

Motor-pump group

Type ABHPG

RE 51175

Edition: 2013-11



motor block

- ▶ With pump type: PGZ
- ▶ Electric motor frame size 90S to 132M
- ▶ Maximum pressure up to 15 bar
- ▶ Maximum flow up to 186 l/min

Features

In the motor-pump groups, electric energy is converted into hydraulic energy.

They have been designed for hydrostatic drives in open circuits.

- ▶ Electric motor design IM B5 (ABHPG)
- ▶ Pump fastened at the electric motor with rigid pump carrier and coupling
- ▶ Low operating noise
- ▶ Versatile possible applications on tank, base frame or separate installation
- ▶ Clear, maintenance-friendly set-up
- ▶ With gerotor pump PGZ (displacement pump)

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Ordering code

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18			
ABHPG	-	GZ	-		R	E	07	V	E4	/			4	5	2	3	/	S	E	

Assembly

01	With motor design B5	ABHPG
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Pump type

02	GZ according to data sheet 10545	GZ
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Frame size

03	4	4
	5	5

Displacement

04	In cm ³ per rotation	...
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Direction of rotation

05	Clockwise	R
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Shaft end version

06	E. g. cylindrical	E
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Suction and pressure port

07	SAE flange connection	07
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Seal material

08	FKM	V
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Mounting flange centering

09	4-hole mounting	E4
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Motor power

10	In kW	...
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Rated voltage

11	230/400 V at 50 Hz (up to 3 kW)	CA
	400/690 V at 50 Hz (from 4 kW)	CB

Number of pole pairs

12	4-pole	4
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Rated frequency

13	50 Hz	5
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Efficiency class

14	IE 2	2
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Motor protection

15	PTC resistor with 3 temperature sensors	3
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Pump carrier design

16	Rigid pump carrier AB 03337	S
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Damping bearing design

17	Elastic damping bearing	E
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Ordering code

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18				
ABHPG	-	GZ				R	E	07	V	E4	/			4	5	2	3	/	S	E	

Motor supplier (e.g.)

18	Hoyer Motors	HOY
	Siemens	SIE
	VEM	VEM

Order example:

ABHPG-GZ4-20RE07VE4/ 1,1CB4523/SE HOY

Set-up of the motor-pump group

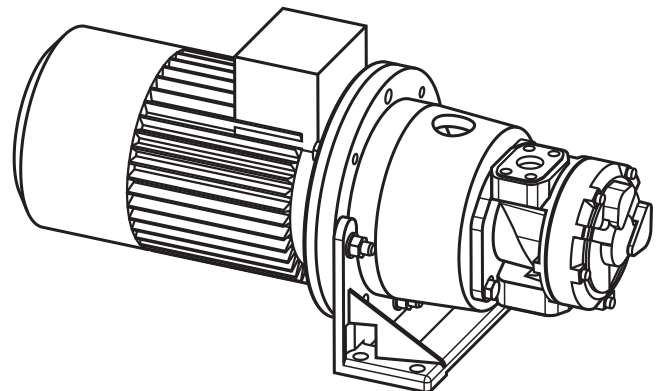
ABHPG design

- ▶ Pump
- ▶ Electric motor
- ▶ Pump carrier (rigid)
- ▶ Coupling
- ▶ Pump base

Use of this design is recommended for restricted installation conditions (e. g. on oil tanks)

Max. performance range 7.5 kW

STEP files of the relevant assemblies on request



Technical data

(For applications outside these parameters, please consult us!)

Line connections	See line connections table on page 9		
Hydraulic fluid	Mineral oil HLP according to DIN 51524; part 2 e.g. with operating temperature 50 °C ISO VG46 DIN ISO 3448 (other fluids on request!) ▶ Please observe our provisions according to data sheet 90220. ▶ Different oil types must not be mixed as this might result in degradation and deterioration of the lubricity. ▶ According to the operating conditions, the fluid must be renewed at certain intervals.		
Pump type	PGZ according to data sheet 10545		
– Direction of rotation	R = clockwise		
Operating pressure, absolute			
– Input	$p_{\min-\max}$	bar	0.7 ... 2 (0.5 for a short time at the start)
– Output	p_{nom}	bar	15
Hydraulic fluid temperature range, observe viscosity range	U		+20 ... +80
– T_{optimal} with HLP 46 (DIN 51524)	U	°C	+40 ... +50
– T_{max} in continuous operation	U	°C	< +65
For start-up at low temperatures a heating can be provided. For cooling, you can either provide an oil/water or an oil/air cooler. See data sheet 50126 (ABUKG) and 50112 (KOL/KOLP).			
Cleanliness classes according to ISO code	Maximum admissible degree of contamination of the hydraulic fluid according to ISO 4406 (c) ¹⁾ . At least cleanliness class 21/18/15		
Viscosity range	U	mm ² /s	10 ... 2000 (see data sheet 10213)
Electric motor	– Motor type		Three-phase asynchronous motor
	– Efficiency class		IE2
	– Number of pole pairs		4
	– Voltage according to IEC 38U		V
	– Speed		$n \text{ min}^{-1}$
	– Protection class		IP
	– Installation position		Horizontal
Surface treatment	By default, all steel components and components are at least provided with temporary corrosion protection (e.g. for transport).		

¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the life cycle of the components.

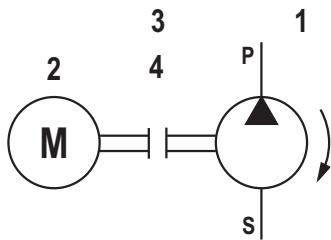
For selecting the filters, see data sheet 51501.

 **Notice!**

For assembly, commissioning and maintenance of hydraulic systems please observe the data sheet 07900. The motor-pump group is constructed and manufactured in accordance with the harmonized EN standards/specifications.

Circuit diagrams

Gerotor pump PGZ



- 1 Gerotor pump PGZ
- 2 Electric motor
- 3 Pump carrier (rigid)
- 4 Coupling

Standard program incl. preferred types ABHPG-PGZ

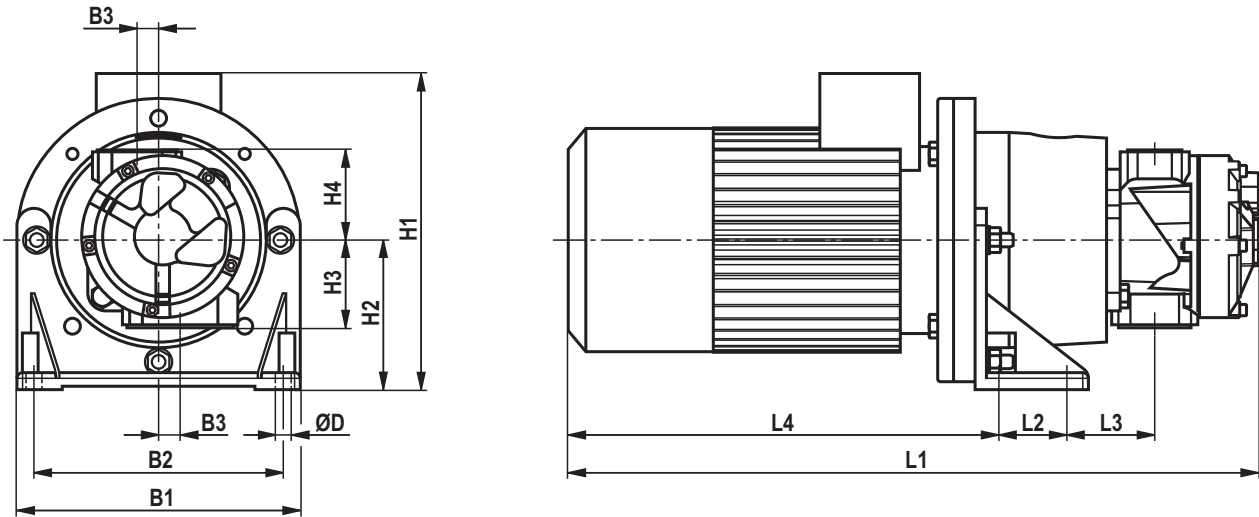
Frequency	50 Hz		50 Hz	Electric motor	ABHPG material no. (motor B5)					
	1450 min ⁻¹		1450 min ⁻¹		HOYER MOTORS	MKZ ¹⁾	VEM	MKZ ¹⁾	SIEMENS	MKZ ¹⁾
Pump	q_v max. in l/min	$p_{max.}$ in bar	Power in kW	Frame size						
PGZ 20	28	9	1.10	90S	R901371809	A3	R901371811	A3	R901371810	A3
		15	1.50	90L	R901346901	A3	R901371813	A3	R901371812	A3
PGZ 32	46	10	1.50	90L	R901371815	A3	R901371817	A3	R901371816	A3
		15	2.20	100L	R901371818	A3	R901371821	A3	R901371820	A3
PGZ 40	58	8	1.50	90L	R901371822	A3	R901371824	A3	R901371823	A3
		14	2.20	100L	R901371825	A3	R901371827	A3	R901371826	A3
		15	3.00	100L	R901371828	A3	R901371830	A3	R901371829	A3
PGZ 50	71	7	1.50	90L	R901371831	A3	R901371833	A3	R901371832	A3
		12	2.20	100L	R901371834	A3	R901371836	A3	R901371835	A3
		15	3.00	100L	R901371837	A3	R901371839	A3	R901371838	A3
PGZ 63	88	9	2.20	100L	R901314152	A3	R901371841	A3	R901371840	A3
		14	3.00	100L	R901371843	A3	R901371845	A3	R901371844	A3
		15	4.00	112M	R901371846	A3	R901371848	A3	R901371847	A3
PGZ 80	116	6	2.20	100L	R901371849	A3	R901371851	A3	R901371850	A3
		10	3.00	100L	R901371852	A3	R901371854	A3	R901371853	A3
		14	4.00	122M	R901371855	A3	R901371857	A3	R901371856	A3
		15	5.50	132S	R901371858	A3	R901371860	A3	R901371859	A3
PGZ 100	144	7	3.00	100L	R901371861	A3	R901371863	A3	R901371862	A3
		11	4.00	112M	R901371864	A3	R901371866	A3	R901371865	A3
		15	5.50	132S	R901371867	A3	R901371869	A3	R901371868	A3
PGZ 140	186	7	4.00	112M	R901371870	A3	R901371874	A3	R901371871	A3
		11	5.50	132S	R901371875	A3	R901371878	A3	R901371876	A3
		15	7.50	132M	R901371879	A3	R901371881	A3	R901371880	A3

