

HYDRAULIC GEAR
PUMPS AND
MOTORS

INDEX

Subject	Page
INTRODUCTION	3
INSTRUCTIONS	4
FEATURES	5
GEAR PUMPS PERFORMANCE CURVES	10
GEAR MOTORS PERFORMANCE CURVES	14
SINGLE UNITS DIMENSIONS	
Side ports CSC	18
Rear ports CSC	19
Side ports HSC	20
Rear ports HSC	21
Side ports BSC	22
Rear ports BSC	23
MULTIPLE PUMPS	24
MULTIPLE PUMPS DIMENSIONS	25
DOUBLE PUMPS DIMENSIONS	26
OUTOARD BEARING OPTIONS	35
DRIVE SHAFTS	38
MOUNTING FLANGES	40
PORTS - POSITION AND TYPE	45
MOTORS WITH BUILT-IN VALVES	50
CHANGING ROTATION	52
HOW TO ORDER	
Single units	54
Multiple pumps same groups	57
Double pumps different groups	58
Multiple pumps common inlet	59

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INTRODUCTION

KAPPA 30 Compact series is a solid compact 2-piece construction and allows you to include many functions in a reduced space.

KAPPA 30 Compact is a direct result of feedback received from Casappa customers, this has given Casappa the opportunity to understand the needs of our customers and implement the hydraulic knowledge gained into new and improved products.

The “Compact” line provides exceptional quality and reliability thanks to 3-dimensional modeling, virtual simulation of the pump’s behavior in the hydraulic system and testing on the machines.

The reduced dimensions as well as a large variety of drive shafts, mounting flanges and ports ensure great flexibility and allow for their use in an infinite variety of applications.

DISPLACEMENTS

From 21,99 cm³/rev (1.34 in³/rev)

To 73,82 cm³/rev (4.50 in³/rev)

PRESSURE

Max. Continuous 280 bar (4060 psi)

Max. Intermittent 300 bar (4350 psi)

Max. Peak 320 bar (4640 psi)

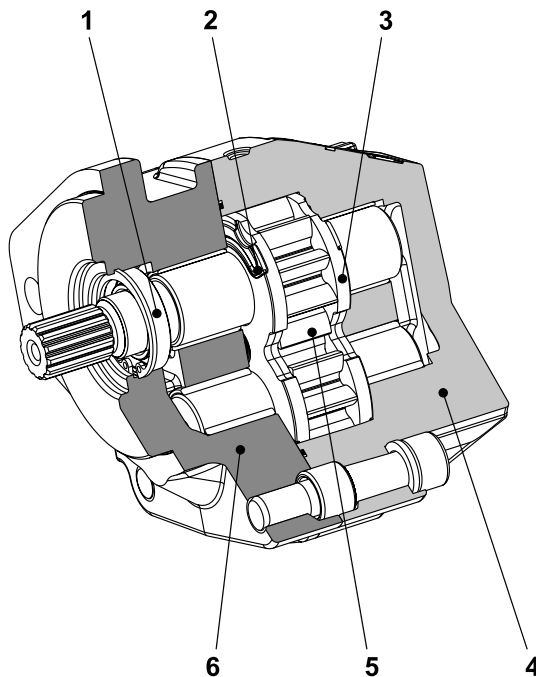
MAX. SPEED

Max. 3000 min⁻¹

- High operating pressures.
- Low noise emission.
- Available with built-in valves.
- Exceptional working life expectancy.

TYPICAL APPLICATIONS

- Building & Construction
- Material Handling
- Forestry
- Fan Drive



1	Shaft seal
2	Seal
3	Thrust plate
4	Body
5	Gear
6	Mounting flange

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INSTRUCTIONS

INSTALLATION

Pump

The direction of rotation of single-rotation pumps must be the same as that of the drive shaft. Check that the coupling flange correctly aligns the transmission shaft and the pump shaft. Flexible couplings should be used (never rigid fittings) which will not generate an axial or radial load on the pump shaft.

Motor

The direction of rotation of single-rotation motors must match circuit connections. Check that the coupling flange correctly aligns the transmission shaft and the motor shaft. Flexible couplings should be used (never rigid fittings) which will not generate an axial or radial load on the motor shaft.

TANK

Tank capacity must be sufficient for the system's operating conditions (~ 3 times the amount of oil in circulation) to avoid overheating of the fluid. A heat exchanger should be installed if necessary. The intake and return lines in the tank must be spaced apart (by inserting a vertical divider) to prevent the return-line oil from being taken up again immediately.

LINES

The lines must have a major diameter which is at least as large as the diameter of pump or motor ports, and must be perfectly sealed. To reduce loss of power, the lines should be as short as possible, reducing the sources of hydraulic resistance (elbow, throttling, gate valves, etc.) to a minimum. A length of flexible tubing is recommended to reduce the transmission of vibrations. All return lines must end below the minimum oil level, to prevent foaming. Before connecting the lines, remove any plugs and make sure that the lines are perfectly clean.

HYDRAULIC FLUID

Use hydraulic fluid conforming to viscosity data as specified in the first pages of the catalogue. Avoid using mixtures of different oils which could result in decomposition and reduction of the oil's lubricating power.

FILTERS

We recommend filtering the entire system flow. Filters on suction and return line must be fitted in according to the contamination class as indicated in the first pages of the catalogue. Casappa recommends to use its own production filters:



STORAGE

The storage must be in a dry environment.

Max storage time in ideal conditions is 24 months.

The ideal storage temperature is between 5°C (41°F) and 20°C (68°F). No problem in case of temperature between -40°C (-40°F) and 50°C (122°F). Below -40°C (-40°F) please consult our pre-sales department.

STARTING UP

Check that all circuit connections are tight and that the entire system is completely clean. Insert the oil in the tank, using a filter. Bleed the circuit to assist in filling. Set the pressure relief valves to the lowest possible setting. Turn on the system for a few moments at minimum speed, then bleed the circuit again and check the level of oil in the tank.

If the difference between pump or motor temperature and fluid temperature exceeds 10 °C (50 °F), rapidly switch the system on and off to heat it up gradually. Then gradually increase the pressure and speed of rotation until the pre-set operating levels as specified in the catalogue are attained.

COLD START

Cold start is meant short term and low idle. During cold start of the machine the following limits can be applied:

Minimum inlet pressure	0,5 bar abs. (7 psi)
Max drain pressure / Max delivery pressure	+ 50% of standard values
Minimum temperature	-40 °C (-40 °F)
Max oil viscosity	2000 mm ² /s (cSt) [9100 SSU]

If the ambient temperature is lower than -20 °C (-4 °F) the system speed and pressure must be limited until the hydraulic oil temperature exceeds -20 °C (-4 °F).

PERIODICAL CHECKS - MAINTENANCE

Keep the outside surface clean especially in the area of the drive shaft seal. In fact, abrasive powder can accelerate wear on the seal and cause leakage. Replace filters regularly to keep the fluid clean. The oil level must be checked and oil replaced periodically depending on the system's operating conditions.

01/10.2018

FEATURES

Construction	External gear type pumps and motors
Mounting	European - SAE - standard flanges
Ports	Threaded and flange
Direction of rotation (looking at the drive shaft)	Anti-clockwise (S) - clockwise (D) - reversible external drain (R - L) reversible internal drain (B)
Inlet pressure range for pumps	0,7 ÷ 3 bar abs. (10 ÷ 44 psi) If p > 1,5 bar abs. (22 psi) specific shaft sealing have to be applied. Please consult our pre-sales department.
Max back pressure for single rotation motors	5 bar (73 psi) continuous @ min. speed 350 min ⁻¹ 1 bar (14.5 psi) continuous @ max. speed (see page 8)
Max drain line pressure on reversible rotation motors	5 bar (73 psi) continuous @ min. speed 350 min ⁻¹ 1 bar (14.5 psi) continuous @ max. speed (see page 8)
Max back pressure on in series motors	150 bar (2175 psi)
Fluid temperature range	See table (1)
Fluid	Mineral oil based hydraulic fluids to ISO/DIN and fire resistant fluids [see table (1)]. For other fluids please consult our pre-sales department.
Viscosity range	From 12 to 100 mm ² /s (cSt) [60 to 456 SSU] recommended Up to 750 mm ² /s (cSt) [3410 SSU] permitted
Filtering requirement and recommended fluid contamination	See table (2) page 6

Tab. 1

Type	Fluid composition	Max pressure bar (psi)	Max speed min ⁻¹	Temperature °C (°F)			Seals (●)	Shaft seals option (◆)
				Min	Max continuous	Max peak		
ISO/DIN	Mineral oil based hydraulic fluid to ISO/DIN	See page 8	See page 8	-25 (-13)	80 (176)	100 (212)	N	D C4
				-25 (-13)	110 (230)	125 (257)	V	
				-25 (-13)	110 (230)	125 (257)	T-PV	
HFA	Oil emulsion in water 5 ÷ 15% of oil	50 (725)	1500	2 (36)	55 (131)		N	
HFB	Water emulsion in oil 40 % of water	120 (1740)	1500	2 (36)	60 (140)		N	D
HFC	Water - glycol	100 (1450)	1500	-20 (-4)	60 (140)		N Bz	
HFD	Phosphate ester	150 (2175)	1500	-10 (14)	80 (176)		V Bz	

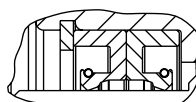
- (●) **N**= Buna NBR (standard) - **V**= Viton-FKM - **T-PV**= Hydrogenated buna HNBR seals with Viton-FKM shaft seals
N Bz= Buna NBR and Bronze thrust plates - **V Bz**= Viton-FKM and Bronze thrust plates

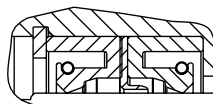
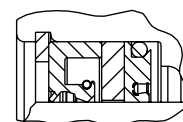
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D (◆) shaft seals with wiper seal

C4 (◆) High pressure special shaft seal (only with ISO/DIN hydraulic fluid)

Single rotation pumps

 Max drain line pressure:
0,5 bar (7 psi)

 Single rotation motors
 Reversible rotation pumps and motors

 Max drain line pressure:
5 bar (73 psi)

 Max drain line pressure:
10 bar (145 psi)


FEATURES

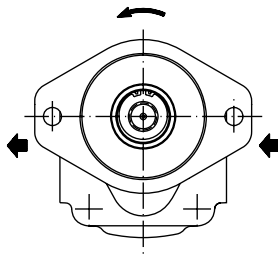
Tab. 2

Working pressure bar (psi)	$\Delta p < 140$ (2030)	$140 < \Delta p < 210$ (2030) (3045)	$\Delta p > 210$ (3045)
Contamination class NAS 1638	10	9	8
Contamination class ISO 4406:1999	21/19/16	20/18/15	19/17/14
Achieved with filter $\beta_{10}(c) \geq 200$ according to ISO 16889	-	10 μm	10 μm
Achieved with filter $\beta_{25}(c) \geq 200$ according to ISO 16889	25 μm	-	-

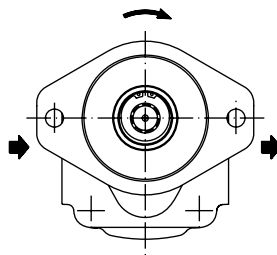
Casappa recommends to use its own production filters:



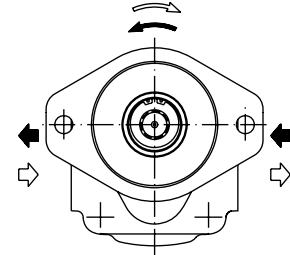
DEFINITION OF ROTATION DIRECTION LOOKING AT THE DRIVE SHAFT



Anti-clockwise rotation



Clockwise rotation



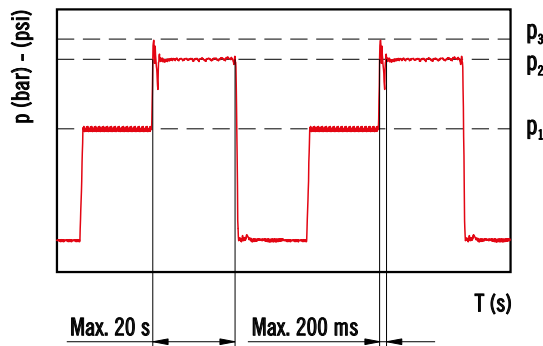
Reversible rotation

GENERAL NOTES

Available with different inlet and outlet ports. If you use fire resistant fluids, specify the fluid type when ordering. For more information please consult our pre-sales department.

FEATURES

PRESSURE DEFINITION



- p_1 Constant operating pressure
- p_2 System pressure (relief valve setting)
- p_3 Peak of pressure

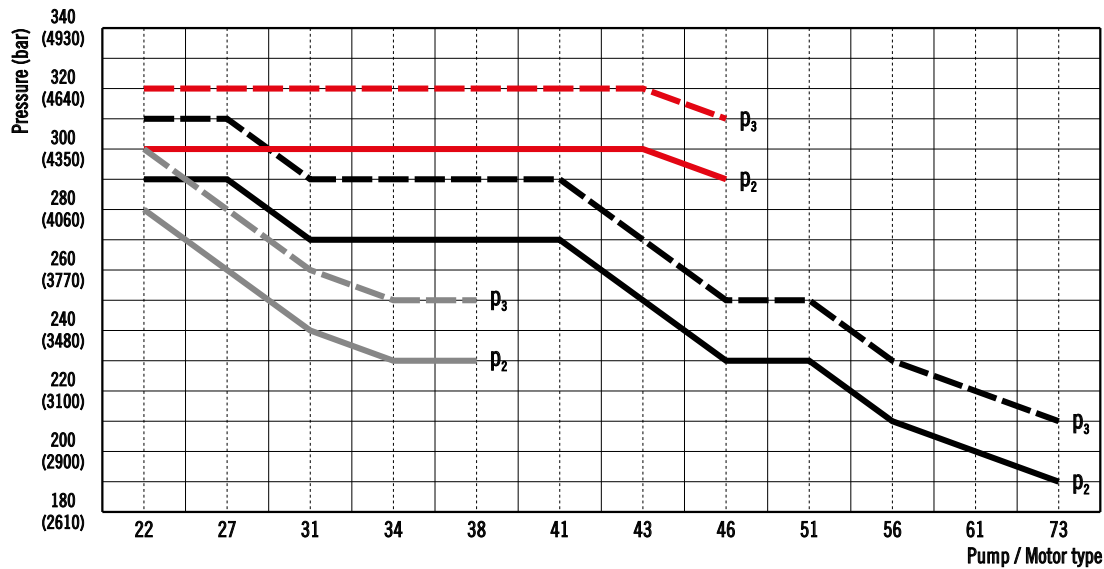
The peak of pressure is the max pressure allowed and it corresponds to the overshoot of the relief valve.

Please note that both relief valve setting and overshoot must be lower than their limits.

If the relief setting is compliant but the overshoot is higher than the limit, the relief setting must be decreased until the overshoot is compliant to Casappa limit.

For high frequency applications please consult our pre-sales department.

PUMP / MOTOR TYPE CHOICE



- | | | | | | |
|--|--|--|----------------------------------|--|---------------------------------|
| | Body design: BSC/BSL | | Body design: CSC/CSL | | Body design: HSC/KSL |
| | Characteristics: High performance | | Characteristics: Standard | | Characteristics: Compact |

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Pressure values referred to side ports.

For different configurations and working conditions please consult our pre-sales department.

FEATURES

Pump type Motor type	Displacement cm ³ /rev (in ³ /rev)	Body design	Characteristics	Max. pressure			Max. speed min ⁻¹	Min. speed
				p ₁	p ₂	p ₃		
				bar (psi)				
K. 30•22	21,99 (1.34)	HSC / KSL	Compact	260 (3770)	280 (4060)	300 (4350)	3000	350
		CSC / CSL	Standard	270 (3915)	290 (4205)	310 (4495)		
		BSC / BSL	High performance	280 (4060)	300 (4350)	320 (4640)		
K. 30•27	26,7 (1.63)	HSC / KSL	Compact	240 (3480)	260 (3770)	280 (4060)	3000	350
		CSC / CSL	Standard	270 (3915)	290 (4205)	310 (4495)		
		BSC / BSL	High performance	280 (4060)	300 (4350)	320 (4640)		
K. 30•31	30,63 (1.87)	HSC / KSL	Compact	220 (3190)	240 (3480)	260 (3770)	3000	350
		CSC / CSL	Standard	250 (3625)	270 (3915)	290 (4205)		
		BSC / BSL	High performance	280 (4060)	300 (4350)	320 (4640)		
K. 30•34	34,56 (2.11)	HSC / KSL	Compact	210 (3045)	230 (3335)	250 (3625)	3000	350
		CSC / CSL	Standard	250 (3625)	270 (3915)	290 (4205)		
		BSC / BSL	High performance	280 (4060)	300 (4350)	320 (4640)		
K. 30•38	39,27 (2.40)	HSC / KSL	Compact	210 (3045)	230 (3335)	250 (3625)	3000	350
		CSC / CSL	Standard	250 (3625)	270 (3915)	290 (4205)		
		BSC / BSL	High performance	280 (4060)	300 (4350)	320 (4640)		
K. 30•41	41,62 (2.54)	CSC / CSL	Standard	250 (3625)	270 (3915)	290 (4205)	3000	350
		BSC / BSL	High performance	280 (4060)	300 (4350)	320 (4640)		
K. 30•43	43,98 (2.68)	CSC / CSL	Standard	230 (3335)	250 (3625)	270 (3915)	3000	350
		BSC / BSL	High performance	280 (4060)	300 (4350)	320 (4640)		
K. 30•46	46,34 (2.83)	CSC / CSL	Standard	210 (3045)	230 (3335)	250 (3625)	3000	350
		BSC / BSL	High performance	270 (3915)	290 (4205)	310 (4495)		
K. 30•51	51,83 (3.16)	CSC / CSL	Standard	210 (3045)	230 (3335)	250 (3625)	2500	350
K. 30•56	56,54 (3.45)	CSC / CSL	Standard	190 (2755)	210 (3045)	230 (3335)	2500	350
K. 30•61	61,26 (3.74)	CSC / CSL	Standard	180 (2610)	200 (2900)	220 (3190)	2500	350
K. 30•73	73,82 (4.50)	CSC / CSL	Standard	170 (2465)	190 (2755)	210 (3045)	2500	350

Pressure values in the table refer to side ports unidirectional pumps and motors.

For reversible pumps and motors, max pressures are 250 bar (3600 psi) excepted those with lower pressures value.

For different configurations and working conditions please consult our pre-sales department.

FEATURES

Q	l/min (US gpm)	Flow
M	Nm (lbf in)	Torque
P	kW (HP)	Power
V	cm ³ /rev (in ³ /rev)	Displacement
n	min ⁻¹	Speed
Δp	bar (psi)	Pressure

Efficiencies

		Pumps	Motors
$\eta_v = \eta_v (V, \Delta p, n)$	Volumetric efficiency	(≈ 0,98)	(≈ 0,97)
$\eta_{hm} = \eta_{hm} (V, \Delta p, n)$	Hydro-mechanical efficiency	(≈ 0,90)	(≈ 0,88)
$\eta_t = \eta_v \cdot \eta_{hm}$	Overall efficiency	(≈ 0,88)	(≈ 0,85)

Efficiencies values has been obtained at 1500 min⁻¹, 200 bar (2900 psi), using oil with viscosity 30 cSt (137 SSU) at 50°C (122 °F).

Design calculations for pump

$$Q = Q_{theor.} \cdot \eta_v \quad [l/min]$$

$$Q_{theor.} = \frac{V \cdot n}{1000} \quad [l/min]$$

$$M = \frac{M_{theor.}}{\eta_{hm}} \quad [Nm]$$

$$M_{theor.} = \frac{\Delta p \cdot V}{62,83} \quad [Nm]$$

$$P_{IN} = \frac{P_{OUT}}{\eta_t} \quad [kW]$$

$$P_{OUT} = \frac{\Delta p \cdot Q}{600} \quad [kW]$$

Design calculations for motor

$$Q = \frac{Q_{theor.}}{\eta_v} \quad [l/min]$$

$$Q_{theor.} = \frac{V \cdot n}{1000} \quad [l/min]$$

$$M = M_{theor.} \cdot \eta_{hm} \quad [Nm]$$

$$M_{theor.} = \frac{\Delta p \cdot V}{62,83} \quad [Nm]$$

$$P_{IN} = \frac{\Delta p \cdot Q}{600} \quad [kW]$$

$$P_{OUT} = P_{IN} \cdot \eta_t \quad [kW]$$

Note: Diagrams providing approximate selection data will be found on subsequent pages.

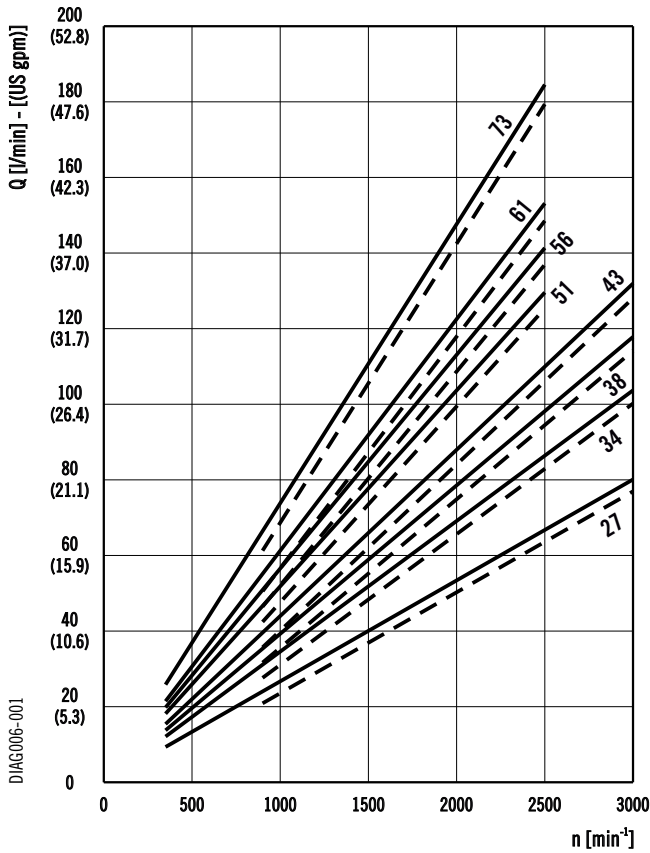
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KP 30

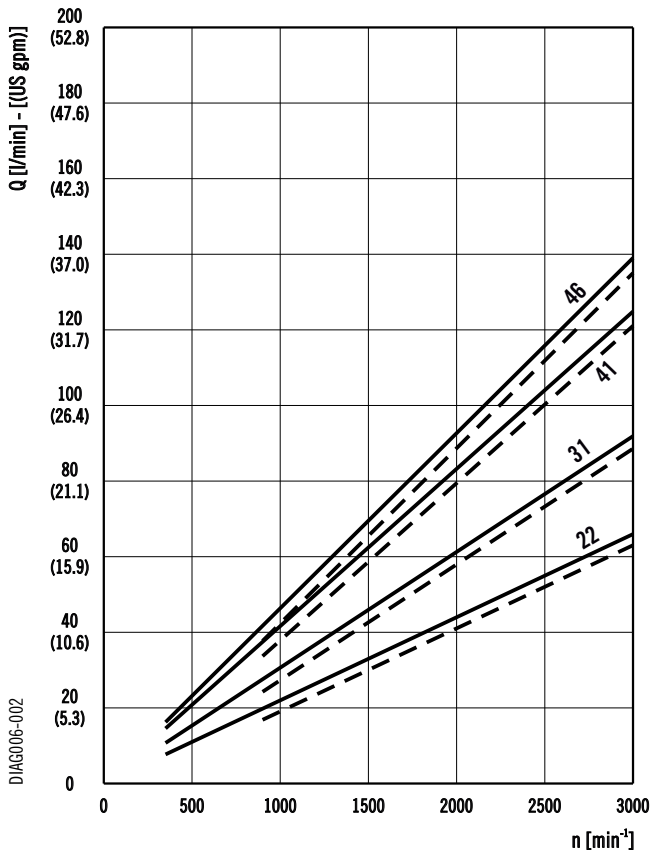
GEAR PUMPS PERFORMANCE CURVES

Diagrams refer to standard performance pumps.

