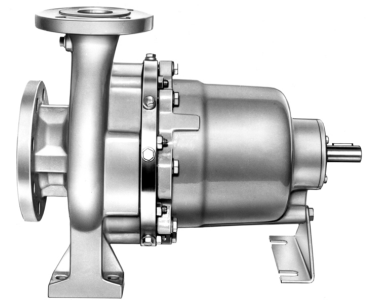


Volute Casing Centrifugal Pumps according to EN 22858, ISO 2858 with Magnetic Drive



ALLMAG® Series CNH-M

Usage

For pumping toxic, volatile, explosive or other fluids harmful to the environment which call for service of hermetically tight pumps without shaft seal. The liquids must not chemically attack the pump / magnetic coupling materials.

Design/Construction/Mounting

Horizontal volute casing centrifugal pump with axial inlet, single stage, single entry in back pull out design with magnetic drive. The pump dimensions and the hydraulic coverage corresponds to DIN EN 22858 / ISO 2858.

External bearing with either grease lifetime lubricated antifriction bearings.

Arranged on the outer magnetic rotor supported in antifriction bearings are rows of permanent magnets. Separated by the stationary can the inner rotor with analog magnet equipment is inserted into the outer magnetic rotor. The inner rotor, together with the impeller, is arranged on the pump shaft supported in slide bearings.

Torque transmission is contactless via the magnetic field lines between the outer and inner magnetic rotors.

The inner rotor is supported in exceptional solid silicone carbide slide bearings (axial-radial bearing) which hydrodynamically absorb all hydraulic forces and shocks within the entire characteristics range.

Performance data at 50 Hz

Q up to 650 m³/h p_d up to 25 bar ① ②
 H up to 145 m DN_d from 25 to 200 mm
 t up to 170 °C ③

Nominal output of magnetic drive:

P up to 48 KW at 1450 1/min
 P up to 96 KW at 2900 1/min

- ① Please take notice of the pressure/temperature limits in dependence of the material.
- ② Inlet pressure plus maximum delivery head (= 0-flow) must not exceed the stated value.
- ③ Special low-temperature version on request.

The mentioned performance data are only to be viewed as a product / performance overview. The exact operating limits are specified in the quotation and / or in the order acknowledgment.

Recommended Minimum

For actual flow rates, please see hydraulic coverage and / or individual hydraulic curves. As a protection against overheating when operating at low flow rates, a minimum flow rate is to be maintained according to the following formula:

$$Q_{min.} = 0,3 \times Q \eta_{opt}$$

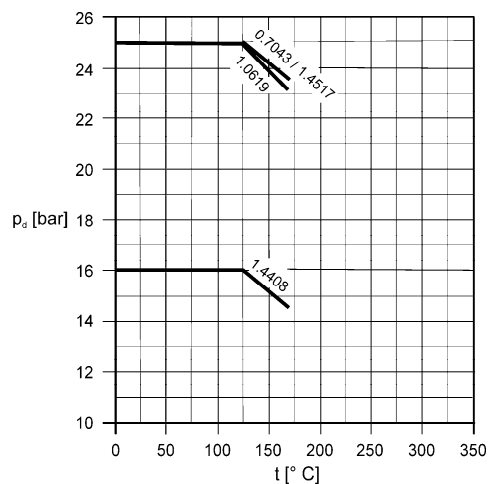
Flanges

Flange dimensions according to DIN EN 1092-1 PN 16 / PN 25 and DIN EN 1092-2 PN 25. Other flange dimensions are possible.

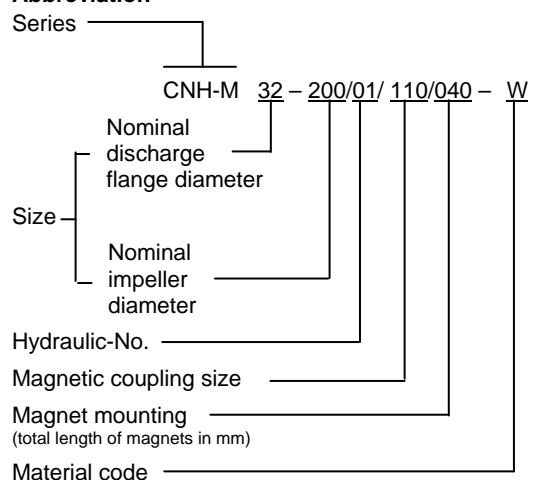
Drive

By serial three-phase squirrel-cage induction motor. Up to 2,2 kW, 230/400 V, from 3 kW 400/690 V, IP55.

Pressure and temperature limits as influenced by the casing material.



Abbreviation



Materials

Denomination	Material design			
	W 20	W 22	W 23	W 26
Volute casing	1.4408	EN-JS 1025	1.0619	1.4517
Impeller	1.4408	EN-JL 1030	EN-JL 1030	1.4408
Casing cover	1.4408	EN-JS 1025	1.0619	1.4517
Pump shaft	1.4571	1.4021	1.4021	1.4571
Driving shaft	1.7139			
Bearing bracket	EN-JL 1040			
Can	2.4610/1.4571			
Rotor	1.4571/Steel			

Other materials upon request.

Bearing

Pump side: Sleeve bearing, conveyance fluid lubrication.

Drive side: ball bearing, oil or grease lubricated.

Dismantling the insert unit

If using a shaft coupling with a spacer the insert unit can be taken out on the drive side without taking off the volute casing and the motor off the base plate or the pipe lines off the volute casing.

Dismounting of motor and drive unit can take place without tension release of system and draining.

Shaft coupling and accidental contact protection

Torsionally flexible shaft coupling according to DIN 740 with or without a spacer. A coupling guard as contact protection according to DIN EN 294 (DIN 31001) is included, if the delivery contains pump, base plate and shaft coupling.

Explosion protection



The pump fulfils the requirements according to EC Explosion Protection Directive 94/9EG (ATEX 100a) for equipment and equipment group II, category 2 G. Categorisation into temperature classes according to EN 13463-1 depends on the temperature of the pumped medium. The max. permissible temperature of the pumped medium for the respective temperature classes are shown in the below table:

Danger classification	Temperature classification according to EN 13463-1	Maximum fluid temperature
II 2G/ EEx c/b	T4	97 °C
	T3	170 °C
II 3G/ EEX c	T2	170 °C
	T1	170 °C

Fire protection type b = monitoring of ignition sources

Fire protection type c = safe design

The temperatures mentioned above correlate with a maximum speed of 2900 1/min, a maximum ambient temperature of 40°C and the can material Hasteloy.

Can materials with abnormal physical characteristics only may be used after consultation with Allweiler AG.

Note: In case of the operation of a category 2 pump, the unacceptable heating of the pump surfaces caused by a possible operational fault must be prevented by a control mechanism. In case of an operation with know parameters (Q, H, v, ρ = const.), a pump performance controller can be supplied with the pump to detect any operational faults.

Units: Only drives may be used, which correspond to the requirements according to EC Explosion Protection Directive 94/9EG.

Product certification supported by:

TÜV Product Service GmbH, Ridler Str. 65, D-80339 München ID: 0123.

