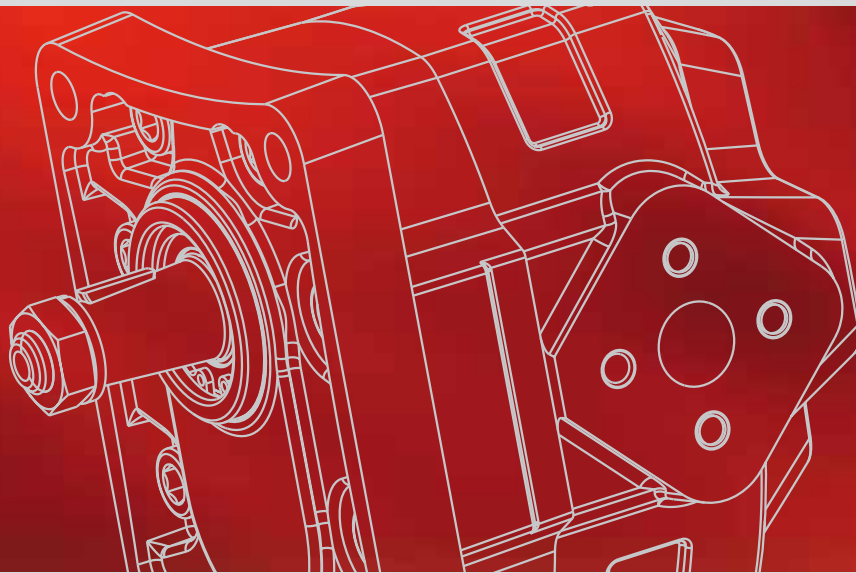




HYDRAULIC GEAR
PUMPS AND
MOTORS

FEATURES

Construction	External gear type pumps and motors
Mounting	EUROPEAN - SAE - ISO standard flanges
Line connections	Screw and flange
Direction of rotation (looking on drive shaft)	Anti-clock (S) - clockwise (D) - reversible (L, R or B)
Inlet pressure range for pumps	10 ÷ 44 psi - [0,7 ÷ 3 bar (abs.)]
Max back pressure for single rotation motors	p ₁ (continuous) max 73 psi (5 bar)
	p ₂ (for 20 s) max 116 psi (8 bar)
	p ₃ (for 8 s) max 218 psi (15 bar)
Max drain line pressure on reversible rotation motors	73 psi (5 bar)
Max back pressure on the series motors	2175 psi (150 bar)
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 technical sales department.
Viscosity range	From 60 to 456 SSU [12 to 100 mm ² /s (cSt)] recommended
Filtering requirement	See table (2)

Tab. 1

Type	Fluid composition	Max pressure psi - (bar)	Max speed min ⁻¹	Temperature °F - (°C)			Seals (◆)
				Min	Max continuous	Max peak	
ISO/DIN	Mineral oil based hydraulic fluid to ISO/DIN	See page 3, 4 75, 76	See page 3, 4 75, 76	-13 (-25)	176 (80)	212 (100)	N
				-13 (-25)	230 (110)		N-H
HFA	Oil emulsion in water 5 ÷ 15% of oil	725 (50)	1500	36 (2)	131 (55)	257 (125)	V
HFB	Water emulsion in oil 40 % of water	1740 (120)	1500	36 (2)	140 (60)		N
HFC	Water - glycol	1450 (100)	1500	-4 (-20)	140 (60)		N Bz
HFD	Phosphate ester	2175 (150)	1500	14 (-10)	176 (80)		V Bz

(◆) N= Buna N (standard) - N-H= Buna N and high back pressure shaft seals - V= Viton

N Bz= Buna N and Bronze thrust plates - V Bz= Viton and Bronze thrust plates

Tab. 2

Working pressure psi (bar)	Δp<2030 (140)	2030<Δp<3045 (140) (210)	Δp>3045 (210)
Contamination class NAS 1638	10	9	8
Contamination class ISO 4406:1999	21/19/16	20/18/15	19/17/14
Achieved with filter β ₁₀ (c) ≥ 200 according to ISO 16889	-	10 μm	10 μm
Achieved with filter β ₂₅ (c) ≥ 200 according to ISO 16889	25 μm	-	-

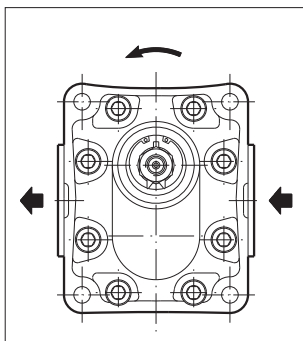
Casappa recommends to use its own production filters:



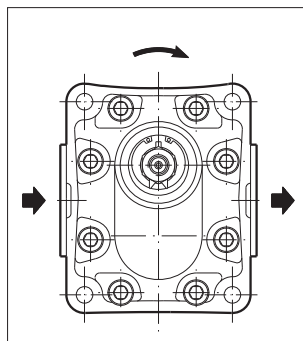
GENERAL NOTES

Available with different inlet and outlet ports. If you use fire resistant fluids specify the type of them at the order. For more information please consult our technical sales department.

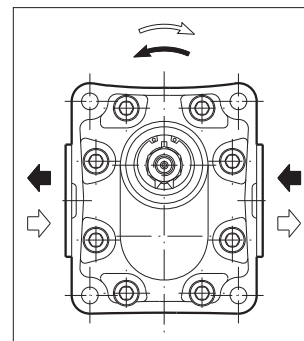
DEFINITION OF ROTATION DIRECTION LOOKING AT THE DRIVE SHAFT



Anti-clock rotation

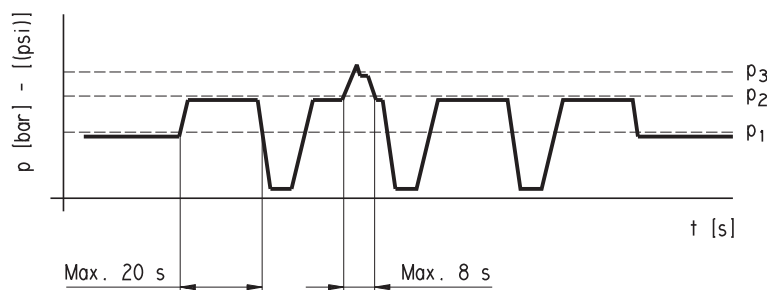


Clockwise rotation



Reversible rotation

PRESSURE DEFINITION



p_1 Max. continuous pressure

p_2 Max. intermittent pressure

p_3 Max. peak pressure

01/03.2002

KAPPA 30 GENERAL DATA PUMPS

KP 30

Pump type	Displacement	Max. pressure			Max. speed	Min. speed
		p ₁	p ₂	p ₃		
	in³/rev (cm³/rev)	psi (bar)			min ⁻¹	
KP 30•27	1.63 (26,7)	4060 (280)	4350 (300)	4495 (310)	3000	350
KP 30•34	2.11 (34,56)	3770 (260)	4060 (280)	4350 (300)	3000	350
KP 30•38	2.40 (39,27)	3770 (260)	4060 (280)	4350 (300)	3000	350
KP 30•43	2.68 (43,98)	3625 (250)	3915 (270)	4205 (290)	3000	350
KP 30•51	3.16 (51,83)	3335 (230)	3625 (250)	3915 (270)	2500	350
KP 30•56	3.45 (56,54)	3118 (215)	3408 (235)	3698 (255)	2500	350
KP 30•61	3.74 (61,26)	2900 (200)	3190 (220)	3480 (240)	2500	350
KP 30•73	4.50 (73,82)	2610 (180)	2900 (200)	3190 (220)	2500	350

p₁= Max. continuous pressure

p₂= Max. intermittent pressure

p₃= Max. peak pressure

The values in the table refer to unidirectional pumps.

Reversible pump max pressures are 15% lower than those shown in table.

For different working conditions please consult our sales department.

01/03.2002

DESIGN CALCULATIONS FOR PUMPS

Replaces: 02/06.2005

Q	US gpm (l/min)	Delivery
M	lbf in (Nm)	Torque
P	HP (kW)	Power
V	in ³ /rev (cm ³ /rev)	Displacement
n	min ⁻¹	Speed
Δp	psi (bar)	Pressure
$\eta_v = \eta_v(V, \Delta p, n) \quad (\approx 0,98)$		Volumetric efficiency
$\eta_{hm} = \eta_{hm}(V, \Delta p, n) \quad (\approx 0,90)$		Hydro-mechanical efficiency
$\eta_t = \eta_v \cdot \eta_m \quad (\approx 0,88)$		Overall efficiency

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

$$\begin{aligned}
 \textcircled{O} \quad Q &= Q_{\text{theor.}} \cdot \eta_v \\
 Q_{\text{theor.}} &= \frac{V \text{ (cm}^3\text{/rev)} \cdot n \text{ (min}^{-1}\text{)}}{1000} \quad [\text{l/min}] \\
 M &= \frac{M_{\text{theor.}}}{\eta_{hm}} \quad [\text{Nm}] \\
 M_{\text{theor.}} &= \frac{\Delta p \text{ (bar)} \cdot V \text{ (cm}^3\text{/rev)}}{62,83} \\
 P_{\text{IN}} &= \frac{P_{\text{OUT}}}{\eta_t} \quad [\text{kW}] \\
 P_{\text{OUT}} &= \frac{\Delta p \text{ (bar)} \cdot Q \text{ (l/min)}}{600}
 \end{aligned}$$

