SE and SL pumps

9-30 kW

50 Hz

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GRUNDFOS

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1. Introduction

This data booklet describes Grundfos SE and SL heavy-duty wastewater pumps, 9-30 kW.

TM077249

SE and SL pumps

The 9-30 kW SE and SL pumps are a range of SuperVortex and S-**tube**® impeller pumps specifically designed for transferring 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 dry installation.

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 IEC and IE3 efficiency motor components. The motors are either 2-, 4- or 6-pole motors, depending on the motor size.

The free passage in the pumps is 35 to 125 mm.

The pumps are available for:

- freestanding, submerged installation on a ring stand
- submersible installation on an auto coupling with completely submerged motor
- submersible installation on an auto coupling with liquid covering the pump housing
- vertical dry installation
- horizontal dry installation.

1.1 Applications

- drainage and surface water
- domestic wastewater
- municipal wastewater
- industrial wastewater
- process and cooling water.

SE and SL pumps are ideal for pumping the above liquids from places such as:

- municipal network pumping stations
- inlet pumping stations in wastewater treatment plants
- primary and secondary clarification tanks in wastewater treatment plants
- stormwater pumping stations
- public buildings
- residential buildings
- factories and industry.

1.2 Hydraulic variants

To meet customer demands, Grundfos SE and SL pumps are offered with three different hydraulic platforms depending on hydraulic variant and pump size.

SE and SL wastewater pumps are available with:

- Open S-**tube**® (semi-open impeller) hydraulics (SE and SL).
- Closed S-**tube**® (channel impeller) hydraulics (SE1/SE2 and SL1/SL2).
- SuperVortex (free flow impeller) hydraulics (SEV and SLV).

SE/SL pumps with open S-tube® hydraulics

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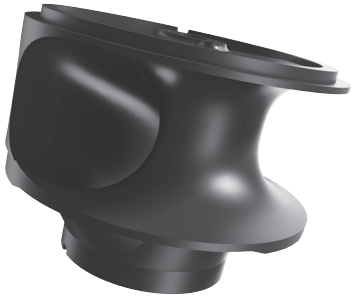
Grundfos SE/SL pumps with open S-**tube®** hydraulics are the ideal choice when there is a need for a wastewater pump with high wire-to-water efficiency and must operate over a wider Allowable Operating Range (AOR). Open S-**tube®** impellers can be trimmed to meet a specific duty-point

Pumps are available in the following material variants:

- Cast iron (standard solution) - Applicable for the vast majority of wastewater applications.
- Stainless steel - Q material variant (standard solution) - Applicable for the vast majority of wastewater applications with larger volume of abrasives.
- White cast iron - W material wariant (customised solution) - Ideal when the pumped liquid contains a high amount of abrasive solids.

SE/SL pumps are available in super-high – and high head variants.

SE1/SE2 and SL1/SL2 pumps with closed S-tube® hydraulics



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Grundfos SE/SL pumps with closed S-**tube®** (1- or 2-channel impellers, depending on pump size) hydraulics are the ideal choice when there is a need for a wastewater pump with large free passage and must operate with a wide and flat efficiency curve.

Pumps are available in the following material variants:

- Cast iron (standard solution)
  Applicable for the vast majority of wastewater applications.
- Stainless steel – Q material variant (standard solution)
  Applicable for the vast majority of wastewater applications with larger volume of abrasives.
- Duplex stainless steel (customised solution)
  Ideal when the pumped liquid contains a high amount of abrasive solids.

SEV/SLV pumps with SuperVortex hydraulics

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Grundfos SEV/SLV pumps with SuperVortex hydraulics are the ideal choice when you require a wastewater pump that has a free-flow impeller for higher efficiency, a large and uncompromised free spherical passage and is optimised for applications balancing a high solids content and relatively low operating hours. SuperVortex impellers can be trimmed to meet a specific duty-point.

Pumps are available in the following material variants:

- Cast iron (standard solution)
  Applicable in the vast majority of wastewater applications.
- Stainless steel – Q material variant (standard solution)
  Applicable for the vast majority of wastewater applications for a larger volume of abrasives.
- Duplex stainless steel (customised solution)
  Ideal when the pumped liquid contains a higher content of abrasive solids.

SEV/SLV pumps are available in super-high head variant.

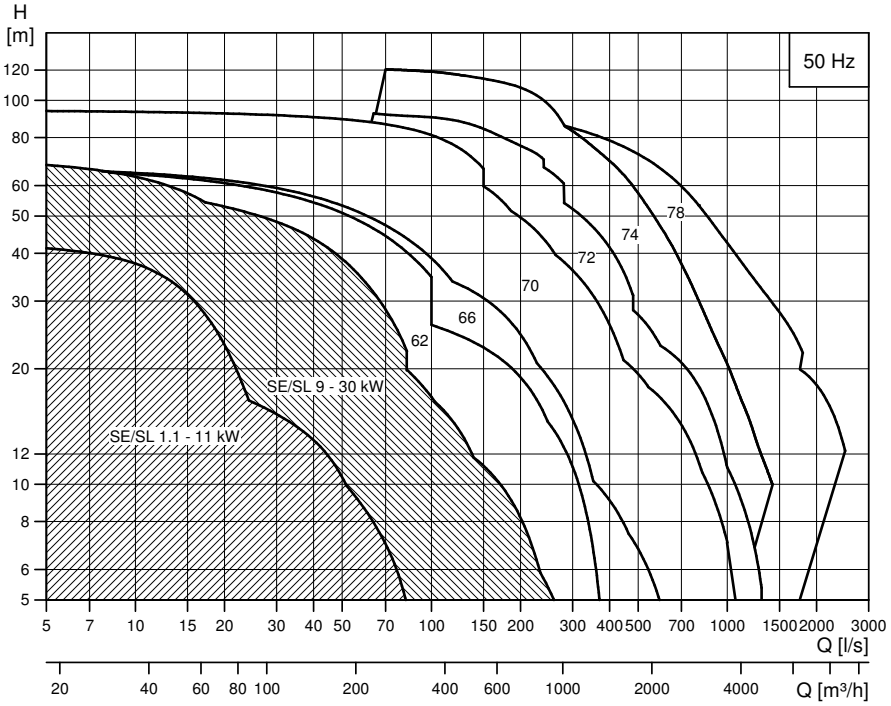
1.3 Product features

Grundfos SE and SL pumps offer the following benefits:

- optimzied high-efficiency and self-cleaning hydraulics to minimize the risk of clogging
- moisture-tight sealed cable entry at the motor top compartment made of corrosion-resistant stainless steel
- double mechanical cartridge shaft seals, fully assembled and tested at the factory, for reliable sealing between the liquid in the pump housing and the motor
- integrated sensors for continuous monitoring and protection of the pump during operation
- SmartTrim system allowing easy adjustment of the impeller clearance without disassembly of the pump, maintaining maximum performance throughout the life of the pump
- high-efficiency electrical motors built on IE3 motor components and fulfilling the latest standards
- explosion-proof pumps for applications involving a high risk of ignition.

2. Performance range

2.1 Performance range, SE, SL and S pumps



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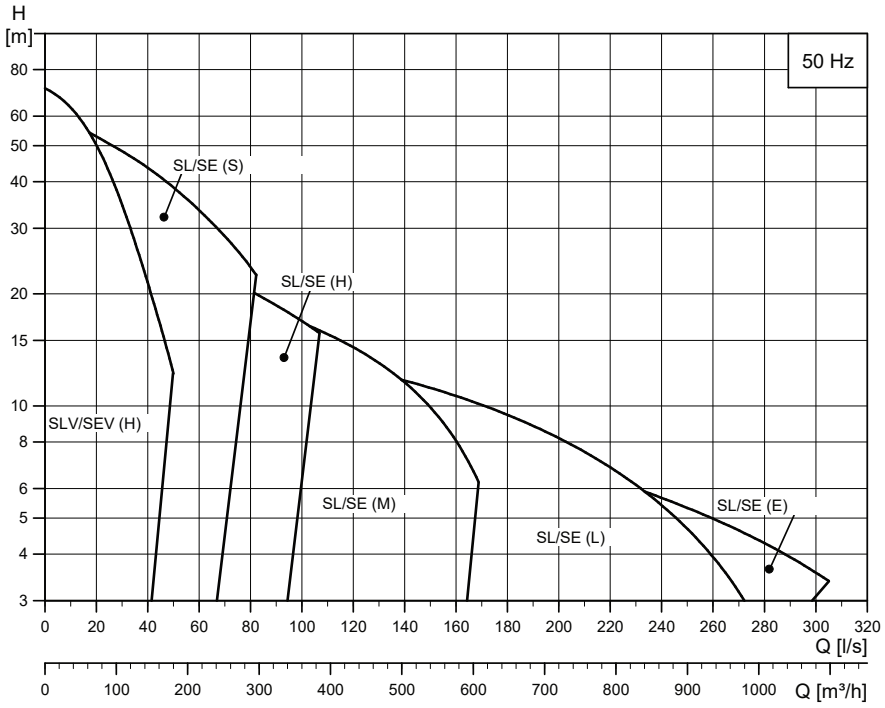
2.2 Performance range, SE and SL pumps



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3. Pump options

The SE and SL pumps can be customised to meet individual requirements. The following pump features and options are available:

- Sensor variant
  - Standard: pump fitted with standard sensors
  - A: pump fitted with sensor version 1*
  - B: pump fitted with sensor version 2*

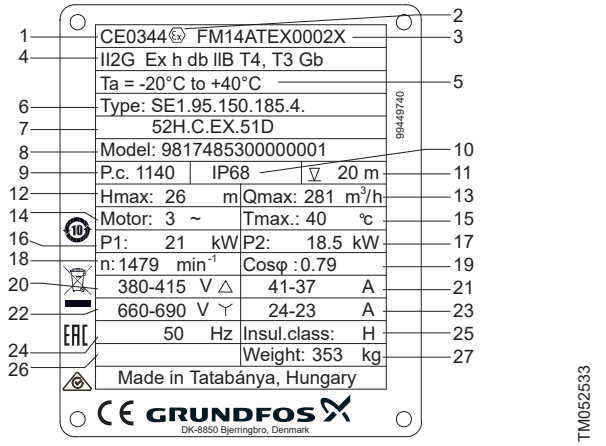
  * Use screened cables to ensure optimal data communication with the pump.
- Pressure range, see *2.1 Performance range, SE, SL and S pumps*
  - 52S: super-high head
  - 52H: high head
  - 52M: medium head
  - 52L: low head
  - 52E: extra-low head
- Material for closed S-**tube**® hydraulics
  - Standard: cast iron pump housing, cast iron impeller, cast iron motor housing
  - Stainless steel
    (Q variant)
    : cast iron pump housing, stainless steel impeller, cast iron motor housing
- Material for open S-**tube**® hydraulics
  - Standard: cast iron pump housing, cast iron impeller, cast iron suction cover, cast iron motor housing
  - Stainless steel
    (Q variant)
    : cast iron pump housing, stainless steel impeller, cast iron suction cover, cast iron motor housing
  - White iron (WI - customised solution): cast iron pump housing, white iron impeller, white iron suction cover, cast iron motor housing
- Material for SuperVortex hydraulics
  - Standard: cast iron pump housing, cast iron impeller, cast iron motor housing
  - Stainless steel
    (Q variant)
    : cast iron pump housing, stainless steel impeller, cast iron motor housing
- Pump version
  - N: pump without ATEX approval
  - Ex: pump with ATEX approval
- Supply voltage
  - 51D: star/delta start, 3 x 380-415 V (D), 660-690 V (Y)
  - 51E: star/delta start, 3 x 220-240 V (D), 380-415 V (Y)
  - 51N: 3 x 500-550 V (D)
- Thermal protection
  - Standard: thermal switches
  - T: thermistor (PTC), including 15 m power cable

For variants, see *5.3 Variants of customised pumps*. For requirements or designs not included in the list, contact Grundfos.

4. Identification

4.1 Nameplate

All pumps can be identified by the nameplate on the motor top cover.



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Nameplate example for Ex-proof pump

Pos.	Description
1	Approvals
2	EU explosion-proof motor Ex symbol
3	Explosion protection certificate no.
4	Ex description
5	Ambient temperature
6	Pump type designation
7	Pump type designation (line 2)
8	Model number
9	Production code (year and 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 φ, 1/1-load
20	Rated voltage, delta connection
21	Rated current, delta connection
22	Rated voltage, star connection
23	Rated current, star connection
24	Frequency
25	Insulation class
26	Approval
27	Weight without cable

4.2 Type key

Example: **SL1.110.200.245.4.52M.S.EX.61G.A**

Code	Explanation	Designation
SE	Sewage pump with cooling jacket	Pump type
SL	Sewage pump without cooling jacket	
[ ]	Open S-**tube**® impeller (semi-open)	Impeller type
1	Closed single-channel S-**tube**® impeller	
2	Closed two-channel S-**tube**® impeller	
V	SuperVortex (free-flow) impeller	
110	Maximum solids size	Pump free passage [mm]
200	Pump outlet nominal diameter	Pump outlet [mm]
245	24.5 kW: P2 / 10	Power [kW]
[ ]	Standard pump or standard Ex pump	Sensor version
A	Sensor version 1 or sensor version 1, Ex pump	
B	Sensor version 2 or sensor version 2, Ex pump	
2	2-pole motor	Number of poles
4	4-pole motor	
6	6-pole motor	
52	Frame size of the pump	Frame size
S	Super-high pressure	Pressure range
H	High pressure	
M	Medium pressure	
L	Low pressure	
E	Extra-low pressure	
S	Sewage pump without cooling jacket for vertical, submerged installation (SL)	Installation type
C	Sewage pump with cooling jacket for vertical, submerged installation (SE)	
D	Sewage pump with cooling jacket for vertical, dry installation (SE)	
H	Sewage pump with cooling jacket for horizontal, dry installation (SE)	
[ ]	Cast iron pump housing, cast iron impeller, cast iron suction cover, cast iron motor housing	Material code for pump housing, impeller, suction cover and motor housing
Q	Cast iron pump housing, stainless-steel impeller, cast iron suction cover, cast iron motor housing	
W	Cast iron pump housing, impeller and suction cover, cast iron motor housing	
N	Pump without ATEX approval	Pump version
EX	Pump with ATEX approval	
5	50 Hz	Frequency
6	60 Hz	
1D	3 × 380-415D, 660-690Y (Standard)	Voltage for 50 Hz
1E	3 × 220-240D, 380-415Y	
1N	3 × 500-550D	

Code	Explanation	Designation
1F	3 × 220-277D, 380-480Y	Voltage for 60 Hz
1G*	3 × 380-480D, 660-690Y (Standard)	
1M	3 × 500-600D	
11**	3 × 460D (Standard)	
15**	3 × 380D, 660Y	
[ ]	Thermal switches	Thermal protection
T	PTC thermistor	
[ ]	1st generation	Generation code
A	2nd generation	
Z	Custom-built products	Customisation

*Only for 2- and 4-pole motors.

**Only for 6-pole motors.

5. Product selection

Consider the following:

- Liquid type
- Inflow requirement
- Total head requirement
  - After a few months, the typical surface roughness in pipes is 0.5 to 1 mm.
- Size of the pipe on the discharge side
  - For a self-cleaning effect in the pipes, the flow velocity must exceed 1 m/s.
- Standby pump requirements
  - To avoid sedimentation, the pumps must be started at least twice a day.
- Inlet conditions to avoid cavitation
- Installation type
- Customisation
- Accessories

If sizing and selection is done via Grundfos Product Center in www.grundfos.com, the selection recommendations may list one or more standard pumps, for example:

Product name: SE1.85.100.130.4

- To identify the pump, use the Type key.

5.1 Hydraulics selection

Use the following tables to identify the most suitable pump hydraulics type.

Liquid description	Recommended material grade	Open S-tube® hydraulics without guide vane (standard)	Open S-tube® hydraulics with guide vane (optional)	Closed S-tube® hydraulics	Supervortex hydraulics	Recommendations
Surface water						
Drainage water	Grey cast iron	x		x	x	
	Stainless steel (Q variant)	x		x	x	
	White cast iron ((W variant))		x			
River water	Grey cast iron	x		x	x	Observe operating conditions when selecting optimal hydraulic variant.
	Stainless steel (Q variant)	x		x	x	Observe content of abrasives in the pumped liquid.
	White cast iron ((W variant))		x			Observe free passage through pump or consider pre-screening of water.
Storm water	Grey cast iron	x		x	x	
	Stainless steel (Q variant)	x		x	x	
	White cast iron ((W variant))		x			

Liquid description	Recommended material grade	Open S-tube® hydraulics without guide vane (standard)	Open S-tube® hydraulics with guide vane (optional)	Closed S-tube® hydraulics	Supervortex hydraulics	Recommendations
Wastewater						
Domestic wastewater from buildings	Grey cast iron	x		x	x	
	Stainless steel (Q variant)	x		x	x	
	White cast iron ((W variant))		x			
Untreated municipal wastewater	Grey cast iron	x		x	x	
	Stainless steel (Q variant)	x		x	x	
	White cast iron ((W variant))		x			Observe and consider:
High head/low flow wastewater handling	Grey cast iron	x		x	x	Local legislation and free passage through pump e.g. EN 12050.
	Stainless steel (Q variant)	x		x	x	Local legislation and free passage through pump e.g. EN 16932:2018.
	White cast iron ((W variant))		x			Open S-**tube**® hydraulics available with guide vane to swipe fibers away (optional solution).
Wastewater with long fibrous material	Grey cast iron	x		x	x	
	Stainless steel (Q variant)	x		x	x	Content of abrasives in the pumped liquid.
	White cast iron ((W variant))		x			Operational time and hydraulic efficiency.
Wastewater with abrassive/ unsuspended solids (dry matter content up to 3%)	Grey cast iron	x		x	x	The need for ceramic-coated pumps (optional).
	Stainless steel (Q variant)	x		x	x	
	White cast iron ((W variant))		x			
Wastewater with abrassive/ unsuspended solids (dry matter content up to 5%)	Grey cast iron	x		-	x	
	Stainless steel (Q variant)	(x)		-	x	
	White cast iron ((W variant))		x			

Liquid description	Recommended material grade	Open S-tube® hydraulics without guide vane (standard)	Open S-tube® hydraulics with guide vane (optional)	Closed S-tube® hydraulics	Supervortex hydraulics	Recommendations
Sludge						
Raw sludge with dry matter content up to 4% (un-screened)	Grey cast iron	x		x	x	Observe and consider: Local legislation and free passage through pump e.g. EN 12050. Local legislation and free passage through pump e.g. EN 16932:2018. Open S-**tube**® hydraulics available with guide vane to swipe fibers away (optional solution). Content of abrasives in the pumped liquid. Operational time and hydraulic efficiency. The need for ceramic-coated pumps (optional).
	Stainless steel (Q variant)	x		x	x	
	White cast iron (W variant)		x			
Digested sludge with dry matter content up to 4-5% depending on screening	Grey cast iron	x		x	x	
	Stainless steel (Q variant)	x		x	x	
	White cast iron (W variant)		x			
Activated sludge with dry matter content up to 4-5% depending on screening	Grey cast iron	x		x	x	
	Stainless steel (Q variant)	x		x	x	
	White cast iron (W variant)		x			
Industrial wastewater containing:						
Suspensions like paint, lacquer and varnish	Grey cast iron			x	x x	Observe and consider: Operating conditions when selecting optimal hydraulic variant. Open S-**tube**® hydraulics available with guide vane to swipe fibers away (optional solution). Operational time and hydraulic efficiency. Content of abrasives in the pumped liquid The need for ceramic-coated pumps (optional). The need for alternative seal face materials in shaft seals, contact Grundfos.
	Stainless steel (Q variant)			x	x x	
	White cast iron (W variant)				x	
Acidic wastewater (down to pH 6.5)	Grey cast iron			x	x x	
	Stainless steel (Q variant)			x	x x	
	White cast iron (W variant)				x	
Basic wastewater (up to pH 14)	Grey cast iron			x	x x	
	Stainless steel (Q variant)			x	x x	
	White cast iron (W variant)				x	
Highly abrasive industrial effluent, causing wear						
Lime water	Grey cast iron			(x)	(x) x	Consider operational time and hydraulic efficiency. Observe the need for ceramic-coated pumps in cast iron execution (optional). Observe the need for alternative seal face materials in shaft seals, contact Grundfos.
	Stainless steel (Q variant)			(x)	(x) x	
	White cast iron (W variant)			(x)		
Lime milk containing quartz and pigment suspensions	Grey cast iron			(x)	(x) x	
	Stainless steel (Q variant)			(x)	(x) x	
	White cast iron (W variant)			(x)		
Effluent industrial wastewater containing solids	Grey cast iron			(x)	(x) x	
	Stainless steel (Q variant)			(x)	(x) x	
	White cast iron (W variant)			(x)		
Effluent industrial wastewater containing high content of dust and ashes	Grey cast iron			(x)	(x) x	
	Stainless steel (Q variant)			(x)	(x) x	
	White cast iron (W variant)			(x)		

Additional water types						
Brackish water		Grey cast iron	x		x	x	Material variants depend on both temperature and chloride content of brackish water, see brochure titled "GRUNDFOS SL, SE, S PUMP VARIANTS, 1.1 - 520 kW (Product brochure)" (publication no. 97745765) available in Grundfos Product Center. Observe the need for cathodic protection and coating of the pump.
		Stainless steel (Q variant)	x		x	x	
		White cast iron (W variant)		x			
Sea water		Grey cast iron	x		x	x	
		Stainless steel (Q variant)	x		x	x	
		White cast iron (W variant)		x			

Legend

x	Recommended choice
(x)	Optional, contact Grundfos.

5.2 Basic pump configuration

- See *Type key* to identify the pump specification.

Example: Product name	
Pump type: Sewage pump with cooling jacket	SE
Impeller type: 1-channel, closed S-**tube**®	1.
Pump free passage: 85 mm	85.
Pump outlet: DN 100	100.
Power: 13 kW	130.
Sensor version: Standard pump or standard Ex pump	
Number of poles: 4-pole motor	4

Features of a standard pump:

- 10 m cable
- paint: NCS 9000N, RAL 9005 (black), average thickness 150 µm
- three thermal switches, one in each phase, or three thermal sensors (PTC)
- one moisture switch below the motor top cover
- one leakage switch in hte leakage chamber (standard pump) or in the bottom of the stator housing (standard Ex pump)
- tested according to ISO 9906:2012, grade 3B.

For selection of a standard pump, see *Performance curves and technical data*.

Note: For further information on technical data, visit the Grundfos Product Center.

5.3 Variants of customised pumps

Motor

Various cable lengths	Cable length depends on motor size and power supply.	10 m
		15 m
		25 m
		30 m
		50 m
EMC power cables	Screened power cables for variable-speed drives. Cable length depends on motor size and power supply. See the notification on the EMC cables in the *Product description*.	10 m
		15 m
		25 m
		30 m
		50 m
Special motor	Special voltage is available on request.	Contact Grundfos
PTC thermistors in windings		

Motor protection

Thermal switch/PTC + moisture switch	Standard
Thermal switch/PTC + moisture switch	Standard Ex version
Thermal switch/PTC + moisture switch + Pt1000	Sensor version 1
Thermal switch/PTC + moisture switch + Pt1000	Sensor Ex version 1
Thermal switch/PTC + moisture switch + Pt1000 + PVS3 + SM 113 and IO 113*	Sensor version 2
Thermal switch/PTC + moisture switch + Pt1000 + PVS3 + SM 113 and IO 113*	Sensor Ex version 2

* IO 113 is not part of the pump delivery. It must be ordered separately.

Tests *

Test at specified duty point based on standard impeller/curve	
Trimmed impeller for specified duty test	(Only SuperVortex impellers)
Duty point verification report (according to ISO 9906:2012 grade 3B)	Duty point verification test guaranteed by Grundfos
Duty point verification report (according to ISO 9906:2012 grade 2B and 2U)	Duty point verification test guaranteed by Grundfos
Duty point verification report (according to ISO 9906:2012 grade 1B and 1U)	Duty point verification test guaranteed by Grundfos
Performance test report (according to grade 3B)	
Performance test report (according to grade 2B and 2U)	
Performance test report (according to grade 1B, 1E and 1U)	
Witness test	

Note: Test requests must be specified upon ordering.

* For tests and test reports, contact Grundfos.

Certificates *

ATEX-approved-pump report	Special Grundfos report
Certificate of compliance with order	According to EN10204 2.1
Impeller balancing certificate	
Pump certificate	According to EN10204 2.2
Inspection certificate	According to EN10204 3.1
Material specification report	According to EN10204 3.1B
Material report with certificate	According to EN10204 3.2
Hydrostatic pressure test certificate	
Painting certificate (including verification of painting thickness)	
Electric motor test report certificate	
Inspection certificate, Lloyds Register	According to EN10204 3.2
Inspection certificate, DNV (Det Norske Veritas)	According to EN10204 3.2
Inspection certificate, Germanischer Lloyd	According to EN10204 3.2

Inspection certificate, American Bureau of Shipping	According to EN10204 3.2
Inspection certificate, Bureau Veritas	According to EN10204 3.2
Inspection certificate, Registro Italiano Navale Agenture	According to EN10204 3.2
Other third-party test certificates	
IECEx approved pump	
IECEx approved report	(special Grundfos report)

* For certificates, contact Grundfos.

Miscellaneous *

Duplex stainless-steel impeller according to EN1.4517	Increased resistance against abrasive liquids
White iron impeller and white iron suction cover with guide vane	Resistant to high/extreme content of long fibres
FKM sealing (optional)	Resistant to acids Resistant to mineral and vegetable oils Resistant to most solvents, such as toluene, petrol, trichloroethylene
Cable protection hose	Resistant to acids Resistant to most oils Resistant to most solvents
Ceramic coating of impeller and pump housing	Reduced wear rate of cast-iron parts Increased corrosion resistance Beneficial in case of low number of operating hours
Extra epoxy coating, 300 µm or 450 µm	Increased corrosion resistance
Top coating (black RAL 9005, red RAL 3000 and other colours)	
Special packaging	
Special nameplate	
Other variants	

* For miscellaneous variants, contact Grundfos.

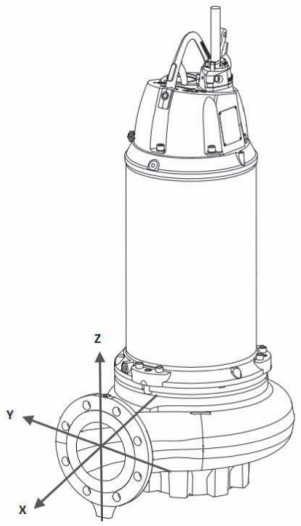
5.4 Flange forces

The flange forces and moments comply with EN ISO 5199.

See forces for both horizontal and vertical installations in Table B.3 in EN ISO 5199 by selecting the correct flange dimension. Forces cannot be used directly for end-suction wastewater pumps without using a coefficient. See it in Table B.5 in EN ISO 5199 by selecting the correct pump family.

For Grundfos wastewater pumps, the pump families and coefficients are stated below.

Horizontally installed pumps	
Pump family A4	coefficient 0.35
Vertically installed pumps	
Pump family 10A	coefficient 0.30



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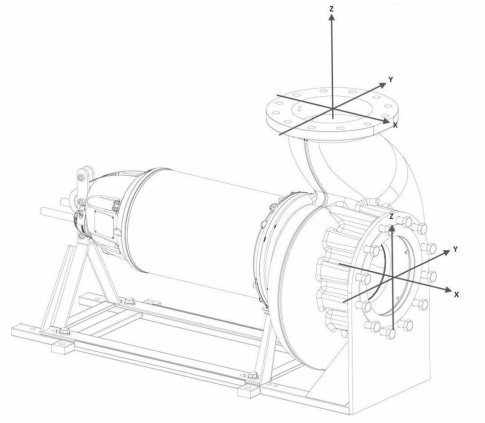

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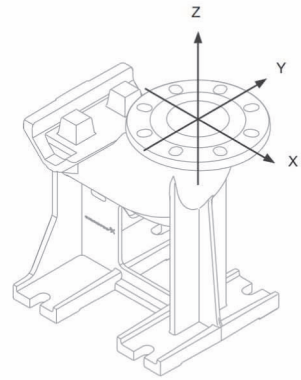

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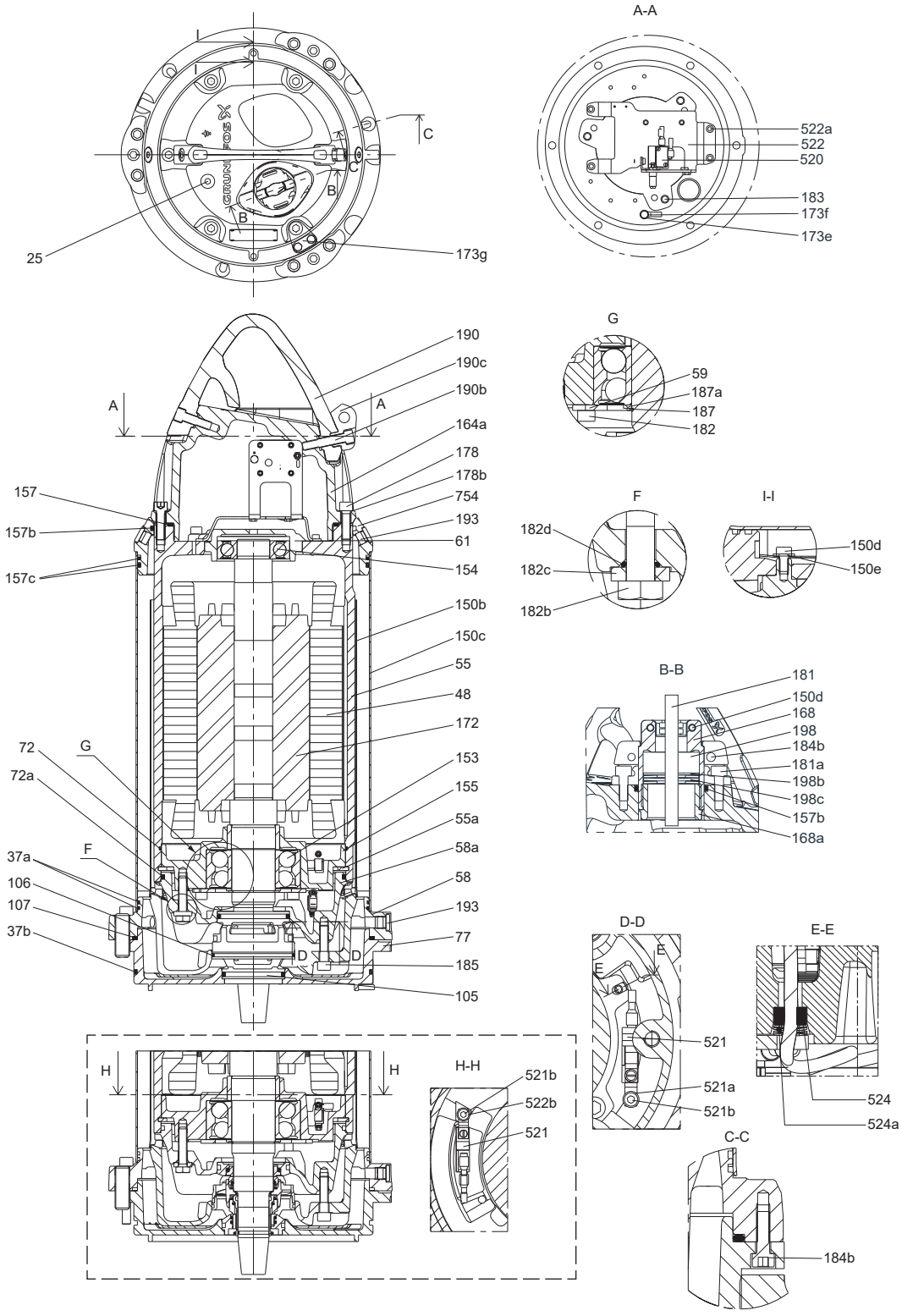
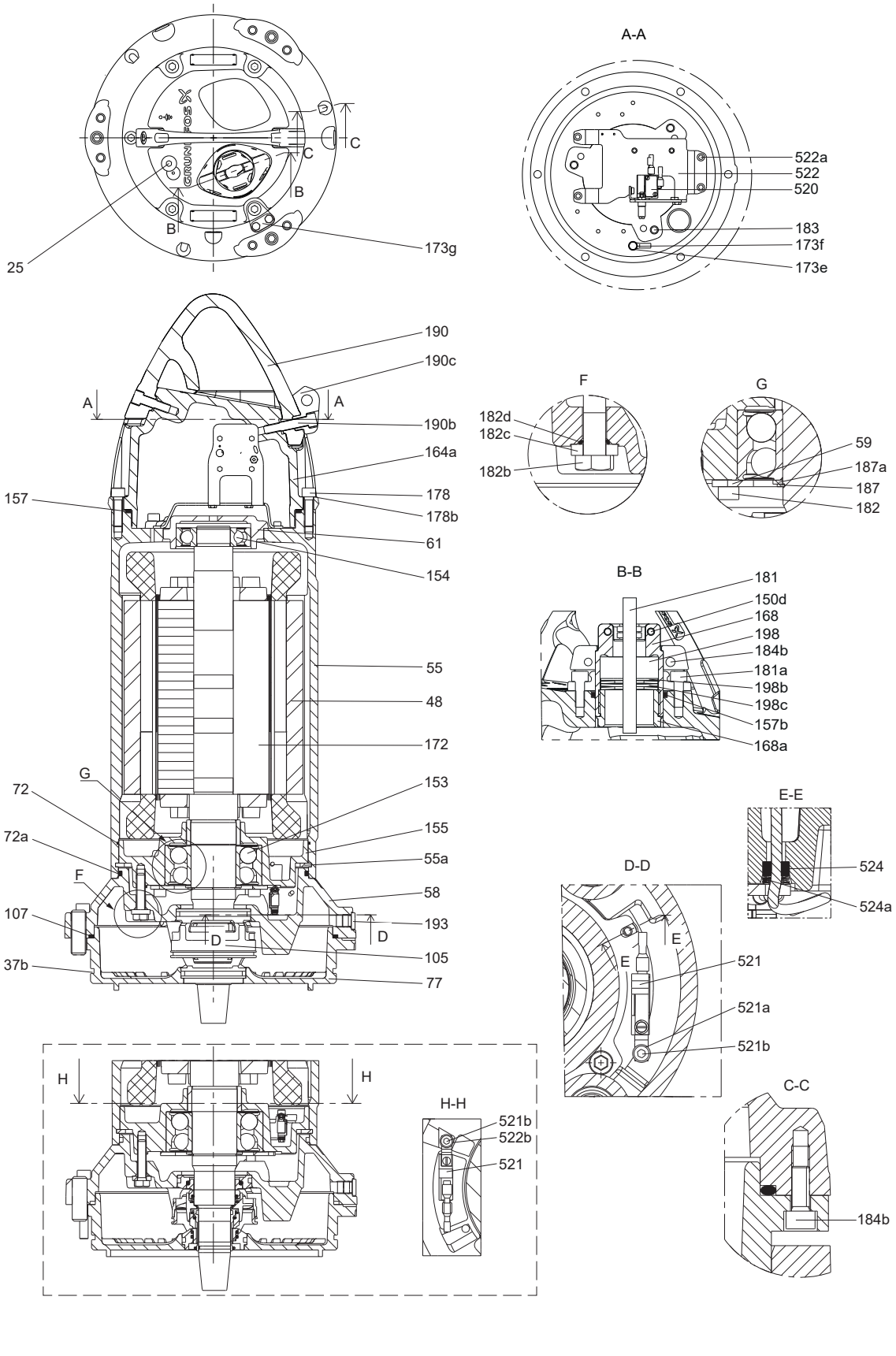
6. Construction

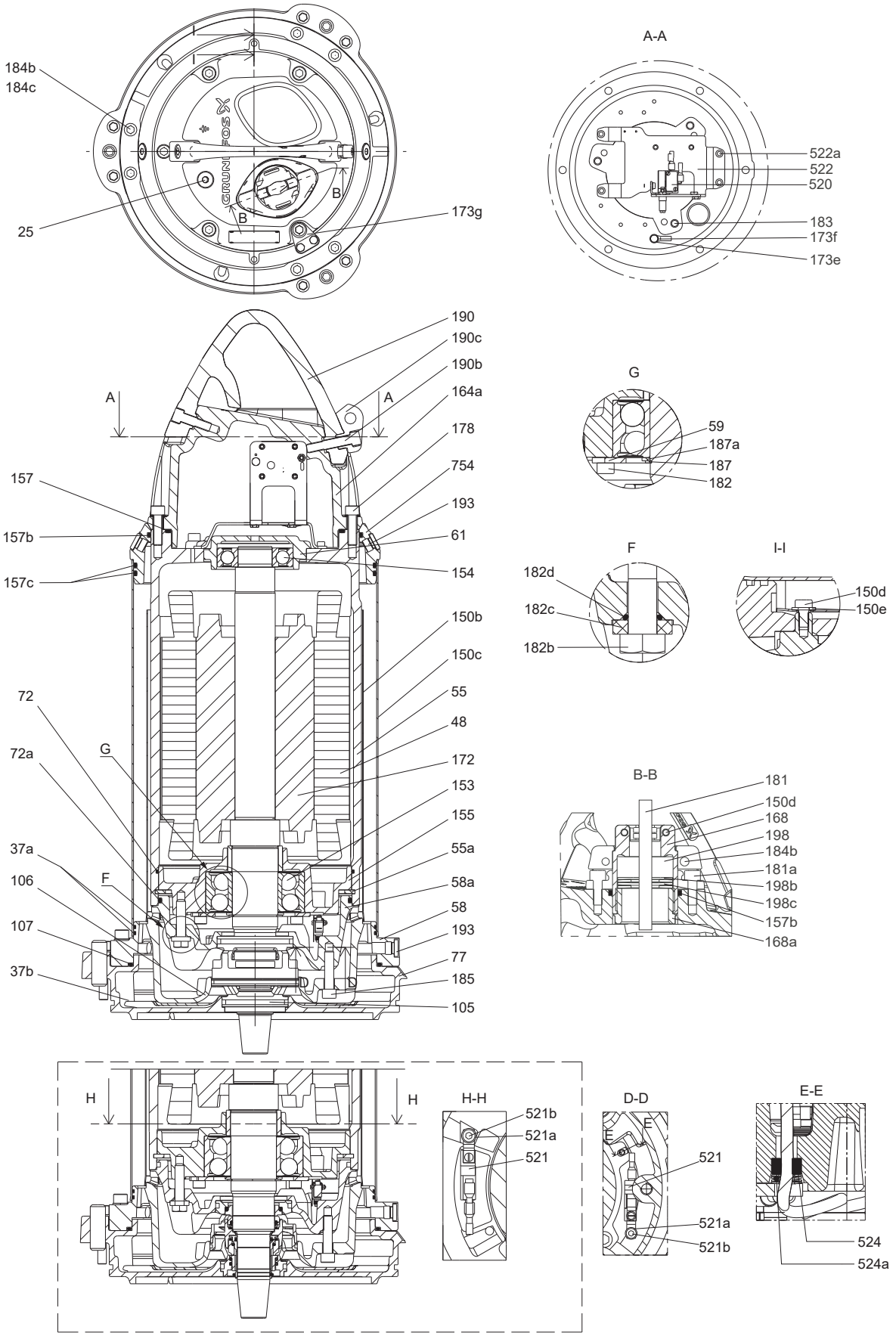
6.1 Sectional drawings, motors



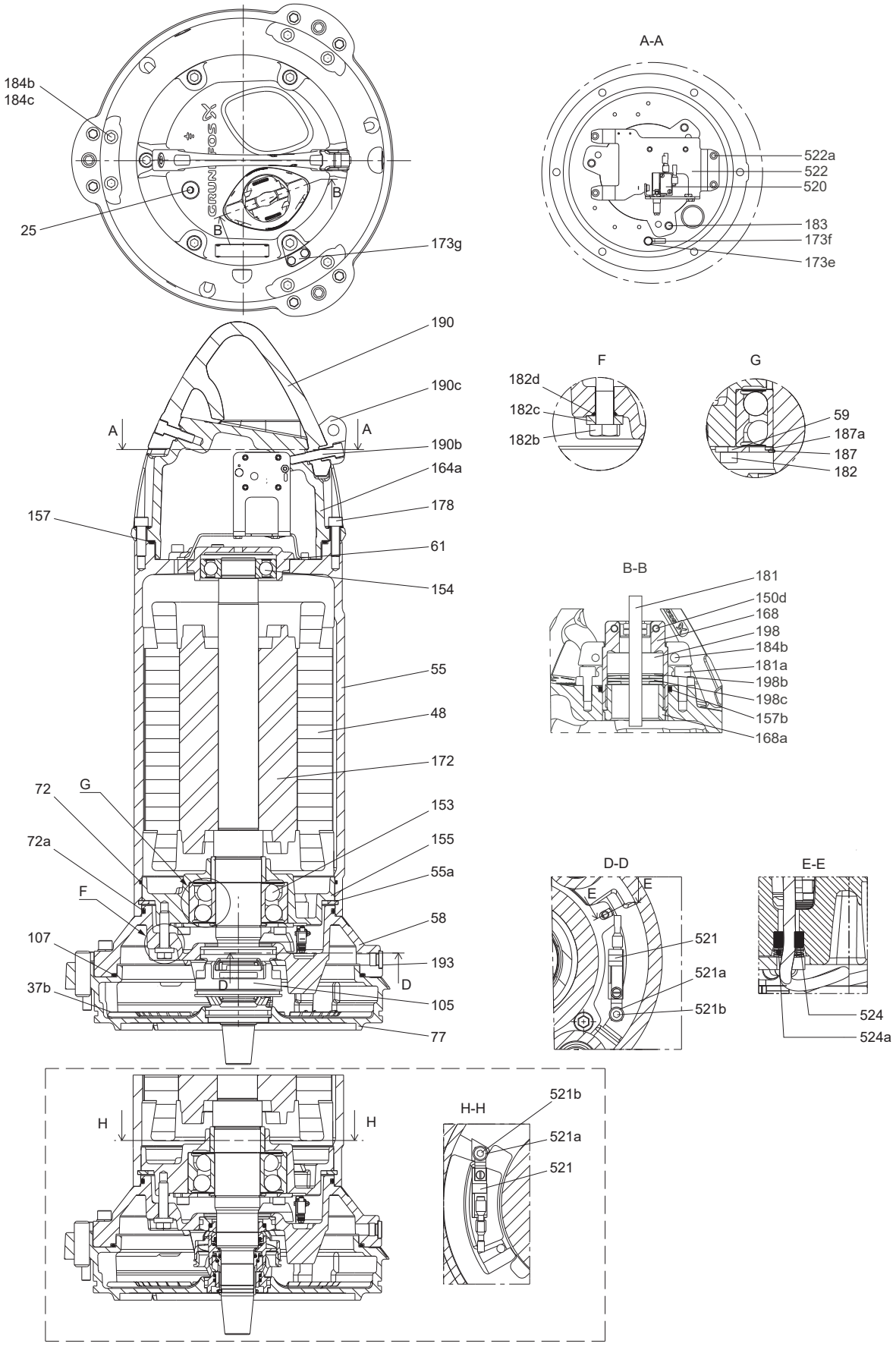
SE pump, with cooling jacket (2- and 4-pole motors) (H-H: Explosion proof version)



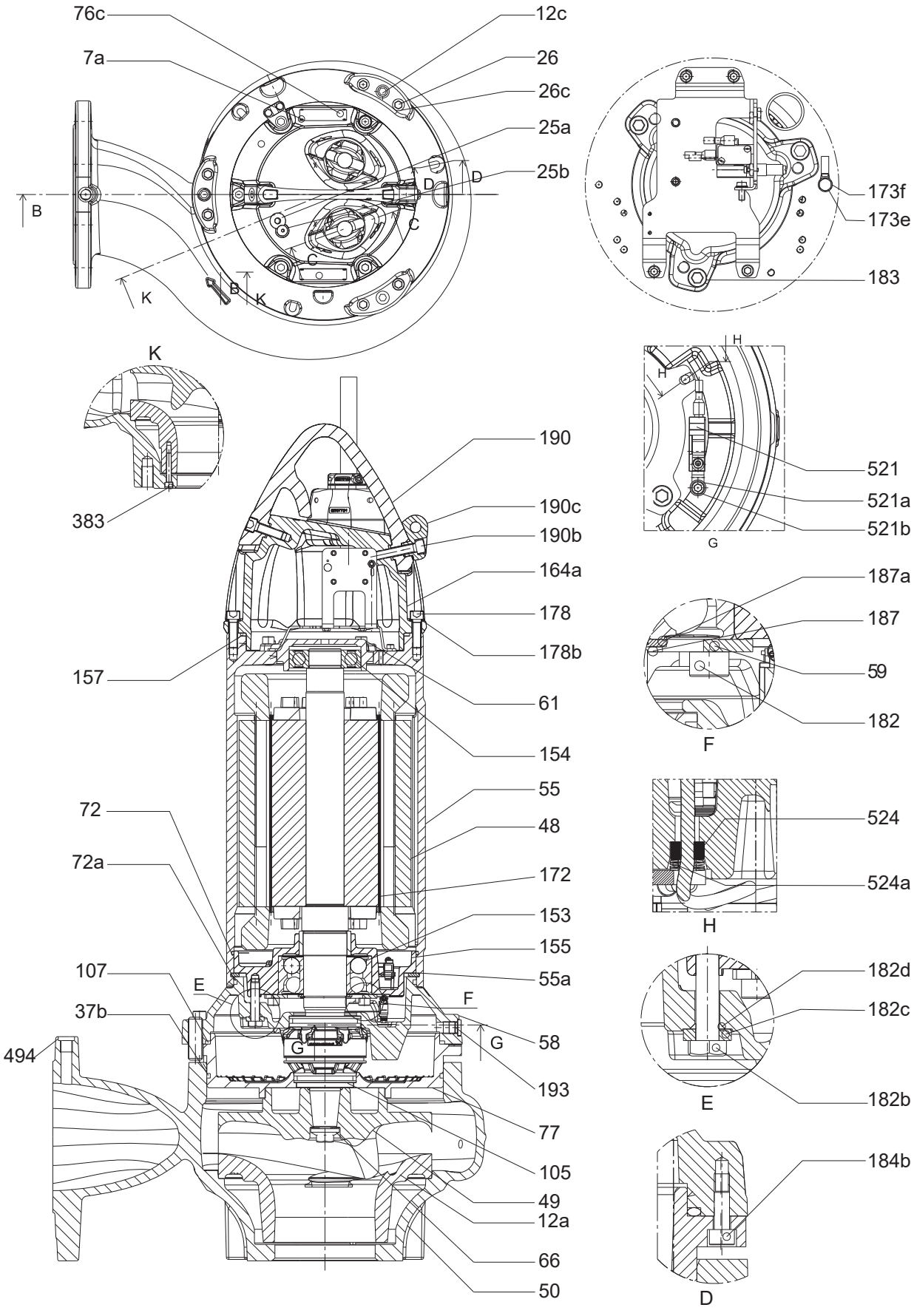
SL pump, without cooling jacket (2- and 4-pole motors) (H-H: Explosion proof version)



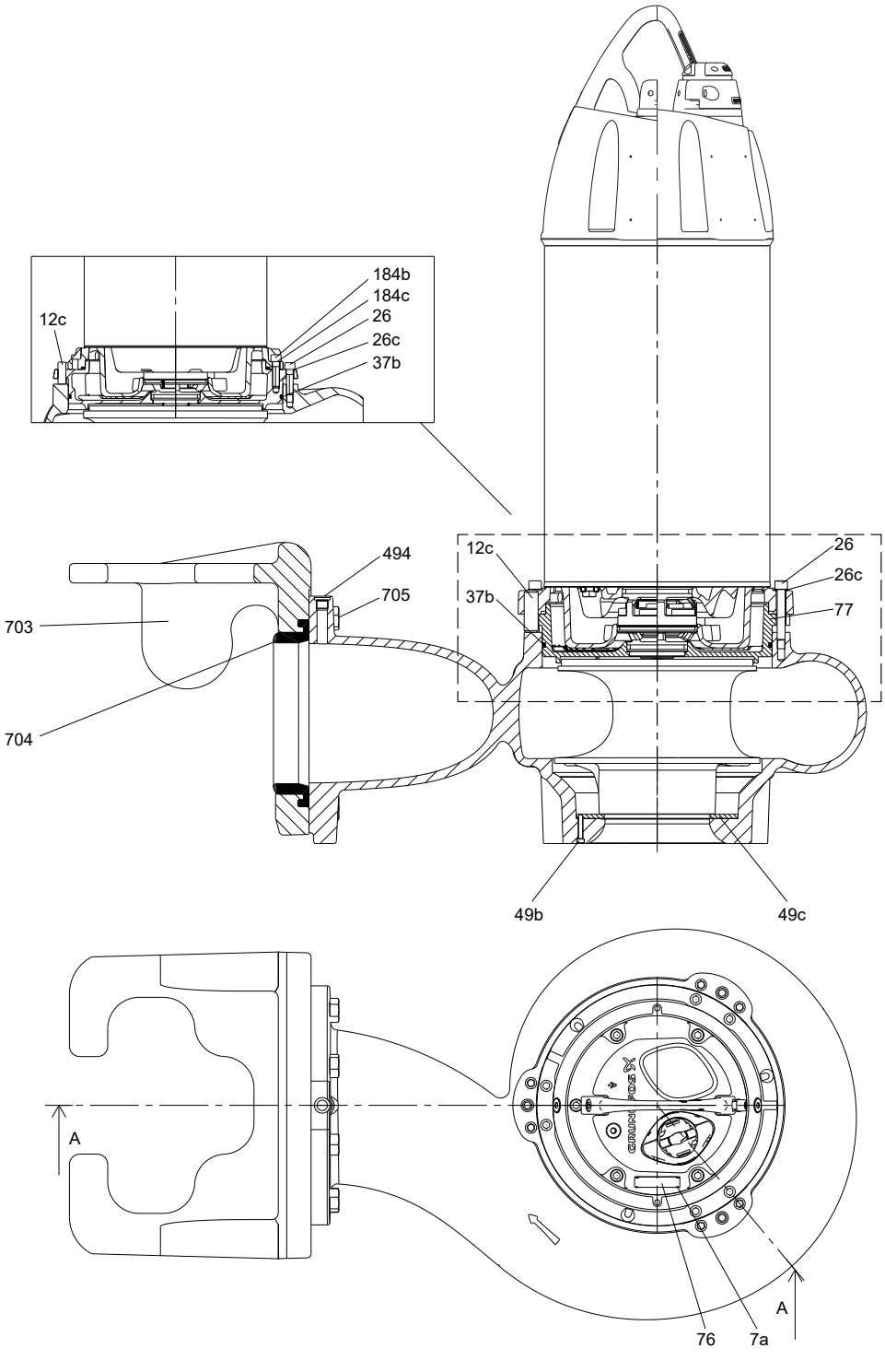
SE pump, with cooling jacket (6-pole motors) (H-H: Explosion proof version)



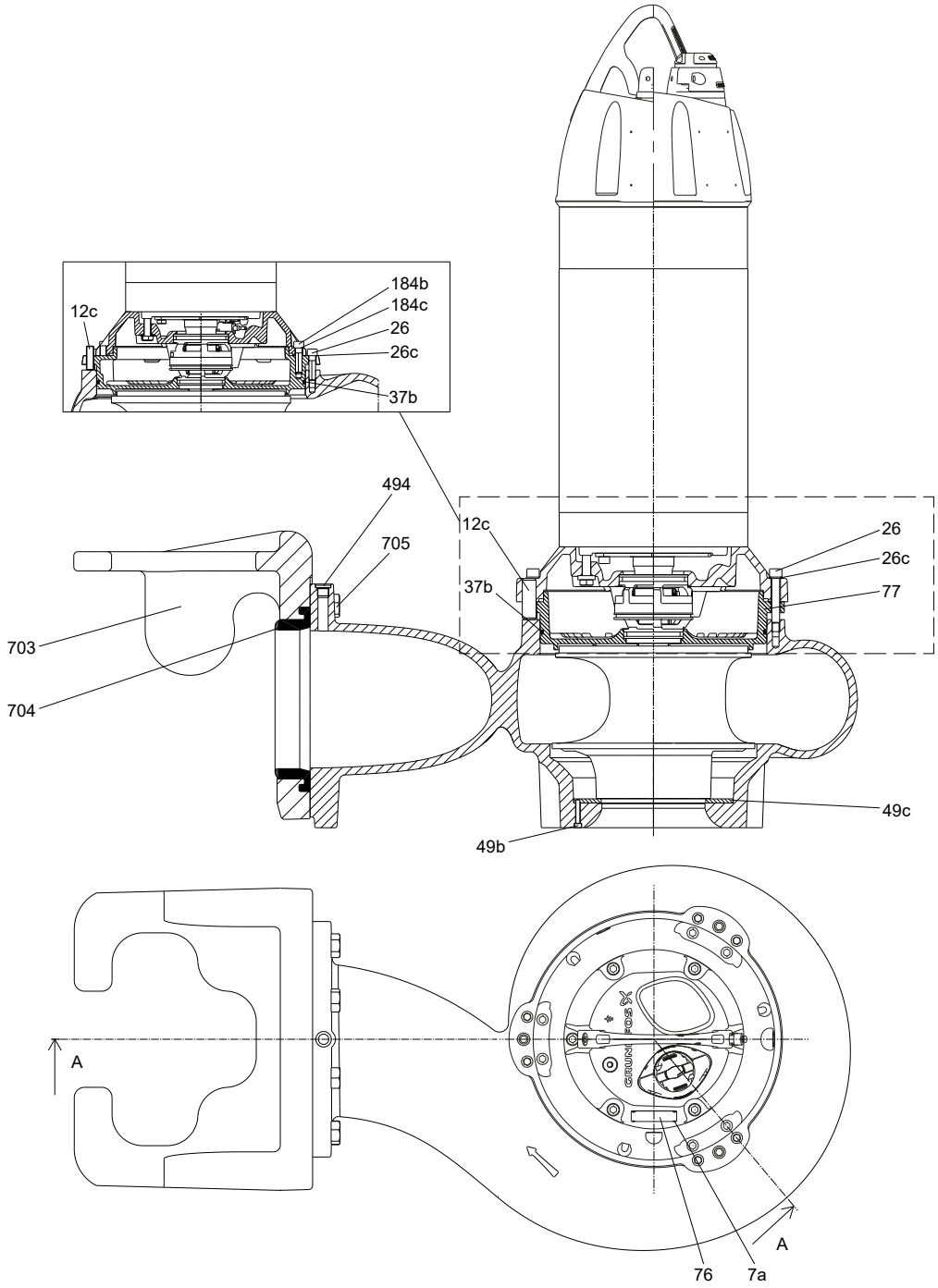
SL pump, without cooling jacket (6-pole motors) (H-H: Explosion proof version)



SL pump with Open S-tube® impeller

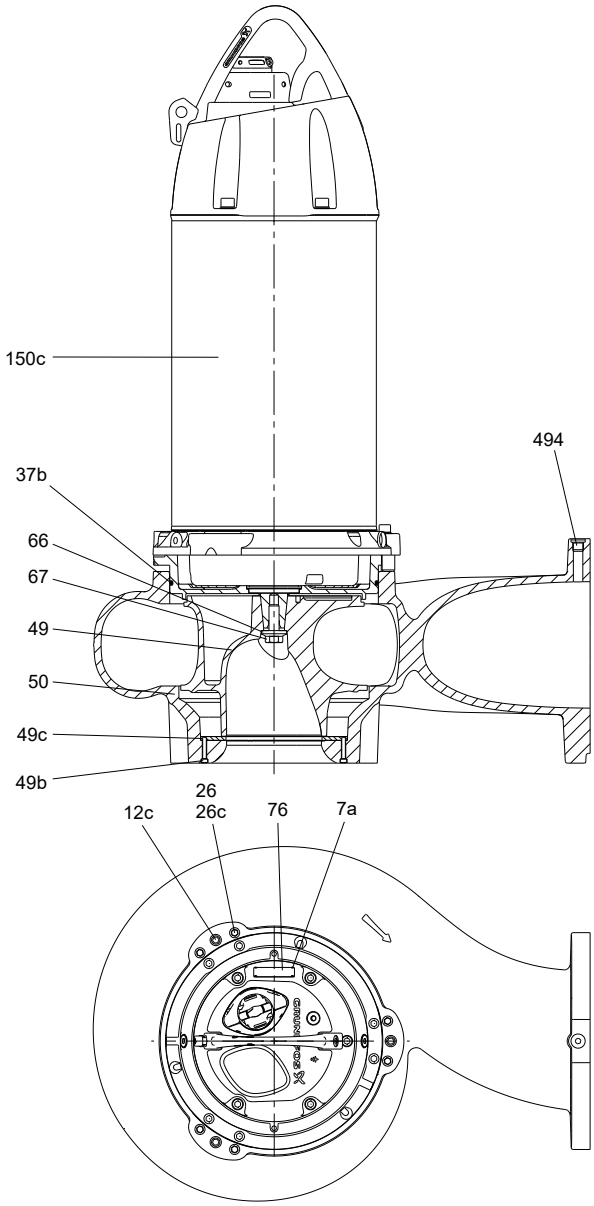


SE pump, with guide claw (6-pole motors)

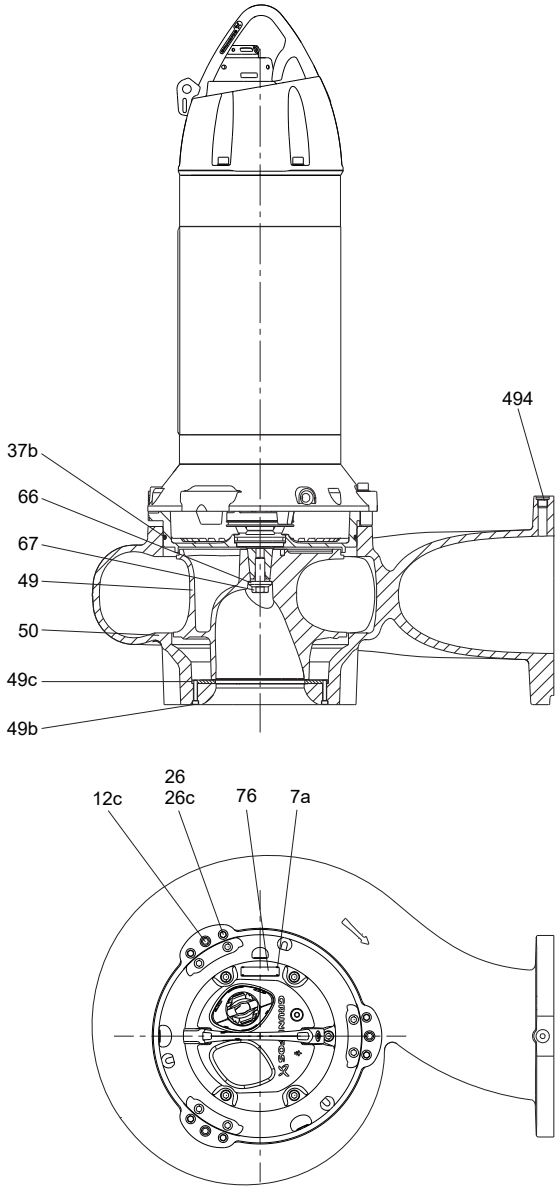


SL pump, with guide claw (6-pole motors)

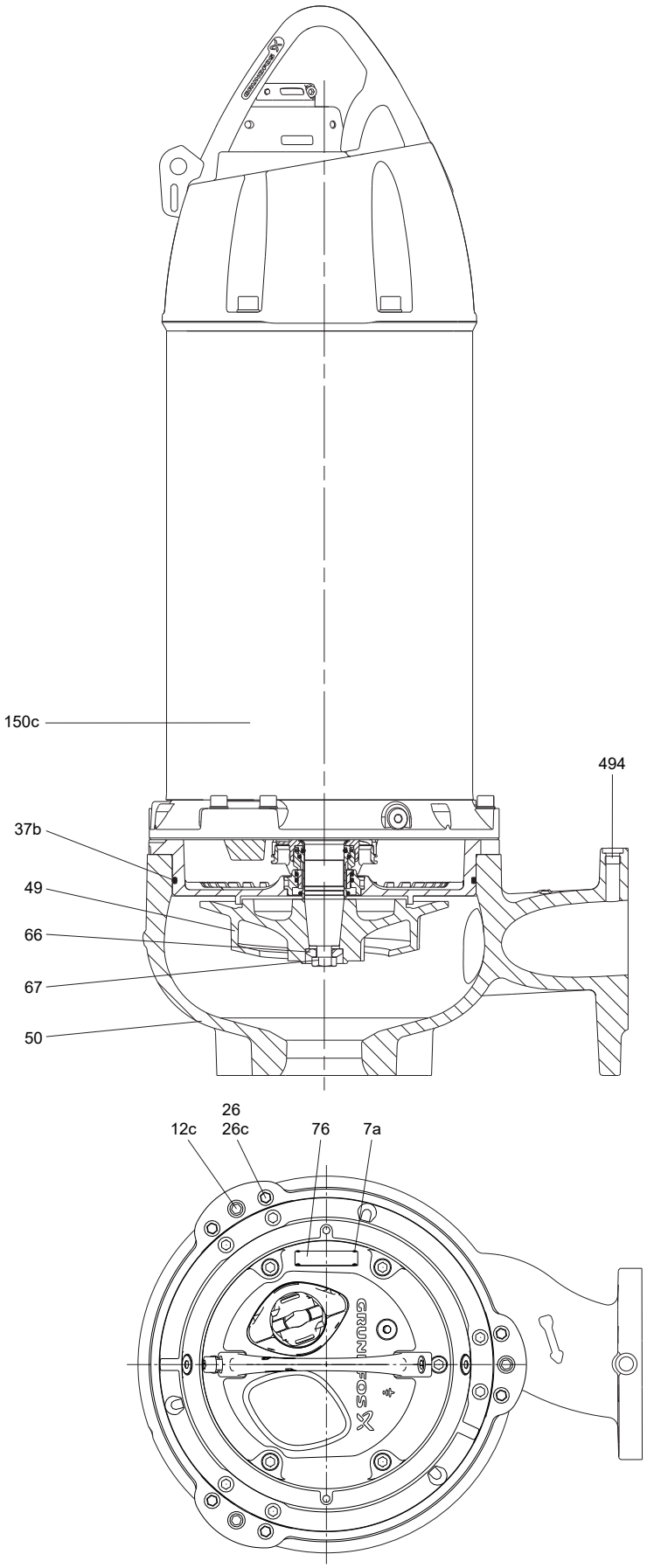
6.2 Sectional drawings, pumps



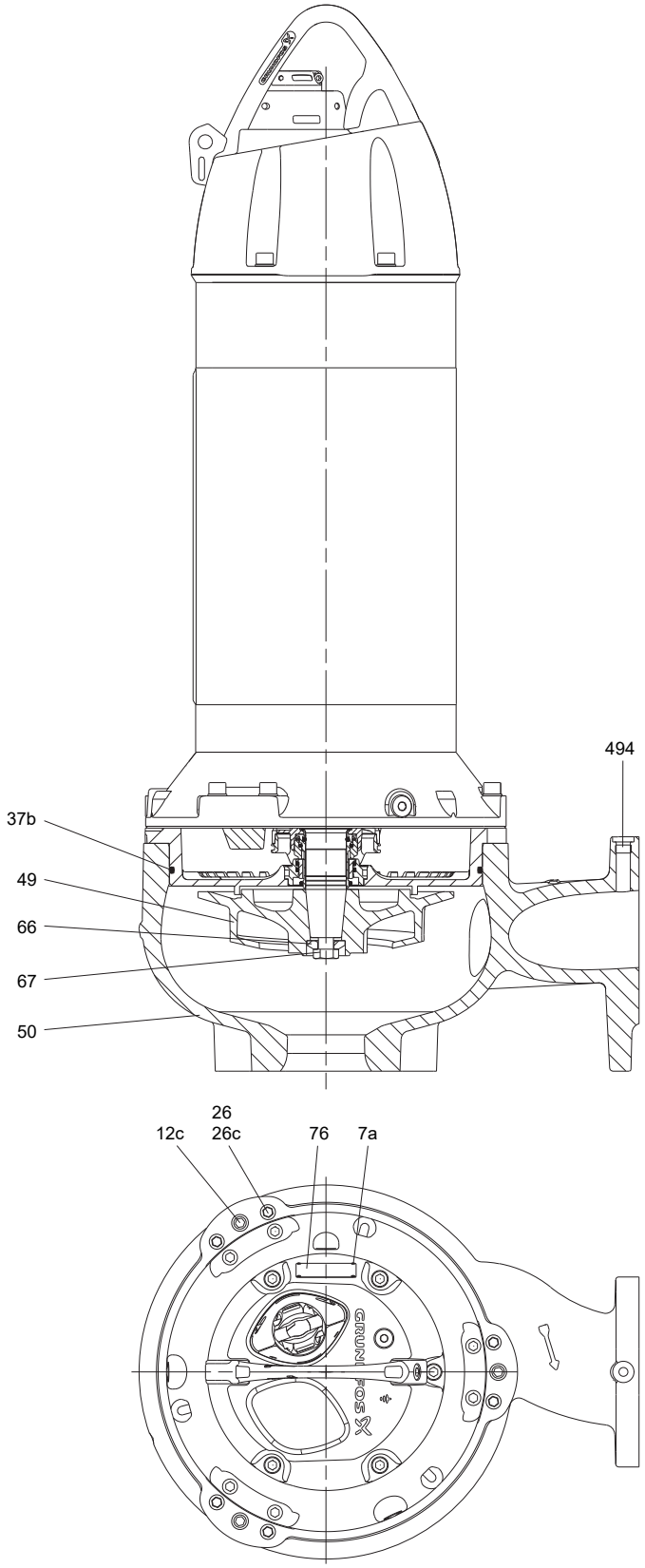
*SE pump, with closed S-**tube**® impeller*



