

S pumps, range 66

22 to 65 kW

50 Hz



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1. Introduction

Introduction

This data booklet deals with Grundfos heavy-duty sewage pumps, type S, range 66.



TM070829

S pump, range 66

S pumps, range 66, are a range of free-flow channel impeller pumps specifically designed for pumping sewage and wastewater in a wide range of municipal, private and industrial applications.

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

The pumps are fitted with motors from 22 to 65 kW. The motors are either 4-, 8- or 10-pole motors, depending on the motor size.

The free passage in the pumps is 100 to 140 mm.

The pumps are available for these types of installation:

- submerged installation on auto-coupling system
- submerged installation, free-standing
- dry installation, vertical
- dry installation, horizontal.

Applications

S pumps are designed for applications such as these:

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

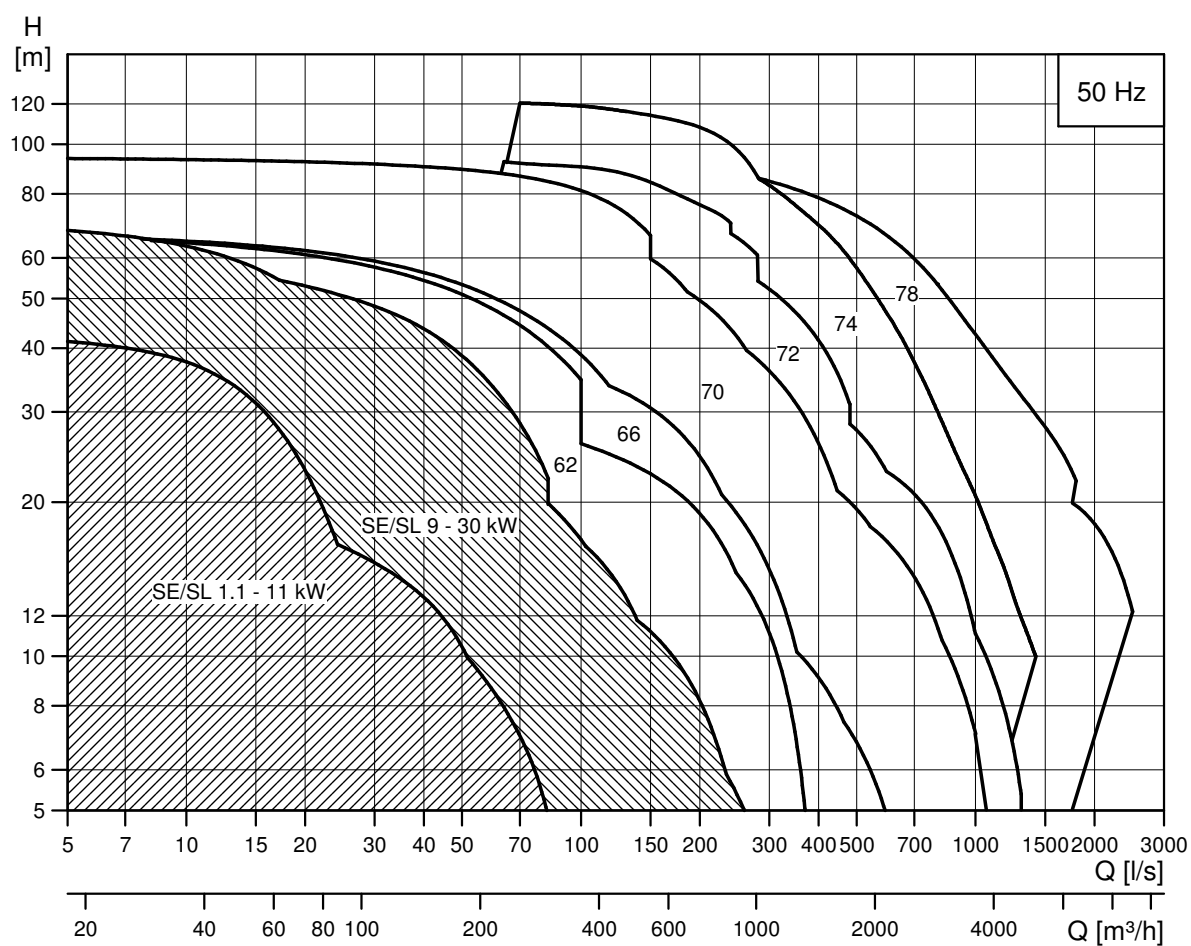
The pumps are suitable for both temporary and permanent installation. The lifting bracket fitted on the pumps facilitates easy transportation as well as installation at the installation site.

Main constructional features

- Leak-proof connections on auto coupling via the Grundfos SmartSeal sealing system
- double mechanical shaft seal system for reliable sealing between pumped liquid and motor
- watertight cable entry
- moisture switch for continuous monitoring of motor housing and terminal box ensuring automatic cut-off of power in case of ingress of liquid
- self-cleaning channel impeller with long vanes reducing the risk of jamming or clogging.
- SmartTrim system allowing easy adjustment of impeller clearance and maintaining maximum pump efficiency over pump lifetime
- motor in insulation class F (155 °C), enclosure class IP68 with three thermal sensors in stator windings
- shaft seal condition monitoring via water-in-oil sensor (optional)
- explosion-proof motors for applications involving potential risk of explosion
- three stainless steel versions for use in corrosive or aggressive liquids:
 - stainless steel impeller, cast iron pump and motor housing
 - stainless steel pump housing, flange and impeller, cast iron motor housing made entirely of corrosion-resistant stainless steel.

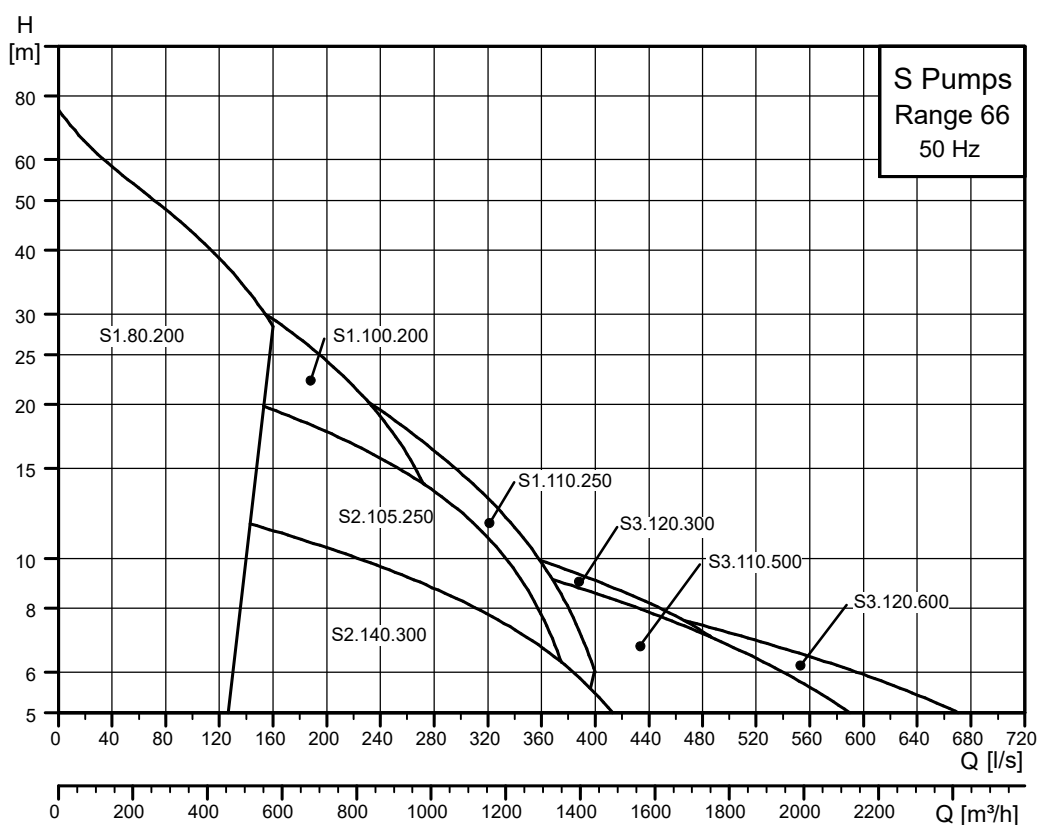
2. Performance range

Performance range overview, S pumps



TM053391

Performance range, S pumps, range 66



TM041877

List of pump curves

3 x 400/690 V

Pump type	Pressure range	Curve chart
S3.120.600.350.10.66E	Extra low	S3.120.600.350.10 and S3.120.600.500.8
S3.120.600.500.8.66E		
S2.110.250.650.4.66L		
S3.110.500.220.10.66L	Low	S3.110.500.220.10, S3.110.500.350.10 and S3.110.500.500.8
S3.110.500.350.10.66L		
S3.110.500.500.8.66L		
S2.140.300.350.8.66M	Medium	S2.140.300.350.8, S2.100.200.550.4 and S2.100.200.650.4
S2.100.200.550.4.66M		
S2.100.200.650.4.66M		
S3.120.300.500.8.66M	High	S3.120.300.500.8 and S1.80.200.650.4 and S2.105.250.500.8
S1.80.200.650.4.66H		
S2.105.250.500.8.66H		

3 x 415 V

Pump type	Pressure range	Curve chart
S3.120.600.350.10.66E	Extra low	S3.120.600.350.10 and S3.120.600.500.8
S3.120.600.500.8.66E		
S2.110.250.650.4.66L		
S3.110.500.220.10.66L	Low	S3.110.500.220.10, S3.110.500.350.10 and S3.110.500.500.8
S3.110.500.350.10.66L		
S3.110.500.500.8.66L		
S2.140.300.350.8.66M	Medium	S2.140.300.350.8, S2.100.200.550.4 and S2.100.200.650.4
S2.100.200.550.4.66M		
S2.100.200.650.4.66M		
S3.120.300.500.8.66M	High	S3.120.300.500.8 and S1.80.200.650.4 and S2.105.250.500.8
S1.80.200.650.4.66H		
S2.105.250.500.8.66H		

3. Identification

Type key

Please note that the pump type described in this booklet is not necessarily available in all variants.

Example: **S1.100.100.55.4.50M.S.205.G.N.D.511.Z**

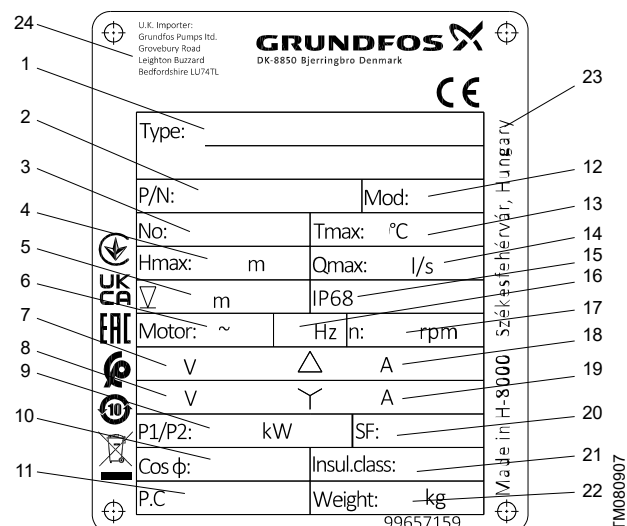
Code	Explanation	Designation
S	Grundfos sewage and wastewater pump	Pump type
1	Single-channel impeller	Impeller type
2	Two-channel impeller	
3	Three-channel impeller	
V	SuperVortex impeller	
100	Maximum solid size [mm]	Pump passage
100	Nominal diameter of pump outlet port [mm]	Pump outlet, S-type
55	P2 = Code number from type designation / 10	Power output [kW] ¹
2	2-pole motor	Number of poles
4	4-pole motor	
6	6-pole motor	
8	8-pole motor	
10	10-pole motor	
12	12-pole motor	
50	Range 50	Pump range
54	Range 54	
58	Range 58	
62	Range 62	
66	Range 66	
70	Range 70	
S	Super-high	Pressure version
H	High	
M	Medium	
L	Low	
E	Extra-low	
F	Super-low	
S	Submersible installation without cooling jacket	Installation type
C	Submersible installation with cooling jacket	
D	Dry installation, vertical	
H	Dry installation, horizontal	
205	Impeller diameter [mm]	Impeller diameter (mean)
G	Cast iron impeller, pump housing and stator housing	Material code for impeller, pump housing and stator housing
Q	Stainless steel impeller, DIN W.-Nr. 1.4408	
S	Stainless steel impeller and pump housing, DIN W.-Nr. 1.4408	
R	Stainless steel impeller, pump housing and stator housing, DIN W.-Nr. 1.4408	
N	Non-explosion-proof pump	Pump version
Ex	Pump with explosion-proof motor	
B	S pump with built-in SM 113 ²	Sensor version
C	Not in use	
D	S pump without built-in SM 113.	

Code	Explanation	Designation
5	50 Hz	Frequency [Hz]
6	60 Hz	
11	3 x 400/690 V, Y/D (50 Hz only)	Voltage code and connection
	3 x 460 V, Y/D (60 Hz only)	
13	3 x 415 V, Y/D (50 Hz only)	
15	3 x 380/660 V, Y/D (60 Hz only)	
GPA	Pumps only for Australia	Customisation
Z	Custom-built products	

¹ The power output (P2) indicated in the type key, which is used to indicate the motor size, can deviate from the actual power output. Please refer to the nameplate or the chapter for the exact power output.

² PTC sensors are connected directly to IO 113 or other PTC relay.

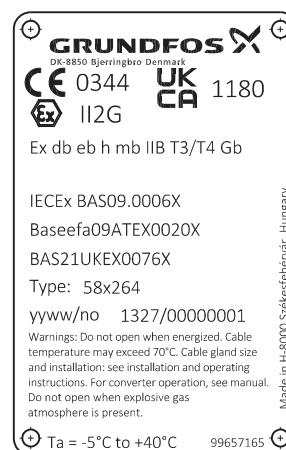
Pump nameplate



Pump nameplate

Pos.	Description
1	Type designation
2	Product number
3	Serial number
4	Maximum head [m]
5	Maximum installation depth [m]
6	Number of phases
7	Voltage, delta connection
8	Voltage, star connection
9	Rated power input / output [kW]
10	Cos φ, 1/1 load
11	Production code (YYWW)
12	Production number
13	Maximum liquid temperature [°C]
14	Maximum flow rate [l/s]
15	Ingress Protection class
16	Frequency [Hz]
17	Rated speed
18	Current, delta connection
19	Current, star connection
20	Safety factor
21	Insulation class
22	Net weight [kg]
23	Place of production
24	UK importer address for UK market

Ex approval plates

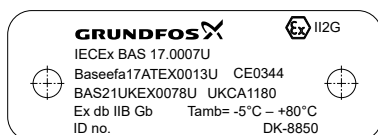


Approval plate of explosion-proof pumps, T3 and T4 classification

The approval plate provides the following details:

Ex	The equipment conforms to harmonised European standard.
II	Equipment group (II = non-mining)
2	Equipment category (high protection)
G	Type of explosive atmosphere (gas)
CE	CE mark
UKCA	UKCA mark
0344	Number of quality assurance notified body
1180	Number of quality assurance notified body
Ex	Marking of explosion protection
db	Flameproof enclosure, Zone 1
eb	WIO sensor protection by increased safety
h	Constructional safety "c", Control of ignition sources "b" and Liquid immersion "k", according to EN ISO 80079-36:2016 and EN ISO 80079-37:2016
mb	WIO sensor protection by encapsulation
IIB	Gas group (ethylene)
T3	The maximum surface temperature of the motor is 200 °C*.
T4	The maximum surface temperature of the motor is 135 °C.
Gb	Equipment protection level, zone 1

Cable entry approval plate



TM080590

Cable entry approval plate

The cable entry approval plate provides the following details:

Pos.	Description
0344	Number of quality assurance notified body
	The equipment conforms to harmonised European standard.
II	Equipment group (II = non-mining)
2	Equipment category (high protection)
G	Type of explosive atmosphere (gas)
CE	CE mark
UKCA	UKCA mark
0344	Number of quality assurance notified body
1180	Number of quality assurance notified body
Ex	Marking of explosion protection
db	Flameproof, Zone 1
IIB	Gas group (Ethylene)
Gb	Equipment protection level, zone 1
T _{amb}	Ambient temperature
ID no	Cable entry identification number
DK-8850	Country and postcode (Bjerringbro, Denmark)

4. Selection of product

Ordering the product

When ordering the product you need to take the following four aspects into consideration:

1. pump
2. custom-built variation (option)
3. accessories
4. controller.

Pump

Use the [Product range](#) and the [Type key](#) to identify the pump that best fulfils your needs. The list below is a detailed description of the product you get if you order the following pump:

Pump	Product no
S1.100.200.650.4.66H.S.406.G.N.D.511	95112744

- Pump as specified in the type key
- 10 m cable
- Paint: black, NCS 9000N/RAL 9005, gloss 30, thickness 150 µm
- Three thermal switches (Klixon) or three thermal sensors (PTC) in stator windings
- One moisture switch below the motor top cover (two moisture switches in explosion-proof versions; one below the motor top cover and one in the stator housing)
- Test according to ISO 9906:2012 grade 3B.

See [Performance curves and technical data](#) for selection of a standard pump.

Note: Product specific data for the pump can also be found in Grundfos Product Center using the product number 95112744.

Related information

[Type key](#)

Custom-built variants

The S pumps can be customised to meet individual requirements. Many pump features and options are available for customisation, e.g. explosion-proof versions, various cable lengths or special materials.

Variants can be seen in the list of variants. For requirements or designs not included in the list, contact Grundfos.

Related information

[List of variants](#)

Accessories

Depending on the installation type, you may need to order accessories.

Note: Ordered accessories are not fitted from factory.

Related information

[11. Accessories](#)

Controller

Grundfos Dedicated Controls are available.



Grundfos Dedicated Controls

Grundfos Dedicated Controls is a control system designed for installation in either commercial buildings or network pumping stations with one to six pumps.

As standard, the system is supplied with application-optimised software and can be configured to meet your specific pumping needs.

For more information about Grundfos Dedicated Controls, see [Level controllers](#).

Related information

[Grundfos DC Controllers](#)

5. Product range

Standard pumps

Cast iron, 3 x 400/690 V

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.80.200.650.4.66H.S.432...	10	99442119			96641489
S1.80.200.650.4.66H.C.432...	10	99442120			96641489
S1.80.200.650.4.66H.H.432...	10	99442122	96308289		
S1.80.200.650.4.66H.D.432...	10	99442121		96308240	
S2.100.200.550.4.66M.S.338...	10	95112753			96641489
S2.100.200.550.4.66M.C.338...	10	95112754			96641489
S2.100.200.550.4.66M.H.338...	10	95112755	96308289		
S2.100.200.550.4.66M.D.338...	10	96785345		96308240	
S2.100.200.650.4.66M.S.350...	10	95112759			96641489
S2.100.200.650.4.66M.C.350...	10	95112760			96641489
S2.100.200.650.4.66M.H.350...	10	95112761	96308289		
S2.100.200.650.4.66M.D.350...	10	96785355		96308240	
S2.110.250.650.4.66L.S.327...	10	95112756			96782483
S2.110.250.650.4.66L.C.327...	10	95112757			96782483
S2.110.250.650.4.66L.D.327...	10	95112758		96308241	
S2.110.250.650.4.66L.H.327...	10	96785351	96308289		
S2.105.250.500.8.66H.S.533...	10	99442913			96782483
S2.105.250.500.8.66H.C.533...	10	99442914			96782483
S2.105.250.500.8.66H.D.533...	10	99442915		96308241	
S2.105.250.500.8.66H.H.533...	10	99442916	96308208		
S2.140.300.350.8.66M.S.438...	10	95112747			96782484
S2.140.300.350.8.66M.C.438...	10	95112748			96782484
S2.140.300.350.8.66M.D.438...	10	95112749		96308241	
S2.140.300.350.8.66M.H.438...	10	96785336	96308289		
S3.110.500.220.10.66L.S.417...	10	95112762			96782485
S3.110.500.220.10.66L.C.417...	10	95112763			96782485
S3.110.500.220.10.66L.D.417...	10	95112764		96308244	
S3.110.500.220.10.66L.H.417...	10	96785361	96308208		
S3.110.500.350.10.66L.S.474...	10	95112768			96782485
S3.110.500.350.10.66L.C.474...	10	95112769			96782485
S3.110.500.350.10.66L.D.474...	10	95112770		96308244	
S3.110.500.350.10.66L.H.474...	10	96785371	96308208		
S3.110.500.500.8.66L.S.426...	10	95112774			96782485
S3.110.500.500.8.66L.C.426...	10	95112775			96782485
S3.110.500.500.8.66L.D.426...	10	95112776		96308244	
S3.110.500.500.8.66L.H.426...	10	96785381	96308208		
S3.120.300.500.8.66M.S.449...	10	95112777			96782484
S3.120.300.500.8.66M.C.449...	10	95112778			96782484
S3.120.300.500.8.66M.D.449...	10	95112779		96308241	
S3.120.300.500.8.66M.H.449...	10	96785386	96308289		
S3.120.600.350.10.66E.S.470...	10	95112765			96782486
S3.120.600.350.10.66E.C.470...	10	95112766			96782486
S3.120.600.350.10.66E.D.470...	10	95112767		96308245	

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S3.120.600.350.10.66E.H.470...	10	96785366	96308208		
S3.120.600.500.8.66E.S.432...	10	95112771			96782486
S3.120.600.500.8.66E.C.432...	10	95112772			96782486
S3.120.600.500.8.66E.D.432...	10	95112773		96308245	
S3.120.600.500.8.66E.H.432...	10	96785376	96308208		

¹ Pumps of installation type H include the standard horizontal stand. Pumps with material code G or Q include a painted-steel stand. If another horizontal stand is required, order a pump of installation type D together with the required stand.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

Cast iron, 3 x 415 V

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.80.200.650.4.66H.S.432...	10	99442123			96641489
S1.80.200.650.4.66H.C.432...	10	99442124			96641489
S1.80.200.650.4.66H.H.432...	10	99442125		96308240	
S1.80.200.650.4.66H.D.432...	10	99442126	96308289		
S2.100.200.550.4.66M.S.338...	10	96785343			96641489
S2.100.200.550.4.66M.C.338...	10	96785344			96641489
S2.100.200.550.4.66M.D.338...	10	96785346		96308240	
S2.100.200.550.4.66M.H.338...	10	96785347	96308289		
S2.100.200.650.4.66M.S.350...	10	96785353			96641489
S2.100.200.650.4.66M.C.350...	10	96785354			96641489
S2.100.200.650.4.66M.D.350...	10	96785356		96308240	
S2.100.200.650.4.66M.H.350...	10	96785357	96308289		
S2.110.250.650.4.66L.S.327...	10	96785348			96782483
S2.110.250.650.4.66L.C.327...	10	96785349			96782483
S2.110.250.650.4.66L.D.327...	10	96785350		96308241	
S2.110.250.650.4.66L.H.327...	10	96785352	96308289		
S2.105.250.500.8.66H.S.533...	10	99442917			96782483
S2.105.250.500.8.66H.C.533...	10	99442918			96782483
S2.105.250.500.8.66H.D.533...	10	99442919		96308241	
S2.105.250.500.8.66H.H.533...	10	99442920	96308208		
S2.140.300.350.8.66M.S.438...	10	96785333			96782484
S2.140.300.350.8.66M.C.438...	10	96785334			96782484
S2.140.300.350.8.66M.D.438...	10	96785335		96308241	
S2.140.300.350.8.66M.H.438...	10	96785337	96308289		
S3.110.500.220.10.66L.S.417...	10	96785358			96782485
S3.110.500.220.10.66L.C.417...	10	96785359			96782485
S3.110.500.220.10.66L.D.417...	10	96785360		96308244	
S3.110.500.220.10.66L.H.417...	10	96785362	96308208		
S3.110.500.350.10.66L.S.474...	10	96785368			96782485
S3.110.500.350.10.66L.C.474...	10	96785369			96782485
S3.110.500.350.10.66L.D.474...	10	96785370		96308244	
S3.110.500.350.10.66L.H.474...	10	96785372	96308208		
S3.110.500.500.8.66L.S.426...	10	96785378			96782485
S3.110.500.500.8.66L.C.426...	10	96785379			96782485
S3.110.500.500.8.66L.D.426...	10	96785380		96308244	
S3.110.500.500.8.66L.H.426...	10	96785382	96308208		
S3.120.300.500.8.66M.S.449...	10	96785383			96782484
S3.120.300.500.8.66M.C.449...	10	96785384			96782484
S3.120.300.500.8.66M.D.449...	10	96785385		96308241	
S3.120.300.500.8.66M.H.449...	10	96785387	96308289		
S3.120.600.350.10.66E.S.470...	10	96785363			96782486
S3.120.600.350.10.66E.C.470...	10	96785364			96782486
S3.120.600.350.10.66E.D.470...	10	96785365		96308245	
S3.120.600.350.10.66E.H.470...	10	96785367	96308208		
S3.120.600.500.8.66E.S.432...	10	96785373			96782486
S3.120.600.500.8.66E.C.432...	10	96785374			96782486
S3.120.600.500.8.66E.D.432...	10	96785375		96308245	
S3.120.600.500.8.66E.H.432...	10	96785377	96308208		

¹ Pumps of installation type H include the standard horizontal stand. Pumps with material code G or Q include a painted-steel stand. If another horizontal stand is required, order a pump of installation type D together with the required stand.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

Cast iron, 3 x 415 V - Australia

Note: Pumps with 15 m cable have PTC thermal protection.

Pump type	Cable length [m]	Pump	Accessories	
			Horizontal base stand ¹	To be ordered separately
				Vertical base plate Auto-coupling system ²
S1.80.200.650.4.66H.S.432...	15	99442127		96641489
S1.80.200.650.4.66H.C.432...	15	99442128		96641489
S1.80.200.650.4.66H.H.432...	15	99442129		96308240
S1.80.200.650.4.66H.D.432...	15	99442130	96308289	
S2.100.200.550.4.66M.S.338...	15	96810494		96641489
S2.100.200.550.4.66M.C.338...	15	96810495		96641489
S2.100.200.550.4.66M.D.338...	15	96810496		96308240
S2.100.200.550.4.66M.H.338...	15	96810497	96308289	
S2.100.200.650.4.66M.S.350...	15	96810502		96641489
S2.100.200.650.4.66M.C.350...	15	96810503		96641489
S2.100.200.650.4.66M.D.350...	15	96810504		96308240
S2.100.200.650.4.66M.H.350...	15	96810505	96308289	
S2.110.250.650.4.66L.S.327...	15	96810498		96782483
S2.110.250.650.4.66L.C.327...	15	96810499		96782483
S2.110.250.650.4.66L.D.327...	15	96810500		96308241
S2.110.250.650.4.66L.H.327...	15	96810501	96308289	
S2.105.250.500.8.66H.S.533...	15	99442921		96782483
S2.105.250.500.8.66H.C.533...	15	99442922		96782483
S2.105.250.500.8.66H.D.533...	15	99442923		96308241
S2.105.250.500.8.66H.H.533...	15	99442924	96308208	
S2.140.300.350.8.66M.S.438...	15	96810486		96782484
S2.140.300.350.8.66M.C.438...	15	96810487		96782484
S2.140.300.350.8.66M.D.438...	15	96810488		96308241
S2.140.300.350.8.66M.H.438...	15	96810489	96308289	
S3.110.500.220.10.66L.S.417...	15	96810506		96782485
S3.110.500.220.10.66L.C.417...	15	96810507		96782485
S3.110.500.220.10.66L.D.417...	15	96810508		96308244
S3.110.500.220.10.66L.H.417...	15	96810509	96308208	
S3.110.500.350.10.66L.S.474...	15	96810514		96782485
S3.110.500.350.10.66L.C.474...	15	96810515		96782485
S3.110.500.350.10.66L.D.474...	15	96810516		96308244
S3.110.500.350.10.66L.H.474...	15	96810517	96308208	
S3.110.500.500.8.66L.S.426...	15	96810522		96782485
S3.110.500.500.8.66L.C.426...	15	96810523		96782485
S3.110.500.500.8.66L.D.426...	15	96810524		96308244
S3.110.500.500.8.66L.H.426...	15	96810525	96308208	
S3.120.300.500.8.66M.S.449...	15	96810526		96782484
S3.120.300.500.8.66M.C.449...	15	96810527		96782484
S3.120.300.500.8.66M.D.449...	15	96810528		96308241
S3.120.300.500.8.66M.H.449...	15	96810529	96308289	
S3.120.600.350.10.66E.S.470...	15	96810510		96782486
S3.120.600.350.10.66E.C.470...	15	96810511		96782486
S3.120.600.350.10.66E.D.470...	15	96810512		96308245
S3.120.600.350.10.66E.H.470...	15	96810513	96308208	
S3.120.600.500.8.66E.S.432...	15	96810518		96782486
S3.120.600.500.8.66E.C.432...	15	96810519		96782486
S3.120.600.500.8.66E.D.432...	15	96810520		96308245
S3.120.600.500.8.66E.H.432...	15	96810521	96308208	

¹ Pumps of installation type H include the standard horizontal stand. Pumps with material code G or Q include a painted-steel stand. If another horizontal stand is required, order a pump of installation type D together with the required stand.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

Stainless steel impeller, 3 x 400/690 V

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.100.200.650.4.66H.S.406.Q.N.D...	10	96811703			96641489
S1.100.200.650.4.66H.C.406.Q.N.D...	10	96811704			96641489
S1.100.200.650.4.66H.H.406.Q.N.D...	10	96811705	96308289		
S1.100.200.650.4.66H.D.406.Q.N.D...	10	96811739		96308240	
S2.100.200.550.4.66M.S.338.Q.N.D...	10	96811712			96641489
S2.100.200.550.4.66M.C.338.Q.N.D...	10	96811713			96641489
S2.100.200.550.4.66M.H.338.Q.N.D...	10	96811714	96308289		
S2.100.200.550.4.66M.D.338.Q.N.D...	10	96811742		96308240	
S2.100.200.650.4.66M.S.350.Q.N.D...	10	96811718			96641489
S2.100.200.650.4.66M.C.350.Q.N.D...	10	96811719			96641489
S2.100.200.650.4.66M.H.350.Q.N.D...	10	96811720	96308289		
S2.100.200.650.4.66M.D.350.Q.N.D...	10	96811744		96308240	
S2.110.250.650.4.66L.S.327.Q.N.D...	10	96811715			96782483
S2.110.250.650.4.66L.C.327.Q.N.D...	10	96811716			96782483
S2.110.250.650.4.66L.D.327.Q.N.D...	10	96811717		96308241	
S2.110.250.650.4.66L.H.327.Q.N.D...	10	96811743	96308289		
S2.120.250.500.8.66H.S.520.Q.N.D...	10	96811709			96782483
S2.120.250.500.8.66H.C.520.Q.N.D...	10	96811710			96782483
S2.120.250.500.8.66H.D.520.Q.N.D...	10	96811711		96308241	
S2.120.250.500.8.66H.H.520.Q.N.D...	10	96811741	96308208		
S2.140.300.350.8.66M.S.438.Q.N.D...	10	96811706			96782484
S2.140.300.350.8.66M.C.438.Q.N.D...	10	96811707			96782484
S2.140.300.350.8.66M.D.438.Q.N.D...	10	96811708		96308241	
S2.140.300.350.8.66M.H.438.Q.N.D...	10	96811740	96308289		
S3.110.500.220.10.66L.S.417.Q.N.D...	10	96811721			96782485
S3.110.500.220.10.66L.C.417.Q.N.D...	10	96811722			96782485
S3.110.500.220.10.66L.D.417.Q.N.D...	10	96811723		96308244	
S3.110.500.220.10.66L.H.417.Q.N.D...	10	96811745	96308208		
S3.110.500.350.10.66L.S.474.Q.N.D...	10	96811727			96782485
S3.110.500.350.10.66L.C.474.Q.N.D...	10	96811728			96782485
S3.110.500.350.10.66L.D.474.Q.N.D...	10	96811729		96308244	
S3.110.500.350.10.66L.H.474.Q.N.D...	10	96811747	96308208		
S3.110.500.500.8.66L.S.426.Q.N.D...	10	96811733			96782485
S3.110.500.500.8.66L.C.426.Q.N.D...	10	96811734			96782485
S3.110.500.500.8.66L.D.426.Q.N.D...	10	96811735		96308244	
S3.110.500.500.8.66L.H.426.Q.N.D...	10	96811749	96308208		
S3.120.300.500.8.66M.S.449.Q.N.D...	10	96811736			96782484
S3.120.300.500.8.66M.C.449.Q.N.D...	10	96811737			96782484
S3.120.300.500.8.66M.D.449.Q.N.D...	10	96811738		96308241	
S3.120.300.500.8.66M.H.449.Q.N.D...	10	96811750	96308289		
S3.120.600.350.10.66E.S.470.Q.N.D...	10	96811724			96782486
S3.120.600.350.10.66E.C.470.Q.N.D...	10	96811725			96782486
S3.120.600.350.10.66E.D.470.Q.N.D...	10	96811726		96308245	
S3.120.600.350.10.66E.H.470.Q.N.D...	10	96811746	96308208		
S3.120.600.500.8.66E.S.432.Q.N.D...	10	96811730			96782486
S3.120.600.500.8.66E.C.432.Q.N.D...	10	96811731			96782486
S3.120.600.500.8.66E.D.432.Q.N.D...	10	96811732		96308245	
S3.120.600.500.8.66E.H.432.Q.N.D...	10	96811748	96308208		

¹ Pumps of installation type H include the standard horizontal stand. Pumps with material code G or Q include a painted-steel stand. If another horizontal stand is required, order a pump of installation type D together with the required stand.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

Explosion-proof pumps

Cast iron, 3 x 400/690 V

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.80.200.650.4.66H.S.432.G.EX.D...	10	99442131			96641489
S1.80.200.650.4.66H.C.432.G.EX.D...	10	99442132			96641489
S1.80.200.650.4.66H.D.432.G.EX.D...	10	99442133		96308240	
S1.80.200.650.4.66H.H.432.G.EX.D...	10	99442134	96308255		
S2.100.200.550.4.66M.S.338.G.EX.D...	10	95112791			96641489
S2.100.200.550.4.66M.C.338.G.EX.D...	10	95112792			96641489
S2.100.200.550.4.66M.D.338.G.EX.D...	10	95112793		96308240	
S2.100.200.550.4.66M.H.338.G.EX.D...	10	96796608	96308255		
S2.100.200.650.4.66M.S.350.G.EX.D...	10	95112797			96641489
S2.100.200.650.4.66M.C.350.G.EX.D...	10	95112798			96641489
S2.100.200.650.4.66M.D.350.G.EX.D...	10	95112799		96308240	
S2.100.200.650.4.66M.H.350.G.EX.D...	10	96796618	96308255		
S2.110.250.650.4.66L.S.327.G.EX.D...	10	95112794			96782483
S2.110.250.650.4.66L.C.327.G.EX.D...	10	95112795			96782483
S2.110.250.650.4.66L.D.327.G.EX.D...	10	95112796		96308241	
S2.110.250.650.4.66L.H.327.G.EX.D...	10	96796613	96308255		
S2.105.250.500.8.66H.S.533.G.EX.D...	10	99442925			96782483
S2.105.250.500.8.66H.C.533.G.EX.D...	10	99442926			96782483
S2.105.250.500.8.66H.D.533.G.EX.D...	10	99442927		96308241	
S2.105.250.500.8.66H.H.533.G.EX.D...	10	99442928	96308192		
S3.110.500.500.8.66L.S.426.G.EX.D...	10	95112803			96782485
S3.110.500.500.8.66L.C.426.G.EX.D...	10	95112804			96782485
S3.110.500.500.8.66L.D.426.G.EX.D...	10	95112805		96308244	
S3.110.500.500.8.66L.H.426.G.EX.D...	10	96796628	96308192		
S3.120.300.500.8.66M.S.449.G.EX.D...	10	95112806			96782484
S3.120.300.500.8.66M.C.449.G.EX.D...	10	95112807			96782484
S3.120.300.500.8.66M.D.449.G.EX.D...	10	95112808		96308241	
S3.120.300.500.8.66M.H.449.G.EX.D...	10	96796633	96308255		
S3.120.600.500.8.66E.S.432.G.EX.D...	10	95112800			96782486
S3.120.600.500.8.66E.C.432.G.EX.D...	10	95112801			96782486
S3.120.600.500.8.66E.D.432.G.EX.D...	10	95112802		96308245	
S3.120.600.500.8.66E.H.432.G.EX.D...	10	96796623	96308192		

¹ Pumps of installation type H include the standard horizontal stand. Pumps with material code G or Q include a painted-steel stand. If another horizontal stand is required, order a pump of installation type D together with the required stand.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

