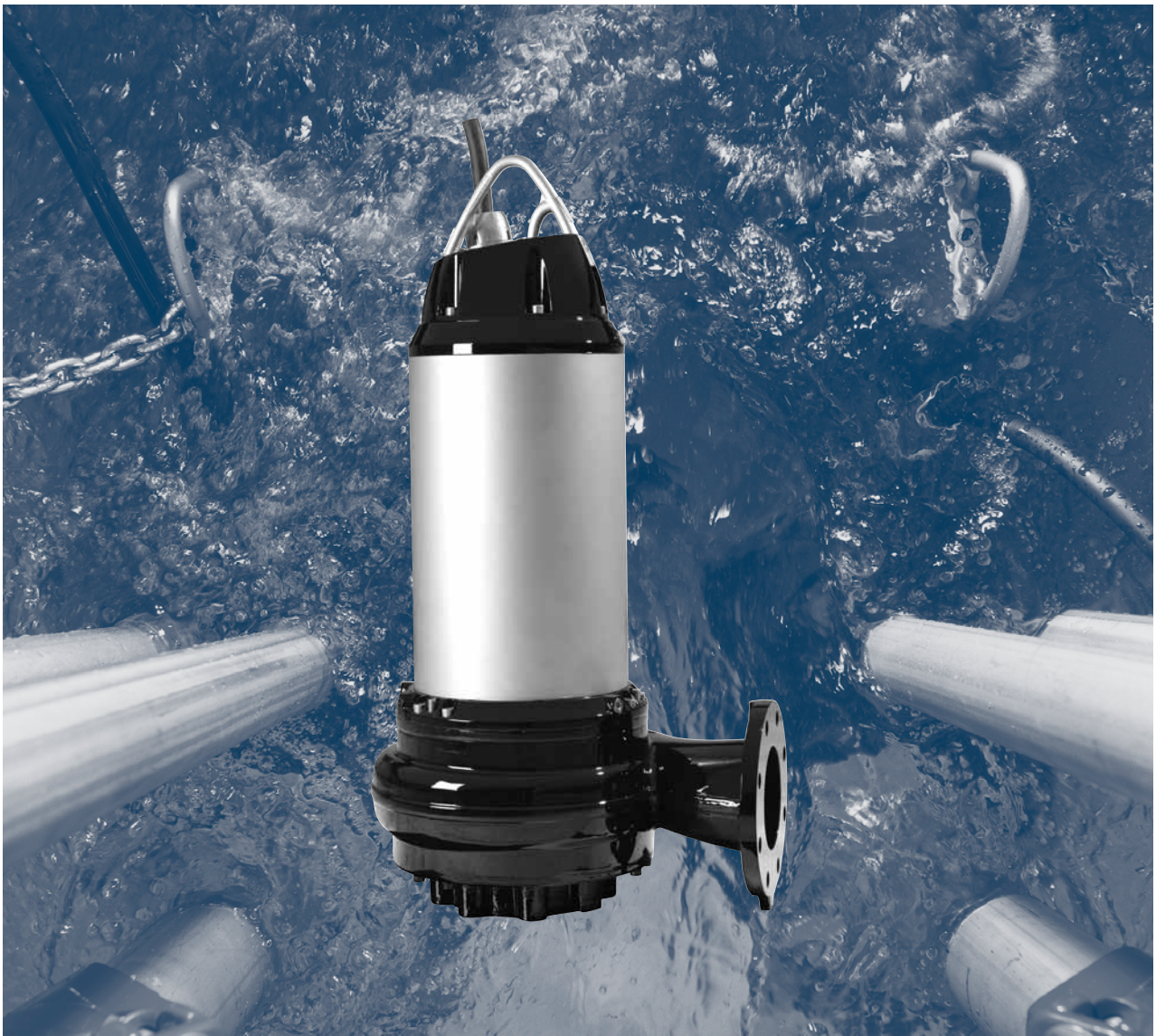


# SE/SL pumps

**9-30 kW**  
50 Hz



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## 1. Introduction

This data booklet deals with Grundfos heavy-duty wastewater pumps called SE/SL, 9-30 kW.



TMD05 3010 0812

**Fig. 1** SE/SL pump

The 9-30 kW SE/SL pumps are a range of SuperVortex and S-tube impeller pumps specifically designed for pumping sewage and wastewater in a wide range of municipal, private and industrial applications.

SE pumps are equipped with an internal closed-loop cooling system, which enables them to be dry installed. SL pumps do not have a cooling system as they are used for submersible installations only.

The pumps are made of resistant materials, such as cast iron and stainless steel. These materials ensure proper operation.

The pumps are fitted with motors from 9 kW up to 30 kW. The motors are either 2-, 4- or 6-pole motors, depending on the motor size.

The free passage in the pumps is 75 to 160 mm.

The pumps are available for:

- freestanding submerged installation on ring stand
- submersible installation on auto-coupling with fully submerged motor
- submersible installation on auto-coupling with media above pump housing only
- pumps for vertical dry installation
- pumps for horizontal dry installation.

## Applications

The SE/SL pumps are designed for applications such as:

- raw water intake systems
- wastewater treatment plants
- municipal pumping stations
- public buildings
- blocks of flats
- industries
- garages
- underground car parks
- car wash areas
- restaurants and hotels.

The pumps are suitable for both temporary and permanent installation. The lifting bracket fitted on the pumps enables easy transportation to and installation on the installation site.

## S-tube impeller



The **S-tube** impeller is the only impeller available in the wastewater market that does not compromise either efficiency or free passage through the pump.

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

A unique balancing method of the impeller ensures minimum vibration in the pump, thus reducing the load on the shaft seal, shaft and bearings.

The S-tube impeller is a no-compromise solution providing free spherical passage through the impeller and pump housing and creating a natural extension of the pipework connected to the pump. This ensures optimum hydraulic efficiency without compromising solids handling. The simple design means lower life cycle costs because abrasive wear is reduced and fewer clogging incidents occur.

## Grundfos Blueflux®



**Grundfos Blueflux®** guarantees the highest motor efficiency from Grundfos. Every aspect of the technology driving a Grundfos Blueflux® motor has been developed to meet the actual needs of the application for which the pump system or solution is installed – and always with an emphasis on reliability and efficiency.

A pump system or solution with a Grundfos **Blueflux®** motor has a considerably higher total efficiency than comparable solutions and reduces life cycle costs substantially. The combination of motor technology, advanced pump design and speed control ensures superior system control, reduced day-to-day service costs and lower environmental impact.

Grundfos **Blueflux®** represents a range of skills and innovative processes that Grundfos brings to motor technology development. Grundfos was instrumental in the drafting and passing of the EuP Directive, setting the ecodesign requirements for electric motors in the European Union.

As a technological leader within high-efficiency motors, Grundfos was invited to help with the technical aspects of the legislation. Grundfos was able to create political awareness of the huge savings potential of variable speed motors and, at a later stage, influence the decision-makers to include variable-frequency drives in the new legislation. As a consequence, Europe's annual electricity consumption will be reduced by 5 % by 2020 – about ten times more than originally planned before Grundfos intervened.

The Grundfos **Blueflux®** label guarantees that the motor technology used is ahead of current market standards and either meets or exceeds legislative requirements for motor efficiency, where these apply.

## Smartdesign



smartdesign

**Smartdesign** describes the functional design of our products that combines elegant appearance with smart features, created with customer needs in mind.

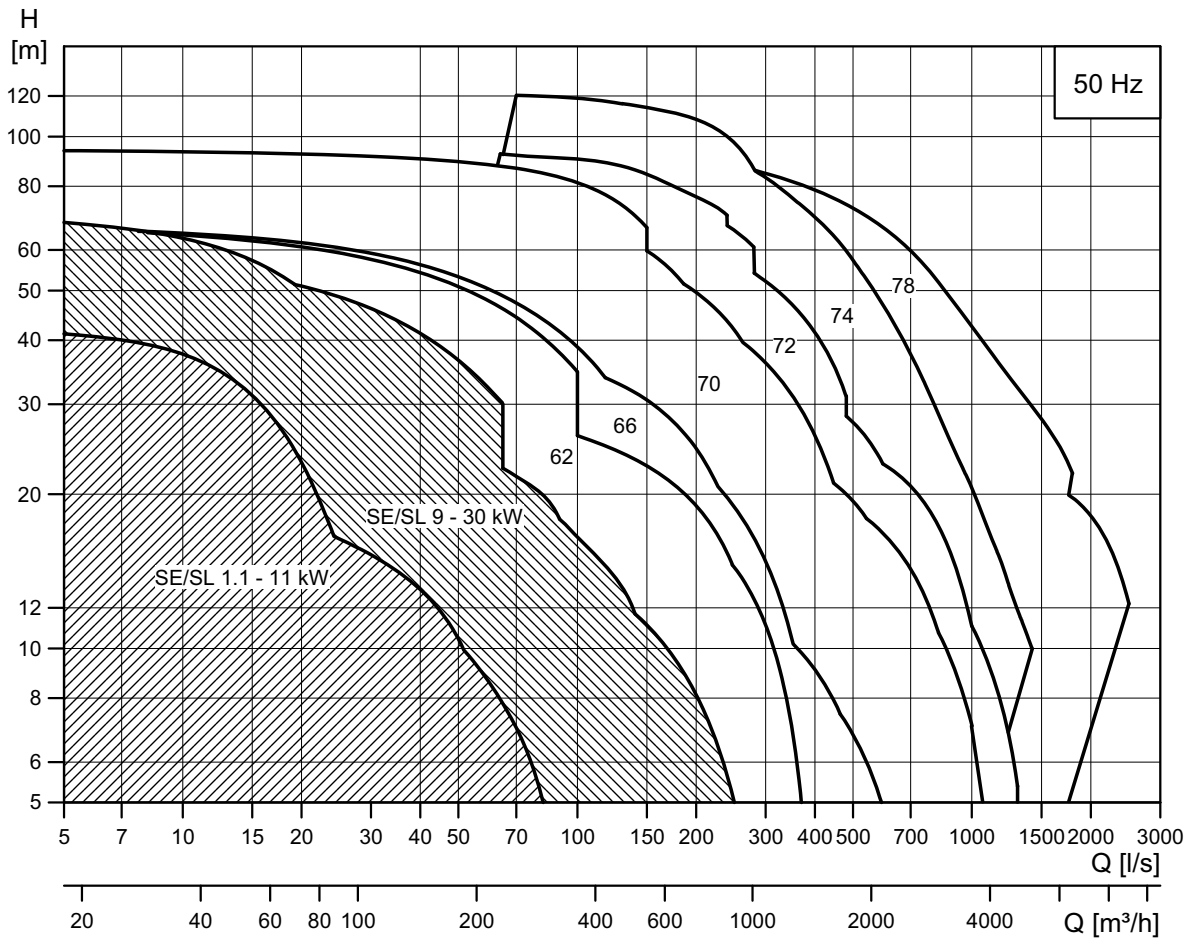
**Smartdesign** does not only look good; the design also makes installation, operation and maintenance of the product easier and more user-friendly.

The **smartdesign** features of our SE/SL pumps include:

- S-tube impeller
- shaft seal cartridge with double mechanical shaft seal system for reliable sealing between pumped liquid and motor
- leak-proof connections via the Grundfos SmartSeal gasket system
- watertight cable entry made of corrosion-resistant stainless steel
- moisture switch for continuous monitoring of motor housing and automatic cut-off of power in case liquid penetrates
- self-cleaning S-tube impeller with long vanes reducing the risk of jamming or clogging and high pumping efficiency or SuperVortex impeller with improved pumping efficiency and less downtime
- SmartTrim system allowing easy adjustment of impeller clearance and maintaining maximum pump efficiency over pump lifetime
- motor in insulation class H (180 °C), enclosure class IP68 with three thermal sensors in stator windings
- explosion-proof motors for applications involving high risk of explosion
- three stainless steel versions for use in corrosive or aggressive liquids:
  - stainless steel impeller; cast iron pump and motor housing
  - stainless steel pump housing, flange and impeller; cast iron motor housing
  - made entirely of corrosion-resistant stainless steel.

## 2. Performance range

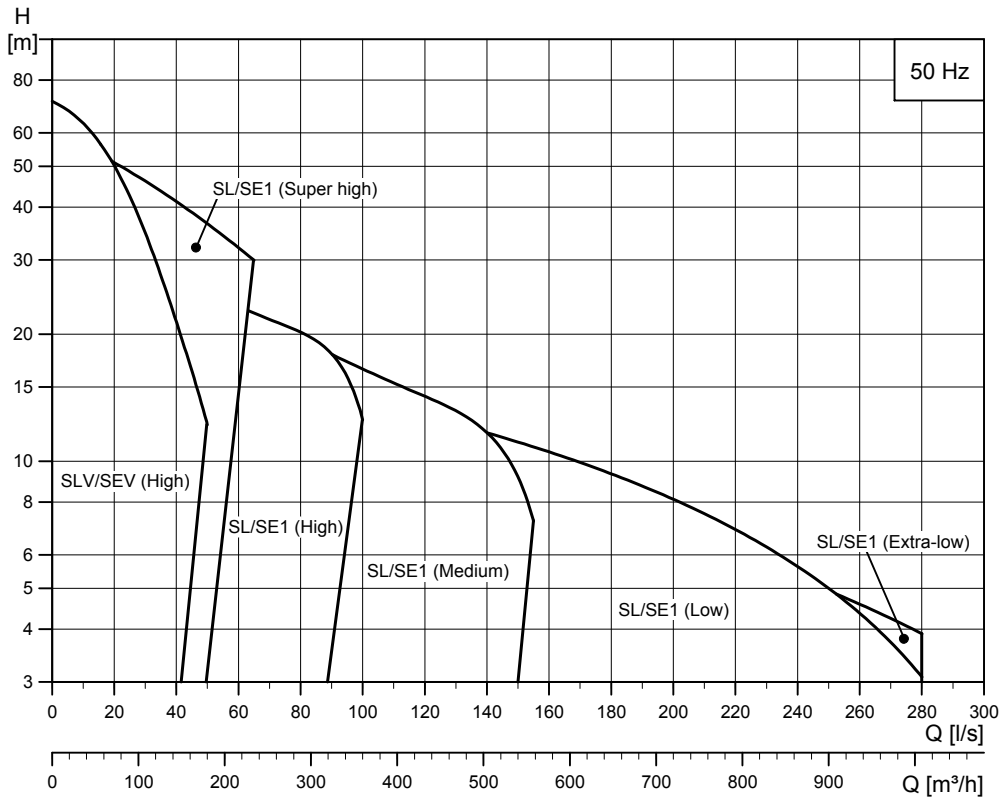
### Performance range, SE/SL and S pumps



TM05 3391 1312



Performance range, SE/SL pumps, 9-30 kW



TM04 1875 1308

List of pump curves

SuperVortex impeller

Pump type	Pressure range	Curve chart on page
SEV/SLV.80.100.130.2.52H	High	43
SEV/SLV.80.100.150.2.52H		44
SEV/SLV.80.100.170.2.52H		45
SEV/SLV.80.100.185.2.52H		46
SEV/SLV.80.100.200.2.52H		47
SEV/SLV.80.100.220.2.52H		48
SEV/SLV.80.100.240.2.52H		49
SEV/SLV.80.100.265.2.52H		50

S-tube impeller

Pump type	Pressure range	Curve chart on page	
SL/SE1.75.100.130.2.52S	Super-high	51	
SL/SE1.75.100.150.2.52S		52	
SL/SE1.75.100.170.2.52S		53	
SL/SE1.75.100.185.2.52S		54	
SL/SE1.80.100.200.2.52S		55	
SL/SE1.80.100.220.2.52S		56	
SL/SE1.80.100.240.2.52S		57	
SL/SE1.80.100.265.2.52S		58	
SL/SE1.85.150.90.4.52H	High	59	
SL/SE1.85.150.110.4.52H		60	
SL/SE1.85.150.130.4.52H		61	
SL/SE1.85.150.150.4.52H		62	
SL/SE1.95.150.170.4.52H		63	
SL/SE1.95.150.185.4.52H		64	
SL/SE1.95.150.200.4.52H		65	
SL/SE1.95.150.220.4.52H		66	
SL/SE1.110.200.90.4.52M	Medium	67	
SL/SE1.110.200.110.4.52M		68	
SL/SE1.110.200.130.4.52M		69	
SL/SE1.110.200.150.4.52M		70	
SL/SE1.110.200.170.4.52M		71	
SL/SE1.110.200.185.4.52M		72	
SL/SE1.110.200.200.4.52M		73	
SL/SE1.110.200.220.4.52M		74	
SL/SE1.140.250.130.4.52L	Low	75	
SL/SE1.140.250.150.4.52L		76	
SL/SE1.140.250.160.4.52L		77	
SL/SE1.140.250.185.4.52L		78	
SL/SE1.140.250.200.4.52L		79	
SL/SE1.140.250.220.4.52L		80	
SL/SE1.160.300.110.6.52E		Extra-low	81
SL/SE1.160.300.130.6.52E			82
SL/SE1.160.300.160.6.52E	83		
SL/SE1.160.300.180.6.52E	84		

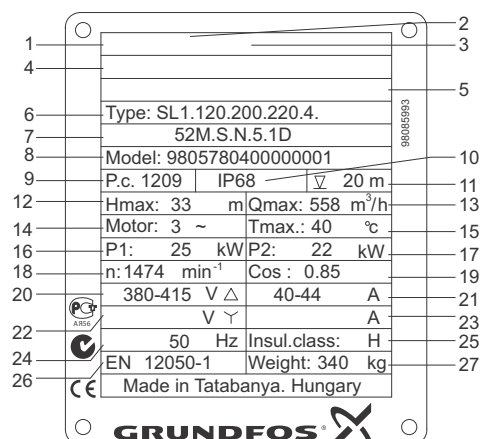
### 3. Identification

#### Type key

Code	Example	SL	1	.80	.100	.265	.2	.52S	.S	.N	.5	1D
<b>Pump type:</b>												
SE	Sewage pump with cooling jacket											
SL	Sewage pump without cooling jacket											
<b>Impeller type:</b>												
1	S-tube impeller											
V	SuperVortex (free-flow) impeller											
<b>Pump free passage:</b>												
Maximum solids size = code number from type designation [mm]												
75	75 mm											
<b>Pump discharge:</b>												
Nominal diameter of pump discharge port = code number from type designation [mm]												
100	100 mm											
<b>Output power, P2:</b>												
P2 = code number from type designation * 100 [W]												
250	25 kW											
<b>Sensor version:</b>												
[ ]	Standard pump											
A	Sensor version 1											
B	Sensor version 2											
<b>Number of poles:</b>												
2	2-pole motor											
4	4-pole motor											
6	6-pole motor											
<b>Pump range/pressure:</b>												
xxS	Super-high pressure											
xxH	High pressure											
xxM	Medium pressure											
xxL	Low pressure											
xxE	Extra-low pressure											
<b>Installation:</b>												
S	Submersible installation - without cooling jacket											
C	Submersible installation - with Cooling jacket											
D	Dry installation, vertical											
H	Dry installation, Horizontal											
<b>Material code for impeller, pump and motor housing:</b>												
[ ]	Cast iron pump housing, cast iron impeller, cast iron motor housing											
Q	Cast iron pump housing, 1.4408 impeller, cast iron motor housing											
S	1.4408 pump housing, 1.4408 impeller, cast iron motor housing											
R	1.4408 pump housing, 1.4408 impeller, 1.4408 motor housing											
D	1.4408 pump housing, duplex steel impeller, 1.4408 motor housing											
<b>Pump version:</b>												
N	Pump without ATEX approval											
Ex	Pump with ATEX approval											
<b>Frequency:</b>												
5	5 = 50 Hz											
6	6 = 60 Hz											
<b>Voltage:</b>												
		<b>50 Hz</b>										
1D	Standard version:	380-415D	660-690Y									
1E		220-240D	380-450Y									
1N		500-550D										
		<b>60 Hz</b>										
1F	Standard version:	220-277D	380-480Y									
1G		380-480D	660-690Y									
1M		500-600D										
1P		208-230D	440-480Y									
Z	Custom-built products											

## 4. Nameplate

### Pump nameplate



TM05 2533 0212

Fig. 2 Pump nameplate

Pos.	Description
1	Approvals
2	EU explosion-proof motor Ex symbol
3	Ex-description ATEX
4	Explosion protection certificate no.
5	Ex description
6	Pump type designation
7	Pump type designation (line 2)
8	Model number
9	Production code, year/week
10	Enclosure class
11	Maximum installation depth
12	Maximum head
13	Maximum flow rate
14	Number of phases
15	Maximum liquid temperature
16	Rated power input P1
17	Rated power output P2
18	Rated speed
19	Cos $\phi$ , 1/1-load
20	Rated voltage I
21	Rated current I
22	Rated voltage II
23	Rated current II
24	Frequency
25	Insulation class
26	Approval
27	Weight



## 5. Selection of product

### Ordering a pump

When ordering an SE/SL pump, 9-30 kW, you need to take the following four aspects into consideration:

- pump
- custom-built variation (option)
- accessories
- controller.

### Pump

Use *Product range* on page 10 and *Type key* on page 7 to identify the pump that best fulfils your needs. The list below is a detailed description of the product you get if you order the following pump:

Pump	Product no.
SL1.80.100.265.2.52S.S.N.51D	98145049

- pump as specified in the type key
- 10 m cable
- paint: graphic grey, NCS S 9000/N black, thickness 150 µ
- three thermal switches (Klixon), one in each phase, or three thermal sensors (PTC)
- one moisture switch below the motor top cover (two moisture switches below the motor top cover on explosion-proof versions)
- test according to DIN 9906, Annex A.

See *Performance curves and technical data* on page 43 for selection of a standard pump.

Note

***Product-specific data for the pump can also be seen in WebCAPS using the product number 98145049.***

### Custom-built variants

The SE/SL pumps can be customized to meet individual requirements. Many pump features and options are available for customization, e.g. explosion-proof versions, various cable lengths or special materials.

Variants can be seen in *List of variants* on page 18. For requirements or designs not included in the list, please contact Grundfos.

### Accessories

Depending on the installation type, you may need to order accessories. See *Accessories* on page 85 for selection of the correct accessories.

Note

***Ordered accessories are not factory-fitted.***

### Controller

The following controllers are available:

- LC/LCD 107 with level pickups
- LC/LCD 108 with float switches
- LC/LCD 110 with level electrodes
- Grundfos Dedicated Controls.



Fig. 3 Grundfos Dedicated Controls

Grundfos Dedicated Controls is a control system designed for installation in either commercial buildings or network pumping stations with one to six pumps. As standard, the system is supplied with application-optimised software and can be configured to meet your specific pumping needs.

For further information about Grundfos Dedicated Controls, see page 35.

TMO 45778 3909

## 6. Product range

### SE1 pumps, with cooling jacket

Pump type	Product no. pump 380-415D 660-690Y	Cable length	Pressure range	Poles	Free passage [mm]	Explosion proof	Accessories			
							Horizontal base stand *	To be ordered separately		
								Vertical base stand	Auto-coupling system	Transportable stand
SE1.75.100.130.2.52S.C.N.51D	98179798	10	S	2	75	No	-	96308237	96090994	96102255
SE1.75.100.130.2.52S.H.N.51D	98179799	10	S	2	75	No	98113361	-	-	-
SE1.75.100.130.2.52S.C.EX.51D	98179867	10	S	2	75	Yes	-	96308237	96090994	96102255
SE1.75.100.130.2.52S.H.EX.51D	98179868	10	S	2	75	Yes	98113361	-	-	-
SE1.75.100.130.2.52S.C.N.51D	98179935	15	S	2	75	No	-	96308237	96090994	96102255
SE1.75.100.130.2.52S.H.N.51D	98179936	15	S	2	75	No	98113361	-	-	-
SE1.75.100.150.2.52S.C.N.51D	98174801	10	S	2	75	No	-	96308237	96090994	96102255
SE1.75.100.150.2.52S.H.N.51D	98174802	10	S	2	75	No	98113361	-	-	-
SE1.75.100.150.2.52S.C.EX.51D	98174847	10	S	2	75	Yes	-	96308237	96090994	96102255
SE1.75.100.150.2.52S.H.EX.51D	98174848	10	S	2	75	Yes	98113361	-	-	-
SE1.75.100.150.2.52S.C.N.51D	98174915	15	S	2	75	No	-	96308237	96090994	96102255
SE1.75.100.150.2.52S.H.N.51D	98174916	15	S	2	75	No	98113361	-	-	-
SE1.75.100.170.2.52S.C.N.51D	98179795	10	S	2	75	No	-	96308237	96090994	96102255
SE1.75.100.170.2.52S.H.N.51D	98179796	10	S	2	75	No	98113361	-	-	-
SE1.75.100.170.2.52S.C.EX.51D	98179864	10	S	2	75	Yes	-	96308237	96090994	96102255
SE1.75.100.170.2.52S.H.EX.51D	98179865	10	S	2	75	Yes	98113361	-	-	-
SE1.75.100.170.2.52S.C.N.51D	98179932	15	S	2	75	No	-	96308237	96090994	96102255
SE1.75.100.170.2.52S.H.N.51D	98179933	15	S	2	75	No	98113361	-	-	-
SE1.75.100.185.2.52S.C.N.51D	98174788	10	S	2	75	No	-	96308237	96090994	96102255
SE1.75.100.185.2.52S.H.N.51D	98174789	10	S	2	75	No	98113361	-	-	-
SE1.75.100.185.2.52S.C.EX.51D	98174844	10	S	2	75	Yes	-	96308237	96090994	96102255
SE1.75.100.185.2.52S.H.EX.51D	98174845	10	S	2	75	Yes	98113361	-	-	-
SE1.75.100.185.2.52S.C.N.51D	98174912	15	S	2	75	No	-	96308237	96090994	96102255
SE1.75.100.185.2.52S.H.N.51D	98174913	15	S	2	75	No	98113361	-	-	-
SE1.80.100.200.2.52S.C.N.51D	98179792	10	S	2	80	No	-	96308237	96090994	96102255
SE1.80.100.200.2.52S.H.N.51D	98179793	10	S	2	80	No	98113361	-	-	-
SE1.80.100.200.2.52S.C.EX.51D	98179861	10	S	2	80	Yes	-	96308237	96090994	96102255
SE1.80.100.200.2.52S.H.EX.51D	98179862	10	S	2	80	Yes	98113361	-	-	-
SE1.80.100.200.2.52S.C.N.51D	98179929	15	S	2	80	No	-	96308237	96090994	96102255
SE1.80.100.200.2.52S.H.N.51D	98179930	15	S	2	80	No	98113361	-	-	-
SE1.80.100.220.2.52S.C.N.51D	98174785	10	S	2	80	No	-	96308237	96090994	96102255
SE1.80.100.220.2.52S.H.N.51D	98174786	10	S	2	80	No	98113361	-	-	-
SE1.80.100.220.2.52S.C.EX.51D	98174841	10	S	2	80	Yes	-	96308237	96090994	96102255
SE1.80.100.220.2.52S.H.EX.51D	98174842	10	S	2	80	Yes	98113361	-	-	-
SE1.80.100.220.2.52S.C.N.51D	98174909	15	S	2	80	No	-	96308237	96090994	96102255
SE1.80.100.220.2.52S.H.N.51D	98174910	15	S	2	80	No	98113361	-	-	-
SE1.80.100.240.2.52S.C.N.51D	98179779	10	S	2	80	No	-	96308237	96090994	96102255
SE1.80.100.240.2.52S.H.N.51D	98179780	10	S	2	80	No	98113361	-	-	-
SE1.80.100.240.2.52S.C.EX.51D	98179858	10	S	2	80	Yes	-	96308237	96090994	96102255
SE1.80.100.240.2.52S.H.EX.51D	98179859	10	S	2	80	Yes	98113361	-	-	-
SE1.80.100.240.2.52S.C.N.51D	98179926	15	S	2	80	No	-	96308237	96090994	96102255
SE1.80.100.240.2.52S.H.N.51D	98179927	15	S	2	80	No	98113361	-	-	-
SE1.80.100.265.2.52S.C.N.51D	98145062	10	S	2	80	No	-	96308237	96090994	96102255
SE1.80.100.265.2.52S.H.N.51D	98145063	10	S	2	80	No	98113361	-	-	-
SE1.80.100.265.2.52S.C.EX.51D	98174798	10	S	2	80	Yes	-	96308237	96090994	96102255
SE1.80.100.265.2.52S.H.EX.51D	98174799	10	S	2	80	Yes	98113361	-	-	-
SE1.80.100.265.2.52S.C.N.51D	98174906	15	S	2	80	No	-	96308237	96090994	96102255
SE1.80.100.265.2.52S.H.N.51D	98174907	15	S	2	80	No	98113361	-	-	-
SE1.85.150.90.4.52H.C.N.51D	98179810	10	H	4	85	No	-	96308238	97695489	96102256
SE1.85.150.90.4.52H.H.N.51D	98179811	10	H	4	85	No	98113365	-	-	-
SE1.85.150.90.4.52H.C.EX.51D	98179879	10	H	4	85	Yes	-	96308238	97695489	96102256
SE1.85.150.90.4.52H.H.EX.51D	98179880	10	H	4	85	Yes	98113365	-	-	-
SE1.85.150.90.4.52H.C.N.51D	98179947	15	H	4	85	No	-	96308238	97695489	96102256
SE1.85.150.90.4.52H.H.N.51D	98179948	15	H	4	85	No	98113365	-	-	-
SE1.85.150.110.4.52H.C.N.51D	98174807	10	H	4	85	No	-	96308238	97695489	96102256
SE1.85.150.110.4.52H.H.N.51D	98174808	10	H	4	85	No	98113365	-	-	-
SE1.85.150.110.4.52H.C.EX.51D	98174859	10	H	4	85	Yes	-	96308238	97695489	96102256
SE1.85.150.110.4.52H.H.EX.51D	98174860	10	H	4	85	Yes	98113365	-	-	-
SE1.85.150.110.4.52H.C.N.51D	98174927	15	H	4	85	No	-	96308238	97695489	96102256
SE1.85.150.110.4.52H.H.N.51D	98174928	15	H	4	85	No	98113365	-	-	-

\* The horizontal base stand is included in the pump product number (Do not order separately).

Pump type	Product no. pump 380-415D 660-690Y	Cable length	Pressure range	Poles	Free passage [mm]	Explosion proof	Accessories			
							Horizontal base stand *	To be ordered separately		
								Vertical base stand	Auto-coupling system	Transportable stand
SE1.85.150.130.4.52H.C.N.51D	98179807	10	H	4	85	No	-	96308238	97695489	96102256
SE1.85.150.130.4.52H.H.N.51D	98179808	10	H	4	85	No	98113365	-	-	-
SE1.85.150.130.4.52H.C.EX.51D	98179876	10	H	4	85	Yes	-	96308238	97695489	96102256
SE1.85.150.130.4.52H.H.EX.51D	98179877	10	H	4	85	Yes	98113365	-	-	-
SE1.85.150.130.4.52H.C.N.51D	98179944	15	H	4	85	No	-	96308238	97695489	96102256
SE1.85.150.130.4.52H.H.N.51D	98179945	15	H	4	85	No	98113365	-	-	-
SE1.85.150.150.4.52H.C.N.51D	98174805	10	H	4	85	No	-	96308238	97695489	96102256
SE1.85.150.150.4.52H.H.N.51D	98174806	10	H	4	85	No	98113365	-	-	-
SE1.85.150.150.4.52H.C.EX.51D	98174856	10	H	4	85	Yes	-	96308238	97695489	96102256
SE1.85.150.150.4.52H.H.EX.51D	98174857	10	H	4	85	Yes	98113365	-	-	-
SE1.85.150.150.4.52H.C.N.51D	98174924	15	H	4	85	No	-	96308238	97695489	96102256
SE1.85.150.150.4.52H.H.N.51D	98174925	15	H	4	85	No	98113365	-	-	-
SE1.95.150.170.4.52H.C.N.51D	98179804	10	H	4	95	No	-	96308238	97695489	96102256
SE1.95.150.170.4.52H.H.N.51D	98179805	10	H	4	95	No	98113365	-	-	-
SE1.95.150.170.4.52H.C.EX.51D	98179873	10	H	4	95	Yes	-	96308238	97695489	96102256
SE1.95.150.170.4.52H.H.EX.51D	98179874	10	H	4	95	Yes	98113365	-	-	-
SE1.95.150.170.4.52H.C.N.51D	98179941	15	H	4	95	No	-	96308238	97695489	96102256
SE1.95.150.170.4.52H.H.N.51D	98179942	15	H	4	95	No	98113365	-	-	-
SE1.95.150.185.4.52H.C.N.51D	98174803	10	H	4	95	No	-	96308238	97695489	96102256
SE1.95.150.185.4.52H.H.N.51D	98174804	10	H	4	95	No	98113365	-	-	-
SE1.95.150.185.4.52H.C.EX.51D	98174853	10	H	4	95	Yes	-	96308238	97695489	96102256
SE1.95.150.185.4.52H.H.EX.51D	98174854	10	H	4	95	Yes	98113365	-	-	-
SE1.95.150.185.4.52H.C.N.51D	98174921	15	H	4	95	No	-	96308238	97695489	96102256
SE1.95.150.185.4.52H.H.N.51D	98174922	15	H	4	95	No	98113365	-	-	-
SE1.95.150.200.4.52H.C.N.51D	98179801	10	H	4	95	No	-	96308238	97695489	96102256
SE1.95.150.200.4.52H.H.N.51D	98179802	10	H	4	95	No	98113365	-	-	-
SE1.95.150.200.4.52H.C.EX.51D	98179870	10	H	4	95	Yes	-	96308238	97695489	96102256
SE1.95.150.200.4.52H.H.EX.51D	98179871	10	H	4	95	Yes	98113365	-	-	-
SE1.95.150.200.4.52H.C.N.51D	98179938	15	H	4	95	No	-	96308238	97695489	96102256
SE1.95.150.200.4.52H.H.N.51D	98179939	15	H	4	95	No	98113365	-	-	-
SE1.95.150.220.4.52H.C.N.51D	98144980	10	H	4	95	No	-	96308238	97695489	96102256
SE1.95.150.220.4.52H.H.N.51D	98145014	10	H	4	95	No	98113365	-	-	-
SE1.95.150.220.4.52H.C.EX.51D	98174850	10	H	4	95	Yes	-	96308238	97695489	96102256
SE1.95.150.220.4.52H.H.EX.51D	98174851	10	H	4	95	Yes	98113365	-	-	-
SE1.95.150.220.4.52H.C.N.51D	98174918	15	H	4	95	No	-	96308238	97695489	96102256
SE1.95.150.220.4.52H.H.N.51D	98174919	15	H	4	95	No	98113365	-	-	-
SE1.110.200.90.4.52M.C.N.51D	98179822	10	M	4	110	No	-	96094523	96641489	96102256
SE1.110.200.90.4.52M.H.N.51D	98179823	10	M	4	110	No	98113366	-	-	-
SE1.110.200.90.4.52M.C.EX.51D	98179891	10	M	4	110	Yes	-	96094523	96641489	96102256
SE1.110.200.90.4.52M.H.EX.51D	98179892	10	M	4	110	Yes	98113366	-	-	-
SE1.110.200.90.4.52M.C.N.51D	98179959	15	M	4	110	No	-	96094523	96641489	96102256
SE1.110.200.90.4.52M.H.N.51D	98179960	15	M	4	110	No	98113366	-	-	-
SE1.110.200.110.4.52M.C.N.51D	98174814	10	M	4	110	No	-	96094523	96641489	96102256
SE1.110.200.110.4.52M.H.N.51D	98174815	10	M	4	110	No	98113366	-	-	-
SE1.110.200.110.4.52M.C.EX.51D	98174871	10	M	4	110	Yes	-	96094523	96641489	96102256
SE1.110.200.110.4.52M.H.EX.51D	98174872	10	M	4	110	Yes	98113366	-	-	-
SE1.110.200.110.4.52M.C.N.51D	98174939	15	M	4	110	No	-	96094523	96641489	96102256
SE1.110.200.110.4.52M.H.N.51D	98174940	15	M	4	110	No	98113366	-	-	-
SE1.110.200.130.4.52M.C.N.51D	98179819	10	M	4	110	No	-	96094523	96641489	96102256
SE1.110.200.130.4.52M.H.N.51D	98179820	10	M	4	110	No	98113366	-	-	-
SE1.110.200.130.4.52M.C.EX.51D	98179888	10	M	4	110	Yes	-	96094523	96641489	96102256
SE1.110.200.130.4.52M.H.EX.51D	98179889	10	M	4	110	Yes	98113366	-	-	-
SE1.110.200.130.4.52M.C.N.51D	98179956	15	M	4	110	No	-	96094523	96641489	96102256
SE1.110.200.130.4.52M.H.N.51D	98179957	15	M	4	110	No	98113366	-	-	-
SE1.110.200.150.4.52M.C.N.51D	98174812	10	M	4	110	No	-	96094523	96641489	96102256
SE1.110.200.150.4.52M.H.N.51D	98174813	10	M	4	110	No	98113366	-	-	-
SE1.110.200.150.4.52M.C.EX.51D	98174868	10	M	4	110	Yes	-	96094523	96641489	96102256
SE1.110.200.150.4.52M.H.EX.51D	98174869	10	M	4	110	Yes	98113366	-	-	-
SE1.110.200.150.4.52M.C.N.51D	98174936	15	M	4	110	No	-	96094523	96641489	96102256
SE1.110.200.150.4.52M.H.N.51D	98174937	15	M	4	110	No	98113366	-	-	-
SE1.110.200.170.4.52M.C.N.51D	98179816	10	M	4	110	No	-	96094523	96641489	96102256
SE1.110.200.170.4.52M.H.N.51D	98179817	10	M	4	110	No	98113366	-	-	-
SE1.110.200.170.4.52M.C.EX.51D	98179885	10	M	4	110	Yes	-	96094523	96641489	96102256
SE1.110.200.170.4.52M.H.EX.51D	98179886	10	M	4	110	Yes	98113366	-	-	-

\* The horizontal base stand is included in the pump product number (Do not order separately).