¹⁾ MKZ = material mark

A3 = standard delivery range

Unit dimensions see page 6 ... 8

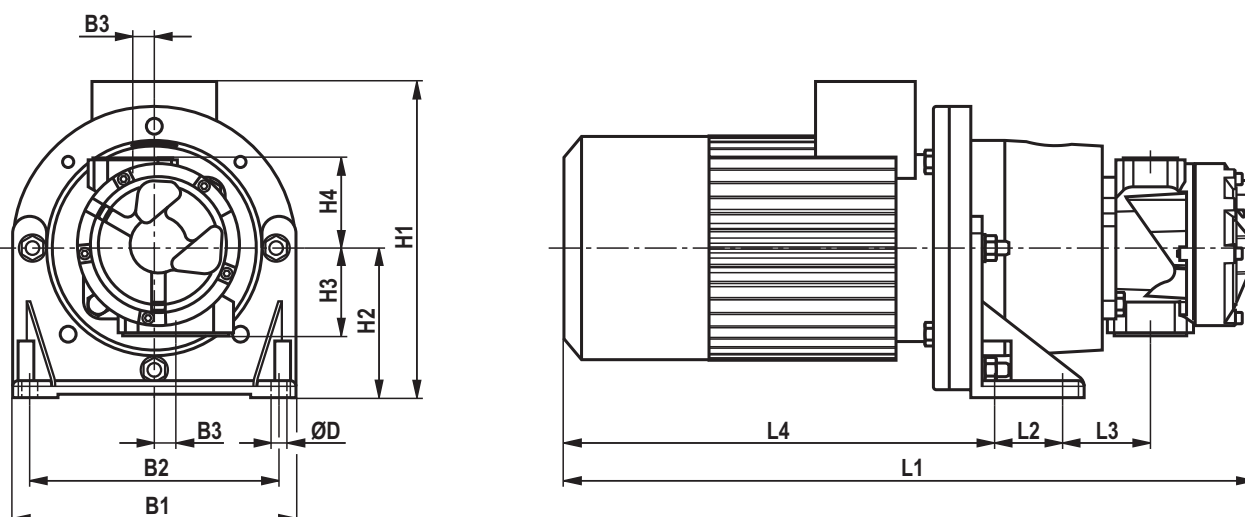
Unit dimensions: Type ABHPG-PGZ (motor supplier HOYER-MOTORS)
(dimensions in mm)



