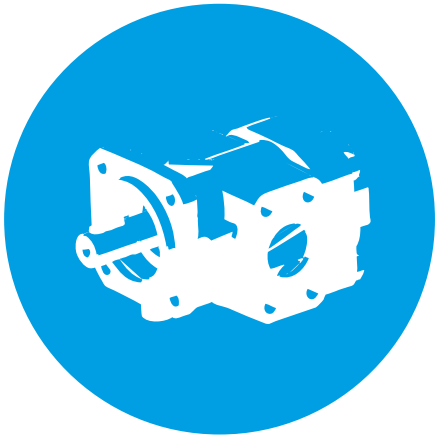
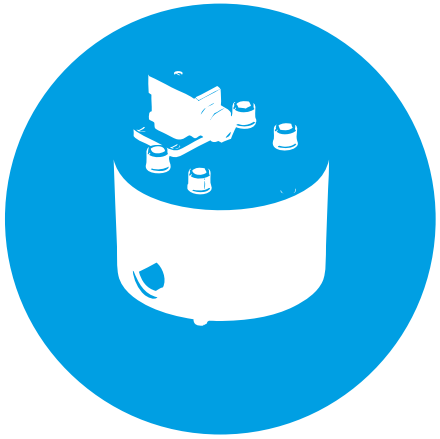
KRACHT

PRODUCT OVERVIEW

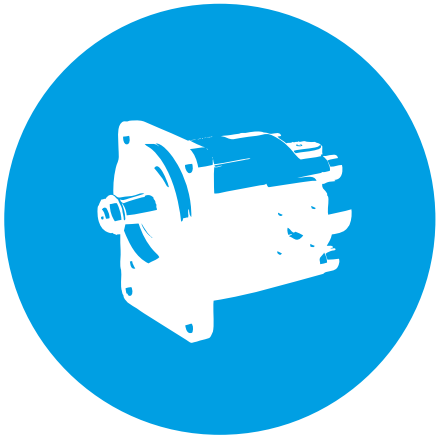
KRACHT



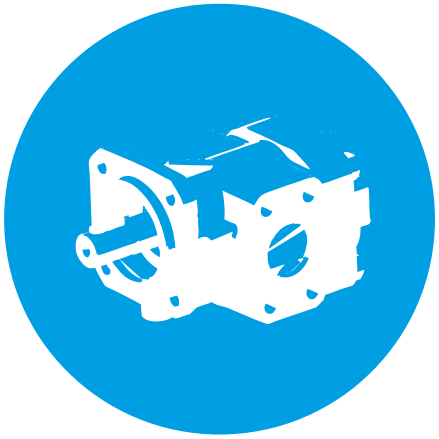
Gear Pumps



Flow Measurement



Hydraulics



Gear Pumps

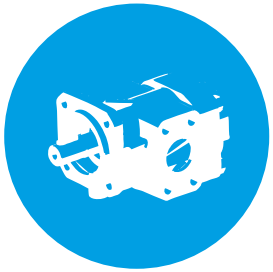
Gear Pumps

KRACHT

High economy, optimal efficiency and silent operation. These are all important features which particularly characterize our gear pumps.

- compact design and low weight
- solid construction and workmanship
- anti-wear coatings, application specific materials, sizes and seal variants

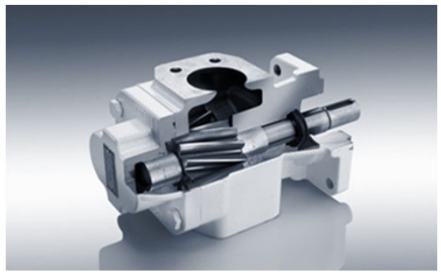
These are additional reasons which make our gear pumps more than interesting for every user.



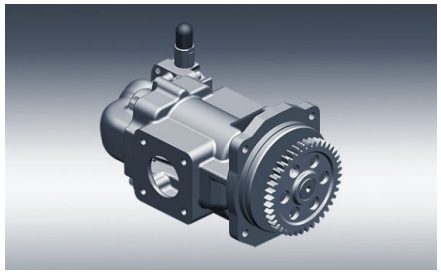
Gear Pumps

KRACHT

Gear Pumps KF
Gear Pumps BT
DuroTec® Gear Pumps DT
Motor-Pump Units
Pressure Valves
Special Pumps





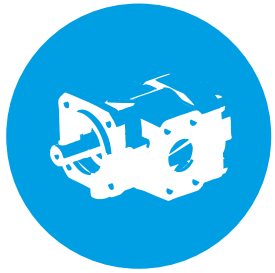



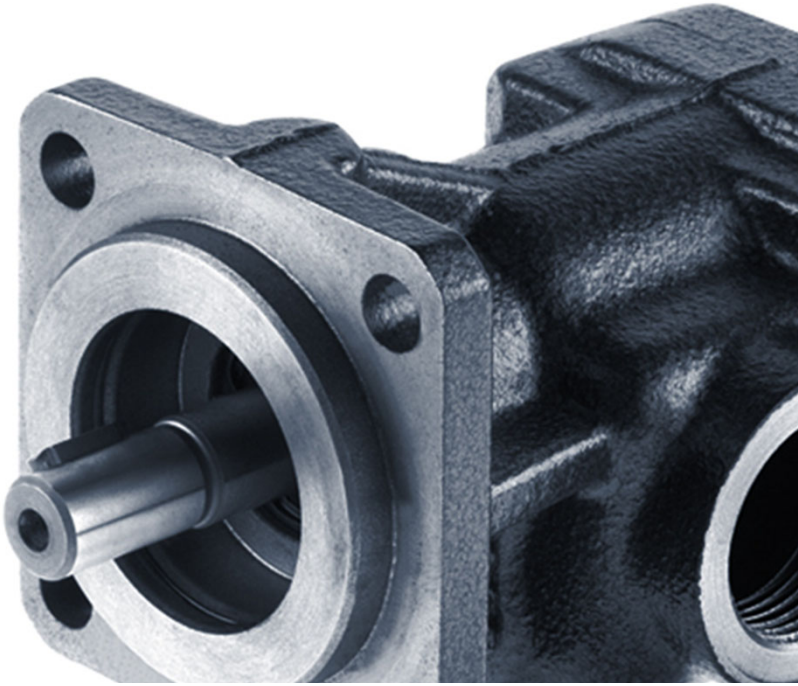
Gear Pumps

KRACHT

KF

Displacement	0.5 ··· 730
cm^3/r	
Working Pressure	··· 120 bar
Speed	··· 3 600 1/min
Viscosity	1 ··· 100 000 mm^2/s
Fluid Temperature	-30 ··· 220 ° C





Gear Pumps

KRACHT

KF

Shaft Seals

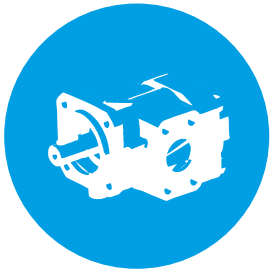
- rotary shaft seal
- mechanical seal
- magnetic coupling

Options

- pressure relief valve
- ATEX
- low-temperature version
- vacuum type
- noise optimized for air containing oils