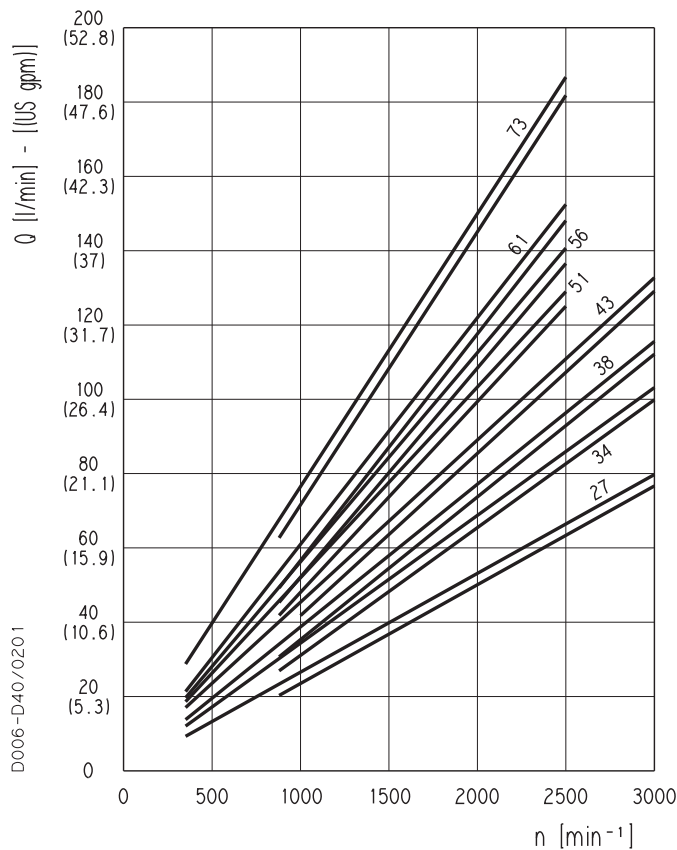
 $\textcircled{O}$ 05/03.2012

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

KAPPA 30 GEAR PUMPS PERFORMANCE CURVES

KP 30

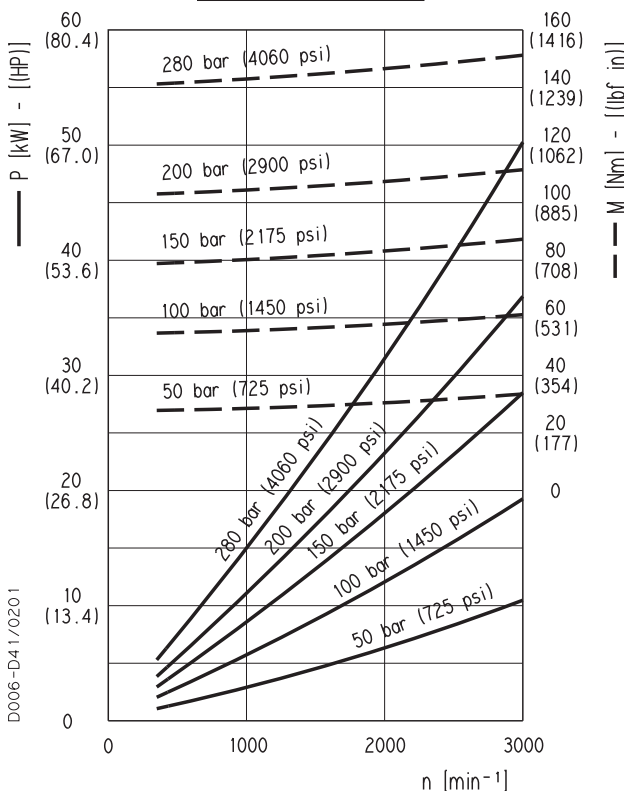
KP 30



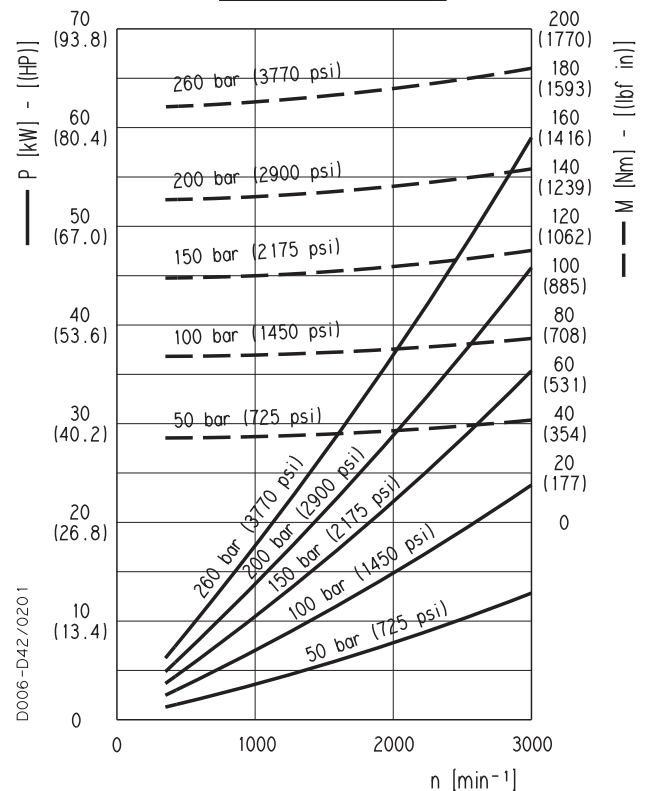
Each curve has been obtained at 122 °F (50 °C), using oil with viscosity 168 SSU (36 cSt) at 104 °F (40 °C) and at these pressures:

- KP 30•27. 290-4060 psi (20-280 bar)
- KP 30•34. 290-3770 psi (20-260 bar)
- KP 30•38. 290-3770 psi (20-260 bar)
- KP 30•43. 290-3625 psi (20-250 bar)
- KP 30•51. 290-3335 psi (20-230 bar)
- KP 30•56. 290-3118 psi (20-215 bar)
- KP 30•61. 290-2900 psi (20-200 bar)
- KP 30•73. 290-2610 psi (20-180 bar)