Cast iron, 3 x 415 V

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.80.200.650.4.66H.S.432.G.EX.D...	10	99442135			96641489
S1.80.200.650.4.66H.C.432.G.EX.D...	10	99442136			96641489
S1.80.200.650.4.66H.D.432.G.EX.D...	10	99442137		96308240	
S1.80.200.650.4.66H.H.432.G.EX.D...	10	99442138	96308255		
S2.100.200.550.4.66M.S.338.G.EX.D...	10	96796605			96641489
S2.100.200.550.4.66M.C.338.G.EX.D...	10	96796606			96641489
S2.100.200.550.4.66M.D.338.G.EX.D...	10	96796607		96308240	
S2.100.200.550.4.66M.H.338.G.EX.D...	10	96796609	96308255		
S2.100.200.650.4.66M.S.350.G.EX.D...	10	96796615			96641489
S2.100.200.650.4.66M.C.350.G.EX.D...	10	96796616			96641489
S2.100.200.650.4.66M.D.350.G.EX.D...	10	96796617		96308240	
S2.100.200.650.4.66M.H.350.G.EX.D...	10	96796619	96308255		
S2.110.250.650.4.66L.S.327.G.EX.D...	10	96796610			96782483
S2.110.250.650.4.66L.C.327.G.EX.D...	10	96796611			96782483
S2.110.250.650.4.66L.D.327.G.EX.D...	10	96796612		96308241	
S2.110.250.650.4.66L.H.327.G.EX.D...	10	96796614	96308255		
S2.105.250.500.8.66H.S.533.G.EX.D...	10	99442929			96782483
S2.105.250.500.8.66H.C.533.G.EX.D...	10	99442930			96782483
S2.105.250.500.8.66H.D.533.G.EX.D...	10	99442931		96308241	
S2.105.250.500.8.66H.H.533.G.EX.D...	10	99442932	96308192		
S3.110.500.500.8.66L.S.426.G.EX.D...	10	96796625			96782485
S3.110.500.500.8.66L.C.426.G.EX.D...	10	96796626			96782485
S3.110.500.500.8.66L.D.426.G.EX.D...	10	96796627		96308244	
S3.110.500.500.8.66L.H.426.G.EX.D...	10	96796629	96308192		
S3.120.300.500.8.66M.S.449.G.EX.D...	10	96796630			96782484
S3.120.300.500.8.66M.C.449.G.EX.D...	10	96796631			96782484
S3.120.300.500.8.66M.D.449.G.EX.D...	10	96796632		96308241	
S3.120.300.500.8.66M.H.449.G.EX.D...	10	96796634	96308255		
S3.120.600.500.8.66E.S.432.G.EX.D...	10	96796620			96782486
S3.120.600.500.8.66E.C.432.G.EX.D...	10	96796621			96782486
S3.120.600.500.8.66E.D.432.G.EX.D...	10	96796622		96308245	
S3.120.600.500.8.66E.H.432.G.EX.D...	10	96796624	96308192		

¹ Pumps of installation type H include the standard horizontal stand. Pumps with material code G or Q include a painted-steel stand. If another horizontal stand is required, order a pump of installation type D together with the required stand.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

Stainless steel impeller, 3 x 400/690 V

Pump type	Cable length [m]	Pump	Accessories		
			Horizontal base stand ¹	To be ordered separately	
				Vertical base plate	Auto-coupling system ²
S1.100.200.650.4.66H.S.406.Q.EX.D...	10	96811959			96641489
S1.100.200.650.4.66H.C.406.Q.EX.D...	10	96811960			96641489
S1.100.200.650.4.66H.D.406.Q.EX.D...	10	96811961		96308240	
S1.100.200.650.4.66H.H.406.Q.EX.D...	10	96811962	96308255		
S2.100.200.550.4.66M.S.338.Q.EX.D...	10	96811967			96641489
S2.100.200.550.4.66M.C.338.Q.EX.D...	10	96811968			96641489
S2.100.200.550.4.66M.D.338.Q.EX.D...	10	96811969		96308240	
S2.100.200.550.4.66M.H.338.Q.EX.D...	10	96811970	96308255		
S2.100.200.650.4.66M.S.350.Q.EX.D...	10	96811975			96641489
S2.100.200.650.4.66M.C.350.Q.EX.D...	10	96811976			96641489
S2.100.200.650.4.66M.D.350.Q.EX.D...	10	96811977		96308240	
S2.100.200.650.4.66M.H.350.Q.EX.D...	10	96811978	96308255		
S2.110.250.650.4.66L.S.327.Q.EX.D...	10	96811971			96782483
S2.110.250.650.4.66L.C.327.Q.EX.D...	10	96811972			96782483
S2.110.250.650.4.66L.D.327.Q.EX.D...	10	96811973		96308241	
S2.110.250.650.4.66L.H.327.Q.EX.D...	10	96811974	96308255		
S2.120.250.500.8.66H.S.520.Q.EX.D...	10	96811963			96782483
S2.120.250.500.8.66H.C.520.Q.EX.D...	10	96811964			96782483
S2.120.250.500.8.66H.D.520.Q.EX.D...	10	96811965		96308241	
S2.120.250.500.8.66H.H.520.Q.EX.D...	10	96811966	96308192		
S3.110.500.500.8.66L.S.426.Q.EX.D...	10	96811983			96782485
S3.110.500.500.8.66L.C.426.Q.EX.D...	10	96811984			96782485
S3.110.500.500.8.66L.D.426.Q.EX.D...	10	96811985		96308244	
S3.110.500.500.8.66L.H.426.Q.EX.D...	10	96811986	96308192		
S3.120.300.500.8.66M.S.449.Q.EX.D...	10	96811987			96782484
S3.120.300.500.8.66M.C.449.Q.EX.D...	10	96811988			96782484
S3.120.300.500.8.66M.D.449.Q.EX.D...	10	96811989		96308241	
S3.120.300.500.8.66M.H.449.Q.EX.D...	10	96811990	96308255		
S3.120.600.500.8.66E.S.432.Q.EX.D...	10	96811979			96782486
S3.120.600.500.8.66E.C.432.Q.EX.D...	10	96811980			96782486
S3.120.600.500.8.66E.D.432.Q.EX.D...	10	96811981		96308245	
S3.120.600.500.8.66E.H.432.Q.EX.D...	10	96811982	96308192		

¹ Pumps of installation type H include the standard horizontal stand. Pumps with material code G or Q include a painted-steel stand. If another horizontal stand is required, order a pump of installation type D together with the required stand.

² Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.

6. Variants

List of variants

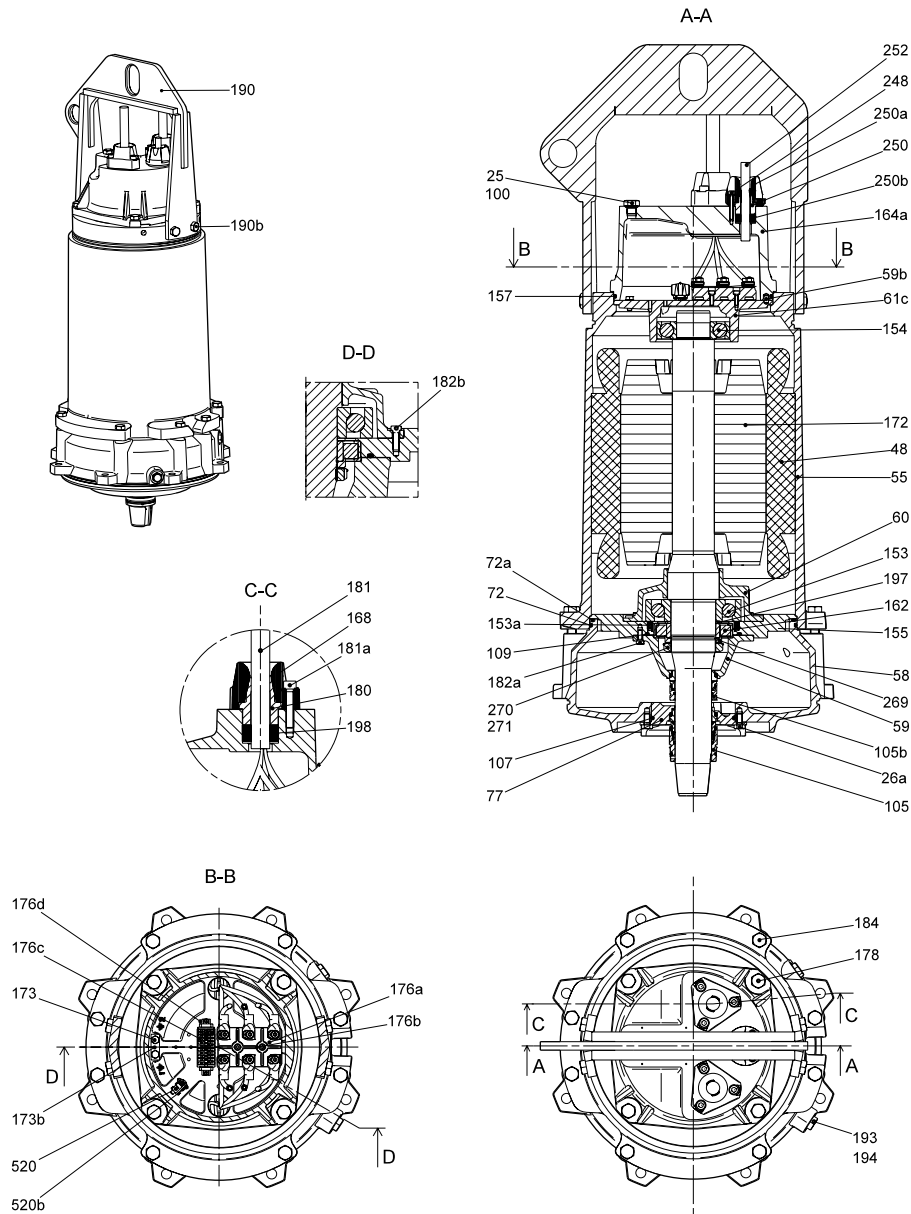
Motor			
Various cable lengths		15 m	
		25 m	
		50 m	
		10 m	
		15 m	
EMC power cables	Screened power cables for variable-speed drives	25 m	
		50 m	
Special motor		Insulation class H	
		Special voltage	
Special oil	Non-toxic Shell Ondina X420 ¹		
Motor protection			
Pt100 on lower bearing + Pt100 on upper bearing + Pt100 on windings		Sensor set 2	
Pt100 on lower bearing + Pt100 on upper bearing + Pt100 on windings + PVS3 vibration sensor		Sensor set 3	
External water-in-oil sensor		WIO	
Coating			
Special paint thickness	300 µm (painted twice)		
	450 µm (painted three times)		
Impeller (external surface)	Epoxy coating (NCS 900N/RAL 9005 gloss 30, black)		
	Belzona 1321 coating (brush painted, blue)		
Impeller (internal surface)	Chesterton ARC 855 ceramic coating (grey)		
Pump housing (internal)	Epoxy coating (NCS 900N/RAL 9005 gloss 30, black)		
	Belzona 1321 coating (brush painted, blue)		
	Chesterton ARC 855 ceramic coating (grey)		
Inlet cover	Epoxy coating (NCS 900N/RAL 9005 gloss 30, black)		
	Belzona 1321 coating (brush painted, blue)		
	Chesterton ARC 855 ceramic coating (grey)		
Zinc anodes (outside of inlet cover/pump housing)	3 pcs.		
Materials			
Stainless steel lifting bracket	AISI 316		
Stainless steel shaft	AISI 329 / 1.4462		
Impeller	Duplex stainless steel ASTM A890 Grade 3A		
Ceramic coating for pump housing, impeller and suction cover	Belzona 1321/chesterton ACR 855		
Shaft seals			
Standard	Seal rings: RBSC/RBSC	Rubber parts: FKM	Metal parts: AISI316L
FPV option 1	Seal rings: NiTC/NiTC	Rubber parts: FKM	Metal parts: AISI316L
FPV option 2	Seal rings: SSiC/SSiC	Rubber parts: FKM	Metal parts: Duplex
Tests			
Test at specified duty on standard impeller curve			
Trimmed impeller for specified duty test			
Additional test of entire QH curve (including report)		5-10 points from pump performance curve	

Tests		
Different test standard	Efficiency guaranteed by Grundfos	ISO 9906:2012 grade 1E tolerances
		ISO 9906:2012 grade 1B/1U tolerances
		ISO 9906:2012 grade 2B/2U tolerances
Vibration test (including report)	According to Grundfos factory quality standard	
Performance test on dry test stand	Contact Grundfos	
NPSHr test	Contact Grundfos	
String test	Contact Grundfos	
Witness test	Contact Grundfos	
Miscellaneous		
Special packaging	Contact Grundfos	
Special nameplate	Contact Grundfos	
Old UK-guide shoe	Contact Grundfos / order guide shoe installation kit	
Other variants	Contact Grundfos	

¹ For pumps with WIO sensor Shell Ondina is not an option.

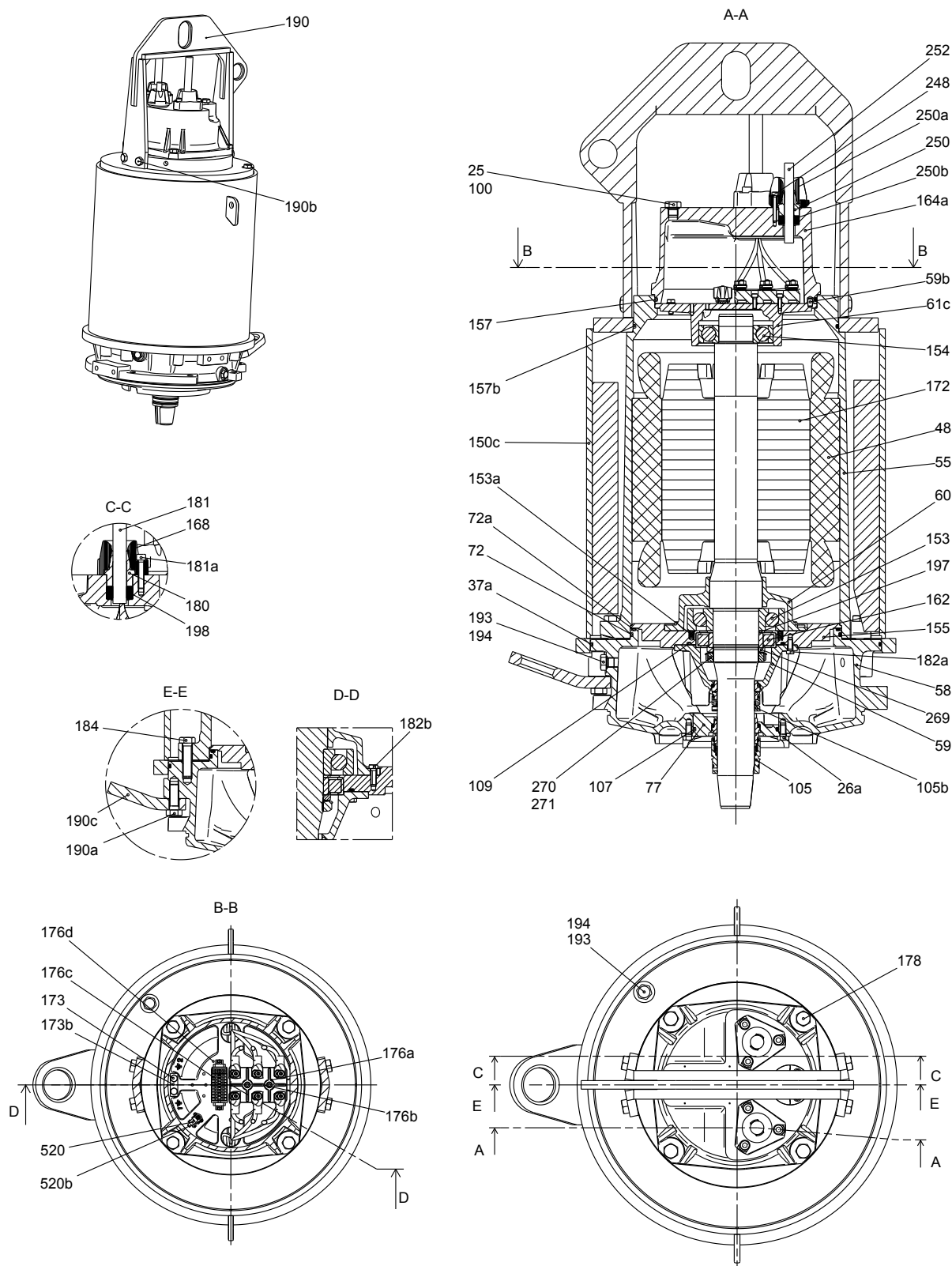
7. Construction

Sectional drawings, motor



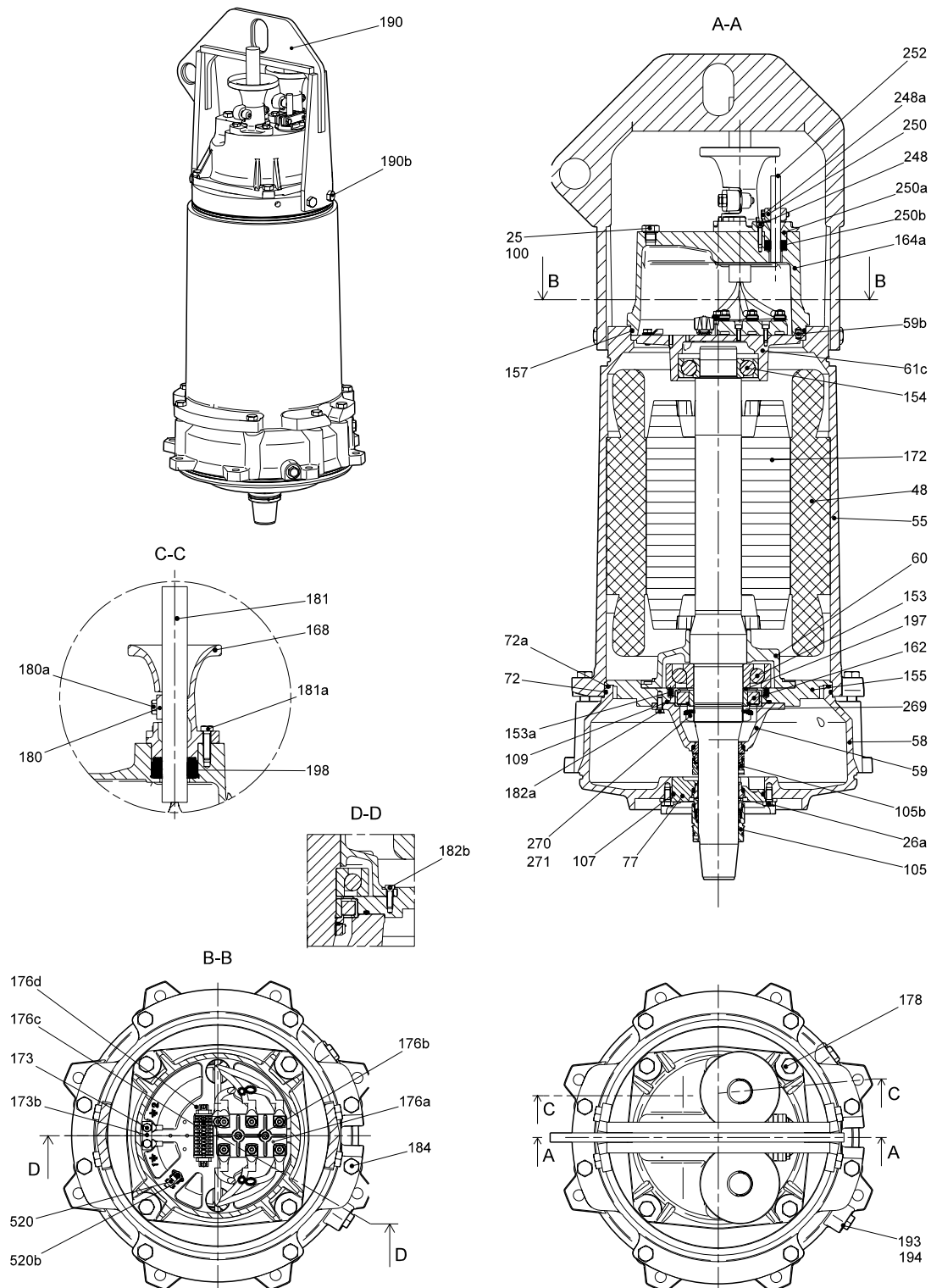
TM042611

Non-explosion-proof motor, without cooling jacket (installation type S)



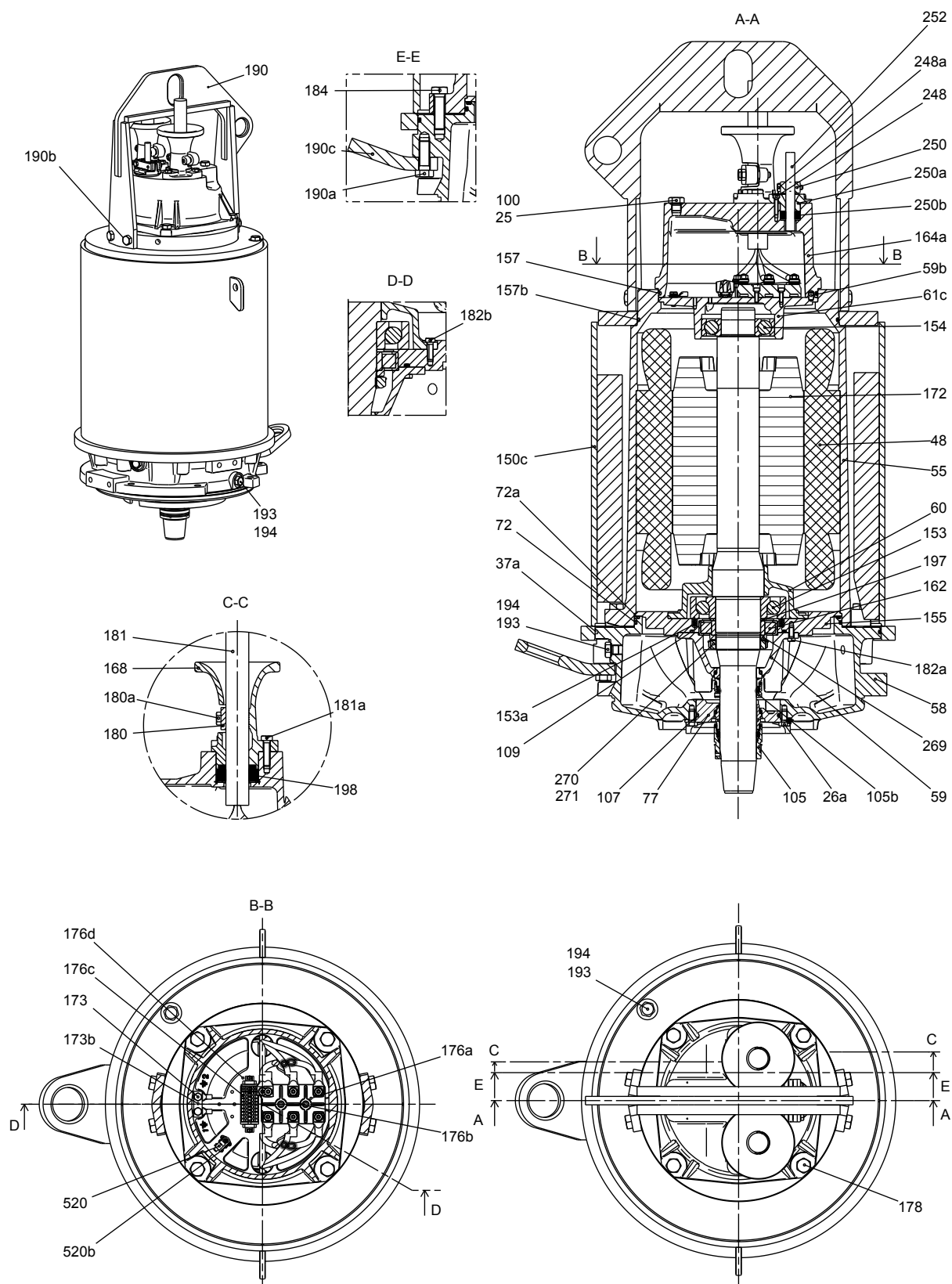
TM042612

Non-explosion-proof motor, with cooling jacket (installation types C, D and H)



TM042613

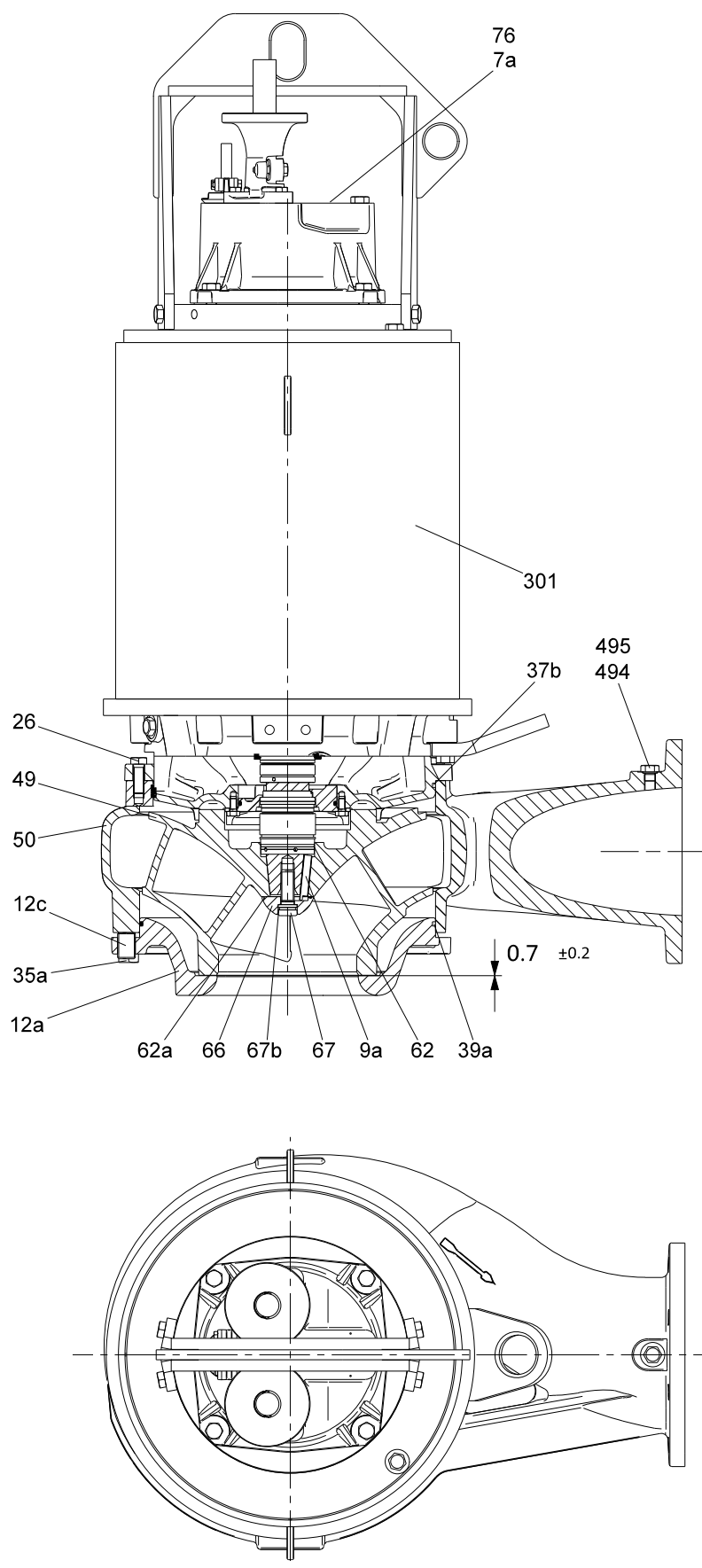
Explosion-proof motor, without cooling jacket (installation type S)



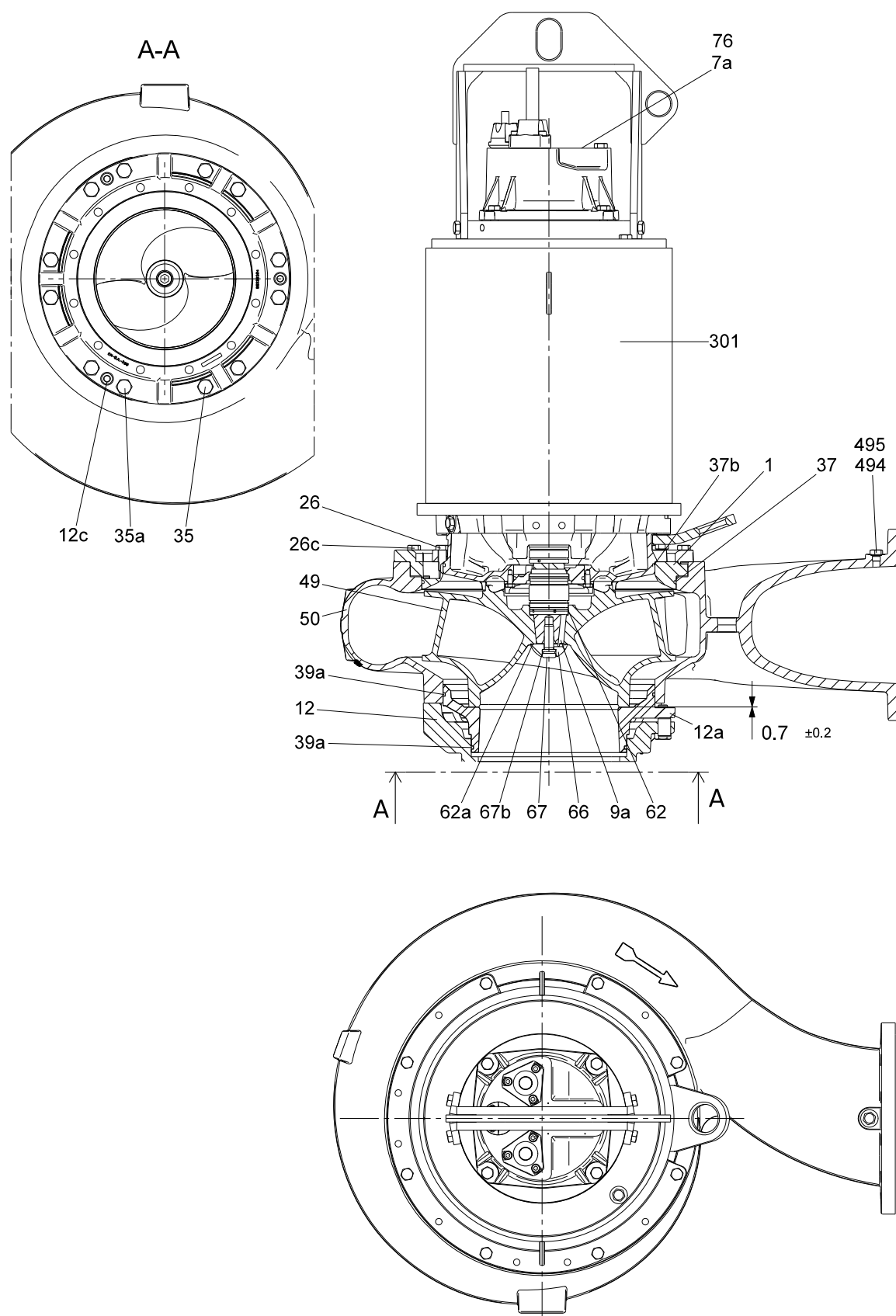
TM042614

Explosion-proof motor, with cooling jacket (installation types C, D and H)

Sectional drawings, pumps

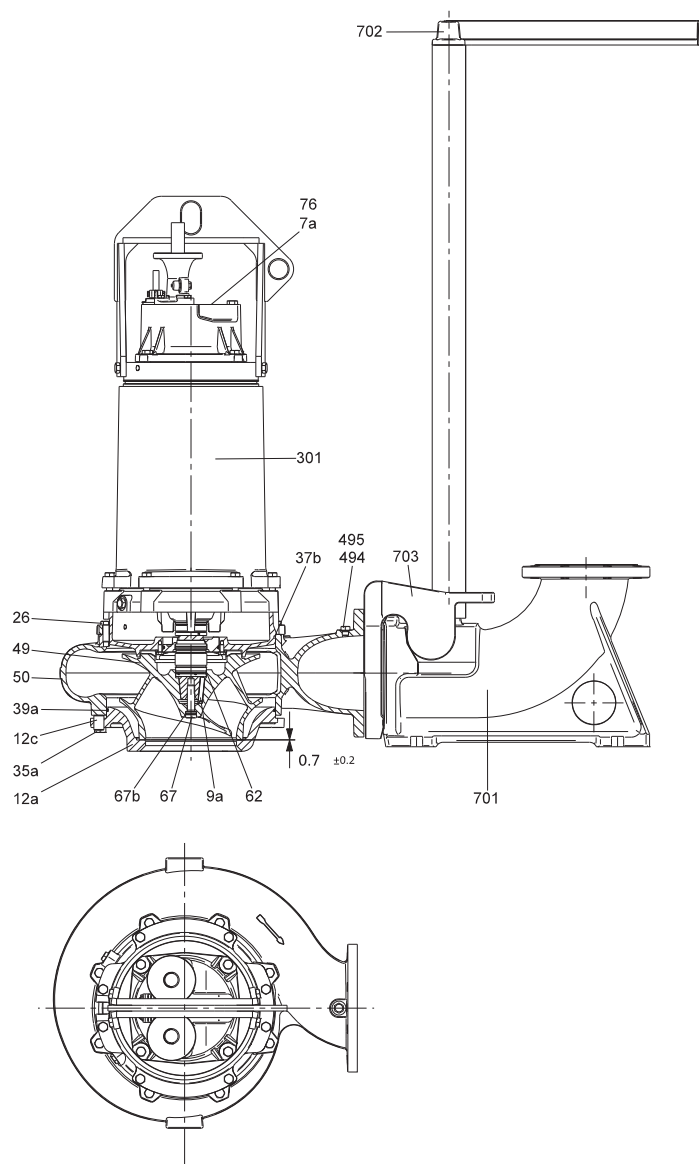


TM042589



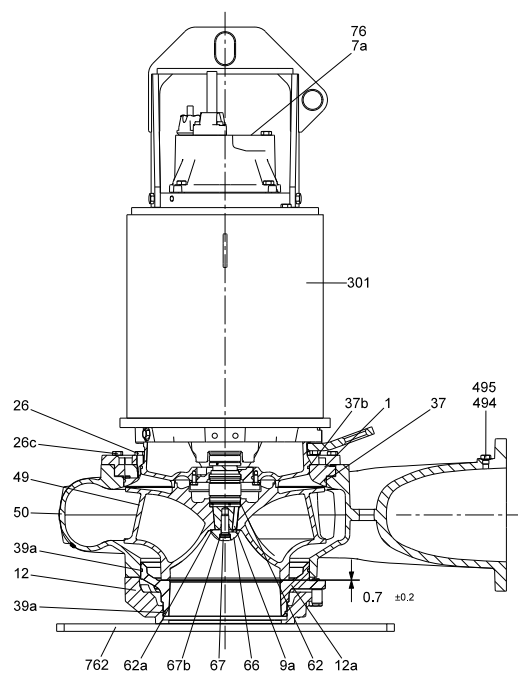
Basic pump, installation types D and H

TW042707



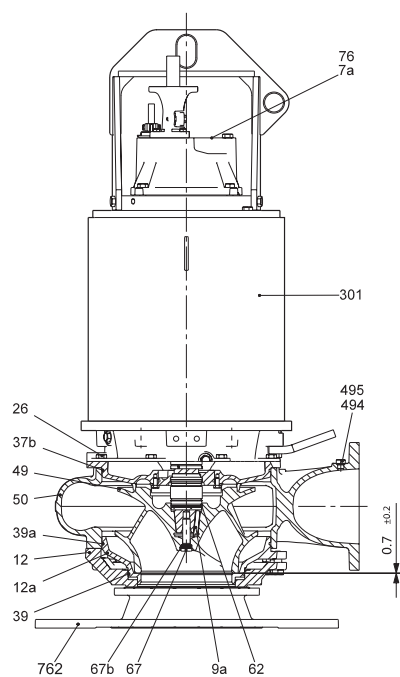
TM042708

Installation types S and C installation on auto coupling



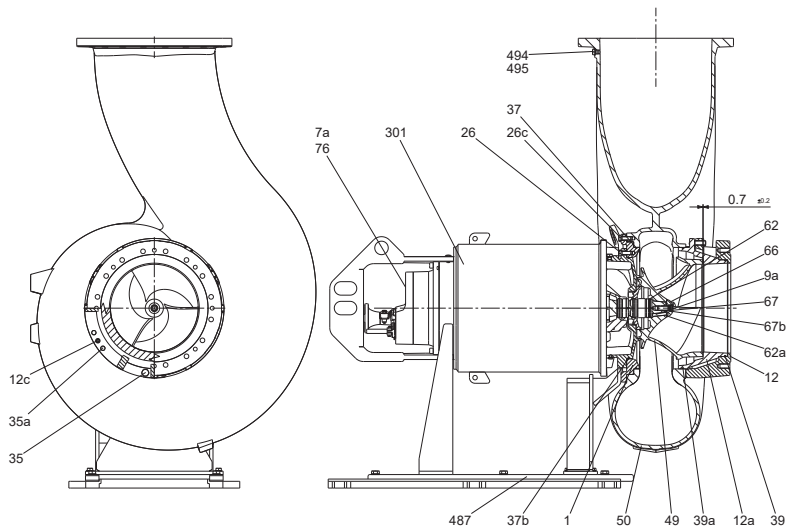
TM042585

Installation type D, dry, vertical installation on base plate - version 1



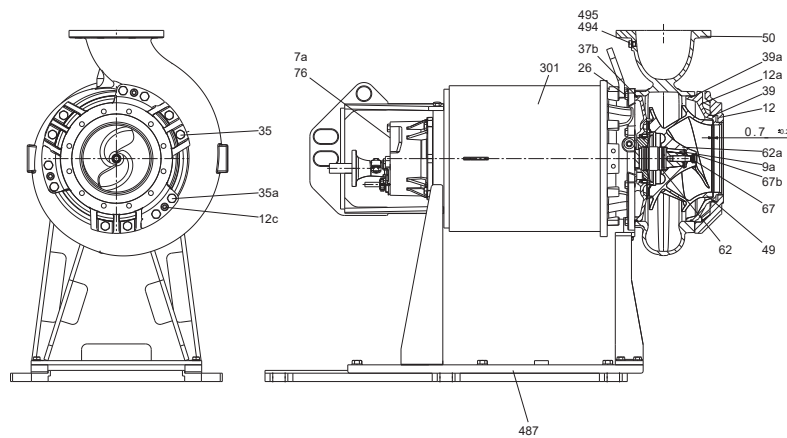
TM042588

Installation type D, dry, vertical pump on base plate - version 2



TM042590

Installation type H, dry, horizontal installation - version 1



TM042591

Installation type H, dry, horizontal installation - version 2

Components and material specification

Motor

Pos.	Component	Material	DIN W.Nr./ EN standard	AISI/ASTM
25	Pressure test plug	Stainless steel	1.4436	316
25a	Screw	Stainless steel	1.4436	316
26a	Screw	Stainless steel	1.4436	316
37a	O-ring			
48	Stator			
55	Stator housing	Cast iron ¹	EN-JL-1040	A48 30
58	Seal housing	Cast iron		
59	Bearing bracket cover	Cast iron		
59b	Pin	Steel		
60	Bearing bracket cover	Cast iron		
61c	Upper bearing bracket	Cast iron		
72	O-ring	NBR rubber		
72a	O-ring	NBR rubber		
77	Seal housing cover	Cast iron		
100	O-ring	NBR rubber		
105	Primary shaft seal	SiC/SiC or SiC/carbon		
105b	Secondary shaft seal	SiC/SiC or SiC/carbon		
107	O-ring	NBR rubber		
109	O-ring	Viton rubber		
150c	Cooling jacket	Galvanised steel		
153	Ball bearing	Stainless steel		
153a	Spring	Steel		
154	Ball bearing	Stainless steel		
155	Lower bearing bracket	Cast iron ¹		
157	O-ring	NBR rubber		
157b	O-ring	NBR rubber		
162	Roller bearing	Steel, brass or steel cage		
164a	Motor top cover	Cast iron ¹		
168	Cable entry	PA or cast iron ²		
172	Shaft with rotor	High tensile	1.7225	
173	Screw	Stainless steel	1.4436	316
173b	Earth terminal			
176a	Terminal block			
176b	Screw	Stainless steel	1.4436	316
176c	Terminal block			
176d	Terminal block			
178	Screw	Stainless steel	1.4436	316
180	Cable clamp	PA or cast iron		
180a	Screw	Stainless steel		
181	Cable	ATON		
181a	Screw	Stainless steel	1.4436	316
182a	Screw	Stainless steel	1.4436	316
182b	Hexagon socket head cap screw	Stainless steel	1.4436	316
184	Screw	Stainless steel	1.4436	316
190	Lifting bracket	Steel		
190a	Screw	Stainless steel		
190b	Screw	Stainless steel		
190c	Lifting bracket (lower)	Galvanised steel		
193	Plug	Stainless steel	1.4408	316
194	O-ring	NBR rubber		
197	Washer	Stainless steel	1.4436	316
198	Rubber seal			

Pos.	Component	Material	DIN W.Nr./ EN standard	AISI/ASTM
248	Screw	Stainless steel	1.4436	316
248a	Screw	Stainless steel	1.4436	316
250	Cable clamp	PA or cast iron		
250a	Cable entry	PA or cast iron		
250b	Rubber seal			
252	Cable	ATON		
269	Angle ring	Steel		
270	Lock nut	Steel		
271	Lock washer	Steel		
520	Moisture switch ³			
520b	Nut	Stainless steel	1.4436	316

¹ Available in stainless steel (custom-built option).

