

*Catalogue Building Services 2013/2014*

## Drainage and Sewage

Pumps, pump systems and accessories for dewatering,  
waste water collection and transport



## Wilo-Rexa PRO



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# Drainage and Sewage

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



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\*) see series overview or Wilo online catalogue

# Programme overview and fields of applications

## Drainage and Sewage

Pump type		Main field of application					Page
							
Dewatering							
Self-priming drainage pumps	Wilo-Drain LP *)	—	—	S/M/C	—	16	
	Wilo-Drain LPC *)	—	—	S/M/C	—	18	
Drainage pumps for hot water	Wilo-Drain TMT/TMC	—	—	C	C	20	
	Wilo-Drain VC	—	—	C	C	25	
Submersible drainage pumps	Wilo-Drain TM/TMR/TMW 32	S	—	S	—	30	
	Wilo-Drain TS/TSW 32	S	—	S	—	36	
	Wilo-Drain TS 40	S	—	S/M	C	42	
	Wilo-Drain TS 50	S	—	S/M/C	C	42	
	Wilo-Drain TS 65	S	—	S/M/C	C	42	
	Wilo-EMU KS	—	—	S/M/C	C	56	
Submersible pumps for mobile applications	Wilo-Drain TP...-AM	—	—	M/C	C	92	
Submersible sewage pumps	Wilo-Drain TC 40	S/M/C	—	S/M/C	—	99	
	Wilo-Drain STS 40	S/M/C	—	S/M/C	—	104	
	Wilo-Drain TP 50	M/C	—	S/M/C	—	109	
	Wilo-Drain TP 65	M/C	—	S/M/C	—	109	
	Wilo-Drain TP 80	M/C	—	M/C	C	135	
	Wilo-Drain TP 100	M/C	—	M/C	C	135	
	 Wilo-Rexa FIT	S/M/C	M/C	S/M/C	—	157	
	 Wilo-Rexa PRO	S/M/C	M/C	S/M/C	—	188	
	Wilo-EMU FA... (standard variant)	—	M/C	M/C	—	220	

## Drainage and Sewage

Pump type		Main field of application					Page
							
Wastewater collection and transport							
Wastewater lifting units	Wilo-DrainLift TMP 32	S	—	—	—	276	
	Wilo-DrainLift TMP 40	S	—	—	—	280	
	Wilo-DrainLift Box	S/M	—	—	—	284	
Sewage lifting units	Wilo-DrainLift KH	S/M	—	—	—	293	
	Wilo-DrainLift XS-F	S/M	—	—	—	298	
	Wilo-DrainLift S	S/M	—	—	—	305	
	Wilo-DrainLift M	S/M	—	—	—	314	
	Wilo-DrainLift L	M/C	—	—	—	326	
	Wilo-DrainLift XL	M/C	—	—	—	338	
	Wilo-DrainLift XXL	M/C	—	—	—	346	
	Wilo-DrainLift FTS *)	M/C	—	—	—	357	
Pumps stations	Wilo-DrainLift WS 40 Basic	S/M	—	—	—	362	
	Wilo-DrainLift WS 40-50	S/M	—	—	—	369	
	Wilo-DrainLift WS 625	S/M/C	—	—	—	379	
	Wilo-DrainLift WS 830	M/C	—	—	—	385	
	 Wilo-DrainLift WS 900/1100	M/C	—	—	—	390	
Submersible sewage pumps with macerator	Wilo-Drain MTC	S/M/C	—	—	—	398	
	Wilo-Drain MTS	S/M/C	—	—	—	413	
Submersible sewage pumps	Wilo-Drain TP 50	M/C	—	S/M/C	—	426	
	Wilo-Drain TP 65	M/C	—	S/M/C	—	426	
	Wilo-Drain TP 80	M/C	—	M/C	C	428	
	Wilo-Drain TP 100	M/C	—	M/C	C	428	
	 Wilo-Rexa FIT	S/M/C	M/C	S/M/C	—	430	
	 Wilo-Rexa PRO	S/M/C	M/C	S/M/C	—	433	
	Wilo-EMU FA... (standard variant)	—	M/C	M/C	—	436	

\*) Detailed information on these products can be found in the Wilo online catalogue.

### Key:

— Cannot be used/not applicable

**S** Single- and two-family houses

**M** Multi-family house

**C** Commercial

**New in the programme or series extension or modification**

### Fields of application:



Wastewater collection and transport



Wastewater treatment








Dewatering (incl. Flood Control)



Industrial processes

# General notes and abbreviations

Abbrevia- tion	Meaning	Material	Meaning	AISI
1~	1-phase current	1.0570	Steel S355J2G3	A106
3~	3-phase current	1.4021	Chromium steel X20Cr13	420
-A	Float switch attached	1.4057	Chromium steel X17CrNi16-2	431
D	Direct activation	1.4112	Chromium steel X90CrMoV18	440B
DI	Leakage detection	1.4122	Chromium steel X39CrMo17-1	
Di	Inside diameter	1.4301	Chromium-nickel steel X5CrNi18-10	304
Di min.	Minimum inside diameter	1.4305	Chromium-nickel steel X8CrNiS18-9	303
DM	Three-phase motor, 3~	1.4306	Chromium-nickel steel X2CrNi19-11	304L
DN	Nominal diameter of the flange connection	1.4308	Chromium-nickel steel GX5CrNi19-10	304 CF8
EBM	Individual run signal	1.4401	Chromium-nickel-molybdenum steel X5CrNiMo17-12-2	316
EM	Single-phase motor, 1~	1.4404	Chromium-nickel-molybdenum steel X2CrNiMo17-12-2	316L
ESM	Individual fault signal	1.4408	Chromium-nickel-molybdenum steel GX5CrNiMo19-11-2	316
GRD/GLRD	Mechanical seal	1.4460	Chromium-nickel-molybdenum steel X3CrNiMoN 27-5-2	329
F	Thrust in newtons (N) (for submersible mixers)	1.4462	Chromium-nickel-molybdenum steel X2CrNiMoN22-5-3	329 (2205)
H, Hman	Delivery head	1.4470	Chromium-nickel-molybdenum steel GX2CrNiMoN22-5-3	329
H <sub>A</sub>	Suction head; inlet floor to ground level	1.4517	Chromium-nickel-molybdenum steel with copper addition GX2CrNiMoCuN25-6-3-3	
H <sub>B</sub>	Installation depth to inlet floor	1.4528	Blade steel X105CrCoMo182	440B+ Co
H <sub>N</sub>	Site altitude above MSL (mean sea level)	1.4541	Chromium-nickel steel with titanium addition X6CrNiTi18-10	321
H <sub>G</sub>	Groundwater level to MSL (mean sea level)	1.4542	Chromium-nickel steel with copper and niobium additions X5CrNiCuNb16-4	630
I <sub>A</sub>	Starting current	1.4571	Chromium-nickel steel with titanium addition X6CrNiMoTi17-12-2	316Ti
I <sub>N</sub>	Nominal current; current at P <sub>2</sub>	1.4581	Chromium-nickel-molybdenum steel with niobium addition GX5CrNiMoNb19-11-2	316 / 316Nb
Inst.	Installation: H = horizontal, V = vertical	Abrasite	Chilled cast iron material for use in strongly abrasive fluids	
	Supply availability (L = stock article, C = available in 2 weeks, K = available in 4 weeks, A = available on request)	Al	Light metal material (aluminium)	
P <sub>1</sub>	Power consumption (power supplied from the network)	Al-oxide	Aluminium oxide	
P <sub>1.1</sub>	Power consumption at the duty point	C	Carbon	
P <sub>2</sub> (P <sub>N</sub> )	Nominal motor power	Ceram	Coating with very high adhesive strength for long-lasting corrosion protection	
PN	Pressure class in bar (e.g. PN10 = suitable up to 10 bar)	Composite	High-strength plastic material	
PTC	Positive temperature coefficient (PTC thermistor sensor)	Cr	Chromium	
PT 100	Platinum temperature sensor with a resistance value of 100 Ω at 0 °C	EN-GJL	Cast iron with lamellar graphite, also referred to as grey cast iron. The use of grey cast iron in domestic water systems is governed by the Drinking Water Directive 98/83/EC and applicable recognised technical rules and standards!	
Q (=ṽ)	Volume flow	EN-GJL 200	Grey cast iron GG20	
-S	Float switch attached	EN-GJL 250	Grey cast iron GG25	
SBM	Run signal or collective run signal			
SSM	Fault signal or collective fault signal			
WSK	Thermal winding contacts (in motor for monitoring the winding temperature, full motor protection through additional tripping unit)			
Y/Δ	Star-delta switching			
	Operating mode of double pumps: Individual operation of the respective duty pump			
	Operating mode of double pumps: Parallel operation of both pumps			
	Number of poles of electric motors: 2-pole motor = approx. 2900 rpm at 50 Hz			
	Number of poles of electric motors: 4-pole motor = approx. 1450 rpm at 50 Hz			
	Number of poles of electric motors: 6-pole motor = approx. 950 rpm at 50 Hz			

Material	Meaning	AISI
EN-GJS	Cast iron with spheroidal graphite, also referred to as spheroidal cast iron. The use of spheroidal cast iron in domestic water systems is governed by the Drinking Water Directive 98/83/EC and applicable recognised technical rules and standards!	
EN-GJS-500-7	Spheroidal cast iron GGG50	
G-Al Si12	Die-cast aluminium	
GfK	Fibreglass plastic	
GG	See EN-GJL	
GGG	See EN-GJS	
Inox	Stainless steel	
ABS	Acrylic butadiene styrene	
PA 30GF	See Composite	
PE-HD	High-density polyethylene	
PP-GF30	Polypropylene, reinforced with 30% fibre-glass	
PUR	Polyurethane	
SiC	Silicon carbide	
St	Steel	
St.vz.	Galvanised steel	
V2A	Material group, e.g. 1.4301, 1.4306	304
V4A	Material group, e.g. 1.4404, 1.4571	316

## Wilo – General Terms of Delivery and Service

The latest version of our General Terms of Delivery and Service can be found on the Internet at

[www.wilo.com](http://www.wilo.com)

## Wear and tear

Pumps or parts of pumps are subject to wear in accordance with the current technical standards (DIN 31051/DIN-EN 13306). This wear may vary depending on the operating parameters (temperature, pressure, speed, water conditions) and the installation/usage situation and may result in the failure of the above products/components, including their electrical/electronic circuits, at different times.

Wear or wearing parts are all components subject to rotary or dynamic stress, including electronic components to which voltage is applied, including in particular:

- Gaskets (including mechanical seals), seal rings.
- Stuffing boxes.
- Bearings and shafts.
- Impellers and pump components.
- Thrust rings and wear rings.
- Wear rings / wear plates.
- Macerators.
- Condensers.
- Relays/contactors/switches.
- Electronic circuits, semiconductor components etc.

Pumps and continuous-flow machines (such as submersible mixers and recirculation pumps) and their coated components (cataphoretic, 2K or Ceram coating) are subject to constant wear due to the abrasive content of the fluids. For this reason the coating of these units is also counted as a wearing part!

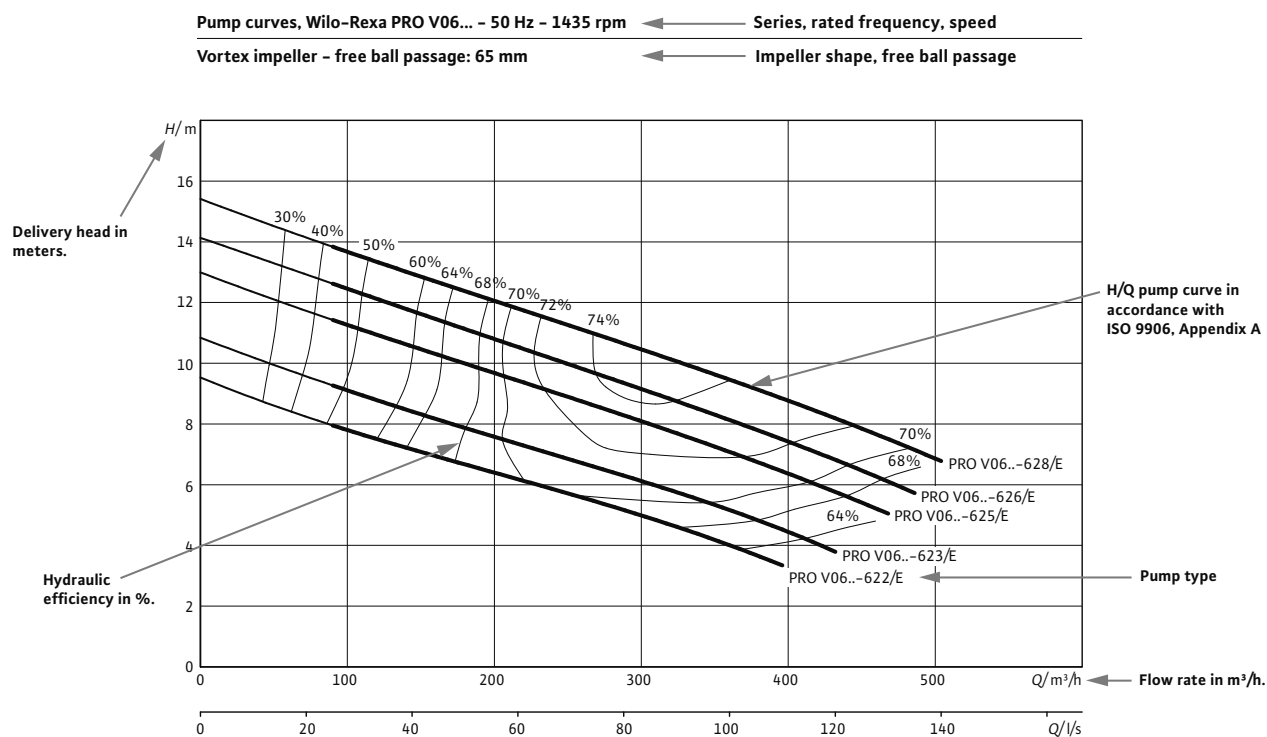
We do not accept any liability for faults or defects arising from natural wear and tear.

# General notes




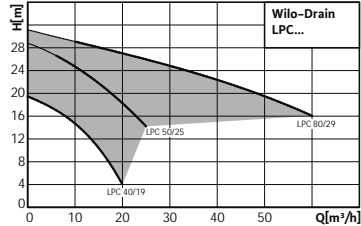
## Information on pump curve diagrams

### Submersible sewage pumps

#### Wilo-Rexa PRO (example)





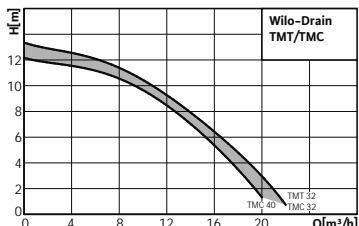
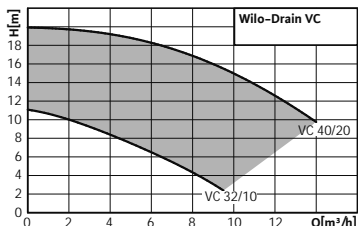
### Series overview

Series	Wilo-Drain LP	Wilo-Drain LPC
Product photo		
Duty chart		
Design	Self-priming drainage pump	Self-priming drainage pump
Application	Pumping of wastewater for <ul style="list-style-type: none"> <li>• Ponds</li> <li>• Sprinkling / spraying of gardens and green areas</li> <li>• Mobile drainage</li> </ul>	Pumping of wastewater with small amounts of solid matter for <ul style="list-style-type: none"> <li>• Excavation pits and ponds</li> <li>• Sprinkling / spraying of gardens and green areas</li> <li>• Drainage of seepage water</li> <li>• Mobile drainage</li> </ul>
H <sub>max</sub>	10 m	29 m
Q <sub>max</sub>	12 m <sup>3</sup> /h	60 m <sup>3</sup> /h
Special features/product advantages	<ul style="list-style-type: none"> <li>• High operational reliability</li> <li>• Easy handling</li> <li>• Easy operation</li> </ul>	<ul style="list-style-type: none"> <li>• Long service life</li> <li>• Heavy-duty design</li> <li>• Easy handling</li> <li>• Easy operation</li> <li>• Easy to maintain</li> <li>• Mobile and flexible use</li> </ul>
Further information	Series information from page 16 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a>	Series information from page 18 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a>

# Dewatering



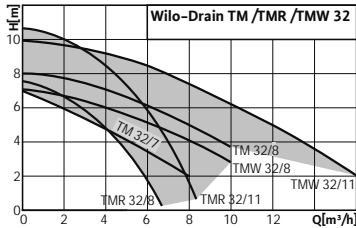
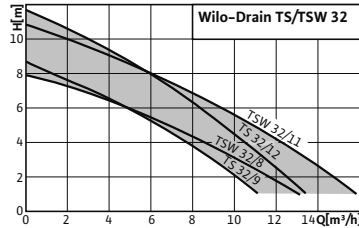
## Drainage pump for hot water

### Series overview

Series	Wilo-Drain TMT/TMC	Wilo-Drain VC
Product photo		
Duty chart		
Design	Drainage pumps	Vertically-mounted drainage pump (pedestal pump with IE2 motor)
Application	For industrial use, e.g. for condensate, hot water and aggressive fluids.	Pumping of wastewater: <ul style="list-style-type: none"> <li>Containing solid substances of max. Ø 5 mm or Ø 7 mm (VC 40)</li> <li>Fluids up to 95 °C</li> <li>From pump sumps</li> <li>With condensate</li> <li>From basements at risk of flooding</li> </ul>
H <sub>max</sub>	13 m	20 m
Q <sub>max</sub>	22 m³/h	14 m³/h
Special features/product advantages	<ul style="list-style-type: none"> <li>High temperature resistance (up to 95°C)</li> <li>Also suitable for aggressive fluids</li> </ul>	<ul style="list-style-type: none"> <li>Long service life</li> <li>Easy commissioning</li> <li>Connection outside the fluid</li> <li>Long downtimes possible</li> <li>Built-in motor protection by thermal relay</li> </ul>
Further information	Series information from page 20 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a>	Series information from page 25 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a>






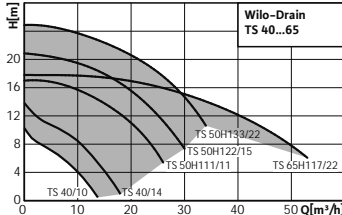
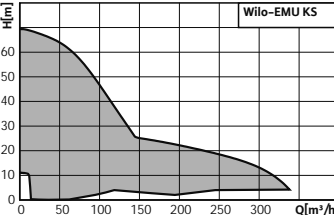
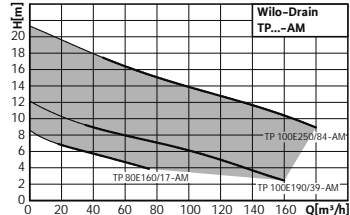
### Series overview

Series	Wilo-Drain TM/TMW/TMR 32	Wilo-Drain TS/TSW 32
Product photo		
Duty chart		
Design	Basement drainage pump, water-cooled	Basement drainage pump, water-cooled
Application	<ul style="list-style-type: none"> <li>For pumping clear or slightly muddy water</li> <li>- From tanks, sumps or pits</li> <li>- For overflows and flooding</li> <li>- For draining basement stairways and basement areas</li> </ul>	<ul style="list-style-type: none"> <li>For pumping clear or slightly muddy water</li> <li>- From tanks, sumps or pits</li> <li>- For overflows and flooding</li> <li>- For draining basement stairways and basement areas</li> <li>- From domestic areas (washing machine water, soapsuds)</li> <li>- From small fountains, waterworks or streams</li> </ul>
H <sub>max</sub>	11 m	12 m
Q <sub>max</sub>	16 m <sup>3</sup> /h	16 m <sup>3</sup> /h
Special features/product advantages	<ul style="list-style-type: none"> <li>Constantly clean pump sump due to patented integrated turbulator (TMW)</li> <li>Minimal residual water level of 2 mm (TMR)</li> <li>For aggressive fluids (HD version)</li> <li>With float switch (A version)</li> <li>Incl. hose connection and 10 m cable</li> </ul>	<ul style="list-style-type: none"> <li>Permanent operation 4000 h/year</li> <li>High-quality motor seal with additional upstream dirt deflector</li> <li>Heavy-duty, impact-resistant stainless steel housing</li> <li>Detachable connection cable/float cable</li> <li>Easy operation and maintenance</li> <li>Constantly clean pump sump due to patented integrated turbulator (TSW)</li> </ul>
Further information	Series information from page 30 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 35	Series information from page 36 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 41

# Dewatering

## Submersible drainage pumps

### Series overview

Series	Wilo-Drain TS 40-65	Wilo-EMU KS	Wilo-Drain TP...-AM
Product photo			
Duty chart			
Design	Submersible drainage pump	Submersible drainage pump	Submersible sewage pump for mobile utilisation
Application	<ul style="list-style-type: none"> <li>For pumping wastewater with foreign matter of max. Ø 10 mm for <ul style="list-style-type: none"> <li>- Domestic and site drainage</li> <li>- Environmental and water treatment technology</li> <li>- Industrial and process engineering</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>For pumping wastewater with foreign matter of max. Ø 45 mm (depending on the model), for <ul style="list-style-type: none"> <li>- Excavation pits, basins and sumps</li> <li>- Flooded basement areas</li> <li>- Use in fountains</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Mobile application for pumping wastewater and drainage water as well as sewage containing faeces, municipal and industrial sewage, including long-fibre constituents, for: <ul style="list-style-type: none"> <li>- House and site drainage</li> <li>- Sewage and water management</li> <li>- Environmental and water treatment technology</li> <li>- Industrial and process engineering</li> <li>- Emergency management</li> <li>- Fire-fighting</li> </ul> </li> </ul>
H <sub>max</sub>	25 m	71 m	22 m
Q <sub>max</sub>	53 m <sup>3</sup> /h	340 m <sup>3</sup> /h	180 m <sup>3</sup> /h
Special features/product advantages	<ul style="list-style-type: none"> <li>- Inox and composites</li> <li>- Detachable connection cable</li> <li>- Wide performance range</li> <li>- Internal capacitor (TS 40/1-)</li> <li>- Internal self-switching thermal motor monitoring (TS 40 and TS 50/1-)</li> </ul>	<ul style="list-style-type: none"> <li>- Long service life</li> <li>- High operational reliability</li> <li>- Slurping operation possible</li> <li>- Suitable for permanent operation</li> <li>- Easy handling</li> </ul>	<ul style="list-style-type: none"> <li>- Mobile application due to installation of the pump in a trolley</li> <li>- Submersible</li> <li>- Low weight</li> <li>- Detachable connecting cable</li> <li>- Longitudinally watertight cable lead-in</li> <li>- Standard-equipped with clogging-free sheath current cooling</li> <li>- Corrosion-resistant (e.g. swimming-pool water, salt water, etc.)</li> <li>- Low-wearing</li> <li>- Patented clogging-free hydraulics</li> </ul>
Further information	Series information from page 42 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 54	Series information from page 56 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 90	Series information from page 92 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a>

Equipment/function				
	Wilo-Drain...			
	LP 40	LPC	TMT/TMC	VC
<b>Design</b>				
Submersible	—	—	•	—
Non-self-priming	—	—	•	•
Open single-channel impeller	—	—	—	—
Vortex impeller	•	—	—	—
Open multi-channel impeller	—	•	•	•
Turbulator	—	—	—	—
Sealing chamber	—	—	—	—
Sealing for mechanical seal on motor side	—	—	•	—
Sealing for rotary shaft seal on motor side	•	•	—	•
Sealing for mechanical seal on fluid side	•	•	•	—
Sealing for rotary shaft seal on fluid side	—	—	—	•
Single-phase AC motor	•	—	—	•
Three-phase motor	•	•	•	•
Direct activation	•	•	•	•
Star-delta activation	—	—	—	—
FC operation	—	—	—	—
Dry motor	•	•	—	•
Motor with oil cooling	—	—	•	—
Sheath current cooling	—	—	—	—
<b>Application</b>				
Wet well installation, stationary	—	—	•	•
Wet well installation, portable	—	—	•	—
Dry well installation, portable	•	•	—	—
<b>Equipment/function</b>				
Motor temperature monitoring	•	—	—	—
Explosion protection	—	—	—	—
Hose connection	—	—	—	—
Float switch	—			•
Non-return valve	—	•	—	—
Capacitor box for 1~230 V	—	—	—	•
Connecting cable detachable	•	•	—	—
Ready-to-plug	—			

• = available or approved, — = not available or not approved

# Dewatering

## Self-priming drainage pumps

### Series description Wilo-Drain LP



#### Design

Self-priming drainage pump

#### Type key

Example: **Wilo-Drain LP 40/10**

**LP** Self-priming pump  
**40** Nominal diameter (DN 40)  
**10** Maximum delivery head in m

#### Application

Pumping of wastewater for

- Ponds
- Sprinkling / spraying of gardens and green areas
- Mobile drainage

#### Special features/product advantages

- High operational reliability
- Easy handling
- Easy operation

#### Technical data

- Mains connection: 1~230 V, 50 Hz
- Protection class: 44
- Fluid temperature: 3 - 35 °C
- Free ball passage: 5 mm
- Connection: Rp 1 ½
- Max. suction head: 6 m

#### Equipment/function

- Thermal motor monitoring
- Oval counter flange
- Vortex impeller

#### Materials

- Motor housing: Al
- Pump housing: PP
- Impeller: Brass
- Shaft: 1.4006
- Sealing: C/Cr mechanical seal
- Static seals: NBR

#### Description/design

Self-priming centrifugal pump for portable dry well installation, not submersible.

The centrifugal pump is equipped with a vortex impeller. Stable installation is ensured by a low-vibration polypropylene baseplate.

#### Scope of delivery

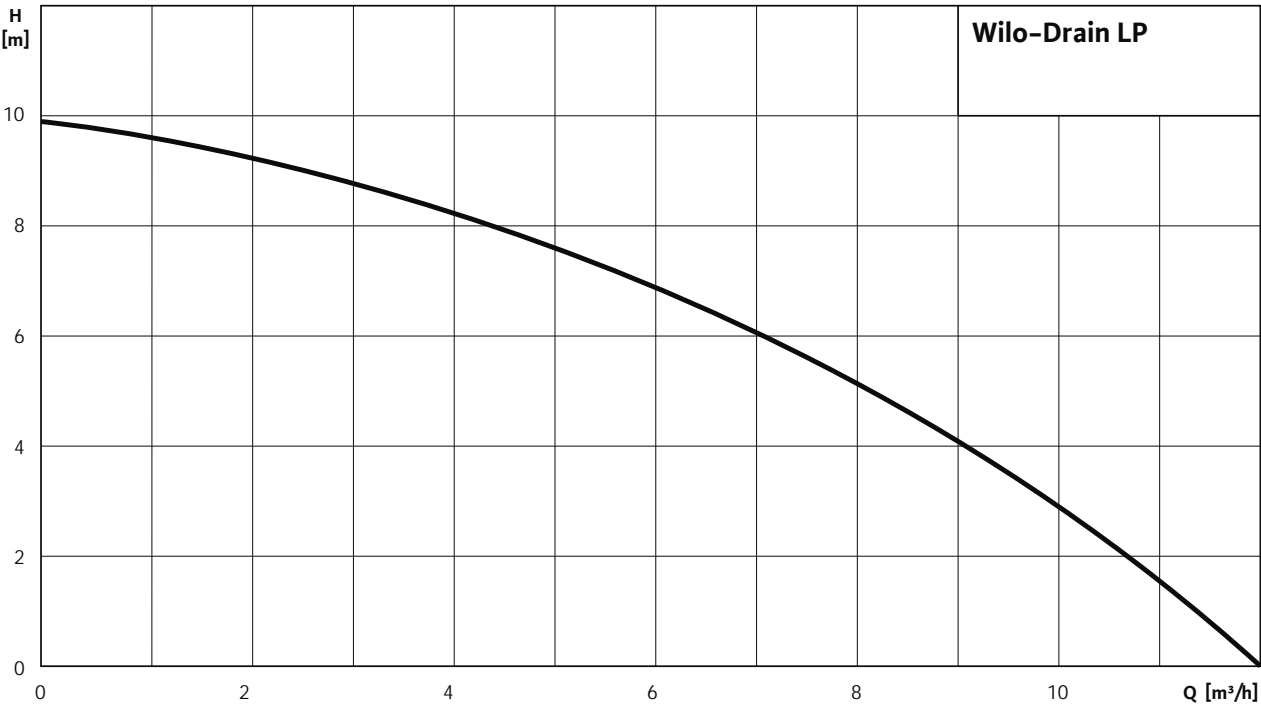
Pump includes 2 oval counter flanges with inside thread G 1 ½, carrying handle and installation and operating instructions.

#### Accessories

5 m connecting cable including plug and switch, hose connection kit R 1 ½, level switching ZSE.

Series description Wilo-Drain LP

Pump curves



# Dewatering

## Self-priming drainage pumps

### Series description Wilo-Drain LPC



#### Design

Self-priming drainage pump

#### Type key

Example: **LPC 40/19**

<b>LP</b>	Self-priming pump
<b>C</b>	Cast version
<b>40</b>	Nominal diameter (DN 40)
<b>19</b>	Maximum delivery head in m

#### Application

- Pumping of wastewater with small amounts of solid matter for
- Excavation pits and ponds
- Sprinkling / spraying of gardens and green areas
- Drainage of seepage water
- Mobile drainage

#### Special features/product advantages

- Long service life
- Heavy-duty design
- Easy handling
- Easy operation
- Easy to maintain
- Mobile and flexible use

#### Technical data

- Mains connection: 3~400 V, 50 Hz
- Protection class: IP 55
- Fluid temperature: 3 - 80 °C
- Free ball passage: 6 - 12 mm (depending on type)
- Pressure port: R 1½ / Rp 2 or Rp 3
- Max. suction head: 7.5 m

#### Equipment/function

- Open multi-channel impeller

#### Materials

- Pump housing: AISi19MG or EN-GJL-250
- Impeller: EN-GJL-250
- Shaft: 1.4104
- Sealing: Mechanical seal C/Al or SiC/SiC
- Static seals: NBR
- Motor housing: Al

#### Description/design

Self-priming centrifugal pump with IE2 motor for portable and stationary dry well installation, not submersible.

The centrifugal pump is equipped with an open multi-channel impeller and integrated non-return valve (LPC 50 and LPC 80 only). Sturdy construction resulting from the high-quality cast iron of the impeller and of the pump housing (LPC 40 made of aluminium casting). The impeller and the pump housing can be cleaned through a small inspection opening.

#### Scope of delivery

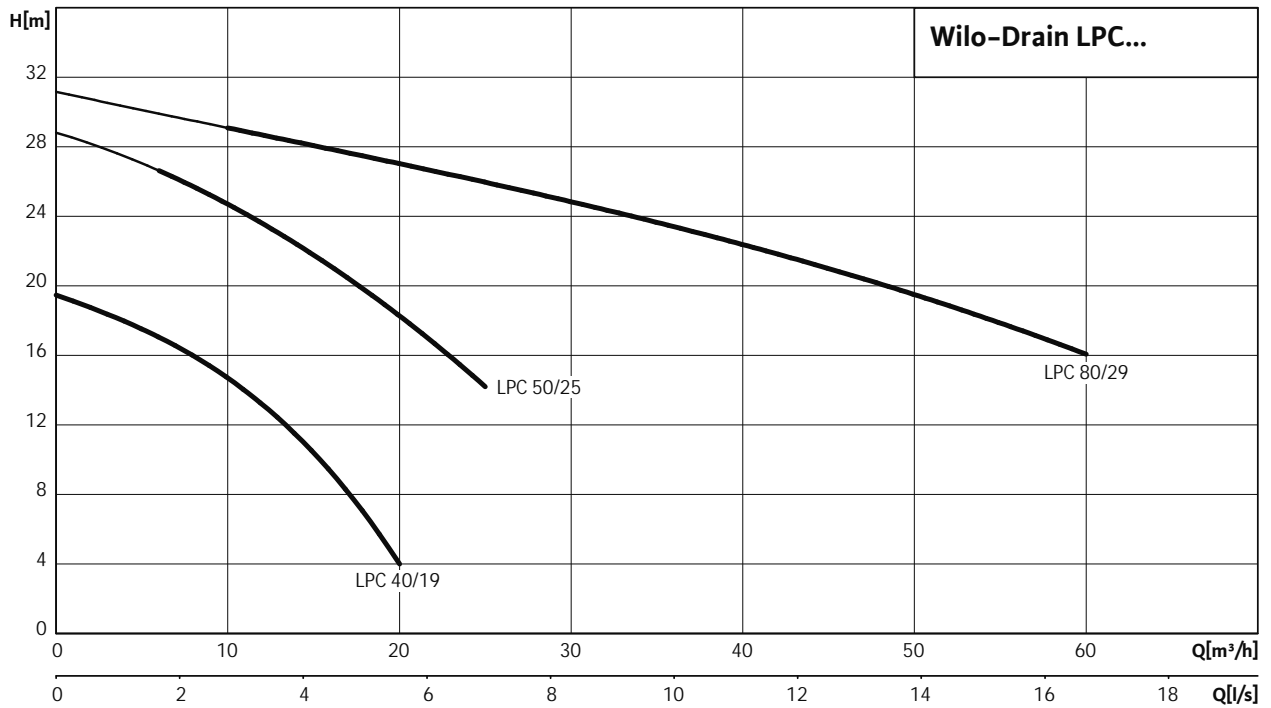
Pump with installation and operating instructions.

#### Accessories

Motor protection switches, stop valves, suction kit consisting of: Hose nozzle, hose, hose clip, hose coupling and foot valve (strainer), trolley for mobile utilisation.

## Series description Wilo-Drain LPC

### Pump curves



# Dewatering

## Drainage pump for hot water

### Series description Wilo-Drain TMT/TMC



#### Design

Drainage pumps

#### Type key

Example: **Wilo-Drain TMC 32 H 102/7,5x**

<b>TM</b>	Submersible motor pump for hot water
<b>C</b>	Version T = for hot wastewater up to 95 °C C = for industrial wastewater up to 95 °C
<b>32</b>	Nominal diameter of the pressure port 32 = Rp 1¼ 40 = Rp 1½
<b>H</b>	Semi-open channel impeller
<b>102</b>	Impeller diameter in mm
<b>7,5</b>	/10 = nominal motor power in kW
<b>x</b>	Material version Ci = cast iron Br = bronze St = cast stainless steel

#### Application

For industrial use, e.g. for condensate, hot water and aggressive fluids.

#### Special features/product advantages

- High temperature resistance (up to 95°C)
- Also suitable for aggressive fluids

#### Technical data

- Mains connection: 3~400 V, 50 Hz
- Protection class: IP 68
- Max. immersion depth: 5 m
- Fluid temperature: immersed = 3 - 95 °C
- Cable length: 10 m
- Free ball passage: 10 mm
- Pressure port: TMT/TMC 32: Rp 1¼; TMC 40: Rp 1½

#### Equipment/function

- Connecting cable, permanently connected

#### Materials

##### “Ci” version

- Pump housing: EN-GJL-250
- Impeller: EN-GJL-250
- Shaft: 1.4122
- Mechanical seal: double, carbon/ceramic
- Static seals: Viton
- Motor housing: EN-GJL-250

##### “Br” version

- Pump housing: G-CuSn10
- Impeller: G-CuSn10
- Shaft: 1.4122
- Mechanical seal: double, carbon/ceramic
- Static seals: Viton
- Motor housing: G-CuSn10

##### “St” version

- Pump housing: 1.4408
- Impeller: 1.4408
- Shaft: 1.4571
- Mechanical seal: double, carbon/ceramic
- Static seals: PTFE/Teflon
- Motor housing: 1.4408

#### Description/design

Fully submersible wastewater pump for vertical wet well installation, for pumping of chemically contaminated fluids with temperatures of up to max. 95°C (depending on the material used: cast iron, bronze or cast stainless steel).

#### Hydraulics

The hydraulics housing and the impeller are, depending on type, made of cast iron, bronze or cast stainless steel. The connection on the pressure side is designed as horizontal threaded flange connection.

#### Motor

The motor is a self-cooling, interference-suppressed three-phase motor and is, depending on type, made of cast iron, bronze or cast stainless steel. The cooling of the motor is done by the oil in the motor. The waste heat is given off to the pumped and surrounding fluid via the housing components. For this reason, the unit can be used in permanent operation and non-immersed in intermittent operation.



### Series description Wilo-Drain TMT/TMC

The cable is heat resistant and the cable inlet is cast in the motor housing. The cable has a length of 10 metres and has bare ends. In the cast stainless steel version, another cable protection hose is also delivered.

#### Seal

The pump-sided and motor-sided sealing is done by two mechanical shaft seals. The oil barrier chamber between the mechanical shaft seal is filled with a lubrication oil of class C in accordance with DIN 51517.

#### Scope of delivery

Pump with rigidly connected supply line with bare cable end, and installation and operating instructions.

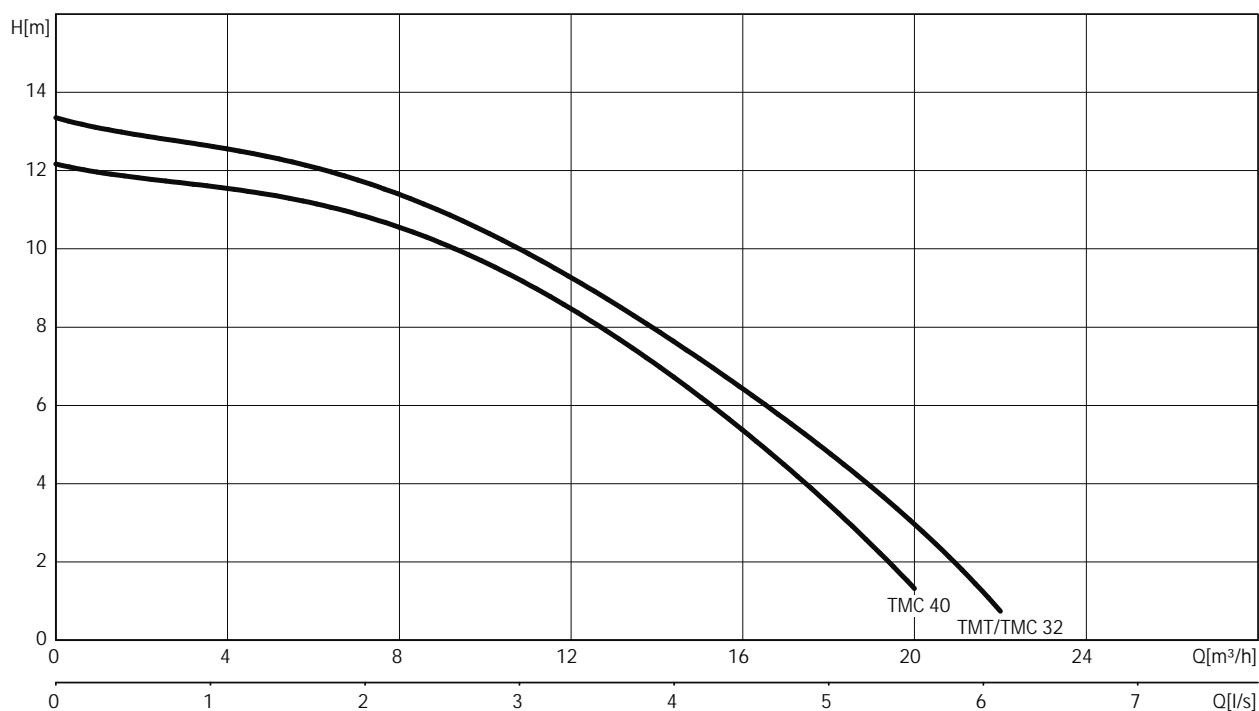
# Dewatering

## Drainage pump for hot water

### Pump curves, ordering information Wilo-Drain TMT/TMC


#### Pump curves Wilo-Drain TMT/TMC – 50 Hz – 2900 rpm


Open multi-channel impeller – Free ball passage: 10 mm



Pump curves in accordance with ISO 9906, Appendix A

#### Information for order placements

Wilo-Drain...	Mains connection		Art No.
TMT 32H102/7,5Ci	3~400 V, 50 Hz	L	120549093
TMC 32H102/7,5Br	3~400 V, 50 Hz	L	120549299
TMC 40H102/7,5St	3~400 V, 50 Hz	L	120654899

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data Wilo-Drain TMT/TMC

	TMT 32H102/7,5Ci	TMC 32H102/7,5Br	TMC 40H102/7,5St
<b>Motor data</b>			
Mains connection	3~400 V, 50 Hz		
Nominal current $I_N$ / A	2	2	2
Nominal motor power $P_2$ / kW	0.75	0.75	0.75
Power consumption $P_1$ / kW	1.1	1.1	1.1
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	2870	2870	2870
Insulation class	F	F	F
Max. switching frequency 1/h	50	50	50
<b>Cable</b>			
Length of connecting cable m	10	10	10
Cable type	SiAF	SiAF	SiAF
Cable cross-section mm <sup>2</sup>	4x1,5	4x1,5	4x1,5
Type of connecting cable	Cast	Cast	Cast
Mains plug	—	—	—
<b>Unit</b>			
Pressure connection	Rp 1¼	Rp 1¼	Rp 1½
Free ball passage mm	10	10	10
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	S3-25%	S3-25%	S3-25%
Max. immersion depth m	5	5	5
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T_f$ / °C	+3 ... +95	+3 ... +95	+3 ... +95
Max. fluid temperature, for short periods up to 3 min $T_f$ / °C	—	—	—
Weight approx. $m$ / kg	30	33	32
<b>Equipment/function</b>			
Float switch	—	—	—
Motor protection	—	—	—
Explosion protection	—	—	—
<b>Materials</b>			
Static seal	FPM	FPM	PTFE/Teflon
Impeller	EN-GJL-250	G-CuSn10	1.4408
Sealing on motor side	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic
Mechanical seal	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic/PTFE
Motor housing	EN-GJL-250	G-CuSn10	1.4408
Pump housing	EN-GJL-250	G-CuSn10	1.4408

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

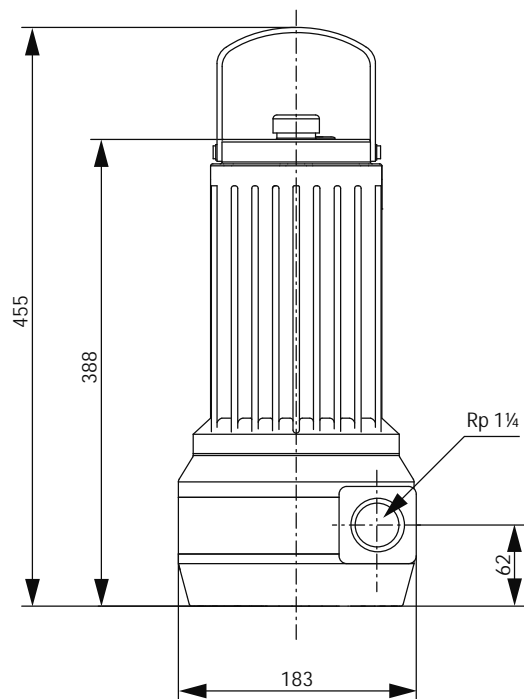
# Dewatering

Drainage pump for hot water

## Dimension drawing Wilo-Drain TMT/TMC

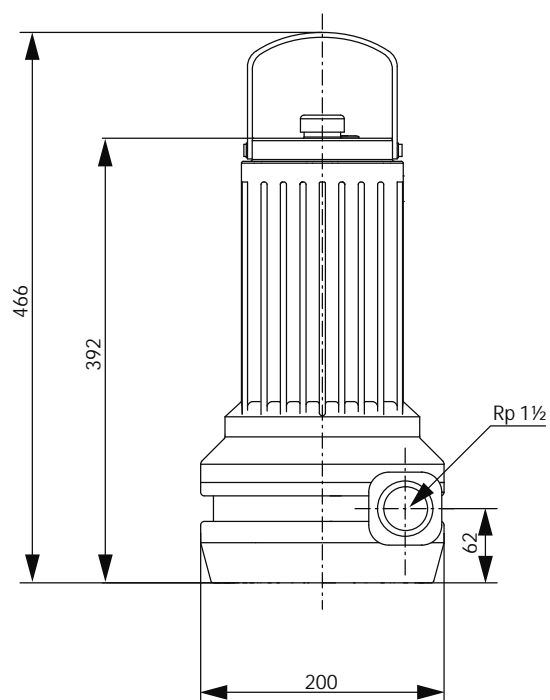
### Dimension drawing

#### Wilo-Drain TMT/TMC 32

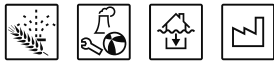


### Dimension drawing

#### Wilo-Drain TMC 40



### Series description Wilo-Drain VC



#### Design

Vertically-mounted drainage pump (pedestal pump with IE2 motor)

#### Type key

Example: **Wilo-Drain VC 32/10**

<b>VC</b>	Vertical drainage pump
<b>32</b>	Nominal diameter of pressure port in mm
<b>10</b>	Max. delivery head in m

#### Application

- Pumping of wastewater:
- Containing solid substances of max. Ø 5 mm or Ø 7 mm (VC 40)
- Fluids up to 95 °C
- From pump sumps
- With condensate
- From basements at risk of flooding

#### Special features/product advantages

- Long service life
- Easy commissioning
- Connection outside the fluid
- Long downtimes possible
- Built-in motor protection by thermal relay

#### Technical data

- Mains connection: 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Protection class: IP 54
- Fluid temperature: 3 - 95 °C
- Free ball passage: 5 mm / 7 mm
- Pressure port: R 1 / R 1½

#### Equipment/function

- Attached float
- Capacitor box (VC 32), 1~

#### Materials

- Motor housing: Al
- Pump housing: EN-GJL-250
- Impeller: 1.4028 (VC 32/10), EN-GJL-250 (VC 40/20)
- Shaft: stainless steel
- Floater: PP

#### Description/design

Vertical pedestal-type wastewater pump with mounted float switch for stationary installation.

- IE2 motor
- On completely flat floors
- Shaft always vertical
- VC 40 hanging from flange

#### Float switch

- VC 32: On the motor
- VC 40: disconnected from motor

#### Electrical data

- VC 32: 1~230 V with capacitor 40 µF
- VC 40: 3~230/400 V motor protection switch required onsite.

#### Scope of delivery

Pump with attached float switch and installation and operating instructions.

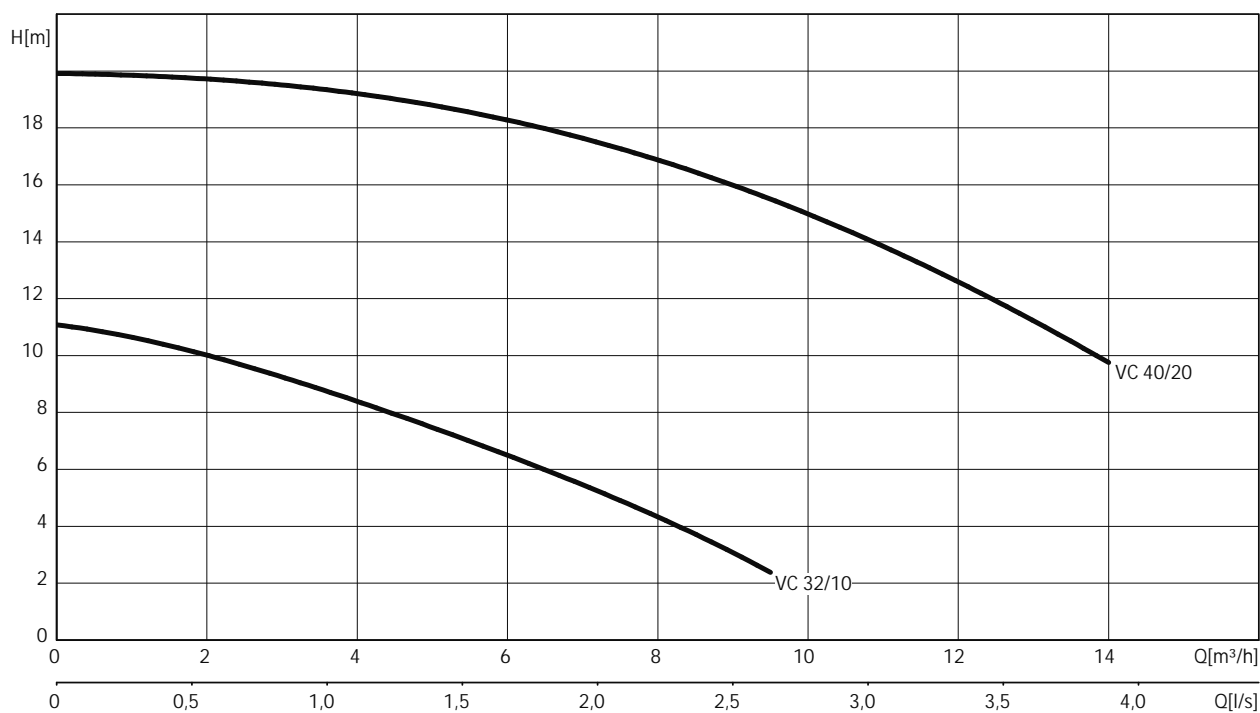
# Dewatering

## Drainage pump for hot water

### Pump curves, ordering information Wilo-Drain VC


#### Pump curves Wilo-Drain VC – 50 Hz – 2900 rpm


Open multi-channel impeller – Free ball passage: 5 – 7 mm



Pump curves in accordance with ISO 9906, Appendix A

#### Information for order placements

Wilo-Drain...	Mains connection		Art No.
VC 32/10	1~230 V, 50 Hz	L	2044582
VC 32/10	3~400 V, 50 Hz	L	2044583
VC 40/20	3~400 V, 50 Hz	L	2044584

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data Wilo-Drain VC

	VC 32/10	VC 32/10	VC 40/20
<b>Motor data</b>			
Mains connection	1~230 V, 50 Hz	3~400 V, 50 Hz	
Nominal current $I_N$ / A	3.9	1	2.9
Nominal motor power $P_2$ / kW	0.37	0.37	2.2
Power consumption $P_1$ / kW	—	—	—
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900
Insulation class	F	F	F
Max. switching frequency 1/h	50	50	50
<b>Cable</b>			
Length of connecting cable m	—	—	—
Cable type	—	—	—
Cable cross-section mm <sup>2</sup>	—	—	—
Type of connecting cable	—	—	—
Mains plug	—	—	—
<b>Unit</b>			
Pressure connection	R 1	R 1	R 1½
Free ball passage mm	5	5	7
Operating mode (immersed)	—	—	—
Operating mode (non-immersed)	S1	S1	S1
Max. immersion depth m	—	—	—
Protection class	IP 55	IP 55	IP 55
Fluid temperature $T$ / °C	+3 ... +95	+3 ... +95	+3 ... +95
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—
Weight approx. $m$ / kg	36	36	77
<b>Equipment/function</b>			
Float switch	•	•	•
Motor protection	—	—	—
Explosion protection	—	—	—
<b>Materials</b>			
Static seal	—	—	—
Impeller	1.4028	1.4028	EN-GJL-250
Sealing on motor side	—	—	—
Mechanical seal	—	—	—
Motor housing	Al	Al	Al
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

### Drainage pump for hot water

## Dimension drawing

Technical drawing of the vertical pump assembly showing dimensions and connection details. The drawing includes the following dimensions and features:

- Motor width: 141
- Motor to pump body distance: 250
- Maximum height from pump body to water level: max.
- Height from pump body to water level: 610
- Minimum height from pump body to water level: min.
- Height from pump body to water level: 160
- Height from pump body to water level: 1020
- Height from pump body to water level: 1247
- Connection: Rp 1
- Pump body diameter: Ø230
- Base width: 300

Technical drawing of the vertical pump assembly showing dimensions and components. The drawing includes the following dimensions and labels:

- Top width: 141
- Motor width: 141
- Motor height: 250
- Maximum height to the float valve: max.
- Height from the base to the float valve: 610
- Minimum height to the base: min. 160
- Height from the base to the pump body: 1020
- Total height: 1228
- Base width: 300
- Base diameter: Ø230
- Connection: Rp 1



### Equipment/function

	Wilo-Drain...								Wilo- EMU
	TM 32	TMW 32	TMR 32	TS 32	TSW 32	TS 40	TS 50	TS 65	KS
<b>Design</b>									
Submersible	•	•	•	•	•	•	•	•	•
Non-self-priming	•	•	•	•	•	•	•	•	•
Open single-channel impeller	—	—	—	—	—	—	—	—	•
Vortex impeller	—	—	—	—	—	—	—	—	•
Open multi-channel impeller	•	•	•	•	•	•	•	•	•
Turbulator	—	•	—	—	•	—	—	—	—
Sealing chamber	•	•	•	•	•	•	•	•	•
Sealing for mechanical seal on motor side	—	—	—	—	—	•	—	—	•
Sealing for rotary shaft seal on motor side	•	•	•	•	•	—	•	•	—
Sealing for mechanical seal on fluid side	•	•	•	•	•	•	•	•	•
Sealing for rotary shaft seal on fluid side	—	—	—	—	—	—	—	—	—
Single-phase AC motor	•	•	•	•	•	•	•	—	•
Three-phase motor	—	—	—	—	—	•	•	•	•
Direct activation	•	•	•	•	•	•	•	•	•
Star-delta activation	—	—	—	—	—	—	—	—	•
FC operation	—	—	—	—	—	—	—	—	—
Dry motor	•	•	•	•	•	•	•	•	•
Motor with oil cooling	—	—	—	—	—	—	—	—	•
Sheath current cooling	•	•	•	•	•	—	—	—	• From KS 24
<b>Application</b>									
Wet well installation, stationary	•	•	•	•	•	•	•	•	•
Wet well installation, portable	•	•	•	•	•	•	•	•	•
Dry well installation, portable	—	—	—	—	—	—	—	—	•
<b>Equipment/function</b>									
Motor temperature monitoring	•	•	•	•	•	•	•	•	• KS 5, 6, 16 only
Explosion protection	—	—	—	—	—	—	• 3- only	•	• KS 5, 6, 16 only
Hose connection	•	•	•	•	•	•	—	—	•
Float switch	• TM 32/7	•				• Version A			•
Non-return valve	—	•	•	•	•	•	—	—	—
Capacitor box for 1~230 V	—	—	—	—	—	—	•	—	•
Connecting cable detachable	—	—	—	•	•	•	•	•	•
Ready-to-plug	•						• Version A		•

• = available or approved, - = not available or not approved

# Dewatering

## Submersible drainage pumps

### Series description Wilo-Drain TM/TMW/TMR 32



#### Design

Basement drainage pump, water-cooled

#### Type key

Example: **Wilo-Drain TM 32/7**

**TM** Submersible pump  
**32** Nominal diameter of discharge port  
**/7** Max. delivery head [m]

Example: **Wilo-Drain TMW 32/11 HD**

**TM** Submersible pump  
**W** W = with turbulator  
R = with flat suction  
**32** Nominal diameter of discharge port  
**/11** Max. delivery head [m]  
**HD** For aggressive fluid

#### Application

- For pumping clear or slightly muddy water
  - From tanks, sumps or pits
  - For overflows and flooding
  - For draining basement stairways and basement areas

#### TMR

The TMR is suited for lowering the water level to a remaining level of 2 mm.

#### TMW

The service life of submersible pumps, which are used in pump sumps and through which washing machine water, soapy water from basins and showers, or other mixtures flow, is considerably reduced by settling sediment. Such sediment can form deposits in the pump sump, resulting in the accumulation of mud and odours.

Wilo-Drain TMW 32 has a turbulator that prevents the build-up of sediment, expelling it together with the fluid. This reduces costs and the time needed for regular cleaning of the sump. In addition, problems associated with mud removal and the observance of occupational safety hygiene regulations during cleaning of the pump sump are minimized.

#### Special features/product advantages

- Constantly clean pump sump due to patented integrated turbulator (TMW)
- Minimal residual water level of 2 mm (TMR)
- For aggressive fluids (HD version)
- With float switch (A version)
- Incl. hose connection and 10 m cable

#### Technical data

- Mains connection 1–230 V, 50 Hz
- Protection class: IP 68
- Submersion depth max. 3 m
- Fluid temperature 3 – 35 °C, max. 90 °C for short periods up to 3 min.
- Cable length 3 to 10 m, depending on type
- Free ball passage 10 mm (TMR: 2 mm)
- Pressure port Rp 1 ¼

#### Equipment/function

- Ready-to-plug
- Thermal motor monitoring
- Sheath current cooling
- Connection cable

#### Materials

- Pump housing PP-GF30
- Impeller PPE/PS-GF20
- Shaft 1.4104 (AISI 430F)/1.4404 (AISI 316L) (for TMW 32/11 HD)
- Shaft seal: NBR on motor side, carbon/ceramic on pump side
- Motor housing 1.4301 (AISI 304) / 1.4404 (AISI 316L) (with TMW 32/11 HD)

#### Description/design

Submersible pump suitable for stationary, fully automatic operation. A pressure hose of appropriate length is connected for mobile use, while a pipe is connected to the pressure port for stationary applications. A residual-current-operated protection switch for a trigger current of 30 mA that is to be provided onsite (regulation concerning outdoor installation) must be utilised in accordance with EN 60335-2,41.

The pumps of the TM series are suitable for drainage applications with a multi-channel impeller and a free ball passage of 10 mm according to EN 12050-2 (except TMR).

### Series description Wilo-Drain TM/TMW/TMR 32

The pump is continuously cooled by the fluid between the outside shroud of the pump and the stainless steel motor housing. The serially installed thermal motor protection assures a permanent protection of the pump. The pump is equipped with a 3 or 10 m connecting cable with shockproof plug and a float switch (not TM 32/8-10M).

#### **TMR**

The Wilo-Drain TMR pumps are built for special applications whereby it is essential to keep the amount of residual water low. The special strainer enables the fluid to be pumped out to a remaining level of 2 mm.

#### **TMW**

Due to its design, the Wilo-Drain TMW ensures constant turbulence in the suction area of the pump. This results in a clean pump sump. No fluid-related odours are generated, due to the turbulence and the elimination of the settling sediment connected with it. The maintenance intervals are extended.

Deactivating the Twister (see installation and operating instructions) increases the pump curve by 1 m.

#### **Motor**

Jacket-cooled, stainless steel-encapsulated, dry electric motor with built-in thermal overload protection and automatic reactivation.

#### **Cable**

In accordance with DIN EN 60335-2-41, 10 m of electrical connection line should be used for outdoor operation (however note that regulations vary from country to country).

#### **Sealing of pumps/motor compartment**

Mechanical seal on impeller side, one rotary shaft seal on motor side; there is an oil chamber between the seals.

#### **Scope of delivery**

Pump ready for connection with cable, plug and attached float switch (except for TM 32/8), supplied non-return valve (except for TM 32/7), installation and operating instructions.

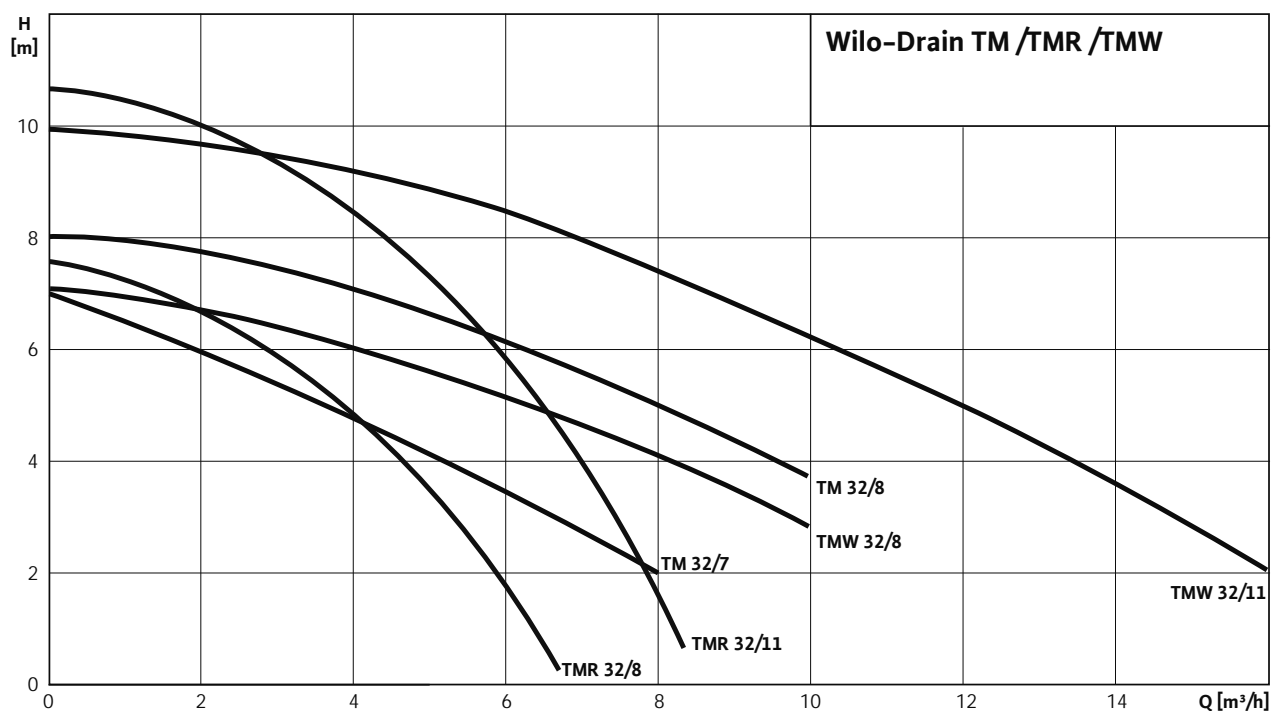
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-Drain TM/TMR/TMW 32


#### Pump curves Wilo-Drain TM/TMR/TMW 32 – 50 Hz – 2900 rpm


Multi-channel impeller – Free ball passage: 2 – 10 mm



Pump curves in accordance with ISO 9906, Appendix A.

#### Information for order placements

Wilo-Drain...	Mains connection		Art No.
TM 32/7	1~230 V, 50 Hz	L	4048412
TM 32/8-10M	1~230 V, 50 Hz	L	4048411
TMR 32/8	1~230 V, 50 Hz	L	4145325
TMR 32/8-10M	1~230 V, 50 Hz	L	4145326
TMR 32/11	1~230 V, 50 Hz	L	4145327
TMW 32/8	1~230 V, 50 Hz	L	4048413
TMW 32/8-10M	1~230 V, 50 Hz	L	4058059
TMW 32/11	1~230 V, 50 Hz	L	4048414
TMW 32/11-10M	1~230 V, 50 Hz	L	4058060
TMW 32/11HD	1~230 V, 50 Hz	L	4048715

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data Wilo-Drain TM/TMW/TMR 32

	TM 32/7	TM 32/8-10M	TMR 32/8	TMR 32/8-10M	TMR 32/11
<b>Motor data</b>					
Mains connection	1~230 V, 50 Hz				
Nominal current $I_N$ / A	1.4	2.1	2.1	2.1	3.6
Nominal motor power $P_2$ / kW	0.25	0.37	0.37	0.37	0.55
Power consumption $P_1$ / kW	0.32	0.45	0.45	0.45	0.75
Activation type	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900	2900
Insulation class	F	F	F	F	F
Max. switching frequency 1/h	50	50	50	50	50
<b>Cable</b>					
Length of connecting cable m	3	10	3	10	3
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	3G1	3G1	3G1	3G1	3G1
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable	Non-detachable	Non-detachable
Mains plug	Shock-proof	Shock-proof	Shock-proof	Shock-proof	Shock-proof
<b>Unit</b>					
Pressure connection	G 1¼	G 1¼	G 1¼	G 1¼	G 1¼
Free ball passage mm	10	10	2	2	2
Operating mode (immersed)	S1, S3-25%	S1, S3-25%	S1, S3-25%	S1, S3-25%	S1, S3-25%
Operating mode (non-immersed)	S1, S3-25%	S1, S3-25%	S1, S3-25%	S1, S3-25%	S1, S3-25%
Max. immersion depth m	3	3	3	3	3
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	90	90	90	90	90
Weight approx. $m$ / kg	3.6	5.2	4.9	5.5	6.2
<b>Equipment/function</b>					
Float switch	•	—	•	•	•
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—	—
<b>Materials</b>					
Static seal	NBR	NBR	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	NBR	NBR	NBR	NBR	NBR
Mechanical seal	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic
Motor housing	1.4301	1.4301	1.4301	1.4301	1.4301
Pump housing	PP-GF30	PP-GF30	PP-GF30	PP-GF30	PP-GF30

$P_1$  refers to the maximum power consumption. All of the data applies to 1–230 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible drainage pumps

### Technical data Wilo-Drain TM/TMW/TMR 32

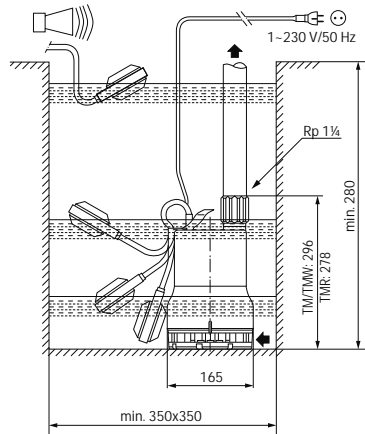
	TMW 32/8	TMW 32/8-10M	TMW 32/11	TMW 32/11-10M	TMW 32/11HD
<b>Motor data</b>					
Mains connection	1~230 V, 50 Hz				
Nominal current $I_N$ / A	2.1	2.1	3.6	3.6	3.6
Nominal motor power $P_2$ / kW	0.37	0.37	0.55	0.55	0.55
Power consumption $P_1$ / kW	0.45	0.45	0.75	0.75	0.75
Activation type	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900	2900
Insulation class	F	F	F	F	F
Max. switching frequency 1/h	50	50	50	50	50
<b>Cable</b>					
Length of connecting cable m	3	10	3	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	3G1	3G1	3G1	3G1	3G1
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable	Non-detachable	Non-detachable
Mains plug	Shock-proof	Shock-proof	Shock-proof	Shock-proof	Shock-proof
<b>Unit</b>					
Pressure connection	G 1¼	G 1¼	G 1¼	G 1¼	G 1¼
Free ball passage mm	10	10	10	10	10
Operating mode (immersed)	S1, S3-25%	S1, S3-25%	S1, S3-25%	S1, S3-25%	S1, S3-25%
Operating mode (non-immersed)	S1, S3-25%	S1, S3-25%	S1, S3-25%	S1, S3-25%	S1, S3-25%
Max. immersion depth m	3	3	3	3	3
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	90	90	90	90	90
Weight approx. $m$ / kg	4.7	5.2	6.1	6.9	6.7
<b>Equipment/function</b>					
Float switch	•	•	•	•	•
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—	—
<b>Materials</b>					
Static seal	NBR	NBR	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	NBR	NBR	NBR	NBR	NBR
Mechanical seal	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic
Motor housing	1.4301	1.4301	1.4301	1.4301	1.4404
Pump housing	PP-GF30	PP-GF30	PP-GF30	PP-GF30	PP-GF30

$P_1$  refers to the maximum power consumption. All of the data applies to 1~230 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

### Dimension drawing Wilo-Drain TM/TMW/TMR 32

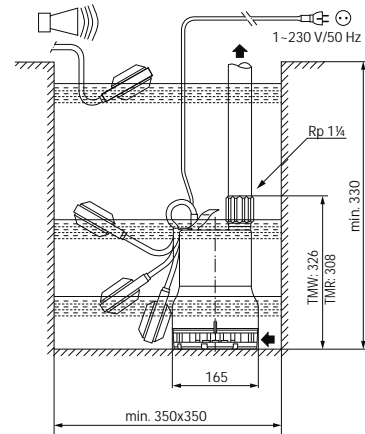
#### Dimension drawing

##### Wilo-Drain TM/TMW/TMR 32/8



#### Dimension drawing

##### Wilo-Drain TM/TMW/TMR 32/11



#### Mechanical accessories

		Description	Art no.
<b>Non-return valve</b>		Made of plastic, with draining screw, rated pressure PN 4 bar, female thread Rp 1 1/4 for DN 32 connection	501533696
<b>Gate valve set</b>		Made of red brass, comprising a coupling sleeve slider with female thread Rp 1 1/4 PN 16 RG, and double nipple with male thread 1 1/4, for mounting the gate valve directly behind the non-return valve on pressure outlet DN 32.	2528652

# Dewatering

## Submersible drainage pumps

### Series description Wilo-Drain TS/TSW 32



#### Design

Basement drainage pump, water-cooled

#### Type key

Example: **Wilo-Drain TS 32/9 A**

<b>TS</b>	Drainage pump
<b>32</b>	Nominal diameter of discharge port
<b>/9</b>	Max. delivery head [m]
<b>A</b>	With float switch

Example: **Wilo-Drain TSW 32/11 A**

<b>TSW</b>	Drainage pump with turbulator
<b>32</b>	Nominal diameter of discharge port
<b>/11</b>	Max. delivery head [m]
<b>A</b>	With float switch

#### Application

- For pumping clear or slightly muddy water
  - From tanks, sumps or pits
  - For overflows and flooding
  - For draining basement stairways and basement areas
- From domestic areas (washing machine water, soapsuds)
- From small fountains, waterworks or streams

#### TSW

The service life of submersible pumps, which are used in pump sumps and through which washing machine water, soapy water from basins and showers, or other mixtures flow, is considerably reduced by settling sediment. Such sediment can form deposits in the pump sump, resulting in the accumulation of mud and odours.

Wilo-Drain TSW 32 has a turbulator that prevents the build-up of sediment, expelling it together with the fluid. This reduces costs and the time needed for regular cleaning of the sump. In addition, problems associated with mud removal and the observance of occupational safety hygiene regulations during cleaning of the pump sump are minimised.

#### Special features/product advantages

- Permanent operation 4000 h/year
- High-quality motor seal with additional upstream dirt deflector
- Heavy-duty, impact-resistant stainless steel housing
- Detachable connection cable/float cable

- Easy operation and maintenance
- Constantly clean pump sump due to patented integrated turbulator (TSW)

#### Technical data

- Mains connection 1~230 V, 50 Hz
- Protection class IP 68
- Max. immersion depth 10 m
- Fluid temperature 3 – 35 °C, for short periods up to 3 min. max. 90 °C
- Cable length 10 m
- Free ball passage 10 mm
- Rp 1 ¼ pressure port, hose connection Ø 32 mm, R1

#### Equipment/function

- Ready-to-plug
- Motor monitoring via temperature
- Sheath current cooling
- Connecting cable

#### Materials

- Pump housing: 1.4301 (AISI 304)
- Impeller: SPL
- Shaft: 1.4401 (AISI 316)
- Shaft seal: NBR on motor side, carbon/ceramic on pump side
- Motor housing: 1.4301 (AISI 304)

#### Description/design

Submersible pump suitable for stationary, fully automatic operation. A pressure hose of appropriate length is connected for mobile use, while a pipe is connected to the discharge port for stationary applications.

A residual-current-operated protection switch for a trigger current of 30 mA that is to be provided on site (regulation concerning out-door installation) must be utilised in accordance with EN 60335-2,41.

#### TSW in addition

Due to its design, the TSW ensures constant turbulence in the suction area of the pump. This results in a clean pump sump.

No fluid-related odours are generated, due to the turbulence and the elimination of the settling sediment connected with it. The maintenance intervals are extended.



### Series description Wilo-Drain TS/TSW 32

#### **Motor**

Jacket-cooled, stainless steel-encapsulated, dry electric motor with built-in thermal overload protection and automatic reactivation. The capacitor is on the inside.

#### **Cable**

In accordance with DIN EN 60335-2-41, 10 m of electrical connection line is required for outdoor operation (however note that regulations vary from country to country).

#### **Sealing of pumps/motor space**

High operational reliability due to shaft sealing consisting of a mechanical seal on the pump side and a rotary shaft seal on the motor side as well as upstream dirt deflector for additional protection of the mechanical seal, oil barrier chamber.

#### **Scope of delivery**

Pump ready for connection with cable, plug and attached float switch, supplied non-return valve and hose connector (Ø 32 mm, R1), installation and operating instructions.

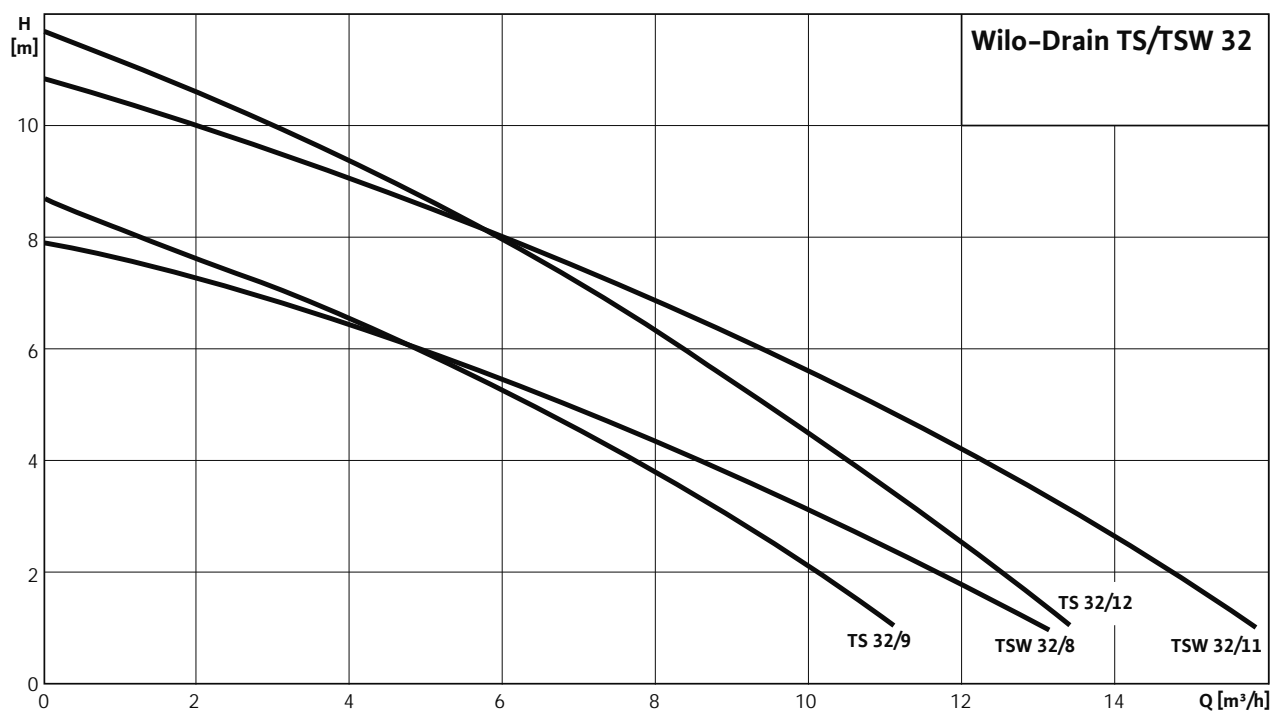
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-Drain TS/TSW 32


#### Pump curves Wilo-Drain TS/TSW 32 – 50 Hz – 2900 rpm


Vortex impeller – Free ball passage: 10 mm



Pump curves in accordance with ISO 9906, Appendix A.

#### Information for order placements

Wilo-Drain...	Mains connection		Art No.
TS 32/9-A	1~230 V, 50 Hz	L	6043943
TS 32/12-A	1~230 V, 50 Hz	L	6043945
TSW 32/8-A	1~230 V, 50 Hz	L	6045167
TSW 32/11-A	1~230 V, 50 Hz	L	6045166

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data Wilo-Drain TS/TSW 32

	TS 32/9-A	TS 32/12-A	TSW 32/8-A	TSW 32/11-A
<b>Motor data</b>				
Mains connection	1~230 V, 50 Hz			
Nominal current $I_N$ / A	2.2	3.4	2.2	3.6
Nominal motor power $P_2$ / kW	0.3	0.6	0.3	0.6
Power consumption $P_1$ / kW	0.5	0.8	0.5	0.9
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	B	B	B	B
Max. switching frequency 1/h	50	50	50	50
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	3G1	3G1	3G1	3G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	Shock-proof	Shock-proof	Shock-proof	Shock-proof
<b>Unit</b>				
Pressure connection	Rp 1¼	Rp 1¼	Rp 1¼	Rp 1¼
Free ball passage mm	10	10	10	10
Operating mode (immersed)	S1, S3-25%	S1, S3-25%	S1, S3-25%	S1, S3-25%
Operating mode (non-immersed)	S1, S3-25%	S1, S3-25%	S1, S3-25%	S1, S3-25%
Max. immersion depth m	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Weight approx. $m$ / kg	6.8	7.8	6.8	7.8
<b>Equipment/function</b>				
Float switch	•	•	•	•
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	PLC	PLC	PLC	PLC
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic
Motor housing	1.4301	1.4301	1.4301	1.4301
Pump housing	1.4301	1.4301	1.4301	1.4301

$P_1$  refers to the maximum power consumption. All of the data applies to 1~230 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

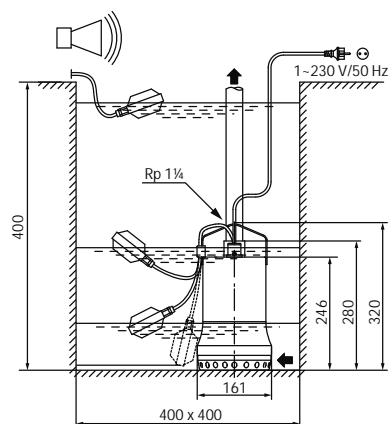
# Dewatering

## Submersible drainage pumps

### Dimension drawing Wilo-Drain TS/TSW 32

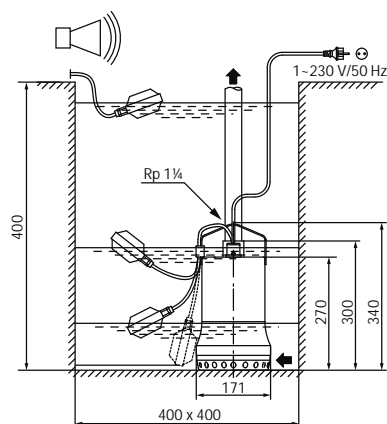
#### Dimension drawing

##### Wilo-Drain TS 32/9-A



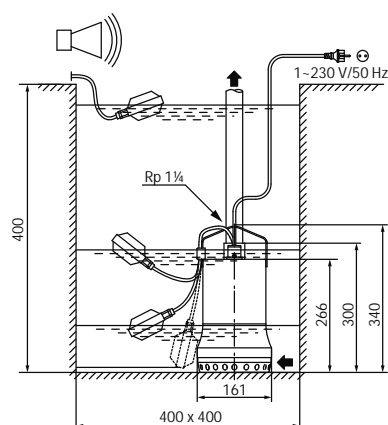
#### Dimension drawing

##### Wilo-Drain TS 32/12-A



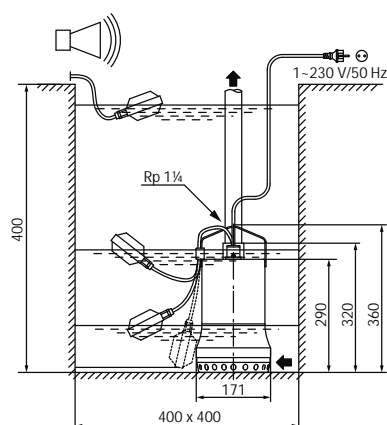
#### Dimension drawing

##### Wilo-Drain TSW 32/8-A

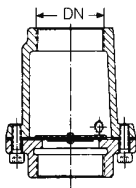
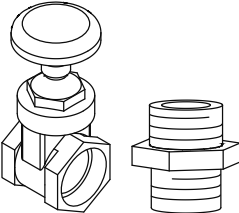


#### Dimension drawing

##### Wilo-Drain TSW 32/11-A



## Mechanical accessories Wilo-Drain TS/TSW 32

		Description	Art no.
Non-return valve		Made of plastic, with draining screw, rated pressure PN 4 bar, female thread Rp 1¼ for DN 32 connection	501533696
Gate valve set		Made of red brass, comprising a coupling sleeve slider with female thread Rp 1¼ PN 16 RG, and double nipple with male thread 1¼, for mounting the gate valve directly behind the non-return valve on pressure outlet DN 32.	2528652

# Dewatering

## Submersible drainage pumps

### Series description Wilo-Drain TS 40-65

Wilo-Drain TS 40



Wilo-Drain TS 50-65



#### Design

Submersible drainage pump

#### Type key

Example: **Wilo-Drain TS 50 H 111/11-A**

- TS** Submersible pump for wastewater  
**50** Connection: 50 (= Rp 2); 65 (= Rp 2 ½)  
**H** Impeller shape: H = half-open impeller  
**111** Nominal diameter of the impeller in mm  
**11** Power  $P_2$  in kW (=value/10 = 1.1 kW)  
**A** Version:  
A = with float switch and connecting cable with shock-proof plug (1~230 V/50 Hz) or CEE plug (3~400 V/50 Hz)  
CEE = without float switch with CEE plug  
without = without float switch with bare cable end

#### Additional type key:

Example: **Wilo-Drain TS 40/10-A**

- TS** Submersible pump for wastewater  
**40** Connection: 40 (Rp 1 ½)  
**10** Max. delivery head in m  
**A** Version:  
A = with float switch and connecting cable with shock-proof plug (1~230 V/50 Hz) or CEE plug (3~400 V/50 Hz)  
CEE = without float switch with CEE plug  
without = without float switch with bare cable end

#### Application

- For pumping wastewater with foreign matter of max. Ø 10 mm for
  - Domestic and site drainage
  - Environmental and water treatment technology
  - Industrial and process engineering

#### Special features/product advantages

- Inox and composites
- Detachable connection cable
- Wide performance range
- Internal capacitor (TS 40/1~)
- Internal self-switching thermal motor monitoring (TS 40 and TS 50/1~)

#### Technical data

- Mains connection: 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Protection class: IP 68
- Max. immersion depth: TS 40 = 5 m; TS 50/TS 65 = 10 m
- Fluid temperature: 3 - 35 °C
- Cable length: 10 m
- Free ball passage: 10 mm
- Pressure port: TS 40 = Rp 1, TS 50 = Rp 1 ¼, TS 65 = Rp 2 ½

#### Equipment/function

- Ready-to-plug for 1~230 V and A and CEE model
- Thermal motor monitoring
- Explosion protection (TS 50/3~ and TS 65)
- Connection cable detachable
- Integrated non-return valve (TS 40)
- Hose connection (TS 40)

#### Materials

##### TS 40:

- Pump housing PP-GF30
- Impeller PP-GF30
- Shaft 1.4404
- Sealing on motor side: mechanical seal SiC/SiC
- Sealing on pump side: mechanical seal SiC/SiC
- Static seal: NBR
- Motor housing 1.4301

##### TS 50, 65:

- Pump housing: PUR
- Impeller: PP-GF30
- Shaft: 1.4404
- Sealing on motor side: NBR rotary shaft seal
- Sealing on pump side: mechanical seal SiC/SiC
- Static seal: NBR
- Motor housing 1.4301

#### Description/design

Submersible wastewater pump as submersible monobloc unit for stationary and portable wet well installation.

#### Hydraulics

The output on the pressure side is configured as a vertical threaded connection Rp 1 ½ (TS 40), Rp 2 (TS 50) or Rp 2 ½ (TS 65). Semi-open channel impellers with free ball passage of 10 mm are used as the impeller.

### Series description Wilo-Drain TS 40-65

#### Motor

Dry motors as single-phase or three-phase AC motors with thermal motor monitoring. On models TS 40 and TS 50 (1~ only) this monitoring is built-in and self-switching. The waste heat is given off directly to the surrounding fluid via the housing components. As a result, these units must always be immersed for permanent or intermittent operation.

A sealing chamber protects the motor from fluid ingress. The filling fluid used is potentially biodegradable and environmentally safe.

The cable is detachable, oil-resistant and has bare cable ends. The cable lengths are available in length increments of 10 m. The A model is equipped with a float switch and a shock-proof plug (1~230 V/50 Hz) or a CEE plug (3~400 V/50 Hz). The CEE model does not have a float switch and is equipped with a CEE plug.

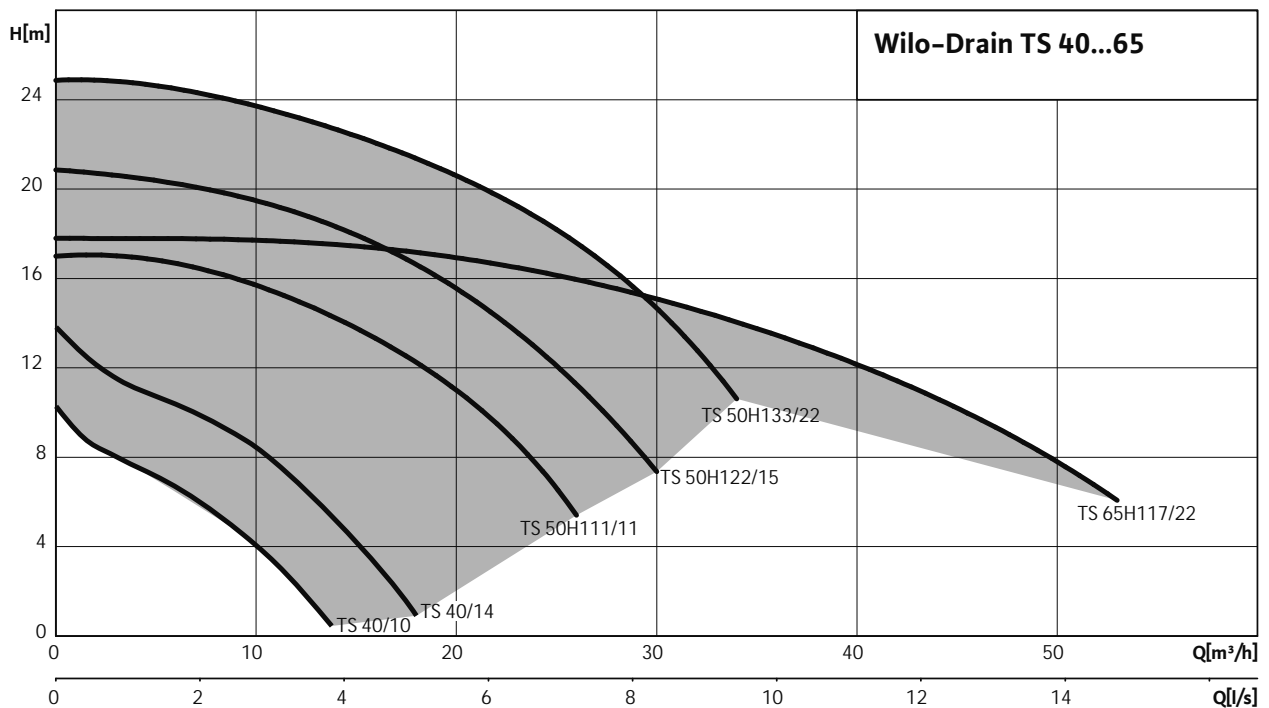
#### Sealing

Sealing on the fluid side is done using a bidirectional mechanical seal. On the TS 40, sealing on the motor side is likewise done using a bidirectional mechanical seal. On the TS 50 and TS 65, sealing on the motor side is with a rotary shaft seal.

#### Scope of delivery

- Pump ready for connection with 10 m connection cable and bare cable end
- "A" model equipped with float switch and shock-proof plug (1~230 V/50 Hz) or CEE plug (3~400 V/50 Hz)
- "CEE" version equipped with CEE plug
- Hose connection (TS 40 only)
- Installation and operating instructions

#### Duty chart



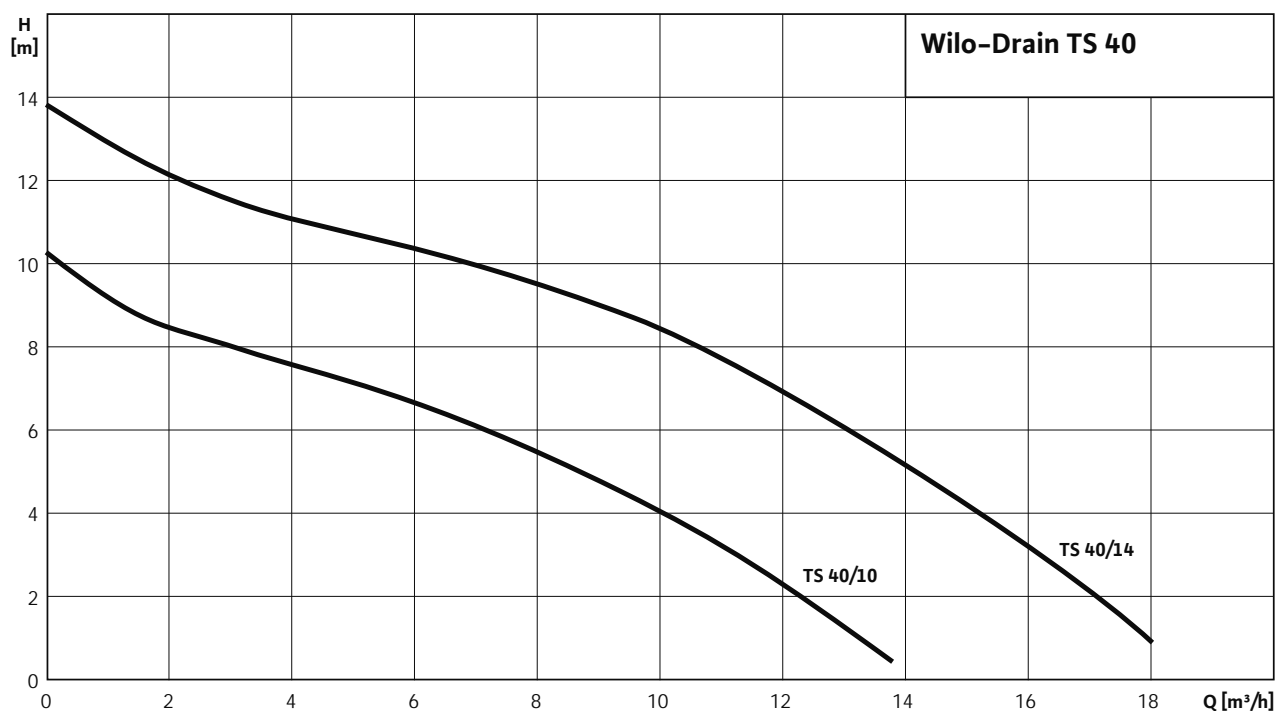
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-Drain TS 40


#### Pump curves Wilo-Drain TS 40 – 50 Hz – 2900 rpm


Single-channel impeller – Free ball passage: 10 mm



Pump curves in accordance with ISO 9906, Appendix A.

#### Information for order placements

Wilo-Drain...	Mains connection		Art No.
TS 40/10	1~230 V, 50 Hz	L	2063928
TS 40/10-A	1~230 V, 50 Hz	L	2063926
TS 40/10	3~400 V, 50 Hz	L	2063927
TS 40/14	1~230 V, 50 Hz	L	2063931
TS 40/14-A	1~230 V, 50 Hz	L	2063929
TS 40/14	3~400 V, 50 Hz	L	2063930

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request



## Technical data Wilo-Drain TS 40

	TS 40/10	TS 40/10	TS 40/10-A
<b>Motor data</b>			
Mains connection	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz
Nominal current $I_N$ / A	2.2	1.1	2.2
Nominal motor power $P_2$ / kW	0.4	0.4	0.4
Power consumption $P_1$ / kW	0.48	0.55	0.48
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900
Insulation class	B	B	B
Max. switching frequency 1/h	50	50	50
<b>Cable</b>			
Length of connecting cable m	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	3G1	4G1	3G1
Type of connecting cable	Plug, detachable	Plug, detachable	Plug, detachable
Mains plug	Shock-proof	—	Shock-proof
<b>Unit</b>			
Pressure connection	Rp 1½	Rp 1½	Rp 1½
Free ball passage mm	10	10	10
Operating mode (immersed)	S1, S3-25%	S1, S3-25%	S1, S3-25%
Operating mode (non-immersed)	—	—	—
Max. immersion depth m	5	5	5
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—
Weight approx. $m$ / kg	14	14	14.2
<b>Equipment/function</b>			
Float switch	—	—	•
Motor protection	WSK	WSK	WSK
Explosion protection	—	—	—
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	SiC/SiC	SiC/SiC	SiC/SiC
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301
Pump housing	PP-GF30	PP-GF30	PP-GF30

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible drainage pumps

### Technical data Wilo-Drain TS 40

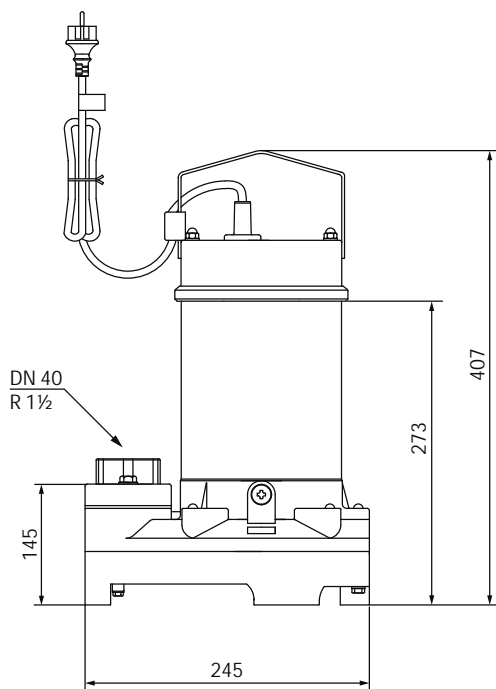
	TS 40/14	TS 40/14	TS 40/14-A
<b>Motor data</b>			
Mains connection	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz
Nominal current $I_N$ / A	4.4	2	4.4
Nominal motor power $P_2$ / kW	0.75	0.75	0.75
Power consumption $P_1$ / kW	1	0.92	1
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900
Insulation class	B	B	B
Max. switching frequency 1/h	50	50	50
<b>Cable</b>			
Length of connecting cable m	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	3G1	4G1	3G1
Type of connecting cable	Plug, detachable	Plug, detachable	Plug, detachable
Mains plug	Shock-proof	—	Shock-proof
<b>Unit</b>			
Pressure connection	Rp 1½	Rp 1½	Rp 1½
Free ball passage mm	10	10	10
Operating mode (immersed)	S1, S3-25%	S1, S3-25%	S1, S3-25%
Operating mode (non-immersed)	—	—	—
Max. immersion depth m	5	5	5
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—
Weight approx. $m$ / kg	16	16	16.2
<b>Equipment/function</b>			
Float switch	—	—	•
Motor protection	WSK	WSK	WSK
Explosion protection	—	—	—
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	SiC/SiC	SiC/SiC	SiC/SiC
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301
Pump housing	PP-GF30	PP-GF30	PP-GF30

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Dimension drawing Wilo-Drain TS 40

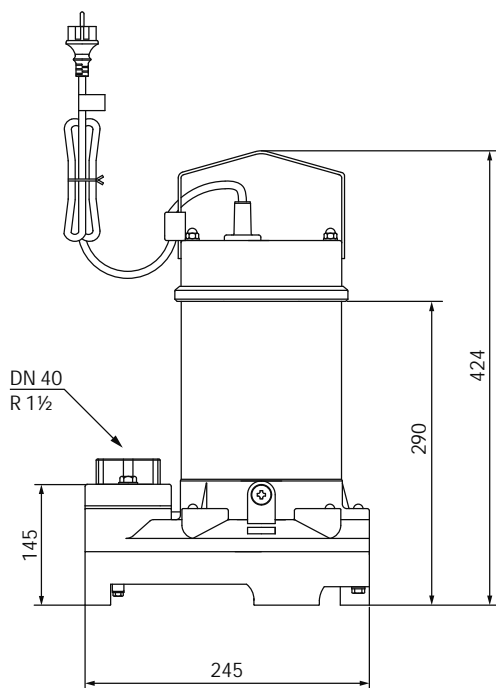
### Dimension drawing

#### Wilo-Drain TS 40/10



### Dimension drawing

#### Wilo-Drain TS 40/14



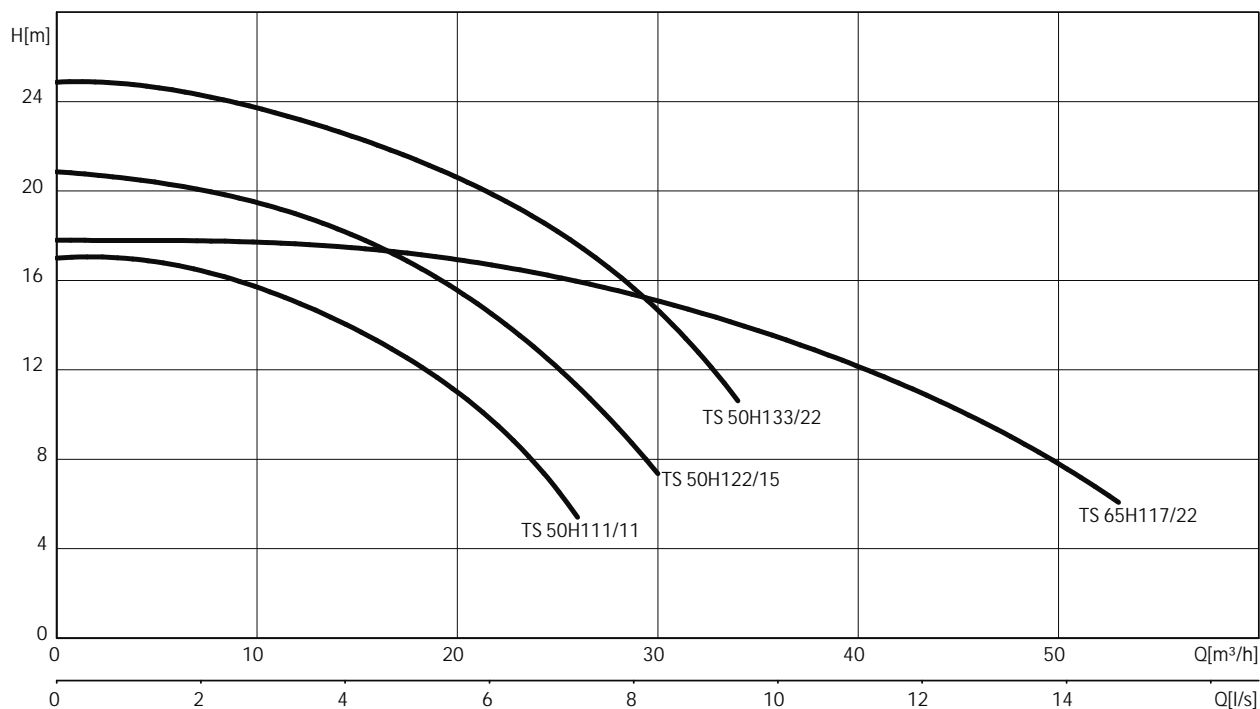
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-Drain TS 50/65


#### Pump curves Wilo-Drain TS 50/TS 65 – 50 Hz – 2900 rpm


Semi-open multi-channel impeller – Free ball passage: 10 mm



Pump curves in accordance with ISO 9906, Appendix A

#### Information for order placements

Wilo-Drain...	Mains connection		Art No.
TS 50 H 111/11	1~230 V, 50 Hz	L	4025037
TS 50 H 111/11-A	1~230 V, 50 Hz	L	4029477
TS 50 H 111/11	3~400 V, 50 Hz	L	4025036
TS 50 H 111/11-A	3~400 V, 50 Hz	L	4029553
TS 50 H 111/11 CEE	3~400 V, 50 Hz	L	6042447
TS 50 H 122/15	3~400 V, 50 Hz	L	4025039
TS 50 H 122/15-A	3~400 V, 50 Hz	L	6042448
TS 50 H 122/15 CEE	3~400 V, 50 Hz	L	6042449
TS 50 H 133/22	3~400 V, 50 Hz	L	4025042
TS 50 H 133/22-A	3~400 V, 50 Hz	L	6042451
TS 50 H 133/22 CEE	3~400 V, 50 Hz	L	6042450
TS 65 H 117/22	3~400 V, 50 Hz	L	4025059
TS 65 H 117/22-A	3~400 V, 50 Hz	L	6042453
TS 65 H 117/22 CEE	3~400 V, 50 Hz	L	6042452

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data TS 50

	TS 50 H 111/11	TS 50 H 111/11	TS 50 H 111/11-A	TS 50 H 111/11-A
<b>Motor data</b>				
Mains connection	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz
Nominal current $I_N$ / A	7.7	3.2	7.7	3.2
Nominal motor power $P_2$ / kW	1.1	1.1	1.1	1.1
Power consumption $P_1$ / kW	1.5	1.5	1.5	1.5
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Max. switching frequency 1/h	50	50	50	50
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1	6G1	4G1	6G1
Type of connecting cable	Plug, detachable	Plug, detachable	Plug, detachable	Plug, detachable
Mains plug	Shock-proof	—	Shock-proof	CEE M 16 WDSHA
<b>Unit</b>				
Pressure connection	Rp 2	Rp 2	Rp 2	Rp 2
Free ball passage mm	10	10	10	10
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-8 min	S2-8 min	S2-8 min	S2-8 min
Max. immersion depth m	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Weight approx. $m$ / kg	21	21	21	21
<b>Equipment/function</b>				
Float switch	—	—	•	•
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	—	ATEX	—	—
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301
Pump housing	PUR	PUR	PUR	PUR

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible drainage pumps

### Technical data TS 50

	TS 50 H 111/11 CEE	TS 50 H 122/15	TS 50 H 122/15-A	TS 50 H 122/15 CEE
<b>Motor data</b>				
Mains connection	3~400 V, 50 Hz			
Nominal current $I_N$ / A	3.2	3.6	3.6	3.6
Nominal motor power $P_2$ / kW	1.1	1.5	1.5	1.5
Power consumption $P_1$ / kW	1.5	2.1	2.1	2.1
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Max. switching frequency 1/h	50	50	50	50
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	6G1	6G1	6G1	6G1
Type of connecting cable	Plug, detachable	Plug, detachable	Plug, detachable	Plug, detachable
Mains plug	CEE M 16 WDU	—	CEE M 16 WDSA	CEE M 16 WDU
<b>Unit</b>				
Pressure connection	Rp 2	Rp 2	Rp 2	Rp 2
Free ball passage mm	10	10	10	10
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-8 min	S2-8 min	S2-8 min	S2-8 min
Max. immersion depth m	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Weight approx. $m$ / kg	21	22	22	22
<b>Equipment/function</b>				
Float switch	—	—	•	—
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	—	ATEX
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301
Pump housing	PUR	PUR	PUR	PUR

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Technical data TS 50

	TS 50 H 133/22	TS 50 H 133/22-A	TS 50 H 133/22 CEE
<b>Motor data</b>			
Mains connection	3~400 V, 50 Hz		
Nominal current $I_N$ / A	5.1	5.1	5.1
Nominal motor power $P_2$ / kW	2.2	2.2	2.2
Power consumption $P_1$ / kW	2.9	2.9	2.9
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900
Insulation class	F	F	F
Max. switching frequency 1/h	50	50	50
<b>Cable</b>			
Length of connecting cable m	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	6G1	6G1	6G1
Type of connecting cable	Plug, detachable	Plug, detachable	Plug, detachable
Mains plug	—	CEE M 16 WDSHA	CEE M 16 WDU
<b>Unit</b>			
Pressure connection	Rp 2	Rp 2	Rp 2
Free ball passage mm	10	10	10
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	S2-8 min	S2-8 min	S2-8 min
Max. immersion depth m	10	10	10
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—
Weight approx. $m$ / kg	23	23	23
<b>Equipment/function</b>			
Float switch	—	•	—
Motor protection	WSK	WSK	WSK
Explosion protection	ATEX	—	ATEX
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301
Pump housing	PUR	PUR	PUR

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible drainage pumps

### Technical data TS 65

	TS 65 H 117/22	TS 65 H 117/22-A	TS 65 H 117/22 CEE
<b>Motor data</b>			
Mains connection	3~400 V, 50 Hz		
Nominal current $I_N$ / A	5.1	5.1	5.1
Nominal motor power $P_2$ / kW	2.2	2.2	2.2
Power consumption $P_1$ / kW	2.9	2.9	2.9
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900
Insulation class	F	F	F
Max. switching frequency 1/h	50	50	50
<b>Cable</b>			
Length of connecting cable m	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	6G1	6G1	6G1
Type of connecting cable	Plug, detachable	Plug, detachable	Plug, detachable
Mains plug	—	CEE M 16 WDSHA	CEE M 16 WDU
<b>Unit</b>			
Pressure connection	Rp 2½	Rp 2½	Rp 2½
Free ball passage mm	10	10	10
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	S2-8 min	S2-8 min	S2-8 min
Max. immersion depth m	10	10	10
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—
Weight approx. $m$ / kg	24	24	24
<b>Equipment/function</b>			
Float switch	—	•	—
Motor protection	WSK	WSK	WSK
Explosion protection	ATEX	—	ATEX
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301
Pump housing	PUR	PUR	PUR

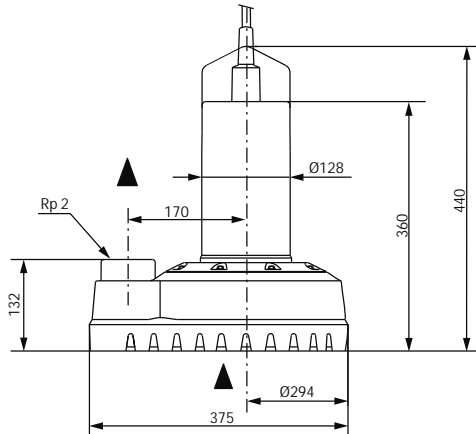
$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.



## Dimension drawing Wilo-Drain TS 50/65

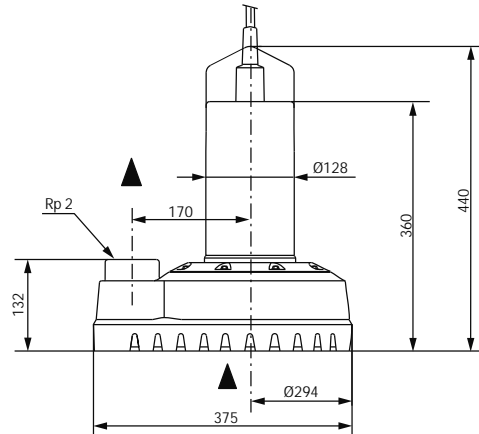
### Dimension drawing

Wilo-Drain TS 50 H 111/11



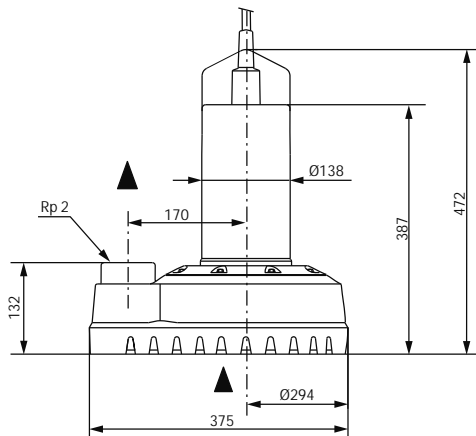
### Dimension drawing

Wilo-Drain TS 50 H 122/15



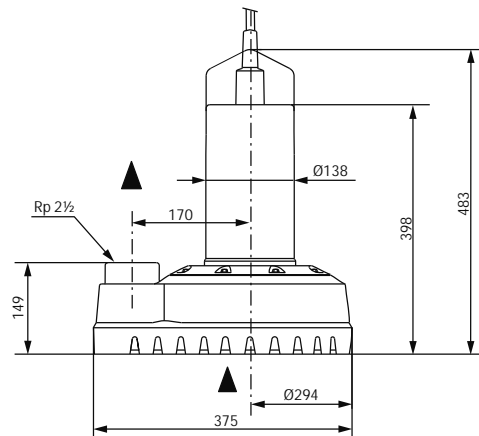
### Dimension drawing

Wilo-Drain TS 50 H 133/22



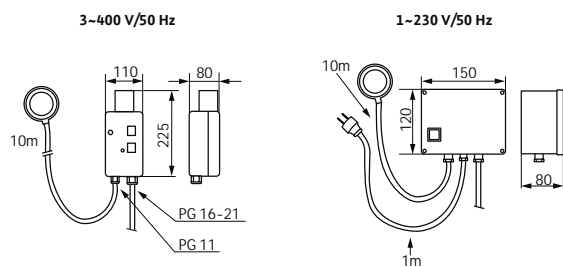
### Dimension drawing

Wilo-Drain TS 65 H 117/22



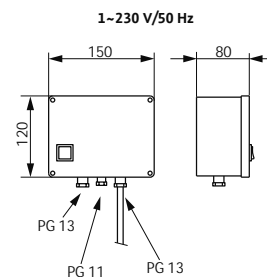
### Dimension drawing

Wilo-Drain TS 50/TS 65 – electrical connection with plug and float switch (version A)



### Dimension drawing

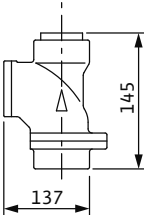
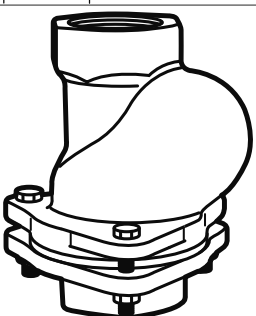
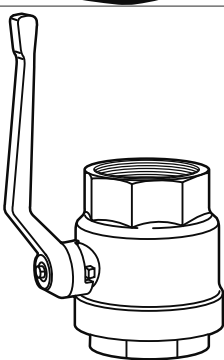
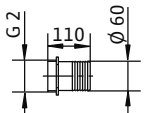
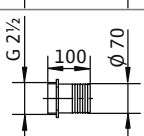
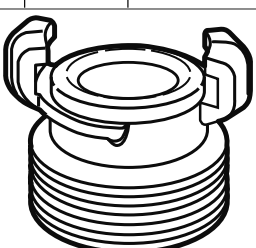
Wilo-Drain TS 50/TS 65 – electrical connection with bare cable end



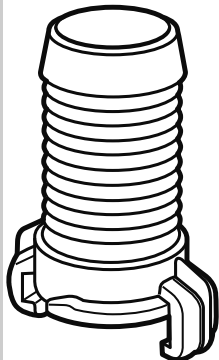
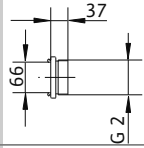
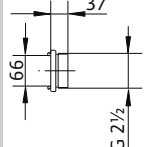
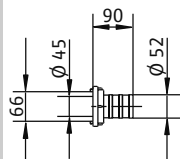
# Dewatering

## Submersible drainage pumps

### Mechanical accessories Wilo-Drain TS 40-65

		Description	Art no.
Non-return ball valve		Made of EN-GJL-250, with Rp 1½ female thread for DN 40 connection	4027330
		Made of EN-GJL-250, with Rp 2 female thread for DN 50 connection	4027331
		Made of EN-GJL-250, with Rp 2½ female thread for DN 65 connection	4019225
Shut-off ball valve		Made of brass, nickel-plated, with Rp 1½ female thread for DN 40 connection	4027337
		Made of brass, nickel-plated, with Rp 2 female thread for DN 50 connection	4027338
		Made of brass, nickel-plated, with Rp 2½ female thread for DN 65 connection	4019227
Hose connection		Made of plastic, hose nozzle Ø 40 mm including hose clip, male thread R 1½ for direct hose connection	4027335
		Made of plastic, hose nozzle with Ø 60 mm including hose clip, G 2 male thread for direct hose connection	4027334
		Made of brass, hose nozzle with Ø 70 mm, including hose clip, G 2½ male thread for direct hose connection	4015210
Geka solid coupling		Made of brass, with R 1½ male thread, fits a Geka hose coupling for a DN 40 connection	2018100

## Mechanical accessories Wilo-Drain TS 40-65

		Description	Art no.
Geka hose coupling		Made of brass, with hose nozzle (Ø 40 mm), including hose clip which fits Geka solid coupling for a DN 40 connection	2018101
Storz C pipe coupling with male thread G 2		Made of aluminium, Storz C connection, with G 2 male thread, tappet clearance 66 mm for a DN 50 connection	2018102
Storz C pipe coupling with male thread G 2½		Made of aluminium, Storz C connection, with G 2½ male thread, tappet clearance 66 mm for a DN 65 connection	2015234
Storz hose coupling		Made of aluminium, Storz A connection, with hose nozzle (Ø 52 mm), tappet clearance 66 mm, incl. hose clip	2015235

# Dewatering

## Submersible drainage pumps

### Series description Wilo-EMU KS



#### Design

Submersible drainage pump

#### Type key

Example: **Wilo-EMU KS 15 X**

<b>KS</b>	Drainage pump
<b>15</b>	Code number for distinguishing between pumps
<b>X</b>	Versions

Possible versions:

<b>E</b>	Single-phase connection
<b>ES</b>	Single-phase connection + float switch
<b>D</b>	Three-phase current
<b>DS</b>	Three-phase current connection + float switch
<b>DMS</b>	Three-phase current connection + motor protection + float switch
<b>E0</b>	Single-phase connection without plug (bare cable end)
<b>D0</b>	Three-phase current connection without plug (bare cable end)
<b>cast iron</b>	Motor housing in cast iron
<b>Ceram</b>	Unit with ceram coating
<b>Ex</b>	Ex-rated
<b>Z</b>	Centre pressure port
<b>H</b>	High-pressure impeller
<b>M</b>	Medium-pressure impeller
<b>N</b>	Low-pressure impeller

#### Application

For pumping wastewater with foreign matter of max. Ø 45 mm (depending on the model), for

- Excavation pits, basins and sumps
- Flooded basement areas
- Use in fountains

#### Special features/product advantages

- Long service life
- High operational reliability
- Slurping operation possible
- Suitable for permanent operation
- Easy handling

#### Technical data

- Mains connection: 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Protection class: IP 68
- Max. immersion depth: 12.5 m
- Fluid temperature: 3 - 40 °C
- Cable length: 10 m/20 m
- Free ball passage: 5 - 45 mm (depending on type)
- Pressure port: G 1¼, G 2, G 2½, G 3, G 4, G 6 (depending on type)

#### Equipment/function

- Ready-to-plug
- Thermal motor monitoring
- Sheath current cooling (depending on type)
- Connection cable detachable

#### Materials

- Motor housing: aluminium or EN-GJL 250 (depending on type and version)
- Pump housing: EN-GJL 250 (KS 220: aluminium)
- Impeller: EN-GJL 250 (KS 220: Abrasite)
- Shaft: 1.4021
- Sealing on motor side: mechanical seal in various material versions
- Sealing on pump side: mechanical seal SiC/SiC
- Static seals: Viton

#### Description/design

Submersible wastewater pump as submersible monobloc unit for portable wet well and dry well installation as well as stationary dry well installation.

#### Hydraulics

The outlet on the pressure side is designed as a horizontal or vertical threaded connection. On models with a horizontal pressure connection, a 90° elbow is attached to make a vertical outlet possible. Open channel impellers with free ball passage of 5...45 mm are used as the impellers.

#### Motor

Dry or self-cooling motors in single or three-phase versions are used, depending on the type. The self-cooling motors are filled with oil; the dry motors have thermal motor monitoring and sheath current cooling. The Ex-rated units KS 5, KS 6 and KS 16 are equipped with a dry motor without sheath current cooling. All models can be used both immersed and non-immersed, in permanent operation. This also permits slurping operation.

### Series description Wilo-EMU KS

A sealing chamber protects the motor from fluid ingress. The filling fluid used is potentially biodegradable and environmentally safe.

The cable is detachable, and cable lengths are available in fixed lengths measured in 10 m intervals. The S model is equipped with a float switch. All models are equipped with plugs. The DMS versions are equipped with switchgears with integrated motor protection.

#### Sealing

Sealing on the fluid side and on the motor side is achieved by a bidirectional mechanical seal.

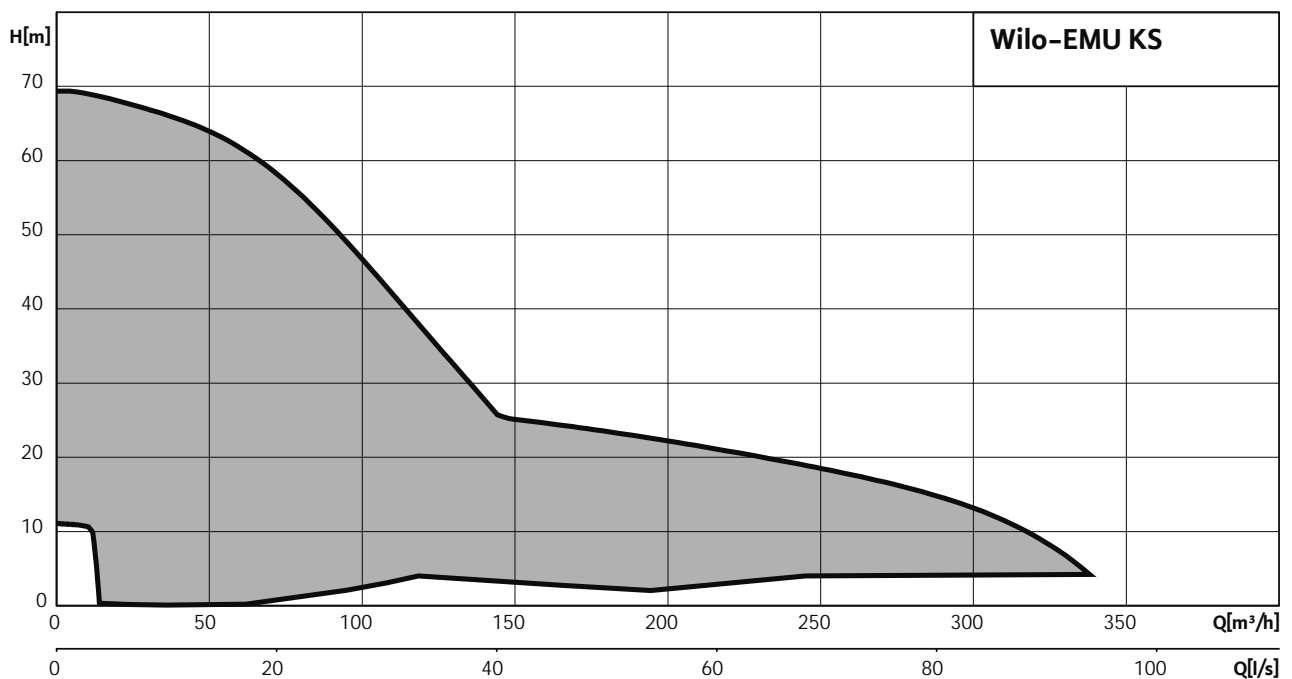
#### Scope of delivery

Pump ready for connection with 10 m connecting cable (starting from KS 24, 20 m) and single-phase or three-phase current plug, Storz or GEKA solid coupling, 90° bend if necessary for implementation of vertical pressure outlet, installation and operating instructions.

#### Accessories

- Flange transitions
- Pressure hose kit with Storz coupling
- Ceram coating for units in cast iron
- Special version with impeller and/or hydraulics housing made of Abrasite

#### Duty chart



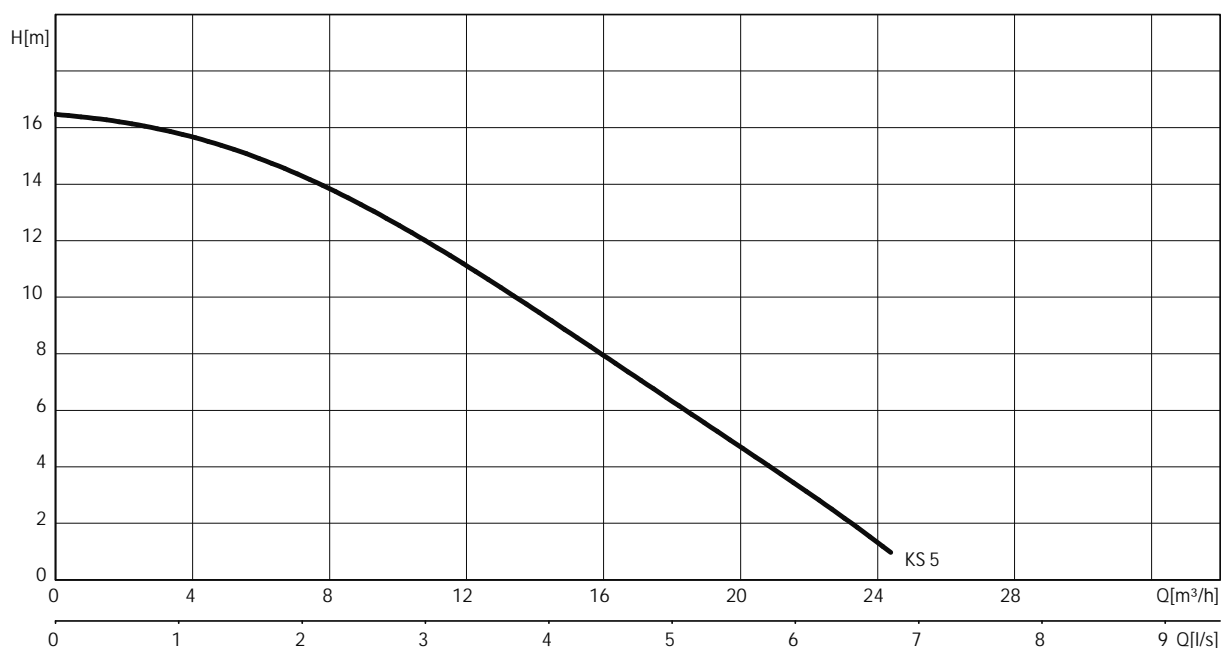
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-EMU KS 5 Ex

#### Pump curves Wilo-EMU KS 5 Ex – 50 Hz – 2900 rpm

Open multi-channel impeller – Free ball passage: 9 mm



Pump curves in accordance with ISO 9906, Appendix A

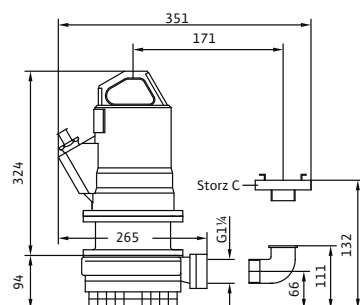
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 5 Ex D0	3~400 V, 50 Hz	L	6030969
KS 5 Ex DMS	3~400 V, 50 Hz	A	on request

☞ = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimension drawing

##### Wilo-EMU KS 5Ex



## Technical data Wilo-EMU KS 5 Ex

	KS 5 Ex D0	KS 5 Ex DMS
<b>Motor data</b>		
Mains connection	3~400 V, 50 Hz	
Nominal current $I_N$ / A	1.76	1.76
Nominal motor power $P_2$ / kW	0.75	0.75
Power consumption $P_1$ / kW	1.1	1.1
Activation type	Direct	Direct
Nominal speed $n$ / rpm	2900	2900
Insulation class	F	F
Max. switching frequency 1/h	15	15
<b>Cable</b>		
Length of connecting cable m	10	10
Cable type	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5
Type of connecting cable	Non-detachable	Non-detachable
Mains plug	—	DMS-Ex + CEE 16
<b>Pump</b>		
Pressure connection	G 1¼	G 1¼
Free ball passage mm	9	9
Operating mode (immersed)	S1	S1
Operating mode (non-immersed)	S2-30 min	S2-30 min
Max. immersion depth m	12.5	12.5
Protection class	IP 68	IP 68
Fluid temperature $T_f$ / °C	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T_f$ / °C	—	—
Weight approx. $m$ / kg	32	33
<b>Equipment/function</b>		
Float switch	—	•
Motor protection	WSK	WSK
Explosion protection	ATEX	ATEX
<b>Materials</b>		
Static seal	FPM	FPM
Impeller	EN-GJL-250	EN-GJL-250
Sealing on motor side	SiC/SiC	SiC/SiC
Sealing on pump side	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

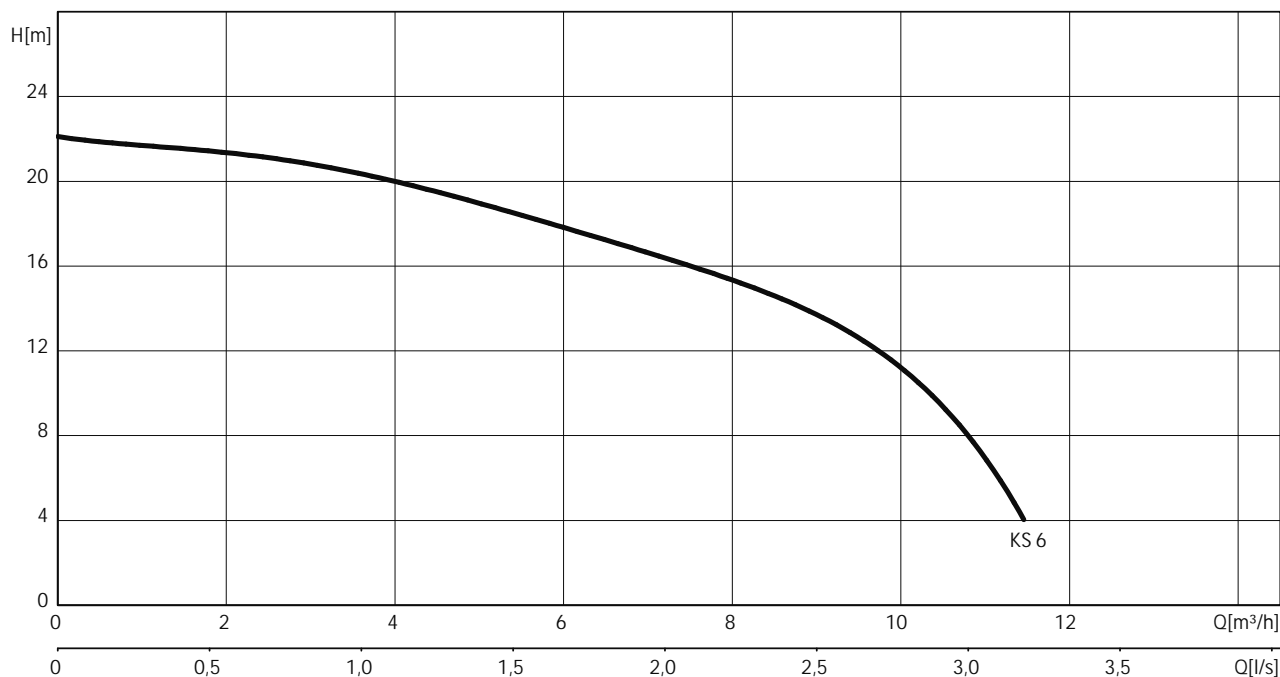
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-EMU KS 6 Ex


#### Pump curves Wilo-EMU KS 6 Ex – 50 Hz – 2900 rpm


Open multi-channel impeller – Free ball passage: 5 mm



Pump curves in accordance with ISO 9906, Appendix A

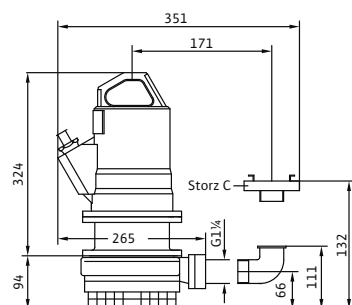
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 6 Ex D0	3~400 V, 50 Hz	A	on request
KS 6 Ex DMS	3~400 V, 50 Hz	A	on request

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimension drawing

##### Wilo-EMU KS 6Ex





## Technical data Wilo-EMU KS 6 Ex

	KS 6 Ex D0	KS 6 Ex DMS
<b>Motor data</b>		
Mains connection	3~400 V, 50 Hz	
Nominal current $I_N$ / A	1.76	1.76
Nominal motor power $P_2$ / kW	0.75	0.75
Power consumption $P_1$ / kW	1.1	1.1
Activation type	Direct	Direct
Nominal speed $n$ / rpm	2900	2900
Insulation class	F	F
Max. switching frequency 1/h	15	15
<b>Cable</b>		
Length of connecting cable m	10	10
Cable type	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5
Type of connecting cable	Non-detachable	Non-detachable
Mains plug	—	DMS-Ex + CEE 16
<b>Pump</b>		
Pressure connection	G 1¼	G 1¼
Free ball passage mm	5	5
Operating mode (immersed)	S1	S1
Operating mode (non-immersed)	S2-15 min	S2-15 min
Max. immersion depth m	12.5	12.5
Protection class	IP 68	IP 68
Fluid temperature $T_f$ / °C	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T_f$ / °C	—	—
Weight approx. $m$ / kg	32	33
<b>Equipment/function</b>		
Float switch	—	•
Motor protection	WSK	WSK
Explosion protection	ATEX	ATEX
<b>Materials</b>		
Static seal	FPM	FPM
Impeller	EN-GJL-250	EN-GJL-250
Sealing on motor side	SiC/SiC	SiC/SiC
Sealing on pump side	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

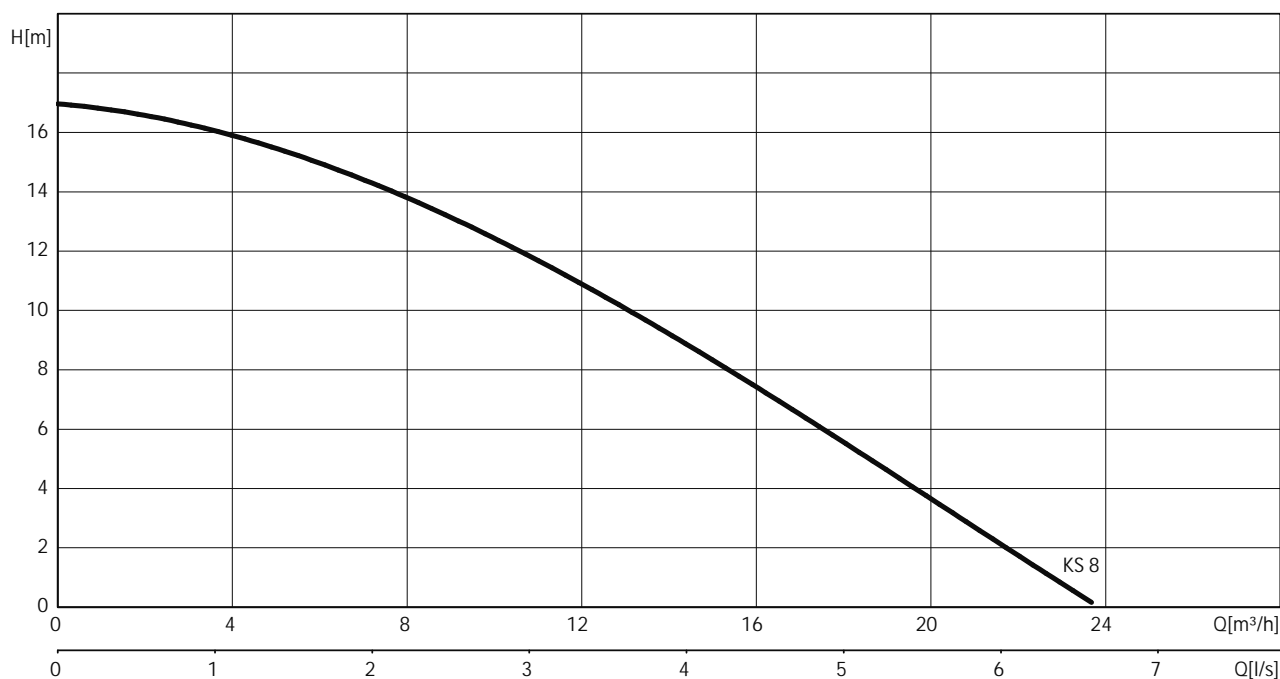
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-EMU KS 8


#### Pump curves Wilo-EMU KS 8 – 50 Hz – 2900 rpm


Open multi-channel impeller – Free ball passage: 9 mm



Pump curves in accordance with ISO 9906, Appendix A

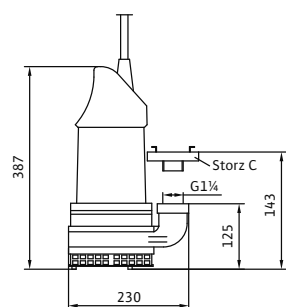
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 8 E	1~230 V, 50 Hz	L	6019740
KS 8 ES	1~230 V, 50 Hz	L	6019741
KS 8 D	3~400 V, 50 Hz	L	6019736
KS 8 DS	3~400 V, 50 Hz	L	6019739
KS 8 E GG	1~230 V, 50 Hz	A	on request
KS 8 ES GG	1~230 V, 50 Hz	A	on request
KS 8 D GG	3~400 V, 50 Hz	A	on request
KS 8 DS GG	3~400 V, 50 Hz	A	on request

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimension drawing

##### Wilo-EMU KS 8



## Technical data Wilo-EMU KS 8

	KS 8 E	KS 8 ES	KS 8 D	KS 8 DS
<b>Motor data</b>				
Mains connection	1~230 V, 50 Hz		3~400 V, 50 Hz	
Nominal current $I_N$ / A	5.70	5.70	1.90	1.90
Nominal motor power $P_2$ / kW	0.75	0.75	0.75	0.75
Power consumption $P_1$ / kW	1.1	1.1	1.1	1.1
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Max. switching frequency 1/h	15	15	15	15
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	SMP 6M	SMP 6MA	CEE M 16 W	CEE M 16 WDSHA
<b>Pump</b>				
Pressure connection	G 1¼	G 1¼	G 1¼	G 1¼
Free ball passage mm	9	9	9	9
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Weight approx. $m$ / kg	19	19	19	20
<b>Equipment/function</b>				
Float switch	—	•	—	•
Motor protection	—	—	—	—
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	FPM	FPM	FPM	FPM
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	G-Al Si12	G-Al Si12	G-Al Si12	G-Al Si12
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible drainage pumps

### Technical data Wilo-EMU KS 8

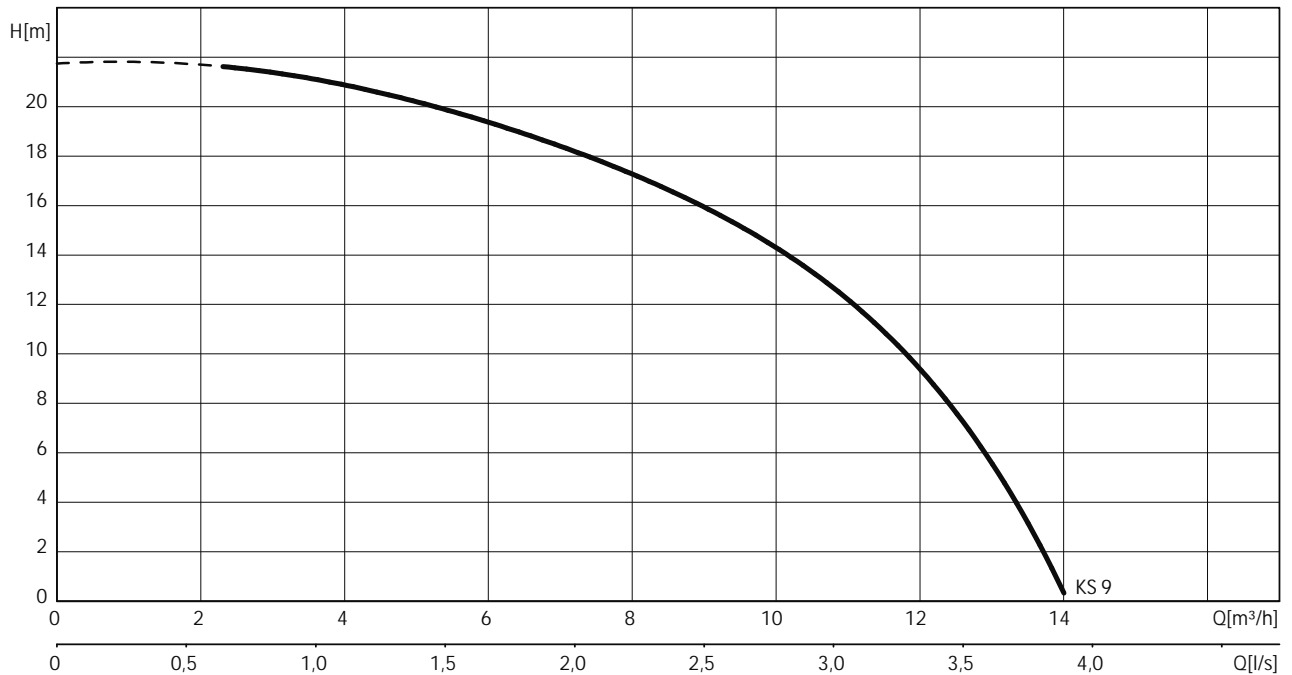
	KS 8 E GG	KS 8 ES GG	KS 8 D GG	KS 8 DS GG
<b>Motor data</b>				
Mains connection	1~230 V, 50 Hz		3~400 V, 50 Hz	
Nominal current $I_N$ / A	5.70	5.70	1.90	1.90
Nominal motor power $P_2$ / kW	0.75	0.75	0.75	0.75
Power consumption $P_1$ / kW	1.1	1.1	1.1	1.1
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Max. switching frequency 1/h	15	15	15	15
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	SMP 6M	SMP 6MA	CEE M 16 W	CEE M 16 WDSA
<b>Pump</b>				
Pressure connection	G 1¼	G 1¼	G 1¼	G 1¼
Free ball passage mm	9	9	9	9
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Weight approx. $m$ / kg	25	25	25	26
<b>Equipment/function</b>				
Float switch	—	•	—	•
Motor protection	—	—	—	—
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	FPM	FPM	FPM	FPM
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Pump curves, ordering information Wilo-EMU KS 9

### Pump curves Wilo-EMU KS 9 – 50 Hz – 2900 rpm

Multi-channel impeller – Free ball passage: 5 mm



Pump curves in accordance with ISO 9906, Appendix A

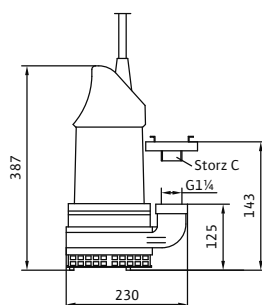
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 9 E	1~230 V, 50 Hz	L	6019745
KS 9 ES	1~230 V, 50 Hz	L	6020835
KS 9 D	3~400 V, 50 Hz	L	6019743
KS 9 DS	3~400 V, 50 Hz	A	on request
KS 9 E GG	1~230 V, 50 Hz	A	on request
KS 9 ES GG	1~230 V, 50 Hz	A	on request
KS 9 D GG	3~400 V, 50 Hz	A	on request
KS 9 DS GG	3~400 V, 50 Hz	A	on request

☞ = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimension drawing

##### Wilo-EMU KS 9



# Dewatering

## Submersible drainage pumps

### Technical data Wilo-EMU KS 9

	KS 9 E	KS 9 ES	KS 9 D	KS 9 DS
<b>Motor data</b>				
Mains connection	1~230 V, 50 Hz		3~400 V, 50 Hz	
Nominal current $I_N$ / A	5.70	5.70	1.90	1.90
Nominal motor power $P_2$ / kW	0.75	0.75	0.75	0.75
Power consumption $P_1$ / kW	1.1	1.1	1.1	1.1
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Max. switching frequency 1/h	15	15	15	15
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	SMP 6M	SMP 6MA	CEE M 16 W	CEE M 16 WDSA
<b>Pump</b>				
Pressure connection	G 1¼	G 1¼	G 1¼	G 1¼
Free ball passage mm	5	5	5	5
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Weight approx. $m$ / kg	19	20	19	21
<b>Equipment/function</b>				
Float switch	—	•	—	•
Motor protection	—	—	—	—
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	FPM	FPM	FPM	FPM
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	G-Al Si12	G-Al Si12	G-Al Si12	G-Al Si12
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Technical data Wilo-EMU KS 9

	KS 9 E GG	KS 9 ES GG	KS 9 D GG	KS 9 DS GG
<b>Motor data</b>				
Mains connection	1–230 V, 50 Hz		3–400 V, 50 Hz	
Nominal current $I_N$ / A	5.70	5.70	1.90	1.90
Nominal motor power $P_2$ / kW	0.75	0.75	0.75	0.75
Power consumption $P_1$ / kW	1.1	1.1	1.1	1.1
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Max. switching frequency 1/h	15	15	15	15
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	SMP 6M	SMP 6MA	CEE M 16 W	CEE M 16 WDSA
<b>Pump</b>				
Pressure connection	G 1¼	G 1¼	G 1¼	G 1¼
Free ball passage mm	5	5	5	5
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	–	–	–	–
Weight approx. $m$ / kg	25	25	25	25
<b>Equipment/function</b>				
Float switch	–	•	–	•
Motor protection	–	–	–	–
Explosion protection	–	–	–	–
<b>Materials</b>				
Static seal	FPM	FPM	FPM	FPM
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1–230 V or 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

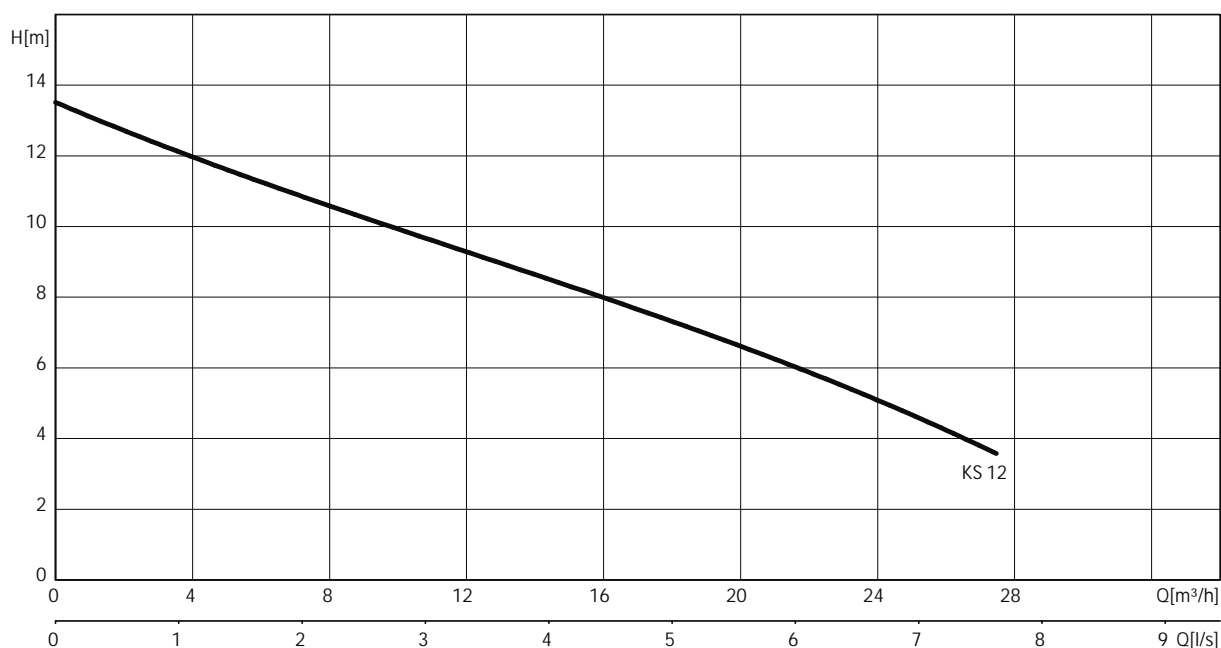
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-EMU KS 12


#### Pump curves Wilo-EMU KS 12 – 50 Hz – 2900 rpm


Open multi-channel impeller – Free ball passage: 40 mm



Pump curves in accordance with ISO 9906, Appendix A

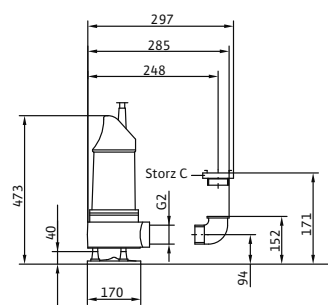
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 12 E GG	1~230 V, 50 Hz	L	6042086
KS 12 ES GG	1~230 V, 50 Hz	L	6042088
KS 12 D GG	3~400 V, 50 Hz	L	6042087
KS 12 DS GG	3~400 V, 50 Hz	L	6042089

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimension drawing

##### Wilo-EMU KS 12





## Technical data Wilo-EMU KS 12

	KS 12 E GG	KS 12 ES GG	KS 12 D GG	KS 12 DS GG
<b>Motor data</b>				
Mains connection	1~230 V, 50 Hz		3~400 V, 50 Hz	
Nominal current $I_N$ / A	9.40	9.40	3.15	3.15
Nominal motor power $P_2$ / kW	1.3	1.3	1.3	1.3
Power consumption $P_1$ / kW	1.9	1.9	1.9	1.9
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Max. switching frequency 1/h	15	15	15	15
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	SMP 10M	SMP 10MA	CEE M 16 W	CEE M 16 WDSHA
<b>Pump</b>				
Pressure connection	G 2	G 2	G 2	G 2
Free ball passage mm	40	40	40	40
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Weight approx. $m$ / kg	27	29	27	29
<b>Equipment/function</b>				
Float switch	—	•	—	•
Motor protection	—	—	—	—
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	FPM	FPM	FPM	FPM
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