Each curve has been obtained at 50°C (122 °F), using oil with viscosity 36 cSt (168 SSU) at 40°C (104 °F) and at these pressures.



KP 30•27	—	20 bar (290 psi)
	- -	270 bar (3915 psi)
KP 30•34	—	20 bar (290 psi)
	- -	250 bar (3625 psi)
KP 30•38	—	20 bar (290 psi)
	- -	250 bar (3625 psi)
KP 30•43	—	20 bar (290 psi)
	- -	230 bar (3335 psi)
KP 30•51	—	20 bar (290 psi)
	- -	210 bar (3045 psi)
KP 30•56	—	20 bar (290 psi)
	- -	190 bar (2755 psi)
KP 30•61	—	20 bar (290 psi)
	- -	180 bar (2610 psi)
KP 30•73	—	20 bar (290 psi)
	- -	170 bar (2465 psi)



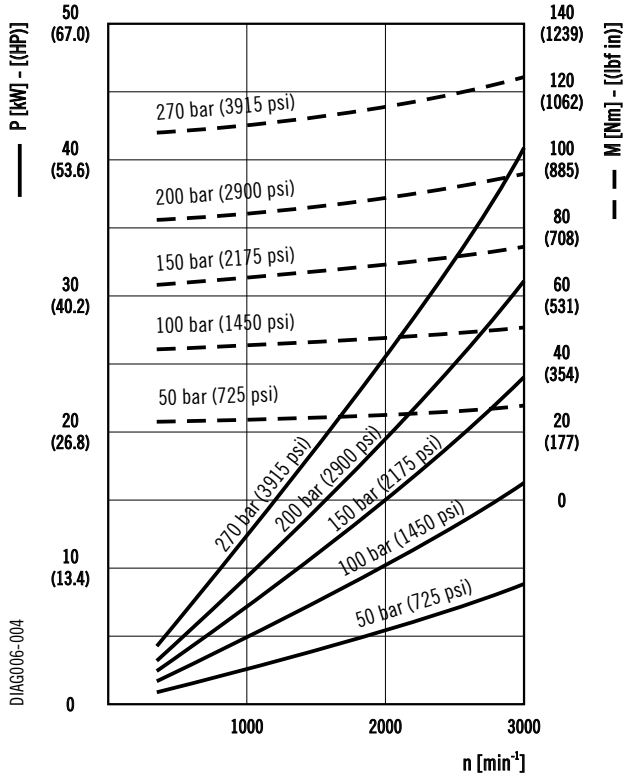
KP 30•22	—	20 bar (290 psi)
	- -	270 bar (3915 psi)
KP 30•31	—	20 bar (290 psi)
	- -	250 bar (3625 psi)
KP 30•41	—	20 bar (290 psi)
	- -	250 bar (3625 psi)
KP 30•46	—	20 bar (290 psi)
	- -	210 bar (3045 psi)

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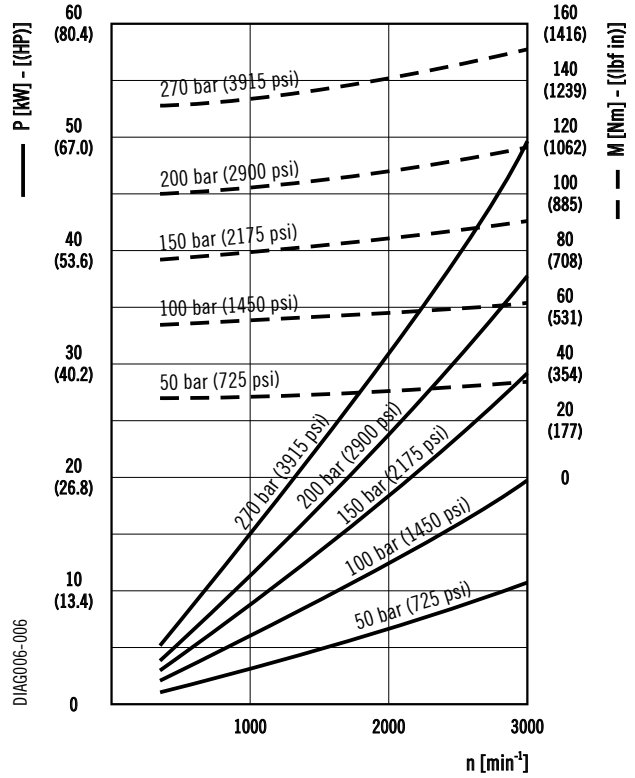
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GEAR PUMPS PERFORMANCE CURVES

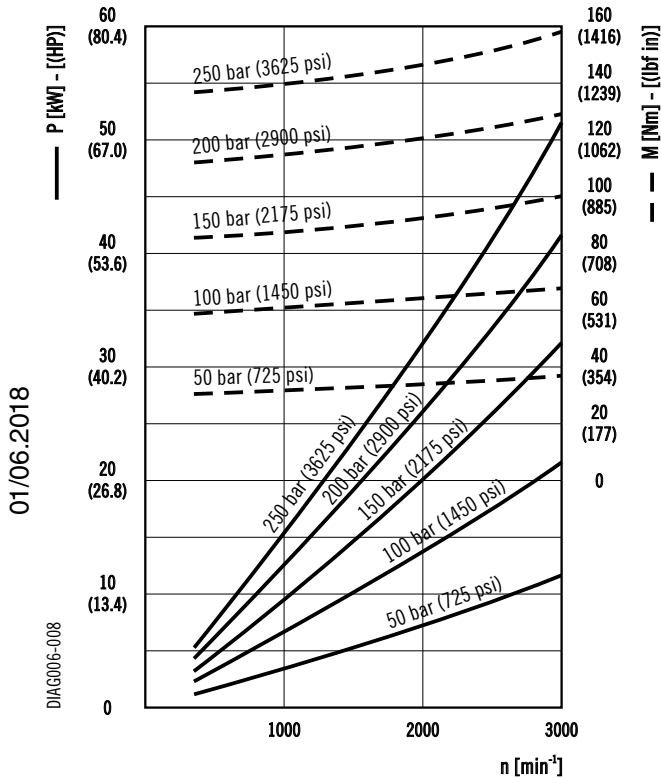
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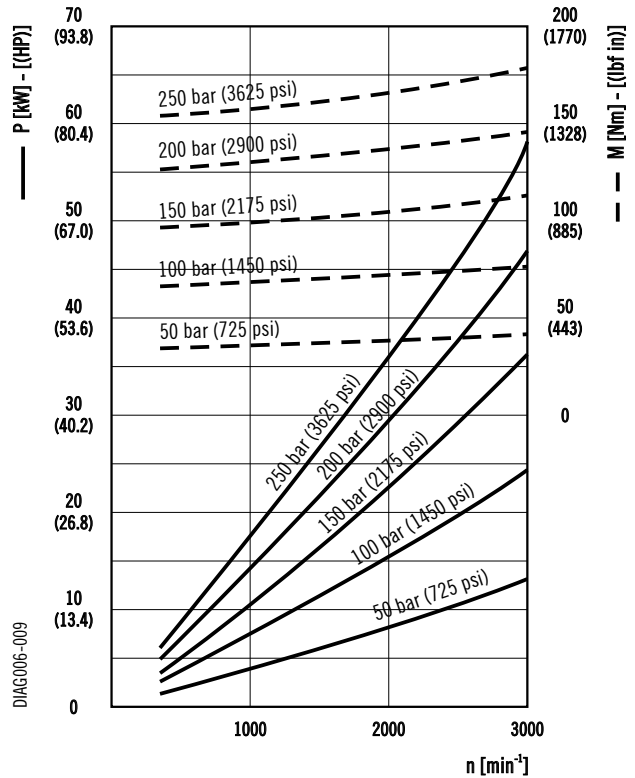
KP 30•27



KP 30•31



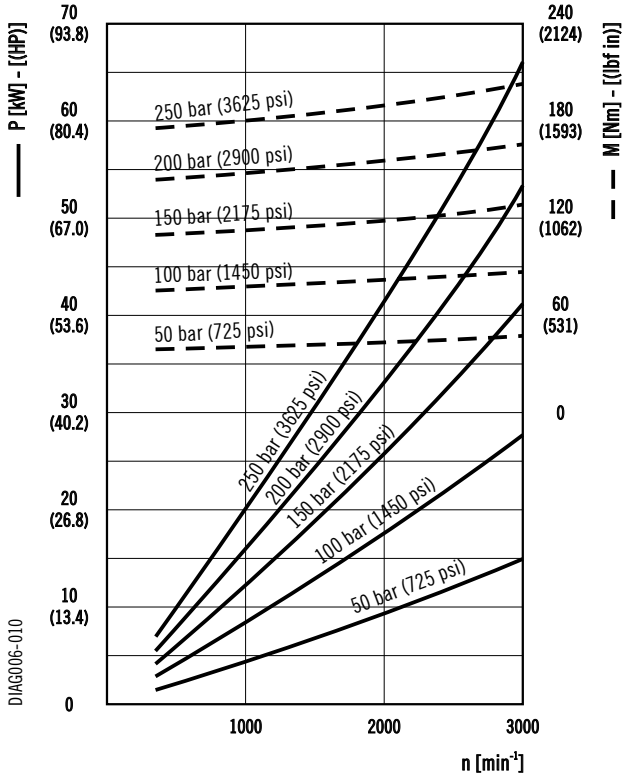
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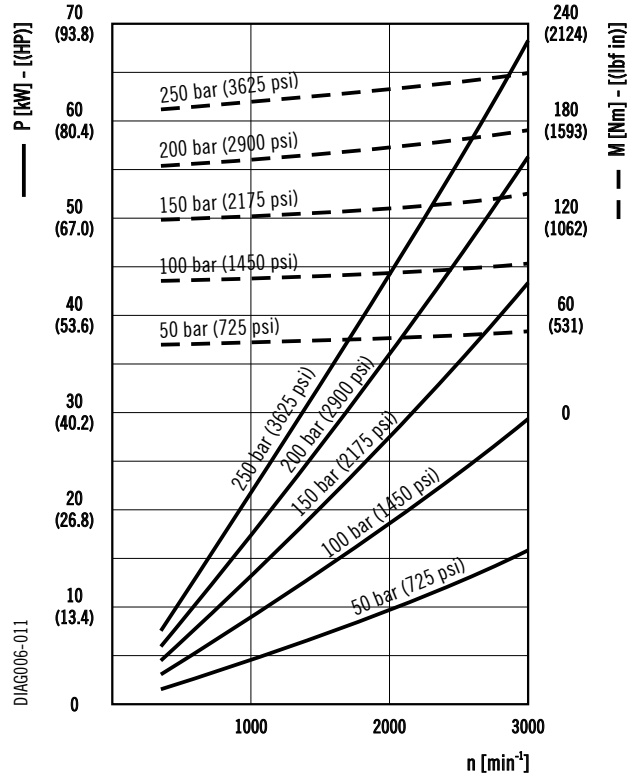
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GEAR PUMPS PERFORMANCE CURVES

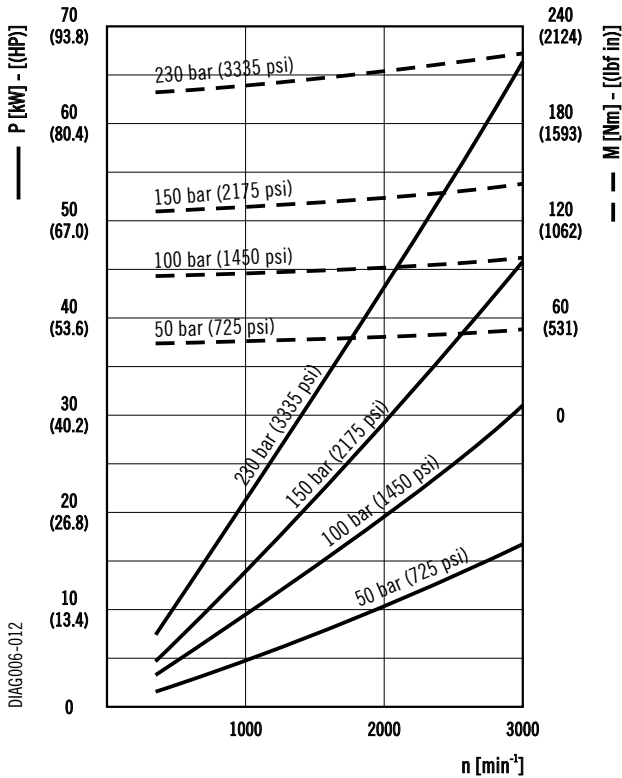
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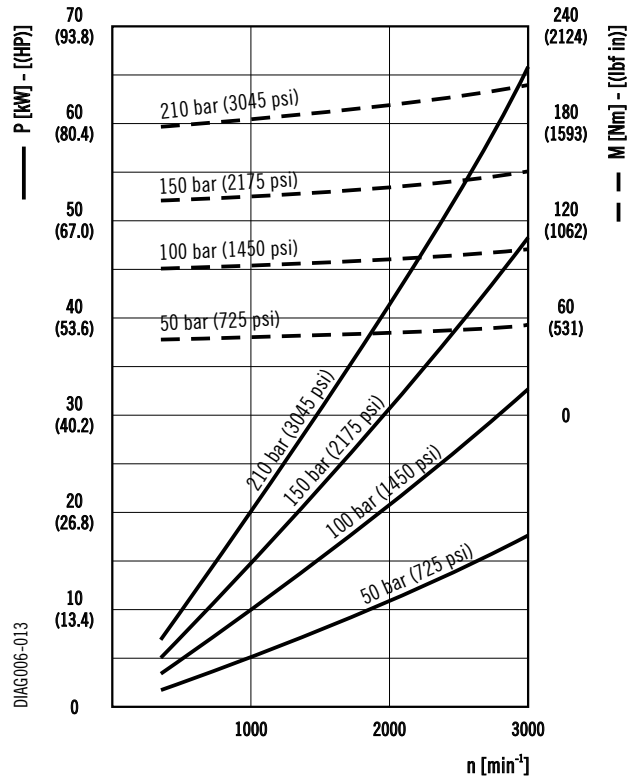
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KP 30•43



KP 30•46

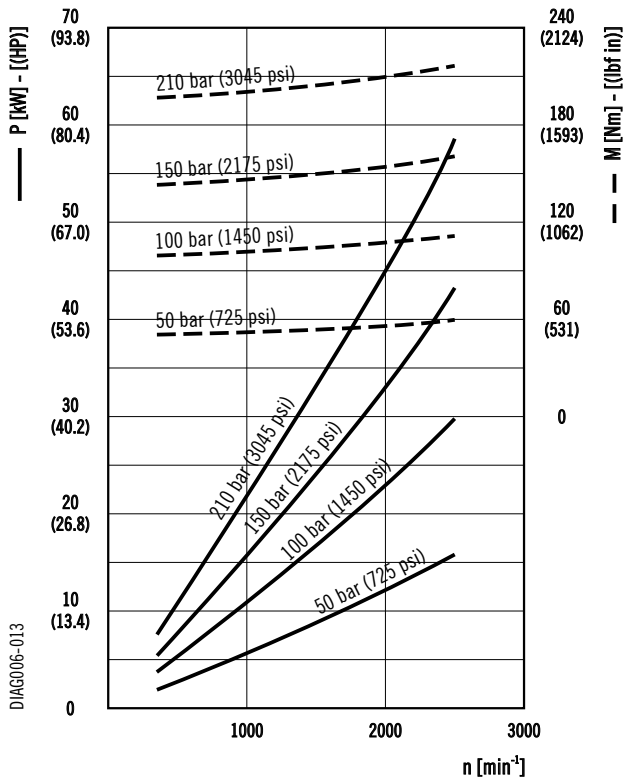


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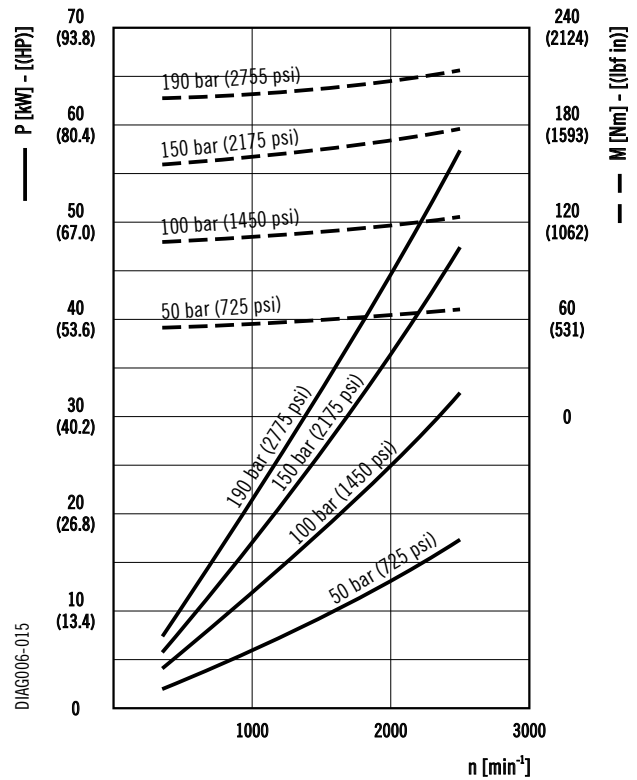
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GEAR PUMPS PERFORMANCE CURVES

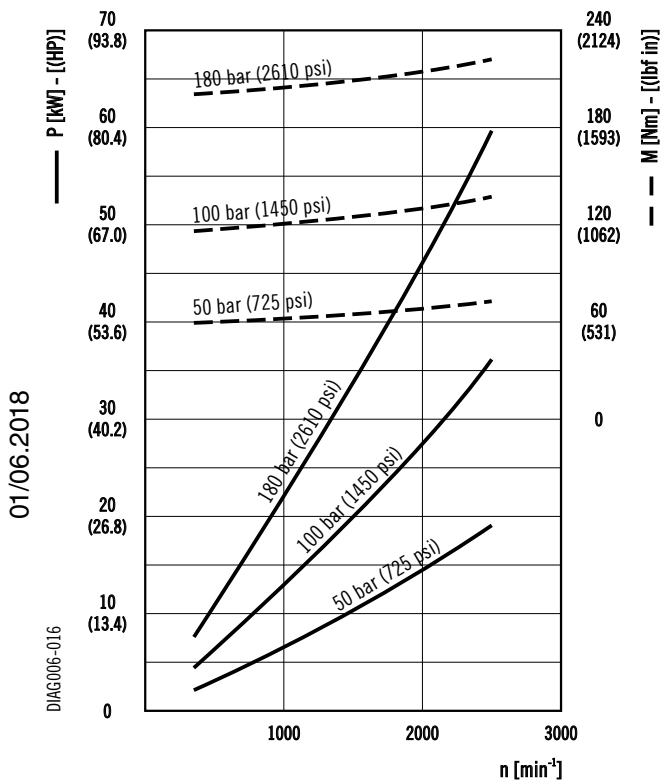
KP 30•51



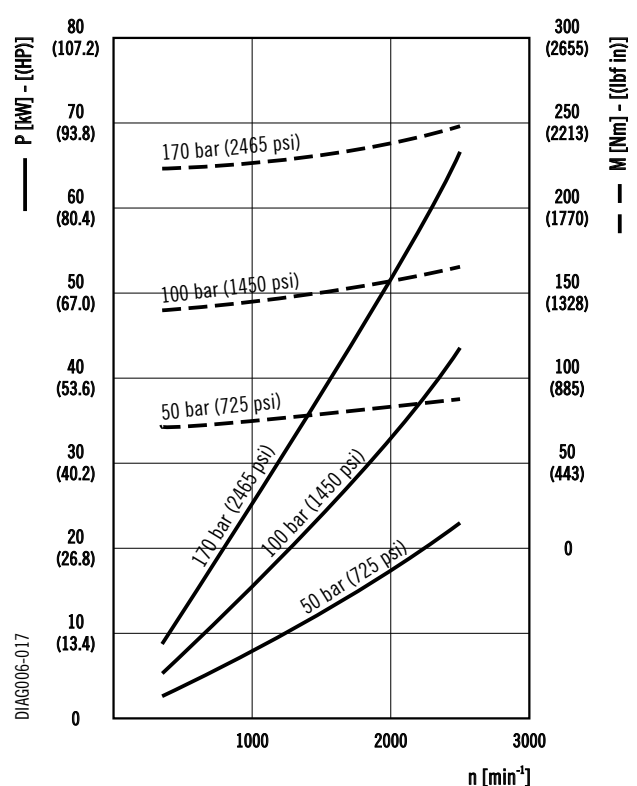
KP 30•56



KP 30•61



KP 30•73

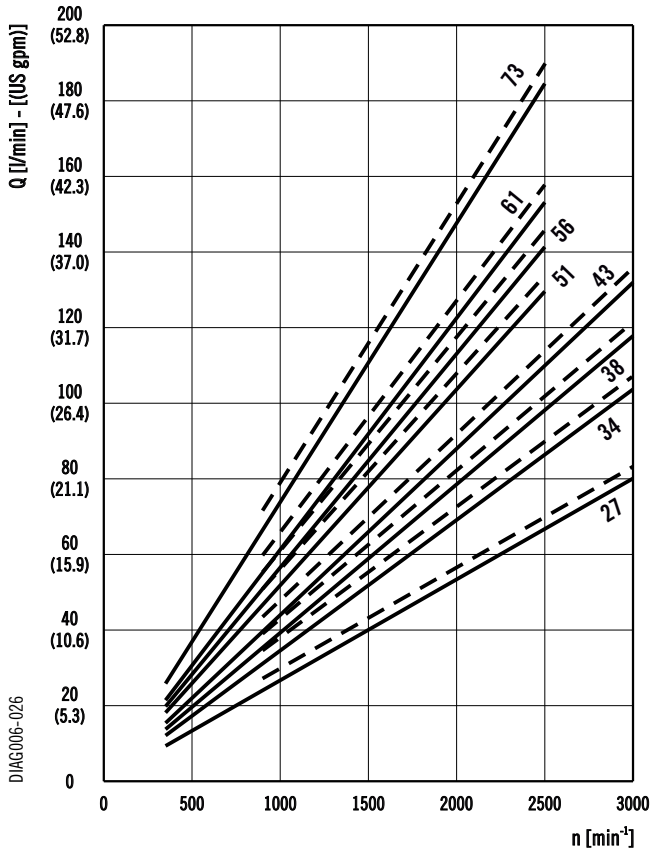


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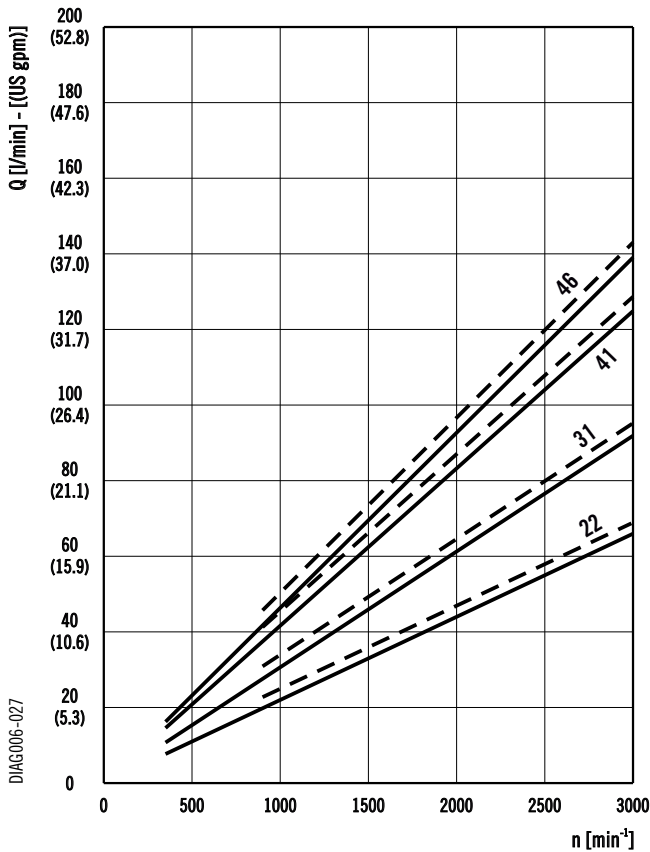
GEAR MOTORS PERFORMANCE CURVES

Diagrams refer to standard performance motors.

