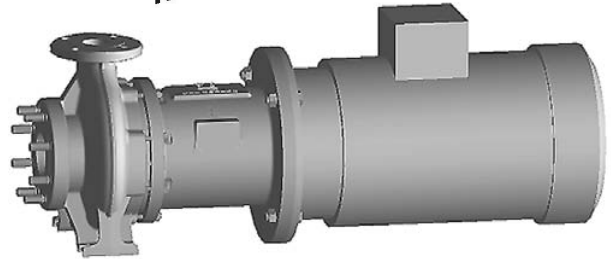


Volute Casing Centrifugal Pumps in inline design with magnetic coupling

ALLMAG[®]
Series CMA



Application

For handling toxic, volatile, explosive or other fluids harmful to the environment which require the application of hermetically sealed pumps without shaft seals. The liquids must not chemically attack the materials of the pump/magnetic clutch.

Type of construction / Installation

Horizontal volute-casing centrifugal pump, single-stage of the direct coupled design with magnetic coupling. The casing dimensions and hydraulic data correspond to DIN EN 22858 / ISO 2858.

Separated by the stationary can, the transmission of the torque is contactless from the outer to the inner rotor by means of analogously arranged CoSm magnets. The outer magnetic rotor is mounted on to the motor shaft. The inner magnetic rotor is directly connected with a symmetric, double-flow impeller thus causing the resulting axial thrust to be reduced to almost zero. Due to the between bearing mounting of the impeller, the resulting radial forces in the sliding bearings are reduced by 50%.

Performance data at 50 Hz speeds

Q up to 80 m³/h p_d up to 16 bar^①
H up to 55 m DN_d from 25 to 50
t up to 150 °C

① Inlet pressure plus internal pressure at maximum delivery head (= 0-flow) must not exceed the stated p_d value.

For the achievable flow rate, please refer to the range charts and/or individual characteristic curves.

Recommended minimum flow rate: $Q_{min.} = 0.3 \times Q_{\eta opt.}$

Nominal capacity-magnetic coupling
P up to 37 kW at 2900 1/min

Lengths of magnet: 20, 30, 40, 60 und 80 mm

The mentioned performance data are to be considered as a product and performance abstract only. The particular operating limits can be taken from the quotation or order acknowledgement.

Flanges

Connection flange: dimensions according to EN 1092-1, PN 16.

Drive

By serial three-phase squirrel-cage induction motor. Up to 2.2 kW 220/380V, from 3 kW 400/660V, IP55.

Abbreviation

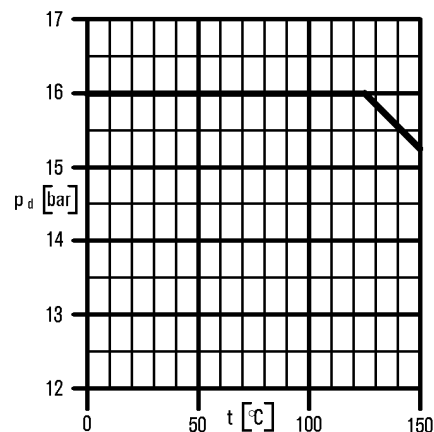
	CMA 32 - 200/01 110/40 - W20
Series	_____
Size	_____
Nominal discharge nozzle diameter	_____
Nominal impeller diameter	_____
Hydraulic-No.	_____
Shroud diameter	_____
Maget length	_____
Material code	_____

The designation is indicated on the name plate.

Materials

Denomination	Material design
Volute casing	1.4408
Impeller	1.408
Casing cover	1.4571
Drive lantern	EN-GJL-250 (GG-25)
Bearing	S SiC
Can flange	1.1191
Can	2.4610

Pressure as a function of the media temperature



Explosion protection



The pump fulfils the requirements according to EU Explosion Protection Directive 2014/34/EU (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.

Hazard category	Temperature class acc. to EN 13463-1	Max. permissible medium temperature
II 2G / c/b II 3G / c	T4	103 °C
	T3	150 °C ①
	T2	150 °C ①
	T1	150 °C ①

① corresponds to the pump's temperature limit

Type of protection b = Monitoring of ignition sources

Type of protection c = Safe design

The temperatures specified above are based on a max. ambient temperature of 40°C.

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.