ABHPG-PGZ with motor supplier HOYER-MOTORS

Pump Frame size	Electric motor Size	kW	Frame size	Dimensions													Weight in kg	
				B1	B2	B3	B4	ØD	H1	H2	H3	H4	L1	L2	L3	L4		L5
PGZ4	20	1.10	90S	210.0	180.0	19.0	19.0	11.0	244.0	112.0	77.4	79.6	525.5	60.0	86.5	305.0	86.5	26
		1.50	90L	210.0	180.0	19.0	19.0	11.0	244.0	112.0	77.4	79.6	551.5	60.0	86.5	331.0	86.5	29
PGZ4	32	1.50	90L	210.0	180.0	19.0	19.0	11.0	244.0	112.0	77.4	79.6	556.5	60.0	86.5	331.0	86.5	29
		2.20	100L	250.0	220.0	19.0	19.0	14.0	279.0	132.0	77.4	79.6	596.5	60.0	77.5	380.0	77.5	37
PGZ4	40	1.50	90L	210.0	180.0	19.0	19.0	11.0	244.0	112.0	77.4	79.6	560.0	60.0	86.5	331.0	86.5	30
		2.20	100L	250.0	220.0	19.0	19.0	14.0	279.0	132.0	77.4	79.6	600.0	60.0	77.5	380.0	77.5	37
		3.00	100L	250.0	220.0	19.0	19.0	14.0	279.0	132.0	77.4	79.6	600.0	60.0	77.5	380.0	77.5	42
PGZ4	50	1.50	90L	210.0	180.0	19.0	19.0	11.0	244.0	112.0	77.4	79.6	564.0	60.0	86.5	331.0	86.5	30
		2.20	100L	250.0	220.0	19.0	19.0	14.0	279.0	132.0	77.4	79.6	604.0	60.0	77.5	380.0	77.5	38
		3.00	100L	250.0	220.0	19.0	19.0	14.0	279.0	132.0	77.4	79.6	604.0	60.0	77.5	380.0	77.5	42
PGZ4	63	2.20	100L	250.0	220.0	19.0	19.0	14.0	279.0	132.0	77.4	79.6	609.0	60.0	77.5	380.0	77.5	38
		3.00	100L	250.0	220.0	19.0	19.0	14.0	279.0	132.0	77.4	79.6	609.0	60.0	77.5	380.0	77.5	42
		4.00	112M	250.0	220.0	19.0	19.0	14.0	301.0	132.0	77.4	79.6	603.0	60.0	77.5	374.0	77.5	49
PGZ4	80	2.20	100L	250.0	220.0	19.0	19.0	14.0	279.0	132.0	77.4	79.6	617.0	60.0	77.5	380.0	77.5	39
		3.00	100L	250.0	220.0	19.0	19.0	14.0	279.0	132.0	77.4	79.6	617.0	60.0	77.5	380.0	77.5	43
		4.00	112M	250.0	220.0	19.0	19.0	14.0	301.0	132.0	77.4	79.6	611.0	60.0	77.5	374.0	77.5	50
		5.50	132S	290.0	260.0	19.0	19.0	14.0	348.0	160.0	77.4	79.6	679.0	80.0	77.5	422.0	77.5	67
PGZ5	100	3.00	100L	250.0	220.0	19.0	19.0	14.0	279.0	132.0	72.9	76.1	625.5	60.0	83.5	380.0	77.5	44
		4.00	112M	250.0	220.0	19.0	19.0	14.0	301.0	132.0	72.9	76.1	619.5	60.0	83.5	374.0	77.5	50
		5.50	132S	290.0	260.0	19.0	19.0	14.0	348.0	160.0	72.9	76.1	687.5	80.0	83.5	422.0	77.5	67
PGZ5	140	4.00	112M	250.0	220.0	19.0	19.0	14.0	301.0	132.0	72.9	76.1	632.0	60.0	83.5	374.0	77.5	52
		5.50	132S	290.0	260.0	19.0	19.0	14.0	348.0	160.0	72.9	76.1	700.0	80.0	83.5	422.0	77.5	69
		7.50	132M	290.0	260.0	19.0	19.0	14.0	348.0	160.0	72.9	76.1	763.0	80.0	83.5	485.0	77.5	80

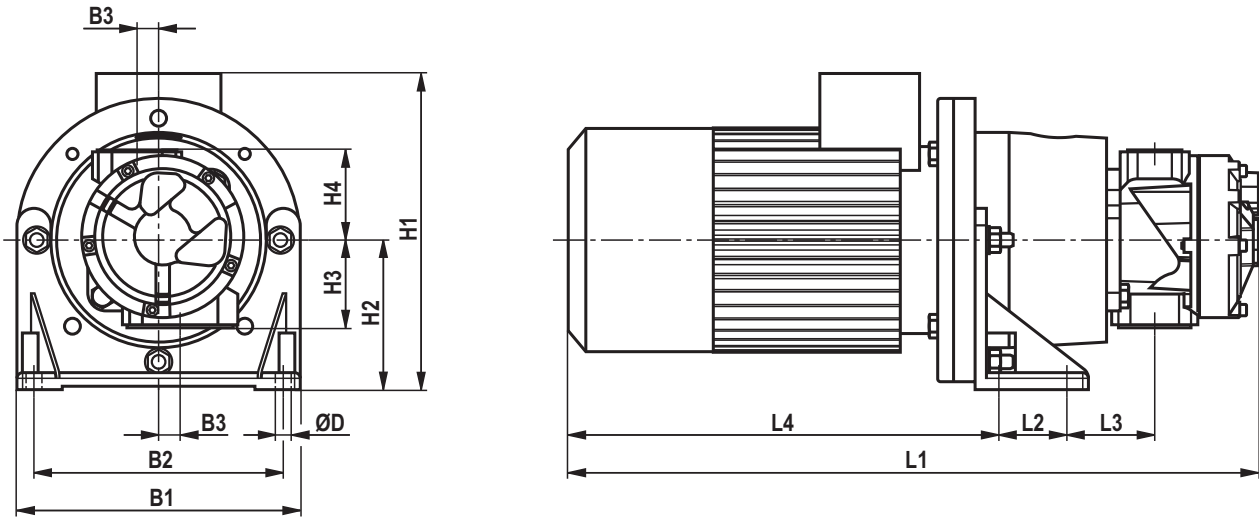
Unit dimensions: Type ABHPG-PGZ (motor supplier VEM) (dimensions in mm)



