

# C

## SUBMERSIBLE SEWAGE PUMPS



### Handled Liquids

Domestic and industrial waste water, raw sewage, liquids with fibrous and solid substances.

### Technical Data

**Discharge Flange** — DN 50 up to DN 300 mm

**Capacity** — up to 1600 m<sup>3</sup>/h

**Head** — up to 95 m

**Speed** — up to 2900 rpm

**Operating Temperature** — up to 40 °C

**Casing Pressure (Pmax)** — 10 bar

- Discharge flange conforms to EN 1902 - 2 / PN10
- All impellers are balanced and dynamically according to ISO 1940 class 6.3.
- Axial thrust is balanced by impeller back ribs.
- In case of request cooling jacket is also applicable (for some of the models)
- Bearings of C type pumps are grease lubricated.

### Design Features

- Vertical, wide volute casing, single stage, end suction centrifugal pump with enclosed, semi-open or vortex types impeller.
- 20 basic sizes covering wide range of operational area.
- Electric motor isolation class is IP 68.

### Shaft Sealing

- Different type of mechanical seals are used according to application (type of liquid, temperature, etc.)
- For pumps bigger than 12 HP, always double mechanical seal is applied while for pumps up to 12 HP, single mechanical seal is applied as standard.

### Pump Designation

**C 100 - 240 B**

Pump Type

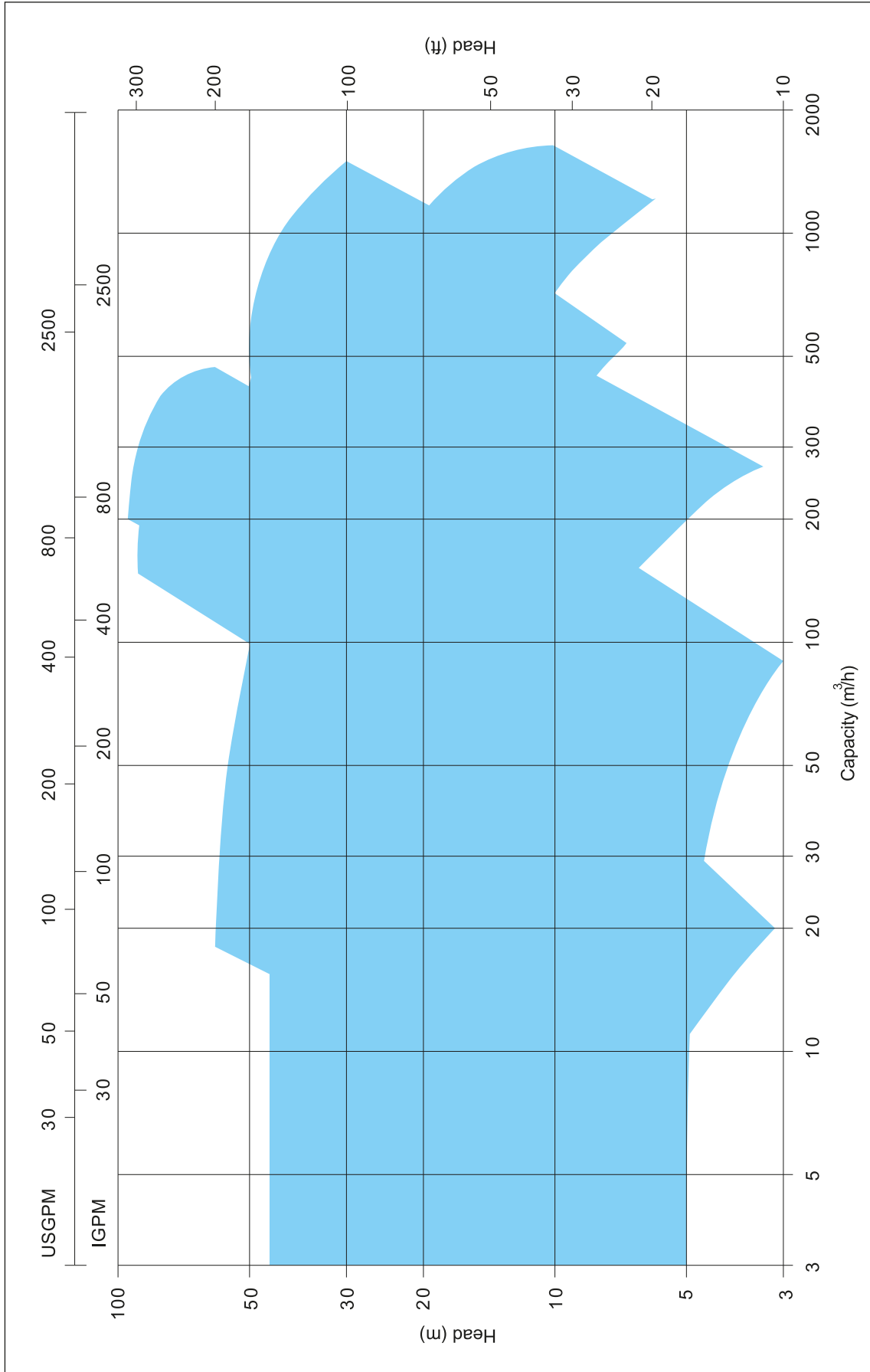
Discharge Nozzle (DN-mm)

