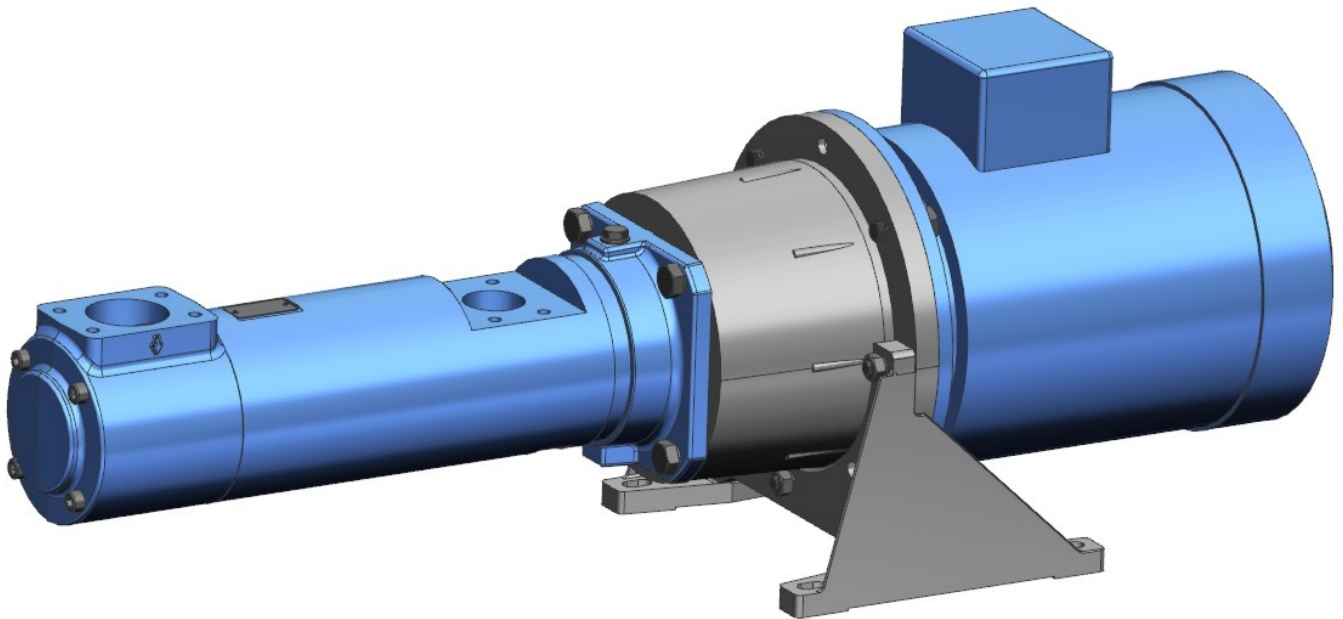


Screw pump Series CFHM



Utilization

The **CFHM** series from ALLWEILER is suitable for use in all segments of industry where lubricating liquids are pumped that do not contain abrasive components and will not chemically attack the pump materials. Pumped liquids include petroleum-based hydraulic oils, synthetic hydraulic liquids, lubricating oils, and native (environmentally friendly, biologically degradable) oils.

Main fields of application

Main fields of application are in hydraulic systems, as lubrication pumps in mechanical engineering, liquid transfer pumps, and other similar applications.

Design

The **CFHM** series is comprised of three-screw, self-priming screw pumps with hardened and polished screws. The drive of the drive spindle is hydraulic, the axial thrust is balanced completely hydrostatic. The drive screw bearing is a groove ball bearing lubricated by the pumped liquid.

Function

The three screws have specially shaped thread flanks that form sealed chambers. As the screws turn, the contents of the chambers are moved continuously in the axial direction from the suction side to the pressure side of the pump. This design produces no turbulence despite rotation of the screws. Constant chamber volumes eliminate squeezing forces, thereby delivering virtually pulsation-free operation.