Each curve has been obtained at 50°C (122 °F), using oil with viscosity 36 cSt (168 SSU) at 40°C (104 °F) and at these pressures.



KM 30•27	—	20 bar (290 psi)
	- -	270 bar (3915 psi)
KM 30•34	—	20 bar (290 psi)
	- -	250 bar (3625 psi)
KM 30•38	—	20 bar (290 psi)
	- -	250 bar (3625 psi)
KM 30•43	—	20 bar (290 psi)
	- -	230 bar (3335 psi)
KM 30•51	—	20 bar (290 psi)
	- -	210 bar (3045 psi)
KM 30•56	—	20 bar (290 psi)
	- -	190 bar (2755 psi)
KM 30•61	—	20 bar (290 psi)
	- -	180 bar (2610 psi)
KM 30•73	—	20 bar (290 psi)
	- -	170 bar (2465 psi)



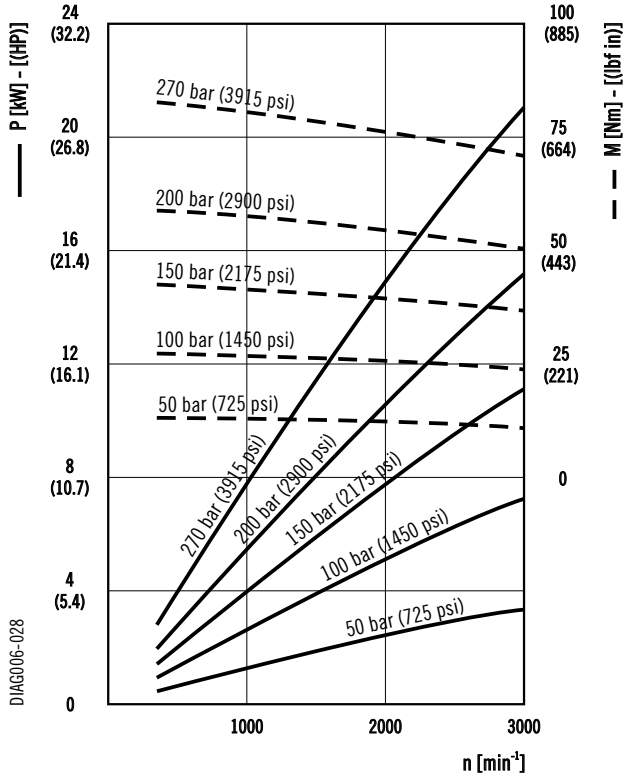
KM 30•22	—	20 bar (290 psi)
	- -	270 bar (3915 psi)
KM 30•31	—	20 bar (290 psi)
	- -	250 bar (3625 psi)
KM 30•41	—	20 bar (290 psi)
	- -	250 bar (3625 psi)
KM 30•46	—	20 bar (290 psi)
	- -	210 bar (3045 psi)

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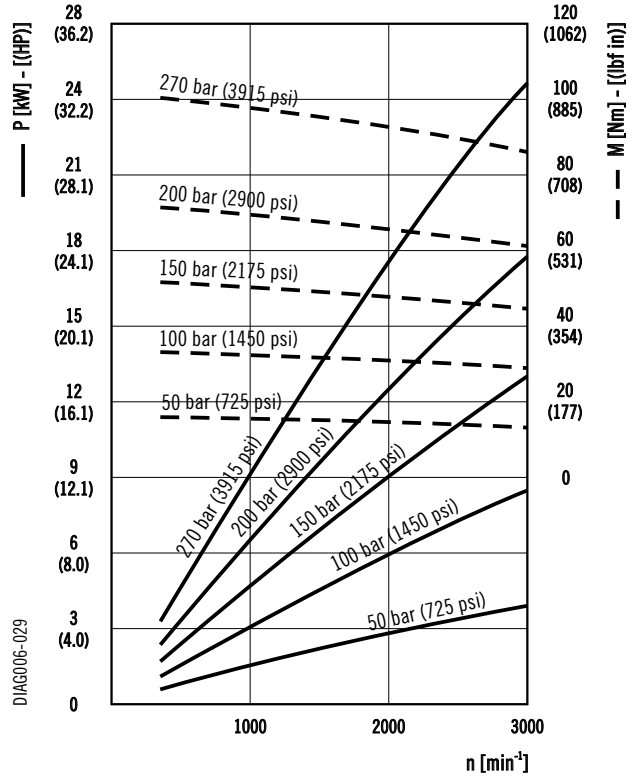
KM 30

GEAR MOTORS PERFORMANCE CURVES

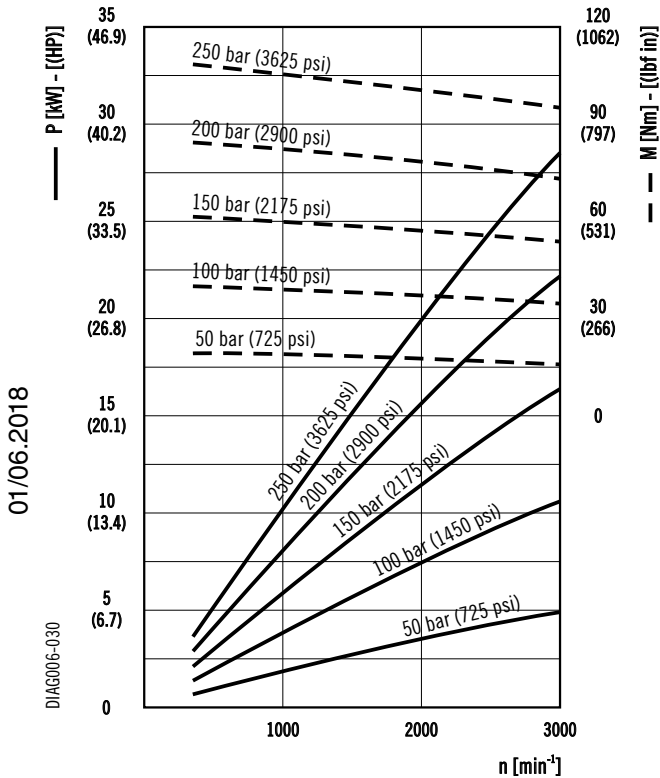
KM 30•22



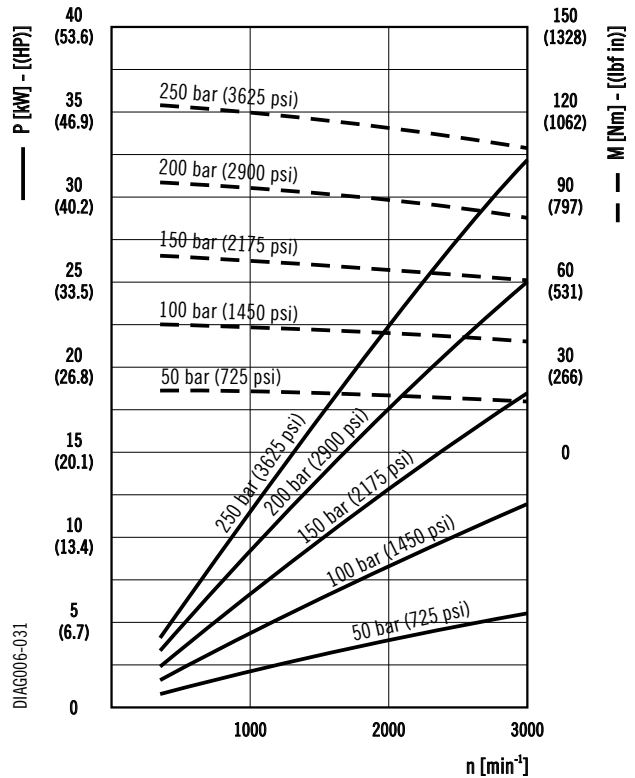
KM 30•27



KM 30•31



KM 30•34

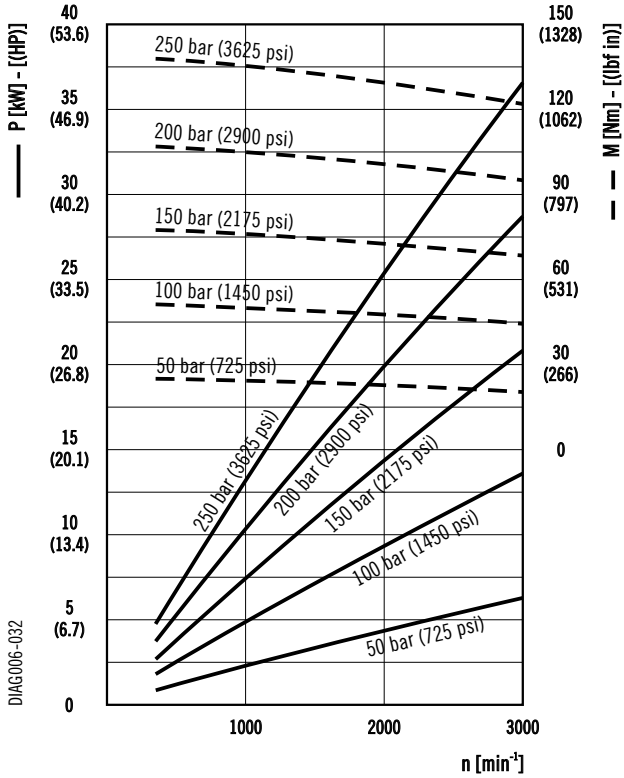


01/06.2018

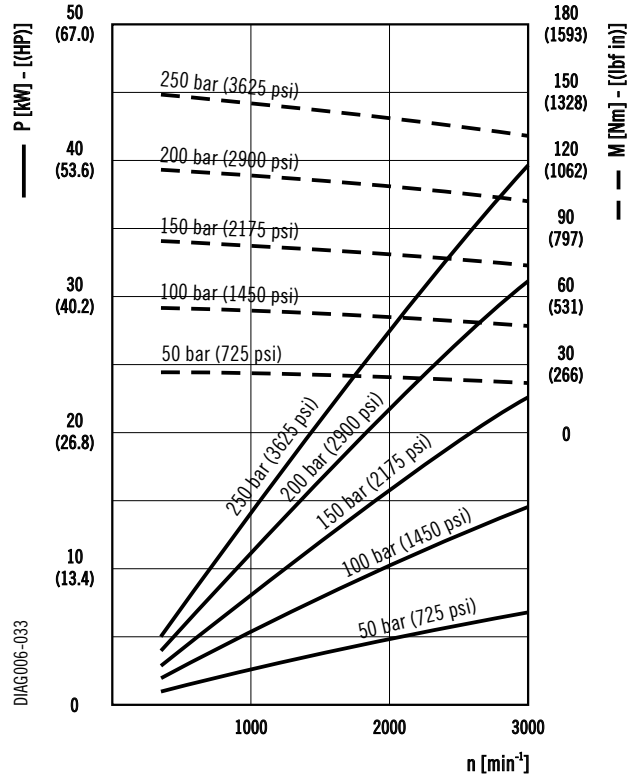
KM 30

GEAR MOTORS PERFORMANCE CURVES

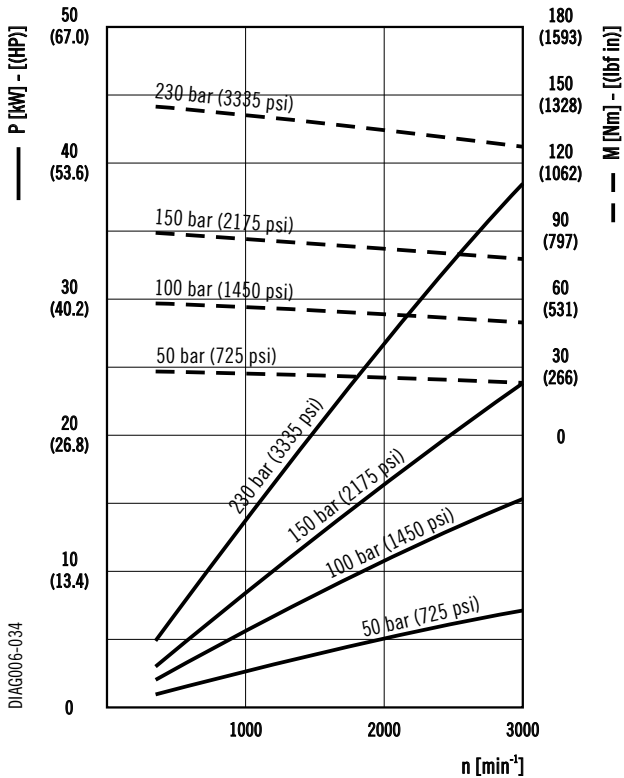
KM 30•38



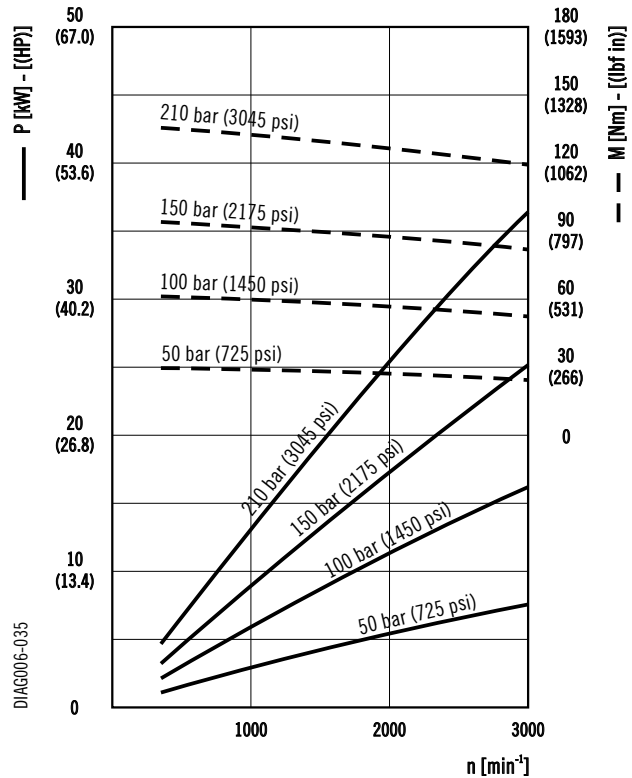
KM 30•41



KM 30•43



KM 30•46

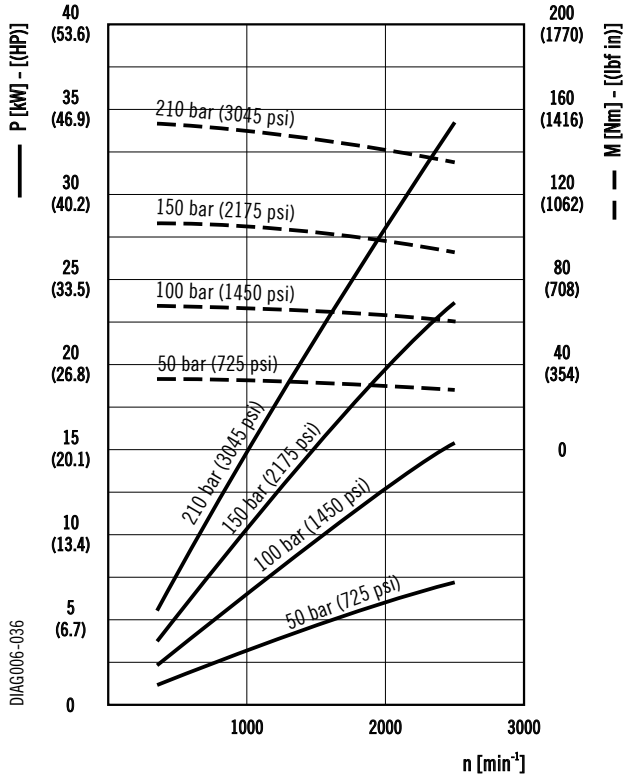


01/06.2018

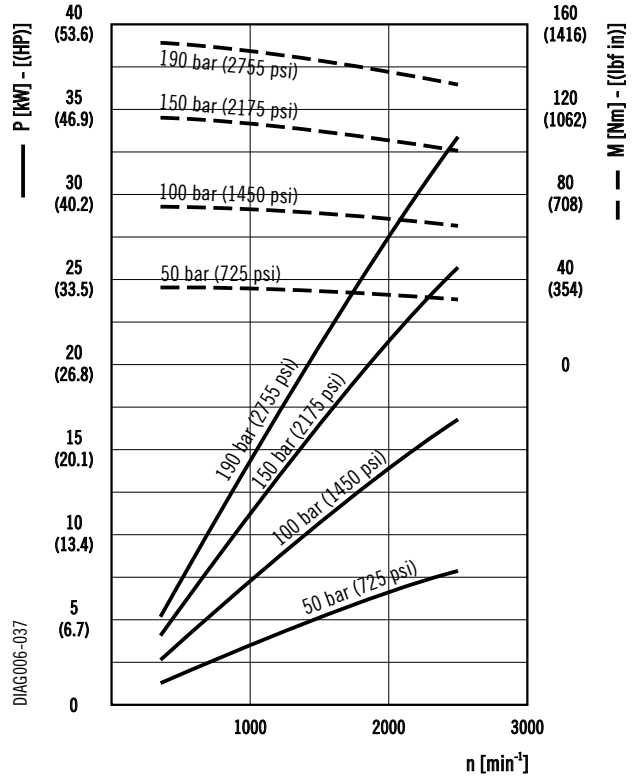
KM 30

GEAR MOTORS PERFORMANCE CURVES

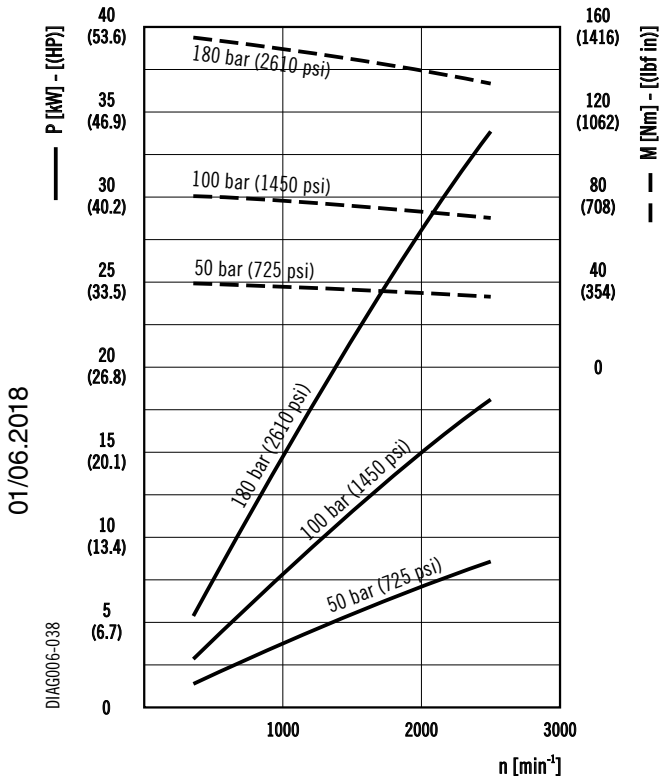
KM 30•51



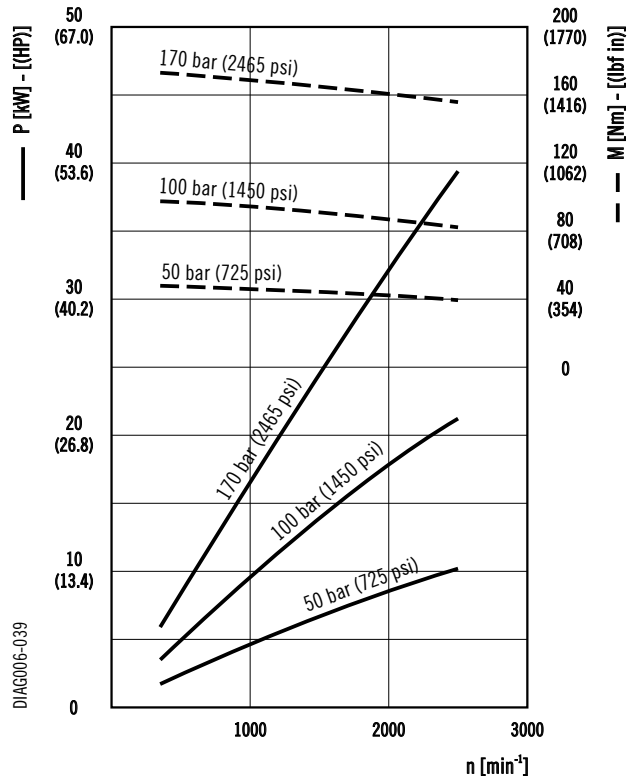
KM 30•56



KM 30•61



KM 30•73



KAPPA 30

SINGLE UNITS DIMENSIONS - SIDE PORTS

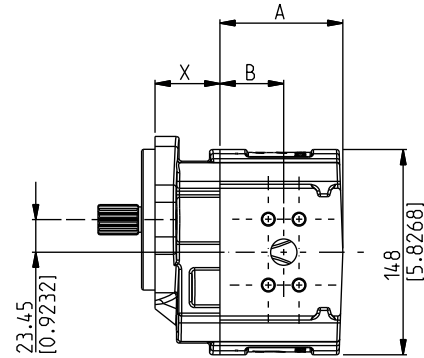
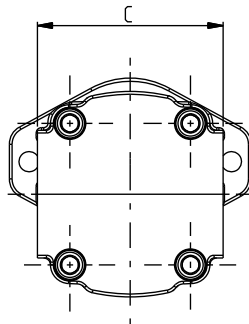
CSC

