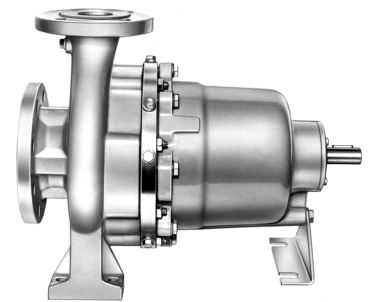


Volute Casing Centrifugal Pumps according to EN 22858, ISO 2858 with Magnetic Drive



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 or oil 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 ④

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.
- ④ Maximum temperature for oil lubricated design: 150 °C

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:

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

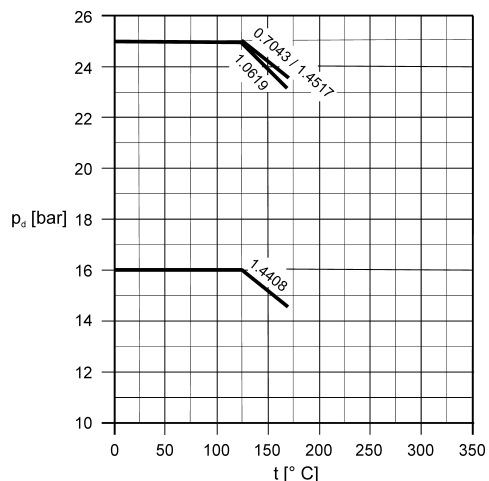
Flanges

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

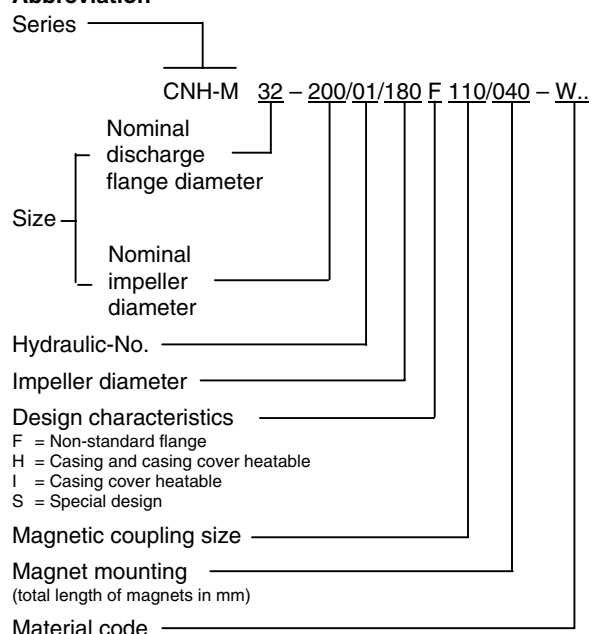
Drive

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-GJS-400-18U-LT (0.7043)	1.0619	1.4517
Impeller	1.4408	EN-GJL-200 (0.6020)	EN-GJL-200 (0.6020)	1.4408
Casing cover	1.4408	EN-GJS-400-18U-LT (0.7043)	1.0619	1.4517
Pump shaft	1.4571	1.4021	1.4021	1.4571
Driving shaft	1.7139			
Bearing bracket	EN-GJL-250 (06025)			
Can	2.4610/1.4571			
Rotor	1.4571/St.			

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 ① 150 °C ②
II 3G/ EEX c	T2	170 °C ① 150 °C ②
	T1	170 °C ① 150 °C ②

- ① Bearing bracket with grease lubrication
- ② Bearing bracket with oil lubrication

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, p = 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