Pump type	Product no. pump 380-415D 660-690Y	Cable length	Pressure range	Poles	Free passage [mm]	Explosion proof	Accessories			
							Horizontal base stand *	To be ordered separately		
								Vertical base stand	Auto-coupling system	Transportable stand
SE1.110.200.170.4.52M.C.N.51D	98179953	15	M	4	110	No		96094523	96641489	96102256
SE1.110.200.170.4.52M.H.N.51D	98179954	15	M	4	110	No	98113366			
SE1.110.200.185.4.52M.C.N.51D	98174809	10	M	4	110	No		96094523	96641489	96102256
SE1.110.200.185.4.52M.H.N.51D	98174810	10	M	4	110	No	98113366			
SE1.110.200.185.4.52M.C.EX.51D	98174865	10	M	4	110	Yes		96094523	96641489	96102256
SE1.110.200.185.4.52M.H.EX.51D	98174866	10	M	4	110	Yes	98113366			
SE1.110.200.185.4.52M.C.N.51D	98174933	15	M	4	110	No		96094523	96641489	96102256
SE1.110.200.185.4.52M.H.N.51D	98174934	15	M	4	110	No	98113366			
SE1.110.200.200.4.52M.C.N.51D	98179813	10	M	4	110	No		96094523	96641489	96102256
SE1.110.200.200.4.52M.H.N.51D	98179814	10	M	4	110	No	98113366			
SE1.110.200.200.4.52M.C.EX.51D	98179882	10	M	4	110	Yes		96094523	96641489	96102256
SE1.110.200.200.4.52M.H.EX.51D	98179883	10	M	4	110	Yes	98113366			
SE1.110.200.200.4.52M.C.N.51D	98179950	15	M	4	110	No		96094523	96641489	96102256
SE1.110.200.200.4.52M.H.N.51D	98179951	15	M	4	110	No	98113366			
SE1.110.200.220.4.52M.C.N.51D	98145015	10	M	4	110	No		96094523	96641489	96102256
SE1.110.200.220.4.52M.H.N.51D	98145022	10	M	4	110	No	98113366			
SE1.110.200.220.4.52M.C.EX.51D	98174862	10	M	4	110	Yes		96094523	96641489	96102256
SE1.110.200.220.4.52M.H.EX.51D	98174863	10	M	4	110	Yes	98113366			
SE1.110.200.220.4.52M.C.N.51D	98174930	15	M	4	110	No		96094523	96641489	96102256
SE1.110.200.220.4.52M.H.N.51D	98174931	15	M	4	110	No	98113366			
SE1.140.250.130.4.52L.C.N.51D	98179833	10	L	4	140	No			96782483	
SE1.140.250.130.4.52L.D.N.51D	98179834	10	L	4	140	No		96308240		96789481
SE1.140.250.130.4.52L.H.N.51D	98179835	10	L	4	140	No	98113367			
SE1.140.250.130.4.52L.C.EX.51D	98179902	10	L	4	140	Yes			96782483	
SE1.140.250.130.4.52L.D.EX.51D	98179903	10	L	4	140	Yes		96308240		96789481
SE1.140.250.130.4.52L.H.EX.51D	98179904	10	L	4	140	Yes	98113367			
SE1.140.250.130.4.52L.C.N.51D	98179970	15	L	4	140	No			96782483	
SE1.140.250.130.4.52L.D.N.51D	98179971	15	L	4	140	No		96308240		96789481
SE1.140.250.130.4.52L.H.N.51D	98179972	15	L	4	140	No	98113367			
SE1.140.250.150.4.52L.C.N.51D	98174819	10	L	4	140	No			96782483	
SE1.140.250.150.4.52L.D.N.51D	98174820	10	L	4	140	No		96308240		96789481
SE1.140.250.150.4.52L.H.N.51D	98174821	10	L	4	140	No	98113367			
SE1.140.250.150.4.52L.C.EX.51D	98174882	10	L	4	140	Yes			96782483	
SE1.140.250.150.4.52L.D.EX.51D	98174883	10	L	4	140	Yes		96308240		96789481
SE1.140.250.150.4.52L.H.EX.51D	98174884	10	L	4	140	Yes	98113367			
SE1.140.250.150.4.52L.C.N.51D	98174950	15	L	4	140	No			96782483	
SE1.140.250.150.4.52L.D.N.51D	98174951	15	L	4	140	No		96308240		96789481
SE1.140.250.150.4.52L.H.N.51D	98174952	15	L	4	140	No	98113367			
SE1.140.250.170.4.52L.C.N.51D	98179829	10	L	4	140	No			96782483	
SE1.140.250.170.4.52L.D.N.51D	98179830	10	L	4	140	No		96308240		96789481
SE1.140.250.170.4.52L.H.N.51D	98179831	10	L	4	140	No	98113367			
SE1.140.250.170.4.52L.C.EX.51D	98179898	10	L	4	140	Yes			96782483	
SE1.140.250.170.4.52L.D.EX.51D	98179899	10	L	4	140	Yes		96308240		96789481
SE1.140.250.170.4.52L.H.EX.51D	98179900	10	L	4	140	Yes	98113367			
SE1.140.250.170.4.52L.C.N.51D	98179966	15	L	4	140	No			96782483	
SE1.140.250.170.4.52L.D.N.51D	98179967	15	L	4	140	No		96308240		96789481
SE1.140.250.170.4.52L.H.N.51D	98179968	15	L	4	140	No	98113367			
SE1.140.250.185.4.52L.C.N.51D	98145029	10	L	4	140	No			96782483	
SE1.140.250.185.4.52L.D.N.51D	98145030	10	L	4	140	No		96308240		96789481
SE1.140.250.185.4.52L.H.N.51D	98145044	10	L	4	140	No	98113367			
SE1.140.250.185.4.52L.C.EX.51D	98174878	10	L	4	140	Yes			96782483	
SE1.140.250.185.4.52L.D.EX.51D	98174879	10	L	4	140	Yes		96308240		96789481
SE1.140.250.185.4.52L.H.EX.51D	98174880	10	L	4	140	Yes	98113367			
SE1.140.250.185.4.52L.C.N.51D	98174946	15	L	4	140	No			96782483	
SE1.140.250.185.4.52L.D.N.51D	98174947	15	L	4	140	No		96308240		96789481
SE1.140.250.185.4.52L.H.N.51D	98174948	15	L	4	140	No	98113367			
SE1.140.250.200.4.52L.C.N.51D	98179825	10	L	4	140	No			96782483	
SE1.140.250.200.4.52L.D.N.51D	98179826	10	L	4	140	No		96308240		96789481
SE1.140.250.200.4.52L.H.N.51D	98179827	10	L	4	140	No	98113367			
SE1.140.250.200.4.52L.C.EX.51D	98179894	10	L	4	140	Yes			96782483	
SE1.140.250.200.4.52L.D.EX.51D	98179895	10	L	4	140	Yes		96308240		96789481
SE1.140.250.200.4.52L.H.EX.51D	98179896	10	L	4	140	Yes	98113367			
SE1.140.250.200.4.52L.C.N.51D	98179962	15	L	4	140	No			96782483	
SE1.140.250.200.4.52L.D.N.51D	98179963	15	L	4	140	No	-	96308240	-	96789481

\* The horizontal base stand is included in the pump product number (Do not order separately).

Pump type	Product no. pump 380-415D 660-690Y	Cable length	Pressure range	Poles	Free passage [mm]	Explosion proof	Accessories			
							Horizontal base stand *	To be ordered separately		
								Vertical base stand	Auto-coupling system	Transportable stand
SE1.140.250.200.4.52L.H.N.51D	98179964	15	L	4	140	No	98113367	-	-	-
SE1.140.250.220.4.52L.C.N.51D	98174816	10	L	4	140	No	-	-	96782483	-
SE1.140.250.220.4.52L.D.N.51D	98174817	10	L	4	140	No	-	96308240	-	96789481
SE1.140.250.220.4.52L.H.N.51D	98174818	10	L	4	140	No	98113367	-	-	-
SE1.140.250.220.4.52L.C.EX.51D	98174874	10	L	4	140	Yes	-	-	96782483	-
SE1.140.250.220.4.52L.D.EX.51D	98174875	10	L	4	140	Yes	-	96308240	-	96789481
SE1.140.250.220.4.52L.H.EX.51D	98174876	10	L	4	140	Yes	98113367	-	-	-
SE1.140.250.220.4.52L.C.N.51D	98174942	15	L	4	140	No	-	-	96782483	-
SE1.140.250.220.4.52L.D.N.51D	98174943	15	L	4	140	No	-	96308240	-	96789481
SE1.140.250.220.4.52L.H.N.51D	98174944	15	L	4	140	No	98113367	-	-	-
SE1.160.300.110.6.52E.C.N.51D	98179841	10	E	6	160	No	-	-	96782484	-
SE1.160.300.110.6.52E.D.N.51D	98179842	10	E	6	160	No	-	96308241	-	-
SE1.160.300.110.6.52E.H.N.51D	98179843	10	E	6	160	No	98113369	-	-	-
SE1.160.300.110.6.52E.C.EX.51D	98179910	10	E	6	160	Yes	-	-	96782484	-
SE1.160.300.110.6.52E.D.EX.51D	98179911	10	E	6	160	Yes	-	96308241	-	-
SE1.160.300.110.6.52E.H.EX.51D	98179912	10	E	6	160	Yes	98113369	-	-	-
SE1.160.300.110.6.52E.C.N.51D	98179978	15	E	6	160	No	-	-	96782484	-
SE1.160.300.110.6.52E.D.N.51D	98179979	15	E	6	160	No	-	96308241	-	-
SE1.160.300.110.6.52E.H.N.51D	98179980	15	E	6	160	No	98113369	-	-	-
SE1.160.300.130.6.52E.C.N.51D	98145102	10	E	6	160	No	-	-	96782484	-
SE1.160.300.130.6.52E.D.N.51D	98145105	10	E	6	160	No	-	96308241	-	-
SE1.160.300.130.6.52E.H.N.51D	98145106	10	E	6	160	No	98113369	-	-	-
SE1.160.300.130.6.52E.C.EX.51D	98174890	10	E	6	160	Yes	-	-	96782484	-
SE1.160.300.130.6.52E.D.EX.51D	98174891	10	E	6	160	Yes	-	96308241	-	-
SE1.160.300.130.6.52E.H.EX.51D	98174892	10	E	6	160	Yes	98113369	-	-	-
SE1.160.300.130.6.52E.C.N.51D	98174958	15	E	6	160	No	-	-	96782484	-
SE1.160.300.130.6.52E.D.N.51D	98174959	15	E	6	160	No	-	96308241	-	-
SE1.160.300.130.6.52E.H.N.51D	98174960	15	E	6	160	No	98113369	-	-	-
SE1.160.300.160.6.52E.C.N.51D	98179837	10	E	6	160	No	-	-	96782484	-
SE1.160.300.160.6.52E.D.N.51D	98179838	10	E	6	160	No	-	96308241	-	-
SE1.160.300.160.6.52E.H.N.51D	98179839	10	E	6	160	No	98113369	-	-	-
SE1.160.300.160.6.52E.C.EX.51D	98179906	10	E	6	160	Yes	-	-	96782484	-
SE1.160.300.160.6.52E.D.EX.51D	98179907	10	E	6	160	Yes	-	96308241	-	-
SE1.160.300.160.6.52E.H.EX.51D	98179908	10	E	6	160	Yes	98113369	-	-	-
SE1.160.300.160.6.52E.C.N.51D	98179974	15	E	6	160	No	-	-	96782484	-
SE1.160.300.160.6.52E.D.N.51D	98179975	15	E	6	160	No	-	96308241	-	-
SE1.160.300.160.6.52E.H.N.51D	98179976	15	E	6	160	No	98113369	-	-	-
SE1.160.300.180.6.52E.C.N.51D	98174822	10	E	6	160	No	-	-	96782484	-
SE1.160.300.180.6.52E.D.N.51D	98174823	10	E	6	160	No	-	96308241	-	-
SE1.160.300.180.6.52E.H.N.51D	98174824	10	E	6	160	No	98113369	-	-	-
SE1.160.300.180.6.52E.C.EX.51D	98174886	10	E	6	160	Yes	-	-	96782484	-
SE1.160.300.180.6.52E.D.EX.51D	98174887	10	E	6	160	Yes	-	96308241	-	-
SE1.160.300.180.6.52E.H.EX.51D	98174888	10	E	6	160	Yes	98113369	-	-	-
SE1.160.300.180.6.52E.C.N.51D	98174954	15	E	6	160	No	-	-	96782484	-
SE1.160.300.180.6.52E.D.N.51D	98174955	15	E	6	160	No	-	96308241	-	-
SE1.160.300.180.6.52E.H.N.51D	98174956	15	E	6	160	No	98113369	-	-	-

\* The horizontal base stand is included in the pump product number (Do not order separately).

## SEV pumps, with cooling jacket

Pump type	Product no. pump 380-415D 660-690Y	Cable length	Pres- sure range	Poles	Free passage [mm]	Explo- sion proof	Accessories			
							Horizontal base stand *	To be ordered separately		
								Vertical base stand	Auto- coupling system	Transport- able stand
SEV.80.80.130.2.52H.C.N.51D	98179854	10	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.130.2.52H.H.N.51D	98179855	10	H	2	80	No	98113361	-	-	-
SEV.80.80.130.2.52H.C.EX.51D	98179923	10	H	2	80	Yes	-	96308237	96102240	96102313
SEV.80.80.130.2.52H.H.EX.51D	98179924	10	H	2	80	Yes	98113361	-	-	-
SEV.80.80.130.2.52H.C.N.51D	98179991	15	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.130.2.52H.H.N.51D	98179992	15	H	2	80	No	98113361	-	-	-
SEV.80.80.150.2.52H.C.N.51D	98174830	10	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.150.2.52H.H.N.51D	98174831	10	H	2	80	No	98113361	-	-	-
SEV.80.80.150.2.52H.C.EX.51D	98174903	10	H	2	80	Yes	-	96308237	96102240	96102313
SEV.80.80.150.2.52H.H.EX.51D	98174904	10	H	2	80	Yes	98113361	-	-	-
SEV.80.80.150.2.52H.C.N.51D	98174971	15	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.150.2.52H.H.N.51D	98174972	15	H	2	80	No	98113361	-	-	-
SEV.80.80.170.2.52H.C.N.51D	98179851	10	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.170.2.52H.H.N.51D	98179852	10	H	2	80	No	98113361	-	-	-
SEV.80.80.170.2.52H.C.EX.51D	98179920	10	H	2	80	Yes	-	96308237	96102240	96102313
SEV.80.80.170.2.52H.H.EX.51D	98179921	10	H	2	80	Yes	98113361	-	-	-
SEV.80.80.170.2.52H.C.N.51D	98179988	15	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.170.2.52H.H.N.51D	98179989	15	H	2	80	No	98113361	-	-	-
SEV.80.80.185.2.52H.C.N.51D	98174827	10	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.185.2.52H.H.N.51D	98174828	10	H	2	80	No	98113361	-	-	-
SEV.80.80.185.2.52H.C.EX.51D	98174900	10	H	2	80	Yes	-	96308237	96102240	96102313
SEV.80.80.185.2.52H.H.EX.51D	98174901	10	H	2	80	Yes	98113361	-	-	-
SEV.80.80.185.2.52H.C.N.51D	98174968	15	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.185.2.52H.H.N.51D	98174969	15	H	2	80	No	98113361	-	-	-
SEV.80.80.200.2.52H.C.N.51D	98179848	10	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.200.2.52H.H.N.51D	98179849	10	H	2	80	No	98113361	-	-	-
SEV.80.80.200.2.52H.C.EX.51D	98179917	10	H	2	80	Yes	-	96308237	96102240	96102313
SEV.80.80.200.2.52H.H.EX.51D	98179918	10	H	2	80	Yes	98113361	-	-	-
SEV.80.80.200.2.52H.C.N.51D	98179985	15	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.200.2.52H.H.N.51D	98179986	15	H	2	80	No	98113361	-	-	-
SEV.80.80.220.2.52H.C.N.51D	98174825	10	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.220.2.52H.H.N.51D	98174826	10	H	2	80	No	98113361	-	-	-
SEV.80.80.220.2.52H.C.EX.51D	98174897	10	H	2	80	Yes	-	96308237	96102240	96102313
SEV.80.80.220.2.52H.H.EX.51D	98174898	10	H	2	80	Yes	98113361	-	-	-
SEV.80.80.220.2.52H.C.N.51D	98174965	15	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.220.2.52H.H.N.51D	98174966	15	H	2	80	No	98113361	-	-	-
SEV.80.80.240.2.52H.C.N.51D	98179845	10	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.240.2.52H.H.N.51D	98179846	10	H	2	80	No	98113361	-	-	-
SEV.80.80.240.2.52H.C.EX.51D	98179914	10	H	2	80	Yes	-	96308237	96102240	96102313
SEV.80.80.240.2.52H.H.EX.51D	98179915	10	H	2	80	Yes	98113361	-	-	-
SEV.80.80.240.2.52H.C.N.51D	98179982	15	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.240.2.52H.H.N.51D	98179983	15	H	2	80	No	98113361	-	-	-
SEV.80.80.265.2.52H.C.N.51D	98145083	10	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.265.2.52H.H.N.51D	98145085	10	H	2	80	No	98113361	-	-	-
SEV.80.80.265.2.52H.C.EX.51D	98174894	10	H	2	80	Yes	-	96308237	96102240	96102313
SEV.80.80.265.2.52H.H.EX.51D	98174895	10	H	2	80	Yes	98113361	-	-	-
SEV.80.80.265.2.52H.C.N.51D	98174962	15	H	2	80	No	-	96308237	96102240	96102313
SEV.80.80.265.2.52H.H.N.51D	98174963	15	H	2	80	No	98113361	-	-	-

\* The horizontal base stand is included in the pump product number (Do not order separately).



## SL1 pumps, without cooling jacket

Pump type	Product no. pump 380-415D 660-690Y	Cable length	Pres- sure range	Poles	Free passage [mm]	Explo- sion proof	Accessories			
							To be ordered separately			
							Horizontal base stand	Vertical base stand	Auto- coupling system	Transport- able stand
SL1.75.100.130.2.52S.S.N.51D	98179797	10	S	2	75	No	-	-	96090994	96102255
SL1.75.100.130.2.52S.S.EX.51D	98179866	10	S	2	75	Yes	-	-	96090994	96102255
SL1.75.100.130.2.52S.S.N.51D	98179934	15	S	2	75	No	-	-	96090994	96102255
SL1.75.100.150.2.52S.S.N.51D	98174790	10	S	2	75	No	-	-	96090994	96102255
SL1.75.100.150.2.52S.S.EX.51D	98174846	10	S	2	75	Yes	-	-	96090994	96102255
SL1.75.100.150.2.52S.S.N.51D	98174914	15	S	2	75	No	-	-	96090994	96102255
SL1.75.100.170.2.52S.S.N.51D	98179794	10	S	2	75	No	-	-	96090994	96102255
SL1.75.100.170.2.52S.S.EX.51D	98179863	10	S	2	75	Yes	-	-	96090994	96102255
SL1.75.100.170.2.52S.S.N.51D	98179931	15	S	2	75	No	-	-	96090994	96102255
SL1.75.100.185.2.52S.S.N.51D	98174787	10	S	2	75	No	-	-	96090994	96102255
SL1.75.100.185.2.52S.S.EX.51D	98174843	10	S	2	75	Yes	-	-	96090994	96102255
SL1.75.100.185.2.52S.S.N.51D	98174911	15	S	2	75	No	-	-	96090994	96102255
SL1.80.100.200.2.52S.S.N.51D	98179791	10	S	2	80	No	-	-	96090994	96102255
SL1.80.100.200.2.52S.S.EX.51D	98179860	10	S	2	80	Yes	-	-	96090994	96102255
SL1.80.100.200.2.52S.S.N.51D	98179928	15	S	2	80	No	-	-	96090994	96102255
SL1.80.100.220.2.52S.S.N.51D	98174784	10	S	2	80	No	-	-	96090994	96102255
SL1.80.100.220.2.52S.S.EX.51D	98174800	10	S	2	80	Yes	-	-	96090994	96102255
SL1.80.100.220.2.52S.S.N.51D	98174908	15	S	2	80	No	-	-	96090994	96102255
SL1.80.100.240.2.52S.S.N.51D	98179778	10	S	2	80	No	-	-	96090994	96102255
SL1.80.100.240.2.52S.S.EX.51D	98179857	10	S	2	80	Yes	-	-	96090994	96102255
SL1.80.100.240.2.52S.S.N.51D	98179925	15	S	2	80	No	-	-	96090994	96102255
SL1.80.100.265.2.52S.S.N.51D	98145049	10	S	2	80	No	-	-	96090994	96102255
SL1.80.100.265.2.52S.S.EX.51D	98174797	10	S	2	80	Yes	-	-	96090994	96102255
SL1.80.100.265.2.52S.S.N.51D	98174905	15	S	2	80	No	-	-	96090994	96102255
SL1.85.150.90.4.52H.S.N.51D	98179809	10	H	4	85	No	-	-	97695489	96102256
SL1.85.150.90.4.52H.S.EX.51D	98179878	10	H	4	85	Yes	-	-	97695489	96102256
SL1.85.150.90.4.52H.S.N.51D	98179946	15	H	4	85	No	-	-	97695489	96102256
SL1.85.150.110.4.52H.S.N.51D	98057803	10	H	4	85	No	-	-	97695489	96102256
SL1.85.150.110.4.52H.S.EX.51D	98174858	10	H	4	85	Yes	-	-	97695489	96102256
SL1.85.150.110.4.52H.S.N.51D	98174926	15	H	4	85	No	-	-	97695489	96102256
SL1.85.150.130.4.52H.S.N.51D	98179806	10	H	4	85	No	-	-	97695489	96102256
SL1.85.150.130.4.52H.S.EX.51D	98179875	10	H	4	85	Yes	-	-	97695489	96102256
SL1.85.150.130.4.52H.S.N.51D	98179943	15	H	4	85	No	-	-	97695489	96102256
SL1.85.150.150.4.52H.S.N.51D	98057802	10	H	4	85	No	-	-	97695489	96102256
SL1.85.150.150.4.52H.S.EX.51D	98174855	10	H	4	85	Yes	-	-	97695489	96102256
SL1.85.150.150.4.52H.S.N.51D	98174923	15	H	4	85	No	-	-	97695489	96102256
SL1.95.150.170.4.52H.S.N.51D	98179803	10	H	4	95	No	-	-	97695489	96102256
SL1.95.150.170.4.52H.S.EX.51D	98179872	10	H	4	95	Yes	-	-	97695489	96102256
SL1.95.150.170.4.52H.S.N.51D	98179940	15	H	4	95	No	-	-	97695489	96102256
SL1.95.150.185.4.52H.S.N.51D	98057801	10	H	4	95	No	-	-	97695489	96102256
SL1.95.150.185.4.52H.S.EX.51D	98174852	10	H	4	95	Yes	-	-	97695489	96102256
SL1.95.150.185.4.52H.S.N.51D	98174920	15	H	4	95	No	-	-	97695489	96102256
SL1.95.150.200.4.52H.S.N.51D	98179800	10	H	4	95	No	-	-	97695489	96102256
SL1.95.150.200.4.52H.S.EX.51D	98179869	10	H	4	95	Yes	-	-	97695489	96102256
SL1.95.150.200.4.52H.S.N.51D	98179937	15	H	4	95	No	-	-	97695489	96102256
SL1.95.150.220.4.52H.S.N.51D	98057790	10	H	4	95	No	-	-	97695489	96102256
SL1.95.150.220.4.52H.S.EX.51D	98174849	10	H	4	95	Yes	-	-	97695489	96102256
SL1.95.150.220.4.52H.S.N.51D	98174917	15	H	4	95	No	-	-	97695489	96102256
SL1.110.200.90.4.52M.S.N.51D	98179821	10	M	4	110	No	-	-	96641489	96789480
SL1.110.200.90.4.52M.S.EX.51D	98179890	10	M	4	110	Yes	-	-	96641489	96789480
SL1.110.200.90.4.52M.S.N.51D	98179958	15	M	4	110	No	-	-	96641489	96789480
SL1.110.200.110.4.52M.S.N.51D	98057806	10	M	4	110	No	-	-	96641489	96789480
SL1.110.200.110.4.52M.S.EX.51D	98174870	10	M	4	110	Yes	-	-	96641489	96789480
SL1.110.200.110.4.52M.S.N.51D	98174938	15	M	4	110	No	-	-	96641489	96789480
SL1.110.200.130.4.52M.S.N.51D	98179818	10	M	4	110	No	-	-	96641489	96789480
SL1.110.200.130.4.52M.S.EX.51D	98179887	10	M	4	110	Yes	-	-	96641489	96789480
SL1.110.200.130.4.52M.S.N.51D	98179955	15	M	4	110	No	-	-	96641489	96789480
SL1.110.200.150.4.52M.S.N.51D	98174811	10	M	4	110	No	-	-	96641489	96789480
SL1.110.200.150.4.52M.S.EX.51D	98174867	10	M	4	110	Yes	-	-	96641489	96789480
SL1.110.200.150.4.52M.S.N.51D	98174935	15	M	4	110	No	-	-	96641489	96789480
SL1.110.200.170.4.52M.S.N.51D	98179815	10	M	4	110	No	-	-	96641489	96789480
SL1.110.200.170.4.52M.S.EX.51D	98179884	10	M	4	110	Yes	-	-	96641489	96789480
SL1.110.200.170.4.52M.S.N.51D	98179952	15	M	4	110	No	-	-	96641489	96789480

Pump type	Product no. pump 380-415D 660-690Y	Cable length	Pressure range	Poles	Free passage [mm]	Explosion proof	Accessories			
							Horizontal base stand	To be ordered separately		
								Vertical base stand	Auto-coupling system	Transportable stand
SL1.110.200.185.4.52M.S.N.51D	98057805	10	M	4	110	No	-	-	96641489	96789480
SL1.110.200.185.4.52M.S.EX.51D	98174864	10	M	4	110	Yes	-	-	96641489	96789480
SL1.110.200.185.4.52M.S.N.51D	98174932	15	M	4	110	No	-	-	96641489	96789480
SL1.110.200.200.4.52M.S.N.51D	98179812	10	M	4	110	No	-	-	96641489	96789480
SL1.110.200.200.4.52M.S.EX.51D	98179881	10	M	4	110	Yes	-	-	96641489	96789480
SL1.110.200.200.4.52M.S.N.51D	98179949	15	M	4	110	No	-	-	96641489	96789480
SL1.110.200.220.4.52M.S.N.51D	98057804	10	M	4	110	No	-	-	96641489	96789480
SL1.110.200.220.4.52M.S.EX.51D	98174861	10	M	4	110	Yes	-	-	96641489	96789480
SL1.110.200.220.4.52M.S.N.51D	98174929	15	M	4	110	No	-	-	96641489	96789480
SL1.140.250.130.4.52L.S.N.51D	98179832	10	L	4	140	No	-	-	96782483	
SL1.140.250.130.4.52L.S.EX.51D	98179901	10	L	4	140	Yes	-	-	96782483	
SL1.140.250.130.4.52L.S.N.51D	98179969	15	L	4	140	No	-	-	96782483	
SL1.140.250.150.4.52L.S.N.51D	98057809	10	L	4	140	No	-	-	96782483	
SL1.140.250.150.4.52L.S.EX.51D	98174881	10	L	4	140	Yes	-	-	96782483	
SL1.140.250.150.4.52L.S.N.51D	98174949	15	L	4	140	No	-	-	96782483	
SL1.140.250.170.4.52L.S.N.51D	98179828	10	L	4	140	No	-	-	96782483	
SL1.140.250.170.4.52L.S.EX.51D	98179897	10	L	4	140	Yes	-	-	96782483	
SL1.140.250.170.4.52L.S.N.51D	98179965	15	L	4	140	No	-	-	96782483	
SL1.140.250.185.4.52L.S.N.51D	98057808	10	L	4	140	No	-	-	96782483	
SL1.140.250.185.4.52L.S.EX.51D	98174877	10	L	4	140	Yes	-	-	96782483	
SL1.140.250.185.4.52L.S.N.51D	98174945	15	L	4	140	No	-	-	96782483	
SL1.140.250.200.4.52L.S.N.51D	98179824	10	L	4	140	No	-	-	96782483	
SL1.140.250.200.4.52L.S.EX.51D	98179893	10	L	4	140	Yes	-	-	96782483	
SL1.140.250.200.4.52L.S.N.51D	98179961	15	L	4	140	No	-	-	96782483	
SL1.140.250.220.4.52L.S.N.51D	98057807	10	L	4	140	No	-	-	96782483	
SL1.140.250.220.4.52L.S.EX.51D	98174873	10	L	4	140	Yes	-	-	96782483	
SL1.140.250.220.4.52L.S.N.51D	98174941	15	L	4	140	No	-	-	96782483	
SL1.160.300.110.6.52E.S.N.51D	98179840	10	E	6	160	No	-	-	96782484	
SL1.160.300.110.6.52E.S.EX.51D	98179909	10	E	6	160	Yes	-	-	96782484	
SL1.160.300.110.6.52E.S.N.51D	98179977	15	E	6	160	No	-	-	96782484	
SL1.160.300.130.6.52E.S.N.51D	98057810	10	E	6	160	No	-	-	96782484	
SL1.160.300.130.6.52E.S.EX.51D	98174889	10	E	6	160	Yes	-	-	96782484	
SL1.160.300.130.6.52E.S.N.51D	98174957	15	E	6	160	No	-	-	96782484	
SL1.160.300.160.6.52E.S.N.51D	98179836	10	E	6	160	No	-	-	96782484	
SL1.160.300.160.6.52E.S.EX.51D	98179905	10	E	6	160	Yes	-	-	96782484	
SL1.160.300.160.6.52E.S.N.51D	98179973	15	E	6	160	No	-	-	96782484	
SL1.160.300.180.6.52E.S.N.51D	98126442	10	E	6	160	No	-	-	96782484	
SL1.160.300.180.6.52E.S.EX.51D	98174885	10	E	6	160	Yes	-	-	96782484	
SL1.160.300.180.6.52E.S.N.51D	98174953	15	E	6	160	No	-	-	96782484	

## SLV pumps, without cooling jacket

Pump type	Product no. pump 380-415D 660-690Y	Cable length	Pressure range	Poles	Free passage [mm]	Explosion proof	Accessories			
							To be ordered separately			
							Horizontal base stand	Vertical base stand	Auto-coupling system	Transportable stand
SLV.80.80.130.2.52H.S.N.51D	98179853	10	H	2	80	No	-	-	96102240	96102313
SLV.80.80.130.2.52H.S.EX.51D	98179922	10	H	2	80	Yes	-	-	96102240	96102313
SLV.80.80.130.2.52H.S.N.51D	98179990	15	H	2	80	No	-	-	96102240	96102313
SLV.80.80.150.2.52H.S.N.51D	98174829	10	H	2	80	No	-	-	96102240	96102313
SLV.80.80.150.2.52H.S.EX.51D	98174902	10	H	2	80	Yes	-	-	96102240	96102313
SLV.80.80.150.2.52H.S.N.51D	98174970	15	H	2	80	No	-	-	96102240	96102313
SLV.80.80.170.2.52H.S.N.51D	98179850	10	H	2	80	No	-	-	96102240	96102313
SLV.80.80.170.2.52H.S.EX.51D	98179919	10	H	2	80	Yes	-	-	96102240	96102313
SLV.80.80.170.2.52H.S.N.51D	98179987	15	H	2	80	No	-	-	96102240	96102313
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SLV.80.80.200.2.52H.S.N.51D	98179847	10	H	2	80	No	-	-	96102240	96102313
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SLV.80.80.220.2.52H.S.N.51D	98057788	10	H	2	80	No	-	-	96102240	96102313
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SLV.80.80.240.2.52H.S.EX.51D	98179913	10	H	2	80	Yes	-	-	96102240	96102313
SLV.80.80.240.2.52H.S.N.51D	98179981	15	H	2	80	No	-	-	96102240	96102313
SLV.80.80.265.2.52H.S.N.51D	98057787	10	H	2	80	No	-	-	96102240	96102313
SLV.80.80.265.2.52H.S.EX.51D	98174893	10	H	2	80	Yes	-	-	96102240	96102313
SLV.80.80.265.2.52H.S.N.51D	98174961	15	H	2	80	No	-	-	96102240	96102313

## 7. Variants

### List of variants

<b>Motor</b>		
		10 m
		15 m
Various cable lengths		25 m
		30 m
		50 m
		10 m
EMC power cables	Screened power cables for variable-speed drives	15 m
		25 m
		30 m
		50 m
		Insulation class H
Special motor		Special voltage
PTC thermistors in windings		
Motor liquid:	SML 3	Dry/wet installation
	2 poles	12.8 / 4.5 litres
	4 poles	12.8 / 4.5 litres
	6 poles	14.1 / 5.1 litres
<b>Motor protection</b>		
Klixon / PTC + moisture switch		Standard
Klixon / PTC + moisture switch + WIA		Standard Ex version
Klixon / PTC + moisture switch + PT1000		Sensor version 1
Klixon / PTC + moisture switch + WIA + PT1000 + PSV3 + SM 113 and IO 113		Sensor version 2
Klixon / PTC + moisture switch + WIA + PT1000 + SM 113 and IO 113		Sensor Ex version 1
Klixon / PTC + moisture switch + WIA + PT1000 + PSV3 + SM 113 and IO 113		Sensor Ex version 2
<b>Tests</b>		
Test at specified duty on standard impeller curve		
Trimmed impeller for specified duty test		
Additional test of entire QH curve (incl. report)	5-10 flows from pump performance curve	
Different test standard	Efficiency guaranteed by Grundfos	ISO 9906 grade 1 tolerances
		ISO 9906 grade 2 tolerances
Vibration test (incl. report)	According to Grundfos factory quality standard	
Performance test on dry test stand	Not yet available	
NPSHr test	Not yet available	
String test	Contact Grundfos	
Witness test	Contact Grundfos	
<b>Miscellaneous</b>		
Special packaging	Contact Grundfos	
Special nameplate	Contact Grundfos	
Other variants	Contact Grundfos	