Applications

- lubrication
- process technology
- fuels



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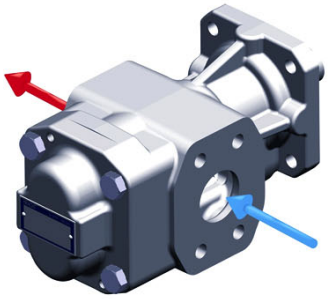
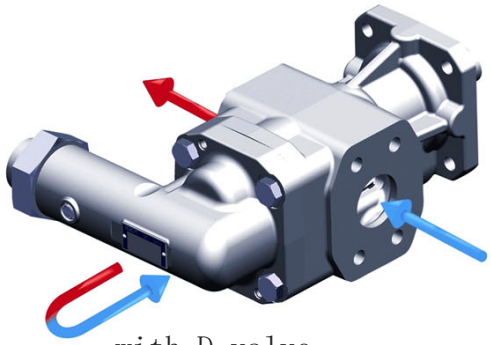
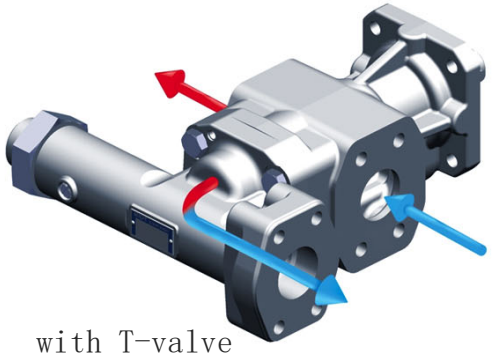
Valve Options



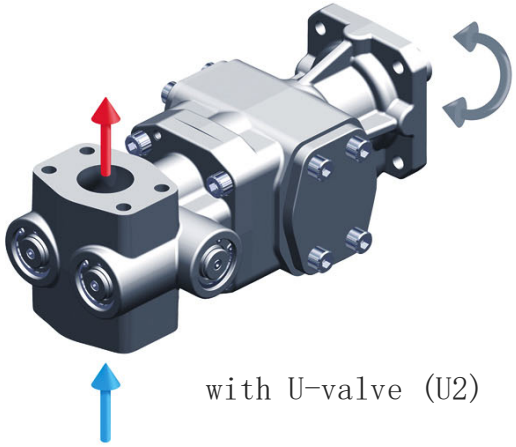
without valve



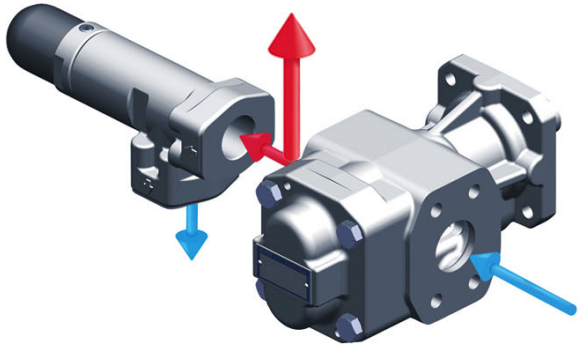
with D-valve



with T-valve



with U-valve (U2)



with pressure relief valve SPV

Gear Pumps

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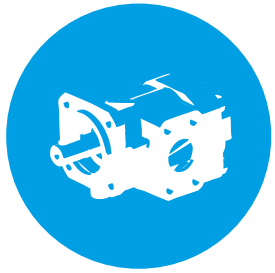
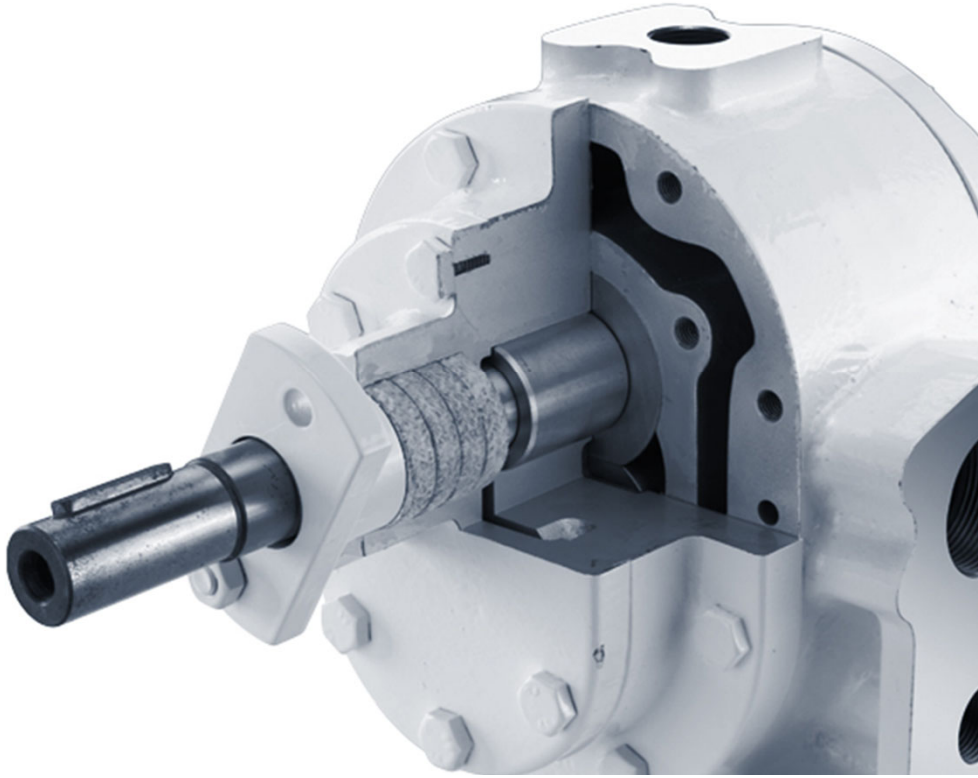
BT

Displacement	4 ··· 1 056
cm^3/r	
Working Pressure	··· 8 bar
Speed	··· 750 1/min
Viscosity	76 ··· 100 000 mm^2/s
Fluid Temperature	-10 ··· 220 ° C





Gear Pumps

KRACHT

BT

Shaft Seals

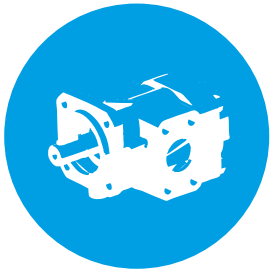
- packing
- mechanical seal

Options

- ATEX
- heating chamber

Applications

- process technology
- coating application
- bitumen application
- food industry

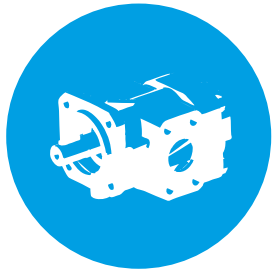


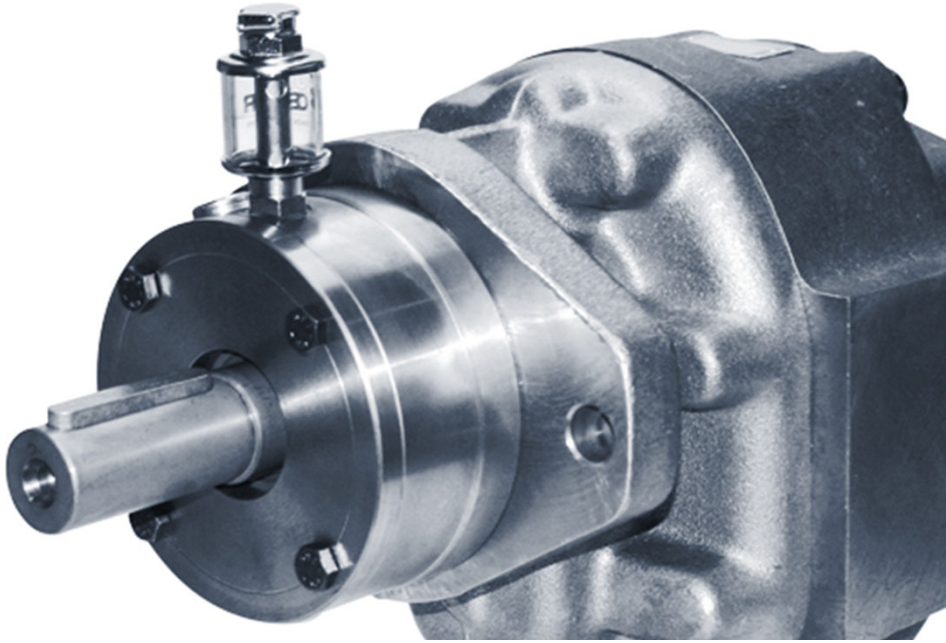
Gear Pumps

KRACHT

DuroTec® DT

Displacement	5.5 ··· 250
cm^3/r	
Working Pressure	··· 150 bar
Speed	··· 1 500 1/min
Viscosity	13 ··· 100 000 mm^2/s
Fluid Temperature	-20 ··· 150 ° C





