

Submittal Data

PROJECT:	UNIT TAG:	QUANTITY:
REPRESENTATIVE: _____	TYPE OF SERVICE:	DATE: _____
ENGINEER:	SUBMITTED BY:	DATE:
CONTRACTOR:	APPROVED BY:	DATE:
	ORDER NO.:	DATE:

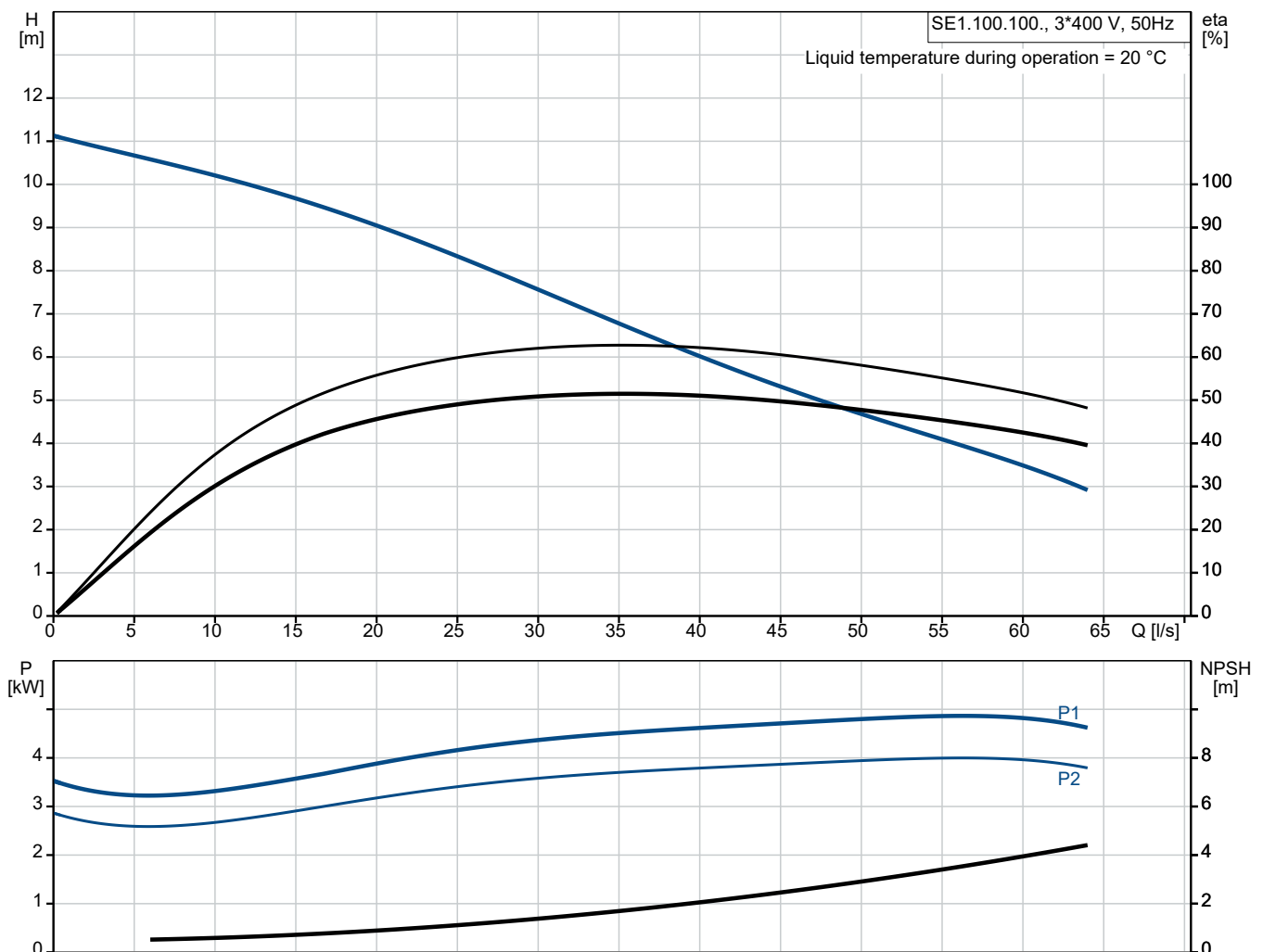


SE1.100.100.40.A.Ex.4.51D.B

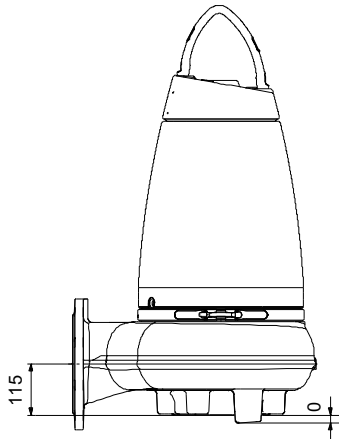
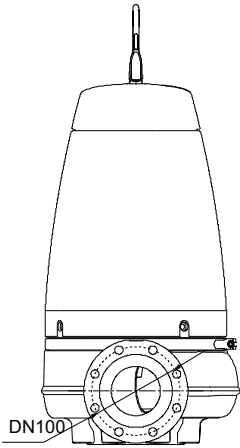
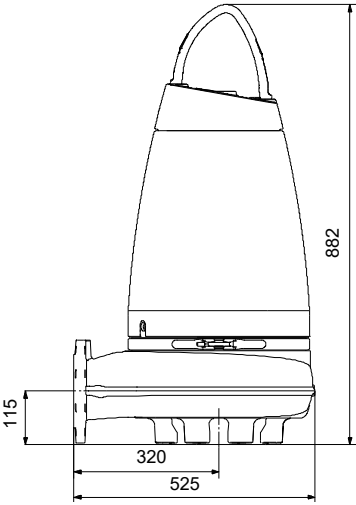
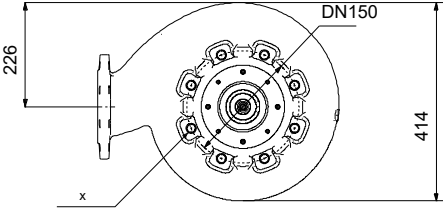
Submersible Grundfos SE sewage pumps (1.1-11 kW) are fitted with either S-tube® (SE1) or SuperVortex impeller (SEV). The free passage through the pump varies from 50-100 mm depending on size.

Note! Product picture may differ from actual product

Conditions of Service	Pump Data	Motor Data
Temperature: 20 °C Specific Gravity: 1.000	Liquid temperature range: 0 .. 40 °C Maximum ambient temperature: 40 °C Product number: On request	Mains frequency: 50 Hz Enclosure class: IP68



Submittal Data



Materials:
Pump housing: Cast iron
Impeller: Cast iron
Impeller: EN 1561 EN-GJL-250

Qty.	Description
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1	SE1.100.100.40.A.Ex.4.51D.B
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Note! Product picture may differ from actual product

Product No.: On request

Non-self-priming, single-stage, centrifugal pump designed for handling wastewater, process water and unscreened raw sewage.