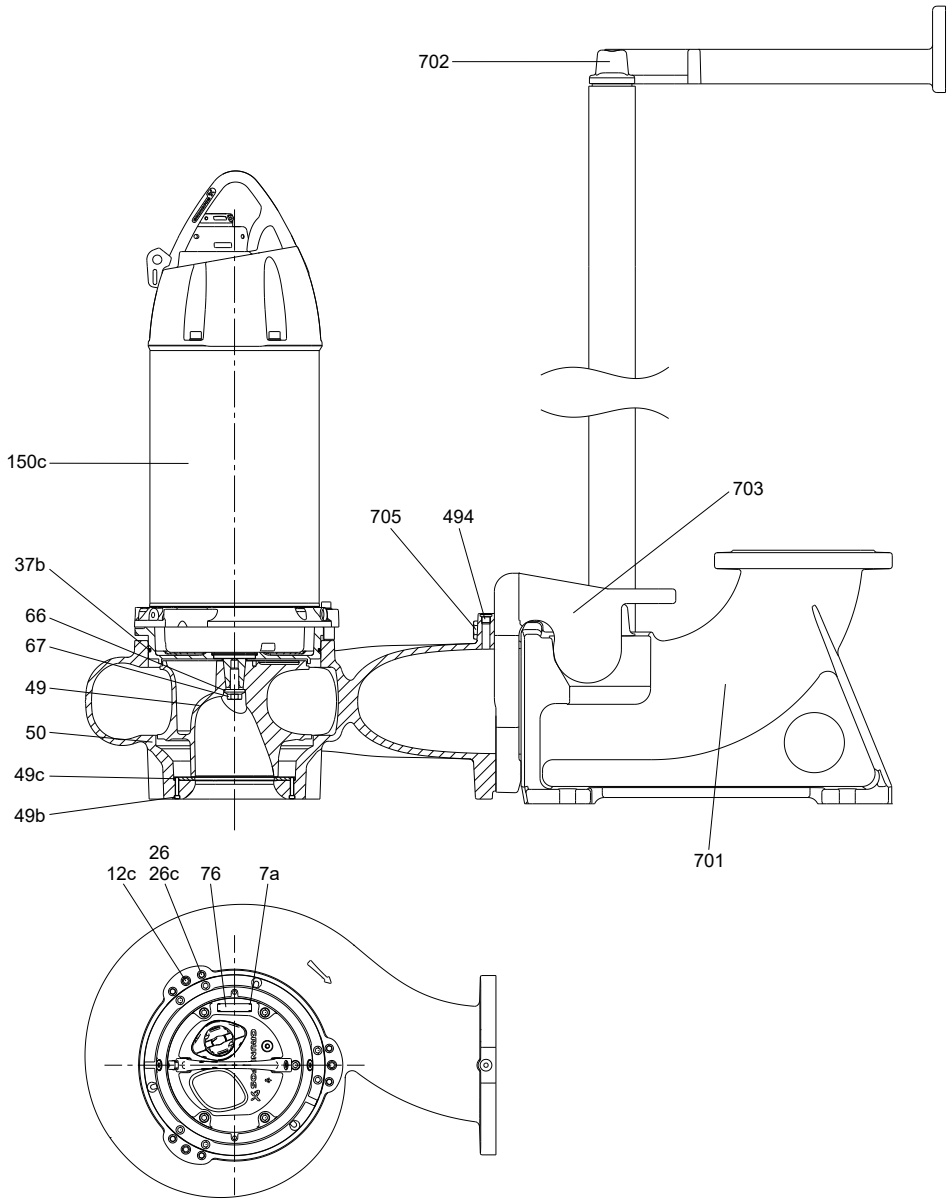
*SL pump, with closed S-**tube**® impeller*



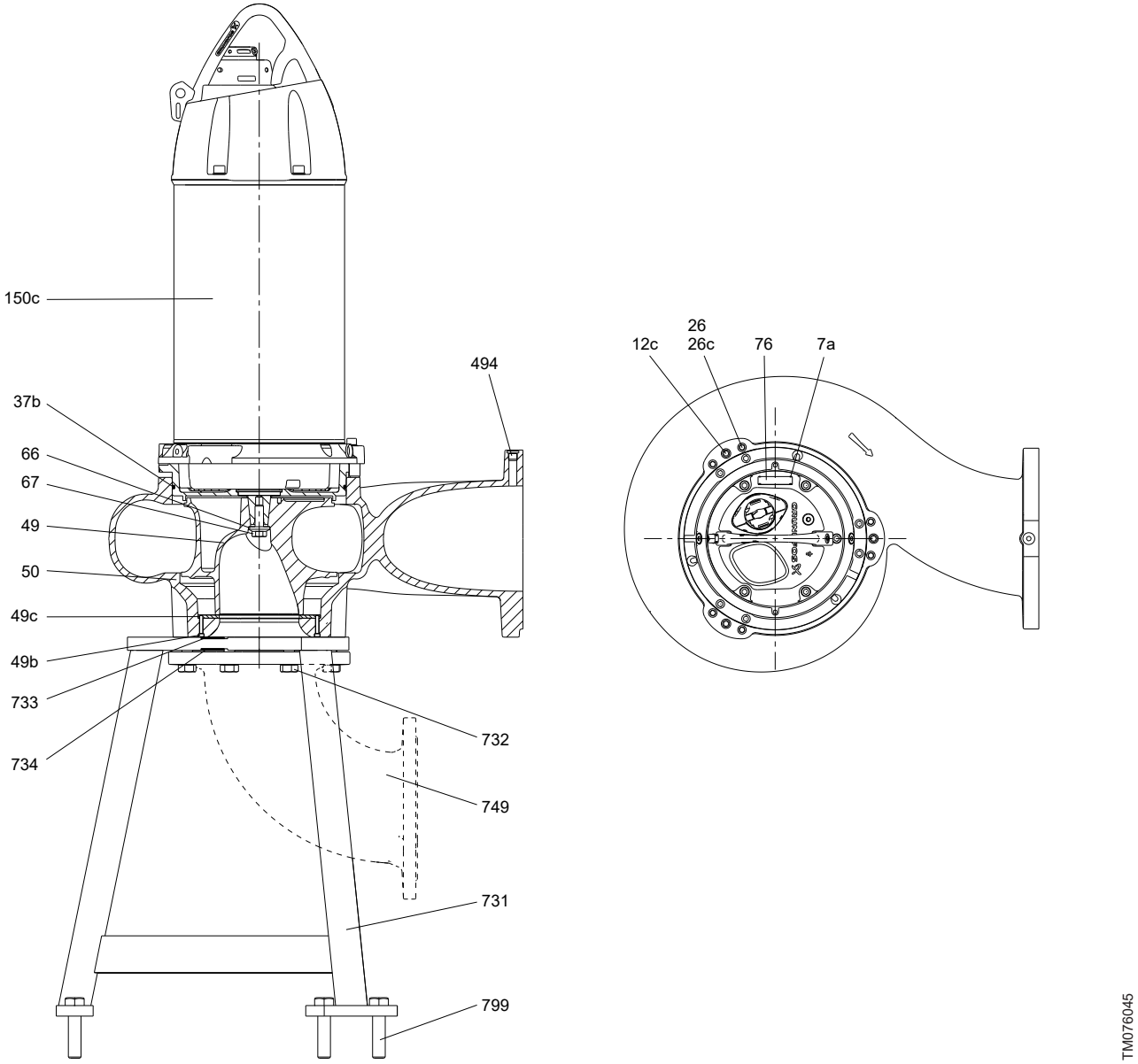
SE pump, with SuperVortex impeller



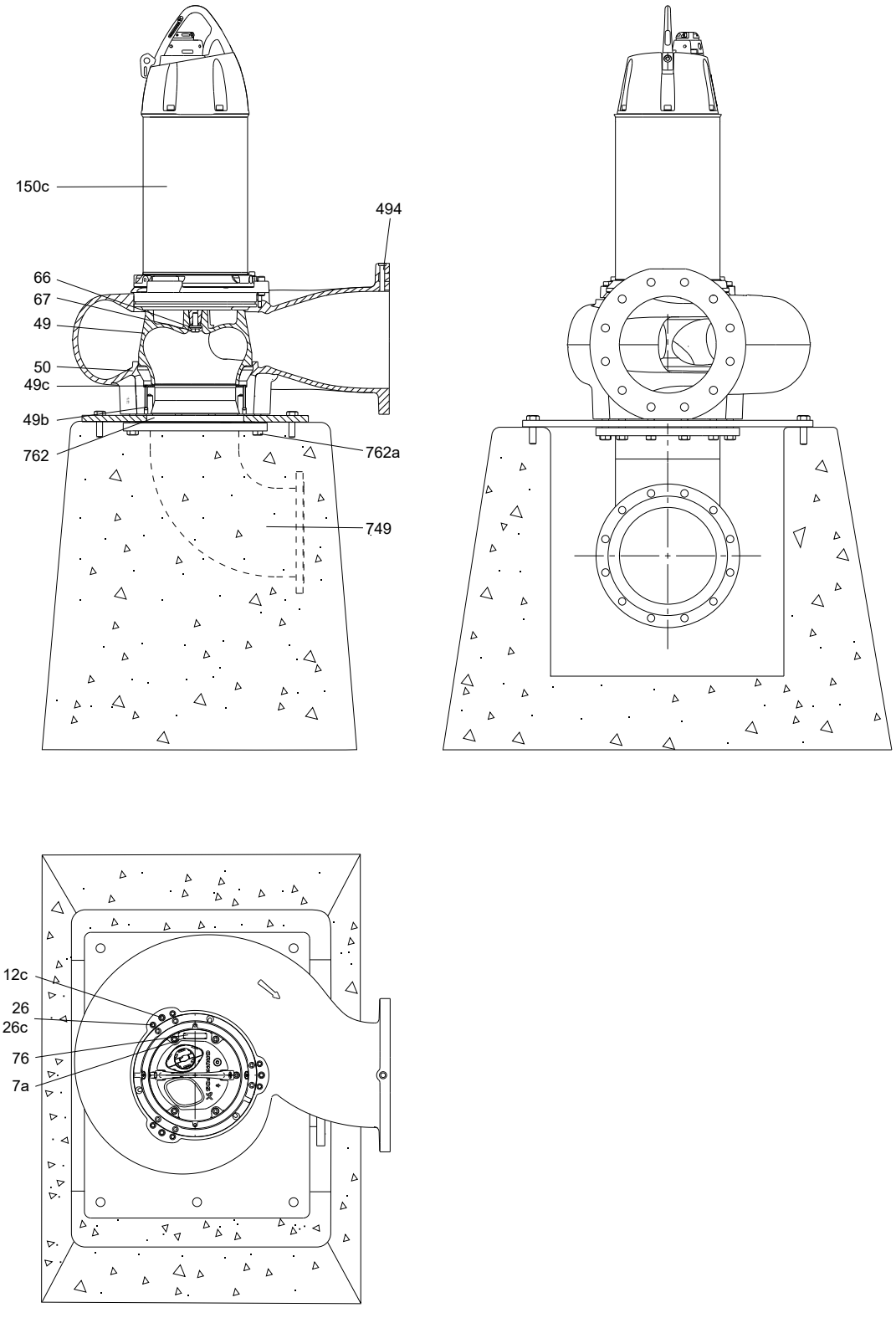
SL pump, with SuperVortex impeller



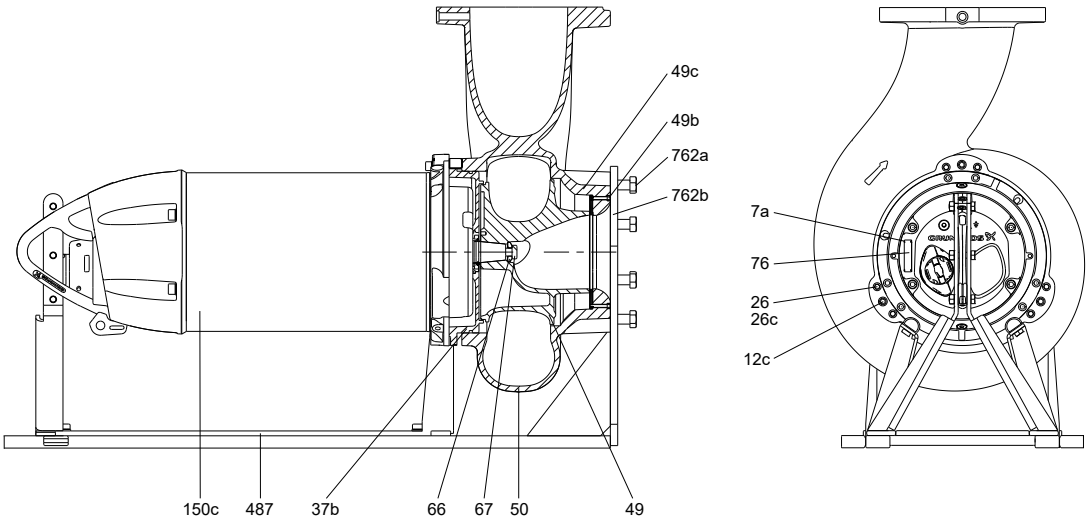
SE pump, with guide claw for auto-coupling



SE pump, dry installation on vertical base stand (recommended for SE pumps below 15 kW)

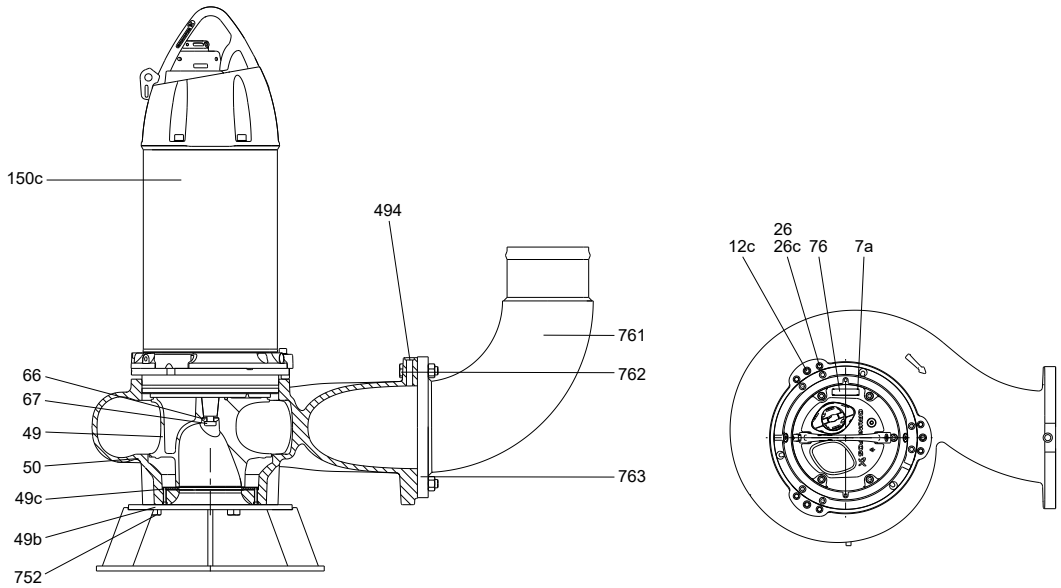


SE pump, dry installation on concrete foundation (recommended for SE pumps from and above 15 kW)



TM076047

SE pump, dry installation on horizontal base stand



TM076048

SE pump, on ring stand

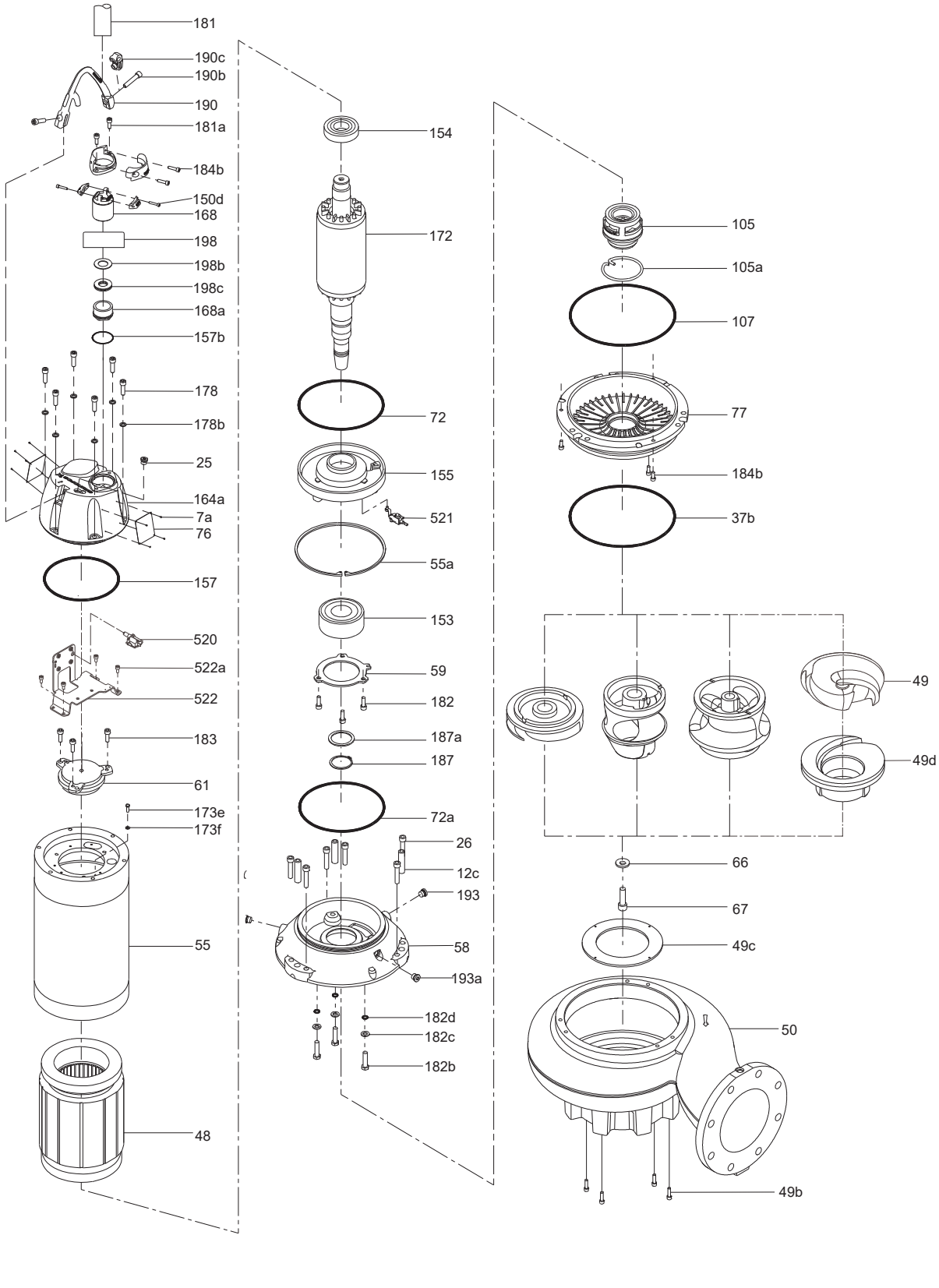
Related information

Installation on vertical base stand

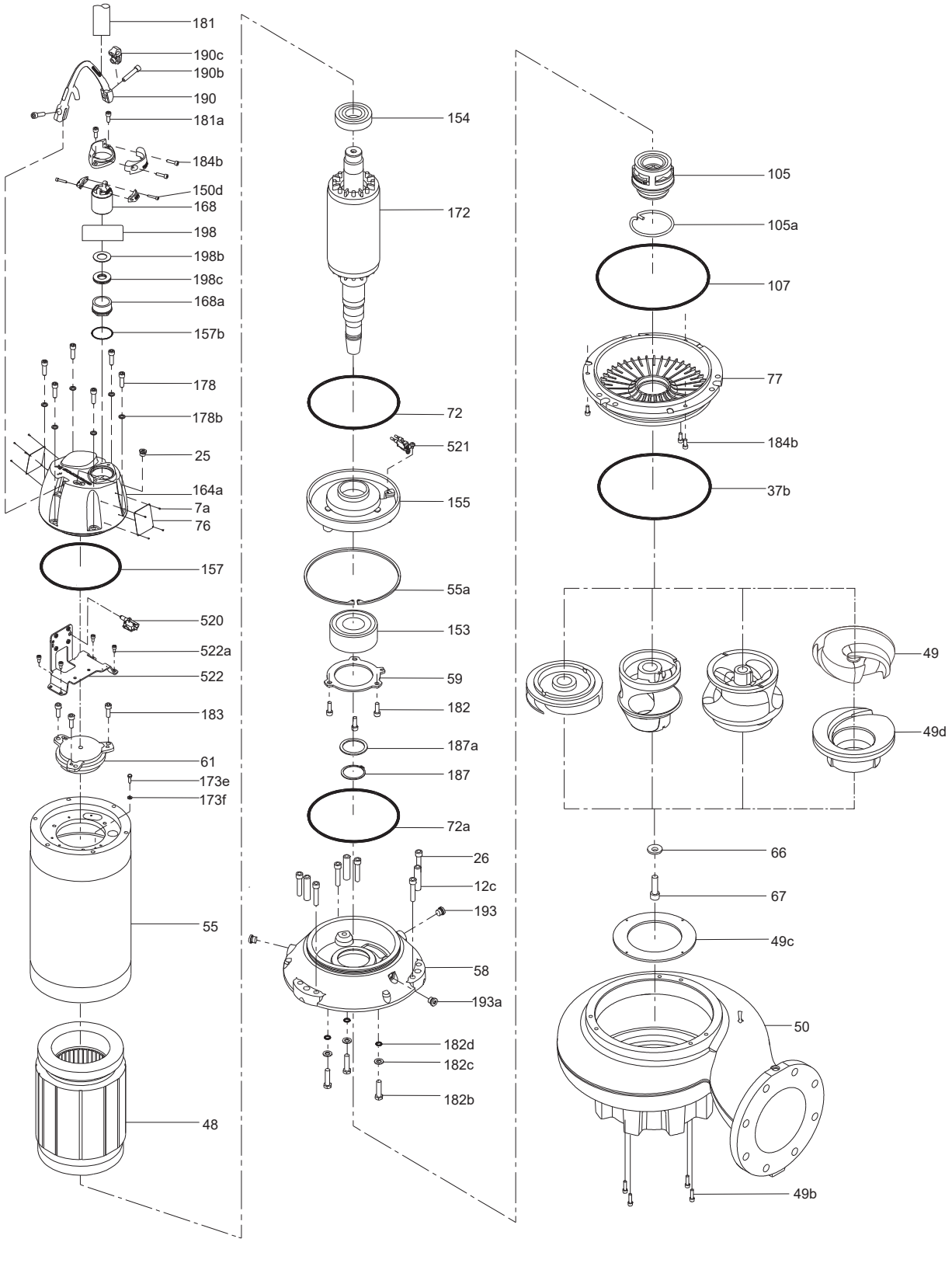
Installation on concrete foundation

Recommendations for pump foundations

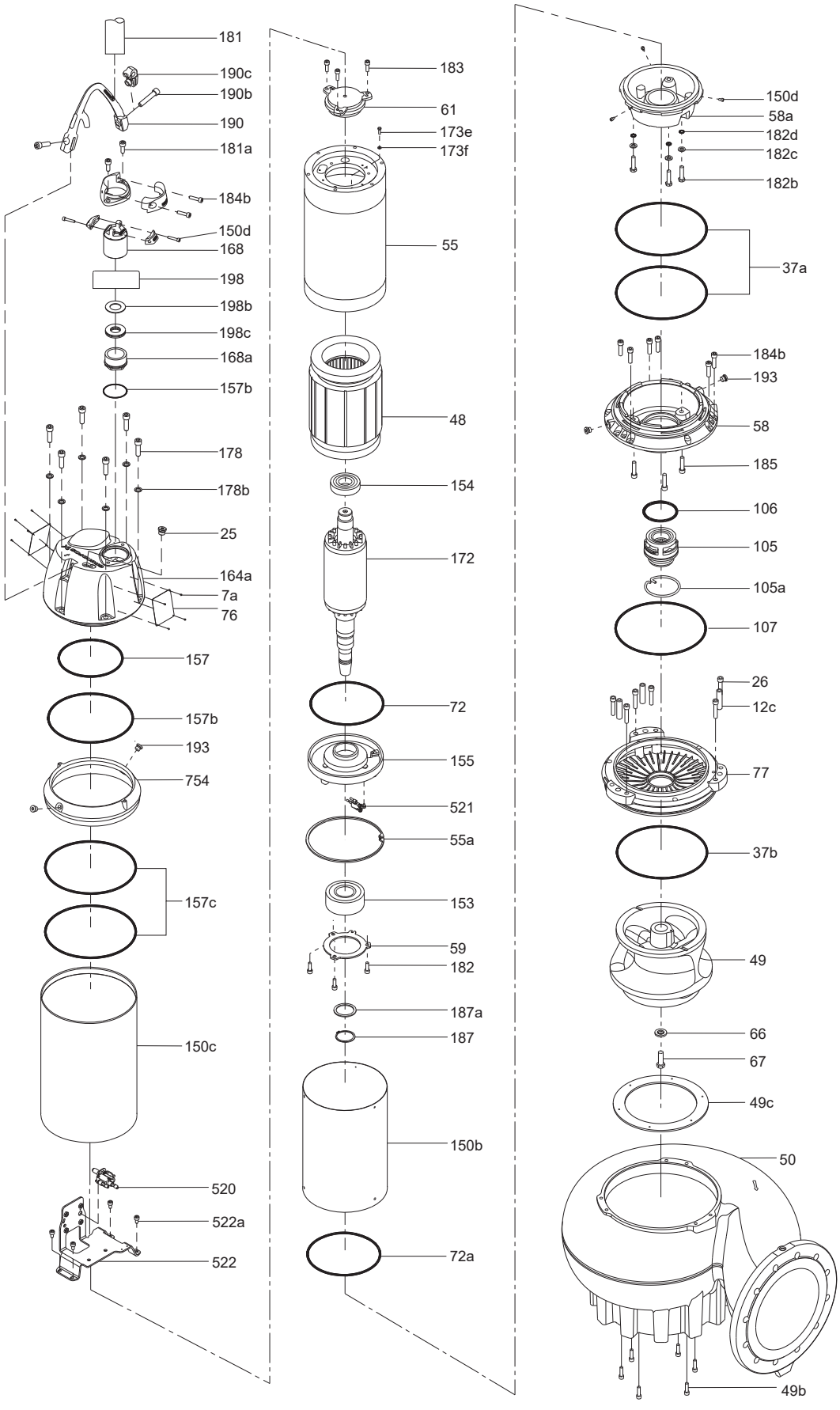
6.3 Exploded views



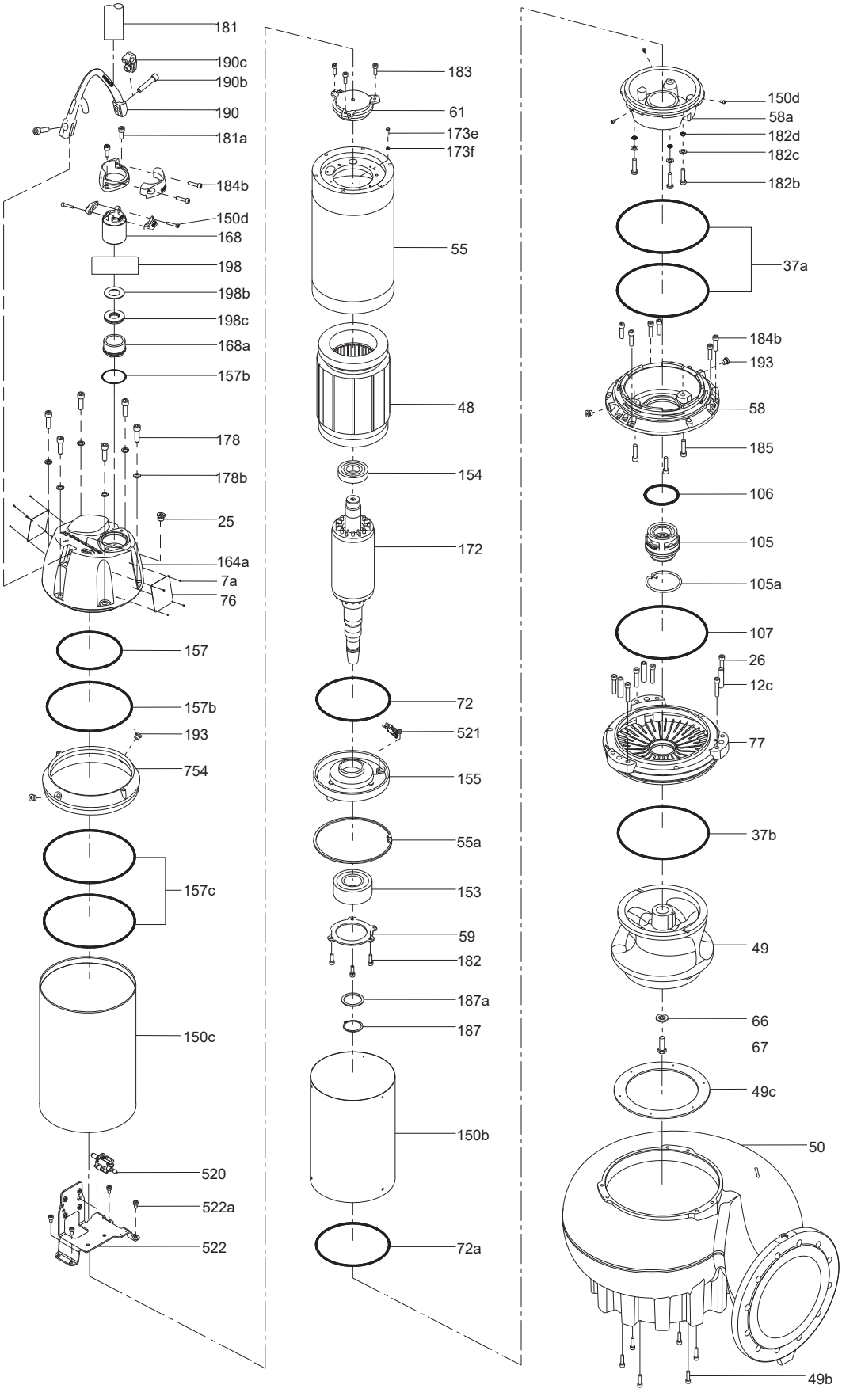
SLV, SL, SL1, SL2 pumps, 2-4 poles



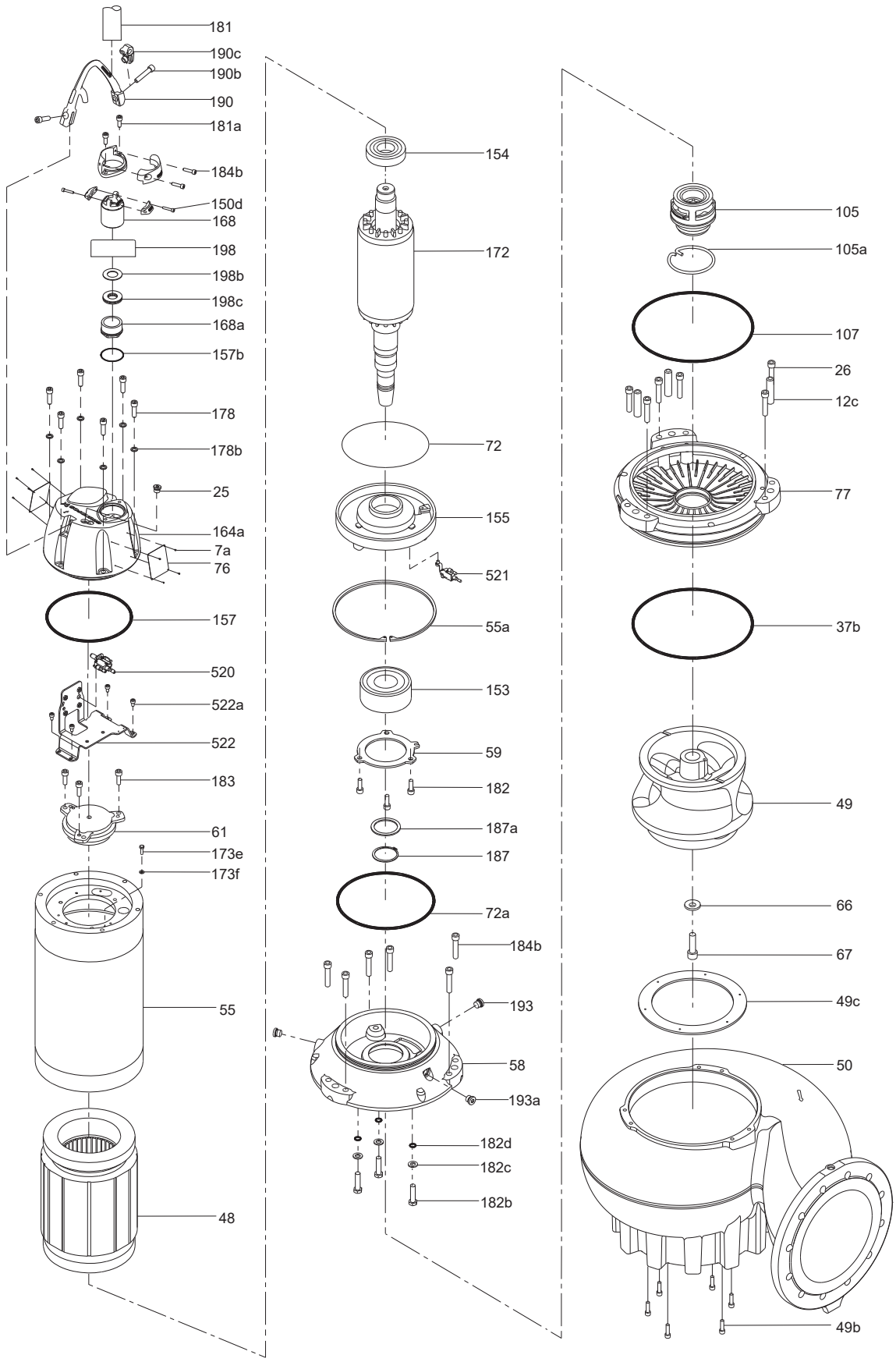
SLV Ex, SL Ex, SL1 Ex, SL2 Ex pumps, 2-4 poles



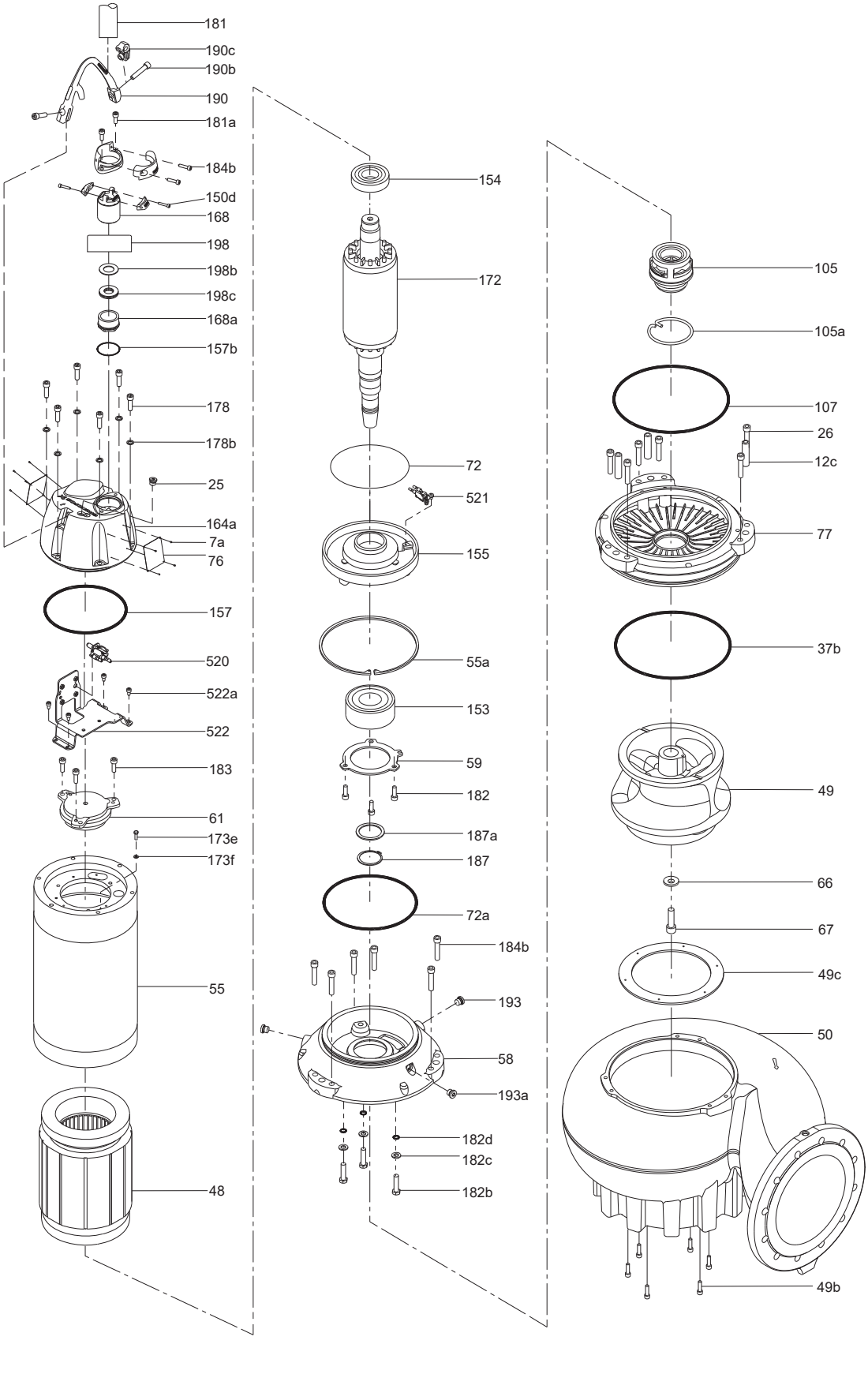
SE2 pumps, 6 poles



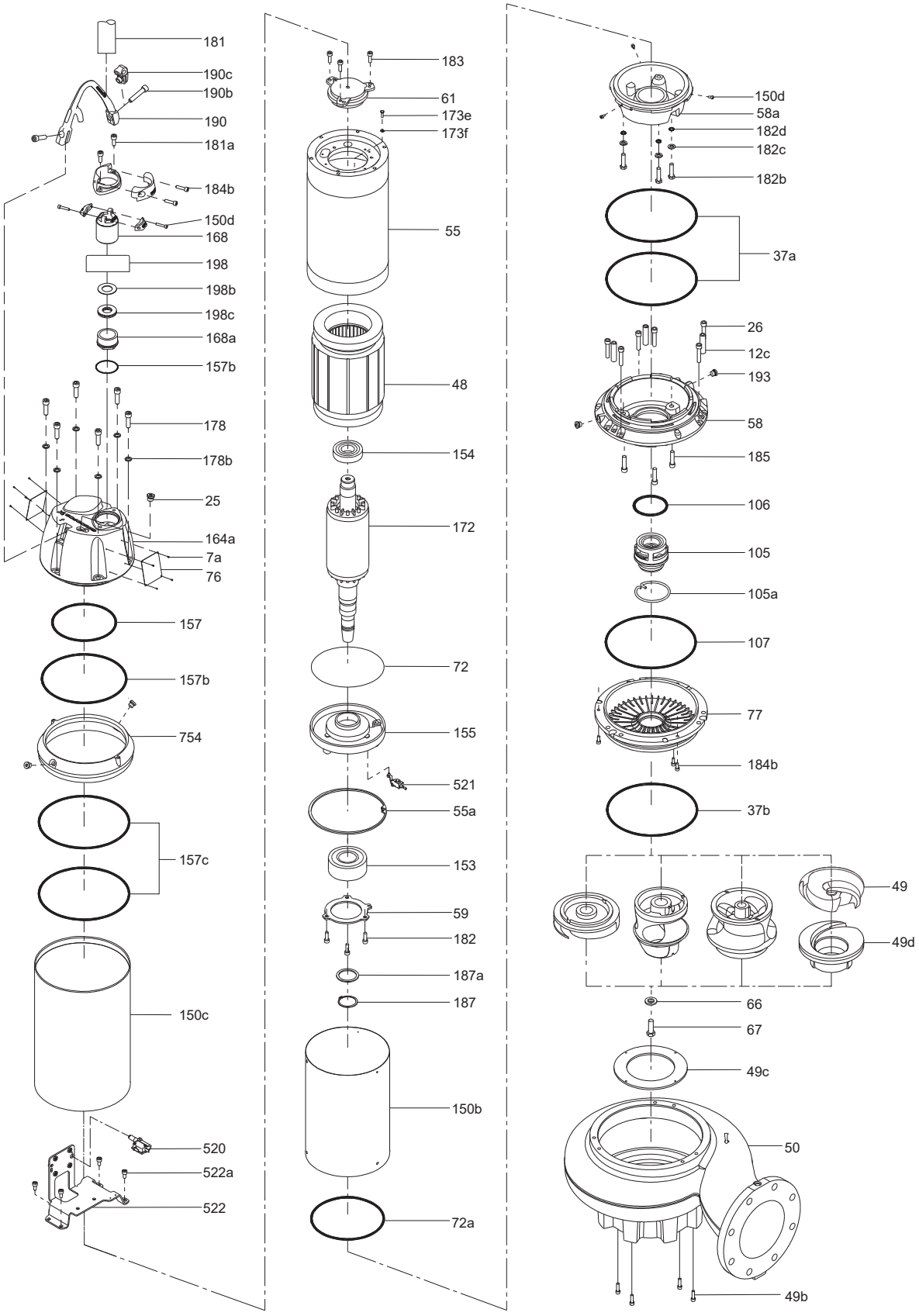
SE2 Ex pumps, 6 poles



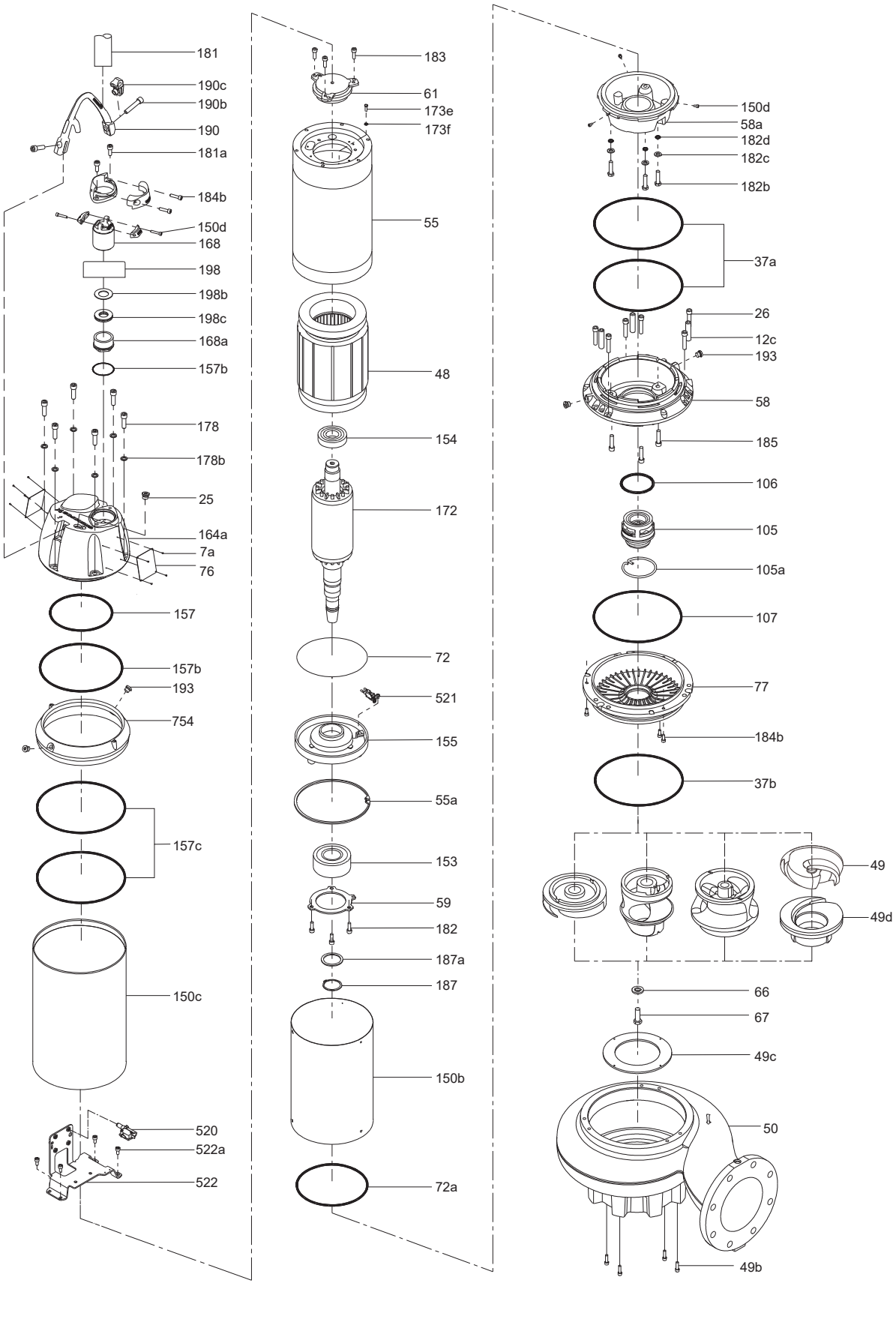
SL2 pumps, 6 poles



SL2 Ex pumps, 6 poles



SEV, SE, SE1, SE2 pumps, 2-4 poles



SEV Ex, SE Ex, SE1 Ex, SE2 Ex pumps, 2-4 poles

6.4 Components and material specification

The position numbers in the table below refer to the sectional drawings on the previous pages.

6.4.1 Motor components

Pos.	Component	Material	DIN W.-No./EN standard	AISI/ ASTM
12c	Adjusting screw	Stainless steel	1.4436	316
25	Pressure test plug	Stainless steel	1.4436	316
25a*	Screw	Stainless steel	1.4436	316
25b*	Lock washer	Stainless steel	1.4436	316
26	Screw	Stainless steel	1.4436	316
26c	Washer	Stainless steel	DIN 433	
37a	O-ring	NBR rubber		
37b	O-ring	NBR rubber		
48	Stator lamination			
55	Stator housing	Cast iron	EN-JL-1040	ASTM A48 Class 40B
55a	Circlip	DIN 472		
58	Intermediate seal housing (SE)	Cast iron	EN-JL-1040	ASTM A48 Class 40B
	Upper seal housing			
58a	Upper seal housing cover	Cast iron	EN-JL-1040	ASTM A48 Class 40B
59	Bearing bracket cover	Cast iron	EN-JL-1040	ASTM A48 Class 40B
61	Upper bearing bracket	Cast iron	EN-JL-1040	ASTM A48 Class 40B
66	Impeller washer	Stainless steel	1.4436	316
67	Impeller screw	Stainless steel	1.4436	316
72a	O-ring	NBR rubber		
77	Lower seal housing			
105	Shaft seal cartridge cpl.	SiC/SiC or SiC/carbon A		
105a	Lock ring			
106	O-ring for shaft seal			
107	O-ring	NBR rubber		
150b	Inner cooling jacket			
150d	Screw			
150e	Washer	Stainless steel	DIN 433	
153	Ball bearing	Stainless steel		
154	Ball bearing	Stainless steel		
155	Lower bearing bracket	Cast iron	EN-JL-1040	ASTM A48 Class 40B
157	O-ring	NBR rubber		
157b	O-ring	NBR rubber		
157c	O-ring	NBR rubber		
164a	Motor top cover	Cast iron	EN-JL-1040	ASTM A48 Class 40B
168	Cable entry	PA or cast iron		
168a	Cable entry lower			
168b	Cover for connector			
172	Shaft with rotor	Stainless steel	1.4462	UNS31803
173e	Screw	Stainless steel	1.4436	316
173f	Spring washer	Stainless steel	1.4436	316
173g	External ground connector	Stainless steel	1.4436	316
176a	Terminal block			
176c	Plug housing			
178	Screw	Stainless steel	1.4436	316
178b	Washer	Stainless steel	DIN 433	
181a	Screw	Stainless steel	1.4436	316
181	Cable			
181b	EMC cable/shield			
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
184c	Washer	Stainless steel	DIN 433	
185	Screw			
187	Circlip			
187a	Washer	Stainless steel	1.4436	316
190b	Screw	Stainless steel	1.4408	CF8M
190	Lifting bracket	Stainless steel	1.4408	CF8M
193	Plug	Stainless steel	1.4408	CF8M
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	Bracket for moisture switch			
522b*	Washer			
522c	Washer lock			
524	Rubber bush			
524a	Disc spring			
754	Cooling jacket ring			

*Only in Ex pumps

Material declaration:

- -Grey cast iron is manufactured according to EN 1561:1997.
- -Cast stainless steel is manufactured according to EN 10283:2010.
- -Conversion to other standards such as AISI/ASTM is normative, and products are not manufactured according to these.

6.4.2 Pump components

Pos.	Component	Material	DIN W.-No./EN standard	AISI/ ASTM
7a	Rivet			
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 (closed S-**tube**®)	Cast iron	EN-GJL-250	A48 35B
		Stainless steel	1.4408	A351 CF8M
			1.4517	316
	Impeller (open S-**tube**®)	Cast iron	EN-GJL-250	A48 35B
		Stainless steel	1.4408	A351 CF8M
			1.4517	316
		White iron	EN 12513 EN-GJN-HB555(XCr18)	A532 Class II B
	Impeller (SuperVortex)	Cast iron	EN-GJS-500-7	A536 grade 70-50-05
		Stainless steel	1.4408	A351 CF8M
			1.4517	316
49b	Screw			
49c	Wear ring	Carbon steel		
49d	Suction cover	Cast iron	EN-GJL-250	A48 35B
		Stainless steel	1.4408	A351 CF8M
		White iron	EN 12513 EN-GJN-HB555(XCr18)	A532 Class II B
50*	Pump housing	Cast iron	EN-JL-1040	ASTM A48 Class 40B
66	Impeller washer	Stainless steel	1.4436	316
67	Impeller screw	Stainless steel	1.4436	316
76	Nameplate			
150c	Outer cooling jacket	Stainless steel	1.4301	304
494	Plug	Stainless steel	1.4436	316

Material declaration:

- Grey cast iron is manufactured according to EN 1561:1997.
- Cast stainless steel is manufactured according to EN 10283:2010.
- Conversion to other standards such as AISI/ASTM is normative, and products are not manufactured according to these.

6.4.3 Accessories

Pos.	Component	Material	DIN W.-No./EN standard	AISI/ ASTM
487	Base stand, horizontal	Galvanised steel		
701*	Auto-coupling base unit	Cast iron or stainless steel		
702	Guide-rail bracket	Cast iron or stainless steel		
703*	Guide claw	Cast iron or stainless steel		
704	Rubber seal	Neoprene 60		
705	Screw	Steel 8.8	DN 933	316
731	Base stand, vertical	Galvanised steel		
732	Screw for base stand	Steel 8.8	DN 933	316
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	DN 933	316
753	Flange seal for ring stand			
761	Hose connector	Cast iron or stainless steel		
762	Base plate			
762a	Screw for hose connector** or base plate connector***	Steel 8.8	DN 933	316
763	Flange seal for hose connector			

*Stainless steel available for DN 80 to DN 150

**For dry, vertical installation on vertical stand

***For dry, vertical installation on concrete base

7. Product description

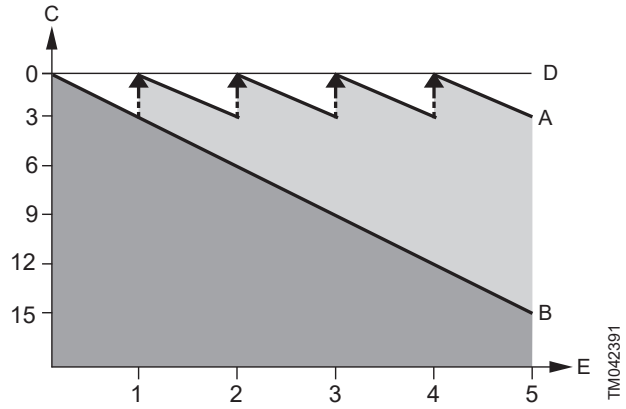
7.1 Features

SmartTrim

All Grundfos heavy-duty S-**tube**® impeller pumps are equipped with the SmartTrim impeller clearance adjustment system. This enables easy restoration of the factory-set impeller clearance and ensures peak pumping efficiency.

Only the adjustment screws on the exterior of the impeller housing need to be tightened, which can be done quickly and easily on-site, without dismantling the pump or using special tools.

For a video presenting the SmartTrim assembly, click here. (https://youtu.be/QZ6AodFNPBM)



Pos.	Description
A	With Grundfos SmartTrim impeller clearance adjustment system
B	Without impeller clearance adjustment system
C	Efficiency drop in percent (%)
D	Factory-set impeller clearance
E	Years

SmartSeal

The Grundfos SmartSeal auto-coupling gasket mounted on the pump outlet flange provides a completely leakproof connection between the pump and the base unit of the auto coupling. 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 sealed contact ball bearing.

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

Shaft seal

GR-1014783

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 A / ceramic.

Motor

SE and SL 9-30 kW motor components are compatible with the IEC, IE3, and NEMA premium efficiency standards.

The motor is a watertight and enclosed.

insulation class	H (180 °C)
temperature rise class	B (80 K)
enclosure class	IP68

Power cables

Standard (S1BN8-F)

Cable type [mm^2]	Outer cable diameter [mm]		Minimum bending radius [mm]
	Min.	Max.	
7 x 4 + 5 x 1.5	21.2	22.8	70
7 x 6 + 5 x 1.5	24.5	26.1	80
7 x 10 + 5 x 1.5	25.2	26.8	110

EMC (S1BC4N8-F)

Cable type [mm^2]	Outer cable diameter [mm]		Minimum bending radius [mm]
	Min.	Max.	
3 x 6 + 4 x2.5 + 5 x 0.5	26.3	28.3	90
3 x 10 + 4 x 2.5 +5 x 0.5	26.3	28.3	120
3 x 16 +4 x 4 + 5 x 0.5	26.3	28.3	140

When ordering a pump with an EMC cable, always indicate the main supply voltage as the connections for the correct voltage are placed inside the motor.

The standard cable length is 10 m. Other cable lengths are available on request. See Variants of customised pumps.

The cable dimension depends on the motor size.

Surface treatment

Grundfos pumps have the following surface treatments:

- cataphoresis treatment of all cast iron parts
- powder painting: NCS 9000N, RAL 9005 (black), gloss code 30, thickness average 150 µm.

Motor liquid

The motor is factory-filled with Grundfos motor liquid SML-3, which is frostproof up 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 miscibility:** Grundfos motor liquid is compatible with most other heat transfer fluids based on mono-propylene glycol. Grundfos motor liquid must 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

The watertight, stainless-steel cable entry has soft shape and sealing rings to prevent cable damage or leaks. The cable entry has a user-friendly design, which allows cable disconnection in a fast and easy way.

Sensors

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

Built-in sensors greatly reduce the risk of downtime and severe damage to the pump.

Sensors can be used for different purposes, depending on pump type and connection. For instance, moisture switches must cut out power 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 are indicated in the table below.

	Standard	Sensor version 1	Sensor version 2	Standard Ex	Sensor version 1 Ex	Sensor version 2 Ex
Thermal switch or PTC in windings	•	•	•	•	•	•
Moisture switch in motor top compartment	•	•	•	•	•	•
Leakage switch in leakage chamber	•	•	•			
Leakage switch in bottom of stator housing				•	•	•
Pt1000 in motor winding		•	•		•	•
Pt1000 in upper bearing			•			•
Pt1000 in lower bearing			•			•
PVS3 vibration sensor			•			•
SM 113 sensor module*			•*			•*
IO 113 module**			•**			•**

*For pumps fitted with two power cables, the SM 113 sensor module must be ordered separately and installed in the control cabinet.

**The IO 113 with communication functionality must be chosen and ordered separately.

As standard, the pump is equipped with:

- three thermal switches, one in each phase
- one moisture switch below the motor top cover
- one leakage switch in leakage chamber (standard pump) or in bottom of stator housing (standard Ex pump)

Pumps with sensor version 1 are equipped with:

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

Pumps with sensor version 2 are equipped with:

- all the 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 sensor module.

IO 113 with communication functionality

GR-1014619

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

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

The IO 113 with communication functionality is connected to the Dedicated Controls (DC) system and allows advanced monitoring functions:

- motor temperature
- moisture in motor
- insulation resistance.

SM 113 sensor module

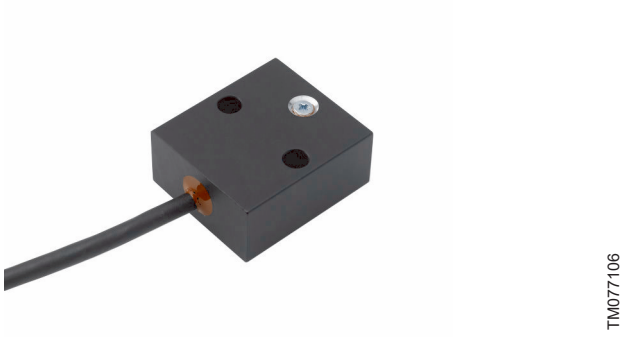
GR-1014621

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

The SM 113 sensor module can collect data from:

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

PVS 3 (pump vibration sensor)



TM077106

The pump vibration sensor monitors the vibration level of the pump in three axes. A change in the vibration level indicates an irregular situation, which can be caused by a clogged impeller, worn bearings or a closed outlet valve. Service inspection should be carried out to protect the pump and the pipe system from damage.

MP 204

GR-1015249

MP 204 can be used as a stand-alone motor protector or it can be incorporated in a Grundfos Dedicated Controls system, where it functions as a motor protector. The pump is protected secondarily by measuring the temperature with a Pt100 sensor and a PTC sensor or thermal switch.

Customised sensor options

1. 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.
2. 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 before the stator/bearings or other parts have reached a harmful temperature and before the built-in thermal protection cuts-out the motor on overtemperature. In this way, the pump can operate with the stator housing above liquid level, for short periods and with long intervals.
3. The upper and lower bearing temperature are monitored by PT1000 type sensors.
4. The vibration level of the pump is monitored by a Grundfos PVS3 sensor (4-20 mA analogue sensor). A change in the vibration level indicates an abnormal situation. This can be caused by a clogged impeller,

worn bearings or a closed outlet. It indicates that service inspection must be carried out to protect the pump or the pipe system from being damaged.

5. The winding resistance can be measured through the Grundfos IO 113 module with communication functionality.

Testing

All pumps are tested before leaving the factory. The factory test report is based on ISO 9906:2012, 3B. 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 Variants of customised pumps.

7.2 Operating conditions

SL, SL1, SL2 and SLV pumps without cooling jacket, submerged installation

- Continuous operation: The pump is completely submerged to the top of the motor. See also *Pump installation dimensions*.
- Intermittent operation: The pump is submerged to the middle of the motor and with short periods of operation down to the top of the pump housing (maximum 20 starts per hour). See also *Pump installation dimensions*.

Note: Explosion-proof pumps must always be completely submerged.