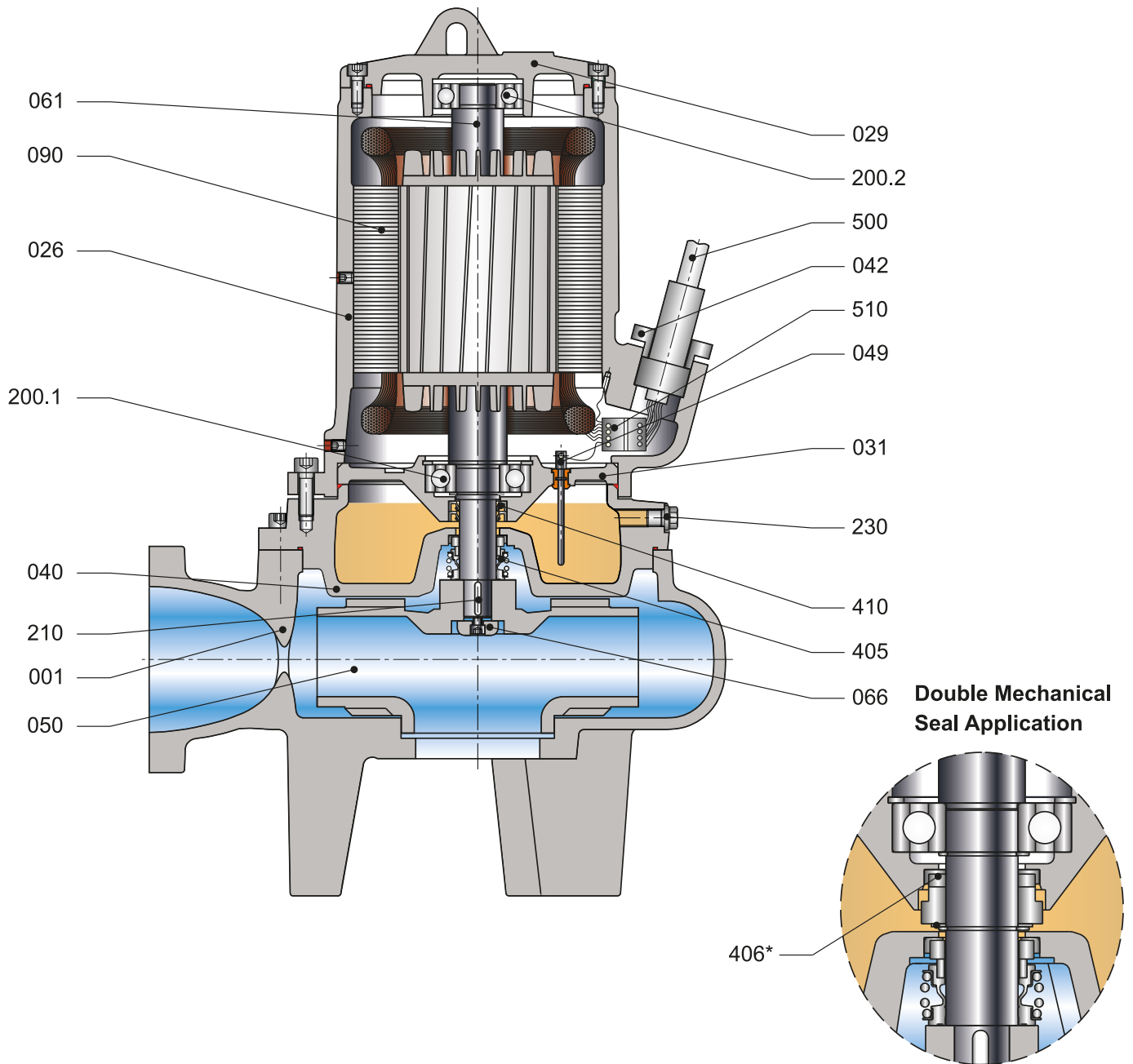
Impeller Nominal Diameter (mm)

Impeller Type

# Field Chart

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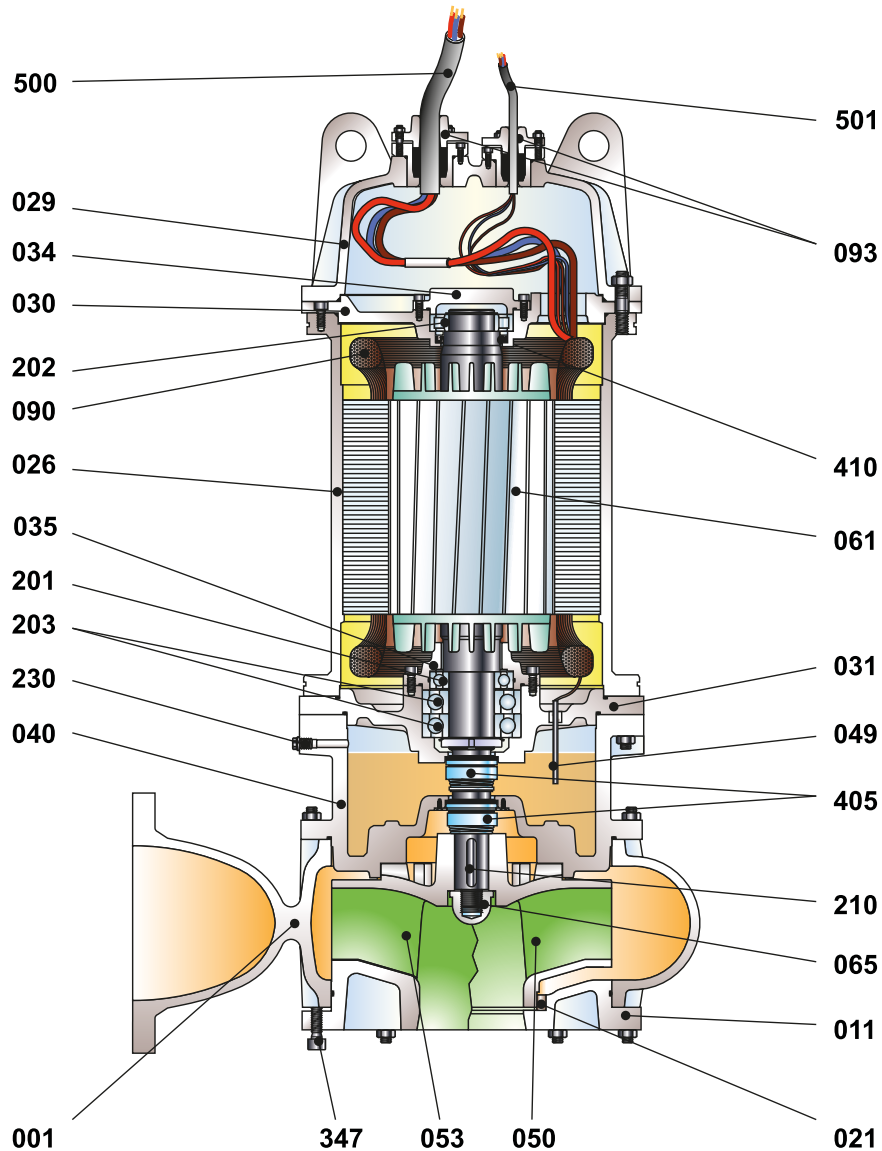