The pump is designed for intermittent and continuous operation. The liquidless and maintenance free cooling system ensures that the pump can be used for submerged or dry installation. The revolutionary S-tube® impeller provides free spherical passage of solids up to 100 mm and is suitable for wastewater with a dry matter content of up to 3 %. A unique stainless-steel clamp assembling system enables quick and easy disassembly of the pump from the motor unit for service and inspection. No special tools are required.

Further product details

The pump is suitable for both temporary and permanent installation either as free-standing on ring stand, on base stand, on brackets or on an auto-coupling system.

Pump

The pump is fitted with an easy-to-clean stainless-steel motor sleeve (EN 1.4301) that is extremely robust and impact-resistant. Pump housing and impeller is made of cast iron (EN-GJL-250).


The S-tube® impeller is providing free spherical passage through the impeller and pump housing and creates a natural extension of the pipework connected to the pump.

The S-tube® impeller is a wet-balanced and tube-shaped channel impeller placed in a pump housing that matches the smooth tube shape leaving no obstructions or dead zones.

The key to the S-tube® design is simplicity, with no cutting or moving functions that can get worn over time, thereby ensuring constant, superior efficiency. The simple design means lower life cycle costs because abrasive wear is reduced and there are fewer clogging incidents.



The shaft seal consists of two mechanical seals that ensure a reliable sealing between the pumped liquid and motor. The shaft seals are incorporated in a single-unit cartridge shaft seal system that is easy to replace in the field without use of special tools.

Qty.	Description						
1	<p>The combination of the primary and secondary seals in a cartridge shaft seal system results in a shorter assembly length compared to conventional shaft seals.</p> <ul style="list-style-type: none"> - Primary seal: Silicon carbide/silicon carbide (SiC/SiC) - Secondary seal: Carbon/Ceramics <p>The shaft seal is bidirectional, meaning it operates correctly in case of backflow through the pump.</p>  <p>The pump is approved according to EN12050-1. Furthermore, the pump is approved for installation in explosive atmospheres and holds the following examination certificate:</p> <ul style="list-style-type: none"> - ATEX (EU): KEMA04ATEX2201 <p>The certificate has been issued according to the ATEX directive (94/9/EC).</p> <p>For applications involving a risk of explosion, or where otherwise required, the pump is approved with the following explosion protection classifications.</p> <p>Mains-driven pump, without sensor: II2 GD Ex cd IIB T4, T3 and Ex c tD A21 IP68 T135°C, T200°C</p> <p>Mains-driven pump, with sensor: II2 GD Ex cd mb IIB T4, T3 and Ex c tD A21 IP68 T135°C, T200°C</p> <p>Frequency converter pump, without sensor: II2 GD Ex cd IIB T4, T3 and Ex c tD A21 IP68 T135°C, T200°C</p> <p>Frequency converter pump, with sensor: II2 GD Ex cd mb IIB T4, T3 and Ex c tD A21 IP68 T135°C, T200°C</p> <p>Motor</p> <p>The motor is a watertight, totally encapsulated motor supplied with a 10 m power cable. The stainless steel plug is fastened with a union nut. This nut and the O-rings provide sealing against ingress of the liquid.</p> <p>The plug is polyurethane-embedded, ensuring a watertight and durable seal around the leads of the cable. This prevents the ingress of water into the motor through the cable in case of cable breakage or adverse handling in connection with installation or service.</p> <p>A compact motor construction with a short shaft reduces vibrations, resulting in an increased efficiency and lifetime of the shaft seal and ball bearings.</p> <p>The motor features built-in thermal protection to protect the motor against overheating and ensure the reliability.</p> <p>A solid-block stator housing with built-in cooling conduits, efficiently transfers excess heat to the pumped liquid via a solid cast intermediate cooling flange, that is in direct contact with the pumped liquid.</p> <p>This allows for continuous operation even in a dry installation.</p> <p>An extremely robust impact-resistant stainless-steel jacket with an easy-to-clean smooth surface is fitted on the top of the solid-block stator housing.</p> <p>The pump is equipped with the following sensor(s):</p> <ul style="list-style-type: none"> - A digital moisture switch that is fitted in the motor chamber monitors whether water enters the motor chamber. If moisture is detected in the motor chamber, the switch will trip and send a warning to the sensor module. - A Pt1000 sensor in motor windings for stator temperature measurements. - An analog sensor that is fitted in the oil chamber monitors whether water enters the pump from the liquid side. It sends a signal if the water content is outside the normal range (warning), or if there is air in the oil chamber (alarm). <p>The pump is designed for speed-controlled operation to keep the energy consumption at a minimum.</p> <p>To avoid the risk of sedimentation in the pipes, we recommend that you operate the speed-controlled pump within a speed range of 30 % to 100 % and at a flow rate above 1 m/s.</p> <p>Controls:</p> <table data-bbox="204 1944 587 2033"> <tr> <td>Moisture sensor:</td> <td>Y</td> </tr> <tr> <td>Water-in-oil sensor:</td> <td>Y</td> </tr> <tr> <td>Temp. sensor:</td> <td>Y</td> </tr> </table> <p>Liquid:</p>	Moisture sensor:	Y	Water-in-oil sensor:	Y	Temp. sensor:	Y
Moisture sensor:	Y						
Water-in-oil sensor:	Y						
Temp. sensor:	Y						

Qty.	Description
1	<p>Liquid temperature range: 0 .. 40 °C Selected liquid temperature: 20 °C Density: 998.2 kg/m³</p> <p>Technical: Rated flow: 40.3 l/s Maximum flow: 63.6 l/s Rated head: 6.128 m Type of impeller: S-TUBE Max. Particle: 100 mm Max. hydraulic efficiency: 67 % Approvals: EN12050-1 Curve tolerance: ISO9906:2012 3B2 Cooling jacket (Yes/No): Y</p> <p>Materials: Pump housing: Cast iron EN 1561 EN-GJL-250 Impeller: Cast iron EN 1561 EN-GJL-250 Shaft seal: SiC/SiC Secondary shaft seal: CER/CARNBR</p> <p>Installation: Range of ambient temperature: 0 .. 40 °C Maximum operating pressure: 6 bar Type of inlet connection: DIN Type of outlet connection: DIN Size of inlet connection: DN 150 Size of outlet connection: DN 100 Pressure rating for outlet connection: PN 10 Maximum installation depth: 7 m Inst dry/wet: DRY/SUBMERGED Auto coupling: 96090994</p> <p>Electrical data: Power input P1: 4.9 kW Rated power - P2: 4 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-415 V Voltage tolerance: +6/-10 % Max starts per hour: 20 Rated current: 10 A Rated current at 3/4 load: 8.2 A Rated current at 1/2 load: 7.1 A Starting current: 67 A Rated current at no load: 6.1 A Cos phi - power factor: 0.73 Cos phi - p.f. at no load: 0.11 Cos phi - p.f. at 3/4 load: 0.65 Cos phi - p.f. at 1/2 load: 0.52 Rated speed: 1460 rpm Locked-rotor torque: 72 Nm Breakdown torque: 100 Nm Moment of Inertia: 0.128 kg m² Motor efficiency at full load: 82.2 % Motor efficiency at 3/4 load: 81.7 % Motor efficiency at 1/2 load: 78.2 %</p>