² Ex versions have cast-iron cable entry.

³ Ex version have two moisture switches.

Pump

Pos.	Component	Material	DIN W.Nr./ EN standard	AISI/ASTM
1	Intermediate ring	Cast iron		
7a	Rivet	Stainless	1.4436	316
9a	Key (for keyway)	Stainless steel	1.4436	316
12	Flange	Cast iron		
12a	Inlet cover	Cast iron		
12c	Adjusting screw	Stainless steel	1.4436	316
26	Screw	Stainless steel	1.4436	316
26c	Screw	Stainless steel	1.4436	316
35	Screw	Stainless steel	1.4436	316
35a	Screw	Stainless steel	1.4436	316
37	O-ring	NBR rubber		
37b	O-ring	NBR rubber		
39	O-ring	NBR rubber		
39a	O-ring	NBR rubber		
49	Impeller	Cast iron ¹	EN-JL-1050	
50	Pump housing	Cast iron ¹	EN-JL-1050	
62	O-ring	NBR rubber		
62a	O-ring	NBR rubber		
66	Cap	Cast iron or stainless steel		
67	Impeller screw	Stainless steel	1.4436	316
67b	O-ring	NBR rubber		
76	Nameplate			
301	Motor housing			
487	Base stand, horizontal	Galvanised steel		
494	Plug	Stainless steel	1.4436	316
495	O-ring	NBR rubber		

¹ Available in stainless steel (custom-built option).

Accessories

Pos.	Component	Material
487	Base stand, horizontal	Steel
701	Auto-coupling base unit	Cast iron ¹
702	Upper guide rail bracket	Cast iron ¹

Pos.	Component	Material
703	Guide claw	Cast iron ¹
762	Base plate, vertical	Cast iron or steel
799	Anchor bolt	

¹ Available in stainless steel (custom-built option).

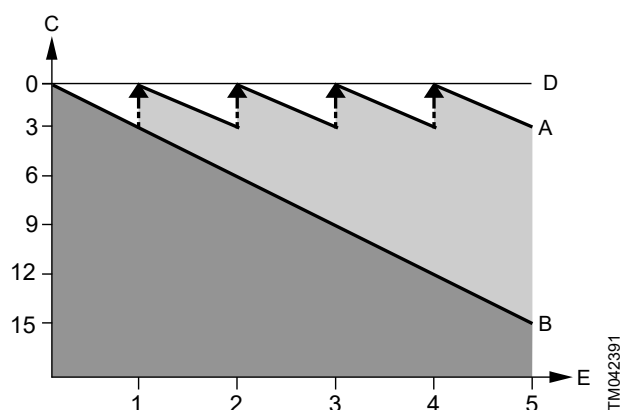
8. Product description

Features

SmartTrim

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

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



Impeller clearance adjustment cycle

Pos.	Description
D	Factory-set impeller clearance
C	Efficiency drop in %
B	Years

A: With Grundfos SmartTrim impeller clearance adjustment system

B: Without impeller clearance adjustment system

SmartSeal

For pumps with DN 250 outlet or larger, the Grundfos SmartSeal auto-coupling sealing mounted on the pump outlet flange provides a completely leak-proof connection between the pump and the base unit of the auto-coupling system. This optimises the efficiency of the entire pumping system and keeps operating costs at a minimum.

Bearings

The bearings are greased for life.

Main bearings: Double-row angular contact ball bearing.

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

Shaft seals

The pumps have a primary and a secondary shaft seal.

The material combination of the primary shaft seal of all pump types is silicon carbide/silicon carbide. For the secondary shaft seal, the material combination is silicon carbide/carbon.

The shaft seals are placed in the oil chamber of the pump. The oil chamber provides reliable sealing between the pumped liquid and the motor.

The shaft seals have no springs or other parts in direct contact with the pumped liquid. This prevents rags and fibres from getting caught. The shaft seals are bidirectional, meaning that they can operate in either direction, thus allowing for opposite rotation caused by back-flow of liquid through the pump.

Motor

The motor is a watertight, totally encapsulated motor with:

- Insulation class F (155 °C).
- Temperature rise class F (105 K).
- Enclosure class IP68.

For motor protection and sensors, see [Sensors](#), page [Sensors](#).

Cables

The pumps have H07RN-F AT power cables as standard or screened ATON EMC VSCCB power cables on request.

The pumps have H07RN-F 450/750 V control cables as standard or screened ATON VSCB 450/750 V control cables on request.

The cables are 10 m long as standard. Other cable lengths are available on request. See [List of variants](#), page [List of variants](#).

The number and dimension of cables depend on the motor size and number of poles.

Motor power [kW]	Voltage	Cable [power + control]
22	3 x 415 V 3 x 400/690 V	2 x 4 x 10 mm ² + 1 x 7 x 1.5 mm ²
35		
50		2 x 4 x 16 mm ² + 1 x 7 x 1.5 mm ²
58		2 x 4 x 25 mm ² + 1 x 7 x 1.5 mm ²
68		

Power cable

Cable type [mm ²]	Outer cable diameter [mm]	Weight [kg/m]	Bending radius [cm]
4 x 10	20.9 - 23.4	0.38	14
4 x 16	23.8 - 26.3	1.26	16
4 x 25	28.9 - 31.4	1.88	19

Control cable

Cable type [mm ²]	Outer cable diameter [mm]	Weight [kg/m]	Bending radius [cm]
7 x 1.5	14.4 - 16.4	0.35	10

Cable entry

Watertight PA or cast iron cable entry with soft shape and sealing rings to prevent damage of the cable or leaks.

Sensors

As standard, the pump is equipped with these switches or sensors:

- Three thermal switches (Klixon) or three thermal sensors in the stator windings.
- One moisture switch under the motor top cover.

An explosion-proof pump is equipped with:

- Three thermal switches (Klixon) or three thermal sensors in the stator windings.
- One moisture switch under the motor top cover and one in the stator housing in the dry end of the motor.

Customised sensor options

1. WIO (water-in-oil) sensor
The WIO sensor measures the water content in the oil and converts the value into an analog current signal. The two sensor conductors are for power supply as well as for carrying the signal to the measuring device or controller. The sensor measures the water content from 0 to 20 %. It also sends a signal if the water content is outside the normal range (warning), or if there is air in the oil chamber (alarm). The sensor is fitted in a stainless steel tube for mechanical protection. The sensor is either built-in with the motor (Ex) or installed as an accessory. If the sensor is installed externally, it is fitted in a plastic hose for mechanical protection. The WIO sensor is connected to Grundfos IO 113.
2. PVS 3 (pump vibration sensor)
The vibration sensor monitors the vibration level of the pump by using measurements of three axes and combining them into a single measurement outputted in an analog current signal. The sensor acts only as a general indicator of changes in the vibration levels. PVS3 is to be connected to Grundfos IO 113 and SM 113. A substantial increase in vibration will trigger a warning or an alarm. An increase in vibrations can be caused by a clogged impeller, worn bearings, closed force main valves, etc. indicating that service inspection should be carried out quickly in order to protect the pump or the pipe system from being damaged.
3. Bearing temperature sensor
Pt100 bearing temperature sensor installed within the motor housing. Sensors to be connected using SM 113 and IO 113.

Testing

All pumps are tested before leaving the factory. The factory test report is based on ISO 9906:2012, grade 3B. Test reports can be ordered directly with the pump or can be ordered separately based on the pump serial number. Other tests or third-party inspection certificates are available on request. See [List of variants](#).

Related information

[List of variants](#)

Operating conditions

Pumps without cooling jacket in submerged installation (type S):

- Continuous operation when the pump is completely submerged to the top of the motor.
- Intermittent operation with a maximum of 15 starts per hour when the pump is submerged to the middle of the motor and with short periods of operation down to the top of the pump housing.

Warning: A motor protection device must be used to cut off the power supply in case of overheating.

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

Pumps with cooling jacket in submerged and dry installation (types C, D, and H):

- Continuous and intermittent operation with a maximum of 15 starts per hour with water level down to the top of the pump housing.

Pumped liquids

pH value: 6-12

Liquid temperature: 0-40 °C

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

Sound pressure

The sound pressure level of the pump is lower than the limiting values stated in Machinery Directive, 2006/42/EC.

Motor range

Motor power [kW]	Number of poles
22	10
35	8/10
50	8
58	4
68	4

Explosion-proof pumps

Use explosion-proof pumps in potentially explosive environments.

Note: All installations must be approved by the local authorities.

Relevant standards/regulations

- EN ISO 80079-36
- EN ISO 80079-37
- EN 60079-0
- EN 60079-1
- IEC 60079-0
- IEC 60079-1

Explosion protection classification (IECEx & ATEX/UKEX)

- Group II, Category 2, Gas or vapor environment
- Ex db eb h mb IIB T3 or T4 Gb ($T_{amb} = -5^{\circ}\text{C}$ to $+40^{\circ}\text{C}$)

Operation with frequency converter

Only temperature class T3.

Notified body

SGS Baseefa for UKEX and IECEx.

SGS Fimko for ATEX.

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.

Grundfos pump controllers are ideally suited to Grundfos S pumps, and include:

- Grundfos Dedicated Controls (DC)
- Grundfos LC controllers

Grundfos DC Controllers



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
- supports 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, see the 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>

Additional features, CUE or VFD

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

Features and benefits:

- anti-blocking
- automatic energy optimisation
- specific-energy test
- output frequency
- monitoring of:
 - voltage ¹⁾
 - current ¹⁾
 - phase sequence ¹⁾
 - power ¹⁾
 - energy ¹⁾
 - torque ¹⁾
- reverse start ²⁾
- run flushing
- stop flushing
- PID control.

¹⁾ These functions are only available with a Grundfos CUE.

²⁾ Do not reverse at full speed at any time. When reduced reverse operation settings are set, make sure that constant torque is enabled in Variable Frequency Drive (VFD) (i.e. Grundfos CUE, Siemens Simatic, ABB, Schneider Electric or similar brands) to have maximum torque available when reversing.

Grundfos LC controllers

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

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

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

IO 113

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

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

IO 113 can be connected to the Grundfos Dedicated Controls system and allows advanced monitoring functions:

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

SM 113

The SM 113 module is used for collection and transfer of sensor data in pumps and includes a large number of sensors.

SM 113 can be placed either inside the pump (allowing fewer sensor conductors out of the pump) or in the control cabinet next to the pump installation.

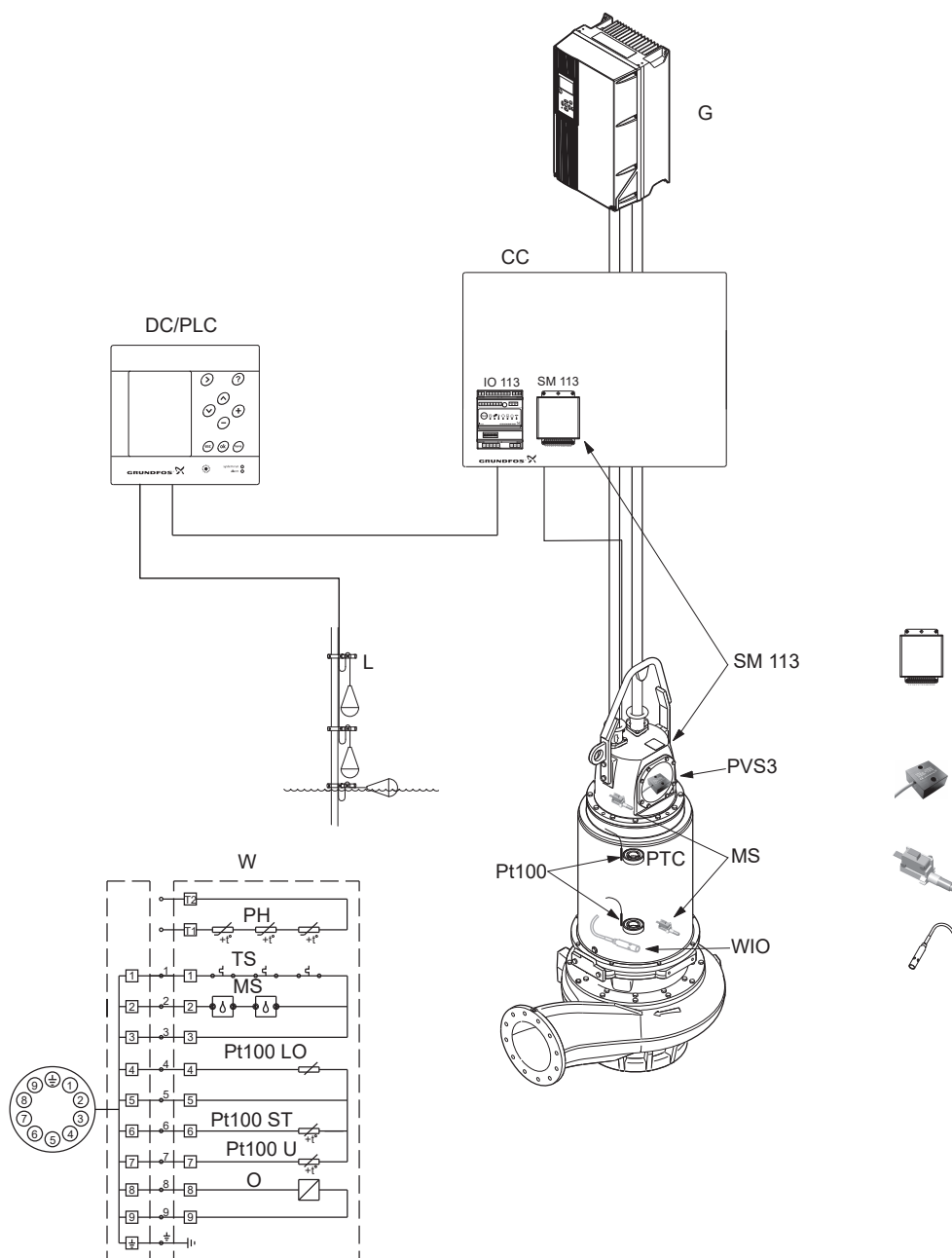
SM 113 works together with IO 113 through a power-line communication using the Grundfos GENIbus protocol.

SM 113 can collect data from:

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

MP 204

The MP 204 control cabinet can be used as a stand-alone motor protector. MP 204 may also be incorporated in a Grundfos Dedicated Controls system in which 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.

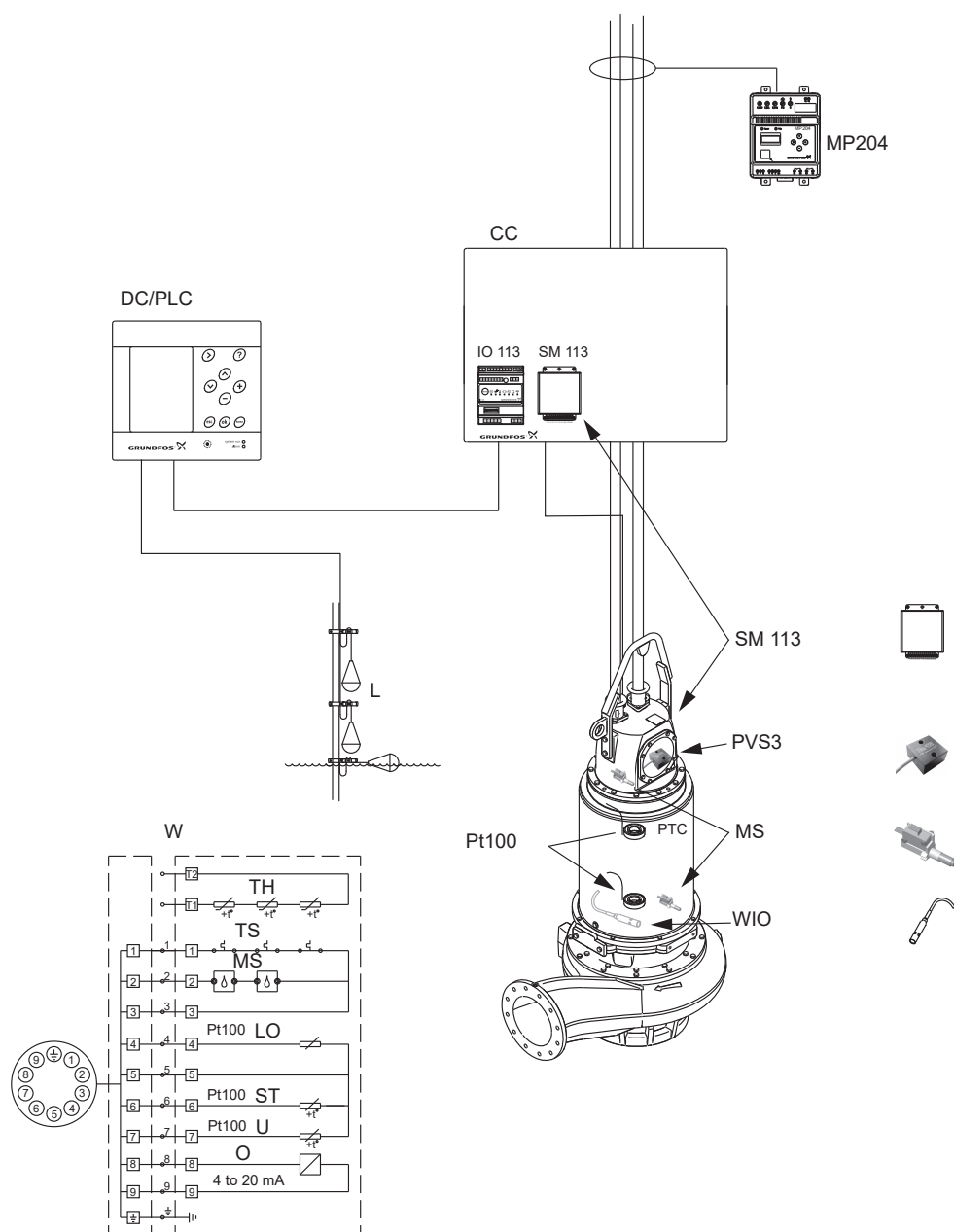


TM068753

Pump with frequency converter operation

Pos.	Description
G	Grundfos CUE, < 250 kW, or another frequency converter.
CC	Control cabinet
DC/PLC	Dedicated Controls or PLC
L	Level sensor
SM 113	SM 113, optional
PVS3	PVS3 sensor, optional
MS	Moisture switches
WIO	WIO sensor, optional

Pos.	Description
Pt100	Pt100 sensor, optional
W	Wiring diagram
PH	Thermistor
TS	Thermal switches
Pt100 LO	Pt100 in lower bearing
Pt100 ST	Pt100 in stator
Pt100 U	Pt100 in upper bearing
O	Oil indicator 4 to 20 mA



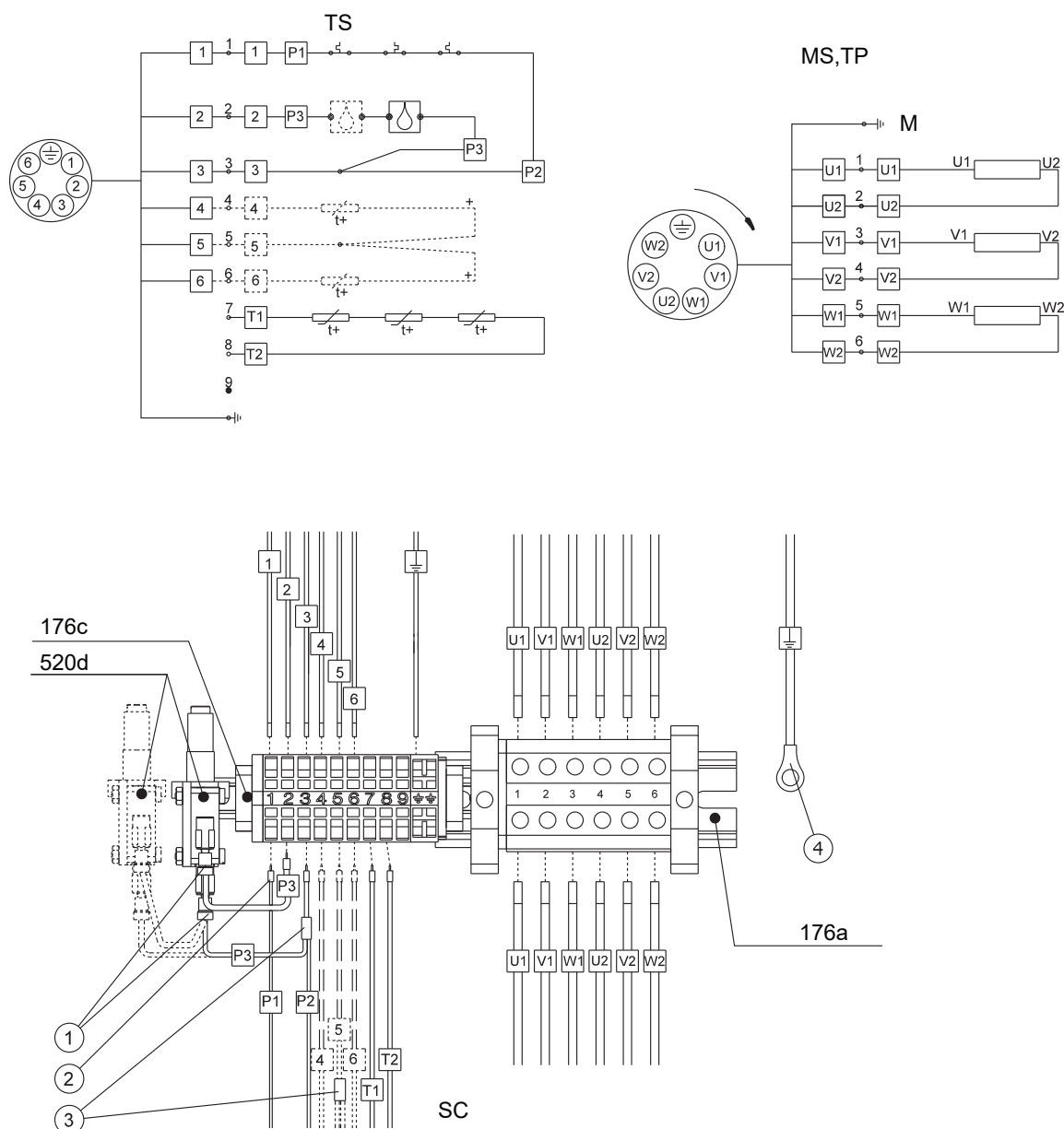
TM068754

Pump with MP 204 motor protector

Pos.	Description
CC	Control cabinet
DC/PLC	Dedicated Controls or PLC
L	Level sensor
SM 113	SM 113, optional
PVS3	PVS3 sensor, optional
MS	Moisture switches
WIO	WIO sensor, optional
Pt100	Pt100 sensor, optional
W	Wiring diagram
TH	Thermistor
TS	Thermal switches
Pt100 LO	Pt100 in lower bearing

Pos.	Description
Pt100 ST	Pt100 in stator
Pt100 U	Pt100 in upper bearing
O	Oil indicator 4 to 20 mA

Wiring diagrams



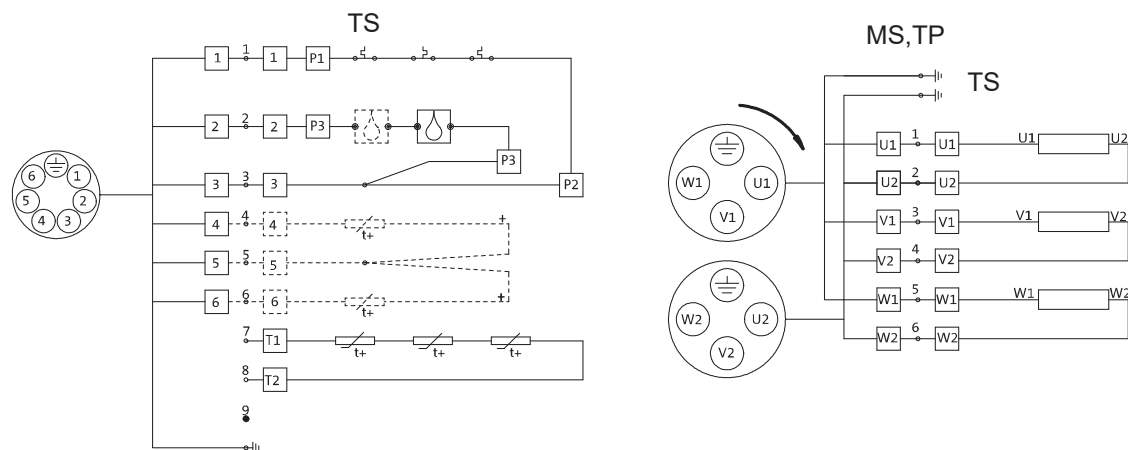
Wiring diagrams, pumps with one power cable

Item	Description
TS	Thermal switch
MS	In Ex pumps 2 moisture switches
PtL	Pt100 in lower bearing
PtS	Pt100 in stator
TH	Thermistor
M	Motor

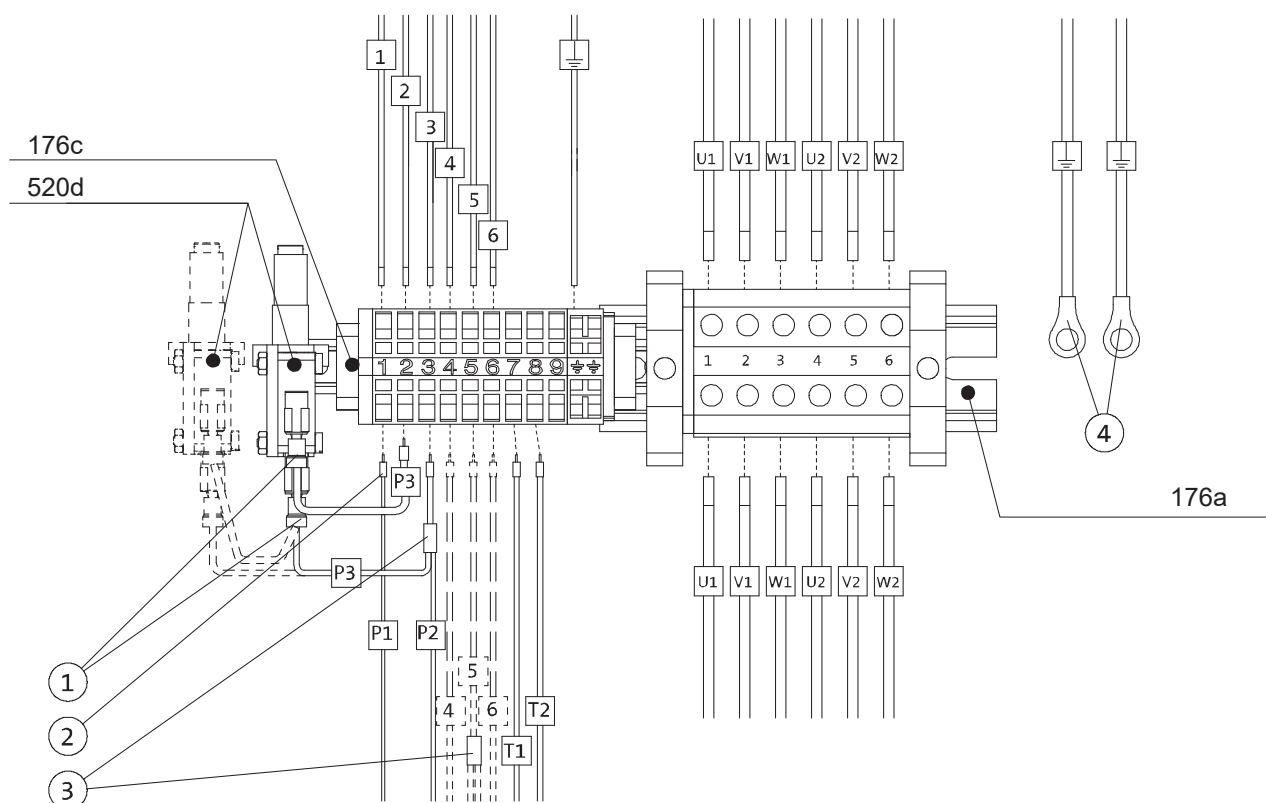
Item	Description
MS, TP	Moisture switch and thermal protectors
C	Read clockwise from GND
SCC	Supply cable conductors
O	Optional equipment
SC	Stator conductors
15	Stator conductors
1	Female push-on connector
2	Wire pin

TM043729

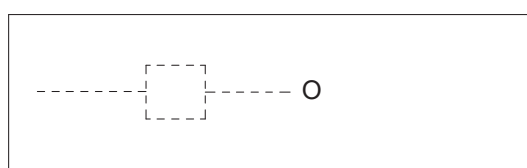
Item	Description
3	Butt splice
4	Ring connector
176a	Terminal block (power cable connections)
176c	Terminal block (sensor connections)
520	Moisture sensor



SCC



STC



Wiring diagrams, pumps with two power cables

Item	Description
TS	Thermal switch
MS	In Ex pumps 2 moisture switches
TH	Thermistor
PtL	Pt100 in lower bearing
PtS	Pt100 in stator
MS, TP	Moisture switch and thermal protectors
C	Read clockwise from GND
M	Motor
SCC	Supply cable conductors
SC	Stator conductors
O	Optional equipment
1	Female push-on connector
2	Wire pin
3	Butt splice
4	Ring connector
176a	Terminal block (power cable connections)
176c	Terminal block (sensor connections)
520	Moisture sensor

9. Curve charts and technical data

The following many pages are divided into sections.

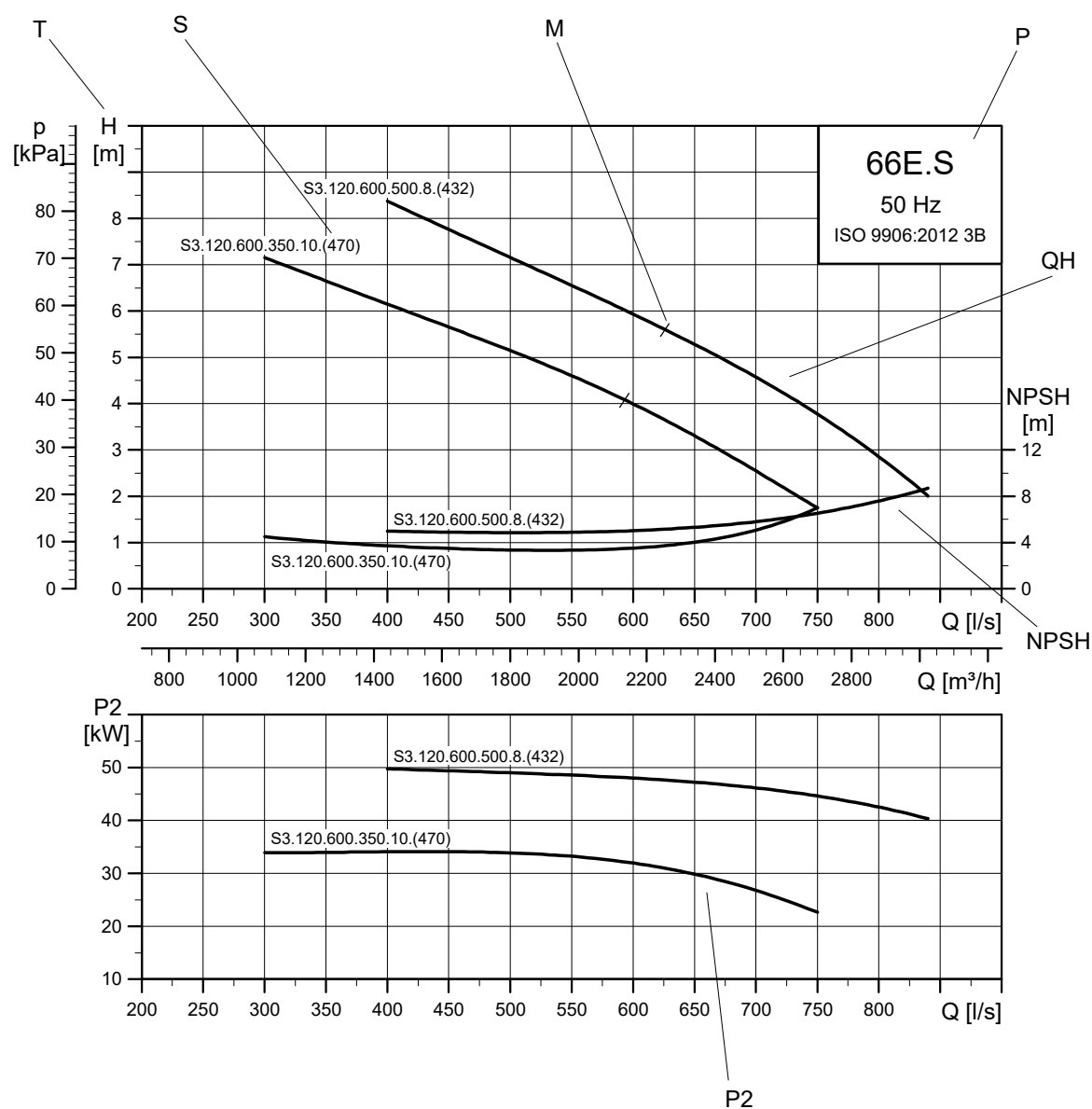
In How to read the curve charts and Curve conditions you will find a brief explanation of how to read the curve charts, the curve conditions, etc.

