

Technical Data 50 Hz DIN/IEC

Vertical centrifugal pumps
series: DPV(C/S) 2 - 4 - 6 - 10 - 15 - 25 - 85
Design Version B

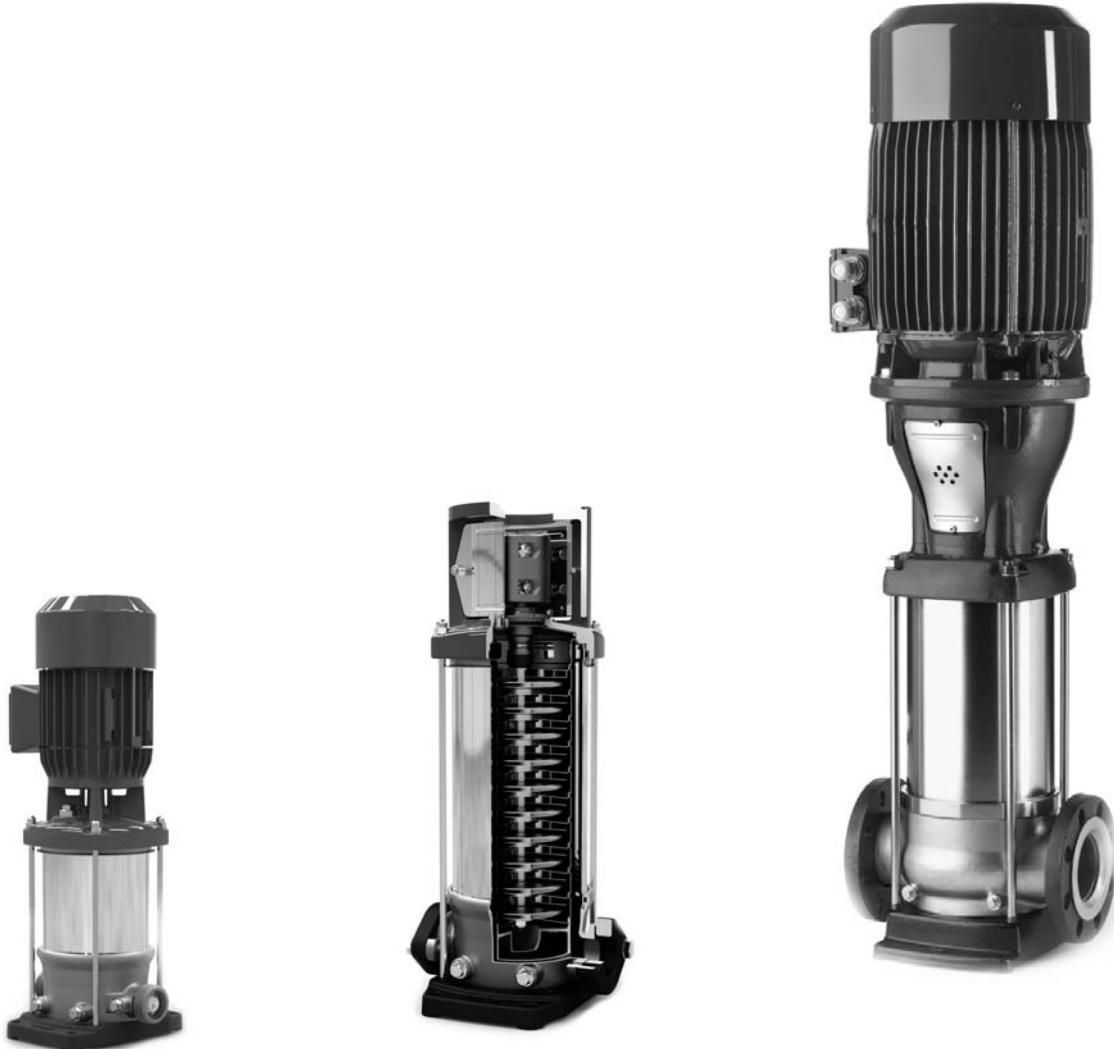


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1 Pump introduction

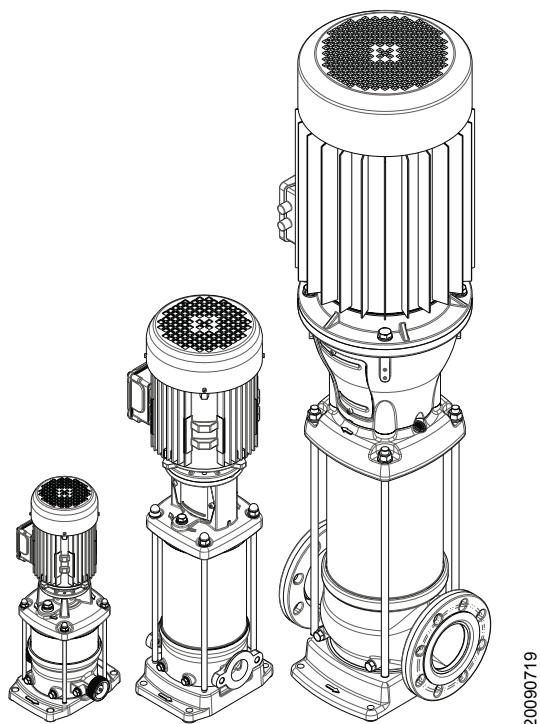
1.1 General

The vertical, single or multistage centrifugal pump series are designed for pumping clean, or lightly aggressive, watery mediums.

Suction and discharge of the pump are in-line, making the pump easy to install.

The hydraulic assembly is driven by an electric motor. All hydraulic parts of the pump are made of stainless steel.

The vertical, multistage centrifugal DPV pumps are produced by DP-Pumps.



DPV2,4,6 B DPV10,15 B DPV 25, 85 B

1.2 Model key

Table 1: Model key Example DPVSF 85/3-1 B

	DP	VS	F	85	/3	-1	B	
Label	DP							Product Label
Material/Construction	VC							Cast Iron pump foot and top bracket, hydraulics 1.4301 / AISI 304
	V							All wetted parts Stainless Steel 1.4301 / AISI 304
	VM							All wetted parts Stainless Steel 1.4301 / AISI 304 with closed coupled motor
	VS							All wetted parts Stainless Steel 1.4401 / AISI 316
Connections		E						Male thread (with non-return valve insert)
								Oval flange with female thread
		F						Round flange
		V						Victaulic connections
		T						Tri-clamp connections
			85					Capacity in m ³ /h at Q _{opt} :
				/3				Number of stages
				/3	-1			Number of stages of which one stage with reduced head
						B		Design version

1.3 Operation

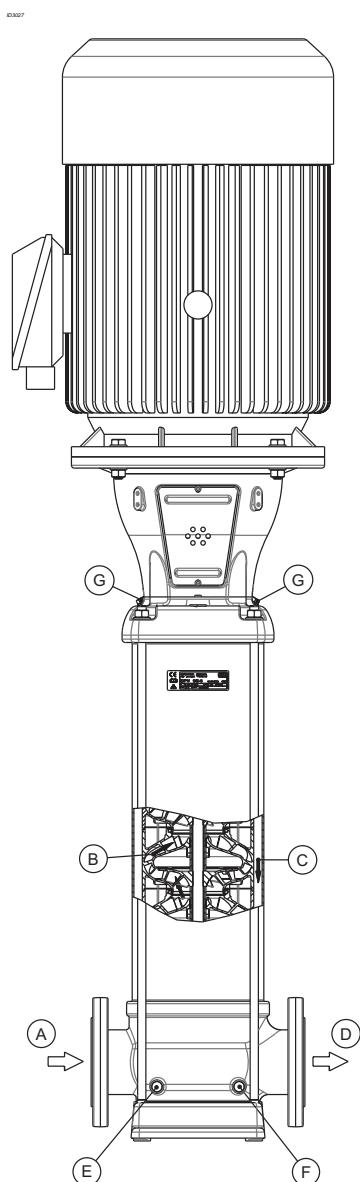


Figure 1: DPVF 85

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During centrifugal operation of the pump an negative pressure is created at the inlet of the impeller. This negative pressure enables the medium to enter the pump at the suction connection (A).

Every stage (B) consists of an impeller and diffuser. The passage of this stage determines the capacity of the pump. The diameter of the stages is related to the centrifugal forces and its "stage pressure": the more stages, the more pressure.

This total capacity and raised pressure will be guided to the outside of the pump, between the pump stages and the outer sleeve (C) and the medium will leave the pump at the discharge connection (D).

1.4 Measuring, draining and venting

The pump is provided with plugs for measuring, draining and venting.

Connection (E) is meant to drain the inlet part of the pump. Or to measure the inlet / suction pressure using a G 1/4 connection.

Connection (F) is meant to drain the outlet part of the pump. Or to measure the discharge pressure using a G 1/4 connection.

Connections (G) are meant to vent the pump system when the pump is not in operation. Or to measure the discharge pressure of the pump using a G 3/8 connection.

1.5 Working range

The working range is depending on the application and a combination of pressure and temperature. For specific and detailed limits please consult the working ranges as described in the chapter 1.8 Modular selection. The overall working range of the pumps can be summarised as follows:

Table 2: Specification of the working range

Pump type	DPV	note
Ambient temperature [°C]	-20 up to 40	¹
Minimum inlet pressure	NPSH _{req.} + 1m	
Viscosity [cSt]	1-100	²
Density [kg/m ³]	1000-2500	²
Cooling	forced motor cooling	³
Minimum frequency [Hz]	10	
Maximum frequency [Hz]	60	⁴
Allowable size of solids pumped	5µm to 1mm	

1. If the ambient temperature exceeds the above value or the motor is located more than 1000 m above sea level, the motor cooling is less effective and could require an adapted motor power. See table 9: Motor load dep. sea level or amb. temp or please contact your supplier for more detailed advice.
2. Deviation in viscosity and/or density could require an adapted motor power. Please contact your supplier for more detailed advice.
3. The free space above the motor cooling fan must be at least 1/4 of the diameter of the inlet of the cooling fan in order to have a sufficient flow of (cooling) air.

4. Pumps that are intended for 50 Hz operation, may not be connected to 60 Hz power supply.

1.5.1 Minimum capacity

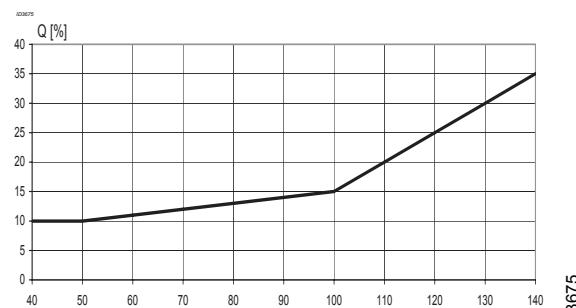
For minimum capacity at medium temperature of 20 °C, see table: 3Minimum capacity (Q_{min}); for higher temperatures, see table: 4Minimum capacity vs.temperature (in % of Q optimum).

To prevent the pump from overheating, gathering gas, cavitation etc. a minimum capacity has to be secured. The minimum capacity corresponds to all percentage of the optimum flow Q_{opt} in relation to the temperature of the liquid pumped.

Table 3: Minimum capacity (Q_{min})

size	Q_{min} [m ³ /h]			
	50 Hz		60 Hz	
	2 pole	4 pole	2 pole	4 pole
2	0,2		0,2	
4	0,4		0,5	
6	0,6		0,8	
10	1,1	0,5	1,3	0,6
15	1,6	0,8	2,0	1,0
25	2,6	1,3	3,2	1,6
85	8,5	4,3	10,2	5,1

Table 4: Minimum capacity vs.temperature (in % of Q optimum)



1.5.2 Ambient temperature and higher altitude

If the ambient temperature exceeds the above value, or if the motor is located more than 1000 m above sea level, the motor cooling is less effective and could require an adapted motor power. See below table for the increased percentage of the motor power or contact your supplier for more detailed advice.

Table 5: Increase of required motor power

Ambient temperature [°C]	Above sea level [m]	Increase of required power
40	1000	0%
45	1625	2%
50	2250	5%
55	2875	11%
60	3500	18%
65	4125	25%
70	4750	33%

1.6 Basic material variants

Table 6: Basic material variants

Model	Hydraulic	Casing	Sealing
V	1.4301	1.4308	EPDM
VS	1.4404	1.4408	Viton
VC	1.4301	JL1040	EPDM

1.7 Pump bearing

Medium lubricated stage bearing
Tungsten Carbide against Ceramic

1.8 Modular selection

To suit almost every application the pump is assembled out of modules which can be selected depending on the required working range.

Basic modules are:

- **Basic pump model**, which defines the capacity, pressure and basic material.
Temperature range -20 up to 140 °C
- **Connections**, which define the suction and discharge connection as well as the base plate.
VE casing (with non return valve) max. temperature 90 °C. Other connections have same temperature range as basic pump model.
- **Sealings**, which define the elastomers, the mechanical seal and the shaft seal type.
Temperature range, see chapter 4.1
- **Electric motor**, which defines all requirements of the motor such as motor size, power, voltage, frequency and all possible motor accessories.
Due to mono-block motor version VM, max. fluid temperature is 60 °C



1.9 Approvals

CE Conformity with European Safety Directive
ACS Drinking Water Approval (F)
WRAS Drinking Water Approval (GB)
ATEX Conformity with “ATmosphères EXplosibles”
 Directive

2 Performance characteristics

2.1 Performance range

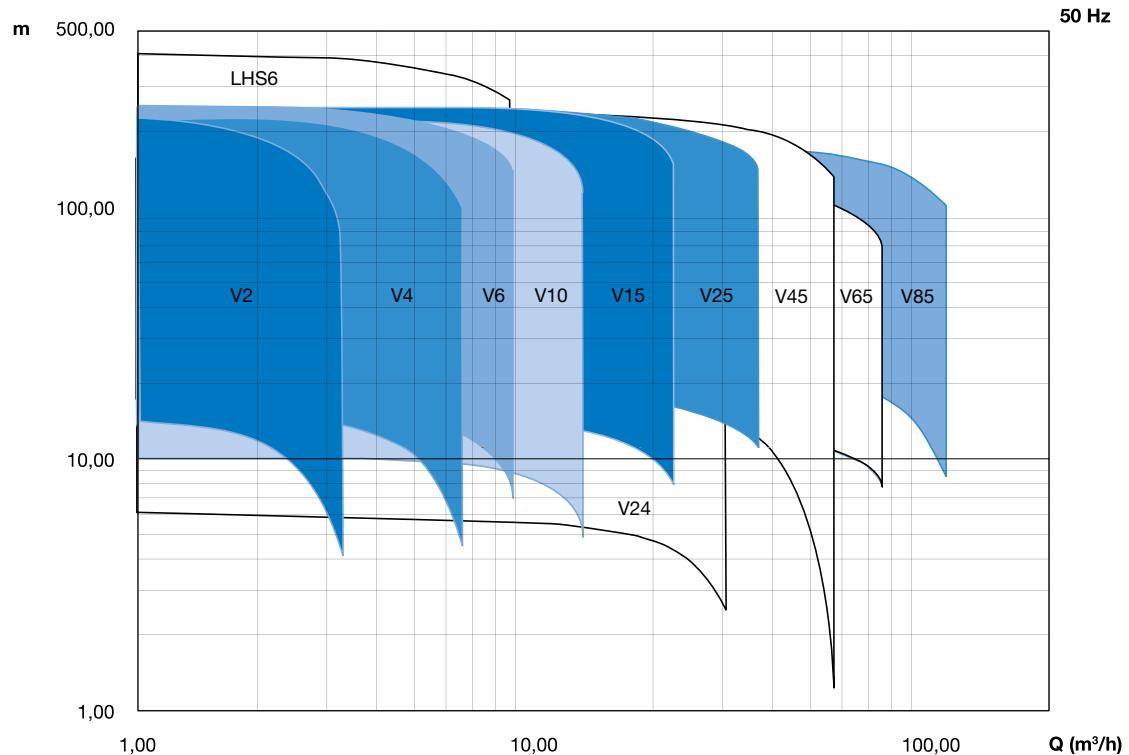


Figure 2: Performance range DPV (C/S) B 50 Hz

2.2 Performance curve details

The performance diagrams give a global overview of all the pump models the shaded models are mentioned in this documentation. Detailed characteristics are given for each model showing the hydraulic efficiency, NPSH_{req}, and shaft power as well.

The performance of the pump depends on the number of stages. As per example:

DPV 4/2 B: model DPV 4 B 2 stages with 2 full head impellers

DPV 85/4-1 B model DPV 85 B 4 stages with 3 full head impellers and 1 reduced impeller

The detailed performance curves are in accordance with ISO 9906:2012 (Grade 3B).

The pumps can be configured with multiple types of motors. Therefore the performance data, like Q/H, efficiency and shaft power used for published curves are converted to the average speed per motor power. To refine this data the published data has to be corrected accordingly.

The published curves and data mentioned on the pump are based on the following rotational speed:

Table 7: Rated motor power and speed in 2 & 4 pole

Rated motor power	Rated speed at 50 Hz [rpm] 2P	Rated speed at 60 Hz [rpm] 2P
0,37 and 0,55 kW	2800	3460
to 2,2 kW	2880	3460
to 4 kW	2920	3510
to 7,5 kW	2940	3530
to 22 kW	2950	3550
to 45 kW	2960	3550

Rated motor power	Rated speed at 50 Hz [rpm] 4P	Rated speed at 60 Hz [rpm] 4P
0,55 kW	1450	1740
0,75 kW	1440	1730
to 2,2 kW	1425	1710
to 4 kW	1450	1740
to 7,5 kW	1460 ^a	1750

The characteristics given are based on:

- De-aerated water at a temperature of 20 °C
- Density of 1,0 kg/dm³
- Kinematical viscosity of 1 mm²/s (1 cst)

To prevent the pump from overheating, gathering gas, cavitation etc. a minimum capacity has to be secured. The minimum capacity corresponds to a percentage of the optimum flow Q_{opt} in relation to the temperature of the liquid pumped.

2.3 Minimum efficiency index

Per January 1st 2013 for multistage pumps (reference 50Hz and 2 poles) a new Commission Regulation (EU) No 547/2012 as part of the Directive 2009/125/EC is mandatory.

According to this the pumps need to apply to a new Minimum Efficiency Index (MEI). This value is set to be >= 0.10

For the design version B pump range the following values are applicable:

Table 8: Minimum efficiency index

Pump range	Minimum Efficiency index
DPV 2	MEI ≥ 0.70
DPV 4	MEI ≥ 0.70
DPV 6	MEI ≥ 0.40
DPV 10	MEI ≥ 0.70
DPV 25	MEI ≥ 0.70
DPV 85	MEI ≥ 0.60

2.4 Performance with variable frequency drive

The minimum frequency of the DP motor should be limited to 10 Hz to ensure sufficient cooling. When the rotational speed exceeds the nominal speed of the motor, make sure that the power output of the motor is suitable to drive the corresponding pump model.

The performance of the pump differs from the fixed speed performance according to the recalculation scheme.

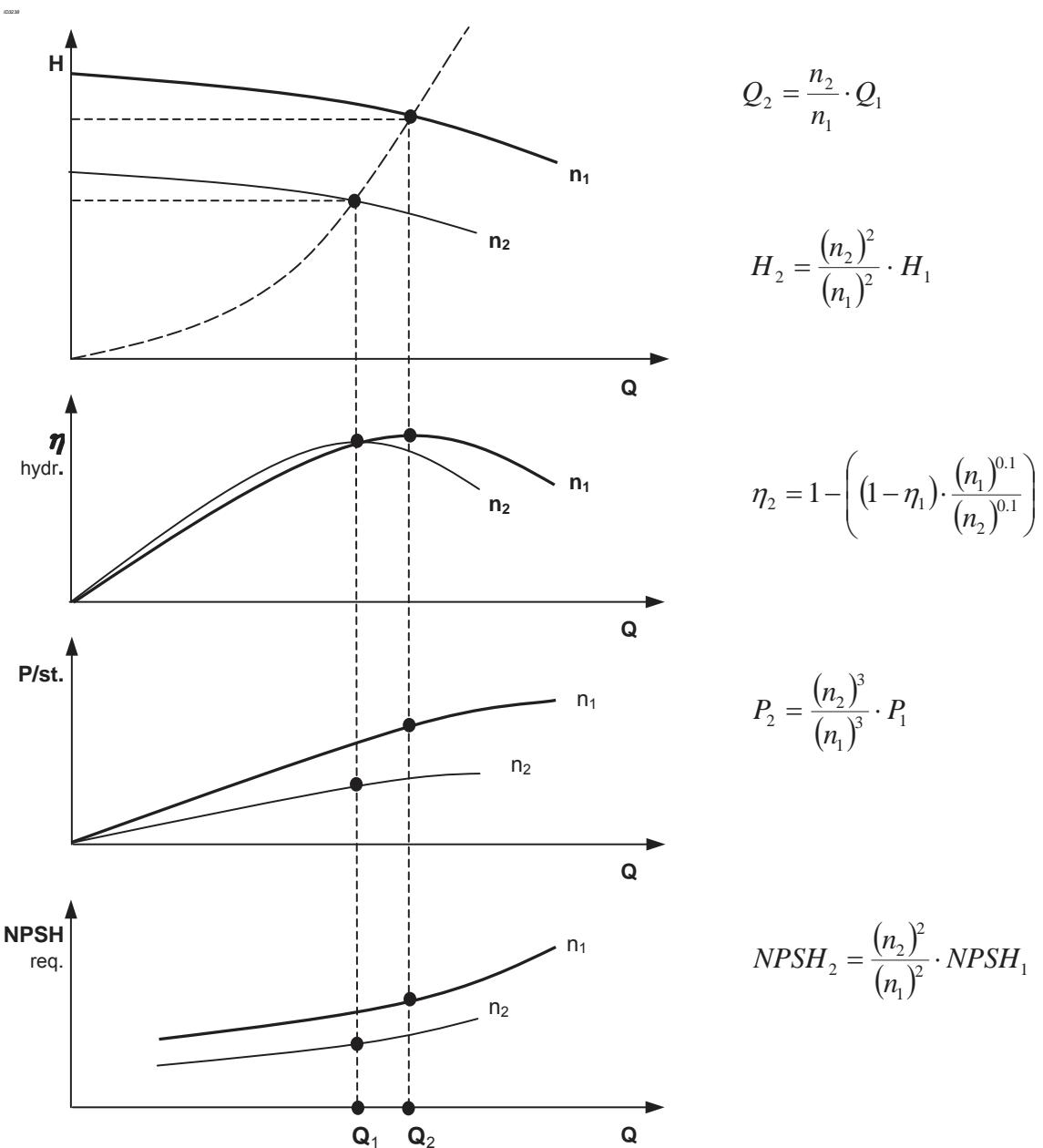


Figure 3: Performance characteristics

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2.5 How to read the values from the curves

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To find the required hydraulic information from the published curves, it is important to know the application in which the pump has to be installed. There are two main distinction to be made:

- A Flow determined (like booster sets and cleaning) → Opening taps
- B Pressure determined (like boiler feed and reverse osmosis systems) → Facing counter pressure.