Performance data

Capacity	Q	30	up to	880 l/min
Discharge pressure (including intermittent operation)	p_d		up to	120 bar ①
Inlet pressure	p_s		up to	3 bar
Liquid temperature	t		up to	100 °C
Liquid viscosity	ν	3	up to	760 mm ² /s

① Permissible pressure load depends on viscosity and speed (see individual curves). Intermittent operation refers to: Alternating loads when the pump is frequently switched on and off (such as variable speed oil drives on turbines).

Installation

The following options are available for specific requirements:

- bracket, including mounting foot, for horizontal or vertical dry installation.
- installation bracket for vertical tank installation.

Shaft sealing

Shaft sealing is provided by an uncooled, maintenance-free, unbalanced mechanical seal.

Connections

Suction and discharge connections with SAE flange connection.

Nominal diameter of discharge flange: DN_d 1 to 3 inches (depending on pump size).

Overload protection

A pipeline-mounted valve shall be provided.

Drive

The pump drive is a standard three-phase squirrel-cage motor according to the IEC standard.

In most cases, surface-cooled three-phase squirrel-cage motors, type B3 or V1 are provided; IP 55 protection class according to the IEC standard, insulation class B, motor coil for 400 VΔ, 50 or 60 Hz.

Explosion protection

When used in an explosive environment, please consult the manufacturer.

Refer to proposal or order documentation for the maximum permissible temperature of pumped liquid for the respective temperature classes.