ABHPG-PGZ with motor supplier VEM

Pump		Electric motor		Dimensions														Weight in kg
Frame size	Size	kW	Frame size	B1	B2	B3	B4	ØD	H1	H2	H3	H4	L1	L2	L3	L4	L5	
PGZ4	20	1.10	90S	210.0	180.0	19.0	19.0	11.0	240.0	112.0	77.4	79.6	511.5	60.0	86.5	291.0	86.5	34
		1.50	90L	210.0	180.0	19.0	19.0	11.0	232.0	112.0	77.4	79.6	552.5	60.0	86.5	332.0	86.5	33
PGZ4	32	1.50	90L	210.0	180.0	19.0	19.0	11.0	232.0	112.0	77.4	79.6	557.5	60.0	86.5	332.0	86.5	34
		2.20	100L	250.0	220.0	19.0	19.0	14.0	269.0	132.0	77.4	79.6	588.5	60.0	77.5	372.0	77.5	47
PGZ4	40	1.50	90L	210.0	180.0	19.0	19.0	11.0	232.0	112.0	77.4	79.6	561.0	60.0	86.5	332.0	86.5	34
		2.20	100L	250.0	220.0	19.0	19.0	14.0	269.0	132.0	77.4	79.6	592.0	60.0	77.5	372.0	77.5	47
		3.00	100L	250.0	220.0	19.0	19.0	14.0	268.0	132.0	77.4	79.6	621.0	60.0	77.5	401.0	77.5	56
PGZ4	50	1.50	90L	210.0	180.0	19.0	19.0	11.0	232.0	112.0	77.4	79.6	565.0	60.0	86.5	332.0	86.5	35
		2.20	100L	250.0	220.0	19.0	19.0	14.0	269.0	132.0	77.4	79.6	596.0	60.0	77.5	372.0	77.5	48
		3.00	100L	250.0	220.0	19.0	19.0	14.0	268.0	132.0	77.4	79.6	625.0	60.0	77.5	401.0	77.5	57
PGZ4	63	2.20	100L	250.0	220.0	19.0	19.0	14.0	269.0	132.0	77.4	79.6	601.0	60.0	77.5	372.0	77.5	48
		3.00	100L	250.0	220.0	19.0	19.0	14.0	268.0	132.0	77.4	79.6	630.0	60.0	77.5	401.0	77.5	57
		4.00	112M	250.0	220.0	19.0	19.0	14.0	310.0	132.0	77.4	79.6	668.0	60.0	77.5	439.0	77.5	65
PGZ4	80	2.20	100L	250.0	220.0	19.0	19.0	14.0	269.0	132.0	77.4	79.6	609.0	60.0	77.5	372.0	77.5	49
		3.00	100L	250.0	220.0	19.0	19.0	14.0	268.0	132.0	77.4	79.6	638.0	60.0	77.5	401.0	77.5	58
		4.00	112M	250.0	220.0	19.0	19.0	14.0	310.0	132.0	77.4	79.6	676.0	60.0	77.5	439.0	77.5	66
		5.50	132S	290.0	260.0	19.0	19.0	14.0	359.0	160.0	77.4	79.6	746.0	80.0	77.5	489.0	77.5	106
PGZ5	100	3.00	100L	250.0	220.0	19.0	19.0	14.0	268.0	132.0	72.9	76.1	646.5	60.0	83.5	401.0	77.5	58
		4.00	112M	250.0	220.0	19.0	19.0	14.0	310.0	132.0	72.9	76.1	684.5	60.0	83.5	439.0	77.5	66
		5.50	132S	290.0	260.0	19.0	19.0	14.0	359.0	160.0	72.9	76.1	754.5	80.0	83.5	489.0	77.5	106
PGZ5	140	4.00	112M	250.0	220.0	19.0	19.0	14.0	310.0	132.0	72.9	76.1	697.0	60.0	83.5	439.0	77.5	68
		5.50	132S	290.0	260.0	19.0	19.0	14.0	359.0	160.0	72.9	76.1	767.0	80.0	83.5	489.0	77.5	108
		7.50	132M	290.0	260.0	19.0	19.0	14.0	359.0	160.0	72.9	76.1	767.0	80.0	83.5	489.0	77.5	110

Unit dimensions: Type ABHPG-PGZ (motor supplier SIEMENS)
(dimensions in mm)