SL pump installation types

Grundfos SL pumps can be installed vertically and submerged, either permanently on an auto-coupling system or temporarily on a ring stand.

SE, SE1, SE2 and SEV pumps with cooling jacket, submerged or dry installation

- continuous and intermittent operation
- maximum 20 starts per hour

See also *Pump installation dimensions*.

SE pump installation types

Grundfos SE pumps can be installed:

- vertically and submerged, either permanently on an auto-coupling system or temporarily on a ring stand
- vertically and dry, on a base stand (up to 15 kW) or on a concrete foundation (above 15 kW)
- horizontally and dry, on a horizontal base stand.

7.2.1 Frequency converter, CUE

GR-1031499

Grundfos SE and SL pumps are designed for speed-controlled operation to keep the energy consumption at a minimum.

To avoid the risk of sedimentation in the pipes, operate the speed-controlled pump within a speed range of 30 to 100 % and at a flow rate above 1 m/s.

A frequency converter that is connected to a wastewater pump must be able to deliver a high and constant start torque.

Grundfos offers a range of dedicated Grundfos CUE frequency converters up to 250 kW designed to run wastewater pumps.

A frequency converter offering the possibility to run the wastewater pump in reverse operation is preferable.

For more information, see the installation and operating instructions of the selected frequency converter at www.grundfos.com (Grundfos Product Center).

7.2.2 Pumped liquids

- pH value: 6.5 to 14
- For fluctuating pH values, the range is pH 4 to 14.
- Liquid temperature: 0 to 40 °C.

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

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

7.2.3 Sound pressure

The sound pressure level of the pump is lower than 70 dB.

7.3 Motor range

Shaft power [kW]	Number of poles
10	4
11	4, 6
13	2, 4, 6
15	2, 4
16	6
17	2, 4
18	6
18.5	2, 4
20	2, 4
22	2, 4, 6
24	2
26.5	2

7.4 Explosion-proof pumps

Use explosion-proof pumps in potentially explosive environments.

When an explosion-proof pump is operated by a frequency converter, the explosion protection classification of the pumps is Ex db IIB T3 Gb.

For a directly driven explosion-proof pumps, the explosion protection classification of the pumps is Ex db IIB T4 Gb.

All installations must be approved by the local authorities.

7.5 Level controllers

Grundfos offers dedicated pump controllers for monitoring liquid levels in the wastewater collecting tanks to ensure correct operation and protection of the pumps.

The following Grundfos pump controllers are available:

- Grundfos Dedicated Controls (DC)
- Grundfos LC controllers

7.5.1 Grundfos DC Controllers

GR-10168086

Grundfos Dedicated Controls control cabinet

Grundfos Dedicated Controls (DC) is a control system designed for installation in municipal wastewater transport, commercial buildings or network pumping stations with up to six wastewater pumps and an optional mixer or a flush valve.

Advanced control and data communication are also possible with the Grundfos Dedicated Controls system. The control cabinets are delivered with a built-in main switch and thermal-magnetic circuit breaker.

Features and benefits:

- Advanced Flow Calculation
- automatic energy optimisation
- easy installation and configuration
- configuration wizard
- electrical overview
- advanced data communication
- advanced alarm and warning priority
- several languages
- daily emptying
- mixer control or flush valve
- user-defined functions
- anti-blocking

- start level variation
- advanced pump alternation with pump groups
- SMS scheduling
- communication to SCADA, BMS, GRM or cell phone.

Dedicated Controls is ordered either with or without a built-in communication interface module (CIM).

The communication module enables the possibility for fieldbus protocol (e.g. PROFIBUS DP, Modbus RTU and PROFINET IO/Modbus TCP) and the communication line.

For further information about Grundfos Dedicated Controls, see Grundfos Product Center:

- Grundfos Dedicated Controls, brochure http://net.grundfos.com/qr/i/96925597
- Grundfos iSolutions, brochure http://net.grundfos.com/qr/i/99249771
- Grundfos Controls Guide, product guide http://net.grundfos.com/qr/i/97954965
- Grundfos Dedicated Controls, data booklet net.grundfos.com/qr/i/98672840.

Additional features, CUE or VFD

Grundfos variable frequency drive CUE or a general variable frequency drive VFD offers better pump protection and a more steady flow through the pipe system.

In addition, Grundfos CUE or variable frequency drive VFD offers the following 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.

** Reversing at full speed is not recommended. When reduced reverse operation settings are set, make sure constant torque is enabled in VFD Grundfos CUE, Siemens Simatic, ABB, Schneider Electric, etc. to have maximum torque available when reversing.

7.5.2 Grundfos LC controllers

The LC 231 pump controller is designed for level control, monitoring and protection of Grundfos pumping stations featuring one or two pumps, starting direct-on-line. The LC 231 controller is built into a polymer cabinet.

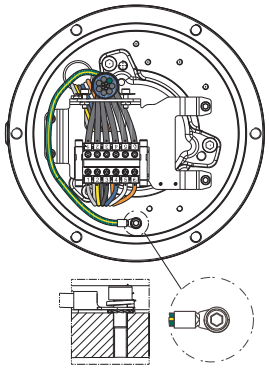
The LC 241 is a modular pump controller that has a metal or polymer cabinet and can be customised.

It is designed for level control, monitoring and protection of Grundfos pumping stations featuring one or two pumps, starting direct-on-line with 0-23 A, star-delta with 0-59 A or soft starter with 0-72 A.

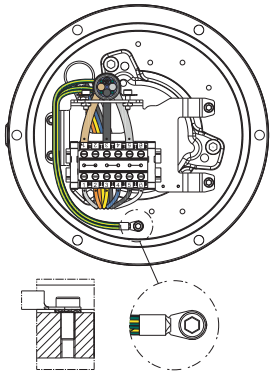
LC 231 and LC241 controller units

Wiring diagrams

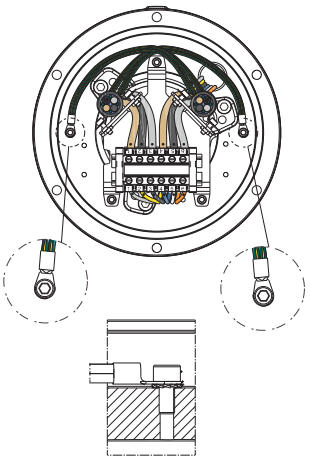
7.6.1 Cable connection



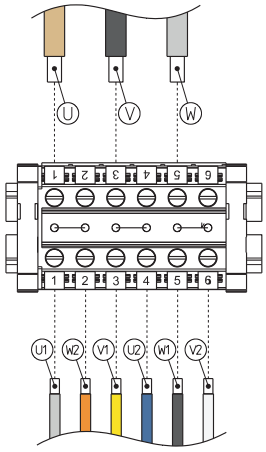
Earthing screw, single cable

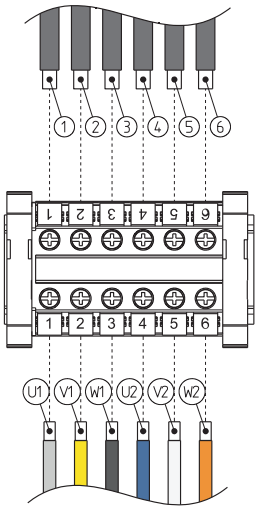


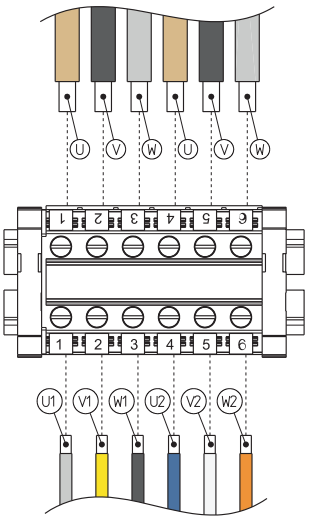
Earthing screw, dual cable



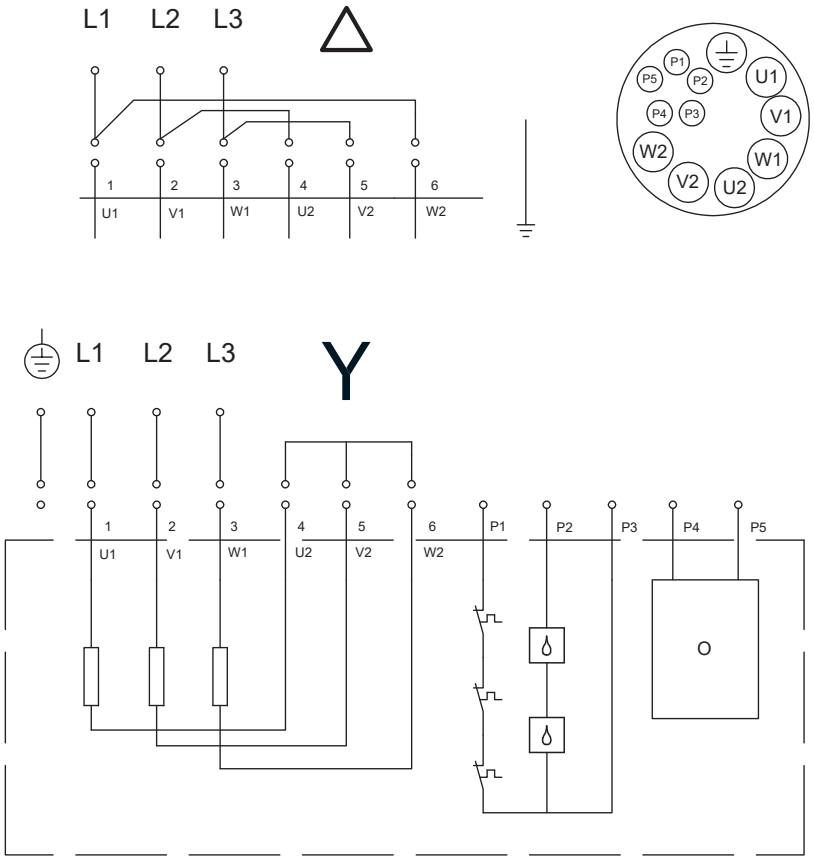
Earthing screw, dual cable EMC







7.6.2 Single-cable, star-delta connection

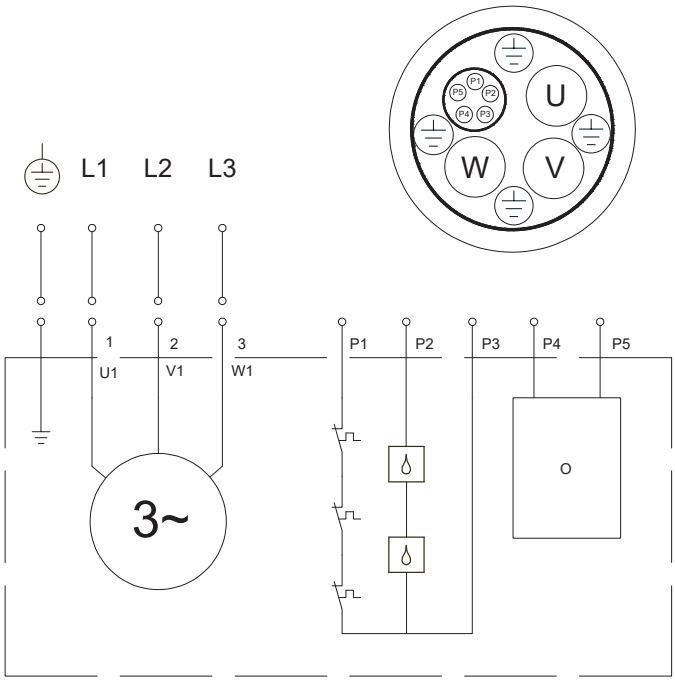


12-wire, star-delta connections (Y/D)

Pos.	Description
O	Optional

7.6.3 EMC single-cable or double-cable

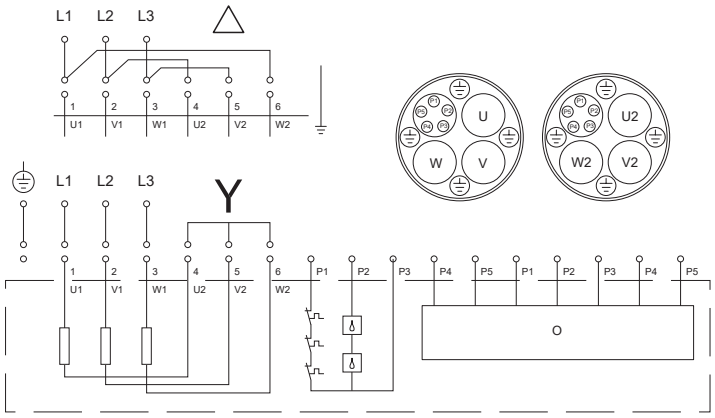
Always indicate the main supply voltage when ordering the pump as it is connected at the factory according to this information.



TM052694

8-wire, EMC cable

Pos.	Description
O	Optional



TM074220

18-wire / EMC double-cable

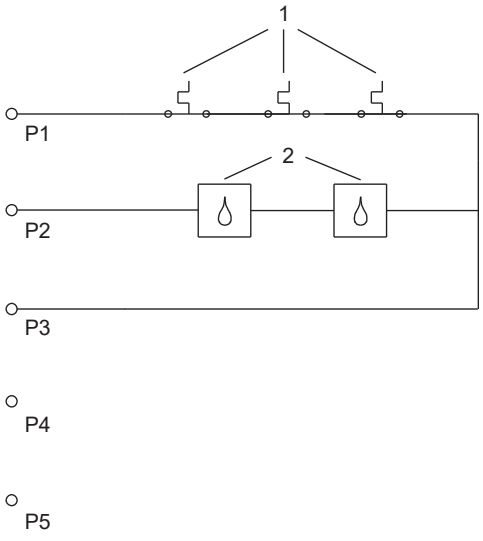
Pos.	Description
O	Optional

Sensor wiring

7.7.1 Sensor wiring schematics for single-cable pumps

For sensor versions, see *Features* .

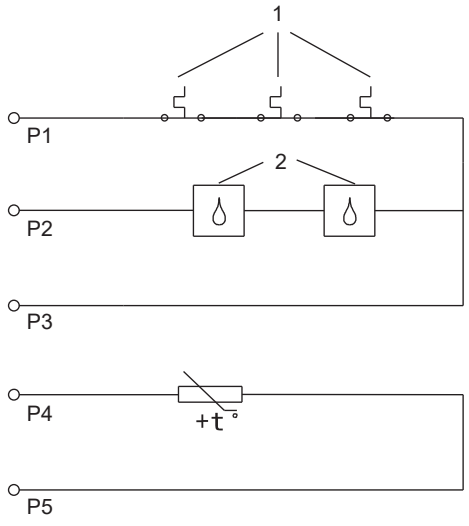
7.7.1.1 Standard, single-cable



Standard and Standard Ex, single-cable

Pos.	Description
1	Thermal switches
2	Moisture-/Leakage switch

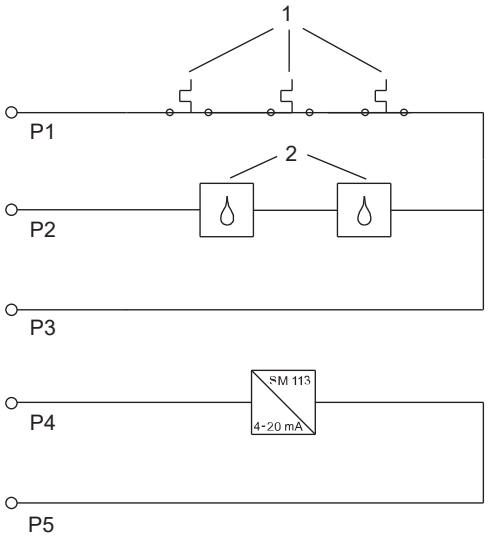
7.7.1.2 Sensor version 1, single-cable



Sensor version 1 and sensor version 1 Ex, single-cable

Pos.	Description
1	Thermal switches
2	Moisture-/Leakage switch

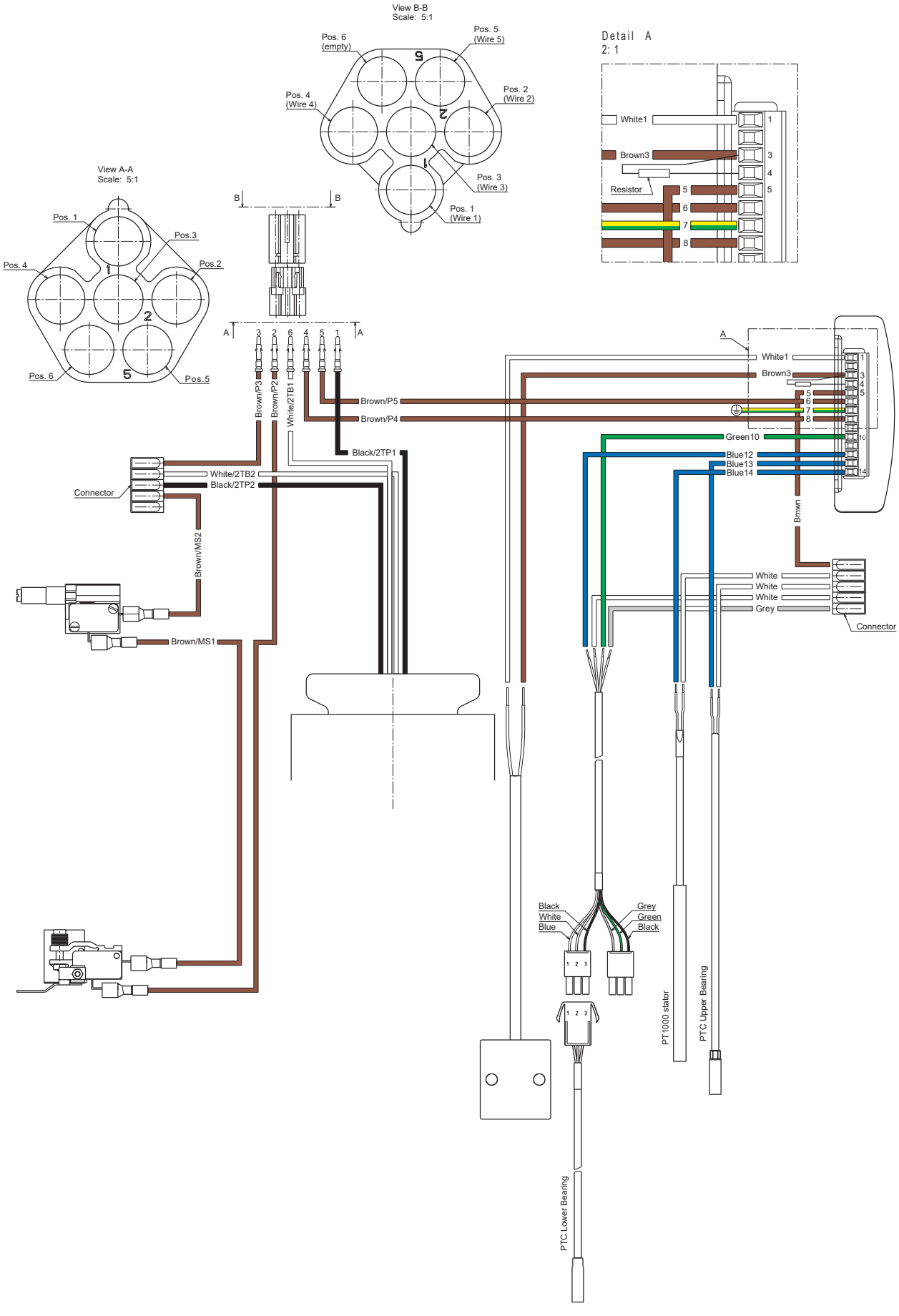
7.7.1.3 Sensor version 2, single-cable



Sensor version 2 and sensor version 2 Ex, single-cable

Pos.	Description
1	Thermal switches
2	Moisture-/Leakage switch

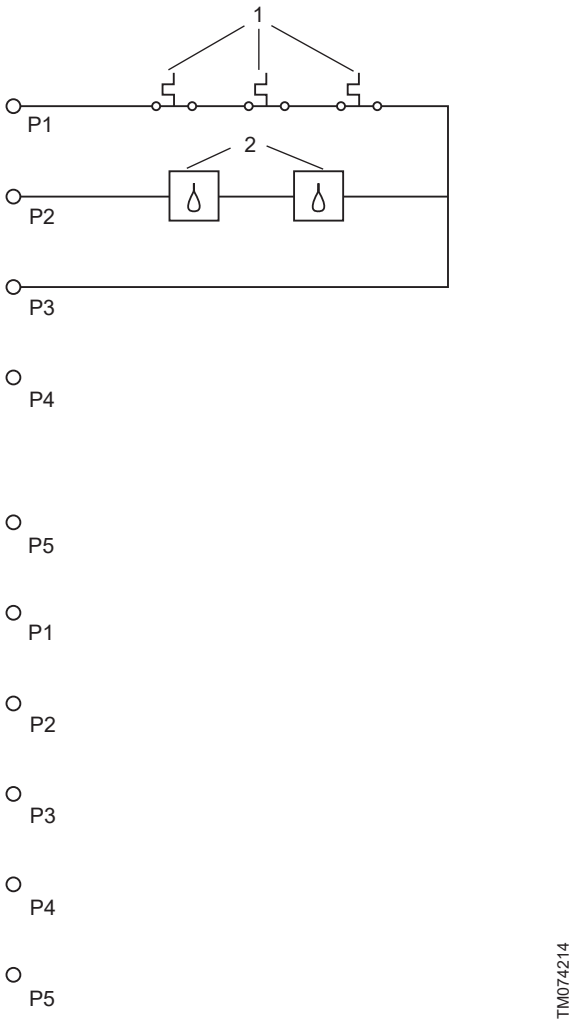
7.7.1.4 Sensor version 2 Ex PTC single-cable



7.7.2 Sensor wiring schematics for double-cable pumps

For sensor versions, see Sensors.

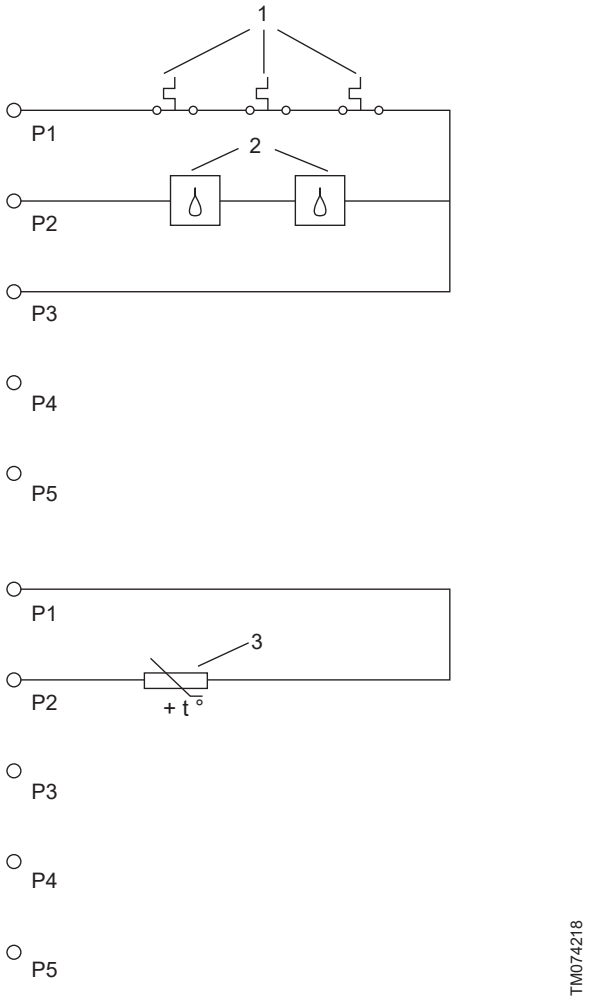
7.7.2.1 Standard, double-cable



Standard and Standard Ex, double-cable

Pos.	Description
1	Thermal switches/Thermistor
2	Moisture-/Leakage switch

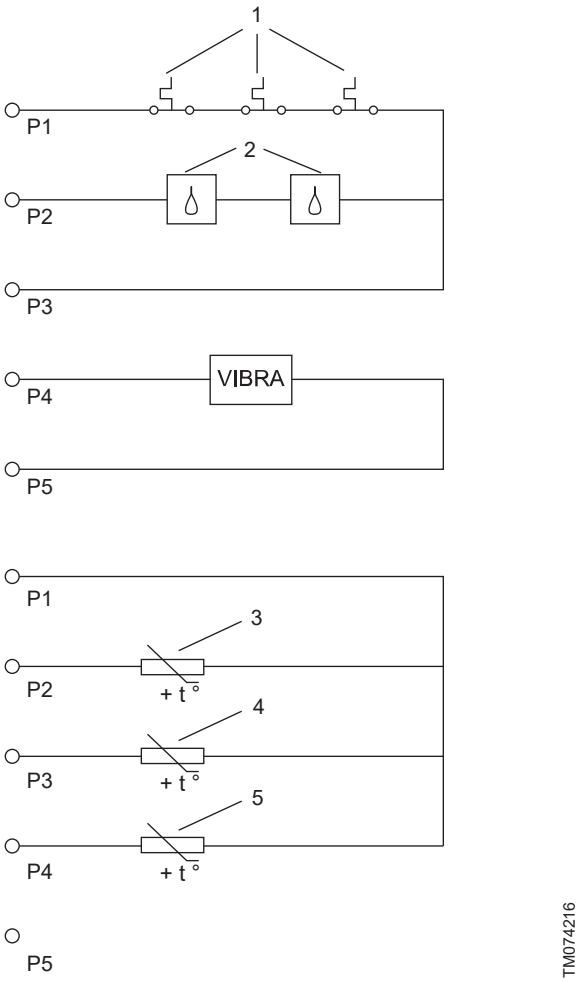
7.7.2.2 Sensor version 1, double-cable



Sensor version 1 and Sensor version 1 Ex, double-cable

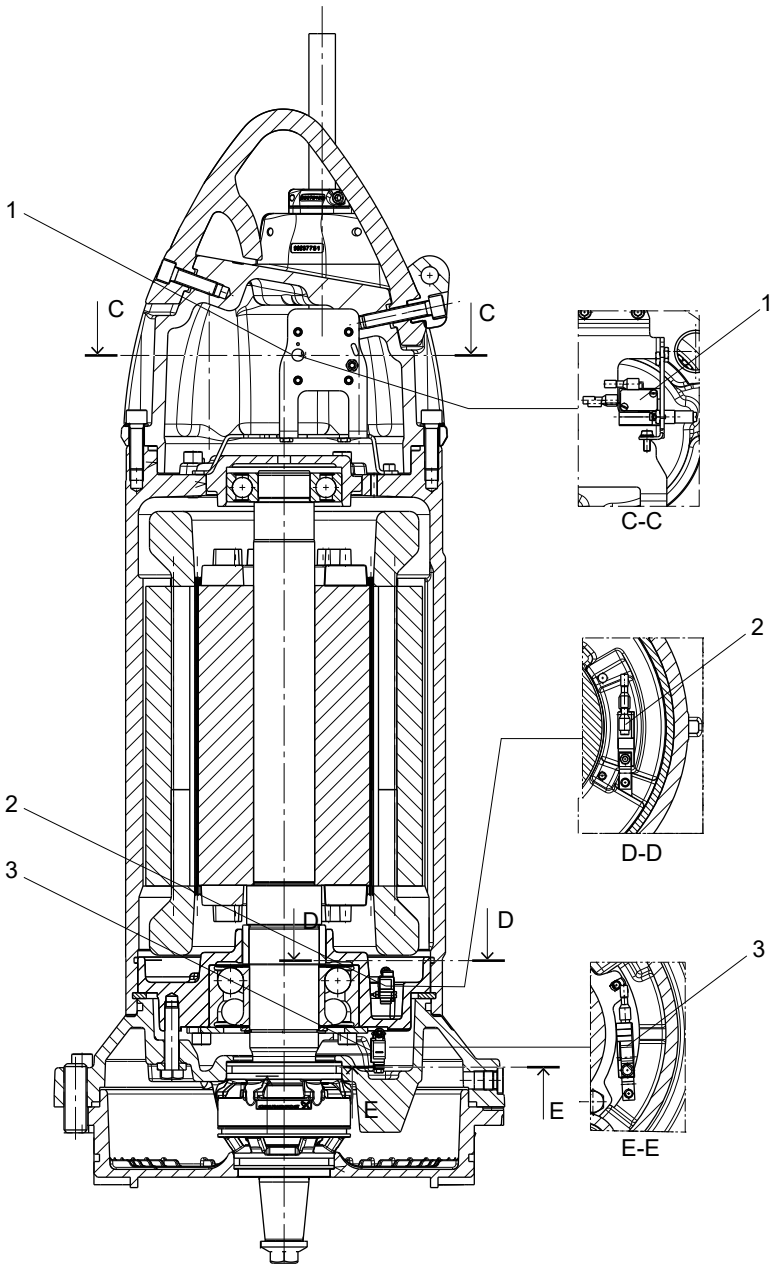
Pos.	Description
1	Thermal switches/Thermistor
2	Moisture-/Leakage switch
3	Pt1000 stator

7.7.2.3 Sensor version 2, double-cable



Sensor version 2 and Sensor version 2 Ex, double-cable

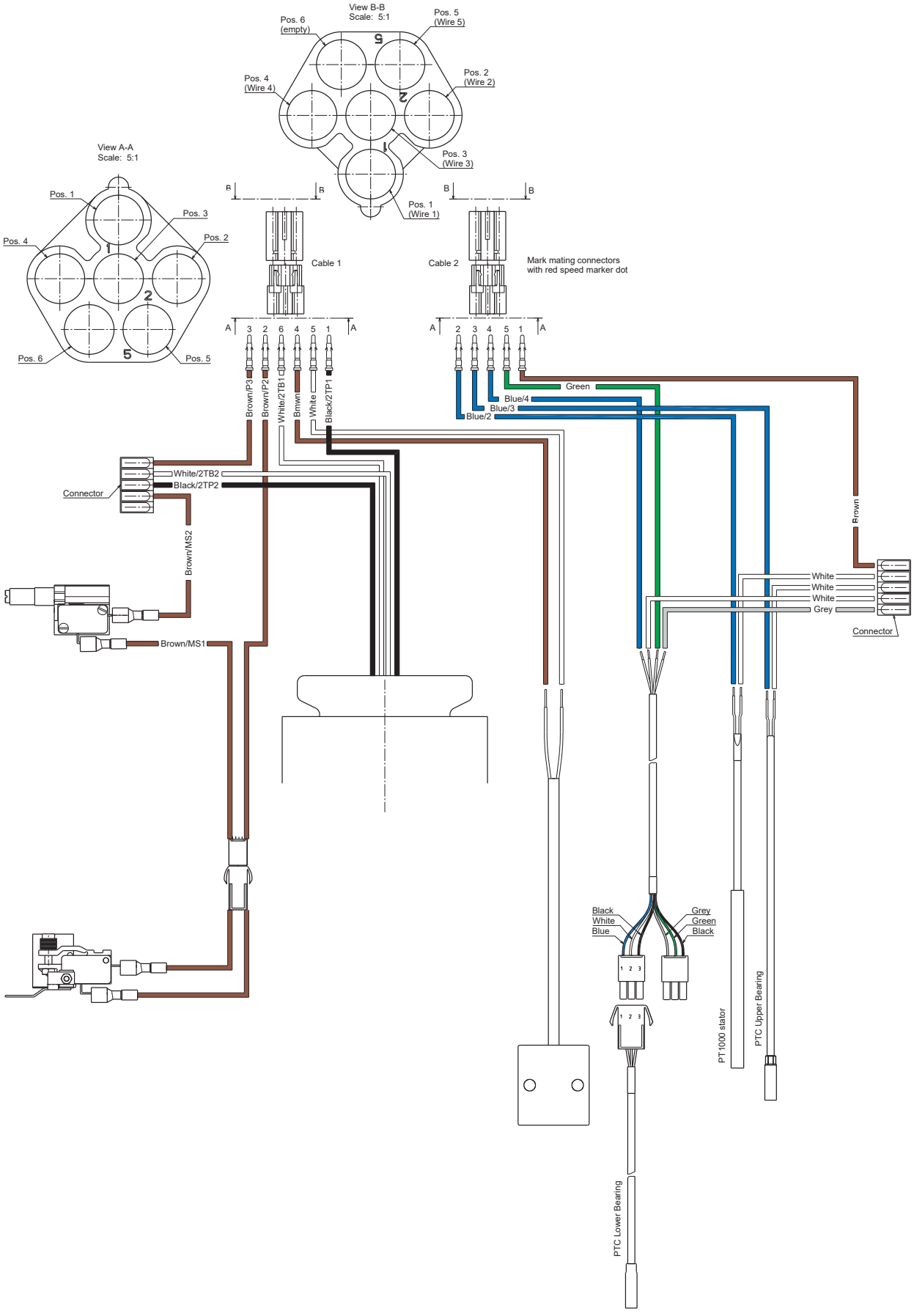
Pos.	Description
1	Thermal switches/Thermistor
2	Moisture-/Leakage switch
3	Pt1000 stator
4	Pt1000 upper bearing
5	Pt1000 lower bearing



Sensor positions

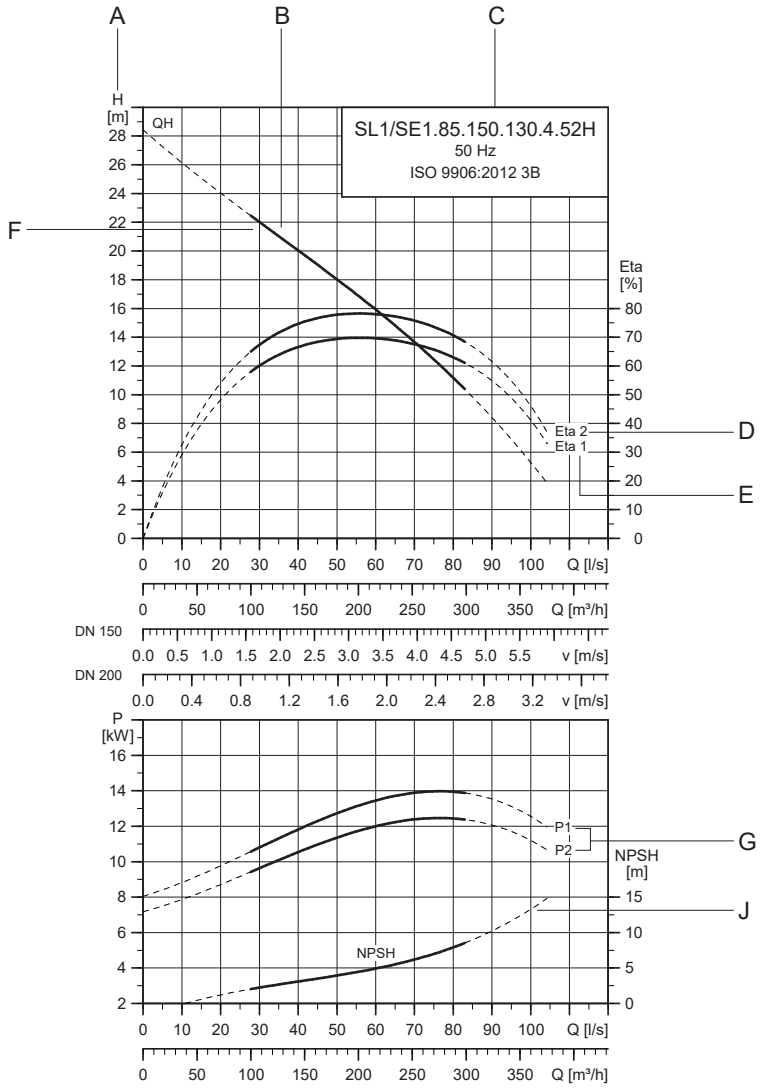
Pos.	View	Description
1	C-C	Moisture switch
2	D-D	Leakage switch in stator housing, for Ex motors
3	E-E	Leakage switch in leakage chamber, for standard motors

7.7.2.4 Sensor version 2 Ex PTC double-cable



8. Performance curves and technical data

8.1 How to read performance curves



TM077966

Pos.	Description
A	Total pump head
	$H = H_{totaD}$
B	QH curve
C	Pump type
D	Eta2 is the hydraulic efficiency (pump).
E	Eta1 is the total efficiency (pump + motor).
F	The solid line represents the permissible operating range. The dotted line represents the range that the pump is not designed to operate.
G	Power curves indicating input power [P_1] and motor output power [P_2] of the pump shown.
J	NPSH curve for all variants are defined as maximum NPSH curves.

Note: Pumps are tested according to ISO 9906:2012 grade 3B tolerances. Testing equipment and measuring instruments are designed and calibrated according to the standards mentioned. The pumps are approved according to tolerances for the entire curve, specified in grade 3B.

8.2 Curve conditions

The guidelines below apply to the curves indicated in the performance charts in *Performance curves and technical data*.

- Tolerances according to: ISO 9906:2012, grade 3B.
- 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^2/s (1 cSt).
- **ETA:** The lines show the hydraulic efficiency values of the pump for the different impeller diameters.
- **NPSH:** The curves show maximum NPSH values according to ISO 9906:2012.
- In case of densities other than 1000 kg/m^3, the outlet pressure is proportional to the density.
- When pumping liquids with a density higher than 1000 kg/m^3, use motors with correspondingly higher outputs.

Calculation of total head

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

$H_{total} = H_{geo} + H_{stat} + H_{dyn}$	
H_{geo}:	height difference between measuring points.
H_{stat}:	differential head between the inlet and the outlet side of the pump.
H_{dyn}:	calculated values based on the velocity of the pumped liquid on the inlet and the outlet side of the pump.

8.3 Performance tests

The requested duty point for each pump is tested according to ISO 9906:2012, grade 3B, and without certification.

In case of pumps ordered on the basis of the impeller diameter only (no requested duty point), the pumps are tested at a duty point which is 2/3 of the maximum flow rate of the published performance curves which is related to the ordered impeller diameter (according to ISO 9906:2012, grade 3B).

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

8.4 Certificates

Certificates are available on request and have to be confirmed for each order.

8.5 Witness test

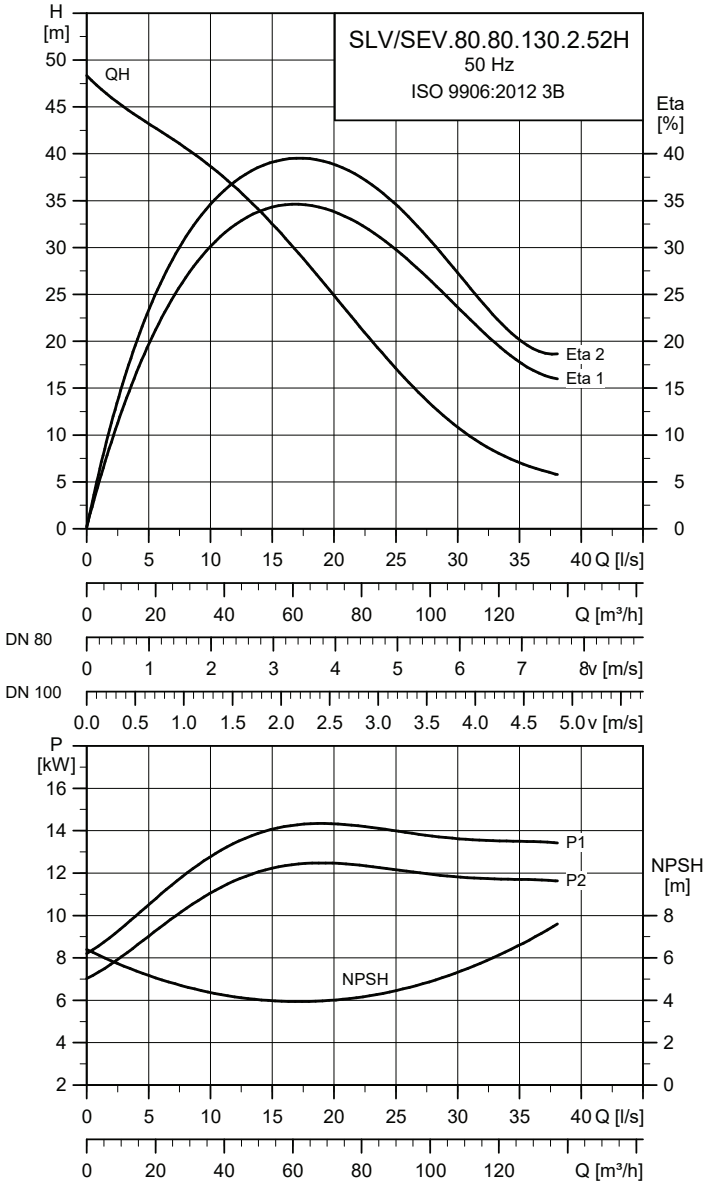
According to ISO 9906:2012, the customer can witness the testing procedure.

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

If a witness test is required, the request must be stated on the order.

SuperVortex impeller

8.6.1 SLV/SEV.80.80.130.2.52H



TM053639

Electrical data

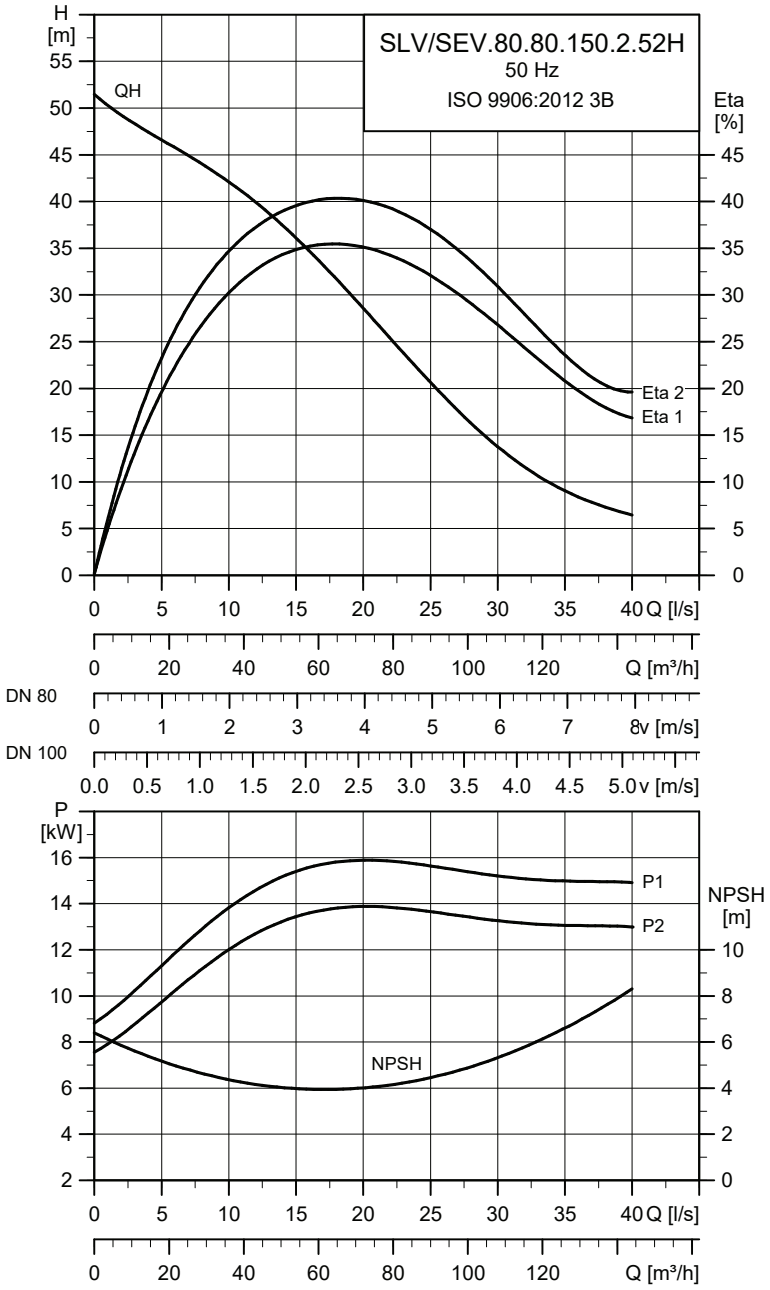
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SLV/SEV.80.80.130.2.52H	380-415	15	13	2	2947	Y/D	27-25	245	79	82	86	0.72	0.81	0.86	0.0490	137
	660-690						16-15	138								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.130.2.52H	221.5	80	10	20

Note: Pumps with stainless steel SuperVortex impellers have the same performance curves as the corresponding cast iron versions.

8.6.2 SLV/SEV.80.80.150.2.52H



TM053638

Electrical data

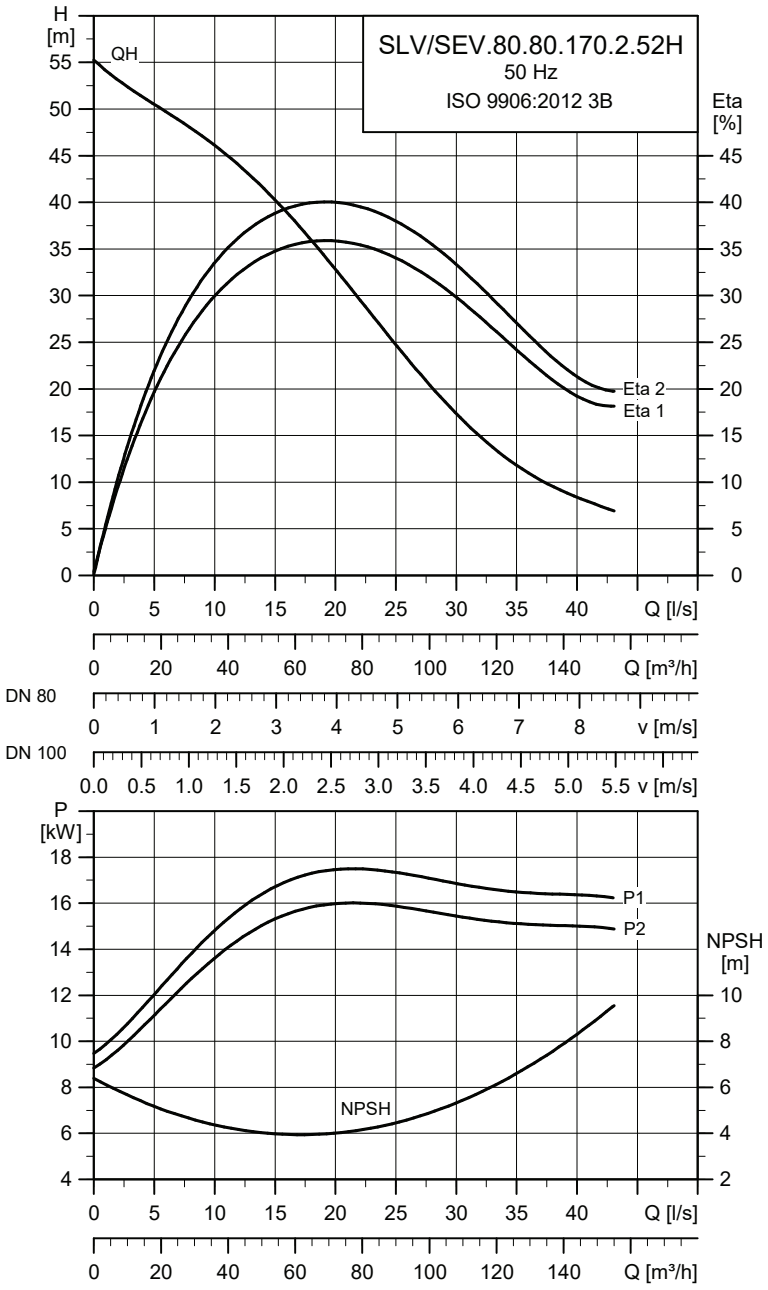
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SLV/SEV.80.80.150.2.52H	380-415	17	15	2	2947	Y/D	30-28	245	80	84	88	0.75	0.84	0.88	0.0490	137
	660-690						18-17	138								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.150.2.52H	228	80	10	20

Note: Pumps with stainless steel SuperVortex impellers have the same performance curves as the corresponding cast iron versions.

8.6.3 SLV/SEV.80.80.170.2.52H



TM053620

Electrical data

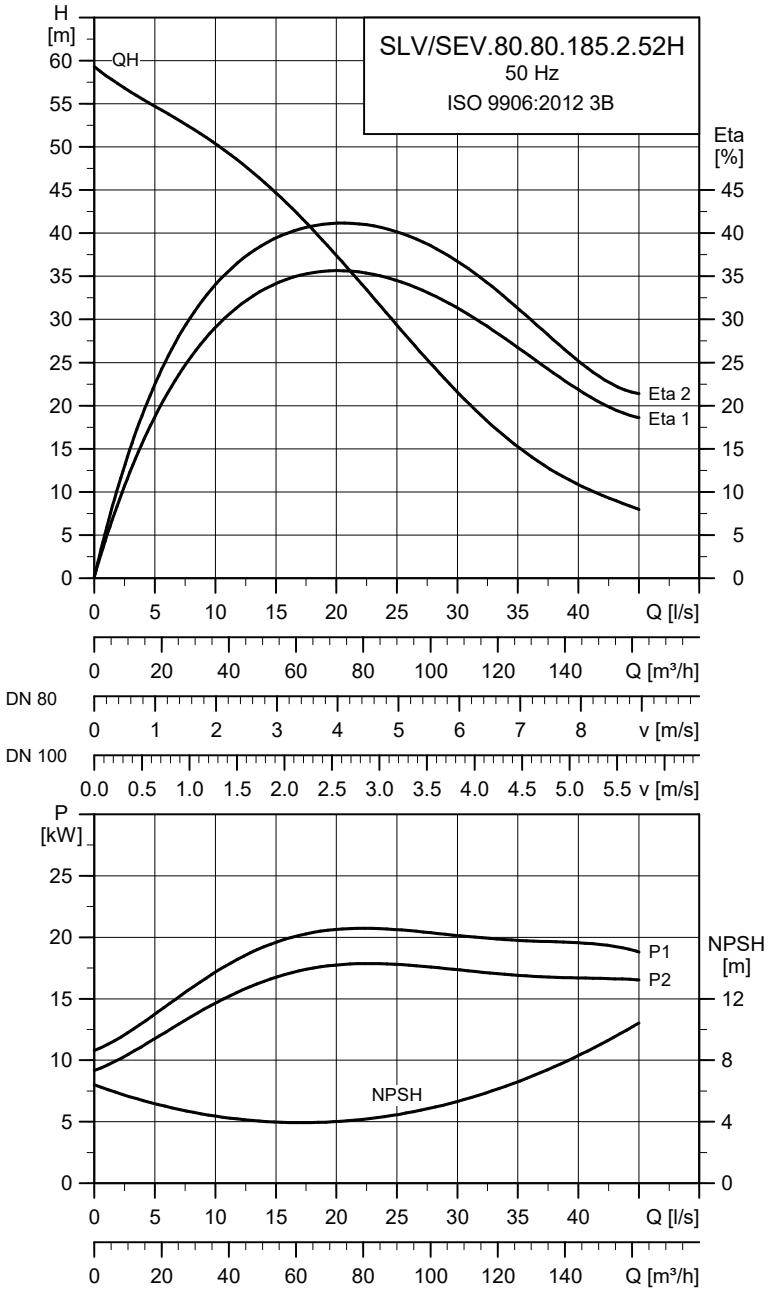
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SLV/SEV.80.80.170.2.52H	380-415	19	17	2	2950	Y/D	34-32	318	84	88	88	0.73	0.82	0.86	0.0580	210
	660-690						20-19	175								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.170.2.52H	235	80	10	20

Note: Pumps with stainless steel SuperVortex impellers have the same performance curves as the corresponding cast iron versions.

8.6.4 SLV/SEV.80.80.185.2.52H



TM053600

Electrical data

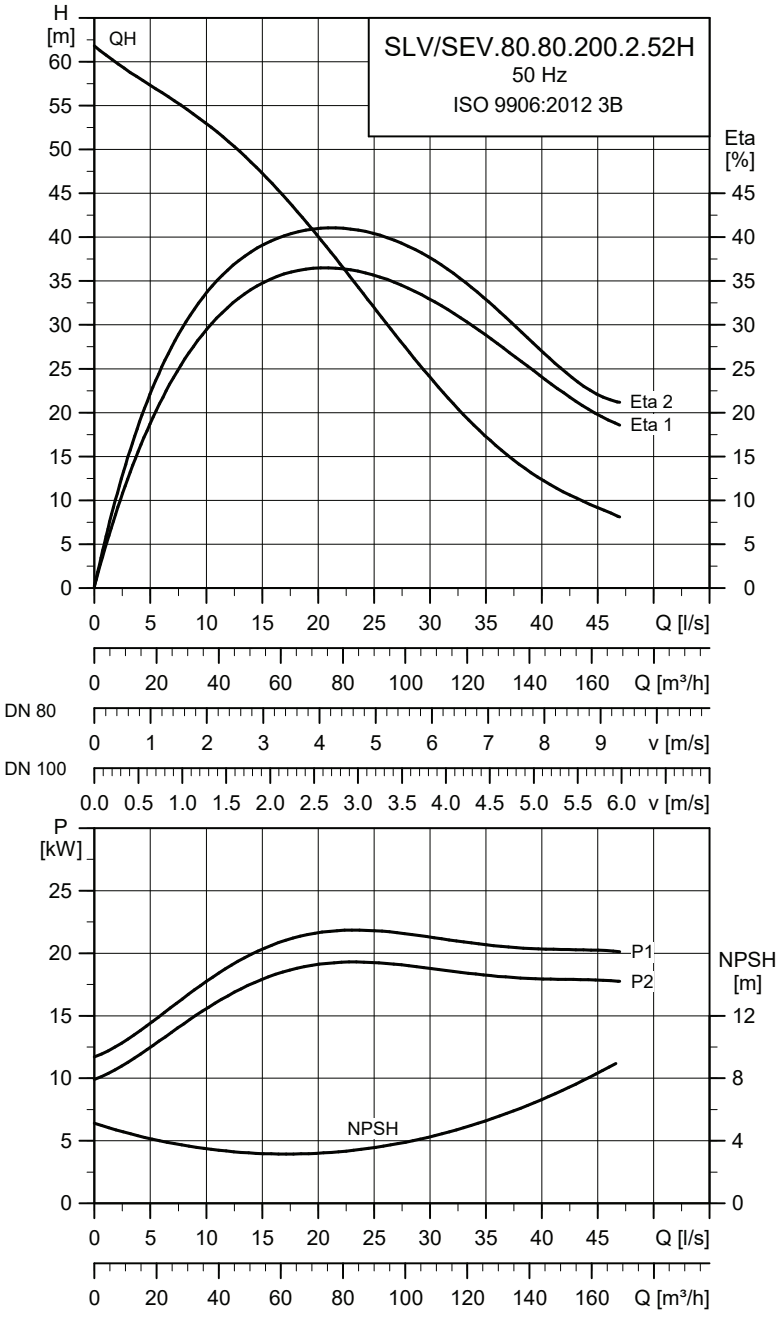
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SLV/SEV.80.80.185.2.52H	380-415	21	18.5	2	2950	Y/D	38-35	318	85	88	88	0.75	0.84	0.86	0.0580	210
	660-690						22-21	175								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.185.2.52H	242	80	10	20

Note: Pumps with stainless steel SuperVortex impellers have the same performance curves as the corresponding cast iron versions.

8.6.5 SLV/SEV.80.80.200.2.52H



TM053619

Electrical data

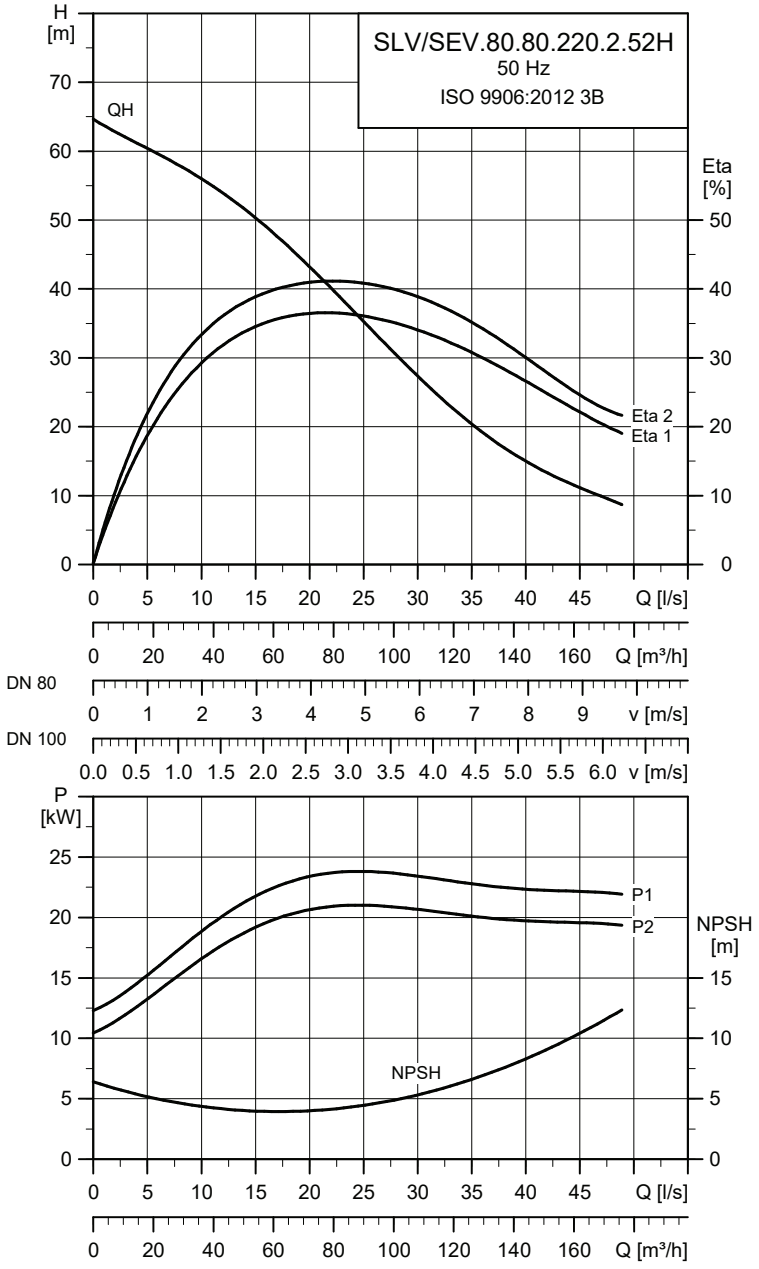
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SLV/SEV.80.80.200.2.52H	380-415	23	20	2	2937	Y/D	39-36	388	85	88	88	0.79	0.86	0.89	0.0650	228
	660-690						23-22	213								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.200.2.52H	247	80	10	20

Note: Pumps with stainless steel SuperVortex impellers have the same performance curves as the corresponding cast iron versions.

8.6.6 SLV/SEV.80.80.220.2.52H



TM053599

Electrical data

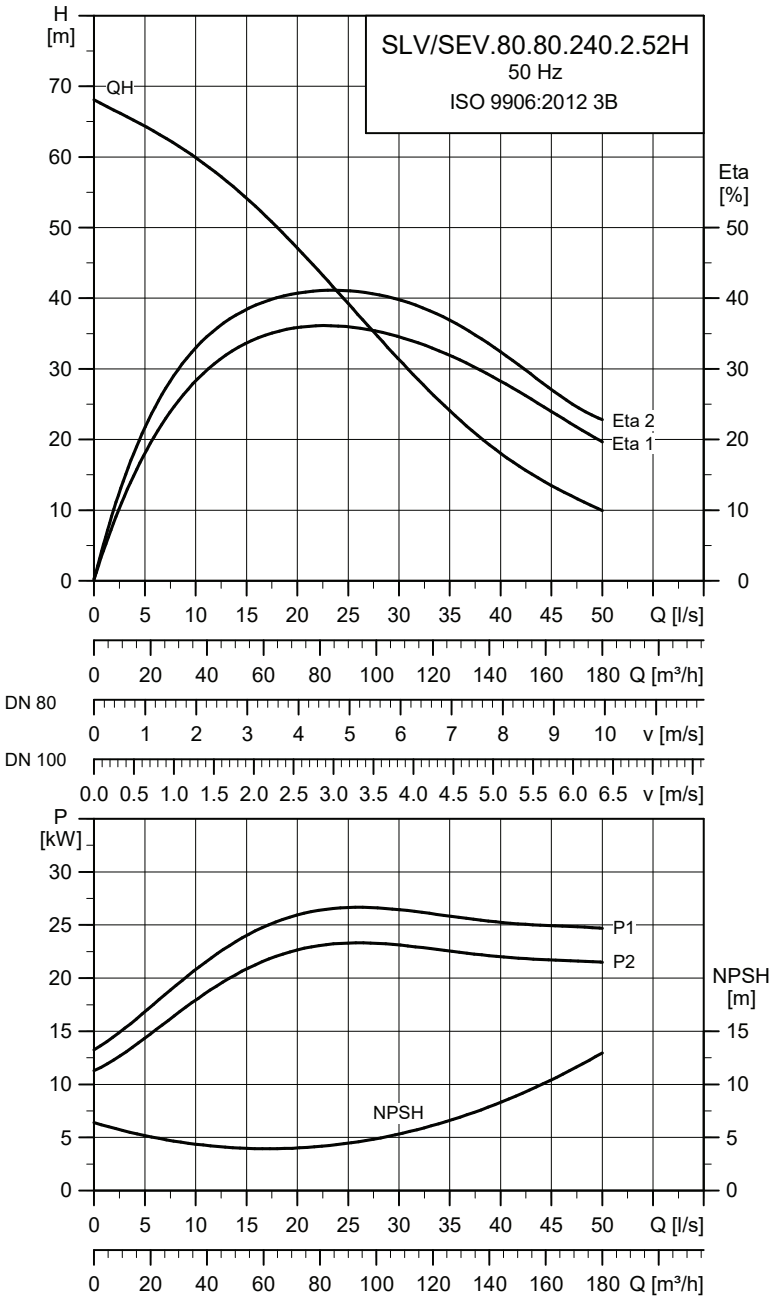
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SLV/SEV.80.80.220.2.52H	380-415	25	22	2	2937	Y/D	43-40	388	86	88	88	0.81	0.87	0.89	0.0650	228
	660-690						25-24	213								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.220.2.52H	253	80	10	20

Note: Pumps with stainless steel SuperVortex impellers have the same performance curves as the corresponding cast iron versions.

