

# Motor pumps and hydraulic units type R and RG

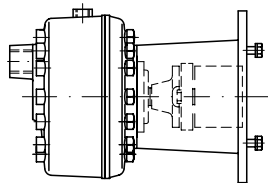
Pump units with radial-piston pumps acc. to D 6010 ready for installation and operation

Operating pressure $p_{max}$	= 700 bar	Radial piston pumps type R and RG	D 6010
Delivery flow $Q_{max}$	= 91.2 lpm (at 1450 rpm)	Radial piston pumps type R and RG with several pressure outlets	D 6010 D
Geometric displacement $V_{g max}$	= 64.2 cm <sup>3</sup> /rev.	Radial piston pumps type R and RG with one main and one or two auxiliary outlets	D 6010 S
		Hydraulic power packs type R and RG with several pressure outlets	D 6010 DB
		Hydraulic power packs type R and RG with DC-drive motor	D 6010 HDC

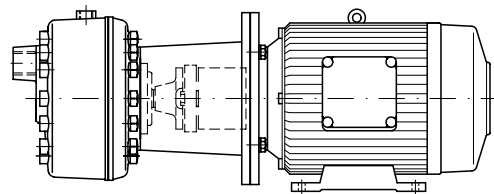
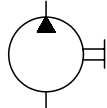
## 1. Overview

**Motor pumps**, see 2.1 on page 2 and 2.2 on page 3

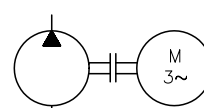
For separate installation outside an oil tank



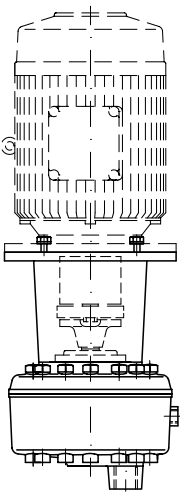
Ready for mounting at industrial standard motor, design IM B 35



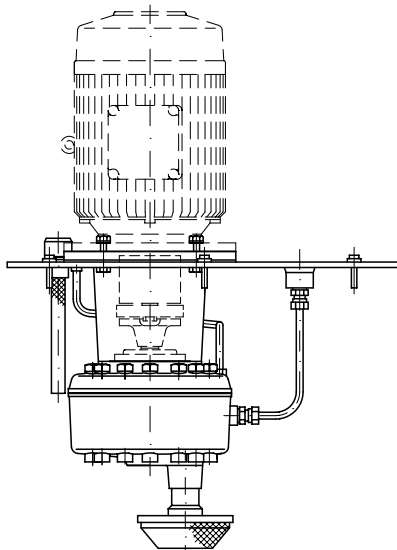
Ready for connection motor pump incl. industrial standard motor, design IM B 35



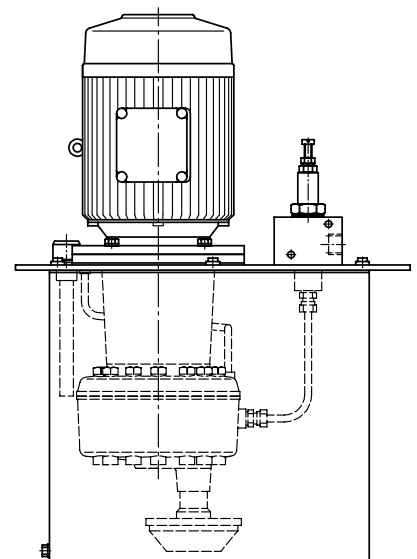
**Hydraulic power packs**, see 2.1 on page 2 and 2.3 on page 4 ++



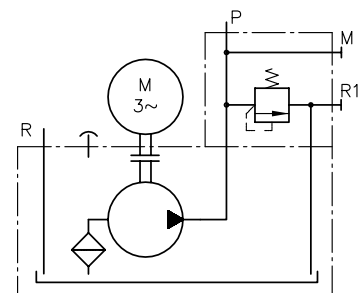
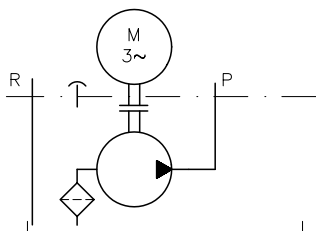
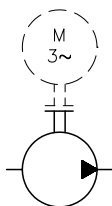
Ready for mounting and piping in customer furnished cover plate and tank, with/without industrial standard motor, design IM B5



Cover plate version for mounting on customer furnished tank, with/without industrial standard motor, design IM B5, with/without pressure limiting valve.



Ready for connection power pack, with/without industrial standard motor, design IM B5, with/without pressure limiting valve.



## 2. Available versions, main data

### 2.1 Radial piston pump acc. to D 6010

for motor pumps, see sect 2.2 and for hydraulic power packs, see sect. 2.3

**Table 1a:** Basic type coding

<b>R</b>	Standard, roller bearing version
<b>RG</b>	Slide bearing version

1) The operating pressure should be restricted for applications with continuous operation where the subsequent load cycles are all at the upper end of the pressure range (>75%) e.g. accumulator charging etc. It is advisable for an economic service life of the bearings to restrict the operating pressure of the respective pump element diameter to about 75% of its original specification. Another pump with smaller but more pump elements should be selected, if this is not possible.

**Table 1b:** Delivery flow coding

2) Figures in brackets apply to design 7631

Design, cylinder arrangement	Number of pump cylinders	Delivery flow coding (guideline figure Q in (lpm) at 1450 rpm) Figures in brackets show the geometric displacement (cm <sup>3</sup> /rev.)											Drive power rating (industrial standard motor)  (kW)	
		Piston diameter (mm)												
		4	5	6	7	8	9	10	12	13	14	15		16
Max. permissible operating pressure p <sub>max</sub> (bar) <sup>1)</sup>														
700	550	(450) <sup>2)</sup> 700	(350) <sup>2)</sup> 600	(300) <sup>2)</sup> 550	250	450	350	300	250	200	160			
<b>Design 7631</b> 2-, 3-, and 5-cylinder pump	2	<b>0,18</b> (0.13)	<b>0,28</b> (0.20)	<b>0,43</b> (0.28)	<b>0,56</b> (0.38)	<b>0,73</b> (0.50)	<b>0,92</b> (0.64)						0.25 to 0.55	
	3	<b>0,27</b> (0.19)	<b>0,42</b> (0.29)	<b>0,64</b> (0.42)	<b>0,81</b> (0.58)	<b>1,1</b> (0.75)	<b>1,35</b> (0.95)						0.25 to 0.75	
	5	<b>0,46</b> (0.31)	<b>0,7</b> (0.49)	<b>1,08</b> (0.71)	<b>1,39</b> (0.96)	<b>1,77</b> (1.26)	<b>2,27</b> (1.59)						0.25 to 1.1	
<b>Design 6010</b> 1- and 2-cylinder pump	1			<b>0,3</b> (0.21)	<b>0,41</b> (0.29)	<b>0,5</b> (0.38)		<b>0,8</b> (0.60)	<b>1,2</b> (0.86)	<b>1,45</b> (1.01)	<b>1,7</b> (1.17)	<b>1,9</b> (1.34)	<b>2,2</b> (1.53)	0.25 to 2.2
	2			<b>0,6</b> (0.43)	<b>0,83</b> (0.58)	<b>1,0</b> (0.76)		<b>1,6</b> (1.19)	<b>2,4</b> (1.72)	<b>2,8</b> (2.02)	<b>3,3</b> (2.34)	<b>3,8</b> (2.69)	<b>4,4</b> (3.06)	
<b>Design 6010</b> 3-cylinder pump	3			<b>0,9</b> (0.64)	<b>1,25</b> (0.88)	<b>1,5</b> (1.15)		<b>2,5</b> (1.79)	<b>3,6</b> (2.58)	<b>4,3</b> (3.03)	<b>5,1</b> (3.51)	<b>5,6</b> (4.03)	<b>6,5</b> (4.58)	0.25 to 3
<b>Design 6011</b> 1-radial pump	5			<b>1,4</b> (1.07)	<b>2,08</b> (1.46)	<b>2,6</b> (1.91)		<b>4,2</b> (2.98)	<b>6,0</b> (4.30)	<b>7,0</b> (5.04)	<b>8,3</b> (5.85)	<b>9,5</b> (6.72)	<b>10,9</b> (7.64)	0.55 to 4
	7			<b>2,1</b> (1.50)	<b>2,9</b> (2.05)	<b>3,7</b> (2.67)		<b>5,8</b> (4.18)	<b>8,4</b> (6.02)	<b>9,8</b> (7.06)	<b>11,8</b> (8.19)	<b>13,3</b> (9.40)	<b>15,3</b> (10.70)	0.55 to 5.5
<b>Design 6012</b> 2-radial pump	10			<b>2,7</b> (2.15)	<b>4,15</b> (2.92)	<b>5,3</b> (3.82)		<b>8,2</b> (5.97)	<b>12,0</b> (8.60)	<b>14,2</b> (10.09)	<b>16,8</b> (11.70)	<b>19,3</b> (13.43)	<b>21,7</b> (15.28)	2.2 to 7.5 (9)
	14			<b>4,0</b> (3.01)	<b>5,85</b> (4.09)	<b>7,4</b> (5.35)		<b>11,6</b> (8.36)	<b>17,0</b> (12.03)	<b>20,0</b> (14.12)	<b>23,5</b> (16.38)	<b>26,5</b> (18.80)	<b>30,4</b> (21.39)	2.2 to 11
<b>Design 6014</b> 4-radial pump	20			<b>6,1</b> (4.30)	<b>8,35</b> (5.85)	<b>11,0</b> (7.64)		<b>17,4</b> (11.94)	<b>25,0</b> (17.19)	<b>30,0</b> (20.18)	<b>35,0</b> (23.40)	<b>38,0</b> (26.86)	<b>43,4</b> (30.56)	5.5 to 18.5
	28			<b>8,0</b> (6.02)	<b>11,65</b> (8.19)	<b>15,0</b> (10.70)		<b>23,0</b> (16.71)	<b>34,0</b> (24.07)	<b>40,0</b> (28.24)	<b>47,0</b> (32.76)	<b>53,0</b> (37.60)	<b>60,8</b> (42.79)	5.5 to 22
<b>Design 6016</b> 6-radial pump	42			<b>12,7</b> (9.03)	<b>17,45</b> (12.28)	<b>22,0</b> (16.04)		<b>34,5</b> (25.07)	<b>51,0</b> (36.10)	<b>60,0</b> (42.37)	<b>70,0</b> (49.14)	<b>80,0</b> (56.41)	<b>91,2</b> (64.18)	11 to 30

7631

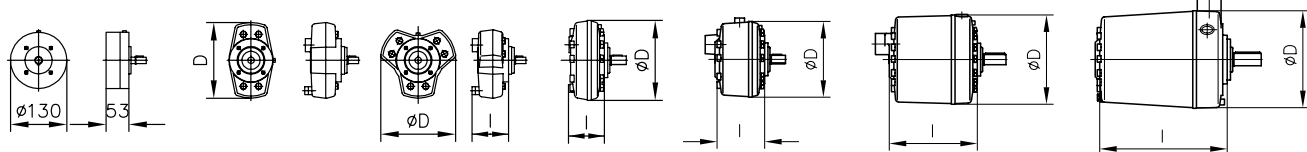
6010

6011

6012

6014

6016



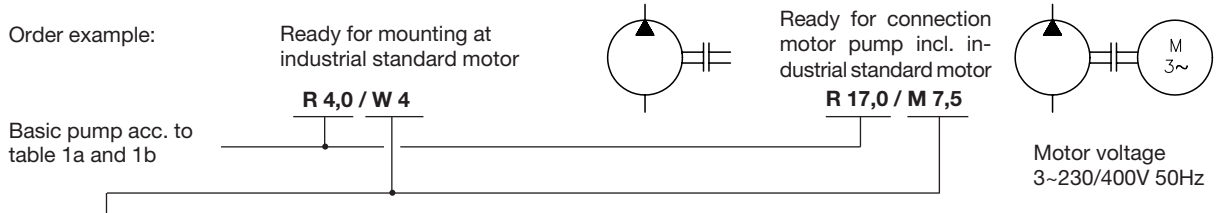
**Main dimensions**

Design	7631	6010	6011	6012	6014	6016
No. of cylinders	2 3 5	1 a. 2 3	5 7	10 14	20 28	42
Mass (weight) approx. (kg)	3	3.1 3.2	2.5 3.1	5.0 5.8	8.7 10.5	21.5 24.2 39.1
D (mm)	130	174	185	185	218	238
l (mm)	53	83	86	122	216	311

## 2.2 Motor pumps

For a listing of standard bell housings and flex-couplings, see sect. 6.2

Order example:



**Table 2:** Motor/Pump design

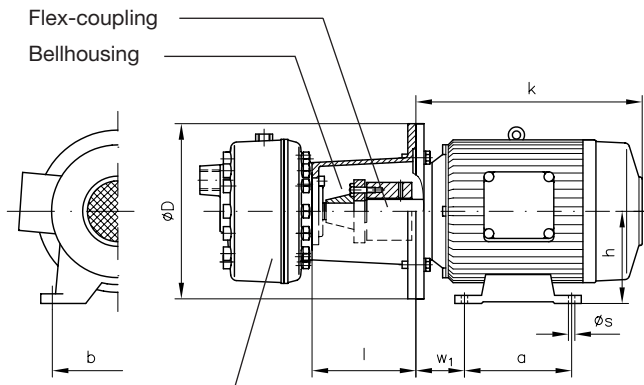
<b>W</b>		Ready for mounting at industrial standard motor, design IM B 35							
<b>M</b>		Ready for connection motor pump incl. industrial standard motor, design IM B 35							
Drive power (kW) <sup>1)</sup>		0,25 0,37	0,55 0,75	1,1 1,5	2,2 3 4	5,5 7,5 (9) <sup>2)</sup>	11 15	18,5 22	30
Available combinations with pump design acc. to sect. 1	7631	●	●	●					
	6010	●	●	●	●				
	6011		●	●	●	●			
	6012				●	●	●		
	6014					●	●	●	
	6016						●	●	●

1) Additional data regarding radial piston pump acc. to D 6010  
 - Power requirements, see sect. 3  
 - Dimensions of bell housings and flexcouplings, see sect. 4

2) A motor with this output is not standardized, but usually is like industrial standard 132 M. Drive power too high for design 6011.

