



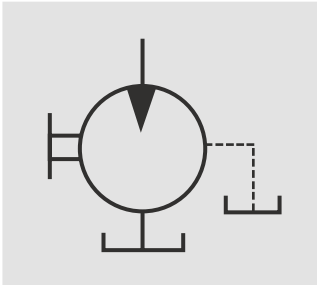
Hydraulic fan drive solutions

Fan drives only when needed

KRACHT

Index of Contents

Content	page
Hydraulic Motor KM	3
KM 1 with Pressure Relief Valve	4
KM 1 with ON - OFF Function	5
KM 1 Pressure Relief Valve and Reversible Unit	6
KM 1 Thermostatic Valve and Pressure Relief Valve	7
KM 1 Thermostatic Valve and Pressure Relief Valve with Reversible unit	10
KM 1 "standard" with Proportional Valve	12
KM 1 „space optimized“ with Proportional Valve	13
KM 1 „standard“ with Proportional Valve and Reversible unit	14
KM 1 „space optimized“ with Proportional Valve and Reversible unit	15
Fan Drive Combinations	16
Contacts	17



Hydraulic Motors

General Information

The demand for reduced noise, reduced emissions and energy savings on mobile machines require alternative solutions for cooling systems.

Beside the standard series of constant gear motors KRACHT designs solutions for these demands together with the vehicle engineers.

The KRACHT solutions offers the system designer the best options due the individual cooling.

Fan Drive motors can be adapted or modified to every cooler brand in the market.

KM 1 series available in ATEX II 2GD c IIC (T3) on request.



Hydraulic fan drive

KM 1 with Pressure Relief Valve

The series KM 1 is available with a mechanical adjustable pressure relief valve in the end cover of the hydraulic motor.

This pressure relief valve can be delivered pre-adjusted to the operating pressure.

With this pressure relief the maximum speed of the fan can be limited, overflow will bypass.

A recharging valve is fitted as a non-return valve. Cavitation will be prevented.

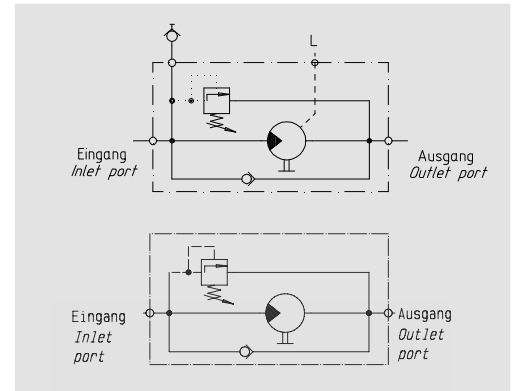
Please remind that this pressure relief valve works only in one direction – clockwise or anticlockwise.

Type code:

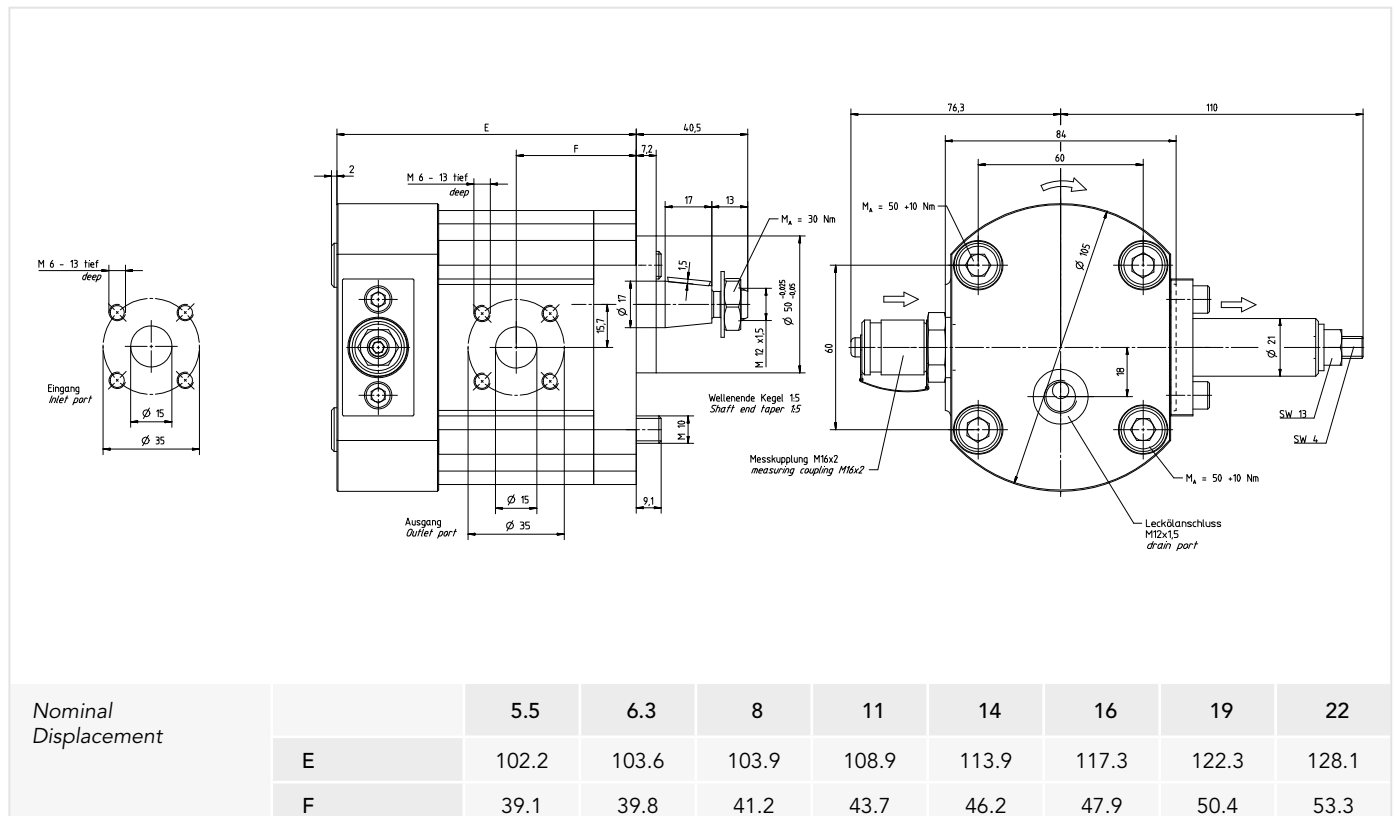
KM 1/... + SOV 4 B 0173 A – without drain port

KM 1/... + SOV 4 E 0173 A – with drain port

Available for all versions of the KM 1 series.



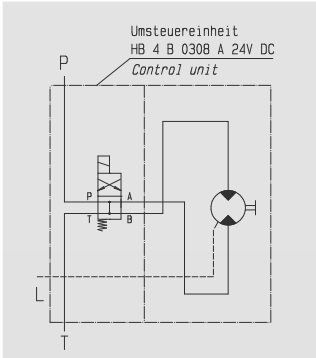
Technical Details KRACHT KM 1 with Pressure Relief Valve:



Ordering example: KM 1/. F20A K00 4NL1/386 + SOV 4 E 0173 A

Hydraulic fan drive

KM 1 with ON-OFF Function



The series KM 1 is available with an ON-OFF Function to run the hydraulic motor in one direction.