KP 30•27



KP 30•34

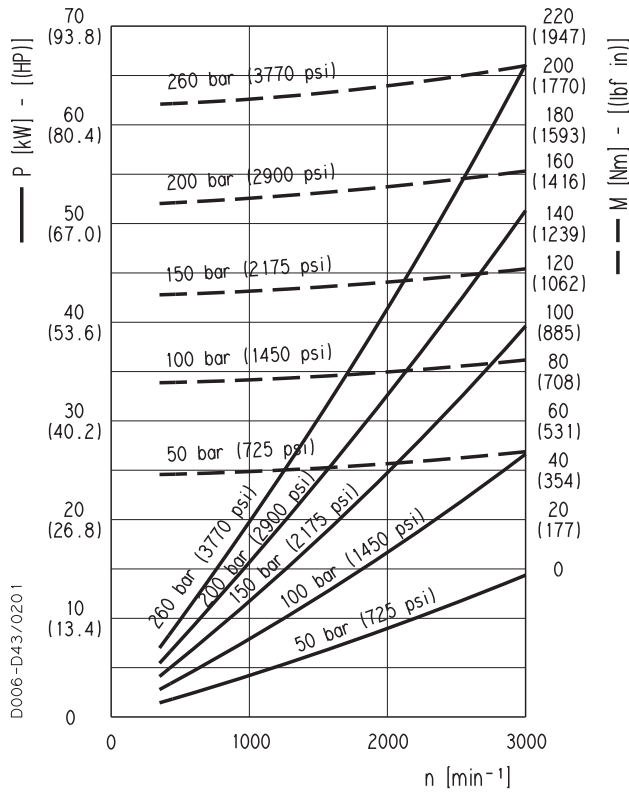


01/03.2002

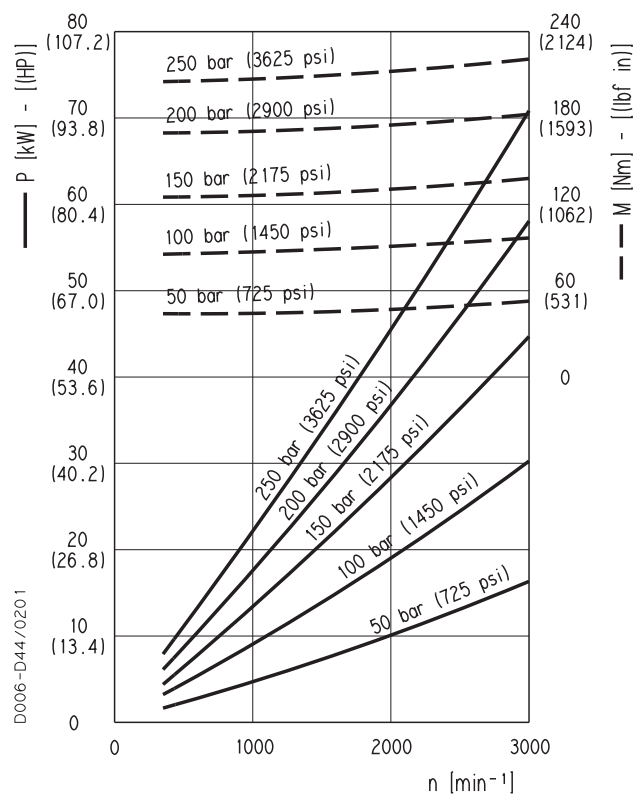
KAPPA 30 GEAR PUMPS PERFORMANCE CURVES

KP 30

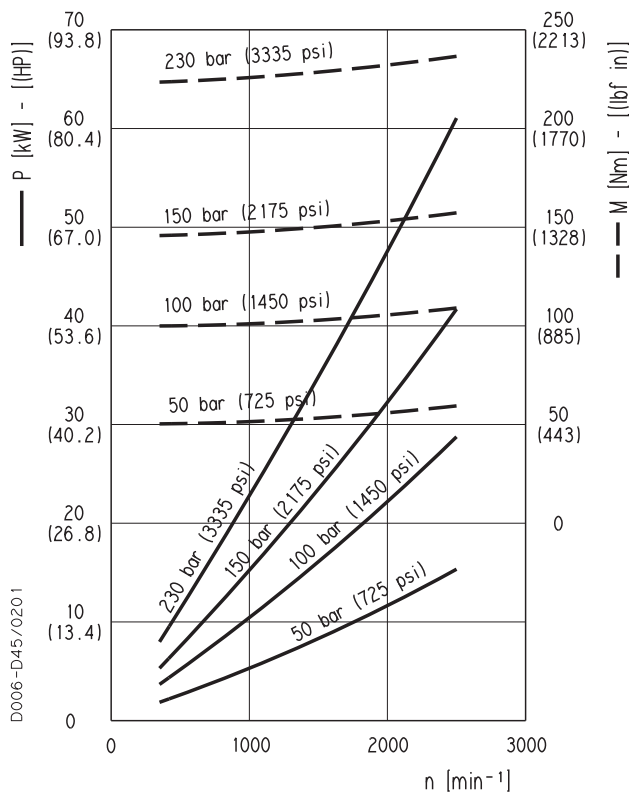
KP 30•38



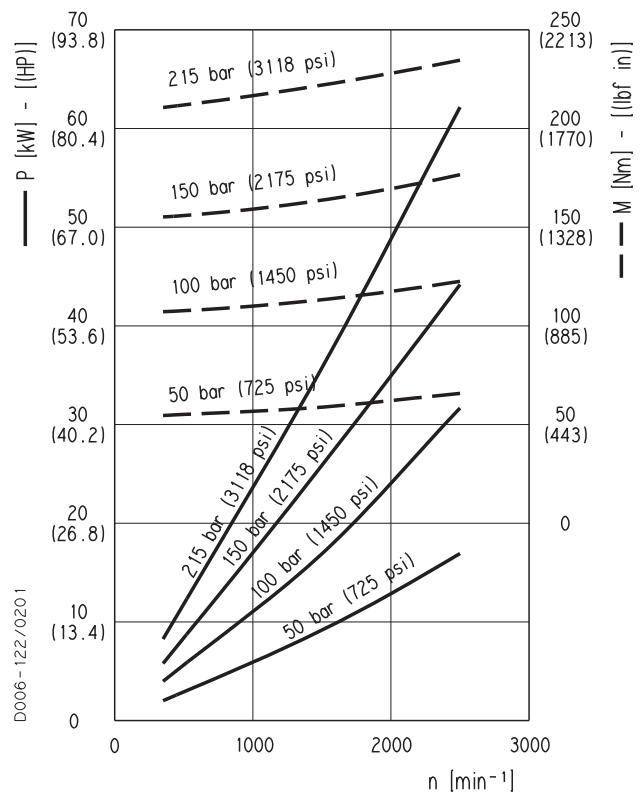
KP 30•43



KP 30•51



KP 30•56

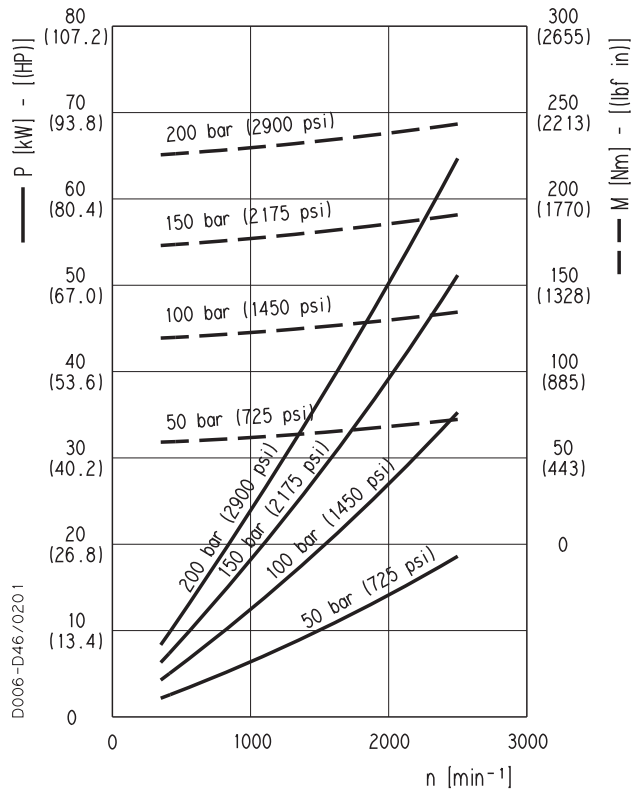


01/03.2002

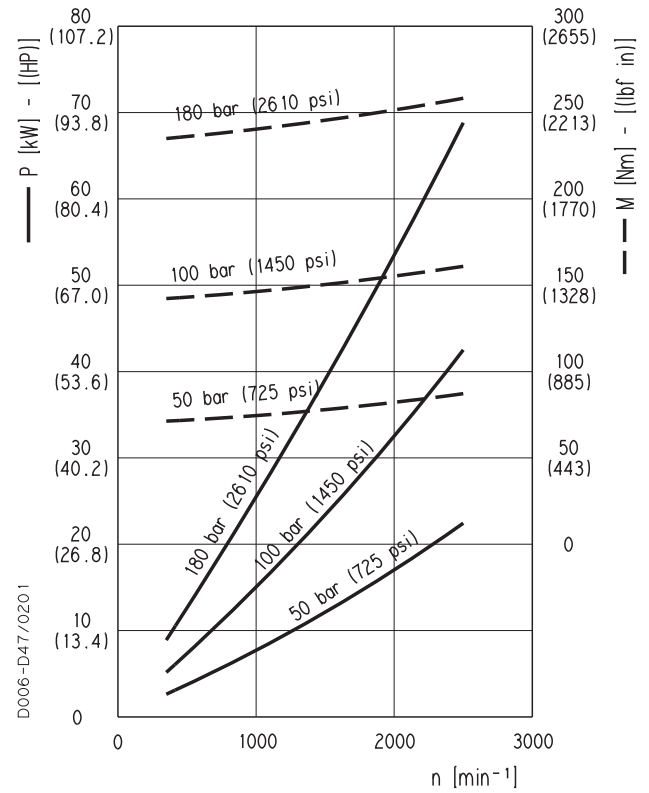
KAPPA 30 GEAR PUMPS PERFORMANCE CURVES

KP 30

KP 30•61



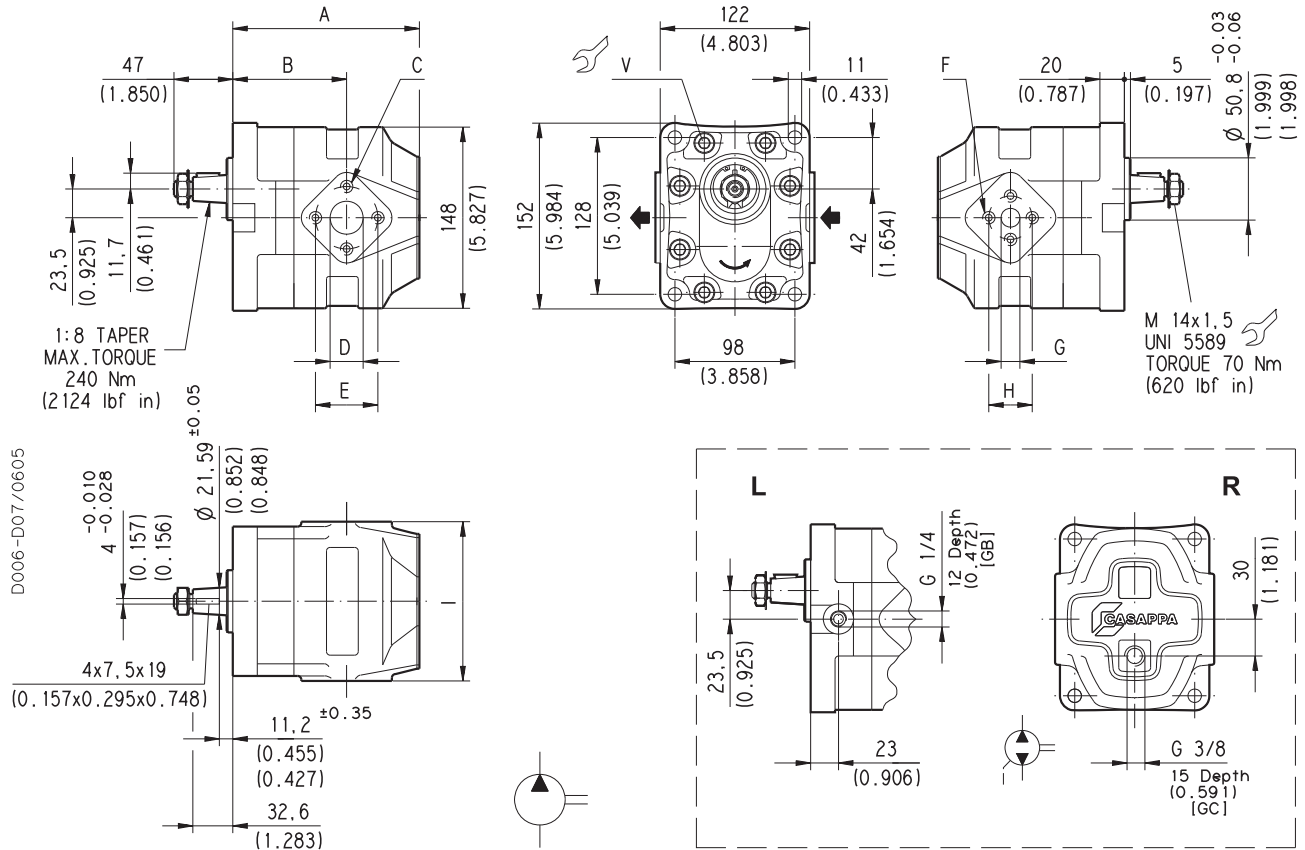
KP 30•73



01/03.2002

EUROPEAN FLANGED PORTS - 4 Bolts

Metric thread ISO 60° conforms to ISO/R 262



V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

Pump type		A	B	C	D	E	F	G	H	I
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30-27	S D L R B	133 (5.236)	85 (3.346)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	M 8 Depth 17 (0.669)	19 (0.748)	40 (1.575)	130 (5.118)
KP 30-34		138 (5.433)	90 (3.543)							
KP 30-38		141 (5.551)	93 (3.661)							
KP 30-43		144 (5.669)	96 (3.780)							
KP 30-51		149 (5.866)	93 (3.661)							
KP 30-56		152 (5.984)	97 (3.819)							
KP 30-61		155 (6.102)	100 (3.937)							
KP 30-73	0-83 E3-L EF/ED-N	163 (6.417)	108 (4.252)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	135 (5.315)