Body design: CSC
Characteristics: Standard

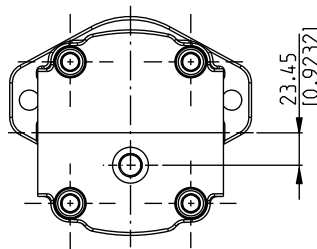
Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see
pages 40 ÷ 44

Ports availability: European, Split, Gas,
SAE. See page 45

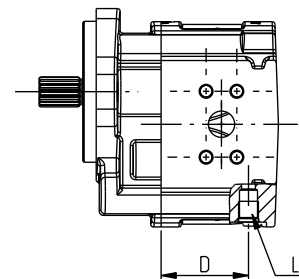
DCAT_006_007_03571388



Unidirectional rotation S-D and reversible rotation B



Reversible rotation R



Reversible rotation L

Pump type Motor type	A		B		C		D
	mm (inch)		mm (inch)		European - Split ports mm (inch)		Gas - SAE ports mm (inch)
K. 30•22	80,5 (3.17)	38 (1.50)	134 (5.28)		142 (5.59)		61,5 (2.42)
K. 30•27	83,5 (3.29)	41 (1.61)	134 (5.28)		142 (5.59)		64,7 (2.55)
K. 30•31	86 (3.39)	43,5 (1.71)	134 (5.28)		142 (5.59)		67 (2.64)
K. 30•34	88,5 (3.48)	46 (1.811)	134 (5.28)		142 (5.59)		69,5 (2.74)
K. 30•38	91,5 (3.60)	49 (1.93)	134 (5.28)		142 (5.59)		69,5 (2.74)
K. 30•41	93 (3.66)	50,5 (1.99)	134 (5.28)		142 (5.59)		73 (2.87)
K. 30•43	94,5 (3.72)	52 (2.05)	134 (5.28)		142 (5.59)		74,5 (2.93)
K. 30•46	96 (3.79)	53,5 (2.10)	134 (5.28)		142 (5.59)		76 (2.99)
K. 30•51	99,5 (3.92)	57 (2.24)	134 (5.28)		142 (5.59)		79,5 (3.13)
K. 30•56	102,5 (4.04)	60 (2.36)	134 (5.28)		142 (5.59)		82,5 (3.25)
K. 30•61	105,5 (4.15)	63 (2.48)	134 (5.28)		142 (5.59)		86 (3.39)
K. 30•73	113,5 (4.47)	71 (2.80)	134 (5.28)		142 (5.59)		94 (3.70)

01/10.2018

KAPPA 30

SINGLE UNITS DIMENSIONS - REAR PORTS

CSC

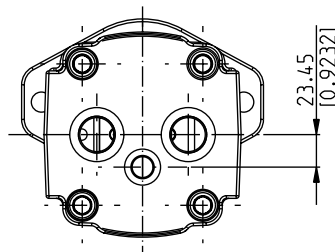
Body design: CSC
Characteristics: Standard

Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see
pages 40 ÷ 44

Ports availability: Gas, SAE.
See page 45



Unidirectional rotation S-D and reversible rotation B



Reversible rotation R

01/10.2018

Pump type Motor type	A
	mm (inch)
K. 30•22	76 (2.99)
K. 30•27	79 (3.11)
K. 30•31	81,5 (3.21)
K. 30•34	84 (3.31)
K. 30•38	87 (3.43)
K. 30•41	88,5 (3.48)
K. 30•43	90 (3.54)
K. 30•46	91,5 (3.60)
K. 30•51	95 (3.74)
K. 30•56	98 (3.86)
K. 30•61	101 (3.98)
K. 30•73	109 (4.29)

KAPPA 30

SINGLE UNITS DIMENSIONS - SIDE PORTS

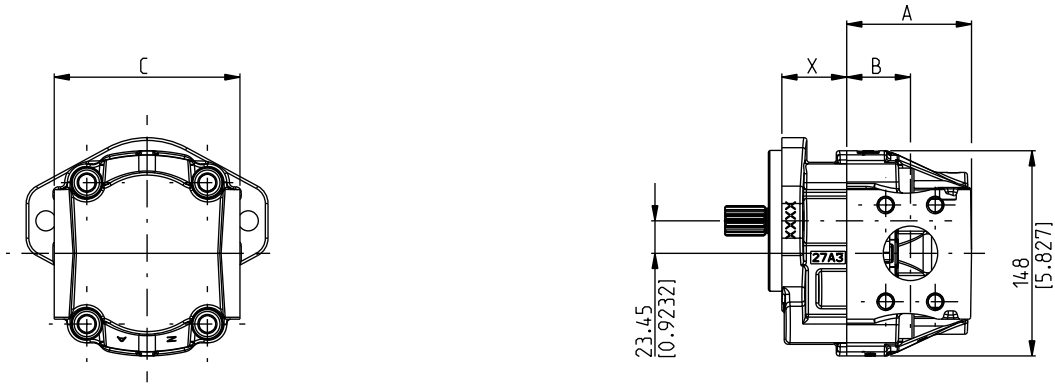
HSC

Body design: HSC
Characteristics: Compact

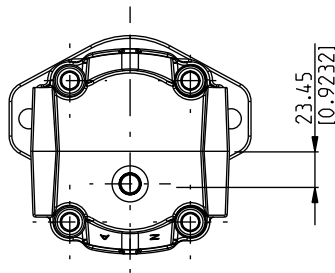
Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see
pages 40 ÷ 44

Ports availability: European, Split, Gas,
SAE. See page 45

DCAT006-200_035700LH



Unidirectional rotation S-D and reversible rotation B



Reversible rotation R

Pump type Motor type	A		B		C	
	mm (inch)		mm (inch)		mm (inch)	
					European - Split ports	Gas - SAE ports
K. 30•22	80,5 (3.17)	38 (1.50)	134 (5.28)	142 (5.59)		
K. 30•27	83,5 (3.29)	41 (1.61)	134 (5.28)	142 (5.59)		
K. 30•31	86 (3.39)	43,5 (1.71)	134 (5.28)	142 (5.59)		
K. 30•34	88,5 (3.48)	46 (1.81)	134 (5.28)	142 (5.59)		
K. 30•38	88,5 (3.48)	46 (1.81)	134 (5.28)	142 (5.59)		

01/10.2018

KAPPA 30

SINGLE UNITS DIMENSIONS - REAR PORTS

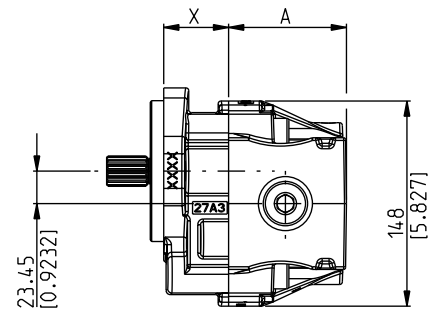
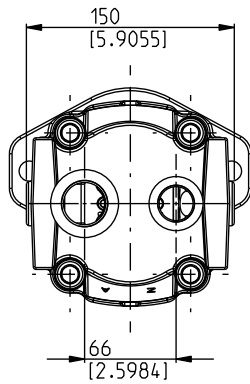
HSC

Body design: HSC
Characteristics: Compact

Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see
pages 40 ÷ 44

Ports availability: Gas, SAE.
See page 45

DCAT006-225



Unidirectional rotation S-D

01/10.2018

Pump type Motor type	A
	mm (inch)
K. 30•22	80,5 (3.17)
K. 30•27	83,5 (3.29)
K. 30•31	86 (3.39)
K. 30•34	88,5 (3.48)
K. 30•38	88,5 (3.48)

KAPPA 30

SINGLE UNITS DIMENSIONS - SIDE PORTS

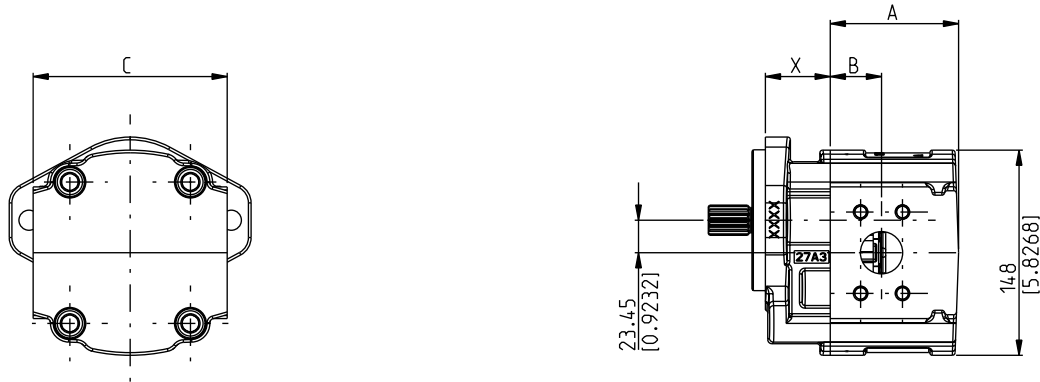
BSC

Body design: BSC
Characteristics: High performance

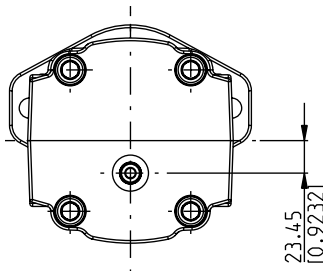
Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see
pages 40 ÷ 44

Ports availability: European, Split, Gas,
SAE. See page 45

DCAT006-216



Unidirectional rotation S-D and reversible rotation B



Reversible rotation R

Pump type Motor type	A mm (inch)	B mm (inch)	C	
			European - Split ports mm (inch)	Gas - SAE ports mm (inch)
K. 30•22	81,6 (3.21)	26 (1.02)	140 (5.51)	148 (5.83)
K. 30•27	84,6 (3.33)	29 (1.14)	140 (5.51)	148 (5.83)
K. 30•31	87,1 (3.43)	31,5 (1.24)	140 (5.51)	148 (5.83)
K. 30•34	89,6 (3.53)	34 (1.34)	140 (5.51)	148 (5.83)
K. 30•38	92,6 (3.65)	37 (1.46)	140 (5.51)	148 (5.83)
K. 30•41	94,1 (3.70)	38,5 (1.52)	140 (5.51)	148 (5.83)
K. 30•43	95,6 (3.76)	40 (1.57)	140 (5.51)	148 (5.83)
K. 30•46	97,1 (3.82)	41,5 (1.63)	140 (5.51)	148 (5.83)

01/10.2018

KAPPA 30

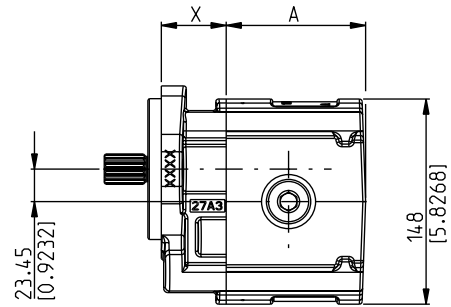
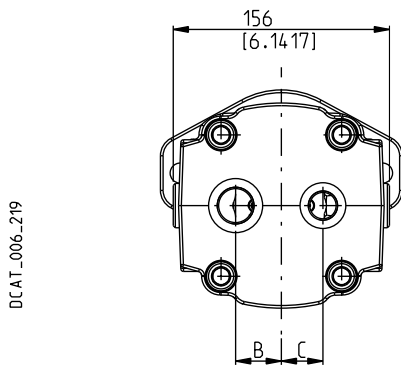
SINGLE UNITS DIMENSIONS - REAR PORTS

BSC

Body design: BSC
Characteristics: High performance

Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see
pages 40 ÷ 44

Ports availability: Gas, SAE.
See page 45



Unidirectional rotation S-D

01/10.2018

	A
Pump type	mm (inch)
Motor type	mm (inch)
K. 30•22	81,6 (3.21)
K. 30•27	84,6 (3.33)
K. 30•31	87,1 (3.43)
K. 30•34	89,6 (3.53)
K. 30•38	92,6 (3.65)
K. 30•41	94,1 (3.70)
K. 30•43	95,6 (3.76)
K. 30•46	97,1 (3.82)

MULTIPLE PUMPS

KAPPA series pumps can be coupled together in combination. In applications where the input power requirement of each section varies, the section with the greater requirement must be at the drive shaft end, and progressively smaller to the rear.

Features and performances are the same as the corresponding single pumps, but pressures must be limited by the transmissible torque of the drive and connecting shafts. To have appropriate data, use the formula below.

The maximum rotational speed is that of the lowest rated speed of the single units incorporated.

Available with common inlet. For more information please consult our pre-sales department.

M	Nm (lbf in)	Torque
V	cm ³ /rev (in ³ /rev)	Displacement
Δp	bar (psi)	Pressure
$\eta_{hm} = \eta_m (V, \Delta p, n)$	(≈ 0,90)	Hydro-mechanical efficiency

$$M = \frac{M_{theor.}}{\eta_{hm}} \quad [Nm]$$

$$M_{theor.} = \frac{\Delta p \text{ (bar)} \cdot V \text{ (cm}^3\text{/rev)}}{62,83}$$

Note:

The torque absorbed from the shaft of the first pump results from the sum of the torques due to all single stages. The achieved value must not exceed the maximum torque limit given for the shaft of the first pump.

For multiple pumps with more than two sections we recommend to use a bracket.

01/10.2018

KAPPA 30

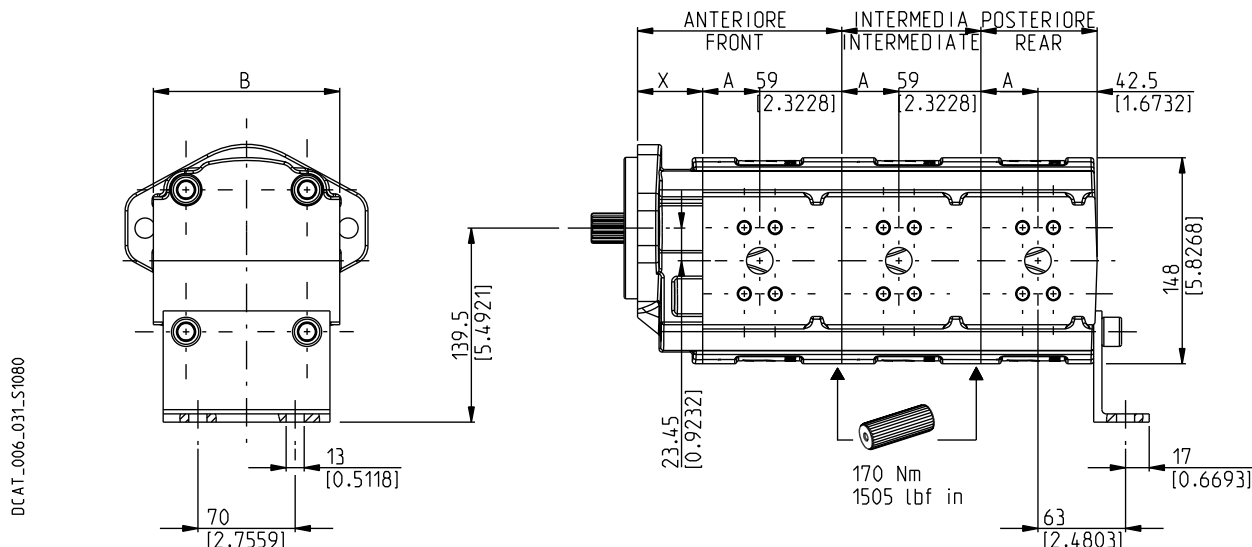
MULTIPLE PUMPS DIMENSIONS - SAME GROUPS

CSL/CSL/CSC

Characteristics: Standard

Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see pages 40 ÷ 44

Ports availability: European, Split, Gas, SAE. See page 45



Special connecting shaft is also available with torque up to 350 Nm (3098 lbf in). Please consult our pre-sales department.

	Front	Intermediate	Rear
Body design	CSL	CSL	CSC

For multiple pumps with more than two sections we recommend to use a bracket.

01/10.2018

Pump type	B		
	A	European ports	Gas ports (BSPP)
		Split ports (SSM) / (SSS)	SAE ports (ODT)
	mm (inch)	mm (inch)	mm (inch)
KP 30•22	38 (1.50)	134 (5.28)	142 (5.59)
KP 30•27	41 (1.61)	134 (5.28)	142 (5.59)
KP 30•31	43,5 (1.71)	134 (5.28)	142 (5.59)
KP 30•34	46 (1.81)	134 (5.28)	142 (5.59)
KP 30•38	49 (1.93)	134 (5.28)	142 (5.59)
KP 30•41	50,5 (1.99)	134 (5.28)	142 (5.59)
KP 30•43	52 (2.05)	134 (5.28)	142 (5.59)
KP 30•46	53,5 (2.11)	134 (5.28)	142 (5.59)
KP 30•51	57 (2.24)	134 (5.28)	142 (5.59)
KP 30•56	60 (2.36)	134 (5.28)	142 (5.59)
KP 30•61	63 (2.48)	134 (5.28)	142 (5.59)
KP 30•73	71 (2.80)	134 (5.28)	142 (5.59)

KAPPA 30

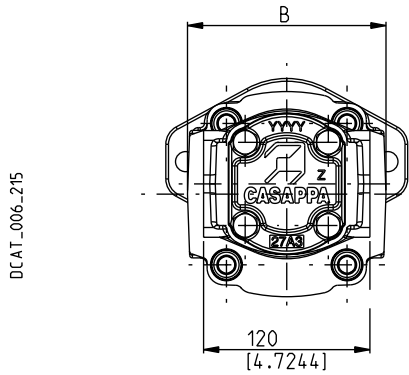
DOUBLE PUMPS DIMENSIONS - KP30/PHP20

CSC

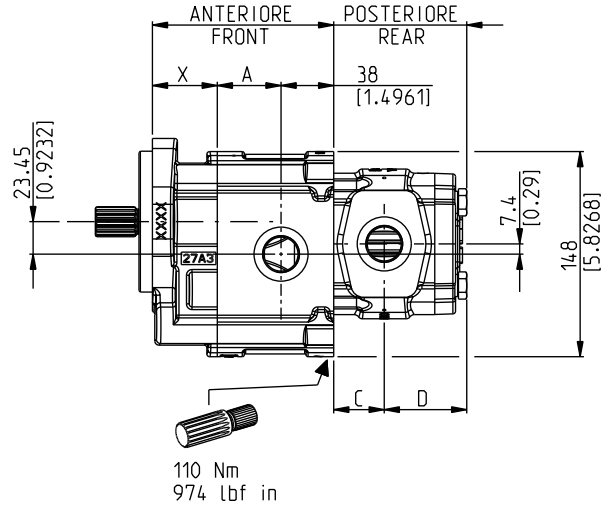
Characteristics: Standard

Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see pages 40 ÷ 44

Ports availability: European, Split, Gas, SAE. See page 45



DCAT_006_215



Special connecting shaft is also available with torque up to 170 Nm (1505 lbf in). Please consult our pre-sales department.

	Front	Rear
Body design	CSC	Polaris PH Series (●)

(●) For features please consult the proper technical catalog

Pump type	B		
	A	Eur. - Split ports	Gas - SAE ports
	mm (inch)	mm (inch)	mm (inch)
KP 30•22	38 (1.50)	134 (5.28)	142 (5.59)
KP 30•27	41 (1.61)	134 (5.28)	142 (5.59)
KP 30•31	43,5 (1.71)	134 (5.28)	142 (5.59)
KP 30•34	46 (1.81)	134 (5.28)	142 (5.59)
KP 30•38	49 (1.93)	134 (5.28)	142 (5.59)
KP 30•41	50,5 (1.99)	134 (5.28)	142 (5.59)
KP 30•43	52 (2.05)	134 (5.28)	142 (5.59)
KP 30•46	53,5 (2.11)	134 (5.28)	142 (5.59)
KP 30•51	57 (2.24)	134 (5.28)	142 (5.59)
KP 30•56	60 (2.36)	134 (5.28)	142 (5.59)
KP 30•61	63 (2.48)	134 (5.28)	142 (5.59)
KP 30•73	71 (2.80)	134 (5.28)	142 (5.59)

Pump type	C	D
	mm (inch)	mm (inch)
PHP 20•8	32,5 (1.28)	47,6 (1.87)
PHP 20•10,5	36,5 (1.44)	47,6 (1.87)
PHP 20•11,2	37 (1.46)	47,6 (1.87)
PHP 20•14	42 (1.65)	47,6 (1.87)
PHP 20•16	34,75 (1.37)	58,35 (2.30)
PHP 20•18	35,85 (1.41)	59,45 (2.34)
PHP 20•19	36,45 (1.44)	60,05 (2.36)
PHP 20•20	38 (1.50)	61,6 (2.43)
PHP 20•23	39,65 (1.56)	63,25 (2.49)
PHP 20•24,5	40,8 (1.61)	64,4 (2.54)
PHP 20•25	42 (1.65)	65,6 (2.58)
PHP 20•27,8	43,35 (1.71)	66,95 (2.64)
PHP 20•31,5	47 (1.85)	70,6 (2.78)

01/10.2018

KAPPA 30

DOUBLE PUMPS DIMENSIONS - KP30/PLP20

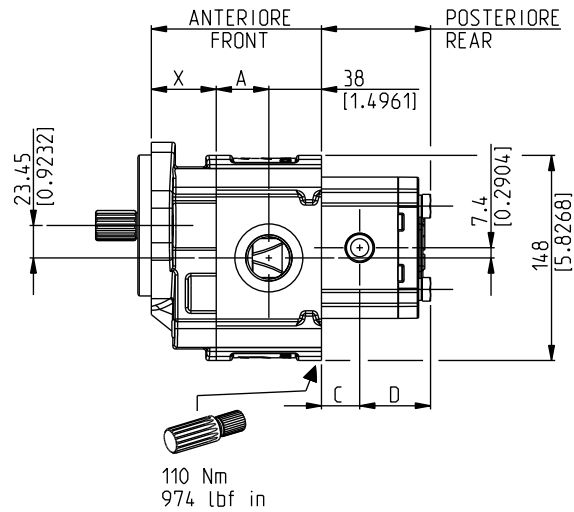
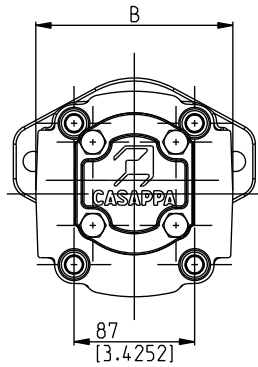
CSC

Characteristics: Standard

Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see
pages 40 ÷ 44

Ports availability: European, Split, Gas,
SAE. See page 45

DCAT_006_033_S1082



Special connecting shaft is also available
with torque up to 170 Nm (1505 lbf in).
Please consult our pre-sales department.