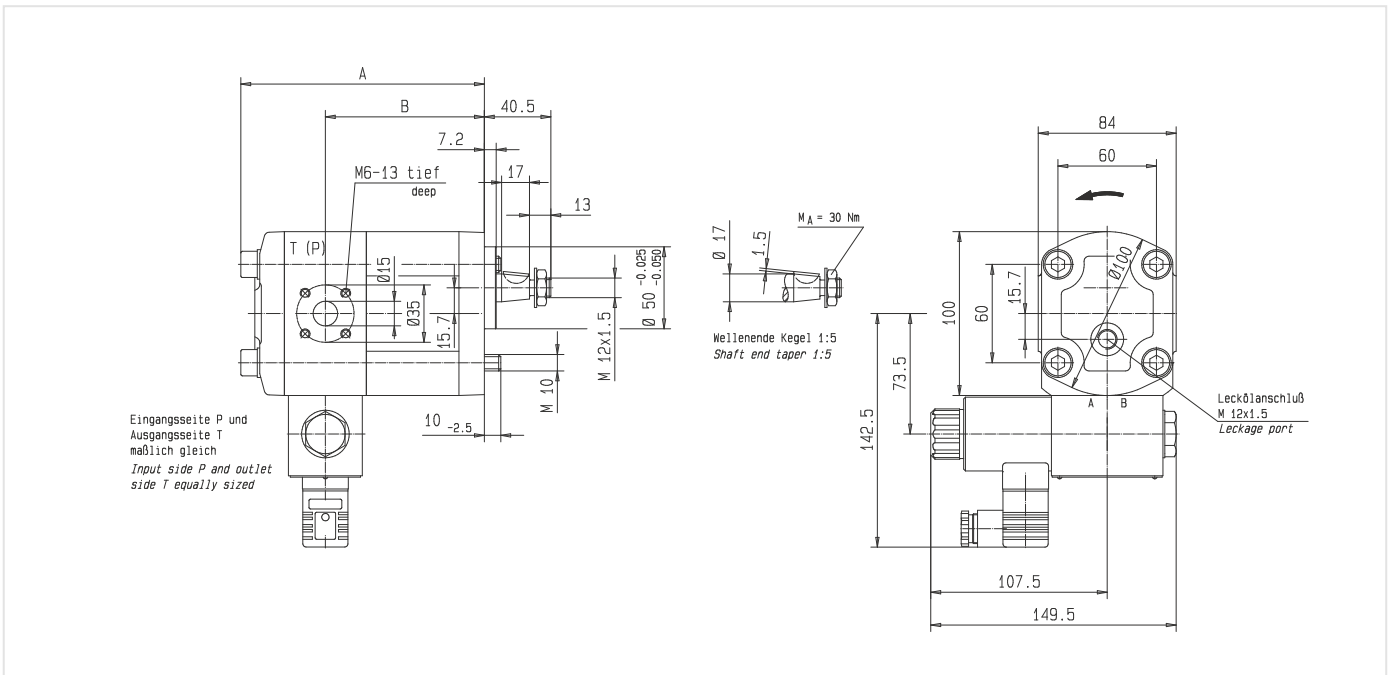
The enclosed solenoid valve can be switched on to bypass the flow around the motor.

Type Code:
KM 1/... + HB 4 B 308 A

Available for all versions of the KM 1 series



Technical Details KRACHT KM1 with ON - OFF Function:



Nominal Motor Displacement		5.5	6.3	8	11	14	16	19	22
	A		139.2	140.6	143.4	148.4	153.4	156.8	161.8
B		87.7	89.1	91.9	96.9	101.9	105.3	110.3	116.1

Ordering example: KM1/. F30W KOA 4N.1/386 + HB 4 B 0308 A

Hydraulic fan drive

KM 1 Pressure Relief Valve and Reversible Unit

The series of hydraulic motors KM 1 can be added with a reversible function including pressure relief valve.

With the reverse function the rotation of the motor can be switched by the solenoid valve DURING operation, the pressure relief valve works independent from the rotation.

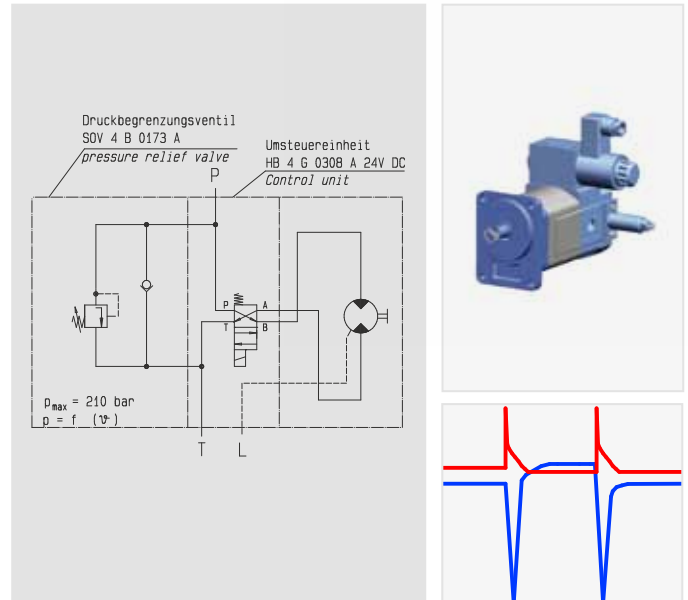
This pressure relief valve can be delivered pre-adjusted to the operating point.

A recharging valve is fitted as a non-return valve. Cavitations will be prevented

The relief valve works in both directions.

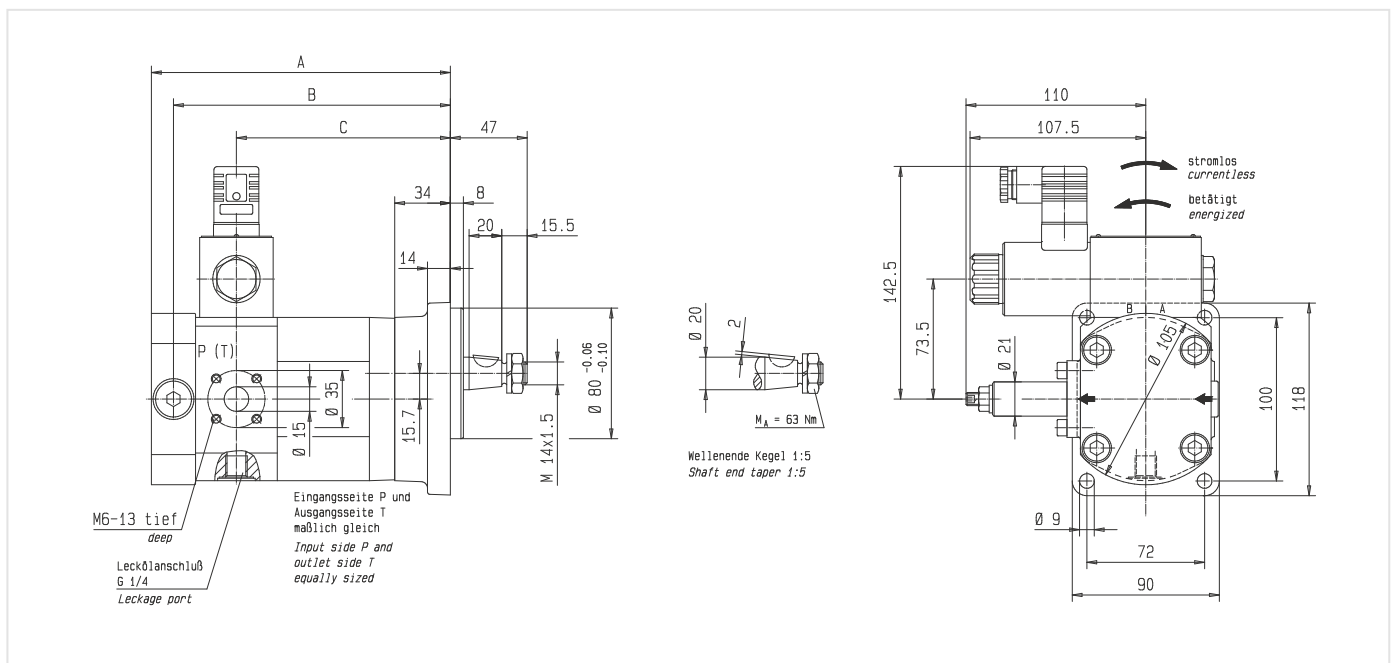
Type Code:
KM 1/... + HB 4 G 0308 A +
SOV 4 B 0173 A

Available for all versions of the KM 1 series.



Reverse operation

Technical Details KRACHT KM 1 Pressure Relief Valve and Reversible Unit



Nominal Motor Displacement		5.5	8	9.6	11	14	16	19	22
	A		173.7	177.9	180.7	182.9	187.9	191.3	196.3
B		160.2	164.4	167.2	169.4	174.4	177.8	182.8	188.6
C		121.7	125.9	128.7	130.9	135.9	139.3	144.3	150.1

Ordering example: KM1/. L3LW X00 4N.1 + HB 4 G 0308 A + SOV 4 B 0173 A

Hydraulic fan drive

KM 1 Thermostatic Valve and Pressure Relief Valve

The thermo valve is a pre-controlled pressure relief valve with temperature-dependent pressure control and mounted on the KM 1 motor.

The basic principle is that the pressure setting of the valve automatically changes depending on the temperature via a built-in flexible material element and this controls the motor speed.

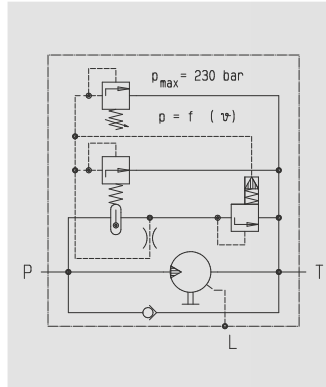
The speed of the motor follows the oil temperature,

different start points can be chosen.