Voluntary product certification by TÜV Product Service GmbH, Ridler Str. 65, D-80339 München, ID no. 0123.

SeriesCMA
Innovation

Patented new pump concept
intelligent design solutions

Shaftless design

With gas-protected bearings
and automatic ventilation enable
safe dry-running

Installation

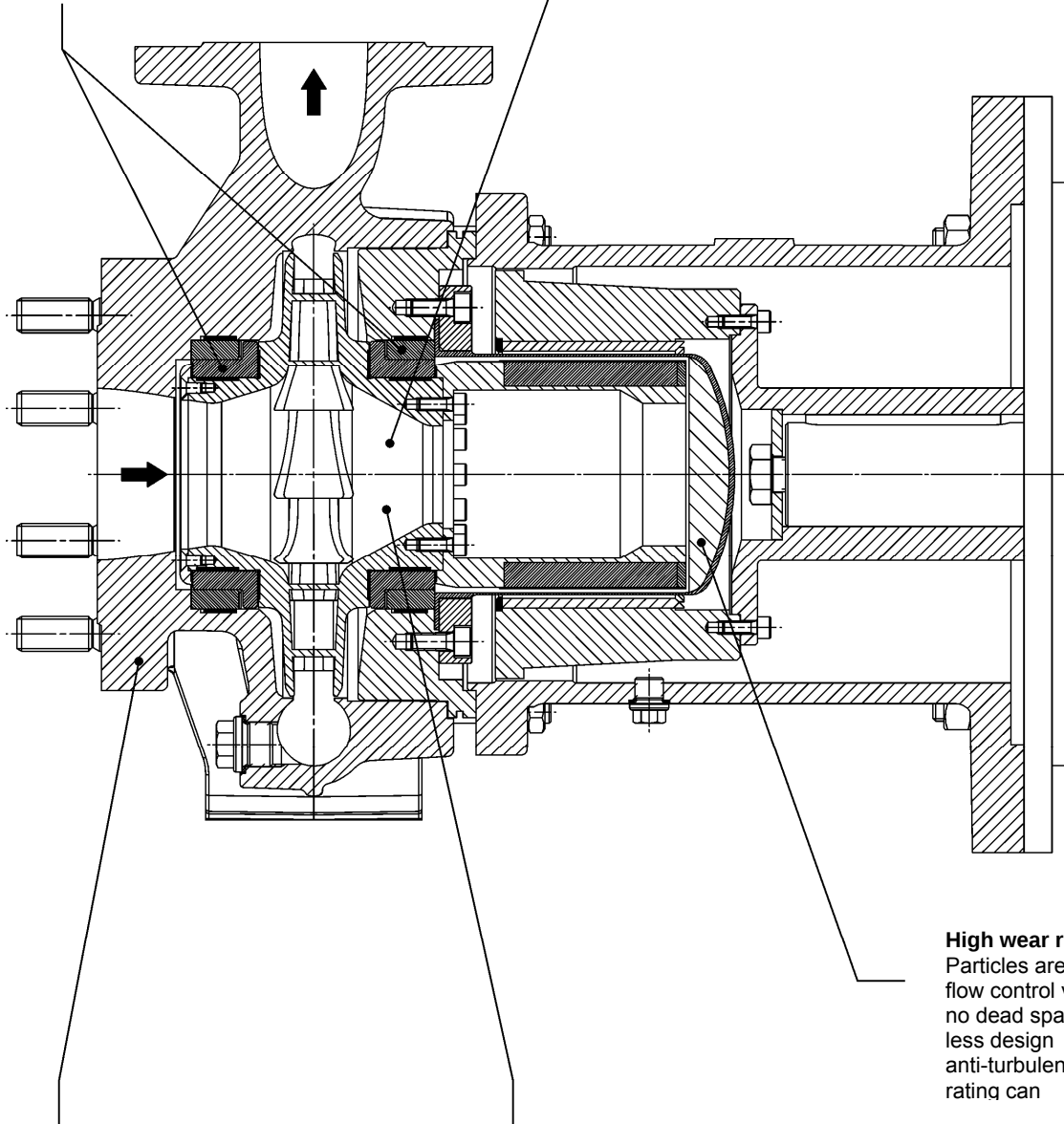
Easy installation due to
the block-type construction
no coupling alignment
required