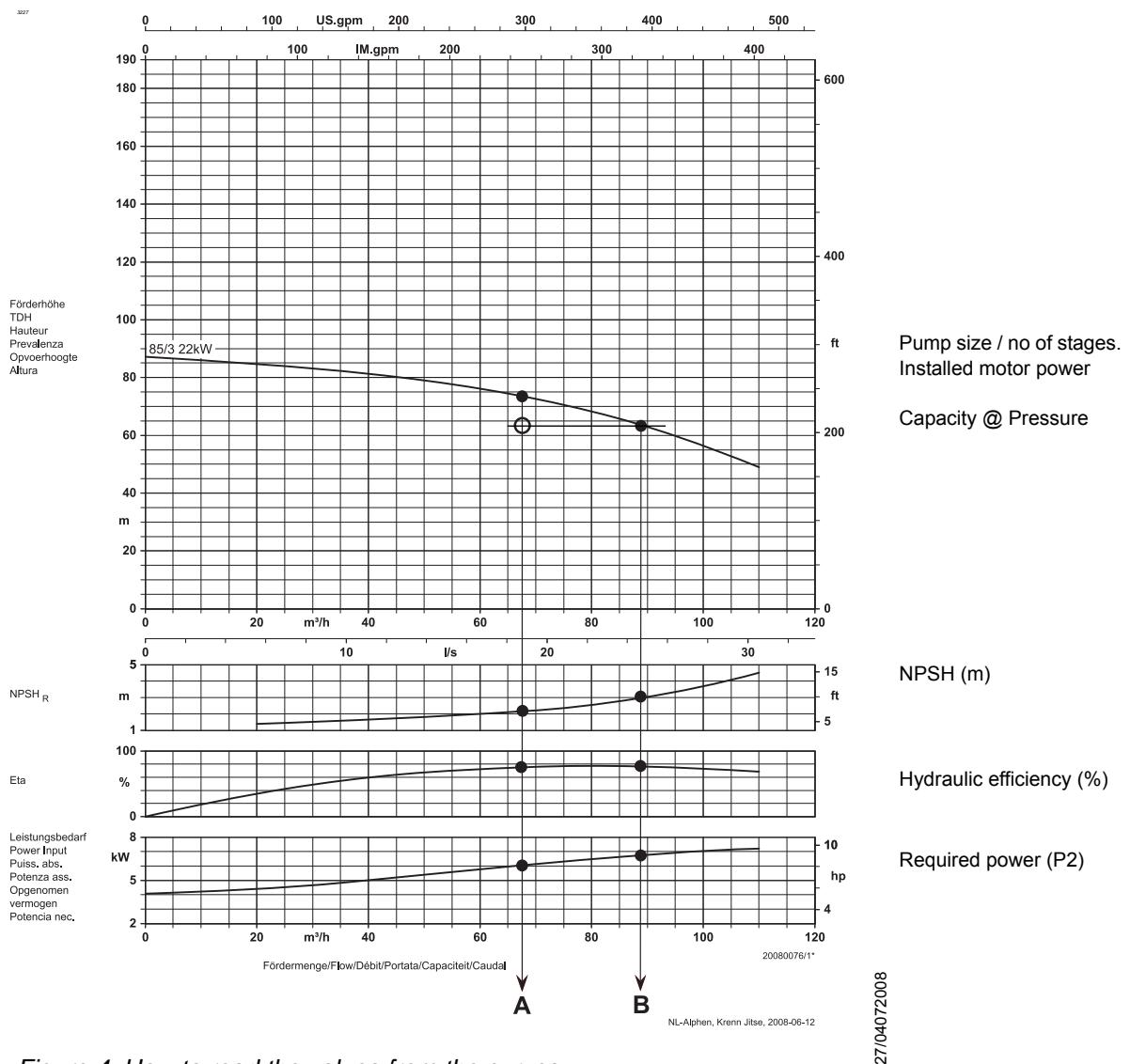


Figure 4: How to read the values from the curves

- Calculated duty point
- Actual hydraulic performance
- A Flow determined
- B Pressure determined

2.6 Hydraulic performance curve DPV(C/S) 2 B - 50Hz -2 pole

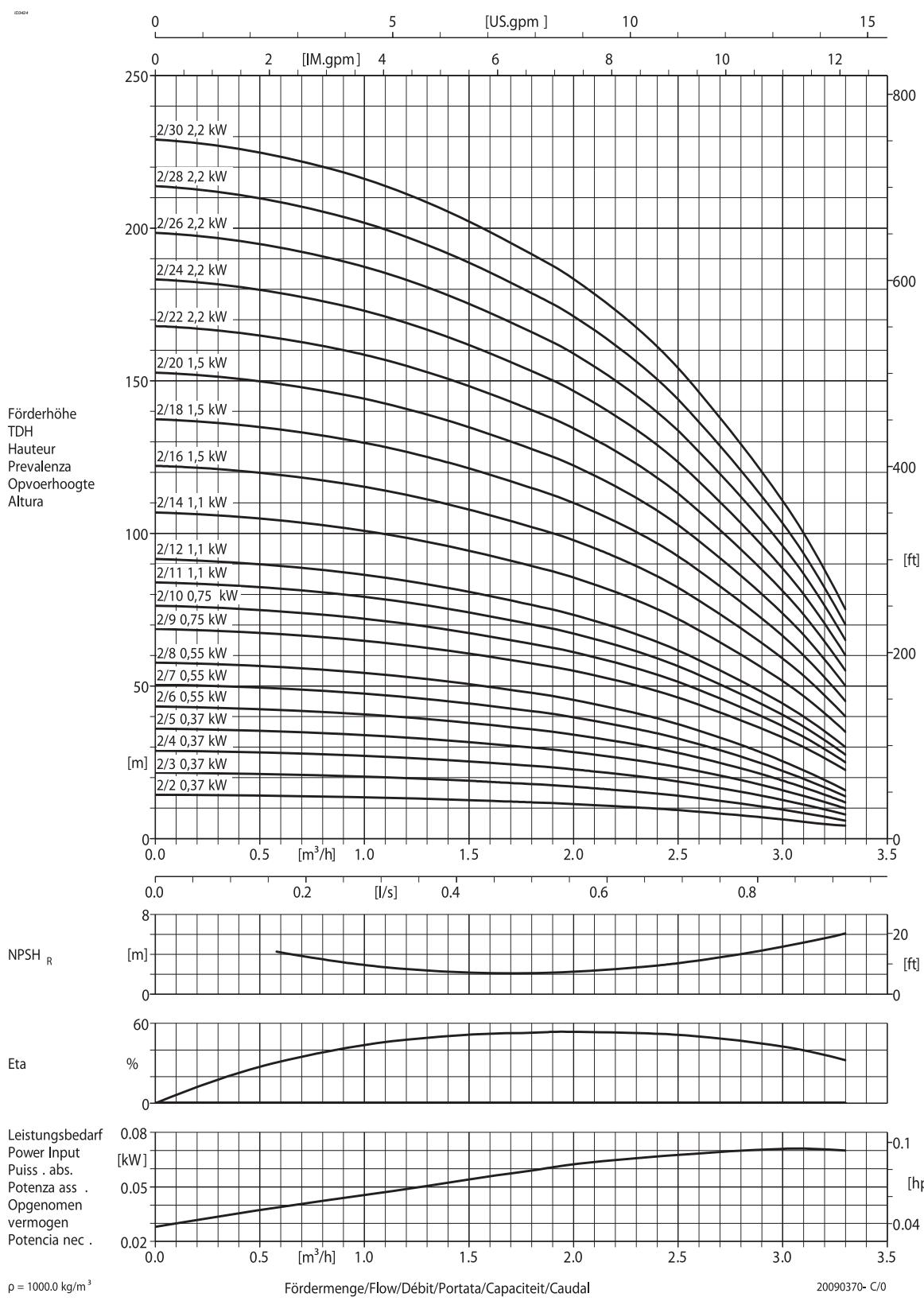


Figure 5: Performance curve DPV(C/S) 2 B - 50Hz - 2 pole



2.7 Hydraulic performance curve DPV(C/S) 4 B - 50Hz - 2 pole

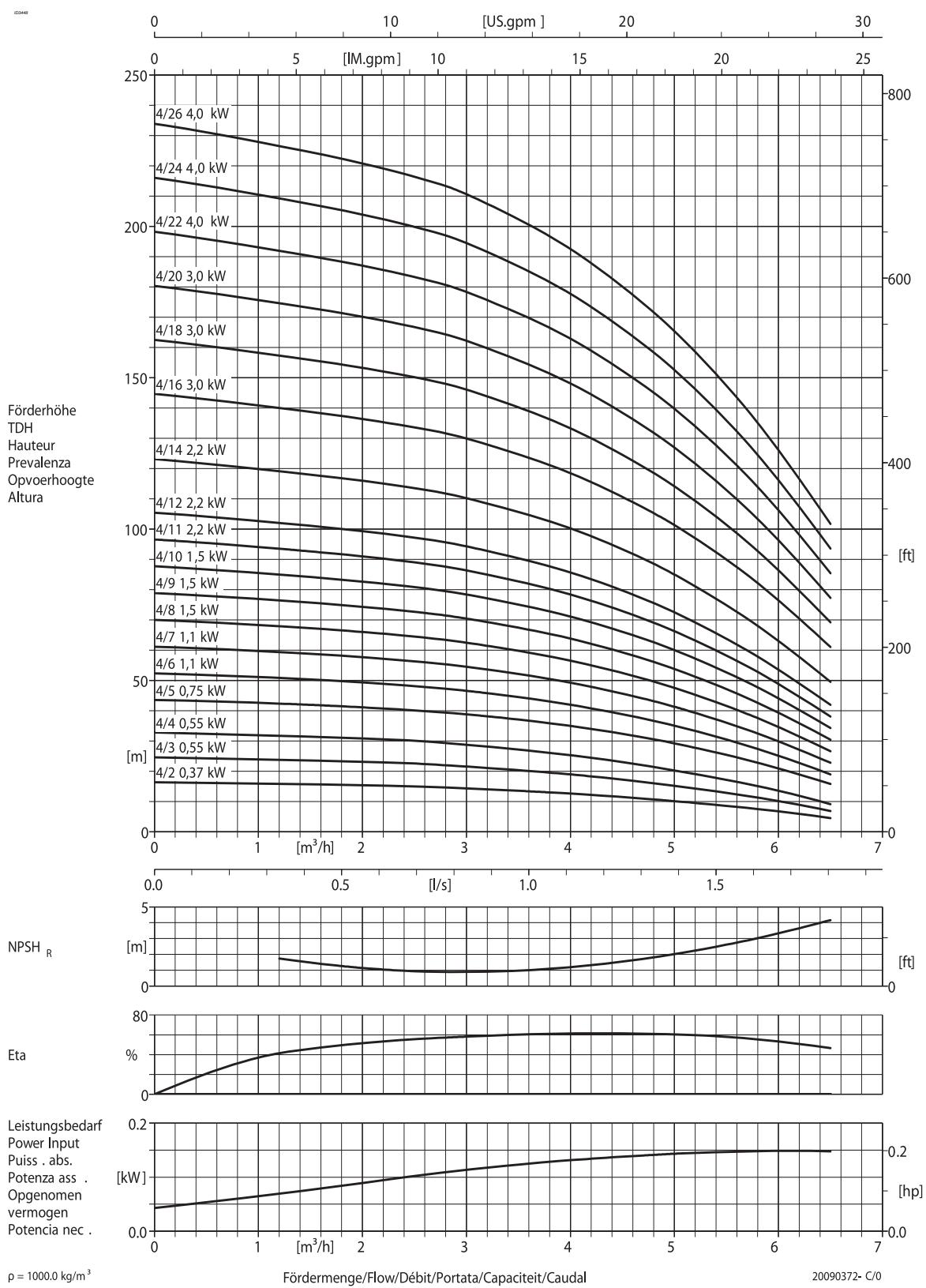


Figure 6: Performance curve DPV(C/S) 4 B - 50Hz - 2 pole

2.8 Hydraulic performance curve DPV(C/S) 6 B - 50Hz - 2 pole

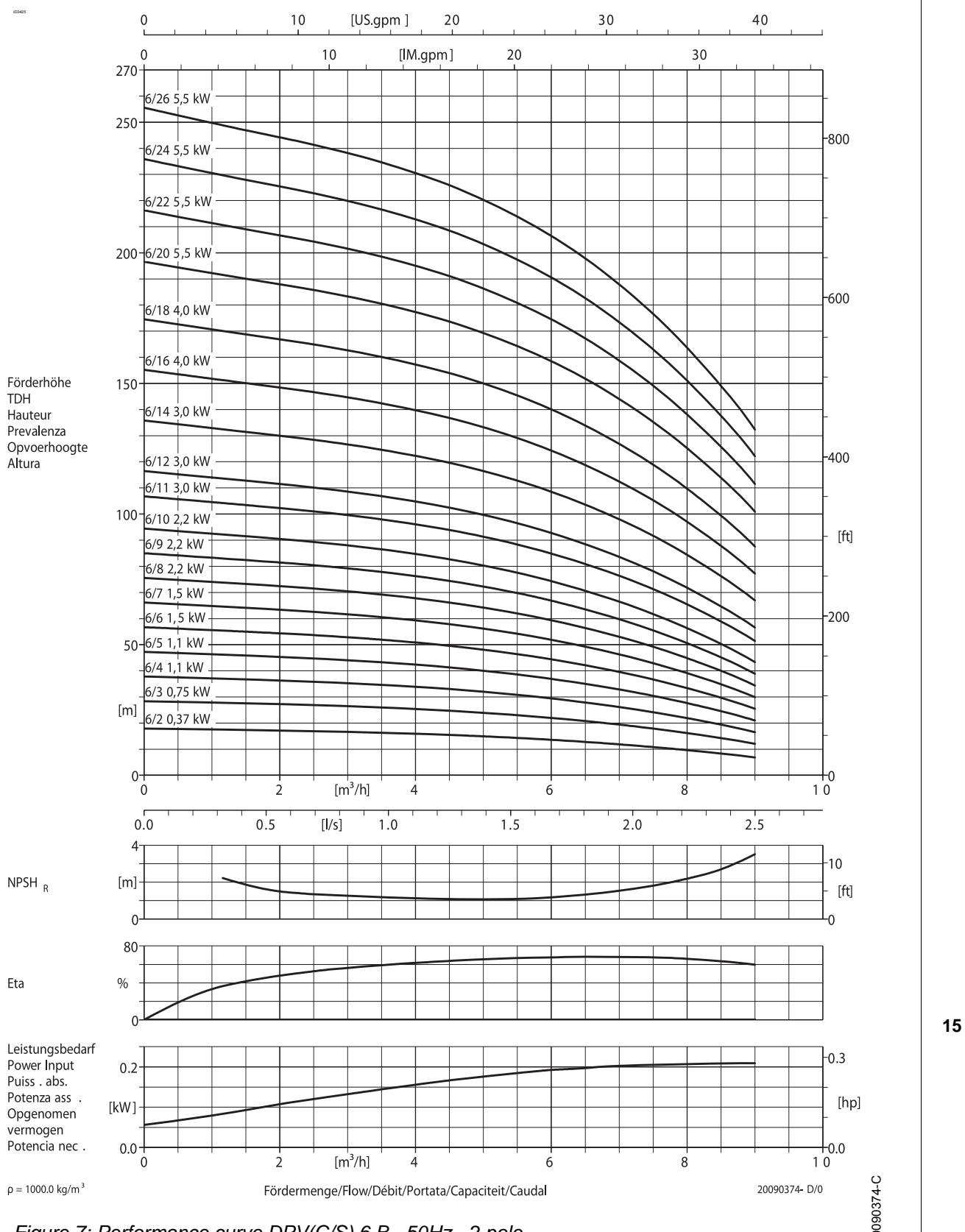


Figure 7: Performance curve DPV(C/S) 6 B - 50Hz - 2 pole



2.9 Hydraulic performance curve DPV(C/S) 10 B - 50Hz - 2 pole

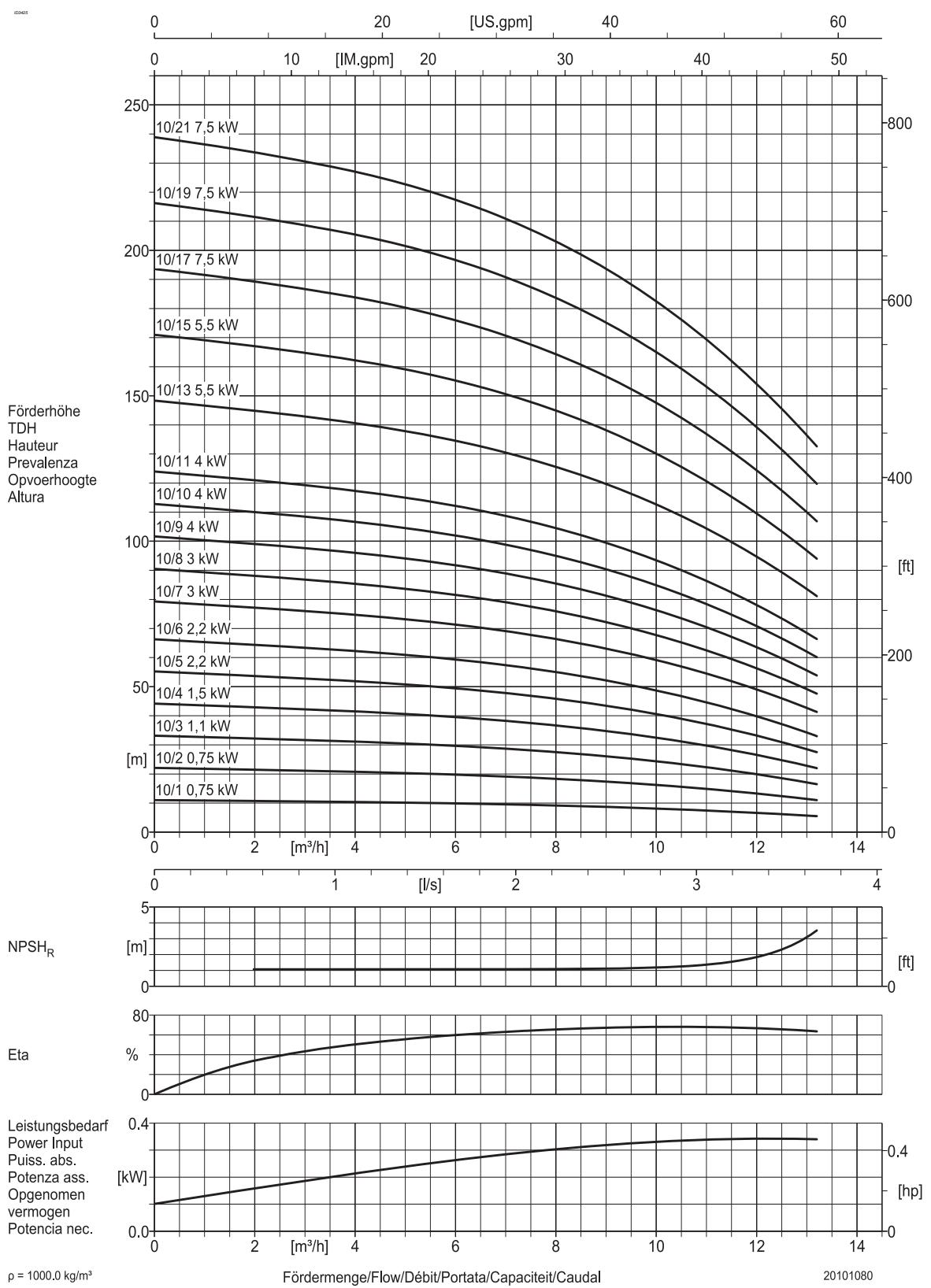


Figure 8: Performance curve DPV(C/S) 10 B - 50Hz- 2 pole

2.10 Hydraulic performance curve DPV(C/S) 10 B - 50Hz - 4 pole

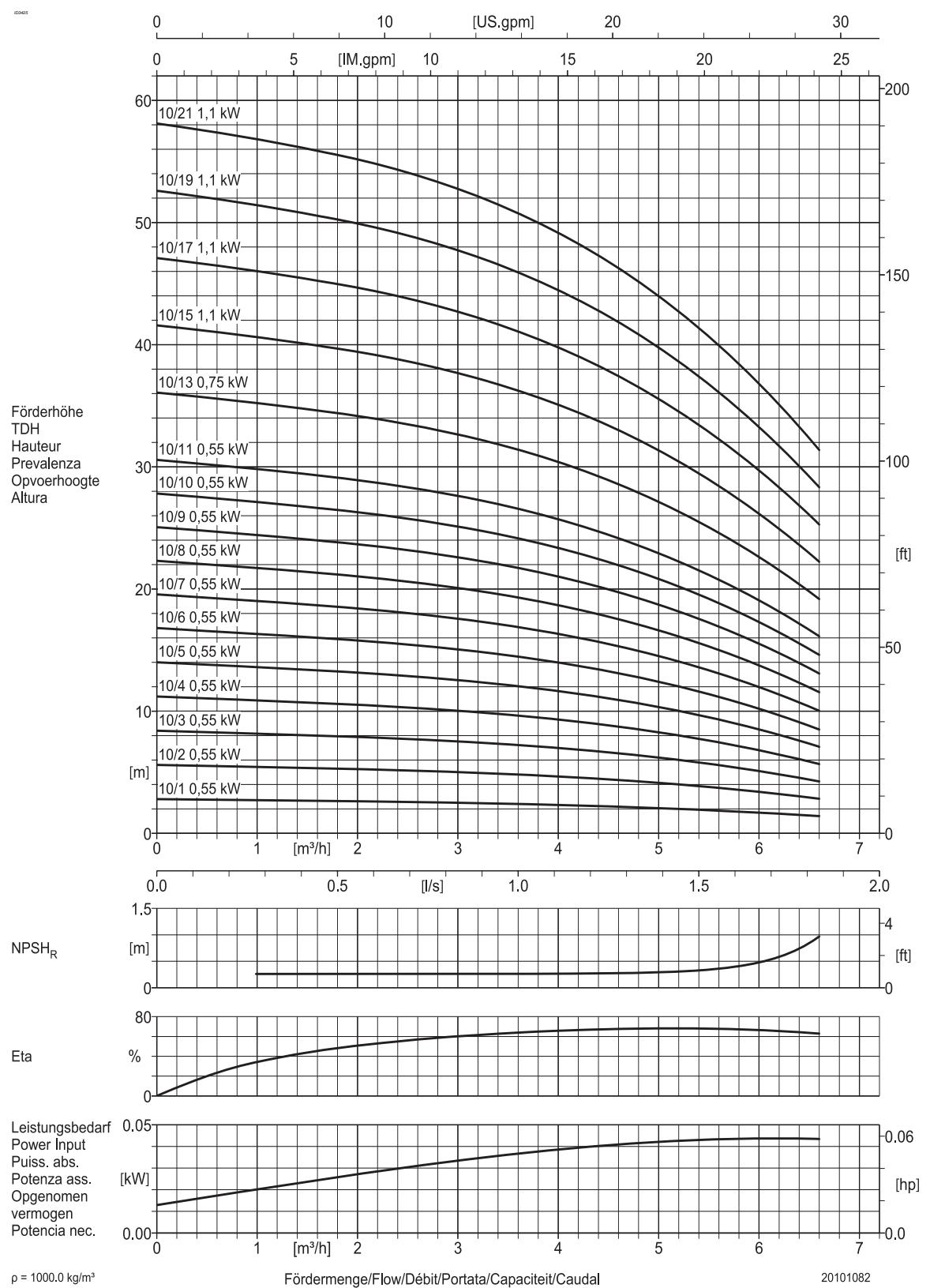


Figure 9: Performance curve DPV(C/S) 10 B - 50Hz - 4 pole

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2.11 Hydraulic performance curve DPV(C/S) 15 B - 50Hz - 2 pole