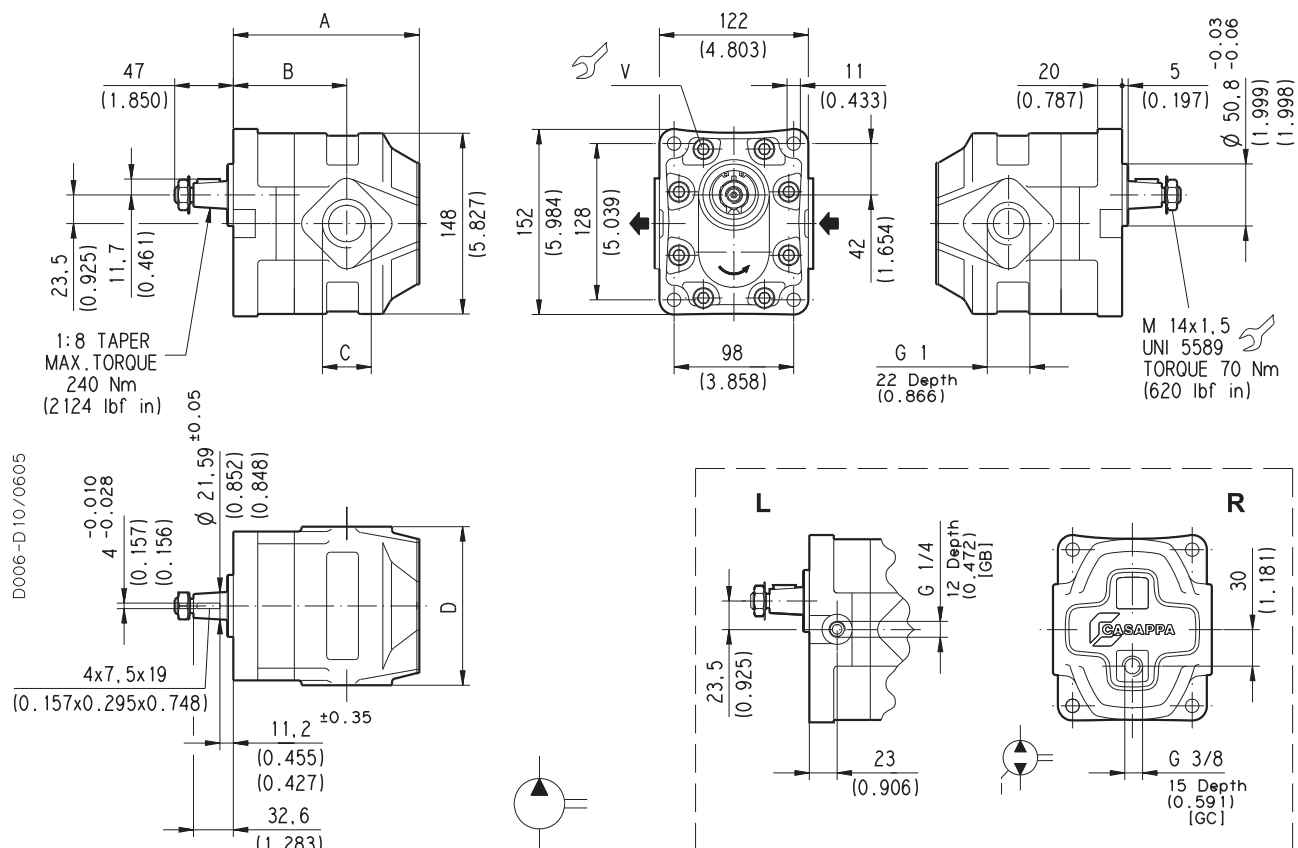
Rotation: S=left - D=right - L=reversible side drain - R=reversible rear drain - B=reversible internal drain

How to order:

KP 30-27 S0-83 E3-L ED/EB-N

GAS STRAIGHT THREAD PORTS

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


V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

Pump type		A	B	C	D
		mm (in)	mm (in)	mm (in)	mm (in)
KP 30•27	S D L R B	133 (5.236)	85 (3.346)	G 1 Depth 22 (0.866)	130 (5.118)
KP 30•34		138 (5.433)	90 (3.543)		
KP 30•38		141 (5.551)	93 (3.661)		
KP 30•43		144 (5.669)	96 (3.780)		
KP 30•51		149 (5.866)	93 (3.661)		
KP 30•56		152 (5.984)	97 (3.819)		
KP 30•61		155 (6.102)	100 (3.937)		
KP 30•73		163 (6.417)	108 (4.252)	G 1 1/4 Depth 24 (0.945)	135 (5.315)

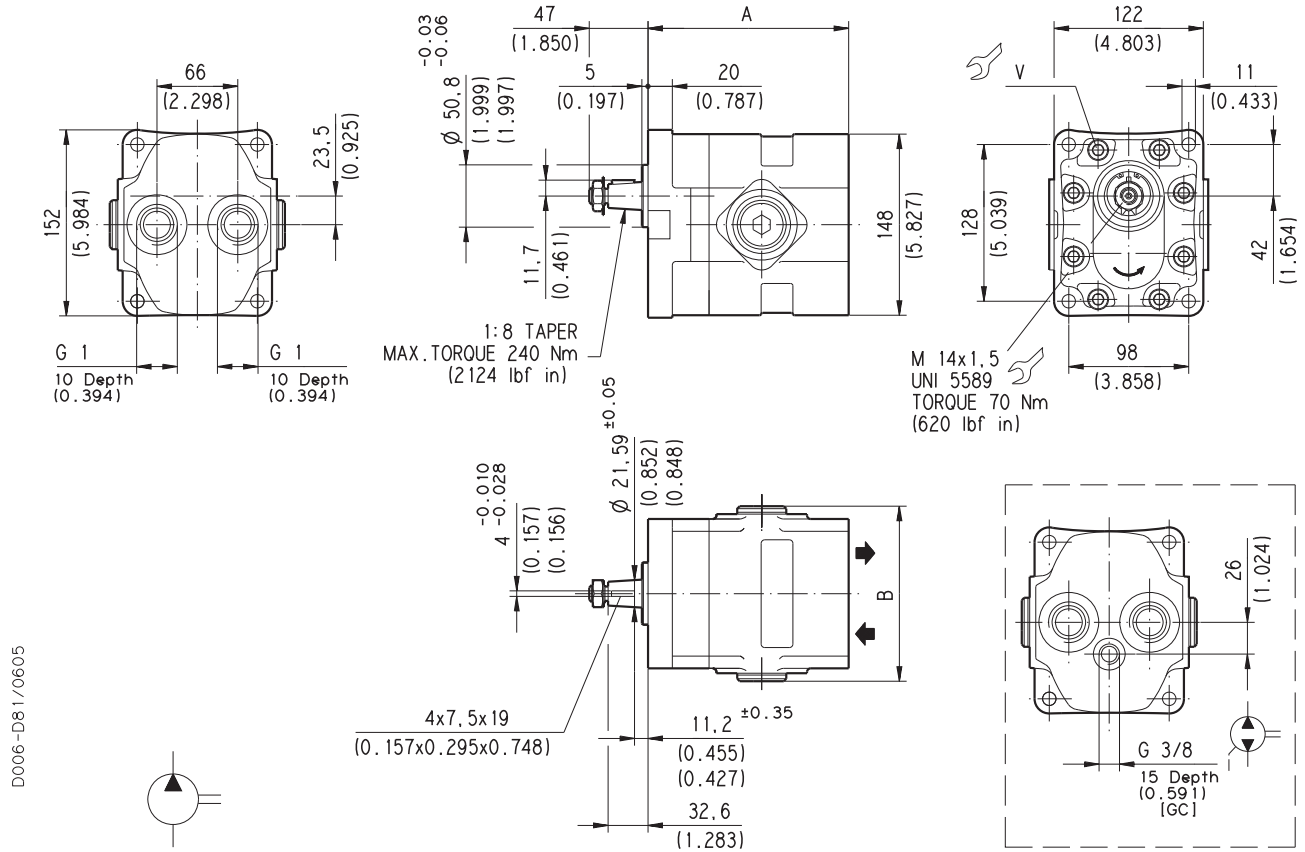
Rotation: S=left - D=right - L=reversible side drain - R=reversible rear drain - B=reversible internal drain

How to order:

KP 30•27 S0-83 E3-L GF/GF-N

GAS STRAIGHT THREAD PORTS

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



D006-D81/0605

V Screws tightening torque Nm (lbf in)

70 ± 7 (558 $\div$ 682)

Rear ports version (P)

