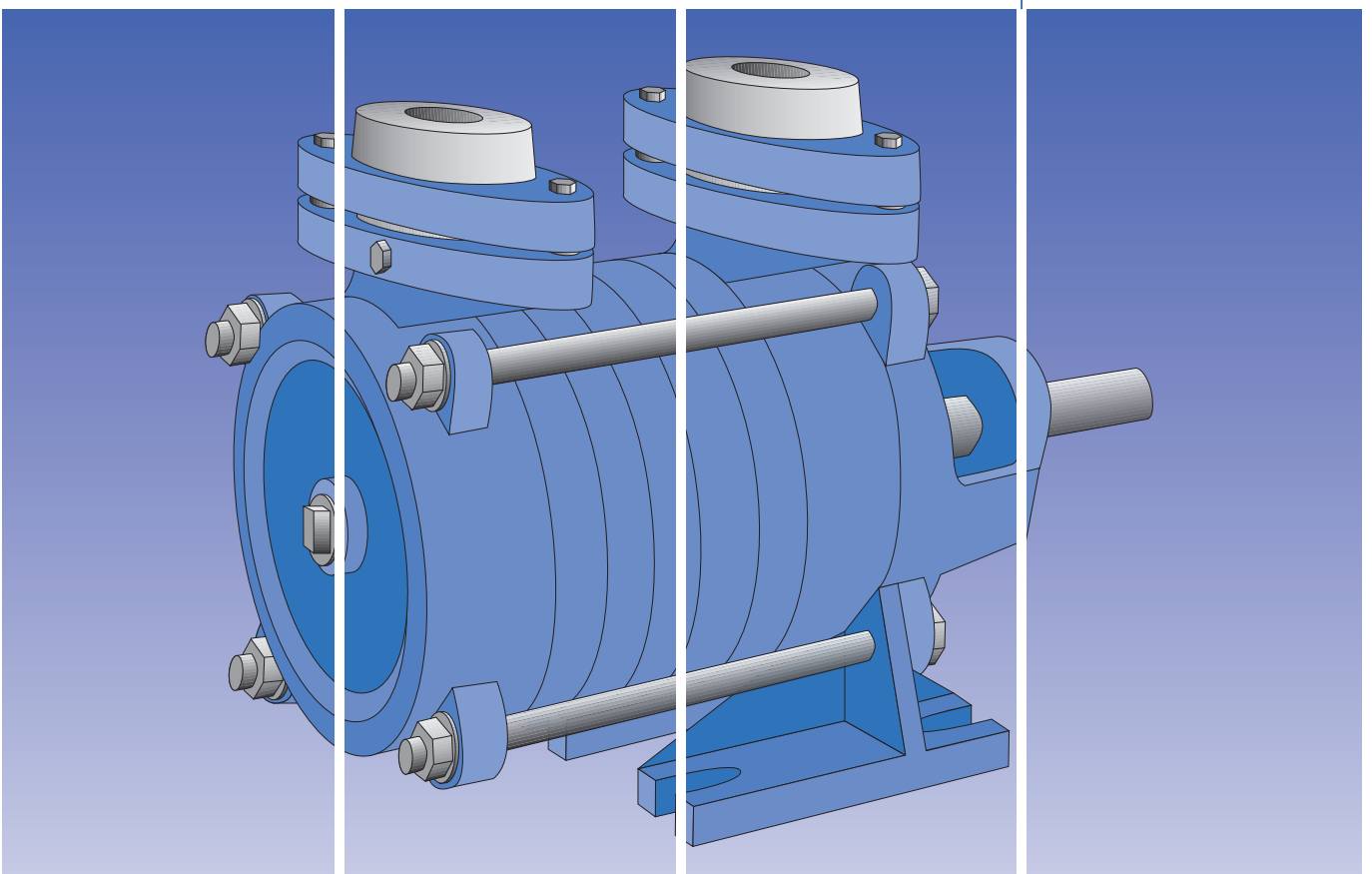


Side channel pumps PN 16

Self-priming centrifugal pumps

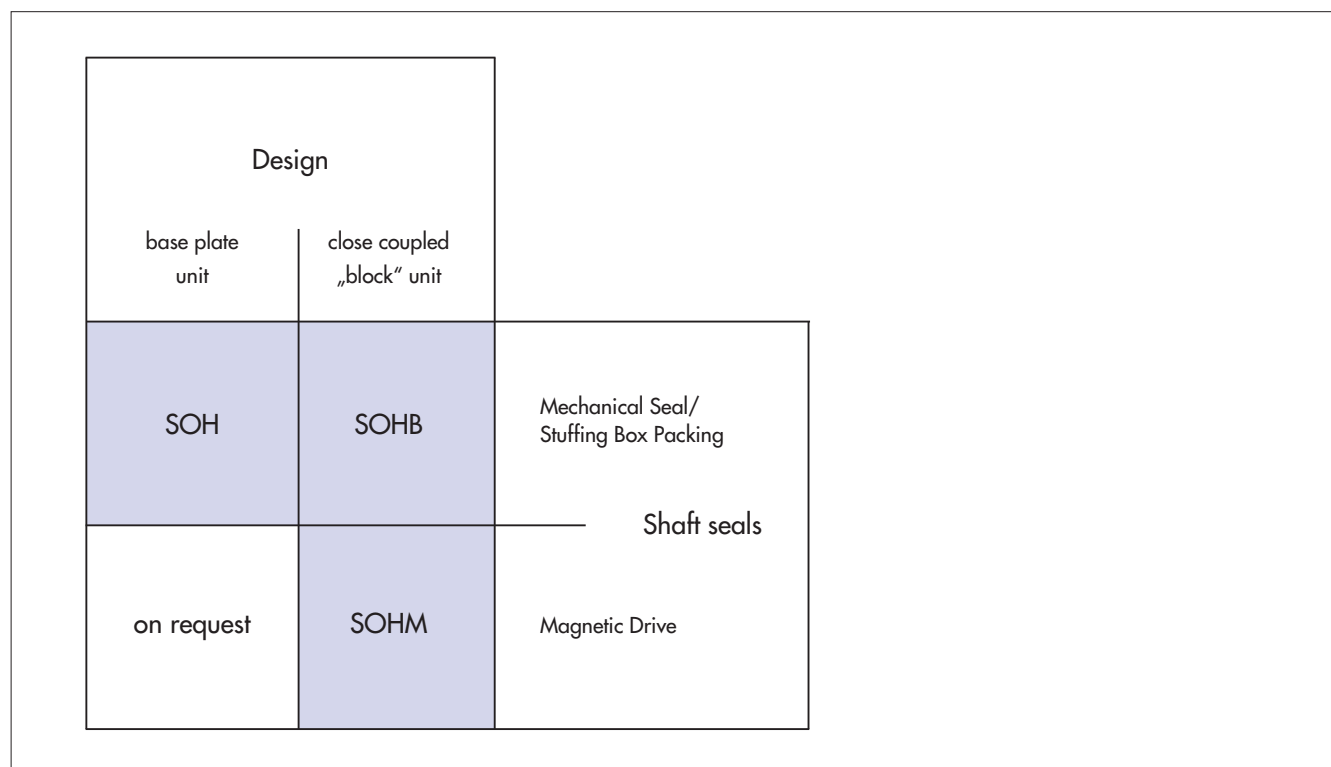
SOH - SOHB - SOHM



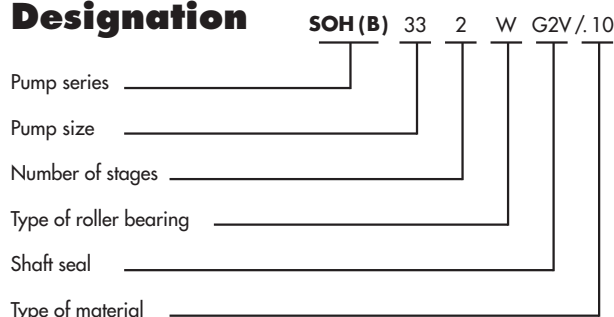
Technical description

**ATEX
certified**

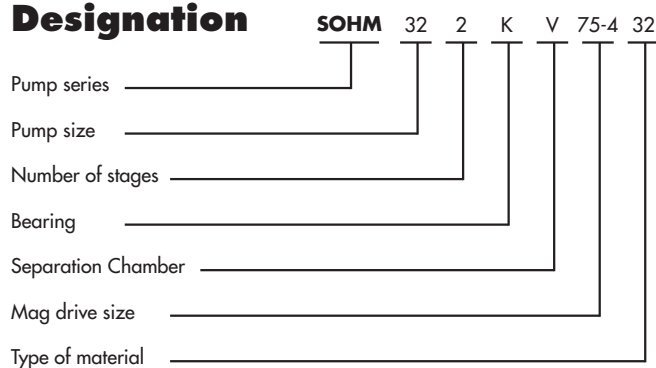
The SOH side channel pump models are available in a variety of designs.



Designation



Designation



Design

Horizontal, transversely divided, self-priming, gas-entraining, side-channel pump - single-stage or multistage. SOH in baseplate construction - SOHB in block design - SOHM with magnetic drive.

Fields of application

The pumps can be used wherever a **self-priming** pump is required.

Clear or cloudy **liquids** of all types can be pumped, provided that they **contain no abrasives**.

The pumps are also used for **boosting pressure**.

Industries

- Apparatus engineering
- Chemical and petrochemical industries
- Process engineering
- Mechanical engineering
- Ship-building
- Agriculture and domestic engineering through to
- Irrigation
- Watering and drainage

Media pumped:

- Distillate
- Distilled water
- Fuel oil
- Boiler feed water
- Hydrocarbons
- Fuels
- Alkalies
- Solvents
- Acids
- Lubricants
- Drinking water
- Refrigerants