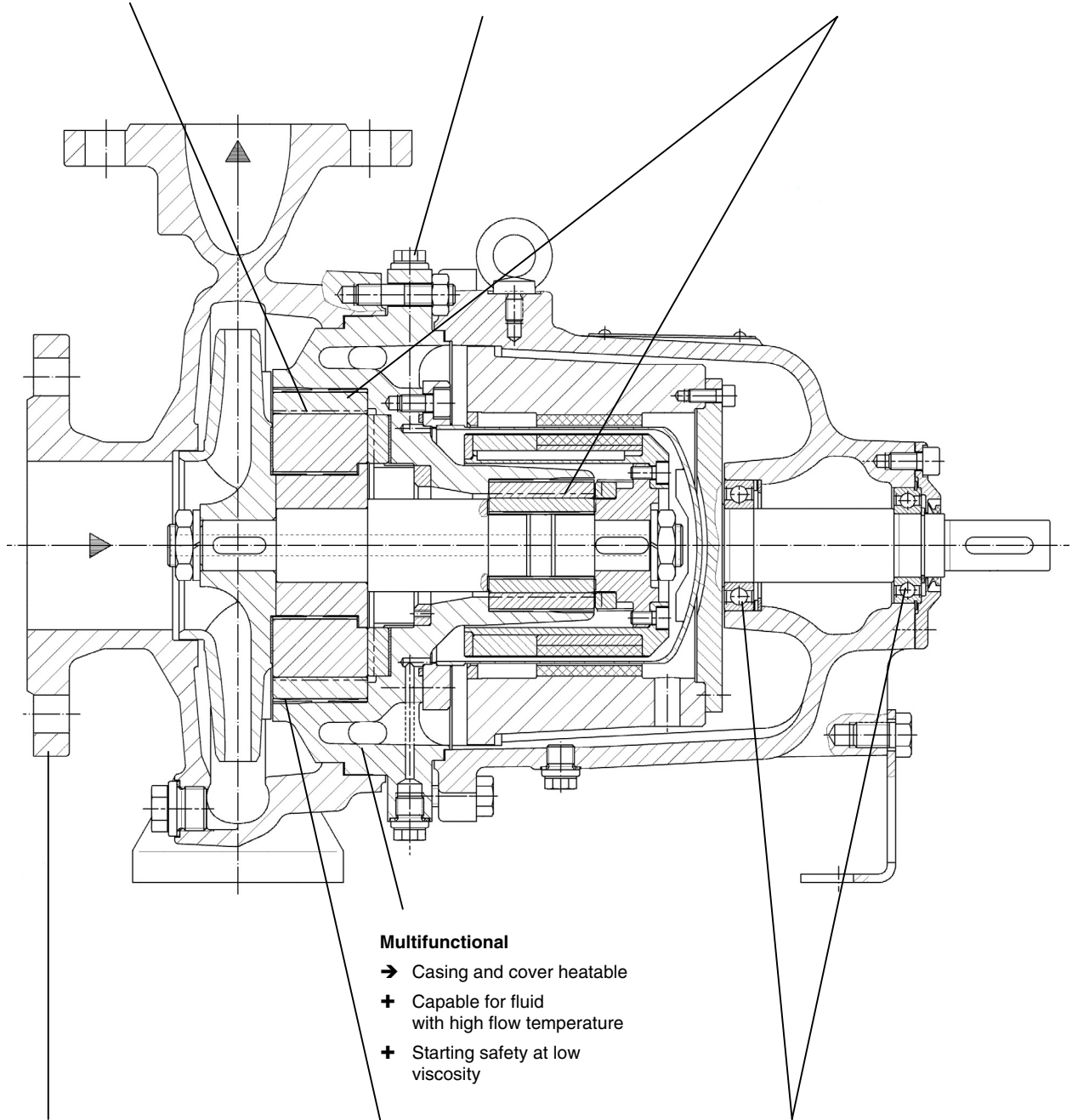
- Flush flow by SiC-sleeve bearings
- + Tolerance against solid particles
- + Security against leakages and damages of the can