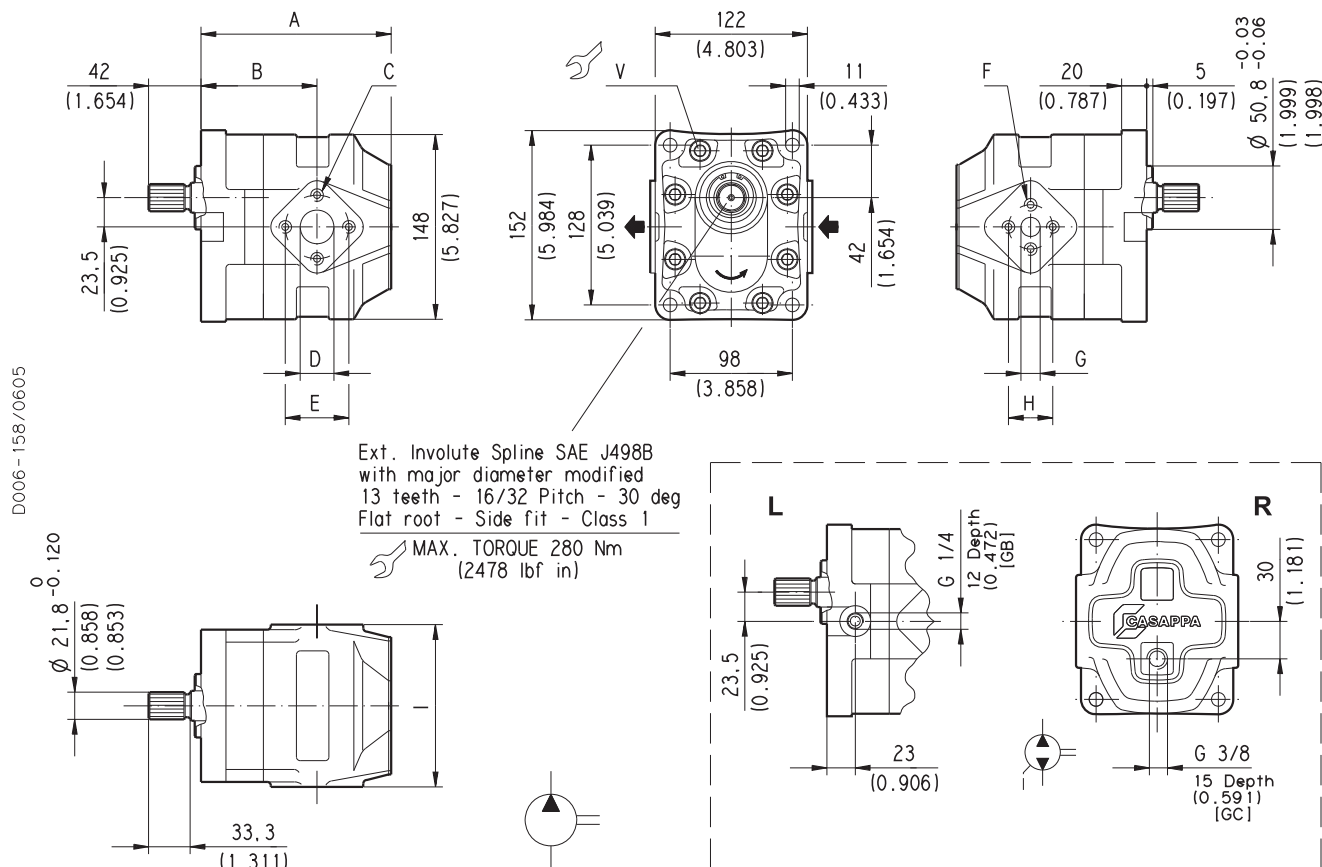
Pump type		A	B
		mm (in)	mm (in)
02/06.2005 KP 30•27 KP 30•34 KP 30•38 KP 30•43 KP 30•51 KP 30•56 KP 30•61 KP 30•73 S D R B	0-83 E3-P GF/GF-N	148 (5.827)	143 (5.630)
		153 (6.024)	
		156 (6.142)	
		159 (6.260)	
		164 (6.457)	
		167 (6.575)	148 (5.827)
		170 (6.693)	
		178 (7.008)	

Rotation: S=Left - D=Right - R=reversible rear drain - B=reversible internal drain

How to order:

KP 30•27 S0-83 E3-P GF/GF-N

EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262



Pump type		A	B	C	D	E	F	G	H	I
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30•27	S D L R B	133 (5.236)	85 (3.346)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	M 8 Depth 17 (0.669)	19 (0.748)	40 (1.575)	130 (5.118)
KP 30•34		138 (5.433)	90 (3.543)							
KP 30•38		141 (5.551)	93 (3.661)							
KP 30•43		144 (5.669)	96 (3.780)							
KP 30•51		149 (5.866)	93 (3.661)							
KP 30•56		152 (5.984)	97 (3.819)							
KP 30•61	S D L R B	155 (6.102)	100 (3.937)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	135 (5.315)
KP 30•73		163 (6.417)	108 (4.252)							

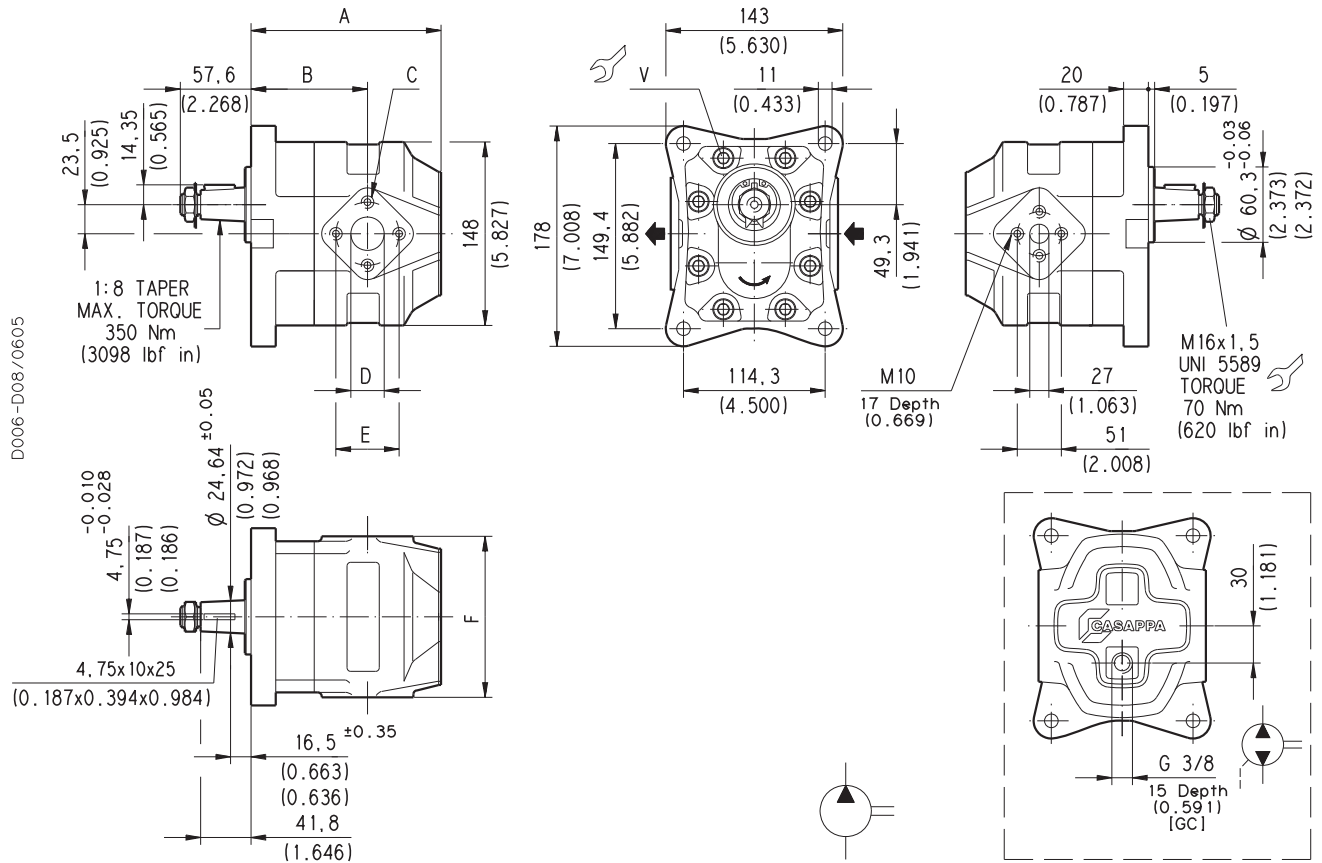
Rotation: S=left - D=right - L=reversible side drain - R=reversible rear drain - B=reversible internal drain

How to order:

KP 30•27 S0-83 E3-L ED/EB-N

EUROPEAN FLANGED PORTS - 4 Bolts

Metric thread ISO 60° conforms to ISO/R 262



V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

02/06.2005

Pump type		A	B	C	D	E	F
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30-51	S D R B	0-84 E4-L ED/ED-N		M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)
KP 30-61		156 (6.142)	101 (3.976)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)
KP 30-73		164 (6.457)	109 (4.291)				

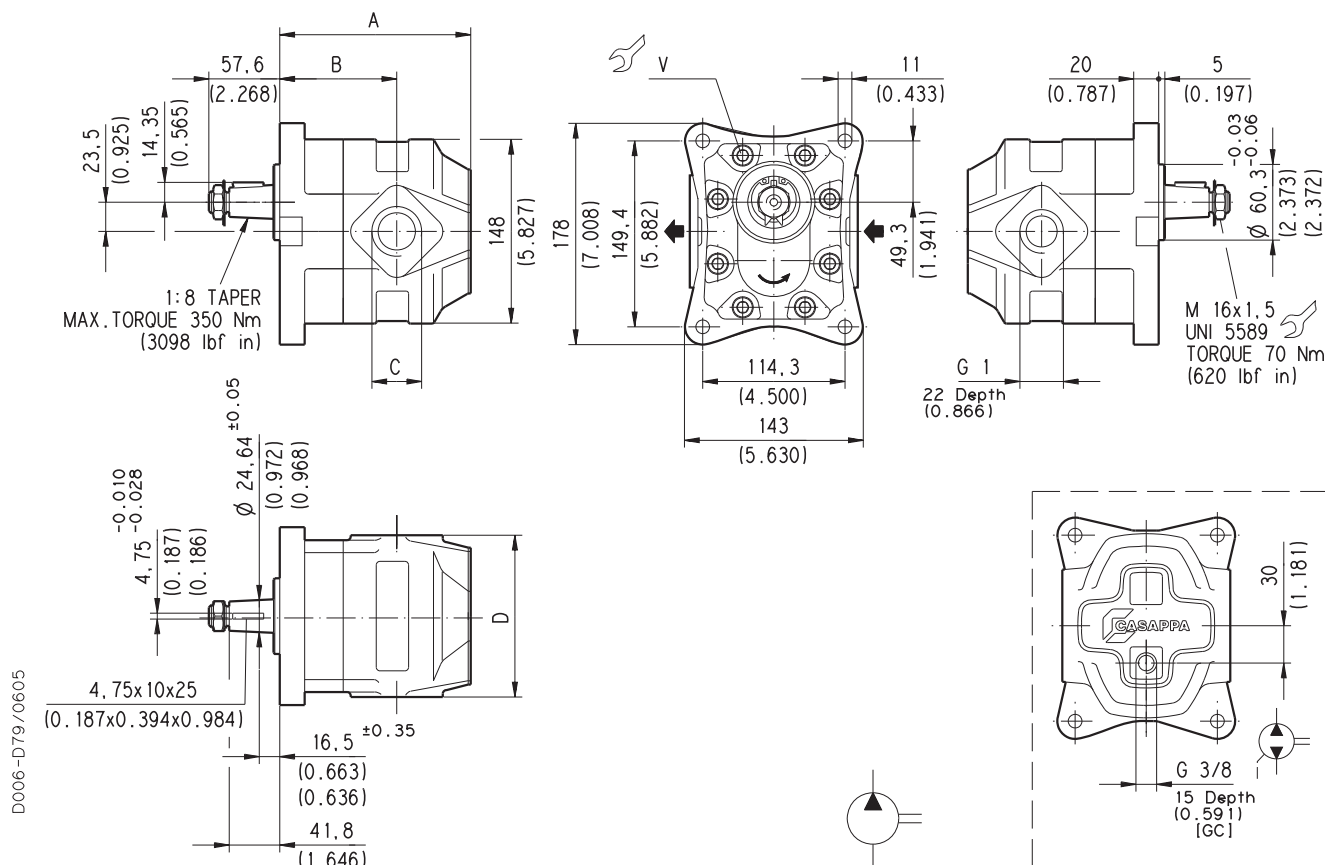
Rotation: S=left - D=right - R=reversible rear drain - B=reversible internal drain