Related information

[How to read the curve charts](#)

[Witness test](#)

How to read the curve charts



TM079512

Pos.	Description
T	Total pump head $H = H_{\text{total}}$
S	Size of impeller
M	Maximum efficiency mark
P	Pump type: 66: Range 66 E: Pressure range (Extra-low pressure) S: Installation type
QH	QH curve of the individual pump
NPSH	NPSH curve for all variants shown. When sizing the pumps, add a safety margin of at least 0.5 m
P2	The power curves indicate the pump shaft power [P_2] of the pump shown

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

Curve conditions

The guidelines below apply to the curves shown in the performance charts in [10. 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 mm²/s (1 cSt).
- **NPSH:** The curves show average values measured under the same conditions as the performance curves. When sizing the pump, add a safety margin of at least 0.5 m.
- In case of densities other than 1000 kg/m³, the outlet pressure is proportional to the density.
- When pumping liquids with a density higher than 1000 kg/m³, motors with correspondingly higher outputs must be used.

Calculation of total head

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

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

H_{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.

Pump performance testing

S pump testers are all capable of performing hydraulic performance tests according to ISO 9906:2012 requirements.

ISO 9906:2012 sets standards for "rotodynamic pumps, Hydraulic performance acceptance tests, Grades 1, 2 and 3".

Performance acceptance grades

Six-pump-performance-test acceptance grades, 3B, 2B, 2U, 1B, 1E and 1U are defined in ISO 9906:2012.

Acceptance grade	Mandatory measurements		Optional measurements	
	Q	H	P1	Eta-tot
3B	± 9 %	± 7 %	+ 9 %	- 7 %
2B	± 8 %	± 5 %	+ 8 %	- 5 %
2U	+ 16 %	+ 10 %	+ 16 %	
1B	± 5 %	± 3 %	+ 4 %	- 3 %
1E	± 5 %	± 3 %	+ 4 %	
1U	+ 10 %	+ 6 %	+ 10 %	≥ 0 %

Q: Flow

H: Head

P1: Total consumed power

Eta-tot: Total efficiency

These tolerance grades can be used in the contract between the pump manufacturer and the customer, or they can be used as part of a default tolerance factor for cases in which no specific tolerance grade has been agreed between the manufacturer and the customer.

Related information

[Specifying acceptance grades](#)

[Acceptance grades and tolerances](#)

The guarantee point

According to ISO 9906:2012 the acceptance-grade tolerance applies to one guarantee point.

A guarantee point is defined by a guaranteed flow rate and a guaranteed head.

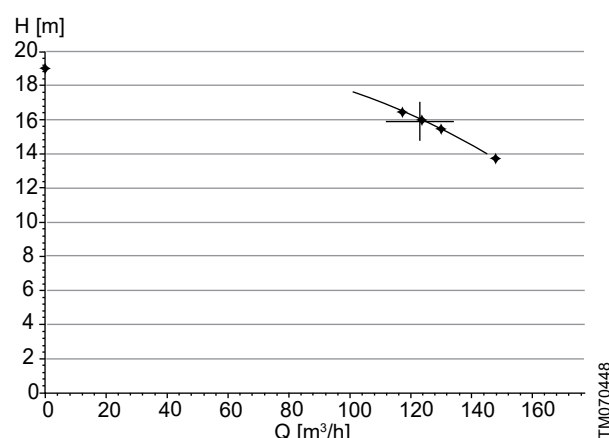
In addition, either minimum total efficiency or maximum total input power may be guaranteed at the specified conditions.

This means that the standard sets guidelines for a duty point guaranteed for the following:

- Q and H, or
- Q, H and total efficiency (Eta-total), or
- Q, H and total consumed power (P1).

The guarantee point is defined by a minimum of five measured test points.

Example of a duty point test living up to ISO 9906:2012 requirements

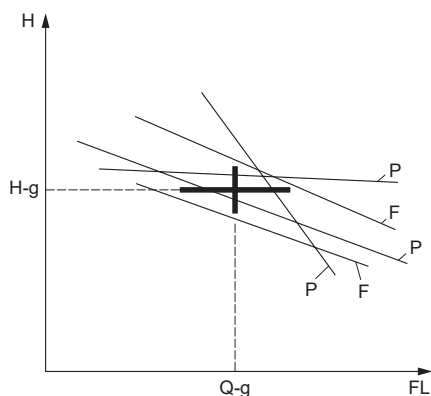


Five measured test points are used to verify one guarantee point

Evaluation of performance

The test must show that the measured pump curve touches or passes through a tolerance surrounding the guarantee point, as defined by the selected acceptance grade.

Guarantee-point evaluation must be made at the rated speed, which for S pumps means 50 Hz or 60 Hz.



TM071544

Pump curves that either pass or fail to cross the tolerance cross of the guarantee point

Pos.	Description
H	Head
H-g	H-guaranteed
P	Pass
F	Fail
Q-g	Q-guaranteed
FL	Flow

Performance-test types for end-suction pumps

Two types of performance tests are available for S pumps:

- duty-point-verification test
- curve test.

Tests carried out on S pumps

- Tests are saved for at least five years and can be traced using the pump's unique serial number.
- It is not possible to change acceptance grade on an already tested and supplied pump; if required, a re-test of the pump is made.
- Witness testing can be arranged.

Duty-point-verification test, Grades 3B, 2B, 2U, 1B, 1E and 1U

This test method offers the possibility to perform a duty-point verification of the following:

- Q and H, or
- Q, H and total efficiency (Eta-tot), or
- Q, H and total consumed power (P1).

Acceptance grade	Mandatory measurements		Optional measurements	
	Q	H	P1	Eta-tot
3B	Standard		On request	
2B	On request		On request	
2U	On request		On request	
1B	On request		On request	
1E	On request		On request	
1U	On request		On request	

What Grundfos is able to guarantee for the different acceptance grades will be evaluated on a case-by-case basis. Contact your local sales company on this.

Grundfos makes duty-point verification according to ISO 9906:2012 for one guarantee point at full speed, 50 or 60 Hz. The customer must tell Grundfos which duty point to verify.

The requested duty point is verified by five measured points.

Grade 1U duty-point verification

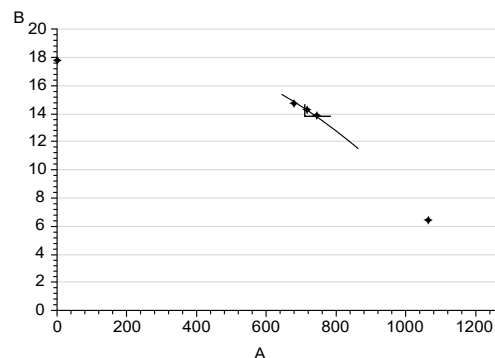
The following example illustrates performance testing according to Grade 1U.

Flow rate and head are mandatory, and efficiency or power consumption, P1, is optional.

Tolerances for a Grade 1U test are as follows:

- Flow: 10 %
- Head: 6 %
- Efficiency: 0 %, only equal to or better than the guaranteed value
- P1: 10 %

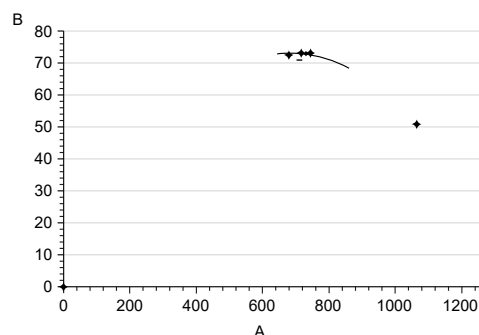
1. Q, H and Eta-tot are tested and verified



TM071542

Measured values for flow rate and head

Pos.	Description
B	H [m]
A	Q [m³/h]

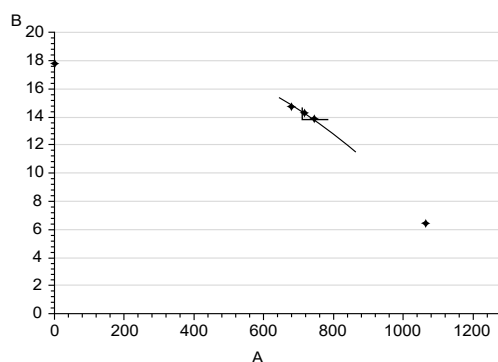


TM071543

Measured values for total efficiency

Pos.	Description
B	Eta-tot % [m]
A	Q [m³/h]

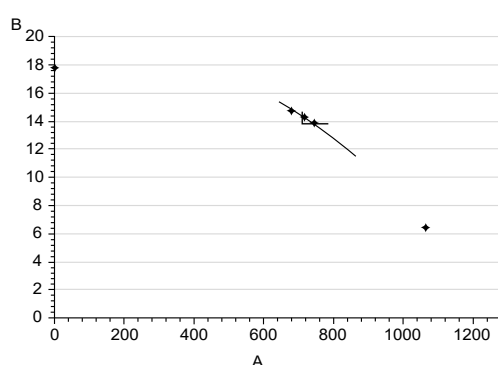
1. Q, H and P1 tested and verified



TM071542

Measured values for flow rate and head

Pos.	Description
B	H [m]
A	Q [m³/h]



TM071542

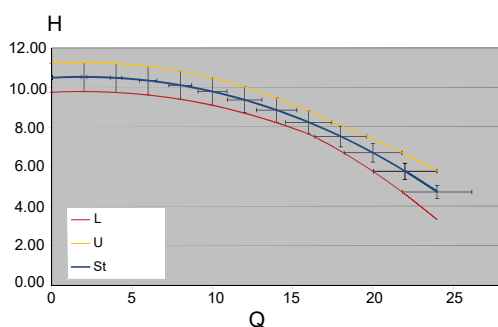
Measured values for consumed power

Pos.	Description
B	P1 [kW]
A	Q [m³/h]

Note that other points than the guarantee point can be measured and displayed in a curve-test report according to Grade 3B tolerances.

Curve test, Grade 3B

This test method is developed by Grundfos and is based on ISO 9906:2012 performance acceptance grade 3B tolerances: $Q = \pm 9\%$, $H = \pm 7\%$.



TM079684

Q-H curve with tolerance crosses on complete performance range

Pos.	Description
Q	[m³/h]
H	[m]
L	Lower limit
U	Upper limit
St	Standard curve

In fig. *Q-H curve with tolerance crosses on complete performance range*, tolerance crosses according to Grade 3B have been distributed across the complete performance range of a pump. We generate the upper and lower limit of the performance curve by drawing two curves at the outlines of these crosses.

When the pump is tested, and the measured point is located within the range between the upper and lower limit, it meets the ISO 9906:2012 Grade 3B tolerances. This way of qualifying the pump performance is stricter than a duty-point-verification test for Grade 3B.

How does Grundfos perform curve testing for S pumps

Grundfos applies two types of curve tests:

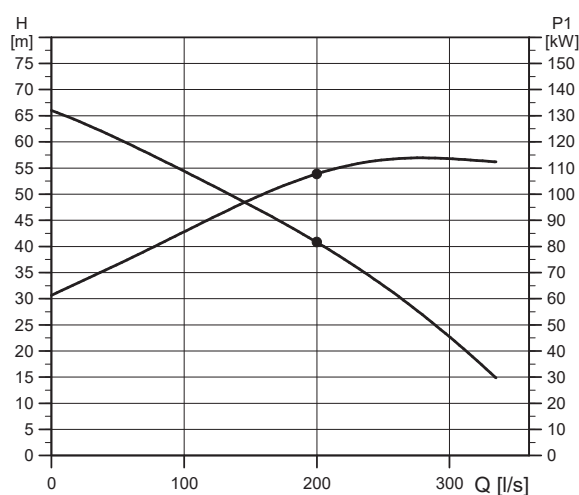
- a reference curve test
- a performance curve test.

Reference curve test, Grade 3B

A reference curve test is made when no curve test report is specified with the order. Three or four test points are measured depending on production site, and no curve test report is supplied with the pump.

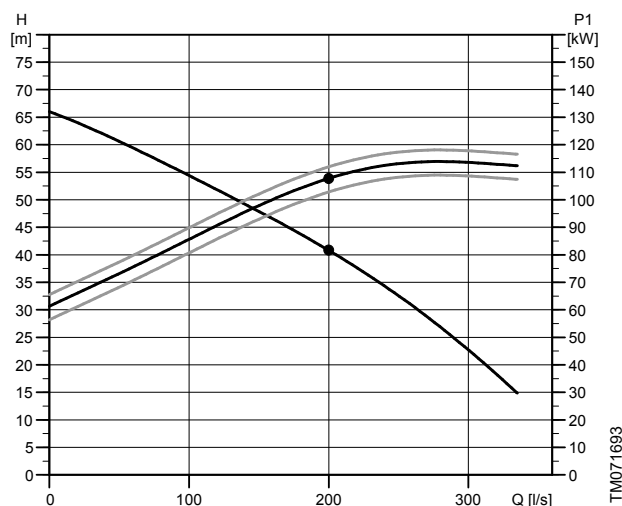
Measurements are made to maintain and observe continuous quality and to ensure that the supplied pump is within test grade tolerances. Test grade tolerances are set as for Grade 3B but without certification.

Example of a reference curve test



TM071674

Measured values for tested pump



The values in fig. calculated to reference speed for comparison to a reference performance curve

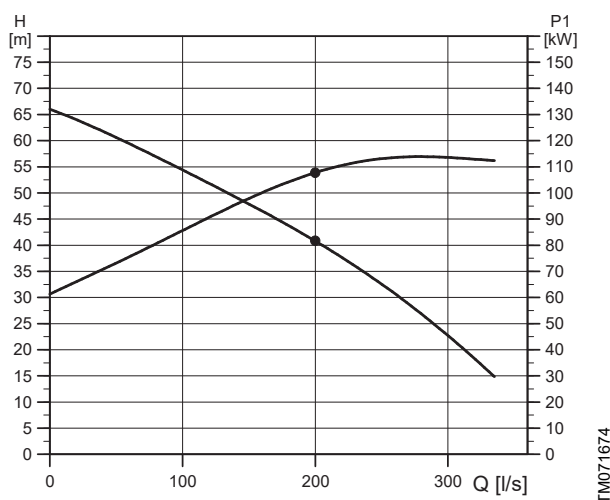
If a pump performance report is requested at a later stage, only reference test data are available.

Performance curve test, grade 3B

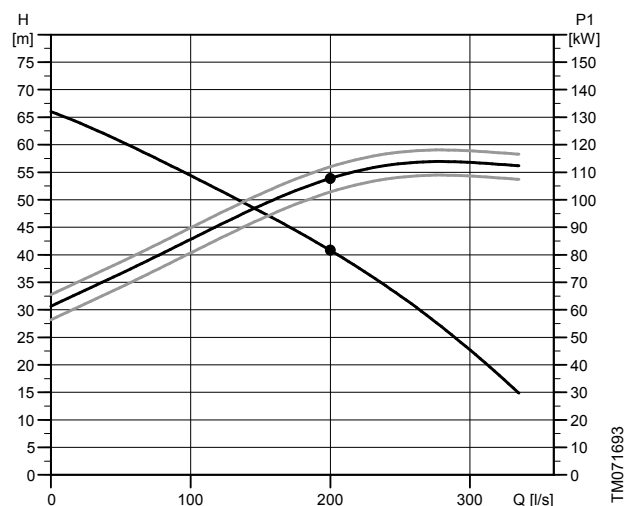
A performance curve test is carried out when a curve test report is specified with the order.

The pump is tested at pre-specified flow rates, and test grade tolerances are set as for Grade 3B but without certification.

Example of an S pump curve test



Measured values for tested pump



The values in fig. calculated to a reference speed for comparison to a reference performance

If the customer requires more points on the curve to be checked, individual measurements must be made, which is not part of the performance curve test.

Static high pressure test

All produced pumps undergo a static high pressure test of 1.5 x PN (nominal pressure of the pump).

Specifying acceptance grades

The graphs in the table in Acceptance grades and tolerances show the tolerances as stated in the standard, related to an ordinary pump curve. The graphs also show which pump performance to expect if the customer, having the same pump to start with, orders a pump with the same guarantee point for different tolerances (B, E or U) within the acceptance grades.

In some cases, it will not be possible to fulfil the same guarantee point for a unilateral tolerance as it will for a bilateral tolerance. This is indicated by the lower curve for "E" and "U" grades.

If the requested guarantee point is the same for a Grade U pump as for a Grade B pump, the consequence of the production tolerances could be that a larger pump is required to obtain the requested duty point.

What Grundfos is able to guarantee for the different acceptance grades will be evaluated on a case-by-case basis. Contact your local sales company on this.

Related information

[Acceptance grades and tolerances](#)

Acceptance grades and tolerances

Acceptance grade B

This acceptance grade refers to grades with a bilateral tolerance on flow rate and head and with a tolerance on efficiency.

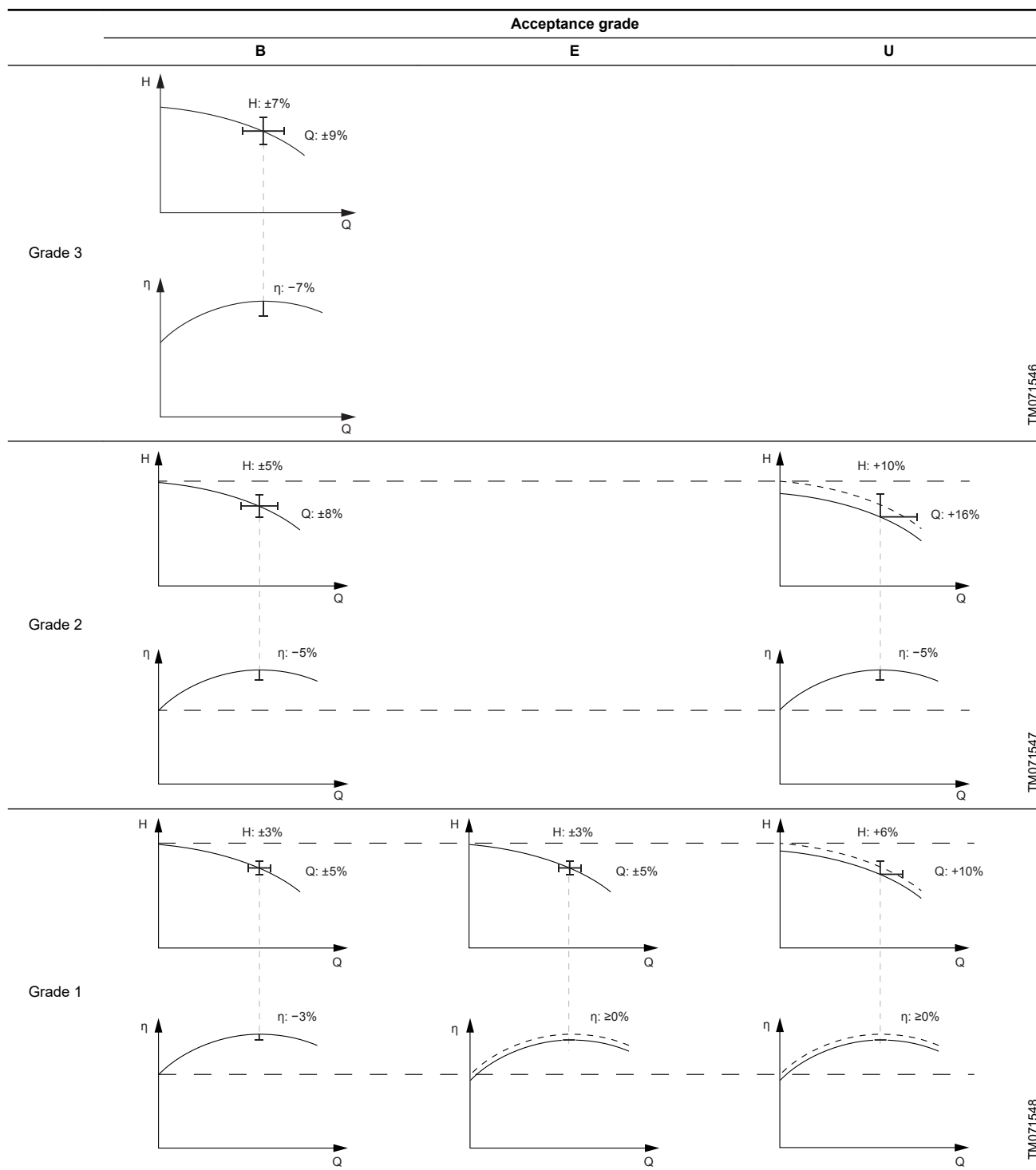
Acceptance grade E

This acceptance grade refers to a grade with a bilateral tolerance on flow rate and head, but without tolerance on efficiency.

Acceptance grade U

This acceptance grade refers to a grade with a unilateral tolerance on flow rate and head. For the 2U grade, there is a tolerance on efficiency. For the 1U grade, there is no tolerance on efficiency.

Note that if the acceptance grade changes from Grade 1B to 1U, the customer does not necessarily get a better pump with a higher efficiency. More likely, he gets a pump where the performance is always to the positive side of the guarantee point.



Certificates

Certificates must be confirmed for each order and are available on request:

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

Witness test

When the pumps are being tested or are tested with a certification, it is possible for the customer to witness the testing procedure according to ISO 9906:2012.

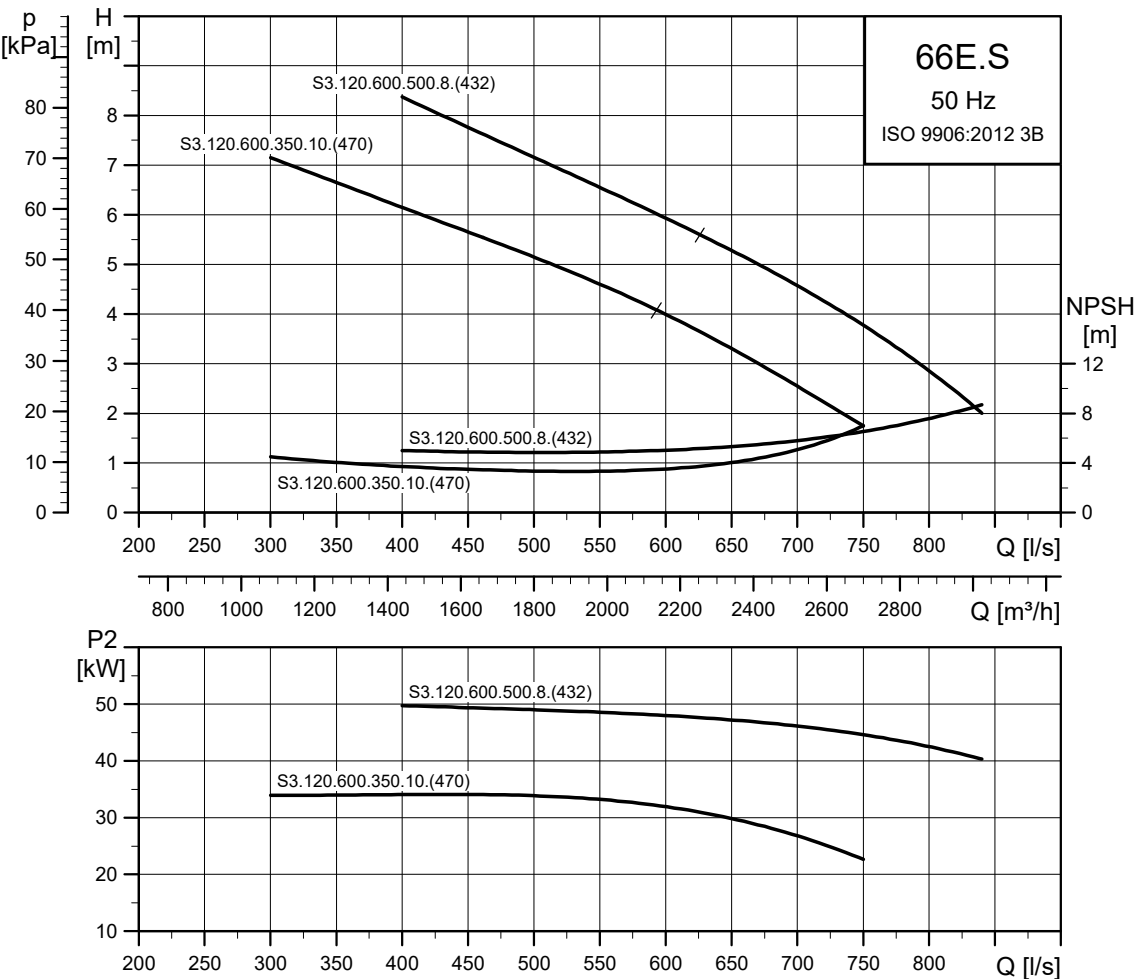
The witness test is not a certificate and will not result in a written statement from Grundfos. The witness itself is the only guarantee that everything is carried out as prescribed in the testing procedure.

If the customer wants to witness the test, place this request on the order.

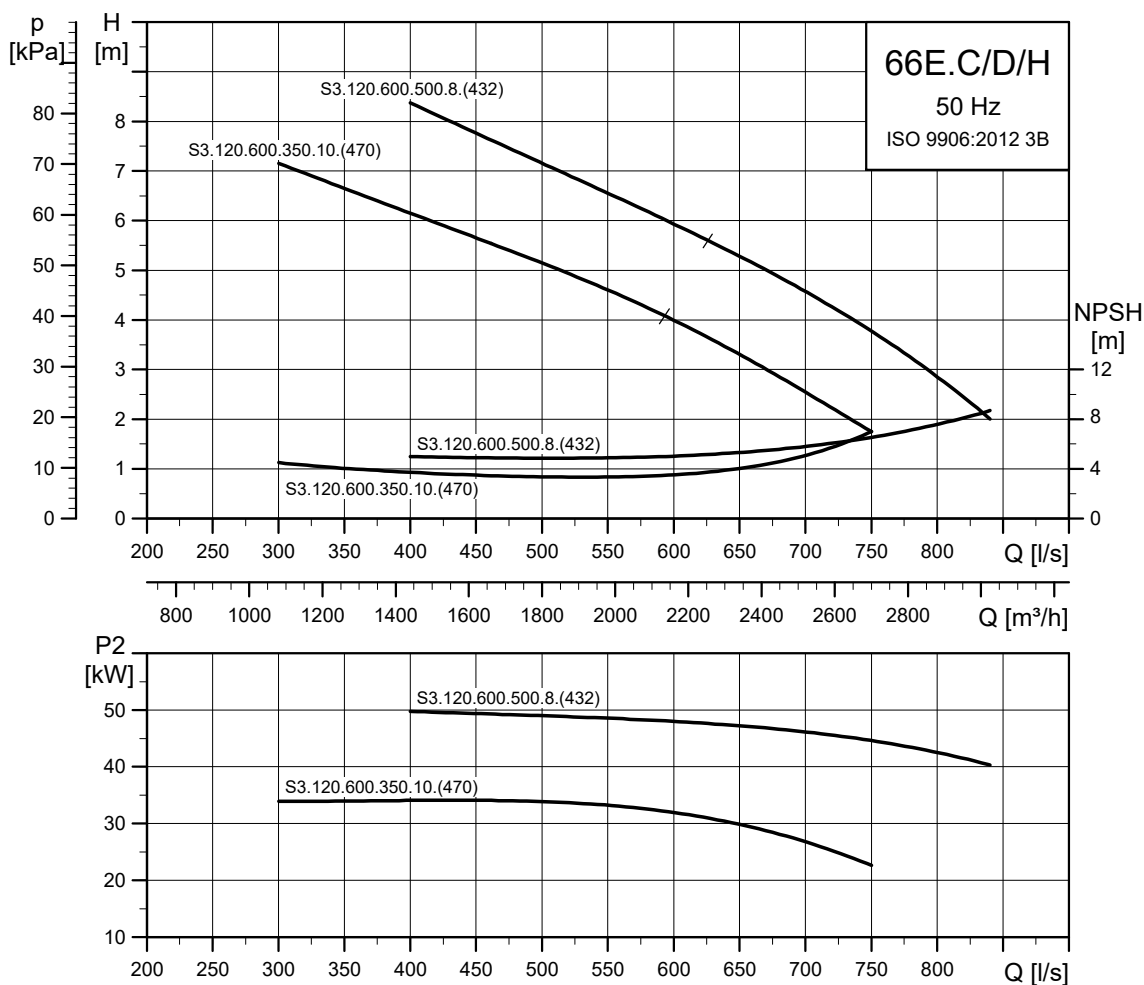
10. Performance curves and technical data

Extra-low pressure - 3 x 400/690 V

S3.120.600.350.10 and S3.120.600.500.8



TM040673



TM040674

Motor data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N ¹	I _{start}	η _{motor} [%]				Cos φ			Moment of inertia [kgm ²]	Breakdown torque M _{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1			
S3.120.600.350.10.66E.S.470...	40	35	10	585	Y/D	80/47	375	87	88	88	0.55	0.65	0.72	0.9400	1087	
S3.120.600.350.10.66E.C.470...	40	35	10	585	Y/D	80/47	375	87	88	88	0.55	0.65	0.72	0.9400	1087	
S3.120.600.350.10.66E.D.470...	40	35	10	585	Y/D	80/47	375	87	88	88	0.55	0.65	0.72	0.9400	1087	
S3.120.600.350.10.66E.H.470...	40	35	10	585	Y/D	80/47	375	87	88	88	0.55	0.65	0.72	0.9400	1087	
S3.120.600.500.8.66E.S.432...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532	
S3.120.600.500.8.66E.C.432...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532	
S3.120.600.500.8.66E.D.432...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532	
S3.120.600.500.8.66E.H.432...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532	

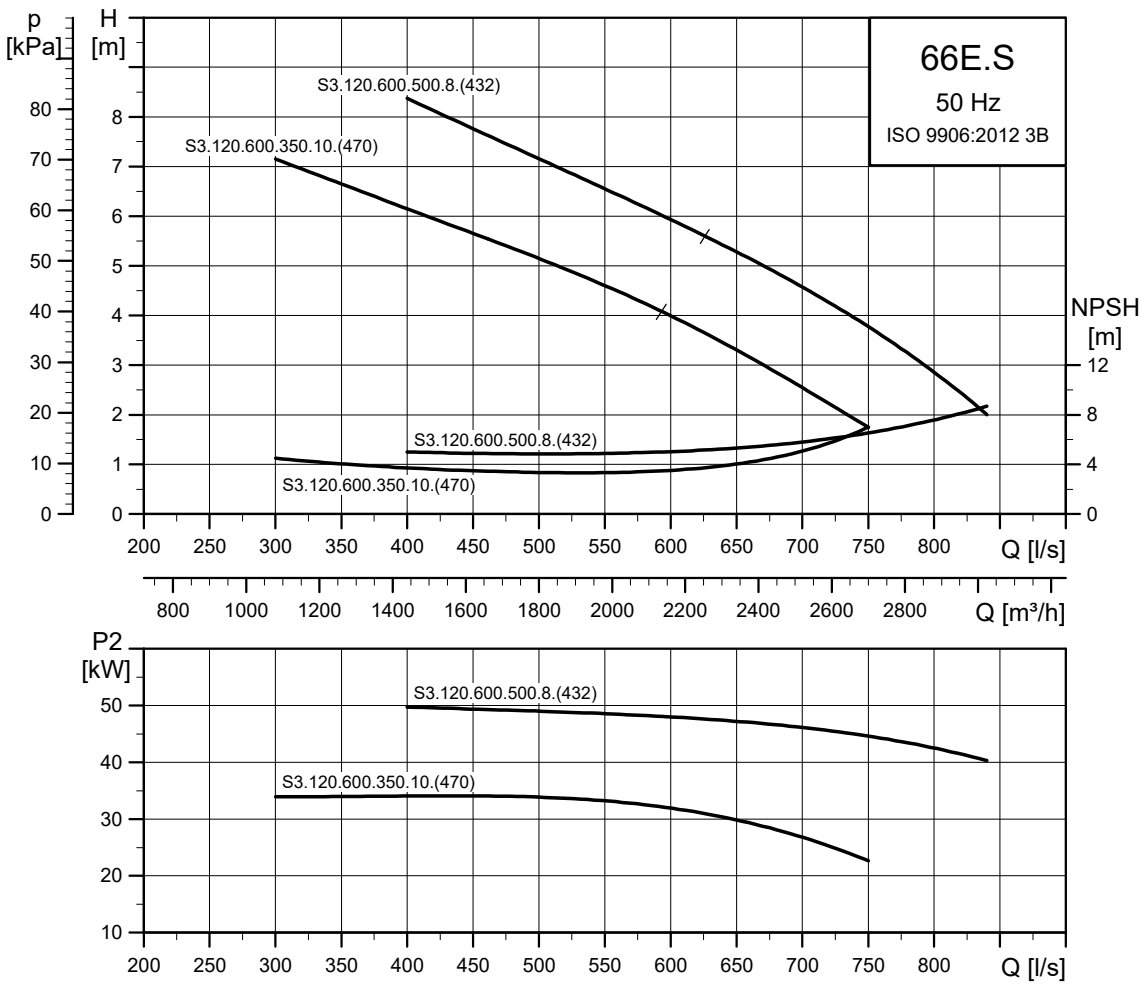
¹ Low/high voltage (400/690 V).**Note:** Enclosure class: IP68**Pump data**

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth	Moment of inertia*
	[mm]	[mm]	PN	[m]	[kgm²]
S3.120.600.350.10.66E.S/C/D/H.470...	470	120	10	20	2.7160
S3.120.600.500.8.66E.S/C/D/H.432...	432				2.2443

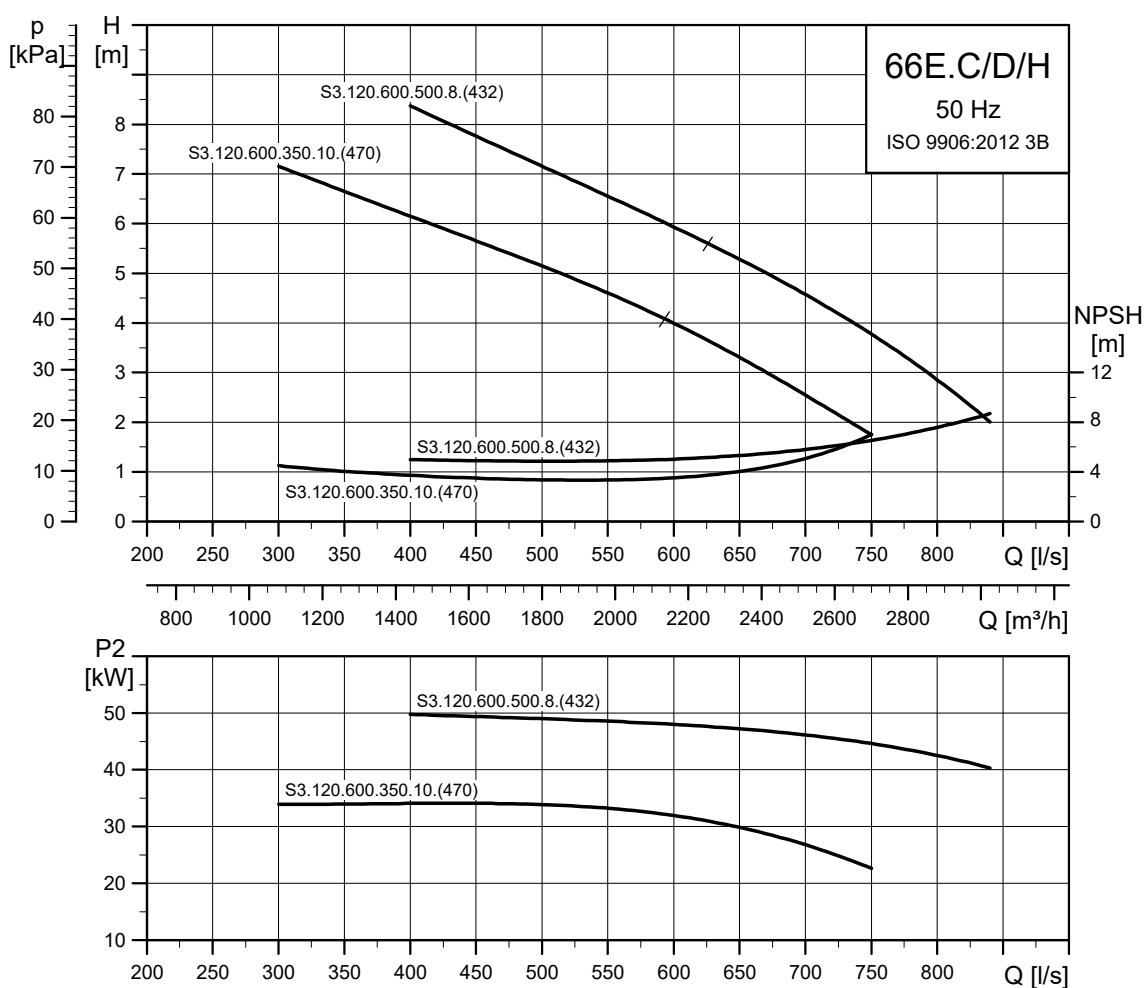
* Applies to material code G (see Type key). For other material codes, please contact Grundfos.