Bearing

Due to between bearing of
the impeller, reduction of the
radial forces (bearing lead)

Starting safety

Reduced GD^2 at the inner ro-
tor due to non shaft design


Dimensions

Flanges according to EN
1092-1; pump of direct cou-
pled design; casing dimen-
sions and hydraulic data ac-
cording to ISO 2858 (EN 22
858)

No axial forces

No axial forces as a result of
a non-shaft design and sym-
metrical impeller

Flushing stream

Patented flush flow proven in
1000 practical applications

Reliable

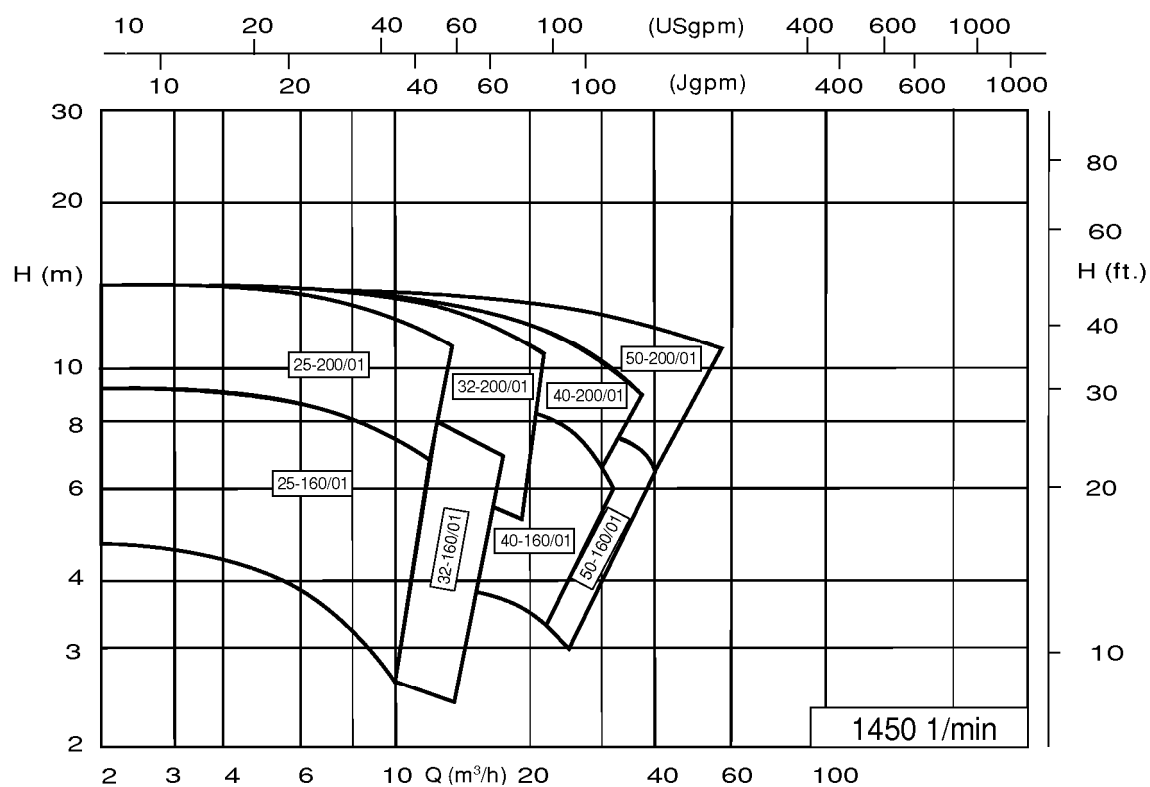
Hydrodynamic lubrication of
the SiC bearings; accommo-
dation of the SiC bearings in
modern tolerance rings

