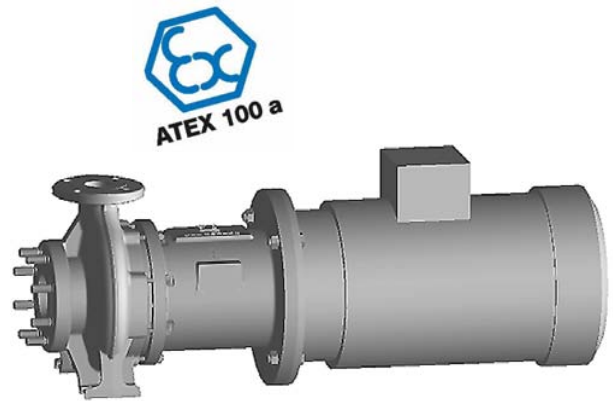


Volute Casing Centrifugal Pumps in inline design with magnetic coupling

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: $Q_{min.} = 0.3 \times Q_{11 \text{ opt.}}$

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

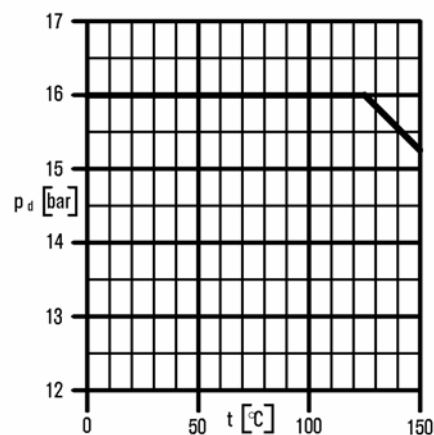
	CMA 32 - 200/01	110/40 - W20
Series	CMA	
Size	32	110/40
Nominal discharge nozzle diameter	200	110
Nominal impeller diameter	01	40
Hydraulic-No.	01	
Shroud diameter	W20	
Maget length	20	
Material code	W20	

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 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:

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

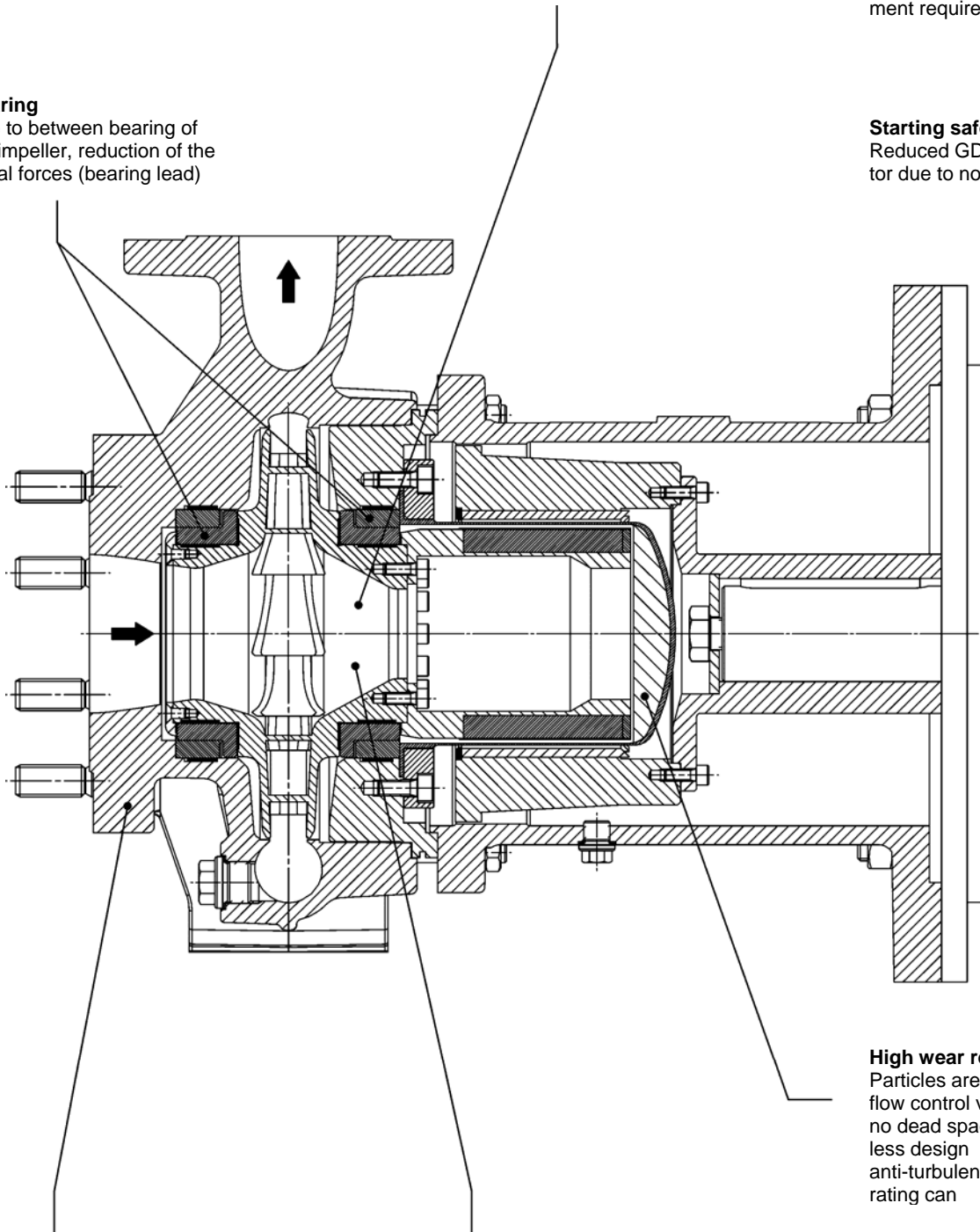
Easy installation due to the block-type construction no coupling alignment required

