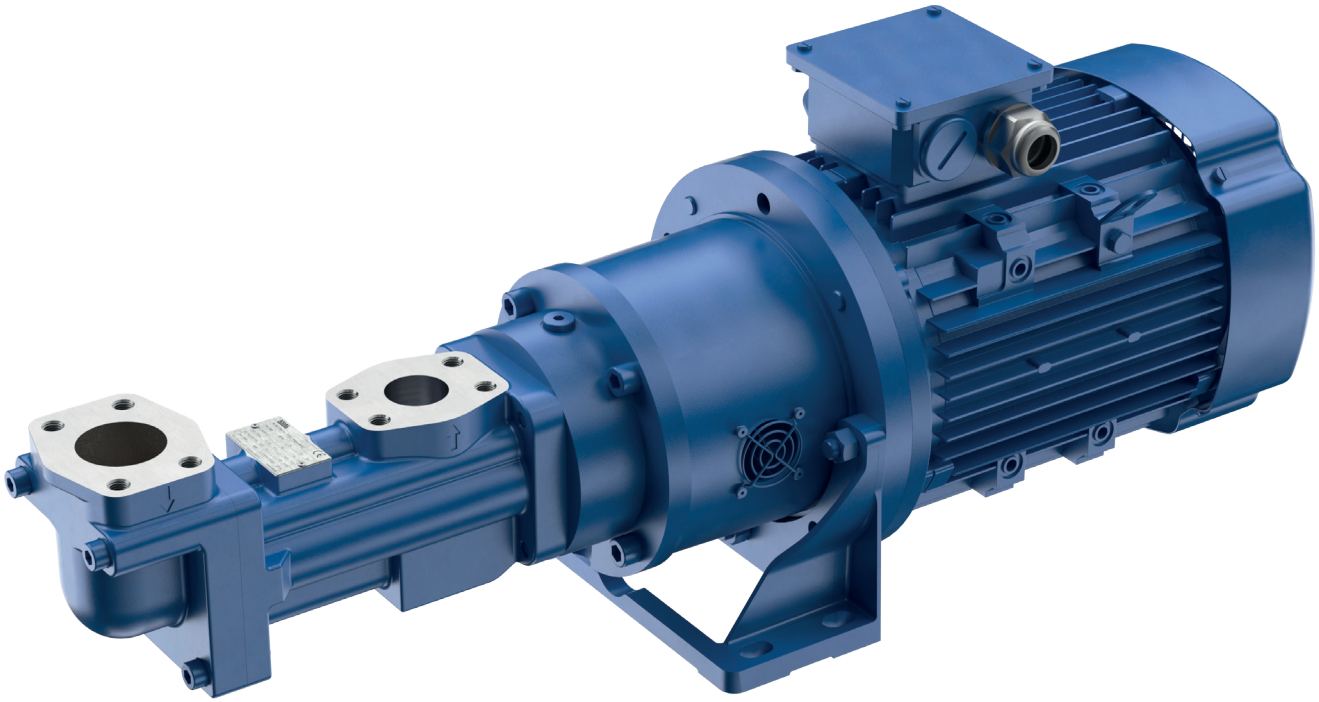
Pumps.

KRAL



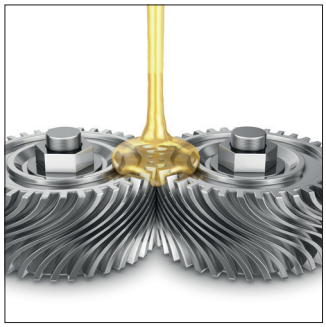
KRAL Screw Pumps.

G Series.

www.kral.at

KRAL Screw Pumps G Series.

Compact lubricating oil pump in modular design.



Applications.

Everything that moves, whether sliding or rolling, must be lubricated.

Energy and cost efficiency are paramount for operators of rotating machinery, such as compressors, gearboxes and turbines.

Friction means energy loss. Lubrication saves energy.

The lubricating film protects the components and reduces the need for maintenance and spare parts.

Proper lubrication reduces friction and protects against wear and corrosion.

The lubricating film dissipates heat. This prevents overheating and protects against severe damage or fire.

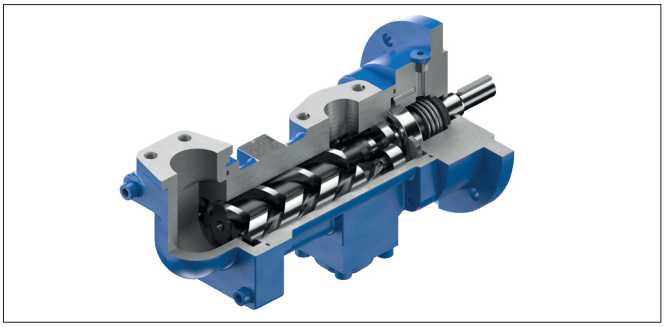
The G pump in the KRAL product range.

The pump that adapts to your needs.

- Modular design.
- Compact construction.
- Selection of standardized process connections.
- Pump housing, suction, and flange cover each rotatable in 90° steps.
- Suction cover with radial and axial inlet.
- Gear or motor drive.
- Horizontal or vertical installation possibility.
- Submersible or dry version.
- Attractive pricing.
- Short delivery times.