# 8. Construction

## Sectional drawings, motors

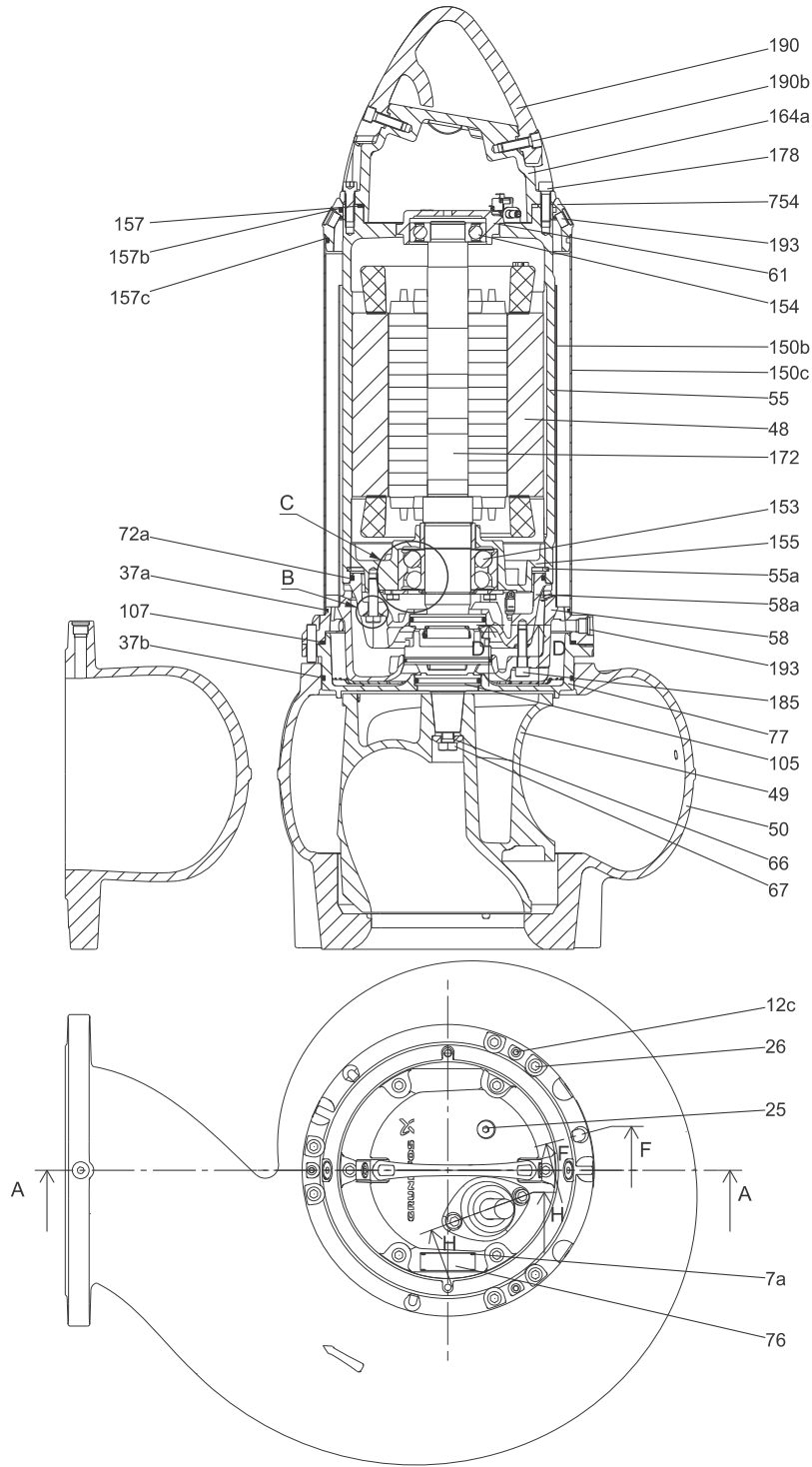


Fig. 4 SE pump, 2-4 poles

TM05 3450 1412

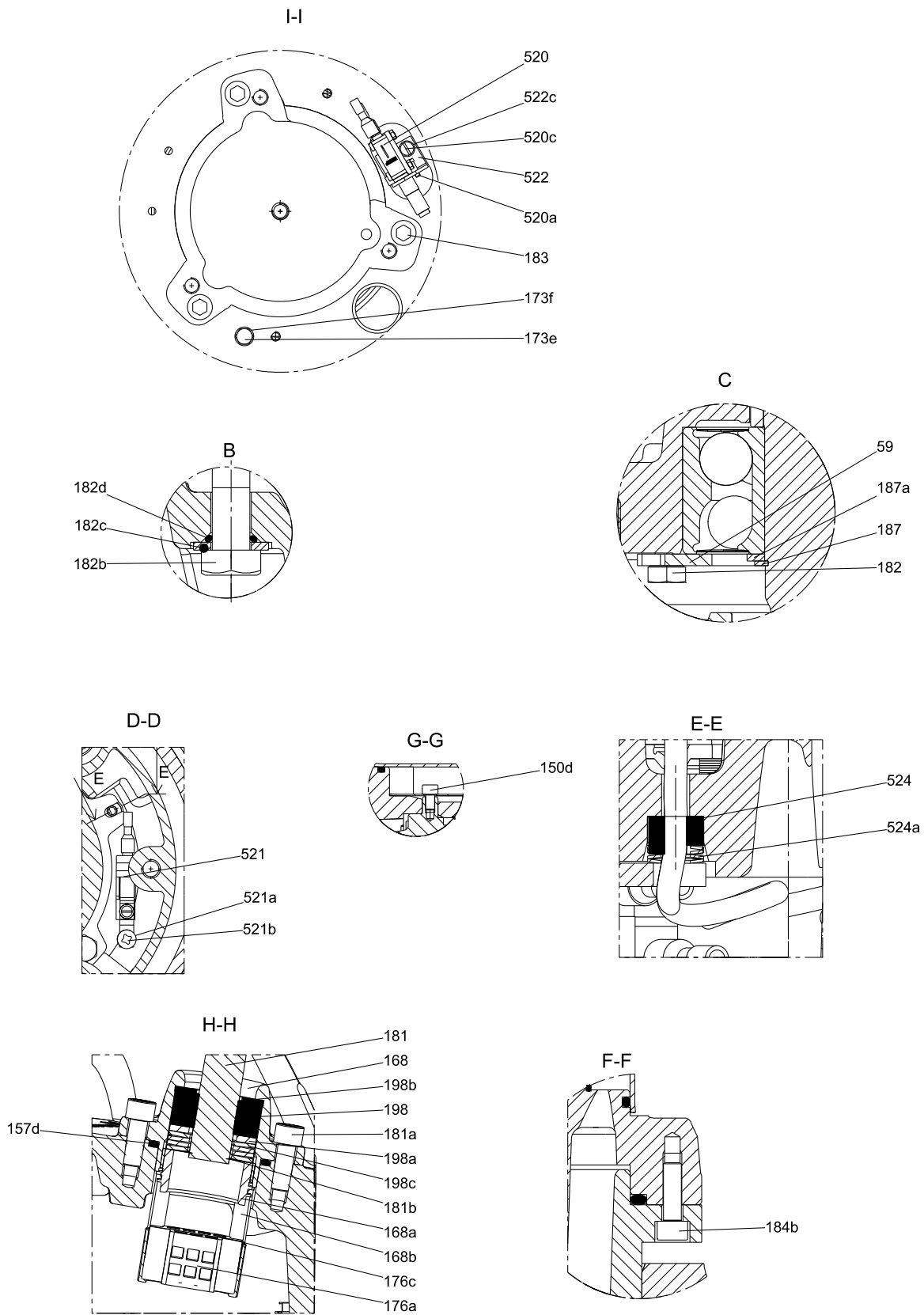


Fig. 5 SE pump, 2-4 poles, additional drawings

TM05 3451 1412



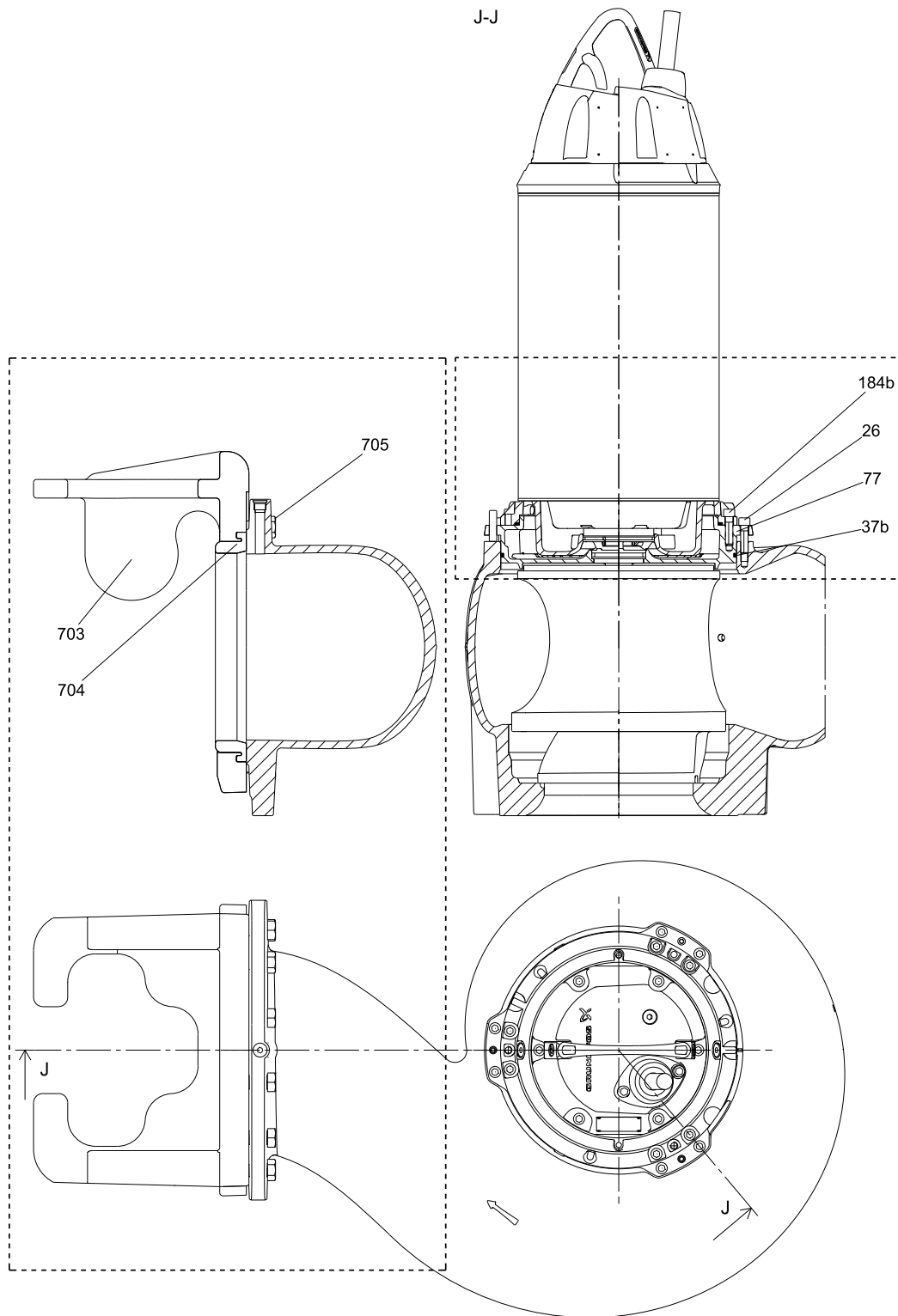


Fig. 6 SE pump, 6 poles

TM05 3483 1412

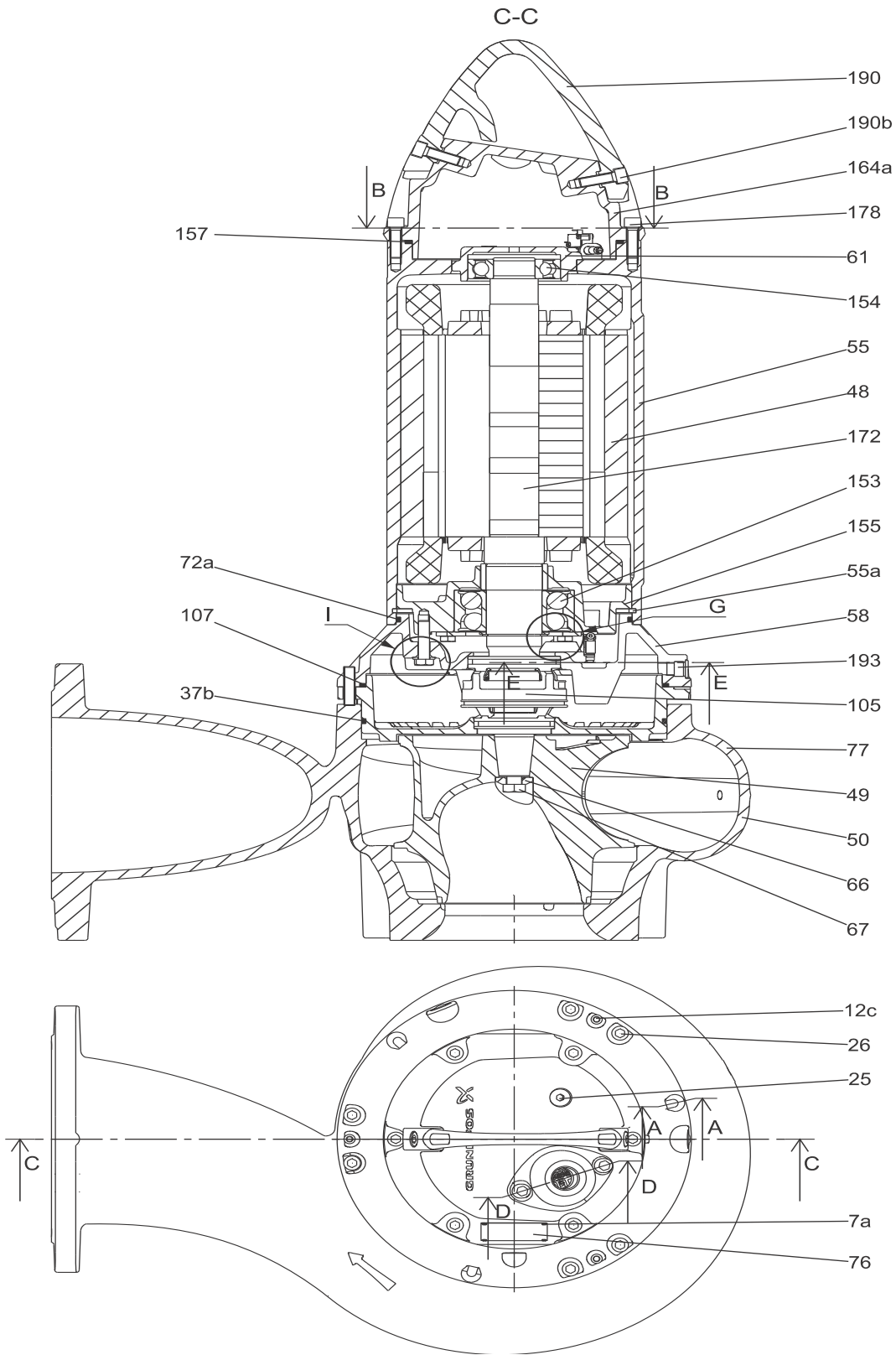


Fig. 7 SL pump, 2-4 poles

TM05 3452 1412

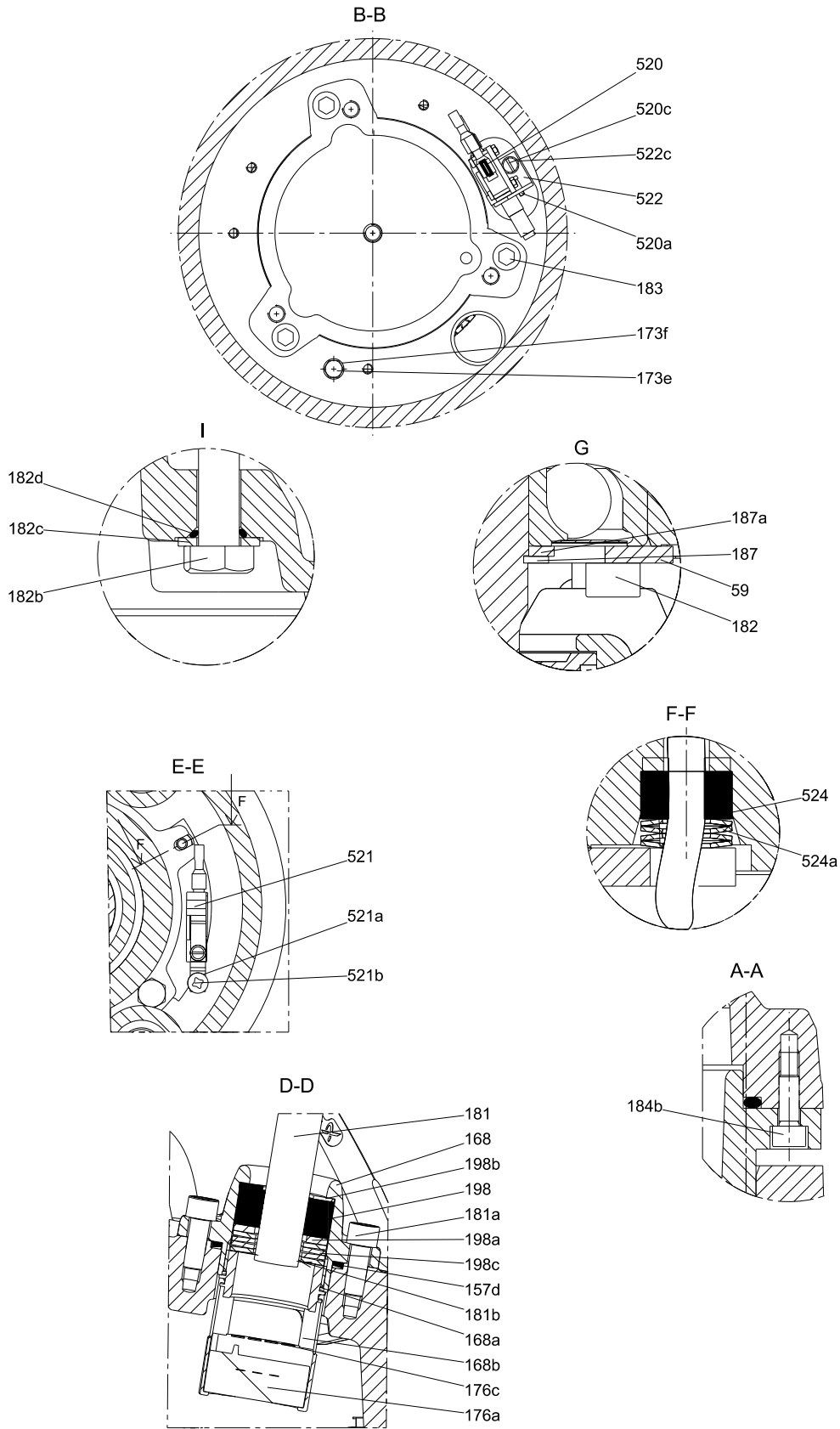


Fig. 8 SL pump, 2-4 poles, additional drawings

TM05 3452 1412

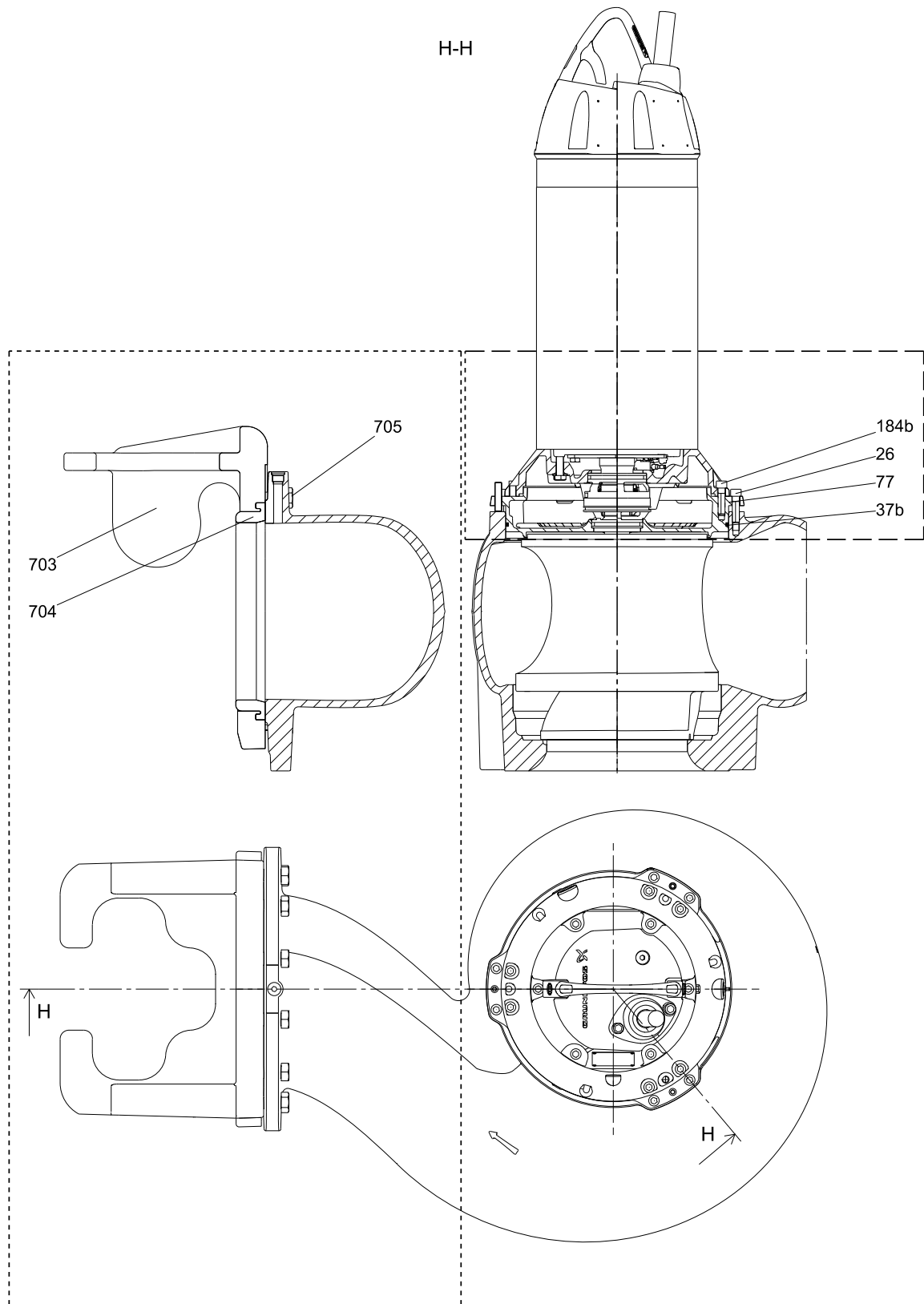


Fig. 9 SL pump, 6 poles

TM05 3484 1412

Sectional drawings, pumps

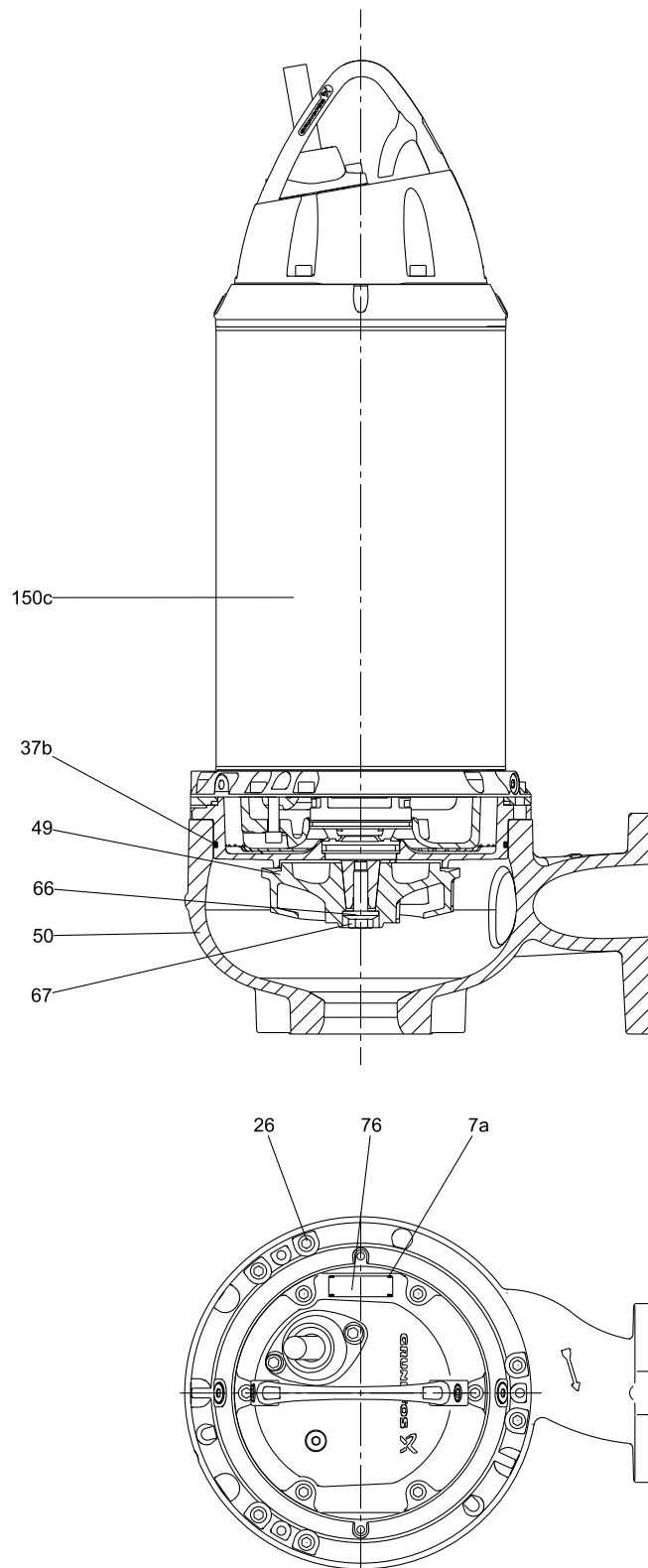


Fig. 10 SE/SL pump, with SuperVortex impeller

TM05 2785 0512

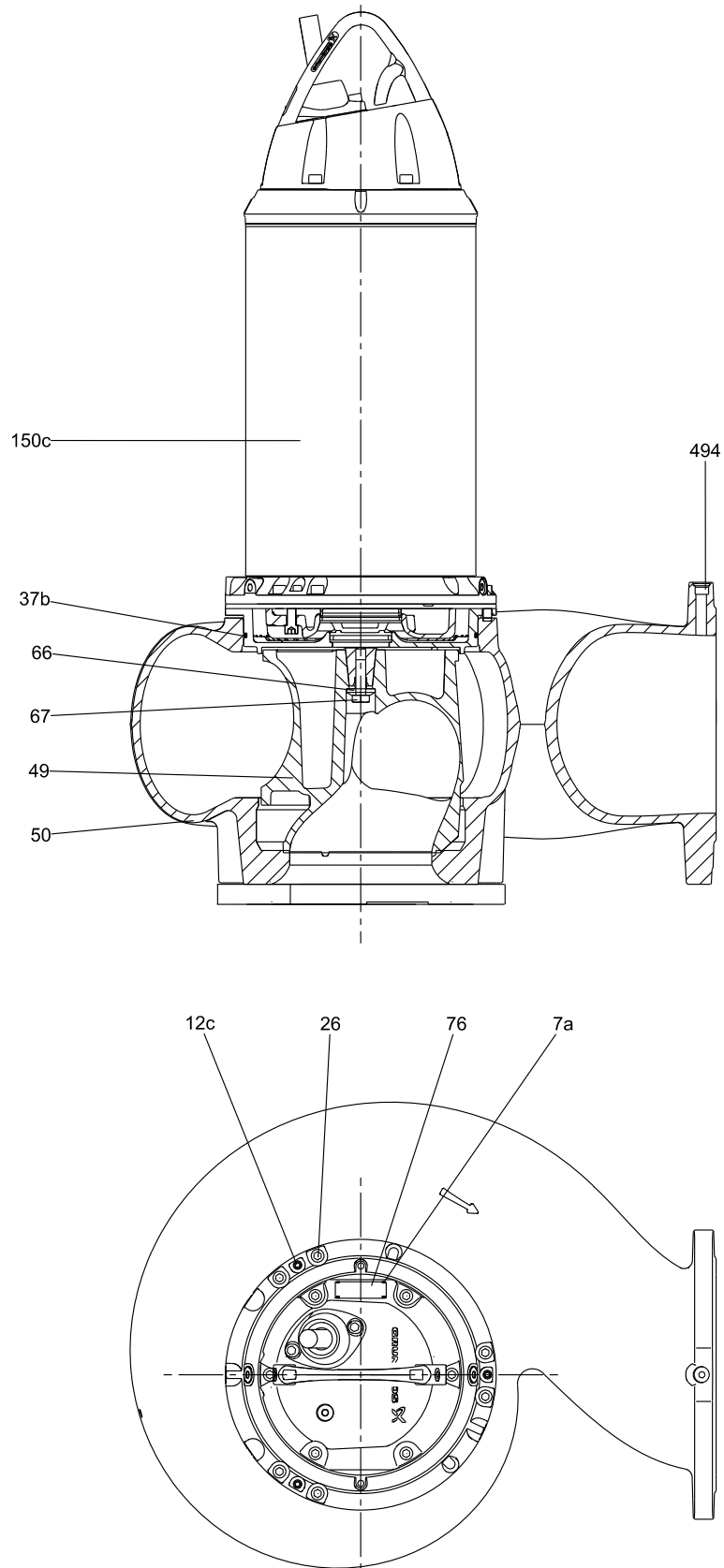


Fig. 11 SE/SL pump, with S-tube impeller

TM05 2784 0512



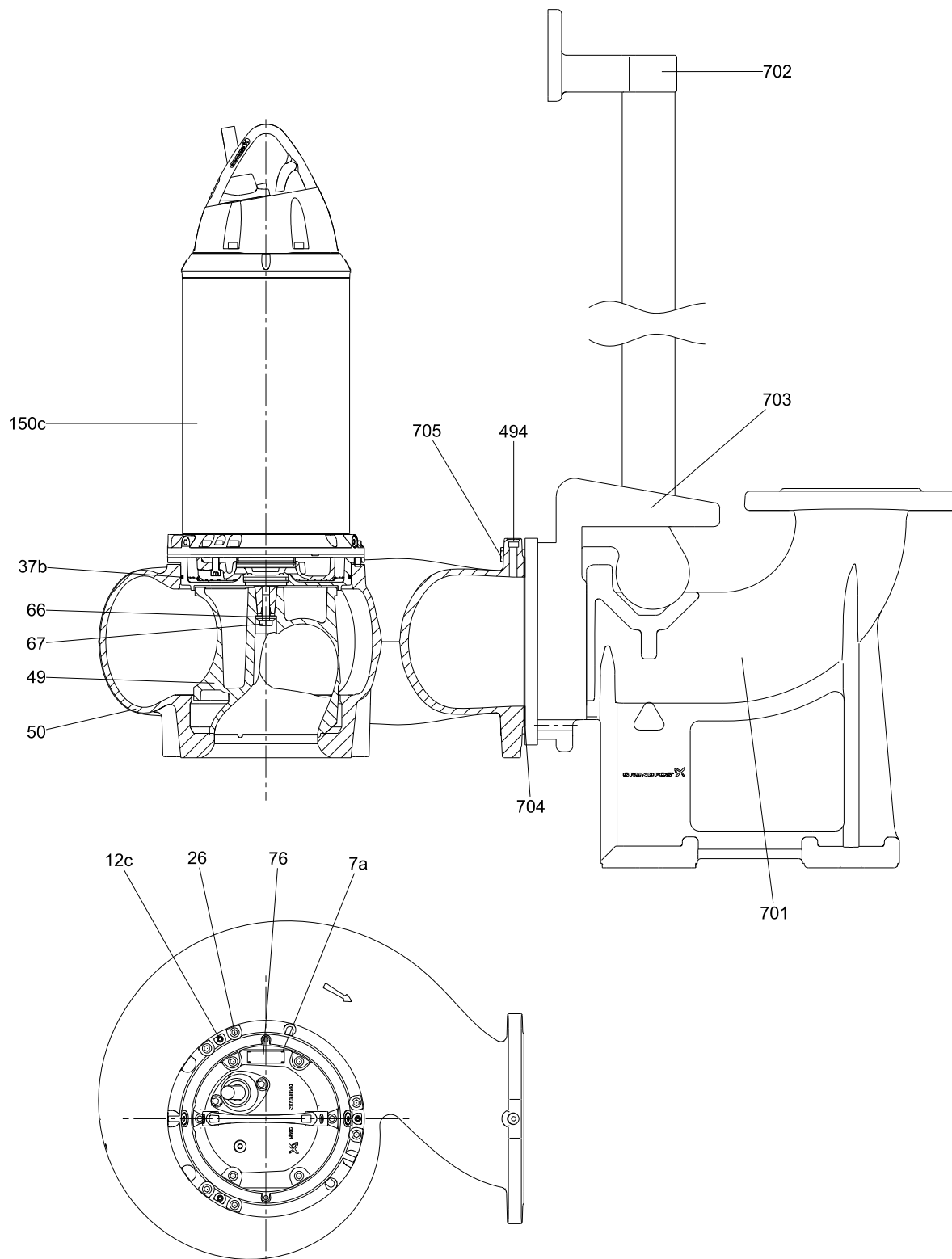


Fig. 12 SE/SL pump, with guide claw for auto coupling

TM05 2781 0512

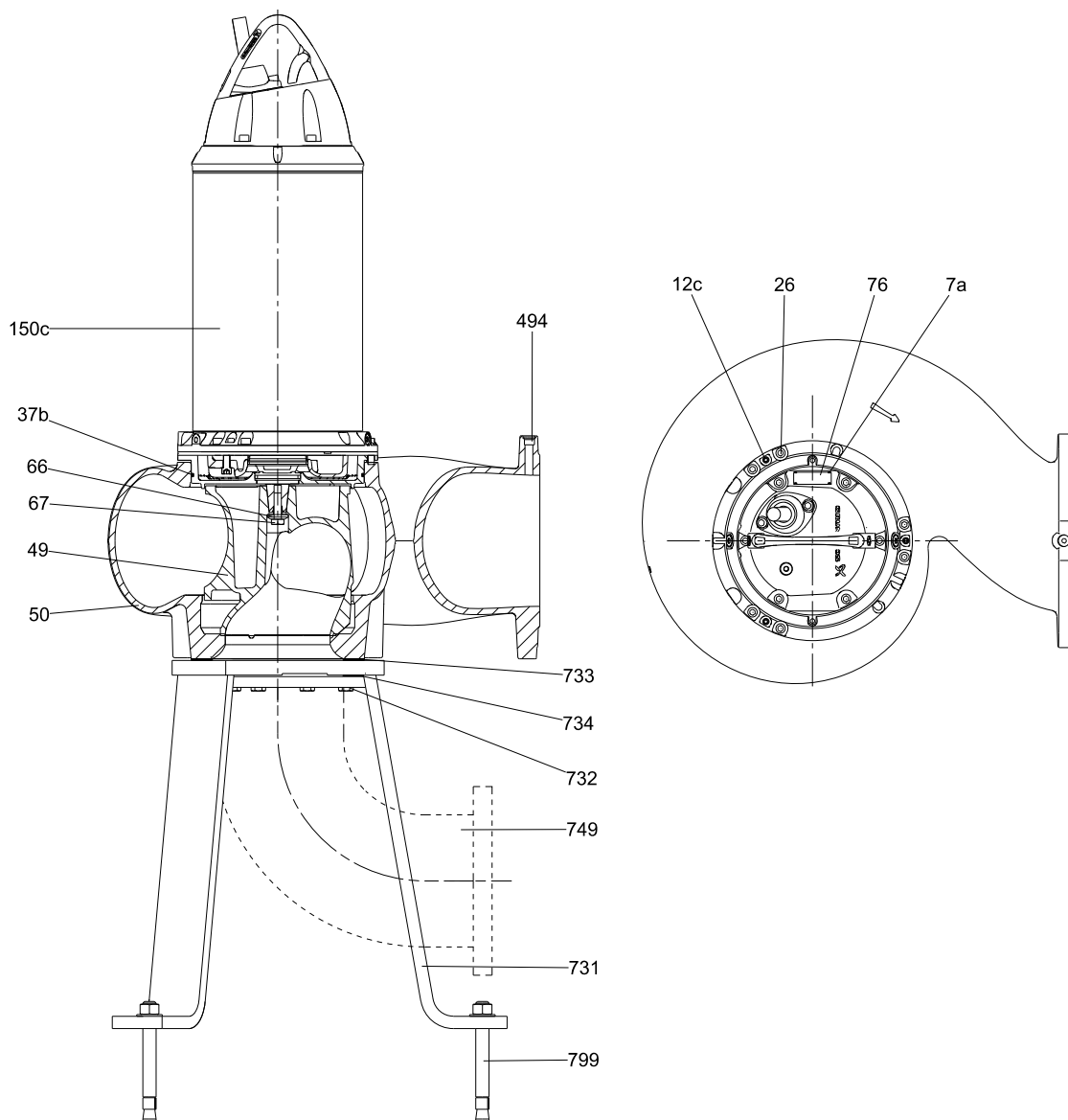


Fig. 13 SE pump, vertical dry installation

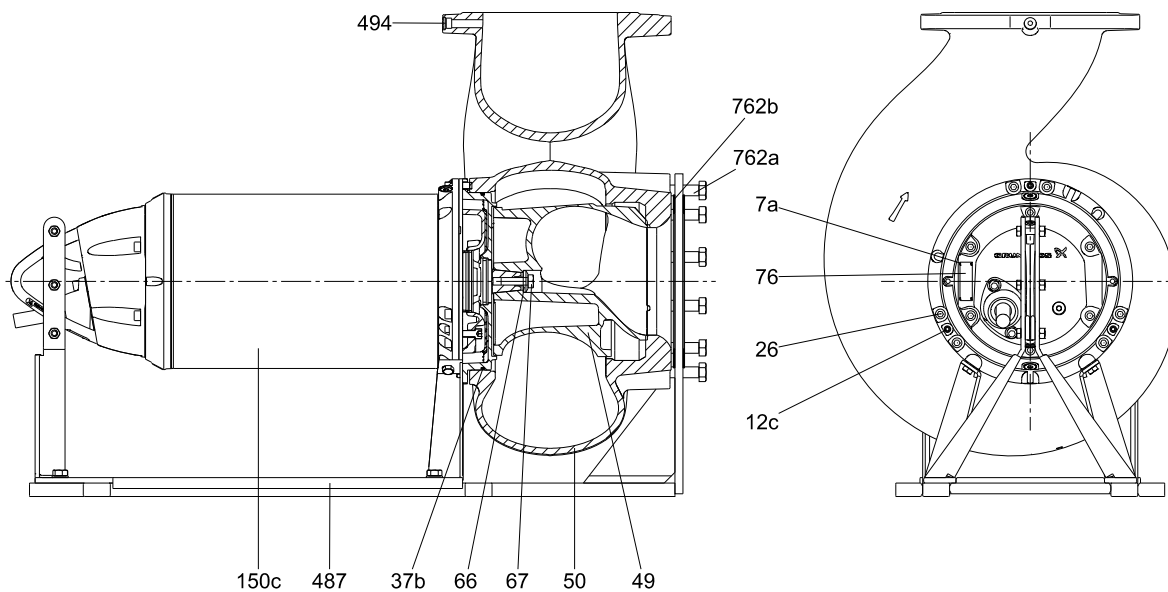


Fig. 14 SE pump, horizontal dry installation

TM05 2782 0512

TM05 2780 0512

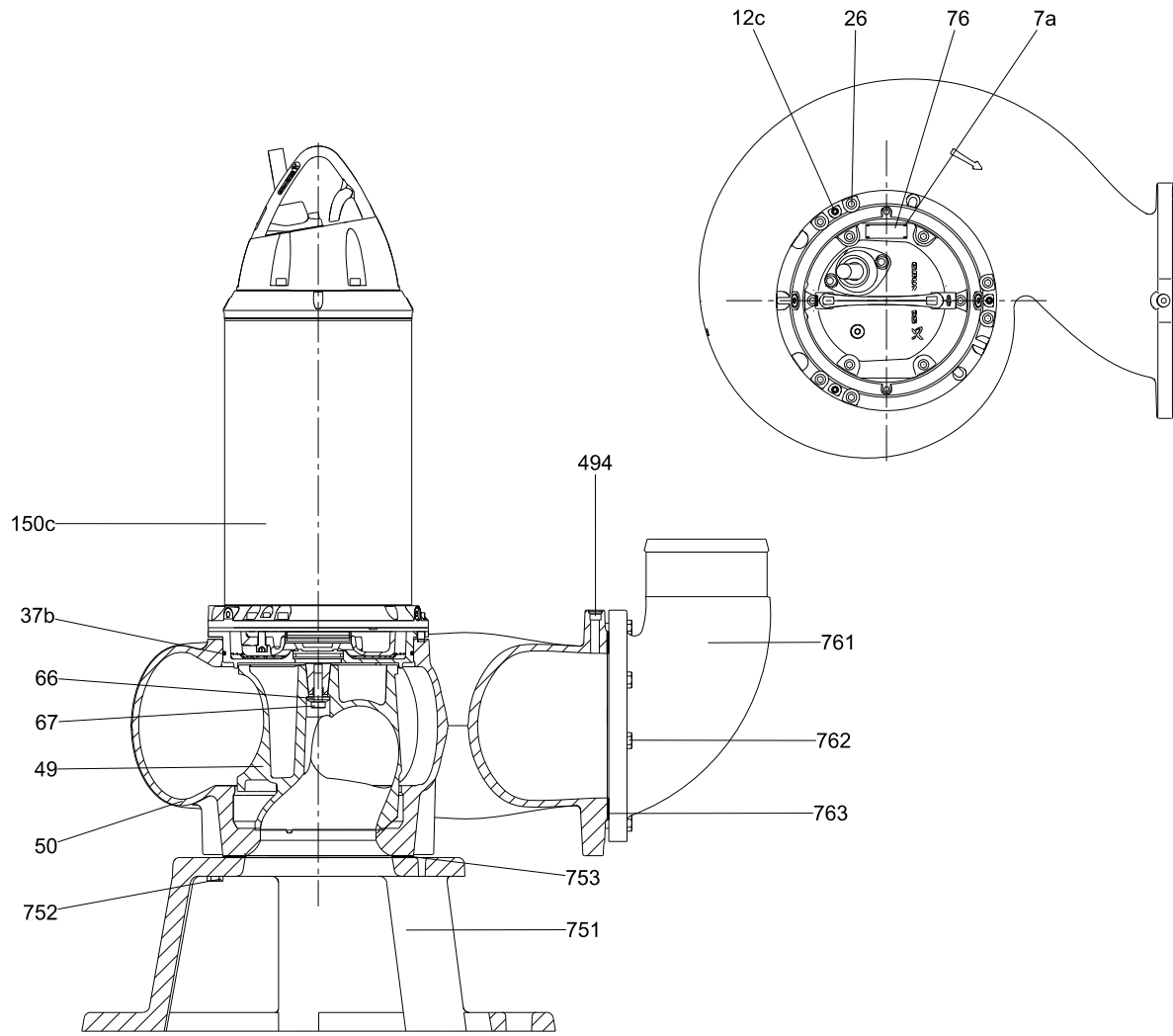


Fig. 15 SE pump, on ring stand

TM05 2783 0512

## Components and material specification

### Motor

Pos.	Component	Material
7a	Rivet	Stainless steel (1.4436/316)
12c	Adjusting screw	Stainless steel (1.4436/316)
25	Pressure test plug	Stainless steel (1.4436/316)
26	Screw	Stainless steel (1.4436/316)
37a	O-ring	NBR rubber
37b	O-ring	NBR rubber
48	Stator lamination	
49	Impeller	
50	Volute pump housing	Cast iron EN-JS 1050
55	Stator housing	Cast iron
55a	Circlip	DIN 472
58	Intermediate seal housing (SE)	Cast iron
	Upper seal housing (SL)	
58a	Upper seal housing cover	Cast iron
59	Bearing bracket cover	Cast iron
61	Upper bearing bracket	Cast iron
66	Impeller washer	
67	Impeller screw	
72a	O-ring	NBR rubber
76	Nameplate	
77	Lower seal housing, 6-pole motor	
77	Lower seal housing, 2- or 4-pole motor	
105	Shaft seal cartridge cpl.	SiC/SiC or SiC/carbon
105a	Lock ring	
106	O-ring for shaft seal	
107	O-ring	NBR rubber
150c	Outer cooling jacket	Stainless steel
150b	Inner cooling jacket	
150d	Screw	
153	Ball bearing	Stainless steel
154	Ball bearing	Stainless steel
155	Lower bearing bracket	Cast iron
157c	O-ring	NBR rubber
157b	O-ring	NBR rubber
157	O-ring	NBR rubber
157d	O-ring	
164a	Motor top cover	Cast iron
168	Cable entry	PA or cast iron
168a	Cable entry, lower	
168b	Cover for connector	

Pos.	Component	Material
172	Shaft with rotor	Stainless steel (1.4462/329)
173e	Screw	Stainless steel (1.4436/316)
173f	Spring washer	Stainless steel (1.4436/316)
176a	Terminal block	
176c	Plug housing	
178	Screw	Stainless steel (1.4436/316)
181a	Screw	Stainless steel (1.4436/316)
181	Cable	
181b	EMC cable/screen	
182	Screw	Stainless steel (1.4436/316)
182b	Hexagon socket head cap screw	Stainless steel (1.4436/316)
182c	Washer	
182d	O-ring	
183	Screw	
184b	Screw	Stainless steel (1.4436/316)
185	Screw	
187a	Washer	Stainless steel (1.4436/316)
187	Circlip	
188	Lock ring	
190b	Screw	Stainless steel (1.4408/316)
190	Lifting bracket	Stainless steel (1.4408/316)
193	Plug	Stainless steel (1.4408/316)
197	Washer	
198	Rubber seal	
198b	Washer	
198a	Washer	
198c	Disc spring	
520a	Screw	Stainless steel (1.4436/316)
520	Moisture switch, top	
520c	Screw	
521	Moisture switch, bottom	
521a	Washer	Zn DIN 127
521b	Screw	
522	Holder for moisture switch	
522c	Washer lock	
523	Moisture switch (WIA)	
524	Rubber bush	
524a	Disc spring	
754	Cooling jacket ring	

## Pump

Pos.	Component	Material
7a	Rivet	
9a	Key (for keyway)	Stainless steel (1.4436/316)
12c	Adjusting screw	Stainless steel (1.4436/316)
26	Screw	Stainless steel (1.4436/316)
37	O-ring	NBR rubber
37b	O-ring	NBR rubber
49 *	Impeller	Cast iron EN-JL 1050
50 *	Volute pump housing	Cast iron EN-JS 1050
66	Impeller washer	Stainless steel (1.4436/316)
67	Impeller screw	Stainless steel (1.4436/316)
76	Nameplate	
150c	Outer cooling jacket	Stainless steel (1.4436/316)
494	Plug	Stainless steel (1.4436/316)

## Accessories

Pos.	Component	Material
487	Base stand, horizontal	galvanised steel
701 *	Auto-coupling base unit	Cast iron
702 *	Guide rail bracket	Cast iron
703 *	Guide claw	Cast iron
704	Rubber seal	Neoprene 60
705	Screw	Steel 8.8 DIN 933
731	Base stand, vertical	Galvanised steel
732	Screw for base stand	Steel 8.8 DIN 933
733	Flange seal, upper, for base stand	
734	Flange seal, lower, for base stand	
749	Bend	Cast iron
751	Ring stand	Galvanised steel
752	Screw for ring stand	Steel 8.8 DIN 933
753	Flange seal for ring stand	
761	Hose connector	Cast iron or stainless steel
762	Screw for hose connector	Steel 8.8 DIN 933
763	Flange seal for hose connector	
799	Anchor bolt	

\* Available in stainless steel (custom-built option).