Extra-low pressure - 3 x 415 V

S3.120.600.350.10 and S3.120.600.500.8



TM040673



TM040674

Motor data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N	I _{start}	η _{motor} [%]				Cos φ		Moment of inertia [kgm ²]	Breakdown torque M _{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1		
S3.120.600.350.10.66E.S.470...	40	35	10	585	Y/D	77	361	87	88	88	0.55	0.65	0.72	0.9400	1087
S3.120.600.350.10.66E.C.470...	40	35	10	585	Y/D	77	361	87	88	88	0.55	0.65	0.72	0.9400	1087
S3.120.600.350.10.66E.D.470...	40	35	10	585	Y/D	77	361	87	88	88	0.55	0.65	0.72	0.9400	1087
S3.120.600.350.10.66E.H.470...	40	35	10	585	Y/D	77	361	87	88	88	0.55	0.65	0.72	0.9400	1087
S3.120.600.500.8.66E.S.432...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532
S3.120.600.500.8.66E.C.432...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532
S3.120.600.500.8.66E.D.432...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532
S3.120.600.500.8.66E.H.432...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532

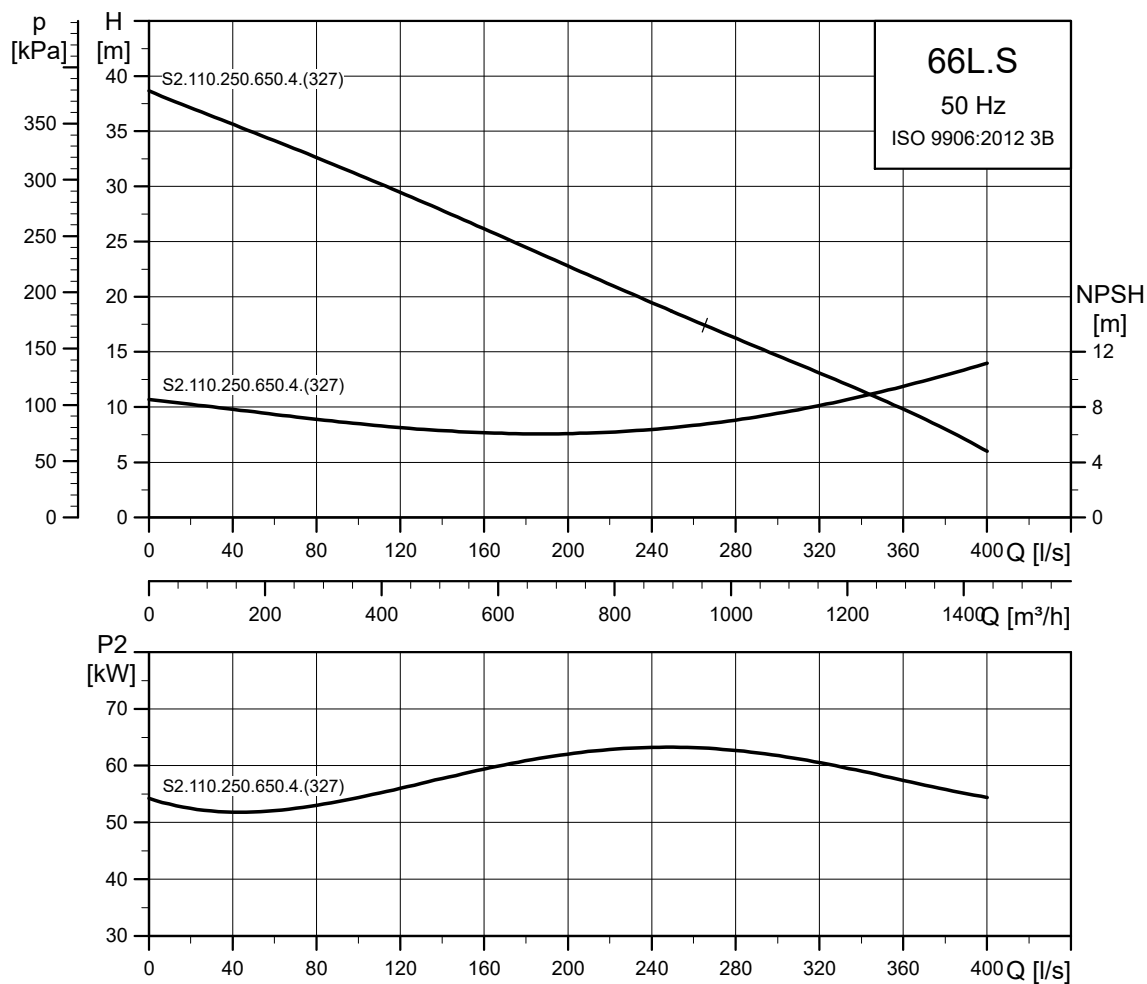
Note: Enclosure class: IP68**Pump data**

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth	Moment of inertia*
	[mm]	[mm]	PN	[m]	[kgm²]
S3.120.600.350.10.66E.S/C/D/H.470...	470	120	10	20	2.7160
S3.120.600.500.8.66E.S/C/D/H.432...	432				2.2443

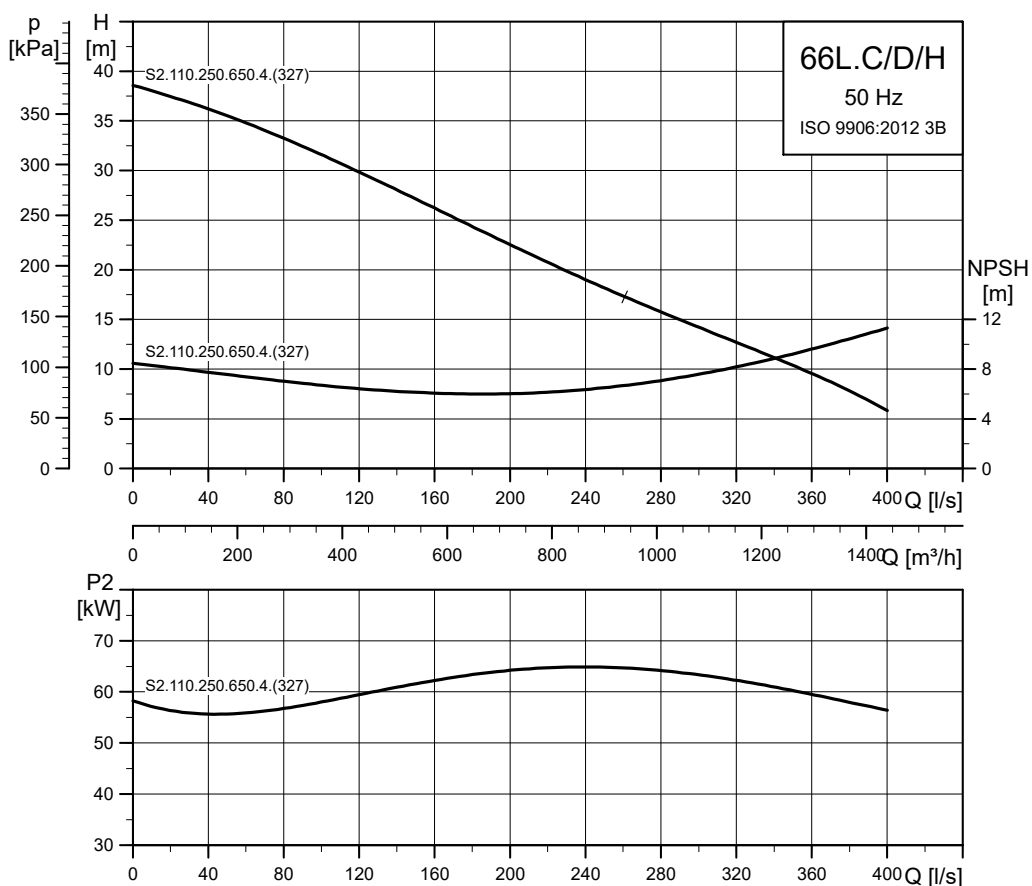
* Applies to material code G (see Type key). For other material codes, please contact Grundfos.

Low pressure - 3 x 400/690 V

S2.110.250.650.4



TM040677



TM040678

Motor data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N ¹	I _{start}	η _{motor} [%]			Cos φ			Moment of inertia [kgm ²]	Breakdown torque M _{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1		
S2.110.250.650.4.66L.S.327...	73	68	4	1476	Y/D	134/78	827	92	93	93	0.67	0.76	0.79	0.6000	1096
S2.110.250.650.4.66L.C.327...	73	68	4	1476	Y/D	134/78	827	92	93	93	0.67	0.76	0.79	0.6000	1096
S2.110.250.650.4.66L.D.327...	73	68	4	1476	Y/D	134/78	827	92	93	93	0.67	0.76	0.79	0.6000	1096
S2.110.250.650.4.66L.H.327...	73	68	4	1476	Y/D	134/78	827	92	93	93	0.67	0.76	0.79	0.6000	1096

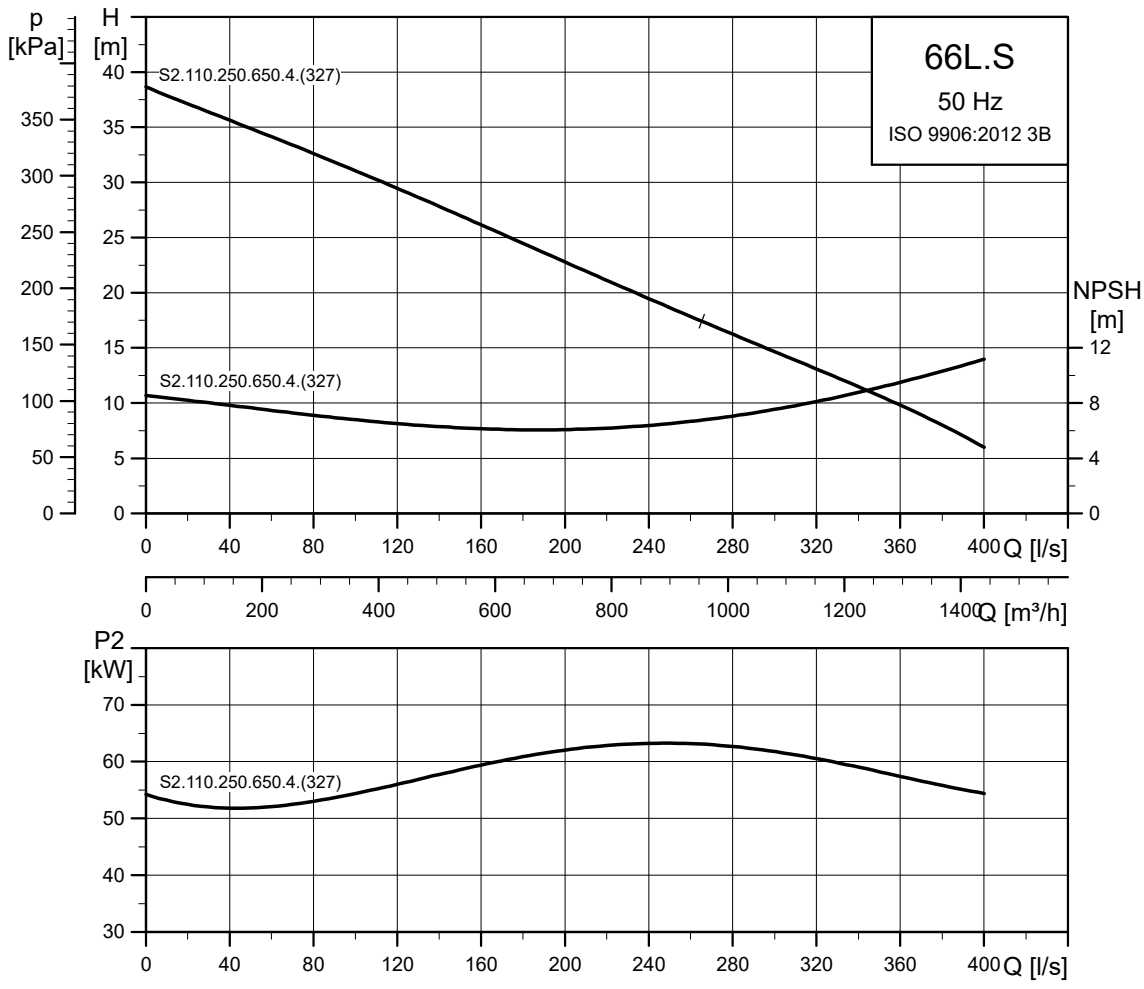
¹ Low/high voltage (400/690 V).**Note:** Enclosure class: IP68**Pump data**

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth	Moment of inertia*
	[mm]	[mm]	PN	[m]	[kgm²]
S2.110.250.650.4.66L.S/C/D/H.327...	327	110	10	20	0.5743

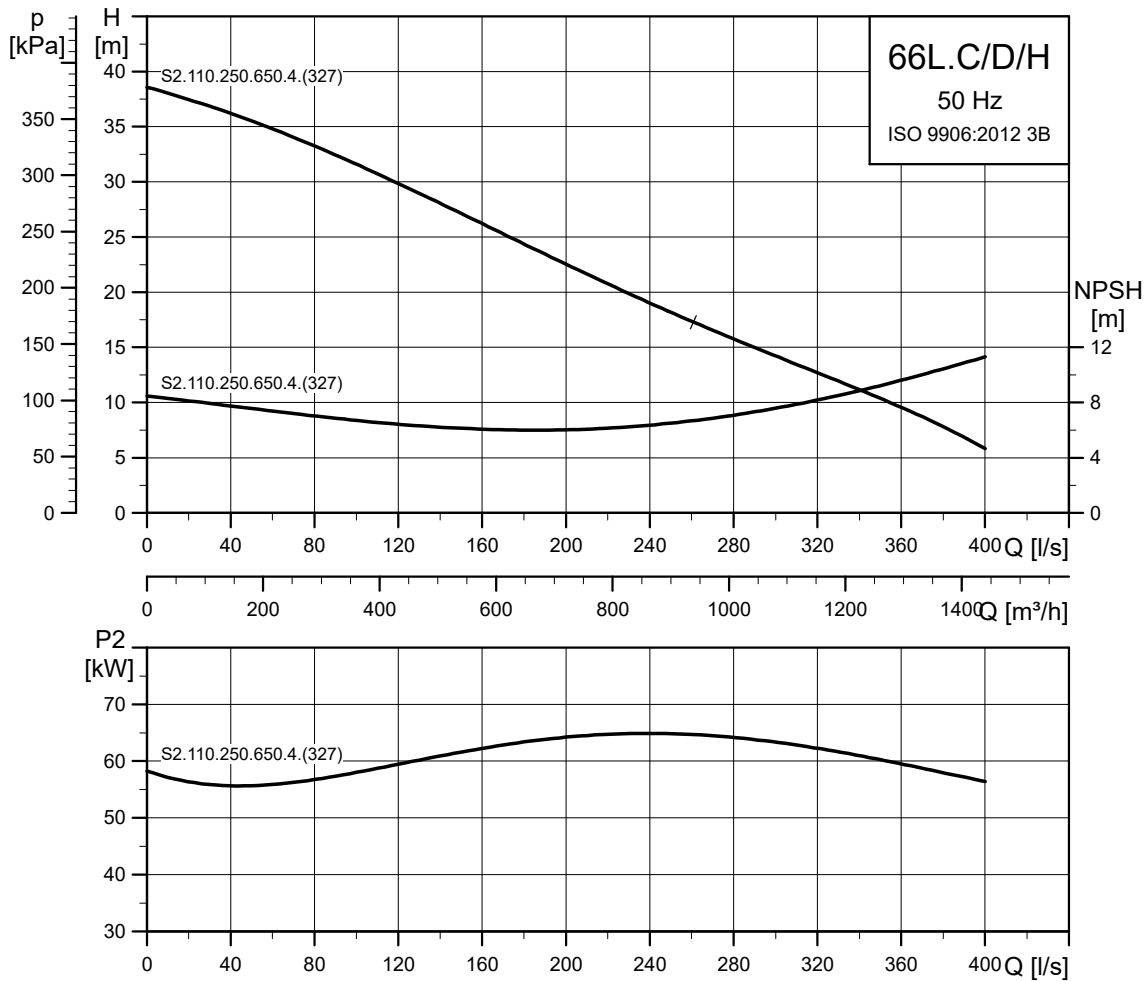
* Applies to material code G (see Type key). For other material codes, please contact Grundfos.

Low pressure - 3 x 415 V

S2.110.250.650.4



TM040677



TM040678

Motor data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N	I _{start}	η _{motor} [%]			Cos φ			Moment of inertia [kgm ²]	Breakdown torque M _{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1		
S2.110.250.650.4.66L.S.327...	73	68	4	1476	Y/D	129	797	92	93	93	0.67	0.76	0.79	0.6000	1096
S2.110.250.650.4.66L.C.327...	73	68	4	1476	Y/D	129	797	92	93	93	0.67	0.76	0.79	0.6000	1096
S2.110.250.650.4.66L.D.327...	73	68	4	1476	Y/D	129	797	92	93	93	0.67	0.76	0.79	0.6000	1096
S2.110.250.650.4.66L.H.327...	73	68	4	1476	Y/D	129	797	92	93	93	0.67	0.76	0.79	0.6000	1096

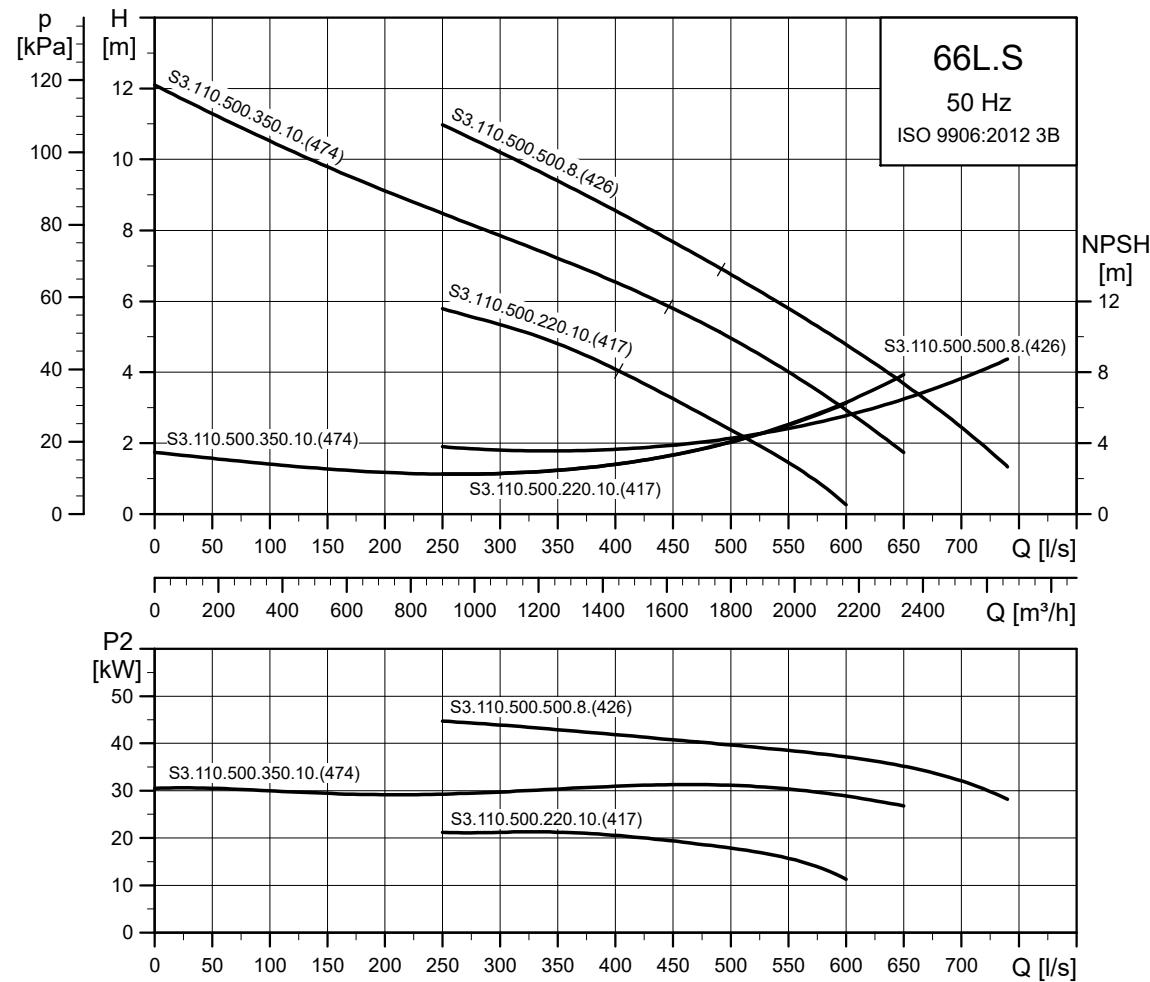
Note: Enclosure class: IP68**Pump data**

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth	Moment of inertia*
	[mm]	[mm]	PN	[m]	[kgm ²]
S2.110.250.650.4.66L.S/C/D/H.327...	327	110	10	20	0.5743

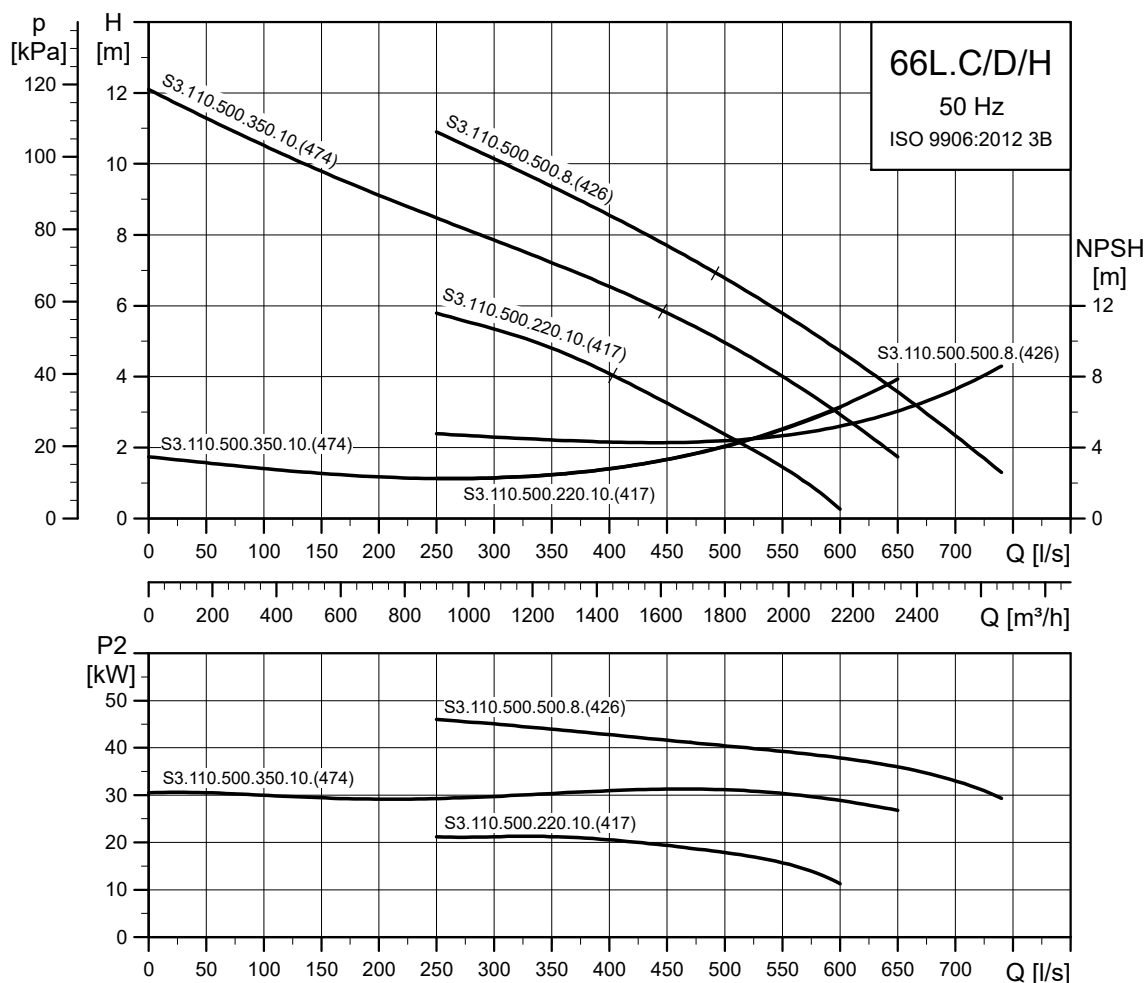
* Applies to material code G (see Type key). For other material codes, please contact Grundfos.

Low pressure - 3 x 400/690 V

S3.110.500.220.10, S3.110.500.350.10 and S3.110.500.500.8



TM040679



TM040680

Motor data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N ¹	I _{start}	η _{motor} [%]				Cos φ			Moment of inertia [kgm ²]	Breakdown torque M _{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1			
S3.110.500.220.10.66L.S.417...	25	22	10	585	Y/D	53/31	282	84	87	88	0.52	0.62	0.69	0.8600	936	
S3.110.500.220.10.66L.C.417...	25	22	10	585	Y/D	53/31	282	84	87	88	0.52	0.62	0.69	0.8600	936	
S3.110.500.220.10.66L.D.417...	25	22	10	585	Y/D	53/31	282	84	87	88	0.52	0.62	0.69	0.8600	936	
S3.110.500.220.10.66L.H.474...	25	22	10	585	Y/D	53/31	282	84	87	88	0.52	0.62	0.69	0.8600	936	
S3.110.500.350.10.66L.S.474...	40	35	10	585	Y/D	80/47	375	87	88	88	0.55	0.65	0.72	0.9400	1087	
S3.110.500.350.10.66L.C.474...	40	35	10	585	Y/D	80/47	375	87	88	88	0.55	0.65	0.72	0.9400	1087	
S3.110.500.350.10.66L.D.474...	40	35	10	585	Y/D	80/47	375	87	88	88	0.55	0.65	0.72	0.9400	1087	
S3.110.500.350.10.66L.H.474...	40	35	10	585	Y/D	80/47	375	87	88	88	0.55	0.65	0.72	0.9400	1087	
S3.110.500.500.8.66L.S.426...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532	
S3.110.500.500.8.66L.C.426...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532	
S3.110.500.500.8.66L.D.426...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532	
S3.110.500.500.8.66L.H.426...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532	

¹ Low/high voltage (400/690 V).

Note: Enclosure class: IP68

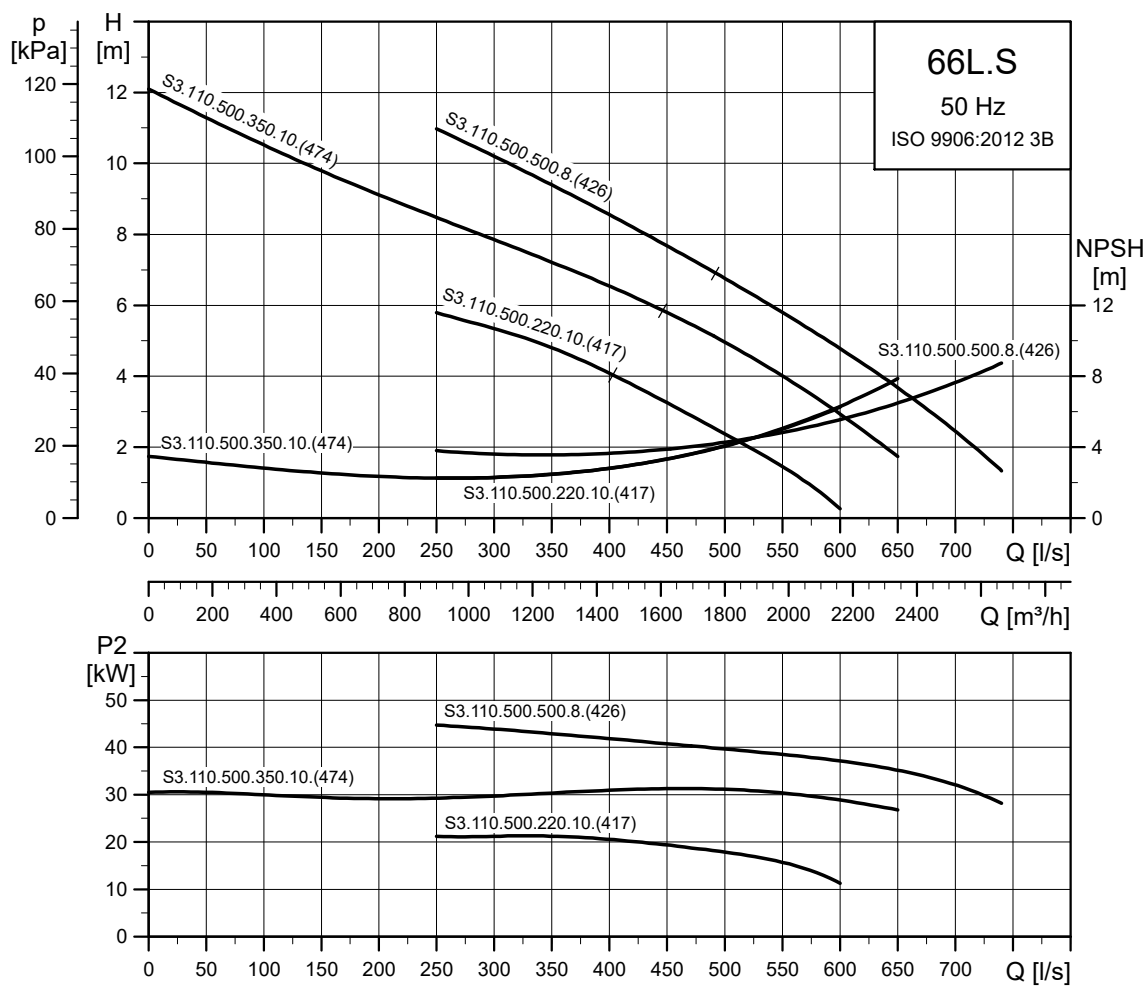
Pump data

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth	Moment of inertia*
	[mm]	[mm]	PN	[m]	[kgm²]
S3.110.500.220.10.66L.S/C/D/H.417...	417				1.9113
S3.110.500.350.10.66L.S/C/D/H.474...	474	110	10	20	2.5177
S3.110.500.500.8.66L.S/C/D/H.426...	426				2.0057

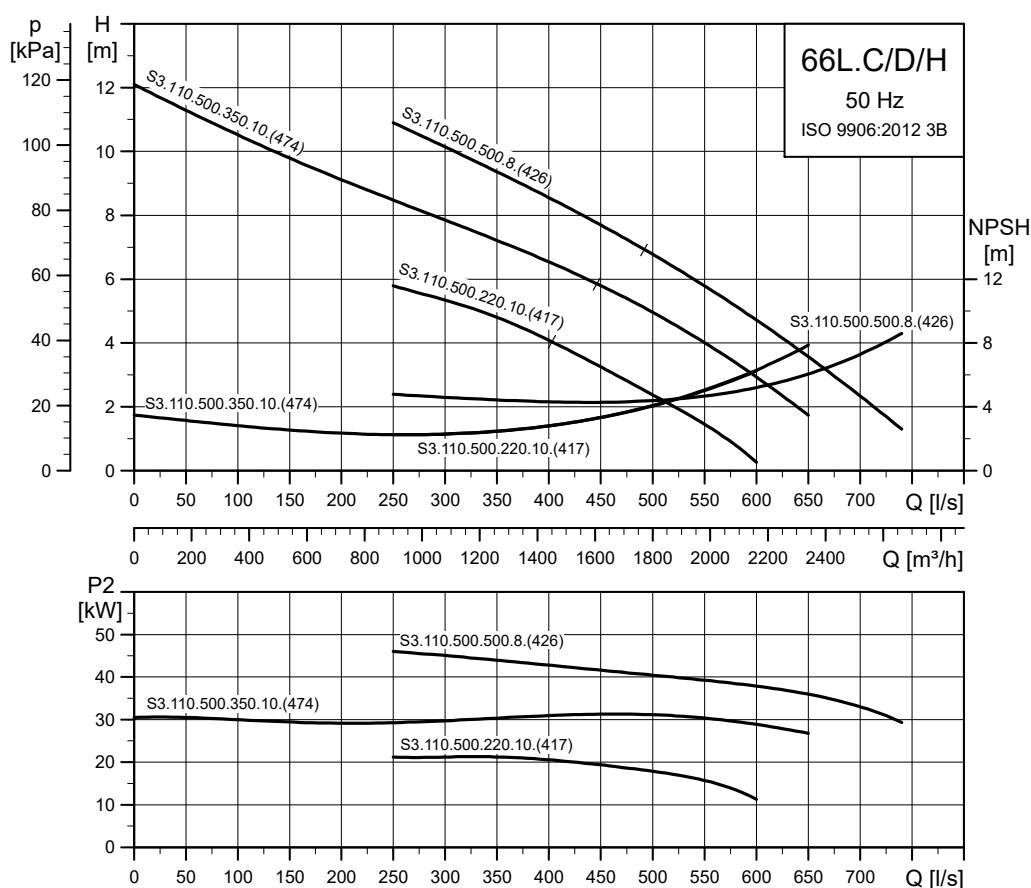
* Applies to material code G (see Type key). For other material codes, please contact Grundfos

Low pressure - 3 x 415 V

S3.110.500.220.10, S3.110.500.350.10 and S3.110.500.500.8



TM040679



TM040680

Motor data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N [A]	I _{start} [A]	η _{motor} [%]			Cos φ			Moment of inertia [kgm²]	Breakdown torque M _{max} [Nm]
S3.110.500.220.10.66L.S.417...	25	22	10	585	Y/D	51	272	84	87	88	0.52	0.62	0.69	0.8600	936
S3.110.500.220.10.66L.C.417...	25	22	10	585	Y/D	51	272	84	87	88	0.52	0.62	0.69	0.8600	936
S3.110.500.220.10.66L.D.417...	25	22	10	585	Y/D	51	272	84	87	88	0.52	0.62	0.69	0.8600	936
S3.110.500.220.10.66L.H.417...	25	22	10	585	Y/D	51	272	84	87	88	0.52	0.62	0.69	0.8600	936
S3.110.500.350.10.66L.S.474...	40	35	10	585	Y/D	77	361	87	88	88	0.55	0.65	0.72	0.9400	1087
S3.110.500.350.10.66L.C.474...	40	35	10	585	Y/D	77	361	87	88	88	0.55	0.65	0.72	0.9400	1087
S3.110.500.350.10.66L.D.474...	40	35	10	585	Y/D	77	361	87	88	88	0.55	0.65	0.72	0.9400	1087
S3.110.500.350.10.66L.H.474...	40	35	10	585	Y/D	77	361	87	88	88	0.55	0.65	0.72	0.9400	1087
S3.110.500.500.8.66L.S.426...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532
S3.110.500.500.8.66L.C.426...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532
S3.110.500.500.8.66L.D.426...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532
S3.110.500.500.8.66L.H.426...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532