Operation, materials, components.

Delivery rate range:	5 to 660 l/min.
Max. differential pressure:	25 bar.
Temperature range:	-10 °C bis 120 °C, Magnetic coupling to 300 °C.
Viscosity:	10 to 500 mm^2/s. Cold start to 1.200 mm^2/s.
Housing design:	Nodular cast iron EN-GJS-400, steel.
Screws:	Steel, nitrided.
Certificates:	ABS, BV, CCS, DNV, LRS, MRS, NK, RINA, KR.
API:	Conformance with API 676.
Options for ATEX :	EX II -/3 G Ex h IIC T4... T2 -/Gc X., with mechanical seal. EX II -/2 G Ex h IIC T4 ... T2 -/Gb X., with magnetic coupling.

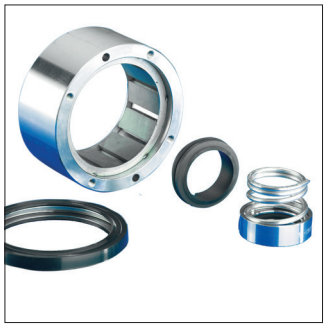


Advantages of the screw pump.

The pumps are self-priming, deliver with low pulsation and noise, and are characterized by low maintenance requirements and long service life.

Proven technology in a Compact design.

KRAL screw pumps off high delivery performance with a small footprint compared to other pump types. This is especially true at high differential pressures.

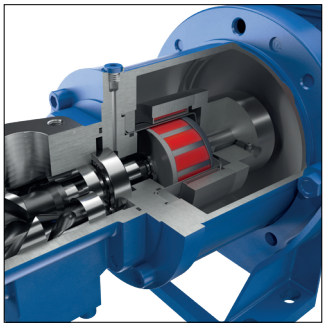


Mechanical Seal.

The G series is supplied as standard with a mechanical seal according to DIN 24960. The high-quality mechanical seal can be used up to 120 °C.

Optionally, relieved mechanical seals can also be used.

Mechanical seals in cartridge design in accordance with API 682 for the G series are optionally available.

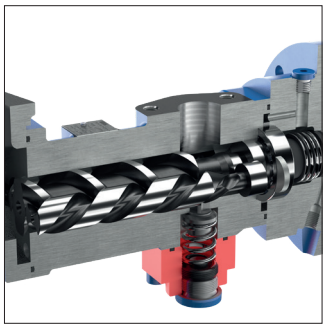


Magnetic coupling.

Pumps of the G series can be designed with a hermetically sealed magnetic coupling. This makes the pump completely leak-free.

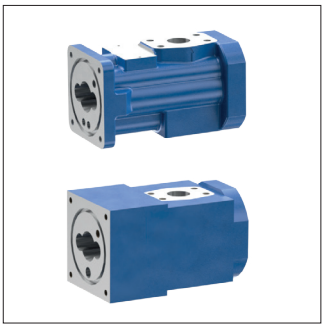
Operating Principle:
The motor torque is transmitted through the containment shell to the pump shaft without contact, using magnetic forces.
The magnetic coupling is ideal for applications with high inlet pressure.

Thank to the magnetic coupling, maximum operating temperatures of 300 °C and higher inlet pressures are possible.



Overflow valve.

The optional pressure relief valve ensures recirculation of the medium in case of overpressure. The adjustment range of the pressure relief valve is between 2 and 25 bar.



Pump Housing.

For the G series, the housing components are made of ductile iron EN-GJS-400 as standard.

For applications in the oil and gas sector, such as lubrication of compressors or gearboxes, the housing compontents can optionally be made of steel.

Due to identical process connections, the housing components are fully interchangeable on a 1:1 basis.