Series CNH-M

Wear-resistant

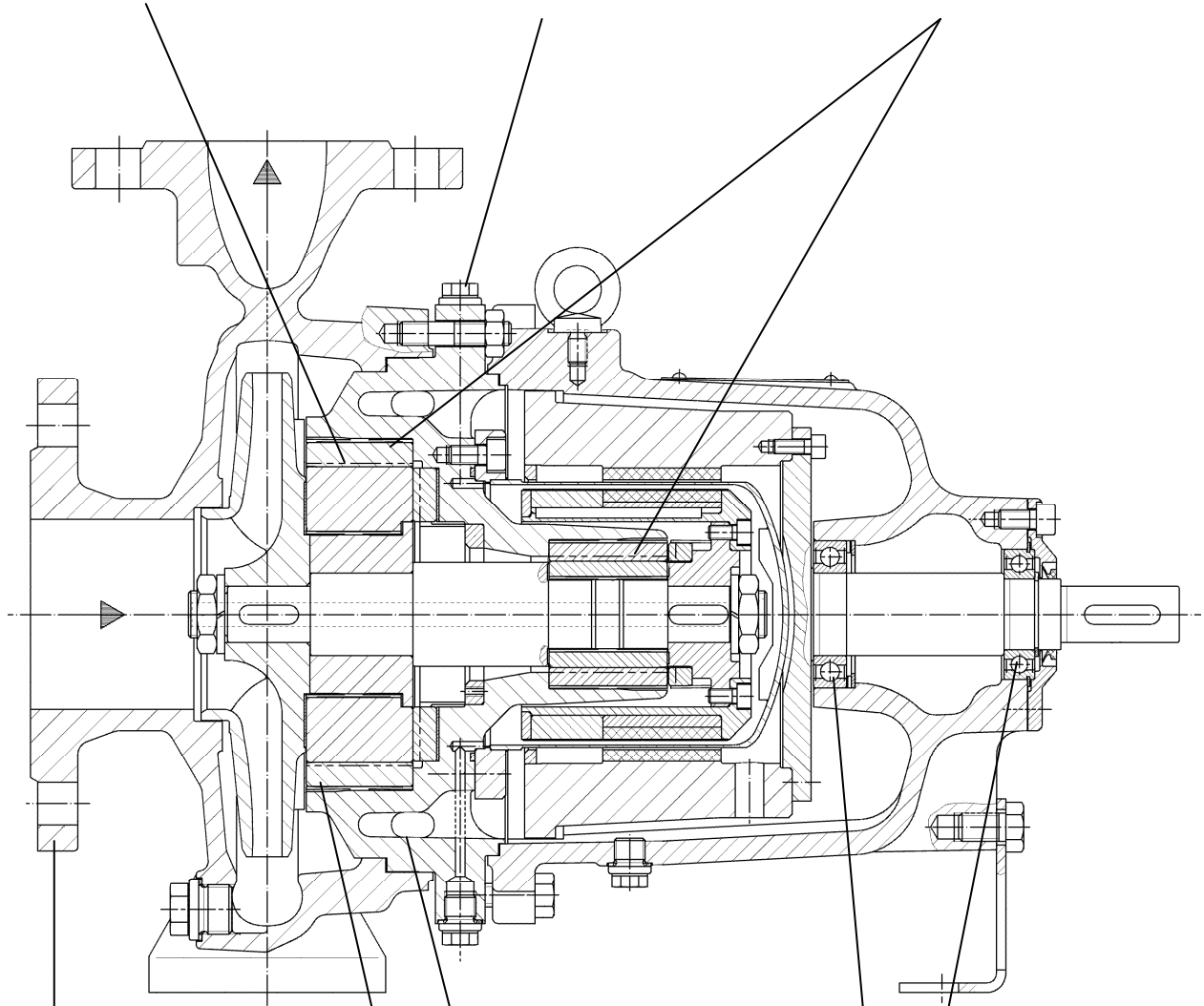
- ➔ Flush flow by SiC-sleeve bearings
- + Tolerance against solid particles
- + Security against leakages and damages of the can

Universal

- ➔ External flush flow
- + Suitable for stagnant and sticky fluid
- + Suited for temperature sensitive fluid

Reliable

- ➔ Generously dimensioned axial und radial bearing
- + Optimum counteract of all forces in the bearing
- + Exceptionally fail safe



Multifunctional

- ➔ Casing and cover heatable
- + Capable for fluid with high flow temperature
- + Starting safety at low viscosity

Easy mounting

- ➔ Back pull-out design
- + When dismantling the pump the volute casing can remain in the piping
- + Dismounting of motor and drive unit can take place without tension release of system and draining

Temperature tolerant

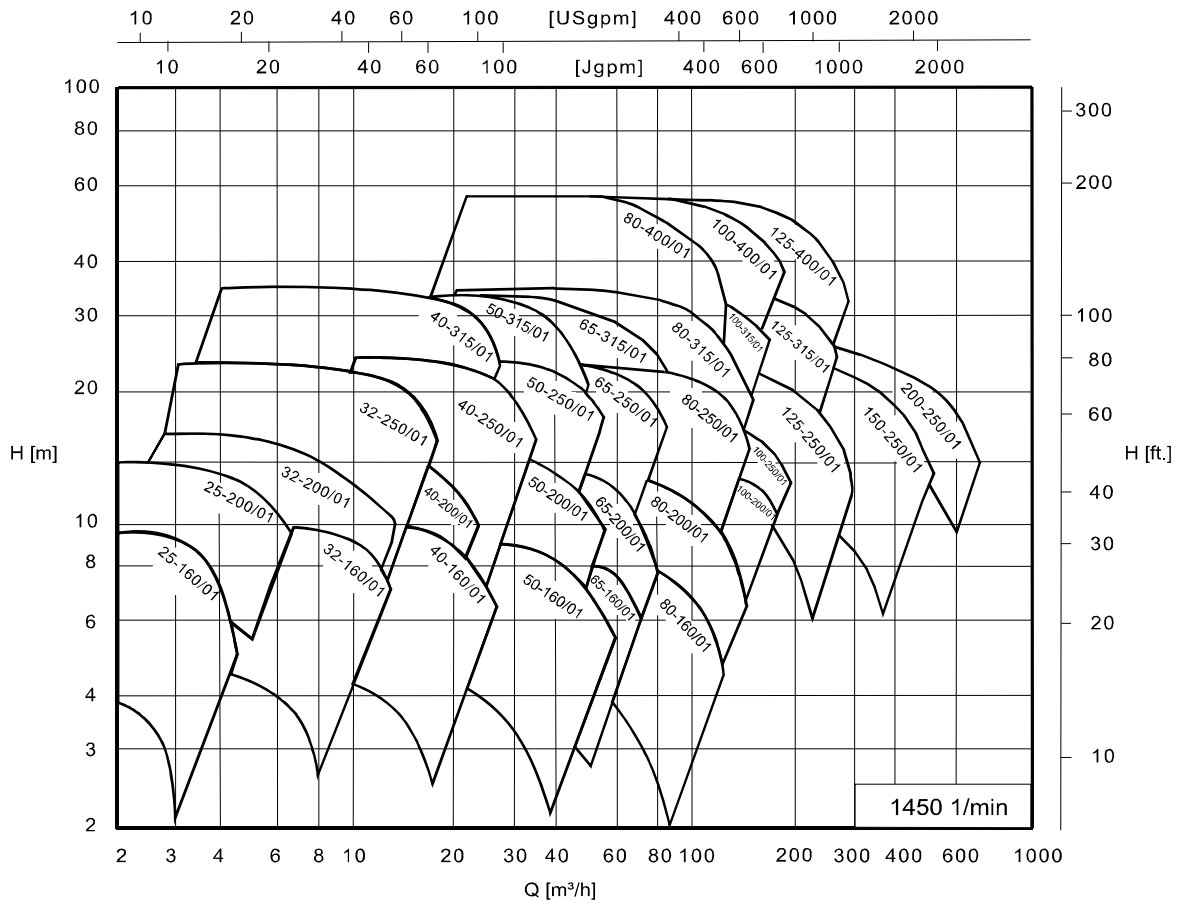
- ➔ Bearings mounted in flexible elements
- + Large temperature range also at high quality steel casing
- + Failure-free discharge at high temperature difference