Bearing

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

Starting safety

Reduced GD^2 at the inner rotor due to non shaft design



High wear resistance

Particles are ground by flush flow control via SiC bearings no dead space due to shaftless design anti-turbulence ribs in separating can

Dimensions

Flanges according to EN 1092-1; pump of direct coupled design; casing dimensions and hydraulic data according to ISO 2858 (EN 22 858)

No axial forces

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

Flushing stream

Patented flush flow proven in 1000 practical applications

Reliable

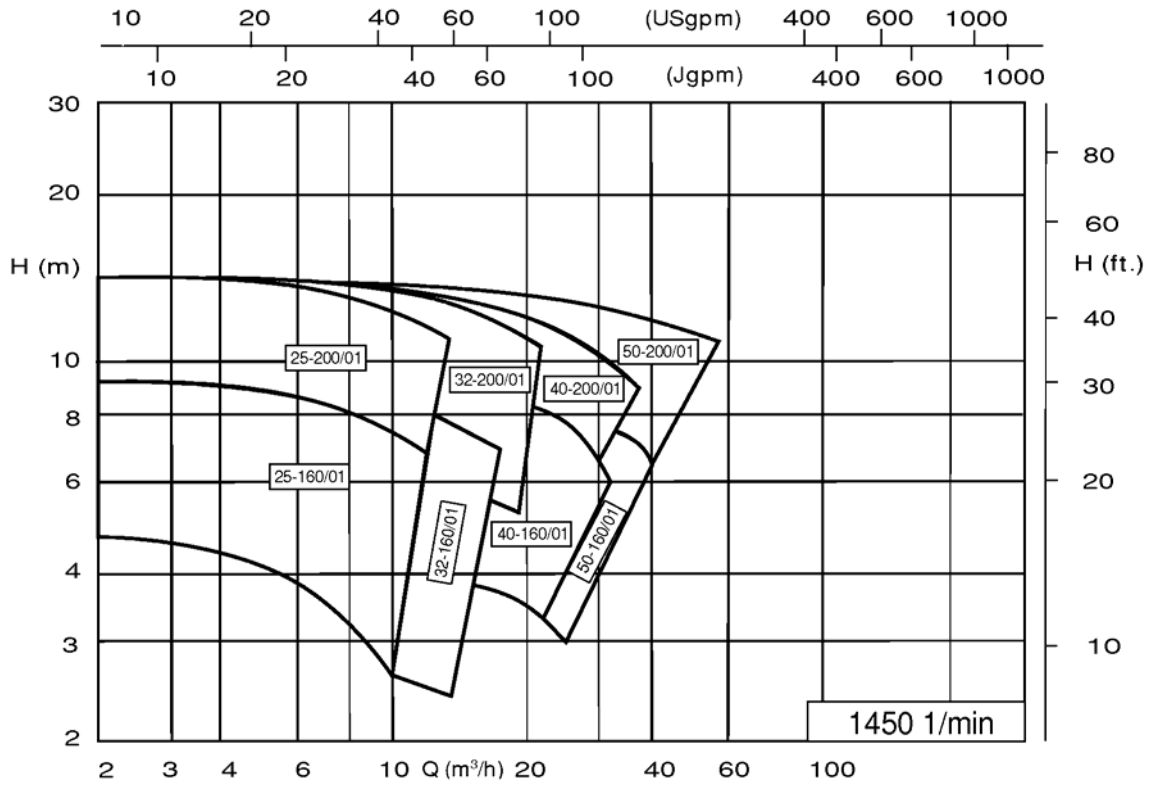
Hydrodynamic lubrication of the SiC bearings; accommodation of the SiC bearings in modern tolerance rings