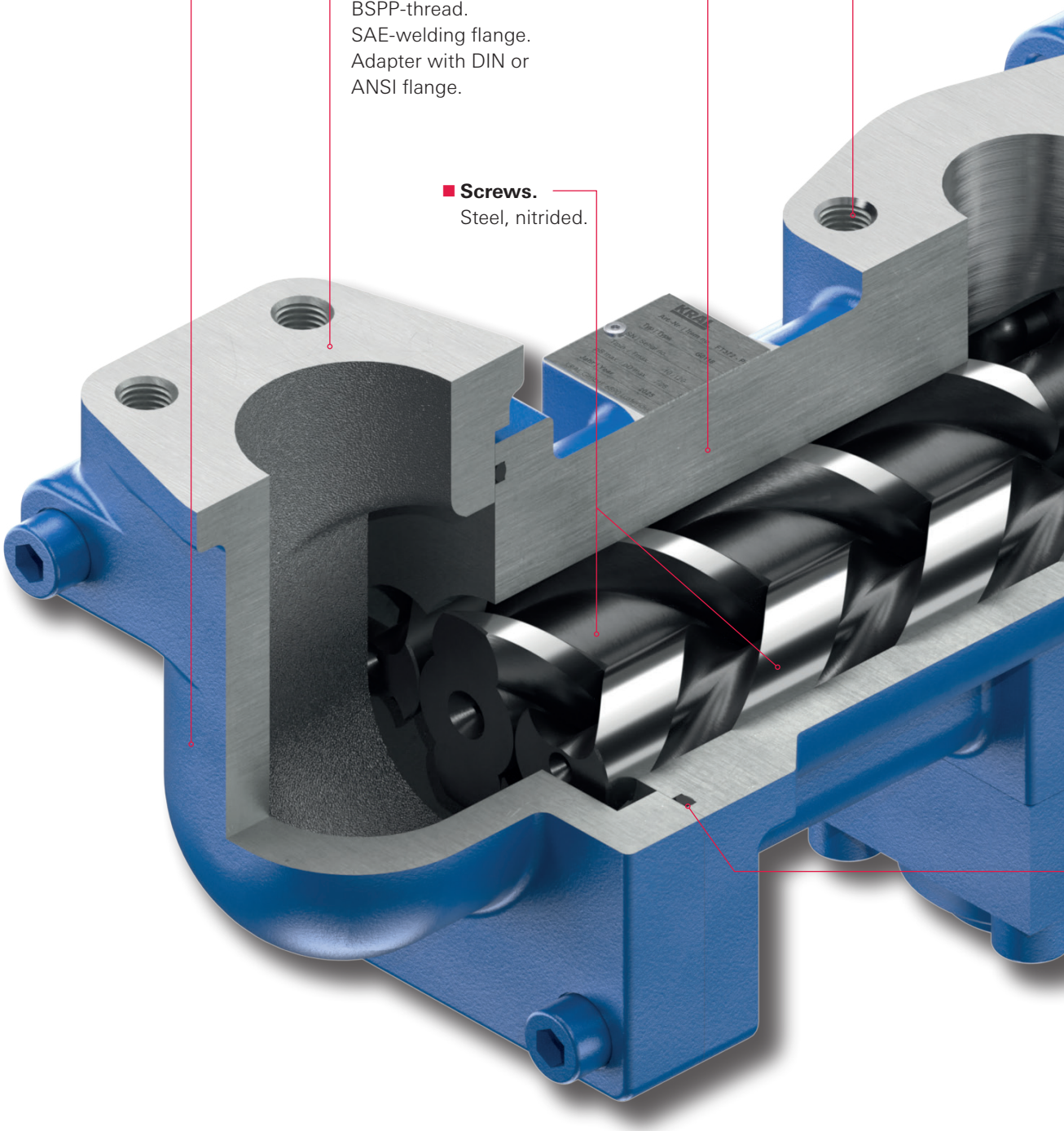
Suction cover.
With radial or axial inlet as required. Can be rotated in 90° steps.

Optional process connections.
SAE 4 BOLT (Standard).
SAE-screw-in flange with NPT-thread or BSPP-thread.
SAE-welding flange.
Adapter with DIN or ANSI flange.

Screws.
Steel, nitrided.

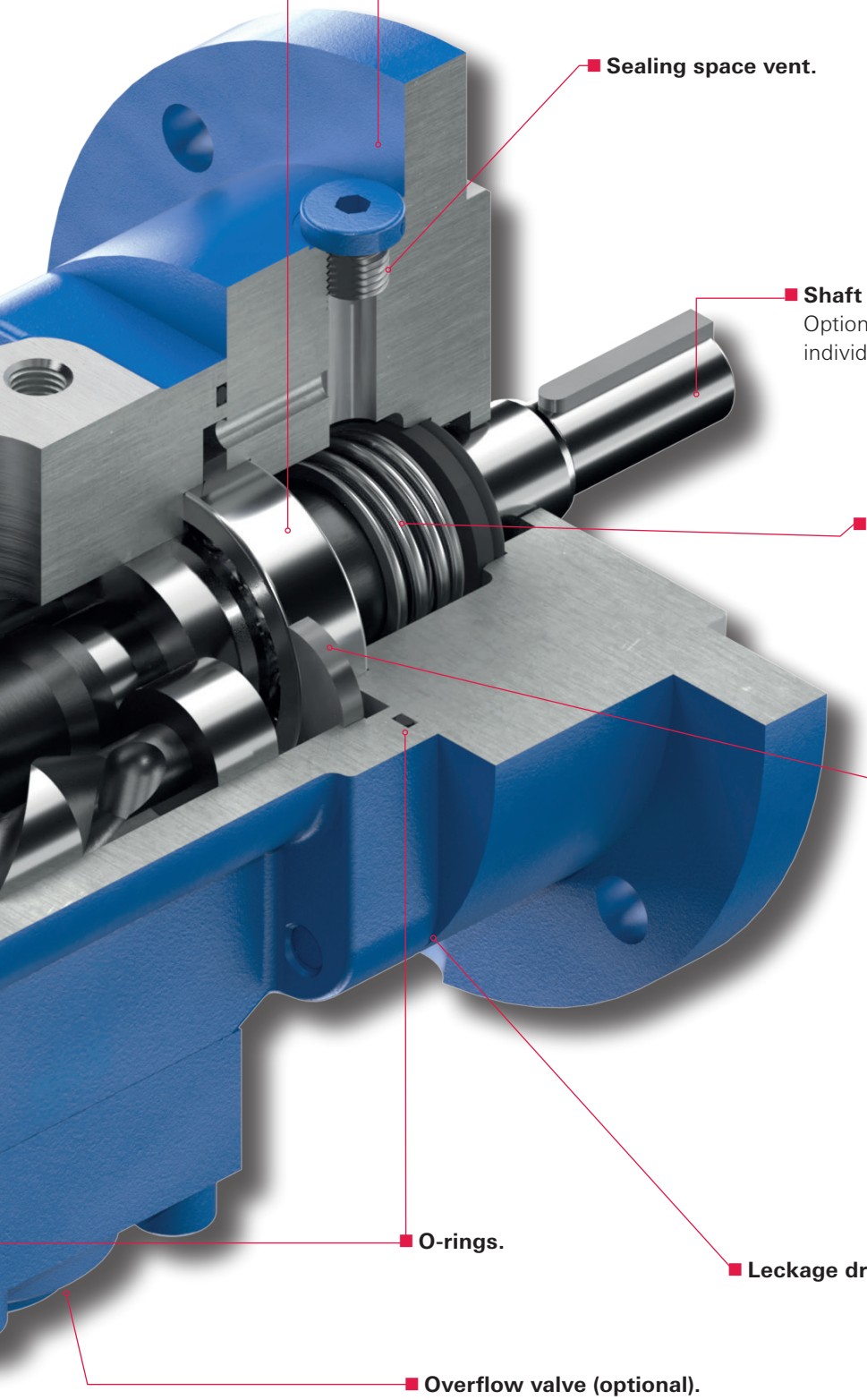
Pump housing.
Housing made of EN-GJS-400, optionally made of steel.