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

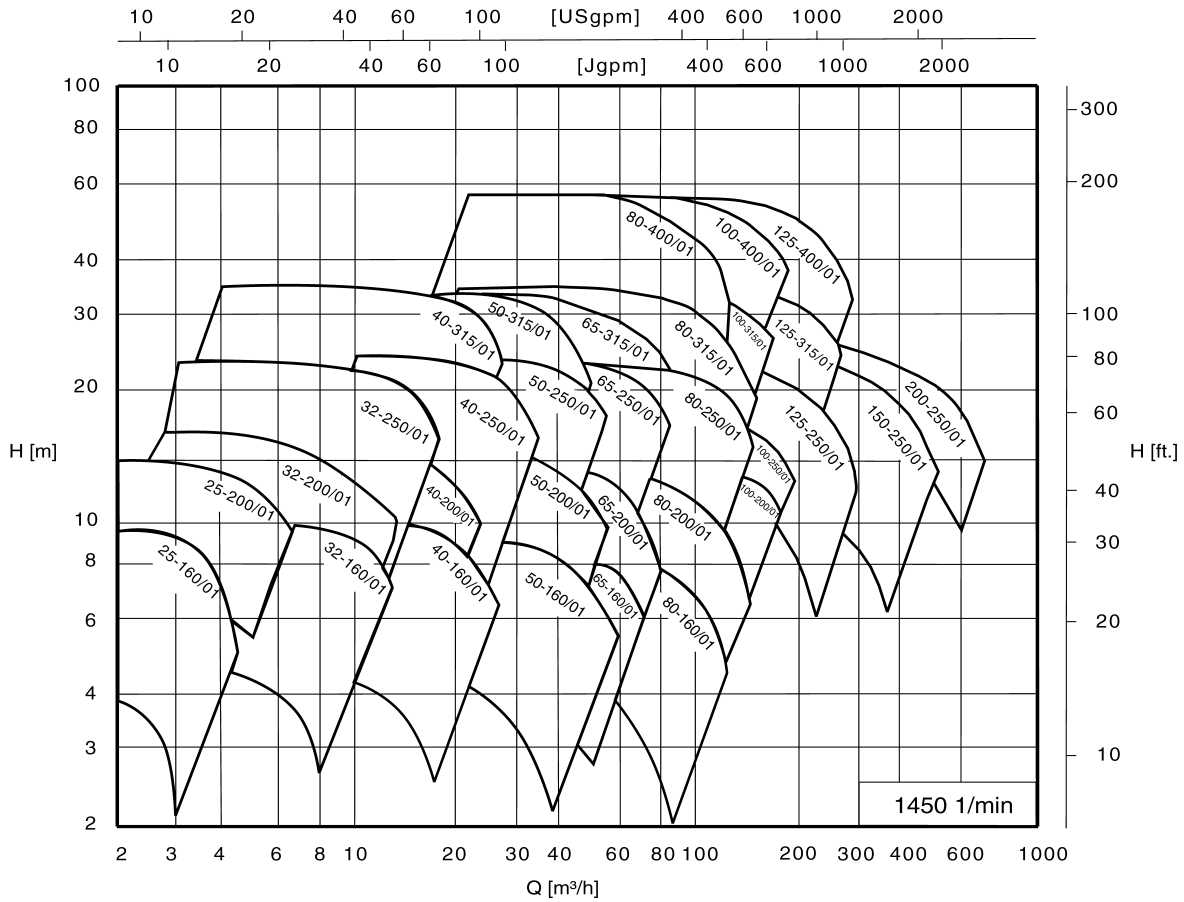
- Bearings mounted in flexible elements
- + Large temperature range also at high quality steel casing
- + Failure-free discharge at high temperature difference