Structure

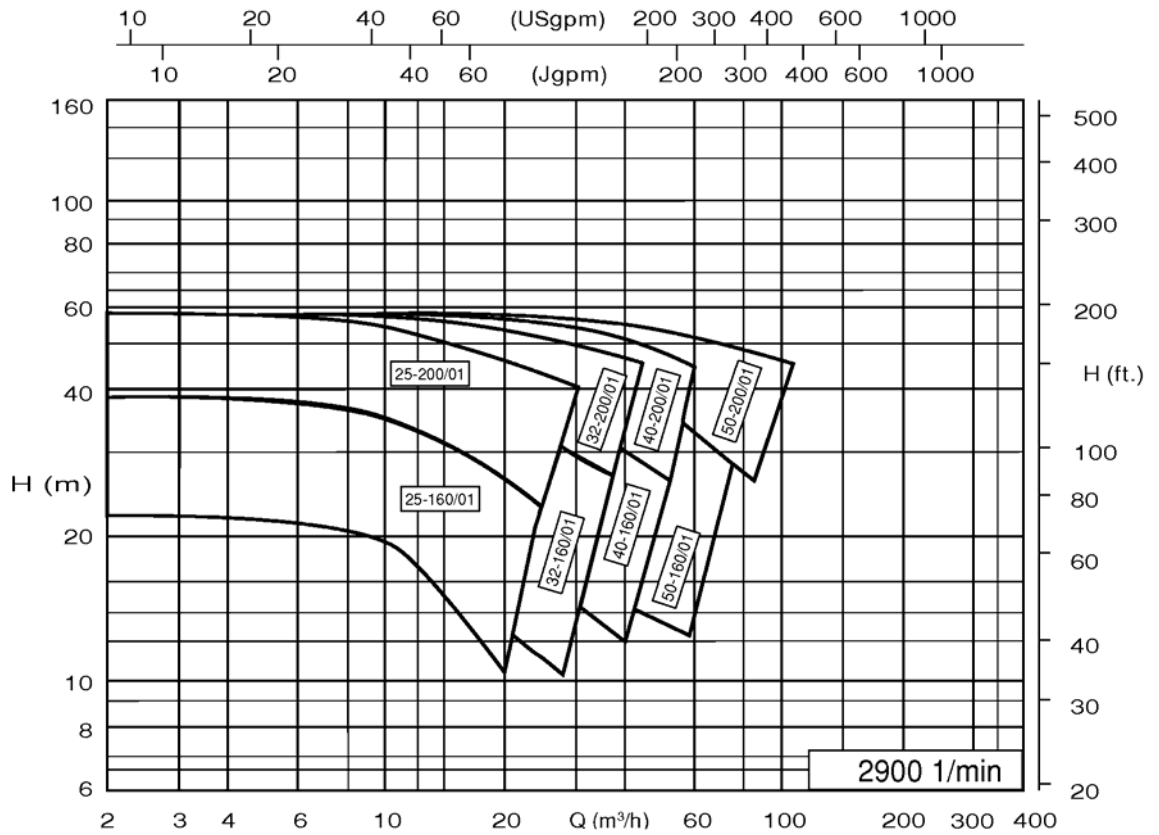
Standardized components; few components; pressure-proof casing components with corrosion allowance according to ISO 5199