ABHPG-PGZ with motor supplier SIEMENS

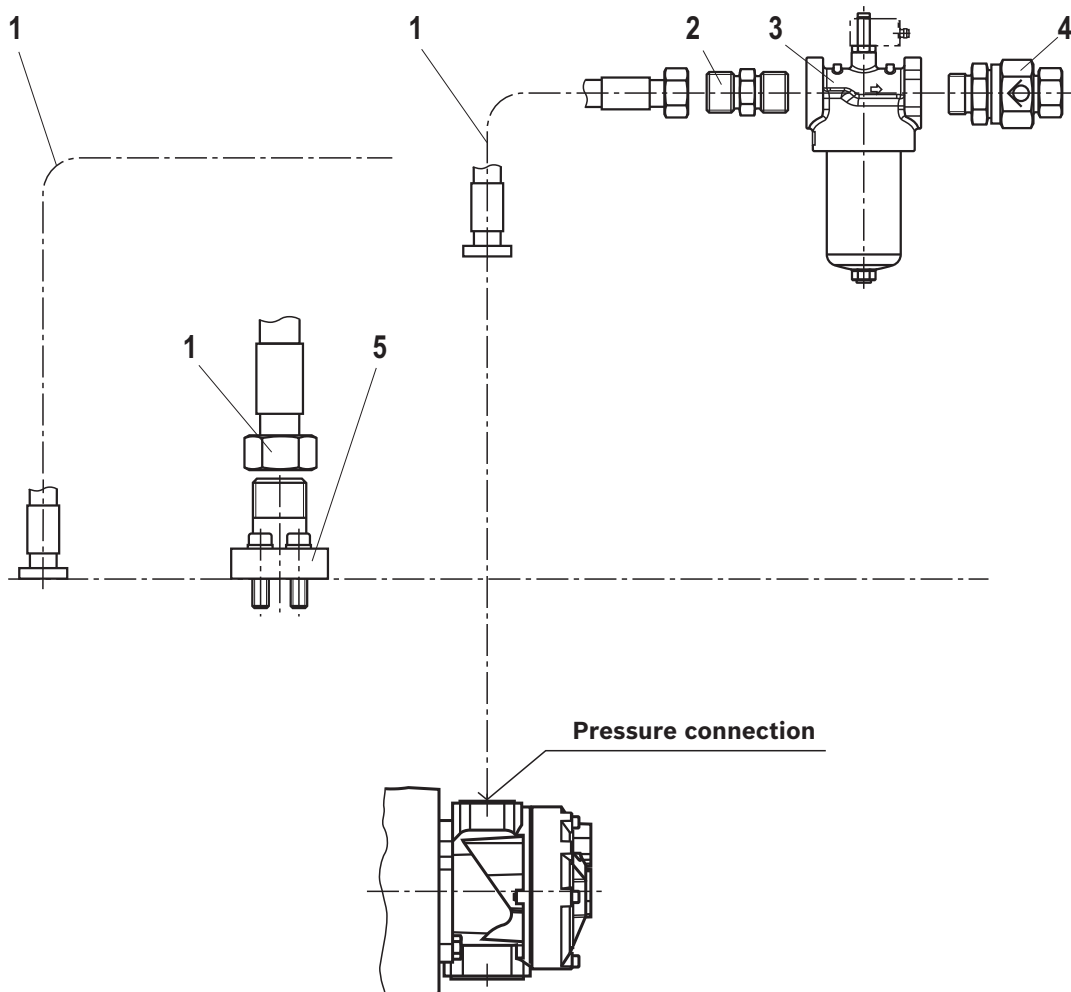
Pump		Electric motor		Dimensions													Weight in kg	
Frame size	Size	kW	Frame size	B1	B2	B3	B4	ØD	H1	H2	H3	H4	L1	L2	L3	L4		L5
PGZ4	20	1.10	90S	210.0	180.0	19.0	19.0	11.0	259.0	112.0	77.4	79.6	521.5	60.0	86.5	301.0	86.5	23
		1.50	90L	210.0	180.0	19.0	19.0	11.0	240.0	112.0	77.4	79.6	548.5	60.0	86.5	328.0	86.5	25
PGZ4	32	1.50	90L	210.0	180.0	19.0	19.0	11.0	240.0	112.0	77.4	79.6	553.5	60.0	86.5	328.0	86.5	26
		2.20	100L	250.0	220.0	19.0	19.0	14.0	298.0	132.0	77.4	79.6	592.5	60.0	77.5	376.0	77.5	33
PGZ4	40	1.50	90L	210.0	180.0	19.0	19.0	11.0	240.0	112.0	77.4	79.6	557.0	60.0	86.5	328.0	86.5	26
		2.20	100L	250.0	220.0	19.0	19.0	14.0	298.0	132.0	77.4	79.6	596.0	60.0	77.5	376.0	77.5	33
		3.00	100L	250.0	220.0	19.0	19.0	14.0	298.0	132.0	77.4	79.6	596.0	60.0	77.5	376.0	77.5	36
PGZ4	50	1.50	90L	210.0	180.0	19.0	19.0	11.0	240.0	112.0	77.4	79.6	561.0	60.0	86.5	328.0	86.5	27
		2.20	100L	250.0	220.0	19.0	19.0	14.0	298.0	132.0	77.4	79.6	600.0	60.0	77.5	376.0	77.5	34
		3.00	100L	250.0	220.0	19.0	19.0	14.0	298.0	132.0	77.4	79.6	600.0	60.0	77.5	376.0	77.5	37
PGZ4	63	2.20	100L	250.0	220.0	19.0	19.0	14.0	298.0	132.0	77.4	79.6	605.0	60.0	77.5	376.0	77.5	34
		3.00	100L	250.0	220.0	19.0	19.0	14.0	298.0	132.0	77.4	79.6	605.0	60.0	77.5	376.0	77.5	37
		4.00	112M	250.0	220.0	19.0	19.0	14.0	309.0	132.0	77.4	79.6	598.0	60.0	77.5	369.0	77.5	41
PGZ4	80	2.20	100L	250.0	220.0	19.0	19.0	14.0	298.0	132.0	77.4	79.6	613.0	60.0	77.5	376.0	77.5	35
		3.00	100L	250.0	220.0	19.0	19.0	14.0	298.0	132.0	77.4	79.6	613.0	60.0	77.5	376.0	77.5	38
		4.00	112M	250.0	220.0	19.0	19.0	14.0	309.0	132.0	77.4	79.6	606.0	60.0	77.5	369.0	77.5	42
		5.50	132S	290.0	260.0	19.0	19.0	14.0	362.0	160.0	77.4	79.6	682.0	80.0	77.5	425.0	77.5	64
PGZ5	100	3.00	100L	250.0	220.0	19.0	19.0	14.0	298.0	132.0	72.9	76.1	621.5	60.0	83.5	376.0	77.5	38
		4.00	112M	250.0	220.0	19.0	19.0	14.0	309.0	132.0	72.9	76.1	614.5	60.0	83.5	369.0	77.5	42
		5.50	132S	290.0	260.0	19.0	19.0	14.0	362.0	160.0	72.9	76.1	690.5	80.0	83.5	425.0	77.5	64
PGZ5	140	4.00	112M	250.0	220.0	19.0	19.0	14.0	309.0	132.0	72.9	76.1	627.0	60.0	83.5	369.0	77.5	44
		5.50	132S	290.0	260.0	19.0	19.0	14.0	362.0	160.0	72.9	76.1	703.0	80.0	83.5	425.0	77.5	66
		7.50	132M	290.0	260.0	19.0	19.0	14.0	362.0	160.0	72.9	76.1	703.0	80.0	83.5	425.0	77.5	78

