

Gear pumps
KF 2.5 ... 630



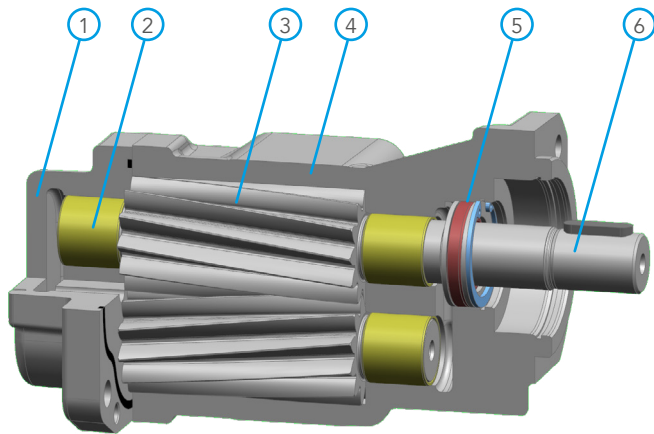
KRACHT®
FLUID TECHNOLOGY AND SYSTEMS

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General

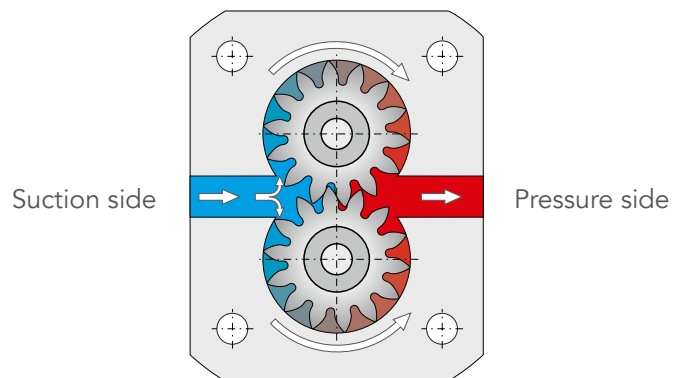
I Construction



- 1 End cover
- 2 Plain bearing bushes
- 3 Gear unit
- 4 Housing
- 5 Shaft seal
- 6 Drive shaft end

I Function

KF series gear pumps are external gear pumps that operate according to the positive displacement principle. Here, the fluid is transported from the suction to the discharge end by rotation of the two gear shafts in the tooth gaps along the housing wall. The geometric displacement volume V_g is displaced per wheel revolution. A value that is stated in technical documentation as the nominal volume V_{gn} to identify the pump size. Gear pumps are in principle self-priming - extremely high viscosities may require upstream pressure. The displacement cycle described initially takes place without exhibiting appreciable pressure build-up. Only after external loads have been specified, e.g. by delivery head, pressure drops, pipe elements, etc., is the working pressure required to overcome these resistances established.



I Characteristics

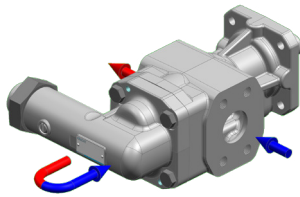
- Gear pumps KF are used for pumping a wide variety of fluids.
- Diversity of variants through modular design. Pumps and optional components (see pages 5 ... 7) can be combined as required and subsequently expanded.
- The standard housing sections are of grey cast iron.
- The gear units are manufactured from high-strength case-hardening steel, hardened and mounted in special multi-compound plain bearing bushes.
- The standard drive shaft is sealed by single radial lip-type seal. Double designs, mechanical seals and magnetic couplings are also optionally available.
- All pump sizes incorporate helical tooth system. This feature, combined with special gear geometry, results in extremely low noise levels and reduced pressure pulsation.

I Working notes

- The fluids should ensure a certain minimum lubricating properties, should not contain solids and should be chemically compatible.
- The pumps may only be operated in the specified direction of rotation, as otherwise the shaft seal will be destroyed.
- In order to prevent excessive overpressure, a safety valve should be provided in the system or on the pump.
- Avoid dry operation.
- The pressure relief valve attached to the pump may only be used as safety valve for short-term operation. Otherwise there is a risk of the pump overheating. A separate pressure relief valve with return line to the reservoir must be foreseen, if a partial discharge flow has to be drained over a prolonged period (see valve options on page 5).

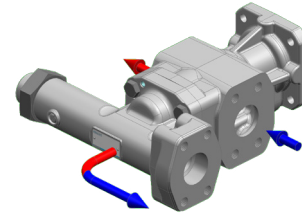
Valve options

I Valves that can be attached to gear pumps



Pressure relief valves D15/D25

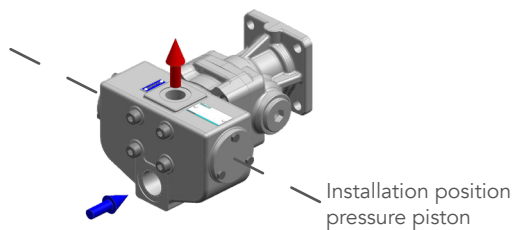
Gear pumps of the KF series can optionally be equipped with a directly controlled pressure relief valve (D-valve D15/D25) to protect the pump from impermissibly high-pressure peaks. The valve has an adjustment facility within the permitted pressure range and is designed for a brief overflow of the discharge flow. Special pressure relief and pressure control valves (SPV, DV B, DV R, T) with an external outflow are available for permanent discharge of a volume flow.



T-valve T15/T25

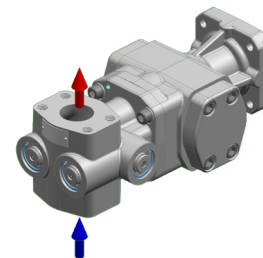
The KF gear pumps can be optionally equipped with the T-valve. The T-valve is an attached, directly controlled pressure relief valve with separate tank connection. To dissipate heat, the handled fluid flowing out via the T-valve is fed directly into the storage tank. Thanks to adapted damping, the valve offers very good control characteristics and outstanding dynamics with vibration-free operation at all operating points of the pump.

Gear pumps with a universal valve also deliver to the same connection when the direction of rotation changes.



Universal valve U for KF 2.5 ... 25

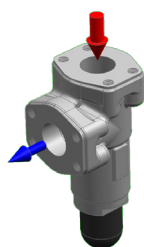
The universal valve U is available for nominal sizes 2.5 ... 25. The valve must be installed with the pressure piston lying horizontally.



Universal valve U2 for KF 32 ... 112

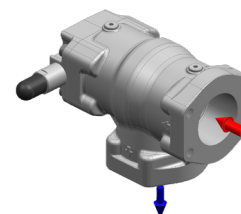
The universal valve U2 is available for nominal sizes 32 ... 112. The installation position is optional.

I Valves that can be integrated in pipelines



SPV valve

The SPV pressure relief valve is a directly controlled slide valve for installation in pipelines and is used to safeguard hydraulic circuits. (Details: see SPV data sheet)



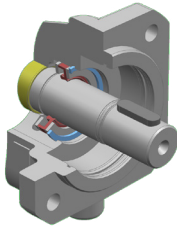
DV valve

DV valves are hydraulically piloted and as

- Pressure relief valve DV B
- Pressure stage control valve DV S
- Pressure control valve DV R

available. (Details: see DV data sheet)

Shaft end seals



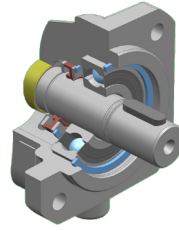
Single radial lip-type seal

Example: for general fluid pumping

Fixing type: F/W

Sealing materials:

NBR	= Sealing type 1
FKM	= Sealing type 2
PTFE	= Sealing type 3
EPDM	= Sealing type 9
FKM low temperature	= Sealing type 23/31/49



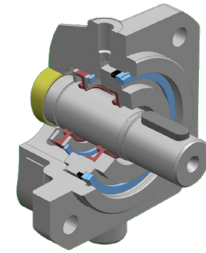
Single radial lip-type seal with outboard bearing

Example: for the absorption of radial forces

Fixing type: G/X

Sealing materials:

NBR	= Sealing type 1
FKM	= Sealing type 2
PTFE	= Sealing type 3



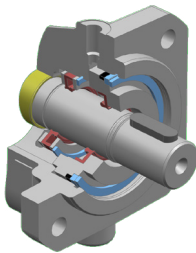
Double radial lip-type seal with connection possibility for quench

Example: for crystallising media

Fixing type: F/W

Sealing materials:

NBR	= Sealing type 19
FKM	= Sealing type 7
PTFE	= Sealing type 4
EPDM	= Sealing type 32



Double radial lip-type seal for vacuum operation with connection possibility for quench

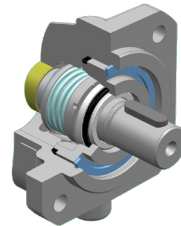
Example: for vacuum applications

Fixing type: F/W

Sealing materials:

NBR	= Sealing type 19
FKM	= Sealing type 7
PTFE	= Sealing type 4

Special number: 74



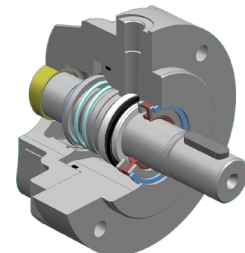
Mechanical seal

Example: for increased upstream pressures

Fixing type: F/W

Sealing materials:

FKM	= Sealing type 40
PTFE	= Sealing type 6
FFKM	= Sealing type 46, 48



Mechanical seal and connection possibility for quench

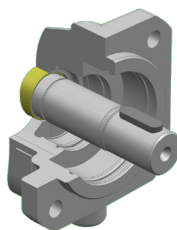
Example: for increased upstream pressures in conjunction with crystallising media

Fixing type: F/W

Sealing material:

FKM	= Sealing type 40
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Special number: 198



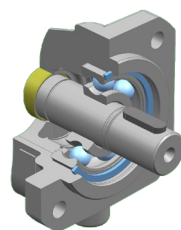
Without shaft sealing

Example: Direct attachment to the engine or gearbox

Fixing type: F/W

Sealing materials:

FKM (O-ring)	= Sealing type 30
NBR (O-ring)	= Sealing type 36



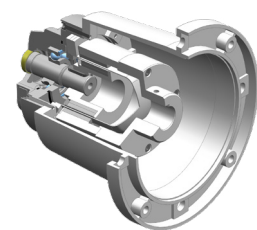
Without shaft sealing with outboard bearing

Example: Direct attachment to the motor or gearbox in connection with the absorption of radial forces

Fixing type: G/X

Sealing materials:

FKM (O-ring)	= Sealing type 30
NBR (O-ring)	= Sealing type 36



Magnetic coupling

Example: for high inlet pressures and absolute tightness

Fixing type: G

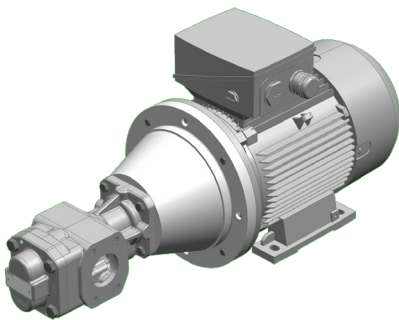
Variants / Options

I Noise optimized for medias with increased air percentage

The noise optimized pumps in the KF series are available from nominal size 4 and are designed for conveying for medias with increased air content. Special measures prevent the otherwise normally increased noise present in auriferous gear oil. The noise levels do not exceed or only barely exceed the measurements with non-auriferous oils. Also, there is no noise

spectrum shift to higher, unpleasant frequencies. In applications without auriferous portions in the media, it is not recommended to use this version as it will not bring about noise reduction effects there. The use of a noise-optimized pump design reduces the flow rate approx. 3%.

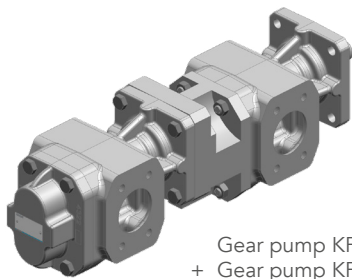
I Motor-pump units



Motors that can be combined with KF pumps

- Air motors
- Gear motors
- Hydraulic motors (for details see data sheet KM)
- IEC electric motors in all common efficiency classes (up to IE4)
- Motors in ATEX version
- Marine approved engines
- NEMA motors

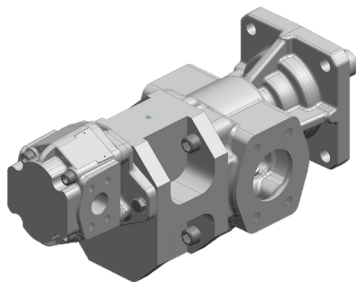
I Multiple pumps



Gear pump KF
+ Gear pump KF

Characteristics and versions

- Opposite flow direction possible
- High cold start viscosities at high idling speed possible
- High efficiency over large ranges of speed
- Hydraulically separated



Gear pump KF
+ High pressure gear pump KP

I Mounting flanges

- 2- and 4-hole versions
- DIN (standard)
- SAE
- Special adapter according to customer requirements

I Shaft ends

- Inner thread
- Conical
- With built-in nozzle
- SAE / DIN toothed
- Cylindrical (standard)

I Equipment

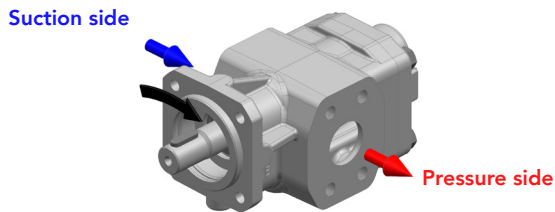
- Welding flanges, threaded flanges BSPP, NPT, UN / UNF
- Quench tank
- Foot flange
- IEC electric motors
- Claw couplings, curved tooth couplings, metal bellows couplings, magnetic coupling
- Bellhousing

Direction of rotation and flow

I Gear pump without valve

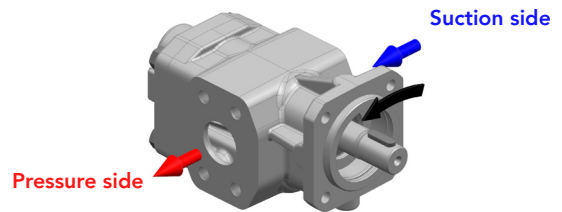
- when looking at the pump shaft end, the direction of pumping is from left to right if the shaft rotates **clockwise**.

Pump running cw

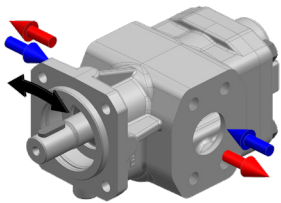


- when looking at the pump shaft end, the direction of pumping is from right to left if the shaft rotates **counterclockwise**.

Pump running ccw



I Gear pump without valve / Direction of rotation B

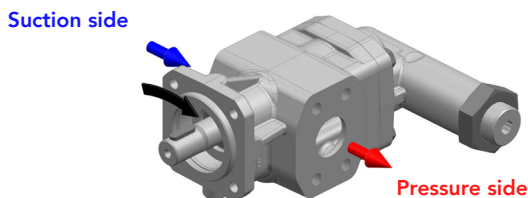


Direction of rotation right and left,
direction of flow changing,
without valve option

I Gear pump with pressure relief valve

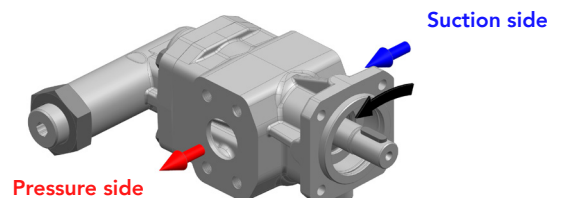
- when looking at the pump shaft end, the direction of pumping is from left to right if the shaft rotates **clockwise**.

Pump running cw



- when looking at the pump shaft end, the direction of pumping is from right to left if the shaft rotates **counterclockwise**.