	Front	Rear
Body design	CSC	Polaris 20 Series (●)

(●) For features please consult the proper technical catalog

01/10.2018

Pump type	A mm (inch)	B	
		Eur. - Split ports mm (inch)	Gas - SAE ports mm (inch)
KP 30•22	38 (1.50)	134 (5.28)	142 (5.59)
KP 30•27	41 (1.61)	134 (5.28)	142 (5.59)
KP 30•31	43,5 (1.71)	134 (5.28)	142 (5.59)
KP 30•34	46 (1.81)	134 (5.28)	142 (5.59)
KP 30•38	49 (1.93)	134 (5.28)	142 (5.59)
KP 30•41	50,5 (1.99)	134 (5.28)	142 (5.59)
KP 30•43	52 (2.05)	134 (5.28)	142 (5.59)
KP 30•46	53,5 (2.11)	134 (5.28)	142 (5.59)
KP 30•51	57 (2.24)	134 (5.28)	142 (5.59)
KP 30•56	60 (2.36)	134 (5.28)	142 (5.59)
KP 30•61	63 (2.48)	134 (5.28)	142 (5.59)
KP 30•73	71 (2.80)	134 (5.28)	142 (5.59)

Pump type	C		D	
	mm (inch)		mm (inch)	
PLP 20•4	25,8 (1.02)		49,3 (1.94)	
PLP 20•6,3	27 (1.06)		50,5 (1.99)	
PLP 20•7,2	27,5 (1.08)		51 (2.01)	
PLP 20•8	28,3 (1.11)		51,8 (2.04)	
PLP 20•9	28,9 (1.14)		52,4 (2.063)	
PLP 20•10,5	30,3 (1.19)		53,8 (2.12)	
PLP 20•11,2	30,5 (1.20)		54 (2.13)	
PLP 20•14	33 (1.30)		56,5 (2.22)	
PLP 20•16	34,8 (1.37)		58,3 (2.30)	
PLP 20•19	36,5 (1.44)		60 (2.36)	
PLP 20•20	38 (1.50)		61,5 (2.42)	
PLP 20•24,5	40,8 (1.61)		64,3 (2.53)	
PLP 20•25	42 (1.65)		65,5 (2.58)	
PLP 20•27,8	43,4 (1.71)		66,9 (2.63)	
PLP 20•31,5	47 (1.85)		70,5 (2.78)	

KAPPA 30

DOUBLE PUMPS DIMENSIONS - SAME GROUPS

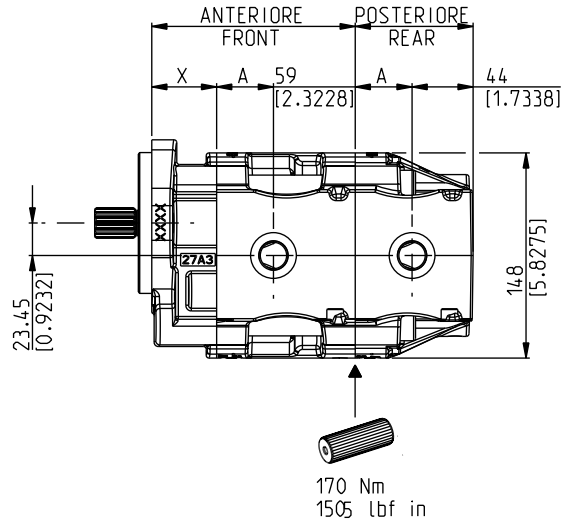
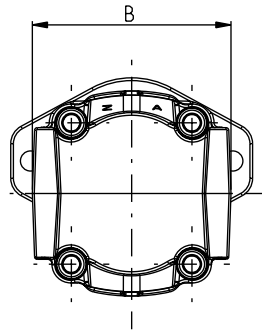
KSL/HSC

Characteristics: Compact

Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see pages 40 ÷ 44

Ports availability: European, Split, Gas, SAE. See page 45

DCAT006-201_PRT14049



Special connecting shaft is also available with torque up to 350 Nm (3098 lbf in). Please consult our pre-sales department.

	Front	Rear
Body design	KSL	HSC

Pump type	A		B	
	mm (inch)	European - Split ports mm (inch)	Gas - SAE ports mm (inch)	
KP 30•22	38 (1.0)	134 (5.28)	142 (5.59)	
KP 30•27	41 (1.61)	134 (5.28)	142 (5.59)	
KP 30•31	43,5 (1.71)	134 (5.28)	142 (5.59)	
KP 30•34	46 (1.81)	134 (5.28)	142 (5.59)	
KP 30•38	46 (1.81)	134 (5.28)	142 (5.59)	

01/10.2018

KAPPA 30

DOUBLE PUMPS DIMENSIONS - KP30/PHP20

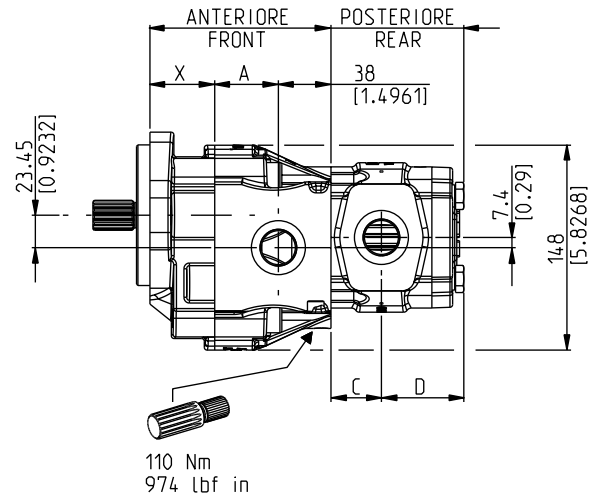
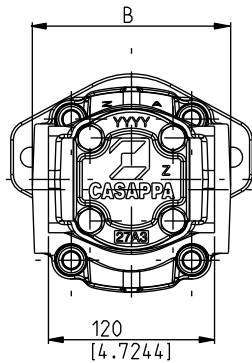
HSC

Characteristics: Compact

Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see pages 40 ÷ 44

Ports availability: European, Split, Gas, SAE. See page 45

DCAT006-202



Special connecting shaft is also available with torque up to 170 Nm (1505 lbf in). Please consult our pre-sales department.

	Front	Rear
Body design	HSC	Polaris PH Series (●)

(●) For features please consult the proper technical catalog

01/10.2018

Pump type	A	B	
	mm (inch)	Eur. - Split ports mm (inch)	Gas - SAE ports mm (inch)
KP 30•22	38 (1.50)	134 (5.28)	142 (5.59)
KP 30•27	41 (1.61)	134 (5.28)	142 (5.59)
KP 30•31	43,5 (1.71)	134 (5.28)	142 (5.59)
KP 30•34	46 (1.81)	134 (5.28)	142 (5.59)
KP 30•38	49 (1.93)	134 (5.28)	142 (5.59)

Pump type	C	D
	mm (inch)	mm (inch)
PHP 20•8	32,5 (1.28)	47,6 (1.87)
PHP 20•10,5	36,5 (1.44)	47,6 (1.87)
PHP 20•11,2	37 (1.46)	47,6 (1.87)
PHP 20•14	42 (1.65)	47,6 (1.87)
PHP 20•16	34,75 (1.37)	58,35 (2.30)
PHP 20•18	35,85 (1.41)	59,45 (2.34)
PHP 20•19	36,45 (1.44)	60,05 (2.36)
PHP 20•20	38 (1.50)	61,6 (2.43)
PHP 20•23	39,65 (1.56)	63,25 (2.49)
PHP 20•24,5	40,8 (1.61)	64,4 (2.54)
PHP 20•25	42 (1.65)	65,6 (2.58)
PHP 20•27,8	43,35 (1.71)	66,95 (2.64)
PHP 20•31,5	47 (1.85)	70,6 (2.78)

KAPPA 30

DOUBLE PUMPS DIMENSIONS - KP30/PLP20

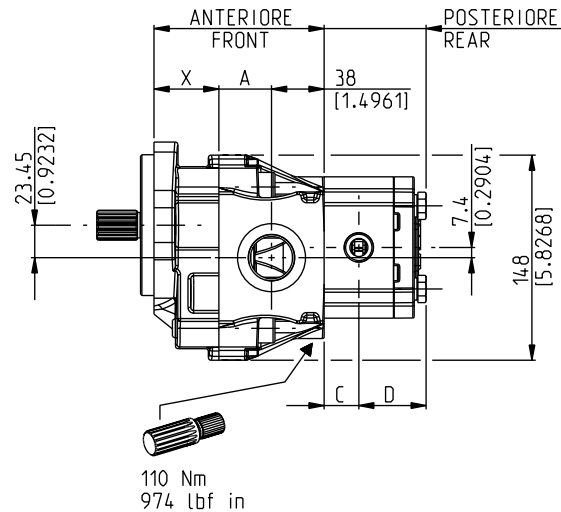
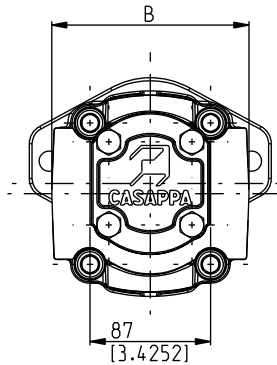
HSC

Characteristics: Compact

Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see pages 40 ÷ 44

Ports availability: European, Split, Gas, SAE. See page 45

DCAT_006_059_N16-2



Special connecting shaft is also available with torque up to 170 Nm (1505 lbf in). Please consult our pre-sales department.

	Front	Rear
Body design	HSC	Polaris 20 Series (●)

(●) For features please consult the proper technical catalog

Pump type	A mm (inch)	B	
		Eur. - Split ports mm (inch)	Gas - SAE ports mm (inch)
KP 30•22	38 (1.50)	134 (5.28)	142 (5.59)
KP 30•27	41 (1.61)	134 (5.28)	142 (5.59)
KP 30•31	43,5 (1.71)	134 (5.28)	142 (5.59)
KP 30•34	46 (1.81)	134 (5.28)	142 (5.59)
KP 30•38	49 (1.93)	134 (5.28)	142 (5.59)

Pump type	C		D
	mm (inch)	mm (inch)	mm (inch)
PLP 20•4	25,8 (1.02)	49,3 (1.94)	
PLP 20•6,3	27 (1.06)	50,5 (1.99)	
PLP 20•7,2	27,5 (1.08)	51 (2.01)	
PLP 20•8	28,3 (1.11)	51,8 (2.04)	
PLP 20•9	28,9 (1.14)	52,4 (2.06)	
PLP 20•10,5	30,3 (1.19)	53,8 (2.12)	
PLP 20•11,2	30,5 (1.20)	54 (2.13)	
PLP 20•14	33 (1.30)	56,5 (2.22)	
PLP 20•16	34,8 (1.37)	58,3 (2.30)	
PLP 20•19	36,5 (1.44)	60 (2.36)	
PLP 20•20	38 (1.50)	61,5 (2.42)	
PLP 20•24,5	40,8 (1.61)	64,3 (2.53)	
PLP 20•25	42 (1.65)	65,5 (2.58)	
PLP 20•27,8	43,4 (1.71)	66,9 (2.63)	
PLP 20•31,5	47 (1.85)	70,5 (2.78)	

01/10.2018

KAPPA 30

DOUBLE PUMPS DIMENSIONS - SAME GROUPS

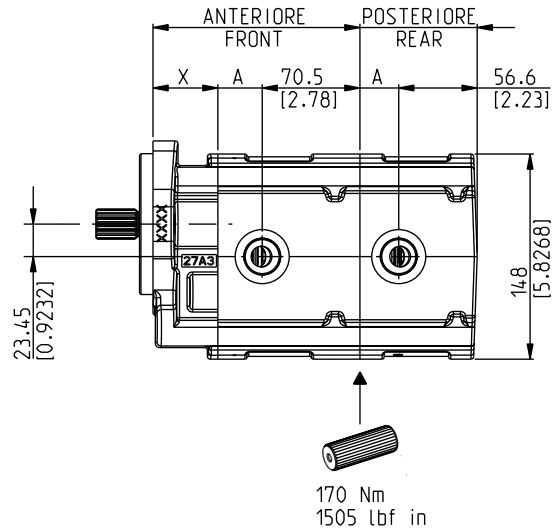
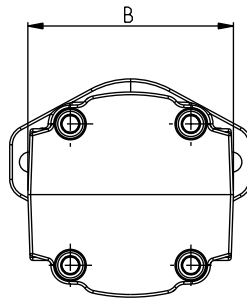
BSL/BSC

Characteristics: High performance

Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see pages 40 ÷ 44

Ports availability: European, Split, Gas, SAE. See page 45

DCAT006-224



Special connecting shaft is also available with torque up to 350 Nm (3098 lbf in). Please consult our pre-sales department.

	Front	Rear
Body design	BSL	BSC

01/10.2018

Pump type	A		B	
	European - Split ports		Gas - SAE ports	
	mm (inch)	mm (inch)	mm (inch)	mm (inch)
K. 30•22	81,6 (3.21)	140 (5.51)	148 (5.83)	
K. 30•27	84,6 (3.33)	140 (5.51)	148 (5.83)	
K. 30•31	87,1 (3.43)	140 (5.51)	148 (5.83)	
K. 30•34	89,6 (3.53)	140 (5.51)	148 (5.83)	
K. 30•38	92,6 (3.65)	140 (5.51)	148 (5.83)	
K. 30•41	94,1 (3.70)	140 (5.51)	148 (5.83)	
K. 30•43	95,6 (3.76)	140 (5.51)	148 (5.83)	
K. 30•46	97,1 (3.82)	140 (5.51)	148 (5.83)	

KAPPA 30

DOUBLE PUMPS DIMENSIONS - KP30/PHP20

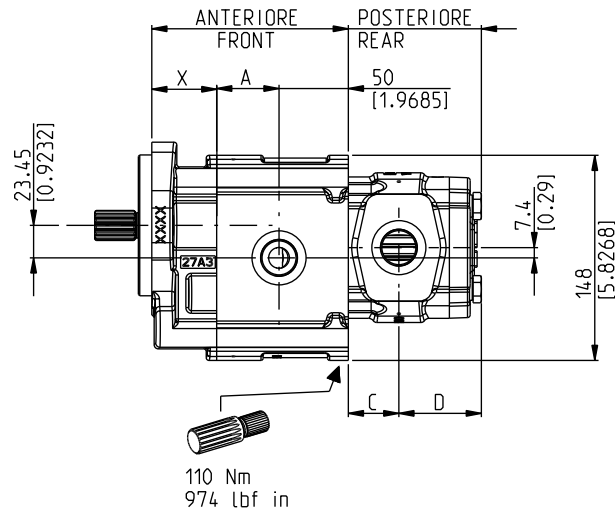
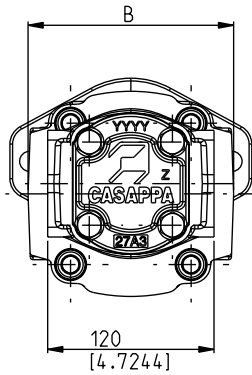
BSC

Characteristics: High performance

Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see pages 40 ÷ 44

Ports availability: European, Split, Gas, SAE. See page 45

DCAT_006-223



Special connecting shaft is also available with torque up to 170 Nm (1505 lbf in). Please consult our pre-sales department.

	Front	Rear
Body design	BSC	Polaris PH Series (●)

(●) For features please consult the proper technical catalog

Pump type	B	
	A	
	Eur. - Split ports	Gas - SAE ports
	mm (inch)	mm (inch)
KP 30•22		
KP 30•27		
KP 30•31		
KP 30•34		
KP 30•38		
KP 30•41		
KP 30•43		
KP 30•46		

Pump type	D	
	C	
	mm (inch)	mm (inch)
PHP 20•8	32,5 (1.28)	47,6 (1.87)
PHP 20•10,5	36,5 (1.44)	47,6 (1.87)
PHP 20•11,2	37 (1.46)	47,6 (1.87)
PHP 20•14	42 (1.65)	47,6 (1.87)
PHP 20•16	34,75 (1.37)	58,35 (2.30)
PHP 20•18	35,85 (1.41)	59,45 (2.34)
PHP 20•19	36,45 (1.44)	60,05 (2.36)
PHP 20•20	38 (1.50)	61,6 (2.43)
PHP 20•23	39,65 (1.56)	63,25 (2.49)
PHP 20•24,5	40,8 (1.61)	64,4 (2.54)
PHP 20•25	42 (1.65)	65,6 (2.58)
PHP 20•27,8	43,35 (1.71)	66,95 (2.64)
PHP 20•31,5	47 (1.85)	70,6 (2.78)

01/10.2018

KAPPA 30

DOUBLE PUMPS DIMENSIONS - KP30/PLP20

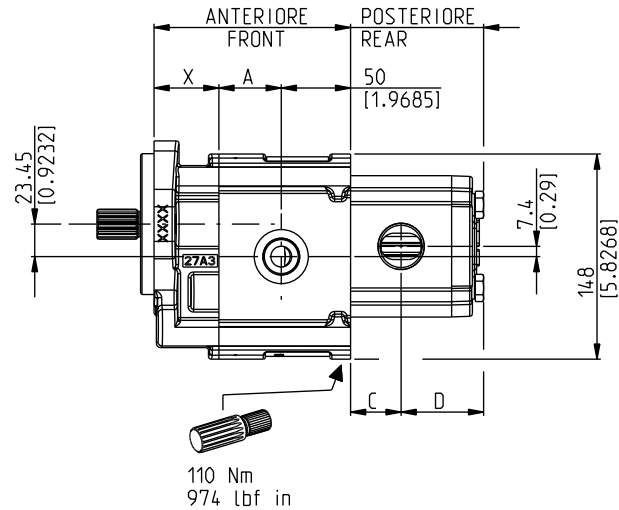
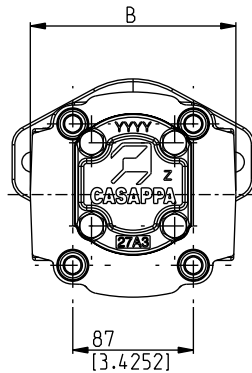
BSC

Characteristics: High performance

Drive shaft: see pages 38 ÷ 39
Mounting flange: for X dimension see pages 40 ÷ 44

Ports availability: European, Split, Gas, SAE. See page 45

DCAT_006_222



Special connecting shaft is also available with torque up to 170 Nm (1505 lbf in). Please consult our pre-sales department.

	Front	Rear
Body design	BSC	Polaris 20 Series (●)

(●) (for features please consult the proper technical catalog)

01/10.2018

Pump type	A mm (inch)	B	
		Eur. - Split ports mm (inch)	Gas - SAE ports mm (inch)
KP 30•22	81,6 (3.21)	140 (5.51)	148 (5.83)
KP 30•27	84,6 (3.33)	140 (5.51)	148 (5.83)
KP 30•31	87,1 (3.43)	140 (5.51)	148 (5.83)
KP 30•34	89,6 (3.53)	140 (5.51)	148 (5.83)
KP 30•38	92,6 (3.65)	140 (5.51)	148 (5.83)
KP 30•41	94,1 (3.70)	140 (5.51)	148 (5.83)
KP 30•43	95,6 (3.76)	140 (5.51)	148 (5.83)
KP 30•46	97,1 (3.82)	140 (5.51)	148 (5.83)

Pump type	C		D	
	mm (inch)	mm (inch)	mm (inch)	mm (inch)
PLP 20•4	25,8 (1.02)	49,3 (1.94)		
PLP 20•6,3	27 (1.06)	50,5 (1.99)		
PLP 20•7,2	27,5 (1.08)	51 (2.01)		
PLP 20•8	28,3 (1.11)	51,8 (2.04)		
PLP 20•9	28,9 (1.14)	52,4 (2.06)		
PLP 20•10,5	30,3 (1.19)	53,8 (2.12)		
PLP 20•11,2	30,5 (1.20)	54 (2.13)		
PLP 20•14	33 (1.30)	56,5 (2.22)		
PLP 20•16	34,8 (1.37)	58,3 (2.30)		
PLP 20•19	36,5 (1.44)	60 (2.36)		
PLP 20•20	38 (1.50)	61,5 (2.42)		
PLP 20•24,5	40,8 (1.61)	64,3 (2.53)		
PLP 20•25	42 (1.65)	65,5 (2.58)		
PLP 20•27,8	43,4 (1.71)	66,9 (2.63)		
PLP 20•31,5	47 (1.85)	70,5 (2.78)		

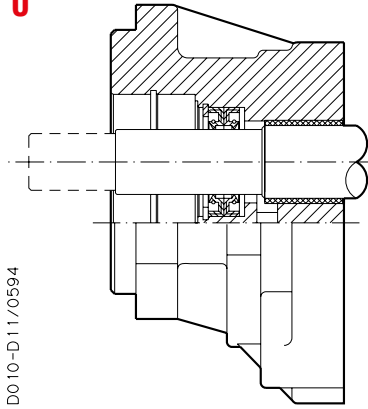
NOTES

01/10.2018

OUTBOARD BEARING OPTIONS

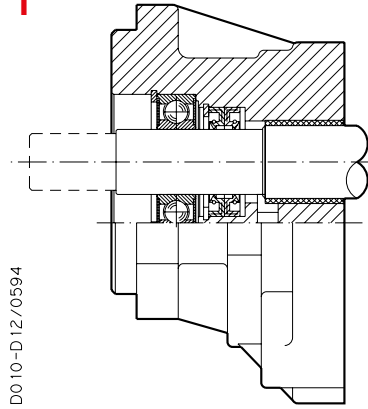
For each version, the possible combination between drive shafts and mounting flanges are shown on pages 40 ÷ 44.

0



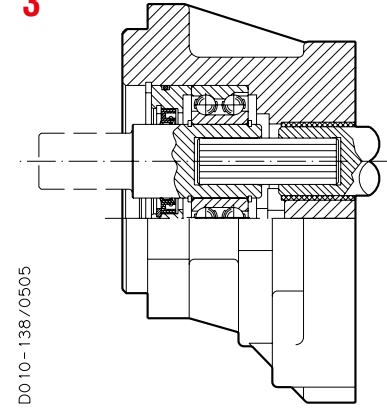
Version for applications without radial and axial load on the drive shaft.

1



Version for applications with low radial load and without axial load on the drive shaft.

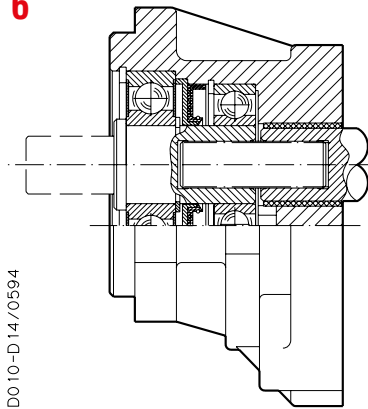
3



Version for applications with radial and axial load on the drive shaft

Max. torque version 3:
KAPPA 30: 170 Nm (1505 lbf in)

6

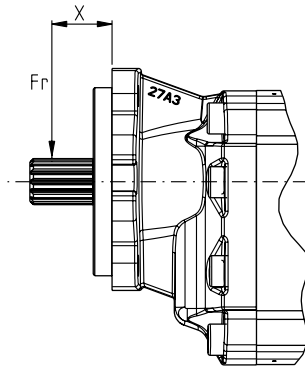


Version for applications with radial and low axial load on the drive shaft.

Max. torque version 6:
KAPPA 30: 170 Nm (1505 lbf in)

01/10.2018

For the outboard bearings life expectancy, diagrams providing approximate selection data will be found on subsequent pages. For particular applications please consult our pre-sales department.



X = Distance of the radial load result from the mounting flange [mm (in)].