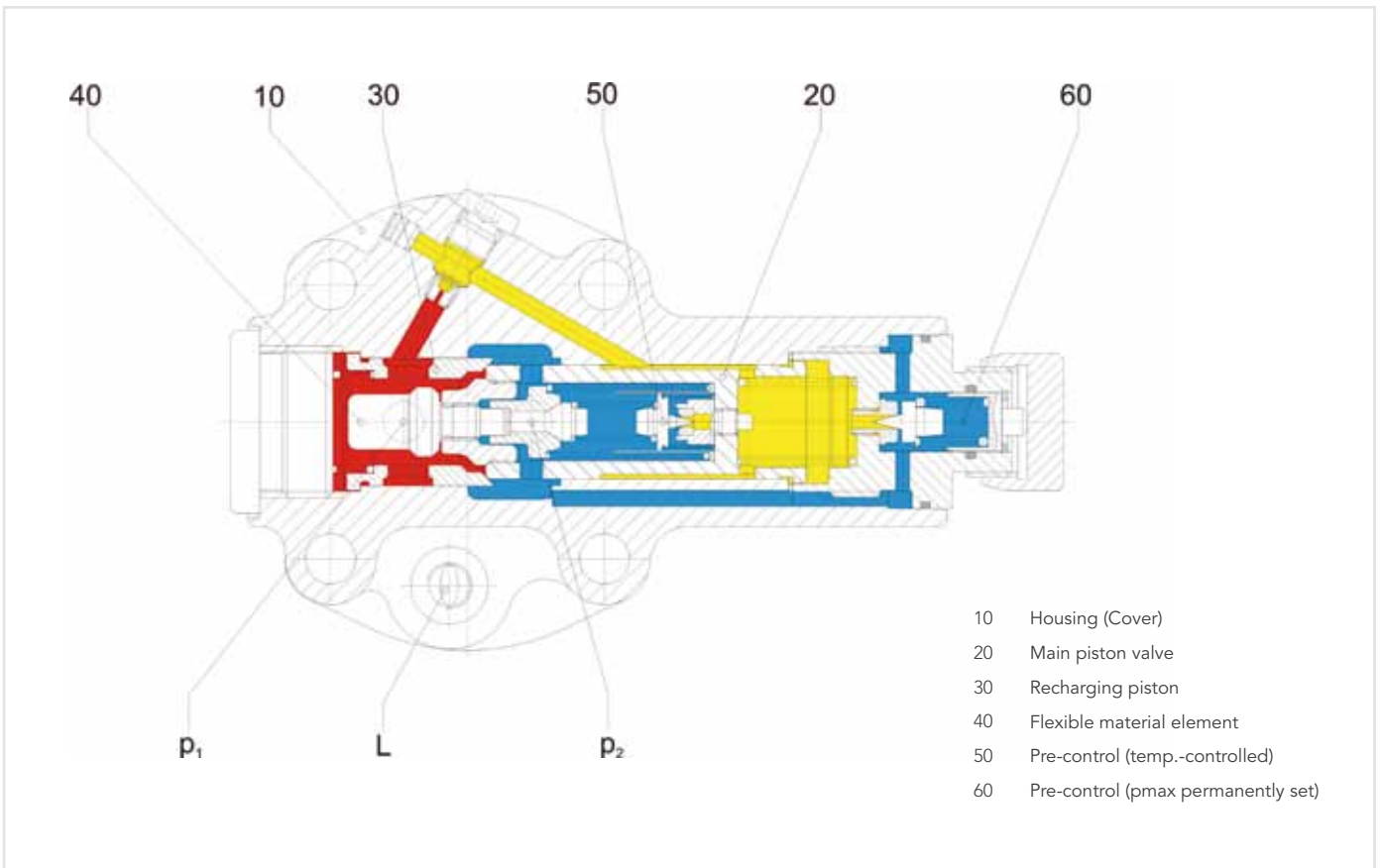
Cooling only when it is needed.

Thermostatic valve type TKM is used for oil-air coolers – for combi coolers proportional version is available.

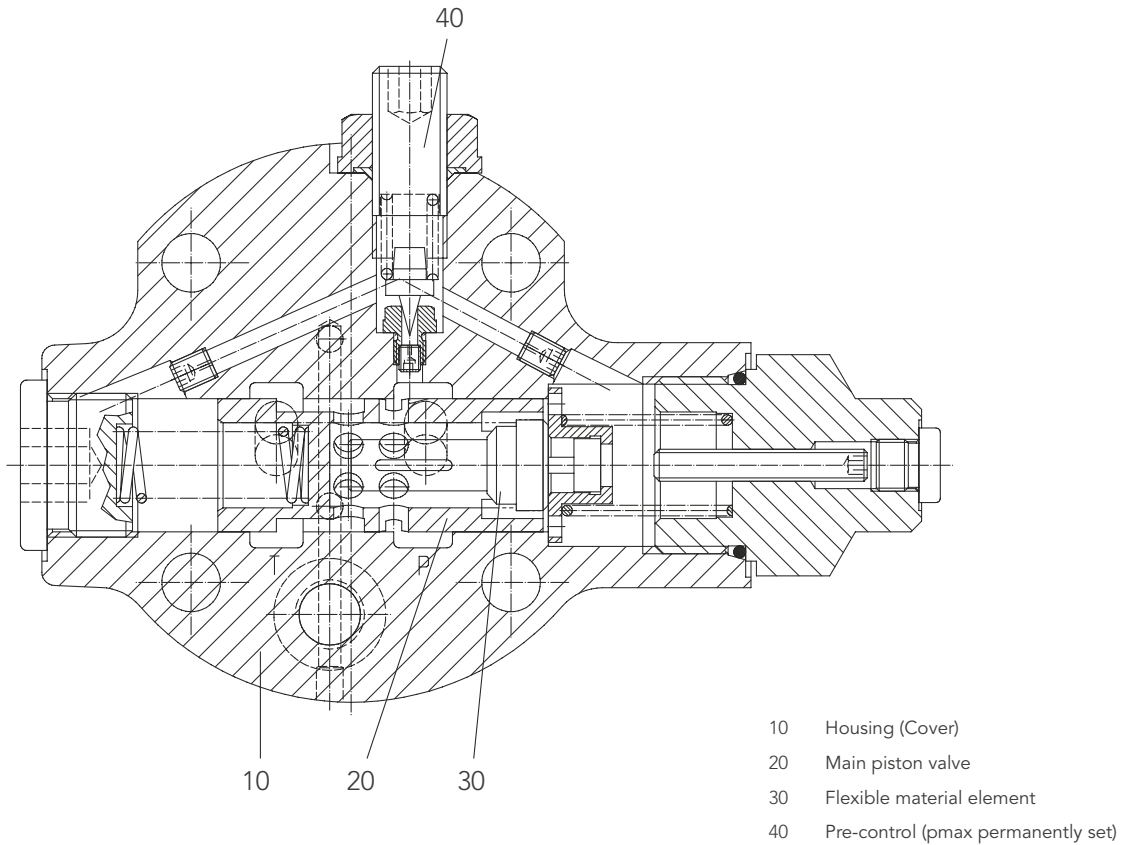
Type code:
KM 1/... + TKM 1 D1D..



Technical Details KRACHT KM1 Thermostatic Valve and Pressure Relief Valve „standard“



Technical Details KRACHT KM1 Thermostatic Valve and Pressure Relief Valve „New Generation“

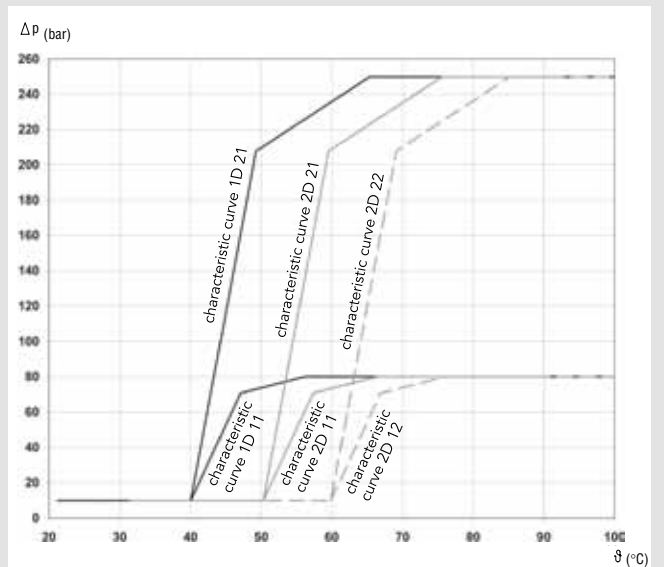


Type key	
TKM	Therموالve for KM hydraulic motor
1	Structural size
	1 for KM 1 2 for KM 2
D	Function
	D Diagram 1 Pressure-temperature control
1D	Control
	1D Flexible material element 40... 60°C 2D Flexible material element 50... 70°C
11	Pressure temperature characteristic curve
	1D 2D
	11 40°C low pressure 50°C low pressure
	12 45°C low pressure 60°C low pressure
	21 40°C high pressure 50°C high pressure
22 45°C high pressure 60°C high pressure	
A	Design code number A (internally allocated)
.	max. pressure control (mechanically set) 020 to 250 p max. in bar
E	Oil discharge E external
00/	Rate of flow (l/min) 00 for TKM.D..
S	Modification S...