### Unit dimensions

All dimensions in mm, subject to change without notice!



For dimensions and mass (weight) of the pump, see sect. 2.1

Mass (weight) approx. kg

(substantial are the spec. of the manufacturer)

Power rating (kW)	Suited bell housings and flex-couplings for combination with design						Motor <sup>3)</sup>
	7631	6010	6011	6012	6014	6016	
0.25 a. 0.37	3.1	3.1					6 ... 7.3
0.55 a. 0.75	3.5	3.5					9 ... 10
1.1							12 ... 14
1.5	3.5	3.5	3.8				15
2.2							20 ... 21
3		3.8	3.9	4.0			23 ... 24
4		3.8	3.9	4.0			28 ... 35
5.5			6.4	6.4	6.4		45 ... 58
7.5 a. 9							60 ... 80
11				8.9	9.2	10.3	80 ... 110
15							100 ... 145
18.5							115 ... 170
22					8.8	9.9	140 ... 185
30						11.9	170 ... 240

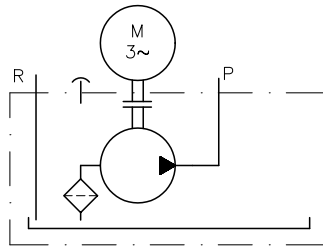
Power rating (kW)	Ext. flange-Ø D (mm)	Bellhousing length l (mm), when combined with design						Outline dimensions of industrial standard motor <sup>4)</sup>					
		7631	6010	6011	6012	6014	6016	h	a	b	Øs	w1	k <sup>4)</sup>
0.25 a. 0.37	160	83	83					71	90	112	7	45	190 ... 210
0.55 a. 0.75	200	109	109	123				80	100	125	9	50	215 ... 230
1.1	200	109	109	123				90	100	140	9 (10)	56	240 ... 250
1.5					265 ... 270								
2.2	250		113	113	123			100	140	160	12	63	280 ... 320
3													
4													
5.5	300			160	160	160		132	140	216	12	89	330 ... 360
7.5 and 9							390 ... 400						
11	350					209	160	210	254	254	14	108	500 ... 520
15													500 ... 550
18.5	350					209	180	241	279	279	14 (15)	121	500 ... 550
22													550 ... 580
30	400					212	200	305	318	318	18	133	620 ... 650

<sup>3)</sup> Guideline data for two makes, but substantial are the spec. of the manufacturer!

<sup>4)</sup> Not standardized, guideline data for two makes, but substantial are the spec. of the manufacturer! See also DIN 42 673-4 and DIN 42 677-4 (outline dimensions)

## 2.3 Hydraulic power packs

Version with tank acc. to order example 1 in sect. 2.3.1



Cover plate version acc. to order example 2 in sect. 2.3.2

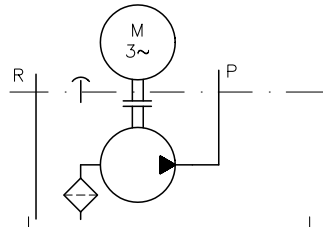
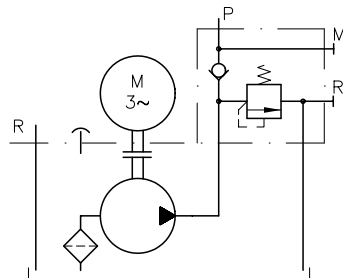
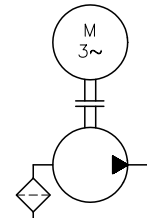


Illustration of the order examples in sect. 2.3.1 and 2.3.2

Version incl. pressure limiting valve acc. to order example 1 in sect. 2.3.1



Motor pump for mounting in customer furnished tank acc. to order example 2 and 3 in sect. 2.3.2 (see also page 5)



### 2.3.1 Tank and cover plate versions B 6 to 40 and D 6 to 40 Usable filling volume approx. 6 to 45 l

For a listing of standard bell housings, flex-couplings, and inlet parts, see sect. 6.2

Order example 1: **R 1,39 / B 6 K- V 0,55** Motor voltage 3~ 230/400V 50 Hz

Order example 2: **R 5,8 / D 13.2 - V 2,2 - E/160** Motor voltage 3~ 230/400V 50 Hz

Basic pump acc. to table 1a and 1b

For connection blocks (optional), see sect. 2.3.3

**Table 3a:** Tank, cover plate, and motor

Tank version	Usable filling volume <sup>3)</sup> approx. (l)	Cover plate version	Z ..	Power pack without motor <sup>2)</sup>				
			V ..	Power pack incl. motor				
			Available combinations with pump design	Drive power (kW) <sup>1) 2)</sup>				
			0,25 0,37	0,55 0,75	1,1 1,5	2,2 3 4		
B 6	6	D 6	7631	•	•	•		
			6010	•	•	•		
			6011		•	•		
B 13	13	D 13.1	7631	•	•	•		
			6010	•	•	•		
			6011		•	•	•	
B 20	20	D 13.2	7631	•	•	•		
			6010	•	•	•		
			6011		•	•	•	
		D 20	6012				•	
B 30 and B 40	31 and 45	D 30	7631	•	•	•		
			6010	•	•	•	•	
			6011		•	•	•	
		D 40	6012				•	

<sup>3)</sup> The specified filling volumes are only guideline figures. There is a slight variation in the filling volume depending on the selected pump size and drive power (bell housing size). For additional notes, see sect. 5.2.

Type	B 6	B 13	B 20	B 30	B 40
approx. (l)	9 ... 9,3	16 ... 17	24 ... 25	37 ... 39	52 ... 55

<sup>4)</sup> not available with AT-seals and PYD-seals

**Table 3b:** Options<sup>4)</sup>

Coding	Version
<b>K</b>	Fluid level gauge
<b>T</b>	Temperature switch
<b>D</b>	Float switch
For data and additional versions, see sect. 6.1	

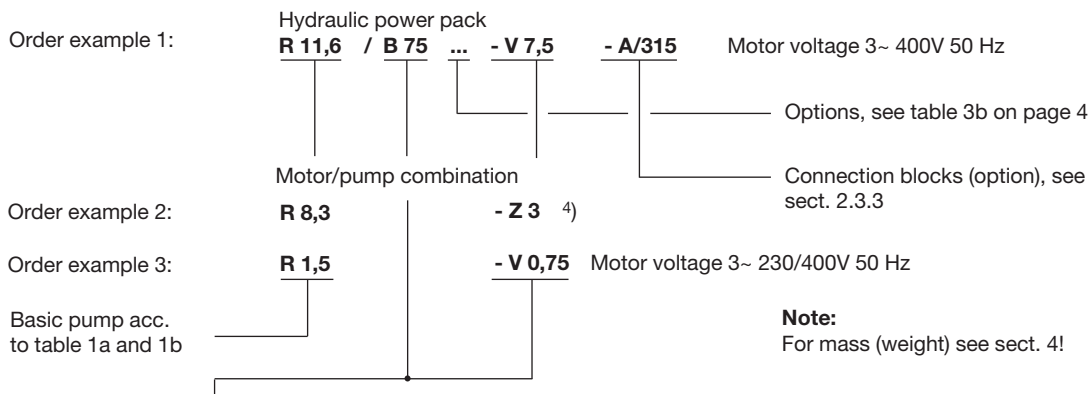
**Note:**

For mass (weight) see sect. 4!

<sup>1)</sup> Additional data regarding radial piston pump acc. to D 6010  
 - Power requirements, see sect. 3  
 - Dimensions of shaft and flange, see sect. 4

<sup>2)</sup> The selected bell housing L... acc. to 6.2 has to be specified in uncoded text, when a pump/motor combination -Z.. (acc. to order example 2 in sect. 2.3.1) for installation in a customer furnished tank is desired. There is a range of bell housings suited for various drive power.

**2.3.2 Tank or cover plate versions B 50 and D 50.1-B 400 and D 250.2** Usable filling volume approx. 60 to 450 l



**Table 3c:** Tank, cover plate, and motor  
For a listing of standard bell housings, flex-couplings, and inlet parts, see sect. 6.2

Tank version	Usable filling volume <sup>3)</sup> approx. (l)	Cover plate version	Z ..	Drive power (kW) <sup>1) 4)</sup>									
			V ..	Available combinations with pump design									
			0,25 0,37	0,55 0,75	1,1 1,5	2,2 3 4	5,5 7,5 (9) <sup>2)</sup>	11 15	18,5 22	30			
B 50	60	D 50.1	6010	•	•	•	•						
			6011		•	•	•	•					
			6012				•	•	•				
B 75	80	D 50.2	6010	•	•	•	•						
			6011		•	•	•	•					
			6012				•	•	•				
			6014					•	•	•			
B 100	120	D 100.1	6011		•	•	•						
			6012				•	•	•				
			6014					•	•	•			
			6016						•	•			
B 160	160	D 100.2	6011		•	•	•						
			6012				•	•	•				
			6014					•	•	•			
			6016						•	•			
B 250	260	D 250.1	6014						•	•			
			6016						•	•	•		
B 400	450	D 250.2	6014						•	•			
			6016						•	•	•		

1) Additional data regarding radial piston pump acc. to D 6010 - Power requirements, see sect. 3  
- Dimensions of shaft and flange, see sect. 4  
2) A motor with this output is not standardized, but usually is like industrial standard 132 M, i.e. also the optional components (see sect. 6.2) will fit  
3) The specified filling volumes are only guideline figures. There is a slight variation in the filling volume depending on the selected pump size and drive power (bell housing size). For additional notes, see sect. 5.2.

Type	B 50	B 75	B 100	B 160	B 250	B 400
approx. (l)	81 ... 85	98 ... 107	140 ... 152	180 ... 193	302 ... 309	461 ... 469

4) The selected bell housing L... acc. to 6.2 has to be specified in uncoded text, when a pump/motor combination -Z.. (acc. to order example 2 in sect. 2.3.1) for installation in a customer furnished tank is desired. There is a range of bell housings suited for various drive power.

**2.3.3 Connection blocks**

The connection blocks are mounted directly onto the cover plate of the power pack. A pressure limiting valve is always integrated whereas return filters are an option. It is possible to go on with directly mounted valve banks.

Order example: R 11,6 / B 75 - V 7,5 - A/ 315 Motor voltage 3 ~ 400V 50 Hz

R 5,8 / B 20 - V 2,2 - EF 1/ 160 Motor voltage 3 ~ 230/400V 50 Hz

Pressure setting.

Take care that the perm. pressure of the respective pump is not exceeded!