Durable

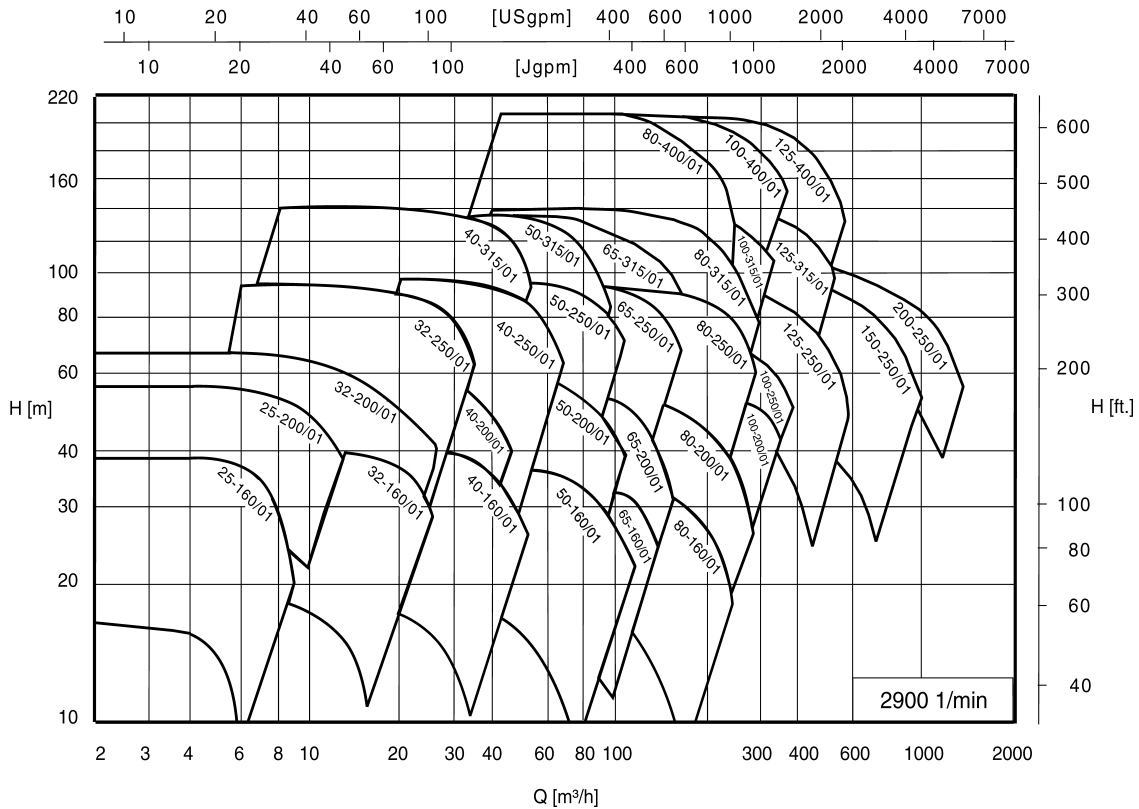
- External bearing with either grease or oil lifetime lubricated groove ball bearings
- + Large bearing clearance
- + Easy mounting