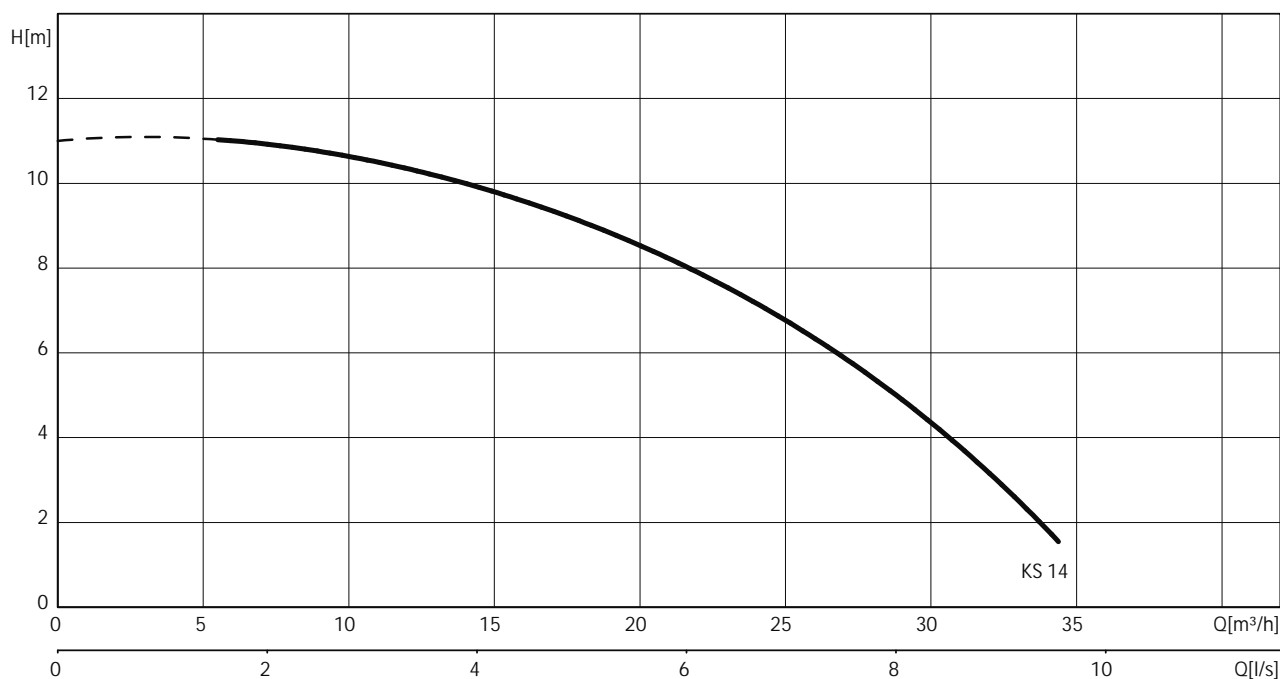
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-EMU KS 14


#### Pump curves Wilo-EMU KS 14 – 50 Hz – 2900 rpm


Open multi-channel impeller – Free ball passage: 10 mm



Pump curves in accordance with ISO 9906, Appendix A

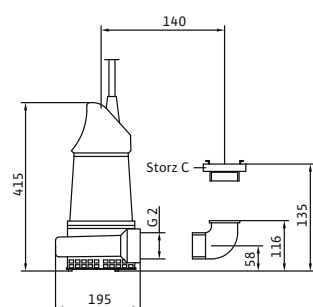
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 14 E	1~230 V, 50 Hz	L	6019448
KS 14 ES	1~230 V, 50 Hz	L	6019449
KS 14 D	3~400 V, 50 Hz	L	6019447
KS 14 DS	3~400 V, 50 Hz	A	on request
KS 14 E GG	1~230 V, 50 Hz	A	on request
KS 14 ES GG	1~230 V, 50 Hz	A	on request
KS 14 D GG	3~400 V, 50 Hz	A	on request
KS 14 DS GG	3~400 V, 50 Hz	A	on request

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimension drawing

##### Wilo-EMU KS 14



## Technical data Wilo-EMU KS 14

	KS 14 E	KS 14 ES	KS 14 D	KS 14 DS
<b>Motor data</b>				
Mains connection	1~230 V, 50 Hz		3~400 V, 50 Hz	
Nominal current $I_N$ / A	5.70	5.70	1.90	1.90
Nominal motor power $P_2$ / kW	0.75	0.75	0.75	0.75
Power consumption $P_1$ / kW	1.1	1.1	1.1	1.1
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Max. switching frequency 1/h	15	15	15	15
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	SMP 6M	SMP 6MA	CEE M 16 W	CEE M 16 WDSHA
<b>Pump</b>				
Pressure connection	G 2	G 2	G 2	G 2
Free ball passage mm	10	10	10	10
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Weight approx. $m$ / kg	20	22	21	22
<b>Equipment/function</b>				
Float switch	—	•	—	•
Motor protection	—	—	—	—
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	FPM	FPM	FPM	FPM
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	G-Al Si12	G-Al Si12	G-Al Si12	G-Al Si12
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible drainage pumps

### Technical data Wilo-EMU KS 14

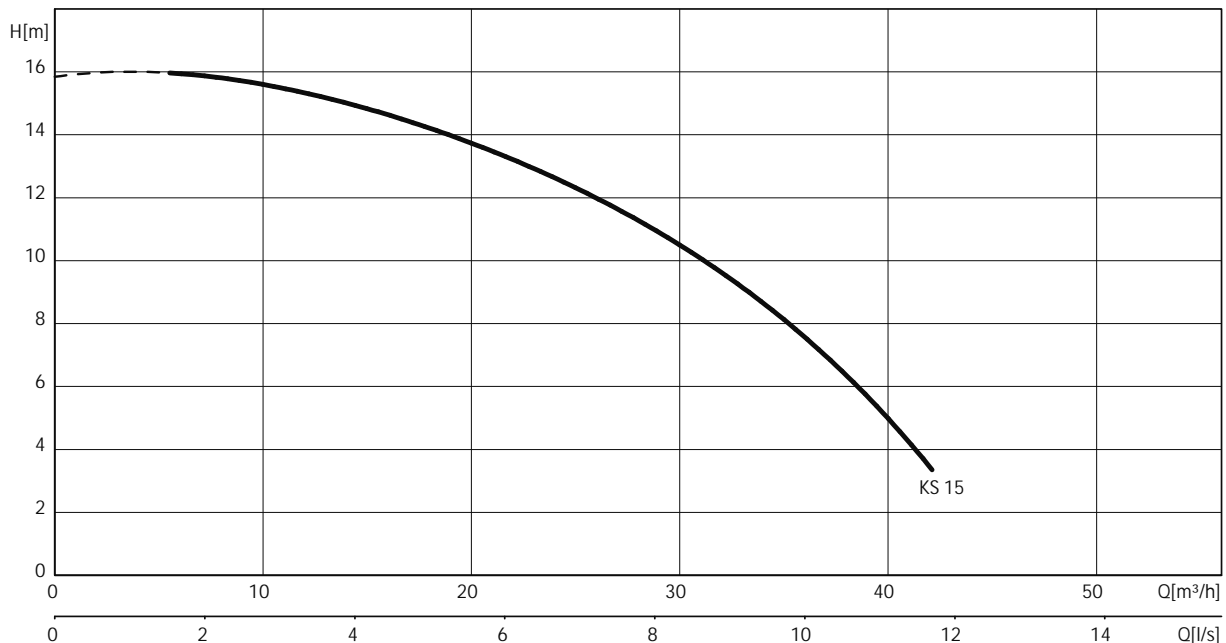
	KS 14 E GG	KS 14 ES GG	KS 14 D GG	KS 14 DS GG
<b>Motor data</b>				
Mains connection	1~230 V, 50 Hz		3~400 V, 50 Hz	
Nominal current $I_N$ / A	5.70	5.70	1.90	1.90
Nominal motor power $P_2$ / kW	0.75	0.75	0.75	0.75
Power consumption $P_1$ / kW	1.1	1.1	1.1	1.1
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Max. switching frequency 1/h	15	15	15	15
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	SMP 6M	SMP 6MA	CEE M 16 W	CEE M 16 WDSA
<b>Pump</b>				
Pressure connection	G 2	G 2	G 2	G 2
Free ball passage mm	10	10	10	10
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Weight approx. $m$ / kg	26	28	27	28
<b>Equipment/function</b>				
Float switch	—	•	—	•
Motor protection	—	—	—	—
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	FPM	FPM	FPM	FPM
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Pump curves, ordering information Wilo-EMU KS 15

### Pump curves Wilo-EMU KS 15 – 50 Hz – 2900 rpm

Open multi-channel impeller – Free ball passage: 10 mm



Pump curves in accordance with ISO 9906, Appendix A

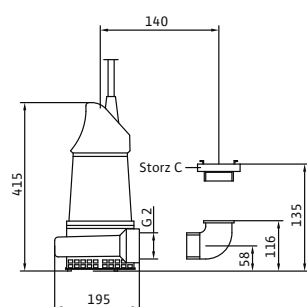
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 15 E	1~230 V, 50 Hz	L	6019785
KS 15 ES	1~230 V, 50 Hz	L	6001201
KS 15 D	3~400 V, 50 Hz	L	6019450
KS 15 DS	3~400 V, 50 Hz	L	6019784
KS 15 E GG	1~230 V, 50 Hz	A	on request
KS 15 ES GG	1~230 V, 50 Hz	A	on request
KS 15 D GG	3~400 V, 50 Hz	A	on request
KS 15 DS GG	3~400 V, 50 Hz	A	on request

☞ = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimension drawing

##### Wilo-EMU KS 15



# Dewatering

## Submersible drainage pumps

### Technical data Wilo-EMU KS 15

	KS 15 E	KS 15 ES	KS 15 D	KS 15 DS
<b>Motor data</b>				
Mains connection	1~230 V, 50 Hz		3~400 V, 50 Hz	
Nominal current $I_N$ / A	9.40	9.40	3.20	3.20
Nominal motor power $P_2$ / kW	1.3	1.3	1.3	1.3
Power consumption $P_1$ / kW	1.9	1.9	1.9	1.9
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Max. switching frequency 1/h	15	15	15	15
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	SMP 10M	SMP 10MA	CEE M 16 W	CEE M 16 WDSA
<b>Pump</b>				
Pressure connection	G 2	G 2	G 2	G 2
Free ball passage mm	10	10	10	10
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Weight approx. $m$ / kg	23	25	23	25
<b>Equipment/function</b>				
Float switch	—	•	—	•
Motor protection	—	—	—	—
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	FPM	FPM	FPM	FPM
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	G-Al Si12	G-Al Si12	G-Al Si12	G-Al Si12
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Technical data Wilo-EMU KS 15

	KS 15 E GG	KS 15 ES GG	KS 15 DS GG	KS 15 D GG
<b>Motor data</b>				
Mains connection	1~230 V, 50 Hz		3~400 V, 50 Hz	
Nominal current $I_N$ / A	9.40	9.40	3.20	3.20
Nominal motor power $P_2$ / kW	1.3	1.3	1.3	1.3
Power consumption $P_1$ / kW	1.9	1.9	1.9	1.9
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Max. switching frequency 1/h	15	15	15	15
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	SMP 10M	SMP 10MA	CEE M 16 WDSA	CEE M 16 W
<b>Pump</b>				
Pressure connection	G 2	G 2	G 2	G 2
Free ball passage mm	10	10	10	10
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Weight approx. $m$ / kg	29	31	31	29
<b>Equipment/function</b>				
Float switch	—	•	•	—
Motor protection	—	—	—	—
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	FPM	FPM	FPM	FPM
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

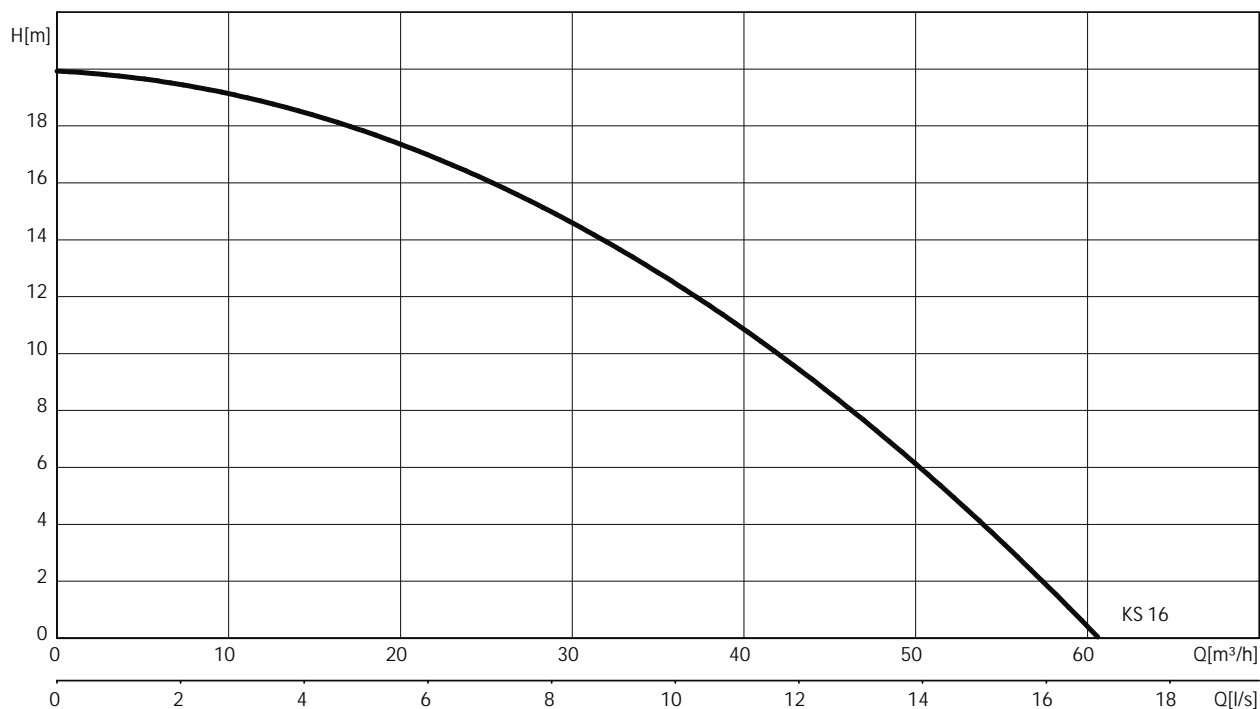
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-EMU KS 16 Ex

#### Pump curves Wilo-EMU KS 16 Ex – 50 Hz – 2900 rpm

Open multi-channel impeller – Free ball passage: 12 mm



Pump curves in accordance with ISO 9906, Appendix A

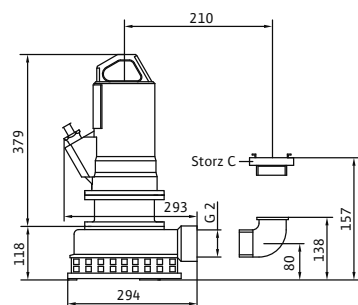
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 16 Ex D0	3~400 V, 50 Hz	A	on request
KS 16 Ex DMS-Ex	3~400 V, 50 Hz	A	on request

☛ = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimension drawing

##### Wilo-EMU KS 16 Ex





## Technical data Wilo-EMU KS 16 Ex

	KS 16 Ex D0	KS 16 Ex DMS-Ex
<b>Motor data</b>		
Mains connection	3~400 V, 50 Hz	
Nominal current $I_N$ / A	4.50	4.50
Nominal motor power $P_2$ / kW	2	2
Power consumption $P_1$ / kW	2.6	2.6
Activation type	Direct	Direct
Nominal speed $n$ / rpm	2900	2900
Insulation class	F	F
Max. switching frequency 1/h	15	15
<b>Cable</b>		
Length of connecting cable m	10	10
Cable type	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5
Type of connecting cable	Non-detachable	Non-detachable
Mains plug	—	DMS-Ex + CEE 16
<b>Pump</b>		
Pressure connection	G 2	G 2
Free ball passage mm	12	12
Operating mode (immersed)	S1	S1
Operating mode (non-immersed)	S2-15 min	S2-15 min
Max. immersion depth m	12.5	12.5
Protection class	IP 68	IP 68
Fluid temperature $T_f$ °C	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T_f$ °C	—	—
Weight approx. $m$ / kg	30	30
<b>Equipment/function</b>		
Float switch	—	•
Motor protection	WSK	WSK
Explosion protection	ATEX	ATEX
<b>Materials</b>		
Static seal	FPM	FPM
Impeller	EN-GJL-250	EN-GJL-250
Sealing on motor side	SiC/SiC	SiC/SiC
Sealing on pump side	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

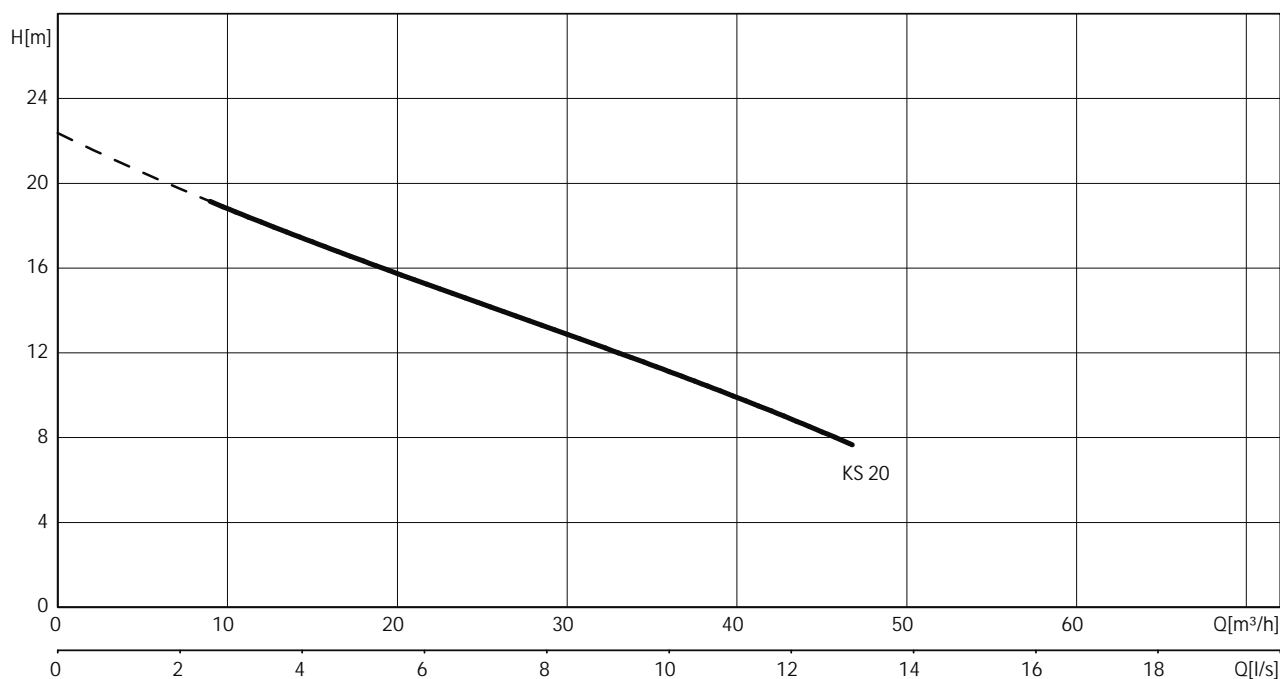
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-EMU KS 20


#### Pump curves Wilo-EMU KS 20 – 50 Hz – 2900 rpm


Open multi-channel impeller – Free ball passage: 45 mm



Pump curves in accordance with ISO 9906, Appendix A

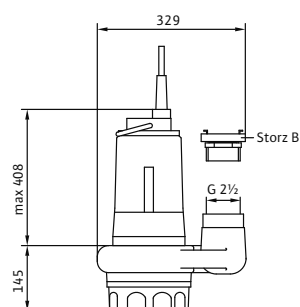
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 20 D GG	3~400 V, 50 Hz	L	6042090
KS 20 DS GG	3~400 V, 50 Hz	L	6042091

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimension drawing

##### Wilo-EMU KS 20



## Technical data Wilo-EMU KS 20

	KS 20 D GG	KS 20 DS GG
<b>Motor data</b>		
Mains connection	3~400 V, 50 Hz	
Nominal current $I_N$ / A	4.65	4.65
Nominal motor power $P_2$ / kW	2.2	2.2
Power consumption $P_1$ / kW	2.8	2.8
Activation type	Direct	Direct
Nominal speed $n$ / rpm	2900	2900
Insulation class	F	F
Max. switching frequency 1/h	15	15
<b>Cable</b>		
Length of connecting cable m	10	10
Cable type	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable
Mains plug	CEE M 16 W	CEE M 16 WDSA
<b>Pump</b>		
Pressure connection	G 2½	G 2½
Free ball passage mm	45	45
Operating mode (immersed)	S1	S1
Operating mode (non-immersed)	S1	S1
Max. immersion depth m	12.5	12.5
Protection class	IP 68	IP 68
Fluid temperature $T_f$ / °C	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T_f$ / °C	—	—
Weight approx. $m$ / kg	42	45
<b>Equipment/function</b>		
Float switch	—	•
Motor protection	—	—
Explosion protection	—	—
<b>Materials</b>		
Static seal	FPM	FPM
Impeller	EN-GJS-500-7	EN-GJS-500-7
Sealing on motor side	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

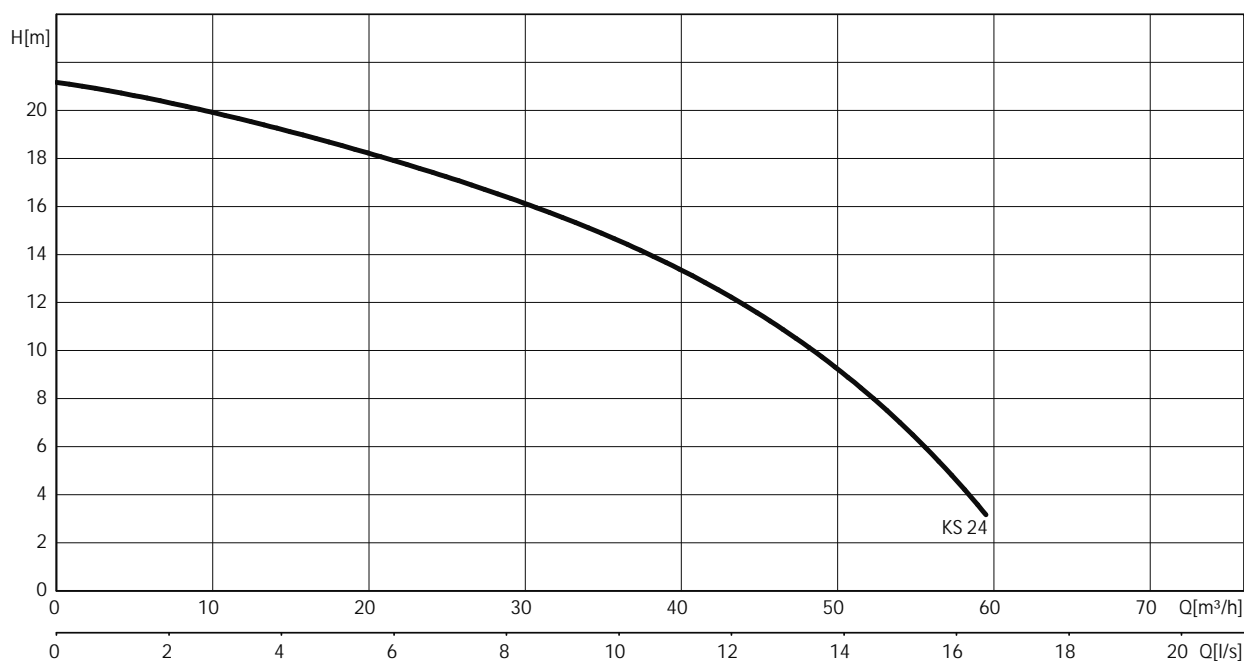
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-EMU KS 24

#### Pump curves Wilo-EMU KS 24 – 50 Hz – 2900 rpm

Multi-channel impeller – Free ball passage: 5 mm



Pump curves in accordance with ISO 9906, Appendix A

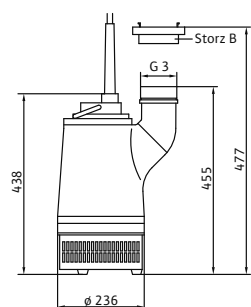
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 24 D	3~400 V, 50 Hz	L	6001204
KS 24 DS	3~400 V, 50 Hz	L	6023360

☛ = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimension drawing

##### Wilo-EMU KS 24



## Technical data Wilo-EMU KS 24

	KS 24 D	KS 24 DS
<b>Motor data</b>		
Mains connection	3~400 V, 50 Hz	
Nominal current $I_N$ / A	4.70	4.70
Nominal motor power $P_2$ / kW	2.4	2.4
Power consumption $P_1$ / kW	2.8	2.8
Activation type	Direct	Direct
Nominal speed $n$ / rpm	2900	2900
Insulation class	F	F
Max. switching frequency 1/h	15	15
<b>Cable</b>		
Length of connecting cable m	20	20
Cable type	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable
Mains plug	CEE M 16 W	CEE M 16 WDSA
<b>Pump</b>		
Pressure connection	G 3	G 3
Free ball passage mm	5	5
Operating mode (immersed)	S1	S1
Operating mode (non-immersed)	S1	S1
Max. immersion depth m	12.5	12.5
Protection class	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—
Weight approx. $m$ / kg	34	36
<b>Equipment/function</b>		
Float switch	—	•
Motor protection	—	—
Explosion protection	—	—
<b>Materials</b>		
Static seal	FPM	FPM
Impeller	EN-GJS-500-7	EN-GJS-500-7
Sealing on motor side	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC
Motor housing	G-Al Si12	G-Al Si12
Pump housing	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

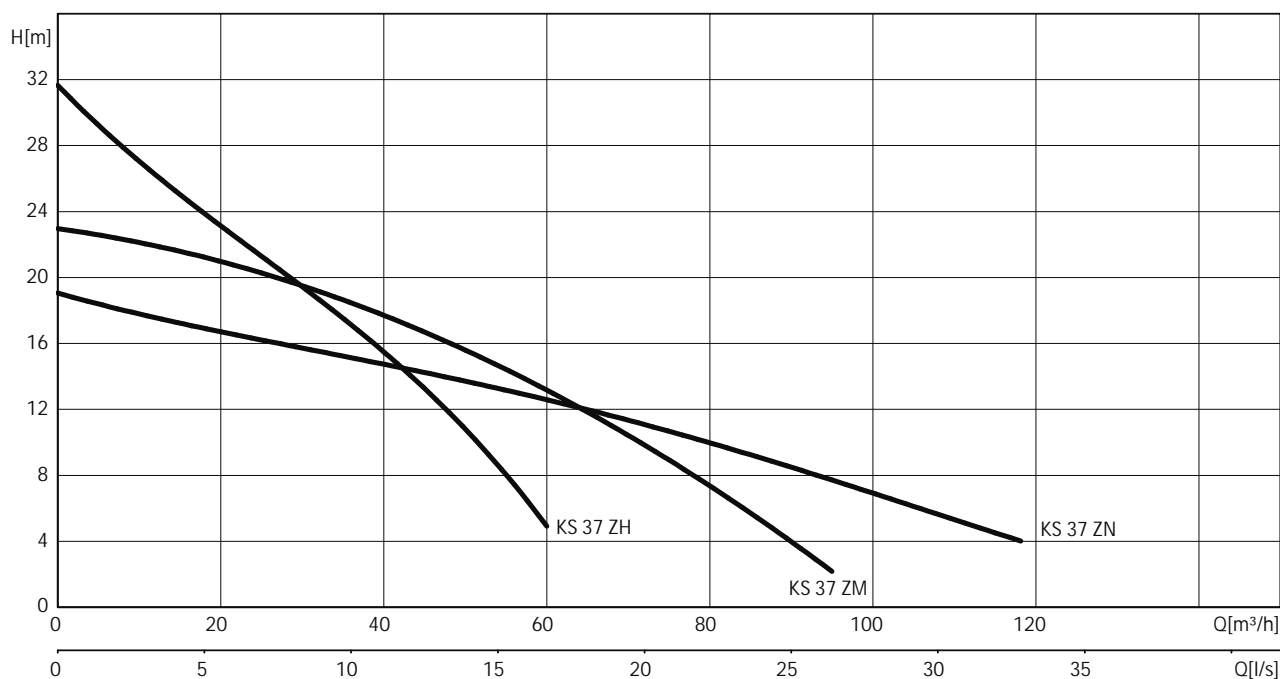
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-EMU KS 37


#### Pump curves Wilo-EMU KS 37 – 50 Hz – 2900 rpm


Multi-channel impeller – Free ball passage: 6 mm



Pump curves in accordance with ISO 9906, Appendix A

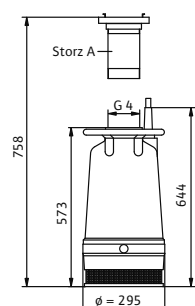
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 37ZN D	3~400 V, 50 Hz	L	6019732
KS 37ZN DS	3~400 V, 50 Hz	A	on request
KS 37ZM D	3~400 V, 50 Hz	L	6019731
KS 37ZM DS	3~400 V, 50 Hz	A	on request
KS 37ZH D	3~400 V, 50 Hz	L	6019730
KS 37ZH DS	3~400 V, 50 Hz	A	on request

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimension drawing

##### Wilo-EMU KS 37



## Technical data Wilo-EMU KS 37

	KS 37ZN D	KS 37ZN DS	KS 37ZM D
<b>Motor data</b>			
Mains connection	3~400 V, 50 Hz		
Nominal current $I_N$ / A	8.00	8.00	8.00
Nominal motor power $P_2$ / kW	3.7	3.7	3.7
Power consumption $P_1$ / kW	4.9	4.9	4.9
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900
Insulation class	F	F	F
Max. switching frequency 1/h	15	15	15
<b>Cable</b>			
Length of connecting cable m	20	20	20
Cable type	NSSHÖU	NSSHÖU	NSSHÖU
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable	Detachable
Mains plug	CEE M 16 W	CEE M 16 WDSA	CEE M 16 W
<b>Pump</b>			
Pressure connection	G 4	G 4	G 4
Free ball passage mm	6	6	6
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—
Weight approx. $m$ / kg	64	65	65
<b>Equipment/function</b>			
Float switch	—	•	—
Motor protection	—	—	—
Explosion protection	—	—	—
<b>Materials</b>			
Static seal	FPM	FPM	FPM
Impeller	EN-GJS-500-7	EN-GJS-500-7	EN-GJS-500-7
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	G-Al Si12	G-Al Si12	G-Al Si12
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1–230 V or 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible drainage pumps

### Technical data Wilo-EMU KS 37

	KS 37ZM DS	KS 37ZH D	KS 37ZH DS
<b>Motor data</b>			
Mains connection	3~400 V, 50 Hz		
Nominal current $I_N$ / A	8.00	8.00	8.00
Nominal motor power $P_2$ / kW	3.7	3.7	3.7
Power consumption $P_1$ / kW	4.9	4.9	4.9
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900
Insulation class	F	F	F
Max. switching frequency 1/h	15	15	15
<b>Cable</b>			
Length of connecting cable m	20	20	20
Cable type	NSSHÖU	NSSHÖU	NSSHÖU
Cable cross-section mm <sup>2</sup>	4G1,5	4G1,5	4G1,5
Type of connecting cable	Detachable	Detachable	Detachable
Mains plug	CEE M 16 WDSHA	CEE M 16 W	CEE M 16 WDSHA
<b>Pump</b>			
Pressure connection	G 4	G 4	G 4
Free ball passage mm	6	6	6
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—
Weight approx. $m$ / kg	66	66	67
<b>Equipment/function</b>			
Float switch	•	—	•
Motor protection	—	—	—
Explosion protection	—	—	—
<b>Materials</b>			
Static seal	FPM	FPM	FPM
Impeller	EN-GJS-500-7	EN-GJS-500-7	EN-GJS-500-7
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	G-Al Si12	G-Al Si12	G-Al Si12
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250

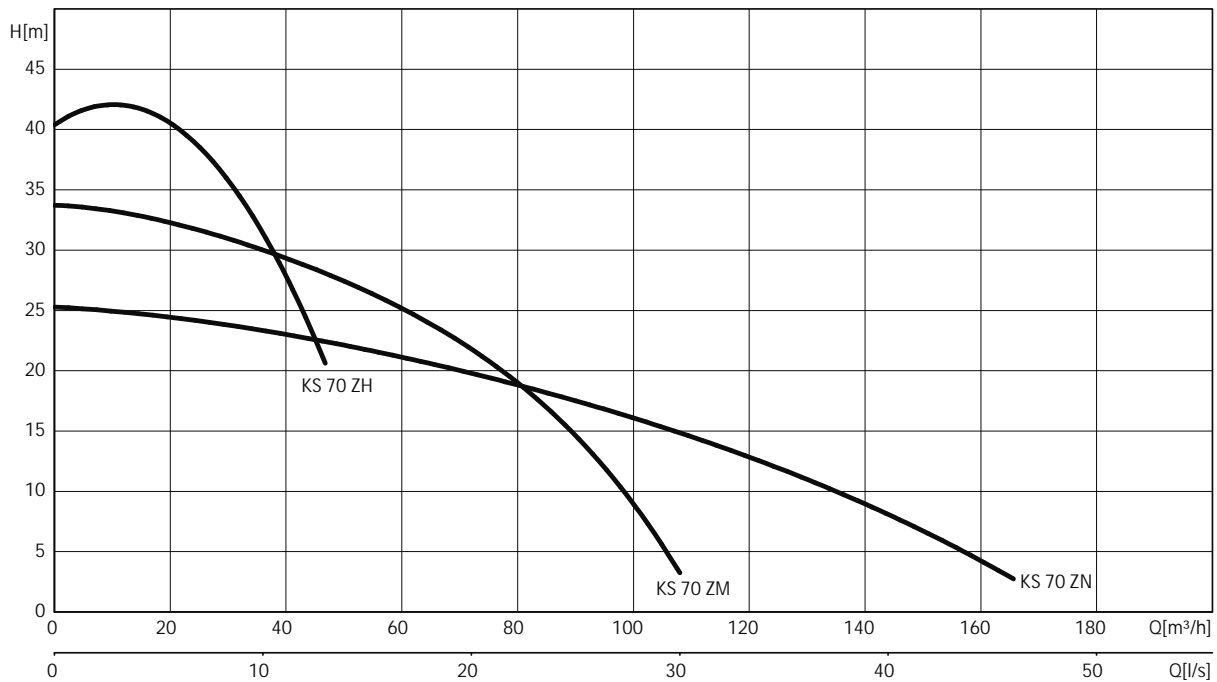
$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.



## Pump curves, ordering information Wilo-EMU KS 70

### Pump curves Wilo-EMU KS 70 – 50 Hz – 2900 rpm

Multi-channel impeller – Free ball passage: 6 mm



Pump curves in accordance with ISO 9906, Appendix A

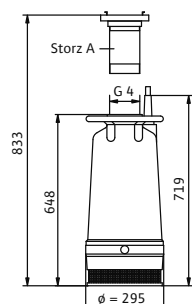
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 70ZN D	3~400 V, 50 Hz	L	6021369
KS 70ZN DS	3~400 V, 50 Hz	A	on request
KS 70ZM D	3~400 V, 50 Hz	L	6021343
KS 70ZM DS	3~400 V, 50 Hz	A	on request
KS 70ZH D	3~400 V, 50 Hz	L	6021370
KS 70ZH DS	3~400 V, 50 Hz	A	on request

☞ = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

### Dimension drawing

#### Wilo-EMU KS 70



# Dewatering

## Submersible drainage pumps

### Technical data Wilo-EMU KS 70

	KS 70ZN D	KS 70ZN DS	KS 70ZM D
<b>Motor data</b>			
Mains connection	3~400 V, 50 Hz		
Nominal current $I_N$ / A	15.60	15.60	15.60
Nominal motor power $P_2$ / kW	7.5	7.5	7.5
Power consumption $P_1$ / kW	9.5	9.5	9.5
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900
Insulation class	F	F	F
Max. switching frequency 1/h	15	15	15
<b>Cable</b>			
Length of connecting cable m	20	20	20
Cable type	NSSHÖU	NSSHÖU	NSSHÖU
Cable cross-section mm <sup>2</sup>	4G2,5	4G2,5	4G2,5
Type of connecting cable	Detachable	Detachable	Detachable
Mains plug	CEE M 32 WD	DMS + CEE M 32	CEE M 32 WD
<b>Pump</b>			
Pressure connection	G 4	G 4	G 4
Free ball passage mm	6	6	6
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—
Weight approx. $m$ / kg	79	80	81
<b>Equipment/function</b>			
Float switch	—	•	—
Motor protection	—	—	—
Explosion protection	—	—	—
<b>Materials</b>			
Static seal	FPM	FPM	FPM
Impeller	EN-GJS-500-7	EN-GJS-500-7	EN-GJS-500-7
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	G-Al Si12	G-Al Si12	G-Al Si12
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Technical data Wilo-EMU KS 70

	KS 70ZM DS	KS 70ZH D	KS 70ZH DS
<b>Motor data</b>			
Mains connection	3~400 V, 50 Hz		
Nominal current $I_N$ / A	15.60	15.60	15.60
Nominal motor power $P_2$ / kW	7.5	7.5	7.5
Power consumption $P_1$ / kW	9.5	9.5	9.5
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900
Insulation class	F	F	F
Max. switching frequency 1/h	15	15	15
<b>Cable</b>			
Length of connecting cable m	20	20	20
Cable type	NSSHÖU	NSSHÖU	NSSHÖU
Cable cross-section mm <sup>2</sup>	4G2,5	4G2,5	4G2,5
Type of connecting cable	Detachable	Detachable	Detachable
Mains plug	DMS + CEE M 32	CEE M 32 WD	DMS + CEE M 32
<b>Pump</b>			
Pressure connection	G 4	G 4	G 4
Free ball passage mm	6	6	6
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—
Weight approx. $m$ / kg	82	81	82
<b>Equipment/function</b>			
Float switch	•	—	•
Motor protection	—	—	—
Explosion protection	—	—	—
<b>Materials</b>			
Static seal	FPM	FPM	FPM
Impeller	EN-GJS-500-7	EN-GJS-500-7	EN-GJS-500-7
Sealing on motor side	C/Al-oxides	C/Al-oxides	C/Al-oxides
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	G-Al Si12	G-Al Si12	G-Al Si12
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

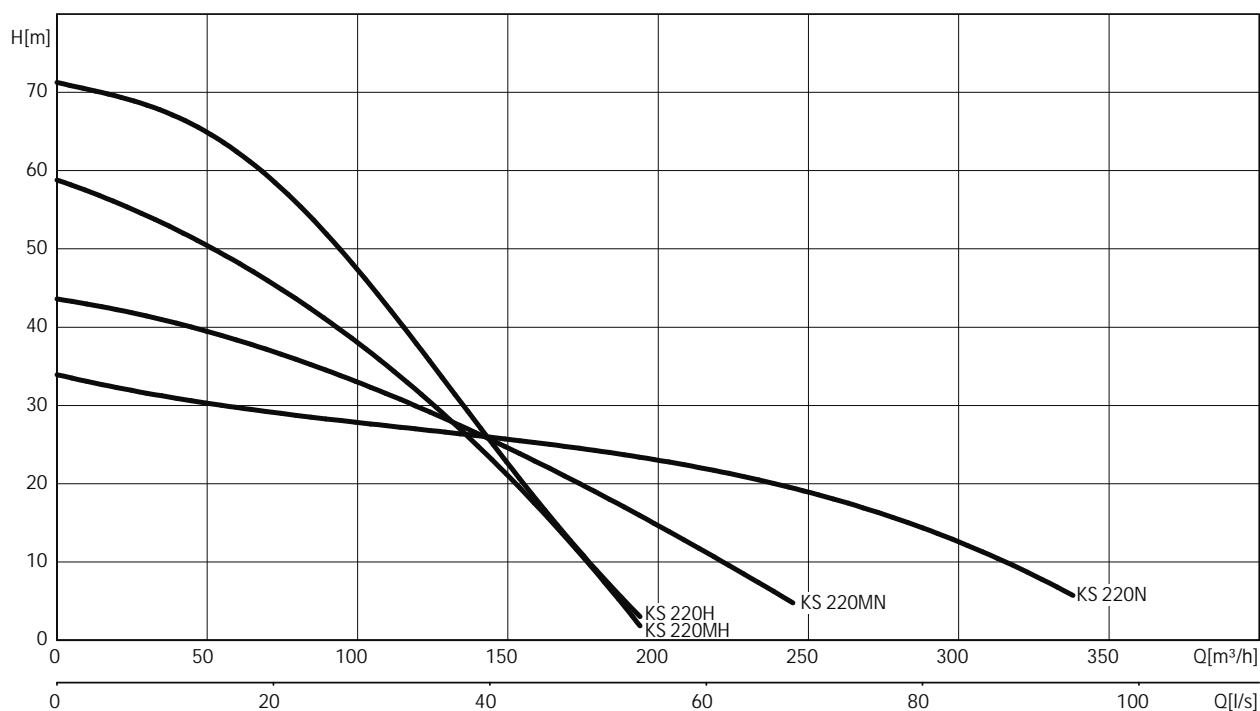
# Dewatering

## Submersible drainage pumps

### Pump curves, ordering information Wilo-EMU KS 220


#### Pump curves Wilo-EMU KS 220 – 50 Hz – 2900 rpm


Open multi-channel impeller – Free ball passage: 10 mm



Pump curves in accordance with ISO 9906, Appendix A

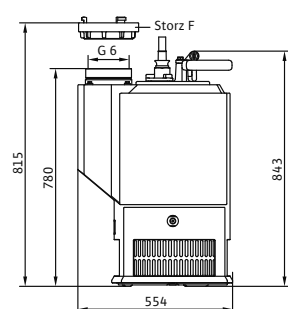
#### Information for order placements

Wilo-EMU	Mains connection		Art No.
KS 220N Ceram	3~400 V, 50 Hz	A	on request
KS 220MN Ceram	3~400 V, 50 Hz	A	on request
KS 220MH Ceram	3~400 V, 50 Hz	A	on request
KS 220H Ceram	3~400 V, 50 Hz	A	on request

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimension drawing

##### Wilo-EMU KS 220



## Technical data Wilo-EMU KS 220

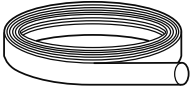
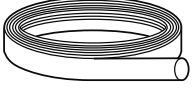
	KS 220N Ceram	KS 220MN Ceram	KS 220MH Ceram	KS 220H Ceram
<b>Motor data</b>				
Mains connection	3~400 V, 50 Hz			
Nominal current $I_N$ / A	40.50	40.50	40.50	40.50
Nominal motor power $P_2$ / kW	22	22	22	22
Power consumption $P_1$ / kW	24.4	24.4	24.4	24.4
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Max. switching frequency 1/h	15	15	15	15
<b>Cable</b>				
Length of connecting cable m	20	20	20	20
Cable type	S07RN-F	S07RN-F	S07RN-F	S07RN-F
Cable cross-section mm <sup>2</sup>	4G6	4G6	4G6	4G6
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable	Non-detachable
Mains plug	DSA-G + CEE 63	DSA-G + CEE 63	DSA-G + CEE 63	DSA-G + CEE 63
<b>Pump</b>				
Pressure connection	G 6	G 6	G 6	G 6
Free ball passage mm	10	10	10	10
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1
Max. immersion depth m	12.5	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Weight approx. $m$ / kg	222	222	222	222
<b>Equipment/function</b>				
Float switch	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	FPM	FPM	FPM	FPM
Impeller	Abrasite	Abrasite	Abrasite	Abrasite
Sealing on motor side	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Sealing on pump side	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	G-Al Si12	G-Al Si12	G-Al Si12	G-Al Si12
Pump housing	G-Al Si 12	G-Al Si 12	G-Al Si 12	G-Al Si 12

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

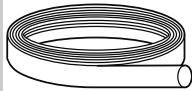

# Dewatering

## Submersible drainage pumps

### Mechanical accessories Wilo-EMU KS

		Description	Art no.
Flat suction		Suction down to 10 mm, additional level control device not possible; KS 8/KS 9	6032495
Suction strainer extension		for filtering coarse constituents; KS 8/KS 9	6032496
		for filtering coarse constituents; KS 14/KS 15	6032616
Storz coupling key		for Storz A, B and C	6022280
		for Storz F	6022281
Storz B/C transition coupling		Made of aluminium, Storz B to Storz C	6000748
Storz A/B transition coupling		Made of aluminium, Storz A to Storz B	6003026
Storz F/A transition coupling		Made of aluminium, Storz F to Storz A	6022279
Adapter DN 80 on Rp 3		Made of steel, galvanised, DN 80 threaded flange, PN 10/16, DIN 2566 with Rp 3 female thread for DN 80 connection	6003672
Adapter DN 100 on Rp 4		Made of steel, galvanised, DN 100 threaded flange, PN 10/16, DIN 2566 with Rp 4 female thread for DN 100 connection	6003669
Pressure hose / Storz A		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 102 mm, length 5 m incl. Storz A coupling, 8/20 bar	6022391
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 102 mm, length 10 m incl. Storz A coupling, 8/20 bar	6022392
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 102 mm, length 20 m incl. Storz A coupling, 8/20 bar	6022393
		Plastic spiral hose, inner Ø 102 mm, length 5 m incl. Storz A coupling, 3/9 bar	6022275
		Plastic spiral hose, inner Ø 102 mm, length 10 m incl. Storz A coupling, 3/9 bar	6022276
		Plastic spiral hose, inner Ø 102 mm, length 20 m incl. Storz A coupling, 3/9 bar	6022277
Pressure hose / Storz B		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 75 mm, length 5 m incl. Storz B coupling, 12/40 bar	6003052
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 75 mm, length 10 m incl. Storz B coupling, 12/40 bar	6003051
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 75 mm, length 20 m incl. Storz B coupling, 12/40 bar	6003050
		Plastic spiral hose, inner Ø 75 mm, length 5 m including Storz B coupling, 3.5/10.5 bar	6022272
		Plastic spiral hose, inner Ø 75 mm, length 10 m incl. Storz B coupling, 3.5/10.5 bar	6035187
		Plastic spiral hose, inner Ø 75 mm, length 20 m incl. Storz B coupling, 3.5/10.5 bar	6022274

## Mechanical accessories Wilo-EMU KS

		Description	Art no.
Pressure hose / Storz C		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 52 mm, length 5 m incl. Storz C coupling, 12/40 bar	6003651
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 52 mm, length 10 m incl. Storz C coupling, 12/40 bar	6003650
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 52 mm, length 20 m incl. Storz C coupling, 12/40 bar	6003649
		Plastic spiral hose, inner Ø 52 mm, length 5 m incl. Storz C coupling, 4.5/13.5 bar	6022269
		Plastic spiral hose, inner Ø 52 mm, length 10 m incl. Storz C coupling, 4.5/13.5 bar	6022270
		Plastic spiral hose, inner Ø 52 mm, length 20 m incl. Storz C coupling, 4.5/13.5 bar	6022271
Pressure hose / Storz F		Plastic spiral hose, inner Ø 150 mm, length 5 m incl. Storz F coupling, 1.8/5.5 bar	6022278
		Plastic spiral hose, inner Ø 150 mm, length 5 m incl. Storz F coupling, 8/- bar	6044660
		Synthetic fibre hose, synthetic, rubberised on the inside, inner Ø 150 mm, length 10 m incl. Storz F coupling, 7/21 bar	6003648
		Synthetic fibre hose, synthetic, rubberised on the inside, inner Ø 150 mm, length 20 m incl. Storz F coupling, 7/21 bar	6003647

# Dewatering

## Submersible pumps for mobile applications

### Series description Wilo-Drain TP...-AM



#### Design

Submersible sewage pump for mobile utilisation

#### Type key

e.g.:	<b>Wilo-Drain TP 80 E 160/17-AM</b>
<b>TP</b>	Submersible pump
<b>80</b>	Nominal diameter [mm]
<b>E</b>	Single-channel impeller
<b>160</b>	Nominal diameter of the impeller [mm]
<b>17</b>	Power P <sub>2</sub> [kW] (=value/10 = 1.7 kW)
<b>A</b>	CEE plug and float switch
<b>M</b>	Mobile version with trolley

#### Application

Mobile application for pumping wastewater and drainage water as well as sewage containing faeces, municipal and industrial sewage, including long-fibre constituents, for:

- House and site drainage
- Sewage and water management
- Environmental and water treatment technology
- Industrial and process engineering
- Emergency management
- Fire-fighting

#### Special features/product advantages

- Mobile application due to installation of the pump in a trolley
- Submersible
- Low weight
- Detachable connecting cable
- Longitudinally watertight cable lead-in
- Standard-equipped with clogging-free sheath current cooling
- Corrosion-resistant (e.g. swimming-pool water, salt water, etc.)
- Low-wearing
- Patented clogging-free hydraulics

#### Technical data

- Mains connection: 3~400 V, 50 Hz
- Immersed and non-immersed operating modes: S1
- Protection class: IP 68
- Insulation class: F
- Max. fluid temperature: 3 - 40°C
- Free ball passage: 80 or 95 mm
- Max. immersion depth: 20 m

#### Equipment/function

- Trolley
- Thermal motor monitoring
- Leakage detection in the motor
- CEE plug including rotation direction monitoring and indication
- Float switch
- Sheath current cooling

#### Materials

- Trolley: 1.4301 stainless steel
- Pump housing: PUR
- Impeller: PUR
- Shaft: 1.4404 stainless steel
- Mechanical seal on pump side: SiC/SiC
- Mechanical seal on motor side: C/Cr
- Static gasket: NBR
- Motor housing: 1.4404 stainless steel

#### Description/design

Submersible sewage pump as submersible monobloc unit with trolley for mobile wet well installation.

#### Hydraulics

The outlet on the pressure side is designed as DN 80 or DN 100 horizontal flange connection. A 90° bend is mounted here as standard with a size B or size A Storz pipe coupling. Single-channel impellers are used as the impeller shape.

#### Motor

Dry motors are equipped with clogging-free sheath current cooling as standard. This ensures that heat is given off directly to the fluid. As a result, these units can be operated in immersed and non-immersed state for permanent or intermittent operation.

In addition, the motor is equipped with a leakage detection unit and a thermal motor monitoring unit. A sealing chamber protects the motor from fluid ingress. The filling fluid used is potentially biodegradable and environmentally safe.

The cable length for the connecting cable and the float switch is 10 m. The connection cable is equipped with a CEE plug.

#### Sealing

Sealing on the fluid side and on the pump side is achieved by two bi-directional mechanical seals.



### Series description Wilo-Drain TP...-AM

#### Scope of delivery

- Pump ready for connection in the trolley
- 10 m connecting cable with CEE plug
- Float switch
- Storz pipe coupling
- Installation and operating instructions

#### Commissioning

Electrical connection:

The units are standard-equipped with a CEE plug for direct starting. The TP 100 units can also be connected without CEE plug for star-delta starting.

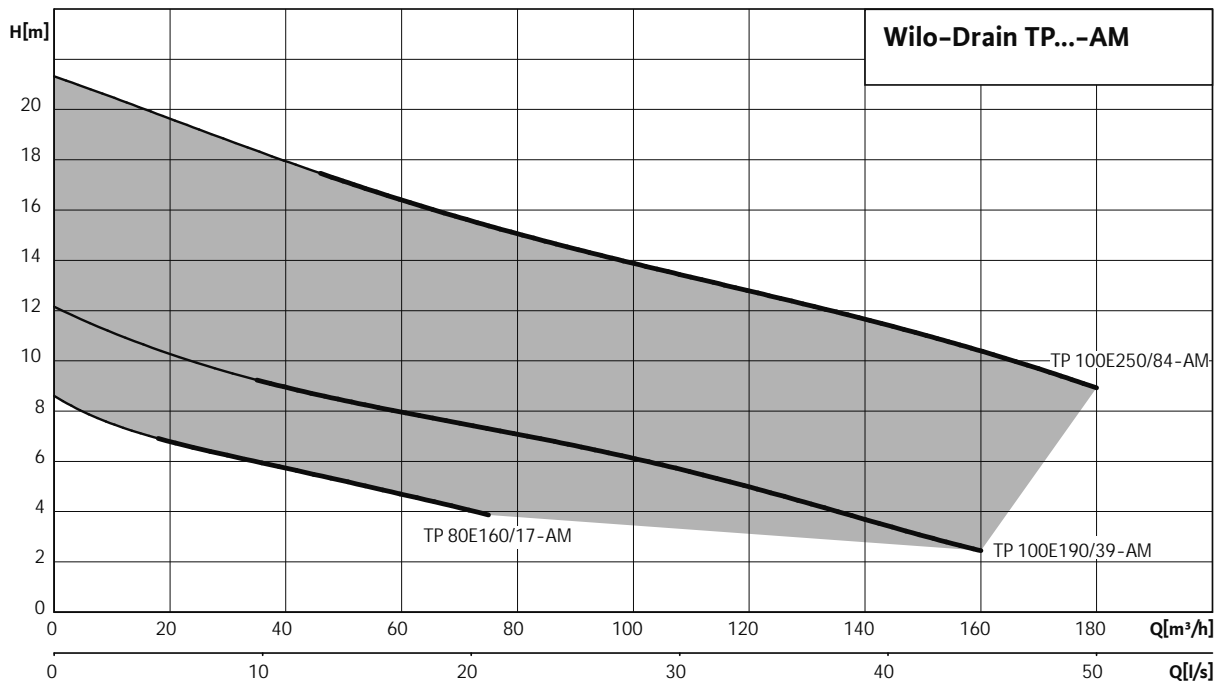
If the device is connected to the public mains system, the regulations of the local electricity supply companies must be observed.

#### Accessories

- Pressure hoses with Storz B or Storz A uncoupling

#### Pump curves Wilo-Drain TP Mobil – 50 Hz – 1450 rpm



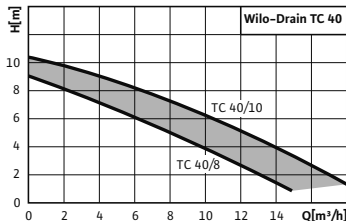
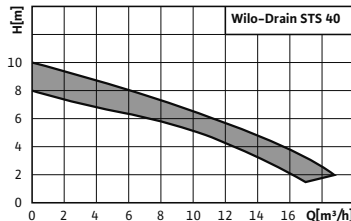
Open single-channel impeller – Free ball passage: 95 mm





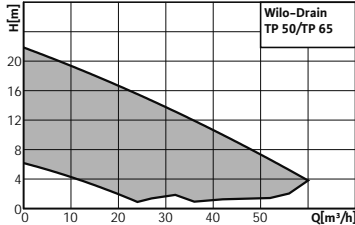
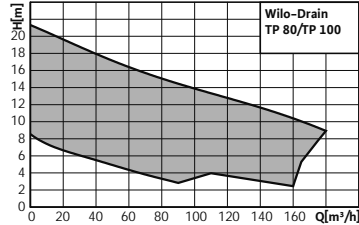
# Dewatering

## Submersible sewage pumps

### Series overview

Series	Wilo-Drain TC 40	Wilo-Drain STS 40
Product photo		
Duty chart		
Design	Submersible sewage pump	Submersible sewage pump
Application	Pumping of heavily contaminated fluids for: <ul style="list-style-type: none"> <li>• House/site drainage</li> <li>• Sewage disposal (pumping of sewage free of faeces in accordance with DIN EN 12050-2)</li> <li>• Environmental and water treatment technology</li> </ul>	Pumping of heavily contaminated fluids for: <ul style="list-style-type: none"> <li>• Domestic and site drainage</li> <li>• Sewage disposal (pumping of sewage free of faeces) in accordance with DIN EN 12050-2</li> <li>• Water management</li> <li>• Environmental and water treatment technology</li> <li>• Industrial and process engineering</li> </ul>
H <sub>max</sub>	11 m	10 m
Q <sub>max</sub>	22 m³/h	20 m³/h
Special features/product advantages	<ul style="list-style-type: none"> <li>• Heavy-duty hydraulic housing made of cast iron</li> <li>• Easy operation due to the attached float switch</li> <li>• Integrated stainless steel pump base for easy installation</li> <li>• Free ball passage: 40 mm</li> </ul>	<ul style="list-style-type: none"> <li>• Detachable connection cable and float switch</li> <li>• Attached float switch (A-model) enables easy operation</li> <li>• Integrated pump base for easy installation</li> <li>• Free ball passage: 40 mm</li> <li>• Integrated thermal motor protection (1~/3~) and phase failure protection (3~)</li> <li>• Impeller made of stainless steel</li> </ul>
Further information	Series information from page 99 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 103	Series information from page 104 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 108



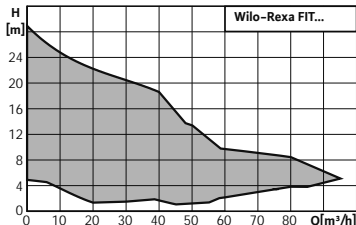
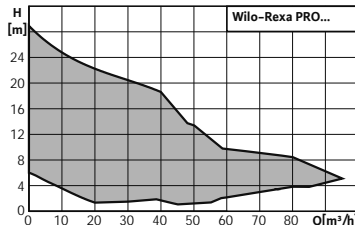
### Series overview

Series	Wilo-Drain TP 50/TP 65	Wilo-Drain TP 80/TP 100
Product photo		
Duty chart		
Design	Submersible sewage pump	Submersible sewage pump for industrial applications
Application	<p>Pumping of heavily contaminated fluids for:</p> <ul style="list-style-type: none"> <li>• Domestic and site drainage</li> <li>• Sewage disposal (not within the scope of <b>DIN</b> EN 12050-1)</li> <li>• Water management</li> <li>• Environmental and water treatment technology</li> <li>• Industrial and process engineering</li> </ul>	<p>Pumping of wastewater and drainage water as well as sewage containing faeces, municipal and industrial sewage for:</p> <ul style="list-style-type: none"> <li>• Domestic and site drainage</li> <li>• Sewage and water management</li> <li>• Environmental and water treatment technology</li> <li>• Industrial and process engineering</li> </ul>
H <sub>max</sub>	21 m	22 m
Q <sub>max</sub>	60 m³/h	180 m³/h
Special features/product advantages	<ul style="list-style-type: none"> <li>• Detachable connection cable</li> <li>• Stainless-steel glanded motor</li> <li>• ATEX approval (only for TP 65/3~ without floater)</li> <li>• Attached float switch (A-model version) enables simple operation</li> <li>• Low weight</li> <li>• Motor housing optionally available in 1.4404</li> </ul>	<ul style="list-style-type: none"> <li>• Operation in stationary wet well and dry well installation as well as portable wet well installation</li> <li>• Submersible</li> <li>• ATEX approval as standard</li> <li>• Low weight</li> <li>• Detachable connection cable</li> <li>• Longitudinally watertight cable inlet</li> <li>• Standard-equipped with clogging-free sheath current cooling</li> <li>• Corrosion-resistant (e.g. swimming-pool water, salt water, etc.)</li> <li>• Low-wearing</li> <li>• Patented clogging-free hydraulics</li> <li>• Easy installation due to suspension unit or pump base</li> </ul>
Further information	<p>Series information from page 109</p> <p>Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a></p> <p>Accessories from page 118</p>	<p>Series information from page 135</p> <p>Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a></p> <p>Accessories from page 141</p>


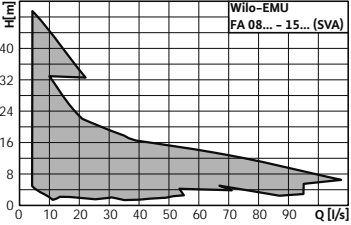
# Dewatering

## Submersible sewage pumps

### Series overview

Series	Wilox-Rexa FIT	Wilox-Rexa PRO
Product photo		
Duty chart		
Design	Submersible sewage pump for intermittent operation with cast iron hydraulics and stainless steel motor	Submersible sewage pump for permanent operation, completely of cast iron
Application	<p>For pumping in intermittent operation of:</p> <ul style="list-style-type: none"> <li>Waste water and sewage</li> <li>Waste water containing faeces</li> <li>Sludges up to maximum 8% dry matter (depending on the selected hydraulics)</li> </ul> <p>out of sumps and vessels as well as to domestic and site drainage in accordance with EN 12050 (observing regional-specific regulations and instructions).</p>	<p>For pumping in permanent operation of:</p> <ul style="list-style-type: none"> <li>Waste water and sewage</li> <li>Waste water containing faeces</li> <li>Sludges up to maximum 8% dry matter (depending on the selected hydraulics)</li> </ul> <p>out of sumps and vessels in municipal and industrial applications as well as to domestic and site drainage in accordance with EN 12050 (observing regional-specific regulations and instructions).</p>
H <sub>max</sub>	29 m	29 m
Q <sub>max</sub>	95 m³/h	95 m³/h
Special features/product advantages	<ul style="list-style-type: none"> <li>Submersible</li> <li>Vortex impeller non-susceptible to clogging</li> <li>Seal by two mechanical shaft seals</li> <li>Optional external sealing chamber control for the oil barrier chamber</li> <li>Very smooth operation</li> <li>Easy installation due to suspension unit or pump base</li> </ul>	<ul style="list-style-type: none"> <li>Submersible</li> <li>Vortex impeller non-susceptible to clogging</li> <li>Seal by two mechanical shaft seals</li> <li>Ex-rated in accordance with ATEX as standard</li> <li>Operation with frequency converter</li> <li>Optional external sealing chamber control for the oil barrier chamber</li> <li>Longitudinally watertight cable inlet</li> <li>Very smooth operation</li> <li>Easy installation due to suspension unit or pump base</li> </ul>
Further information	<p>Series information from page 157</p> <p>Wilox online catalogue at <a href="http://www.wilo.com">www.wilo.com</a></p> <p>Accessories from page 177</p>	<p>Series information from page 188</p> <p>Wilox online catalogue at <a href="http://www.wilo.com">www.wilo.com</a></p> <p>Accessories from page 209</p>

### Series overview

Series	<b>Wilo-EMU FA (standard variant)</b>
Product photo	
Duty chart	 <p>Wilo-EMU FA 08... - 15... (SVA)</p>
Design	Submersible sewage pump
Application	<ul style="list-style-type: none"> <li>• Pumping of sewage with solid constituents in water treatment systems and pumping stations</li> <li>• Local drainage, water control and process water extraction</li> <li>• Applications in construction and industry</li> </ul>
H <sub>max</sub>	51 m
Q <sub>max</sub>	380 m <sup>3</sup> /h
Special features/product advantages	<ul style="list-style-type: none"> <li>• Operation in stationary and portable wet well installation</li> <li>• Heavy-duty version made of grey cast iron</li> <li>• Easy installation due to suspension unit or pump base</li> <li>• Longitudinally watertight cable lead-in</li> <li>• Cable length 10 m</li> <li>• ATEX approval</li> </ul>
Further information	<p>Series information from page 220</p> <p>Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a></p> <p>Accessories from page 271</p>

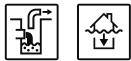
# Dewatering

## Submersible sewage pumps

Equipment/function							
	Wilo- Drain TC 40	Wilo- Drain STS 40	Wilo- Drain TP 50/ TP 65	Wilo- Drain TP 80/ TP 100	Wilo- Rexa FIT	Wilo- Rexa PRO	Wilo-EMU FA (standard variant)
<b>Design</b>							
Submersible	•	•	•	•	•	•	•
Single-channel impeller	—	—	•	•	—	—	•
Vortex impeller	•	•	•	—	•	•	•
Multi-channel impeller	—	—	—	—	—	—	—
Open multi-channel impeller	—	—	—	—	—	—	—
Macerator	—	—	—	—	—	—	—
Turbulator	—	—	—	—	—	—	—
Sealing chamber	—	•	•	•	•	•	•
Leakage chamber	—	—	—	—	—	—	•
Sealing for mechanical seal on motor side	—	—	—	•	•	•	•
Sealing for rotary shaft seal on motor side	•	•	•	—	—	—	•
Sealing for mechanical seal on fluid side	•	•	•	•	•	•	•
Single-phase AC motor	•	•	•	—	•	•	—
Three-phase motor	—	•	•	•	•	•	•
Direct activation	•	•	•	•	•	•	•
Star-delta activation	—	—	—	•	—	—	•
FC operation	—	—	—	—	—	•	—
Dry motor	—	•	•	—	•	•	•
Motor with oil cooling	•	—	—	—	—	—	—
Dry motor with closed-circuit cooling	—	—	—	—	—	—	—
Sheath current cooling	—	—	—	•	—	—	—
<b>Application</b>							
Wet well installation, stationary	—	—	•	•	•	•	•
Wet well installation, portable	•	•	•	•	•	•	•
Dry well installation, stationary	—	—	—	•	—	•	—
Dry well installation, portable	—	—	—	•	—	—	—
<b>Equipment/function</b>							
Motor temperature monitoring	•	•	•	•	•	•	•
Sealing chamber monitoring	—	—	—	—	optional	optional	optional
Explosion protection	—	—	• TP 65/3~	•	—	•	•
Float switch	•	• Version A	• Version A	—	• Version A	—	—
Capacitor box for 1~230 V	• integrated	• integrated	•	—	—	•	—
Ready-to-plug	•	• 1~	• Version A	—	•	optional	—

• = available, — = not available

### Series description Wilo-Drain TC 40



#### Design

Submersible sewage pump

#### Type key

e.g.:	<b>Wilo-Drain TC 40/10</b>
<b>T</b>	Submersible pump
<b>C</b>	Hydraulic housing made of cast iron
<b>40</b>	Nominal diameter [mm]
<b>10</b>	Max. delivery head [m]

#### Application

Pumping of heavily contaminated fluids for:

- House/site drainage
- Sewage disposal (pumping of sewage free of faeces in accordance with DIN EN 12050-2)
- Environmental and water treatment technology

#### Special features/product advantages

- Heavy-duty hydraulic housing made of cast iron
- Easy operation due to the attached float switch
- Integrated stainless steel pump base for easy installation
- Free ball passage: 40 mm

#### Technical data

- Mains connection: 1–230 V, 50 Hz
- Immersed operating mode: S1 or S3 25%
- Surfaced operating mode: S3 25%
- Protection class: IP 68
- Insulation class: F
- Thermal winding monitoring
- Max. fluid temperature: 3 – 40 °C
- Cable length: 5 m
- Free ball passage: 40 mm
- Max. immersion depth: 5 m

#### Equipment/function

- Ready-to-plug
- Including float switch
- Thermal motor monitoring

#### Materials

- Pump housing: EN-GJL-200
- Pedestal: stainless steel

- Impeller: PA 30GF
- Shaft: stainless steel 1.4005
- Mechanical seal on pump side: carbon/ceramic
- Shaft seal on motor side: NBR
- Static gasket: NBR
- Motor housing: stainless steel 1.4308

#### Description/design

Submersible sewage pump as submersible monobloc unit for stationary and portable wet well installation.

#### Hydraulics

The outlet on the pressure side is designed as vertical threaded connection Rp 1½. Vortex impeller are used as the impeller shapes.

#### Motor

The oil-filled motors give off heat directly to the pumped fluid via an integrated heat exchanger. As a result, these motors can be used in immersed state for permanent and intermittent operation. In non-immersed state, these motors can be used for intermittent operation.

A sealing chamber protects the motor from fluid ingress. The filling fluid used is potentially biodegradable and environmentally safe.

The motor cable and float switch can be detached and replaced.

#### Sealing

Sealing on the fluid side is achieved by a bidirectional mechanical seal, while sealing on the motor side is achieved by a rotary shaft seal.

#### Scope of delivery

- Pump ready for connection with 5 m connecting cable and shock-proof plug
- With attached float switch
- Installation and operating instructions

#### Accessories

- Non-return valve and gate valve
- Various pressure outlets and hoses
- Switchgears and relays

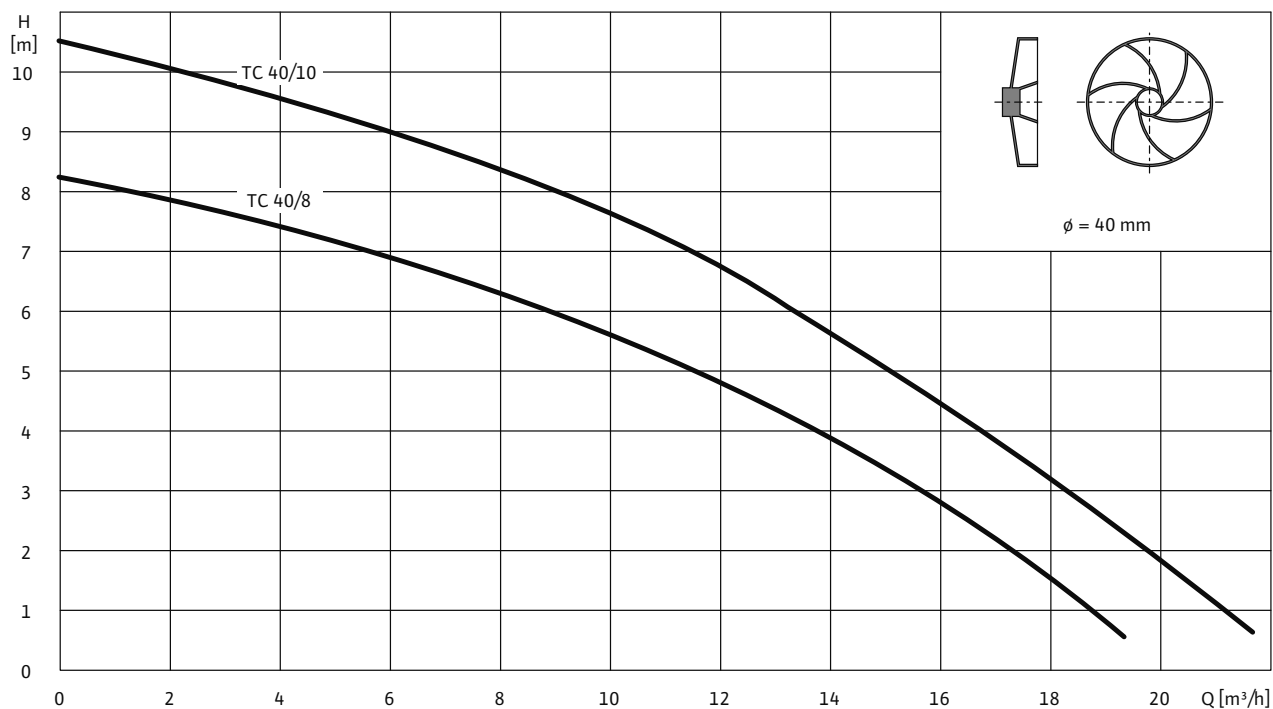
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-Drain TC 40


#### Pump curves Wilo-Drain TC 40 – 50 Hz – 2900 rpm


Vortex impeller – Free ball passage: 40 mm



Pump curves in accordance with ISO 9906, Appendix A.

#### Information for order placements

Wilo-Drain...	Mains connection		Art no.
TC 40/8	1~230 V, 50 Hz	L	4050131
TC 40/10	1~230 V, 50 Hz	L	4050132

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request



## Technical data Wilo-Drain TC 40

	TC 40/8	TC 40/10
	1~230 V, 50 Hz	1~230 V, 50 Hz
<b>Unit</b>		
Pressure connection	Rp 1½	Rp 1½
Free ball passage mm	40	40
Max. volume flow $Q_{max}$ / m³/h	19	22
Max. delivery head $H_{max}$ / m	8	10.5
Operating mode (immersed)	S1 S3-25%	S1 S3-25%
Operating mode (non-immersed)	S3-25%	S3-25%
Max. immersion depth m	5	5
Protection class	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	9.5	12
<b>Motor data</b>		
Nominal current $I_N$ / A	3.3	4.5
Starting current $I_A$ / A	—	—
Nominal motor power $P_2$ / kW	0.5	0.6
Power consumption $P_1$ / kW	0.66	0.94
Activation type	Direct	Direct
Nominal speed $n$ / rpm	2900	2900
Insulation class	F	F
Recommended switching frequency 1/h	20	20
Max. switching frequency 1/h	30	30
Permitted voltage tolerance %	±10	±10
<b>Cable</b>		
Length of connecting cable m	5	5
Cable type	H07RN-F	H07RN-F
Cable cross-section mm²	3G1	3G1
Type of connecting cable	Detachable	Detachable
Mains plug	Shock-proof	Shock-proof
<b>Equipment/function</b>		
Float switch	•	•
Motor protection	WSK	WSK
Explosion protection	—	—
<b>Materials</b>		
Static seal	NBR	NBR
Impeller	PA 30GF	PA 30GF
Sealing on motor side	NBR	NBR
Mechanical seal	Carbon/ceramic	Carbon/ceramic
Motor housing	1.4308	1.4308
Pump housing	EN-GJL-200	EN-GJL-200
Pump shaft	1.4005	1.4005

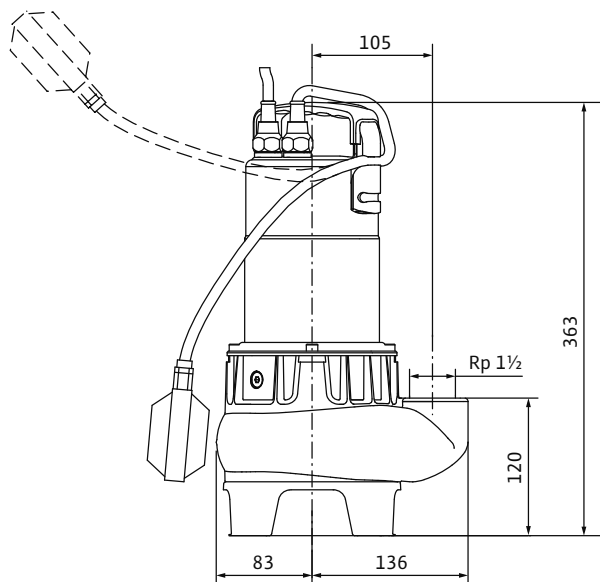
$P_1$  refers to the maximum power consumption. All of the data applies to 1~230 V, 50 Hz and a density of 1 kg/dm³.

# Dewatering

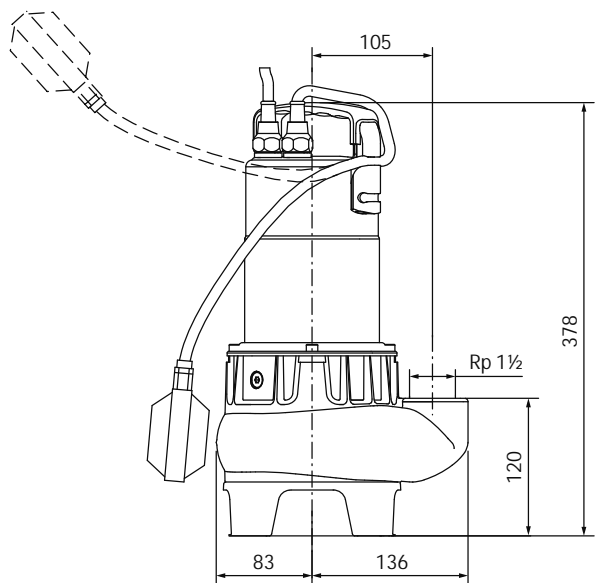
## Submersible sewage pumps

### Dimensions Wilo-Drain TC 40

#### Dimension drawing Wilo-Drain TC 40/8

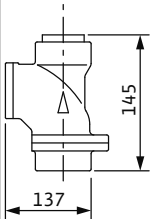

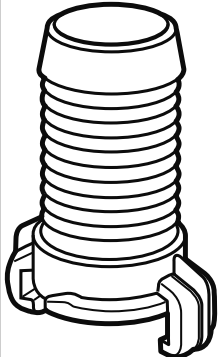


#### Dimension drawing Wilo-Drain TC 40/10



## Mechanical accessories Wilo-Drain TC 40

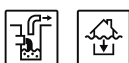
### Portable wet well installation with hose connection

		Description	Art no.
Non-return ball valve		Made of EN-GJL-250, with Rp 1½ female thread for DN 40 connection	4027330
Shut-off ball valve		Made of brass, nickel-plated, with Rp 1½ female thread for DN 40 connection	4027337
Hose connection		Made of plastic, hose nozzle Ø 40 mm including hose clip, male thread R 1½ for direct hose connection	4027335
Geka solid coupling		Made of brass, with R 1½ male thread, fits a Geka hose coupling for a DN 40 connection	2018100
Geka hose coupling		Made of brass, with hose nozzle (Ø 40 mm), including hose clip which fits Geka solid coupling for a DN 40 connection	2018101

# Dewatering

## Submersible sewage pumps

### Series description Wilo-Drain STS 40



#### Design

Submersible sewage pump

#### Type key

e.g.: **Wilo-Drain STS 40/10-A**

<b>STS</b>	Submersible pump
<b>40</b>	Nominal diameter [mm]
<b>10</b>	Max. delivery head [m]
<b>A</b>	With float switch

#### Application

Pumping of heavily contaminated fluids for:

- Domestic and site drainage
- Sewage disposal (pumping of sewage free of faeces) in accordance with DIN EN 12050-2)
- Water management
- Environmental and water treatment technology
- Industrial and process engineering

#### Special features/product advantages

- Detachable connection cable and float switch
- Attached float switch (A-model) enables easy operation
- Integrated pump base for easy installation
- Free ball passage: 40 mm
- Integrated thermal motor protection (1-/3-) and phase failure protection (3-)
- Impeller made of stainless steel

#### Technical data

- Mains connection: 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Immersed operating mode: S1 or S3 25%
- Protection class: IP 68
- Insulation class: B
- Thermal winding monitoring
- Max. fluid temperature: 3 - 35 °C
- Cable length: 10 m
- Free ball passage: 40 mm
- Max. immersion depth: 5 m

#### Equipment/function

- Ready-to-plug single-phase version
- A-model version including float switch
- Thermal motor monitoring

#### Materials

- Pump housing: EN-GJL-250
- Pedestal: grey cast iron
- Impeller: stainless steel 1.4301
- Shaft: stainless steel 1.4404
- Mechanical seal on pump side: carbon/ceramic
- Shaft seal on motor side: NBR
- Static gasket: NBR
- Motor housing: stainless steel 1.4301

#### Description/design

Submersible sewage pump as submersible monobloc unit for stationary and portable wet well installation.

#### Hydraulics

The outlet on the pressure side is designed as vertical threaded connection Rp 1½. Vortex impellers are used as the impeller shapes.

#### Motor

Dry motors give off their heat directly to the surrounding fluid via the housing components and can be used in immersed state for permanent or intermittent operation.

A sealing chamber protects the motor from fluid ingress. The filling fluid used is potentially biodegradable and environmentally safe.

The single-phase AC motors are equipped with shockproof plugs, and A-model versions with float switches. The three-phase AC motors are equipped with bare cable ends.

#### Sealing

Sealing on the fluid side is achieved by a bidirectional mechanical seal, while sealing on the motor side is achieved by a rotary shaft seal.

#### Scope of delivery

- Pump ready for connection with 10 m connection cable
  - For 1~230 V with shock-proof plug
  - For 3~400 V with bare cable end
- A-model version with attached float switch
- Installation and operating instructions

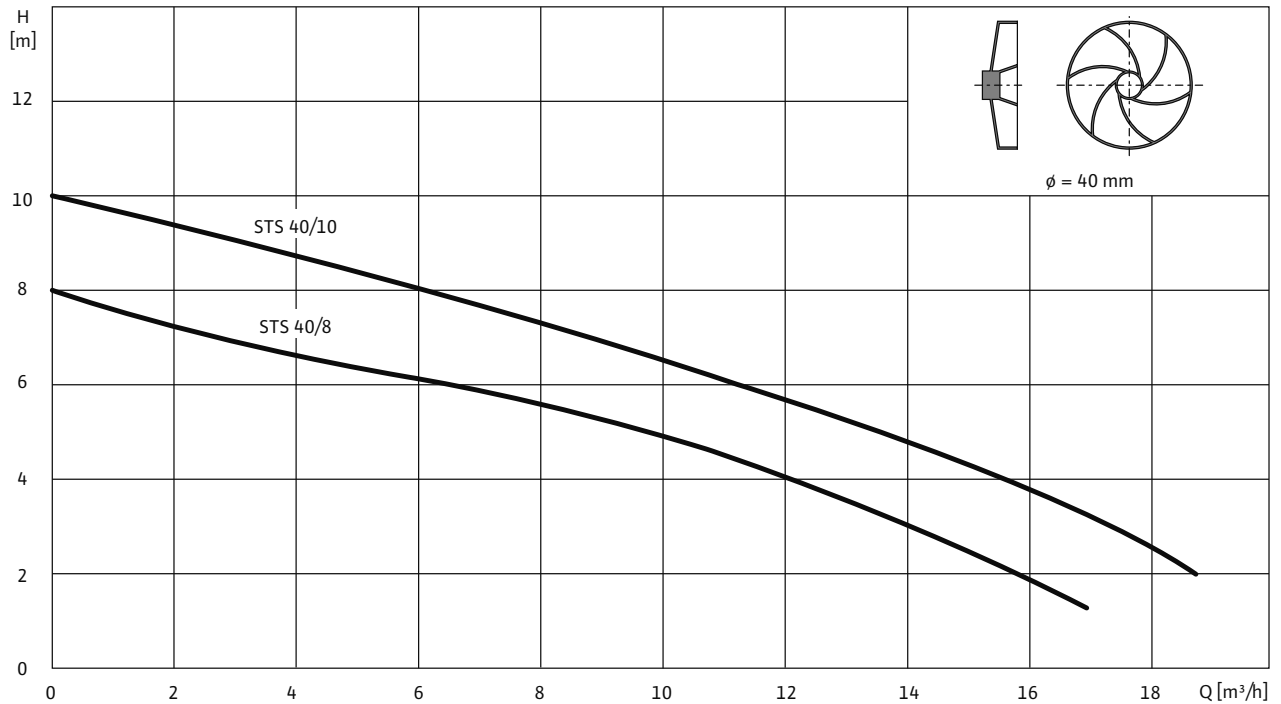
#### Accessories

- Non-return valve and gate valve
- Various pressure outlets and hoses
- Switchgears and relays

## Pump curves, ordering information Wilo-Drain STS 40


### Pump curves Wilo-Drain STS 40 – 50 Hz – 2900 rpm


Vortex impeller – Free ball passage: 40 mm



Pump curves in accordance with ISO 9906, Appendix A

#### Information for order placements

Wilo-Drain...	Mains connection		Art no.
STS 40/8	1~230 V, 50 Hz	L	2065866
STS 40/8-A	1~230 V, 50 Hz	L	2065868
STS 40/8	3~400 V, 50 Hz	L	2065870
STS 40/10	1~230 V, 50 Hz	L	2065872
STS 40/10-A	1~230 V, 50 Hz	L	2065874
STS 40/10	3~400 V, 50 Hz	L	2065876

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Dewatering

## Submersible sewage pumps

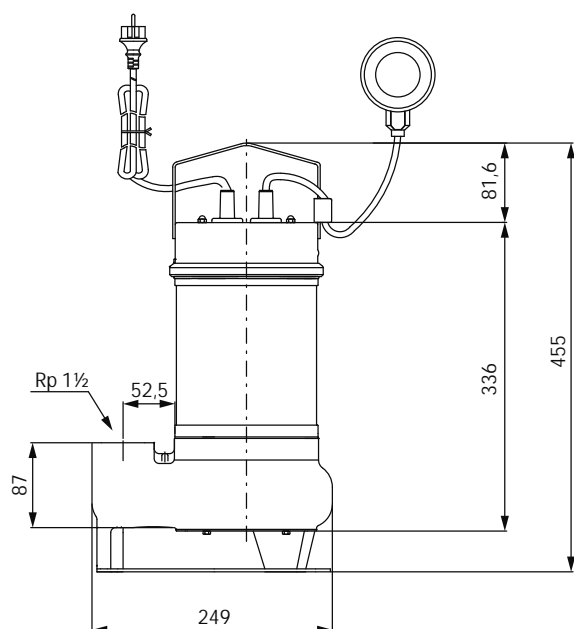
### Technical data Wilo-Drain STS 40

	STS 40/8	STS 40/8-A	STS 40/8	STS 40/10	STS 40/10-A	STS 40/10
	1~230 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>						
Pressure connection	R 1½	R 1½	R 1½	R 1½	R 1½	Rp 1½
Free ball passage mm	40	40	40	40	40	40
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	15	15	15	20	20	20
Max. delivery head $H_{max}$ / m	8	8	8	10	10	10
Operating mode (immersed)	S1	S1	S1	S1	S1	S1
Operating mode (non-immersed)	—	—	—	—	—	—
Max. immersion depth m	5	5	5	5	5	5
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35
Weight approx. $m$ / kg	20	20.2	20	20	20.2	20
<b>Motor data</b>						
Nominal current $I_N$ / A	3.6	3.6	1.7	4.5	4.5	2
Starting current $I_A$ / A	—	—	—	—	—	—
Nominal motor power $P_2$ / kW	0.6	0.6	0.6	0.75	0.75	0.75
Power consumption $P_1$ / kW	0.8	0.8	0.8	1	1	0.92
Activation type	Direct	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900	2900	2900
Insulation class	B	B	B	B	B	B
Recommended switching frequency 1/h	20	20	20	20	20	20
Max. switching frequency 1/h	50	50	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10	±10	±10
<b>Cable</b>						
Length of connecting cable m	10	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	3G1	3G1	4G1	3G1	3G1	4G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable	Detachable	Detachable
Mains plug	Shock-proof	Shock-proof	—	Shock-proof	Shock-proof	—
<b>Equipment/function</b>						
Float switch	—	•	—	—	•	—
Motor protection	WSK	WSK	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—	—	—
<b>Materials</b>						
Static seal	NBR	NBR	NBR	NBR	NBR	NBR
Impeller	1.4301	1.4301	1.4301	1.4301	1.4301	1.4301
Sealing on motor side	NBR	NBR	NBR	NBR	NBR	NBR
Mechanical seal	Carbon/ ceramic	Carbon/ ceramic	Carbon/ ceramic	Carbon/ ceramic	Carbon/ ceramic	Carbon/ ceramic
Motor housing	1.4301	1.4301	1.4301	1.4301	1.4301	1.4301
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4404	1.4404	1.4404	1.4404	1.4404	1.4404

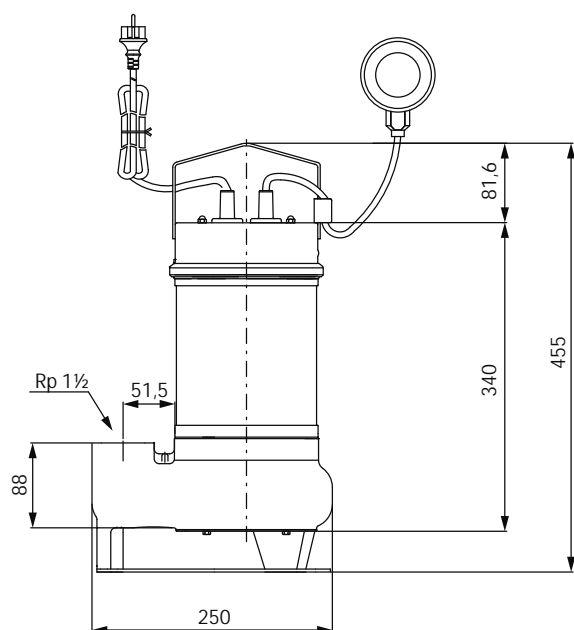
$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Dimensions Wilo-Drain STS 40

Dimension drawing Wilo-Drain STS 40/8



Dimension drawing Wilo-Drain STS 40/10

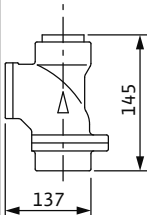
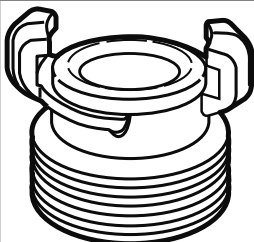
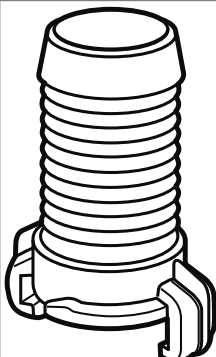


# Dewatering

## Submersible sewage pumps

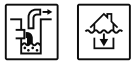
### Mechanical accessories Wilo-Drain STS 40

#### Portable wet well installation with hose connection

		Description	Art no.
Non-return ball valve		Made of EN-GJL-250, with Rp 1½ female thread for DN 40 connection	4027330
Shut-off ball valve		Made of brass, nickel-plated, with Rp 1½ female thread for DN 40 connection	4027337
Hose connection		Made of plastic, hose nozzle Ø 40 mm including hose clip, male thread R 1½ for direct hose connection	4027335
Geka solid coupling		Made of brass, with R 1½ male thread, fits a Geka hose coupling for a DN 40 connection	2018100
Geka hose coupling		Made of brass, with hose nozzle (Ø 40 mm), including hose clip which fits Geka solid coupling for a DN 40 connection	2018101



### Series description Wilo-Drain TP 50/TP 65



#### Design

Submersible sewage pump

#### Type key

e.g.:	<b>Wilo-Drain TP 65 E 114/11-A</b>
<b>TP</b>	Submersible pump
<b>65</b>	Nominal diameter [mm]
<b>E</b>	Impeller shape (E = single-channel impeller, F = Vortex impeller)
<b>114</b>	Nominal diameter of the impeller [mm]
<b>11</b>	Power $P_2$ [kW] (=value/10 = 1.1 kW)
<b>A</b>	With float switch and plug

#### Application

Pumping of heavily contaminated fluids for:

- Domestic and site drainage
- Sewage disposal (not within the scope of **DIN EN 12050-1**)
- Water management
- Environmental and water treatment technology
- Industrial and process engineering

#### Special features/product advantages

- Detachable connection cable
- Stainless-steel glanded motor
- ATEX approval (only for TP 65/3~ without floater)
- Attached float switch (A-model version) enables simple operation
- Low weight
- Motor housing optionally available in 1.4404

#### Technical data

- Mains connection: 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Immersed operating mode: S1
- Non-immersed operating mode: S2-8 min, S3 25%
- Protection class: IP 68
- Insulation class: F
- Thermal winding monitoring
- Max. fluid temperature: 3 - 35°C
- Cable length: 10 m
- Free ball passage: 44 mm
- Max. immersion depth: 10 m

#### Equipment/function

- Single-phase version with capacitor box
- A-model including float switch and plug
- Thermal motor monitoring
- ATEX approval (TP 65 3~ without float)

#### Materials

- Pump housing: PP-GF30 (TP 50), PUR (TP 65)
- Impeller: PP-GF30 (vortex impeller), PUR (single-channel impeller)
- Shaft: Stainless steel 1.4404
- Mechanical seal on pump side: SiC/SiC
- Shaft seal on motor side: NBR
- Static gasket: NBR
- Motor housing: Stainless steel 1.4301

#### Description/design

Submersible sewage pump as submersible monobloc unit for stationary and portable wet well installation.

#### Hydraulics

The outlet on the pressure side is designed as DN 50 or DN 65 horizontal flange connections. The impeller shapes used are single-channel (E) or vortex impellers (F).

#### Motor

Dry motors give off their heat directly to the surrounding fluid via the housing components and can be used in immersed state for permanent or intermittent operation.

A sealing chamber protects the motor from fluid ingress. The filling fluid used is potentially biodegradable and environmentally safe.

Cable lengths are available in length increments of 10 m. The A-model is equipped with float switch and plug.

#### Sealing

Sealing on the fluid side is achieved by a bidirectional mechanical seal, while sealing on the motor side is achieved by a rotary shaft seal.

#### Scope of delivery

- Pump ready for connection with 10 m connection cable
  - Single-phase version in A-model design with capacitor box and shock-proof plug
  - Single-phase version with capacitor box and bare cable end

# Dewatering

## Submersible sewage pumps

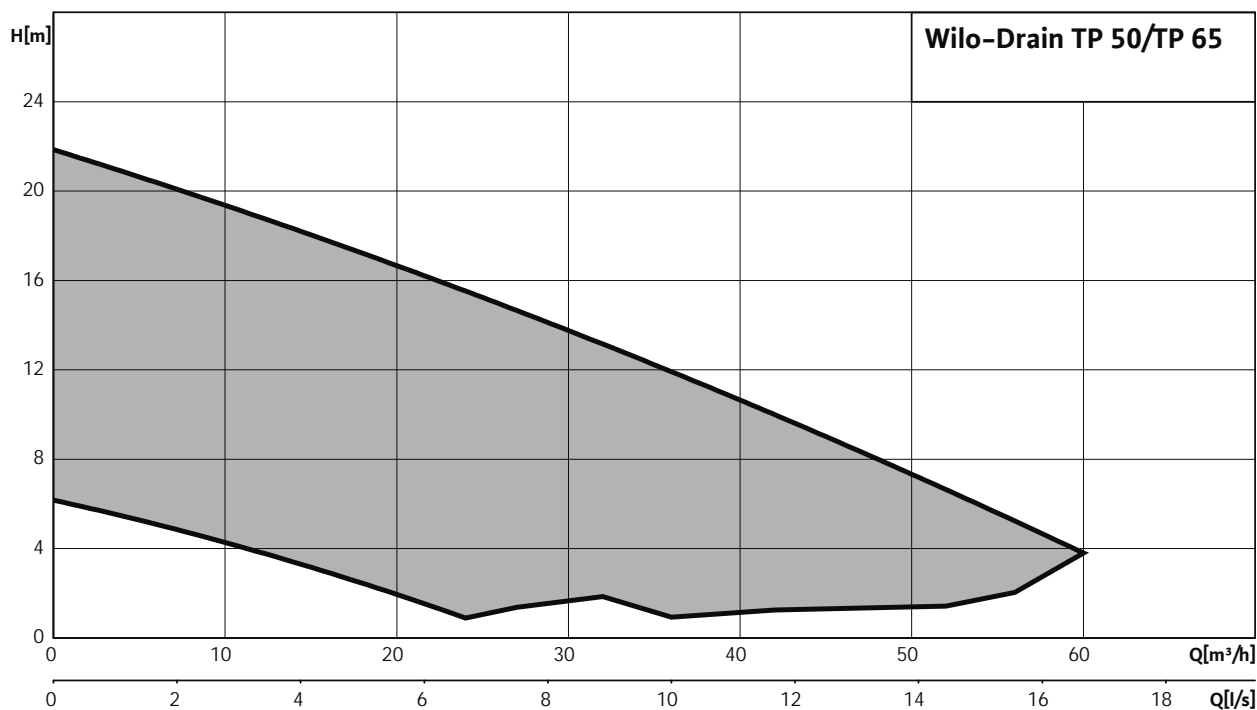
### Series description Wilo-Drain TP 50/TP 65

- Three-phase version in A-model design with CEE plug
- Three-phase version with bare cable end
- A-model version with attached float switch
- Installation and operating instructions

#### Accessories

- Suspension unit
- Chains
- Non-return valve and gate valve
- Various pressure outlets and hoses
- Switchgears and relays

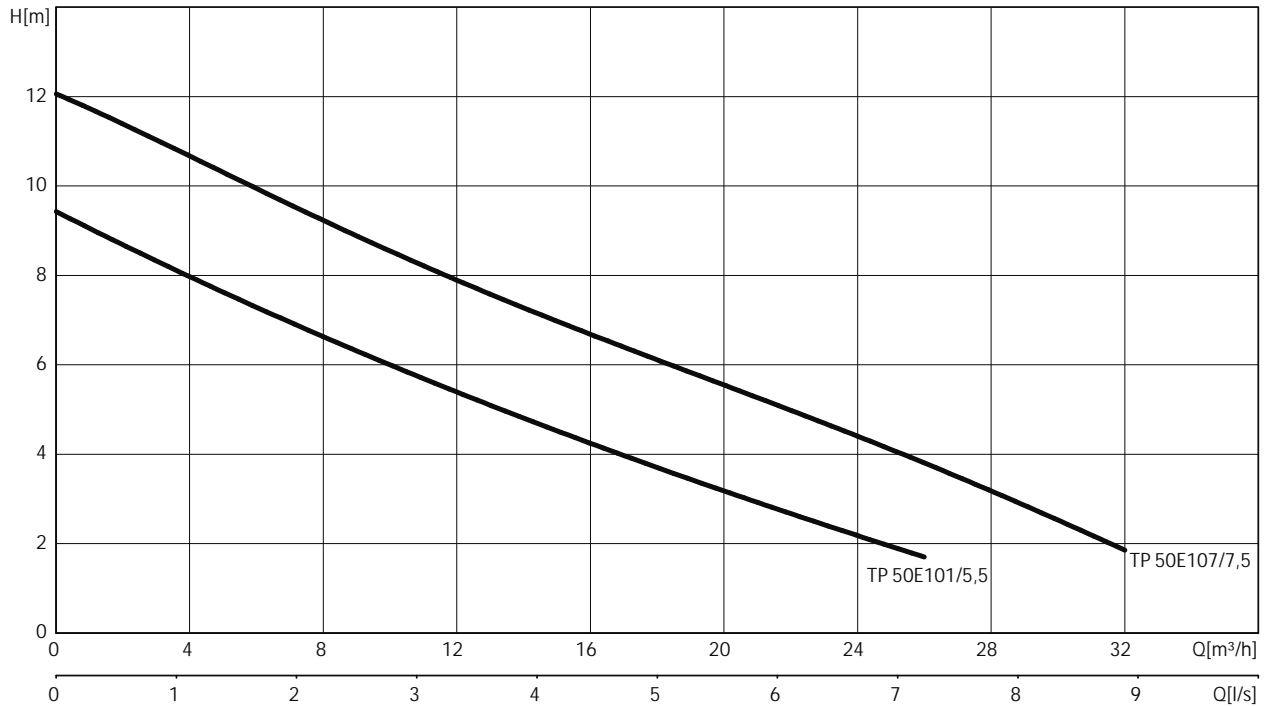
#### Duty chart



## Pump curves, ordering information Wilo-Drain TP 50 E


### Pump curves Wilo-Drain TP 50 E – 50 Hz – 2900 rpm


Open single-channel impeller – Free ball passage: 44 mm



Pump curves in accordance with ISO 9906, Appendix A

#### Information for order placements

Wilo-Drain...	Mains connection		Art no.
TP 50 E 101/5,5	1~230 V, 50 Hz	L	4025332
TP 50 E 101/5,5-A	1~230 V, 50 Hz	L	4029445
TP 50 E 101/5,5	3~400 V, 50 Hz	L	4025331
TP 50 E 101/5,5-A	3~400 V, 50 Hz	L	4029551
TP 50 E 107/7,5	1~230 V, 50 Hz	L	4025335
TP 50 E 107/7,5-A	1~230 V, 50 Hz	L	4029452
TP 50 E 107/7,5	3~400 V, 50 Hz	L	4025334
TP 50 E 107/7,5-A	3~400 V, 50 Hz	L	4029552

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-Drain TP 50 E

	TP 50 E 101/5,5	TP 50 E 101/5,5	TP 50 E 107/7,5	TP 50 E 107/7,5
	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 50	DN 50	DN 50	DN 50
Free ball passage mm	44	44	44	44
Max. volume flow $Q_{max}/m^3/h$	26	26	32	32
Max. delivery head $H_{max}/m$	9.5	9.5	12	12
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. immersion depth m	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T/^\circ C$	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35
Weight approx. $m/kg$	14.5	14.5	16	16
<b>Motor data</b>				
Nominal current $I_N/A$	4	2	5.5	2.1
Starting current $I_A/A$	—	—	—	—
Nominal motor power $P_2/kW$	0.55	0.55	0.75	0.75
Power consumption $P_1/kW$	1	1	1.3	1.1
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n/rpm$	2850	2850	2850	2850
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	70	70	70	70
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF
Cable cross-section $mm^2$	4G1	6G1	4G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	—	—	—	—
<b>Equipment/function</b>				
Float switch	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301
Pump housing	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Pump shaft	1.4404	1.4404	1.4404	1.4404

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Technical data Wilo-Drain TP 50 E

	TP 50 E 101/5,5-A 1~230 V, 50 Hz	TP 50 E 101/5,5-A 3~400 V, 50 Hz	TP 50 E 107/7,5-A 1~230 V, 50 Hz	TP 50 E 107/7,5-A 3~400 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 50	DN 50	DN 50	DN 50
Free ball passage mm	44	44	44	44
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	26	26	32	32
Max. delivery head $H_{max}$ / m	9.5	9.5	12	12
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. immersion depth m	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35
Weight approx. m/ kg	14.5	14.5	16	16
<b>Motor data</b>				
Nominal current $I_N$ / A	4	2	5.5	2.1
Starting current $I_A$ / A	—	—	—	—
Nominal motor power $P_2$ / kW	0.55	0.55	0.75	0.75
Power consumption $P_1$ / kW	1	1	1.3	1.1
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2850	2850	2850	2850
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	70	70	70	70
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF
Cable cross-section mm <sup>2</sup>	4G1	6G1	4G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	Shock-proof	CEE	Shock-proof	CEE
<b>Equipment/function</b>				
Float switch	•	•	•	•
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301
Pump housing	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Pump shaft	1.4404	1.4404	1.4404	1.4404

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

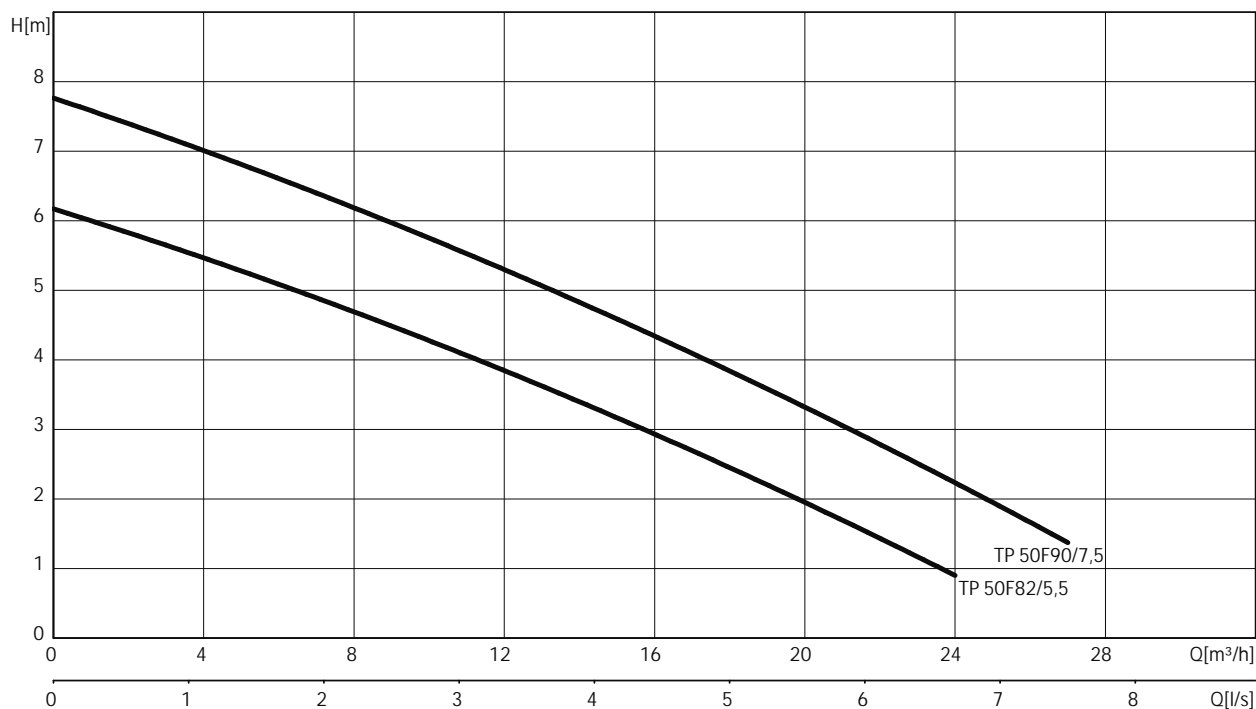
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-Drain TP 50 F


#### Pump curves Wilo-Drain TP 50 F – 50 Hz – 2900 rpm


Vortex impeller – Free ball passage: 44 mm



Pump curves in accordance with ISO 9906, Appendix A

#### Information for order placements

Wilo-Drain...	Mains connection		Art no.
TP 50 F 82/5,5	1~230 V, 50 Hz	L	4025319
TP 50 F 82/5,5-A	1~230 V, 50 Hz	L	4029438
TP 50 F 82/5,5	3~400 V, 50 Hz	L	4025318
TP 50 F 82/5,5-A	3~400 V, 50 Hz	L	4029548
TP 50 F 90/7,5	1~230 V, 50 Hz	L	4025322
TP 50 F 90/7,5-A	1~230 V, 50 Hz	L	4029439
TP 50 F 90/7,5	3~400 V, 50 Hz	L	4025321
TP 50 F 90/7,5-A	3~400 V, 50 Hz	L	4029549

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data Wilo-Drain TP 50 E

	TP 50 F 82/5,5 1~230 V, 50 Hz	TP 50 F 82/5,5 3~400 V, 50 Hz	TP 50 F 82/5,5-A 1~230 V, 50 Hz	TP 50 F 82/5,5-A 3~400 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 50	DN 50	DN 50	DN 50
Free ball passage mm	44	44	44	44
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	24	24	24	24
Max. delivery head $H_{max}$ / m	6.5	6.5	6.5	6.5
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. immersion depth m	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35
Weight approx. $m$ / kg	14.5	14.5	14.5	14.5
<b>Motor data</b>				
Nominal current $I_N$ / A	4	2	4	2
Starting current $I_A$ / A	—	—	—	—
Nominal motor power $P_2$ / kW	0.55	0.55	0.55	0.55
Power consumption $P_1$ / kW	1	1	1	1
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2850	2850	2850	2850
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	70	70	70	70
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF
Cable cross-section mm <sup>2</sup>	4G1	6G1	4G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	—	—	Shock-proof	CEE
<b>Equipment/function</b>				
Float switch	—	—	•	•
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301
Pump housing	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Pump shaft	1.4404	1.4404	1.4404	1.4404

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-Drain TP 50 E

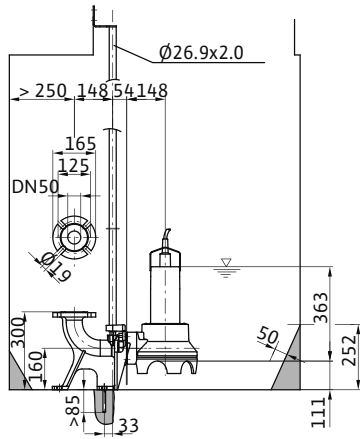
	TP 50 F 90/7,5	TP 50 F 90/7,5	TP 50 F 90/7,5-A	TP 50 F 90/7,5-A
	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 50	DN 50	DN 50	DN 50
Free ball passage mm	44	44	44	44
Max. volume flow $Q_{max}/m^3/h$	27	27	27	27
Max. delivery head $H_{max}/m$	9	9	9	9
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. immersion depth m	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T/^\circ C$	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35
Weight approx. $m/kg$	16	16	16	16
<b>Motor data</b>				
Nominal current $I_N/A$	5.5	2.1	5.5	2
Starting current $I_A/A$	—	—	—	—
Nominal motor power $P_2/kW$	0.75	0.75	0.75	0.75
Power consumption $P_1/kW$	1.3	1.1	1.3	1.1
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n/rpm$	2850	2850	2850	2850
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	70	70	70	70
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF
Cable cross-section $mm^2$	4G1	6G1	4G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	—	—	Shock-proof	CEE
<b>Equipment/function</b>				
Float switch	—	—	•	•
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301
Pump housing	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Pump shaft	1.4404	1.4404	1.4404	1.4404

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

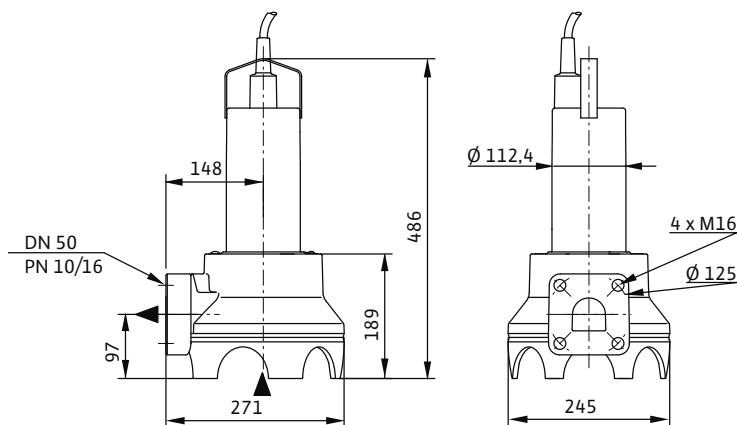


## Dimensions Wilo-Drain TP 50/TP 65

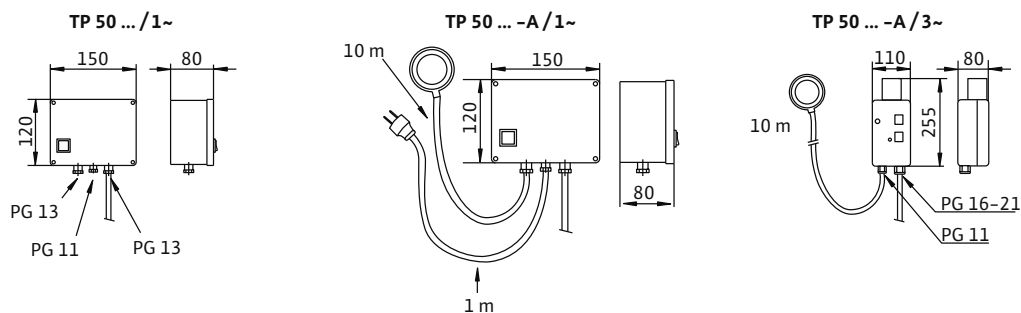
### Dimension drawing Wilo-Drain TP 50 – stationary wet well installation



### Dimension drawing Wilo-Drain TP 50 – portable wet well installation



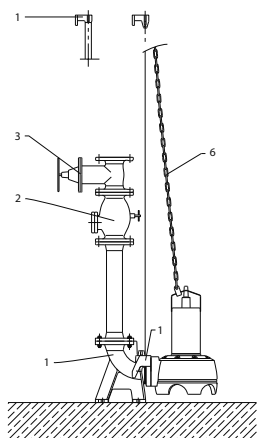
### Dimension drawing Wilo-Drain TP 50 – Switchgears



# Dewatering

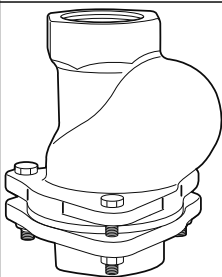
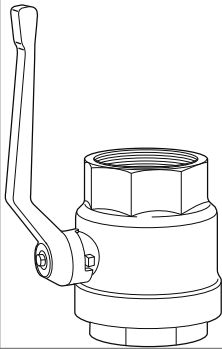
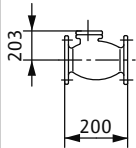
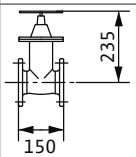
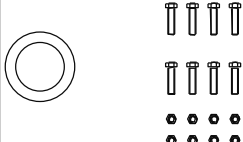
## Submersible sewage pumps

### Mechanical accessories Wilo-Drain TP 50/TP 65



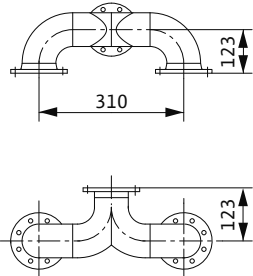
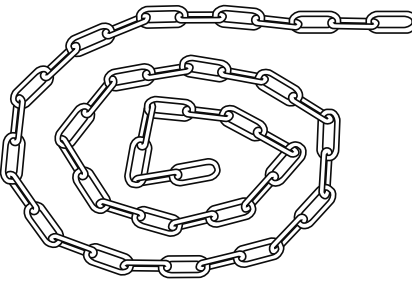
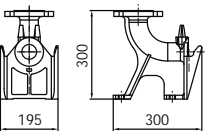
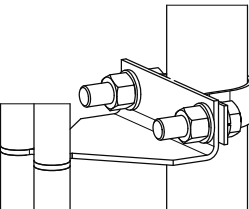
- 1 Suspension unit
- 2 Non-return valve
- 3 Gate valve
- 6 Chain

#### Stationary wet well installation DN 50

		Description	Art no.
<b>Non-return ball valve</b>		Made of EN-GJL-250, with Rp 2 female thread for DN 50 connection	4027331
<b>Shut-off ball valve</b>		Made of brass, nickel-plated, with Rp 2 female thread for DN 50 connection	4027338
<b>Non-return valve</b>		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 50 connection	2017166
<b>Gate valve</b>		Made of EN-GJL-250, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, DN 50	2017160
<b>Mounting accessories DN 40/50</b>		For a DN 40/50 flange connection, with 4 screws, 4 nuts and 1 flat gasket for PN 10/16 flange, DIN 2501	2057177

## Mechanical accessories Wilo-Drain TP 50/TP 65

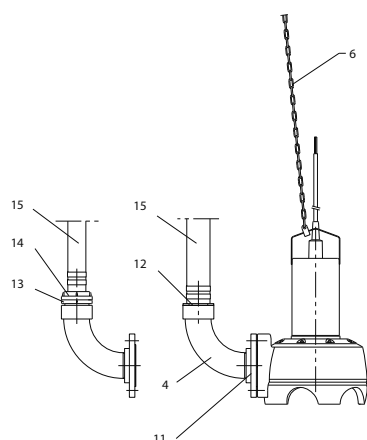
## Stationary wet well installation DN 50

		Description	Art no.
Y-piece DN 50		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 50/50/50 connection	2019042
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138
Suspension unit DN50/2RK		for 2-pipe guide bracket, of EN-GJL-250, painted, with free passage in DN 50, coupling foot with 90° pipe elbow, including coupling connection, guide pipe bracket of stainless steel for sump mounting, profile joint and mounting accessories, connection on the pressure side DN 50; 2x guide pipes Ø ¾" must be provided on site!	6040766
Guide pipe bracket		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 50 cast-iron pipe, including mounting accessories of A4	6066851
		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 50 steel pipe, including mounting accessories of A4	6061084
Bracket for guide pipe extension		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 50 cast-iron pipe, including mounting accessories of A4	6066852
		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 50 steel pipe, including mounting accessories of A4	6066846

# Dewatering

## Submersible sewage pumps

### Mechanical accessories Wilo-Drain TP 50/TP 65



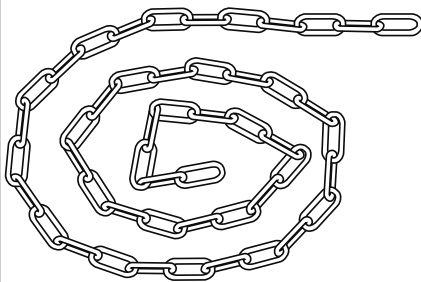
- 4 Pipe bend
- 6 Chain
- 11 Adapter
- 12 hose connection
- 13 Storz pipe coupling
- 14 Storz hose coupling
- 15 Pressure hose

#### Portable wet well installation with hose connection

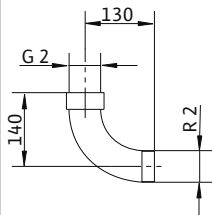
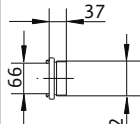
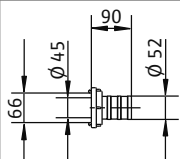
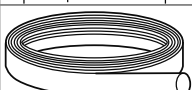
		Description	Art no.
Pipe bend 90°		Made of steel, galvanized with G 2 / R 2 female/male thread for DN 50 connection	4027332
Adapter DN 50 on Rp 2		Made of steel, galvanized, DN 50 threaded flange, PN 10/16, DIN 2566 with Rp 2 female thread, incl. 1 set of mounting accessories for DN 50 connection	4027333
Hose connection		Made of plastic, hose nozzle with Ø 60 mm including hose clip, G 2 male thread for direct hose connection	4027334
Pipe bend 90°		Made of PVC, with hose nozzle (Ø 60 mm) for direct hose connection, flange on pump side, incl. 1 set of mounting accessories for DN 50 connection	4027344
Pressure hose		Synthetic, inner Ø 60 mm, PN 8, length 10 m, incl. hose clip for direct hose connection via hose nozzle, Ø 60 mm	2018106

## Mechanical accessories Wilo-Drain TP 50/TP 65

### Portable wet well installation with hose connection

		Description	Art no.
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

### Portable wet well installation with Storz coupling

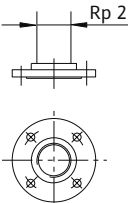
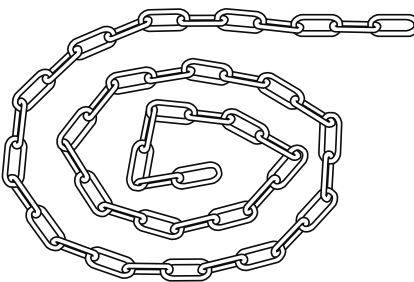
		Description	Art no.
Pipe bend 90°		Made of steel, galvanized with G 2 / R 2 female/male thread for DN 50 connection	4027332
Storz C pipe coupling with male thread G 2		Made of aluminium, Storz C connection, with G 2 male thread, tappet clearance 66 mm for a DN 50 connection	2018102
Storz hose coupling		Made of aluminium, Storz A connection, with hose nozzle (Ø 52 mm), tappet clearance 66 mm, incl. hose clip	2015235
Pressure hose		Synthetic, inner Ø 52 mm, PN 8, length 10 m, incl. hose clip for direct hose connection via hose nozzle (Ø 50 mm) or a Storz C hose coupling	2017192

# Dewatering

## Submersible sewage pumps

### Mechanical accessories Wilo-Drain TP 50/TP 65

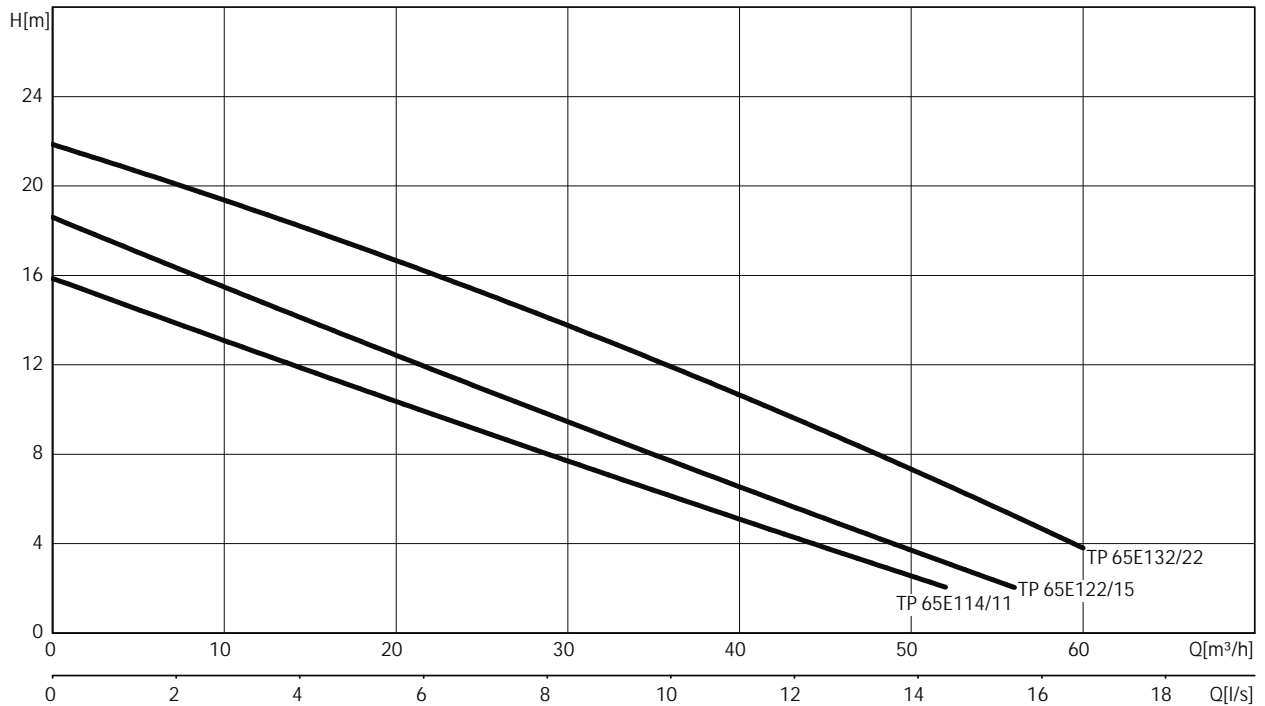
#### Portable wet well installation with Storz coupling

		Description	Art no.
Adapter DN 50 on Rp 2		Made of steel, galvanized, DN 50 threaded flange, PN 10/16, DIN 2566 with Rp 2 female thread, incl. 1 set of mounting accessories for DN 50 connection	4027333
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

## Pump curves, ordering information Wilo-Drain TP 65 E


### Pump curves Wilo-Drain TP 65 E – 50 Hz – 2900 rpm


Open single-channel impeller – Free ball passage: 44 mm



Pump curves in accordance with ISO 9906, Appendix A

#### Information for order placements

Wilo-Drain...	Mains connection		Art no.
TP 65 E 114/11	1~230 V, 50 Hz	L	4007101
TP 65 E 114/11-A	1~230 V, 50 Hz	L	4029444
TP 65 E 114/11	3~400 V, 50 Hz	L	4007099
TP 65 E 114/11-A	3~400 V, 50 Hz	L	4029550
TP 65 E 122/15	1~230 V, 50 Hz	L	4007107
TP 65 E 122/15	3~400 V, 50 Hz	L	4007105
TP 65 E 132/22	3~400 V, 50 Hz	L	4007111

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-Drain TP 65 E

	TP 65 E 114/11	TP 65 E 114/11	TP 65 E 114/11-A	TP 65 E 114/11-A
	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 65	DN 65	DN 65	DN 65
Free ball passage mm	44	44	44	44
Max. volume flow $Q_{max}/m^3/h$	52	52	52	52
Max. delivery head $H_{max}/m$	15	15	15	15
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. immersion depth m	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T/^\circ C$	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35
Weight approx. $m/kg$	21	21	21	21
<b>Motor data</b>				
Nominal current $I_N/A$	7.2	3.2	7.2	3.2
Starting current $I_A/A$	—	—	—	—
Nominal motor power $P_2/kW$	1.1	1.1	1.1	1.1
Power consumption $P_1/kW$	1.5	1.5	1.5	1.5
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n/rpm$	2850	2850	2850	2850
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	40	40	40	40
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF
Cable cross-section $mm^2$	4G1	6G1	4G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	—	—	Shock-proof	CEE
<b>Equipment/function</b>				
Float switch	—	—	•	•
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	—	ATEX	—	—
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	PUR	PUR	PUR	PUR
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301
Pump housing	PUR	PUR	PUR	PUR
Pump shaft	1.4404	1.4404	1.4404	1.4404

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.



## Technical data Wilo-Drain TP 65 E

	TP 65 E 122/15	TP 65 E 122/15	TP 65 E 132/22
	1~230 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>			
Pressure connection	DN 65	DN 65	DN 65
Free ball passage mm	44	44	44
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	56	56	60
Max. delivery head $H_{max}$ / m	18	18	21
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. immersion depth m	10	10	10
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35
Weight approx. $m$ / kg	22	22	24.5
<b>Motor data</b>			
Nominal current $I_N$ / A	9.5	3.8	5.2
Starting current $I_A$ / A	—	—	—
Nominal motor power $P_2$ / kW	1.5	1.5	2.2
Power consumption $P_1$ / kW	2	2	2.9
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	2850	2850	2850
Insulation class	F	F	F
Recommended switching frequency 1/h	20	20	20
Max. switching frequency 1/h	40	40	40
Permitted voltage tolerance %	±10	±10	±10
<b>Cable</b>			
Length of connecting cable m	10	10	10
Cable type	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF
Cable cross-section mm <sup>2</sup>	4G1	6G1	6G1,5
Type of connecting cable	Detachable	Detachable	Detachable
Mains plug	—	—	—
<b>Equipment/function</b>			
Float switch	—	—	—
Motor protection	WSK	WSK	WSK
Explosion protection	—	ATEX	ATEX
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	PUR	PUR	PUR
Sealing on motor side	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301
Pump housing	PUR	PUR	PUR
Pump shaft	1.4404	1.4404	1.4404

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

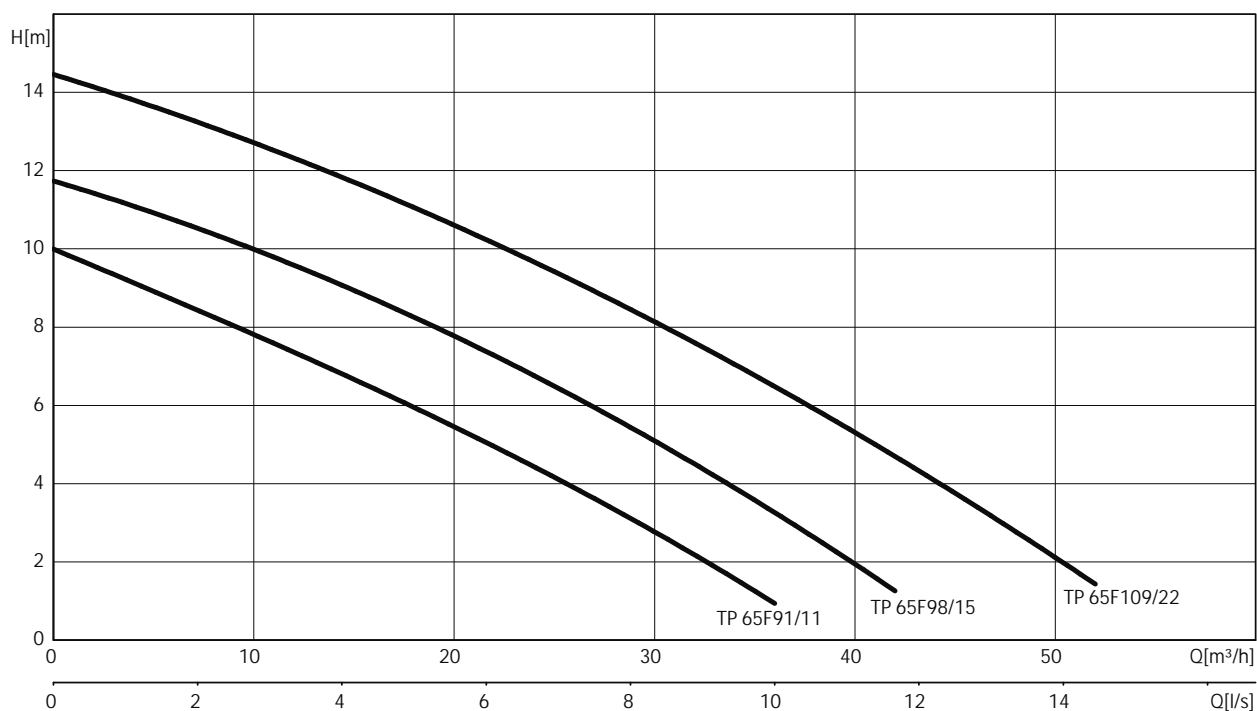
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-Drain TP 65 E


#### Pump curves Wilo-Drain TP 65 F – 50 Hz – 2900 rpm


Vortex impeller – Free ball passage: 44 mm



Pump curves in accordance with ISO 9906, Appendix A

#### Information for order placements

Wilo-Drain...	Mains connection		Art no.
TP 65 F 91/11	1~230 V, 50 Hz	L	4007085
TP 65 F 91/11-A	1~230 V, 50 Hz	L	4029437
TP 65 F 91/11	3~400 V, 50 Hz	L	4007083
TP 65 F 91/11-A	3~400 V, 50 Hz	L	4029547
TP 65 F 98/15	1~230 V, 50 Hz	L	4007091
TP 65 F 98/15	3~400 V, 50 Hz	L	4007089
TP 65 F 109/22	3~400 V, 50 Hz	L	4007095

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data Wilo-Drain TP 65 E

	TP 65 F 91/11 1~230 V, 50 Hz	TP 65 F 91/11 3~400 V, 50 Hz	TP 65 F 91/11-A 1~230 V, 50 Hz	TP 65 F 91/11-A 3~400 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 65	DN 65	DN 65	DN 65
Free ball passage mm	44	44	44	44
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	36	36	36	36
Max. delivery head $H_{max}$ / m	9.5	9.5	9.5	9.5
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. immersion depth m	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35	+3 ... +35
Weight approx. m/ kg	22	22	22	22
<b>Motor data</b>				
Nominal current $I_N$ / A	6.9	3.2	6.9	3.2
Starting current $I_A$ / A	—	—	—	—
Nominal motor power $P_2$ / kW	1.1	1.1	1.1	1.1
Power consumption $P_1$ / kW	1.5	1.5	1.5	1.5
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2850	2850	2850	2850
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	40	40	40	40
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF
Cable cross-section mm <sup>2</sup>	4G1	6G1	4G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	—	—	Shock-proof	CEE
<b>Equipment/function</b>				
Float switch	—	—	•	•
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	—	ATEX	—	—
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301
Pump housing	PUR	PUR	PUR	PUR
Pump shaft	1.4404	1.4404	1.4404	1.4404

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible sewage pumps

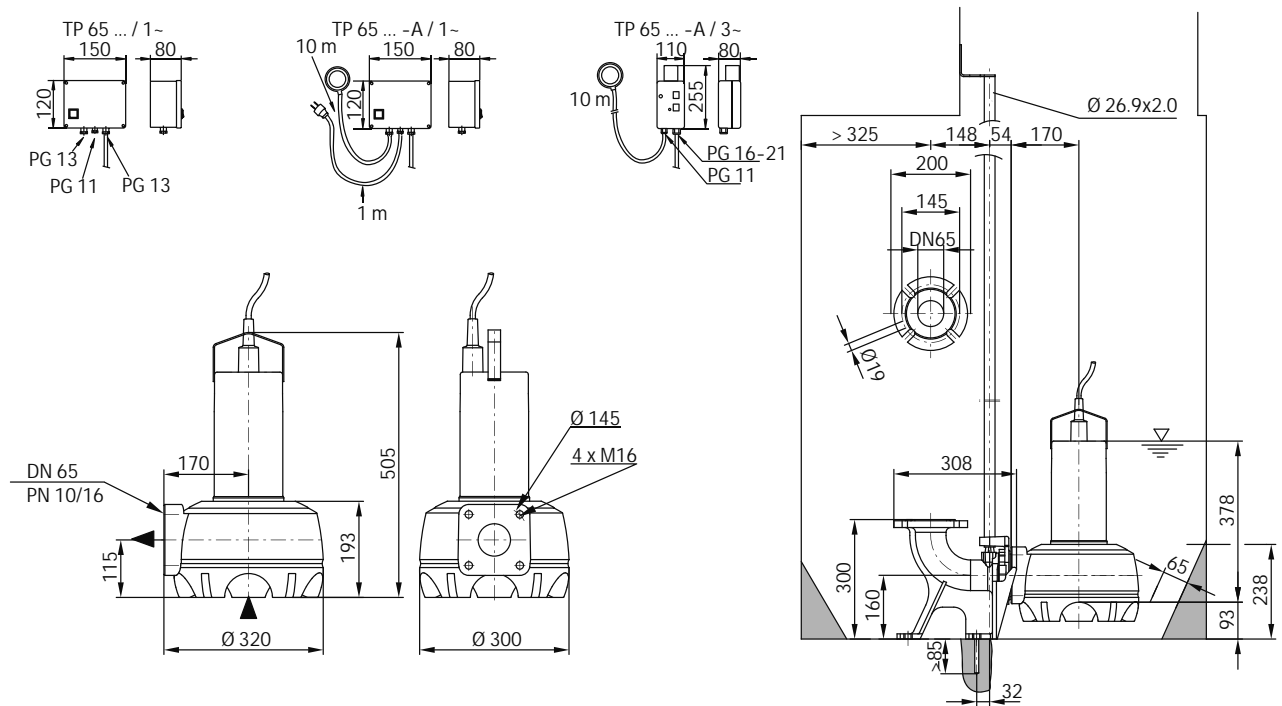
### Technical data Wilo-Drain TP 65 E

	TP 65 F 98/15	TP 65 F 98/15	TP 65 F 109/22
	1~230 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>			
Pressure connection	DN 65	DN 65	DN 65
Free ball passage mm	44	44	44
Max. volume flow $Q_{max}/m^3/h$	42	42	52
Max. delivery head $H_{max}/m$	11.5	11.5	14.5
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. immersion depth m	10	10	10
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T/^\circ C$	+3 ... +35	+3 ... +35	+3 ... +35
Weight approx. $m/kg$	24.5	24.5	24.5
<b>Motor data</b>			
Nominal current $I_N/A$	9.5	3.6	5.1
Starting current $I_A/A$	—	—	—
Nominal motor power $P_2/kW$	1.5	1.5	2.2
Power consumption $P_1/kW$	1.8	1.8	2.7
Activation type	Direct	Direct	Direct
Nominal speed $n/rpm$	2850	2850	2850
Insulation class	F	F	F
Recommended switching frequency 1/h	20	20	20
Max. switching frequency 1/h	40	40	40
Permitted voltage tolerance %	±10	±10	±10
<b>Cable</b>			
Length of connecting cable m	10	10	10
Cable type	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF	OZOFLEX (PLUS) 07RNF
Cable cross-section $mm^2$	6G1	6G1	6G1,5
Type of connecting cable	Detachable	Detachable	Detachable
Mains plug	—	—	—
<b>Equipment/function</b>			
Float switch	—	—	—
Motor protection	WSK	WSK	WSK
Explosion protection	—	ATEX	ATEX
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	PP-GF30	PP-GF30	PP-GF30
Sealing on motor side	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301
Pump housing	PUR	PUR	PUR
Pump shaft	1.4404	1.4404	1.4404

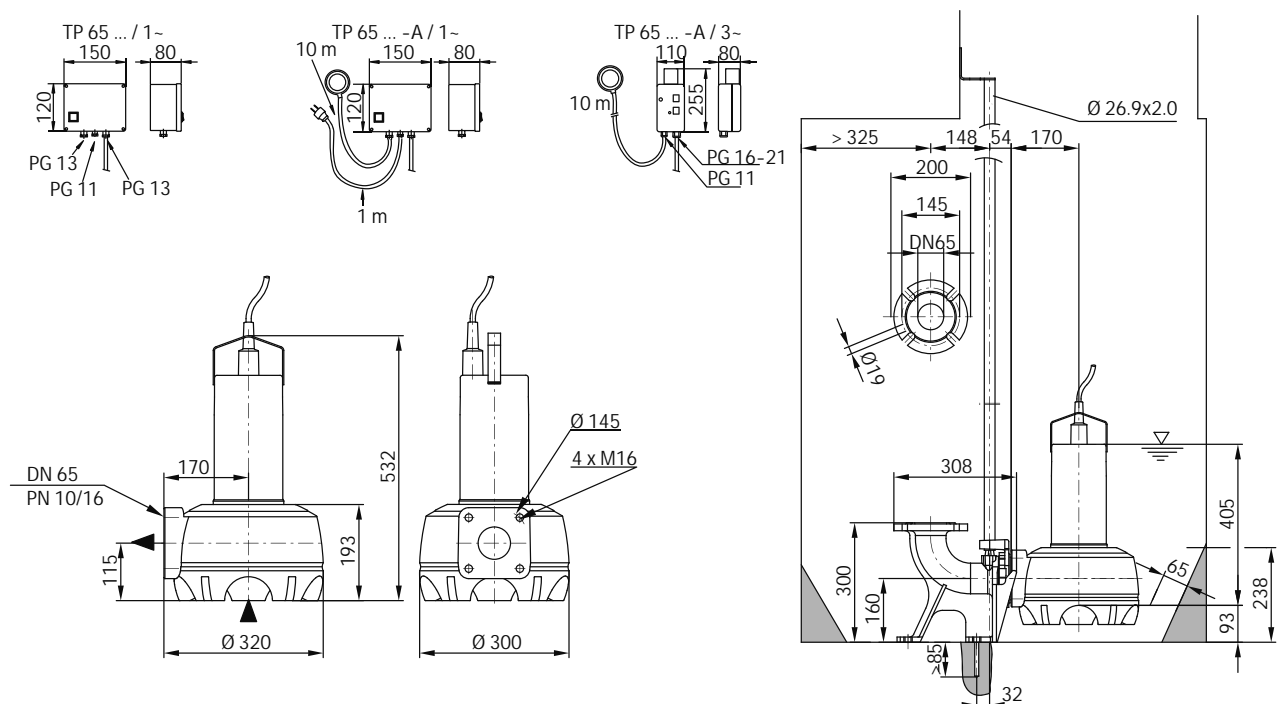
$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Dimensions Wilo-Drain TP 50/TP 65

### Dimension drawing Wilo-Drain TP 65: 3~/1,1 kW, 3~/1,5 kW



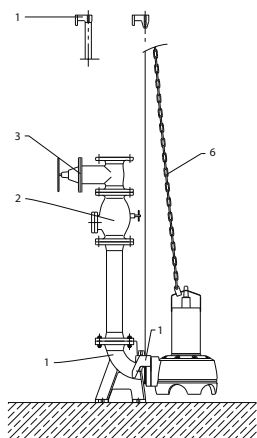
### Dimension drawing Wilo-Drain TP 65: 1~/1,5 kW, 3~/2,2 kW



# Dewatering

## Submersible sewage pumps

### Mechanical accessories Wilo-Drain TP 50/TP 65



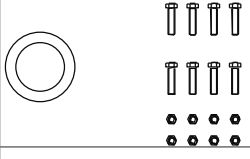
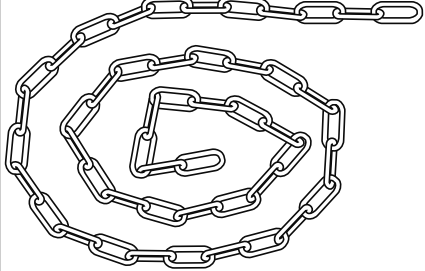
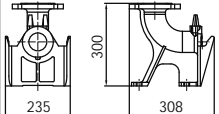
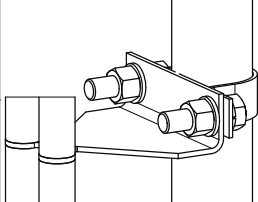
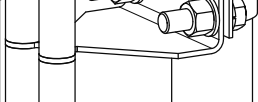
- 1 Suspension unit
- 2 Non-return valve
- 3 Gate valve
- 6 Chain

#### Stationary wet well installation DN 65

		Description	Art no.
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 65 connection	2017167
Gate valve		Made of EN-GJL-250, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, DN 65	2017161
Pipe bend 90°		Made of spheroidal cast iron 400-15, with 2 flanges, including 1 set of mounting accessories, PN 10/16 flange, DIN 28637, for DN 65 connection	2017183
Y-piece DN 65		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 65/65/65 connection	2017178

## Mechanical accessories Wilo-Drain TP 50/TP 65

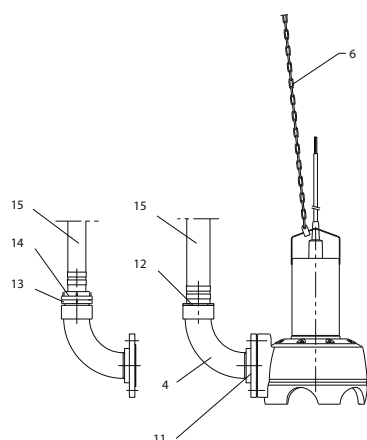
## Stationary wet well installation DN 65

		Description	Art no.
Mounting accessories DN 65		For a DN 40/50 flange connection, with 4 screws, 4 nuts and 1 flat gasket for PN 10/16 flange, DIN 2502	2012068
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138
Suspension unit DN65/2RK		for 2-pipe guide bracket, of EN-GJL-250, painted, with free passage in DN 65, coupling foot with 90° pipe elbow, including coupling connection, guide pipe bracket of stainless steel for sump mounting, profile joint and mounting accessories, connection on the pressure side DN 65; 2x guide pipes Ø ¾" must be provided on site!	6066844
Guide pipe bracket		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 65 cast-iron pipe, including mounting accessories of A4	6066847
		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 65 steel pipe, including mounting accessories of A4	6066848
Bracket for guide pipe extension		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 65 cast-iron pipe, including mounting accessories of A4	6066849
		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 65 steel pipe, including mounting accessories of A4	6066850

# Dewatering

## Submersible sewage pumps

### Mechanical accessories Wilo-Drain TP 50/TP 65



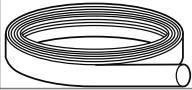
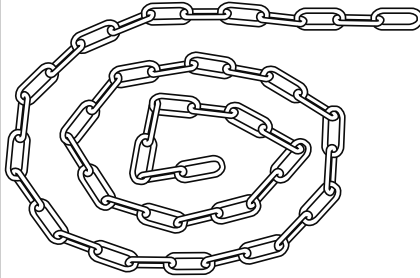
- 4 Pipe bend
- 6 Chain
- 11 Adapter
- 12 hose connection
- 13 Storz pipe coupling
- 14 Storz hose coupling
- 15 Pressure hose

Portable wet well installation with hose connection DN 65			
		Description	Art no.
Pipe bend 90°		Made of steel, galvanised with G 2½ / R 2½ female/male thread for DN 65 connection	4015212
Baseplate TP 65		Made of galvanized steel, consisting of: 1 baseplate and fixation material (required for sludgy ground; prevents pump from sinking)	4015206
Adapter DN 65 on Rp 2½		Made of steel, galvanized, DN 65 threaded flange, PN 10/16, DIN 2566 with Rp 2½ female thread, incl. 1 set of mounting accessories for DN 65 connection	4015204
Hose connection		Made of brass, hose nozzle with Ø 70 mm, including hose clip, G 2½ male thread for direct hose connection	4015210
Pipe bend 90°		Made of EN-GJL-250, with hose nozzle (Ø 70 mm) for direct hose connection, flange on pump side, incl. 1 set of mounting accessories for DN 65 connection	4027346

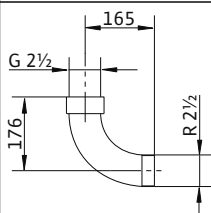
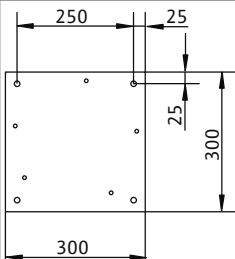
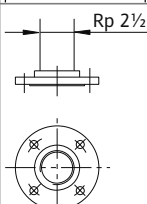


## Mechanical accessories Wilo-Drain TP 50/TP 65

### Portable wet well installation with hose connection DN 65

		Description	Art no.
Pressure hose		Synthetic, inner Ø 70 mm, PN 8, length 10 m, incl. hose clip for direct hose connection via hose nozzle, Ø 70 mm	2014151
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

### Portable wet well installation with Storz coupling DN 65

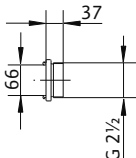
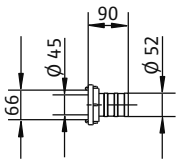
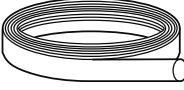
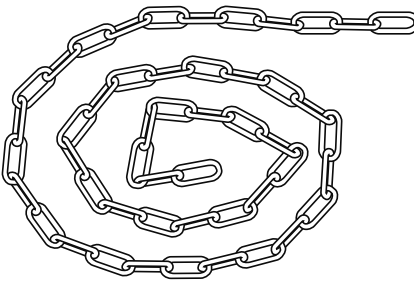
		Description	Art no.
Pipe bend 90°		Made of steel, galvanised with G 2 1/2 / R 2 1/2 female/male thread for DN 65 connection	4015212
Baseplate TP 65		Made of galvanized steel, consisting of: 1 baseplate and fixation material (required for sludgy ground; prevents pump from sinking)	4015206
Adapter DN 65 on Rp 2 1/2		Made of steel, galvanized, DN 65 threaded flange, PN 10/16, DIN 2566 with Rp 2 1/2 female thread, incl. 1 set of mounting accessories for DN 65 connection	4015204

# Dewatering

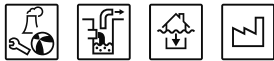
## Submersible sewage pumps

### Mechanical accessories Wilo-Drain TP 50/TP 65

#### Portable wet well installation with Storz coupling DN 65

		Description	Art no.
Storz C pipe coupling with male thread G 2½		Made of aluminium, Storz C connection, with G 2½ male thread, tappet clearance 66 mm for a DN 65 connection	2015234
Storz hose coupling		Made of aluminium, Storz A connection, with hose nozzle (Ø 52 mm), tappet clearance 66 mm, incl. hose clip	2015235
Pressure hose		Synthetic, inner Ø 52 mm, PN 8, length 10 m, incl. hose clip for direct hose connection via hose nozzle (Ø 50 mm) or a Storz C hose coupling	2017192
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

### Series description Wilo-Drain TP 80/TP 100



#### Design

Submersible sewage pump for industrial applications

#### Type key

E.g.	<b>Wilo-Drain TP 80 E 160/17</b>
<b>TP</b>	Tauchmotorpumpe (submersible pump)
<b>80</b>	Nominal diameter [mm]
<b>E</b>	Einkanallaufgrad (single-channel impeller)
<b>160</b>	Nominal diameter of impeller [mm]
<b>17</b>	Power $P_2$ [kW] (= value/10 = 1.7 kW)

#### Application

Pumping of wastewater and drainage water as well as sewage containing faeces, municipal and industrial sewage for:

- Domestic and site drainage
- Sewage and water management
- Environmental and water treatment technology
- Industrial and process engineering

#### Special features/product advantages

- Operation in stationary wet well and dry well installation as well as portable wet well installation
- Submersible
- ATEX approval as standard
- Low weight
- Detachable connection cable
- Longitudinally watertight cable inlet
- Standard-equipped with clogging-free sheath current cooling
- Corrosion-resistant (e.g. swimming-pool water, salt water, etc.)
- Low-wearing
- Patented clogging-free hydraulics
- Easy installation due to suspension unit or pump base

#### Technical data

- Mains connection: 3–400 V, 50 Hz
- Immersed and non-immersed operating modes: S1
- Protection class: IP 68
- Insulation class: F
- Max. fluid temperature: 3–40°C
- Free ball passage: 80 or 95 mm
- Max. immersion depth: 20 m

#### Equipment/function

- Thermal motor monitoring
- Leakage detection in the motor
- ATEX-certified
- Sheath current cooling

#### Materials

- Pump housing: PUR
- Impeller: PUR
- Shaft: stainless steel 1.4404
- Mechanical seal on pump side: SiC/SiC
- Mechanical seal on motor side: C/Cr
- Static gasket: NBR
- Motor housing: stainless steel 1.4404

#### Description/design

Submersible sewage pump as submersible monobloc unit for stationary wet well and dry well installation as well as portable wet well installation.