Structure

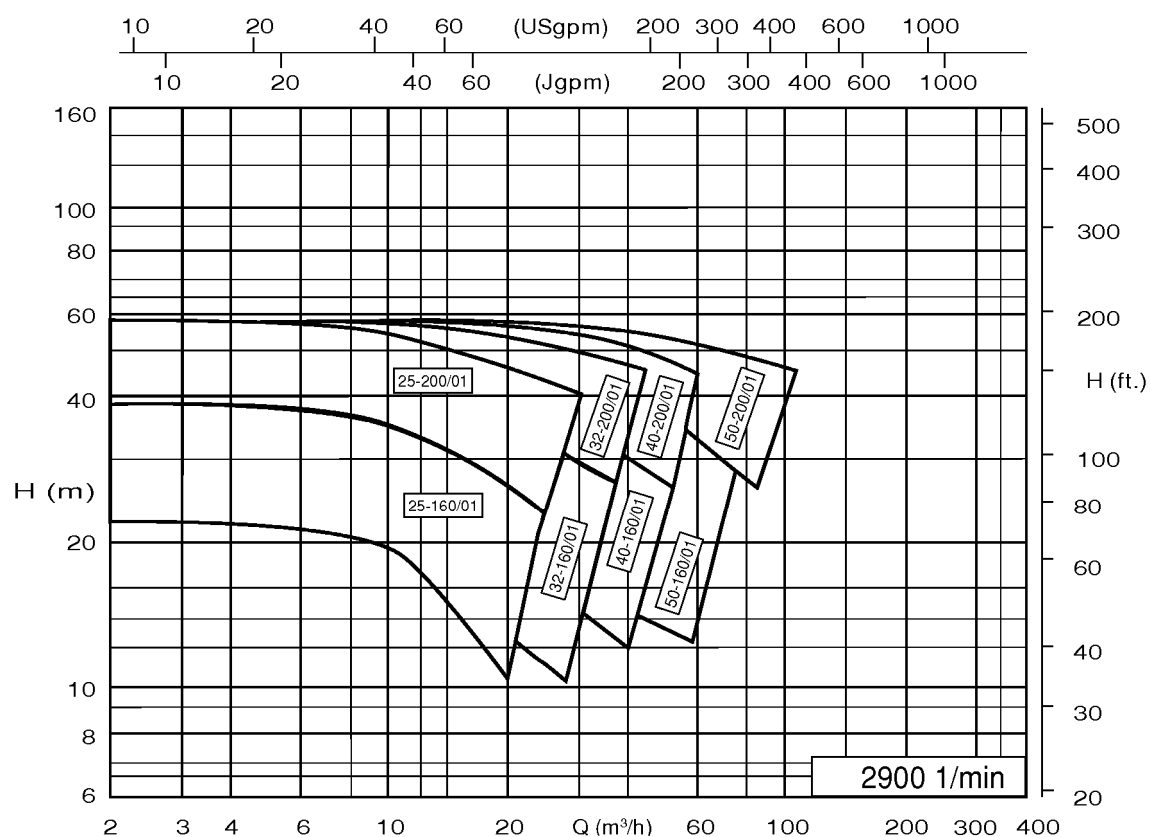
Standardized components;
few components; pressure-
proof casing components
with corrosion allowance ac-
cording to ISO 5199