Company name:

Created by:

Phone:

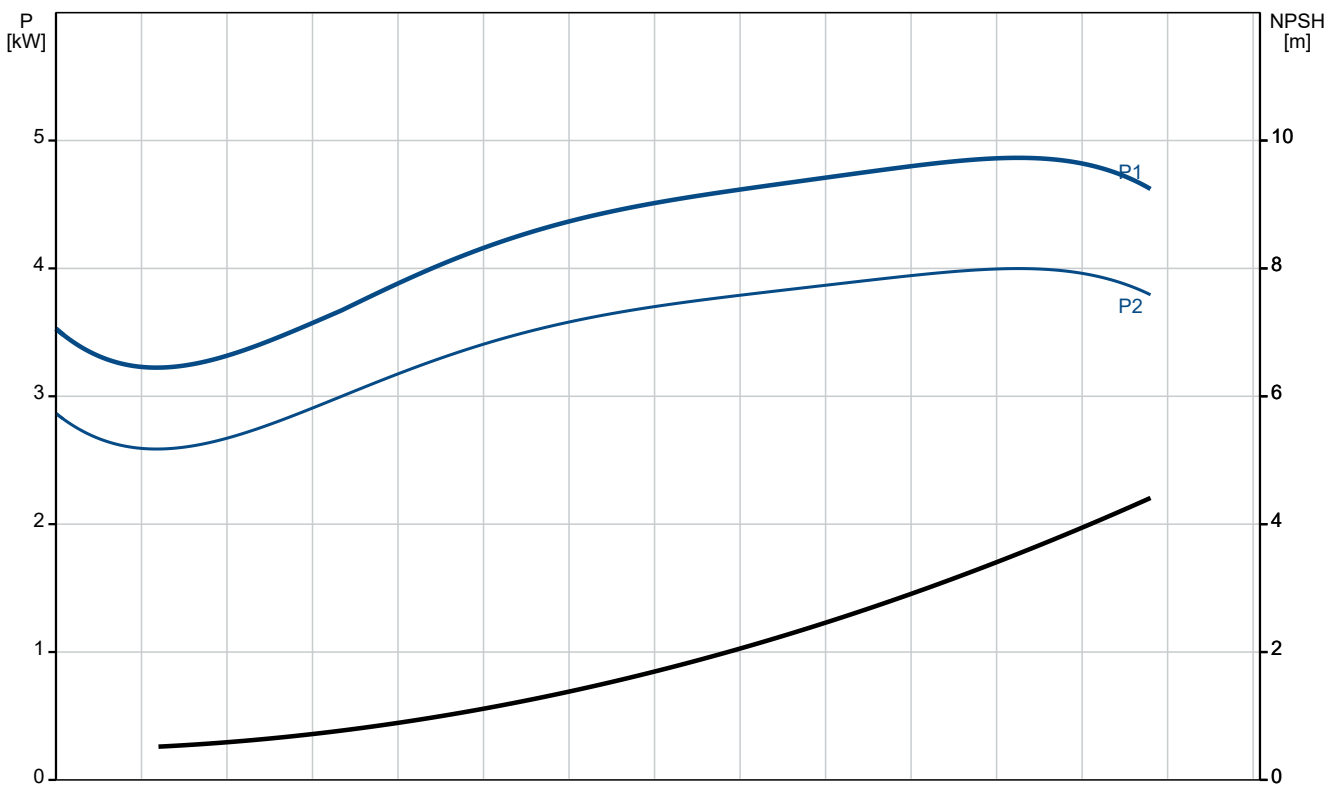
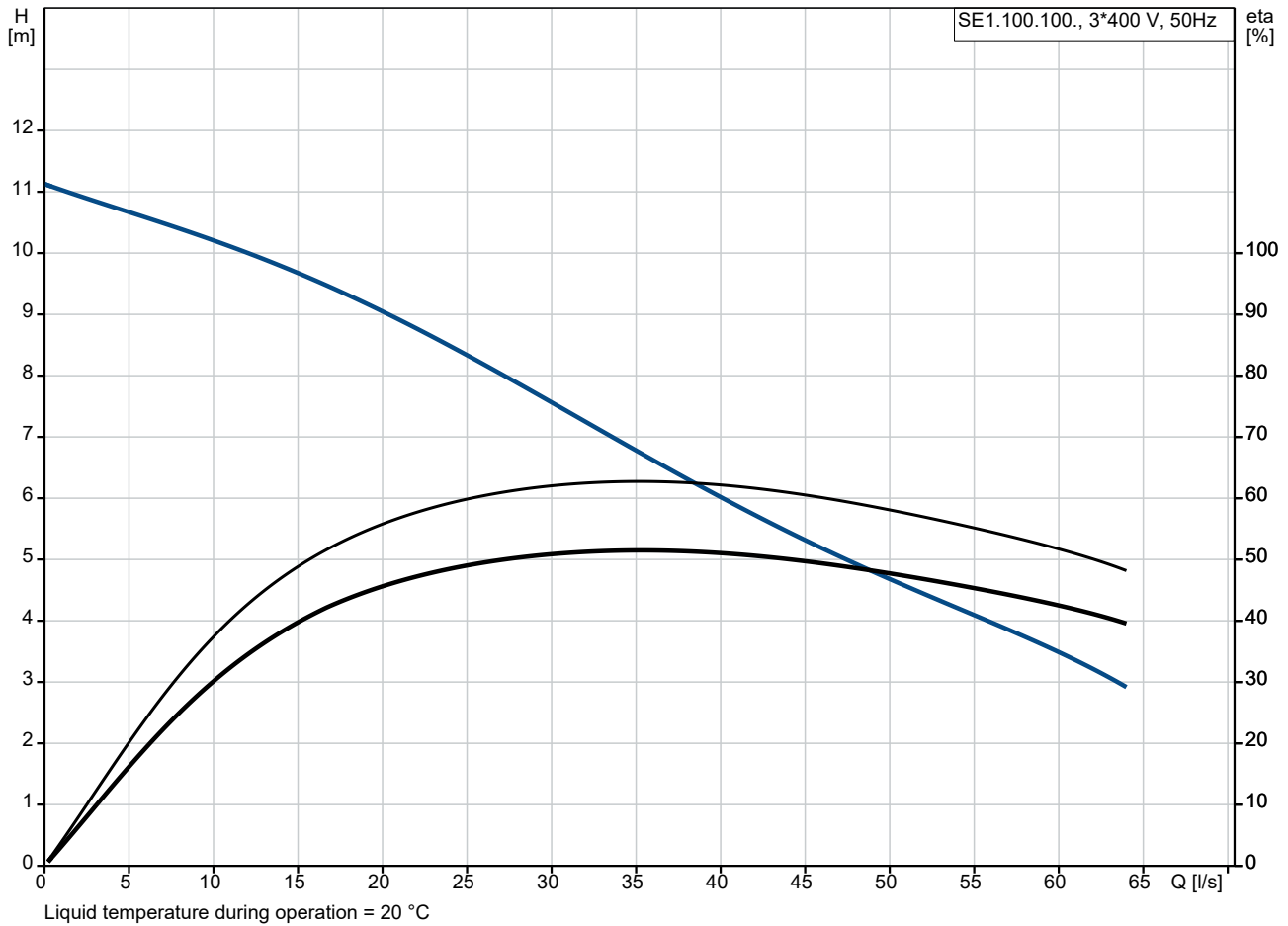
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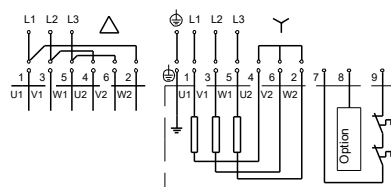
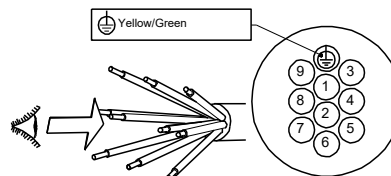
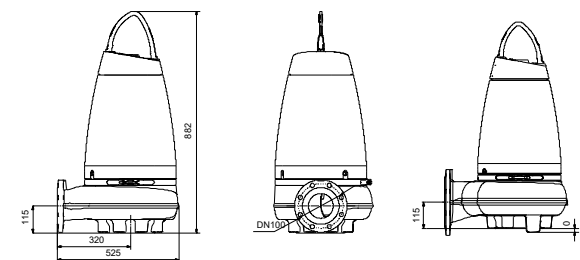
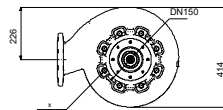
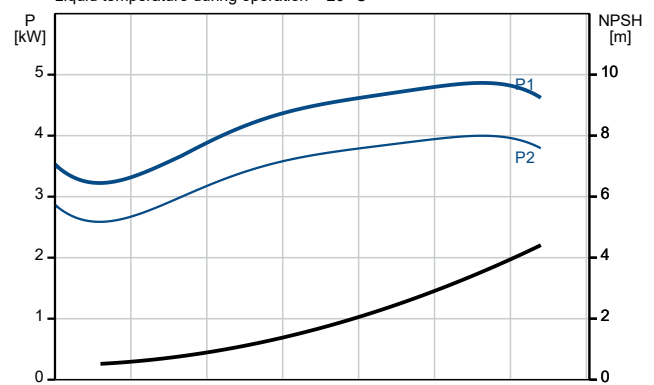
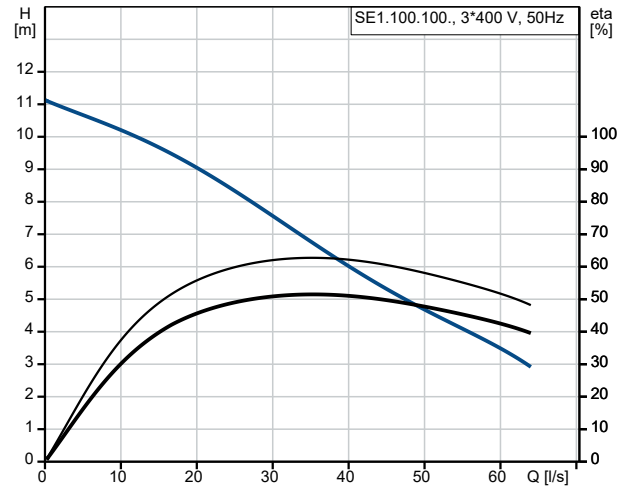
Qty. Description