Durable

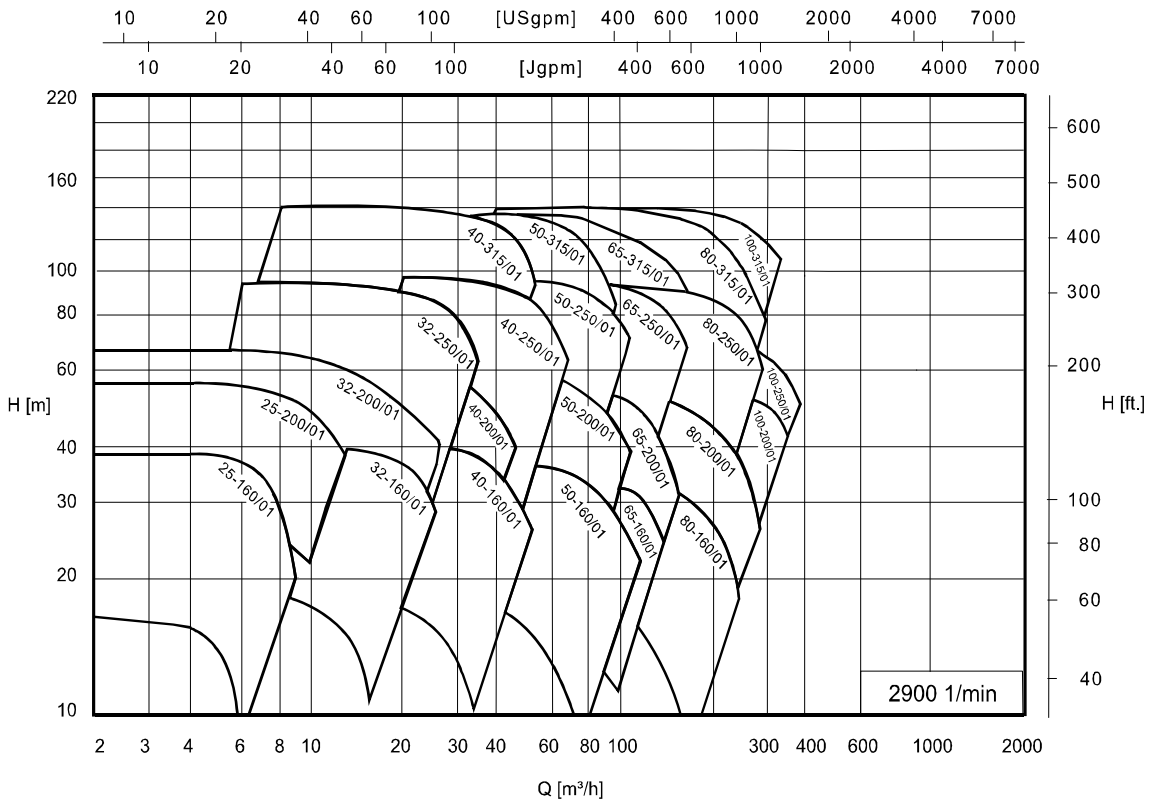
- ➔ External bearing with grease lifetime lubricated groove ball bearings
- + Large bearing clearance
- + Easy mounting

Performance graphs

n = 1450 1/min

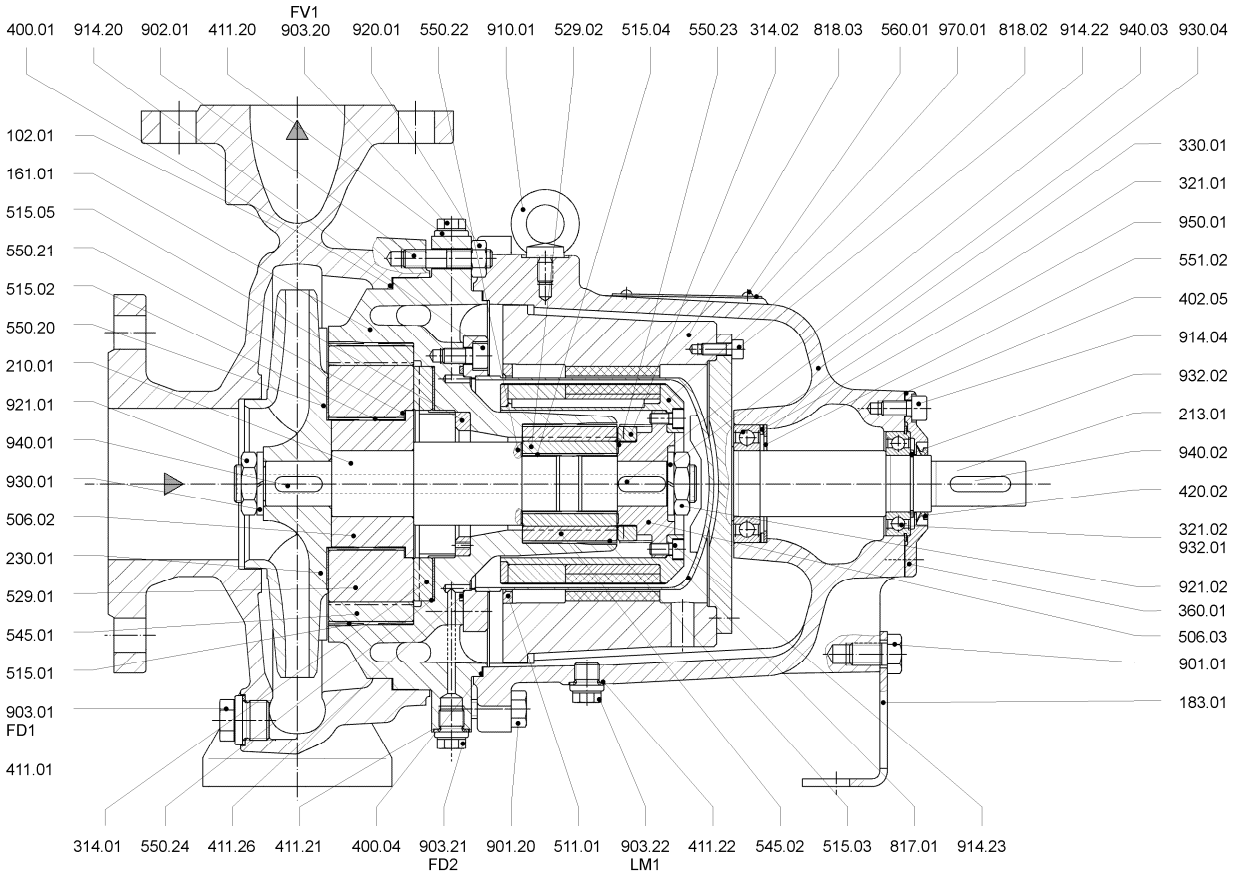


n = 2900 1/min

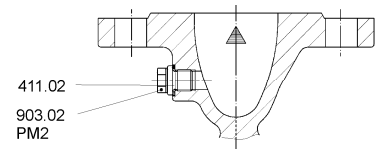


For exact performance data, please refer to the individual characteristics.