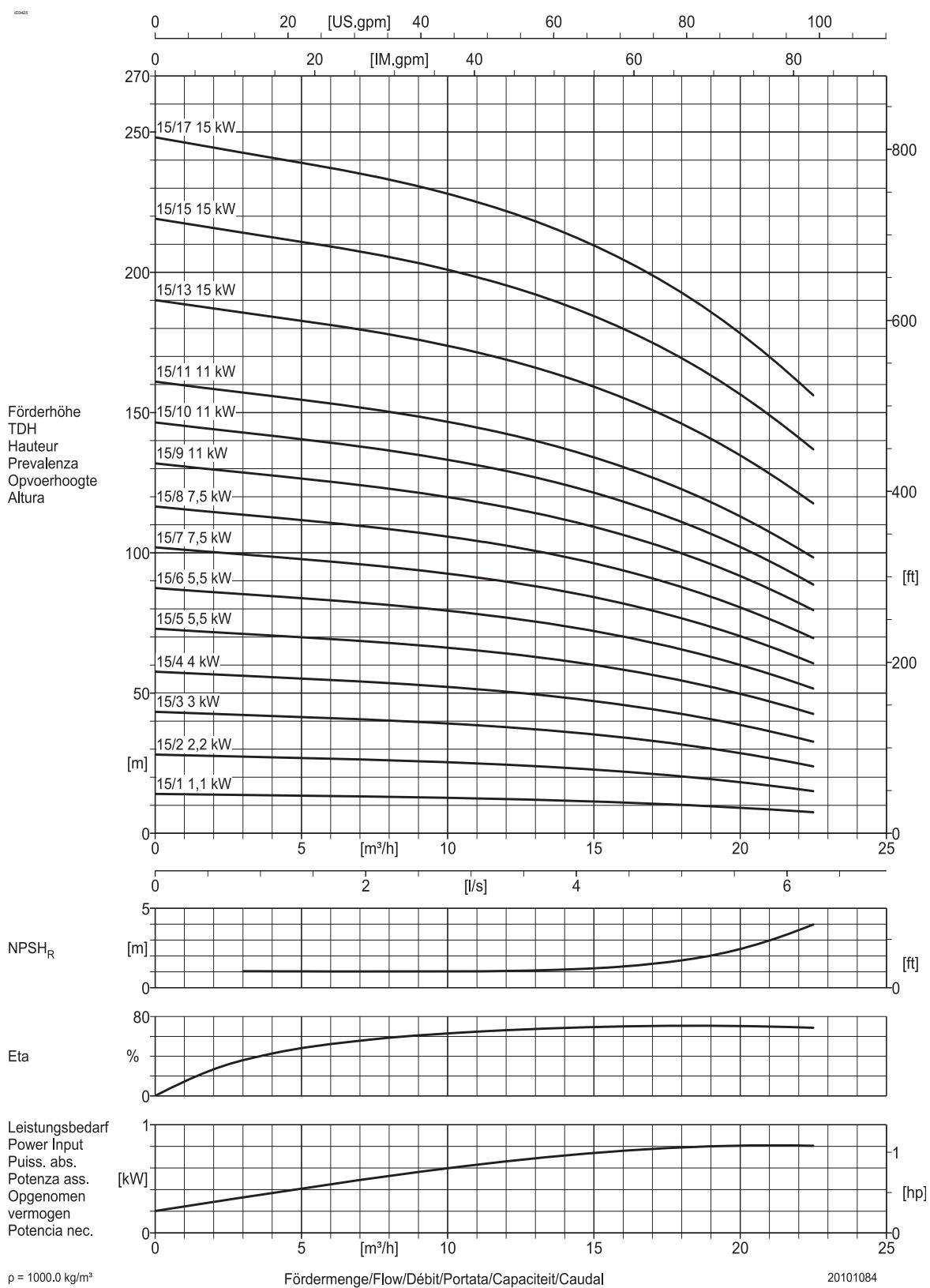


Figure 10: Performance curve DPV(C/S) 15 B - 50Hz - 2 pole

2.12 Hydraulic performance curve DPV(C/S) 15 B - 50Hz - 4 pole

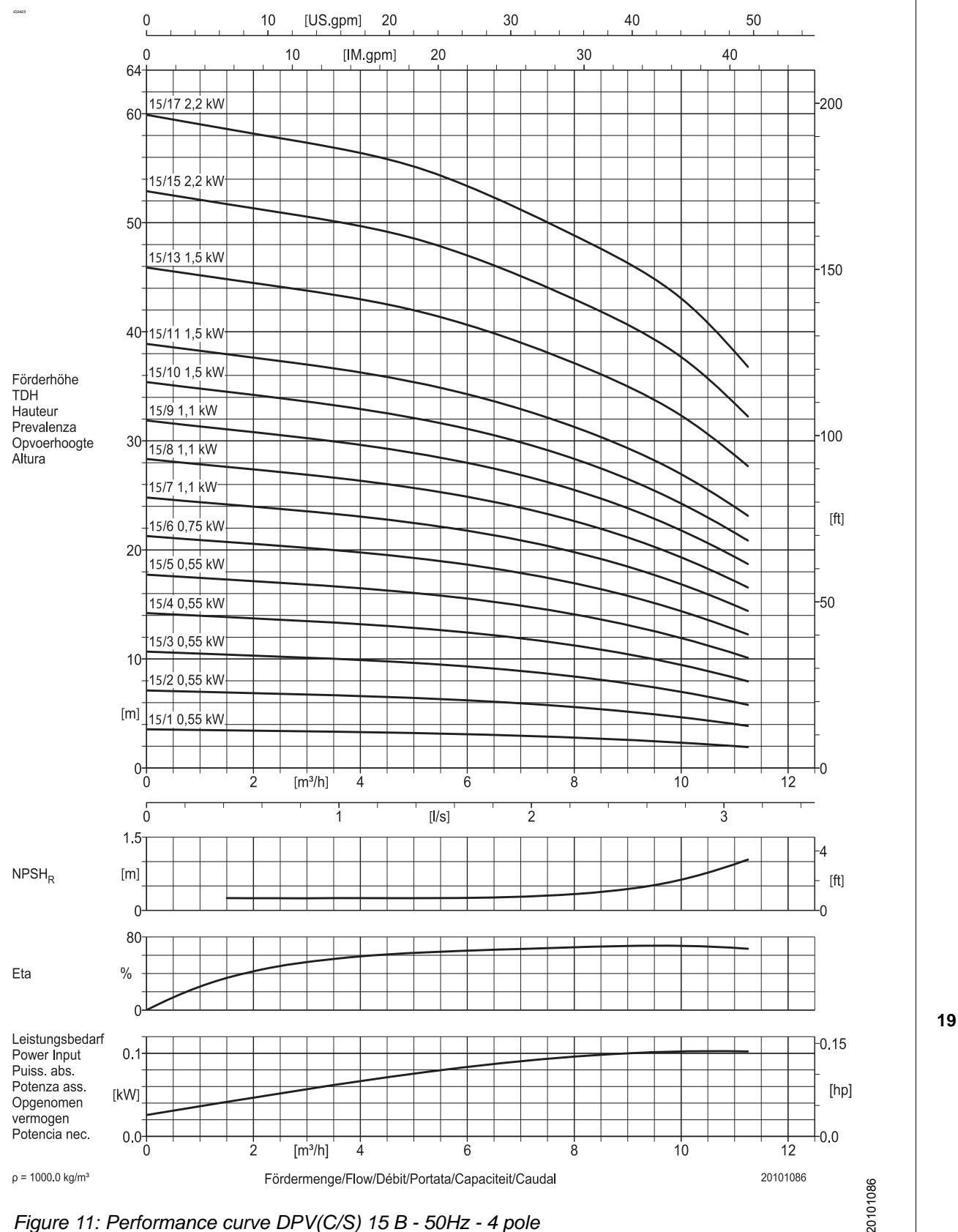


Figure 11: Performance curve DPV(C/S) 15 B - 50Hz - 4 pole



2.13 Hydraulic performance curve DPV(C/S) 25 B - 50Hz - 2 pole

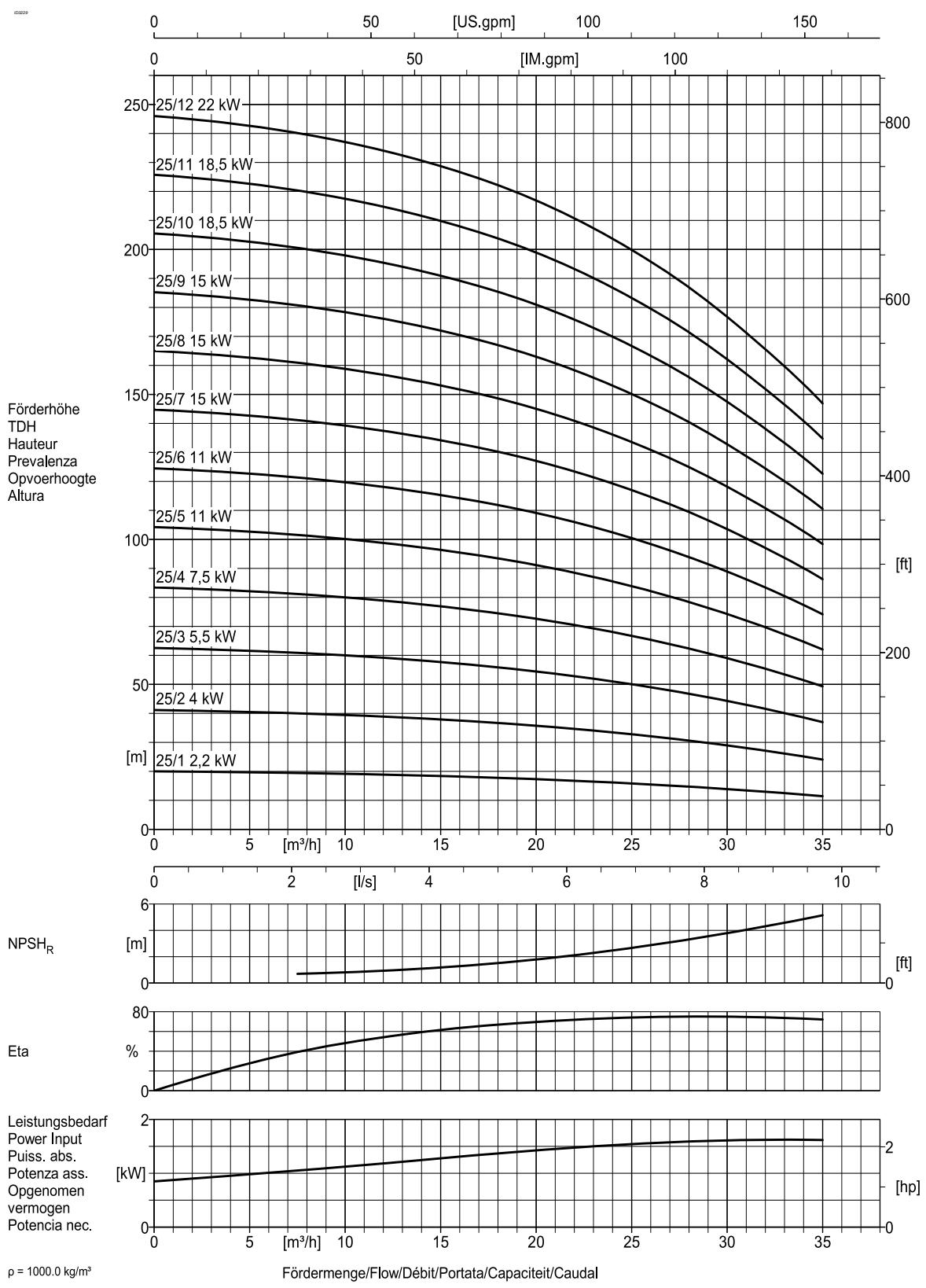


Figure 12: Performance curve DPV(C/S) 25 B - 50Hz - 2 pole

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2.14 Hydraulic performance curve DPV(C/S) 25 B - 50Hz - 4 pole

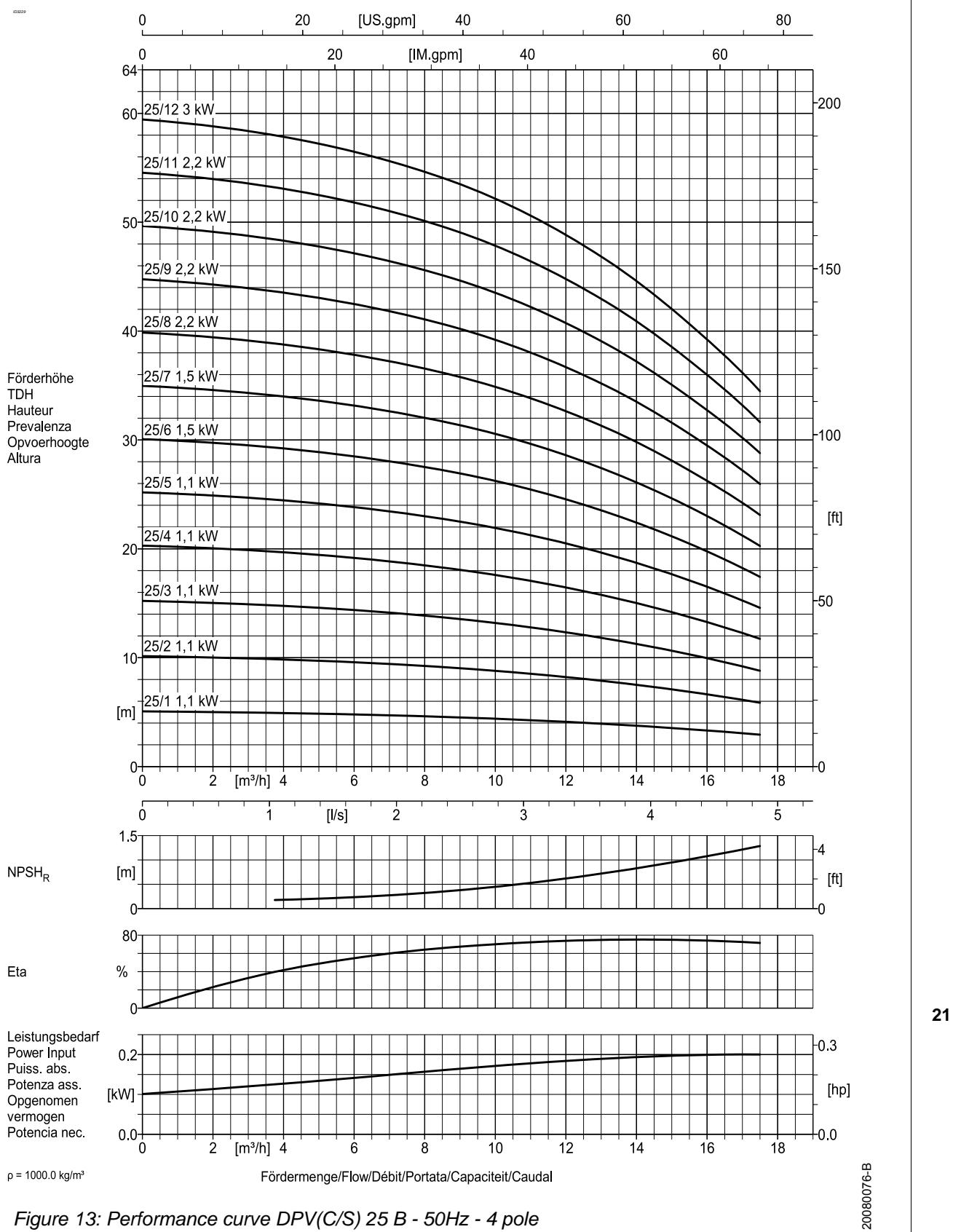


Figure 13: Performance curve DPV(C/S) 25 B - 50Hz - 4 pole



2.15 Hydraulic performance curve DPV(C/S) 85 B - 50Hz - 2 pole

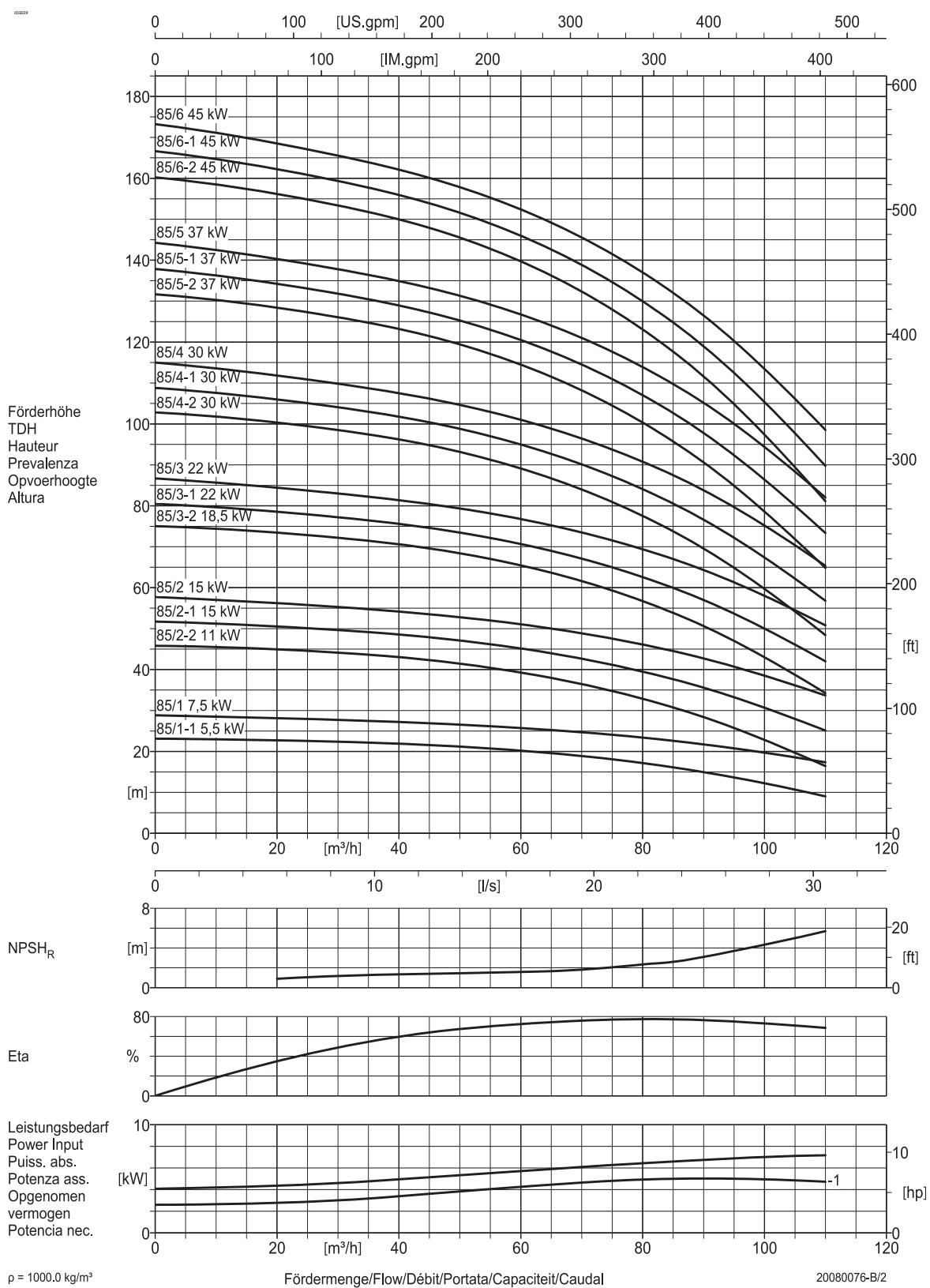


Figure 14: Performance curve DPV(C/S) 85 B - 50Hz - 2 pole

2.16 Hydraulic performance curve DPV(C/S) 85 B - 50Hz - 4 pole

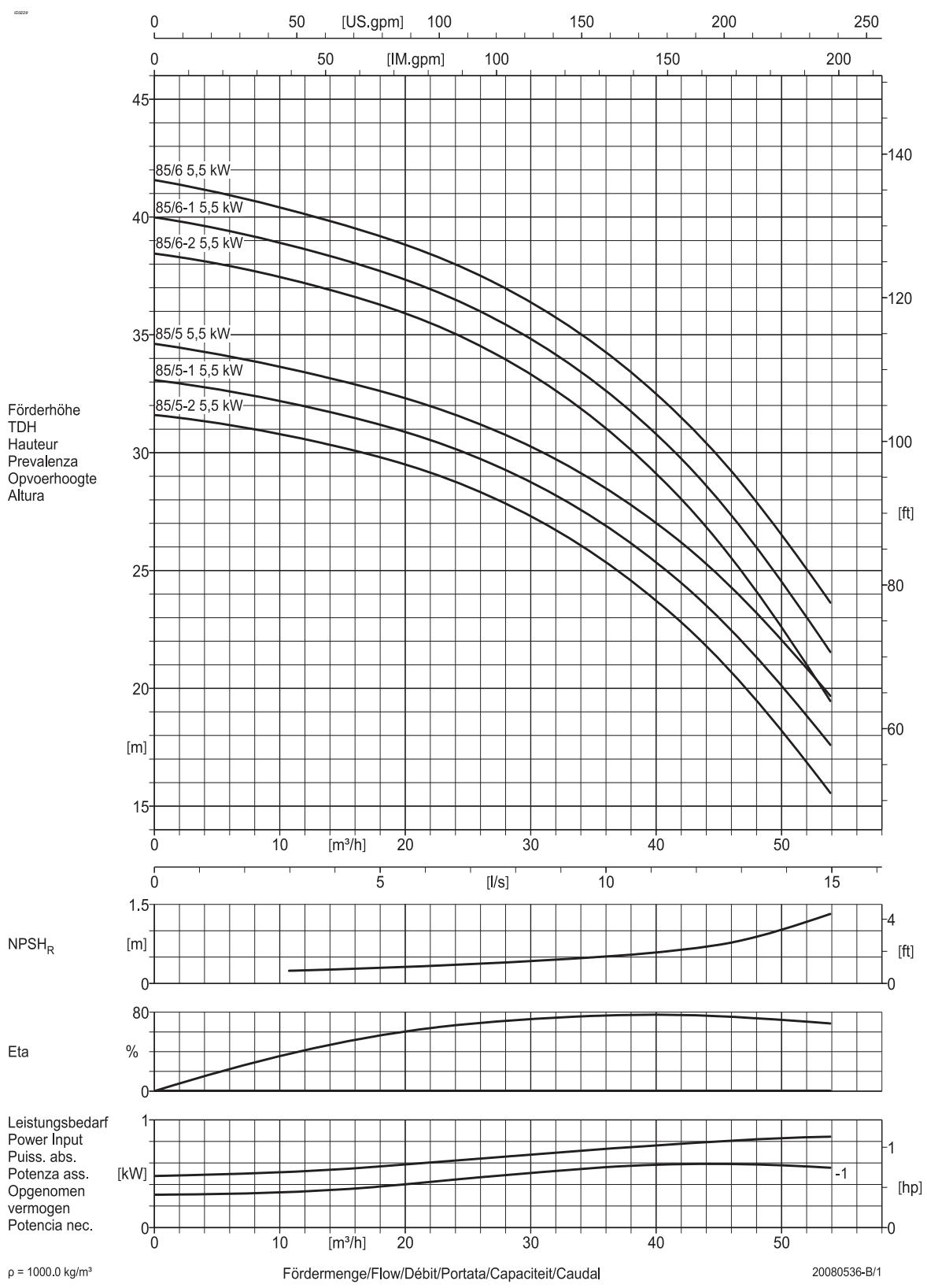


Figure 15: Performance curve DPV(C/S) 85 B - 50Hz -4 pole

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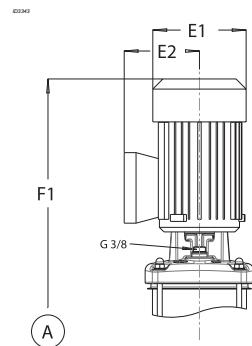