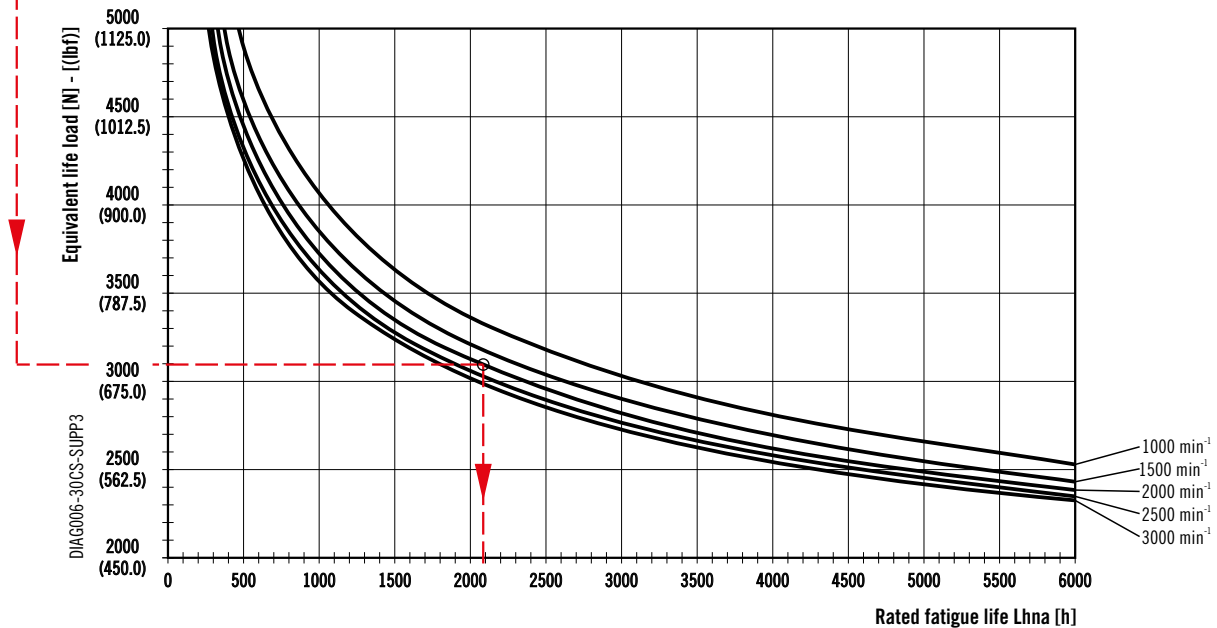
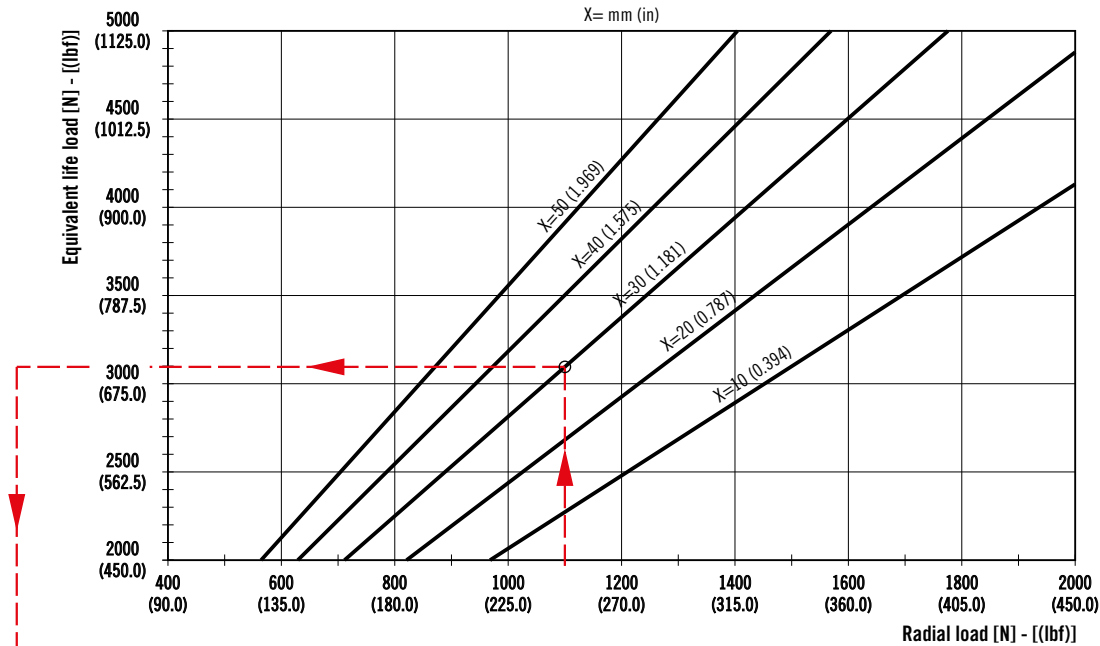
Each curve has been obtained at:

- Lubricant oil ISO VG 46
- Temperature 60 °C (140 °F)
- Without axial load
- Contamination level ISO 281: $\beta_{12} = 200$
- Reliability level of the calculation 90%

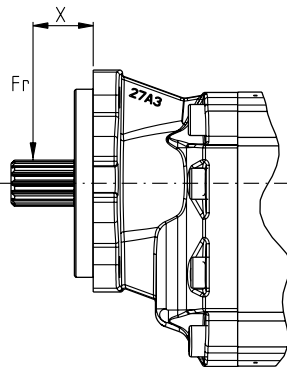
Example

Fr Radial load	1100 N (247.5 lbf)
X	30 mm (1.8111 in)
Speed	2000 min ⁻¹
Rating fatigue life	≈ 2085 h

Values shown in the diagrams are indicative only. For more information please consult our pre-sales department.



01/10.2018



X = Distance of the radial load result from the mounting flange [mm (in)].

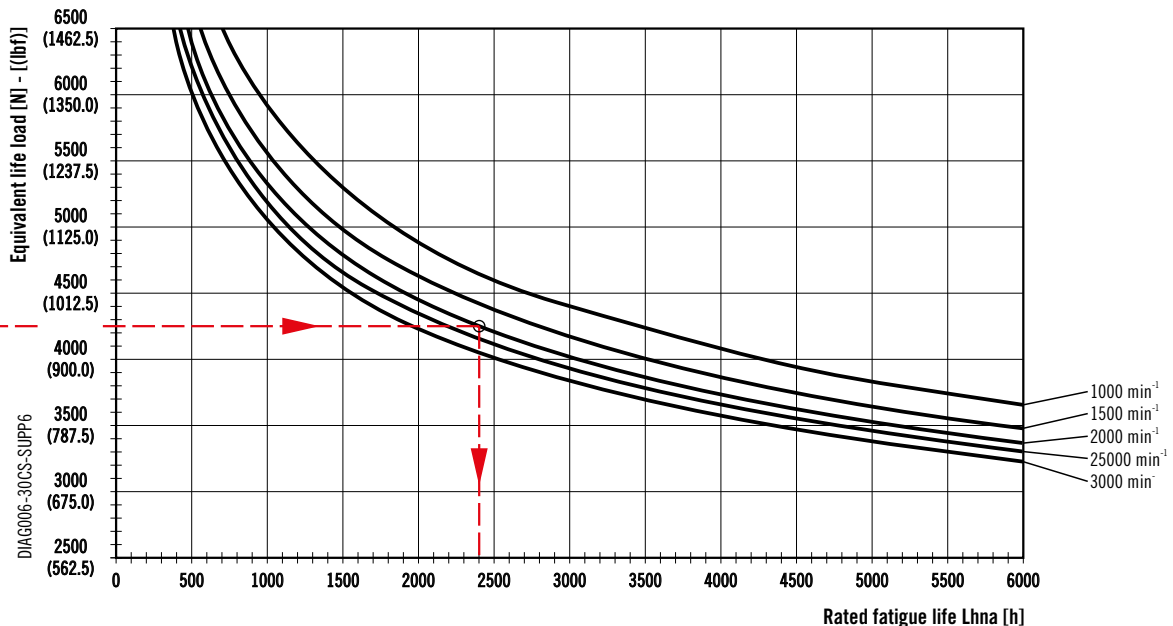
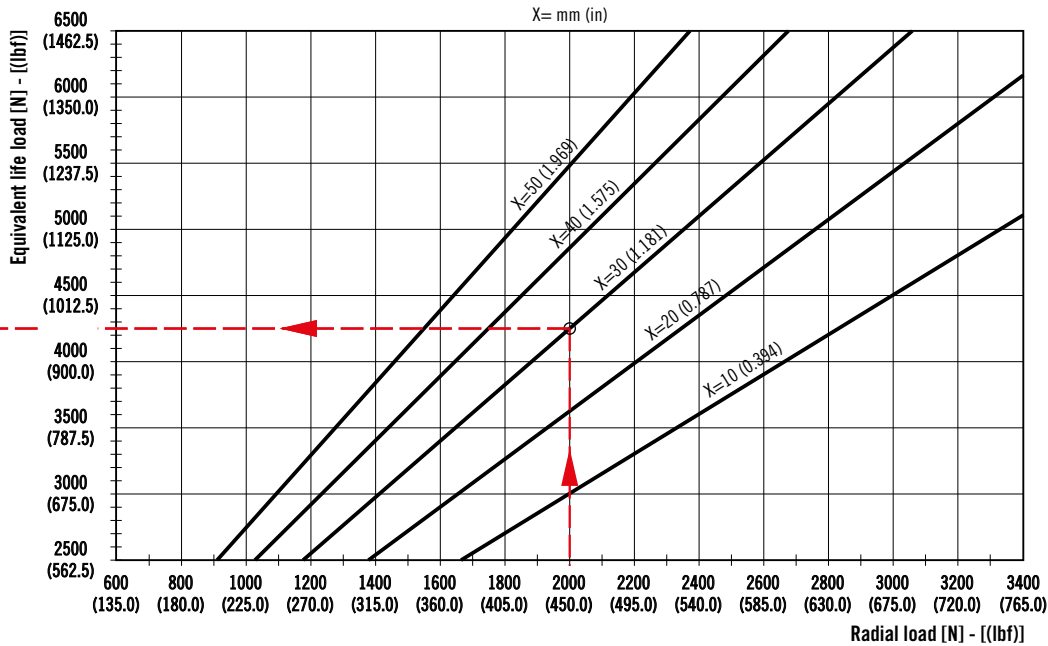
Each curve has been obtained at:

- Lubricant oil ISO VG 46 / grease
- Temperature 60 °C (140 °F)
- Without axial load
- Contamination level ISO 281: $\beta_{12} = 200$
- Reliability level of the calculation 90%

Example

Fr Radial load	2000 N (337.5 lbf)
X	30 mm (1.81 in)
Speed	2000 min ⁻¹
Rating fatigue life	≈ 2400 h

Values shown in the diagrams are indicative only. For more information please consult our pre-sales department.



01/10.2018

DIAG006-30CS-SUPP6

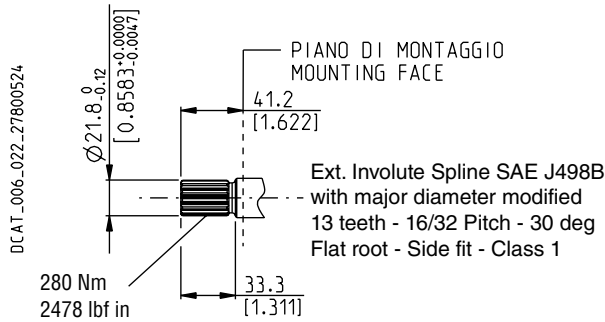
KAPPA 30

DRIVE SHAFTS

SAE "B" SPLINE

A8

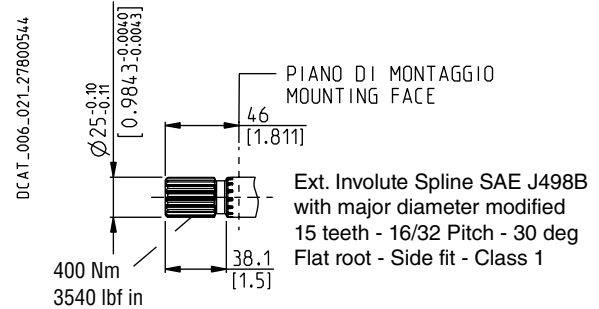
Mounting face refer to flange code **K9**



SAE "BB" SPLINE

A5

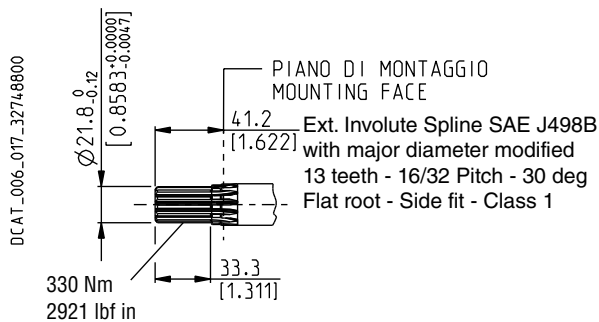
Mounting face refer to flange code **K9**



SAE "B" SPLINE

04

Mounting face refer to flange code **S3**

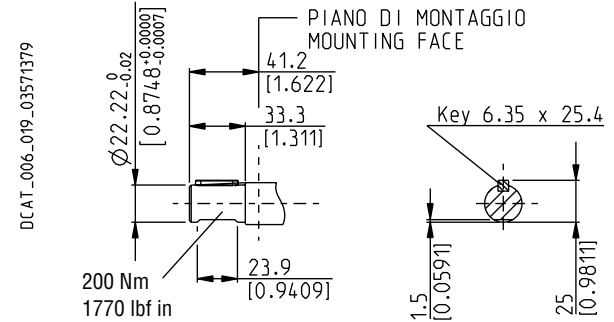


SAE "B" STRAIGHT

32

Not available with size: **30•41 - 30•46**

Mounting face refer to flange code **S3**

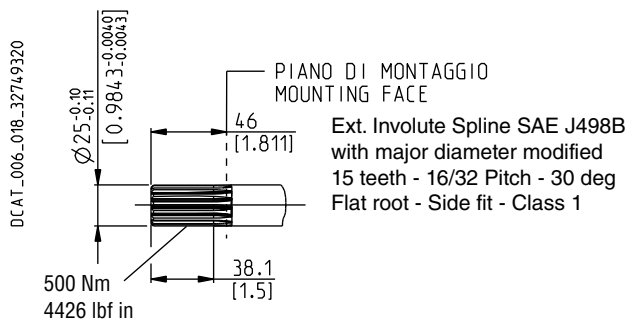


SAE "BB" SPLINE

05

Not available with size: **30•22 - 30•31 - 30•41**

Mounting face refer to flange code **S3**

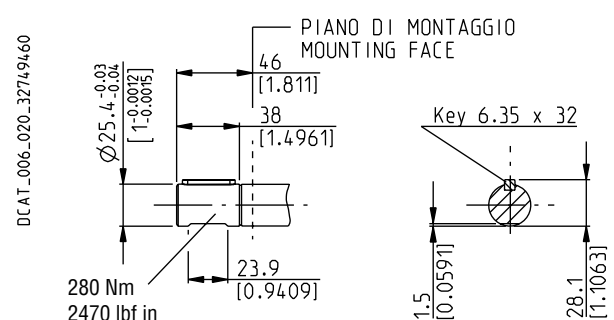


SAE "BB" STRAIGHT

33

Not available with size: **30•31 - 30•41**

Mounting face refer to flange code **S3**



01/10.2018

KAPPA 30

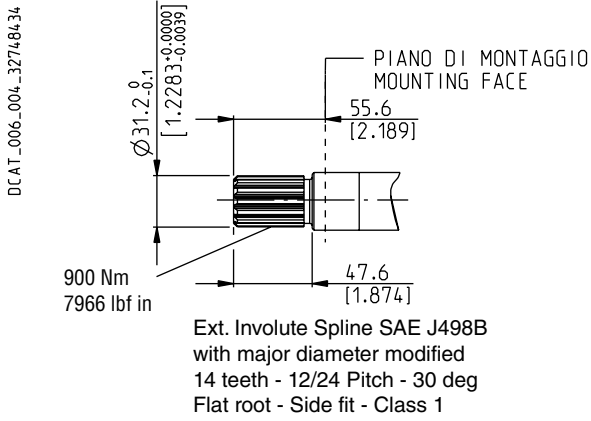
DRIVE SHAFTS

SAE "C" SPLINE

06

Not available with size: **30•41**

Mounting face refer to flange code **S8**

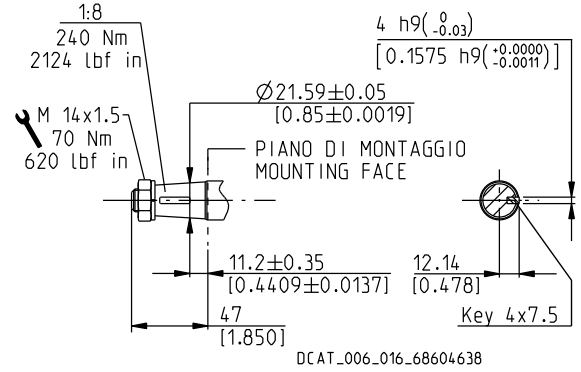


EUROPEAN TAPERED

83

Not available with size: **30•41**

Mounting face refer to flange code **E3**

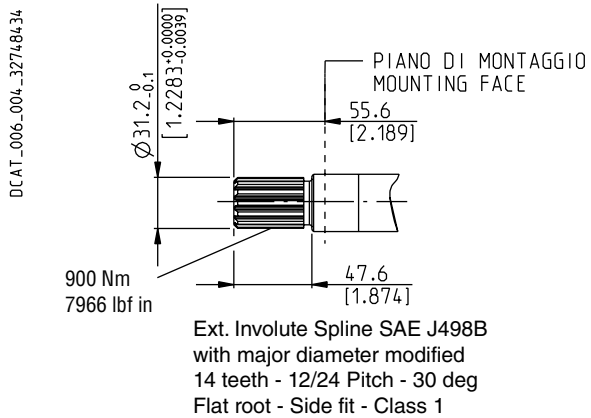


SAE "C" SPLINE - SHORT TYPE

A6

Not available with size: **30•22 - 30•31 - 30•46 - 30•56 - 30•73**

Mounting face refer to flange code **Q3**



01/10.2018

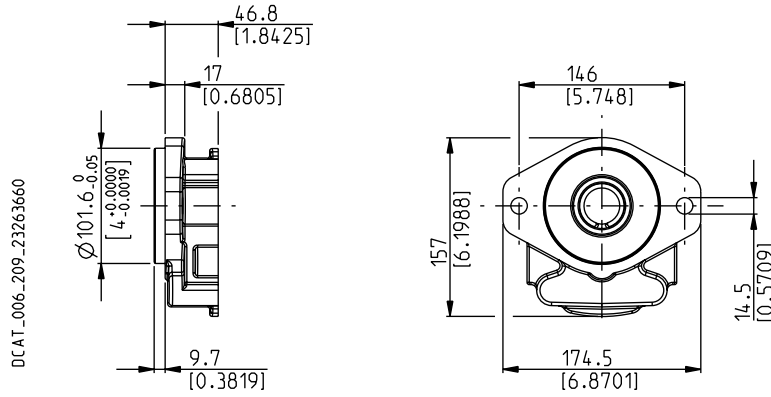
KAPPA 30

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

SAE "B" 2 HOLES

K9

Conforms to SAE J744



DRIVE SHAFTS
See page 38

VERSIONS

See page 35

A8

A5

0

■

●

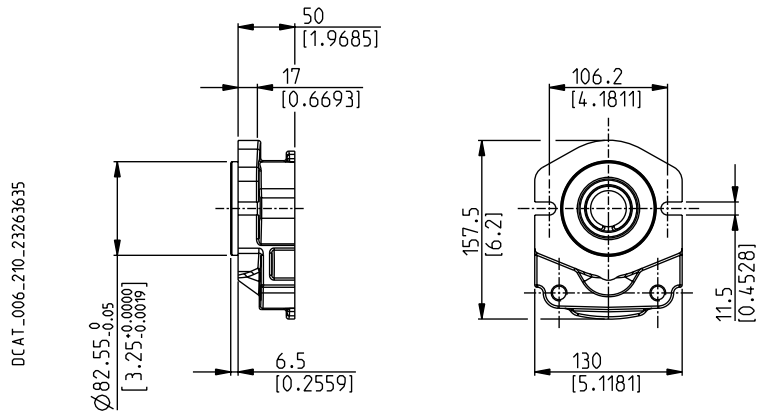
- Standard combination
- Available combination

N.B.: For the mounting with flanged ports bodies, we recommend to use studs.