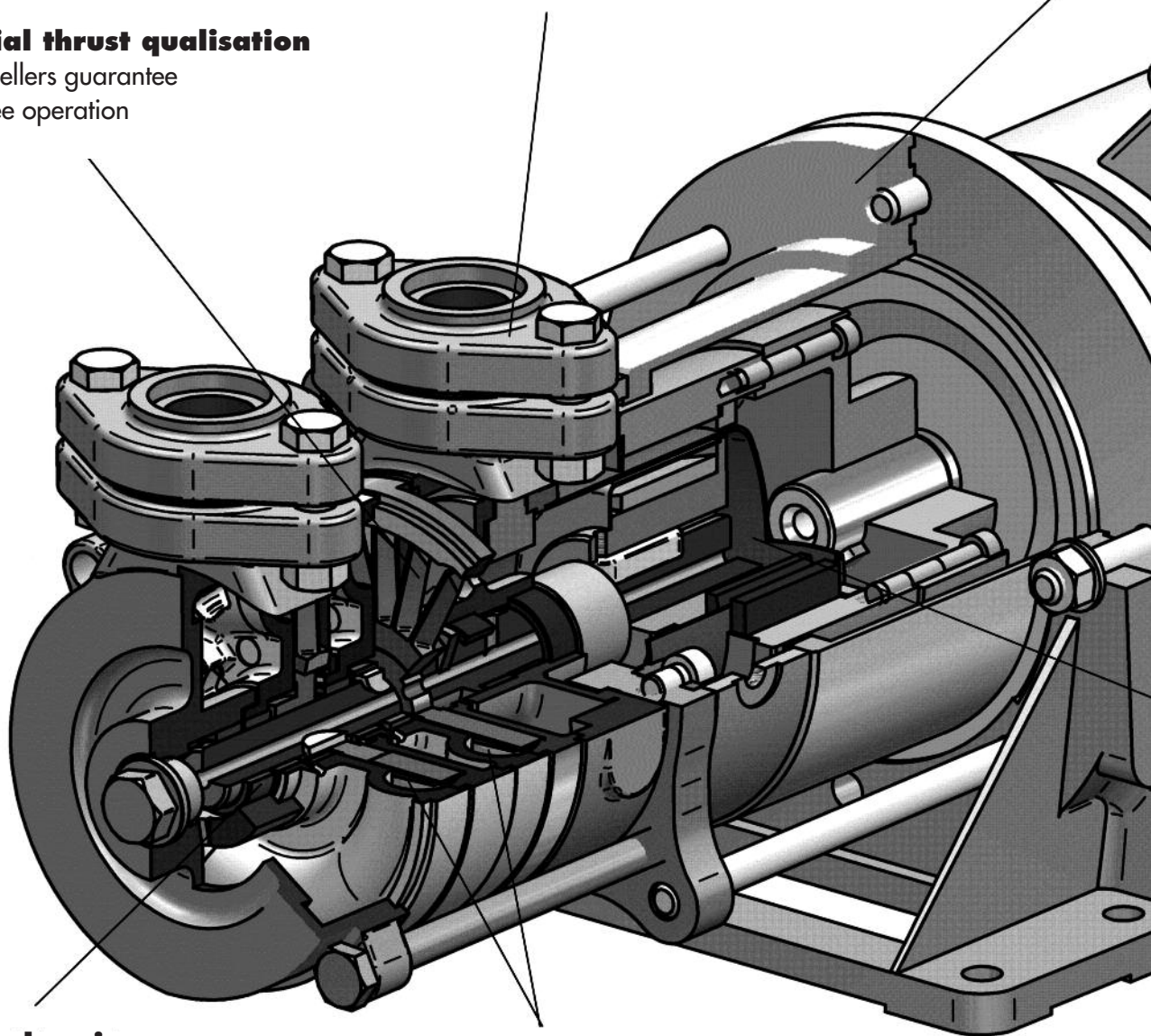
Advantages SOHM

Oval flange PN 16

Oval light construction flanges guarantee security at good value

Hydraulic axial thrust qualisation

Self centering impellers guarantee a maintenance free operation



Blockage safe bearings

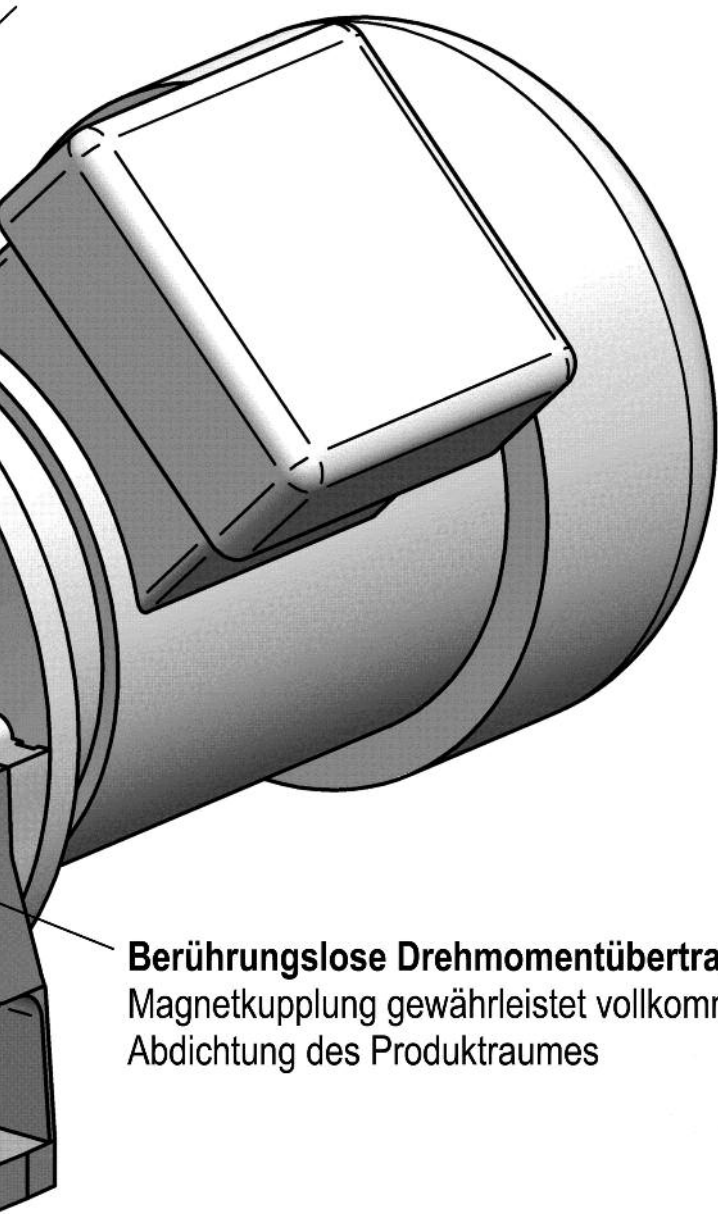
Liquid lubricated bearing bushings guarantee high operation reliability