Gear Pumps

KRACHT

DuroTec® DT

Shaft Seals

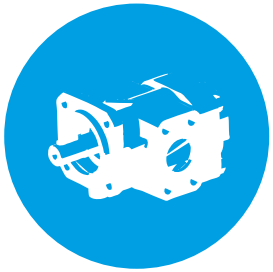
- rotary shaft seal
- mechanical seal
- magnetic coupling

Options

- ATEX

Applications

- process technology



Gear Pumps

KRACHT

max. working pressure (bar)	8	16	20	25	50	100	110	120	150
nominal size (cm^3/r)									
0.5								[1,2] KF 0/0.5	
0.8								[1,2] KF 0/0.8	
1.0								[1,2] KF 0/1	
1.6								[1,2] KF 0/1.6	
2.0								[1,2] KF 0/2	
2.5				[1,2,3] KF 2.5				[1,2] KF 0/2.5	
3.0								[1,2] KF 0/3	
4.0				[1,2,3] KF 4	[1,2] KF 1/4…/130			[1,2] KF 0/4	
5.0				[1,2,3] KF 5					[1,2] KP 1/5.5…/245 /492 /499
6.0				[1,2,3] KF 6					[1,2] KP 1/6.3…/245
8.0				[1,2,3] KF 8	[1,2] KF 1/8…/130				[1,2] KP 1/8…/245
10.0				[1, 2, 3] KF 10					
11.0 + 12.0				[1, 2, 3] KF 12	[1,2] KF 1/11…/130				[2] KP 1/11… /499
16.0				[1, 2, 3] KF 16	[1,2] KF 1/16…/130				
19.0 + 20.0				[1, 2, 3] KF 20	[1,2] KF 1/20…/130				
22.0									[1,3] KP 1/22 … /245
24.0 + 25.0				[1, 2, 3] KF 25	[1,2] KF 1/24…/130				
28.0 + 32.0	[4] BT1 [4] BT1…/04			[1, 2, 3] KF 32					[1] KP 2/28.../434

Versions

high wear protection

light wear protection

stainless steel without protection

Shaft Seals

[1] rotary shaft seal

[2] magnetic coupling

[3] mechanical seal

[4] packing

Gear Pumps

KRACHT

max. working pressure (bar)	8	16	20	25	50	100	110	120	150
nominal size (cm^3/r)									
40.0	[4] BT2 [4] BT1…/04			[1, 2, 3] KF 40					[1] KP 2/40.../434
50.0				[1, 2, 3] KF 50		[3] SOP 74/50 (drum pump)			
63.0				[1, 2, 3] KF 63					[1] KP 3/63 … /434
80.0	[4] BT 3 [4] BT 3…/04			[1, 2, 3] KF 80					
100.0				[1, 2, 3] KF 100					[1] KP 3/100 … /434 [1,3] DT 3/100
112.0				[1, 2, 3] KF 112					
125.0				[1, 2, 3] KF 125			[1] KP 3/125 … /434		
150.0				[1, 2, 3] KF 150		[1] KP 5/150 … /434			
180.0				[1, 2, 3] KF 180					
200.0	[4] BT 4 [4] BT 4…/04			[1, 2, 3] KF 200		[1] KP 5/200 … /434			
250.0	[4] BT 5 [4] BT 5…/04		[1, 2, 3] KF 5/250			[1] KP 5/250 … /434 [1, 3] DT 5/250			
315.0	[4] BT 6 [4] BT 6…/04	[1, 2, 3] KF 5/315							
400.0				[1, 2, 3] KF 6/400					
500.0	[4] BT 7 [4] BT 7 …/04		[1, 2, 3] KF 6/500						
630.0		[1, 2, 3] KF 6/630							
730.0		[1, 2, 3] KF 6/730							

Versions

- high wear protection
- light wear protection
- stainless steel without protection

Shaft Seals

[1] rotary shaft seal
[2] magnetic coupling
[3] mechanical seal
[4] packing

KRACHT

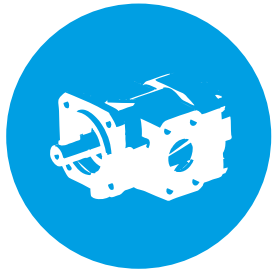
Motor-Pump Units

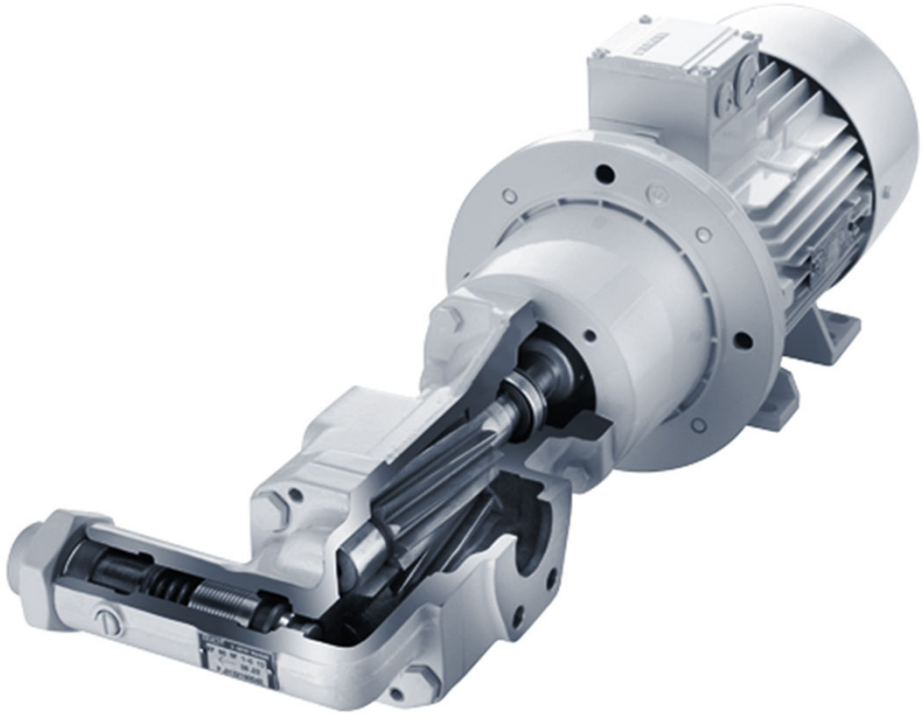
Drive Types

- phase AC
- AC current
- DC current
- compressed air

Mounting

- horizontal
- vertical
- foot
- external feet
- tank installation
- drum pump





Gear Pumps

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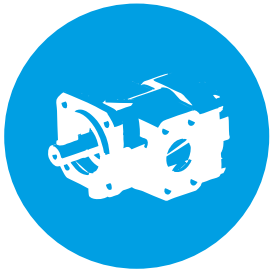
Motor-Pump Assemblies

Motors

- IE3
- NEMA
- Marine classifications
- UL
- CSA
- ATEX



Couplings

- Mechanical Couplings
  - flexible, vibration-reduction
  - axial plug-in
  - easy assembly
- Magnetic Couplings
  - contactless torque transmission with permant magnets
  - maintenance free
  - resistant to aggressive fluids