#### Hydraulics

The outlet on the pressure side is designed as DN 80 or DN 100 horizontal flange connection. Single-channel impellers are used as the impeller shape.

#### Motor

Dry motors are equipped with clogging-free sheath current cooling as standard. This ensures that heat is given off directly to the fluid. As a result, these units can be operated in immersed and non-immersed state for permanent or intermittent operation.

In addition, the motor is equipped with a leakage detection unit and a thermal motor monitoring unit. A sealing chamber protects the motor from fluid ingress. The filling fluid used is potentially biodegradable and environmentally safe.

The cable inlet is longitudinally watertight, the standard cable length is 10 m.

#### Sealing

Sealing on the fluid side and on the pump side is achieved by two bi-directional mechanical seals.

# Dewatering

## Submersible sewage pumps

### Series description Wilo-Drain TP 80/TP 100

#### Scope of delivery

- Pump ready for connection with 10 m connection cable (bare cable end)
- Installation and operating instructions

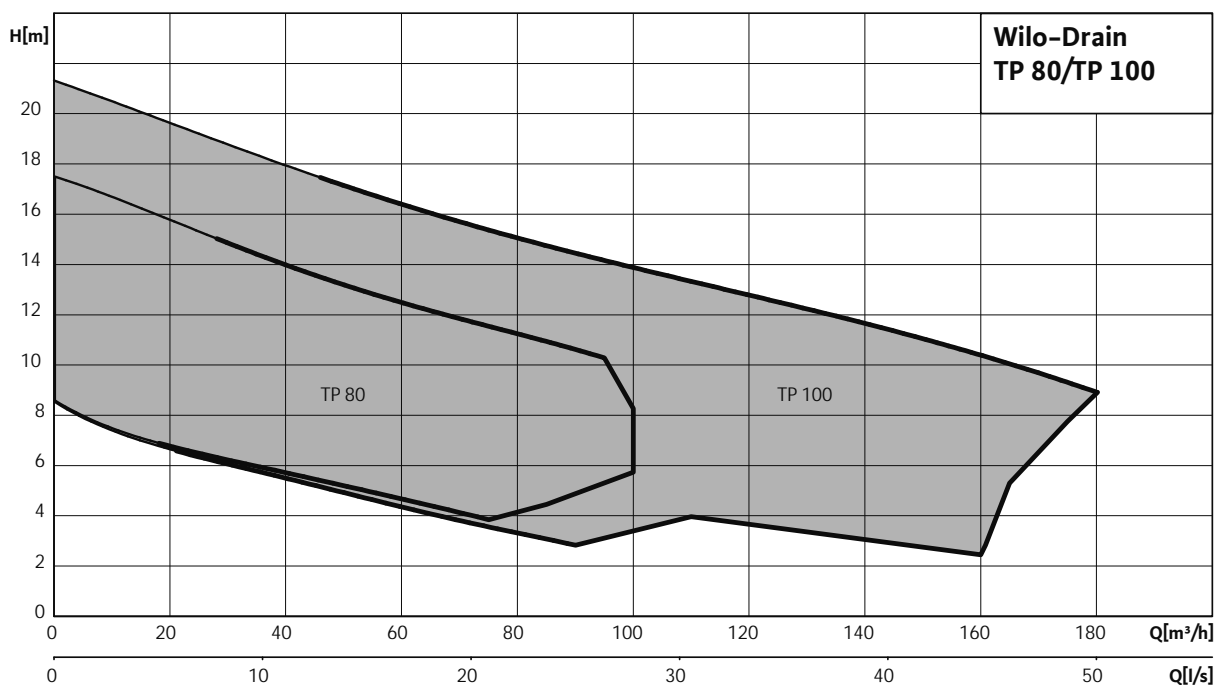
#### Accessories

- Suspension unit
- Chain
- Non-return valve and gate valve
- Various pressure outlets and hoses
- Switchgears and relays

#### Options

- HD version with Viton seals and another mechanical seals
- Pumps without cooling jacket for use in higher-viscosity fluids such as sludge (intermittent operation S3--25 only)
- Salt water version for higher temperatures and salt contents
- Version for horizontal dry well installation
- External cooling for fluid with floating solid matter, such as wood chippings
- Cable lengths up to 50 m are available in length increments of 10 m

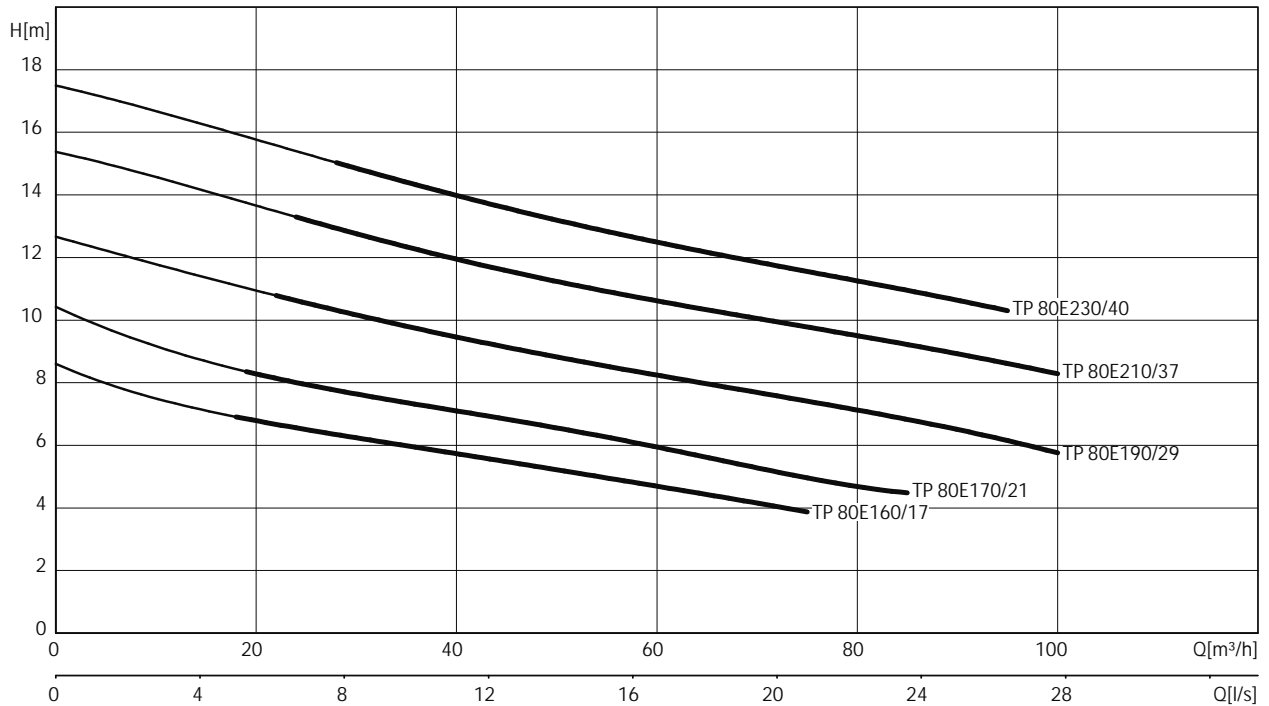
#### Duty chart



## Pump curves, ordering information Wilo-Drain TP 80


### Pump curves Wilo-Drain TP 80 – 50 Hz – 1450 rpm


Open single-channel impeller – Free ball passage: 80 mm



Pump curves in accordance with ISO 9906, Appendix A

### Information for order placements

Wilo-Drain...	Mains connection		Art no.
TP 80E160/17	3~400 V, 50 Hz	K	6043950
TP 80E170/21	3~400 V, 50 Hz	K	6043957
TP 80E190/29	3~400 V, 50 Hz	K	6043963
TP 80E210/37	3~400 V, 50 Hz	K	6043971
TP 80E230/40	3~400 V, 50 Hz	K	6043983

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Dewatering

## Submersible sewage pumps

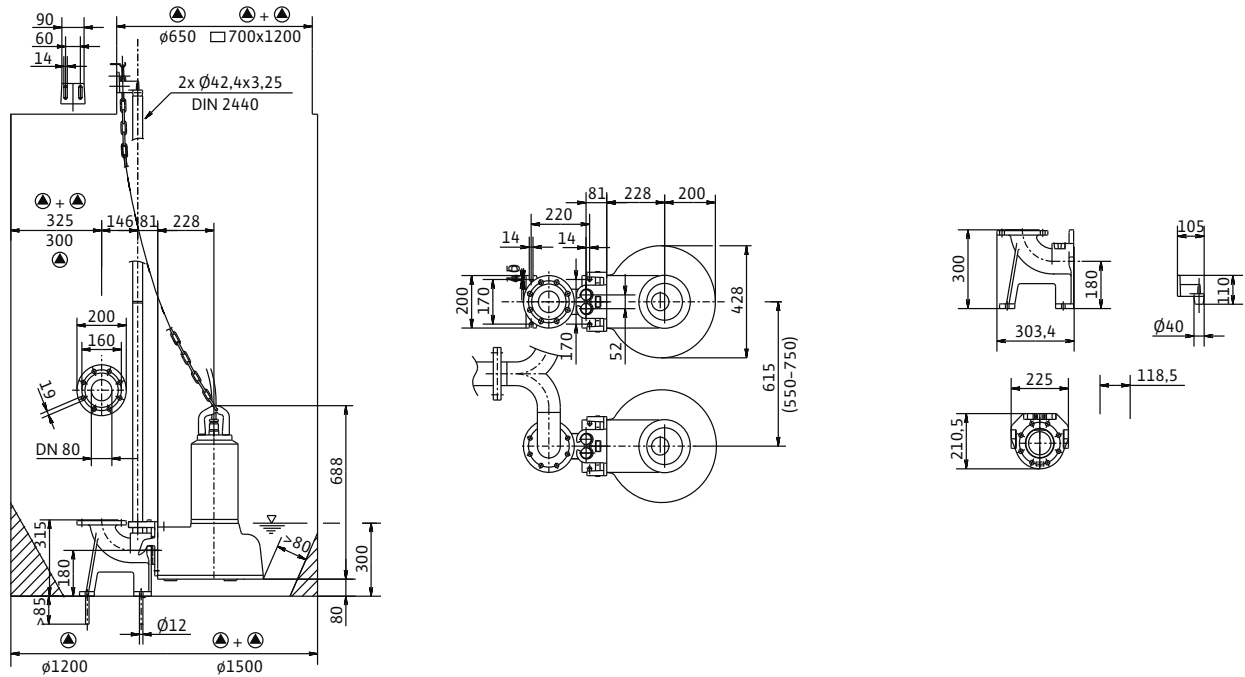
### Technical data Drain TP 80

	TP 80E160/17	TP 80E170/21	TP 80E190/29	TP 80E210/37	TP 80E230/40
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>					
Pressure connection	DN 80	DN 80	DN 80	DN 80	DN 80
Free ball passage mm	80	80	80	80	80
Max. volume flow $Q_{max}/m^3/h$	75	85	100	100	95
Max. delivery head $H_{max}/m$	9	10	13	15	17
Operating mode (immersed)	S1	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1	S1
Max. immersion depth m	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T/^\circ C$	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m/kg$	42	42	42	42	42
<b>Motor data</b>					
Nominal current $I_N/A$	6.4	6.7	7.3	8.5	9.5
Starting current $I_A/A$	—	—	—	—	—
Nominal motor power $P_2/kW$	1.7	2.1	2.9	3.7	4
Power consumption $P_1/kW$	2	2.5	3.3	4.5	5.1
Activation type	Direct	Direct	Direct	Direct	Direct
Nominal speed $n/rpm$	1450	1450	1450	1450	1450
Insulation class	F	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20	20
Max. switching frequency 1/h	60	60	60	60	60
Permitted voltage tolerance %	±10	±10	±10	±10	±10
<b>Cable</b>					
Length of connecting cable m	10	10	10	10	10
Cable type	NSSHÖU	NSSHÖU	NSSHÖU	NSSHÖU	NSSHÖU
Cable cross-section $mm^2$	7x1,5	7x1,5	7x1,5	7x1,5	7x1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable	Detachable
Mains plug	—	—	—	—	—
<b>Equipment/function</b>					
Float switch	—	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>					
Static seal	NBR	NBR	NBR	NBR	NBR
Impeller	PUR	PUR	PUR	PUR	PUR
Sealing on motor side	C/Cr	C/Cr	C/Cr	C/Cr	C/Cr
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4404	1.4404	1.4404	1.4404	1.4404
Pump housing	PUR	PUR	PUR	PUR	PUR
Pump shaft	1.4404	1.4404	1.4404	1.4404	1.4404

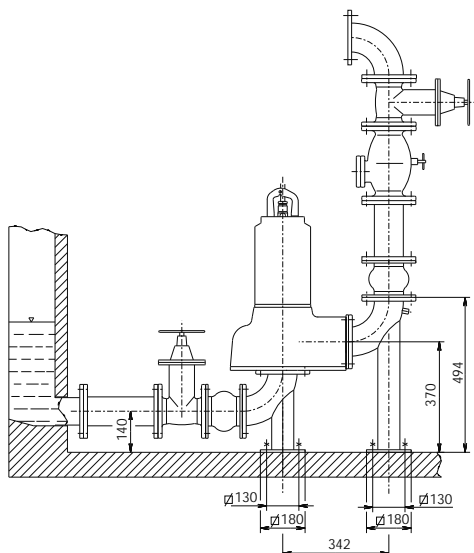
$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of  $1\text{ kg/dm}^3$ .

## Dimensions Wilo-Drain TP 80

### Dimension drawing Wilo-Drain TP 80 – stationary wet well installation



### Dimension drawing Wilo-Drain TP 80 – stationary dry well installation

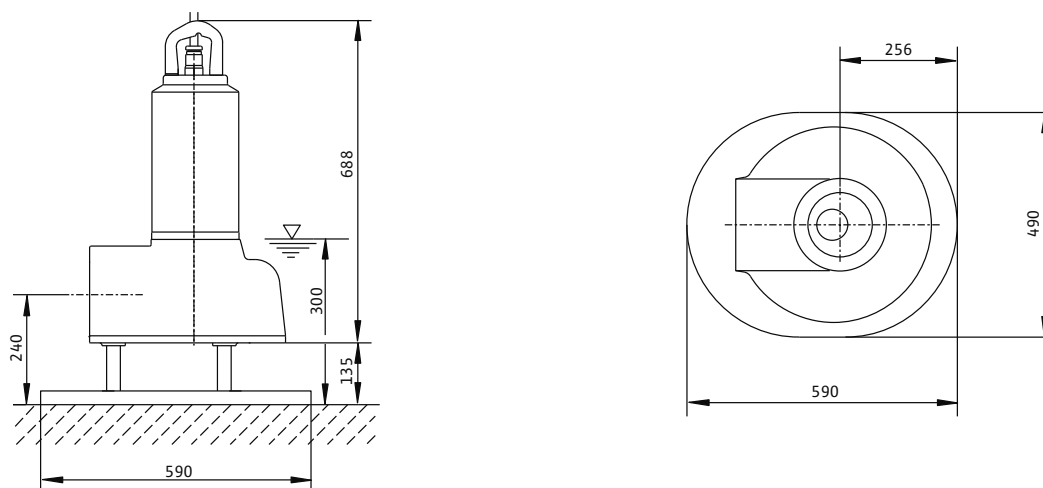


# Dewatering

## Submersible sewage pumps

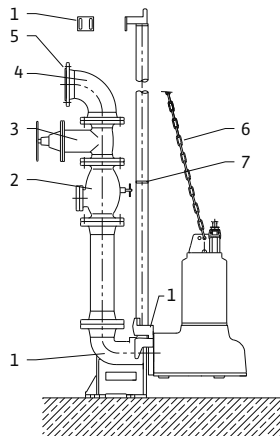
### Dimensions Wilo-Drain TP 80

#### Dimension drawing Wilo-Drain TP 80 – portable wet well installation





### Mechanical accessories Wilo-Drain TP 80



- |   |                      |
|---|----------------------|
| 1 | Suspension unit      |
| 2 | Non-return valve     |
| 3 | Gate valve           |
| 4 | Pipe bend            |
| 5 | Mounting accessories |
| 6 | Chain                |
| 7 | Pipe connector       |

### Stationary wet well installation DN 80

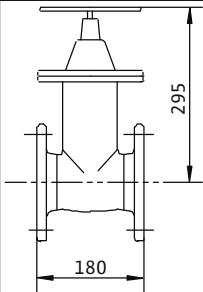
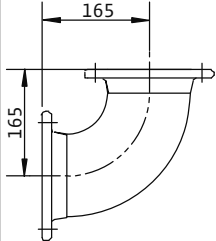
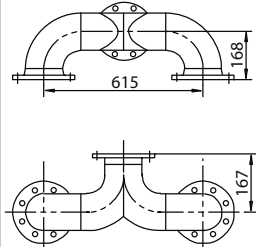
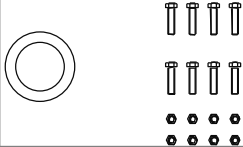
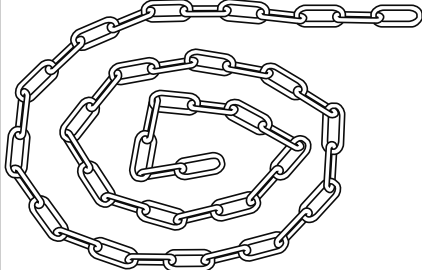
		Description	Art no.
<b>Suspension unit DN 80</b>		Made of EN-GJL-250, painted, with free passage in DN 80, foot elbow incl. pump bracket, profile joint, installation and floor fixation accessories and guide pipe bracket Ø 1 1/4" without guide pipes. Connection on pressure side DN 80. Flanges PN 10/16 in accordance with DIN 2501. The double pipe feed Ø 1 1/4" is to be provided by the customer.	2029039
<b>Suspension unit DN 80, including cable guide</b>		Made of stainless steel (AISI 304), with free passage in DN 80, foot elbow including pump holder, profile joint, installation and floor fixation accessories and 10 m stainless steel cable guide for 5 m installation depth. Connection on pressure side DN 80. Flanges PN 10/16 in accordance with DIN 2501.	2032495
<b>Non-return valve</b>		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 80 connection	2017168

# Dewatering

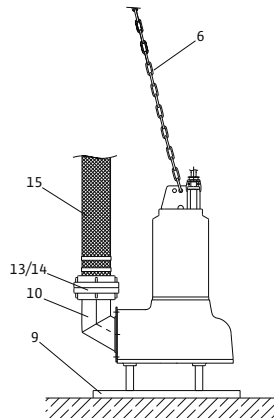
## Submersible sewage pumps

### Mechanical accessories Wilo-Drain TP 80

#### Stationary wet well installation DN 80

		Description	Art no.
Gate valve		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 80	2017162
Pipe bend 90°		Made of spheroidal cast iron 400-15, with 2 flanges, including 1 set of mounting accessories, PN 10/16 flange, DIN 28637, for DN 80 connection	2012064
Y-piece DN 80		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 80/80/80 connection	2017179
Mounting accessories DN 80		For a DN 80 flange connection, with 8 screws, 8 nuts and 1 flat gasket for PN 10/16 flange, DIN 2502	2012067
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

## Mechanical accessories Wilo-Drain TP 80



- 6 Chain
- 9 Floor supporting foot
- 10 Pipe bend
- 13 Storz pipe coupling
- 14 Storz hose coupling
- 15 Pressure hose

### Portable wet well installation with hose connection

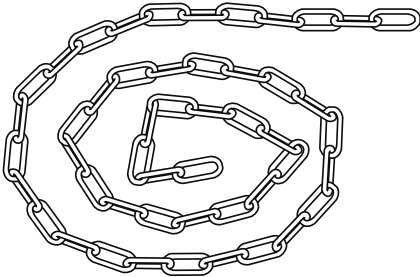
		Description	Art no.
<b>Floor supporting foot TP 80/100</b>		Made of stainless steel (AISI 304), comprising 3 support feet, 1 baseplate and fixation material	2004672
<b>Pipe bend 90°</b>		Made of stainless steel, with hose nozzle (Ø 90 mm) and G 3 male thread for direct hose connection or installation with Storz B fixed coupling, flange on pump side, incl. 1 set of mounting accessories for DN 80 connection. Hole pitch 45° allows variable attachment position.	2017207
<b>Storz pipe coupling, 90 mm, with female thread G 3</b>		Made of aluminium, Storz 90 connection, with G 3 female thread, tappet clearance 105 mm for a DN 80 connection	2017203
<b>Storz hose coupling, 90 mm</b>		Made of aluminium, Storz 90 connection, with hose nozzle (Ø 90 mm), tappet clearance 105 mm, incl. hose clip	2017204
<b>Pressure hose</b>		Synthetic, inner Ø 90 mm, PN 8, length 10 m, incl. 2 hose clips for direct hose connection via hose nozzle (Ø 90 mm) or a Storz B hose coupling	2017152
		Synthetic, inner Ø 90 mm, PN 8, length 20 m, incl. 2 hose clips for direct hose connection via hose nozzle (Ø 90 mm) or a Storz B hose coupling	2017193
		Synthetic, inner Ø 90 mm, PN 8, length 30 m, incl. 2 hose clips for direct hose connection via hose nozzle (Ø 90 mm) or a Storz B hose coupling	2017194

# Dewatering

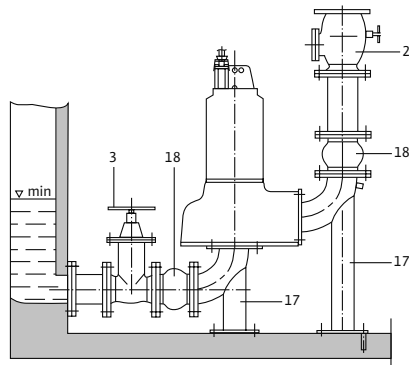
## Submersible sewage pumps

### Mechanical accessories Wilo-Drain TP 80

#### Portable wet well installation with hose connection

		Description	Art no.
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

## Mechanical accessories Wilo-Drain TP 80



- 2 Non-return valve
- 3 Gate valve
- 17 Installation kit
- 18 Compensator

### Stationary vertical dry well installation

		Description	Art no.
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 80 connection	2017168
Installation kit TP 80		Made of stainless steel (AISI 304), consisting of 2 pipe elbows with support (pressure and intake side), each with 2 flanges for DN 80 connection, incl. installation and floor fixation accessories	2036896
Compensator DN 80		Made of steel, galvanized / neoprene incl. mounting accessories, length 130 mm, PN 10/16 flange for DN 80 connection	2017189
Y-piece DN 80		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 80/80/80 connection	2017179
Gate valve		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 80	2017162

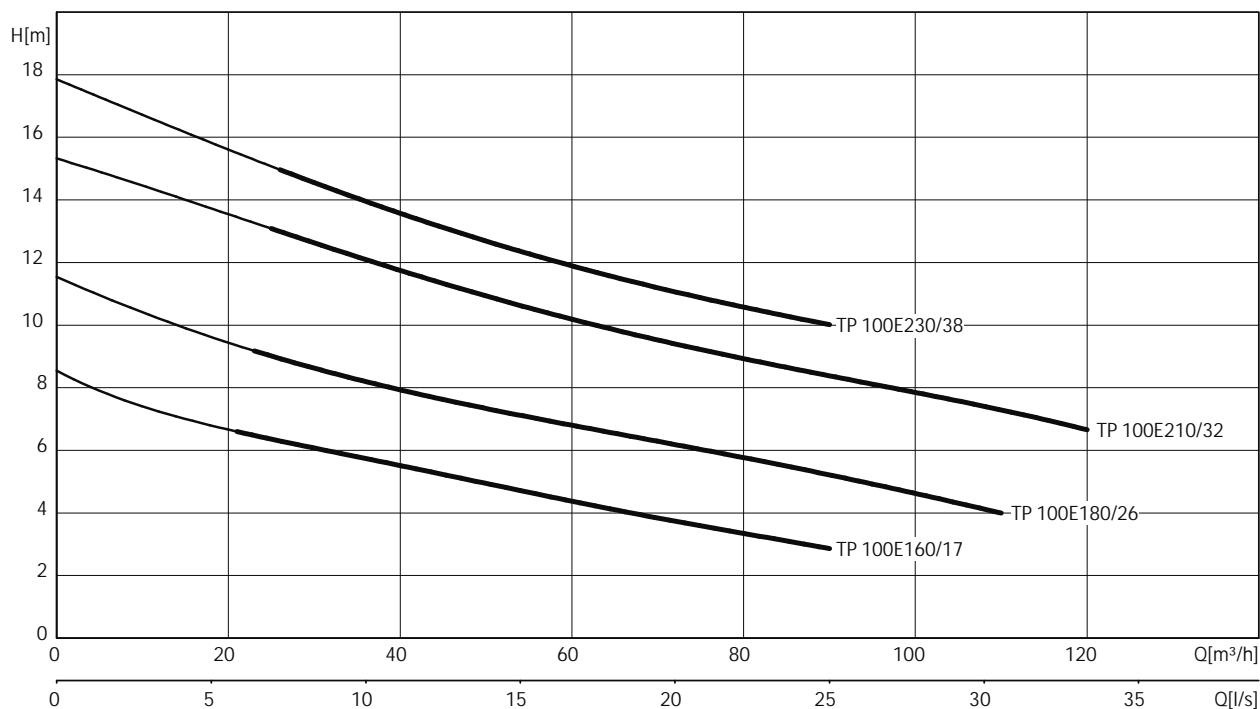
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-Drain TP 100


Pump curves Wilo-Drain TP 100 with nominal motor power up to 3.8 kW – 50 Hz – 1450 rpm

Open single-channel impeller – Free ball passage: 95 mm



Pump curves in accordance with ISO 9906, Appendix A

#### Information for order placements

Wilo-Drain...	Mains connection		Art no.
TP 100E160/17	3~400 V, 50 Hz	K	6044004
TP 100E180/26	3~400 V, 50 Hz	K	6044010
TP 100E210/32	3~400 V, 50 Hz	K	6044014
TP 100E230/38	3~400 V, 50 Hz	K	6044018

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data Drain TP 100

	TP 100E160/17	TP 100E180/26	TP 100E210/32	TP 100E230/38
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 100	DN 100	DN 100	DN 100
Free ball passage mm	95	95	95	95
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	90	110	120	90
Max. delivery head $H_{max}$ / m	8	11	15	18
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1
Max. immersion depth m	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	43	43	43	43
<b>Motor data</b>				
Nominal current $I_N$ / A	6.6	7.5	9	9.5
Starting current $I_A$ / A	—	—	—	—
Nominal motor power $P_2$ / kW	1.7	2.6	3.2	3.8
Power consumption $P_1$ / kW	2.1	3.4	4.8	5.2
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	1450	1450	1450	1450
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	60	60	60	60
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	NSSHÖU	NSSHÖU	NSSHÖU	NSSHÖU
Cable cross-section mm <sup>2</sup>	7x1,5	7x1,5	7x1,5	7x1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	—	—	—	—
<b>Equipment/function</b>				
Float switch	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	PUR	PUR	PUR	PUR
Sealing on motor side	C/Cr	C/Cr	C/Cr	C/Cr
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4404	1.4404	1.4404	1.4404
Pump housing	PUR	PUR	PUR	PUR
Pump shaft	1.4404	1.4404	1.4404	1.4404

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

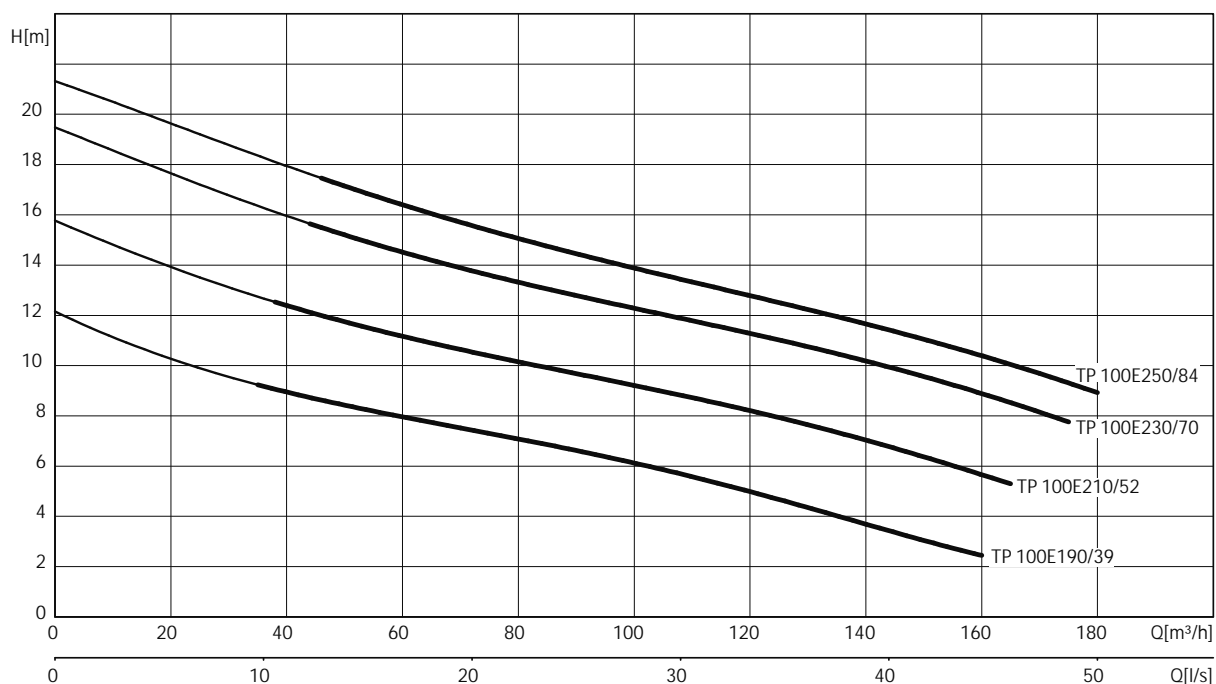
# Dewatering

## Submersible sewage pumps


### Pump curves, ordering information Wilo-Drain TP 100


Pump curves Wilo-Drain TP 100 with nominal motor power 3.9 kW and higher – 50 Hz – 1450 rpm

Open single-channel impeller – Free ball passage: 95 mm



Pump curves in accordance with ISO 9906, Appendix A

Information for order placements			
Wilo-Drain...	Mains connection		Art no.
TP 100E190/39	3~400 V, 50 Hz	K	2008469
TP 100E210/52	3~400 V, 50 Hz	K	2003559
TP 100E230/70	3~400 V, 50 Hz	K	2003561
TP 100E250/84	3~400 V, 50 Hz	K	2003563

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request



## Technical data Drain TP 100

	TP 100E190/39	TP 100E210/52	TP 100E230/70	TP 100E250/84
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 100	DN 100	DN 100	DN 100
Free ball passage mm	95	95	95	95
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	160	165	175	180
Max. delivery head $H_{max}$ / m	12	16	19	21
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S1	S1
Max. immersion depth m	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	60	60	60	60
<b>Motor data</b>				
Nominal current $I_N$ / A	12.5	14.1	16.7	18.8
Starting current $I_A$ / A	—	—	—	—
Nominal motor power $P_2$ / kW	3.9	5.2	7	8.4
Power consumption $P_1$ / kW	5	6.7	8.8	10.6
Activation type	Star-delta	Star-delta	Star-delta	Star-delta
Nominal speed $n$ / rpm	1450	1450	1450	1450
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	60	60	60	60
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	NSSHÖU	NSSHÖU	NSSHÖU	NSSHÖU
Cable cross-section mm <sup>2</sup>	10x1,5	10x1,5	10x1,5	10x1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	—	—	—	—
<b>Equipment/function</b>				
Float switch	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	PUR	PUR	PUR	PUR
Sealing on motor side	C/Cr	C/Cr	C/Cr	C/Cr
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4404	1.4404	1.4404	1.4404
Pump housing	PUR	PUR	PUR	PUR
Pump shaft	1.4404	1.4404	1.4404	1.4404

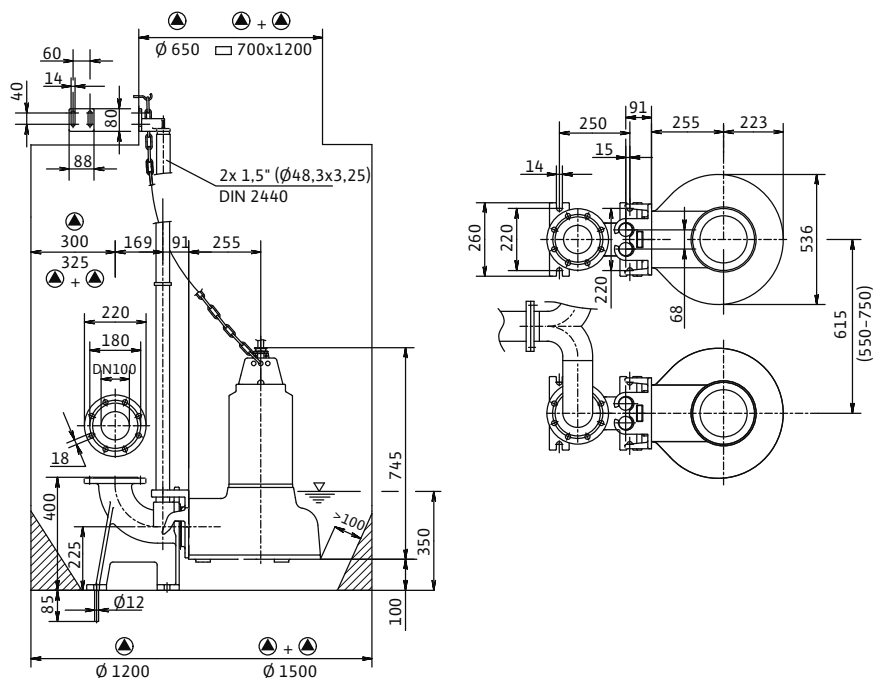
$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

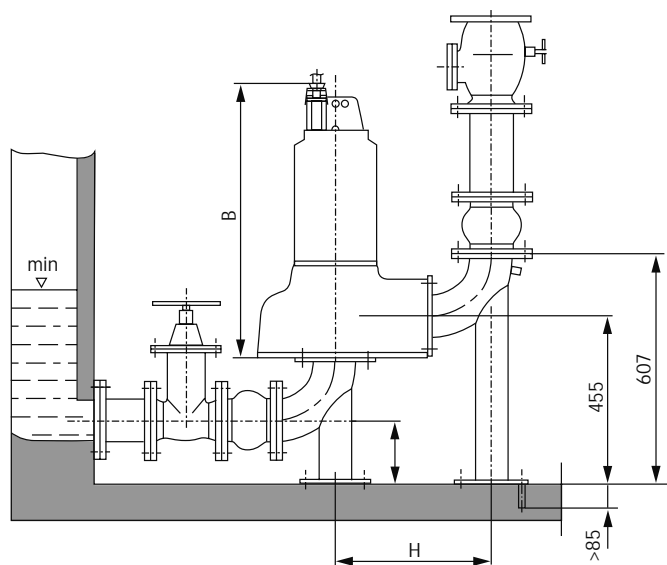
## Submersible sewage pumps

### Dimensions Wilo-Drain TP 100

#### Dimension drawing Wilo-Drain TP 100 – stationary wet well installation

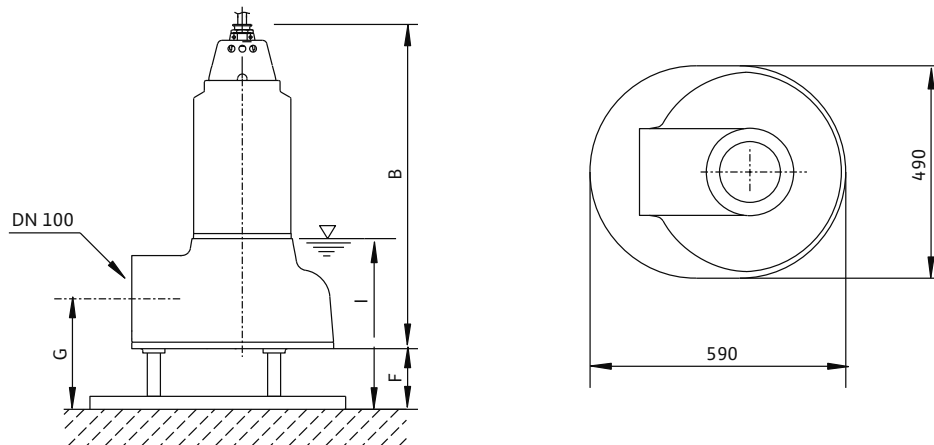


#### Dimension drawing Wilo-Drain TP 100 – stationary dry well installation



## Dimensions Wilo-Drain TP 100

### Dimension drawing Wilo-Drain TP 100 – portable wet well installation

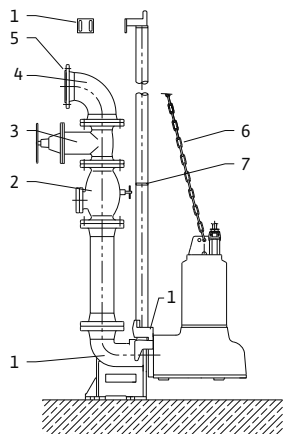


Dimensions					
Wilo-Drain...	Dimensions				
	B	F	G	H	I
	mm				
TP 100E160/17	725	135	250	380	355
TP 100E180/26	725	135	250	380	355
TP 100E210/32	725	135	250	380	355
TP 100E230/38	725	135	250	380	355
TP 100E190/39	745	140	255	408	365
TP 100E210/52	745	140	255	408	365
TP 100E230/70	745	140	255	408	365
TP 100E250/84	745	140	255	408	365

# Dewatering

## Submersible sewage pumps

### Mechanical accessories Wilo-Drain TP 100



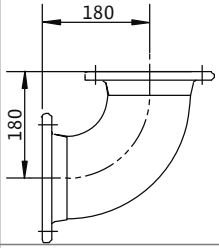
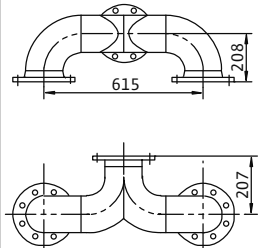
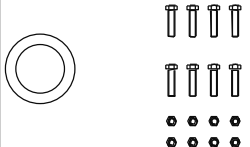
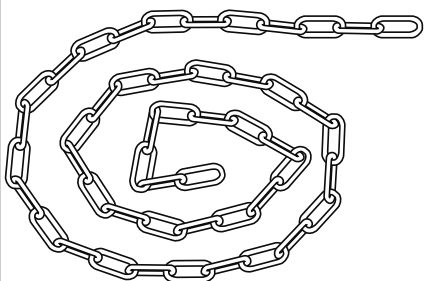
- |   |                      |
|---|----------------------|
| 1 | Suspension unit      |
| 2 | Non-return valve     |
| 3 | Gate valve           |
| 4 | Pipe bend            |
| 5 | Mounting accessories |
| 6 | Chain                |
| 7 | Pipe connector       |

#### Stationary wet well installation DN 100

		Description	Art no.
<b>Suspension unit DN 100</b>		Made of EN-GJL-250, painted, with free passage in DN 100, foot elbow incl. pump bracket, profile joint, installation and floor fixation accessories and guide pipe bracket Ø 1½" without guide pipes. Connection on pressure side DN 100. Flanges PN 10/16 in accordance with DIN 2501. The double pipe feed Ø 1½" is to be provided by the customer.	2029040
<b>Suspension unit DN 100, including cable guide</b>		Made of stainless steel (AISI 304), with free passage in DN 100, foot elbow including pump holder, profile joint, installation and floor fixation accessories and 10 m stainless steel cable guide for 5 m installation depth. Connection on pressure side DN 100. Flanges PN 10/16 in accordance with DIN 2501.	2004667
<b>Non-return valve</b>		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 100 connection	2017169
<b>Gate valve</b>		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 100	2017163

## Mechanical accessories Wilo-Drain TP 100

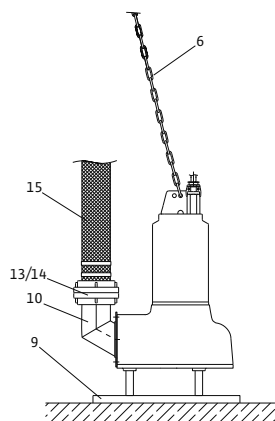
### Stationary wet well installation DN 100

		Description	Art no.
Pipe bend 90°		Made of spheroidal cast iron 400-15, with 2 flanges, including 1 set of mounting accessories, PN 10/16 flange, DIN 28637, for DN 100 connection	2004669
Y-piece DN 100		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 100/100/100 connection	2017180
Mounting accessories DN 100		For a DN 80 flange connection, with 8 screws, 8 nuts and 1 flat gasket for PN 10/16 flange, DIN 2503	2017176
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Dewatering

## Submersible sewage pumps

### Mechanical accessories Wilo-Drain TP 100

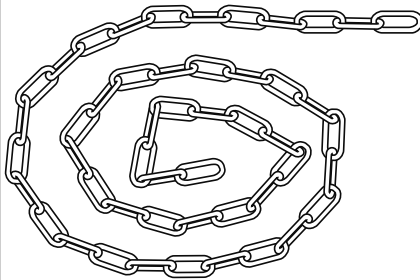


- 6 Chain
- 9 Floor supporting foot
- 10 Pipe bend
- 13 Storz pipe coupling
- 14 Storz hose coupling
- 15 Pressure hose

Portable wet well installation with hose connection			
		Description	Art no.
Floor supporting foot TP 80/100		Made of stainless steel (AISI 304), comprising 3 support feet, 1 baseplate and fixation material	2004672
Pipe bend 90°		Made of stainless steel, with hose nozzle (Ø 110 mm) and G 4 male thread for direct hose connection or installation with Storz A fixed coupling, flange on pump side, incl. 1 set of mounting accessories for DN 100 connection. Variable set-up possible with 45° hole pitch.	2017184
Storz A pipe coupling with female thread G 4		Made of aluminium, Storz A connection, with G 4 female thread, tappet clearance 133 mm for a DN 100 connection	2016161
Storz hose coupling		Made of aluminium, Storz A connection, with hose nozzle (Ø 110 mm), tappet clearance 133 mm, incl. hose clip	2004675
Pressure hose		Synthetic, inner Ø 110 mm, PN 8, length 10 m, incl. 2 hose clips for direct hose connection via hose nozzle (Ø 110 mm) or a Storz A hose coupling	2017196
		Synthetic, inner Ø 110 mm, PN 8, length 20 m, incl. 2 hose clips for direct hose connection via hose nozzle (Ø 110 mm) or a Storz A hose coupling	2017197
		Synthetic, inner Ø 110 mm, PN 8, length 30 m, incl. 2 hose clamps for direct hose connection via hose nozzle Ø 110 mm or a Storz A hose coupling	2017198

## Mechanical accessories Wilo-Drain TP 100

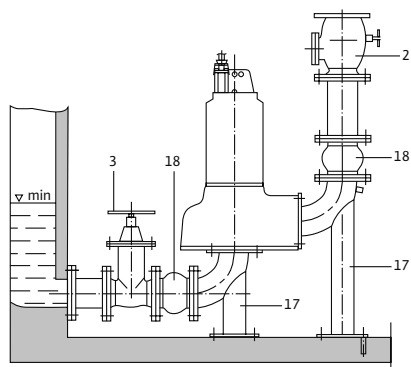
### Portable wet well installation with hose connection

		Description	Art no.
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Dewatering

## Submersible sewage pumps

### Mechanical accessories Wilo-Drain TP 100



- 2 Non-return valve
- 3 Gate valve
- 17 Installation kit
- 18 Compensator

#### Stationary vertical dry well installation DN 100

		Description	Art no.
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 100 connection	2017169
Gate valve		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 100	2017163
Installation kit TP 100		Made of stainless steel (AISI 304), consisting of 2 pipe elbows with support (pressure and intake side), each with 2 flanges for DN 100 connection, incl. installation and floor fixation accessories	2026541
Compensator DN 100		Made of steel, galvanized / neoprene incl. mounting accessories, length 135 mm, PN 10/16 flange for DN 100 connection	2017190
Y-piece DN 100		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 100/100/100 connection	2017180



### Series description Wilo-Rexa FIT



#### Design

Submersible sewage pump for intermittent operation with cast iron hydraulics and stainless steel motor

#### Type key

Example: **Wilo-Rexa FIT V06DA-110/EAD1-2-T0015-540-A**

<b>FIT</b>	Series name
<b>V</b>	Vortex impeller
<b>06</b>	Nominal diameter of pressure connection e.g. DN 65
<b>D</b>	Hydraulics drilled on the suction side in accordance with DIN drilled
<b>A</b>	Material version, hydraulics A = standard version
<b>110</b>	Hydraulics intended use
<b>E</b>	dry motor
<b>A</b>	Material version, motor A = standard version
<b>D</b>	Seal with two independent mechanical shaft seals
<b>1</b>	IE efficiency class, e.g. 1 = IE1 (derived from IEC 60034-30)
<b>-</b>	not Ex-rated
<b>2</b>	Number of poles
<b>T</b>	Mains connection version: M = 1~ T = 3~
<b>0015</b>	Value/10 = motor power $P_2$ in kW
<b>5</b>	Frequency (5 = 50 Hz, 6 = 60 Hz)
<b>40</b>	Key for rated voltage
<b>A</b>	Additional electrical equipment: O = with bare cable end, P = with plug A = with float switch and plug

#### Application

For pumping in intermittent operation of:

- Waste water and sewage
- Waste water containing faeces
- Sludges up to maximum 8% dry matter (depending on the selected hydraulics)

out of sumps and vessels as well as to domestic and site drainage in accordance with EN 12050 (observing regional-specific regulations and instructions).

#### Special features/product advantages

- Submersible
- Vortex impeller non-susceptible to clogging
- Seal by two mechanical shaft seals
- Optional external sealing chamber control for the oil barrier chamber
- Very smooth operation
- Easy installation due to suspension unit or pump base

#### Technical data

- Mains connection: 1-230 V, 50 Hz or 3-400 V, 50 Hz
- Immersed operating mode: S1
- Non-immersed operating mode: S2-15 min; S3 10%
- Protection class: IP 68
- Insulation class: F
- Fluid temperature: 3 - 40°C, max. 60°C for 3 min
- Free passage: 50 / 65 / 80 mm
- Max. immersion depth: 20 m
- Cable length: 10 m

#### Equipment/function

- Winding temperature monitoring with bimetal sensor
- Optional external sealing chamber control for the oil barrier chamber

#### Materials

- Motor housing: 1.4301
- Hydraulic housing: EN-GJL250
- Impeller: EN-GJL250
- Static seals: NBR
- Sealing on pump side: SiC/SiC
- Sealing on motor side: C/MgSiO<sub>4</sub>
- Shaft end: Stainless steel 1.4021

#### Description/design

Submersible sewage pump as submersible monobloc unit for stationary and portable wet well installation in intermittent operation.

#### Hydraulics

The outlet on the pressure side is designed as horizontal flange connection. The maximum possible dry matter is 8 % (depending on the hydraulics) Vortex impellers are used as the impeller shape.

# Dewatering

## Submersible sewage pumps

### Series description Wilo-Rexa FIT

#### Motor

The motors available are glanded motors in single-phase version (with built-in operation capacitor) and three-phase version for the direct starting. The waste heat is given off directly to the surrounding fluid via the motor housing. These motors can operate immersed in permanent operation (S1) and non-immersed in short-term operation (S2) or intermittent operation (S3).

Furthermore the motors are equipped with thermal motor monitoring. This protects the motor windings against overheating. For units with single-phase AC motors this is built-in and switches automatically. I.e. if the motor is switched off due to overheating and then cools down it is automatically switched on again. Bimetal sensors are used as standard for this.

In addition the motor can be equipped with an external sealing chamber electrode for monitoring the oil barrier chamber. This signals if there is water ingress into the oil barrier chamber through the mechanical seal on the fluid side.

The connecting cable has a length of 10 m as standard and is available in following versions:

- With bare cable ends
- With plug
- With float switch and plug

#### Seal

There is an oil barrier chamber between the motor and hydraulics. This is filled with medicinal white oil. The fluid-side and motor-side seals are provided by two mechanical seals which rotate independently of each other.

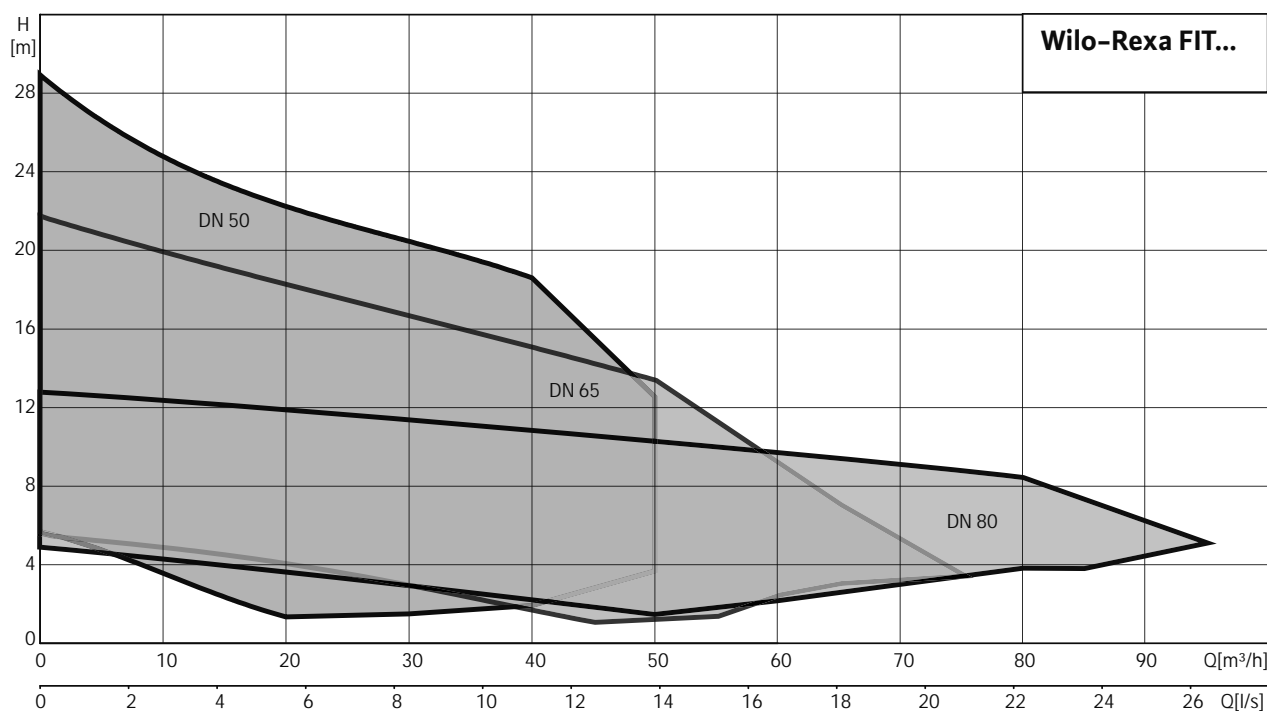
#### Scope of delivery

- Submersible sewage pump with 10 m cable
- Cable version depending on the variant:
  - With bare cable ends
  - With plug
  - With float switch and plug
- Operating and maintenance manual

#### Accessories

- Suspension unit or pump base
- External sealing chamber monitoring for monitoring the oil barrier chamber
- Chains
- Switchgears, relays and plugs
- Fixation sets with anchor bolts

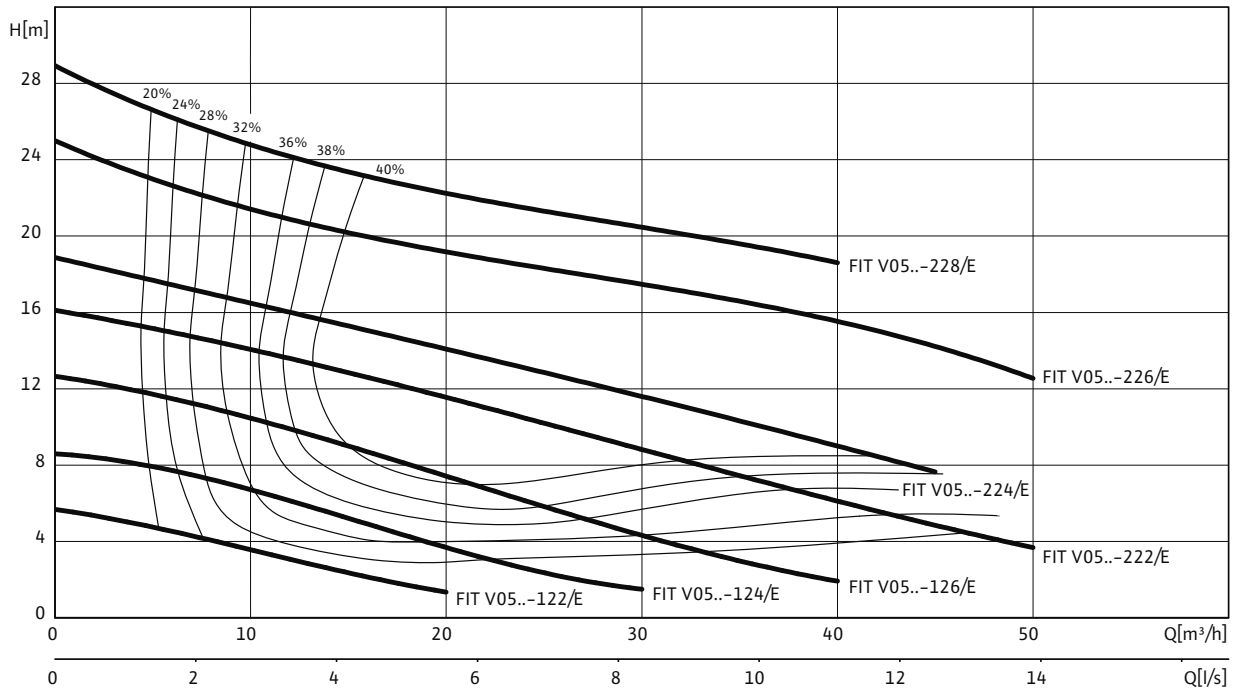
#### Pump curves



## Pump curves, ordering information Wilo-Rexa FIT V05

### Pump curves Wilo-Rexa FIT V05.. – 50 Hz – 2900 rpm

Vortex impeller – Free ball passage: 50 mm



Characteristic curves acc. to ISO 9906, Appendix A. The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Pump type	Nominal motor power	Float switch	Mains plug	Weight approx.	Art no.		Art no.	
					1~230 V, 50 Hz		3~400 V, 50 Hz	
	$P_2$			$m$				
	kW			kg				
FIT V05DA-122/E...-O	1.1	—	—	38.6	—	—	6064579	L
FIT V05DA-122/E...-A	1.1	•	•	38.6	6064576	L	6064577	L
FIT V05DA-124/E...-O	1.1	—	—	38.7	—	—	6064583	L
FIT V05DA-124/E...-A	1.1	•	•	38.7	6064580	L	6064581	L
FIT V05DA-126/E...-O	1.5	—	—	38.7	—	—	6064587	L
FIT V05DA-126/E...-A	1.5	•	•	38.7	6064584	L	6064585	L
FIT V05DA-222/E...-O	2.5	—	—	41.1	—	—	6064589	L
FIT V05DA-222/E...-A	2.5	•	•	41.1	—	—	6064588	L
FIT V05DA-224/E...-O	2.5	—	—	41.1	—	—	6064591	L
FIT V05DA-224/E...-A	2.5	•	•	41.1	—	—	6064590	L
FIT V05DA-226/E...-O	3.9	—	—	46.2	—	—	6064593	L
FIT V05DA-226/E...-A	3.9	•	•	46.2	—	—	6064592	L
FIT V05DA-228/E...-O	3.9	—	—	46.2	—	—	6064595	L
FIT V05DA-228/E...-A	3.9	•	•	46.2	—	—	6064594	L
FIT V05DA-122/E...-P	1.1	—	•	37.7	6064578	L	—	—
FIT V05DA-124/E...-P	1.1	—	•	37.8	6064582	L	—	—
FIT V05DA-126/E...-P	1.5	—	•	37.8	6064586	L	—	—

• = available, — = not available

$P_1$  refers to the maximum power consumption. All data are applicable to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm³.

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-Rexa FIT V05

	FIT V05DA-122/E	FIT V05DA-122/E	FIT V05DA-124/E	FIT V05DA-124/E	FIT V05DA-126/E	FIT V05DA-126/E
	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>						
Pressure connection	DN 50/Rp 2	DN 50/Rp 2	DN 50/Rp 2	DN 50/Rp 2	DN 50/Rp 2	DN 50/Rp 2
Free ball passage mm	50	50	50	50	50	50
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	20	20	30	30	40	40
Max. delivery head $H_{max}$ / m	5.7	5.7	8.6	8.6	12.7	12.7
Operating mode (immersed)	S1	S1	S1	S1	S1	S1
Operating mode (non-immersed)	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%
Max. immersion depth m	20	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>						
Nominal current $I_N$ / A	7.2	2.55	7.2	2.55	9.3	3.3
Starting current - direct $I_A$ / A	29	20	29	20	29	20
Nominal motor power $P_2$ / kW	1.1	1.1	1.1	1.1	1.5	1.5
Power consumption $P_1$ / kW	1.6	1.5	1.6	1.5	2.1	2
Activation type	Direct	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2899	2898	2899	2898	2852	2858
Insulation class	F	F	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20	20	20
Max. switching frequency 1/h	50	50	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10	±10	±10
<b>Cable</b>						
Length of connecting cable m	10	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	3G1	6G1	3G1	6G1	3G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>						
Motor protection	WSK	WSK	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—	—	—
<b>Materials</b>						
Static seal	NBR	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Car-bon/steatite	Car-bon/steatite	Car-bon/steatite	Car-bon/steatite	Car-bon/steatite	Car-bon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301	1.4301	1.4301
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021	1.4021

• = available, - = not available

$P_1$  refers to the maximum power consumption. All data are applicable to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Technical data Wilo-Rexa FIT V05

	FIT V05DA-222/E	FIT V05DA-224/E	FIT V05DA-226/E	FIT V05DA-228/E
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 50/Rp 2	DN 50/Rp 2	DN 50/Rp 2	DN 50/Rp 2
Free ball passage mm	50	50	50	50
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	50	50	50	40
Max. delivery head $H_{max}$ / m	16	18.6	24.2	28
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%
Max. immersion depth m	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>				
Nominal current $I_N$ / A	5.2	5.2	7.8	7.8
Starting current - direct $I_A$ / A	31	31	66	66
Nominal motor power $P_2$ / kW	2.5	2.5	3.9	3.9
Power consumption $P_1$ / kW	3.2	3.2	4.8	4.8
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2840	2840	2861	2861
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	6G1	6G1	6G1,5	6G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>				
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021

• = available, - = not available

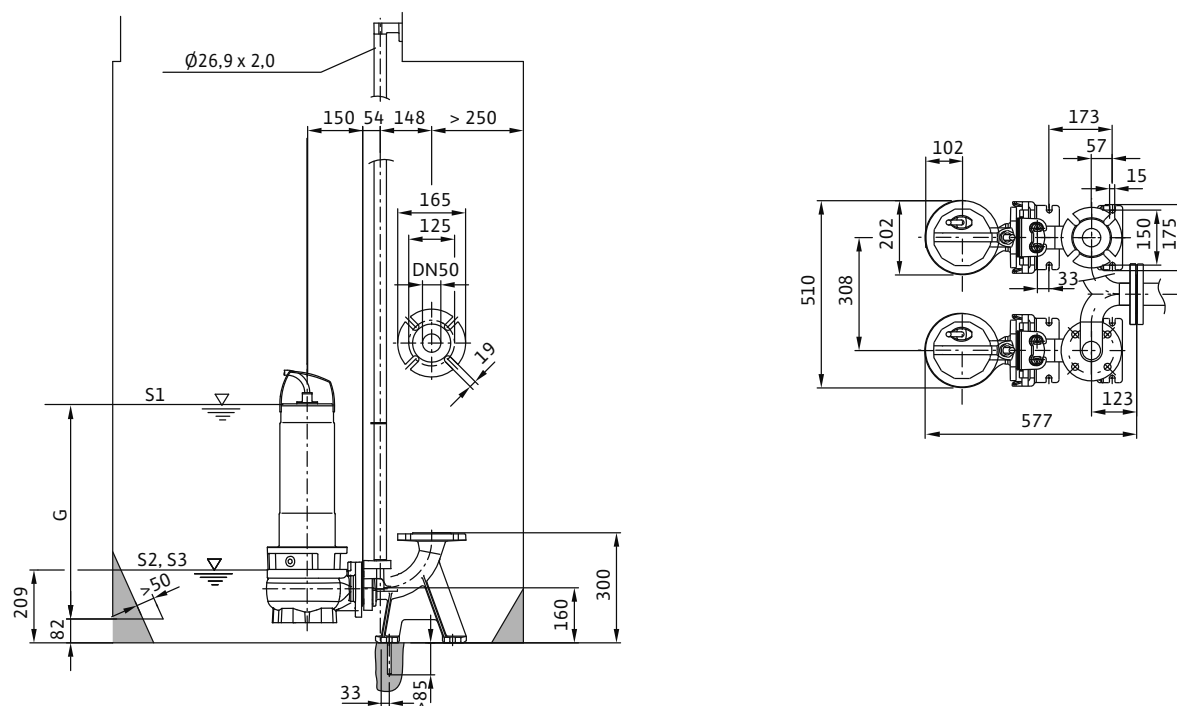
$P_1$  refers to the maximum power consumption. All data are applicable to 1–230 V or 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

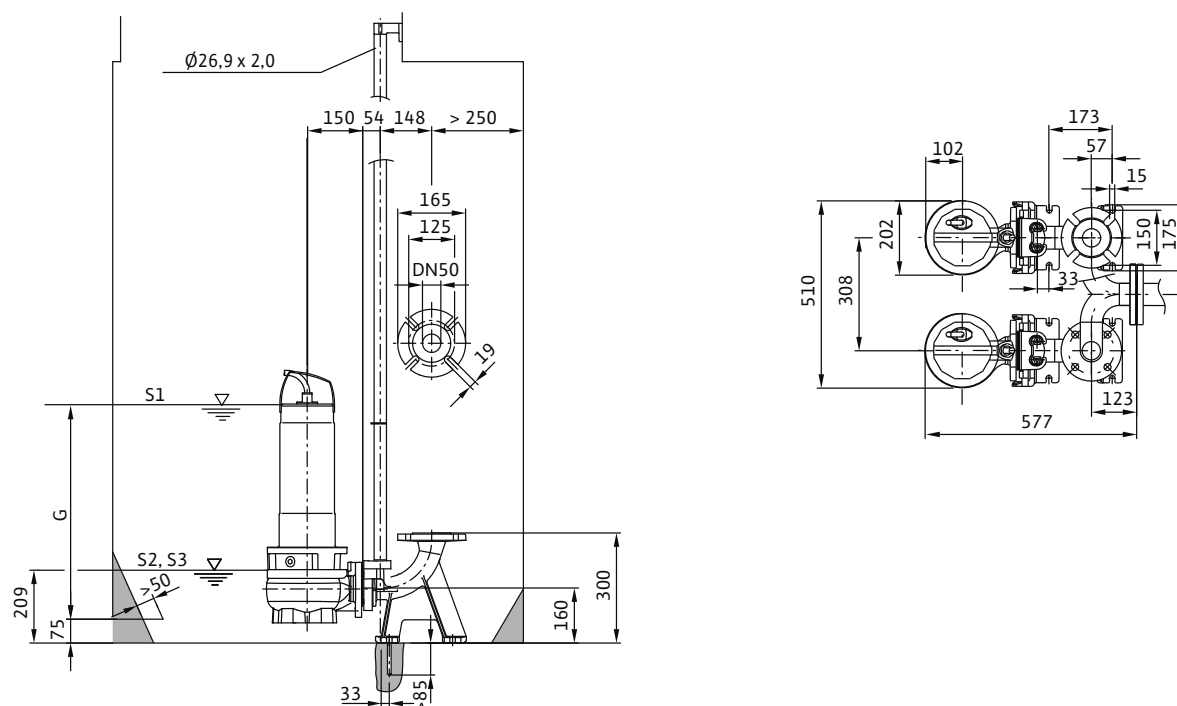
## Submersible sewage pumps

### Dimensions, weights Wilo-Rexa FIT

#### Dimension drawing Wilo-Rexa FIT V05-12.. – Stationary wet well installation

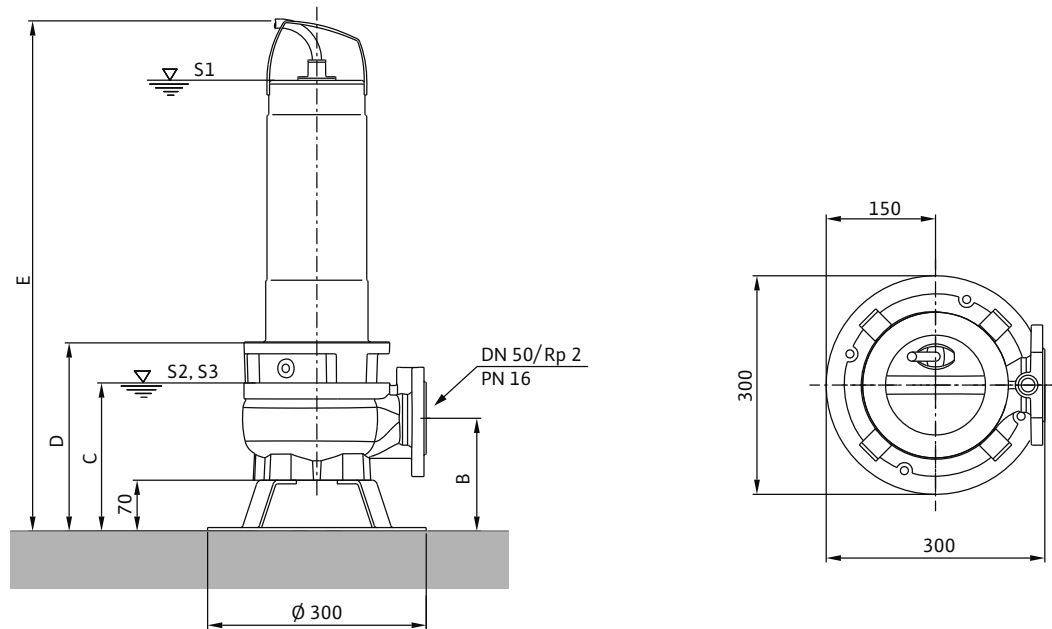


#### Dimension drawing Wilo-Rexa FIT V05-22.. – Stationary wet well installation



## Dimensions, weights Wilo-Rexa FIT

### Dimension drawing Wilo-Rexa FIT V05 – transportable wet well installation



#### Dimensions, weights

Wilo-Rexa...	Dimensions				
	B	C	D	E	G
	mm				
<b>FIT V05DA-122/E</b>	148	196	251	608	457
<b>FIT V05DA-124/E</b>	148	196	251	608	457
<b>FIT V05DA-126/E</b>	148	196	251	608	457
<b>FIT V05DA-222/E</b>	155	203	258	700	549
<b>FIT V05DA-224/E</b>	155	203	258	700	549
<b>FIT V05DA-226/E</b>	155	203	258	700	549
<b>FIT V05DA-228/E</b>	155	203	258	700	549

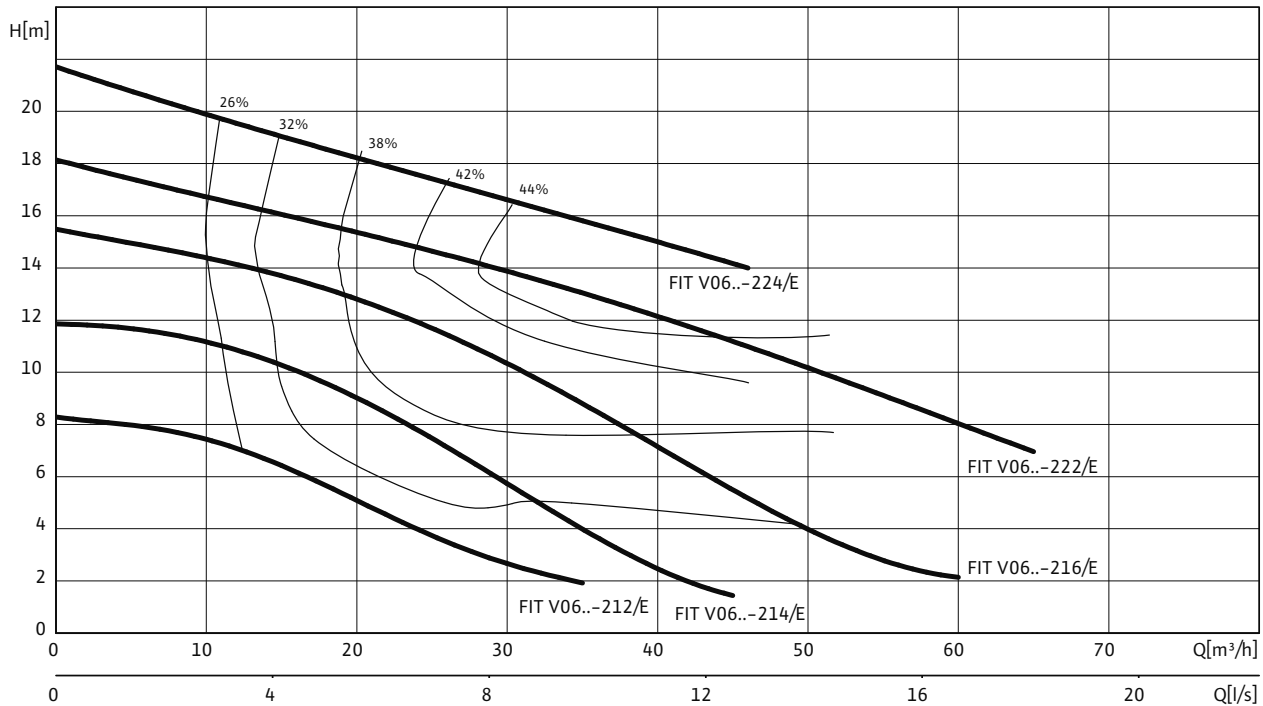
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-Rexa FIT V06

#### Pump curves Wilo-Rexa FIT V06.. – 50 Hz – 2900 rpm

Vortex impeller – Free ball passage: 65 mm



Characteristic curves acc. to ISO 9906, Appendix A. The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Pump type	Nominal motor power	Float switch	Mains plug	Weight approx.	Art no.		Art no.	
					1~230 V, 50 Hz		3~400 V, 50 Hz	
	$P_2$			$m$				
	kW			kg				
FIT V06DA-212/E...-O	1.1	—	—	39.5	—	—	6064599	L
FIT V06DA-212/E...-A	1.1	•	•	38.6	6064596	L	6064597	L
FIT V06DA-214/E...-O	1.5	—	—	39.6	—	—	6064703	L
FIT V06DA-214/E...-A	1.5	•	•	38.7	6064700	L	6064701	L
FIT V06DA-216/E...-A	2.5	•	•	40.7	—	—	6064704	L
FIT V06DA-216/E...-O	2.5	—	—	40.7	—	—	6064705	L
FIT V06DA-222/E...-O	3.9	—	—	45.5	—	—	6064707	L
FIT V06DA-222/E...-A	3.9	•	•	45.5	—	—	6064706	L
FIT V06DA-224/E...-O	3.9	—	—	45.5	—	—	6064709	L
FIT V06DA-224/E...-A	3.9	•	•	45.5	—	—	6064708	L
FIT V06DA-212/E...-P	1.1	—	•	39.5	6064598	L	—	—
FIT V06DA-214/E...-P	1.5	—	•	39.6	6064702	L	—	—

• = available, — = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.



## Technical data Wilo-Rexa FIT V06

	FIT V06DA-212/E	FIT V06DA-212/E	FIT V06DA-214/E	FIT V06DA-214/E	FIT V06DA-216/E
	1~230 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>					
Pressure connection	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80
Free ball passage mm	65	65	65	65	65
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	35	35	45	45	60
Max. delivery head $H_{max}$ / m	8.3	8.3	11.9	11.9	15.6
Operating mode (immersed)	S1	S1	S1	S1	S1
Operating mode (non-immersed)	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%
Max. immersion depth m	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>					
Nominal current $I_N$ / A	7.2	2.55	3.3	9.3	5.2
Starting current - direct $I_A$ / A	29	20	20	29	31
Nominal motor power $P_2$ / kW	1.1	1.1	1.5	1.5	2.5
Power consumption $P_1$ / kW	1.6	1.5	2	2.1	3.2
Activation type	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2899	2898	2858	2852	2840
Insulation class	F	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20	20
Max. switching frequency 1/h	50	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10	±10
<b>Cable</b>					
Length of connecting cable m	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	3G1	6G1	6G1	3G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>					
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—	—
<b>Materials</b>					
Static seal	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301	1.4301
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021

• = available, - = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-Rexa FIT V06

	FIT V06DA-222/E	FIT V06DA-224/E
	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>		
Pressure connection	DN 65/DN 80	DN 65/DN 80
Free ball passage mm	65	65
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	65	50
Max. delivery head $H_{max}$ / m	18.1	21.6
Operating mode (immersed)	S1	S1
Operating mode (non-immersed)	S2-15 min S3-10%	S2-15 min S3-10%
Max. immersion depth m	20	20
Protection class	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40
<b>Motor data</b>		
Nominal current $I_N$ / A	7.8	7.8
Starting current - direct $I_A$ / A	66	66
Nominal motor power $P_2$ / kW	3.9	3.9
Power consumption $P_1$ / kW	4.8	4.8
Activation type	Direct	Direct
Nominal speed $n$ / rpm	2861	2861
Insulation class	F	F
Recommended switching frequency 1/h	20	20
Max. switching frequency 1/h	50	50
Permitted voltage tolerance %	±10	±10
<b>Cable</b>		
Length of connecting cable m	10	10
Cable type	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	6G1,5	6G1,5
Type of connecting cable	Detachable	Detachable
<b>Equipment/function</b>		
Motor protection	WSK	WSK
Explosion protection	—	—
<b>Materials</b>		
Static seal	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301
Pump housing	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021

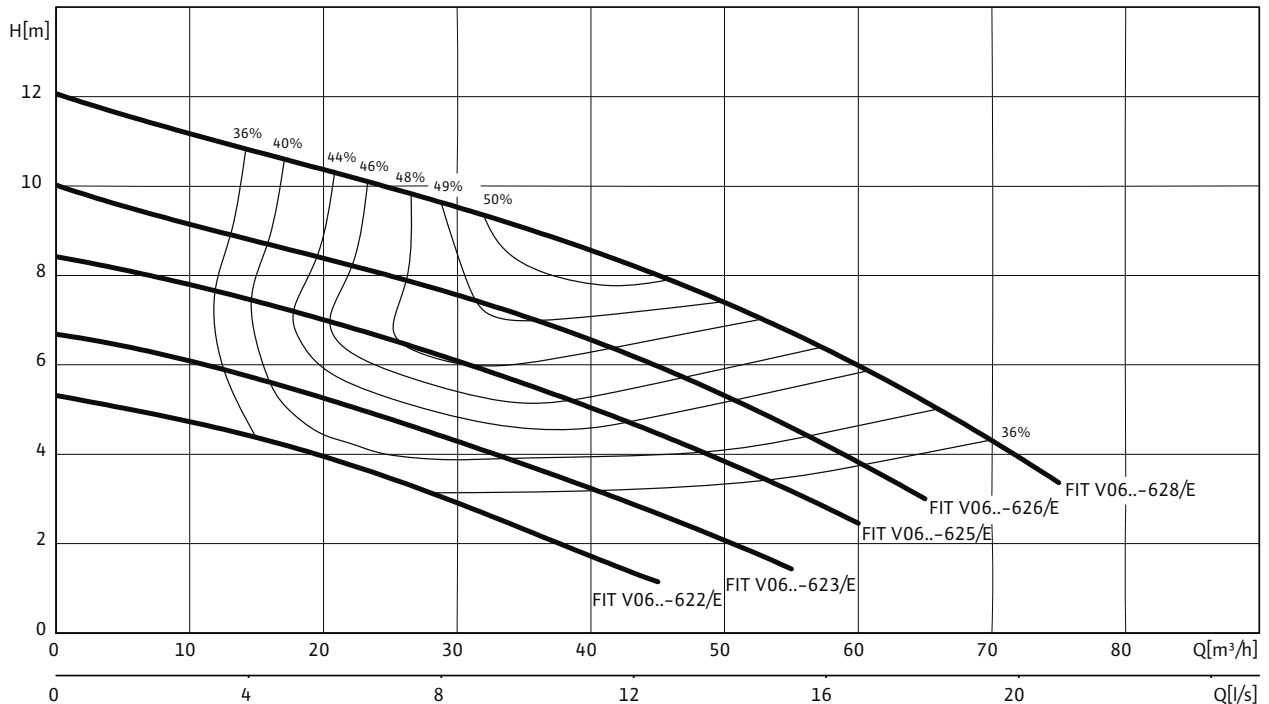
• = available, - = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Pump curves, ordering information Wilo-Rexa FIT V06

### Pump curves Wilo-Rexa FIT V06.. – 50 Hz – 1450 rpm

Vortex impeller – Free ball passage: 65 mm



Characteristic curves acc. to ISO 9906, Appendix A. The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Pump type	Nominal motor power	Float switch	Mains plug	Weight approx.	Art no.		Art no.	
					1~230 V, 50 Hz		3~400 V, 50 Hz	
	$P_2$			$m$				
	kW			kg				
FIT V06DA-622/E...-O	1.1	—	—	51.1	—	—	6064711	L
FIT V06DA-622/E...-P	1.1	—	•	51	6064710	L	—	—
FIT V06DA-623/E...-O	1.5	—	—	51.1	—	—	6064713	L
FIT V06DA-623/E...-P	1.5	—	•	51	6064712	L	—	—
FIT V06DA-625/E...-O	1.5	—	—	51.3	—	—	6064715	L
FIT V06DA-625/E...-P	1.5	—	•	51	6064714	L	—	—
FIT V06DA-626/E...-O	2.5	—	—	53.4	—	—	6064716	L
FIT V06DA-628/E...-O	2.5	—	—	53.5	—	—	6064717	L

• = available, — = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm³.

# Dewatering

## Submersible sewage pumps

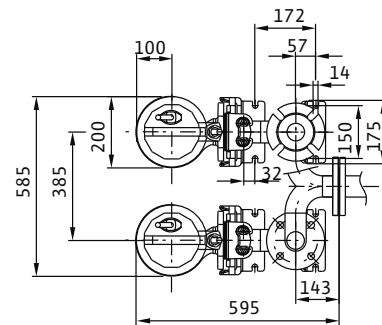
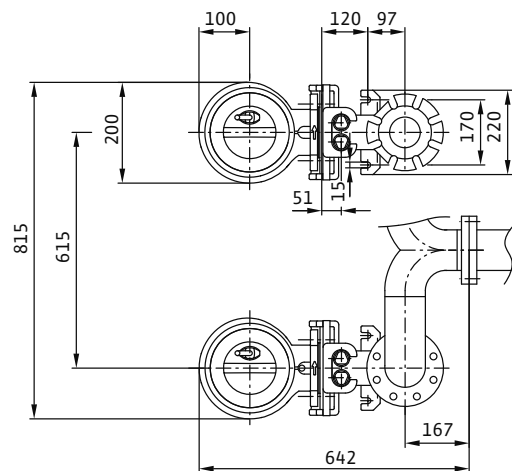
### Technical data Wilo-Rexa FIT V06

	FIT V06DA-622/E	FIT V06DA-623/E	FIT V06DA-625/E	FIT V06DA-626/E	FIT V06DA-628/E
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>					
Pressure connection	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80
Free ball passage mm	65	65	65	65	65
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	45	55	60	65	75
Max. delivery head $H_{max}$ / m	5.3	6.7	8.4	10	12
Operating mode (immersed)	S1	S1	S1	S1	S1
Operating mode (non-immersed)	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%
Max. immersion depth m	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>					
Nominal current $I_N$ / A	3.05	3.7	3.7	5.8	5.8
Starting current - direct $I_A$ / A	24.5	24.5	24.5	35.5	35.5
Nominal motor power $P_2$ / kW	1.1	1.5	1.5	2.5	2.5
Power consumption $P_1$ / kW	1.5	2	2	3.3	3.3
Activation type	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	1436	1413	1413	1402	1402
Insulation class	F	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20	20
Max. switching frequency 1/h	50	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10	±10
<b>Cable</b>					
Length of connecting cable m	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	6G1	6G1	6G1	6G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>					
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—	—
<b>Materials</b>					
Static seal	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301	1.4301
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021

• = available, — = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

### Dimension drawing Wilo-Rexa FIT V06-2.. - Stationary wet well installation for DN 65

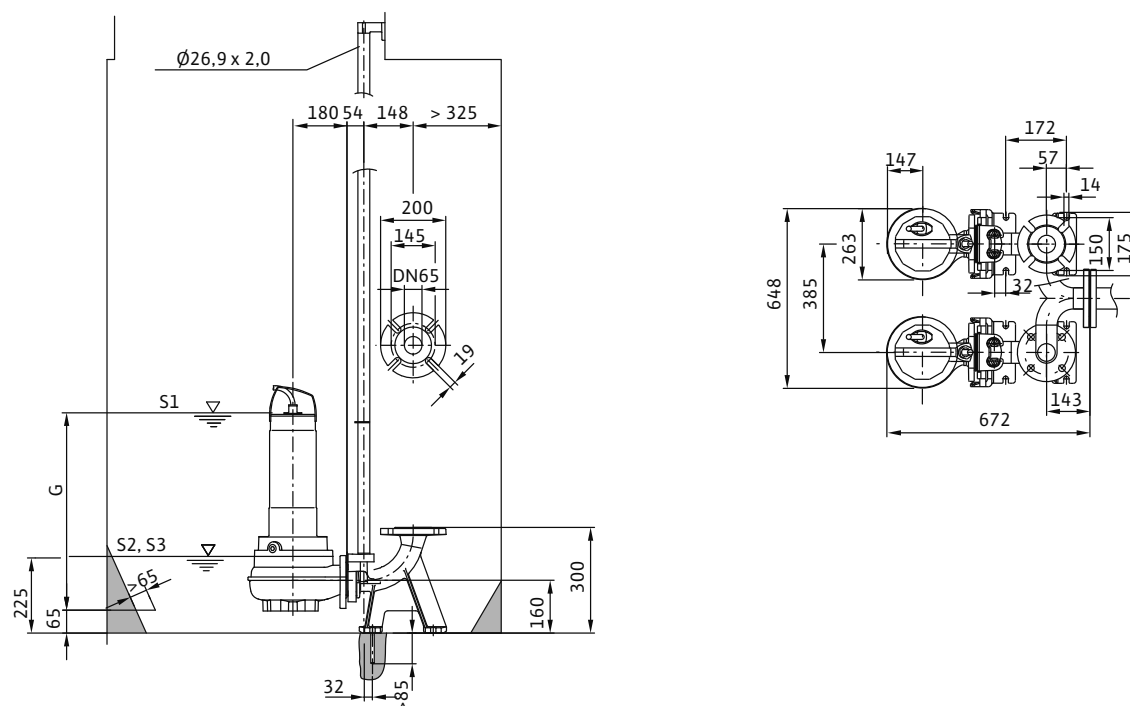
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# Dewatering

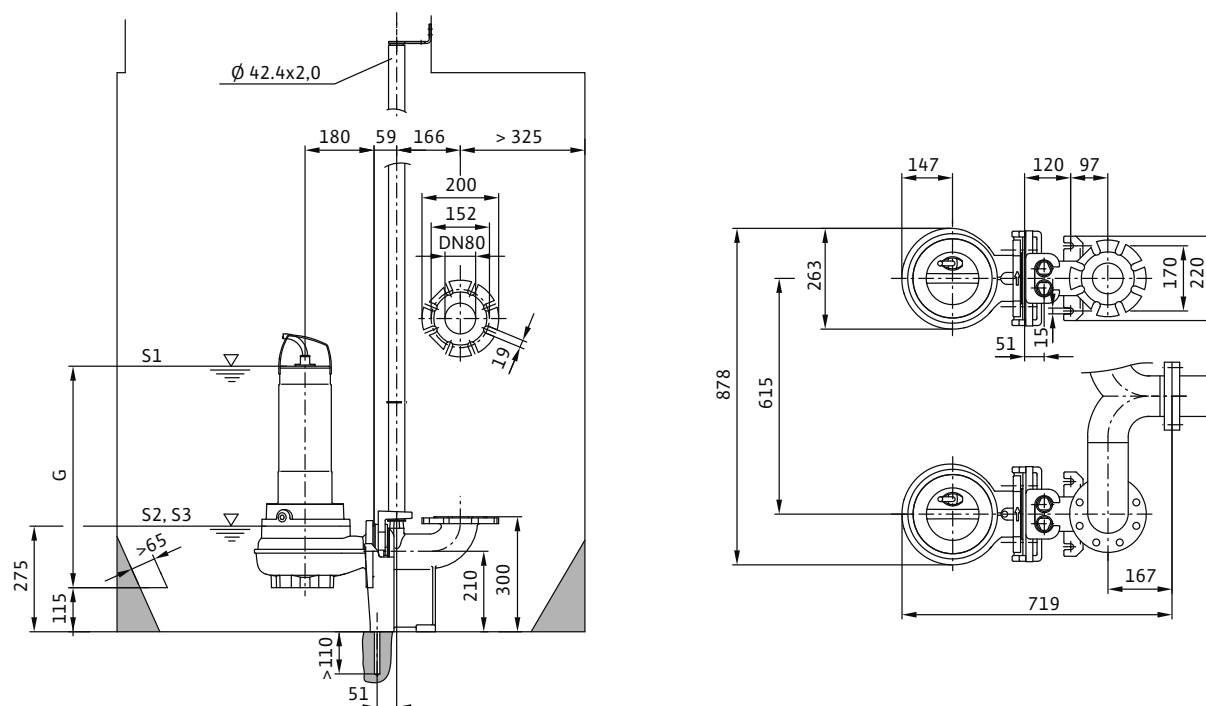
## Submersible sewage pumps

### Dimensions, weights Wilo-Rexa FIT

#### Dimension drawing Wilo-Rexa FIT V06-6.. – Stationary wet well installation for DN 65

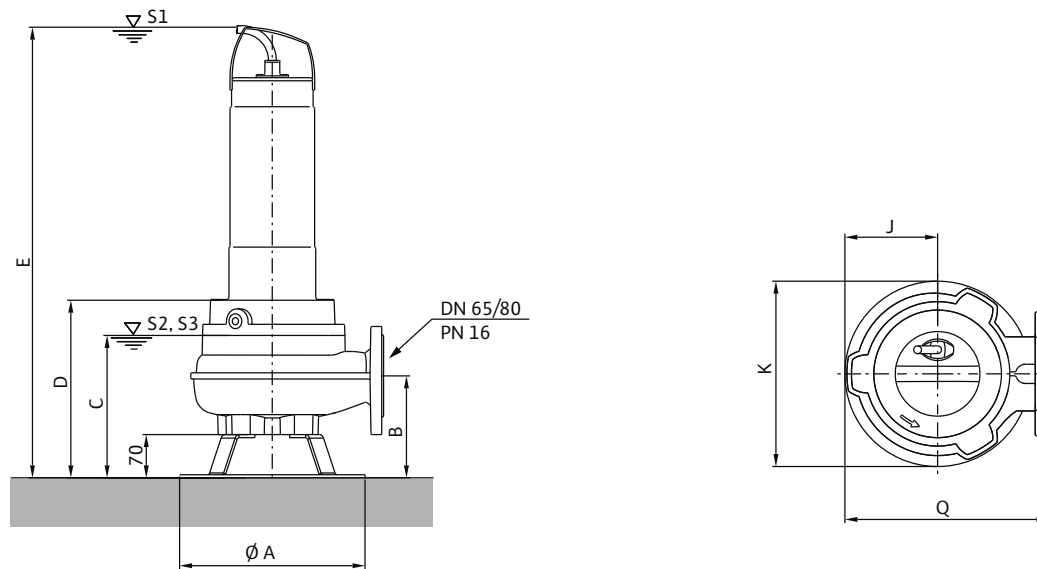


#### Dimension drawing Wilo-Rexa FIT V06-6.. – Stationary wet well installation for DN 80



## Dimensions, weights Wilo-Rexa FIT

### Dimension drawing Wilo-Rexa FIT V06 – transportable wet well installation



#### Dimensions, weights

Wilo-Rexa...	Dimensions							
	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>G</i>	<i>J</i>	<i>K</i>	<i>Q</i>
	mm							
<b>FIT V06DA-212/E</b>	155	211	266	623	471	100	200	250
<b>FIT V06DA-214/E</b>	155	211	266	623	471	100	200	250
<b>FIT V06DA-216/E</b>	155	211	266	708	556	100	200	250
<b>FIT V06DA-222/E</b>	155	211	266	708	556	100	200	250
<b>FIT V06DA-224/E</b>	155	211	266	708	556	100	200	250
<b>FIT V06DA-622/E</b>	165	230	287	729	578	147	263	327
<b>FIT V06DA-623/E</b>	165	230	287	729	578	147	263	327
<b>FIT V06DA-625/E</b>	165	230	287	729	578	147	263	327
<b>FIT V06DA-626/E</b>	165	230	287	729	578	147	263	327
<b>FIT V06DA-628/E</b>	165	230	287	729	578	147	263	327

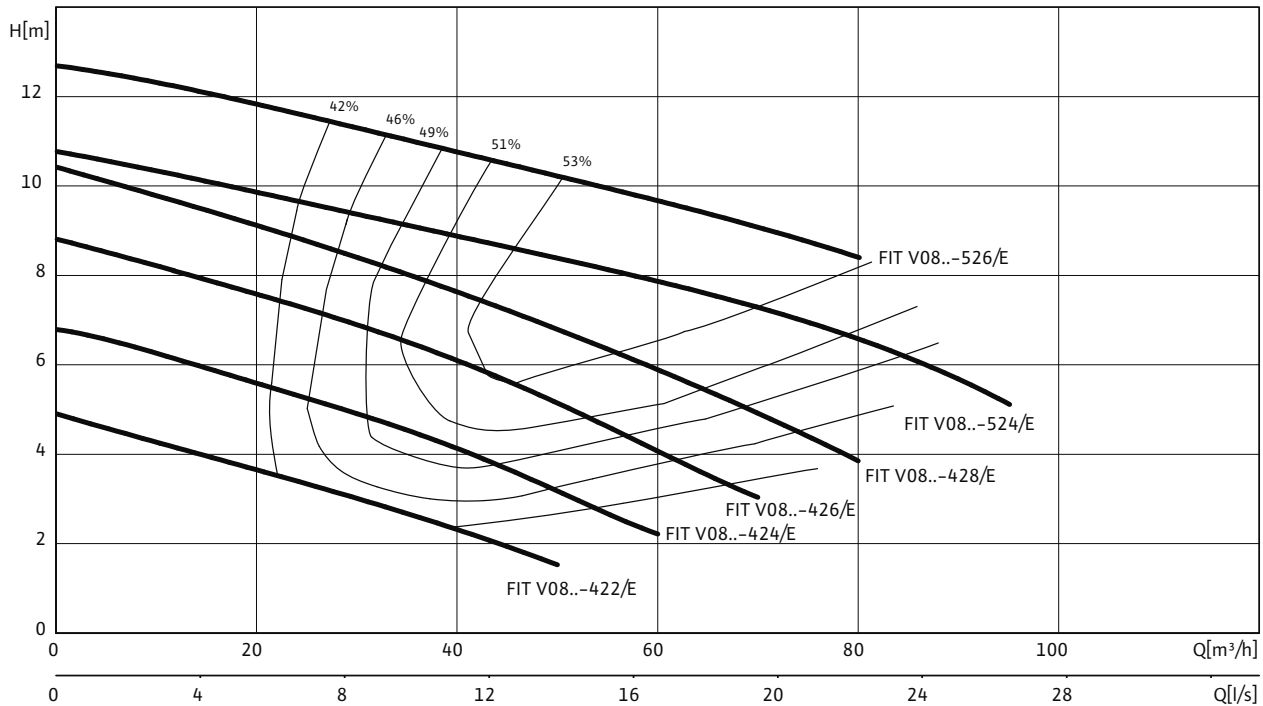
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-Rexa FIT V08

#### Pump curves Wilo-Rexa FIT V08.. – 50 Hz – 1450 rpm

Vortex impeller – Free ball passage: 80 mm



Characteristic curves acc. to ISO 9906, Appendix A. The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Pump type	Nominal motor power	Float switch	Mains plug	Weight approx.	Art no.		Art no.	
					1~230 V, 50 Hz		3~400 V, 50 Hz	
	$P_2$			$m$				
	kW			kg				
FIT V08DA-422/E...-A	1.1	•	•	58	6065917	L	6065918	L
FIT V08DA-422/E...-O	1.1	—	—	58	—	—	6065920	L
FIT V08DA-422/E...-P	1.1	—	•	58	6065919	L	—	—
FIT V08DA-424/E...-A	1.1	•	•	59	6065921	L	6065922	L
FIT V08DA-424/E...-O	1.1	—	—	59	—	—	6065924	L
FIT V08DA-424/E...-P	1.1	—	•	59	6065923	L	—	—
FIT V08DA-426/E...-A	1.5	•	•	59	6065925	L	6065926	L
FIT V08DA-426/E...-O	1.5	—	—	59	—	—	6065928	L
FIT V08DA-426/E...-P	1.5	—	•	59	6065927	L	—	—
FIT V08DA-428/E...-O	2.5	—	—	61	—	—	6065929	L
FIT V08DA-524/E...-O	3.5	—	—	65	—	—	6065931	L
FIT V08DA-526/E...-O	3.5	—	—	65	—	—	6065932	L

• = available, — = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm³.



## Technical data Wilo-Rexa FIT V08

	FIT V08DA-422/E	FIT V08DA-424/E	FIT V08DA-426/E	FIT V08DA-428/E
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 80/DN 100	DN 80/DN 100	DN 80/DN 100	DN 80/DN 100
Free ball passage mm	80	80	80	80
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	50	60	70	80
Max. delivery head $H_{max}$ / m	4.9	6.8	8.8	10.4
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%	S2-15 min S3-10%
Max. immersion depth m	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>				
Nominal current $I_N$ / A	3.05	3.05	3.7	5.8
Starting current - direct $I_A$ / A	24.5	24.5	24.5	35.5
Nominal motor power $P_2$ / kW	1.1	1.1	1.5	2.5
Power consumption $P_1$ / kW	1.5	1.5	2	3.3
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	1436	1436	1413	1402
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	6G1	6G1	6G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>				
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	—	—	—	—
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301	1.4301	1.4301
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021

• = available, - = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-Rexa FIT V08

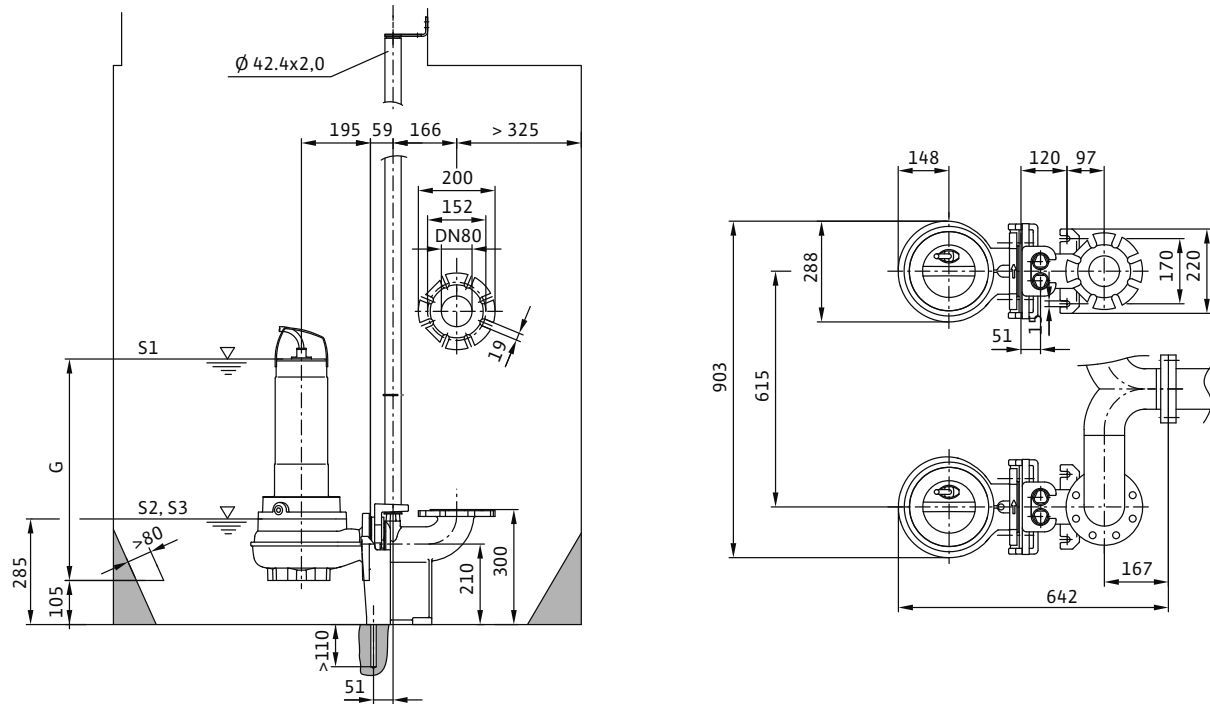
	FIT V08DA-524/E	FIT V08DA-526/E
	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>		
Pressure connection	DN 80/DN 100	DN 80/DN 100
Free ball passage mm	80	80
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	95	80
Max. delivery head $H_{max}$ / m	10.8	12.7
Operating mode (immersed)	S1	S1
Operating mode (non-immersed)	S2-15 min S3-10%	S2-15 min S3-10%
Max. immersion depth m	20	20
Protection class	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40
<b>Motor data</b>		
Nominal current $I_N$ / A	8.1	8.1
Starting current - direct $I_A$ / A	51	51
Nominal motor power $P_2$ / kW	3.5	3.5
Power consumption $P_1$ / kW	4.5	4.5
Activation type	Direct	Direct
Nominal speed $n$ / rpm	1393	1393
Insulation class	F	F
Recommended switching frequency 1/h	20	20
Max. switching frequency 1/h	50	50
Permitted voltage tolerance %	±10	±10
<b>Cable</b>		
Length of connecting cable m	10	10
Cable type	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	6G1,5	6G1,5
Type of connecting cable	Detachable	Detachable
<b>Equipment/function</b>		
Motor protection	WSK	WSK
Explosion protection	—	—
<b>Materials</b>		
Static seal	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC
Motor housing	1.4301	1.4301
Pump housing	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021

• = available, - = not available

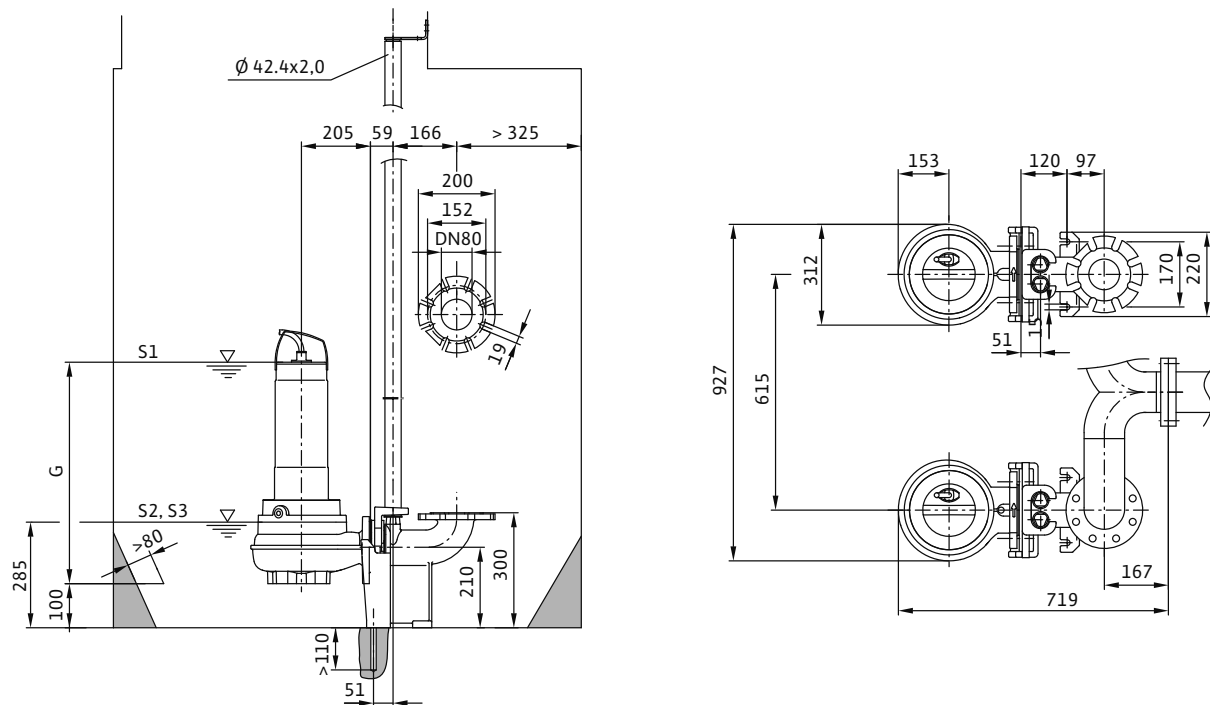
P<sub>1</sub> refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Dimensions, weights Wilo-Rexa FIT

Dimension drawing Wilo-Rexa FIT V08-42.. - Stationary wet well installation



Dimension drawing Wilo-Rexa FIT V08-52.. - Stationary wet well installation

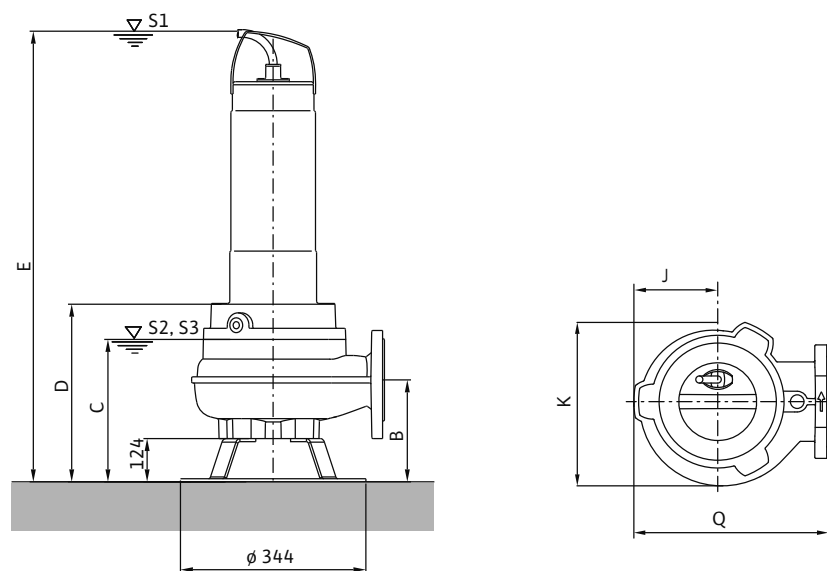


# Dewatering

## Submersible sewage pumps

### Dimensions, weights Wilo-Rexa FIT

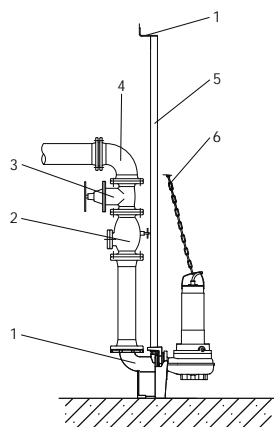
#### Dimension drawing Wilo-Rexa FIT V08 – transportable wet well installation



#### Dimensions, weights

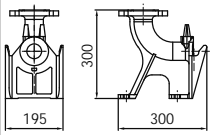
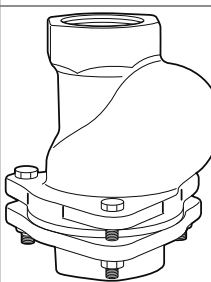
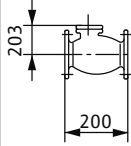
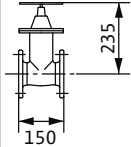
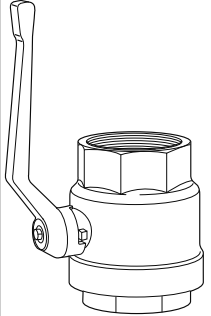
Wilo-Rexa...	Dimensions							
	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>G</i>	<i>J</i>	<i>K</i>	<i>Q</i>
	mm							
<b>FIT V08DA-422/E</b>	229	304	361	803	597	148	288	343
<b>FIT V08DA-424/E</b>	229	304	361	803	597	148	288	343
<b>FIT V08DA-426/E</b>	229	304	361	803	597	148	288	343
<b>FIT V08DA-428/E</b>	229	304	361	803	597	148	288	343
<b>FIT V08DA-524/E</b>	234	309	366	808	602	153	312	358
<b>FIT V08DA-526/E</b>	234	309	366	808	602	153	312	358

### Mechanical accessories



- 1 Suspension unit
- 2 Non-return valve
- 3 Gate valve
- 4 Pipe elbow
- 5 Guide pipe
- 6 Chain

#### Stationary wet well installation DN 50

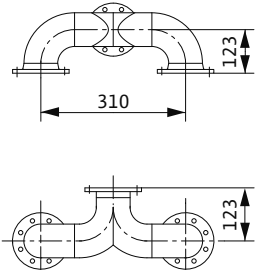
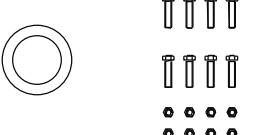
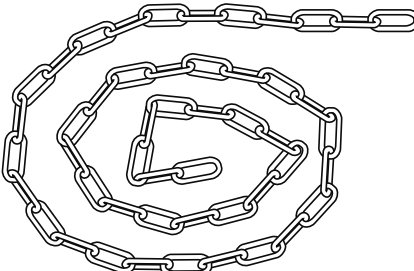
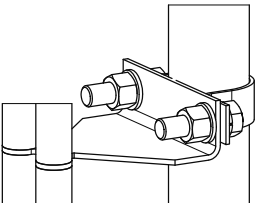
		Description	Art no.
<b>Suspension unit DN50/2RK</b>		for 2-pipe guide bracket, of EN-GJL-250, painted, with free passage in DN 50, coupling foot with 90° pipe elbow, including coupling connection, guide pipe bracket of stainless steel for sump mounting, profile joint and mounting accessories, connection on the pressure side DN 50: 2x guide pipes Ø ¾" must be provided on site!	6040766
<b>Non-return ball valve</b>		Made of EN-GJL-250, with Rp 2 female thread for DN 50 connection	4027331
<b>Non-return valve</b>		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 50 connection	2017166
<b>Gate valve</b>		Made of EN-GJL-250, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, DN 50	2017160
<b>Shut-off ball valve</b>		Made of brass, nickel-plated, with Rp 2 female thread for DN 50 connection	4027338

# Dewatering

## Submersible sewage pumps

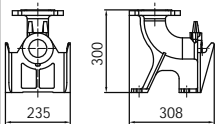
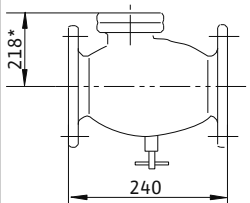
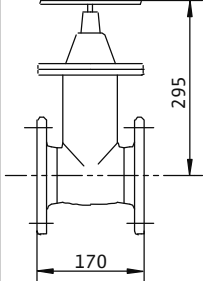
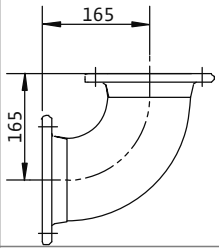
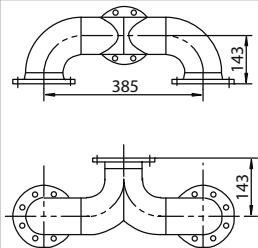
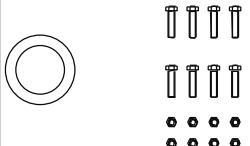
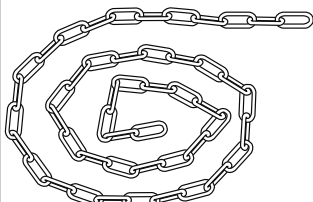
### Mechanical accessories

#### Stationary wet well installation DN 50

		Description	Art no.
<b>Y-piece DN 50</b>		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 50/50/50 connection	2019042
<b>Mounting accessories DN 40/50</b>		For a DN 40/50 flange connection, with 4 screws, 4 nuts and 1 flat gasket for PN 10/16 flange, DIN 2501	2057177
<b>Chain set PCS-CE</b>		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138
<b>Guide pipe bracket</b>		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 50 cast-iron pipe, including mounting accessories of A4	6066851
		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 50 steel pipe, including mounting accessories of A4	6061084
<b>Bracket for guide pipe extension</b>		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 50 cast-iron pipe, including mounting accessories of A4	6066852
		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 50 steel pipe, including mounting accessories of A4	6066846

## Mechanical accessories

## Stationary wet well installation DN 65

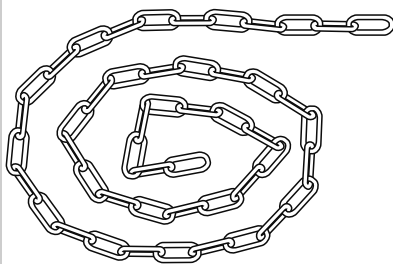
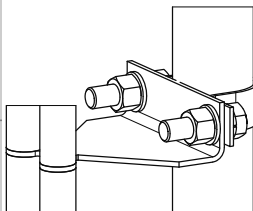
		Description	Art no.
Suspension unit DN65/2RK		for 2-pipe guide bracket, of EN-GJL-250, painted, with free passage in DN 65, coupling foot with 90° pipe elbow, including coupling connection, guide pipe bracket of stainless steel for sump mounting, profile joint and mounting accessories, connection on the pressure side DN 65; 2x guide pipes Ø ¾" must be provided on site!	6066844
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 65 connection	2017167
Gate valve		Made of EN-GJL-250, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, DN 65	2017161
Pipe bend 90°		Made of spheroidal cast iron 400-15, with 2 flanges, including 1 set of mounting accessories, PN 10/16 flange, DIN 28637, for DN 65 connection	2017183
Y-piece DN 65		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 65/65/65 connection	2017178
Mounting accessories DN 65		For a DN 40/50 flange connection, with 4 screws, 4 nuts and 1 flat gasket for PN 10/16 flange, DIN 2502	2012068
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140

# Dewatering

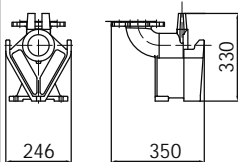
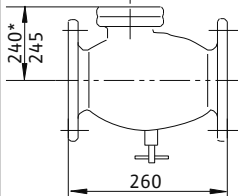

## Submersible sewage pumps

### Mechanical accessories

#### Stationary wet well installation DN 65

		Description	Art no.
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138
Guide pipe bracket		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 65 cast-iron pipe, including mounting accessories of A4	6066847
for 2-pipe guide, of stainless steel, for pipe attachment on a DN 65 steel pipe, including mounting accessories of A4		6066848	
Bracket for guide pipe extension		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 65 cast-iron pipe, including mounting accessories of A4	6066849
		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 65 steel pipe, including mounting accessories of A4	6066850

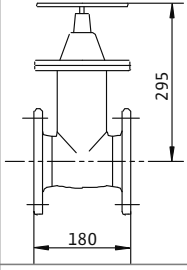
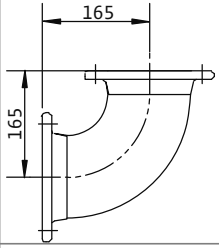
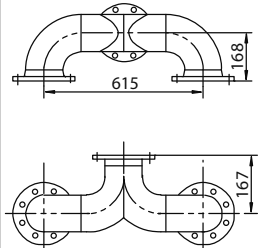
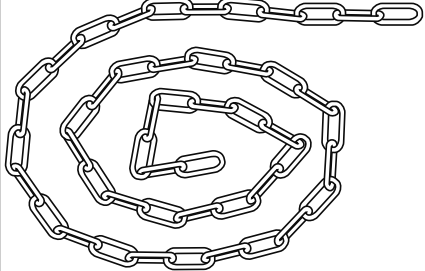
#### Stationary wet well installation DN 80

		Description	Art no.
Suspension unit DN 80/2RK		Made of EN-GJL-250, lacquered, with free passage in DN 80, foot elbow including pump holder, profile joint, installation and floor fixation accessories and guide tube bracket Ø 1 1/4" without guide pipes. Connection on pressure side DN 80/PN16 in acc. with DIN 2501. The double pipe feed Ø 1 1/4" is to be provided by the customer.	6036888
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 80 connection	2017168
Mounting accessories DN 80		For a DN 80 flange connection, with 8 screws, 8 nuts and 1 flat gasket for PN 10/16 flange, DIN 2502	2012067



## Mechanical accessories

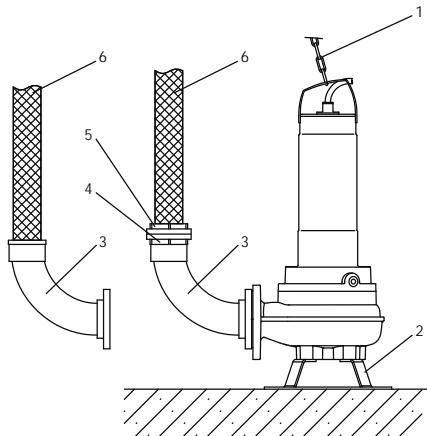
### Stationary wet well installation DN 80

		Description	Art no.
Gate valve		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 80	2017162
Pipe bend 90°		Made of spheroidal cast iron 400-15, with 2 flanges, including 1 set of mounting accessories, PN 10/16 flange, DIN 28637, for DN 80 connection	2012064
Y-piece DN 80		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 80/80/80 connection	2017179
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Dewatering

## Submersible sewage pumps

### Mechanical accessories



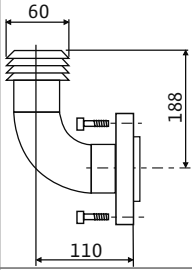
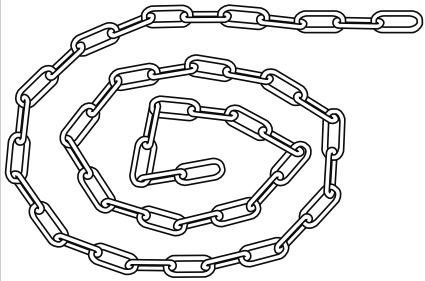
- 1 Chain
- 2 Pump base
- 3 Pipe elbow for hose connection or Storz pipe coupling
- 4 Storz pipe coupling
- 5 Storz hose coupling
- 6 Pressure hose

#### Portable wet well installation with hose connection

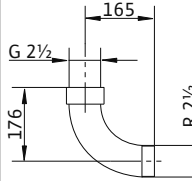
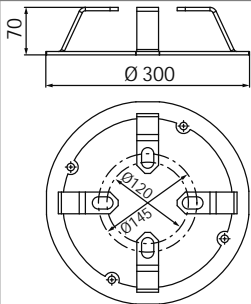
		Description	Art no.
Pipe bend 90°		Made of steel, galvanized with G 2 / R 2 female/male thread for DN 50 connection	4027332
Adapter DN 50 on Rp 2		Made of steel, galvanized, DN 50 threaded flange, PN 10/16, DIN 2566 with Rp 2 female thread, incl. 1 set of mounting accessories for DN 50 connection	4027333
Hose connection		Made of plastic, hose nozzle with Ø 60 mm including hose clip, G 2 male thread for direct hose connection	4027334
Pressure hose		Synthetic, inner Ø 60 mm, PN 8, length 10 m, incl. hose clip for direct hose connection via hose nozzle, Ø 60 mm	2018106
Floor supporting foot DN 50/65		Made of steel (S235JR) with 4 supports for connection to DN 50/65, powder coated, incl. fixation material	6064666

## Mechanical accessories

### Portable wet well installation with hose connection

		Description	Art no.
Pipe bend 90°		Made of PVC, with hose nozzle (Ø 60 mm) for direct hose connection, flange on pump side, incl. 1 set of mounting accessories for DN 50 connection	4027344
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

### Portable wet well installation with hose connection DN 65

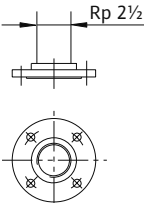
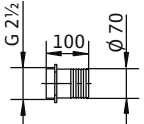
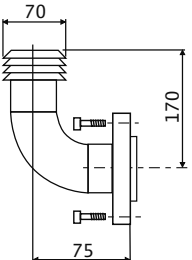
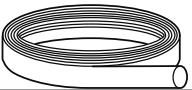
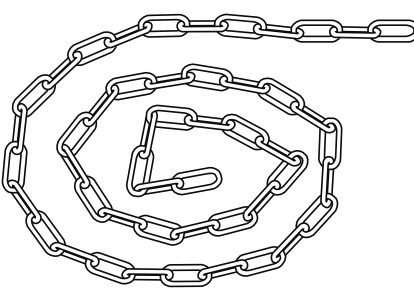
		Description	Art no.
Pipe bend 90°		Made of steel, galvanised with G 2 1/2 / R 2 1/2 female/male thread for DN 65 connection	4015212
Floor supporting foot DN 50/65		Made of steel (S235JR) with 4 supports for connection to DN 50/65, powder coated, incl. fixation material	6064666

# Dewatering

## Submersible sewage pumps

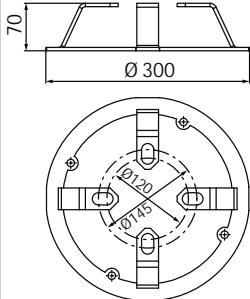
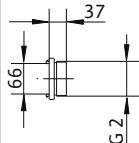
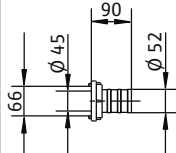
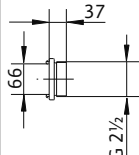

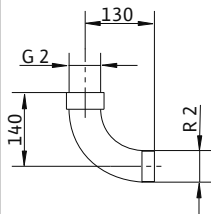
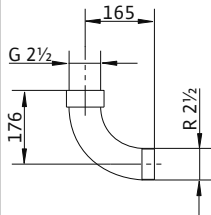
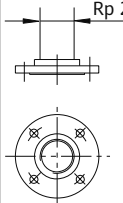
### Mechanical accessories

#### Portable wet well installation with hose connection DN 65

		Description	Art no.
Adapter DN 65 on Rp 2½		Made of steel, galvanized, DN 65 threaded flange, PN 10/16, DIN 2566 with Rp 2½ female thread, incl. 1 set of mounting accessories for DN 65 connection	4015204
Hose connection		Made of brass, hose nozzle with Ø 70 mm, including hose clip, G 2½ male thread for direct hose connection	4015210
Pipe bend 90°		Made of EN-GJL-250, with hose nozzle (Ø 70 mm) for direct hose connection, flange on pump side, incl. 1 set of mounting accessories for DN 65 connection	4027346
Pressure hose		Synthetic, inner Ø 70 mm, PN 8, length 10 m, incl. hose clip for direct hose connection via hose nozzle, Ø 70 mm	2014151
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

## Mechanical accessories

### Portable wet well installation with Storz coupling DN 50/65

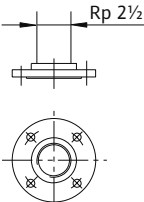
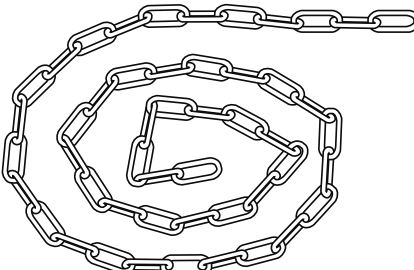
		Description	Art no.
Floor supporting foot DN 50/65		Made of steel (S235JR) with 4 supports for connection to DN 50/65, powder coated, incl. fixation material	6064666
Storz C pipe coupling with male thread G 2		Made of aluminium, Storz C connection, with G 2 male thread, tappet clearance 66 mm for a DN 50 connection	2018102
Storz hose coupling		Made of aluminium, Storz A connection, with hose nozzle (Ø 52 mm), tappet clearance 66 mm, incl. hose clip	2015235
Storz C pipe coupling with male thread G 2½		Made of aluminium, Storz C connection, with G 2½ male thread, tappet clearance 66 mm for a DN 65 connection	2015234
Pressure hose		Synthetic, inner Ø 52 mm, PN 8, length 10 m, incl. hose clip for direct hose connection via hose nozzle (Ø 50 mm) or a Storz C hose coupling	2017192
Pipe bend 90°		Made of steel, galvanized with G 2 / R 2 female/male thread for DN 50 connection	4027332
		Made of steel, galvanised with G 2½ / R 2½ female/male thread for DN 65 connection	4015212
Adapter DN 50 on Rp 2		Made of steel, galvanized, DN 50 threaded flange, PN 10/16, DIN 2566 with Rp 2 female thread, incl. 1 set of mounting accessories for DN 50 connection	4027333

# Dewatering

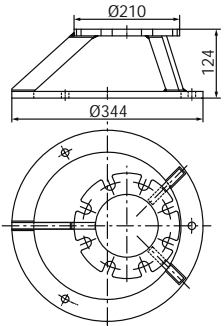
## Submersible sewage pumps

### Mechanical accessories

#### Portable wet well installation with Storz coupling DN 50/65

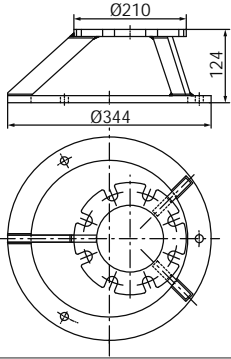
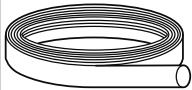
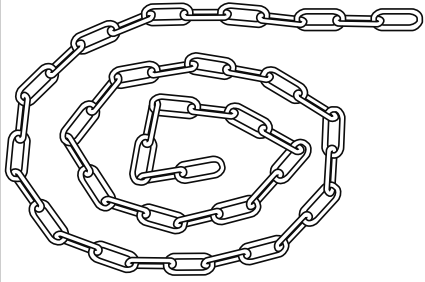
		Description	Art no.
<b>Adapter DN 65 on Rp 2½</b>		Made of steel, galvanized, DN 65 threaded flange, PN 10/16, DIN 2566 with Rp 2½ female thread, incl. 1 set of mounting accessories for DN 65 connection	4015204
<b>Chain set PCS-CE</b>		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

#### Portable wet well installation with Storz coupling DN 80

		Description	Art no.
<b>Pipe elbow 90° with Storz B pipe coupling and female thread R 3</b>		Made of EN-GJL-250, with R 3 male thread, DN 80 flange on pump side, incl. 1 set of mounting accessories and Storz B fixed coupling, G 3 female thread	6031385
<b>Floor supporting foot DN 80/100</b>		Made of steel (S235JR) with 4 supports for connection to DN 80/100, powder-coated, incl. fixation material	6065949

## Mechanical accessories

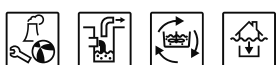
### Portable wet well installation with Storz coupling DN 80

		Description	Art no.
<b>Floor supporting foot DN 80/100</b>		Made of stainless steel (1.4571) with 4 supports for connection to DN 80/100, incl. fixation material	6065953
<b>Pressure hose / Storz B</b>		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 75 mm, length 5 m incl. Storz B coupling, 12/40 bar	6003052
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 75 mm, length 10 m incl. Storz B coupling, 12/40 bar	6003051
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 75 mm, length 20 m incl. Storz B coupling, 12/40 bar	6003050
<b>Chain set PCS-CE</b>		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Dewatering

## Submersible sewage pumps

### Series description Wilo-Rexa PRO



#### Design

Submersible sewage pump for permanent operation, completely of cast iron

#### Type key

Example: **Wilo-Rexa PRO V06DA-110/EAD1X2-T0015-540-O**

<b>PRO</b>	Series name
<b>V</b>	Vortex impeller
<b>06</b>	Nominal diameter of pressure connection e.g. DN 65
<b>D</b>	Hydraulics drilled on the suction side in accordance with DIN drilled
<b>A</b>	Material version, hydraulics A = standard version
<b>110</b>	Hydraulics intended use
<b>E</b>	Motor version E = dry motor R = reduced-power motor
<b>A</b>	Material version, motor A = standard version
<b>D</b>	Seal with two independent mechanical shaft seals
<b>1</b>	IE efficiency class, e.g. 1 = IE1 (derived from IEC 60034-30)
<b>X</b>	Ex-rated X = ATEX F = FM C = CSA
<b>2</b>	Number of poles
<b>T</b>	Mains connection version: M = 1~ T = 3~
<b>0015</b>	Value/10 = motor power $P_2$ in kW
<b>5</b>	Frequency (5 = 50 Hz, 6 = 60 Hz)
<b>40</b>	Key for rated voltage
<b>o</b>	Additional electrical equipment: O = with bare cable end, A = with float switch and plug

#### Application

For pumping in permanent operation of:

- Waste water and sewage
- Waste water containing faeces
- Sludges up to maximum 8% dry matter (depending on the selected hydraulics)
- out of sumps and vessels in municipal and industrial applications as well as to domestic and site drainage in accordance with EN 12050 (observing regional-specific regulations and instructions).

#### Special features/product advantages

- Submersible
- Vortex impeller non-susceptible to clogging
- Seal by two mechanical shaft seals
- Ex-rated in accordance with ATEX as standard
- Operation with frequency converter
- Optional external sealing chamber control for the oil barrier chamber
- Longitudinally watertight cable inlet
- Very smooth operation
- Easy installation due to suspension unit or pump base

#### Technical data

- Mains connection: 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Immersed operating mode: S1
- Non-immersed operating mode: S2-30 min; S3 25%
- Protection class: IP 68
- Insulation class: F
- Fluid temperature: 3 - 40°C, max. 60°C for 3 min
- Free passage: 50 / 65 / 80 mm
- Max. immersion depth: 20 m
- Cable length: 10 m

#### Equipment/function

- Leakage detection for the motor compartment
- Winding temperature monitoring with bimetal sensor
- Optional external sealing chamber control for the oil barrier chamber

#### Materials

- Motor housing: EN-GJL-250
- Hydraulic housing: EN-GJL250
- Impeller: EN-GJL250
- Static seals: NBR
- Sealing on pump side: SiC/SiC
- Sealing on motor side: C/MgSiO<sub>4</sub>
- Shaft end: Stainless steel 1.4021



### Series description Wilo-Rexa PRO

#### Description/design

Submersible sewage pump as submersible monobloc unit for stationary and portable wet well installation in permanent operation.

#### Hydraulics

The outlet on the pressure side is designed as horizontal flange connection. The maximum possible dry matter is 8 % (depending on the hydraulics) Vortex impellers are used as the impeller shape.

#### Motor

The motors available are glanded motors in single-phase version (with built-in operation capacitor in external switchgear) and three-phase version for the direct starting. The waste heat is given off directly to the surrounding fluid via the motor housing. These motors can be operated immersed in permanent operation (S1) and non-immersed in short-term operation (S2) or intermittent operation (S3).

Furthermore the motors are equipped with the following monitoring devices:

- Leakage detection motor compartment  
The leakage detection signals water ingress into the motor compartment.
- Thermal motor monitoring  
The thermal motor monitoring protects the motor windings against overheating. Bimetal sensors are used as standard for this.

In addition the motor can be equipped with an external sealing chamber electrode for monitoring the oil barrier chamber. This signals if there is water ingress into the oil barrier chamber through the mechanical seal on the fluid side.

The connecting cable has bare cable ends and a length of 10 m as standard, and is available in following versions:

#### Seal

There is an oil barrier chamber between the motor and hydraulics. This is filled with medicinal white oil. The fluid-side and motor-side seals are provided by two mechanical seals which rotate independently of each other.

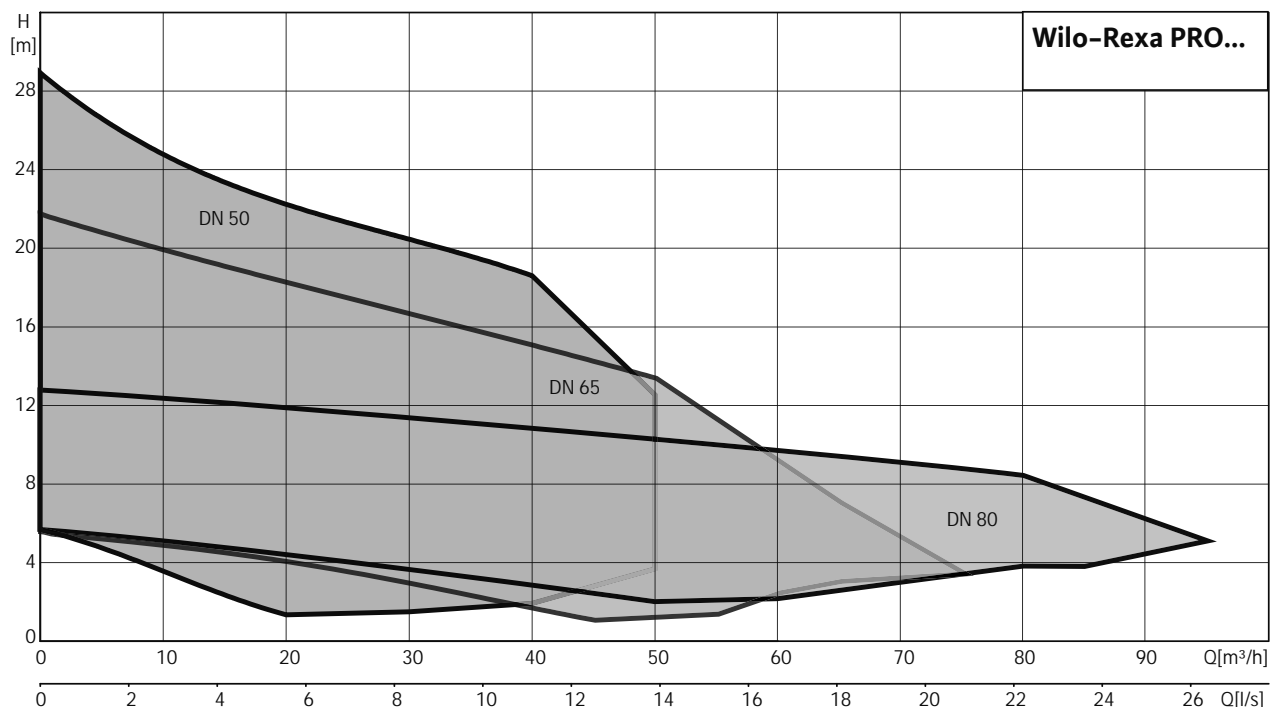
#### Scope of delivery

- Submersible sewage pump with 10 m cable
- version "P" with plug, single-phase AC motor with switchgear
- Operating and maintenance manual

#### Accessories

- Suspension unit or pump base
- External sealing chamber monitoring for monitoring the oil barrier chamber
- Chains
- Switchgears, relays and plugs
- Fixation sets with anchor bolts

#### Pump curves



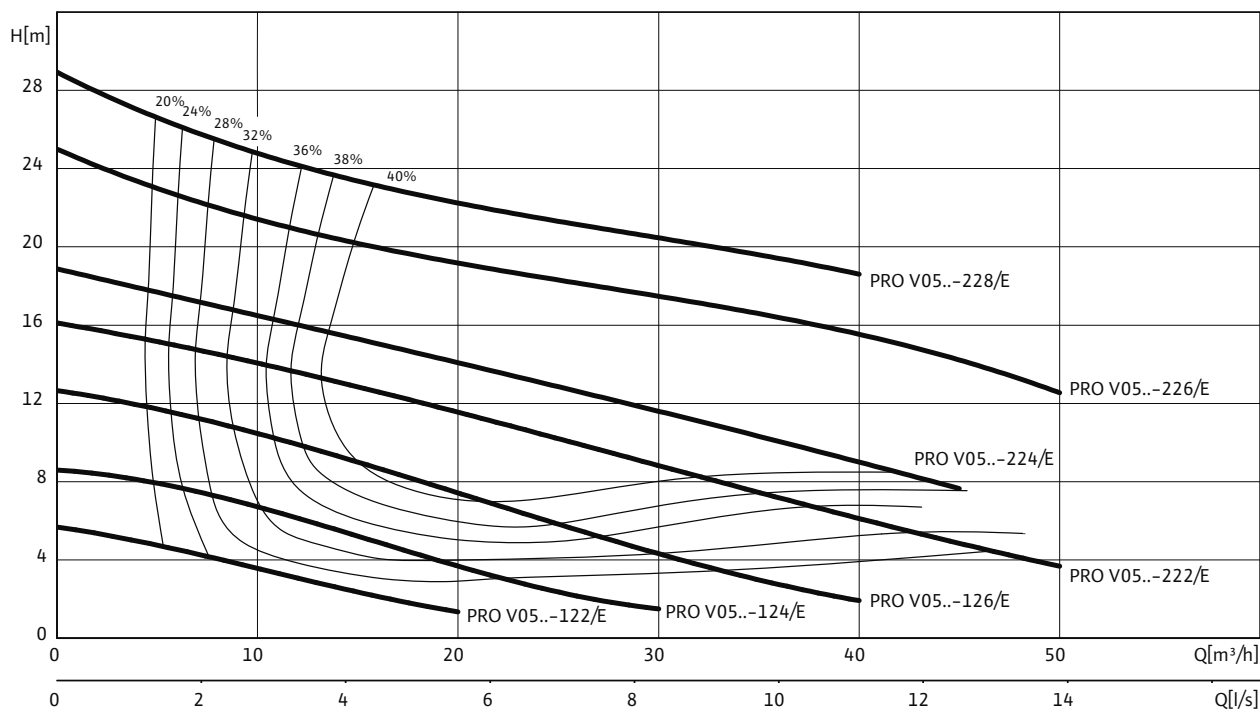
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-Rexa PRO V05

#### Pump curves Wilo-Rexa PRO V05.. – 50 Hz – 2900 rpm

Vortex impeller – Free ball passage: 50 mm



Characteristic curves acc. to ISO 9906, Appendix A. The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Pump type	Nominal motor power	Float switch	Mains plug	Weight approx.	Art no.		Art no.	
					1~230 V, 50 Hz		3~400 V, 50 Hz	
	$P_2$			$m$				
	kW			kg				
PRO V05DA-122/E...-O	1.1	—	—	48	6064718	L	6064719	L
PRO V05DA-124/E...-O	1.1	—	—	48	6064720	L	6064721	L
PRO V05DA-126/E...-O	1.5	—	—	48	6064722	L	6064723	L
PRO V05DA-222/E...-O	2.5	—	—	53.7	—	—	6064724	L
PRO V05DA-224/E...-O	2.5	—	—	53.7	—	—	6064725	L
PRO V05DA-226/E...-O	3.9	—	—	57.8	—	—	6064726	L
PRO V05DA-228/E...-O	3.9	—	—	57.8	—	—	6064727	L

• = available, — = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm³.

## Technical data Wilo-Rexa PRO V05

	PRO V05DA- 122/E	PRO V05DA- 122/E	PRO V05DA- 124/E	PRO V05DA- 124/E	PRO V05DA- 126/E	PRO V05DA- 126/E
	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz
<b>Unit</b>						
Pressure connection	DN 50/Rp 2	DN 50/Rp 2	DN 50/Rp 2	DN 50/Rp 2	DN 50/Rp 2	DN 50/Rp 2
Free ball passage mm	50	50	50	50	50	50
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	20	20	30	30	40	40
Max. delivery head $H_{max}$ / m	5.7	5.7	8.6	8.6	12.7	12.7
Operating mode (immersed)	S1	S1	S1	S1	S1	S1
Operating mode (non-immersed)	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%
Max. immersion depth m	20	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>						
Nominal current $I_N$ / A	2.55	7.2	2.55	7.2	3.3	9.3
Starting current - direct $I_A$ / A	20	29	20	29	20	29
Nominal motor power $P_2$ / kW	1.1	1.1	1.1	1.1	1.5	1.5
Power consumption $P_1$ / kW	1.5	1.6	1.5	1.6	2	2.1
Activation type	Direct	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2898	2899	2898	2899	2858	2852
Insulation class	F	F	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20	20	20
Max. switching frequency 1/h	50	50	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10	±10	±10
<b>Cable</b>						
Length of connecting cable m	10	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>						
Motor protection	WSK	WSK	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>						
Static seal	NBR	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Car- bon/steatite	Car- bon/steatite	Car- bon/steatite	Car- bon/steatite	Car- bon/steatite	Car- bon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021	1.4021

• = available, - = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-Rexa PRO V05

	PRO V05DA-222/E	PRO V05DA-224/E	PRO V05DA-226/E	PRO V05DA-228/E
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 50/Rp 2	DN 50/Rp 2	DN 50/Rp 2	DN 50/Rp 2
Free ball passage mm	50	50	50	50
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	50	50	50	40
Max. delivery head $H_{max}$ / m	16	18.6	24.2	28
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%
Max. immersion depth m	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>				
Nominal current $I_N$ / A	5.2	5.2	7.8	7.8
Starting current - direct $I_A$ / A	31	31	66	66
Nominal motor power $P_2$ / kW	2.5	2.5	3.9	3.9
Power consumption $P_1$ / kW	3.2	3.2	4.8	4.8
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2840	2840	2861	2861
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>				
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021

• = available, - = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

### Dimension drawing Wilo-Rexa PRO V05-12.. - Stationary wet well installation

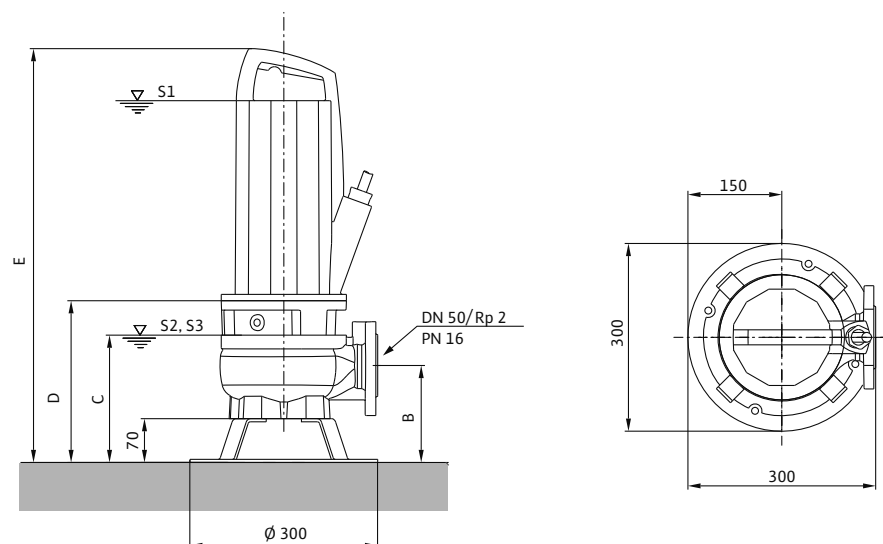
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# Dewatering

## Submersible sewage pumps

### Dimensions, weights Wilo-Rexa PRO

#### Dimension drawing Wilo-Rexa PRO V05 – transportable wet well installation



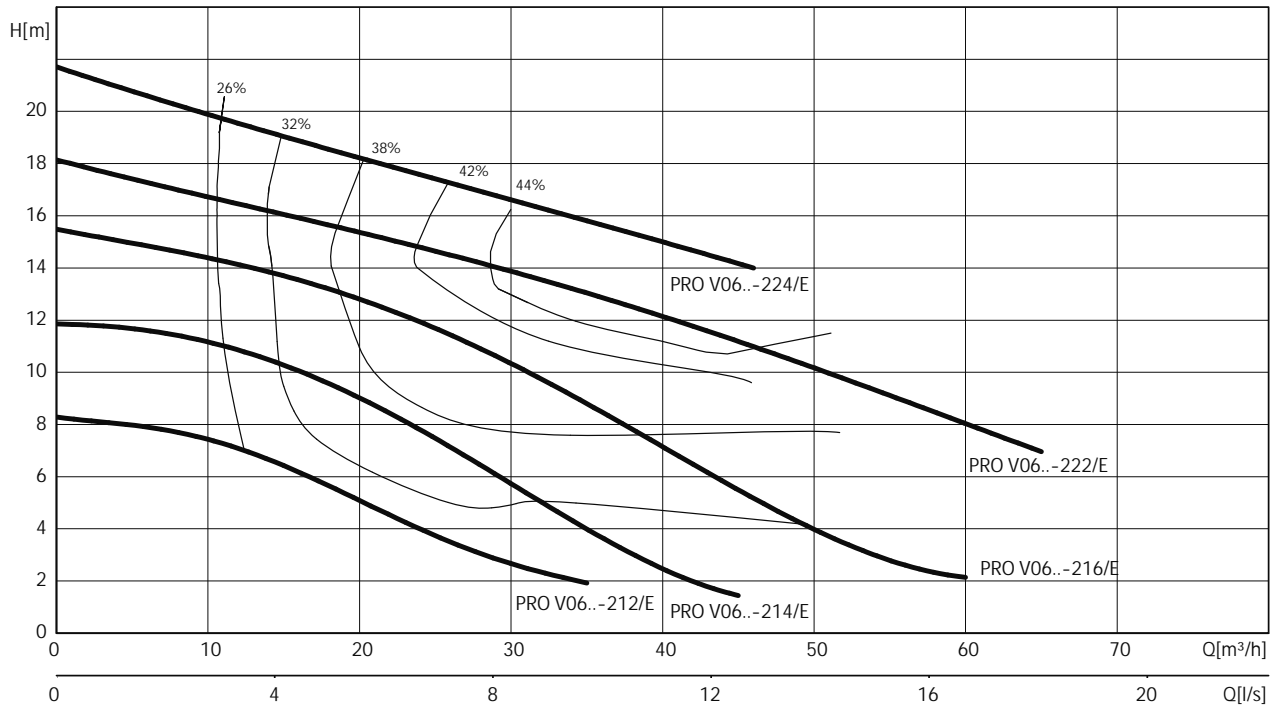
#### Dimensions, weights

Wilo-Rexa...	Dimensions				
	$B$	$C$	$D$	$E$	$G$
	mm				
PRO V05DA-122/E	148	196	251	569	417
PRO V05DA-124/E	148	196	251	569	417
PRO V05DA-126/E	148	196	251	569	417
PRO V05DA-222/E	155	203	258	661	508
PRO V05DA-224/E	155	203	258	661	508
PRO V05DA-226/E	155	203	258	661	508
PRO V05DA-228/E	155	203	258	661	508

## Pump curves, ordering information Wilo-Rexa PRO V06

### Pump curves Wilo-Rexa PRO V06.. – 50 Hz – 2900 rpm

Vortex impeller – Free ball passage: 65 mm



Characteristic curves acc. to ISO 9906, Appendix A. The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Pump type	Nominal motor power	Float switch	Mains plug	Weight approx.	Art no.		Art no.	
					1~230 V, 50 Hz		3~400 V, 50 Hz	
	$P_2$			$m$				
	kW			kg				
PRO V06DA-212/E...-O	1.1	—	—	49	6064728	L	6064729	L
PRO V06DA-214/E...-O	1.5	—	—	49	6064730	L	6064731	L
PRO V06DA-216/E...-O	2.5	—	—	53.3	—	—	6064732	L
PRO V06DA-222/E...-O	3.9	—	—	57.7	—	—	6064733	L
PRO V06DA-224/E...-O	3.9	—	—	57.7	—	—	6064734	L

• = available, — = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm³.