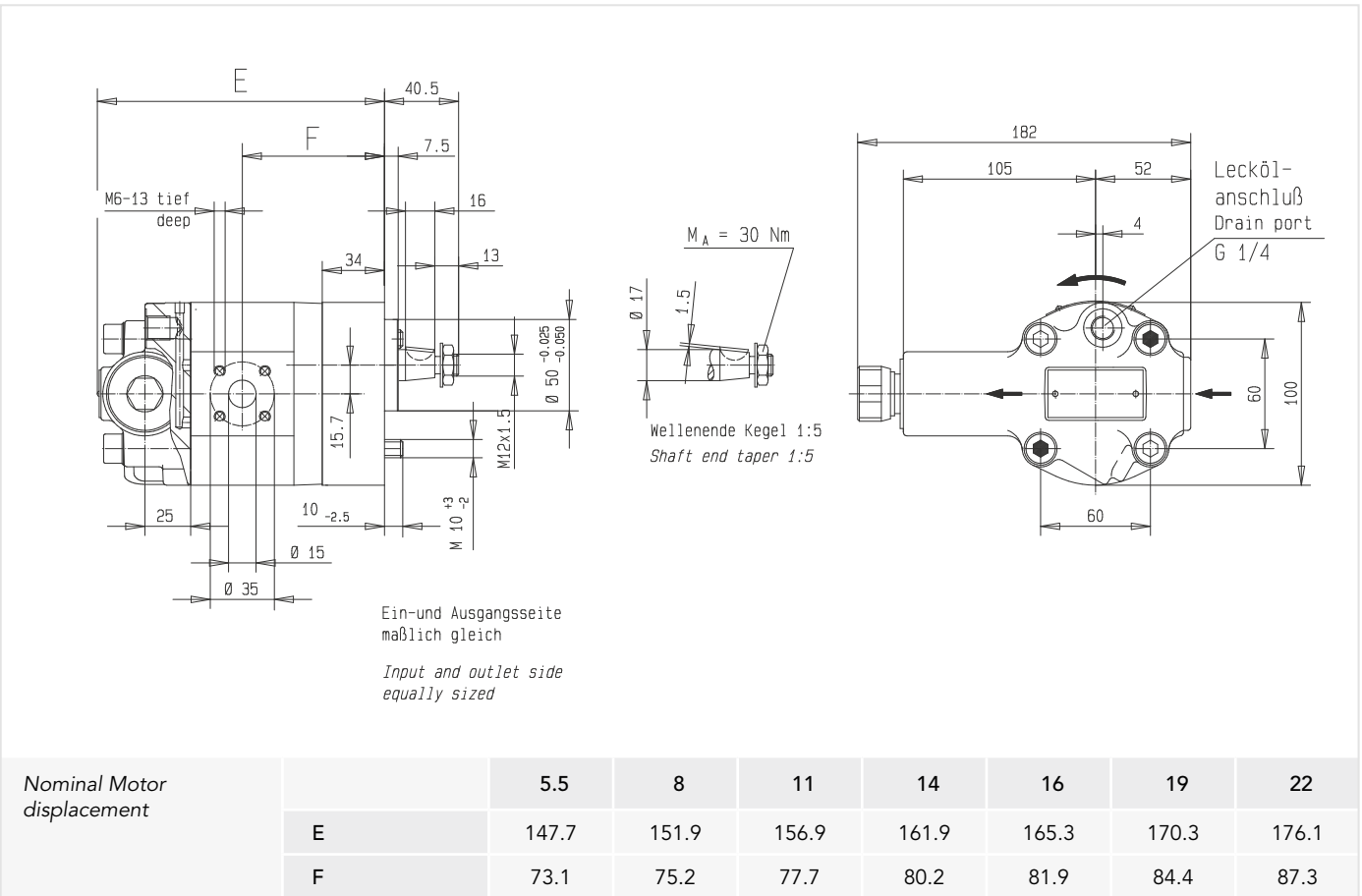
Pressure temperature characteristic curve

Control:

1D = 40... 60°C control range max 90°C
 2D = 50... 70°C control range max 100°C

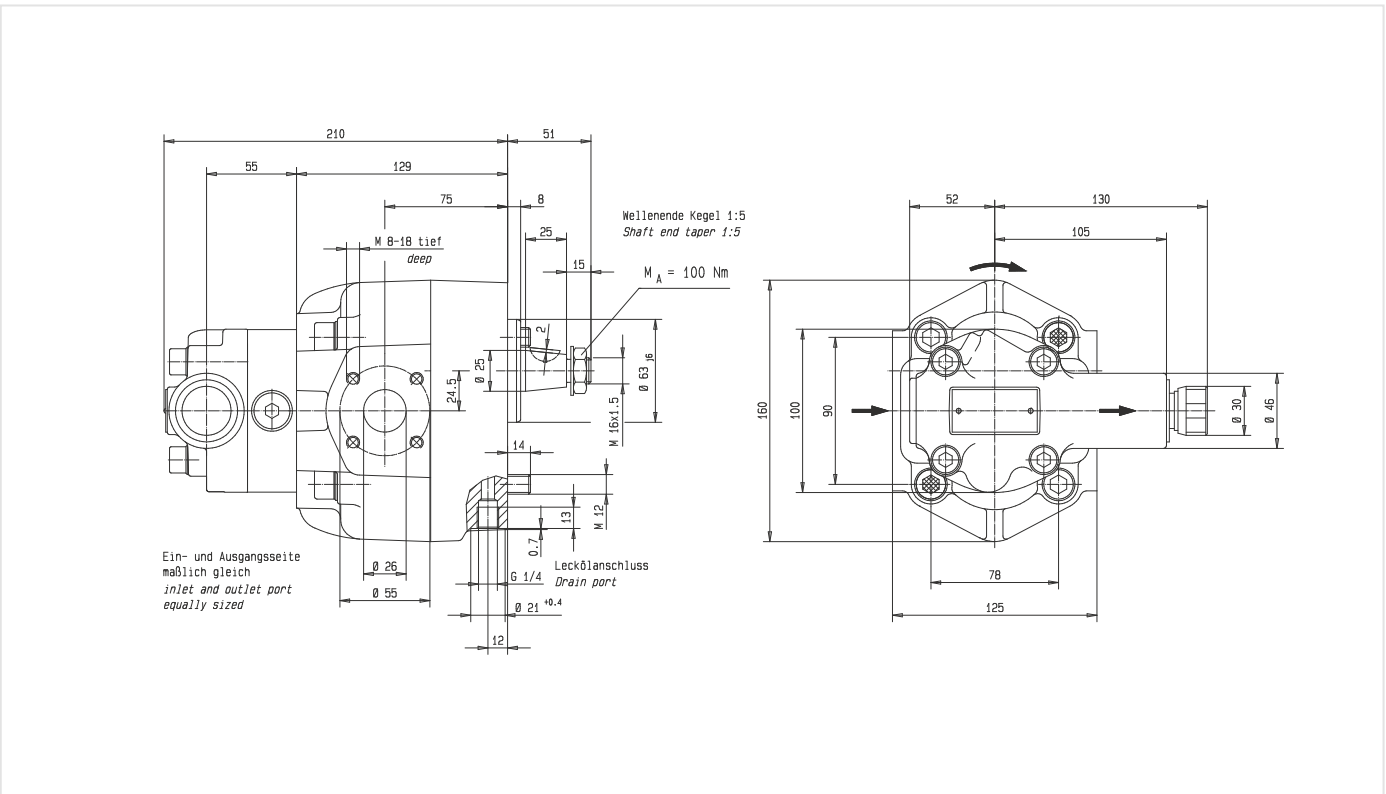


Technical Details KRACHT KM1 Thermostatic Valve and Pressure Relief Valve



Ordering example: KM1/. L.LA .00 4N../375 + TKM1 D.D..A..E..