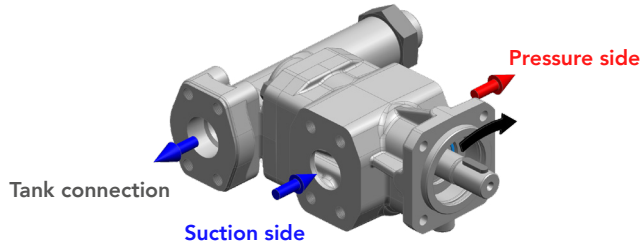
Pump running ccw



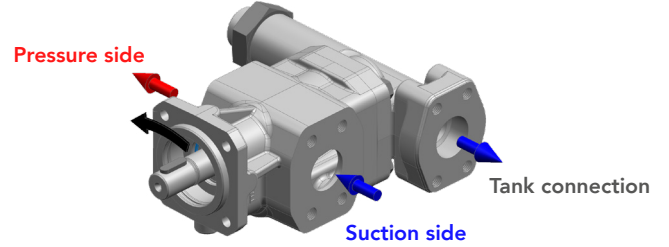
Direction of rotation and flow

I Gear pump with T-valve

Pump running cw



Pump running ccw

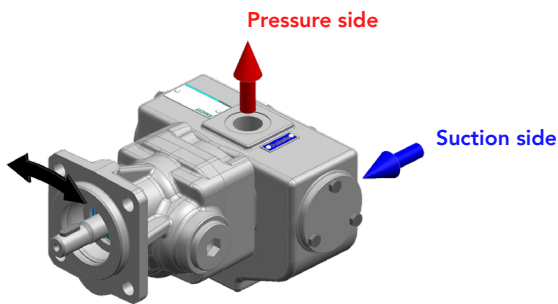


I Gear pump with U / U2 valve

Direction of rotation right and left, direction of flow constant

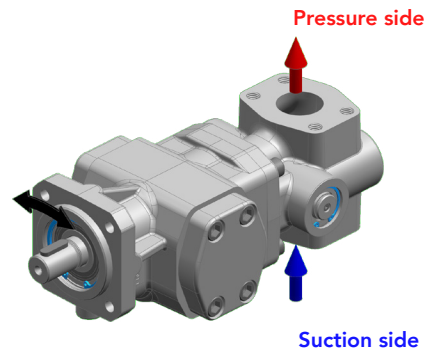
Universal valve U for KF 2.5 ... 25

Pump right / left running



Universal valve U2 for KF 32 ... 112

Pump right / left running



Technical data KF 2.5 ... 630 without valve / with D-valve / with T-valve

I Materials

Housing pump	Grey cast iron – EN-GJL-250 (GG 25) Spheroidal cast iron – EN-GJS-400-15 (GGG 40)
Housing D-valve	Grey cast iron – EN-GJL-250 (GG 25) Spheroidal cast iron – EN-GJS-400-15 (GGG 40)
Housing T-valve	Spheroidal cast iron – EN-GJS-400-15 (GGG 40)
Gear	Steel 1.7139
Plain bearing bushes	Standard: Multi-layer plain bearing Optional: Plastic plain bearing White metal bearing bushes
Shaft seals	Single radial lip-type seal, double radial lip-type seal, mechanical seal, magnetic coupling
Sealing materials	NBR, FKM, PTFE, EPDM, FKM low temperature, HNBR, CR (other sealing materials on request)
Corrosion protection	Standard painting C2m - RAL 7024 on a 2-component basis. Other corrosion protection classes (according to DIN EN ISO 12944) e.g. C4 or C5 and colors on request.

I Characteristics

Nominal sizes in cm ³ /rev	without valve / with D-valve 2.5 · 4 · 5 · 6 · 8 · 10 · 12 · 16 · 20 · 25 · 32 · 40 · 50 · 63 · 80 · 100 · 112 · 125 · 150 · 180 · 200 · 250 · 315 · 400 · 500 · 630 with T-valve 32 · 40 · 50 · 63 · 80
Mounting position	without quench: optional with quench: horizontal, quench connection above
Direction of rotation	R/L right or left B right and left (changing direction of flow)
Fixing type	Flange / mounting angle (optional)
Pipe connection	2.5 ... 25 Whitworth pipe thread, SAE flange 32 ... 630 SAE flange
Drive shaft end	Cylindrical with feather key (ISO R 775), see shaft ends (page 7)
Working pressure suction side	see tables of operating characteristics / permissible differential pressure (page 16)
Working pressure	p _b max. 25 bar (higher pressures on request, see chart permissible differential pressure (page 16))
Speed	see table operating characteristics (page 16)
Viscosity (dependent on pressure and rotational speed)	v _{min} 1.4 ... 12 mm ² /s (see tables of permissible differential pressure (page 16)) v _{max} 100 000 mm ² /s (higher viscosities on request)
Viscosity with T-valve (dependent on pressure and rotational speed)	v _{min} 12 mm ² /s (see tables of permissible differential pressure (page 16)) v _{max} 5 000 mm ² /s (higher viscosities on request)
Filtration	recommended filter fineness ≤ 60 μm
Media temperature	see chart temperature ranges (page 17)
Ambient temperature	see chart temperature ranges (page 17)

Type key KF 2.5 ... 630 without valve / with D-valve / with T-valve

I Type key

KF	40	R	F	1	/...	-	D15	...	-
1	2	3	4	5	6	7	8	9	10		

1 Product

2 Nominal size

2.5 · 4 · 5 · 6 · 8 · 10 · 12 · 16 · 20 · 25 · 32 · 40 · 50 · 63 · 80 · 100 · 112 · 125 · 150 · 180 · 200 · 250 · 315 · 400 · 500 · 630

3 Direction of rotation

R	right
L	left
B	right and left (only possible without valve)

4 Mounting

F	DIN flange without outboard bearing
G	DIN flange with outboard bearing
W	Mounting angle without outboard bearing (KF 2.5 ... 200)
X	Mounting angle with outboard bearing (KF 2.5 ... 200)

5 Sealing types

See table sealing types (page 14)

6 Special number

See table special numbers (page 15)

7 Valve

	without valve
T15	adjustable from 0 up to 15 bar (only nominal sizes 32 ... 80)
T25	adjustable from 15 up to 25 bar (only nominal sizes 32 ... 80)
D15	adjustable from 0 up to 15 bar
D25	adjustable from 15 up to 25 bar

8 Viscosity range (only with T-valve)

	12 ... 300 mm ² /s
A	300 ... 1000 mm ² /s
B	1000 ... 5000 mm ² /s

9 Housing material

	Pump / D-valve: Grey cast iron – EN-GJL-250 (GG 25) / T-valve: Spheroidal cast iron – EN-GJS-400 (GGG 40)
GJS	Pump / D-valve: Spheroidal cast iron – EN-GJS-400 (GGG 40) / T-valve: Spheroidal cast iron – EN-GJS-400 (GGG 40)

10 Variants

	Standard version
- ATEX	ATEX-version (Nominal sizes 2.5 ... 200)

Technical data KF 2.5 ... 112 with universal valve U / U2

I Materials

Housing pump	Grey cast iron – EN-GJL-250 (GG 25) Spheroidal cast iron – EN-GJS-400-15 (GGG 40)
Housing valve	Spheroidal cast iron – EN-GJS-400-15 (GGG 40)
Gear	Stahl 1.7139
Plain bearing bushes	Standard: Multi-layer plain bearing Optional: Plastic plain bearing White metal bearing bushes
Shaft seals	Single radial lip-type seal, double radial lip-type seal, mechanical seal, magnetic coupling
Sealing materials	NBR, FKM, PTFE, EPDM, FKM low temperature, HNBR, CR (other sealing materials on request)
Corrosion protection	Standard painting C2m - RAL 7024 on 2-component basis. Other corrosion protection classes (according to DIN EN ISO 12944) e.g. C4 or C5 and colors on request.

I Characteristics

Nominal sizes in cm ³ /rev	Universal valve U: 2.5 · 4 · 5 · 6 · 8 · 10 · 12 · 16 · 20 · 25 Universal valve U2: 32 · 40 · 50 · 63 · 80 · 100 · 112
Mounting position	Universal valve U: Pressure piston horizontal Universal valve U2: optional
Direction of rotation	right and left (direction of discharge consistent)
Fixing type	Flange / mounting angel (optional)
Pipe connection on the valve	KF 2.5 ... 25 Suction connection: Whitworth pipe thread G 3/4 Pressure connection: Whitworth pipe thread G 1/2 KF 32 ... 80 Flange connection: SAE 1 1/2 KF 100/112 Flange connection: SAE 2
Drive shaft end	Cylindrical with feather key (ISO R 775), see shaft ends (page 7)
Working pressure suction side	see tables of operating characteristics / permissible differential pressure (page 16)
Working pressure	p _b max. 25 bar (higher pressures on request, see table permissible differential pressure (page 16))
Speed	see table operating characteristics (page 16)
Viscosity (dependent on pressure and rotational speed)	v _{min} 1.4... 12 mm ² /s, (see table permissible differential pressure (page 16)) v _{max} 100 000 mm ² /s (higher viscosities on request)
Filtration	recommended filter fineness ≤ 60 µm
Media temperature	see chart temperature ranges (Page 17)
Ambient temperature	see chart temperature ranges (Page 17)

Type key KF 2.5 ... 112 with universal valve U / U2

I Type key

KF	40	B	F	1	/...	-	U2	-	...
1	2	3	4	5	6	7	8		

1 Product

2 Nominal size

2.5 · 4 · 5 · 6 · 8 · 10 · 12 · 16 · 20 · 25 · 32 · 40 · 50 · 63 · 80 · 100 · 112

3 Direction of rotation

B	right and left – direction of discharge consistent (only universal valve U2 32 ... 112)
U	right and left – direction of discharge consistent (only universal valve U 2.5 ... 25)

4 Mounting

F	DIN flange without outboard bearing
G	DIN flange with outboard bearing
W	Mounting angle without outboard bearing (only universal valve U 2.5 ... 25)
X	Mounting angle with outboard bearing (only universal valve U 2.5 ... 25)

5 Sealing types

See table sealing types (page 14)

6 Special number

See table special numbers (Page 15)

7 Universal valve

U2	New design (only nominal sizes 32 ... 112)
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8 Housing material

	Grey cast iron – EN-GJL-250 (GG 25)
GJS	Spheroidal cast iron – EN-GJS-400 (GGG 40)

Sealing types

Single radial lip-type seal	Dichtungsart
Single radial lip-type seal NBR	1
Single radial lip-type seal FKM	2
Single radial lip-type seal PTFE	3
Single radial lip-type seal EPDM (not resistant to mineral oil)	9
Low friction single radial lip-type seal FKM	18
Single radial lip-type seal FKM low temperature (KF 2.5 ... 25)	23
Single radial lip-type seal FKM low temperature (KF 32 ... 80)	31
Single radial lip-type seal FKM low temperature (KF 100 ... 200)	49
Double radial lip-type seal	
Double radial lip-type seal NBR	19
Double radial lip-type seal FKM	7
Double radial lip-type seal PTFE	4
Double radial lip-type seal EPDM (not resistant to mineral oil)	32
Mechanical seal	
Mechanical seal mit FKM secondary seals, hard-soft pairing for general applications, not relieved, direction of rotation independent, good emergency running properties	40
Mechanical seal hard-soft pairing, with FFKM secondary seals, not relieved, direction of rotation independent, good emergency running properties	46
Mechanical seal hard-soft pairing, with FFKM secondary seals, not relieved, direction of rotation independent, good wear resistance	48
Mechanical seal with FFKM secondary seals (AX30), direction of rotation independent	6
Without shaft seal	
Without shaft seal, o-ring NBR	36
Without shaft seal, o-ring FKM	30

Special numbers

Housing connections	Special number
SAE instead of threaded connections KF 2.5 ... 12: Flange connection SAE 3/4" KF 16 ... 25: Flange connection SAE 1"	158
NPT instead of threaded connections KF 2.5 ... 12 3/4 -14 NPT KF 16 ... 25 1-11-1/2 NPT	173
Enlarged SAE ports KF 50 ... 80: Flange connection SAE 2" KF 100 ... 112: Flange connection SAE 2 1/2" KF 125 ... 150: Flange connection SAE 3" KF 180 ... 200: Flange connection SAE 3 1/2"	232
Threaded hole M8 x 16/20 in the housing, noise-optimized design (special number 197) KF 125 ... 150: Suction connection SAE 3" / Standard pressure connection 2 1/2" KF 180 ... 200: Suction connection SAE 3 1/2" / Standard pressure connection 3"	452
Noise-optimized versions (for KF 4 ... 630)	
Noise-optimized version for aerated oils and vacuum ⁽¹⁾	197
Combination of special numbers 45 and 197 ⁽¹⁾	326
Combination of special numbers 158 and 197 ⁽¹⁾ (only for KF 4 ... 25)	359
Combination of special numbers 197 and 304	317
Combination of special numbers 158, 197 and 304 (only for KF 4 ... 25)	355
Combination of special numbers 74 and 197 ⁽¹⁾	309
Combination of special numbers 197 ⁽¹⁾ and 232	391
Combination of special numbers 197 ⁽¹⁾ and 397	398
Combination of special numbers 197 ⁽¹⁾ and 277	455
Bearing variants	
White metal bearing bushes in combination with special number 197 ⁽¹⁾	273
Plastic plain bearings iglidur® X (non-ferrous metal free) $\Delta p_{\max} = 10$ bar	304
Combination of special numbers 304 und 158 (only for KF 2.5 ... 25)	363
Noise-optimized version for aerated oils (197 ⁽¹⁾) Multilayer plain bearings DP4 (bleifrei)	353
Seal variants	
Double radial lip-type seal (for vacuum operation), connection borehole G 1/8" (for quench)	74
KF 2.5 ... 25: Combination of special numbers 74 and 158 KF 50 ... 200: Combination of special numbers 74 and 232	402
KF 2.5 ... 25: Combination of special numbers 74, 197 ⁽¹⁾ and 158 KF 50 ... 200: Combination of special numbers 74, 197 ⁽¹⁾ and 232	459
Mechanical seal with quench	198
Triple radial lip-type seal (for normal operation + for vacuum operation), Connection borehole G 1/8" (for quench), Plastic plain bearings iglidur® X (non-ferrous metal free), $\Delta p_{\max} = 10$ bar (304) Housing connection: KF 32; 40: Flange connection SAE 1 1/2" (Standard) KF 50 ... 80: Flange connection SAE 2" (232)	322
Shaft end variants	
Shaft end with center hole according to DIN 332 type D: KF 4 ... 25 = M5 / 12.5 mm deep KF 32 ... 80 = M8 / 19 mm deep KF 100 ... 200 = M10 / 22 mm deep KF 315 ... 630 = M12 / 28 mm deep	45
ATEX versions	
Vertical installation, shaft end at the top, separate lubrication for radial shaft sealing, reduced flow rate	277
General versions	
All screws in stainless steel	397

⁽¹⁾ Measures for noise optimisation are only possible for one rotational direction and only effective for aerated oils or vacuum (only in connection with seal versions that are suitable for vacuum operation). Can lead to a reduction of flow rate.

Note to sealing types and special numbers:

We have developed numerous special solutions that are not listed in this data sheet. Please contact us if necessary.

Technical data

I Working characteristics

Nominal size V_{gn}	Geom. displacement	Working pressure	Certification test pressure/ test pressure*	Speed range**		Permissible radial forces*** (n=1500 1/min)	Sound level in dB (A)		
	V_g in cm ³ /U	P_b in bar	P_{max} in bar	n_{min} in 1/min	n_{max} **** in 1/min	F_{radial} in N	$p = 5$ bar	$p = 15$ bar	$p = 25$ bar
2.5	2.55	25	40	200	3600	700	≤ 65	≤ 66	≤ 67
4	4.03	25	40	200	3600	700	≤ 65	≤ 66	≤ 67
5	5.05	25	40	200	3600	700	≤ 65	≤ 66	≤ 67
6	6.38	25	40	200	3600	700	≤ 65	≤ 66	≤ 67
8	8.05	25	40	200	3600	700	≤ 65	≤ 66	≤ 67
10	10.11	25	40	200	3600	700	≤ 65	≤ 66	≤ 67
12	12.58	25	40	200	3600	700	≤ 65	≤ 66	≤ 67
16	16.09	25	40	200	3600	700	≤ 65	≤ 66	≤ 67
20	20.10	25	40	200	3600	700	≤ 65	≤ 66	≤ 67
25	25.10	25	40	200	3600	700	≤ 65	≤ 66	≤ 67
32	32.12	25	40	200	3600	700	≤ 65	≤ 66	≤ 67
40	40.21	25	40	200	3600	1500	≤ 67	≤ 68	≤ 68
50	50.20	25	40	200	3600	1500	≤ 67	≤ 68	≤ 68
63	63.18	25	40	200	3600	1500	≤ 67	≤ 68	≤ 68
80	80.50	25	40	200	3000	1500	≤ 67	≤ 68	≤ 68
100	101.50	25	40	200	3000	1500	≤ 67	≤ 68	≤ 69
112	113.50	25	40	200	3000	1500	≤ 67	≤ 68	≤ 69
125	129.40	25	40	200	3000	1500	≤ 65	≤ 65	≤ 65
150	155.60	25	40	200	3000	1500	≤ 65	≤ 65	≤ 65
180	186.60	25	40	200	3000	1500	≤ 65	≤ 65	≤ 65
200	206.20	25	40	200	2500	1500	≤ 65	≤ 65	≤ 65
250	245.10	25	40	200	2000	2500	≤ 75	≤ 75	≤ 75
315	312.90	25	40	200	2000	2500	≤ 75	≤ 75	≤ 75
400	399.50	25	35	200	2000	2500	≤ 77	≤ 77	≤ 77
500	496.50	25	35	200	2000	2500	≤ 77	≤ 77	≤ 77
630	622.50	25	30	200	2000	2500	≤ 78	≤ 78	≤ 80

* Certification test pressure/test pressure for max. 5 seconds at a viscosity of 12 ... 1200 mm²/s

** Speed limitation KF 32 ... 112 with U2-valve
Nominal size 32 ... 50, $n_{max} = 3000$ 1/min
Nominal size 63 ... 112, $n_{max} = 2200$ 1/min

*** Radial forces only for version with outboard bearing.
 F_{radial} at centre of shaft end.
Axial forces are not allowed.