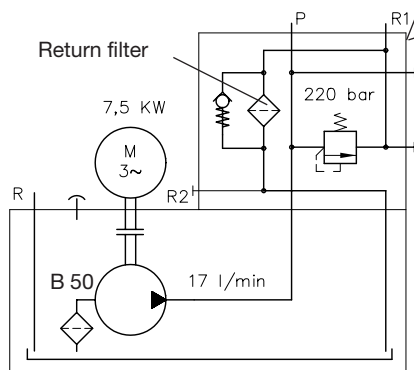
**Table 4:** Connection blocks

Suited for tank or cover plate version	Max. pressure setting $P_{max}$ (bar)	Version				Return filter cartridge (MANN micro-Top) Filter material is soaked paper			Filter fineness	Mass (weight) approx. (kg)
		Tool adjustable	Manually adjustable	Tool adjustable	Manually adjustable	Coding (Co. MANN)	Nom. flow (lpm)	Filter area approx. (cm <sup>2</sup> )		
B 6 ... B 40 D 6 ... D 40	700	A / ...	B / ...	E / ...	F / ...	---	---	---	approx. 12µm nom. 50 % -30 µm abs.	1.2
		AF 0 / ..	BF 0 / ..	EF 0 / ..	FF 0 / ..	W 77/2	7	637		2.8
		AF 1 / ...	BF 1 / ...	EF 1 / ...	FF 1 / ...	HAWE 6905 117 F1	15	1230		2.8
		AF 2 / ...	BF 2 / ...	EF 2 / ...	FF 2 / ...	HAWE 6905 117 F2	21	1900		2.8
		AF 3 / ...	BF 3 / ...	EF 3 / ...	FF 3 / ...	HAWE 6905 117 F3	32	3190		3.0
B 50 ... B 400 D 50 ... D 250		A / ...	B / ...	X		---	---	---	1.4	
		AF 4 / ..	BF 4 / ...			WD 940/2	32	3190	5.4	
		AF 5 / ...	BF 5 / ...			WD 962	52	5110	5.6	

**Utilized pressure limiting valves and pressure ranges**

Tank, cover plate	Connection block	Pressure limiting valve	Pressure range bar	Tank, cover plate	Connection block	Pressure limiting valve	Pressure range bar
B 6 ... B 40 D 6 ... D 40	A/..., B/..., E/..., F/..	MVE 5 A (R) MVE 5 B (R) MVE 5 C (R) MVE 5 E (R) MVE 5 F (R)	500 ... 700 315 ... 500 160 ... 315 80 ... 160 (0) ... 80	B 50 ... B 75 D 50	A/..., B/..	SVP 6 A (R) SVP 6 B (R) SVP 6 C (R) SVP 6 E (R) SVP 6 F (R)	500 ... 700 315 ... 500 160 ... 315 80 ... 160 (0) ... 80
	AF 0(1,2,3)/.. to FF 0(1,2,3)/..	MVF 5 A (R) MVF 5 B (R) MVF 5 C (R) MVF 5 E (R) MVF 5 F (R)	500 ... 700 315 ... 500 160 ... 315 80 ... 160 (0) ... 80			see D 7000/1	B 100 ... B 400 D 100 ... D 250
				B 50 ... B 400 D 50 ... D 250	AF 4 (5) / ... BF 4 (5) / ..	MVF 6 A (R) MVF 6 B (R) MVF 6 C (R) MVF 6 E (R) MVF 6 F (R)	500 ... 700 315 ... 500 160 ... 315 80 ... 160 (0) ... 80

Symbol acc. to order example  
R 17,0/B50 V7,5 - AF 5/220



**Suited directional valve banks for direct mounting**

A/..., AF 0(1, 2, 3)/.. (B 6 ... B 40)	SKP(H) 06 and 16	acc. to D 7230
B/..., BF 0(1, 2, 3) /..	BWN(H) 1C	acc. to D 7470 B/1
E/..., EF 0(1, 2, 3) /..	BWH 2(3) C	acc. to D 7470 B/1
F/..., FF 0(1, 2, 3) /..	VB 01(11, 21) C	acc. to D 7302
A/..., B/.. (B 50 ... B 75)	SKP(H) 27 and 37	acc. to D 7230
AF4(5)/..., BF4(5) (B 50 ... B 400)	SWR 1D BWH 2(3) D VB 11(21, 31) D	acc. to D 7450 acc. to D 7470 B/1 acc. to D 7302
A/.. (B 100 ... B 400)	SKP(H) 28 and 38	acc. to D 7230
B/..	VB 31E	acc. to D 7302

Two mounting screws and two tapped plugs (if P and R are not used otherwise) have to be ordered additionally, when it is intended to directly mount directional valve banks

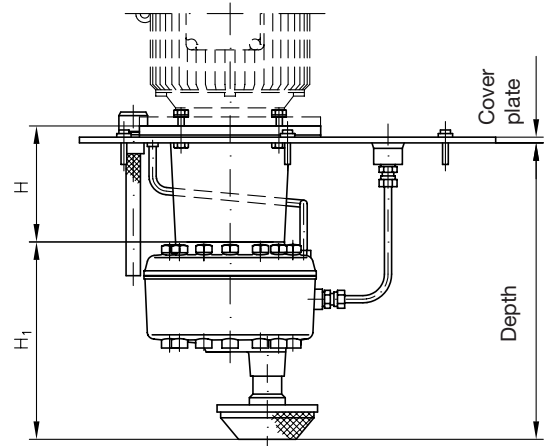
Connection block, complete	AF 0 (1,2,3) /.. to ...FF 0 (1,2,3) /.. (4000 640)	AF 4 (5) / .. and BF 4 (5) / .. (6330 100 a..d)	(6340 100 a..d)
Skt. head screw conf. ISO 4762	M 8x35-8.8-A2K	M 10x50-8.8-A2K	M 12x60-8.8-A2K
Tapped plug (BSPP)	G 1/2 acc. to (943 008)	G 1/2 acc. to (943 008)	G 3/4 acc. to (1980 010)

### 3. Dimensions

All dimensions in mm, subject to change without notice!

The following illustrations supply all main outline dimensions to determine the spatial requirements at the place where these power packs are intended for use.

It is most important with cover plate versions that the intake strainer of the pump is located minimum 10 mm above the tank bottom. The depth of the pump strainer below the cover plate depends on the pump combination and can be calculated by adding the individual dimensions H and H<sub>1</sub> acc. to D 6010 Z.

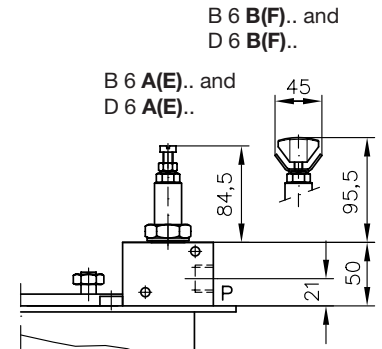
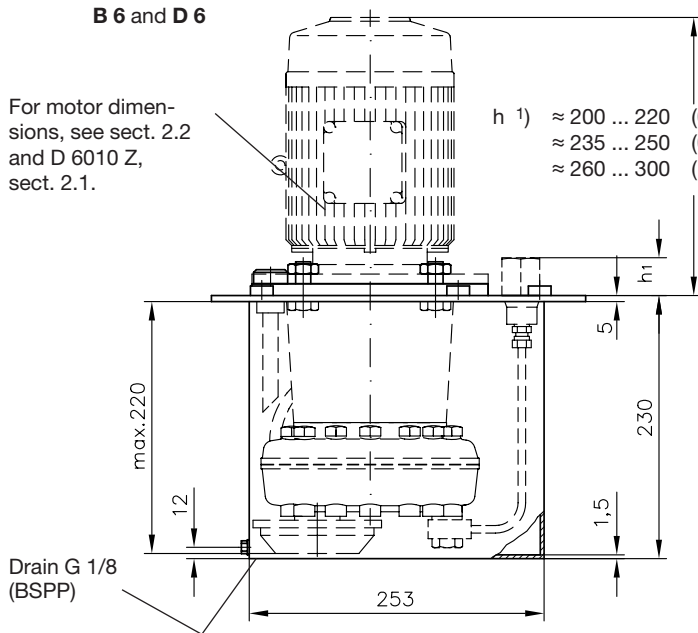


#### 3.1 Type B 6.. and D 6

For a listing of standard bell housings and flex-couplings, see sect. 6.2

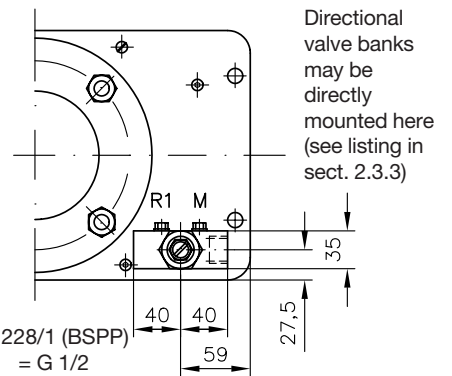
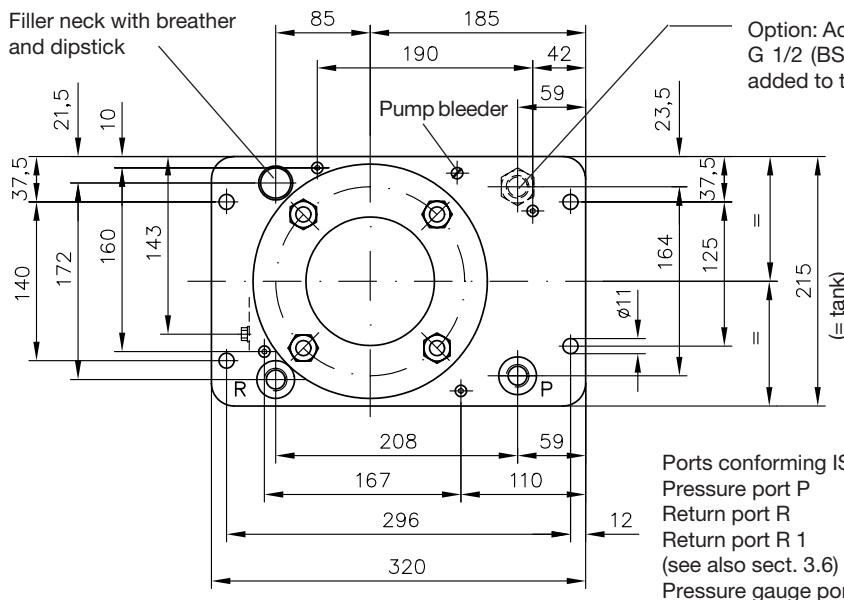
Tank and cover plate are zinc galvanized

**Note:** The mounting screws ISO 4762-M8x30-8.8-A2K and seals are scope of delivery with cover plate version D 6.



For dimensions of connection blocks, see sect. 3.6.

1) Guideline data for two makes, but substantial are the spec. of the manufacturer! For the strength of the bell housing flange, see D 6010 Z.



Ports conforming ISO 228/1 (BSPP)  
 Pressure port P = G 1/2  
 Return port R = G 1/2  
 Return port R 1 = G 1/8  
 (see also sect. 3.6)  
 Pressure gauge port M = G 1/8

For dimension of connection blocks with return filter, see sect. 3.6

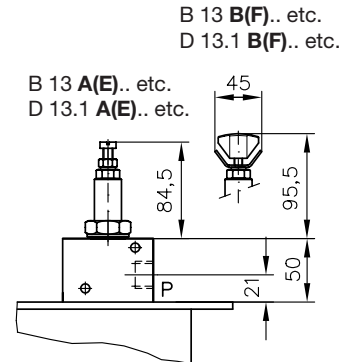
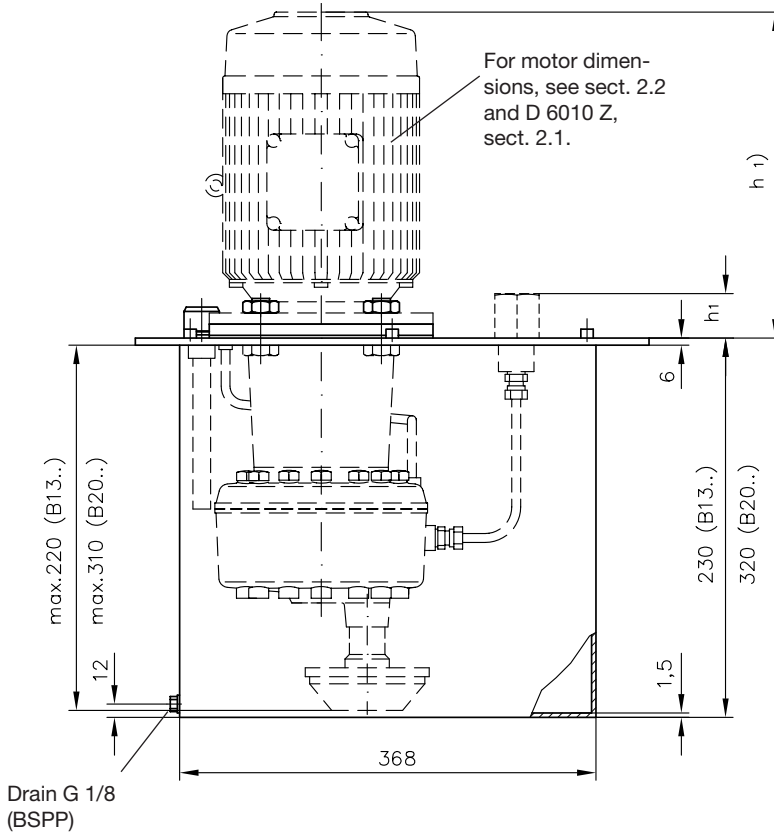
### 3.2 Type B 13.. and B 20.. as well as D 13.1 to D 20

For a listing of standard bell housings and flex-couplings, see sect. 6.2

Tank and cover plate are zinc galvanized

**Note:** The mounting screws ISO 4762-M8x30-8.8-A2K and seals are scope of delivery with cover plate version D 13.1 to D 20.