Performance graphs

n = 1450 1/min

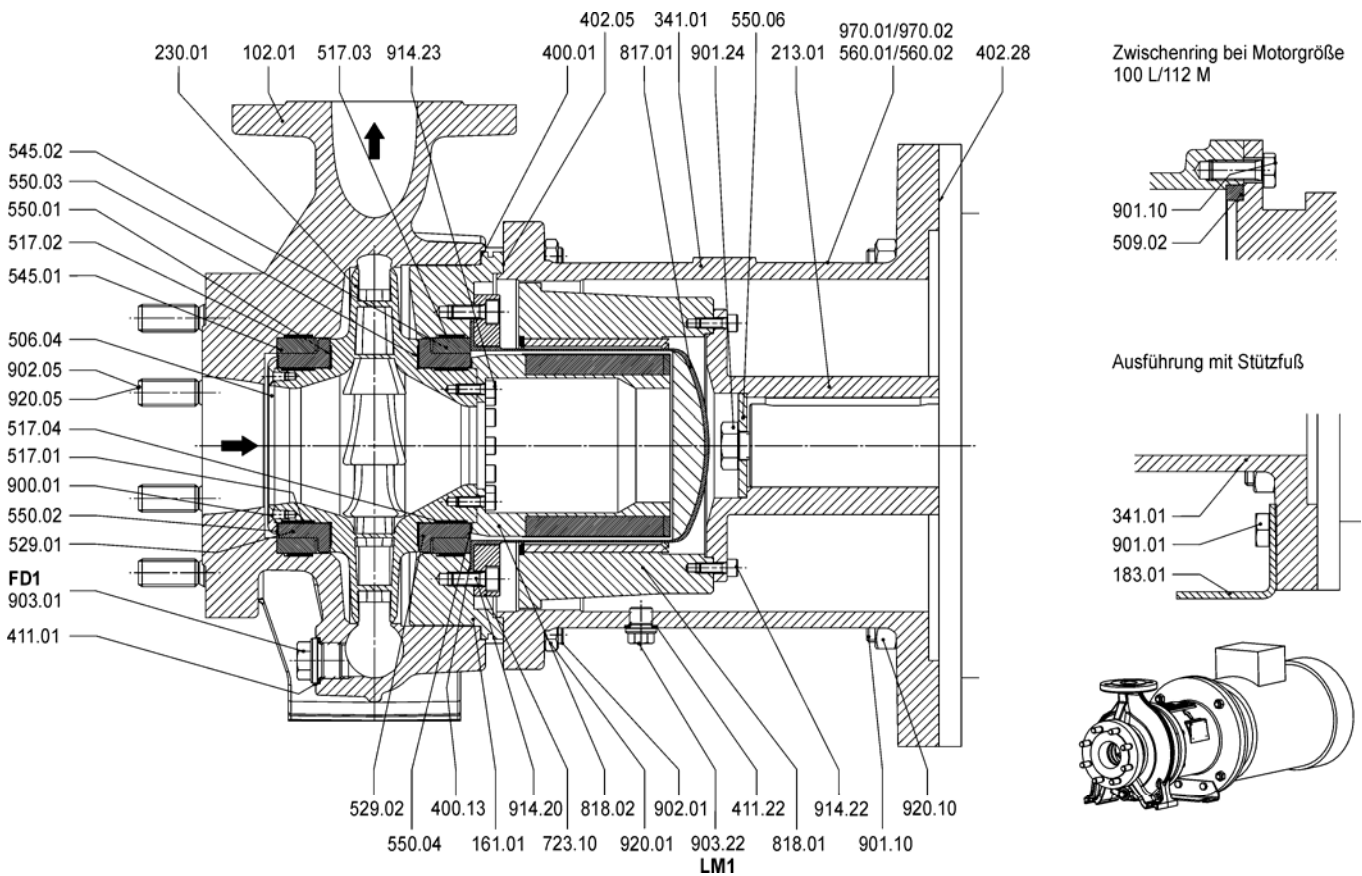


n = 2900 1/min



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

Sectional drawing, series CMA



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.