Performance graphs

n = 1450 1/min



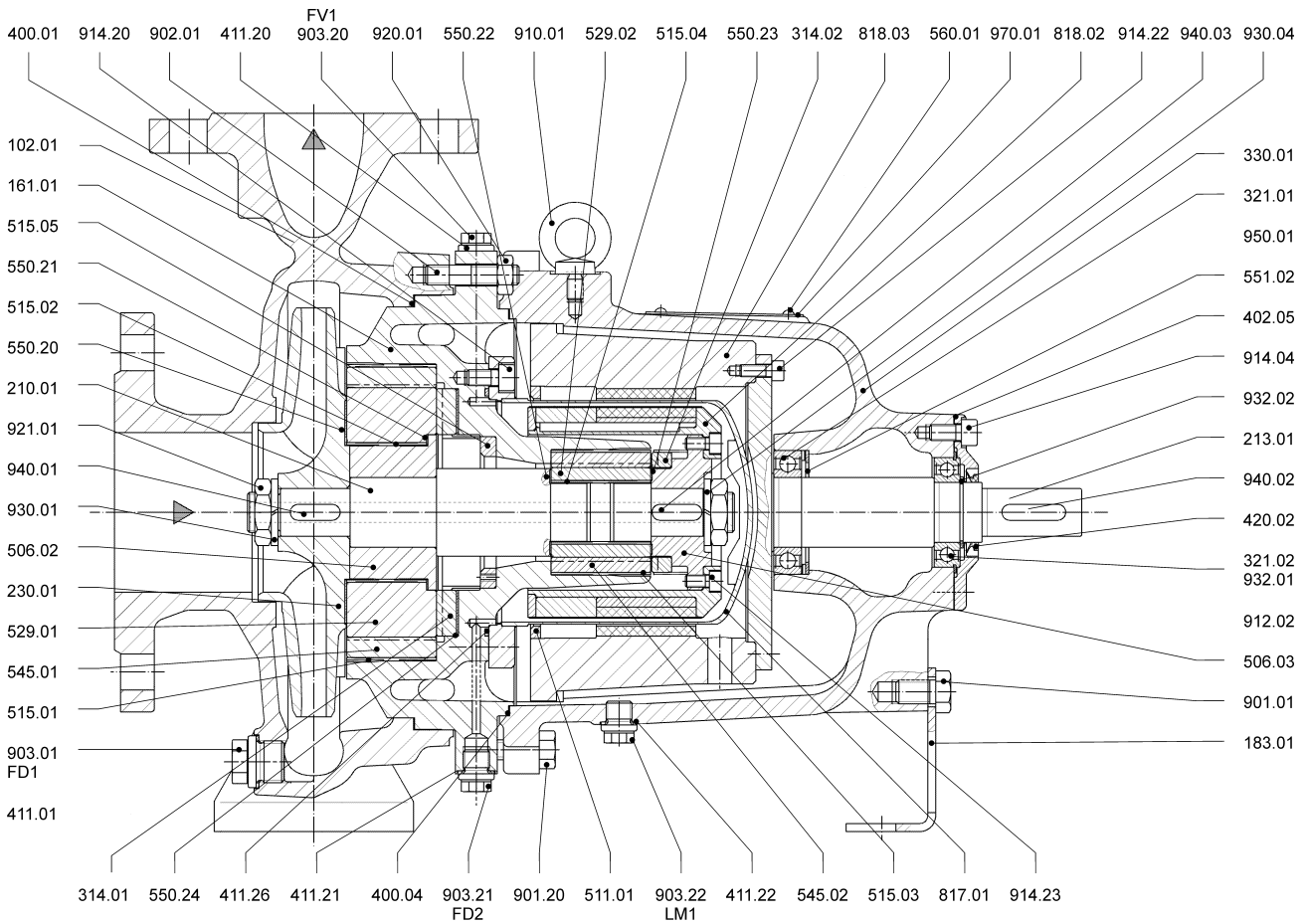
n = 2900 1/min



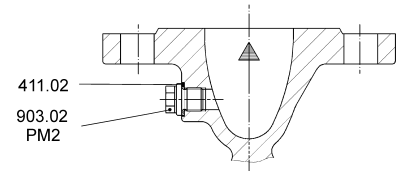
For exact performance data, please refer to the individual characteristics.