Side Channel Stages

With open star impellers guarantees a high self priming ability and a delivery of gaseous liquids

Compact design

Space saving bloc design guarantees an optimal alignment of the motor



Berührungslose Drehmomentübertragung
Magnetkupplung gewährleistet vollkommene
Abdichtung des Produktraumes

Operating data

Nominal diameter:	1" - 1 1/2"
Flow rate:	0.3 - 7.5 m ³ /h
Pump head:	5 - 155 m
Speed:	up to 1800 rpm
Temperature:	-20 to +120° C
Design pressure:	16 bar
Viscosity:	0.3 to 230 mPas
Gas content:	up to 50 %
Max. motor output:	5.5 kW
Direction of rotation:	right (clockwise)

Design features

Bearings

On the drive side, the shaft turns in a greased, single-channel grooved ball bearing conforming to DIN 625. This is packed with grease at the factory for approximately 10,000 operating hours. On the impeller side, the shaft turns in a stable carbon bearing which is lubricated by the pumped liquid. In addition, all intermediate stages are mounted in carbon bearing bushes. For the **SOHM** only these maintenance free bearing bushings are used.

Shaft seals SOH(B)

A mechanical seal is used as standard. This is a single-acting seal which is not cooled or pressure-balanced and has no crossover pipe (see ill. 1)

G2:

for pumping pressures < 10 bar in accordance with works standards

G11:

for pumping pressures < 16 bar in accordance with DIN 24 960

The **SOHM** is equipped with a permanent magnetic coupling, which transfers the torque of the motor contactless to the pump

shaft. A split can guarantee a total sealing of product area and atmosphere and allows additionally an almost vibration free power transmission

For pressures < 16 bar

Casing

Both the suction and discharge casings and the suction and discharge stage casings are divided transversely. The casing and individual casing sections are sealed with respect to one another by gaskets.

Impellers

Open, star-shaped impellers. Compensation for axial thrust through relief holes. Can be moved axially on the shaft. The impeller diameter cannot be changed.

Shaft

The particularly rigid stainless steel shaft ensures trouble-free operation in all load phases.

Socket position

The suction and discharge casings are directed radial upwards. The suction casing is usually located on the drive side. (If the pump turns anti-clockwise, then the discharge casing is on the drive side).

Connections

The suction and discharge connections of each pump are of the same nominal diameter.

The connections have oval flanges for a design pressure of PN 16. The counter flanges are supplied with the pump.

Other flanged connection dimensions and other flange designs are not available. (If you require other flanges, then you should consider the SRZ pump for a design pressure of PN 40).

Overview of the materials used: see page 6

Accessories

Drive

Fan-cooled IEC three-phase
AC squirrel-cage motor

Winding:

up to 3 kW: 220-240V /
380-420V

4 kW or higher: 380-420V /
660-725V

Model: B3 for SOH
B14 for SOHB
B5 for SOHM

Type of
protection: IP 55/IP 54
Temperature class: F
Operating mode:
Continuous operation S1

Coupling SOH(B)

Flexible coupling without
spacer sleeve

Protection against accidental contact

Coupling guard conforming
to EN 294

Base plate (for SOH)

Welded profiled steel or
cast iron of torsionally-rigid
design

Paint

Standard paint: RAL 5002
blue. Other paints available
upon request.

Acceptance tests

The operating point is guar-
anteed with the following
tolerance:

Pump head H: $\pm 10\%$

Flow rate Q: $\pm 10\%$

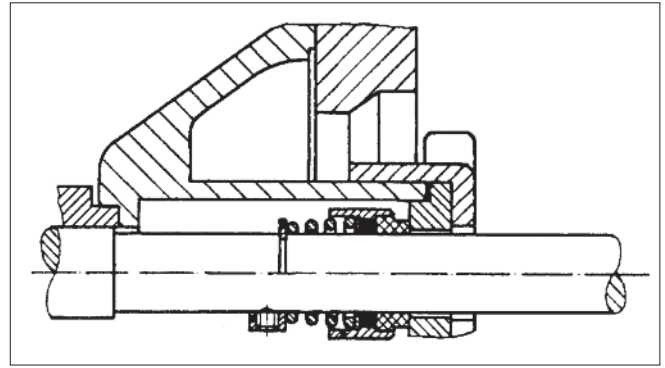
Power

consumption P: $+14\%$

Acceptance tests to DIN
EN ISO 9906 (1 operating
point) can be carried out
upon request.

Maximum test pressure:

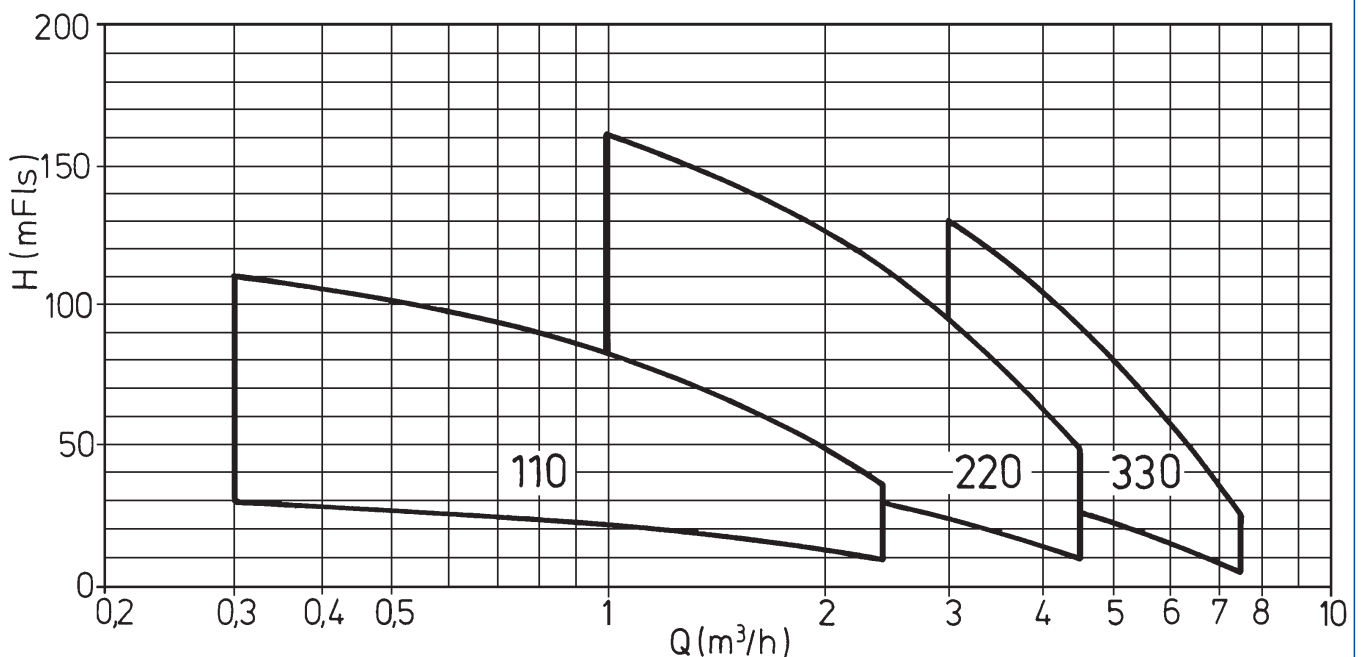
1.3 x maximum admissible
pump discharge pressure



ill. 1

Characteristics

$n = 1450 \text{ rpm (50 Hz)}$



Pumping capacity, power consumption, NPSH

see the individual characteristic curves (available on request)

Materials

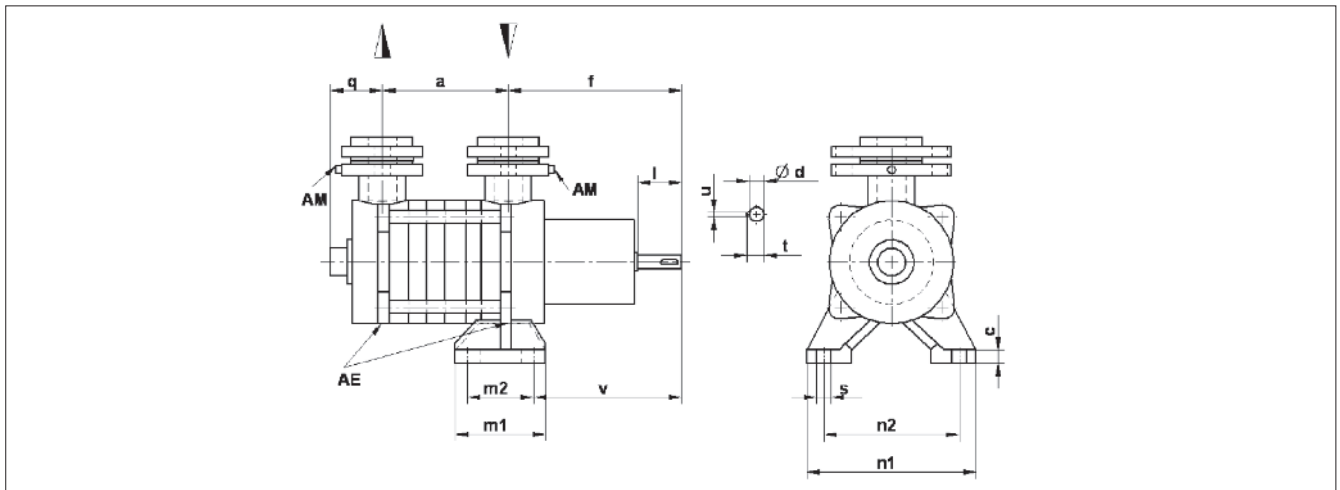
Pump material	Materials code 10	Material code 12	Material code 32
Suction casing	cast iron GG	cast iron GG	stainless steel 1.4408
Discharge casing	cast iron GG	cast iron GG	stainless steel 1.4408
Stage casing	cast iron GG	cast iron GG	stainless steel 1.4470
Side Channel casing	cast iron GG	cast iron GG	stainless steel 1.4470
Shaft	1.4021	1.4021	stainless steel 1.4571
Impeller	Brass CuZn40Al1	stainless steel 1.4059	stainless steel 1.4581
Bearing bracket	cast iron GG	cast iron GG	cast iron GG
Bearing bush	bronze	carbon	carbon
Counter flange	cast iron GG	cast iron GG	stainless steel 1.4581
Connection bolt	steel	steel	steel
Reducing adapter	steel	steel	stainless steel 1.4581
Lantern (SOHM)	GD-AISI8Cu3	GD-AISI8Cu3	GD-AISI8Cu3