3 Dimensions

All below mentioned dimensions in mm. weight in kg

3.1 DPV(C/S) 2 B - 50Hz - 2 pole - DIN

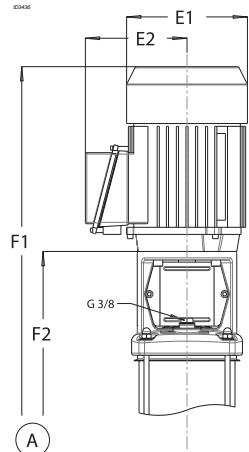
Table 9: VM CLOSED coupled motor construction type; IM 3619



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Model	pressure class	Power [kW]	Motor dimensions			DPVM (-E/V/T)			DPVMF		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
2/2	PN10	0,37	134	107		420		15	445		20
2/3		0,37	134	107		441		16	466		21
2/4		0,37	134	107		463		16	488		21
2/5		0,37	134	107		484		17	509		21
2/6		0,55	134	107		506		17	531		22

20091216-A/30112009



Model	pressure class	Power [kW]	Motor dimensions			DPV(S)(-E/V/T) (E-casing PN16)			DPV(C/S)F		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
2/2	PN10	0,37	134	107		472	259	18	497	284	22
2/3		0,37	134	107		493	280	18	518	305	23
2/4		0,37	134	107		515	302	18	540	327	23
2/5		0,37	134	107		536	323	19	561	348	24
2/6		0,55	134	107		558	345	19	583	370	24
2/7		0,55	134	107		579	366	20	604	391	25
2/8		0,55	134	107		601	398	20	626	423	25
2/9		0,75	150	115		676	419	27	701	444	32
2/10		0,75	150	115		698	441	27	723	466	32
2/11		1,1	150	115		719	462	28	744	487	32
2/12		1,1	150	115		741	484	28	766	509	33
2/14	PN16	1,1	150	115		784	527	29	809	552	34
2/16		1,5	176	141		833	580	36	858	605	40
2/18		1,5	176	141		876	623	36	901	648	41
2/20		1,5	176	141		919	666	37	944	691	42
2/22	PN25/40	2,2	176	141		991	709	45	1016	734	46
2/24		2,2	176	141		1034	752	46	1059	777	46
2/26		2,2	176	141		1077	795	46	1102	820	47
2/28		2,2	176	141		1120	838	47	1145	863	48
2/30		2,2	176	141		1163	881	64	1188	906	64

	<p>DPV E Male thread - With non return valve insert at discharge side and pressure measurement plug at upstream side Norm: G EN ISO 228 Size: G 6/4 Pressure Class: PN16 Option: Base plate in Cast SS 1.4308</p>
	<p>DPV (S) Counter flange with female thread included DPV: Cataphoric coated cast iron DPVS: Cast Stainless steel 1.4408 Norm: G EN ISO 228 Size: G1 Pressure Class: PN16 Option: SS 1.4308 flange and base plate</p>
	<p>DPV (S) V Victaulic Norm: - Size: 42,2 Pressure Class: PN40 Option: Base plate in cast SS 1.4308</p>
	<p>DPV (S) T Tri-Clamp Norm: 32676 Size: DN32 Pressure Class: PN40 Option: Base plate in cast SS 1.4308</p>
	<p>DPV C F Cast iron flange Norm: EN 1092-1/1092-2 Size: NW25 Pressure Class: PN40</p>
	<p>DPV (S) F Loose plate flange Cataphoric coated loose plate flange Norm: EN 1092-1/1092-2 Size: NW25 Pressure Class: PN40 Option: Loose plate flange (PN25) and/or base plate in cast SS 1.4308</p>

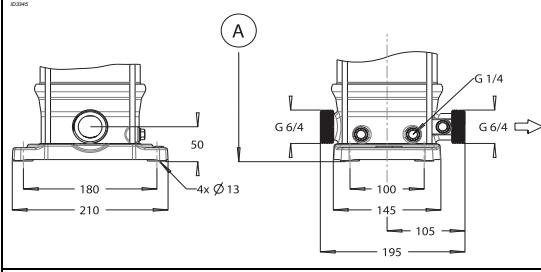
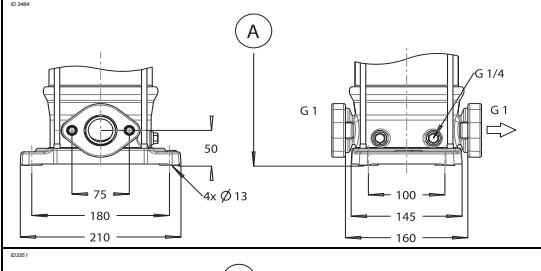
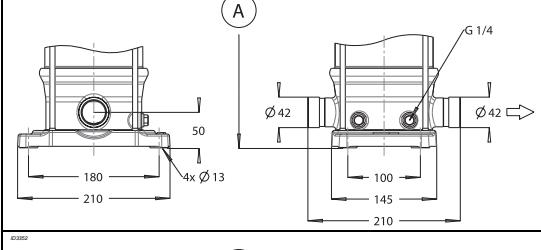
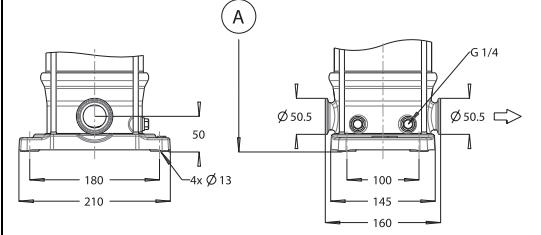
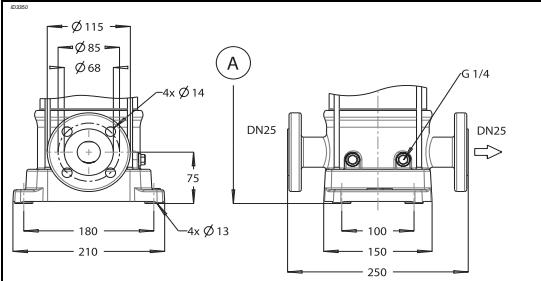
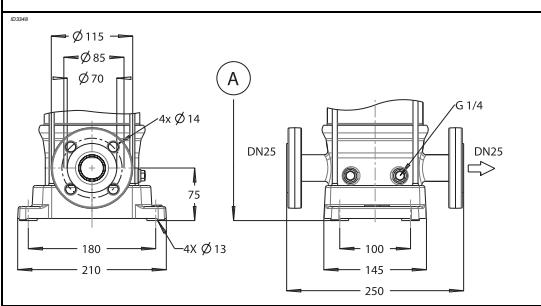
3.2 DPV(C/S) 4 B - 50Hz - 2 pole - DIN

Table 11: VM CLOSED coupled motor construction type; IM 3619

Model	pressure class	Power [kW]	Motor dimensions			DPVM(-E/V/T)			DPVMF		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
4/2	PN10	0,37	134	107		420		15	453		20
4/3		0,55	134	107		441		16	466		21
4/4		0,55	134	107		463		16	488		21
4/5		0,75	150	115		528		23	553		27
4/6		1,1	150	115		550		23	573		28

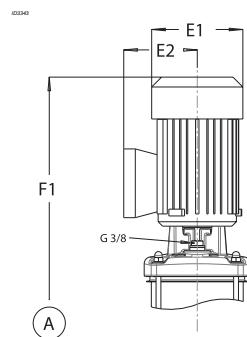
Table 12: coupled motor construction type; V18

Model	pressure class	Power [kW]	Motor dimensions			DPV(S)(-E/V/T) (E-casing PN16)			DPV(C/S)F		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
4/2	PN10	0,37	134	107		472	259	18	497	284	22
4/3		0,55	134	107		493	280	18	518	305	23
4/4		0,55	134	107		515	302	19	540	327	23
4/5		0,75	150	115		590	333	25	615	358	30
4/6		1,1	150	115		612	355	26	637	380	30
4/7		1,1	150	115		633	376	26	658	401	31
4/8		1,5	176	141		661	408	32	686	433	37
4/9		1,5	176	141		682	429	33	707	454	37
4/10		1,5	176	141		704	451	33	729	476	38
4/11		2,2	176	141		754	472	34	779	497	39
4/12		2,2	176	141		776	494	35	801	519	40
4/14		2,2	176	141		819	537	36	844	562	41
4/16		3	195	145		904	590	47	929	615	52
4/18	PN25/40	3	195	145		947	633	52	972	658	53
4/20		3	195	145		990	676	53	1015	701	53
4/22		4	223	167		1042	719	60	1067	744	61
4/24		4	223	167		1085	762	61	1110	787	62
4/26		4	223	167		1128	805	61	1153	830	62

	<p>DPV E Male thread - With non return valve insert at discharge side and pressure measurement plug at upstream side Norm: G EN ISO 228 Size: G 6/4 Pressure Class: PN16 Option: Base plate in cast SS 1.4308</p>
	<p>DPV (S) Counter flange with female thread included DPV: Cataphoric coated cast iron DPVS: Cast Stainless steel 1.4408 Norm: G EN ISO 228 Size: G1 Pressure Class: PN16 Option: Base plate & flange in SS 1.4308</p>
	<p>DPV (S) V Victaulic Norm: - Size: 42,2 Pressure Class: PN40 Option: Base plate in cast SS 1.4308</p>
	<p>DPV (S) T Tri-Clamp Norm: 32676 Size: DN32 Pressure Class: PN40 Option: Base plate in cast SS 1.4308</p>
	<p>DPV C F Cast iron flange Norm: EN 1092-1/1092-2 Size: NW25 Pressure Class: PN40</p>
	<p>DPV (S) F Loose plate flange Cataphoric coated loose plate flange Norm: EN 1092-1/1092-2 Size: NW25 Pressure Class: PN40 Option: Loose plate flange (PN25) and/or base plate in cast SS 1.4308</p>

3.3 DPV(C/S) 6 B - 50Hz - 2 pole - DIN

Table 13: VM CLOSED coupled motor construction type; IM 3619

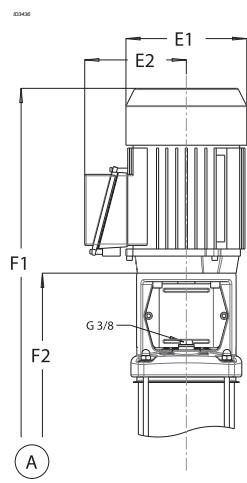


20081033-E

Model	pressure class	Power [kW]	Motor dimensions			DPVM(-E/V/T)			DPVMF		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
6/2	PN10	0,37	134	107		427		16	452		24
		0,75	150	115		496		22	521		30
		1,1	150	115		521		23	546		31
		1,1	150	115		546		23	571		31

20081033-E

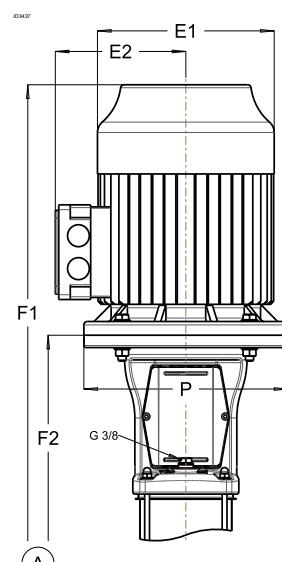
Table 14: coupled motor construction type; V18



20091216-A/30112009

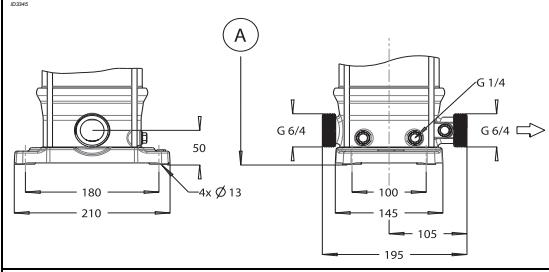
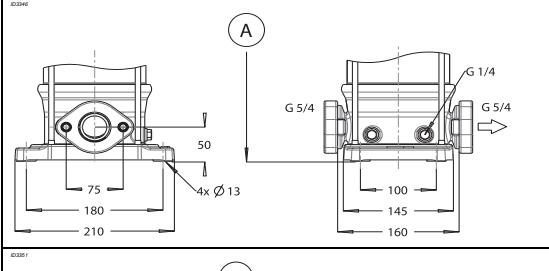
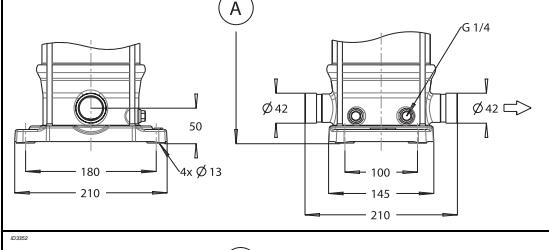
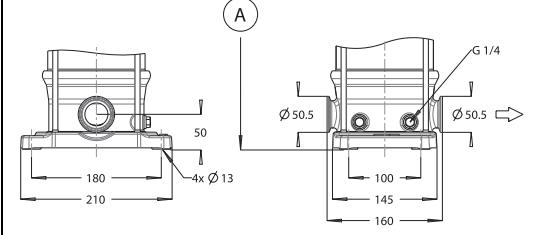
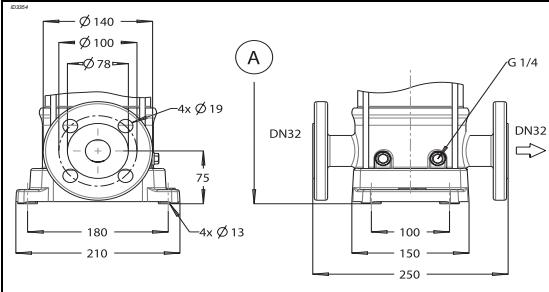
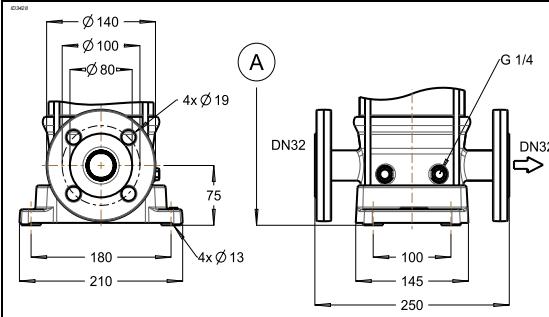
Model	pressure class	Power [kW]	Motor dimensions			DPV(S)(-E/V/T) (E-casing PN16)			DPV(C/S)F		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
6/2	PN10	0,37	134	107		479	266	18	504	291	26
6/3		0,75	150	115		558	301	25	583	326	31
6/4		1,1	150	115		583	326	25	608	351	31
6/5		1,1	150	115		608	351	26	633	376	32
6/6		1,5	176	141		639	386	32	664	411	38
6/7		1,5	176	141		664	411	32	689	436	38
6/8		2,2	176	141		718	436	34	743	461	40
6/9		2,2	176	141		743	461	34	768	486	41
6/10		2,2	176	141		768	486	35	793	511	41
6/11		3	195	145		835	521	45	860	546	51
6/12	PN16	3	195	145		860	546	46	885	571	52
6/14		3	195	145		910	596	47	935	621	53
6/16		4	223	167		969	646	51	994	671	61
6/18	PN25/40	4	223	167		1016	696	61	1044	721	62

Table 15: coupled motor construction type; V1



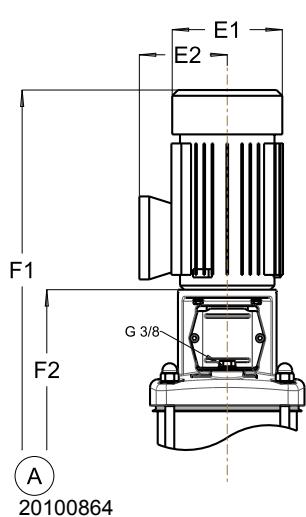
20091217

Model	pressure class	Power [kW]	Motor dimensions			DPV(S) (V/T)			DPV(C/S)F		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
6/20	PN25/40	5.5	266	178	300	1168	822	96	1193	847	97
		5.5	266	178	300	1218	872	97	1243	897	98
		5.5	266	178	300	1268	922	98	1293	947	99
		5.5	266	178	300	1318	972	99	1343	997	100

	<p>DPV E Male thread - With non return valve insert at discharge side and pressure measurement plug at upstream side Norm: G EN ISO 228 Size: G 6/4 Pressure Class: PN16 Option: Base plate in cast SS 1.4308</p>
	<p>DPV (S) Counter flange with female thread included DPV: Cataphoric coated cast iron DPVS: Cast Stainless steel 1.4408 Norm: G EN ISO 228 Size: G 5/4 Pressure Class: PN16 Option: Flange and base plate in SS1.4308</p>
	<p>DPV (S) V Victaulic Norm: - Size: 42,2 Pressure Class: PN40 Option: Base plate in SS 1.4308</p>
	<p>DPV (S) T Tri-Clamp Norm: 32676 Size: DN32 Pressure Class: PN40 Option: Baseplate in cast SS 1.4308</p>
	<p>DPV C F Cast iron flange Norm: EN 1092-1/1092-2 Size: NW32 Pressure Class: PN40</p>
	<p>DPV (S) F Loose plate flange Cataphoric coated loose plate flange Norm: EN 1092-1/1092-2 Size: NW32 Pressure Class: PN40 Option: Loose plate flange (PN25) and/or base plate in cast SS 1.4308</p>

3.4 DPV(C/S) 10 B - 50Hz - 2 pole - DIN

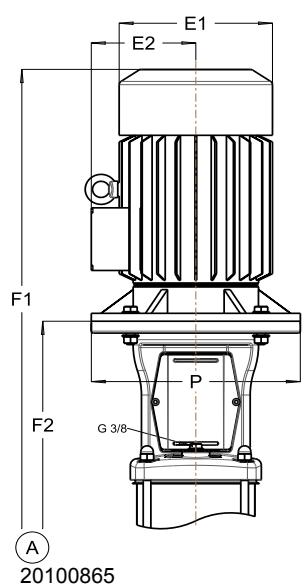
Table 16: coupled motor construction type; V18



Model	pressure class	Power [kW]	Motor dimensions			DPV(S)(-E/V/T) (E-casing PN16)			DPV(C/S)F		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
10/1	PN10	0,75	150	115		621	346	32	621	346	36
10/2		0,75	150	115		621	346	33	621	346	36
10/3		1,1	150	115		647	372	36	647	372	39
10/4		1,5	176	141		679	409	41	679	409	45
10/5		2,2	176	141		720	435	45	720	435	48
10/6		2,2	176	141		747	462	45	747	462	49
10/7		3	195	145		828	498	54	828	498	58
10/8		3	195	145		855	525	55	855	525	59
10/9		4	223	167		891	551	62	891	551	65
10/10		4	223	167		918	578	63	918	578	66
10/11		4	223	167		944	604	64	944	604	67