Sectional drawing

Sizes at 1. and 2. bearing bracket



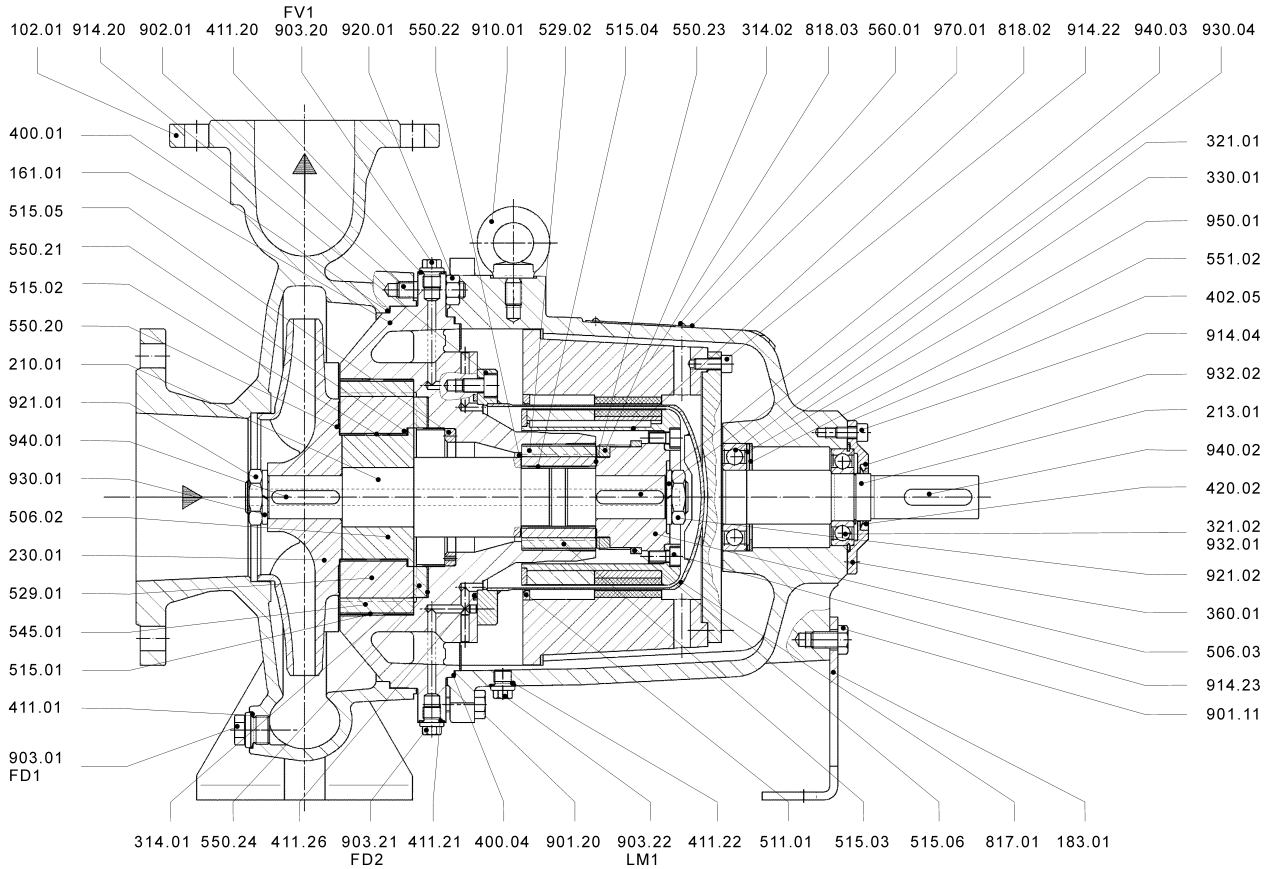
Design with pressure measuring



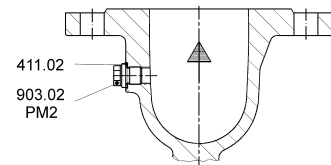
Denomination	Part No.	Denomination	Part No.	Denomination	Part No.
Volute Casing	102.01	Joint washer	411.21	Stud	902.01
Cover	160.01	Joint washer	411.22	Screw plug	903.02
Casing Cover	161.01	O-Ring	412.20	Screw plug	903.20
Supporting foot	183.01	Felt strip	422.02	Screw plug	903.21
Pump shaft	210.01	Distance ring	504.01	Screw plug	903.22
Drive shaft	213.01	Retaining ring	506.02	Socket-head cap screw	914.04
Impeller	230.01	Retaining ring	506.03	Socket-head cap screw	914.20
Axial bearing	314.01	Straining ring	515.01	Socket-head cap screw	914.21
Axial bearing	314.02	Straining ring	515.02	Socket-head cap screw	914.22
Radial ball bearing	321.01	Straining ring	515.03	Socket-head cap screw	914.23
Radial ball bearing	321.02	Straining ring	515.04	Hexagonal nut	920.01
Bearing bracket	330.01	Straining ring	515.05	Hexagonal nut	921.01
Bearing cover	360.01	Bearing sleeve	529.01	Hexagonal nut	921.02
Gasket	400.01	Bearing sleeve	529.02	Spring washer	930.01
Gasket	400.04	Bearing bush	545.01	Spring washer	930.04
Gasket	400.20	Bearing bush	545.02	Circlip	932.01
Gasket	400.21	Support disc	551.02	Circlip	932.02
Gasket	400.22	Can	817.01	Key	940.01
Gasket	400.23	Rotor	818.01	Key	940.02
Gasket	400.24	Rotor	818.02	Key	940.03
Joint washer	411.01	Coupling part	860.01	Key	940.05
Joint washer	411.02	Hexagonal screw	901.01	Ball bearing-	950.01
Joint washer	411.20	Hexagonal screw	901.20	compensating disc	