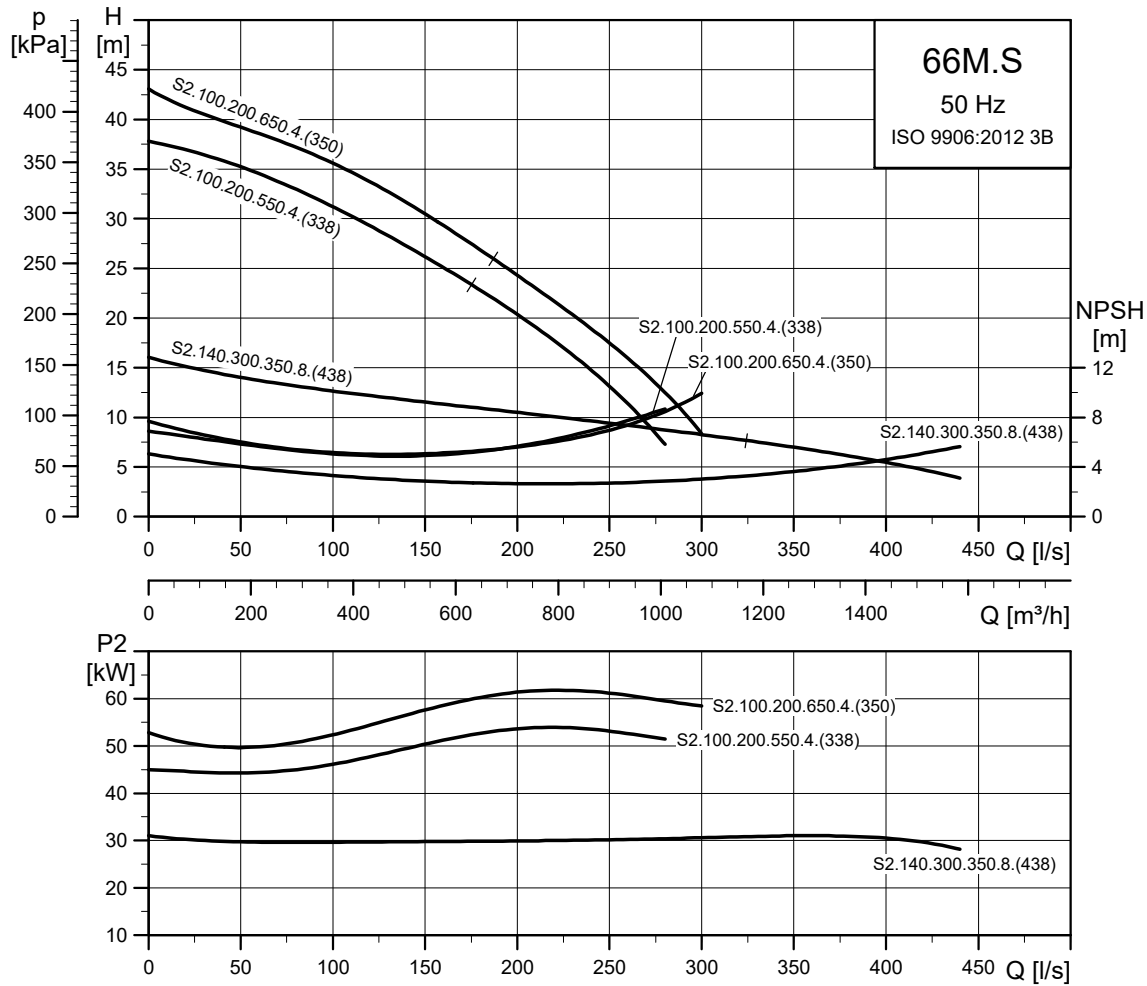
Note: Enclosure class: IP68**Pump data**

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth	Moment of inertia*
	[mm]	[mm]	PN	[m]	[kgm²]
S3.110.500.220.10.66L.S/C/D/H.417...	417				1.9113
S3.110.500.350.10.66L.S/C/D/H.474...	474	110	10	20	2.5177
S3.110.500.500.8.66L.S/C/D/H.426...	426				2.0057

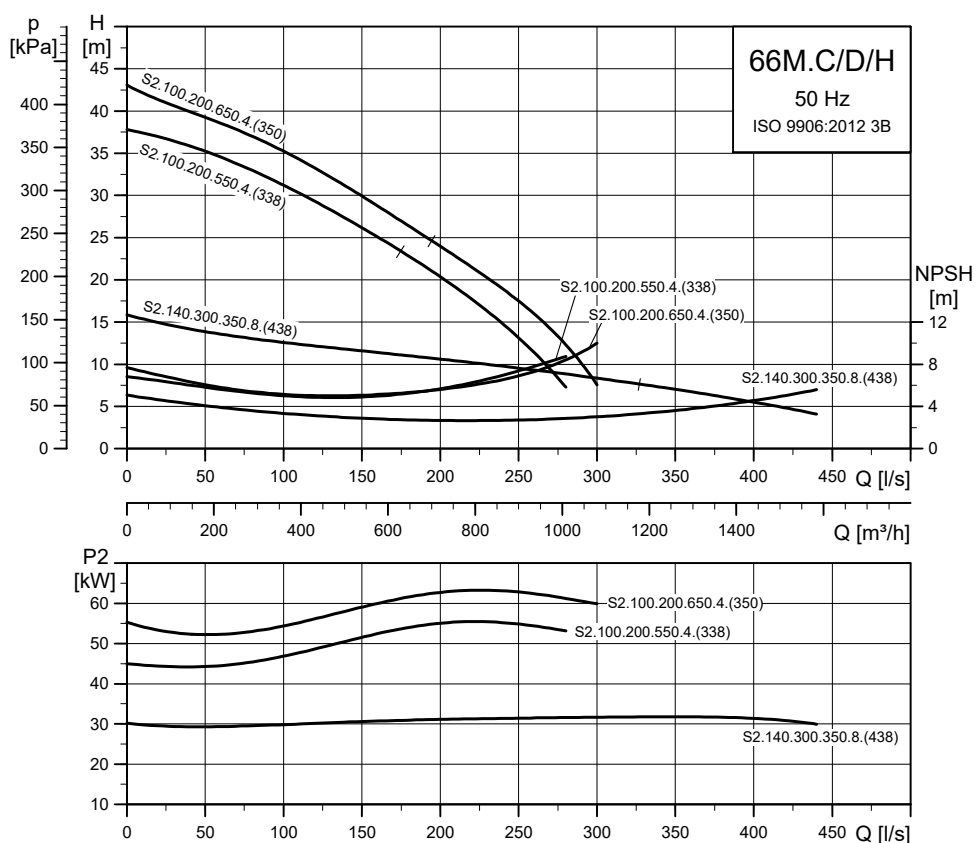
* Applies to material code G (see Type key). For other material codes, please contact Grundfos.

Medium pressure - 3 x 400/690 V

S2.140.200.350.8, S2.100.200.550.4 and S2.100.200.650.4



TM040681



TM040682

Motor data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N ¹	I _{start}	η _{motor} [%]			Cos φ			Moment of inertia [kgm ²]	Breakdown torque M _{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1		
S2.100.200.550.4.66M.S.338...	62	58	4	1482	Y/D	115/67	827	91	93	93	0.62	0.73	0.78	0.6000	1096
S2.100.200.550.4.66M.C.338...	62	58	4	1482	Y/D	115/67	827	91	93	93	0.62	0.73	0.78	0.6000	1096
S2.100.200.550.4.66M.H.338...	62	58	4	1482	Y/D	115/67	827	91	93	93	0.62	0.73	0.78	0.6000	1096
S2.100.200.550.4.66M.D.338...	62	58	4	1482	Y/D	115/67	827	91	93	93	0.62	0.73	0.78	0.6000	1096
S2.100.200.650.4.66M.S.350...	73	68	4	1476	Y/D	134/78	827	92	93	93	0.67	0.76	0.79	0.6000	1096
S2.100.200.650.4.66M.C.350...	73	68	4	1476	Y/D	134/78	827	92	93	93	0.67	0.76	0.79	0.6000	1096
S2.100.200.650.4.66M.H.350...	73	68	4	1476	Y/D	134/78	827	92	93	93	0.67	0.76	0.79	0.6000	1096
S2.100.200.650.4.66M.D.350...	73	68	4	1476	Y/D	134/78	827	92	93	93	0.67	0.76	0.79	0.6000	1096
S2.140.300.350.8.66M.S.438...	40	35	8	732	Y/D	76/44	376	87	88	88	0.59	0.70	0.76	0.7000	989
S2.140.300.350.8.66M.C.438...	40	35	8	732	Y/D	76/44	376	87	88	88	0.59	0.70	0.76	0.7000	989
S2.140.300.350.8.66M.D.438...	40	35	8	732	Y/D	76/44	376	87	88	88	0.59	0.70	0.76	0.7000	989
S2.140.300.350.8.66M.H.438...	40	35	8	732	Y/D	76/44	376	87	88	88	0.59	0.70	0.76	0.7000	989

¹ Low/high voltage (400/690 V).

Note: Enclosure class: IP68

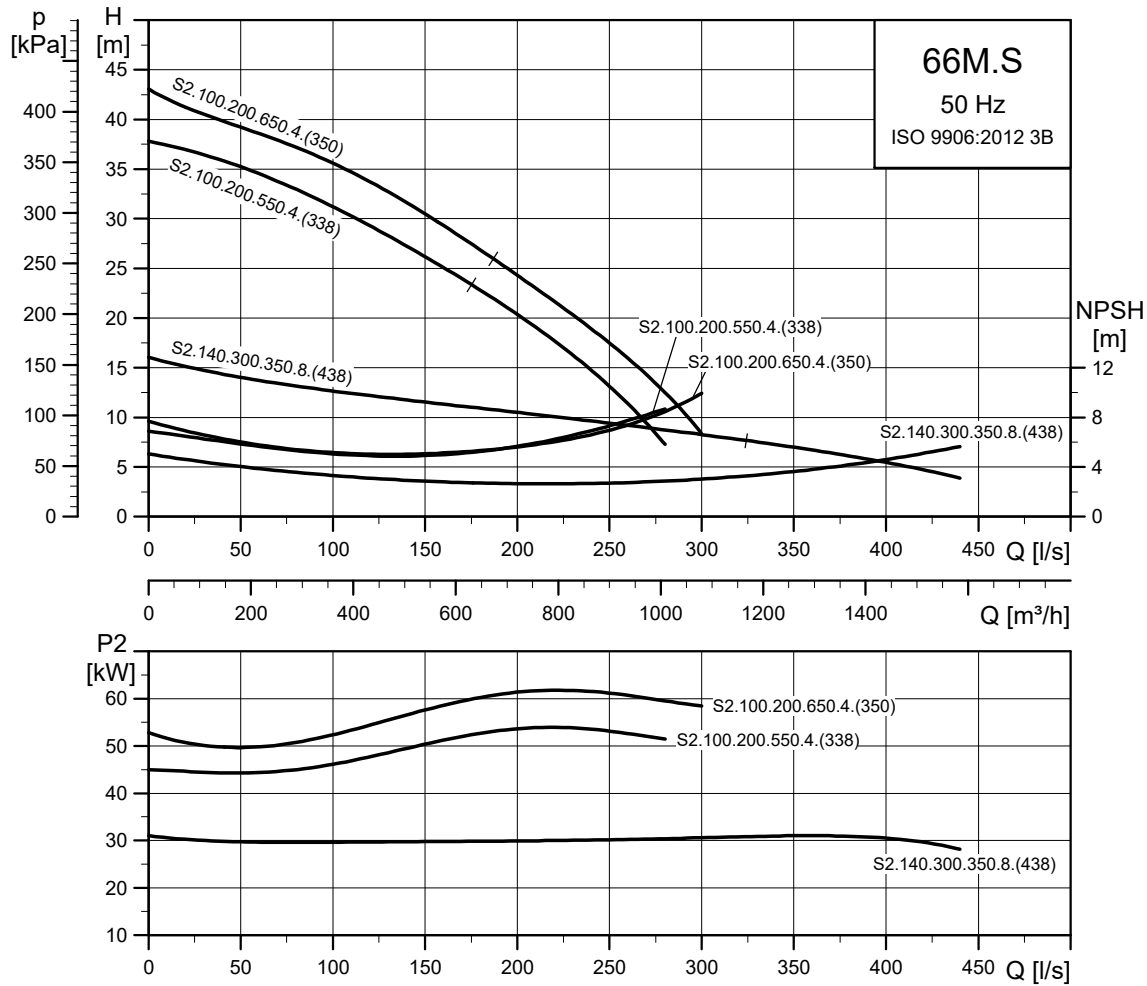
Pump data

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth	Moment of inertia*
	[mm]	[mm]	PN	[m]	[kgm ²]
S2.100.200.550.4.66M.S/C/D/H.338...	338	100			0.5580
S2.100.200.650.4.66M.S/C/D/H.350...	350		10	20	0.6700
S2.140.300.350.8.66M.S/C/D/H.438...	438	140			1.3620

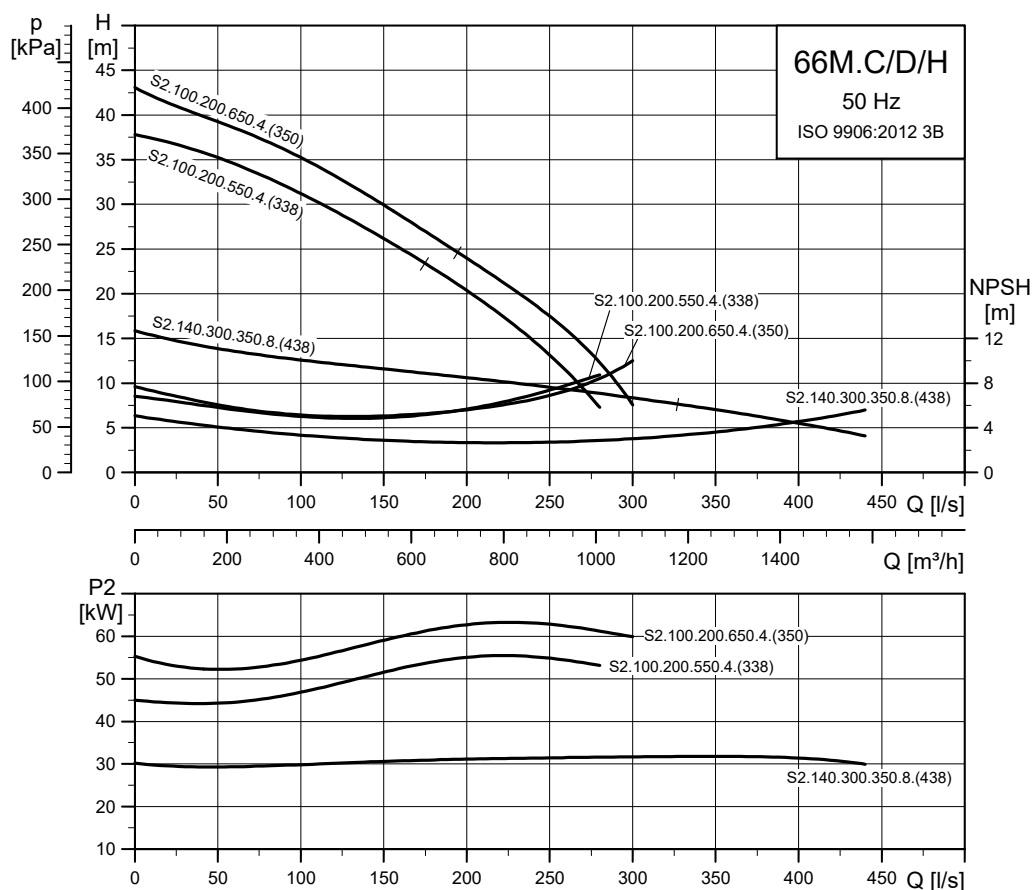
* Applies to material code G (see Type key). For other material codes, please contact Grundfos.

Medium pressure - 3 x 415 V

S2.140.300.350.8, S2.100.200.550.4 and S2.100.200.650.4



TM040681



TM040682

Motor data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N		I _{start}			η _{motor} [%]			Cos φ			Moment of inertia [kgm ²]	Breakdown torque M _{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
S2.100.200.550.4.66M.S.338...	62	58	4	1482	Y/D	111	797	91	93	93	0.62	0.73	0.78	0.6000	1096			
S2.100.200.550.4.66M.C.338...	62	58	4	1482	Y/D	111	797	91	93	93	0.62	0.73	0.78	0.6000	1096			
S2.100.200.550.4.66M.D.338...	62	58	4	1482	Y/D	111	797	91	93	93	0.62	0.73	0.78	0.6000	1096			
S2.100.200.550.4.66M.H.338...	62	58	4	1482	Y/D	111	797	91	93	93	0.62	0.73	0.78	0.6000	1096			
S2.100.200.650.4.66M.S.350...	73	68	4	1476	Y/D	129	797	92	93	93	0.67	0.76	0.79	0.6000	1096			
S2.100.200.650.4.66M.C.350...	73	68	4	1476	Y/D	129	797	92	93	93	0.67	0.76	0.79	0.6000	1096			
S2.100.200.650.4.66M.D.350...	73	68	4	1476	Y/D	129	797	92	93	93	0.67	0.76	0.79	0.6000	1096			
S2.100.200.650.4.66M.H.350...	73	68	4	1476	Y/D	129	797	92	93	93	0.67	0.76	0.79	0.6000	1096			
S2.140.300.350.8.66M.S.438...	40	35	8	732	Y/D	73	362	87	88	88	0.59	0.70	0.76	0.7000	989			
S2.140.300.350.8.66M.C.438...	40	35	8	732	Y/D	73	362	87	88	88	0.59	0.70	0.76	0.7000	989			
S2.140.300.350.8.66M.D.438...	40	35	8	732	Y/D	73	362	87	88	88	0.59	0.70	0.76	0.7000	989			
S2.140.300.350.8.66M.H.438...	40	35	8	732	Y/D	73	362	87	88	88	0.59	0.70	0.76	0.7000	989			

Note: Enclosure class: IP68

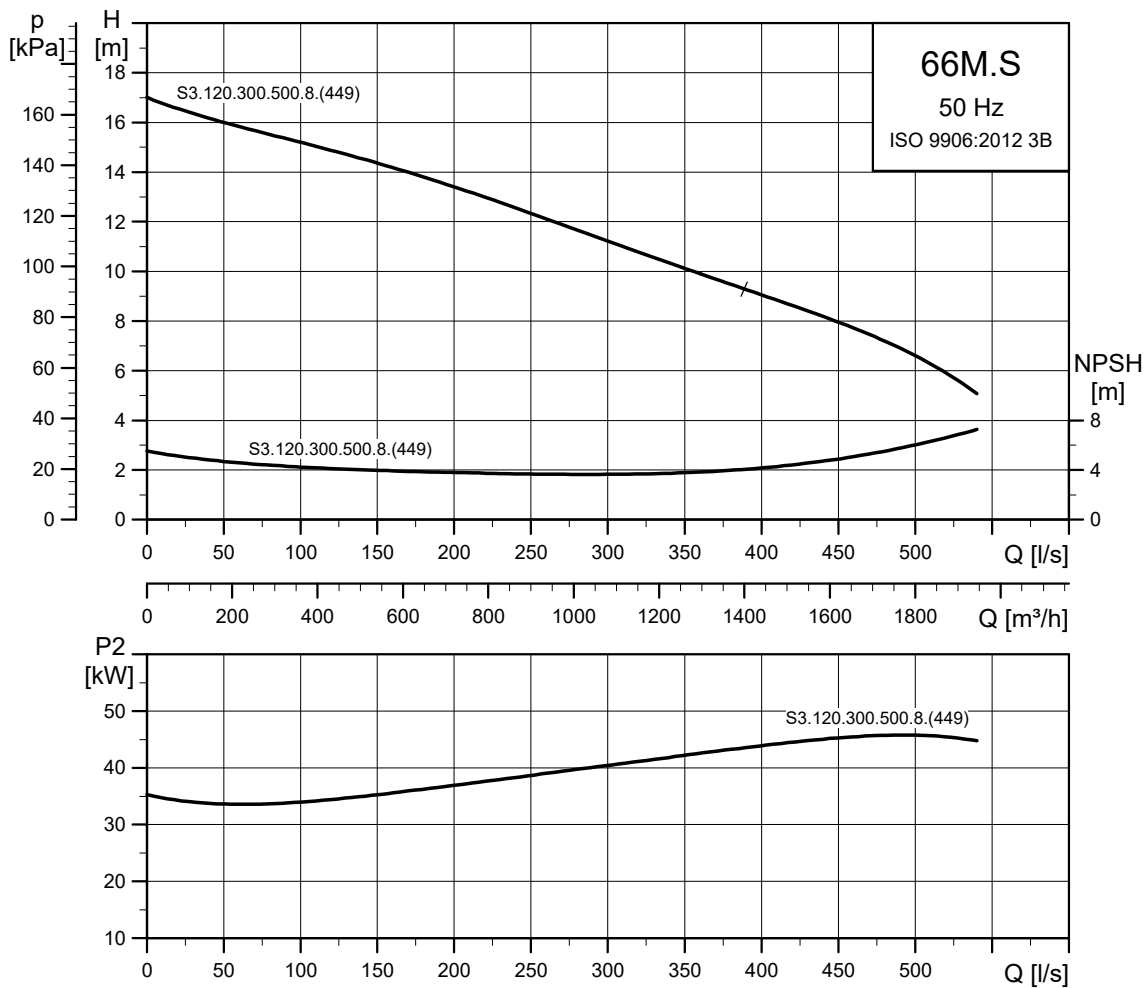
Pump data

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth	Moment of inertia*
	[mm]	[mm]	PN	[m]	[kgm ²]
S2.100.200.550.4.66M.S/C/D/H.338...	338	100	10	20	0.5580
S2.100.200.650.4.66M.S/C/D/H.350...	350				0.6700
S2.140.300.350.8.66M.S/C/D/H.438...	438	140			1.3620

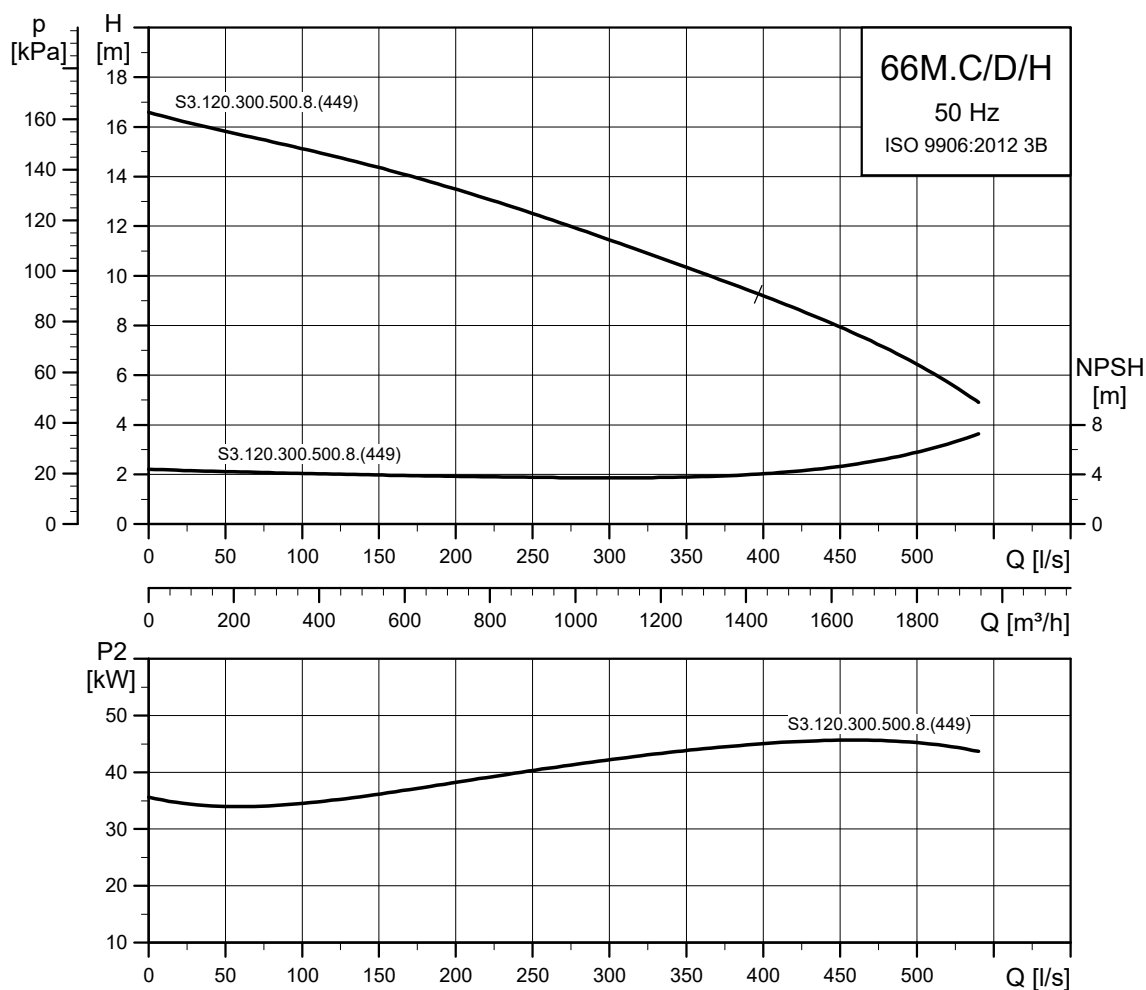
* Applies to material code G (see Type key). For other material codes, please contact Grundfos.

Medium pressure - 3 x 400/690 V

S3.120.300.500.8



TM041944



TM041945

Motor data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N ¹	I _{start}	η _{motor} [%]					Cos φ			Moment of inertia [kgm ²]	Breakdown torque M _{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1				
S3.120.300.500.8.66M.S.449...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532		
S3.120.300.500.8.66M.C.449...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532		
S3.120.300.500.8.66M.D.449...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532		
S3.120.300.500.8.66M.H.449...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532		

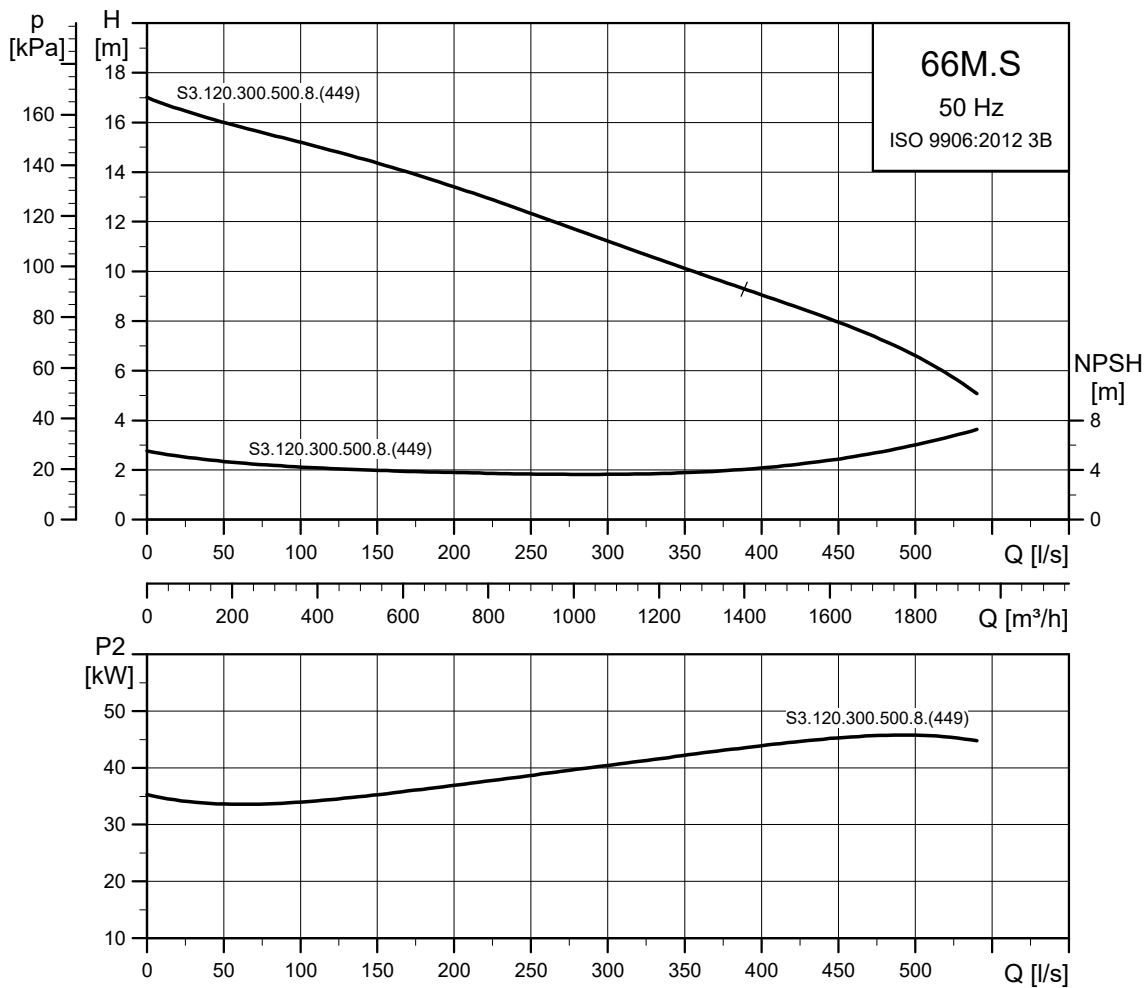
¹ Low/high voltage (400/690 V).**Note:** Enclosure class: IP68**Pump data**

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth	Moment of inertia*
	[mm]	[mm]	PN	[m]	[kgm ²]
S3.120.300.500.8.66M.S/C/D/H.449...	449	120	10	20	1,5370

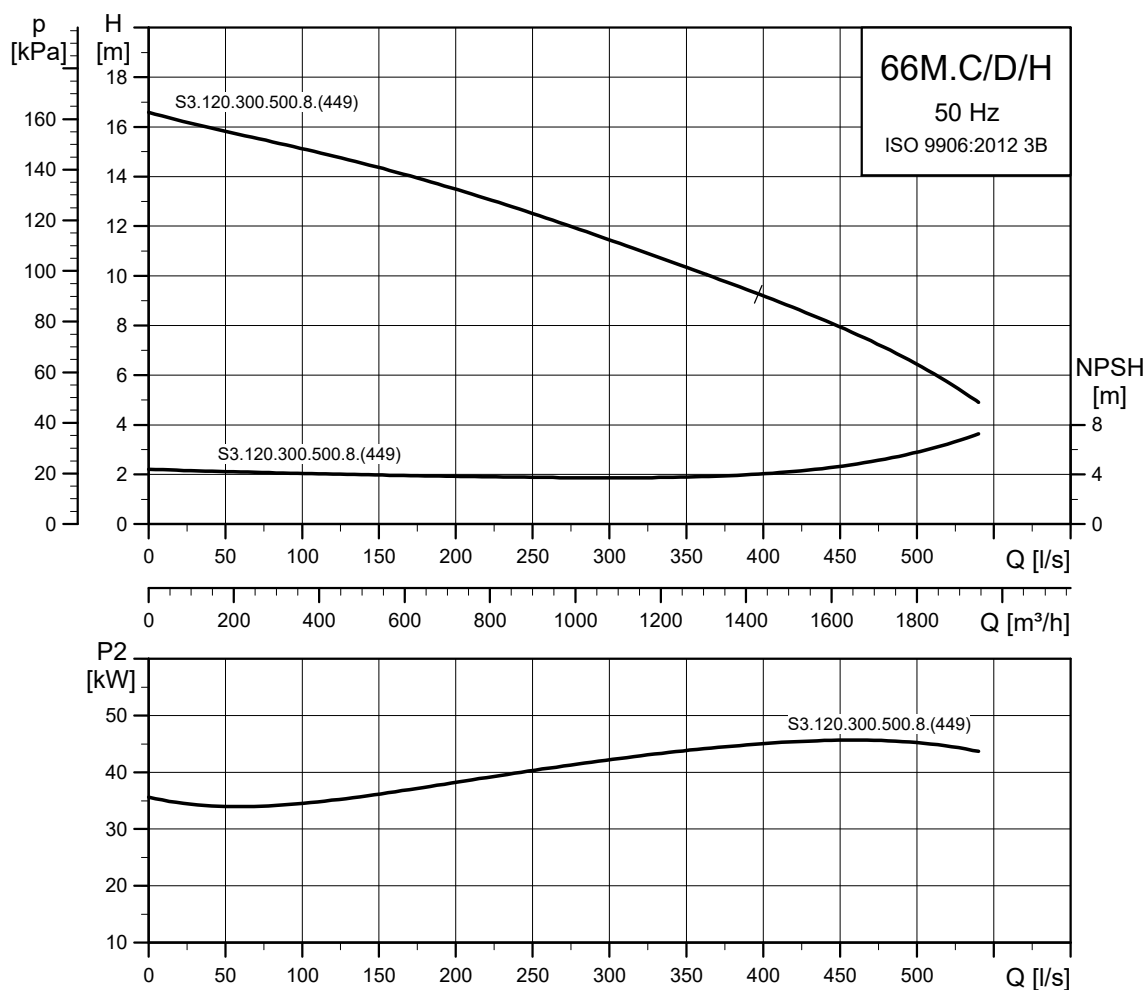
* Applies to material code G (see Type key). For other material codes, please contact Grundfos.