**** The speed of the pump is to be selected so that a complete filling of the pump is guaranteed. This is the case if the relative pressure at the pump inlet does not fall below -0.4 bar (briefly -0.6 bar, e.g. during a cold start).

For certain working conditions, the minimum or maximum characteristics should not be used. For example, the max. working pressure is not permissible in combination with low speed and low viscosity. In such limit ranges, please consult us.

Sound level measured in dB(A) at 1 m distance with motor.
Installation site: Works hall.
Pump unit on rigid fastening angle, Suction and pressure conduits:
Hose measured with gear oil,
Oil viscosity $\nu = 34$ mm²/s, Speed $n = 1500$ 1/min.

I Permissible differential pressure

Bearing	Δp_{max} in bar		
	≥ 1.4 mm ² /s	≥ 6 mm ² /s	≥ 12 mm ² /s
Multi-layer plain bearing containing lead	3	12	25
Plastic plain bearing*	-	6	10
White metal plain bearing*	-	6	10

* Is defined in the special number (Page 15)

Technical data

I Characteristics shaft seals

	Sealing material	Speed in 1/min	Pressure suction side in bar (short term during start-up status: -0.6 bar)			
			KF 2.5 ... 80	KF 100 ... 200	KF 250 ... 315	KF 400 ... 630
Single radial lip-type seal Single radial lip-type seal with outboard bearing Double radial lip-type seal with connection possibility for quench	NBR / FKM	max. 750	-0.4 ... 6.0	-0.4 ... 6.0	-0.4 ... 5.5	-0.4 ... 5.0
		max. 1000	-0.4 ... 5.0	-0.4 ... 5.0	-0.4 ... 4.5	-0.4 ... 4.0
		max. 1500	-0.4 ... 4.0	-0.4 ... 3.5	-0.4 ... 3.0	-0.4 ... 2.5
		max. 2000	-0.4 ... 3.0	-0.4 ... 2.5	-0.4 ... 2.0	-0.4 ... 1.5
		max. 2500	-0.4 ... 2.5	-0.4 ... 2.0	-	-
		max. 3000*	-0.4 ... 2.0	-0.4 ... 1.5	-	-
Double radial lip-type seal with connection possibility for quench	FKM low temperature	speed independent	-0.4 ... 0.5		-	
	EPDM	speed independent	-0.4 ... 0.5			
	PTFE	speed independent	-0.4 ... 2.0			
Mechanical seal	FKM / PTFE / EPDM*	speed independent	-0.4 ... 10.0			
Magnetic coupling***	FKM, FKM low temperature, EPDM, FEP with FKM core, FEP with silicone core, CR, HNBR	speed independent	-0.9 ... 60 depending on the pump and magnetic coupling			
Double radial lip-type seal for vacuum operation with connection possibility for quench	NBR / FKM / PTFE	speed independent	-0.9 ... 0.2			

* KF 80 ... 180

** KF 2.5 ... 63

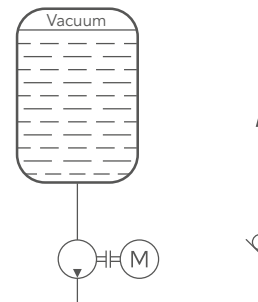
*** See data sheet KF 2.5 ... 630 with magnetic coupling

The specified maximum values depend on the other operating conditions.

With universal valve U pressure on suction side -0.35 bar. Installation position pressure piston horizontal. Other sealing materials on request.

Suction line for vacuum operation

If suction is to take place from a container under vacuum, the pump must be positioned approx. 1 m below the container. The suction line must be laid in a straight line and without resistance. The container may only be subjected to a vacuum when the line system and the pump are filled with liquid. Only pumps suitable for vacuum operation may be used for this purpose: special number 74 or pumps with magnetic coupling.



I Permissible Temperatures

Media temperature		Ambient temperature		Sealing material	Material housing and cover
$\vartheta_{m \text{ min}}$ in °C	$\vartheta_{m \text{ max}}$ in °C	$\vartheta_{m \text{ min}}$ in °C	$\vartheta_{m \text{ max}}$ in °C		
-20	90	-20	60	NBR	EN-GJL-250 (GG 25)* / EN-GJS-400-15 (GGG 40)**
	120			EPDM	EN-GJL-250 (GG 25)* / EN-GJS-400-15 (GGG 40)**
	200			PTFE	EN-GJL-250 (GG 25)* / EN-GJS-400-15 (GGG 40)**
-20	150	-20		FKM	EN-GJL-250 (GG 25)* / EN-GJS-400-15 (GGG 40)**
	200			FFKM / FEP with FKM core	EN-GJL-250 (GG 25)* / EN-GJS-400-15 (GGG 40)**
-30	150	-40		FKM low temperature	EN-GJL-250 (GG 25)*
-40	150	-50	FKM low temperature	EN-GJS-400-15 (GGG 40)**	

* Gray cast iron

** Spheroidal cast iron

Technical data

I Discharge flow and required drive power for speed n = 950 1/min

	Pressure p _b in bar								Nominal size	Pressure p _b in bar								
	2	4	6	8	10	15	20	25	V _{gn}	2	4	6	8	10	15	20	25	
Discharge flow Q in l/min	2.5	2.4	2.4	2.3	2.2	2.1	2.0	1.8	2.5	0.03	0.04	0.05	0.06	0.08	0.09	0.11	0.13	Required drive power P in kW
	3.7	3.7	3.6	3.6	3.6	3.5	3.4	3.3	4	0.04	0.05	0.07	0.08	0.09	0.13	0.16	0.20	
	4.6	4.6	4.5	4.5	4.4	4.2	4.1	3.9	5	0.04	0.06	0.08	0.10	0.11	0.16	0.20	0.25	
	5.8	5.7	5.6	5.5	5.5	5.3	5.1	4.9	6	0.05	0.07	0.09	0.12	0.14	0.19	0.25	0.30	
	7.3	7.3	7.2	7.1	7.0	6.8	6.6	6.4	8	0.06	0.09	0.11	0.14	0.17	0.24	0.31	0.38	
	9.2	9.1	9.0	8.9	8.8	8.5	8.2	7.9	10	0.07	0.10	0.14	0.17	0.21	0.29	0.38	0.47	
	11.4	11.3	11.2	11.1	11.0	10.8	10.5	10.3	12	0.08	0.12	0.16	0.21	0.25	0.36	0.47	0.58	
	14.2	14.0	13.8	13.6	13.4	12.9	12.3	11.8	16	0.09	0.15	0.20	0.26	0.31	0.45	0.60	0.74	
	18.0	17.6	17.3	16.9	16.6	15.7	14.9	14.0	20	0.10	0.18	0.25	0.32	0.39	0.56	0.74	0.92	
	22.8	22.5	22.3	22.0	21.7	21.1	20.4	19.8	25	0.12	0.21	0.30	0.39	0.48	0.70	0.92	1.14	
	29.0	28.0	27.0	27.0	26.0	25.0	23.0	22.0	32	0.16	0.30	0.40	0.50	0.60	0.90	1.20	1.50	
	36.0	36.0	35.0	34.0	34.0	32.0	30.0	28.0	40	0.25	0.40	0.50	0.60	0.80	1.10	1.50	1.80	
	45.0	44.0	43.0	42.0	41.0	39.0	36.0	34.0	50	0.30	0.50	0.60	0.80	1.00	1.40	1.90	2.30	
	57.0	56.0	54.0	53.0	52.0	50.0	46.0	43.0	63	0.40	0.60	0.80	1.00	1.20	1.80	2.40	2.90	
	74.0	73.0	72.0	71.0	70.0	67.0	65.0	62.0	80	0.60	0.80	1.10	1.40	1.60	2.30	3.00	3.70	
	92.0	90.0	88.0	86.0	84.0	79.0	73.0	67.0	100	0.70	1.00	1.30	1.60	1.90	2.70	3.60	4.50	
	102.0	99.0	97.0	94.0	91.0	84.0	77.0	70.0	112	0.90	1.20	1.60	2.00	2.40	3.30	4.30	5.20	
	114.0	112.0	109.0	106.0	103.0	96.0	89.0	82.0	125	1.00	1.40	1.80	2.30	2.80	3.90	5.00	6.10	
	139.0	137.0	134.0	132.0	129.0	123.0	116.0	110.0	150	1.10	1.60	2.10	2.60	3.20	4.50	5.80	7.20	
	169.0	166.0	163.0	160.0	156.0	148.0	140.0	132.0	180	1.20	1.80	2.40	3.00	3.60	5.10	6.60	8.10	
187.0	184.0	180.0	177.0	174.0	167.0	159.0	151.0	200	1.40	2.10	2.80	3.40	4.00	5.70	7.30	9.00		
230.0	226.0	223.0	219.0	216.0	209.0	203.0	197.0	250	1.50	2.30	3.10	4.00	4.80	6.80	8.90	10.90		
295.0	290.0	286.0	282.0	279.0	272.0	265.0	259.0	315	2.00	3.00	4.00	5.10	6.10	8.70	11.20	13.80		
376.0	369.0	363.0	358.0	353.0	341.0	330.0	320.0	400	2.60	3.80	5.10	6.40	7.70	11.00	14.30	17.50		
467.0	461.0	454.0	449.0	443.0	430.0	418.0	407.0	500	3.30	4.90	6.50	8.10	9.80	13.90	18.00	22.10		
587.0	578.0	570.0	562.0	554.0	537.0	523.0	511.0	630	4.50	6.60	8.70	10.70	12.80	18.10	23.30	28.60		

I Discharge flow and required drive power for speed n = 1150 1/min

	Pressure p _b in bar								Nominal size	Pressure p _b in bar								
	2	4	6	8	10	15	20	25	V _{gn}	2	4	6	8	10	15	20	25	
Discharge flow Q in l/min	2.9	2.9	2.8	2.8	2.7	2.6	2.5	2.4	2.5	0.03	0.04	0.06	0.08	0.10	0.11	0.13	0.16	Required drive power P in kW
	4.5	4.5	4.4	4.4	4.4	4.3	4.2	4.1	4	0.05	0.06	0.08	0.10	0.11	0.16	0.20	0.24	
	5.5	5.5	5.4	5.4	5.3	5.2	5.1	4.9	5	0.05	0.08	0.10	0.12	0.14	0.20	0.26	0.32	
	7.0	6.9	6.9	6.8	6.7	6.5	6.3	6.1	6	0.06	0.09	0.11	0.14	0.17	0.24	0.31	0.37	
	8.9	8.9	8.8	8.7	8.6	8.4	8.2	8.0	8	0.07	0.11	0.14	0.17	0.21	0.29	0.37	0.46	
	11.2	11.1	11.0	10.9	10.8	10.5	10.2	9.9	10	0.09	0.12	0.17	0.21	0.25	0.35	0.46	0.57	
	13.9	13.8	13.7	13.6	13.5	13.2	13.0	12.8	12	0.10	0.15	0.20	0.25	0.31	0.44	0.57	0.70	
	17.4	17.2	17.0	16.7	16.5	15.9	15.3	14.8	16	0.12	0.19	0.27	0.34	0.41	0.60	0.79	0.98	
	22.0	21.6	21.2	20.9	20.5	19.6	18.7	17.8	20	0.13	0.22	0.31	0.39	0.47	0.68	0.90	1.12	
	27.8	27.5	27.3	27.0	26.7	26.0	25.3	24.6	25	0.17	0.26	0.37	0.48	0.58	0.85	1.12	1.38	
	35.0	34.0	33.0	33.0	32.0	31.0	29.0	28.0	32	0.20	0.40	0.50	0.60	0.80	1.10	1.50	1.80	
	44.0	44.0	43.0	42.0	42.0	40.0	38.0	36.0	40	0.30	0.50	0.70	0.80	1.00	1.40	1.80	2.20	
	55.0	54.0	53.0	52.0	51.0	49.0	46.0	44.0	50	0.40	0.60	0.80	1.00	1.20	1.80	2.30	2.80	
	69.0	68.0	67.0	66.0	65.0	62.0	59.0	56.0	63	0.50	0.80	1.00	1.30	1.50	2.20	2.90	3.50	
	90.0	89.0	88.0	87.0	86.0	83.0	81.0	79.0	80	0.70	1.00	1.40	1.70	2.00	2.80	3.60	4.50	
	113.0	111.0	109.0	107.0	105.0	100.0	95.0	91.0	100	0.90	1.20	1.60	2.00	2.30	3.30	4.40	5.50	
	126.0	123.0	121.0	118.0	115.0	109.0	103.0	97.0	112	1.10	1.50	2.00	2.40	2.90	4.10	5.30	6.40	
	141.0	138.0	135.0	132.0	129.0	122.0	115.0	108.0	125	1.30	1.80	2.20	2.80	3.40	4.70	6.00	7.30	
	171.0	169.0	166.0	164.0	161.0	155.0	148.0	142.0	150	1.50	2.00	2.70	3.20	3.90	5.50	7.00	8.70	
	207.0	204.0	201.0	198.0	194.0	186.0	178.0	170.0	180	1.60	2.40	3.10	3.80	4.50	6.30	8.10	9.90	
229.0	226.0	229.0	219.0	216.0	209.0	201.0	193.0	200	1.90	2.70	3.50	4.30	5.00	7.10	9.00	11.00		
280.0	276.0	273.0	269.0	266.0	259.0	253.0	247.0	250	2.10	3.10	4.10	5.10	6.10	8.60	11.10	13.50		
359.0	354.0	350.0	346.0	343.0	336.0	329.0	323.0	315	2.80	4.10	5.30	6.60	7.80	10.90	14.00	17.20		
457.0	451.0	445.0	440.0	435.0	423.0	412.0	402.0	400	3.80	5.30	6.90	8.40	10.00	14.00	17.90	21.90		
568.0	561.0	555.0	550.0	544.0	532.0	520.0	509.0	500	4.90	6.90	8.80	10.70	12.80	17.70	22.70	27.70		
713.0	704.0	697.0	689.0	682.0	665.0	652.0	640.0	630	6.70	9.20	11.80	14.30	16.80	23.30	29.60	36.10		

Notes:

- Margin of error for the flow Q +10 % ... -5 % of the tabular value.
- The ratings refer to a mineral oil with a viscosity of 34 mm²/s.
- For viscosity < 30 mm²/s, take a reduction of the rated flow Q into account.
- The output of the drive motor should be selected 15 % higher than tabular value P.
- For viscosity > 100 mm²/s, an increase in the required power is necessary; then proceed as described below.
- 3 % of discharge flow for the noise-optimized version.