8.6.7 SLV/SEV.80.80.240.2.52H



TM053618

Electrical data

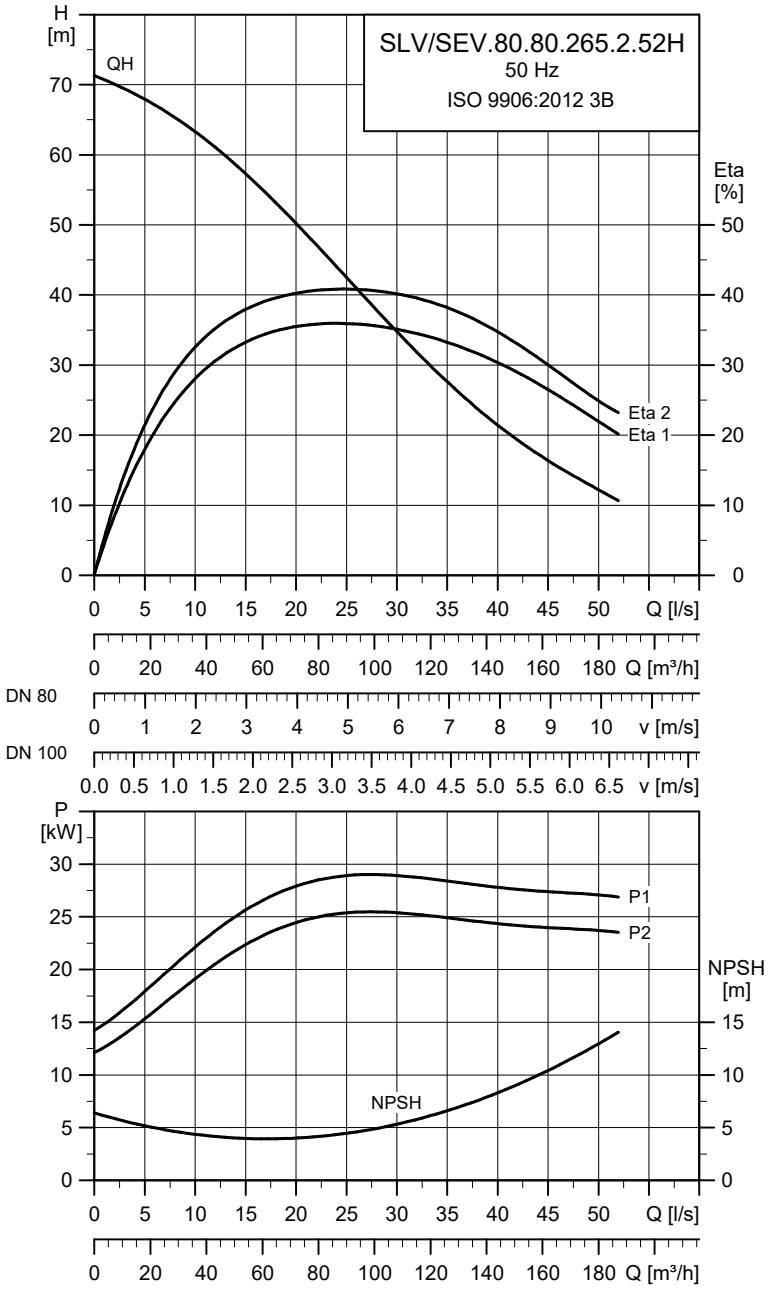
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SLV/SEV.80.80.240.2.52H	380-415	27	24	2	2955	Y/D	51-47	582	84	86	88	0.69	0.77	0.82	0.0650	228
	660-690						30-28	320								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.240.2.52H	262	80	10	20

Note: Pumps with stainless steel SuperVortex impellers have the same performance curves as the corresponding cast iron versions.

8.6.8 SLV/SEV.80.80.265.2.52H



TM053598

Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SLV/SEV.80.80.265.2.52H	380-415	30	26.5	2	2955	Y/D	56-51	582	85	87	88	0.71	0.79	0.83	0.0650	228
	660-690						32-31	320								

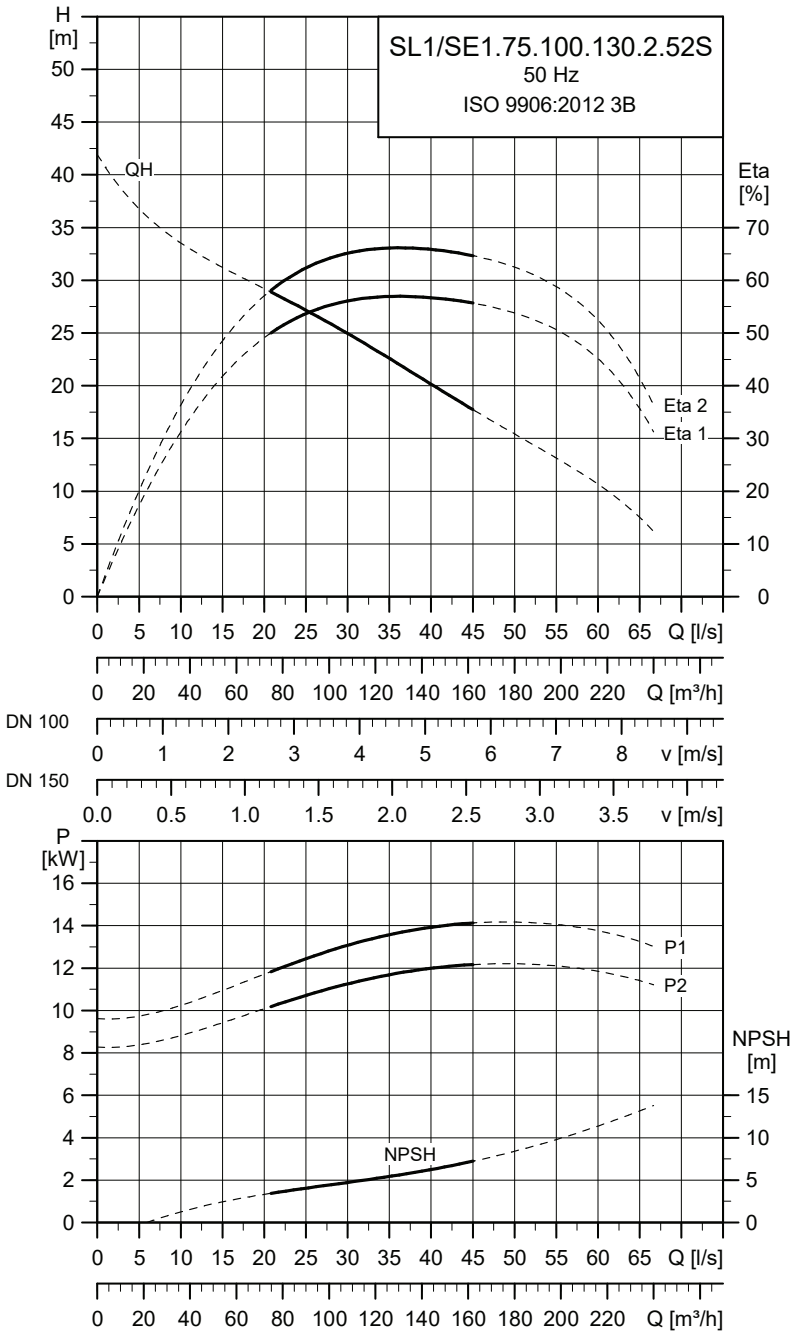
Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SLV/SEV.80.80.265.2.52H	271	80	10	20

Note: Pumps with stainless steel SuperVortex impellers have the same performance curves as the corresponding cast iron versions.

Closed S-tube® impeller

8.7.1 SL1/SE1.75.100.130.2.52S



TM053624

Electrical data

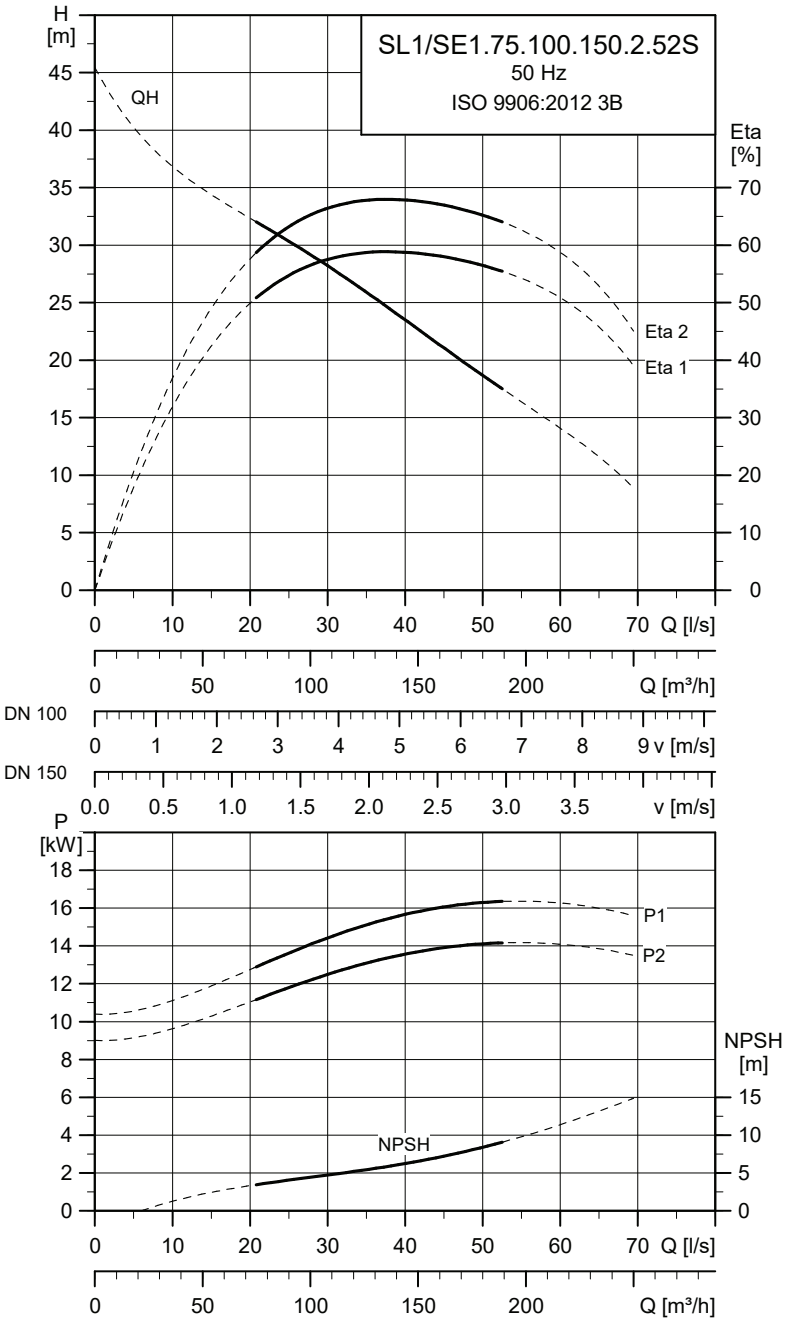
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.75.100.130.2.52S	380-415	15	13	2	2973	Y/D	27-25	245	79	82	86	0.72	0.81	0.86	0.0490	137
	660-690						16-15	138								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.75.100.130.2.52S	178	75	10	20

Note: Pumps with stainless steel closed S**-tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.2 SL1/SE1.75.100.150.2.52S



TM053604

Electrical data

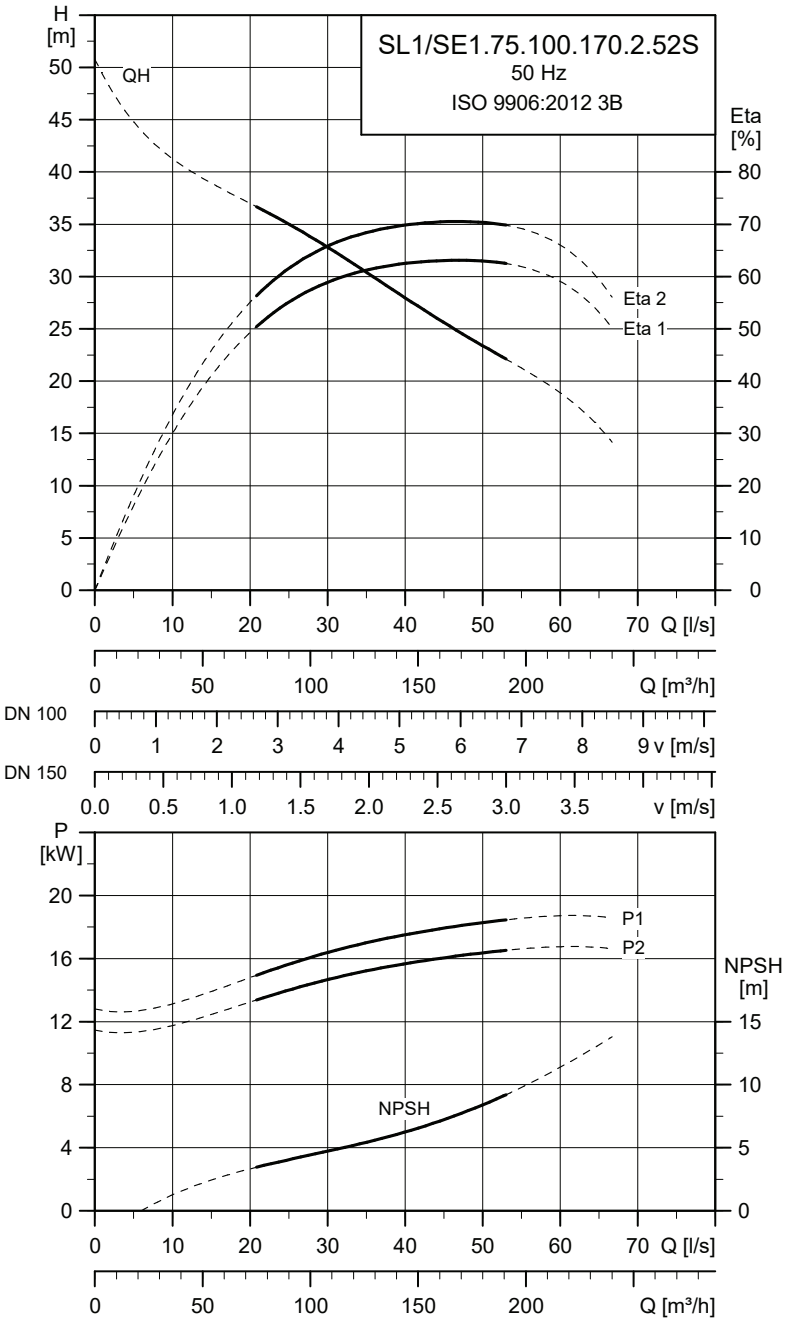
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.75.100.150.2.52S	380-415	17	15	2	2966	Y/D	30-28	245	80	84	88	0.75	0.84	0.88	0.0490	137
	660-690						18-17	138								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.75.100.150.2.52S	182	75	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.3 SL1/SE1.75.100.170.2.52S



TM053623

Electrical data

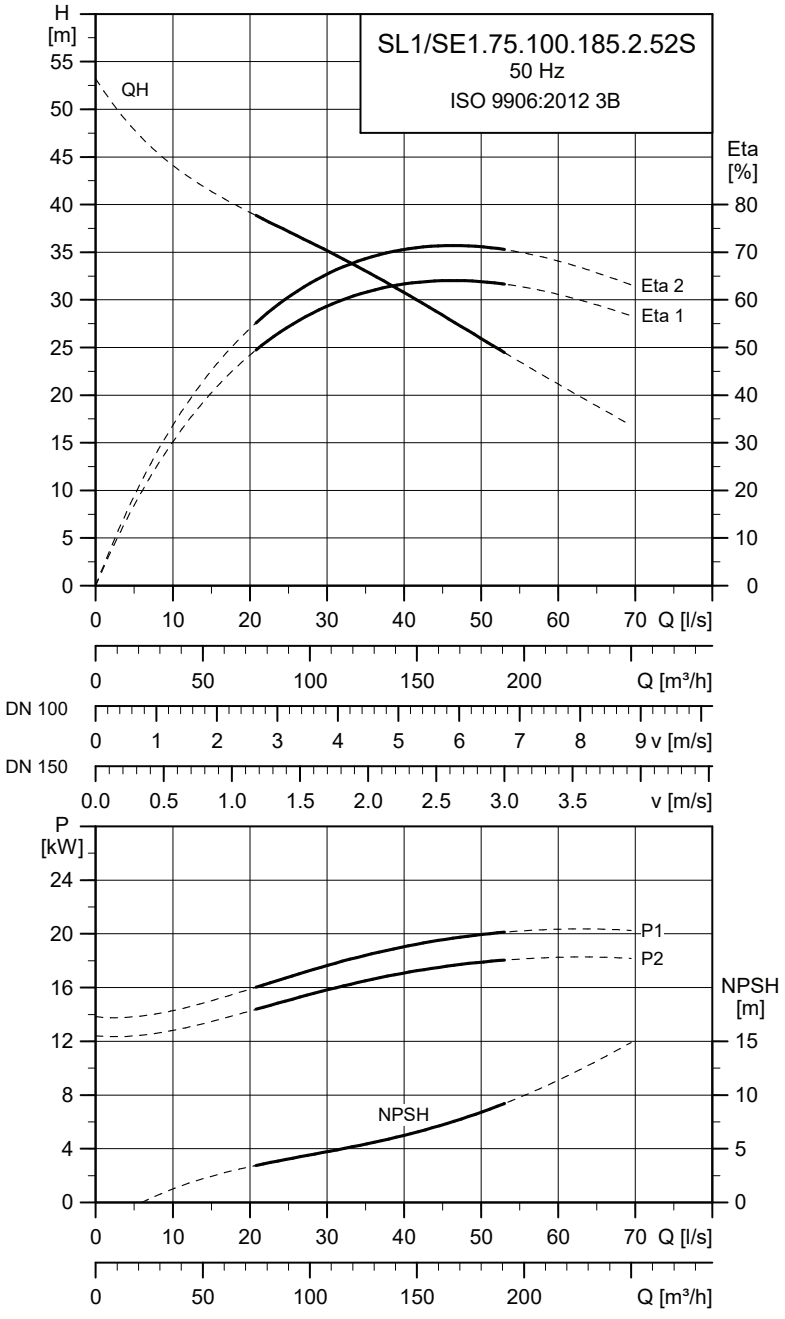
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.75.100.170.2.52S	380-415	19	17	2	2969	Y/D	34-32	318	84	88	88	0.73	0.82	0.86	0.0580	210
	660-690						20-19	175								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.75.100.170.2.52S	186.5	75	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.4 SL1/SE1.75.100.185.2.52S



TM053603

Electrical data

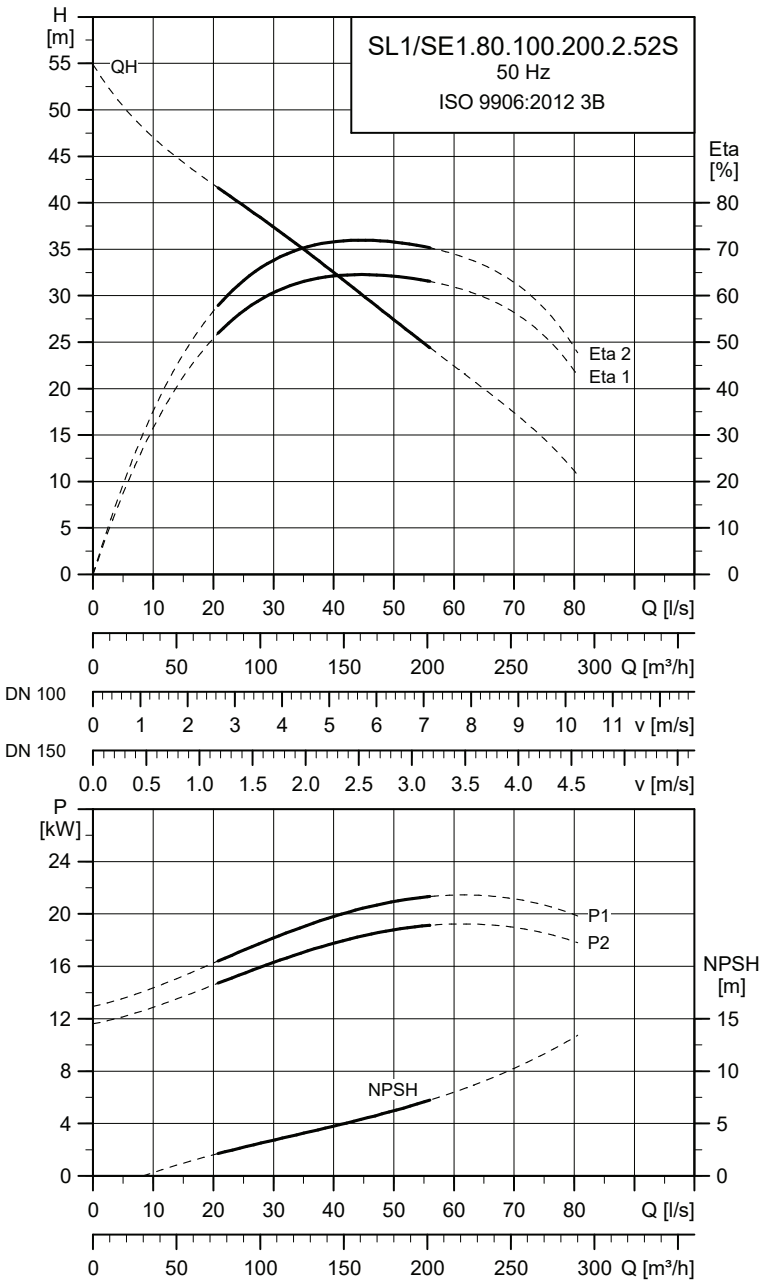
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.75.100.185.2.52S	380-415	21	18.5	2	2964	Y/D	38-35	318	85	88	88	0.75	0.84	0.86	0.0580	210
	660-690						22-21	175								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.75.100.185.2.52S	192	80	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.5 SL1/SE1.80.100.200.2.52S



TM053622

Electrical data

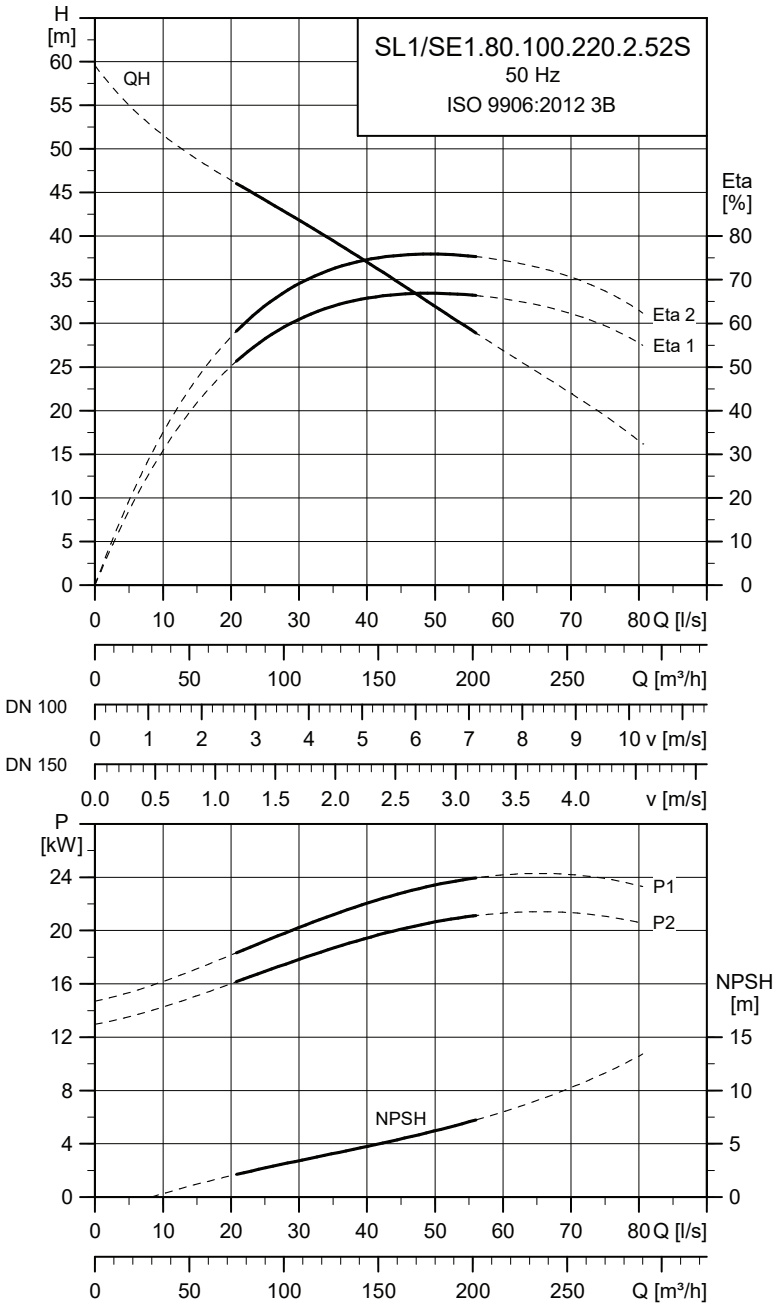
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.80.100.200.2.52S	380-415	23	20	2	2968	Y/D	39-36	388	85	88	88	0.79	0.86	0.89	0.0650	228
	660-690						23-22	213								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.80.100.200.2.52S	197.5	80	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.6 SL1/SE1.80.100.220.2.52S



TM053602

Electrical data

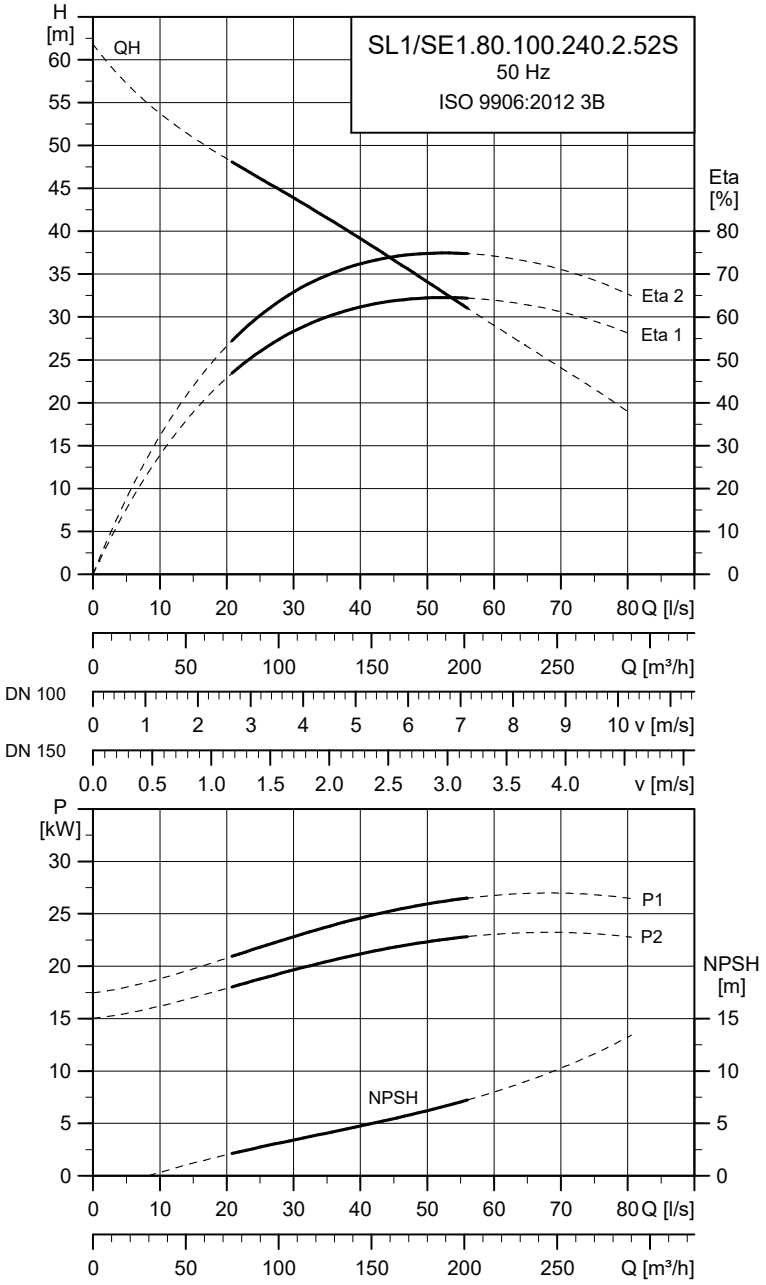
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.80.100.220.2.52S	380-415	25	22	2	2963	Y/D	43-40	388	86	88	88	0.81	0.87	0.89	0.0650	228
	660-690						25-24	213								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.80.100.220.2.52S	253	80	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.7 SL1/SE1.80.100.240.2.52S



TM053621

Electrical data

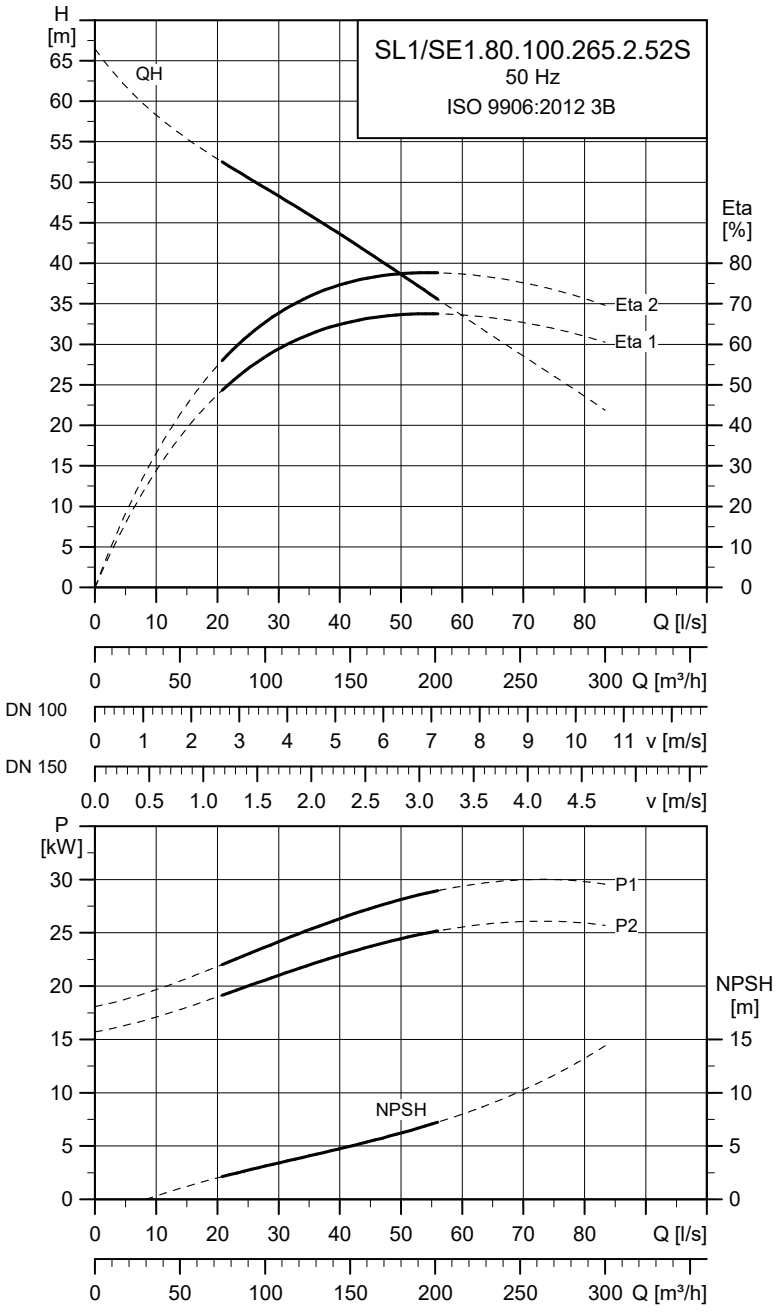
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.80.100.240.2.52S	380-415	27	24	2	2971	Y/D	51-47	582	84	86	88	0.69	0.77	0.82	0.0650	228
	660-690						30-28	320								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.80.100.240.2.52S	209	80	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.8 SL1/SE1.80.100.265.2.52S



TM053601

Electrical data

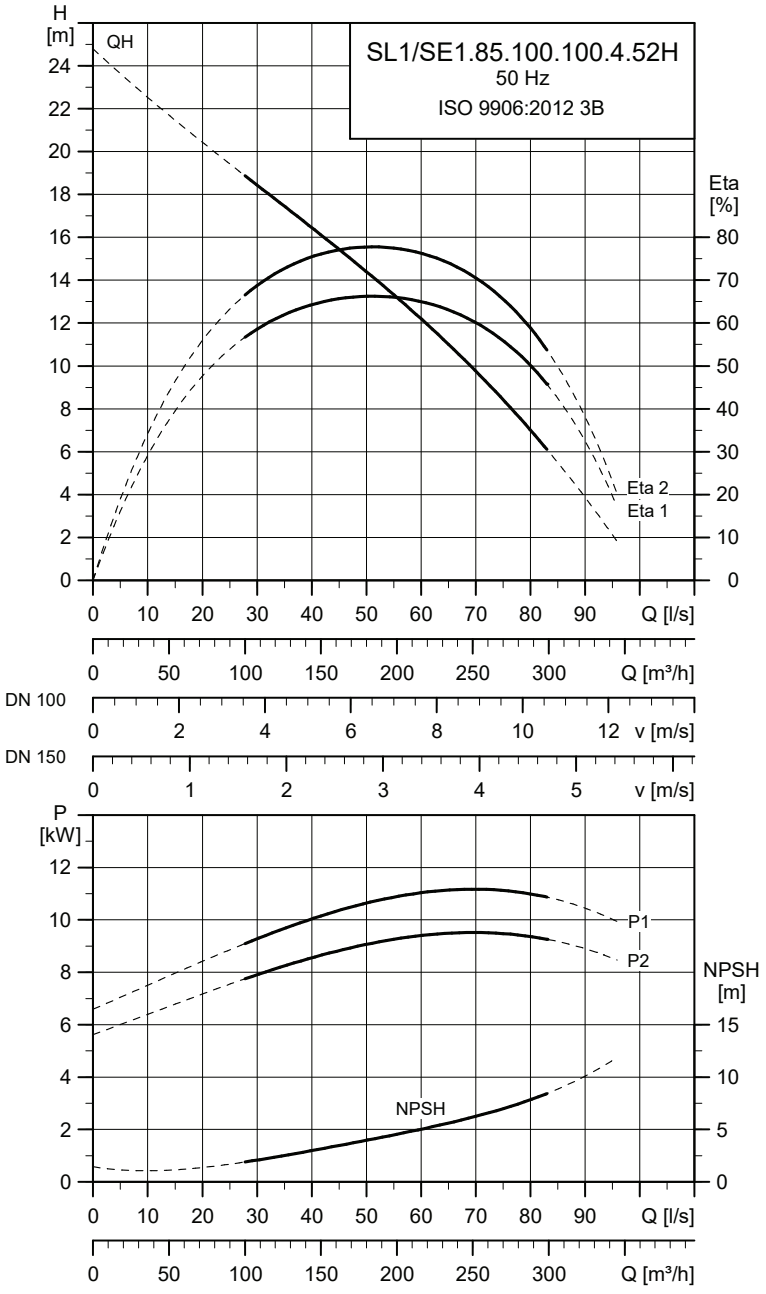
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.80.100.265.2.52S	380-415 / 660-690	30	26.5	2	2967	Y/D	56-51 / 32-31	582 / 320	85	87	88	0.71	0.79	0.83	0.0650	228

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.80.100.265.2.52S	215	80	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.9 SL1/SE1.85.100.100.4.52H



TM066802

Electrical data

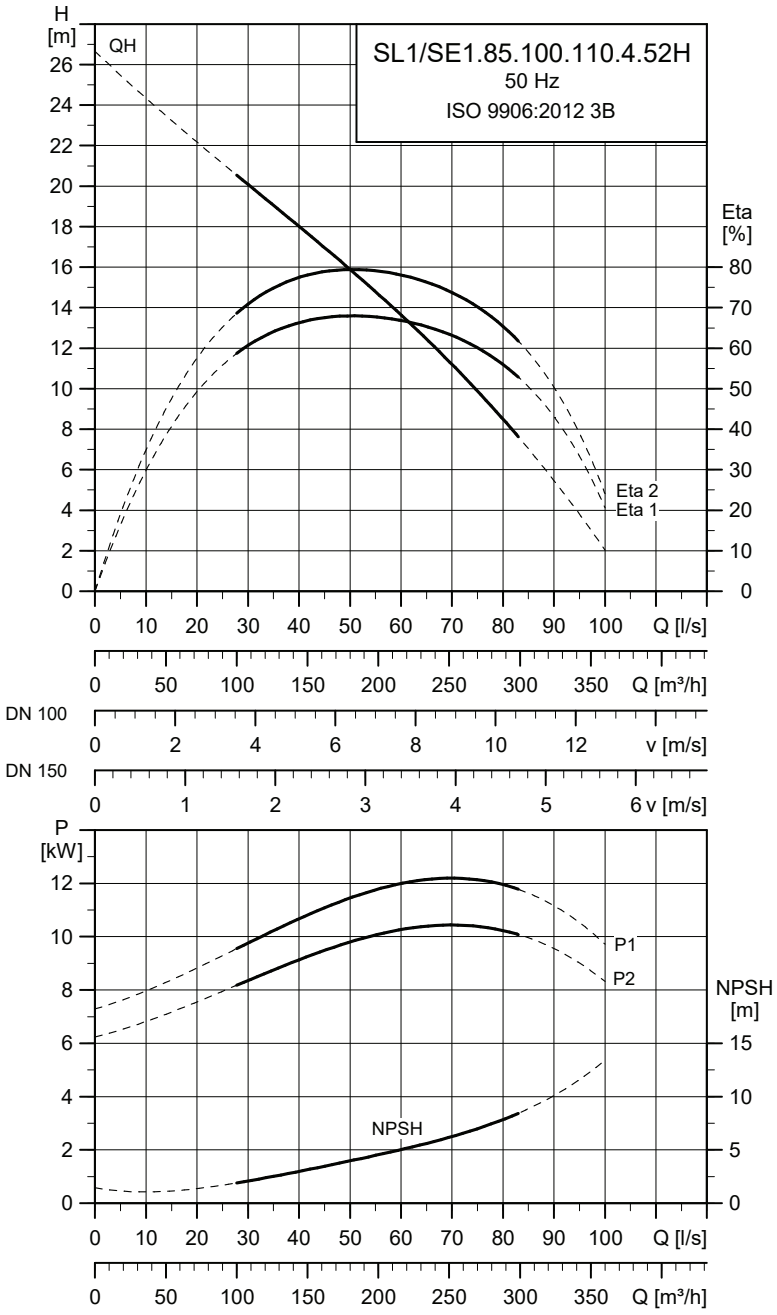
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.85.100.100.4.52H	380-415	12	10	4	1482	Y/D	23-21	210	84	85	86	0.69	0.7	0.80	0.0580	222
	660-690						13-13	116								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.85.100.100.4.52H	266	85	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.10 SL1/SE1.85.100.110.4.52H



TM066803

Electrical data

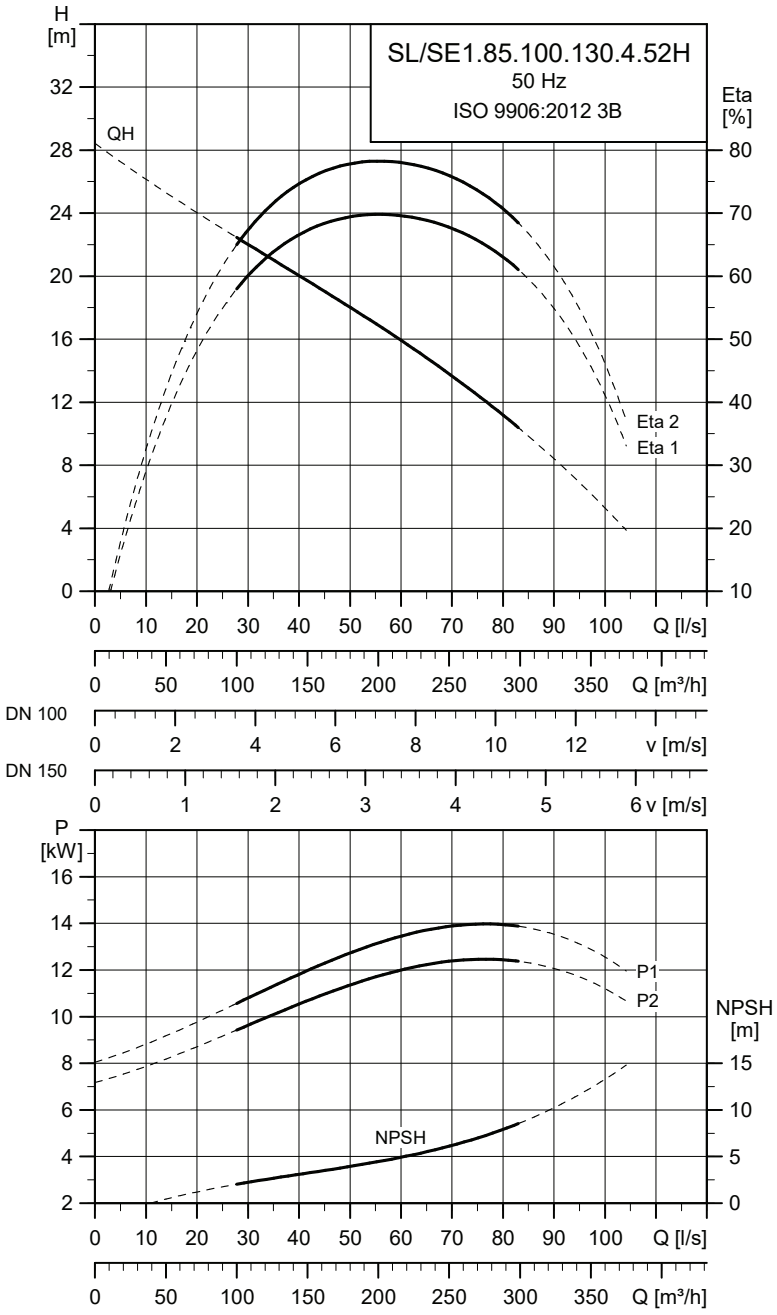
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.85.100.110.4.52H	380-415	13	11	4	1481	Y/D	24-22	210	84	86	86	0.70	0.76	0.82	0.0580	222
	660-690						14-13	116								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.85.100.110.4.52H	276	85	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.11 SL1/SE1.85.100.130.4.52H



Electrical data

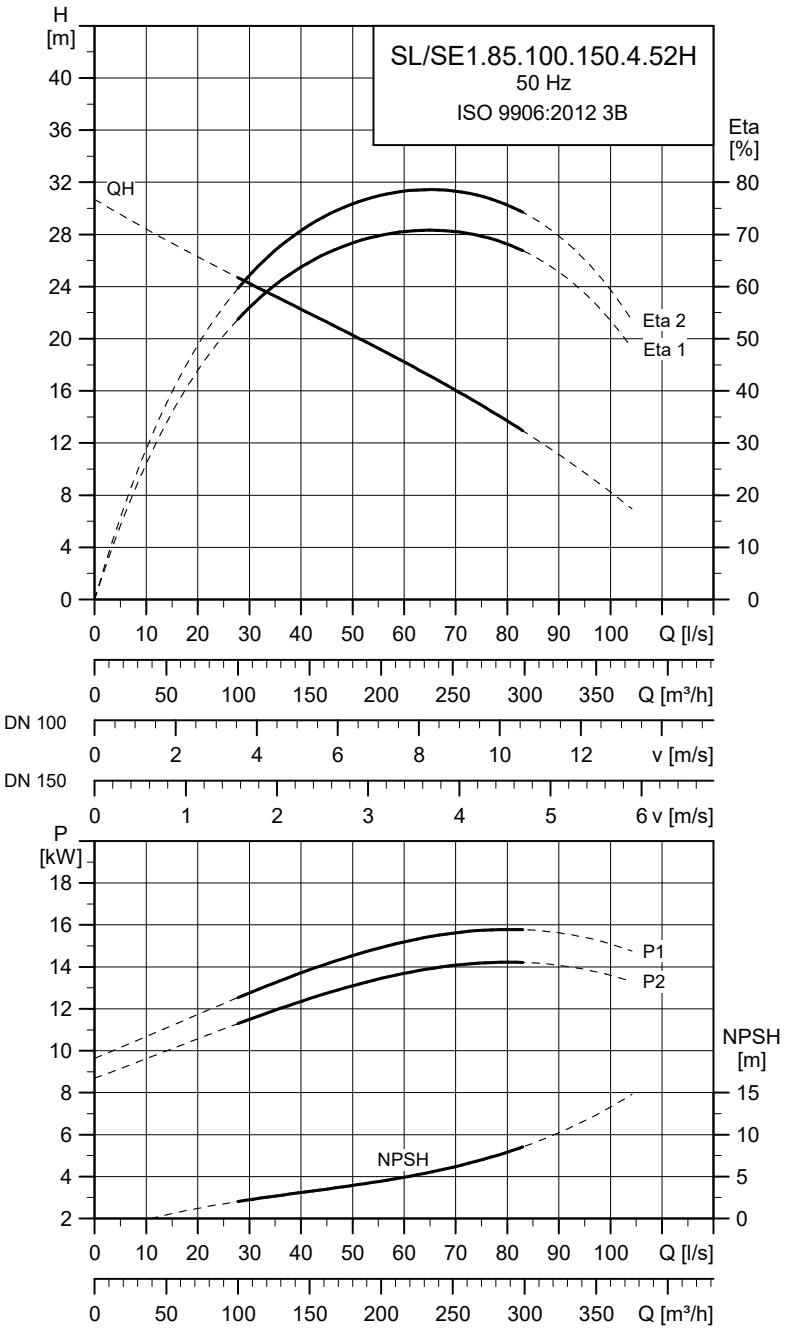
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.85.100.130.4.52H	380-415	15	13	4	1483	Y/D	28-25	283	87	88	88	0.66	0.77	0.83	0.0750	304
	660-690						16-15	156								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.85.100.130.4.52H	281	85	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.12 SL1/SE1.85.100.150.4.52H



TM066805

Electrical data

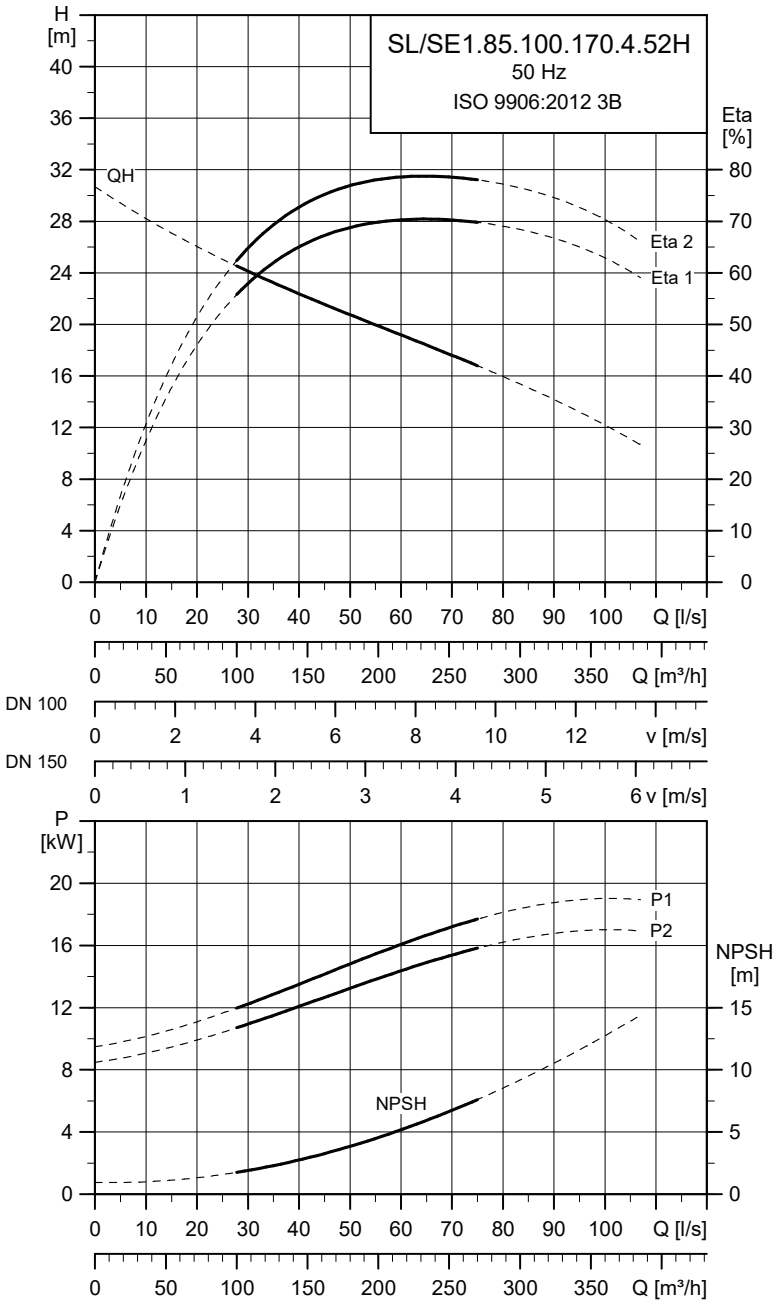
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.85.100.150.4.52H	380-415	17	15	4	1480	Y/D	31-29	283	87	88	88	0.70	0.80	0.84	0.0750	304
	660-690						18-17	156								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.85.100.150.4.52H	292	85	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.13 SL1/SE1.85.100.170.4.52H



TM066806

Electrical data

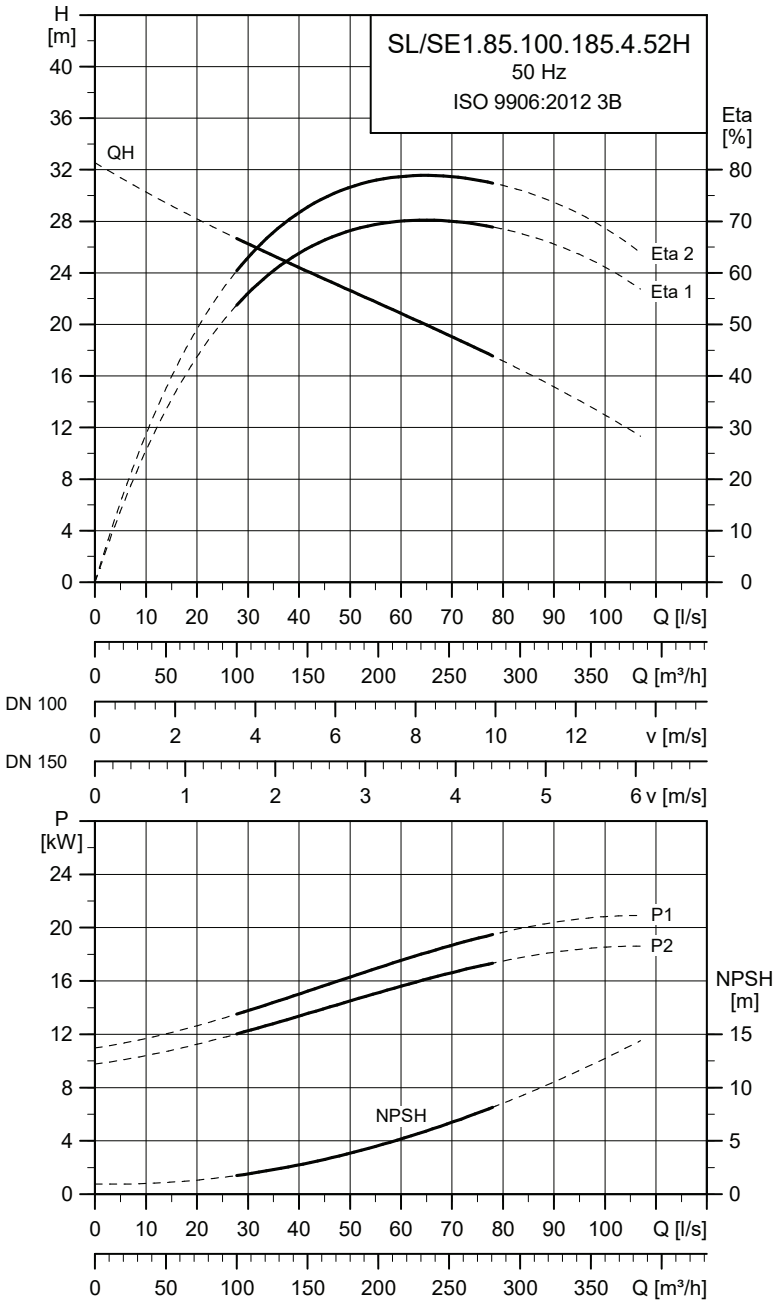
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.85.100.170.4.52H	380-415	19	17	4	1480	Y/D	39-36	381	84	87	88	0.68	0.72	0.77	0.0750	304
	660-690						23-22	209								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.85.100.170.4.52H	293	95	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.14 SL1/SE1.85.100.185.4.52H



TM066807

Electrical data

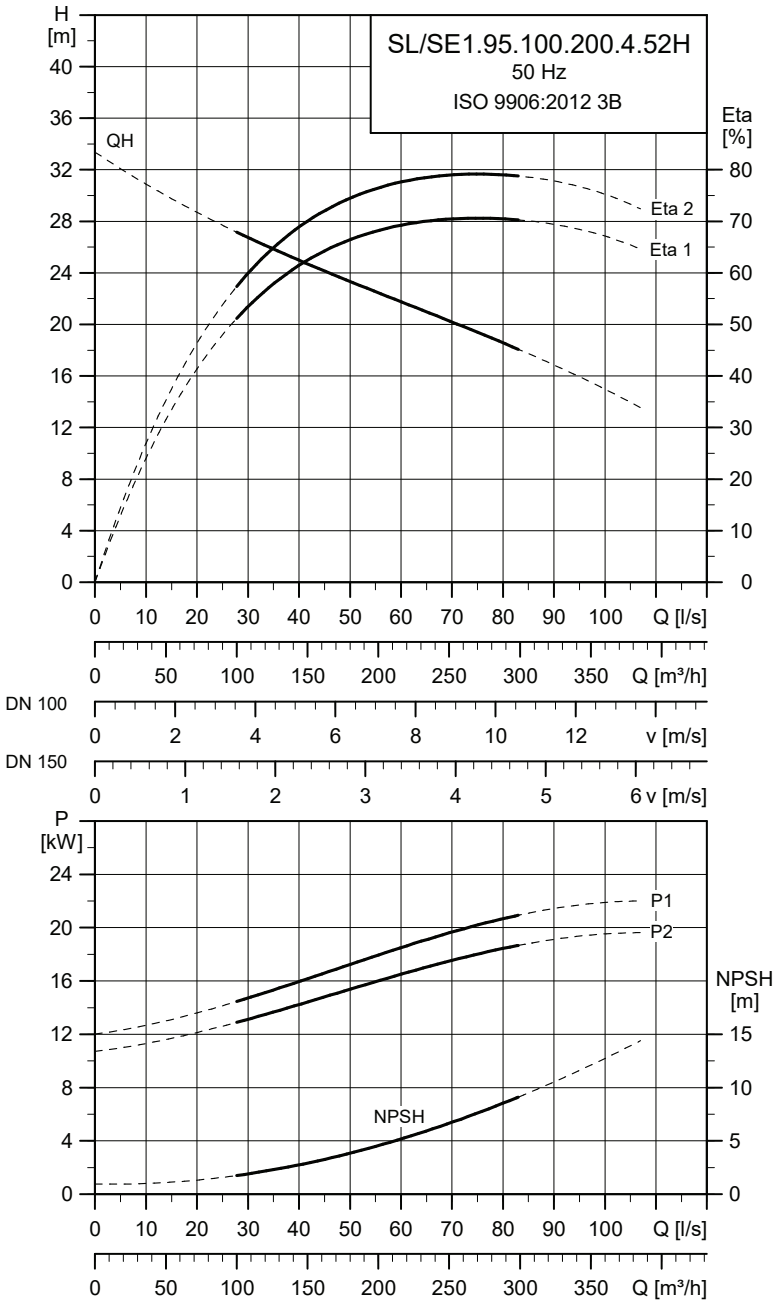
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.85.100.185.4.52H	380-415	21	18.5	4	1479	Y/D	41-37	381	85	87	88	0.69	0.73	0.79	0.0750	304
	660-690						24-23	209								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.85.100.185.4.52H	299	95	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.15 SL1/SE1.95.100.200.4.52H



TM066808

Electrical data

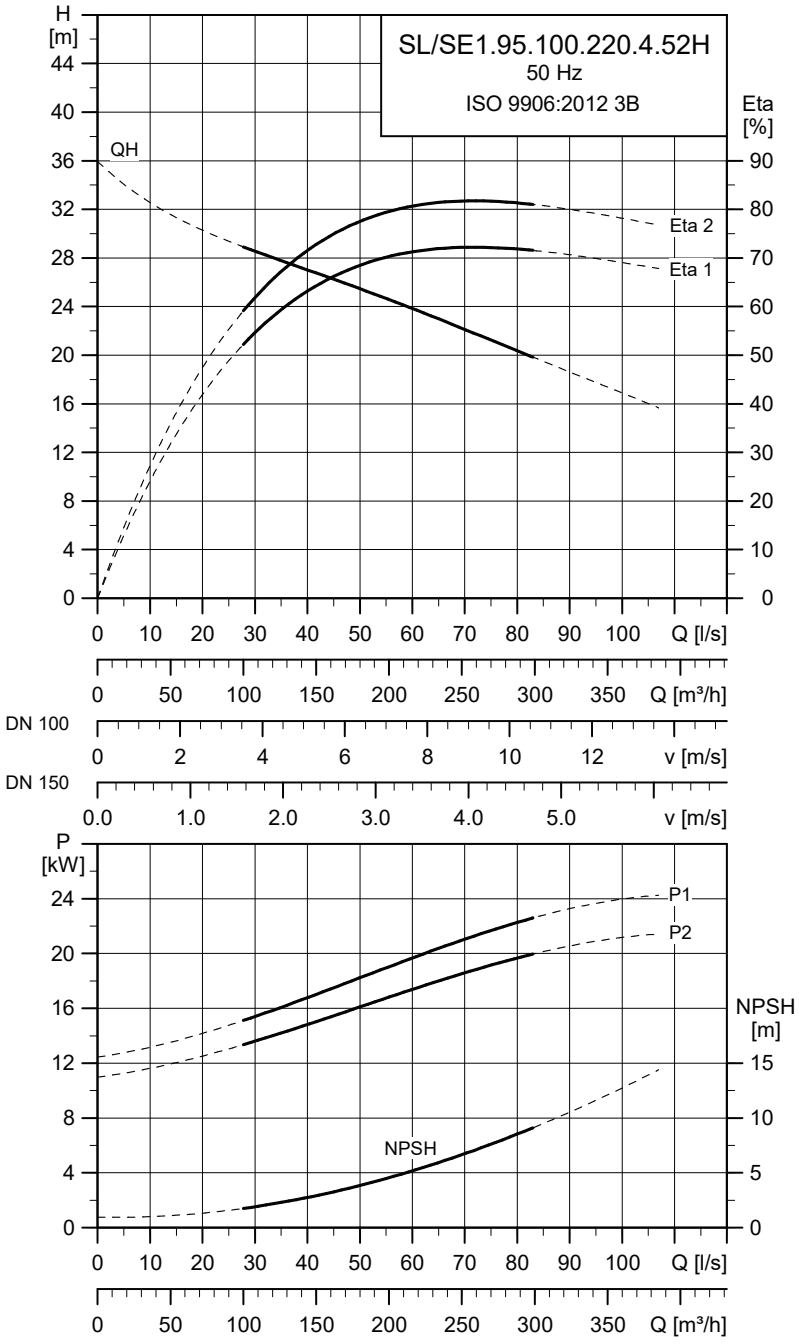
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.95.100.200.4.52H	380-415	23	20	4	1478	Y/D	43-39	381	85	88	88	0.69	0.74	0.81	0.0750	304
	660-690						25-24	209								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.95.100.200.4.52H	300	95	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.16 SL1/SE1.95.100.220.4.52H



TM066809

Electrical data

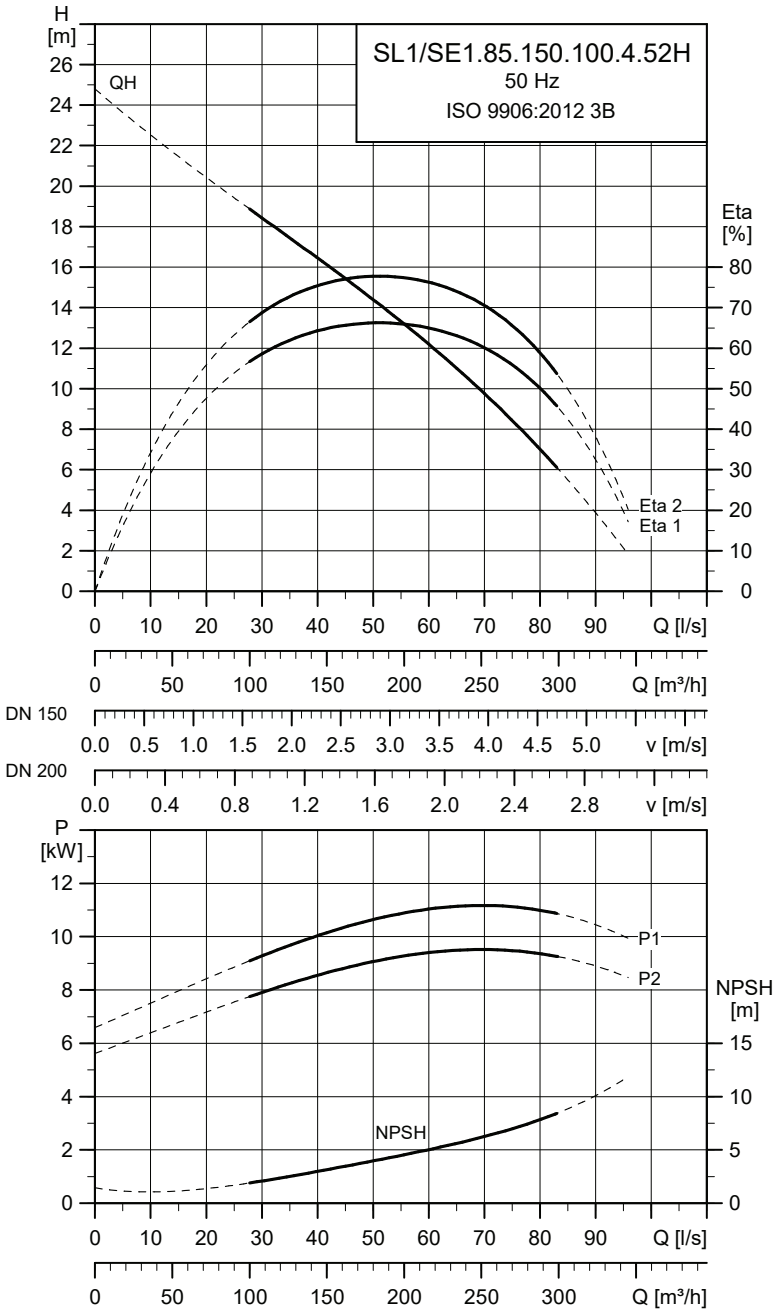
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.95.100.220.4.52H	380-415	25	22	4	1476	Y/D	45-41	381	86	88	88	0.70	0.76	0.85	0.0750	304
	660-690						26-25	209								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.95.100.220.4.52H	309	95	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.17 SL1/SE1.85.150.100.4.52H