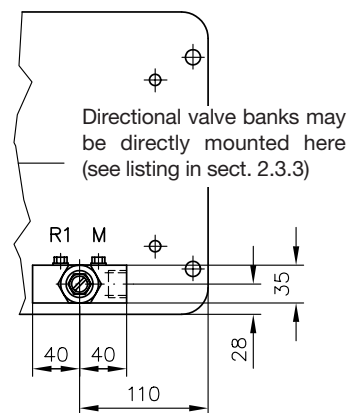
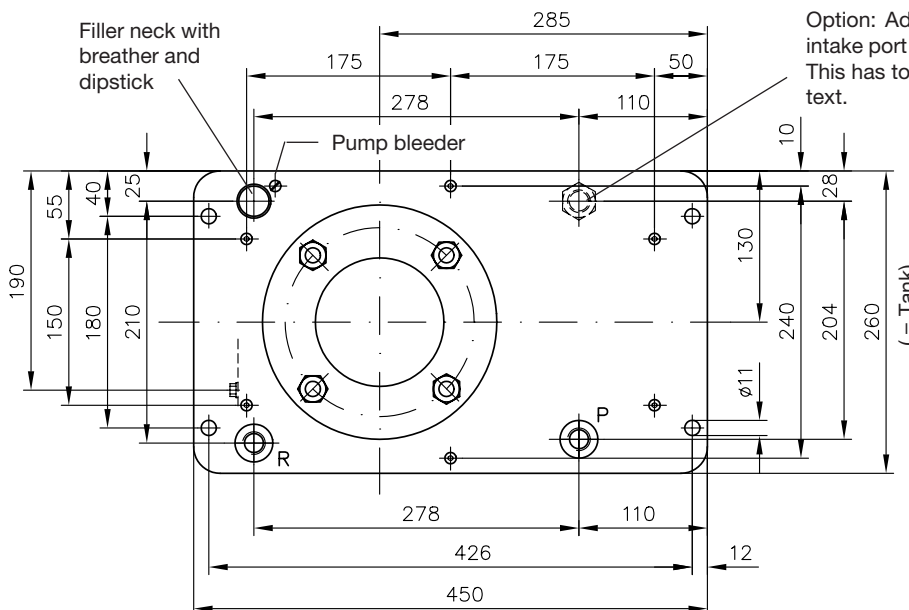
**B 13 and B 20  
D 13.1 to D 20**



For dimension of connection blocks, with return filter, see sect. 3.6

- 1) ≈ 200 ... 220 (0.25 and 0.37 kW)
- ≈ 235 ... 250 (0.55 and 0.75 kW)
- ≈ 260 ... 300 (1.1 and 1.5 kW)
- ≈ 300 ... 340 (2.2 and 3 kW)
- ≈ 330 ... 350 (4 kW)

Guideline data for two makes, but substantial are the spec. of the manufacturer! For the strength of the bell housing flange, see D 6010 Z.



Ports conforming ISO 228/1 (BSPP):

Pressure port P	= G 1/2
Return port R	= G 1/2
Return port R 1	= G 1/8
(see also sect. 3.6)	
Pressure gauge port M	= G 1/8

For dimension of connection blocks, with return filter, see sect. 3.6



### 3.3 Type B 30.. and B 40.. as well as D 30 and D 40

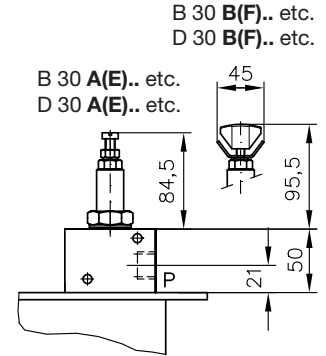
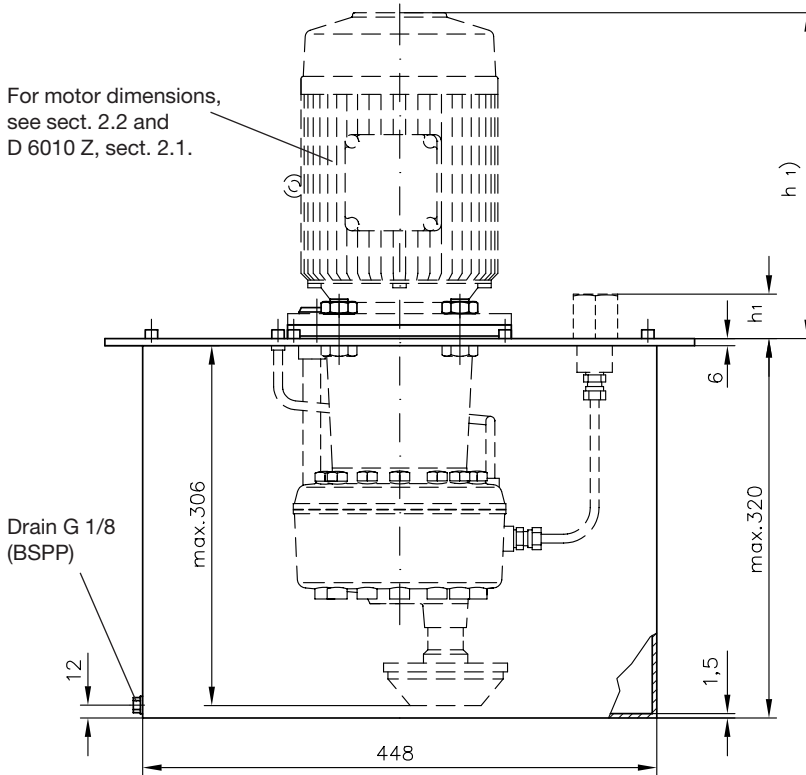
For a listing of standard bell housings and flex-couplings, see sect. 6.2

Tank and cover plate are zinc galvanized

**Note:** The mounting screws ISO 4762-M8x30-8.8-A2K and seals are scope of delivery with cover plate version D 30.. and D 40..

**B 30 and B 40**  
**D 30 and D 40**

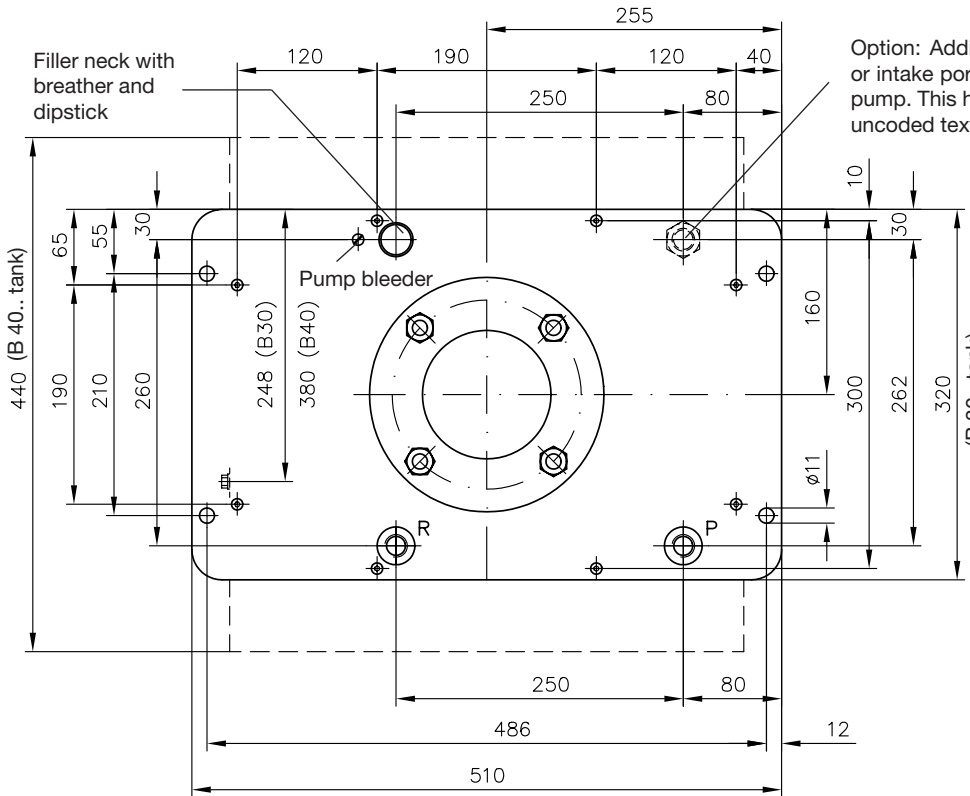
For motor dimensions, see sect. 2.2 and D 6010 Z, sect. 2.1.



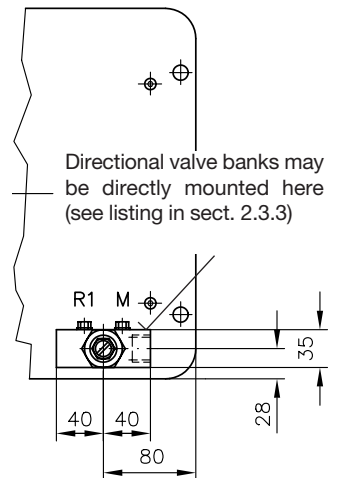
For dimension of connection blocks, with return filter, see sect. 3.6

- 1)  $\approx$  200 ... 220 (0.25 and 0.37 kW)
- $\approx$  235 ... 250 (0.55 and 0.75 kW)
- $\approx$  260 ... 300 (1.1 and 1.5 kW)
- $\approx$  300 ... 340 (2.2 and 3 kW)
- $\approx$  330 ... 350 (4 kW)

Guideline data for two makes, but substantial are the spec. of the manufacturer! For the strength of the bell housing flange, see D 6010 Z.



Option: Additional return G 1/2 (BSPP) ( $h_1 = 26$ ) or intake port G 1/2 (BSPP) ( $h_1 = 38$ ) for a manual pump. This has to be added to the order coding in uncoded text.



For dimension of connection blocks, with return filter, see sect. 3.6

Ports forming ISO 228/1 (BSPP):	Pressure port P	= G 1/2
	Return port R	= G 1/2
	Return port R 1	= G 1/8
	(see also sect. 3.6)	
	Pressure gauge port M	= G 1/8

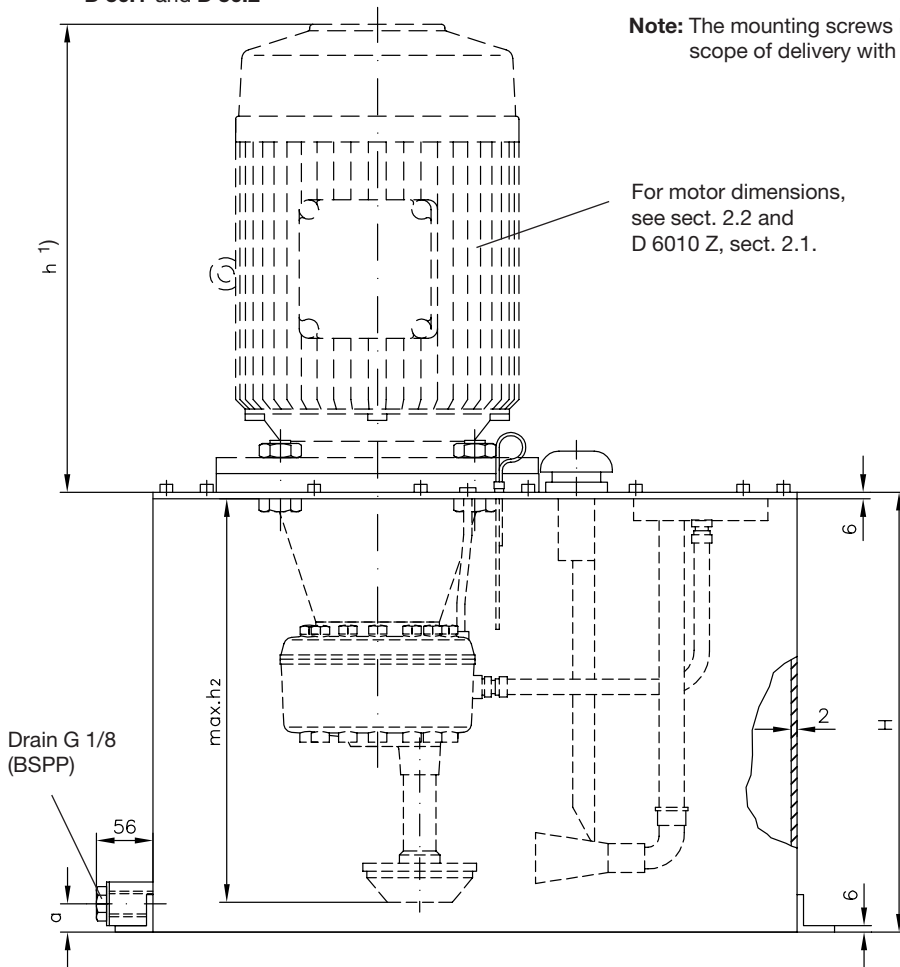
### 3.4 Type B 50.. and B 75.. as well as D 50.1 and D 50.2

For a listing of standard bell housings and flex-couplings, see sect. 6.2

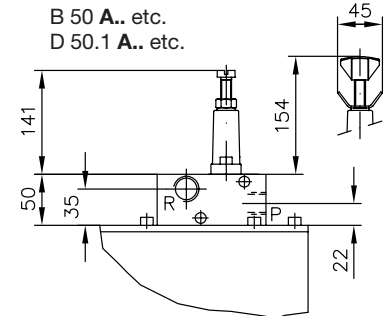
**B 50 and B 75**  
**D 50.1 and D 50.2**

External surfaces of tank and cover plate are sprayed with gray primer

**Note:** The mounting screws ISO 4762-M6x16-8.8-A2K and seals are scope of delivery with cover plate version D 50..



B 50 B.. etc.  
D 50.1 B.. etc.