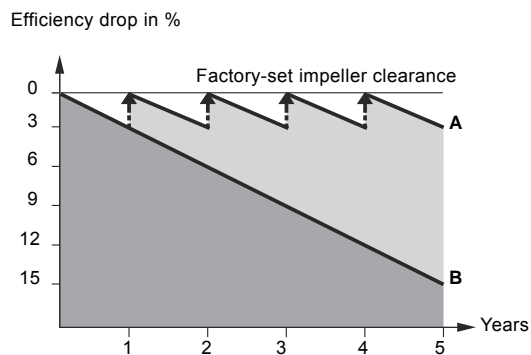
## 9. Product description

### Features

#### SmartTrim

On conventional pumps, maintaining factory-set impeller clearance is a time-consuming and costly task. The pumps need to be disconnected from the pipework and to be totally dismantled, and new parts need to be installed in order to maintain full pumping efficiency. Not so with Grundfos SmartTrim!

All Grundfos heavy-duty closed impeller pumps, whether for submerged or dry installation, are equipped with the unique SmartTrim impeller clearance adjustment system. This enables you to easily restore the factory-set impeller clearance and maintain peak pumping efficiency. All you need to do is to tighten the adjustment screws on the exterior of the impeller housing. This can be done on site, quickly and easily, without dismantling the pump and without using special tools.



**A:** With Grundfos SmartTrim impeller clearance adjustment system

**B:** Without impeller clearance adjustment system

#### SmartSeal

The Grundfos SmartSeal auto-coupling gasket mounted on the pump discharge flange provides a completely leak-proof connection between the pump and the base unit of the auto-coupling system. This optimises the efficiency of the entire pumping system and keeps operating costs at a minimum.

#### Ball bearings

The bearings are greased for life.

**Main bearing:** Double-row angular contact ball bearing.

**Support bearing:** Single-row deep-groove ball bearing.

#### Shaft seal

The shaft seal consists of two mechanical seals and separates the motor from the pumped liquid.

The shaft seal is a cartridge seal for easy service. The combination of the primary and secondary seals in a cartridge results in a shorter assembly length compared to conventional shaft seals. Furthermore, this design minimises the risk of incorrect fitting.

The seal faces of the primary shaft seal are SiC/SiC and the seal faces of the secondary shaft seal are carbon/ceramic.

#### Motor

The motor is a watertight, totally encapsulated motor with:

- insulation class H (180 °C)
- temperature rise class B (60 °C)
- enclosure class IP68.

For motor protection and sensors, see *Sensors* on page 33.

#### Power cables

##### Standard H07RN-F

Cable type [mm <sup>2</sup> ]	Outer cable diameter [mm]		Bending radius [cm]
	min.	max.	
7 x 4 + 5 x 1.5	21.0	23.0	12.0
7 x 6 + 5 x 1.5	23.8	26.8	13.0
7 x 10 + 5 x 1.5	24.5	27.5	14.0

#### EMC

Cable type [mm <sup>2</sup> ]	Outer cable diameter [mm]		Bending radius [cm]
	min.	max.	
3 x 6 + 5 x 1	24.5	27.5	14
3 x 10 + 5 x 1	24.7	27.7	14
3 x 16 + 5 x 1	24.9	27.9	14

The standard cable length is 10 m. Other cable lengths are available on request.

See *List of variants* on page 18.

The cable dimension depends on the motor size.

#### Motor liquid

The motor is factory-filled with Grundfos motor liquid SML-3, which is frost-proof down to -20 °C.

#### Specification of SML-3:

##### • Corrosion protection

Grundfos motor liquid protects metals and alloys in the equipment against all forms of corrosion. The combination of low toxicity and FDA-approved ingredients with a high level of corrosion protection makes Grundfos motor liquid unique in the market. The anti-corrosion performance is demonstrated according to ASTM D 1384.



- **Compatibility and mixability**

Grundfos motor liquid is compatible with most other heat transfer fluids based on mono-propylene glycol. Grundfos motor liquid should only be mixed with clean water. The product can be delivered as a dilution mixed with the proper amount of purified water.

- **Toxicity and safety**

Grundfos motor liquid consists of FDA-approved components for heat transfer fluids with incidental food contact. Neither the Grundfos motor liquid concentrate nor any dilution is classified according to the European Dangerous Preparations Directive.

### Cable entry

Watertight stainless steel cable entry with soft shape and sealing rings to prevent damage of the cable or leaks. The cable entry has a user-friendly design, making it easy and fast for the user to disconnect the cable. Only two bolts must be removed to access the terminal board.

### Sensors

SE/SL pumps are available with built-in sensors.

A pump with built-in sensors greatly reduces the risk of downtime and severe damage to your pump as you are informed immediately if a problem occurs.

Sensors can be used for different purposes, depending on pump type and connection. For instance, moisture switches must cut out electricity in case of water penetrating through the cable entry, cable or shaft seal, while bearing temperature sensors are used for monitoring the temperatures in the bearings.

The standard built-in sensors and the optional sensors can be seen in the table below.

	Standard pump	Pump with sensor version 1	Pump with sensor version 2	Standard Ex pump	Ex pump with sensor version 1	Ex pump with sensor version 2
Klixon/PTC	•	•	•	•	•	•
Moisture switch, top	•	•	•	•	•	•
Moisture switch, bottom	•	•	•			
WIA (water-in-air sensor)				•	•	•
Pt1000 in stator winding		•	•		•	•
Pt1000 in upper bearing			•			•
Pt1000 in lower bearing			•			•
PSV3 vibration sensor			•			•
IO 113 module			•	•	•	•
SM 113 module			•		•	•

As standard, the pump is equipped with:

- three thermal switches (Klixon), one in each phase
- two moisture switches – one below the motor top cover and one in the upper seal housing chamber (SL) or intermediate seal housing (SE).

Pumps with sensor version 1 are equipped with:

- all sensors from the "standard pump"
- Pt1000 sensor in stator winding for temperature measurement.

Pumps with sensor version 2 are equipped with:

- all sensors from the "standard pump"
- Pt1000 sensor in stator winding for temperature measurement
- Pt1000 sensor in upper and lower bearing for temperature measurement
- SM 113.

The SM 113 module (see description below) will be available at the end of 2012.

### IO 113 module

The IO 113 module is a protection module for Grundfos wastewater pumps.

The IO 113 has inputs for digital and analog pump sensors and can stop the pump if a sensor indicates a pump fault.

The IO 113 is connected to the Dedicated Controls system and allows advanced monitoring functions:

- motor temperature
- moisture in motor
- water in oil
- insulation resistance.

### SM 113 module

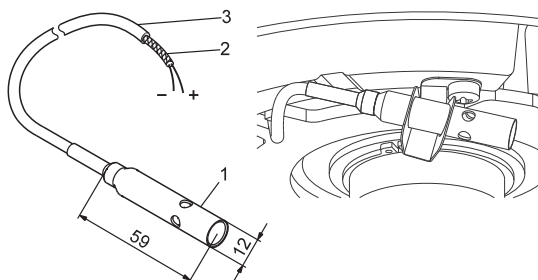
The SM 113 module is used for collection and transfer of sensor data. The SM 113 works together with the IO 113 through power line communication using the Grundfos GENIbus protocol.

The SM 113 can collect data from:

- 3 current sensors, 4-20 mA
- 3 Pt100 thermal sensors
- 3 Pt1000 thermal sensors
- 1 PTC thermal sensor
- 1 digital input.

### Customised sensor options

- Each motor winding has three built-in thermistors which can be used instead of the normal thermal switches. If used, a relay is needed to disconnect power in case of excess temperature.
- The stator temperature sensor is an analogue sensor. Especially for versions without a cooling jacket, a temperature sensor in the stator can be used to give a warning well before the stator/bearings or other parts have reached a harmful temperature and well before the built-in thermal protection cuts-out the motor on overtemperature. In this way, customers can operate the pump with the stator housing above liquid level, provided that it is for short periods and with long intervals.
- The WIA (water-in-air) sensor measures the water resistance and detects if water is present. It also sends a signal if water is detected (alarm).  
The sensor is fitted in a stainless steel tube for mechanical protection and is only used for Ex versions. The sensor must be used together with the Grundfos IO 113 or SM 113 module, but it can also be used together with other controllers with inputs of 4 to 20 mA.



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Pos.	Designation
1	Steel tube with sensor
2	Screen
3	Cable

- The bearing temperature sensors for upper and lower bearing temperature are PT1000 type sensors.
- The pump vibration sensor is a Grundfos PVS3 sensor (4-20 mA analogue sensor). The vibration sensor monitors the vibration level of the pump. A change in the vibration level indicates an abnormal situation. The cause of this can be a clogged impeller, worn bearings, a closed discharge valve etc., indicating that service inspection should be carried out in order to protect the pump or the pipe system from being damaged.
- The winding resistance can be measured via the Grundfos IO 113 module.

### Testing

All pumps are tested before leaving the factory. The factory test report is based on ISO 9906, Annex A. Test reports can be ordered directly together with the pump or can be ordered separately based on the pump serial number.

Other tests or third party inspection certificates are available on request. See *List of variants* on page 18.

## Operating conditions

### Pumps without a cooling jacket in submerged installation:

- Continuous operation when pump is fully submerged to top of motor.
- Intermittent operation with max. 20 starts per hour when pump is submerged to middle of motor and with short periods of operation down to the top of the pump housing.

**Note:** Explosion-proof pumps must always be fully submerged.

### Pumps with a cooling jacket in submerged and dry installations:

- Continuous and intermittent operation with max. 20 starts per hour with water level down to the top of the pump housing.

## Pumped liquids

Pump type	Material variant	Installation	Material	pH value
SE1/ SEV/ SL1/ SLV	Standard	Dry and submerged	Cast iron impeller, pump housing and motor top	6.5 to 14 <sup>2)</sup>
SE1/ SEV/ SL1/ SLV	Q	Dry and submerged	Stainless steel impeller. Cast iron pump housing and motor top.	6 to 14 <sup>2)</sup>
SE1/ SEV	S <sup>1)</sup>	Submerged Dry	Stainless steel impeller and pump housing. Cast iron motor top.	5.5 to 14 <sup>2)</sup> 1 to 14
SE1/ SEV	R	Dry and submerged	Entire pump in stainless steel	1 to 14
SE1/ SEV	D <sup>1)</sup>	Dry and submerged	Stainless steel pump according to EN 1.4517/1.4539	0 to 14

<sup>1)</sup> Material variants S and D are available on request.

<sup>2)</sup> For fluctuating pH values, the range is pH 4 to 14.

Liquid temperature: 0 °C to +40 °C.

When pumping liquids with a density and/or a kinematic viscosity higher than that of water, use motors with correspondingly higher outputs.

For short periods (max. 3 min.), a temperature of up to +60 °C is permissible (non-Ex versions only).

### Sound pressure

The sound pressure level of the pump is lower than the limiting values stated in the EC Council directive 98/37/EC relating to machinery (the EC Machinery Directive).

## Motor range

Shaft power [kW]	No. of poles
11	4
15	2 and 4
18	2, 4 and 6
22	2 and 4
27	2

## Explosion-proof pumps

Use explosion-proof pumps in potentially explosive environments. The explosion protection classification of the pumps is Ex c d IIB T3. The Ex d IIB T4 protection classification is available on request. Operation of the pump via a frequency converter requires temperature class T3. All installations must be approved by the local authorities.

## Level controllers

Grundfos offers a wide range of pump controllers to keep a watchful eye on liquid levels in the wastewater collecting tank, ensuring correct operation and protection of the pumps.

Controller ranges:

- Dedicated Controls, DC control cabinets
- LC and LCD level controllers.

## Dedicated Controls



GrA6270

Fig. 16 Dedicated Controls control cabinet

Grundfos Dedicated Controls is a control system that can control and monitor one to six Grundfos wastewater pumps and a mixer or a flush valve.

Dedicated Controls is used in installations requiring advanced control and data communication.

Main components of the Dedicated Controls system:

- CU 361 control unit
- IO 351B module (general I/O module).

Dedicated Controls is available either as separate components or as control cabinets.

The control system can be operated by the following:

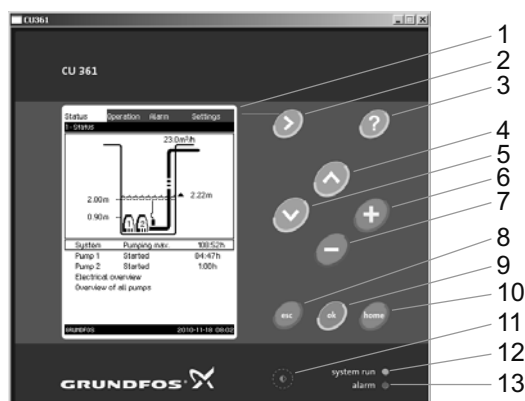
- float switches
- a level sensor
- a level sensor and safety float switches.

The control cabinet is available for the following pump sizes and starting methods:

- pumps up to and including 9 kW, direct-on-line starting
- pumps up to and including 30 kW, star-delta starting
- pumps up to and including 30 kW, soft starter.

The separate control unit and modules can be built for practically any size of system.

## CU 361 control panel



TM04 9896 0212

Fig. 17 CU 361 control panel

Pos.	Description
1	Display
2	Arrow to the right
3	Help
4	Up
5	Down
6	Plus
7	Minus
8	Esc
9	Ok
10	Home
11	Contrast
12	Indicator light, operation (green)
13	Indicator light, fault (red)

## Features and benefits

The Grundfos Dedicated Controls system offers these features and benefits:

### Basic features

- Pump start/stop
- alternating operation of pumps
- overflow detection
- overflow measurement
- alarms and warnings
- advanced alarm schedules
- start and stop delays
- free language selection.

### Advanced features

- User-defined functions
- alternation between groups
- start level variation (reduced sedimentation)
- combi alarms
- daily emptying
- foam draining
- anti-seizing (limestone)
- safety after-run delay
- mixer or flush valve
- maximum number of started pumps
- pump flow measurement
- system flow measurement
- pump flow calculation
- system flow calculation.

### Additional features, IO 113

- Monitoring of:
  - insulation resistance
  - moisture in motor
  - water in oil.

### Additional features, MP 204

- Anti-blocking
- monitoring of:
  - voltage
  - current
  - current asymmetry
  - phase sequence
  - $\cos \varphi$  (power factor)
  - power
  - energy
  - insulation resistance
  - temperature, Pt100/Pt1000
  - temperature, PTC
  - temperature, Tempcon.

## Additional features, CUE or VFD

The CUE/VFD (optional), which is either a Grundfos variable-frequency converter or a general variable-frequency converter, also offers better pump protection and a more steady flow through the pipe system.

In addition, Grundfos CUE/VFD offers these features and benefits:

- anti-blocking
- automatic energy optimisation
- specific-energy test
- output frequency
- monitoring of:
  - voltage\*
  - current\*
  - phase sequence\*
  - power\*
  - energy\*
  - torque\*
- reverse start
- run flushing
- stop flushing
- PID control.

\* These functions are only available with a Grundfos CUE.

### Communication features

- Complete overview of the pump installation
- setpoint change, resetting of system and start/stop of pumps
- access to complete alarm/warning log
- automatic redirection of alarms and warnings to the on-duty staff
- optimisation of your maintenance and service programme
- reduction in energy consumption
- Modbus RTU communication via cable
- Modbus TCP communication via GSM/GPRS
- SMS commands (send/receive)
- SMS schedule
- VNC connection for migration of user interface to a web browser.

For further information, see the data booklet or installation and operating instructions for Dedicated Controls on [www.grundfos.com](http://www.grundfos.com) (WebCAPS).

## LC and LCD

The Grundfos LC and LCD range of level controllers are designed for one- and two-pump installations. It comprises three series with a total of six variants:

- LC and LCD 107 operated by air bells
- LC and LCD 108 operated by float switches
- LC and LCD 110 operated by electrodes.

All controllers are ideally suited for applications requiring up to 11 kW motors for direct-on-line starting. The LC and LCD can also be supplied with an integrated star-delta starter for applications requiring larger motors up to and including 30 kW.



TM04 2360 2408

**Fig. 18** LCD 110 for two-pump installations

### Features and benefits

- Control of one pump (LC) or two pumps (LCD)
- automatic alternating operation of two pumps (LCD)
- automatic test run (prevents shaft seals from becoming jammed in the event of long periods of inactivity)
- water hammer protection
- starting delay after power supply failure
- automatic alarm resetting, if required
- automatic restarting, if required
- alarm output as NO and NC.

When an SMS module (optional) is fitted in an LC or LCD controller, it acts as a time recorder for the pumps, and when programmed (using an ordinary mobile phone with text messaging facility), it can send text messages containing "high-level alarm" and "general alarm", information about operation and the number of times the pump has started. The SMS module is also available with battery and can thus send text messages that will inform you of power failure and when the power has been restored.

For further information, see the data booklet or installation and operating instructions for the LC and LCD controllers on [www.grundfos.com](http://www.grundfos.com) (WebCAPS).

Name	DC	LC	LCD
<b>Application</b>			
One pump	•	•	•
Two pumps	•		•
Two pumps or more	•		
Mixer	•		
Battery backup	•		
<b>Level sensor</b>			
Float switches	•	•	•
Electrodes		•	•
Air bells		•	•
Pressure sensor	•		
Ultrasonic sensor	•		
Analog level sensor with safety float switches	•		
<b>Starting method</b>			
Direct-on-line starting (DOL)	•	•	•
Star-delta starting	•	•	•
Soft starter	•		
<b>Basic functions</b>			
Start and stop of pump(s)	•	•	•
Pump alternation	•		•
High-level alarm	•	•	•
Dry-running level alarm	•	•	•
Flow measurement (calculated or via flow sensor)	•		
Pump statistics	•		
Conflicting levels alarm	•		
<b>Advanced functions</b>			
Start and stop delays (prevent water hammer)	•	•	•
Motor temperature sensor	•	•	•
Test run/anti-seizing	•	•	•
Daily emptying (emptying the pit once a day)	•		
Water-in-air sensor input	•		
<b>Communication</b>			
Text messaging	• <sup>1)</sup>	• <sup>2)</sup>	• <sup>2)</sup>
SCADA communication (GSM/GPRS)	• <sup>1)</sup>		
<b>User interface</b>			
Level indication	•	•	•
Graphical display	•		
PC Tool WW Controls	•		

<sup>1)</sup> If a CIM 250 GSM/GPRS module is fitted in the CU 361.

<sup>2)</sup> If an SMS module is fitted.

### Wiring diagram

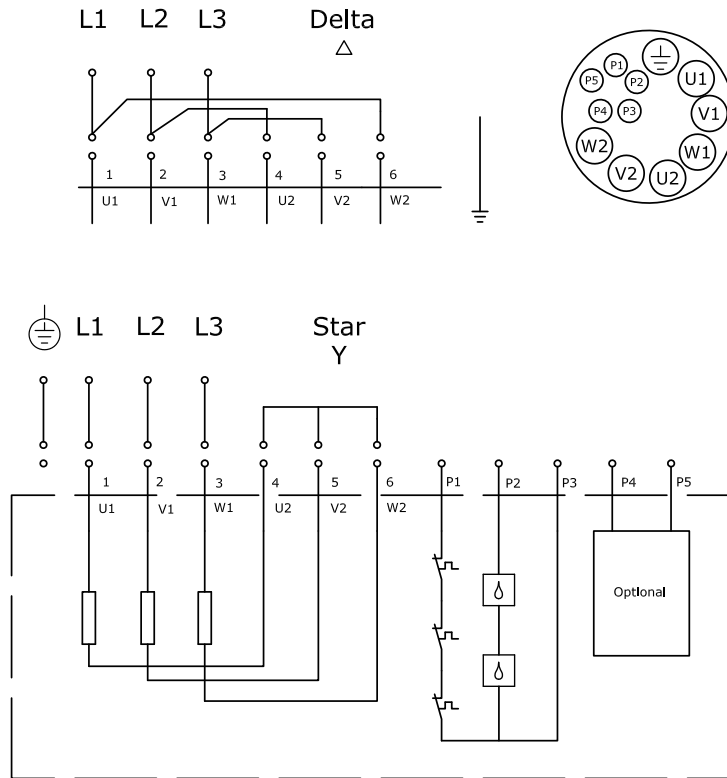


Fig. 19 Wiring diagram, 12-wire star/delta start

TM05 2695 0412

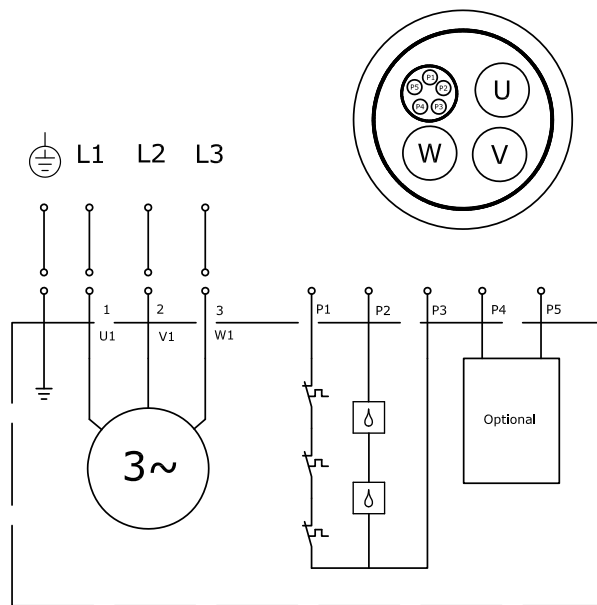


Fig. 20 Wiring diagram, 8-wire DOL start

TM05 2694 0412

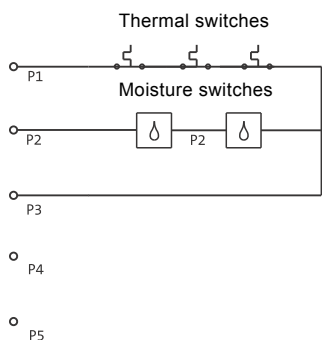


Fig. 21 Standard version with Klixon

TM05 2687 0412

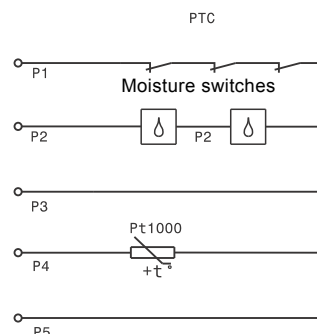


Fig. 25 GPA sensor 1 (PTC)

TM05 2691 0412

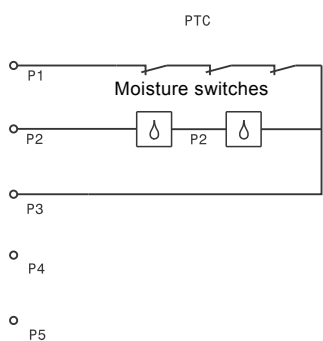


Fig. 22 Standard version with PTC sensors

TM05 2688 0412

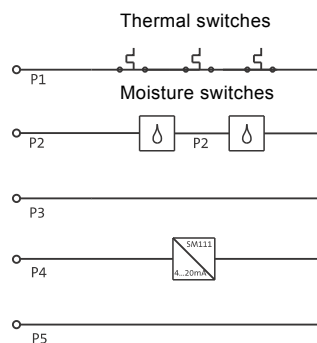


Fig. 26 Sensor version 2 / version 2 Ex

TM05 2692 0412

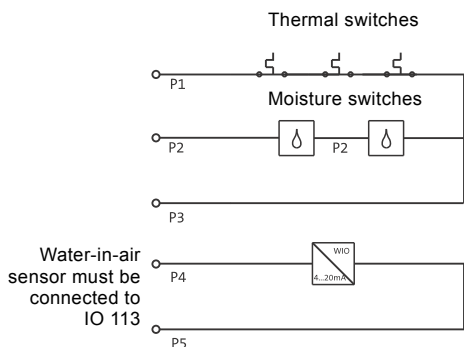


Fig. 23 Standard Ex pump

TM05 2689 0412

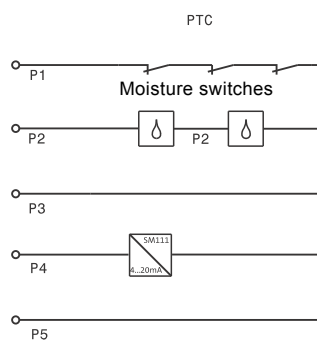


Fig. 27 GPA sensor 2 (PTC)

TM05 2693 0412

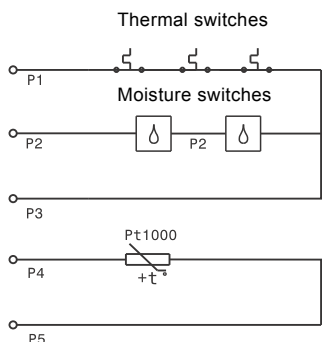


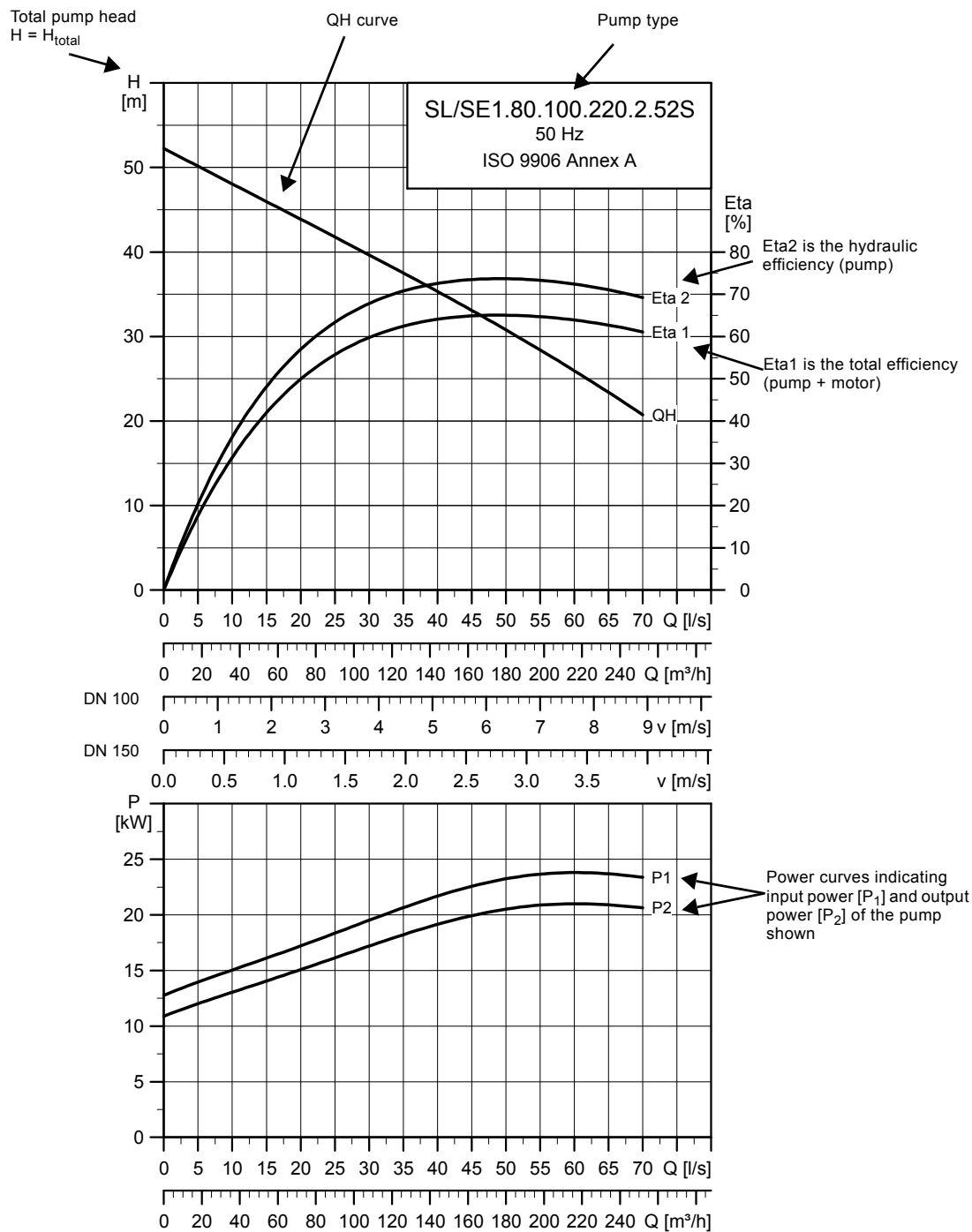
Fig. 24 Sensor version 1

TM05 2690 0412



# 10. Curve charts and technical data

## How to read the curve charts



TM04 3460 4608

## Curve conditions

The guidelines below apply to the curves shown in the performance charts on pages 43-84.

- Tolerances according to: ISO 9906, Annex A.
- The curves show pump performance with different impeller diameters at rated speed.
- The curves apply to the pumping of airless water at a temperature of +20 °C and a kinematic viscosity of 1 mm<sup>2</sup>/s (1 cSt).
- **ETA:** The lines show the hydraulic efficiency values of the pump for the different impeller diameters.
- **NPSH:** The curves show average values measured under the same conditions as the performance curves.

When dimensioning the pump, add a safety margin of at least 0.5 m.

- In case of densities other than 1000 kg/m<sup>3</sup>, the discharge pressure is proportional to the density.
- When pumping liquids with a density higher than 1000 kg/m<sup>3</sup>, motors with correspondingly higher outputs must be used.

### Calculation of total head

The total pump head consists of the height difference between the measuring points + the differential head + the dynamic head.

$$H_{\text{total}} = H_{\text{geo}} + H_{\text{stat}} + H_{\text{dyn}}$$

$H_{\text{geo}}$ : Height difference between measuring points.

$H_{\text{stat}}$ : Differential head between the suction and the discharge side of the pump.

$H_{\text{dyn}}$ : Calculated values based on the velocity of the pumped liquid on the suction and the discharge side of the pump.

## Performance tests

The requested duty point for every pump is tested according to ISO 9906, Annex A, and without certification.

In case of pumps ordered on the basis of impeller diameter only (no requested duty point), the pump will be tested at a duty point which is 2/3 of the maximum flow of the published performance curve which is related to the ordered impeller diameter (according to ISO 9906, Annex A).

If the customer requires either more points on the curve to be checked or certain minimum performances or certificates, individual measurements must be made, and a certificate can be ordered.

## Certificates

Certificates have to be confirmed for every order and are available on request as follows:

- certificate of compliance with the order (EN 10204 - 2.1)
- pump test sheet.

## Witness test

When the pumps are being tested or are tested with a certification, it is possible for the customer to witness the testing procedure according to ISO 9906.

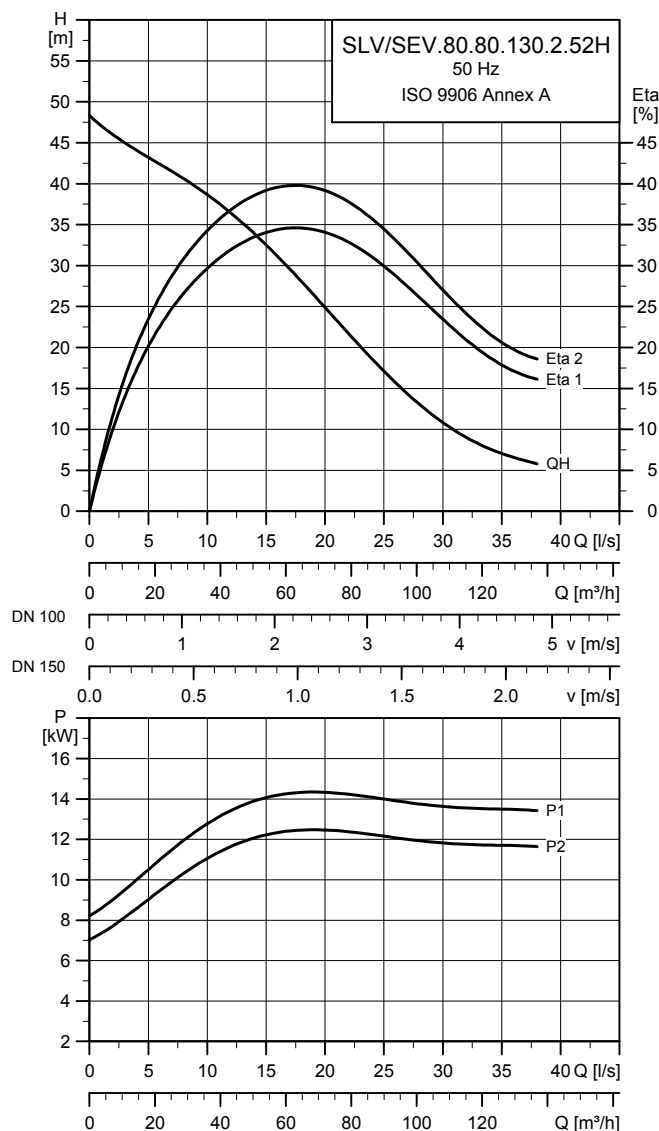
The witness test is not a certificate and will not result in a written statement from Grundfos. The witness test only guarantees that everything is carried out as prescribed in the testing procedure.

If the customer wants to carry out a witness test of the pump performance, such request must be indicated on the order.