TM053628

Electrical data

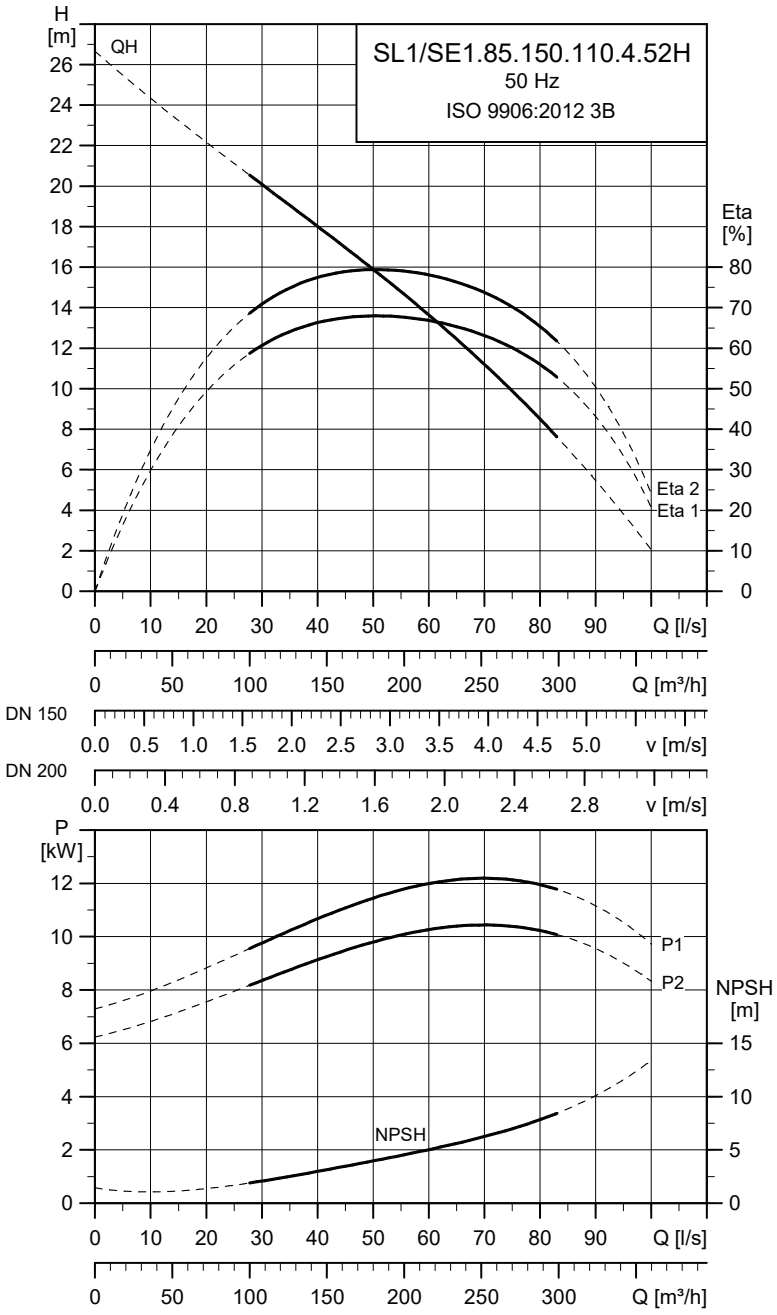
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	η_{motor} [%] 3/4	η_{motor} [%] 1/1	Cos φ 1/2	Cos φ 3/4	Cos φ 1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.85.150.100.4.52H	380-415	12	10	4	1482	Y/D	23-21	210	84	85	86	0.69	0.74	0.80	0.0580	222
	660-690						13-13	116								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.85.150.100.4.52H	266	85	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.18 SL1/SE1.85.150.110.4.52H



TM053608

Electrical data

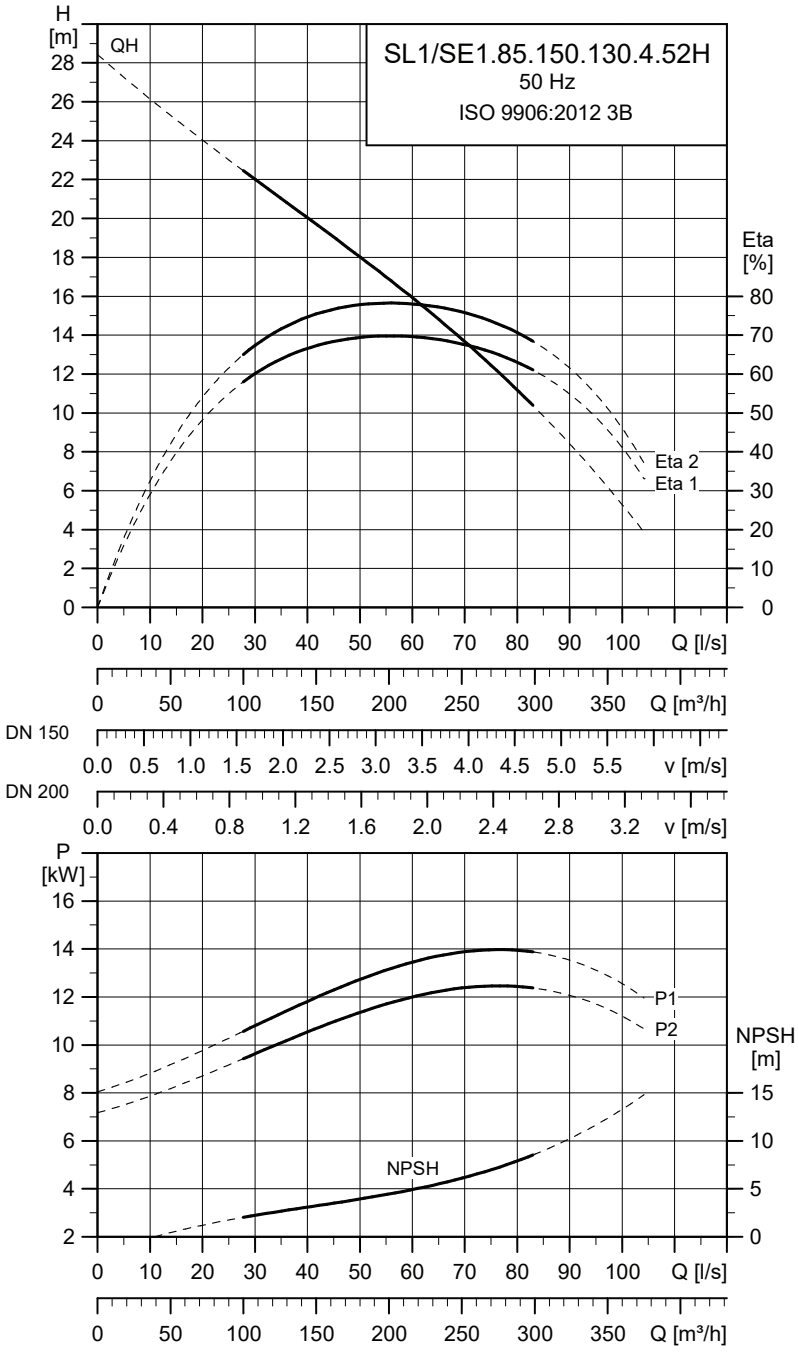
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	η_{motor} [%] 3/4	η_{motor} [%] 1/1	Cos φ 1/2	Cos φ 3/4	Cos φ 1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.85.150.110.4.52H	380-415 / 660-690	13	11	4	1481	Y/D	24-22 / 14-13	210 / 116	84	86	86	0.70	0.76	0.82	0.0580	222

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2) PN	Max. installation depth [m]
SL1/SE1.85.150.110.4.52H	276	85	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.19 SL1/SE1.85.150.130.4.52H



TM053627

Electrical data

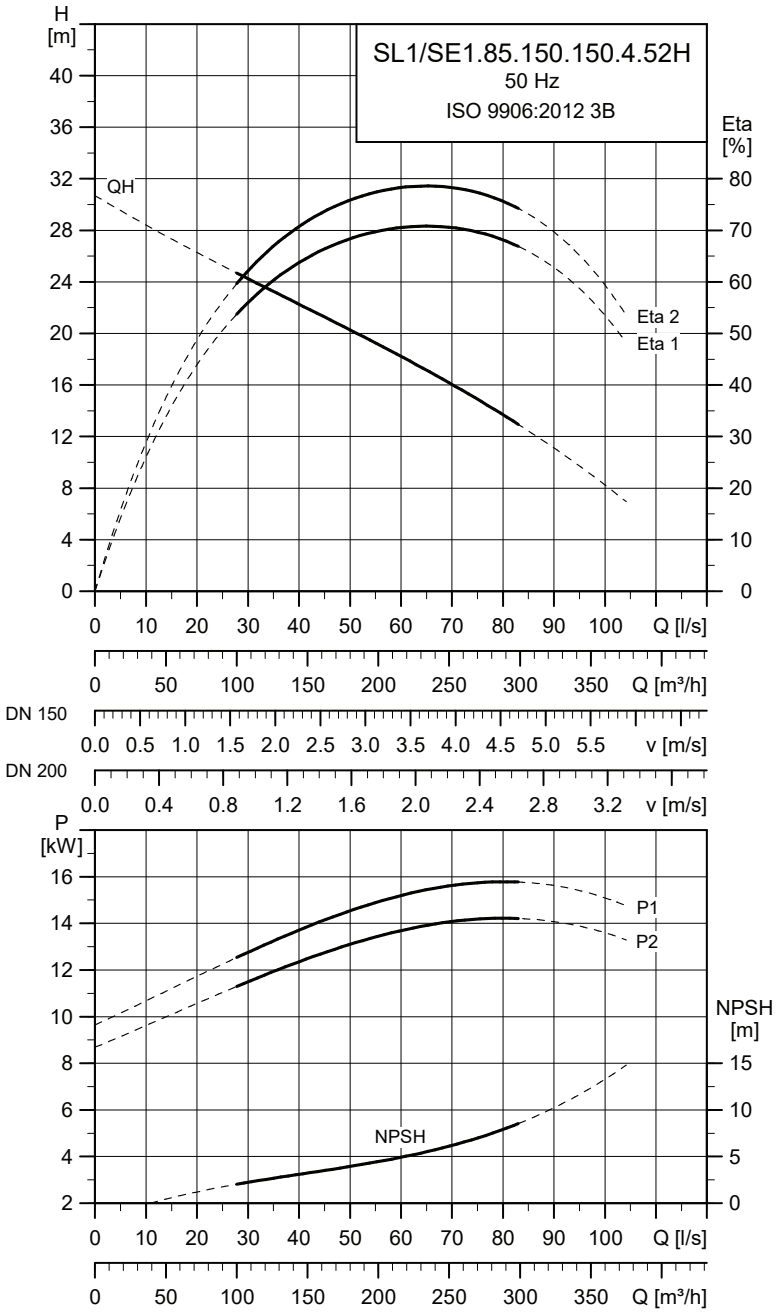
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.85.150.130.4.52H	380-415	15	13	4	1483	Y/D	28-25	534	87	88	88	0.66	0.77	0.83	0.0750	304
	660-690						16-15	156								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.85.150.130.4.52H	281	85	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.20 SL1/SE1.85.150.150.4.52H



TM053607

Electrical data

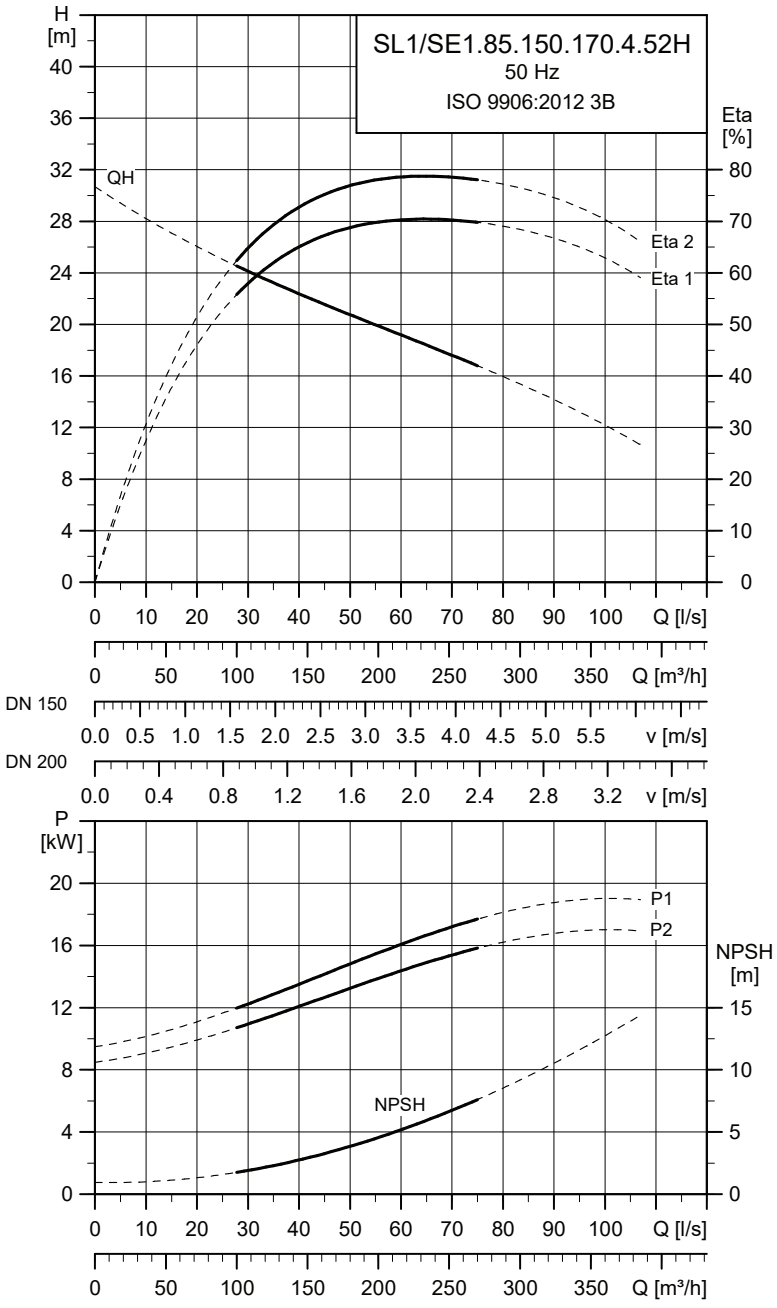
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.85.150.150.4.52H	380-415	17	15	4	1480	Y/D	31-29	283	87	88	88	0.70	0.80	0.84	0.0750	304
	660-690						18-17	156								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.85.150.150.4.52H	292	85	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.21 SL1/SE1.85.150.170.4.52H



TM053626

Electrical data

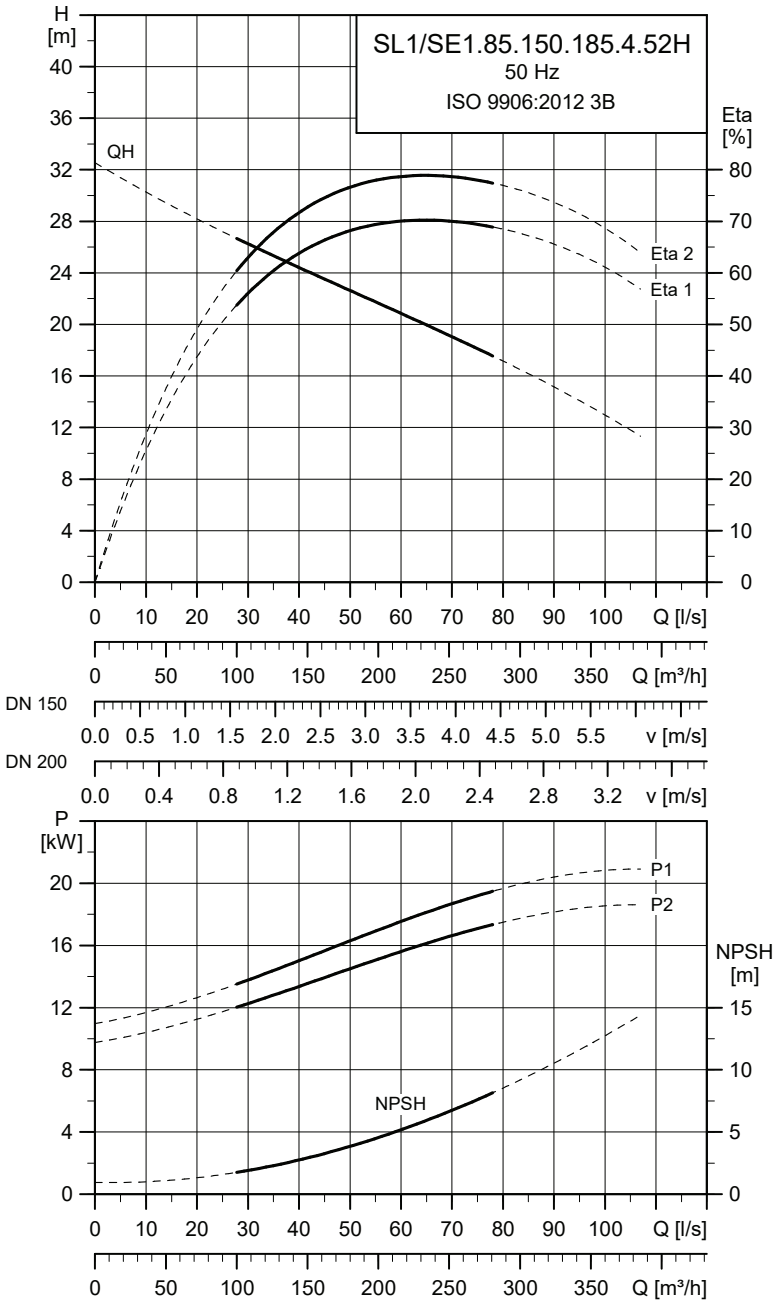
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.85.150.170.4.52H	380-415	19	17	4	1480	Y/D	39-36	381	84	87	88	0.68	0.72	0.77	0.0750	304
	660-690						23-22	209								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.85.150.170.4.52H	293	95	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.22 SL1/SE1.85.150.185.4.52H



TM053605

Electrical data

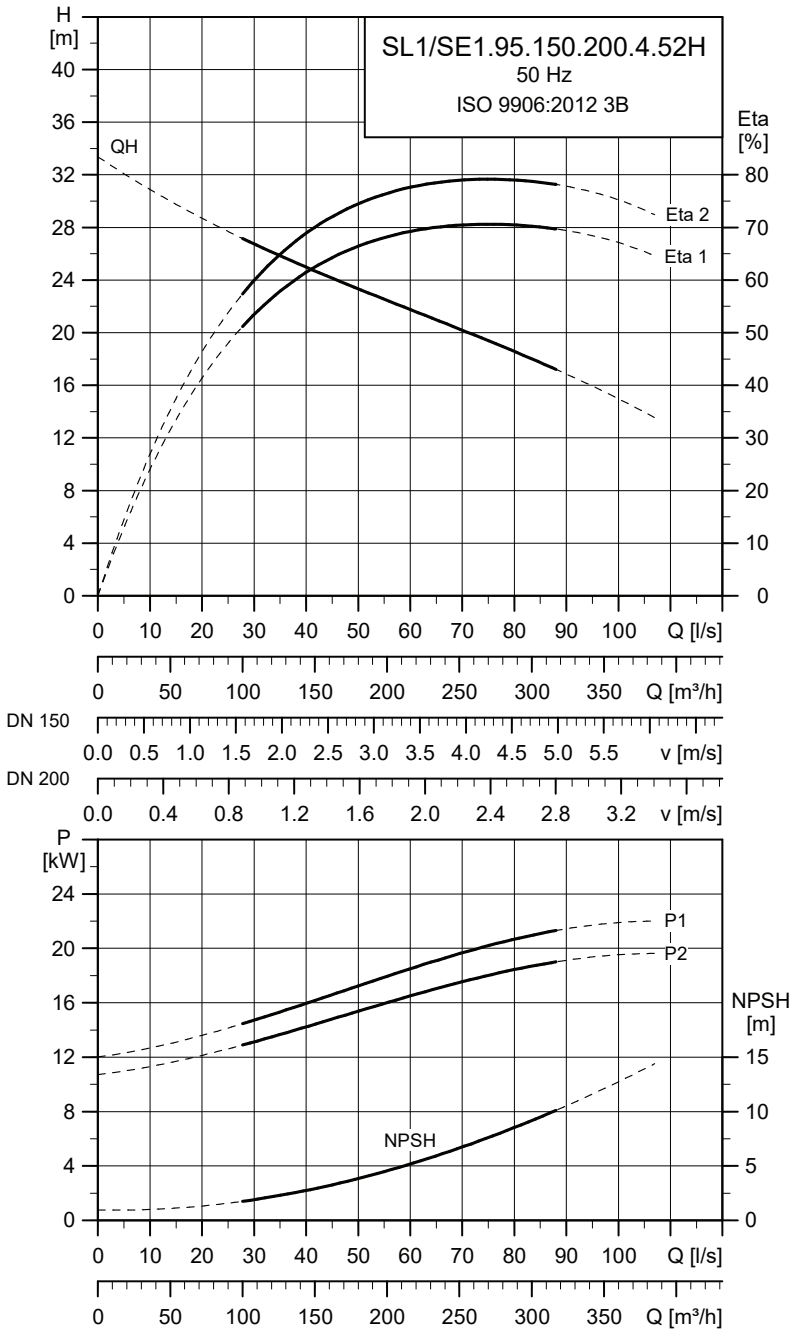
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.85.150.185.4.52H	380-415	21	18.5	4	1479	Y/D	41-37	381	85	87	88	0.69	0.73	0.79	0.0750	304
	660-690						24-23	209								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.85.150.185.4.52H	299	95	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.23 SL1/SE1.95.150.200.4.52H



TM053625

Electrical data

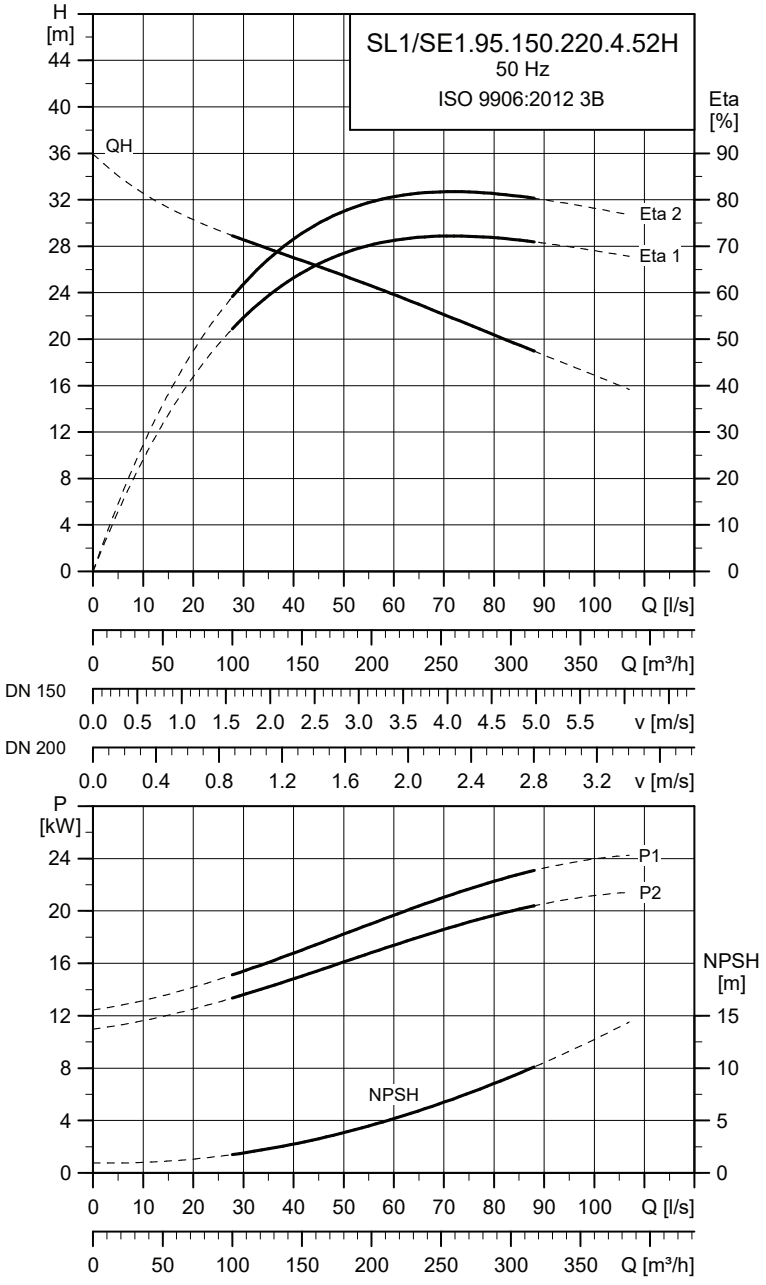
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.95.150.200.4.52H	380-415	23	20	4	1478	Y/D	43-39	381	85	88	88	0.69	0.74	0.81	0.0750	304
	660-690						25-24	209								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.95.150.200.4.52H	300	95	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.24 SL1/SE1.95.150.220.4.52H



TM053606

Electrical data

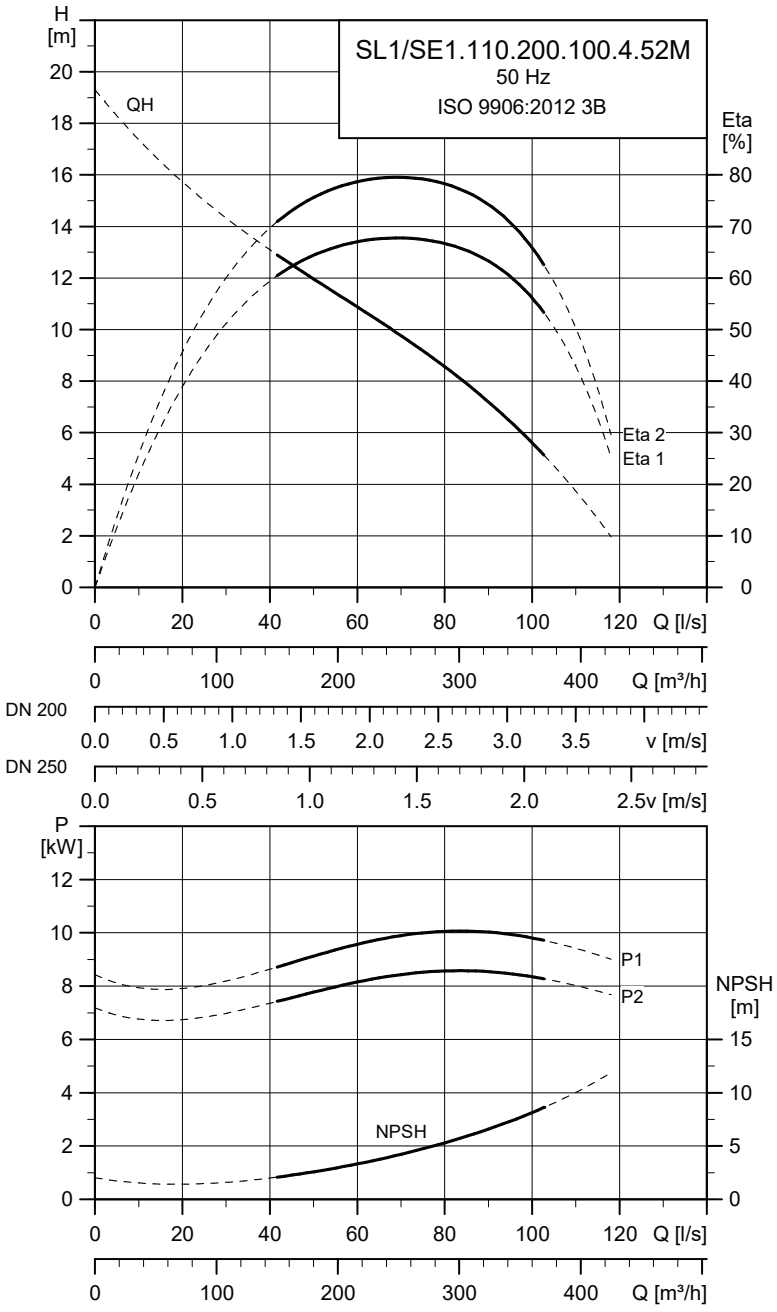
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.95.150.220.4.52H	380-415	25	22	4	1476	Y/D	45-41	381	86	88	88	0.70	0.76	0.85	0.0750	304
	660-690						26-25	209								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL1/SE1.95.150.220.4.52H	309	95	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.25 SL1/SE1.110.200.100.4.52M



TM053632

Electrical data

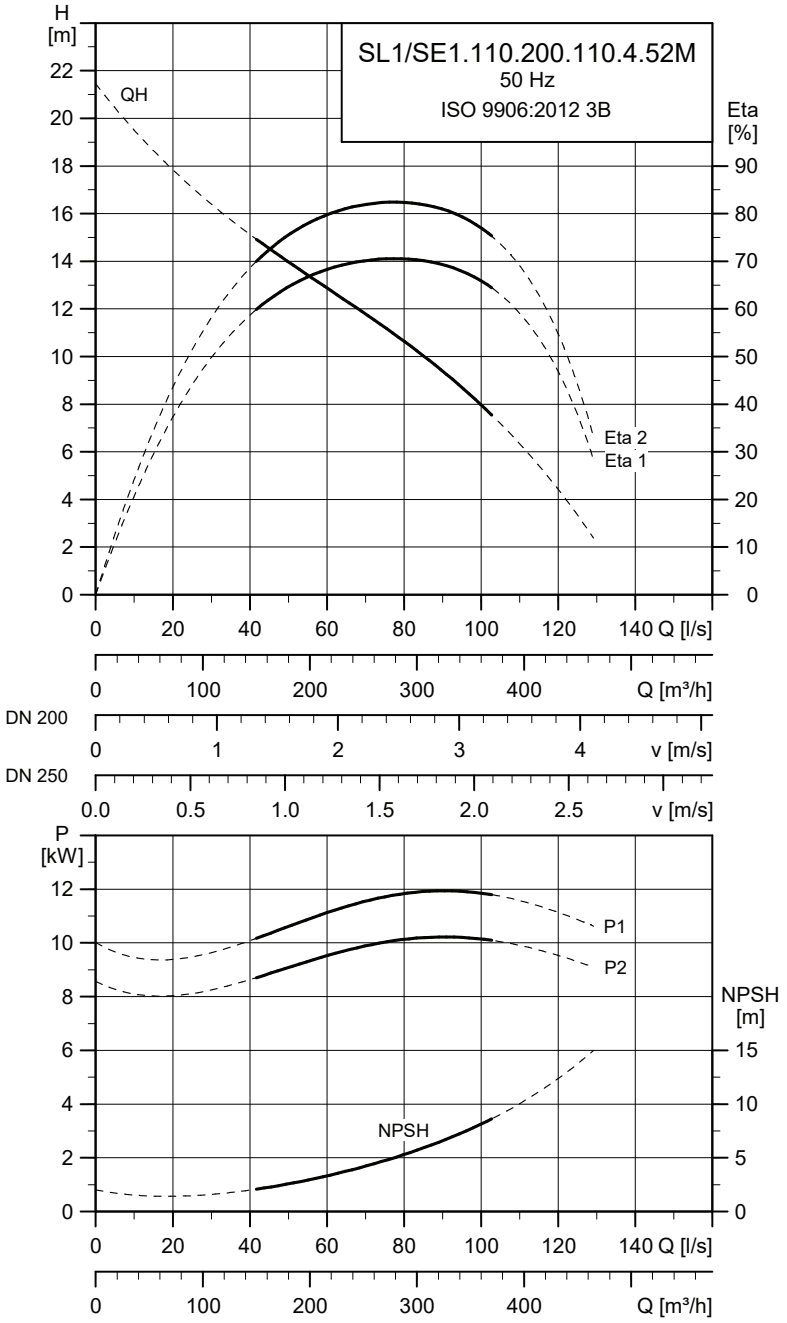
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.110.200.100.4.52M	380-415 / 660-690	12	10	4	1482	Y/D	23-21 / 13-13	210 / 116	84	85	86	0.69	0.74	0.80	0.0580	222

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2) PN	Max. installation depth [m]
SL1/SE1.110.200.100.4.52M	246	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.26 SL1/SE1.110.200.110.4.52M



TM053612

Electrical data

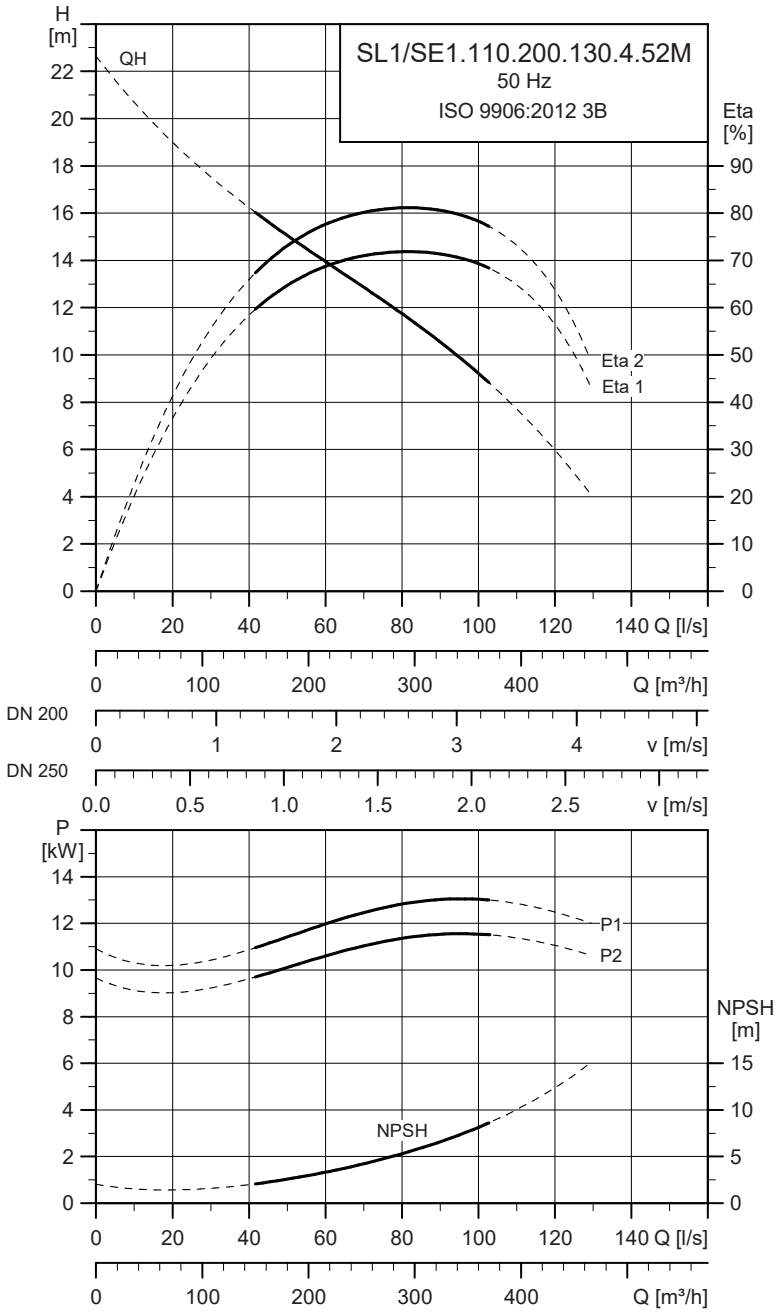
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.110.200.110.4.52M	380-415 / 660-690	13	11	4	1481	Y/D	24-22 / 14-13	210 / 116	84	86	86	0.70	0.76	0.82	0.0580	222

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2) PN	Max. installation depth [m]
SL1/SE1.110.200.110.4.52M	256	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.27 SL1/SE1.110.200.130.4.52M



TM053631

Electrical data

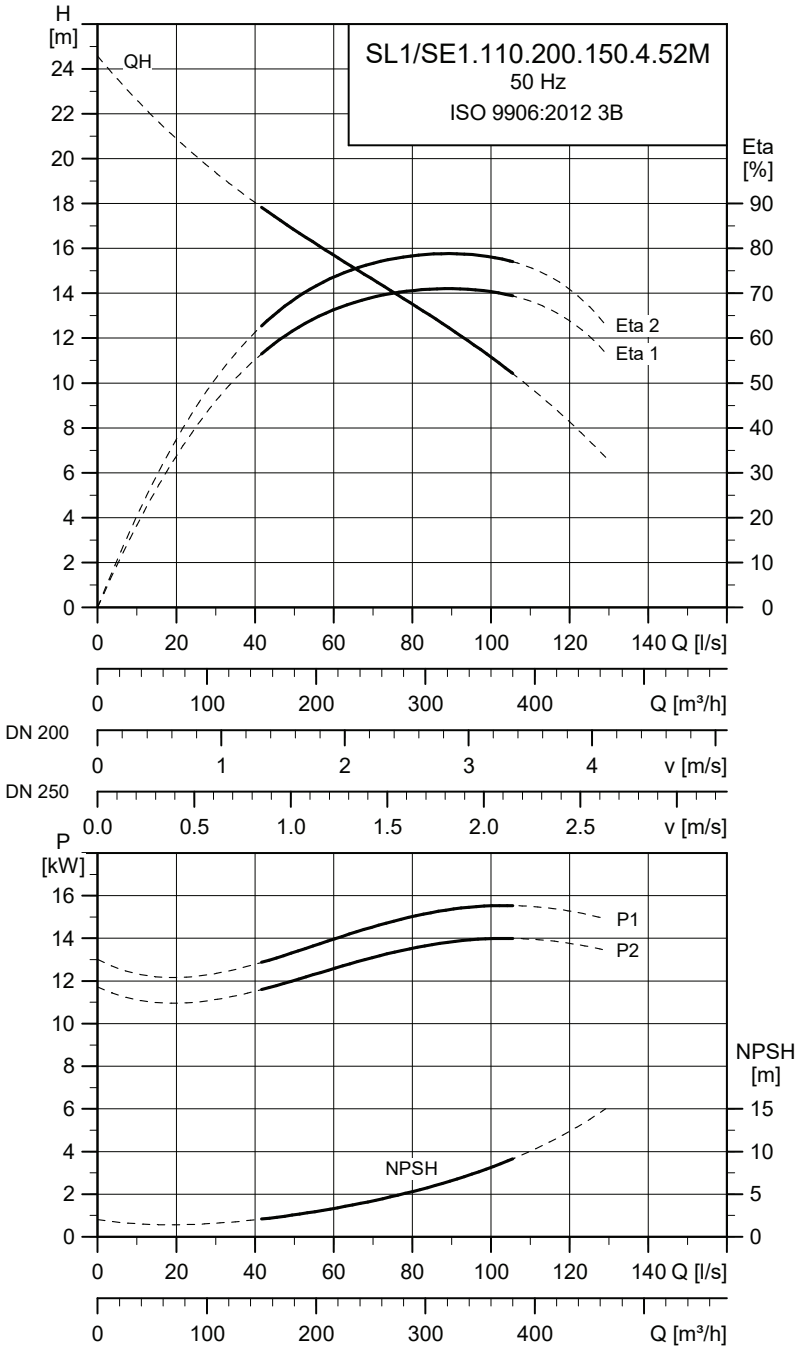
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.110.200.130.4.52M	380-415 / 660-690	15	13	4	1483	Y/D	28-25 / 16-15	283 / 156	87	88	88	0.66	0.77	0.83	0.0750	304

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2) PN	Max. installation depth [m]
SL1/SE1.110.200.130.4.52M	264	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.28 SL1/SE1.110.200.150.4.52M



Electrical data

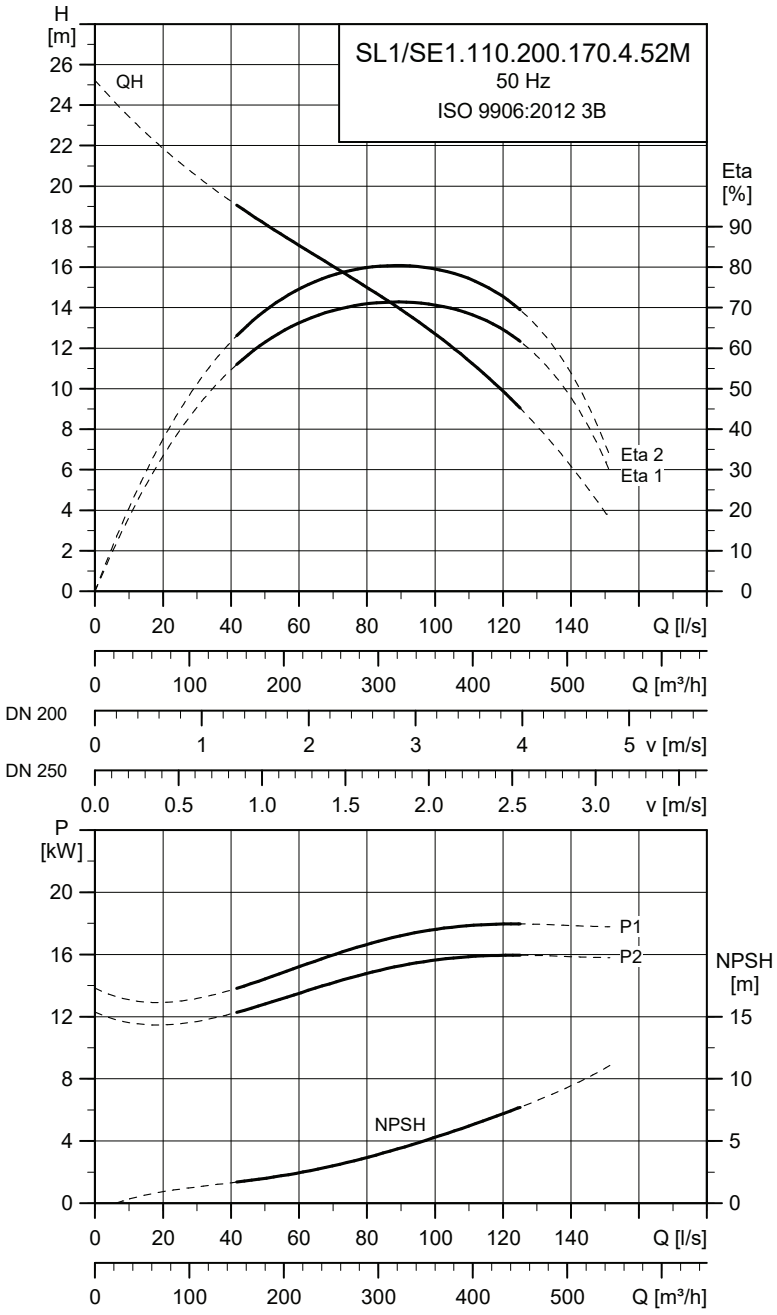
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.110.200.150.4.52M	380-415 / 660-690	17	15	4	1480	Y/D	31-29 / 18-17	283 / 156	87	88	88	0.70	0.80	0.84	0.0750	304

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2) PN	Max. installation depth [m]
SL1/SE1.110.200.150.4.52M	273	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.29 SL1/SE1.110.200.170.4.52M



TM053630

Electrical data

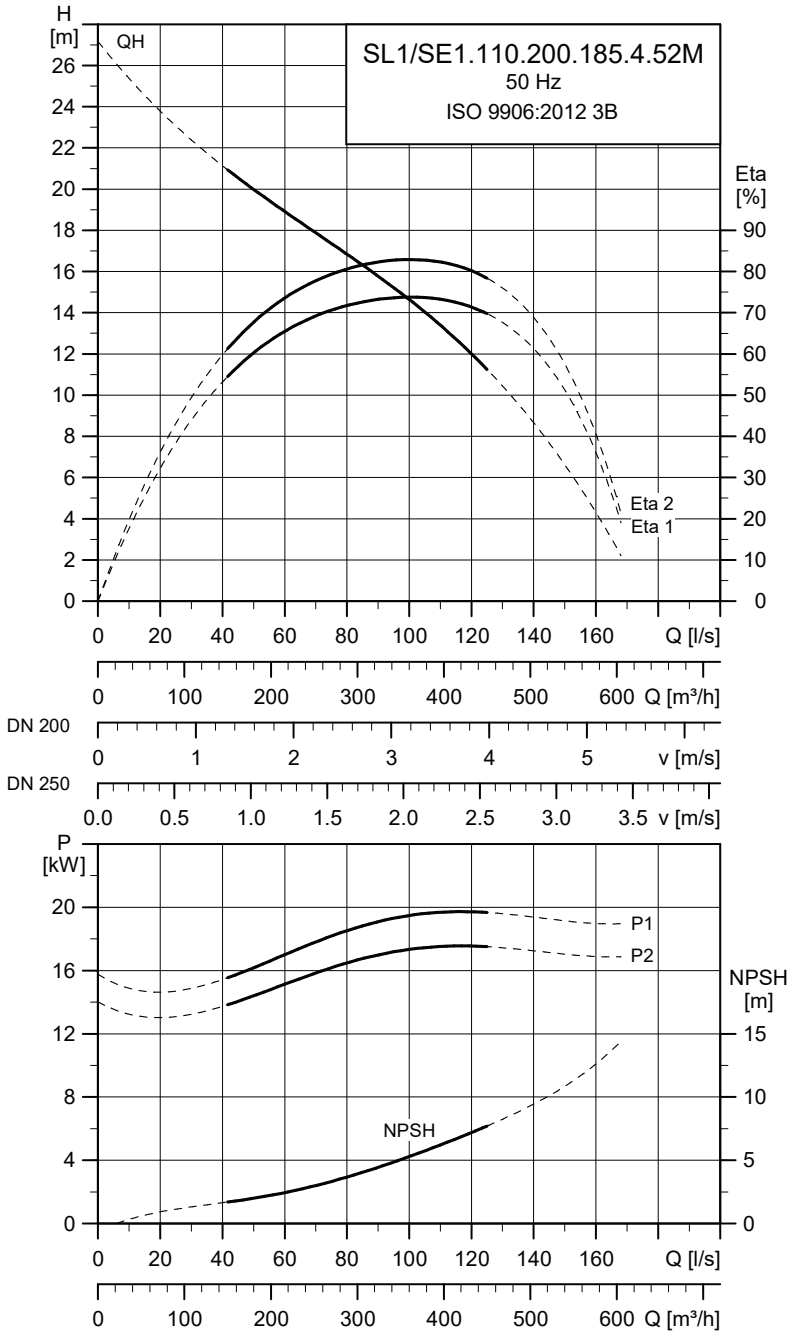
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.110.200.170.4.52M	380-415 / 660-690	19	17	4	1480	Y/D	39-36 / 23-22	381 / 209	84	87	88	0.68	0.72	0.77	0.0750	304

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2) PN	Max. installation depth [m]
SL1/SE1.110.200.170.4.52M	277	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.30 SL1/SE1.110.200.185.4.52M



TM053610

Electrical data

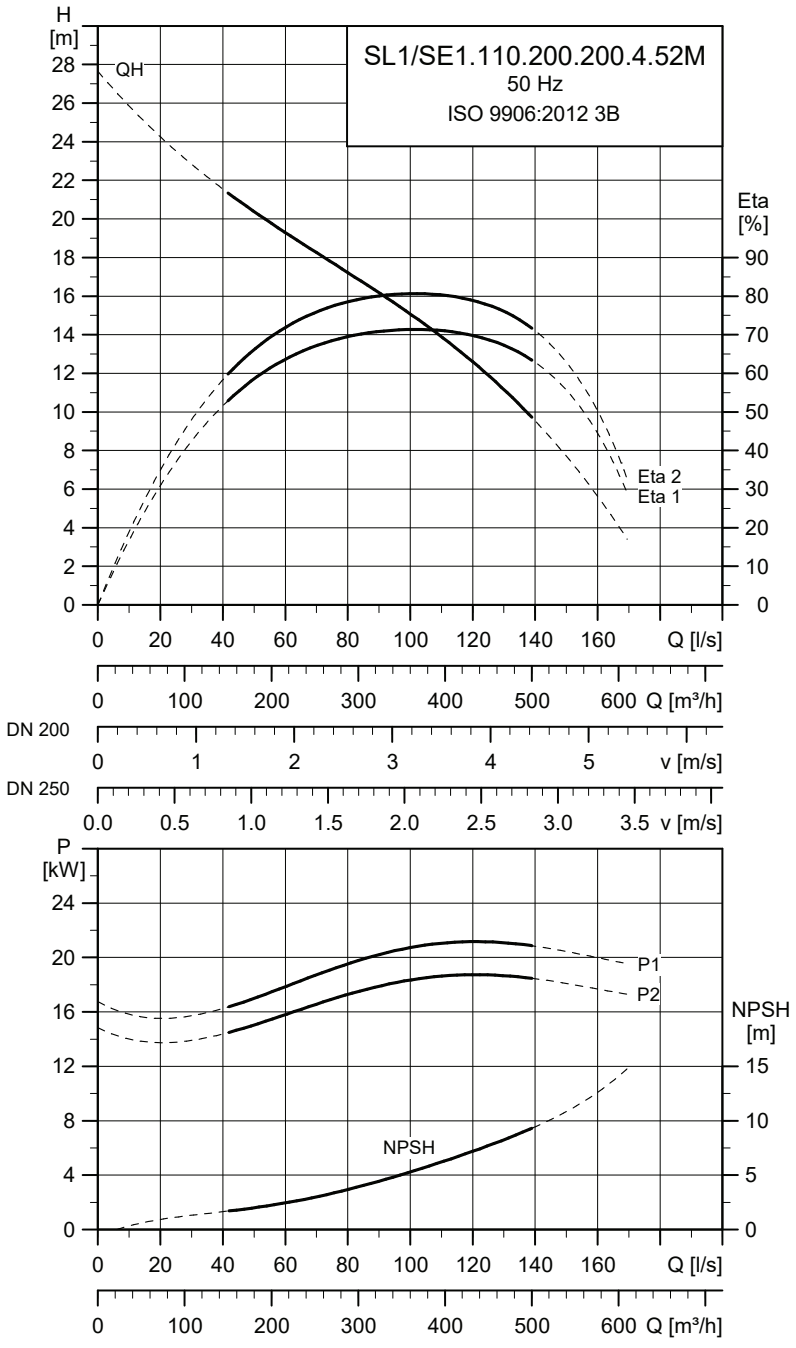
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.110.200.185.4.52M	380-415 / 660-690	21	18.5	4	1479	Y/D	41-37 / 24-23	381 / 209	85	87	88	0.69	0.73	0.79	0.0750	304

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2) PN	Max. installation depth [m]
SL1/SE1.110.200.185.4.52M	285	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.31 SL1/SE1.110.200.200.4.52M



TM053629

Electrical data

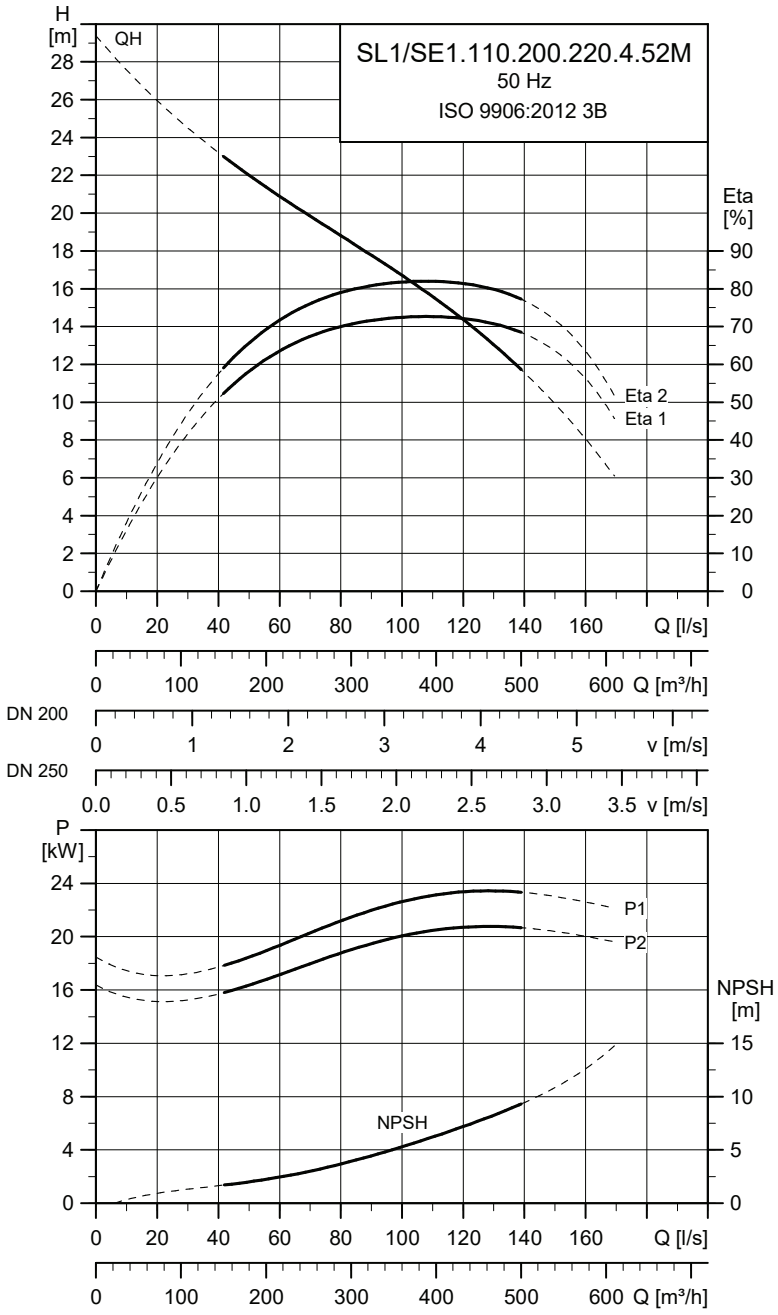
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.110.200.200.4.52M	380-415 / 660-690	23	20	4	1478	Y/D	43-39 / 25-24	381 / 209	85	88	88	0.69	0.74	0.81	0.0750	304

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2) PN	Max. installation depth [m]
SL1/SE1.110.200.200.4.52M	293	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.32 SL1/SE1.110.200.220.4.52M



TM053609

Electrical data

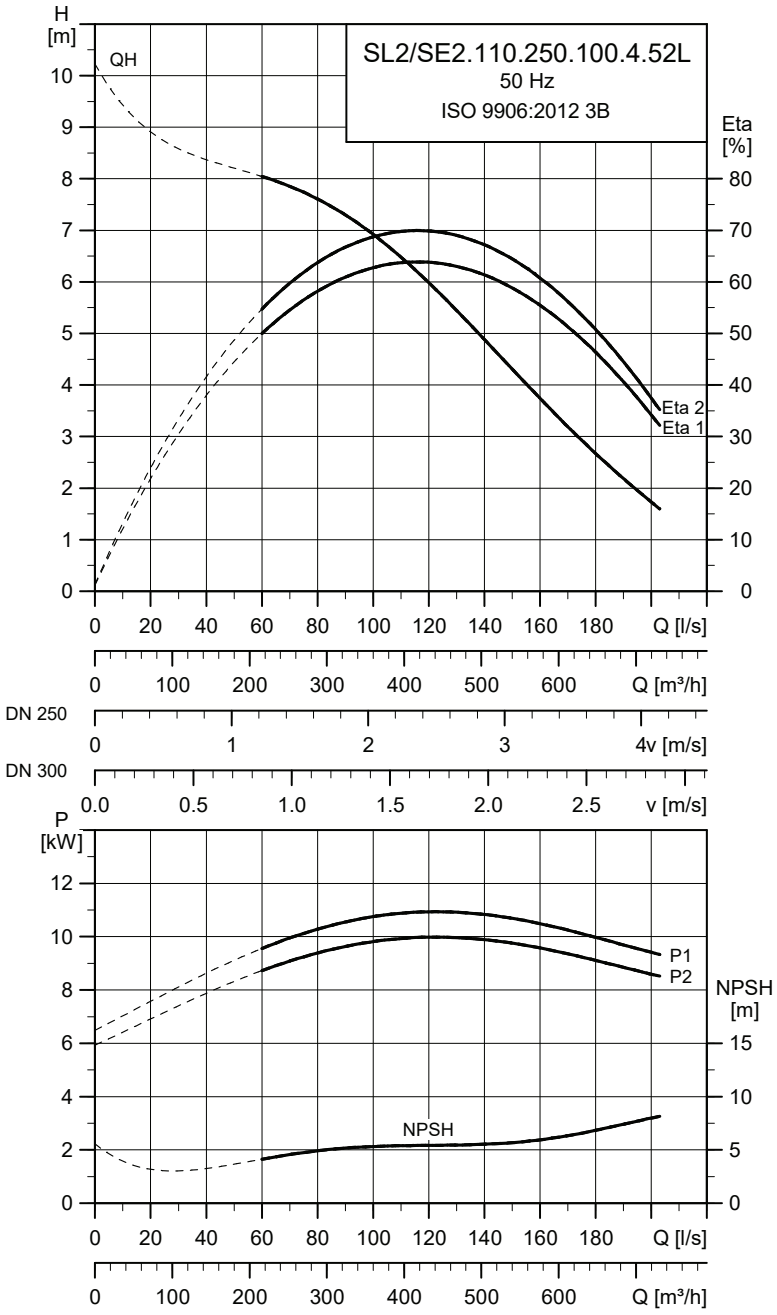
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL1/SE1.110.200.220.4.52M	380-415 / 660-690	25	22	4	1476	Y/D	45-41 / 26-25	381 / 209	86	88	88	0.70	0.76	0.85	0.0750	304

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2) PN	Max. installation depth [m]
SL1/SE1.110.200.220.4.52M	302	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.33 SL2/SE2.110.250.100.4.52L



TM074325

Electrical data

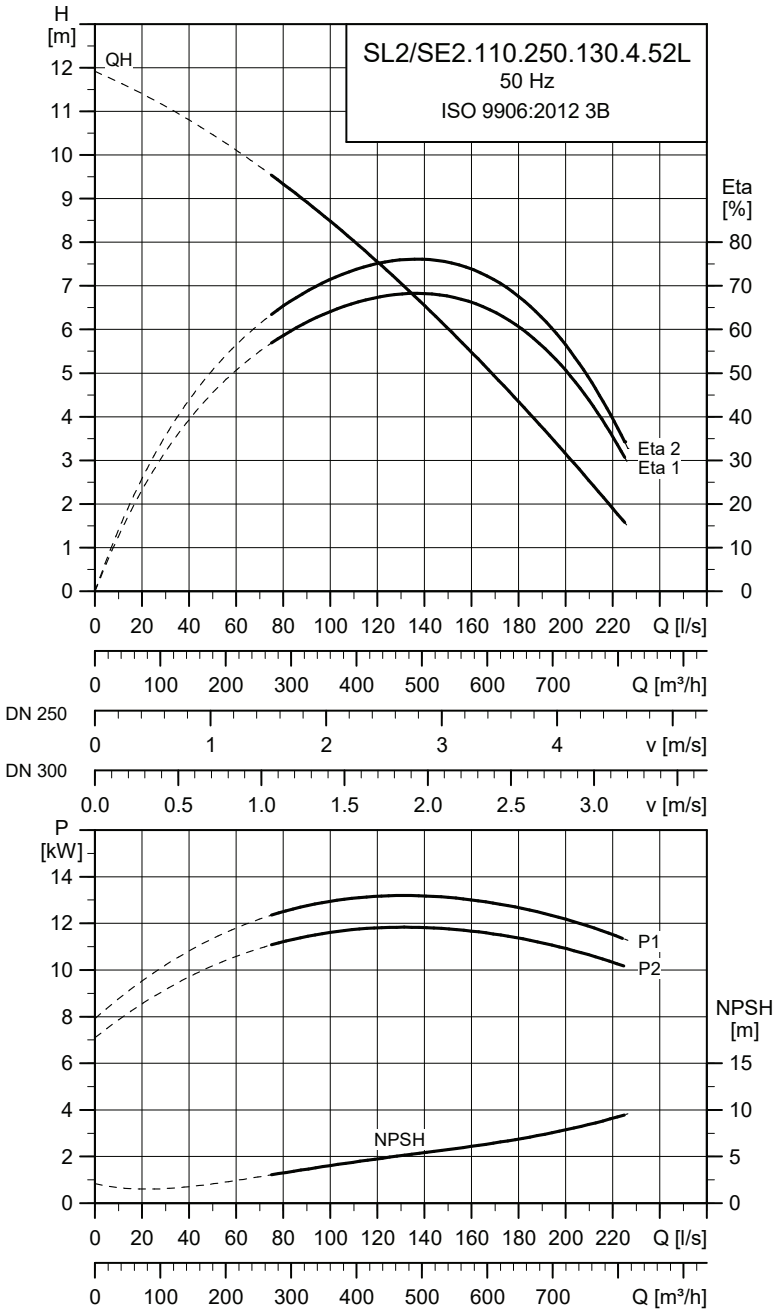
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL2/SE2.110.250.100.4.52L	380-415	12	10	4	1481	Y/D	23-21	210	84	85	86	0.69	0.74	0.80	0.0580	222
	660-690						13-13	116								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL2/SE2.110.250.100.4.52L	231	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.34 SL2/SE2.110.250.130.4.52L