Optional process connections.



Flange cover.
Installation dimensions
according to ISO 3019-2.
With integrated leakage drilling.

Deep-groove ball bearing.



Sealing space vent.

Shaft end.
Optionally adaptable to
individual requirements.

Mechanical seal DIN 24960.
Optional: Magnetic coupling,
cartridge seal according to
API 682, radial shaft seal,
without seal.

Sealing Disc.

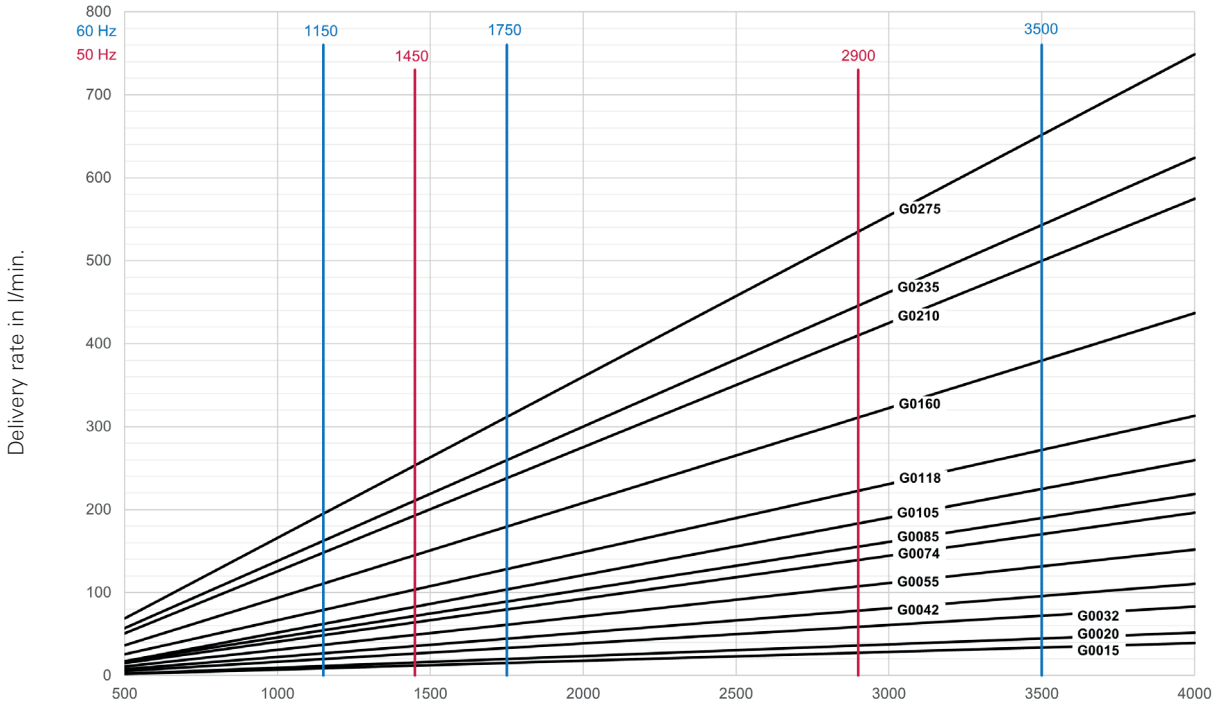
O-rings.