Material of shaft steel	G2V	G11E	G11V	G11T
Seal face	carbon	carbon	carbon	carbon
stationary seat	SiC	SiC	SiC	SiC
O-ring seal	Viton	EP	Viton	TTV *
other metal parts	1.4571	1.4571	1.4571	1.4571

TTV * = viton double coated PTFE

Material of magnet drive	for all material codes
inner rotor	stainless steel samarium cobalt
outer rotor	steel/neodymium iron boron
gasket	Statotherm®
can	stainless steel/ Hastelloy®C4

Dimensions SOH

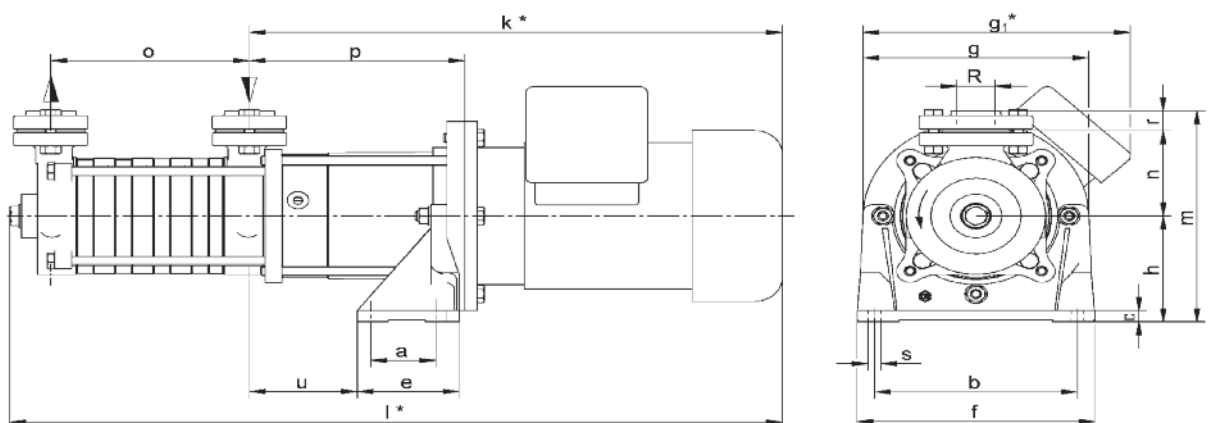


- ① connection for manometer R $\frac{1}{4}$ "
- ② connection for drain R $\frac{1}{4}$ "

mm

SOH	DN ₁ DN ₂	a	c	d k ₆	f	h ₁	h ₂	l	m ₁	m ₂	n ₁	n ₂	q	s	t	u	v
111	R1 ¹⁾	78	12	12	154	90	90	39	80	50	150	120	45	13	13,8	4	136
112		112															
113		146															
114		180															
221	R1½ ¹⁾	83	12	16	178	112	112	51	106	70	195	160	50	14	18	5	128
222		123															
223		163															
224		203															
331	R1½ ¹⁾	83	12	16	178	112	112	51	106	70	195	160	50	14	18	5	128
332		123															
333		163															
334		203															