Sectional drawing
 Sizes at 1. bearing bracket



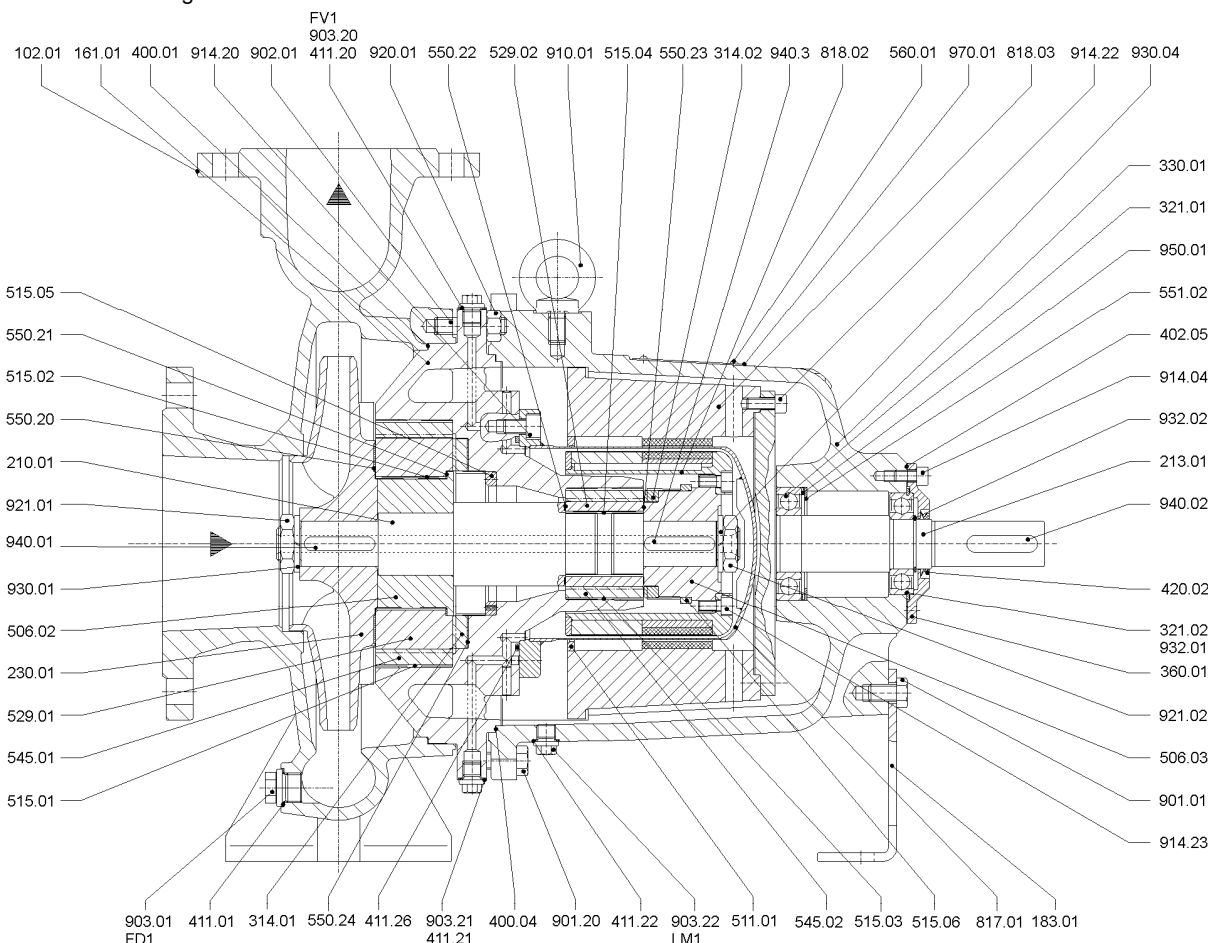
Design with pressure measuring



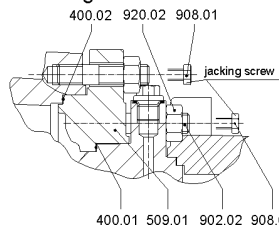
Denomination	Part No.	Denomination	Part No.	Denomination	Part No.
Volute Casing	102.01	Centering ring	511.01	Screw plug	903.02
Casing Cover	161.01	Tension ring	515.01	Screw plug	903.20
Support foot	183.01	Tension ring	515.02	Screw plug	903.21
Pump shaft	210.01	Tension ring	515.03	Screw plug	903.22
Drive shaft	213.01	Tension ring	515.04	Eye bolt	910.01
Impeller	230.01	Tension ring	515.05	Hexagon socket screw	914.04
Axial bearing	314.01	Bearing sleeve	529.01	Hexagon socket screw	914.20
Axial bearing	314.02	Bearing sleeve	529.02	Hexagon socket screw	914.21
Radial ball bearing	321.01	Bearing bush	545.01	Hexagon socket screw	914.22
Radial ball bearing	321.02	Bearing bush	545.02	Hexagon socket screw	914.23
Bearing bracket	330.01	Disc	550.20	Nut	920.01
Bearing cover	360.01	Disc	550.21	Shaft nut	921.01
Gasket	400.01	Disc	550.22	Shaft nut	921.02
Gasket	400.04	Disc	550.23	Lock	930.01
Plastic gasket	402.05	Disc	550.24	Lock	930.04
Seal ring	411.01	Spacer disc	551.02	Circlip	932.01
Seal ring	411.02	Pin	560.01	Circlip	932.02
Seal ring	411.20	Can	817.01	Key	940.01
Seal ring	411.21	Rotor	818.02	Key	940.02
Seal ring	411.22	Rotor	818.03	Key	940.03
Seal ring	411.26	Hexagon head screw	901.01	Ball bearing-	950.01
Shaft seal ring	420.02	Hexagon head screw	901.20	compensating disc	
Retaining ring	506.02	Stud	902.01	Plate	970.01
Retaining ring	506.03	Screw plug	903.01		