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

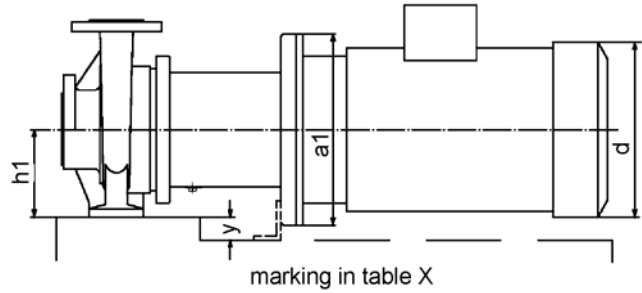
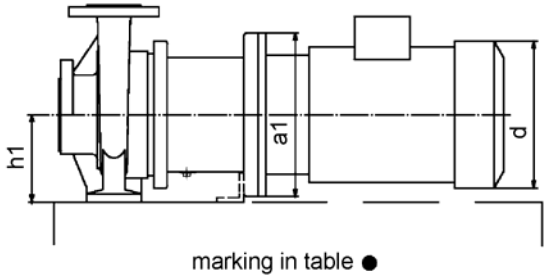
Base plate and/or foundation design
without support foot

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

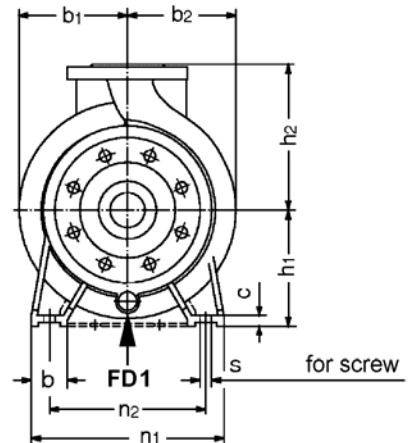
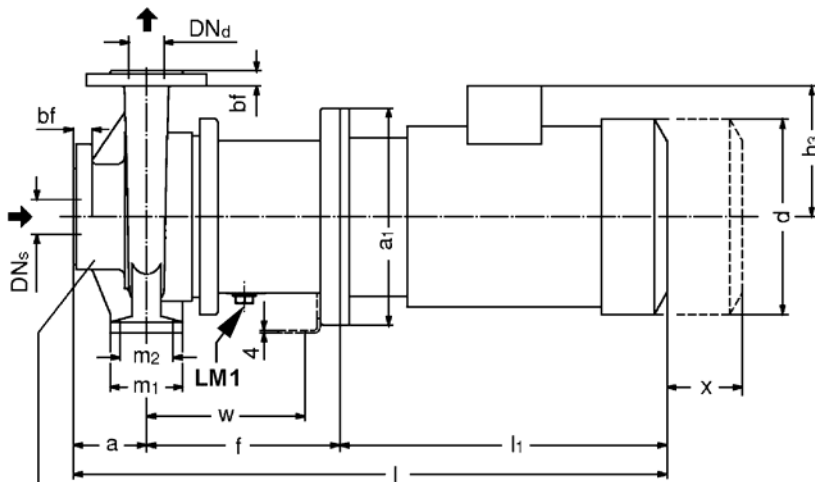
$$y = 0$$

with support foot

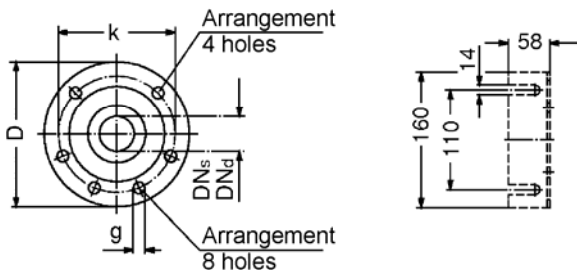
$$y > 0$$



Unit dimensions, series CMA



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



Flange dimensions					
DN _s DN _d	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

Tolerances of joint dimensions acc. to DIN EN 735.

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

Dimensions in mm without commitment.

Connections		
DN _s DN _d	Drainage	Leak tightness monitoring
25-80	FD1	LM1
	G 1/2	G 1/4

Subject to technical alterations.



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