1	Number of poles:	4
	Method of start:	Star-delta (YD)
	Enclosure class (IEC 34-5):	IP68
	Insulation class (IEC 85):	F
	Explosion proof:	yes
	Ex-protection standard:	Ex db eb h mb IIB T4, T3 Gb
	Built-in motor protection:	PTO
	Thermal protection:	Internal
	Power cable type:	Lyniflex
	Length of power cable:	10 m
	Power plug:	No plug
	Others:	
	Net weight:	173 kg
	Gross weight:	192 kg

On request SE1.100.100.40.A.Ex.4.51D.B 50 Hz



Description	Value
General information:	
Product name:	SE1.100.100.40.A.Ex.4.51D.B
Product No:	On request
EAN number:	On request
Technical:	
Rated flow:	40.3 l/s
Maximum flow:	63.6 l/s
Rated head:	6.128 m
Maximum head:	11.1 m
Type of impeller:	S-TUBE
Max. Particle:	100 mm
Max. hydraulic efficiency:	67 %
Approvals:	EN12050-1
Curve tolerance:	ISO9906:2012 3B2
Cooling jacket (Yes/No):	Y
Materials:	
Pump housing:	Cast iron
Pump housing:	EN 1561 EN-GJL-250
Impeller:	Cast iron
Impeller:	EN 1561 EN-GJL-250
Shaft seal:	SiC/SiC
Secondary shaft seal:	CER/CARNBR
Installation:	
Range of ambient temperature:	0 .. 40 °C
Maximum operating pressure:	6 bar
Type of inlet connection:	DIN
Type of outlet connection:	DIN
Size of inlet connection:	DN 150
Size of outlet connection:	DN 100
Pressure rating for outlet connection:	PN 10
Maximum installation depth:	7 m
Inst dry/wet:	DRY/SUBMERGED
Installation:	H/V
Auto coupling:	96090994
Liquid:	
Liquid temperature range:	0 .. 40 °C
Selected liquid temperature:	20 °C
Density:	998.2 kg/m ³
Electrical data:	
Power input P1:	4.9 kW
Rated power - P2:	4 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-415 V
Voltage tolerance:	+6/-10 %
Max starts per hour:	20
Rated current:	10 A
Rated current at 3/4 load:	8.2 A
Rated current at 1/2 load:	7.1 A
Starting current:	67 A
Rated current at no load:	6.1 A
Cos phi - power factor:	0.73
Cos phi - p.f. at no load:	0.11
Cos phi - p.f. at 3/4 load:	0.65
Cos phi - p.f. at 1/2 load:	0.52
Rated speed:	1460 rpm
Locked-rotor torque:	72 Nm





Company name:

Created by:

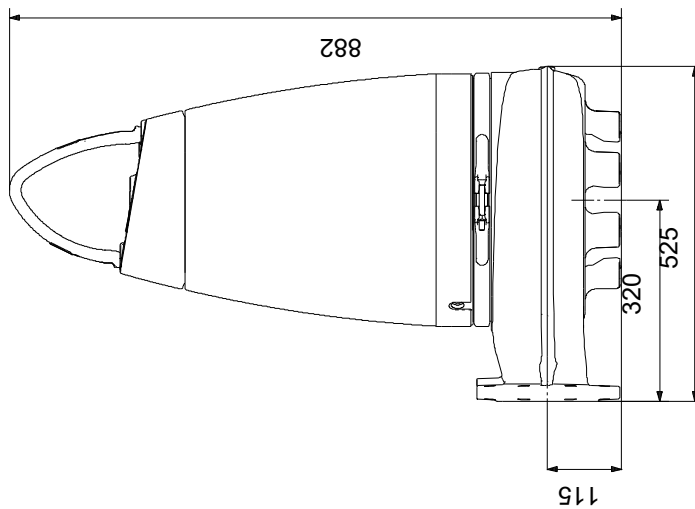
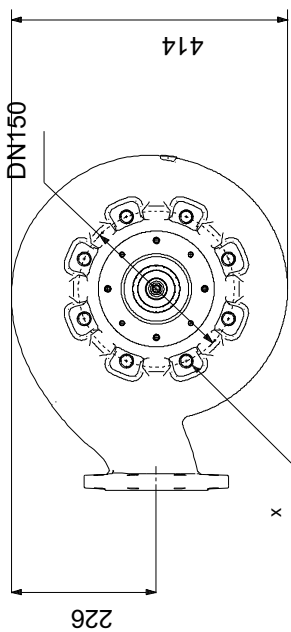
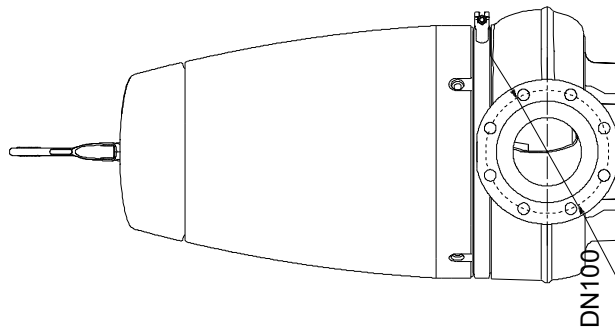
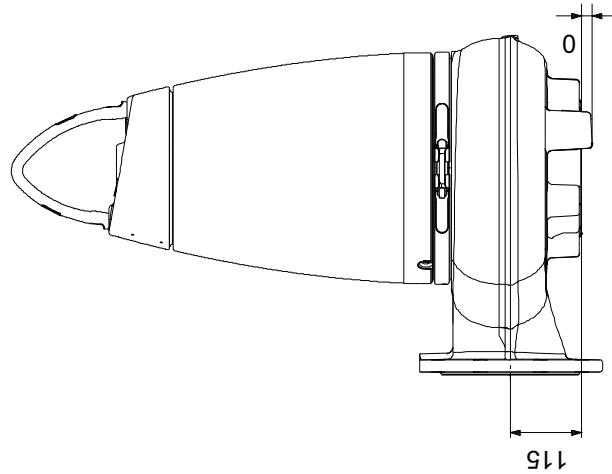
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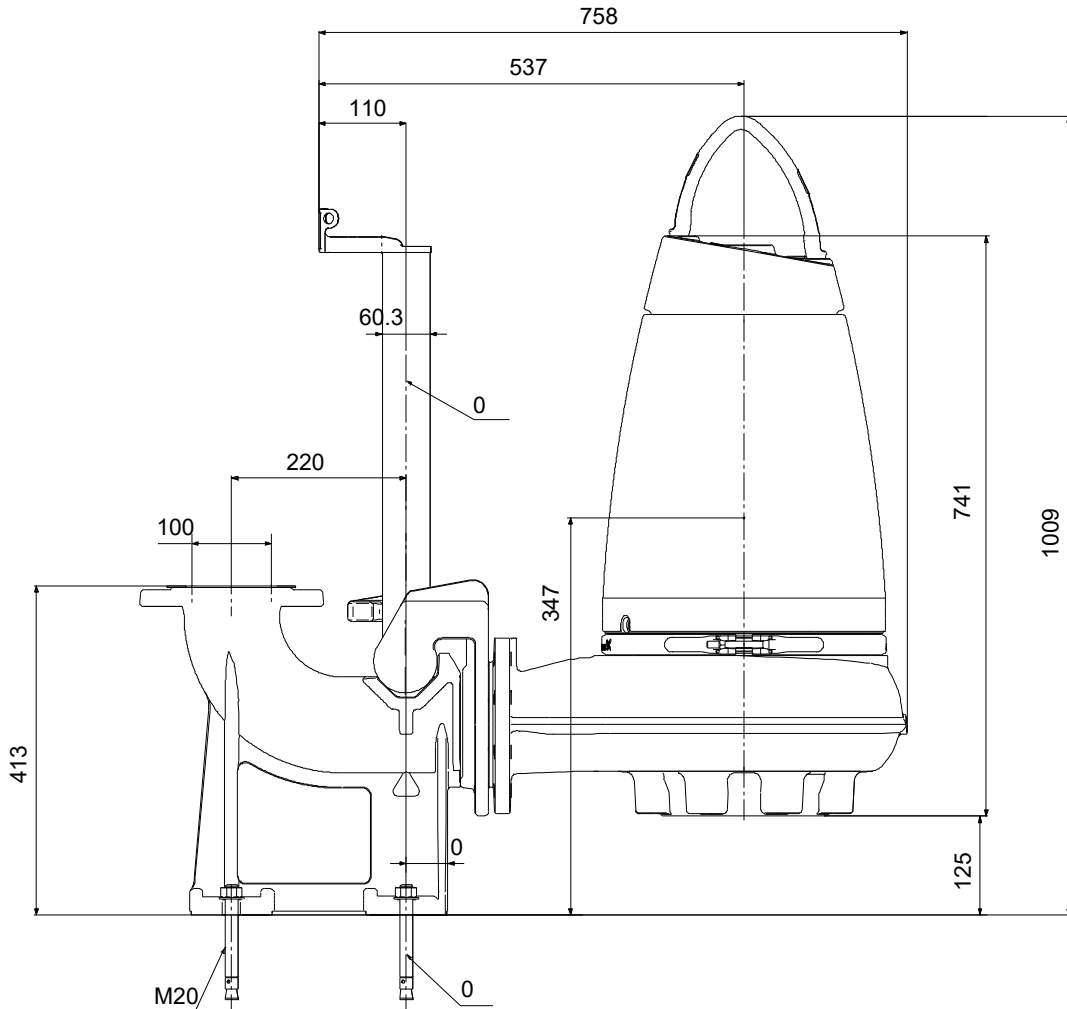
Description	Value
Breakdown torque:	100 Nm
Moment of Inertia:	0.128 kg m ²
Motor efficiency at full load:	82.2 %
Motor efficiency at 3/4 load:	81.7 %
Motor efficiency at 1/2 load:	78.2 %
Number of poles:	4
Method of start:	Star-delta (YD)
Enclosure class (IEC 34-5):	IP68
Insulation class (IEC 85):	F
Explosion proof:	yes
Ex-protection standard:	Ex db eb h mb IIB T4, T3 Gb
Built-in motor protection:	PTO
Thermal protection:	Internal
Power cable type:	Lyniflex
Length of power cable:	10 m
Power plug:	No plug
Controls:	
Control box:	N
Moisture sensor:	Y
Water-in-oil sensor:	Y
Temp. sensor:	Y
Others:	
Net weight:	173 kg
Gross weight:	192 kg