How to order:

KP 30-51 S0-84 E4-L ED/ED-N

GAS STRAIGHT THREAD PORTS

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



V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

Pump type			A	B	C	D
			mm (in)	mm (in)	mm (in)	mm (in)
KP 30-51	S D R B	0-84 E4-L GF/GF-N	150 (5.906)	94 (3.701)	G 1 Depth 22 (0.866)	130 (5.118)
KP 30-61		0-84 E4-L GG/GF-N	156 (6.142)	101 (3.976)	G 1 1/4 Depth 24 (0.945)	135 (5.315)
KP 30-73			164 (6.457)	109 (4.291)		

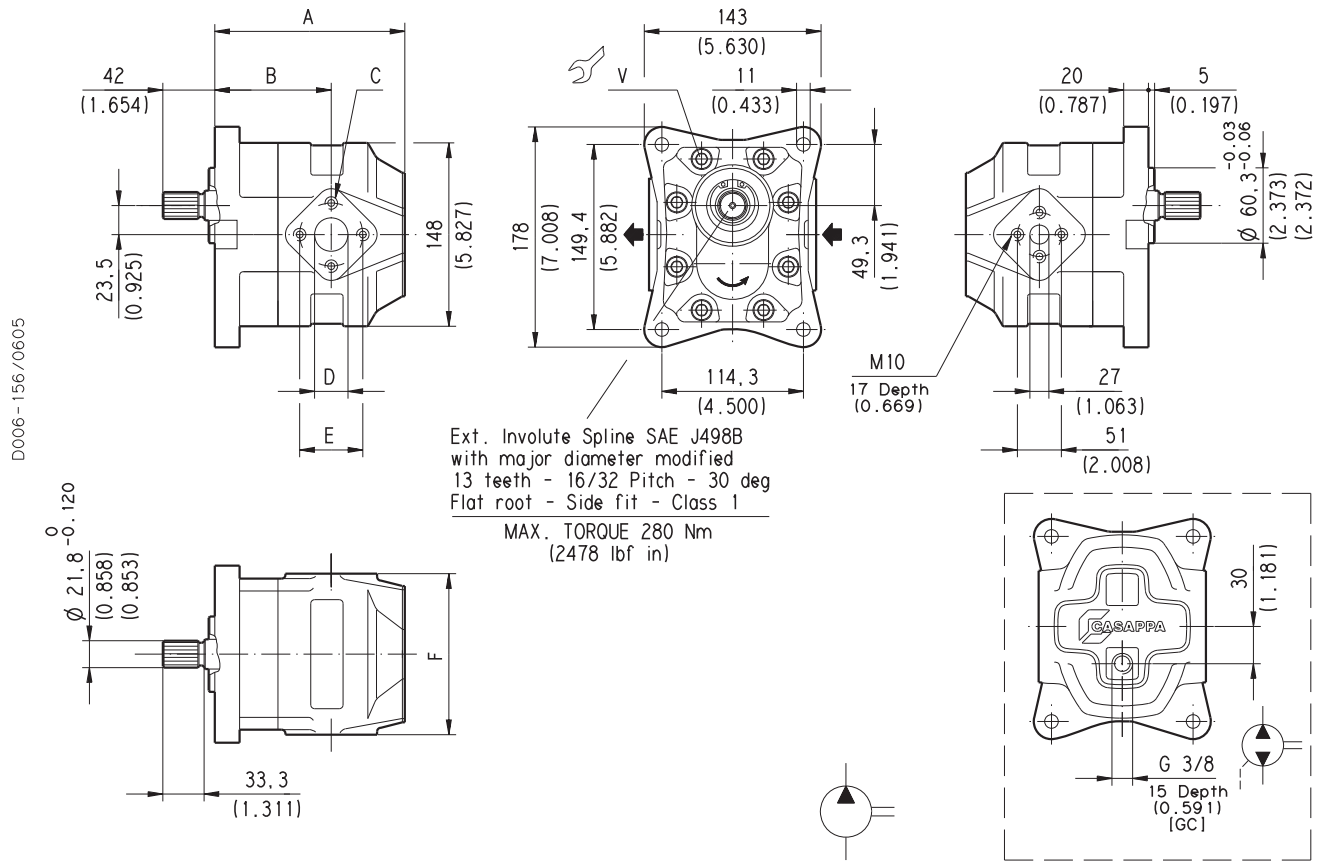
Rotation: S=left - D=right - R=reversible rear drain - B=reversible internal drain

How to order:

KP 30-51 S0-84 E4-L GF/GF-N

EUROPEAN FLANGED PORTS - 4 Bolts

Metric thread ISO 60° conforms to ISO/R 262



V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

02/06.2005

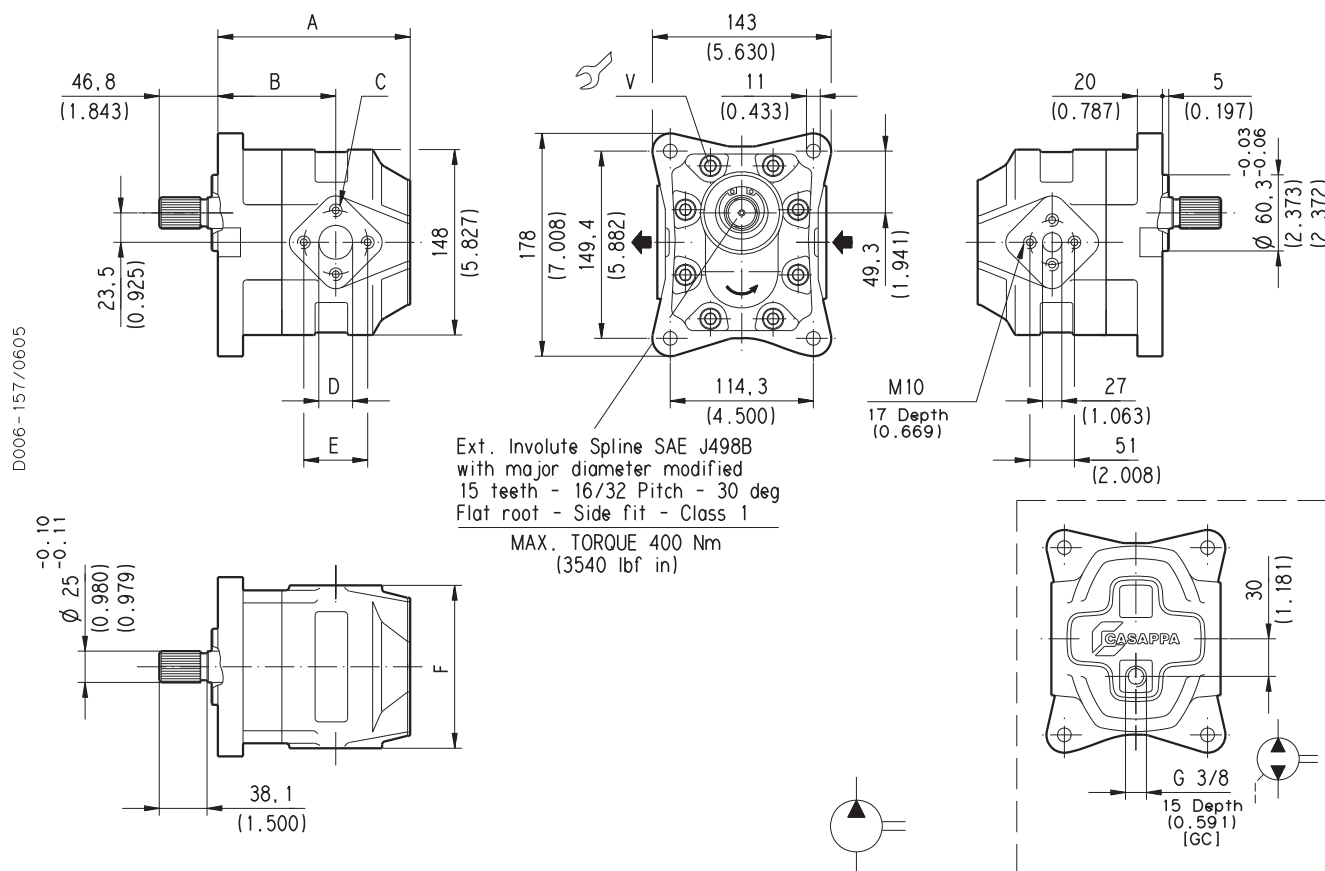
Pump type		A	B	C	D	E	F
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30-51 KP 30-61 KP 30-73	S D R B	0-A8 E4-L ED/ED-N		M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)
				M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)
		0-A8 E4-L EF/ED-N					

Rotation: S=left - D=right - R=reversible rear drain - B=reversible internal drain

How to order:

KP 30-51 S0-A8 E4-L ED/ED-N

EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262



V Screws tightening torque Nm (lbf in)	
70 ±7 (558 ÷ 682)	