Technical data

I Discharge flow and required drive power for speed n = 1450 1/min

	Pressure p _b in bar								Nominal size	Pressure p _b in bar								
	2	4	6	8	10	15	20	25	V _{gn}	2	4	6	8	10	15	20	25	
3.6	3.6	3.5	3.5	3.5	3.4	3.3	3.2	2.5	0.04	0.05	0.08	0.10	0.12	0.14	0.16	0.20		
5.7	5.7	5.6	5.6	5.5	5.4	5.4	5.3	4	0.06	0.08	0.10	0.12	0.15	0.20	0.25	0.30		
6.9	6.8	6.8	6.7	6.7	6.6	6.5	6.4	5	0.07	0.10	0.12	0.15	0.19	0.27	0.35	0.43		
8.9	8.8	8.8	8.7	8.6	8.4	8.2	8.0	6	0.08	0.11	0.15	0.18	0.22	0.32	0.39	0.47		
11.3	11.2	11.1	11.0	10.9	10.8	10.6	10.4	8	0.09	0.14	0.18	0.22	0.26	0.37	0.47	0.58		
14.2	14.1	14.1	13.8	13.7	13.4	13.1	12.8	10	0.11	0.16	0.21	0.27	0.32	0.45	0.58	0.72		
17.6	17.5	17.4	17.3	17.2	16.9	16.7	16.5	12	0.12	0.19	0.26	0.32	0.39	0.55	0.72	0.89		
22.2	21.9	21.7	21.4	21.2	20.5	19.9	19.3	16	0.16	0.26	0.37	0.47	0.57	0.82	1.08	1.33		
27.9	27.5	27.1	26.8	26.4	25.5	24.5	23.6	20	0.17	0.28	0.39	0.49	0.60	0.87	1.14	1.41		
35.3	35.0	34.7	34.4	34.1	33.3	32.6	31.8	25	0.24	0.34	0.47	0.61	0.74	1.08	1.41	1.75		
45.0	44.0	43.0	43.0	42.0	41.0	39.0	37.0	32	0.30	0.50	0.70	0.80	1.00	1.40	1.90	2.30		
57.0	56.0	55.0	55.0	54.0	52.0	50.0	48.0	40	0.40	0.60	0.90	1.10	1.30	1.80	2.30	2.90		
70.0	69.0	68.0	67.0	66.0	64.0	61.0	58.0	50	0.50	0.80	1.10	1.30	1.60	2.30	2.90	3.60		
88.0	87.0	86.0	85.0	84.0	81.0	78.0	75.0	63	0.70	1.00	1.30	1.70	2.00	2.90	3.70	4.50		
114.0	113.0	112.0	111.0	110.0	107.0	105.0	103.0	80	0.90	1.40	1.80	2.20	2.60	3.60	4.60	5.70		
144.0	142.0	140.0	138.0	137.0	131.0	128.0	126.0	100	1.20	1.60	2.00	2.50	3.00	4.30	5.70	7.00		
161.0	159.0	157.0	154.0	152.0	147.0	142.0	138.0	112	1.40	2.00	2.60	3.10	3.70	5.20	6.70	8.20		
181.0	178.0	175.0	172.0	169.0	162.0	155.0	147.0	125	1.70	2.30	2.90	3.60	4.20	5.80	7.40	9.00		
218.0	216.0	213.0	211.0	209.0	203.0	197.0	191.0	150	2.00	2.70	3.50	4.20	5.00	6.90	8.90	11.00		
264.0	261.0	257.0	254.0	251.0	242.0	234.0	226.0	180	2.30	3.20	4.10	5.00	5.90	8.20	10.40	12.70		
293.0	290.0	287.0	283.0	280.0	272.0	264.0	256.0	200	2.60	3.60	4.60	5.60	6.60	9.10	11.60	14.00		
356.0	352.0	348.0	344.0	341.0	334.0	327.0	321.0	250	3.10	4.30	5.60	6.80	8.10	11.20	14.30	17.40		
455.0	450.0	446.0	442.0	439.0	431.0	424.0	418.0	315	4.10	5.70	7.20	8.80	10.40	14.30	18.30	22.20		
579.0	573.0	567.0	562.0	557.0	545.0	535.0	524.0	400	5.60	7.50	9.50	11.50	13.50	18.40	23.40	28.50		
719.0	712.0	707.0	701.0	696.0	684.0	673.0	662.0	500	7.40	9.80	12.20	14.70	17.20	23.40	29.70	36.10		
902.0	894.0	887.0	880.0	874.0	858.0	845.0	834.0	630	10.10	13.20	16.40	19.60	22.90	31.00	39.10	47.40		

I Discharge flow and required drive power for speed n = 1750 1/min

	Pressure p _b in bar								Nominal size	Pressure p _b in bar								
	2	4	6	8	10	15	20	25	V _{gn}	2	4	6	8	10	15	20	25	
4.3	4.3	4.2	4.2	4.3	4.2	4.1	4.0	2.5	0.05	0.06	0.10	0.12	0.14	0.17	0.19	0.24		
6.9	6.9	6.8	6.8	6.6	6.5	6.6	6.5	4	0.07	0.10	0.12	0.14	0.19	0.24	0.3	0.36		
8.3	8.1	8.2	8.0	8.1	8.0	7.9	7.9	5	0.09	0.12	0.14	0.18	0.24	0.34	0.44	0.54		
10.8	10.7	10.7	10.6	10.5	10.3	10.1	9.9	6	0.10	0.13	0.19	0.22	0.27	0.40	0.47	0.57		
13.7	13.5	13.4	13.3	13.2	13.2	13.0	12.8	8	0.11	0.17	0.22	0.27	0.31	0.45	0.57	0.70		
17.2	17.1	17.2	16.7	16.6	16.3	16.0	15.7	10	0.13	0.20	0.25	0.33	0.39	0.55	0.70	0.87		
21.3	21.2	21.1	21.0	20.9	20.6	20.4	20.2	12	0.14	0.23	0.32	0.39	0.47	0.66	0.87	1.08		
27.0	26.6	26.4	26.1	25.9	25.1	24.5	23.8	16	0.20	0.33	0.47	0.60	0.73	1.04	1.37	1.68		
33.8	33.4	33.0	32.7	32.3	31.4	30.3	29.4	20	0.21	0.34	0.47	0.59	0.73	1.06	1.38	1.70		
42.8	42.5	42.1	41.8	41.5	40.6	39.9	39.0	25	0.31	0.42	0.57	0.74	0.90	1.31	1.70	2.12		
55.0	54.0	53.0	53.0	52.0	51.0	49.0	46.0	32	0.40	0.60	0.90	1.00	1.20	1.70	2.30	2.80		
70.0	68.0	67.0	68.0	66.0	64.0	62.0	60.0	40	0.50	0.70	1.10	1.40	1.60	2.20	2.80	3.60		
85.0	84.0	83.0	82.0	81.0	79.0	76.0	72.0	50	0.60	1.00	1.40	1.60	2.00	2.80	3.50	4.40		
107.0	106.0	105.0	104.0	103.0	100.0	97.0	94.0	63	0.90	1.20	1.60	2.10	2.50	3.60	4.50	5.50		
138.0	137.0	136.0	135.0	134.0	131.0	129.0	127.0	80	1.10	1.70	2.20	2.70	3.20	4.40	5.60	6.90		
175.0	173.0	171.0	169.0	169.0	162.0	162.0	161.0	100	1.50	2.00	2.40	3.00	3.70	5.30	7.00	8.50		
196.0	195.0	193.0	190.0	189.0	185.0	181.0	179.0	112	1.70	2.50	3.20	3.80	4.50	6.30	8.10	10.00		
221.0	218.0	215.0	212.0	209.0	202.0	195.0	186.0	125	2.10	2.80	3.60	4.40	5.00	6.90	8.80	10.70		
265.0	263.0	260.0	258.0	257.0	251.0	246.0	240.0	150	2.50	3.40	4.30	5.20	6.10	8.30	10.80	13.30		
321.0	318.0	313.0	310.0	308.0	298.0	290.0	282.0	180	3.00	4.00	5.10	6.20	7.30	10.10	12.70	15.50		
357.0	354.0	351.0	347.0	344.0	335.0	327.0	319.0	200	3.30	4.50	5.70	6.90	8.20	11.10	14.20	17.00		
432.0	428.0	423.0	419.0	416.0	409.0	401.0	395.0	250	4.10	5.50	7.10	8.50	10.10	13.80	17.50	21.30		
551.0	546.0	542.0	538.0	535.0	526.0	519.0	513.0	315	5.40	7.30	9.10	11.00	13.00	17.70	22.60	27.20		
701.0	695.0	689.0	684.0	679.0	667.0	658.0	646.0	400	7.40	9.70	12.10	14.60	17.00	22.80	28.90	31.50		
870.0	863.0	859.0	852.0	848.0	836.0	826.0	815.0	500	9.90	12.70	15.60	18.70	21.60	29.10	36.70	44.50		
1091.0	1084.0	1077.0	1071.0	1066.0	1051.0	1038.0	1028.0	630	13.50	17.20	21.00	24.90	29.00	38.70	48.60	58.70		

Notes:

- Margin of error for the flow Q +10 % ... -5 % of the tabular value.
- The ratings refer to a mineral oil with a viscosity of 34 mm²/s.
- For viscosity < 30 mm²/s, take a reduction of the rated flow Q into account.
- The output of the drive motor should be selected 15 % higher than tabular value P.
- For viscosity > 100 mm²/s, an increase in the required power is necessary; then proceed as described below.
- 3 % of discharge flow for the noise-optimized version.

Technical data

I Calculation of input power

Calculation / Characteristics

$$P_{Pu} = P_{Tab} \cdot \frac{n}{1450 \text{ 1/min}} + f_v \cdot Q$$

P_{Pu} Pump power consumption in kW

P_{Tab} Power consumption per table in kW at 1450 1/min (see page 19)

n Speed in 1/min
Dependent on viscosity!

f_v Viscosity factor in $\frac{\text{kW}}{\text{l/min}}$ (see diagram below)

Q Discharge flow in l/min with $\frac{V_g \cdot n}{1000}$

V_g Geometrical displacement in cm^3/U

Sample calculation: Pump type KF 80

Viscosity $\nu = 3000 \text{ mm}^2/\text{s}$

Working pressure $p = 15 \text{ bar}$

Power consumption per table $P_{Tab} = 3.6 \text{ kW}$

Speed $n = 500 \text{ 1/min}$

Viscosity factor $f_v = 0.017 \frac{\text{kW}}{\text{l/min}}$

$$Q = \frac{80.5 \text{ l/min} \cdot 500}{1000} = 40 \text{ l/min}$$

$$P_{Pu} = 3.6 \text{ kW} \cdot \frac{500}{1450} + 0.017 \frac{\text{kW}}{\text{l/min}} \cdot 40 \text{ l/min} = 1.92 \text{ kW}$$

Calculation of engine output

$$P_{Mot} = 1.2 \cdot P_{Pu} = 1.2 \cdot 1.92 \text{ kW} = 2.4 \text{ kW}$$

Motor version (next available power level)

$P = 3.0 \text{ kW}$

$n = 500 \text{ 1/min}$

I Input Power

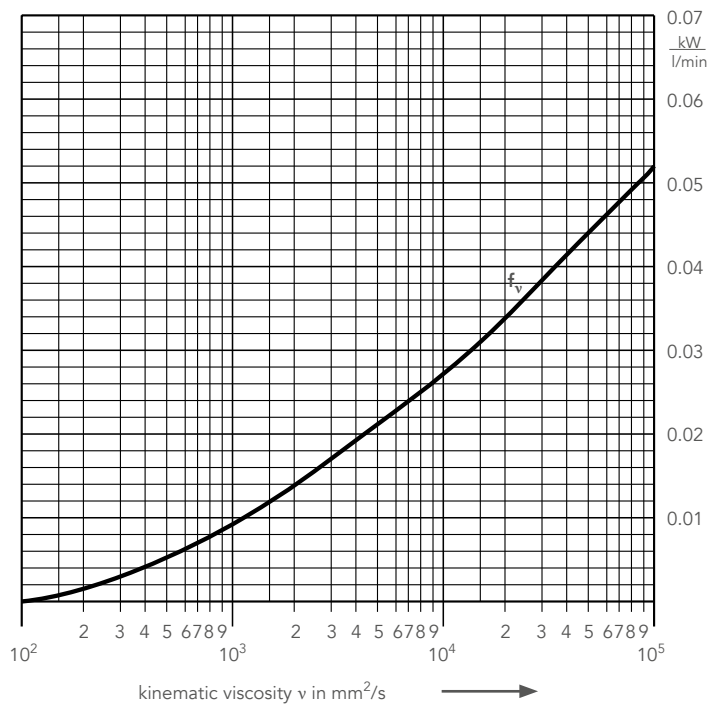


Diagram: $f_v = f(\nu)$

Note:

To determine the power consumption, always take the max. working viscosity at starting state into consideration.

The power of the drive motor should be selected 15% higher than the value determined.

Consultation

For competent advice, please get in touch with your responsible contact person in the sales department or give us a call (+49 2392.935 0).

ATEX version

I Permitted areas of application

Depending on the labeling, our explosion-proof pump versions in accordance with directive 2014/34/EU may be used as follows:

1. In the zone 2 (Gas-Ex, category 3G) in the explosion groups IIA, IIB und IIC
2. In the zone 22 (Staub-Ex, category 3D) in the explosion groups IIIA und IIIB
3. In the zone 1 (Gas-Ex, category 2G) in the explosion groups IIA, IIB und IIC
4. In the zone 21 (Staub-Ex, category 2D) in the explosion groups IIIA und IIIB

I Characteristics

Nominal size	2.5 · 4 · 5 · 6 · 8 · 10 · 12 · 16 · 20 · 25 · 32 · 40 · 50 · 63 · 80 · 100 · 112 · 125 · 150 · 180 · 200	
Working pressure suction side	-0.4 ... 0.5 bar	
Working pressure pressure side	25 bar	
Differential pressure	See table permissible differential pressure (Page 16)	
Mounting position	Horizontal or shaft end down, Versions with connection for horizontal liquid supply. Vertical installation with shaft end on top (Special number 277).	
Ambient temperatures	NBR	-20 ... 60 °C
	FKM	-15 ... 60 °C
Media temperatures	NBR	-20 ... 80 °C (T4)
	FKM	-15 ... 80 °C (T4)
	FKM	-15 ... 110 °C (T3)
Device temperatures	NBR	-20 ... 80 °C (T4)
	FKM	-15 ... 130 °C (T3/T4)

The maximum temperatures must not be exceeded.
An application-dependent self-heating of the devices must be taken into account.

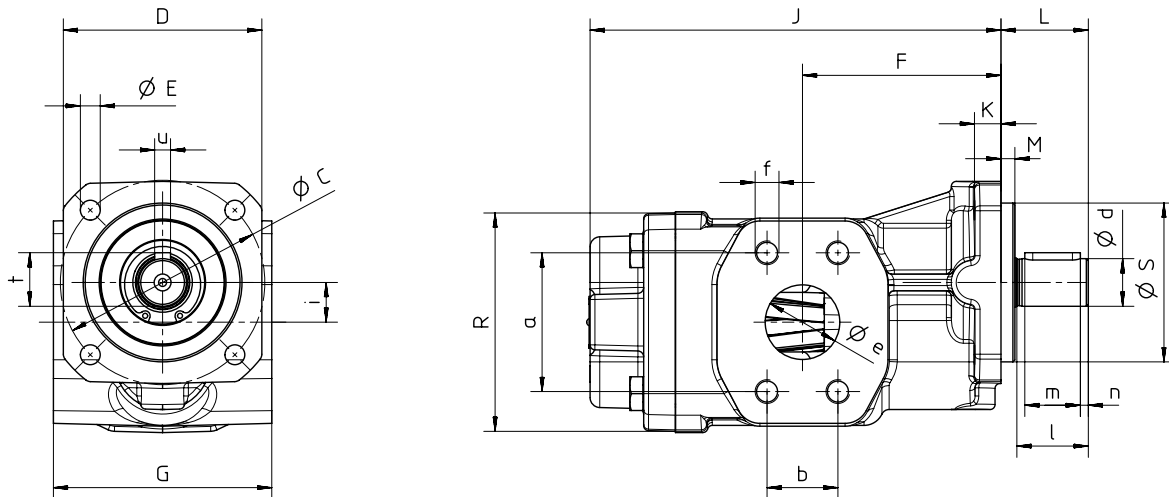
Consultation

For competent advice, please get in touch with your responsible contact person in the sales department or give us a call (+49 2392.935 0).