Sectional drawing

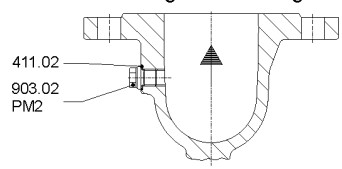
Sizes at 2. bearing bracket



Design with intermediate ring



Design with venting

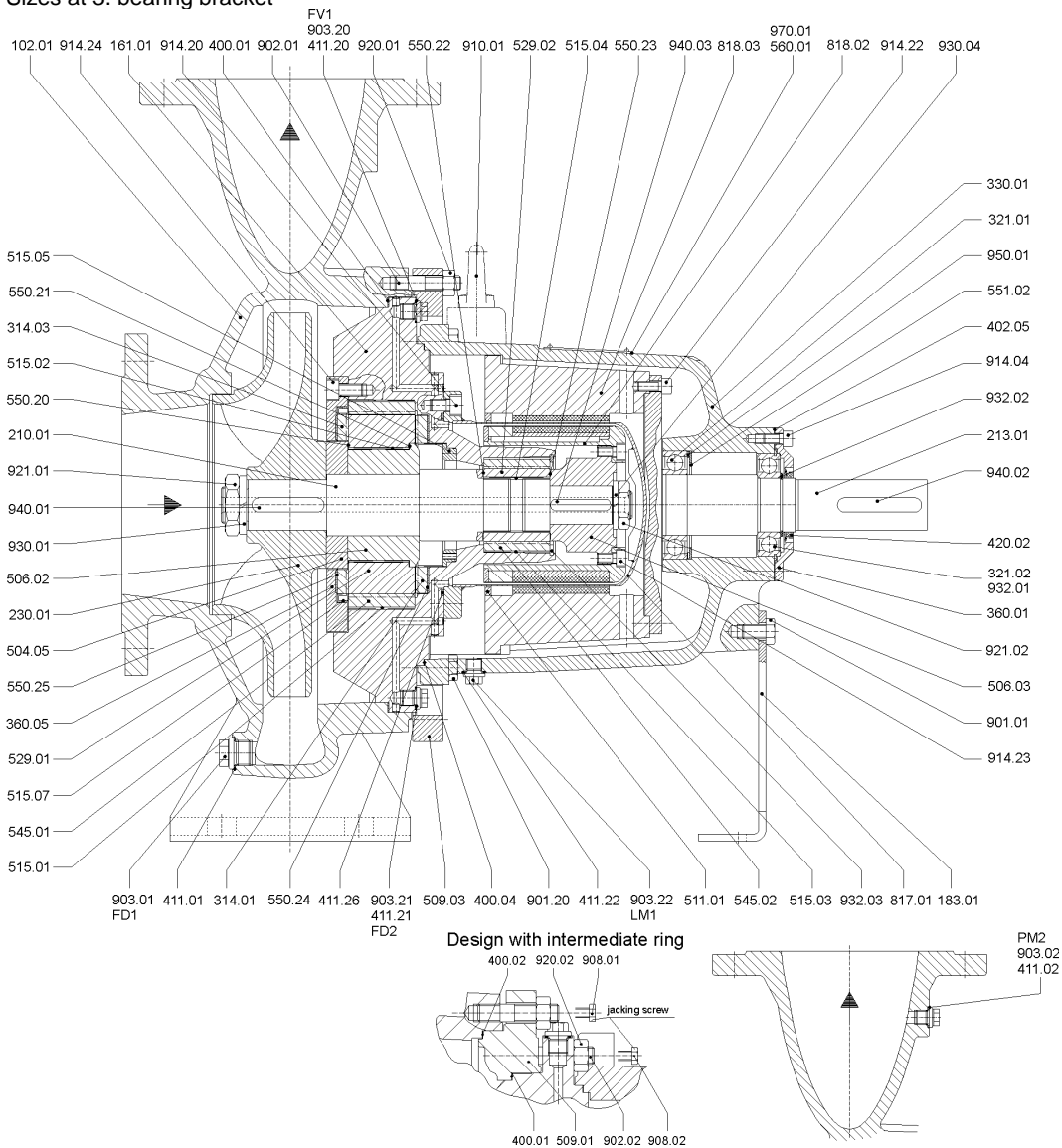


Denomination	Part No.
Volute Casing	102.01
Casing Cover	161.01
Support foot	183.01
Pump shaft	210.01
Drive shaft	213.01
Impeller	230.01
Axial bearing	314.01
Axial bearing	314.02
Radial ball bearing	321.01
Radial ball bearing	321.02
Bearing bracket	330.01
Bearing cover	360.01
Gasket	400.01
Gasket	400.02
Gasket	400.04
Plastic gasket	402.05
Seal ring	411.01
Seal ring	411.02
Seal ring	411.20
Seal ring	411.21
Seal ring	411.22
Seal ring	411.26
Shaft seal ring	420.02
Retaining ring	506.02
Retaining ring	506.03
Intermediate ring	509.01

Denomination	Part No.
Centering ring	511.01
Tension ring	515.01
Tension ring	515.02
Tension ring	515.03
Tension ring	515.04
Tension ring	515.05
Tension ring	515.06
Bearing sleeve	529.01
Bearing sleeve	529.02
Bearing bush	545.01
Bearing bush	545.02
Disc	550.20
Disc	550.21
Disc	550.22
Disc	550.23
Disc	550.24
Spacer disc	551.02
Pin	560.01
Can	817.01
Rotor	818.02
Rotor	818.03
Hexagon head screw	901.01
Hexagon head screw	901.20
Stud	902.01
Stud	902.02
Screw plug	903.01

Denomination	Part No.
Screw plug	903.02
Screw plug	903.20
Screw plug	903.21
Screw plug	903.22
Jacking screw	908.01
Jacking screw	908.02
Eye bolt	910.01
Hexagon socket screw	914.04
Hexagon socket screw	914.20
Hexagon socket screw	914.22
Hexagon socket screw	914.23
Nut	920.01
Nut	920.02
Shaft nu	921.01
Shaft nut	921.02
Lock	930.01
Lock	930.04
Circlip	932.01
Circlip	932.02
Key	940.01
Key	940.02
Key	940.03
Ball bearing-compensating disc	950.01
Plate	970.01