# 11. Performance curves and technical data

## SuperVortex impeller

### Performance curves SLV/SEV.80.80.130.2.52H



TM05 3639 1612

### Electrical data

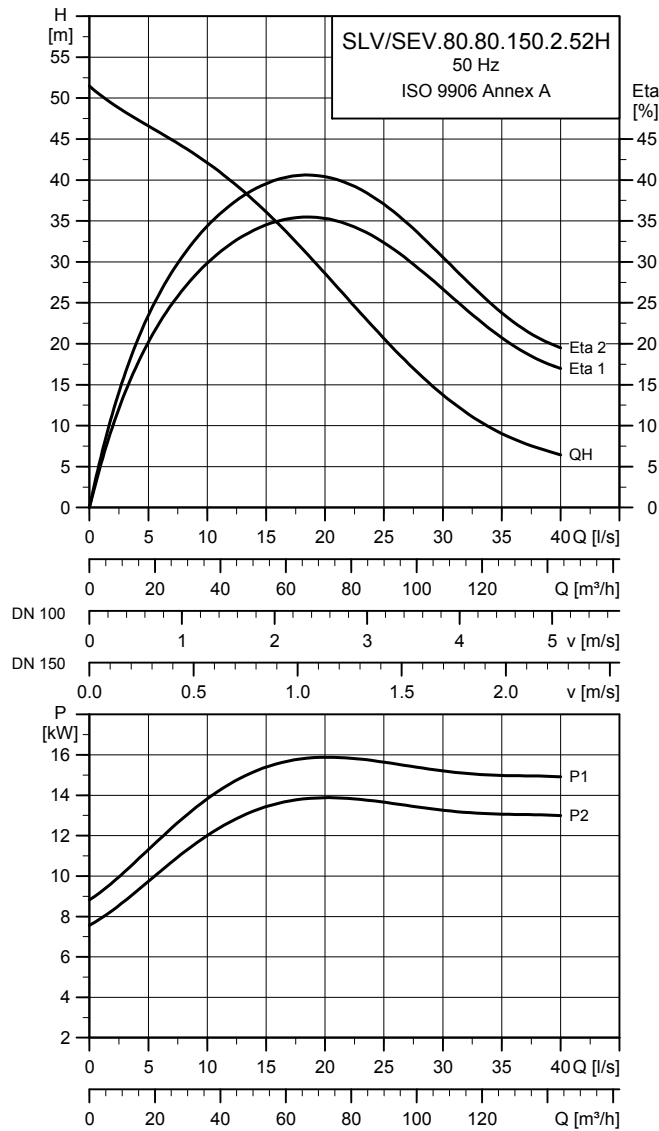
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			$\cos \phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]		
SLV/SEV.80.80.130.2.52H	15	13	2	2947	Y/D	26	180	79	82	86	0.72	0.81	0.86	0.0909	112				

Note: Enclosure class: IP68

### Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.130.2.52H	221.5	80	DN80	20

Performance curves SLV/SEV.80.80.150.2.52H



TM05 3638 1612

Electrical data

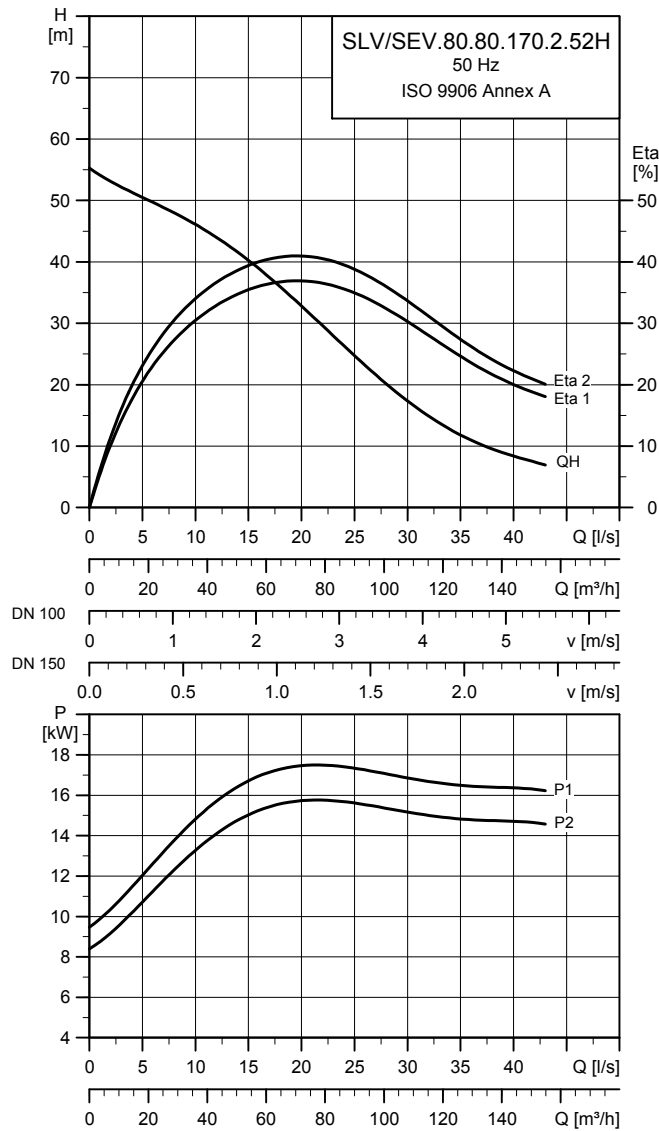
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm²]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4		
SLV/SEV.80.80.150.2.52H	17	15	2	2947	Y/D	29	180	80	84	88	0.75	0.84	0.88	0.0946	112				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.150.2.52H	228	80	DN80	20

Performance curves SLV/SEV.80.80.170.2.52H



TM05 3620 1612

Electrical data

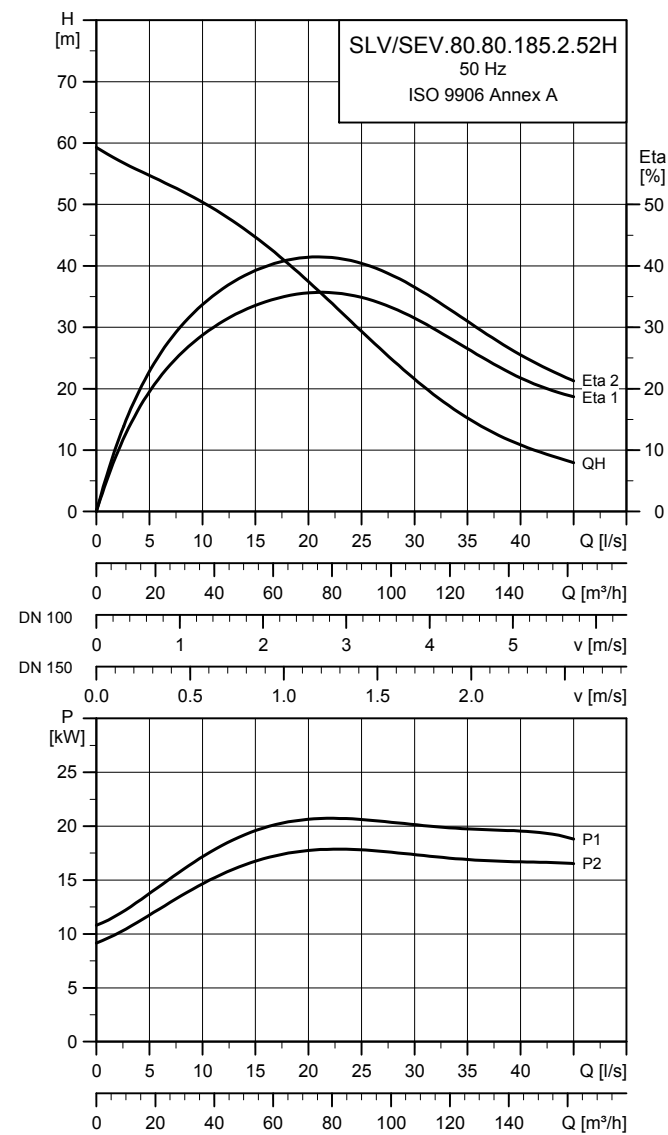
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]		
SLV/SEV.80.80.170.2.52H	19	17	2	2950	Y/D	32	315	87	90	90	0.75	0.84	0.87	0.1084	120				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.170.2.52H	235	80	DN80	20

Performance curves SLV/SEV.80.80.185.2.52H



TM05 3600 1612

Electrical data

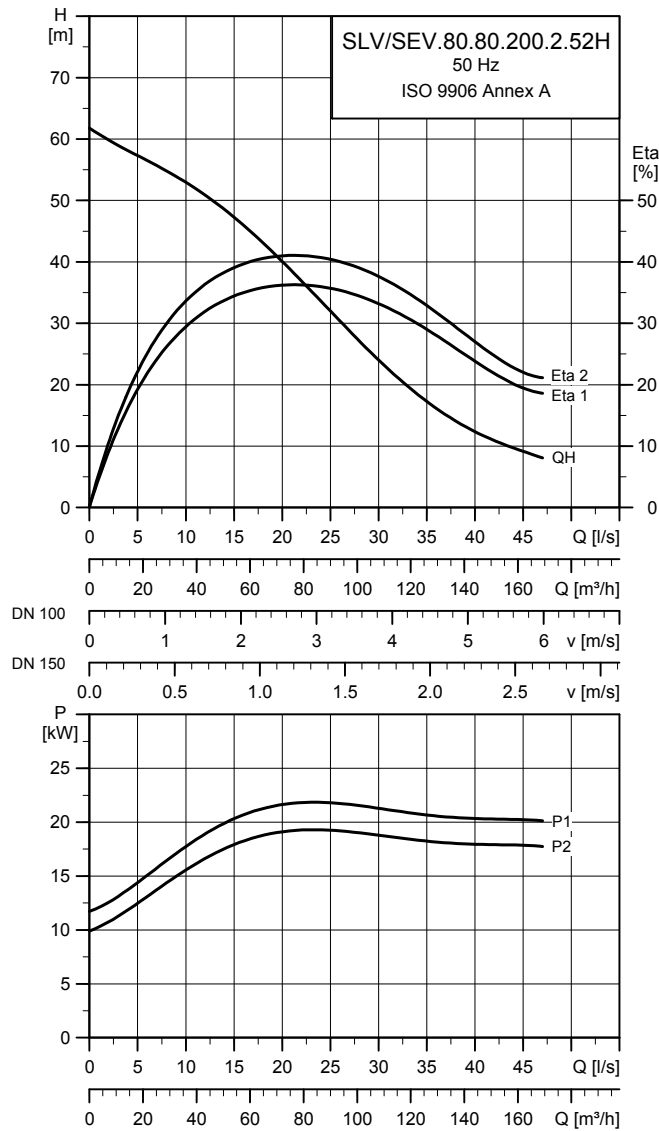
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]		
SLV/SEV.80.80.185.2.52H	21	18.5	2	2950	Y/D	34	315	88	90	90	0.77	0.85	0.87	0.1138	120				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.185.2.52H	242	80	DN80	20

**Performance curves SLV/SEV.80.80.200.2.52H**



TM05 3619 1612

**Electrical data**

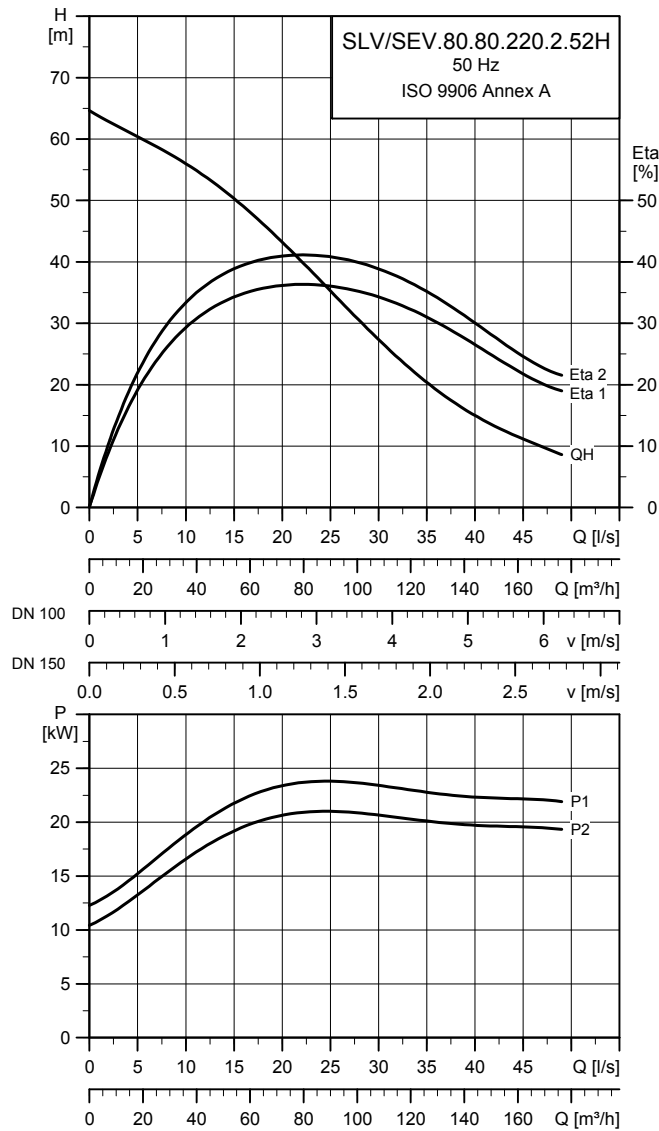
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
SLV/SEV.80.80.200.2.52H	23	20	2	2937	Y/D	37	332	85	88	88	0.79	0.86	0.89	0.1247	200				

Note: Enclosure class: IP68

**Pump data**

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.200.2.52H	247	80	DN80	20

Performance curves SLV/SEV.80.80.220.2.52H



TM05 3599 1612

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4		
SLV/SEV.80.80.220.2.52H	25	22	2	2937	Y/D	41	332	86	88	88	88	0.81	0.87	0.89	0.1290	200			

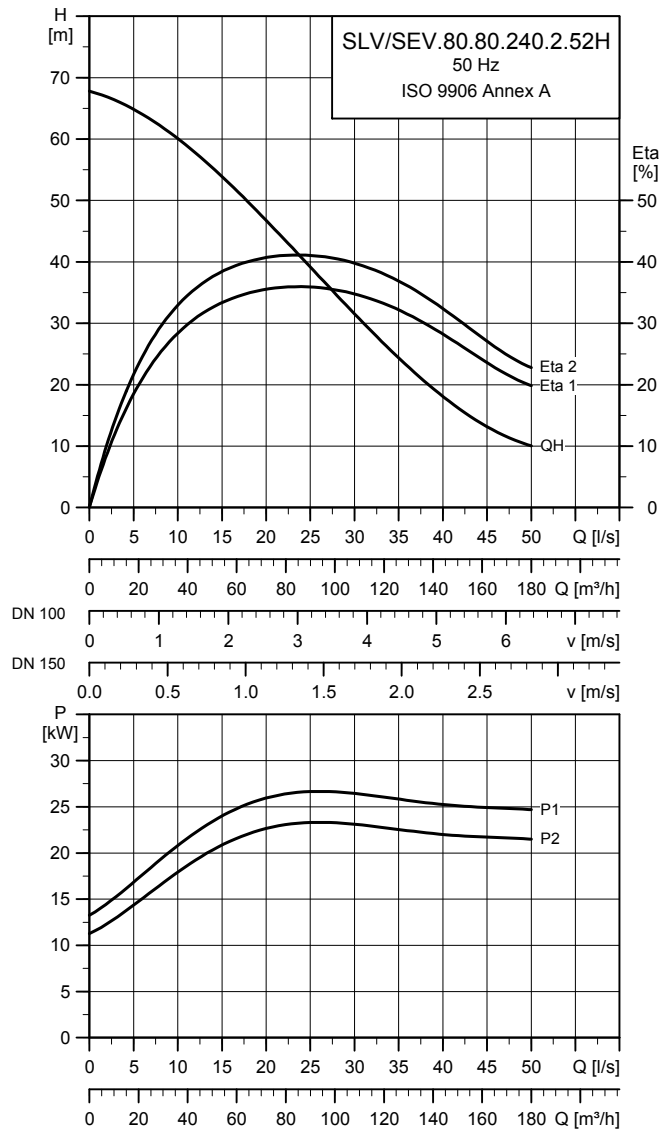
Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.220.2.52H	253	80	DN80	20



Performance curves SLV/SEV.80.80.240.2.52H



TM05 3618 1612

Electrical data

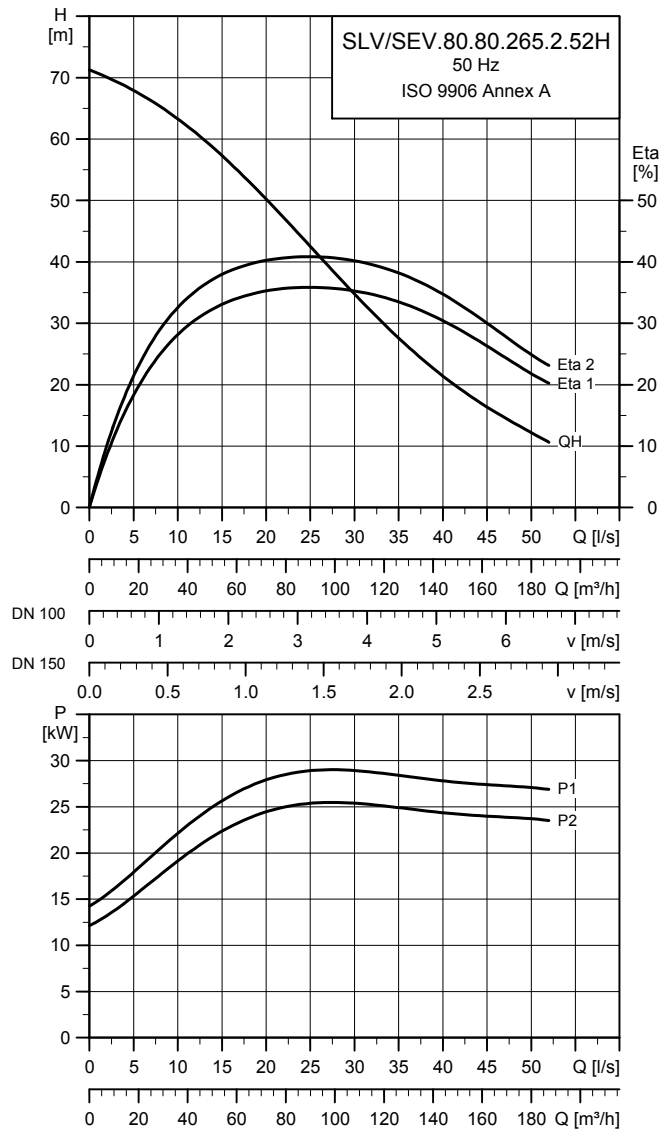
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SLV/SEV.80.80.240.2.52H	27	24	2	2955	Y/D	48	332	84	86	88	0.69	0.77	0.83	0.1355	200				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.240.2.52H	262	80	DN80	20

Performance curves SLV/SEV.80.80.265.2.52H



TM05 3598 1612

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SLV/SEV.80.80.265.2.52H	30	26.5	2	2955	Y/D	52	332	85	87	88	0.71	0.79	0.85	0.1423	200				

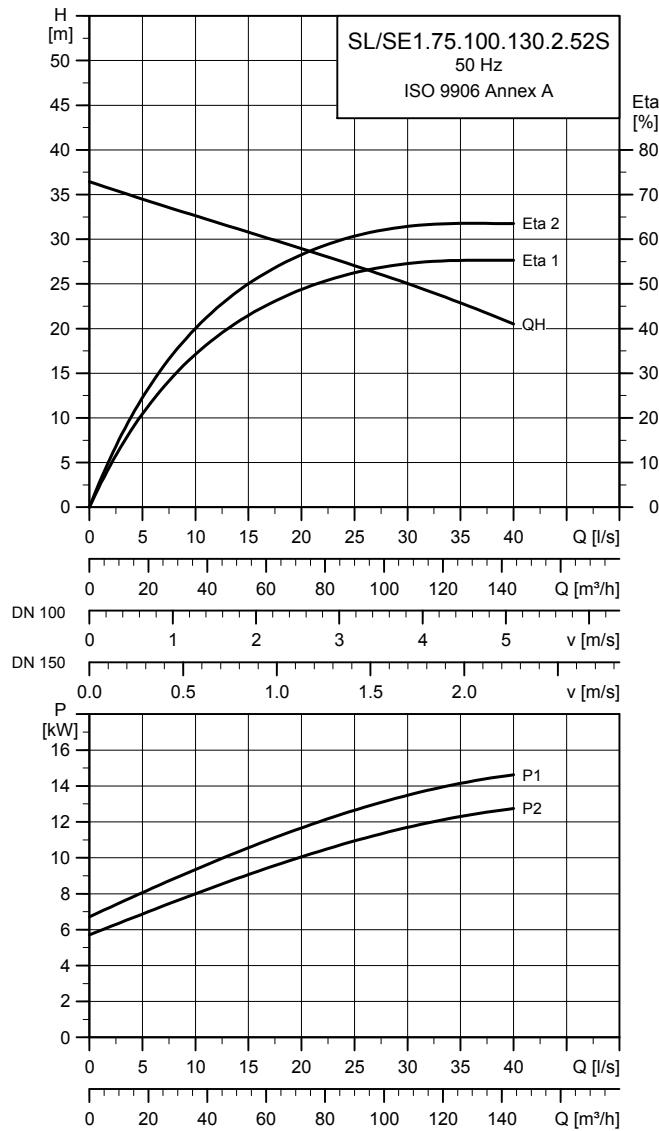
Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.265.2.52H	271	80	DN80	20

## S-tube impeller

### Performance curves SL/SE1.75.100.130.2.52S



TM05 3624 44 12

### Electrical data

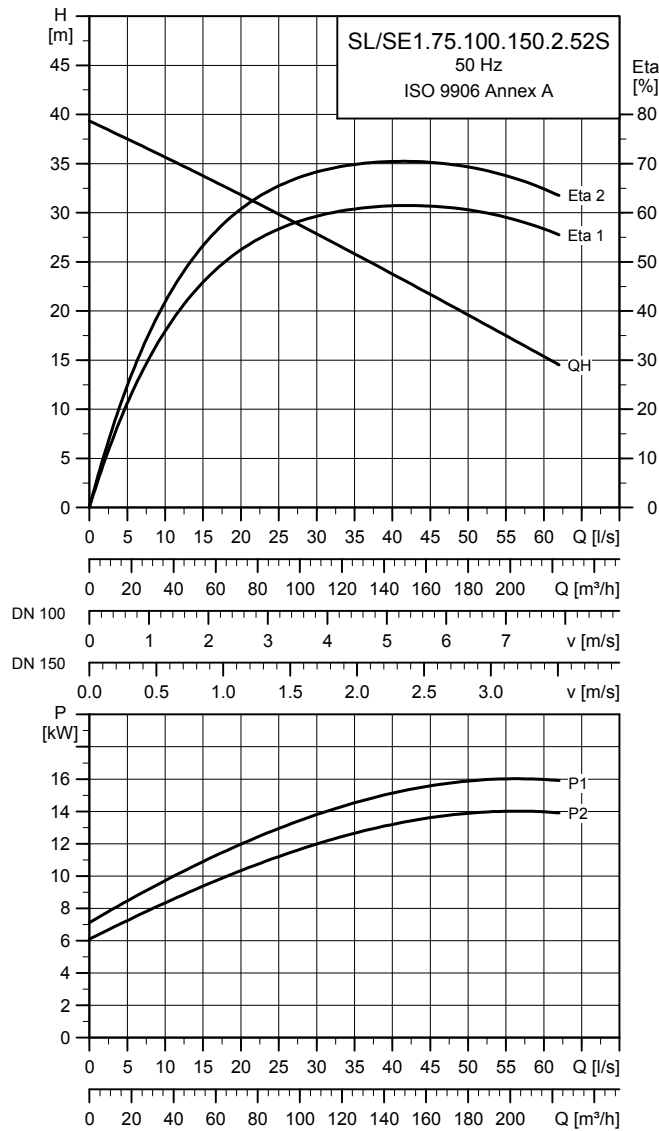
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.75.100.130.2.52S	15	13	2	2947	Y/D	26	180	79	82	86	0.72	0.81	0.86	0.0995	112				

Note: Enclosure class: IP68

### Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.75.100.130.2.52S	178	75	DN100	20

Performance curves SL/SE1.75.100.150.2.52S



TM05 3604 1612

Electrical data

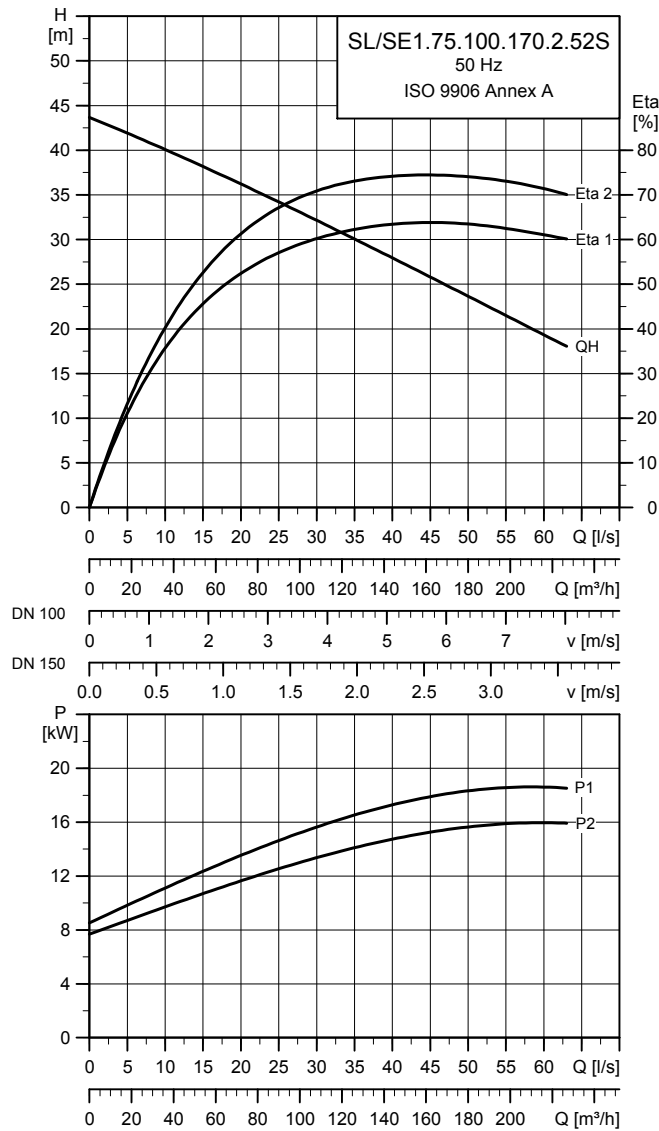
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.75.100.150.2.52S	17	15	2	2947	Y/D	29	180	80	84	88	0.75	0.84	0.88	0.1006	112				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.75.100.150.2.52S	182	75	DN100	20

Performance curves SL/SE1.75.100.170.2.52S



TM05 3623 1612

Electrical data

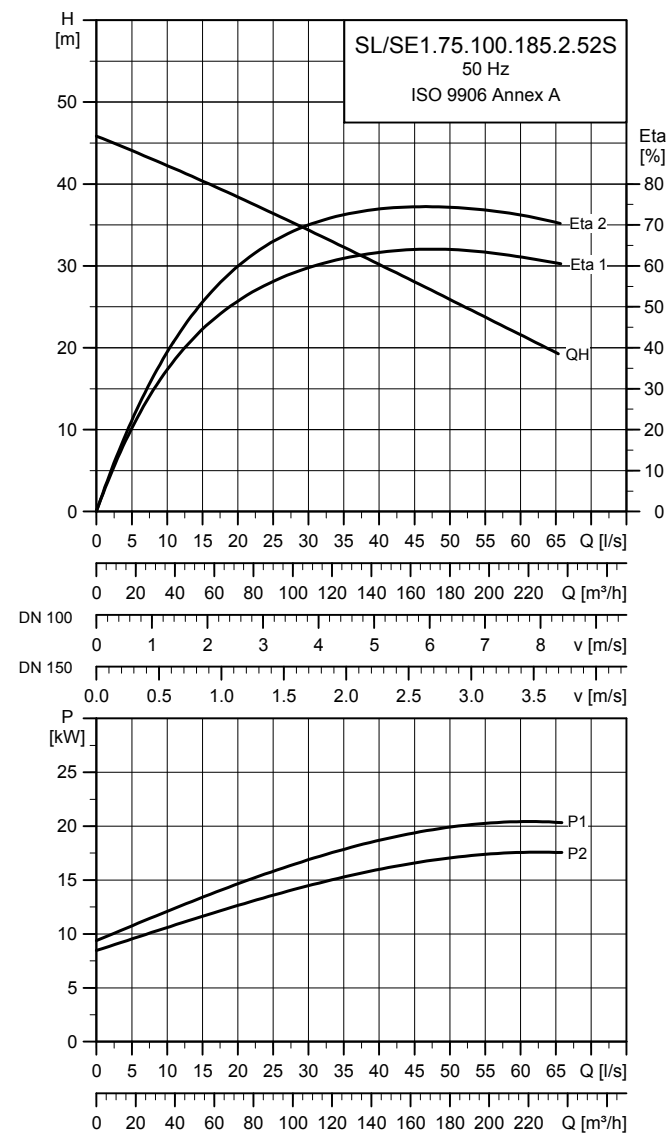
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]		
SL/SE1.75.100.170.2.52S	19	17	2	2950	Y/D	32	315	87	90	90	0.75	0.84	0.87	0.1125	120				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.75.100.170.2.52S	186.5	75	DN100	20

Performance curves SL/SE1.75.100.185.2.52S



TM05 3603 1612

Electrical data

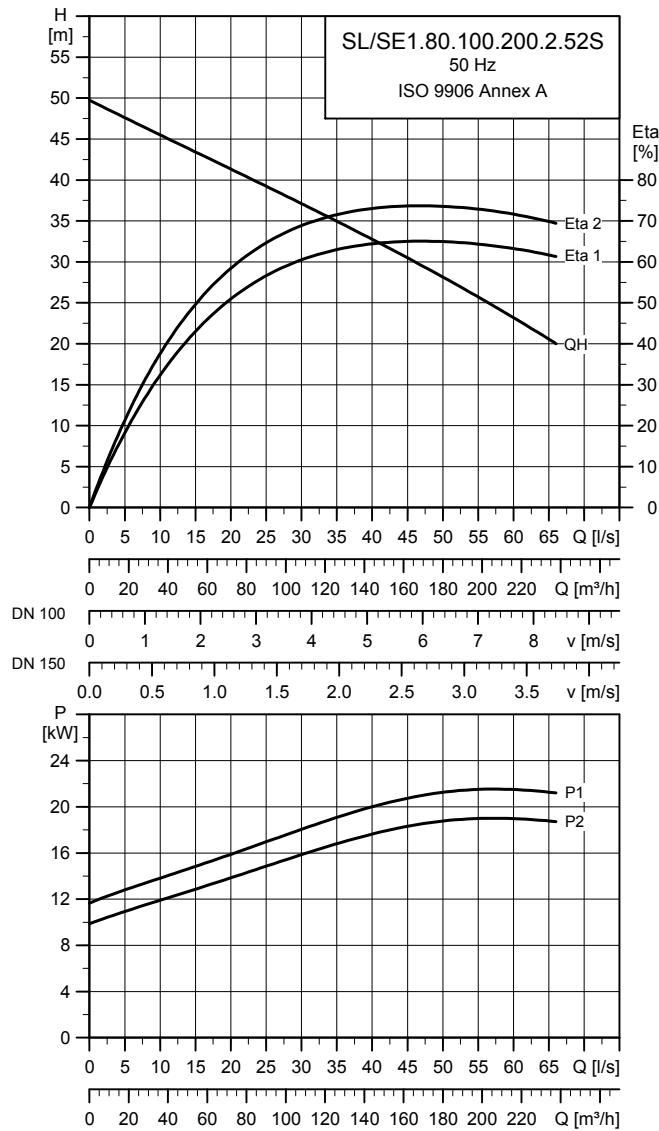
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
SL/SE1.75.100.185.2.52S	21	18.5	2	2950	Y/D	34	315	88	90	90	0.77	0.85	0.87	0.1141	120				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.75.100.185.2.52S	192	80	DN100	20

Performance curves SL/SE1.80.100.200.2.52S



TIM05 3622 1612

Electrical data

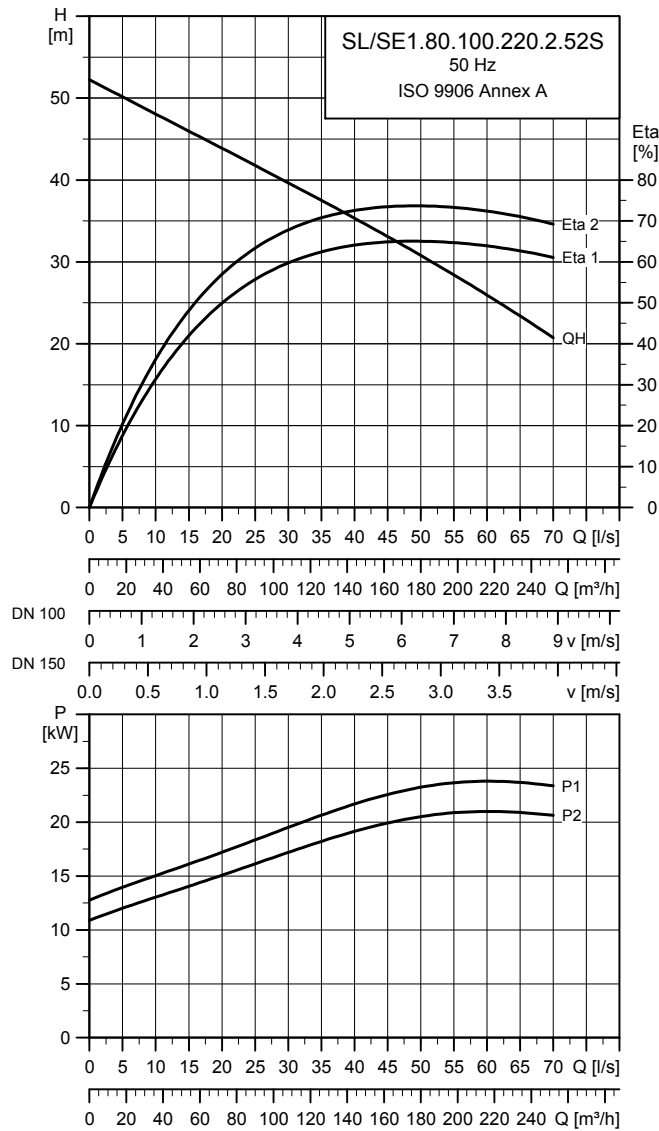
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.80.100.200.2.52S	23	20	2	2937	Y/D	37	332	85	88	88	88	0.79	0.86	0.89	0.1383	200			

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.80.100.200.2.52S	197.5	80	DN100	20

Performance curves SL/SE1.80.100.220.2.52S



TM05 3602 1612

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.80.100.220.2.52S	25	22	2	2937	Y/D	41	332	86	88	88	0.81	0.87	0.89	0.1407	200				

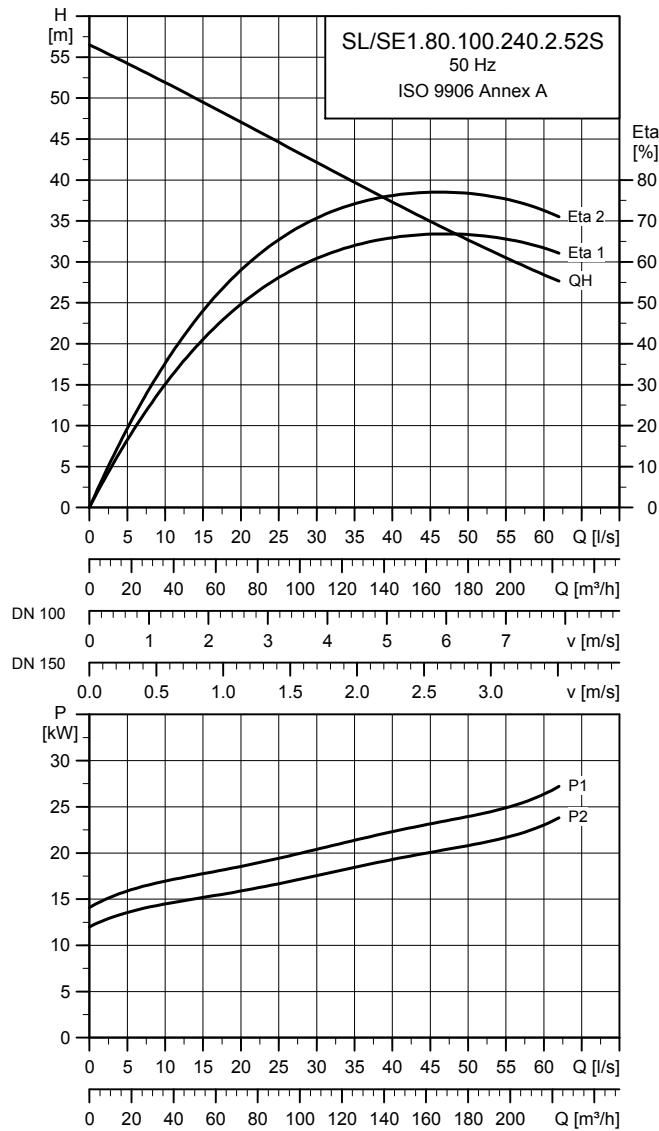
Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.80.100.220.2.52S	253	80	DN100	20



**Performance curves SL/SE1.80.100.240.2.52S**



TM05 3621 1612

**Electrical data**

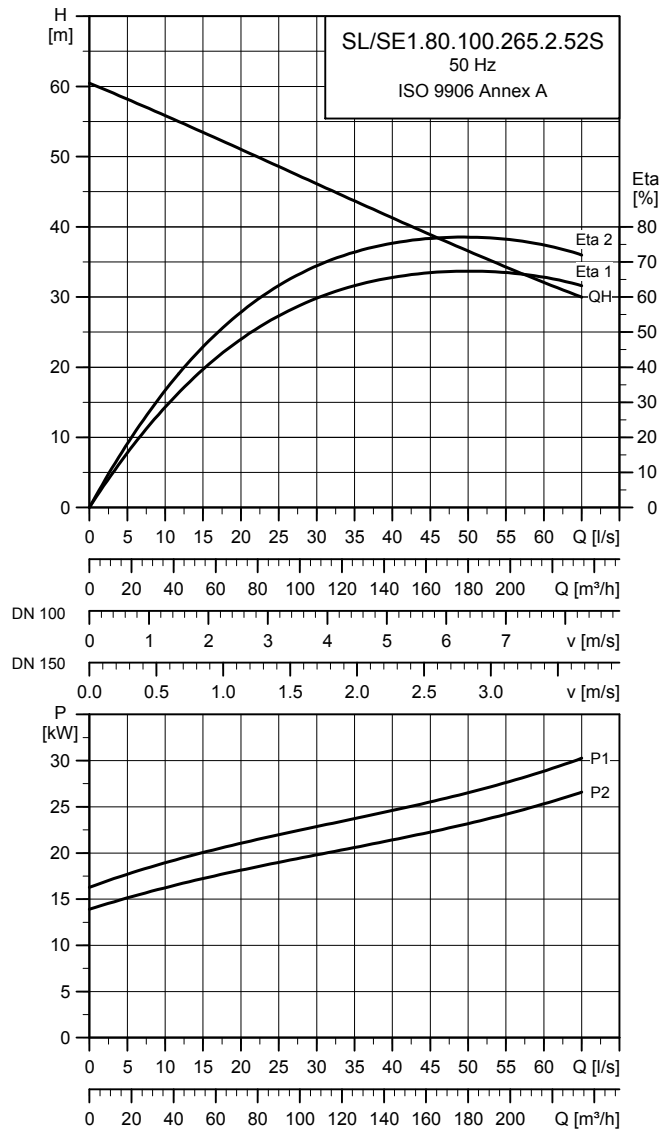
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm²]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
SL/SE1.80.100.240.2.52S	27	24	2	2955	Y/D	48	332	84	86	88	0.69	0.77	0.83	0.1564	200				

Note: Enclosure class: IP68

**Pump data**

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.80.100.240.2.52S	209	80	DN100	20

Performance curves SL/SE1.80.100.265.2.52S



TM05 3601 1612

Electrical data

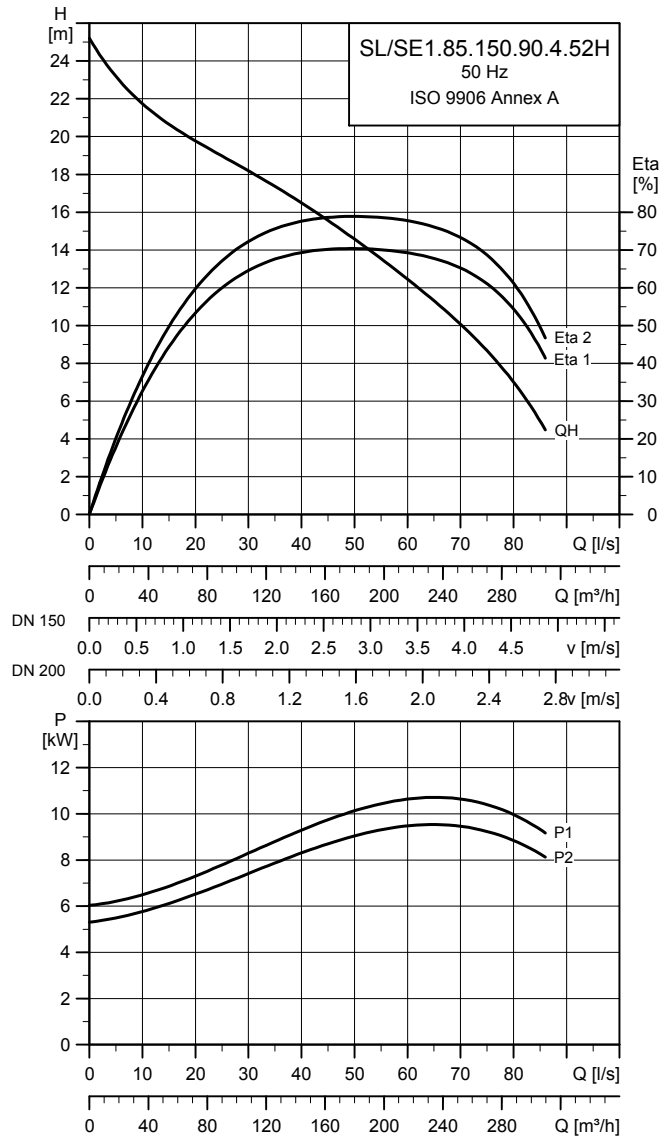
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.80.100.265.2.52S	30	26.5	2	2955	Y/D	52	332	85	87	88	0.71	0.79	0.85	0.1581	200				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter		Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	[mm]	PN	[m]
SL/SE1.80.100.265.2.52S	215	80	DN100	20	