Gear Pumps

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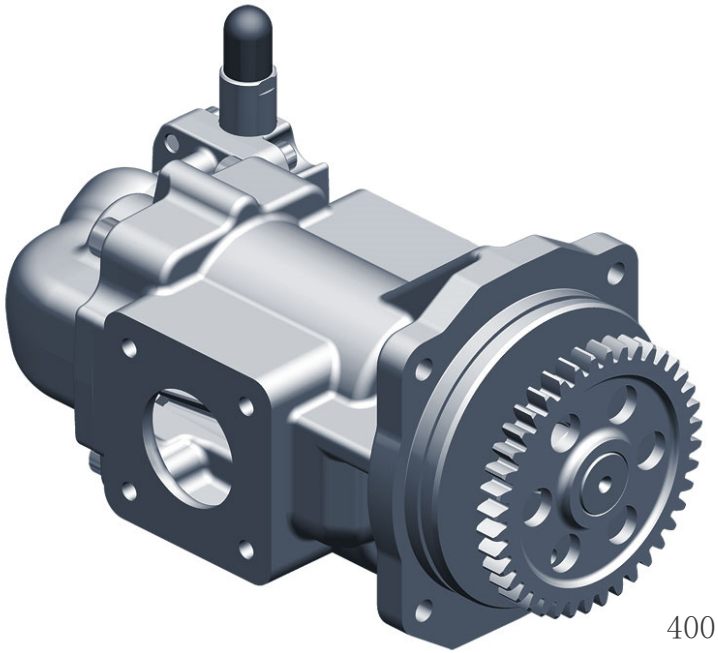
Special Pumps

Solutions According to Customer Requirements

Lubricating oil pump SOP 73 with integrated pressure control valve.



400 cm³/r
12 bar
2 700 1/min

Gear Pumps

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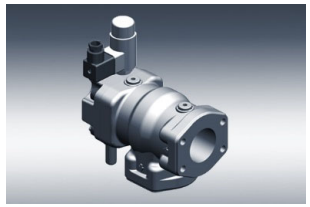
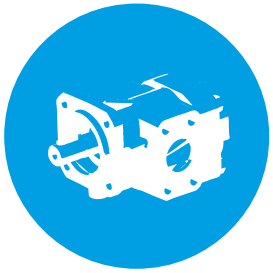
Valves

- Pressure Relief Valves SPV / SPVF direct-operated
- Pressure Relief Valves DBD direct-operated
- Pressure Relief Valves HV / HVF pilot-operated
- Pressure Valves DV pilot-operated





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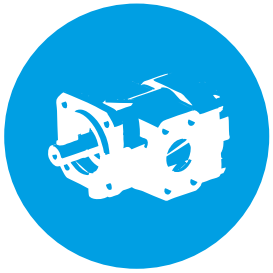
Pressure Relief Valves
SPV / SPVF direct-operated

Max. Flow Rate	··· 800 l/min
Pressure Settings	··· 40 bar
Viscosity	1.2 ··· 50 000 mm²/s
Fluid Temperature	-20 ··· 350 ° C

KRACHT

Pressure Relief Valves
DBD direct-operated

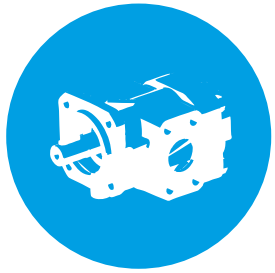
Max. Flow Rate	··· 200 l/min
Pressure Settings	··· 400 bar
Viscosity	10 ··· 600 mm²/s
Fluid Temperature	-20 ··· 80 ° C



KRACHT

Pressure Relief Valves
HV / HVF pilot-operated

Max. Flow Rate	··· 800 l/min
Pressure Settings	··· 160 bar
Viscosity	1.2 ··· 50 000 mm²/s
Fluid Temperature	-20 ··· 350 ° C



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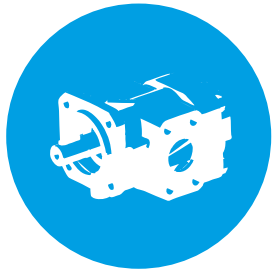
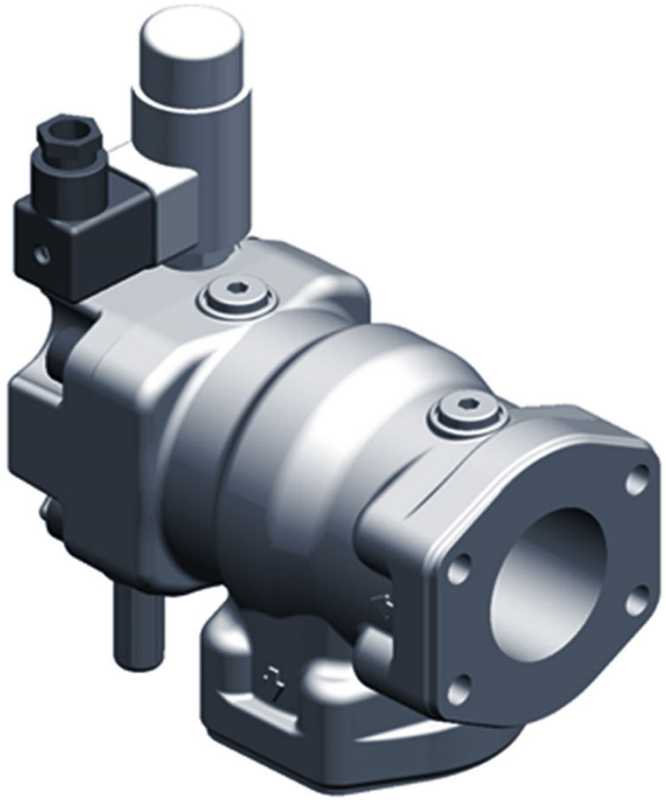
Pressure Valves
DV pilot-operated

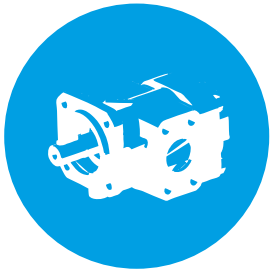
Max. Flow Rate	··· 1 800 l/min
Pressure Settings	··· 210 bar
Viscosity	4 ··· 1 000 mm²/s
Fluid Temperature	-15 ··· 150 ° C





Pressure Valves DV pilot-operated

Versions	Functions
DV B	pressure relief valve
DV S	pressure stage control valve
DV R	pressure control valve



Gear Pumps and Valves

KRACHT

Requirements

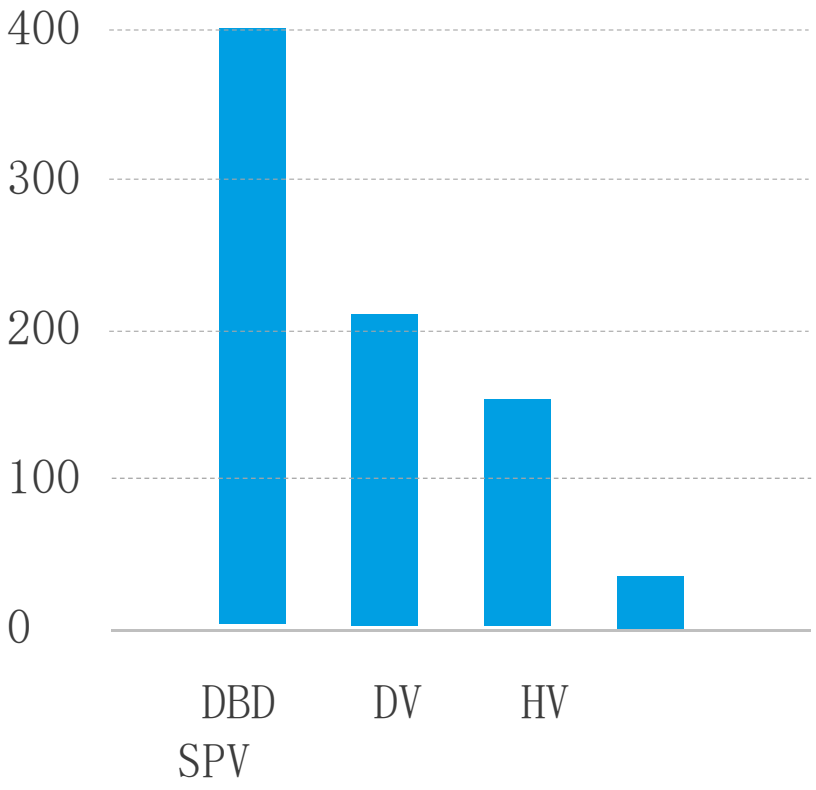
	Safety Function	Low Pressure Rise	Insensitive to Dirt Contamination	Vibration free Operation	Absorb Pressure Peaks
DBD	●		●	●	●
DV		●		●	
HV		●			
SPV	○		●	●	