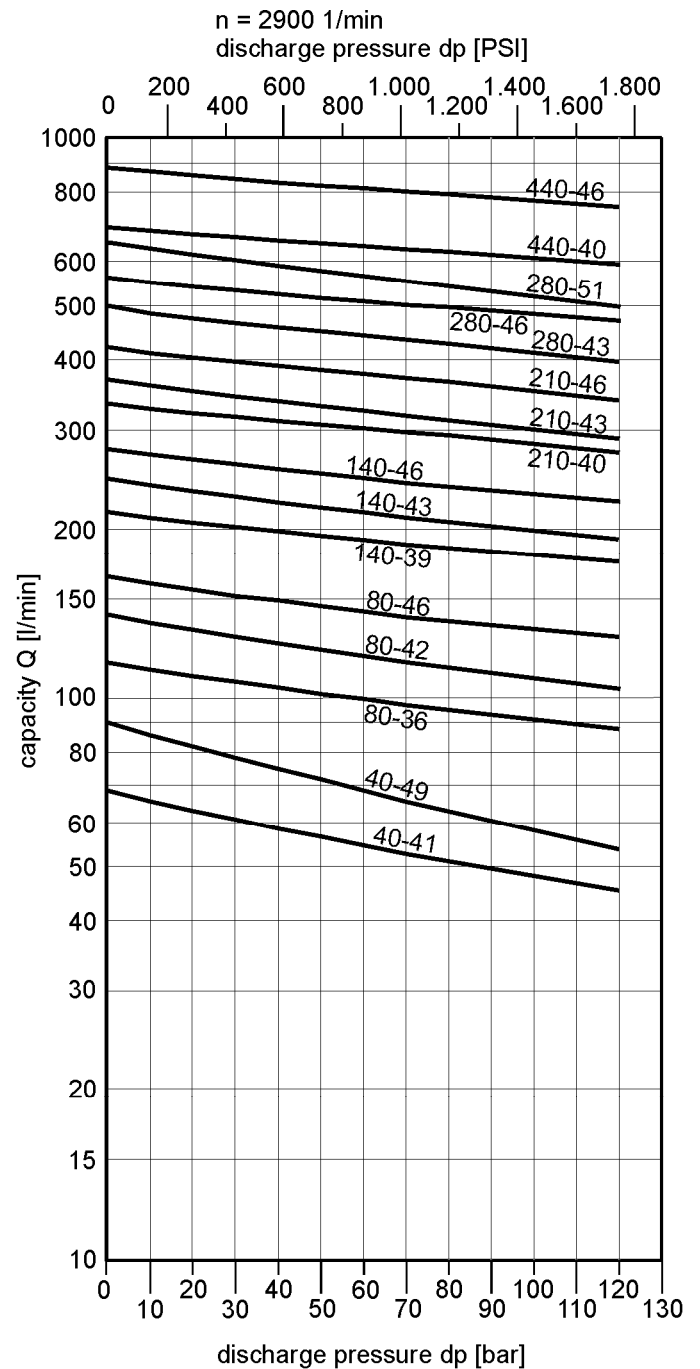
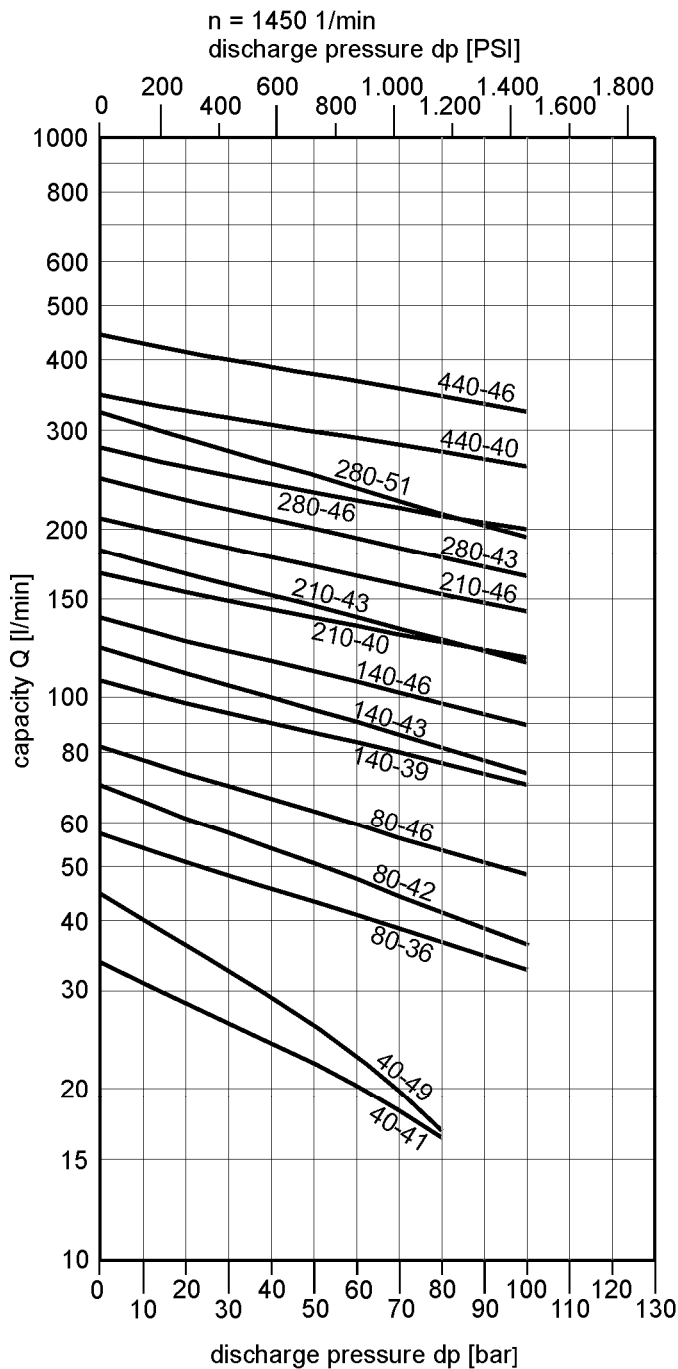
Note: If operating the pump in Category 2, impermissible warming of the pump surfaces, potentially caused by a disturbance, must be prevented with suitable measures.