Electrical data

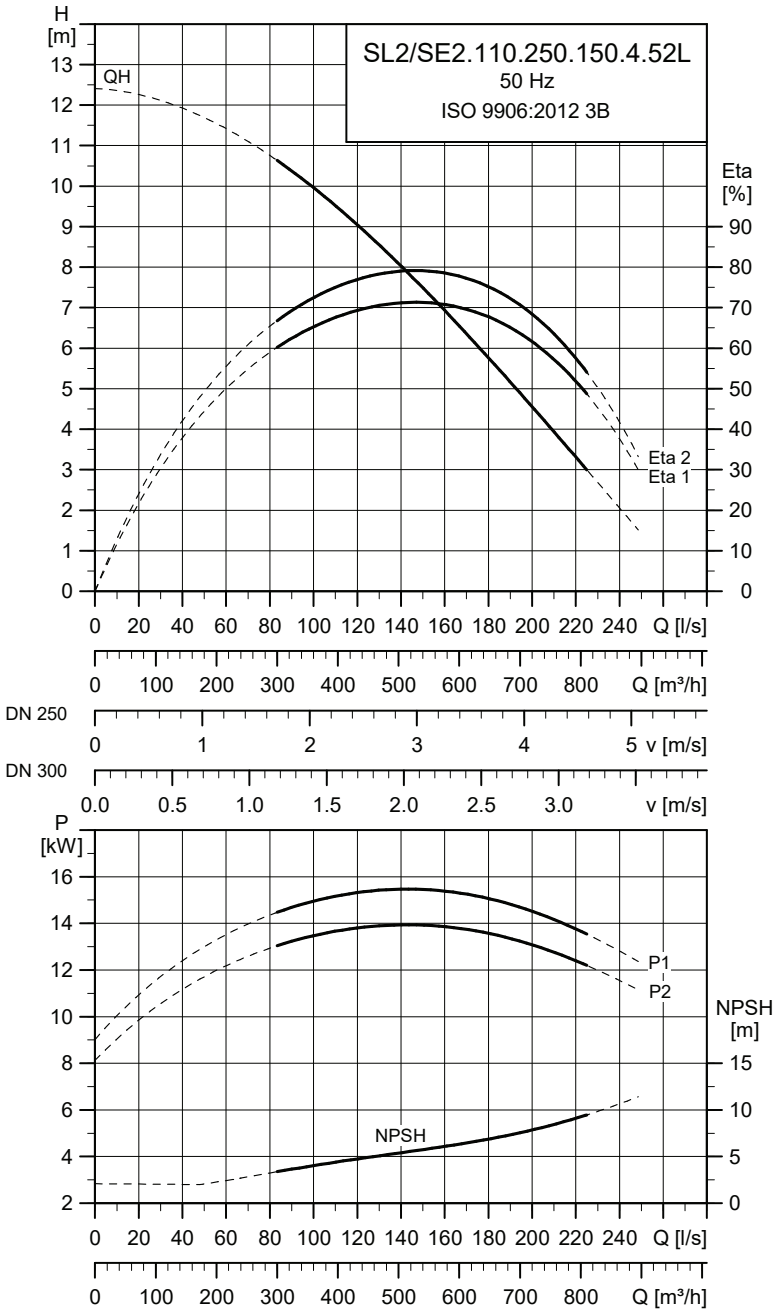
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL2/SE2.110.250.130.4.52L	380-415	15	13	4	1483	Y/D	28-25	283	87	88	88	0.66	0.77	0.83	0.0750	304
	660-690						16-15	156								

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2) PN	Max. installation depth [m]
SL2/SE2.110.250.130.4.52	237	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.35 SL2/SE2.110.250.150.4.52L



TM066729

Electrical data

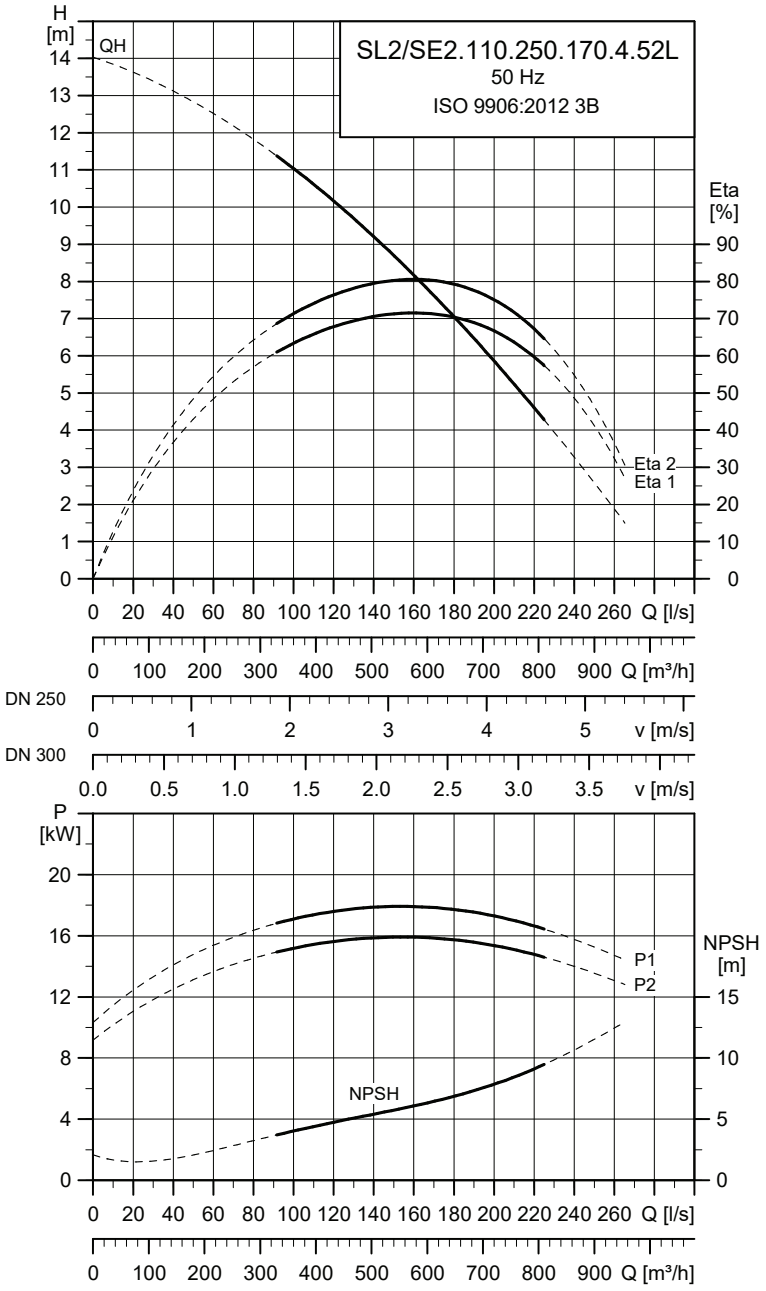
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL2/SE2.110.250.150.4.52L	380-415	17	15	4	1480	Y/D	31-29	283	87	88	88	0.70	0.80	0.84	0.0750	304
	660-690						18-17	156								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL2/SE2.110.250.150.4.52	247	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.36 SL2/SE2.110.250.170.4.52L



TM066730

Electrical data

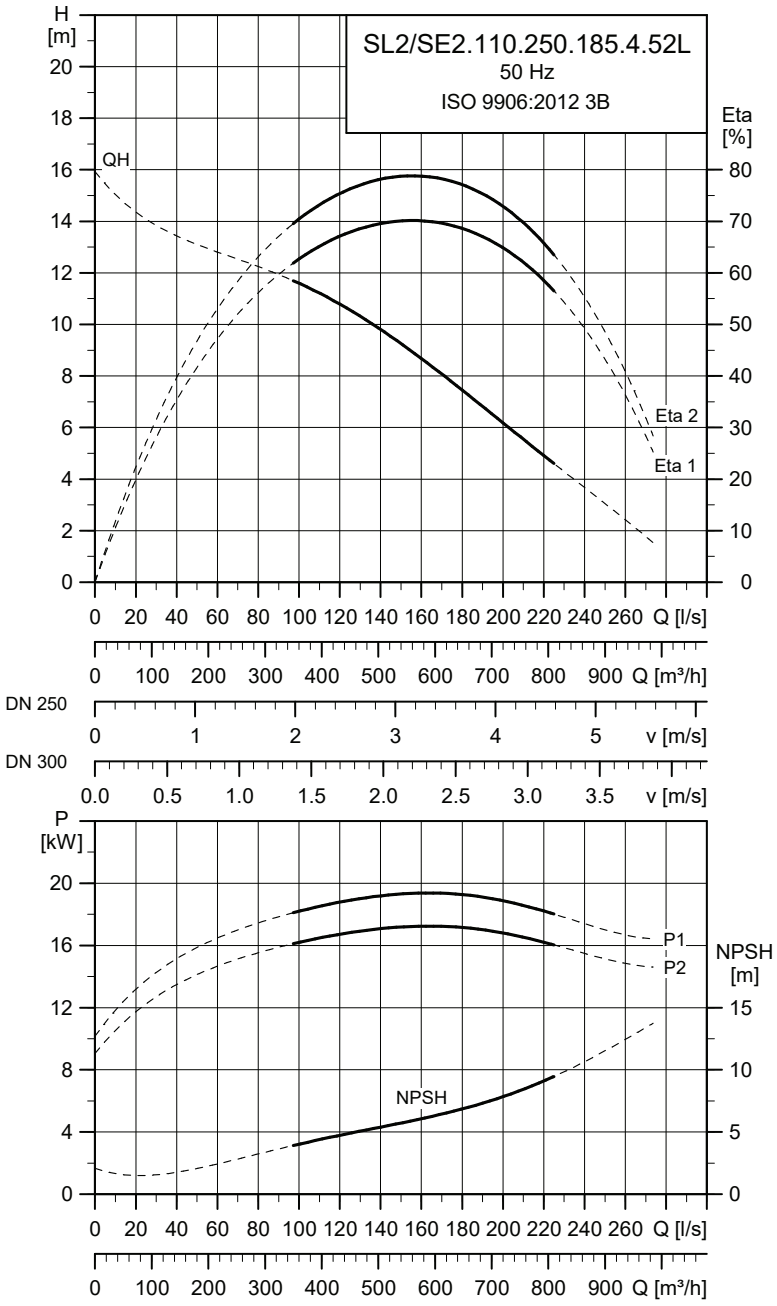
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL2/SE2.110.250.170.4.52L	380-415	19	17	4	1480	Y/D	39-36	381	84	87	88	0.68	0.72	0.77	0.0750	304
	660-690						23-22	209								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL2/SE2.110.250.170.4.52	255	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.37 SL2/SE2.110.250.185.4.52L



TM066731

Electrical data

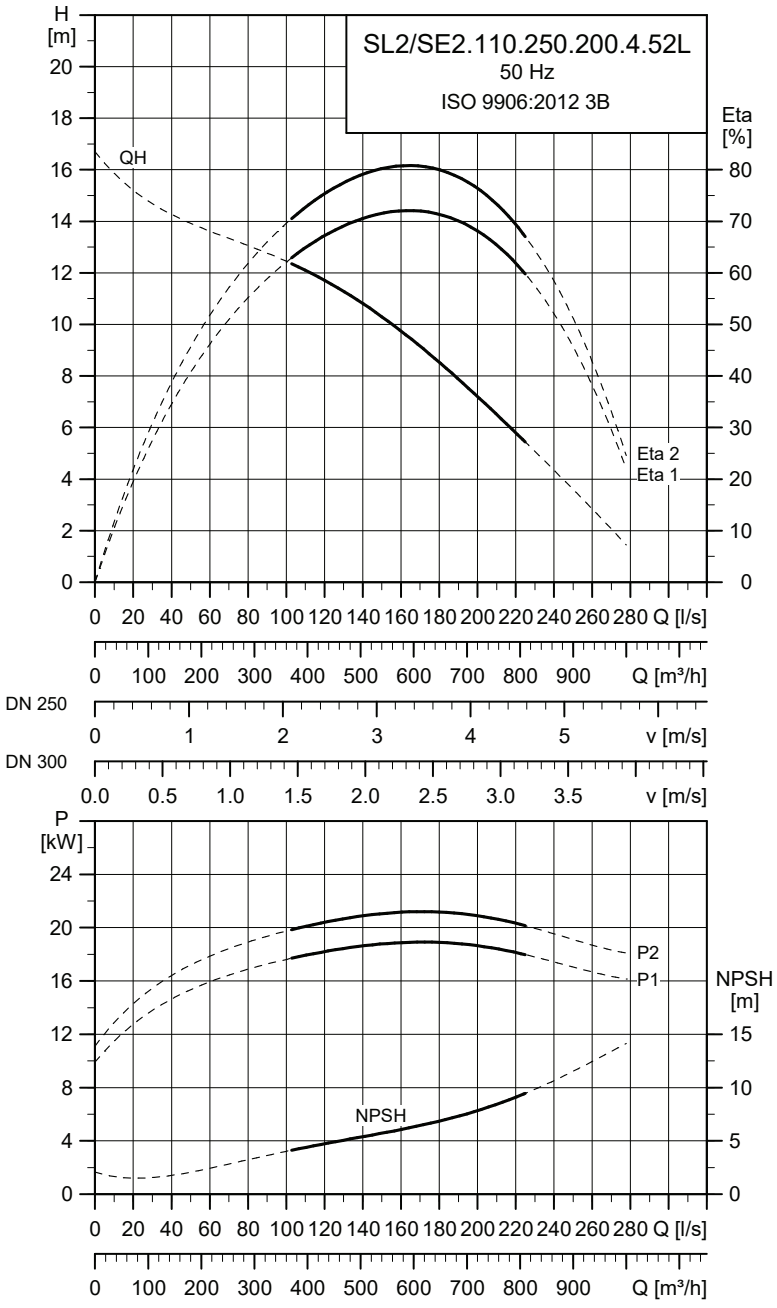
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL2/SE2.110.250.185.4.52L	380-415	21	18.5	4	1479	Y/D	41-37	381	85	87	88	0.69	0.73	0.79	0.0750	304
	660-690						24-23	209								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL2/SE2.110.250.185.4.52	259	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.38 SL2/SE2.110.250.200.4.52L



TM066732

Electrical data

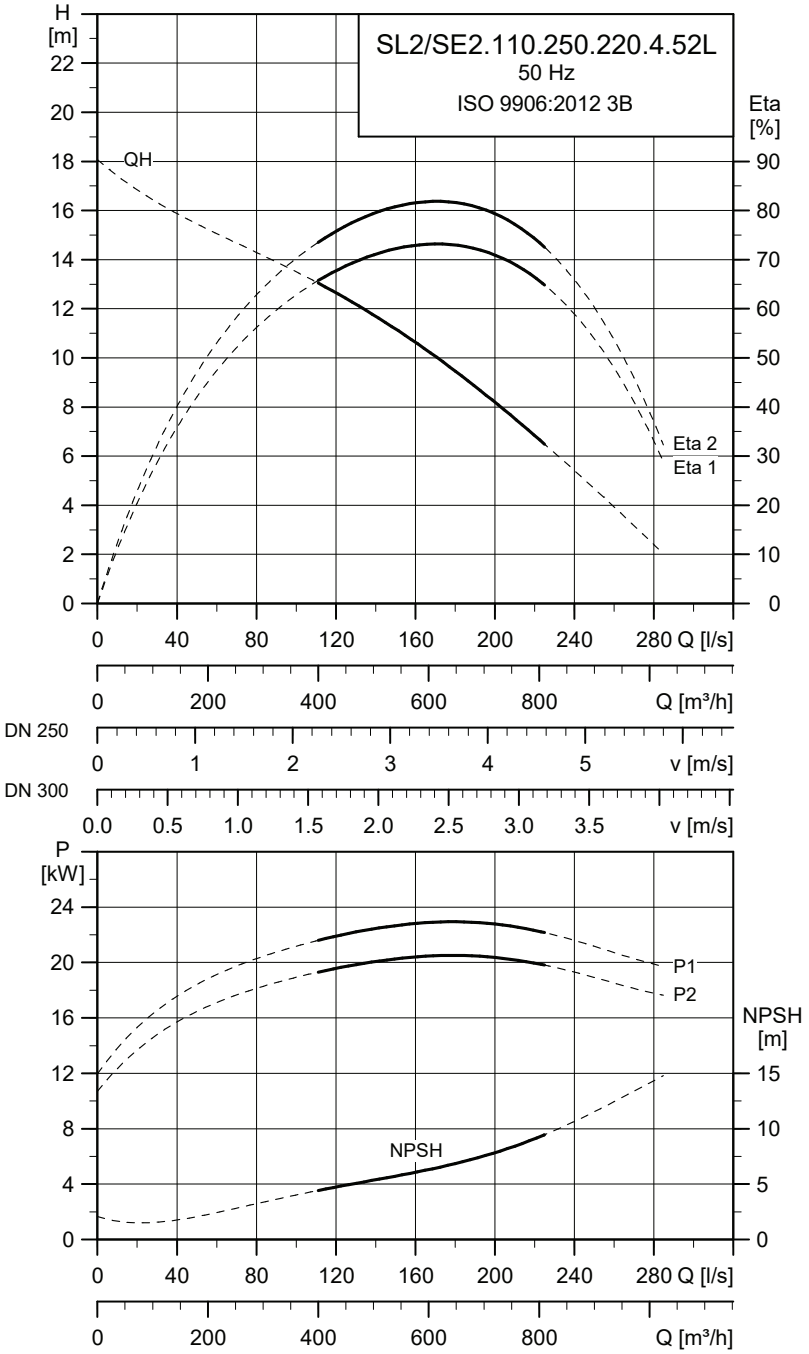
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL2/SE2.110.250.200.4.52L	380-415	23	20	4	1478	Y/D	43-39	381	85	88	88	0.69	0.74	0.81	0.0750	304
	660-690						25-24	209								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL2/SE2.110.250.200.4.52	264	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.39 SL2/SE2.110.250.220.4.52L



TM066733

Electrical data

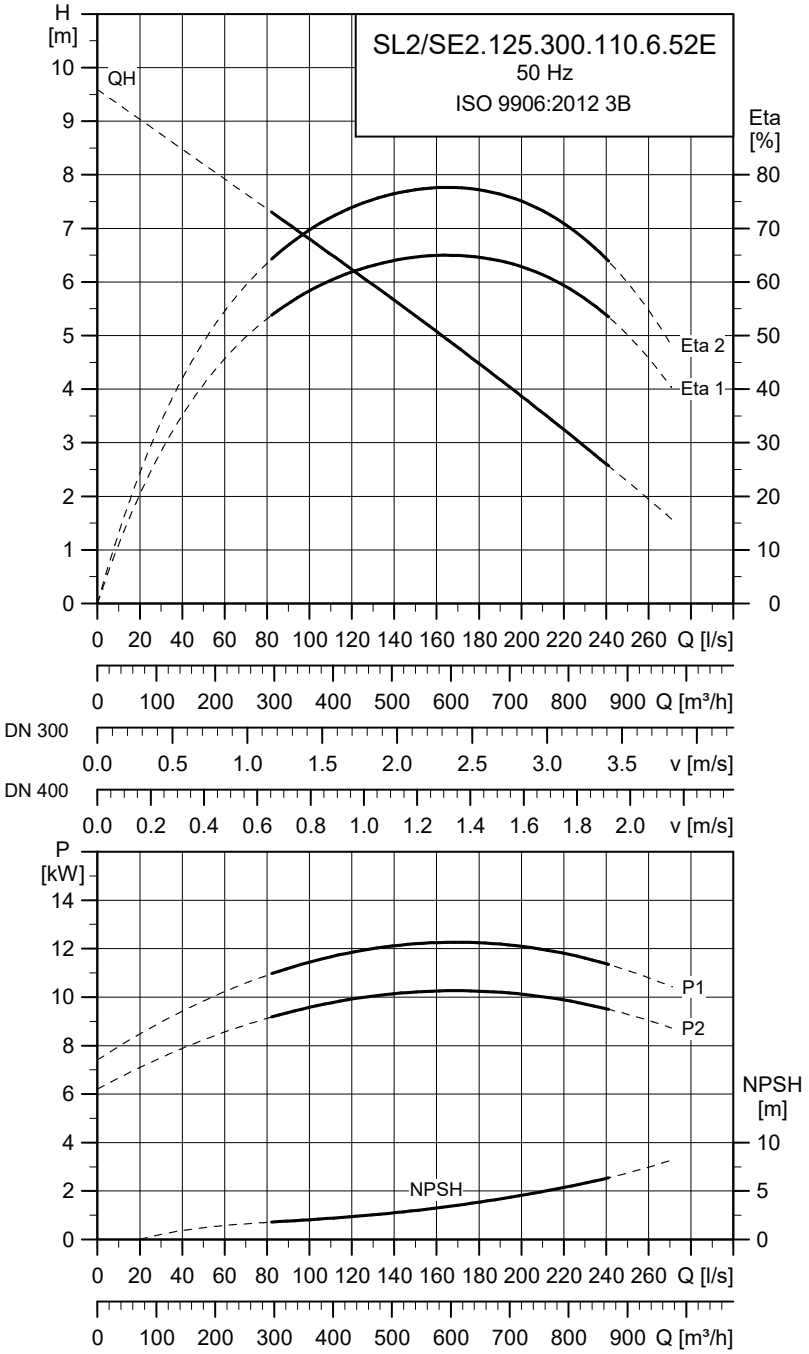
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL2/SE2.110.250.220.4.52L	380-415	25	22	4	1476	Y/D	45-41	381	86	88	88	0.70	0.76	0.85	0.0750	304
	660-690						26-25	209								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL2/SE2.110.250.220.4.52	271	110	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.40 SL2/SE2.125.300.110.6.52E



TM069926

Electrical data

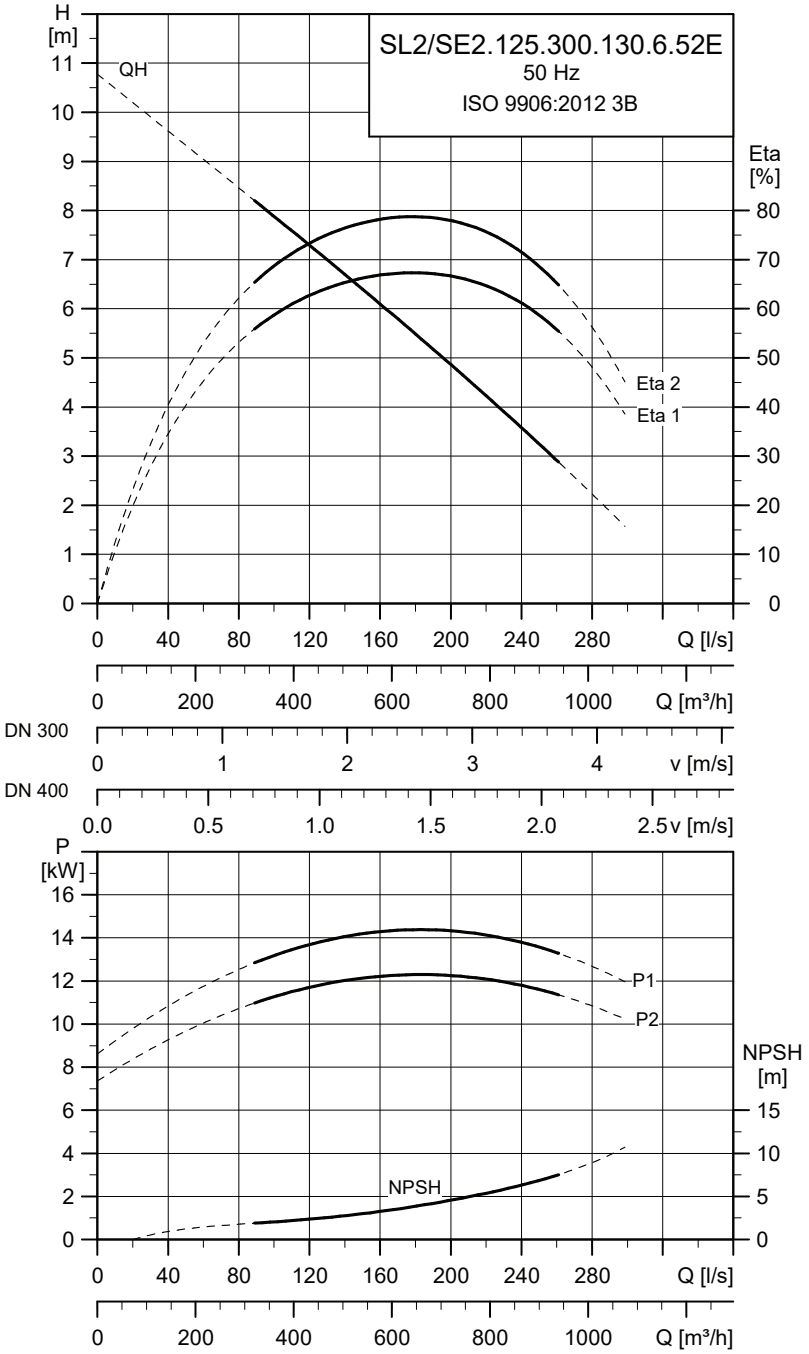
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL2/SE2.125.300.110.6.52E	380-415	13	11	6	983	Y/D	28-26	185	84	86	86	0.52	0.62	0.70	0.0940	503
	660-690						16-16	177								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL2/SE2.125.300.110.6.52E	298	125	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.41 SL2/SE2.125.300.130.6.52E



TM069927

Electrical data

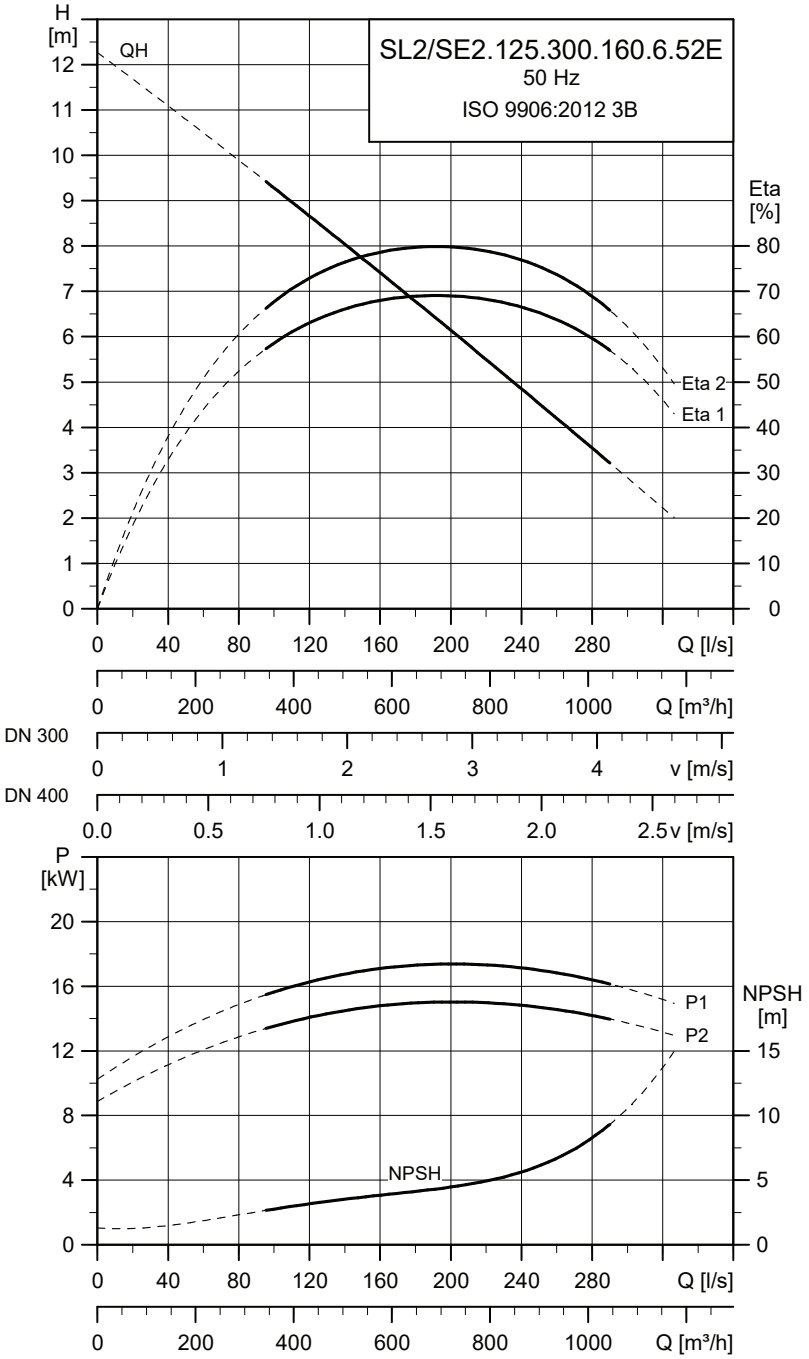
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL2/SE2.125.300.130.6.52E	380-415	15	13	6	980	Y/D	31-29	185	85	86	86	0.56	0.66	0.74	0.0940	503
	660-690						18-17	177								

Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL2/SE2.125.300.130.6.52E	304	125	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.42 SL2/SE2.125.300.160.6.52E



TM069928

Electrical data

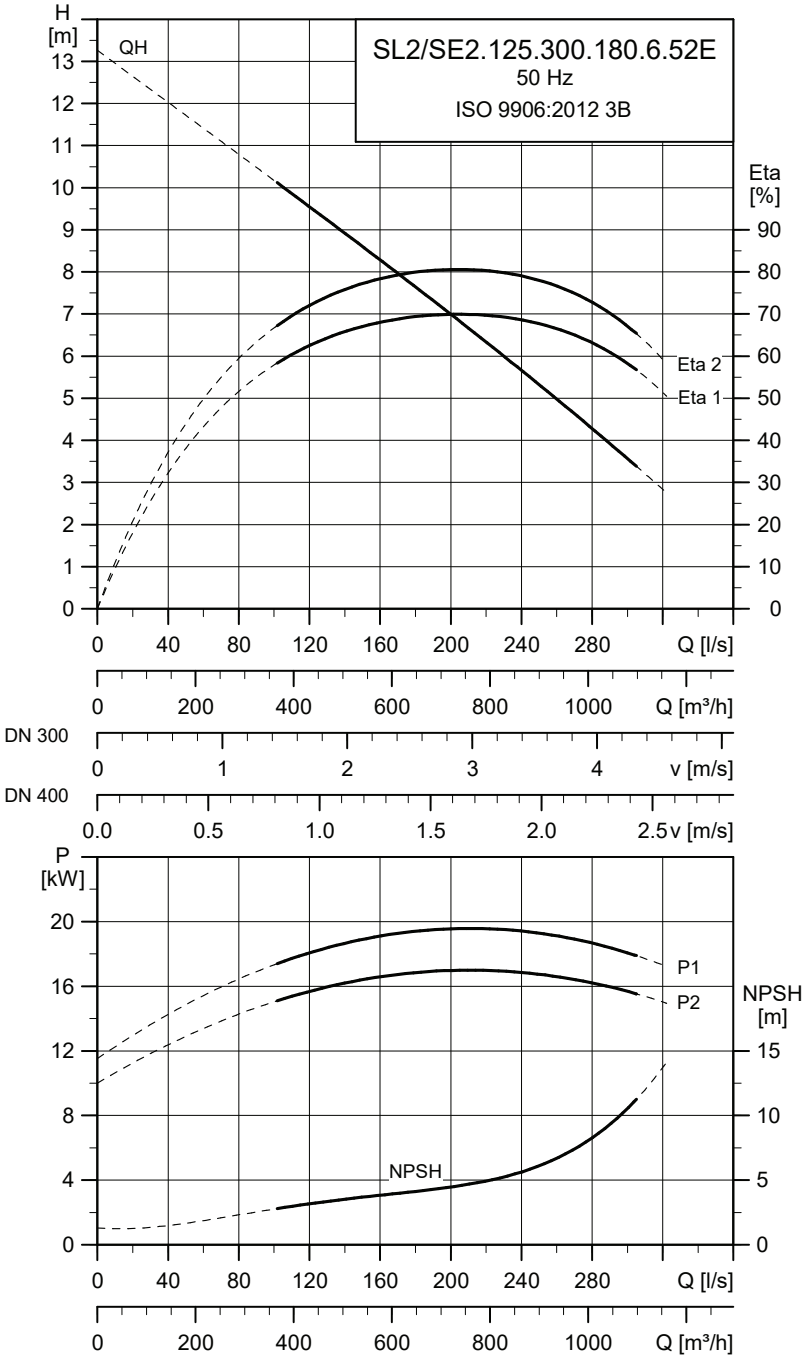
Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL2/SE2.125.300.160.6.52E	380-415 / 660-690	19	16	6	975	Y/D	36-33 / 21-20	185 / 177	86	86	86	0.61	0.72	0.79	0.0940	503

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2) PN	Max. installation depth [m]
SL2/SE2.125.300.160.6.52E	327	125	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

8.7.43 SL2/SE2.125.300.180.6.52E



TM069929

Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL2/SE2.125.300.180.6.52E	380-415 / 660-690	21	18	6	971	Y/D	40-37 / 23-22	185 / 177	86	86	85	0.64	0.75	0.82	0.0940	503

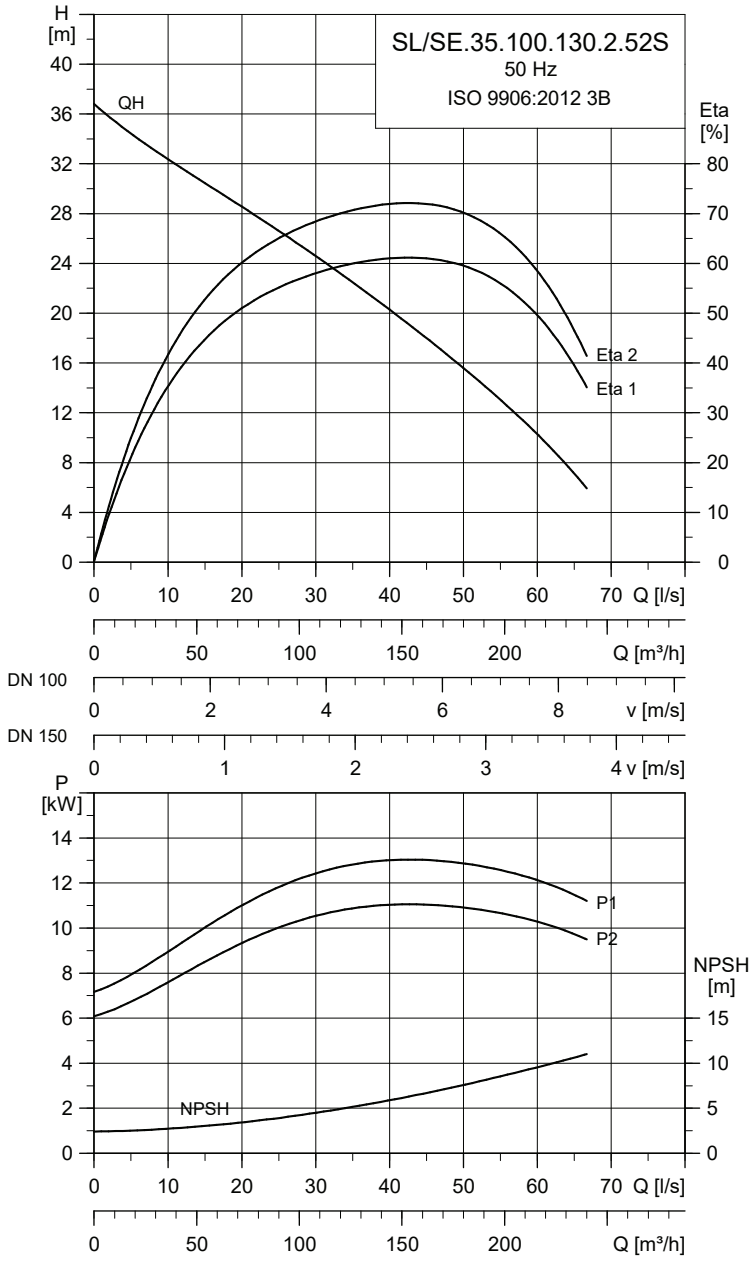
Pump data

Pump type	Impeller diameter	Max. solids size	Outlet flange pressure (according to EN 1092-2)	Max. installation depth
	[mm]	[mm]	PN	[m]
SL2/SE2.125.300.180.6.52E	329	125	10	20

Note: Pumps with stainless steel closed S-**tube**® impellers have the same performance curves as the corresponding cast iron version.

Open S-tube® impeller

8.8.1 SL/SE.35.100.130.2.52S



TM078460

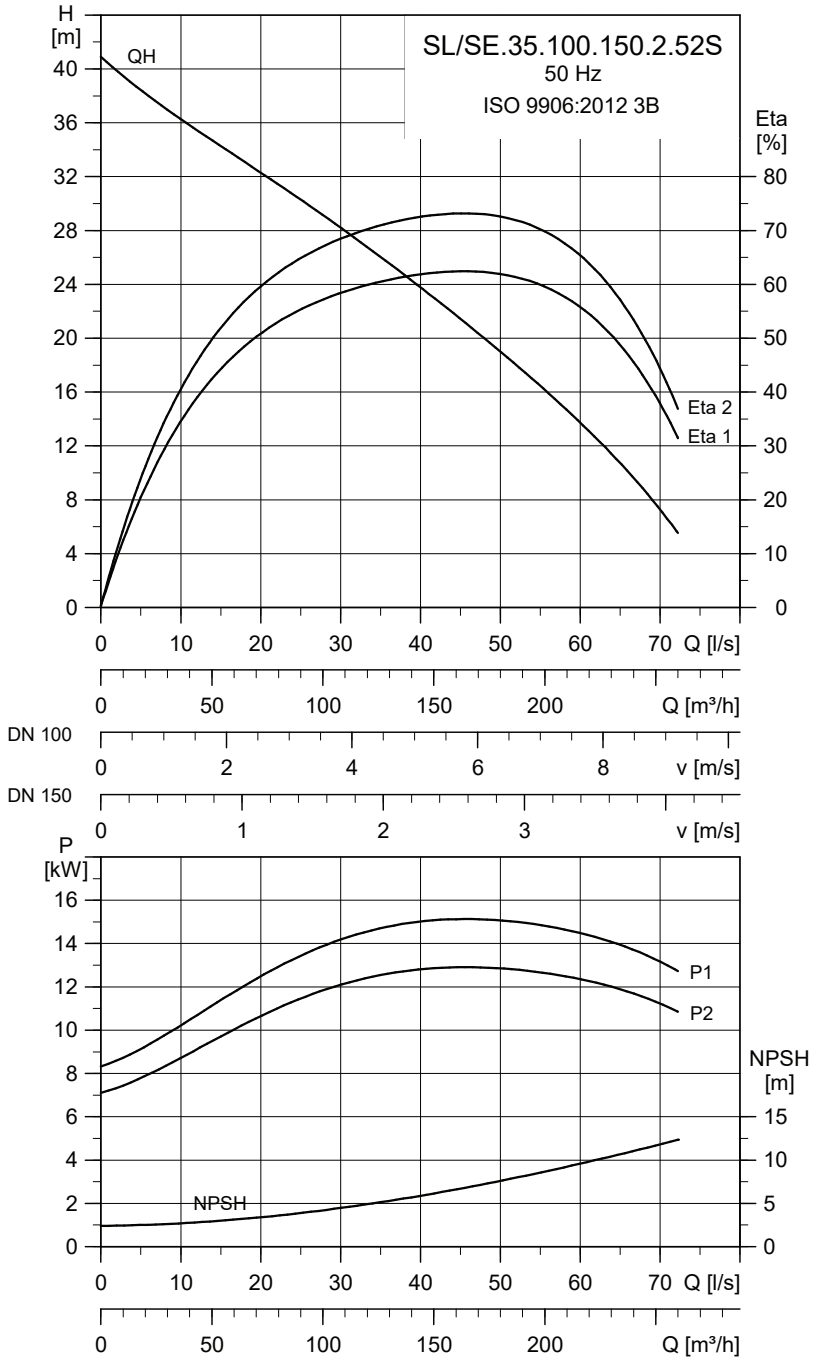
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.35.100.130.2.52S	380-415 / 660-690	15.2	13	2	2973	Y/D	27-25 / 16-15	138 / 245	79	82	86	0.72	0.81	0.86	0.049	137

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.35.100.130.2.52S	174.80	35	PN 10	20

8.8.2 SL/SE.35.100.150.2.52S



TM078461

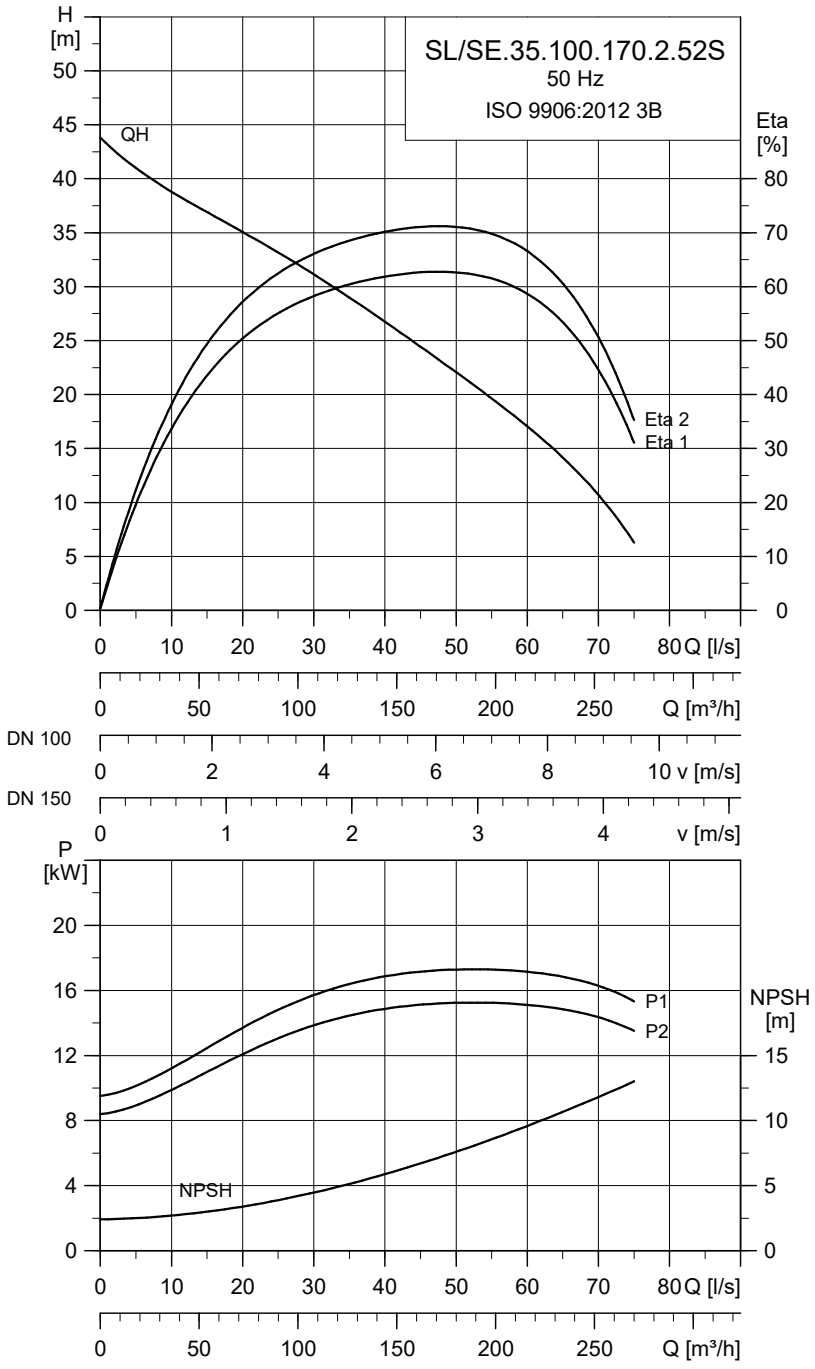
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.35.100.150.2.52S	380-415 / 660-690	17.1	15	2	2966	Y/D	30-28 / 18-17	138 / 245	80	84	88	0.75	0.84	0.88	0.049	137

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.35.100.150.2.52S	183.0	35	PN 10	20

8.8.3 SL/SE.35.100.170.2.52S



TM078462

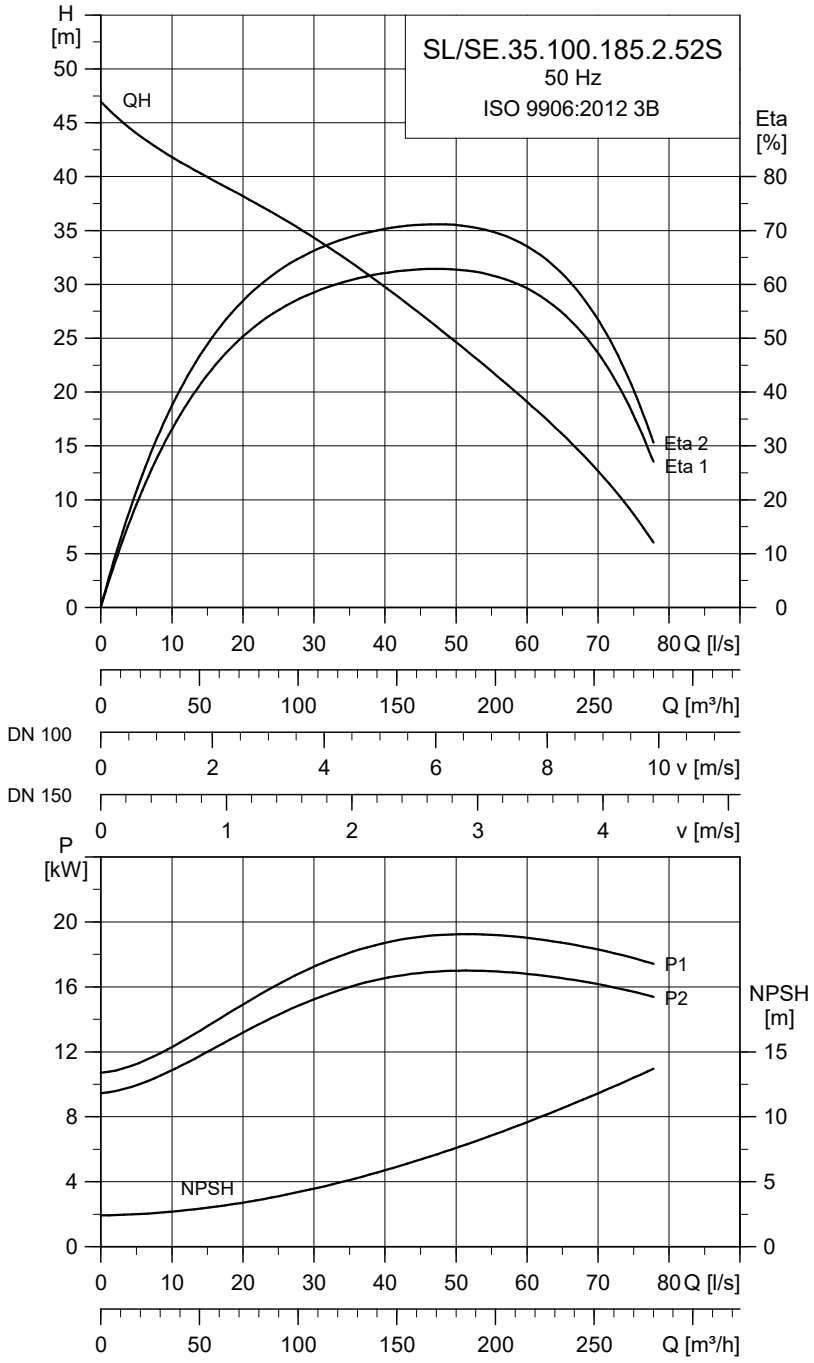
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.35.100.170.2.52S	380-415 / 660-690	19.2	17	2	2969	Y/D	34-32 / 20-19	175 / 318	84	88	88	0.73	0.82	0.86	0.058	210

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.35.100.170.2.52S	193.4	35	PN 10	20

8.8.4 SL/SE.35.100.185.2.52S



TM078463

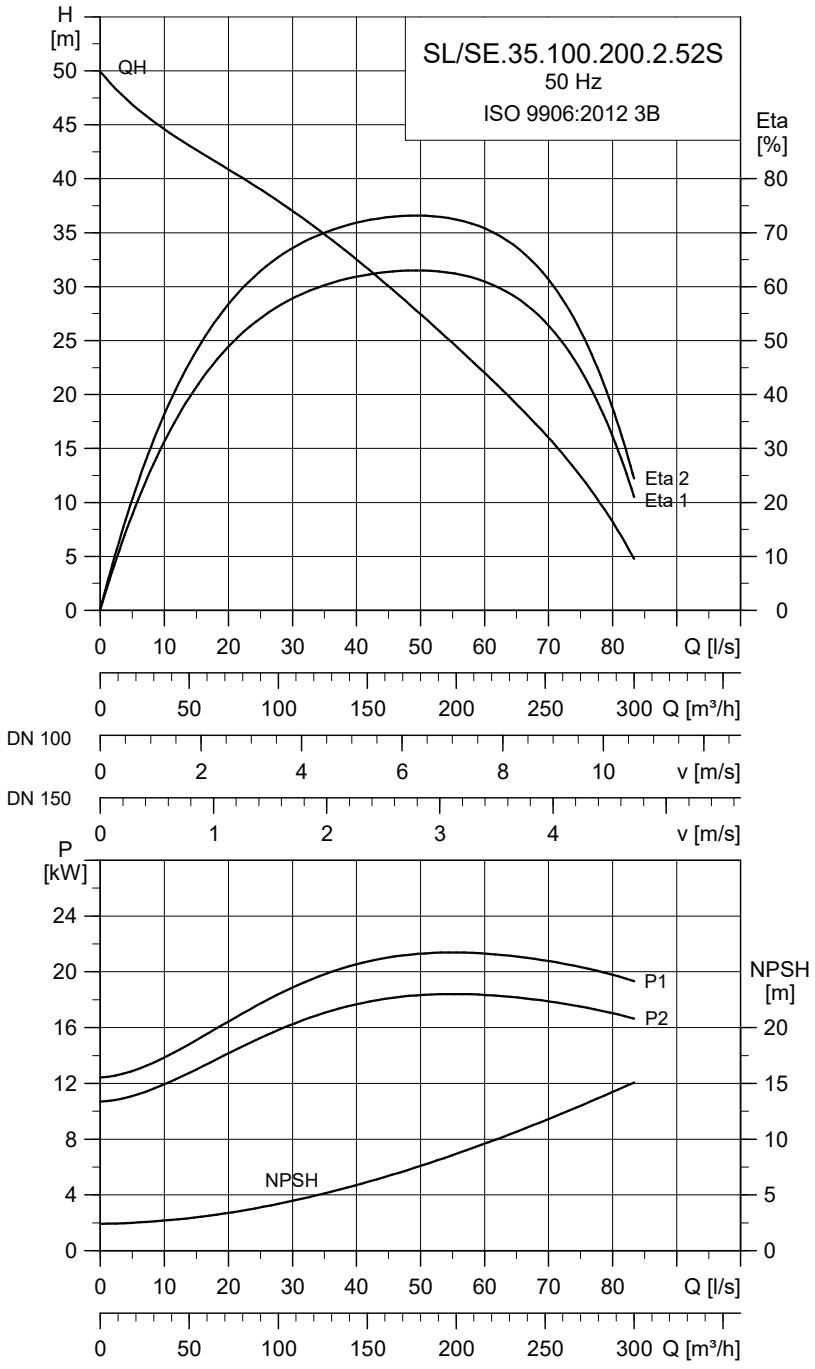
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.35.100.185.2.52S	380-415	21	18.5	2	2964	Y/D	38-35	175	85	88	88	0.75	0.84	0.86	0.058	210
	660-690						22-21	318								

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.35.100.185.2.52S	199.5	35	PN 10	20

8.8.5 SL/SE.35.100.200.2.52S



TM078464

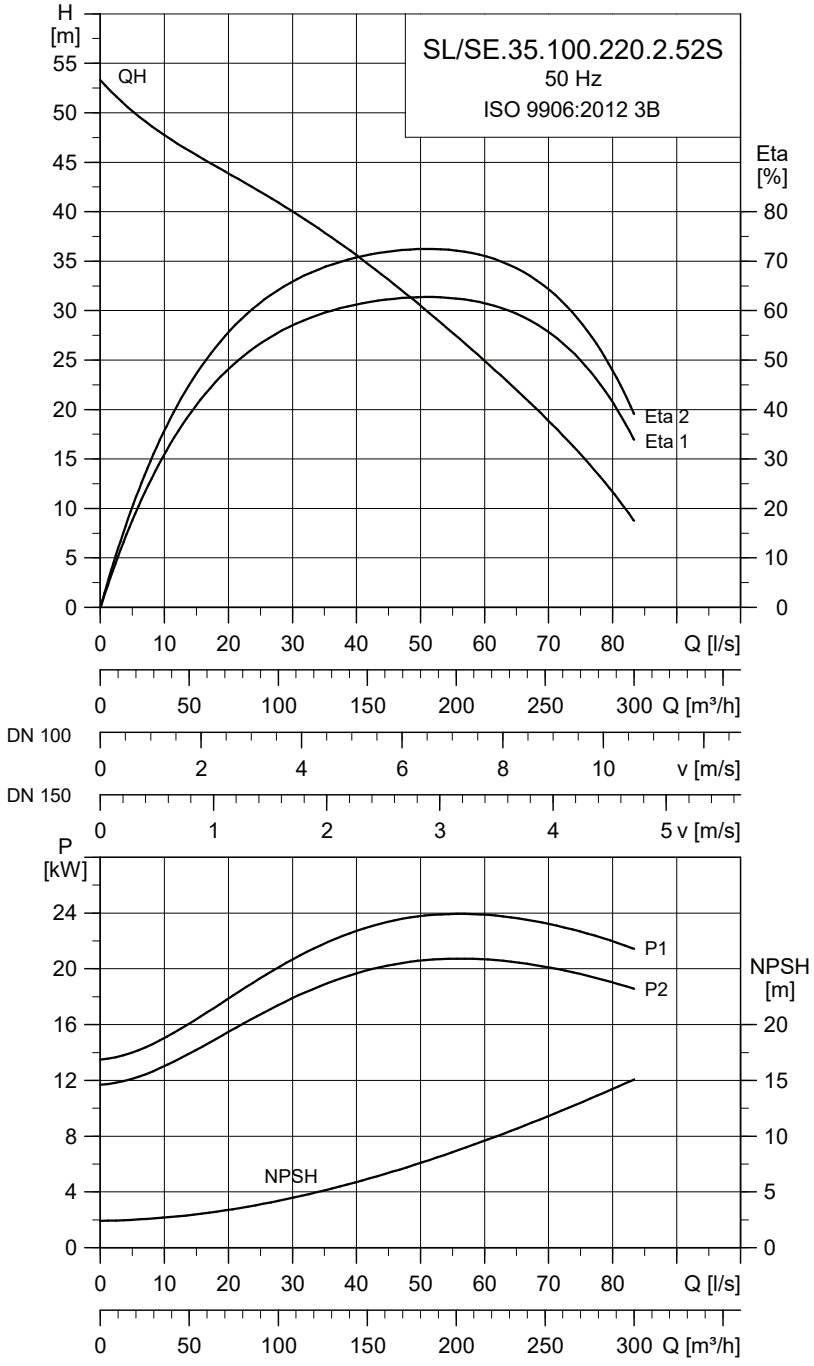
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.35.100.200.2.52S	380-415 / 660-690	22.7	20	2	2968	Y/D	39-36 / 23-22	213 / 388	85	88	88	0.79	0.86	0.89	0.065	228

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.35.100.200.2.52S	204.3	35	PN 10	20

8.8.6 SL/SE.35.100.220.2.52S



TM078465

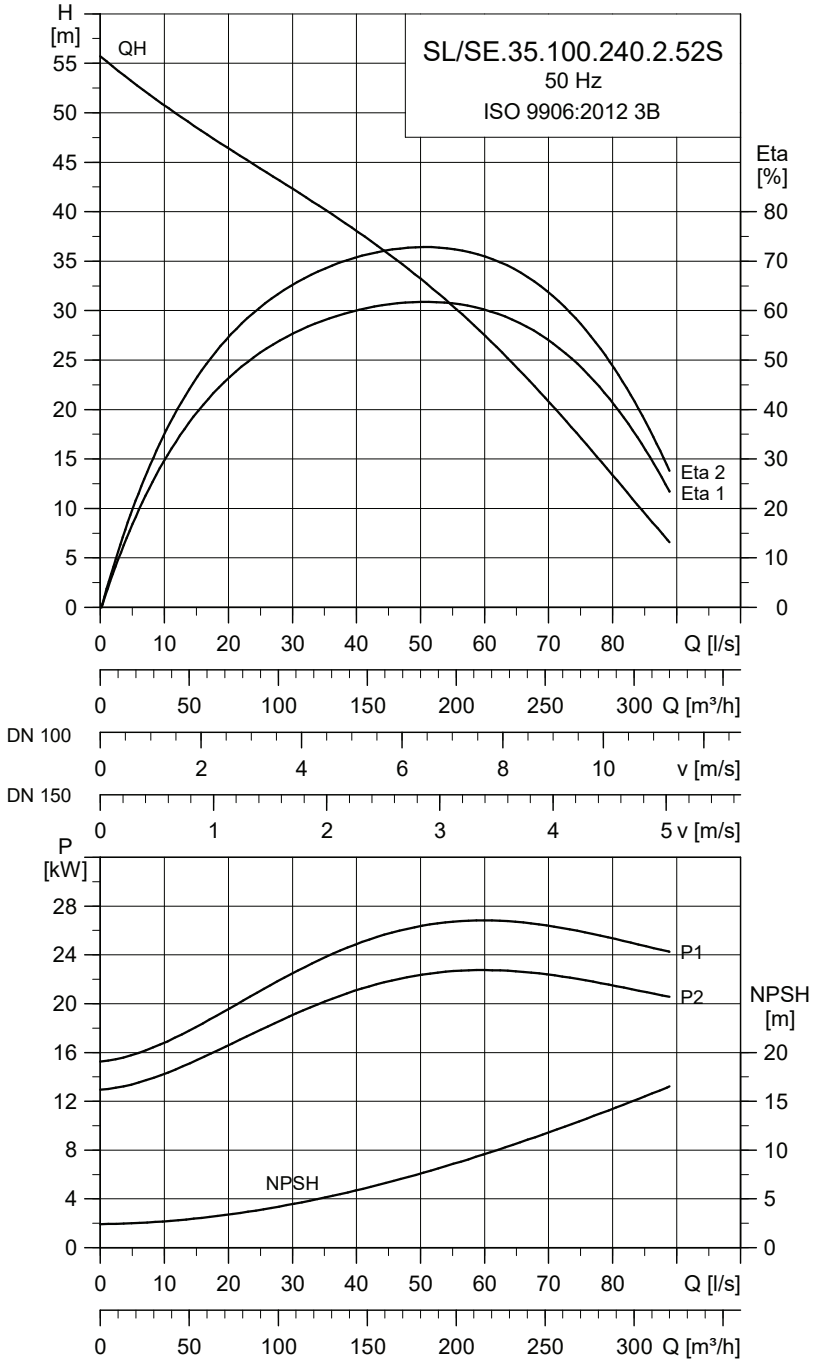
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.35.100.220.2.52S	380-415	25	22	2	2963	Y/D	43-40	213	86	88	88	0.81	0.87	0.89	0.065	228
	660-690						25-24	388								

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.35.100.220.2.52S	209.1	35	PN 10	20

8.8.7 SL/SE.35.100.240.2.52S



TM078466

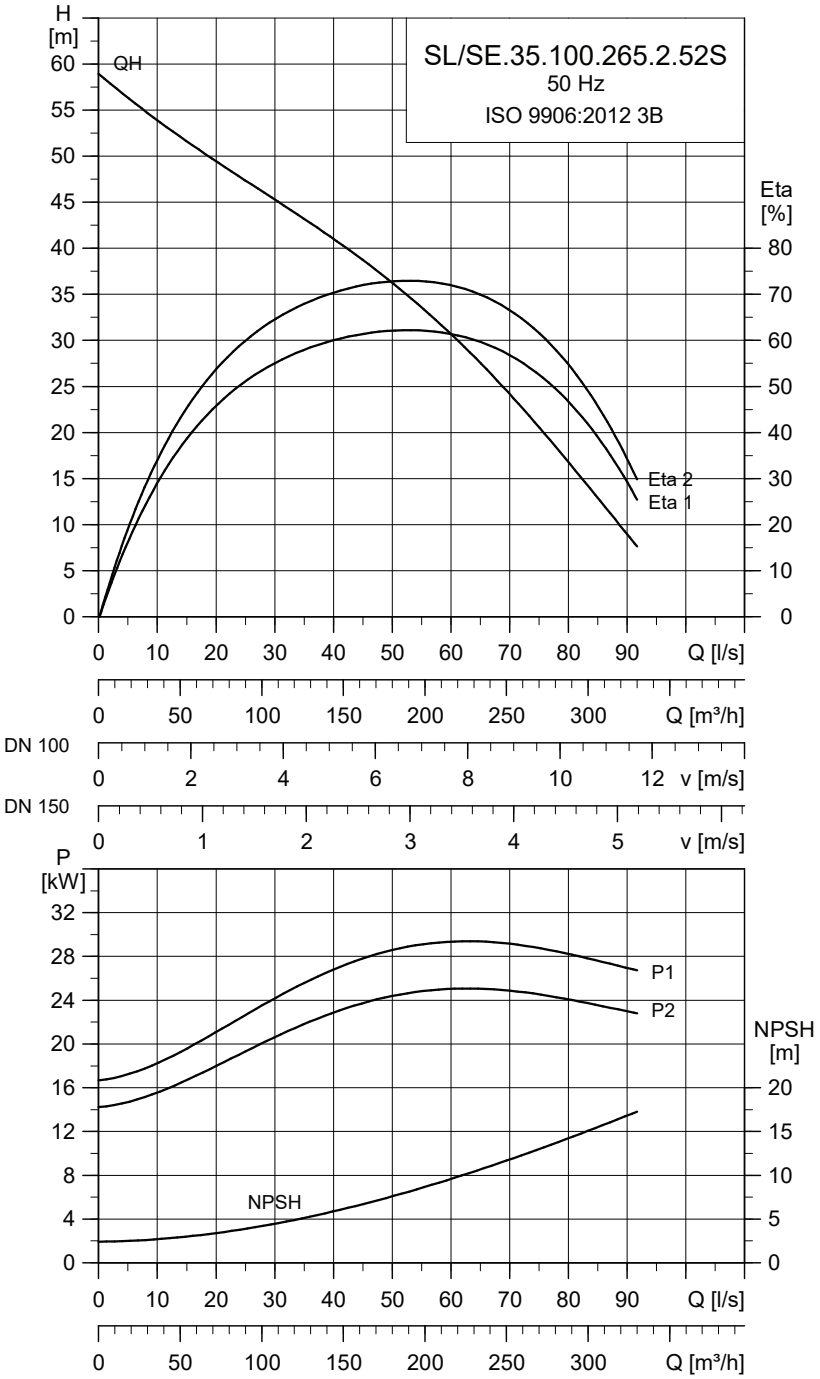
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.35.100.240.2.52S	380-415 / 660-690	27.4	24	2	2971	Y/D	51-47 / 30-28	320 / 582	84	86	88	0.69	0.77	0.82	0.065	228