Performance curves SL/SE1.85.150.90.4.52H



TM05 3628 1612

Electrical data

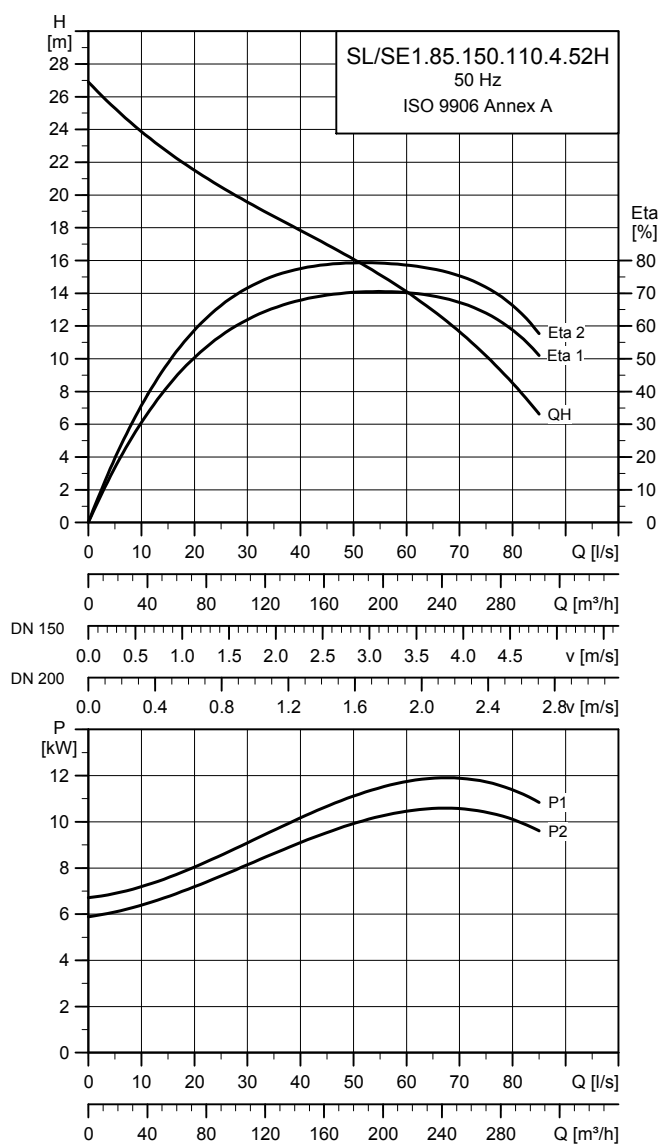
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]		
SL/SE1.85.150.90.4.52H	10	9	4	1474	Y/D	19	156	76	83	87	0.66	0.74	0.81	0.3107	128				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.85.150.90.4.52H	266	85	DN150	20

Performance curves SL/SE1.85.150.110.4.52H



TM05 3608 1612

Electrical data

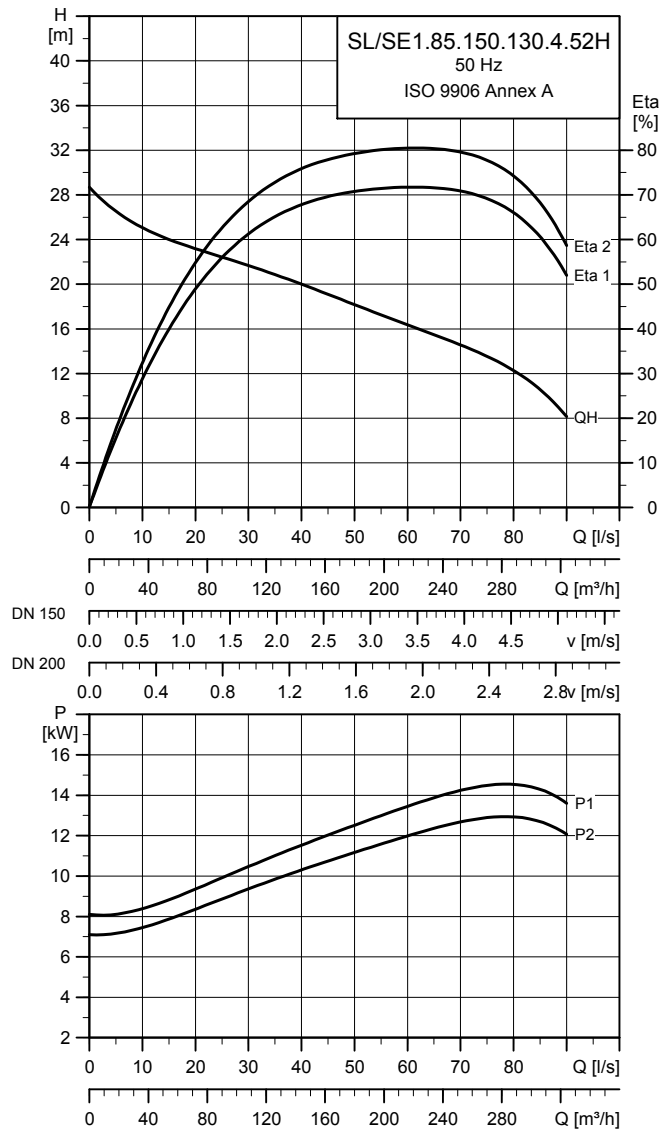
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm²]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.85.150.110.4.52H	12	11	4	1474	Y/D	21	156	80	87	88	0.70	0.79	0.86	0.3255	128				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.85.150.110.4.52H	276	85	DN150	20

**Performance curves SL/SE1.85.150.130.4.52H**



TM05 3627 1612

**Electrical data**

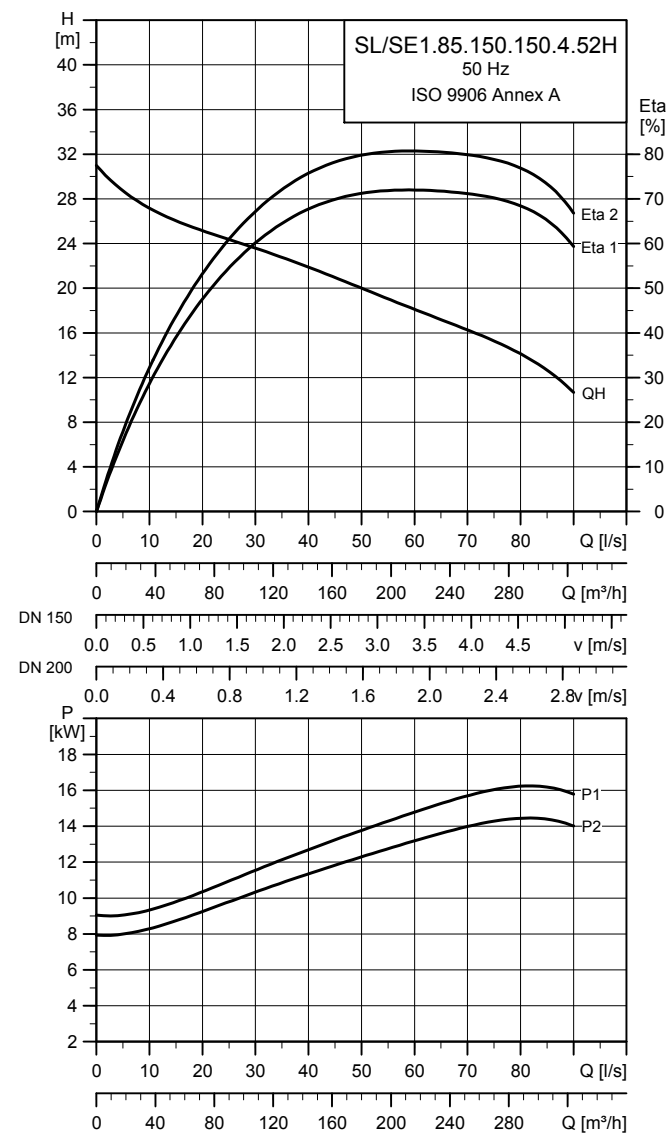
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			$\cos \varphi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
SL/SE1.85.150.130.4.52H	14	13	4	1474	Y/D	25	228	87	89	90	0.67	0.76	0.83	0.3522	205				

Note: Enclosure class: IP68

**Pump data**

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.85.150.130.4.52H	281	85	DN150	20

Performance curves SL/SE1.85.150.150.4.52H



TM05 3607 1612

Electrical data

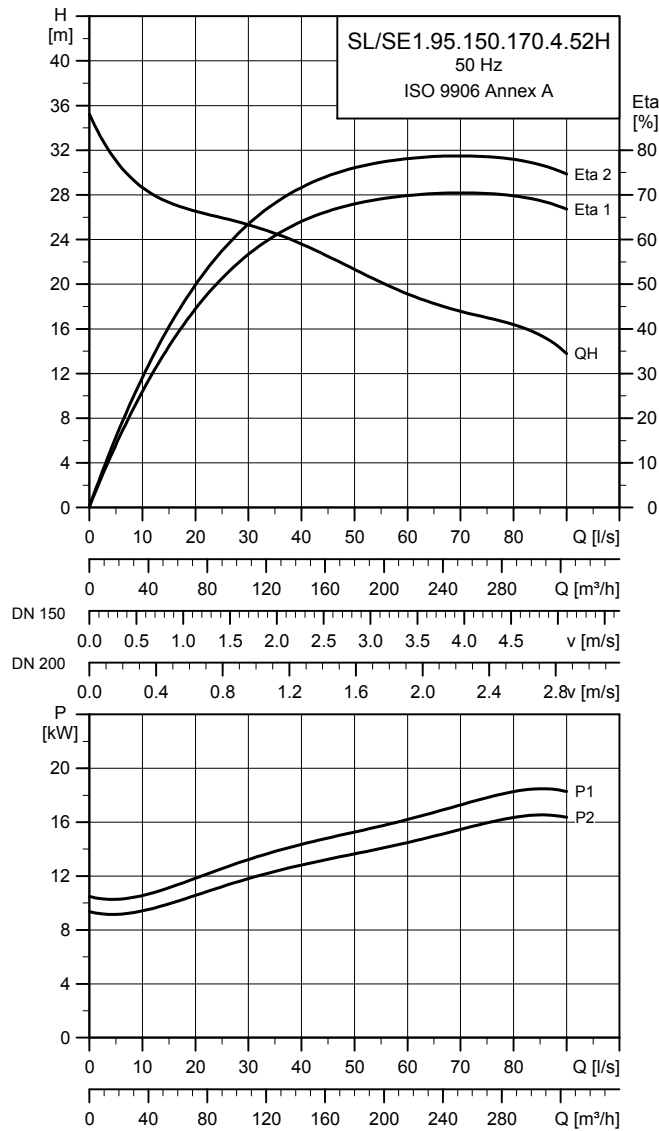
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.85.150.150.4.52H	17	15	4	1474	Y/D	28	228		88	90	90	0.70	0.80	0.86	0.3613	205			

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.85.150.150.4.52H	292	85	DN150	20

Performance curves SL/SE1.95.150.170.4.52H



TM05 3626 1612

Electrical data

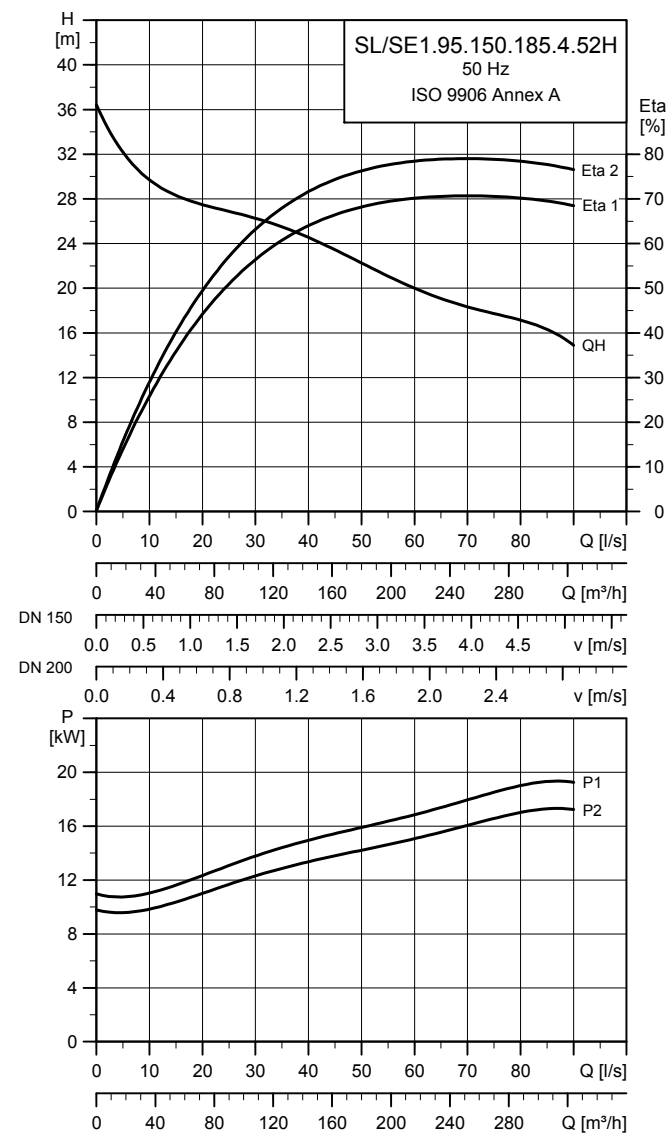
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.95.150.170.4.52H	19	17	4	1474	Y/D	36	243	88	85	89	0.68	0.72	0.77	0.3463	205				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.95.150.170.4.52H	293	95	DN150	20

Performance curves SL/SE1.95.150.185.4.52H



TM05 3605 1612

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			$\cos \phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.95.150.185.4.52H	21	18.5	4	1473	Y/D	38	243	86	88	89	0.69	0.73	0.79	0.3538	205				

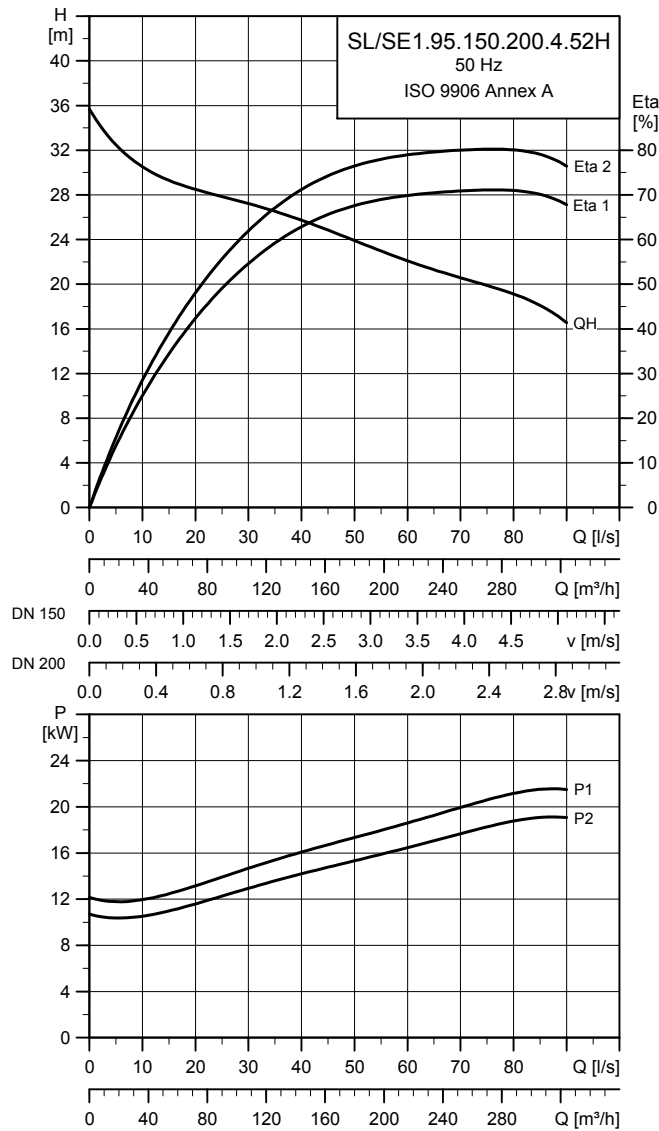
Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.95.150.185.4.52H	299	95	DN150	20



Performance curves SL/SE1.95.150.200.4.52H



TM05 3625 1612

Electrical data

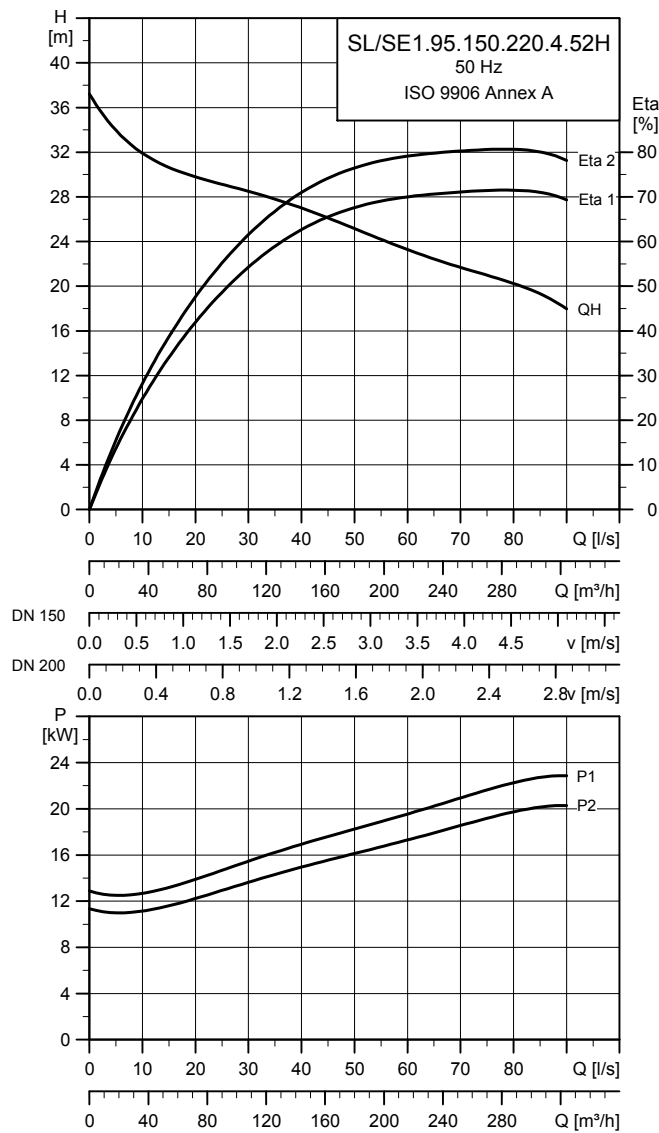
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			$\cos \phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
SL/SE1.95.150.200.4.52H	22	20	4	1474	Y/D	40	243	86	89	89	89	0.69	0.74	0.81	0.3653	205			

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.95.150.200.4.52H	300	95	DN150	20

Performance curves SL/SE1.95.150.220.4.52H



TM05 3606 1612

Electrical data

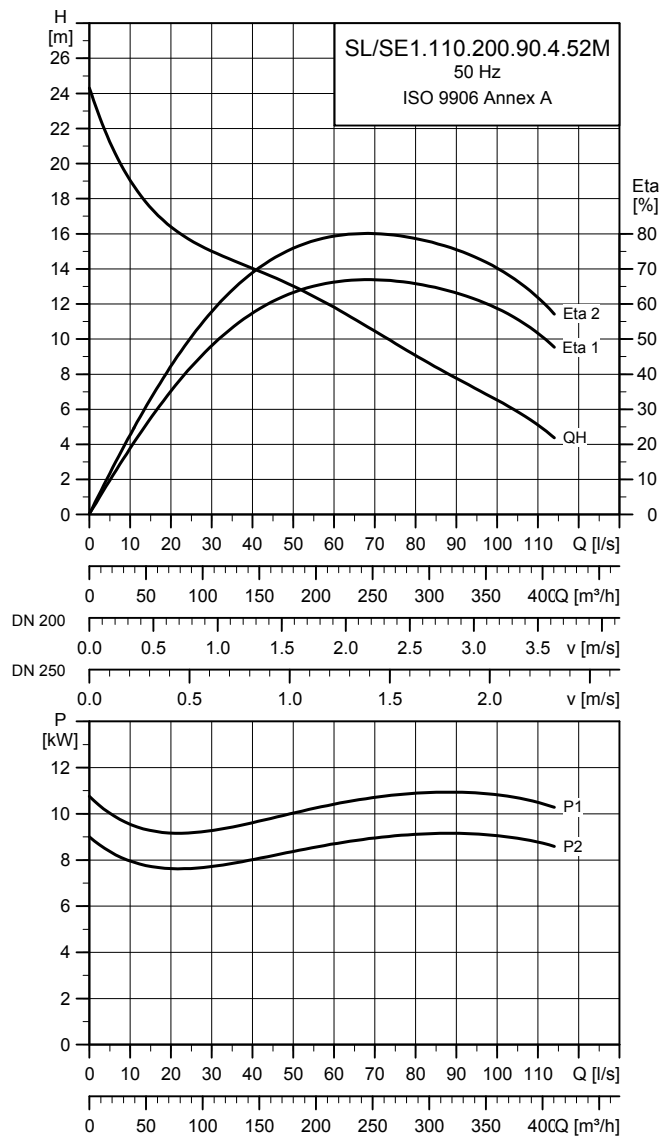
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			$\cos \phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.95.150.220.4.52H	25	22	4	1465	Y/D	42	243	87	89	89	89	0.70	0.76	0.85	0.3847	205			

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.95.150.220.4.52H	309	95	DN150	20

**Performance curves SL/SE1.110.200.90.4.52M**



TM05 3632 1612

**Electrical data**

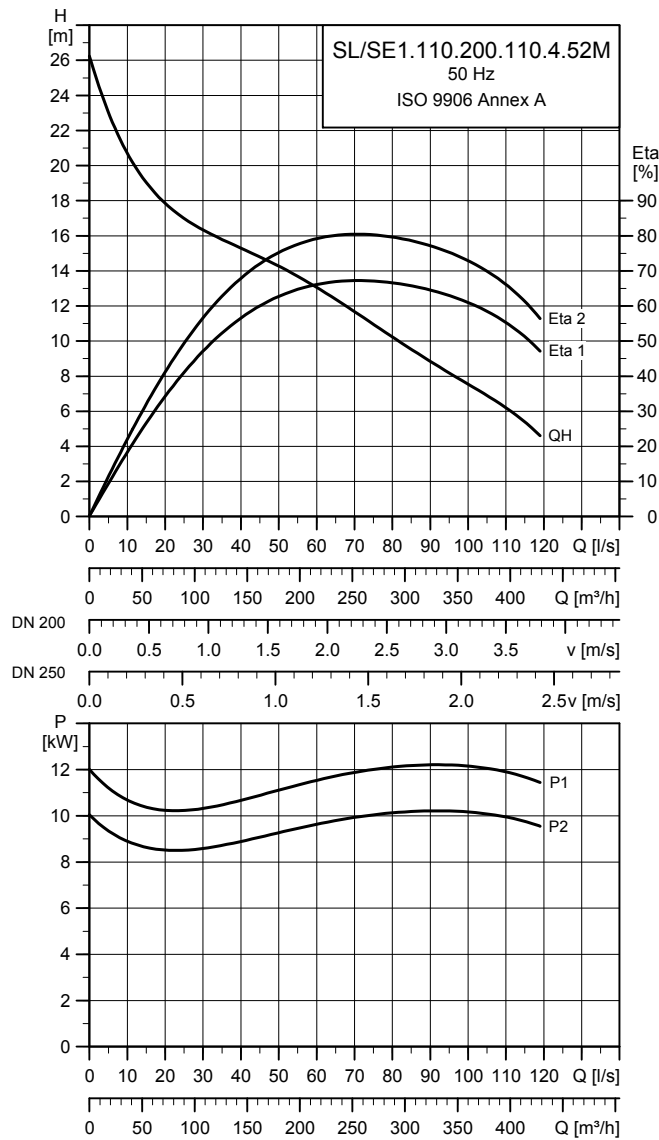
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			$\cos \phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
SL/SE1.110.200.90.4.52M	10	9	4	1474	Y/D	19	156	76	83	87	0.66	0.74	0.81	0.3107	128				

Note: Enclosure class: IP68

**Pump data**

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.110.200.90.4.52M	246	110	DN200	20

Performance curves SL/SE1.110.200.110.4.52M



TM05 3612 1612

Electrical data

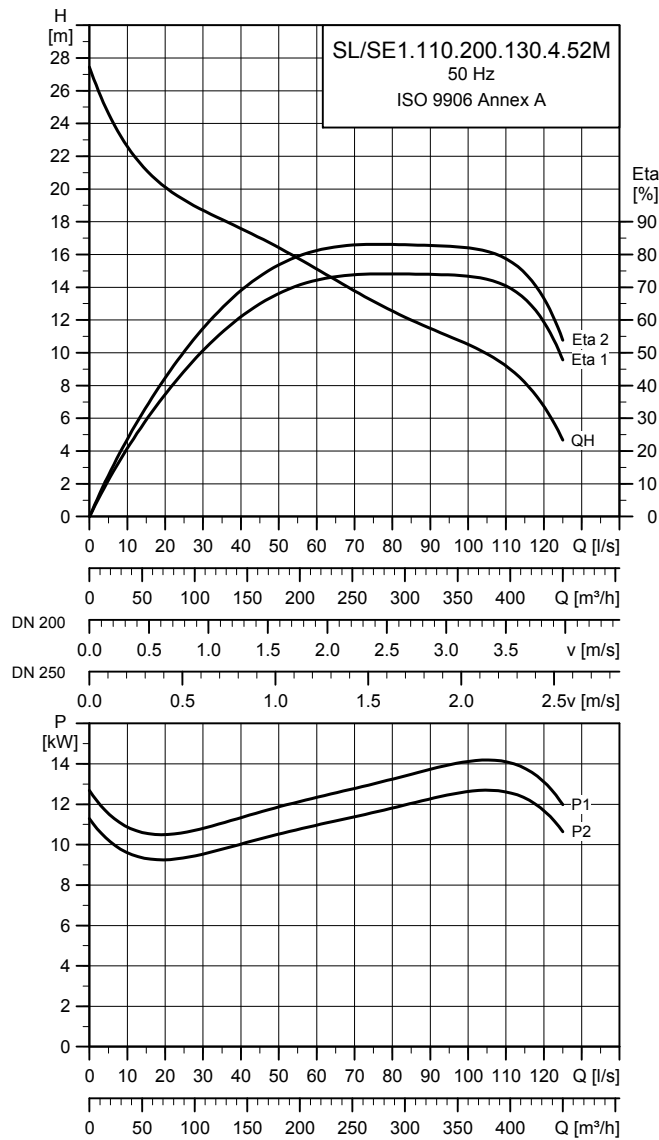
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.110.200.110.4.52M	12	11	4	1474	Y/D	21	156	80	87	88	0.70	0.79	0.86	0.3255	128				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.110.200.110.4.52M	256	110	DN200	20

**Performance curves SL/SE1.110.200.130.4.52M**



TM05 3631 1612

**Electrical data**

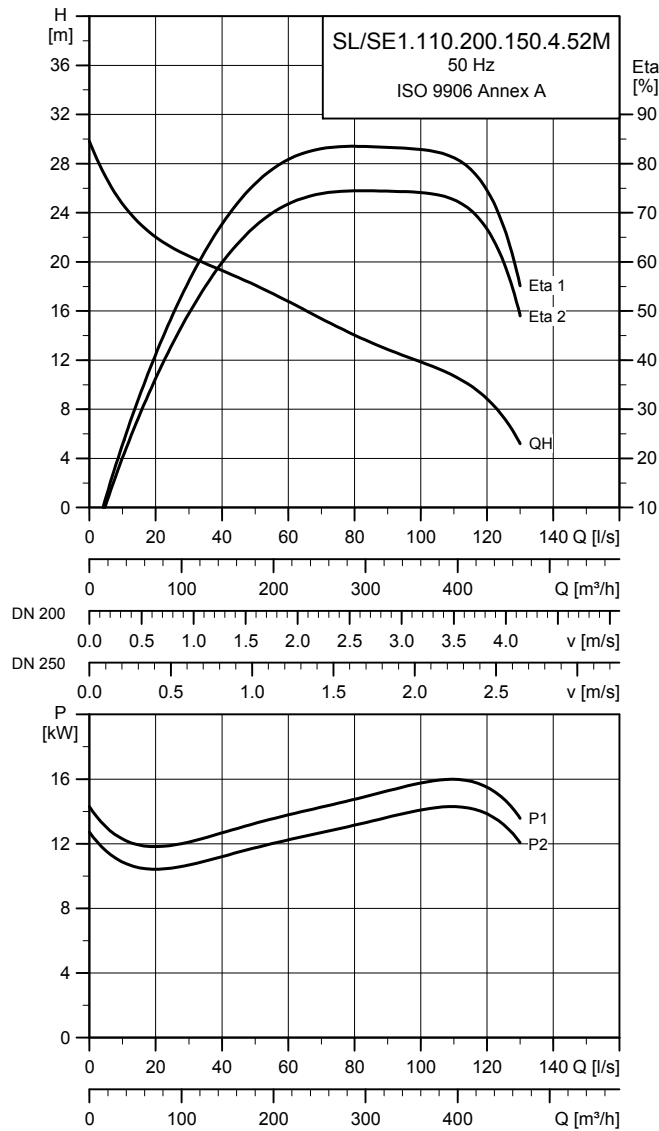
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.110.200.130.4.52M	14	13	4	1474	Y/D	25	228	87	89	90	0.67	0.76	0.83	0.3522	205				

Note: Enclosure class: IP68

**Pump data**

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.110.200.130.4.52M	264	110	DN200	20

Performance curves SL/SE1.110.200.150.4.52M



TM05 3611 1612

Electrical data

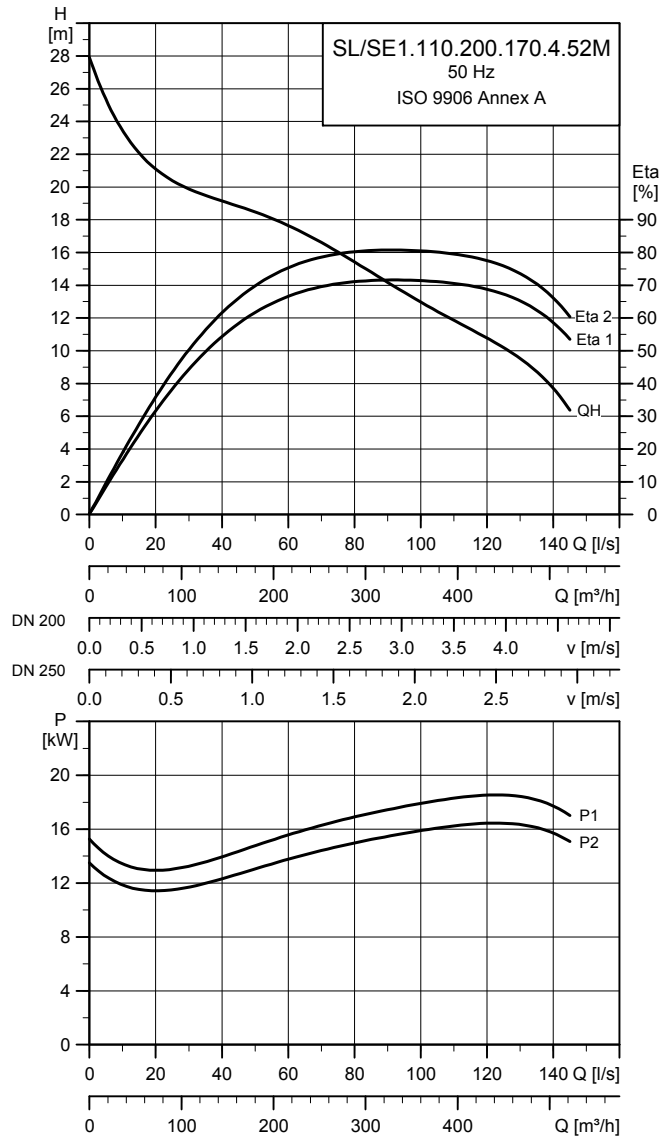
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.110.200.150.4.52M	17	15	4	1474	Y/D	28	228	88	90	90	0.70	0.80	0.86	0.3613	205				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.110.200.150.4.52M	273	110	DN200	20

**Performance curves SL/SE1.110.200.170.4.52M**



TM05 3630 1612

**Electrical data**

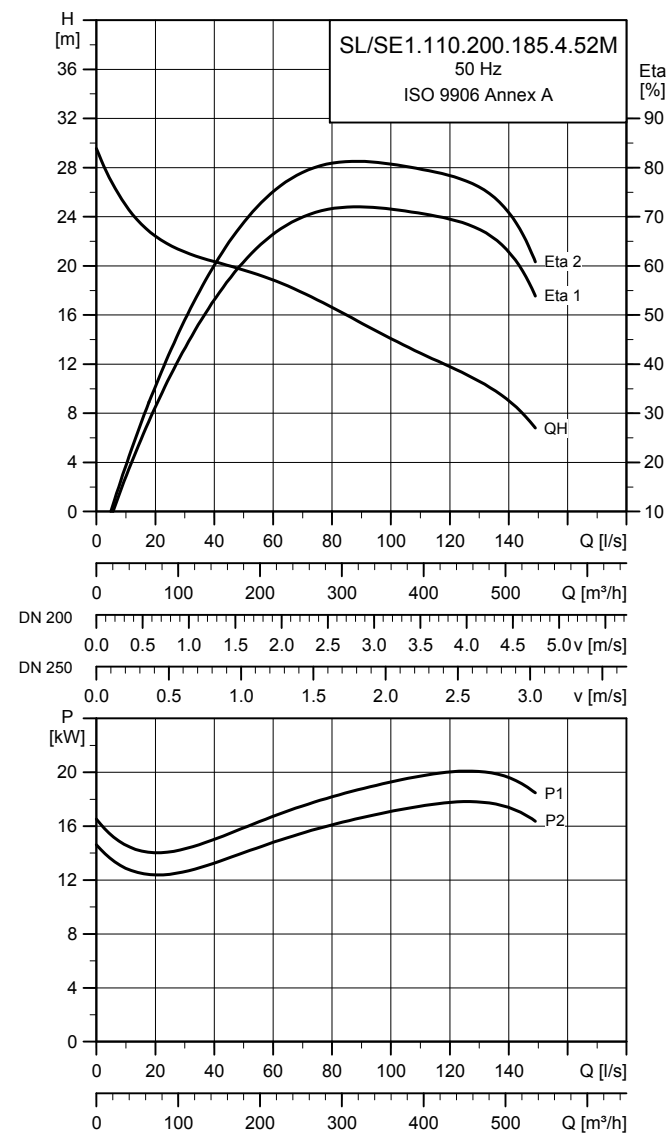
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			$\cos \phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
SL/SE1.110.200.170.4.52M	19	17	4	1474	Y/D	36	243		88	85	89	0.68	0.72	0.77	0.3463	205			

Note: Enclosure class: IP68

**Pump data**

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.110.200.170.4.52M	277	110	DN200	20

Performance curves SL/SE1.110.200.185.4.52M



TIM05 3610 1612

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4		
SL/SE1.110.200.185.4.52M	21	18.5	4	1473	Y/D	38	243	86	88	89	0.69	0.73	0.79	0.3538	205				

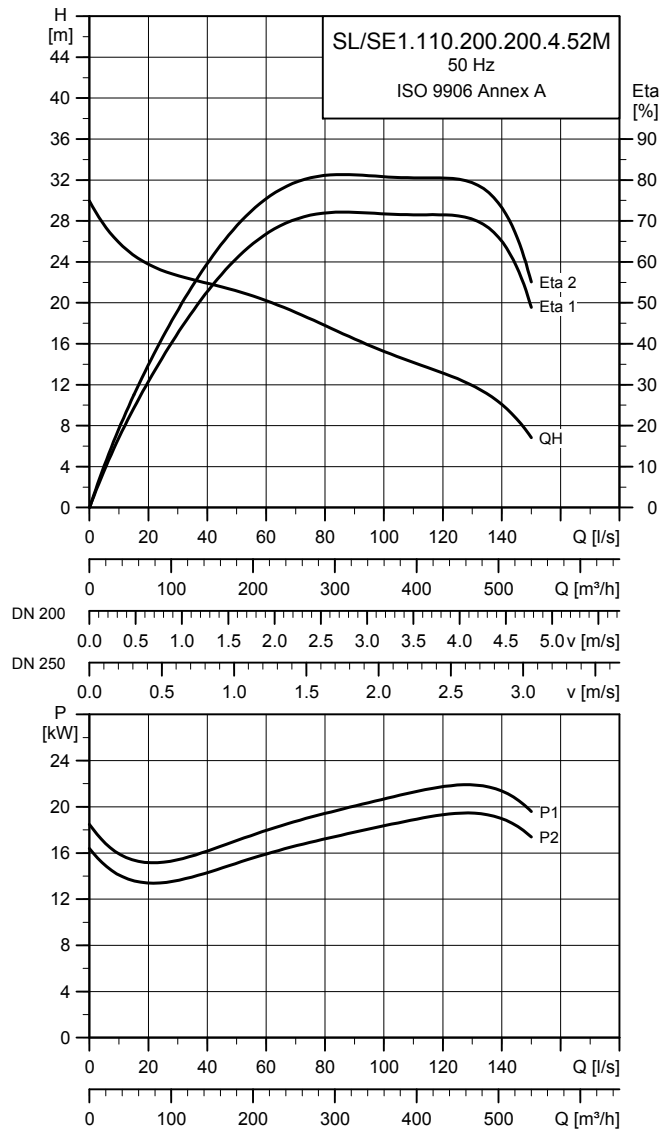
Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.110.200.185.4.52M	285	110	DN200	20