On request SE1.100.100.40.A.Ex.4.51D.B 50 Hz



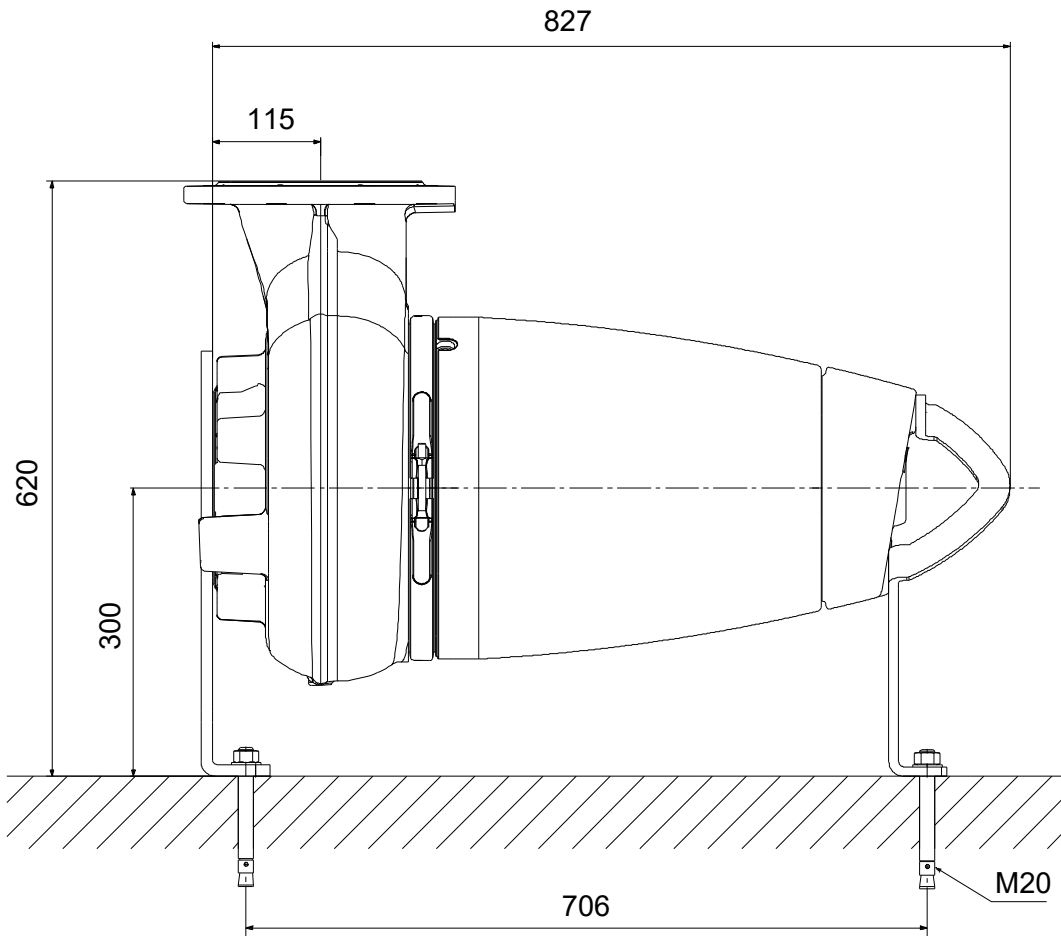
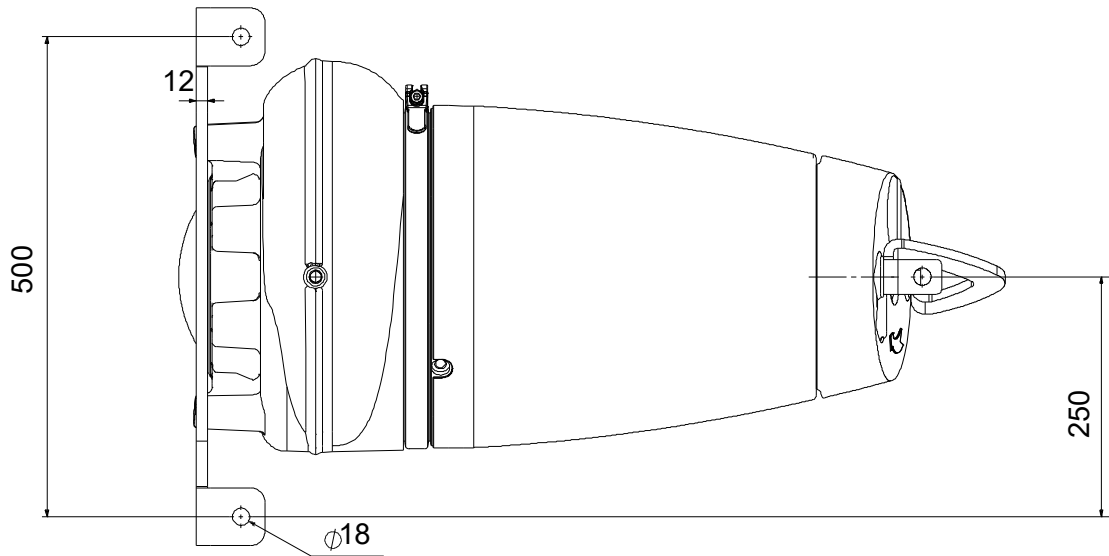
Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.