Sectional drawing
 Sizes at 3. bearing bracket

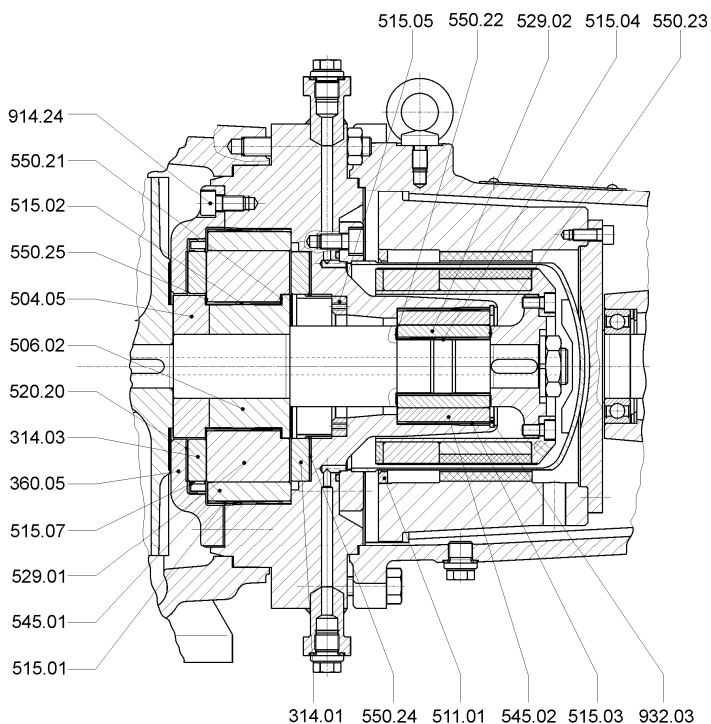


Denomination	Part No.
Volute Casing	102.01
Casing Cover	161.01
Support foot	183.01
Pumpshaft	210.01
Drive shaft	213.01
Impeller	230.01
Axial bearing	314.01
Axial bearing	314.03
Radial ball bearing	321.01
Radial ball bearing	321.02
Bearing bracket	330.01
Bearing cover	360.01
Bearing cover	360.05
Gasket	400.01
Gasket	400.02
Gasket	400.04
Plastic gasket	402.05
Joint washer	411.01
Seal ring	411.02
Seal ring	411.20
Seal ring	411.21
Seal ring	411.22
Seal ring	411.26
Shaft seal ring	420.02
Distance ring	504.05
Retaining ring	506.02
Retaining ring	506.03
Intermediate ring	509.01

Denomination	Part No.
Intermediate ring	509.03
Centering ring	511.01
Tension ring	515.01
Tension ring	515.02
Tension ring	515.03
Tension ring	515.04
Tension ring	515.05
Tension ring	515.07
Bearing sleeve	529.01
Bearing sleeve	529.02
Bearing bush	545.01
Bearing bush	545.02
Disc	550.20
Disc	550.21
Disc	550.23
Disc	550.24
Disc	550.25
Spacer disc	551.02
Pin	560.01
Can	817.01
Rotor	818.02
Rotor	818.03
Hexagon head screw	901.01
Hexagon head screw	901.20
Stud	902.01
Stud	902.02
Screw plug	903.01
Screw plug	903.02

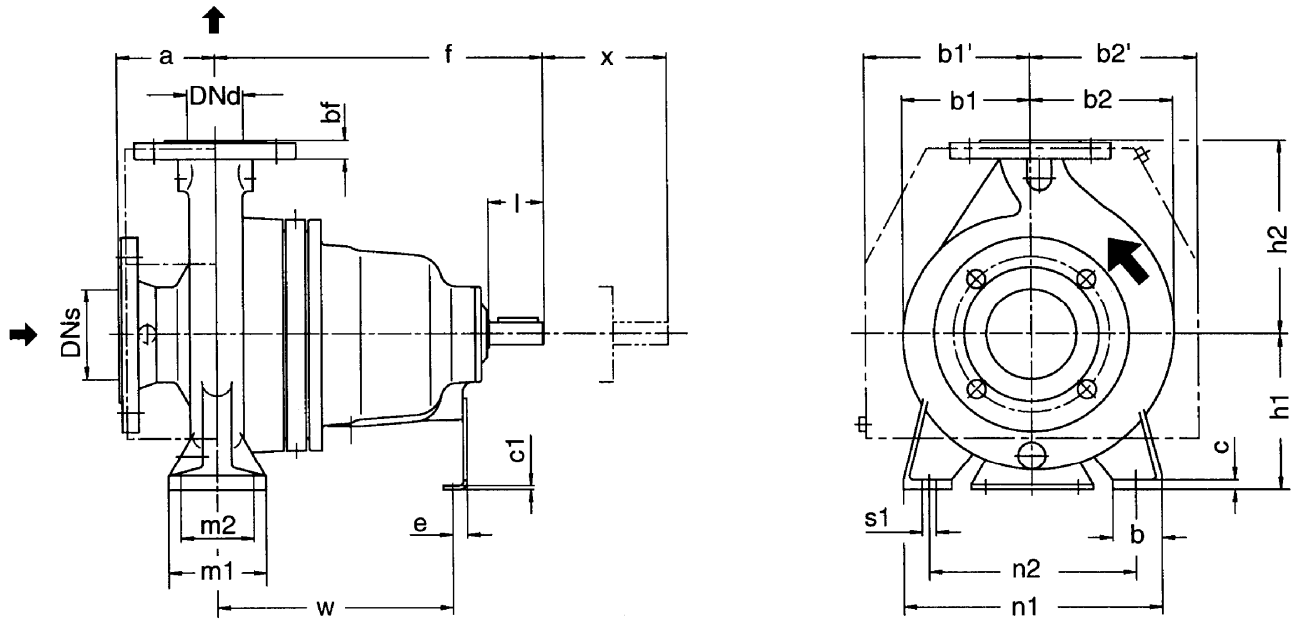
Denomination	Part No.
Screw plug	903.20
Screw plug	903.21
Screw plug	903.22
Jacking screw	908.01
Jacking screw	908.02
Eye bolt	910.01
Hexagon socket screw	914.04
Hexagon socket screw	914.20
Hexagon socket screw	914.22
Hexagon socket screw	914.23
Hexagon socket screw	914.24
Nut	920.01
Nut	920.02
Shaft nut	921.01
Shaft nut	921.02
Lock	930.01
Lock	930.04
Circlip	932.01
Circlip	932.02
Circlip	932.03
Key	940.01
Key	940.02
Key	940.03
Ball bearing-compensating disc	950.01
Plate	970.01

Sectional drawing, Series CNH-M double axial bearing

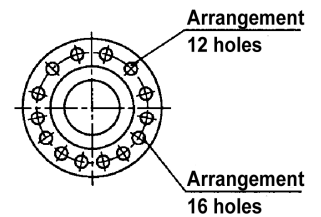
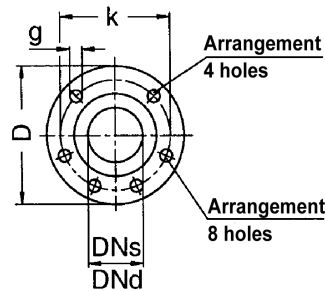
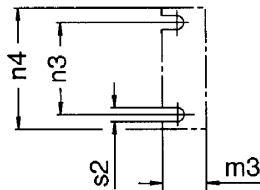
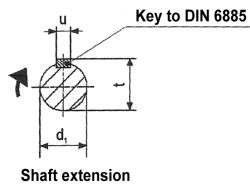


Denomination	Part No.
Thrust bearing	314.01
Thrust bearing	314.03
Bearing cover	360.05
Spacer ring	504.05
Retaining ring	506.02
centering ring	511.01
Tension ring	515.01
Tension ring	515.02
Tension ring	515.03
Tension ring	515.04
Tension ring	515.05
Tension ring	515.07
Bearing sleeve	529.01
Bearing sleeve	529.02
Bearing bush	545.01
Bearing bush	545.02
Disc	550.20
Disc	550.21
Disc	550.22
Disc	550.23
Disc	550.24
Disc	550.25
Hexagon socket screw	914.24
Lock	932.03

Pump dimensions



Sense of rotation: clockwise, as seen from the driving side



Tolerances of companion dimensions according to DIN EN 735

Dimensions in mm without commitment.