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.35.100.240.2.52S	214.0	35	PN 10	20

8.8.8 SL/SE.35.100.265.2.52S



TM078467

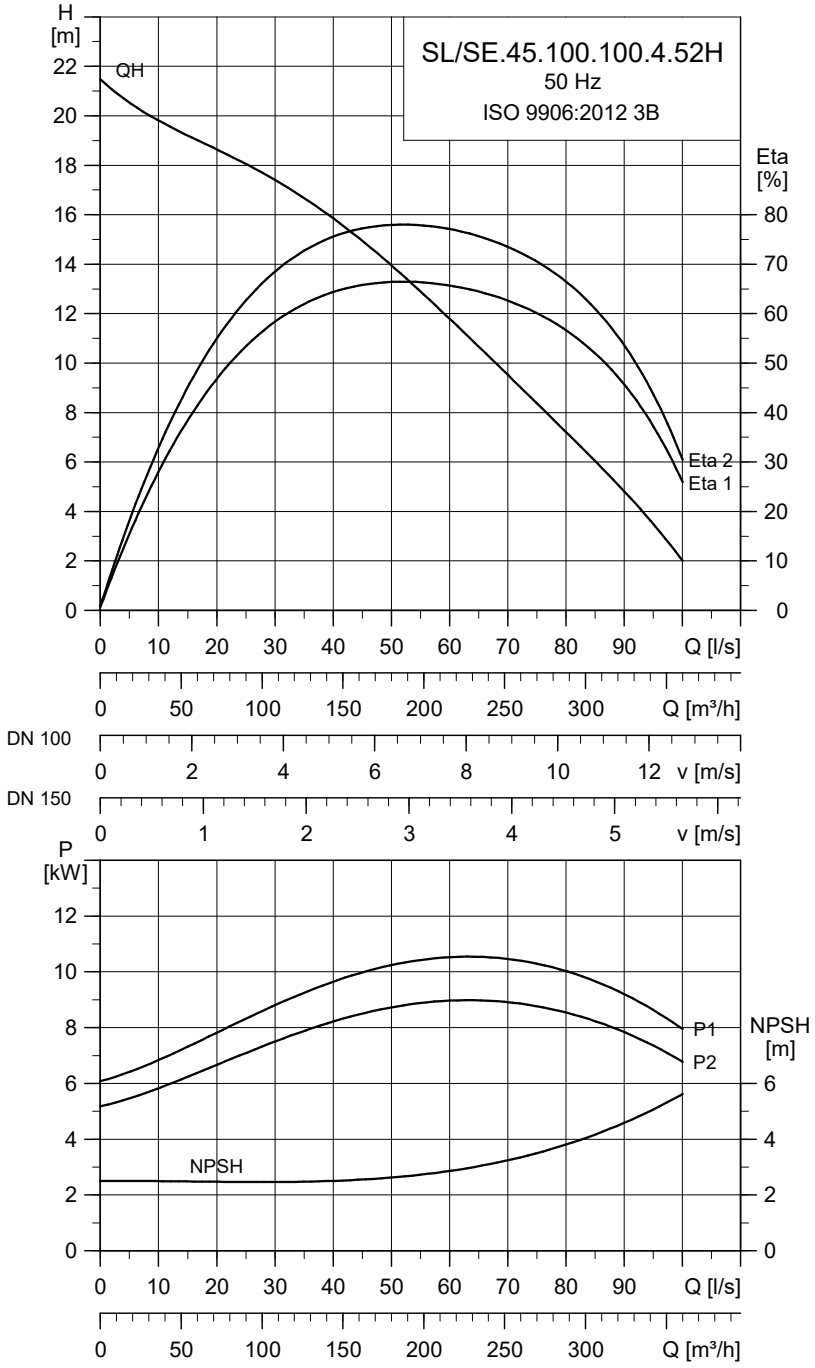
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.35.100.265.2.52S	380-415 / 660-690	30.1	26.5	2	2967	Y/D	56-51 / 32-31	320 / 582	85	87	88	0.71	0.79	0.83	0.065	228

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.35.100.265.2.52S	219.0	35	PN 10	20

8.8.9 SL/SE.45.100.100.4.52H



TM078468

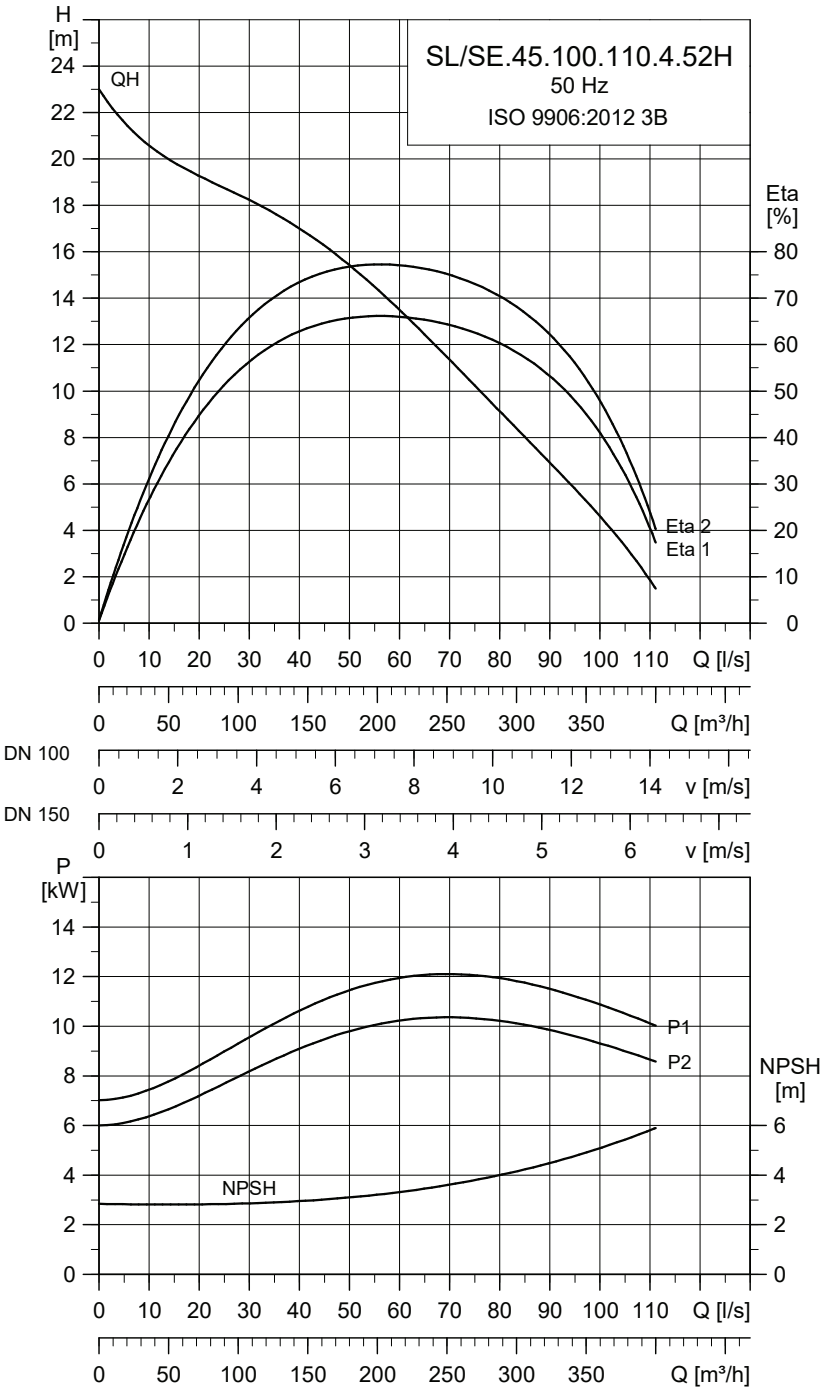
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.45.100.100.4.52H	380-415 / 660-690	11.6	10	4	1482	Y/D	23-21 / 13-13	116 / 210	84	85	86	0.69	0.74	0.80	0.058	222

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.45.100.100.4.52H	260	45	PN 10	20

8.8.10 SL/SE.45.100.110.4.52H



TM078469

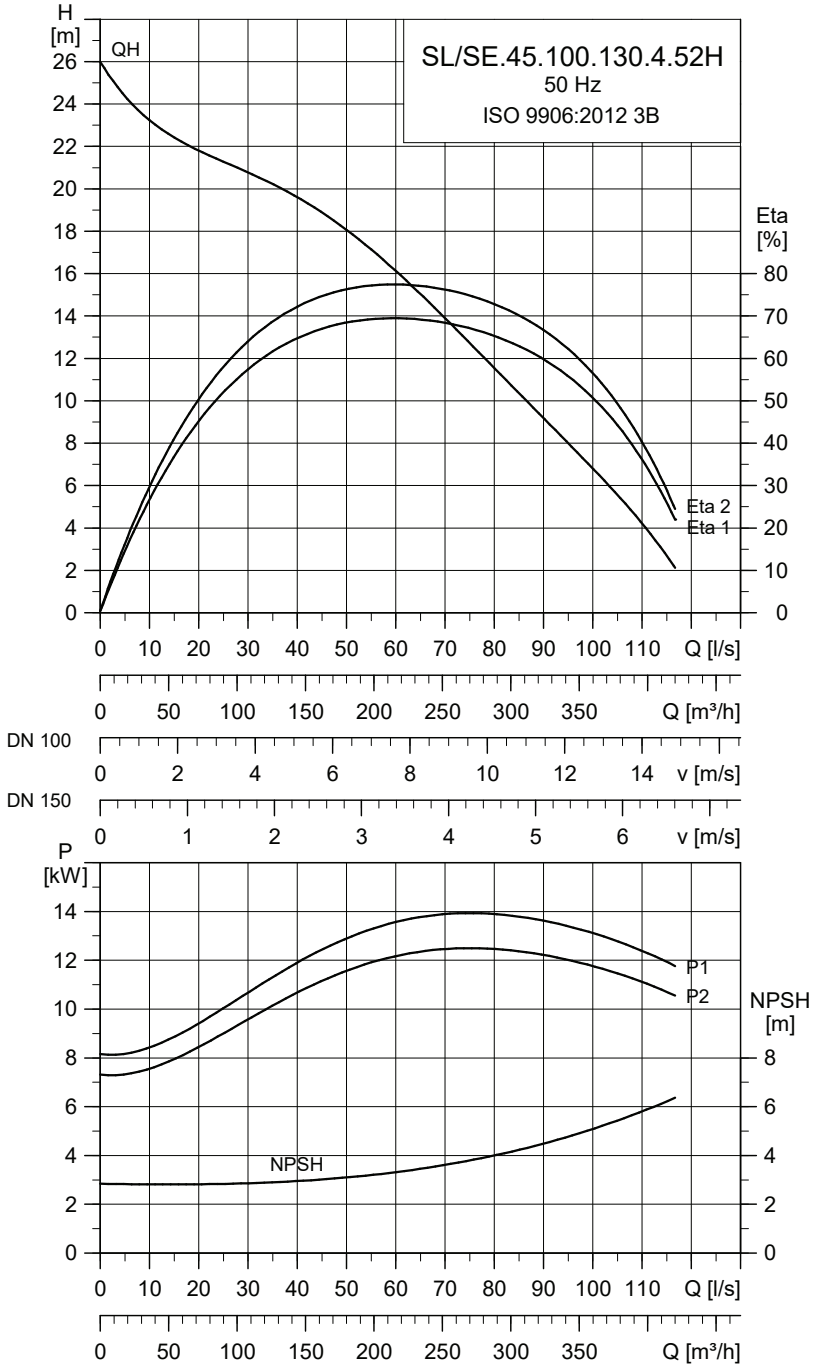
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.45.100.110.4.52H	380-415 / 660-690	12.7	11	4	1481	Y/D	24-22 / 14-13	116 / 210	84	86	86	0.70	0.76	0.82	0.058	222

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.45.100.110.4.52H	272	45	PN 10	20

8.8.11 SL/SE.45.100.130.4.52H



TM078470

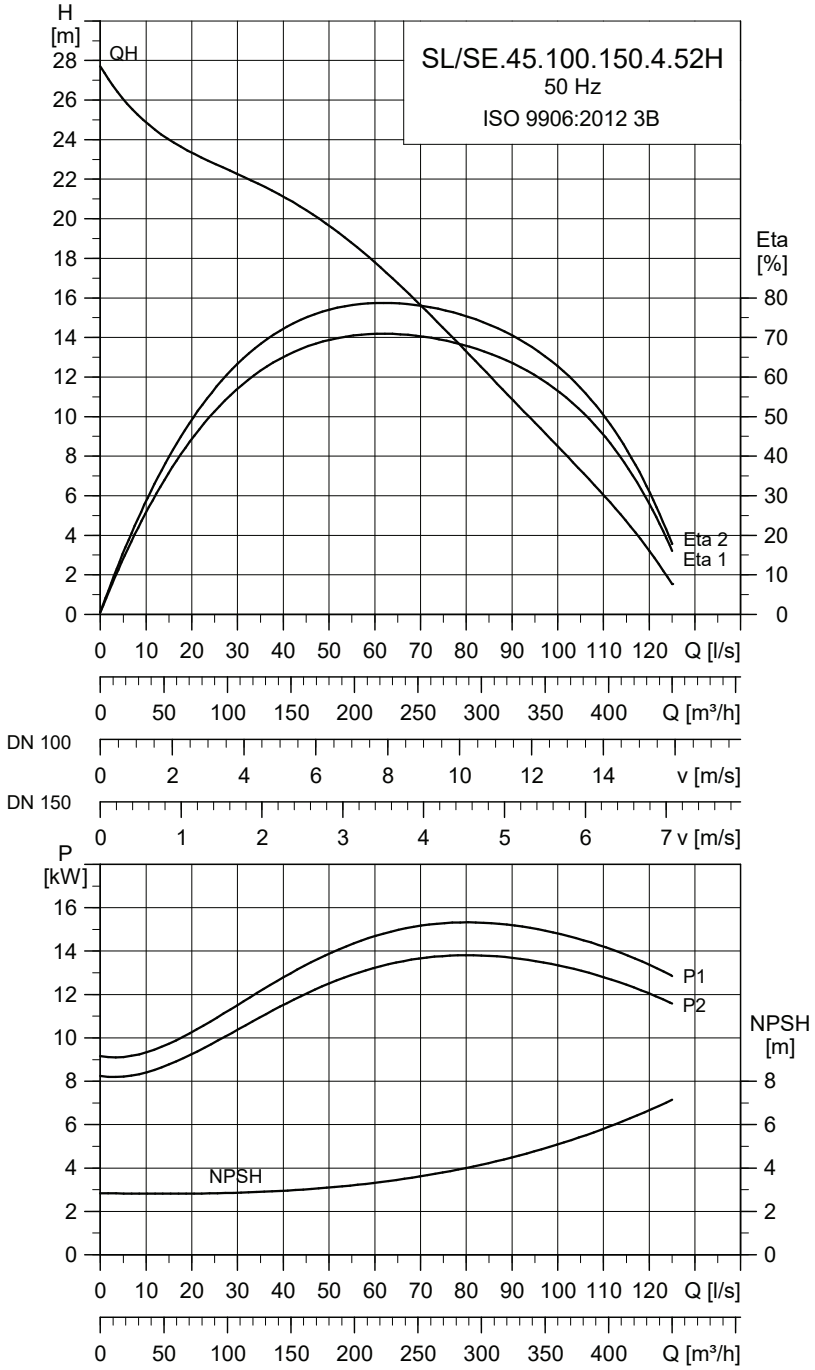
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.45.100.130.4.52H	380-415 / 660-690	14.8	13	4	1483	Y/D	28-25 / 16-15	156 / 283	87	88	88	0.66	0.77	0.83	0.075	304

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.45.100.130.4.52H	284	45	PN 10	20

8.8.12 SL/SE.45.100.150.4.52H



TM078471

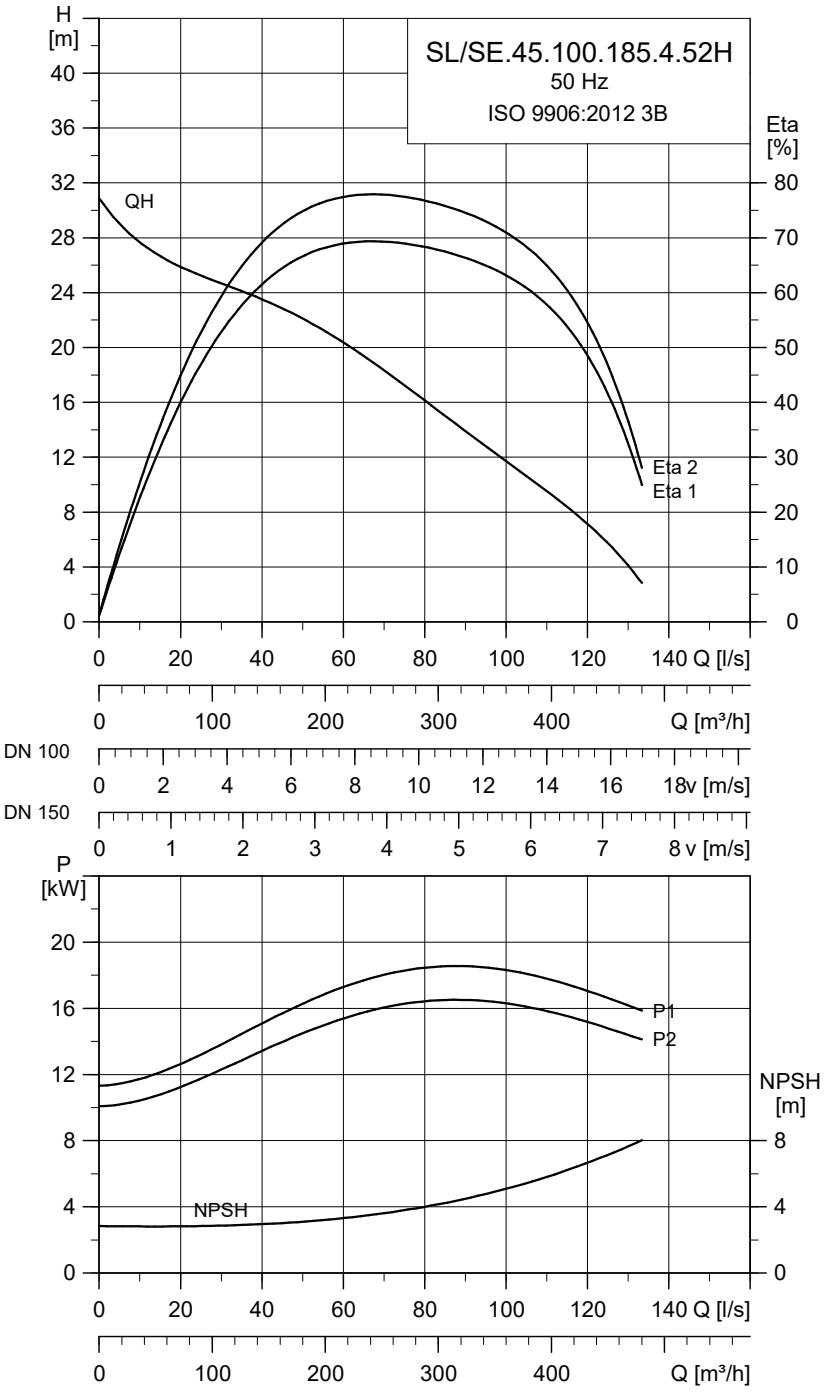
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.45.100.150.4.52H	380-415 / 660-690	17	15	4	1480	Y/D	31-29 / 18-17	156 / 283	87	88	88	0.70	0.80	0.84	0.075	304

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.45.100.150.4.52H	292.1	45	PN 10	20

8.8.13 SL/SE.45.100.185.4.52H



TM078472

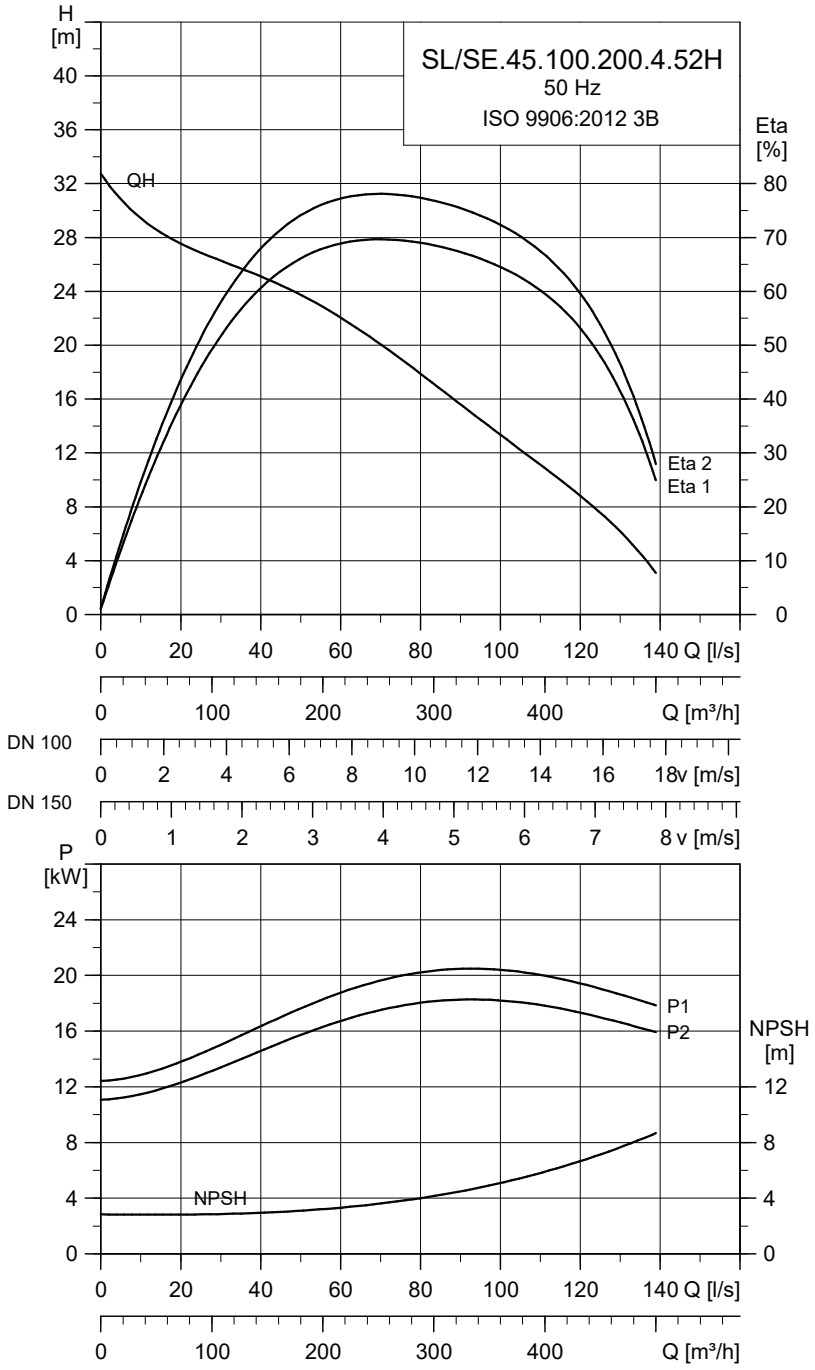
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.45.100.185.4.52H	380-415 660-690	21	18.5	4	1479	Y/D	41-37 24-23	209 381	85	87	88	0.69	0.73	0.79	0.075	304

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.45.100.185.4.52H	305.6	45	PN 10	20

8.8.14 SL/SE.45.100.200.4.52H



TM078473

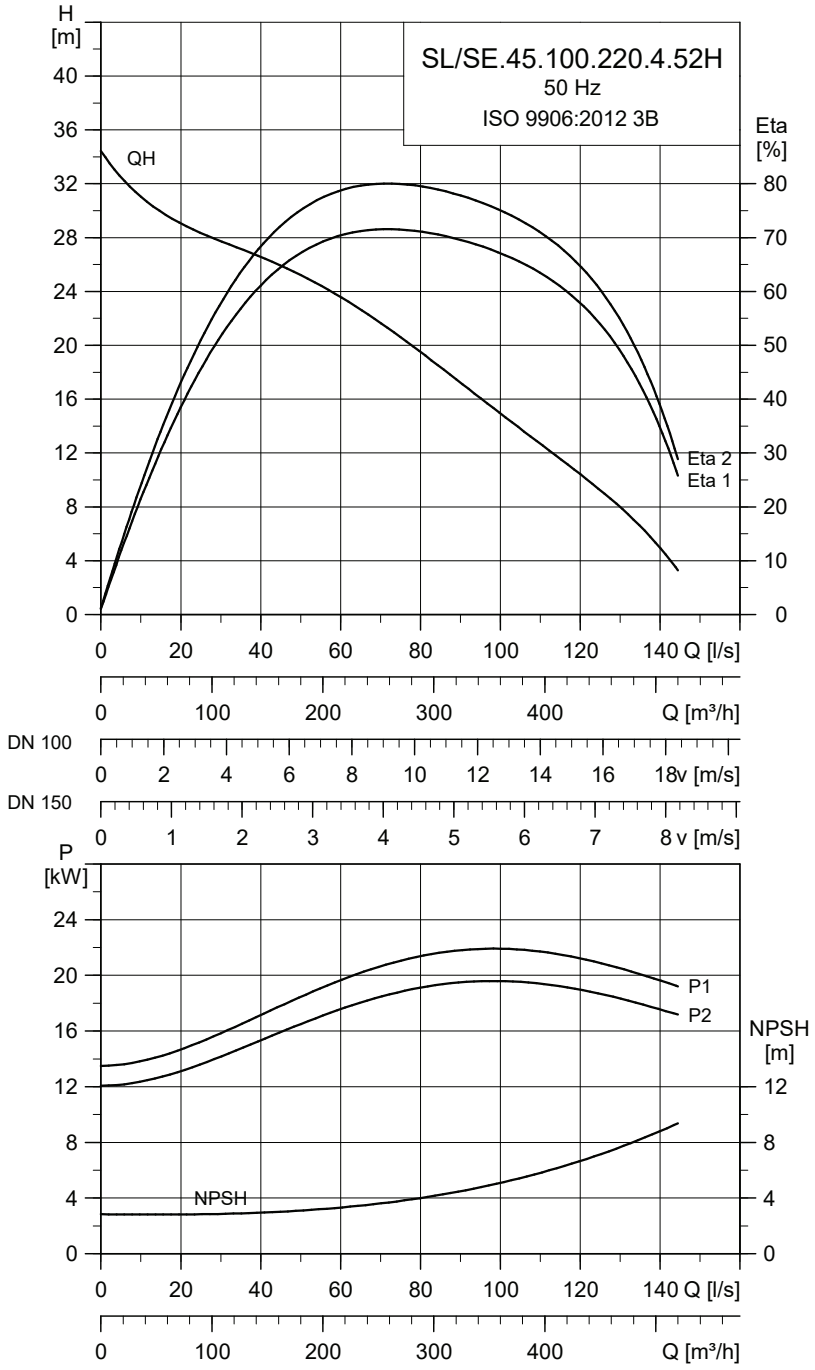
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.45.100.200.4.52H	380-415 / 660-690	22.7	20	4	1478	Y/D	43-39 / 25-24	209 / 381	85	88	88	0.69	0.74	0.81	0.075	304

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.45.100.200.4.52H	312.96	45	PN 10	20

8.8.15 SL/SE.45.100.220.4.52H



TM078474

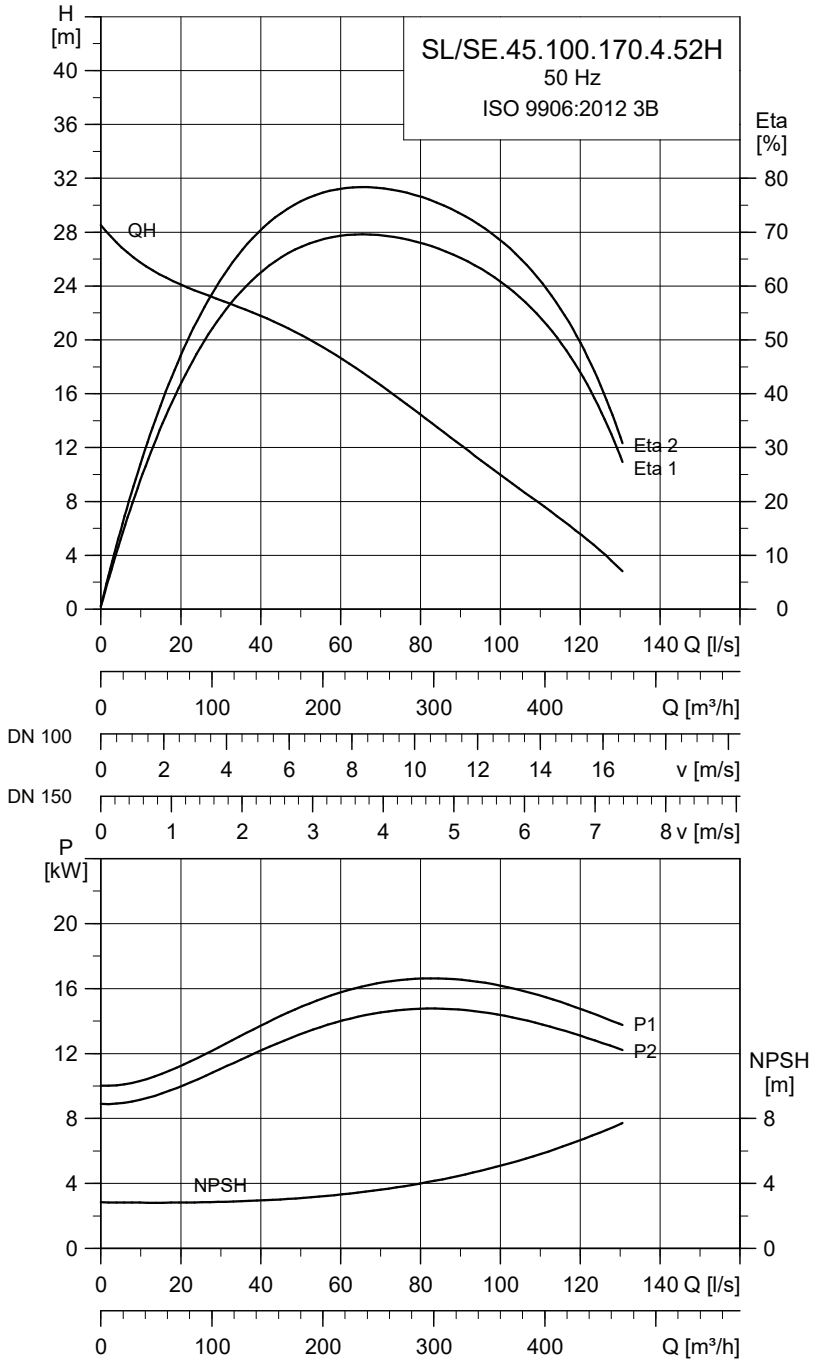
Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.45.100.220.4.52H	380-415 / 660-690	25	22	4	1476	Y/D	45-41 / 26-25	209 / 381	86	88	88	0.70	0.76	0.85	0.075	304

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.45.100.220.4.52H	320	45	PN 10	20

8.8.16 SL/SE.45.100.170.4.52H



TM078475

Electrical data

Pump type	Voltage variant	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I_N [A]	I_{start} [A]	η_{motor} [%] 1/2	3/4	1/1	Cos φ 1/2	3/4	1/1	Moment of inertia [kgm²]	Breakdown torque M_{max} [Nm]
SL/SE.45.100.170.4.52H	380-415 / 660-690	19.3	17	4	1480	Y/D	39-36 / 23-22	209 / 381	84	87	88	0.68	0.72	0.77	0.075	304

Pump data

Pump type	Impeller diameter [mm]	Max. solids size [mm]	Outlet flange pressure (according to EN 1092-2)	Max. installation depth [m]
SL/SE.45.100.170.4.52H	298	45	PN 10	20

9. Accessories

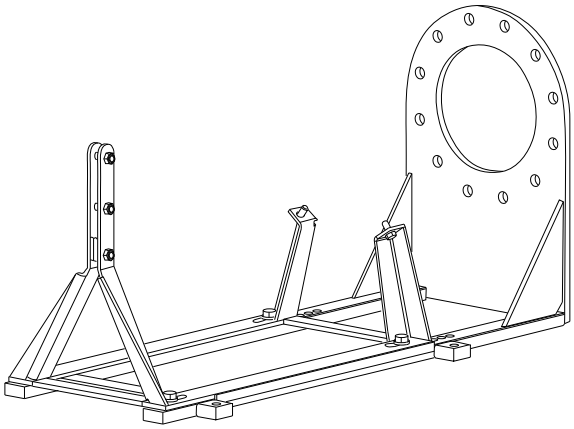
Installation systems

9.1.1 Installation type H (dry, horizontal)

Horizontal base stand for Grundfos SE pumps

- Horizontal base stand with bolts and nuts.
- Steel, epoxy-coated.

Note: A horizontal base stand is included with the pump.



TM053866

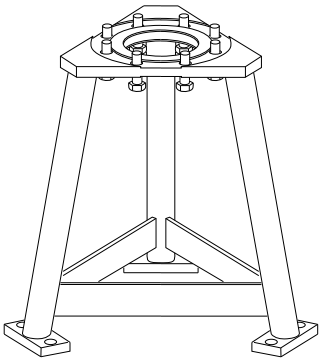
Pump type	Pressure range	Pump inlet	Pump outlet	Product number
SEV.XX.80	H	DN 100	DN 80	99867046
SE/SE1.XX.100	S	DN 100	DN 100	99867046
	H	DN 150	DN 100	99867050
SE/SE1.XX.150	H	DN 150	DN 150	99867050
SE1.XX.200	M	DN 200	DN 200	99867461
SE2.XX.250	L	DN 250	DN 250	99867462
SE2.XX.300	E	DN 300	DN 300	99867474

9.1.2 Installation type D (dry, vertical)

Vertical base stand installation kit

- vertical base stand with bolts and flange seal.
- material variants
  - steel, epoxy-coated
  - stainless steel.

Note: suitable only for SE pumps up to 15 kW.



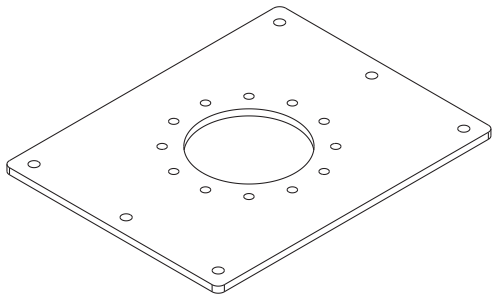
TM053869

Pump type	Pressure range	Pump inlet	Pump outlet	Product number	
				Steel, epoxy coated	Stainless steel
SEV.XX.80	H	DN 100	DN 80	96308237	96090110
SE/ SE1.XX.100	S	DN 100	DN 100	96308237	96090110
	H	DN 150	DN 100	96308238	96835614
SE/ SE1.XX.150	H	DN 150	DN 150	96308238	96835614
SE1.XX.200	M	DN 200	DN 200	96094523	96090119

Base plate installation kit

- base plate with bolts and flange seal.
- steel, epoxy-coated.

Note: suitable only for 15 kW and larger SE pumps.



TM078361

Base plate

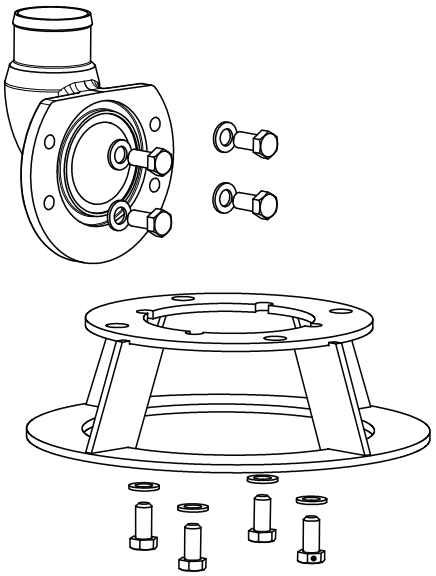
Pump type	Pressure range	Pump inlet	Pump outlet	Product number
SE2.XXX.250	L	DN 250	DN 250	96308240
SE2.XXX.300	E	DN 300	DN 300	96308241

9.1.3 Installation type S, C (submerged, vertical), temporary on ring stand

Ring stand

- ring stand complete with flanged 90 ° bend with connection, anchor bolts, bolts, nuts and gaskets.
- material variants
  - cast iron, epoxy-coated
  - stainless steel
- connection types
  - hose connection
  - thread connection.

Note: Only suitable for SE pumps up to 15 kW.



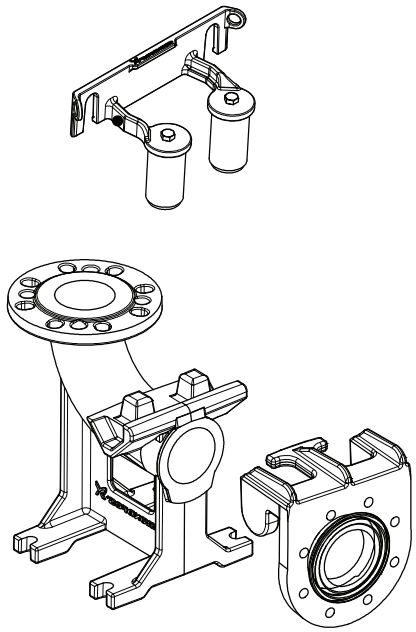
TM053871

Pump type	Pressure range	Pump inlet	Pump outlet	Product number		
				Cast iron, epoxy coated		Stainless steel
				Hose connection	Thread connection	Hose connection
SEV/SLV.XX.80	H	DN 100	DN 80	96102313	96102382	96898249
SE/SL/SE1/SL1.XX.100	S	DN 100	DN 100	96102255	96102383	96898272
	H	DN 150	DN 100	96102314	96102384	96898274
SE/SL/SE1/SL1.XX.150	H	DN 150	DN 150	96102256	96102385	-
SE1/SL1.XXX.200	M	DN 200	DN 200	96789480	-	96898277
SE1/SL1.XXX.250	L	DN 250	DN 250	96789481	-	-

9.1.4 Installation type S, C (submerged, vertical), permanent on auto coupling

Auto-coupling system DN 100 - DN 200

- complete auto-coupling system with guide shoe, base unit, upper guide-rail holder, bolts, nuts and gaskets.
- material variants
  - cast iron (according to EN-GJL-250)
  - stainless steel (according to EN 1.4408).



TM053872

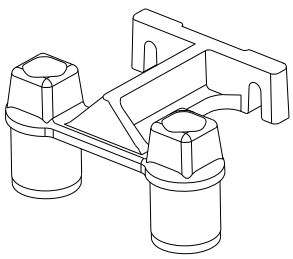
Note: If the guide rails exceed 6 m, consider using intermediate guide rail holders (IGRH) to support the system.
Note: For flanges up to DN 200, the guide shoe is delivered with the auto-coupling kit.

Pump type	Pressure range	Pump inlet	Pump outlet	Auto-coupling inlet	Auto-coupling outlet	Product number	
						Cast iron	Stainless steel
SEV/SLV.XX.80	H	DN 100	DN 80	DN 80	DN 80	96090993	96825106
				DN 80	DN 100	96102240	-
SE/SL/SE1/ SL1.XX.100	S	DN 100	DN 100	DN 100	DN 100	96090994	96825108
	H	DN 150	DN 100	DN 100	DN 150	96102241	-
SE/SL/SE1/ SL1.XX.150	H	DN 150	DN 150	DN 150	DN 150	97695489	96989863
SE1/SL1.XXX.200	M	DN 200	DN 200	DN 200	DN 200	96641489	-

Auto-coupling spare parts DN 100 - DN 200

Intermediate guide rail holders (IGRH)

- stainless steel



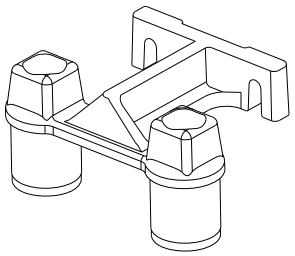
TM062841

Pump type	Pressure range	Pump inlet	Pump outlet	Product number
SEV/SLV.XX.80	H	DN 100	DN 80	96825142
SE/SL/SE1/SL1.XX.100	S	DN 100	DN 100	96825161
	H	DN 150	DN 100	96825161
SE/SL/SE1/SL1.XX.150	H	DN 150	DN 150	96829331
SE1/SL1.XXX.200	M	DN 200	DN 200	97918997

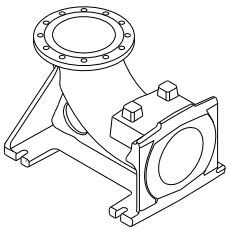
Auto-coupling system DN 250 - DN 300

- auto-coupling system including bolts, nuts and gaskets:
  - cast iron base unit
  - stainless steel upper guide rail holder (UGRH)
  - cast iron guide shoe

Note: If the guide rails exceed 4 m, consider using intermediate guide-rail holders (IGRH) to support your system.
Note: For DN 250 and larger pump outlet flanges, the guide shoe is fitted to the outlet flange.



TM062841

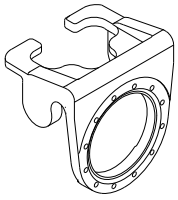


TM066849

Pump type	Pressure range	Pump inlet	Pump outlet	Auto-coupling inlet and outlet	Product number
					Cast iron
SE2/SL2.XXX.250	L	DN 250	DN 250	DN 250	96782483
SE2/SL2.XXX.300	E	DN 300	DN 300	DN 300	96782484

Auto-coupling spare parts DN 250 - DN 300

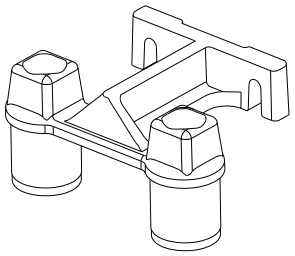
Complete guide shoe



TM066850

Pump type	Pressure range	Pump inlet	Pump outlet	Product number
SE2/SL2.XXX.250	L	DN 250	DN 250	99252842
SE2/SL2.XXX.300	E	DN 300	DN 300	99252841

Intermediate guiderail holders IGRH / UGRH



TM062841

Pump type	Pressure range	Pump inlet	Pump outlet	Product number
SE2/SL2.XXX.250	L	DN 250	DN 250	97918997
SE2/SL2.XXX.300	E	DN 300	DN 300	

9.1.5 Lifting chain

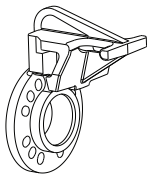
- complete, certified lifting chain for all pump types.
- maximum load: 800 kg
- material variants
  - galvanised steel
  - stainless steel

TM026126

Material	Length [m]	Product number
Galvanised steel	2	98425759
	4	98425760
	6	98425781
	8	98425782
	10	98425783
Stainless steel	2	98425796
	4	98425797
	6	98425798
	8	98425799
	10	98425800

9.1.6 Adaptors

Adaptor for Flygt type autocouplings



TM069949

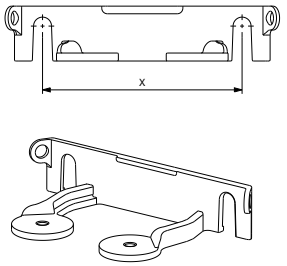
Pump type	Pressure range	Pump inlet	Pump outlet	Adaptor outlet	Product number
SEV/SLV.XX.80	H	DN 100	DN 80	DN 100	96105790
SE/SL/SE1/ SL1.XX.100	S	DN 100	DN 100	DN 100	96105782
	H	DN 150	DN 100	DN 150	96105787
SE/SL/SE1/ SL1.XX.150	H	DN 150	DN 150	DN 150	96105787
SE/SL/SE1/ SL1.XX.150	H	DN 150	DN 150	DN 150	96006638*
SE1/SL1.XXX.20	M	DN 200	DN 200	DN 200	98365764**
SE2/ SL2.XXX.250	L	DN 250	DN 250	DN 250	98365769**
SE2/ SL2.XXX.300	E	DN 300	DN 300	DN 300	98381199**

*For 2" guide pipes

**For 3" guide pipes

10. Installation

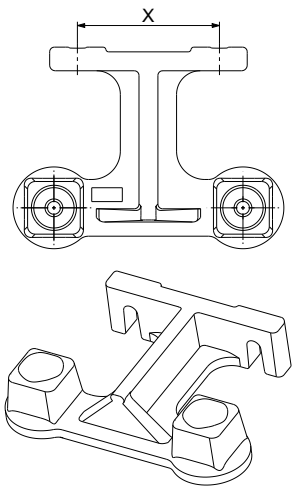
10.1 Upper guide-rail bracket dimensions



TM069913

Model A

Cast iron			X
Product number	**Size**	**Model**	**[mm]**
96090993	DN 80	A	180
96102240	DN 100/DN 80		200
96090994	DN 100		
96102241	DN 150/DN 100		
97695489	DN 150		
96641489	DN 200	B	150
96782483	DN 250		
96782484	DN 300		

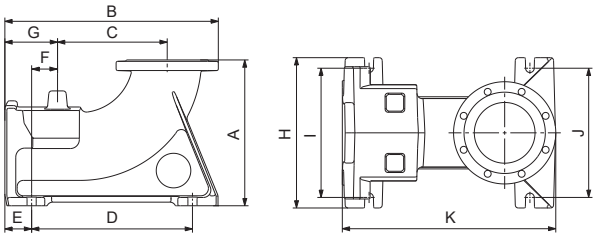


TM069915

Model B

Stainless steel			X
Product number	**Size**	**Model**	**[mm]**
96825106	DN 80	A	180
96825108	DN 100		200
96989863	DN 150		210

10.2 Auto-coupling dimensions



TM070592

Cast iron

Product number	Size	Dimensions [mm]										
		A	B	C	D	E	F	G	H	I	J	K
96090993	DN 80	345	326.6	171	160	41	13	54	240	220	220	214.2
96102240	DN 100/DN 80	413	403.0	220	220	68	0	68	300	260	230	340.6
96090994	DN 100	413	403.0	220	220	68	0	68	300	260	230	340.6
96102241	DN 150/DN 100	450	500.5	280	280	78	0	78	340	300	300	404.6
97695489	DN 150	450	500.5	280	280	78	0	78	340	300	300	404.6
96641489	DN 200	485	710	365	535	89	86	175	500	430	430	709
96782483	DN 250	545	752.5	375	565	89	86	175	540	468.7	468.7	744
96782484	DN 300	650	860	450	670	80	95	175	620	551	551	844

Stainless steel

Product number	Size	Dimensions [mm]										
		A	B	C	D	E	F	G	H	I	J	K
96825106	DN 80	345	326.6	171	160	27	27	54	240	220	220	228
96825108	DN 100	413	403	220	220	68	0	68	300	230	260	340.6
96989863	DN 150	450	500.5	280	280	78	0	78	340	300	300	404.6

Dimensions

10.4 Pump installation dimensions

10.4.1 Recommendations for pump foundations

Note: This applies only for pumps above 15 kW.

According to the ANSI/HI 1.4 standard, the following pump foundations are recommended.

All rotating equipment generates vibrations, when a mass, such as an impeller or rotor, is turning at high speeds. Proper installation and anchorage of Grundfos pumps and installation accessories are critical to limit vibrations and achieve reliable, smooth installation. All mechanically connected pipes, fittings and supports to the pump are all part of a single system.

The rotating mass of the entire pump together with the forces from the motor and hydraulics generate disturbances related to the speed of the motor. Unbalance and impeller vane pass in hydraulics are the two most important frequencies affecting vibration. When these frequencies coincide with the natural frequency of the entire mechanical system, the vibration level increases substantially.

Grundfos pumps are designed and produced according to the highest quality standards. The method and grade of balancing is specified by the manufacturer in order to achieve acceptable vibration levels. Although the pump itself can withstand rather high vibration levels under running conditions without considerable lifetime reduction, the pipes and supportive structure may suffer and crack if vibration levels are too high. Furthermore, noticeable noise levels might be generated.

The occurence of high vibration levels is increased in variable speed applications, where the pump is operated over a range of speeds rather than at a single constant speed. Most variable speed drives provide the possibility to exclude certain frequencies.

To ensure acceptable vibration levels in the field, all parts of the system must be sufficiently stiff and firmly anchored to minimise vibrations:

- The foundation and concrete must have adequate strength to support the weight of the pump including accessories, the weight of the liquid passing through the pump and the forces generated by the pump.
- The mass of the concrete foundation must be at least three to five times the mass of the supported equipment and must have sufficient rigidity to withstand the axial, transverse, and torsional loads generated by these machines.
- The foundation must be 15 cm wider than the base plate.
- The concrete used in the foundation must have a minimum tensile strength of 250 N/cm^2.
- Use epoxy grout to fix the pump base plate to the foundation.

10.4.1.1 Pull-out strengths for bolts and anchor bolts

Submerged installation on autocoupling (types S and C):

Auto-coupling base unit	Bolts	Pull-out resistance [kN]
DN 100	4 x M16	5
DN 125/150*		8
DN 200	4 x M24	16
DN 250		30
DN 300		40

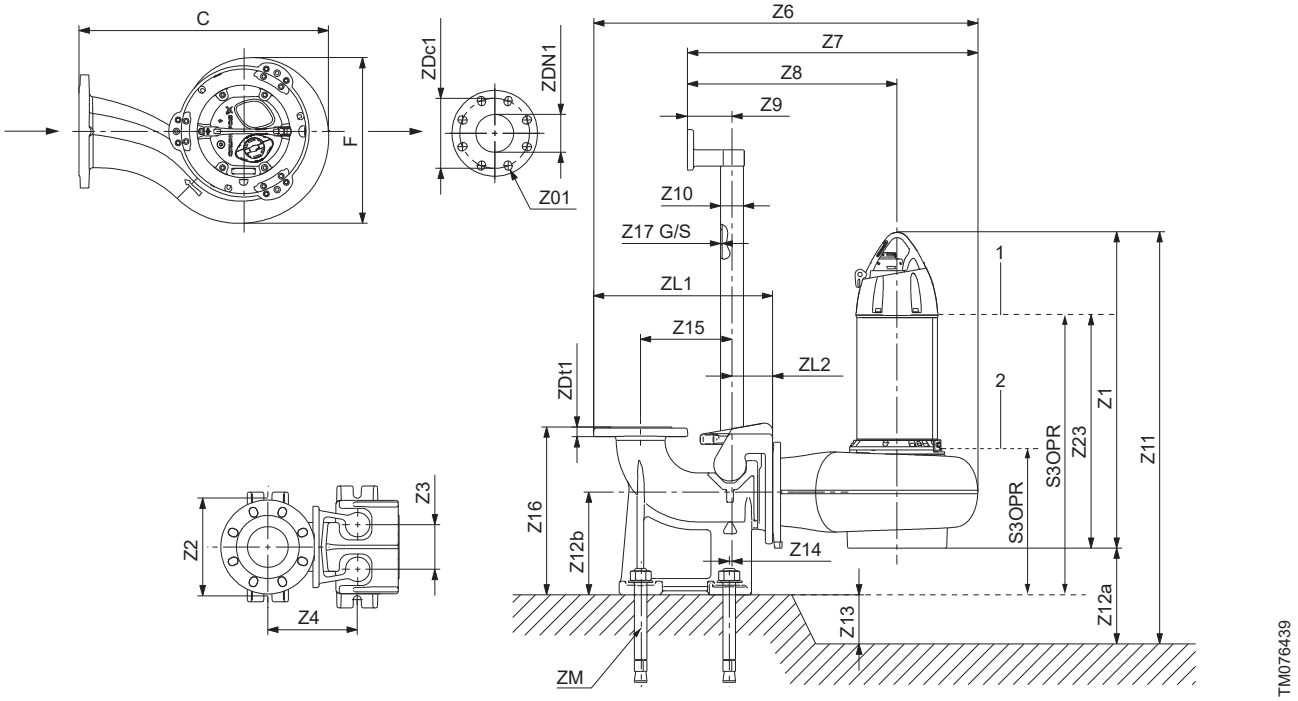
*Pump outlet DN 125 and base plate outlet DN 150.

Dry installation (types D and H):

Dry installation	Anchor bolts	Pull-out resistance [kN]
DN 100	3 x M20	18
DN 150	6 x M20	18
DN 200		
DN 250	6 x M24	25
DN 300		

Submerged installation

10.4.2.1 Installation on autocoupling



Pos.	Description
1	minimum liquid level for SL pumps, installation type S
2	minimum liquid level for SE pumps, installation type C

Auto-coupling dimensions

SE/SE1/SE2/SEV (part 1)

Pump type	C	F	Z01	Z1	Z2	Z3	Z4	Z6	Z7	Z8	Z9	Z10	Z11	Z12a	Z12b
SE/SE1.**35**/75.100.130.2.52S.C	476	382	8 x 20	1131	260	110	220	919	693	502	110	60	1232	100	240
SE/SE1.**35**/75.100.150.2.52S.C	476	382	8 x 20	1131	260	110	220	919	693	502	110	60	1232	100	240
SE/SE1.**35**/75.100.170.2.52S.C	476	382	8 x 20	1131	260	110	220	919	693	502	110	60	1232	100	240
SE/SE1.**35**/75.100.185.2.52S.C	476	382	8 x 20	1131	260	110	220	919	693	502	110	60	1232	100	240
SE/SE1.**35**/80.100.200.2.52S.C	476	383	8 x 20	1145	260	110	220	919	693	502	110	60	1285	140	240
SE/SE1.**35**/80.100.220.2.52S.C	476	383	8 x 20	1145	260	110	220	919	693	502	110	60	1285	140	240
SE/SE1.**35**/80.100.240.2.52S.C	476	383	8 x 20	1145	260	110	220	919	693	502	110	60	1285	140	240
SE/SE1.**35**/80.100.265.2.52S.C	476	383	8 x 20	1145	260	110	220	919	693	502	110	60	1285	140	240
SE/SE1.**45**/85.100.100.4.52H.C	609	460	8 x 20	1160	260	110	220	1052	826	597	110	60	1300	140	240
SE/SE1.**45**/85.100.110.4.52H.C	609	460	8 x 20	1160	260	110	220	1052	826	597	110	60	1300	140	240
SE/SE1.**45**/85.100.130.4.52H.C	609	460	8 x 20	1160	260	110	220	1052	826	597	110	60	1300	140	240
SE/SE1.**45**/85.100.150.4.52H.C	609	460	8 x 20	1160	260	110	220	1052	826	597	110	60	1300	140	240
SE/SE1.**45**/85.100.170.4.52H.C	625	494	8 x 20	1160	260	110	220	1068	842	597	110	60	1300	140	240
SE/SE1.**45**/85.100.185.4.52H.C	625	494	8 x 20	1160	260	110	220	1068	842	597	110	60	1300	140	240
SE/SE1.**45**/85.150.100.4.52H.C	605	485	8 x 25	1159	300	123	280	1157	844	619	110	89	1279	120	275
SE/SE1.**45**/85.150.110.4.52H.C	605	485	8 x 25	1159	300	123	280	1157	844	619	110	89	1279	120	275
SE/SE1.**45**/85.150.130.4.52H.C	605	485	8 x 25	1159	300	123	280	1157	844	619	110	89	1279	120	275
SE/SE1.**45**/85.150.150.4.52H.C	605	485	8 x 25	1159	300	123	280	1157	844	619	110	89	1279	120	275
SE/SE1.**45**/85.150.170.4.52H.C	620	485	8 x 25	1160	300	123	280	1172	859	619	110	89	1280	120	275
SE/SE1.**45**/85.150.185.4.52H.C	620	485	8 x 25	1160	300	123	280	1172	859	619	110	89	1280	120	275
SE1.95.100.200.4.52H.C	625	494	8 x 20	1160	260	110	220	1068	842	597	110	60	1300	140	240
SE1.95.100.220.4.52H.C	625	494	8 x 20	1160	260	110	220	1068	842	597	110	60	1300	140	240

Pump type	C	F	Z01	Z1	Z2	Z3	Z4	Z6	Z7	Z8	Z9	Z10	Z11	Z12a	Z12b
SE1.95.150.200.4.52H.C	620	485	8 x 25	1160	300	123	280	1172	859	619	110	89	1280	120	275
SE1.95.150.220.4.52H.C	620	485	8 x 25	1160	300	123	280	1172	859	619	110	89	1280	120	275
SE1.110.200.100.4.52M.C	755	500	8 x 23	1188	430	200	535	1516	1148	893	170	89	1328	140	196
SE1.110.200.110.4.52M.C	755	500	8 x 23	1188	430	200	535	1516	1148	893	170	89	1328	140	196
SE1.110.200.130.4.52M.C	755	500	8 x 23	1188	430	200	535	1516	1148	893	170	89	1328	140	196
SE1.110.200.150.4.52M.C	755	500	8 x 23	1188	430	200	535	1516	1148	893	170	89	1328	140	196
SE1.110.200.170.4.52M.C	785	559	8 x 23	1187	430	200	535	1546	1178	893	170	89	1327	140	196
SE1.110.200.185.4.52M.C	785	559	8 x 23	1187	430	200	535	1546	1178	893	170	89	1327	140	196
SE1.110.200.200.4.52M.C	785	559	8 x 23	1187	430	200	535	1546	1178	893	170	89	1327	140	196
SE1.110.200.220.4.52M.C	785	559	8 x 23	1187	430	200	535	1546	1178	893	170	89	1327	140	196
SE2.110.250.130.4.52L.C	849	680	12 x 23	1202	471	200	565	1644	1245	896	170	89	1342	140	224
SE2.110.250.150.4.52L.C	849	680	12 x 23	1202	471	200	565	1644	1245	896	170	89	1342	140	224
SE2.110.250.170.4.52L.C	849	680	12 x 23	1202	471	200	565	1644	1245	896	170	89	1342	140	224
SE2.110.250.185.4.52L.C	849	680	12 x 23	1202	471	200	565	1644	1245	896	170	89	1342	140	224
SE2.110.250.200.4.52L.C	849	680	12 x 23	1202	471	200	565	1644	1245	896	170	89	1342	140	224
SE2.110.250.220.4.52L.C	849	680	12 x 23	1202	471	200	565	1644	1245	896	170	89	1342	140	224
SE2.125.300.110.6.52E.C	961	691	12 x 23	1254	551	200	670	1856	1357	996	170	89	1394	140	256
SE2.125.300.130.6.52E.C	961	691	12 x 23	1254	551	200	670	1856	1357	996	170	89	1394	140	256
SE2.125.300.160.6.52E.C	978	749	12 x 23	1254	551	200	670	1873	1374	996	170	89	1394	140	256
SE2.125.300.180.6.52E.C	978	749	12 x 23	1254	551	200	670	1873	1374	996	170	89	1394	140	256
SEV.80.80.130.2.52H.C	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SEV.80.80.150.2.52H.C	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SEV.80.80.170.2.52H.C	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SEV.80.80.185.2.52H.C	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SEV.80.80.200.2.52H.C	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SEV.80.80.220.2.52H.C	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SEV.80.80.240.2.52H.C	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SEV.80.80.265.2.52H.C	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240

SE/SE1/SE2/SEV (part 2)

Pump type	Z13	Z14	Z15	Z16	Z17G	Z17S	Z23	S3OPR	ZDC1	ZDN1	ZDT1	ZL1	ZL2	ZM	ZL2	ZM
SE/SE1.**35**/75.100.130.2.52S.C	0	0	220	413	3	3	300	401	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**35**/75.100.150.2.52S.C	0	0	220	413	3	3	300	401	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**35**/75.100.170.2.52S.C	0	0	220	413	3	3	300	401	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**35**/75.100.185.2.52S.C	0	0	220	413	3	3	300	401	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**35**/80.100.200.2.52S.C	37	0	220	413	3	3	314	417	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**35**/80.100.220.2.52S.C	37	0	220	413	3	3	314	417	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**35**/80.100.240.2.52S.C	37	0	220	413	3	3	314	417	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**35**/80.100.265.2.52S.C	37	0	220	413	3	3	314	417	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**45**/85.100.100.4.52H.C	84	0	220	413	3	3	329	385	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**45**/85.100.110.4.52H.C	84	0	220	413	3	3	329	385	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**45**/85.100.130.4.52H.C	84	0	220	413	3	3	329	385	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**45**/85.100.150.4.52H.C	84	0	220	413	3	3	329	385	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**45**/85.100.170.4.52H.C	89	0	220	413	3	3	329	380	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**45**/85.100.185.4.52H.C	89	0	220	413	3	3	329	380	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE/SE1.**45**/85.150.100.4.52H.C	18	0	280	450	3	3	328	430	240	DN 150	22	552	129	4 x M16	129	4 x M16
SE/SE1.**45**/85.150.110.4.52H.C	18	0	280	450	3	3	328	430	240	DN 150	22	552	129	4 x M16	129	4 x M16
SE/SE1.**45**/85.150.130.4.52H.C	18	0	280	450	3	3	328	430	240	DN 150	22	552	129	4 x M16	129	4 x M16
SE/SE1.**45**/85.150.150.4.52H.C	18	0	280	450	3	3	328	430	240	DN 150	22	552	129	4 x M16	129	4 x M16
SE/SE1.**45**/85.150.170.4.52H.C	18	0	280	450	3	3	329	431	240	DN 150	22	552	129	4 x M16	129	4 x M16
SE/SE1.**45**/85.150.185.4.52H.C	18	0	280	450	3	3	329	431	240	DN 150	22	552	129	4 x M16	129	4 x M16
SE1.95.100.200.4.52H.C	89	0	220	413	3	3	329	380	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE1.95.100.220.4.52H.C	89	0	220	413	3	3	329	380	180	DN 100	21	443	107	4 x M16	107	4 x M16
SE1.95.150.200.4.52H.C	18	0	280	450	3	3	329	431	240	DN 150	22	552	129	4 x M16	129	4 x M16