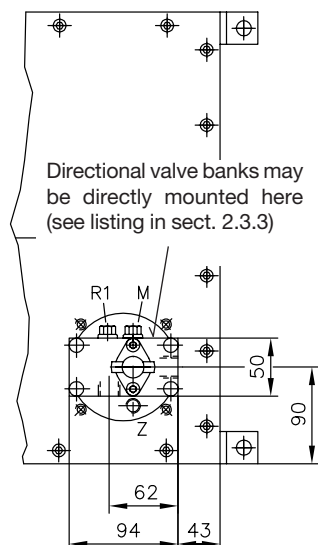
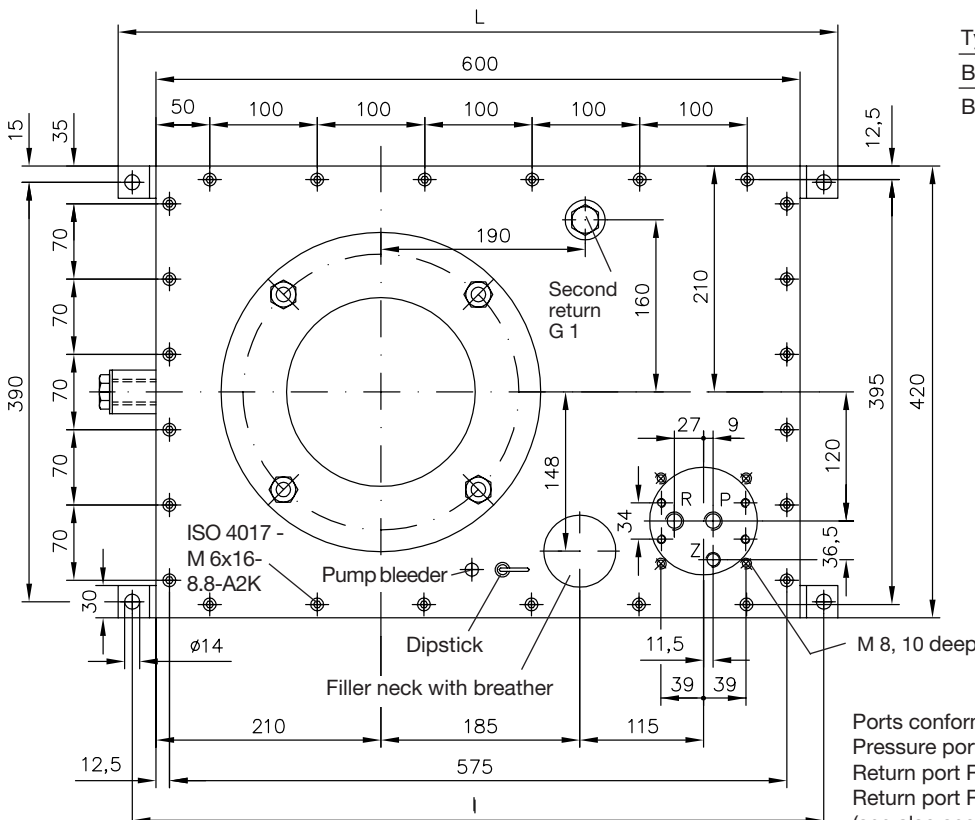


For dimension of connection blocks, with return filter, see sect. 3.6

- 1) ≈ 200 ... 220 (0.25 and 0.37 kW)
- ≈ 235 ... 250 (0.55 and 0.75 kW)
- ≈ 260 ... 300 (1.1 and 1.5 kW)
- ≈ 300 ... 340 (2.2 and 3 kW)
- ≈ 330 ... 350 (4 kW)
- ≈ 410 ... 420 (5.5 to 9 kW)
- ≈ 520 ... 570 (11 and 15 kW)

Guideline data for two makes, but substantial are the spec. of the manufacturer! For the strength of the bell housing flange, see D 6010 Z.

Type	H	h2	L	l	a
B 50..	403	370	670	644	27
B 75..	478	450	660	630	26



Ports conforming ISO 228/1 (BSPP):

- Pressure port P = G 1/2
- Return port R = G 1/2
- Return port R 1 = G 1/4 <sup>2)</sup> only with version acc. to D 6010 S
- Pressure gauge port M = G 1/4
- Control connection Z <sup>2)</sup> = G 1/4

### 3.5 Type B 100.. to B 400.. as well as D 100.1 to D 250.2

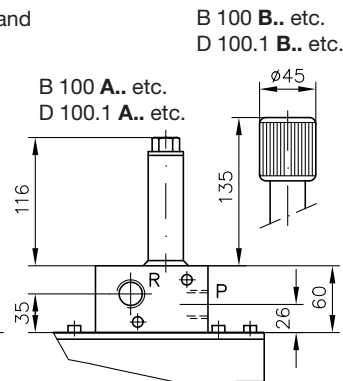
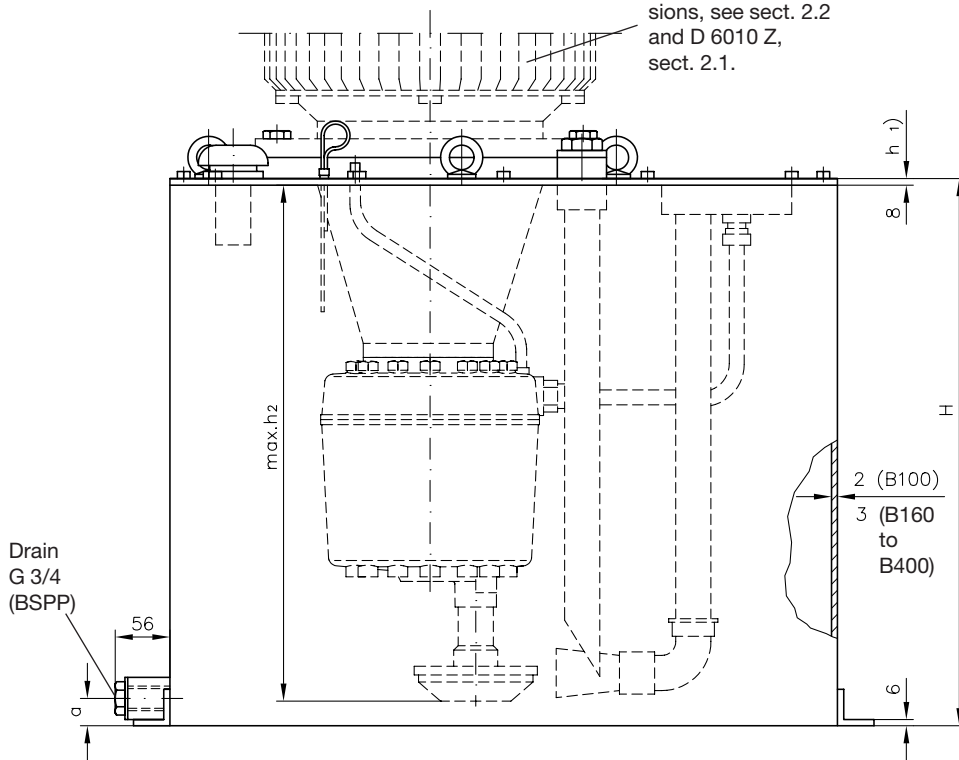
For a listing of standard bell housings and flex-couplings, see sect. 6.2

External surfaces of tank and cover plate are sprayed with gray primer

**Note:** The mounting screws ISO 4017 M6 x 20 ... -8.8-A2K or ISO 4017 M8 x 20 ... -8.8-A2K and seals are scope of delivery with cover plate version D 100.1.. to D 250.2..

**B 100 to B 400**  
**D 100.1 to D 250.2**

For motor dimensions, see sect. 2.2 and D 6010 Z, sect. 2.1.

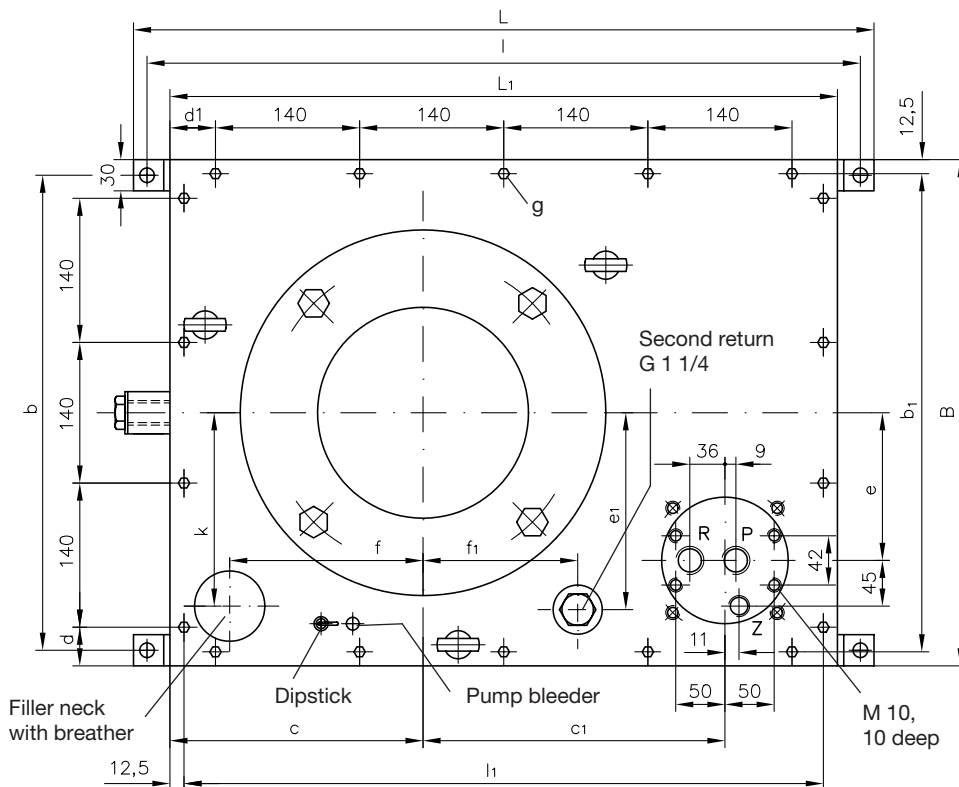


For dimension of connection blocks, with return filter, see sect. 3.6

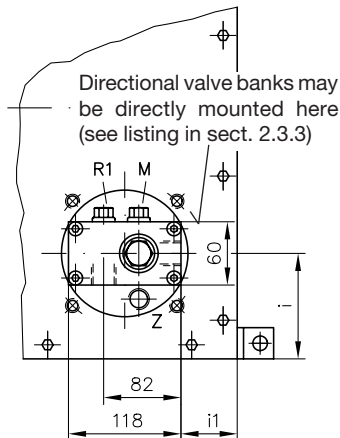
- 1) B 100 (160) and D 100... :  
 ≈ 235 ... 250 (0.55 a. 0.75 kW)  
 ≈ 260 ... 300 (1.1 and 1.5 kW)  
 ≈ 300 ... 340 (2.2 and 3 kW)  
 ≈ 330 ... 350 (4 kW)  
 ≈ 410 ... 420 (5.5 to 9 kW)  
 ≈ 520 ... 570 (11 and 15 kW)

- B 250 (400) and D 250... :  
 ≈ 520 ... 570 (11 and 15 kW)  
 ≈ 570 ... 610 (18,5 a. 22 kW)  
 ≈ 640 ... 670 (30 kW)

Guideline data for two makes, but substantial are the spec. of the manufacturer! For the strength of the bell housing flange, see D 6010 Z.