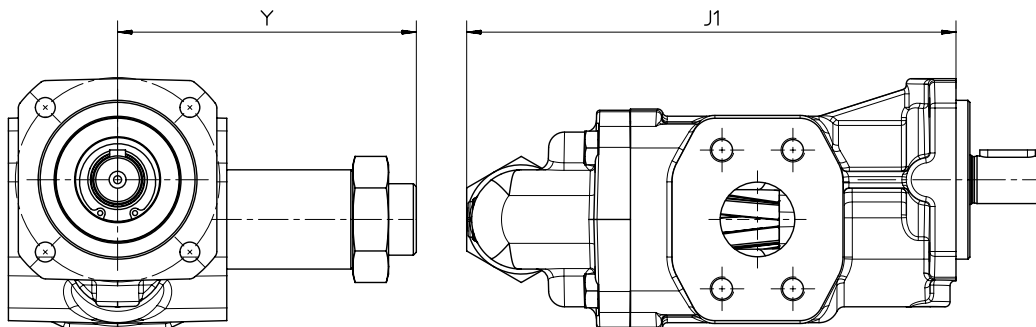
Dimensions and weights

- I KF 2.5 ... 25 – Gear pumps without/with D-valve and SAE connection (special number 158)
- I KF 32 ... 630 – Gear pumps without/with D-valve and SAE connection

without D-valve

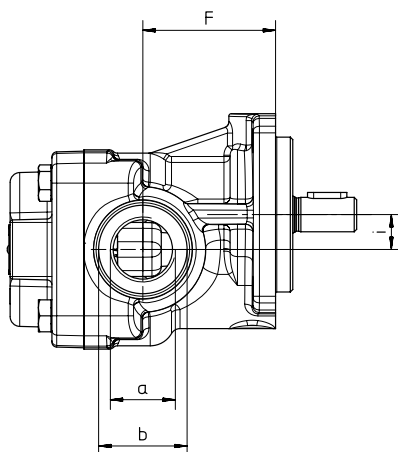


with D-valve

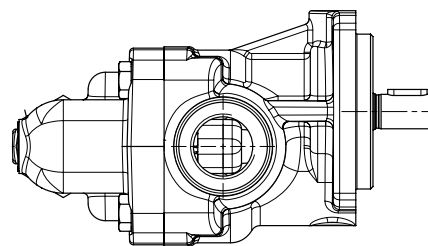


- I KF 2.5 ... 25 – Gear pumps without/with D-valve and pipe thread

without D-valve



with D-valve



Pumps of nominal sizes 2.5 ... 25 are supplied with a pipe connection as standard.

Dimensions in mm

Dimensions and weights

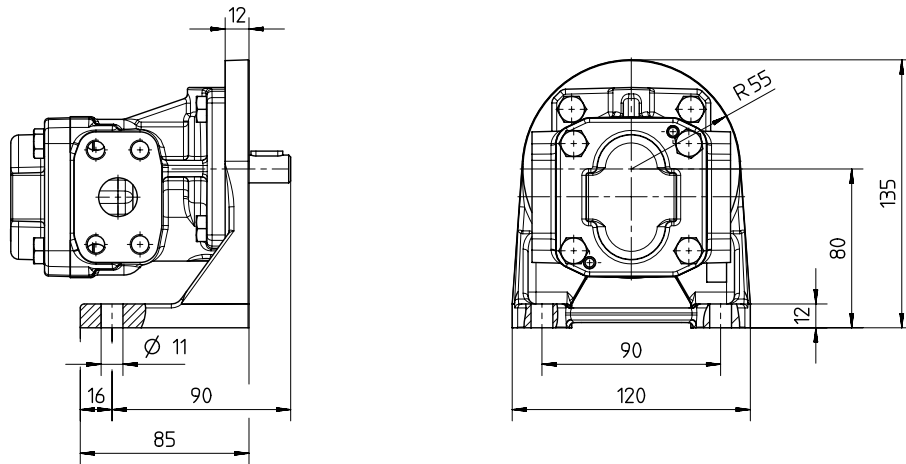
I KF 2.5 ... 630 – Gear pumps with SAE connection and pipe thread

Nominal size	Sp.-No.*	SAE	Suction- and pressure connection				Dimensions														Shaft end					Weight in kg		
			a	b	e	f	C	D	E	F	G	J	J1	K	L	M	R	S _{h8}	i	Y	d _{j6}	l	m	n	t	u	without valve	with valve
2.5 ... 12	-	-	G 3/4	∅ 36	-	-	85	80	10	54	95	108.0	140	9	33	7	80	63	14.2	100.0	14	25	16	4	16	5	2.9	3.7
2.5 ... 12	158	3/4"	47.6	22.2	19.5	M10-15 deep	85	80	10	54	100	108.0	140	9	33	7	80	63	14.2	99.5	14	25	16	4	16	5	4.2	5.0
16 ... 25	-	-	G 1 19 deep	∅ 42	-	-	85	80	10	63	95	130.0	162	9	33	7	80	63	14.2	100.0	14	25	16	4	16	5	3.5	4.3
16 ... 25	158	1"	52.4	26.2	25.0	M10-17 deep	85	80	10	63	100	130.0	162	9	33	7	80	63	14.2	99.5	14	25	16	4	16	5	4.8	5.6
32 ... 50	-	1 1/2"	69.9	35.7	38.0	M12-20 deep	103	100	10	84	110	172.0	211.5	13	44	7	110	80	20.0	150.5	24	36	28	4	27	8	7.7	9.5
63/80	-	1 1/2"	69.9	35.7	38.0	M12-20 deep	103	100	10	100	110	207.0	246.5	13	44	7	110	80	20.0	150.5	24	36	28	4	27	8	9.4	11.2
50	232	2"	77.8	42.9	50.0	M12-20 deep	103	100	10	84	110	172.0	211.5	13	44	7	110	80	20.0	150.5	24	36	28	4	27	8	7.7	9.5
63/80	232	2"	77.8	42.9	50.0	M12-20 deep	103	100	10	100	110	207.0	246.5	13	44	7	110	80	20.0	150.5	24	36	28	4	27	8	9.4	11.2
100/112	-	2"	77.8	42.9	50.8	M12-20 deep	145	135	14	102	130	220.5	262.5	17	60	8	128	110	23.7	170.5	28	50	40	5	31	8	16.0	18.7
100/112	232	2 1/2"	88.9	50.8	63.5	M12-20 deep	145	135	14	102	130	220.5	262.5	17	60	8	128	110	23.7	170.5	28	50	40	5	31	8	16.0	18.7
125/150	-	2 1/2"	88.9	50.8	63.5	M12-20 deep	145	135	14	120	150	245.0	282	18	60	8	159	110	23.7	170.5	28	50	40	5	31	8	22.2	24.9
125/150	232	3"	106.4	61.9	76.2	M16- 32 deep	145	135	14	120	150	245.0	282	18	60	8	159	110	23.7	170.5	28	50	40	5	31	8	22.2	24.9
180/200	-	3"	106.4	61.9	76.2	M16- 32 deep	145	135	14	130	150	261.5	298.5	18	60	8	159	110	23.7	170.5	28	50	40	5	31	8	24.8	27.5
180/200	232	3 1/2"	120.7	69.9	88.9	M16- 32 deep	145	135	14	130	150	261.5	298.5	18	60	8	159	110	23.7	170.5	28	50	40	5	31	8	24.8	27.5
250/315	-	3"	106.4	61.9	76.2	M16- 32 deep	200	185	19	155	200	311.0	364	26	90	8	208	160	35.5	240.0	38	80	63	8	41	10	44.2	47.6
400/500	-	4"	130.2	77.8	101.6	M16- 32 deep	200	185	19	200	200	373.0	426	26	90	8	208	160	35.5	240.0	38	80	63	8	41	10	54.7	58.2
630	-	4"	130.2	77.8	101.6	M16- 32 deep	200	185	19	200	200	417.0	470	26	90	8	208	160	35.5	240.0	38	80	63	8	41	10	60.8	64.2

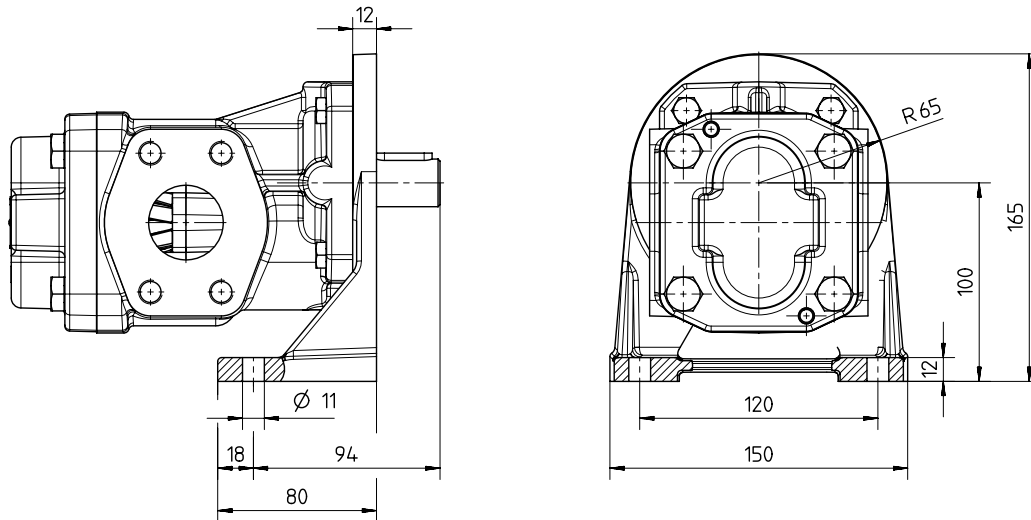
* Special numbers: see page 15.

Dimensions and weights

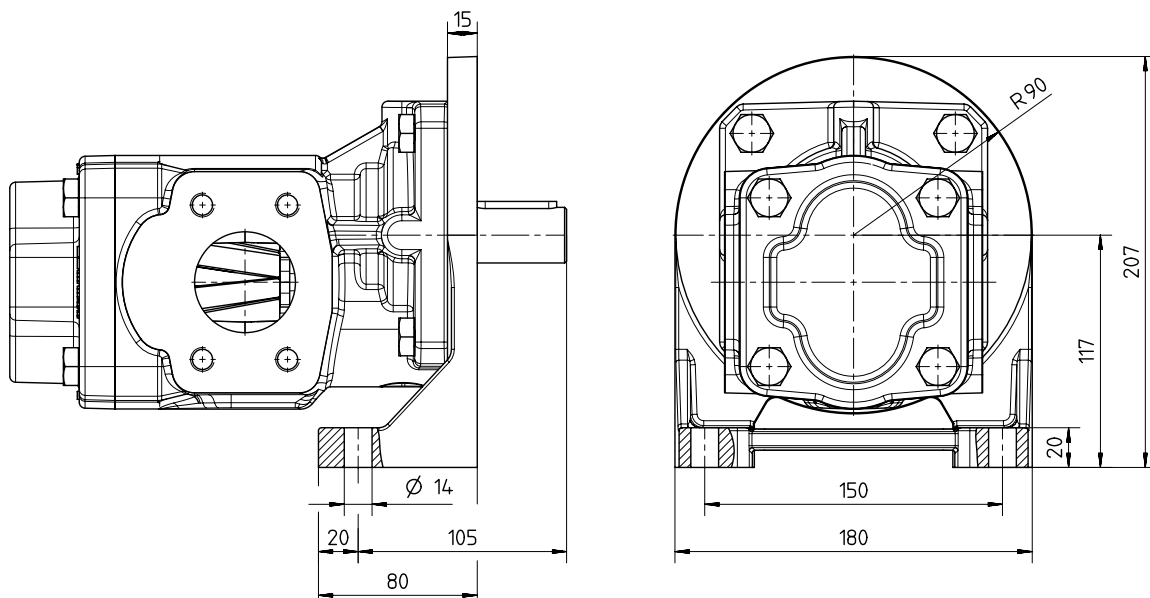
I KF 2.5 ... 25 – Mounting angle for gear pumps



I KF 32 ... 80 – Mounting angle for gear pumps



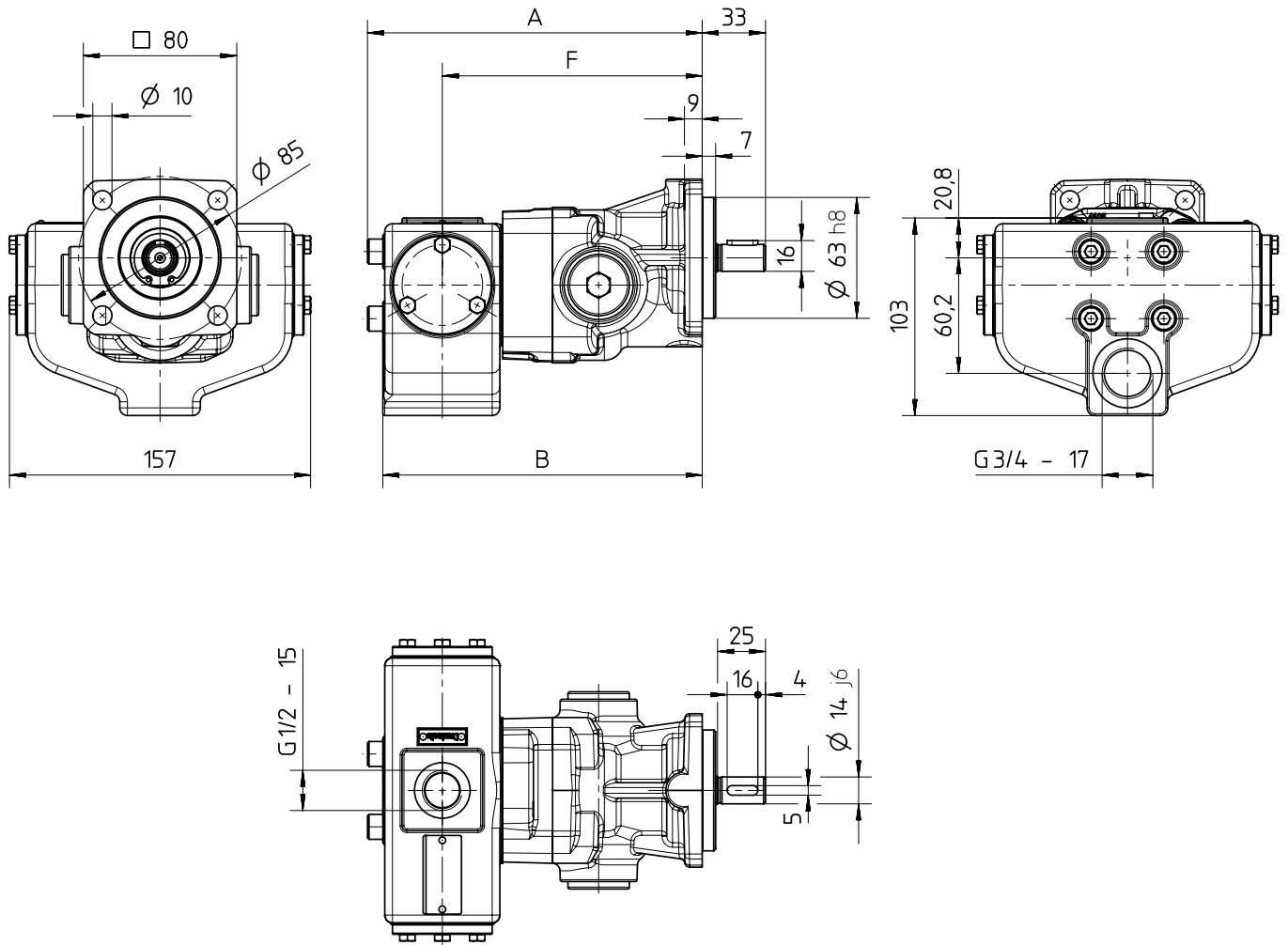
I KF 100 ... 200 – Mounting angle for gear pumps



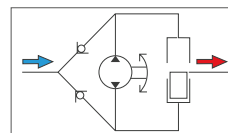
Dimensions in mm

Dimensions and weights

I KF 2.5 ... 25 – Gear pumps with universal valve U

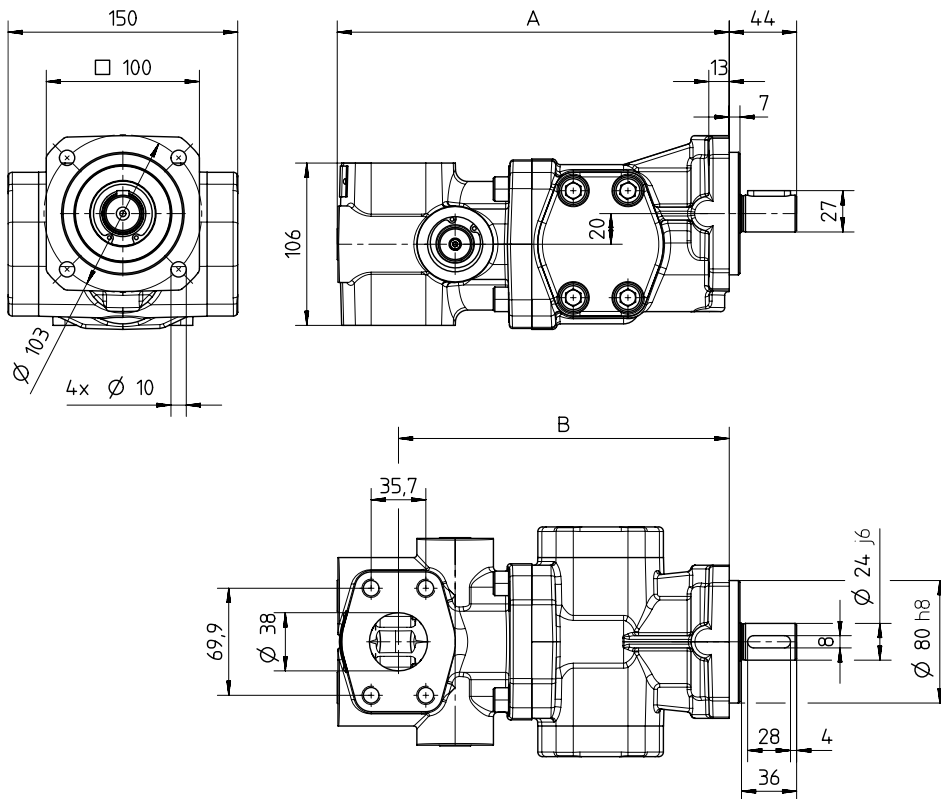


Nominal size	A	B	F	Weight in kg	Perm. manometric negative pressure at the pump suction connection P_e in bar
4	174.5	166.5	135.5	6.9	0.35
5					
6					
8					
10					
12	196.5	188.5	157.5	7.5	
16					
20					
25					