Material code

Part name	Material W205
Rotor housing	Aluminum alloy
Pump cover	EN-GJL-250 (GG-25)
Suction casing	EN-GJL-250 (GG-25)
Screw set	Nitride steel

Performance graph

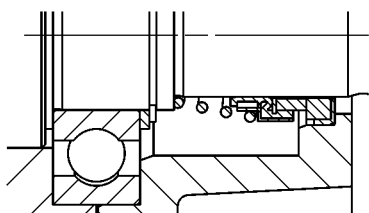
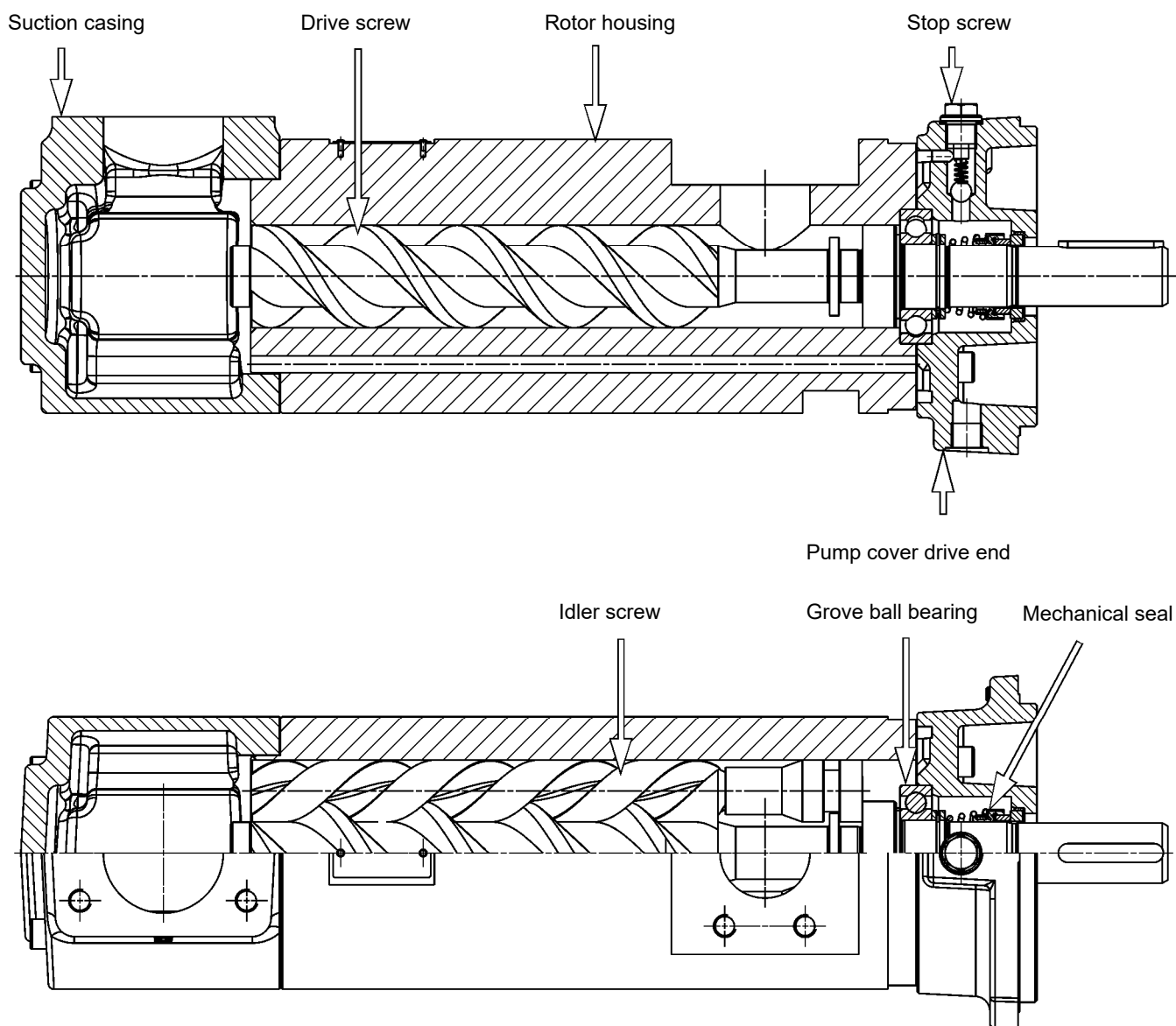
Capacity/discharge pressure per size/screw pitch at viscosity of $\nu = 40 \text{ mm}^2/\text{s}$.