Medium pressure - 3 x 415 V

S3.120.300.500.8



TM041944



TM041945

Motor data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N	I _{start}	η _{motor} [%]			Cos φ			Moment of inertia [kgm ²]	Breakdown torque M _{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1		
S3.120.300.500.8.66M.S.449...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532
S3.120.300.500.8.66M.C.449...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532
S3.120.300.500.8.66M.D.449...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532
S3.120.300.500.8.66M.H.449...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532

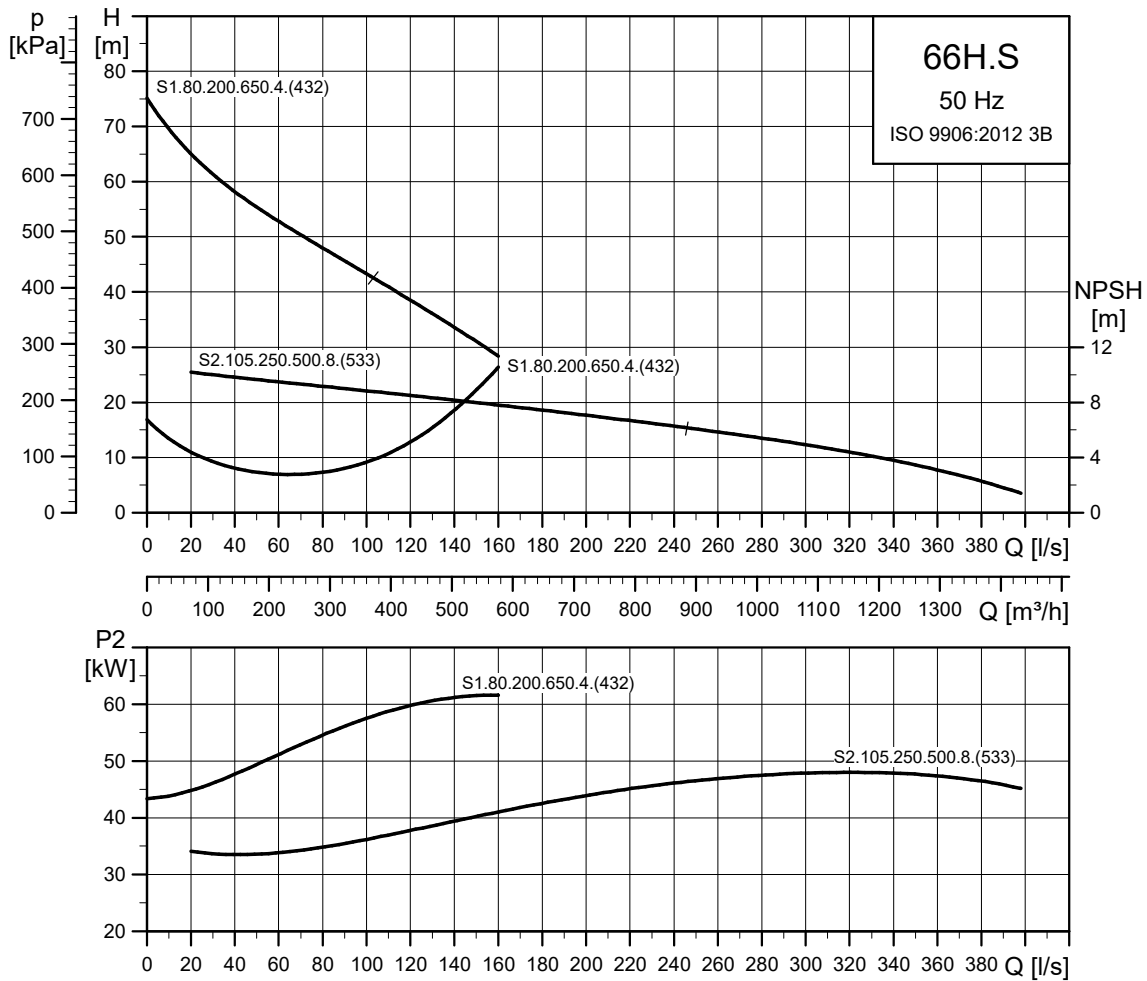
Note: Enclosure class: IP68**Pump data**

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth	Moment of inertia*
	[mm]	[mm]	PN	[m]	[kgm²]
S3.120.300.500.8.66M.S/C/D/H.449...	449	120	10	20	1.5370

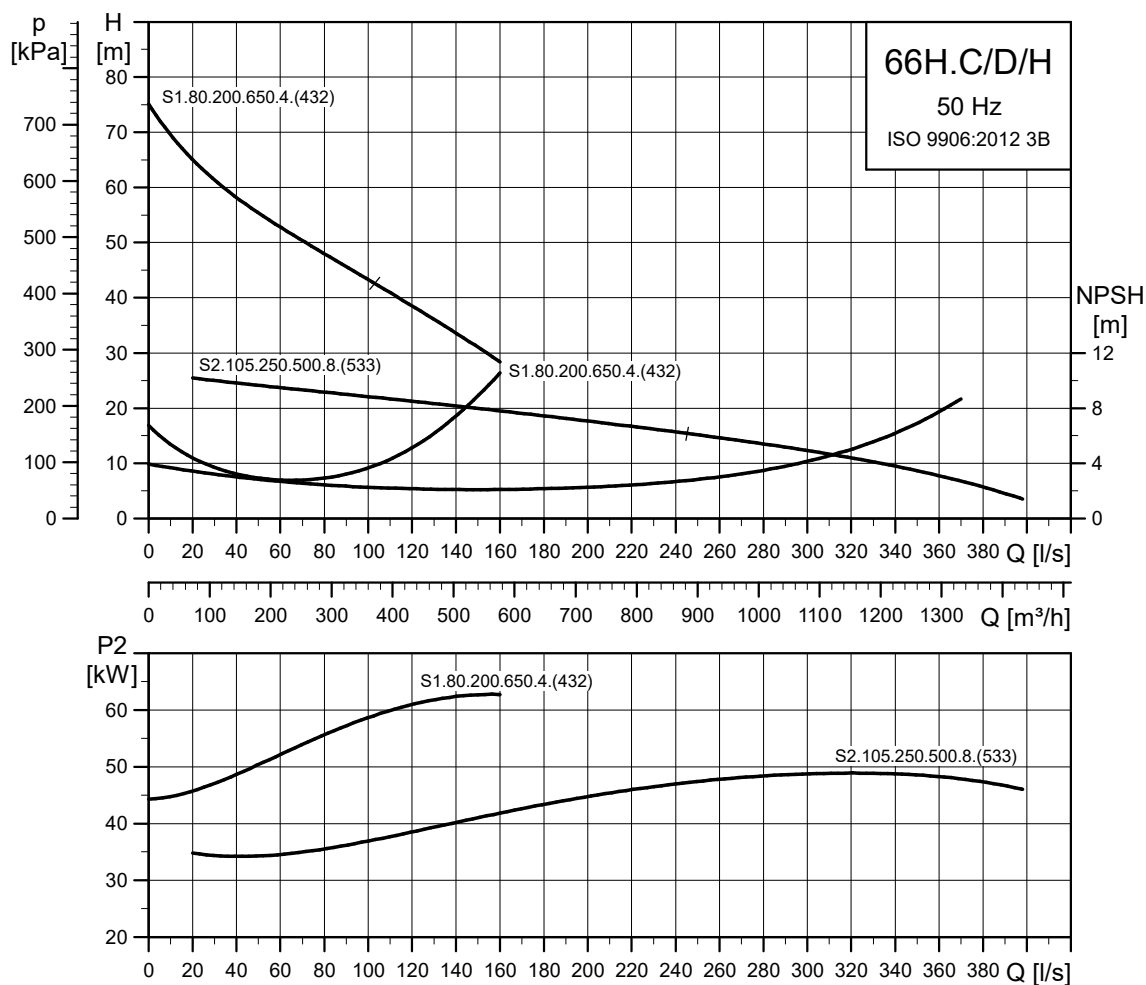
* Applies to material code G (see Type key). For other material codes, please contact Grundfos.

High pressure - 3 x 400/690 V

S1.80.200.650.4 and S2.105.250.500.8



TM040675



TM040676

Motor data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N ¹		I _{start}		η _{motor} [%]			Cos φ			Moment of inertia [kgm ²]	Breakdown torque M _{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1				
S1.80.200.650.4.66H.S.432...	73	68	4	1476	Y/D	134/78	827	92	93	93	0.67	0.76	0.79	0.6000	1096		
S1.80.200.650.4.66H.C.432...	73	68	4	1476	Y/D	134/78	827	92	93	93	0.67	0.76	0.79	0.6000	1096		
S1.80.200.650.4.66H.H.432...	73	68	4	1476	Y/D	134/78	827	92	93	93	0.67	0.76	0.79	0.6000	1096		
S1.80.200.650.4.66H.D.432...	73	68	4	1476	Y/D	134/78	827	92	93	93	0.67	0.76	0.79	0.6000	1096		
S2.105.250.500.8.66H.S.533...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532		
S2.105.250.500.8.66H.C.533...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532		
S2.105.250.500.8.66H.D.533...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532		
S2.105.250.500.8.66H.H.533...	56	50	8	726	Y/D	102/59	547	90	91	89	0.68	0.77	0.80	0.9000	1532		

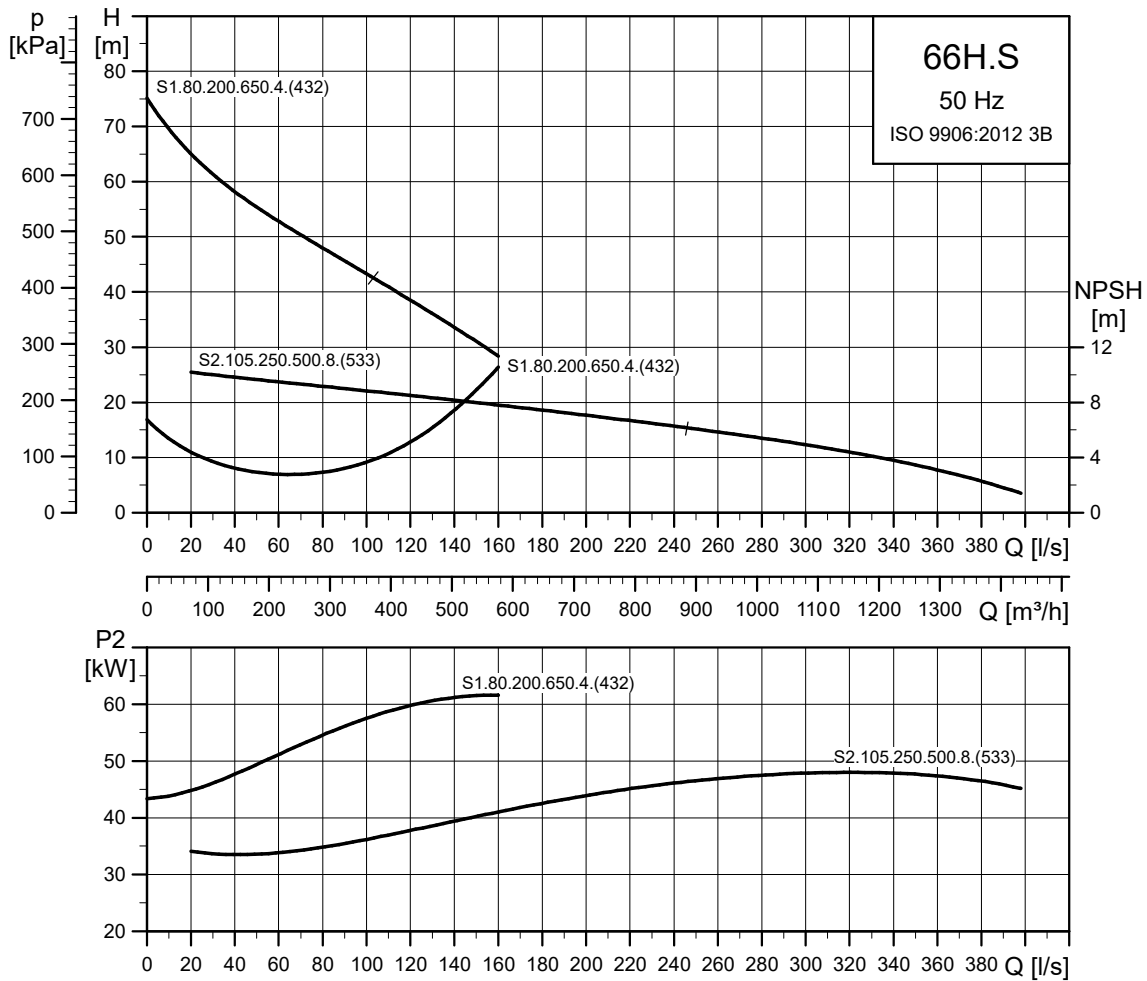
¹ Low/high voltage (400/690 V).**Note:** Enclosure class: IP68**Pump data**

Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth	Moment of inertia*
	[mm]	[mm]	PN	[m]	[kgm²]
S1.80.200.650.4.66H.S/C/D/H.432...	432	80	10	20	1.1300
S2.105.250.500.8.66H.S/C/D/H.533...	533	105			2.6700

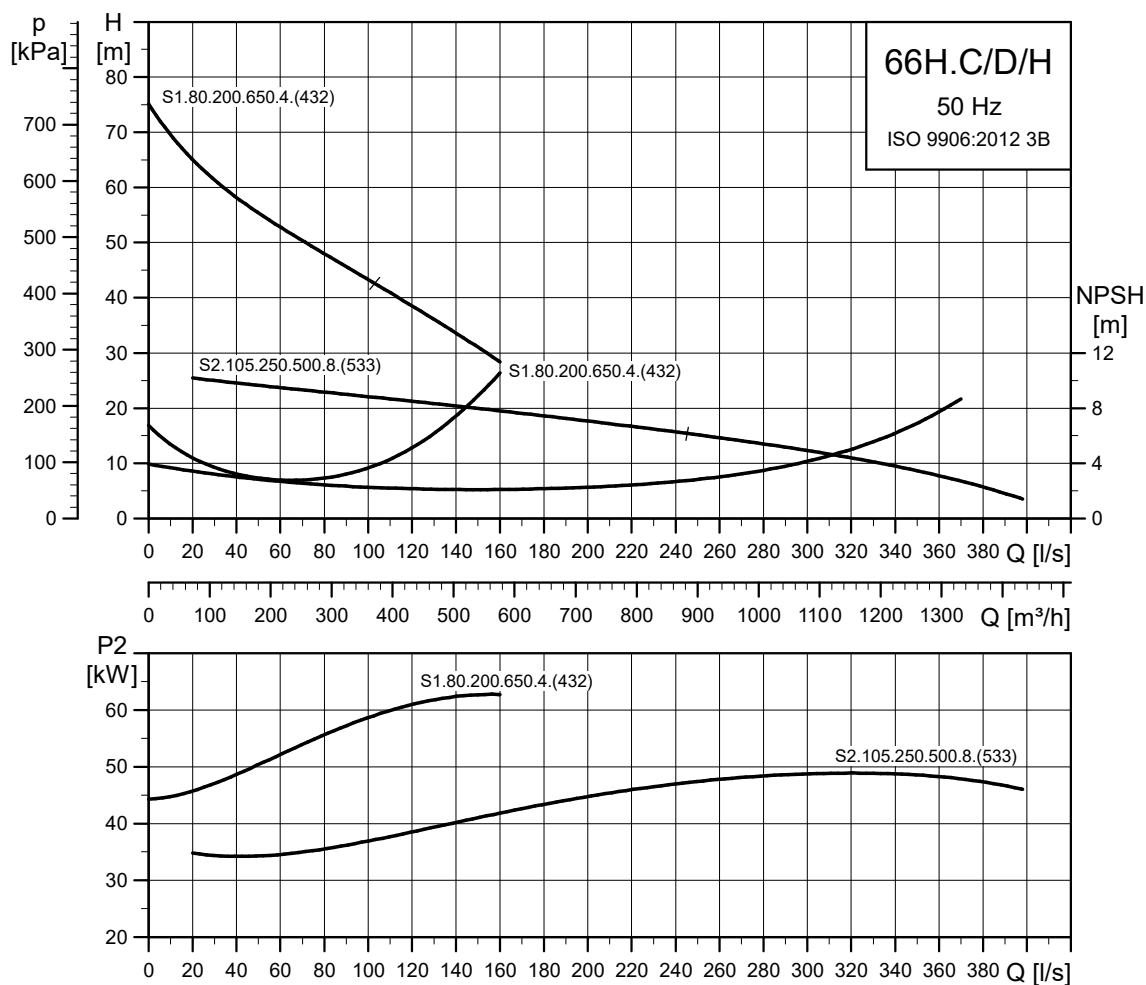
* Applies to material code G (see Type key). For other material codes, please contact Grundfos.

High pressure - 3 x 415 V

S1.80.200.650 and S2.105.250.500



TM040675



TM040676

Motor data

Pump type	P1 [kW]	P2 [kW]	No. of poles	RPM	Starting method	I _N		I _{start}			η _{motor} [%]			Cos φ			Moment of inertia [kgm ²]	Breakdown torque M _{max} [Nm]
						[A]	[A]	1/2	3/4	1/1	1/2	3/4	1/1					
S1.80.200.650.4.66H.S.432...	73	68	4	1476	Y/D	129	797	92	93	93	0.67	0.76	0.79	0.6000	1096			
S1.80.200.650.4.66H.C.432...	73	68	4	1476	Y/D	129	797	92	93	93	0.67	0.76	0.79	0.6000	1096			
S1.80.200.650.4.66H.D.432...	73	68	4	1476	Y/D	129	797	92	93	93	0.67	0.76	0.79	0.6000	1096			
S1.80.200.650.4.66H.H.432...	73	68	4	1476	Y/D	129	797	92	93	93	0.67	0.76	0.79	0.6000	1096			
S2.105.250.500.8.66H.S.533...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532			
S2.105.250.500.8.66H.C.533...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532			
S2.105.250.500.8.66H.D.533...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532			
S2.105.250.500.8.66H.H.533...	56	50	8	726	Y/D	98	528	90	91	89	0.68	0.77	0.80	0.9000	1532			

Note: Enclosure class: IP68**Pump data**

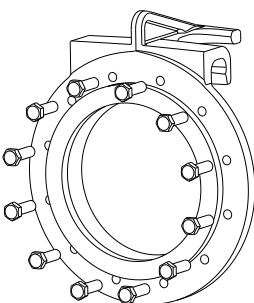
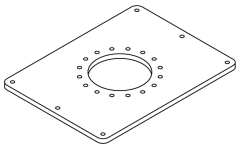
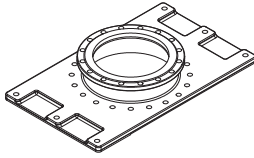
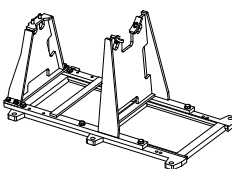
Pump type	Impeller diameter	Maximum solids size	Pump housing pressure	Maximum installation depth	Moment of inertia*
	[mm]	[mm]	PN	[m]	[kgm²]
S1.80.200.650.4.66H.S/C/D/H.432...	432	80	10	20	1.1300
S2.105.250.500.8.66H.S/C/D/H.533...	533	105			2.6700

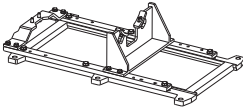
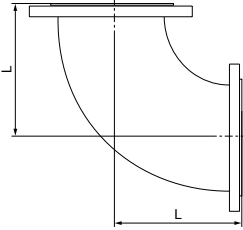
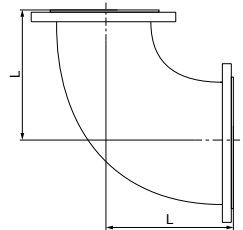
* Applies to material code G (see Type key). For other material codes, please contact Grundfos.

11. Accessories

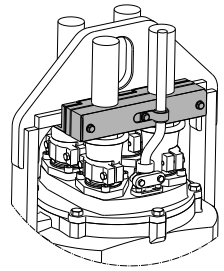
Accessories (for installation)

Pump type	Installation accessories
Range 50-70 S and C	DN 80-DN 200 without a guide claw (guide claw included in auto-coupling kit)
Range 50-70 S and C	DN 250-DN 600 with a guide claw mounted on the pump
Range 50-70 D	Pump without installation accessories (accessories as separate kit)
Range 50-70 H	Base stand for horizontal, dry installation supplied together with the pump. Pumps with material code G or Q include a painted-steel stand. If another horizontal stand is required, order a pump of installation type D together with the required stand.

Pictures	Description	Size	Weight [kg]	PN	Product number	
 TM069868	Cast iron, epoxy-coated auto-coupling system complete with: guide claw ¹ base unit upper guide rail bracket gaskets and bolts.	DN 200	250	10	96641489	
		DN 250	223		96782483	
		DN 300	276		96782484	
		DN 500	705		96782485	
		DN 600	899		96782486	
Outlet flange						
¹ Installation type S and C pumps with outlet flange size DN 250 and higher are supplied with a guide claw mounted on the flange.						
Intermediate guide rail bracket	For guide rails longer than 6 m	DN 200-600	8		96255842	
Guide rails	Standard pipes. Not supplied by Grundfos					
 TM069923	Adapter for Flygt auto-coupling with: flange seal bolts.	Grundfos flange/Flygt flange		10		
		DN 200/DN 200 - 3"	25		97908872	
		DN 250/DN 250 - 3"	33		97908887	
		DN 300/DN 300 - 3"	120		97908892	
		DN 300/DN 300 - 4"	120		97908893	
 TM032015	Steel, epoxy-coated. Base plate for vertical, dry installation with: gaskets bolts.	DN 250	90	10	96308240	
		DN 300	87		96308241	
		DN 500	167		96308245	
 TM043693	Cast iron, epoxy-coated. Base plate for vertical, dry installation with: gaskets bolts.	DN 400/DN 500	195	10	96308244	
		L and E hydraulics		125	96308208	
 TM044159	Base stand for horizontal, dry installation	M and H hydraulics		113	10	96308289

Pictures	Description	Size	Weight [kg]	PN	Product number
	TM064971 Special base stand for horizontal, dry installation with customized height.				Contact Grundfos.
	Bend Cast iron, epoxy-coated				
	L = 350 mm	DN 250	64		99035998
	L = 400 mm	DN 300	81		99035999
	L = 500 mm	DN 400	148		99036000
	L = 500 mm	DN 500	351	10	99036001
	Reducing bend Cast iron, epoxy-coated	Pipe/pump inlet			
	L = 350 mm	DN 250/DN 200	58		99036008
	L = 400 mm	DN 300/DN 250	76		99036011
	L = 450 mm	DN 350/DN 250	93		99036012
	L = 500 mm	DN 400/DN 250	118		99036013
	L = 500 mm	DN 400/DN 300	128	10	99036014
	L = 600 mm	DN 500/DN 400	306		99036015
	L = 700 mm	DN 600/DN 500	411		99031225

Other accessories

Pictures	Description	Size	Product number
 TM026126	Galvanised lifting chain with lifting link and safety hook. Certified. Maximum lifting capacity 2000 kg.	4 m	98425784
		6 m	98425785
		8 m	98425786
		10 m	98425787
	Stainless steel lifting chain with lifting link and safety hook. Certified. Maximum lifting capacity 2000 kg..	4 m	98425801
		6 m	98425802
		8 m	98425803
		10 m	98425804
 TM064974	Cable support bracket (case by case).		Contact Grundfos
 TM065110	AMD.07.18.1430 mixer, 3 x 400 V, 50 Hz.		99018155
	Bracket for wall mounting.	2" thread	96115291
	Bracket for floor mounting.	2" thread	96115292
	Bracket for suspended mounting.	2" thread	96115293
	Tube for suspended mounting, length 3 m.	2" thread	96115294
 TM016982	Float switch.	10 m cable	96003332
		20 m cable	96003695
		10 m cable	96003421
	Float switch for use in potentially explosive environments.	20 m cable	96003536
 TM028862	Bracket for two float switches.		96003338

Pictures	Description	Size	Product number
	Float switches with bracket.		
	2 switches, 1 pump without alarm.	10 m cable	62500013
	3 switches, 1 pump with alarm.		62500014
	3 switches, 2 pumps with alarm.		62500014
	3 switches, 2 pumps with alarm.		62500015
	Float switches with bracket for use in potentially explosive environments.		
	2 switches, 1 pump without alarm.	10 m cable	62500016
	3 switches, 1 pump with alarm.		62500017
	3 switches, 2 pumps with alarm.		62500017
	3 switches, 2 pumps with alarm.		62500018
	TM020670		
	TM028860		
	Bracket for level electrodes.	For 38 mm mounting pipe	91713196

12. Dimensions

Recommendation for pump foundations

Note: This applies only to pumps above 15 kW.

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

The rotating mass of the entire pump together with the forces from the motor and hydraulics will 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 will increase substantially.

Pumps from Grundfos 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 operating conditions without considerable lifetime reduction, the pipes and supportive structure might suffer and crack if vibration levels are too high. Furthermore, noticeable noise levels might be generated.

The likelihood of high vibration levels occurring 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 frequency ranges to avoid operating areas with high vibrations. 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 be of 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.
- As a rule of thumb, the mass of the concrete foundation must be a minimum of three to five times the mass of the supported equipment and must have sufficient rigidity to withstand the axial, transverse and torsional loadings generated by the equipment.
- The foundation must be 15 cm wider than the base plate for pumps up to 350 kW and 25 cm wider for larger pumps.
- The concrete used in the foundation must have a minimum tensile strength of 250 N/cm². Epoxy grout must always be used to secure the pump base plate to the foundation.

Pull-out strengths for anchor bolts

Submerged installation on auto-coupling (type S and C):

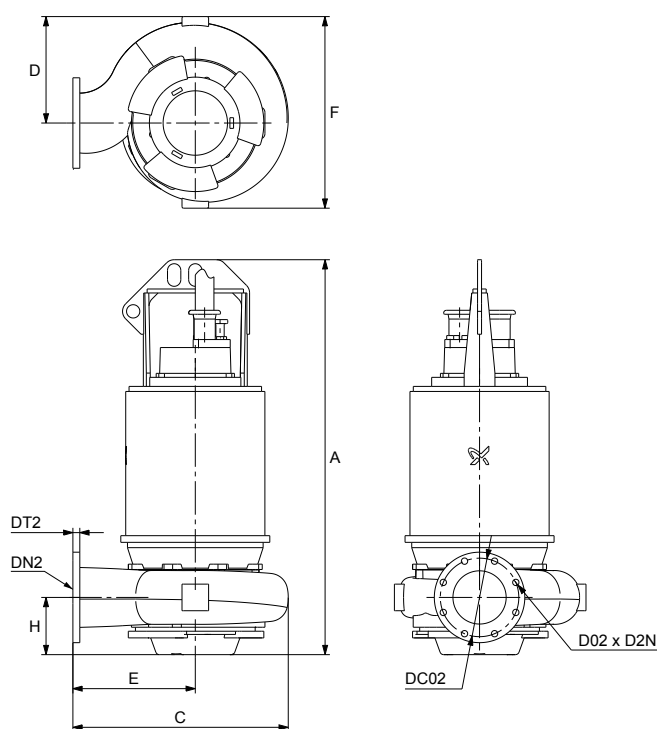
Auto-coupling base unit	Anchor bolts	Pull-out strength [kN]
DN 100	4 x M16	5
DN 125/150 ¹		8
DN 200	4 x M24	16
DN 250		30
DN 300		40
DN 500	6 x M30	40
DN 600		40

¹ Base plate outlet DN 125 and base plate outlet DN 150.
Dry installation (type H and D):

Dry installation	Anchor bolts	Pull-out strength [kN]
DN 100	3 x M20	18
DN 150	6 x M20	18
DN 200		18
DN 250	6 x M24	25
DN 300		25
DN 500/400 ¹		25
DN 500		25

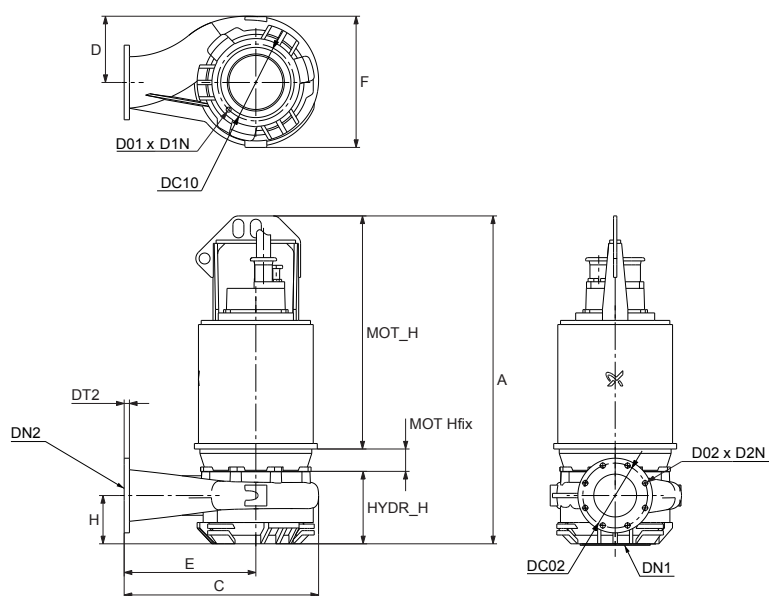
¹ Base plate inlet DN 500 and pump inlet DN 400.

Basic pump



TM046386

Basic pumps - Installation types S and C



TM046395

Basic pumps - Installation types D and H

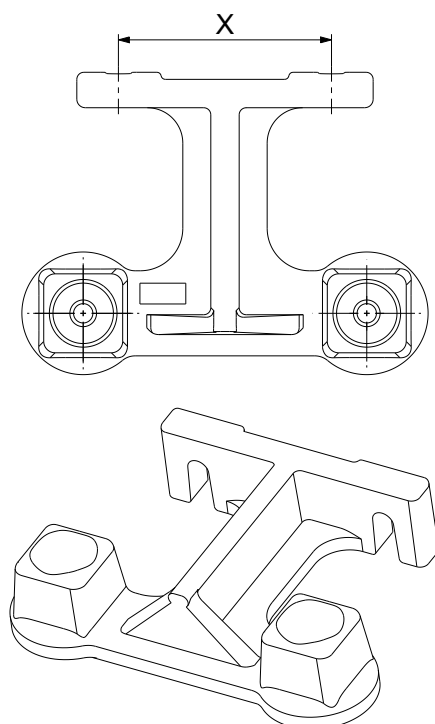
Note: Dimensions D01, D1N, DC10 and DN1 are equal to zero for installation types C and S because of the inlet type.

Pump type	A	C	D	D01	D02	D1N	D2N	DC02	DC10	DN1	DN2	DT2	E	H	F	HYDR H	MOT H	MOT Hfix
S1.80.200.650.4.66H.S	1.524	883	300	-	24	-	8	296	-	-	DN200	24	600	596	220	328	1.196	20
S1.80.200.650.4.66H.C	1.530	883	300	M20	24	12	8	296	350	-	DN200	24	600	596	226	334	1.196	20
S1.80.200.650.4.66H.H	1.530	883	300	M20	24	12	8	296	350	DN 250	DN200	24	600	596	226	334	1.196	20
S1.80.200.650.4.66H.D	1.524	883	300	-	24	-	8	296	-	DN 250	DN200	24	600	596	220	328	1.196	20
S2.100.200.550.4.66M.S	1.514	809	400	-	24	0	8	296	0	-	DN200	26	460	720	215	318	1.196	20

Pump type	A	C	D	D01	D02	D1N	D2N	DC02	DC10	DN1	DN2	DT2	E	H	F	HYDR H	MOT H	MOT Hfix
S2.100.200.550.4.66M.C	1.514	809	400	M20	24	12	8	296	350	-	DN200	26	460	720	215	318	1.196	20
S2.100.200.550.4.66M.H	1.514	809	400	M20	24	12	8	296	350	DN 250	DN200	26	460	720	215	318	1.196	20
S2.100.200.550.4.66M.D	1.514	809	400	-	24	0	8	296	0	DN 250	DN200	26	460	720	215	318	1.196	20
S2.100.200.650.4.66M.S	1.514	809	400	-	24	0	8	296	0	-	DN200	26	460	720	215	318	1.196	20
S2.100.200.650.4.66M.C	1.514	809	400	M20	24	12	8	296	350	-	DN200	26	460	720	215	318	1.196	20
S2.100.200.650.4.66M.H	1.514	809	400	M20	24	12	8	296	350	DN 250	DN200	26	460	720	215	318	1.196	20
S2.100.200.650.4.66M.D	1.514	809	400	-	24	0	8	296	0	DN 250	DN200	26	460	720	215	318	1.196	20
S2.110.250.650.4.66L.S	1.565	1.193	478	-	24	0	12	350	0	-	DN 250	30	750	891	235	369	1.196	20
S2.110.250.650.4.66L.C	1.196	1.193	478	M20	24	12	12	350	515	-	DN 250	30	750	891	235	369	1.196	20
S2.110.250.650.4.66L.D	1.196	1.193	478	M20	24	12	12	350	515	DN 400	DN 250	30	750	891	235	369	1.196	20
S2.110.250.650.4.66L.H	1.565	1.193	478	-	24	0	12	350	0	DN 400	DN 250	30	750	891	235	369	1.196	20
S2.105.250.500.8.66H.S	1.546	1.067	410	-	24	0	12	350	0	-	DN 250	30	750	730	233	350	1.196	20
S2.105.250.500.8.66H.C	1.546	1.070	410	M20	24	12	12	350	400	-	DN 250	30	750	730	233	350	1.196	20
S2.105.250.500.8.66H.D	1.546	1.070	410	M20	24	12	12	350	400	DN 300	DN 250	30	750	730	233	350	1.196	20
S2.105.250.500.8.66H.H	1.546	1.067	410	-	24	0	12	350	0	DN 300	DN 250	30	750	730	233	350	1.196	20
S2.140.300.350.8.66M.S	1.566	1.139	522	-	24	0	12	400	0	-	DN 300	33	700	907	225	370	1.196	20
S2.140.300.350.8.66M.C	1.620	1.139	522	M20	24	12	12	400	400	-	DN 300	33	700	907	279	424	1.196	20
S2.140.300.350.8.66M.D	1.620	1.139	522	M20	24	12	12	400	400	DN 300	DN 300	33	700	907	279	424	1.196	20
S2.140.300.350.8.66M.H	1.566	1.139	522	-	24	0	12	400	0	DN 300	DN 300	33	700	907	225	370	1.196	20
S3.110.500.220.10.66L.S	1.706	1.843	719	-	27	0	20	620	0	-	DN 500	37	1.200	1.269	380	510	1.196	20
S3.110.500.220.10.66L.C	1.659	1.843	719	M24	27	16	20	620	515	-	DN 500	37	1.200	1.269	333	463	1.196	20
S3.110.500.220.10.66L.D	1.659	1.843	719	M24	27	16	20	620	515	DN 400	DN 500	37	1.200	1.269	333	463	1.196	20
S3.110.500.220.10.66L.H	1.706	1.843	719	-	27	0	20	620	0	DN 400	DN 500	37	1.200	1.269	380	510	1.196	20
S3.110.500.350.10.66L.S	1.706	1.843	719	-	27	0	20	620	0	-	DN 500	37	1.200	1.269	380	510	1.196	20
S3.110.500.350.10.66L.C	1.659	1.843	719	M24	27	16	20	620	515	-	DN 500	37	1.200	1.269	333	463	1.196	20
S3.110.500.350.10.66L.D	1.659	1.843	719	M24	27	16	20	620	515	DN 400	DN 500	37	1.200	1.269	333	463	1.196	20
S3.110.500.350.10.66L.H	1.706	1.843	719	-	27	0	20	620	0	DN 400	DN 500	37	1.200	1.269	380	510	1.196	20
S3.110.500.500.8.66L.S	1.706	1.843	719	-	27	0	20	620	0	-	DN 500	37	1.200	1.269	380	510	1.196	20
S3.110.500.500.8.66L.C	1.659	1.843	719	M24	27	16	20	620	515	-	DN 500	37	1.200	1.269	333	463	1.196	20
S3.110.500.500.8.66L.D	1.659	1.843	719	M24	27	16	20	620	515	DN 400	DN 500	37	1.200	1.269	333	463	1.196	20
S3.110.500.500.8.66L.H	1.706	1.843	719	-	27	0	20	620	0	DN 400	DN 500	37	1.200	1.269	380	510	1.196	20
S3.120.300.500.8.66M.S	1.791	1.139	522	-	24	0	12	400	0	-	DN 300	33	700	907	450	595	1.196	20
S3.120.300.500.8.66M.C	1.620	1.139	522	M20	24	12	12	400	400	-	DN 300	33	700	907	279	424	1.196	20
S3.120.300.500.8.66M.D	1.620	1.139	522	M20	24	12	12	400	400	DN 300	DN 300	33	700	907	279	424	1.196	20
S3.120.300.500.8.66M.H	1.791	1.139	522	-	24	0	12	400	0	DN 300	DN 300	33	700	907	450	595	1.196	20
S3.120.600.350.10.66E.S	1.787	2.124	886	-	30	0	20	725	0	-	DN 600	40	1.350	1.506	450	591	1.196	20
S3.120.600.350.10.66E.C	1.753	2.124	886	M24	30	20	20	725	620	-	DN 600	40	1.350	1.506	417	557	1.196	20
S3.120.600.350.10.66E.D	1.753	2.124	886	M24	30	20	20	725	620	DN 500	DN 600	40	1.350	1.506	417	557	1.196	20
S3.120.600.350.10.66E.H	1.787	2.124	886	-	30	0	20	725	0	DN 500	DN 600	40	1.350	1.506	450	591	1.196	20
S3.120.600.500.8.66E.S	1.787	2.124	886	-	30	0	20	725	0	-	DN 600	40	1.350	1.506	450	591	1.196	20
S3.120.600.500.8.66E.C	1.753	2.124	886	M24	30	20	20	725	620	-	DN 600	40	1.350	1.506	417	557	1.196	20
S3.120.600.500.8.66E.D	1.753	2.124	886	M24	30	20	20	725	620	DN 500	DN 600	40	1.350	1.506	417	557	1.196	20
S3.120.600.500.8.66E.H	1.787	2.124	886	-	30	0	20	725	0	DN 500	DN 600	40	1.350	1.506	450	591	1.196	20

Installation on auto-coupling system

Upper guide rail bracket dimensions

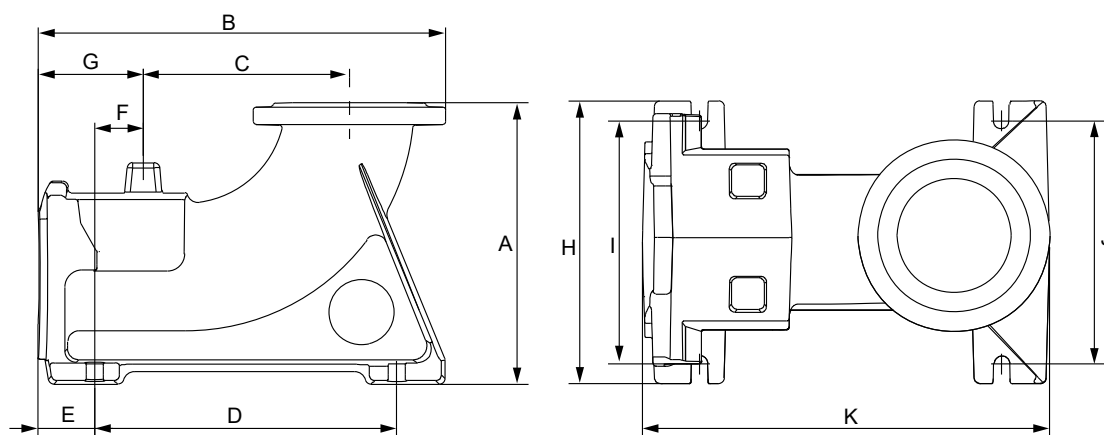


TM069915

Installation dimensions for upper guide rail bracket

Auto-coupling		X [mm]
Product number	Size	
96641489	DN 200	150
96782483	DN 250	
96782484	DN 300	
96782485	DN 500	
96782486	DN 600	

Auto-coupling dimensions



TM066497

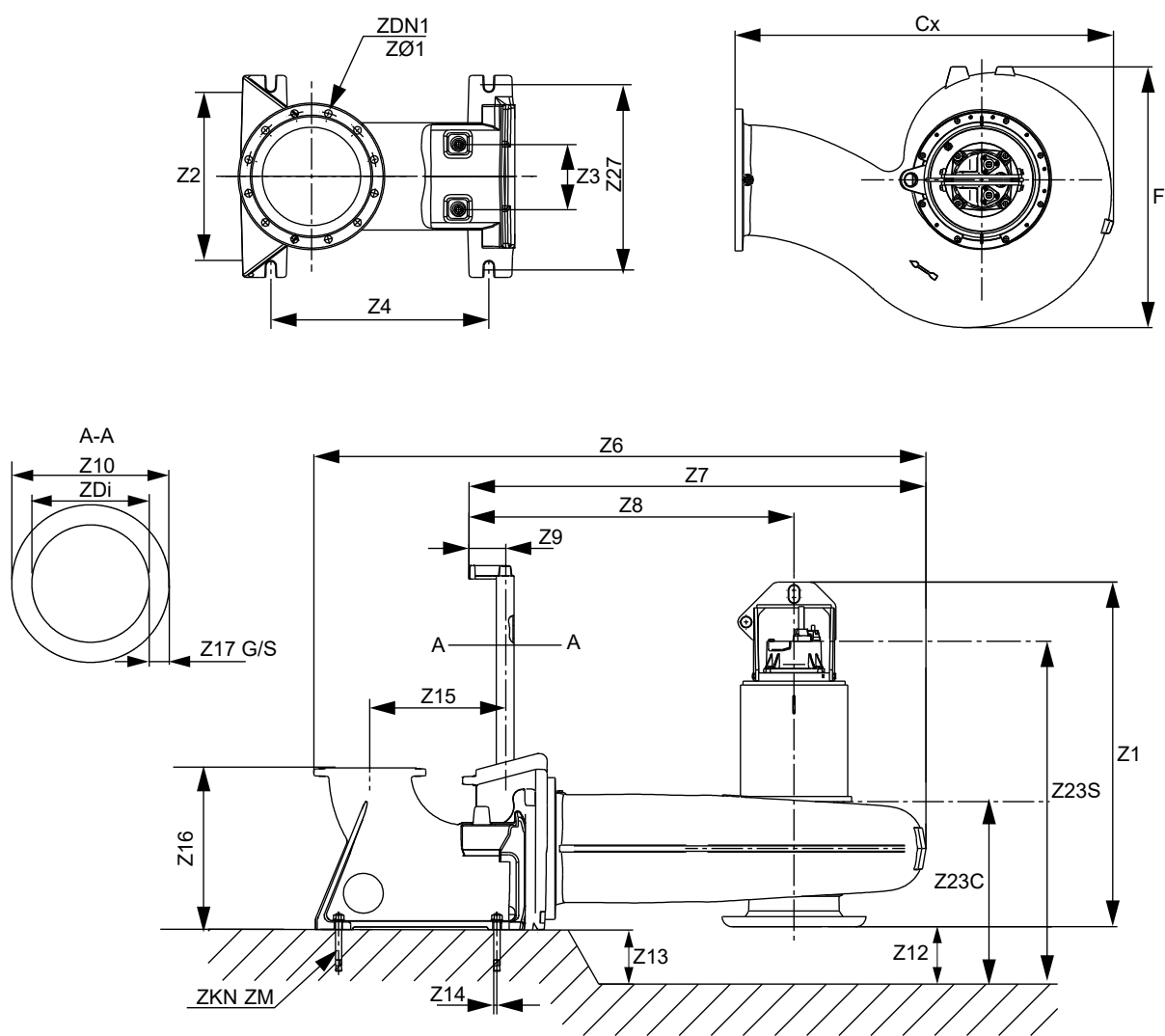
Dimension for cast-iron base unit

Product number	Size	Dimensions [mm]										
		A	B	C	D	E	F	G	H	I	J	K
96641489	DN 200	485	710	365	535	89	86	175	540	430	430	710
96782483	DN 250	545	753	375	565	89	86	175	540	470	470	745
96782484	DN 300	650	860	450	670	80	95	175	620	550	550	845
96782485	DN 500	890	1148	564	735/150 ¹	127	99	226	720	660	6660	1120
96782486	DN 600	1050	1260	614	830/160 ¹	127	99	226	780	710	710	1230

¹ Six-bolt installation: distance between the front bolt hole and the middle bolt hole / distance between the middle bolt hole and the back bolt hole.