Part List

001	Volute Casing	090	Stator
026	Motor Casing	200.1	Bottom Bearing
029	Top Cover	200.2	Top Bearing
031	Bearing Housing	210	Impeller Key
040	Oil Chamber	230	Oil Plug
042	Gland	405	Mechanical Seal
049	Water Leakage Electrode	406*	Mechanical Seal
050	Impeller	410	Oil Seal
061	Rotor Shaft	500	Energy and Control Cable with Plug
066	Impeller Nut	510	Socket

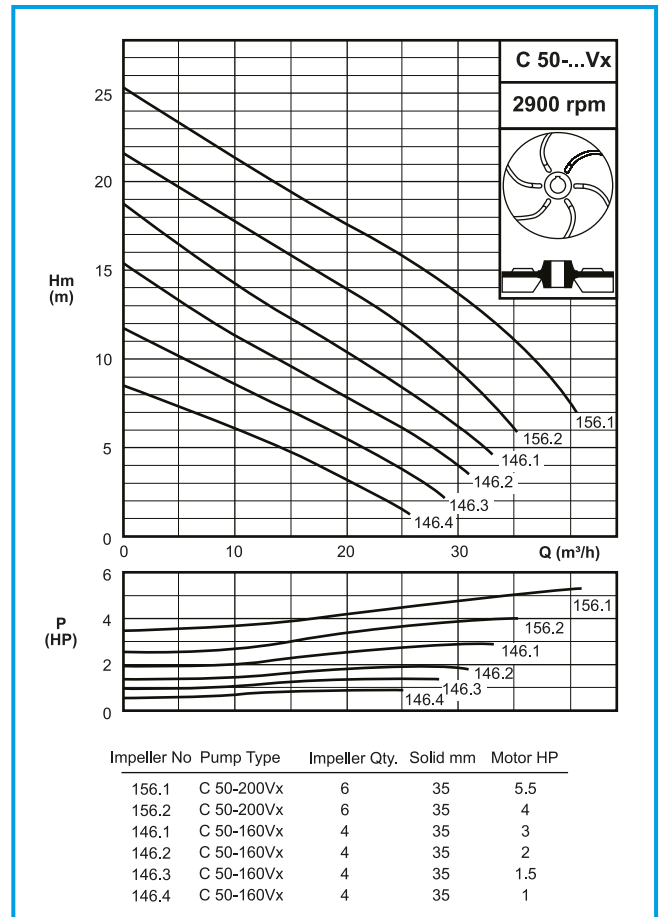
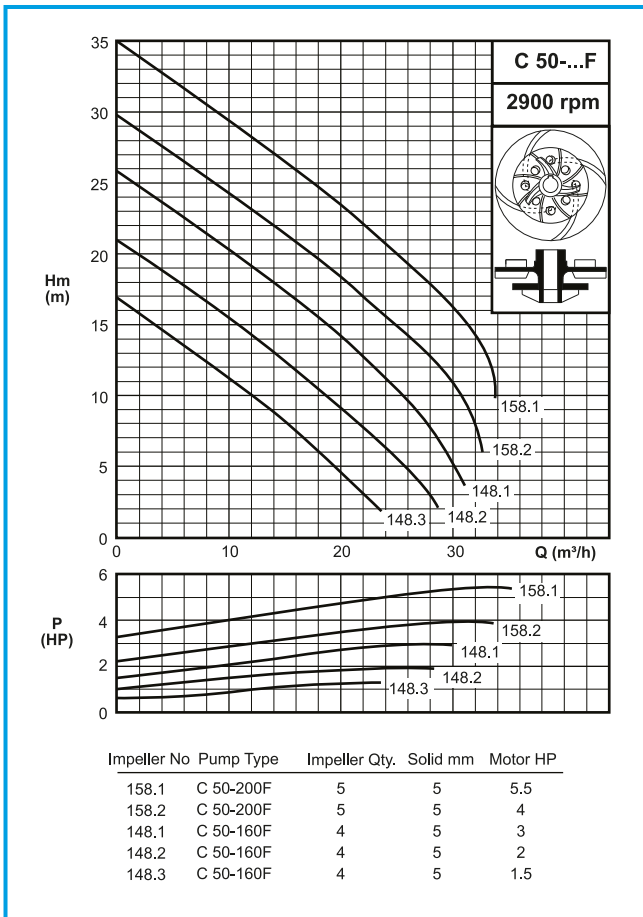
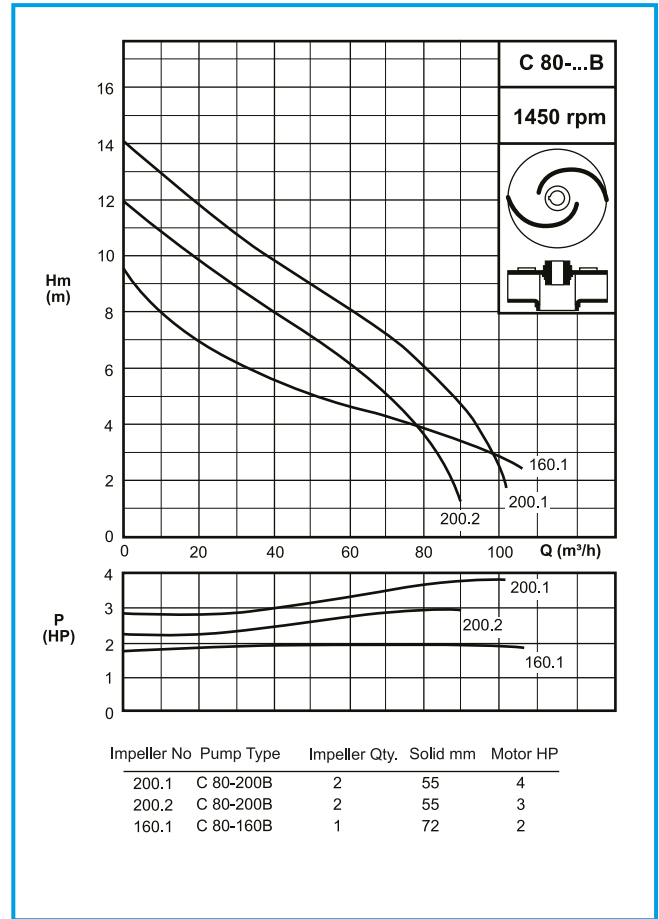
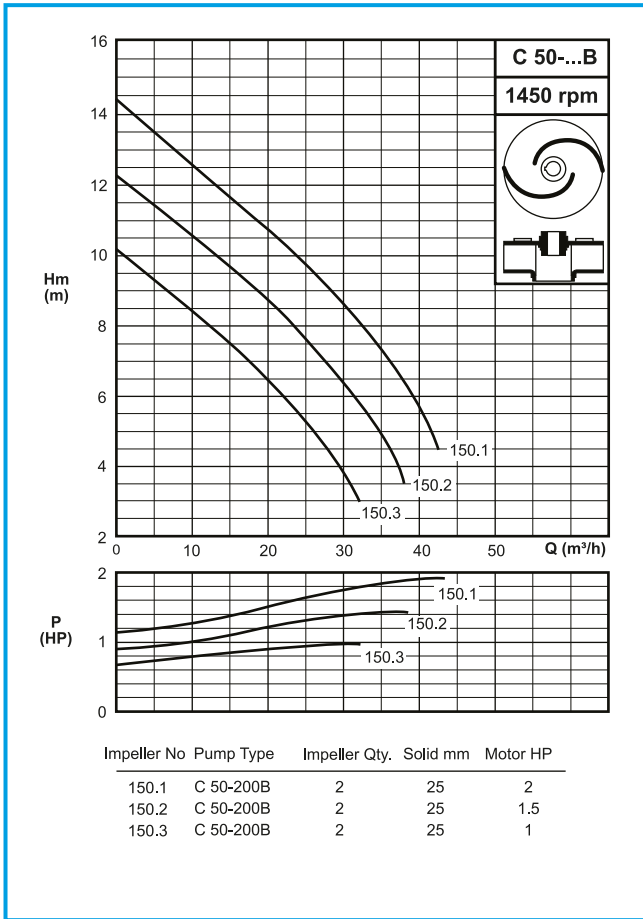
## Sectional Drawing (bigger than 12 HP)