Pump type		A	B	C	D	E	F
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30-51 KP 30-61 KP 30-73	S D R B	0-A5 E4-L ED/ED-N		M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)
		0-A5 E4-L EF/ED-N		M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)

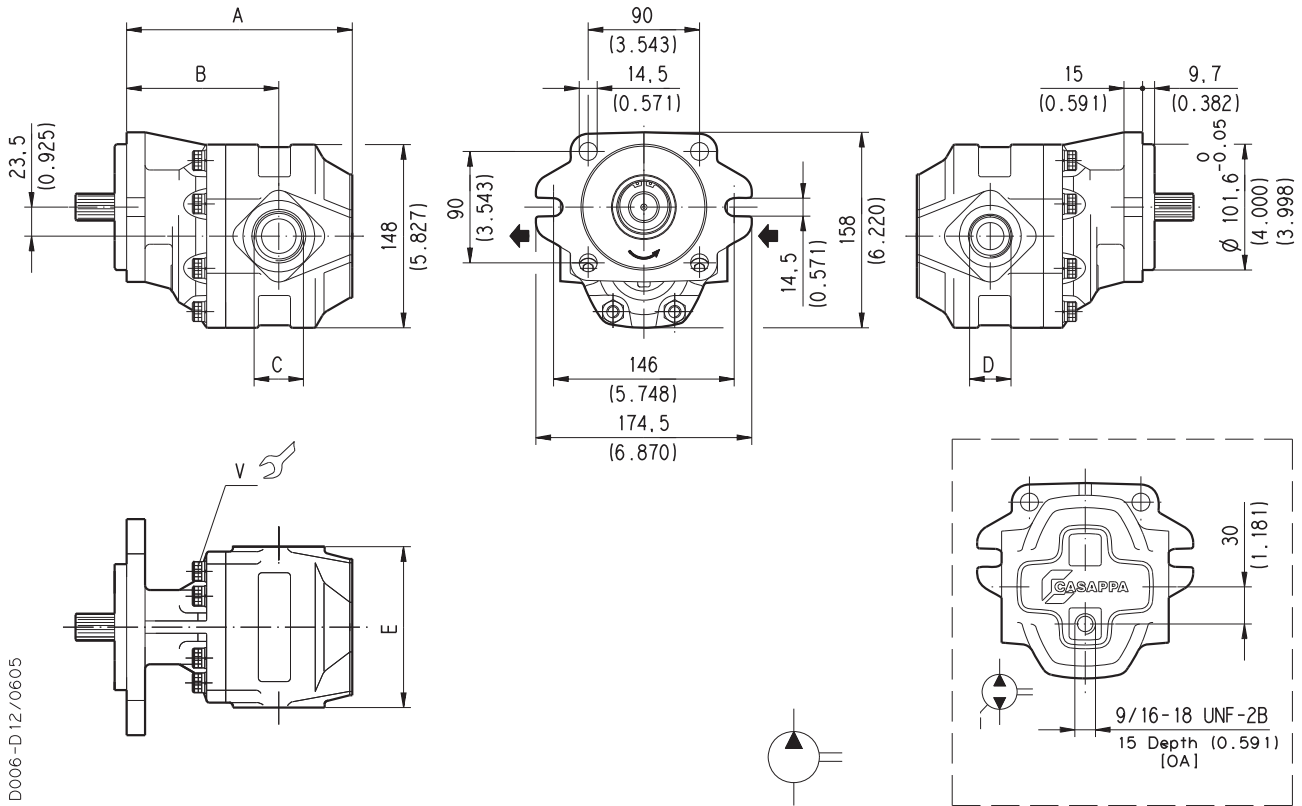
Rotation: S=left - D=right - R=reversible rear drain - B=reversible internal drain

How to order:

KP 30-51 S0-A5 E4-L ED/ED-N

SAE STRAIGHT THREAD PORTS J514

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



D006-D12/0605

V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

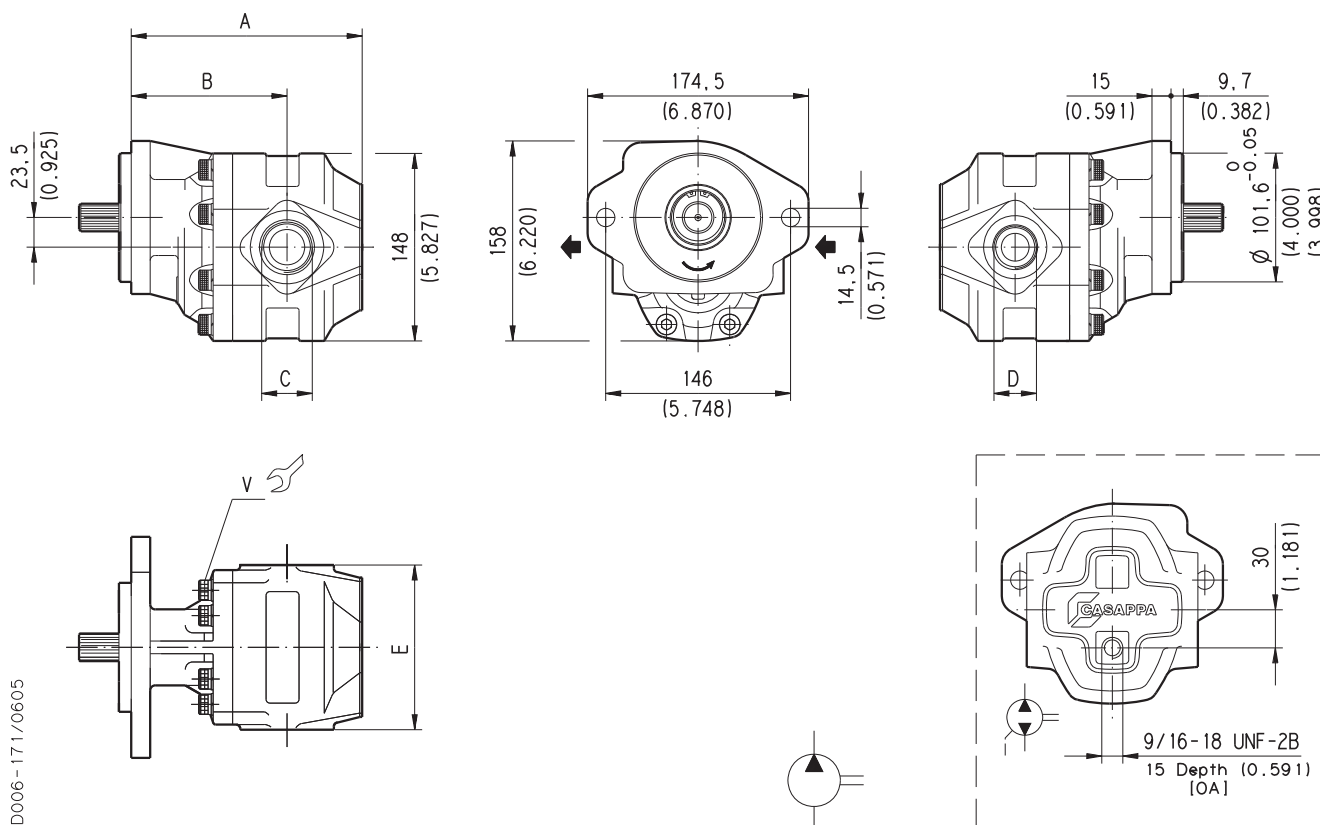
To order see page 33 - 34

Pump type	A	B	C	D	E	Ports code	
	mm (in)	mm (in)			mm (in)	IN	OUT
KP 30-27	164 (6.457)	115 (4.528)	1-5/16-12 UN-2B	1-1/16-12 UN-2B	130 (5.118)	OF	OD
KP 30-34	169 (6.654)	120 (4.724)					
KP 30-38	172 (6.772)	123 (4.843)					
KP 30-43	175 (6.890)	126 (4.961)	1-5/8-12 UN-2B	1-5/16-12 UN-2B	130 (5.118)	OG	OF
KP 30-51	180 (7.087)	123 (4.843)					
KP 30-56*	182 (7.165)	127 (5.000)					
KP 30-61	186 (7.323)	130 (5.118)	1-7/8-12 UN-2B	1-5/8-12 UN-2B	135 (5.433)	OH	OG
KP 30-73	194 (7.638)	138 (5.433)					

* Available only with 04 and 32 shaft for 0 and 1 version.

SAE STRAIGHT THREAD PORTS J514

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



D006-171/0605

V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

To order see page 33 - 34

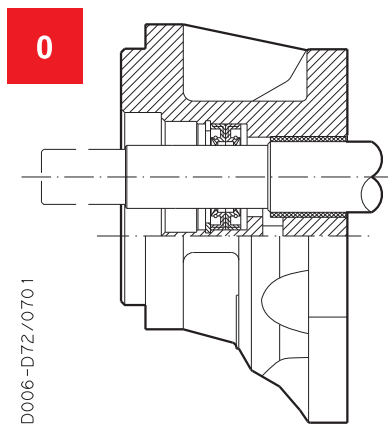
Pump type	A	B	C	D	E	Ports code	
	mm (in)	mm (in)			mm (in)	IN	OUT
KP 30-27	164 (6.457)	115 (4.528)	1-5/16-12 UN-2B	1-1/16-12 UN-2B	130 (5.118)	OF	OD
KP 30-34	169 (6.654)	120 (4.724)					
KP 30-38	172 (6.772)	123 (4.843)	1-5/8-12 UN-2B	1-5/16-12 UN-2B		OG	OF
KP 30-43	175 (6.890)	126 (4.961)					
KP 30-51	180 (7.087)	123 (4.843)					
KP 30-56*	182 (7.165)	127 (5.000)	1-7/8-12 UN-2B	1-5/8-12 UN-2B	135 (5.433)	OH	OG
KP 30-61	186 (7.323)	130 (5.118)					
KP 30-73	194 (7.638)	138 (5.433)					

* Available only with 04 and 32 shaft for 0 and 1 version.