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-Rexa PRO V06

	PRO V06DA-212/E	PRO V06DA-212/E	PRO V06DA-214/E	PRO V06DA-214/E
	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80
Free ball passage mm	65	65	65	65
Max. volume flow $Q_{max}/m^3/h$	35	35	45	45
Max. delivery head $H_{max}/m$	8.3	8.3	11.9	11.9
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%
Max. immersion depth m	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T/^\circ C$	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>				
Nominal current $I_N/A$	2.55	7.2	3.3	9.3
Starting current - direct $I_A/A$	20	29	20	29
Nominal motor power $P_2/kW$	1.1	1.1	1.5	1.5
Power consumption $P_1/kW$	1.5	1.6	2	2.1
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n/rpm$	2898	2899	2858	2852
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section $mm^2$	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>				
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021

• = available, - = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.



## Technical data Wilo-Rexa PRO V06

	PRO V06DA-216/E	PRO V06DA-222/E	PRO V06DA-224/E
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>			
Pressure connection	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80
Free ball passage mm	65	65	65
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	60	65	50
Max. delivery head $H_{max}$ / m	15.6	18.1	21.6
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%
Max. immersion depth m	20	20	20
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>			
Nominal current $I_N$ / A	5.2	7.8	7.8
Starting current - direct $I_A$ / A	31	66	66
Nominal motor power $P_2$ / kW	2.5	3.9	3.9
Power consumption $P_1$ / kW	3.2	4.8	4.8
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	2840	2861	2861
Insulation class	F	F	F
Recommended switching frequency 1/h	20	20	20
Max. switching frequency 1/h	50	50	50
Permitted voltage tolerance %	±10	±10	±10
<b>Cable</b>			
Length of connecting cable m	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5
Type of connecting cable	Detachable	Detachable	Detachable
<b>Equipment/function</b>			
Motor protection	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021

• = available, - = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3-400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

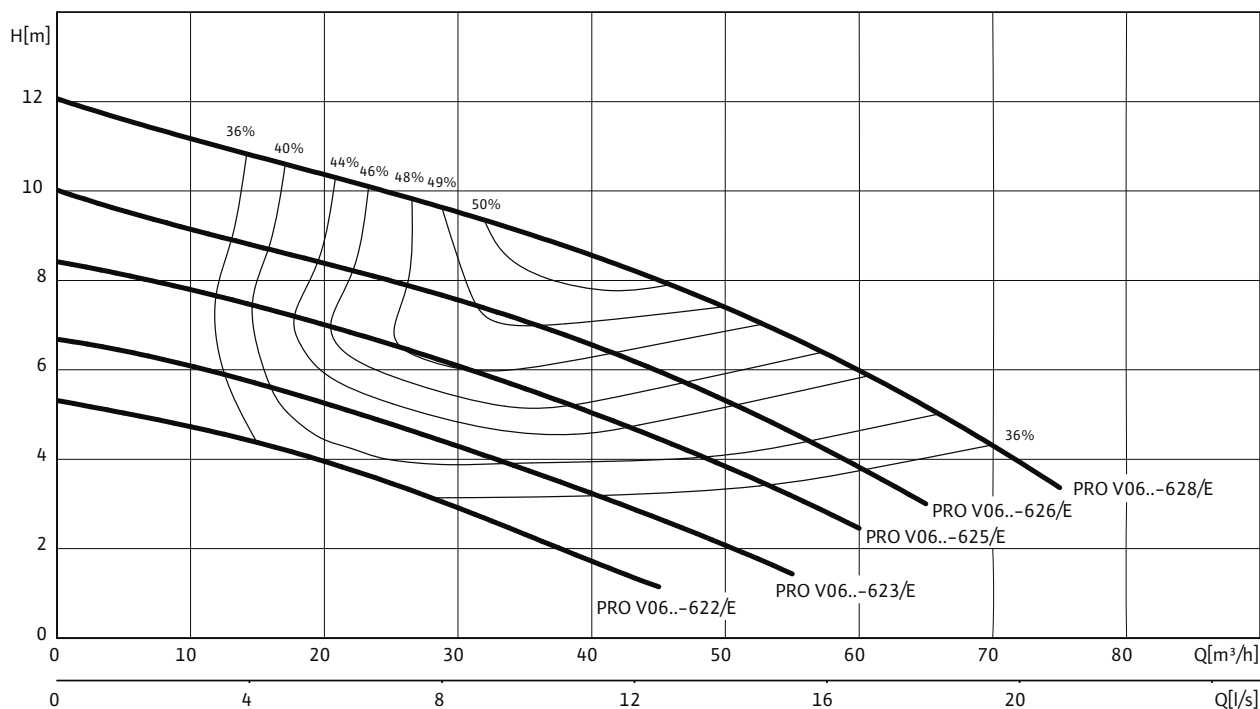
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-Rexa PRO V06

#### Pump curves Wilo-Rexa PRO V06.. – 50 Hz – 1450 rpm

Vortex impeller – Free ball passage: 65 mm



Characteristic curves acc. to ISO 9906, Appendix A. The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Pump type	Nominal motor power	Float switch	Mains plug	Weight approx.	Art no.		Art no.	
					1~230 V, 50 Hz		3~400 V, 50 Hz	
	$P_2$			$m$				
	kW			kg				
PRO V06DA-622/E...-O	1.1	—	—	63.7	6064735	L	6064736	L
PRO V06DA-623/E...-O	1.5	—	—	63.7	6064737	L	6064738	L
PRO V06DA-625/E...-O	1.5	—	—	63.9	6064739	L	6064740	L
PRO V06DA-626/E...-O	2.5	—	—	66	—	—	6064741	L
PRO V06DA-628/E...-O	2.5	—	—	66.1	—	—	6064742	L

• = available, - = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm³.

## Technical data Wilo-Rexa PRO V06

	PRO V06DA-622/E	PRO V06DA-623/E	PRO V06DA-625/E
	1~230 V, 50 Hz	1~230 V, 50 Hz	1~230 V, 50 Hz
<b>Unit</b>			
Pressure connection	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80
Free ball passage mm	65	65	65
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	45	55	60
Max. delivery head $H_{max}$ / m	5.3	6.7	8.4
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%
Max. immersion depth m	20	20	20
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>			
Nominal current $I_N$ / A	7.3	9.4	9.4
Starting current - direct $I_A$ / A	25	25	25
Nominal motor power $P_2$ / kW	1.1	1.5	1.5
Power consumption $P_1$ / kW	1.6	2.2	2.2
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	1453	1419	1419
Insulation class	F	F	F
Recommended switching frequency 1/h	20	20	20
Max. switching frequency 1/h	50	50	50
Permitted voltage tolerance %	±10	±10	±10
<b>Cable</b>			
Length of connecting cable m	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5
Type of connecting cable	Detachable	Detachable	Detachable
<b>Equipment/function</b>			
Motor protection	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021

• = available, - = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3-400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-Rexa PRO V06

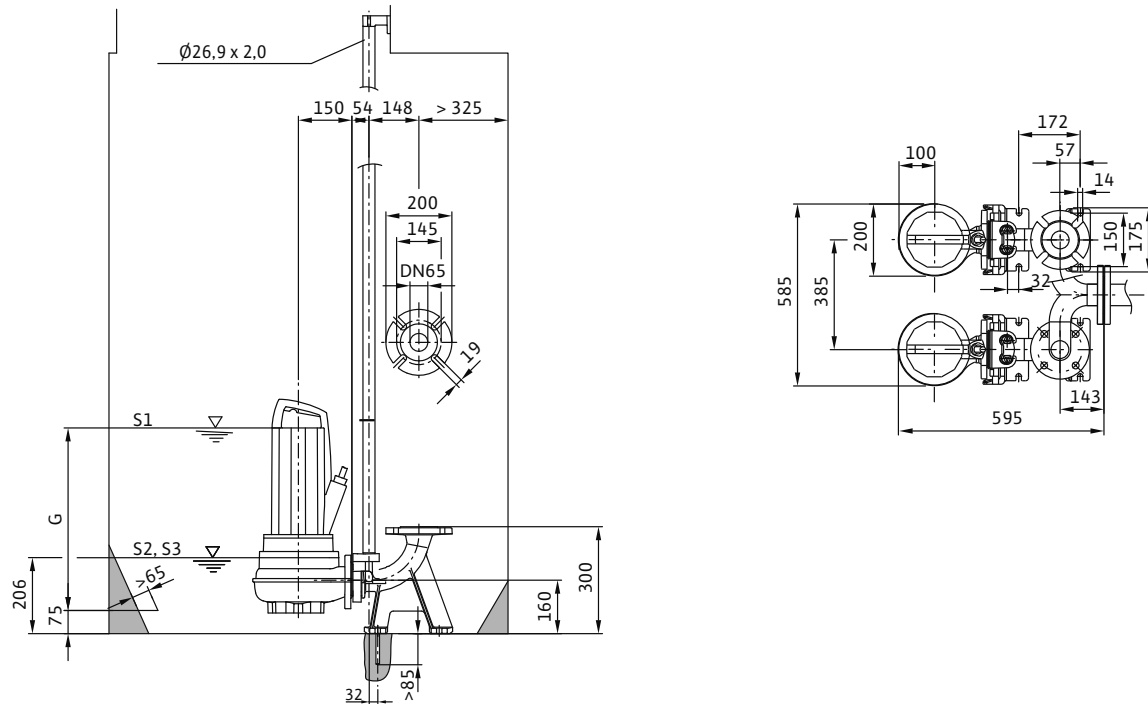
	PRO V06DA-622/E	PRO V06DA-623/E	PRO V06DA-625/E	PRO V06DA-626/E	PRO V06DA-628/E
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>					
Pressure connection	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80	DN 65/DN 80
Free ball passage mm	65	65	65	65	65
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	45	55	60	65	75
Max. delivery head $H_{max}$ / m	5.3	6.7	8.4	10	12
Operating mode (immersed)	S1	S1	S1	S1	S1
Operating mode (non-immersed)	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%
Max. immersion depth m	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>					
Nominal current $I_N$ / A	3.05	3.7	3.7	5.8	5.8
Starting current - direct $I_A$ / A	24.5	24.5	24.5	35.5	35.5
Nominal motor power $P_2$ / kW	1.1	1.5	1.5	2.5	2.5
Power consumption $P_1$ / kW	1.5	2	2	3.3	3.3
Activation type	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	1436	1413	1413	1402	1402
Insulation class	F	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20	20
Max. switching frequency 1/h	50	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10	±10
<b>Cable</b>					
Length of connecting cable m	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>					
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>					
Static seal	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021

• = available, - = not available

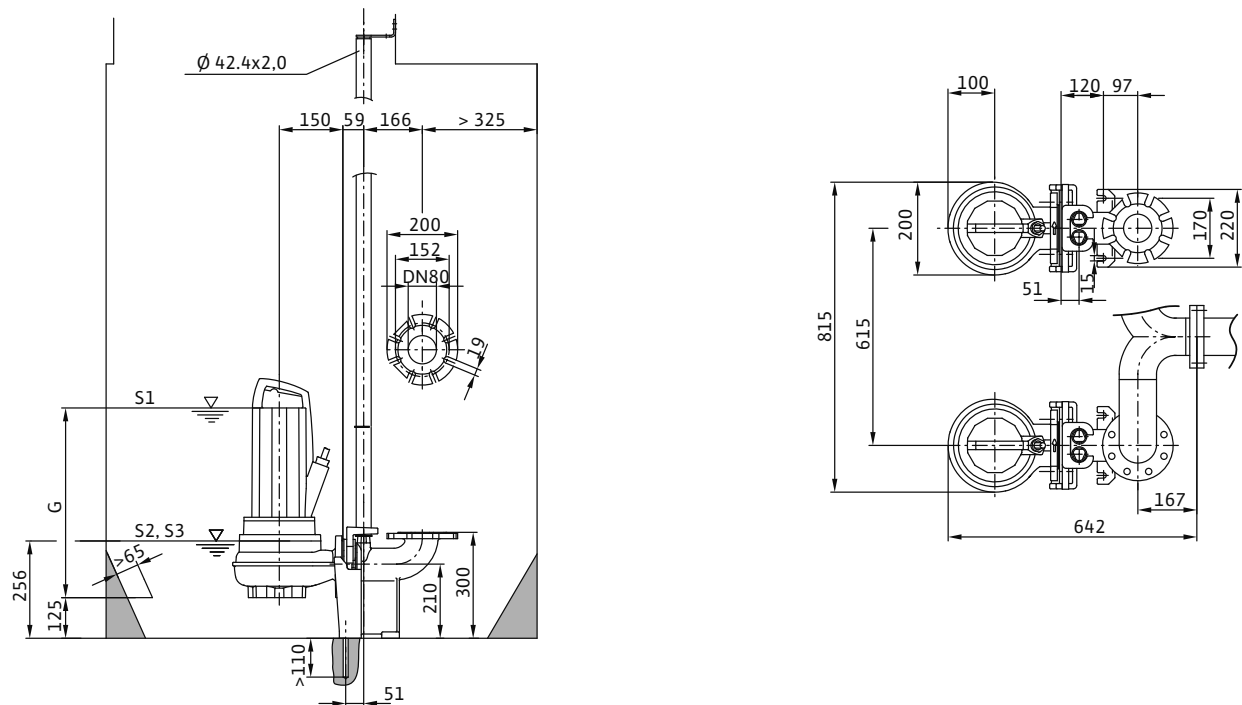
$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

### Dimensions, weights Wilo-Rexa PRO

Dimension drawing Wilo-Rexa PRO V06-2.. – Stationary wet well installation for DN 65



Dimension drawing Wilo-Rexa PRO V06-2.. – Stationary wet well installation for DN 80

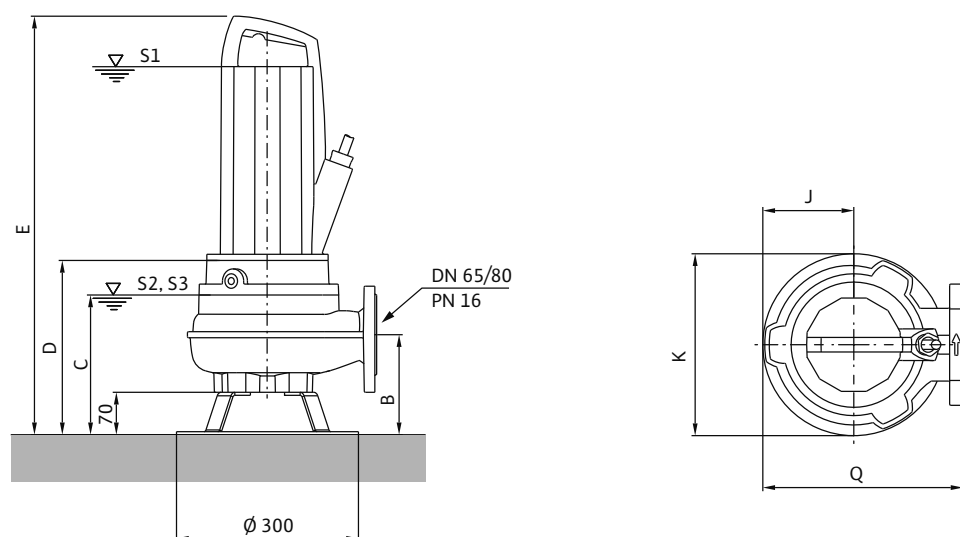


# Dewatering

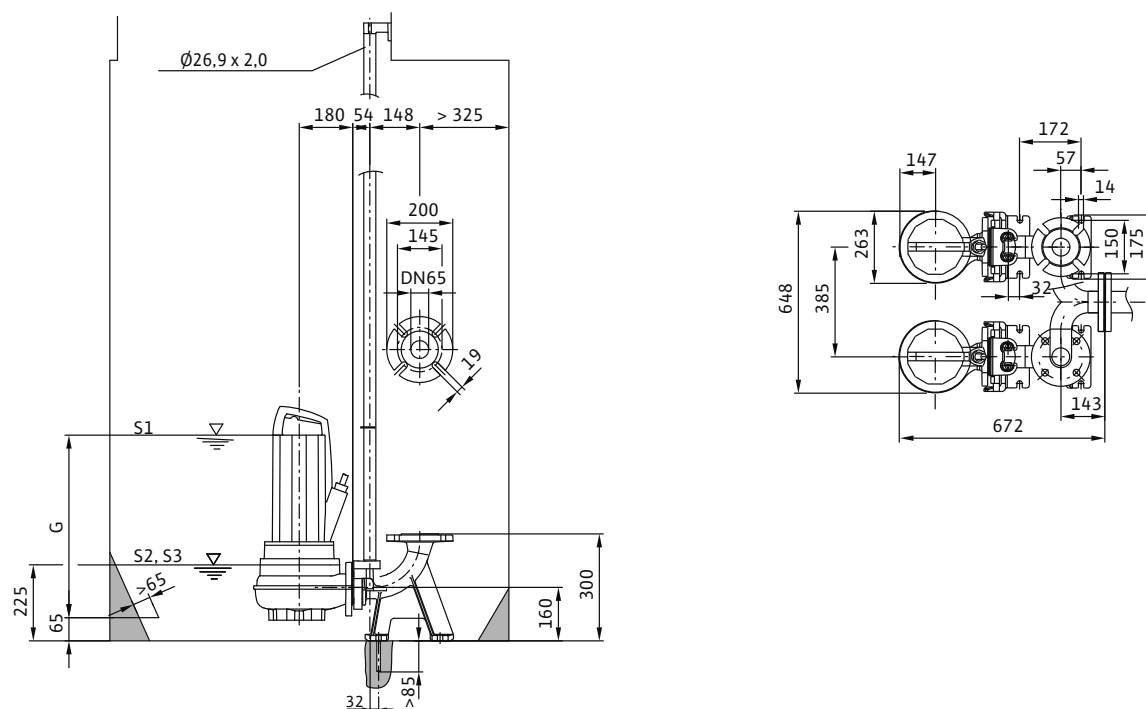
## Submersible sewage pumps

### Dimensions, weights Wilo-Rexa PRO

#### Dimension drawing Wilo-Rexa PRO V06 – transportable wet well installation

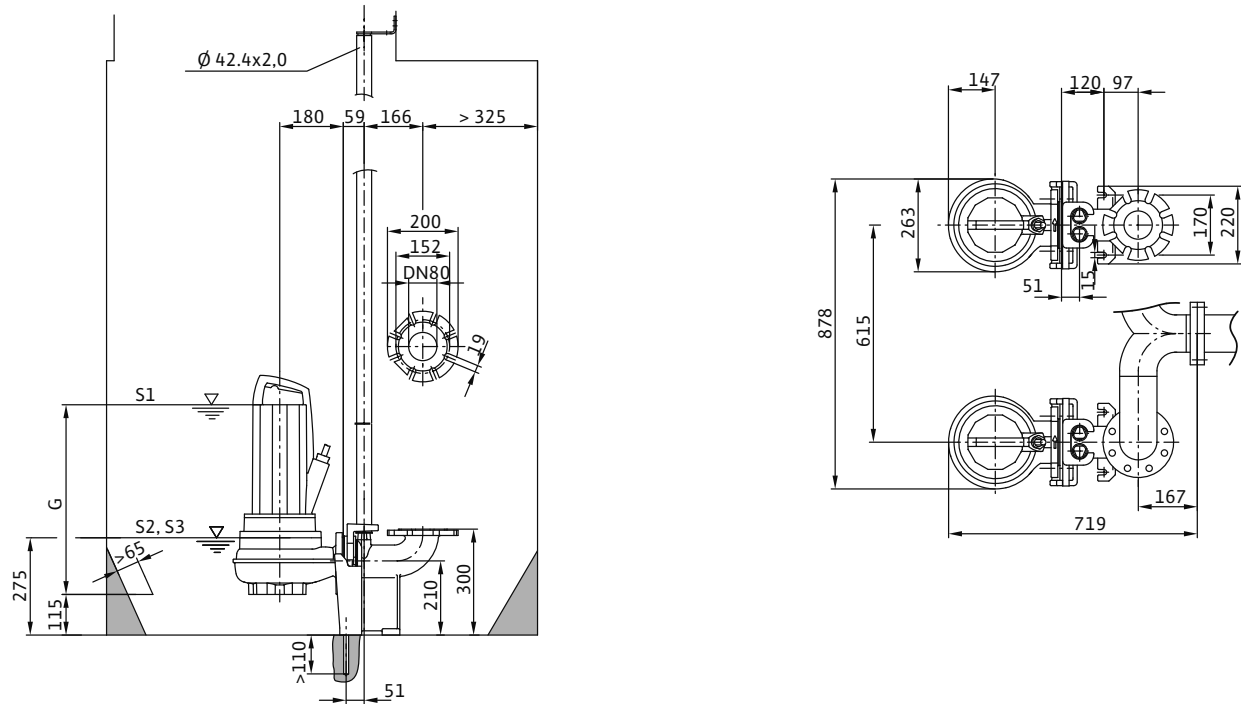


#### Dimension drawing Wilo-Rexa PRO V06-6.. – Stationary wet well installation for DN 65



## Dimensions, weights Wilo-Rexa PRO

Dimension drawing Wilo-Rexa PRO V06-6.. – Stationary wet well installation for DN 80



### Dimensions, weights

Wilo-Rexa...	Dimensions							
	B	C	D	E	G	J	K	Q
	mm							
PRO V06DA-212/E	155	211	266	584	431	100	200	250
PRO V06DA-214/E	155	211	266	584	431	100	200	250
PRO V06DA-216/E	155	211	266	669	516	100	200	250
PRO V06DA-222/E	155	211	266	669	516	100	200	250
PRO V06DA-224/E	155	211	266	669	516	100	200	250
PRO V06DA-622/E	165	230	287	690	537	147	263	327
PRO V06DA-623/E	165	230	287	690	537	147	263	327
PRO V06DA-625/E	165	230	287	690	537	147	263	327
PRO V06DA-626/E	165	230	287	690	537	147	263	327
PRO V06DA-628/E	165	230	287	690	537	147	263	327

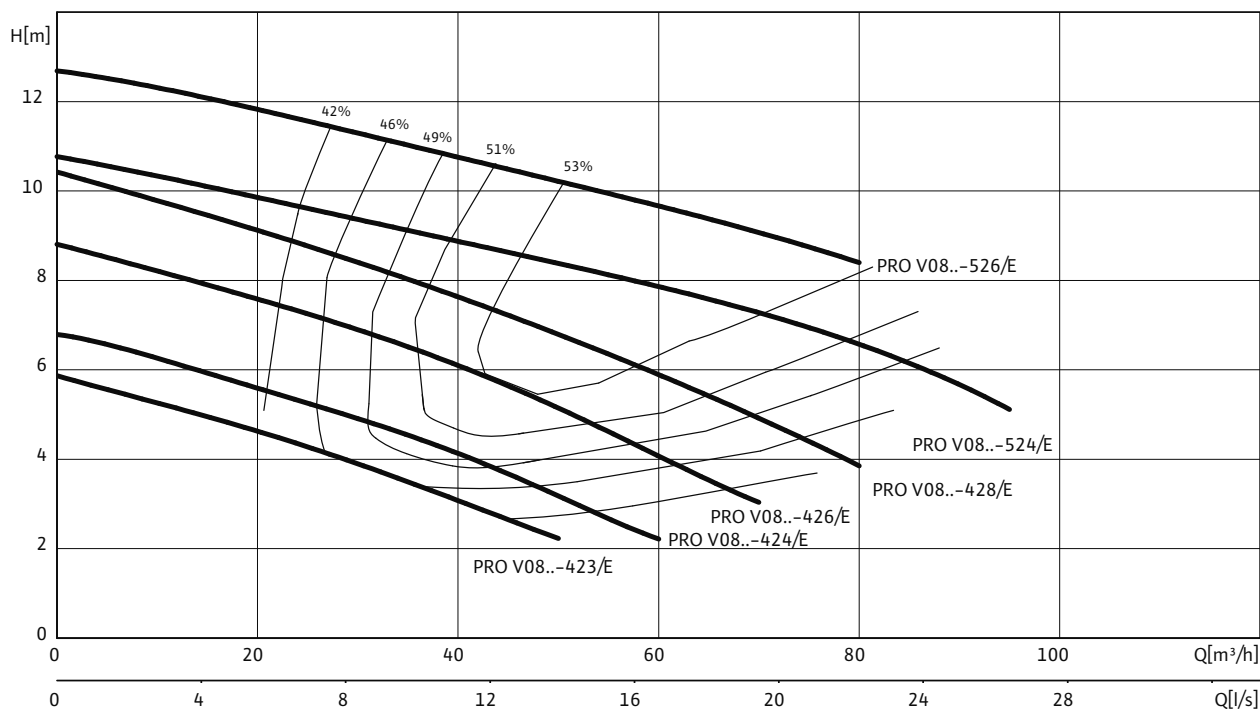
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-Rexa PRO V08

#### Pump curves Wilo-Rexa PRO V08.. – 50 Hz – 1450 rpm

Vortex impeller – Free ball passage: 80 mm



Characteristic curves acc. to ISO 9906, Appendix A. The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Pump type	Nominal motor power	Float switch	Mains plug	Weight approx.	Art no.		Art no.	
					1~230 V, 50 Hz		3~400 V, 50 Hz	
	$P_2$			$m$				
	kW			kg				
PRO V08DA-423/E...-O	1.1	—	—	72	6065933		6065934	
PRO V08DA-424/E...-O	1.1	—	—	72	6065935		6065936	
PRO V08DA-426/E...-O	1.5	—	—	72	6065937		6065938	
PRO V08DA-428/E...-O	2.5	—	—	73	—	—	6065939	
PRO V08DA-524/E...-O	3.5	—	—	77	—	—	6065941	
PRO V08DA-526/E...-O	3.5	—	—	77	—	—	6065942	

• = available, - = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm³.



## Technical data Wilo-Rexa PRO V08

	PRO V08DA-423/E 3~400 V, 50 Hz	PRO V08DA-423/E 1~230 V, 50 Hz	PRO V08DA-424/E 3~400 V, 50 Hz	PRO V08DA-424/E 1~230 V, 50 Hz
<b>Unit</b>				
Pressure connection	DN 80/DN 100	DN 80/DN 100	DN 80/DN 100	DN 80/DN 100
Free ball passage mm	80	80	80	80
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	50	50	60	60
Max. delivery head $H_{max}$ / m	5.8	5.8	6.8	6.8
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%
Max. immersion depth m	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>				
Nominal current $I_N$ / A	3.05	7.3	3.05	7.3
Starting current - direct $I_A$ / A	24.5	25	24.5	25
Nominal motor power $P_2$ / kW	1.1	1.1	1.1	1.1
Power consumption $P_1$ / kW	1.5	1.6	1.5	1.6
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	1436	1453	1436	1453
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>				
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021

• = available, - = not available

$P_1$  refers to the maximum power consumption. All of the data applies to 3-400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-Rexa PRO V08

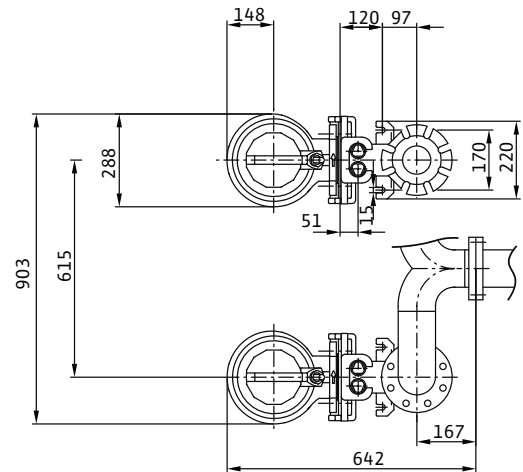
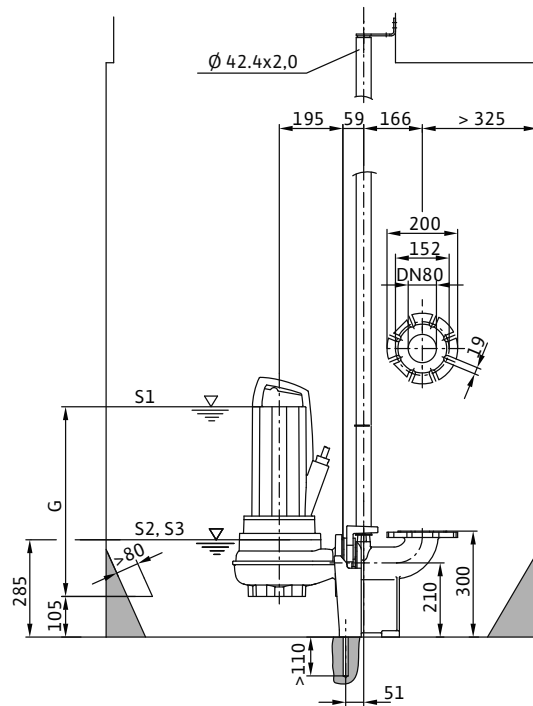
	PRO V08DA-426/E	PRO V08DA-426/E	PRO V08DA-428/E	PRO V08DA-524/E	PRO V08DA-526/E
	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>					
Pressure connection	DN 80/DN 100	DN 80/DN 100	DN 80/DN 100	DN 80/DN 100	DN 80/DN 100
Free ball passage mm	80	80	80	80	80
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	70	70	80	95	80
Max. delivery head $H_{max}$ / m	8.8	8.8	10.4	10.8	12.7
Operating mode (immersed)	S1	S1	S1	S1	S1
Operating mode (non-immersed)	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%	S2-30 min S3-25%
Max. immersion depth m	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
<b>Motor data</b>					
Nominal current $I_N$ / A	3.7	9.4	5.8	8.1	8.1
Starting current - direct $I_A$ / A	24.5	25	35.5	51	51
Nominal motor power $P_2$ / kW	1.5	1.5	2.5	3.45	3.45
Power consumption $P_1$ / kW	2	2.2	3.3	4.5	4.5
Activation type	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	1413	1419	1402	1393	1393
Insulation class	F	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20	20
Max. switching frequency 1/h	50	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10	±10
<b>Cable</b>					
Length of connecting cable m	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable	Detachable
<b>Equipment/function</b>					
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>					
Static seal	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite	Carbon/steatite
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021

• = available, - = not available

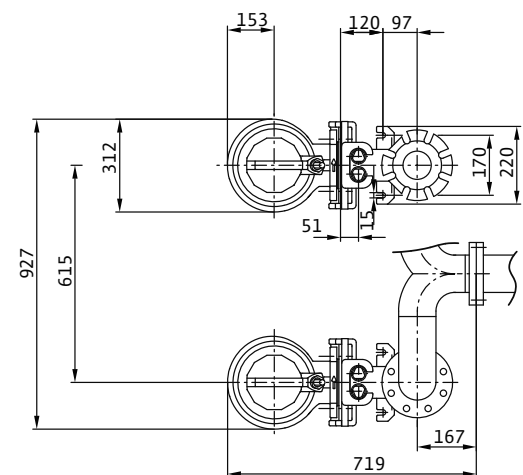
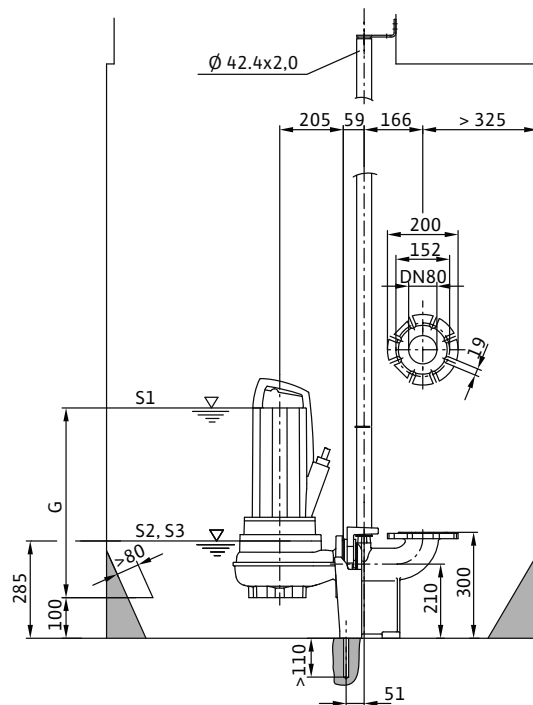
$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Dimensions, weights Wilo-Rexa PRO

Dimension drawing Wilo-Rexa PRO V08-42.. – Stationary wet well installation



Dimension drawing Wilo-Rexa PRO V08-52.. – Stationary wet well installation

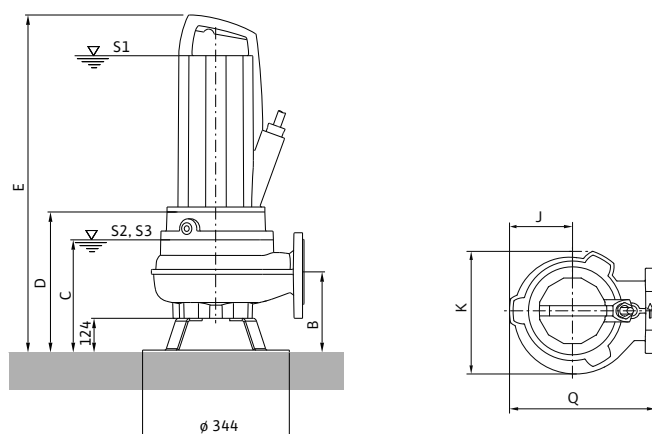


# Dewatering

## Submersible sewage pumps

### Dimensions, weights Wilo-Rexa PRO

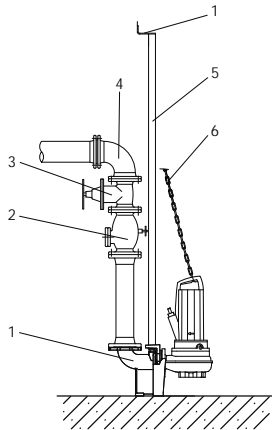
#### Dimension drawing Wilo-Rexa PRO V08 – transportable wet well installation



#### Dimensions, weights

Wilo-Rexa...	Dimensions							
	B	C	D	E	G	J	K	Q
	mm							
PRO V08DA-423/E	229	304	361	764	557	148	288	343
PRO V08DA-424/E	229	304	361	764	557	148	288	343
PRO V08DA-426/E	229	304	361	764	557	148	288	343
PRO V08DA-428/E	229	304	361	764	557	148	288	343
PRO V08DA-524/E	234	309	366	769	562	153	288	358
PRO V08DA-526/E	234	309	366	769	562	153	288	358

### Mechanical accessories



- 1 Suspension unit
- 2 Non-return valve
- 3 Gate valve
- 4 Pipe elbow
- 5 Guide pipe
- 6 Chain

#### Stationary wet well installation DN 50

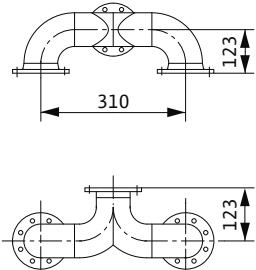
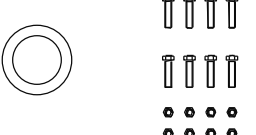
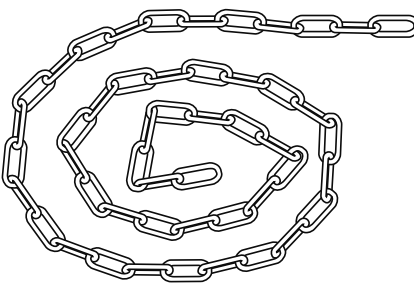
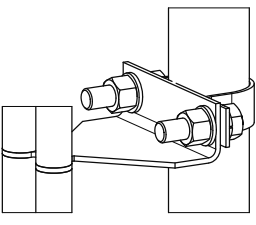
		Description	Art no.
<b>Suspension unit DN50/2RK</b>		for 2-pipe guide bracket, of EN-GJL-250, painted, with free passage in DN 50, coupling foot with 90° pipe elbow, including coupling connection, guide pipe bracket of stainless steel for sump mounting, profile joint and mounting accessories, connection on the pressure side DN 50; 2x guide pipes Ø ¾" must be provided on site!	6040766
<b>Non-return ball valve</b>		Made of EN-GJL-250, with Rp 2 female thread for DN 50 connection	4027331
<b>Non-return valve</b>		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 50 connection	2017166
<b>Gate valve</b>		Made of EN-GJL-250, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, DN 50	2017160
<b>Shut-off ball valve</b>		Made of brass, nickel-plated, with Rp 2 female thread for DN 50 connection	4027338

# Dewatering

## Submersible sewage pumps

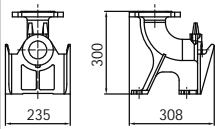
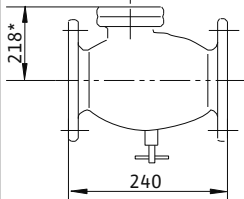
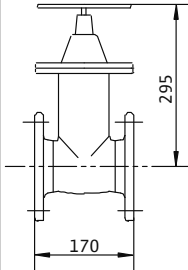
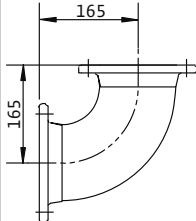
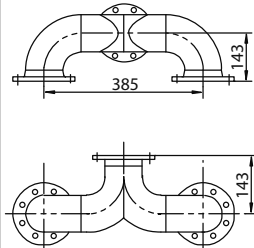
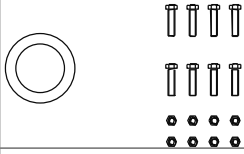
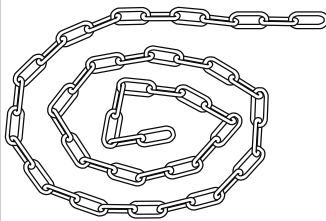
### Mechanical accessories

#### Stationary wet well installation DN 50

		Description	Art no.
<b>Y-piece DN 50</b>		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 50/50/50 connection	2019042
<b>Mounting accessories DN 40/50</b>		For a DN 40/50 flange connection, with 4 screws, 4 nuts and 1 flat gasket for PN 10/16 flange, DIN 2501	2057177
<b>Chain set PCS-CE</b>		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138
<b>Guide pipe bracket</b>		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 50 cast-iron pipe, including mounting accessories of A4	6066851
		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 50 steel pipe, including mounting accessories of A4	6061084
<b>Bracket for guide pipe extension</b>		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 50 cast-iron pipe, including mounting accessories of A4	6066852
		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 50 steel pipe, including mounting accessories of A4	6066846

## Mechanical accessories

## Stationary wet well installation DN 65

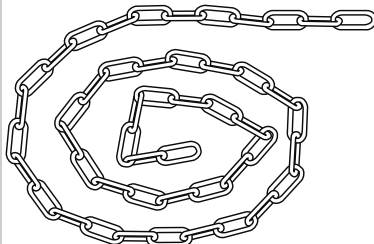
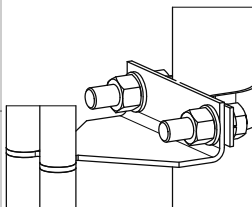
		Description	Art no.
Suspension unit DN65/2RK		for 2-pipe guide bracket, of EN-GJL-250, painted, with free passage in DN 65, coupling foot with 90° pipe elbow, including coupling connection, guide pipe bracket of stainless steel for sump mounting, profile joint and mounting accessories, connection on the pressure side DN 65; 2x guide pipes Ø ¾" must be provided on site!	6066844
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 65 connection	2017167
Gate valve		Made of EN-GJL-250, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, DN 65	2017161
Pipe bend 90°		Made of spheroidal cast iron 400-15, with 2 flanges, including 1 set of mounting accessories, PN 10/16 flange, DIN 28637, for DN 65 connection	2017183
Y-piece DN 65		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 65/65/65 connection	2017178
Mounting accessories DN 65		For a DN 40/50 flange connection, with 4 screws, 4 nuts and 1 flat gasket for PN 10/16 flange, DIN 2502	2012068
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141

# Dewatering

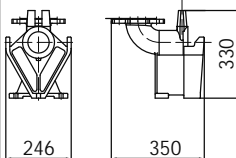
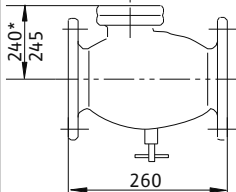
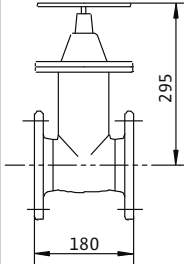
## Submersible sewage pumps

### Mechanical accessories

#### Stationary wet well installation DN 65

		Description	Art no.
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138
Guide pipe bracket		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 65 cast-iron pipe, including mounting accessories of A4	6066847
for 2-pipe guide, of stainless steel, for pipe attachment on a DN 65 steel pipe, including mounting accessories of A4		6066848	
Bracket for guide pipe extension		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 65 cast-iron pipe, including mounting accessories of A4	6066849
		for 2-pipe guide, of stainless steel, for pipe attachment on a DN 65 steel pipe, including mounting accessories of A4	6066850

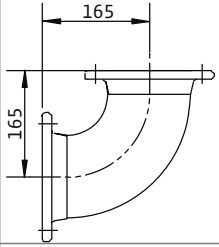
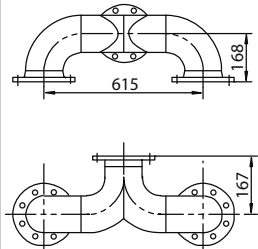
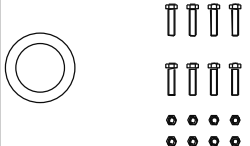
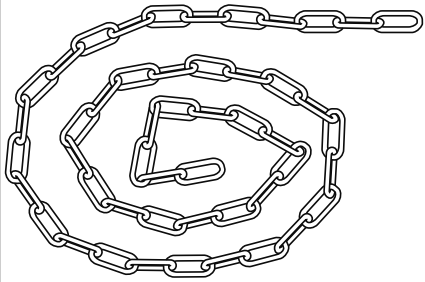
#### Stationary wet well installation DN 80

		Description	Art no.
Suspension unit DN 80/2RK		Made of EN-GJL-250, lacquered, with free passage in DN 80, foot elbow including pump holder, profile joint, installation and floor fixation accessories and guide tube bracket Ø 1¼" without guide pipes. Connection on pressure side DN 80/PN16 in acc. with DIN 2501. The double pipe feed Ø 1¼" is to be provided by the customer.	6036888
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 80 connection	2017168
Gate valve		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 80	2017162



## Mechanical accessories

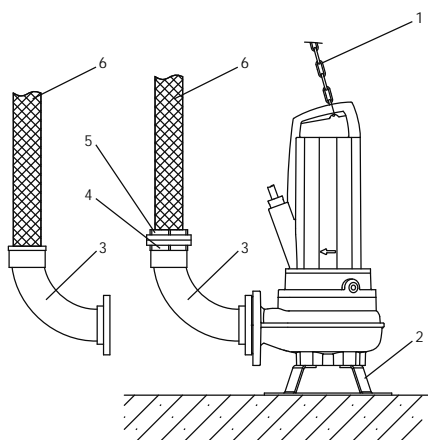
### Stationary wet well installation DN 80

		Description	Art no.
Pipe bend 90°		Made of spheroidal cast iron 400-15, with 2 flanges, including 1 set of mounting accessories, PN 10/16 flange, DIN 28637, for DN 80 connection	2012064
Y-piece DN 80		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 80/80/80 connection	2017179
Mounting accessories DN 80		For a DN 80 flange connection, with 8 screws, 8 nuts and 1 flat gasket for PN 10/16 flange, DIN 2502	2012067
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Dewatering

## Submersible sewage pumps

### Mechanical accessories



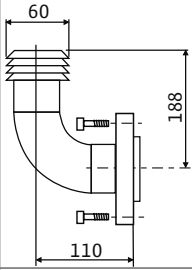
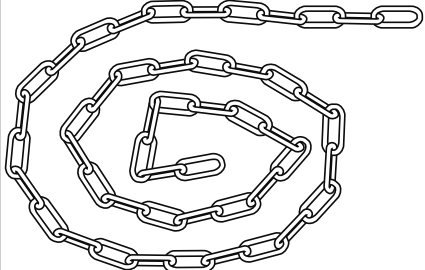
- 1 Chain
- 2 Pump base
- 3 Pipe elbow for hose connection or Storz pipe coupling
- 4 Storz pipe coupling
- 5 Storz hose coupling
- 6 Pressure hose

#### Portable wet well installation with hose connection

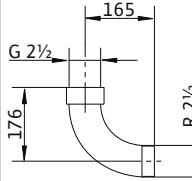
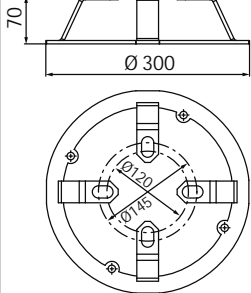
		Description	Art no.
Pipe bend 90°		Made of steel, galvanized with G 2 / R 2 female/male thread for DN 50 connection	4027332
Adapter DN 50 on Rp 2		Made of steel, galvanized, DN 50 threaded flange, PN 10/16, DIN 2566 with Rp 2 female thread, incl. 1 set of mounting accessories for DN 50 connection	4027333
Hose connection		Made of plastic, hose nozzle with Ø 60 mm including hose clip, G 2 male thread for direct hose connection	4027334
Pressure hose		Synthetic, inner Ø 60 mm, PN 8, length 10 m, incl. hose clip for direct hose connection via hose nozzle, Ø 60 mm	2018106
Floor supporting foot DN 50/65		Made of steel (S235JR) with 4 supports for connection to DN 50/65, powder coated, incl. fixation material	6064666

## Mechanical accessories

### Portable wet well installation with hose connection

		Description	Art no.
Pipe bend 90°		Made of PVC, with hose nozzle (Ø 60 mm) for direct hose connection, flange on pump side, incl. 1 set of mounting accessories for DN 50 connection	4027344
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

### Portable wet well installation with hose connection DN 65

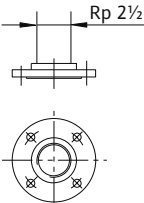
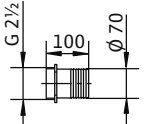
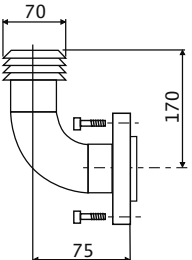
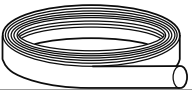
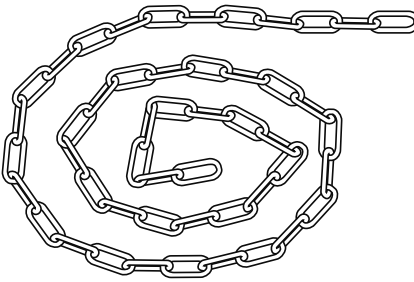
		Description	Art no.
Pipe bend 90°		Made of steel, galvanised with G 2 1/2 / R 2 1/2 female/male thread for DN 65 connection	4015212
Floor supporting foot DN 50/65		Made of steel (S235JR) with 4 supports for connection to DN 50/65, powder coated, incl. fixation material	6064666

# Dewatering

## Submersible sewage pumps

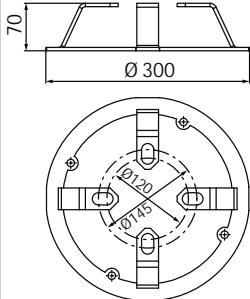
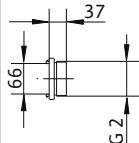
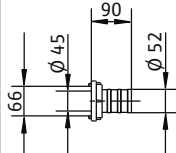
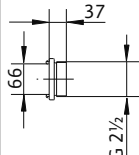

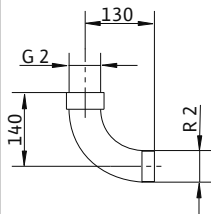
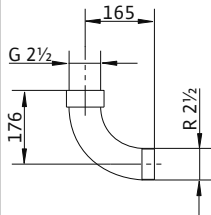
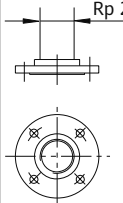
### Mechanical accessories

#### Portable wet well installation with hose connection DN 65

		Description	Art no.
Adapter DN 65 on Rp 2½		Made of steel, galvanized, DN 65 threaded flange, PN 10/16, DIN 2566 with Rp 2½ female thread, incl. 1 set of mounting accessories for DN 65 connection	4015204
Hose connection		Made of brass, hose nozzle with Ø 70 mm, including hose clip, G 2½ male thread for direct hose connection	4015210
Pipe bend 90°		Made of EN-GJL-250, with hose nozzle (Ø 70 mm) for direct hose connection, flange on pump side, incl. 1 set of mounting accessories for DN 65 connection	4027346
Pressure hose		Synthetic, inner Ø 70 mm, PN 8, length 10 m, incl. hose clip for direct hose connection via hose nozzle, Ø 70 mm	2014151
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

## Mechanical accessories

### Portable wet well installation with Storz coupling DN 50/65

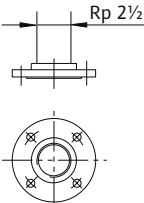
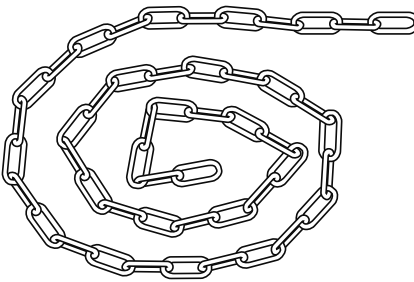
		Description	Art no.
Floor supporting foot DN 50/65		Made of steel (S235JR) with 4 supports for connection to DN 50/65, powder coated, incl. fixation material	6064666
Storz C pipe coupling with male thread G 2		Made of aluminium, Storz C connection, with G 2 male thread, tappet clearance 66 mm for a DN 50 connection	2018102
Storz hose coupling		Made of aluminium, Storz A connection, with hose nozzle (Ø 52 mm), tappet clearance 66 mm, incl. hose clip	2015235
Storz C pipe coupling with male thread G 2½		Made of aluminium, Storz C connection, with G 2½ male thread, tappet clearance 66 mm for a DN 65 connection	2015234
Pressure hose		Synthetic, inner Ø 52 mm, PN 8, length 10 m, incl. hose clip for direct hose connection via hose nozzle (Ø 50 mm) or a Storz C hose coupling	2017192
Pipe bend 90°		Made of steel, galvanized with G 2 / R 2 female/male thread for DN 50 connection	4027332
		Made of steel, galvanised with G 2½ / R 2½ female/male thread for DN 65 connection	4015212
Adapter DN 50 on Rp 2		Made of steel, galvanized, DN 50 threaded flange, PN 10/16, DIN 2566 with Rp 2 female thread, incl. 1 set of mounting accessories for DN 50 connection	4027333

# Dewatering

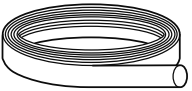
## Submersible sewage pumps

### Mechanical accessories

#### Portable wet well installation with Storz coupling DN 50/65

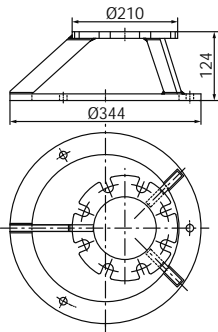
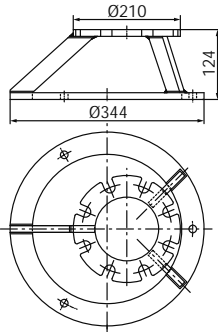
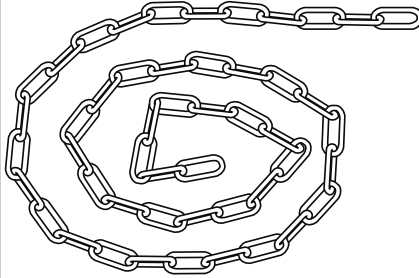
		Description	Art no.
Adapter DN 65 on Rp 2½		Made of steel, galvanized, DN 65 threaded flange, PN 10/16, DIN 2566 with Rp 2½ female thread, incl. 1 set of mounting accessories for DN 65 connection	4015204
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanized steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanized steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanized steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanized steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

#### Portable wet well installation with Storz coupling DN 80

		Description	Art no.
Pipe elbow 90° with Storz B pipe coupling and female thread R 3		Made of EN-GJL-250, with R 3 male thread, DN 80 flange on pump side, incl. 1 set of mounting accessories and Storz B fixed coupling, G 3 female thread	6031385
Pressure hose / Storz B		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 75 mm, length 5 m incl. Storz B coupling, 12/40 bar	6003052
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 75 mm, length 10 m incl. Storz B coupling, 12/40 bar	6003051
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 75 mm, length 20 m incl. Storz B coupling, 12/40 bar	6003050

## Mechanical accessories

### Portable wet well installation with Storz coupling DN 80

		Description	Art no.
Floor supporting foot DN 80/100		Made of steel (S235JR) with 4 supports for connection to DN 80/100, powder-coated, incl. fixation material	6065949
		Made of stainless steel (1.4571) with 4 supports for connection to DN 80/100, incl. fixation material	6065953
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Dewatering

## Submersible sewage pumps

### Series description Wilo-EMU FA (standard variant)



#### Design

Submersible sewage pump

#### Type key

E.g.: **Wilo-EMU FA 08.22W-133+T12-2/11**

<b>FA</b>	Submersible sewage pump
<b>08</b>	Nominal diameter of DN 80 pressure connection
<b>22</b>	Performance indicator
<b>W</b>	Impeller shape (W = vortex impeller, E = single-channel impeller)
<b>133</b>	Impeller diameter [mm]
<b>T</b>	Motor version
<b>12</b>	Size
<b>2</b>	Number of poles
<b>11</b>	Package length [cm]

#### Application

- Pumping of sewage with solid constituents in water treatment systems and pumping stations
- Local drainage, water control and process water extraction
- Applications in construction and industry

#### Special features/product advantages

- Operation in stationary and portable wet well installation
- Heavy-duty version made of grey cast iron
- Easy installation due to suspension unit or pump base
- Longitudinally watertight cable lead-in
- Cable length 10 m
- ATEX approval

#### Technical data

- Mains connection: 3~400 V, 50 Hz
- Immersed operating mode: S1
- Surfaced operating mode: S1, S2-15 or S2-30 (depending on type)
- Thermal motor monitoring
- Protection class: IP 68
- Insulation class: F
- Fluid temperature: 3 - 40 °C
- Cable length: 10 m
- Free ball passage from 45 mm to 100 mm
- Permanently lubricated roller bearings
- Max. immersion depth: 20 m

#### Equipment/function

- Stationary dry well installation possible for short-term operation, S1 and S2 (depending on type)
- Heavy-duty version made of cast iron
- Simple installation via suspension unit or pump base

#### Materials

- Pump housing: EN-GJL-250
- Impeller: EN-GJL or EN-GJS
- Static seals: NBR
- Mechanical seal on pump side: SiC/SiC
- Mechanical seal on motor side: SiC/SiC (depending on type)
- Rotary shaft seal on motor side: NBR (depending on type)
- Motor housing: EN-GJL-250
- Shaft: Stainless steel 1.4021

#### Description/design

Submersible sewage pump as submersible monobloc unit for stationary and portable wet well installation.

#### Hydraulics

The outlet on the pressure side is designed as horizontal flange connection. The maximum possible dry matter content is 8%, depending on the hydraulics and impeller type.

The following impeller shapes are used:

- Vortex impeller (W)
- Single-channel impeller (E)

Each single-channel hydraulic system (E) is equipped with a counter ring and stationary wear ring made of hardened material (except for FA 08.41E). These ensure the consistently high efficiency of the unit for a long duration.

#### Motor

Dry motors (T motors) give off their heat directly to the surrounding fluid via the housing components and can be used in immersed state for permanent operation. Depending on the size, they can also be used in non-immersed state for short-term operation.

All motors have a sealing chamber that protects the motor from fluid ingress. It can be accessed from the outside and can be monitored with an optional sealing chamber electrode.



### Series description Wilo-EMU FA (standard variant)

All filling fluids used are potentially biodegradable and environmentally safe.

The cable inlet of the dry motors is longitudinally watertight. The cable length is 10 m.

#### Sealing

Fluid-side and motor-side sealing is possible in the following versions depending on the motor type:

- Version H: Mechanical seal for the fluid side, rotary shaft seal for the motor side
- Version G: Two independently operating mechanical seals

#### Scope of delivery

- Pump ready for connection with 10 m connecting cable without plug
- Installation and operating instructions

#### Commissioning

Operation with surfaced motor:

Surfacing of the self-cooling motors (FA 05.11W and FA 05.33E) is permitted.

Dry motors (T motors) may be surfaced only if an operating mode for surfaced operation is specified.

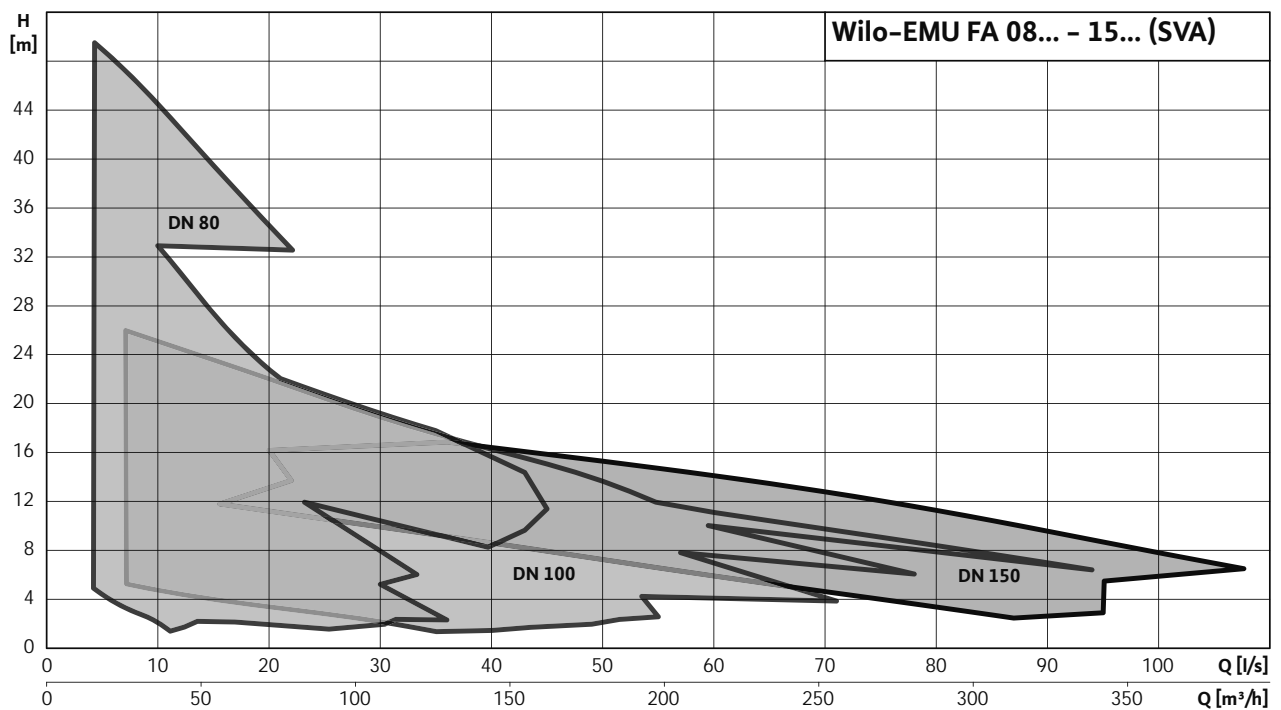
Dry-running protection system:

The hydraulic housing must always be immersed to prevent air from being drawn in. In the case of fluctuating fluid levels, the system should shut down automatically once the minimum water submersion is reached.

#### Accessories

- Suspension unit or pump base
- Various pressure outlets and Storz couplings
- Chains
- Switchgears, relays and plugs

#### Duty chart



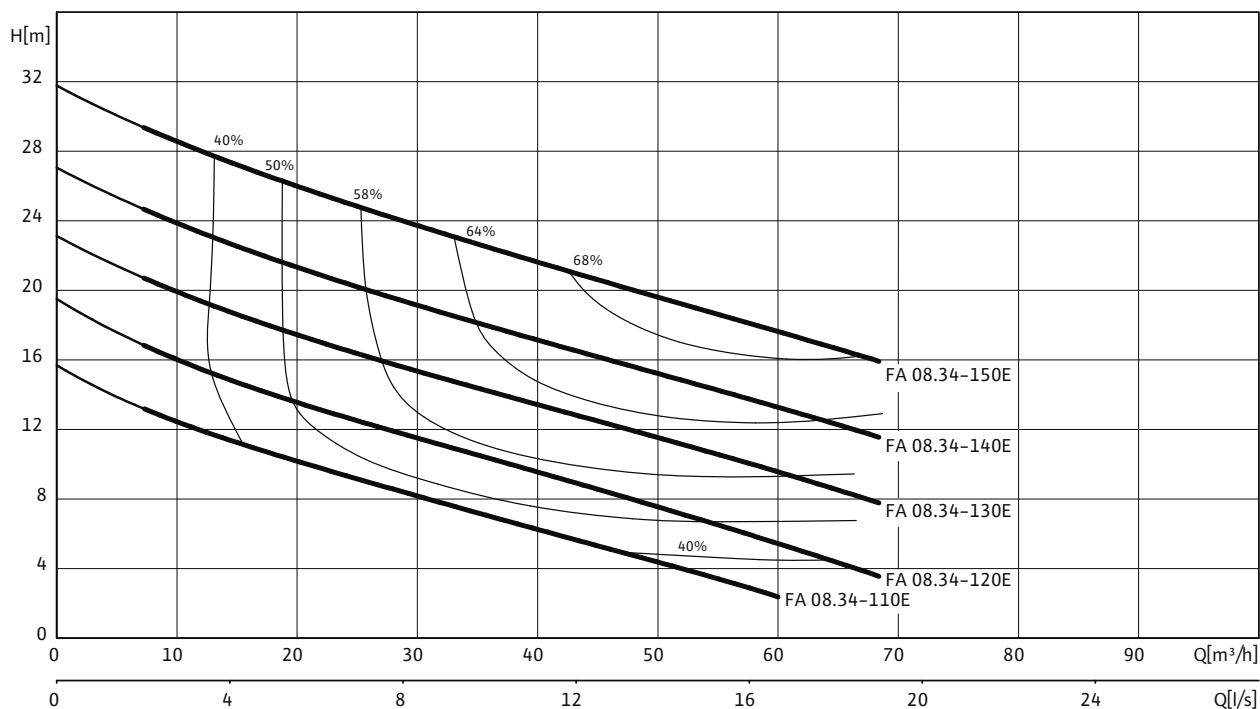
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-EMU FA 08.34E (2900 rpm)


#### Pump curves Wilo-EMU FA 08.34E – 50 Hz – 2900 rpm


Single-channel impeller – Free ball passage: 45 mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection		Art no.
FA 08.34-110E + T 13-2/12HEX	3~400 V, 50 Hz	K	6047536
FA 08.34-120E + T 13-2/12HEX	3~400 V, 50 Hz	K	6035722
FA 08.34-130E + T 13-2/12HEX	3~400 V, 50 Hz	K	6047552
FA 08.34-140E + T 13-2/12HEX	3~400 V, 50 Hz	L	6047560
FA 08.34-150E + T 13-2/16HEX	3~400 V, 50 Hz	K	6047568

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data Wilo-EMU FA 08.34E (2900 rpm)

	FA 08.34-110E + T 13- 2/12HEx	FA 08.34-120E + T 13- 2/12HEx	FA 08.34-130E + T 13- 2/12HEx	FA 08.34-140E + T 13- 2/12HEx	FA 08.34-150E + T 13- 2/16HEx
	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz
<b>Unit</b>					
Pressure connection	DN 80	DN 80	DN 80	DN 80	DN 80
Free ball passage mm	45	45	45	45	45
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	60.1	71.3	83.2	87.8	87.8
Max. delivery head $H_{max}$ / m	15.6	19.4	23	27	31.7
Operating mode (immersed)	S1	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S2-15 min	S2-15 min	S2-15 min
Max. immersion depth m	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	54.5	54.5	55	55	58.5
<b>Motor data</b>					
Nominal current $I_N$ / A	5	5	7.6	7.6	7.6
Starting current $I_A$ / A	37	37	37	37	37
Nominal motor power $P_2$ / kW	2.2	2.2	3.75	3.75	5
Power consumption $P_1$ / kW	2.8	2.8	4.7	4.7	6
Activation type	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2890	2890	2825	2825	2825
Insulation class	F	F	F	F	F
Recommended switching frequency 1/h	—	—	—	—	—
Max. switching frequency 1/h	15	15	15	15	15
Permitted voltage tolerance %	±10	±10	±10	±10	±10
<b>□able</b>					
Length of connecting cable m	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable	Non-detachable	Non-detachable
Mains plug	—	—	—	—	—
<b>E□uipment/function</b>					
Float switch	—	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>					
Static seal	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	NBR	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021

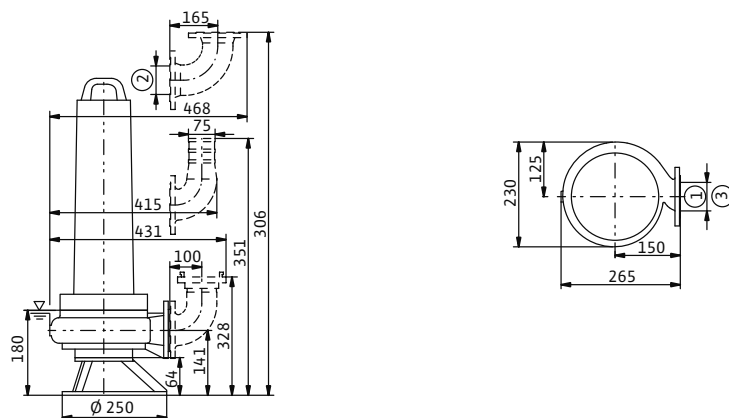
$P_1$  refers to the maximum power consumption. All of the data applies to 3-400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

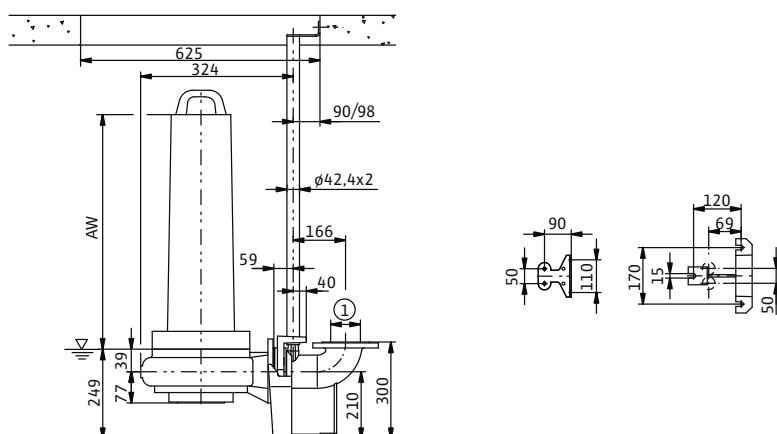
## Submersible sewage pumps

### Dimensions Wilo-EMU FA 08.34E (2900 rpm)

#### Dimension drawing Wilo-EMU FA – portable installation



#### Dimension drawing Wilo-EMU FA – stationary wet well installation



1 = DN80 PN10 / ANSI B16.1, Class 125, Size 3; 2 = DN80 PN10; 3 = DN65 PN10 / ANSI B16.1, Class 125, Size 2,5

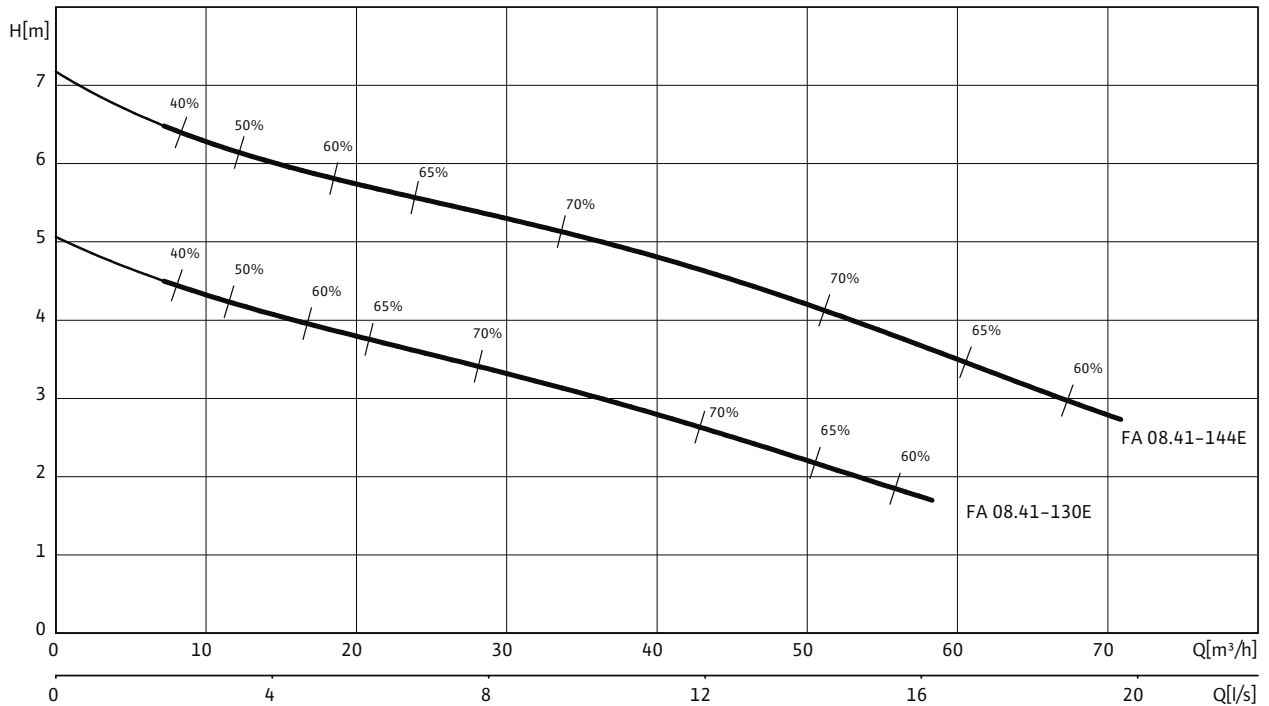
#### Dimensions

Wilo-EMU...	Dimensions
	AW
	mm
T 13-2/12 (Ex)	319
T 13-2/16 (Ex)	374

## Pump curves, ordering information Wilo-EMU FA 08.41E (1450 rpm)

### Pump curves Wilo-EMU FA 08.41E – 50 Hz – 1450 rpm

Single-channel impeller – Free ball passage: 65 mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection		Art no.
FA 08.41-130E + T 12-4/11 Ex	3~400 V, 50 Hz	L	6047580
FA 08.41-144E + T 12-4/11 Ex	3~400 V, 50 Hz	L	6046640

= ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Dewatering

## Submersible sewage pumps

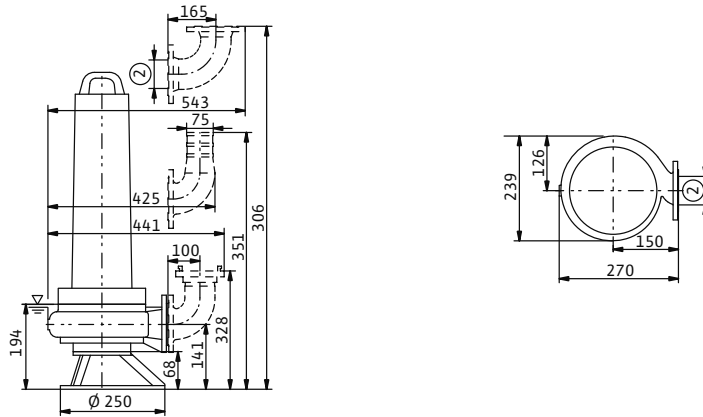
### Technical data Wilo-EMU FA 08.41E (1450 rpm)

	FA 08.41-130E + T 12-4/11 Ex	FA 08.41-144E + T 12-4/11 Ex
	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Unit</b>		
Pressure connection	DN 80	DN 80
Free ball passage mm	65	65
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	58.3	70.9
Max. delivery head $H_{max}$ / m	5	7
Operating mode (immersed)	S1	S1
Operating mode (non-immersed)	S1	S2-15 min
Max. immersion depth m	20	20
Protection class	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	38	38
<b>Motor data</b>		
Nominal current $I_N$ / A	2.5	3.3
Starting current $I_A$ / A	16	16
Nominal motor power $P_2$ / kW	0.5	1.3
Power consumption $P_1$ / kW	0.8	1.8
Activation type	Direct	Direct
Nominal speed $n$ / rpm	1460	1392
Insulation class	F	F
Recommended switching frequency 1/h	—	—
Max. switching frequency 1/h	15	15
Permitted voltage tolerance %	±10	±10
<b>Cable</b>		
Length of connecting cable m	10	10
Cable type	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5
Type of connecting cable	Non-detachable	Non-detachable
Mains plug	—	—
<b>Equipment/function</b>		
Float switch	—	—
Motor protection	WSK	WSK
Explosion protection	ATEX	ATEX
<b>Materials</b>		
Static seal	NBR	NBR
Impeller	EN-GJS-500-7	EN-GJS-500-7
Sealing on motor side	SiC/SiC	SiC/SiC
Mechanical seal	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021

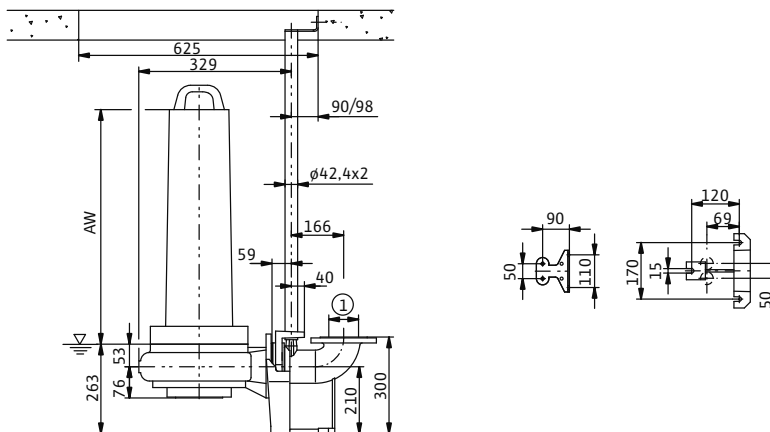
$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Dimensions Wilo-EMU FA 08.41E (1450 rpm)

### Dimension drawing Wilo-EMU FA – portable installation



### Dimension drawing Wilo-EMU FA – stationary wet well installation



1 = DN80 PN10 / ANSI B16.1, Class 125, Size 3; 2 = DN80 PN10

### Dimensions

#### Wilo-EMU... Dimensions

	AW
	mm
T 12-4/11 (Ex)	319

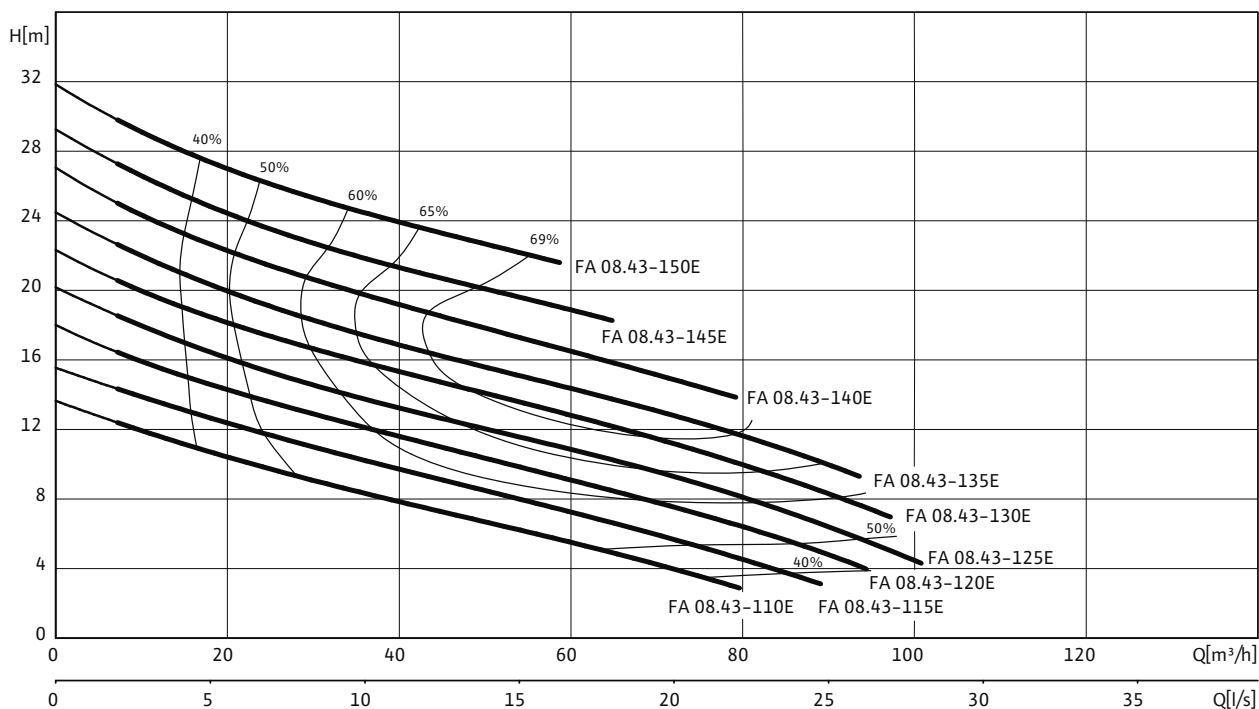
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-EMU FA 08.43E (2900 rpm)


#### Pump curves Wilo-EMU FA 08.43E – 50 Hz – 2900 rpm


Single-channel impeller – Free ball passage:  $\varnothing 0$  mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection		Art no.
FA 08.43-110E + T 13-2/12HEX	3~400 V, 50 Hz	L	6047584
FA 08.43-115E + T 13-2/12HEX	3~400 V, 50 Hz	L	6047586
FA 08.43-120E + T 13-2/9HEX	3~400 V, 50 Hz	K	6047588
FA 08.43-120E + T 13-2/12HEX	3~400 V, 50 Hz	L	6044795
FA 08.43-125E + T 13-2/12HEX	3~400 V, 50 Hz	K	6047590
FA 08.43-130E + T 13-2/12HEX	3~400 V, 50 Hz	L	6047592
FA 08.43-135E + T 13-2/12HEX	3~400 V, 50 Hz	L	6035728
FA 08.43-135E + T 13-2/16HEX	3~400 V, 50 Hz	K	6044796
FA 08.43-140E + T 13-2/12HEX	3~400 V, 50 Hz	K	6049211
FA 08.43-140E + T 13-2/16HEX	3~400 V, 50 Hz	L	6047596
FA 08.43-145E + T 13-2/16HEX	3~400 V, 50 Hz	L	6047598
FA 08.43-150E + T 13-2/16HEX	3~400 V, 50 Hz	L	6035730

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request



## Technical data Wilo-EMU FA 08.43E (2900 rpm)

	FA 08.43- 110E + T 13-2/12HEx	FA 08.43- 115E + T 13-2/12HEx	FA 08.43- 120E + T 13-2/9HEx	FA 08.43- 120E + T 13-2/12HEx	FA 08.43- 125E + T 13-2/12HEx	FA 08.43- 130E + T 13-2/12HEx
	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz
<b>Unit</b>						
Pressure connection	DN 80	DN 80	DN 80	DN 80	DN 80	DN 80
Free ball passage mm	70	70	70	70	70	70
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	79.6	89.1	94.4	94.4	104	108
Max. delivery head $H_{max}$ / m	13.6	15.6	18.1	18.1	20.3	22.3
Operating mode (immersed)	S1	S1	S1	S1	S1	S1
Operating mode (non-immersed)	S1	S1	S2-15 min	S2-15 min	S2-15 min	S2-15 min
Max. immersion depth m	20	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	55	55	53	55	55.5	55.5
<b>Motor data</b>						
Nominal current $I_N$ / A	5	5	5.3	7.6	7.6	7.6
Starting current $I_A$ / A	37	37	25	37	37	37
Nominal motor power $P_2$ / kW	2.2	2.2	2.4	3.75	3.75	3.75
Power consumption $P_1$ / kW	2.8	2.8	3	4.7	4.7	4.7
Activation type	Direct	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2890	2890	2800	2825	2825	2825
Insulation class	F	F	F	F	F	F
Recommended switching frequency 1/h	—	—	—	—	—	—
Max. switching frequency 1/h	15	15	15	15	15	15
Permitted voltage tolerance %	±10	±10	±10	±10	±10	±10
<b>Table</b>						
Length of connecting cable m	10	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Non-detach- able	Non-detach- able	Non-detach- able	Non-detach- able	Non-detach- able	Non-detach- able
Mains plug	—	—	—	—	—	—
<b>Equipment/function</b>						
Float switch	—	—	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>						
Static seal	NBR	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJS- 500-7	EN-GJS- 500-7	EN-GJS- 500-7	EN-GJS- 500-7	EN-GJS- 500-7	EN-GJS- 500-7
Sealing on motor side	NBR	NBR	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021	1.4021

$P_1$  refers to the maximum power consumption. All of the data applies to 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

## Submersible sewage pumps

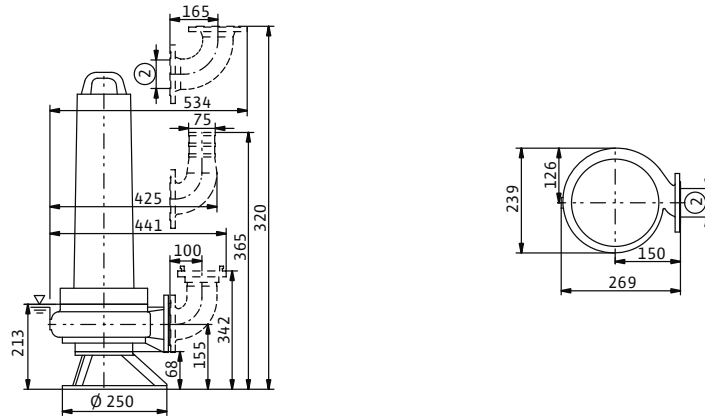
### Technical data Wilo-EMU FA 08.43E (2900 rpm)

	FA 08.43-135E + T 13-2/12HEx	FA 08.43-135E + T 13-2/16HEx	FA 08.43-140E + T 13-2/12HEx	FA 08.43-140E + T 13-2/16HEx	FA 08.43-145E + T 13-2/16HEx	FA 08.43-150E + T 13-2/16HEx
	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz
<b>Unit</b>						
Pressure connection	DN 80	DN 80	DN 80	DN 80	DN 80	DN 80
Free ball passage mm	70	70	70	70	70	70
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	112	112	118	118	78.1	58.7
Max. delivery head $H_{max}$ / m	24.4	24.4	27	27	29.3	31.9
Operating mode (immersed)	S1	S1	S1	S1	S1	S1
Operating mode (non-immersed)	S2-15 min	S2-15 min	S2-15 min	S2-15 min	S2-15 min	S2-15 min
Max. immersion depth m	20	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	55.5	59	—	59.5	59.5	59.5
<b>Motor data</b>						
Nominal current $I_N$ / A	7.6	9.7	7.6	7.6	7.6	9.7
Starting current $I_A$ / A	37	64	37	37	37	64
Nominal motor power $P_2$ / kW	3.75	5	3.75	5	5	5
Power consumption $P_1$ / kW	4.7	6	4.7	6	6	6
Activation type	Direct	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2825	2835	2825	2825	2825	2835
Insulation class	F	F	F	F	F	F
Recommended switching frequency 1/h	—	—	—	—	—	—
Max. switching frequency 1/h	15	15	15	15	15	15
Permitted voltage tolerance %	±10	±10	±10	±10	±10	±10
<b>□able</b>						
Length of connecting cable m	10	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Non-detach-able	Non-detach-able	Non-detach-able	Non-detach-able	Non-detach-able	Non-detach-able
Mains plug	—	—	—	—	—	—
<b>E□uipment/function</b>						
Float switch	—	—	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>						
Static seal	NBR	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJS-500-7	EN-GJS-500-7	EN-GJS-500-7	EN-GJS-500-7	EN-GJS-500-7	EN-GJS-500-7
Sealing on motor side	NBR	NBR	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021	1.4021

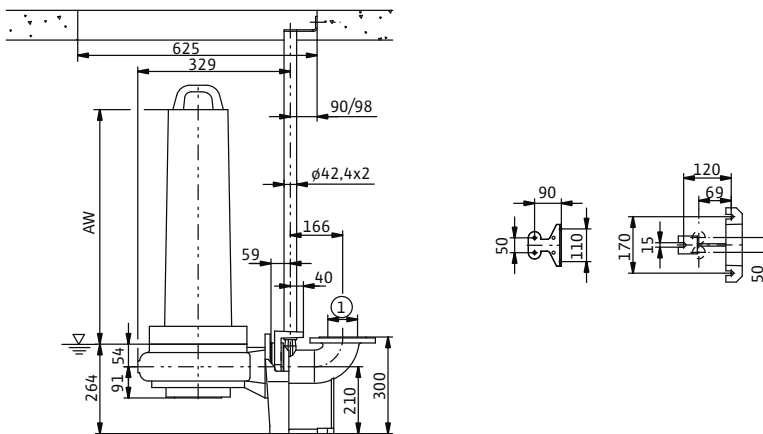
$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

### Dimensions Wilo-EMU FA 08.43E (2900 rpm)

#### Dimension drawing Wilo-EMU FA – portable installation



#### Dimension drawing Wilo-EMU FA – stationary wet well installation



1 = DN80 PN10 / ANSI B16.1, Class 125, Size 3; 2 = DN80 PN10

Dimensions	
Wilo-EMU...	Dimensions
	AW
	mm
T 13-2/9 (Ex)	319
T 13-2/12 (Ex)	319
T 13-2/16 (Ex)	374

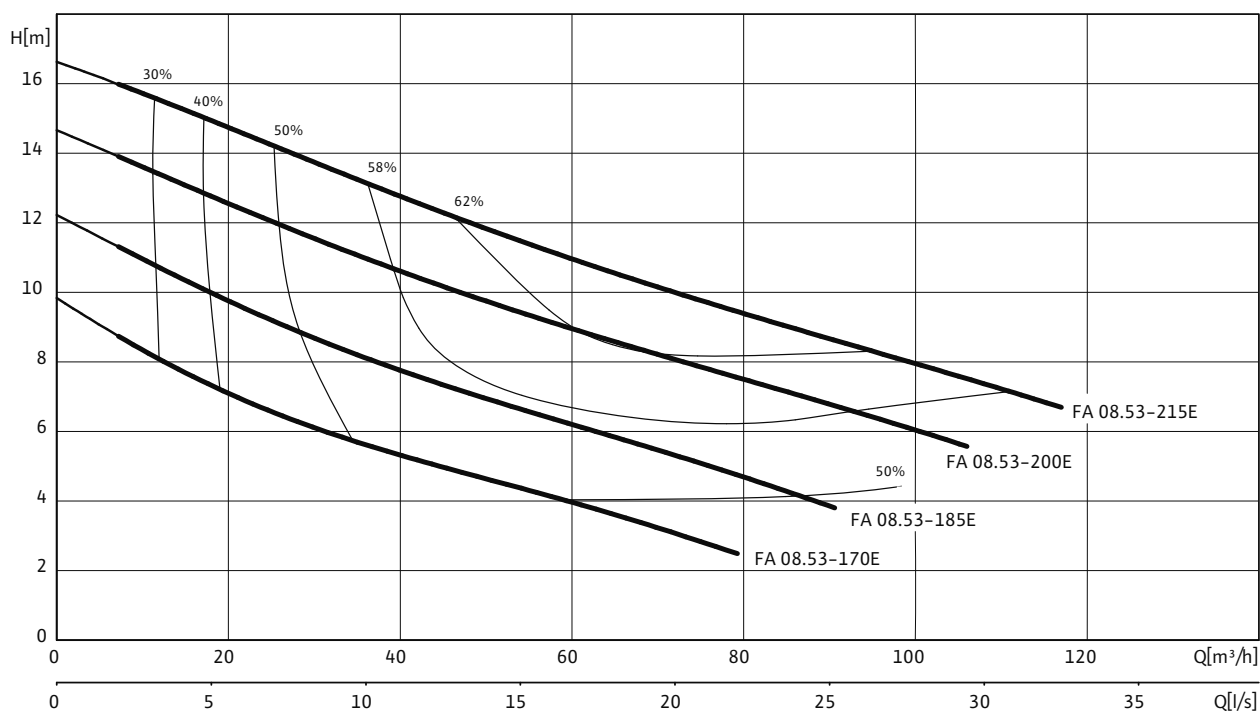
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-EMU FA 08.53E (1450 rpm)


#### Pump curves Wilo-EMU FA 08.53E – 50 Hz – 1450 rpm

Single-channel impeller – Free ball passage:  $\varnothing$ 0 mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection		Art no.
FA 08.53-1 $\varnothing$ 0E + T 13-4/9HEX	3~400 V, 50 Hz	K	6047614
FA 08.53-185E + T 13-4/12HEX	3~400 V, 50 Hz	K	6047616
FA 08.53-200E + T 13-4/18HEX	3~400 V, 50 Hz	K	6047618
FA 08.53-215E + T 13-4/18HEX	3~400 V, 50 Hz	K	6046643

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data Wilo-EMU FA 08.53E (1450 rpm)

	FA 08.53-100E + T 13-4/9HEX	FA 08.53-185E + T 13-4/12HEX	FA 08.53-200E + T 13-4/18HEX	FA 08.53-215E + T 13-4/18HEX
	3000 mm, 50 Hz	3000 mm, 50 Hz	3000 mm, 50 Hz	3000 mm, 50 Hz
<b>Unit</b>				
Pressure connection	DN 80	DN 80	DN 80	DN 80
Free ball passage mm	70	70	70	70
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	79.3	90.6	106	117
Max. delivery head $H_{max}$ / m	9.8	12.2	14.7	16.6
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-15 min	S2-15 min	S2-15 min	S2-15 min
Max. immersion depth m	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	66.5	68.5	73.5	73.5
<b>Motor data</b>				
Nominal current $I_N$ / A	4.2	5.1	9.2	9.2
Starting current $I_A$ / A	16	20	32	32
Nominal motor power $P_2$ / kW	1.75	2.25	4	4
Power consumption $P_1$ / kW	2.5	3	5	5
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	1310	1350	1400	1400
Insulation class	F	F	F	F
Recommended switching frequency 1/h	—	—	—	—
Max. switching frequency 1/h	15	15	15	15
Permitted voltage tolerance %	±10	±10	±10	±10
<b>Cable</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable	Non-detachable
Mains plug	—	—	—	—
<b>Equipment/function</b>				
Float switch	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	EN-GJS-500-7	EN-GJS-500-7	EN-GJS-500-7	EN-GJS-500-7
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021

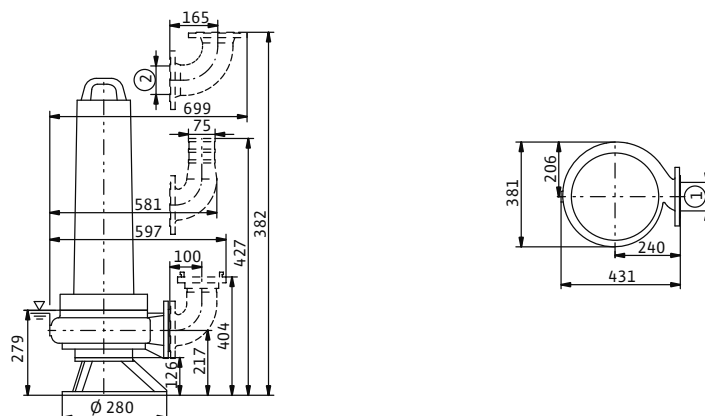
$P_1$  refers to the maximum power consumption. All of the data applies to 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

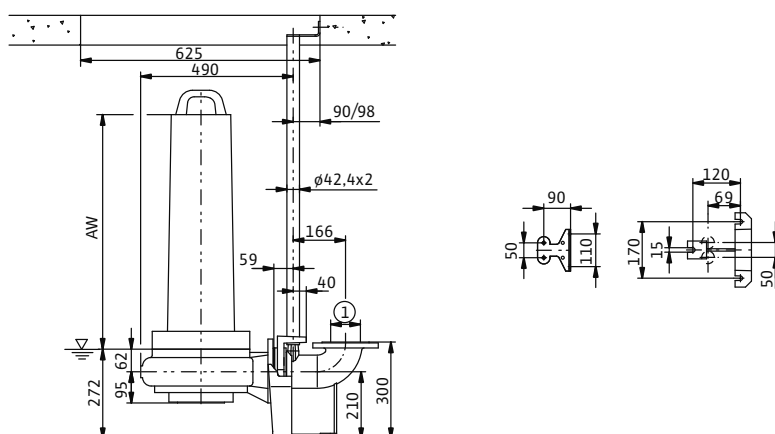
## Submersible sewage pumps

### Dimensions Wilo-EMU FA 08.53E (1450 rpm)

#### Dimension drawing Wilo-EMU FA – portable installation



#### Dimension drawing Wilo-EMU FA – stationary wet well installation



1 = DN80 PN10 / ANSI B16.1, Class 125, Size 3; 2 = DN80 PN10

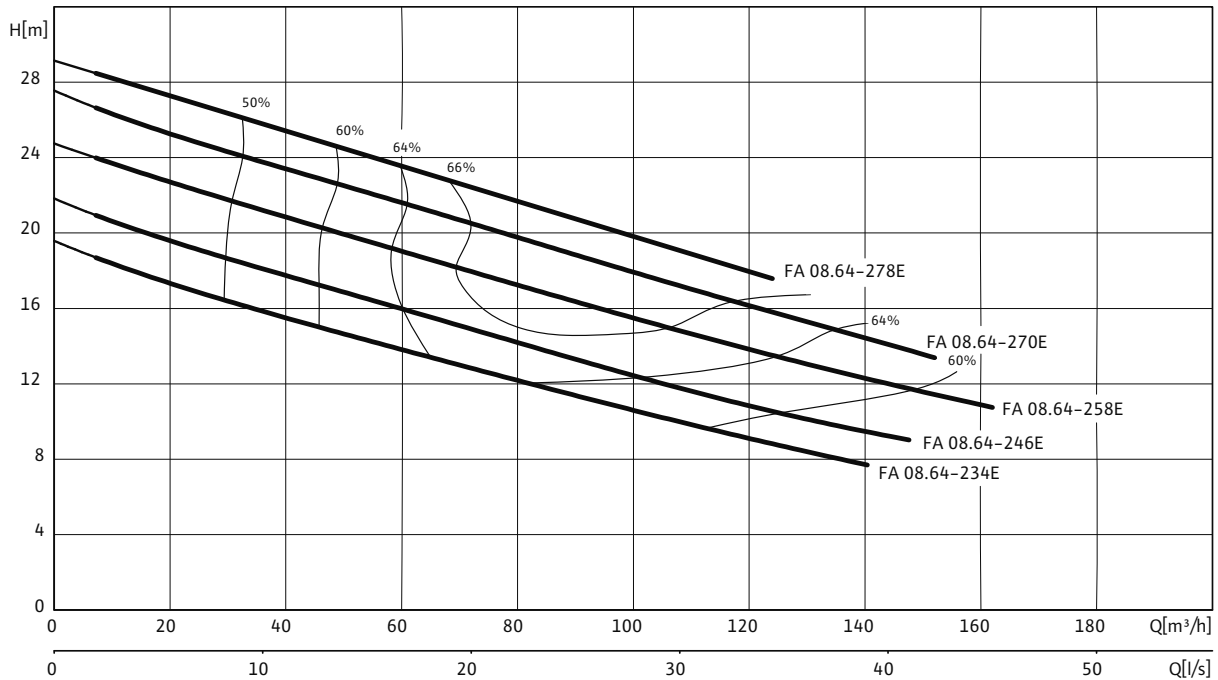
#### Dimensions

Wilo-EMU...	Dimensions
	AW
	mm
T 13-4/9 (Ex)	319
T 13-4/12 (Ex)	319
T 13-4/18 (Ex)	374

## Pump curves, ordering information Wilo-EMU FA 08.64E (1450 rpm)

### Pump curves Wilo-EMU FA 08.64E – 50 Hz – 1450 rpm

Single-channel impeller – Free ball passage: 80 mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection		Art no.
FA 08.64-234E + T 1□-4/16HEX	3~400 V, 50 Hz	A	6047622
FA 08.64-246E + T 1□-4/16HEX	3~400 V, 50 Hz	A	6047624
FA 08.64-258E + T 1□.2-4/24HEX	3~400 V, 50 Hz	A	6047626
FA 08.64-2□0E + T 1□.2-4/24HEX	3~400 V, 50 Hz	A	6047628
FA 08.64-2□8E + T 1□.2-4/24HEX	3~400 V, 50 Hz	A	6047630

= ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-EMU FA 08.64E (1450 rpm)

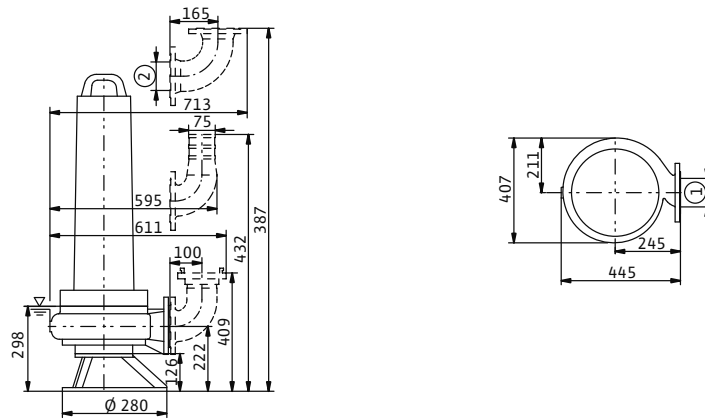
	FA 08.64-234E + T 1□-4/ 16HEx	FA 08.64-246E + T 1□-4/ 16HEx	FA 08.64-258E + T 1□.2-4/ 24HEx	FA 08.64-2□0E + T 1□.2-4/ 24HEx	FA 08.64-2□8E + T 1□.2-4/ 24HEx
	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz
<b>Unit</b>					
Pressure connection	DN 80	DN 80	DN 80	DN 80	DN 80
Free ball passage mm	80	80	80	80	80
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	144	155	162	152	124
Max. delivery head $H_{max}$ / m	19.6	21.8	24.6	27.6	29.4
Operating mode (immersed)	S1	S1	S1	S1	S1
Operating mode (non-immersed)	—	—	—	—	—
Max. immersion depth m	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	105	106	136	137	138
<b>Motor data</b>					
Nominal current $I_N$ / A	13.5	13.5	21	21	21
Starting current $I_A$ / A	68	68	123	123	123
Nominal motor power $P_2$ / kW	6.5	6.5	10	10	10
Power consumption $P_1$ / kW	8.2	8.2	12.2	12.2	12.2
Activation type	Star-delta	Star-delta	Star-delta	Star-delta	Star-delta
Nominal speed $n$ / rpm	1400	1400	1417	1417	1417
Insulation class	F	F	F	F	F
Recommended switching frequency 1/h	—	—	—	—	—
Max. switching frequency 1/h	15	15	15	15	15
Permitted voltage tolerance %	±10	±10	±10	±10	±10
<b>Table</b>					
Length of connecting cable m	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	10G1,5	10G1,5	10G1,5	10G1,5	10G1,5
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable	Non-detachable	Non-detachable
Mains plug	—	—	—	—	—
<b>Equipment/function</b>					
Float switch	—	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>					
Static seal	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	NBR	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

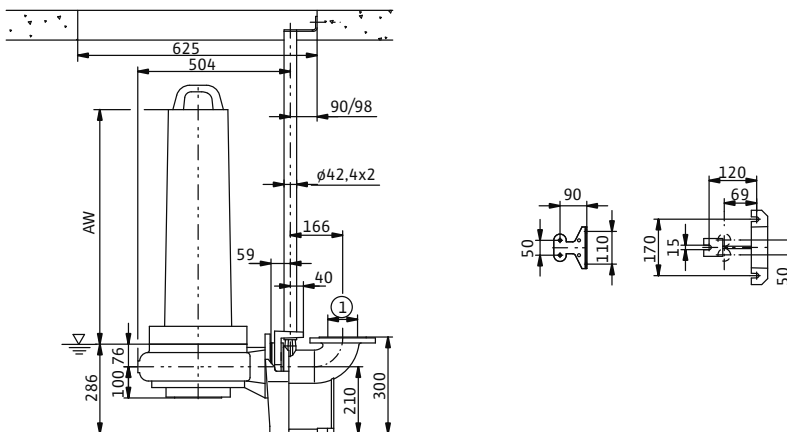


## Dimensions Wilo-EMU FA 08.64E (1450 rpm)

### Dimension drawing Wilo-EMU FA – portable installation



### Dimension drawing Wilo-EMU FA – stationary wet well installation



1 = DN80 PN10 / ANSI B16.1, Class 125, Size 3; 2 = DN80 PN10; 3 = DN100 PN10 / ANSI B16.1, Class 125, Size 4; 4 = DN100 PN10

### Dimensions

Wilo-EMU...	Dimensions
	AW
	mm
T 1□-4/16 (Ex)	411
T 1□.2-4/24 (Ex)	510

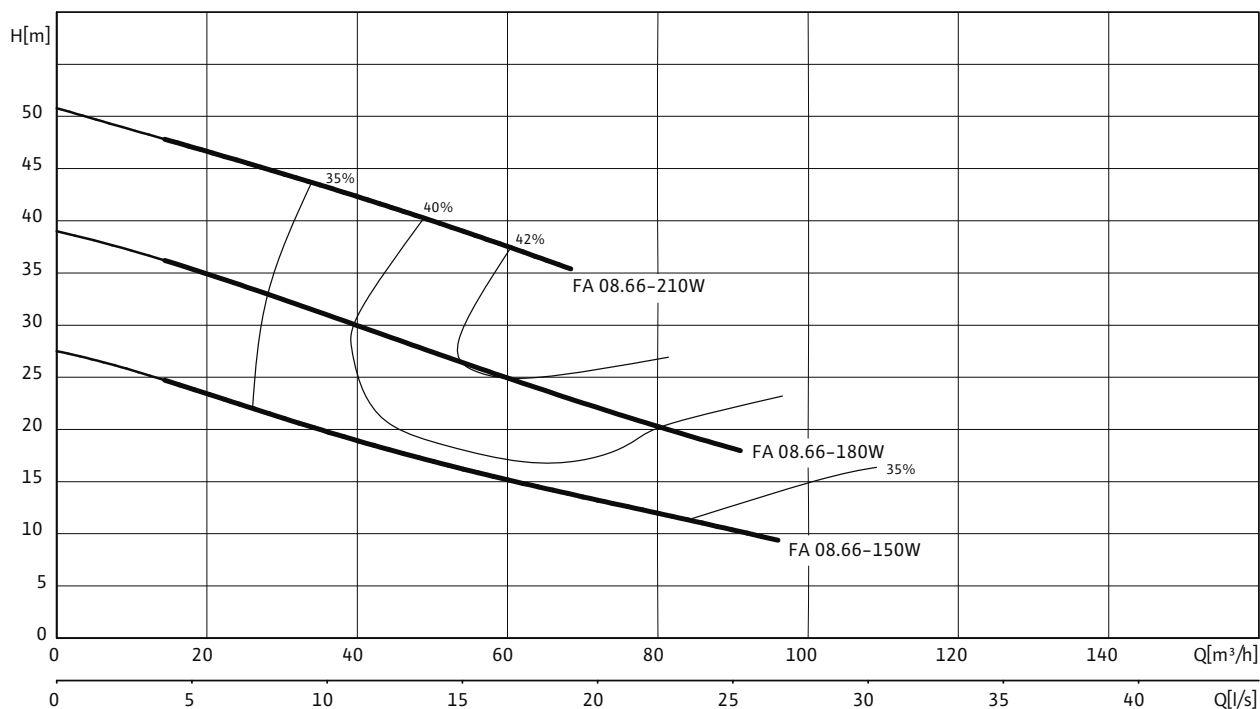
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-EMU FA 08.66W (2900 rpm)


#### Pump curves Wilo-EMU FA 08.66W - 50 Hz - 2900 rpm


Portex impeller - Free ball passage: 50 mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection		Art no.
FA 08.66-150W +T 1□-2/22HEx	3~400 V, 50 Hz	A	6049218
FA 08.66-180W +T 20.1-2/22□Ex	3~400 V, 50 Hz	A	6049220
FA 08.66-210W +T 20.1-2/22□Ex	3~400 V, 50 Hz	A	6049221

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data Wilo-EMU FA 08.66W (2900 rpm)

	FA 08.66-150W +T 1□-2/ 22HEX	FA 08.66-180W +T 20.1-2/ 22□EX	FA 08.66-210W +T 20.1-2/ 22□EX
	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz
<b>Unit</b>			
Pressure connection	DN 80	DN 80	DN 80
Free ball passage mm	50	50	50
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	96	91	80
Max. delivery head $H_{max}$ / m	27.5	39	51
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	—	S2-15 min	S2-15 min
Max. immersion depth m	20	20	20
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	—	—	—
<b>Motor data</b>			
Nominal current $I_N$ / A	20.5	30	30
Starting current $I_A$ / A	57	72	72
Nominal motor power $P_2$ / kW	10.5	15.5	15.5
Power consumption $P_1$ / kW	12.3	18.6	18.6
Activation type	Star-delta	Star-delta	Star-delta
Nominal speed $n$ / rpm	2907	2900	2900
Insulation class	F	F	F
Recommended switching frequency 1/h	—	—	—
Max. switching frequency 1/h	15	15	15
Permitted voltage tolerance %	±10	±10	±10
<b>□able</b>			
Length of connecting cable m	10	10	10
Cable type	H07RN-F	NSSHÖU	NSSHÖU
Cable cross-section mm <sup>2</sup>	10G1,5	2x 4x2,5 + 7x1,5	2x 4x2,5 + 7x1,5
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable
Mains plug	—	—	—
<b>E□uipment/function</b>			
Float switch	—	—	—
Motor protection	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	EN-GJS-500-7	EN-GJS-500-7	EN-GJS-500-7
Sealing on motor side	NBR	SiC/SiC	SiC/SiC
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021

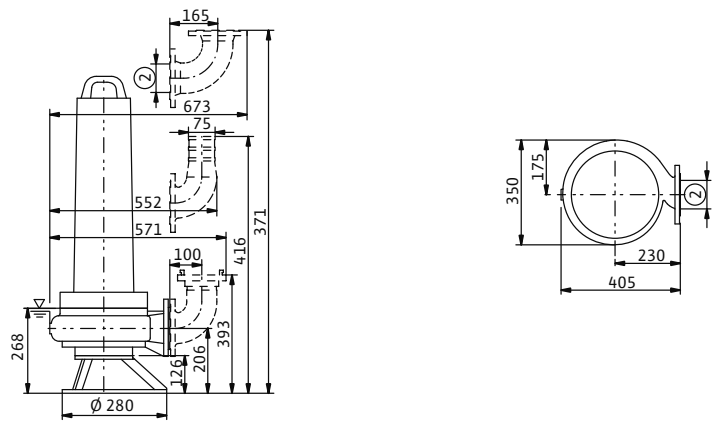
$P_1$  refers to the maximum power consumption. All of the data applies to 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

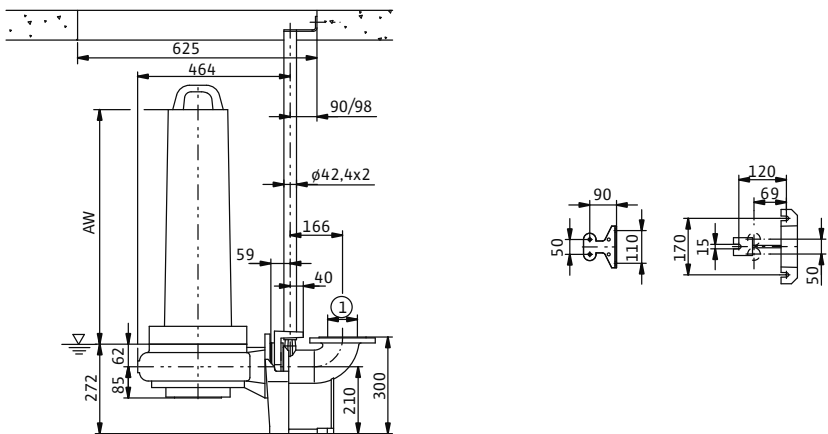
## Submersible sewage pumps

### Dimensions Wilo-EMU FA 08.66W (2900 rpm)

#### Dimension drawing Wilo-EMU FA – portable installation



#### Dimension drawing Wilo-EMU FA – stationary wet well installation



1 = DN80 PN10 / ANSI B16.1, Class 125, Size 3; 2 = DN80 PN10

### Dimensions

#### Wilo-EMU...

#### Dimensions

AW

mm

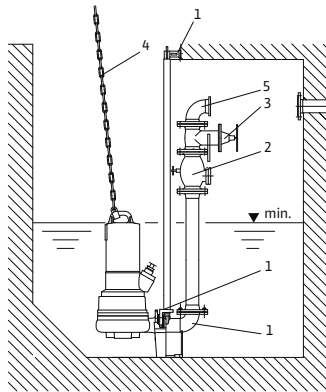
T 11-2/22 (Ex)

491

T 20.1-2/22 (Ex)

674

### Mechanical accessories Wilo-EMU FA (standard variant) 08...



- 1 Suspension unit
- 2 Non-return valve
- 3 Gate valve
- 4 Chain
- 5 Pipe bend

#### Stationary wet well installation 80

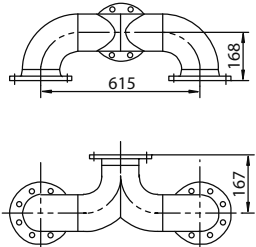
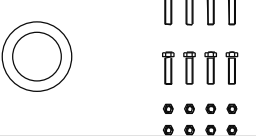
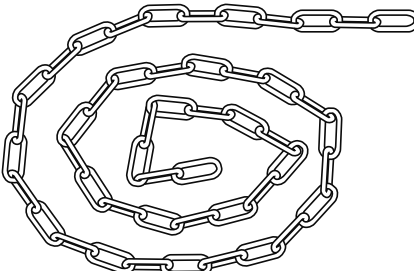
		Description	Art no.
Suspension unit 80/2		Made of EN-GJL-250, lacquered, with free passage in DN 80, foot elbow including pump holder, profile joint, installation and floor fixation accessories and guide tube bracket Ø 1¼" without guide pipes. Connection on pressure side DN 80/PN16 in acc. with DIN 2501. The double pipe feed Ø 1¼" is to be provided by the customer.	6036888
Adapter flange EMU/Flygt		Coupling flange for connecting a FA pump to a Flygt suspension unit, DN80 connection, made of EN-GJL-250, incl. installation accessories	6030437
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 80 connection	2017168
Gate valve		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 80	2017162
Pipe bend 90°		Made of spheroidal cast iron 400-15, with 2 flanges, including 1 set of mounting accessories, PN 10/16 flange, DIN 28637, for DN 80 connection	2012064

# Dewatering

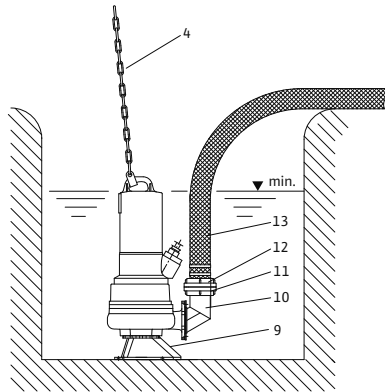
## Submersible sewage pumps

### Mechanical accessories Wilo-EMU FA (standard variant) 08...

#### Stationary wet well installation 80

		Description	Art no.
Y-piece 80		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 80/80/80 connection	2017179
Mounting accessories 80		For a DN 80 flange connection, with 8 screws, 8 nuts and 1 flat gasket for PN 10/16 flange, DIN 2502	2012067
Chain set P-S-E		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

Mechanical accessories Wilo-EMU FA (standard variant) 08...



- 4 Chain
- 9 Floor supporting foot
- 10 Pipe bend
- 11 Storz pipe coupling
- 12 Storz hose coupling
- 13 Pressure hose

Portable wet well installation with hose connection

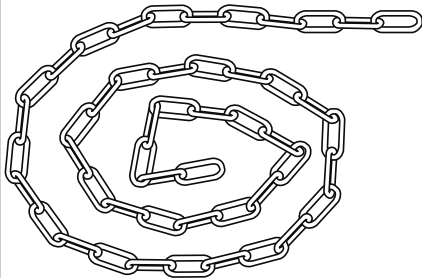
		Description	Art no.
Floor supporting foot FA 08.23		Made of steel (S235JR), painted, consisting of 3 support feet, 1 baseplate and fixation material	6022981
Floor supporting foot FA 05..., FA 08..., FA 05.23, 05.32		Made of EN-GJL-250, painted, comprising 3 support feet, 1 baseplate and fixation material	6001190
Floor supporting foot FA 08..., FA 10..., FA 08.64		Made of spheroidal cast iron 400-15, painted, comprising 3 support feet, 1 baseplate and fixation material	6031386
Pipe elbow 90° with Storz pipe coupling and female thread G 3		Made of EN-GJL-250, with R 3 male thread, DN 80 flange on pump side, incl. 1 set of mounting accessories and Storz B fixed coupling, G 3 female thread	6031385
Pressure hose / Storz		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 75 mm, length 5 m incl. Storz B coupling, 12/40 bar	6003052
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 75 mm, length 10 m incl. Storz B coupling, 12/40 bar	6003051
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 75 mm, length 20 m incl. Storz B coupling, 12/40 bar	6003050

# Dewatering

## Submersible sewage pumps

### Mechanical accessories Wilo-EMU FA (standard variant) 08...

#### Portable wet well installation with hose connection

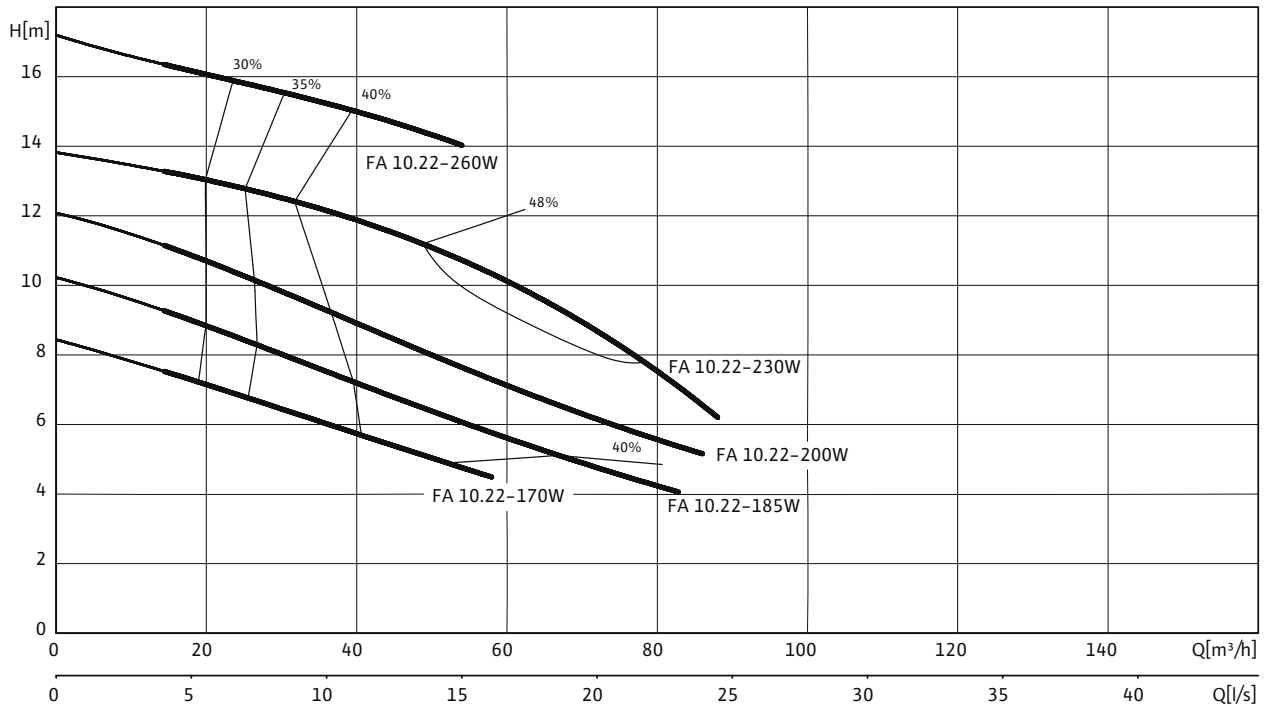
		Description	Art no.
Chain set P-S-E		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138



## Pump curves, ordering information Wilo-EMU FA 10.22W (1450 rpm)

### Pump curves Wilo-EMU FA 10.22W – 50 Hz – 1450 rpm

Portex impeller – Free ball passage: 100 mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection	🚚	Art no.
FA 10.22-170W + T 1□-4/8HEX	3~400 V, 50 Hz	K	6047650
FA 10.22-185W + T 1□-4/8HEX	3~400 V, 50 Hz	K	6047652
FA 10.22-200W + T 1□-4/8HEX	3~400 V, 50 Hz	K	6047654
FA 10.22-230W + T 1□-4/12HEX	3~400 V, 50 Hz	K	6035738
FA 10.22-230W + T 1□-4/8HEX	3~400 V, 50 Hz	K	6047656
FA 10.22-260W + T 1□-4/12HEX	3~400 V, 50 Hz	K	6047658

🚚 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Dewatering

## Submersible sewage pumps

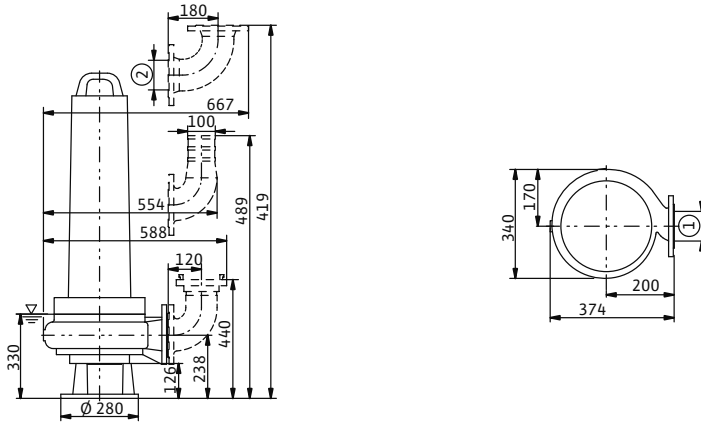
### Technical data Wilo-EMU FA 10.22W (1450 rpm)

	FA 10.22- 1□0W + T 1□-4/8HEX	FA 10.22- 185W + T 1□-4/8HEX	FA 10.22- 200W + T 1□-4/8HEX	FA 10.22- 230W + T 1□-4/12HEX	FA 10.22- 230W + T 1□-4/8HEX	FA 10.22- 260W + T 1□-4/12HEX
	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz
<b>Unit</b>						
Pressure connection	DN 100	DN 100	DN 100	DN 100	DN 100	DN 100
Free ball passage mm	100	100	100	100	100	100
Max. volume flow $Q_{max}/m^3/h$	58	82.8	86	88.1	88.1	85.3
Max. delivery head $H_{max}/m$	8.5	10.2	12.1	13.9	13.9	17.3
Operating mode (immersed)	S1	S1	S1	S1	S1	S1
Operating mode (non-immersed)	—	—	—	—	—	—
Max. immersion depth m	20	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T/^\circ C$	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m/kg$	73	73	74	84	76	86
<b>Motor data</b>						
Nominal current $I_N/A$	7.9	7.9	7.9	9.4	7.9	9.4
Starting current $I_A/A$	37	37	37	47	37	47
Nominal motor power $P_2/kW$	3.5	3.5	3.5	4.5	3.5	4.5
Power consumption $P_1/kW$	4.5	4.5	4.5	5.8	4.5	4.5
Activation type	Direct	Direct	Direct	Direct	Direct	Direct
Nominal speed $n/rpm$	1410	1410	1410	1405	1410	1405
Insulation class	F	F	F	F	F	F
Recommended switching frequency 1/h	—	—	—	—	—	—
Max. switching frequency 1/h	15	15	15	15	15	15
Permitted voltage tolerance %	±10	±10	±10	±10	±10	±10
<b>Cable</b>						
Length of connecting cable m	10	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section $mm^2$	7G1,5	7G1,5	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Non-detach- able	Non-detach- able	Non-detach- able	Non-detach- able	Non-detach- able	Non-detach- able
Mains plug	—	—	—	—	—	—
<b>Equipment/function</b>						
Float switch	—	—	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>						
Static seal	NBR	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	NBR	NBR	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021	1.4021

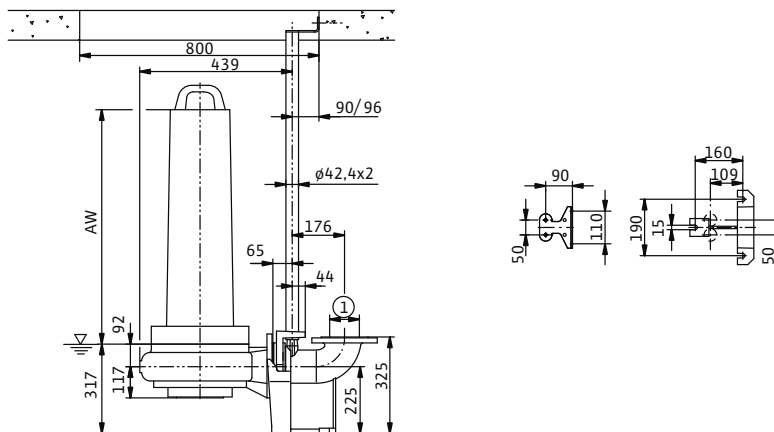
$P_1$  refers to the maximum power consumption. All of the data applies to 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

### Dimensions Wilo-EMU FA 10.22W (1450 rpm)

#### Dimension drawing Wilo-EMU FA – portable installation



#### Dimension drawing Wilo-EMU FA – stationary wet well installation



1 = DN100 PN10 / ANSI B16.1, Class 125, Size 4; 2 = DN100 PN10

#### Dimensions

Wilo-EMU...	Dimensions
	AW
	mm
T 1□-4/8 (Ex)	338
T 1□-4/12 (Ex)	373

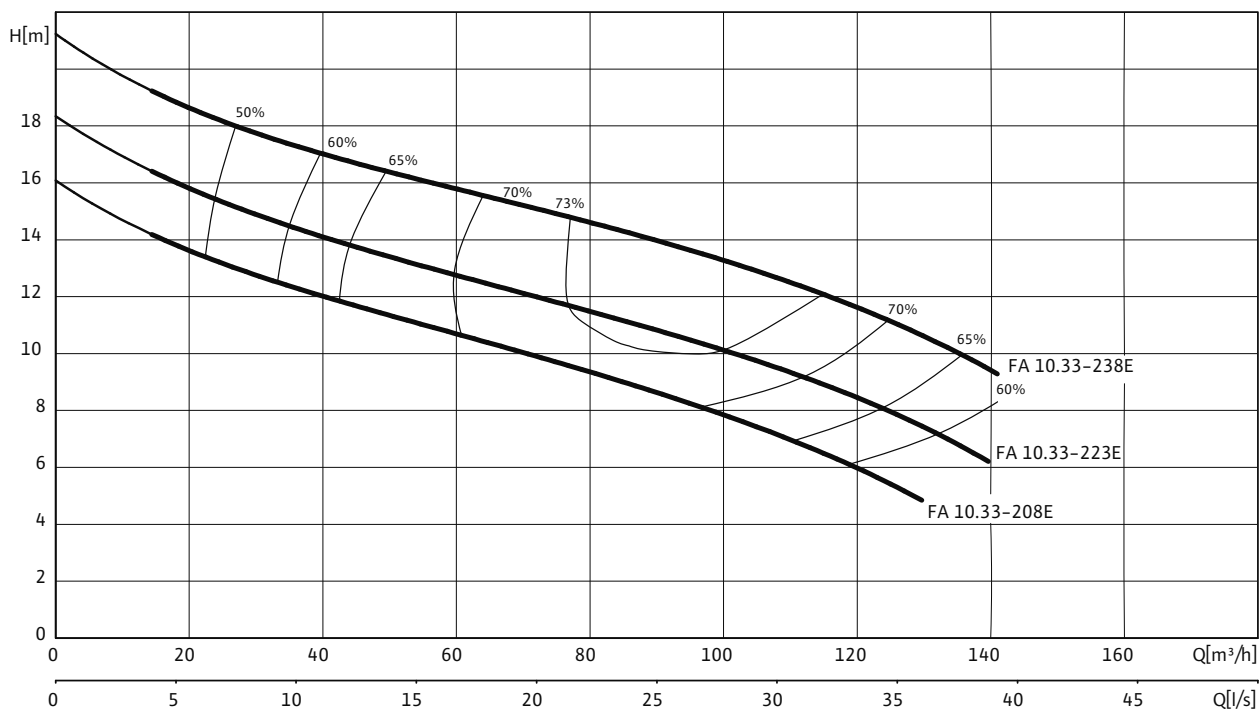
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-EMU FA 10.33E (1450 rpm)


#### Pump curves Wilo-EMU FA 10.33E – 50 Hz – 1450 rpm

Single-channel impeller – Free ball passage: 80 mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection		Art no.
FA 10.33-208E + T 1□-4/8HEX	3~400 V, 50 Hz	K	6047662
FA 10.33-223E + T 1□-4/12HEX	3~400 V, 50 Hz	K	6047664
FA 10.33-238E + T 1□-4/16HEX	3~400 V, 50 Hz	K	6047666

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data Wilo-EMU FA 10.33E (1450 rpm)

	FA 10.33-208E + T 1□-4/ 8HEx	FA 10.33-223E + T 1□-4/ 12HEx	FA 10.33-238E + T 1□-4/ 16HEx
	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz
<b>Unit</b>			
Pressure connection	DN 100	DN 100	DN 100
Free ball passage mm	80	80	80
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	130	140	141
Max. delivery head $H_{max}$ / m	16.1	18.3	21.2
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	—	—	—
Max. immersion depth m	20	20	20
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	73	81	92
<b>Motor data</b>			
Nominal current $I_N$ / A	7.9	9.4	13.5
Starting current $I_A$ / A	37	47	68
Nominal motor power $P_2$ / kW	3.5	4.5	6.5
Power consumption $P_1$ / kW	4.5	5.8	8.2
Activation type	Direct	Direct	Star-delta
Nominal speed $n$ / rpm	1410	1405	1400
Insulation class	F	F	F
Recommended switching frequency 1/h	—	—	—
Max. switching frequency 1/h	15	15	15
Permitted voltage tolerance %	±10	±10	±10
<b>□able</b>			
Length of connecting cable m	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	10G1,5
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable
Mains plug	—	—	—
<b>E□uipment/function</b>			
Float switch	—	—	—
Motor protection	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	EN-GJS-500-7	EN-GJS-500-7	EN-GJS-500-7
Sealing on motor side	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021

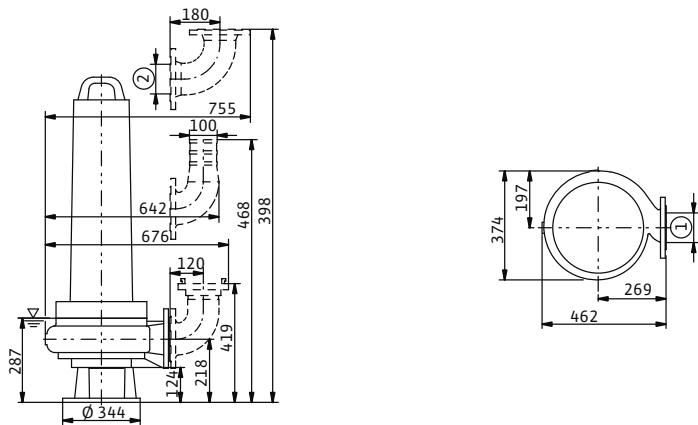
$P_1$  refers to the maximum power consumption. All of the data applies to 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

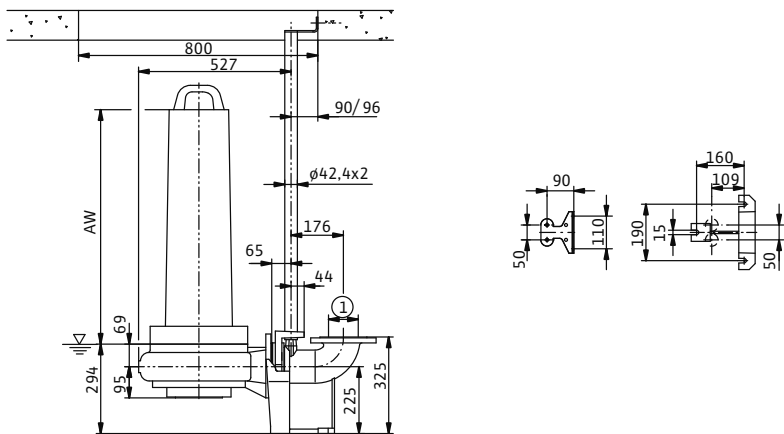
## Submersible sewage pumps

### Dimensions Wilo-EMU FA 10.33E (1450 rpm)

Dimension drawing Wilo-EMU FA – portable installation



Dimension drawing Wilo-EMU FA – stationary wet well installation



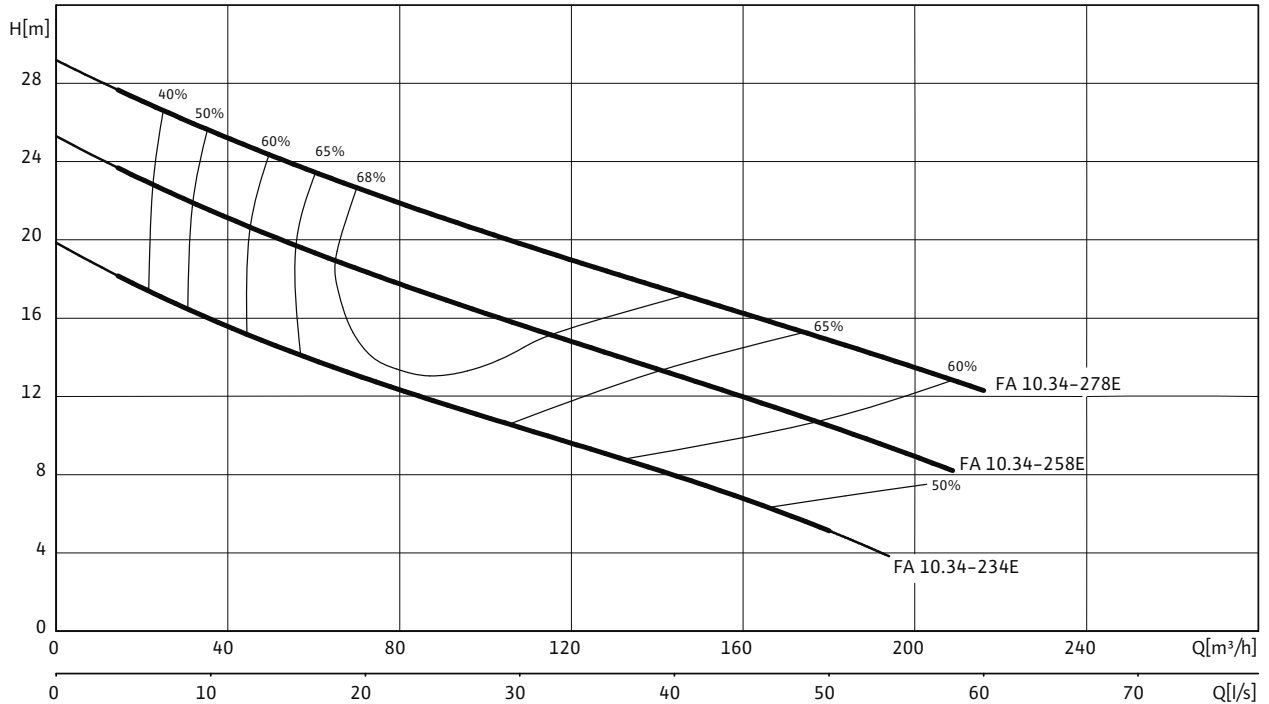
1 = DN100 PN10 / ANSI B16.1, Class 125, Size 4; 2 = DN100 PN10; 3 = DN80 PN10

Dimensions	
Wilo-EMU...	Dimensions
	AW
	mm
T 1"-4/8 (Ex)	338
T 1"-4/12 (Ex)	373
T 1"-4/16 (Ex)	411

## Pump curves, ordering information Wilo-EMU FA 10.34E (1450 rpm)


### Pump curves Wilo-EMU FA 10.34E - 50 Hz - 1450 rpm


Single-channel impeller - Free ball passage: 80 mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection		Art no.
FA 10.34-234E + T 1□-4/16HEX	3-400 V, 50 Hz	L	6045118
FA 10.34-258E + T 1□.2-4/24HEX	3-400 V, 50 Hz	K	6045117
FA 10.34-2□8E + T 20.1-4/22□EX	3-400 V, 50 Hz	K	6047678

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-EMU FA 10.34E (1450 rpm)

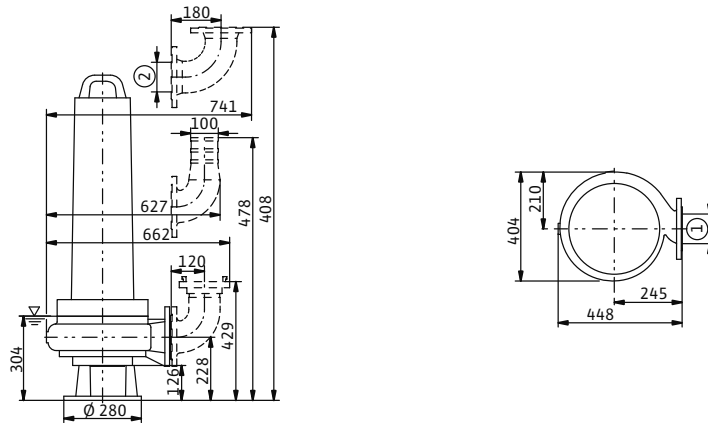
	FA 10.34-234E + T 1□-4/16HEx	FA 10.34-258E + T 1□.2-4/24HEx	FA 10.34-2□8E + T 20.1-4/22□Ex
	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz
<b>Unit</b>			
Pressure connection	DN 100	DN 100	DN 100
Free ball passage mm	80	80	80
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	195	225	247
Max. delivery head $H_{max}$ / m	19.6	25	28.9
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	—	—	S2-15 min
Max. immersion depth m	20	20	20
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	106	137	216
<b>Motor data</b>			
Nominal current $I_N$ / A	13.5	21	30.5
Starting current $I_A$ / A	68	123	156
Nominal motor power $P_2$ / kW	6.5	10	15
Power consumption $P_1$ / kW	8.2	12.2	18.2
Activation type	Star-delta	Star-delta	Star-delta
Nominal speed $n$ / rpm	1400	1417	1425
Insulation class	F	F	F
Recommended switching frequency 1/h	—	—	—
Max. switching frequency 1/h	15	15	15
Permitted voltage tolerance %	±10	±10	±10
<b>□able</b>			
Length of connecting cable m	10	10	10
Cable type	H07RN-F	H07RN-F	NSSHÖU
Cable cross-section mm <sup>2</sup>	10G1,5	10G1,5	2x 4x2,5 + 7x1,5
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable
Mains plug	—	—	—
<b>E□uipment/function</b>			
Float switch	—	—	—
Motor protection	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	NBR	NBR	C/Al-oxides
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021

$P_1$  refers to the maximum power consumption. All of the data applies to 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

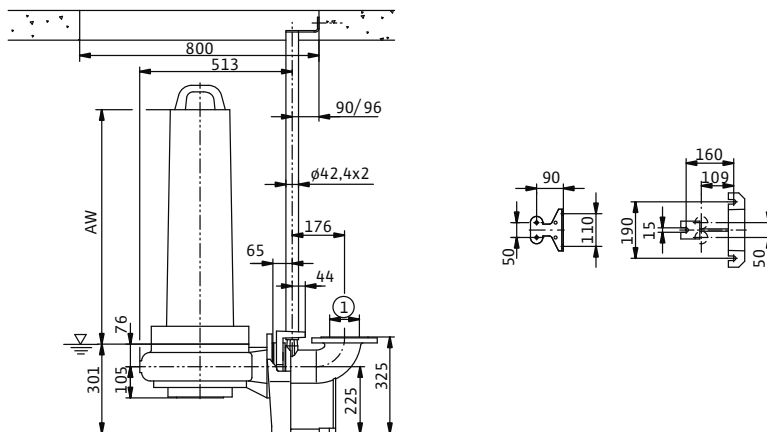


## Dimensions Wilo-EMU FA 10.34E (1450 rpm)

### Dimension drawing Wilo-EMU FA – portable installation



### Dimension drawing Wilo-EMU FA – stationary wet well installation



1 = DN100 PN10 / ANSI B16.1, Class 125, Size 4; 2 = DN100 PN10

### Dimensions

Wilo-EMU...	Dimensions
	AW
	mm
T 1□-4/16 (Ex)	411
T 1□.2-4/24 (Ex)	510
T 20.1-4/22 (Ex)	674

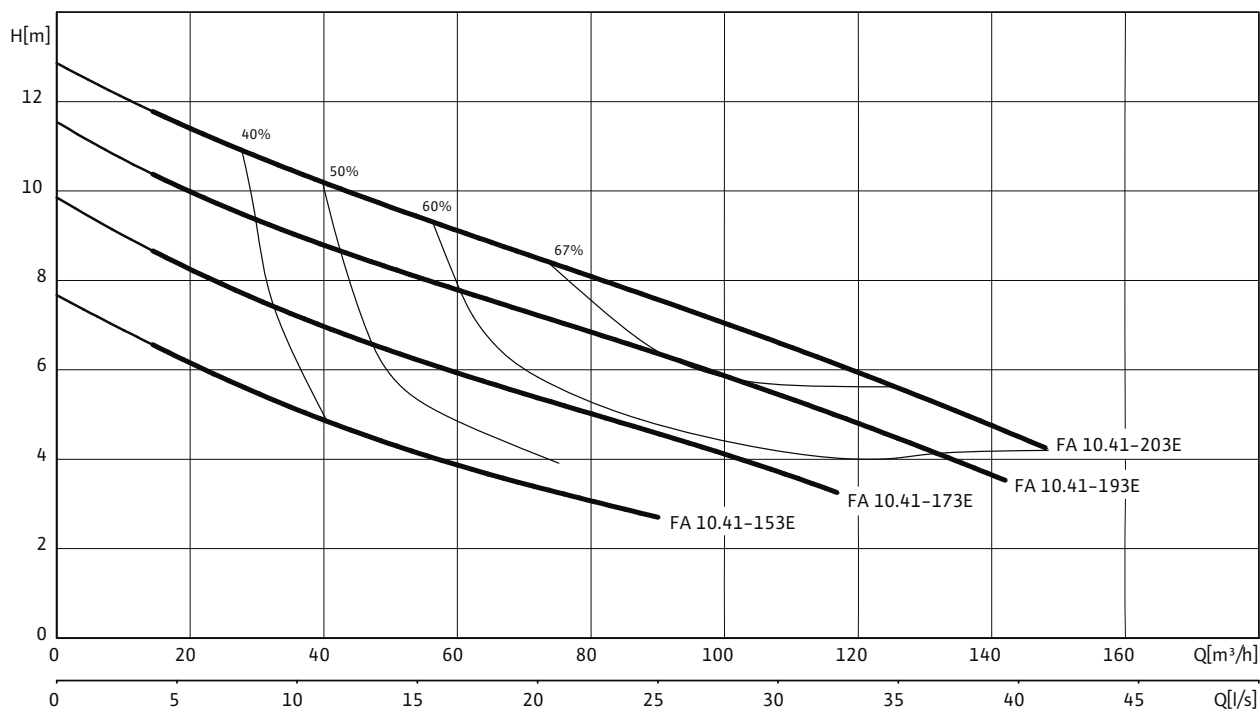
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-EMU FA 10.41E (1450 rpm)


#### Pump curves Wilo-EMU FA 10.41E – 50 Hz – 1450 rpm

Single-channel impeller – Free ball passage: 80 mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection		Art no.
FA 10.41-153E + T 1□-4/8HEX	3~400 V, 50 Hz	A	6047680
FA 10.41-1□3E + T 1□-4/8HEX	3~400 V, 50 Hz	A	6047684
FA 10.41-193E + T 1□-4/8HEX	3~400 V, 50 Hz	A	6047688
FA 10.41-203E + T 1□-4/8HEX	3~400 V, 50 Hz	A	6047690

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

## Technical data Wilo-EMU FA 10.41E (1450 rpm)

	FA 10.41-153E + T 1□-4/8HEx 3□400 □, 50 Hz	FA 10.41-1□3E + T 1□-4/8HEx 3□400 □, 50 Hz	FA 10.41-193E + T 1□-4/8HEx 3□400 □, 50 Hz	FA 10.41-203E + T 1□-4/8HEx 3□400 □, 50 Hz
<b>Unit</b>				
Pressure connection	DN 100	DN 100	DN 100	DN 100
Free ball passage mm	80	80	80	80
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	90	117	142	148
Max. delivery head $H_{max}$ / m	7.6	9.8	11.4	12.8
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	—	—	—	—
Max. immersion depth m	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	69.5	70	70.5	70.5
<b>Motor data</b>				
Nominal current $I_N$ / A	7.9	7.9	7.9	7.9
Starting current $I_A$ / A	37	37	37	37
Nominal motor power $P_2$ / kW	3.5	3.5	3.5	3.5
Power consumption $P_1$ / kW	4.5	4.5	4.5	4.5
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	1410	1410	1410	1410
Insulation class	F	F	F	F
Recommended switching frequency 1/h	—	—	—	—
Max. switching frequency 1/h	15	15	15	15
Permitted voltage tolerance %	±10	±10	±10	±10
<b>□able</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable	Non-detachable
Mains plug	—	—	—	—
<b>E□uipment/function</b>				
Float switch	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021

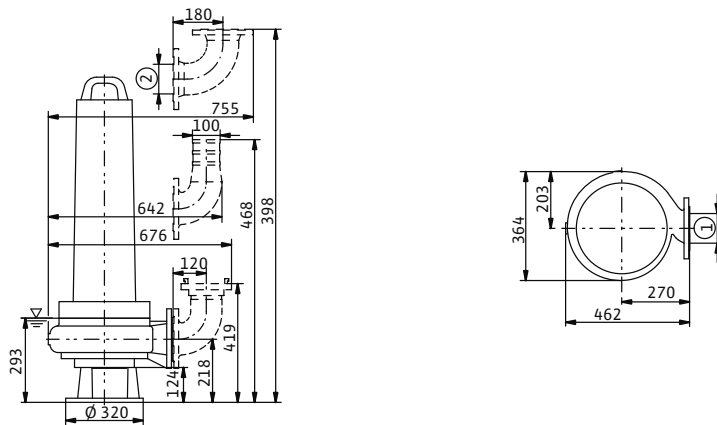
$P_1$  refers to the maximum power consumption. All of the data applies to 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

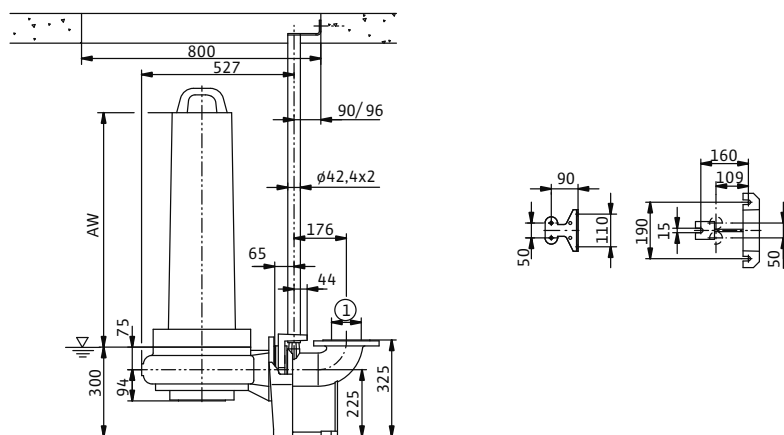
## Submersible sewage pumps

### Dimensions Wilo-EMU FA 10.41E (1450 rpm)

#### Dimension drawing Wilo-EMU FA – portable installation



#### Dimension drawing Wilo-EMU FA – stationary wet well installation



1 = DN100 PN10 / ANSI B16.1, Class 125, Size 4; 2 = DN100 PN10

#### Dimensions

Wilo-EMU...