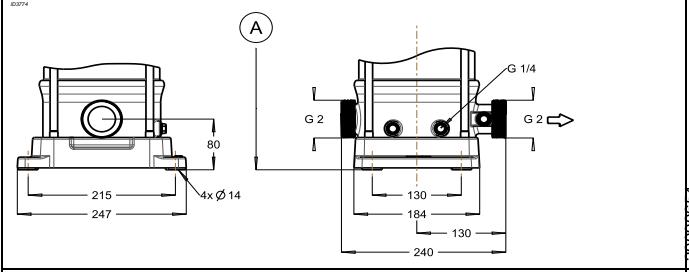
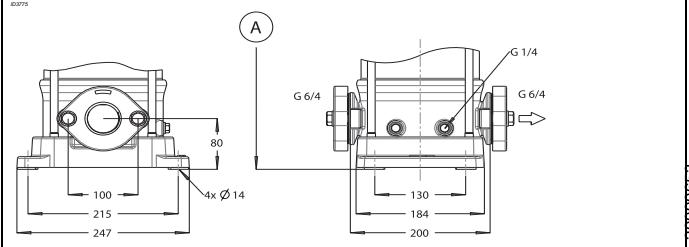
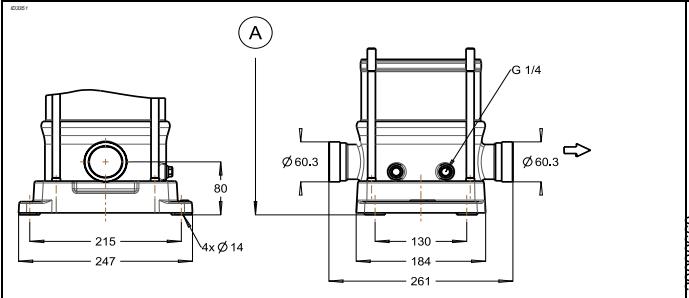
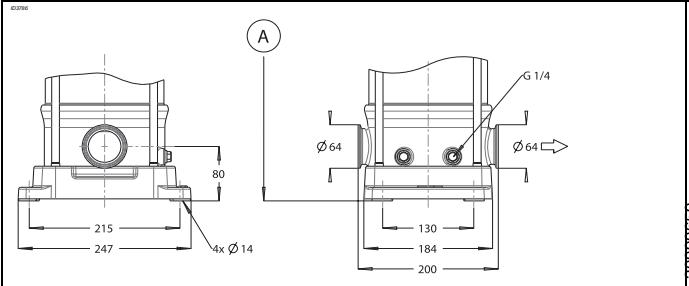
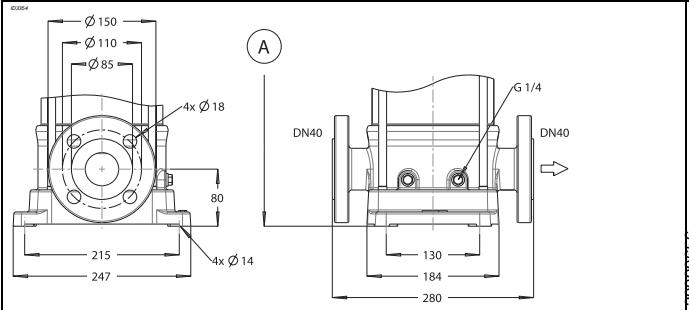
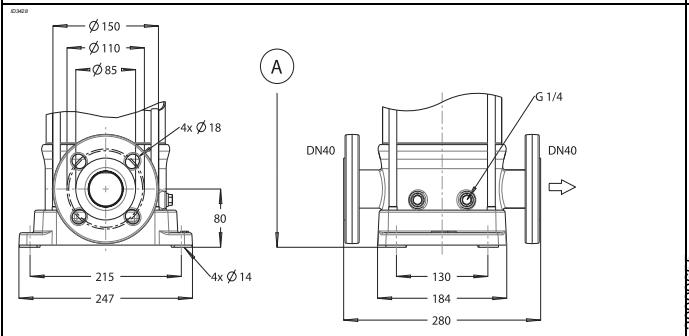
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Table 17: coupled motor construction type; V1



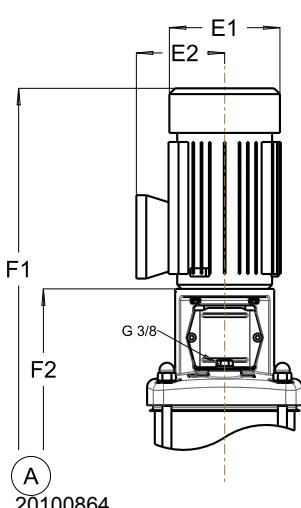
Model	pressure class	Power [kW]	Motor dimensions			DPV(S)(-V/T)			DPV(C/S)F		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
10/13	PN16	5,5	266	178	300	1102	737	104	1102	737	108
10/15	PN25/40	5,5	266	178	300	1155	790	108	1155	790	112
10/17		7,5	266	178	300	1208	843	116	1208	843	118
10/19		7,5	266	178	300	1261	896	118	1261	896	120
10/21		7,5	266	178	300	1314	949	120	1314	949	122

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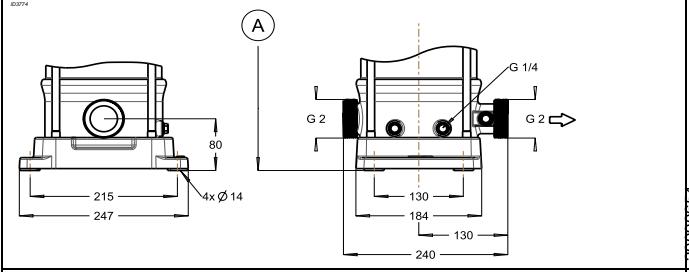
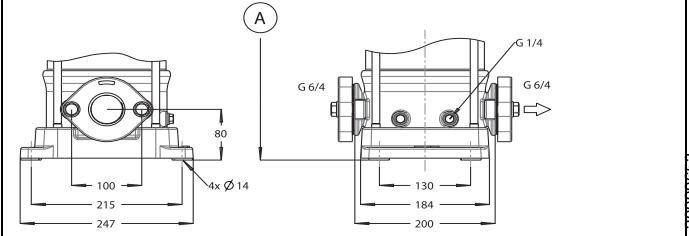
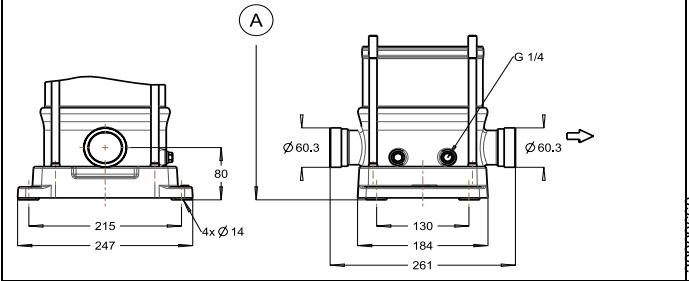
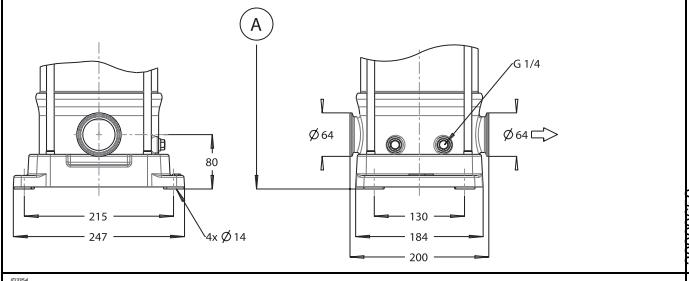
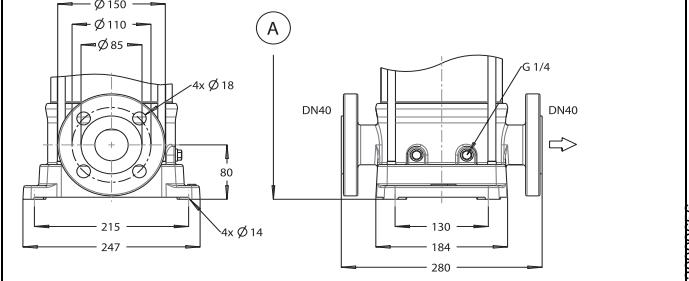
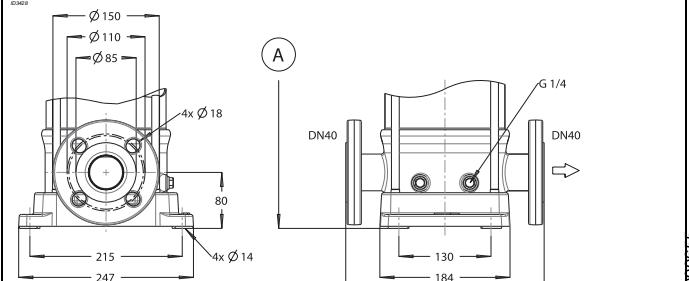
	<p>DPV E Male thread - With non return valve insert at discharge side and pressure measurement plug at upstream side Norm: G EN ISO 228 Size: G 2 Pressure Class: PN16 Option: Base plate in cast SS 1.4308</p>
	<p>DPV (S) Counter flange with female thread included DPV: Cataphoric coated cast iron DPVS: Cast Stainless steel 1.4408 Norm: G EN ISO 228 Size: G 6/4 Pressure Class: PN16 Option: Flange and base plate in SS1.4308</p>
	<p>DPV (S) V Victaulic Norm: - Size: 60,3 Pressure Class: PN40 Option: Base plate in SS 1.4308</p>
	<p>DPV (S) T Tri-Clamp Norm: 32676 Size: Ø64 Pressure Class: PN40 Option: Baseplate in cast SS 1.4308</p>
	<p>DPV C F Cast iron flange Norm: EN 1092-1/1092-2 Size: NW40 Pressure Class: PN40</p>
	<p>DPV (S) F Loose plate flange Cataphoric coated loose plate flange Norm: EN 1092-1/1092-2 Size: NW40 Pressure Class: PN40 Option: Loose plate flange (PN25) and/or base plate in cast SS 1.4308</p>

3.5 DPV(C/S) 10 B - 50Hz - 4 pole - DIN

Table 18: coupled motor construction type; V18



Model	pressure class	Power [kW]	Motor dimensions			DPV(S)(-E/V/T)			DPV(C/S)F		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
10/1	PN10	0,55	150	115		592	346	35	592	346	38
		0,55	150	115		592	346	35	592	346	38
		0,55	150	115		618	372	36	618	372	39
		0,55	150	115		645	399	37	645	399	41
		0,55	150	115		671	425	38	671	425	42
		0,55	150	115		698	452	39	698	452	43
		0,55	150	115		724	478	40	724	478	44
		0,55	150	115		750	505	41	750	505	45
		0,55	150	115		777	531	43	777	531	46
		0,55	150	115		804	558	44	804	558	47
		0,55	150	115		830	584	45	830	584	48
		0,75	150	115		912	672	62	912	672	65
		1,1	176	141		970	700	67	970	700	71
		1,1	176	141		1023	753	71	1023	753	73
		1,1	176	141		1076	806	73	1076	806	75
		1,1	176	141		1129	859	75	1129	859	77

	<p>DPV E Male thread - With non return valve insert at discharge side and pressure measurement plug at upstream side Norm: G EN ISO 228 Size: G 2 Pressure Class: PN16 Option: Base plate in cast SS 1.4308</p>
	<p>DPV (S) Counter flange with female thread included DPV: Cataphoric coated cast iron DPVS: Cast Stainless steel 1.4408 Norm: G EN ISO 228 Size: G 6/4 Pressure Class: PN16 Option: Flange and base plate in SS1.4308</p>
	<p>DPV (S) V Victaulic Norm: - Size: 60,3 Pressure Class: PN40 Option: Base plate in SS 1.4308</p>
	<p>DPV (S) T Tri-Clamp Norm: 32676 Size: Ø64 Pressure Class: PN40 Option: Baseplate in cast SS 1.4308</p>
	<p>DPV C F Cast iron flange Norm: EN 1092-1/1092-2 Size: NW40 Pressure Class: PN40</p>
	<p>DPV (S) F Loose plate flange Cataphoric coated loose plate flange Norm: EN 1092-1/1092-2 Size: NW40 Pressure Class: PN40 Option: Loose plate flange (PN25) and/or base plate in cast SS 1.4308</p>

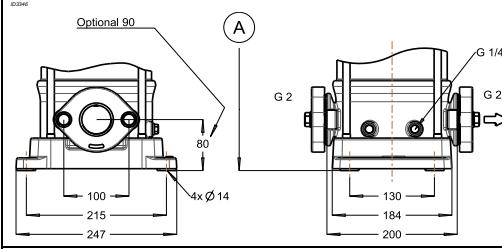
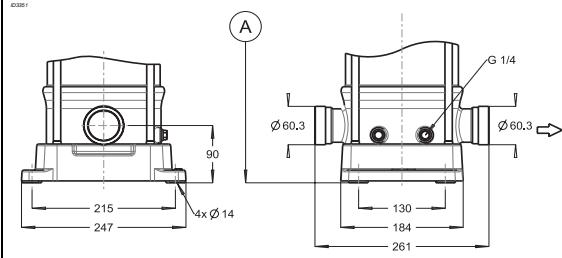
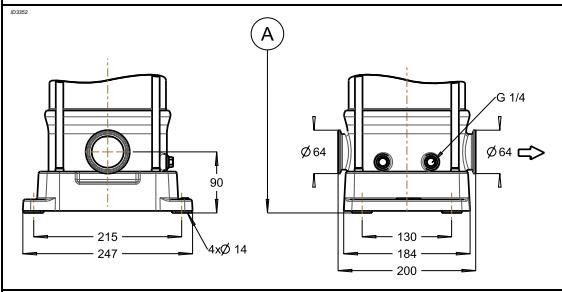
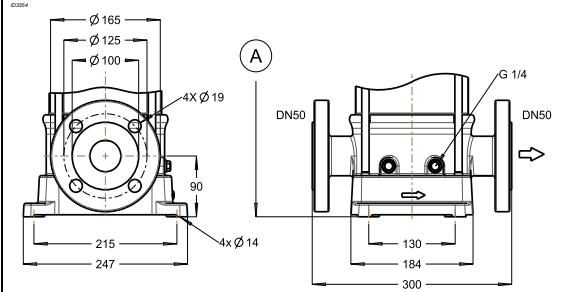
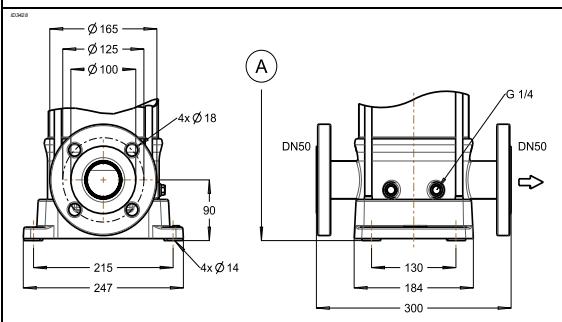
3.6 DPV(C/S) 15 B - 50Hz - 2 pole - DIN

Table 19: coupled motor construction type; V18

Model	pressure class	Power [kW]	Motor dimensions			DPV(S)			DPV(C/S)F - DPV(S)V/T		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
15/1	PN10	1,1	150	115		621	346	34	631	356	40
15/2		2,2	176	141		641	356	41	651	366	47
15/3		3	195	145		722	392	50	732	402	56
15/4		4	223	167		759	419	56	769	429	62

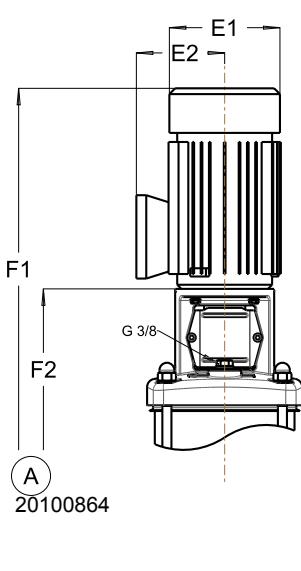
Table 20: coupled motor construction type; V1

Model	pressure class	Power [kW]	Motor dimensions			DPV(S)			DPV(C/S)F - DPV(S)V/T		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
15/5	PN10	5,5	266	178	300	890	525	95	900	535	101
15/6		5,5	266	178	300	916	551	96	926	561	102
15/7	PN16	7,5	266	178	300	943	578	101	953	588	107
15/8		7,5	266	178	300	969	604	103	979	614	109
15/9	PN25	11	315	204	350	1159	661	180	1169	671	186
15/10		11	315	204	350	1185	687	181	1195	697	187
15/11	PN25	11	315	204	350				1222	724	188
15/13		15	315	204	350				1275	777	203
15/15		15	315	204	350				1328	830	205
15/17		15	315	204	350				1381	883	207

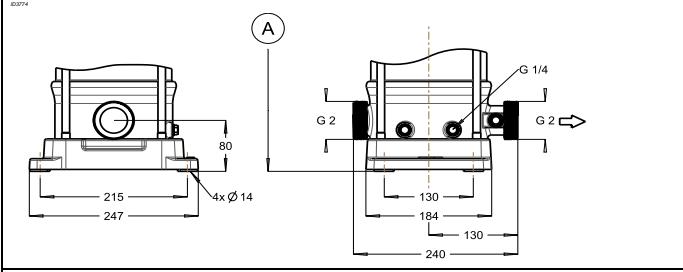
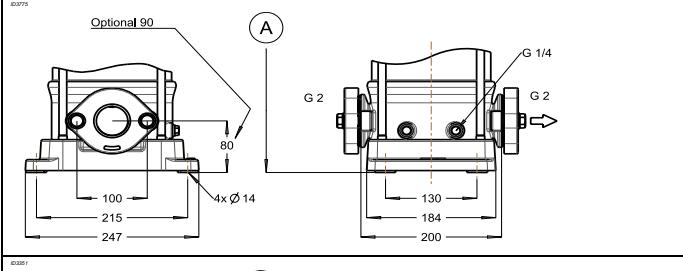
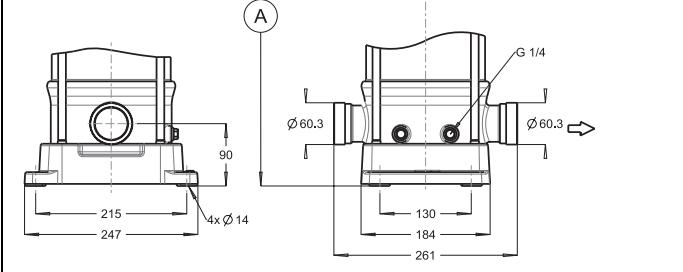
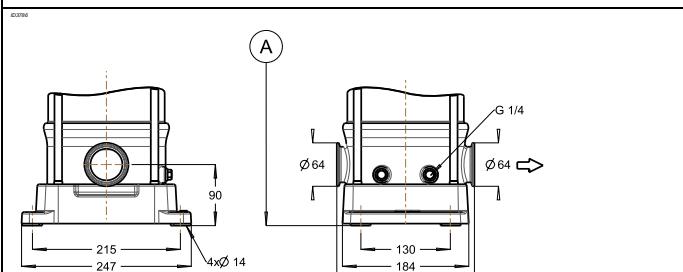
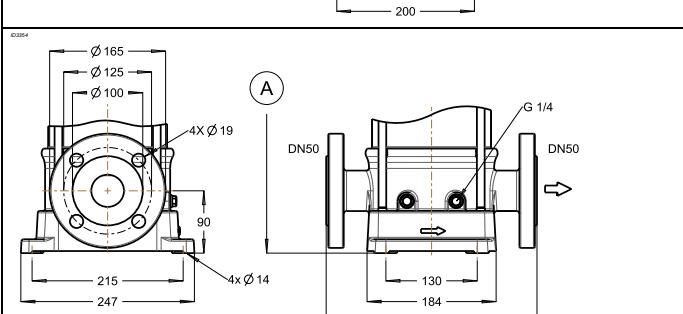
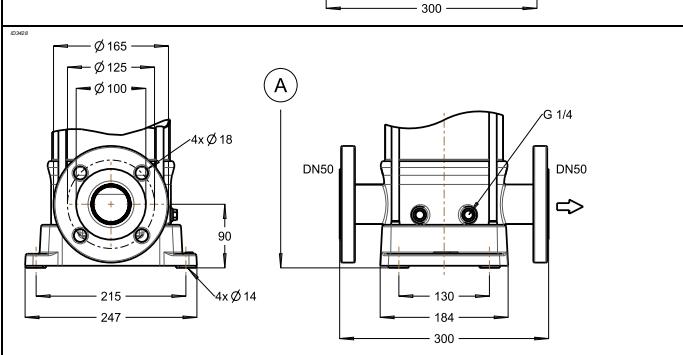
	<p>DPV (S) Counter flange with female thread included DPV: Cataphoric coated cast iron DPVS: Cast Stainless steel 1.4408 Norm: G EN ISO 228 Size: G 2 Pressure Class: PN16 Option: Flange and base plate in SS1.4308</p>
	<p>DPV (S) V Victaulic Norm: - Size: 60,3 Pressure Class: PN40 Option: Base plate in SS 1.4308</p>
	<p>DPV (S) T Tri-Clamp Norm: 32676 Size: Ø64 Pressure Class: PN40 Option: Baseplate in cast SS 1.4308</p>
	<p>DPV C F Cast iron flange Norm: EN 1092-1/1092-2 Size: NW50 Pressure Class: PN40</p>
	<p>DPV (S) F Loose plate flange Cataphoric coated loose plate flange Norm: EN 1092-1/1092-2 Size: NW50 Pressure Class: PN40 Option: Loose plate flange (PN25) and/or base plate in cast SS 1.4308</p>

3.7 DPV(C/S) 15 B - 50Hz - 4 pole - DIN

Table 21: coupled motor construction type; V18

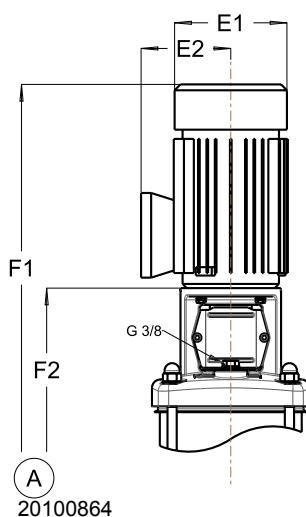


Model	pressure class	Power [kW]	Motor dimensions			DPV(S)(-E)			DPV(C/S)F DPV(S)V/T		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]	F1 [mm]	F2 [mm]	Mass [kg]
15/1	PN10	0,55	150	115		592	346	34	602	356	38
15/2		0,55	150	115		592	346	35	602	356	38
15/3		0,55	150	115		618	372	36	628	382	39
15/4		0,55	150	115		645	399	37	655	409	40
15/5		0,55	150	115		671	425	38	681	435	42
15/6		0,75	150	115		727	452	40	737	462	43
15/7		1,1	176	141		758	488	43	768	498	46
15/8		1,1	176	141		785	515	44	795	525	47
15/9		1,1	176	141		811	541	46	821	551	49
15/10		1,5	195	145		853	568	48	863	578	53
15/11		1,5	195	145		879	594	50	889	604	53
15/13		1,5	195	145		932	647	52	942	657	55
15/15		2,2	195	145		1040	710	62	1050	720	65
15/17		2,2	195	145		1093	763	64	1103	773	67