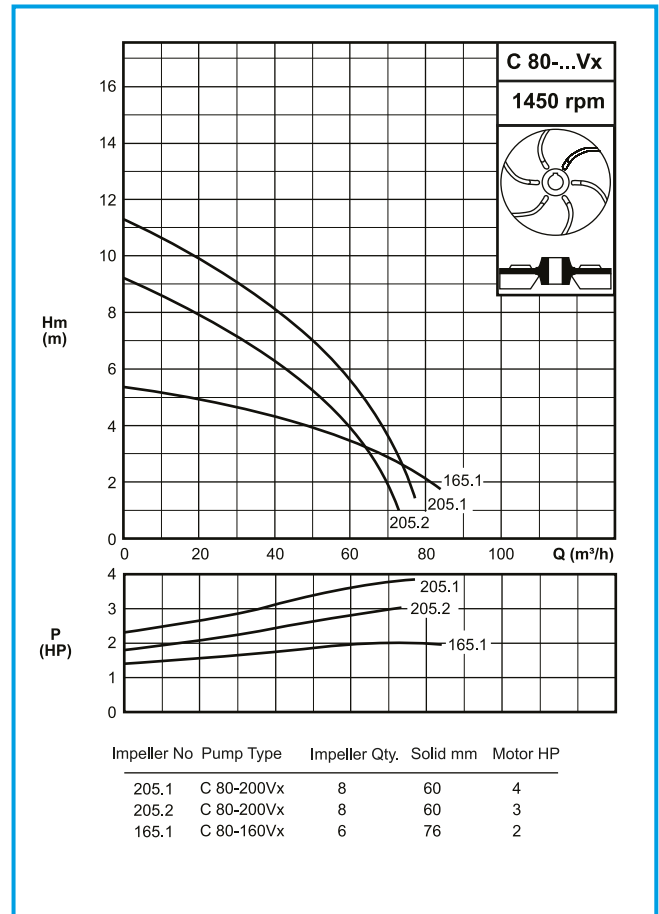
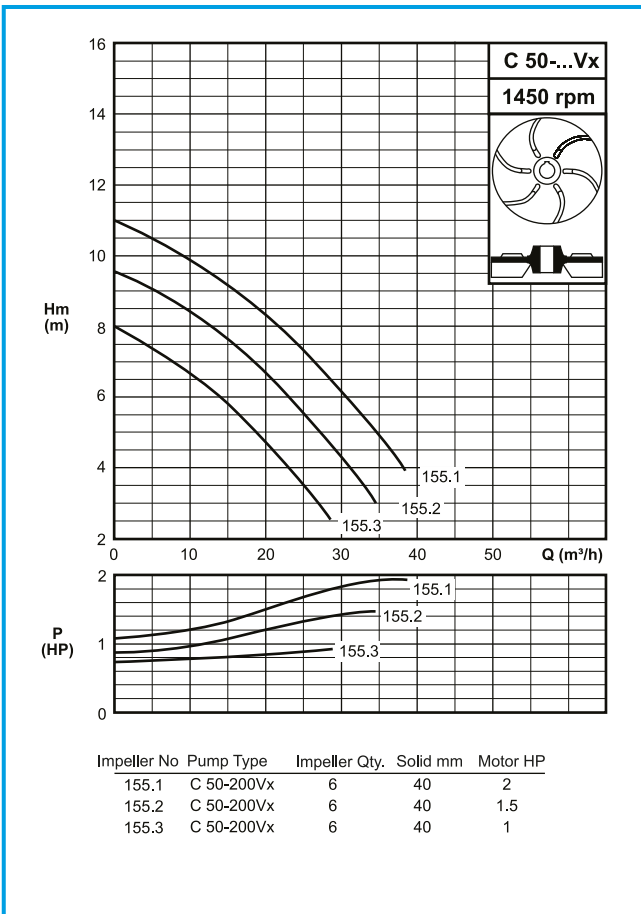
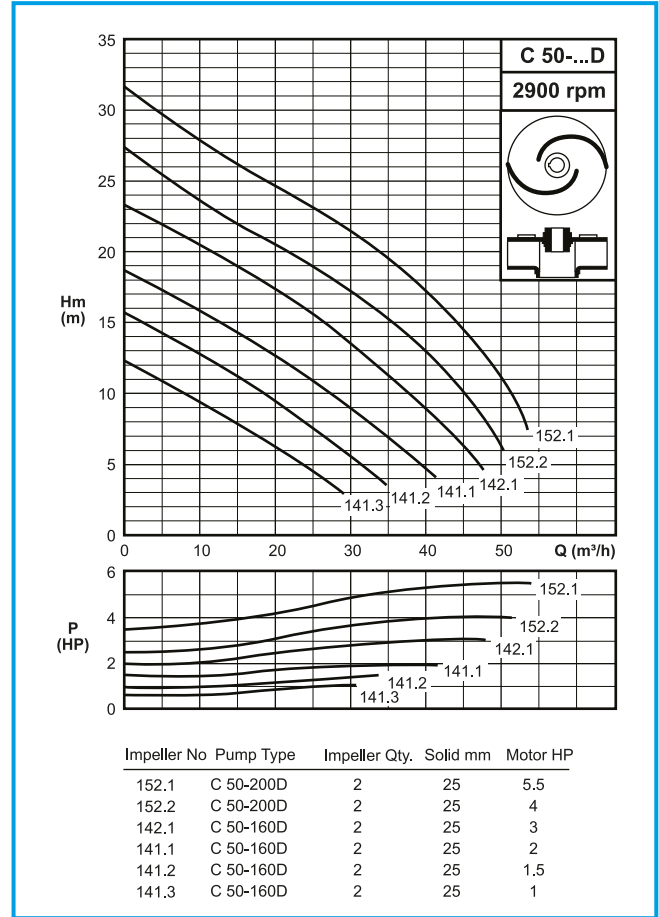
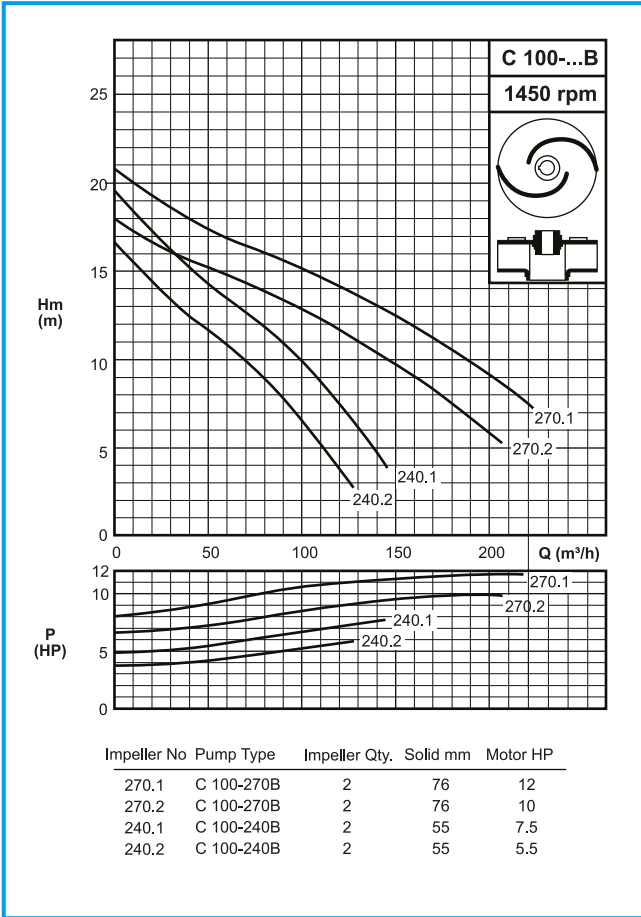
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### Part List