Pump type	Z13	Z14	Z15	Z16	Z17G	Z17S	Z23	S3OPR	ZDC1	ZDN1	ZDT1	ZL1	ZL2	ZM	ZL2	ZM
SE1.95.150.220.4.52H.C	18	0	280	450	3	3	329	431	240	DN 150	22	552	129	4 x M16	129	4 x M16
SE1.110.200.100.4.52M.C	131	86	365	485	3	3	357	366	295	DN 200	31	761	223	4 x M24	223	4 x M24
SE1.110.200.110.4.52M.C	131	86	365	485	3	3	357	366	295	DN 200	31	761	223	4 x M24	223	4 x M24
SE1.110.200.130.4.52M.C	131	86	365	485	3	3	357	366	295	DN 200	31	761	223	4 x M24	223	4 x M24
SE1.110.200.150.4.52M.C	131	86	365	485	3	3	357	366	295	DN 200	31	761	223	4 x M24	223	4 x M24
SE1.110.200.170.4.52M.C	131	86	365	485	3	3	356	365	295	DN 200	31	761	223	4 x M24	223	4 x M24
SE1.110.200.185.4.52M.C	131	86	365	485	3	3	356	365	295	DN 200	31	761	223	4 x M24	223	4 x M24
SE1.110.200.200.4.52M.C	131	86	365	485	3	3	356	365	295	DN 200	31	761	223	4 x M24	223	4 x M24
SE1.110.200.220.4.52M.C	131	86	365	485	3	3	356	365	295	DN 200	31	761	223	4 x M24	223	4 x M24
SE2.110.250.130.4.52L.C	114	86	375	545	3	3	371	397	350	DN 250	32	795	226	4 x M24	226	4 x M24
SE2.110.250.150.4.52L.C	114	86	375	545	3	3	371	397	350	DN 250	32	795	226	4 x M24	226	4 x M24
SE2.110.250.170.4.52L.C	114	86	375	545	3	3	371	397	350	DN 250	32	795	226	4 x M24	226	4 x M24
SE2.110.250.185.4.52L.C	114	86	375	545	3	3	371	397	350	DN 250	32	795	226	4 x M24	226	4 x M24
SE2.110.250.200.4.52L.C	114	86	375	545	3	3	371	397	350	DN 250	32	795	226	4 x M24	226	4 x M24
SE2.110.250.220.4.52L.C	114	86	375	545	3	3	371	397	350	DN 250	32	795	226	4 x M24	226	4 x M24
SE2.125.300.110.6.52E.C	114	95	450	650	3	3	423	449	400	DN 300	32	895	226	4 x M24	226	4 x M24
SE2.125.300.130.6.52E.C	114	95	450	650	3	3	423	449	400	DN 300	32	895	226	4 x M24	226	4 x M24
SE2.125.300.160.6.52E.C	114	95	450	650	3	3	423	449	400	DN 300	32	895	226	4 x M24	226	4 x M24
SE2.125.300.180.6.52E.C	114	95	450	650	3	3	423	449	400	DN 300	32	895	226	4 x M24	226	4 x M24
SEV.80.80.130.2.52H.C	10	0	220	413	3	3	293	383	180	DN 100	21	463	127	4 x M16	127	4 x M16
SEV.80.80.150.2.52H.C	10	0	220	413	3	3	293	383	180	DN 100	21	463	127	4 x M16	127	4 x M16
SEV.80.80.170.2.52H.C	10	0	220	413	3	3	293	383	180	DN 100	21	463	127	4 x M16	127	4 x M16
SEV.80.80.185.2.52H.C	10	0	220	413	3	3	293	383	180	DN 100	21	463	127	4 x M16	127	4 x M16
SEV.80.80.200.2.52H.C	10	0	220	413	3	3	293	383	180	DN 100	21	463	127	4 x M16	127	4 x M16
SEV.80.80.220.2.52H.C	10	0	220	413	3	3	293	383	180	DN 100	21	463	127	4 x M16	127	4 x M16
SEV.80.80.240.2.52H.C	10	0	220	413	3	3	293	383	180	DN 100	21	463	127	4 x M16	127	4 x M16
SEV.80.80.265.2.52H.C	10	0	220	413	3	3	293	383	180	DN 100	21	463	127	4 x M16	127	4 x M16

SL/SL1/SL2/SLV (part 1)

Pump type	C	F	Z01	Z1	Z2	Z3	Z4	Z6	Z7	Z8	Z9	Z10	Z11	Z12a	Z12b
SL/SL1.**35**/75.100.130.2.52S.S	476	382	8 x 20	1131	260	110	220	919	693	502	110	60	1232	100	240
SL/SL1.**35**/75.100.150.2.52S.S	476	382	8 x 20	1131	260	110	220	919	693	502	110	60	1232	100	240
SL/SL1.**35**/75.100.170.2.52S.S	476	382	8 x 20	1131	260	110	220	919	693	502	110	60	1232	100	240
SL/SL1.**35**/75.100.185.2.52S.S	476	382	8 x 20	1131	260	110	220	919	693	502	110	60	1232	100	240
SL/SL1.**35**/80.100.200.2.52S.S	476	383	8 x 20	1145	260	110	220	919	693	502	110	60	1285	140	240
SL/SL1.**35**/80.100.220.2.52S.S	476	383	8 x 20	1145	260	110	220	919	693	502	110	60	1285	140	240
SL/SL1.**35**/80.100.240.2.52S.S	476	383	8 x 20	1145	260	110	220	919	693	502	110	60	1285	140	240
SL/SL1.**35**/80.100.265.2.52S.S	476	383	8 x 20	1145	260	110	220	919	693	502	110	60	1285	140	240
SL/SL1.**45**/85.100.100.4.52H.S	609	460	8 x 20	1160	260	110	220	1052	826	597	110	60	1300	140	240
SL/SL1.**45**/85.100.110.4.52H.S	609	460	8 x 20	1160	260	110	220	1052	826	597	110	60	1300	140	240
SL/SL1.**45**/85.100.130.4.52H.S	609	460	8 x 20	1160	260	110	220	1052	826	597	110	60	1300	140	240
SL/SL1.**45**/85.100.150.4.52H.S	609	460	8 x 20	1160	260	110	220	1052	826	597	110	60	1300	140	240
SL/SL1.**45**/85.100.170.4.52H.S	625	494	8 x 20	1160	260	110	220	1068	842	597	110	60	1300	140	240
SL/SL1.**45**/85.100.185.4.52H.S	625	494	8 x 20	1160	260	110	220	1068	842	597	110	60	1300	140	240
SL1.85.150.100.4.52H.S	605	485	8 x 25	1159	300	123	280	1157	844	619	110	89	1279	120	275
SL1.85.150.110.4.52H.S	605	485	8 x 25	1159	300	123	280	1157	844	619	110	89	1279	120	275
SL1.85.150.130.4.52H.S	605	485	8 x 25	1159	300	123	280	1157	844	619	110	89	1279	120	275
SL1.85.150.150.4.52H.S	605	485	8 x 25	1159	300	123	280	1157	844	619	110	89	1279	120	275
SL1.85.150.170.4.52H.S	620	485	8 x 25	1160	300	123	280	1172	859	619	110	89	1280	120	275
SL1.85.150.185.4.52H.S	620	485	8 x 25	1160	300	123	280	1172	859	619	110	89	1280	120	275
SL1.95.100.200.4.52H.S	625	494	8 x 20	1160	260	110	220	1068	842	597	110	60	1300	140	240
SL1.95.100.220.4.52H.S	625	494	8 x 20	1160	260	110	220	1068	842	597	110	60	1300	140	240
SL1.95.150.200.4.52H.S	620	485	8 x 25	1160	300	123	280	1172	859	619	110	89	1280	120	275
SL1.95.150.220.4.52H.S	620	485	8 x 25	1160	300	123	280	1172	859	619	110	89	1280	120	275

Pump type	C	F	Z01	Z1	Z2	Z3	Z4	Z6	Z7	Z8	Z9	Z10	Z11	Z12a	Z12b
SL1.110.200.100.4.52M.S	755	500	8 x 23	1188	430	200	535	1516	1148	893	170	89	1328	140	196
SL1.110.200.110.4.52M.S	755	500	8 x 23	1188	430	200	535	1516	1148	893	170	89	1328	140	196
SL1.110.200.130.4.52M.S	755	500	8 x 23	1188	430	200	535	1516	1148	893	170	89	1328	140	196
SL1.110.200.150.4.52M.S	755	500	8 x 23	1188	430	200	535	1516	1148	893	170	89	1328	140	196
SL1.110.200.170.4.52M.S	785	559	8 x 23	1187	430	200	535	1546	1178	893	170	89	1327	140	196
SL1.110.200.185.4.52M.S	785	559	8 x 23	1187	430	200	535	1546	1178	893	170	89	1327	140	196
SL1.110.200.200.4.52M.S	785	559	8 x 23	1187	430	200	535	1546	1178	893	170	89	1327	140	196
SL1.110.200.220.4.52M.S	785	559	8 x 23	1187	430	200	535	1546	1178	893	170	89	1327	140	196
SL2.110.250.100.4.52L.S	849	680	12 x 23	1202	471	200	565	1644	1245	896	170	89	1342	140	224
SL2.110.250.130.4.52L.S	849	680	12 x 23	1202	471	200	565	1644	1245	896	170	89	1342	140	224
SL2.110.250.150.4.52L.S	849	680	12 x 23	1202	471	200	565	1644	1245	896	170	89	1342	140	224
SL2.110.250.170.4.52L.S	849	680	12 x 23	1202	471	200	565	1644	1245	896	170	89	1342	140	224
SL2.125.300.110.6.52E.S	961	691	12 x 23	1254	551	200	670	1856	1357	996	170	89	1394	140	256
SL2.125.300.130.6.52E.S	961	691	12 x 23	1254	551	200	670	1856	1357	996	170	89	1394	140	256
SL2.125.300.160.6.52E.S	978	749	12 x 23	1254	551	200	670	1873	1374	996	170	89	1394	140	256
SL2.125.300.180.6.52E.S	978	749	12 x 23	1254	551	200	670	1873	1374	996	170	89	1394	140	256
SLV.80.80.130.2.52H.S	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SLV.80.80.150.2.52H.S	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SLV.80.80.170.2.52H.S	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SLV.80.80.185.2.52H.S	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SLV.80.80.200.2.52H.S	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SLV.80.80.220.2.52H.S	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SLV.80.80.240.2.52H.S	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240
SLV.80.80.265.2.52H.S	527	394	8 x 20	1124	260	110	220	990	764	567	110	60	1224	100	240

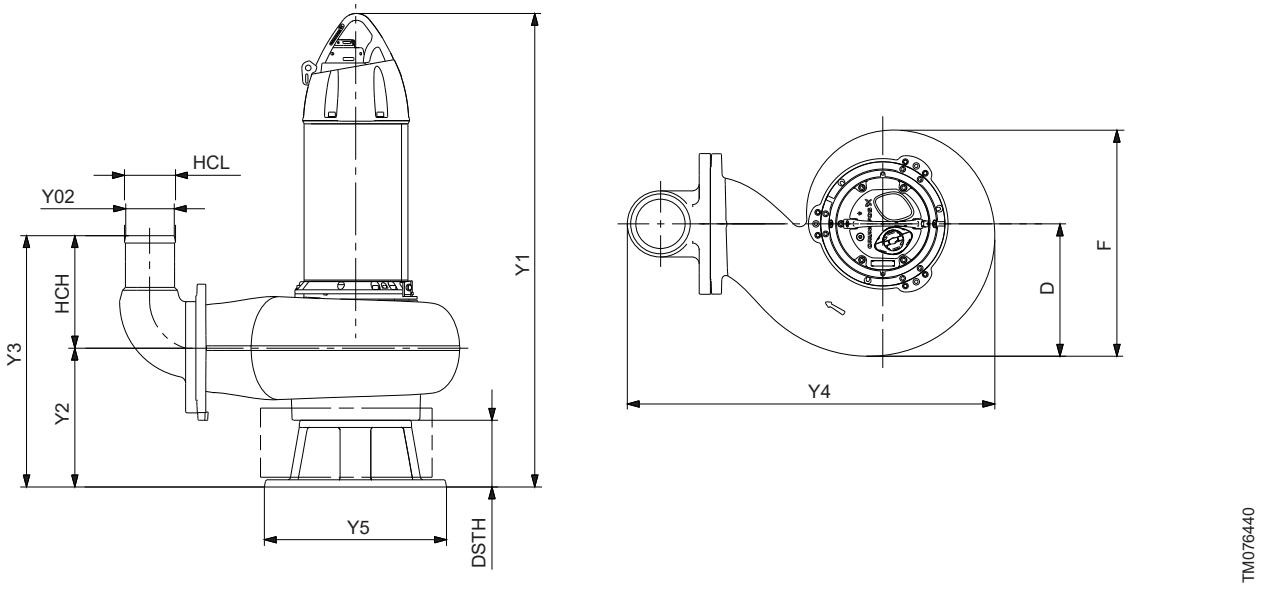
SL/SL1/SL2/SLV (part 2)

Pump type	Z13	Z14	Z15	Z16	Z17G	Z17S	Z23	S3OPR	ZDC1	ZDN1	ZDT1	ZL1	ZL2	ZM
SL/SL1.**35**/75.100.130.2.52S.S	0	0	220	413	3	3	846	947	180	DN 100	21	443	107	4 x M16
SL/SL1.**35**/75.100.150.2.52S.S	0	0	220	413	3	3	846	947	180	DN 100	21	443	107	4 x M16
SL/SL1.**35**/75.100.170.2.52S.S	0	0	220	413	3	3	846	947	180	DN 100	21	443	107	4 x M16
SL/SL1.**35**/75.100.185.2.52S.S	0	0	220	413	3	3	846	947	180	DN 100	21	443	107	4 x M16
SL/SL1.**35**/80.100.200.2.52S.S	37	0	220	413	3	3	860	963	180	DN 100	21	443	107	4 x M16
SL/SL1.**35**/80.100.220.2.52S.S	37	0	220	413	3	3	860	963	180	DN 100	21	443	107	4 x M16
SL/SL1.**35**/80.100.240.2.52S.S	37	0	220	413	3	3	860	963	180	DN 100	21	443	107	4 x M16
SL/SL1.**35**/80.100.265.2.52S.S	37	0	220	413	3	3	860	963	180	DN 100	21	443	107	4 x M16
SL/SL1.**45**/85.100.100.4.52H.S	84	0	220	413	3	3	875	931	180	DN 100	21	443	107	4 x M16
SL/SL1.**45**/85.100.110.4.52H.S	84	0	220	413	3	3	875	931	180	DN 100	21	443	107	4 x M16
SL/SL1.**45**/85.100.130.4.52H.S	84	0	220	413	3	3	875	931	180	DN 100	21	443	107	4 x M16
SL/SL1.**45**/85.100.150.4.52H.S	84	0	220	413	3	3	875	931	180	DN 100	21	443	107	4 x M16
SL/SL1.**45**/85.100.170.4.52H.S	89	0	220	413	3	3	875	926	180	DN 100	21	443	107	4 x M16
SL/SL1.**45**/85.100.185.4.52H.S	89	0	220	413	3	3	875	926	180	DN 100	21	443	107	4 x M16
SL1.85.150.100.4.52H.S	18	0	280	450	3	3	874	976	240	DN 150	22	552	129	4 x M16
SL1.85.150.110.4.52H.S	18	0	280	450	3	3	874	976	240	DN 150	22	552	129	4 x M16
SL1.85.150.130.4.52H.S	18	0	280	450	3	3	874	976	240	DN 150	22	552	129	4 x M16
SL1.85.150.150.4.52H.S	18	0	280	450	3	3	874	976	240	DN 150	22	552	129	4 x M16
SL1.85.150.170.4.52H.S	18	0	280	450	3	3	875	977	240	DN 150	22	552	129	4 x M16
SL1.85.150.185.4.52H.S	18	0	280	450	3	3	875	977	240	DN 150	22	552	129	4 x M16
SL1.95.100.200.4.52H.S	89	0	220	413	3	3	875	926	180	DN 100	21	443	107	4 x M16
SL1.95.100.220.4.52H.S	89	0	220	413	3	3	875	926	180	DN 100	21	443	107	4 x M16
SL1.95.150.200.4.52H.S	18	0	280	450	3	3	875	977	240	DN 150	22	552	129	4 x M16
SL1.95.150.220.4.52H.S	18	0	280	450	3	3	875	977	240	DN 150	22	552	129	4 x M16
SL1.110.200.100.4.52M.S	131	86	365	485	3	3	903	912	295	DN 200	31	761	223	4 x M24
SL1.110.200.110.4.52M.S	131	86	365	485	3	3	903	912	295	DN 200	31	761	223	4 x M24
SL1.110.200.130.4.52M.S	131	86	365	485	3	3	903	912	295	DN 200	31	761	223	4 x M24

Pump type	Z13	Z14	Z15	Z16	Z17G	Z17S	Z23	S3OPR	ZDC1	ZDN1	ZDT1	ZL1	ZL2	ZM
SL1.110.200.150.4.52M.S	131	86	365	485	3	3	903	912	295	DN 200	31	761	223	4 x M24
SL1.110.200.170.4.52M.S	131	86	365	485	3	3	902	911	295	DN 200	31	761	223	4 x M24
SL1.110.200.185.4.52M.S	131	86	365	485	3	3	902	911	295	DN 200	31	761	223	4 x M24
SL1.110.200.200.4.52M.S	131	86	365	485	3	3	902	911	295	DN 200	31	761	223	4 x M24
SL1.110.200.220.4.52M.S	131	86	365	485	3	3	902	911	295	DN 200	31	761	223	4 x M24
SL2.110.250.100.4.52L.S	114	86	375	545	3	3	917	943	350	DN 250	32	795	226	4 x M24
SL2.110.250.130.4.52L.S	114	86	375	545	3	3	917	943	350	DN 250	32	795	226	4 x M24
SL2.110.250.150.4.52L.S	114	86	375	545	3	3	917	943	350	DN 250	32	795	226	4 x M24
SL2.110.250.170.4.52L.S	114	86	375	545	3	3	917	943	350	DN 250	32	795	226	4 x M24
SL2.125.300.110.6.52E.S	114	95	450	650	3	3	969	995	400	DN 300	32	895	226	4 x M24
SL2.125.300.130.6.52E.S	114	95	450	650	3	3	969	995	400	DN 300	32	895	226	4 x M24
SL2.125.300.160.6.52E.S	114	95	450	650	3	3	969	995	400	DN 300	32	895	226	4 x M24
SL2.125.300.180.6.52E.S	114	95	450	650	3	3	969	995	400	DN 300	32	895	226	4 x M24
SLV.80.80.130.2.52H.S	10	0	220	413	3	3	839	929	180	DN 100	21	463	127	4 x M16
SLV.80.80.150.2.52H.S	10	0	220	413	3	3	839	929	180	DN 100	21	463	127	4 x M16
SLV.80.80.170.2.52H.S	10	0	220	413	3	3	839	929	180	DN 100	21	463	127	4 x M16
SLV.80.80.185.2.52H.S	10	0	220	413	3	3	839	929	180	DN 100	21	463	127	4 x M16
SLV.80.80.200.2.52H.S	10	0	220	413	3	3	839	929	180	DN 100	21	463	127	4 x M16
SLV.80.80.220.2.52H.S	10	0	220	413	3	3	839	929	180	DN 100	21	463	127	4 x M16
SLV.80.80.240.2.52H.S	10	0	220	413	3	3	839	929	180	DN 100	21	463	127	4 x M16
SLV.80.80.265.2.52H.S	10	0	220	413	3	3	839	929	180	DN 100	21	463	127	4 x M16

Submerged installation

10.4.3.1 Installation on ring stand



Ring stand dimensions

SE/SE1/SEV

Pump type	Y02	Y1	Y2	Y3	Y4	Y5	HCH	HCL	DSTH	D	F
SE/SE1.**35**/75.100.130.2.52S.C	105	1261	269	446	605	355	177	142	130	190	382
SE/SE1.**35**/75.100.150.2.52S.C	105	1261	269	446	605	355	177	142	130	190	382
SE/SE1.**35**/75.100.170.2.52S.C	105	1261	269	446	605	355	177	142	130	190	382
SE/SE1.**35**/75.100.185.2.52S.C	105	1261	269	446	605	355	177	142	130	190	382
SE/SE1.**35**/80.100.200.2.52S.C	105	1275	267	444	605	355	177	142	130	191	383
SE/SE1.**35**/80.100.220.2.52S.C	105	1275	267	444	605	355	177	142	130	191	383
SE/SE1.**35**/80.100.240.2.52S.C	105	1275	267	444	605	355	177	142	130	191	383
SE/SE1.**35**/80.100.265.2.52S.C	105	1275	267	444	605	355	177	142	130	191	383
SE/SE1.**45**/85.100.100.4.52H.C	105	1346	370	514	771	450	144	166	186	255	460
SE/SE1.**45**/85.100.110.4.52H.C	105	1346	370	514	771	450	144	166	186	255	460
SE/SE1.**45**/85.100.130.4.52H.C	105	1346	370	514	771	450	144	166	186	255	460
SE/SE1.**45**/85.100.150.4.52H.C	105	1346	370	514	771	450	144	166	186	255	460
SE/SE1.**45**/85.100.170.4.52H.C	105	1346	375	519	771	450	144	166	186	270	494
SE/SE1.**45**/85.100.185.4.52H.C	105	1346	375	519	771	450	144	166	186	270	494
SE/SE1.**45**/85.150.100.4.52H.C	150	1345	359	632	867	450	273	262	186	266	485
SE/SE1.**45**/85.150.110.4.52H.C	150	1345	359	632	867	450	273	262	186	266	485
SE/SE1.**45**/85.150.130.4.52H.C	150	1345	359	632	867	450	273	262	186	266	485
SE/SE1.**45**/85.150.150.4.52H.C	150	1345	359	632	867	450	273	262	186	266	485
SE/SE1.**45**/85.150.170.4.52H.C	150	1346	359	632	867	450	273	262	186	266	485
SE/SE1.**45**/85.150.185.4.52H.C	150	1346	359	632	867	450	273	262	186	266	485
SE1.95.100.200.4.52H.C	105	1346	375	519	771	450	144	166	186	270	494
SE1.95.100.220.4.52H.C	105	1346	375	519	771	450	144	166	186	270	494
SE1.95.150.200.4.52H.C	150	1346	359	632	867	450	273	262	186	266	485
SE1.95.150.220.4.52H.C	150	1346	359	632	867	450	273	262	186	266	485
SE1.110.200.100.4.52M.C	205	1348	347	782	1193	550	435	418	160	278	500
SE1.110.200.110.4.52M.C	205	1348	347	782	1193	550	435	418	160	278	500
SE1.110.200.130.4.52M.C	205	1348	347	782	1193	550	435	418	160	278	500
SE1.110.200.150.4.52M.C	205	1348	347	782	1193	550	435	418	160	278	500
SE1.110.200.170.4.52M.C	205	1347	347	782	1193	550	435	418	160	307	559

Pump type	Y02	Y1	Y2	Y3	Y4	Y5	HCH	HCL	DSTH	D	F
SE1.110.200.185.4.52M.C	205	1347	347	782	1193	550	435	418	160	307	559
SE1.110.200.200.4.52M.C	205	1347	347	782	1193	550	435	418	160	307	559
SE1.110.200.220.4.52M.C	205	1347	347	782	1193	550	435	418	160	307	559
SEV.80.80.130.2.52H.C	79	1254	280	454	626	355	174	118	130	197	394
SEV.80.80.150.2.52H.C	79	1254	280	454	626	355	174	118	130	197	394
SEV.80.80.170.2.52H.C	79	1254	280	454	626	355	174	118	130	197	394
SEV.80.80.185.2.52H.C	79	1254	280	454	626	355	174	118	130	197	394
SEV.80.80.200.2.52H.C	79	1254	280	454	626	355	174	118	130	197	394
SEV.80.80.220.2.52H.C	79	1254	280	454	626	355	174	118	130	197	394
SEV.80.80.240.2.52H.C	79	1254	280	454	626	355	174	118	130	197	394
SEV.80.80.265.2.52H.C	79	1254	280	454	626	355	174	118	130	197	394

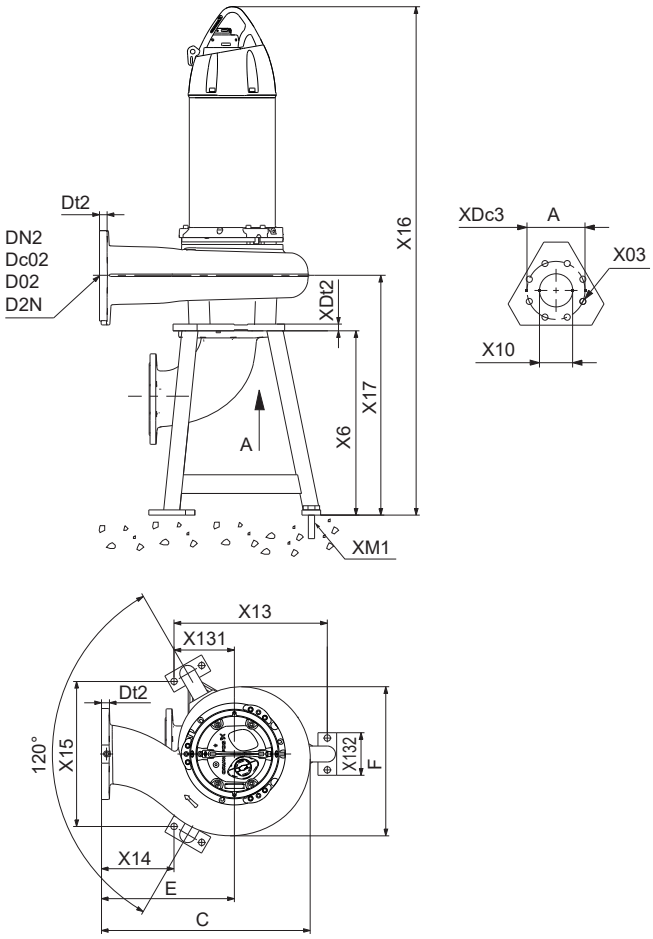
SL/SL1/SLV

Pump type	Y02	Y1	Y2	Y3	Y4	Y5	HCH	HCL	DSTH	D	F
SL/SL1.75.100.130.2.52S.S	105	1261	269	446	605	355	177	142	130	190	382
SL/SL1.75.100.150.2.52S.S	105	1261	269	446	605	355	177	142	130	190	382
SL/SL1.75.100.170.2.52S.S	105	1261	269	446	605	355	177	142	130	190	382
SL/SL1.75.100.185.2.52S.S	105	1261	269	446	605	355	177	142	130	190	382
SL/SL1.80.100.200.2.52S.S	105	1275	267	444	605	355	177	142	130	191	383
SL/SL1.80.100.220.2.52S.S	105	1275	267	444	605	355	177	142	130	191	383
SL/SL1.80.100.240.2.52S.S	105	1275	267	444	605	355	177	142	130	191	383
SL/SL1.80.100.265.2.52S.S	105	1275	267	444	605	355	177	142	130	191	383
SL/SL1.85.100.100.4.52H.S	105	1346	370	514	771	450	144	166	186	255	460
SL/SL1.85.100.110.4.52H.S	105	1346	370	514	771	450	144	166	186	255	460
SL/SL1.85.100.130.4.52H.S	105	1346	370	514	771	450	144	166	186	255	460
SL/SL1.85.100.150.4.52H.S	105	1346	370	514	771	450	144	166	186	255	460
SL/SL1.85.100.170.4.52H.S	105	1346	375	519	771	450	144	166	186	270	494
SL/SL1.85.100.185.4.52H.S	105	1346	375	519	771	450	144	166	186	270	494
SL/SL1.85.150.100.4.52H.S	150	1345	359	632	867	450	273	262	186	266	485
SL/SL1.85.150.110.4.52H.S	150	1345	359	632	867	450	273	262	186	266	485
SL/SL1.85.150.130.4.52H.S	150	1345	359	632	867	450	273	262	186	266	485
SL/SL1.85.150.150.4.52H.S	150	1345	359	632	867	450	273	262	186	266	485
SL/SL1.85.150.170.4.52H.S	150	1346	359	632	867	450	273	262	186	266	485
SL/SL1.85.150.185.4.52H.S	150	1346	359	632	867	450	273	262	186	266	485
SL1.95.100.200.4.52H.S	105	1346	375	519	771	450	144	166	186	270	494
SL1.95.100.220.4.52H.S	105	1346	375	519	771	450	144	166	186	270	494
SL1.95.150.200.4.52H.S	150	1346	359	632	867	450	273	262	186	266	485
SL1.95.150.220.4.52H.S	150	1346	359	632	867	450	273	262	186	266	485
SL1.110.200.100.4.52M.S	205	1348	347	782	1193	550	435	418	160	278	500
SL1.110.200.110.4.52M.S	205	1348	347	782	1193	550	435	418	160	278	500
SL1.110.200.130.4.52M.S	205	1348	347	782	1193	550	435	418	160	278	500
SL1.110.200.150.4.52M.S	205	1348	347	782	1193	550	435	418	160	278	500
SL1.110.200.170.4.52M.S	205	1347	347	782	1193	550	435	418	160	307	559
SL1.110.200.185.4.52M.S	205	1347	347	782	1193	550	435	418	160	307	559
SL1.110.200.200.4.52M.S	205	1347	347	782	1193	550	435	418	160	307	559
SL1.110.200.220.4.52M.S	205	1347	347	782	1193	550	435	418	160	307	559
SLV.80.80.130.2.52H.S	79	1254	280	454	626	355	174	118	130	197	394
SLV.80.80.150.2.52H.S	79	1254	280	454	626	355	174	118	130	197	394
SLV.80.80.170.2.52H.S	79	1254	280	454	626	355	174	118	130	197	394
SLV.80.80.185.2.52H.S	79	1254	280	454	626	355	174	118	130	197	394

Pump type	Y02	Y1	Y2	Y3	Y4	Y5	HCH	HCL	DSTH	D	F
SLV.80.80.200.2.52H.S	79	1254	280	454	626	355	174	118	130	197	394
SLV.80.80.220.2.52H.S	79	1254	280	454	626	355	174	118	130	197	394
SLV.80.80.240.2.52H.S	79	1254	280	454	626	355	174	118	130	197	394
SLV.80.80.265.2.52H.S	79	1254	280	454	626	355	174	118	130	197	394

Dry, vertical installation

10.4.4.1 Installation on vertical base stand



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Vertical base stand dimensions

SE/SE1 (part 1)

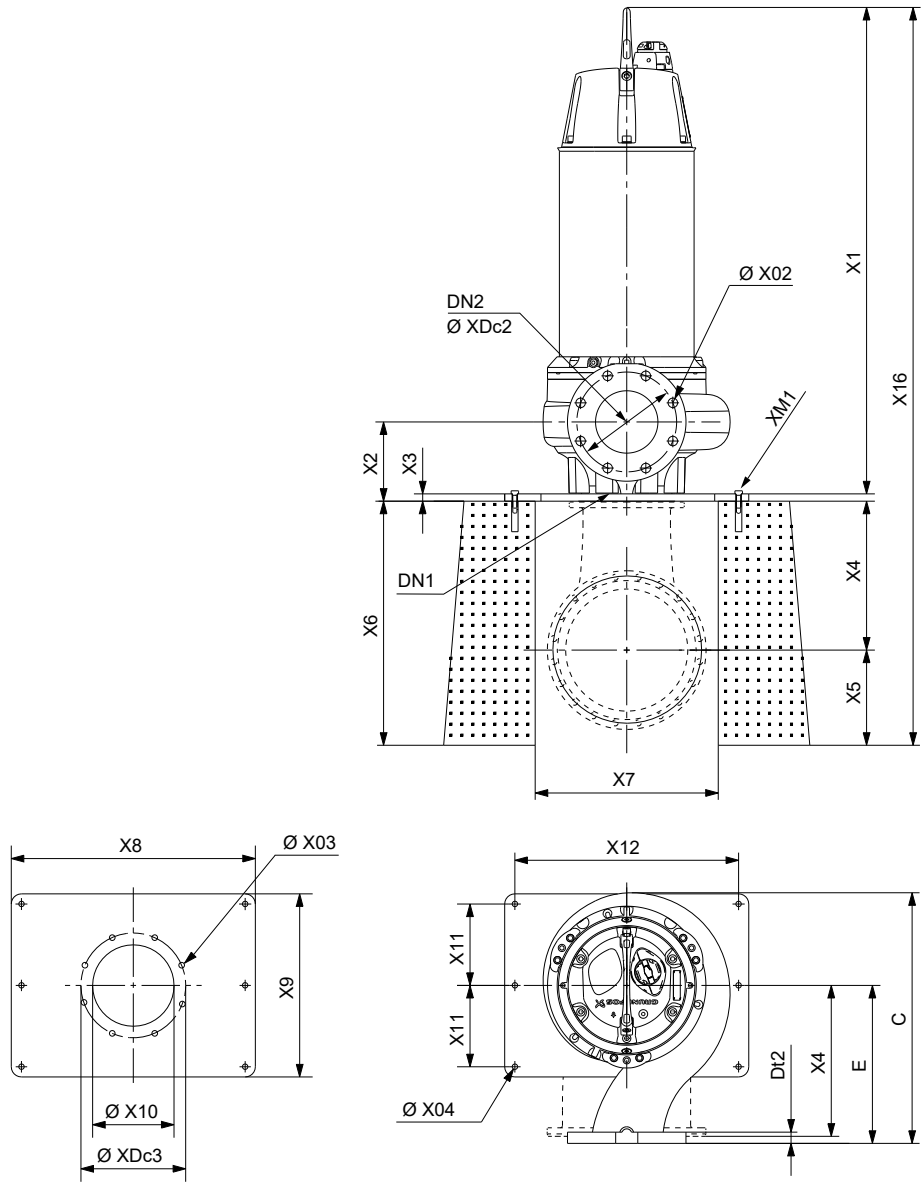
Pump type	C	E	F	X6	X10	X13	X14	X15	X16
SE/SE1.**35**/75.100.130.2.52S.C	476	285	382	443	DN 100	405	150	468	1574
SE/SE1.**45**/85.100.100.4.52H.C	609	380	460	621	DN 150	450	230	520	1781
SE/SE1.**45**/85.100.110.4.52H.C	609	380	460	621	DN 150	450	230	520	1781
SE/SE1.**45**/85.100.130.4.52H.C	609	380	460	621	DN 150	450	230	520	1781
SE/SE1.**45**/85.150.100.4.52H.C	605	380	485	621	DN 150	450	230	520	1780
SE/SE1.**45**/85.150.110.4.52H.C	605	380	485	621	DN 150	450	230	520	1780
SE/SE1.**45**/85.150.130.4.52H.C	605	380	485	621	DN 150	450	230	520	1780
SE1.110.200.100.4.52M.C	755	500	500	719	DN 200	525	325	606	1907
SE1.110.200.110.4.52M.C	755	500	500	719	DN 200	525	325	606	1907
SE1.110.200.130.4.52M.C	755	500	500	719	DN 200	525	325	606	1907

SE/SE1 (part 2)

Pump type	X17	X131	X132	XDt2	XDc3	X03	Dt2	DN2	XM1
SE/SE1.**35**/75.100.130.2.52S.C	582	135	0	22	180	19	25	DN 100	M20 x 3
SE/SE1.**45**/85.100.100.4.52H.C	805	150	120	24	240	24	24	DN 100	M20 x 6
SE/SE1.**45**/85.100.110.4.52H.C	805	150	120	24	240	24	24	DN 100	M20 x 6
SE/SE1.**45**/85.100.130.4.52H.C	805	150	120	24	240	24	24	DN 100	M20 x 6
SE/SE1.**45**/85.150.100.4.52H.C	794	150	120	24	240	24	27	DN 150	M20 x 6
SE/SE1.**45**/85.150.110.4.52H.C	794	150	120	24	240	24	27	DN 150	M20 x 6
SE/SE1.**45**/85.150.130.4.52H.C	794	150	120	24	240	24	27	DN 150	M20 x 6
SE1.110.200.100.4.52M.C	906	175	120	26	295	24	30	DN 200	M20 x 6
SE1.110.200.110.4.52M.C	906	175	120	26	295	24	30	DN 200	M20 x 6
SE1.110.200.130.4.52M.C	906	175	120	26	295	24	30	DN 200	M20 x 6

Dry, vertical installation

10.4.5.1 Installation on concrete foundation



Concrete foundation dimensions

SE/SE1/SE2 (part 1)

Pump type	C	E	X02	X03	X04	X1	X2	X3	X6	X7	X8
SE/SE1.**35**/75.100.150.2.52S.C	476	285	18	19	28	1131	139	23	443	500	900
SE/SE1.**35**/75.100.170.2.52S.C	476	285	18	19	28	1131	139	23	443	500	900
SE/SE1.**35**/75.100.185.2.52S.C	476	285	18	19	28	1131	139	23	443	500	900
SE/SE1.**35**/80.100.200.2.52S.C	476	285	18	19	28	1145	137	23	443	500	900
SE/SE1.**35**/80.100.220.2.52S.C	476	285	18	19	28	1145	137	23	443	500	900
SE/SE1.**35**/80.100.240.2.52S.C	476	285	18	19	28	1145	137	23	443	500	900
SE/SE1.**35**/80.100.265.2.52S.C	476	285	18	19	28	1145	137	23	443	500	900
SE/SE1.**45**/85.100.150.4.52H.C	609	380	19	24	28	1160	184	23	621	500	900
SE/SE1.**45**/85.100.170.4.52H.C	625	380	19	24	28	1160	189	23	621	500	900
SE/SE1.**45**/85.100.185.4.52H.C	625	380	19	24	28	1160	189	23	621	500	900
SE/SE1.**45**/85.150.150.4.52H.C	605	380	23	24	28	1159	173	23	621	500	900
SE/SE1.**45**/85.150.170.4.52H.C	620	380	23	24	28	1160	173	23	621	500	900
SE/SE1.**45**/85.150.185.4.52H.C	620	380	23	24	28	1160	173	23	621	500	900
SE1.95.100.200.4.52H.C	625	380	19	24	28	1160	189	23	621	500	900
SE1.95.100.220.4.52H.C	625	380	19	24	28	1160	189	23	621	500	900
SE1.95.150.200.4.52H.C	620	380	23	24	28	1160	173	23	621	500	900
SE1.95.150.220.4.52H.C	620	380	23	24	28	1160	173	23	621	500	900
SE1.110.200.150.4.52M.C	755	500	23	24	28	1188	187	23	719	500	900
SE1.110.200.170.4.52M.C	785	500	23	24	28	1187	187	23	719	500	900
SE1.110.200.185.4.52M.C	785	500	23	24	28	1187	187	23	719	500	900
SE1.110.200.200.4.52M.C	785	500	23	24	28	1187	187	23	719	500	900
SE1.110.200.220.4.52M.C	785	500	23	24	28	1187	187	23	719	500	900
SE2.110.250.130.4.52L.D	849	500	23	23	28	1202	221	23	700	500	900
SE2.110.250.150.4.52L.D	849	500	23	23	28	1202	221	23	700	500	900
SE2.110.250.170.4.52L.D	849	500	23	23	28	1202	221	23	700	500	900
SE2.110.250.185.4.52L.D	849	500	23	23	28	1202	221	23	700	500	900
SE2.110.250.200.4.52L.D	849	500	23	23	28	1202	221	23	700	500	900
SE2.110.250.220.4.52L.D	849	500	23	23	28	1202	221	23	700	500	900
SE2.125.300.110.6.52E.D	961	600	25	23	28	1254	253	23	800	600	900
SE2.125.300.130.6.52E.D	961	600	25	23	28	1254	253	23	800	600	900
SE2.125.300.160.6.52E.D	978	600	25	23	28	1254	253	23	800	600	900
SE2.125.300.180.6.52E.D	978	600	25	23	28	1254	253	23	800	600	900

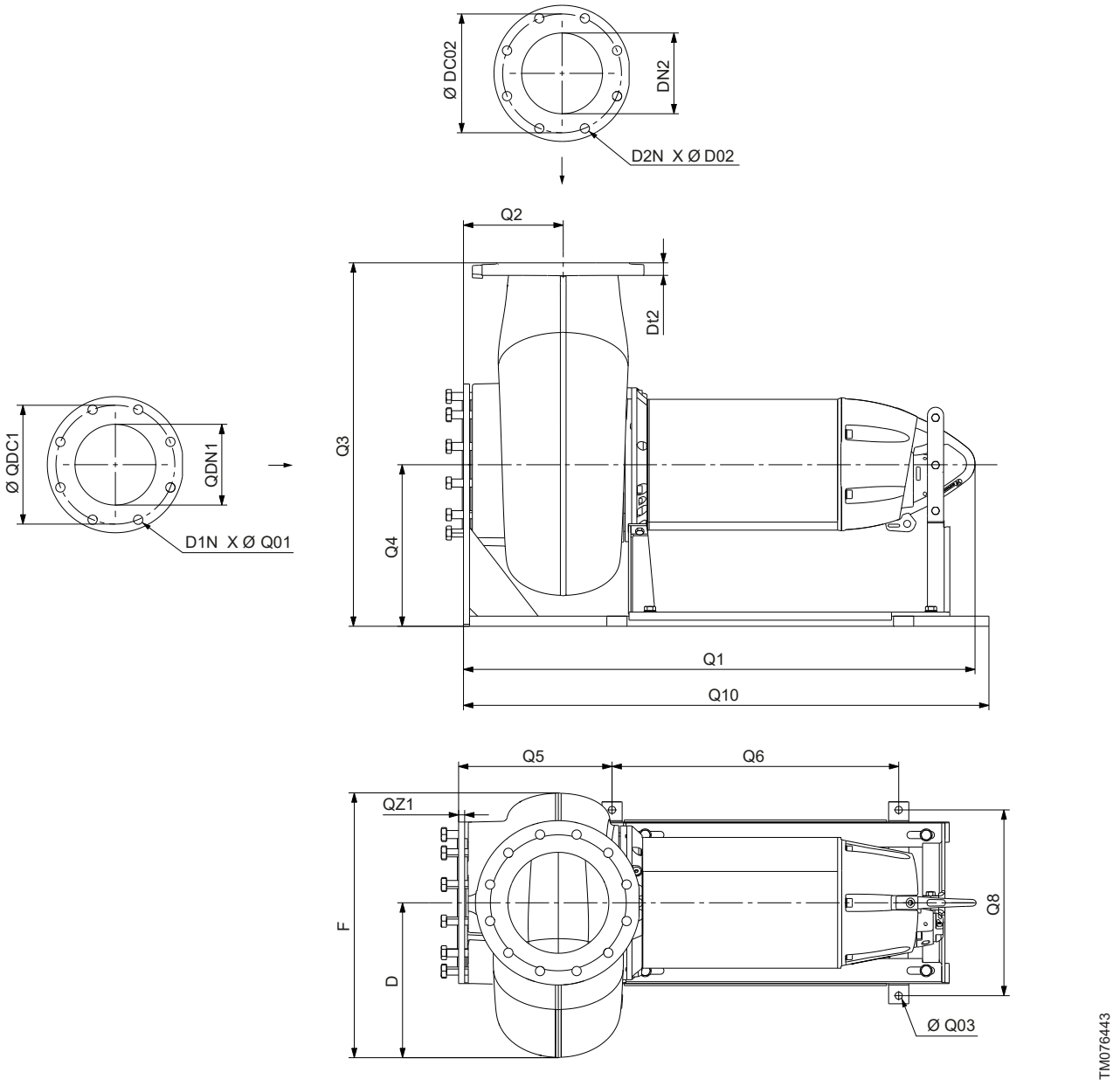
SE/SE1/SE2 (part 2)

Pump type	X9	X10	X11	X12	X16	XDc3	DN1	DN2	XDC2	Dt2	XM1
SE/SE1.**35**/75.100.150.2.52S.C	700	DN 100	300	800	1574	180	DN 100	DN 100	180	25	M20 x 3
SE/SE1.**35**/75.100.170.2.52S.C	700	DN 100	300	800	1574	180	DN 100	DN 100	180	25	M20 x 3
SE/SE1.**35**/75.100.185.2.52S.C	700	DN 100	300	800	1574	180	DN 100	DN 100	180	25	M20 x 3
SE/SE1.**35**/80.100.200.2.52S.C	700	DN 100	300	800	1588	180	DN 100	DN 100	180	25	M20 x 3
SE/SE1.**35**/80.100.220.2.52S.C	700	DN 100	300	800	1588	180	DN 100	DN 100	180	25	M20 x 3
SE/SE1.**35**/80.100.240.2.52S.C	700	DN 100	300	800	1588	180	DN 100	DN 100	180	25	M20 x 3
SE/SE1.**35**/80.100.265.2.52S.C	700	DN 100	300	800	1588	180	DN 100	DN 100	180	25	M20 x 3
SE/SE1.**45**/85.100.150.4.52H.C	700	DN 150	300	800	1781	240	DN 150	DN 100	180	24	M20 x 6
SE/SE1.**45**/85.100.170.4.52H.C	700	DN 150	300	800	1781	240	DN 150	DN 100	180	24	M20 x 6
SE/SE1.**45**/85.100.185.4.52H.C	700	DN 150	300	800	1781	240	DN 150	DN 100	180	24	M20 x 6
SE/SE1.**45**/85.150.150.4.52H.C	700	DN 150	300	800	1780	240	DN 150	DN 150	240	27	M20 x 6
SE/SE1.**45**/85.150.170.4.52H.C	700	DN 150	300	800	1781	240	DN 150	DN 150	240	27	M20 x 6
SE/SE1.**45**/85.150.185.4.52H.C	700	DN 150	300	800	1781	240	DN 150	DN 150	240	27	M20 x 6
SE1.95.100.200.4.52H.C	700	DN 150	300	800	1781	240	DN 150	DN 100	180	24	M20 x 6
SE1.95.100.220.4.52H.C	700	DN 150	300	800	1781	240	DN 150	DN 100	180	24	M20 x 6
SE1.95.150.200.4.52H.C	700	DN 150	300	800	1781	240	DN 150	DN 150	240	27	M20 x 6
SE1.95.150.220.4.52H.C	700	DN 150	300	800	1781	240	DN 150	DN 150	240	27	M20 x 6
SE1.110.200.150.4.52M.C	700	DN 200	300	800	1907	295	DN 200	DN 200	295	30	M20 x 6

Pump type	X9	X10	X11	X12	X16	XDc3	DN1	DN2	XDC2	Dt2	XM1
SE1.110.200.170.4.52M.C	700	DN 200	300	800	1906	295	DN 200	DN 200	295	30	M20 x 6
SE1.110.200.185.4.52M.C	700	DN 200	300	800	1906	295	DN 200	DN 200	295	30	M20 x 6
SE1.110.200.200.4.52M.C	700	DN 200	300	800	1906	295	DN 200	DN 200	295	30	M20 x 6
SE1.110.200.220.4.52M.C	700	DN 200	300	800	1906	295	DN 200	DN 200	295	30	M20 x 6
SE2.110.250.130.4.52L.D	700	DN 250	300	800	1925	350	DN 250	DN 250	350	32	M24 x 6
SE2.110.250.150.4.52L.D	700	DN 250	300	800	1925	350	DN 250	DN 250	350	32	M24 x 6
SE2.110.250.170.4.52L.D	700	DN 250	300	800	1925	350	DN 250	DN 250	350	32	M24 x 6
SE2.110.250.185.4.52L.D	700	DN 250	300	800	1925	350	DN 250	DN 250	350	32	M24 x 6
SE2.110.250.200.4.52L.D	700	DN 250	300	800	1925	350	DN 250	DN 250	350	32	M24 x 6
SE2.110.250.220.4.52L.D	700	DN 250	300	800	1925	350	DN 250	DN 250	350	32	M24 x 6
SE2.125.300.110.6.52E.D	700	DN 300	300	800	2077	400	DN 300	DN 300	400	32	M24 x 6
SE2.125.300.130.6.52E.D	700	DN 300	300	800	2077	400	DN 300	DN 300	400	32	M24 x 6
SE2.125.300.160.6.52E.D	700	DN 300	300	800	2077	400	DN 300	DN 300	400	32	M24 x 6
SE2.125.300.180.6.52E.D	700	DN 300	300	800	2077	400	DN 300	DN 300	400	32	M24 x 6

Dry, horizontal installation

10.4.6.1 Installation on horizontal base stand



Horizontal base stand dimensions

SE/SE1/SE2/SEV (part 1)

Pump type	D	F	Q1	Q2	Q3	Q4	Q5	Q6	Q8	Q10	QZ1
SE/SE1.**35**/75.100.130.2.52S.H	190	382	1149	157	685	400	380	710	460	1275	18
SE/SE1.**35**/75.100.150.2.52S.H	190	382	1149	157	685	400	380	710	460	1275	18
SE/SE1.**35**/75.100.170.2.52S.H	190	382	1149	157	685	400	380	710	460	1275	18
SE/SE1.**35**/75.100.185.2.52S.H	190	382	1149	157	685	400	380	710	460	1275	18
SE/SE1.**35**/80.100.200.2.52S.H	191	383	1163	155	685	400	380	710	460	1275	18
SE/SE1.**35**/80.100.220.2.52S.H	191	383	1163	155	685	400	380	710	460	1275	18
SE/SE1.**35**/80.100.240.2.52S.H	191	383	1163	155	685	400	380	710	460	1275	18
SE/SE1.**35**/80.100.265.2.52S.H	191	383	1163	155	685	400	380	710	460	1275	18
SE/SE1.**45**/85.100.100.4.52H.H	255	460	1178	202	780	400	380	710	460	1275	18
SE/SE1.**45**/85.100.110.4.52H.H	255	460	1178	202	780	400	380	710	460	1275	18

Pump type	D	F	Q1	Q2	Q3	Q4	Q5	Q6	Q8	Q10	QZ1
SE/SE1.**45**/85.100.130.4.52H.H	255	460	1178	202	780	400	380	710	460	1275	18
SE/SE1.**45**/85.100.150.4.52H.H	255	460	1178	202	780	400	380	710	460	1275	18
SE/SE1.**45**/85.100.170.4.52H.H	270	494	1178	207	780	400	380	710	460	1275	18
SE/SE1.**45**/85.100.185.4.52H.H	270	494	1178	207	780	400	380	710	460	1275	18
SE/SE1.**45**/85.150.100.4.52H.H	266	485	1177	191	780	400	380	710	460	1275	18
SE/SE1.**45**/85.150.110.4.52H.H	266	485	1177	191	780	400	380	710	460	1275	18
SE/SE1.**45**/85.150.130.4.52H.H	266	485	1177	191	780	400	380	710	460	1275	18
SE/SE1.**45**/85.150.150.4.52H.H	266	485	1177	191	780	400	380	710	460	1275	18
SE/SE1.**45**/85.150.170.4.52H.H	266	485	1178	191	780	400	380	710	460	1275	18
SE/SE1.**45**/85.150.185.4.52H.H	266	485	1178	191	780	400	380	710	460	1275	18
SE1.95.100.200.4.52H.H	270	494	1178	207	780	400	380	710	460	1275	18
SE1.95.100.220.4.52H.H	270	494	1178	207	780	400	380	710	460	1275	18
SE1.95.150.200.4.52H.H	266	485	1178	191	780	400	380	710	460	1275	18
SE1.95.150.220.4.52H.H	266	485	1178	191	780	400	380	710	460	1275	18
SE1.110.200.100.4.52M.H	278	500	1206	205	900	400	380	710	460	1275	18
SE1.110.200.110.4.52M.H	278	500	1206	205	900	400	380	710	460	1275	18
SE1.110.200.130.4.52M.H	278	500	1206	205	900	400	380	710	460	1275	18
SE1.110.200.150.4.52M.H	278	500	1206	205	900	400	380	710	460	1275	18
SE1.110.200.170.4.52M.H	307	559	1205	205	900	400	380	710	460	1275	18
SE1.110.200.185.4.52M.H	307	559	1205	205	900	400	380	710	460	1275	18
SE1.110.200.200.4.52M.H	307	559	1205	205	900	400	380	710	460	1275	18
SE1.110.200.220.4.52M.H	307	559	1205	205	900	400	380	710	460	1275	18
SE2.110.250.130.4.52L.H	394	680	1220	216	900	400	380	710	460	1275	18
SE2.110.250.150.4.52L.H	394	680	1220	216	900	400	380	710	460	1275	18
SE2.110.250.170.4.52L.H	394	680	1220	216	900	400	380	710	460	1275	18
SE2.110.250.185.4.52L.H	394	680	1220	216	900	400	380	710	460	1275	18
SE2.110.250.200.4.52L.H	394	680	1220	216	900	400	380	710	460	1275	18
SE2.110.250.220.4.52L.H	394	680	1220	216	900	400	380	710	460	1275	18
SE2.125.300.110.6.52E.H	407	691	1272	248	1000	400	380	710	460	1275	18
SE2.125.300.130.6.52E.H	407	691	1272	248	1000	400	380	710	460	1275	18
SE2.125.300.160.6.52E.H	441	749	1272	248	1000	400	380	710	460	1275	18
SE2.125.300.180.6.52E.H	441	749	1272	248	1000	400	380	710	460	1275	18
SEV.80.80.130.2.52H.H	197	394	1142	168	730	400	380	710	460	1275	18
SEV.80.80.150.2.52H.H	197	394	1142	168	730	400	380	710	460	1275	18
SEV.80.80.170.2.52H.H	197	394	1142	168	730	400	380	710	460	1275	18
SEV.80.80.185.2.52H.H	197	394	1142	168	730	400	380	710	460	1275	18
SEV.80.80.200.2.52H.H	197	394	1142	168	730	400	380	710	460	1275	18
SEV.80.80.220.2.52H.H	197	394	1142	168	730	400	380	710	460	1275	18
SEV.80.80.240.2.52H.H	197	394	1142	168	730	400	380	710	460	1275	18
SEV.80.80.265.2.52H.H	197	394	1142	168	730	400	380	710	460	1275	18

SE/SE1/SE2/SEV (part 2)

Pump type	QDc1	QDN1	Q01	D1N	D02	D2N	Dc02	DN2	Dt2	Q03
SE/SE1.**35**/75.100.130.2.52S.H	180	DN 100	M16	8	18	8	180	DN 100	25	18
SE/SE1.**35**/75.100.150.2.52S.H	180	DN 100	M16	8	18	8	180	DN 100	25	18
SE/SE1.**35**/75.100.170.2.52S.H	180	DN 100	M16	8	18	8	180	DN 100	25	18
SE/SE1.**35**/75.100.185.2.52S.H	180	DN 100	M16	8	18	8	180	DN 100	25	18
SE/SE1.**35**/80.100.200.2.52S.H	180	DN 100	M16	8	18	8	180	DN 100	25	18
SE/SE1.**35**/80.100.220.2.52S.H	180	DN 100	M16	8	18	8	180	DN 100	25	18
SE/SE1.**35**/80.100.240.2.52S.H	180	DN 100	M16	8	18	8	180	DN 100	25	18
SE/SE1.**35**/80.100.265.2.52S.H	180	DN 100	M16	8	18	8	180	DN 100	25	18
SE/SE1.**45**/85.100.100.4.52H.H	240	DN 150	M20	8	19	8	180	DN 100	24	18
SE/SE1.**45**/85.100.110.4.52H.H	240	DN 150	M20	8	19	8	180	DN 100	24	18
SE/SE1.**45**/85.100.130.4.52H.H	240	DN 150	M20	8	19	8	180	DN 100	24	18

Pump type	QDc1	QDN1	Q01	D1N	D02	D2N	Dc02	DN2	Dt2	Q03
SE/SE1.**45**/85.100.150.4.52H.H	240	DN 150	M20	8	19	8	180	DN 100	24	18
SE/SE1.**45**/85.100.170.4.52H.H	240	DN 150	M20	8	19	8	180	DN 100	24	18
SE/SE1.**45**/85.100.185.4.52H.H	240	DN 150	M20	8	19	8	180	DN 100	24	18
SE/SE1.**45**/85.150.100.4.52H.H	240	DN 150	M20	8	23	8	240	DN 150	27	18
SE/SE1.**45**/85.150.110.4.52H.H	240	DN 150	M20	8	23	8	240	DN 150	27	18
SE/SE1.**45**/85.150.130.4.52H.H	240	DN 150	M20	8	23	8	240	DN 150	27	18
SE/SE1.**45**/85.150.150.4.52H.H	240	DN 150	M20	8	23	8	240	DN 150	27	18
SE/SE1.**45**/85.150.170.4.52H.H	240	DN 150	M20	8	23	8	240	DN 150	27	18
SE/SE1.**45**/85.150.185.4.52H.H	240	DN 150	M20	8	23	8	240	DN 150	27	18
SE1.95.100.200.4.52H.H	240	DN 150	M20	8	19	8	180	DN 100	24	18
SE1.95.100.220.4.52H.H	240	DN 150	M20	8	19	8	180	DN 100	24	18
SE1.95.150.200.4.52H.H	240	DN 150	M20	8	23	8	240	DN 150	27	18
SE1.95.150.220.4.52H.H	240	DN 150	M20	8	23	8	240	DN 150	27	18
SE1.110.200.100.4.52M.H	295	DN 200	M20	8	23	8	295	DN 200	30	18
SE1.110.200.110.4.52M.H	295	DN 200	M20	8	23	8	295	DN 200	30	18
SE1.110.200.130.4.52M.H	295	DN 200	M20	8	23	8	295	DN 200	30	18
SE1.110.200.150.4.52M.H	295	DN 200	M20	8	23	8	295	DN 200	30	18
SE1.110.200.170.4.52M.H	295	DN 200	M20	8	23	8	295	DN 200	30	18
SE1.110.200.185.4.52M.H	295	DN 200	M20	8	23	8	295	DN 200	30	18
SE1.110.200.200.4.52M.H	295	DN 200	M20	8	23	8	295	DN 200	30	18
SE1.110.200.220.4.52M.H	295	DN 200	M20	8	23	8	295	DN 200	30	18
SE2.110.250.130.4.52L.H	350	DN 250	M20	12	23	12	350	DN 250	32	18
SE2.110.250.150.4.52L.H	350	DN 250	M20	12	23	12	350	DN 250	32	18
SE2.110.250.170.4.52L.H	350	DN 250	M20	12	23	12	350	DN 250	32	18
SE2.110.250.185.4.52L.H	350	DN 250	M20	12	23	12	350	DN 250	32	18
SE2.110.250.200.4.52L.H	350	DN 250	M20	12	23	12	350	DN 250	32	18
SE2.110.250.220.4.52L.H	350	DN 250	M20	12	23	12	350	DN 250	32	18
SE2.125.300.110.6.52E.H	400	DN 300	M20	12	25	12	400	DN 300	32	18
SE2.125.300.130.6.52E.H	400	DN 300	M20	12	25	12	400	DN 300	32	18
SE2.125.300.160.6.52E.H	400	DN 300	M20	12	25	12	400	DN 300	32	18
SE2.125.300.180.6.52E.H	400	DN 300	M20	12	25	12	400	DN 300	32	18
SEV.80.80.130.2.52H.H	180	DN 100	M16	8	18	8	160	DN 80	25	18
SEV.80.80.150.2.52H.H	180	DN 100	M16	8	18	8	160	DN 80	25	18
SEV.80.80.170.2.52H.H	180	DN 100	M16	8	18	8	160	DN 80	25	18
SEV.80.80.185.2.52H.H	180	DN 100	M16	8	18	8	160	DN 80	25	18
SEV.80.80.200.2.52H.H	180	DN 100	M16	8	18	8	160	DN 80	25	18
SEV.80.80.220.2.52H.H	180	DN 100	M16	8	18	8	160	DN 80	25	18
SEV.80.80.240.2.52H.H	180	DN 100	M16	8	18	8	160	DN 80	25	18
SEV.80.80.265.2.52H.H	180	DN 100	M16	8	18	8	160	DN 80	25	18

11. Grundfos Product Center

Online search and sizing tool to help you make the right choice.
From the international view, you can select your specific country to view the product range available to you.
International view: *https://product-selection.grundfos.com*

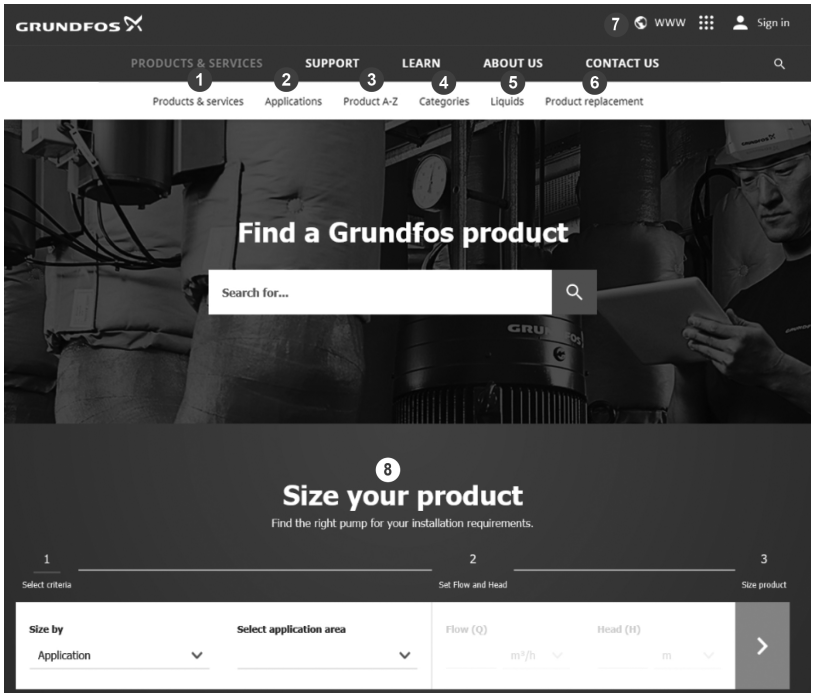
All the information you need in one place

Performance curves, technical specifications, pictures, dimensional drawings, motor curves, wiring diagrams, spare parts, service kits, 3D drawings, documents, system parts. The Product Center displays any recent and saved items - including complete projects - right on the main page.

Downloads

On the product pages, you can download installation and operating instructions, data booklets, service instructions, etc., in PDF format.

When you select your country, you will see the menus below. Note that some menus may not be available depending on the country.
Example: *https://product-selection.grundfos.com/uk*



Pos.	Description
1	**Products & services** enables you to find products and documents by typing a product number or name into the search field.
2	**Applications** enables you to choose an application to see how Grundfos can help you design and optimise your system.
3	**Products A-Z** enables you to look through a list of all the Grundfos products.
4	**Categories** enables you to look for a product category.
5	**Liquids** enables you to find pumps designed for aggressive, flammable or other special liquids.
6	**Product replacement** enables you to find a suitable replacement.
7	**WWW** enables you to select the country, which changes the language, the available product range and the structure of the website.
8	**Sizing** enables you to size a product based on your application and operating conditions.

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