Performance graphs

$n = 1450 \text{ 1/min}$

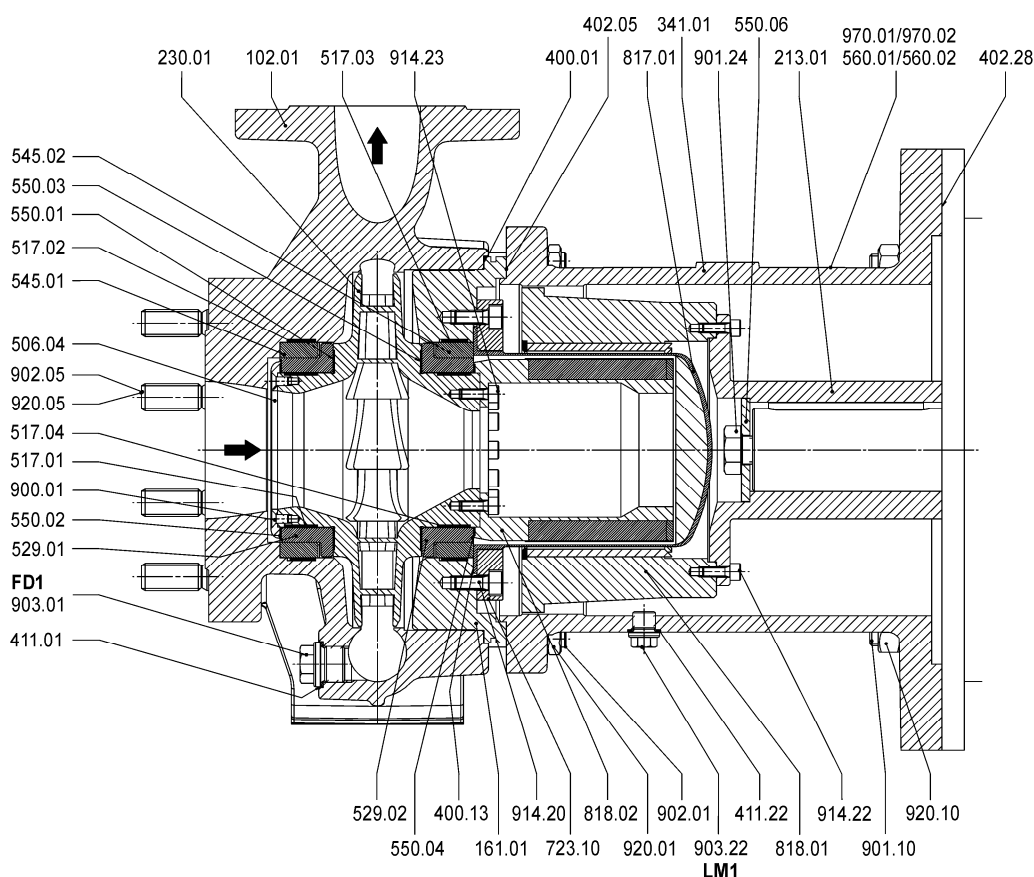


$n = 2900 \text{ 1/min}$

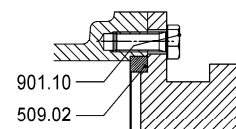


For exact performance data, please refer to the individual characteristics.

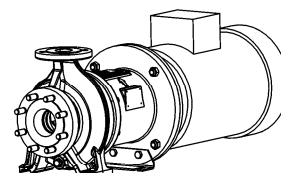
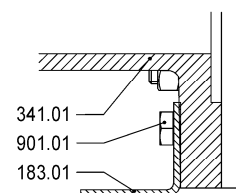
Sectional drawing, series CMA



Zwischenring bei Motorgröße
100 L/112 M



Ausführung mit Stützfuß



Denomination	Part No.	Denomination	Part No.	Connection
Volute casing	102.01	Disc	550.03	FD1 Draining
Casing cover	161.01	Disc	550.04	LM1 Leak tightness monitoring
Support foot	183.01	Disc	550.06	
Drive shaft	213.01	Pin	560.01	
Impeller	230.01	Pin	560.02	
Adapter	341.01	Flange	723.10	
Gasket	400.01	Containment shell	817.01	
Gasket	400.13	Rotor	818.01	
Gasket	402.05	Rotor	818.02	
Gasket	402.28	Flat head	900.01	
Joint ring	411.01	Hexagonal screw	901.10	
Joint ring	411.22	Hexagonal screw	901.24	
Retaining ring	506.04	Stud	902.01	
Intermediate ring	509.02	Stud	902.05	
Tolerance ring	517.01	Screwed plug	903.01	
Tolerance ring	517.02	Screwed plug	903.22	
Tolerance ring	517.03	Socket head cap screw	914.20	
Tolerance ring	517.04	Socket head cap screw	914.22	
Bearing sleeve	529.01	Socket head cap screw	914.23	
Bearing sleeve	529.02	Hexagonal nut	920.01	
Bearing bush	545.01	Hexagonal nut	920.05	
Bearing bush	545.02	Hexagonal nut	920.10	
Disc	550.01	Name plate	970.01	
Disc	550.02	Rotation arrow	970.02	

Base plate and/or foundation design, series CMA

The motor dimensions as indicated are approximate values. Exact data depend on the motor make.