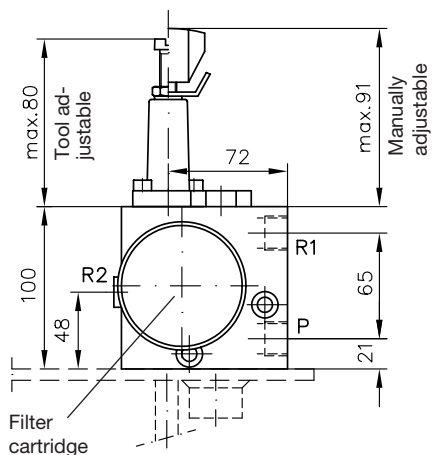
Ports conforming ISO 228/1 (BSPP):  
 Pressure port P = G 3/4  
 Return port R = G 3/4  
 Return port R 1 = G 1/2 (see also sect. 3.6)  
 Pressure gauge port M = G 1/2  
 Control connection Z = G 1/4 (only with version acc. to D 6010 S)



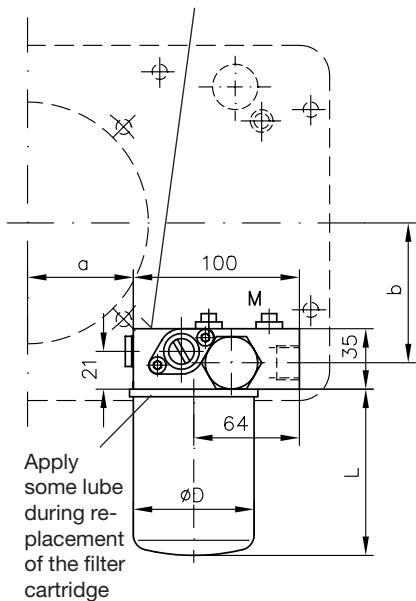
Type	H	h2	B	L	L1	a	b	b1	c	c1	d	d1	e	e1	f	f1	g	i	i1	k	l	l1
B 100	536	510	500	710	650	26	470	475	250	295	40	45	145	195	190	150	M 6x20	105	46	190	680	625
B 160	666	640																				
B 250	575	510	650	1070	1000	27	620	625	375	465	45	80	165	250	290	315	M 8x20	160	101	240	1044	975
B 400	825	790																				

### 3.6 Dimensions of connection blocks with return filter

Connection block AF 0../ to FF 3../



Directional valve banks may be directly mounted here (see listing in sect. 2.3.3)



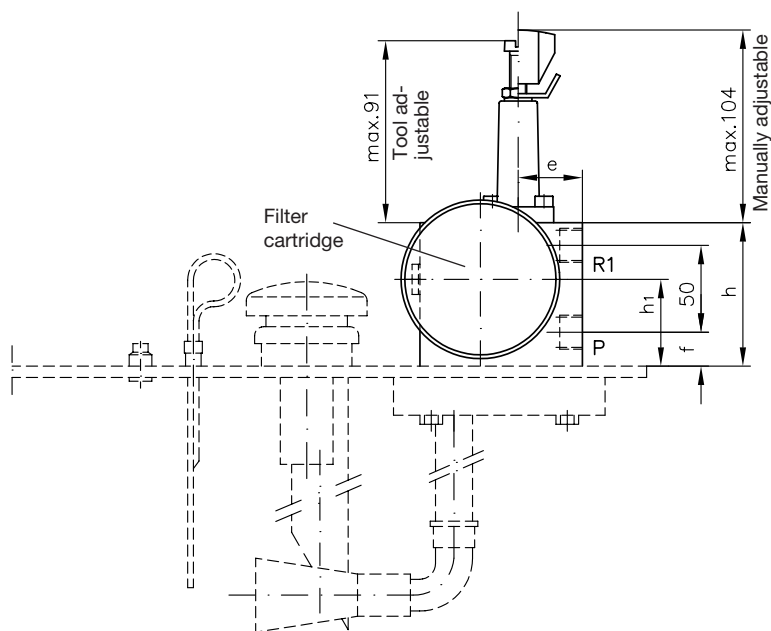
Tank or cover plate size	B 6 D 6	B 13, B 20 D 13, D 20	B 30, B 40 D 30, D 40
a	66	115	115
b	80	102	133

Filter coding	F 0	F 1	F 2	F 3
$\varnothing D$	78	78	78	93
L	59	93	123	144

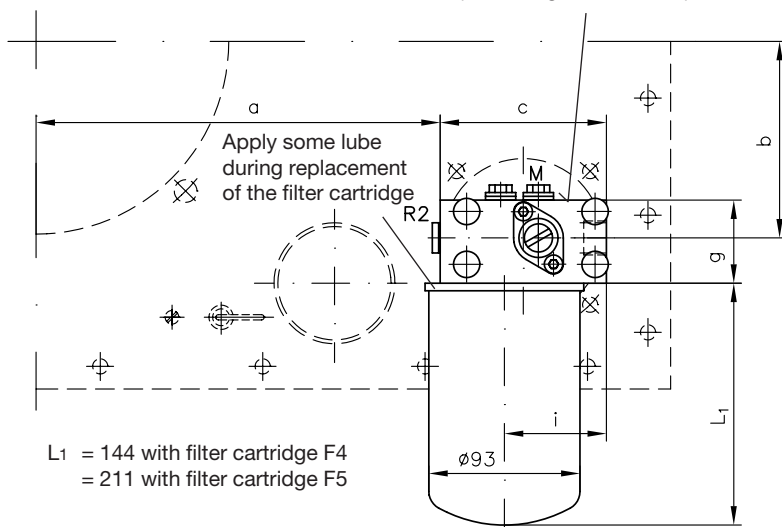
Ports conforming ISO 228/1 (BSPP)

- P = Pressure port            G 1/2
- R1 = Return port            G 1/2
- R2 = Return port            G 1/4
- M = Pressure gauge port    G 1/8

Connection block AF 4../ to BF 5../



Directional valve banks may be directly mounted here (see listing in sect. 2.3.3)



L1 = 144 with filter cartridge F4  
= 211 with filter cartridge F5

Tank or cover plate size	a	b	c	e	f	g	h	h1	i	Ports ISO 228/1 (BSPP)		
										P, R1	R2	M
B 50, B 75 D 50	247	120	100	38	22	50	90	54	64	G 1/2	G 1/4	G 1/4
B 100, B 160 D 100	236	154	118	50	26	63	100	56	71	G 3/4	G 1/4	G 1/2
B 250, B 400 D 250	406	165	118	50	26	63	100	56	71	G 3/4	G 1/4	G 1/2

#### 4. Mass (weigh)

Tank or cover plate version	Design of the utilized radial piston pump acc. to sect. 2.1	Mass (weight) approx. (kg) with drive power (kW): First figure = tank versions, figures in brackets = cover plate versions						Add weight for versions with pressure limiting valve (kg)	
		with drive power (kW)							
		0.25 - 1.5	2.2; 3; 4	5.5; 7; 9	11; 15	18.5; 22	30		
B 6, D 6	7631, 6010, 6011	9.2 (6.2)						1.2	
B 13, D 13.1	7631, 6010, 6011	13.5 (9)							
B 20, D 13.2, D 20	7631, 6010, 6011	15 (9)	15.3 (9.5)						
	6012		15.2 (9.3)						
B 30, D 30, D 40	7631, 6010, 6011	19.2 (11.7)	19.5 (12)						
	6012		19.5 (12)						
B 40, D 30, D 40	7631, 6010, 6011	21.2 (11.7)	21.5 (12)						
	6012		21.5 (12)						
B 50, D 50.1	7631, 6010	33.2 (16.2)	33.5 (16.5)						2.0
	6011	33.3 (16.3)	35 (18)	35.5 (18.5)					
	6012		35.5 (18.5)	35.5 (18.5)					
B 75, D 50.2	7631, 6010	36 (16.5)	36 (16.5)						
	6011	36 (16.5)	36 (16.5)	38.5 (19)					
	6012	36 (16.5)	36 (16.5)	38.5 (19)	41 (21.5)				
	6014			38.5 (19)	41.3 (22)				
B 100 D 100.1	6011	55.7 (24.7)	56.5 (25.5)					4.0	
	6012		56.5 (25.5)	59.5 (28.5)	60.5 (29.5)				
	6014			61 (30)	61 (30)	61 (30)			
	6016				63 (32)	63 (32)			
B 160 D 100.2	6011	62.5 (25)	63.5 (26)						
	6012		64 (26.5)	68 (30.5)	67.5 (30)				
	6014			67.5 (30)	68.5 (31)				
	6016				69.5 (32)				
B 250 D 250.1	6014				111 (50)	111 (50)			
	6016				113 (52)	113 (52)			
B 400 D 250.2	6014				136 (51)	136 (51)			
	6016				139 (54)	139 (54)	139.5 (54.5)		

**Note:**

Weight specifications contain cover plate, bell housing, flex-coupling, intake parts, and tank.

Figures in brackets = as above but without tank

For weight of basic pump incl. flex-coupling /bell housing and motor, see sect. 2.2!

For the weights of the individual components, see D 6010 Z.

## 5. Notes for mounting and initial operation

### 5.1 Installation

- **Individual pumps acc. to sect. 2.2**

When installed outside the tank, these pumps should preferably be positioned beneath or below the min. fluid level that a sufficient amount of fluid can flow in automatically via a feed line facing steadily downwards. This makes sure that the pump housing is always filled up with fluid and that no air is dragged into the system. The line connecting pump and tank should be equipped with a tap easing removal of the pump for maintenance without the necessity of draining the tank.

- **Cover plate versions type D ... acc. to sect. 2.3**

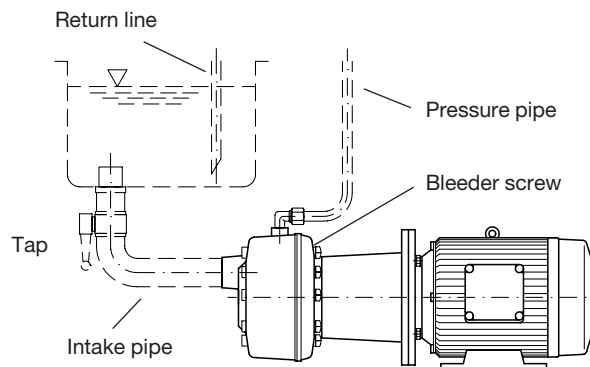
When fitting such cover plate versions in customer furnished tanks it has to be made sure that these pumps are always located below the max. fluid level to ensure that no air is sucked in the system and that it can be easily bled prior to initial operation (see sect. 5.2) or after a fluid service. The fluid is usually fed to the pump via the sufficiently dimensioned intake piping and screen filter. The fluid level may drop below the pump housing during operation as long as the screen filter is sufficiently immersed in the fluid. Should a customer furnished tank be very high, resulting in an intake height of more than approx. 0.5 m, a foot valve should be installed in the intake pipe preventing running empty of the pump during prolonged stand-still periods. This is not necessary if the tank is of about the same height as the tanks, which are standard with HAWE power packs type B ... acc. to sect. 3 ++.

### 5.2 Initial operation, bleeding

The pump has to be bled prior to initial operation and after every fluid service to prevent intake problems and air to be fed into the hydraulic system. The coupling must not get in contact with the pressure fluid.

- **Motor pumps**

Loosen, but do not remove the bleeder screw during or after filling the tank and leave it open until fluid without bubbles comes out. Retighten the screw and let the pump run or switch the pump on and off several times (in idle circulation mode if possible with your circuitry). Another way is to set the main pressure limiting valve to zero bar, thereby enabling pressureless circulation. Next, any air dragged into the system should be removed by operating all functions of the circuitry without load until all cylinders, motors, etc. move steadily and without any hesitation. Next the pressure limiting valve has to be reset to the system requirements (monitored by a pressure gauge).