Pump size	Pump dimensions											Feet dimensions											for screws		Extension dimension x	Shaft end			
	DNs	DNd	a	f	b1	b1'	b2	b2'	h1	h2	b	c	c1	e	m1	m2	m3	n1	n2	n3	n4	w	s1	s2		d	l	t	u
25-160/01	40	25	80	385	128	151	128	151	132	160	50	15	4	29,5	100	70	45	240	190	110	160	285	M 12	M 12	80	24	50	27	8
25-200/01	40	25	80	385	132	153	132	153	160	180	50	15	4	29,5	100	70	45	240	190	110	160	285	M 12	M 12	80	24	50	27	8
32-160/01	50	32	80	385	130	147,5	130	147,5	132	160	50	15	4	29,5	100	70	45	240	190	110	160	285	M 12	M 12	100	24	50	27	8
32-200/01	50	32	80	385	130	147,5	135	147,5	160	180	50	15	4	29,5	100	70	45	240	190	110	160	285	M 12	M 12	100	24	50	27	8
32-250/01	50	32	100	500	170	186	170	186	180	225	65	15	6	24	125	95	40	320	250	110	160	370	M 12	M 12	100	32	80	35	10
40-160/01	65	40	80	385	130	146	130	146	132	160	50	15	4	29,5	100	70	45	240	190	110	160	285	M 12	M 12	100	24	50	27	8
40-200/01	65	40	100	385	130	156	140	156	160	180	50	15	4	29,5	100	70	45	265	212	110	160	285	M 12	M 12	100	24	50	27	8
40-250/01	65	40	100	500	170	186	170	186	180	225	65	15	6	24	125	95	40	320	250	110	160	370	M 12	M 12	100	32	80	35	10
40-315/01	65	40	125	500	200	223	200	223	200	250	65	20	6	24	125	95	40	345	280	110	160	370	M 12	M 12	100	32	80	35	10
50-160/01	80	50	100	385	130	146	130	146	160	180	50	15	4	29,5	100	70	45	265	212	110	160	285	M 12	M 12	100	24	50	27	8
50-200/01	80	50	100	385	135	162,5	150	162,5	160	200	50	15	4	29,5	100	70	45	265	212	110	160	285	M 12	M 12	100	24	50	27	8
50-250/01	80	50	125	500	170	203	170	203	180	225	65	15	6	24	125	95	40	320	250	110	160	370	M 12	M 12	100	32	80	35	10
50-315/01	80	50	125	500	200	221	200	221	225	280	65	20	6	24	125	95	40	345	280	110	160	370	M 12	M 12	100	32	80	35	10
65-160/01	100	65	100	405	130	178	155	178	160	200	65	15	4	29,5	125	95	45	280	212	110	160	305	M 12	M 12	100	24	50	27	8
65-200/01	100	65	100	500	170	186	170	186	180	225	65	15	6	24	125	95	40	320	250	110	160	370	M 12	M 12	140	32	80	35	10
65-250/01	100	65	125	500	170	201	190	201	200	250	80	18	6	24	160	120	40	360	280	110	160	370	M 16	M 12	140	32	80	35	10
65-315/01	100	65	125	530	200	260	230	260	225	280	80	20	6	31	160	120	56	400	315	110	160	370	M 16	M 12	140	42	110	45	12
80-160/01	125	80	125	405	145	203	180	203	180	225	65	15	4	29,5	125	95	45	320	250	110	160	305	M 12	M 12	100	24	50	27	8
80-200/01	125	80	125	500	170	208	190	208	180	250	65	18	6	24	125	95	40	345	280	110	160	370	M 12	M 12	140	32	80	35	10
80-250/01	125	80	125	500	185	231	210	231	225	280	80	18	6	24	160	120	40	400	315	110	160	370	M 16	M 12	140	32	80	35	10
80-315/01	125	80	125	530	210	268	255	268	250	315	80	20	6	31	160	120	56	400	315	110	160	370	M 16	M 12	140	42	110	45	12
80-400/01	125	80	125	530	245	283	260	283	280	355	80	20	6	31	160	120	56	435	355	110	160	370	M 16	M 12	140	42	110	45	12
100-200/01	125	100	125	500	170	225	205	225	200	280	80	18	6	24	160	120	40	360	280	110	160	370	M 16	M 12	140	32	80	35	10
100-250/01	125	100	140	530	200	260	230	260	225	280	80	20	6	31	160	120	56	400	315	110	160	370	M 16	M 12	140	42	110	45	12
100-315/01	125	100	140	530	210	293	260	293	250	315	80	20	6	31	160	120	56	400	315	110	160	370	M 16	M 12	140	42	110	45	12
100-400/01	125	100	140	530	250	330	295	330	280	355	100	20	6	31	200	150	56	500	400	110	160	370	M 20	M 12	140	42	110	45	12
125-250/01	150	125	140	530	210	285	260	285	250	355	80	20	6	31	160	120	56	400	315	110	160	370	M 16	M 12	140	42	110	45	12
125-250/02	150	125	140	530	215	330	295	330	250	355	80	20	6	31	160	120	56	400	315	110	160	370	M 16	M 12	140	42	110	45	12
125-315/01	150	125	140	530	215	275	255	275	280	355	100	20	6	31	200	150	56	500	400	110	160	370	M 20	M 12	140	42	110	45	12
125-315/02	150	125	140	530	215	310	285	310	280	355	100	20	6	31	200	150	56	500	400	110	160	370	M 20	M 12	140	42	110	45	12
125-400/01	150	125	140	530	265	350	320	350	315	400	100	20	6	31	200	150	56	500	400	110	160	370	M 20	M 12	140	42	110	45	12
150-250/01	200	150	160	530	225	310	285	310	280	375	100	20	6	31	200	150	56	500	400	110	160	370	M 20	M 12	180	42	110	45	12
200-250/01	200	200	180	537	265	382	340	382	355	425	100	27	6	31	200	150	56	550	450	110	160	377	M 20	M 12	180	42	110	45	12

Flange dimensions

Flanges acc. to DIN EN 1092-1 PN 16

with material design W 20 / W 26

DNd DNs	D	bf	k	g	No. of holes
25	115	18	85	14	4
32	140	18	100	18	4
40	150	18	110	18	4
50	165	20	125	18	4
65	185	18	145	18	4
80	200	20	160	18	8
100	220	20	180	18	8
125	250	22	210	18	8