Line connections

Pump type	Line connections	
	Pressure connection P	Suction port S
PGZ4-1X	DIN ISO 6162-1 SAE 1 1/2" ¹⁾	DIN ISO 6162-1 SAE 1 1/2" ¹⁾
PGZ5-1X	DIN ISO 6162-1 SAE 2" ¹⁾	DIN ISO 6162-1 SAE 2" ¹⁾

¹⁾ Standard pressure SAE flange figure with metric mounting screws

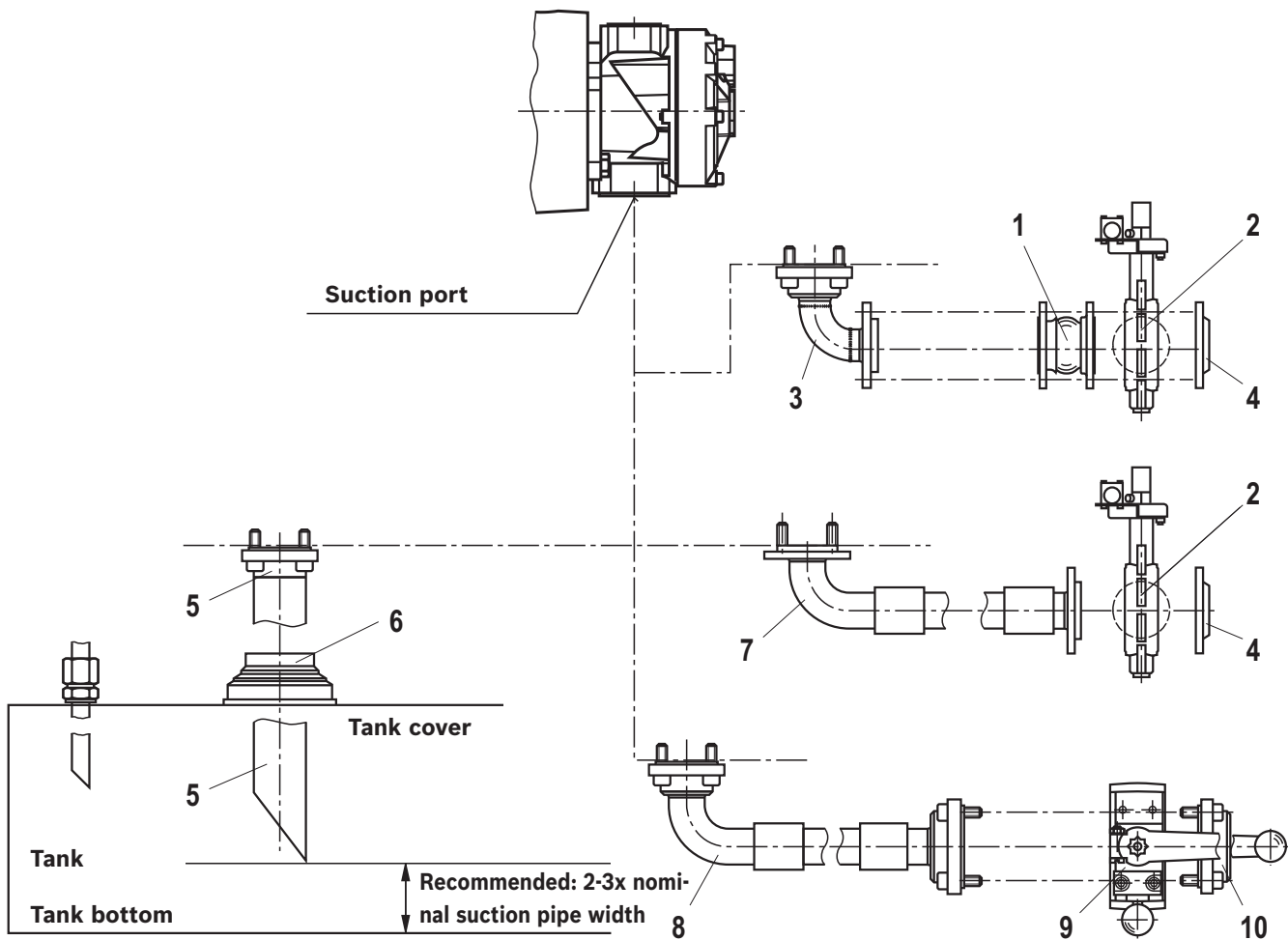
Optional accessories at the pressure connection