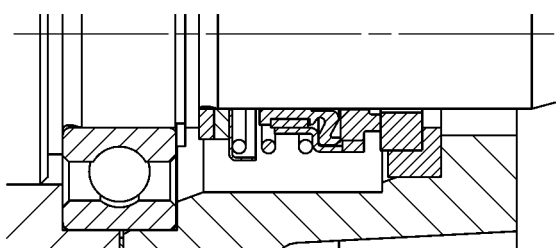
Refer to the individual curves of the hydraulic selection program for precise pump capacities.
Observe the hydrodynamic pressure limit (permissible discharge pressure) when dimensioning the pump!

Sectional drawing

Series CFHM in the W205 material version, internal antifriction bearing, with mechanical seal.



Antifriction bearing type for size 280, 440



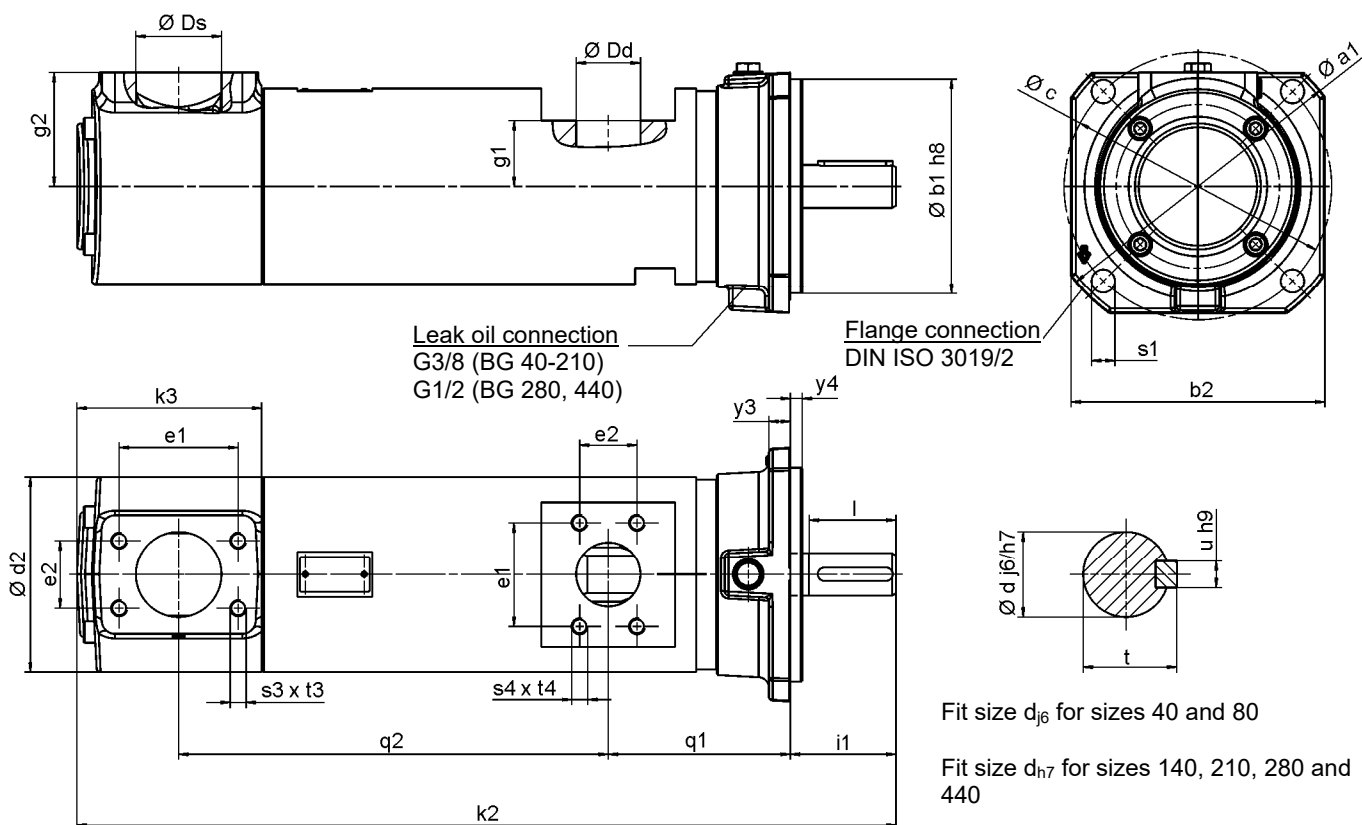
Antifriction bearing type for size 40, 80