Sectional drawing

Sizes at 3. bearing bracket

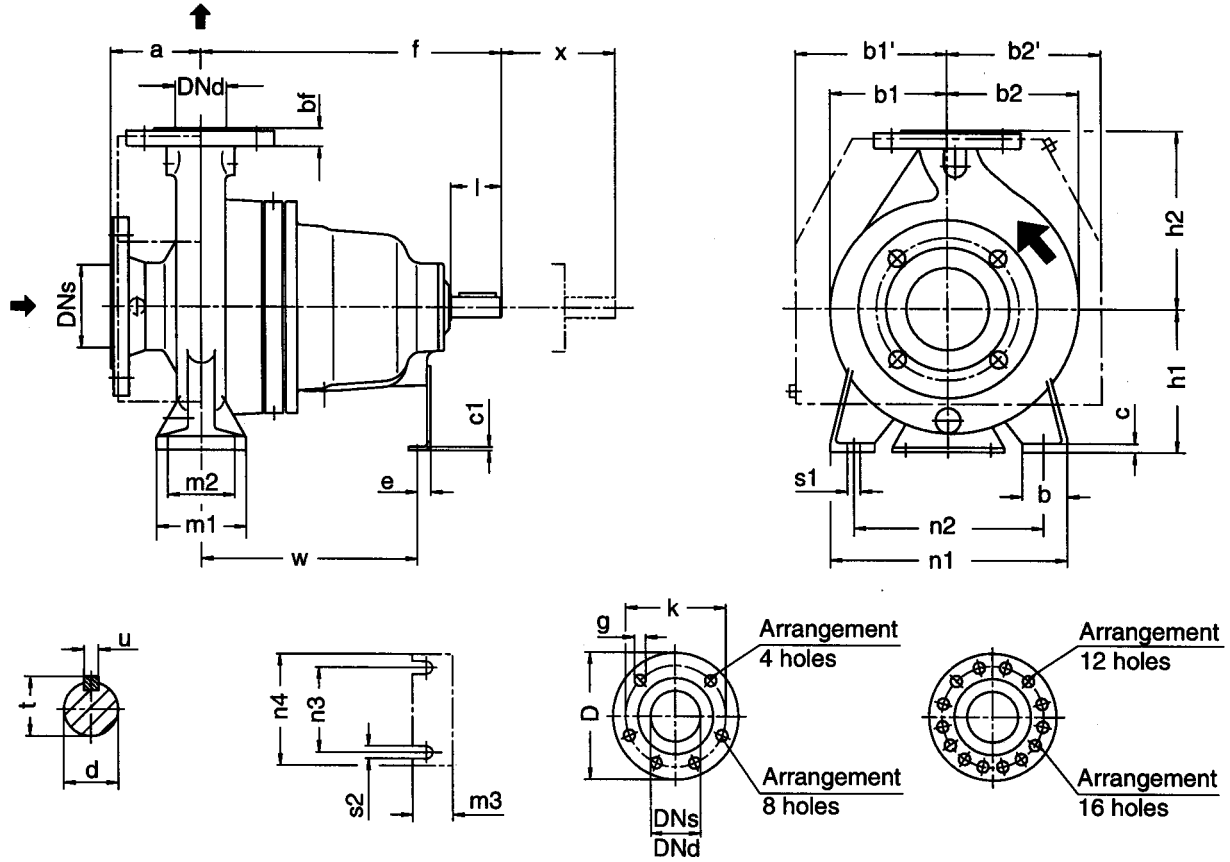


Design with pressure measuring



Denomination	Part No.	Denomination	Part No.	Denomination	Part No.
Volute Casing	102.01	Joint washer	411.22	Screw plug	903.02
Cover	160.01	O-Ring	412.20	Screw plug	903.20
Casing Cover	161.01	Felt strip	422.02	Screw plug	903.21
Supporting foot	183.01	Distance ring	504.01	Screw plug	903.22
Pump shaft	210.01	Distance ring	504.05	Socket-head cap screw	914.04
Drive shaft	213.01	Retaining ring	506.02	Socket-head cap screw	914.20
Impeller	230.01	Retaining ring	506.03	Socket-head cap screw	914.21
Axial bearing	314.01	Intermediate ring	509.03	Socket-head cap screw	914.22
Axial bearing	314.03	Straining ring	515.01	Socket-head cap screw	914.23
Radial ball bearing	321.01	Straining ring	515.02	Socket-head cap screw	914.24
Radial ball bearing	321.02	Straining ring	515.03	Hexagonal nut	920.01
Bearing bracket	330.01	Straining ring	515.04	Hexagonal nut	921.01
Bearing cover	360.01	Straining ring	515.05	Hexagonal nut	921.02
Bearing cover	360.05	Straining ring	515.07	Spring washer	930.01
Gasket	400.01	Bearing sleeve	529.01	Spring washer	930.04
Gasket	400.04	Bearing sleeve	529.02	Circlip	932.01
Gasket	400.20	Bearing bush	545.01	Circlip	932.02
Gasket	400.21	Bearing bush	545.02	Key	940.01