- 1 Hose line AB 02314, AB 02316
- 2 Fitting AB 02012
- 3 Inline filter data sheet 51421; 51422
- 4 Check valve AB 02112
- 5 SAE flange AB 02214

Items 1 to 5 as optional accessories upon request.
All figures are examples.

Optional accessories at the suction port



- 1 Compensator DIN AB 02231
- 2 Shut-off valve DIN AB 02129
- 3 Flange bend SAE-DIN AB 02229
- 4 DIN flange AB 02204
- 5 Suction pipe AB 02303
- 6 Elastic pipe fitting AB 01203
- 7 Suction tube SAE-DIN AB 02315

- 8 Suction tube SAE-SAE AB 02315
- 9 Shut-off valve SAE (on request)
- 10 SAE flange AB 02215

Items 1 to 10 as optional accessories upon request.
All figures are examples.

Installation information

Fluid tank

- ▶ Adjust useful volume of the tank to the operating conditions.
- ▶ The admissible fluid temperature must not be exceeded; use coolers, if necessary.
- ▶ Suction and return line are to be designed so that the largest distance possible between these two lines is guaranteed. Return fluid must not be directly sucked in again.
- ▶ The return flow exit must always be below the oil level.

Lines and connections

- ▶ Remove the protective plug at the pump.
- ▶ Select the inner width of the pipes according to the connections.
- ▶ Pipelines and fittings must be carefully cleaned before assembly.
Observe the installation information of the manufacturers.
- ▶ Ensure tight assembly of the pipelines.

Filtration of the hydraulic fluid

- ▶ The finer the filtration, the better the achieved cleanliness class of the hydraulic fluid, the longer the life cycle (for cleanliness classes see page 4).

Hydraulic fluid

- ▶ Please observe the notice according to data sheet 90220 and 90223.
- ▶ Brand-name hydraulic oils are recommended. In order to guarantee functional safety, at least cleanliness class 20/18/15 in accordance with ISO 4406 is necessary.
- ▶ Different oil types must not be mixed as this might result in degradation and deterioration of the lubricity.
- ▶ We recommend checking the hydraulic fluid at regular intervals by means of an oil analysis. The measures resulting therefrom are to be implemented.

Commissioning, maintenance and operating instructions

In this connection, please observe the instructions contained in the following documents:

- ▶ Data sheet 07009
- ▶ Data sheet 07009-MON
- ▶ Data sheet 10515
- ▶ Data sheet 10522

Legal provisions

- ▶ In Germany, the Ordinance on Industrial Safety and Health (BetrSichV) applies.
- ▶ The EU Regulation 640/2009 on the environmentally friendly design of electric motors.

Notice pursuant to the EC Machinery Directive 2006/42/EC, according to appendix II part 1, section A, manufacturer's declaration:

- ▶ The assemblies were manufactured in accordance with the harmonized standards DIN EN ISO 4413, DIN EN ISO 12100 and DIN EN 60204-1.
- ▶ Commissioning is prohibited until it was confirmed that the machine into which the assemblies are to be integrated complies with the regulations laid down in the EC Directives.

Installation position

- ▶ Horizontal according to the dimensional drawing. Deviating designs only after coordination with the manufacturer.
- ▶ Exclusive use in stationary systems.

Notes

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