Leckage drilling (inside).

Overflow valve (optional).
The adjustable overflow valve
ensures that the medium
circualtes in the event
of overpressure.

All Data at a Glance.

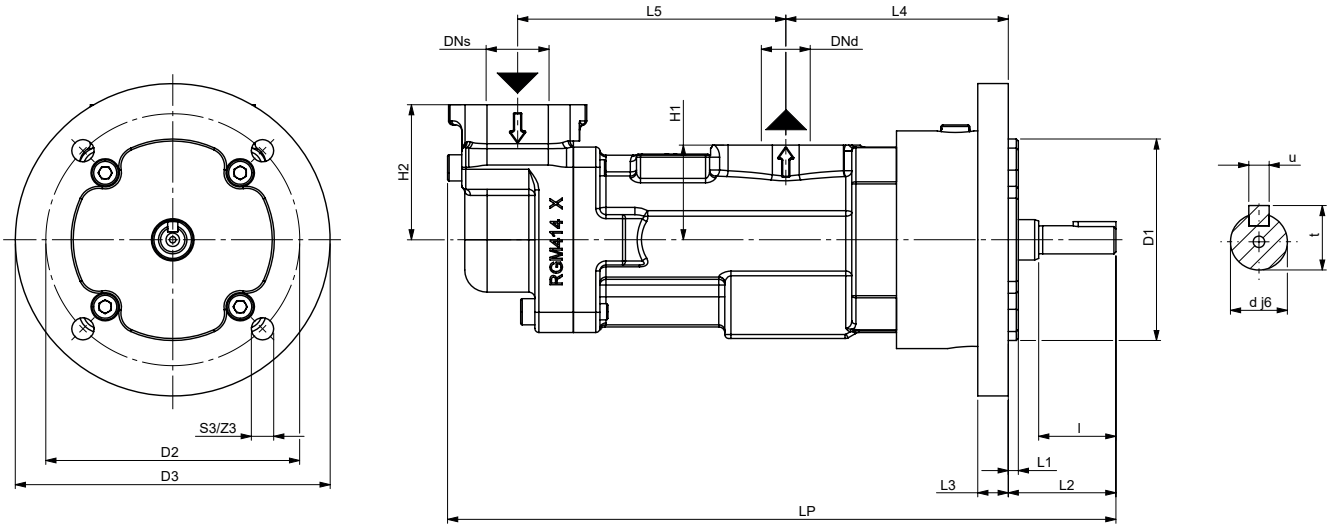
Overview delivery rates at 7 bar and 15 mm²/s (cSt).



Technical Data G.		15-20	32-42	55-85	105-118	160-210	235-275
Qth (1450 min-1, 0 bar)	l/min	15-20	32-42	55-85	105-118	160-210	235-275
Max. pressure at pressure flange	bar	25	25	25	25	25	25
Temperatur	°C						
with mechanical seal		120	120	120	120	120	120
with magnetic coupling		300	300	300	300	300	300
Viscosity Continuous operation *	mm²/s						
min.		10	10	10	10	10	10
max.		500	500	500	500	500	500
Coldstart		1.200	1.200	1.200	1.200	1.200	1.200
Max. pressure at suction flange *	bar						
with mechanical seal		6	6	6	6	6	6
with magnetic coupling		16	16	16	16	16	16

* Special designs possible for deviating values.

Overview dimension.



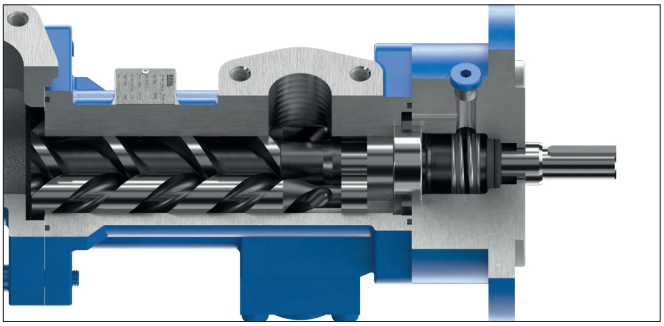
Connection dimension for steel and cast iron housing identical.

Pump.	Flange.				Pump dimension.											Shaft end.			
	DNs *	H2	DNd *	H1	D1	D2	D3	S3	Z3	L1	L2	L3	L4	L5	LP	d	l	t	u
15 – 20	SAE 1"	67	SAE 3/4"	47	100	125	155	11	4	5	53	15	109,5	132	329	14	38	16	5
32 –42	SAE 1 1/4"	67	SAE 1"	47	100	125	155	11	4	5	53	15	109,5	132	329	14	38	16	5
55 – 85	SAE 1 1/2"	76	SAE 1 1/4"	56	125	160	188	13,5	4	6	59	15,5	120	161,5	380	19	43	21,5	6
105 – 118	SAE 2"	80	SAE 1 1/2"	56	125	160	188	13,5	4	6	59	15,5	125	185,5	415,5	19	43	21,5	6
160 – 210	SAE 2 1/2"	87	SAE 1 1/2"	65	160	200	230		4	6	64	20	141,5	220,5	478,5	28	47	31	8
235 – 275	SAE 3"	100	SAE 2 1/2"	71	160	200	230	17,5	4	6	64	20	147	250	523	28	47	31	8

* 3.000 psi.