Dimensions

AW

mm

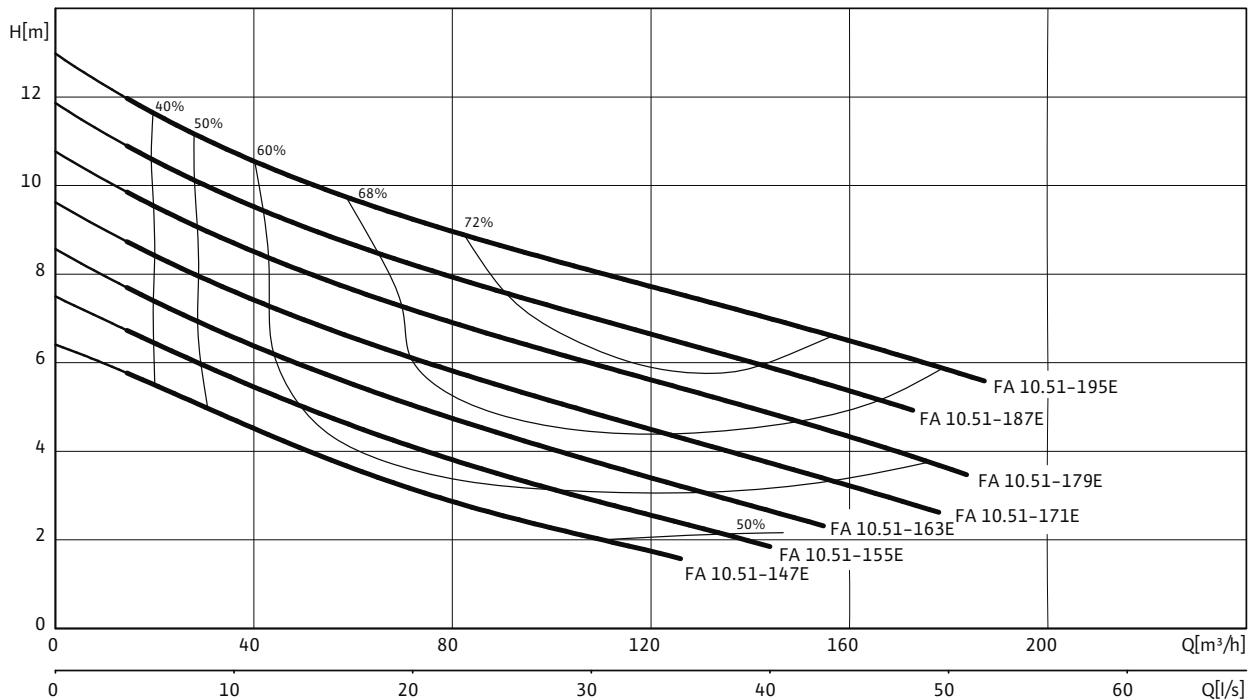
T 1"-4/8 (Ex)

338

## Pump curves, ordering information Wilo-EMU FA 10.51E (1450 rpm)

### Pump curves Wilo-EMU FA 10.51E - 50 Hz - 1450 rpm

Single-channel impeller - Free ball passage: 100 mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection		Art no.
FA 10.51-14□E + T 1□-4/8HEX	3-400 V, 50 Hz	K	6047692
FA 10.51-155E + T 1□-4/8HEX	3-400 V, 50 Hz	K	6047694
FA 10.51-163E + T 1□-4/8HEX	3-400 V, 50 Hz	K	6047696
FA 10.51-1□1E + T 1□-4/8HEX	3-400 V, 50 Hz	K	6047698
FA 10.51-1□9E + T 1□-4/8HEX	3-400 V, 50 Hz	K	6035740
FA 10.51-18□E + T 1□-4/8HEX	3-400 V, 50 Hz	K	6047702
FA 10.51-195E + T 1□-4/12HEX	3-400 V, 50 Hz	K	6047704

= ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Dewatering

## Submersible sewage pumps

### Technical data Wilo-EMU FA 10.51E (1450 rpm)

	FA 10.51-14□E + T 1□-4/8HEX	FA 10.51-155E + T 1□-4/8HEX	FA 10.51-163E + T 1□-4/8HEX
	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz
<b>Unit</b>			
Pressure connection	DN 100	DN 100	DN 100
Free ball passage mm	100	100	100
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	142	154	167
Max. delivery head $H_{max}$ / m	6.4	7.5	8.5
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	—	—	—
Max. immersion depth m	20	20	20
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	65	67	67
<b>Motor data</b>			
Nominal current $I_N$ / A	7.9	7.9	7.9
Starting current $I_A$ / A	37	37	37
Nominal motor power $P_2$ / kW	3.5	3.5	3.5
Power consumption $P_1$ / kW	4.5	4.5	4.5
Activation type	Direct	Direct	Direct
Nominal speed $n$ / rpm	1410	1410	1410
Insulation class	F	F	F
Recommended switching frequency 1/h	—	—	—
Max. switching frequency 1/h	15	15	15
Permitted voltage tolerance %	±10	±10	±10
<b>Cable</b>			
Length of connecting cable m	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable
Mains plug	—	—	—
<b>Equipment/function</b>			
Float switch	—	—	—
Motor protection	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021

$P_1$  refers to the maximum power consumption. All of the data applies to 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Technical data Wilo-EMU FA 10.51E (1450 rpm)

	FA 10.51-1□1E + T 1□-4/8HEx	FA 10.51-1□9E + T 1□-4/8HEx	FA 10.51-18□E + T 1□-4/8HEx	FA 10.51-195E + T 1□-4/12HEx
	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz
<b>Unit</b>				
Pressure connection	DN 100	DN 100	DN 100	DN 100
Free ball passage mm	100	100	100	100
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	178	194	205	218
Max. delivery head $H_{max}$ / m	9.6	10.6	11.7	12.8
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	—	—	—	—
Max. immersion depth m	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	68	68	69	77
<b>Motor data</b>				
Nominal current $I_N$ / A	7.9	7.9	7.9	9.4
Starting current $I_A$ / A	37	37	37	47
Nominal motor power $P_2$ / kW	3.5	3.5	3.5	4.5
Power consumption $P_1$ / kW	4.5	4.5	4.5	5.8
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	1410	1410	1410	1405
Insulation class	F	F	F	F
Recommended switching frequency 1/h	—	—	—	—
Max. switching frequency 1/h	15	15	15	15
Permitted voltage tolerance %	±10	±10	±10	±10
<b>□able</b>				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable	Non-detachable
Mains plug	—	—	—	—
<b>E□uipment/function</b>				
Float switch	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>				
Static seal	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021

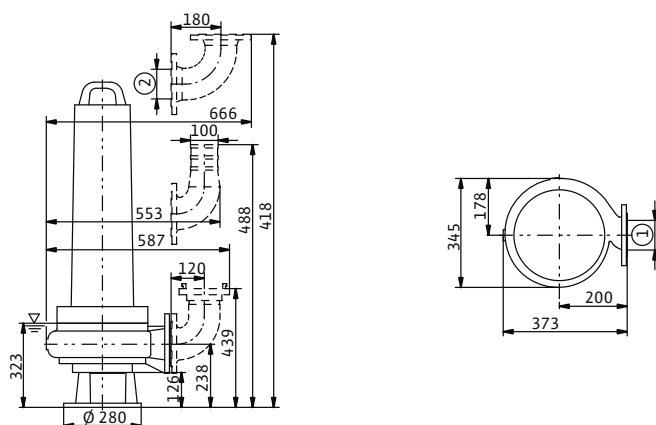
$P_1$  refers to the maximum power consumption. All of the data applies to 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

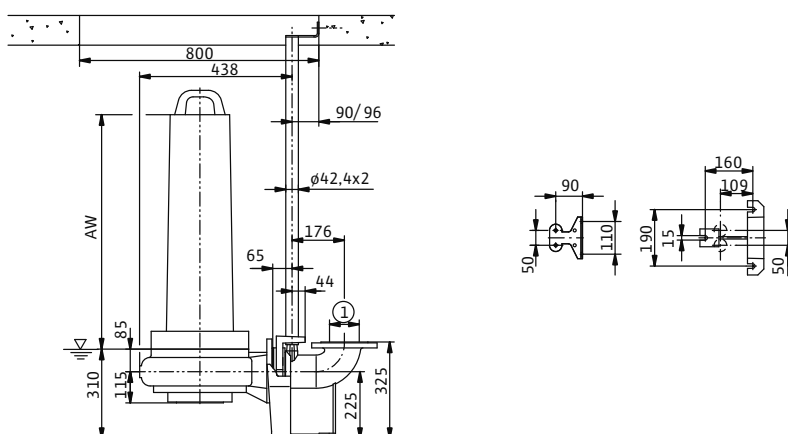
## Submersible sewage pumps

### Dimensions Wilo-EMU FA 10.51E (1450 rpm)

#### Dimension drawing Wilo-EMU FA – portable installation



#### Dimension drawing Wilo-EMU FA – stationary wet well installation



1 = DN100 PN10 / ANSI B16.1, Class 125, Size 4; 2 = DN100 PN10

#### Dimensions

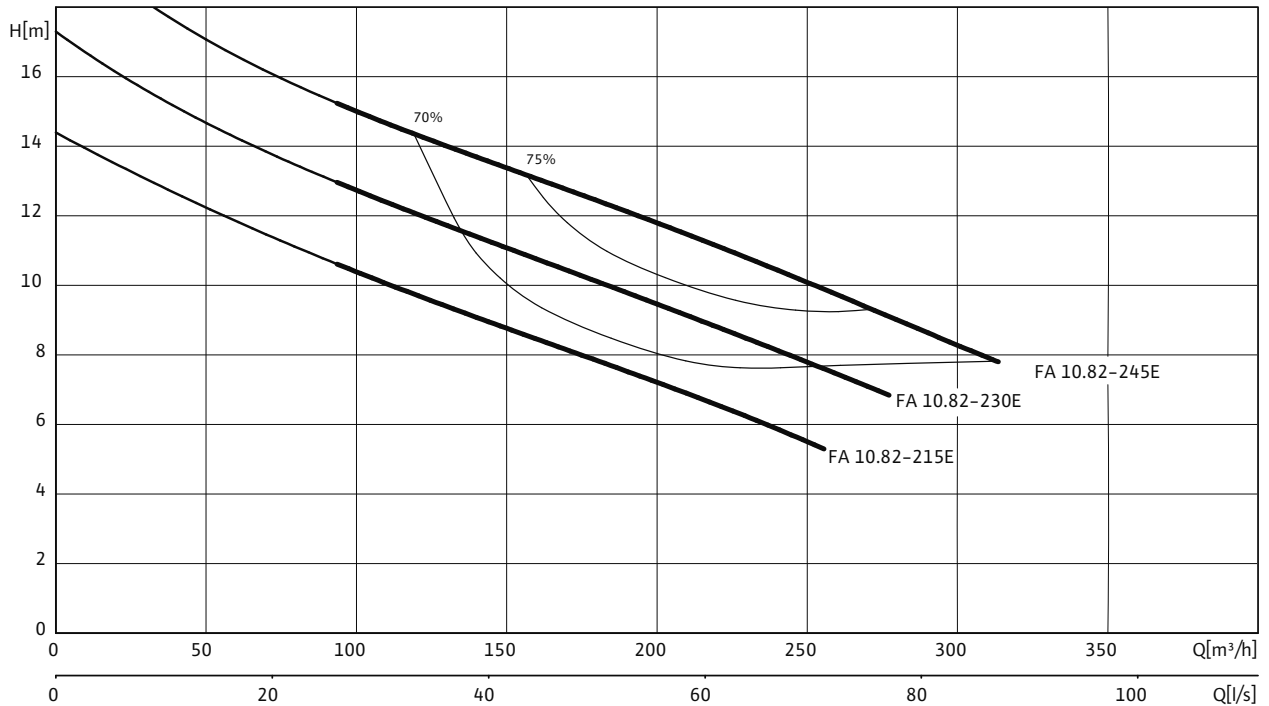
Wilo-EMU...	Dimensions
	AW
	mm
T 1"-4/8 (Ex)	338
T 1"-4/12 (Ex)	373



## Pump curves, ordering information Wilo-EMU FA 10.82E (1450 rpm)


### Pump curves Wilo-EMU FA 10.82E - 50 Hz - 1450 rpm


Single-channel impeller - Free ball passage: 100 mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection		Art no.
FA 10.82-215E + T 1□-4/16HEX	3~400 V, 50 Hz	L	6047722
FA 10.82-230E + T 1□.2-4/24HEX	3~400 V, 50 Hz	L	6047724
FA 10.82-245E + T 1□.2-4/24HEX	3~400 V, 50 Hz	L	6047726

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Dewatering

## Submersible sewage pumps

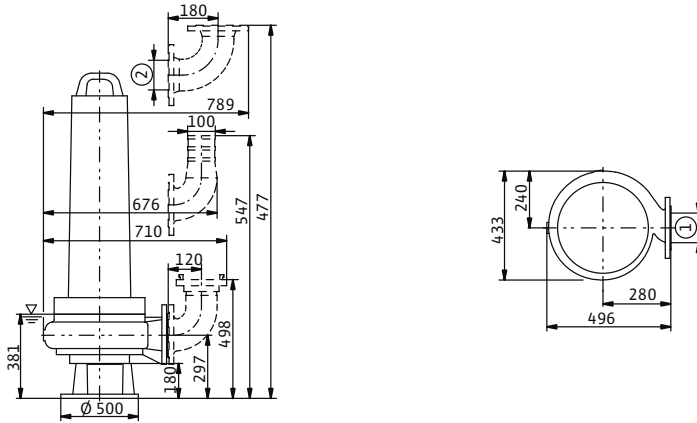
### Technical data Wilo-EMU FA 10.82E (1450 rpm)

	FA 10.82-215E + T 1□-4/16HEX	FA 10.82-230E + T 1□.2-4/24HEX	FA 10.82-245E + T 1□.2-4/24HEX
	3□400 □, 50 Hz	3□400 □, 50 Hz	3□400 □, 50 Hz
<b>Unit</b>			
Pressure connection	DN 100	DN 100	DN 100
Free ball passage mm	100	100	100
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	260	288	314
Max. delivery head $H_{max}$ / m	14.3	17.2	20
Operating mode (immersed)	S1	S1	S1
Operating mode (non-immersed)	—	—	—
Max. immersion depth m	20	20	20
Protection class	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	117	147	148
<b>Motor data</b>			
Nominal current $I_N$ / A	13.5	21	21
Starting current $I_A$ / A	68	123	123
Nominal motor power $P_2$ / kW	6.5	10	10
Power consumption $P_1$ / kW	8.2	12.2	12.2
Activation type	Star-delta	Star-delta	Star-delta
Nominal speed $n$ / rpm	1400	1417	1417
Insulation class	F	F	F
Recommended switching frequency 1/h	—	—	—
Max. switching frequency 1/h	15	15	15
Permitted voltage tolerance %	±10	±10	±10
<b>□able</b>			
Length of connecting cable m	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	10G1,5	10G1,5	10G1,5
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable
Mains plug	—	—	—
<b>E□uipment/function</b>			
Float switch	—	—	—
Motor protection	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX
<b>Materials</b>			
Static seal	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021

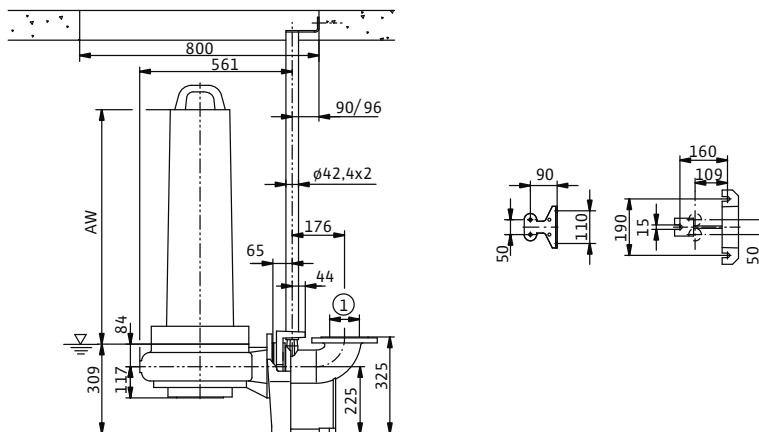
$P_1$  refers to the maximum power consumption. All of the data applies to 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Dimensions Wilo-EMU FA 10.82E (1450 rpm)

### Dimension drawing Wilo-EMU FA – portable installation



### Dimension drawing Wilo-EMU FA – stationary wet well installation



1 = DN100 PN10 / ANSI B16.1, Class 125, Size 4; 2 = DN100 PN10; 3 = DN150 PN10 / ANSI B16.1, Class 125, Size 6; 4 = DN150 PN10

### Dimensions

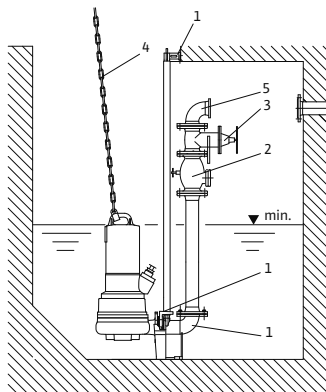
#### Wilo-EMU... Dimensions

	AW
	mm
T 1□-4/16 (Ex)	411
T 1□.2-4/24 (Ex)	510

# Dewatering

## Submersible sewage pumps

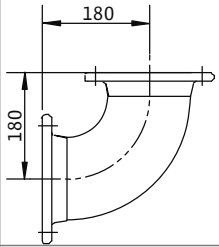
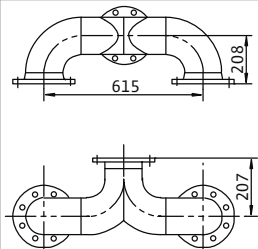
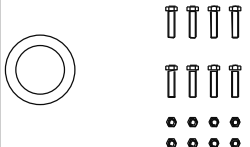
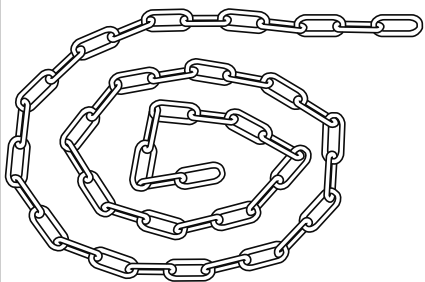
### Mechanical accessories Wilo-EMU FA (standard variant) 10...



- 1 Suspension unit
- 2 Non-return valve
- 3 Gate valve
- 4 Chain
- 5 Pipe bend

		Description	Art no.
Adapter flange EMU/Flygt		Coupling flange for connecting a FA pump to a Flygt suspension unit, DN100 connection, made of EN-GJL-250, incl. installation accessories	6030438
Suspension unit EH 100/200		Made of EN-GJL-250, painted, with free passage in DN 100, foot elbow incl. pump bracket, profile joint, installation and floor fixation accessories and guide pipe bracket Ø 1 1/4" without guide pipes. Connection on pressure side DN 100. Flanges PN 10/16 in accordance with DIN 2501. The double pipe feed Ø 1 1/4" is to be provided by the customer.	6036889
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 100 connection	2017169
Gate valve		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 100	2017163

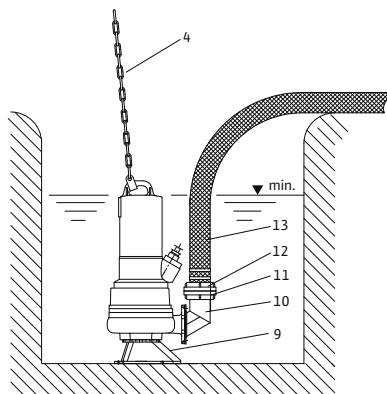
Mechanical accessories Wilo-EMU FA (standard variant) 10...

		Description	Art no.
Pipe bend 90°		Made of spheroidal cast iron 400-15, with 2 flanges, including 1 set of mounting accessories, PN 10/16 flange, DIN 28637, for DN 100 connection	2004669
Y-piece 100		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 100/100/100 connection	2017180
Mounting accessories 100		For a DN 80 flange connection, with 8 screws, 8 nuts and 1 flat gasket for PN 10/16 flange, DIN 2503	2017176
Chain set P-S-E		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Dewatering


## Submersible sewage pumps

### Mechanical accessories Wilo-EMU FA (standard variant) 10...



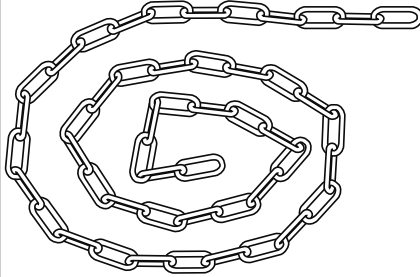
- 4 Chain
- 9 Floor supporting foot
- 10 Pipe bend
- 11 Storz pipe coupling
- 12 Storz hose coupling
- 13 Pressure hose

#### Portable wet well installation with hose connection

		Description	Art no.
Pipe elbow 90° with Storz A pipe coupling and female thread 4		Made of EN-GJL-250, with R 4 male thread, DN 100 flange on pump side, incl. 1 set of mounting accessories and Storz A fixed coupling, G 4 female thread	6031672
Floor supporting foot FA 10..., FA 10.22, 10.43		Made of spheroidal cast iron 400-15, painted, comprising 3 support feet, 1 baseplate and fixation material	6035278
Floor supporting foot FA 08..., FA 10..., FA 08.64		Made of spheroidal cast iron 400-15, painted, comprising 3 support feet, 1 baseplate and fixation material	6031386
Pressure hose / Storz A		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 102 mm, length 5 m incl. Storz A coupling, 8/20 bar	6022391
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 102 mm, length 10 m incl. Storz A coupling, 8/20 bar	6022392
		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 102 mm, length 20 m incl. Storz A coupling, 8/20 bar	6022393

## Mechanical accessories Wilo-EMU FA (standard variant) 10...

### Portable wet well installation with hose connection

		Description	Art no.
Chain set P-S-E		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

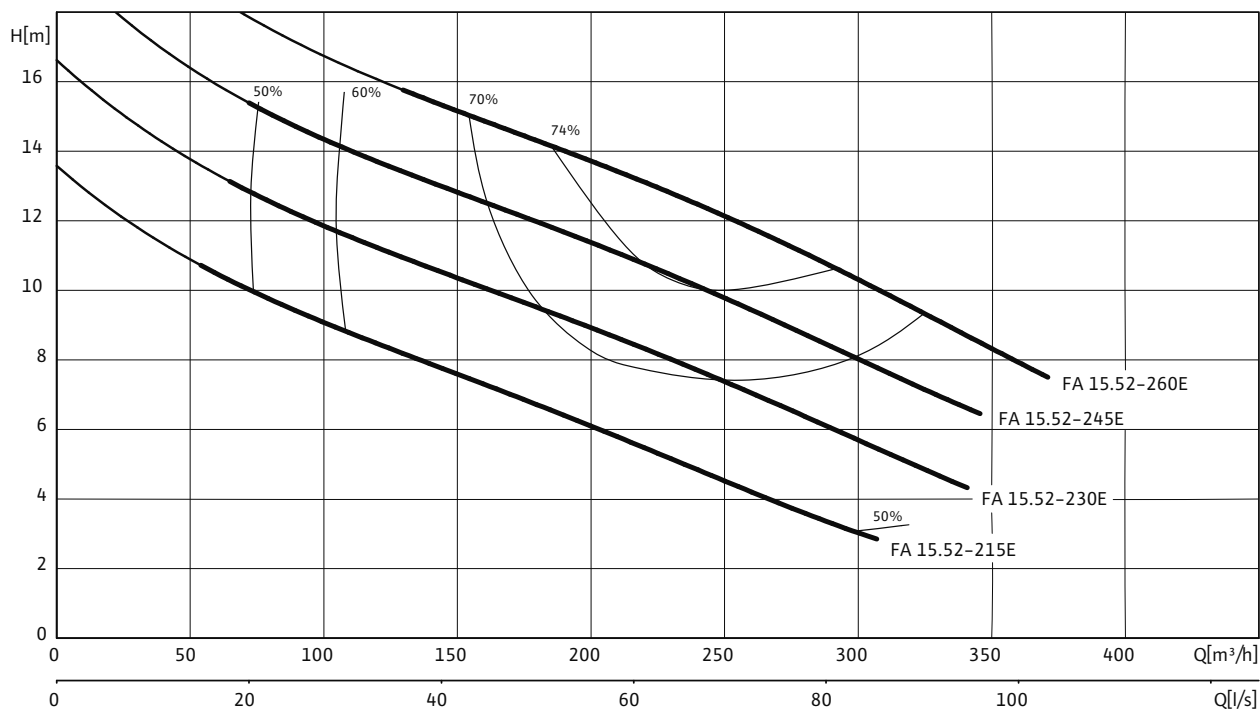
# Dewatering

## Submersible sewage pumps

### Pump curves, ordering information Wilo-EMU FA 15.52E (1450 rpm)


#### Pump curves Wilo-EMU FA 15.52E – 50 Hz – 1450 rpm


Single-channel impeller – Free ball passage: 100 mm



Pump curves in accordance with ISO 9906, Appendix A The specified degrees of efficiency correspond to the hydraulic efficiency.

#### Information for order placements

Wilo-EMU...	Mains connection		Art no.
FA 15.52-215E + T 1□-4/16HEx	3~400 V, 50 Hz	K	6046644
FA 15.52-230E + T 1□.2-4/16HEx	3~400 V, 50 Hz	K	6049225
FA 15.52-230E + T 1□.2-4/24HEx	3~400 V, 50 Hz	K	6047730
FA 15.52-245E + T 1□.2-4/24HEx	3~400 V, 50 Hz	K	6047732
FA 15.52-260E + T 20.1-4/22□Ex	3~400 V, 50 Hz	K	6047734

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request



## Technical data Wilo-EMU FA 15.52E (1450 rpm)

	FA 15.52-215E + T 1□-4/16HEX 3□400 □, 50 Hz	FA 15.52-230E + T 1□.2-4/16HEX 3□400 □, 50 Hz	FA 15.52-230E + T 1□.2-4/24HEX 3□400 □, 50 Hz	FA 15.52-245E + T 1□.2-4/24HEX 3□400 □, 50 Hz	FA 15.52-260E + T 20.1-4/22□Ex 3□400 □, 50 Hz
<b>Unit</b>					
Pressure connection	DN 150	DN 150	DN 150	DN 150	DN 150
Free ball passage mm	100	100	100	100	100
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	307	341	341	335	371
Max. delivery head $H_{max}$ / m	13.6	16.6	16.6	19.6	22.3
Operating mode (immersed)	S1	S1	S1	S1	S1
Operating mode (non-immersed)	—	—	—	—	S2-15 min
Max. immersion depth m	20	20	20	20	20
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	140	—	170	171	249
<b>Motor data</b>					
Nominal current $I_N$ / A	13.5	13.5	21	21	30.5
Starting current $I_A$ / A	68	68	123	123	156
Nominal motor power $P_2$ / kW	6.5	6.5	10	10	15
Power consumption $P_T$ / kW	8.2	8.2	12.2	12.2	18.2
Activation type	Star-delta	Star-delta	Star-delta	Star-delta	Star-delta
Nominal speed $n$ / rpm	1400	1400	1417	1417	1425
Insulation class	F	F	F	F	F
Recommended switching frequency 1/h	—	—	—	—	—
Max. switching frequency 1/h	15	15	15	15	15
Permitted voltage tolerance %	±10	±10	±10	±10	±10
<b>□able</b>					
Length of connecting cable m	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	NSSHÖU
Cable cross-section mm <sup>2</sup>	10G1,5	10G1,5	10G1,5	10G1,5	7x2,5 + 7x1,5
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable	Non-detachable	Non-detachable
Mains plug	—	—	—	—	—
<b>E□uipment/function</b>					
Float switch	—	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX	ATEX
<b>Materials</b>					
Static seal	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Sealing on motor side	NBR	NBR	NBR	NBR	C/Al-oxides
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021

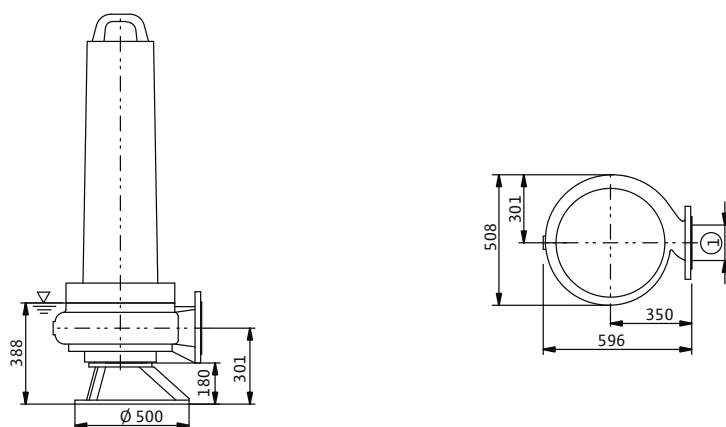
$P_1$  refers to the maximum power consumption. All of the data applies to 3–400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Dewatering

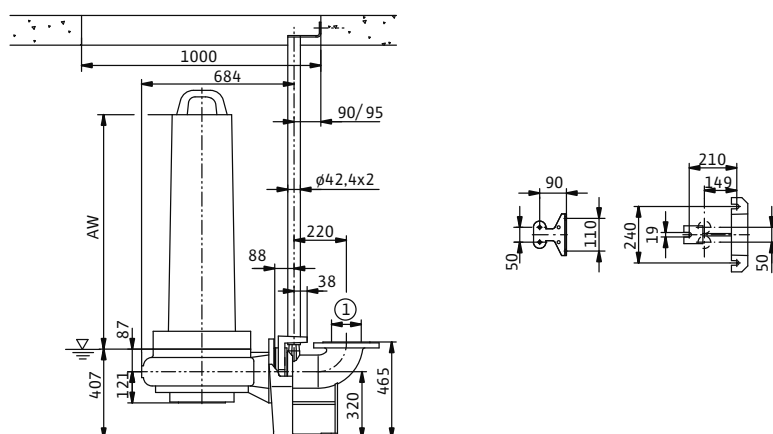
## Submersible sewage pumps

### Dimensions Wilo-EMU FA 15.52E (1450 rpm)

#### Dimension drawing Wilo-EMU FA – portable installation



#### Dimension drawing Wilo-EMU FA – stationary wet well installation

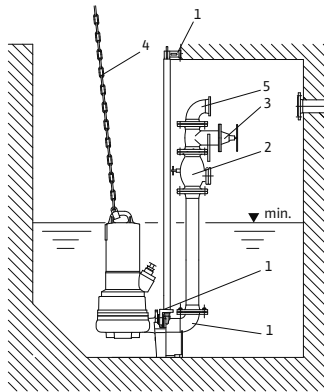


1 = DN150 PN10 / ANSI B16.1, Class 125, Size 6; 2 = DN150 PN10

#### Dimensions

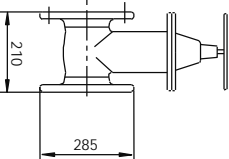
Wilo-EMU...	Dimensions
	AW
	mm
T 1□-4/16 (Ex)	411
T 1□.2-4/24 (Ex)	510
T 20.1-4/22 (Ex)	674

## Mechanical accessories Wilo-EMU FA (standard variant) 15...



- 1 Suspension unit
- 2 Non-return valve
- 3 Gate valve
- 4 Chain
- 5 Pipe bend

### Stationary wet well installation

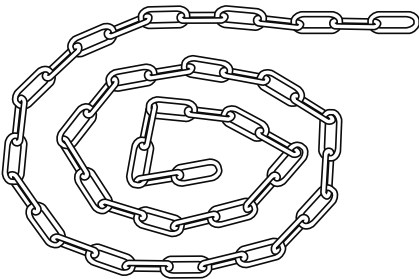
		Description	Art no.
<b>Suspension unit EH</b> 150/2		Made of EN-GJL-250, painted, with free passage in DN 150, foot elbow including pump holder, profile joint, installation and floor fixation accessories and guide pipe bracket Ø 1¼" without guide pipes. Connection on pressure side DN 150. Flanges PN 10/16 in accordance with DIN 2501. The double pipe feed Ø 1¼" is to be provided by the customer.	6036890
<b>Non-return valve</b>		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 150 connection	2017170
<b>Gate valve</b>		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 150	2017164
<b>Pipe bend 90°</b>		Made of spheroidal cast iron 400-15, with 2 flanges, including 1 set of mounting accessories, PN 10/16 flange, DIN 28637, for DN 150 connection	2017186
<b>Pipe piece 150</b>		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 150/150/150 connection	2017181
<b>Mounting accessories 150</b>		For a DN 80 flange connection, with 8 screws, 8 nuts and 1 flat gasket for PN 10/16 flange, DIN 2504	2390488

# Dewatering

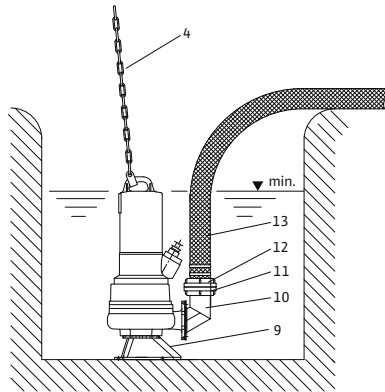
## Submersible sewage pumps

### Mechanical accessories Wilo-EMU FA (standard variant) 15...

#### Stationary wet well installation

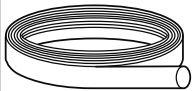
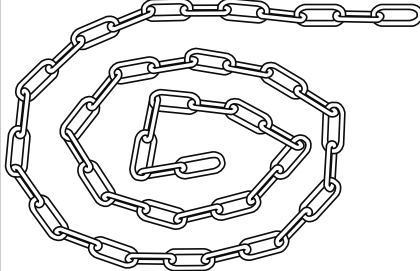
		Description	Art no.
Chain set P-S-E		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

Mechanical accessories Wilo-EMU FA (standard variant) 15...



- 4 Chain
- 9 Floor supporting foot
- 10 Pipe bend
- 11 Storz pipe coupling
- 12 Storz hose coupling
- 13 Pressure hose




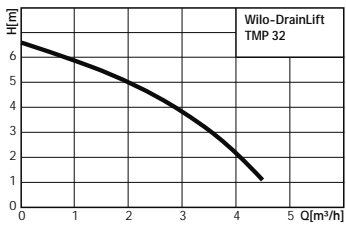
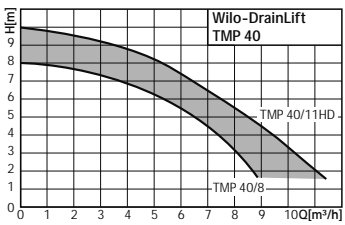
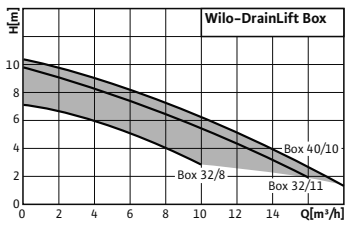
Portable wet well installation with hose connection

		Description	Art no.
Floor supporting foot FA 15..., FA 15.52		Made of steel (S235JR), painted, consisting of 3 support feet, 1 baseplate and fixation material	6024243
Pipe elbow 90° with Storz F pipe coupling and flange DN 150		made of aluminium, Storz F connection, with DN 150 flange connection	6040247
Pressure hose / Storz F		Synthetic fibre hose, synthetic, rubberised on the inside, inner Ø 150 mm, length 10 m incl. Storz F coupling, 7/21 bar	6003648
		Synthetic fibre hose, synthetic, rubberised on the inside, inner Ø 150 mm, length 20 m incl. Storz F coupling, 7/21 bar	6003647
Chain set P-S-E		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Wastewater collection and transport

## Wastewater lifting units

### Series overview

Series	Wilo-DrainLift TMP 32	Wilo-DrainLift TMP 40	Wilo-DrainLift Box
Product photo			
Duty chart			
Design	Wastewater lifting unit (floor-mounted installation)	Wastewater lifting unit (floor-mounted installation)	Wastewater lifting unit (concealed floor installation)
Application	<ul style="list-style-type: none"> <li>Automatic drainage for showers, washbasins, washing machines/dish-washers, etc.</li> <li>Pumping of wastewater and drainage water free of faeces, fibres, grease and oil, and pumping of non-aggressive rainwater.</li> </ul>	<ul style="list-style-type: none"> <li>Automatic drainage for showers, washbasins, washing machines/dish-washers, etc.</li> <li>Pumping of wastewater and drainage water free of faeces, fibres, grease and oil, and pumping of non-aggressive rainwater.</li> </ul>	For concealed floor installation, can be used to drain <ul style="list-style-type: none"> <li>Rooms subject to possible flooding</li> <li>Garage entrances</li> <li>Basement stairways</li> <li>Showers, washbasins, washing machines, dishwashers</li> </ul>
Max. intake/h with S3 operation V	max. 156 l	max. 900 l	max. 900 ... 1320 l
Special features/product advantages	<ul style="list-style-type: none"> <li>Modern design</li> <li>Shower drains from height of 110 mm possible</li> <li>Low-noise operation</li> </ul>	<ul style="list-style-type: none"> <li>Service-friendly thanks to integrated submersible pump</li> <li>Suitable for aggressive media (TMP 40/11 HD)</li> <li>Low-noise operation</li> </ul>	<ul style="list-style-type: none"> <li>Easy to install due to integrated pump and non-return valve</li> <li>Large tank volume</li> <li>Easy to maintain</li> <li>Pumps with pressure pipe that can be pulled</li> <li>Stainless steel tile frame with trap</li> <li>With extra connection for a second tank</li> </ul>
Further information	Series information from page 276 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a>	Series information from page 280 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a>	Series information from page 284 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a>

Equipment/function				
	Wilo-DrainLift ...			
	TMP 32	TMP 40	Box 32	Box 40
<b>Design</b>				
Submersible	—	—	—	—
Single-pump system	•	•	•	•
Double-pump system	—	—	—	—
Single-phase AC motor	•	•	•	•
Three-phase motor	—	—	—	—
Pump position: motor components outside the tank	—	—	—	—
Pump position: outside the tank	—	—	—	—
Pump position: in tank	•	•	•	•
Sealing chamber	—	•	•	•
Sealing for mechanical seal on fluid side	—	•	•	•
Sealing for rotary shaft seal on fluid side	•	—	—	—
Integrated non-return valve	•	•	•	•
Sheath current cooling	—	•	•	—
Single-channel impeller	—	—	—	—
Multi-channel impeller	•	•	•	•
Vortex impeller	—	—	—	—
Macerator	—	—	—	—
Patented turbulator	—	—	•	—
<b>Equipment/function</b>				
Inlet position freely selectable	—	—	—	—
Active carbon filter	•	—	—	—
Level control: with float switch	—	•	•	•
Level control: with level sensor	—	—	—	—
Level control: with pneumatic pressure transducer	•	—	—	—
Motor temperature monitoring	—	•	•	•
Mains-independent alarm	—	—	—	—
Alarm for potential-free contact	—	—	—	—
Ready-to-plug	•	•	•	•
Connecting cable detachable	—	—	—	—
Switchgear	—	—	—	—
Hose connection for diaphragm hand pump	—	—	—	—
Seal for suction pipe connection for diaphragm hand pump	—	—	—	—
Hose connection for ventilation	—	—	—	—
Pressure hose	—	—	—	—
<b>Installation sundries</b>				
Fixation material	•	•	—	—
Kit for pressure pipe connection	•	•	•	•
Keyhole saw for inlet borehole	—	—	—	—
Inlet seal	—	—	—	—
Soundproofing material	—	—	—	—

• = available, — = not available

# Wastewater collection and transport

## Wastewater lifting units

### Series description Wilo-DrainLift TMP 32



#### Design

Wastewater lifting unit (floor-mounted installation)

#### Type key

Example: **Wilo-DrainLift TMP 32-0.5**

**TMP** Wastewater lifting unit (floor-mounted)

**32** Nominal diameter of the pressure connection (DN 32, G 1 ¼)

**0.5** Nominal motor power [KW]

#### Application

Wastewater lifting unit for the automatic drainage of showers, wash-basins, washing machines/dishwashers, etc., in both old and new buildings where the wastewater cannot be discharged to the sewer system via natural slopes and/or for the disposal of wastewater that accumulates below the backflow level. For pumping non-aggressive wastewater and drainage waters that are free of faeces, fibre, grease and oil. Compliance with DIN EN 12050-2 and DIN 1986-100 is required.

**Attention:** Pumping sewage containing faeces in wastewater lifting units is not permitted. In these cases, it is necessary to use DrainLift KH32, DrainLift XS-F, DrainLift S to XXL and FTS series sewage lifting units.

#### Special features/product advantages

- Modern design
- Shower drains from height of 110 mm possible
- Low-noise operation

#### Technical data

- Mains connection 1~230 V, 50 Hz
- Cable length from system to switchgear/plug 1.2 m
- Operating mode S1 (1000 h, Tmax 45 °C), S3-10 % (Tmax 75 °C)
- Fluid temperature max. 45 °C, for short periods (3 min) 75 °C
- Pressure port Ø 32 mm (G 1 ¼)
- Inlet connection 40 mm (2 x G 1 ¼)
- Ventilation connection 25 mm
- Protection class IP 44
- Gross tank volume 17 l
- Switching volume 2.6 l

#### Materials

- Motor: stainless steel
- Hydraulic housing: Plastic
- Tank: ABS plastic

#### Equipment/function

- Ready-to-plug
- Thermal motor monitoring
- Level control with pneumatic pressure transducer
- Integrated non-return valve
- Fixation material
- Active carbon filter

#### Description/design

Automatically switching wastewater lifting unit ready for connection with all of the required switchgear and control mechanisms and a built-in non-return valve. Including 2 inlet connecting pieces DN 40 at different height levels and pressure port DN 32 (G 1 ¼) as well as active carbon filter with overflow protection for aeration and ventilation.

Ventilation can also be carried out at roof level through the use of self-sealing plug couplers (external pipe diameter 25 mm).

#### Scope of delivery

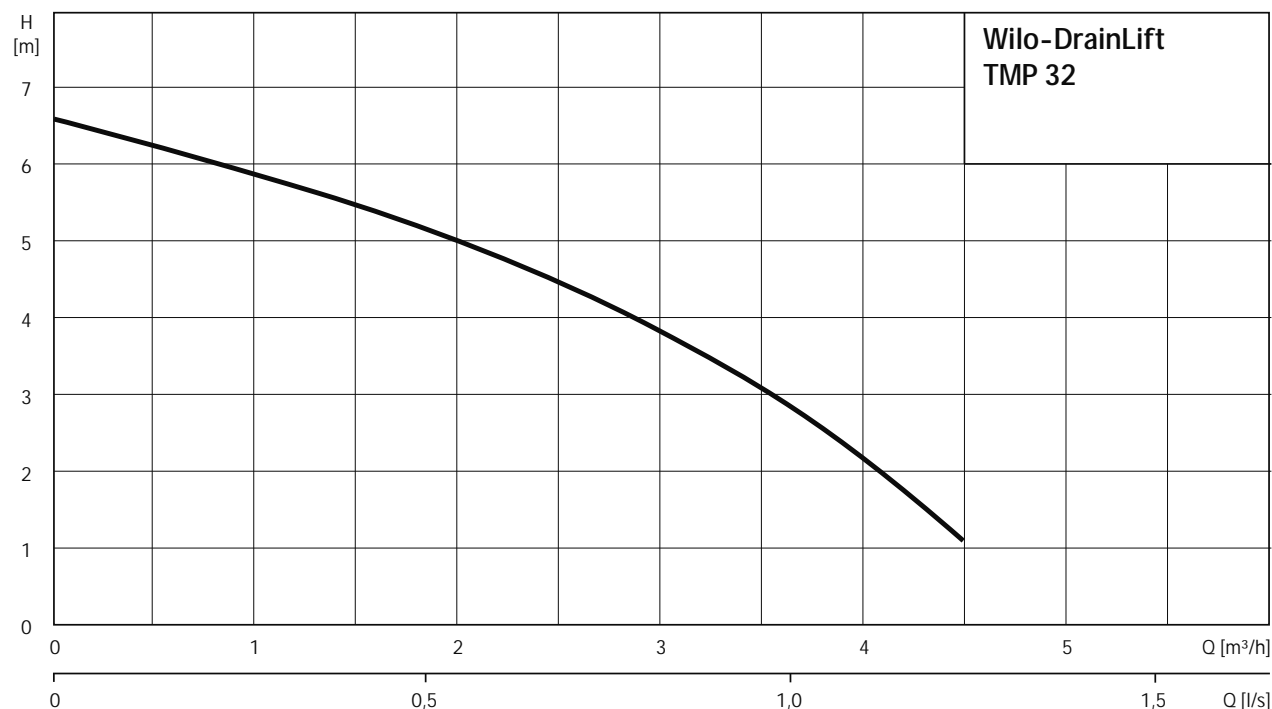
Automatically switching wastewater lifting unit ready for connection with active carbon filter.

- Connection material for inlet and pressure pipe
- Fixation material for buoyancy safeguards
- Installation and operating instructions



### Pump curves, ordering information Wilo-DrainLift TMP 32

Pump curves Wilo-DrainLift TMP 32 - 50 Hz - 2900 rpm



According to EN 12056-4, 6.1, flow velocity (in the pressure pipe) must be kept between 0.7 and 2.3 m/s.  
The stated  $Q_{min}$  values apply to the inside diameter of single-walled steel pipes.

#### Information for order placements

Wilo-DrainLift ...	Mains connection		Art no.
TMP 32-0,5	1~230 V, 50 Hz	L	2017795

= ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Wastewater collection and transport

## Wastewater lifting units

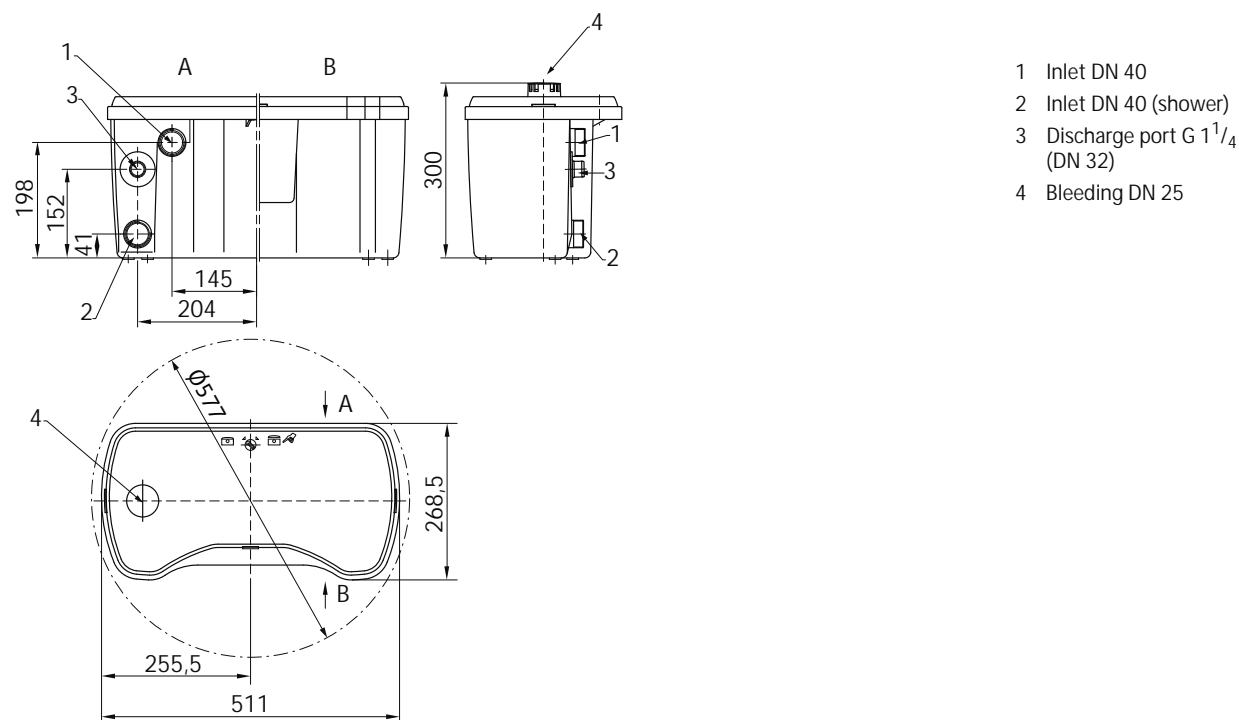
### Technical data Wilo-DrainLift TMP 32

	TMP 32-0,5
	1~230 V, 50 Hz
<b>Motor</b>	
Power consumption $P_1$ / W	330
Nominal current $I_N$ / A	1.5
Activation type	Direct
Insulation class	F
Protection class	IP 44
Max. switching frequency per pump 1/h	60
<b>Cable</b>	
Length of connecting cable m	1.2
Mains plug	Shock-proof
Type of connecting cable	Non-detachable
<b>Permitted field of application</b>	
Max. intake/h with S3 operation V/ l	max. 156
Operating mode per pump	S1, S3-10%
Max. permissible pressure in the pressure pipe $p$ / bar	1
Fluid temperature $T$ / °C	+3 ... +45
Max. fluid temperature, for short periods up to 3 min $T$ / °C	75
Max. ambient temperature $T$ / °C	35
<b>Connections</b>	
Pressure connection	G 1¼
Inlet connection	2x G 1½
Bleeding	DN 25
<b>Dimensions/weights</b>	
Gross volume $V$ / l	17
Max. switching volume $V$ / l	2.6
Dimensions <i>Width x height x depth</i> / mm	511 x 300 x 268.5
Diagonal dimension mm	520
Weight approx. $m$ / kg	7.1
<b>Materials</b>	
Motor housing	1.4301
Mechanical seal	Carbon/ceramic
Pump housing	PP
Tank material	ABS

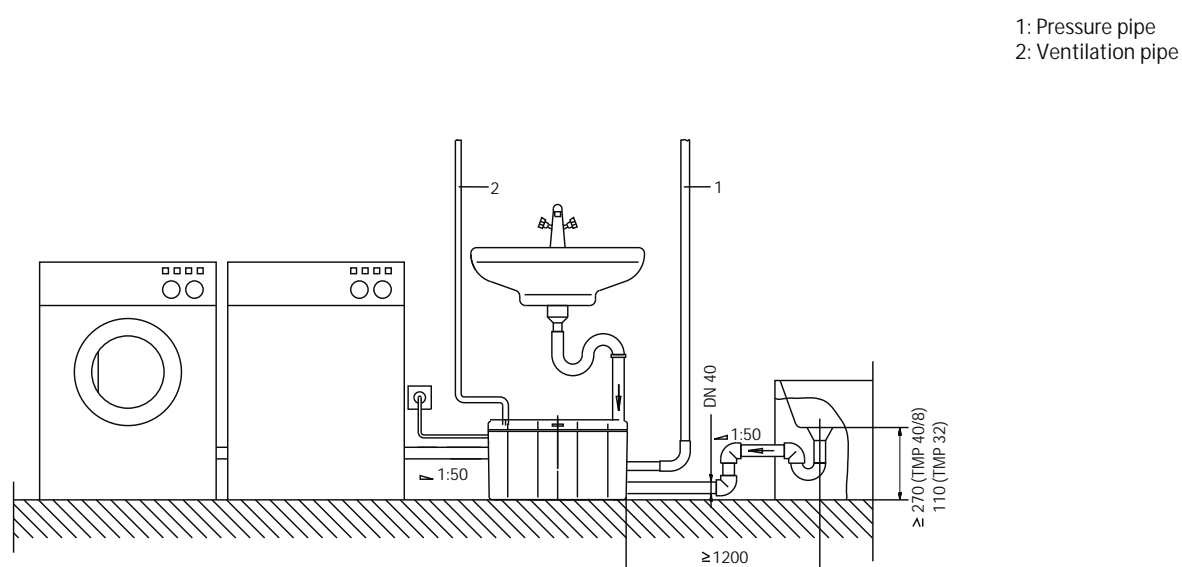
$P_1$  refers to the maximum power consumption. All of the data applies to 1~230 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.  
Restriction of operating mode: S1 (1000 h, max. 45 °C), S3-10% (max. 75 °C)

### Dimension drawing Wilo-DrainLift TMP 32

#### Dimension drawing



#### Installation drawing Wilo-DrainLift TMP



# Wastewater collection and transport

## Wastewater lifting units

### Series description Wilo-DrainLift TMP 40



#### Design

Wastewater lifting unit (floor-mounted installation)

#### Type key

Example: **Wilo-DrainLift TMP 40/8**

**TMP** Wastewater lifting unit (floor-mounted)

**40** Nominal diameter of the discharge port (DN 40)

**8** Max. delivery head [m]

#### Application

Wastewater lifting unit for automatic drainage of showers, washbasins, washing machines/dishwashers, etc., in both old and new buildings, the wastewater of which cannot be piped to the sewer system through natural inclines and/or for disposal of wastewater that is generated below the backflow level. For the pumping of non-aggressive wastewater and drainage waters that are free of faeces, fibre, grease and oil. Compliance with DIN EN 12050-2 and DIN 1986-100 is required.

**Attention:** Pumping sewage containing faeces in wastewater lifting units is not permitted. In these cases, it is necessary to use Wilo-DrainLift KH 32, DrainLift XS-F, DrainLift S to XXL as well as FTS series sewage lifting units.

#### Special features/product advantages

- Service-friendly thanks to integrated submersible pump
- Suitable for aggressive media (TMP 40/11 HD)
- Low-noise operation

#### Technical data

- Mains connection 1–230 V, 50 Hz
- Cable length from system to switchgear/plug 2.5 m
- Operating mode S3 –25%
- Fluid temperature max. 35 °C, for short periods (3 min) 90 °C
- Pressure port Ø 40 mm
- Inlet connection 25/32/40 mm
- Ventilation 32 mm
- Protection class IP 67
- Gross tank volume 32 l
- Switching volume 15 l

#### Materials

- Motor: stainless steel
- Hydraulic housing: PP-GF30 plastic

- Tank: PE plastic

#### Equipment/function

- Ready-to-plug
- Thermal motor monitoring
- Level control with float switch
- Integrated non-return valve
- Fixation material

#### Description/design

Automatically switching wastewater lifting unit ready for connection with all of the required switchgear and control mechanisms and a built-in non-return valve. Flexible utilisation thanks to lateral inlets as well as inlets possible from above (advantageous for retrofits). Easy-to-maintain system design with Wilo-Drain TMW built-in pump, pressure port DN 40.

Also available as TMP 40/11 HD for aggressive fluids.

Ventilation is carried out at roof level through the use of self-sealing plug couplers (external pipe diameter 32 mm).

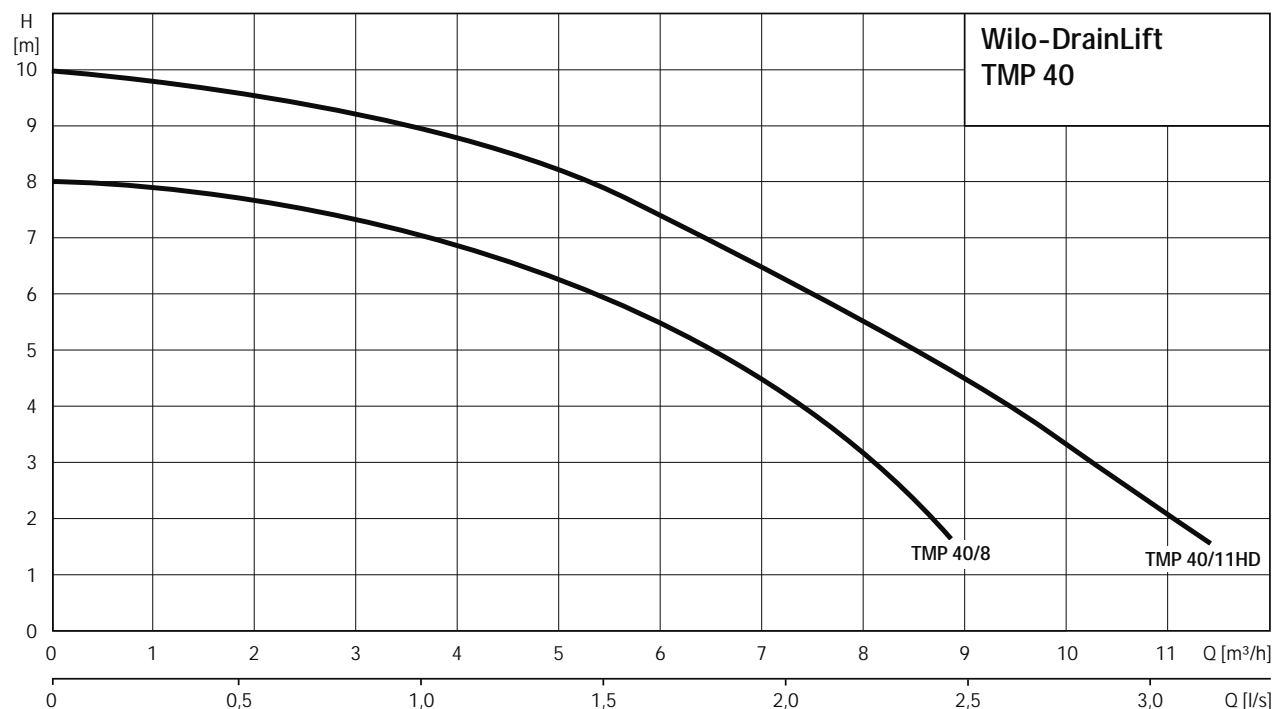
#### Scope of delivery

Automatically switching wastewater lifting unit ready for connection

- Connection material for inlet and pressure pipe
- Fixation material for buoyancy safeguards
- Installation and operating instructions

### Pump curves, ordering information Wilo-DrainLift TMP 40

Pump curves Wilo-DrainLift TMP 40 - 50 Hz - 2900 rpm



According to EN 12056-4, 6.1, flow velocity (in the pressure pipe) must be kept between 0.7 and 2.3 m/s. The stated  $Q_{min}$  values apply to the inside diameter of single-walled steel pipes.

#### Information for order placements

Wilo-DrainLift ...	Mains connection		Art no.
TMP 40/8	1-230 V, 50 Hz	L	2522664
TMP 40/11 HD	1-230 V, 50 Hz	L	2525932

= ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Wastewater collection and transport

## Wastewater lifting units

### Technical data Wilo-DrainLift TMP 40

	TMP 40/8	TMP 40/11 HD
	1~230 V, 50 Hz	1~230 V, 50 Hz
<b>Motor</b>		
Power consumption $P_1$ / W	450	750
Nominal current $I_N$ / A	2.1	3.6
Activation type	Direct	Direct
Insulation class	F	F
Protection class	IP 67	IP 67
Max. switching frequency per pump 1/h	60	60
<b>Cable</b>		
Length of connecting cable m	2.5	2.5
Mains plug	Shock-proof	Shock-proof
Type of connecting cable	Non-detachable	Non-detachable
<b>Permitted field of application</b>		
Max. intake/h with S3 operation V/ l	max. 900	max. 900
Operating mode per pump	S3-25%	S3-25%
Max. permissible pressure in the pressure pipe $p$ / bar	1.1	1.1
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	90	90
Max. ambient temperature $T$ / °C	35	35
<b>Connections</b>		
Pressure connection	DN 40	DN 40
Inlet connection	DN 25/32/40	DN 25/32/40
Bleeding	DN 32	DN 32
<b>Dimensions/weights</b>		
Gross volume $V$ / l	32	32
Max. switching volume $V$ / l	15	15
Dimensions <i>Width x height x depth</i> / mm	510 x 385 x 300	510 x 385 x 300
Diagonal dimension mm	500	500
Weight approx. $m$ / kg	8	8
<b>Materials</b>		
Motor housing	1.4301	1.4404
Mechanical seal	Carbon/ceramic	Carbon/ceramic
Pump housing	PP-GF30	PP-GF30
Tank material	PE	PE

$P_1$  refers to the maximum power consumption. All of the data applies to 1~230 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.



# Wastewater collection and transport

## Wastewater lifting units

### Series description Wilo-DrainLift Box



#### Design

Wastewater lifting unit (concealed floor installation)

#### Type key

Example: **Wilo-DrainLift Box 32/8**

<b>Box</b>	Wastewater lifting unit (concealed floor installation)
<b>32</b>	Nominal diameter of the discharge port (DN 32, Ø 40)
<b>8</b>	Max. delivery head [m]

#### Application

For concealed floor installation, can be used to drain

- Rooms subject to possible flooding
- Garage entrances
- Basement stairways
- Showers, washbasins, washing machines, dishwashers

#### Special features/product advantages

- Easy to install due to integrated pump and non-return valve
- Large tank volume
- Easy to maintain
- Pumps with pressure pipe that can be pulled
- Stainless steel tile frame with trap
- With extra connection for a second tank

#### Technical data

- Mains connection 1~230 V, 50 Hz
- Mains connection cable 10 m (5 m with 40/10), with shock-proof plug
- Operating mode S3 -25%
- Fluid temperature max. 35 °C, with 32/8 and 32/11 for short periods (3 min) 90 °C
- Pressure port Ø 40 mm
- Inlet connection 100 mm
- Ventilation connection 100 mm
- Protection class IP 67
- Gross tank volume 85 l
- Switching volume 22 l, 30 l with 40/10

#### Materials

- Concealed floor tank: PE plastic
- Motor: stainless steel
- Hydraulic housing: PP-GF30 plastic with Box 32..., cast iron EN-GJL-200 with Box 40

#### Equipment/function

- Ready-to-plug
- Plastic tank with already mounted drainage pump, pressure pipe and integrated non-return valve
- Thermal motor monitoring
- Level control with float switch

#### Description/design

Automatically switching lifting unit with built-in submersible pump and non-return valve. Ready for installation in concealed floor structures. Flexible due to two inlet possibilities in DN 100 and a connection (DN 100) with a second tank.

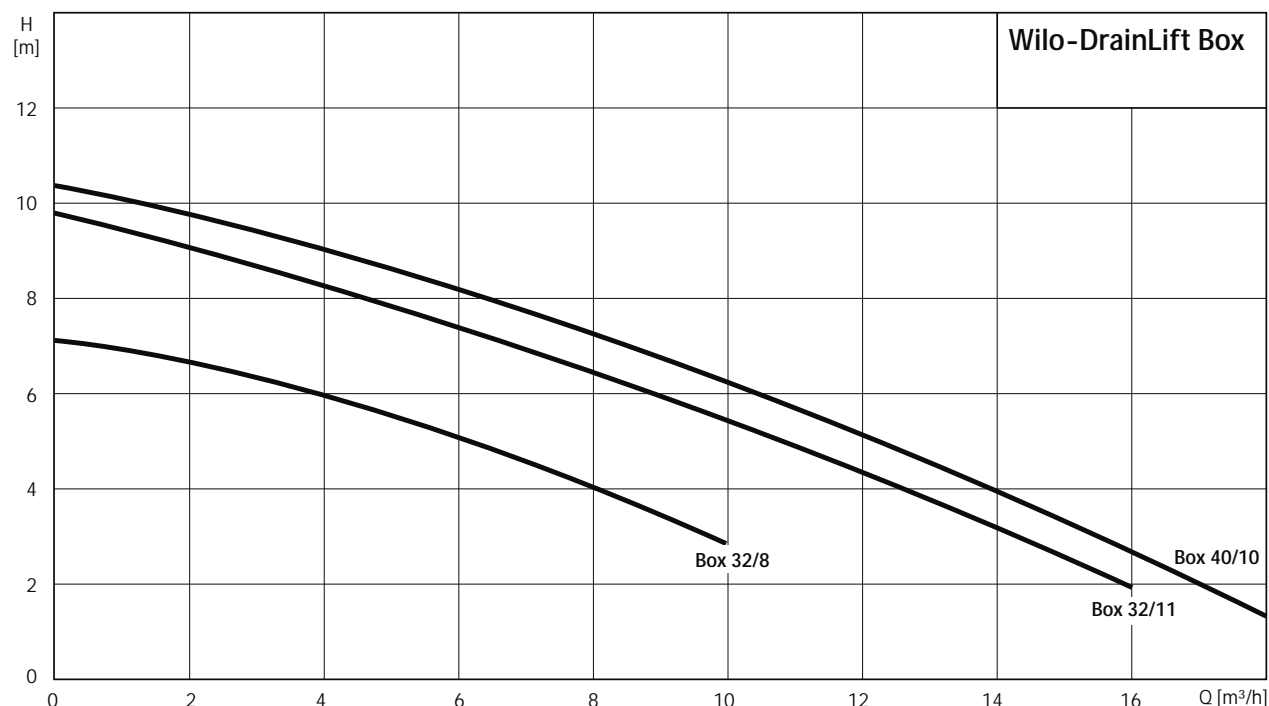
#### Scope of delivery

Pump ready for connection with attached float switch in impact-resistant plastic container for concealed floor installation. Completely ready for operation with pressure pipe and non-return valve already installed. Pump cable (5 m or 10 m long) with mounted shock-proof plug. Installation and operating instructions.



### Pump curves, ordering information Wilo-DrainLift Box

Pump curves Wilo-DrainLift Box - 50 Hz - 0.0 rpm



According to EN 12056-4, 6.1, flow velocity (in the pressure pipe) must be kept between 0.7 and 2.3 m/s.  
The stated  $Q_{min}$  values apply to the inside diameter of single-walled steel pipes.

#### Information for order placements

Wilo-DrainLift ...	Mains connection	🚚	Art no.
Box 32/8	1~230 V, 50 Hz	L	2521820
Box 32/11	1~230 V, 50 Hz	L	2521821
Box 40/10	1~230 V, 50 Hz	L	2521822

🚚 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Wastewater collection and transport

## Wastewater lifting units

### Technical data Wilo-DrainLift Box

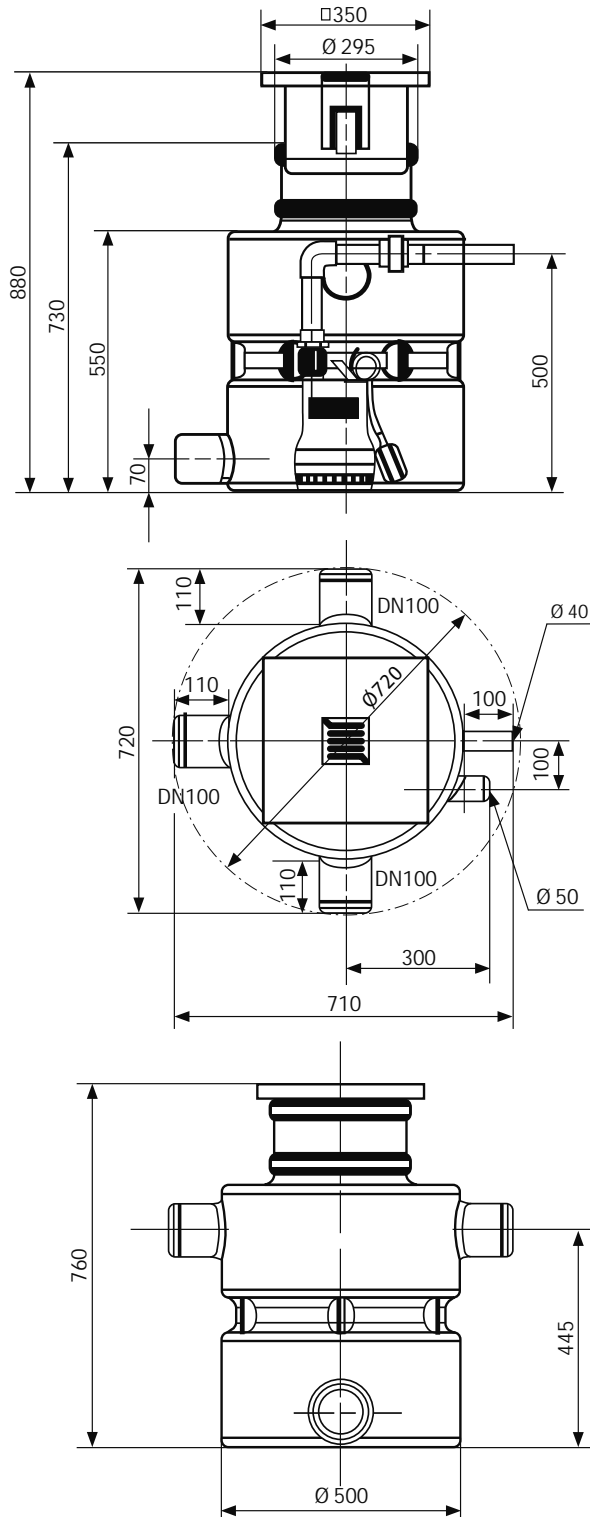
	Box 32/8	Box 32/11	Box 40/10
	1~230 V, 50 Hz	1~230 V, 50 Hz	1~230 V, 50 Hz
<b>Motor</b>			
Power consumption $P_1$ / W	450	750	940
Nominal current $I_N$ / A	2.1	3.6	4.4
Activation type	Direct	Direct	Direct
Insulation class	—	—	—
Protection class	—	—	—
Max. switching frequency per pump 1/h	60	60	30
<b>Cable</b>			
Length of connecting cable m	10	10	5
Mains plug	Shock-proof	Shock-proof	Shock-proof
Type of connecting cable	Non-detachable	Non-detachable	Non-detachable
<b>Permitted field of application</b>			
Max. intake/h with S3 operation V/ l	max. 1320	max. 1320	max. 900
Operating mode per pump	S3-15%	S3-15%	S3-25%
Max. permissible pressure in the pressure pipe $p$ / bar	1.1	1.1	1.1
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	90	90	—
Max. ambient temperature $T$ / °C	—	—	—
<b>Connections</b>			
Pressure connection	—	—	—
Inlet connection	—	—	—
Bleeding	DN 100	DN 100	DN 100
<b>Dimensions/weights</b>			
Gross volume $V$ / l	—	—	—
Max. switching volume $V$ / l	22	22	30
Dimensions <i>Width x height x depth</i> / mm	720 x 880 x 710	720 x 880 x 710	720 x 880 x 710
Diagonal dimension mm	—	—	—
Weight approx. $m$ / kg	30	32	38
<b>Materials</b>			
Motor housing	1.4301	1.4301	1.4301
Mechanical seal	—	—	—
Pump housing	PP	PP	PP-GF30
Tank material	PE	PE	PE

$P_1$  refers to the maximum power consumption. All of the data applies to 1~230 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

### Dimension drawing Wilo-DrainLift Box

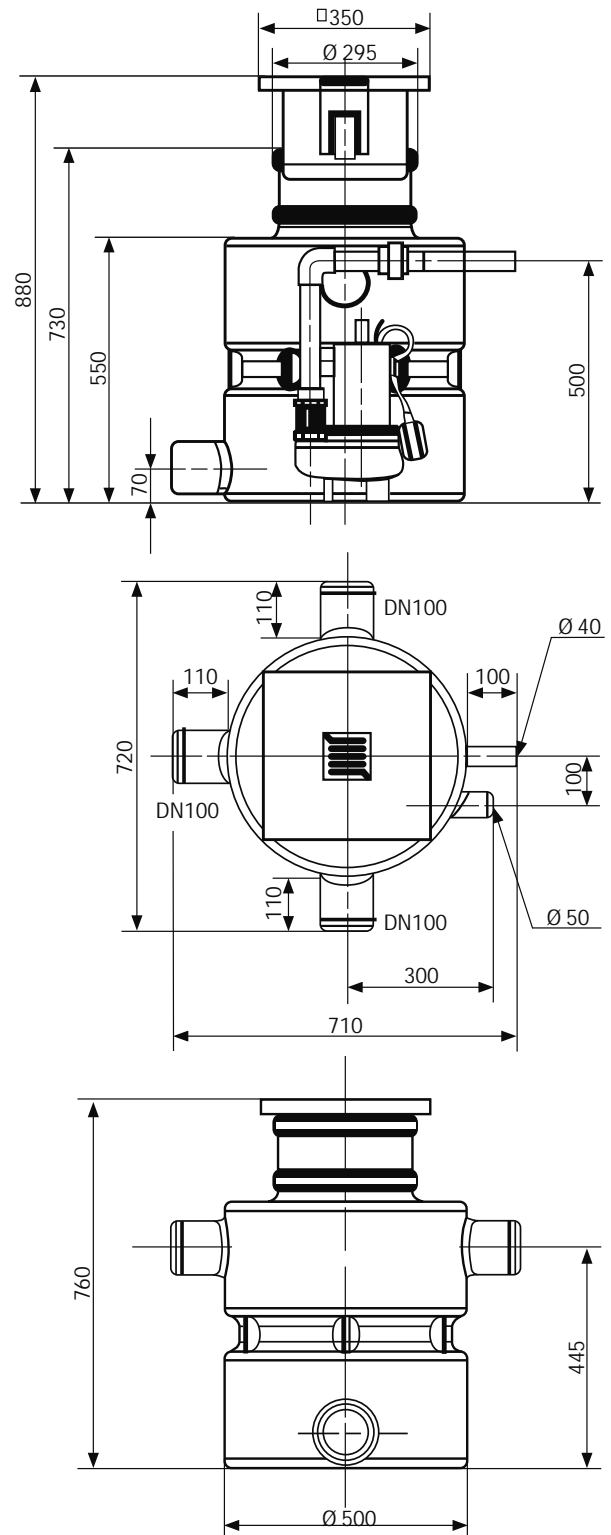
#### Dimension drawing

##### Wilo-DrainLift Box 32



#### Dimension drawing




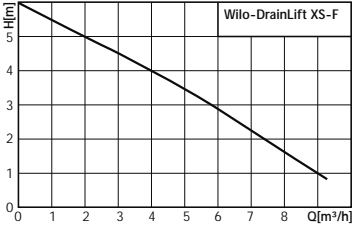
##### Wilo-DrainLift Box 40







# Wastewater collection and transport

## Sewage lifting units

### Series overview

Series	Wilo-DrainLift KH 32	Wilo-DrainLift XS-F
Product photo		
Duty chart		
Design	Small sewage lifting unit (floor-mounted installation)	Small sewage lifting unit (front wall installation)
Application	For limited application (in direct connection behind a stand-alone toilet) with macerator for disposing the sewage from an individual toilet in addition to a washbasin, a shower or a bidet.	For limited use (directly connected to a wall-mounted toilet) for special installation in the front wall. For disposal of sewage from a single toilet as well as drainage from one washbasin, shower or bidet.
Max. intake/h with S3 operation V	max. 120 l	max. 260 l
Special features/ product advantages	<ul style="list-style-type: none"> <li>• Modern, space-saving design</li> <li>• Simple and quick installation: <ul style="list-style-type: none"> <li>- Self-sealing, direct toilet connection</li> <li>- Built-in active carbon filter</li> <li>- Ready-to-plug</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Quiet operation for high user comfort</li> <li>• Reliable due to integrated alarm</li> <li>• Simple and quick installation: <ul style="list-style-type: none"> <li>- Including all connection sleeves</li> <li>- Built-in active carbon filter</li> <li>- Ready-to-plug</li> </ul> </li> <li>• Suitable for all standard front wall installation systems</li> </ul>
Further information	Series information from page 293 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a>	Series information from page 298 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 304



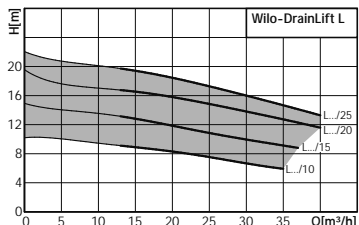
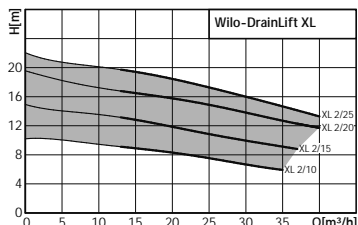
### Series overview

Series	Wilo-DrainLift S	Wilo-DrainLift M
Product photo		
Duty chart		
Design	Compact sewage lifting unit with integrated pump	Sewage lifting unit with 1 or 2 integrated pumps
Application	<ul style="list-style-type: none"> <li>For the pumping of raw sewage that cannot be piped to the sewer system through the use of natural inclines.</li> <li>Drainage of individual rooms</li> </ul>	<ul style="list-style-type: none"> <li>Pumping of untreated sewage that cannot be conveyed to the sewer system via natural slope.</li> <li>For drainage of single-family houses and small building complexes.</li> </ul>
Max. intake/h with S3 operation V	max. 600 l	max. 1080 ... 3600 l
Special features/ product advantages	<ul style="list-style-type: none"> <li>Easy to install due to:                             <ul style="list-style-type: none"> <li>Low weight</li> <li>Large scope of delivery</li> <li>Including non-return valve</li> </ul> </li> <li>Flexible due to:                             <ul style="list-style-type: none"> <li>Freely selectable inlets</li> <li>Front-wall-like installation</li> <li>Space-saving installation (depth 30 cm)</li> </ul> </li> <li>Safe due to:                             <ul style="list-style-type: none"> <li>Reliable pneumatic level measurement</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Easy to install due to:                             <ul style="list-style-type: none"> <li>Compact dimensions</li> <li>Low weight</li> <li>Large scope of delivery</li> </ul> </li> <li>Flexible due to:                             <ul style="list-style-type: none"> <li>Freely selectable inlets</li> </ul> </li> <li>Safe due to:                             <ul style="list-style-type: none"> <li>Integrated mains-independent alarm function</li> <li>Integrated thermal motor protection</li> <li>Additional potential-free contact</li> <li>Maintenance interval display for M2</li> <li>Early fault detection for M2</li> </ul> </li> </ul>
Further information	Series information from page 305 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 312	Series information from page 314 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 324

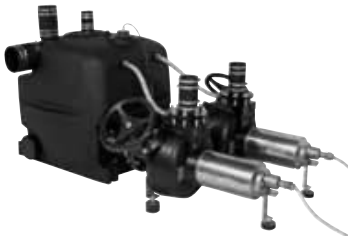

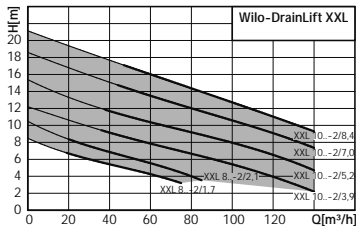
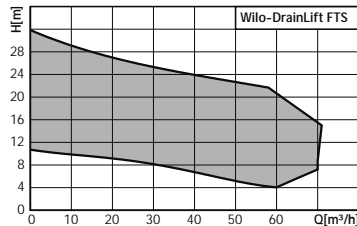
# Wastewater collection and transport

## Sewage lifting units

### Series overview

Series	Wilo-DrainLift L	Wilo-DrainLift XL
Product photo		
Duty chart		
Design	Sewage lifting unit with 1 or 2 integrated pumps	Sewage lifting unit with 2 integrated pumps
Application	<ul style="list-style-type: none"> <li>For the pumping of raw sewage that cannot be piped to the sewer system through the use of natural inclines.</li> <li>For drainage of multi-family houses and smaller structures (cafés, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>For the pumping of raw sewage that cannot be piped to the sewer system through the use of natural inclines.</li> <li>For drainage of larger structures (restaurants, department stores, etc.).</li> </ul>
Max. intake/h with S3 operation V	max. 1050 ... 3000 l	max. 15600 l
Special features/ product advantages	<ul style="list-style-type: none"> <li>Easy to install due to: <ul style="list-style-type: none"> <li>Low weight</li> <li>Only one pressure outlet with double-pump system (integrated Y-pipe)</li> <li>Built-in non-return valve</li> <li>Large scope of delivery</li> </ul> </li> <li>Flexible due to: <ul style="list-style-type: none"> <li>Freely selectable inlets</li> <li>Wide performance range</li> </ul> </li> <li>Safe due to: <ul style="list-style-type: none"> <li>Large tank volume</li> <li>Mains-independent alarm function</li> <li>Additional potential-free contact</li> <li>Comfort version "C" with individual fault signal</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Easy installation / commissioning due to <ul style="list-style-type: none"> <li>Built-in non-return valve</li> <li>Higher flexibility in the intake area (connection is height-adjustable and can be swivelled)</li> <li>Menu-prompted setting on switchgear</li> </ul> </li> <li>Safe due to: <ul style="list-style-type: none"> <li>Large switching volume</li> <li>Additional potential-free contact</li> <li>Reliable level measurement due to level sensor</li> <li>Suitable for permanent operation (due to integrated sheath current cooling)</li> </ul> </li> </ul>
Further information	Series information from page 326 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 336	Series information from page 338 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 344

### Series overview

Series	Wilo-DrainLift XXL	Wilo-DrainLift FTS
Product photo		
Duty chart		
Design	Sewage lifting unit with 2 dry-mounted pumps	Sewage lifting unit with solids separation system
Application	<ul style="list-style-type: none"> <li>For the removal of untreated sewage that cannot be piped to the sewer system through the use of natural inclines.</li> <li>For drainage of large building complexes (hotels, hospitals, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>For the pumping of raw sewage that cannot be piped to the sewer system through the use of natural inclines.</li> <li>For drainage of large building complexes (hotels, hospitals, etc.).</li> </ul>
Max. intake/h with S3 operation V	max. 26400 ... 55200 l	—
Special features/ product advantages	<ul style="list-style-type: none"> <li>Large tank volume</li> <li>Low weight of individual components</li> <li>Wide performance range</li> <li>Suitable for permanent operation (due to integrated sheath current cooling)</li> </ul>	<ul style="list-style-type: none"> <li>High efficiency, due to pumps with small free ball passage</li> <li>Large delivery heads</li> <li>System non-susceptible to clogging, due to solids separation</li> <li>Large tank volume</li> </ul>
Further information	Series information from page 346 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 355	Series information from page 357 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a>

# Wastewater collection and transport

## Sewage lifting units

Equipment/function							
	Wilo-DrainLift ...						
	KH	XS-F	S	M	L	XL	XXL
<b>Design</b>							
Submersible	—	—	•	•	•	•	•
Single-pump system	•	•	•	•	•	—	—
Double-pump system	—	—	—	•	•	•	•
Single-phase AC motor	•	•	•	•	—	—	—
Three-phase motor	—	—	•	•	•	•	•
Pump position: motor components outside the tank	—	—	•	•	•	•	—
Pump position: outside the tank	—	—	—	—	—	—	•
Pump position: in tank	•	•	—	—	—	—	—
Sealing chamber	—	—	•	•	•	•	•
Sealing for mechanical seal on fluid side	—	—	•	•	•	•	•
Sealing for rotary shaft seal on fluid side	•	•	—	—	—	—	—
Integrated non-return valve	•	•	•	•	•	•	—
Sheath current cooling	—	—	—	—	—	•	•
Single-channel impeller	—	—	—	—	—	—	•
Multi-channel impeller	—	—	—	—	—	—	—
Vortex impeller	•	•	•	•	•	•	—
Macerator	•	—	—	—	—	—	—
<b>Equipment/function</b>							
Inlet position freely selectable	—	—	•	•	•	•	—
Active carbon filter	•	•	—	—	—	—	—
Level control: with float switch	—	—	—	•	•	—	—
Level control: with level sensor	—	—	—	—	—	•	•
Level control: with pneumatic pressure transducer	•	•	•	—	—	—	—
Motor temperature monitoring	—	—	—	—	•	—	—
Mains-independent alarm	—	—	—	•	•	—	—
Alarm for potential-free contact	—	—	•	•	•	•	•
Ready-to-plug	•	•	•	•	•	•	—
Connecting cable detachable	—	—	•	•	•	•	•
Switchgear	—	—	—	•	•	•	•
Hose connection for diaphragm hand pump	—	—	•	—	•	•	•
Seal for suction pipe connection for diaphragm hand pump	—	—	—	•	—	—	—
Hose connection for ventilation	—	•	•	•	•	•	•
Pressure hose	—	—	—	—	—	—	—
<b>Installation sundries</b>							
Kit for pressure pipe connection	•	•	—	•	•	•	•
Keyhole saw for inlet borehole	—	—	•	•	•	•	—
Inlet seal	•	•	•	•	•	•	—
Soundproofing material	—	•	•	•	•	—	—

• = available, — = not available



### Series description Wilo-DrainLift KH 32



#### Design

Small sewage lifting unit (floor-mounted installation)

#### Type key

Example: **Wilo-DrainLift KH 32-0.4**

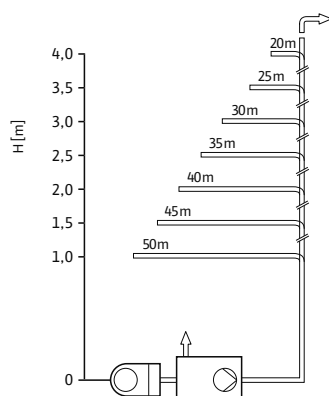
**KH** KH Small lifting unit with macerator for sewage containing faeces

**32** Nominal diameter of the discharge port (DN 25/32)

**– 0.4** Nominal motor power [KW]

#### Application

Sewage lifting unit ready for connection for limited use (in direct connection behind a stand-alone toilet) with macerator for the disposal of the sewage from an individual toilet in addition to a hand washbasin, a shower or a bidet, the wastewater/sewage of which cannot be conveyed to the sewer system via natural slope and/or for the disposal of wastewater that accumulates below the backflow level. Compliance with DIN EN 12050-3 and DIN 1986-100 is required. We recommend using Wilo-DrainLift S to XXL as well as FTS series products when connecting several or different drainage fixtures.



Max. pressure pipe lengths DN 32, for optimal operation, the first section of the pressure pipe should be positioned vertically and then the rest continued horizontally if at all possible (2 bends of 90° and a built-in non-return valve are taken into account).

#### Special features/product advantages

- Modern, space-saving design
- Simple and quick installation:
  - Self-sealing, direct toilet connection
  - Built-in active carbon filter
  - Ready-to-plug

#### Technical data

- Mains connection 1~230 V, 50 Hz
- Mains connection cable 1.2 m, with shock-proof plug
- Operating mode: Intermittent operation S3 - 28 %
- Fluid temperature max. 35 °C
- Ambient temperature max. 35 °C
- Free ball passage 10 mm
- Pressure port DN 25/32
- Inlet connection 2 x DN 40 / DN 100
- Ventilation 25 mm
- Min. suction head (installation level to middle of inlet) 180 mm
- Protection class IP 44
- Gross tank volume 17 l
- Switching volume 2.6 l

#### Materials

- Motor housing: stainless steel 1.4301 (AISI 304)
- Hydraulics: PP-GF30 plastic
- Tank: ABS plastic

#### Equipment/function

- Ready-to-plug
- Thermal motor monitoring
- Level control with pneumatic pressure transducer
- Non-return valve
- Macerator
- Inlet seal
- Kit for pressure pipe connection
- Active carbon filter

#### Description/design

Automatically operating small lifting unit with macerator, all switch-gears and control units required, built-in non-return valve, active carbon filter, flexible pressure port and connection options for one toilet, two additional drainage fixtures and one ventilation pipe. The DrainLift KH 32 small lifting unit is connected directly to a toilet basin with a horizontal connecting piece. The connections for additional

# Wastewater collection and transport

## Sewage lifting units

### Series description Wilo-DrainLift KH 32

drainage fixtures and for the pressure pipe are at the back of the system and can be guided out either to the right or to the left. Odour-free exhaust ventilation into the installation room is implemented by means of an integrated active carbon filter or a ventilation pipe over the roof.

#### Inlet connection:

- DN 100 (direct connection via sealing collar)
- 2 inlets – DN 40 including blind cover and a non-return valve

#### Connection pressure side:

- Pressure port hose angle DN 25/32 including non-return valve

#### Ventilation:

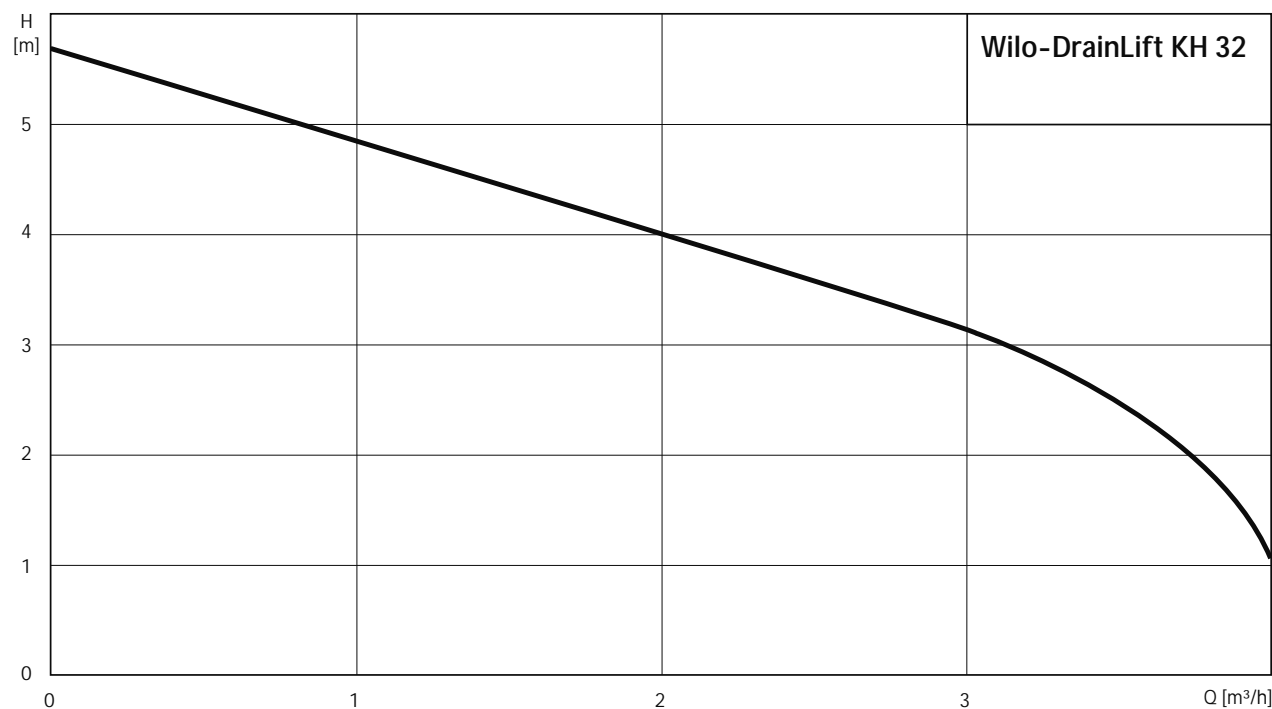
- Choice of integrated active carbon filter with overflow protection or connection of a separate ventilation pipe at roof level by means of a self-sealing plug coupler (outside pipe Ø 25 mm).

#### Scope of delivery

Lifting unit ready for connection with macerator, active carbon filter, flexible pressure port and installation and operating instructions.

### Pump curves, ordering information Wilo-DrainLift KH 32

Pump curves KH - 50 Hz - 2900 rpm



According to EN 12056-4, 6.1, flow velocity (in the pressure pipe) must be kept between 0.7 and 2.3 m/s.  
The stated  $Q_{\min}$  values apply to the inside diameter of single-walled steel pipes.

#### Information for order placements

Wilo-DrainLift ...	Mains connection		Art no.
KH 32-0,4	1-230 V, 50 Hz	L	2011011

= ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Wastewater collection and transport

## Sewage lifting units

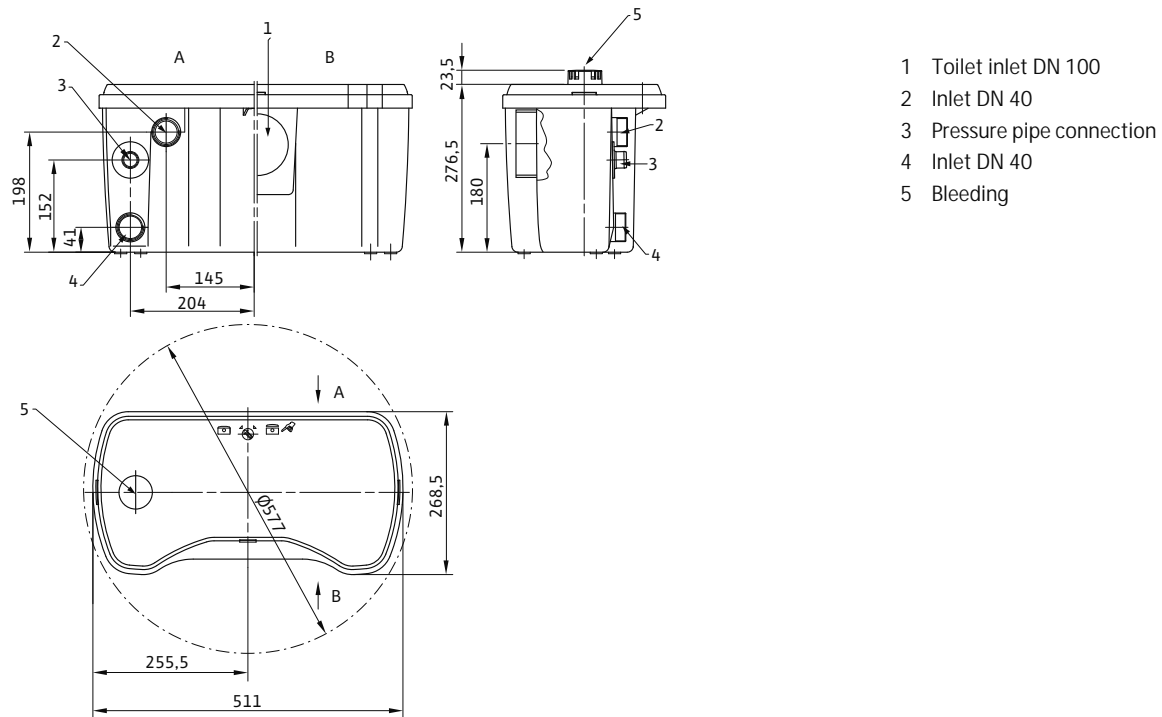
### Technical data Wilo-DrainLift KH 32

	Wilo-DrainLift ...
	KH 32-0,4
<b>Motor</b>	
Mains connection	1~230 V, 50 Hz
Power consumption $P_1$ / kW	0.5
Nominal current $I_N$ / A	2.1
Nominal speed $n$ / rpm	2900
Activation type	Direct
Insulation class	F
Protection class	IP 44
Max. switching frequency per pump 1/h	100
<b>Cable</b>	
Cable length from system to switchgear/plug m	–/1.2
Mains plug	Shock-proof
Type of connecting cable	Non-detachable
<b>Permitted field of application</b>	
Max. intake/h with S3 operation $V/I$	max. 260
Operating mode per pump	S3-25%
Max. permissible pressure in the pressure pipe $p$ / bar	0.7
Fluid temperature $T$ / °C	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	–
Max. ambient temperature $T$ / °C	35
<b>Connections</b>	
Pressure connection	DN 25/DN 32
Inlet connection	2x DN 40/1x DN 100
Bleeding	DN 25
<b>Dimensions/weights</b>	
Gross volume $V/I$	17
Switching volume $V/I$	2.6
Min. level OFF mm	–
Min. level ON mm	70
Dimensions <i>Width x height x depth</i> / mm	500 x 300 x 269
Diagonal dimension mm	520
Weight approx. $m$ / kg	7.8
<b>Materials</b>	
Motor housing	1.4301
Pump shaft	–
Mechanical seal	Carbon/ceramic
Pump housing	PP
Impeller	PP
Tank material	ABS

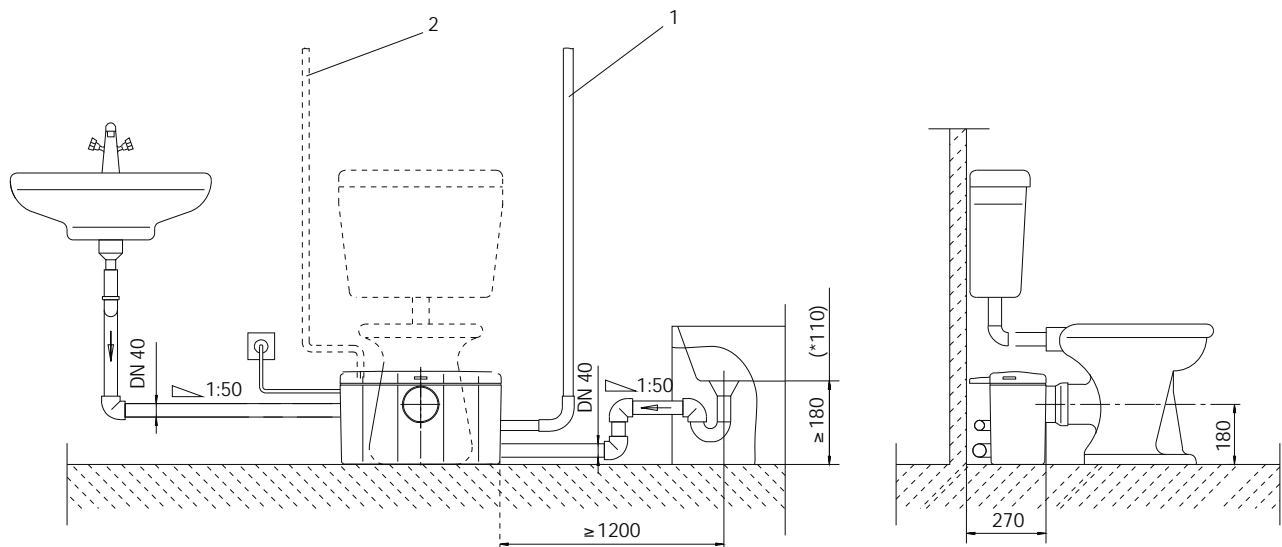
$P_1$  refers to the maximum power consumption. All of the data applies to 1~230 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

### Dimension drawing Wilo-DrainLift KH 32

#### Dimension drawing



#### Installation drawing KH



\* Please observe the information in the installation and operating instructions.  
 1: Pressure pipe; 2: Ventilation pipe

# Wastewater collection and transport

## Sewage lifting units

### Series description Wilo-DrainLift XS-F



#### Design

Small sewage lifting unit (front wall installation)

#### Type key

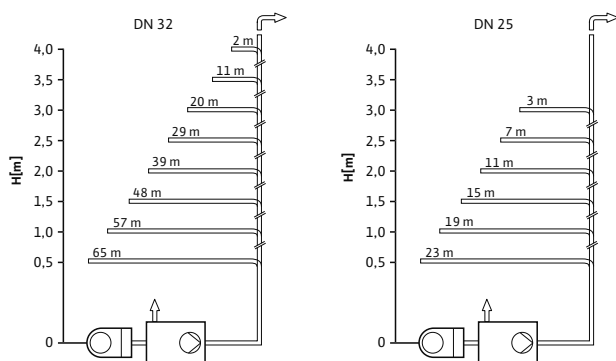
Example: **Wilo-DrainLift XS-F**

**XS** Small lifting unit for sewage containing faeces

**-F** Front wall

#### Application

Sewage lifting unit ready for connection for limited use (directly connected to a wall-mounted toilet) for special installation on the front wall. For the sewage disposal of an individual toilet, in addition to a hand washbasin, a shower or bidet, the wastewater/sewage of which cannot be discharged to the sewer system via the natural slope and/or for the disposal of wastewater/sewage that accumulates below the backflow level. Compliance with DIN EN 12050-3 and DIN 1986-100 is required. We recommend using products of the Wilo-DrainLift S to XXL and FTS series when connecting several or different drainage fixtures.



Max. pressure pipe lengths DN 32 / DN 25, for optimal operation, the first section of the pressure pipe should be positioned vertically and then the rest continued horizontally if at all possible (2 bends of 90° and a built-in non-return valve are taken into account)

#### Special features/product advantages

- Quiet operation for high user comfort
- Reliable due to integrated alarm
- Simple and quick installation:

- Including all connection sleeves
- Built-in active carbon filter
- Ready-to-plug
- Suitable for all standard front wall installation systems

#### Technical data

- Mains connection 1~230 V, 50 Hz
- Mains connection cable 1.5 m, with shock-proof plug
- Operating mode: Intermittent operation S3 - 30 %
- Fluid temperature max. 35 °C
- Ambient temperature max. 35 °C
- Free ball passage 25 mm
- Pressure port DN 32
- Inlet connection 2 x DN 50 / DN 100
- Ventilation 2 x DN 50
- Min. suction head (installation level to middle of inlet) 180 mm
- Protection class IP 44
- Gross tank volume 7.9 l
- Switching volume 1.2 l

#### Materials

- Motor housing: stainless steel 1.4301 (AISI 304)
- Hydraulics: PP-GF 30 plastic
- Tank: ABS plastic

#### Equipment/function

- Ready-to-plug
- Thermal motor monitoring
- Level control with pneumatic pressure transducer
- Potential-free contact
- Non-return valve
- Inlet seals
- Kit for pressure pipe connection
- Fixation material
- Active carbon filter

#### Description/design

Automatically operating small lifting unit incl. all switchgear and control units required, included non-return valve, active carbon filter, flexible pressure port and connection options for one toilet, two additional drainage fixtures and one ventilation pipe. The DrainLift XS-F small lifting unit is connected directly to a wall-mounted toilet. The direct toilet connection as well as connection options for additional drainage fixtures are located on the long sides of the system. The two optional ventilation connection pieces are on the top of the tank. The

### Series description Wilo-DrainLift XS-F

fluid is discharged through a flexible pressure pipe which can be swivelled. The ventilation pipe is guided into the installation room via an included active carbon filter (odourless) or is guided over the roof. Any malfunction is indicated quickly by means of an integrated, mains-independent alarm signal. This signal can be passed on via an additional potential-free contact.

**Inlet connection:**

- DN 100 (direct connection)
- 2 DN 50 inlets

**Connection pressure side:**

- DN 32 via elastic pressure outlet

**Ventilation:**

- 2 x DN50; optionally via supplied active carbon filter in the installation room or via pipe at roof level

**Scope of delivery**

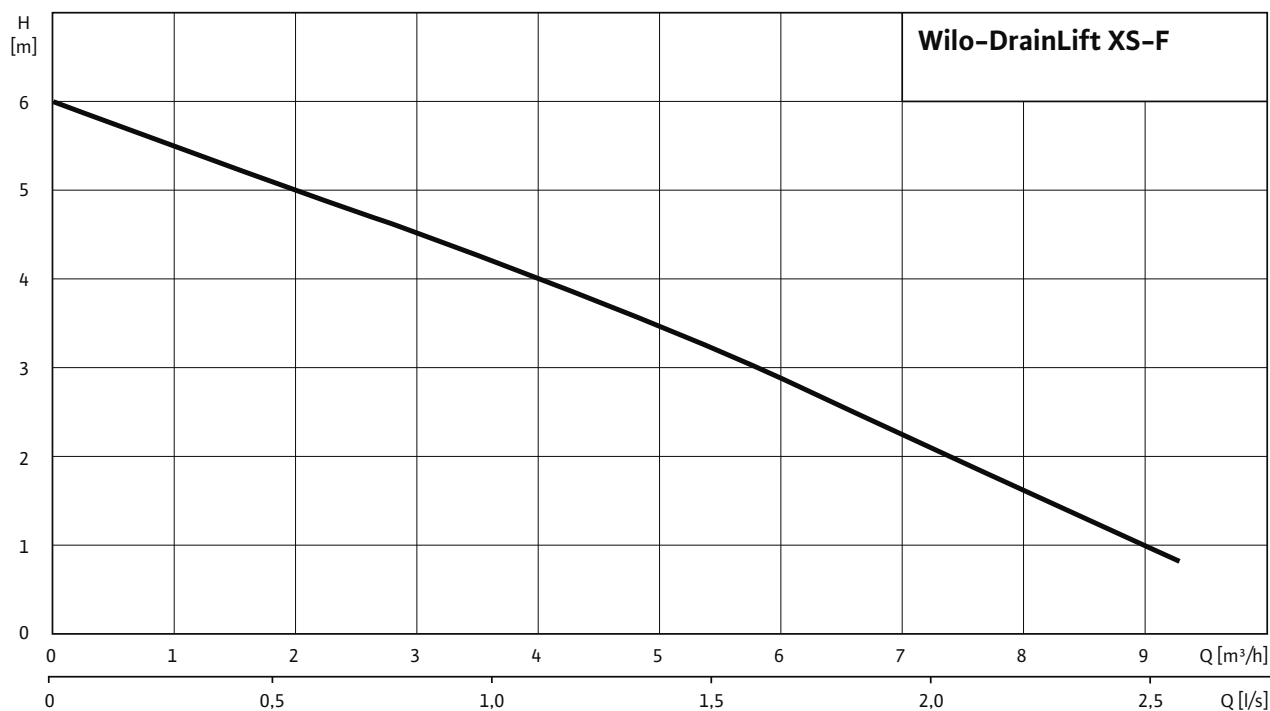
Lifting unit ready for connection including connection sleeves, non-return valve 1 1/4", DN 32 reducer, active carbon filter, insertion screen for ventilation, accessories for the buoyancy safeguards, drain hose with sealing plugs, elastic pressure outlet which can be swivelled and installation and operating instructions.

# Wastewater collection and transport

## Sewage lifting units

### Pump curves, ordering information Wilo-DrainLift XS-F

Pump curves Wilo-DrainLift XS-F - 50 Hz - 2900 rpm



According to EN 12056-4, 6.1, flow velocity (in the pressure pipe) must be kept between 0.7 and 2.3 m/s. The stated  $Q_{min}$  values apply to the inside diameter of single-walled steel pipes.

#### Information for order placements

Wilo-DrainLift ...	Mains connection		Art no.
XS-F	1~230 V, 50 Hz	L	2526945

🚚 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request



### Technical data Wilo-DrainLift XS-F

Wilo-DrainLift ...	
XS-F	
<b>Motor</b>	
Mains connection	1~230 V, 50 Hz
Power consumption $P_1$ / kW	0.4
Nominal current $I_N$ / A	1.8
Nominal speed $n$ / rpm	2900
Activation type	Direct
Insulation class	B
Protection class	IP 44
Max. switching frequency per pump 1/h	100
<b>Cable</b>	
Cable length from system to switchgear/plug m	–/1.5
Mains plug	Shock-proof
Type of connecting cable	Non-detachable
<b>Permitted field of application</b>	
Max. intake/h with S3 operation $V/I$	max. 120
Operating mode per pump	S3-30%
Max. permissible pressure in the pressure pipe $p$ / bar	0.4
Fluid temperature $T$ / °C	+3 ... +35
Max. fluid temperature, for short periods up to 3 min $T$ / °C	–
Max. ambient temperature $T$ / °C	35
<b>Connections</b>	
Pressure connection	DN 32
Inlet connection	2x DN 50/1x DN 100
Bleeding	DN 50
<b>Dimensions/weights</b>	
Gross volume $V/I$	7.9
Switching volume $V/I$	1.2
Min. level OFF mm	–
Min. level ON mm	125
Dimensions <i>Width x height x depth</i> / mm	515 x 410 x 168
Diagonal dimension mm	541
Weight approx. $m$ / kg	6.5
<b>Materials</b>	
Motor housing	1.4301
Pump shaft	–
Mechanical seal	Carbon/ceramic
Pump housing	PP
Impeller	PP
Tank material	ABS

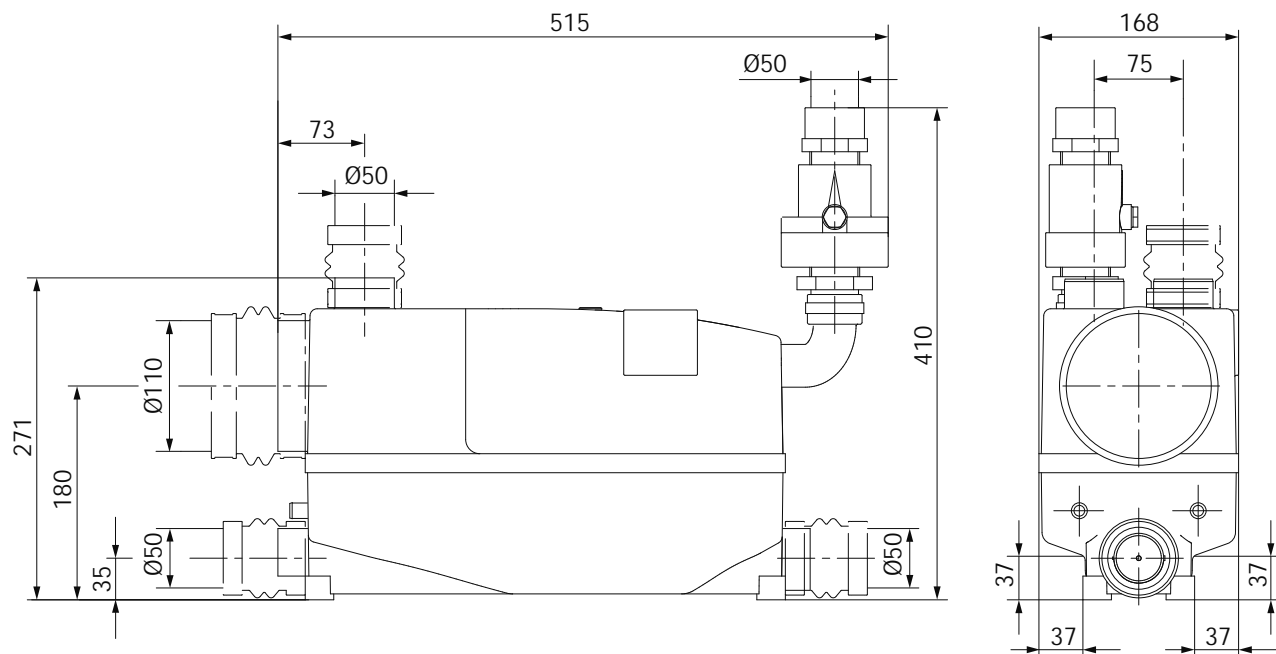
$P_1$  refers to the maximum power consumption. All of the data applies to 1–230 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Wastewater collection and transport

## Sewage lifting units

### Dimension drawing Wilo-DrainLift XS-F

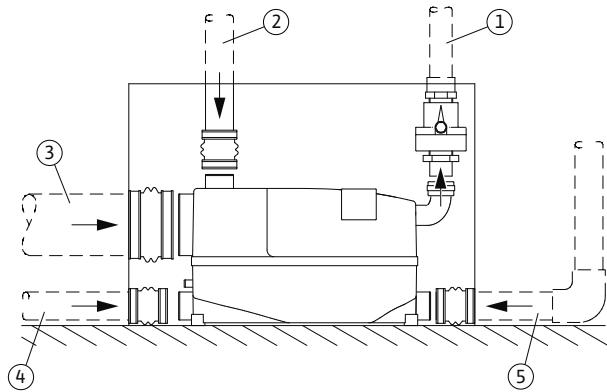
#### Dimension drawing



### Installation example for Wilo-DrainLift XS-F

#### Installation drawing Wilo-DrainLift XS-F

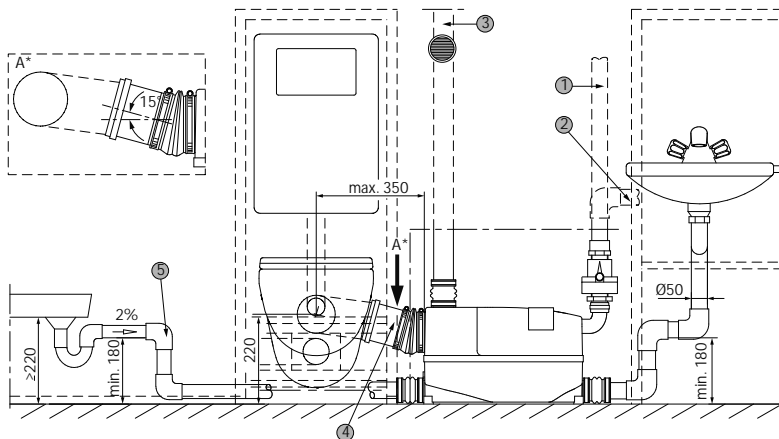
##### Installation in the installation frame



- 1 Pressure pipe
- 2 Ventilation pipe
- 3 Inlet for wall-mounted toilet and HT pipe  
DN 100, min. 15° incline
- 4 Inlet pipe, shower/bidet
- 5 Inlet pipe, washbasin

The system is placed in the installation frame through the installation opening and is connected to the inlets flexibly using the collars and clamps.

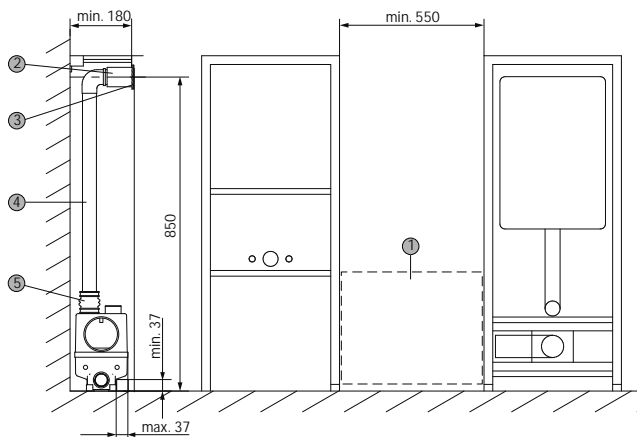
#### Installation drawing Wilo-DrainLift XS-F



- 1 Vertical pressure pipe with non-return valve and loop to be guided over the locally determined backflow level.
- 2 Pressure pipe, alternatively horizontally installed
- 3 Ventilation via active carbon filter in the installation room, or alternatively above the roof.
- 4 Inlet bend, wall-mounted toilet and HT pipe DN 100, min. 15° incline.
- 5 Back-up bend, to be installed as close as possible to the system

#### Installation drawing Wilo-DrainLift XS-F

##### Installation information, front wall installation

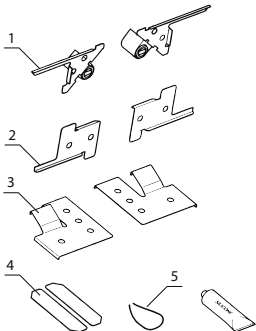
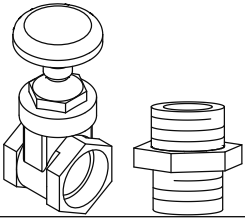


- 1 Inspection opening min. 500 x 400
- 2 Use for ventilation with active carbon filter
- 3 Ventilation screen (for changing the active carbon filter, only the ventilation screen has to be removed).
- 4 Ventilation pipe (HT) DN 50
- 5 Connection sleeve DN 50

# Wastewater collection and transport

## Sewage lifting units

### Mechanical accessories

		Description	Art no.
Service hatch		<p>Installation accessories for frameless tile flap, with concealed suspension technology and release safeguard. Suitable for sizes of 150 mm x 150 mm to 0.5 m².</p> <p>1 Magnetic angle 2 Suspension bracket 3 Suspension unit 4 Metal strip 5 Opening cord</p>	2528216
Gate valve set		<p>Made of red brass, comprising a coupling sleeve slider with female thread Rp 1 ¼ PN 16 RG, and double nipple with male thread 1 ¼, for mounting the gate valve directly behind the non-return valve on pressure outlet DN 32.</p>	2528652

### Series description Wilo-DrainLift S



#### Design

Compact sewage lifting unit with integrated pump

#### Type key

Example: **DrainLift S1/5 (1~)**

<b>S1</b>	Single-pump system
<b>/5</b>	Max. delivery head [m]
<b>(1~)</b>	1~: Single-phase version 3~: Three-phase version

#### Application

Complete sewage lifting unit ready for connection in accordance with DIN EN 12050-1.

For the pumping of raw sewage that cannot be piped to the sewer system through the use of natural inclines. Wilo-DrainLift S meets the requirements of DIN EN 12050-1 and DIN EN 12056. Minimum dimensions, combined with space-optimised installation area enable a wide range of different application options for:

- Retrofitting installation of showers, toilets, saunas, etc.
- Installation of toilets in basement flats
- Expansion/renovation of flats and buildings
- Innovative combination of different installation options for sewage lifting units in a single system, e.g.:
  - Direct toilet connection
  - Drainage of individual rooms
  - Front wall installation/recessed wall installation

Can be used in the following installation types:

As conventional sewage lifting unit for connection of a wall-mounted or stand-alone toilet or for complete room drainage. Due to compact design, system requires only minimum space.

In conjunction with front wall installation/recessed wall installation, used as sewage lifting unit, integrated into commercially available front wall installation systems, in recessed wall installation as well as in pedestal profiles.

#### Note:

It must be possible to both install and remove the system after laying tiles. Observe installation instructions and accessories.

#### Special features/product advantages

- Easy to install due to:
  - Low weight
  - Large scope of delivery

- Including non-return valve
- Flexible due to:
  - Freely selectable inlets
  - Front-wall-like installation
  - Space-saving installation (depth 30 cm)
- Safe due to:
  - Reliable pneumatic level measurement

#### Technical data

- Mains connection 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Power consumption  $P_1$  from 1.1 to 1.25 kW, depending on type
- Cable length from system to switchgear/plug 4 m
- Operating mode S3-15%, 120 sec
- Fluid temperature max. 35 °C, for short periods up to 60 °C
- Max. ambient temperature of 40 °C
- Free ball passage 40 mm
- Pressure port DN 80
- Inlet connection DN 40 / DN 100
- Ventilation connection DN 70
- Min. suction head (installation level to middle of inlet) 180 mm
- Protection class (without switchgear) IP 67
- Gross tank volume 45 l

#### Materials

- Motor housing: stainless steel 1.4404 (AISI 316L)
- Hydraulic housing: PE/PUR plastic
- Impeller: PUR plastic
- Tank: PE plastic

#### Equipment/function

- Ready-to-plug
- Thermal motor monitoring
- Level control with pneumatic pressure transducer
- Potential-free contact
- Pump cable detachable
- Non-return valve
- Inlet seal
- Hole saw for inlet borehole
- Hose connection for ventilation
- Hose connection for diaphragm hand pump
- Fixation material
- Soundproofing material

#### Description/design

**Stainless steel motor**

# Wastewater collection and transport

## Sewage lifting units

### Series description Wilo-DrainLift S

Proven construction in modern INOX & Composite design, including efficiency-optimised vortex impeller.

#### Carrying handle and fastening strap

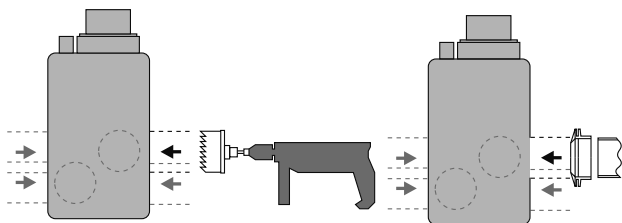
Easy handling, reliable standard-compliant installation and fixation (for buoyancy safeguards).

#### Inlet DN 40

For additional inlets from washbasins, bathtubs, etc.

#### Freely selectable inlets

Open areas on both lengthways sides and on a facing side provide the widest possible range of connection flexibility (see illustration). Observe the minimum suction head of the drainage fixtures.



#### Installation beading

For commercially available front-wall installation systems.

#### Standard sound absorption strips or material

Prevent structure-borne noise transmission.

#### Tank

Large inspection opening. Inclined collection space for deposit-free, reliable operation. Connection possibility for a DN 70 ventilation pipe and for a diaphragm hand pump

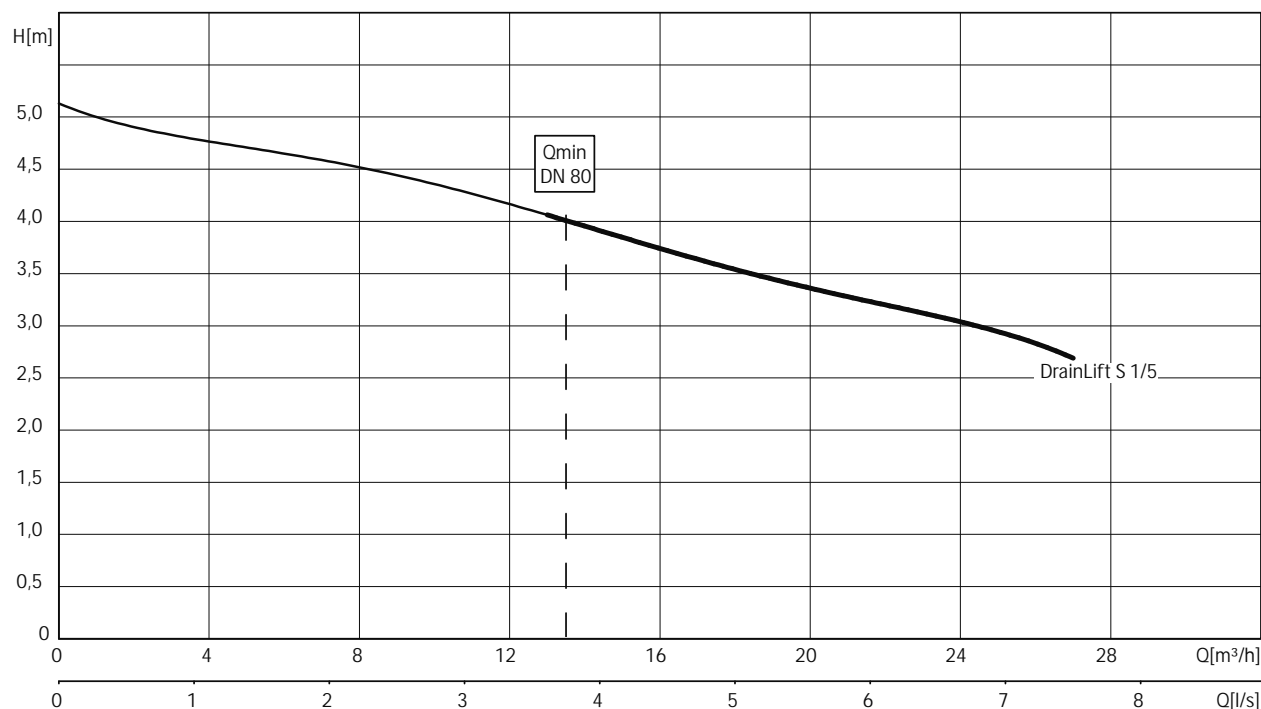
#### Scope of delivery

Sewage lifting unit ready for connection

- Switchgear/plug
- Non-return valve
- Inlet seal DN 100
- Keyhole saw
- Fixation material
- Soundproofing material
- Installation and operating instructions

### Pump curves, ordering information Wilo-DrainLift S

#### Pump curves Wilo-DrainLift S - 50 Hz - 1450 rpm



According to EN 12056-4, 6.1, flow velocity (in the pressure pipe) must be kept between 0.7 and 2.3 m/s.  
The stated  $Q_{min}$  values apply to the inside diameter of single-walled steel pipes.

#### Information for order placements

Wilo-DrainLift ...	Mains connection		Art no.
S 1/5	1-230 V, 50 Hz	L	2520947
S 1/5	3-400 V, 50 Hz	L	2520948

= ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Wastewater collection and transport

## Sewage lifting units

### Technical data Wilo-DrainLift S

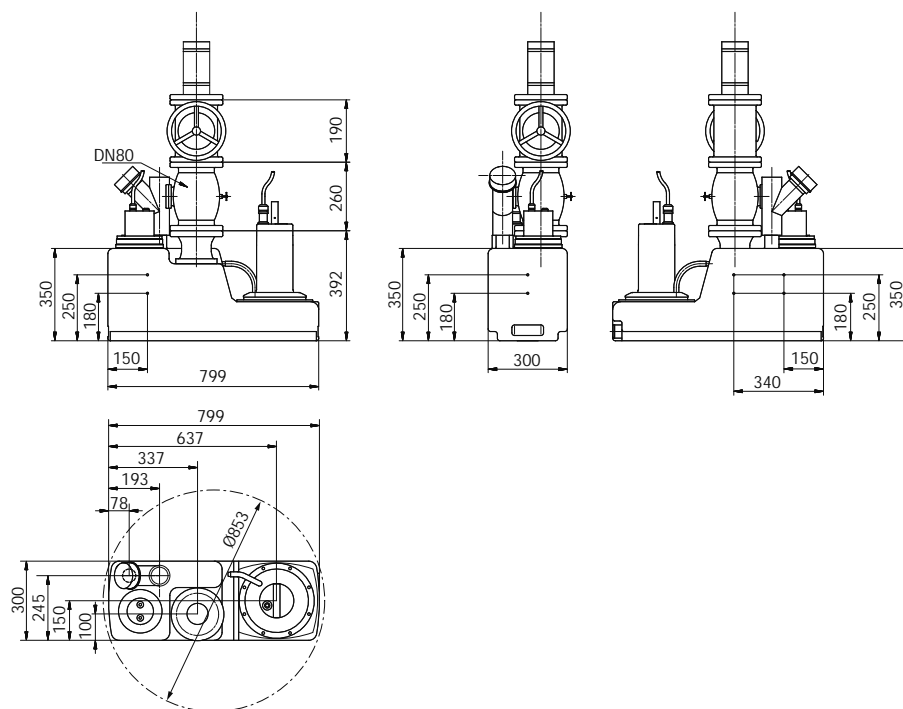
	S 1/5	S 1/5
	1~230 V, 50 Hz	3~400 V, 50 Hz
<b>Motor</b>		
Power consumption $P_1$ / kW	1.3	1.1
Nominal current $I_N$ / A	6.8	2.6
Nominal speed $n$ / rpm	1450	1450
Activation type	Direct	Direct
Insulation class	H	H
Protection class	IP 67	IP 67
Max. switching frequency per pump 1/h	30	30
<b>Cable</b>		
Cable length from system to switchgear/plug m	—/4	—/4
Mains plug	Shock-proof	CEE
Type of connecting cable	Detachable	Detachable
<b>Permitted field of application</b>		
Max. intake/h with S3 operation V/ l	max. 600	max. 600
Operating mode per pump	S3-15%, 120 sec	S3-15%, 120 sec
Max. permissible pressure in the pressure pipe $p$ / bar	1.5	1.5
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	60	60
Max. ambient temperature $T$ / °C	40	40
<b>Connections</b>		
Pressure connection	DN 80	DN 80
Inlet connection	DN 100/DN 40	DN 100/DN 40
Bleeding	DN 70	DN 70
<b>Dimensions/weights</b>		
Gross volume $V$ / l	45	45
Max. switching volume $V$ / l	20	20
Min. level OFF mm	100	100
Min. level ON mm	180	180
Dimensions <i>Width x height x depth</i> / mm	799 x 400 x 300	799 x 400 x 300
Diagonal dimension mm	853	853
Weight approx. $m$ / kg	30	30
<b>Materials</b>		
Motor housing	1.4301	1.4301
Pump shaft	1.4401	1.4401
Mechanical seal	SiC/SiC	SiC/SiC
Pump housing	PE/PUR	PE/PUR
Impeller	PUR	PUR
Tank material	PE	PE

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.



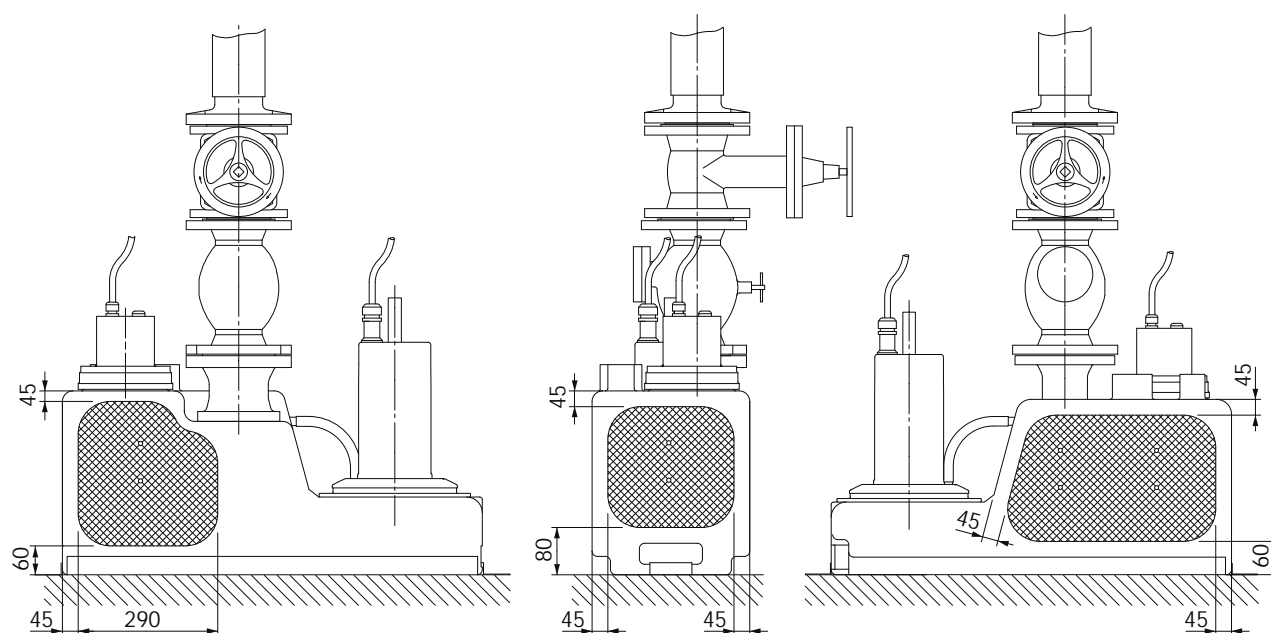
### Dimension drawing Wilo-DrainLift S

#### Dimension drawing Wilo-DrainLift S



#### Dimension drawing Wilo-DrainLift S

##### Freely selectable inlet areas



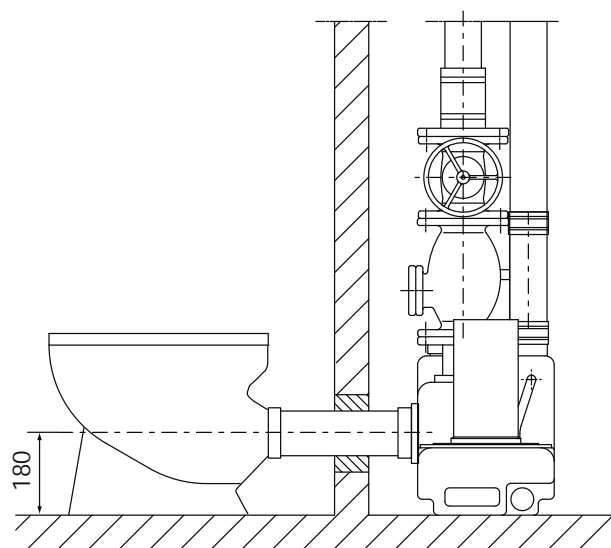
# Wastewater collection and transport

## Sewage lifting units

### Installation example for Wilo-DrainLift S

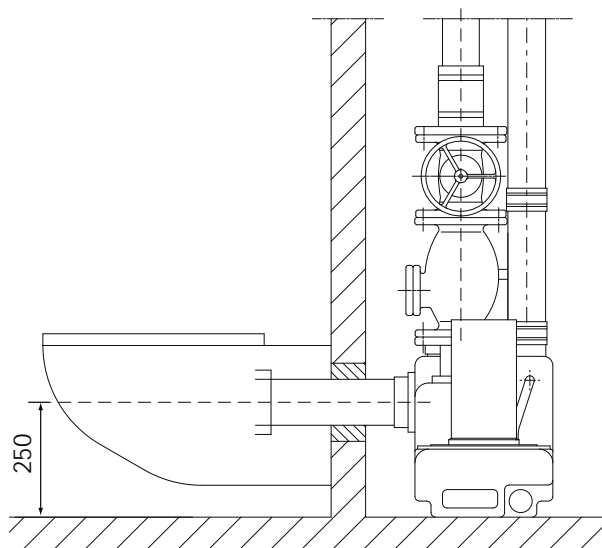
#### Installation drawing Wilo-DrainLift S

Toilet direct connection - floor-mounted toilet



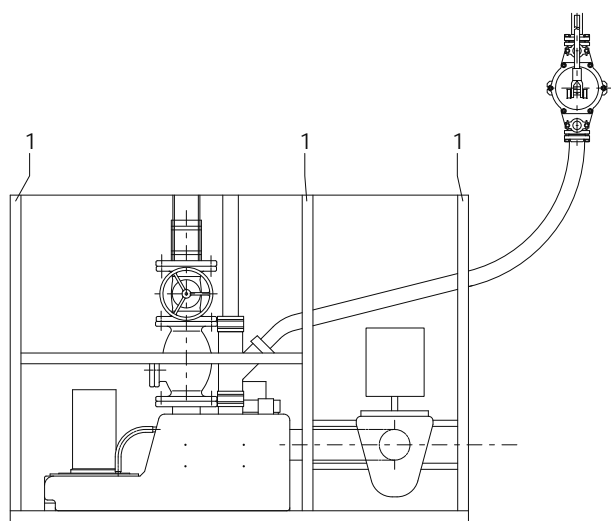
#### Installation drawing Wilo-DrainLift S

Toilet direct connection - wall-mounted toilet



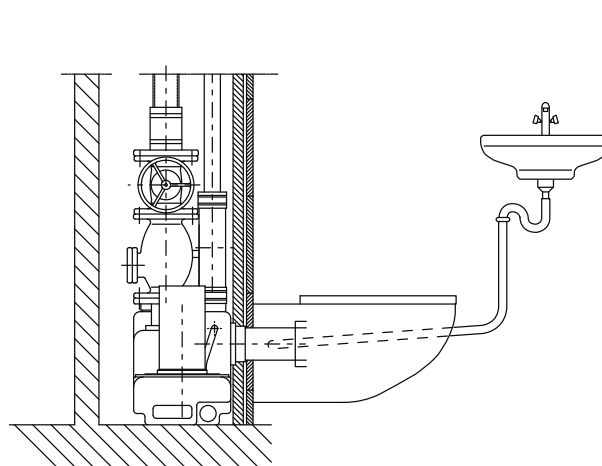
#### Installation drawing Wilo-DrainLift S

Front wall frame



#### Installation drawing Wilo-DrainLift S

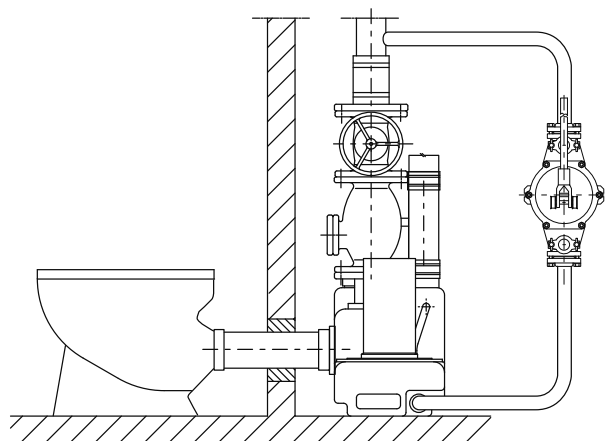
Similar to front wall



### Installation example for Wilo-DrainLift S

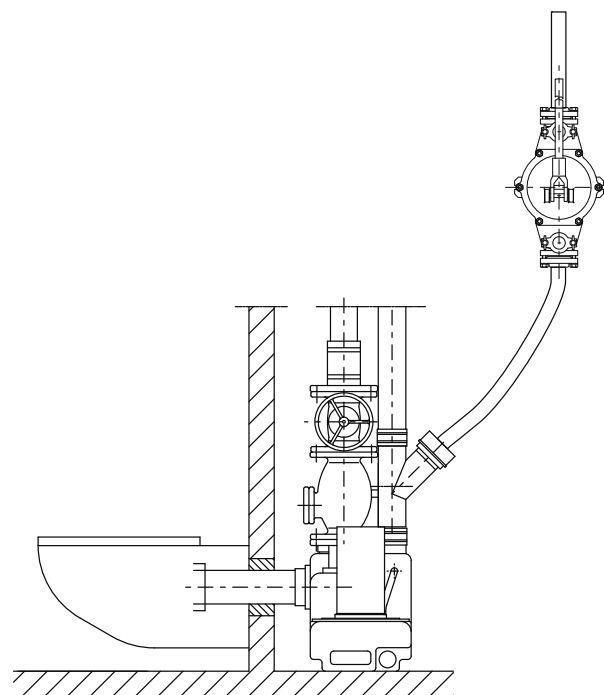
#### Installation drawing Wilo-DrainLift S

##### Stationary diaphragm hand pump connection



#### Installation drawing Wilo-DrainLift S

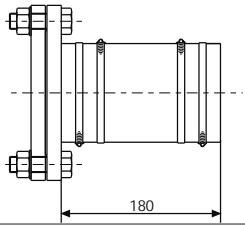
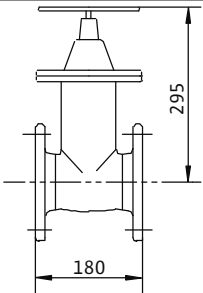
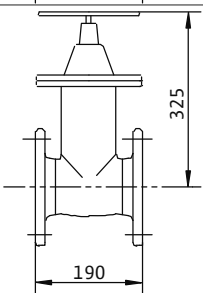
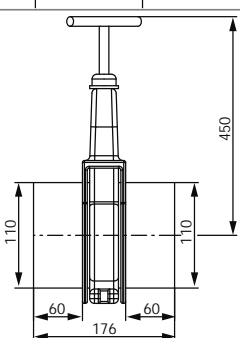
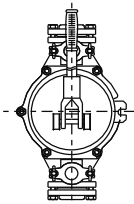
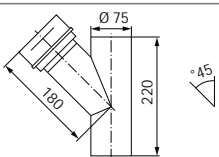
##### Diaphragm hand pump connection where necessary



# Wastewater collection and transport

## Sewage lifting units

### Mechanical accessories Wilo-DrainLift S

		Description	Art no.
Flange piece		Made of PUR, with hose DN 90 x 180 mm, hose clips and mounting accessories for DN 80 connection	2511595
Gate valve		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 80	2017162
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 100	2017163
		Made out of PVC with solid pipe ends DN 100, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529808
Diaphragm hand pump		For draining a system tank or a pump sump, connection on both sides female thread Rp 1½ for DN 40 connection	2060166
Inlet seal DN 100		Made of NBR, gasket for pipe Ø 110 mm for another freely selectable inlet on the sump/tank	2522672
Ventilation combination pipe		Made of plastic, for ventilation connection DN 70, or the diaphragm hand pump if needed	2512741

### Mechanical accessories Wilo-DrainLift S

		Description	Art no.
Service hatch		<p>Installation accessories for frameless tile flap, with concealed suspension technology and release safeguard. Suitable for sizes of 150 mm x 150 mm to 0.5 m².</p> <p>1 Magnetic angle 2 Suspension bracket 3 Suspension unit 4 Metal strip 5 Opening cord</p>	2528216
Flange piece		Made of PUR, with hose DN 112 x 180 mm, hose clips and mounting accessories for DN 100 connection	2511597
3-way cock		Made of brass, chrome-plated with 3x Rp 1½ female threads for DN 40 connection	2511607

# Wastewater collection and transport

## Sewage lifting units

### Series description Wilo-DrainLift M



#### Design

Sewage lifting unit with 1 or 2 integrated pumps

#### Type key

Example: **Wilo-DrainLift M1/8 (1~) RV**

<b>M1</b>	M1 = single-pump system M2 = double-pump system
<b>/8</b>	Max. delivery head [m]
<b>(1~)</b>	1~: Single-phase version, 3~: Three-phase version
<b>RV</b>	Version with non-return valve without details: Version without non-return valve

#### Application

Sewage lifting unit for drainage of residential housing and commercial buildings (e.g. restaurants, department stores, etc.). Raw sewage that cannot be piped to the sewer system through the use of natural inclines and sewage from toilet systems below the backflow level are to be piped to the public sewer system by means of an automatic lifting unit in accordance with DIN EN 12056/ DIN 1986-100. Sewage containing mineral oils or explosive admixtures must be guided through oil precipitators and/or petrol precipitators; those containing fatty substances must go through grease traps and those with sand through grit chambers. In cases where the flow to the lifting unit must not be interrupted during normal operation, one lifting unit must be equipped with a second pumping unit that has the same performance capacity and switches on automatically when needed (DIN EN 12050-1 A1).

#### Special features/product advantages

- Easy to install due to:
  - Compact dimensions
  - Low weight
  - Large scope of delivery
- Flexible due to:
  - Freely selectable inlets
- Safe due to:
  - Integrated mains-independent alarm function
  - Integrated thermal motor protection
  - Additional potential-free contact
  - Maintenance interval display for M2
  - Early fault detection for M2

#### Technical data

- Mains connection 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Power consumption  $P_1 = 1.3$  kW
- Cable length from system to switchgear 4 m / plug cable 1.5 m
- Operating mode S3-15%, 80 sec
- Fluid temperature max. 40 °C, for short periods (3 min.) 60 °C
- Max. ambient temperature of 40 °C
- Free ball passage 45 mm
- Pressure port DN 80
- Inlet connection DN 40 / DN 100 / DN 150
- Ventilation connection DN 70
- Min. suction head (installation level to middle of inlet) 180 mm
- Protection class (without switchgear) IP 67
- Gross tank volume 62 l to 115 l, depending on type
- Switching volume 24 l to 40 l, depending on type

#### Materials

- Motor housing: Stainless steel 1.4301
- Hydraulic housing: Cast iron EN-GJL-250
- Impeller: PUR plastic
- Tank: PE plastic

#### Equipment/function

- Ready-to-plug
- Thermal motor monitoring
- Level control with float switch
- Mains-independent alarm
- Potential-free contact
- Pump cable detachable
- Non-return valve (RV version)
- Inlet seal
- Hole saw for inlet borehole
- Hose connection for ventilation
- Seal for suction pipe connection for diaphragm hand pump
- Kit for pressure pipe connection
- Fixation material
- Soundproofing material
- Switchgear

#### Description/design

Fully submersible sewage lifting unit, ready for connection (flooding height: 2 mWS, overflow time: 7 days) with a gas and watertight collection tank equipped with buoyancy safeguards. Centrifugal pump with vortex impeller.

### Series description Wilo-DrainLift M

#### **DrainLift M1/8:**

Single-pump system with single-phase or three-phase AC motor for automatic operation. Switchgear with shock-proof or CEE plug, potential-free contact, integrated alarm (mains-independent, due to built-in rechargeable battery\*) and adjustable follow-up time. RV version with non-return valve included in the scope of delivery.

#### **DrainLift M2/8:**

Double-pump system for automatic operation (with automatic duty cycling, standby and peak-load operation). Due to the integrated double non-return valve, only one pressure pipe connection is required. Switchgear with shock-proof or CEE plug, potential-free contact, maintenance interval display, early fault detection and integrated alarm (mains-independent, due to built-in rechargeable battery\*) adjustable follow-up time.

**Attention:** The switchgear is not submersible and must therefore be arranged in such a way that it is overflow-proof.

\* The battery is not included in the scope of delivery and can be ordered as an accessory.