Technical Details KRACHT KM 2 Thermostatic Valve and Pressure Relief Valve



Ordering example: KM2/32 M20A K00 4VL. + TKM 2 D1D 22 A 200 A00/S03

Hydraulic fan drive

KM 1 Thermostatic Valve and Pressure Relief Valve with Reversible Unit

The version with Thermostatic valve type TKM can be added with the reversible unit. The reverse function is used to clean the cooler by blowing against the cooler.

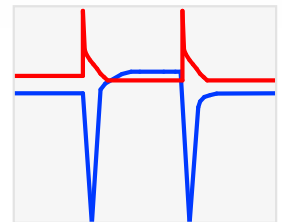
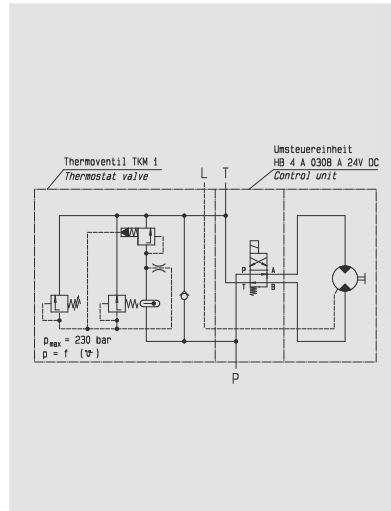
The temperature control is working independent from the rotation.

To reverse the unit the solenoid valve has to be switched.

While construction the normal rotation should be specified to decide the currentless operation of the motor.

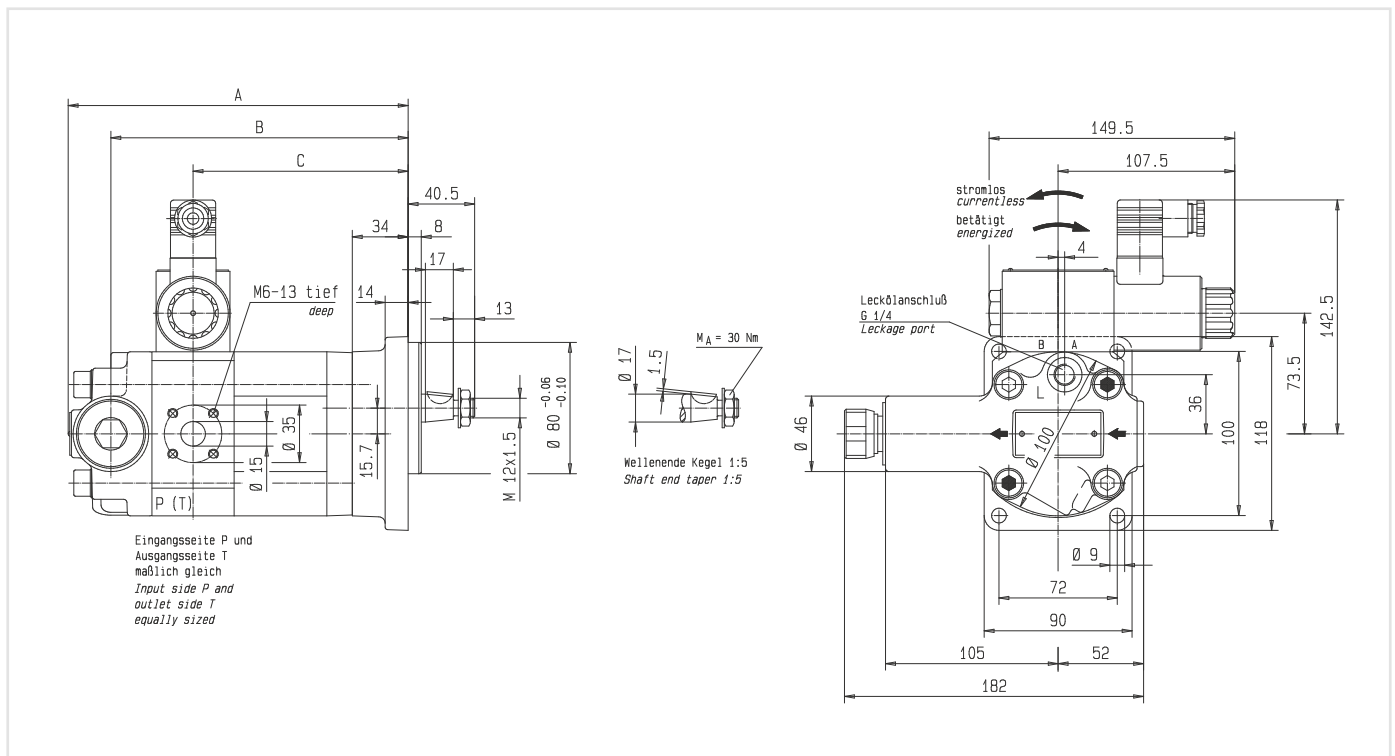
Are charging valve is fitted as a non-return Valve. Cavitations will be prevented.

Type code:
KM 1/... + HB4 A 308 A + TKM 1 D.D...



Reverse operation

KM 1 Thermostatic and Pressure Relief Valve with Reversible Unit (currentless clockwise)

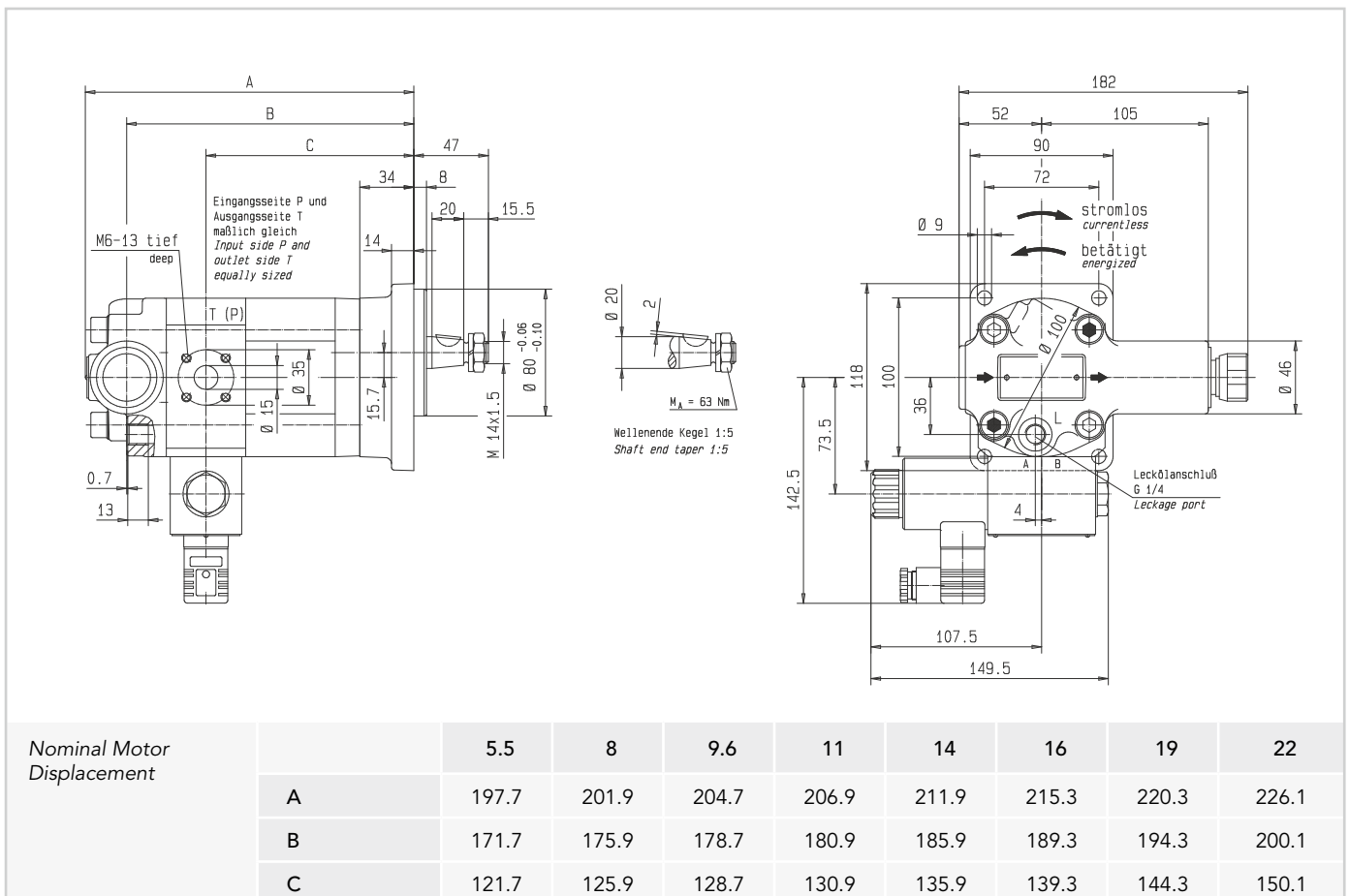


Nominal Motor Displacement		5.5	8	9.6	11	14	16	19	22
	A		197.7	201.9	204.7	206.9	211.9	215.3	220.3
B		171.7	175.9	178.7	180.9	185.9	189.3	194.3	200.1
C		121.7	125.9	128.7	130.9	135.9	139.3	144.3	150.1