When using special motors, it must be noted that depending upon the enclosures, different performances are allocated to the individual sizes. The main dimensions are changes accordingly. In case of order, binding tables of motor dimensions must be transmitted to us.

$$h1 > \frac{a1}{2} \quad \text{or} \quad \frac{d}{2}$$

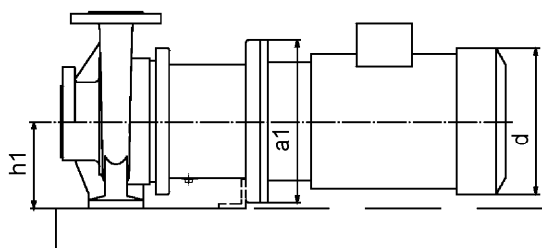
Base plate and/or foundation design
without support foot

$$h1 \leq \frac{a1}{2} \quad \text{or} \quad \frac{d}{2}$$

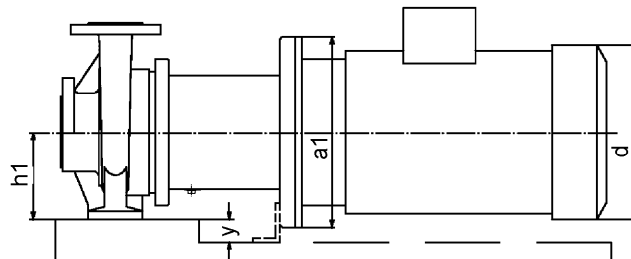
$$y = 0$$

with support foot

$$y > 0$$

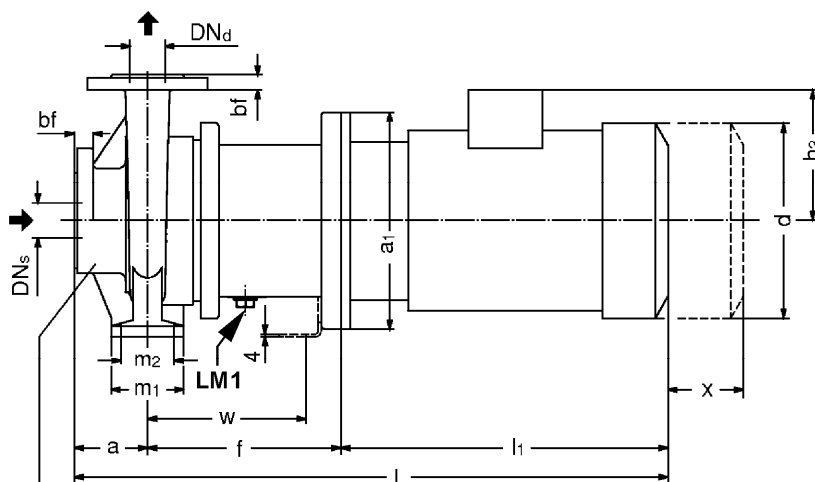


marking in table ●

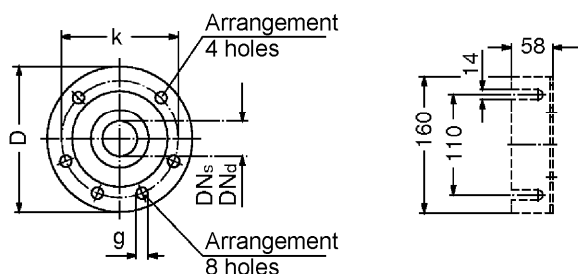
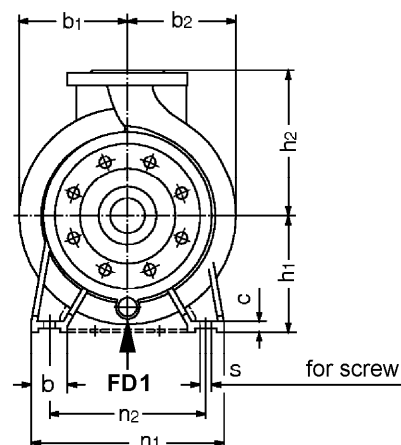


marking in table X

Unit dimensions, series CMA



Casing design on suction side in size
25-160/01, 25-200/01, 32-160/01 und 32-200/01



Tolerances of joint dimensions acc. to DIN EN 735.

Sence of rotation: clockwise as seen from the driving side.

Dimensions in mm
without commitment.

Flange dimensions

DNs DNd	D	bf	k	g	No. of holes
25	115	16	85	14	4
32	140	18	100	19	4
40	150	19	110	19	4
50	165	19	125	19	4
65	185	19	145	19	4
80	200	19	160	19	8

Connections

DNs DNd	Drainage	Leak tightness monitoring
25-80	FD1 G 1/2	LM1 G 1/4

Unit dimensions, series CMA

Dimmensions in mm without commitment.