#### **Scope of delivery**

Connection-ready sewage lifting unit, including:

- Switchgear (mains-independent alarm)
- Inlet seal, DN 100 (for pipe Ø 110 mm)
- Keyhole saw Ø 124 for inlet, DN 100
- PVC hose section Ø 50 mm with clamps for inlet connection, DN 50
- Special lip seal for pipe connection, diaphragm hand pump DN 50
- Collar for ventilation connection, DN 70
- Fixation material
- Sound absorption strip for insulation of structure-borne noise
- DN 80/100 flange piece with flat gasket, flexible hose section, hose clips, screws and nuts for connecting the pressure pipeline, DN 100
- Non-return valve (RV version)
- Installation and operating instructions

#### **Options**

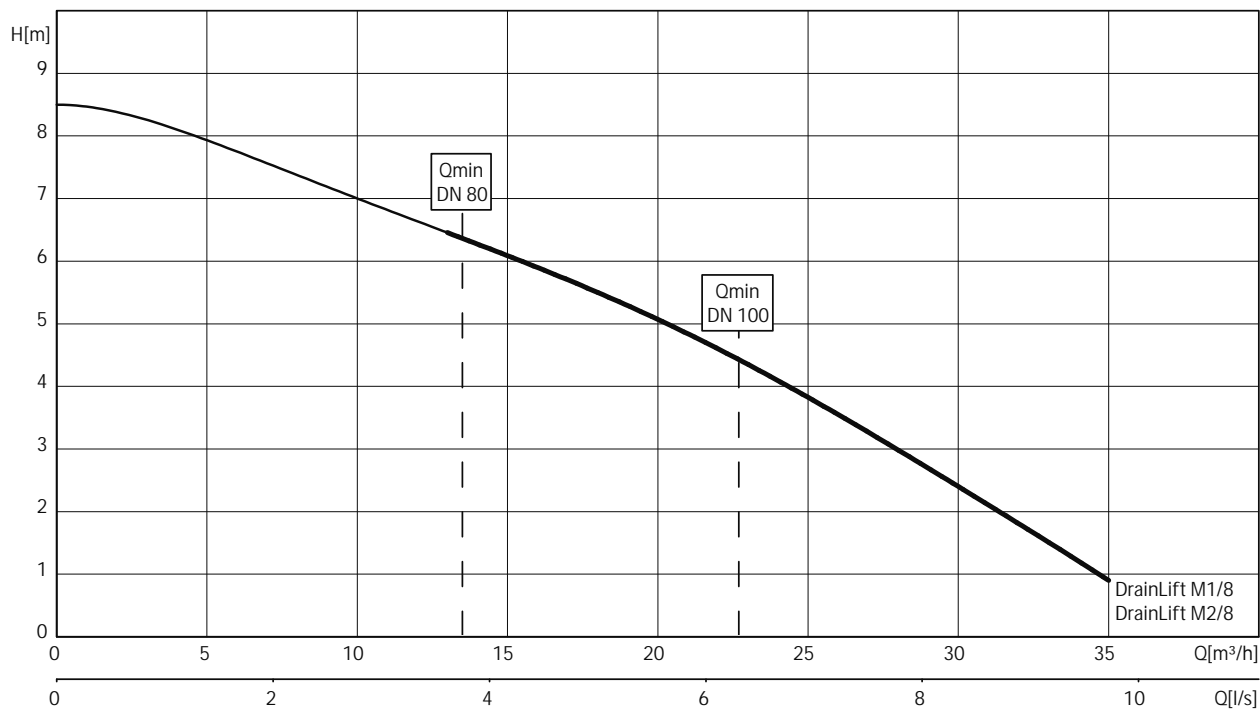
Mains-independent alarm utilising 9V block battery (accessories), which is plugged into the switchgear board separately

# Wastewater collection and transport

## Sewage lifting units


### Pump curves, ordering information Wilo-DrainLift M


#### Pump curves Wilo-DrainLift M - 50 Hz - 2900 rpm



According to EN 12056-4, 6.1, flow velocity (in the pressure pipe) must be kept between 0.7 and 2.3 m/s.  
The stated  $Q_{min}$  values apply to the inside diameter of single-walled steel pipes.

#### Information for order placements

Wilo-DrainLift ...	Mains connection		Art no.
M 1/8	1~230 V, 50 Hz	L	2528650
M 1/8	3~400 V, 50 Hz	L	2528651
M 1/8 RV	1~230 V, 50 Hz	L	2528940
M 1/8 RV	3~400 V, 50 Hz	L	2528941
M 2/8 RV	1~230 V, 50 Hz	L	2531400
M 2/8 RV	3~400 V, 50 Hz	L	2531401

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request



### Technical data Wilo-DrainLift M

	M 1/8	M 1/8	M 1/8 RV	M 1/8 RV
	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz
<b>Motor</b>				
Power consumption $P_1$ / kW	1.3	1.3	1.3	1.3
Nominal current $I_N$ / A	5.8	2.5	5.8	2.5
Nominal speed $n$ / rpm	2900	2900	2900	2900
Activation type	Direct	Direct	Direct	Direct
Insulation class	F	F	F	F
Protection class	IP 67	IP 67	IP 67	IP 67
Max. switching frequency per pump 1/h	45	45	45	45
<b>Cable</b>				
Cable length from system to switchgear/plug m	4/1.5	4/1.5	4/1.5	4/1.5
Mains plug	Shock-proof	CEE	Shock-proof	CEE
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Permitted field of application</b>				
Max. intake/h with S3 operation $V/I$	max. 1080	max. 1080	max. 1080	max. 1080
Operating mode per pump	S3-15%, 80 sec	S3-15%, 80 sec	S3-15%, 80 sec	S3-15%, 80 sec
Max. permissible pressure in the pressure pipe $p$ / bar	1.5	1.5	1.5	1.5
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	60	60	60	60
Max. ambient temperature $T$ / °C	40	40	40	40
<b>Connections</b>				
Pressure connection	DN 80	DN 80	DN 80	DN 80
Inlet connection	DN 40/DN 100/DN 150	DN 40/DN 100/DN 150	DN 40/DN 100/DN 150	DN 40/DN 100/DN 150
Bleeding	DN 70	DN 70	DN 70	DN 70
<b>Dimensions/weights</b>				
Gross volume $V/I$	62	62	62	62
Max. switching volume $V/I$	24	24	24	24
Min. level OFF mm	—	—	—	—
Min. level ON mm	180	180	180	180
Dimensions <i>Width x height x depth</i> / mm	600 x 505 x 580	600 x 505 x 580	600 x 505 x 580	600 x 505 x 580
Diagonal dimension mm	742	742	742	742
Weight approx. $m$ / kg	40	40	57	57
<b>Materials</b>				
Motor housing	1.4301	1.4301	1.4301	1.4301
Pump shaft	1.4404	1.4404	1.4404	1.4404
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Impeller	PUR	PUR	PUR	PUR
Tank material	PE	PE	PE	PE

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Wastewater collection and transport

## Sewage lifting units

### Technical data Wilo-DrainLift M

	M 2/8 RV	M 2/8 RV
	1~230 V, 50 Hz	3~400 V, 50 Hz
<b>Motor</b>		
Power consumption $P_1$ / kW	2x 1.3	2x 1.3
Nominal current $I_N$ / A	5.8	2.5
Nominal speed $n$ / rpm	2900	2900
Activation type	Direct	Direct
Insulation class	F	F
Protection class	IP 67	IP 67
Max. switching frequency per pump 1/h	45	45
<b>Cable</b>		
Cable length from system to switchgear/plug m	4/1.5	4/1.5
Mains plug	Shock-proof	CEE
Type of connecting cable	Detachable	Detachable
<b>Permitted field of application</b>		
Max. intake/h with S3 operation V/ l	max. 3600	max. 3600
Operating mode per pump	S3-15%, 80 sec	S3-15%, 80 sec
Max. permissible pressure in the pressure pipe $p$ / bar	1.5	1.5
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	60	60
Max. ambient temperature $T$ / °C	40	40
<b>Connections</b>		
Pressure connection	DN 80	DN 80
Inlet connection	DN 40/DN 100/DN 150	DN 40/DN 100/DN 150
Bleeding	DN 70	DN 70
<b>Dimensions/weights</b>		
Gross volume $V$ / l	115	115
Max. switching volume $V$ / l	40	40
Min. level OFF mm	—	—
Min. level ON mm	180	180
Dimensions <i>Width x height x depth</i> / mm	810 x 505 x 780	810 x 505 x 780
Diagonal dimension mm	970	970
Weight approx. $m$ / kg	91	91
<b>Materials</b>		
Motor housing	1.4301	1.4301
Pump shaft	1.4404	1.4404
Mechanical seal	SiC/SiC	SiC/SiC
Pump housing	EN-GJL-250	EN-GJL-250
Impeller	PUR	PUR
Tank material	PE	PE

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

### Dimension drawing Wilo-DrainLift M 1/8



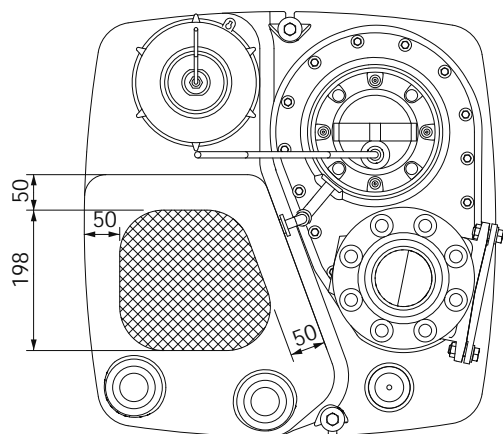
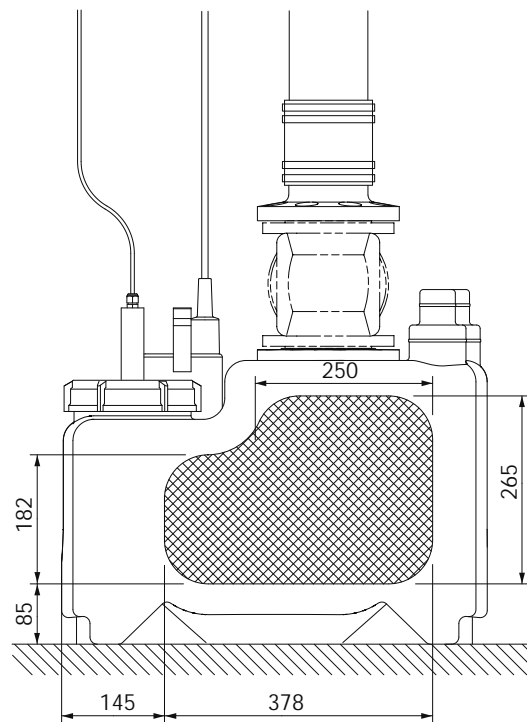
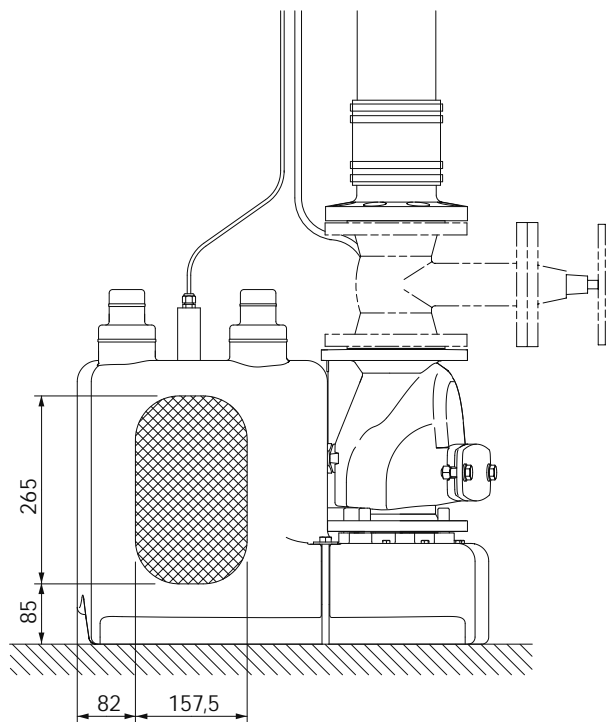
# Wastewater collection and transport

## Sewage lifting units

### Dimension drawing Wilo-DrainLift M

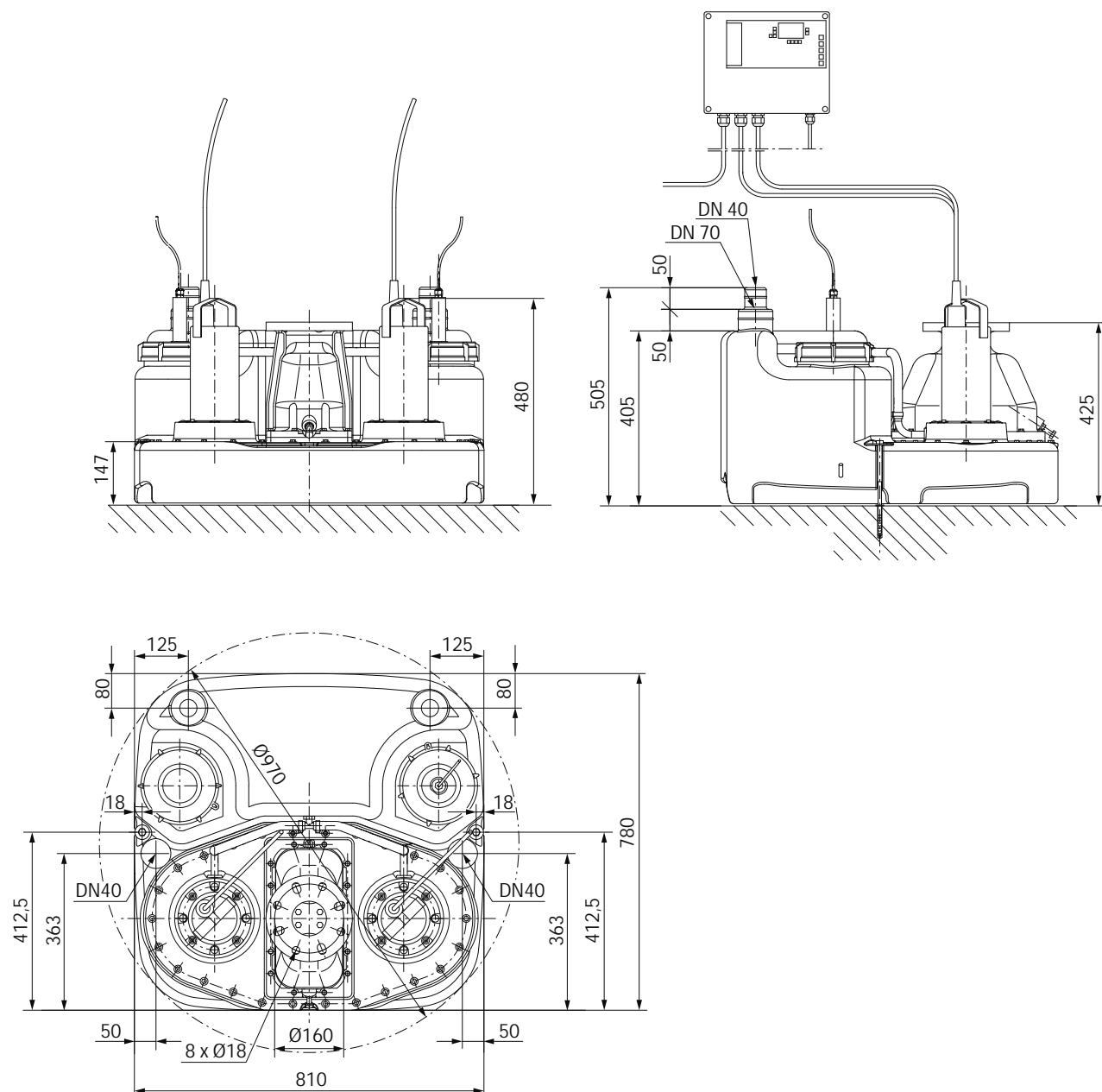
#### Inlet areas Wilo-DrainLift M 1/8

Freely selectable inlet areas



### Dimension drawing Wilo-DrainLift M

#### Dimension drawing Wilo-DrainLift M 2/8



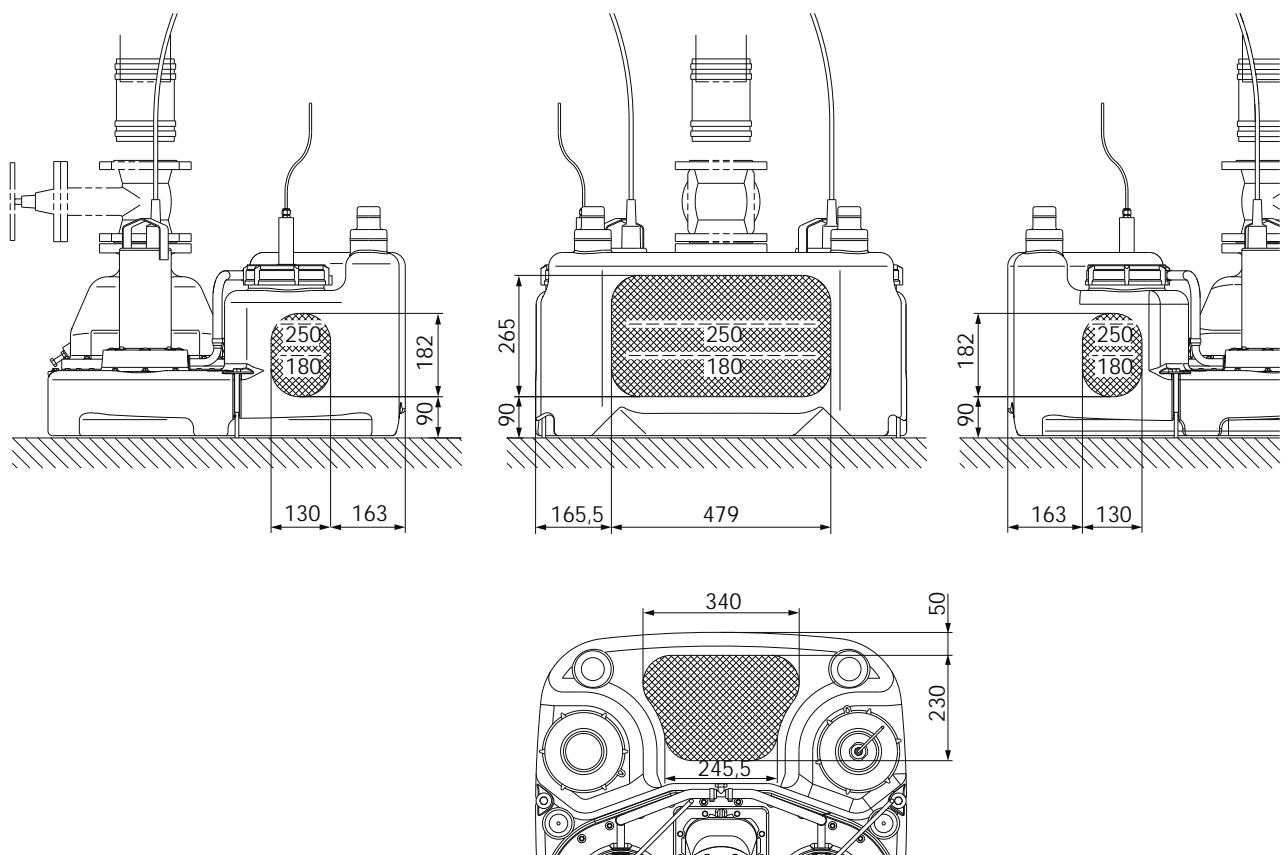
# Wastewater collection and transport

## Sewage lifting units

### Dimension drawing Wilo-DrainLift M

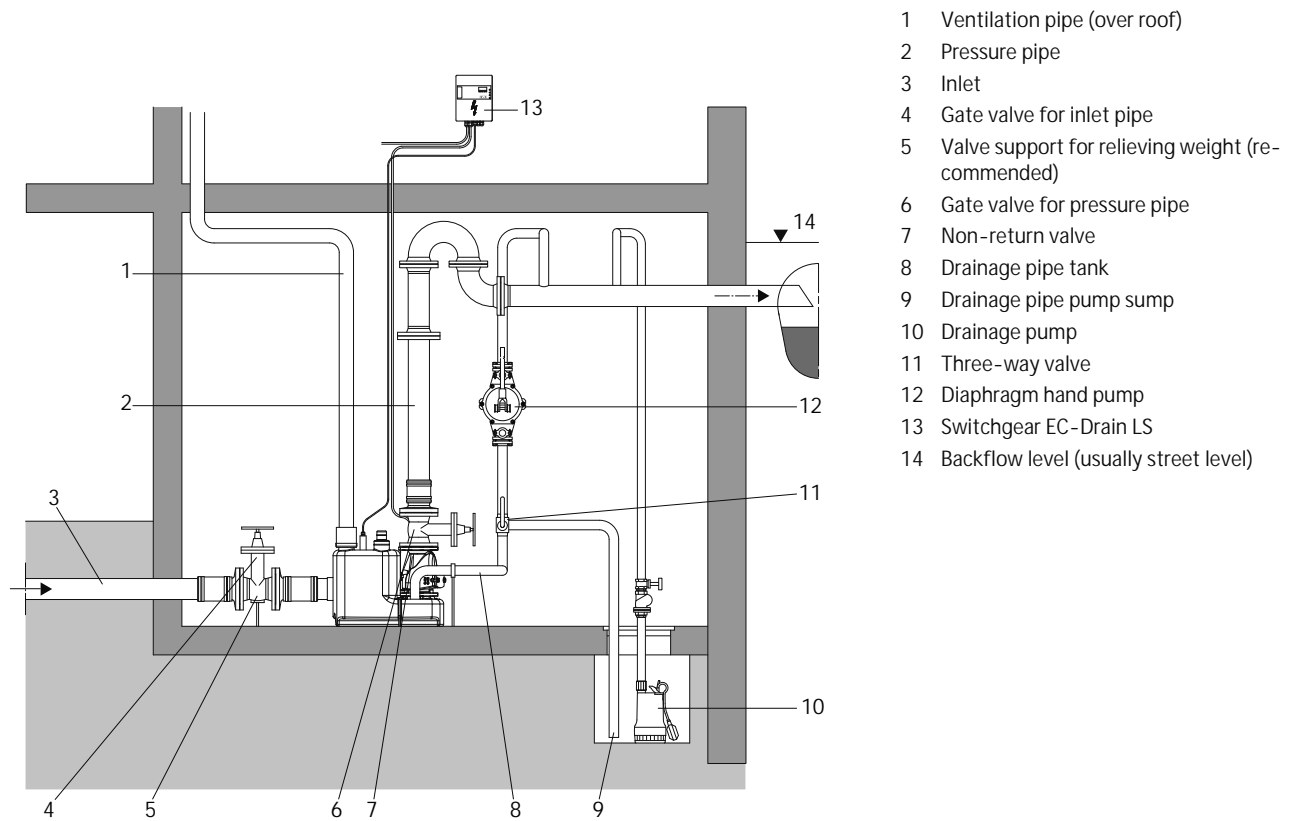
#### Inlet areas Wilo-DrainLift M 2/8

Freely selectable inlet areas



### Installation example for Wilo-DrainLift M

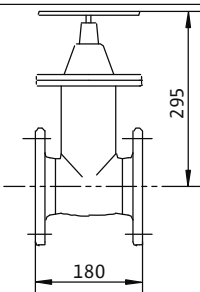
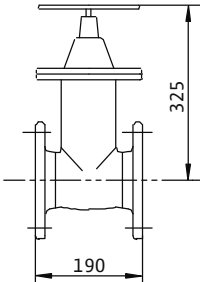
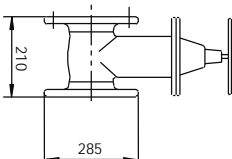
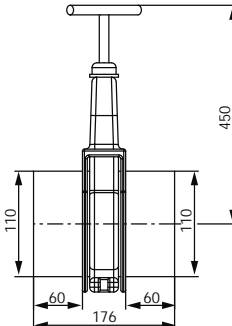
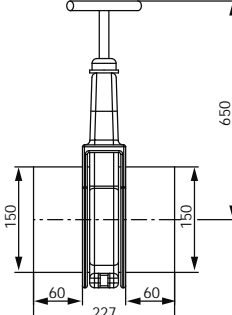
Installation drawing Wilo-DrainLift M



# Wastewater collection and transport

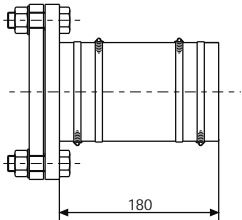
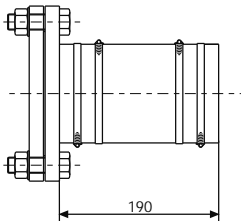
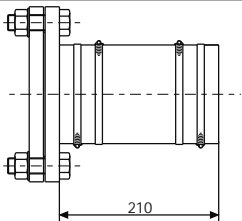

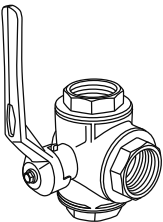
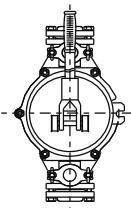
## Sewage lifting units

### Mechanical accessories Wilo-DrainLift M

		Description	Art no.
Gate valve		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 80	2017162
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 100	2017163
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 150	2017164
		Made out of PVC with solid pipe ends DN 100, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529808
		Made of PVC with solid pipe ends DN 150, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529809



### Mechanical accessories Wilo-DrainLift M

		Description	Art no.
Flange piece		Made of PUR, with hose DN 90 x 180 mm, hose clips and mounting accessories for DN 80 connection	2511595
		Made of PUR, with hose DN 112 x 180 mm, hose clips and mounting accessories for DN 100 connection	2511597
		Made of PUR, with hose DN 160 x 180 mm, hose clips and mounting accessories for DN 150 connection	2511598
Inlet seal DN 100		Made of NBR, gasket for pipe Ø 110 mm for another freely selectable inlet on the sump/tank	2522672
Inlet seal set DN 150		Gasket made of NBR for Ø 160 pipe and keyhole saw (Ø175 mm) for the freely selectable inlet	2515145
3-way cock		Made of brass, chrome-plated with 3x Rp 1½ female threads for DN 40 connection	2511607
Diaphragm hand pump		For draining a system tank or a pump sump, connection on both sides female thread Rp 1½ for DN 40 connection	2060166

# Wastewater collection and transport

## Sewage lifting units

### Series description Wilo-DrainLift L



#### Design

Sewage lifting unit with 1 or 2 integrated pumps

#### Type key

Example: **Wilo-DrainLift L1/25-C (3~)**

<b>L1</b>	L1 = single-pump system L2 = double-pump system
<b>25</b>	Max. delivery head [m]
<b>C</b>	Comfort version
<b>(3~)</b>	3~: Three-phase version

#### Application

Sewage lifting unit for drainage of residential housing and commercial buildings (e.g. restaurants, department stores, etc.). Raw sewage that cannot be piped to the sewer system through the use of natural inclines and sewage from toilet systems below the backflow level are to be piped to the public sewer system by means of an automatic lifting unit in accordance with DIN EN 12056/ DIN 1986-100. Sewage containing mineral oils or explosive admixtures must be guided through oil precipitators and/or petrol precipitators; those containing fatty substances must go through grease traps and those with sand through grit chambers. In cases where the flow to the lifting unit must not be interrupted during normal operation, one lifting unit must be equipped with a second pumping unit (DrainLift L2) that has the same performance capacity and switches on automatically when needed (DIN EN 12050--1 A1).

#### Special features/product advantages

- Easy to install due to:
  - Low weight
  - Only one pressure outlet with double-pump system (integrated Y-pipe)
  - Built-in non-return valve
  - Large scope of delivery
- Flexible due to:
  - Freely selectable inlets
  - Wide performance range
- Safe due to:
  - Large tank volume
  - Mains-independent alarm function
  - Additional potential-free contact
  - Comfort version "C" with individual fault signal

#### Technical data

- Mains connection 3~400 V, 50 Hz
- Power consumption  $P_1$  from 2.95 to 5.3 kW, depending on type
- Cable length from system to switchgear/plug 4 m
- Operating mode S3-15%, 120 sec
- Fluid temperature max. 40 °C, for short periods up to 60 °C
- Max. ambient temperature of 40 °C
- Free ball passage 40 mm
- Pressure port DN 65 / DN 80
- Inlet connection DN 40 / DN 100 / DN 150
- Ventilation connection DN 70
- Min. suction head (installation level to middle of inlet) 180 mm
- Protection class (without switchgear) IP 67
- Gross tank volume 90...130 l, depending on type
- Switching volume 35 ... 50 l, depending on type

#### Materials

- Motor housing: stainless steel 1.4404 (AISI 316L)
- Hydraulic housing: PE/PUR plastic
- Impeller: PUR plastic
- Tank: PE plastic

#### Equipment/function

- Ready-to-plug
- Thermal motor monitoring
- Level control with float switch
- Mains-independent alarm
- Potential-free contact
- Pump cable detachable
- Non-return valve
- Inlet seal
- Hole saw for inlet borehole
- Hose connection for ventilation
- Hose connection for diaphragm hand pump
- Kit for pressure pipe connection
- Fixation material
- Soundproofing material
- Switchgear

#### Description/design

Fully submersible sewage lifting unit, ready for connection (flooding height: 2 mWS, overflow time: 7 days) with a collection tank that is impermeable to gas and water and that is equipped with buoyancy safeguards. Centrifugal pump with vortex impeller.

### Series description Wilo-DrainLift L

**DrainLift L1:**

Single-pump system with three-phase motor for automatic operation. Switchgear with CEE plug, potential-free contact, integrated alarm (mains-independent, due to built-in rechargeable battery\*) and adjustable follow-up time.

**DrainLift L2:**

Double-pump system with three-phase motor for automatic operation (with automatic duty cycling, standby and peak-load operation). Due to the integrated double non-return valve, only one pressure pipe connection is required. Switchgear with CEE plug, potential-free contact, integrated alarm (mains-independent, due to built-in rechargeable battery\*) and adjustable follow-up time.

**Option:**

"C" version: switchgear with individual fault signal.

**Attention:** The switchgear is not submersible and must therefore be arranged in such a way that it is overflow-proof.

\* The battery is not included in the scope of delivery and can be ordered as an accessory.

**Scope of delivery**

Sewage lifting unit, ready for connection, including:

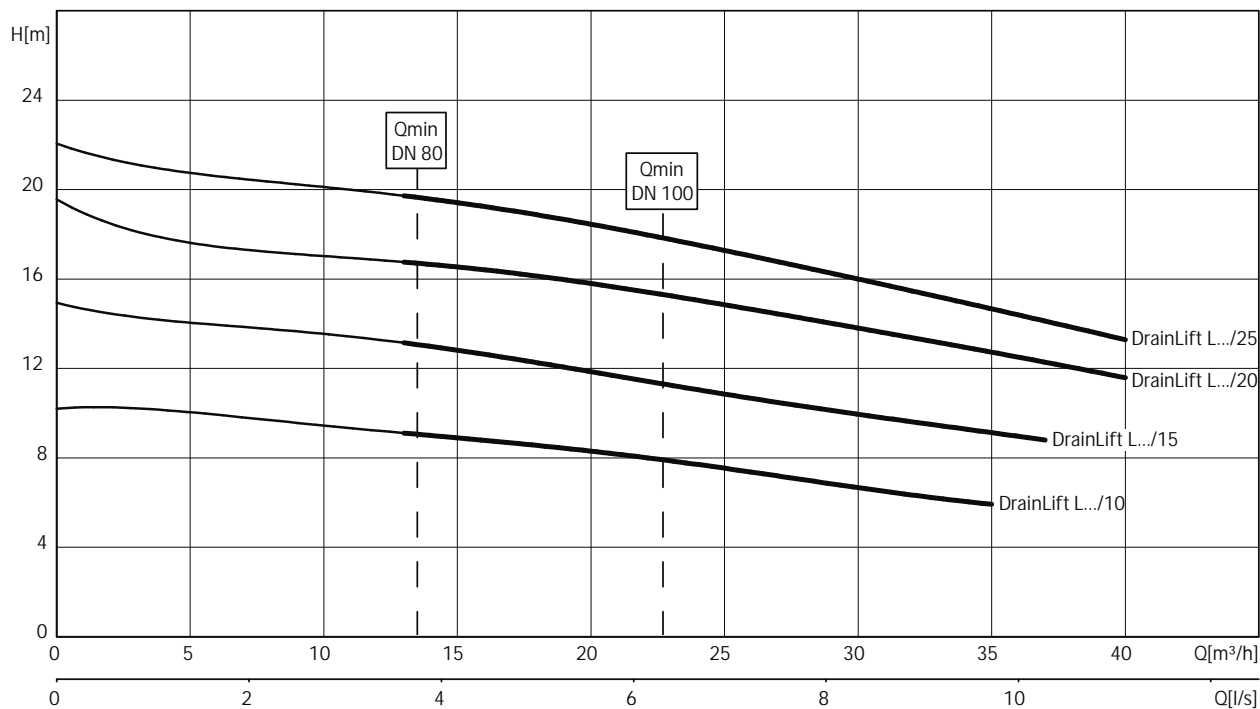
- Switchgear (mains-independent alarm)
- Inlet seal DN100 (for pipe Ø 110 mm)
- Keyhole saw Ø124 for inlet DN100
- PVC hose section Ø 50 mm with clamps for inlet connection DN50
- Hose section DN50 with hose clips for pipe connection of diaphragm hand pump or an inlet DN40
- Sleeve for ventilation connection DN70
- Fixation material
- Sound absorption strip for insulation of structure-borne noise
- Flange piece DN80/100 with flat gasket, flexible hose section, hose clips, screws and nuts for connection of pressure pipeline DN100
- Installation and operating instructions

# Wastewater collection and transport

## Sewage lifting units


### Pump curves, ordering information Wilo-DrainLift L

#### Pump curves Wilo-DrainLift L - 50 Hz - 2900 rpm



According to EN 12056-4, 6.1, flow velocity (in the pressure pipe) must be kept between 0.7 and 2.3 m/s. The stated  $Q_{min}$  values apply to the inside diameter of single-walled steel pipes.

#### Information for order placements

Wilo-DrainLift ...	Mains connection		Art no.
L 1/10	3~400 V, 50 Hz	L	2532150
L 1/15	3~400 V, 50 Hz	L	2532151
L 1/20	3~400 V, 50 Hz	L	2532152
L 1/25	3~400 V, 50 Hz	L	2532153
L 1/10 C	3~400 V, 50 Hz	K	2519508
L 1/15 C	3~400 V, 50 Hz	K	2519509
L 1/20 C	3~400 V, 50 Hz	K	2519510
L 1/25 C	3~400 V, 50 Hz	K	2519511
L 2/10	3~400 V, 50 Hz	L	2532154
L 2/15	3~400 V, 50 Hz	L	2532155
L 2/20	3~400 V, 50 Hz	L	2532156
L 2/25	3~400 V, 50 Hz	L	2532157
L 2/10 C	3~400 V, 50 Hz	K	2519512
L 2/15 C	3~400 V, 50 Hz	K	2519513
L 2/20 C	3~400 V, 50 Hz	K	2519514
L 2/25 C	3~400 V, 50 Hz	K	2519515

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

### Technical data Wilo-DrainLift L

	L 1/10	L 1/15	L 1/20	L 1/25
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Motor</b>				
Power consumption $P_1$ / kW	3.0	3.8	4.9	5.3
Nominal current $I_N$ / A	6	6.9	8.5	8.9
Nominal speed $n$ / rpm	2900	2900	2900	2900
Activation type	Direct	Direct	Direct	Direct
Insulation class	H	H	H	H
Protection class	IP 67	IP 67	IP 67	IP 67
Max. switching frequency per pump 1/h	30	30	30	30
<b>Cable</b>				
Cable length from system to switchgear/plug m	4/1.5	4/1.5	4/1.5	4/1.5
Mains plug	CEE	CEE	CEE	CEE
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Permitted field of application</b>				
Max. intake/h with S3 operation $V/I$	max. 1050	max. 1050	max. 1050	max. 1050
Operating mode per pump	S3-15%, 120 sec	S3-15%, 120 sec	S3-15%, 120 sec	S3-15%, 120 sec
Max. permissible pressure in the pressure pipe $p$ / bar	3	3	3	3
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	60	60	60	60
Max. ambient temperature $T$ / °C	40	40	40	40
<b>Connections</b>				
Pressure connection	DN 80	DN 80	DN 80	DN 80
Inlet connection	DN 50/DN 100/ DN 150	DN 50/DN 100/ DN 150	DN 50/DN 100/ DN 150	DN 50/DN 100/ DN 150
Bleeding	DN 70	DN 70	DN 70	DN 70
<b>Dimensions/weights</b>				
Gross volume $V/I$	115	115	115	115
Max. switching volume $V/I$	35	35	35	35
Min. level OFF mm	90	90	90	90
Min. level ON mm	180	180	180	180
Dimensions <i>Width x height x depth</i> / mm	630 x 770 x 630	630 x 770 x 630	630 x 770 x 630	630 x 770 x 630
Diagonal dimension mm	994	994	994	994
Weight approx. $m$ / kg	55	55	55	55
<b>Materials</b>				
Motor housing	1.4404	1.4404	1.4404	1.4404
Pump shaft	1.4404	1.4404	1.4404	1.4404
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Pump housing	PE/PUR	PE/PUR	PE/PUR	PE/PUR
Impeller	PUR	PUR	PUR	PUR
Tank material	PE	PE	PE	PE

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Wastewater collection and transport

## Sewage lifting units

### Technical data Wilo-DrainLift L

	L 1/10 C	L 1/15 C	L 1/20 C	L 1/25 C
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Motor</b>				
Power consumption $P_1$ / kW	3.0	3.8	4.9	5.3
Nominal current $I_N$ / A	6	6.9	8.5	8.9
Nominal speed $n$ / rpm	2900	2900	2900	2900
Activation type	Direct	Direct	Direct	Direct
Insulation class	H	H	H	H
Protection class	IP 67	IP 67	IP 67	IP 67
Max. switching frequency per pump 1/h	30	30	30	30
<b>Cable</b>				
Cable length from system to switchgear/plug m	4/1.5	4/1.5	4/1.5	4/1.5
Mains plug	CEE	CEE	CEE	CEE
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Permitted field of application</b>				
Max. intake/h with S3 operation V/ l	max. 1050	max. 1050	max. 1050	max. 1050
Operating mode per pump	S3-15%, 120 sec	S3-15%, 120 sec	S3-15%, 120 sec	S3-15%, 120 sec
Max. permissible pressure in the pressure pipe $p$ / bar	3	3	3	3
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	60	60	60	60
Max. ambient temperature $T$ / °C	40	40	40	40
<b>Connections</b>				
Pressure connection	DN 80	DN 80	DN 80	DN 80
Inlet connection	DN 50/DN 100/ DN 150	DN 50/DN 100/ DN 150	DN 50/DN 100/ DN 150	DN 50/DN 100/ DN 150
Bleeding	DN 70	DN 70	DN 70	DN 70
<b>Dimensions/weights</b>				
Gross volume V/ l	115	115	115	115
Max. switching volume V/ l	35	35	35	35
Min. level OFF mm	90	90	90	90
Min. level ON mm	180	180	180	180
Dimensions <i>Width x height x depth</i> / mm	630 x 770 x 630	630 x 770 x 630	630 x 770 x 630	630 x 770 x 630
Diagonal dimension mm	994	994	994	994
Weight approx. <i>m</i> / kg	55	55	55	55
<b>Materials</b>				
Motor housing	1.4404	1.4404	1.4404	1.4404
Pump shaft	1.4404	1.4404	1.4404	1.4404
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Pump housing	PE/PUR	PE/PUR	PE/PUR	PE/PUR
Impeller	PUR	PUR	PUR	PUR
Tank material	PE	PE	PE	PE

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

### Technical data Wilo-DrainLift L

	L 2/10	L 2/15	L 2/20	L 2/25
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Motor</b>				
Power consumption $P_1$ / kW	2x 3.0	2x 3.8	2x 4.9	2x 5.3
Nominal current $I_N$ / A	6	6.9	8.5	8.9
Nominal speed $n$ / rpm	2900	2900	2900	2900
Activation type	Direct	Direct	Direct	Direct
Insulation class	H	H	H	H
Protection class	IP 67	IP 67	IP 67	IP 67
Max. switching frequency per pump 1/h	30	30	30	30
<b>Cable</b>				
Cable length from system to switchgear/plug m	4/1.5	4/1.5	4/1.5	4/1.5
Mains plug	CEE	CEE	CEE	CEE
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Permitted field of application</b>				
Max. intake/h with S3 operation $V/I$	max. 3000	max. 3000	max. 3000	max. 3000
Operating mode per pump	S3-15%, 120 sec	S3-15%, 120 sec	S3-15%, 120 sec	S3-15%, 120 sec
Max. permissible pressure in the pressure pipe $p$ / bar	3	3	3	3
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	60	60	60	60
Max. ambient temperature $T$ / °C	40	40	40	40
<b>Connections</b>				
Pressure connection	DN 80	DN 80	DN 80	DN 80
Inlet connection	DN 50/DN 100/ DN 150	DN 50/DN 100/ DN 150	DN 50/DN 100/ DN 150	DN 50/DN 100/ DN 150
Bleeding	DN 70	DN 70	DN 70	DN 70
<b>Dimensions/weights</b>				
Gross volume $V/I$	140	140	140	140
Max. switching volume $V/I$	50	50	50	50
Min. level OFF mm	90	90	90	90
Min. level ON mm	180	180	180	180
Dimensions <i>Width x height x depth</i> / mm	830 x 755 x 630	830 x 755 x 630	830 x 755 x 630	830 x 755 x 630
Diagonal dimension mm	1122	1122	1122	1122
Weight approx. $m$ / kg	85	85	85	85
<b>Materials</b>				
Motor housing	1.4404	1.4404	1.4404	1.4404
Pump shaft	1.4404	1.4404	1.4404	1.4404
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Pump housing	PE/PUR	PE/PUR	PE/PUR	PE/PUR
Impeller	PUR	PUR	PUR	PUR
Tank material	PE	PE	PE	PE

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Wastewater collection and transport

## Sewage lifting units

### Technical data Wilo-DrainLift L

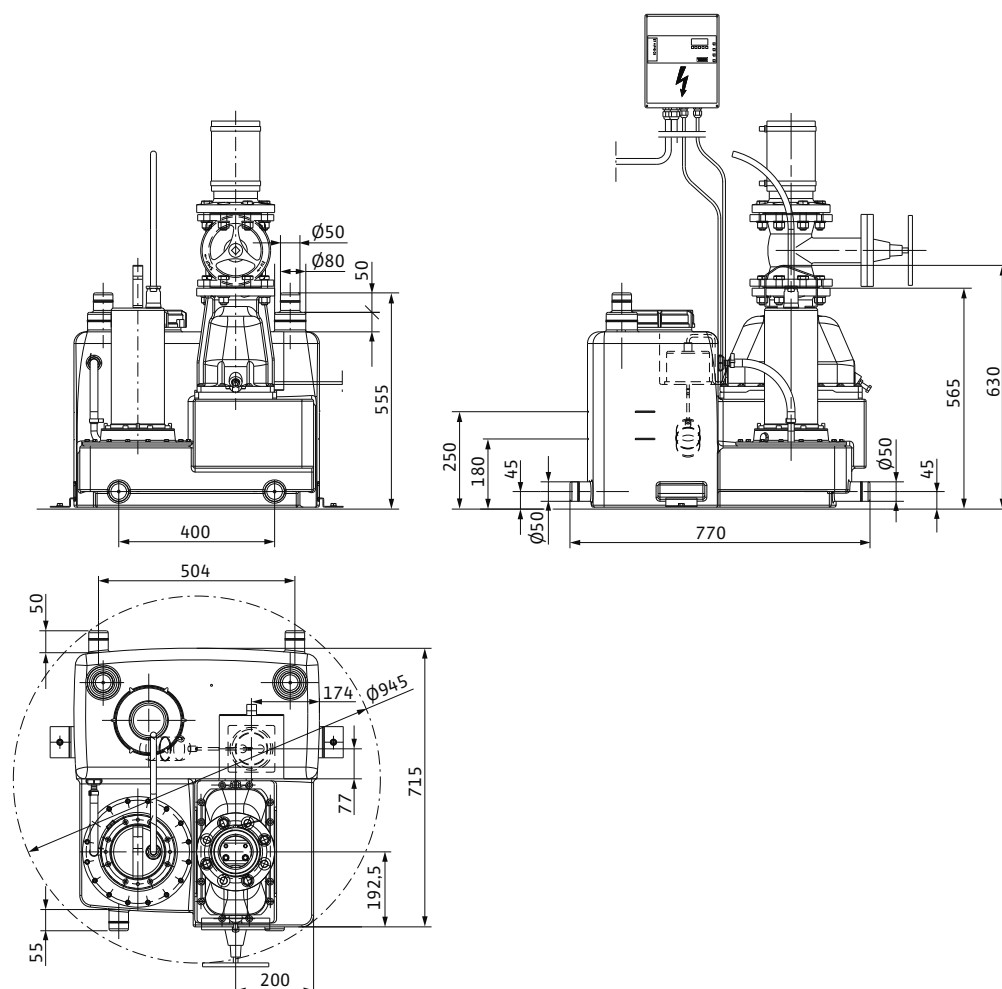
	L 2/10 C	L 2/15 C	L 2/20 C	L 2/25 C
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Motor</b>				
Power consumption $P_1$ / kW	2x 3.0	2x 3.8	2x 4.9	2x 5.3
Nominal current $I_N$ / A	6	6.9	8.5	8.9
Nominal speed $n$ / rpm	2900	2900	2900	2900
Activation type	Direct	Direct	Direct	Direct
Insulation class	H	H	H	H
Protection class	IP 67	IP 67	IP 67	IP 67
Max. switching frequency per pump 1/h	30	30	30	30
<b>Cable</b>				
Cable length from system to switchgear/plug m	4/1.5	4/1.5	4/1.5	4/1.5
Mains plug	CEE	CEE	CEE	CEE
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Permitted field of application</b>				
Max. intake/h with S3 operation V/ l	max. 3000	max. 3000	max. 3000	max. 3000
Operating mode per pump	S3-15%, 120 sec	S3-15%, 120 sec	S3-15%, 120 sec	S3-15%, 120 sec
Max. permissible pressure in the pressure pipe $p$ / bar	3	3	3	3
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	60	60	60	60
Max. ambient temperature $T$ / °C	40	40	40	40
<b>Connections</b>				
Pressure connection	DN 80	DN 80	DN 80	DN 80
Inlet connection	DN 50/DN 100/ DN 150	DN 50/DN 100/ DN 150	DN 50/DN 100/ DN 150	DN 50/DN 100/ DN 150
Bleeding	DN 70	DN 70	DN 70	DN 70
<b>Dimensions/weights</b>				
Gross volume V/ l	140	140	140	140
Max. switching volume V/ l	50	50	50	50
Min. level OFF mm	90	90	90	90
Min. level ON mm	180	180	180	180
Dimensions <i>Width x height x depth</i> / mm	830 x 755 x 630	830 x 755 x 630	830 x 755 x 630	830 x 755 x 630
Diagonal dimension mm	1122	1122	1122	1122
Weight approx. <i>m</i> / kg	85	85	85	85
<b>Materials</b>				
Motor housing	1.4404	1.4404	1.4404	1.4404
Pump shaft	1.4404	1.4404	1.4404	1.4404
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Pump housing	PE/PUR	PE/PUR	PE/PUR	PE/PUR
Impeller	PUR	PUR	PUR	PUR
Tank material	PE	PE	PE	PE

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.



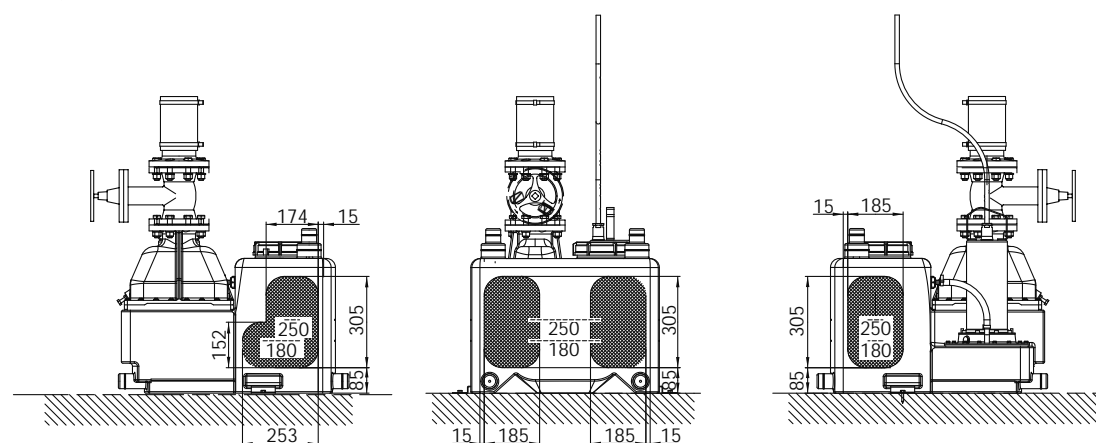
## Dimension drawing Wilo-DrainLift L

### Dimension drawing Wilo-DrainLift L 1



### Dimension drawing Wilo-DrainLift L 1

#### Freely selectable inlet areas

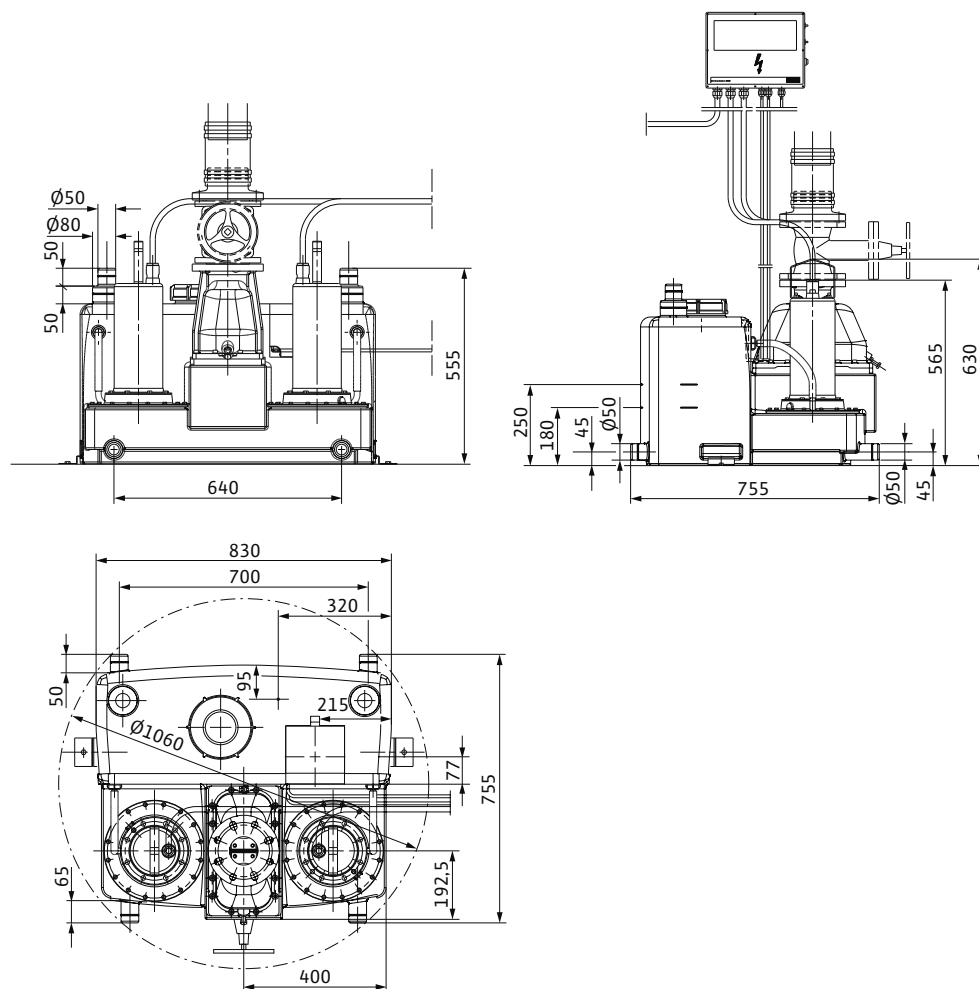


# Wastewater collection and transport

## Sewage lifting units

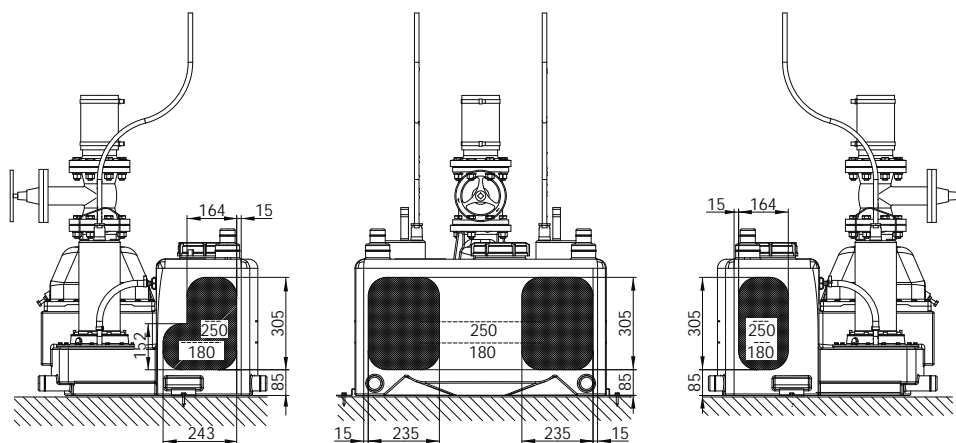
### Dimension drawing Wilo-DrainLift L

#### Dimension drawing Wilo-DrainLift L 2



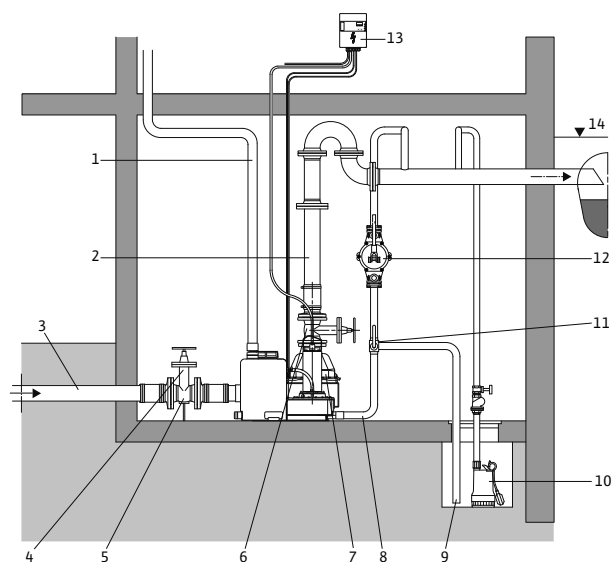
#### Dimension drawing Wilo-DrainLift L 2

##### Freely selectable inlet areas



### Installation example Wilo-DrainLift L

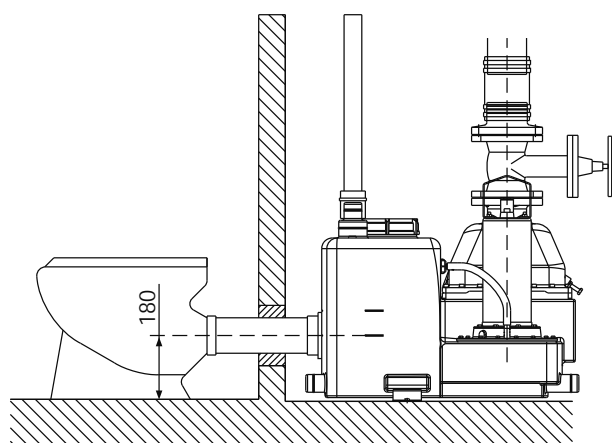
Installation drawing Wilo-DrainLift L



- 1 Ventilation pipe (over roof)
- 2 Pressure pipe
- 3 Inlet
- 4 Gate valve for inlet pipe
- 5 Valve support for relieving weight (recommended)
- 6 Gate valve for pressure pipe
- 7 Non-return valve
- 8 Drainage pipe tank
- 9 Drainage pipe pump sump
- 10 Drainage pump
- 11 Three-way valve
- 12 Diaphragm hand pump
- 13 Switchgear EC-Drain LS
- 14 Backflow level (usually street level)

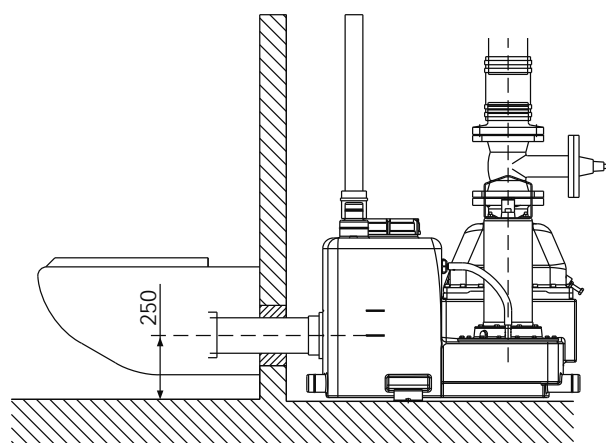
Installation drawing Wilo-DrainLift L

Toilet direct connection - floor-mounted toilet



Installation drawing Wilo-DrainLift L

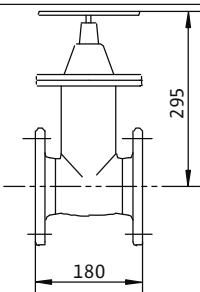
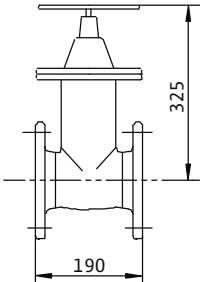
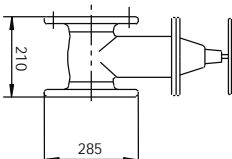
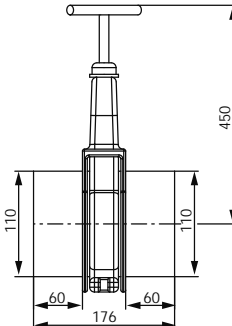
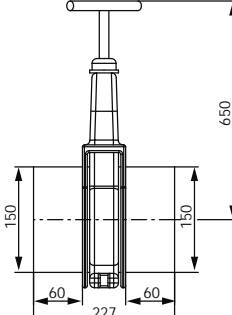
Toilet direct connection - wall-mounted toilet



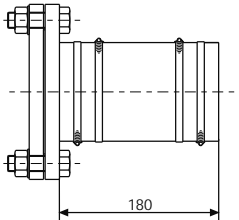
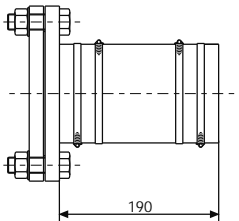
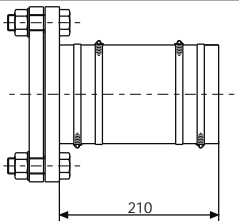

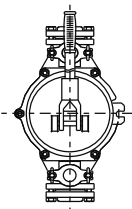
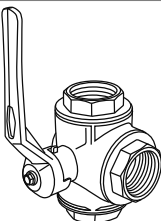
# Wastewater collection and transport

## Sewage lifting units

### Mechanical accessories Wilo-DrainLift L

		Description	Art no.
Gate valve		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 80	2017162
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 100	2017163
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 150	2017164
		Made out of PVC with solid pipe ends DN 100, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529808
		Made of PVC with solid pipe ends DN 150, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529809

### Mechanical accessories Wilo-DrainLift L

		Description	Art no.
Flange piece		Made of PUR, with hose DN 90 x 180 mm, hose clips and mounting accessories for DN 80 connection	2511595
		Made of PUR, with hose DN 112 x 180 mm, hose clips and mounting accessories for DN 100 connection	2511597
		Made of PUR, with hose DN 160 x 180 mm, hose clips and mounting accessories for DN 150 connection	2511598
Inlet seal DN 100		Made of NBR, gasket for pipe Ø 110 mm for another freely selectable inlet on the sump/tank	2522672
Inlet seal set DN 150		Gasket made of NBR for Ø 160 pipe and keyhole saw (Ø175 mm) for the freely selectable inlet	2515145
Diaphragm hand pump		For draining a system tank or a pump sump, connection on both sides female thread Rp 1½ for DN 40 connection	2060166
3-way cock		Made of brass, chrome-plated with 3x Rp 1½ female threads for DN 40 connection	2511607

# Wastewater collection and transport

## Sewage lifting units

### Series description Wilo-DrainLift XL



#### Design

Sewage lifting unit with 2 integrated pumps

#### Type key

Example: **Wilo-DrainLift XL 2/25 (3~)**

**XL2** Double-pump system

**/25** Max. delivery head [m]

**(3~)** 3~: Three-phase version

#### Application

Sewage lifting unit for drainage of residential housing and commercial buildings (e.g. restaurants, department stores, etc.). Raw sewage that cannot be piped to the sewer system through the use of natural inclines and sewage from toilet systems below the backflow level are to be piped to the public sewer system by means of an automatic lifting unit in accordance with DIN EN 12056/ DIN 1986-100. Sewage containing mineral oils or explosive admixtures must be guided through oil precipitators and/or petrol precipitators; those containing fatty substances must go through grease traps and those with sand through grit chambers. In cases where the flow to the lifting unit must not be interrupted during normal operation, one lifting unit must be equipped with a second pumping unit that has the same performance capacity and switches on automatically when needed (DIN EN 12050-1 A1).

#### Special features/product advantages

- Easy installation / commissioning due to
  - Built-in non-return valve
  - Higher flexibility in the intake area (connection is height-adjustable and can be swivelled)
  - Menu-prompted setting on switchgear
- Safe due to:
  - Large switching volume
  - Additional potential-free contact
  - Reliable level measurement due to level sensor
  - Suitable for permanent operation (due to integrated sheath current cooling)

#### Technical data

- Mains connection 3~400 V, 50 Hz
- Power consumption  $P_1$  from 3 to 5.3 kW, depending on type
- Cable length from system to switchgear 4 m / plug cable 1.5 m
- Operating mode S1 / S3 - 60%

- Fluid temperature max. 40 °C, for short periods up to 60 °C
- Ambient temperature max. 40 °C
- Free ball passage 40 mm
- Pressure port DN 80
- Inlet connection DN 100 / DN 150
- Ventilation connection DN 70
- Min. suction head (installation level to middle of inlet) 700 mm
- Protection class (without switchgear) IP 67
- Gross tank volume 380 l
- Switching volume 260 l

#### Materials

- Motor housing: Stainless steel 1.4404 (AISI 316L)
- Hydraulics: PE/PUR plastic
- Tank: PE plastic

#### Equipment/function

- Thermal motor monitoring
- Level control with level sensor
- Potential-free contact
- Pump cable detachable
- Inlet seal DN 150
- Keyhole saw for inlet seal
- Non-return valve
- Hose connection for ventilation
- Hose connection for diaphragm hand pump
- Kit for pressure pipe connection
- Fixation material
- Switchgear with breakdown barrier

#### Description/design

Fully submersible sewage lifting unit, ready for connection (flooding height: 2 mWS, overflow time: 7 days) with a collection tank that is impermeable to gas and water and that is equipped with buoyancy safeguards. Centrifugal pump with vortex impeller.

#### DrainLift XL2:

Double-pump system for automatic operation (with automatic duty cycling, standby and peak-load operation). Due to the integrated double non-return valve, only one pressure pipe connection is required. Switchgear with CEE plug, potential-free contact, integrated alarm. Pumps with integrated sheath current cooling.

**Attention:** The switchgear is not submersible and must therefore be arranged in such a way that it is overflow-proof.

### Series description Wilo-DrainLift XL

#### Scope of delivery

Connection-ready sewage lifting unit, including:

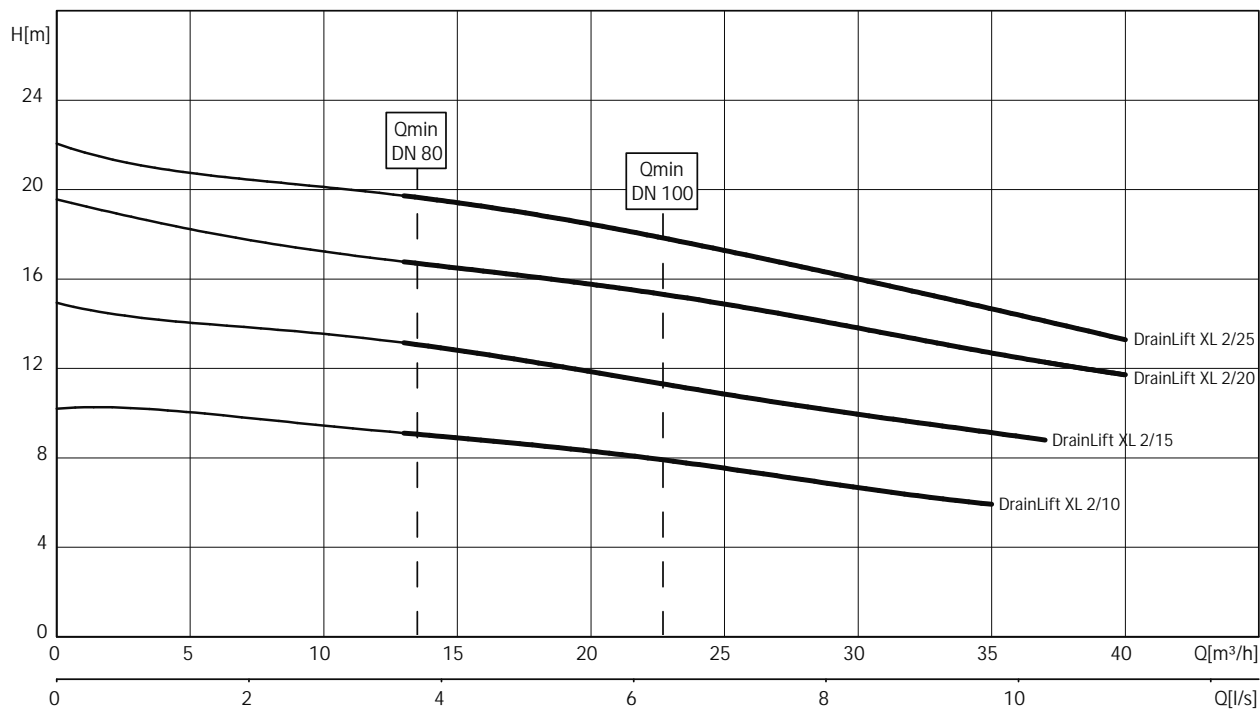
- Switchgear
- Breakdown barrier in the housing with 1 m cable, pre-installed
- Level sensor 0-1 mWS, 10 m cable
- Inlet seal, DN 150 for pipe Ø 160 mm
- Keyhole saw Ø 175 for inlet DN 150
- Hose section DN 50 with hose clips for connecting the suction line to the diaphragm hand pump
- Collar for ventilation connection, DN 70
- Fixation material
- DN 80/100 flange piece with flat gasket, flexible hose section, hose clips, screws and nuts for connecting the pressure pipeline, DN 100
- Installation and operating instructions

# Wastewater collection and transport

## Sewage lifting units


### Pump curves, ordering information Wilo-DrainLift XL

#### Pump curves Wilo-DrainLift XL - 50 Hz - 2900 rpm



According to EN 12056-4, 6.1, flow velocity (in the pressure pipe) must be kept between 0.7 and 2.3 m/s. The stated  $Q_{min}$  values apply to the inside diameter of single-walled steel pipes.

#### Information for order placements

Wilo-DrainLift ...	Mains connection		Art no.
XL 2/10	3~400 V, 50 Hz	K	2532140
XL 2/15	3~400 V, 50 Hz	K	2532141
XL 2/20	3~400 V, 50 Hz	K	2532142
XL 2/25	3~400 V, 50 Hz	K	2532143

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request



### Technical data Wilo-DrainLift XL

	XL 2/10	XL 2/15	XL 2/20	XL 2/25
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Motor</b>				
Power consumption $P_T$ / kW	2x 3.0	2x 3.8	2x 4.9	2x 5.3
Nominal current $I_N$ / A	6	6.9	8.5	8.9
Nominal speed $n$ / rpm	2900	2900	2900	2900
Activation type	Direct	Direct	Direct	Direct
Insulation class	H	H	H	H
Protection class	IP 67	IP 67	IP 67	IP 67
Max. switching frequency per pump 1/h	30	30	30	30
<b>Cable</b>				
Cable length from system to switchgear/plug m	4/1.5	4/1.5	4/1.5	4/1.5
Mains plug	CEE	CEE	CEE	CEE
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Permitted field of application</b>				
Max. intake/h with S3 operation $V/I$	max. 15600	max. 15600	max. 15600	max. 15600
Operating mode per pump	S1	S1	S1	S1
Max. permissible pressure in the pressure pipe $p$ / bar	3	3	3	3
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	60	60	60	60
Max. ambient temperature $T$ / °C	40	40	40	40
<b>Connections</b>				
Pressure connection	DN 80	DN 80	DN 80	DN 80
Inlet connection	DN 150/DN 100	DN 150/DN 100	DN 150/DN 100	DN 150/DN 100
Bleeding	DN 70	DN 70	DN 70	DN 70
<b>Dimensions/weights</b>				
Gross volume $V/I$	380	380	380	380
Max. switching volume $V/I$	260	260	260	260
Min. level OFF mm	80	80	80	80
Min. level ON mm	550	550	550	550
Dimensions <i>Width x height x depth</i> / mm	835 x 1120 x 955	835 x 1120 x 955	835 x 1120 x 955	835 x 1120 x 955
Diagonal dimension mm	1300	1300	1300	1300
Weight approx. $m$ / kg	108	108	108	108
<b>Materials</b>				
Motor housing	1.4404	1.4404	1.4404	1.4404
Pump shaft	1.4404	1.4404	1.4404	1.4404
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Pump housing	PE/PUR	PE/PUR	PE/PUR	PE/PUR
Impeller	PUR	PUR	PUR	PUR
Tank material	PE	PE	PE	PE

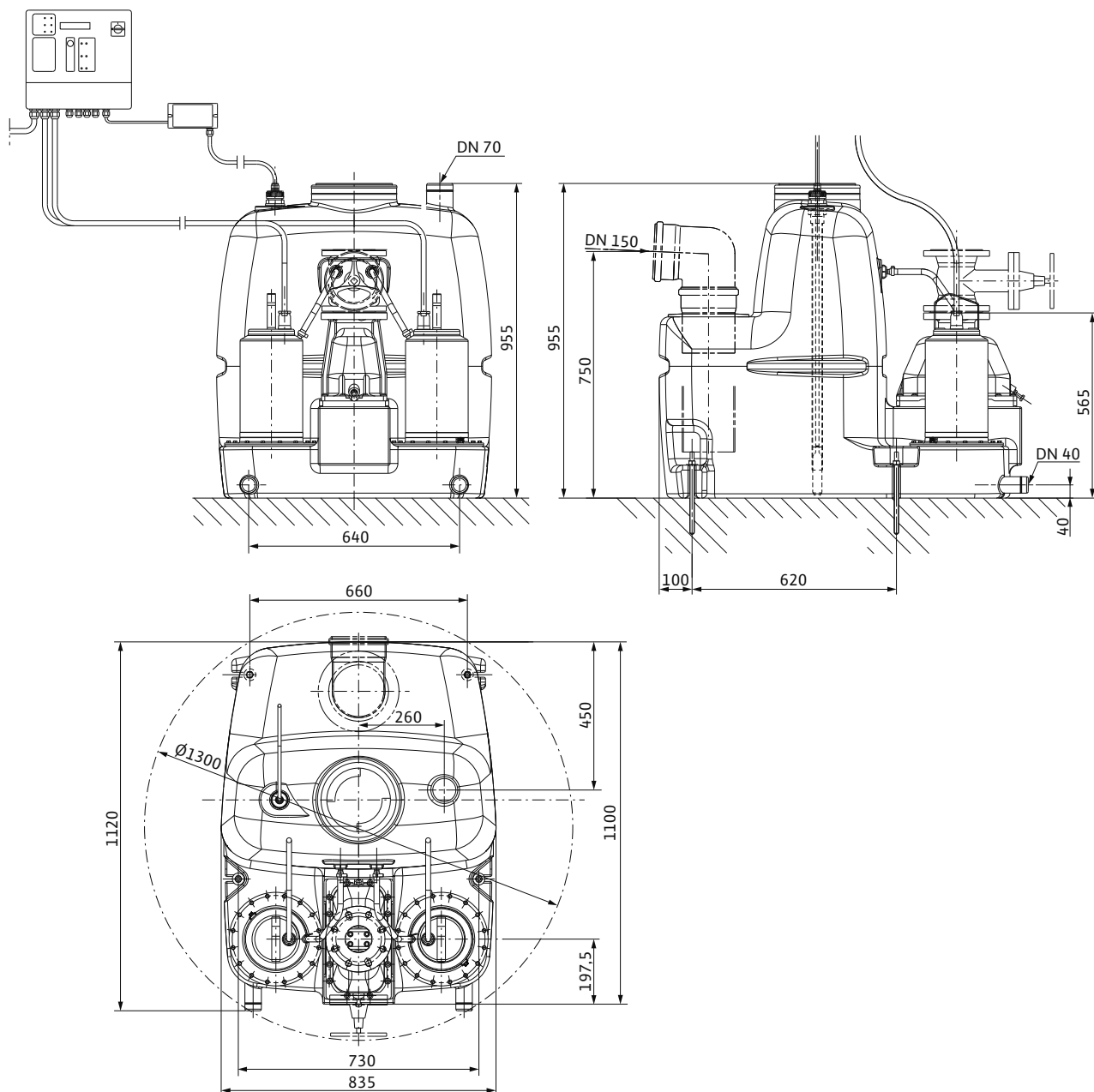
$P_T$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

# Wastewater collection and transport

## Sewage lifting units

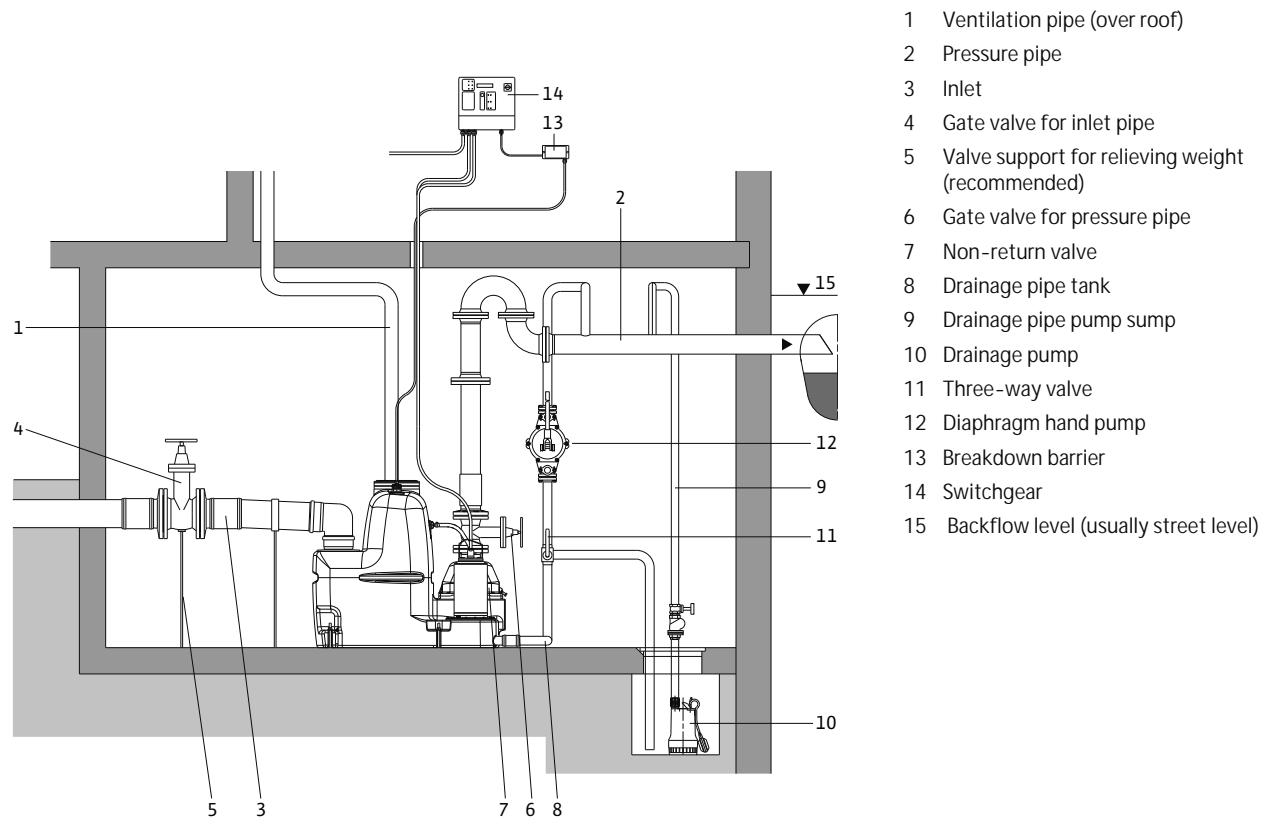
### Dimension drawing Wilo-DrainLift XL

#### Dimension drawing Wilo-DrainLift XL



### Installation example Wilo-DrainLift XL

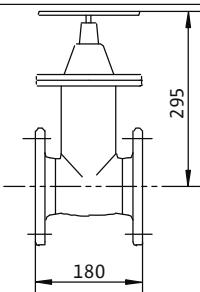
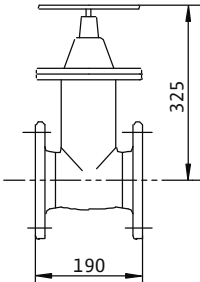
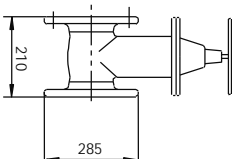
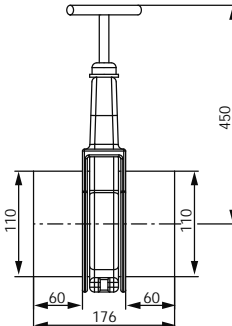
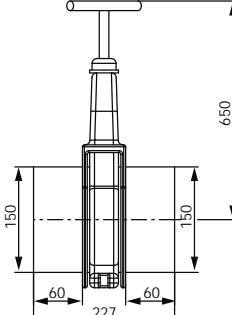
#### Installation drawing Wilo-DrainLift XL



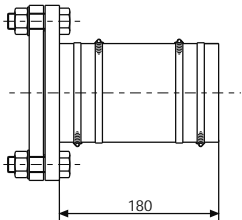
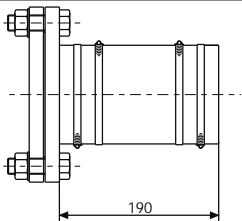
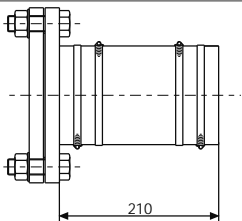
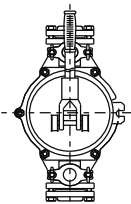
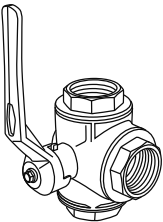
# Wastewater collection and transport

## Sewage lifting units

### Mechanical accessories Wilo-DrainLift XL

		Description	Art no.
Gate valve		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 80	2017162
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 100	2017163
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 150	2017164
		Made out of PVC with solid pipe ends DN 100, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529808
		Made of PVC with solid pipe ends DN 150, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529809

### Mechanical accessories Wilo-DrainLift XL

		Description	Art no.
Flange piece		Made of PUR, with hose DN 90 x 180 mm, hose clips and mounting accessories for DN 80 connection	2511595
		Made of PUR, with hose DN 112 x 180 mm, hose clips and mounting accessories for DN 100 connection	2511597
		Made of PUR, with hose DN 160 x 180 mm, hose clips and mounting accessories for DN 150 connection	2511598
Inlet seal set DN 100		Made of NBR, gasket for pipe Ø 110 mm and keyhole saw Ø 124 mm for the freely selectable inlet on the sump/tank	2521841
Diaphragm hand pump		For draining a system tank or a pump sump, connection on both sides female thread Rp 1½ for DN 40 connection	2060166
3-way cock		Made of brass, chrome-plated with 3x Rp 1½ female threads for DN 40 connection	2511607

# Wastewater collection and transport

## Sewage lifting units

### Series description Wilo-DrainLift XXL



#### Design

Sewage lifting unit with 2 dry-mounted pumps

#### Type key

Example: **Wilo-DrainLift XXL 1080-2/8.4**

<b>XXL</b>	Sewage lifting unit for large objects
<b>10</b>	10 = discharge port DN 100 8 = discharge port DN 80
<b>80</b>	80 = total volume 800 l 40 = total volume 400 l
<b>2</b>	Double-pump system
<b>/ 8.4</b>	Power P <sub>2</sub> per pump [kW]

#### Application

Sewage lifting unit for drainage of residential housing and commercial buildings (e.g. restaurants, department stores, etc.). Raw sewage that cannot be piped to the sewer system through the use of natural inclines and sewage from toilet systems below the backflow level are to be piped to the public sewer system by means of an automatic lifting unit in accordance with DIN EN 12056/DIN 1986-100. Sewage containing mineral oils or explosive admixtures must be guided through oil precipitators and/or petrol precipitators; those containing fatty substances must go through grease traps and those with sand through sand catchers.

#### Special features/product advantages

- Large tank volume
- Low weight of individual components
- Wide performance range
- Suitable for permanent operation (due to integrated sheath current cooling)

#### Technical data

- Mains connection 3~400 V, 50 Hz
- Power consumption P<sub>1</sub> from 2.3 to 10.0 kW, depending on type
- Cable length from system to switchgear 10 m
- Operating mode S1, S3
- Fluid temperature max. 40 °C, for short periods up to 65 °C
- Ambient temperature max. 40 °C
- Free ball passage 78 mm to 95 mm, depending on type
- Pressure port DN 80 or DN 100, depending on type
- Inlet connection 3 x DN 100/150, 1 x DN 100
- Ventilation connection DN 70 mm

- Min. suction head (installation level to middle of inlet) 700 mm
- Protection class (without switchgear) IP 68
- Gross tank volume 400/800 l
- Switching volume 200/400 l

#### Materials

- Motor housing: stainless steel 1.4404 (AISI 316L)
- Hydraulics: PUR plastic
- Tank: PE plastic

#### Equipment/function

- Sheath current cooling
- Thermal motor monitoring and leakage detection
- Level control with level sensor
- Potential-free contact
- Pump cable detachable
- Hose connection for ventilation
- Hose connection for diaphragm hand pump
- Kit for pressure pipe connection
- Fixation material
- Switchgear with breakdown barrier in the housing

#### Description/design

Fully submersible sewage lifting unit, ready for connection (flooding height: 2 mWS, overflow time: 7 days), with a gas- and watertight collection tank. Equipped with two sewage pumps of the Wilo-Drain TP 80 or TP 100 series (material: Inox and composite). Easy handling due to low total weight of system, e.g. double system with TP 80 pump only 160 kg (heaviest individual weight: pump 62 kg). Optimal tank drainage due to deep extraction by suction.

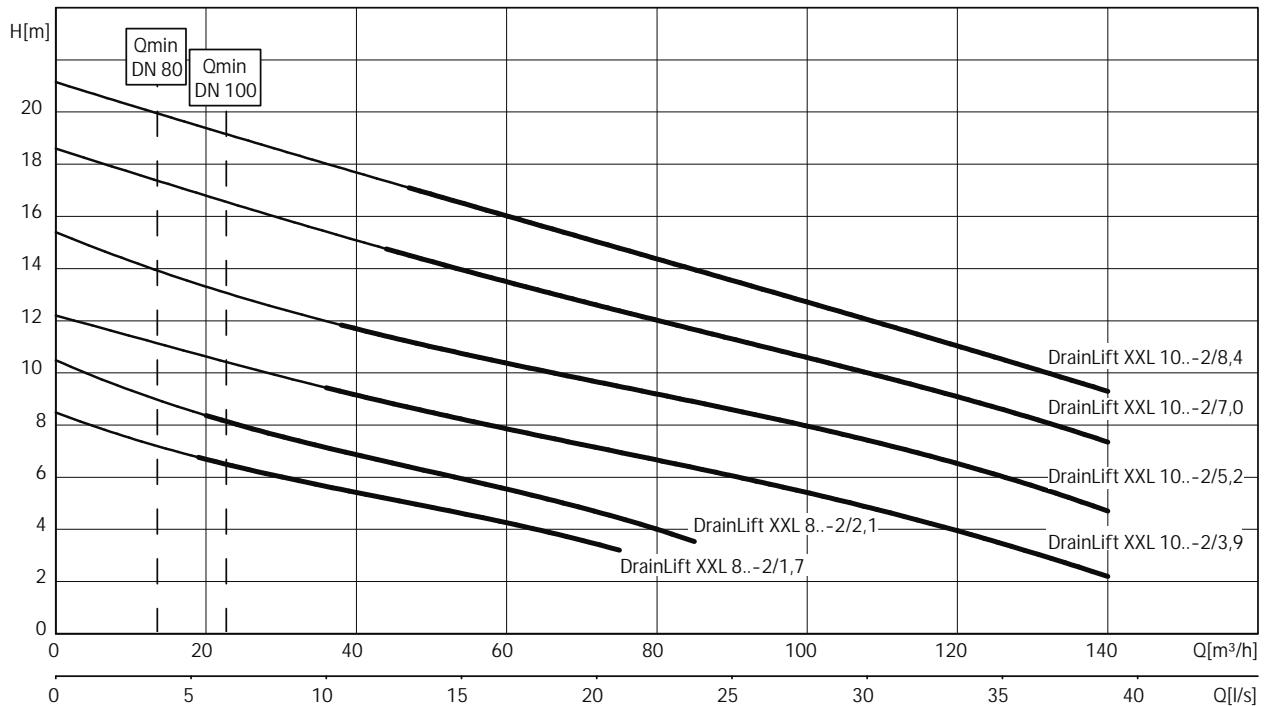
**Important:** The switchgear is not submersible and must therefore be arranged in such a way that it is safe from flooding.

#### Scope of delivery

- Microprocessor-controlled switchgear with automatic duty cycling, standby and peak load operation, potential-free contacts and indicator lights for operation and malfunctions for each pump.
- Elastic hose connection for ventilation DN 70.
- Elastic hose connection for connecting a diaphragm hand pump. Kit for connecting the tank with a pump (including ventilation flange with hose).

### Pump curves, ordering information Wilo-DrainLift XXL

#### Pump curves Wilo-DrainLift XXL - 50 Hz - 1450 rpm



According to EN 12056-4, 6.1, flow velocity (in the pressure pipe) must be kept between 0.7 and 2.3 m/s. The stated Q<sub>min</sub> values apply to the inside diameter of single-walled steel pipes.

#### Information for order placements

Wilo-DrainLift ...	Mains connection	🚚	Art no.
XXL 840-2/1,7	3-400 V, 50 Hz	K	2509000
XXL 840-2/2,1	3-400 V, 50 Hz	K	2509001
XXL 880-2/1,7	3-400 V, 50 Hz	K	2509005
XXL 880-2/2,1	3-400 V, 50 Hz	K	2509006
XXL 1040-2/3,9	3-400 V, 50 Hz	K	2509014
XXL 1040-2/5,2	3-400 V, 50 Hz	K	2509015
XXL 1040-2/7,0	3-400 V, 50 Hz	K	2509016
XXL 1040-2/8,4	3-400 V, 50 Hz	K	2509017
XXL 1080-2/3,9	3-400 V, 50 Hz	K	2509034
XXL 1080-2/5,2	3-400 V, 50 Hz	K	2509035
XXL 1080-2/7,0	3-400 V, 50 Hz	K	2509036
XXL 1080-2/8,4	3-400 V, 50 Hz	K	2509037

🚚 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Wastewater collection and transport

## Sewage lifting units

### Technical data Wilo-DrainLift XXL

	XXL 840- 2/1,7	XXL 840- 2/2,1	XXL 1040- 2/3,9	XXL 1040- 2/5,2	XXL 1040- 2/7,0	XXL 1040- 2/8,4
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Motor</b>						
Power consumption $P_1$ / kW	2x 2.3	2x 2.7	2x 4.4	2x 6.2	2x 8.4	2x 10.0
Nominal current $I_N$ / A	6.7	7.1	10.5	12.8	15.6	18.1
Nominal speed $n$ / rpm	1450	1450	1450	1450	1450	1450
Activation type	Direct	Direct	Direct	Star-delta	Star-delta	Star-delta
Insulation class	F	F	F	F	F	F
Protection class	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67
Max. switching frequency per pump 1/h	60	60	60	60	60	60
<b>Cable</b>						
Cable length from system to switchgear/plug m	10/0	10/0	10/0	10/0	10/0	10/0
Mains plug	—	—	—	—	—	—
Type of connecting cable	Detachable	Detachable	Detachable	Detachable	Detachable	Detachable
<b>Permitted field of application</b>						
Max. intake/h with S3 operation $V/I$	max. 27600	max. 27600	max. 26400	max. 26400	max. 26400	max. 26400
Operating mode per pump	S1	S1	S1	S1	S1	S1
Max. permissible pressure in the pressure pipe $p$ / bar	3	3	3	3	3	3
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	60	60	60	60	60	60
Max. ambient temperature $T$ / °C	40	40	40	40	40	40
<b>Connections</b>						
Pressure connection	DN 80	DN 80	DN 100	DN 100	DN 100	DN 100
Inlet connection	DN 150/ DN 100	DN 150/ DN 100	DN 150/ DN 100	DN 150/ DN 100	DN 150/ DN 100	DN 150/ DN 100
Bleeding	DN 70	DN 70	DN 70	DN 70	DN 70	DN 70
<b>Dimensions/weights</b>						
Gross volume $V/I$	400	400	400	400	400	400
Max. switching volume $V/I$	315	315	305	305	305	305
Min. level OFF mm	140	140	160	160	160	160
Min. level ON mm	500	500	550	550	550	550
Dimensions <i>Width x height x depth</i> / mm	1965 x 880 x 930	1965 x 880 x 930	1990 x 880 x 960	1990 x 880 x 960	1990 x 880 x 960	1990 x 880 x 960
Diagonal dimension mm	2173	2173	2173	2173	2173	2173
Weight approx. $m$ / kg	160	160	195	195	195	195
<b>Materials</b>						
Motor housing	1.4404	1.4404	1.4404	1.4404	1.4404	1.4404
Pump shaft	1.4404	1.4404	1.4404	1.4404	1.4404	1.4404
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Pump housing	PUR	PUR	PUR	PUR	PUR	PUR
Impeller	PUR	PUR	PUR	PUR	PUR	PUR
Tank material	PE	PE	PE	PE	PE	PE

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.



### Technical data Wilo-DrainLift XXL

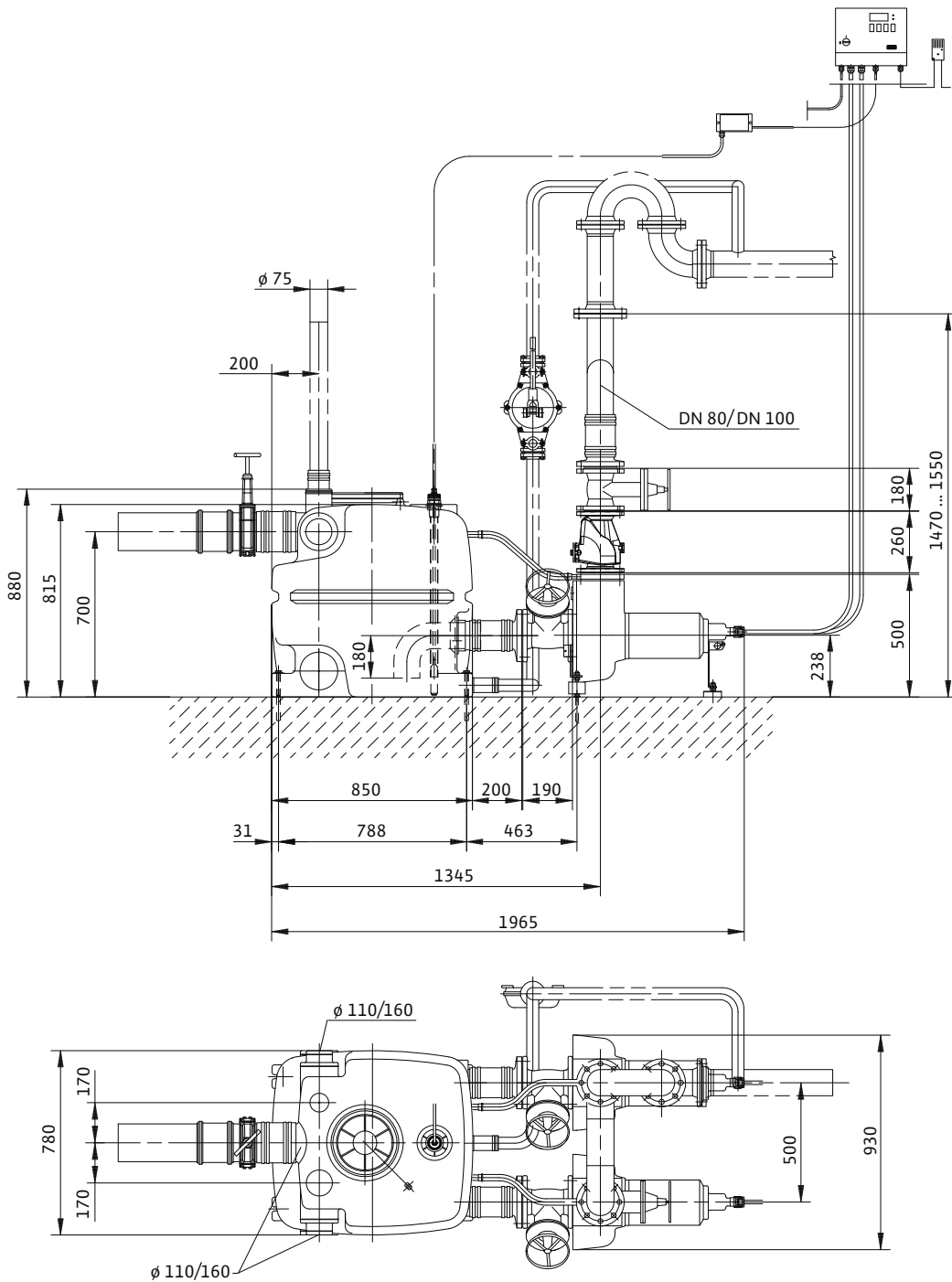
	XXL 880- 2/1,7	XXL 880- 2/2,1	XXL 1080- 2/3,9	XXL 1080- 2/5,2	XXL 1080- 2/7,0	XXL 1080- 2/8,4
	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz	3~400 V, 50 Hz
<b>Motor</b>						
Power consumption $P_1$ / kW	2x 2.3	2x 2.7	2x 4.4	2x 6.2	2x 8.4	2x 10.0
Nominal current $I_N$ / A	6.7	7.1	10.5	12.8	15.6	18.1
Nominal speed $n$ / rpm	1450	1450	1450	1450	1450	1450
Activation type	Direct	Direct	Direct	Star-delta	Star-delta	Star-delta
Insulation class	F	F	F	F	F	F
Protection class	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67
Max. switching frequency per pump 1/h	60	60	60	60	60	60
<b>Cable</b>						
Cable length from system to switchgear/plug m	10/0	10/0	10/0	10/0	10/0	10/0
Mains plug	—	—	—	—	—	—
Type of connecting cable	Detachable	Detachable	Detachable	Detachable	Detachable	Detachable
<b>Permitted field of application</b>						
Max. intake/h with S3 operation $V/I$	max. 55200	max. 55200	max. 52800	max. 52800	max. 52800	max. 52800
Operating mode per pump	S1	S1	S1	S1	S1	S1
Max. permissible pressure in the pressure pipe $p$ / bar	3	3	3	3	3	3
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	60	60	60	60	60	60
Max. ambient temperature $T$ / °C	40	40	40	40	40	40
<b>Connections</b>						
Pressure connection	DN 80	DN 80	DN 100	DN 100	DN 100	DN 100
Inlet connection	DN 150/ DN 100	DN 150/ DN 100	DN 150/ DN 100	DN 150/ DN 100	DN 150/ DN 100	DN 150/ DN 100
Bleeding	DN 70	DN 70	DN 70	DN 70	DN 70	DN 70
<b>Dimensions/weights</b>						
Gross volume $V/I$	800	800	800	800	800	800
Max. switching volume $V/I$	630	630	610	610	610	610
Min. level OFF mm	140	140	160	160	160	160
Min. level ON mm	500	500	550	550	550	550
Dimensions <i>Width x height x depth</i> / mm	1965 x 880 x 1695	1965 x 880 x 1695	1990 x 880 x 1710	1990 x 880 x 1710	1990 x 880 x 1710	1990 x 880 x 1710
Diagonal dimension mm	2623	2623	2623	2623	2623	2623
Weight approx. $m$ / kg	195	195	230	230	230	230
<b>Materials</b>						
Motor housing	1.4404	1.4404	1.4404	1.4404	1.4404	1.4404
Pump shaft	1.4404	1.4404	1.4404	1.4404	1.4404	1.4404
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Pump housing	PUR	PUR	PUR	PUR	PUR	PUR
Impeller	PUR	PUR	PUR	PUR	PUR	PUR
Tank material	PE	PE	PE	PE	PE	PE

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

## Sewage lifting units

## Dimension drawing Wilo-DrainLift XXL

## Dimension drawing Wilo-DrainLift XXL 840



## Dimension drawing Wilo-DrainLift XXL 880

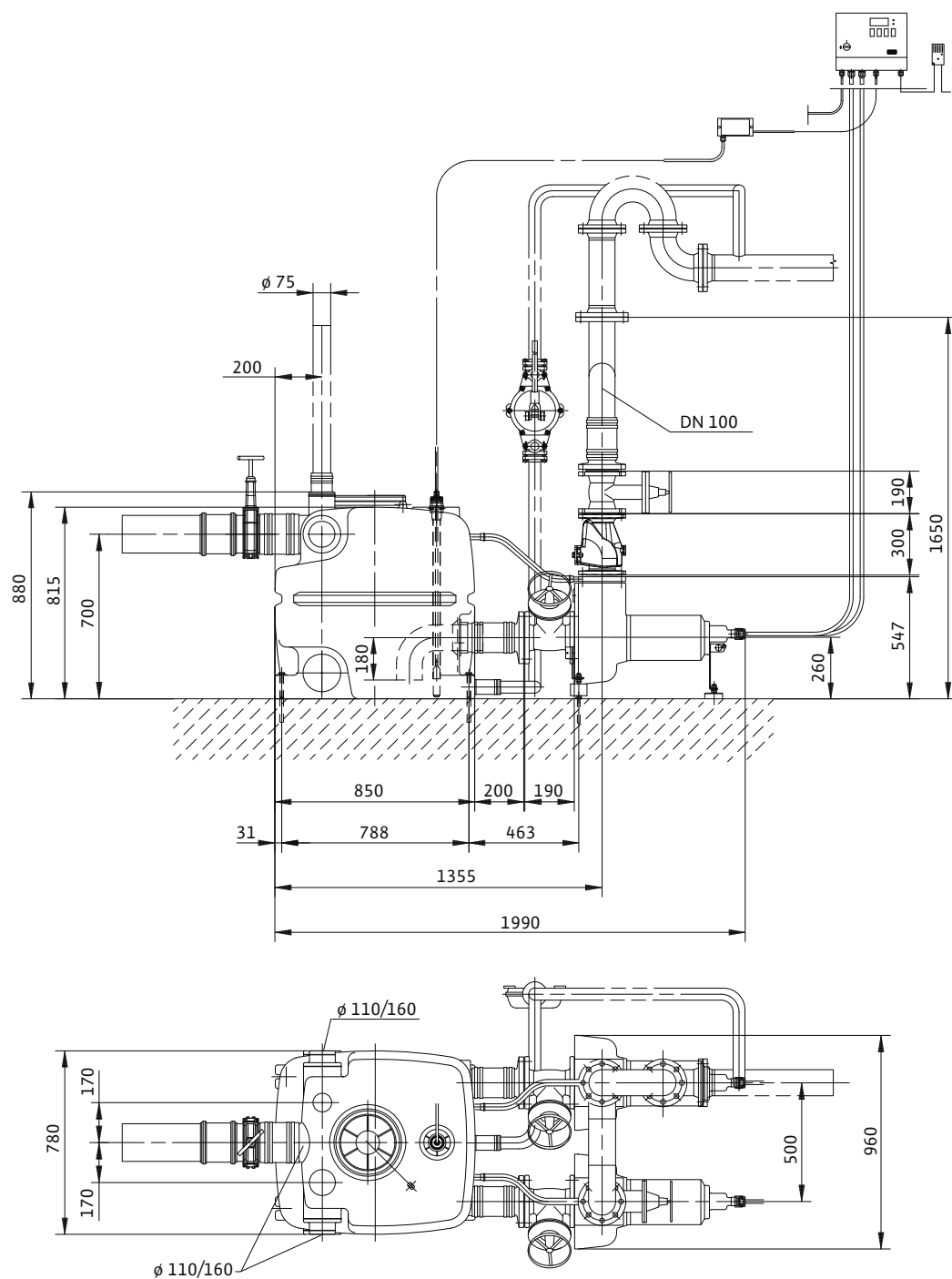


# Wastewater collection and transport

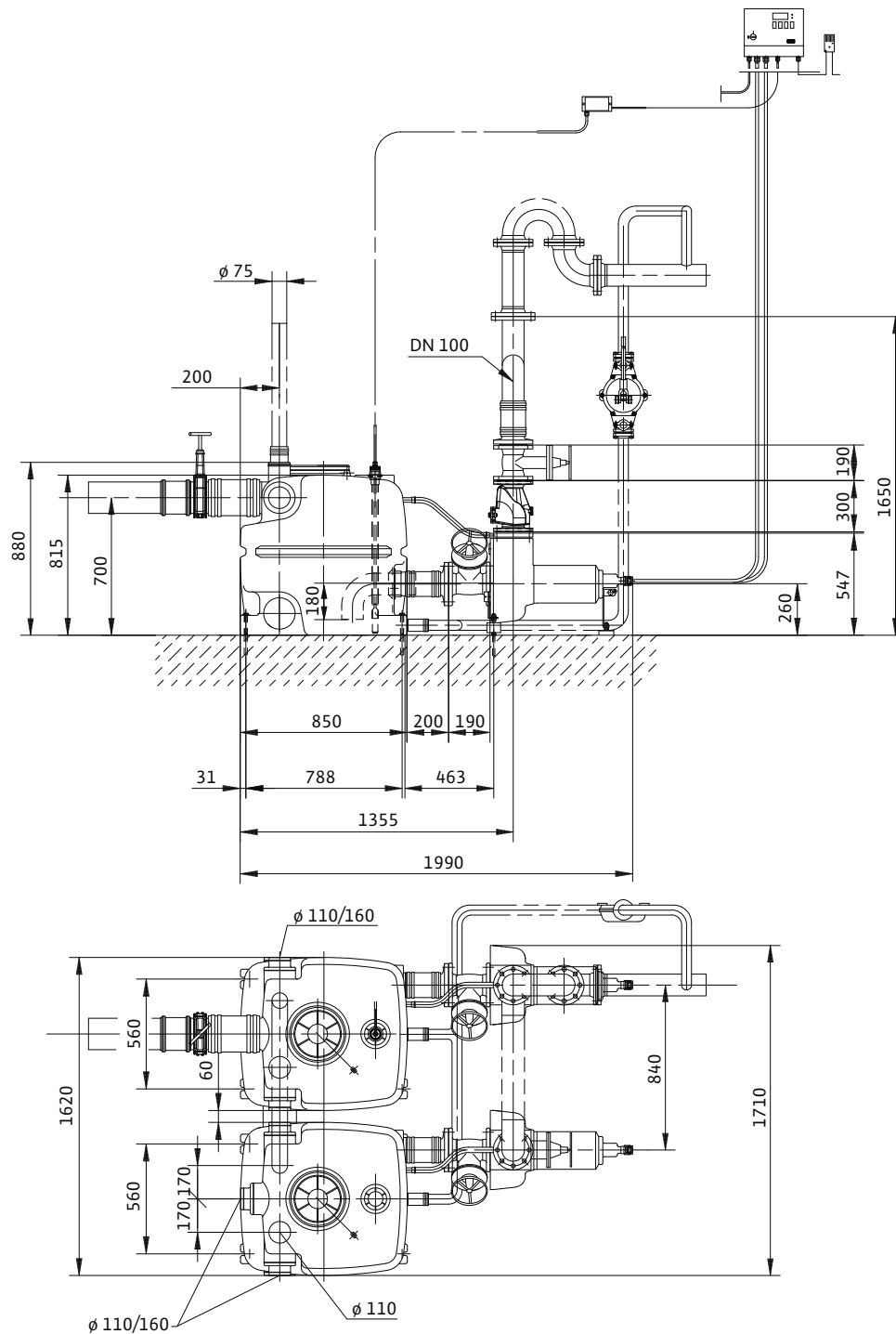
## Sewage lifting units

### Dimension drawing Wilo-DrainLift XXL

#### Dimension drawing Wilo-DrainLift XXL 1040



## Dimension drawing Wilo-DrainLift XXL 1080



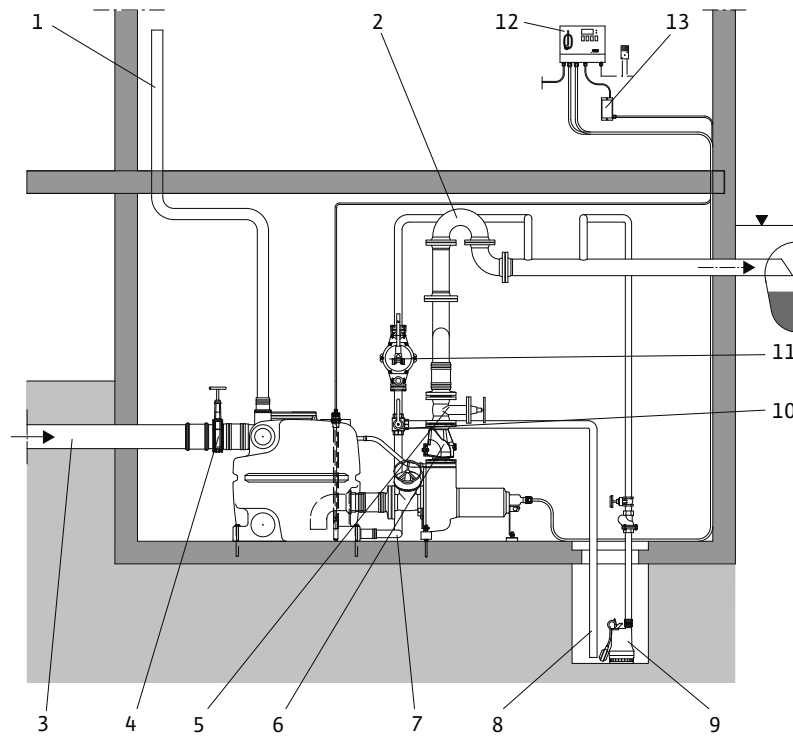
# Wastewater collection and transport

## Sewage lifting units

### Installation example Wilo-DrainLift XXL

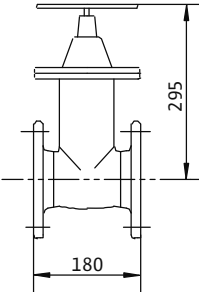
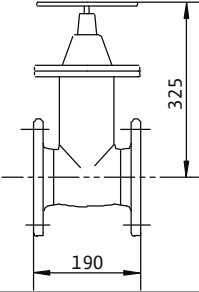
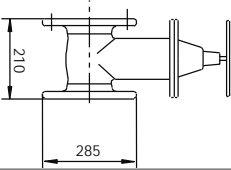
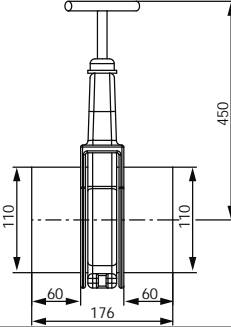
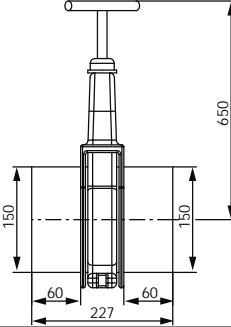
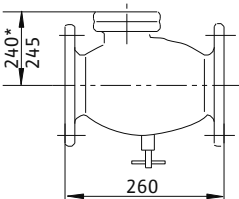
#### Installation drawing Wilo-DrainLift XXL

Wastewater and sewage lifting unit (sewage with faecal content); Double unit, Wilo-DrainLift XXL



- 1 Ventilation pipe (over roof)
- 2 Pressure pipe
- 3 Inlet
- 4 Gate valve for inlet pipe
- 5 Valve support for relieving weight (recommended)
- 6 Gate valve for pressure pipe
- 7 Non-return valve
- 8 Drainage pipe tank
- 9 Drainage pipe pump sump
- 10 Drainage pump
- 11 Three-way valve
- 12 Diaphragm hand pump
- 13 Switchgear
- 14 Breakdown barrier
- 15 Backflow level (usually street level)

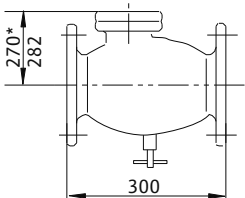
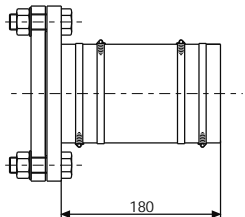
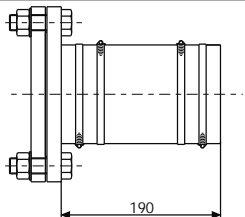
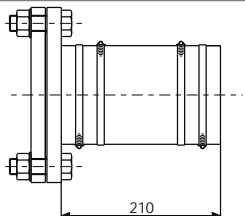
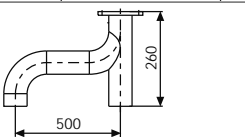
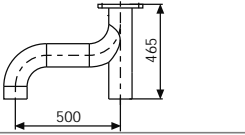
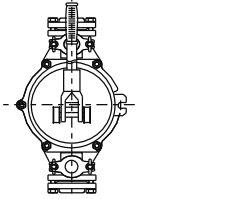
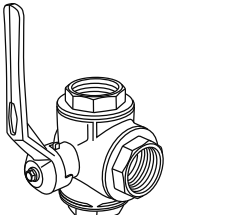
### Mechanical accessories Wilo-DrainLift XXL

		Description	Art no.
Gate valve		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 80	2017162
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 100	2017163
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 150	2017164
		Made out of PVC with solid pipe ends DN 100, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529808
		Made of PVC with solid pipe ends DN 150, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529809
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 80 connection	2017168

# Wastewater collection and transport

## Sewage lifting units

### Mechanical accessories Wilo-DrainLift XXL

		Description	Art no.
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 100 connection	2017169
Flange piece		Made of PUR, with hose DN 90 x 180 mm, hose clips and mounting accessories for DN 80 connection	2511595
		Made of PUR, with hose DN 112 x 180 mm, hose clips and mounting accessories for DN 100 connection	2511597
		Made of PUR, with hose DN 160 x 180 mm, hose clips and mounting accessories for DN 150 connection	2511598
Y-pipe		Made of steel, galvanised including 1 set of mounting accessories for mounting on systems with 1 tank (400 l), connection DN 80/80/80	2511605
		Made of steel, galvanised including 1 set of mounting accessories for mounting on systems with 1 tank (400 l), connection DN 100/100/100	2511606
Diaphragm hand pump		For draining a system tank or a pump sump, connection on both sides female thread Rp 1 1/2 for DN 40 connection	2060166
3-way cock		Made of brass, chrome-plated with 3x Rp 1 1/2 female threads for DN 40 connection	2511607



### Series description Wilo-DrainLift FTS



#### Design

Sewage lifting unit with solids separation system

#### Type key

Example:	<b>Wilo-DrainLift FTS MG 750 STS 65/18</b>
<b>FTS</b>	Solids separation system for the drainage of large buildings
<b>MG</b>	Installation in buildings
<b>750</b>	Suction head [mm] (up to the floor of the inlet pipe)
<b>STS 65/18</b>	Pump types used STS65/... or FA08.43E

#### Application

The DrainLift FTS solids separation system is a sewage lifting unit for the drainage of commercial buildings and blocks of buildings (e.g. hotels, department stores, etc.).

Raw sewage that cannot be piped to the sewer system through the use of natural inclines and sewage from below the backflow level are to be piped to the public sewer system by means of an automatic lifting unit in accordance with DIN EN 12056/DIN 1986-100. Sewage containing mineral oils or explosive admixtures must be guided through oil precipitators and/or petrol precipitators; those containing fatty substances must go through grease traps and those with sand through grit chambers.

#### Special features/product advantages

- High efficiency, due to pumps with small free ball passage
- Large delivery heads
- System non-susceptible to clogging, due to solids separation
- Large tank volume

#### Technical data

- Mains connection 3~400 V, 50 Hz
- Mains connection cable (pumps) 10 m,
- Operating mode: S2-10 min (STS 65), S2-15 min (FA08.43E)
- Fluid temperature max. 40 °C
- Ambient temperature max. 40 °C
- Free ball passage 65 mm (STS 65), 70 mm (FA08.43E)
- Pressure port DN 100
- Inlet connection DN 150
- Ventilation DN 100
- Min. suction head (up to bottom edge of inlet) 750 mm

- Protection class (without switchgear) IP 68
- Gross tank volume 400 l
- Switching volume 300 l

#### Materials

- Motor housing: stainless steel 1.4404 / AISI 316L (STS 65), cast iron EN-GJL-250 (FA08.43E)
- Hydraulics: Grey cast iron EN-GJL-250
- Tank: PE plastic

#### Equipment/function

- Thermal motor monitoring
- Level control with level sensor
- Potential-free contact
- Non-return valve
- Inlet seal
- Fixation material

#### Description/design

Fully submersible, connection-ready sewage lifting unit with integrated solids separation system. Equipped as double-pump system with two Wilo-Drain STS 65 or FA08.43E pumps.

Due to the use of solids separation tanks, the pumps do not come in contact with the solids. In this way, pumps with optimised efficiency can be used for pumping sewage.

The dry well installation of the pump and its configuration as redundant double-pump system ensures maximum ease of maintenance and operational reliability. The complete system, apart from the pumps and non-return valve, is made of corrosion-resistant PE-HD. Fully submersible compact unit ready for connection with a gastight and watertight collection tank.

Easy handling and optimum tank drainage by means of deep extraction by suction.

**Attention:** The switchgear is not submersible and must therefore be arranged in such a way that it is safe from flooding.

#### Scope of delivery

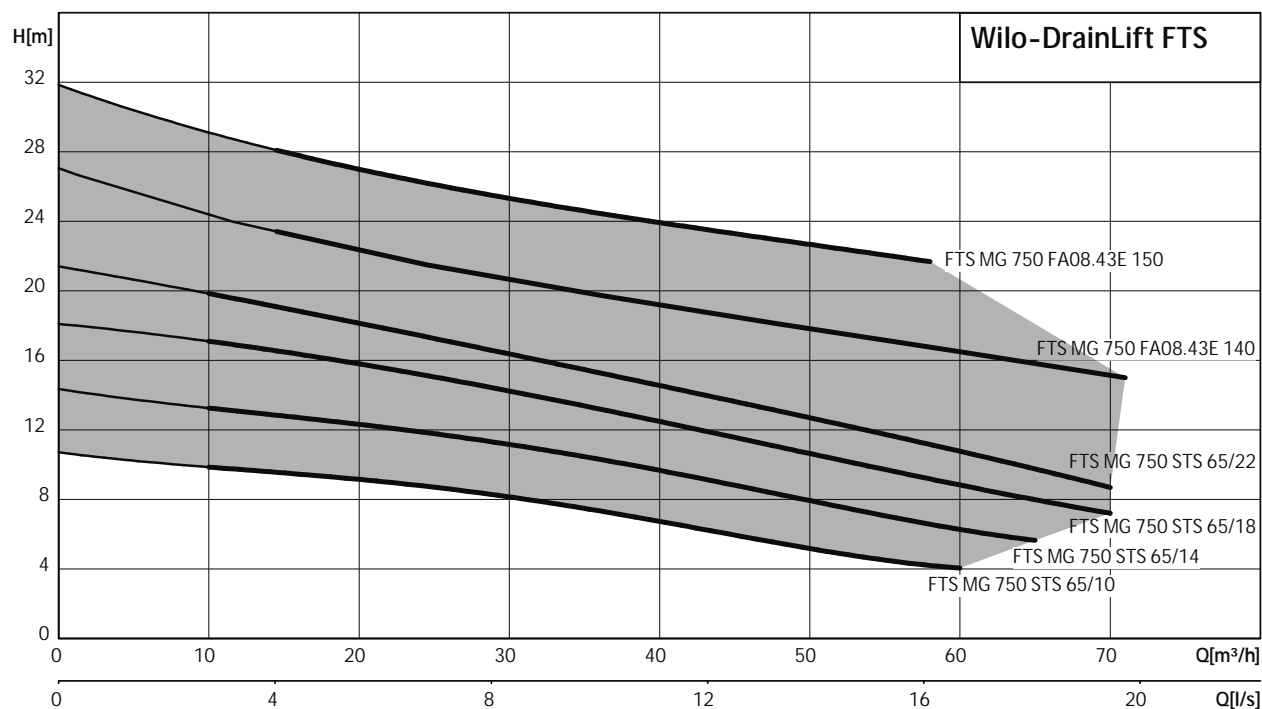
Sewage lifting unit ready for connection with solids separation system incl. pumps, switchgear, non-return valve and Y-piece. Optional, individual blocking of the solids separation reservoir.

# Wastewater collection and transport

## Sewage lifting units

### Series description Wilo-DrainLift FTS

#### Pump curves Wilo-DrainLift FTS






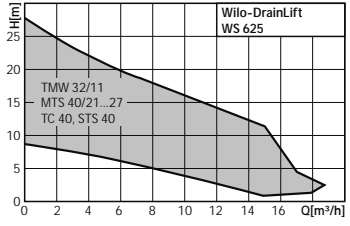

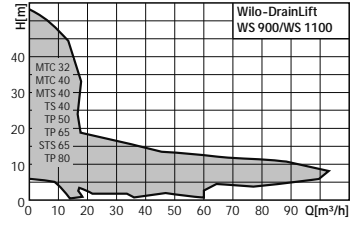
### Series overview

Series	Wilo-DrainLift WS 40 Basic	Wilo-DrainLift WS 40-50
Product photo		
Duty chart		
Design	Synthetic pumps station	Synthetic pumps station
Application	Wastewater and sewage pumping station for drainage and pressure drainage: <ul style="list-style-type: none"> <li>• In the building as lifting unit in accordance with EN 12050</li> <li>• Outside the building as pumps station in accordance with EN 752</li> </ul>	Wastewater and sewage pumping station for drainage and pressure drainage: <ul style="list-style-type: none"> <li>• In the building as lifting unit in accordance with EN 12050</li> <li>• Outside the building as pumps station in accordance with EN 752</li> </ul>
Special features/ product advantages	<ul style="list-style-type: none"> <li>• Freely selectable inlets</li> <li>• Flexible use: As lifting unit inside buildings or as pumps station outside buildings.</li> <li>• Large tank volume (255/400 l)</li> <li>• Flexible installation due to optional sump length extension</li> <li>• Electric control or switchgear included</li> </ul>	<ul style="list-style-type: none"> <li>• Freely selectable inlets</li> <li>• Flexible use: As lifting unit inside buildings or as pumps station outside buildings.</li> <li>• Large tank volume (255/400 l)</li> <li>• Flexible installation due to optional sump length extension</li> <li>• Easy installation and maintenance of pumps through the use of surface coupling made of corrosion-resistant PUR</li> <li>• Also with Wilo-Drain MTS 40/21...27 macerator pump</li> </ul>
Further information	Series information from page 362 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 367	Series information from page 369 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 377

# Wastewater collection and transport

## Pumps stations

### Series overview

Series	Wilo-DrainLift WS 625	Wilo-DrainLift WS 830	Wilo-DrainLift WS 900/1100
Product photo			
Duty chart			
Design	Synthetic pumps station	Synthetic pumps station	Synthetic pumps station
Application	Wastewater and sewage pumping station for drainage and pressure drainage, outside the building as pumps station in accordance with EN 752.	Wastewater and sewage pumping station for drainage and pressurised drainage, outside the building as pumps station in accordance with EN 752.	Wastewater and sewage pumping station for drainage and pressure drainage, outside the building as pumps station in accordance with EN 752.
Special features/ product advantages	<ul style="list-style-type: none"> <li>• Small sump diameter (625 mm)</li> <li>• Flexible use due to different installation heights</li> <li>• Inlet connection is included with DN 100 as a standard</li> <li>• Complete due to integrated fittings and seals</li> <li>• Can be walked on or driven over, depending on the cover (accessories)</li> <li>• Also with Wilo-Drain MTS 40/21...27 macerator pump</li> </ul>	<ul style="list-style-type: none"> <li>• Monolithic sump in 2 installation depths: 1800 mm and 2300 mm</li> <li>• Removable angle non-return ball valve on pump discharge pipe</li> <li>• Upward pressure reliability with groundwater level up to ground surface level, without additional concrete</li> <li>• Check valve can be operated from the top</li> <li>• High installation guide for easier installing of the pump pipe in the case of high water levels in the sump</li> </ul>	<ul style="list-style-type: none"> <li>• Deposit-free collection space</li> <li>• Maximum strength due to hemispherically shaped sump floor</li> <li>• 2/4 inlets can be selected onsite</li> <li>• Pumps station ready for connection (without pump and switchgear)</li> <li>• V4A stainless steel pipework</li> <li>• Also with Wilo-Drain MTS 40/21...39 and MTC macerator pumps</li> </ul>
Further information	Series information from page 379 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 384	Series information from page 385 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a>	Series information from page 390 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 395

Equipment/function					
	Wilo-DrainLift ...				
	WS 40 Basic	WS 40-50	WS 625	WS 830	WS 900/1100
<b>Design</b>					
Pump included in the scope of delivery	•	—	—	—	—
Single-pump system	•	•	•	•	•
Double-pump system	•	•	—	—	•
Inlet position freely selectable	•	•	—	—	—
Ready-to-plug	•	—	—	—	—
Switchgear	•	Optional	Optional	Optional	Optional
<b>Application</b>					
Floor-mounted installation	•	•	—	—	—
Concealed floor installation	•	•	•	•	•

• = available, — = not available

Overview of the pump series in pumps stations						
Wilo-Drain...	WS 40 Basic	WS 40-50	WS 625	WS 830	WS 900	WS 1100
TMW 32	—	—	•	—	—	—
TS 40	—	—	—	—	•	—
TC 40	Incl.	—	•	—	—	—
STS 40	—	—	•	—	—	—
TP 50	—	•	—	—	•	•
TP 65	—	•	—	—	•	•
FIT V05	—	—	—	—	•	•
PRO V05	—	—	—	—	•	•
PRO V06	—	—	—	—	•	•
TP 80 E	—	—	—	—	—	•
MTC 32	—	—	—	•	•	•
MTC 40	—	—	—	•	•	•
MTS 40/21...27	—	•	•	•	•	•
MTS 40/31...39	—	—	—	•	•	•

• = can be used, — = cannot be used

# Wastewater collection and transport

## Pumps stations

### Series description Wilo-DrainLift WS 40 Basic



#### Design

Synthetic pumps station

#### Type key

Example: **Wilo-DrainLift WS 40E/TC40 (3~)-BV**

<b>WS</b>	Synthetic pumps station
<b>40</b>	Pressure outlet of the system
<b>E</b>	E = single-pump system D = double-pump system
<b>TC 40</b>	Built-in pump
<b>(3~)</b>	Three-phase motor
<b>BV</b>	Non-return ball valve

#### Application

Wilo-DrainLift WS 40 Basic is an automatically operating wastewater lifting unit in accordance with EN 12050-2 for backup-free drainage of sewage that does not contain faeces and that originates from building discharge points below the backflow level. The system can be installed in buildings as well as outside buildings in the same way as a plastic sump in the ground. The system is ideally suited for applications that involve seasonal wastewater (such as at camping sites, weekend homes, etc.) or in regions where the ground does not freeze to very deep levels.

#### Built-in pump

**TC 40**

For severely contaminated fluids; 40 mm free ball passage

#### Special features/product advantages

- Freely selectable inlets
- Flexible use: As lifting unit inside buildings or as pumps station outside buildings.
- Large tank volume (255/400 l)
- Flexible installation due to optional sump length extension
- Electric control or switchgear included

#### Equipment/function

Complete system with pump as well as all monitoring and control units

#### Description/design

- For supply line in DN 100/DN 150
- Ventilation pipe connection in DN 70
- Maximum pressure in the pressure pipe 1,5 bar.
- Synthetic pumps station made of recyclable PE
- Maximum upward pressure reliability and inherent stability due to finning
- Inlets freely selectable onsite.
- Versions: WS...E: single-pump system; WS...D: Double-pump system

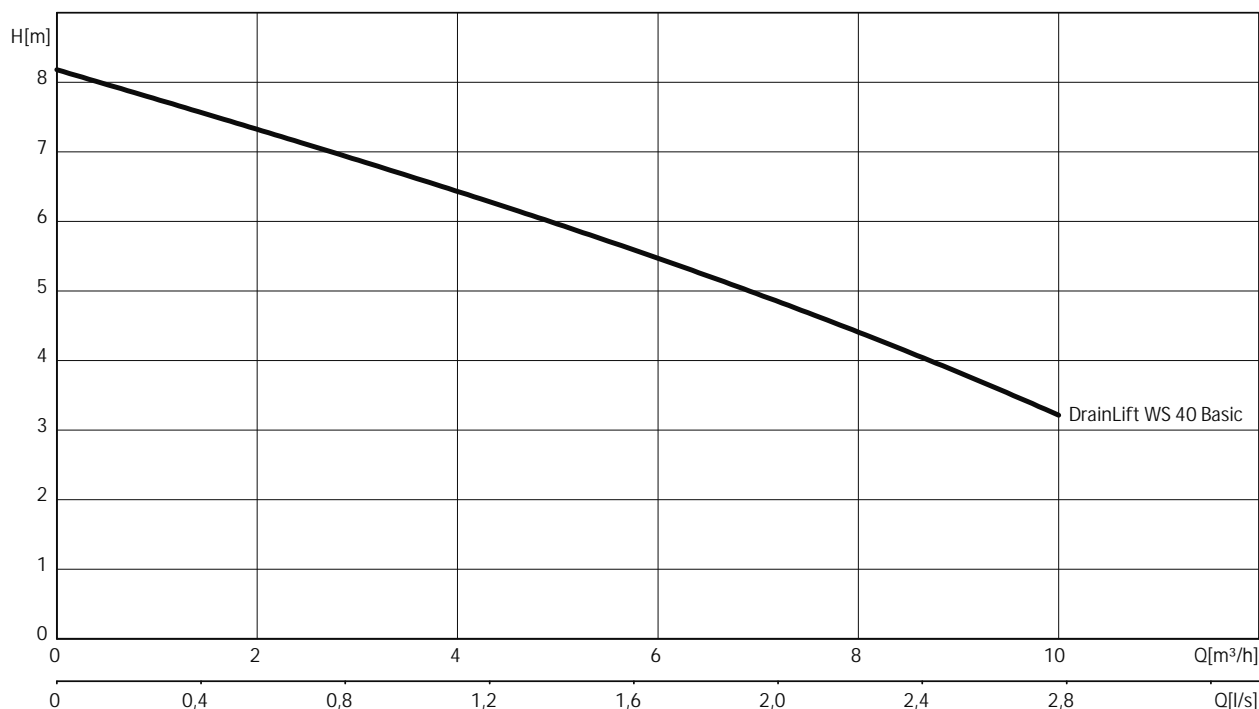
In the case of double-pump systems, the pressure line connection must be established onsite.

#### Scope of delivery

- Tank (for single or double pump system)
- Built-in pipework
- Non-return ball valve
- **Including pump**
- Level switching
- Switchgear (for three-phase pump or double-pump system)
- Cover with seal (can be walked on, supporting a weight up to 200 kg)
- Keyhole saw Ø 124 mm, inlet seal DN 100 (for pipe Ø 110 mm)
- 1 PVC hose section Ø 50 mm with clamps for connection of a diaphragm hand pump
- Fixation material for floor fixation
- Installation and operating instructions

### Pump curves, ordering information Wilo-DrainLift WS 40 Basic

#### Pump curves



#### Information for order placements

Wilo-DrainLift ...	Mains connection		Art no.
WS 40 E/TC 40 BV	1~230 V, 50 Hz	L	2525600
WS 40 E/TC 40 BV	3~400 V, 50 Hz	L	2525601
WS 40 D/TC 40 BV	1~230 V, 50 Hz	L	2525602
WS 40 D/TC 40 BV	3~400 V, 50 Hz	L	2525603

= ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

#### Dimensions

Wilo-DrainLift ...	Installation depth below ground surface level up to inlet floor without extension	Installation depth below ground surface level up to inlet floor with extension
	mm	
WS 40 E/TC 40 BV	510...540	810...840
WS 40 D/TC 40 BV	510...540	810...840

# Wastewater collection and transport

## Pumps stations

### Technical data Wilo-DrainLift WS 40 Basic

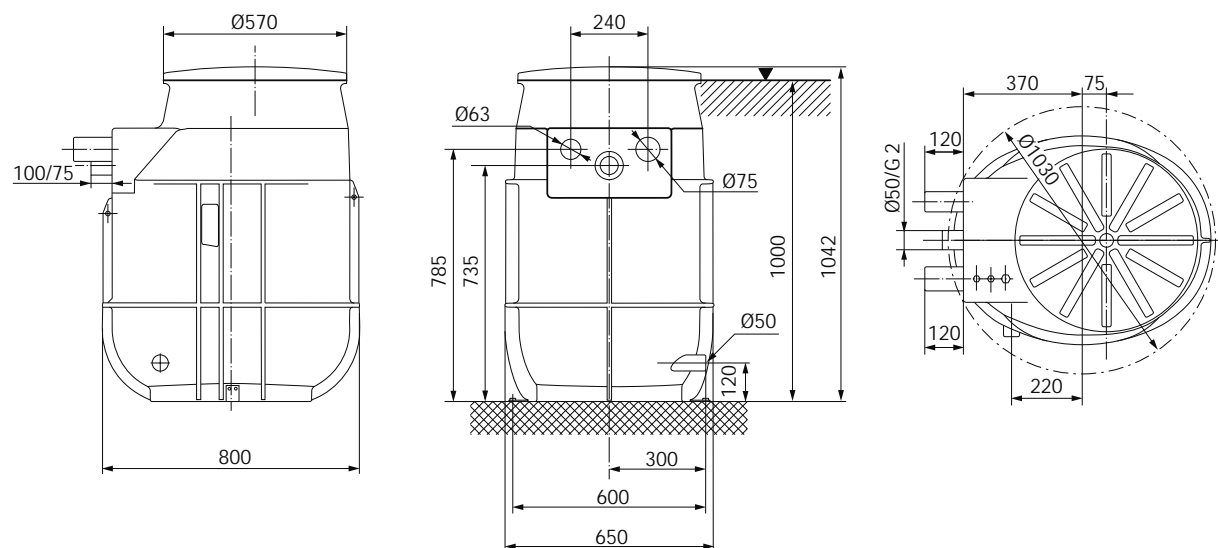
	WS 40 E/TC 40 BV	WS 40 E/TC 40 BV	WS 40 D/TC 40 BV	WS 40 D/TC 40 BV
	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz
<b>Motor</b>				
Power consumption $P_1$ / kW	0.7	0.7	2x 0.7	2x 0.7
Nominal current $I_N$ / A	3.3	1.4	3.3	1.4
Nominal speed $n$ / rpm	2900	2900	2900	2900
Activation type	Direct	Direct	Direct	Direct
Insulation class	F	F	F	F
Protection class	IP 67	IP 67	IP 67	IP 67
Max. switching frequency per pump 1/h	30	30	30	30
<b>Cable</b>				
Cable length from system to switchgear/plug m	—	—	—	—
Mains plug	Shock-proof	—	—	—
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
<b>Permitted field of application</b>				
Max. intake/h with S3 operation V/ l	max. 1950	max. 3000	max. 9600	max. 9600
Operating mode per pump	S3-15%	S3-15%	S3-15%	S3-15%
Max. permissible pressure in the pressure pipe $p$ / bar	1.5	1.5	1.5	1.5
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Max. fluid temperature, for short periods up to 3 min $T$ / °C	—	—	—	—
Max. ambient temperature $T$ / °C	40	40	40	40
<b>Connections</b>				
Pressure connection	Ø50/G2A	Ø50/G2A	2 x Ø50/G2A	2 x Ø50/G2A
Inlet connection	DN 150/DN 100	DN 150/DN 100	DN 150/DN 100	DN 150/DN 100
Bleeding	DN 70	DN 70	DN 70	DN 70
<b>Dimensions/weights</b>				
Gross volume $V$ / l	255	255	400	400
Max. switching volume $V$ / l	65	100	160	160
Min. level OFF mm	190	190	190	190
Min. level ON mm	450	450	450	450
Dimensions <i>Width x height x depth</i> / mm	650 x 1040 x 800	650 x 1040 x 800	800 x 1040 x 1000	800 x 1040 x 1000
Diagonal dimension mm	1030	1030	1280	1280
Weight approx. $m$ / kg	51	52	83	83
<b>Materials</b>				
Motor housing	1.4308	1.4308	1.4308	1.4308
Pump shaft	1.4005	1.4005	1.4005	1.4005
Mechanical seal	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic	Carbon/ceramic
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Impeller	PA 30GF	PA 30GF	PA 30GF	PA 30GF
Tank material	PE	PE	PE	PE

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

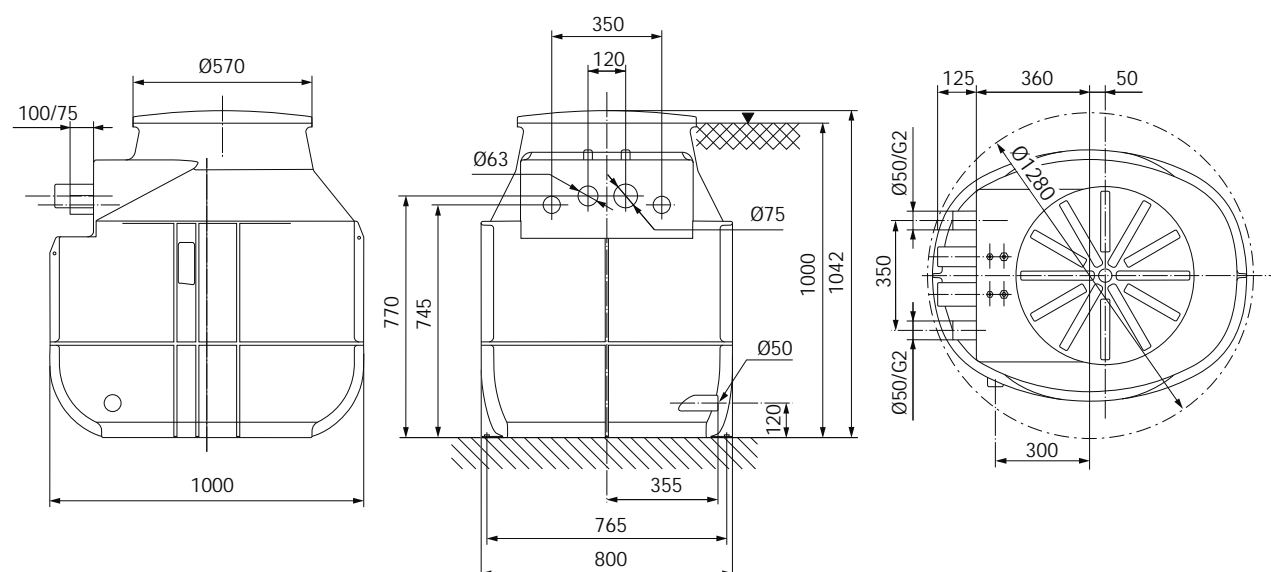


### Dimension drawing Wilo-DrainLift WS 40 Basic

#### Dimension drawing Wilo-DrainLift WS 40 E/TC 40BV



#### Dimension drawing Wilo-DrainLift WS 40 D/TC 40BV

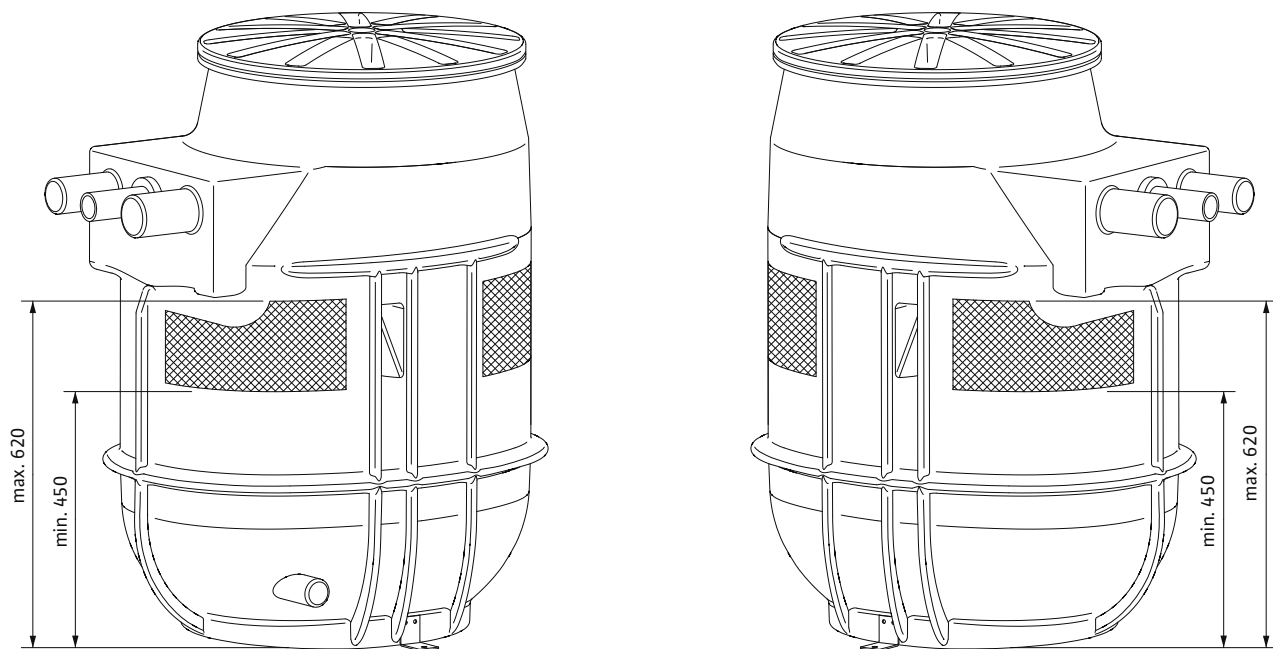


# Wastewater collection and transport

## Pumps stations

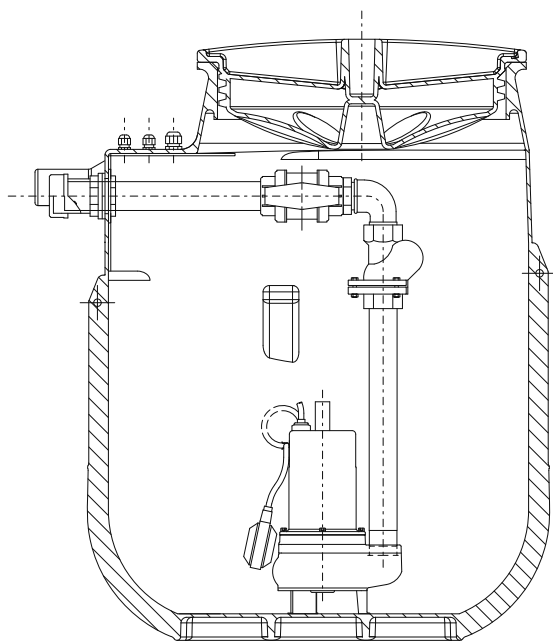
### Dimension drawing Wilo-DrainLift WS 40 Basic

Dimension drawing freely selectable inlet areas

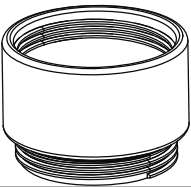
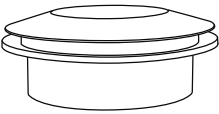
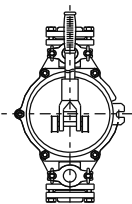
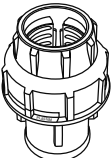
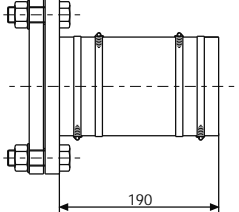
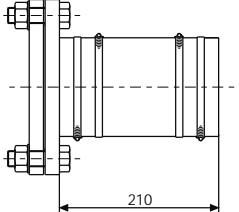


Version example Wilo-DrainLift WS 40 Basic

e.g.: WS 40 E/TC 40...BV



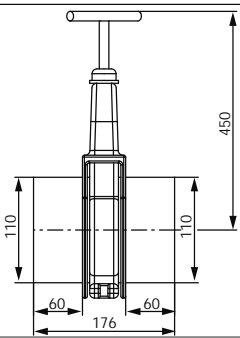
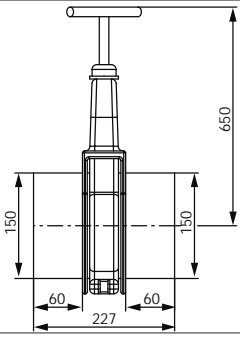
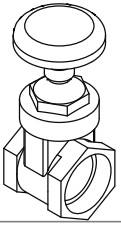
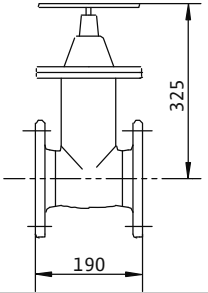
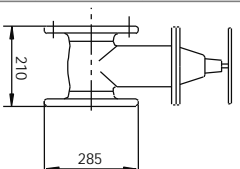
### Mechanical accessories Wilo-DrainLift WS 40 Basic

		Description	Art no.
Sump extension WS 40/50		Made of PE, Ø 500 x 300, for screw connection, for sumps WS40/50, including gasket and mounting accessories, maximum of 1 extension possible per sump.	2525190
Inlet seal set DN 100		Gasket made out of NBR, for Ø 110 mm pipe and Ø 124 mm keyhole saw for the freely selectable inlet	2525179
Inlet seal set DN 150		Gasket made of NBR for Ø 160 pipe and keyhole saw (Ø175 mm) for the freely selectable inlet	2515145
Diaphragm hand pump		For draining a system tank or a pump sump, connection on both sides female thread Rp 1½ for DN 40 connection	2060166
Clamp bolting		Made of PE, with female thread (IG), for connection to a PE discharge pipeline outside of the sump 2" (IG) on 63 mm pipe diameter	2505046
Flange piece		Made of PUR, with hose DN 112 x 180 mm, hose clips and mounting accessories for DN 100 connection	2511597
		Made of PUR, with hose DN 160 x 180 mm, hose clips and mounting accessories for DN 150 connection	2511598

# Wastewater collection and transport

## Pumps stations

### Mechanical accessories Wilo-DrainLift WS 40 Basic

		Description	Art no.
Gate valve		Made out of PVC with solid pipe ends DN 100, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529808
		Made of PVC with solid pipe ends DN 150, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529809
		Made of red brass, coupling sleeve slider with Rp 1½ female thread for a DN 40 connection	2525187
		Made of red brass, coupling sleeve slider with Rp 2 female thread for a DN 50 connection	2525188
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 100	2017163
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 150	2017164

### Series description Wilo-DrainLift WS 40-50



#### Design

Synthetic pumps station

#### Type key

Example: **Wilo-DrainLift WS 40E/MTS 40/...**

**WS** Synthetic pumps station

**40** Pressure outlet of the system

**E** E = single-pump system  
D = double-pump system

**MTS 40/...** Pumps that can be used MTS 40/21...27  
With WS 50 for pumps TP 50, TP 65.

#### Application

Wilo-DrainLift WS 40-50 is an automatically operating sewage lifting unit in accordance with EN 12050 for backup-free drainage of sewage that either contains faeces or contains no faeces (depending on the type) and that originates from building discharge points below the backflow level.

The system can be installed in buildings (also as a macerator lifting unit with MTS pump) as well as outside of buildings in the same way as a plastic sump in the ground. The system is ideally suited for applications that involve seasonal wastewater (such as at camping sites, weekend homes, etc.), for use in regions where the earth does not freeze to very deep levels or also for use with pressure drainage.

When the system is used as a macerator lifting unit in a building, small pipeline diameters DN 40 and larger can be used on the pressure side in conformity with the relevant standard (in accordance with DIN EN 12050-1). This enables flexible and low-cost overall installation.

#### Applicable pumps

##### TP 50

For severely contaminated fluids; 44 mm free ball passage, detachable connection cable.

##### TP 65

For severely contaminated fluids; 44 mm free ball passage, detachable connection cable.

##### MTS 40/21...27

For severely contaminated fluids and faeces. Standard-equipped explosion protection (only 3-400 V), detachable connection cable. With a spherical macerator that is non-susceptible to clogging, with an internal rotating blade.