Ordering example: KM1/. L3LW X00 4N.1/324 + HB4 A 0308 A + TKM 1 D1D 22 A 200 E00/S03



Thermostatic and Pressure Relief Valve with Reversible Unit (*currentless anti-clockwise*)



Ordering example: KM1/. L3LW X00 4N.1 + HB4 A 0308 A + TKM1 D1D 22 A 200 E00/S03

Hydraulic fan drive

KM1 „standard“ with Proportional Valve

For cooler combinations of water and oil cooler the use of a proportional valve is the best choice.

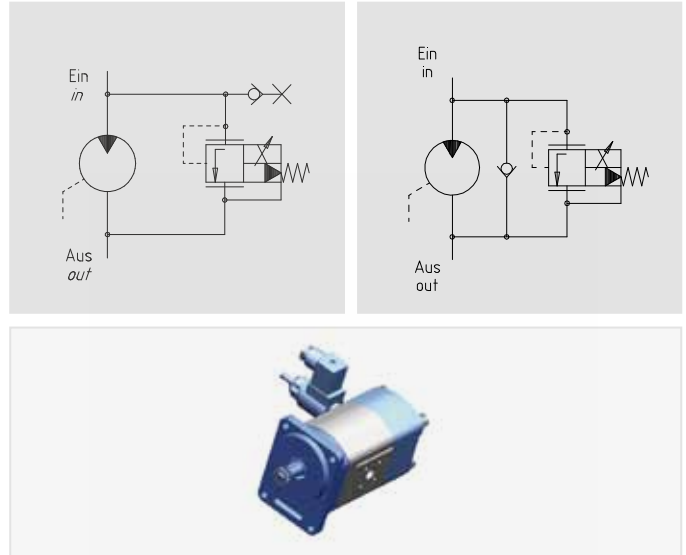
The shown proportional valve includes a mechanical adjustable pressure relief valve and an electrical adjustment of the flow.

The proportional valve is acting due to the signal of the temperature sensor of the vehicle – different solenoids are available.

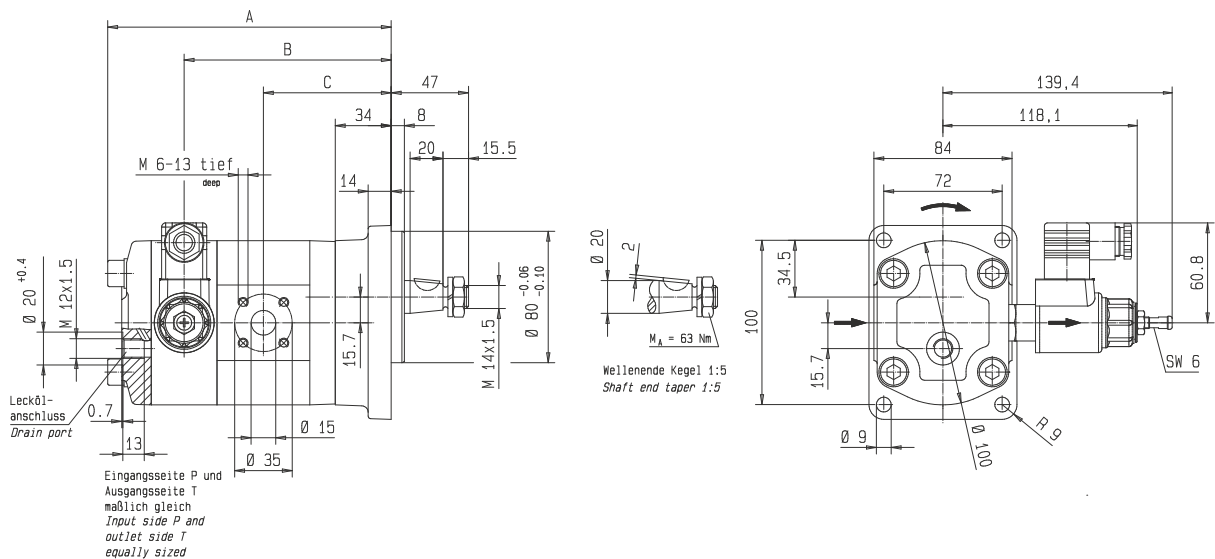
KRACHT always recommends to use the version which is without current fully open - in the case of a broken cable the motor will run with the maximum speed to avoid an overheating of the machine - fail-safe function.

Optional with anti-cavitation valve. Version KM 1... 445.

TYPE code:
KM1/... + SOV 4 . 0216 A



Technical Details KRACHT KM1 „standard“ with Proportional Valve



Nominal Motor Displacement		5.5	6.3	8	9.6	11	14	16	19	22
	A		163.2	164.6	167.4	170.2	172.4	177.4	180.8	185.8
B		116.7	118.1	120.9	123.7	125.9	130.9	134.3	139.3	145.1
C		73.1	73.8	75.2	76.6	77.7	80.2	81.9	84.4	87.3

Ordering example: KM1/. L.LA (X)0A 4N.. + SOV 4 B 0216 A

Hydraulic fan drive

KM1 „space optimized“ with Proportional Valve

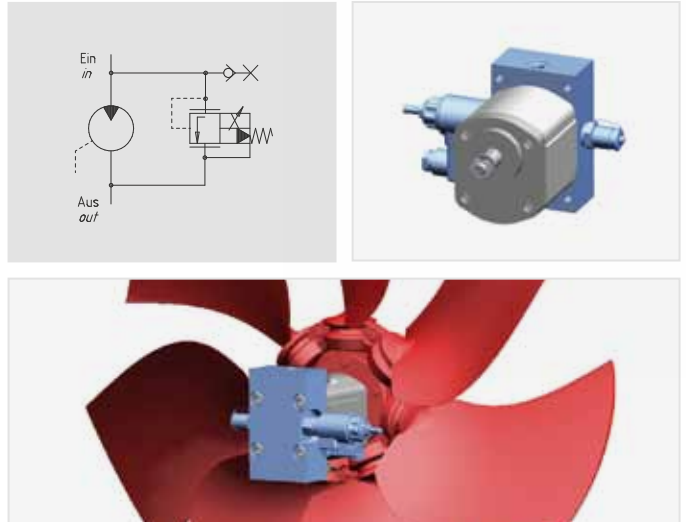
For cooler combinations of water and oil cooler the use of a proportional valve is the best choice.

The shown proportional valve includes a mechanical adjustable pressure relief valve and an electrical adjustment of the flow.