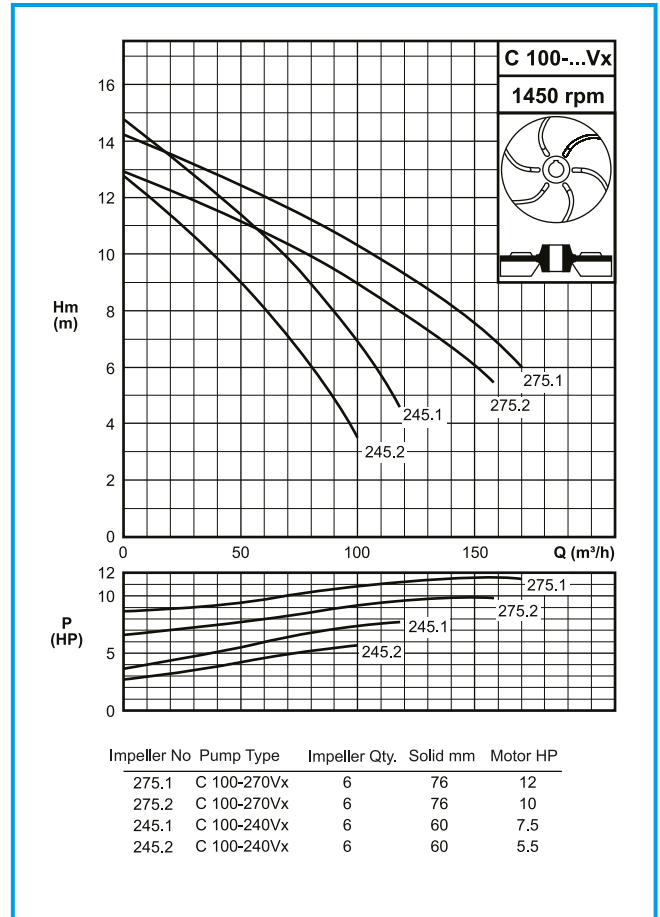
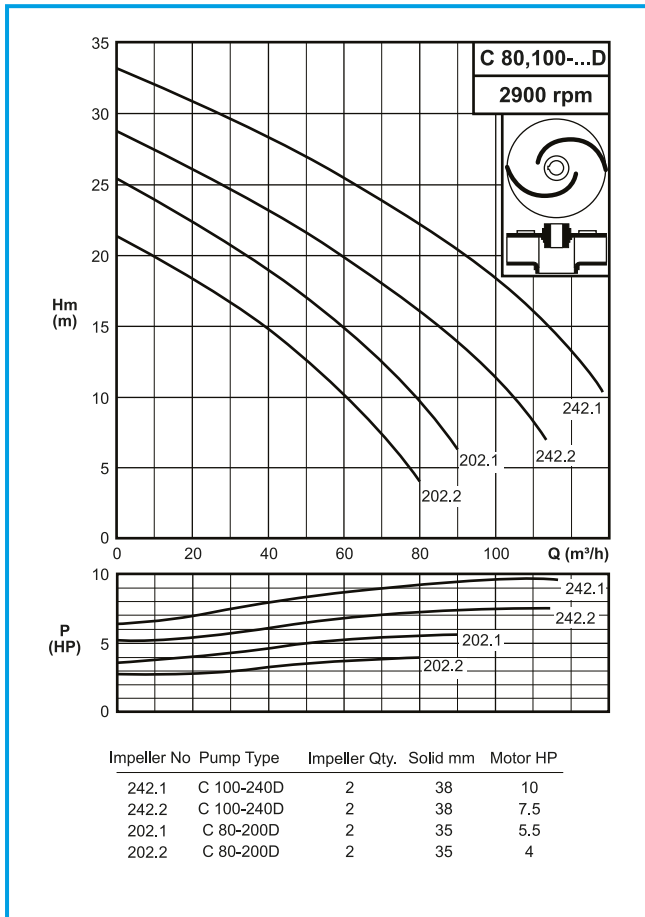
001	Volute Casing	049	Water Leakage Electrode	210	Impeller Key
011	Bottom Cover	050	Closed Impeller	230	Oil Plug
021	Wear Ring	053	Semi-open Impeller	347	Adjustment Bolt
026	Motor Casing	061	Rotor Shaft	405	Mechanical Seal
029	Top Cover	065	Impeller Nut	410	Oil Seal
030	Top Bearing Housing	090	Stator	500	Energy Cable
031	Bottom Bearing Housing	093	Gasket Compress Cover	501	Control Cable
034	Top Bearing Cover	201	Bottom Bearing		
035	Bottom Bearing Cover	202	Bottom Bearing		
040	Oil Chamber	203	Angular Contact Ball Bearing		