#### Special features/product advantages

- Freely selectable inlets
- Flexible use: As lifting unit inside buildings or as pumps station outside buildings.
- Large tank volume (255/400 l)
- Flexible installation due to optional sump length extension
- Easy installation and maintenance of pumps through the use of surface coupling made of corrosion-resistant PUR
- Also with Wilo-Drain MTS 40/21...27 macerator pump

#### Equipment/function

Pipework in 1.4404, without pump and switchgear, with PUR surface coupling, non-return ball valve, slide valve and a holding device for level sensor.

#### Description/design

- For supply line in DN 100/DN 150
- Ventilation pipe connection in DN 70
- Maximum pressure in the pressure pipe 6 bar.
- Synthetic pumps station made of recyclable PE
- Maximum upward pressure reliability and inherent stability due to finning
- Inlets freely selectable onsite.
- Due to the static properties of the tank, the systems can even be used in concrete floors as concealed floor lifting unit, e.g. for industrial sewage.
- Versions: WS...E: single-pump system; WS...D: Double-pump system

In the case of double-pump systems, the pressure line union must be established onsite.

#### Scope of delivery

- Tank (for single or double pump system)
- Built-in stainless steel pipework
- Gate valve in red bronze
- Surface coupling made of corrosion-free plastic (PUR) with built-in non-return valve
- Cover with seal (can be walked on, supporting a weight up to 200 kg)
- Keyhole saw Ø 124 mm, inlet seal DN 100 (for pipe Ø 110 mm)
- 1 PVC hose section Ø 50 mm with clamps for connection of a diaphragm hand pump
- Fixation material for floor fixation
- Installation and operating instructions

# Wastewater collection and transport

## Pumps stations

### Series description Wilo-DrainLift WS 40-50

Pump, switchgear (DrainControl PL) and level sensor can be freely selected from the accessories.

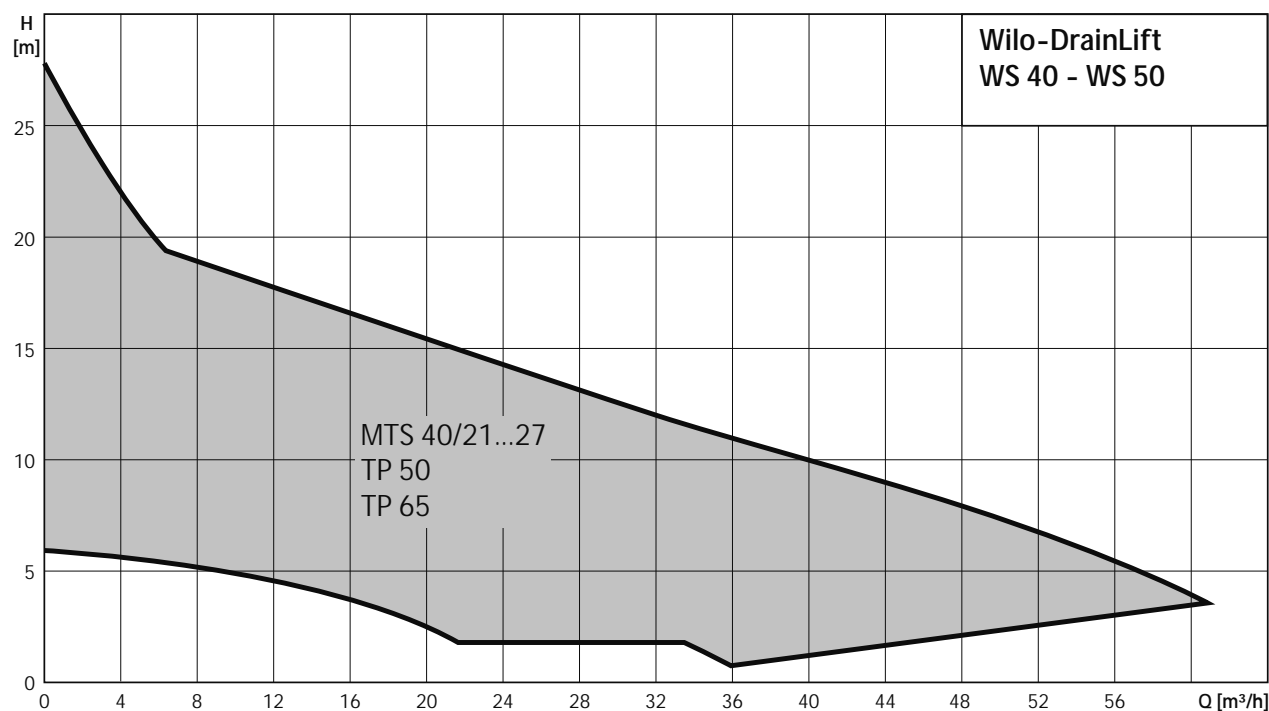
Recommendations for electrical accessories are described in the "Wilo-Drain electrical accessories" chapter.

**Note: Pump is not included in the scope of delivery!**

### Pump curves, ordering information Wilo-DrainLift WS 40-50

#### Pump curves Wilo-DrainLift WS 40/WS 50

Duty chart of usable pump types, Wilo-Drain (50 Hz)



For individual pump curves, see the technical data for the selected pump.

According to EN 12056-4 a flow rate (in the pressure pipe) between 0.7 and 2.3 m/s is to be maintained.

#### Information for order placements

Wilo-DrainLift ...	For utilisation of pump(s)		Art no.
WS 40 E/MTS 40	MTS 40/21 ...27	K	2525164
WS 40 D/MTS 40	MTS 40/21 ...27	K	2525165
WS 50 E	TP 50, TP 65	K	2525160
WS 50 D	TP 50, TP 65	K	2525161

= ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Wastewater collection and transport

## Pumps stations

### Technical data Wilo-DrainLift WS 40-50

	WS 40 E/MTS 40	WS 40 D/MTS 40	WS 50 E	WS 50 D
Gross volume <i>V</i> /l	255	255	400	400
Inlet connection	DN 150/DN 100	DN 150/DN 100	DN 150/DN 100	DN 150/DN 100
Max. permissible pressure in the pressure pipe <i>p</i> /bar	6	6	6	6
Pressure connection	DN 40, R 1½	DN 40, R 1½	DN 50, R 2	DN 50, R 2
Bleeding	DN 70	DN 70	DN 70	DN 70
Weight approx. <i>m</i> /kg	43	63	46	63

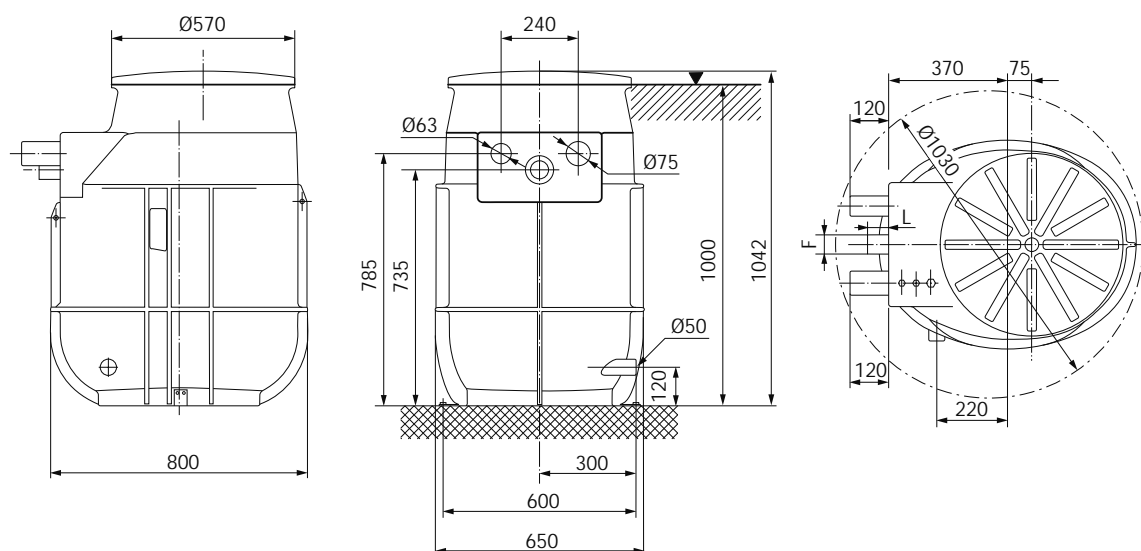
### Dimensions

Wilo-DrainLift ...	Installation depth below ground surface level up to inlet floor without extension	Installation depth below ground surface level up to inlet floor with extension	Dimensions	
			<i>L</i>	<i>F</i>
			mm	
WS 40 E/MTS 40	510...540	810...840	95	DN 40, R 1½
WS 40 D/MTS 40	510...540	810...840	100	DN 40, R 1½
WS 50 E	510...540	810...840	65	DN 50, R 2
WS 50 D	510...540	810...840	75	DN 50, R 2

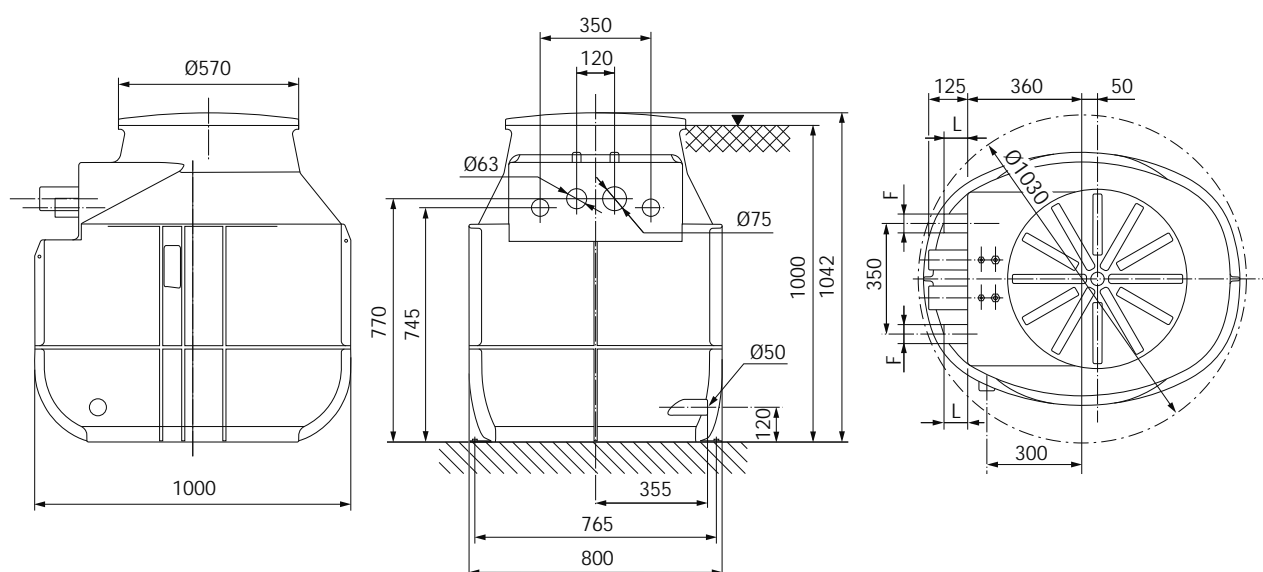


## Dimension drawing Wilo-DrainLift WS 40-50

### Dimension drawing Wilo-DrainLift WS 40 E/WS 50 E



### Dimension drawing Wilo-DrainLift WS 40 D/WS 50 D

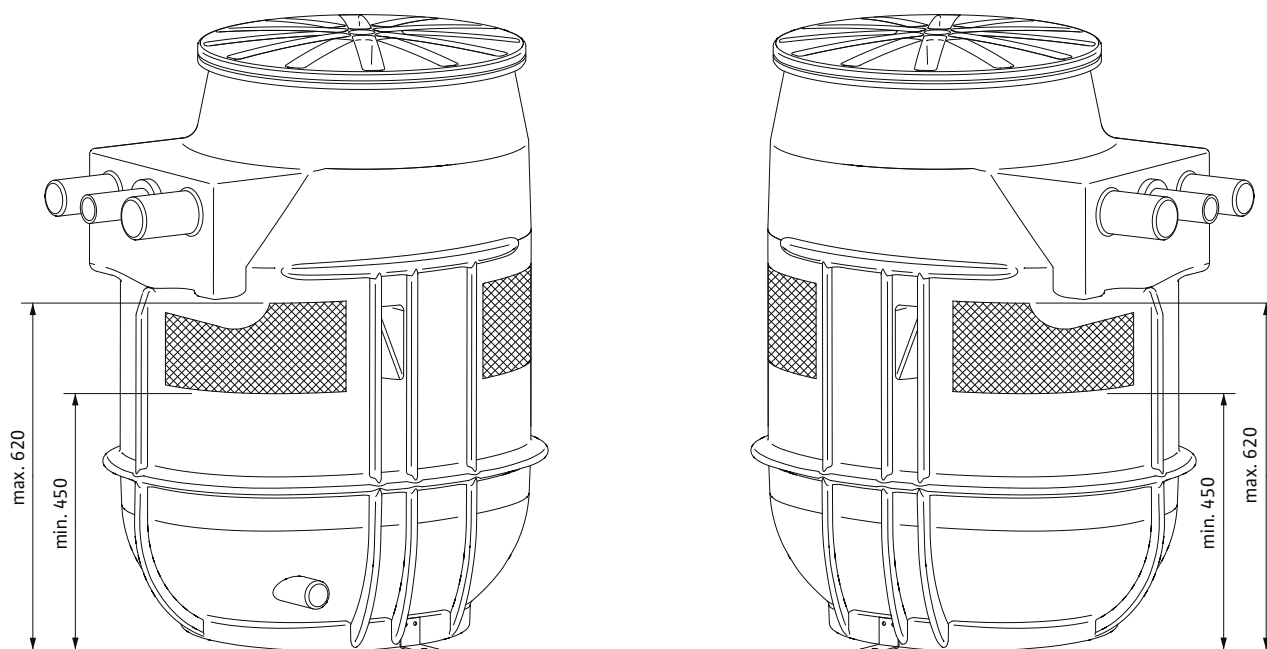


# Wastewater collection and transport

## Pumps stations

### Dimension drawing Wilo-DrainLift WS 40-50

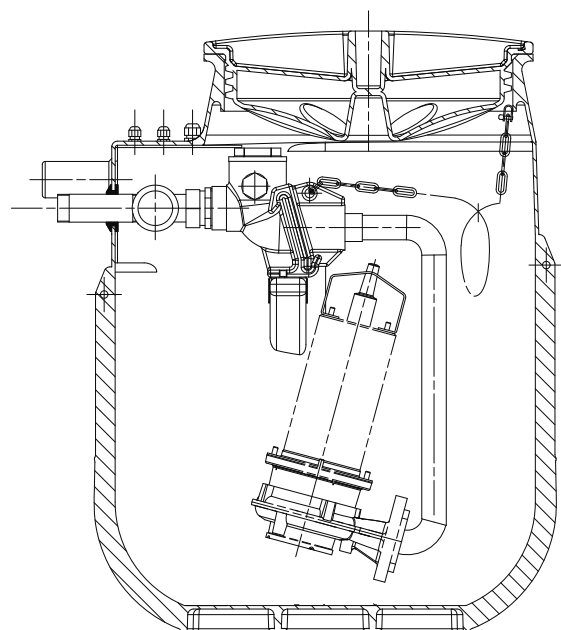
Dimension drawing freely selectable inlet areas



### Installation example for Wilo-DrainLift WS 40-50

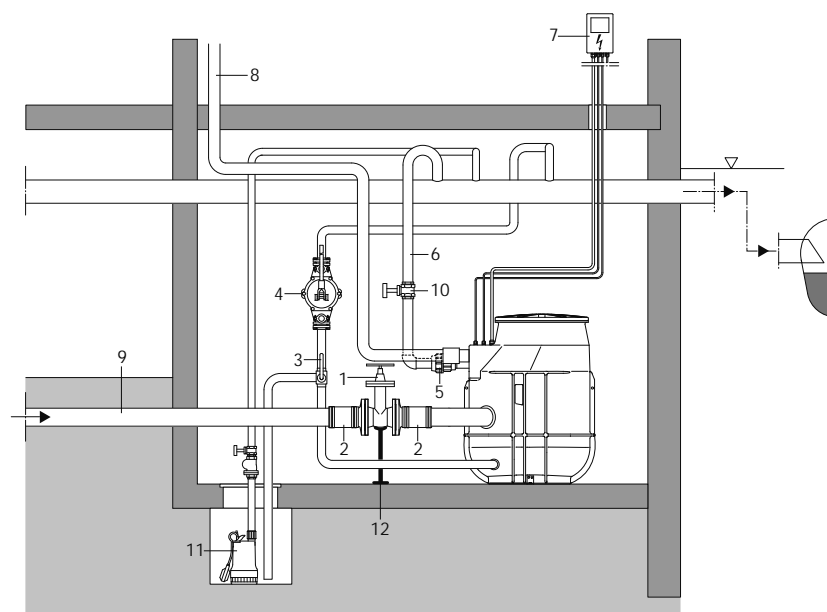
Version example Wilo-DrainLift WS 40

e.g.: WS 40 E/MTS 40/...



### Installation drawing Wilo-DrainLift WS 40

#### Floor-mounted installation



- ▽ Backflow level (usually street level)
- 1 Gate valve DN 100 (accessory)
- 2 Flange piece DN 100 (accessory)
- 3 3-way cock (accessory)
- 4 Diaphragm hand pump (accessory)
- 5 Clamp bolting (accessory)
- 6 Pressure pipe to the main collection line.
- 7 Wilo-Drain switchgear (see elec. accessories)
- 8 Ventilation (connection DN 70)
- 9 Inlet (connection DN 100)
- 10 Gate valve (accessory)
- 11 Drainage pump (e.g. Twister)
- 12 Valve support for relieving weight (recommended)

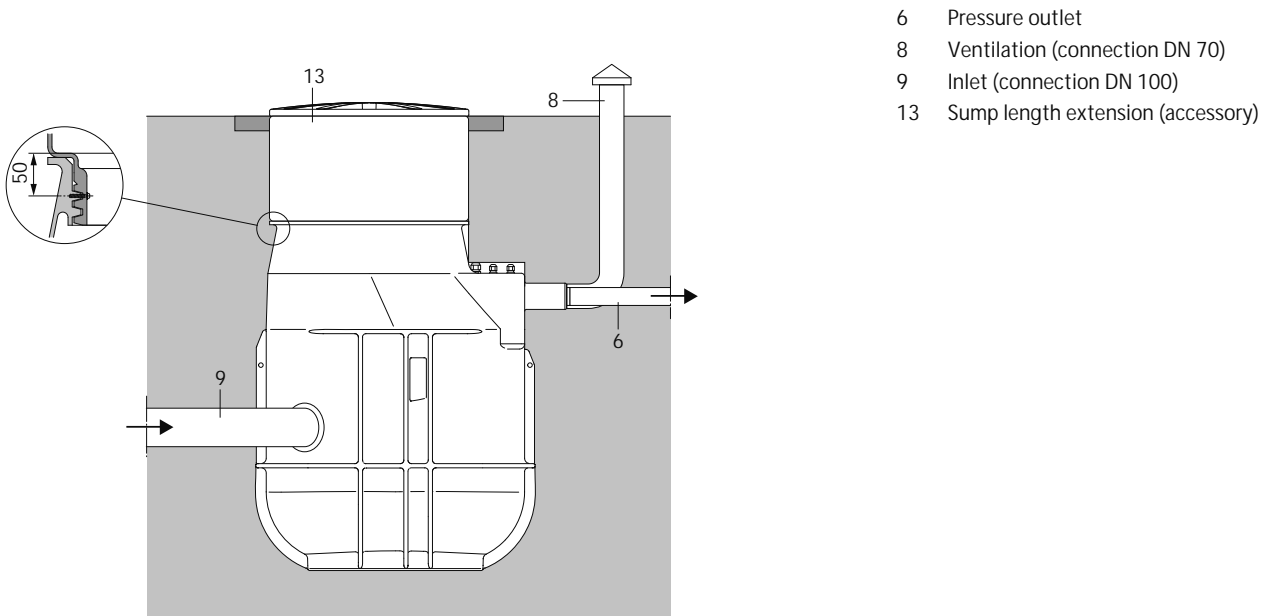
# Wastewater collection and transport

## Pumps stations

### Installation example for Wilo-DrainLift WS 40-50

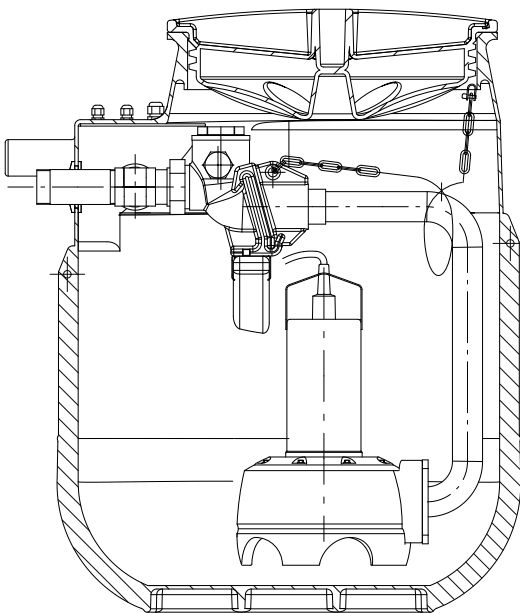
#### Installation drawing Wilo-DrainLift WS 40

##### Concealed floor installation

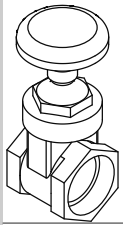
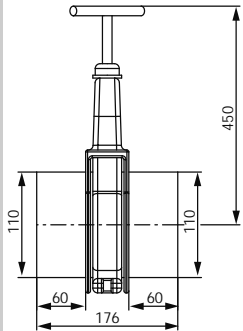
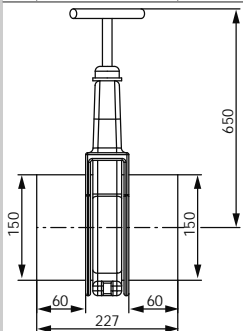
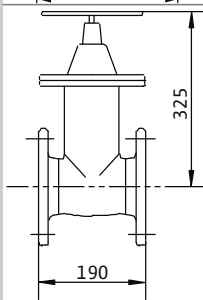
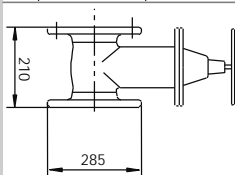
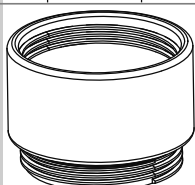


#### Version example Wilo-DrainLift WS 50

e.g.: WS 50 E/TP 65...



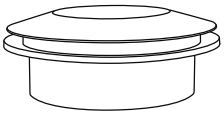
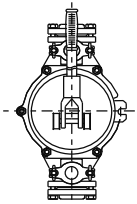
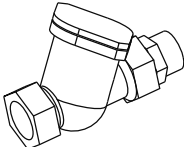
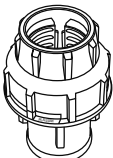
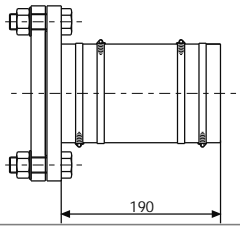
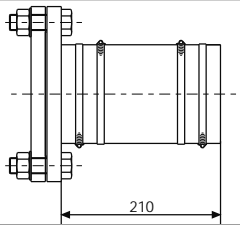
### Mechanical accessories Wilo-DrainLift WS 40-50

		Description	Art no.
Gate valve		Made of red brass, coupling sleeve slider with Rp 1½ female thread for a DN 40 connection	2525187
		Made of red brass, coupling sleeve slider with Rp 2 female thread for a DN 50 connection	2525188
		Made out of PVC with solid pipe ends DN 100, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529808
		Made of PVC with solid pipe ends DN 150, fluid temperature up to max. 60°C, pressure-tight up to 0.5 bar, for commercially available HT/KG pipe connections.	2529809
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 100	2017163
		Made of EN-GJL-250, incl. 1 set of installation accessories, PN 10/16 flanges in accordance with DIN 2501, DN 150	2017164
Sump extension WS 40/50		Made of PE, Ø 500 x 300, for screw connection, for sumps WS40/50, including gasket and mounting accessories, maximum of 1 extension possible per sump.	2525190

# Wastewater collection and transport

## Pumps stations

### Mechanical accessories Wilo-DrainLift WS 40-50

		Description	Art no.
Inlet seal set DN 100		Gasket made out of NBR, for Ø 110 mm pipe and Ø 124 mm keyhole saw for the freely selectable inlet	2525179
Inlet seal set DN 150		Gasket made of NBR for Ø 160 pipe and keyhole saw (Ø175 mm) for the freely selectable inlet	2515145
Diaphragm hand pump		For draining a system tank or a pump sump, connection on both sides female thread Rp 1½ for DN 40 connection	2060166
Vacuum interrupter		from EN-GJL - 250, non-return ball valve with female thread Rp 1 and double nipple with male thread R 1, for retrofitting when underpressures arise at the fixed coupling piece for the onsite pressure pipe.	2525180
Clamp bolting		Made of PE, with female thread (IG), for connection to a PE discharge pipeline outside of the sump 1½" (IG) on 50 mm pipe diameter	2505044
		Made of PE, with female thread (IG), for connection to a PE discharge pipeline outside of the sump 1½" (IG) on 63 mm pipe diameter	2505045
		Made of PE, with female thread (IG), for connection to a PE discharge pipeline outside of the sump 2" (IG) on 63 mm pipe diameter	2505046
		Made of PE, with female thread (IG), for connection to a PE discharge pipeline outside of the sump 2" (IG) on 75 mm pipe diameter	2525181
Flange piece		Made of PUR, with hose DN 112 x 180 mm, hose clips and mounting accessories for DN 100 connection	2511597
		Made of PUR, with hose DN 160 x 180 mm, hose clips and mounting accessories for DN 150 connection	2511598

### Series description Wilo-DrainLift WS 625



#### Design

Synthetic pumps station

#### Type key

Example:	<b>Wilo-DrainLift WS 625 E / 1800 MTS 40</b>
<b>WS</b>	Synthetic pumping station
<b>625</b>	Inside diameter of sump [mm]
<b>E</b>	Single pump sump
<b>1800</b>	Sump height [mm]
<b>MTS 40/...</b>	Selected pump type MTS 40/21...27

#### Application

The Wilo-DrainLift WS 625 is a single pump sump for pumping wastewater and sewage in building services out of rooms and from areas underneath the backflow level (EN 752). It is suitable as a pumps station for pressure drainage and as a pumping station for pressurised drainage. The WS 625 is installed in the ground outside the building. A time-saving, easy-to-install, low-cost solution for all planners and building contractors.

#### Applicable pump types

##### TMW 32/11

Slightly contaminated fluids (free of faeces), 10 mm free ball passage.

##### STS 40 and TC 40

For severely contaminated fluids (free of faeces);

STS 40: Free ball passage 40 mm

TC 40: Free ball passage 40 mm

##### MTS 40/21...27

For severely contaminated fluids and faeces. Standard-equipped explosion protection (only 3–400 V), detachable connection cable. With a spherical macerator that is non-susceptible to clogging, with an internal rotating blade.

#### Special features/product advantages

- Small sump diameter (625 mm)
- Flexible use due to different installation heights
- Inlet connection is included with DN 100 as a standard
- Complete due to integrated fittings and seals
- Can be walked on or driven over, depending on the cover (accessories)
- Also with Wilo-Drain MTS 40/21...27 macerator pump

#### Description/design

The Wilo-DrainLift WS 625 is available in 4 lengths: 1200, 1500, 1800 and 2100 mm. The sump can both be equipped with a standard cover which can be walked on, a class A cover (can be walked on) or a class B/D cover (can be driven over).

- Maximum pressure in the pressure pipe 6 bar in conjunction with MTS 40, other pumps 4 bar
- Synthetic pumps station made of recyclable PE
- Maximum upward pressure reliability and inherent stability by means of finning up to a ground water level above the entire sump height (upper edge of site)

#### Scope of delivery

- PE sump with internal pipework including coupling sleeve slider 1¼", non-return valve and matching discharge pipe
- Seal mounted for inlet DN 100
- Seal mounted for ventilation/electrical connection (DN 100).
- Seal mounted for pressure pipeline (DN 40 / Ø50).
- Floor supporting foot included with MTS 40
- Installation and operating instructions.

**Note: Pump is not included in the scope of delivery!**

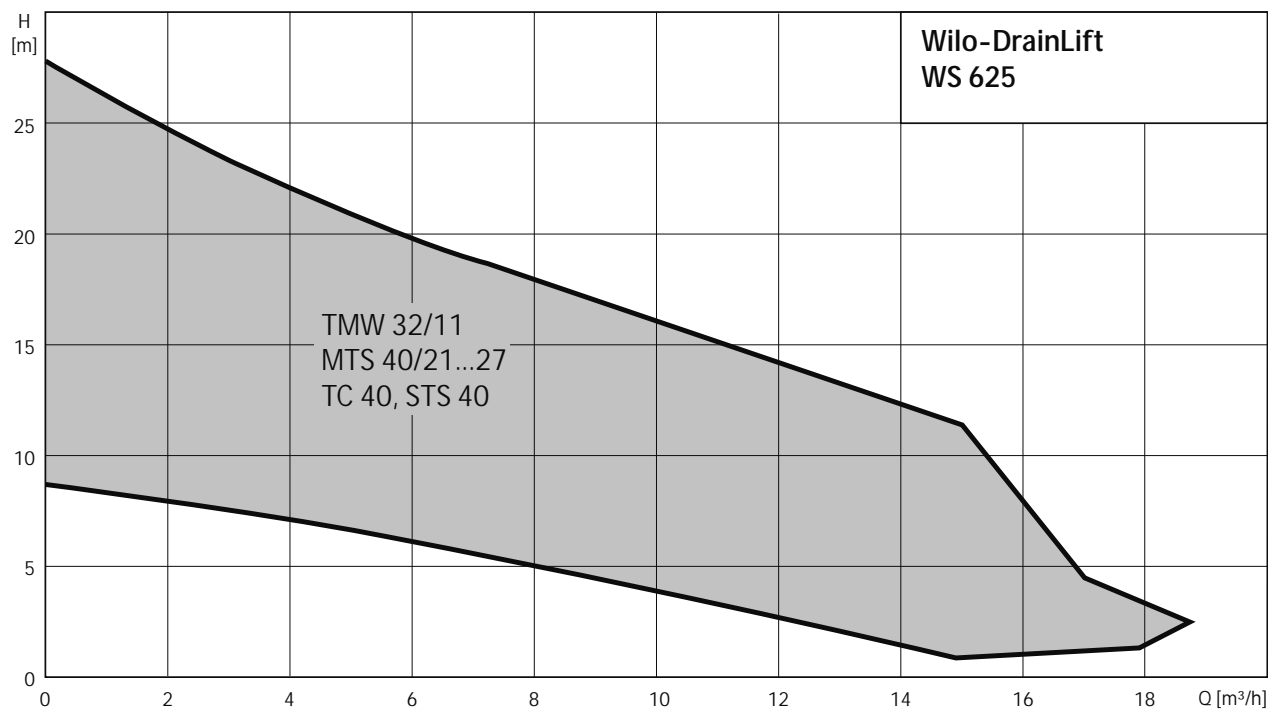
# Wastewater collection and transport

## Pumps stations

### Pump curves, ordering information Wilo-DrainLift WS 625

#### Pump curves Wilo-DrainLift WS 625


Duty chart of usable pump types, Wilo-Drain (50 Hz)



For individual pump curves, see the technical data for the selected pump.

According to EN 12056-4 a flow rate (in the pressure pipe) between 0.7 and 2.3 m/s is to be maintained.

#### Information for order placements

Wilo-DrainLift ...	For utilisation of pump(s)		Art no.
WS 625 E/1200	TMW 32/11	K	2097141
WS 625 E/1200	TC 40/STS 40	K	2097145
WS 625 E/1200	MTS 40/21...27	K	2097149
WS 625 E/1500	TMW 32/11	K	2097142
WS 625 E/1500	TC 40/STS 40	K	2097146
WS 625 E/1500	MTS 40/21...27	K	2097150
WS 625 E/1800	TMW 32/11	K	2097143
WS 625 E/1800	TC 40/STS 40	K	2097147
WS 625 E/1800	MTS 40/21...27	K	2097151
WS 625 E/2100	TMW 32/11	K	2097144
WS 625 E/2100	TC 40/STS 40	K	2097148
WS 625 E/2100	MTS 40/21...27	K	2097152

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request



### Technical data Wilo-DrainLift WS 625

	WS 625 E/1200			WS 625 E/1500		
	TMW 32/11	TC 40/STS 40	MTS 40/21...27	TMW 32/11	TC 40/STS 40	MTS 40/21...27
Gross volume <i>V</i> /l	368	368	368	460	460	460
Inlet connection	DN 100	DN 100	DN 100	DN 100	DN 100	DN 100
Max. permissible pressure in the pressure pipe <i>p</i> / bar	4	4	6	4	4	6
Pressure connection	Ø50	Ø50	Ø50	Ø50	Ø50	Ø50
Bleeding	DN 100	DN 100	DN 100	DN 100	DN 100	DN 100
Weight approx. <i>m</i> / kg	30	31	33	38	38	40

### Technical data

	WS 625 E/1800			WS 625 E/2100		
	TMW 32/11	TC 40/STS 40	MTS 40/21...27	TMW 32/11	TC 40/STS 40	MTS 40/21...27
Gross volume <i>V</i> /l	552	552	552	644	644	644
Inlet connection	DN 100	DN 100	DN 100	DN 100	DN 100	DN 100
Max. permissible pressure in the pressure pipe <i>p</i> / bar	4	4	6	4	4	6
Pressure connection	Ø50	Ø50	Ø50	Ø50	Ø50	Ø50
Bleeding	DN 100	DN 100	DN 100	DN 100	DN 100	DN 100
Weight approx. <i>m</i> / kg	45	46	48	54	54	56

### Dimensions

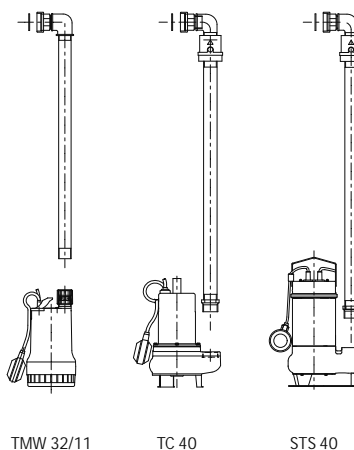
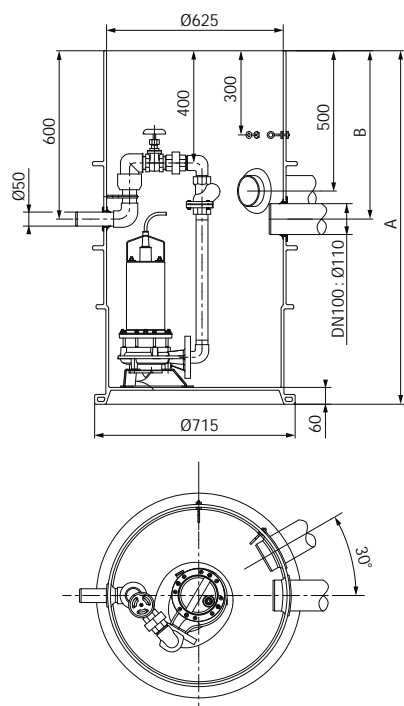
Wilo-DrainLift ...	Installation depth below ground surface level up to inlet floor without extension	Installation depth below ground surface level up to inlet floor with extension	Dimensions	
			<i>A</i>	<i>B</i>
			mm	
WS 625 E/1200	655	—	1260	600
WS 625 E/1500	955	—	1560	900
WS 625 E/1800	1255	—	1860	1200
WS 625 E/2100	1555	—	2160	1500

# Wastewater collection and transport

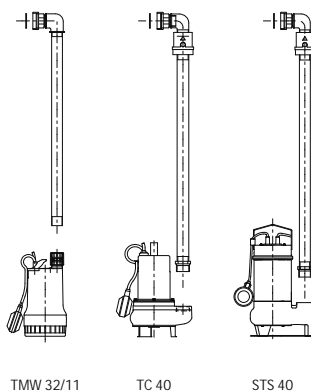
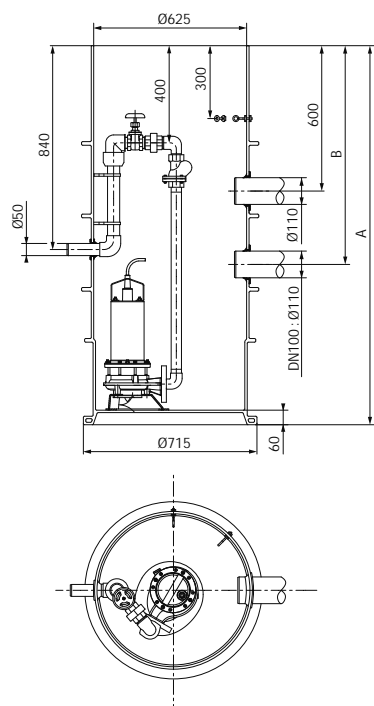
## Pumps stations

### Dimension drawing Wilo-DrainLift WS 625

#### Dimension drawing Wilo-DrainLift WS 625 E/1200



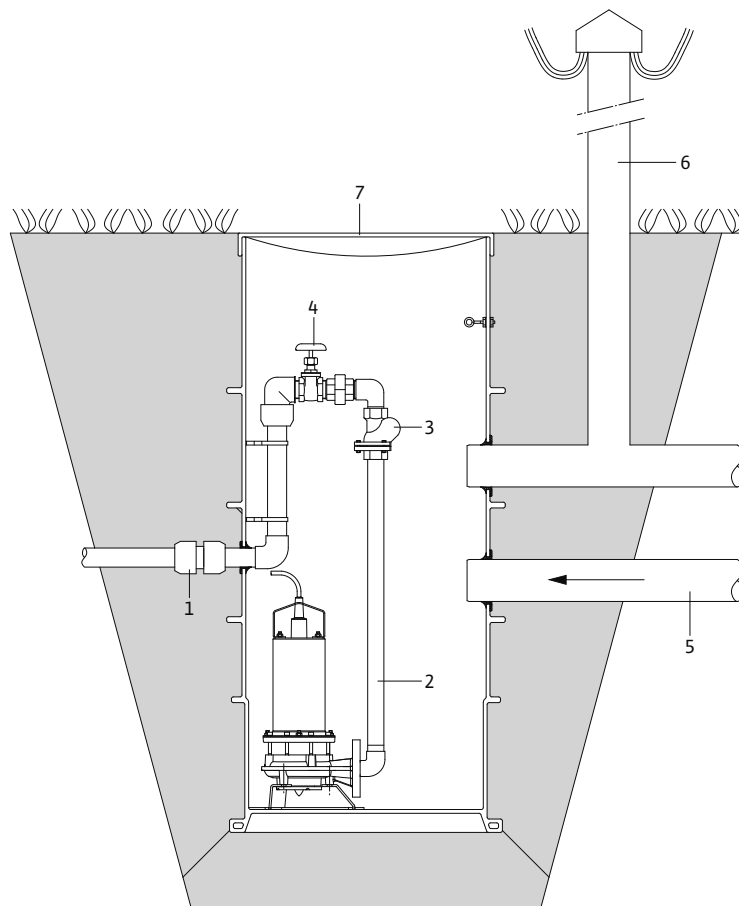
#### Dimension drawing Wilo-DrainLift WS 625 E/1500...2100



### Installation example Wilo-DrainLift WS 625

#### Installation drawing Wilo-DrainLift WS 625

##### Concealed floor installation

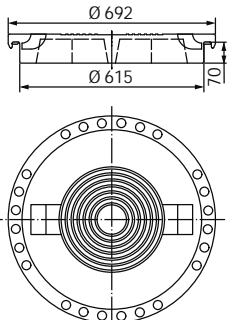
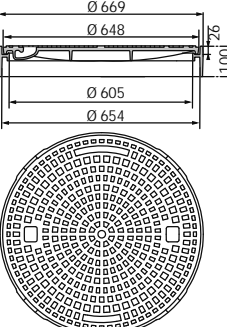
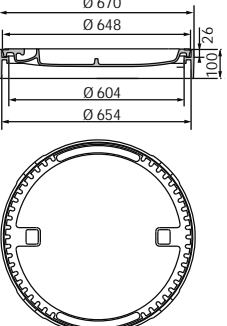
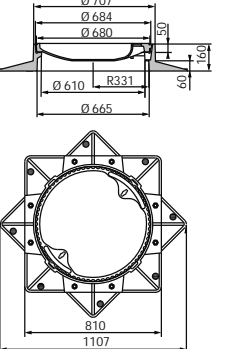
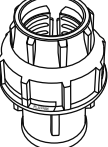


- 1 Clamp bolting (accessory)
- 2 Pressure pipe (including non-return valve, item 3 (integrated in pump with TMW 32/11))
- 3 Non-return valve R 1¼
- 4 Gate valve 1¼" (scope of delivery)
- 5 Inlet (DN 100)
- 6 Ventilation DN 100
- 7 Sump cover (accessory)

# Wastewater collection and transport

## Pumps stations

### Mechanical accessories Wilo-DrainLift WS 625

		Description	Art no.
Pump cover WS625 standard		Made of PE, Ø 692 x 30 mm, slip-resistant profile on the upper side of the cover, with screws - lock, can be walked on	2525207
Pump cover WS625 Class A		Made of cast iron, cover with overlay for PE sumps with inside Ø 625, can be walked on, Class A, EN 124	2525318
Pump cover WS625 Class B		Made of cast iron with concrete (BEGU), cover with overlay for PE sumps with inside Ø 625, can be driven over, Class B, EN 124	2525319
Pump cover WS625 Class D		Made of cast iron with concrete (BEGU), cover with self-supporting overlay for PE sumps with inside Ø 625, can be driven over, Class D, EN 124	2525320
Clamp bolting		Made of PP, for connection to a PE discharge pipeline outside the sump on 50 x 50 mm pipe diameter	2525183
		Made of PP, for connection to a PE discharge pipeline outside the sump on 50 x 63 mm pipe diameter	2525184

### Series description Wilo-DrainLift WS 830



#### Design

Synthetic pumps station

#### Type key

Example:	<b>Wilo-DrainLift WS 830 E/1800 MTS 40/21...27</b>
<b>WS</b>	Synthetic pumps station
<b>830</b>	Sump diameter in mm
<b>E</b>	Single pump sump
<b>1800</b>	Installation depth of the sump in mm
<b>MTS ...</b>	Pump types that can be used e.g. MTS 40/21...27

#### Application

The Wilo-DrainLift WS 830 is a single pump sump for pumping wastewater and sewage in building services out of rooms and from areas underneath the backflow level (EN 752). Suitable as a connection-ready pumps station for pressure drainage. The WS 830 is installed in the ground outside the building. A time-saving, easy-to-install, low-cost solution for all planners and building contractors.

#### Applicable pump types

##### MTC 32

Sewage pump with macerator, available as three-phase version with and without explosion protection. For greater delivery heads of up to 50 m. Compliant with DIN EN 12050-1 and EN 12050-1.

##### MTC 40

Sewage pump with macerator, for low delivery heads, in three-phase or single-phase current versions, without explosion protection. Single-phase version with attached float switch and capacitor box. Compliant with EN 12050-1.

##### MTS 40

For severely contaminated fluids and faeces. Standard explosion protection (only 3~400 V), detachable connection cable. With patented macerator. Compliant with DIN EN 12050-1 and EN 12050-1.

- Internal rotating blade
- Spherically formed macerator
- Absolutely reliable

#### Special features/product advantages

- Monolithic sump in 2 installation depths: 1800 mm and 2300 mm
- Removable angle non-return ball valve on pump discharge pipe

- Upward pressure reliability with groundwater level up to ground surface level, without additional concrete
- Check valve can be operated from the top
- High installation guide for easier installing of the pump pipe in the case of high water levels in the sump

#### Equipment/function

- Pumps station with corrosion-resistant pipework in 1.4571
- With PP surface coupling, non-return valve, check valve in 1.4571 and a mount for a level sensor

#### Description/design

- Angle non-return ball valve which can be removed with the pump discharge pipe
- Monolithic sump in two installation depths: 1800 and 2300 mm
- Maximum pressure in the pressure pipe: 6 bar
- Synthetic pumps station made of recyclable PE
- Upward pressure reliability with groundwater level up to ground surface level, without additional concrete
- Maximum stability due to moulded hemispherical shape of the sump floor
- Wilo surface coupling
- Pre-mounted inlet with gasket in DN 150
- 2 DN 100 connection pieces for ventilation and connection cable
- Deposit-free collecting space due to moulded hemispherical shape of the pump sump
- Mount in the cross member for attaching the dynamic pressure system or level probe
- Check valve can be operated from above using an operating rod
- Low remaining volume in the pump sump

#### Scope of delivery

- PE sump
- Surface coupling system including gaskets
- Angle non-return ball valve and check valve completely assembled
- Concrete cover which can be walked on with frame for class A15
- Installed DN 150 inlet seal
- Connection kit for the MTS 40/21...27 pumps
- Installation and operating instructions

**Note! Pump is not included in the scope of delivery!**

#### Accessories

- Choice of pump and switchgear as accessories.

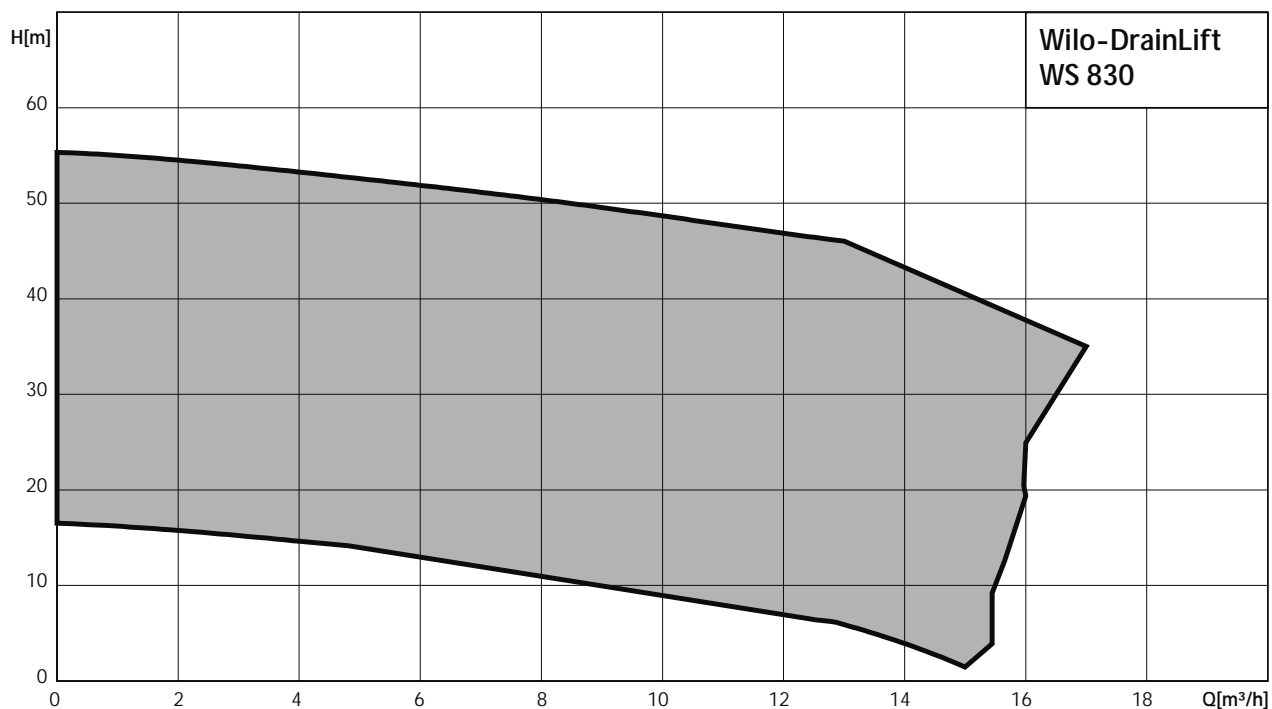
# Wastewater collection and transport

## Pumps stations

### Pump curves, ordering information Wilo-DrainLift WS 830


#### Pump curves Wilo DrainLift WS 830


Duty chart of usable pump types, Wilo-Drain (50 Hz)



For individual pump curves, see the technical data for the selected pump.

#### Information for order placements

Wilo-DrainLift ...	For utilisation of pump(s)		Art no.
WS 830 E/1800	MTC 32, MTC 40, MTS 40/21...27	K	2101161
WS 830 E/2300	MTC 32, MTC 40, MTS 40/21...27	K	2101162

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

### Technical data Wilo-DrainLift WS 830

	WS 830 E/1800	WS 830 E/2300
Gross volume l	929	1261
Inlet connection	DN 150	DN 150
Max. permissible pressure in the pressure pipe bar	6	6
Pressure connection	DN 40	DN 40
Bleeding	DN 100	DN 100
Weight approx. kg	83	104

### Dimensions

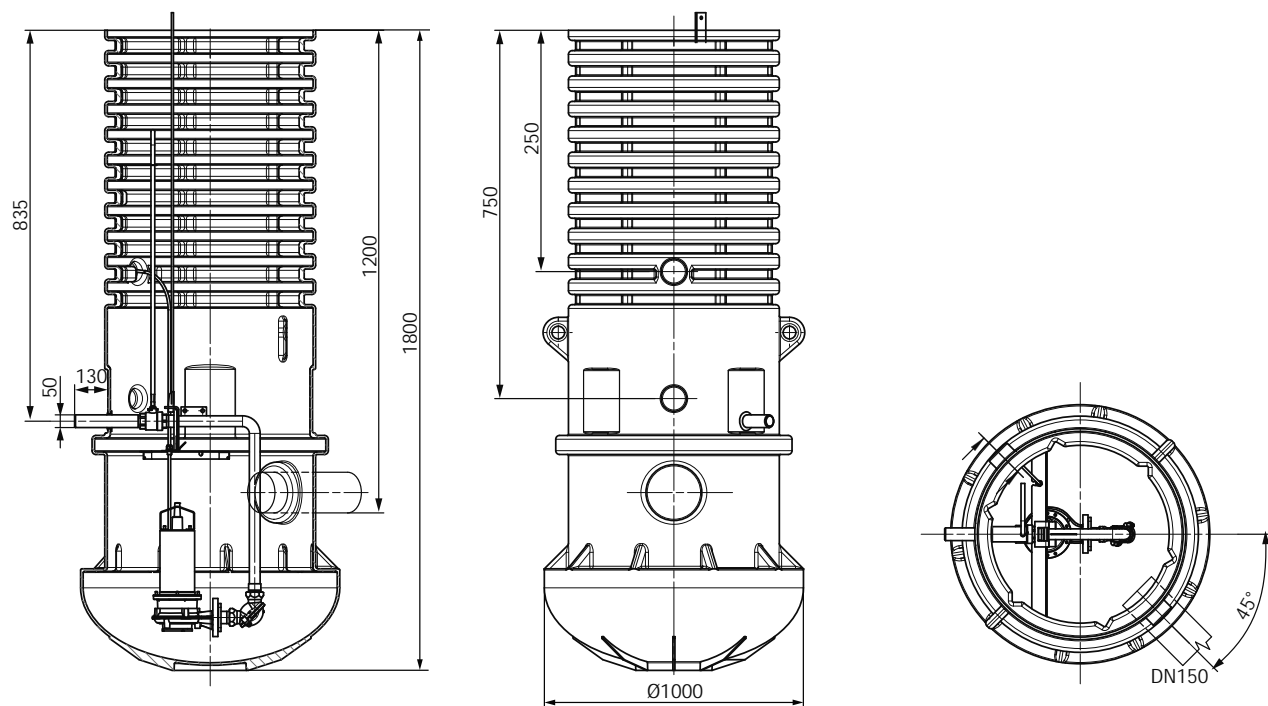
Wilo-DrainLift ...	Installation depth below ground surface level up to inlet floor without extension
	mm
WS 830 E/1800	1200
WS 830 E/2300	1700

# Wastewater collection and transport

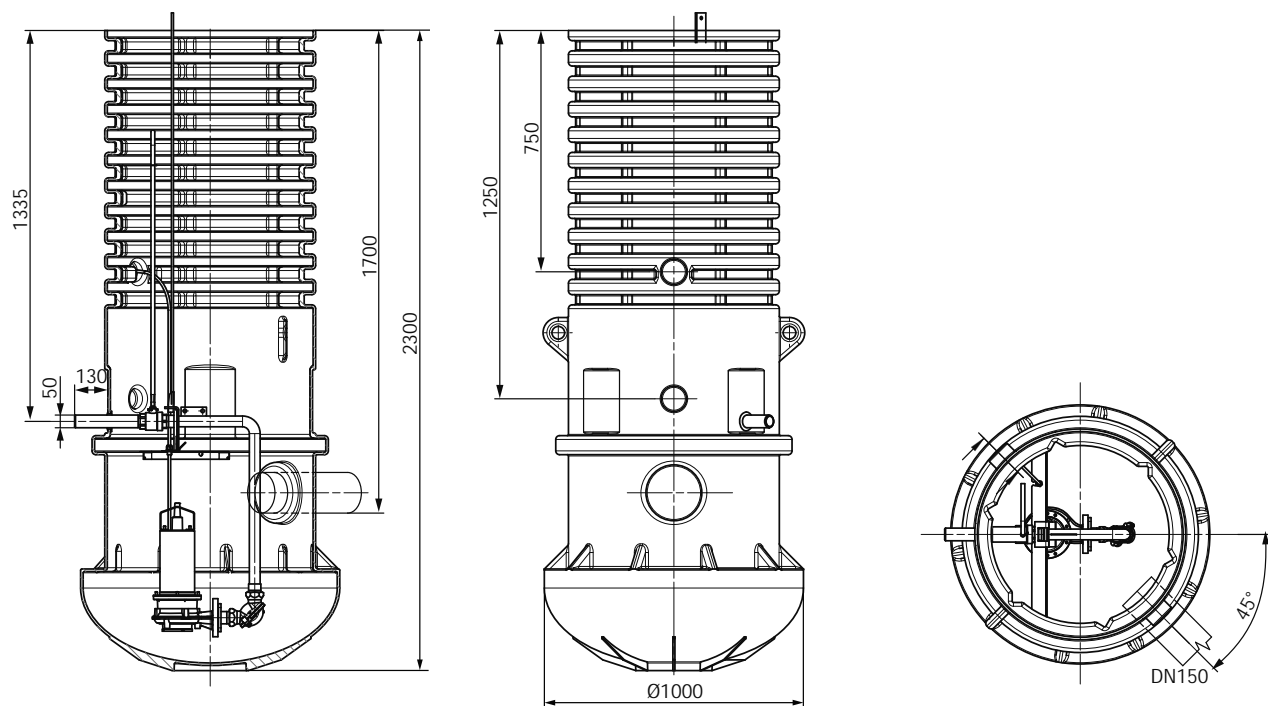
## Pumps stations

### Dimension drawing Wilo-DrainLift WS 830

#### Dimension drawing Wilo-DrainLift WS 830 E/1800



#### Dimension drawing Wilo-DrainLift WS 830 E/2300

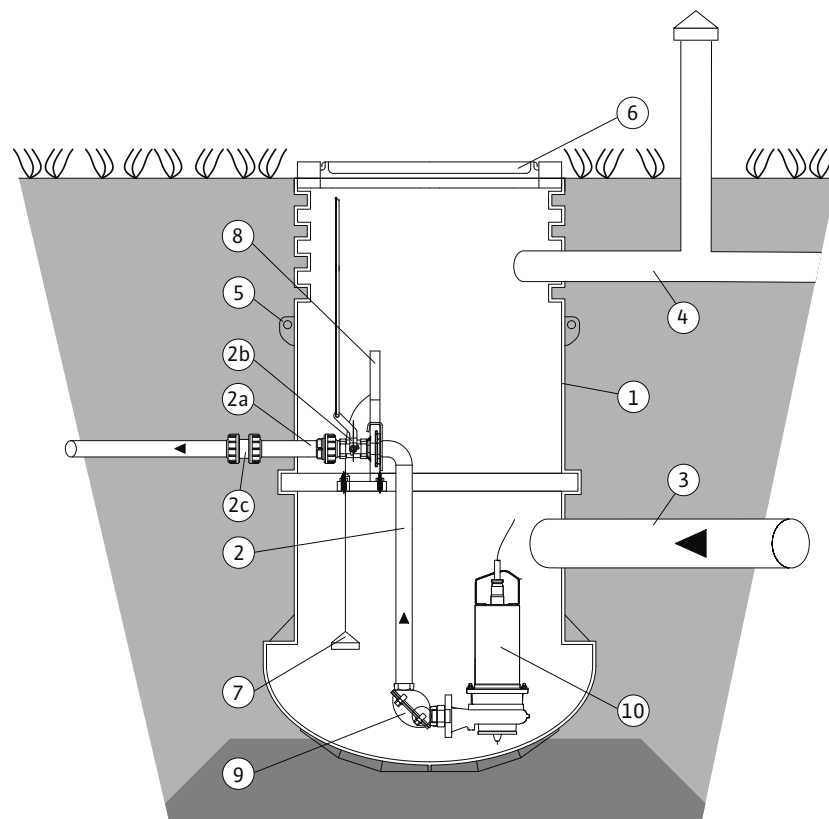




### Installation example Wilo-DrainLift WS 830

#### Installation drawing Wilo DrainLift WS 830

##### Concealed floor installation



- 1= PE-HD sump
- 2= internal pipework with non-return ball valve
- 2a = pressure outlet, PE-HD, Da = 50 mm
- 2b = ball valve
- 2c = threaded pipe union
- 3= inlet connection with gasket
- 4 = connection for ventilation/cable duct with gasket
- 5= transport lugs
- 6= pump cover
- 7= sensor
- 8= cross member
- 9= non-return ball valve
- 10= pump

# Wastewater collection and transport

## Pumps stations

### Series description Wilo-DrainLift WS 900/1100



#### Design

Synthetic pumps station

#### Type key

Example: **Wilo-DrainLift WS 900 E/ MTS 40**

**WS** Synthetic pumps station

**900** Sump diameter  
900 = 900 mm  
1100 = 1100 mm

**E** E = single pump  
D = double pump

**MTS 40** Selected pump type

#### Application

The Wilo-DrainLift WS 900/1100 is a single/double pump sump for pumping wastewater and sewage in building services out of rooms and from areas underneath the backflow level (EN 752). Suitable as a ready for connection pumps station for pressure drainage and as a pumping station for drainage dewatering. The WS 900/1100 is installed in the ground outside the building. A time-saving, easy-to-install, low-cost solution for all planners and building contractors.

#### Applicable pump types

##### TS 40

Slightly contaminated fluids (free of faeces), 10 mm free ball passage, detachable connection cable.

##### TP 50

For severely contaminated fluids (free of faeces); 44 mm free ball passage, detachable connection cable.

##### TP 65

For severely contaminated fluids (free of faeces); 44 mm free ball passage, detachable connection cable.

##### FIT and PRO V05, V06

For severely contaminated fluids (containing faeces or free of faeces), 50 or 65 mm free ball passage, detachable connection cable, vortex hydraulics non-susceptible to clogging.

##### TP 80

For severely contaminated fluids and faeces; 80 mm free ball passage. Standard explosion protection, detachable connection cable (only as single-pump station). Compliant with DIN EN 12050-1.

##### MTC 32

Sewage pump with macerator, available as three-phase version with and without explosion protection. For greater delivery heads of up to 50 m. Compliant with DIN EN 12050-1 and EN 12050-1.

##### MTC 40

Sewage pump with macerator, for low delivery heads, in three-phase or single-phase current versions, without explosion protection. Single-phase version with attached float switch and capacitor box. Compliant with EN 12050-1.

##### MTS 40

For severely contaminated fluids and faeces. Standard explosion protection (only 3~400 V), detachable connection cable. With patented macerator:

- Internal rotating blade
  - Spherically formed macerator
  - Absolutely reliable
- Compliant with DIN EN 12050-1 and EN 12050-1.

#### Special features/product advantages

- Deposit-free collection space
- Maximum strength due to hemispherically shaped sump floor
- 2/4 inlets can be selected onsite
- Pumps station ready for connection (without pump and switchgear)
- V4A stainless steel pipework
- Also with Wilo-Drain MTS 40/21...39 and MTC macerator pumps

#### Description/design

- Maximum traffic load 5 kN/m<sup>2</sup> (in accordance with DIN EN 124, group 1)
- Maximum pressure in the pressure pipe 6 bar
- Synthetic pumps station made of recyclable PE
- Maximum upward pressure reliability through the use of 2/4 (WS 900 = 2 pcs., WS 1100 = 4 pcs.) standard-equipped lateral fins (no concrete rings necessary)
- 2/4 inlets can be selected onsite
- Maximum strength thanks to moulded hemispherical shape of the sump floor, up to an immersion depth of 1.20 m in the ground water.
- Wilo surface coupling

### Series description Wilo-DrainLift WS 900/1100

- 2 DN 100 connection pieces for ventilation and connection cable
- Deposit-free collecting space due to moulded hemispherical shape of the pump sump
- Good accessibility of the level sensor due to installation with hinged supporting bar

#### Scope of delivery

- Pipework made of stainless steel, from pump pressure joints up to approx. 10 cm outside of the sump
- Surface coupling system including seals
- Non-return valve, gate valve completely mounted
- Flush connection G 1 ½
- Stainless steel chain including fastening hook
- Supporting bar for level monitoring (level sensor, float switch) including installation accessories
  - Double pumping stations are each supplied with twice the quantity of surface couplings and fittings.
- Connection material for two DN 150 KG inlet pipes
- Installation and operating instructions

**Note: Pump is not included in the scope of delivery!**

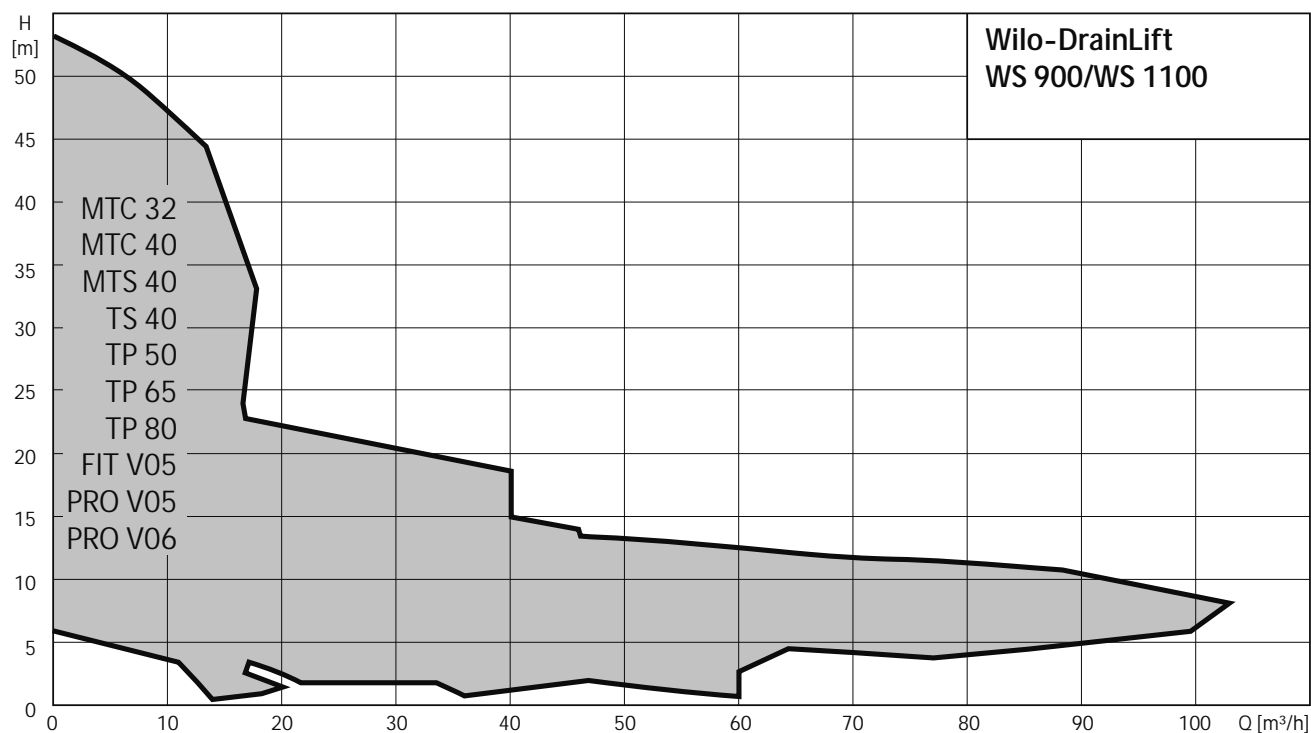
# Wastewater collection and transport

## Pumps stations

### Pump curves, ordering information Wilo-DrainLift WS 900/1100

#### Pump curves Wilo-DrainLift WS 900/WS 1100


Duty chart of usable pump types, Wilo-Drain (50 Hz)




For individual pump curves, see the technical data for the selected pump.

According to EN 12056-4 a flow rate (in the pressure pipe) between 0.7 and 2.3 m/s is to be maintained.

#### Information for order placements

Wilo-DrainLift ...		Art no.
WS 900 E/TS 40	L	2507739
WS 900 D/TS 40	L	2507740
WS 900 E/TP 50, FIT V05, PRO V05	L	2506435
WS 900 E/TP 65, PRO V06	L	2506436
WS 900 E/MTS 40-MTC	L	2531440
WS 1100 E/TP 50, FIT V05, PRO V05	L	2506432
WS 1100 D/TP 50, FIT V05, PRO V05	L	2506441
WS 1100 E/TP 65, PRO V06	L	2506433
WS 1100 D/TP 65, PRO V06	L	2506442
WS 1100 E/TP 80, PRO V06	L	2506434
WS 1100 E/MTS 40-MTC	L	2531441
WS 1100 D/MTS 40-MTC	L	2531442

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

### Technical data Wilo-DrainLift WS 900/1100

	WS 900 E/TS 40	WS 900 D/TS 40	WS 900 E/TP 50, FIT V05, PRO V05	WS 900 E/TP 65, PRO V06	WS 900 E/MTS 40-MTC
Gross volume <i>V</i> /l	900	900	900	900	880
Inlet connection	DN 150	DN 150	DN 150	DN 150	DN 150
Max. permissible pressure in the pressure pipe <i>p</i> /bar	6	6	6	6	6
Pressure connection	Rp 1½	Rp 1½	Rp 2	Rp 2½	Rp 1½
Bleeding	DN 100	DN 100	DN 100	DN 100	DN 100
Weight approx. <i>m</i> /kg	75	95	80	90	72

### Technical data

	WS 1100 E/TP 50, FIT V05, PRO V05	WS 1100 D/TP 50, FIT V05, PRO V05	WS 1100 E/TP 65, PRO V06	WS 1100 D/TP 65, PRO V06
Gross volume <i>V</i> /l	1240	1240	1240	1240
Inlet connection	DN 150	DN 150	DN 150	DN 150
Max. permissible pressure in the pressure pipe <i>p</i> /bar	6	6	6	6
Pressure connection	Rp 2	Rp 2	Rp 2½	Rp 2½
Bleeding	DN 100	DN 100	DN 100	DN 100
Weight approx. <i>m</i> /kg	105	130	115	145

### Technical data

	WS 1100 E/TP 80, PRO V06	WS 1100 E/MTS 40-MTC	WS 1100 D/MTS 40-MTC
Gross volume <i>V</i> /l	1240	1215	1220
Inlet connection	DN 150	DN 150	DN 150
Max. permissible pressure in the pressure pipe <i>p</i> /bar	6	6	6
Pressure connection	DN 80	Rp 1½	Rp 1½
Bleeding	DN 100	DN 100	DN 100
Weight approx. <i>m</i> /kg	170	94	110

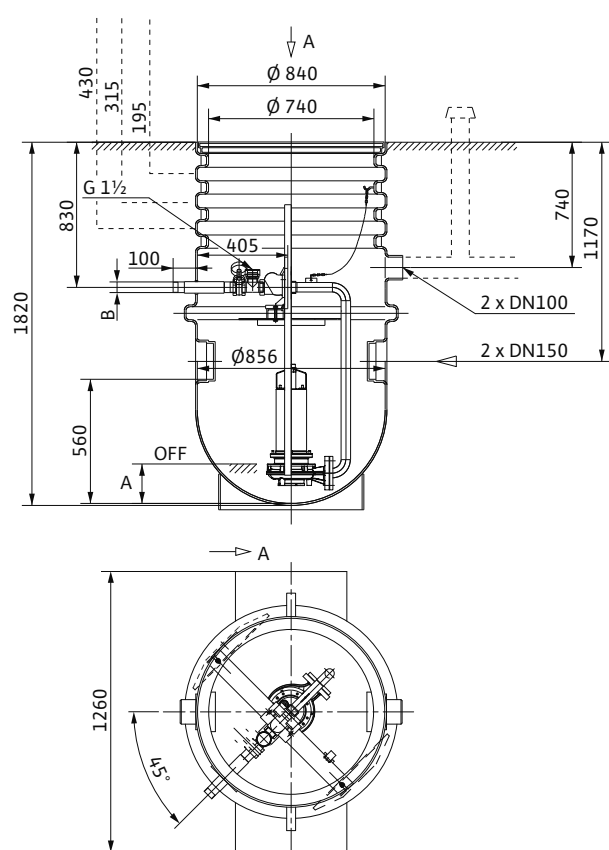
# Wastewater collection and transport

## Pumps stations

### Dimension drawing Wilo-DrainLift WS 900/1100

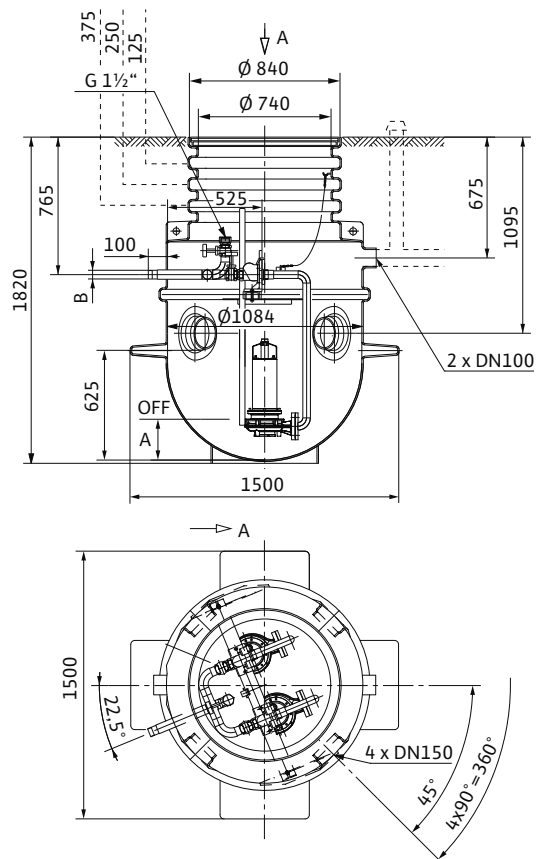
#### Dimension drawing

##### Wilo-DrainLift WS 900



#### Dimension drawing

##### Wilo-DrainLift WS 1100



#### Dimensions

Wilo-DrainLift ...	Installation depth below ground surface level up to inlet floor without extension	Installation depth below ground surface level up to inlet floor with extension	Pressure connection	Dimensions	
				A	B
				mm	
WS 900 E/TS 40	1245	1345...1945	Rp 1 1/2	200	40
WS 900 D/TS 40	1245	1345...1945	Rp 1 1/2	354	40
WS 900 E/TP 50, FIT V05, PRO V05	1245	1345...1945	Rp 2	220	50
WS 900 E/TP 65, PRO V06	1245	1345...1945	Rp 2 1/2	285	65
WS 900 E/MTS 40-MTC	1245	1345...1945	Rp 1 1/2	200	40
WS 1100 E/TP 50, FIT V05, PRO V05	1170	1270...1870	Rp 2	230	50
WS 1100 E/TP 65, PRO V06	1170	1270...1870	Rp 2 1/2	260	65
WS 1100 E/TP 80, PRO V06	1170	1270...1870	DN 80	330	80
WS 1100 D/TP 50, FIT V05, PRO V05	1170	1270...1870	Rp 2	310	50
WS 1100 D/TP 65, PRO V06	1170	1270...1870	Rp 2 1/2	360	65
WS 1100 E/MTS 40-MTC	1170	1270...1870	Rp 1 1/2	220	40
WS 1100 D/MTS 40-MTC	1170	1270...1870	Rp 1 1/2	260	40



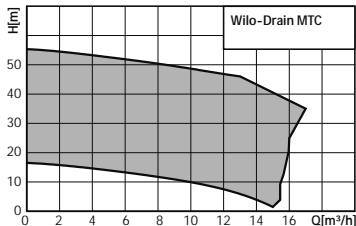
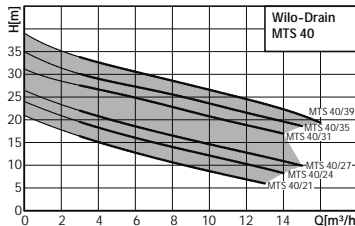
### Mechanical accessories Wilo-DrainLift WS 900/1100

		Description	Art no.
Sump cover WS 900/1100 Standard		Made of PE, Ø 830 x 52 mm, slip-resistant profile on the upper side of the cover, with two inner locks, can be walked on	2506477
Sump cover WS 900/1100 flood-proof		Made of PE, Ø 960 x 100 mm, overflow-proof thanks to integrated gasket, slip-resistant profile on the upper side of the cover, with six exterior stainless steel locks, can be walked on	2506478
Sump extension WS 900/1100		Made of PE, Ø 730 x 800, for WS900/1100 sumps, including seal, mounting accessories and supporting bar extension for level sensor Maximum of 1 extension per sump is possible. Other extensions are not permitted.	2506431
Clamp bolting		Made of PE, with female thread (IG), for connection to a PE discharge pipeline outside of the sump 1½" (IG) on 50 mm pipe diameter	2505044
		Made of PE, with female thread (IG), for connection to a PE discharge pipeline outside of the sump 1½" (IG) on 63 mm pipe diameter	2505045
		Made of PE, with female thread (IG), for connection to a PE discharge pipeline outside of the sump 2" (IG) on 63 mm pipe diameter	2505046

# Wastewater collection and transport

## Submersible sewage pumps with macerator

### Series overview

Series	Wilо-Drain MTC	Wilо-Drain MTS
Product photo		
Duty chart		
Design	Submersible sewage pumps with macerator	Submersible sewage pumps with macerator
Application	Pumping of sewage containing faeces as well as municipal and industrial sewage, including long-fibre constituents, for: <ul style="list-style-type: none"> <li>• Pressure drainage</li> <li>• House drainage</li> <li>• Sewage disposal</li> <li>• Water management</li> <li>• Environmental and water treatment technology</li> </ul>	Pumping of sewage containing faeces as well as municipal and industrial sewage, including long-fibre constituents, for: <ul style="list-style-type: none"> <li>• Pressure drainage</li> <li>• House drainage</li> <li>• Sewage disposal</li> <li>• Water management</li> <li>• Environmental and water treatment technology</li> </ul>
H <sub>max</sub>	55 m	39 m
Q <sub>max</sub>	17 m <sup>3</sup> /h	16 m <sup>3</sup> /h
Special features/product advantages	<ul style="list-style-type: none"> <li>• Oil barrier chamber</li> <li>• Mechanical seal on pump side made of solid silicon carbide material</li> <li>• Hardened macerator</li> <li>• Longitudinally watertight cable (only MTC 32)</li> <li>• Ex-rated (only MTC 32)</li> </ul>	<ul style="list-style-type: none"> <li>• Spherically formed macerator</li> <li>• High degree of efficiency</li> <li>• Low operating costs</li> <li>• Resistant to clogging and blockage</li> <li>• Oil barrier chamber</li> <li>• High operational reliability</li> <li>• Corrosion-resistant stainless steel motor in 1.4404 (316 L)</li> <li>• Explosion protection as standard for all 3~400V versions</li> </ul>
Further information	Series information from page 398 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 406	Series information from page 413 Wilo online catalogue at <a href="http://www.wilo.com">www.wilo.com</a> Accessories from page 420



# Wastewater collection and transport

## Submersible sewage pumps with macerator



Equipment/function		
	Wilo-Drain MTC	Wilo-Drain MTS
<b>Design</b>		
Submersible	•	•
Single-channel impeller	—	•
Vortex impeller	—	—
Multi-channel impeller	—	—
Open multi-channel impeller	•	—
Macerator	•	•
Turbulator	—	—
Sealing chamber	•	•
Leakage chamber	—	—
Sealing for mechanical seal on motor side	•	—
Sealing for rotary shaft seal on motor side	•	•
Sealing for mechanical seal on fluid side	•	•
Single-phase AC motor	•	•
Three-phase motor	•	•
Direct activation	•	•
Star-delta activation	•	—
FC operation	—	—
Dry motor	•	•
Motor with oil cooling	—	—
Dry motor with closed-circuit cooling	—	—
Sheath current cooling	—	—
<b>Application</b>		
Wet well installation, stationary	•	•
Wet well installation, portable	•	•
Dry well installation, stationary	—	—
Dry well installation, portable	—	—
<b>Equipment/function</b>		
Motor temperature monitoring	•	•
Sealing chamber monitoring	optional	—
Explosion protection	•	•
Float switch	• 1~	—
Capacitor box for 1~230 V	•	•
Ready-to-plug	• 1~	• 1~

• = available, — = not available

# Wastewater collection and transport

## Submersible sewage pumps with macerator

### Series description Wilo-Drain MTC



#### Design

Submersible sewage pumps with macerator

#### Type key

e.g.:	<b>Wilo-Drain MTC 32 F 55.13/66 Ex</b>
<b>MT</b>	Macerator technology
<b>C</b>	Cast iron version
<b>32</b>	Nominal diameter [mm]
<b>F</b>	Impeller shape
<b>55</b>	Max. delivery head [m]
<b>13</b>	Max. volume flow [m <sup>3</sup> /h]
<b>66</b>	Power P <sub>2</sub> [kW] (= value/10 = 6.6 kW)
<b>Ex</b>	ATEX approval
<b>A</b>	With float switch

#### Application

Pumping of sewage containing faeces as well as municipal and industrial sewage, including long-fibre constituents, for:

- Pressure drainage
- House drainage
- Sewage disposal
- Water management
- Environmental and water treatment technology

#### Special features/product advantages

- Oil barrier chamber
- Mechanical seal on pump side made of solid silicon carbide material
- Hardened macerator
- Longitudinally watertight cable (only MTC 32)
- Ex-rated (only MTC 32)

#### Technical data

- Mains connection: 3~400 V, 50 Hz (MTC 40 F also 1~230 V, 50 Hz)
- Immersed operating mode: S1 or S3 25% (depending on type)
- Protection class: IP 68
- Insulation class: F
- Thermal winding monitoring
- Max. fluid temperature: 3 - 40 °C (MTC 40 only 3 - 35 °C)
- Cable length: 10 m

#### Equipment/function

- Heavy-duty version made of cast iron

- External macerator
- Unimpeded flow to the impeller
- Maceration of substances being pumped
- Simple installation via suspension unit or pump base
- Attached float switch (only MTC 40, 1~230 V, version A)

#### Materials

- Pump housing: EN-GJL-250
- Motor housing: EN-GJL-200 or EN-GJL-250 (depending on type)
- Impeller: EN-GJL-HB175, EN-GJS-500 or EN-GJL-250 (depending on type)
- Shaft: Stainless steel 1.0503, 1.7225 or 1.4021 (depending on type)
- Static seal: NBR
- Mechanical seal on pump side: SiC/SiC
- Mechanical seal on motor side: Carbon/ceramic (MTC 32 F 49.17 and MTC 32 F 55.13)
- Mechanical seal on motor side: Al-oxide/SiC (MTC 40 F...)
- Mechanical seal on motor side: SiC/SiC (MTC 32 F 22.17, MTC 32 F 16.17 and MTC 32 F 26.17)
- Rotary shaft seal on motor side: NBR (MTC 32 F 33.17, MTC 32 F 39.16)
- Macerator: Stainless steel 1.4112, Abrasite/1.4034 or X102CrMo17K4 (depending on type)

#### Description/design

Submersible sewage pump with external macerator as submersible monobloc unit for stationary and portable wet well installation.

#### Hydraulics

The outlet on the pressure side is designed as horizontal threaded connection or flange connection (depending on type). Open multi-channel impellers are used as the impeller shape.

#### Motor

Glanded motors give off their heat directly to the surrounding fluid via the housing parts and can be used in immersed state for permanent operation and, in some cases, for intermittent operation. Depending on the size, they can also be used in non-immersed state for short-term operation.

A oil barrier chamber protects the motor from fluid ingress. Depending on the size, it can be accessed from the outside and can be monitored with an optional sealing chamber electrode.

All filling fluids used are potentially biodegradable and environmentally safe.

### Series description Wilo-Drain MTC

The cable length is 10 metres. The cable inlet for the MTC 32 is longitudinally watertight. The three-phase motors have a bare cable end; AC motor are fitted with capacitor boxes and shockproof plug.

#### Seal

Fluid-side and motor-side sealing is available in different versions depending on the motor type: MTC 32 F...

- ...33.17 and ...39.16: Mechanical seal on the fluid side, two rotary shaft seals on the motor side
- ...22.17, ...26.17, ...49.17, ...55.13 and MTC 40...: Two independently operating mechanical seals

#### Options

- Length of the power cable in 20 m, 30 m, 40 m and 50 m (for MTC 32 F 16 to MTC 32 F 33)

#### Scope of delivery

- Pump ready for connection with 10 m connection cable
  - For 3~400 V with bare cable end
  - For 1~230 V with shock-proof plug
- A-model version with attached float switch
- Installation and operating instructions

#### Commissioning

S1 operating mode with non-immersed motor:

Dry motors can be non-immersed only if there is an operating mode for non-immersed operation.

Dry-running protection system:

The hydraulic housing must always be immersed to prevent air from being drawn in. In the case of fluctuating fluid levels, the system should shut down automatically once the minimum water submersion is reached.

#### Accessories

- Suspension unit and pump base
- Chains
- Switchgears, relays and plugs

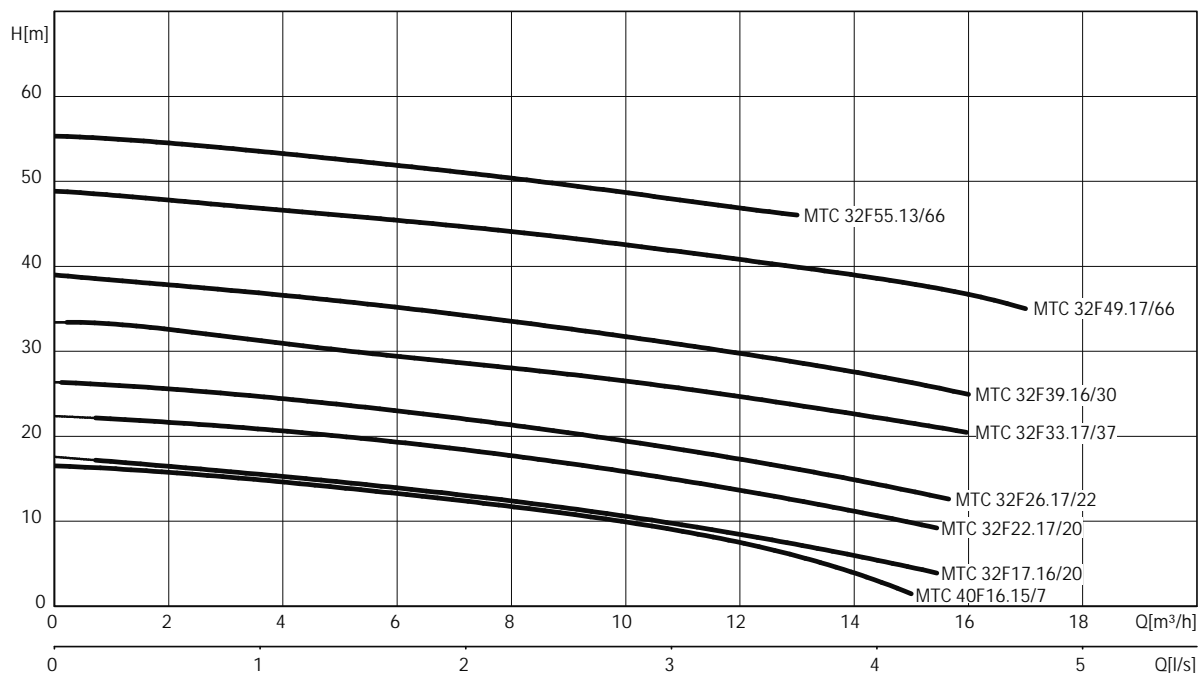
# Wastewater collection and transport

## Submersible sewage pumps with macerator

### Pump curves, ordering information Wilo-Drain MTC


#### Pump curves Wilo-Drain MTC 40, MTC 32 - 50 Hz - 2900 rpm


Multi-channel impeller with macerator



Pump curves in accordance with ISO 9906, Appendix A

#### Information for order placements

Wilo-Drain...	Mains connection		Art no.
MTC 40 F 16.15/7-A	1~230 V, 50 Hz	L	2081260
MTC 40 F 16.15/7	3~400 V, 50 Hz	L	2081261
MTC 32 F 17.16/20 Ex	3~400 V, 50 Hz	L	6048291
MTC 32 F 22.17/20 Ex	3~400 V, 50 Hz	L	6046395
MTC 32 F 26.17/22 Ex	3~400 V, 50 Hz	L	6046396
MTC 32 F 33.17/37 Ex	3~400 V, 50 Hz	L	6046397
MTC 32 F 39.16/30	3~400 V, 50 Hz	L	2081263
MTC 32 F 39.16/30 Ex	3~400 V, 50 Hz	L	2081262
MTC 32 F 49.17/66	3~400 V, 50 Hz	L	2081265
MTC 32 F 49.17/66 Ex	3~400 V, 50 Hz	L	2081264
MTC 32 F 55.13/66	3~400 V, 50 Hz	L	2081267
MTC 32 F 55.13/66 Ex	3~400 V, 50 Hz	L	2081266

 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Wastewater collection and transport

Submersible sewage pumps with macerator

**wilo**

## Technical data Wilo-Drain MTC

	MTC 40 F 16.15/7-A	MTC 40 F 16.15/7	MTC 32 F 17.16/20 Ex	MTC 32 F 22.17/20 Ex	MTC 32 F 26.17/22 Ex	MTC 32 F 33.17/37 Ex
	1~230 V, 50 Hz	3~400 V, 50 Hz				
Unit						
Pressure connection	Rp 1½/DN 40	Rp 1½/DN 40	DN 36/G 1¼/G 2	DN 36/G 1¼/G 2	DN 36/G 1¼/G 2	DN 36/G 1¼/G 2
Max. volume flow $Q_{max}$ / m³/h	15	15	16	17	17	17
Max. delivery head $H_{max}$ / m	16	16	17	22	26	33
Operating mode (immersed)	S1	S1	S1	S1	S1	S1
Operating mode (non-immersed)	-	-	S2-15 min	S2-15 min	S3-30%	S2-15 min
Max. immersion depth m	20	20	12.5	12.5	12.5	12.5
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +35	+3 ... +35	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	20	20	33	33	33	49
Motor data						
Nominal current $I_N$ / A	5.6	2.5	4.45	4.45	4.8	7.6
Starting current $I_A$ / A	14.4	16.5	26	26	25	37
Nominal motor power $P_2$ / kW	0.7	0.7	2	2	2.25	3.75
Power consumption $P_1$ / kW	1.2	1.2	2.6	2.6	3	4.7
Activation type	Direct	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900	2900	2900
Insulation class	F	F	F	F	F	F
Recommended switching frequency 1/h	25	25	—	—	—	—
Max. switching frequency 1/h	50	50	15	15	15	15
Permitted voltage tolerance %	±10	±10	±10	±10	±10	±10
Cable						
Length of connecting cable m	10	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm²	4G1	4G1	7G1,5	7G1,5	7G1,5	7G1,5
Type of connecting cable	Non-detach- able	Non-detach- able	Non-detach- able	Non-detach- able	Non-detach- able	Non-detach- able
Mains plug	Shock-proof	—	—	—	—	—
Equipment/function						
Float switch	•	—	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK	WSK	WSK
Explosion protection	—	—	ATEX	ATEX	ATEX	ATEX
Materials						
Static seal	NBR	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Macerator	X102CrMo17 K4/Sint C4 DIN 30910-4	X102CrMo17 K4/Sint C4 DIN 30910-4	Abrasit/ 1.4034	Abrasit/ 1.4034	Abrasit/ 1.4034	Abrasit/ 1.4034
Sealing on motor side	Al/SiC	Al/SiC	SiC/SiC	SiC/SiC	SiC/SiC	FPM
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021	1.4021

$P_1$  refers to the maximum power consumption. All of the data apply to 1-230 V or 3-400 V, 50 Hz and a density of 1 kg/dm³.

# Wastewater collection and transport

## Submersible sewage pumps with macerator

### Technical data Wilo-Drain MTC

	MTC 32 F 39.16/30	MTC 32 F 39.16/30 Ex	MTC 32 F 49.17/66	MTC 32 F 49.17/66 Ex	MTC 32 F 55.13/66	MTC 32 F 55.13/66 Ex
3~400 V, 50 Hz						
<b>Unit</b>						
Pressure connection	DN 32	DN 32	DN 32	DN 32	DN 32	DN 32
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	16	16	17	17	13	13
Max. delivery head $H_{max}$ / m	39	39	49	49	55	55
Operating mode (immersed)	S1	S1	S1	S1	S1	S1
Operating mode (non-immersed)	S3-30%	S3-30%	S3-30%	S3-30%	S3-30%	S3-30%
Max. immersion depth m	10	10	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	43	43	90	90	90	90
<b>Motor data</b>						
Nominal current $I_N$ / A	7.3	7.3	13.2	13.2	13.2	13.2
Starting current $I_A$ / A	43	43	58	58	58	58
Nominal motor power $P_2$ / kW	3.4	3.4	6.6	6.6	6.6	6.6
Power consumption $P_1$ / kW	4.2	4.2	7.7	7.7	7.7	7.7
Activation type	Direct	Direct	Star-delta	Star-delta	Star-delta	Star-delta
Nominal speed $n$ / rpm	2900	2900	2900	2900	2900	2900
Insulation class	F	F	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20	20	20
Max. switching frequency 1/h	50	50	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10	±10	±10
<b>Cable</b>						
Length of connecting cable m	10	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	6G1,5	6G1,5	10G2,5	10G2,5	10G2,5	10G2,5
Type of connecting cable	Non-detach- able	Non-detach- able	Non-detach- able	Non-detach- able	Non-detach- able	Non-detach- able
Mains plug	—	—	—	—	—	—
<b>Equipment/function</b>						
Float switch	—	—	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK	WSK	WSK
Explosion protection	—	ATEX	—	ATEX	—	ATEX
<b>Materials</b>						
Static seal	NBR	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL- HB175	EN-GJL- HB175	EN-GJS- 500-7	EN-GJS- 500-7	EN-GJS- 500-7	EN-GJS- 500-7
Macerator	1.4112	1.4112	1.4112	1.4112	1.4112	1.4112
Sealing on motor side	NBR	NBR	Carbon/ ceramic	Carbon/ ceramic	Carbon/ ceramic	Carbon/ ceramic
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.0503	1.0503	1.7225	1.7225	1.7225	1.7225

$P_1$  refers to the maximum power consumption. All of the data apply to 1~230 V or 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

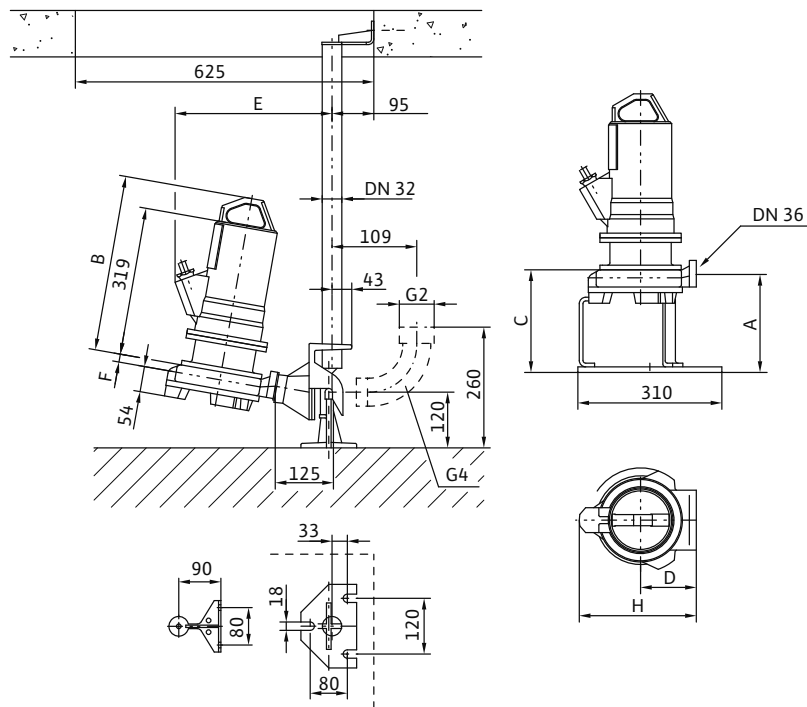


# Wastewater collection and transport

## Submersible sewage pumps with macerator

### Dimensions, weights Wilo-Drain MTC

#### Dimension drawing Wilo-Drain MTC 32 F17 - F33



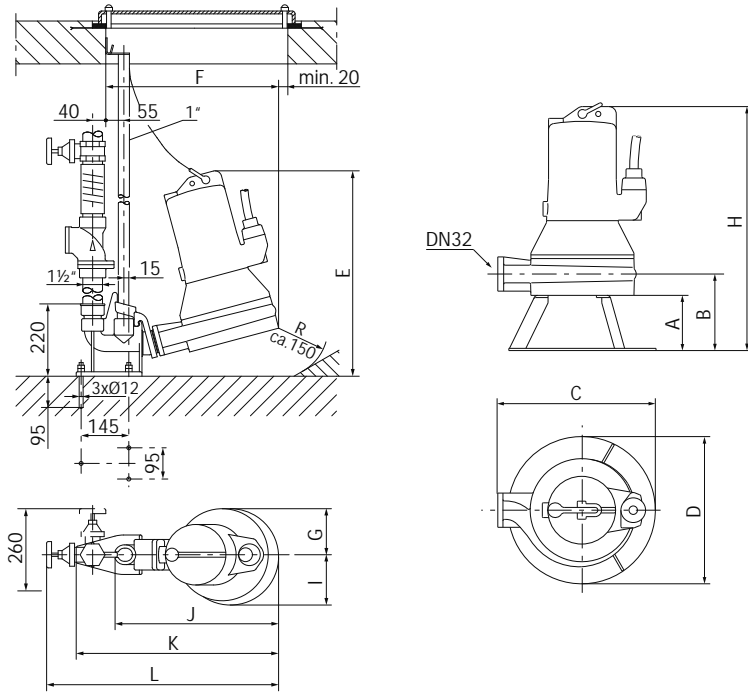
#### Dimensions

Wilo-Drain...	Dimensions						
	A	B	C	D	E	F	H
	mm						
MTC 32 F 17.16/20 Ex	211	379	221	120	338	17	252
MTC 32 F 22.17/20 Ex	211	379	221	120	338	17	252
MTC 32 F 26.17/22 Ex	211	379	221	120	338	17	252
MTC 32 F 33.17/37 Ex	197	394	224	140	378	20	279



### Dimensions, weights Wilo-Drain MTC

#### Dimension drawing Wilo-Drain MTC 32 F39 - F55

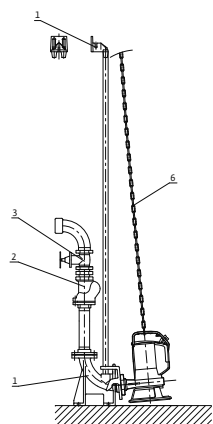


Dimensions												
Wilo-Drain...	Dimensions											
	A	B	C	D	E	F	G	H	I	J	K	L
	mm											
MTC 32 F 39.16/30	140	180	330	350	490	450	125	520	125	420	540	635
MTC 32 F 39.16/30 Ex	140	180	330	350	490	450	125	520	125	420	540	635
MTC 32 F 49.17/66	150	210	430	400	625	525	140	665	155	500	615	705
MTC 32 F 49.17/66 Ex	150	210	430	400	625	525	140	665	155	500	615	705
MTC 32 F 55.13/66	150	210	430	400	625	525	140	665	155	500	615	705
MTC 32 F 55.13/66 Ex	150	210	430	400	625	525	140	665	155	500	615	705

# Wastewater collection and transport

## Submersible sewage pumps with macerator

### Mechanical accessories MTC 40



- 1 Suspension unit
- 2 Non-return valve
- 3 Gate valve
- 6 Chain

#### Stationary wet well installation DN 40

		Description	Art no.
Suspension unit DN 40		Made of EN-GJL-250, painted, with free passage in DN 40, foot elbow incl. pump bracket, profile joint, installation and floor fixation accessories and guide pipe bracket Ø ¾" without guide pipes. Connection on pressure side DN 40/50. Flanges PN 10/16 in accordance with DIN 2501. The double pipe feed Ø ¾" is to be provided by the customer.	2057179
Non-return ball valve		Made of EN-GJL-250, with Rp 1½ female thread for DN 40 connection	4027330
Gate valve		Made of red brass, coupling sleeve slider with Rp 1½ female thread for DN 40 connection	2525301
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142

### Mechanical accessories MTC 40

#### Stationary wet well installation DN 40

		Description	Art no.
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

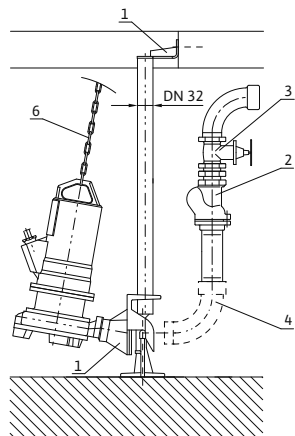
#### Portable wet well installation with hose connection

		Description	Art no.
Pipe angle 90°		For MTC 40 and MTS 40/31...39, made of EN-GJMW-400-5, with female/male thread G 1 1/2 / R 1 1/2 including threaded flange (DN 40 / PN 16 in acc. with EN 1092), galvanised steel, with female thread R 1 1/2 and 1 set of mounting accessories for DN 40 connection	2057401
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Wastewater collection and transport

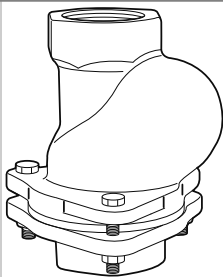
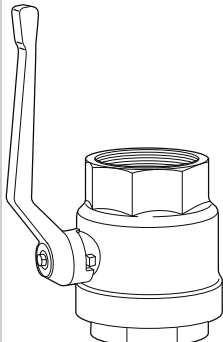
## Submersible sewage pumps with macerator

### Mechanical accessories MTC 32



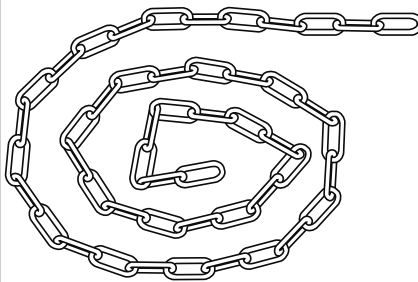
- 1 Suspension unit
- 2 Non-return valve
- 3 Gate valve
- 4 Pipe bend
- 6 Chain

#### Stationary wet well installation DN 50

		Description	Art no.
Suspension unit DN 50		Made of EN-GJL-250, with free passage to DN 36, coupling connection and foot without 90° pipe elbow, including profile joint, installation and floor fixation accessories and guide pipe bracket Ø 1¼" without guide pipe. Connection on pressure side via 90° pipe elbow with male thread R 2 for DN 50 connection. The single pipe feed Ø 1¼" is to be provided by the customer.	6031599
Pipe bend 90°		Made of steel, galvanized, with female/male thread G 2 / R 2 for suspension unit DN 50	6003089
Non-return ball valve		Made of EN-GJL-250, with Rp 2 female thread for DN 50 connection	4027331
Shut-off ball valve		Made of brass, nickel-plated, with Rp 2 female thread for DN 50 connection	4027338

### Mechanical accessories MTC 32

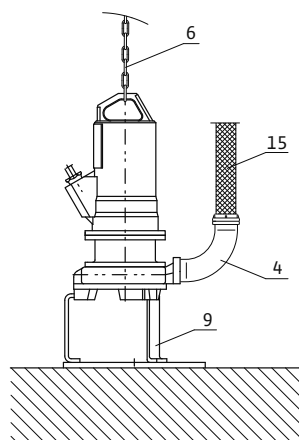
#### Stationary wet well installation DN 50

		Description	Art no.
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Wastewater collection and transport


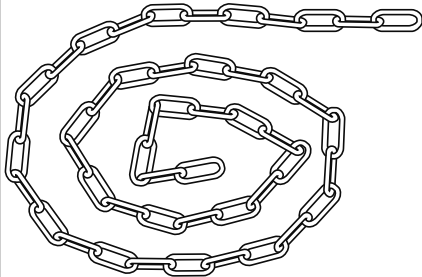
## Submersible sewage pumps with macerator

### Mechanical accessories MTC 32

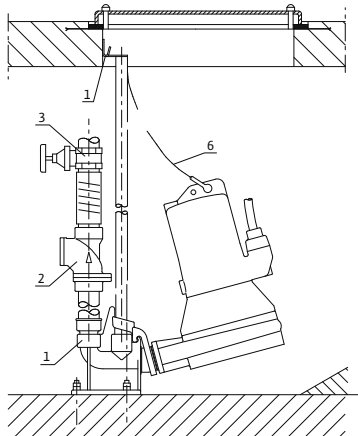


- 4 Pipe bend
- 6 Chain
- 9 Floor supporting foot
- 15 Pressure hose

#### Portable wet well installation with hose connection

		Description	Art no.
Floor supporting foot MTC 32F22...33		Made of steel (S235JR), painted, comprising 3 support feet, 1 baseplate and fixation material	6040150
Pipe bend 90°		Made of EN-GJL-250, with G 2 / R 2 female/male thread, incl. Storz C fixed coupling G 2 male thread, transition flange on pump side, G 2 female thread, incl. 1 set of mounting accessories for DN 50 connection	6045171
Pressure hose / Storz C		Synthetic fibre hose, synthetic, rubberized on the inside, inner Ø 52 mm, length 10 m incl. Storz C coupling, 12/40 bar	6003650
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

### Mechanical accessories MTC 32



- 1 Suspension unit
- 2 Non-return valve
- 3 Gate valve
- 6 Chain

#### Stationary wet well installation DN 40

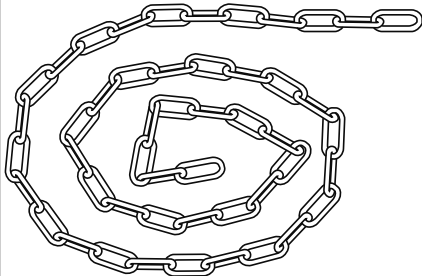
		Description	Art no.
Suspension unit Rp 1½		Made of EN-GJL-250, painted, with free passage in DN 40, foot elbow including pump holder, profile joint, installation and floor fixation accessories and guide pipe bracket Ø 1" without guide pipes. Pressure-side connection Rp 1½. Flanges PN 10/16 in accordance with DIN 2501. The single pipe feed Ø 1" is to be provided by the customer.	2082630
Centre of gravity extension		Shackle adapter with fixation accessories for MTC 32 F 49 and MTC 32 F 55 pumps	6042181
Non-return ball valve		Made of EN-GJL-250, with Rp 1½ female thread for DN 40 connection	4027330
Gate valve		Made of red brass, coupling sleeve slider with Rp 1½ female thread for DN 40 connection	2525301
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141

# Wastewater collection and transport

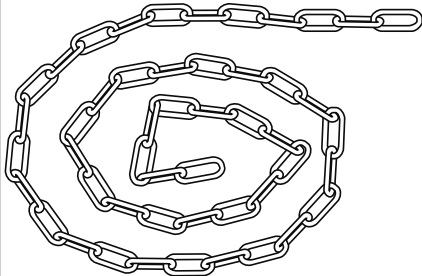
## Submersible sewage pumps with macerator

### Mechanical accessories MTC 32

#### Stationary wet well installation DN 40

		Description	Art no.
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

#### Portable wet well installation with hose connection

		Description	Art no.
Floor supporting foot MTC 32 F 49...55		Made of steel (S235JR), painted, comprising 3 support feet, 1 baseplate and fixation material	2098296
Floor supporting foot MTC 32 F 39		Made of steel (S235JR), painted, comprising 3 support feet, 1 baseplate and fixation material	2098295
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138



### Series description Wilo-Drain MTS



#### Design

Submersible sewage pumps with macerator

#### Type key

e.g.:	<b>Wilo-Drain MTS 40/27-1-230-50-2</b>
<b>MT</b>	Macerator technology
<b>S</b>	Stainless steel motor
<b>40</b>	Nominal diameter of pressure port [mm]
<b>27</b>	Max. delivery head [m]
<b>1</b>	Phase specification
<b>230</b>	Rated voltage
<b>50</b>	Frequency
<b>2</b>	Number of poles

#### Application

Pumping of sewage containing faeces as well as municipal and industrial sewage, including long-fibre constituents, for:

- Pressure drainage
- House drainage
- Sewage disposal
- Water management
- Environmental and water treatment technology

#### Special features/product advantages

- Spherically formed macerator
- High degree of efficiency
- Low operating costs
- Resistant to clogging and blockage
- Oil barrier chamber
- High operational reliability
- Corrosion-resistant stainless steel motor in 1.4404 (316 L)
- Explosion protection as standard for all 3~400V versions

#### Technical data

- Mains connection: 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Submerged operating mode: S1 or S3 25%
- Protection class: IP 68
- Insulation class: F
- Thermal winding monitoring
- Max. fluid temperature: 3 - 40 °C
- Cable length: 10 m

#### Equipment/function

- Patented macerator
- Unimpeded flow to the impeller
- Internal rotating blade
- Spherically formed macerator
- Maceration of substances being conveyed
- Pulling cut (shearing cut)

#### Materials

- Pump housing: EN-GJL-250
- Impeller: EN-GJL-250
- Shaft: Stainless steel 1.4021
- Mechanical seal on pump side: SiC/SiC
- Shaft seal on motor side: NBR
- Static seal: NBR
- Motor housing: Stainless steel 1.4404
- Macerator: Stainless steel 1.4528

#### Description/design

Submersible sewage pump with internal macerator as submersible monobloc unit for stationary and portable wet well installation.

#### Hydraulics

The outlet on the pressure side is designed as horizontal threaded connection (Rp 1¼" for MTS 40/21...27) or flange connection. Single-channel impellers are used as the impeller shapes.

#### Motor

Glanded motors give off their heat directly to the surrounding fluid via the housing components and can be used in immersed state for permanent and intermittent operation.

A sealing chamber protects the motor from fluid ingress. The filling fluid used is potentially biodegradable and environmentally safe.

The cable inlet can be plugged in. Cable lengths are available in length increments of 10 metres.

#### Seal

Sealing on the fluid side is achieved by a bidirectional mechanical seal, while sealing on the motor side is achieved by a rotary shaft seal.

#### Scope of delivery

- Pump ready for connection with 10 m connection cable

# Wastewater collection and transport

## Submersible sewage pumps with macerator

### Series description Wilo-Drain MTS

- For 3~400 V with bare cable end
- For 1~230 V with shock-proof plug
- Installation and operating instructions

#### Commissioning

Dry-running protection system:

The hydraulic housing must always be immersed to prevent air from being drawn in. In the case of fluctuating fluid levels, the system should shut down automatically once the minimum water submersion is reached.

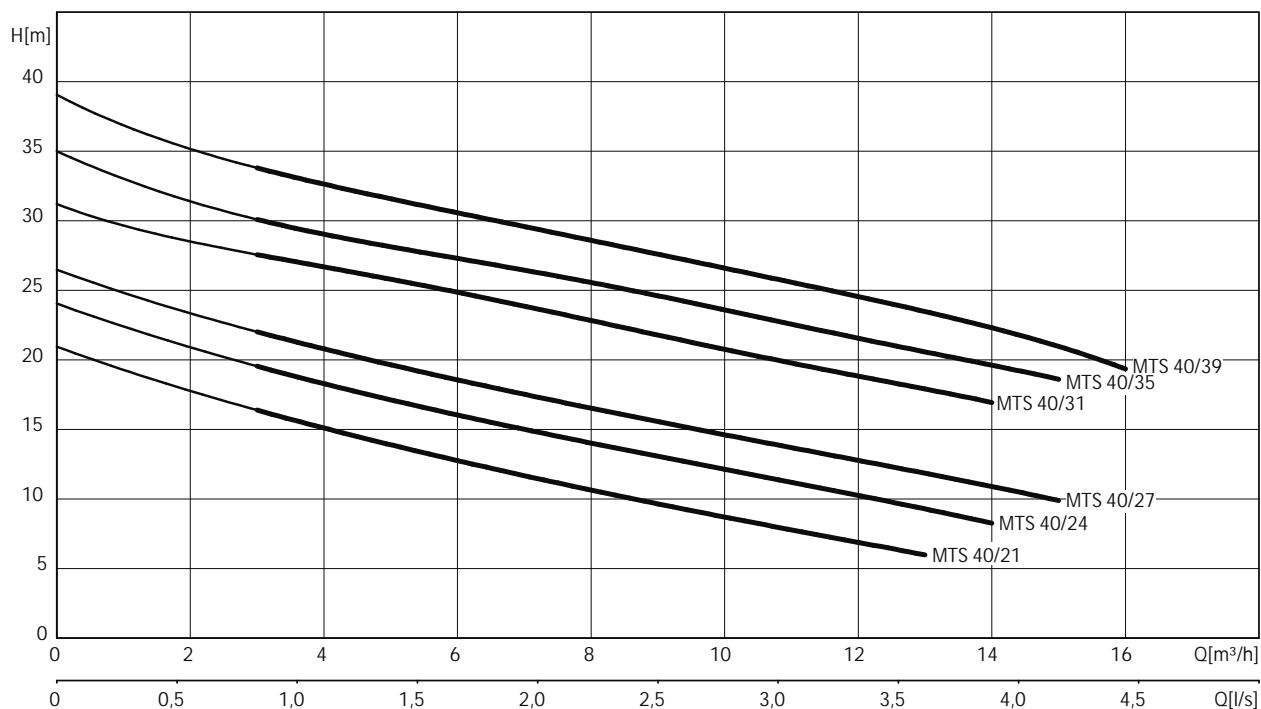
#### Accessories

- Suspension unit and pump base
- Chains
- Switchgears, relays and plugs

### Pump curves, ordering information Wilo-Drain MTS 40

#### Pump curves Wilo-Drain MTS 40 - 50 Hz - 2900 rpm

Multi-channel impeller with macerator



Pump curves in accordance with ISO 9906, Appendix A

#### Information for order placements

Wilo-Drain...	Mains connection	🚚	Art no.
MTS 40/21	1~230 V, 50 Hz	L	2060174
MTS 40/21	3~400 V, 50 Hz	L	2060176
MTS 40/24	1~230 V, 50 Hz	L	2060170
MTS 40/24	3~400 V, 50 Hz	L	2060175
MTS 40/27	1~230 V, 50 Hz	L	2053831
MTS 40/27	3~400 V, 50 Hz	L	2056253
MTS 40/31	3~400 V, 50 Hz	L	6046761
MTS 40/35	3~400 V, 50 Hz	L	6046760
MTS 40/39	3~400 V, 50 Hz	L	6045558

🚚 = ready for delivery, L = stock article, C = order-specific production approx. 2 weeks, K = order-specific production approx. 4 weeks, A = delivery time on request

# Wastewater collection and transport

## Submersible sewage pumps with macerator

### Technical data Wilo-Drain MTS

	MTS 40/21	MTS 40/21	MTS 40/24	MTS 40/24	MTS 40/27
	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz	3~400 V, 50 Hz	1~230 V, 50 Hz
<b>Unit</b>					
Pressure connection	Rp 1¼/DN 40	Rp 1¼/DN 40	Rp 1¼/DN 40	Rp 1¼/DN 40	Rp 1¼/DN 40
Max. volume flow $Q_{max}$ / m <sup>3</sup> /h	13	13	14	14	15
Max. delivery head $H_{max}$ / m	21	21	24	24	27
Operating mode (immersed)	S1	S1	S1	S1	S1
Operating mode (non-immersed)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. immersion depth m	10	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	30	30	30	30	30
<b>Motor data</b>					
Nominal current $I_N$ / A	8	2.5	8.7	2.8	9.5
Starting current $I_A$ / A	—	—	—	—	—
Nominal motor power $P_2$ / kW	1	1	1.2	1.2	1.5
Power consumption $P_1$ / kW	1.3	1.2	1.6	1.45	1.9
Activation type	Direct	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900	2900
Insulation class	F	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20	20
Max. switching frequency 1/h	50	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10	±10
<b>Cable</b>					
Length of connecting cable m	10	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm <sup>2</sup>	4G1,5	6G1	4G1,5	6G1	4G1,5
Type of connecting cable	Detachable	Detachable	Detachable	Detachable	Detachable
Mains plug	—	—	—	—	—
<b>Equipment/function</b>					
Float switch	—	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK	WSK
Explosion protection	—	ATEX	—	ATEX	—
<b>Materials</b>					
Static seal	NBR	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Macerator	1.4528	1.4528	1.4528	1.4528	1.4528
Sealing on motor side	NBR	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4404	1.4404	1.4404	1.4404	1.4404
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021	1.4021

$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm<sup>3</sup>.

### Technical data Wilo-Drain MTS

	MTS 40/27	MTS 40/31	MTS 40/35	MTS 40/39
	3~400 V, 50 Hz			
Unit				
Pressure connection	Rp 1¼/DN 40	DN 40	DN 40	DN 40
Max. volume flow $Q_{max}$ / m³/h	15	14	15	16
Max. delivery head $H_{max}$ / m	27	31	35	39
Operating mode (immersed)	S1	S1	S1	S1
Operating mode (non-immersed)	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%	S2-8 min S3-25%
Max. immersion depth m	10	10	10	10
Protection class	IP 68	IP 68	IP 68	IP 68
Fluid temperature $T$ / °C	+3 ... +40	+3 ... +40	+3 ... +40	+3 ... +40
Weight approx. $m$ / kg	30	39	39	39
Motor data				
Nominal current $I_N$ / A	3.2	5.3	5.8	6
Starting current $I_A$ / A	—	—	—	—
Nominal motor power $P_2$ / kW	1.5	2.1	2.3	2.5
Power consumption $P_1$ / kW	1.7	2.6	2.8	3
Activation type	Direct	Direct	Direct	Direct
Nominal speed $n$ / rpm	2900	2900	2900	2900
Insulation class	F	F	F	F
Recommended switching frequency 1/h	20	20	20	20
Max. switching frequency 1/h	50	50	50	50
Permitted voltage tolerance %	±10	±10	±10	±10
Cable				
Length of connecting cable m	10	10	10	10
Cable type	H07RN-F	H07RN-F	H07RN-F	H07RN-F
Cable cross-section mm²	6G1	6G1	6G1	6G1
Type of connecting cable	Detachable	Detachable	Detachable	Detachable
Mains plug	—	—	—	—
Equipment/function				
Float switch	—	—	—	—
Motor protection	WSK	WSK	WSK	WSK
Explosion protection	ATEX	ATEX	ATEX	ATEX
Materials				
Static seal	NBR	NBR	NBR	NBR
Impeller	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Macerator	1.4528	1.4528	1.4528	1.4528
Sealing on motor side	NBR	NBR	NBR	NBR
Mechanical seal	SiC/SiC	SiC/SiC	SiC/SiC	SiC/SiC
Motor housing	1.4404	1.4404	1.4404	1.4404
Pump housing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJL-250
Pump shaft	1.4021	1.4021	1.4021	1.4021

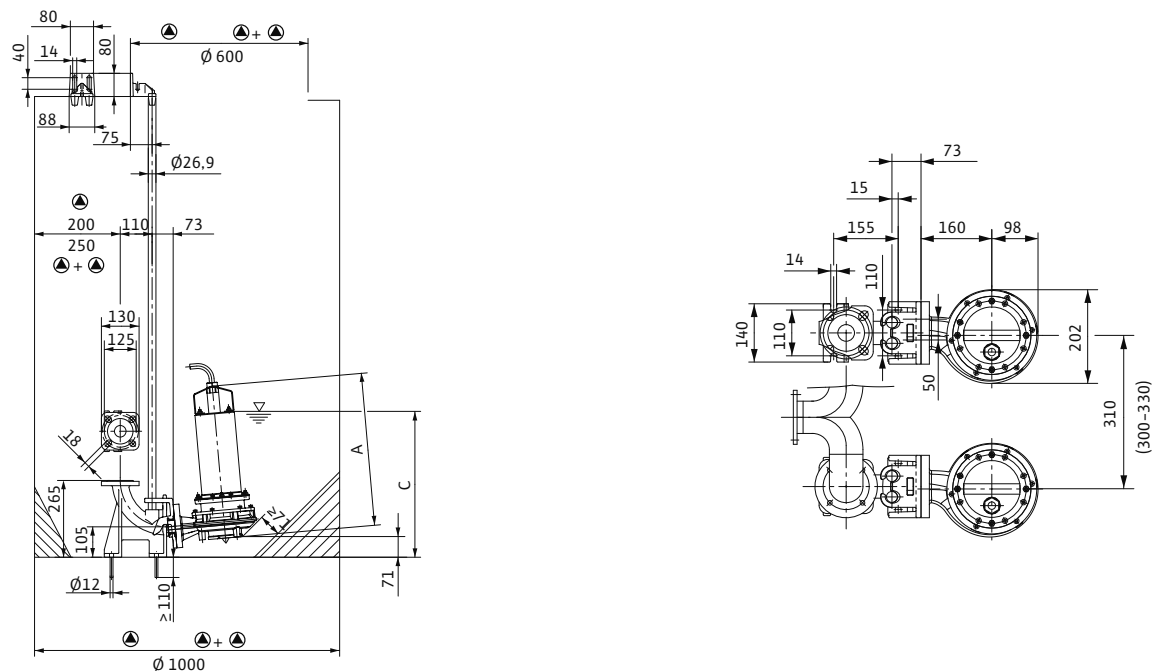
$P_1$  refers to the maximum power consumption. All of the data applies to 3~400 V, 50 Hz and a density of 1 kg/dm³.

# Wastewater collection and transport

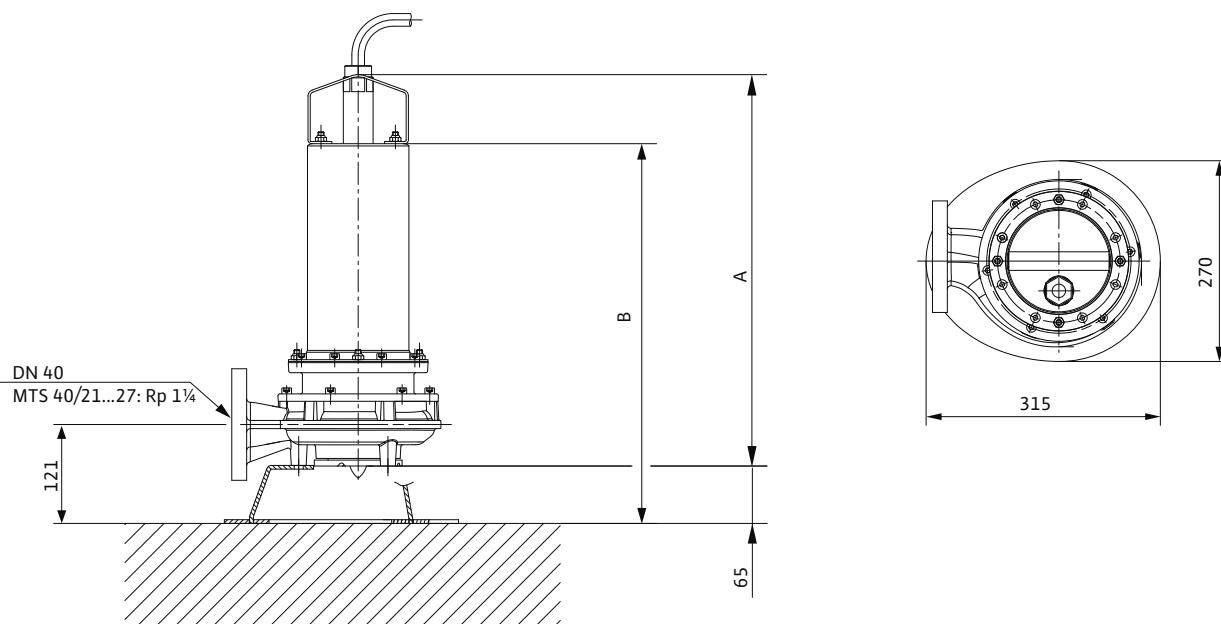
Submersible sewage pumps with macerator

## Dimensions Wilo-Drain MTS 40

Dimension drawing Wilo-Drain MTS 40 - stationary wet well installation



Dimension drawing Wilo-Drain MTS 40 - portable wet well installation



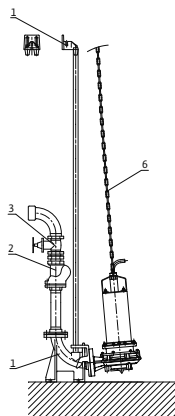
### Dimensions Wilo-Drain MTS 40

Dimensions				
Wilo-Drain...	Mains connection	Dimensions		
		A	B	C
		mm		
MTS 40/21	1~230 V, 50 Hz	498.5	463.5	469.5
MTS 40/21	3~400 V, 50 Hz	498.5	463.5	469.5
MTS 40/24	1~230 V, 50 Hz	498.5	463.5	469.5
MTS 40/24	3~400 V, 50 Hz	498.5	463.5	469.5
MTS 40/27	1~230 V, 50 Hz	498.5	463.5	469.5
MTS 40/27	3~400 V, 50 Hz	498.5	463.5	469.5
MTS 40/31	3~400 V, 50 Hz	518.5	483.5	489.5
MTS 40/35	3~400 V, 50 Hz	518.5	483.5	489.5
MTS 40/39	3~400 V, 50 Hz	518.5	483.5	489.5

# Wastewater collection and transport

## Submersible sewage pumps with macerator

### Mechanical accessories Wilo-Drain MTS 40



- 1 Suspension unit
- 2 Non-return valve
- 3 Gate valve
- 6 Chain

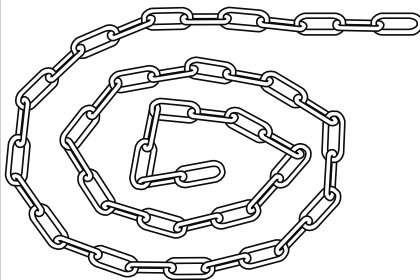
#### Stationary wet well installation DN 40

		Description	Art no.
Non-return ball valve		Made of EN-GJL-250, with Rp 1½ female thread for DN 40 connection	4027330
Suspension unit DN 40		Made of EN-GJL-250, painted, with free passage in DN 40, foot elbow incl. pump bracket, profile joint, installation and floor fixation accessories and guide pipe bracket Ø ¾" without guide pipes. Connection on pressure side DN 40/50. Flanges PN 10/16 in accordance with DIN 2501. The double pipe feed Ø ¾" is to be provided by the customer.	2057179
Gate valve		Made of red brass, coupling sleeve slider with Rp 1½ female thread for DN 40 connection	2525301



### Mechanical accessories Wilo-Drain MTS 40

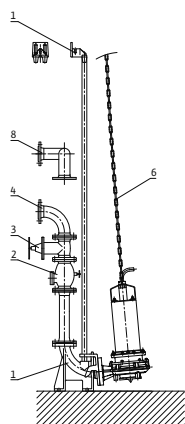
#### Stationary wet well installation DN 40

		Description	Art no.
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Wastewater collection and transport

## Submersible sewage pumps with macerator

### Mechanical accessories Wilo-Drain MTS 40



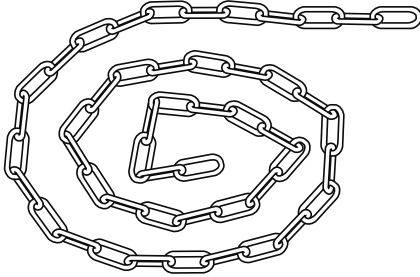
- 1 Suspension unit
- 2 Non-return valve
- 3 Gate valve
- 4 Pipe bend
- 6 Chain
- 8 Y-piece

#### Stationary wet well installation DN 50

		Description	Art no.
Non-return valve		Made of EN-GJL-250, in accordance with DIN EN 12050-4, with non-constricted passage, cleaning aperture and ventilation device, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, for DN 50 connection	2017166
Suspension unit DN 40		Made of EN-GJL-250, painted, with free passage in DN 40, foot elbow incl. pump bracket, profile joint, installation and floor fixation accessories and guide pipe bracket Ø ¾" without guide pipes. Connection on pressure side DN 40/50. Flanges PN 10/16 in accordance with DIN 2501. The double pipe feed Ø ¾" is to be provided by the customer.	2057179
Gate valve		Made of EN-GJL-250, incl. 1 set of mounting accessories, PN 10/16 flange in accordance with DIN 2501, DN 50	2017160
Pipe bend 90°		Made of spheroidal cast iron 400-15, with 2 flanges, including 1 set of mounting accessories, PN 10/16 flange, DIN 28637, for DN 50 connection	2018053
Y-piece DN 50		For double-pump systems made of steel, galvanized, PN 10/16 flange in accordance with DIN 2501 with 2 sets of mounting accessories, DN 50/50/50 connection	2019042

### Mechanical accessories Wilo-Drain MTS 40

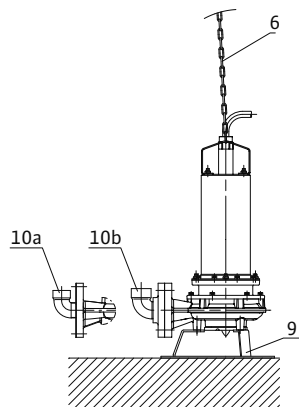
#### Stationary wet well installation DN 50

		Description	Art no.
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Wastewater collection and transport

## Submersible sewage pumps with macerator

### Mechanical accessories Wilo-Drain MTS 40



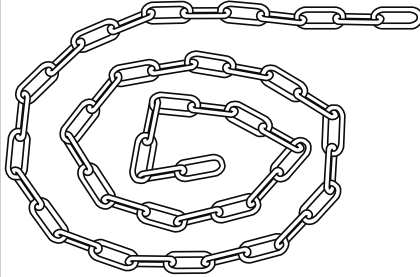
- 6 Chain
- 9 Floor supporting foot MTS
- 10a Pipe bend MTS 40/21...27
- 10b Pipe bend MTS 40/31...39

#### Portable wet well installation with hose connection

		Description	Art no.
Floor supporting foot MTS 40		Made of steel (S235JR), painted, comprising 3 support feet, 1 baseplate and fixation material	2058721
Pipe angle 90°		Only for MTS 40/21...27, of EN-GJMW-400-5, with female/male thread G 1 1/4 / R 1 1/4 for DN 32 connection	2057400
		For MTC 40 and MTS 40/31...39, made of EN-GJMW-400-5, with female/male thread G 1 1/2 / R 1 1/2 including threaded flange (DN 40 / PN 16 in acc. with EN 1092), galvanised steel, with female thread R 1 1/2 and 1 set of mounting accessories for DN 40 connection	2057401

### Mechanical accessories Wilo-Drain MTS 40

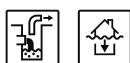
#### Portable wet well installation with hose connection

		Description	Art no.
Chain set PCS-CE		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 3 m	6063139
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 5 m	6063140
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 6 m	6063141
		As chain sling including 2 shackles to DIN 32891. Material: galvanised steel, bearing capacity: 400 kg, length: 10 m	6063142
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 3 m	6063135
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 5 m	6060658
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 6 m	6063137
		As chain sling including 2 shackles to DIN 32891. Material: stainless steel 1.4401, bearing capacity: 400 kg, length: 10 m	6063138

# Wastewater collection and transport

## Submersible sewage pumps

### Series description Wilo-Drain TP 50/TP 65



#### Design

Submersible sewage pump

#### Type key

e.g.:	<b>Wilo-Drain TP 65 E 114/11-A</b>
<b>TP</b>	Submersible pump
<b>65</b>	Nominal diameter [mm]
<b>E</b>	Impeller shape (E = single-channel impeller, F = Vortex impeller)
<b>114</b>	Nominal diameter of the impeller [mm]
<b>11</b>	Power $P_2$ [kW] (=value/10 = 1.1 kW)
<b>A</b>	With float switch and plug

#### Application

Pumping of heavily contaminated fluids for:

- Domestic and site drainage
- Sewage disposal (not within the scope of DIN EN 12050-1)
- Water management
- Environmental and water treatment technology
- Industrial and process engineering

#### Special features/product advantages

- Detachable connection cable
- Stainless-steel glanded motor
- ATEX approval (only for TP 65/3~ without float)
- Attached float switch (A-model version) enables simple operation
- Low weight
- Motor housing optionally available in 1.4404

#### Technical data

- Mains connection: 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Immersed operating mode: S1
- Non-immersed operating mode: S2-8 min, S3 25%
- Protection class: IP 68
- Insulation class: F
- Thermal winding monitoring
- Max. fluid temperature: 3 - 35°C
- Cable length: 10 m
- Free ball passage: 44 mm
- Max. immersion depth: 10 m

#### Equipment/function

- Single-phase version with capacitor box
- A-model including float switch and plug
- Thermal motor monitoring
- ATEX approval (TP 65 3~ without float)

#### Materials

- Pump housing: PP-GF30 (TP 50), PUR (TP 65)
- Impeller: PP-GF30 (vortex impeller), PUR (single-channel impeller)
- Shaft: Stainless steel 1.4404
- Mechanical seal on pump side: SiC/SiC
- Shaft seal on motor side: NBR
- Static gasket: NBR
- Motor housing: Stainless steel 1.4301

#### Description/design

Submersible sewage pump as submersible monobloc unit for stationary and portable wet well installation.

#### Hydraulics

The outlet on the pressure side is designed as DN 50 or DN 65 horizontal flange connections. The impeller shapes used are single-channel (E) or vortex impellers (F).

#### Motor

Dry motors give off their heat directly to the surrounding fluid via the housing components and can be used in immersed state for permanent or intermittent operation.

A sealing chamber protects the motor from fluid ingress. The filling fluid used is potentially biodegradable and environmentally safe.

Cable lengths are available in length increments of 10 m. The A-model is equipped with float switch and plug.

#### Sealing

Sealing on the fluid side is achieved by a bidirectional mechanical seal, while sealing on the motor side is achieved by a rotary shaft seal.

#### Scope of delivery

- Pump ready for connection with 10 m connection cable
  - Single-phase version in A-model design with capacitor box and shock-proof plug
  - Single-phase version with capacitor box and bare cable end

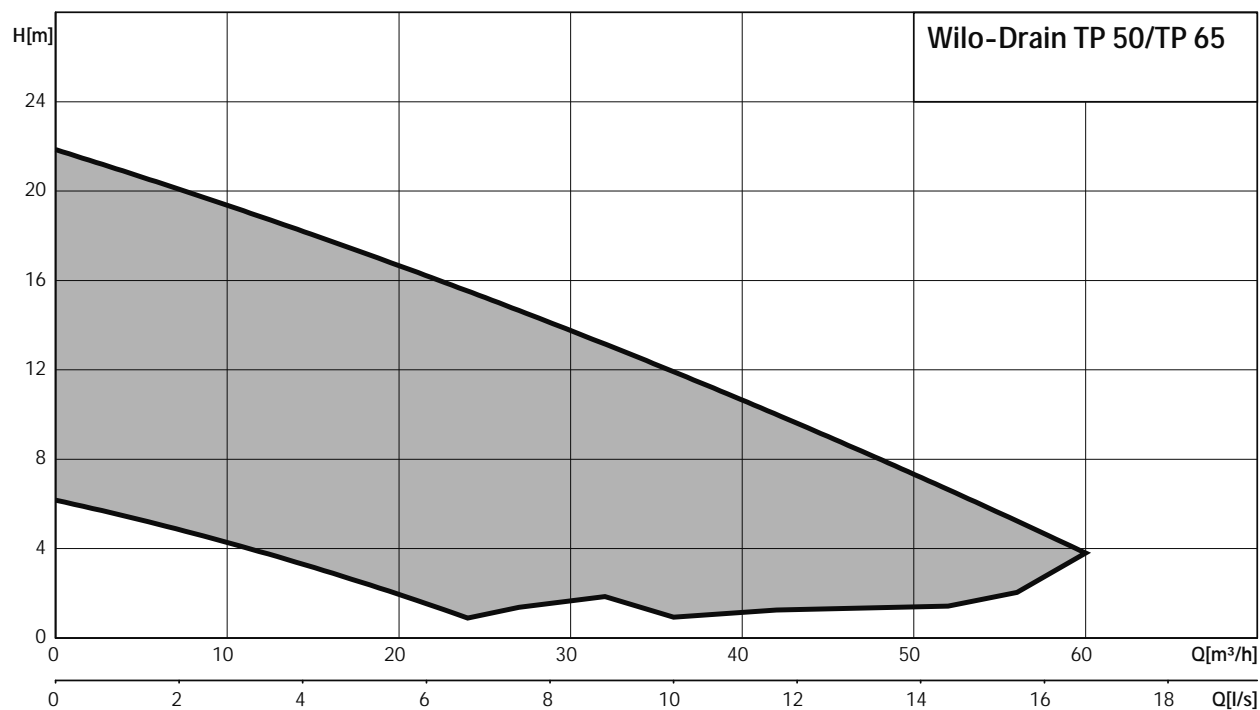
### Series description Wilo-Drain TP 50/TP 65

- Three-phase version in A-model design with CEE plug
- Three-phase version with bare cable end
- A-model version with attached float switch
- Installation and operating instructions

#### Accessories

- Suspension unit
- Chains
- Non-return valve and gate valve
- Various pressure outlets and hoses
- Switchgears and relays

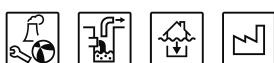
#### Duty chart



# Wastewater collection and transport

## Submersible sewage pumps

### Series description Wilo-Drain TP 80/TP 100



#### Design

Submersible sewage pump for industrial applications

#### Type key

E.g.	<b>Wilo-Drain TP 80 E 160/17</b>
<b>TP</b>	Tauchmotorpumpe (submersible pump)
<b>80</b>	Nominal diameter [mm]
<b>E</b>	Einkanallauftrad (single-channel impeller)
<b>160</b>	Nominal diameter of impeller [mm]
<b>17</b>	Power P <sub>2</sub> [kW] (= value/10 = 1.7 kW)

#### Application

Pumping of wastewater and drainage water as well as sewage containing faeces, municipal and industrial sewage for:

- Domestic and site drainage
- Sewage and water management
- Environmental and water treatment technology
- Industrial and process engineering

#### Special features/product advantages

- Operation in stationary wet well and dry well installation as well as portable wet well installation
- Submersible
- ATEX approval as standard
- Low weight
- Detachable connection cable
- Longitudinally watertight cable inlet
- Standard-equipped with clogging-free sheath current cooling
- Corrosion-resistant (e.g. swimming-pool water, salt water, etc.)
- Low-wearing
- Patented clogging-free hydraulics
- Easy installation due to suspension unit or pump base

#### Technical data

- Mains connection: 3~400 V, 50 Hz
- Immersed and non-immersed operating modes: S1
- Protection class: IP 68
- Insulation class: F
- Max. fluid temperature: 3 - 40°C
- Free ball passage: 80 or 95 mm
- Max. immersion depth: 20 m

#### Equipment/function

- Thermal motor monitoring
- Leakage detection in the motor
- ATEX-certified
- Sheath current cooling

#### Materials

- Pump housing: PUR
- Impeller: PUR
- Shaft: stainless steel 1.4404
- Mechanical seal on pump side: SiC/SiC
- Mechanical seal on motor side: C/Cr
- Static gasket: NBR
- Motor housing: stainless steel 1.4404

#### Description/design

Submersible sewage pump as submersible monobloc unit for stationary wet well and dry well installation as well as portable wet well installation.

#### Hydraulics

The outlet on the pressure side is designed as DN 80 or DN 100 horizontal flange connection. Single-channel impellers are used as the impeller shape.

#### Motor

Dry motors are equipped with clogging-free sheath current cooling as standard. This ensures that heat is given off directly to the fluid. As a result, these units can be operated in immersed and non-immersed state for permanent or intermittent operation.

In addition, the motor is equipped with a leakage detection unit and a thermal motor monitoring unit. A sealing chamber protects the motor from fluid ingress. The filling fluid used is potentially biodegradable and environmentally safe.

The cable inlet is longitudinally watertight, the standard cable length is 10 m.

#### Sealing

Sealing on the fluid side and on the pump side is achieved by two bi-directional mechanical seals.



### Series description Wilo-Drain TP 80/TP 100

#### Scope of delivery

- Pump ready for connection with 10 m connection cable (bare cable end)
- Installation and operating instructions

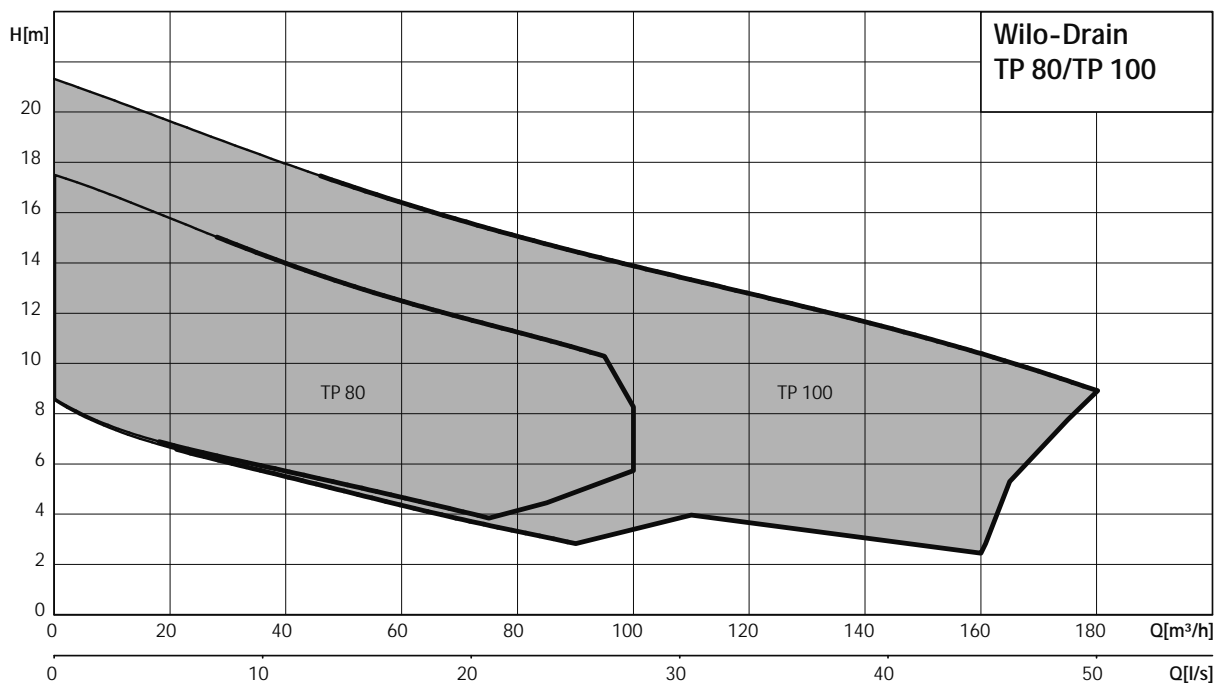
#### Accessories

- Suspension unit
- Chain
- Non-return valve and gate valve
- Various pressure outlets and hoses
- Switchgears and relays

#### Options

- HD version with Viton seals and another mechanical seals
- Pumps without cooling jacket for use in higher-viscosity fluids such as sludge (intermittent operation S3--25 only)
- Salt water version for higher temperatures and salt contents
- Version for horizontal dry well installation
- External cooling for fluid with floating solid matter, such as wood chippings
- Cable lengths up to 50 m are available in length increments of 10 m

#### Duty chart



# Wastewater collection and transport

## Submersible sewage pumps

### Series description Wilo-Rexa FIT



#### Design

Submersible sewage pump for intermittent operation with cast iron hydraulics and stainless steel motor

#### Type key

Example: **Wilo-Rexa FIT V06DA-110/EAD1-2-T0015-540-A**

<b>FIT</b>	Series name
<b>V</b>	Vortex impeller
<b>06</b>	Nominal diameter of pressure connection e.g. DN 65
<b>D</b>	Hydraulics drilled on the suction side in accordance with DIN drilled
<b>A</b>	Material version, hydraulics A = standard version
<b>110</b>	Hydraulics intended use
<b>E</b>	dry motor
<b>A</b>	Material version, motor A = standard version
<b>D</b>	Seal with two independent mechanical shaft seals
<b>1</b>	IE efficiency class, e.g. 1 = IE1 (derived from IEC 60034-30)
<b>-</b>	not Ex-rated
<b>2</b>	Number of poles
<b>T</b>	Mains connection version: M = 1~ T = 3~
<b>0015</b>	Value/10 = motor power $P_2$ in kW
<b>5</b>	Frequency (5 = 50 Hz, 6 = 60 Hz)
<b>40</b>	Key for rated voltage
<b>A</b>	Additional electrical equipment: O = with bare cable end, P = with plug A = with float switch and plug

#### Application

For pumping in intermittent operation of:

- Waste water and sewage
- Waste water containing faeces
- Sludges up to maximum 8% dry matter (depending on the selected hydraulics)

out of sumps and vessels as well as to domestic and site drainage in accordance with EN 12050 (observing regional-specific regulations and instructions).

#### Special features/product advantages

- Submersible
- Vortex impeller non-susceptible to clogging
- Seal by two mechanical shaft seals
- Optional external sealing chamber control for the oil barrier chamber
- Very smooth operation
- Easy installation due to suspension unit or pump base

#### Technical data

- Mains connection: 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Immersed operating mode: S1
- Non-immersed operating mode: S2-15 min; S3 10%
- Protection class: IP 68
- Insulation class: F
- Fluid temperature: 3 - 40°C, max. 60°C for 3 min
- Free passage: 50 / 65 / 80 mm
- Max. immersion depth: 20 m
- Cable length: 10 m

#### Equipment/function

- Winding temperature monitoring with bimetal sensor
- Optional external sealing chamber control for the oil barrier chamber

#### Materials

- Motor housing: 1.4301
- Hydraulic housing: EN-GJL250
- Impeller: EN-GJL250
- Static seals: NBR
- Sealing on pump side: SiC/SiC
- Sealing on motor side: C/MgSiO<sub>4</sub>
- Shaft end: Stainless steel 1.4021

#### Description/design

Submersible sewage pump as submersible monobloc unit for stationary and portable wet well installation in intermittent operation.

#### Hydraulics

The outlet on the pressure side is designed as horizontal flange connection. The maximum possible dry matter is 8 % (depending on the hydraulics) Vortex impellers are used as the impeller shape.

### Series description Wilo-Rexa FIT

#### Motor

The motors available are glanded motors in single-phase version (with built-in operation capacitor) and three-phase version for the direct starting. The waste heat is given off directly to the surrounding fluid via the motor housing. These motors can be operated immersed in permanent operation (S1) and non-immersed in short-term operation (S2) or intermittent operation (S3).

Furthermore the motors are equipped with thermal motor monitoring. This protects the motor windings against overheating. For units with single-phase AC motors this is built-in and switches automatically. I.e. if the motor is switched off due to overheating and then cools down it is automatically switched on again. Bimetal sensors are used as standard for this.

In addition the motor can be equipped with an external sealing chamber electrode for monitoring the oil barrier chamber. This signals if there is water ingress into the oil barrier chamber through the mechanical seal on the fluid side.

The connecting cable has a length of 10 m as standard and is available in following versions:

- With bare cable ends
- With plug
- With float switch and plug

#### Seal

There is an oil barrier chamber between the motor and hydraulics. This is filled with medicinal white oil. The fluid-side and motor-side seals are provided by two mechanical seals which rotate independently of each other.

#### Scope of delivery

- Submersible sewage pump with 10 m cable
- Cable version depending on the variant:
  - With bare cable ends
  - With plug
  - With float switch and plug
- Operating and maintenance manual

#### Accessories

- Suspension unit or pump base
- External sealing chamber monitoring for monitoring the oil barrier chamber
- Chains
- Switchgears, relays and plugs
- Fixation sets with anchor bolts

#### Commissioning

##### Operation in wet well installation with non-immersed motor:

The motor can be run non-immersed. The operating times are defined here by the "Operating mode for non-immersed operation". This information must be strictly observed!