Dimensions SOHM

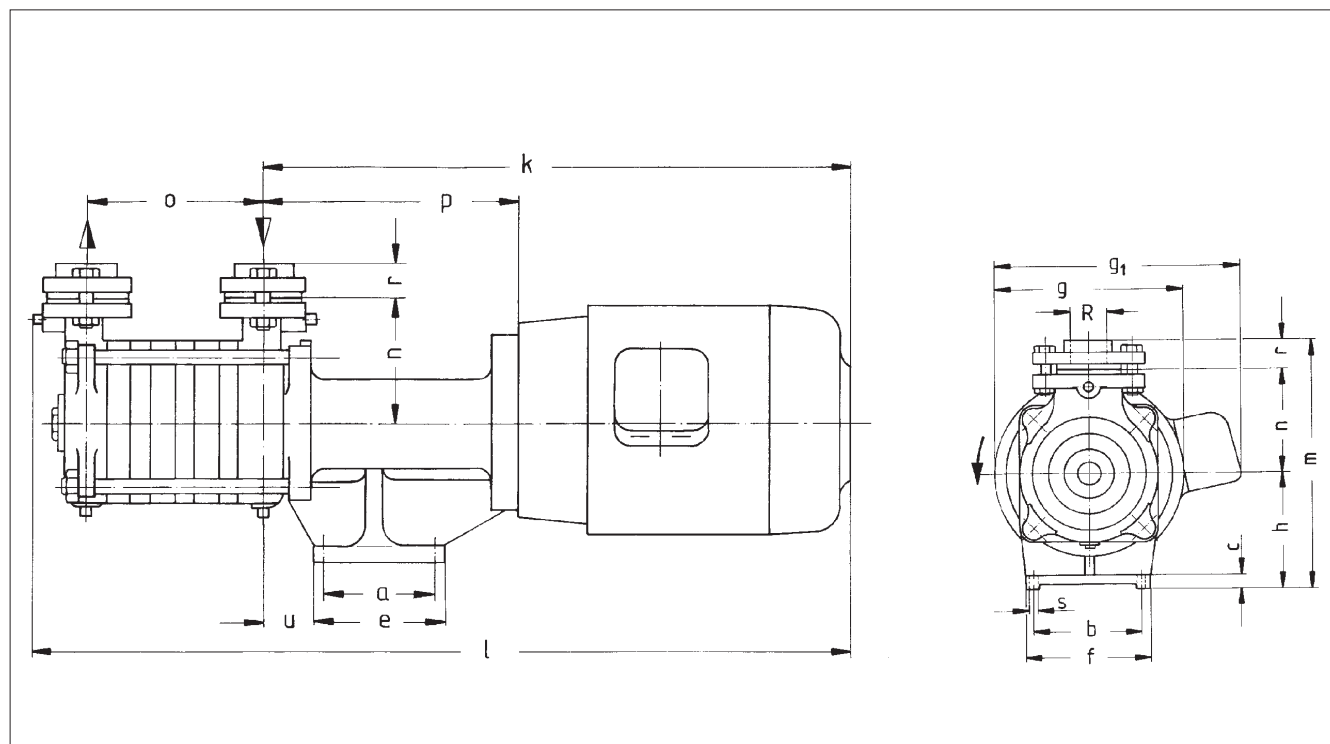


mm

Pumpe / pump	Motor		Maße / measurements in mm																	Laterne / Lantern	Antrieb / Mag drive		
	kW	Typ	g	g1*	h	k*	l*	m	n	o	p	r	u	R	a	b	c	e	f	s	Nr.		
111	1,50	90L	200	240*	112	470	579	223	90	78	191	21	96	1"	60	180	12	90	209	11,0	03-317.01	75-4	
112										613													112
113										647													146
221	3,00	100L	250	250	132	525	661	274	112	84	204	27	105	1 1/4"	60	220	15	97	250	13,5	03-314.01	75-6	
222										701													124
223										741													164
331	4,00	112M	250	250	132	540	661	274	112	84	204	30	105	1 1/2"	60	220	15	97	250	13,5	03-314.01	75-6	
332										701													124
333										741													164