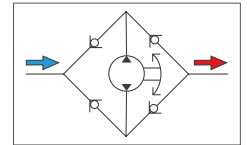


Dimensions and weights

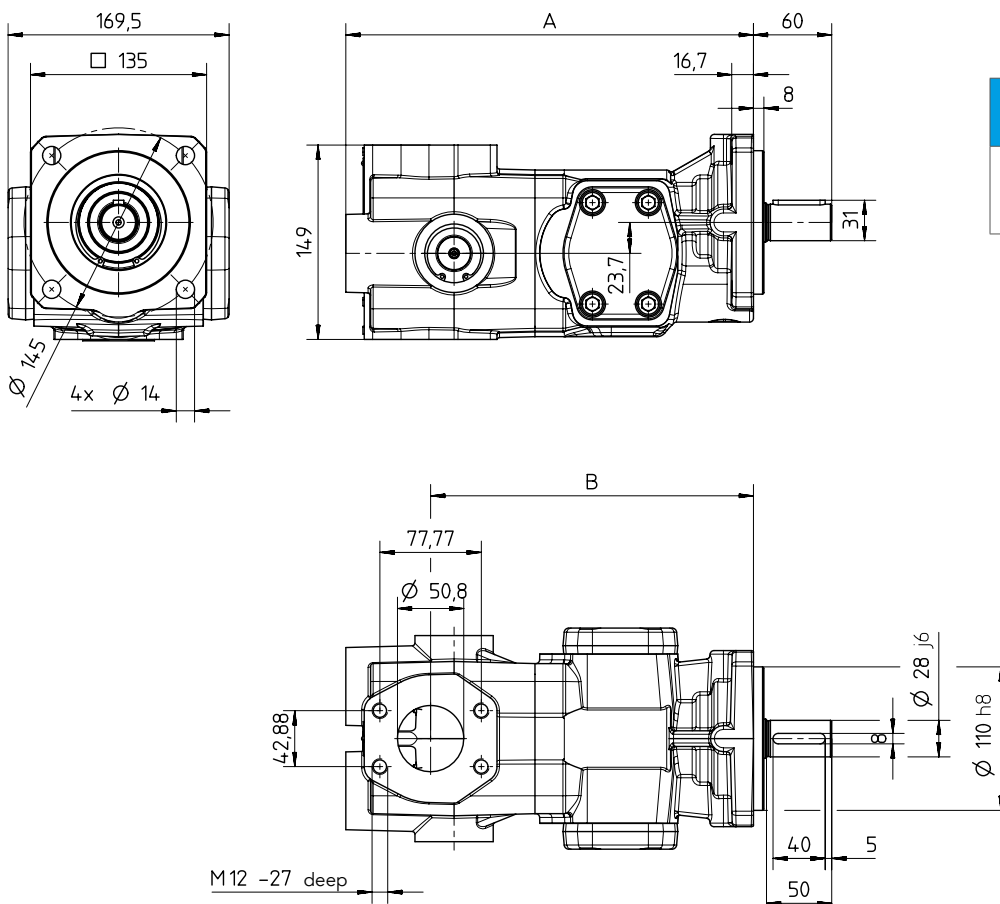
I KF 32 ... 80 – Gear pumps with universal valve U2



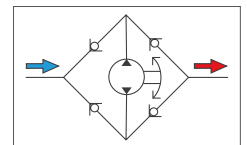
Discharge flow Nominal size	A	B	Weight in kg
32 40 50	256	216	15.5
63 80	291	251	17.5



I KF 100/112 – Gear pumps with universal valve U2



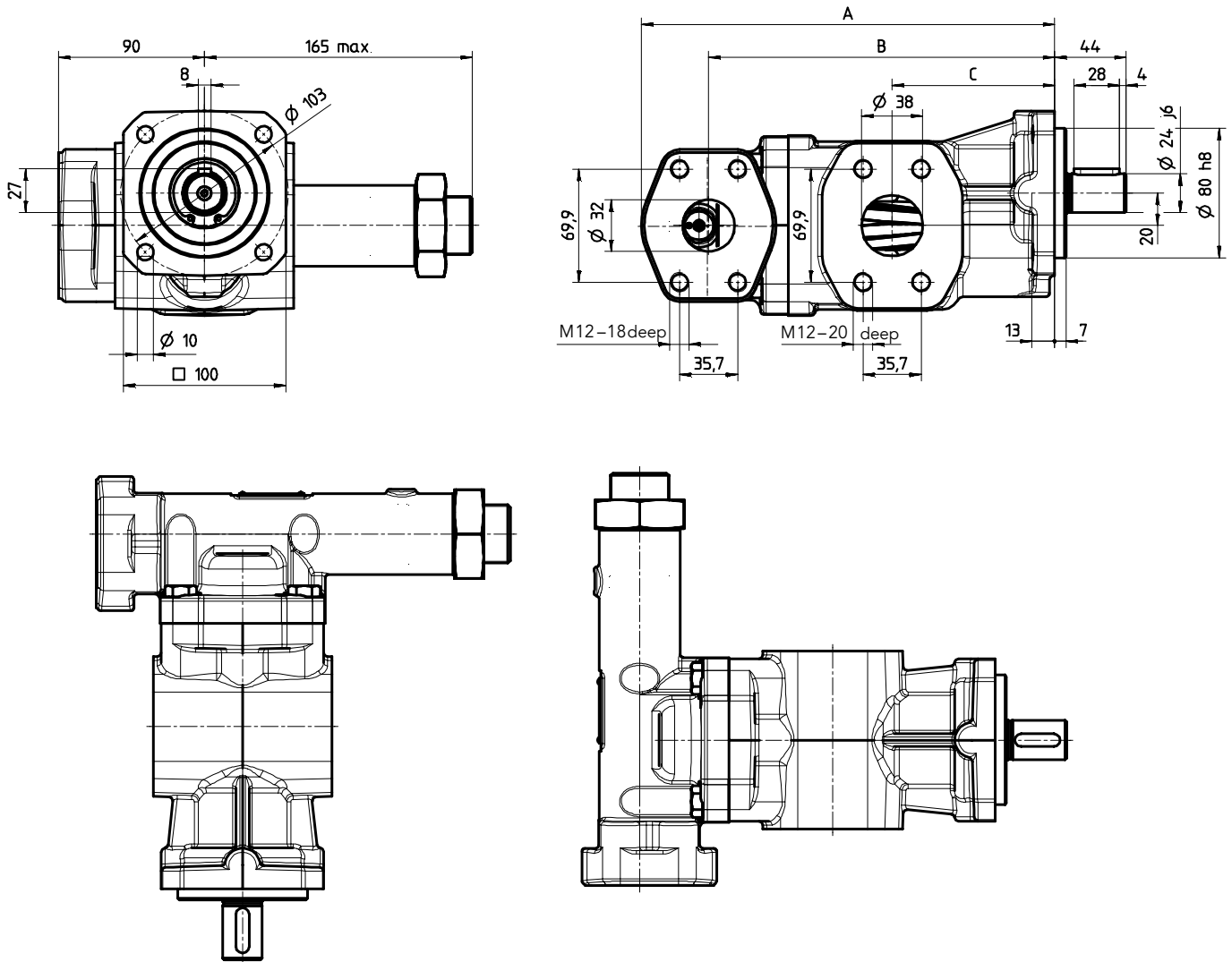
Discharge flow Nominal size	A	B	Weight in kg
100 112	312.5	247.5	21.6



Dimensions in mm

Dimensions and weights

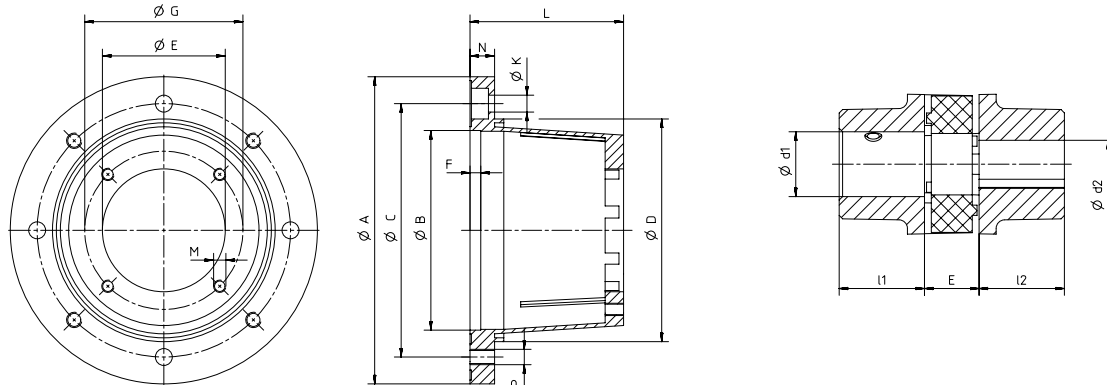
I KF 32 ... 80 – Gear pumps with T-valve



Nominal size	A	B	C	Weight in kg
32	220	184	84	9.5
40				
50				
63	255	213	100	11.2
80				

Technical data

I KF 2.5 ... 630 – Dimensions of bellhousing and couplings



KF 2.5 ... 25

IEC motor size	Dimensions bellhousing												Bellhousing description	Dimensions coupling					Coupling description
	A	B	C	D	E	F	G	K	L	M	N	P		d1	d2	l1	l2	E	
71 M	160	110	130	110	63	7	85	9	80	M8	13	M8	PT 160-A-063-80	14	14	25	25	16	RA 19-Z25/14-Z25/14
80 M	200	130	165	145	63	7	85	11	100	M8	16	M10	PT 200-A-063-100	14	19	25	25	16	RA 19-Z25/14-Z25/19
90 S/L	200	130	165	145	63	7	85	11	100	M8	16	M10	PT 200-A-063-100	14	24	25	25	16	RA 19-Z25/14-Z25/24
100 L / 112 M	250	180	215	190	63	7	85	14	120	M8	19	M12	PT 250-A-063-120	14	28	30	30	18	RA 24-Z30/14-Z30/28
132 S/M	300	230	265	234	63	7	85	14	144	M8	20	M12	PT 300-A-063-144	14	38	35	35	20	RA 28-Z35/14-Z35/38

KF 32 ... 80

IEC motor size	Dimensions bellhousing												Bellhousing description	Dimensions coupling					Coupling description
	A	B	C	D	E	F	G	K	L	M	N	P		d1	d2	l1	l2	E	
80 M	200	130	165	145	80	7	103	11	100	M8	16	M10	PT 200-A-080-100	24	19	25	25	16	RA 19-Z25/24-Z25/19
90 S/L	200	130	165	145	80	7	103	11	110	M8	16	M10	PT 200-A-080-110	24	24	30	30	18	RA 24-Z30/24-Z30/24
100 L / 112 M	250	180	215	190	80	7	103	14	124	M8	18	M12	PT 250-A-080-124	24	28	30	30	18	RA 24-Z30/24-Z30/28
132 S/M	300	230	265	234	80	7	103	14	144	M8	20	M12	PT 300-A-080-144	24	38	35	35	20	RA 28-Z35/24-Z35/38
160 M/L	350	250	300	260	80	7	103	18	188	M8	26	M16	PT 350-A-080-188	24	42	45	45	24	RA 38-Z45/24-Z45/42

KF 100 ... 200

IEC motor size	Dimensions bellhousing												Bellhousing description	Dimensions coupling					Coupling description
	A	B	C	D	E	F	G	K	L	M	N	P		d1	d2	l1	l2	E	
100 L / 112 M	250	180	215	190	110	7	145	14	135	M12	18	M12	PT 250-A-110-135	28	28	30	30	18	RA 24-Z30/28-Z30/28
132 S/M	300	230	265	234	110	7	145	14	168	M12	20	M12	PT 300-A-110-168	28	38	35	35	20	RA 28-Z35/28-Z35/38
160 M/L	350	250	300	260	110	7	145	18	188	M12	26	M16	PT 350-A-110-188	28	42	45	45	24	RA 38-Z45/28-Z45/42
180 M/L	350	250	300	260	110	7	145	18	204	M12	26	M16	PT 350-A-110-204	28	48	50	50	26	RA 42-Z50/28-Z50/48

KF 250 ... 630

IEC motor size	Dimensions bellhousing												Bellhousing description	Dimensions coupling					Coupling description
	A	B	C	D	E	F	G	K	L	M	N	P		d1	d2	l1	l2	E	
132 S/M	300	230	265	234	160	7	200	14	196	M16	20	M12	PT 300-A-160-196	38	38	35	35	20	RA 28-Z35/38-Z35/38
160 M/L	350	250	300	260	160	7	200	18	228	M16	26	M16	PT 350-A-160-228	38	42	45	45	24	RA 38-Z45/38-Z45/42
180 M/L	350	250	300	260	160	7	200	18	228	M16	26	M16	PT 350-A-160-228	38	48	50	50	26	RA 42-Z50/38-Z50/48
200 M/L	400	300	350	300	160	7	200	18	228	M16	26	M16	PT 400-A-160-228	38	55	50	50	26	RA 42-Z50/38-Z50/55
225 S/M	450	350	400	350	160	7	200	18	262	M16	26	M16	PT 450-A-160-262	38	60	56	56	28	RA 48-Z56/38-Z56/60
250 M	550	450	500	450	160	6	200	18	265	M16	26	M16	PT 550-A-160-265	38	65	65	65	30	RG 55-Z65/38-Z65/65

Dimensions in mm

Technical data

I KF 2.5 ... 630 – Accessories (Bellhousings, couplings, motor types)



Standard motors

IEC motor size	Power		Power		Foot flange
	Motor 4-pole 1450 1/min bei 50 Hz 1750 1/min bei 60 Hz		Motor 6-pole 950 1/min bei 50 Hz 1150 1/min bei 60 Hz		
	in kW		in kW		
71 M	0.25	0.18	0.09	PTFL 160	
71 M	0.37	0.25	0.12	PTFL 160	
80 M	0.55	0.37	0.18	PTFL 200	
80 M	0.75	0.55	0.25	PTFL 200	
90 S	1.10	0.75	0.37	PTFL 200	
90 L	1.50	1.10	0.55	PTFL 200	
100 L	2.20	-	0.75	PTFL 250	
100 L	3.00	1.50	1.10	PTFL 250	
112 M	4.00	2.20	1.50	PTFL 250	
132 S	5.50	3.00	2.20	PTFL 300	
132 M	7.50	4.00	3.00	PTFL 300	
132 M	-	5.50	-	PTFL 300	
160 M	11.00	7.50	4.00	PTFL 350	
160 L	15.00	11.00	5.50	PTFS 350	
180 M	18.50	-	-	PTFS 350	
180 L	22.00	15.00	11.00	PTFS 350	
200 L	30.00	18.50	-	PTFS 400	
200 L	-	22.00	15.00	PTFS 400	
225 S	37.00	-	18.50	PTFS 450	
225 M	45.00	30.00	22.00	PTFS 450	
250 M	55.00	37.00	30.00	PTFS 550	

Type key bellhousing

PT	160	A	063	80
Short term bellhousing	Outer-Ø engine side	Type A = fixed	Center-Ø pump side	Bellhousing Overall length