○ option

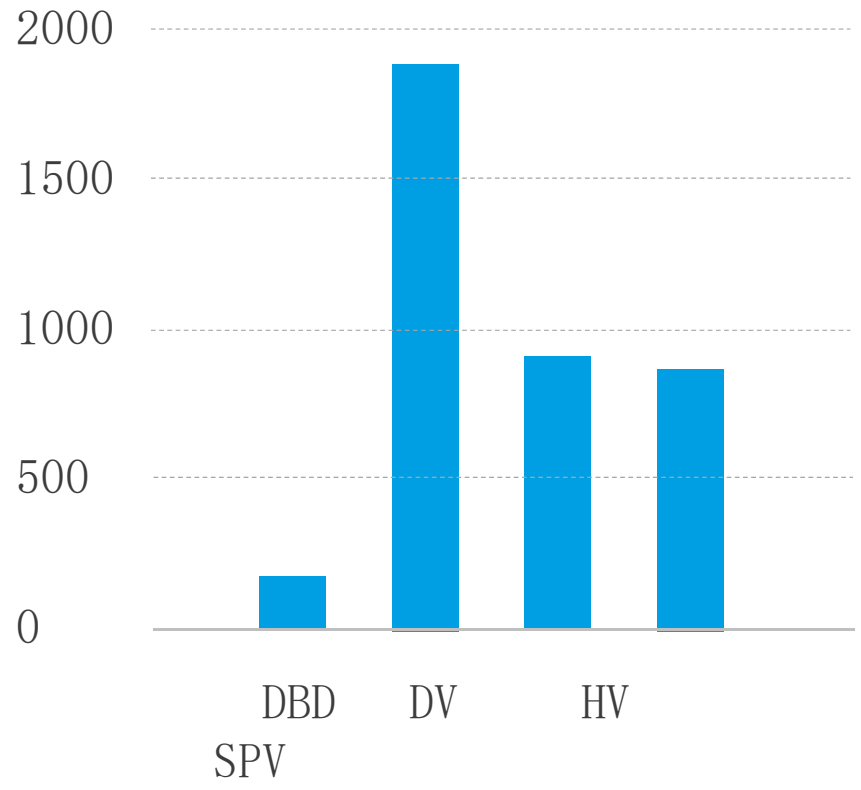
Gear Pumps and Valves

KRACHT

Pressure (bar)



Flow Rate (l/min)



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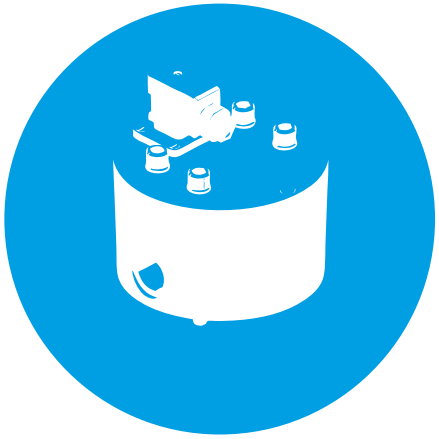


Flow Measurement

Flow Measurement

KRACHT

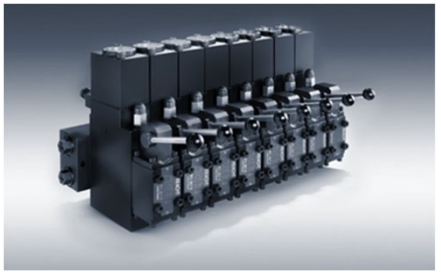
Flow Measurement – that means high-dynamic, precise volume and flow measurements, evaluated according to the application – from a simple display unit to an intelligent microcontroller solution.

The sophisticated tooth system geometry in connection with application-specific bearings are made for the flow meters being an absolute „all-rounder “.

Flow Measurement

KRACHT

Gear Type Flow Meters VC
Screw Type Flow Meters SVC
Turbine Type Flow Meters TM
Valve Position Indicators
VOLUMEC / VOLUTRONIC®
Electronics



Flow Measurement

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Gear Type Flow Meters VC

Measuring Range		0.001 ··· 700 l/min
Working / Peak Pressure		··· 400 bar / ··· 480 bar
Fluid Temperature		-30 ··· 220 ° C
Viscosity		0.1 ··· 1 000 000 mm²/s
Measuring Accuracy		··· ± 0.3 % from measuring value
Repeat Accuracy	< 0.1 %	
Linearity		± 0.1 % from measuring value

Gear Type Flow Meters VC

Series	Fluids / Applications	Versions
1	oil, brake fluid, skydrol, diesel flow rate measurement (test benches)	spheroidal cast iron, ball bearings minimal clearances
2	gear oil, polyol oil metering, dosing systems	spheroidal cast iron, ball bearings increased clearances
3	offset ink consumption measurement	spheroidal cast iron, bronze plain bearings
4	polyol+isocyanate, adhesives, grease dosing systems,	large clearances spheroidal cast iron, carbide plain bearings increased clearances

Flow Measurement

KRACHT

Series	Fluids / Applications	Versions
5	clear lacquer, cavity waxes	stainless steel, carbide plain bearings
	consumption measurement - lacquering plant	increased clearances
6	solvent	stainless steel, ball bearings
	consumptions measurement - lacquering	minimal clearances
7	plant	spheroidal cast iron, hybrid ball bearings
	petrol	minimal clearances
8	test benches	stainless steel, hybrid ball bearings
	water, urea, petrol	minimal clearances
	lacquering plant	

Flow Measurement

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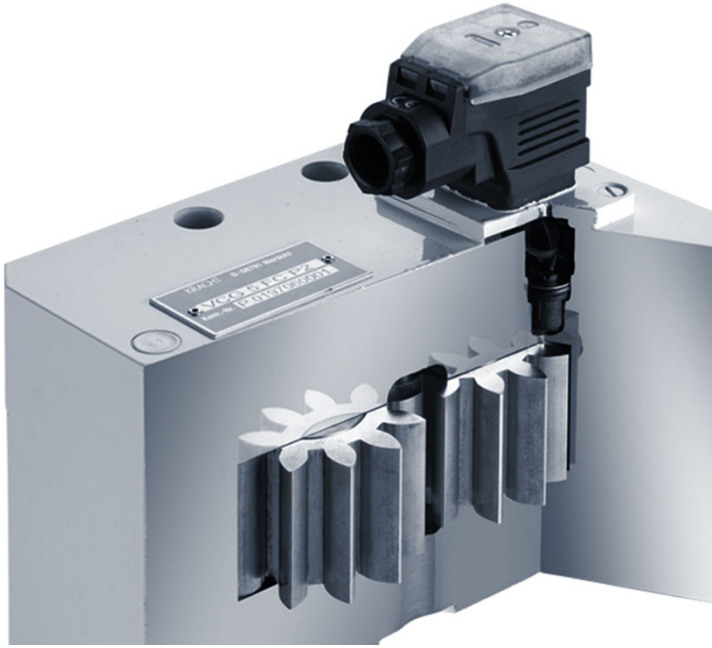
Gear Type Flow Meters VCA / VCN / VCG