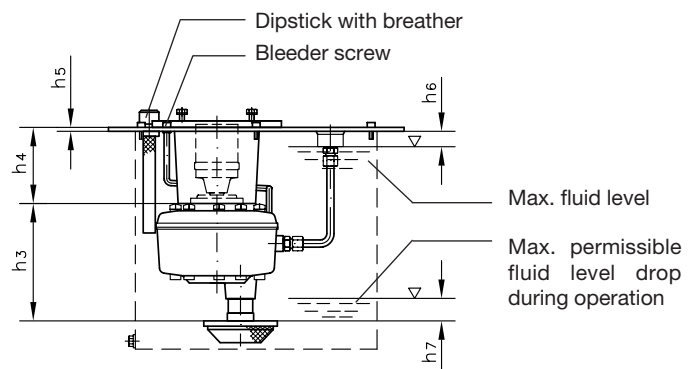
- **Hydraulic power packs**

Remove the bleeder screw (located on the cover plate beneath the dipstick or the breather) prior to filling the tank and leave it open until fluid without bubbles comes out (wait a few minutes, if necessary). Reinstall and tighten the bleeder screw. The respective illustrations in sect. 3.1 to 3.5 inform about the location of this screw (conf. ISO 1207-M 6x6-8.8-A2K incl. copper seal ring DIN 7603-Cu-A6x10x1).

The tank should be well-filled during start-up but not absolutely full so as to allow the fluid to expand while reaching operation temperature. This is particularly important with customer furnished tanks. The figures for the minimum distance between cover plate and fluid level (see table below) are to be understood as a guideline.

This distance ( $h_6$ ) is roughly halved if the fluid temperature rises by approx. 50 K (Kelvin).

Cover plate	Tank	Distance $h_6$ above fluid level approx. (mm)
D 6	B 6	... 15
D 13, D 20	B 13, B 20	... 20
D 30, D 40	B 30, B 40	... 20
D 50...	B 50, B 75	... 30
D 100...	B 100, B 160	... 40
D 250...	B 250, B 400	... 50



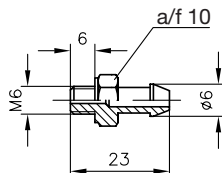
Dimensions  $h_3$  to  $h_5$  are stated in pamphlet D 6010 Z.  
 $h_7 \geq 10$  mm is the safety margin above the screen filter.

**Installation inside the tank**

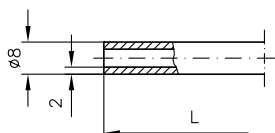
When using your own tank and tank cover plates, replace the bleeder screw at the pump by nipple 6020 070 and install a proper bleeding point at the cover plate, as illustrated below. Both nipples have to be connected via an oil-proof hose (8x2).

**Available bleeder components:**

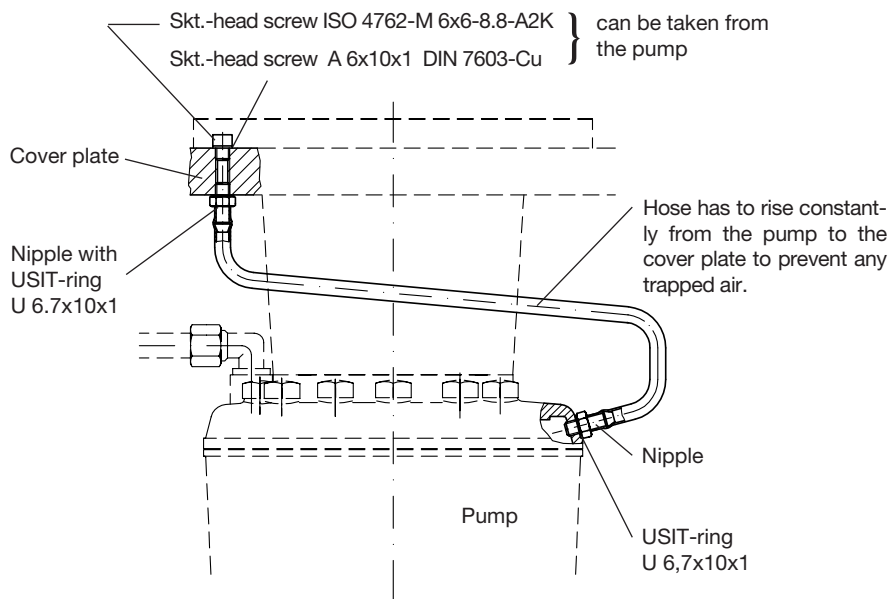
1. Nipple part No. 6020 070



2. Hose (NBR)



Part. No.	Length L
6020 077 a	220
6020 077 b	260
6020 077 c	310
6020 077 d	420
6020 077 e	500



**5.3 Running noise**

There is no significant difference in the running noise between motor pumps acc. to 2.2 and hydraulic power packs acc. to 2.3. The specifications listed in D 6010, sect 5.1 may be taken as guideline for the respective pump (dep. on design and cylinder- Ø).

Design		7631	6010 <sup>1)</sup>	6011	6012	6014	6016
dB(A)	No pressure	55 ... 60	55 ... 63	60 ... 66	63 ... 70	65 ... 75	68 ... 76
	0.5 p <sub>max</sub>	63 ... 66	66 ... 72	72 ... 74	73 ... 76	75 ... 80	77 ... 82
	p <sub>max</sub>	65 ... 68	70 ... 75	73 ... 76	75 ... 78	76 ... 83	82 ... 84

1) 60 to 80 dB(A) for 1- and 2-cylinder pumps

## 6. Appendix

### 6.1 Optional equipment

#### 6.1.1 Fluid level gauge

Order example:

R 1.39 / B6 - K - V 0,55

Basic pump acc. to sect. 2.1 and 2.3

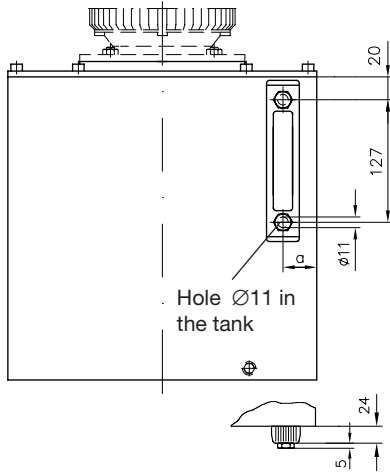


**K** = Standard

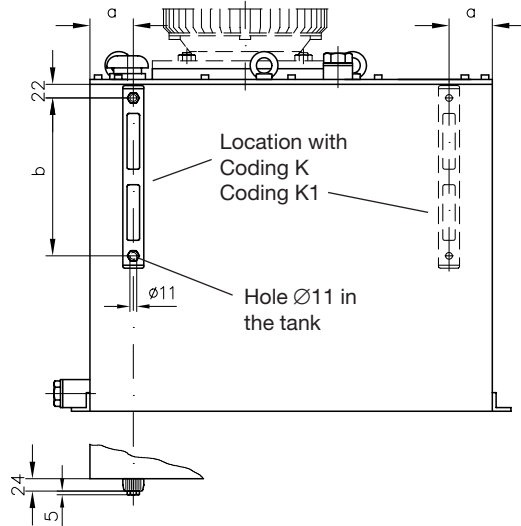
**K1** = Mounted at location 1 (only with tank B50 to 400)

Tank

Type B 6 to B 40



Type B 50 to B 400



For spare part orders:  
STAUFF fluid level gauge  
SNA 127-B-S-0-10 with B 6 to B 30  
SNA 254-B-S-0-10 with B 100 to B 400

Type	B 6	B 13 ... ... B 30	B 40	B 50 B 75	B 100 B 160	B 250 B 400
a	85	95	155	70	70	100
b	---	---	---	127	254	254

#### 6.1.2 Temperature and float switches

Order example:

Version with temperature switch

R 5,8 / B 13 **T 1** - V 0,55 - E/160 Motor voltage 3 ~ 230/400V 50 Hz

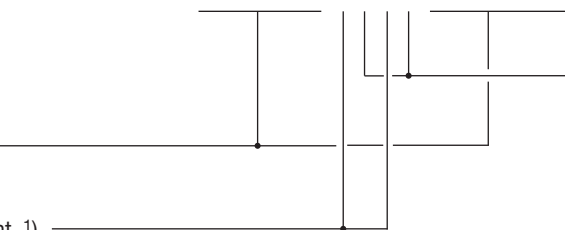
Version with float switch

R 17,0 / B 50 **D** - V 7,5 - A/200 Motor voltage 3 ~ 400V 50 Hz

Version with temperature and float switch (any combination)

R 11,6 / B 75 **D 2 T 3** - V 0,75 - A/315 Motor voltage 3 ~ 230/400V 50 Hz

Basic pump with tank acc. to sect. 2.1 and 2.3



Mounting position (see also dimensional drawings on page 17)



No coding = Standard

**1** = Location 1

**2** = Location 2

**3** = Location 3

**Table 5:** Optional equipment 1)

Coding	Qty.	Switch	Parameters
<b>T</b>	1	Temperature switch 	MICROTHERM-bimetallic switch T10V 80°C ± 5K U112 P102 L510
<b>D</b>	1	Float switch 	Float switch made of PA Float made of NBR Function: NC-contact, when fluid level drops; Power rating 230 V DC / AC 0.5 A 30 VA; Max. perm. temperature 90°C
<b>DD</b>	2		

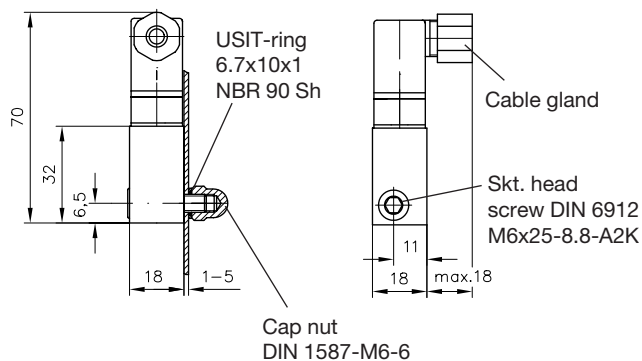
For spare part orders: Temperature switch, part No. 7912 000 Float switch, part No. 7912 300