Dimensions

Pump installation dimensions



Installation on auto-coupling system - version 1 (base unit with 4 anchor bolts)

Pos.	Description
S Ex	Installation S Ex pumps
S St	Installation S Std. pumps
C	Installation C

Note: Z12A is the minimum recommended distance from pit bottom to bottom of pump inlet side.

Note: Z11 is the total height of pump installed on Grundfos installation accessory in the pit.

Note: The pump in this figure might not equal Z12A + Z1.

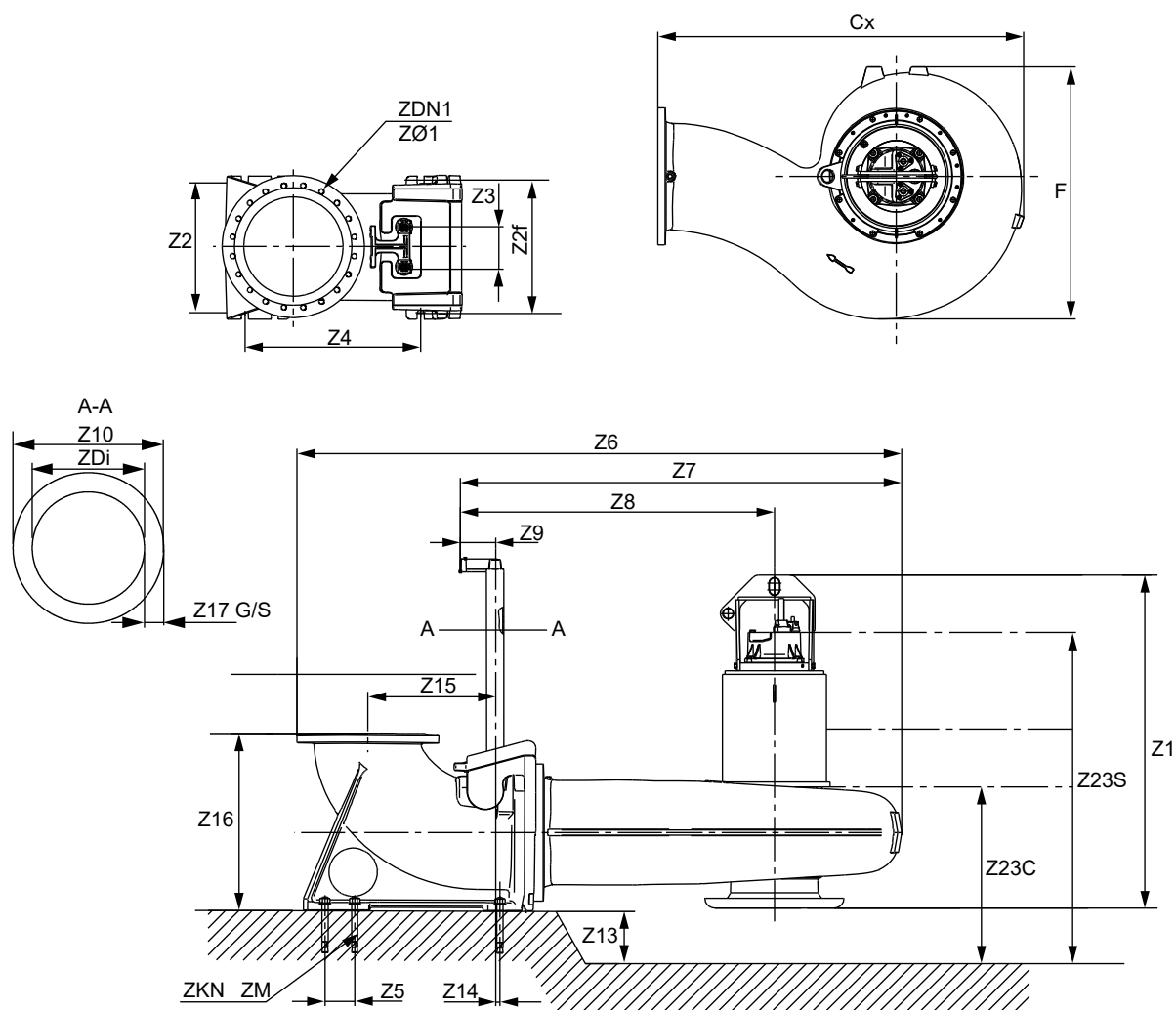
Pump type	C	F	ZØ1	Z1	Z2	Z3	Z4	Z6	Z7	Z8	Z9	Z10	Z11	Z12A
S1.80.200.650.4.66H.C	883	596	8 x 23	1494	430	200	535	1644	1275	992	170	88	1620	126
S1.80.200.650.4.66H.S	883	596	8 x 23	1494	430	200	535	1644	1275	992	170	88	1620	126
S2.100.200.550.4.66M.C	809	720	8 x 23	1484	430	200	535	1570	1201	852	170	88	1615	131
S2.100.200.550.4.66M.S	809	720	8 x 23	1484	430	200	535	1570	1201	852	170	88	1615	131
S2.100.200.650.4.66M.C	809	720	8 x 23	1484	430	200	535	1570	1201	852	170	88	1615	131
S2.100.200.650.4.66M.S	809	720	8 x 23	1484	430	200	535	1570	1201	852	170	88	1615	131
S2.110.250.650.4.66L.C	1070	730	12 x 23	1516	471	200	565	1869	1462	1142	170	88	1657	141
S2.110.250.650.4.66L.S	1070	730	12 x 23	1516	471	200	565	1869	1462	1142	170	88	1657	141
S2.105.250.500.8.66H.C	1193	891	12 x 23	1535	471	200	565	1992	1585	1142	170	88	1674	139
S2.105.250.500.8.66H.S	1193	891	12 x 23	1535	471	200	565	1992	1585	1142	170	88	1674	139
S2.140.300.350.8.66M.C	1139	907	12 x 23	1536	551	200	670	2040	1531	1092	170	88	1717	181

TM068504

Pump type	C	F	Z01	Z1	Z2	Z3	Z4	Z6	Z7	Z8	Z9	Z10	Z11	Z12A
S2.140.300.350.8.66M.S	1139	907	12 x 23	1536	551	200	670	2040	1531	1092	170	88	1717	181
S3.120.300.500.8.66M.C	1139	907	12 x 23	1761	551	200	670	2040	1531	1092	170	88	1967	206
S3.120.300.500.8.66M.S	1139	907	12 x 23	1761	551	200	670	2040	1531	1092	170	88	1967	206

Pump type	Z12B	Z13	Z14	Z15	Z16	Z17		Z23		S3OPR		ZDC1	ZDN1	ZDT1	ZL1	ZL2	ZM
						G	S	Std.	Ex	Std.	Ex						
S1.80.200.650.4.66H.C	196	150	86	365	485	3	3	450	445	426	421	295	DN 200	31	761	222	4 x M24
S1.80.200.650.4.66H.S	196	150	86	365	485	3	3	750	1352	726	1328	295	DN 200	31	761	222	4 x M24
S2.100.200.550.4.66M.C	196	150	86	365	485	3	3	440	435	421	416	295	DN 200	31	761	222	4 x M24
S2.100.200.550.4.66M.S	196	150	86	365	485	3	3	740	1342	721	1323	295	DN 200	31	761	222	4 x M24
S2.100.200.650.4.66M.C	196	150	86	365	485	3	3	440	435	421	416	295	DN 200	31	761	222	4 x M24
S2.100.200.650.4.66M.S	196	150	86	365	485	3	3	740	1342	721	1323	295	DN 200	31	761	222	4 x M24
S2.110.250.650.4.66L.C	224	150	86	375	545	3	3	472	467	463	458	350	DN 250	32	799	222	4 x M24
S2.110.250.650.4.66L.S	224	150	86	375	545	3	3	772	1374	763	1365	350	DN 250	32	799	222	4 x M24
S2.105.250.500.8.66H.C	224	150	86	375	545	3	3	491	486	480	475	350	DN 250	32	799	222	4 x M24
S2.105.250.500.8.66H.S	224	150	86	375	545	3	3	791	1393	780	1382	350	DN 250	32	799	222	4 x M24
S2.140.300.350.8.66M.C ¹	256	150	95	450	650	3	3	492	-	523	-	400	DN 300	32	901	222	4 x M24
S2.140.300.350.8.66M.S ¹	256	150	95	450	650	3	3	792	-	823	-	400	DN 300	32	901	222	4 x M24
S3.120.300.500.8.66M.C	256	400	95	450	650	3	3	717	518	523	518	400	DN 300	32	901	222	4 x M24
S3.120.300.500.8.66M.S	256	400	95	450	650	3	3	1017	1619	823	1425	400	DN 300	32	901	222	4 x M24

¹ Explosion-proof version not available.



TM042418

Installation on auto-coupling system - version 2 (base unit with 6 anchor bolts)

Pos.	Description
Se	Installation S Ex pumps
St	Installation S Std. pumps
C	Installation C

Note: Z12A is the minimum recommended distance from pit bottom to bottom of pump inlet side.

Note: Z11 is the total height of pump installed on Grundfos installation accessory in the pit.

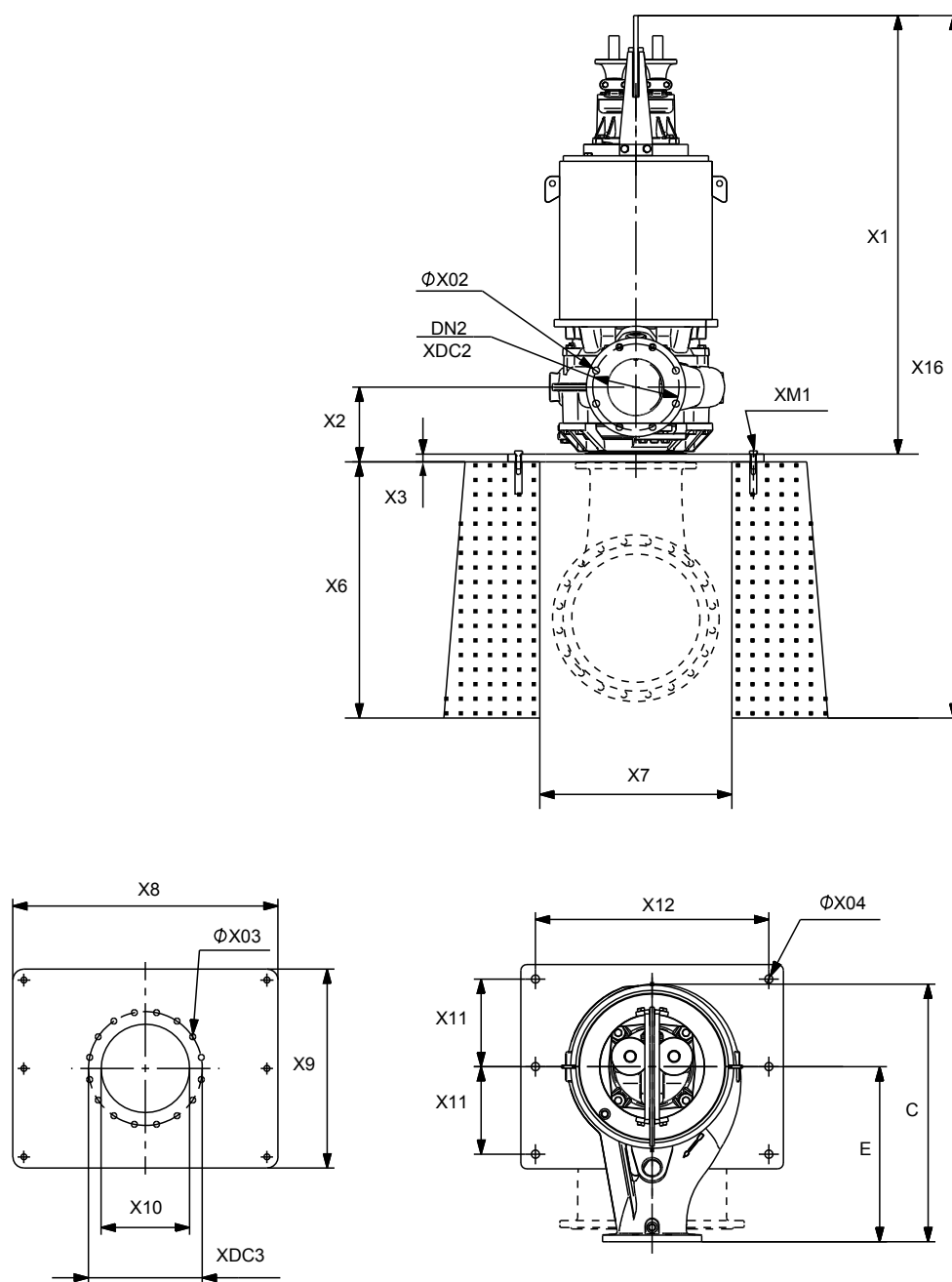
Note: The pump in this figure might not equal Z12A + Z1.

Pump type	C	F	Z01	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Z9	Z10	Z11	Z12A
S3.110.500.220.10.66L.C	1843	1269	20 x 27	1676	657	200	885	150	3028	2297	1654	170	88	1876	200
S3.110.500.220.10.66L.S	1843	1269	20 x 27	1676	657	200	885	150	3028	2297	1654	170	88	1876	200
S3.110.500.350.10.66L.C	1843	1269	20 x 27	1676	657	200	885	150	3028	2297	1654	170	88	1876	200
S3.110.500.350.10.66L.S	1843	1269	20 x 27	1676	657	200	885	150	3028	2297	1654	170	88	1876	200
S3.110.500.500.8.66L.C	1843	1269	20 x 27	1676	657	200	885	150	3028	2297	1654	170	88	1876	200
S3.110.500.500.8.66L.S	1843	1269	20 x 27	1676	657	200	885	150	3028	2297	1654	170	88	1876	200
S3.120.600.350.10.66E.C	2124	1506	20 x 31	1757	710	200	990	160	3444	2574	1800	170	88	1988	231
S3.120.600.350.10.66E.S	2124	1506	20 x 31	1757	710	200	990	160	3444	2574	1800	170	88	1988	231
S3.120.600.500.8.66E.C	2124	1506	20 x 31	1757	710	200	990	160	3444	2574	1800	170	88	1988	231
S3.120.600.500.8.66E.S	2124	1506	20 x 31	1757	710	200	990	160	3444	2574	1800	170	88	1988	231

Pump type	Z12B	Z13	Z14	Z15	Z16	Z17		Z23		S3OPR		ZDC1	ZDN1	ZDT1	ZL1	ZL2	ZM
						G	S	Std.	Ex	Std.	Ex						
S3.110.500.220.10.66L.C ¹	380	200	98	565	890	3	3	632	-	632	-	620	DN 500	42	1185	284	6 x M30
S3.110.500.220.10.66L.S ¹	380	200	98	565	890	3	3	932	-	932	-	620	DN 500	42	1185	284	6 x M30
S3.110.500.350.10.66L.C ¹	380	200	98	565	890	3	3	632	-	632	-	620	DN 500	42	1185	284	6 x M30
S3.110.500.350.10.66L.S ¹	380	200	98	565	890	3	3	932	-	932	-	620	DN 500	42	1185	284	6 x M30
S3.110.500.500.8.66L.C	380	200	98	565	890	3	3	632	627	632	627	620	DN 500	42	1185	284	6 x M30
S3.110.500.500.8.66L.S	380	200	98	565	890	3	3	932	1534	932	1534	620	DN 500	42	1185	284	6 x M30
S3.120.600.350.10.66E.C ¹	431	250	98	615	1050	3	3	713	-	694	-	725	DN 600	48	1320	280	6 x M30
S3.120.600.350.10.66E.S ¹	431	250	98	615	1050	3	3	1013	-	994	-	725	DN 600	48	1320	280	6 x M30
S3.120.600.500.8.66E.C	431	250	98	615	1050	3	3	713	708	694	689	725	DN 600	48	1320	280	6 x M30
S3.120.600.500.8.66E.S	431	250	98	615	1050	3	3	1013	1615	994	1596	725	DN 600	48	1320	280	6 x M30

¹ Explosion-proof version not available.

Dry, vertical installation on concrete foundation



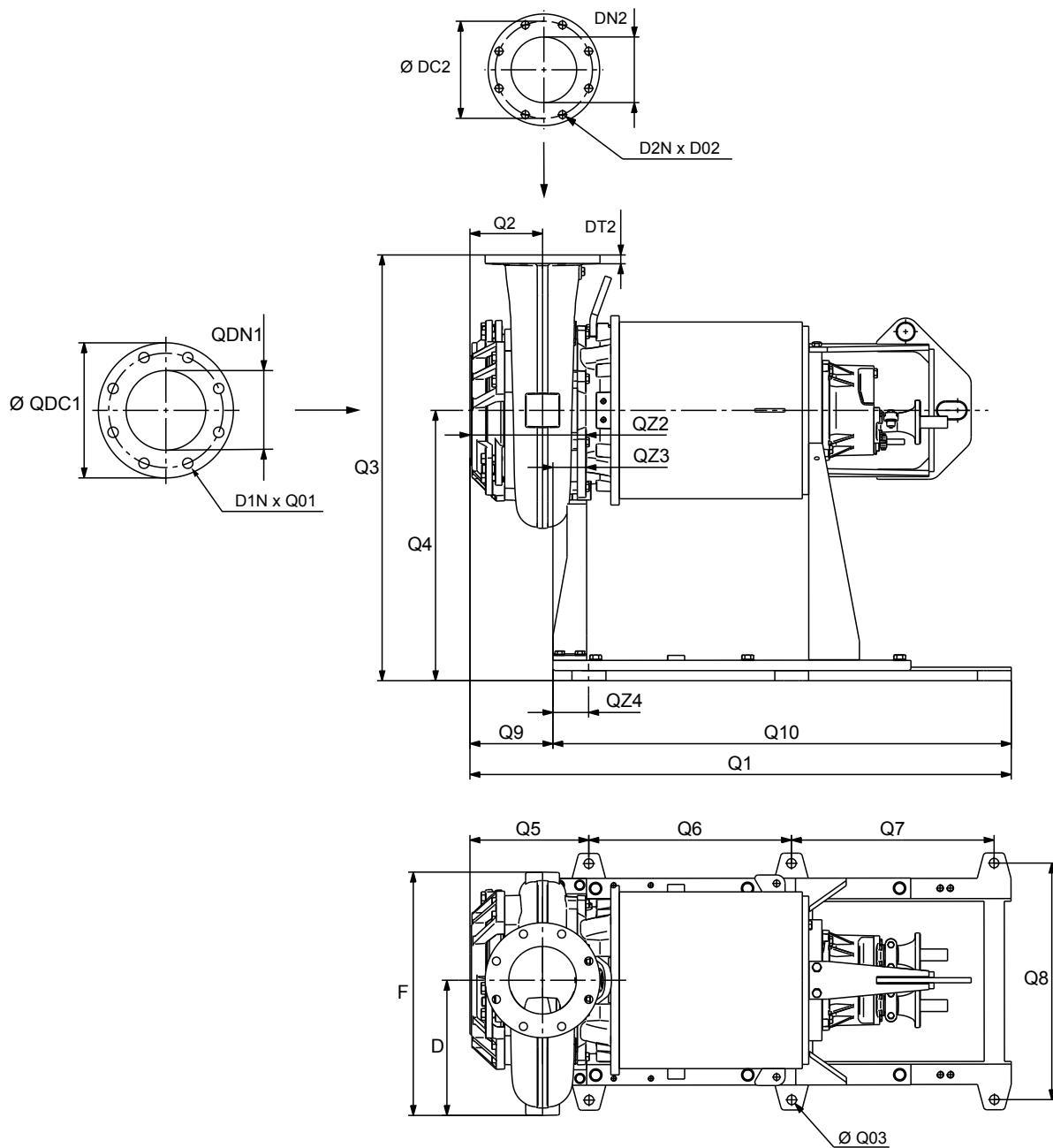
Dry, vertical installation on concrete foundation

Pump type	C	E	Ø X02	Ø X03	Ø X04	X1	X2	X3	X6	X7	X8
S1.80.200.650.4.66H.D	883	600	24	23	28	1500	246	20	700	500	900
S2.100.200.550.4.66M.D	809	460	24	23	28	1484	235	20	700	500	900
S2.100.200.650.4.66M.D	809	460	24	23	28	1484	235	20	700	500	900
S2.110.250.650.4.66L.D	1070	750	24	23	28	1516	253	20	800	600	900
S2.105.250.500.8.66H.D	1193	750	24	23	28	1590	310	20	800	600	900
S2.140.300.350.8.66M.D	1139	700	24	23	28	1590	299	20	800	600	900
S3.110.500.220.10.66L.D	1843	1200	27	27	28	1629	493	160	1450	850	1180
S3.110.500.350.10.66L.D	1843	1200	27	27	28	1629	493	160	1450	850	1180
S3.110.500.500.8.66L.D	1843	1200	27	27	28	1629	493	160	1450	850	1180

TM042424

Pump type	C	E	Ø X02	Ø X03	Ø X04	X1	X2	X3	X6	X7	X8
S3.120.300.500.8.66M.D	1139	700	24	23	28	1590	299	20	800	600	900
S3.120.600.350.10.66E.D	2124	1350	30	27	28	1723	452	35	1450	850	1180
S3.120.600.500.8.66E.D	2124	1350	30	27	28	1723	452	35	1450	850	1180

Pump type	X9	X10	X11	X12	X16	DT2	XDC2	XDC3	DN2	XM1
S1.80.200.650.4.66H.D	700	DN 250	300	800	2220	24	296	350	DN 200	6 x M24
S2.100.200.550.4.66M.D	700	DN 250	300	800	2204	26	296	350	DN 200	6 x M24
S2.100.200.650.4.66M.D	700	DN 250	300	800	2204	26	296	350	DN 200	6 x M24
S2.110.250.650.4.66L.D	700	DN 300	300	800	2336	30	350	400	DN 250	6 x M24
S2.105.250.500.8.66H.D	700	DN 300	300	800	2410	30	350	400	DN 250	6 x M24
S2.140.300.350.8.66M.D	700	DN 300	300	800	2410	33	400	400	DN 300	6 x M24
S3.110.500.220.10.66L.D	700	DN 400	300	1100	3239	37	620	620	DN 500	6 x M24
S3.110.500.350.10.66L.D	700	DN 400	300	1100	3239	37	620	620	DN 500	6 x M24
S3.110.500.500.8.66L.D	700	DN 400	300	1100	3239	37	620	620	DN 500	6 x M24
S3.120.300.500.8.66M.D	700	DN 300	300	800	2410	33	400	400	DN 300	6 x M24
S3.120.600.350.10.66E.D	700	DN 500	300	1100	3208	40	725	620	DN 600	6 x M24
S3.120.600.500.8.66E.D	700	DN 500	300	1100	3208	40	725	620	DN 600	6 x M24

Dry, horizontal installation on base stand

TM042415

Dry, horizontal installation on base stand

Pump type	D	F	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
S1.80.200.650.4.66H.H	300	596	1500	226	1400	800	411	600	600	700	304	1357
S2.100.200.550.4.66M.H	400	720	1484	215	1260	800	395	600	600	700	288	1357
S2.100.200.650.4.66M.H	400	720	1484	215	1260	800	395	600	600	700	288	1357
S2.110.250.650.4.66L.H	410	730	1516	233	1550	800	427	600	600	700	320	1357
S2.105.250.500.8.66H.H	478	891	1590	290	1550	800	501	600	600	700	394	1357
S2.140.300.350.8.66M.H	522	907	1590	279	1500	800	501	600	600	700	394	1357
S3.110.500.220.10.66L.H	719	1269	1629	333	2000	800	540	600	600	700	433	1357
S3.110.500.350.10.66L.H	719	1269	1629	333	2000	800	540	600	600	700	433	1357
S3.110.500.500.8.66L.H	719	1269	1629	333	2000	800	540	600	600	700	433	1357

Pump type	D	F	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
S3.120.300.500.8.66M.H	522	907	1590	279	1500	800	501	600	600	700	394	1357
S3.120.600.350.10.66E.H	886	1506	1723	417	2150	800	634	600	600	700	527	1357
S3.120.600.500.8.66E.H	886	1506	1723	417	2150	800	634	600	600	700	527	1357

Pump type	QDC1	QDN1	QD1N	Q01	DN2	D2N	D02	DC2	DT2	Ø Q03	QZ2	QZ3	QZ4
S1.80.200.650.4.66H.H	350	DN 250	12	M20	DN 200	8	24	296	24	28	354	-50	107
S2.100.200.550.4.66M.H	350	DN 250	12	M20	DN 200	8	24	296	26	28	338	-50	107
S2.100.200.650.4.66M.H	350	DN 250	12	M20	DN 200	8	24	296	26	28	338	-50	107
S2.110.250.650.4.66L.H	400	DN 300	12	M20	DN 250	12	24	350	30	28	370	-50	107
S2.105.250.500.8.66H.H	400	DN 300	12	M20	DN 250	12	24	350	30	28	444	-50	107
S2.140.300.350.8.66M.H	400	DN 300	12	M20	DN 300	12	24	400	33	28	444	-50	107
S3.110.500.220.10.66L.H	515	DN 400	16	M24	DN 500	20	27	620	37	28	483	-50	107
S3.110.500.350.10.66L.H	515	DN 400	16	M24	DN 500	20	27	620	37	28	483	-50	107
S3.110.500.500.8.66L.H	515	DN 400	16	M24	DN 500	20	27	620	37	28	483	-50	107
S3.120.300.500.8.66M.H	400	DN 300	12	M20	DN 300	12	24	400	33	28	444	-50	107
S3.120.600.350.10.66E.H	620	DN 500	20	M24	DN 600	20	30	725	40	28	577	-50	107
S3.120.600.500.8.66E.H	620	DN 500	20	M24	DN 600	20	30	725	40	28	577	-50	107

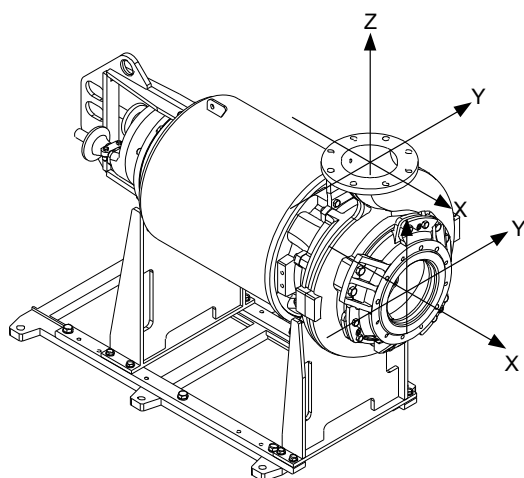
13. Weights

Weights include 10 m cable.

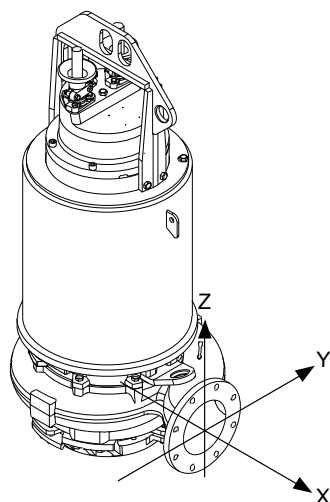
Pump type	Weight [kg]
S1.80.200.650.4.66H.S.406...	810
S1.80.200.650.4.66H.C.406...	840
S1.80.200.650.4.66H.H.406...	1040
S1.80.200.650.4.66H.D.406...	920
S2.100.200.550.4.66M.S.338...	750
S2.100.200.550.4.66M.C.338...	855
S2.100.200.550.4.66M.D.338...	855
S2.100.200.550.4.66M.H.338...	1000
S2.100.200.650.4.66M.S.350...	750
S2.100.200.650.4.66M.C.350...	860
S2.100.200.650.4.66M.D.350...	880
S2.100.200.650.4.66M.H.350...	1000
S2.110.250.650.4.66L.S.327...	890
S2.110.250.650.4.66L.C.327...	1000
S2.110.250.650.4.66L.D.327...	940
S2.110.250.650.4.66L.H.327...	1050
S2.105.250.500.8.66H.S.533...	1100
S2.105.250.500.8.66H.C.533...	1130
S2.105.250.500.8.66H.D.533...	1130
S2.105.250.500.8.66H.H.533...	1200
S2.140.300.350.8.66M.S.438...	870
S2.140.300.350.8.66M.C.438...	990
S2.140.300.350.8.66M.D.438...	965
S2.140.300.350.8.66M.H.438...	1050
S3.110.500.220.10.66L.S.417...	1440
S3.110.500.220.10.66L.C.417...	1550
S3.110.500.220.10.66L.D.417...	1400
S3.110.500.220.10.66L.H.417...	1520
S3.110.500.350.10.66L.S.474...	1420
S3.110.500.350.10.66L.C.474...	1525
S3.110.500.350.10.66L.D.474...	1380
S3.110.500.350.10.66L.H.474...	1500
S3.110.500.500.8.66L.S.426...	1480
S3.110.500.500.8.66L.C.426...	1585
S3.110.500.500.8.66L.D.426...	1440
S3.110.500.500.8.66L.H.426...	1560
S3.120.300.500.8.66M.S.449...	1000
S3.120.300.500.8.66M.C.449...	1100
S3.120.300.500.8.66M.D.449...	1100
S3.120.300.500.8.66M.H.449...	1120
S3.120.600.350.10.66E.S.470...	1655
S3.120.600.350.10.66E.C.470...	1770
S3.120.600.350.10.66E.D.470...	1650
S3.120.600.350.10.66E.H.470...	1785
S3.120.600.500.8.66E.S.432...	1720
S3.120.600.500.8.66E.C.432...	1825
S3.120.600.500.8.66E.D.432...	1720
S3.120.600.500.8.66E.H.432...	1843

14. Flange forces

Pump characteristics

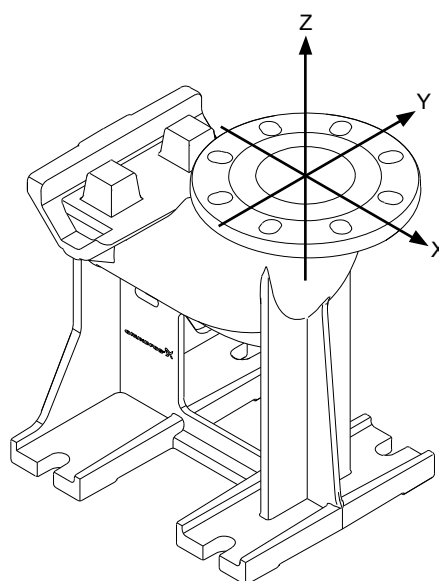


Horizontal installations



Vertical installations

TM064902



TM064901

Base unit

The flange forces and moments are according to EN ISO 5199.

Forces can be found 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 which can be found in Table B.5 in EN ISO 5199 by selecting the correct pump family.

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

Horizontally installed pumps

Pump family A4 = Coefficient 0.35

Vertically installed pumps

Pump family 10A = Coefficient 0.30

TM064903

15. 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.

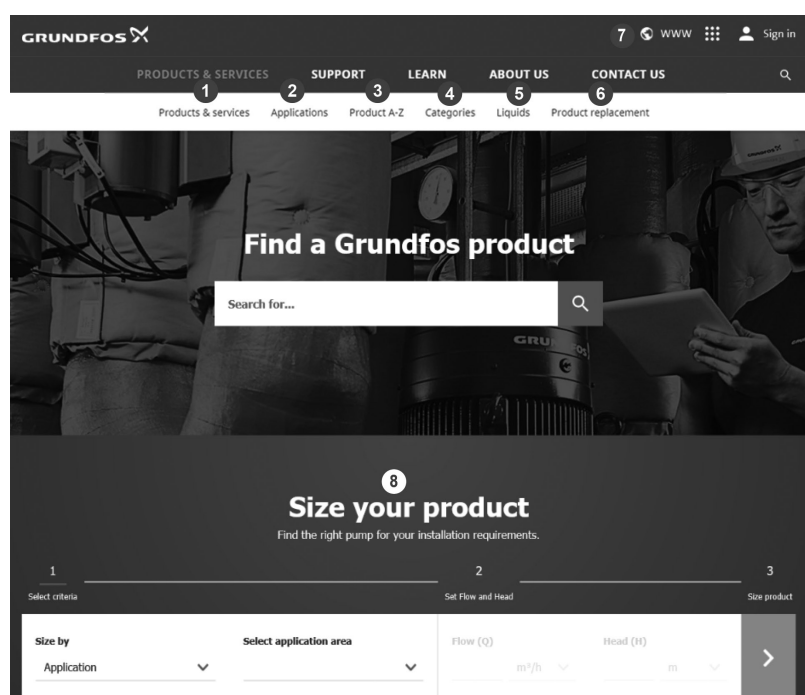
International view: <https://product-selection.grundfos.com>

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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