**Performance curves SL/SE1.110.200.200.4.52M**



TM05 3629 1612

**Electrical data**

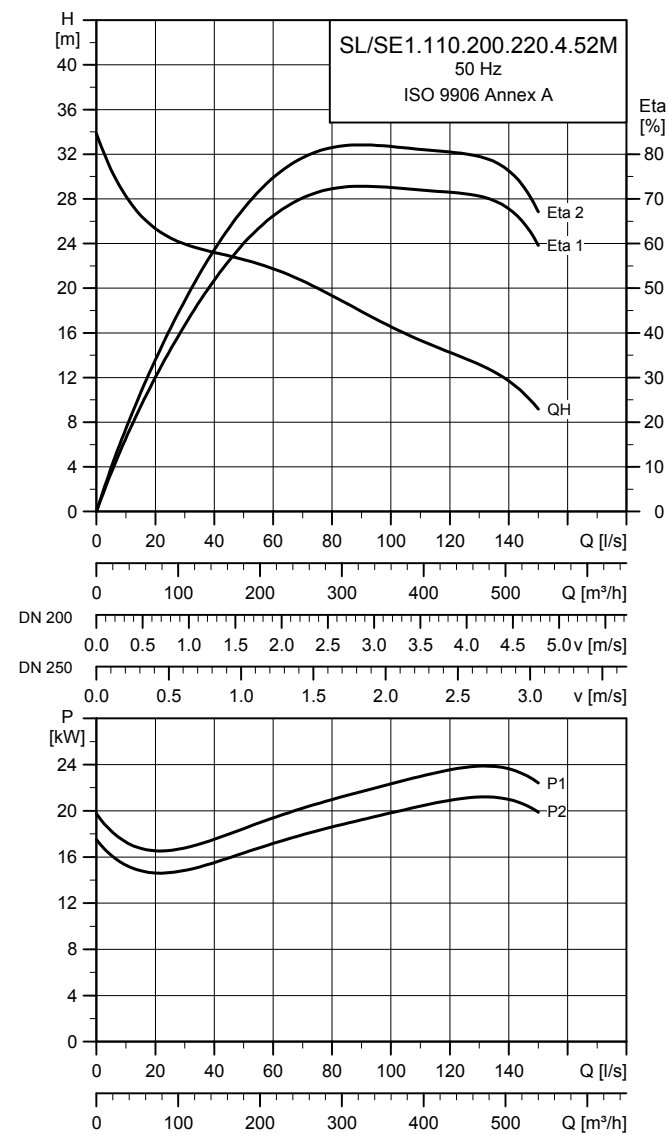
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm²]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
SL/SE1.110.200.200.4.52M	22	20	4	1474	Y/D	40	243	86	89	89	89	0.69	0.74	0.81	0.3653	205			

Note: Enclosure class: IP68

**Pump data**

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.110.200.200.4.52M	293	110	DN200	20

Performance curves SL/SE1.110.200.220.4.52M



TIM05 3609 1612

Electrical data

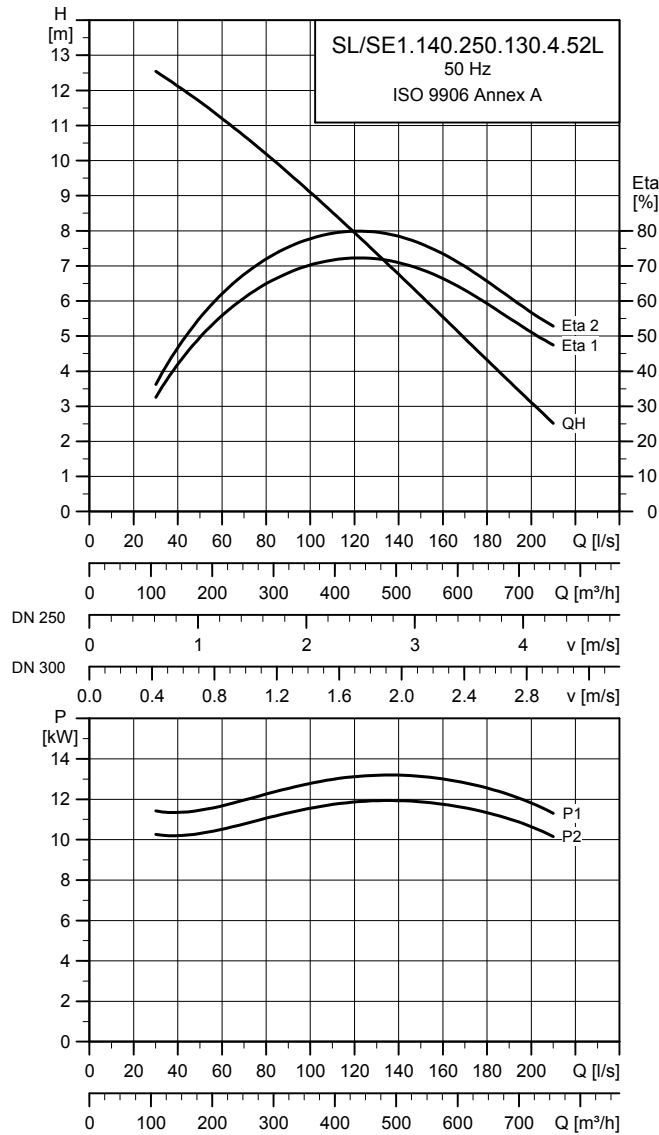
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			$\cos \phi$			Moment of inertia [kgm²]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
SL/SE1.110.200.220.4.52M	25	22	4	1465	Y/D	42	243	87	89	89	89	0.70	0.76	0.85	0.3847	205			

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.110.200.220.4.52M	302	110	DN200	20

Performance curves SL/SE1.140.250.130.4.52L



TM05 3635 1612

Electrical data

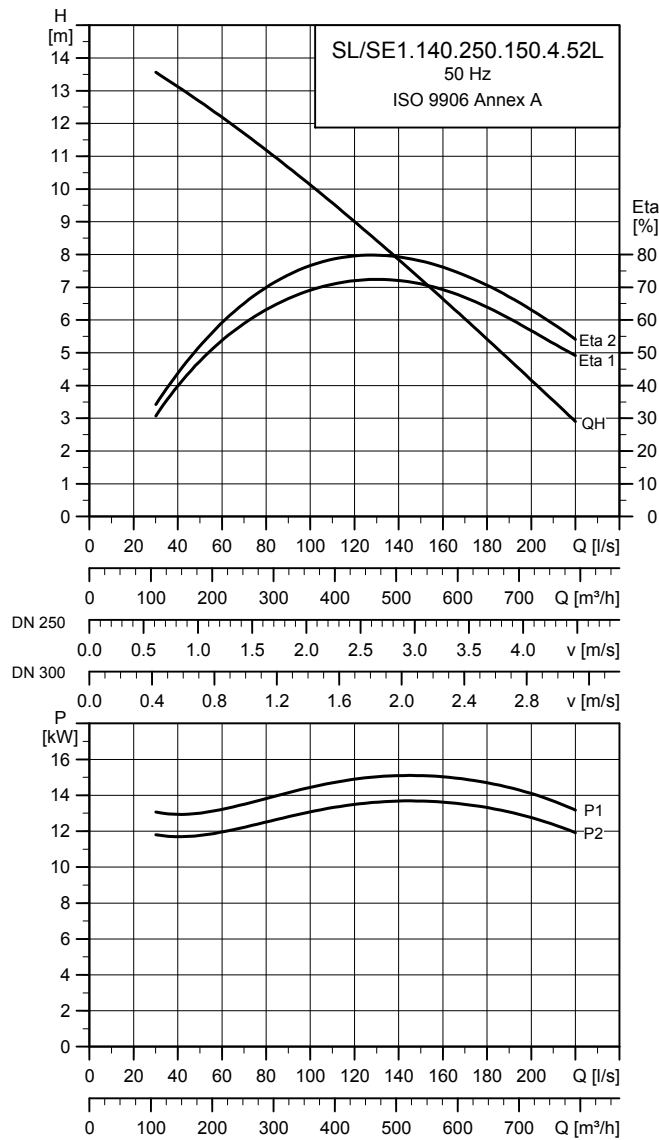
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.140.250.130.4.52L	14	13	4	1474	Y/D	25	228	87	89	90	0.67	0.76	0.83	0.4045	205				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.140.250.130.4.52L	228	140	DN250	20

Performance curves SL/SE1.140.250.150.4.52L



TIM05 3615 1612

Electrical data

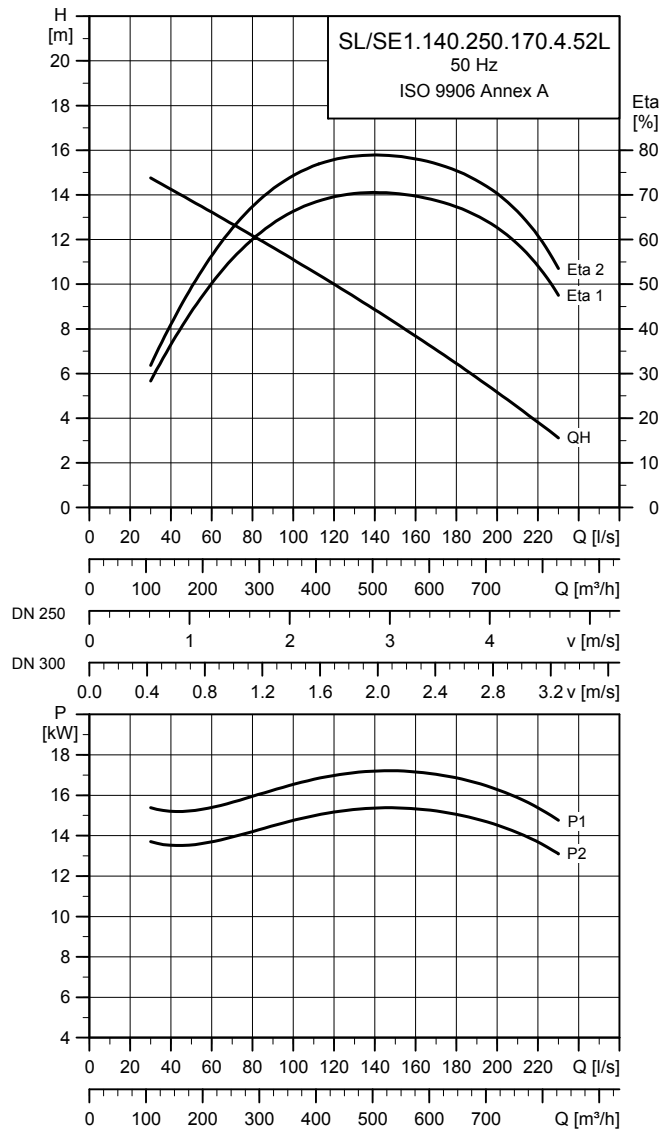
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]	[A]		
SL/SE1.140.250.150.4.52L	17	15	4	1474	Y/D	28	228	88	90	90	0.70	0.80	0.86	0.4121	205				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.140.250.150.4.52L	254	140	DN250	20

Performance curves SL/SE1.140.250.170.4.52L



TIM05 3634 1612

Electrical data

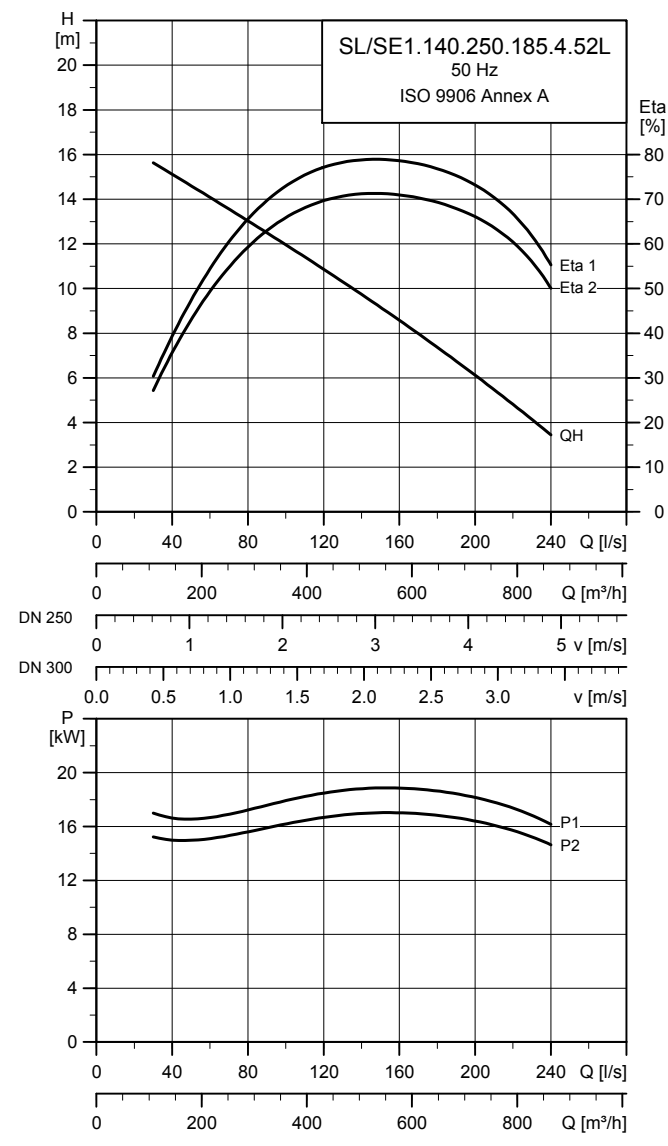
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4		
SL/SE1.140.250.170.4.52L	19	17	4	1474	Y/D	36	243	88	85	89	0.68	0.72	0.77	0.4263	205				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.140.250.170.4.52L	250	140	DN250	20

Performance curves SL/SE1.140.250.185.4.52L



TM05 3614 1612

Electrical data

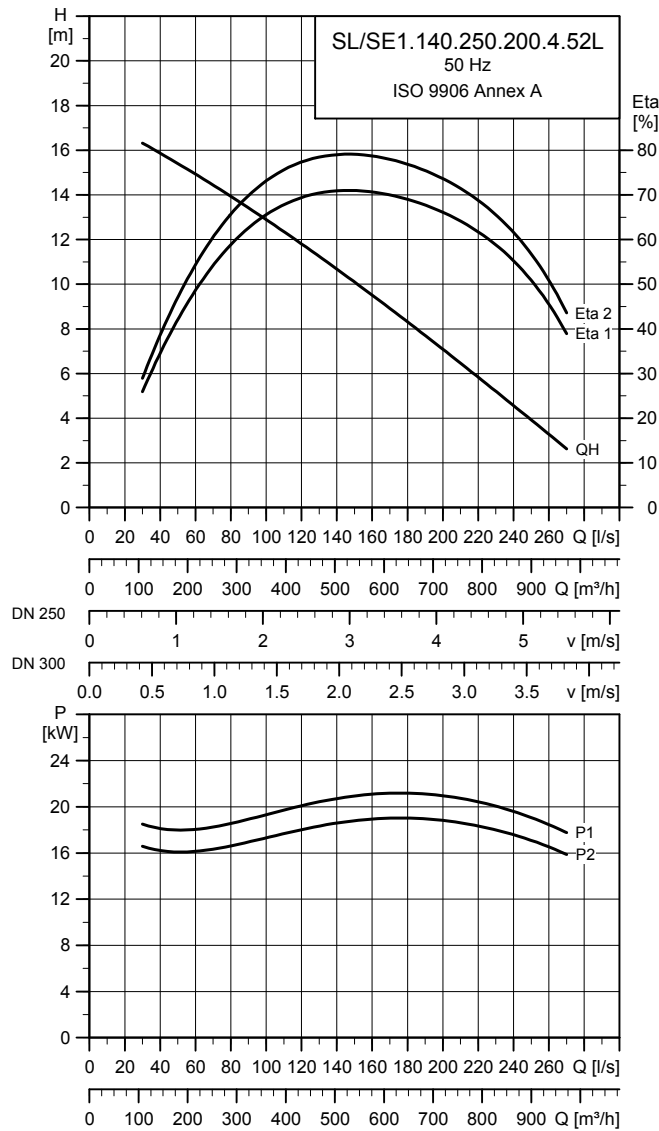
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			$\cos \phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4		
SL/SE1.140.250.185.4.52L	21	18.5	4	1473	Y/D	38	243	86	88	89	0.69	0.73	0.79	0.4425	205				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.140.250.185.4.52L	272	140	DN250	20

Performance curves SL/SE1.140.250.200.4.52L



TM05 3633 1612

Electrical data

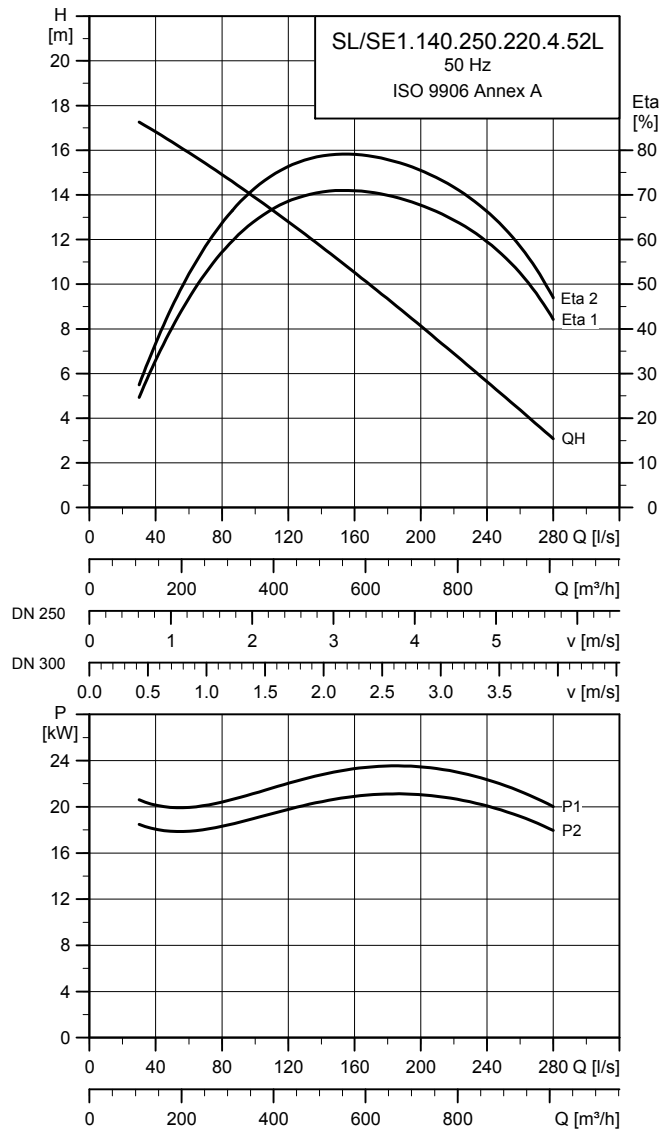
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
SL/SE1.140.250.200.4.52L	22	20	4	1474	Y/D	40	243	86	89	89	0.69	0.74	0.81	0.4511	205				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.140.250.200.4.52L	259	140	DN250	20

Performance curves SL/SE1.140.250.220.4.52L



TIM05 3613 1612

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			$\cos \phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1	1/2	3/4	1/1		
SL/SE1.140.250.220.4.52L	25	22	4	1465	Y/D	42	243	87	89	89	89	0.70	0.76	0.85	0.4558	205			

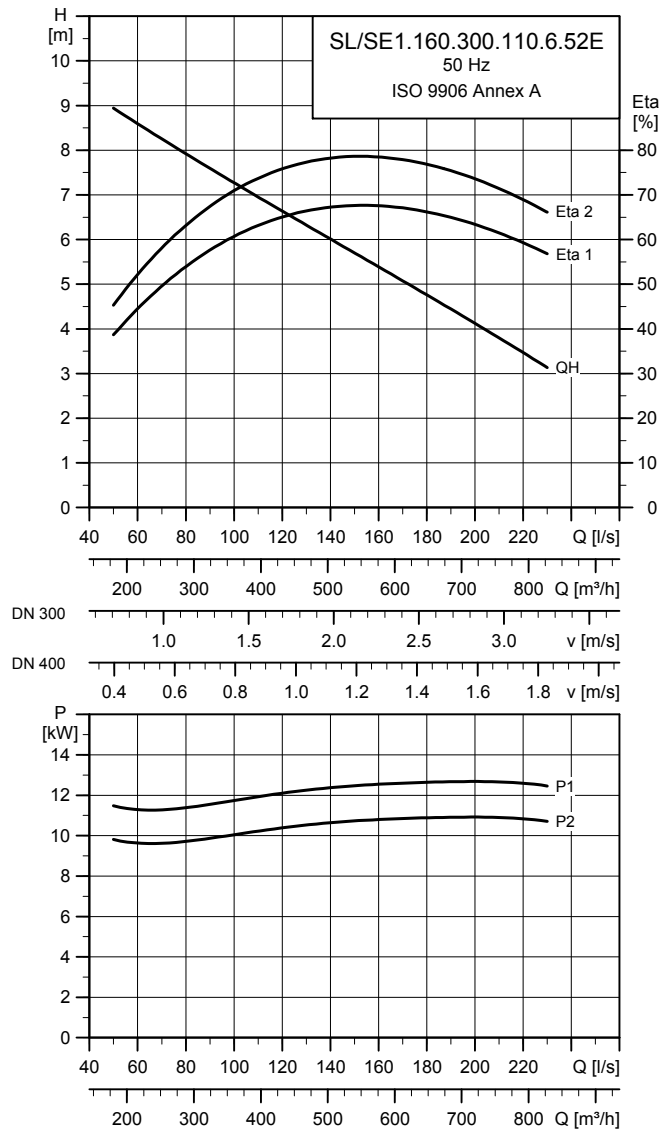
Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.140.250.220.4.52L	277	140	DN250	20



Performance curves SL/SE1.160.300.110.6.52E



TM05 3637 1612

Electrical data

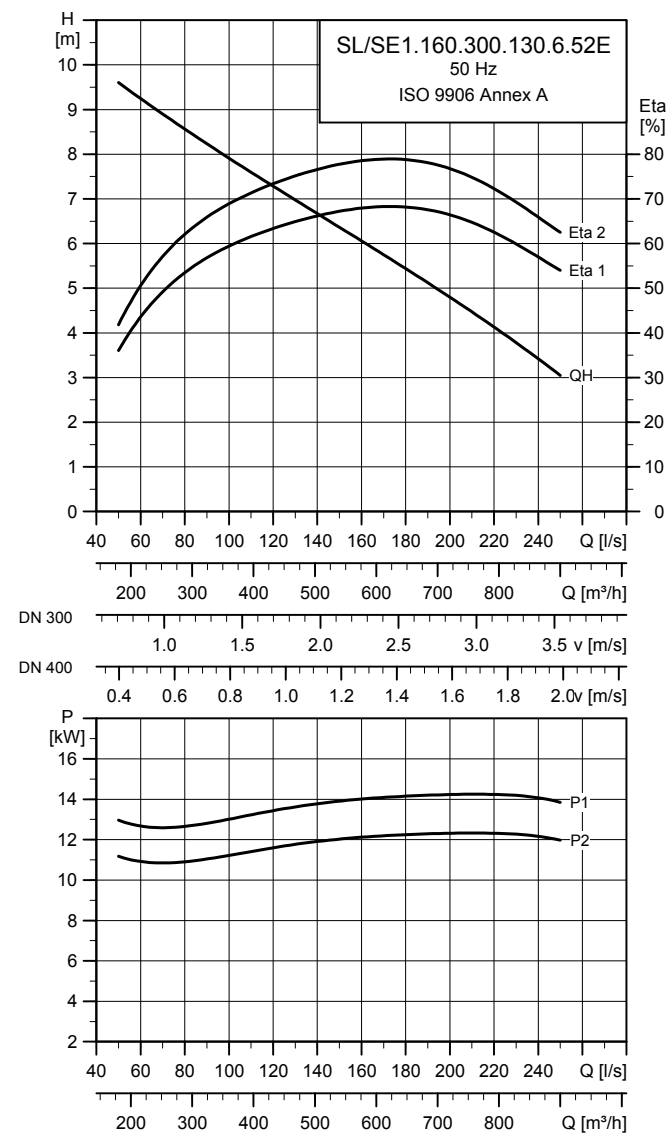
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4		
SL/SE1.160.300.110.6.52E	13	11	6	974	Y/D	29	198	82	85	86	0.50	0.57	0.64	0.8325	429				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.160.300.110.6.52E	284	160	DN300	20

Performance curves SL/SE1.160.300.130.6.52E



TM05 3617 1612

Electrical data

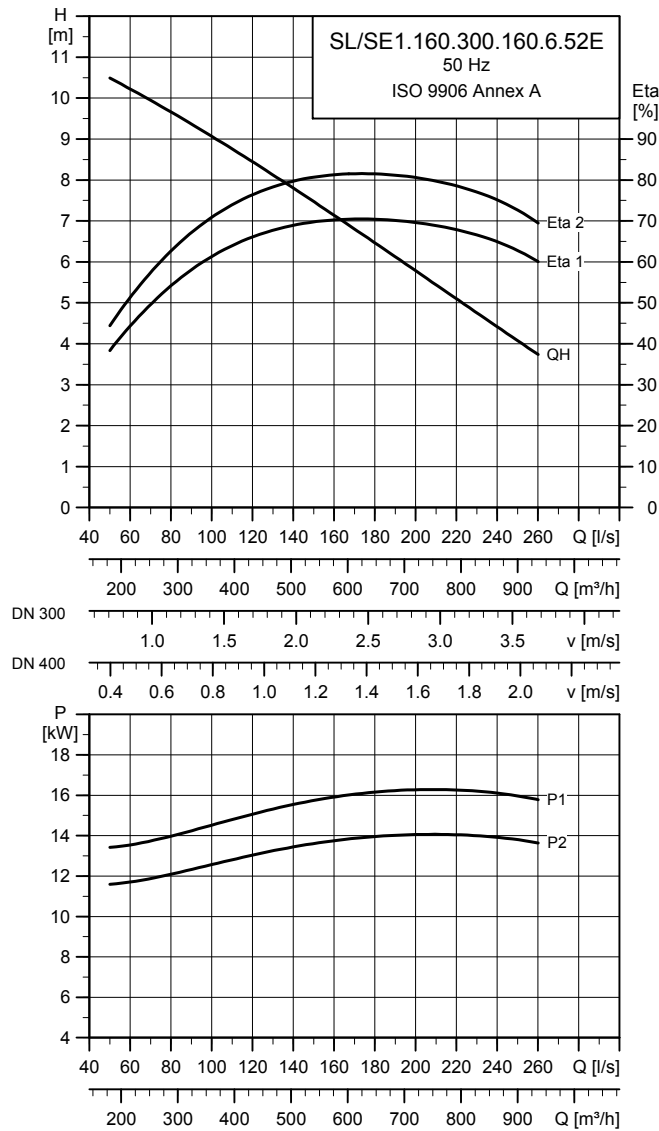
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.160.300.130.6.52E	15	13	6	974	Y/D	32	198	83	85	86	0.53	0.61	0.70	0.8559	429				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.160.300.130.6.52E	315	160	DN300	20

Performance curves SL/SE1.160.300.160.6.52E



TM05 3636 1612

Electrical data

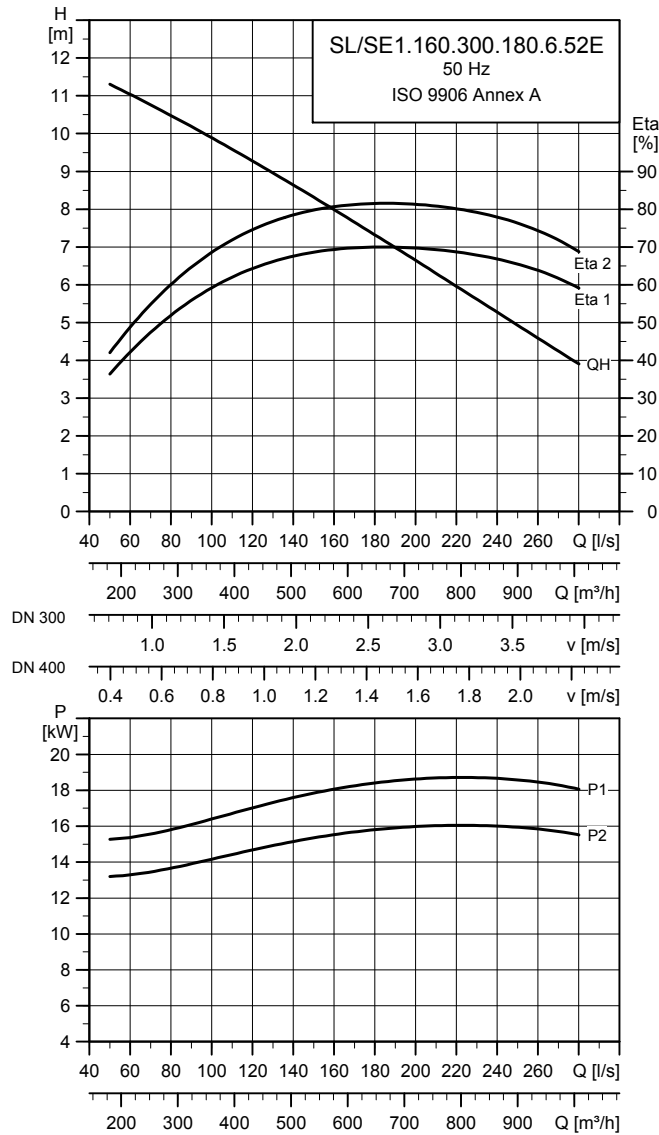
Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor}$ [%]			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	[A]	[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4		
SL/SE1.160.300.160.6.52E	19	16	6	953	Y/D	32	198	84	86	86	0.56	0.67	0.79	0.8559	429				

Note: Enclosure class: IP68

Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.160.300.160.6.52E	315	160	DN300	20

Performance curves SL/SE1.160.300.180.6.52E



T/M05 3616 1612

Electrical data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	$I_N$			$I_{start}$			$\eta_{motor} [\%]$			Cos $\phi$			Moment of inertia [kgm <sup>2</sup> ]	Breakdown torque $M_{max}$ [Nm]
						[A]	[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
SL/SE1.160.300.180.6.52E	22	18	6	953	Y/D	37	198	85	86	84	0.60	0.73	0.87	1.0089	429				

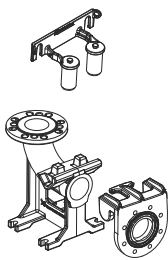
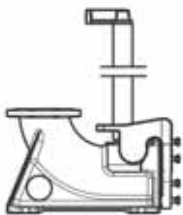

Note: Enclosure class: IP68

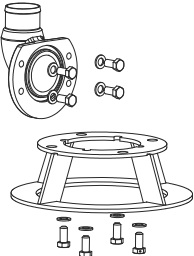
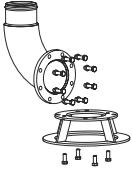

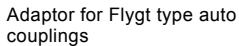
Pump data

Pump type	Impeller diameter	Max. solids size	Pump housing pressure	Max. installation depth
	[mm]	[mm]	PN	[m]
SL/SE1.160.300.180.6.52E	340	160	DN300	20


## 12. Accessories

### Installation systems

Picture	Description	Dimensions/Materials	SL1.80.100	SLV.80.100	SL1.100.150	SL1.120.200	SL1.140.250	SL1.140.300	SE1.80.100	SEV.80.100	SE1.100.150	SE1.120.200	SE1.140.250	SE1.140.300	Product number	
	Complete auto-coupling system, including guide claw, base unit and upper guide rail bracket. With bolts, nuts and gaskets. <b>Note:</b> If your guide rails exceed 6 m, please consider the use of intermediate guide rail brackets to support your system.	DN 100/80	•	•					•	•					96102240	
		4"/3" ANSI, DN 100/80	•	•						•	•					97626239
		DN 80, 1.4408	•	•						•	•					96825106
		DN 80, 1.4517	•	•						•	•					97904193
		DN 100	•	•						•	•					96090994
		4" ANSI, DN 100	•	•						•	•					97626238
		DN 100, 1.4408	•	•						•	•					96825108
		DN 100, 1.4517	•	•						•	•					97904194
		DN 150, 3"			•							•				97695489
		6" ANSI with 3" upper guide rail bracket				•						•				97699099
	Complete auto-coupling system, including guide claw, base unit and upper guide rail bracket. With bolts, nuts and gaskets. For pump discharge flanges sized DN 250 and above, the guide claw is fitted to the pump discharge flange. For flanges below DN 250, the guide claw is delivered with the auto-coupling kit.	DN 200, PN 10, G				•					•			96641489		
		8" ANSI, G				•						•			97506541	
		DN 250, PN 10, G					•						•		96782483	
		10" ANSI, G						•					•		97510048	
		DN 300, PN 10, G							•					•	96782484	
		12" ANSI, G								•				•	97510049	
		DN 250						•						•	96782449	
		10" ANSI							•					•	97509643	
		DN 300								•					•	96782450
		12" ANSI								•					•	97509644
	Dry vertical installation kit	DN 100	•	•					•	•					96308237	
		DN 100, R	•	•						•	•					96090110
		DN 150			•							•				96308238
		DN 150, R				•							•			96835614
		DN 200					•						•			96094523
		DN 200, R						•						•		96090119
		DN 250						•						•		96308240
		DN 300							•						•	96308241

Picture	Description	Dimensions/Materials	SL1.80.100	SLV.80.100	SL1.100.150	SL1.120.200	SL1.140.250	SL1.140.300	SE1.80.100	SEV.80.100	SE1.100.150	SE1.120.200	SE1.140.250	SE1.140.300	Product number	
 <p>TM05 3871 1712</p>	Ring stand complete with flanged 90 ° elbow and hose connection or outside thread connection. With bolts, nuts, gaskets and anchor bolts.	DN 100/DN 80	•	•					•	•					96102313	
		DN 100/DN 80 w. thread	•	•						•	•					96102382
		DN 100/DN 80 Transportable stand R	•	•						•	•					96898249
		4"/3" ANSI DN 100/DN 80	•	•						•	•					97632229
		4"/3" ANSI w. thread	•	•						•	•					97632241
		DN 100	•	•						•	•					96102255
		DN 100 w. thread	•	•						•	•					96102383
		DN 100/DN 100 Transportable stand R	•	•						•	•					96898272
		4" ANSI/DN 100	•	•						•	•					97632278
		4" ANSI/DN 100 w. thread	•	•						•	•					97632280
		DN 150			•							•				96102256
		DN 150 w. thread				•						•				96102385
6" ANSI					•					•				97632372		
6" ANSI w. thread					•					•				97632373		
 <p>TM05 3870 1712</p>	Ring stand with flanged 90 ° elbow and hose connection. With bolts, nuts, gaskets and anchor bolts.	DN 200/DN 200, ANSI 8"/8", G				•						•		96789480		
		DN 200/DN 200, ANSI 8"/8", R				•							•		96898277	
		DN 250/DN 250 G					•							•	96789481	
 <p>TM05 3866 1712</p>	Horizontal base stand with bolts and nuts	DN 100	•	•					•	•					98093035	
		4" ANSI	•	•						•	•					98103007
		DN 150/6" ANSI			•							•				98093039
		DN 200/8" ANSI				•							•			98093040
		DN 250					•							•		98062204
		10" ANSI						•							•	98103011
		DN 300							•						•	98093051
		12" ANSI								•					•	98103012
	Adaptor for Flygt type auto couplings	DN 80/100	•	•					•	•					96105790	
		DN 100	•	•						•	•					96105782
		DN 100/150			•							•				96105787
		DN 150			•							•				96006638
		DN 200				•							•			97908872
		DN 250					•							•		97908887
		DN 300							•						•	97908892
DN 300/DN 300, 14" ANSI								•					•	97908893		

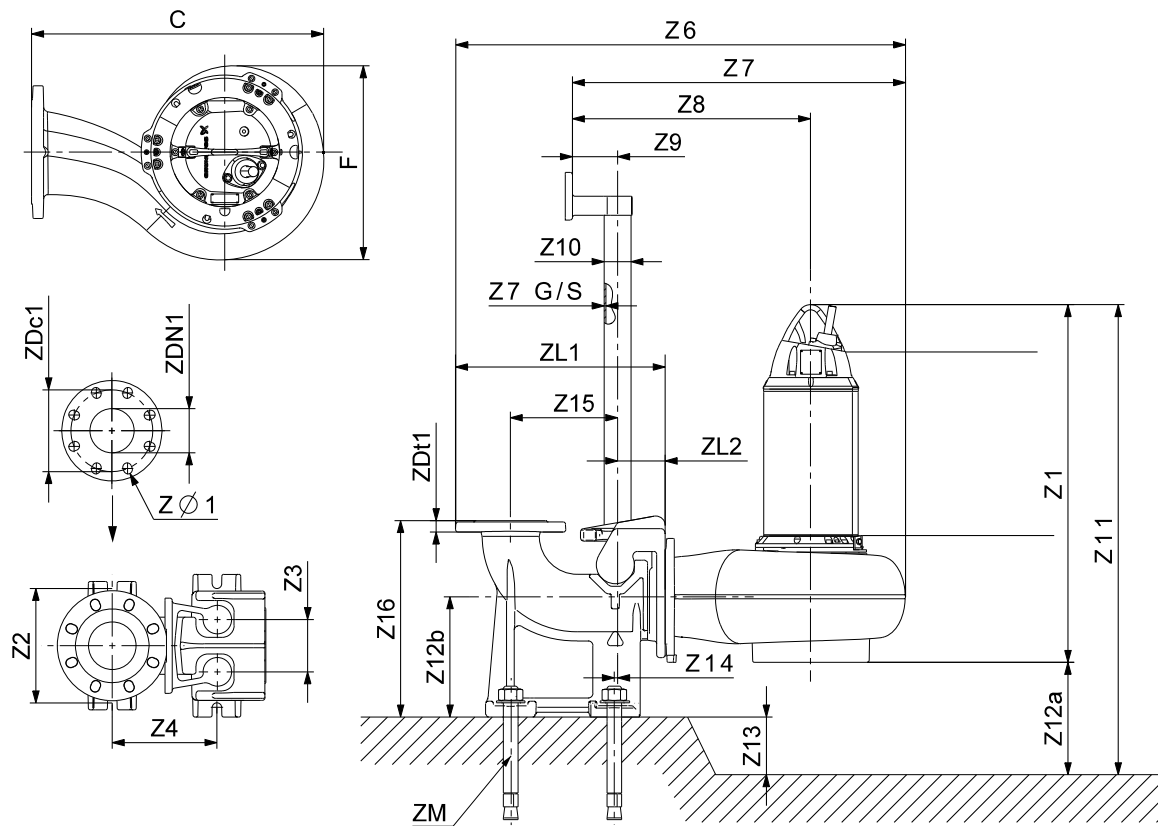
## Other accessories

Picture	Description	Max. load [kg]	SL1.80.100	SLV.80.100	SL1.100.150	SL1.120.200	SL1.140.250	SL1.140.300	SE1.80.100	SEV.80.100	SE1.100.150	SE1.120.200	SE1.140.250	SE1.140.300	Product number
	4 m hot dip galvanised lifting chain with lifting link and safety hook. With certificates.	800	•	•	•	•	•	•	•	•	•	•	•	•	96735550
	6 m hot dip galvanised lifting chain with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	•	•	96735553
	8 m hot dip galvanised lifting chain with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	•	•	96735554
	10 m hot dip galvanised lifting chain with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	•	•	96735556
	12 m hot dip galvanised lifting chain with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	•	•	96735557
	4 m stainless steel lifting chain (EN/DIN 1.4401) with lifting link and safety hook. With certificates.		•	•	•	•	•	•	•	•	•	•	•	•	•
	6 m stainless steel lifting chain (EN/DIN 1.4401) with lifting link and safety hook. With certificates.	•	•	•	•	•	•	•	•	•	•	•	•	•	96735564
	8 m stainless steel lifting chain (EN/DIN 1.4401) with lifting link and safety hook. With certificates.	•	•	•	•	•	•	•	•	•	•	•	•	•	96735566
	10 m stainless steel lifting chain (EN/DIN 1.4401) with lifting link and safety hook. With certificates.	•	•	•	•	•	•	•	•	•	•	•	•	•	96735567
	12 m stainless steel lifting chain (EN/DIN 1.4401) with lifting link and safety hook. With certificates.	•	•	•	•	•	•	•	•	•	•	•	•	•	96735569