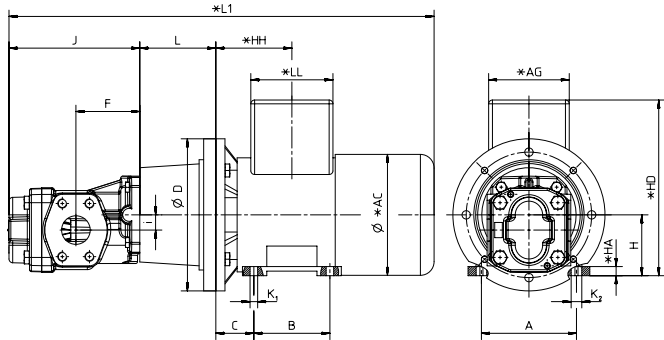
Type key coupling

R	A	19	Z	25	10	Z	25	10
Short term manufacturer	Material A = Aluminum G = Cast	Coupling size	Hub bore cylindrical pump side	Hub length pump side	Bore-Ø pump side	Hub bore cylindrical engine side	Hub length engine side	Bore-Ø engine side

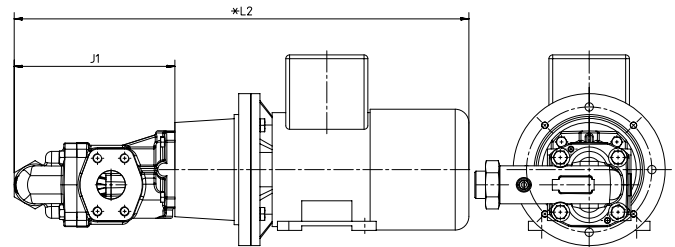
Dimensions

I KF 2.5 ... 25 – Motor-pump units with SAE connection

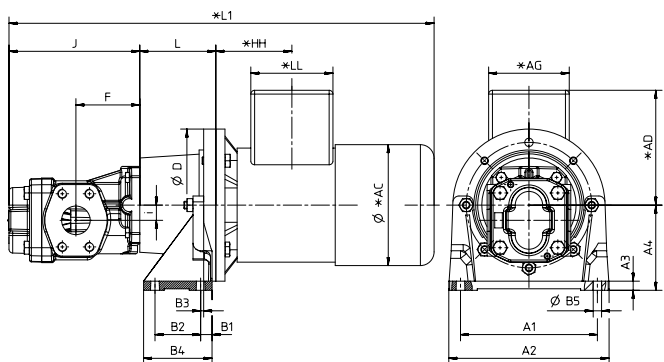
Version with bearing cover
Design IM B35



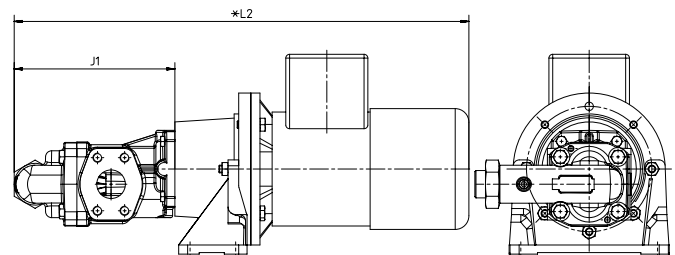
Version with pressure relief valve
Design IM B35



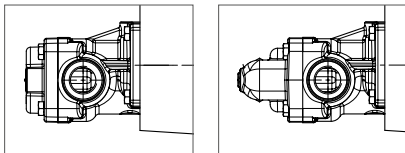
Version with bearing cover
Foot flange L (light version)
Design IM B5



Version with pressure relief valve
Foot flange L (light version)
Design IM B5



I KF 2.5 ... 25 – Motor-pump units with pipe thread



Alternatively, pumps of nominal sizes 2.5 ... 25 are also available with an SAE connection.

Dimensions

I KF 2.5 ... 25 – Dimensions of motor-pump units, Design IM B35

Size	Dimensions																	
	4...12 L1*	16...25 L1*	4...12 L2*	16...25 L2*	L	øD	A	B	C	H	*HD	K1	K2	*AC	*HA	*LL	*HH	*AG
71	408	430	440	462	80	160	112	90	45	71	201	7	10	147	9	108	90	101
80	499	521	531	553	100	200	125	100	50	80	231	10	14	159	12	108	100	106
90S	505	527	537	559	100	200	140	100	56	90	251	10	14	179	13	115	106	109
90L	545	567	577	599	100	200	140	125	56	90	251	10	14	179	13	115	118.5	109
100	650.5	672.5	682.5	704.5	120	250	160	140	63	100	293	12	16	199	16	134	133	163
112	640	662	672	694	120	250	190	140	70	112	308	12	16	222	15	140	140	163

I KF 2.5 ... 25 – Dimensions of motor-pump units with foot flange, Design IM B5

Size	Dimensions																			
	4...12 L1*	16...25 L1*	4...12 L2*	16...25 L2*	L	øD	A1	A2	A3	A4	B1	B2	B3	B4	B5	*AD	*HH	*LL	*AG	*AC
71	408	430	440	462	80	160	140	160	10	100	15	50	7	80	9	130	90	108	101	147
80	499	521	531	553	100	200	180	210	12	112	15	60	4	90	11	151	100	108	106	159
90S	505	527	537	559	100	200	180	210	12	112	15	60	4	90	11	161	106	115	109	179
90L	545	567	577	599	100	200	180	210	12	112	15	60	4	90	11	161	118.5	115	109	179
100	650.5	672.5	682.5	704.5	120	250	220	250	15	132	21	60	-	97	13	193	133	134	163	199
112	640	662	672	694	120	250	220	250	15	132	21	60	-	97	13	196	140	140	163	222

Note: With flange connection, the same external dimensions as with pipe connection.

I KF 2.5 ... 25 – Dimensions of the pump

Nominal size	Dimensions			
	F	J	J1	i
2.5 ... 12	54	108	140	14.2
16 ... 25	63	130	162	14.2

Notes

* Dimensions dependent on motor manufacturer.

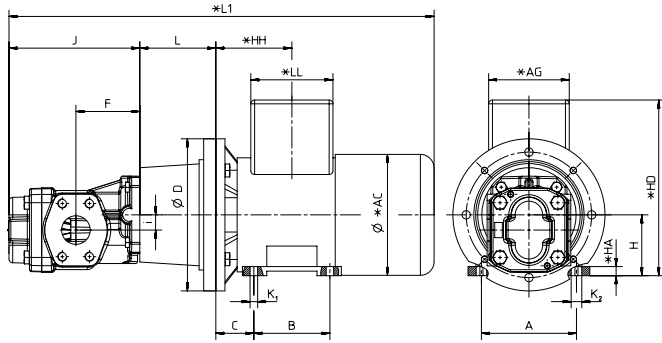
Motor frame sizes are based on DIN 42673/677.
All pump and motor sizes can be combined.

Dimensions in mm

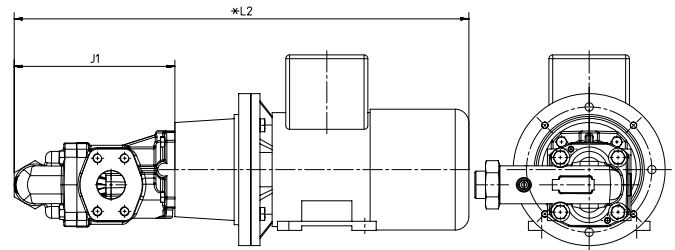
Dimensions

I KF 32 ... 80 – Motor-pump units with SAE connection

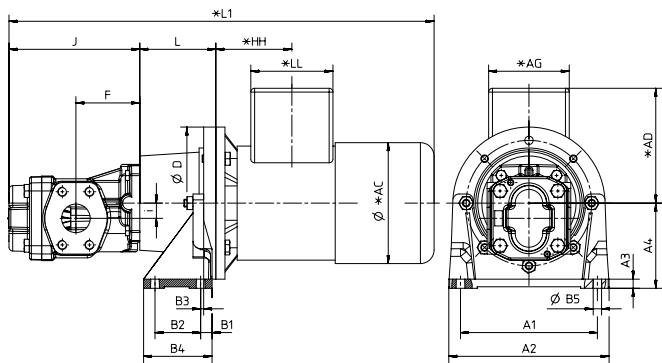
Version with bearing cover
Design IM B35



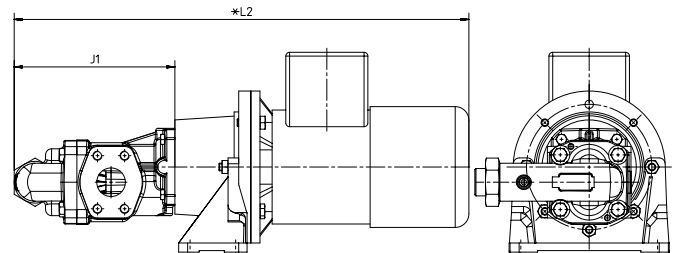
Version with pressure relief valve
Design IM B35



Version with bearing cover
Foot flange L (light version)
Design IM B5



Version with pressure relief valve
Foot flange L (light version)
Design IM B5



Dimensions

I KF 32 ... 80 – Dimensions of motor-pump units, design IM B35

Size	Dimensions																	
	32 ... 50	63 ... 80	32 ... 50	63 ... 80	32 ... 80													
	L1*	L1*	L2*	L2*	L	i	a1	a	b	c*	e*	f*	g*	h	o*	p*	q*	w1
80	563	598	602.5	637.5	100	200	125	100	50	80	231	10	14	159	12	108	100	106
90S	579	614	618.5	653.5	110	200	140	100	56	90	251	10	14	179	13	115	106	109
90L	619	654	658.5	693.5	110	200	140	125	56	90	251	10	14	179	13	115	118.5	109
100	718.5	753.5	758	793	124	250	160	140	63	100	293	12	16	199	16	134	133	163
112	708	743	747.5	782.5	124	250	190	140	70	112	308	12	16	222	15	140	140	163
132S	752.5	787.5	792	827	144	300	216	140	89	132	350	12	16	271	20	140	159	163
132M	752.5	787.5	792	827	144	300	216	178	89	132	350	12	16	271	20	140	178	163
160M	916	951	955.5	990.5	188	350	254	210	108	160	437	15	19	329	22	198	213	190
160L	938	973	977.5	1012.5	188	350	254	254	108	160	437	15	19	329	22	198	235.0	190

I KF 32 ... 80 – Dimensions of motor-pump units with foot flange, design IM B5

Size	Dimensions																			
	32 ... 50	63 ... 80	32 ... 50	63 ... 80	32 ... 80															
	L1*	L1*	L2*	L2*	L	øD	A1	A2	A3	A4	B1	B2	B3	B4	B5	*AD	*HH	*LL	*AG	*AC
80	563	598	602.5	637.5	100	200	180	210	12	112	15	60	4	90	11	151	100.0	108	106	159
90S	579	614	618.5	653.5	110	200	180	210	12	112	15	60	4	90	11	161	106.0	115	109	179
90L	619	654	658.5	693.5	110	200	180	210	12	112	15	60	4	90	11	161	118.5	115	109	179
100	718.5	753.5	758	793	124	250	220	250	15	132	21	60	-	97	13	193	133.0	134	163	199
112	708	743	747.5	782.5	124	250	220	250	15	132	21	60	-	97	13	196	140.0	140	163	222
132S	752.5	787.5	792	827	144	300	260	290	18	160	20	80	-	116	13	218	159.0	140	163	271
132M	752.5	787.5	792	827	144	300	260	290	18	160	20	80	-	116	13	218	178.0	140	163	271
160M	916	951	955.5	990.5	188	350	300	340	22	180	20	110	-	150	16	277	213.0	198	190	329
160L	938	973	977.5	1012.5	188	350	300	340	22	180	20	110	-	150	16	277	235.0	198	190	329

I KF 32 ... 80 – Dimensions of the pump

Nominal size	Dimensions			
	F	J	J1	i
32 ... 50	84	172	211.5	20
63 / 80	100	207	246.5	20

Notes

* Dimensions dependent on motor manufacturer.

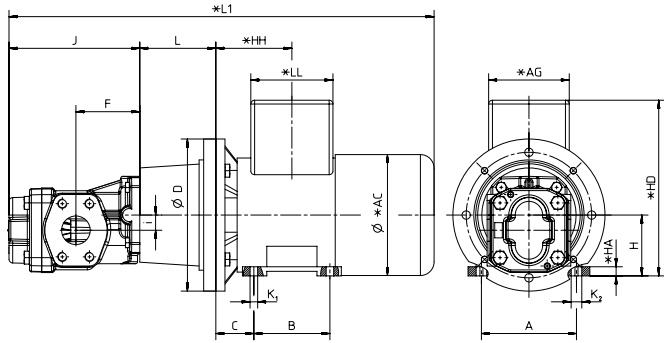
Motor frame sizes are based on DIN 42673/677.
All pump and motor sizes can be combined.

Dimensions in mm

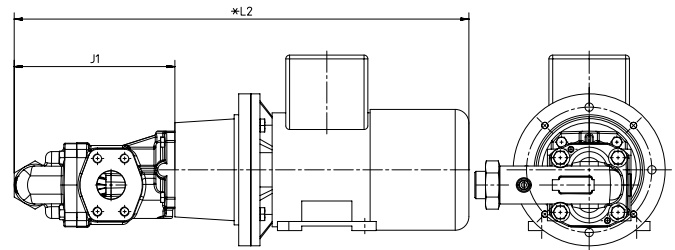
Dimensions

I KF 100 ... 200 – Motor-pump units with SAE connection

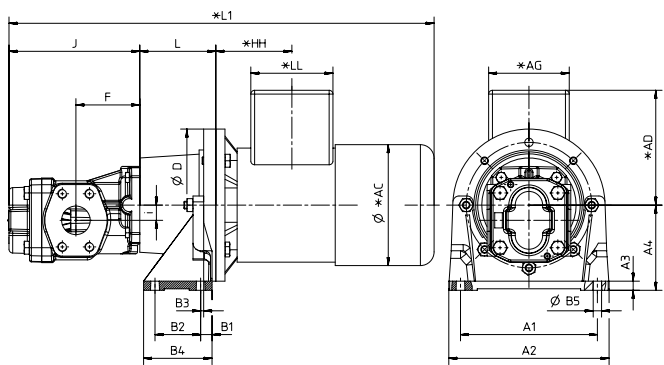
Version with bearing cover
Design IM B35



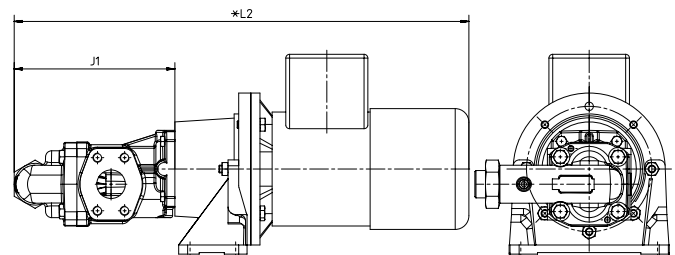
Version with pressure relief valve
Design IM B35



Version with bearing cover
Foot flange L (light version)
Design IM B5



Version with pressure relief valve
Foot flange L (light version)
Design IM B5



Dimensions

I KF 100 ... 200 – Dimensions of motor-pump units, design IM B35

Size	Dimensions																			
	100/112	125/150	180/200	100/112	125/150	180/200														
	L1*	L1*	L1*	L2*	L2*	L2*	L	øD	A	B	C	H	*HD	K1	K2	*AC	*HA	*LL	*HH	*AG
100	778	802.5	819	820	839.5	856	135	250	160	140	63	100	293	12	16	199	16	134	133	163
112	767.5	792	808.5	809.5	829	845.5	135	250	190	140	70	112	308	12	16	222	15	140	140	163
132S	825	849.5	866	867	886.5	903	168	300	216	140	89	132	350	12	16	271	20	140	159	163
132M	825	849.5	866	867	886.5	903	168	300	216	178	89	132	350	12	16	271	20	140	178	163
160M	964.5	989	1005.5	1006.5	1026	1042.5	188	350	254	210	108	160	437	15	19	329	22	198	213	190
160L	986.5	1011	1027.5	1028.5	1048	1064.5	188	350	254	254	108	160	437	15	19	329	22	198	235	190
180M	1025.5	1050	1066.5	1067.5	1087	1103.5	204	350	279	241	121	180	477	15	19	360	28	198	241.5	190
180L	1060.5	1085	1101.5	1102.5	1122	1138.5	204	350	279	279	121	180	477	15	19	360	28	198	261	210

I KF 100 ... 200 – Dimensions of motor-pump units mit Foot flange, design IM B5

Size	Dimensions																					
	100/112	125/150	180/200	100/112	125/150	180/200																
	L1*	L1*	L1*	L2*	L2*	L2*	L	øD	A1	A2	A3	A4	B1	B2	B3	B4	B5	*AD	*HH	*LL	*AG	*AC
100	778	802.5	819	820	839.5	856	135	250	220	250	15	132	21	60	-	97	13	193	133.0	134	163	199
112	767.5	792	808.5	809.5	829	845.5	135	250	220	250	15	132	21	60	-	97	13	196	140.0	140	163	222
132S	825	849.5	866	867	886.5	903	168	300	260	290	18	160	20	80	-	116	13	218	159.0	140	163	271
132M	825	849.5	866	867	886.5	903	168	300	260	290	18	160	20	80	-	116	13	218	178.0	140	163	271
160M	964.5	989	1005.5	1006.5	1026	1042.5	188	350	300	340	22	180	20	110	-	150	16	277	213.0	198	190	329
160L	986.5	1011	1027.5	1028.5	1048	1064.5	188	350	300	340	22	180	20	110	-	150	16	277	235.0	198	190	329
180M	1025.5	1050	1066.5	1067.5	1087	1103.5	204	350	300	340	22	180	20	110	-	150	16	297	241.5	198	190	360
180L	1060.5	1085	1101.5	1102.5	1122	1138.5	204	350	300	340	22	180	20	110	-	150	16	297	261.0	198	210	360

I KF 100 ... 200 – Dimensions of the pump

Nominal size	Dimensions			
	F	J	J1	i
100 / 112	102	220.5	262.5	23.7
125 / 150	120	245.0	282.0	23.7
180 / 200	130	261.5	298.5	23.7

Notes

* Dimensions dependent on motor manufacturer.