* abhängig vom verwendeten Motorfabrikat /
depending on brand of the motor

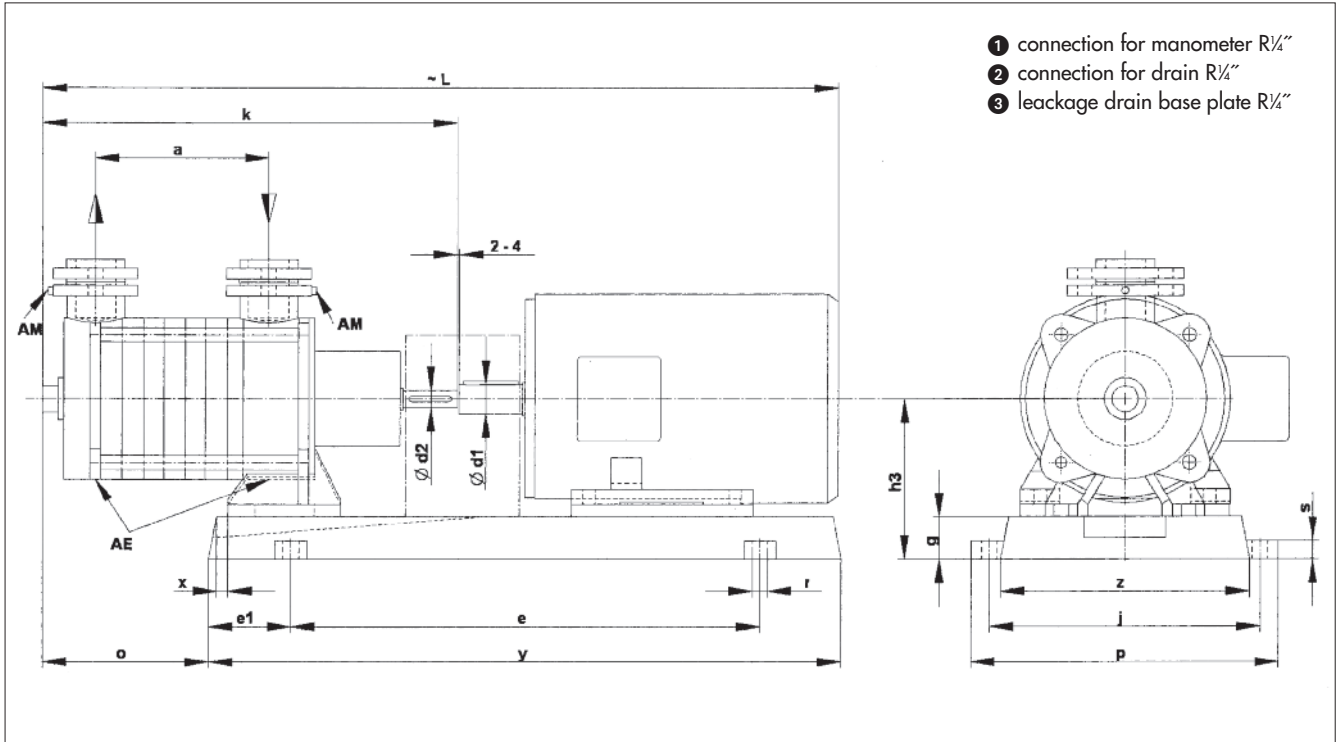
Dimensions SOHB



mm

pump	kW	Motor Typ	Laternen Modell	coupling	sizes g g ₁		h	k	l	m	n	o	p	r	u	R	a	b	c	e	f	s
111	0,37 0,55	71 80	1564 A 1564 B	58 58	143 160	186 203	97	368 404	488 524	208	90	78 78	167 177	21	27	1"	70	70	12	110	100	14
112	0,55 0,75 1,10	80 80 90 S	1564 B 1564 B 1565 A	58 58 68	160 160 176	203 203 227		404 404 431	558 558 585			112 112 112	177 177 187									
113	1,10 1,50	90 S 90 L	1565 A 1565 A	68 68	176 176	227 227		431 456	619 644			146 146	187 187									
114	1,10 1,50	90 S 90 L	1565 A 1565 A	68 68	176 176	227 219		431 456	653 678			180 180	187 187									
221	0,75 1,10	80 90 S	1566 A 1566 B	58 68	160 176	203 227	124	430 457	562 589	261	110	84 84	203 213	27	42	1½"	90	90	14	120	120	14
222	1,50 2,20 3,00	90 L 100 L 100 L	1566 B 1567 B 1567 B	68 80 80	176 196 196	227 254 254		482 526 526	654 698 698			124 124 124	213 223 223									
223	2,20 3,00	100 L 100 L	1567 B 1567 B	80 80	196 196	254 254		526 526	738 738			164 164	223 223									
224	3,00 4,00	100 L 112 M	1567 B 1567 B	80 80	196 220	254 277		526 543	778 795			204 204	223 223									
331	1,10 1,50	90 S 90 L	1566 B 1566 B	68 68	176 176	227 227	124	457 482	589 614	264	110	84 84	213 213	30	42	1½"	90	90	14	120	120	14
332	1,50 2,20 3,00	90 L 100 L 100 L	1566 B 1567 B 1567 B	68 80 80	176 196 196	227 254 254		482 526 526	654 689 689			124 124 124	213 223 223									
333	2,20 3,00 4,00	100 L 100 L 112 M	1567 B 1567 B 1567 B	80 80 80	196 196 220	254 254 277		526 526 543	738 738 755			164 164 164	223 223 223									
334	3,00 4,00	100 L 112 M	1567 B 1567 B	80 80	196 220	254 277		526 543	778 795			204 204	223 223									

Installation plan SOH



SOH	Motor IP 55 1450 1/min kW	coupling size	base plate	DN ₁ DN ₂ 1)	a	b	d ₁	d ₂	e	e ₁	g	h ₁	h ₂	h ₃	j	k	$\sim L$	o	p	r	x	y	z	stone bolt
111	0,37 0,55	71 80	58 58	179 179	R 1"	78	10	14 19	12	355 73	40	90	90	130	245	277	515 551	56	274	15	10	500	220	M12 x 200
112	0,55 0,75 1,1 1,5	80 80 90 S 90 L	58 58 68 68	179 179 179 179	R 1"	112	10	19 19 24 24	12	355 73	40	90	90	130	245	311	585 585 608 633	90	274	15	10	500	220	M12 x 200
113	0,75 1,1 1,5	80 90 S 90 L	58 68 68	179 179 180	R 1"	146	10	19 24 24	12	355 73 445 78	40	90	90	130	245 245 255	345	619 642 667	124	274 274 290	15	10	500 500 600	220 220 235	M12 x 200
114	1,1 1,5 2,2	90 S 90 L 100 L	68 68 80	179 180 180	R 1"	180	10	24 24 28	12	355 73 445 78	40	90 90 100	90	130 130 140	245 255 255	379	676 701 740	158 160 160	274 290 290	15 15 15	10 8 8	500 600 600	220 235 235	M12 x 200
221	0,55 0,75 1,1 1,5	80 80 90 S 90 L	58 58 68 68	179 179 180 180	R 1 1/4"	83	10	19 24 24 24	16	355 73 445 78	40	112	112	152	245 245 255 255	311	585 585 608 633	75 75 77 77	274 274 290 290	15 15 15 15	10 10 8 8	500 500 600 600	220 220 235 235	M12 x 200
222	1,1 1,5 2,2	90 S 90 L 100 L	68 68 80	180	R 1 1/4"	123	10	24 24 28	16	445 78	40	112	112	152	255	351	648 673 714	117	290	15	8	600	235	M12 x 200
223	1,5 2,2 3 4	90 L 100 L 100 L 112 M	68 80 80 80	180	R 1 1/4"	163	10	24 28 28 28	16	445 78	40	112	112	152	255	391	713 754 754 835	157	290	15	8	600	235	M12 x 200
224	2,2 3 4 5,5	100 L 100 L 112 M 132 S	80 80 80 95	180 180 180 181	R 1 1/4"	203	10	28 28 28 38	16	445 78 445 78 550 90	40 40 40 45	112 112 112 132	112	152 152 152 177	255 255 255 305	431	794 794 875 901	197	290 290 290 340	15	8	600 600 600 730	235 235 235 270	M12 x 200
331	0,75 1,1 1,5	80 90 S 90 L	58 68 68	179 180 180	R 1 1/2"	83	10	19 24 24	16	355 73 445 78	40	112	112	152	245 255 255	311	585 608 633	77	290 290 290	15	10 8 8	500 600 600	220 235 235	M12 x 200
332	1,1 1,5 2,2 3	90 S 90 L 100 L 100 L	68 68 80 80	180	R 1 1/2"	123	10	24 24 28 28	16	445 78	40	112	112	152	255	351	648 673 714 714	117	290	15	8	600	235	M12 x 200
333	2,2 3 4	100 L 100 L 112 M	80	180	R 1 1/2"	163	10	28	16	445 78	40	112	112	152	255	391	754 754 835	157	290	15	8	600	235	M12 x 200
334	3 4 5,5	100 L 112 M 132 S	80 80 95	180 180 181	R 1 1/2"	203	10	28 28 38	16	445 78 550 90	40 40 45	112 112 132	112	152 152 177	255 255 305	431	794 875 901	197	290 290 340	15	8	600 600 730	235 235 270	M12 x 200

1) R = DIN 259



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