Measuring Range	0.02 ··· 240 l/min
Working / Peak Pressure	··· 315 bar / ··· 350 bar
Fluid Temperature	-15 ··· 120 ° C
Viscosity	20 ··· 20 000 mm²/s
Measuring Accuracy	··· ± 1 % from measuring value
Repeat Accuracy	< 0.1 %
Linearity	± 0.1 % from measuring value



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Gear Type Flow Meters VCA / VCN / VCG

Versions	Materials
VCA	aluminium
VCN	stainless steel
VCG	spheroidal cast iron

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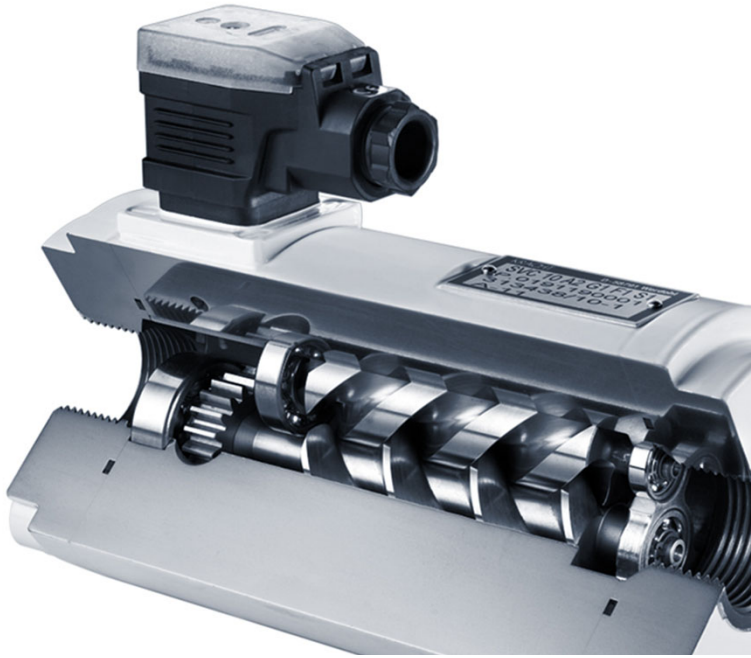
Screw Type Flow Meters SVC

Measuring Range	0.02 ··· 3 750 l/min	
Working / Peak Pressure		··· 400 bar / ··· 480 bar
Fluid Temperature		-40 ··· 220 ° C
Viscosity		0.1 ··· 1 000 000 mm²/s
Measuring Accuracy		± 0.2 % from measuring value
Repeat Accuracy	< 0.1 %	
Linearity		± 0.1 % from measuring value



KRACHT

Screw Type Flow Meters SVC

Version

- screw type

Material

- spheroidal cast iron

Applications

- consumption measurement
- dosing plants
- process technology
- test bench construction

KRACHT

Turbine Type Flow Meters TM

Measuring Range	0.92 ··· 66 667 l/min
Working Pressure	··· 400 bar
Fluid Temperature	-30 ··· 400 ° C
Viscosity	1 ··· 50 mm²/s
Linearity	± 0.5 % from measuring value

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Turbine Type Flow Meters TM

Version

- turbine type

Material

- stainless steel

Applications

- lubrication oil control
- water and coolant measurement

Flow Measurement

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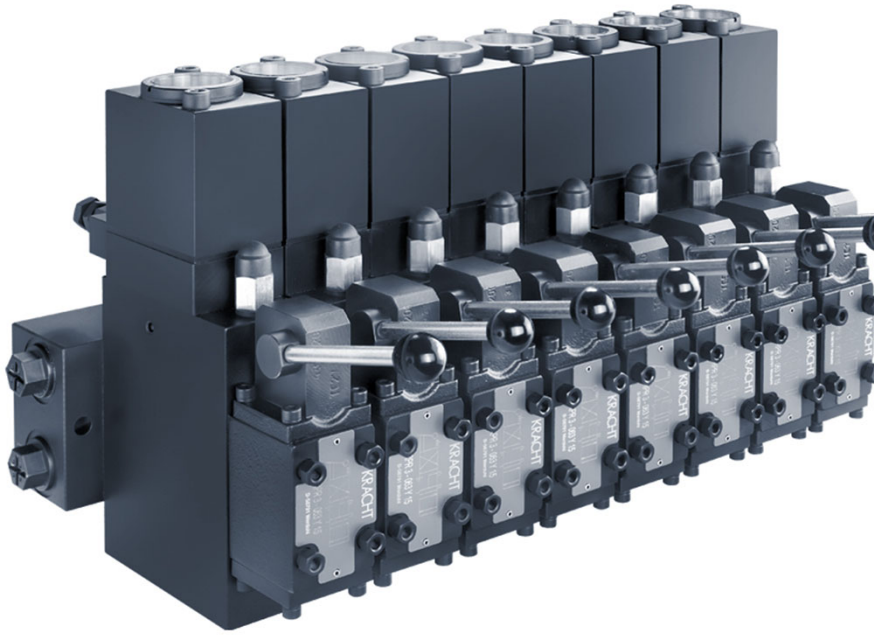
Valve Position Indicators

Valve Position Indicator VOLUMEC

Valve Position Measuring Instrument VOLUTRONIC®



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Valve Position Indicators

	VOLUMEC	VOLUTRONIC®
Design	gear volume counter	gear volume counter
Max. Flow Rate	VCM 02: 4 l/min, VCM 04: 7 l/min, VCM 5: 150 l/min	VCA 02: 0.25 ··· 10 l/min
Working Pressure	VCM 02 / VCM 04: 200 bar, VCM 5: 300 bar	VCA 02: 160 bar
Display	mechanical	possible
Leakage Detection	yes	possible
Flow Direction	must be defined	A-B / B-A
Error Message	no	possible

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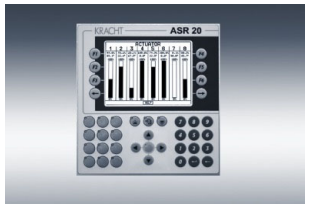
Electronics

Plug-In Display SD 1

Display Unit AS 8

Control Unit ASR 14

Control Unit ASR 20



Plug-In Display
SD 1

The SD 1 is an onsite display that can be used universally for all flow meters with Hirschmann plug. Flow rate or volume indication can be optionally displayed.

Flow Measurement and Electronics

KRACHT

Display Unit
AS 8

The AS 8 processes incremental input signals from flow meters.

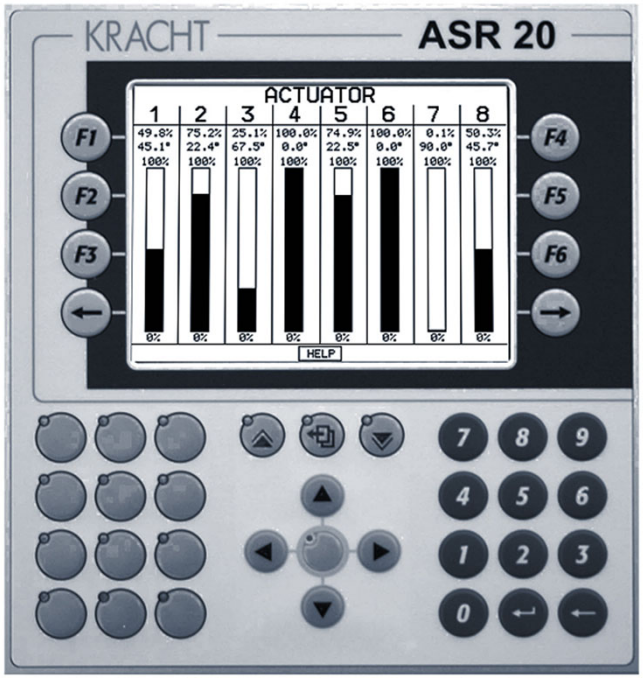
The input signals are filtered in the unit, converted, and computed into the physical sizes of flow rate or volumes.