On request SE1.100.100.40.A.Ex.4.51D.B 50 Hz



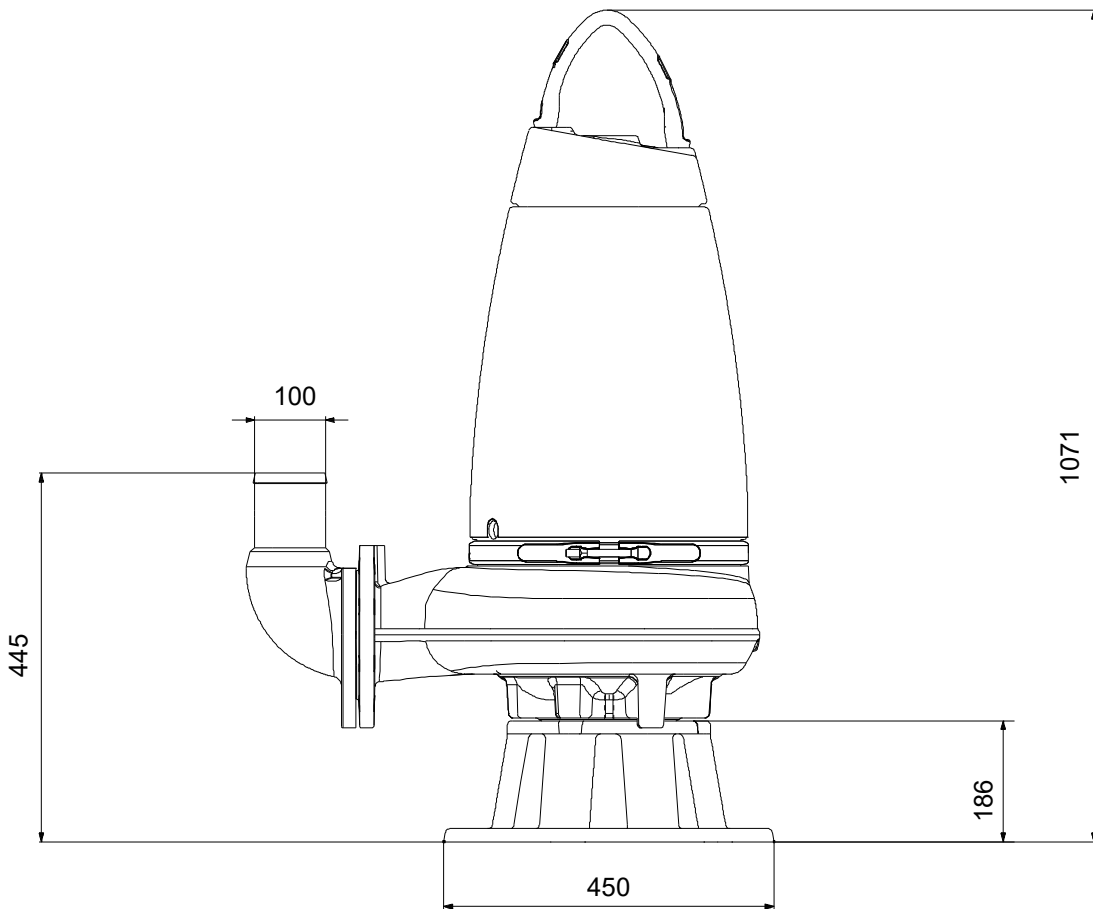
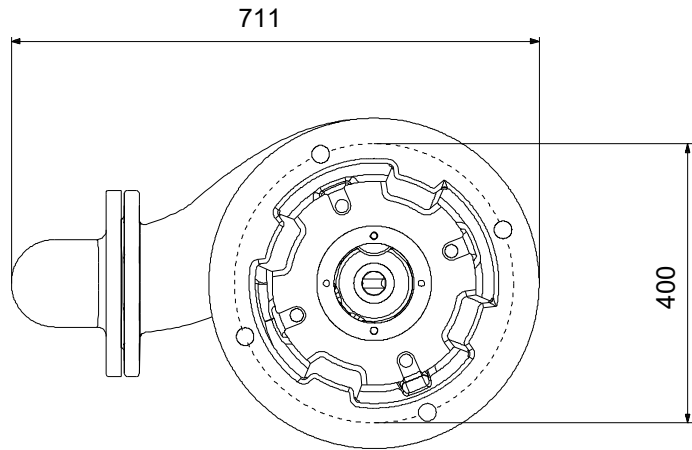
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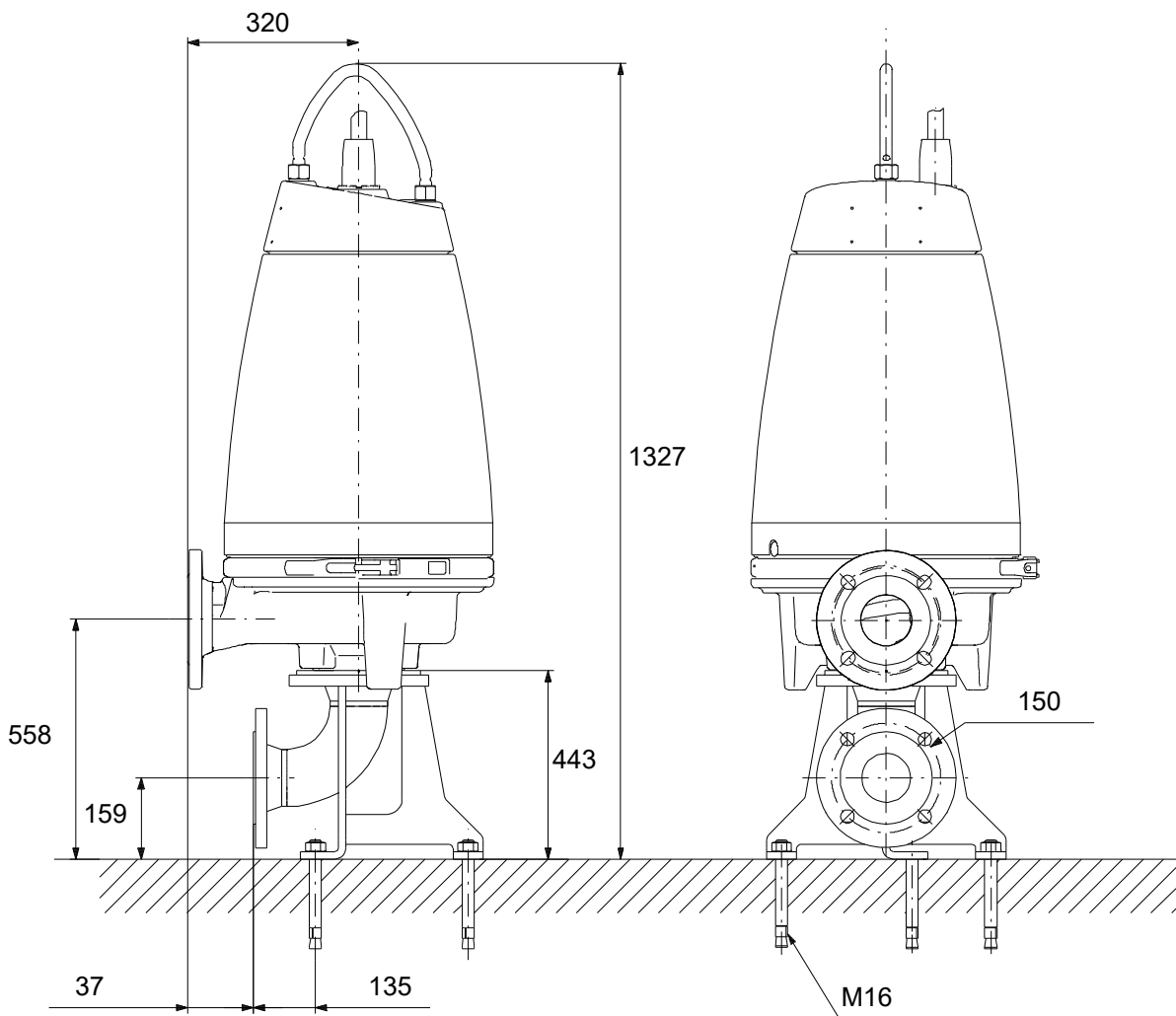
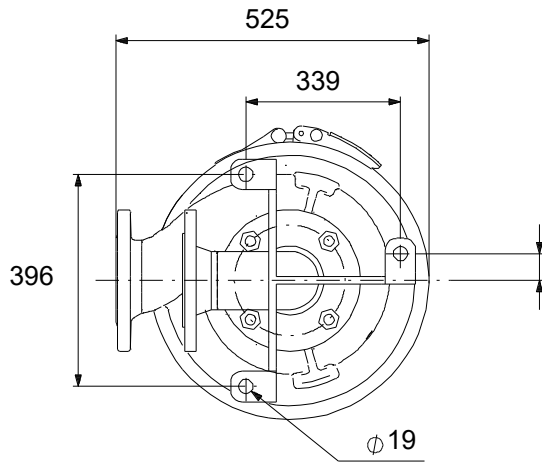
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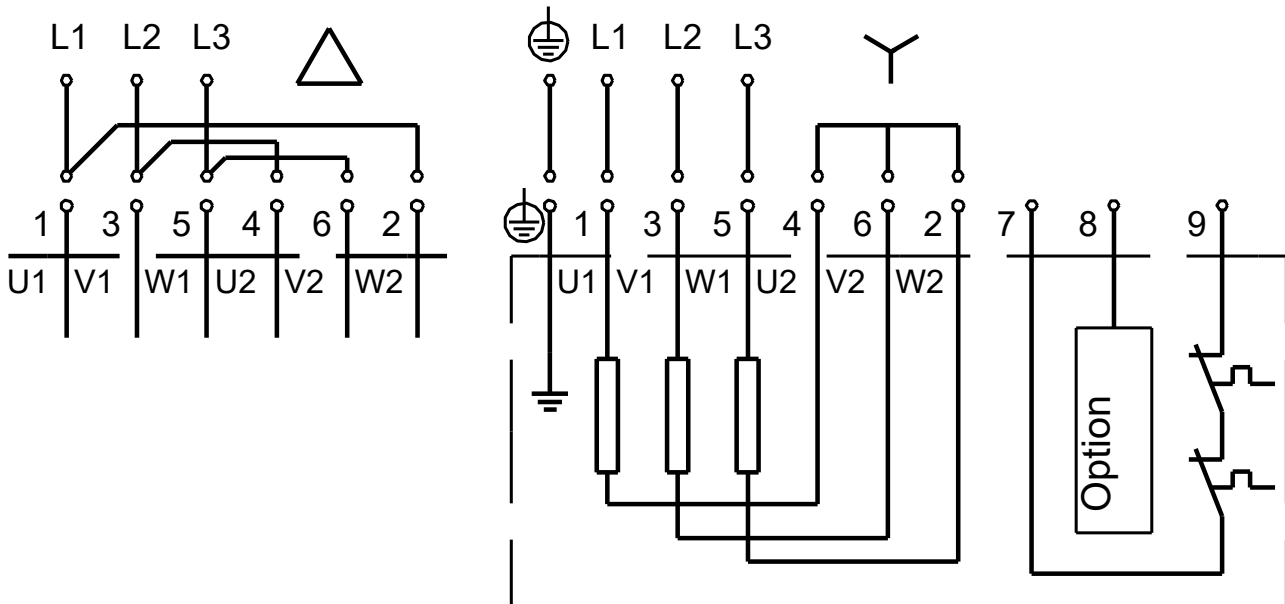