SAE "A" 2 HOLES

S9

Conforms to SAE J744



DRIVE SHAFTS
See page 38

VERSIONS

See page 35

A8

0

■

- Standard combination
- Available combination

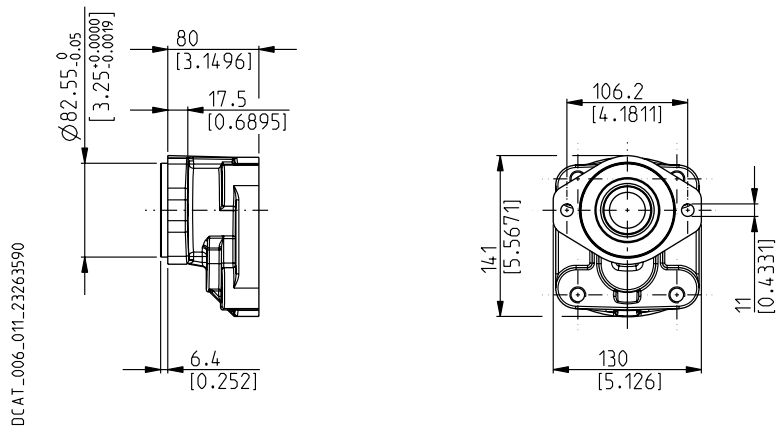
01/10.2018

KAPPA 30 MOUNTING FLANGES AND TABLE OF COMPATIBILITY

SAE "A" 2 HOLES

S1

Conforms to SAE J744



DRIVE SHAFTS
See page 38

VERSIONS

See page 35

04

32

05

33

0

■

●

●

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1

■

●

●

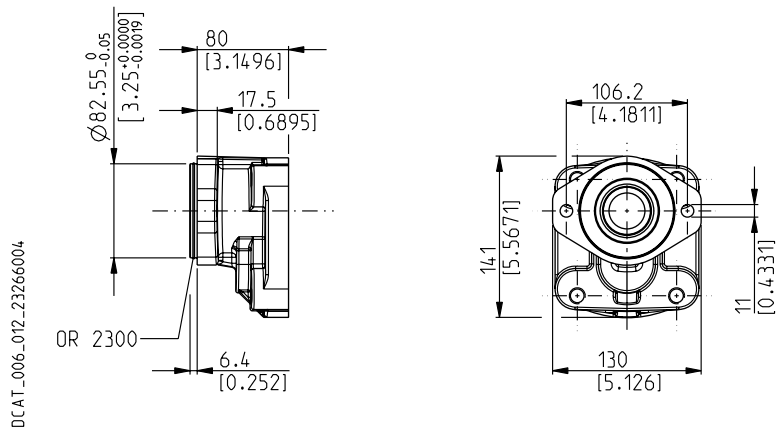
●

- Standard combination
- Available combination

SAE "A" 2 HOLES

S2

Conforms to SAE J744



DRIVE SHAFTS
See page 38

VERSIONS

See page 35

04

32

05

33

0

■

●

●

●

1

■

●

●

●

- Standard combination
- Available combination

01/10.2018

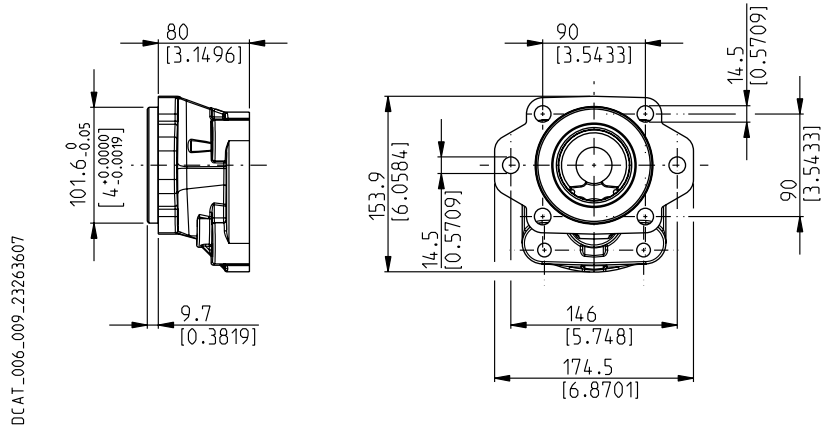
KAPPA 30

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

SAE "B" 2-4 HOLES

S3

Conforms to SAE J744



DCAT_006_009_23263607

DRIVE SHAFTS

See page 38

VERSIONS See page 35	04	32	05	33
0	■	●	●	●
1	■	●	●	●
3	■	●	●	●
6	■	●	●	●

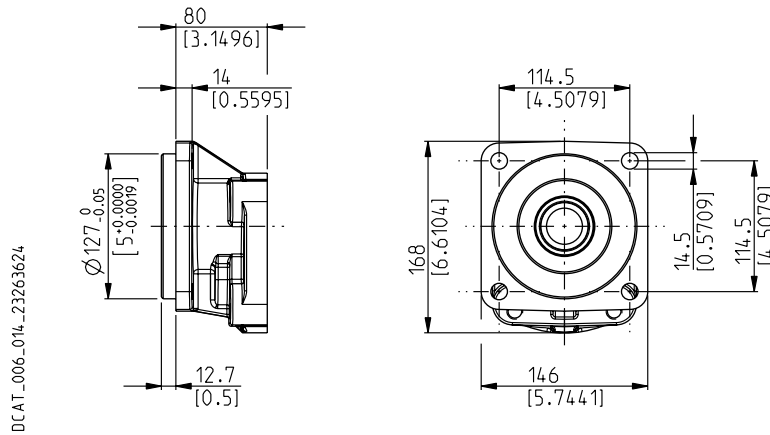
■ Standard combination

● Available combination

SAE "C" 4 HOLES

S6

Conforms to SAE J744



DCAT_006_014_23263624

DRIVE SHAFTS

See page 38 and 39

VERSIONS See page 35	05	06
0	●	■
1	●	■
3	●	■
6	●	■

■ Standard combination

● Available combination

01/10.2018

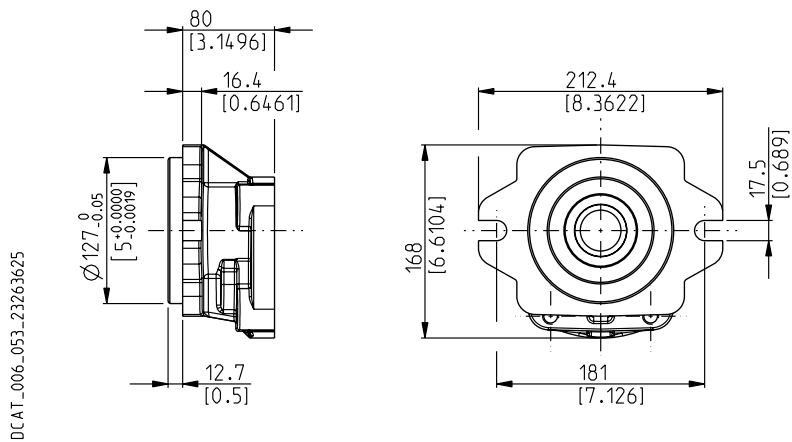
KAPPA 30

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

SAE "C" 2 HOLES

S8

Conforms to SAE J744



DRIVE SHAFTS
See page 38 and 39

VERSIONS
See page 35

05

06

0

●

■

1

●

■

3

●

■

6

●

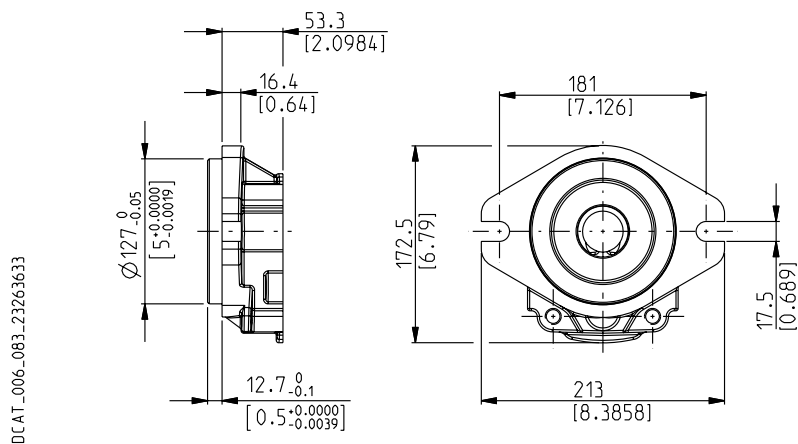
■

- Standard combination
- Available combination

SAE "C" 2 HOLES

Q3

Conforms to SAE J744



DRIVE SHAFTS
See page 38

VERSIONS
See page 35

A6

0

■

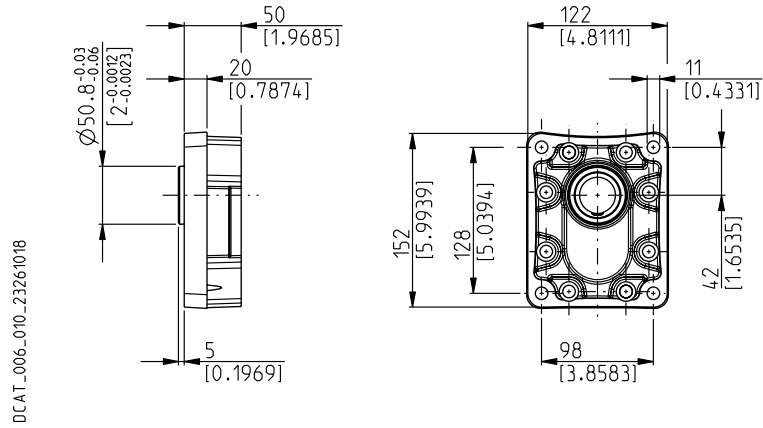
- Standard combination
- Available combination

01/10.2018

KAPPA 30

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

EUROPEAN
E3

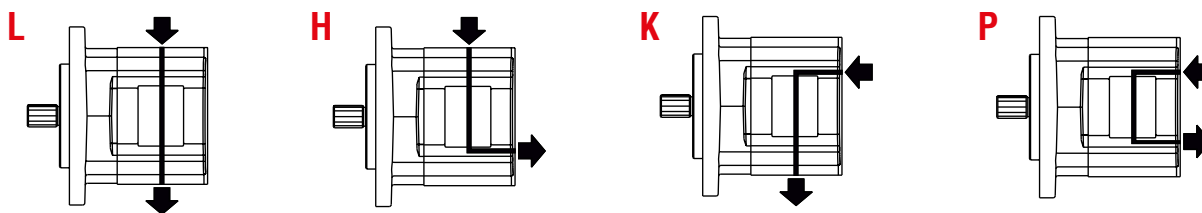


DRIVE SHAFTS
See page 38 and 39

VERSIONS See page 35	83	A8	A5
0	■	●	●

- Standard combination
- Available combination

PORTS POSITION AND TYPE



PORTS TYPE	SIDE PORTS												REAR PORTS			
	European		Split SSM		Spit SSS		Gas BSPP		SAE ODT		German		Gas BSPP		SAE ODT	
Pump type	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Motor type	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN
K. 30•22	ED	EB	MC	MB	SC	SB	GF	GE	OF	OD	BM	BL	GF	GE	OF	OD
K. 30•27	ED	EB	MC	MB	SC	SB	GF	GE	OF	OD	BM	BL	GF	GE	OF	OD
K. 30•31	ED	EB	MC	MB	SC	SB	GF	GE	OF	OD	BM	BL	GF	GE	OF	OD
K. 30•34	ED	EB	MC	MB	SC	SB	GF	GE	OF	OD	BM	BL	GF	GE	OF	OD
K. 30•38	ED	EB	MC	MB	SC	SB	GF	GE	OF	OD	BM	BL	GF	GE	OF	OD
K. 30•41	ED	EB	MD	MC	SD	SC	GG	GF	OG	OF	BM	BL	GG	GF	OG	OF
K. 30•43	ED	EB	MD	MC	SD	SC	GG	GF	OG	OF	BM	BL	GG	GF	OG	OF
K. 30•46	ED	EB	MD	MC	SD	SC	GG	GF	OG	OF	BM	BL	GG	GF	OG	OF
K. 30•51	ED	EB	MD	MC	SD	SC	GG	GF	OG	OF	BM	BL	GG	GF	OG	OF
K. 30•56	ED	EB	ME	MD	SE	SD	GG	GF	OG	OF	BM	BL	GG	GF	OG	OF
K. 30•61	ED	EB	ME	MD	SE	SD	GG	GF	OG	OF	BM	BL	GG	GF	OG	OF
K. 30•73	EF	ED	ME	MD	SE	SD	GG	GF	OG	OF			GG	GF	OG	OF

Ports codes shown are not codified for all different body design (HSC - KSL - CSC - CSL - BSC - BSL).

Different ports are available on request. See page 49.


For more information please consult our pre-sales department.


EXTERNAL DRAIN PORTS

01/10.2018

PORTS TYPE	GAS BSPP	SAE ODT
K. 30	GC	OA

PORT SIZES

 Tightening torque for low pressure side port



 Tightening torque for high pressure side port

For reversible rotation, please consult only the tightening torque for high pressure side port

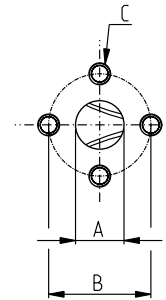
EUROPEAN FLANGED PORTS - 4 Bolts

EUROPEAN

Metric thread ISO 60° conforms to ISO/R 262

CODE	A	B	C		
	mm (inch)	mm (inch)	Thread Depth mm (inch)	Nm (lbf in)	Nm (lbf in)
EB	19 (0.75)	40 (1.57)	M 8 15 (0.59)	15 ⁺¹ (133 ÷ 142)	15 ⁺¹ (133 ÷ 142)
ED	27 (1.06)	51 (2.01)	M 10 15 (0.59)	20 ⁺¹ (177 ÷ 186)	30 ^{+2.5} (266 ÷ 288)
EF	33 (1.30)	62 (2.44)	M 12 17 (0.67)	25 ⁺¹ (221 ÷ 230)	50 ^{+2.5} (443 ÷ 465)



DCAT_006_024_21060533



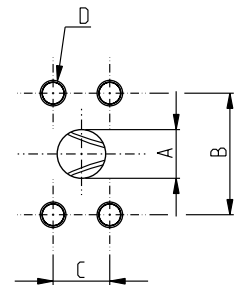
SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

SSM

Metric thread ISO 60° conforms to ISO/R 262


CODE	A	B	C	D		
	mm (inch)	mm (inch)	mm (inch)	Thread Depth mm (inch)	Nm (lbf in)	Nm (lbf in)
MB	19 (0.75)	47,6 (1.87)	22,2 (0.87)	M 10 17 (0.67)	20 ⁺¹ (177 ÷ 186)	30 ^{+2.5} (266 ÷ 288)
MC	25,4 (1.00)	52,4 (2.06)	26,2 (1.03)	M 10 17 (0.67)	20 ⁺¹ (177 ÷ 186)	30 ^{+2.5} (266 ÷ 288)
MD	30,5 (1.20)	58,7 (2.31)	30,2 (1.19)	M 10 17 (0.67)	20 ⁺¹ (177 ÷ 186)	35 ^{+2.5} (310 ÷ 332)
ME	39,3 (1.55)	69,8 (2.75)	35,7 (1.41)	M 12 17 (0.67)	30 ^{+2.5} (266 ÷ 288)	60 ⁺⁵ (531 ÷ 575)


DCAT_006_025_21064252



01/10.2018

PORT SIZES

 Tightening torque for low pressure side port



 Tightening torque for high pressure side port

For reversible rotation, please consult only the tightening torque for high pressure side port

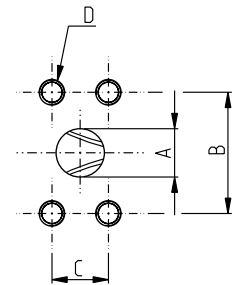
SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

SSS

American straight thread UNC-UNF 60° conforms to ANSI B 1.1

CODE	A	B	C	D		
	mm (inch)	mm (inch)	mm (inch)	Thread Depth mm (inch)	Nm (lbf in)	Nm (lbf in)
SB	19 (0.75)	47,6 (1.87)	22,2 (0.87)	3/8 - 16 UNC-2B 17 (0.67)	20 ⁺¹ (177 ÷ 186)	25 ⁺¹ (221 ÷ 230)
SC	25,4 (1.00)	52,4 (2.06)	26,2 (1.03)	3/8 - 16 UNC-2B 17 (0.67)	20 ⁺¹ (177 ÷ 186)	30 ^{+2,5} (266 ÷ 288)
SD	30,5 (1.20)	58,7 (2.31)	30,2 (1.19)	7/16 - 14 UNC-2B 17 (0.67)	20 ⁺¹ (177 ÷ 186)	40 ^{+2,5} (354 ÷ 376)
SE	39,3 (1.55)	69,8 (2.75)	35,7 (1.41)	1/2 - 13 UNC-2B 17 (0.67)	30 ^{+2,5} (266 ÷ 288)	70 ⁺⁵ (620 ÷ 664)

DCAT_006_028_21060740

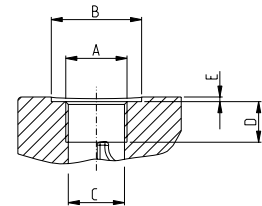


GAS STRAIGHT THREAD PORTS



BSPP

British standard pipe parallel (55°) conforms to UNI - ISO 228

DCAT_006_026_21064779



01/10.2018

CODE	Nominal size	A	Ø B	Ø C	D	E		
			mm (inch)	mm (inch)	mm (inch)	mm (inch)	mm (inch)	Nm (lbf in)
GC (◆)	3/8"	G 3/8	25 (0.98)	15 (0.5906)	14 (0.55)	2 (0.08)	15 ⁺¹ (133 ÷ 142)	—
GE	3/4"	G 3/4	39 (1.54)	24,5 (0.96)	18 (0.71)	2,5 (0.10)	30 ^{+2,5} (266 ÷ 288)	90 ⁺⁵ (797 ÷ 841)
GF	1"	G 1	49 (1.93)	30,5 (1.20)	22 (0.87)	2,5 (0.10)	50 ^{+2,5} (443 ÷ 465)	130 ⁺¹⁰ (1151 ÷ 1239)
GG	1" 1/4	G 1 1/4	56 (2.20)	39 (1.54)	24 (0.95)	2,5 (0.10)	60 ⁺⁵ (531 ÷ 575)	170 ⁺¹⁵ (1505 ÷ 1637)

(◆) = Drain port

PORT SIZES



Tightening torque for low pressure side port



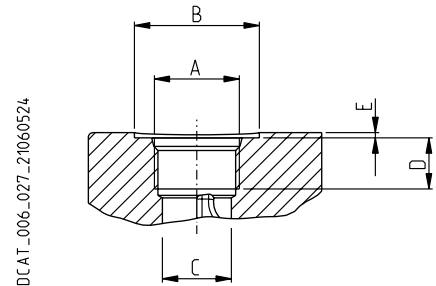
Tightening torque for high pressure side port

For reversible rotation, please consult only the tightening torque for high pressure side port

SAE STRAIGHT THREAD PORTS J514

ODT

American straight thread UNC-UNF 60° conforms to ANSI B 1.1



CODE	Nominal size	A	Ø B	Ø C	D	E		
			mm (inch)	mm (inch)	mm (inch)	mm (inch)		
OA (◆)	3/8"	9/16" - 18 UNF - 2B	26 (1.02)	13 (0.5118)	15 (0.5906)	2 (0.0787)	15 ⁺¹ (133 ÷ 142)	—
OD	3/4"	1 1/16" - 12 UNF - 2B	42 (1.65)	24,8 (0.98)	20 (0.79)	2 (0.08)	40 ^{+2,5} (354 ÷ 376)	120 ⁺¹⁰ (1062 ÷ 1151)
OF	1"	1 5/16" - 12 UNF - 2B	49 (1.93)	30,5 (1.20)	20 (0.79)	2 (0.08)	60 ⁺⁵ (531 ÷ 575)	170 ⁺¹⁰ (1505 ÷ 1593)
OG	1" 1/4	1 5/8" - 12 UNF - 2B	58 (2.28)	39,1 (1.54)	20 (0.79)	2 (0.08)	70 ⁺⁵ (620 ÷ 664)	—
OH	1" 1/2	1 7/8" - 12 UNF - 2B	65 (2.56)	45 (1.77)	20 (0.79)	2 (0.08)	100 ⁺⁵ (885 ÷ 929)	—

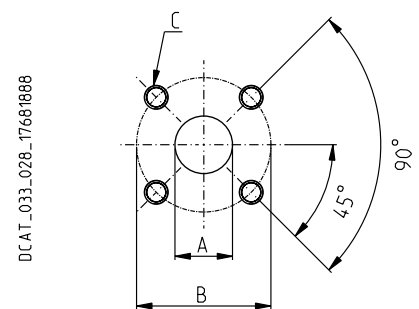
(◆) = Drain port

GERMAN FLANGED PORTS - 4 Bolts

GERMAN


Metric thread ISO 60° conforms to ISO/R 262


CODE	A	B	C		
	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
BC	15 (0.59)	35 (1.38)	M6 13 (0.51)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
BE	20 (0.79)	40 (1.57)	M6 13 (0.51)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
BL	19 (0.75)	55 (2.17)	M8 17 (0.67)	15 ⁺¹ (133 ÷ 142)	20 ⁺¹ (177 ÷ 186)
BM	27 (1.06)	55 (2.17)	M8 17 (0.67)	15 ⁺¹ (133 ÷ 142)	20 ⁺¹ (177 ÷ 186)



01/10.2018

PORT SIZES

 Tightening torque for low pressure side port

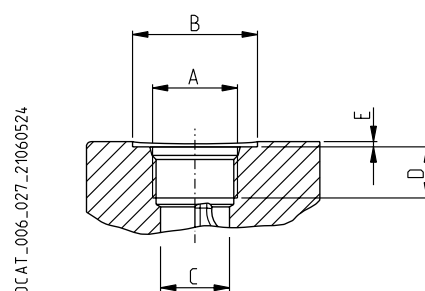
 Tightening torque for high pressure side port



For reversible rotation, please consult only the tightening torque for high pressure side port

INTERNATIONAL STRAIGHT THREAD PORTS ISO 6149

METRIC

Metric thread ISO 60° conforms to ISO/R 262



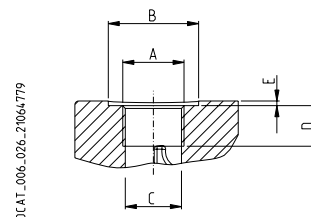
CODE	Nominal size	A	Ø B		Ø C		D	E		
			mm (inch)	mm (inch)	mm (inch)	mm (inch)				
RM	3/4"	M27x2	50 (1.97)	25 (0.98)	22 (0.87)	2 (0.08)	40 ^{+2.5} (354 ÷ 376)	100 ⁺⁵ (885 ÷ 929)		
RP	1"	M33x2	43 (1.69)	31 (1.22)	20 (0.79)	2 (0.08)	55 ⁺⁵ (487 ÷ 531)	150 ⁺¹⁰ (1328 ÷ 1416)		
RQ	1" 1/4	M42x2	52 (2.28)	40 (1.57)	20 (0.79)	2 (0.08)	70 ⁺⁵ (620 ÷ 664)	200 ⁺¹⁰ (1770 ÷ 1859)		

(◆) = Drain port



INTERNATIONAL STRAIGHT THREAD PORTS ISO 9974

METRIC

Metric thread ISO 60° conforms to ISO/R 262



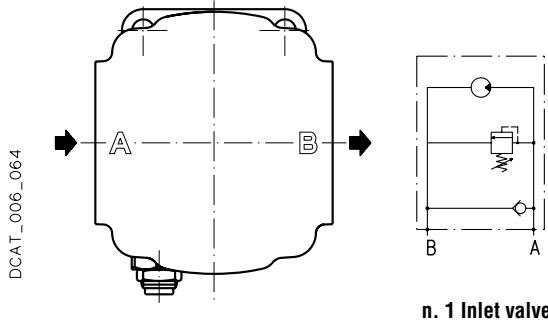
01/10.2018

CODE	Nominal size	A	Ø B		Ø C		D	E		
			mm (inch)	mm (inch)	mm (inch)	mm (inch)				
TM	3/4"	M27x2	40 (1.57)	24,5 (0.96)	20 (0.79)	2 (0.08)	40 ^{+2.5} (354 ÷ 376)	100 ⁺⁵ (885 ÷ 929)		
TP	1"	M33x2	50 (1.97)	30,5 (1.20)	20 (0.79)	2 (0.08)	60 ⁺⁵ (531 ÷ 575)	170 ⁺¹⁰ (1549 ÷ 1637)		

Unidirectional motors and reversible with internal drain - Anti-clockwise rotation (S)

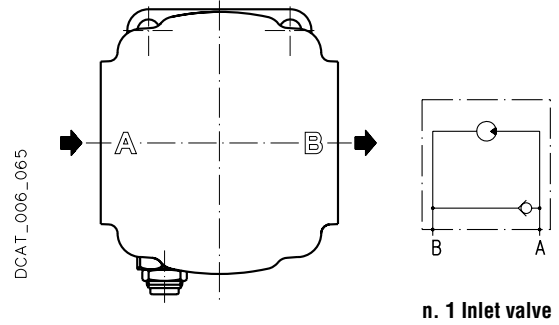
Antishock and anti-cavitation valves

U1



Anti-cavitation valves

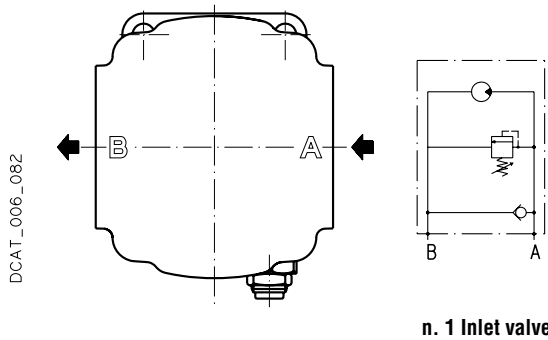
C1



Unidirectional motors and reversible with internal drain - Clockwise rotation (D)

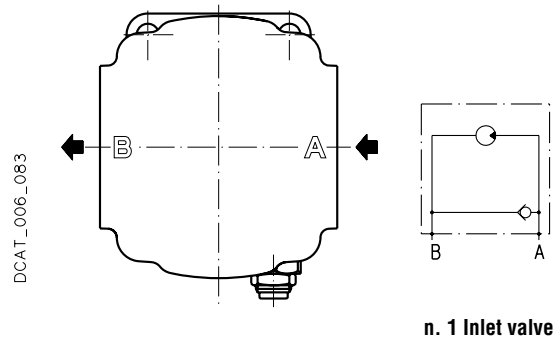
Antishock and anti-cavitation valves

U2



Anti-cavitation valves

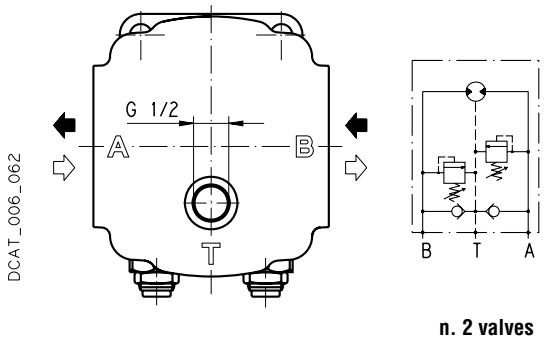
C2



Reversible motors with external drain (R)

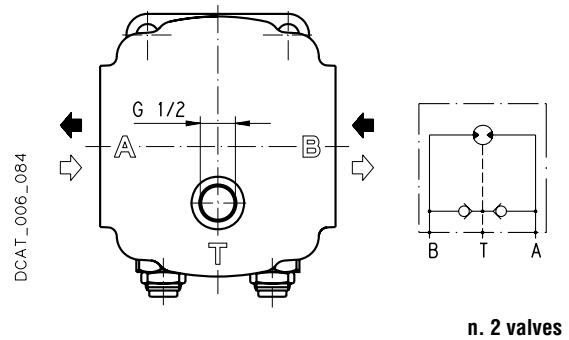
Antishock and anti-cavitation valves

U3



Anti-cavitation valves

C3



01/10.2018

The nominal drain line size can't be lower than 1/2" in case of **U3** or **C3** valve configuration.
For different valve mounting positions please consult our pre-sales department.