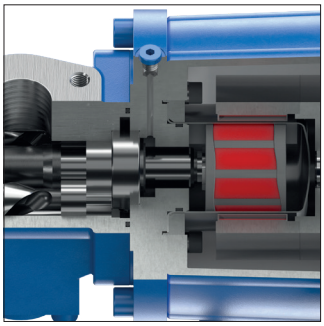
Seals.

Sealing concepts depending on requirements.



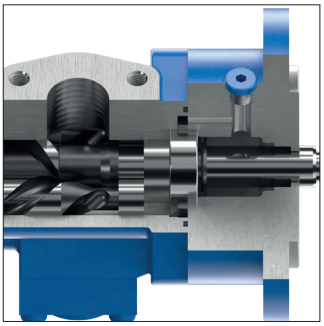
Mechanical seals.

- Standard: DIN 24960, Material pairing for lubricating oil applications, independent of direction of rotation, inlet pressure up to 6 bar, T_{max} = 120 °C, Viscosity in continuous in continuous operation up to 500 mm^2/s. With cold start up to 1.200 mm^2/s.
- Optional balanced: DIN 24960, Materials according to requirements, independent of direction of rotation, liquids with / without abrasive components, Inlet pressure upt to 16 bar, T_{max} = 150 °C.



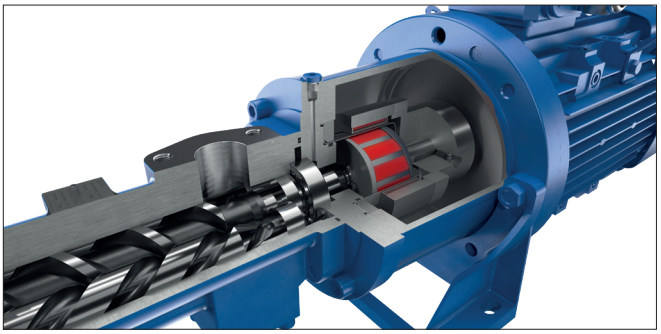
Magnetic coupling.

- Standard: Containment shell 1.4301, secondary seal FKM, inlet pressure up to 16 bar, T_{max} = 300°C.
- Optional: Reinforced containment can for high inlet pressure.



Without seal.

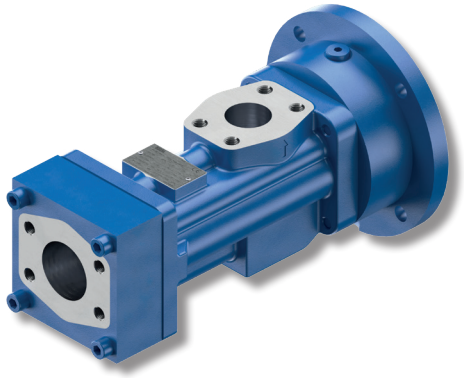
- For gearbox attachment – with or without clutch.



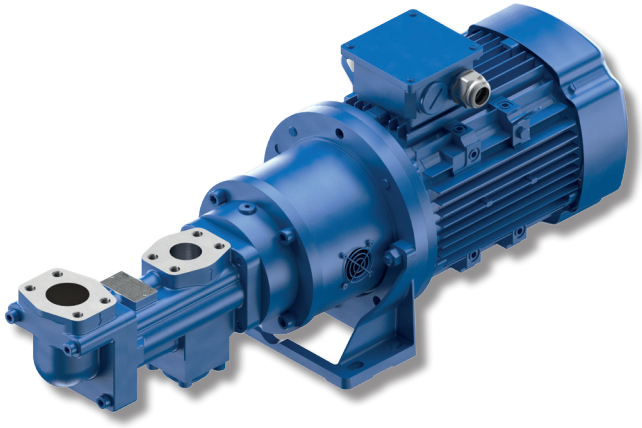
Special designs.

- The modular design of the G series offers maximum flexibility, even for special requirements.
- For higher viscosities and inlet pressures, the G series can also be designed as a special construction with special mechanical seals.
- Thanks to the use of magnetic couplings with reinforced containment can with inlet pressures of upto 60 bar.

Design and installation variants.

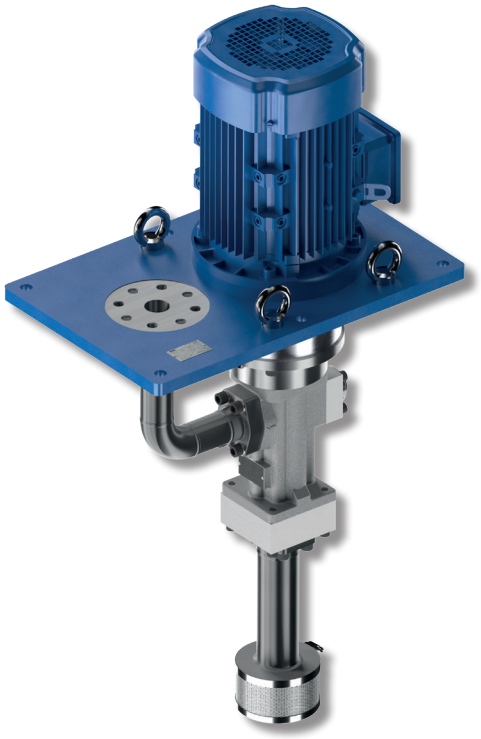


Flange pump.
- For gearbox attachment with or without coupling.
- With axial inlet.