Control Unit
ASR 14

The ASR 14 integrates controlling, operating and visualizing. The control unit processes incremental signals. The programming can be adapted optimally for the specific applications. Optimal for the controlling of dosing applications (e.g. metering of gearbox oil).

Control Unit
ASR 20

The ASR 20 is a combination comprising a control panel and a controller unit. That means numerous fluid-engineering applications can be implemented. Standardized programs are available for various applications.



Flow Measurement and Electronics

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Electronics

Type	Design
SD 1	plug-in display
AS 8	display unit
ASR 14	control unit
ASR 20	control unit

Software

- flow control and dosing
- cylinder stroke measurement and monitoring
- display and monitoring of added amounts
- display and monitoring of differential amounts
- display and monitoring of mixing ratio
- display and control of mixing ratio

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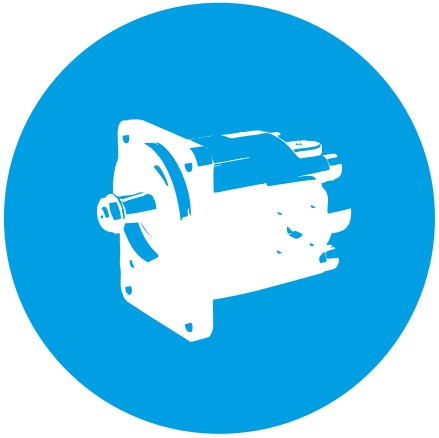


Hydraulics

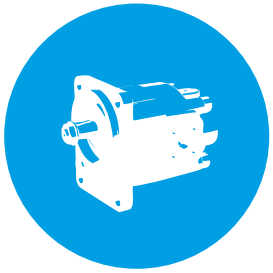
Hydraulics

KRACHT

When you need to produce and control high pressures, forces and torques permanently for mobile and stationary applications, then there are some preconditions:

- robust, service-friendly technology
- small size and low weight
- as flexible multiple use of a component as possible
- easy handling and operation

Our hydraulics components meet these requirements exemplarily.

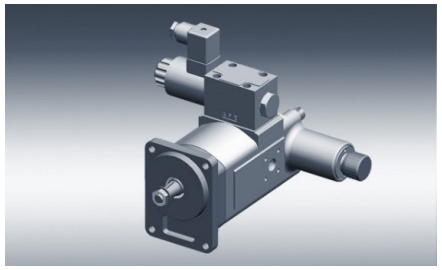


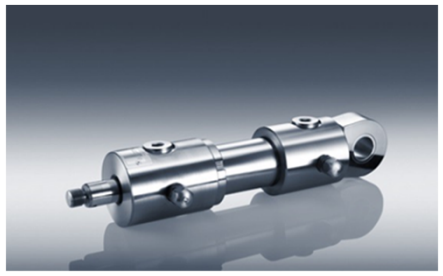
Hydraulics

KRACHT

High Pressure Gear Pumps KP
High Pressure Gear Motors KM
Hydraulic Fan Drives KM
Pressure Relief Valves DBD
Cylinders CNL / CNA / OZ







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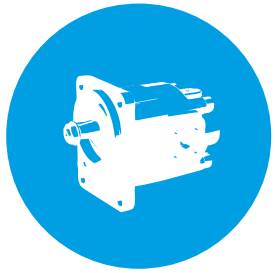
High Pressure Gear Pumps
KP

Displacement	1 ··· 300 cm^3/r
Working Pressure	··· 315 bar
Speed	··· 4 000 1/min
Viscosity	10 ··· 800 mm^2/s
Fluid Temperature	-20 ··· 150 ° C

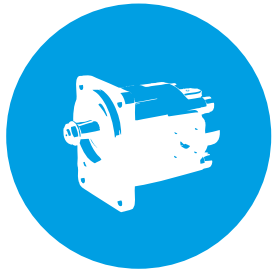


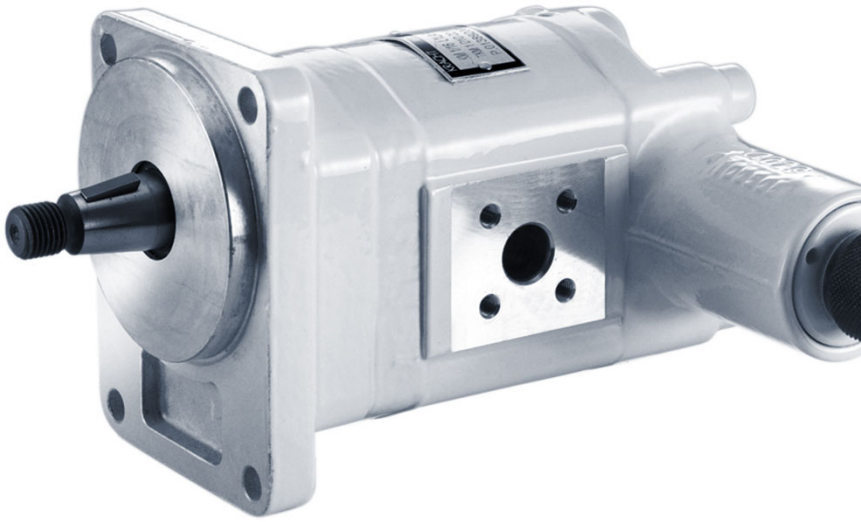
KRACHT

High Pressure Gear Motors

KM

Displacement	1 ··· 300 cm^3/r
Working Pressure	··· 315 bar
Speed	··· 4 000 1/min
Viscosity	10 ··· 800 mm^2/s
Fluid Temperature	-20 ··· 150 ° C





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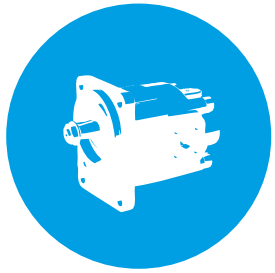
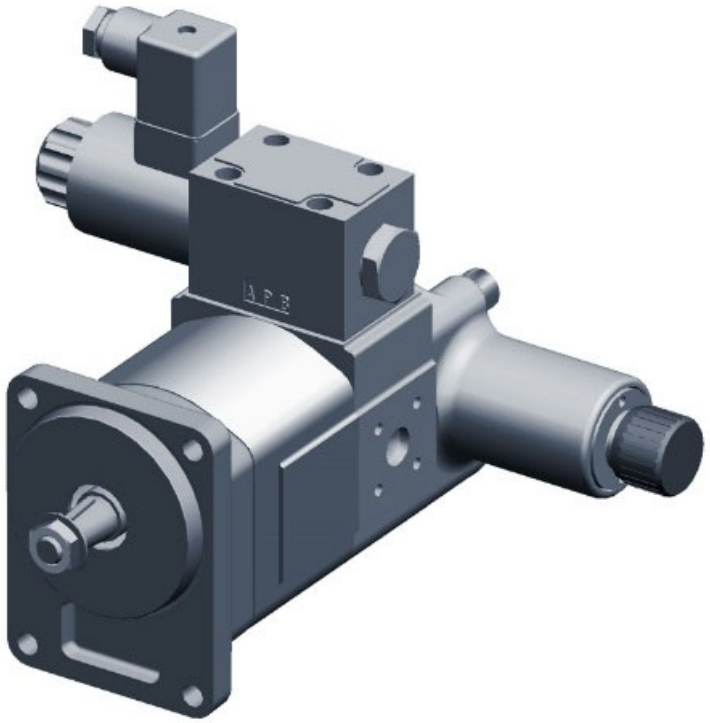
Hydraulic Fan Drives
KM