1) Not available for -AT and -PYD versions

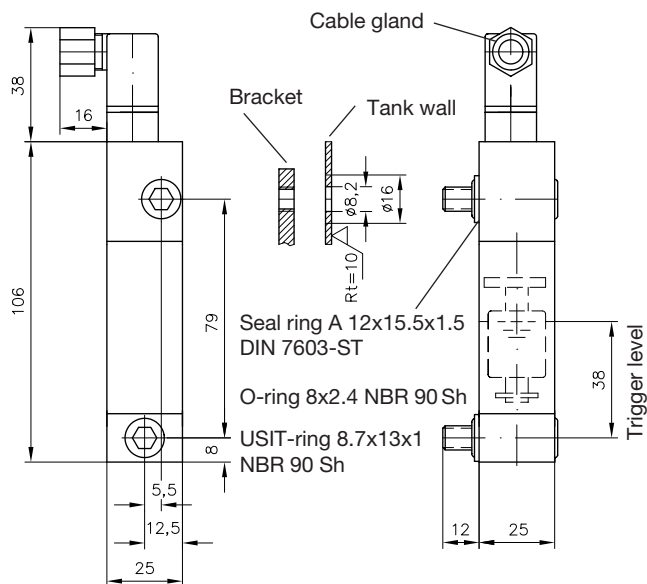


**Unit dimensions** All dimensions in mm, subject to change without notice!

**Temperature switch**

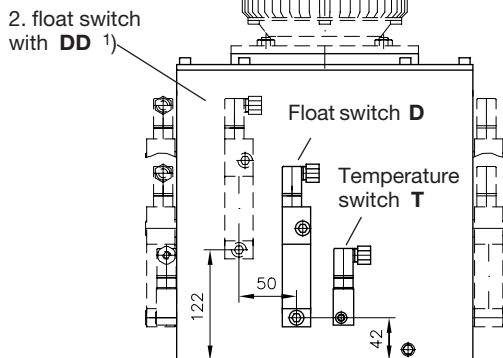


**Float switch**

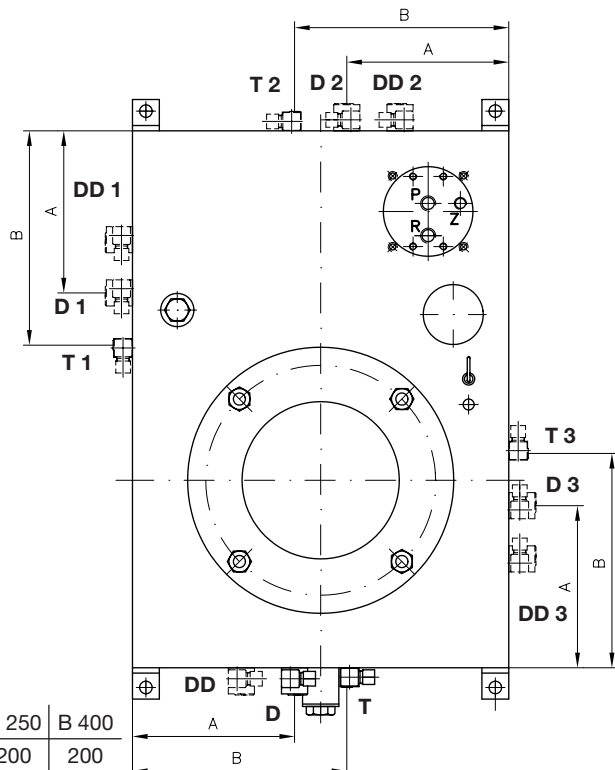
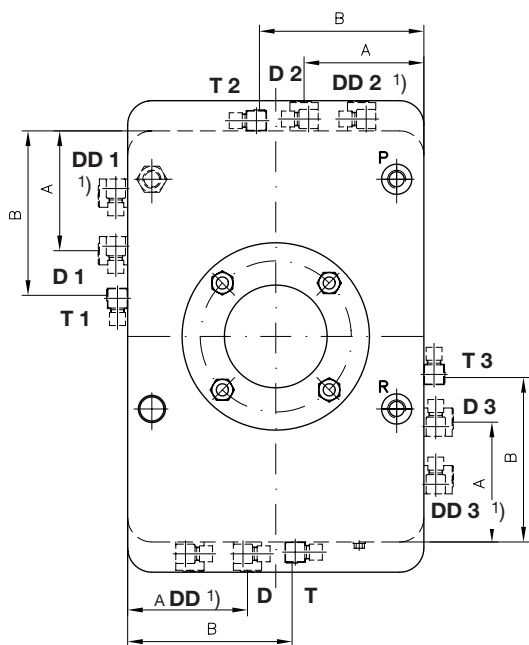
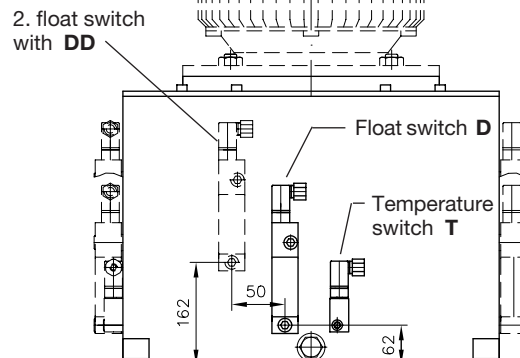


**Mounting position**

With type B6 to 40



With type B 50 to B 400



	B 6	B 13	B 20	B 30	B 40	B 50	B 75	B 100	B 160	B 250	B 400
A	80	100	100	100	160	160	160	160	160	200	200
B	110	220	220	130	190	260	260	340	340	450	450

1) Float switch "DD" only available at type B 6 and B 13 with mounting position 1 (DD 1) and (DD 3)

## 6.2 Accessories for motor pumps and power packs acc. to sect. 2.2 and 2.3

Individual order codings and dimensional drawings

For dimensional drawings of the individual components, see D 6010 Z.

### 6.2.1 Overview

Cross reference table for bell housings (**F.** and **L.**), flex-couplings (**K.**), and intake parts (**S.**) to standard pump/motor/tank-combinations

#### Motor pumps acc. to sect. 2.2

Drive power (kW) (4-pole)	DIN-size	Utilized accessories for R-pump designs acc. to D 6010					
		7631	6010	6011	6012	6014	6016
0.25 and 0.37	71	<b>F 31 K 31</b>	<b>F 31 K 31</b>				
0.55 and 0.75	80	<b>F 41 K 41</b>	<b>F 41 K 41</b>	<b>F 42 K 42</b>			
1.1 and 1.5	90 S (L)	<b>F 41 K 43</b>	<b>F 41 K 43</b>	<b>F 42 K 44</b>			
2.2 and 3	100 L		<b>F 51 K 51</b>	<b>F 52 K 52</b>	<b>F 52 K 52</b>		
	4	112 M					
5.5 and 7.5 (9)	132 S (M)			<b>F 61 KN 61</b>	<b>F 61 KN 61</b>	<b>F 61 KN 62</b>	
11 and 15	160 M (L)				<b>F 71 KN 71</b>	<b>F 71 KN 72</b>	<b>F 73 KN 73</b>
18.5 and 22	180 M (L)					<b>F 71 KN 74</b>	<b>F 73 KN 75</b>
30	200 L						<b>F 81 K 81</b>

#### Power packs acc. to sect. 2.3

Tank and cover plate versions size B6 to 40 and D6 to 40

Drive power (kW) (4-pole)	DIN-size	Utilized accessories depending on tank and cover plate size													
		B 6 and D 6			B 13 and D 13.1			B 20 and D 13.2 (20)			B 30 (40) and D 30 (40)				
		for R-pump designs acc. to D 6010													
		7631	6010	6011	7631	6010	6011	7631	6010	6011	6012	7631	6010	6011	6012
0.25 and 0.37	71	<b>L 32</b> <b>K 35</b> <b>S 319</b>	<b>L 32</b> <b>K 32</b> <b>S 11</b>		<b>L 32</b> <b>K 32</b> <b>S 319</b>	<b>L 32</b> <b>K 32</b> <b>S 11</b>		<b>L 32</b> <b>K 32</b> <b>S 320</b>	<b>L 32</b> <b>K 32</b> <b>S 12</b>			<b>L 32</b> <b>K 32</b> <b>S 320</b>	<b>L 32</b> <b>K 32</b> <b>S 12</b>		
0.55 and 0.75	80	<b>L 41</b> <b>K 41</b> <b>S 319</b>	<b>L 41</b> <b>K 41</b> <b>S 11</b>	<b>L 42</b> <b>K 42</b> <b>S 21</b>	<b>L 41</b> <b>K 41</b> <b>S 319</b>	<b>L 41</b> <b>K 41</b> <b>S 11</b>	<b>L 42</b> <b>K 42</b> <b>S 21</b>	<b>L 41</b> <b>K 41</b> <b>S 320</b>	<b>L 41</b> <b>K 41</b> <b>S 12</b>	<b>L 42</b> <b>K 42</b> <b>S 22</b>		<b>L 41</b> <b>K 41</b> <b>S 320</b>	<b>L 41</b> <b>K 41</b> <b>S 12</b>	<b>L 42</b> <b>K 42</b> <b>S 22</b>	
1.1 and 1.5	90 S (M)	<b>L 41</b> <b>K 43</b> <b>S 319</b>	<b>L 41</b> <b>K 43</b> <b>S 11</b>	<b>L 42</b> <b>K 44</b> <b>S 21</b>	<b>L 41</b> <b>K 43</b> <b>S 319</b>	<b>L 41</b> <b>K 43</b> <b>S 11</b>	<b>L 42</b> <b>K 44</b> <b>S 21</b>	<b>L 41</b> <b>K 43</b> <b>S 320</b>	<b>L 41</b> <b>K 43</b> <b>S 12</b>	<b>L 42</b> <b>K 44</b> <b>S 22</b>		<b>L 41</b> <b>K 43</b> <b>S 320</b>	<b>L 41</b> <b>K 43</b> <b>S 12</b>	<b>L 42</b> <b>K 44</b> <b>S 22</b>	
2.2 and 3 4	100 L 112 M				<b>L 51</b> <b>K 51</b> <b>S 11</b>	<b>L 52</b> <b>K 52</b> <b>S 21</b>		<b>L 51</b> <b>K 51</b> <b>S 12</b>	<b>L 52</b> <b>K 52</b> <b>S 22</b>	<b>L 52</b> <b>K 52</b> <b>S 31</b>		<b>L 51</b> <b>K 51</b> <b>S 12</b>	<b>L 52</b> <b>K 52</b> <b>S 22</b>	<b>L 52</b> <b>K 52</b> <b>S 31</b>	

Tank and cover plate versions size B50 to 400 and D50.1 to 250.2

Drive power (kW) (4-pole)	DIN-size	Utilized accessories depending on tank and cover plate size																					
		B 50 and D 50.1					B 75 and D 50.2					B 100 and D 100.1				B 160 and D 100.2				B 250 and D 250.1		B 400 and D 250.2	
		for R-pump designs acc. to D 6010																					
		7631	6010	6011	6012	7631	6010	6011	6012	6014	6011	6012	6014	6016	6011	6012	6014	6016	6014	6016	6014	6016	
0.25 and 0.37	71	L 32 K 32 S 13	L 32 K 32 S 13			L 32 K 32 S 14	L 32 K 32 S 14																
0.55 and 0.75	80	L 41 K 41 S 13	L 41 K 41 S 13	L 42 K 42 S 22		L 41 K 41 S 14	L 41 K 41 S 14	L 42 K 42 S 23				L 42 K 42 S 24		L 42 K 42 S 25									
1.1 and 1.5	90 S 90 M	L 41 K 43 S 13	L 41 K 43 S 13	L 42 K 44 S 22		L 41 K 43 S 14	L 41 K 43 S 14	L 42 K 44 S 23				L 42 K 44 S 24		L 42 K 44 S 25									
2.2 and 3 4	100 L 112 M		L 51 K 51 S 13	L 53 K 53 S 22	L 53 K 53 S 31		L 51 K 51 S 14	L 53 K 53 S 23	L 53 K 53 S 32			L 52 K 53 S 24	L 53 K 53 S 35		L 52 K 52 S 25	L 53 K 53 S 36							
5.5 and 7.5 (9)	132 S 132 M			L 61 KN 61 S 22	L 61 KN 61 S 31			L 61 KN 61 S 23	L 61 KN 61 S 32	L 61 KN 62 S 41		L 61 KN 70 S 33	L 70 KN 70 S 42		L 61 KN 70 S 34	L 70 KN 70 S 43							
11 and 15	160 M 160 L			L 71 KN 71 S 31				L 71 KN 71 S 32	L 71 KN 72 S 32			L 72 KN 71 S 33	L 72 KN 72 S 42	L 73 KN 73 S 51	L 72 KN 71 S 34	L 72 KN 72 S 43	L 73 KN 73 S 52	L 72 KN 72 S 42	L 73 KN 73 S 51	L 72 KN 72 S 44	L 73 KN 73 S 54		
18.5 and 22	180 M 180 L							L 71 KN 74 S 41				L 72 KN 74 S 42	L 73 KN 75 S 51		L 72 KN 74 S 43	L 72 KN 75 S 52	L 72 KN 74 S 42	L 73 KN 75 S 51	L 72 KN 74 S 44	L 73 KN 75 S 54			
30	200 L																			L 81 K 81 S 51	L 81 K 81 S 54		

Industrial standard 3-phase motors (4-pole)

The coding only informs about the power rating.

The voltage specification and design (IM B 35 or IM B 5) has to be added in uncoded text to the spare part order coding.

IM B 35	Drive power (kW) (4-pole)	DIN-size	Main dimensions (mm)												Mass (weight) approx. (kg) <sup>2)</sup>
			Motor housing			Shaft journal				Motor support					
			Øa <sub>1</sub>	i <sub>2</sub>	k <sup>1)</sup>	d	l	u	t	h	a	b	w <sub>1</sub>	Øs	
	0.25	71	160	30	190 ... 210	14	30	5	16	71	90	112	45	7	5.5 .. 6.4
	0.37														6.8 .. 7.3
	0.55	80	200	40	215 ... 230	19	40	6	21,5	80	100	125	50	9	9
	0.75														10
	1.1	90 S	200	50	240 ... 250	24	50	9	27	90	100	140	56	9	12 .. 14
	1.5	90 L			265 ... 270						125				(10)
	2.2	100 L	250	60	280 ... 320	28	60	8	27	100	140	160	63	12	20 .. 21
	3				315 ... 330										112
	4	112 M	300	80	330 ... 360	38	80	10	41	132	178	216	89	12	28 .. 35
	5.5	132 S			390 ... 400										140
	7.5	132 M	350	110	500 ... 520	42	110	12	45	132	210	254	108	14	60 .. 72
	9 <sup>1)</sup>	(132 M)													500 ... 550
	11	160 M	350	110	500 ... 550	48	110	14	51,5	180	241	279	121	14	80 .. 109
	15	160 L			500 ... 550						241				121
	18.5	180 M	400	110	550 ... 580	55	110	16	59	200	279	318	133	18	115 .. 167
	22	180 L			550 ... 580						279				133
	30	200 L	400	110	620 ... 650	55	110	16	59	200	305	318	133	18	170 .. 244

1) Not standardized; Guideline data for two makes, but substantial are the spec. of the manufacturer! See also DIN 42 673-4 and DIN 42 677-4 (outline dimensions).

2) Guideline data for two makes, but substantial are the spec. of the manufacturer!