## Field Chart

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## Material Options

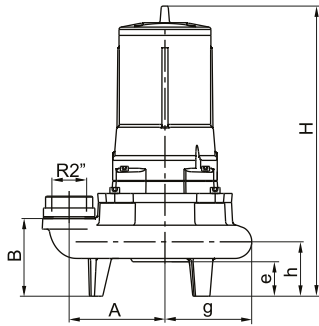
Part List	0.6025	0.7040	1.0619	1.4308	1.4309	1.4408	1.4409	1.4517	1.4317	2.1050.01	2.0975.01	1.4021
Volute Casing	●	○	○	○	○	○	○	○	○	○	○	○
Motor Casing	●	○	○	○	○	○	○	○	○	○	○	○
Impeller	●	○	○	○	○	○	○	○	○	○	○	○
Rotor Shaft												●
Oil Chamber	●	○										

Mechanical Seal EN 12756 / DIN 24960

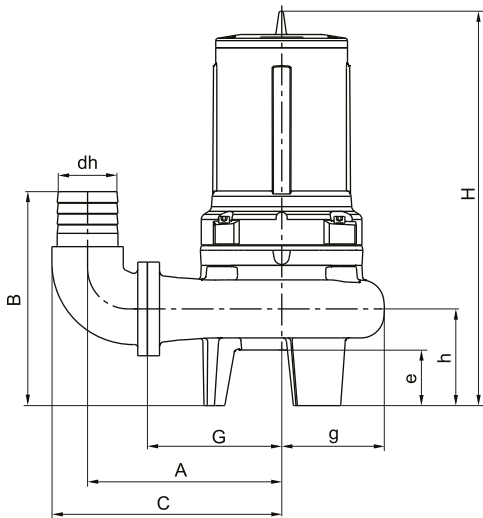
● Standart manufacturing  
○ Optional

## Material Equivalents

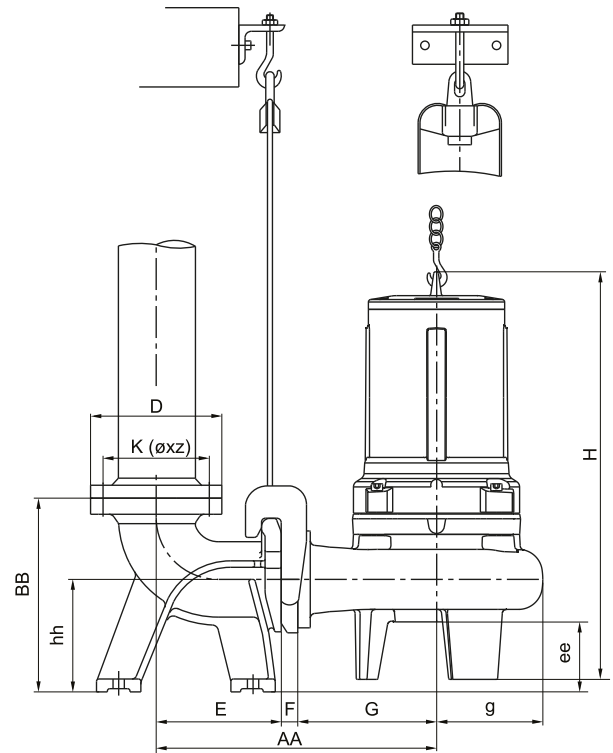
Description	DIN 17007	EN-DIN	ASTM
Cast iron	0.6025	GJL-250 (GG 25)	A 48 Class 40-B
Nodular cast iron	0.7040	GJS-400-15 (GGG 40)	A 536 Gr. 60-40-18
Cast steel	1.0619	GP240GH (GS-C 25)	A 216 Gr. WCB
Chrome nickel cast steel	1.4308	G-X5 Cr Ni 19-10	A 351/743/744 Gr. CF8
Chrome nickel cast steel (low carbon)	1.4309	G-X2 Cr Ni 19-11	A 351/743/744 Gr. CF3
Chrome nickel molybdenum cast steel	1.4408	G-X5 Cr Ni Mo 19-11-2	A 351/743/744 Gr. CF8M
Chrome nickel molybdenum cast steel (low carbon)	1.4409	G-X2 Cr Ni Mo 19-11-2	A 351/743/744 CF3M
Austenitic-ferritic cast steel (duplex)	1.4517	G-X2 Cr Ni Mo Cu N 25-6-3-3	A 890 Gr. 1B (CD4MCuN)
Martenzitic Stainless Cast Steel	1.4317	G-X4 Cr Ni 13-4	A 351/743/744 (CA6NM)
Cast bronze (tin alloy)	2.1050.01	G-Cu Sn 10	B 584 C 90700
Cast bronze (nickel alloy)	2.0975.01	G-Cu Al 10 Ni	B 148 C 95800
Chrome steel	1.4021	X20 Cr 13	A 276 Type 420



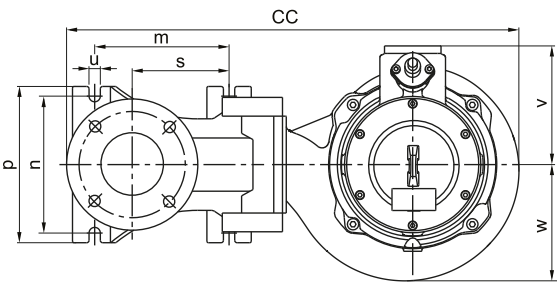
C 50 Hose Connection



C 80-100 Hose Connection



C 50-80-100 Auto Coupling Connection



Pump	MOTOR			Discharge		PUMP DIMENSIONS (mm)																	
	Power - HP	IEC No	DN	R"	A	B	C	e	h	H	G	g	v	w									
	1450	2900	No												d								
C 50-160	-	1~1.5	80	50	2"	139	131	-	55	90	430	185	114	130	125								
	-	2~3	90								475			138									
C 50-160F	-	1.5	80								412			130									
	-	2~3	90								457			138									
C 50-200	1	-	80								160			129		-	57	90	438	205	144	130	152
	1.5~2	-	90																483			138	
	-	4	100			524	148																
	-	5.5	112			529	158																
C 50-200F	-	4	100			496	138																
	-	5.5	112			501	135																
C 80-160	2	-	90			80	-	262	287	304	62	133	540	180	130	138	146						
C 80-200	3~4	4	100					282	286	324	70	132	573	200	150	148	168						
	-	5.5	112	578	158																		
C 100-240	5.5	-	112	100	-	324	356	383	94	162	608	225	170	158	186								
	7.5	7.5~10	132								657			190									
C 100-270	10~12	-	132	359	364	418	88	170	678	260	211	198	228										

Discharge ø d	Pump Type	Dimensions (With Auto Coupling Connection) (mm)											FLANGE		HOSE		
		AA	BB	CC	E	F	ee	hh	s	m	u	p	n	D	k	ø x Z	dh
50	C 50-160	355	217	528	155	15	75	110	116	156	14	200	176	165	125	ø18x4	-
	C 50-200	375		585			75										
80	C 80-160	363	243	595	165	18	63	134	127	202	16	200	175	190	150	ø18x4	77
	C 80-200	383		635			72										
100	C 100-240	451	310	723	200	26	112	180	155	215	18	250	219	210	170	ø18x4	100
	C 100-270	486		802			98										



## Impeller Type

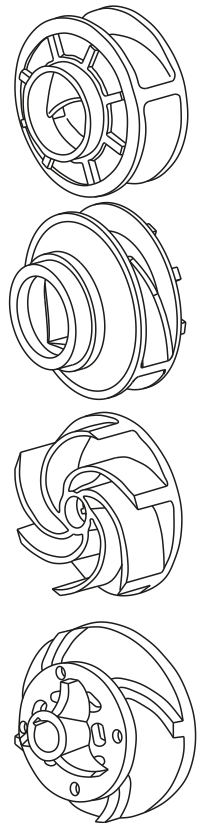
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**B Type Impeller:** Closed type impellers with wide channels capable of pumping large size solid particles without clogging, for big capacity and low pressure. It is more suitable for 4 pole motors (1450 or 1750 RPM)