Pump dimensions

Series CFHM, internal antifriction bearing, with mechanical seal.

Branch position: The suction casing (and with it the suction branch) as well as the rotor housing (and with it the discharge branch) can each be displaced by 90°. When the pump is installed horizontally, stop screw A must always point upward.

Direction of rotation: Clockwise, viewed from drive end.



Size	Pump dimensions [mm]								Flange cover [mm]						
	d2	g1	g2	i1	k2	k3	q1	q2	a1	b1	b2	c	s1	y3	y4
40	116	45	75	49	430	124	104,5	207,5	188	125	150	160	13,5	15	9
80		43			467		108,5	240,5							
140	146	55	85	79	567	138	130	282	232	160	190	200	17,5	16	
210		49			612		136	321							
280	186	65	95		666	165	140	357	296	200	230	250	22		
440			100		777	192	169	424							

Size	Shaft end [mm]				SAE-Suction flange					SAE-Discharge flange				
	d	l	u	t	Zoll	S3 x t3	e1	e2	Ds		S4 x t4	e3	e4	Dd
40	19	35	6	21,5	2	M12 x 22	77,8	42,9	50	1	M10 x 22	52,4	26,2	25
80										1¼	M12 x 22	58,7	30,2	32
140	32	65	10	35	2½	M12 x 22	88,9	50,8	64	1½	M12 x 20	69,9	35,7	40
210					3	M16 x 25	106,4	61,9	72	2	M12 x 22	77,8	42,9	48
280										2½	M12 x 25	88,9	50,8	64
440					4		130,2	77,8	98	3	M16 x 27	106,4	61,9	

Efficient

Various sizes and screw pitch angles provide fine gradation of pump capacity across the entire design performance range.

Reliability

Hydraulically driven idler screws. The thread flanks are virtually load-free and not subject to wear.

Wear-resistant

Finely machined starting surfaces provide axial force compensation of the screws.

Durable

Shaft sealed with maintenance-free mechanical seal suitable for the operating conditions.