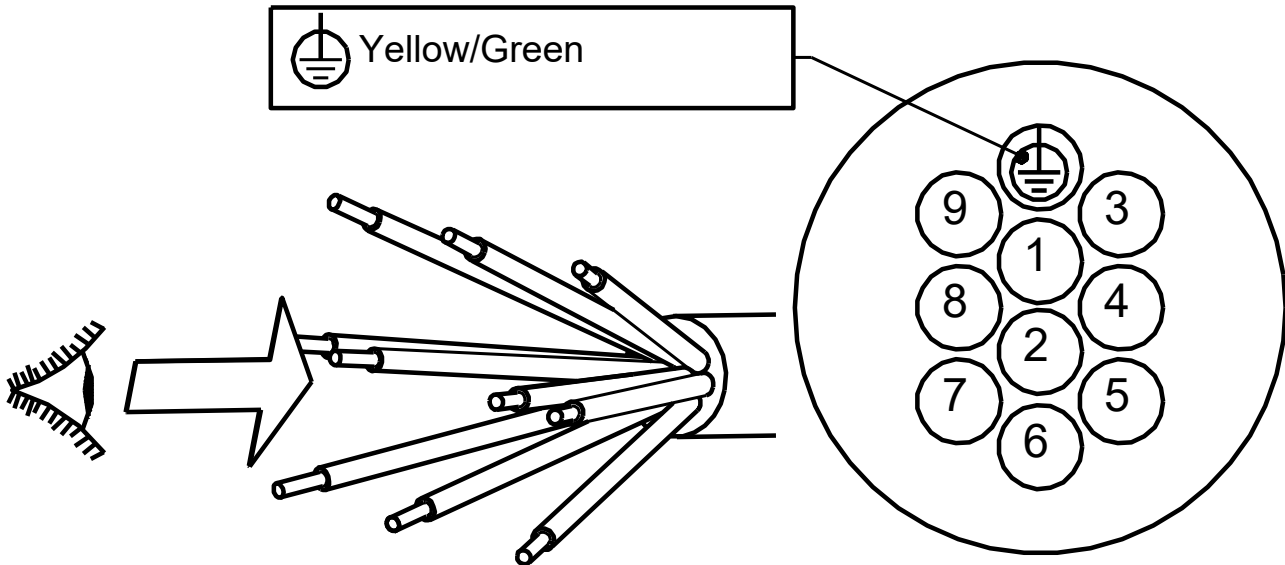
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On request SE1.100.100.40.A.Ex.4.51D.B 50 Hz



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On request SE1.100.100.40.A.Ex.4.51D.B 50 Hz



Note! All units are in [mm] unless others are stated.