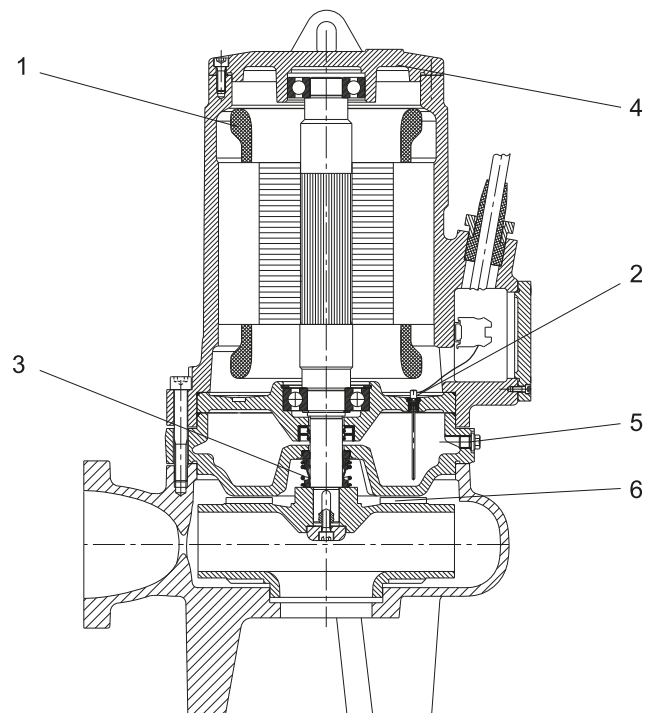
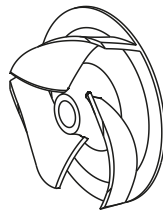
**D Type Impeller:** It is also closed type, suitable for high speed motors (2900 or 3500 RPM). It is convenient for high pressure, small capacity and smaller size solid particles.

**VX Type Impeller:** Free vortex type impeller is placed on top of the volute. It can pump the solid particles without touching them. It is also suitable for fibrous materials. Pump efficiency is usually less than other impeller types. Recessed type impeller are also possible for some models. Please ask for more information.

**F Type Impeller:** Semi-open type impeller with cutter. The cutting system is placed in front of the impeller and it breaks up the solid particles into smaller sizes that makes passing possible through the smaller pipes without sticking. F type impeller is suitable for small capacity, high pressure, but the pump efficiency is also low.



**AB Type Semi-Open Impeller:** Closed type impellers with wide channels capable of pumping large size solid particles without clogging, for big capacity and low pressure. It is more suitable for 4 pole motors (1450 or 1750 RPM). Designed for aggressive applications. Impeller works against a wear plate.

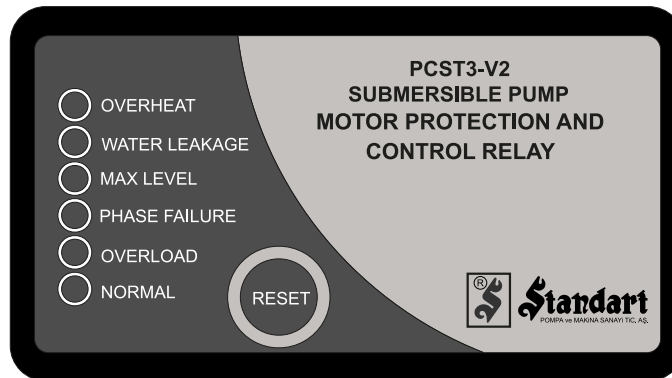


- 1 – Temperature SENSOR (130°C) in F class winding head protection for overheating.
- 2 – Signaling ELECTRODE in case of leakage into the motor or into the oil chamber.
- 3 – Mechanical seal running in pumping liquid.
- 4 – Demountable TOP COVER for easy motor winding.
- 5 – Oil filling and inspection PLUG.
- 6 – BACK VANES for reducing axial load and sealing pressure.

Standart PCST3-V2 Motor Protection and Control Relay is an indispensable part of Standart C type pumps. It is supplied with the pump and it shall be used to secure smooth operation of motor and the pump.

**FUNCTION:**

When the device is switched on, all indicator lights blinks in order and the control unit makes a self-check. If there is not any failure, NORMAL indicator light switches on in green indicating it is ready to run the motor.

**OVER HEAT**

In case of overheating of motor windings, in which the temperature exceeds 130°C, the red indicator light switches on and the relay shuts down the motor. Indicator light blinks in short periods at alarming position. When motor has cooled down, relay restarts the motor while alarming goes on until the RESET button is pressed. Pressing the RESET button disables the alarm relay and indicator light stops blinking.

**WATER LEAKAGE**

In case of water leakage into the motor casing or oil chamber, red indicator light switches on and the relay shuts down the motor. Alarm relay becomes activated and until the RESET button is pressed, alarming goes on by blinking of red indicator light in short periods. When this failure occurs, the pump needs to be overhauled.

**MAX LEVEL**

When water level reaches the maximum level, which is set by the user, float switch sends on alarm signal and yellow indicator light starts blinking. This alarm does not affect the current state (run or stop) of the pump. Pressing the RESET button disables the alarm relay and indicator light stops blinking.

**PHASE FAILURE**

An external phase protection relay, mounted in the control panel, is connected to PCST3-V2 for checking phase sequence and phase failures. When there is a failure in mains voltage or in phase sequence, the motor is shut down by the relay and red indicator light starts blinking. By the time the failure is fixed, the motor restarts automatically while alarming goes on until the RESET button is pressed.

**OVERLOAD**

The relay shuts down the motor, if the current overload limit is exceeded. Meanwhile, alarm relay becomes activated and red indicator light starts blinking. As the failure is fixed, pressing the RESET button will disable the overload and the alarm relay, so the system turns back to normal conditions.

**NORMAL**

By the time all red indicator lights on PCST3-V2 switch off, green indicator light switches on, meaning that it is ready to run the motor. In case of failure, green indicator light switches off and the relay shuts down the motor.

PCST3-V2 is an indispensable part of Standart C type pumps. If it is damaged, do not try to operate the motor without it.