Robust

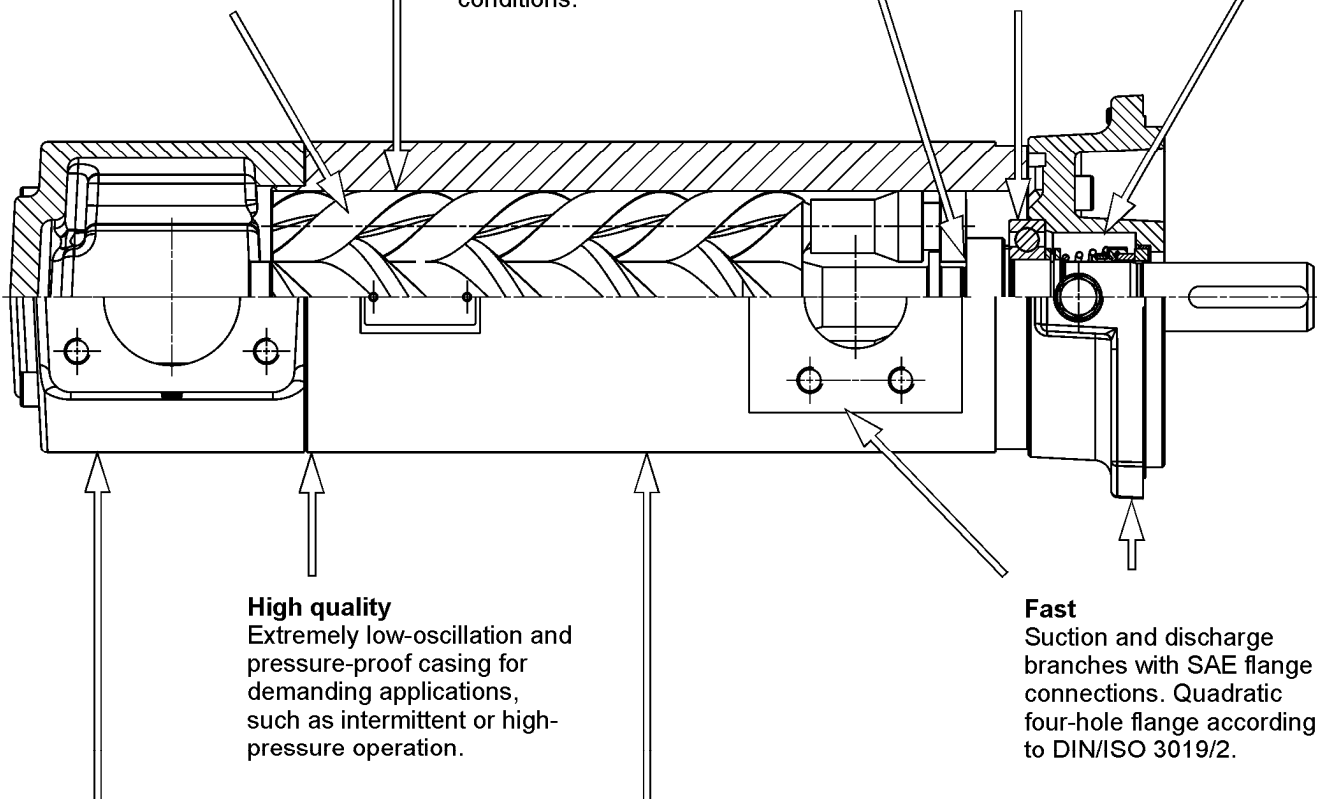
Hardened and polished drive and idler screws provide a long service life.

Versatile

Optimized material for the rotor housing provides versatility in terms of pressure resistance and special operating conditions.

Low maintenance

Drive screw utilizes groove ball bearing that is lubricated by the pumped liquid.



High quality

Extremely low-oscillation and pressure-proof casing for demanding applications, such as intermittent or high-pressure operation.

Fast

Suction and discharge branches with SAE flange connections. Quadratic four-hole flange according to DIN/ISO 3019/2.

Flexible

Suction casing (and with it the suction branch) may be displaced by 90° to the discharge flange (pump).

Flexible

Rotor housing (and with it the suction branch) may be displaced by 90°.

Well-designed

Pumps of the CFHM series are self priming. Low noise, virtually pulsation-free pumping operation, without turbulence, and without crushing.

Subject to technical changes.



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