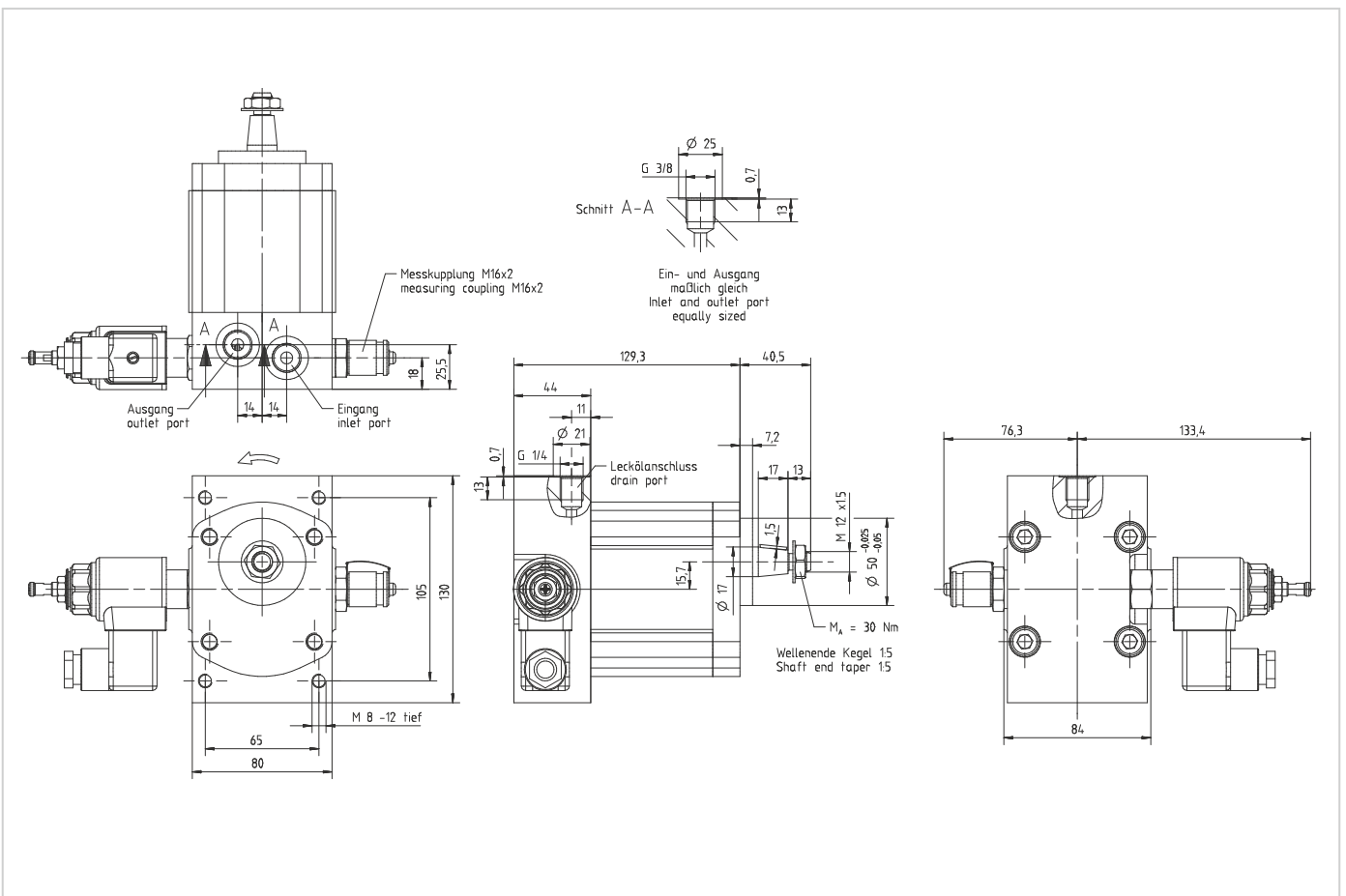
The proportional valve is acting due to the signal of the temperature sensor of the vehicle – different solenoids are available.

KRACHT always recommends to use the version which is without current fully open - in the case of a broken cable the motor will run with the maximum speed to avoid an overheating of the machine - fail-safe function.

TYPE code:
KM1/... + SOV 4 . 0217 A



Technical Details KM1 „space optimized“ with Proportional Valve



Ordering example: KM1/19 F20W K00 4NM1/433 + SOV 4 A 0217 A

Hydraulic fan drive

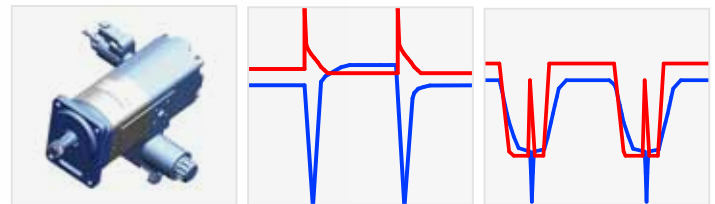
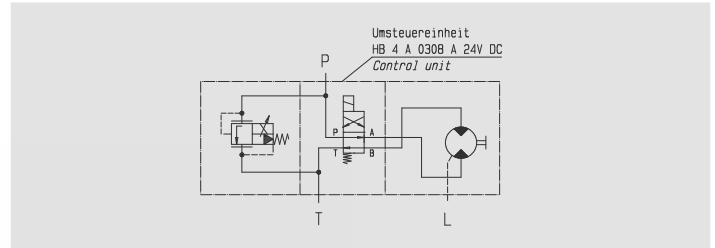
KM1 „standard“ with Proportional Valve and Reversible Unit

Of course the KM 1 version with proportional valve can be combined with the reverse function.

Type code:
KM 1/... + HB 4 A 308A + SOV 4 . 0216 A

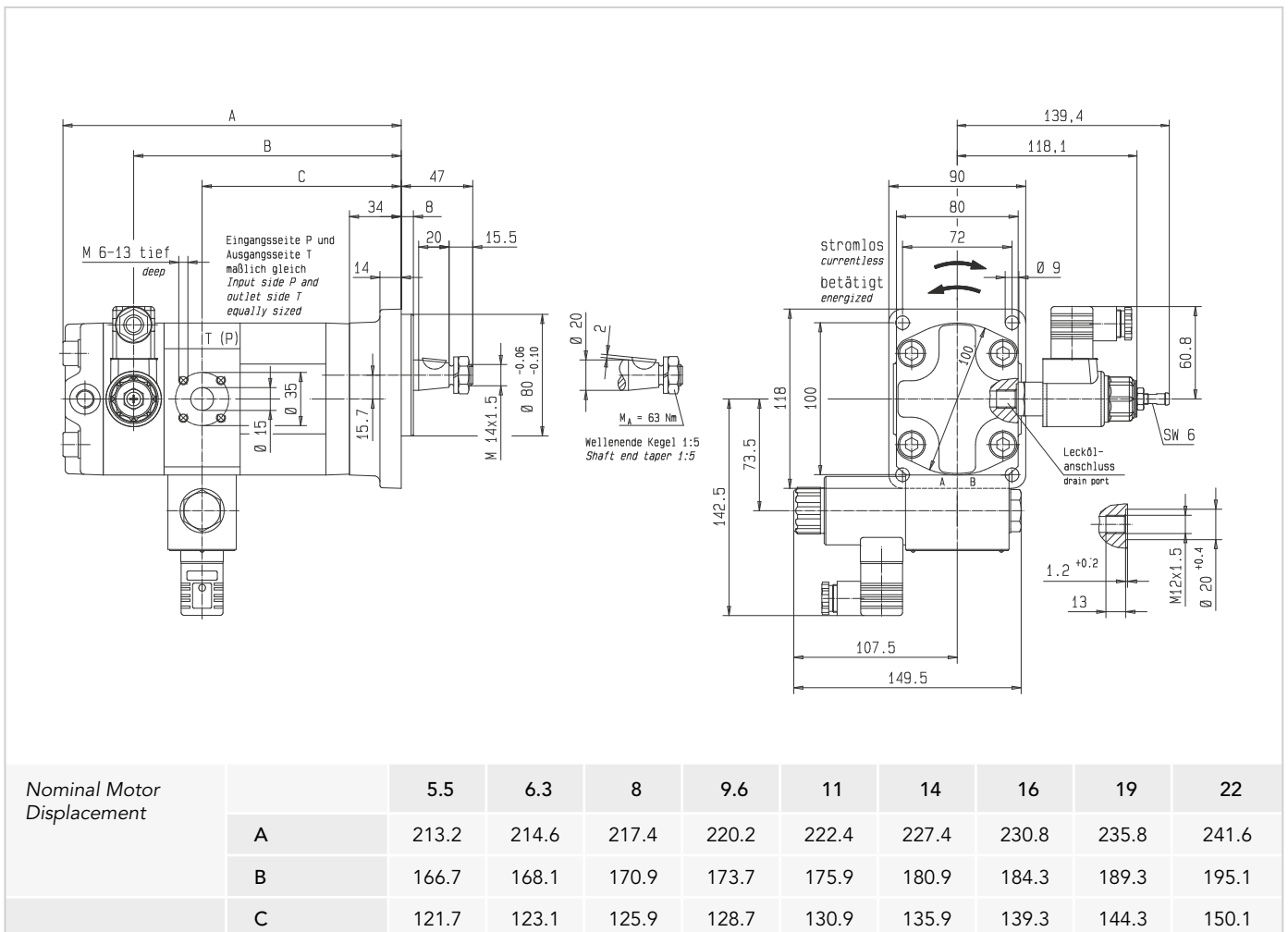
The reverse function can be acting independent from the temperature.