- Short-term operation S2: The maximum operating time is 15 minutes (S2-15minutes).
- Intermittent operation S3: By default, the maximum operating time is 1 minute in S3 operation (S3 10%). If the motor is completely immersed for 1 minute before a re-start and the necessary cooling of the motor has thus taken place, the maximum running time in S3 operation can be 2.5 minutes (S3 25%)!
- The maximum fluid temperature is 40 °C.

##### Dry-running protection:

The hydraulics housing must always be immersed. In the case of fluctuating fluid levels, the system should shut down automatically once the minimum water submersion is reached. Please refer to the dimension drawings for this.

##### Horizontal installation:

Horizontal installation is **not** possible!

##### Dry well installation:

Dry well installation is possible. The operating times are defined here by the "Operating mode for non-immersed operation". This information must be strictly observed!

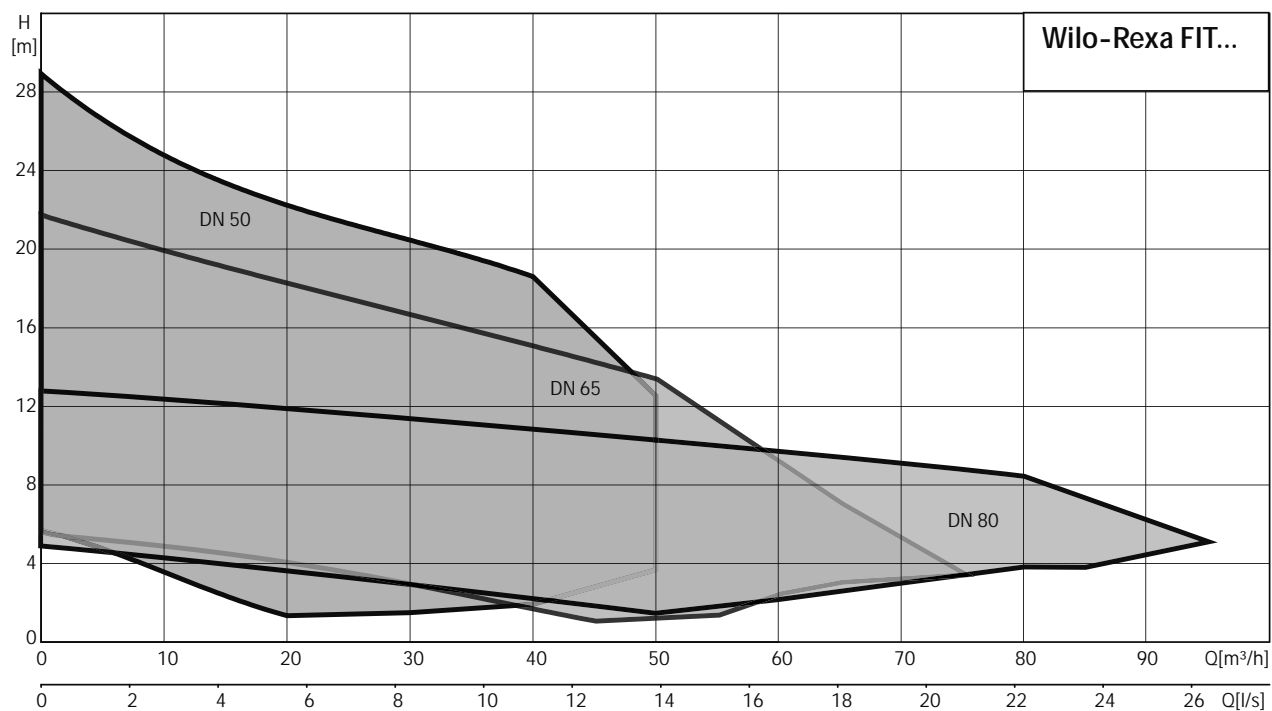
- Short-term operation S2: The maximum operating time is 15 minutes (S2-15minutes).
- Intermittent operation S3: The maximum operating time is 1 minute in S3 operation (S3 10%).
- The maximum fluid temperature is 40 °C.
- The maximum ambient temperature is 25 °C (in accordance with EN 60335-1)

# Wastewater collection and transport

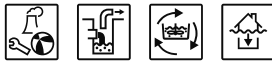
## Submersible sewage pumps

### Series description Wilo-Rexa FIT

#### Pump curves



### Series description Wilo-Rexa PRO



#### Design

Submersible sewage pump for permanent operation, completely of cast iron

#### Type key

Example: **Wilo-Rexa PRO V06DA-110/EAD1X2-T0015-540-O**

<b>PRO</b>	Series name
<b>V</b>	Vortex impeller
<b>06</b>	Nominal diameter of pressure connection e.g. DN 65
<b>D</b>	Hydraulics drilled on the suction side in accordance with DIN drilled
<b>A</b>	Material version, hydraulics A = standard version
<b>110</b>	Hydraulics intended use
<b>E</b>	Motor version E = dry motor R = reduced-power motor
<b>A</b>	Material version, motor A = standard version
<b>D</b>	Seal with two independent mechanical shaft seals
<b>1</b>	IE efficiency class, e.g. 1 = IE1 (derived from IEC 60034-30)
<b>X</b>	Ex-rated X = ATEX F = FM C = CSA
<b>2</b>	Number of poles
<b>T</b>	Mains connection version: M = 1~ T = 3~
<b>0015</b>	Value/10 = motor power $P_2$ in kW
<b>5</b>	Frequency (5 = 50 Hz, 6 = 60 Hz)
<b>40</b>	Key for rated voltage
<b>o</b>	Additional electrical equipment: O = with bare cable end, A = with float switch and plug

#### Application

For pumping in permanent operation of:

- Waste water and sewage
- Waste water containing faeces
- Sludges up to maximum 8% dry matter (depending on the selected hydraulics)  
out of sumps and vessels in municipal and industrial applications as well as to domestic and site drainage in accordance with EN 12050 (observing regional-specific regulations and instructions).

#### Special features/product advantages

- Submersible
- Vortex impeller non-susceptible to clogging
- Seal by two mechanical shaft seals
- Ex-rated in accordance with ATEX as standard
- Operation with frequency converter
- Optional external sealing chamber control for the oil barrier chamber
- Longitudinally watertight cable inlet
- Very smooth operation
- Easy installation due to suspension unit or pump base

#### Technical data

- Mains connection: 1~230 V, 50 Hz or 3~400 V, 50 Hz
- Immersed operating mode: S1
- Non-immersed operating mode: S2-30 min; S3 25%
- Protection class: IP 68
- Insulation class: F
- Fluid temperature: 3 - 40°C, max. 60°C for 3 min
- Free passage: 50 / 65 / 80 mm
- Max. immersion depth: 20 m
- Cable length: 10 m

#### Equipment/function

- Leakage detection for the motor compartment
- Winding temperature monitoring with bimetal sensor
- Optional external sealing chamber control for the oil barrier chamber

#### Materials

- Motor housing: EN-GJL-250
- Hydraulic housing: EN-GJL250
- Impeller: EN-GJL250
- Static seals: NBR
- Sealing on pump side: SiC/SiC
- Sealing on motor side: C/MgSiO<sub>4</sub>
- Shaft end: Stainless steel 1.4021

# Wastewater collection and transport

## Submersible sewage pumps

### Series description Wilo-Rexa PRO

#### Description/design

Submersible sewage pump as submersible monobloc unit for stationary and portable wet well installation in permanent operation.

#### Hydraulics

The outlet on the pressure side is designed as horizontal flange connection. The maximum possible dry matter is 8 % (depending on the hydraulics) Vortex impellers are used as the impeller shape.

#### Motor

The motors available are glanded motors in single-phase version (with built-in operation capacitor in external switchgear) and three-phase version for the direct starting. The waste heat is given off directly to the surrounding fluid via the motor housing. These motors can be operated immersed in permanent operation (S1) and non-immersed in short-term operation (S2) or intermittent operation (S3).

Furthermore the motors are equipped with the following monitoring devices:

- Leakage detection motor compartment  
The leakage detection signals water ingress into the motor compartment.
- Thermal motor monitoring  
The thermal motor monitoring protects the motor windings against overheating. Bimetal sensors are used as standard for this.

In addition the motor can be equipped with an external sealing chamber electrode for monitoring the oil barrier chamber. This signals if there is water ingress into the oil barrier chamber through the mechanical seal on the fluid side.

The connecting cable has bare cable ends and a length of 10 m as standard, and is available in following versions:

#### Seal

There is an oil barrier chamber between the motor and hydraulics. This is filled with medicinal white oil. The fluid-side and motor-side seals are provided by two mechanical seals which rotate independently of each other.

#### Scope of delivery

- Submersible sewage pump with 10 m cable
- version "P" with plug, single-phase AC motor with switchgear
- Operating and maintenance manual

#### Accessories

- Suspension unit or pump base
- External sealing chamber monitoring for monitoring the oil barrier chamber
- Chains
- Switchgears, relays and plugs
- Fixation sets with anchor bolts

#### Commissioning

##### Operation in wet well installation with non-immersed motor:

The motor can be run non-immersed. The operating times are defined here by the "Operating mode for non-immersed operation". This information must be strictly observed!

- Short-term operation S2: The maximum operating time is 30 minutes (S2-30minutes).
- Intermittent operation S3: By default, the maximum operating time is 2.5 minutes in S3 operation (S3 25%). If the motor is completely immersed for 1 minute before a re-start and the necessary cooling of

the motor has thus taken place, the maximum running time in S3 operation can be 5 minutes (S3 50%)!

- The maximum fluid temperature is 40 °C.

#### Dry-running protection:

The hydraulics housing must always be immersed. In the case of fluctuating fluid levels, the system should shut down automatically once the minimum water submersion is reached. Please refer to the dimension drawings for this.

#### Horizontal installation:

Horizontal installation is **not** possible!

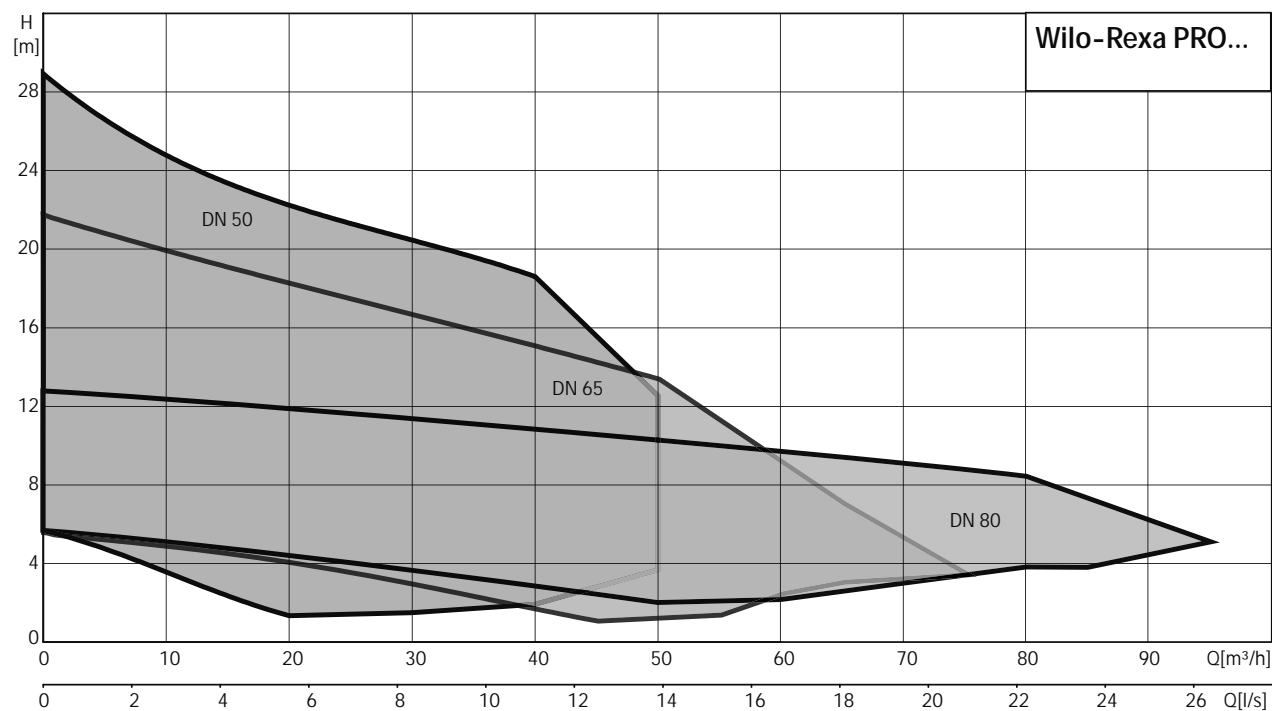
#### Dry well installation:

Dry well installation is possible. The operating times are defined here by the "Operating mode for non-immersed operation". This information must be strictly observed!

- Short-term operation S2: The maximum operating time is 30 minutes (S2-30minutes).
- Intermittent operation S3: The maximum operating time is 2.5 minutes in S3 operation (S3 25%).
- The maximum fluid temperature is 40 °C.
- The maximum ambient temperature is 25 °C (in accordance with EN 60335-1)

### Series description Wilo-Rexa PRO

#### Pump curves



# Wastewater collection and transport

## Submersible sewage pumps

### Series description Wilo-EMU FA (standard variant)



#### Design

Submersible sewage pump

#### Type key

E.g.:	<b>Wilo-EMU FA 08.22W-133+T12-2/11</b>
<b>FA</b>	Submersible sewage pump
<b>08</b>	Nominal diameter of DN 80 pressure connection
<b>22</b>	Performance indicator
<b>W</b>	Impeller shape (W = vortex impeller, E = single-channel impeller)
<b>133</b>	Impeller diameter [mm]
<b>T</b>	Motor version
<b>12</b>	Size
<b>2</b>	Number of poles
<b>11</b>	Package length [cm]

#### Application

- Pumping of sewage with solid constituents in water treatment systems and pumping stations
- Local drainage, water control and process water extraction
- Applications in construction and industry

#### Special features/product advantages

- Operation in stationary and portable wet well installation
- Heavy-duty version made of grey cast iron
- Easy installation due to suspension unit or pump base
- Longitudinally watertight cable lead-in
- Cable length 10 m
- ATEX approval

#### Technical data

- Mains connection: 3~400 V, 50 Hz
- Immersed operating mode: S1
- Surfaced operating mode: S1, S2-15 or S2-30 (depending on type)
- Thermal motor monitoring
- Protection class: IP 68
- Insulation class: F
- Fluid temperature: 3 - 40 °C
- Cable length: 10 m
- Free ball passage from 45 mm to 100 mm
- Permanently lubricated roller bearings
- Max. immersion depth: 20 m

#### Equipment/function

- Stationary dry well installation possible for short-term operation, S1 and S2 (depending on type)
- Heavy-duty version made of cast iron
- Simple installation via suspension unit or pump base

#### Materials

- Pump housing: EN-GJL-250
- Impeller: EN-GJL or EN-GJS
- Static seals: NBR
- Mechanical seal on pump side: SiC/SiC
- Mechanical seal on motor side: SiC/SiC (depending on type)
- Rotary shaft seal on motor side: NBR (depending on type)
- Motor housing: EN-GJL-250
- Shaft: Stainless steel 1.4021

#### Description/design

Submersible sewage pump as submersible monobloc unit for stationary and portable wet well installation.

#### Hydraulics

The outlet on the pressure side is designed as horizontal flange connection. The maximum possible dry matter content is 8%, depending on the hydraulics and impeller type.

The following impeller shapes are used:

- Vortex impeller (W)
- Single-channel impeller (E)

Each single-channel hydraulic system (E) is equipped with a counter ring and stationary wear ring made of hardened material (except for FA 08.41E). These ensure the consistently high efficiency of the unit for a long duration.

#### Motor

Dry motors (T motors) give off their heat directly to the surrounding fluid via the housing components and can be used in immersed state for permanent operation. Depending on the size, they can also be used in non-immersed state for short-term operation.

All motors have a sealing chamber that protects the motor from fluid ingress. It can be accessed from the outside and can be monitored with an optional sealing chamber electrode.



### Series description Wilo-EMU FA (standard variant)

All filling fluids used are potentially biodegradable and environmentally safe.

The cable inlet of the dry motors is longitudinally watertight. The cable length is 10 m.

#### Sealing

Fluid-side and motor-side sealing is possible in the following versions depending on the motor type:

- Version H: Mechanical seal for the fluid side, rotary shaft seal for the motor side
- Version G: Two independently operating mechanical seals

#### Scope of delivery

- Pump ready for connection with 10 m connecting cable without plug
- Installation and operating instructions

#### Commissioning

Operation with surfaced motor:

Surfacing of the self-cooling motors (FA 05.11W and FA 05.33E) is permitted.

Dry motors (T motors) may be surfaced only if an operating mode for surfaced operation is specified.

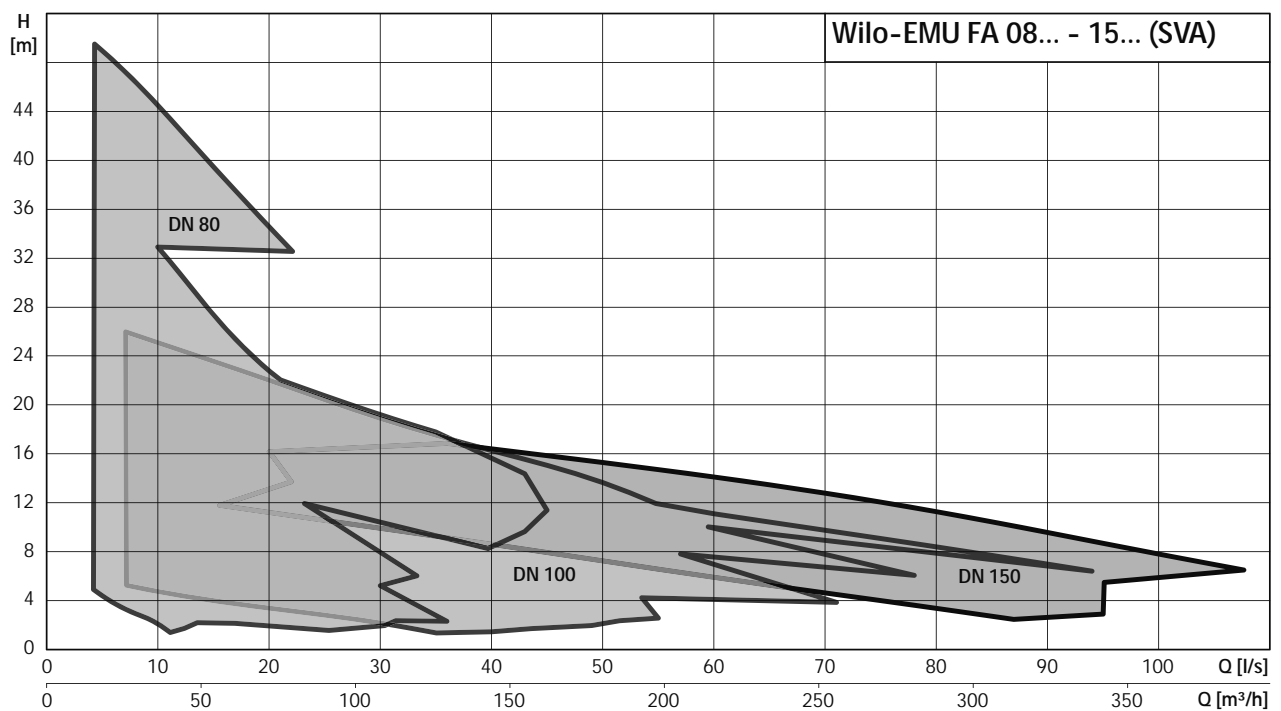
Dry-running protection system:

The hydraulic housing must always be immersed to prevent air from being drawn in. In the case of fluctuating fluid levels, the system should shut down automatically once the minimum water submersion is reached.

#### Accessories

- Suspension unit or pump base
- Various pressure outlets and Storz couplings
- Chains
- Switchgears, relays and plugs

#### Duty chart



# Electrical accessories

## Recommended accessories

Wilo ...	EC Drain PD1 <sup>1)</sup>	EC-Drain 1x4.0 <sup>1)</sup>	EC-Drain 2x4.0 <sup>2)</sup>	Drain-Control PL1 <sup>1)</sup>	Drain-Control PL1 WS <sup>1)</sup>	Drain-Control PL2 <sup>2)</sup>	Drain-Control PL2 WS <sup>2)</sup>	Drain-Control 1 <sup>1)</sup>	Drain-Control 2 <sup>2)</sup>
<b>Submersible drainage pumps, self-priming drainage pumps, drainage pumps for hot water</b>									
Wilo-Drain TM/TMW/TMR 32	—	•	•	—	—	0	—	—	—
Wilo-Drain TS/TSW 32	—	•	•	—	—	0	—	—	—
Wilo-Drain TS 40/50/65	—	•	•	0	—	0	—	0	0
Wilo-EMU KS	—	•	•	0	—	0	—	0	0
Wilo-Drain LP/LPC	—	•	•	—	—	0	—	0	0
Wilo-Drain TMT/TMC	—	•	•	0	—	0	—	—	—
Wilo-Drain VC	—	•	•	0	—	—	—	—	—
<b>Submersible sewage pumps with macerator</b>									
Wilo-Drain MTC 40	•	—	—	•	0	•	0	0	0
Wilo-Drain MTC 32	•	—	—	0*	0*	0*	0*	•	•
Wilo-Drain MTS 40	•	—	—	•	0	•	0	0	0
<b>Submersible sewage pumps</b>									
Wilo-Drain TC 40	—	•	•	0	—	0	—	—	—
Wilo-Drain STS 40	—	•	•	0	—	0	—	—	—
Wilo-Drain TP 50	—	•	•	0	—	0	—	0	0
Wilo-Drain TP 65	—	•	•	•	—	•	—	0	0
Wilo-Rexa FIT	—	•	•	•	—	•	—	0	0
Wilo-Rexa PRO	—	—	—	0	0	0	—	•	•
Wilo-Drain TP 80, 100	—	—	—	0	0	—	—	•	•
Wilo-EMU FA 08... to 15...	—	—	—	0*	—	0*	—	•	•
<b>Condensate lifting units, wastewater lifting units</b>									
Wilo-DrainLift Con	—	—	—	—	—	—	—	—	—
Wilo-DrainLift TMP	—	—	—	—	—	—	—	—	—
Wilo-DrainLift Box	—	—	—	—	—	—	—	—	—
<b>Sewage lifting units</b>									
Wilo-DrainLift KH 32	—	—	—	—	—	—	—	—	—
Wilo-DrainLift XS-F	—	—	—	—	—	—	—	—	—
Wilo-DrainLift S	—	—	—	—	—	—	—	—	—
Wilo-DrainLift M	—	—	—	—	—	—	—	—	—
Wilo-DrainLift L	—	—	—	—	—	—	—	—	—
Wilo-DrainLift XL	—	—	—	—	—	—	—	—	—
Wilo-DrainLift XXL	—	—	—	—	—	—	—	—	—
Wilo-DrainLift FTS	—	—	—	—	—	—	—	—	—
<b>Pumps stations</b>									
Wilo-DrainLift WS 40 Basic	—	—	—	—	—	—	—	—	—
Wilo-DrainLift WS 40-50	—	—	—	—	•	—	•	—	—
Wilo-DrainLift WS 625	•	•	—	—	•	—	—	—	—
Wilo-DrainLift WS 830	•	•	—	—	•	—	—	—	—
Wilo-DrainLift WS 900/1100	•	•	•	0	•	0	•	—	—

• = Recommended, 0 = Optional, — = Not required, \* = Up to max. 4 kW motor power

<sup>1)</sup> Switchgear for 1 pump, <sup>2)</sup> Switchgear for 2 pumps, <sup>3)</sup> Required for use in potentially explosive areas

## Recommended accessories

Wilo ...	KAS	Drain-Alarm 2	Alarm-Control 1	Alarm-Control 2	Motor protection plug CEE	Level sensor	Float switch MS 1
<b>Submersible drainage pumps, self-priming drainage pumps, drainage pumps for hot water</b>							
Wilo-Drain TM/TMW/TMR 32	o	o	•	o	—	—	—
Wilo-Drain TS/TSW 32	o	o	•	o	—	—	—
Wilo-Drain TS 40/50/65	o	o	o	o	o	o	o
Wilo-EMU KS	o	o	o	o	—	o	o
Wilo-Drain LP	—	—	—	—	o	—	o
Wilo-Drain LPC	o	o	o	o	o	o	o
Wilo-Drain TMT/TMC	o	o	o	o	o	o	o
Wilo-Drain VC	o	o	o	o	o	o	o
<b>Submersible sewage pumps with macerator</b>							
Wilo-Drain MTC 40	o	o	o	o	o	o	o
Wilo-Drain MTC 32	o	o	o	o	o	•	o
Wilo-Drain MTS 40	o	o	o	o	o	•	o
<b>Submersible sewage pumps</b>							
Wilo-Drain TC 40	o	o	o	o	o	o	o
Wilo-Drain STS 40	o	o	o	o	o	o	o
Wilo-Drain TP 50	o	o	o	o	o	o	o
Wilo-Drain TP 65	o	o	o	o	o	o	o
Wilo-Rexa FIT	o	o	o	o	o	o	o
Wilo-Rexa PRO	—	—	—	—	o	•	o
Wilo-Drain TP 80, 100	—	—	—	—	o*	•	o
Wilo-EMU FA 08... to 15...	—	—	—	—	o*	•	o
<b>Condensate lifting units, wastewater lifting units</b>							
Wilo-DrainLift Con	—	—	—	—	—	—	—
Wilo-DrainLift TMP	—	—	o	•	—	—	—
Wilo-DrainLift Box	o	o	o	•	—	—	—
<b>Sewage lifting units</b>							
Wilo-DrainLift KH 32	—	—	o	•	—	—	—
Wilo-DrainLift XS-F	—	—	—	—	—	—	—
Wilo-DrainLift S	o	o	o	o	—	—	—
Wilo-DrainLift M	—	o	—	—	—	—	—
Wilo-DrainLift L	—	o	—	—	—	—	—
Wilo-DrainLift XL	—	o	—	—	—	—	—
Wilo-DrainLift XXL	o	o	o	o	—	—	—
Wilo-DrainLift FTS	o	o	o	o	—	—	—
<b>Pumps stations</b>							
Wilo-DrainLift WS 40 Basic	o	o	o	o	—	•	—
Wilo-DrainLift WS 40-50	o	o	o	o	—	•	—
Wilo-DrainLift WS 625	—	o	—	—	—	•	o
Wilo-DrainLift WS 830	—	o	—	—	—	•	o
Wilo-DrainLift WS 900/1100	—	o	—	—	—	•	o

• = Recommended, o = Optional, — = Not required, \* = Up to max. 4 kW motor power

<sup>1)</sup> Switchgear for 1 pump, <sup>2)</sup> Switchgear for 2 pumps, <sup>3)</sup> Required for use in potentially explosive areas

# Electrical accessories

## Recommended accessories

Wilo ...	Float switch WA	Dynamic pressure system	Bubbling-through system	Ex-rated cut-off relay	Zener barrier	Switch cabinet	Flashing light	Signal horn
<b>Submersible drainage pumps, self-priming drainage pumps, drainage pumps for hot water</b>								
Wilo-Drain TM/TMW/TMR 32	—	—	—	—	—	—	—	—
Wilo-Drain TS/TSW 32	—	—	—	—	—	—	—	—
Wilo-Drain TS 40	—	o	o	—	—	—	—	—
Wilo-Drain TS 50/65	•	o	o	o <sup>3)</sup>	o <sup>3)</sup>	—	—	—
Wilo-EMU KS	—	—	—	o <sup>3)</sup>	o <sup>3)</sup>	—	—	—
Wilo-Drain LP/LPC	•	—	—	—	—	—	—	—
Wilo-Drain TMT/TMC	•	o	o	—	—	—	—	—
Wilo-Drain VC	•	o	o	—	—	—	—	—
<b>Submersible sewage pumps with macerator</b>								
Wilo-Drain MTC 40	o	•	o	o	o	o	o	o
Wilo-Drain MTC 32	o	o	o	o <sup>3)</sup>	o <sup>3)</sup>	o	o	o
Wilo-Drain MTS 40	o	•	o	o <sup>3)</sup>	o <sup>3)</sup>	o	o	o
<b>Submersible sewage pumps</b>								
Wilo-Drain TC 40	•	o	o	—	—	—	—	—
Wilo-Drain STS 40	•	o	o	—	—	—	—	—
Wilo-Drain TP 50	•	o	o	o <sup>3)</sup>	o <sup>3)</sup>	o	o	o
Wilo-Drain TP 65	•	o	o	o <sup>3)</sup>	o <sup>3)</sup>	o	o	o
Wilo-Rexa FIT	•	o	o	—	—	o	o	o
Wilo-Rexa PRO	—	—	—	o <sup>3)</sup>	o <sup>3)</sup>	o	o	o
Wilo-Drain TP 80, 100	—	—	—	o <sup>3)</sup>	o <sup>3)</sup>	o	o	o
Wilo-EMU FA 08... to 15...	o	o	o	o <sup>3)</sup>	o <sup>3)</sup>	o	o	o
<b>Condensate lifting units, wastewater lifting units</b>								
Wilo-DrainLift Con	—	—	—	—	—	—	o	o
Wilo-DrainLift TMP	—	—	—	—	—	—	o	o
Wilo-DrainLift Box	o	—	—	—	—	—	o	o
<b>Sewage lifting units</b>								
Wilo-DrainLift KH 32	—	—	—	—	—	—	o	o
Wilo-DrainLift XS-F	—	—	—	—	—	—	o	o
Wilo-DrainLift S	—	—	—	—	—	—	o	o
Wilo-DrainLift M	—	—	—	—	—	—	o	o
Wilo-DrainLift L	—	—	—	—	—	—	o	o
Wilo-DrainLift XL	—	—	—	—	—	—	o	o
Wilo-DrainLift XXL	—	—	—	—	—	—	o	o
Wilo-DrainLift FTS	—	—	—	—	—	—	o	o
<b>Pumps stations</b>								
Wilo-DrainLift WS 40 Basic	—	—	—	—	—	—	—	—
Wilo-DrainLift WS 40-50	—	—	—	—	o	o	—	—
Wilo-DrainLift WS 625	o	o	o	o	o	o	o	o
Wilo-DrainLift WS 830	o	o	o	o	o	o	o	o
Wilo-DrainLift WS 900/1100	o	o	o	o	o	o	o	o

• = Recommended, o = Optional, — = Not required, \* = Up to max. 4 kW motor power

<sup>1)</sup> Switchgear for 1 pump, <sup>2)</sup> Switchgear for 2 pumps, <sup>3)</sup> Required for use in potentially explosive areas

## Equipment/function Basic and Comfort switchgears

Wilo ...	EC- Drain PD1	EC-Drain 1x4.0	EC Drain 2x4.0	Drain Con- trol PL 1/ PL 1 WS	Drain Con- trol PL 2/ PL 2 WS	Drain Control 1	Drain Control 2
<b>Application</b>							
Switchgear for controlling pumps	•	•	•	•	•	•	•
Alarm switchgear	—	—	—	—	—	—	—
Evaluation relay	—	—	—	—	—	—	—
Number of pumps to be controlled	1	1	2	1	2	1	2
<b>Mains connection</b>							
1~230 V/50 Hz	•	•	•	•	•	•	•
3~400 V/50 Hz	•	•	•	•	•	•	•
Max. current with direct starter	12 A	12 A	2x 12 A	12 A	2x 12 A	10 A	2x 10 A
Max. current with star-delta starter	—	—	—	—	—	> 10 A	> 10 A
<b>Design</b>							
Microprocessor-controlled	•	—	•	•	•	•	•
Electronic	—	•	—	—	—	—	—
Plastic housing	•	•	•	•	•	•	•
<b>Equipment</b>							
Test run	•	—	•	•	•	•	•
Pump starts counter/pulse counter	—	—	—	•	•	—	—
LC display	—	—	—	•	•	•	•
LED/control lamp	•	•	•	•	•	•	•
Main switch	—	•	•	• (WS only)	• (WS only)	•	•
Ampere indicator	—	—	—	•	•	• <sup>1)</sup>	• <sup>1)</sup>
Voltmeter	—	—	—	—	—	—	—
Adjustable follow-up time	•	—	•	•	•	•	•
Operating hours counter	—	—	—	•	•	•	•
Level measurement with float switch	•	• <sup>2)</sup>	• <sup>2)</sup>	• <sup>2)</sup>	• <sup>2)</sup>	• <sup>2)</sup>	• <sup>2)</sup>
Level measurement with pneumatic pressure transducer	•	—	—	•	•	—	—
Level measurement with level sensor (4-20 mA)	—	—	—	• <sup>3)</sup>	• <sup>3)</sup>	• <sup>3)</sup>	• <sup>3)</sup>
Level measurement with electrodes	—	—	—	—	—	—	—
Mains-dependent alarm	•	•	•	•	•	•	•
Mains-independent alarm	•	—	•	—	—	—	—
Integrated alarm (buzzer)	•	•	•	•	•	—	—
Pump cycling	—	—	•	—	•	—	•
<b>Signalling/display function</b>							
Collective run signal (SBM)	—	•	—	—	—	—	—
Collective fault signal (SSM)	•	•	•	•	•	•	•
Individual run signal (EBM)	—	—	—	—	—	•	•
Individual fault signal (ESM)	—	—	—	—	•	—	—

• = available, o = optional, — = not available

<sup>1)</sup> only for direct switch-on devices (up to 4 kW)<sup>2)</sup> in the potentially explosive area, only with ex-rated cut-off relay<sup>3)</sup> in the potentially explosive area, only with Zener barrier

# Electrical accessories

## Equipment/function Basic and Comfort switchgears

Wilo ...	EC- Drain PD1	EC-Drain 1x4.0	EC Drain 2x4.0	Drain Con- trol PL 1/ PL 1 WS	Drain Con- trol PL 2/ PL 2 WS	Drain Control 1	Drain Control 2
<b>Control functions (motor monitoring)</b>							
WSK	•	•	•	•	•	•	•
PTC	—	—	—	—	—	•	•
Impermeability (DI)	—	—	—	—	—	•	•
Electronic	•	•	•	•	•	• ( < 10 A)	• ( < 10 A)
Motor protection switch	—	—	—	o	o	• ( < 10 A)	• ( < 10 A)

• = available, o = optional, — = not available

<sup>1)</sup> only for direct switch-on devices (up to 4 kW)

<sup>2)</sup> in the potentially explosive area, only with ex-rated cut-off relay

<sup>3)</sup> in the potentially explosive area, only with Zener barrier

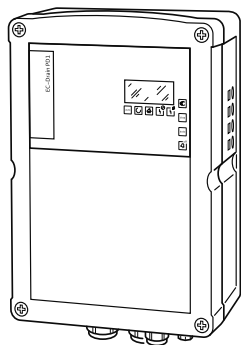
## Equipment/function Basic and Comfort switchgears

Wilo ...	KAS	Drain-Alarm 2	Alarm-Control 1	Alarm-Control 2
<b>Application</b>				
Switchgear for controlling pumps	—	—	—	—
Alarm switchgear	•	•	•	•
Evaluation relay	—	—	—	—
Number of pumps to be controlled	—	—	—	—
<b>Mains connection</b>				
1~230 V/50 Hz	•	•	•	•
3~400 V/50 Hz	—	—	—	—
Max. current with direct starter	—	—	—	—
Max. current with star-delta starter	—	—	—	—
<b>Design</b>				
Microprocessor-controlled	—	—	—	—
Electronic	•	•	•	•
Plastic housing	•	•	•	•
<b>Equipment</b>				
LED/control lamp	—	•	—	—
Level measurement with float switch	—	•	•	•
Level measurement with pneumatic pressure transducer	—	—	—	—
Level measurement with level sensor (4-20 mA)	—	—	—	—
Level measurement with electrodes	•	—	—	—
Mains-dependent alarm	•	•	•	•
Mains-independent alarm	•	•	•	•
Integrated alarm (buzzer)	•	•	•	•
Socket 1-230 V	—	—	—	•
<b>Signalling/display function</b>				
Collective run signal (SBM)	—	—	—	—
Collective fault signal (SSM)	—	—	—	—
Individual run signal (EBM)	—	—	—	—
Individual fault signal (ESM)	—	•	•	—
<b>Control functions (motor monitoring)</b>				
WSK	—	—	—	—
PTC	—	—	—	—
Impermeability (DI)	—	—	—	—
Electronic	—	—	—	—
Motor protection switch	—	—	—	—

• = available, — = not available

## Product descriptions

### Switchgear Wilo EC-Drain PD 1



Switchgear for level control of 1 submersible wastewater or sewage pump in the series Wilo-Drain or Wilo-EMU. Level measurement can be performed by the dynamic pressure system or 2 float switches.

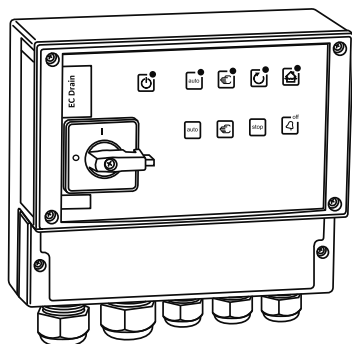
- LED for alarm, operation/run-on time, manual/automatic mode
- Input terminals for connecting 2 float switches (WA 65, WA 95 or MS 1)
- Button for manual mode of the pump
- The switching level and the motor currents are set by potentiometer and DIP switch
- Potential-free contacts for collective fault signal (changeover contact)
- Forced activation of the pump
- Pump switch-off with run-on time (0...120 s)
- Integrated mains-independent alarm buzzer by 9 V rechargeable battery (available as accessory)

Technical data:

- Operating voltage: 1~230 V or 3~400 V
- Frequency: 50/60 Hz
- Protection class: IP 54
- Dimensions (WxHxD): 190x320x110mm

**Attention:** Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. Ex-rated cut-off relays are to be provided for controlling pumps in potentially explosive areas.

### Switchgear Wilo EC-Drain 1x4.0



Microprocessor-controlled switchgear for automatic, transmitter-dependent control of 1 submersible wastewater/sewage pump of the series Wilo-Drain or Wilo-EMU

- Motor protection by means of integrated motor current monitoring and WSK evaluation
- Lockable main switch
- Transmitter connection for float switch, type WA 65, WA 95
- Button for manual mode of the pump
- High water alarm
- Forced activation with high water
- Potential-free fault signal (changeover contact) and potential-free run signal (changeover contact)
- Integrated mains-dependent alarm buzzer
- Operation, high water and malfunction display via LEDs on the front panel

Technical data:

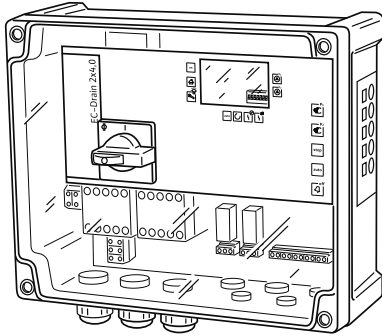
- Operating voltage: 1~230 V, 3~400 V, 3~230 V
- Connected load  $P_2$ : 4.0 kW
- Maximum current: 12 A
- Frequency: 50/60 Hz
- Protection class: IP 65 (within buildings/switch cabinets)
- Dimensions (W x H x D): 215 x 220 x 125 mm

**Important:** Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. Ex-rated cut-off relays are to be provided for controlling pumps in potentially explosive areas.



## Product descriptions

## Switchgear Wilo EC-Drain 2x4.0



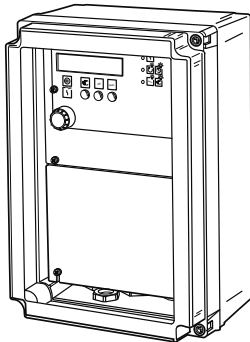
- Microprocessor controlled switchgear for automatic, transmitter-dependent control of 2 submersible wastewater or sewage pumps in the Wilo-Drain or Wilo-EMU series.
- Motor protection by integrated WSK evaluation
  - Lockable main switch
  - Sensor connection for 3 float switches type WA 65, WA 95 and MS 1
  - 2 buttons for manual operation of the pumps
  - Adjustable pump kick function for a pump start of 2 s after a standstill time of 24 hours
  - High water alarm
  - Forced activation with high water
  - Potential-free collective fault signal (changeover contact) and potential-free high water alarm (changeover contact)
  - Integrated network-independent alarm buzzer by 9 V rechargeable battery (available as accessory)
  - Operation, high water and malfunction display via LEDs
  - Maintenance interval display

## Technical data:

- Operating voltage: 1–230 V, 3–400 V
- Connected load  $P_2$ : 2x 4.0 kW
- Maximum current: 2x 12 A
- Frequency: 50/60 Hz
- Protection class: IP 54
- Dimensions (W x H x D): 289 x 239 x 155 mm

**Attention:** Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. Ex-rated cut-off relays are to be provided for controlling pumps in potentially explosive areas.

## Switchgear Wilo DrainControl PL 1



Switchgear for controlling the level of 1 submersible pump. Level measurement can be carried out with either the bubbling-through or the dynamic pressure system, via an electronic level sensor 0–1 mWs (4–20 mA) or float switch (WA 65, WA 95 or MS1).

- LC display
- LED for alarm, operation/run-on time, manual/automatic mode
- Potential-free contact for collective fault signal and high water alarm
- Forced switch-on of the pump
- Pump switch-off with run-on time (0...180 s)
- Integrated buzzer
- Operating hours counter, pump starts

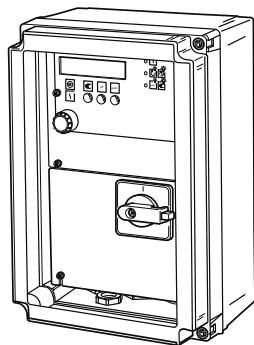
## Technical data:

- Operating voltage: 1–230 V, 3–400 V
- Connected load  $P_2$ : 4.0 kW
- Frequency: 50/60 Hz
- Protection class: IP 65 (within buildings/switch cabinets)
- Dimensions (W x H x D): 180 x 255 x 180 mm

**Attention:** Switchgear is not protected against explosions and may only be used outside of potentially explosive areas. A level sensor in the potentially explosive area (with breakdown barrier!) or a float switch (in the potentially explosive area with ex-rated cut-off relay) is to be provided for controlling the pump.

## Product descriptions

### Switchgear Wilo DrainControl PL 1-WS



Switchgear for level control of 1 submersible pump in conjunction with the pumps stations Wilo-DrainLift WS... Level measurement can be carried out with either the bubbling-through or dynamic pressure systems, via an electronic level sensor 0--1 mWs (4--20 mA) or float switch (WA 65, WA 95 or MS1).

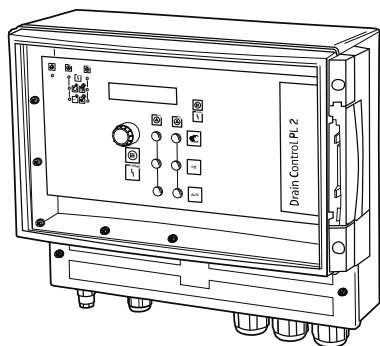
- LC display
- LED for alarm, operation/follow-up time, manual/automatic mode
- Potential-free contact for collective fault signal and high water alarm
- Forced switch-on of the pump
- Pump switch-off with run-on time (0...180 s)
- Integrated buzzer
- Operating hours counter, pump starts
- Lockable main switch
- 3~ mains, no neutral conductor required

Technical data:

- Operating voltage: 1~230 V, 3~400 V
- Connected load  $P_2$ : 4.0 kW
- Frequency: 50/60 Hz
- Protection class: IP 65 (within buildings/switch cabinets)
- Dimensions (W x H x D): 180 x 255 x 180 mm

**Attention:** Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. A level sensor in the potentially explosive area (with breakdown barrier!) or a float switch (in the potentially explosive area with ex-rated cut-off relay) is to be provided for controlling the pump.

### Switchgear Wilo DrainControl PL 2



Switchgear for controlling the levels of 2 submersible pumps. Level measurement can be carried out by either the bubbling-through or the dynamic pressure system, via an electronic level sensor 0--2.5 mWs (4-20 mA) or float switch (WA 65, WA 95 or MS1).

- LC display, multi-language switching
- LED for alarm, operation/run-on time, manual/automatic mode
- Potential-free contacts for collective fault signal and high water alarm, malfunction pump 1, malfunction pump 2
- Forced switch-on of the pump
- Pump switch-off with run-on time (0...180 s)
- Automatic fault-actuated switchover
- Integrated buzzer
- Operating hours counter, pump starts

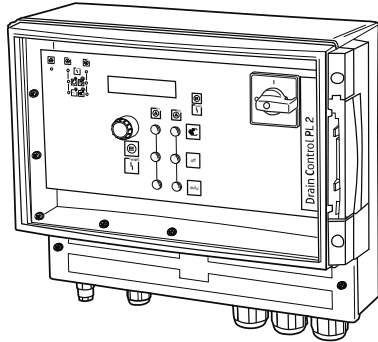
Technical data:

- Operating voltage: 1~230 V, 3~400 V
- Connected load  $P_2$ : 2x 4.0 kW
- Frequency: 50/60 Hz
- Protection class: IP 65 (within buildings/switch cabinets)
- Dimensions (W x H x D): 320 x 300 x 120 mm

**Attention:** Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. A level sensor in the potentially explosive area (with breakdown barrier!) or a float switch (in the potentially explosive area with ex-rated cut-off relay) is to be provided for controlling the pump.

## Product descriptions

### Switchgear Wilo DrainControl PL 2-WS



Switchgear for controlling the levels of 2 submersible pumps. Level measurement can be carried out with either the bubbling-through or the dynamic pressure system, via an electronic level sensor 0-1 mWs (4-20 mA) or float switch (WA 65, WA 95 or MS1).

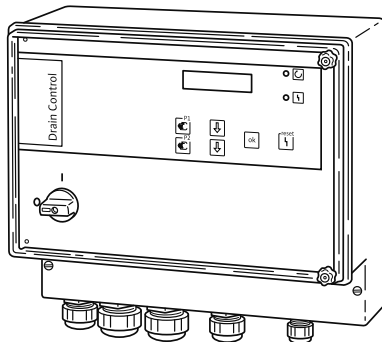
- LC display, multi-language switching
- LED for alarm, operation/run-on time, manual/automatic mode
- Potential-free contacts for collective fault signal and high water alarm, malfunction pump 1, malfunction pump 2
- Forced switch-on of the pump
- Pump switch-off with run-on time (0...180 s)
- Automatic fault-actuated switchover
- Integrated buzzer
- Operating hours counter, pump starts
- Lockable main switch
- 3~ mains, no neutral conductor required

Technical data:

- Operating voltage: 1~230 V, 3~400 V
- Connected load  $P_2$ : 2x 4.0 kW
- Frequency: 50/60 Hz
- Protection class: IP 65 (within buildings/switch cabinets)
- Dimensions (W x H x D): 320 x 300 x 120 mm

**Attention:** Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. A level sensor in the potentially explosive area (with breakdown barrier!) or a float switch (in the potentially explosive area with ex-rated cut-off relay) is to be provided for controlling the pump.

### Switchgear Wilo DrainControl 1/2



Microprocessor-controlled switchgear with multi-language, menu-prompted operation via membrane keyboard and a two-row LC display for fully automatic control of a submersible pump. Level measurement can be performed either via a level sensor or a float switch.

- Two-line LCD-display with 2 x 16 characters, multilingual, switchable, menu-driven operating option via membrane keyboard
- Manual-0-Automatic switch via membrane keyboard
- Input terminals for connecting a level sensor:
  - Standard: 0-2.5 mWs (4-20 mA)
  - Optional: 0-1 mWs (4-20 mA) or 0-5 mWs (4-20 mA)
- Input terminals for connecting float switches WA 65, WA 95 or MS 1
- Automatic phase failure and rotating field monitoring
- Operating hours counter
- Potential-free contacts for:
  - Collective fault signal
  - Horn (NO contact)
  - Operation of pump 1 (NO contact)
- Main switch
- Integrated electronic motor current monitoring
- Starting mode: Direct or star-delta

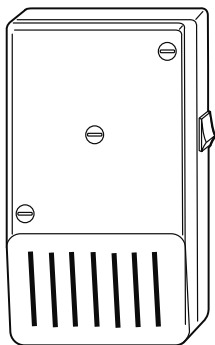
Technical data:

- Operating voltage: 1~230 V, 3~400 V, 3~230 V
- Frequency: 50 Hz
- Protection class: IP 54
- Housing: Plastic for wall-mounted installation
- Max. ambient temperature 40 °C
- Dimensions (W x H x D): depending on the model

**Attention:** Switchgears are not protected against explosions and may only be used outside of potentially explosive areas. A level sensor in the potentially explosive area (with breakdown barrier!) or a float switch (in the potentially explosive area with ex-rated cut-off relay) is to be provided for controlling the pump.

## Product descriptions

### Small alarm switchgear Wilo KAS

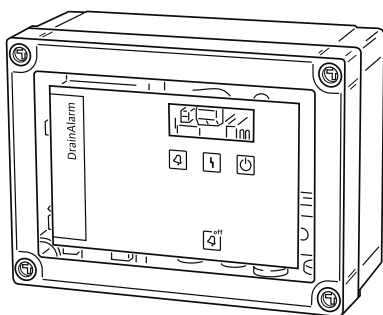


Small alarm switchgear with signalling tone, signal transmitter (electrode) and 3 m cable

Technical data:

- Self-charging power supply unit (battery backup approx. 5 hrs)
- ISO plug housing (shock-proof)
- Protection class: IP 30
- Signal intensity: 70 dBA
- 230 V~ / 9 V=; 1.5 VA

### Wilo Drain Alarm alarm switchgear

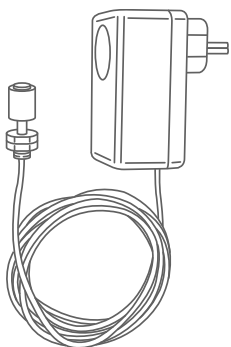


Alarm switchgear for wall-mounted installation with optical and acoustic alarm signal (buzzer); a WA float switch is required as the transmitter.

Technical data:

- Self-charging power supply unit
- Potential-free contact
- ISO housing
- Alarm signal: 85 dBA
- Protection class: IP 54
- 1~ 230 V

### Wilo-AlarmControl alarm switchgear



#### > Wilo-AlarmControl 1

Mains-independent alarm system with shock-proof plug, rechargeable battery, acoustic alarm signal (buzzer) and potential-free contact. Mini-float switch with 3 m cable mounted on the device.

#### > Wilo-AlarmControl 2

Mains-independent alarm system with shock-proof adapter plug for connecting an appliance, e.g. a washing machine. With rechargeable battery and acoustic alarm signal (buzzer). Mini-float switch with 3 m cable mounted on the device.

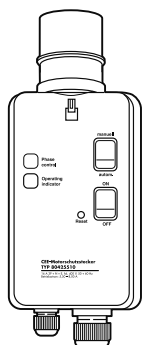
Technical data:

- Operating voltage: 1~230 V, 50 Hz
- Control voltage: 12 VDC (unstabilized)
- Alarm contact for AlarmControl 1: Potential-free NO contact, max. contact load 1 A (230 VAC)
- Contact socket for AlarmControl 2: max. contact load 16 A (250 VAC)
- Protection class: IP 20
- Housing: ABS
- Cable length, mini-float switch: 3 m (2 x 0.75 mm<sup>2</sup>)
- Maximum ambient temperature: + 60 °C
- Dimensions (W x H x D): 68 x 112 x 53 mm

**Attention:** Switchgears are not protected against explosions and may only be used outside of potentially explosive areas.

## Product descriptions

### Motor switchgear



Motor protection plug without thermal motor protection.

- Phase inverter
- Rotating field monitoring
- On/Off switch
- Connection for a float switch with "manual/automatic mode" switchover button
- Operation display

Technical data:

- Connection: 3~400 V/50 Hz, 5-pole
- Max. rated motor power  $P_2$ : 4 kW
- Max. current: 16 A
- Protection class: IP 54

**Attention:** Switchgears are not protected against explosions and may be used only outside potentially explosive areas.

### Level sensor

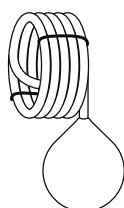


For level measurement.

Technical data:

- Protection class: IP 68
- Measurement range: 0-1 mWS; 0-2.5 mWS
- Cable lengths: 10, 30 or 50 m
- Output signal: 4-20 mA
- Certified explosion approval in accordance with ATEX

### Float switch MS



Signal transmitters for level control devices as min./max switches for fluids that are aggressive or contain faeces, floats with the fluid and switches when tilted.

Function:

Because of its construction and switching point, the float switch can exhibit only a very small hysteresis, i.e. the ON and OFF switching points lie close together. This property cannot be changed, not even the length of the cable. The following points must therefore be noted for the use of the signal transmitter:

- If only one signal transmitter is used, the connection to the switchgear must be made using a configurable run-on time, e.g. Wilo-DrainControl..., Wilo-EC Drain...
- The level control device must be fitted with two signal transmitters.

> **Technical data**

- Max. fluid temperature: 80 °C
- Cable length: 10 m
- Switching capacity: 250 V / 5 A
- Max. pressure: 2 bar
- Switching angle: 10°
- Protection class: IP 68

## Product descriptions

### Float switch WA



Signal transmitters for level control devices as min./max switches for fluids that are slightly dirty, floats with the fluid and switches when tilted. The signal transmitter must be permanently positioned on its signal line for the switching point.

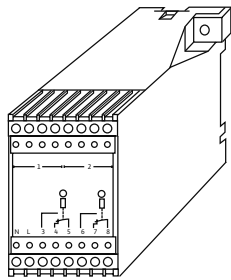
#### Technical data

- Max. fluid temperature: 60 - 90 °C
- Cable lengths: 5...30 m
- Switching capacity: 250 V / 8 A / 1.1 kW
- Max. pressure: 1 bar
- Protection class: IP 68
- Type WA...: as low-water cut-out switchgear for indirect connection.
- Type WAO...: if the actuated pump pumps into a tank, above the level of which switching is to take place.

#### Versions

- Type WA...: Switching points up "ON" / down "OFF"
- Type WAO...: Switching points up "OFF" / down "ON"
- TYPE ...EK: Float switch incl. small switchgear EK for pumps with AC motors up to 1 kW nominal power

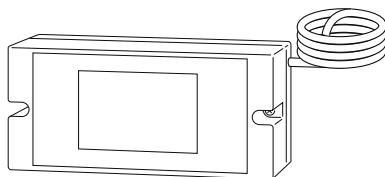
### Ex-rated cut-off relay



For the installation of float switches in potentially explosive areas.

- Suitable for connecting 2 to 5 float switches
  - 2-circuit (connection of 2 float switches possible)
  - 3-circuit (connection of 3 float switches possible)
  - 4-circuit (connection of 4 float switches possible)
  - 5-circuit (connection of 5 float switches possible)
- Installed in an ISO housing, with transparent cover
- Protection class IP 54
- For wall-mounted installation
- Dimensions (W x H x D): 182 x 180 x 165 mm

### Zener barrier

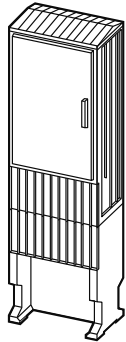


For the installation of a level sensor in potentially explosive areas.

- Suitable for the connection of a level sensor.
- Protection class IP 40, housing for installation in non-explosive areas.
- Dimensions (W x H x D): 75 x 150 x 106 mm
- 1 m cable premounted.

## Product descriptions

### Switch cabinet for Wilo DrainControl for outdoor installation



One- or two-part cable distribution cabinet for outdoor installation. Made of fibreglass-reinforced polyester including integrated mounting plate. Housing with smooth surface.

**Cable distribution cabinet without equipment:**

Optional installation with selected accessories (additional charge).

- One-part size 00, protection class IP 34D, outer dimensions (WxHxD): 400 x 800(1600) x 225 for DrainControl PL1 and EC-Drain 1x4.0
- Two-part size 00, protection class IP 44, outer dimensions (WxHxD): 460 x 830(1760) x 330 for DrainControl PL1 WS
- Two-part size 0, protection class IP 44, outer dimensions (WxHxD): 590 x 830(1760) x 330 for DrainControl 1+2 (0.5–10 A) direct starter, PL2 and PL2 WS
- Two-part size 1, protection class IP 44, outer dimensions (WxHxD): 785 x 830(1760) x 330
- Two-part size 2, protection class IP 44, outer dimensions (WxHxD): 1115 x 830(1760) x 330

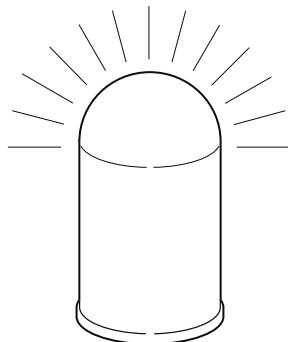
**Cable distribution cabinet including switchgear:**

with mounted distribution board, heating and flashing light.

- One-part size 00, protection class IP 34D, outer dimensions (WxHxD): 400 x 800(1600) x 225 optionally including DrainControl PL1 (not -WS), or EC-Drain 1x4.0
- Two-part size 0, protection class IP 44, outer dimensions (WxHxD): 590 x 830(1760) x 330 optionally including DrainControl PL2 1 (not water column) direct starter or DrainControl 2 (0.5–10A) direct starter

The switchgears being used have the protection class IP 54.

### Flash light

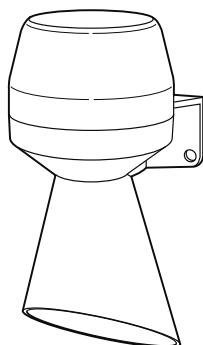


Signal light for outdoor installation on the switch cabinet.

Technical data:

- Connection: 1~230 V, 50 Hz

### Signal horn



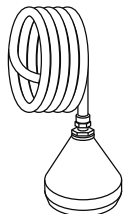
For connection to Wilo-DrainControl switchgear

Technical data:

- 1~230 V, 50 Hz
- Noise pressure level: 92 dBA

## Product descriptions

### Dynamic pressure system

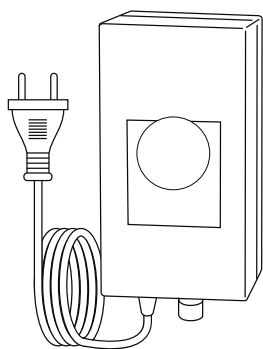


The pressure transducer (immersion bell) detects changes in the fluid level in the sump. The change in the pressure value in the immersion bell are transmitted via a leak-proof hose to the Wilo DrainControl PL switchgear and evaluated by measuring elements in the switchbox.

Scope of delivery:

- Immersion bell with 10 m hose

### Bubbling-through system



Dynamic pressure system with compressed air permanently introduced by small compressor. The immersion bell (dynamic pressure system) is to be ordered separately.

Scope of delivery:

- Mini-compressor
- 3 m hose with T-iron and non-return valve



Product descriptions

## Basic hydraulic principles

### Flow rate

Solid matter and settling sediments in the sewage may be deposited in pipes, resulting in the clogging of the drainage system. To prevent pipe clogging, it is advisable to maintain the following minimum flow rates:

Recommendations for flow velocities		
Pipe/standard	Value according to standard	Recommendation
<b>Free drainage via gravity</b>		
Horizontal pipe	—	$V_{\min} = 0.7 \dots 1.0 \text{ m/s}$
Vertical pipe	—	$V_{\min} = 1.0 \dots 1.5 \text{ m/s}$
Sewer pipes	—	$V_{\min} = 2.0 \dots 3.0 \text{ m/s}$
<b>Pressure drainage</b>		
Pipe flushed with compressed air EN 1671	$0.6 \text{ m/s} \leq v_{\min} < 0.9 \text{ m/s}$	$0.7 \text{ m/s} \leq v_{\min}$
Non-flushed pipes, ATV-DVWK A 134	$0.5 \text{ m/s} \leq v_{\min} < 0.9 \text{ m/s}$	$0.7 \text{ m/s} \leq v_{\min} \leq 2.5 \text{ m/s}$

Depending on the composition of the fluid (e.g. high sand content, pumping sludge), the above-mentioned values may be higher. However, the corresponding regional and national standards and guidelines need to be observed. The flow rate is determined by the full volume flow ( $\text{m}^3/\text{s}$ ) per area ( $\text{m}^2$ ) and should generally lie between 0.7 m/s and 2.5 m/s.

The following should be taken into account for the selection of the pipe diameter:  
The greater the flow velocity, the fewer deposits and the lower the risk of clogging. But then the resistances in the pipe increase with increasing flow velocity, which leads to system inefficiency and can lead to premature component damage due to abrasive constituents.

### Building services

Both the sewage generated in a building or on a piece of land and the rainwater which accumulates on courtyard and roof surfaces should be pumped to the sewer system with the aid of pumping stations and lifting units, insofar as they do not flow naturally downhill into the local sewage network. There are different ways of disposing of this sewage, depending on the respective fluids to be pumped. Wilo submersible pumps and sewage lifting units are designed especially to meet these different requirements and comply with currently valid EN standards. Planning must be carried out in accordance with DIN EN 12050/12056 – Drainage systems for buildings and sites. A distinction is made here between sewage emerging from discharge points above the local backflow level, which must be guided to the public sewer system by taking advantage of natural slopes, and sewage from discharge points whose water levels in the anti-siphon trap lie below the local backflow level. The backflow level is defined in by-laws. The upper street edge is usually taken as a rough guide value. Drainage and sewage (rainwater and wastewater), which accumulates below the backflow level, must be conveyed to the public sewer system via automatically operating lifting units – Wilo sewage lifting units or Wilo submersible pumps.

The following details, among others, are to be observed for system planning and design in accordance with DIN 1986-100, EN 12050 and EN 12056:

- Lifting units are to be designed in terms of performance in such a way that a minimum flow velocity of  $\geq 0.7 \text{ m/s}$  is guaranteed for the prescribed nominal diameters of the pressure pipe.  
Required minimum nominal diameters:  
Sewage lifting unit for sewage containing faeces without comminution unit: DN 80  
Sewage lifting unit for sewage containing faeces with comminution unit: DN 32  
Sewage lifting unit for sewage free of faeces DN: DN 32  
Sewage lifting unit for limited use for sewage containing faeces without comminution unit: DN 25  
Sewage lifting unit for limited use for sewage containing faeces without comminution unit: DN 20
- The pressure pipe of a lifting unit must be equipped with a non-return valve and installed with its bottom above the backflow level (backflow loop). The pressure pipe may not be connected to wastewater downpipes.
- Wastewater gate valves (supply and pressure sides) are to be installed in accordance with DIN 1986-100, EN 12050/EN 12056.
- Ventilation pipes for lifting units are to be guided to heights above the roof level; the minimum nominal pipe width is DN 70 for sewage lifting units.
- Feed lines are to be installed with sufficient slope (a minimum of 1:50).
- It is practical to install all pipes flexibly through masonry.
- An automatic standby pump is to be provided if the sewage disposal pipe does not allow for interruptions.
- Switchboxes and signalling systems are to be installed at a dry, easily accessible position. The signalling system is to be mounted at a position that can be observed.
- Lifting units must be serviced regularly. At least:  
1x per year in single-family homes  
Every six months in multi-family homes  
Every 3 months for systems in commercial operations
- The installation room is to be provided with sufficient ventilation and lighting. Above and next to all operating elements and parts to be maintained there should be a working space of at least 600 mm. The lifting unit must be fastened so that it is anti-buoyant.
- Sewage containing mineral oils or explosive admixtures must be guided through oil precipitators and/or petrol precipitators; those containing fatty substances must go through grease traps and those with sand through grit chambers. Acidic sewage must be neutralised. Pumps are generally to be made with Ex-protection.

### Determining the required pump and/or system power

#### Volume flow $Q_p$ [l/s]:

Equivalent to the sum of the incoming waste water  $Q_S$  and the incoming rainwater  $Q_r$ , which must be determined in accordance with EN 12050/EN 12056:

$Q_S$  = Rate of waste water flow [l/s] from the sum of all sewage sources, taking the simultaneity into account,  $Q_r$  = rainwater flow rate [l/s] as a product of rainfall, discharge coefficient and precipitation area.

#### Pumping head $H/H_{\text{man}}$ [m]:

Equivalent to the total height difference ( $H_{\text{geo}}$  in m) between the lowest collection tank level and the bottom of the backflow loop + the total friction losses  $H_v$  [m] in the pressure pipe.

Attention: When selecting the lifting unit, it is necessary to take into account that the pressure difference between the delivery head in the duty point at the nominal flow rate (observe minimum volume flow) and the delivery head at zero volume flow must still amount to approximately 2-3 m in order to open the non-return valve.

## Basic hydraulic principles

### Vibrations and resonance

When sewage pumps are installed and connected, various aspects must be observed to guarantee smooth operation. Fundamentally, every moving machine part causes vibrations.

In the case of submersible motor pumps and monobloc pumps, during rotation, free centrifugal forces are generated at the circulation frequency. Also, the hydraulic forces acting on the pump impeller considerably contribute to the machine vibrations.

In order to avoid malfunctions and damage, the strength of the vibrations in the operating state may not exceed a certain threshold. This is achieved by statically and dynamically balancing the corresponding parts.

If the pumps are subject to additional external vibrations due to unfavourable installation and connections, these vibrations are superimposed. These vibrations can put high levels of stress on individual components.

In order for the pumps to work without disturbances and to have long service lives, they must be installed according to the generally valid rules of technology.

# Planning guide

## General calculation instructions

### General notes

- The volume flow to be handled by the pump must exceed the volume flow of approaching sewage. Make sure that the pumps run as close to the optimum duty point as possible to ensure durability and optimum performance.
- Consider a loss in performance with increasing pump age. The volume flow and pressures can be negatively influenced by abrasion and corrosion.
- Design the pump so that it operates as efficiently as possible.
- Steep pump curves prevent clogging in the pressure pipe, since when there's increased backpressure, the pump also increases pressure along its pump curve and rinses away the deposits.
- When selecting accessories, take the material properties into consideration with regard to the corrosion- and abrasion-resistance.
- Compensate for peak inflows for economical and safety reasons by using double-pump systems (pump splitting, standby pump is always to be considered separately).
- If the transfer point (drainage pipe) lies underneath the sump level, ventilation should be provided, since otherwise the created suction could empty the complete sump, incl. the pump. This would result in ventilation difficulties and should therefore be checked in advance.
- Observe the various operating conditions for pipes which are not permanently installed in one place. The partial and full-filling situations should be observed.

### Pipe and pump material

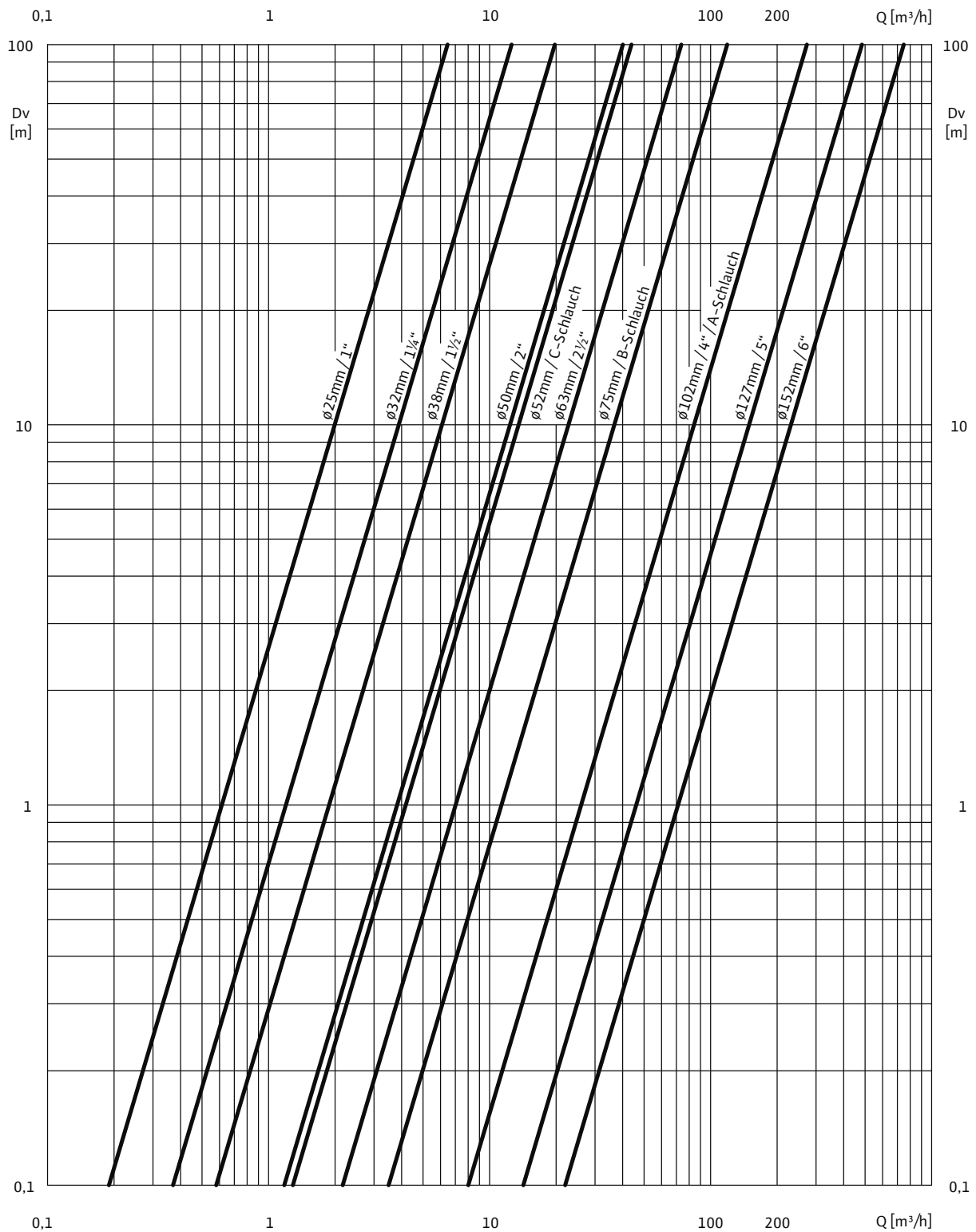
When designing, observe that the following influences could mean additional requirements for your system:

- Flow velocity of the fluid > Noises, wear
- pH value of the fluid > Material damage, corrosion
- Chemical constituents of the fluid > Corrosion
- Atmospheric conditions, such as humidity, salt content in the air, etc. > Corrosion
- Outside and fluid temperature > Fluid aggressiveness, corrosion
- Dwell time of the fluid in the pipe > Odour development
- Leakage currents due to using materials having different electron negativity

Due to the material changes and the resulting pressure level change, pipes for underground use should be designed as PN 10 pipes.

## Pressure losses

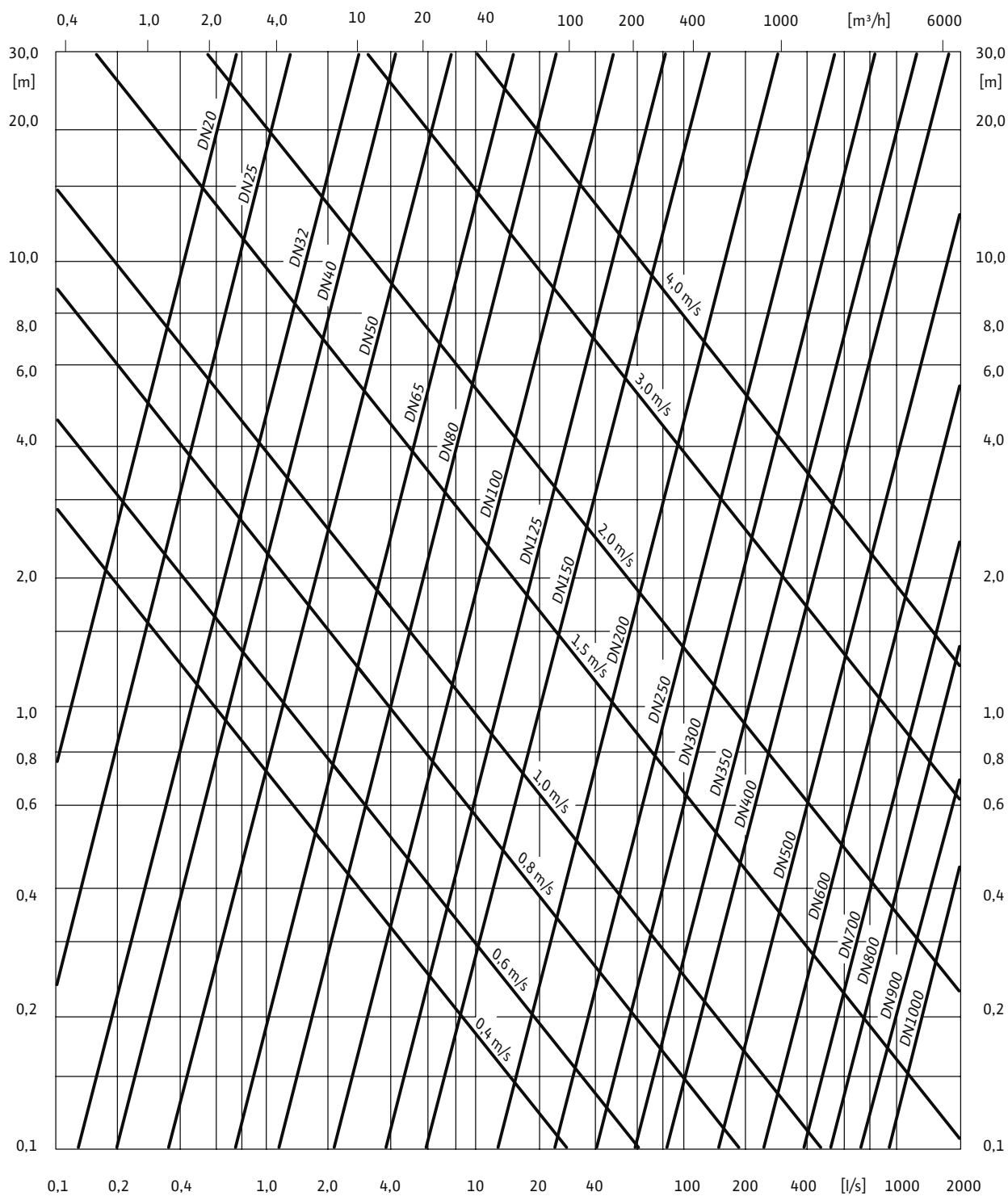
### Pressure loss in hoses



$Q$  = volume flow;  $D_v$  = pressure loss per 100 m hose ( $k_b = 0.25$ )

## Pressure losses

### Pressure loss in fixed pipes



Q = volume flow;  $D_v$  = pressure loss per 100 m hose ( $k_b = 0.1$ )

## Pressure losses

### Factors for adapting to other materials/older pipes

$k_b$	Pipe type
0.1	new galvanized steel pipes
0.8	newly rolled steel pipes, new plastic pipes
1.0	new cast-iron pipes, bitumen coated cast-iron pipes
1.25	older surface corroded cast-iron pipes
1.5	newly galvanised steel pipes, cleaned cast-iron pipes
1.7	encrusted pipes
2.0	new concrete pipes, medium-gloss
2.5	stoneware pipes
3	new concrete pipes, flat line markings
15-30	cast-iron pipes with light to heavy encrustations

### Losses in valves and pipe line contents

Valve type	Unit	Nominal diameter						
		DN 40, 1¼	DN 32, 1½	DN 50, 2	DN 65, 2½	DN 80, 3	DN 100	DN 150
Non-return valve $K_V$	m³/h	-	-	158	267	405	632	1423
Non-return ball valve with flange $K_V$	m³/h	-	-	87	136.5	267	396	890
Non-return ball valve with female thread $K_V$	m³/h	26	54	70	115	180	-	-
Gate valve $K_V$	m³/h	-	-	160	280	470	830	2000
Pipe contents	l/m	0.8	1.3	2.1	2.9	4.3	8.2	17

Formula for calculating the losses in valves

$$\Delta_{PV} = \left( \frac{Q [\text{m}^3/\text{h}]}{K_V [\text{m}^3/\text{h}]} \right)^2$$

Q = volume flow in the duty point

$K_V$  = Flow coefficient from table

#### Example

Non-return ball valves with flange, DN 80,  
duty point 40 m³/h

$$\Delta_{PV} = \left( \frac{40}{267} \right)^2 = 0.022 \text{ bar} = 0.22 \text{ m}$$

# Planning guide

## Installation types

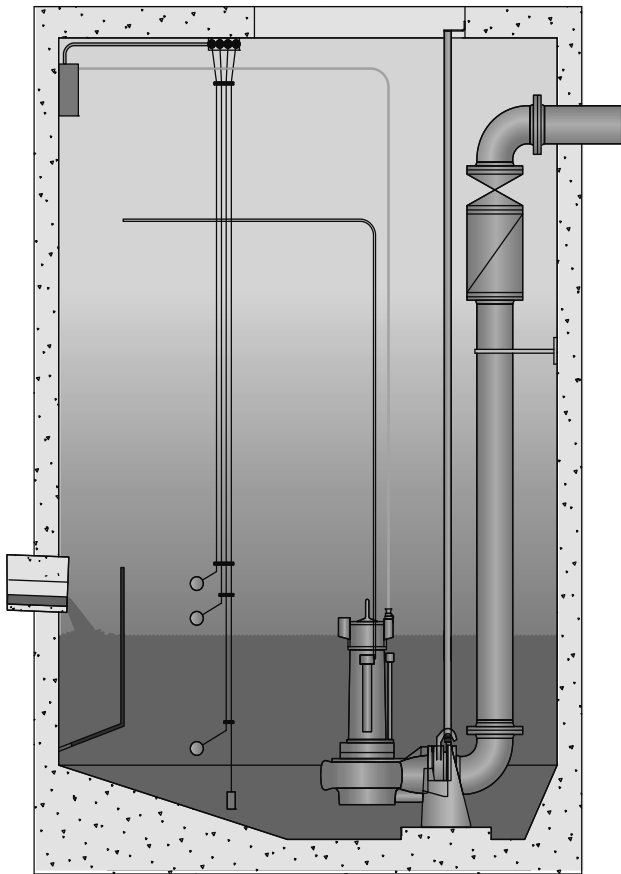
Very different types of installations are used in submersible systems in municipal applications. The type of installation depends mainly on the application purpose and the investment volume.

Basically, three main installation types are distinguished:

- Wet well installation, stationary
- Wet well installation, portable
- Dry well installation, stationary

The pipe sump installations are also required. The type of installation depends mainly on the requirements of the planning engineer and the operator. Different viewpoints arise, which each are justified in terms of the individual field of application.

### Wet well installation or stationary tank installation



With wet well installation, the pump is installed in the fluid to be pumped. The motor is cooled by the circulating sewage. The advantage of this type of installation is low investment costs compared to the more sophisticated pumping station designs for dry-installed sewage pumps. In such a case, a construction above ground or an intermediate base in the sump for the pumps is not required. In greater depths, an intermediate ceiling is necessary.

The pump is fastened by means of a suspension unit with lowering mechanism. That allows the pump to be "pulled" at all times, e.g. for maintenance work.

The coupling base and the elbow are usually cast in one piece. The guide consists of two pipes, thus preventing any twisting. The Wilo

coupling connection is made in such a way that a lip prevents the seal ring from falling out.

The pressure pipe made of a galvanized steel pipe, or ideally of a stainless steel pipe, is fitted directly on the suspension unit via flanges and leads out of the pump sump. The sump can be made at low costs from ready-made concrete sumps equipped with elastomer seals in accordance with EN 1917 (national addition: DIN 4034 T1). However, one-piece PEHD sumps without joints are a better solution, since these prevent any infiltration of external water.

As shown on the diagram alongside, this installation type gives the operator the option of special pump sump geometries adjusted to individual requirements, the use of additional flushing valves or the installation of vortex impellers with special mixer head technology.

The disadvantage of a wet well installation is the lack of ease of maintenance. In addition, with a wet-installed submersible sewage pump, the water level can only be lowered to a certain level, since optimum cooling of the motor is only possible in submerged condition.

### Stationary dry well installation

The dry well installation variant, in particular the dry-installed submersible pump, provides a number of advantages compared to dry-installed pumps, and also compared to wet-installed submersible pumps.

#### Installation principle of a dry-installed submersible pump

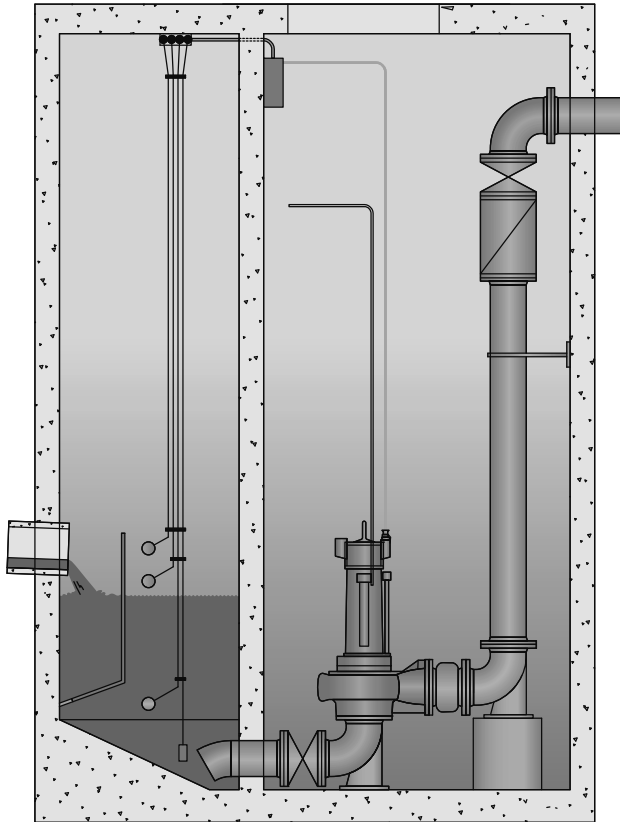
The main difference from a wet-installed submersible pump is the design of the motor. It is a fully encapsulated motor with internal closed-circuit cooling. A distinction is made between an open cooling system and a closed cooling system. With an open cooling system, the fluid to be pumped is used as the coolant. With a closed system (single-chamber or two-chamber system), cooling is performed by an external fluid, such as e.g. water-glycol or medical white oil, in a closed circuit.

Another main difference from the wet-installed submersible pump is that the dry-installed submersible pump is not installed in the fluid to be pumped. In terms of the technical construction, an intermediate base is required directly in the pumping station. The major advantages are the combination. On the one hand, this submersible pump offers all benefits of a dry-installed pump and, on the other hand, all benefits of a submersible pump, such as being overflow-proof.



## Installation types

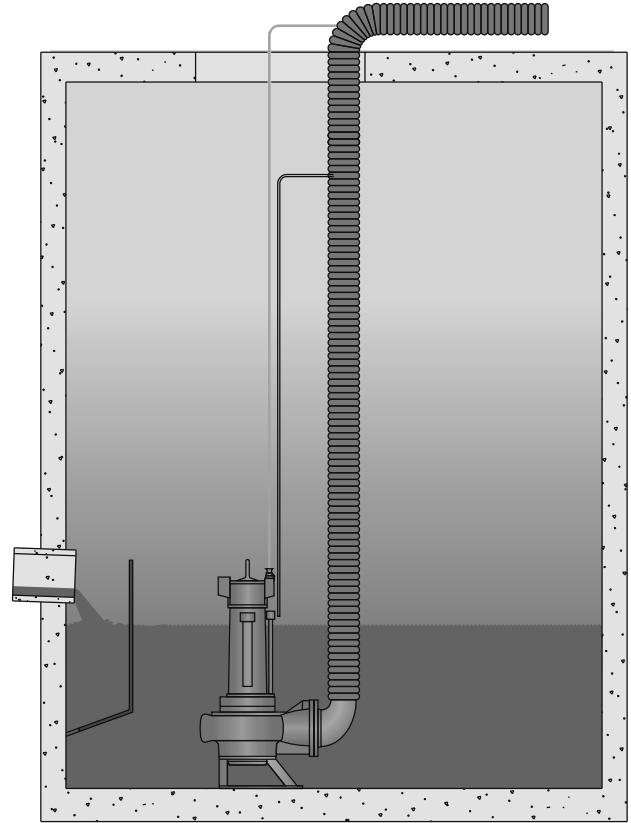
As already mentioned, the pump is installed in a separate pump room. The pump is fastened to the inflow pipe unspectacularly via a pipe elbow.



### Advantages compared to dry-installed pumps (not submersible pumps)

- Overflow-proof and thus more operational reliability
- Low-maintenance carbide mechanical seals or seal cartridges
- No couplings or V-belts, thus fewer wearing parts and less maintenance required
- Ex protection possible at all times
- Clean and hygienic working conditions
- Easy to maintain

### Portable installation



With this type of installation, the motor is cooled in the same way as for stationary wet well installation. However, the pump is not fastened firmly in the pump by means of a suspension unit. The pump can thus be installed in any sump via a base component on the pump housing. With the right couplings, hoses of appropriate length can be installed on the pressure port. When selecting the pump, hydraulic conditions, such as volume flow and delivery head as well as the pump's NPSH, must also be taken into account.

Portable pumps are frequently used for municipal applications as emergency drainage or residual drainage pumps.

## Pumped fluids and impeller shapes

### Pumped fluid (untreated sewage, sludge)

#### Solids concentration

Non-clog impellers and vortex impellers are suitable for fluids with a DM content (dry matter) of max. 8% (rough guideline).

The prerequisite for perfect pumping in all cases is that the pump's fluid still flows on its own.

#### Viscosity

The pump curve and the given motor power values in the type sheets apply to the pumping of water =  $1.0 \times 10^{-6} \text{ m}^2/\text{sec}$ . The diagram for friction losses also applies to water only. If the viscosity of the fluid is greater than  $\nu = 1.5 \times 10^{-6} \text{ m}^2/\text{sec}$ , the following aspects need to be observed in particular:

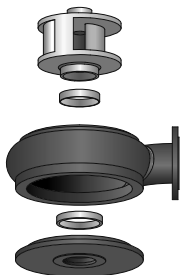
- Increased friction losses in the pipe (when determining the delivery head)
- Increased power requirement of the pump (when determining the drive power)

#### Specific weight

The motor power values given in the type sheets apply to water as the fluid ( $\rho = 1 \text{ kg/dm}^3$ ). With a higher specific weight of the fluid than that of water, an increased power requirement of the pump needs to be taken into account.

#### Impeller shapes

##### Closed single-blade impeller (single-channel impeller)



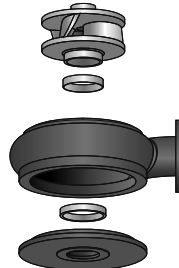
#### Properties:

- For the most part, insensitive to clogging
- Wide ball passage
- Low wear susceptibility
- Gentle pumping
- Power correction possible by trimming the impeller
- High degree of efficiency
- For solid matter concentrations up to 8% dry matter, depending on the type of sludge
- In the event of wear, only the stationary wear ring and the counter ring need to be replaced
- Hydraulic compensation of the axial thrust due to back vanes, thus reduced load on the bearings

#### Fields of application

- Untreated sewage
- Circulation and heating sludge
- Mixed water
- Raw and digested sludge
- Activated sludge

##### Closed multi-blade impeller (multi-channel impeller)\*



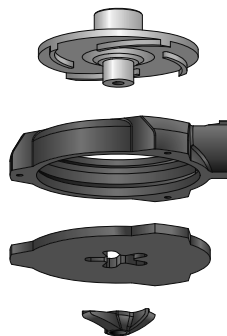
#### Properties:

- Smooth running
- Largely insensitive to clogging
- Larger ball passage
- Low wear susceptibility
- Gentle pumping
- Power correction possible by trimming the impeller
- High degree of efficiency
- For solid matter concentrations up to 5% dry matter, depending on the type of sludge
- In the event of wear, only the stationary wear ring and the counter ring need to be replaced
- Hydraulic compensation of the axial thrust due to back vanes, thus reduced load on the bearings

#### Fields of application:

- Rake-cleaned sewage
- Mechanically treated sewage
- Industrial waste water
- Landfill water
- Activated sludge
- Industrial sewage

##### Open multi-blade impeller with macerator



The upstream macerator system cuts up the admixtures in the sewage to the required size. The macerator system consists of an Abrasive macerator unit and a cutting plate made of the material 1.4034. The macerator system has easy-to-use adjustment options for various gap clearances.

#### Properties:

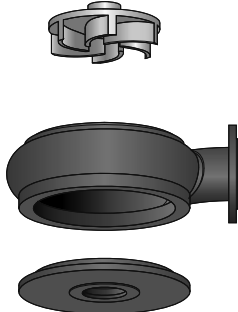
- Largely insensitive to clogging
- Small ball passage
- Sensitive to wearing fluids, e.g. containing sand

#### Fields of application:

- Domestic sewage
- Wastewater
- Faeces
- Suitable for low-pressure drainage

## Pumped fluids and impeller shapes

### Vortex impeller



#### Properties:

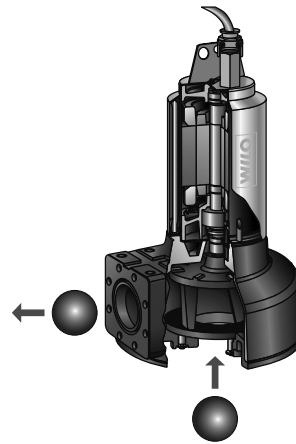
- Hardly any clogging
- No gap sealing
- Optimum ball passage
- Suitable for some bubble-forming fluids
- Power correction possible by trimming the impeller
- Lower degree of efficiency compared to the non-clog impeller
- For solid matter concentrations up to 8% dry matter, depending on the type of sludge
- Insensitive to fibrous sewage and sewage containing textiles
- Hydraulic compensation of the axial thrust due to back vanes, thus reduced load on the bearings
- Low-wearing
- Also suitable for bubble-forming fluids

#### Fields of application:

- Untreated sewage
- Activated sludge
- Raw and digested sludge
- Mixed water
- Fluids with problematic constituents
- Fluids with wearing constituents

### Free (ball) passage

Sewage pumps and their hydraulic components are adapted to the different conditions and the corresponding constituents of the pumped fluids. However, one needs to take into account which design shape of the impeller is best suited for the corresponding fluid and its composition.



An increase of the free ball passage means a reduction of the hydraulic efficiency. That results in a higher motor power with the same hydraulic result, which in turn has an effect on the operating and acquisition costs.

Dimensioning is important:

- Economic aspects
- Trouble-free operation of the sewage pumps
- Operational reliability

### Impeller properties

Impeller shape	No clogging	Pumping of bubble-containing fluids	Sludge pumping	Efficiency	Smooth operation	Wear resistance
Vortex impeller	+++	+	+	0	+++	+++
Closed single-blade impeller	++	-	+	++	+	++*
Closed multi-blade impeller	+	0	+	++	++	++*
Axial impeller	+	0	0	+++	++	++*

+++ = ideal; ++ = very good; + = good; 0 = limited; - = unfavourable; \* = with counter and stationary wear ring

## Basic electric principles

### Starting current

This is the current which is required during the start-up operation of a machine to overcome friction losses and starting torques. The starting current can be up to seven times that of the nominal current, depending on the type of start-up. When there is instability in the electric mains or for larger motors, corresponding devices must be provided to reduce the starting current. These could be soft starters, frequency converters, etc. A reduction of the starting current can already be achieved by a motor circuit version in the star delta.

### Operating modes (in acc. with DIN EN 60034-1)

Our motors are generally designed for permanent operation (operating mode S1) in immersed state. For operation with non-immersed motor (e.g. dry well installation or non-immersed in the sump), the motors can be used for permanent operation (operating modes S1), short-term operation (operating mode S2) or intermittent operation (operating mode S3), depending on the design.

The maximum operating times in short-term and intermittent operation are defined by the information in the operating mode, e.g. S2-15 min or S3 25%.

You can find more information on the individual operating modes in the separate chapter: "Operating modes". You can find exact information on the possible operating modes of the products on the corresponding product pages in the technical data.

### Individual run signal

Indicates the fault of the individual pump and provides an exact evaluation method for building management systems.

### Explosion protection

The operator is responsible for marking the explosion zones in the operating area. The explosion zones are clearly defined in the respective standards. Products to be used in explosive environments must be checked and approved by an external body. The Wilo units are certified for these applications according to three different standards:

- ATEX: European explosion protection standard
- FM: American explosion protection standard
- CSA: Canadian explosion protection standard

More information on the individual explosion protection standards and the corresponding classification is to be found in the chapter: "Explosion protection".

### Ex-rated cut-off relay

With ex-rated cut-off relays, float switches can also be used in potentially explosive environments. These relays reduce the flowing current to a magnitude which doesn't cause sparks, even in the event of an error, which would cause the fluid or its surroundings to ignite.

### Motor protection

To operate a motor safely, it must be protected from heating up too much. Unacceptable motor overheating can be caused by a fault that increases the motor current:

- Overload
- Phase failure
- Undervoltage
- Blocking

These faults can be detected by a motor protection relay or a motor protection switch, which then shut down the motor. Motor protection relays and motor protection switches may not be adjusted to a current higher than the motor's rated current.

### Motor protection relay

#### Principle of operation:

Thermal protection is provided by bimetal strips that are heated up by heating windings through which the motor current flows. A separate bimetal strip with corresponding heating winding is provided for each electrical conductor to the motor. If the current consumption of just one winding of the motor exceeds the specified value for several seconds, the bimetal, which is deformed by the heat, triggers the switch lock and switches the motor contactor off. The motor is also shut down after a short while in the event of a phase failure of the motor (uneven heating of the bimetal strips). In the event of thermal triggering, the switch can only be turned back on again once the bimetals have cooled down. Motor protection relays do not shut the motor down directly. Their contacts have only a relatively small switching capacity. This contact is used to activate a contactor that shuts the motor down in the event of a fault. Unlike the motor protection switch, a motor protection relay does not have a short-circuit trigger. That is why fuses should be installed in the supply line for one or more motors that are protected with a motor protection relay. Furthermore, with motor protection relays, restarting can be set manually or automatically. Restarting should be performed manually, to prevent constant activation and deactivation if there is a fault.

### Motor protection switch

Motor protection switches can be used to switch the operation of motors on and off. Thermal triggering works according to the principle of the motor protection relay. However, the operator is able to shut down the motor during operation or in the event of a fault. Furthermore, most motor protection switches also have a magnetic fast trigger mechanism that protects the line downstream and the motor from short-circuits. In small current ranges, these switches are short-circuit proof, i.e. a back-up fuse is not necessarily required.

Other faults that may result in an increase in heat:

- Dry running of motors that may only be operated in submerged state
- Unacceptably high fluid temperature / ambient temperature
- Impermissible running times during short-term operation

These faults do not have any effect on the motor's current consumption and can therefore not be detected by the overload protection connected upstream. For these types of faults, monitoring devices are used that are embedded in the component to be protected (motor winding). You can find more information on the possible monitoring devices in the chapter: "Motors".

### Protective measures (DIN VDE 0100-410)

#### Protection classes: (DIN EN 50529 / VDE 0470 Part 1)

The degree of protection that a housing offers e.g. against direct contact is defined by the IP code (International Protection). It consists of "IP" and two digits (e.g. IP 54).

#### First figure:

- Protection of persons against access to hazardous parts
- Protection of the equipment against the ingress of solid foreign matter

#### Second figure:

- Protection of the equipment against the ingress of water

## Basic electric principles

Code figure	First figure		Second figure
	Protection against contact	Protection against foreign matter	Protection against water
0	No protection	No protection	No protection
1	Protection against contact with the back of the hand	Protection against solid foreign matter with a diameter of 50 mm	Protection against water dripping vertically
2	Protection against contact with fingers	Protection against solid foreign matter with a diameter of 12.5 mm	Protection against water dripping at an angle (15°)
3	Protection against contact with tools	Protection against solid foreign matter with a diameter of 2.5 mm	Protection against sprayed water at an angle of up to 60°
4	Protection against contact with a wire	Protection against solid foreign body with a diameter of 1.0 mm	Protection against water splashing from any direction
5	Protection against contact with a wire	Dust protection	Protection against jets of water
6	Protection against contact with a wire	Dust-proof	Protection against strong jets of water
7	-	-	Protection against temporary submersion in water
8	-	-	Protection against permanent submersion in water

## Operating modes

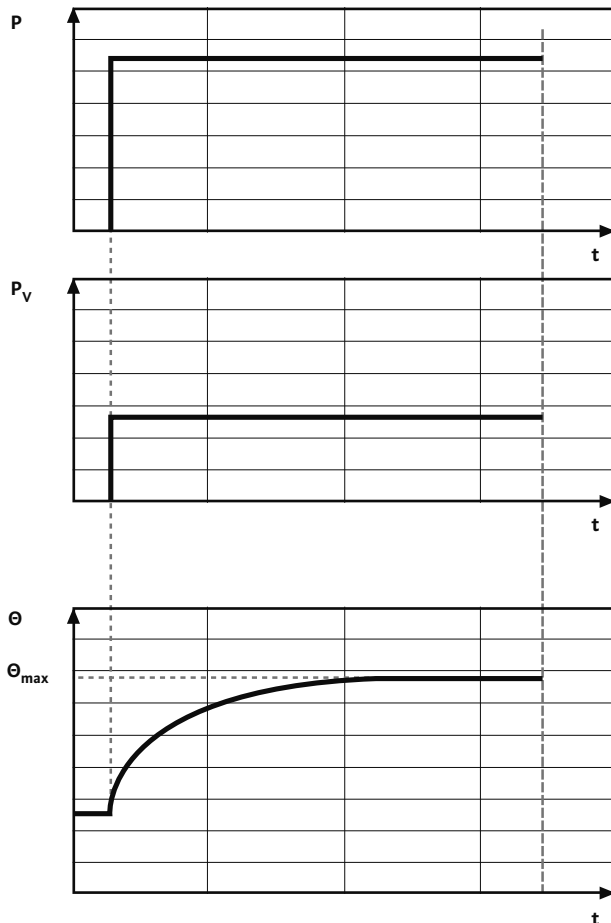
The operating mode defines the permissible motor activation period. Fundamentally, it is to be made sure that the installed temperature monitor of the motors is correctly connected. This ensures that the temperature classes of the windings are complied with if the operating time is exceeded or incorrect operating mode is used.

### S1 permanent operation

#### Definition:

Operation at a constant load which is maintained until the machine is able to reach the thermal steady state.

The machine is designed such that the cooling under nominal conditions is sufficient. The operating mode provides no information about whether the machine is to be operated wet or dry, however. If no operating mode is specified on the rating plate of a machine, S1 permanent operation applies.



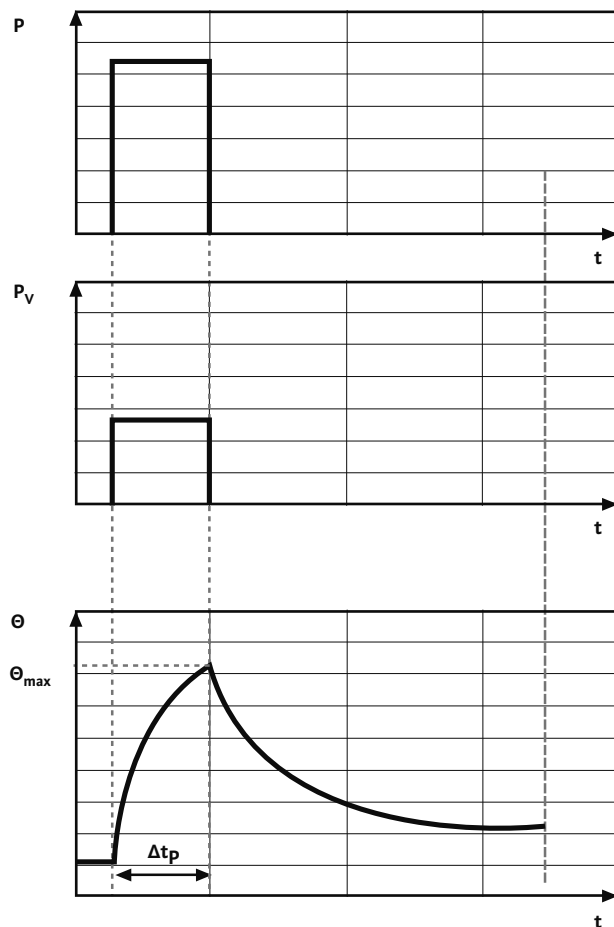
$P$  = load  
 $P_V$  = electrical losses  
 $\Theta$  = temperature  
 $\Theta_{\max}$  = max. temperature  
 $t$  = time  
 $T_C$  = cycle duration  
 $\Delta t_p$  = operating time at constant load  
 $\Delta t_R$  = standstill time with no current in windings,  
 relative activation period =  $\Delta t_p / T_C$

### S2 short-term operation

#### Definition:

Operation at a constant load, the duration of which is not sufficient to reach the thermal steady state, and a following time at a standstill, in which the machine temperatures, which have dropped again, only deviate from the coolant temperature by less than 2K.

The power dissipation of the machine is greater than that which can be conducted away via the coolant. For S2, the permissible operating time is always specified (e.g. S2 15 min). After this operating time, the machine must cool back down to the ambient temperature. This operating mode is mainly used with dry set-up machines.



$P$  = load  
 $P_V$  = electrical losses  
 $\Theta$  = temperature  
 $\Theta_{\max}$  = max. temperature  
 $t$  = time  
 $T_C$  = cycle duration  
 $\Delta t_p$  = operating time at constant load  
 $\Delta t_R$  = standstill time with no current in windings,  
 relative activation period =  $\Delta t_p / T_C$

## Operating modes

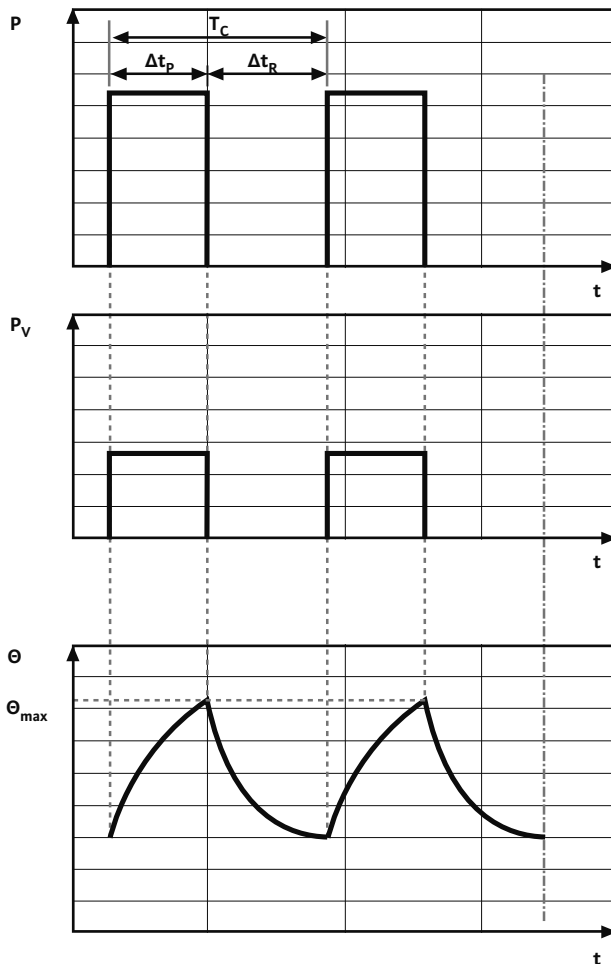
### S3 intermittent operation without influence on the starting current

#### Definition:

Operation which is composed of a sequence of identical cycles, of which each one involves an operating time with a constant load and a standstill time, whereby the starting current has no noticeable effect on the excess temperature.

The power dissipation of the machine is greater than that which can be conducted away via the coolant. With operating mode S3, the cycle duration is specified in percent and the cycle time is also specified.

Example for S3 25% 10 min: The activation period is 2.5 min and the pause is 7.5 min. If no cycle duration is specified, a cycle duration of 10 min. is assumed.



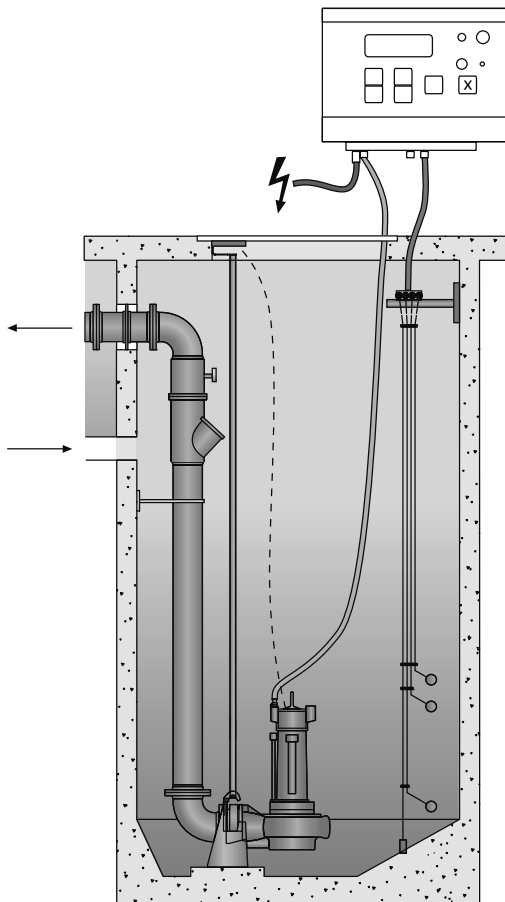
- P = load
- $P_V$  = electrical losses
- $\Theta$  = temperature
- $\Theta_{\max}$  = max. temperature
- t = time
- $T_C$  = cycle duration
- $\Delta t_p$  = operating time at constant load
- $\Delta t_R$  = standstill time with no current in windings,  
relative activation period =  $\Delta t_p / T_C$

## Level measuring systems

Level measurement systems are for measuring the water levels in tanks. Various systems are available, depending on the operating conditions.

### Float switch

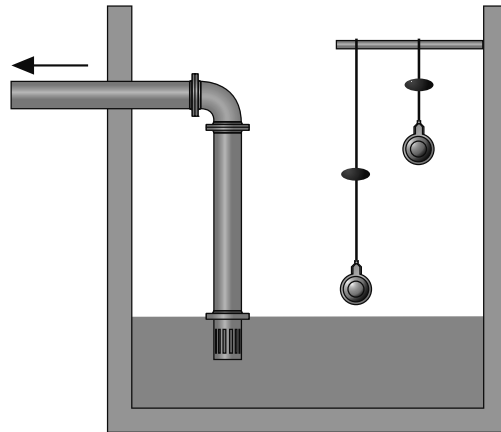
With this method, switching contacts are closed/opened in a float depending on the angle of inclination. In general, with float switches, it should be made sure that they can move freely in the sump. Furthermore, they can be used in the potentially explosive area if they are operated via a ex-rated cut-off relay (Ex-i).



Here, basically two different designs must be distinguished:

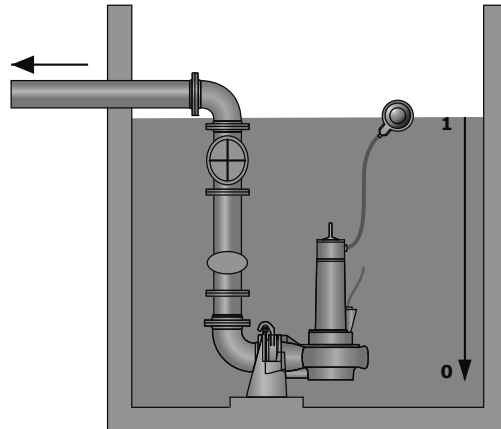
### One-point float switch:

These floats are fixed very shortly on the cable and have a small difference between the activation and deactivation point. Some of these floats are also available in heavy versions which tilt around their centres of gravity. To avoid the pump constantly switching, at least two of these floats must be used for level control. They are better suited for the sewage area, however, due to their good floating behaviour.



### Two-point float switch:

These float switches have a greater angle between the activation and deactivation points. They are fastened to their line. This way, it is possible to switch smaller differences with only one float switch, depending on the spanned line length.

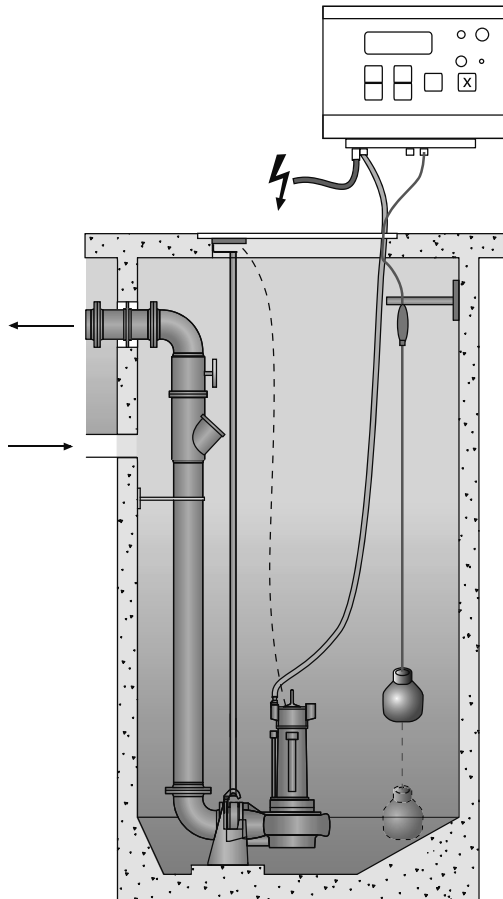




## Level measuring systems

### Dynamic pressure system (measurement of the hydrostatic pressure)

With this method, the pressure at the installation point is measured using a measuring bell/dynamic pressure bell. The filling height of the fluid generates a pressure, which is conducted to the evaluation device via a hose. In the evaluation device, the pressure is converted into an electric signal. Thus, a continuous filling level measurement is possible, where the switching points can be freely defined.



A distinction is made between open systems and closed systems. The selection is made depending on the field of application and type of fluid. Use in the potentially explosive area is possible.

#### Open system:

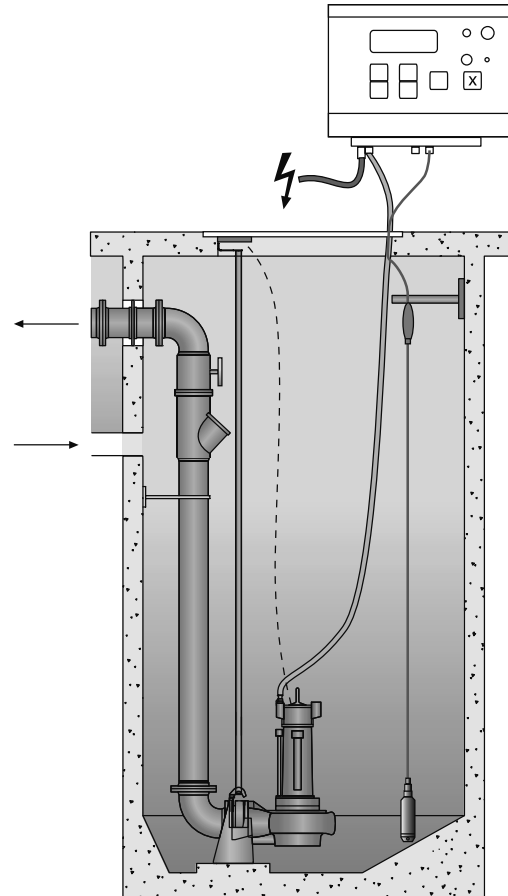
For this variant, the bell is open toward the fluid. Every time after pumping out, the bell must emerge to vent the system. "Off" after a certain time. Another way of venting the system is to connect it to a small compressor (bubbling-through system), which vents the system constantly or periodically. "Off" depending on the water level.

#### Closed system:

With this variant, the air cushion in the bell is separated from the fluid by a diaphragm. The system is then suitable for severely contaminated fluids. Leaks/air loss in the system lead to measurement errors or to system failure.

### Pressure probe (electronic pressure transducer)

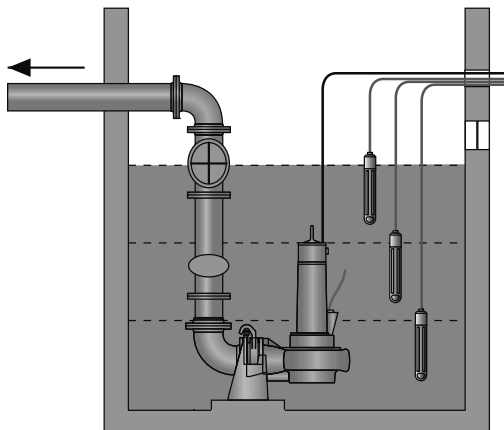
Similar to the back-pressure probes, the hydrostatic pressure at the installation point is measured here, too. Here, the pressure is directly converted into an electrical signal in the pressure transducer via a diaphragm.



## Level measuring systems

### Conductivity (conductive measurement method)

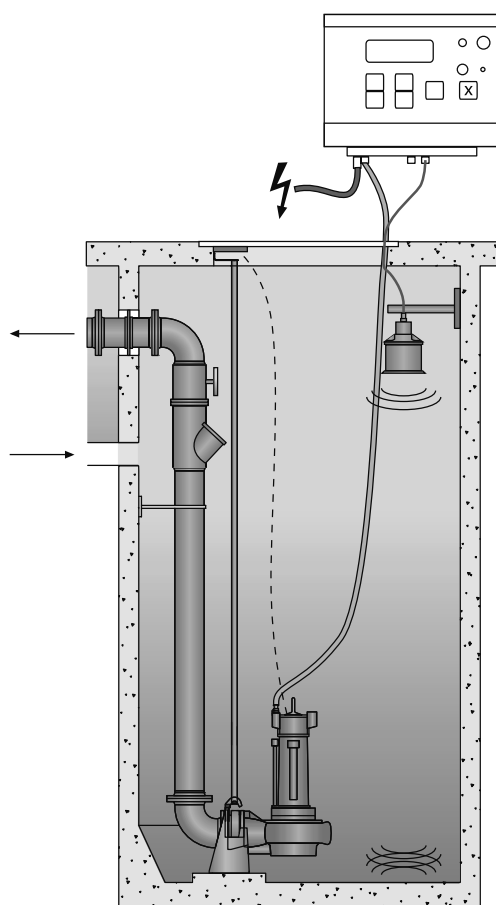
Here, the submersible electrodes are connected to an evaluation relay. The relay detects whether fluid is present or not based on the resistance. The reaction resistance can be set on most relays. This way, simple level control devices for filling or emptying can be realized. The dry-running protection application is also very common. Not suitable for sewage pump stations.



### Ultrasound

The measurement with ultrasound is based on a running time measurement. The ultrasound pulses emitted by a sensor are reflected by the surface of the fluid and measured by the sensor. The required running time is a measure for the path traveled in the empty tank. This value is subtracted from the total tank height and one can get the filling level from this.

The advantage of this method is that, independent of the fluid, the filling level can be measured in a tank with no contact. During installation, make sure that the measuring cone emitted by the sensor is free of obstacles. Also, make sure a minimum distance is kept to the tank wall.



## Explosion protection

For applications in explosive environments, the products must be checked accordingly by a certified body and approved. For these applications, the Wilo units are certified according to three different standards:

- The European ATEX standard
- The American FM standard
- The Canadian CSA standard

The three different standards are described briefly below, including what you need to observe for applications in explosive environments.

For the standard according to which the individual series are checked and approved, please refer to the technical data on the corresponding product pages. The explosion classification and the approval number are to be found on the rating plate or in the installation and operating instructions.

### ATEX standard

The units are designed according to "EC directive 94/09/EC" (ATEX 95) and the European standards DIN EN 60079-0 and EN 60079-1. They may be operated in potentially explosive environments which require electrical devices of device group II, category 2.

Therefore, they may be used in zone 1 and zone 2. These units may not be used in zone 0.

The explosion classification, e.g. II 2 G Ex d IIB T4, defines the following:

II	Device group II Meaning: intended for potentially explosive locations except for mines
2	Category
G	Substance group Meaning: gases
Ex	explosion-protected device in acc. with European standard
d	Motor housing ignition protection class Meaning: pressure-resistant encapsulation
e	Terminal ignition protection class Meaning: Increased safety
IIB	Explosion group Meaning: for use in combination with gases of sub-category B, all gases apart from H <sub>2</sub> , C <sub>2</sub> H <sub>2</sub> , CS <sub>2</sub>
T4	Temperature class Meaning: the maximum device surface temperature is 135 °C
GB	Device protection level "B"

### FM standard

The units are certified and approved by the certified testing and licensing authority "FM Approvals" according to standards FM 3600, 3615, 3615.80 and ANSI/UL-1004. They may be operated in potentially explosive areas which require electrical devices of protection class "Explosion-proof, Class 1, Division 1". Therefore, operation in areas with the required protection class "Explosion-proof, Class 1, Division 2" according to the FM standard is also possible.

The explosion classification defines the following:

Class 1	Division 1; Groups C, D Meaning: gases, vapours, mists; explosive environment present constantly or occasionally during normal conditions; gas groups: ethylene (C), propane (D)
Class 2	Division 1; Groups E, F, G Meaning: dusts; Explosive environment present constantly or occasionally during normal conditions; Dust groups: Metal (E), carbon (F), corn (G)
Class 3	Meaning: fibres and lint
T3C	Temperature class Meaning: maximum machine surface temperature is 160 °C

### CSA standard

The units are certified by the certified testing and licensing authority "KEMA" (European registration office for CSA) in accordance with the current standards. The units are approved according to the zone and class system.

### Approval according to zones

They may be operated in potentially explosive areas which require electrical devices of protection class "Explosion-proof, Class 1, Zone 1". Therefore, operation in areas with the required protection class "Explosion-proof, Class 1, Zone 2" is also possible.

The explosion classification, e.g. Ex d IIB T4 Gb, defines the following:

Ex	Ex-protected device in accordance with IEC standard
D	Motor housing ignition protection class Meaning: pressure-resistant encapsulation
IIB	Explosion group Meaning: for use in combination with gases of sub-category B, all gases apart from H <sub>2</sub> , C <sub>2</sub> H <sub>2</sub> , CS <sub>2</sub>
T4	Temperature class Meaning: maximum device surface temperature is 135 °C
GB	Device protection level "B"

### Approval according to classes

They may be operated in potentially explosive areas, which require electrical devices of protection class "Explosion-proof, Class 1, Division 1". Therefore, operation in areas with the required protection class "Explosion-proof, Class 1, Division 2" is also possible:

The explosion classification defines the following:

Class 1	Division 1; Groups C, D Meaning: gases, vapours, mists; explosive environment present constantly or occasionally during normal conditions; gas groups: ethylene (C), propane (D)
T3C	Temperature class Meaning: maximum machine surface temperature is 160 °C

### Temperature monitoring

Standard explosion-certified motors must be equipped with a temperature monitoring option. This monitoring can take place using bimetal strip sensors or PTC sensors.

The standard temperature monitoring unit is always designed as a 1-circuit monitoring unit, i.e. when the maximum winding temperature is reached, the motor must be switched off!

# Planning guide

## Explosion protection

The temperature monitoring unit can be designed as an optional 2-circuit monitoring unit, i.e. when the lower temperature is reached, a preliminary warning is emitted. Deactivation is only necessary if the maximum winding temperature is reached.

The temperature monitoring unit must be connected in such a way that when the maximum winding temperature is reached, the motor is deactivated and reactivation is only possible if the release button was actuated manually.

When the lower temperature is reached (2-circuit monitoring), a preliminary warning is possible or deactivation with automatic reactivation.

### **Non-immersion of the motor in the sump or dry well installation of dry motors**

These motors may only be non-immersed or dry well installed if there is a 2-circuit temperature monitoring unit!

### **Frequency converter operation**

For operation on a frequency converter, it must be ensured that the internal winding temperature monitoring unit (bimetal strip sensor or PTC sensor) can be connected.

### **Sealing chamber control**

The units can be equipped with external sealing chamber monitoring, which can also be retrofitted. If the unit is equipped with external sealing chamber control, it must be connected to an intrinsically-safe electric circuit.

### **Definition of the explosion zones**

The explosion zones are clearly defined in the respective standards. Marking the zones in the operating range of the units must be done by the operator. When ordering, please state which explosion standard you are using and in which zone you would like to operate the unit.

## Materials

### Abrasite

Special material for pump housings and impellers. This is a high-alloy, extremely wear-resistant cast material. The material has a martensitic basic structure with a high chromium and mixed carbide content. It provides an especially high degree of wear resistance against sewage, which has a high concentration of abrasive particles (such as wastewater with a high proportion of sand, for example). Lab tests show that "Abrasive" provides a seven times longer pump service life for abrasive materials compared to normal cast materials.

### Concrete

Material for creating sumps in accordance with DIN 4034-1. The concrete quality used by Wilo complies with DIN EN 206 (formerly DIN 1045). The exact designation is B45WU with a maximum water penetration depth of 30 mm as specified in the standard. The following are aggressive toward concrete: Fluids with pH values < 6.5, sulphuric acid, hydrochloric acid, butanoic acid and lactic acid, sulphates, salts, animal and mineral fats and oils.

### Ceram

Ceram coating provides modern corrosion and abrasion protection. It is based on aluminium oxide particles enclosed in a polymer matrix. Its structure is based on the diamond model and combines two important properties: there are no predetermined breaking points and the adhesion is very high. The coating is available in five different qualities: C0, C1, C2, C3 and CT. For use in highly abrasive fluids, the coatings C1 to C3 can also be combined in order to establish an even higher degree of protection.

### Duplex steel (1.4517, 1.4460, 1.4462)

Its microstructure consists of a ferritic matrix, in which austenitic inclusions are embedded. The ferrite/austenite ratio is normally 50:50. This duplex microstructure combines the beneficial properties of rustproof ferritic and austenitic materials. It has good mechanical properties and a significantly higher resistance to corrosion. The duplex steel 1.4460 and 1.4462 and the cast stainless steel material 1.4517 are relatively widespread. Compared to chromium-nickel-molybdenum steel, these materials have a better general resistance to corrosion. In addition, they are much more resistant to pitting corrosion, contact corrosion and stress corrosion cracking and are to a large extent resistant to intercrystalline corrosion. Lab tests show that the duplex material 1.4517 provides a significantly longer pump service life for pumping abrasive fluids compared to normal cast materials (more exact data is available in the sand material speed recommendation table, MH07.2006).

### Stainless steel 1.4301 - V2A (AISI 304 - X5CrNi18-10)

V2A comes from the Thyssen Krupp definition (test series 2, type Austenite) for a chrome-nickel steel. This is the steel standard which is generally available in the pump industry, combining good strength properties with good temperature resistance. The material is also highly resistant to organic solutions.

### Stainless steel 1.4404 - V4A (AISI 316L - X2CrNiMo17-12-3)

V4A comes from the Thyssen Krupp definition (test series 4, type Austenite) and refers to a high-alloy rustproof steel (as compared to 1.4301) with a molybdenum content, which can sometimes also be used in seawater. High strength and high elasticity are the features which make stainless steel superior to grey cast iron.

### Grey cast iron

Grey cast iron is the standard material used in pump construction. For many years now, most units are made of grey cast iron. The benefits of grey cast iron are mainly its price and robustness. In the field of submersible pumps, the cast materials EN-GJL-250 and EN-GJS-500-7 are primarily used.

### PE-HD (high density polythene)

The most frequently used material in pipe construction for sewage pipes with very high chemical resistance and extremely low surface roughness for preventing deposits and flow losses. High impact resistance and ultimate strain with low influence of temperature are other advantages. The material PE100 is used increasingly in practice and is replacing PE80 and grey cast iron. Benefits, such as installing pipes during renovation work, offer a high cost-savings potential.

### PP (polypropylene)

Resistance to extreme temperatures and chemicals and an extremely high stability (due to the high impact strength of the material) characterise this material.

### PUR (polyurethane)

PUR is available in many variations. The outstanding advantages of Baydur GS, which is used by Wilo and has been proven in industrial applications, such as the high chemical resistance to diluted acids, alkaline solutions, motor oils, greases, benzines, etc. as well as the corrosion- and micro-resistance, are predestined for use in aggressive media. It is also characterised by its superior wear resistance, resistance to rotting, weather resistance, dimensional stability under heat and impact resistance at a much lower weight compared to metallic materials, such as grey cast iron. In a sand-slurry test conducted by Bayer, the wear resistance of PUR is about twice as high as that of cast iron under the same conditions.

### PVC (polyvinyl chloride)

PE sumps are designed in accordance with DIN 19537-1 and offer great advantages compared to conventional concrete sumps, such as durability, flexibility, easy installation and reduced installation costs. It is a flame-resistant material, which equally combines mechanical strength and chemical resistance.

Material table for austenitic steels

DIN designation	US designation	Chemical symbol	European standard	American standard
Material number	AISI		EN	ASTM
1.4301	304	X5CrNi18-10	10088-3	A 167 /276
1.4401	316	X5CrNiMo17-12-2	10088-3	A 167 /276
1.4404	316 L	X2CrNiMo17-12-3	10088-3	A 167 /276
1.4571	316 Ti	X6CrNiMoTi17-12-2	10088-3	A 167 /276

# Planning guide

## Materials

Material table for duplex materials

DIN designation	US designation	Chemical symbol	European standard	American standard
Material number	AISI		EN	ASTM
1.457		G-X2CrNiMoCuN25-6-3-3	10213-4 / 10283	A 351 / 744 / 890 / 995
1.4460	329	X-3CrNiMoN27-5-2	10088-3-2005	S32900
1.4462	2205	X-2CrNiMoN22-5-3	10088-2-2005	S31803

Resistance list for drainage pumps

	LPC	TS 50/TS 65	KS	TMT/TMC	VC
<b>Water</b>					
Clean water	•	•	•	•	•
Bath water, unchlorinated	•	•	•	•	•
Boiler water	—	•	—	•	•
Water from car-washing plants	•	•	0	—	—
Cooling water	•	•	0	—	—
Partially desalinated water	—	0	—	—	—
Fire-fighting water	—	•	•	—	—
Wastewater, rainwater, floodwater and river water	•	•	•	•	•
Heating water	•	• <sup>3)</sup>	—	•	•
Hot water	•	—	—	•	•
Swimming pool water (max. 30 °C)	—	0	—	—	—
Sea water (max. 20 °C)	—	—	—	• <sup>7)</sup>	—
Washing machine suds (without long-fibre constituents)	•	•	•	—	•
Municipal and domestic sewage, with faeces	—	—	—	—	—
Domestic sewage not containing faeces	—	—	—	—	—
<b>Sludges</b>					
Non-bubble-forming sludges (up to 3% volume percentage dry matter)	—	—	—	—	—
Non-bubble-forming sludges (up to 6% volume percentage dry matter) 2)	—	—	—	—	—
Bubble-forming sludges (up to 3% volume percentage dry matter) 2)	—	—	—	—	—
<b>Oils (up to 20 % vol.)</b>					
Light fuel oil/diesel oil	—	—	—	—	—
Mineral oils	—	—	—	—	—
Vegetable oils	—	—	—	—	—
Animal oils	—	—	—	—	—
Petroleum	—	—	—	—	—
Kerosene	—	—	—	—	—
Cooling and lubricating oil	—	—	—	—	—
<b>Acids (up to max. 20 °C)</b>					
Boric acid, up to 5 % vol.	—	—	—	—	—
Acetic acid, up to 2.5 % vol.	—	—	—	—	—
Tannic acid, up to 10 % vol.	—	—	—	—	—
Lactic acid, up to 10 % vol.	—	—	—	—	—
Phosphoric acid, up to 5 % vol.	—	—	—	—	—

• = can be pumped, — = cannot be pumped, 0 = can be pumped to a limited extent

<sup>1)</sup> not in accordance with DIN EN 12050-1, <sup>2)</sup> only with vortex impeller, <sup>3)</sup> max. 35 °C, <sup>4)</sup> only MTC 32..., <sup>5)</sup> other material versions possible with configuration, <sup>6)</sup> cast iron version, <sup>7)</sup> bronze version, <sup>8)</sup> Niro version, <sup>9)</sup> only 4kW version with Sikaflex up to 30 °C

## Materials

### Resistance list for drainage pumps

	LPC	TS 50/TS 65	KS	TMT/TMC	VC
Nitric acid, up to 5 % vol.	—	—	—	—	—
Hydrochlorid acid, up to 2.5 % vol.	—	—	—	—	—
Sulphuric acid, up to 2.5 % vol.	—	—	—	—	—
Tartaric acid, up to 10 % vol.	—	—	—	—	—
Citric acid, up to 10 % vol.	—	—	—	—	—
<b>Other (up to 30 % vol.)</b>					
Blood	—	—	—	—	—
Glycerine	—	—	—	—	—
Glycol	—	—	—	—	—
Beverages (alcohol level up to 5%)	—	—	—	—	—
Soap solution	—	—	—	—	—

• = can be pumped, - = cannot be pumped, o = can be pumped to a limited extent

<sup>1)</sup> not in accordance with DIN EN 12050-1, <sup>2)</sup> only with vortex impeller, <sup>3)</sup> max. 35 °C, <sup>4)</sup> only MTC 32..., <sup>5)</sup> other material versions possible with configuration, <sup>6)</sup> cast iron version, <sup>7)</sup> bronze version, <sup>8)</sup> Niro version, <sup>9)</sup> only 4kW version with Sikaflex up to 30 °C

### Resistance list sewage pumps

	MTC	MTS	TP 50/ TP 65	TP 80/ 100	TP 80/ 100...HD	FIT	PRO	FA	FA... WR	FA...RF	KPR..
<b>Water</b>											
Clean water	•	•	•	•	•	•	•	•	•	•	•
Bath water, unchlorinated	•	•	•	•	•	•	•	•	•	•	•
Boiler water	—	—	•	•	•	•	•	•	•	•	•
Water from car-washing plants	—	—	•	•	•	•	• <sup>5)</sup>	• <sup>5)</sup>	• <sup>5)</sup>	•	—
Cooling water	—	—	•	•	•	•	•	•	•	•	•
Partially desalinated water	—	—	o	•	•	—	o	o	o	•	o
Fire-fighting water	—	—	•	•	•	•	•	•	•	•	•
Wastewater, rainwater, floodwater and river water	—	—	•	•	•	•	•	•	•	•	•
Heating water	—	—	•	•	•	•	—	—	—	—	—
Hot water	—	—	—	—	—	—	—	—	—	—	—
Swimming pool water (max. 30 °C)	—	—	o	•	•	—	• <sup>5)</sup>	• <sup>5)</sup>	• <sup>5)</sup>	•	• <sup>5)</sup>
Sea water (max. 20 °C)	—	—	—	• <sup>9)</sup>	• <sup>9)</sup>	—	• <sup>5)</sup>	• <sup>5)</sup>	• <sup>5)</sup>	• <sup>5)</sup>	• <sup>5)</sup>
Washing machine suds (without long-fibre constituents)	—	—	•	•	•	•	•	•	•	•	—
Municipal and domestic sewage, with faeces	• <sup>4)</sup>	•	—	•	•	—	•	•	•	•	—
Domestic sewage not containing faeces	•	•	•	•	•	•	•	•	•	•	—
<b>Sludges</b>											
Non-bubble-forming sludges (up to 3% volume percentage dry matter)	—	•	•	•	•	•	•	•	•	•	—
Non-bubble-forming sludges (up to 6% volume percentage dry matter) 2)	—	—	—	—	—	—	o	o	—	—	—
Bubble-forming sludges (up to 3% volume percentage dry matter) 2)	—	—	—	—	—	—	o	o	o	o	—
<b>Oils (up to 20 % vol.)</b>											
Light fuel oil/diesel oil	—	—	—	•	•	—	—	—	—	—	—
Mineral oils	—	—	—	—	o	—	—	—	—	—	—

• = can be pumped, - = cannot be pumped, o = can be pumped to a limited extent

<sup>1)</sup> not in accordance with DIN EN 12050-1, <sup>2)</sup> only with vortex impeller, <sup>3)</sup> max. 35 °C, <sup>4)</sup> only MTC 32..., <sup>5)</sup> other material versions possible with configuration, <sup>6)</sup> cast iron version, <sup>7)</sup> bronze version, <sup>8)</sup> Niro version, <sup>9)</sup> only 4kW version with Sikaflex up to 30 °C

# Planning guide

## Materials

### Resistance list sewage pumps

	MTC	MTS	TP 50/ TP 65	TP 80/ 100	TP 80/ 100...HD	FIT	PRO	FA	FA... WR	FA...RF	KPR..
Vegetable oils	—	—	o	o	•	—	—	—	—	—	—
Animal oils	—	—	o	o	•	—	—	—	—	—	—
Petroleum	—	—	—	o	o	—	—	—	—	—	—
Kerosene	—	—	—	—	•	—	—	—	—	—	—
Cooling and lubricating oil	—	—	—	—	o	—	—	—	—	—	—
<b>Acids (up to max. 20 °C)</b>											
Boric acid, up to 5 % vol.	—	—	—	•	•	—	—	—	—	•	—
Acetic acid, up to 2.5 % vol.	—	—	—	—	•	—	—	—	—	•	—
Tannic acid, up to 10 % vol.	—	—	—	—	•	—	—	—	—	•	—
Lactic acid, up to 10 % vol.	—	—	—	—	•	—	—	—	—	•	—
Phosphoric acid, up to 5 % vol.	—	—	—	—	•	—	—	—	—	—	—
Nitric acid, up to 5 % vol.	—	—	—	—	•	—	—	—	—	—	—
Hydrochlorid acid, up to 2.5 % vol.	—	—	—	—	o	—	—	—	—	—	—
Sulphuric acid, up to 2.5 % vol.	—	—	—	—	•	—	—	—	—	—	—
Tartaric acid, up to 10 % vol.	—	—	—	•	•	—	—	—	—	•	—
Citric acid, up to 10 % vol.	—	—	—	•	•	—	—	—	—	•	—
<b>Other (up to 30 % vol.)</b>											
Blood	—	—	—	—	•	—	o	o	o	o	—
Glycerine	—	—	•	•	•	•	—	—	—	—	—
Glycol	—	—	•	•	•	•	—	—	—	—	—
Beverages (alcohol level up to 5%)	—	—	—	—	•	—	—	—	—	—	—
Soap solution	—	—	•	•	•	•	—	—	—	—	—

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<sup>1)</sup> not in accordance with DIN EN 12050-1, <sup>2)</sup> only with vortex impeller, <sup>3)</sup> max. 35 °C, <sup>4)</sup> only MTC 32..., <sup>5)</sup> other material versions possible with configuration, <sup>6)</sup> cast iron version, <sup>7)</sup> bronze version, <sup>8)</sup> Niro version, <sup>9)</sup> only 4kW version with Sikaflex up to 30 °C

### Resistance list sewage lifting units

	S	M	L	XL	XXL	FTS
<b>Water</b>						
Clean water	—	—	—	—	—	—
Bath water, unchlorinated	•	•	•	•	•	•
Boiler water	—	—	—	—	—	—
Water from car-washing plants	—	—	—	—	—	—
Cooling water	—	—	—	—	—	—
Partially desalinated water	—	—	—	—	—	—
Fire-fighting water	—	—	—	—	—	—
Wastewater, rainwater, floodwater and river water	—	—	—	—	—	—
Heating water	—	—	—	—	—	—
Hot water	—	—	—	—	—	—
Swimming pool water (max. 30 °C)	—	—	—	—	—	—
Sea water (max. 20 °C)	—	—	—	—	—	—

• = can be pumped, — = cannot be pumped, o = can be pumped to a limited extent

<sup>1)</sup> not in accordance with DIN EN 12050-1, <sup>2)</sup> only with vortex impeller, <sup>3)</sup> max. 35 °C, <sup>4)</sup> only MTC 32..., <sup>5)</sup> other material versions possible with configuration, <sup>6)</sup> cast iron version, <sup>7)</sup> bronze version, <sup>8)</sup> Niro version, <sup>9)</sup> only 4kW version with Sikaflex up to 30 °C



## Materials

### Resistance list sewage lifting units

	S	M	L	XL	XXL	FTS
Washing machine suds (without long-fibre constituents)	•	•	•	•	•	•
Municipal and domestic sewage, with faeces	—	—	—	—	—	—
Domestic sewage not containing faeces	•	•	•	•	•	•
<b>Sludges</b>						
Non-bubble-forming sludges (up to 3% volume percentage dry matter)	—	—	—	—	—	—
Non-bubble-forming sludges (up to 6% volume percentage dry matter) 2)						
Bubble-forming sludges (up to 3% volume percentage dry matter) 2)						
<b>Oils (up to 20 % vol.)</b>						
Light fuel oil/diesel oil	—	—	—	—	—	—
Mineral oils	—	—	—	—	—	—
Vegetable oils	—	—	—	—	—	—
Animal oils	—	—	—	—	—	—
Petroleum	—	—	—	—	—	—
Kerosene	—	—	—	—	—	—
Cooling and lubricating oil	—	—	—	—	—	—
<b>Acids (up to max. 20 °C)</b>						
Boric acid, up to 5 % vol.	—	—	—	—	—	—
Acetic acid, up to 2.5 % vol.	—	—	—	—	—	—
Tannic acid, up to 10 % vol.	—	—	—	—	—	—
Lactic acid, up to 10 % vol.	—	—	—	—	—	—
Phosphoric acid, up to 5 % vol.	—	—	—	—	—	—
Nitric acid, up to 5 % vol.	—	—	—	—	—	—
Hydrochlorid acid, up to 2.5 % vol.	—	—	—	—	—	—
Sulphuric acid, up to 2.5 % vol.	—	—	—	—	—	—
Tartaric acid, up to 10 % vol.	—	—	—	—	—	—
Citric acid, up to 10 % vol.	—	—	—	—	—	—
<b>Other (up to 30 % vol.)</b>						
Blood	—	—	—	—	—	—
Glycerine	—	—	—	—	—	—
Glycol	—	—	—	—	—	—
Beverages (alcohol level up to 5%)	—	—	—	—	—	—
Soap solution	—	—	—	—	—	—

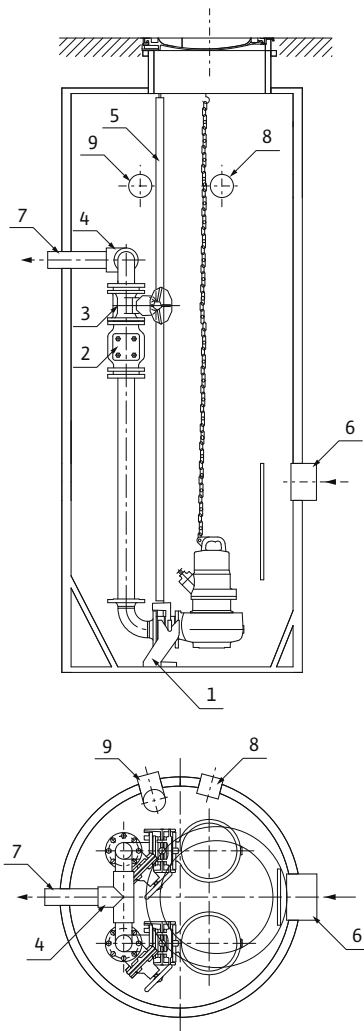
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## Pumps stations

### General information:

- Backflow fittings and slide valves are to be generally placed high up in the sump in the pressure pipe since deposits are avoided this way and the fittings are easily accessible for maintenance, cleaning and inspection.
- Check valves are to be generally provided for maintenance and repair work. These are sometimes required by the standards.
- Pressure pipes are to be dimensioned according to the parameters specified in the relevant standards, e.g. flow rates and pressure stage.
- The pump sump is to be designed as small as possible around the pump.



- At the inlet of the sump, strong surge currents on the pump and components of the level sensors are to be avoided.
- During the building phase, a foundation or earthing strip is to be provided for potential equalisation.

- If the outlet of the pressure pipe lies underneath the suction port of the pump, a ventilator, e.g. vacuum interrupter (accessory) is to be installed in the common pressure pipe to avoid the pump sump being sucked out up to underneath the suction port.

### Double-pump pump station

- 1 Foot elbow
- 2 Non-return valve
- 3 Gate valve
- 4 Y-piece (Y-pipe)
- 5 Guide pipe
- 6 Inlet
- 7 Pressure outlet
- 8 Cable conduit
- 9 Ventilation pipe

### Determining the volume flow

The accumulated domestic sewage volumes are calculated roughly according to the water consumption of the community in question. They depend on the number of residents "E" as well as the wastewater outflow "a" in litres [l] per resident and day (l/ET, according to experience approx. 120 l/ET). Under the condition that the maximum hourly outflow  $Q_{\max}$  is one fourteenth of the average daily outflow, the following results:

$$Q_{\max} \text{ in [l/s]} = (E \times a) / (14 \times 60 \times 60)$$

When dimensioning the pressure pipe, make sure that the minimum flow rate of 0.7 m/s is maintained. To take the rainwater and ground water into account, which accumulates on the sewage side even when the drainage system is separated, the calculated value is to be increased by 50 - 130 %. Further information about this can be found in the planning guide "Sewage technology" (can be ordered).

### Determining the size of the usable suction space of sewage pump stations

The usable impoundment volume of the suction space depends on the permissible switching frequency and the volume flow of the largest pump installed. With two identical pumps and automatically alternating activation, the volume can be cut in half.

The permissible switching frequency "S" for each pump is not to be exceeded (depends on the selected pump type. See "Equipment/function").

For higher motor power ratings or switching frequencies, please consult Wilo.

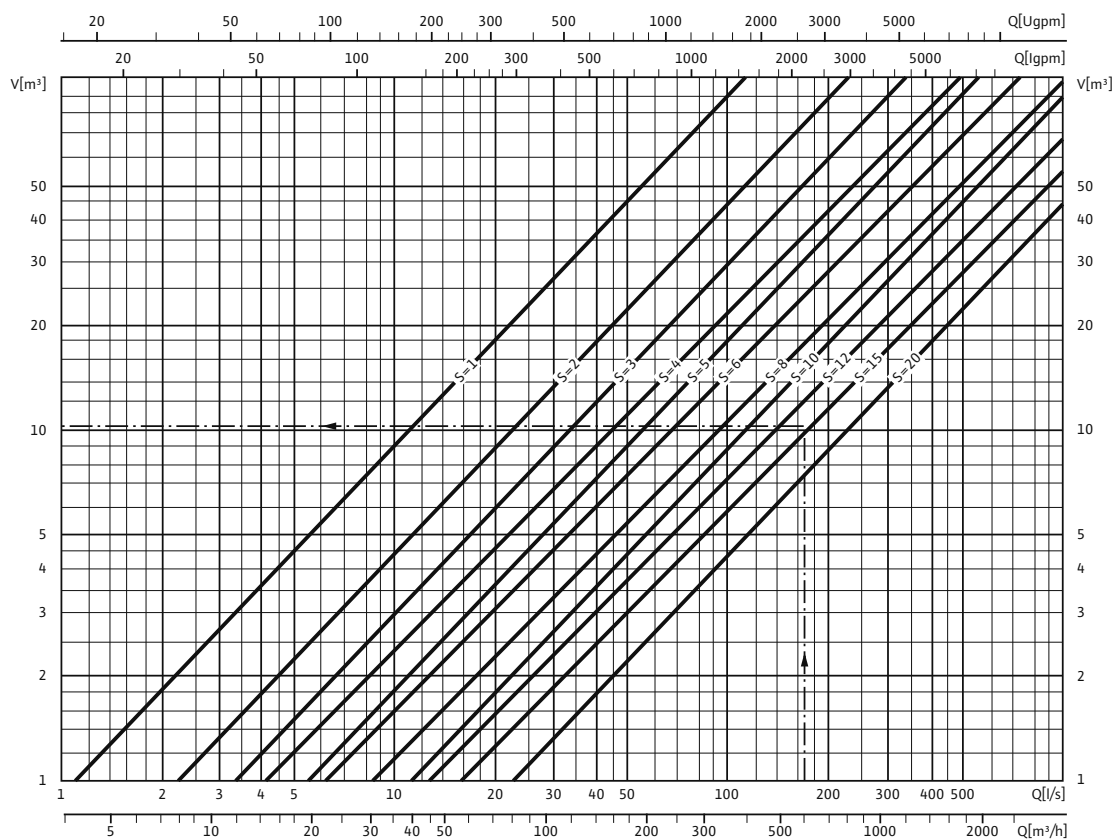
The volumes indicated in the diagram are minimum values required to ensure smooth pumping operation under unfavourable conditions. This is the case when the inflow for a pump is half of the volume flow. This results in a maximum number of activation operations per hour.

For Wilo synthetic sumps WS 40-50, 625, 900, 1100 the useable impoundment volume is defined as follows, depending on the selected pump type:

WS 40-50	55	-	160 L
WS 625	95	-	150 L
WS 900	110	-	150 L
WS 1100	200	-	280 L

## Pumps stations

### Volume flow



## Wilo-DrainLift XL





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