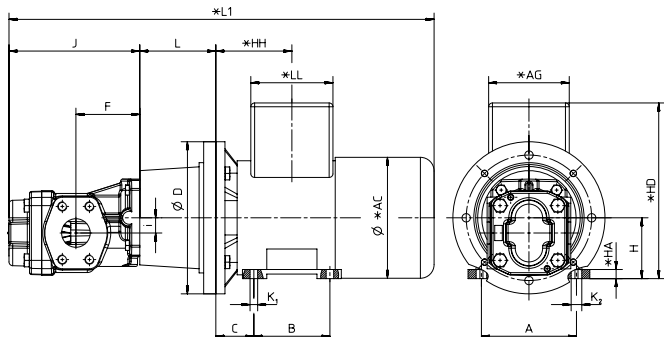
Motor frame sizes are based on DIN 42673/677.
All pump and motor sizes can be combined.

Dimensions in mm

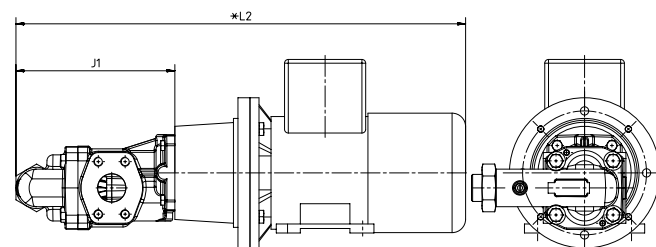
Dimensions

I KF 250 ... 630 – Motor-pump units with SAE connection

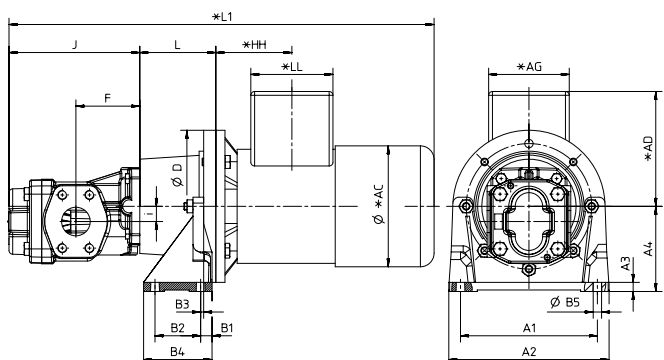
Version with bearing cover
Design IM B35



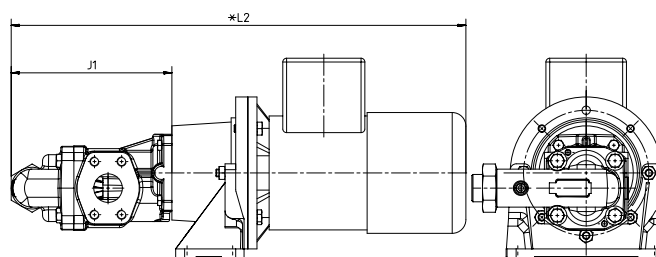
Version with pressure relief valve
Design IM B35



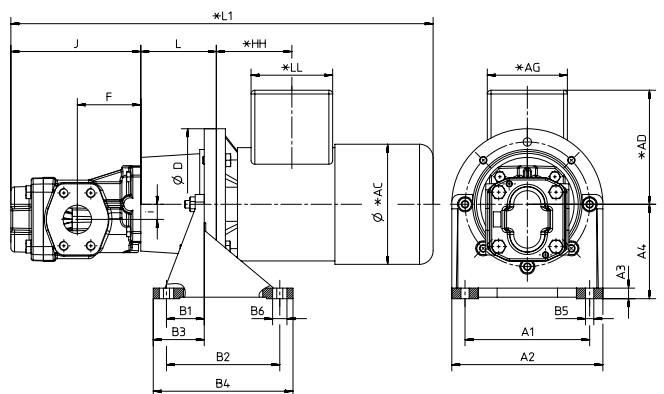
Version with bearing cover
Foot flange L (light version)
Design IM B5



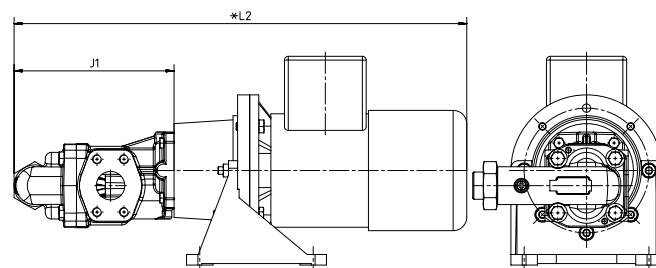
Version with pressure relief valve
Foot flange L (light version)
Design IM B5



Version with bearing cover
Foot flange S (heavy version)
Design IM B5



Version with pressure relief valve
Foot flange S (heavy version)
Design IM B5



Dimensions in mm

Dimensions

I KF 250 ... 630 – Dimensions of motor-pump units, Design IM B35

Size	Dimensions																			
	250/315	400/500	630	250/315	400/500	630														
	L1*	L1*	L1*	L2*	L2*	L2*	L	øD	A	B	C	H	*HD	K1	K2	*AC	*HA	*LL	*HH	*AG
132S	943.5	1005.5	1049.5	996.5	1058.5	1102.5	196	300	216	140	89	132	350	12	16	271	20	140	159.0	163
132M	943.5	1005.5	1049.5	996.5	1058.5	1102.5	196	300	216	178	89	132	350	12	16	271	20	140	178.0	163
160M	1095	1157	1201	1148	1210	1254	228	350	254	210	108	160	437	15	19	329	22	198	213.0	190
160L	1117	1179	1223	1170	1232	1276	228	350	254	254	108	160	437	15	19	329	22	198	235.0	190
180M	1140	1202	1246	1193	1255	1299	228	350	279	241	121	180	477	15	19	360	28	198	241.5	190
180L	1175	1237	1281	1228	1290	1334	228	350	279	279	121	180	477	15	19	360	28	198	261.0	210
200L	1275	1337	1381	1328	1390	1434	228	400	318	305	133	200	521	19	25	402	30	228	285.0	266
225S	1319	1381	1425	1372	1434	1478	262	450	356	286	149	225	609	19	25	465	34	261	283.0	292
225M	1361	1423	1467	1414	1476	1520	262	450	356	311	149	225	609	19	25	465	34	261	295.0	292
250M	1416	1478	1522	1469	1531	1575	265	550	406	349	168	250	660	24	30	506	43	261	342.0	319

I KF 250 ... 630 – Dimensions of motor-pump units with foot flange L, Design IM B5

Size	Dimensions																						
	250/315	400/500	630	250/315	400/500	630																	
	L1*	L1*	L1*	L2*	L2*	L2*	L	øD	A1	A2	A3	A4	B1	B2	B3	B4	B5	B6	*AD	*HH	*LL	*AG	*AC
132S	943.5	1005.5	1049.5	996.5	1058.5	1102.5	196	300	265	300	19	185	75	225	92	270	14	10	218	159.0	140	163	271
132M	943.5	1005.5	1049.5	996.5	1058.5	1102.5	196	300	265	300	19	185	75	225	92	270	14	10	218	178.0	140	163	271
160M	1095	1157	1201	1148	1210	1254	228	350	300	350	18	235	90	265	110	305	18	12	277	213.0	198	190	329

I KF 250 ... 630 – Dimensions of motor-pump units with foot flange S, Design IM B5

Size	Dimensions																						
	250/315	400/500	630	250/315	400/500	630																	
	L1*	L1*	L1*	L2*	L2*	L2*	L	øD	A1	A2	A3	A4	B1	B2	B3	B4	B5	B6	*AD	*HH	*LL	*AG	*AC
160L	1117	1179	1223	1170	1232	1276	228	350	300	350	18	235	90	265	110	305	18	12	277	235.0	198	190	329
180M	1140	1202	1246	1193	1255	1299	228	350	300	350	18	235	90	265	110	305	18	12	297	241.5	198	190	360
180L	1175	1237	1281	1228	1290	1334	228	350	300	350	18	235	90	265	110	305	18	12	297	261.0	198	210	360
200L	1275	1337	1381	1328	1390	1434	228	400	350	400	20	260	100	300	125	350	18	12	321	285.0	228	266	402
225S	1319	1381	1425	1372	1434	1478	262	450	400	450	20	295	110	335	138	385	18	12	384	283.0	261	292	465
225M	1361	1423	1467	1414	1476	1520	262	450	400	450	20	295	110	335	138	385	18	12	384	295.0	261	292	465
250M	1416	1478	1522	1469	1531	1575	265	550	500	550	25	350	140	415	165	465	18	12	410	342.0	261	319	506

I KF 250 ... 630 – Dimensions of the pump

Nominal size	Dimensions		
	F	J	J1
250 / 315	155	311	364
400 / 500	200	373	426
630	200	417	470

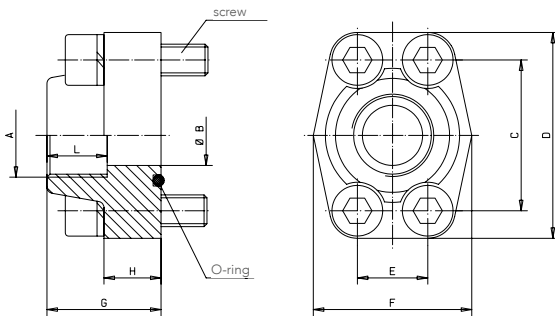
Notes

* Dimensions dependent on motor manufacturer.

Motor frame sizes are based on DIN 42673/677.
All pump and motor sizes can be combined.

Dimensions and weights

I SAE threaded flange



Nominal size SAE	A	B max.	C	D*	E	F*	G	H*	L min.	Screws 10.9	O-ring	Working pressure max.**	Weight approx. in kg
3/4"	G 1/2"	13	47.63	65	22.23	50	36	18	14	M 10x35	24.99 x 3.53	350	0.54
	G 3/4"	19	47.63	65	22.23	50	36	18	16	M 10x35	24.99 x 3.53	350	0.51
1"	G 1/2"	13	52.37	70	26.19	55	38	18	14	M 10x35	32.92 x 3.53	315	0.64
	G 3/4"	19	52.37	70	26.19	55	38	18	16	M 10x35	32.92 x 3.53	315	0.61
	G 1"	25	52.37	70	26.19	55	38	18	18	M 10x35	32.92 x 3.53	315	0.58
1 1/4"	G 3/4"	19	58.72	79	30.18	68	41	21	16	M 10x40	37.69 x 3.53	250	0.92
	G 1"	25	58.72	79	30.18	68	42	25	18	M 10x40	37.69 x 3.53	250	0.88
	G 1 1/4"	32	58.72	79	30.18	68	41	21	20	M 10x40	37.69 x 3.53	250	0.79
1 1/2"	G 1"	25	69.85	93	35.71	78	45	25	18	M 12x45	47.22 x 3.53	200	1.36
	G 1 1/4"	32	69.85	93	35.71	78	45	27	20	M 12x45	47.22 x 3.53	200	1.30
	G 1 1/2"	38	69.85	93	35.71	78	45	25	22	M 12x45	47.22 x 3.53	200	1.25
2"	G 1"	25	77.77	102	42.88	90	45	25	18	M 12x45	56.74 x 3.53	200	1.64
	G 1 1/4"	32	77.77	102	42.88	90	45	25	20	M 12x45	56.74 x 3.53	200	1.60
	G 1 1/2"	38	77.77	102	42.88	90	45	25	22	M 12x45	56.74 x 3.53	200	1.45
	G 2"	51	77.77	102	42.88	90	45	25	26	M 12x45	56.74 x 3.53	200	1.39
2 1/2"	G 2"	51	88.90	114	50.80	105	50	25	26	M 12x45	69.44 x 3.53	160	1.65
	G 2 1/2"	63	88.90	114	50.80	105	50	25	30	M 12x45	69.44 x 3.53	160	1.60
3"	G 2 1/2"	63	106.38	134	61.93	124	50	27	30	M 16x50	85.32 x 3.53	138	2.68
	G 3"	73	106.38	134	61.93	124	50	27	30	M 16x50	85.32 x 3.53	138	2.58
3 1/2"	G 3"	73	120.65	152	69.85	136	48	27	30	M 16x50	98.02 x 3.53	35	2.93
	G 3 1/2"	89	120.65	152	69.85	136	48	27	30	M 16x50	98.02 x 3.53	35	2.83
4"	G 3 1/2"	89	130.20	162	77.80	146	48	27	30	M 16x50	110.72 x 3.53	35	3.42
	G 4"	99	130.20	162	77.80	146	48	27	30	M 16x50	110.72 x 3.53	35	3.27

* Dimensions depending on the manufacturer.

** O-ring material with hardness 90 Shore A

Materials:

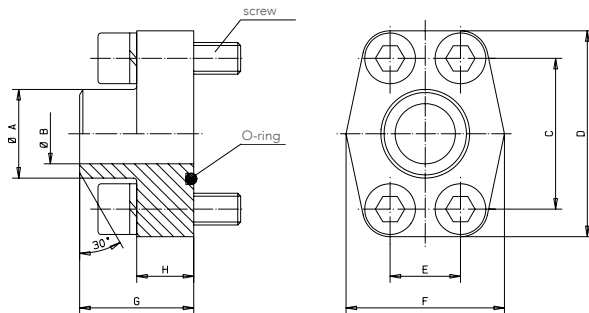
Steel S355J2G3 or equivalent

Stainless steel 1.4404 or equivalent

Dimensions in mm

Dimensions and weights

I SAE welding flange



Nominal size SAE	A	B max.	C	D*	E	F*	G	H*	Screws 10.9	O-ring	Working pressure max.**	Weight approx. in kg
3/4"	28.0	19	47.63	65	22.23	50	36	18	M 10x35	24.99 x 3.53	350	0.51
1"	34.0	25	52.37	70	26.19	55	38	18	M 10x35	32.92 x 3.53	315	0.58
1 1/4"	42.8	32	58.72	79	30.18	68	41	21	M 10x40	37.69 x 3.53	250	0.79
1 1/2"	48.6	38	69.85	93	35.71	78	44	25	M 12x45	47.22 x 3.53	200	1.25
2"	61.0	51	77.77	102	42.88	90	45	25	M 12x45	56.74 x 3.53	200	1.39
2 1/2"	77.0	63	88.90	114	50.80	105	50	25	M 12x45	69.44 x 3.53	160	1.60
3"	92.0	73	106.38	134	61.93	124	50	27	M 16x50	85.32 x 3.53	138	2.58
3 1/2"	103.0	89	120.65	152	69.85	136	48	27	M 16x50	98.02 x 3.53	35	2.83
4"	115.5	99	130.20	162	77.80	146	48	27	M 16x50	110.72 x 3.53	35	3.27

* Dimensions depending on the manufacturer.

** O-ring material with hardness 90 Shore A

Materials:

Steel S355J2G3 or equivalent

Stainless steel 1.4404 or equivalent

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