TM02 6126 5102

## 13. Dimensions

## Auto coupling



TM05 2579 0312

Fig. 28 Auto coupling dimensions

Pump type	C	F	ZØ1	Z1	Z2	Z3	Z4	Z6	Z7	Z8	Z9	Z10	Z11	Z12a	Z12b
SE1.75.100.130.2.52S.C	480	384	8 x 20	1106	260	110	220	926	700	505	110	60.3	1251	140	240
SE1.75.100.150.2.52S.C	480	384	8 x 20	1106	260	110	220	926	700	505	110	60.3	1251	140	240
SE1.75.100.170.2.52S.C	480	384	8 x 20	1106	260	110	220	926	700	505	110	60.3	1251	140	240
SE1.75.100.185.2.52S.C	480	384	8 x 20	1106	260	110	220	926	700	505	110	60.3	1251	140	240
SE1.80.100.200.2.52S.C	480	384	8 x 20	1122	260	110	220	926	700	505	110	60.3	1251	140	240
SE1.80.100.220.2.52S.C	480	384	8 x 20	1122	260	110	220	926	700	505	110	60.3	1251	140	240
SE1.80.100.240.2.52S.C	480	384	8 x 20	1122	260	110	220	926	700	505	110	60.3	1251	140	240
SE1.80.100.265.2.52S.C	480	384	8 x 20	1122	260	110	220	926	700	505	110	60.3	1251	140	240
SE1.85.150.90.4.52H.C	605	485	8 x 23	1125	287	123	280	1176	862	637	110	88	1246	120	275
SE1.85.150.110.4.52H.C	605	485	8 x 23	1125	287	123	280	1176	862	637	110	88	1246	120	275
SE1.85.150.130.4.52H.C	605	485	8 x 23	1125	287	123	280	1176	862	637	110	88	1246	120	275
SE1.85.150.150.4.52H.C	605	485	8 x 23	1125	287	123	280	1176	862	637	110	88	1246	120	275
SE1.95.150.170.4.52H.C	620	485	8 x 23	1126	287	123	280	1191	877	637	110	88	1246	120	275
SE1.95.150.185.4.52H.C	620	485	8 x 23	1126	287	123	280	1191	877	637	110	88	1246	120	275
SE1.95.150.200.4.52H.C	620	485	8 x 23	1126	287	123	280	1191	877	637	110	88	1246	120	275
SE1.95.150.220.4.52H.C	620	485	8 x 23	1126	287	123	280	1191	877	637	110	88	1246	120	275
SE1.110.200.90.4.52M.C	755	570	8 x 23	1153	430	200	535	1546	1147	892	170	88	1293	140	196
SE1.110.200.110.4.52M.C	755	570	8 x 23	1153	430	200	535	1546	1147	892	170	88	1293	140	196
SE1.110.200.130.4.52M.C	755	570	8 x 23	1153	430	200	535	1546	1147	892	170	88	1293	140	196
SE1.110.200.150.4.52M.C	755	570	8 x 23	1153	430	200	535	1546	1147	892	170	88	1293	140	196
SE1.110.200.170.4.52M.C	785	570	8 x 23	1153	430	200	535	1546	1147	892	170	88	1293	140	196
SE1.110.200.185.4.52M.C	785	570	8 x 23	1153	430	200	535	1546	1147	892	170	88	1293	140	196
SE1.110.200.200.4.52M.C	785	570	8 x 23	1153	430	200	535	1546	1147	892	170	88	1293	140	196
SE1.110.200.220.4.52M.C	785	570	8 x 23	1153	430	200	535	1546	1147	892	170	88	1293	140	196
SE1.140.250.130.4.52L.C	830	660	12 x 23	1224	471	200	565	1629	1222	892	170	88	1364	140	224
SE1.140.250.150.4.52L.C	830	660	12 x 23	1224	471	200	565	1629	1222	892	170	88	1364	140	224
SE1.140.250.170.4.52L.C	830	660	12 x 23	1224	471	200	565	1629	1222	892	170	88	1364	140	224
SE1.140.250.185.4.52L.C	830	660	12 x 23	1224	471	200	565	1629	1222	892	170	88	1364	140	224
SE1.140.250.200.4.52L.C	830	660	12 x 23	1224	471	200	565	1629	1222	892	170	88	1364	140	224
SE1.140.250.220.4.52L.C	830	660	12 x 23	1224	471	200	565	1629	1222	892	170	88	1364	140	224



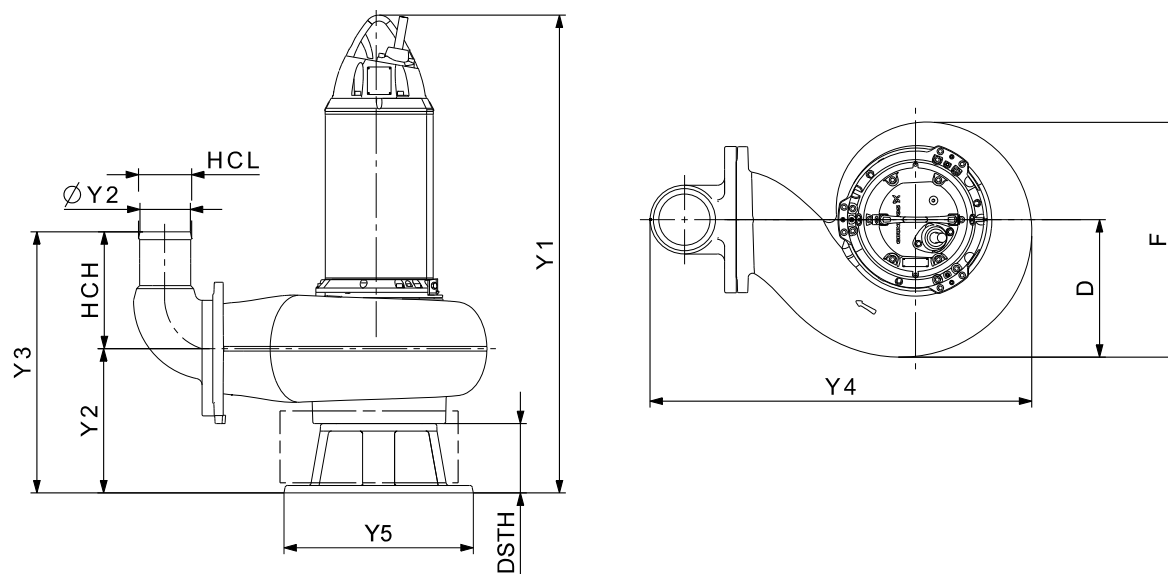
Pump type	C	F	ZØ1	Z1	Z2	Z3	Z4	Z6	Z7	Z8	Z9	Z10	Z11	Z12a	Z12b
SE1.160.300.110.6.52E.C	965	735	12 x 23	1292	551	200	670	1866	1357	992	170	88	1452	160	256
SE1.160.300.130.6.52E.C	965	735	12 x 23	1292	551	200	670	1866	1357	992	170	88	1452	160	256
SE1.160.300.160.6.52E.C	965	735	12 x 23	1292	551	200	670	1866	1357	992	170	88	1452	160	256
SE1.160.300.180.6.52E.C	965	735	12 x 23	1292	551	200	670	1866	1357	992	170	88	1452	160	256
SEV.80.80.130.2.52H.C	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SEV.80.80.150.2.52H.C	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SEV.80.80.170.2.52H.C	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SEV.80.80.185.2.52H.C	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SEV.80.80.200.2.52H.C	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SEV.80.80.220.2.52H.C	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SEV.80.80.240.2.52H.C	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SEV.80.80.265.2.52H.C	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SL1.75.100.130.2.52S.S	480	384	8 x 20	1106	260	110	220	926	700	505	110	60.3	1246	140	240
SL1.75.100.150.2.52S.S	480	384	8 x 20	1106	260	110	220	926	700	505	110	60.3	1246	140	240
SL1.75.100.170.2.52S.S	480	384	8 x 20	1106	260	110	220	926	700	505	110	60.3	1246	140	240
SL1.75.100.185.2.52S.S	480	384	8 x 20	1106	260	110	220	926	700	505	110	60.3	1246	140	240
SL1.80.100.200.2.52S.S	480	384	8 x 20	1122	260	110	220	926	700	505	110	60.3	1251	140	240
SL1.80.100.220.2.52S.S	480	384	8 x 20	1122	260	110	220	926	700	505	110	60.3	1251	140	240
SL1.80.100.240.2.52S.S	480	384	8 x 20	1122	260	110	220	926	700	505	110	60.3	1251	140	240
SL1.80.100.265.2.52S.S	480	384	8 x 20	1122	260	110	220	926	700	505	110	60.3	1251	140	240
SL1.85.150.90.4.52H.S	605	485	8 x 23	1125	287	123	280	1176	862	637	110	88	1245	120	275
SL1.85.150.110.4.52H.S	605	485	8 x 23	1125	287	123	280	1176	862	637	110	88	1245	120	275
SL1.85.150.130.4.52H.S	605	485	8 x 23	1125	287	123	280	1176	862	637	110	88	1245	120	275
SL1.85.150.150.4.52H.S	605	485	8 x 23	1125	287	123	280	1176	862	637	110	88	1245	120	275
SL1.95.150.170.4.52H.S	620	485	8 x 23	1126	287	123	280	1191	877	637	110	88	1246	120	275
SL1.95.150.185.4.52H.S	620	485	8 x 23	1126	287	123	280	1191	877	637	110	88	1246	120	275
SL1.95.150.200.4.52H.S	620	485	8 x 23	1126	287	123	280	1191	877	637	110	88	1246	120	275
SL1.95.150.220.4.52H.S	620	485	8 x 23	1126	287	123	280	1191	877	637	110	88	1246	120	275
SL1.110.200.90.4.52M.S	755	570	8 x 23	1153	430	200	535	1546	1147	892	170	88	1293	140	196
SL1.110.200.110.4.52M.S	755	570	8 x 23	1153	430	200	535	1546	1147	892	170	88	1293	140	196
SL1.110.200.130.4.52M.S	755	570	8 x 23	1153	430	200	535	1546	1147	892	170	88	1293	140	196
SL1.110.200.150.4.52M.S	755	570	8 x 23	1153	430	200	535	1546	1147	892	170	88	1293	140	196
SL1.110.200.170.4.52M.S	785	570	8 x 23	1153	430	200	535	1546	1177	892	170	88	1293	140	196
SL1.110.200.185.4.52M.S	785	570	8 x 23	1153	430	200	535	1546	1177	892	170	88	1293	140	196
SL1.110.200.200.4.52M.S	785	570	8 x 23	1153	430	200	535	1546	1177	892	170	88	1293	140	196
SL1.110.200.220.4.52M.S	785	570	8 x 23	1153	430	200	535	1546	1177	892	170	88	1293	140	196
SL1.140.250.130.4.52L.S	830	660	12 x 23	1224	471	200	565	1629	1222	892	170	88	1364	140	224
SL1.140.250.150.4.52L.S	830	660	12 x 23	1224	471	200	565	1629	1222	892	170	88	1364	140	224
SL1.140.250.170.4.52L.S	830	660	12 x 23	1224	471	200	565	1629	1222	892	170	88	1364	140	224
SL1.140.250.185.4.52L.S	830	660	12 x 23	1224	471	200	565	1629	1222	892	170	88	1364	140	224
SL1.140.250.200.4.52L.S	830	660	12 x 23	1224	471	200	565	1629	1222	892	170	88	1364	140	224
SL1.140.250.220.4.52L.S	830	660	12 x 23	1224	471	200	565	1629	1222	892	170	88	1364	140	224
SL1.160.300.110.6.52E.S	965	735	12 x 23	1292	551	200	670	1866	1357	992	170	88	1452	160	256
SL1.160.300.130.6.52E.S	965	735	12 x 23	1292	551	200	670	1866	1357	992	170	88	1452	160	256
SL1.160.300.160.6.52E.S	965	735	12 x 23	1292	551	200	670	1866	1357	992	170	88	1452	160	256
SL1.160.300.180.6.52E.S	965	735	12 x 23	1292	551	200	670	1866	1357	992	170	88	1452	160	256
SLV.80.80.130.2.52H.S	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SLV.80.80.150.2.52H.S	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SLV.80.80.170.2.52H.S	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SLV.80.80.185.2.52H.S	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SLV.80.80.200.2.52H.S	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SLV.80.80.220.2.52H.S	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SLV.80.80.240.2.52H.S	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240
SLV.80.80.265.2.52H.S	525	385	8 x 20	1090	260	110	220	988	762	567	110	60.3	1190	100	240

Pump type	Z13	Z14	Z15	Z16	Z17G	Z17S	ZDC1	ZDN1	ZDT1	ZL1	ZL2	ZM
SE1.75.100.130.2.52S.C	37	0	220	413	3.0	3.0	180	DN 100	22	446	110	4 X M16
SE1.75.100.150.2.52S.C	37	0	220	413	3.0	3.0	180	DN 100	22	446	110	4 X M16
SE1.75.100.170.2.52S.C	37	0	220	413	3.0	3.0	180	DN 100	22	446	110	4 X M16
SE1.75.100.185.2.52S.C	37	0	220	413	3.0	3.0	180	DN 100	22	446	110	4 X M16
SE1.80.100.200.2.52S.C	37	0	220	413	3.0	3.0	180	DN 100	22	446	110	4 X M16
SE1.80.100.220.2.52S.C	37	0	220	413	3.0	3.0	180	DN 100	22	446	110	4 X M16
SE1.80.100.240.2.52S.C	37	0	220	413	3.0	3.0	180	DN 100	22	446	110	4 X M16
SE1.80.100.265.2.52S.C	37	0	220	413	3.0	3.0	180	DN 100	22	446	110	4 X M16
SE1.85.150.90.4.52H.C	18	0	280	450	3.0	3.0	240	DN 150	25	571	147	4 X M16
SE1.85.150.110.4.52H.C	18	0	280	450	3.0	3.0	240	DN 150	25	571	147	4 X M16
SE1.85.150.130.4.52H.C	18	0	280	450	3.0	3.0	240	DN 150	25	571	147	4 X M16
SE1.85.150.150.4.52H.C	18	0	280	450	3.0	3.0	240	DN 150	25	571	147	4 X M16
SE1.95.150.170.4.52H.C	18	0	280	450	3.0	3.0	240	DN 150	25	571	147	4 X M16
SE1.95.150.185.4.52H.C	18	0	280	450	3.0	3.0	240	DN 150	25	571	147	4 X M16



## Ring stand



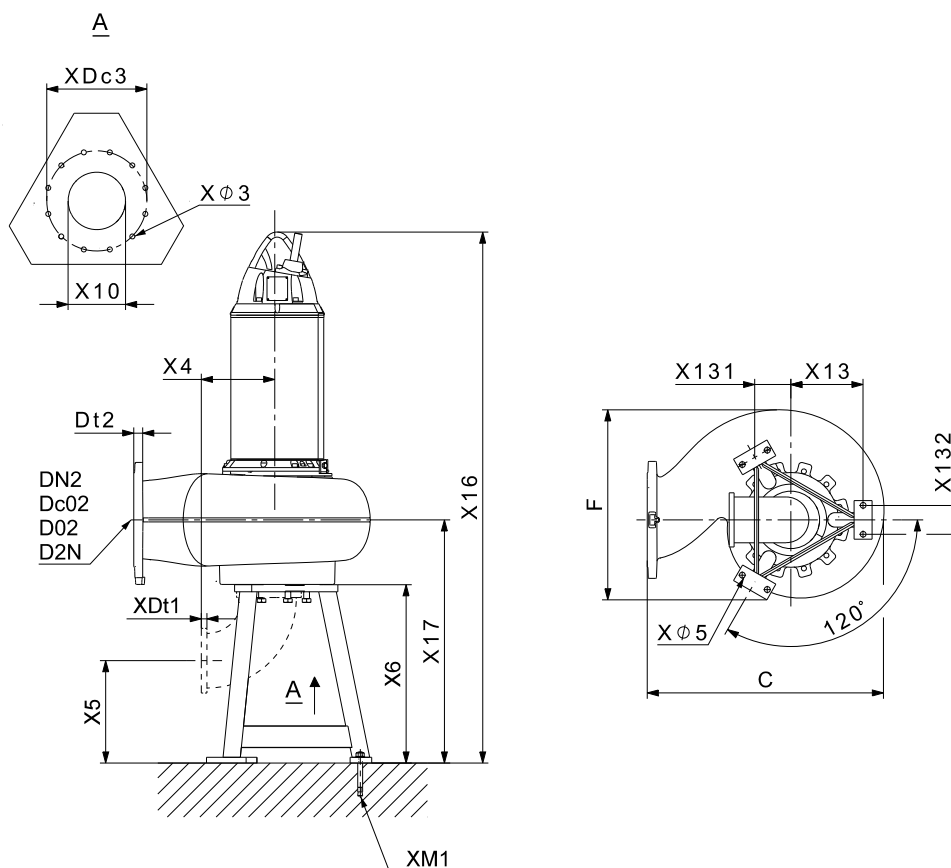
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Fig. 29 Ring stand dimensions

Pump type	YØ2	Y1	Y2	Y3	Y4	Y5	HCH	DSTH	D	F
SE1.75.100.130.2.52S.C	105	1236	267	444	605	355	177	130	192	384
SE1.75.100.150.2.52S.C	105	1236	267	444	605	355	177	130	192	384
SE1.75.100.170.2.52S.C	105	1236	267	444	605	355	177	130	192	384
SE1.75.100.185.2.52S.C	105	1236	267	444	605	355	177	130	192	384
SE1.80.100.200.2.52S.C	105	1252	267	444	605	355	177	130	192	384
SE1.80.100.220.2.52S.C	105	1252	267	444	605	355	177	130	192	384
SE1.80.100.240.2.52S.C	105	1252	267	444	605	355	177	130	192	384
SE1.80.100.265.2.52S.C	105	1252	267	444	605	355	177	130	192	384
SE1.85.150.90.4.52H.C	150	1125	173	173	380	450	273	186	266	485
SE1.85.150.110.4.52H.C	150	1125	173	173	380	450	273	186	266	485
SE1.85.150.130.4.52H.C	150	1125	173	173	380	450	273	186	266	485
SE1.85.150.150.4.52H.C	150	1125	173	173	380	450	273	186	266	485
SE1.95.150.170.4.52H.C	150	1126	173	173	380	450	273	186	266	485
SE1.95.150.185.4.52H.C	150	1126	173	173	380	450	273	186	266	485
SE1.95.150.200.4.52H.C	150	1126	173	173	380	450	273	186	266	485
SE1.95.150.220.4.52H.C	150	1126	173	173	380	450	273	186	266	485
SE1.110.200.90.4.52M.C	205	1313	347	782	1193	550	435	160	252	570
SE1.110.200.110.4.52M.C	205	1313	347	782	1193	550	435	160	252	570
SE1.110.200.130.4.52M.C	205	1313	347	782	1193	550	435	160	252	570
SE1.110.200.150.4.52M.C	205	1313	347	782	1193	550	435	160	252	570
SE1.110.200.170.4.52M.C	205	1313	347	782	1193	550	435	160	252	570
SE1.110.200.185.4.52M.C	205	1313	347	782	1193	550	435	160	252	570
SE1.110.200.200.4.52M.C	205	1313	347	782	1193	550	435	160	252	570
SE1.110.200.220.4.52M.C	205	1313	347	782	1193	550	435	160	252	570
SEV.80.80.130.2.52H.C	79	1220	280	422	626	355	142	130	192	385
SEV.80.80.150.2.52H.C	79	1220	280	422	626	355	142	130	192	385
SEV.80.80.170.2.52H.C	79	1220	280	422	626	355	142	130	192	385
SEV.80.80.185.2.52H.C	79	1220	280	422	626	355	142	130	192	385
SEV.80.80.200.2.52H.C	79	1220	280	422	626	355	142	130	192	385
SEV.80.80.220.2.52H.C	79	1220	280	422	626	355	142	130	192	385
SEV.80.80.240.2.52H.C	79	1220	280	422	626	355	142	130	192	385
SEV.80.80.265.2.52H.C	79	1220	280	422	626	355	142	130	192	385
SL1.75.100.130.2.52S.S	105	1236	267	444	605	355	177	130	192	384
SL1.75.100.150.2.52S.S	105	1236	267	444	605	355	177	130	192	384
SL1.75.100.170.2.52S.S	105	1236	267	444	605	355	177	130	192	384
SL1.75.100.185.2.52S.S	105	1236	267	444	605	355	177	130	192	384
SL1.80.100.200.2.52S.S	105	1252	267	444	605	355	177	130	192	384
SL1.80.100.220.2.52S.S	105	1252	267	444	605	355	177	130	192	384
SL1.80.100.240.2.52S.S	105	1252	267	444	605	355	177	130	192	384
SL1.80.100.265.2.52S.S	105	1252	267	444	605	355	177	130	192	384
SL1.85.150.90.4.52H.S	150	1125	173	173	380	450	273	186	266	485
SL1.85.150.110.4.52H.S	150	1125	173	173	380	450	273	186	266	485
SL1.85.150.130.4.52H.S	150	1125	173	173	380	450	273	186	266	485

Pump type	YØ2	Y1	Y2	Y3	Y4	Y5	HCH	DSTH	D	F
SL1.85.150.150.4.52H.S	150	1125	173	173	380	450	273	186	266	485
SL1.95.150.170.4.52H.S	150	1126	173	173	380	450	273	186	266	485
SL1.95.150.185.4.52H.S	150	1126	173	173	380	450	273	186	266	485
SL1.95.150.200.4.52H.S	150	1126	173	173	380	450	273	186	266	485
SL1.95.150.220.4.52H.S	150	1126	173	173	380	450	273	186	266	485
SL1.110.200.90.4.52M.S	205	1313	347	782	1193	550	435	160	252	570
SL1.110.200.110.4.52M.S	205	1313	347	782	1193	550	435	160	252	570
SL1.110.200.130.4.52M.S	205	1313	347	782	1193	550	435	160	252	570
SL1.110.200.150.4.52M.S	205	1313	347	782	1193	550	435	160	252	570
SL1.110.200.170.4.52M.S	205	1313	347	782	1193	550	435	160	252	570
SL1.110.200.185.4.52M.S	205	1313	347	782	1193	550	435	160	252	570
SL1.110.200.200.4.52M.S	205	1313	347	782	1193	550	435	160	252	570
SL1.110.200.220.4.52M.S	205	1313	347	782	1193	550	435	160	252	570
SLV.80.80.130.2.52H.S	79	1220	280	422	626	355	142	130	192	385
SLV.80.80.150.2.52H.S	79	1220	280	422	626	355	142	130	192	385
SLV.80.80.170.2.52H.S	79	1220	280	422	626	355	142	130	192	385
SLV.80.80.185.2.52H.S	79	1220	280	422	626	355	142	130	192	385
SLV.80.80.200.2.52H.S	79	1220	280	422	626	355	142	130	192	385
SLV.80.80.220.2.52H.S	79	1220	280	422	626	355	142	130	192	385
SLV.80.80.240.2.52H.S	79	1220	280	422	626	355	142	130	192	385
SLV.80.80.265.2.52H.S	79	1220	280	422	626	355	142	130	192	385

## Dry vertical



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Fig. 30 Dimensions, dry vertical

Pump type	C	E	F	X $\phi$ 3	X $\phi$ 5	X4	X6	X13	X131	X132	X15	X16	X17	XDc3	XDt1	XDt2	XM1
SE1.140.250.130.4.52L.D	830	500	660	23	N/A*	400	700	N/A*	N/A*	N/A*	N/A*	1947	929	350	28	28	M24X6
SE1.140.250.150.4.52L.D	830	500	660	23	N/A*	400	700	N/A*	N/A*	N/A*	N/A*	1947	929	350	28	28	M24X6
SE1.140.250.170.4.52L.D	830	500	660	23	N/A*	400	700	N/A*	N/A*	N/A*	N/A*	1947	929	350	28	28	M24X6
SE1.140.250.185.4.52L.D	830	500	660	23	N/A*	400	700	N/A*	N/A*	N/A*	N/A*	1947	929	350	28	28	M24X6
SE1.140.250.200.4.52L.D	830	500	660	23	N/A*	400	700	N/A*	N/A*	N/A*	N/A*	1947	929	350	28	28	M24X6
SE1.140.250.220.4.52L.D	830	500	660	23	N/A*	400	700	N/A*	N/A*	N/A*	N/A*	1947	929	350	28	28	M24X6
SE1.160.300.110.6.52E.D	965	600	735	23	N/A*	500	800	N/A*	N/A*	N/A*	N/A*	2115	1072	400	32	28	M24X6
SE1.160.300.130.6.52E.D	965	600	735	23	N/A*	500	800	N/A*	N/A*	N/A*	N/A*	2115	1072	400	32	28	M24X6
SE1.160.300.160.6.52E.D	965	600	735	23	N/A*	500	800	N/A*	N/A*	N/A*	N/A*	2115	1072	400	32	28	M24X6
SE1.160.300.180.6.52E.D	965	600	735	23	N/A*	500	800	N/A*	N/A*	N/A*	N/A*	2115	1072	400	32	28	M24X6

\* Contact Grundfos for dimensions.

## Dry horizontal

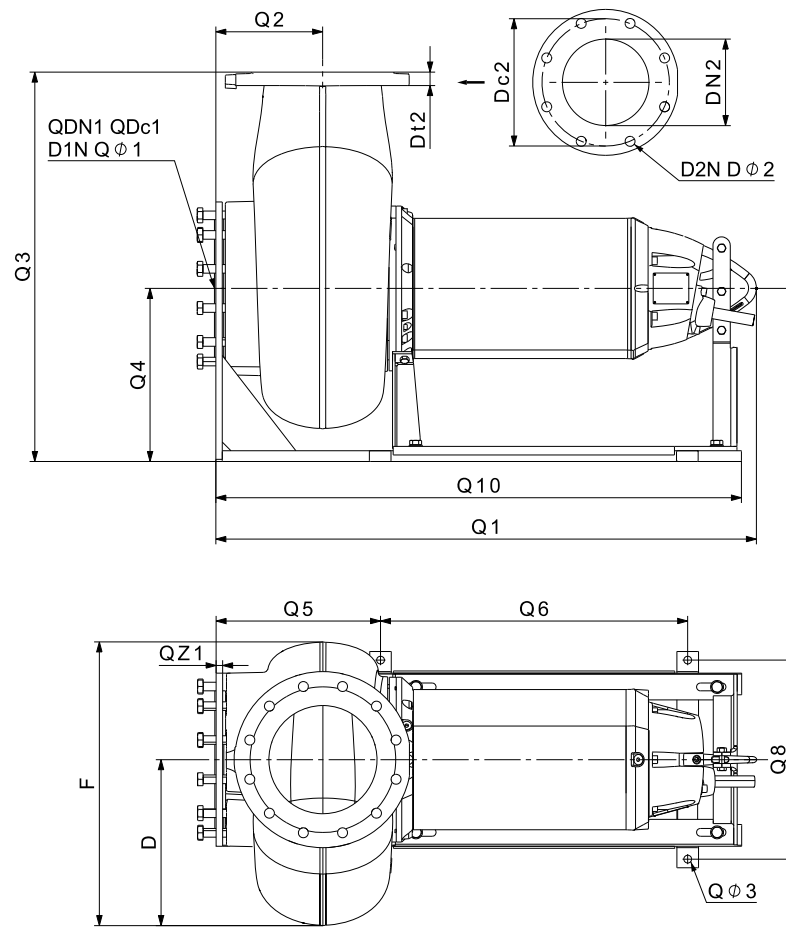


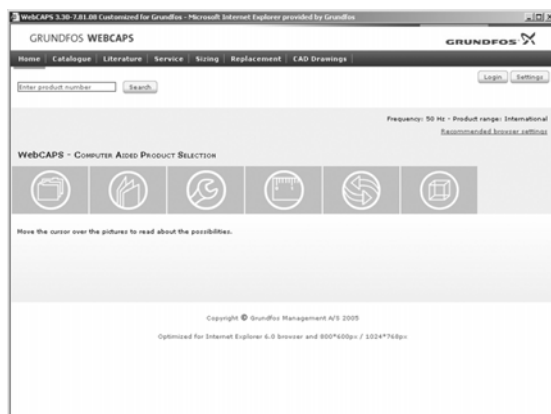
Fig. 31 Dimensions, dry horizontal

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Pump type	D	F	Q1	Q2	Q3	Q4	Q5	Q6	Q8	Q10	QZ1	QDc1	QDN	QØ1	D1N	DØ2	D2N	Dc2	DN2	DT2	QØ3
SE1.75.100.130.2.52S.H	192	384	1124	155	685	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN100	25	18
SE1.75.100.150.2.52S.H	192	384	1124	155	685	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN100	25	18
SE1.75.100.170.2.52S.H	192	384	1124	155	685	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN100	25	18
SE1.75.100.185.2.52S.H	192	384	1124	155	685	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN100	25	18
SE1.80.100.200.2.52S.H	192	384	1140	155	685	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN100	25	18
SE1.80.100.220.2.52S.H	192	384	1140	155	685	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN100	25	18
SE1.80.100.240.2.52S.H	192	384	1140	155	685	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN100	25	18
SE1.80.100.265.2.52S.H	192	384	1140	155	685	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN100	25	18
SE1.85.150.90.4.52H.H	266	485	1143	191	780	400	380	710	460	1215	18	240	DN150	M20	8	23	8	-	DN150	27	18
SE1.85.150.110.4.52H.H	266	485	1143	191	780	400	380	710	460	1215	18	240	DN150	M20	8	23	8	-	DN150	27	18
SE1.85.150.130.4.52H.H	266	485	1143	191	780	400	380	710	460	1215	18	240	DN150	M20	8	23	8	-	DN150	27	18
SE1.85.150.150.4.52H.H	266	485	1143	191	780	400	380	710	460	1215	18	240	DN150	M20	8	23	8	-	DN150	27	18
SE1.95.150.170.4.52H.H	266	485	1144	191	780	400	380	710	460	1215	18	240	DN150	M20	8	23	8	-	DN150	27	18
SE1.95.150.185.4.52H.H	266	485	1144	191	780	400	380	710	460	1215	18	240	DN150	M20	8	23	8	-	DN150	27	18
SE1.95.150.200.4.52H.H	266	485	1144	191	780	400	380	710	460	1215	18	240	DN150	M20	8	23	8	-	DN150	27	18
SE1.95.150.220.4.52H.H	266	485	1144	191	780	400	380	710	460	1215	18	240	DN150	M20	8	23	8	-	DN150	27	18
SE1.110.200.90.4.52M.H	252	570	1172	205	900	400	380	710	460	1215	18	295	DN200	M20	8	23	8	-	DN200	30	18
SE1.110.200.110.4.52M.H	252	570	1172	205	900	400	380	710	460	1215	18	295	DN200	M20	8	23	8	-	DN200	30	18
SE1.110.200.130.4.52M.H	252	570	1172	205	900	400	380	710	460	1215	18	295	DN200	M20	8	23	8	-	DN200	30	18
SE1.110.200.150.4.52M.H	252	570	1172	205	900	400	380	710	460	1215	18	295	DN200	M20	8	23	8	-	DN200	30	18
SE1.110.200.170.4.52M.H	252	570	1171	205	900	400	380	710	460	1215	18	295	DN200	M20	8	23	8	-	DN200	30	18
SE1.110.200.185.4.52M.H	252	570	1171	205	900	400	380	710	460	1215	18	295	DN200	M20	8	23	8	-	DN200	30	18
SE1.110.200.200.4.52M.H	252	570	1171	205	900	400	380	710	460	1215	18	295	DN200	M20	8	23	8	-	DN200	30	18
SE1.110.200.220.4.52M.H	252	570	1171	205	900	400	380	710	460	1215	18	295	DN200	M20	8	23	8	-	DN200	30	18
SE1.140.250.130.4.52L.H	385	660	1242	247	900	400	380	710	460	1215	18	350	DN250	M20	12	23	12	-	DN250	31	18
SE1.140.250.150.4.52L.H	385	660	1242	247	900	400	380	710	460	1215	18	350	DN250	M20	12	23	12	-	DN250	31	18
SE1.140.250.170.4.52L.H	385	660	1242	247	900	400	380	710	460	1215	18	350	DN250	M20	12	23	12	-	DN250	31	18
SE1.140.250.185.4.52L.H	385	660	1242	247	900	400	380	710	460	1215	18	350	DN250	M20	12	23	12	-	DN250	31	18
SE1.140.250.200.4.52L.H	385	660	1242	247	900	400	380	710	460	1215	18	350	DN250	M20	12	23	12	-	DN250	31	18
SE1.140.250.220.4.52L.H	385	660	1242	247	900	400	380	710	460	1215	18	350	DN250	M20	12	23	12	-	DN250	31	18
SE1.160.300.110.6.52E.H	430	735	1310	290	1000	400	380	710	460	1275	18	400	DN300	M20	12	23	12	-	DN300	34	18
SE1.160.300.130.6.52E.H	430	735	1310	290	1000	400	380	710	460	1275	18	400	DN300	M20	12	23	12	-	DN300	34	18
SE1.160.300.160.6.52E.H	430	735	1310	290	1000	400	380	710	460	1275	18	400	DN300	M20	12	23	12	-	DN300	34	18
SE1.160.300.180.6.52E.H	430	735	1310	290	1000	400	380	710	460	1275	18	400	DN300	M20	12	23	12	-	DN300	34	18
SEV.80.80.130.2.52H.H	192	385	1108	168	730	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN80	25	18
SEV.80.80.150.2.52H.H	192	385	1108	168	730	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN80	25	18
SEV.80.80.170.2.52H.H	192	385	1108	168	730	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN80	25	18
SEV.80.80.185.2.52H.H	192	385	1108	168	730	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN80	25	18
SEV.80.80.200.2.52H.H	192	385	1108	168	730	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN80	25	18
SEV.80.80.220.2.52H.H	192	385	1108	168	730	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN80	25	18
SEV.80.80.240.2.52H.H	192	385	1108	168	730	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN80	25	18
SEV.80.80.265.2.52H.H	192	385	1108	168	730	400	380	710	460	1215	18	180	DN100	M16	8	18	8	-	DN80	25	18

# 14. Further product documentation

## WebCAPS



WebCAPS is a **Web**-based **Computer Aided Product Selection** program available on [www.grundfos.com](http://www.grundfos.com).

WebCAPS contains detailed information on more than 220,000 Grundfos products in more than 30 languages.

Information in WebCAPS is divided into six sections:

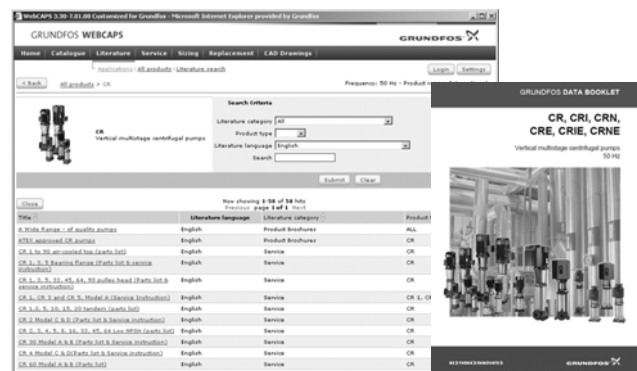
- Catalogue
- Literature
- Service
- Sizing
- Replacement
- CAD drawings.



### Catalogue

Based on fields of application and pump types, this section contains the following:

- technical data
- curves (QH, Eta, P1, P2 etc.) which can be adapted to the density and viscosity of the pumped liquid and which show the number of pumps in operation
- product photos
- dimensional drawings
- wiring diagrams
- quotation texts etc.



### Literature

This section contains all the latest documents of a given pump, such as

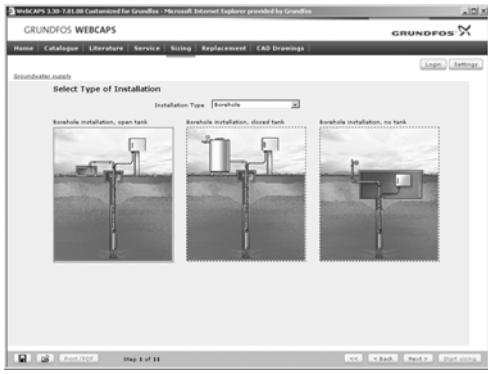
- data booklets
- installation and operating instructions
- service documentation, such as service kit catalogues and service kit instructions
- quick guides
- product brochures.




### Service

This section contains an easy-to-use interactive service catalogue. Here you can find and identify service parts of both existing and discontinued Grundfos pumps. Furthermore, the section contains service videos showing you how to replace service parts.

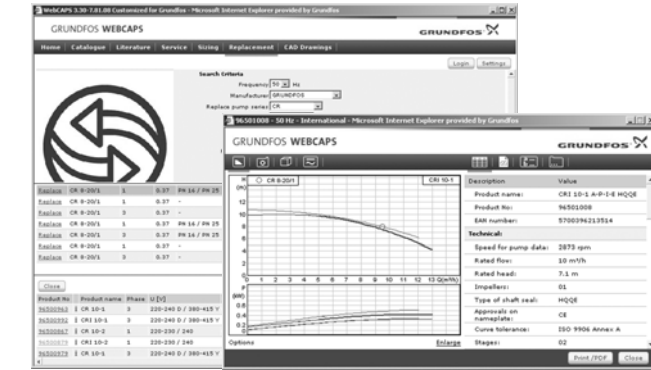





**Sizing** 

This section is based on different fields of application and installation examples and gives easy step-by-step instructions in how to size a product:

- Select the most suitable and efficient pump for your installation.
- Carry out advanced calculations based on energy, consumption, payback periods, load profiles, life cycle costs etc.
- Analyse your selected pump via the built-in life cycle cost tool.
- Determine the flow velocity in wastewater applications etc.

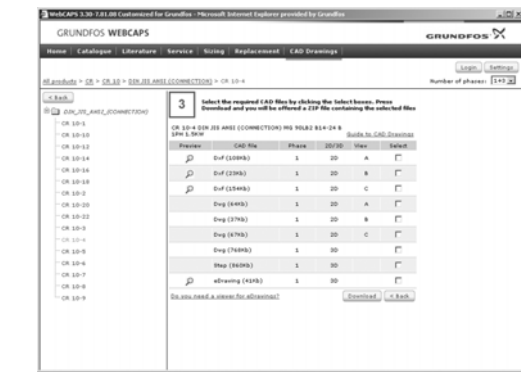


**Replacement** 

In this section, you find a guide to selecting and comparing replacement data of an installed pump with a view to replacing the pump with a more efficient Grundfos pump.

The section contains replacement data of a wide range of pumps produced by manufacturers other than Grundfos.

Based on an easy step-by-step guide, you can compare Grundfos pumps with the one you have installed at your site. When you have specified the installed pump, the guide will suggest a number of Grundfos pumps which can improve both comfort and efficiency.



**CAD drawings** 

In this section, you can download two-dimensional (2D) and three-dimensional (3D) CAD drawings of most Grundfos pumps.

These formats are available in WebCAPS:

2D drawings:

- .dxf, wireframe drawings
- .dwg, wireframe drawings.

3D drawings:

- .dwg, wireframe drawings (without surfaces)
- .stp, solid drawings (with surfaces)
- .eprt, E-drawings.

**WinCAPS**



Fig. 32 WinCAPS DVD

WinCAPS is a **Windows-based Computer Aided Product Selection** program containing detailed information on more than 220,000 Grundfos products in more than 30 languages.

The program contains the same features and functions as WebCAPS, but is an ideal solution if no Internet connection is available.

WinCAPS is available on DVD and is updated once a year.

Subject to alterations.





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