	<p>DPV E Male thread - With non return valve insert at discharge side and pressure measurement plug at upstream side Norm: G EN ISO 228 Size: G 2 Pressure Class: PN16 Option: Base plate in cast SS 1.4308</p>
	<p>DPV (S) Counter flange with female thread included DPV: Cataphoric coated cast iron DPVS: Cast Stainless steel 1.4408 Norm: G EN ISO 228 Size: G 2 Pressure Class: PN16 Option: Flange and base plate in SS1.4308</p>
	<p>DPV (S) V Victaulic Norm: - Size: 60,3 Pressure Class: PN40 Option: Base plate in SS 1.4308</p>
	<p>DPV (S) T Tri-Clamp Norm: 32676 Size: Ø64 Pressure Class: PN40 Option: Baseplate in cast SS 1.4308</p>
	<p>DPV C F Cast iron flange Norm: EN 1092-1/1092-2 Size: NW50 Pressure Class: PN40</p>
	<p>DPV (S) F Loose plate flange Cataphoric coated loose plate flange Norm: EN 1092-1/1092-2 Size: NW50 Pressure Class: PN40 Option: Loose plate flange (PN25) and/or base plate in cast SS 1.4308</p>

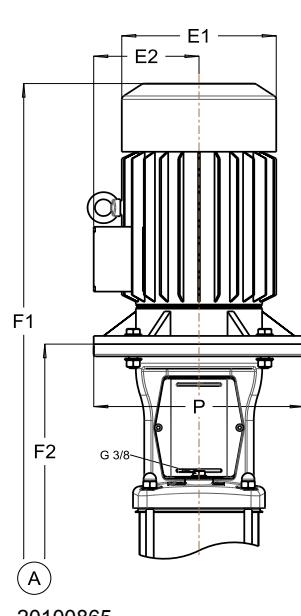
3.8 DPV(C/S) 25 B - 50Hz - 2 pole - DIN

Table 22: coupled motor construction type; V18

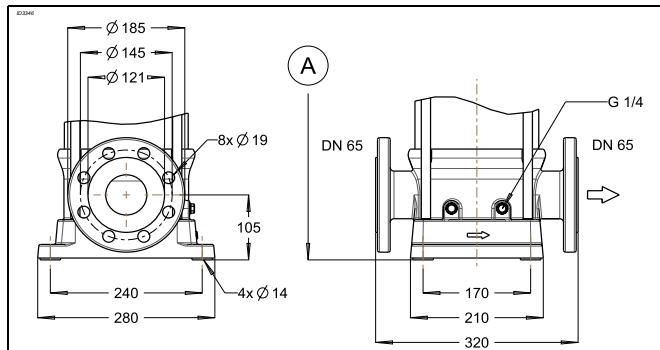


Model	pressure class	Power [kW]	Motor dimensions			DPV(C/S)F		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]
25/1	PN10	2,2	176	141		693	408	70
25/2		4	223	167		818	478	85

Table 23: coupled motor construction type; V1



Model	pressure class	Power [kW]	Motor dimensions			DPV(C/S)F		
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]	Mass [kg]
25/3	PN10	5,5	266	178	300	999	634	114
25/4		7,5	266	178	300	1064	699	121
25/5	PN16	11	315	204	350	1292	794	203
25/6		11	315	204	350	1357	859	206
25/7	PN25	15	315	204	350	1422	924	218
25/8		15	315	204	350	1487	989	231
25/9		15	315	204	350	1552	1054	233
25/10		18,5	315	204	350	1699	1119	253
25/11		18,5	315	204	350	1764	1184	256
25/12		22	350	223	350	1829	1249	294



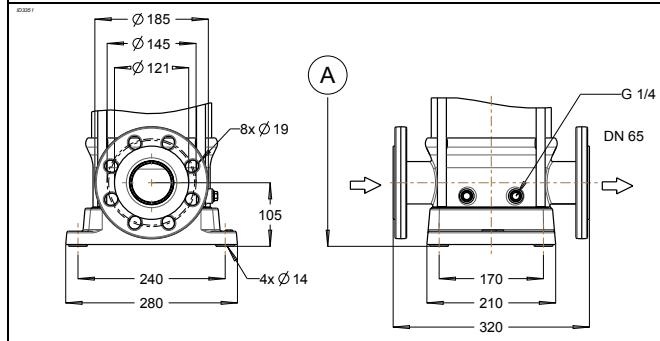
DPV C F Cast iron flange

Norm: EN 1092-1/1092-2

Size: NW65

Pressure Class: PN40

ZU001130-E-A



DPV (S) F Loose plate flange

Cataphoric coated loose plate flange

Norm: EN 1092-1/1092-2

Size: NW65

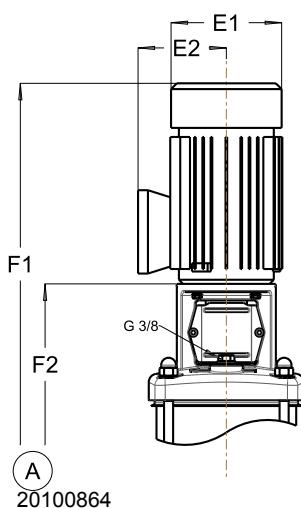
Pressure Class: PN40

Option: Loose plate flange (PN25) in SS 1.4308

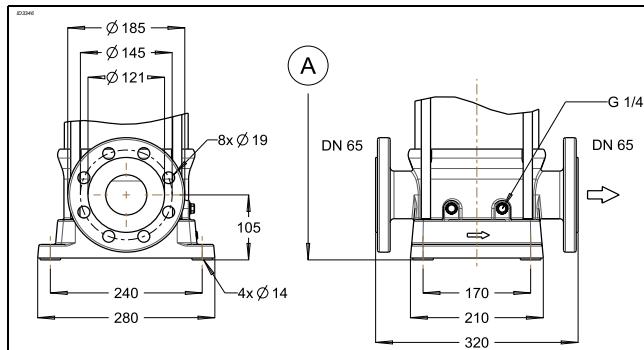
ZU008110B-A

3.9 DPV(C/S) 25 B - 50Hz - 4 pole - DIN

Table 24: coupled motor construction type; V18



Model	pressure class	Power [kW]	Motor dimensions			DPV(C/S)F	
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]
25/1	PN10	1,1	176	141		678	408
25/2		1,1	176	141		743	473
25/3		1,1	176	141		808	538
25/4		1,1	176	141		873	603
25/5		1,1	176	141		938	668
25/6		1,5	195	145		1018	733
25/7		1,5	195	145		1083	798
25/8		2,2	195	145		1198	868
25/9		2,2	195	145		1263	933
25/10		2,2	195	145		1328	998
25/11		2,2	195	145		1393	1063
25/12		3	195	145		1458	1128



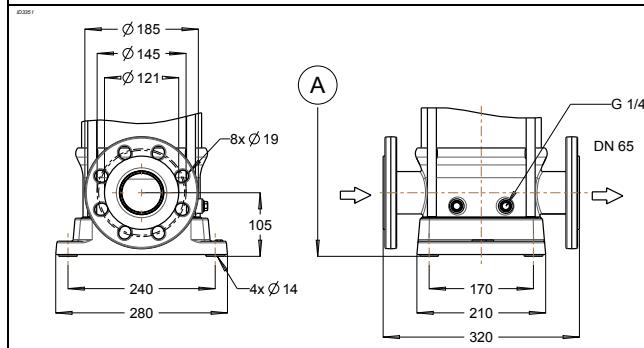
DPV C F Cast iron flange

Norm: EN 1092-1/1092-2

Size: NW65

Pressure Class: PN40

ZU001130-E-A



DPV (S) F Loose plate flange

Cataphoric coated loose plate flange

Norm: EN 1092-1/1092-2

Size: NW65

Pressure Class: PN40

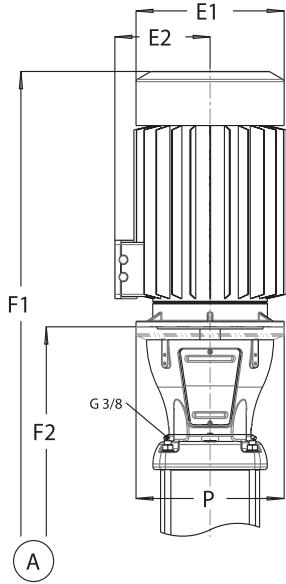
Option: Loose plate flange (PN25) in SS 1.4308

ZU008110-B-A

3.10 DPV(C/S) 85 B - 2 and 4 pole - DIN

Table 25: coupled motor construction type; V1

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20091237

Model	pressure class	Power [kW]	Motor dimensions			DPV(C/S)F	
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]
85/1-1	PN10	5,5	266	178	300	970	641
85/1		7,5	266	178	300	998	641
85/2-2		11	315	204	350	1282	780
85/2-1		15	315	204	350	1282	780
85/2		15	315	204	350	1282	780
85/3-2		18,5	315	204	350	1435	889
85/3-1		22	350	223	350	1484	889
85/3		22	350	223	350	1484	889
85/4-2		30	400	290	400	1648	998
85/4-1		30	400	290	400	1648	998
85/4	PN16	30	400	290	400	1648	998
85/5-2		37	400	290	400	1757	1107
85/5-1		37	400	290	400	1757	1107
85/5		37	400	290	400	1757	1107
85/6-2		45	466	373	466	1923	1216
85/6-1		45	466	373	466	1923	1216
85/6		45	466	373	466	1923	1216

Table 26: coupled motor construction type; V1, 4 pole

Model	pressure class	Power [kW]	Motor dimensions			DPV(C/S)F	
			E1 [mm]	E2 [mm]	P [mm]	F1 [mm]	F2 [mm]
85/5-2	PN10	5,5	260	192	300	1460	1077
85/5-1		5,5	260	192	300	1460	1077
85/5		5,5	260	192	300	1460	1077
85/6-2		5,5	260	192	300	1569	1186
85/6-1		5,5	260	192	300	1569	1186
85/6		5,5	260	192	300	1569	1186

<p>20190542</p>	<p>DPV C F Cast iron flange Norm: EN 1092-1/1092-2 Size: NW100 Pressure Class: PN16</p>
<p>20190543</p>	<p>DPV C F Cast iron flange Norm: EN 1092-1/1092-2 Size: NW100 Pressure Class: PN25/40</p>
<p>20190542</p>	<p>DPV (S) F Loose plate flange Cataphoric coated loose plate flange Norm: EN 1092-1/1092-2 Size: NW100 Pressure Class: PN16 Option: Loose plate flange and baseplate in cast SS1.4308</p>
<p>20190543</p>	<p>DPV (S) F Loose plate flange Cataphoric coated loose plate flange Norm: EN 1092-1/1092-2 Size: NW100 Pressure Class: PN25/40 Option: Loose plate flange and baseplate in cast SS1.4308</p>

4 Seals

4.1 Mechanical seal option specifications

Table 27: Seal code

Shaft seal Type	Material mechanical seal	Seal code	Material shaft seal	Material pump elastomer	Temperature range shaft seal[°C]	Max. pressure [bar]	Fixed	Easy Access	Cartridge
MG-G60	B Q1 E GG	11	Ca / SiC / EPDM	EPDM	-20 - 100	10	●	●	●
MG-G60	B Q1 V GG	12	Ca / SiC / Viton	Viton	-20 - 120	10	●	●	●
RMG-G606	Q1 B E GG	13	SiC / Ca / EPDM	EPDM WRAS / ACS	-20 - 100	25	●	●	●
RMG-G606	Q1 B V GG	14	SiC / Ca / Viton	Viton	-20 - 120 (140)	25 (16)	●	●	●
RMG-G606	U3 U3 X4 GG	15	TuC / TuC / HNBR	HNBR	-20 - 120 (140)	25 (16)	●	●	●
RMG-G606	U3 U3 V GG	16	TuC / TuC / Viton	Viton	-20 - 120	25	●	●	●
RMG-G606	U3 B E GG	18	TuC / Ca / EPDM	EPDM 559236	-20 - 120 (140)	25 (16)	●	●	●
H7N	Q1 A E GG	20	SiC / Ca / EPDM	EPDM 559236	-20 - 120 (140)	40 (25)			●
H7N	Q1 A V GG	21	SiC / Ca / Viton	Viton	-20 - 120 (140)	40 (25)			●
H7N	Q1 A X4 GG	22	SiC / Ca / HNBR	HNBR	-20 - 120 (140)	40 (25)			●
RMG-G606	Q1 B E GG	23	SiC / Ca / EPDM	EPDM	-20 - 100	25	●	●	●
MG-G606	Q1 Q1 V GG	24	SiC / SiC /Viton	Viton	-20 - 120	10	●	●	●
MG-G606	Q1 Q1 X4 GG	28	SiC / SiC / HNBR	HNBR	-20 - 120	10	●	●	●
MG-G606	Q1 Q1 E GG	29	SiC / SiC / EPDM	EPDM	-20 - 100	10	●	●	●



ATTENTION

Seal dimensions according to EN24960

5 Motors and motor options

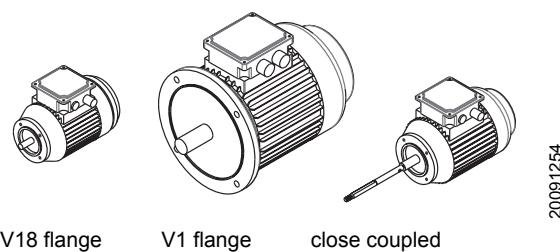
5.1 General

The standard DPmotors are produced conform the latest technical design, and comply with the international standards and EU directives regarding safety measures.

The motors can be specified as:

- Standard IE2 >= 0,75kW
- T.E.F.C. (totally enclosed fan cooled) Squirrel cage.
- AC induction motor.
- Protection IP55.
- Insulation class F.
- Temperature rise class B.
- Duty class S1, maximum 20 starts per hour.
- Noise levels conform IEC 60034-9.
- > 2,2 kW standard 3 x PTC.

The motors come in 3 different configurations.
Mounting in acc. with IEC60034-7 and dimensions in acc. with IEC 60072-1



5.2 Options

- Standard motors as per above, but in **4 pole** version (low speed) (sizes 10, 15, 25 and 85).
- Standard motors as per above, in **single phase** (1x230V).
- Provided with 10 pole **industrial connector** "Harting stecker" HAN 10, mounted in stead of the motor connection box, <= 7,5kW.
- Provided with **Rain cover** on top of the fan hood.
- For motors < 3kW provided with **3 x PTC** and/or **anti condensation heater (1x230V)**.
- Motors from other manufacturers like **Siemens** and VEM in efficiency class IE2.
- Explosion proof, class **Eex e II T3**.
- Explosion proof, class **Eex d II T4**.
- Marine approved variant acc. bureau Veritas

5.3 Standard motor data

Table 28: Motor data 1 and 3 phase, 2p 50 Hz

Article number	Rated power output [kW]	Rated Voltage [V]	Rated current [A]	Starting current I _{a/in}	Cos Phi	Tolerance rated voltage	Rated speed [rpm]	Motor efficiency	Sound pressure [dB(A)]	Cable gland	Max. starts per hour
3700000003	0,37	1x230	2,6	3,7	0,92	10%	2750	67	58	1xM18x1,5	20
3700000005	0,55	1x230	3,69	3,9	0,92	10%	2760	70	56	1xM18x1,5	20
3700000007	0,75	1x230	5,0	3,9	0,92	10%	2780	70	56	1xM20x1,5	20
3700000011	1,1	1x230	6,68	4,3	0,95	10%	2790	75	58	1xM20x1,5	20
3700000015	1,5	1x230	8,99	4,8	0,95	10%	2800	76	58	1xM20x1,5	20
3700000022	2,2	1x230	13,04	4,8	0,95	10%	2800	77	58	1xM20x1,5	20

Article number	Rated power output [kW]	Rated Voltage [V]	Rated current [A]	Starting current I _{a/in}	Cos Phi	Tolerance rated voltage	Rated speed [rpm]	Motor efficiency	Sound pressure [dB(A)]	Cable gland	Max. starts per hour
3710021003	0,37	230/400	1,6/0,95	4,5	0,76	10%	2865	76	60	1xM20x1,5	50
3710021005	0,55	230/400	2,1/1,2	5,3	0,8	10%	2880	82	60	1xM20x1,5	50
3710011007	0,75	230/400	3,1/1,8	6,0	0,77	10%	2865	80	60	1xM20x1,5	50
3710011011	1,1	230/400	4,21/2,4	6,8	0,79	10%	2870	81	60	1xM20x1,5	50
3710011015	1,5	230/400	5,7/3,3	7,6	0,81	10%	2900	81,8	56	1xM20x1,5	50
3710011022	2,2	230/400	8,2/4,7	7,3	0,81	10%	2870	83,5	56	1xM20x1,5	30
3710111030	3	230/400	10,2/6,2	8,3	0,83	10%	2900	84,6	58	2xM20x1,5	30
3710112030	3	400/690	6,2/3,7	8,3	0,83	10%	2900	84,6	58	2xM20x1,5	30
3710111040	4	230/400	13,4/7,7	8,5	0,87	10%	2915	86,3	59	2xM20x1,5	30
3710112040	4	400/690	7,7/4,5	8,5	0,87	10%	2915	86,3	59	2xM20x1,5	30
3710111055	5,5	230/400	17,5/10,1	8,8	0,9	10%	2930	87,5	64	2xM25x1,5	20
3710112055	5,5	400/690	10,1/5,9	8,8	0,9	10%	2930	87,5	64	2xM25x1,5	20
3710111075	7,5	230/400	22,9/13,2	8,5	0,92	10%	2920	88,6	64	2xM25x1,5	20
3710112075	7,5	400/690	13,2/7,7	8,5	0,92	10%	2920	88,6	64	2xM25x1,5	20
3710111110	11	230/400	36,5/21,0	7,8	0,84	10%	2950	90	71	2xM32x1,5	15
3710112110	11	400/690	21,0/12,2	7,8	0,84	10%	2950	90	71	2xM32x1,5	15
3710111150	15	230/400	49,0/28,2	7,6	0,85	10%	2945	90,3	70	2xM32x1,5	15
3710112150	15	400/690	28,2/16,3	7,6	0,85	10%	2945	90,3	70	2xM32x1,5	15
3710111185	18,5	230/400	58,5/33,6	9,3	0,87	10%	2950	91,3	73	2xM32x1,5	15
3710112185	18,5	400/690	33,6/16,5	9,3	0,87	10%	2950	91,3	73	2xM32x1,5	15
3710111220	22	230/400	68,7/39,5	7,5	0,88	10%	2945	91,3	75	2xM32x1,5	12
3710112220	22	400/690	39,5/22,4	7,5	0,88	10%	2945	91,3	75	2xM32x1,5	12
3700111300	30	230/400	89,7/51,8	7,5	0,91	10%	2955	92,9	80	2xM50x1,5	12
3700112300	30	400/690	51,8/29,9	7,5	0,91	10%	2955	92,9	80	2xM50x1,5	12
3700111370	37	230/400	110/63,5	7,5	0,91	10%	2957	93,3	80	2xM50x1,5	20
3700112370	37	400/690	63,5/36,7	7,5	0,91	10%	2950	93,3	80	2xM50x1,5	12
3700111450	45	230/400	131,6/76	7,5	0,91	10%	2969	93,7	80	2xM50x1,5	20
3700112450	45	400/690	76/43,9	7,5	0,91	10%	2969	93,7	80	2xM50x1,5	12

Table 29: Motor data 3 phase, 4p 50 Hz

Article number	Rated power output [kW]	Rated Voltage [V]	Rated current [A]	Starting current I _{a/in}	Cos Phi	Tolerance rated voltage	Rated speed [rpm]	Motor efficiency	Sound pressure [dB(A)]	Cable gland	Starts per hour
3710041005	0,55	230/400	4,5/2,6	4,0	0,5	10%	1450	73	58	1xM20x1,5	50
3710041007	0,75	230/400	3,65/2,1	5,0	0,65	10%	1440	80	60	1xM20x1,5	50
3710031011	1,1	230/400	4,5/2,6	5,7	0,76	10%	1425	76	50	1xM20x1,5	30
3710031015	1,5	230/400	6,0/3,4	6,0	0,76	10%	1425	82,8	50	1xM20x1,5	30
3710031022	2,2	230/400	7,9/4,5	7,3	0,83	10%	1440	84,7	55	1xM20x1,5	30
3710132030	3	400/690	6,8/3,9	7,0	0,75	10%	1445	85,5	64	2xM20x1,5	30
3710132040	4	400/690	8,4/4,9	6,7	0,79	10%	1450	87,0	64	2xM20x1,5	30
3710132055	5,5	400/690	11,3/6,5	7,9	0,8	10%	1460	88,0	64	2xM25x1,5	20
3710132075	7,5	400/690	15,3/8,2	7,5	0,86	10%	1460	88,7	64	2xM25x1,5	20

6 Frequency drive

6.1 General

For the motor range up to 2,2kW DP-Pumps has an 1x230Volts frequency inverter range of the brand Lenze available. The inverter series SMVector are mounted on a support bracket at the side of the motor.

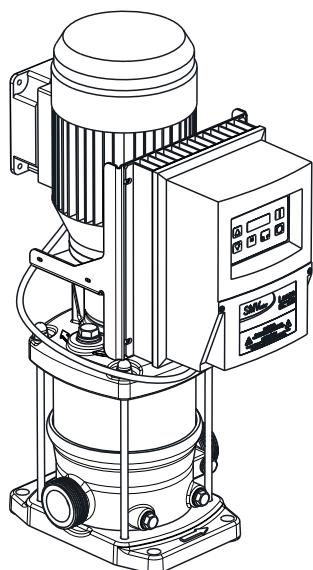
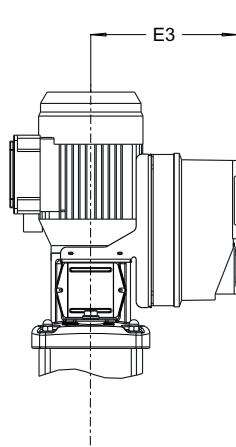


Figure 16: Example layout

6.4 Specifications



Type	371NO2FSFC	751NO2FSFC	112NO2FSFC	152NOSFSFC	222NO2FSFC
Power [kW]	0,37	0,75	1,1	1,5	2,2
I (mains) [A]	5,1	8,8	12,0	13,5	17,1
I (motor) [A]	2,4	4,2	6,0	7,0	9,6
Fuse [A]	10	16	20	25	32
E3 [mm]	194	194	204	260	272
Mass [kg]*	2,9	2,9*	4	4	4,5

* Mass is including support bracket

6.2 Working range

In addition to the working range of the pumps in case of using a frequency inverter the following needs to be considered:

Table 30: Working range

Ambient temperature [°C]	-10 up to 55
Maximum altitude [m]	2000

6.3 General

Table 31: General specifications

Voltage range (net) [VAC] (input)	1 x 170 - 264
Voltage range motor [VAC] (output)	3 x 170 - 264
I (max) [%] (output)	200
Protection class	IP65
Dimensions 0,37-0,75kW HxWxD [mm]	203x160x114
Dimensions 1,1-1,5kW HxWxD [mm]	203x160x160
Dimensions 2,2kW HxWxD [mm]	203x181x172
Integrated EMC filter	yes
Cooling	convection

7 Accessories

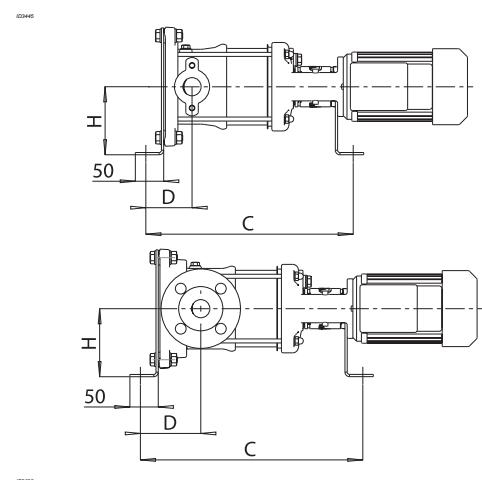
7.1 Horizontal mounting kit (optional)

In special applications it could be a solution to mount the pump in a horizontal position. Although the pump is designed for vertical positioning the hydraulic parts of the pump are also capable of functioning in a horizontal position. This option is limited by the motor rating. The **motors of 11kW and above** are equipped with a co-axial bearing which is **not suitable for horizontal positioning**.