Different solenoid function are available due to the rotation.



Reverse operation

Technical Details KRACHT KM 1 „standard“ with Proportional Valve and Reversible Unit



Ordering example: KM1/. L3LW X0B 4N.1 + HB4 A 0308 A + SOV 4 B 0216 A

Hydraulic fan drive

KM 1 „space optimized“ with Proportional Valve and Reversible Unit

For cooler combinations of water and oil cooler the use of a proportional valve is the best choice.

The shown proportional valve includes a mechanical adjustable pressure relief valve and an electrical adjustment of the flow and the reversible function.

The proportional valve is acting due to the signal of the temperature sensor of

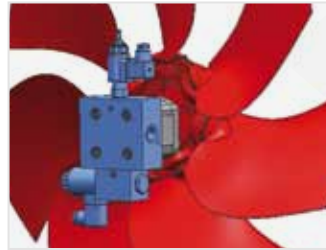
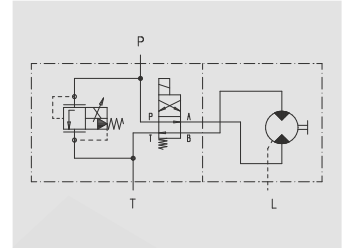
the vehicle - different solenoids are available.

KRACHT always recommends to use the version which is without current fully open - in the case of a broken cable the motor will run with the maximum speed to avoid an overheating of the machine - fail-safe function.

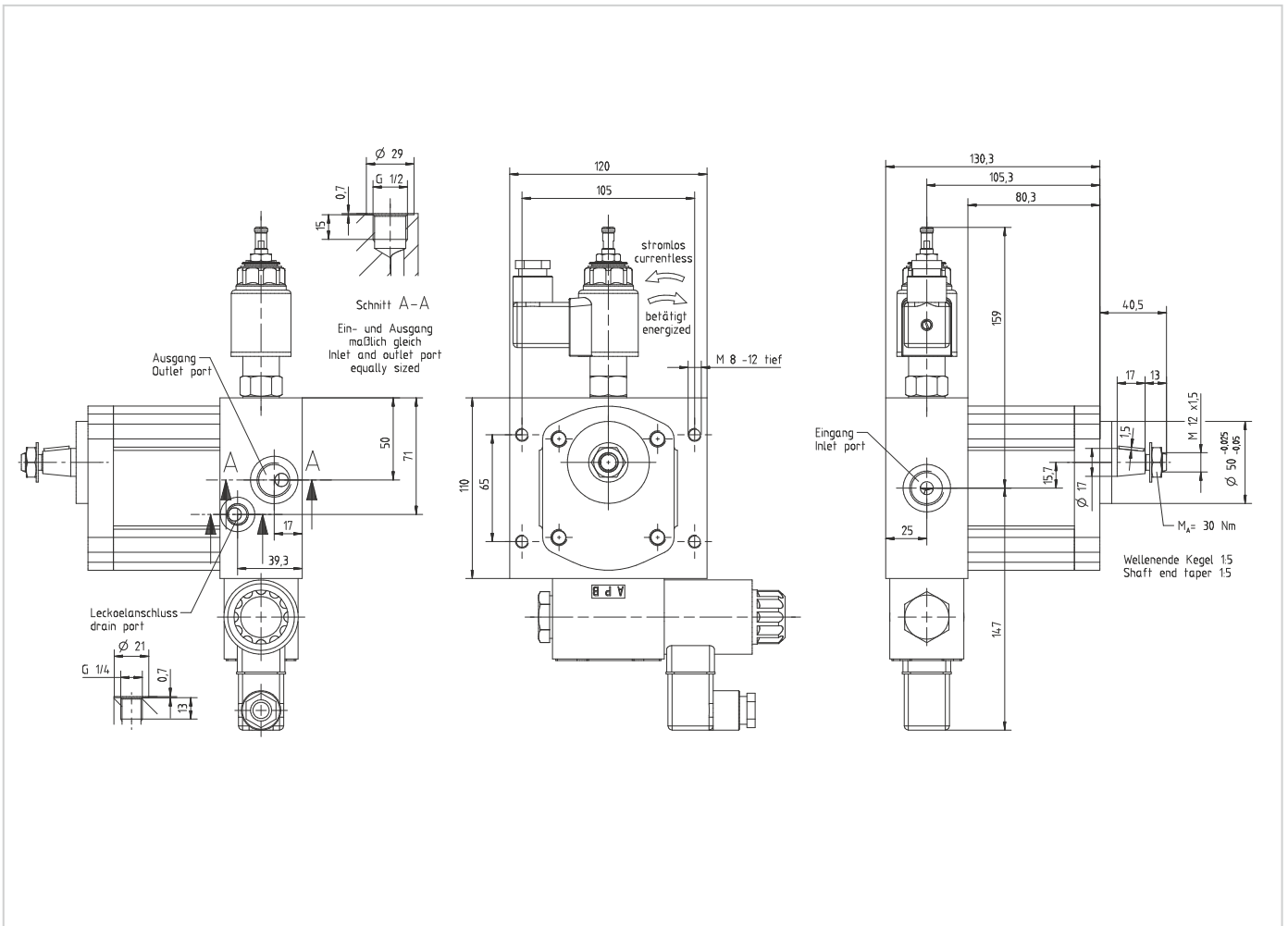
The reverse function can be acting independent from the temperature.

Different solenoid function are available due to the rotation.

TYPE code:
KM1/... + SOV 4 A 0222 A



Technical Details KRACHT KM1 "space optimized" with Proportional Valve and Reversible Unit






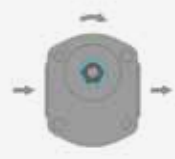

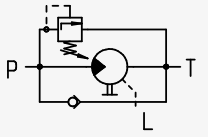

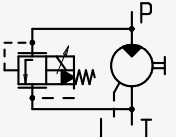

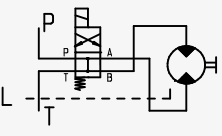

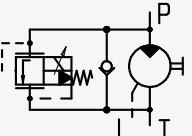

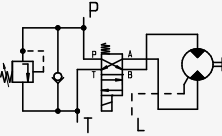

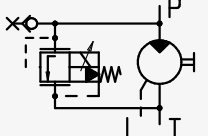

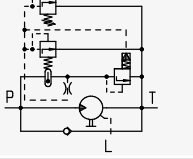

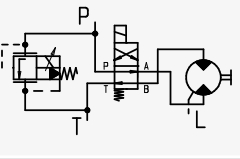

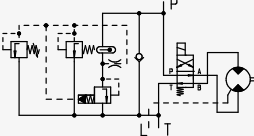

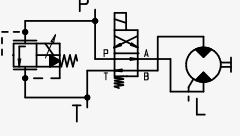



Ordering example: KM1/16 F30W K00 4NL1/433 + SOV 4 A 0222 A

Hydraulic fan drive

Fan Drive Combinations



Outboard Bearing			
			
Taper 1:5, Ø 17	Taper 1:5, Ø 20	Taper 1:5, Ø 17	Taper 1:5, Ø 20
Motor – Direction of rotation			
			
Both	Clockwise	Counter Clockwise	
Function			
Page 4		Page 12	
			
page 5		Page 12	
			
page 6		Page 13	
			
page 7		Page 14	
			
page 10		Page 15	
			

Product specialists Mobile Hydraulics

Mr. Oliver Paßolat

fon +49 (0) 2392/935-274

fax +49 (0) 2392/935-231

mail passolat@kracht.eu



Mr. Georg Schütz

fon +49 (0) 2392/935-307

fax +49 (0) 2392/935-231

mail schuetz@kracht.eu

We are at your side, worldwide, with our decades of experience, for professional mastery of specific applications and complete solutions in hydraulics and processing technology.

A comprehensive network of sales and service offices guarantees you and your project the right advice and optimal service. Take us at our word.

International Distribution

Australia
Belgium
China
Denmark
Germany
Finland
France
United Kingdom
Italy
Japan
Canada
Korea
Luxembourg
Netherlands

Norway
Austria
Philippines
Poland
Sweden
Switzerland
Slovenia
Spain
South Africa
Czech Republic
Turkey
Hungary
USA



Notes



KRACHT

KRACHT GmbH, Gewerbestraße 20, D-58791 Werdohl, fon +49 (0) 2392.935 0, fax +49 (0) 2392.935 - 209
mail info@kracht.eu web www.kracht.eu