Flange pump.
- Mounting on bellhousing with foot brackets.
- With radial inlet.
- With overflow valve.

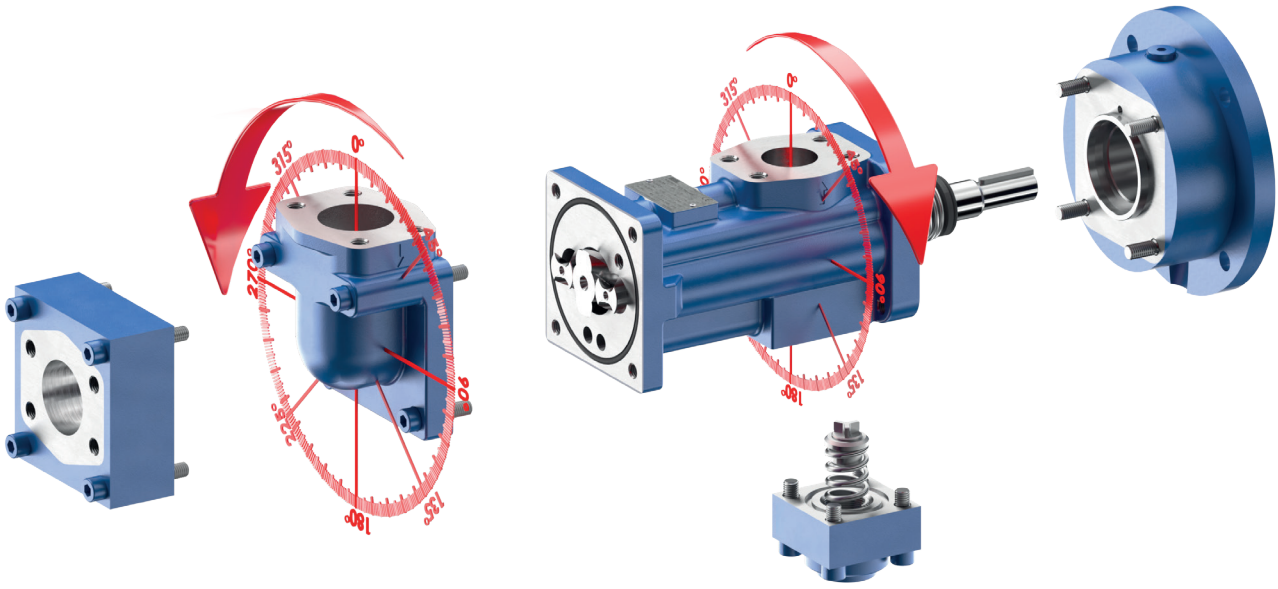
Built-in tank pump with suction strainer.
- Space-saving due to pressure connection above the mounting plate.
- Suitable for low tank heights.



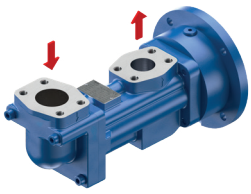
Built-in tank pump.
- Classic tank installation.
- With mounting plate.

Connection variants.

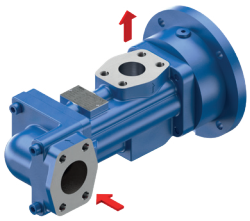
The modular design of the G series gives you a free choice of connections.



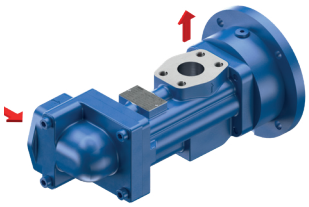
Extract from the possible connection variants.



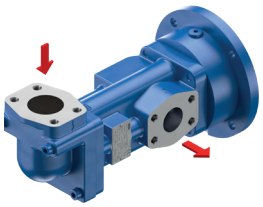
Top flange connection.



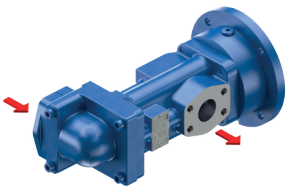
Connection 90°.



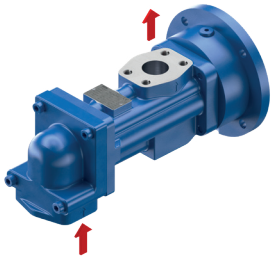
Connection 90°.



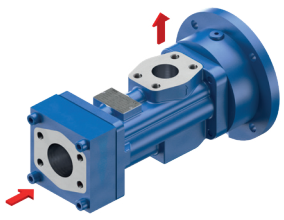
Connection 90°.