Gasket	400.22	Support disc	551.02	Key	940.02
Gasket	400.23	Can	817.01	Key	940.03
Gasket	400.24	Rotor	818.01	Key	940.05
Gasket	400.25	Rotor	818.02	Ball bearing-	950.01
Joint washer	411.01	Coupling part	860.01	compensating disc	
Joint washer	411.02	Hexagonal screw	901.01		
Joint washer	411.20	Hexagonal screw	901.20		
Joint washer	411.21	Stud	902.01		

Pump dimensions



Tolerances of companion dimensions according to DIN EN 735

Dimensions in mm without commitment.

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

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

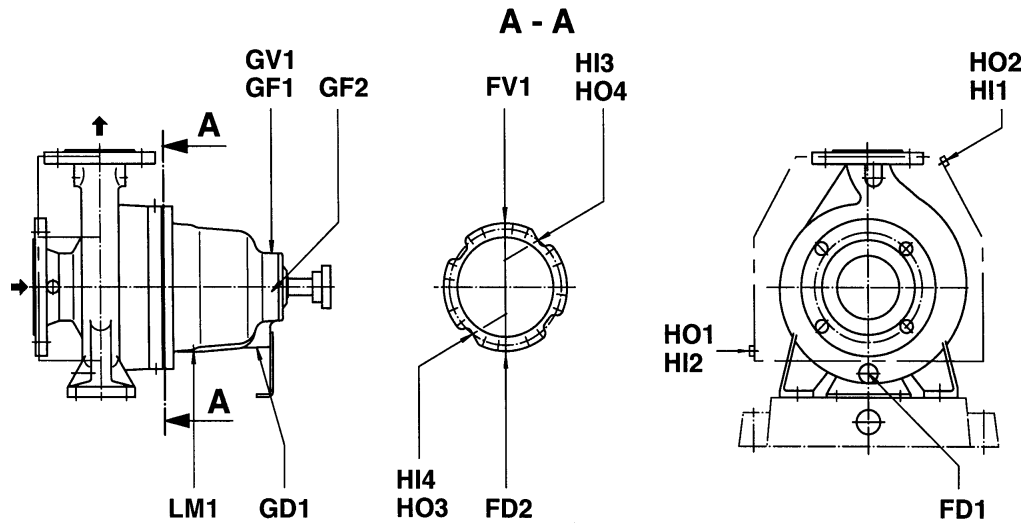
Flanges acc. to DIN EN 1092-1 PN 25
with material design W 22

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
GD1	G 1/4	Lubrication – draining
GF1	G 1/2	Lubrication – filling
GF2	-	Lubrication – filling
GV1	G 1/2	Lubrication – venting
HI1	G 3/8	Heating – inlet (steam)

Connections	Size	Denomination
HI2	G 3/8	Heating – inlet (fluid)
HI3	G 1/4	Heating – inlet (steam)
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

Subject to technical alterations



A Member of the
COLFAX PUMP GROUP

ALLWEILER AG
Postfach 1140 · 78301 Radolfzell
Allweilerstr. 1 · 78315 Radolfzell
Germany
Tel. +49 (0)7732 86-0
Fax. + 49 (0)7732 86-436
E-Mail: service@allweiler.de
Internet: http://www.allweiler.com