Versions with

- pressure relief valve
- on-off function
- pressure relief valve and reversible unit
- thermostatic valve and pressure relief valve,
  reversible unit as an option





Hydraulics

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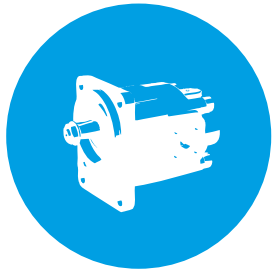
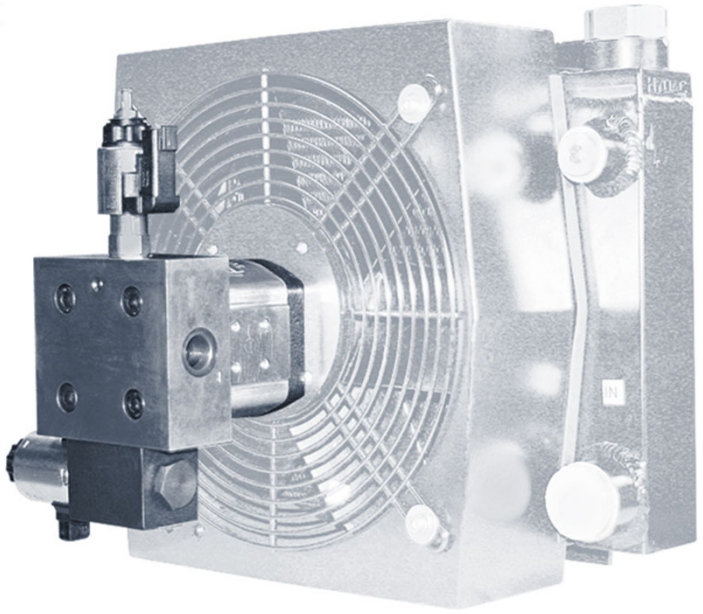
- “standard” with proportional valve
- “space optimized” with proportional valve
- “standard” with proportional valve and reversible unit
- “space optimized” with proportional valve and reversible ur





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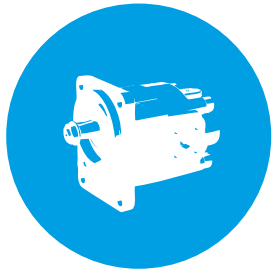
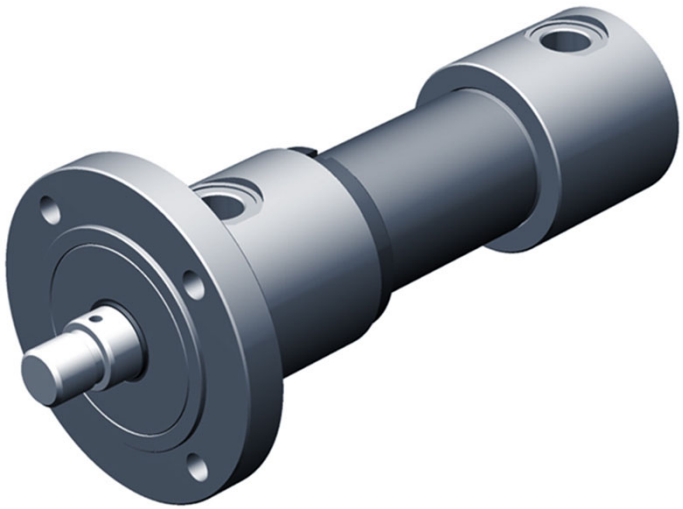
Cylinders
CNL

Piston Diameter	40 ··· 100 mm
Rod Diameter	22 ··· 70 mm
Stroke	··· 4 000 mm
Working Pressure	200 bar
Test Pressure	200 bar
Speed	··· 0.5 m/s





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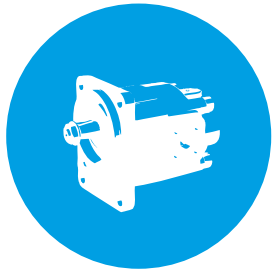
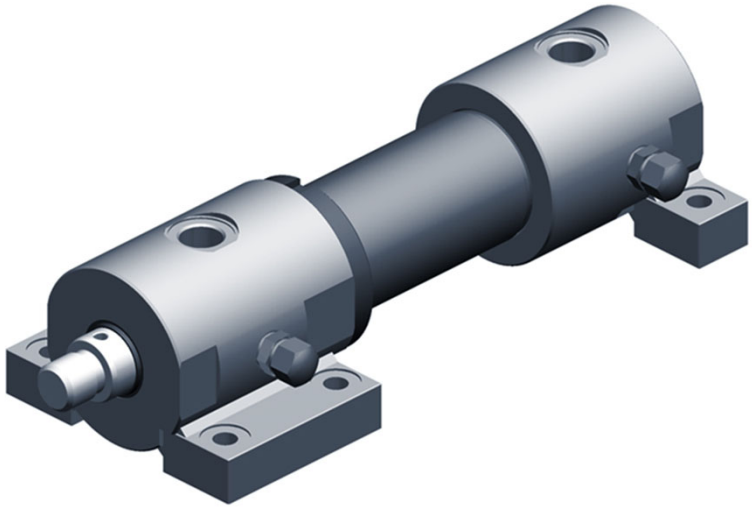
Cylinders

CNA

Piston Diameter	40 ··· 160 mm
Rod Diameter	22 ··· 110 mm
Stroke	··· 4 000 mm
Working Pressure	250 bar
Test Pressure	250 bar
Speed	··· 0.5 m/s





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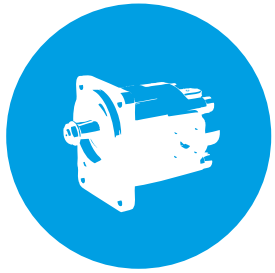
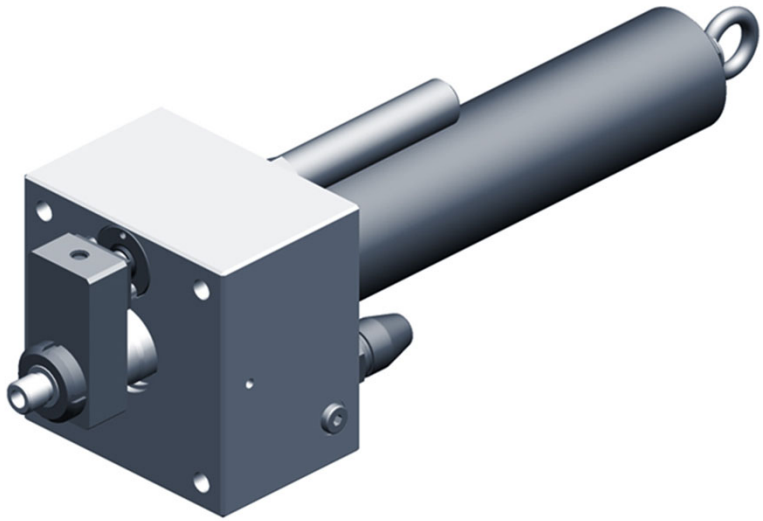
Cylinders
OZ

Piston Diameter	50 mm
Rod Diameter	35 mm
Stroke	150 mm
Working Pressure	120 bar
Test Pressure	200 bar
Speed	··· 0.5 m/s





References

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