KAPPA 30

MOTORS WITH BUILT-IN VALVES

U... / C...

Spring type	Antishock and anti-cavitation valves setting range (U..)
	bar (psi)
G3	50 ÷ 220 (725 ÷ 3190)
G4	180 ÷ *** (p ₃) (2654 ÷ *** [(p ₃)]

***: G4 spring maximum setting range, see p₃ peak pressure on page 8.
For more information please consult our pre-sales department.

HOW TO ORDER

	-	Valve type	-	Spring and setting range	-	Body type
KM 30•38 D0-83 E3-L EB/ED-N	-	U2	-	(G3 - 200)	-	CSC

ORDER EXAMPLE

Clockwise motor with antishock and anti-cavitation valve
Setting pressure 200 bar (2900 psi) **KM30•38 D0-83 E3-L EB/ED-N-U2 (G3-200)-CSC**

Reversible motor R with anti-cavitation valve **KM30•27 R0-83 E3-L ED/EB-N-C3-CSC**

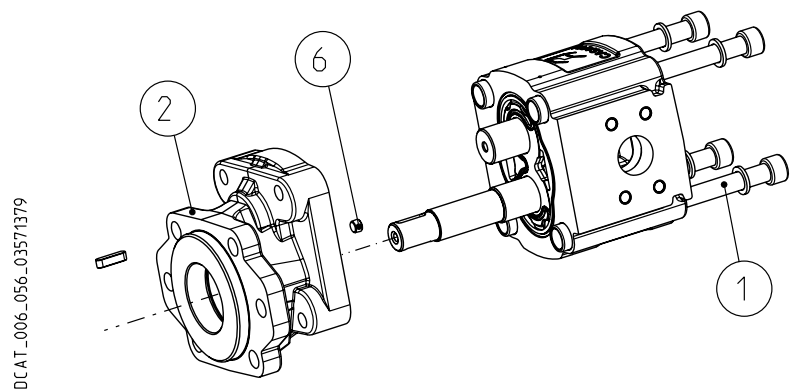
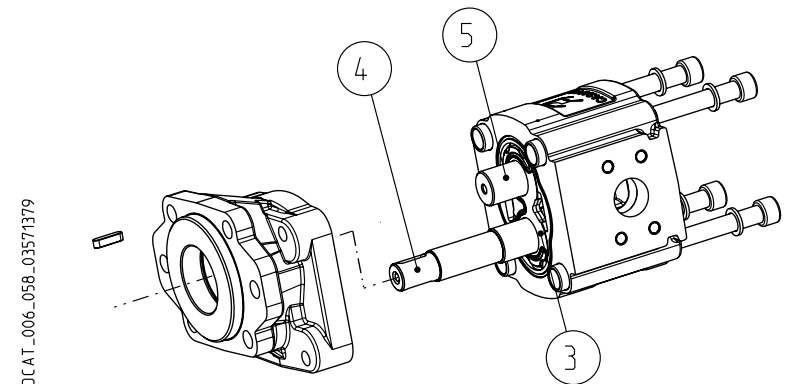
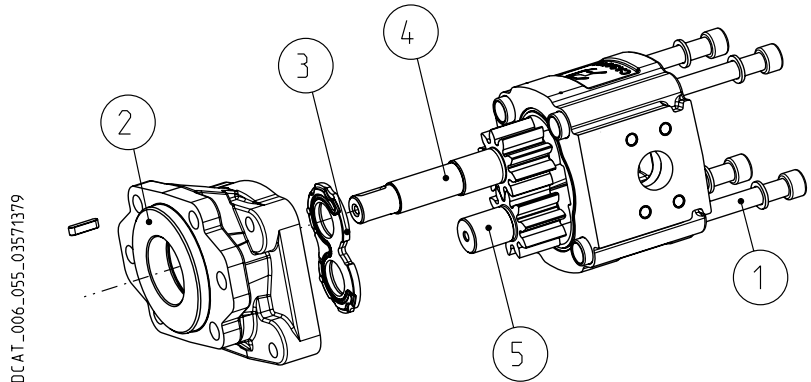
01/10.2018

CHANGING ROTATION

Example of changing rotation: from KP30 pump counterclockwise to clockwise

To change rotation of unidirectional pumps and motors is necessary to operate in the following way:

1. Clean the pump externally with care.
2. Loosen, and remove, the clamp bolts (1).
3. Coat the sharp edges of the drive shaft (4) with adhesive tape and smear a layer of clean grease on the shaft end extension to avoid damaging the lip of the shaft seal when removing the mounting flange.
4. Remove the mounting flange (2), taking care to keep the flange as straight as possible during removal. If the flange is stuck, tap around the edge with a fibre or rubber mallet in order to break away from the body. Ensure that while removing the front mounting flange, the drive shaft and other components remain position.
5. Ease the drive gear (4) up to facilitate removal the front plate (3), taking care that the precision ground surfaces do not become damaged, and remove the drive gear.
6. Remove the driven gear (5) without overturning. The rear plate has not to be removed.
7. Re-locate the driven gear (5) in the position previously occupied by the drive gear (4).
8. Re-locate the drive gear (4) in the position previously occupied by the driven gear (5).
9. Replace the front plate (3) in its original position.
10. Remove the grub screw (6) from the mounting flange (2) and re-locate it in the other threaded hole in the same flange.
11. Gently wipe the machined surface of the mounting flange (2) and the body with a flat hand stone.
12. Refit the front mounting flange (2) turned 180° from its original position.
13. Refit the clamp bolts (1) with the washers and tighten in a crisscross pattern to a torque value of 140 ± 14 Nm ($1115 \div 1363$ lbf in)
14. Check that the pump rotates freely when the drive shaft (4) is turned by hand. If not a pressure plate seal may be pinched.
15. The pump is ready for installation with the original rotation reversed.



01/10.2018

NOTES

01/10.2018

HOW TO ORDER - SINGLE UNITS

1	2	3	4	5	6	7	8	9	10	11	12
KP 30•27	R	0	- 04	S3	- L	OF/OD	- N	- OA	- C4	- CSC	- VNR01

1	Type	Pump type	Motor type
	21,99 cm ³ /rev (1.34 in ³ /rev)	KP 30•22	KM 30•22
	26,7 cm ³ /rev (1.63 in ³ /rev)	KP 30•27	KM 30•27
	30,63 cm ³ /rev (1.87 in ³ /rev)	KP 30•31	KM 30•31
	34,56 cm ³ /rev (2.11 in ³ /rev)	KP 30•34	KM 30•34
	39,27 cm ³ /rev (2.40 in ³ /rev)	KP 30•38	KM 30•38
	41,62 cm ³ /rev (2.54 in ³ /rev)	KP 30•41	KM 30•41
	43,98 cm ³ /rev (2.68 in ³ /rev)	KP 30•43	KM 30•43
	46,34 cm ³ /rev (2.83 in ³ /rev)	KP 30•46	KM 30•46
	51,83 cm ³ /rev (3.16 in ³ /rev)	KP 30•51	KM 30•51
	56,54 cm ³ /rev (3.45 in ³ /rev)	KP 30•56	KM 30•56
	61,26 cm ³ /rev (3.74 in ³ /rev)	KP 30•61	KM 30•61
	73,82 cm ³ /rev (4.50 in ³ /rev)	KP 30•73	KM 30•73

2	Rotation	Code
	Anti-clockwise	S
	Clockwise	D
	Reversible rear external drain	R
	Reversible side external drain	L
	Reversible internal drain	B

3	Outboard bearing options	Code
	Without outboard bearing	0
	With outboard bearing	1
	With outboard bearing	3
	With outboard bearing	6

4	Drive shaft	Code
	European tapered 1:8	83
	SAE "B" spline (13 teeth)	04
	SAE "B" straight	32
	SAE "BB" spline (15 teeth)	05
	SAE "BB" straight	33
	SAE "B" spline (13 teeth) for K9	A8
	SAE "BB" spline (15 teeth) for K9	A5
	SAE "C" spline (14 teeth)	06
	SAE "C" spline short type (14 teeth)	A6

Code	Mounting flange	5
E3	European	
S1	SAE "A" 2 holes	
S2	SAE "A" 2 holes with O-ring	
S9	SAE "A" 2 holes short type	
S3	SAE "B" 2-4 holes	
K9	SAE "B" 2 holes	
S6	SAE "C" 4 holes	
S8	SAE "C" 2 holes	
Q3	SAE "C" 2 holes short type	

Code	Ports position	6
L	IN/OUT side	
H	IN side/ OUT rear	
K	IN rear/ OUT side	
P	IN/OUT rear	

Code	Ports IN/OUT	7	
EUROPEAN FLANGED PORTS			
	Side	Rear	Type
ED/EB		KP 30	22-27-31-34-38
EB/ED		KM 30	41-43-46-51-56-61
EF/ED		KP 30	73
ED/EF		KM 30	
SAE FLANGED PORTS (SSM)			
	Side	Rear	Type
MC/MB		KP 30	22-27-31-34-38
MB/MC		KM 30	
MD/MC		KP 30	41-43-46-51
MC/MD		KM 30	
ME/MD		KP 30	56-61-73
MD/ME		KM 30	
SAE FLANGED PORTS (SSS)			
	Side	Rear	Type
SC/SB		KP 30	22-27-31-34-38
SB/SC		KM 30	
SD/SC		KP 30	41-43-46-51
SC/SD		KM 30	
SE/SD		KP 30	56-61-73
SD/SE		KM 30	

01/10.2018

HOW TO ORDER - SINGLE UNITS

7		Ports IN/OUT		Code
SAE STRAIGHT THREAD PORTS (ODT)				
Side	Rear			Type
OF/OD	OF/OD	KP 30		22-27-31-34-38
OD/OF	OD/OF	KM 30		
OG/OF	OG/OF	KP 30		41-43-46-51
OF/OG	OF/OG	KM 30		56-61-73
GAS STRAIGHT THREAD PORTS (BSPP)				
Side	Rear			Type
GF/GE	GF/GE	KP 30		22-27-31-34-38
GE/GF	GE/GF	KM 30		
GG/GF	GG/GF	KP 30		41-43-46-51
GF/GG	GF/GG	KM 30		56-61-73

- (a) Choose the seals according to the temperature shown on page 5.
- (b) Available only with 22-27-31-34-38 displacements.
- (c) Available only with 22-27-31-34-38-41-43-46 displacements.
- (d) Salt spray resistance of 300 hours. For more information please consult our pre-sales department.

8		Seals (a)		Code
Buna NBR (standard)				N
Viton-FKM				V
Hydrogenated buna HNBR seals with Viton-FKM shaft seals				T-PV
Buna NBR and bronze thrust plates				N Bz
Viton-FKM and bronze thrust plate				V Bz

9		Drain port		Code
GAS straight thread ports (BSPP) (standard) no code				...
SAE straight thread ports (ODT)				OA

10		Shaft seal options		Code
Shaft seal with wiper seal				D
High pressure special shaft seal				C4

11		Body design		Code
Standard				CSC
Compact (b)				HSC
High performance (c)				BSC

12		Painting		Code
Without painting (standard) no code				...
Black painting (d)				VNR01
Grey painting (d)				VGR01

01/10.2018

HOW TO ORDER - MULTIPLE PUMPS SAME GROUPS

1	2	3	4	5	6	7	8	9	10	11	12						
KP 30•51	-	A8	K9	-	L	MD/MC	-	-	CSL	/							
Front section																	
30•51	-		-	L	MD/MC	-	-	CSL	/								
Intermediate section																	
30•51	-			L	MD/MC	-	-	CSC	-	S	1	-	V	-	C4	-	VNR01
Rear section																	

1	Type	Pump type
	21,99 cm ³ /rev (1.34 in ³ /rev)	KP 30•22
	26,7 cm ³ /rev (1.63 in ³ /rev)	KP 30•27
	30,63 cm ³ /rev (1.87 in ³ /rev)	KP 30•31
	34,56 cm ³ /rev (2.11 in ³ /rev)	KP 30•34
	39,27 cm ³ /rev (2.40 in ³ /rev)	KP 30•38
	41,62 cm ³ /rev (2.54 in ³ /rev)	KP 30•41
	43,98 cm ³ /rev (2.68 in ³ /rev)	KP 30•43
	46,34 cm ³ /rev (2.83 in ³ /rev)	KP 30•46
	51,83 cm ³ /rev (3.16 in ³ /rev)	KP 30•51
	56,54 cm ³ /rev (3.45 in ³ /rev)	KP 30•56
	61,26 cm ³ /rev (3.74 in ³ /rev)	KP 30•61
	73,82 cm ³ /rev (4.50 in ³ /rev)	KP 30•73

2	Drive shaft	Code
	European tapered 1:8	83
	SAE "B" spline (13 teeth)	04
	SAE "B" straight	32
	SAE "BB" spline (15 teeth)	05
	SAE "BB" straight	33
	SAE "B" spline (13 teeth) for K9	A8
	SAE "BB" spline (15 teeth) for K9	A5
	SAE "C" spline (14 teeth)	06
	SAE "CC" spline short type (14 teeth)	A6

3	Mounting flange	Code
	European	E3
	SAE "A" 2 holes	S1
	SAE "A" 2 holes with O-ring	S2
	SAE "A" 2 holes short type	S9
	SAE "B" 2-4 holes	S3
	SAE "B" 2 holes	K9
	SAE "C" 4 holes	S6
	SAE "C" 2 holes	S8
	SAE "C" 2 holes short type	Q3

Code	Ports position	4
L	IN/OUT side	

Code	Ports IN/OUT	5
EUROPEAN FLANGED PORTS		
Side	Type	
ED/EB	KP 30	22-27-31-34-38 41-43-46-51-56-61
EF/ED	KP 30	73

SAE FLANGED PORTS (SSM)		
Side	Type	
MC/MB	KP 30	22-27-31-34-38
MD/MC	KP 30	41-43-46-51
ME/MD	KP 30	56-61-73

SAE FLANGED PORTS (SSS)		
Side	Type	
SC/SB	KP 30	22-27-31-34-38
SD/SC	KP 30	41-43-46-51
SE/SD	KP 30	56-61-73

SAE STRAIGHT THREAD PORTS (ODT)		
Side	Type	
OF/OD	KP 30	22-27-31-34-38
OG/OF	KP 30	41-43-46-51-56-61-73

GAS STRAIGHT THREAD PORTS (BSPP)		
Side	Type	
GF/GE	KP 30	22-27-31-34-38
GG/GF	KP 30	41-43-46-51-56-61-73

Code	Body for common inlet (a)	6
M5	Combination KP30 / KP30	

01/10.2018

HOW TO ORDER - MULTIPLE PUMPS SAME GROUPS

7	Body design	Code
FRONT SECTION		
	Standard	CSL
	Compact (b)	KSL
	High performance (c)	BSL
INTERMEDIATE SECTION		
	Standard	CSL
REAR SECTION (d)		
	Standard	CSC
	Compact (b)	HSC
	High performance (c)	BSC

8	Rotation	Code
	Anti-clockwise	S
	Clockwise	D

9	Outboard bearing options	Code
	Without outboard bearing (standard) no code	0
	With outboard bearing	1
	With outboard bearing	3
	With outboard bearing	6

10	Seals (e)	Code
	Buna NBR (standard) no code	...
	Viton-FKM	V
	Hydrogenated buna HNBR seals with Viton-FKM shaft seals	T-PV
	Buna NBR and bronze thrust plate	N Bz
	Viton-FKM and bronze thrust plate	V Bz

11	Shaft seal options	Code
	Shaft seal with wiper seal	D
	High pressure special shaft seal	C4

12	Painting	Code
	Without painting (standard) no code	...
	Black painting (f)	VNR01
	Grey painting (f)	VGR01

- (a) Please write this code only for common inlet pumps. (see page 59)
- (b) Available only with 22-27-31-34-38 displacements.
- (c) Available only with 22-27-31-34-38-41-43-46 displacements.
- (d) For multiple pumps with more than two sections we recommend to use a bracket.
- (e) Choose the seals according to the temperature shown on page 4. Buna N-NBR no code.
- (f) Salt spray resistance of 300 hours. For more information please consult our technical sales department.

01/10.2018

HOW TO ORDER - DOUBLE PUMPS DIFFERENT GROUPS

KP30 / PHP20

1	2	3	4	5	6	7	8	9	10	11	12	13	14
KP 30•51 - A8 K9 - L MD/MC - 45							CSC /						
Front section							Rear section						
PHP 20•19 - L MB/MA							L - S 1 / FS V - C4 VNR01						

KP30 / PLP20

1	2	3	4	5	6	7	8	9	10	11	12	13	14
KP 30•51 - A8 K9 - L MD/MC - 45							CSC /						
Front section							Rear section						
PLP 20•14 - L MB/MA							L - S 1 / FS V - C4 VNR01						

1	Type	Pump type
The same of multiple pumps on page 56		KP 30•...
2		Code
The same of multiple pumps on page 56		...
3	Mounting flange	Code
The same of multiple pumps on page 56		...
4	Ports position	Code
Side		L
5	Ports IN/OUT	Code
The same of multiple pumps on page 56		.../...
6	Connecting shaft	Code
Combination KP30/PHP20 and KP30/PLP20		45
7	Body for common inlet (a)	Code
Combination KP30/PHP20 and KP30/PLP20		N7
8	Body design	Code
Standard		CSC
Compact (b)		HSC
High performance (c)		BSC

Code	Rear cover options	9
...	Cast iron (standard) no code	
L	Aluminium	
Code	Rotation	10
S	Anti-clockwise	
D	Clockwise	
Code	Outboard bearing options	11
...	The same of multiple pumps on page 57	
Code	Seals	12
...	The same of multiple pumps on page 57	
Code	Shaft seal options	13
...	The same of multiple pumps on page 57	
Code	Painting	14
...	Without painting (standard) no code	
VNR01	Black painting (d)	
VGR01	Grey painting (d)	

- (a) Please write this code only for common inlet pumps. (see page 59)
- (b) Available only with 22-27-31-34-38 displacements.
- (c) Available only with 22-27-31-34-38-41-43-46 displacements.
- (d) Salt spray resistance of 300 hours. For more information please consult our technical sales department.

01/10.2018

HOW TO ORDER - MULTIPLE PUMPS COMMON INLET

Depending on the required version, the common inlet codes must be used only for the section which has the common suction. For pumps with common inlet for all sections, the code must be used only for the last section. For the sections with only an outlet port, the code of the inlet port must be omitted.

Front pump	Identification code of common inlet body	Rear pump
KP 30	M5	KP 30
KP 30	N7	PHP 20 PLP 20

Order example

Triple pump Kappa 30+Kappa 30+ PLP 20.
Common inlet intermediate pump and rear pump.

KP 30•51-A8 K9-L MD/MC-CSL /

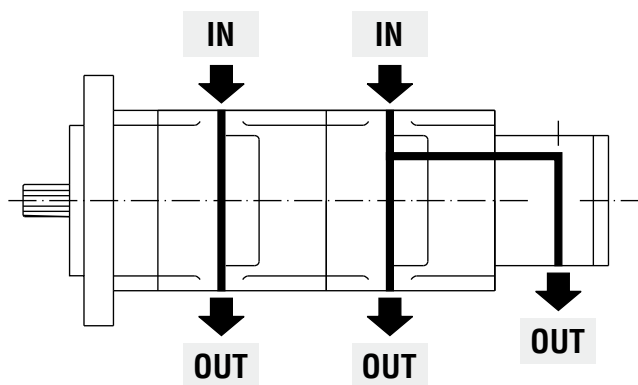
Front pump

KP 30•51-L MD/MC-45-N7-CSC /

Intermediate pump

PLP 20•14-L /MA-L-S/FS

Rear pump



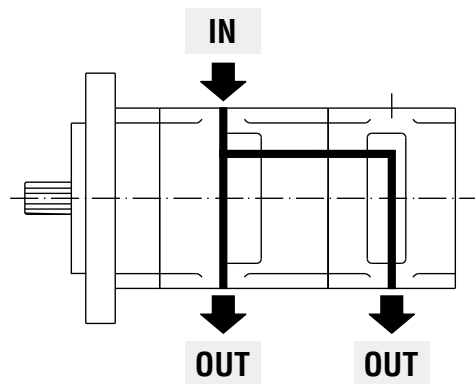
Double pump Kappa 30+Kappa 30.
Common inlet all pumps.

KP 30•38-A8 K9-L MC/MB-KSL /

Front pump

KP 30•38-L /MB-M5-HSC-S

Rear pump



Triple pump Kappa 30+Kappa 30+ Kappa 30
Common inlet all pumps.

KP 30•51 A8 K9-L /MC-CSL /

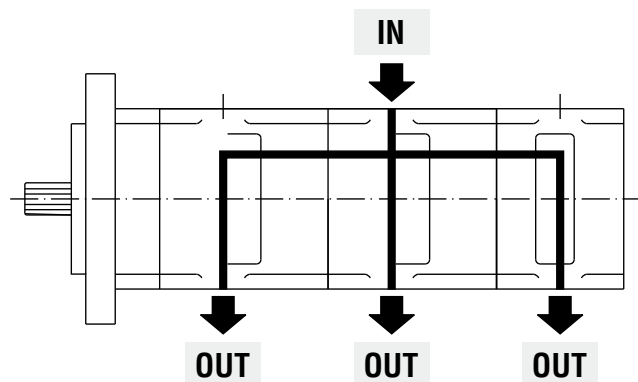
Front pump

KP 30•51-L MD/MC-CSL /

Intermediate pump

KP 30•51-L /MC-M5-CSC-S

Rear pump



01/10.2018

Our policy is one of continuous improvement in product. Specification of items may, therefore, be changed without notice.

K30 01 T A

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