To ensure a proper and stable horizontal mounting position for the pump, stainless steel AISI 304 support frames are available. To mount the support frames, bolts up to a maximum of M12 can be used.

The horizontal mounting kit includes the following parts:

- Pump bracket support
- Motor flange support
- 4 bolts M12
- 4 washers 12mm
- 4 nuts M12



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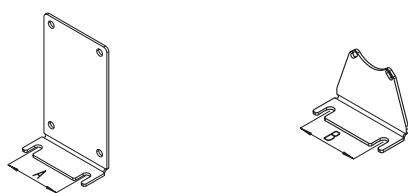
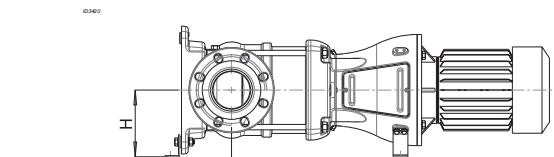
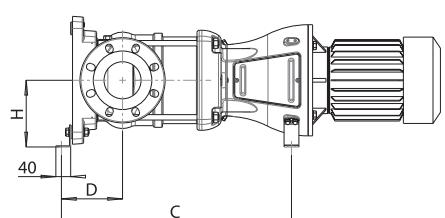


Figure 17: V(C/S) 2-25 B horizontal



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20050451-F



20071047-B

20071047-B

Figure 18: V(C/S) 85 B horizontal

7.1.1 Dimensions of pumps fitted with horizontal mounting kit

Dimensions are related to the dimensions of the complete pump in standard vertical position and are mentioned in [mm].

DPV 2/4/6 B		V(S)(V) D = 82				
		V(C/S)F D = 107				
Motor [kW]	Part no.	C	H	A	B	Mass [kg]
0,37 - 0,55 2p / 0,25 - 0,37 4p	18707065	F2+49	120	100	100	1,520
0,75 - 1,1 2p / 0,55 - 0,75 4p	18707066					
1,5 - 2,2 2p / 1,1 - 1,5 4p	18707067	F2+47				
3 - 4 2p / 2,2 - 4 4p	18707068					
5,5 - 7,5 2p/4p	18707069	F2-18	170		210	2,280

20090417-A

DPV 10/15 B		V(S)(V) D = 111,5				
		V(C/S)F D = 121,5				
Motor [kW]	Part no.	C	H	A	B	Mass [kg]
0,75 - 1,1 2p / 0,55 - 0,75 4p	18707070	F2+49	140	130	130	2,78
1,5 - 2,2 2p / 1,1 - 1,5 4p	18707071	F2+47				
3 - 4 2p / 2,2 - 4 4p	18707072					
5,5 - 7,5 2p/4p	18707073	F2-18	170		210	3,12

20091236

DPV 85 B		V(S)F D = 165				
Motor [kW]	Part no.	C	H	A	B	Mass [kg]
5,5 - 7,5	18707064	F2- 16	180	210	250	0,830

20071047-B

7.2 Thrust bearing housing (optional)



ATTENTION

This option is not applicable for pump model DPVM.



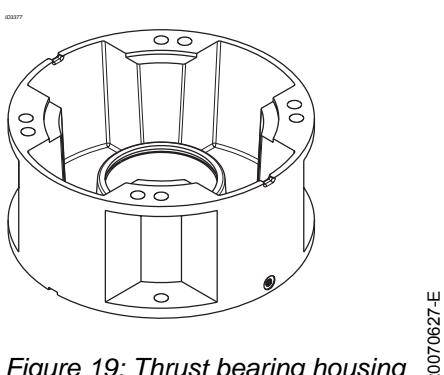
ATTENTION

Only a motor with a standard key can be installed with a thrust bearing housing.



ATTENTION

There is no need to change the motor stool of the pump. The bearing flange can be mounted on the standard motor stool of the pump.



20070627-E

Figure 19: Thrust bearing housing

The standard DP-Pumps motors are specially designed to drive the pump. When a standard motor has to be installed (or a special motor to fulfil the applications requirement, like explosion proof, high efficiency) a special bearing housing must be installed to relieve the motor of the axial force created by the pump.

8 Materials

8.1 Parts overview

8.1.1 Part list

Part. no.	part description	material code	Wetted part	VC	V	VS
10-6	Pump shroud	1.4301	X	●	●	
		1.4404	X			●
45-4	Spacer DPV(C/S) 85 B	EPDM	X	●	●	○
		Viton	X	○	○	●
		HNBR	X	○	○	○
101	Pump casing	JL1040	X	●		
		1.4308	X		●	
		1.4408	X		●	
	(Loose plate) flange	JL1040		●	●	
		1.4308		○	○	
108	Stage Casing DPV 2-25 B	1.4301	X	●	●	
		1.4404	X			●
108	Stage Casing DPV 85 B	1.4308	X	●	●	
		1.4408	X			●
131	Inlet ring DPV10-15 B	1.4308	X	●	●	
		1.4408	X			●
160	Cover DPV 2-25 B	1.4301	X		●	
		1.4404	X			●
160	Cover DPV 85 B	1.4308	X	●	●	
		1.4408	X			●
171	Diffuser DPV 25 B	1.4301	X	●	●	
		1.4404	X			●
210	Shaft	1.4057	X	●	●	
		1.4460	X			●
230	Impeller DPV 2-25 B	1.4301	X	●	●	
		1.4404	X			●
230	Impeller DPV 85 B	1.4308	X	●	●	
		1.4408	X			●
341	Motor stool	JL1040		●	●	●
412	Pump sealing elastomers	EPDM	X	●	●	○
		EPDM WRAS/ACS	X	○	○	○
		Viton	X	○	○	●
		EPDM 559236	X	○	○	○
		HNBR	X	○	○	○
433	Shaft seal LP (P at Q=0 < 9.2bar)	B Q 1 E GG LP	X	●	●	○
		Q1 B E GG HP ¹	X	●	●	○
	Shaft seal LP (P at Q=0 < 9.2bar)	B Q1 V GG LP	X	○	○	●
		Q1 B V GG HP ¹	X	○	○	●
471	Seal cover	1.4308	X	●	●	○
		1.4408	X	○	○	●
503	Impeller wear ring DPV 85 B	1.4404	X	●	●	●
511	Center ring DPV 25B	1.4301		●	●	●
525	Spacer sleeve	1.4301	X	●	●	
		1.4404	X			●

Part. no.	part description	material code	Wetted part	VC	V	VS
529	Bearing sleeve	Tungsten Carbide	X	●	●	●
Part of 108	Bearing	Aluminium Oxide	X	●	●	●
722	Taper piece	JL1040		●	●	●
723	Counter flange	JL1040	X		●	
		1.4308	X		○	
		1.4408	X			○
862	Coupling from 5.5 kW	JS1030		●	●	●
	Coupling up to 4 kW	Aluminium		●	●	●
890	Base plate	JS1030		●	●	●
	Base plate	1.4308			○	○
	Base plate (for F connection)	JL1040			●	●
903.01	Screwed plug (vent)	1.4301 (A2)	X	●	●	
		1.4404 (A4)	X			●
903.02	Screwed plug (drain)	1.4301 (A2)	X	●	●	
		1.4404 (A4)	X			●
905	Tie bolt	1.4057		●	●	●
920.01	Lock nut	1.4301	X	●	●	
		1.4404	X			●
930	Safety device Nord-lock	1.4404	X	●	●	●
932	Circlip	1.4571	X	●	●	●
950	Wave spring DPV(C/S) 2-15 B	1.4300	X	●	●	○
		1.4401	X	○	○	●

1. HP: high pressure version > 10 bar (P at Q=0 > 9.2 bar)

● Standard○ Option

8.1.2 Materials conversion

Material	Description	Code and material nr.	Standard	ASTM / AISI ¹
JL 1040	Cast iron	GJL-250	EN 1561	A48:40B
JS1030	Cast iron	GJS-400	EN 1563	
1.4057	Chromium-nickel steel	X17CrNi16-2-QT800	EN 10088-3	A276:431
1.4300	Chromium-nickel steel	X12CrNi 18-8	EN 10088	A276:302
1.4301	Chromium-nickel steel	X5CrNi 18-10	EN 10088	A276:304
1.4305	Chromium-nickel steel	X8CrNiS 18-9	EN 10088	A276:303
1.4308	Chromium-nickel cast steel	GX5CrNi 19-10	EN 10283	A743:CF8
1.4401	Chromium-nickel-molybdenum steel	X5CrNiMo 17-12-2	EN 10088	A276:316
1.4404	Chromium-nickel-molybdenum steel	X2CrNiMo 17-12-2	EN 10088	A276:316L
1.4408	Chromium-nickel-molybdenum cast steel	GX5CrNiMo 19-11-2	EN 10213	A743CF8M
1.4460	Chromium-nickel-molybdenum steel	X3CrNiMoN 27 5 2	EN 10088	--:329
1.4571	Chromium-nickel-molybdenum steel	X6CrNiMoTi 17-12-2	EN 10088	A276:316Ti

1. Note: The indication of the material designations to ASTM / AISI is not binding



8.1.3 Sectional drawing DPVCF2/4/6 B

020414

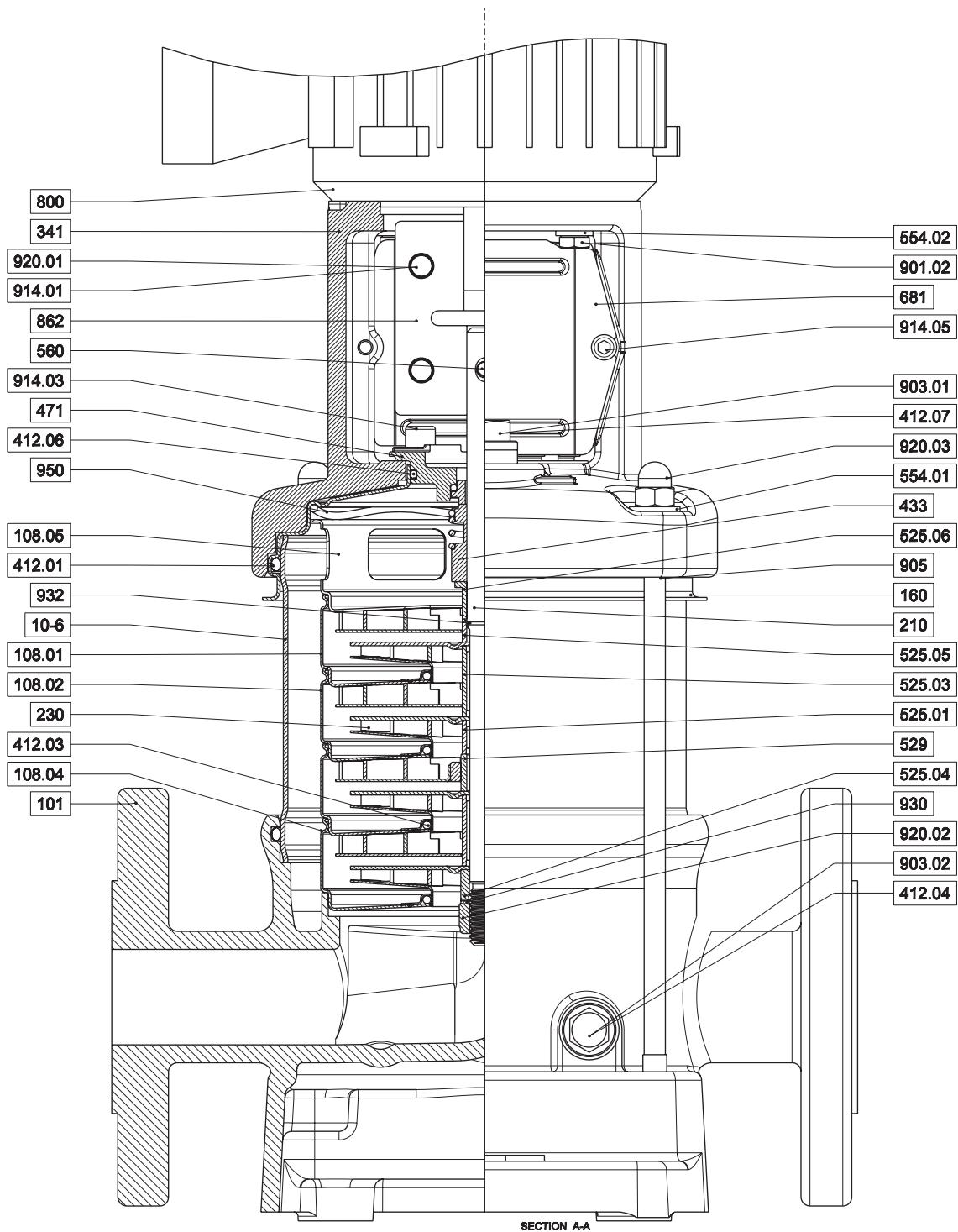


Figure 20: Sectional drawing DPVCF 2/4/6 B

8.1.4 Sectional drawing DPV(S) 2/4/6 B

020412

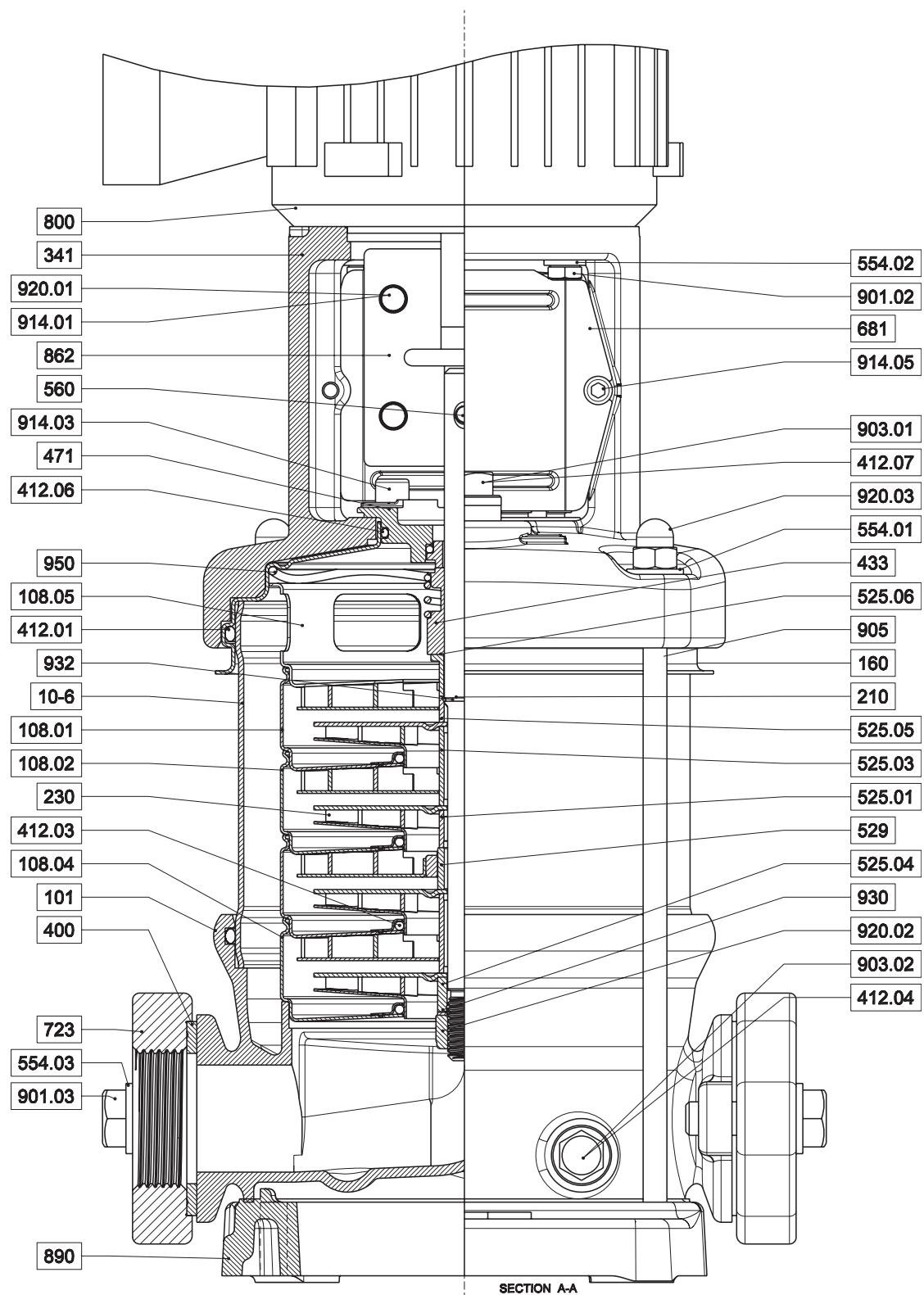


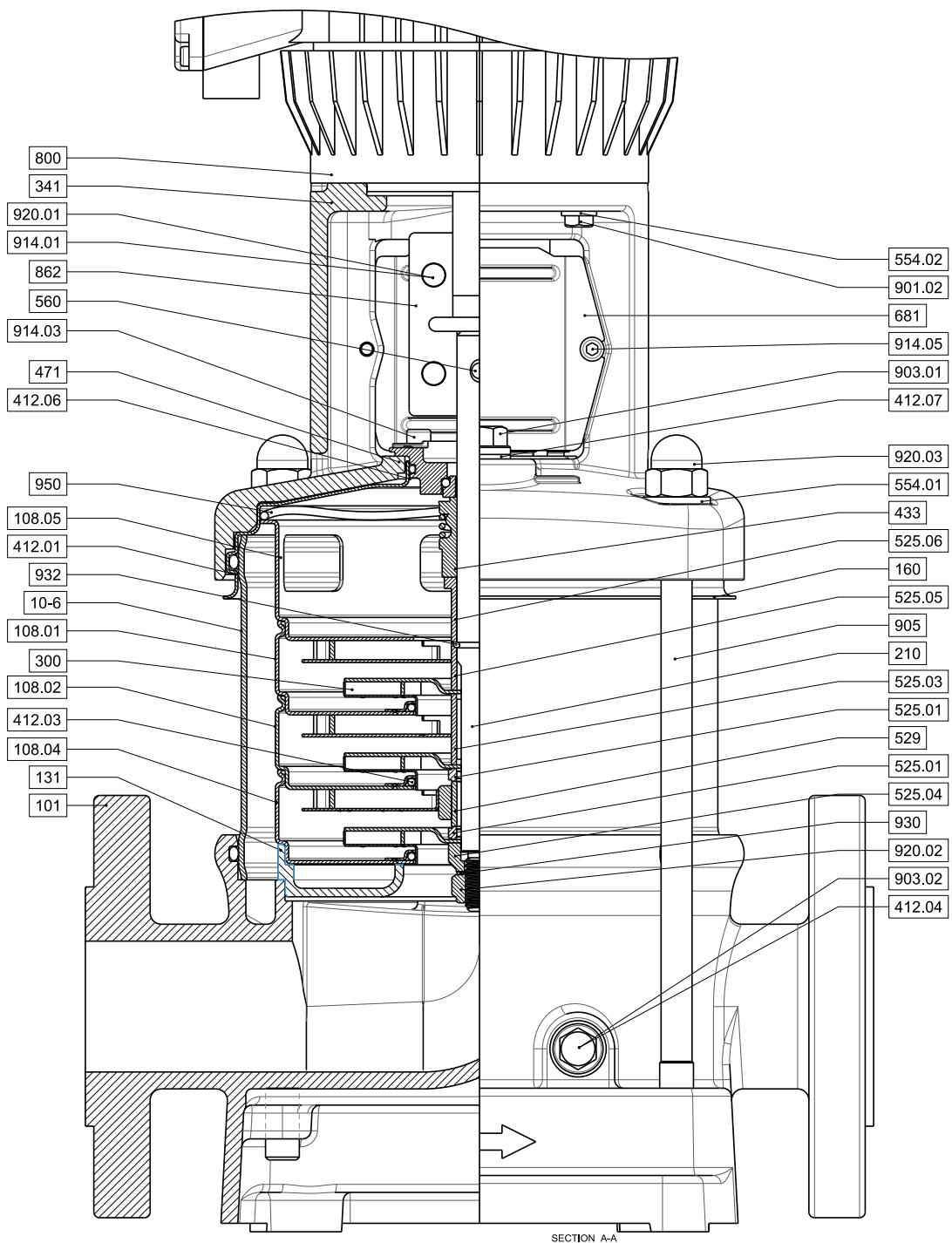
Figure 21: Sectional drawing DPV(S) 2/4/6 B