Pump-size	Motor-size	Base plate and/or foundation design see page 6	Support foot	Unit dimensions																						Allocation motor shaft/ drive shaft Contained in abbreviation	
				Pump dimensions								Foot dimensions								Motor dimensions approximate dim. different depending upon manufacturer							Extension dim
				Flansche																							
				DNs	DNd	a	f	b1	b2	h1	h2	b	c	m1	m2	n1	n2	w	y	s	a1	d	h3	l1	l		x
25-160/01	100 L	•	①	40	25	80	279	135	135	132	160	50	15	100	70	240	190	280	28	M12	250	203	158	312	671	195	28/250
	112 M	•	①				322														228	171	335	694	28/250		
	132 S	×	①				322														300	266	196	413	815		237
25-200/01	100 L	•	①	40	25	80	268	135	140	160	180	50	15	100	70	240	190	270	-	M12	250	203	158	312	660	195	28/250
	112 M		•				①														311	228	171	335	683		28/250
	132 S		•				②														322	300	266	196	413	804	237
	160 M	×	②				322														350	320	234	525	927	247	42/350
32-160/01	100 L	•	①	50	32	80	284	135	135	132	160	50	15	100	70	240	190	285	28	M12	250	203	158	312	676	195	28/250
	112 M	•	①				327														228	171	335	699	28/250		
	132 S	×	②				339														300	266	196	413	820	237	38/300
	160 M		②				339														350	320	234	525	944	247	42/350
32-200/01	100 L	•	①	50	32	80	268	135	145	160	180	50	15	100	70	240	190	270	-	M12	250	203	158	312	660	195	28/250
	112 M		•				①														311	228	171	335	683		28/250
	132 S		•				②														322	300	266	196	413	804	237
	160 M	×	②				322														350	320	234	525	927	247	42/350
40-160/01	100 L	•	①	65	40	80	282	135	135	132	160	50	15	100	70	240	190	285	28	M12	250	203	158	312	674	195	28/250
	112 M	•	①				325														228	171	335	697	28/250		
	132 S	×	①				336														300	266	196	413	818	237	38/300
	160 M		②				336														350	320	234	525	941	247	42/350
40-200/01	100 L	•	①	65	40	100	271	135	150	160	180	50	15	100	70	265	212	270	-	M12	250	203	158	312	683	195	28/250
	112 M		•				①														314	228	171	335	706		28/250
	132 S		•				②														325	300	266	196	413	827	237
	160 M	×	②				325														320	234	525	950	247	42/350	
	160 L		②				325														350	320	234	525		950	42/350
	180 M		②				325														375	275	610	1035		48/350	
50-160/01	100 L	•	①	80	50	100	283	135	135	160	180	50	15	100	70	265	212	285	-	M12	250	203	158	312	695	195	28/250
	112 M		•				①														326	228	171	335	718		28/250
	132 S		•				②														338	300	266	196	413	839	237
	160 M	×	②				338														320	234	525	963	247	42/350	
	160 L		②				338														350	320	234	525		963	42/350
	180 M		②				338														375	275	610	1048		48/350	
50-200/01	100 L	•	①	80	50	100	273	140	160	160	200	50	15	100	70	265	212	275	-	M12	250	203	158	312	685	195	28/250
	112 M		•				①														316	228	171	335	708		28/250
	132 S		•				②														328	300	266	196	413	829	237
	160 M	×	②				328														320	234	525	953	247	42/350	
	160 L		②				328														350	320	234	525		953	42/350
	180 M		②				330														375	275	610	1038		48/350	
	200 L		②				330														400	415	310	665		55/400	

① without support foot ② available with or without support foot depending upon the speed (see selection programme for magnetic drives)

Other pump-motor combinations are documented in our selection programme ALL2CAD.

Motor rated output in kW

	100 L	112 M	132 S	160 M	160 L	180 M	200 L
n = 1450 1/min	2,2 3	4	5,5	11	15	18,5	30
n = 2900 1/min	3	4	5,5 7,5	11 15	18,5	22	30 37

Subject to technical alterations.

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