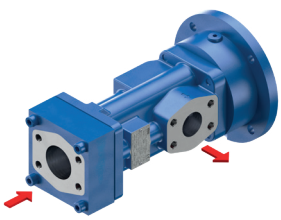
Connection Inline.



Connection Inline.



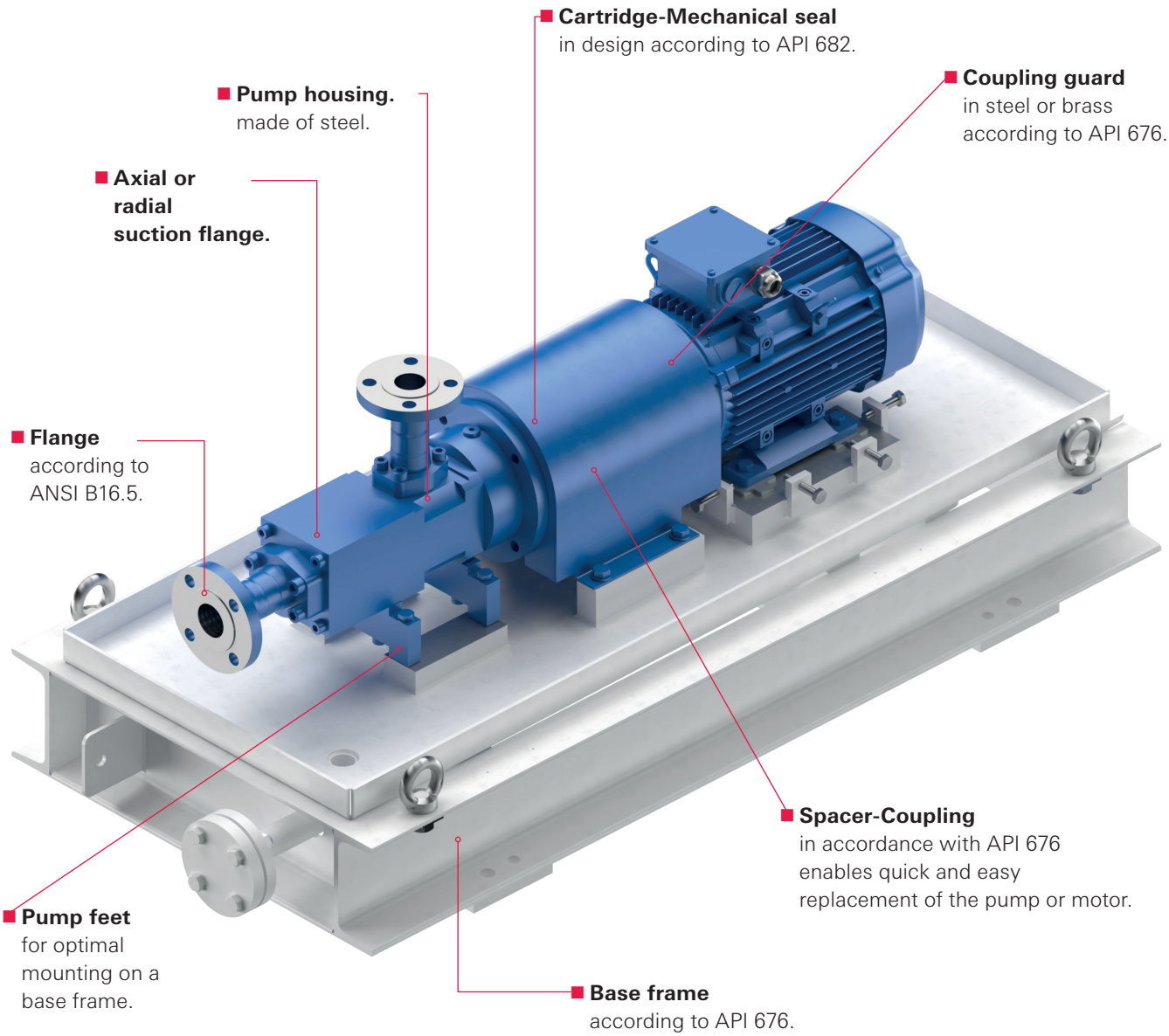
Connection Axial.



Connection Axial.

G Series Design according to API.

Manufactured according to API 676.



Use in potentially explosive atmospheres.

According to ATEX.

- EX II -/3 G Ex h IIC T4 ... T2 -/Gc X., with mechanical seal.
- EX II -/2 G Ex h IIC T4 ... T2 -/Gc X., with magnetic coupling.

G Series.

Head office.

KRAL GmbH
Bildgasse 40, Industry North
6890 Lustenau, Austria
e-mail: kral@kral.at
Tel.: +43/5577/86644-0

Further locations.

KRAL Deutschland GmbH
88131 Lindau
Germany

KRAL Polska Sp. z o.o.
40-668 Katowice
Poland

KRAL SAS
69100 Villeurbanne
France

KRAL-USA, Inc.
28105 Matthews, NC
USA

KRAL (Wuxi) Machinery Technology Co., Ltd.
214100 Wuxi
China