20080766-F



8.1.5 Sectional drawing DPVCF 10 B

02M14



54

Figure 22: Sectional drawing DPVCF 10 B

20081021-B

8.1.6 Sectional drawing DPV(S) 10 B

03M13

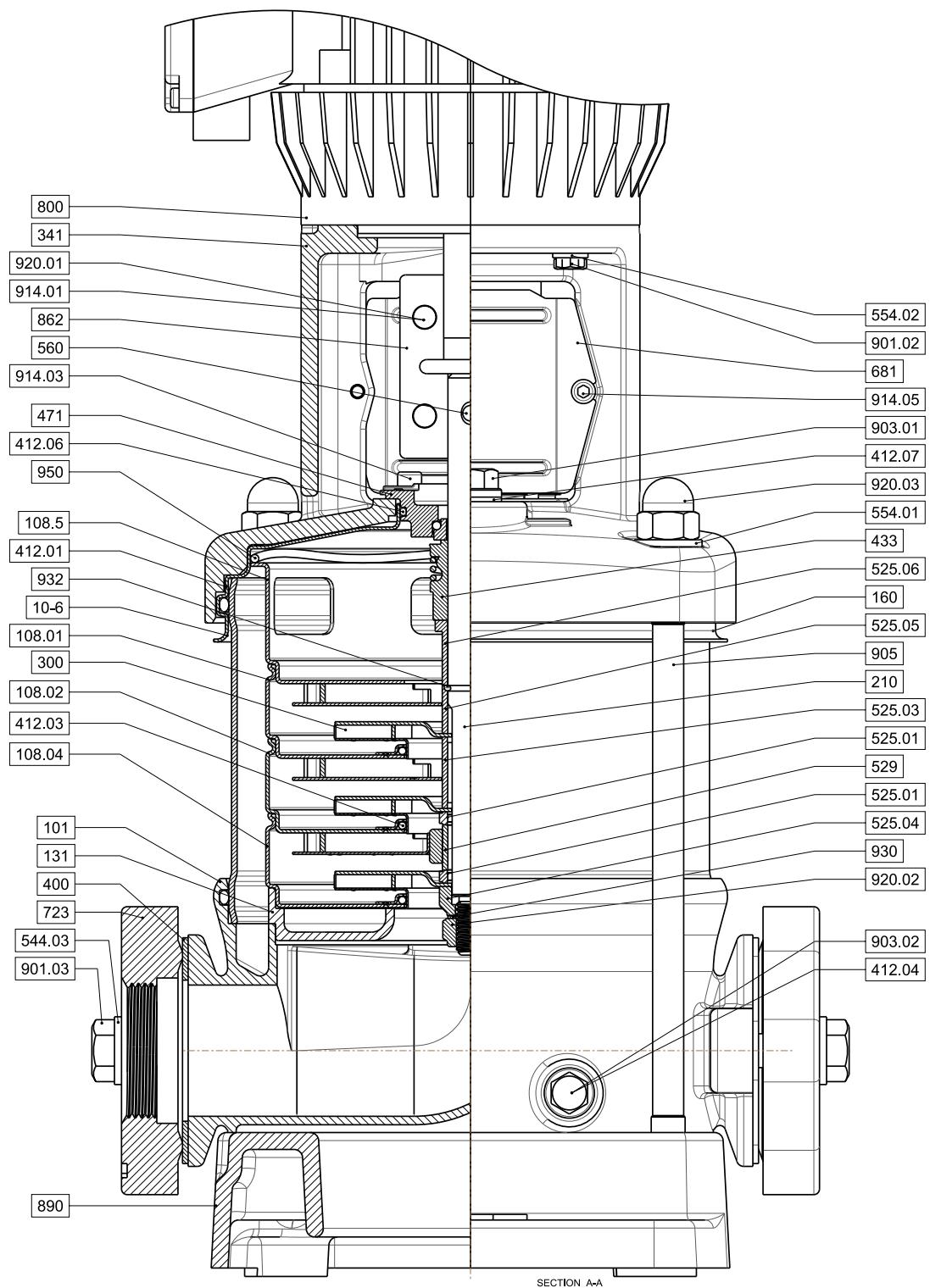


Figure 23: Sectional drawing DPV(S) 10 B

20080645-C



8.1.7 Sectional drawing DPVCF 85 B

102325

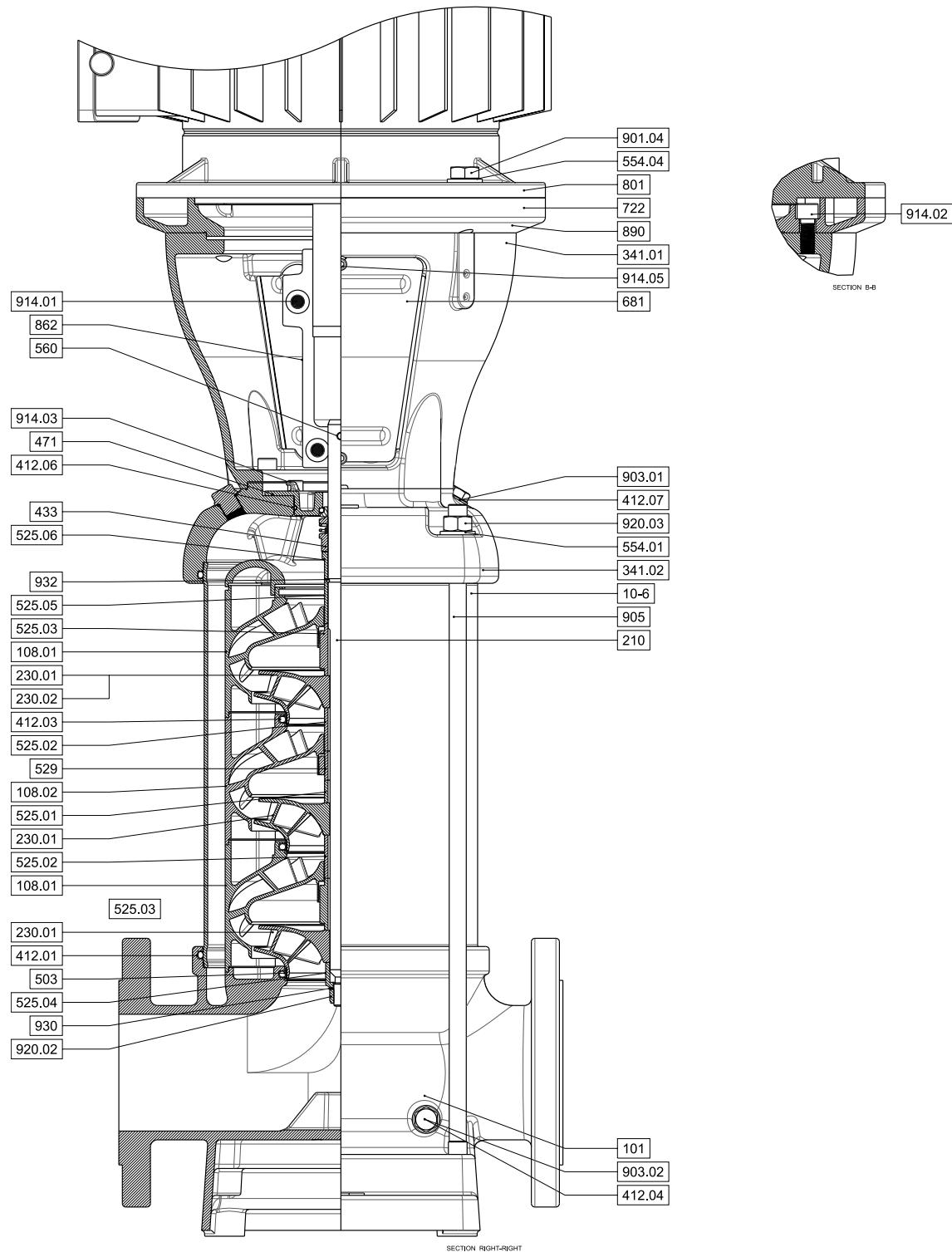


Figure 24: Sectional drawing DPVCF 85 B

8.1.8 Sectional drawing DPV(S)F 85 B

00233

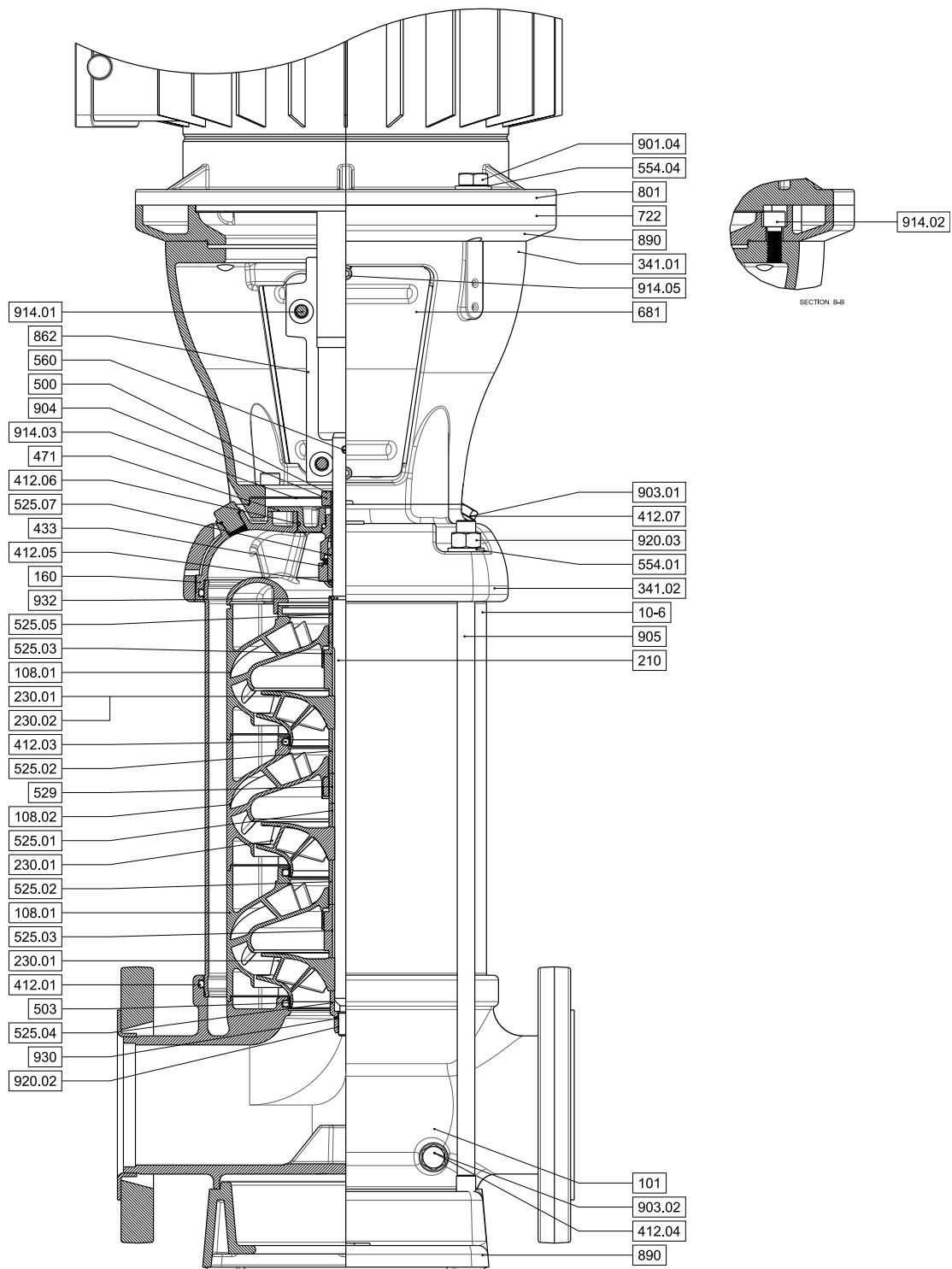


Figure 25: Sectional drawing DPV(S)F 85 B

20080066-E

9 Medium handled

9.1 Medium handled

Media description	Media group	Chemical formula	Cons. max. [%]	PH max.	Temp max. [C]	Model	Material shaft seal			Material pump
							rotor	stator	elastomer	
Acetic acid	Acid	(CH ₃ COOH	5		20	V	SiC	Ca	EPDM	EPDM
Acetic anhydride	Weak acid derivative	(CH ₃ CO) ₂ O	20		20	V	SiC	Ca	EPDM	EPDM
Acetone	Ketone	(CH ₃) ₂ CO				VC	SiC	Ca	EPDM	EPDM
Acetyl chloride		CH ₃ COCl			40	VS	SiC	Ca	EPDM	EPDM
Alkaline (bottle rinse)	Rinsing		2	< 9.5	40	V	TuC	TuC	HNBR	HNBR
Alcohol (Ethanol)	Hydrocarbon	C ₂ H ₅ OH	100		60	V	SiC	Ca	EPDM	EPDM
Alum (potassium aluminium sulphate)	Salt	MI MIII (SO ₄) ₂	3		80	VS	SiC	Ca	Viton	Viton
Aluminium chloride	Halide	AlCl ₃	5		50	VS	SiC	Ca	EPDM	EPDM
Aluminium chloride	Halide	AlCl ₃	25		20	VS	SiC	Ca	EPDM	EPDM
Aluminium sulphate	Salt	Al ₂ (SO ₄) ₃			20	V	SiC	Ca	EPDM	EPDM
Aluminium sulphate	Salt	Al ₂ (SO ₄) ₃	5		Boiling	VS	SiC	Ca	EPDM	EPDM
Ammonia	Strong base	NH ₃				VC	SiC	Ca	EPDM	EPDM
Ammonium bicarbonate	Salt	(NH ₄)HCO ₃	10		40	V	SiC	Ca	EPDM	EPDM
Ammonium sulphate	Salt	(NH ₄) ₂ SO ₄	20		60	V	SiC	Ca	EPDM	EPDM
Antifreeze (glycol base, salt-free)	Alcohol		45		110	V	SiC	Ca	EPDM	EPDM
Beer (not lattery / under pressure)	Alcohol		100		15	V	SiC	Ca	EPDM	EPDM
Benzene	Hydrocarbon solvent	C ₆ H ₆				VS	SiC	Ca	Viton	Viton
Boric acid	Acid	H ₃ BO ₃				V	SiC	Ca	EPDM	EPDM
Buttermilk	Dairy product	fats + water	100		60	V	SiC	Ca	EPDM	EPDM
Butyl alcohol (butanol)	Hydrocarbon	CH ₃ (CH ₂) ₃ OH					SiC	Ca	EPDM	EPDM
Calcium acetate	Salt	C ₄ H ₆ O ₄ Ca	10		60	VS	SiC	Ca	EPDM	EPDM
Calcium nitrate (non-acidic)	Salt	Ca(NO ₃) ₂	10		60	VS	TuC	TuC	Viton	Viton
Cider (apple cider)	Alcohol	H ₂ O + sucrose + alcohol	100		40	V	SiC	Ca	EPDM	EPDM
Citric acid	Acid	C ₃ H ₄ (OH)(CO OH) ₃	5		20	VS	SiC	Ca	Viton	Viton
Copper sulphate	Salt	CuSO ₄ ·5H ₂ O	5		80	V	TuC	TuC	HNBR	HNBR
Corn oil	Vegetable oil		100		100	VS	SiC	Ca	Viton	Viton
Diesel oil	Hydrocarbons					V	SiC	Ca	Viton	Viton
Diethylene glycol (salt-free)	Alcohol	C ₄ H ₁₀ O ₃	100		100	VC	SiC	Ca	EPDM	EPDM
Ethanol (alcohol)	Hydrocarbon	C ₂ H ₅ OH	100		60	V	SiC	Ca	EPDM	EPDM
Ethylene glycol (salt-free)	Alcohol	(CH ₂ OH) ₂	100		100	V	SiC	Ca	EPDM	EPDM
Ferric-III-chloride	Salt	FeCl ₃	5		80	V	TuC	TuC	Viton	Viton

Media description	Media group	Chemical formula	Cons. max. [%]	PH max.	Temp max. {C}	Model	Material shaft seal			Material pump
							rotor	stator	elastomer	
Fuel oil (light)	Hydrocarbon				80	VS	SiC	Ca	Viton	Viton
Glycerin (glycerol)	Alcohol	C ₃ H ₈ O ₃	40		80	V	SiC	Ca	EPDM	EPDM
Kerosene	Hydrocarbon		100		80	V	SiC	Ca	Viton	Viton
Linseed oil	Vegetable oil		100		60	V	SiC	Ca	Viton	Viton
Linseed oil + 3% sulphur acid	Vegetable oil		100		60	V	SiC	Ca	Viton	Viton
Magnesium sulphate	Salt	MgSO ₄	10		80	V	SiC	Ca	Viton	Viton
Malic acid	Acid	C ₄ H ₂ O ₃				V	SiC	Ca	Viton	Viton
Methanol	Alcohol	CH ₃ OH				V	SiC	Ca	EPDM	EPDM
Methyl glycol (propylene glycol)	Alcohol	C ₃ H ₆ (OH) ₂	100		20	VC	SiC	Ca	EPDM	EPDM
Milk	Dairy product	fats + water				V	SiC	Ca	EPDM	EPDM
Olive oil	Vegetable oil					VC	SiC	Ca	Viton	Viton
Oxalic acid	Acid	H ₂ C ₂ O ₄	5		20	V	SiC	Ca	EPDM	EPDM
Oxalic acid	Acid	H ₂ C ₂ O ₄	5		Boiling	VS	SiC	Ca	Viton	Viton
Oxalic acid	Acid	H ₂ C ₂ O ₄	10		60	V	SiC	Ca	EPDM	EPDM
Paraffins	Hydrocarbon					V	SiC	Ca	Viton	Viton
Peanut oil	Vegetable oil		100		90	V	SiC	Ca	Viton	Viton
Petroleum	Hydrocarbon	Hydrocarbon	100		80	V	SiC	Ca	Viton	Viton
Potassium chlorate	Salt	KClO ₃				VS	TuC	TuC	HNBR	HNBR
Potassium chloride	Salt	KCl				V	SiC	Ca	EPDM	EPDM
Potassium hydroxide	Salt	KOH	5		40	VS	SiC	Ca	EPDM	EPDM
Potassium nitrate	Salt	KNO ₃	5		30	VS	TuC	TuC	HNBR	HNBR
Potassium sulphate	Salt	K ₂ SO ₄	3		20	VS	SiC	Ca	Viton	Viton
Rape-seed oil	Vegetable oil	mixture			100	VS	SiC	Ca	Viton	Viton
Sodium carbonate	Salt	Na ₂ CO ₃	6		60	V	SiC	Ca	EPDM	EPDM
Sodium chloride	See sea water	NaCl								
Sodium hydroxide (soda lye)	Salt	NaOH	5		50	VS	TuC	TuC	HNBR	HNBR
Sodium nitrate (non acidic)	Salt	NaNO ₃	10		60	V	SiC	Ca	EPDM	EPDM
Sodium phosphate	Salt	Na ₃ PO ₄				V	SiC	Ca	EPDM	EPDM
Sodium sulphate (non acidic)	Salt	Na ₂ SO ₄	5		60	V	SiC	Ca	EPDM	EPDM
Soybean oil	Vegetable oil		100		100	V	SiC	Ca	Viton	Viton
Spirits	Alcohol	H ₂ O + sucrose + alcohol	40		60	V	SiC	Ca	EPDM	EPDM
Sulphuric acid	Acid	H ₂ SO ₄	5		30	VS	TuC	TuC	Viton	Viton
Tannic acid	Acid	C ₇₆ H ₅₂ O ₄₆	20		80	V	SiC	Ca	Viton	Viton
Tartaric acid	Acid	C ₄ H ₆ O ₆	8		40	VS	SiC	Ca	Viton	Viton
Vinegar (wine vinegar)	Acid	CH ₃ COOH	10		60	VS	SiC	Ca	EPDM	EPDM
Water, untreated / suspended solids <20 ppm	Water	H ₂ O + ...	100		60	VC	TuC	Ca	EPDM	EPDM
Water, boiler feed water (conform. VdTÜV 1466)	Water	H ₂ O + ...	100		120	VC	TuC	Ca	EPDM	EPDM E425
Water, brackish	Sea water	H ₂ O + ...	100	7	5	V	TuC	TuC	Viton	Viton
Water, brackish	Sea water	H ₂ O + ...	100	7	10	V	TuC	TuC	Viton	Viton
Water, brackish	Sea water	H ₂ O + ...	100	7	15	VS	TuC	TuC	Viton	Viton



Media description	Media group	Chemical formula	Cons. max. [%]	PH max.	Temp max. {C}	Model	Material shaft seal			Material pump
							rotor	stator	elastomer	
Water, brackish	Sea water	H ₂ O + ...	100	7	20	VS	TuC	TuC	Viton	Viton
Water, brackish	Sea water	H ₂ O + ...	100	7	25	VS	TuC	TuC	Viton	Viton
Water, coast water	Sea water	H ₂ O + ...	100	7	5	VS	TuC	TuC	Viton	Viton
Water, coast water	Sea water	H ₂ O + ...	100	7	10	VS	TuC	TuC	Viton	Viton
Water, coast water	Sea water	H ₂ O + ...		7	15	VS	TuC	TuC	Viton	Viton
Water, condensate (conform Vd TÜV 1466)	Water	H ₂ O + ...	100		100	VS	TuC	TuC	EPDM	EPDM
Water, cooling water	Water	H ₂ O + ...			100	VS	TuC	TuC	Viton	Viton
Water, de-carbonised (softened)	Water	H ₂ O + ...	100		120	V	TuC	TuC	HNBR	HNBR
Water, de-ionised	Water	H ₂ O + ...			120	VS	SiC	Ca	EPDM	EPDM
Water, distilled	Water	H ₂ O + ...				V	SiC	Ca	EPDM	EPDM
Water, fire fighting	Water	H ₂ O + ...	100		60	VC	TuC	TuC	HNBR	HNBR
Water, harbour	Sea water	H ₂ O + ...	100	7	5	VS	TuC	TuC	Viton	Viton
Water, harbour	Sea water	H ₂ O + ...	100	7	10	VS	TuC	TuC	Viton	Viton
Water, heating (conform Vd TÜV 1466)	Water	H ₂ O + ...	100		120	VC	SiC	Ca	EPDM	EPDM
Water, (conform VDI 2035)	Water	H ₂ O + ...	100		100	VC	TuC	Ca	EPDM	EPDM
Water, oil water mixture	Water		5		80	V	SiC	Ca	Viton	Viton
Water, ordinary sea water	Sea water	H ₂ O + ...	100	7	5	V	TuC	TuC	Viton	Viton
Water, ordinary sea water	Sea water	H ₂ O + ...	100	7	10	VS	TuC	TuC	Viton	Viton
Water, ordinary sea water	Sea water	H ₂ O + ...	100	7	15	VS	TuC	TuC	Viton	Viton
Water, ordinary sea water	Sea water	H ₂ O + ...	100	7	20	VS	TuC	TuC	Viton	Viton
Water, pure (chemically neutral)	Water	H ₂ O + ...	100		60	V	SiC	Ca	EPDM	EPDM
Water, rinsing	Water	H ₂ O + ...			70	VS	TuC	TuC	Viton	Viton
Water, swimming-pool (chlorine 0.8 mg/l)	Water	H ₂ O + ...			25	VS	SiC	Ca	Viton	Viton
Water, tap (drinking water)	Water	H ₂ O + ...	100		60	V	SiC	Ca	EPDM	EPDM WRc/ ACS

dp pumps

P.O. Box 28
2400 AA Alphen aan den Rijn
The Netherlands

t +31 172 48 83 88
f +31 172 46 89 30

dp@dp-pumps.com
www.dp-pumps.com

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Original instructions

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