Flanges acc. to DIN EN 1092-1 PN 25

with material design W 22

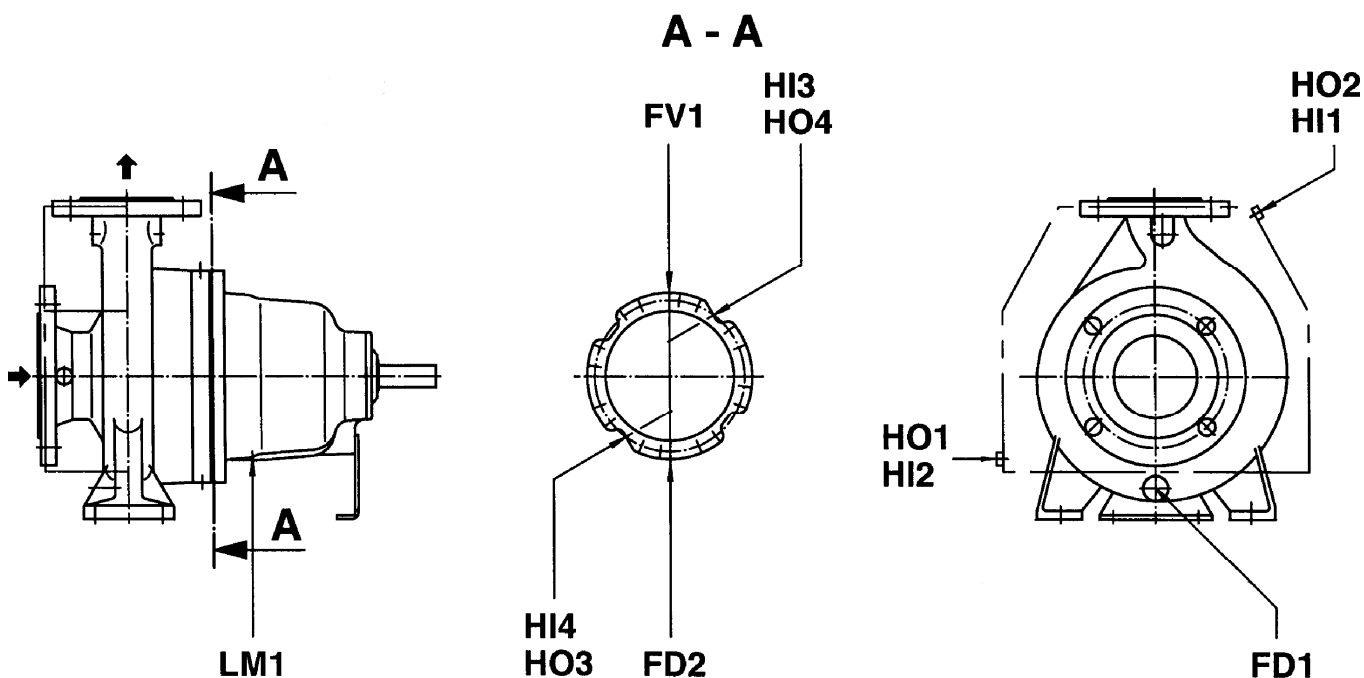
DNd DNs	D	bf	k	g	No. of holes
25	115	18	85	14	4
32	140	20	100	18	4
40	150	20	110	18	4
50	165	22	125	18	4
65	185	24	145	18	8
80	200	26	160	18	8
100	235	28	190	22	8
125	270	30	220	26	8

Flanges acc. to DIN EN 1092-2 PN 25

with material design W 23

DNd DNs	D	bf	k	g	No. of holes
25	115	18	85	14	4
32	140	18	100	18	4
40	150	18	110	18	4
50	165	20	125	18	4
65	185	22	145	18	8
80	200	24	160	18	8
100	235	24	190	22	8
125	270	26	220	26	8

Auxiliary connections



Connections	Size	Denomination
FD1	G 1/2	Pumped fluid – draining
FD2	G 1/4	Pumped fluid – draining
FV1	G 1/4	Pumped fluid – venting
HI1	G 3/8	Heating – inlet (steam)
HI2	G 3/8	Heating – inlet (fluid)
HI3	G 1/4	Heating – inlet (steam)

Connections	Size	Denomination
HI4	G 1/4	Heating – inlet (fluid)
HO1	G 3/8	Heating – outlet (steam)
HO2	G 3/8	Heating – outlet (fluid)
HO3	G 1/4	Heating – outlet (steam)
HO4	G 1/4	Heating – outlet (fluid)
LM1	G 1/4	Leakage – monitoring

ALLWEILER delivery range

Centrifugal Pumps

► Features

Pump capacities acc. to DIN EN 733 or DIN EN 22 858. Additional sizes enlarge the EN-performance range. Series construction acc. to the modular system. Single-stage or multistage pumps in block- or inline-design; pumps with magnetic coupling, pumps for heat transfer oil and hot water.

► Pumped liquids

Neutral or aggressive, pure, with solids content or contaminated, cold or hot, toxic or harmful to the environment.

► Performance data

Q up to 2,400 m³/h, H up to 250 m

Propeller Pumps

► Features

For large flows at relatively small delivery heads. Horizontal, vertical, submerged and elbow casing pumps.

► Pumped liquids

Neutral or aggressive, pure or contaminated, cold or hot.

► Performance data

Q up to 35,000 m³/h, H up to 20 m

Self-Priming Side Channel Pumps

► Features

Self-priming side channel segmental-type pumps.

► Pumped liquids

Neutral or aggressive, pure or contaminated, cold or hot, toxic, harmful to the environment.

► Performance data

Q up to 20 m³/h, H up to 350 m

Three-Screw Pumps

► Features

Three-screw, self-priming, very good efficiencies, very low noise level. The pumping process is continuous, nearly without pulsation and without turbulences. Self-priming, for horizontal and vertical installation, submerged pumps and pumps with magnetic drive.

► Pumped liquids

Oils or other lubricating, not lubricating or sparsely lubricating liquids.

► Performance data

Q up to 7,500 l/min, p_d up to 280 bar

Two-Screw Pumps

► Features

Two-screw, double-entry, self-priming, high suction power due to low NPSH-values, adapted for dry running.

► Pumped liquids

Oils or other lubricating, not lubricating or sparsely lubricating liquids.

► Performance data

Q up to 1,300 m³/h, p_d up to 40 bar

Progressing Cavity Pumps

► Features

Single-stage or multistage, self-priming. The pumping is continuous, nearly without pulsation and without turbulences, crushing or demixing.

► Pumped liquids

For pumping and dosing liquids of low to high viscosity; pasty, neutral or aggressive, pure or abrasive, gaseous or tending to froth, also with fibrous and solids content.

► Performance data

Q up to 7,500 l/min, p_d up to 36 bar

Rotary Lobe Pumps

► Features

Hermetically sealed pumps with no welded parts, sealing systems adapted to the liquid, sterile cleaning possible.

► Pumped liquids

For pumping and dosing liquids of low to high viscosity; pasty, neutral or aggressive, pure or abrasive, especially in the food and pharma industry.

► Performance data

Q up to 1,666 l/min, p_d up to 20 bar

Peristaltic Pumps

► Features

Dry self-priming, without seals and valves.

► Pumped liquids

For pumping and dosing liquids of low to high viscosity; pasty, neutral or aggressive, pure or abrasive, gaseous or tending to froth, also with fibrous and solids content.

► Performance data

Q up to 60 m³/h, p_d up to 16 bar

Macerators

► Features

Impeller with exchangeable, highly wear resistant milling cutters.

► Pumped liquids

For milling of fibres and solids (wood, textiles, glass etc.) that are contained in the liquids to be pumped and making them pumpable.

► Performance data

Q up to 160 m³/h, p_d up to 10 bar

Subject to technical alterations



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