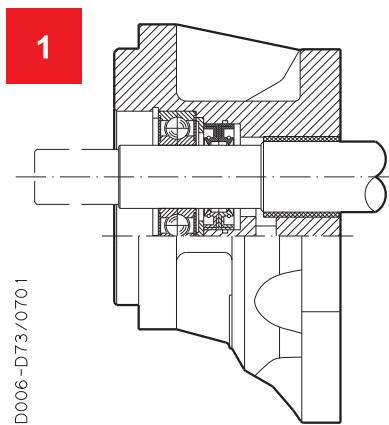
KAPPA 30 SAE VERSION

SAE

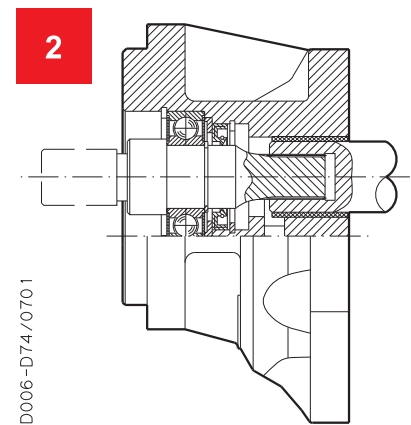
Replaces: 01/03.2002



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



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



Special version with independent shaft for applications with low radial load and without axial load on the drive shaft.

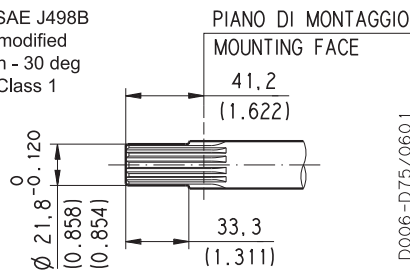
KAPPA 30 END DRIVE SHAFTS

SAE

SAE "B" SPLINE

04

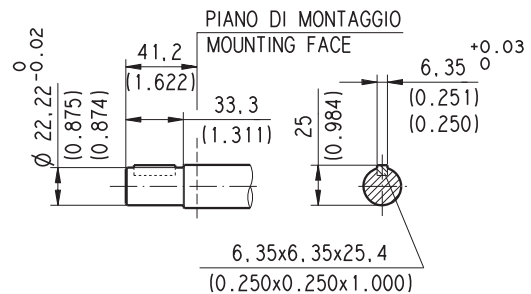
Ext. Involute Spline SAE J498B
with major diameter modified
13 teeth - 16/32 Pitch - 30 deg
Flat Root - Side fit - Class 1



○ MAX 2921 lbf in (330 Nm) ◆

SAE "B" STRAIGHT

32

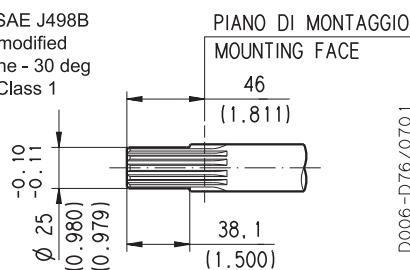


◆ MAX 1770 lbf in (200 Nm) ◆

SAE "BB" SPLINE

05

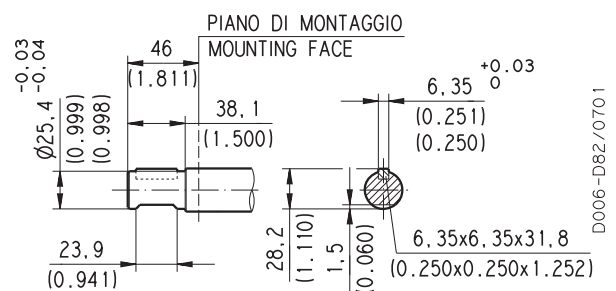
Ext. Involute Spline SAE J498B
with major diameter modified
15 teeth - 16/32 Spline - 30 deg
Flat Root - Side fit - Class 1



○ MAX 4426 lbf in (500 Nm) ◆

SAE "BB" STRAIGHT

33



◆ MAX 2478 lbf in (280 Nm) ◆

◆ For "2" version whichever end shaft, the max. torque applicable is M= 1505 lbf in (170 Nm)

HOW TO ORDER SINGLE PUMPS

1	2	3		4	5		6	7		8
Pump type	Rotation	Version	–	Drive shaft	Mounting flange	–	Ports position	Ports IN/OUT	–	Seals
KP30-27	S	0	–	04	S3	–	L	OF/OD	–	N

1	Pump Type	CODE
in³/rev	(cm³/rev)	
1.63	26,7	KP 30•27
2.11	34,56	KP 30•34
2.40	39,27	KP 30•38
2.68	43,98	KP 30•43
3.16	51,83	KP 30•51
3.45	56,54	KP 30•56
3.74	61,26	KP 30•61
4.50	73,82	KP 30•73

2	Rotation	CODE
Left		S
Right		D
Reversible		R
Reversible with internal drain		B

3	Version	CODE
	Without outboard bearing	0
	With outboard bearing	1
	With outboard bearing and indep. shaft	2

4	Drive shaft	CODE
	SAE "B" spline (13 teeth)	04
	SAE "B" straight	32
	SAE "BB" spline (15 teeth)	05
	SAE "BB" straight	33

5	Mounting flange	CODE
SAE "B" 2-4 holes		S3
SAE "B" 2 holes		S5

CODE	Ports position	6
L	Side	
P	Rear	

CODE	Ports IN/OUT	7
SAE STRAIGHT THREAD PORTS (ODT)		
Side	Pump type	
OF/OD	KP 30•27	
OF/OD	KP 30•34	
OG/OF	KP 30•38	
OG/OF	KP 30•43	
OG/OF	KP 30•51	
OH/OG	KP 30•56	
OH/OG	KP 30•61	
OH/OG	KP 30•73	

CODE	Seals (a)	8
N	Buna N (standard) - no code	
N-H	Buna with high back pressure shaft seals	
V	Viton	
N Bz	Buna N and Bronze thrust plates	
V Bz	Viton and Bronze thrust plates	

(a) Choose the seals according to the temperature shown on page 1

ORDER EXAMPLE

Standard pump **KP 30•27 S0 - 04 S3 - L OF/OD - N**

Special version pump **KP 30•27 S2 - 32 S3 - L OF/OD - V Bz**

MULTIPLE PUMPS

KAPPA series pumps can be coupled together in combination. Where input power requirement of each element varies, that 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.

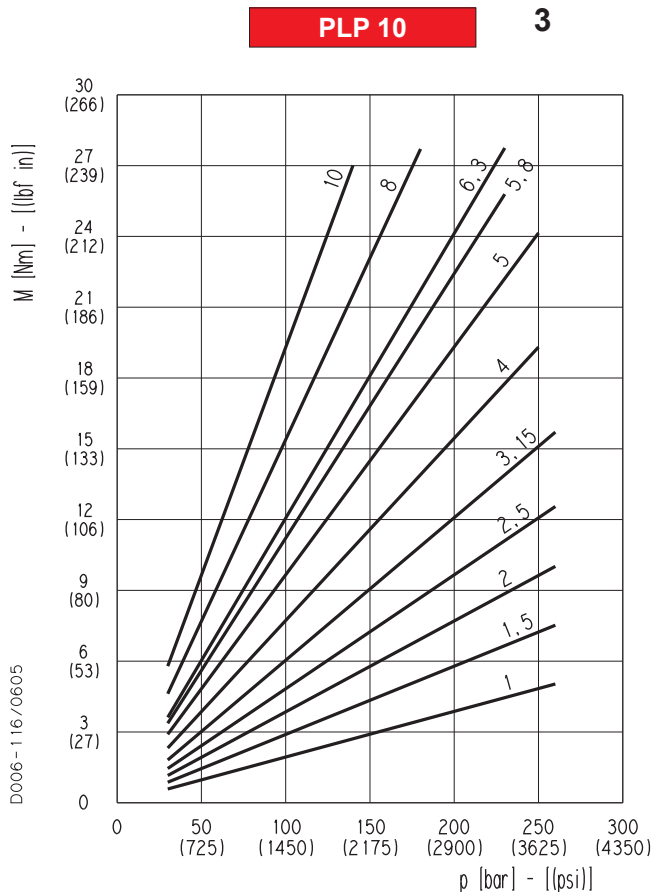
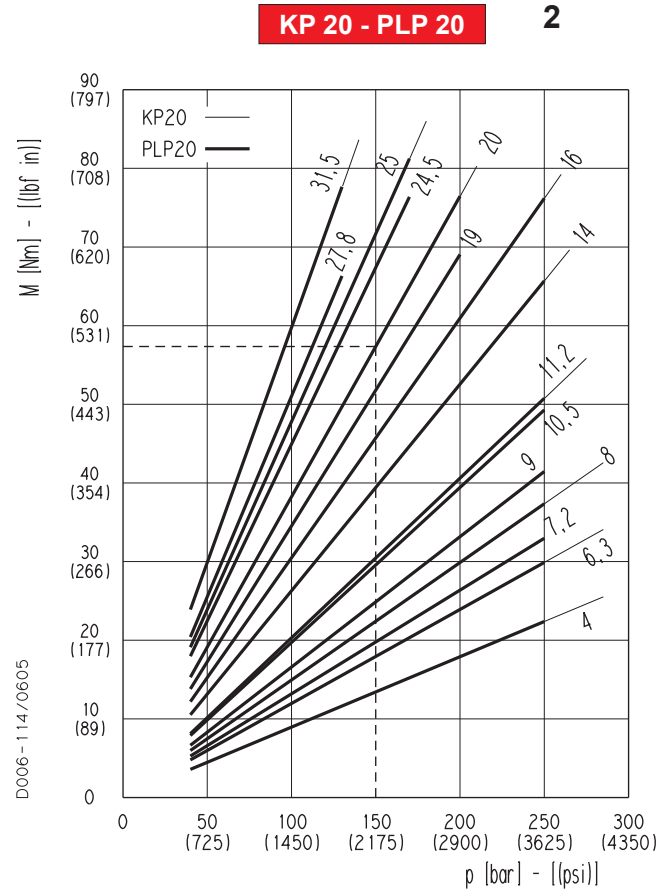
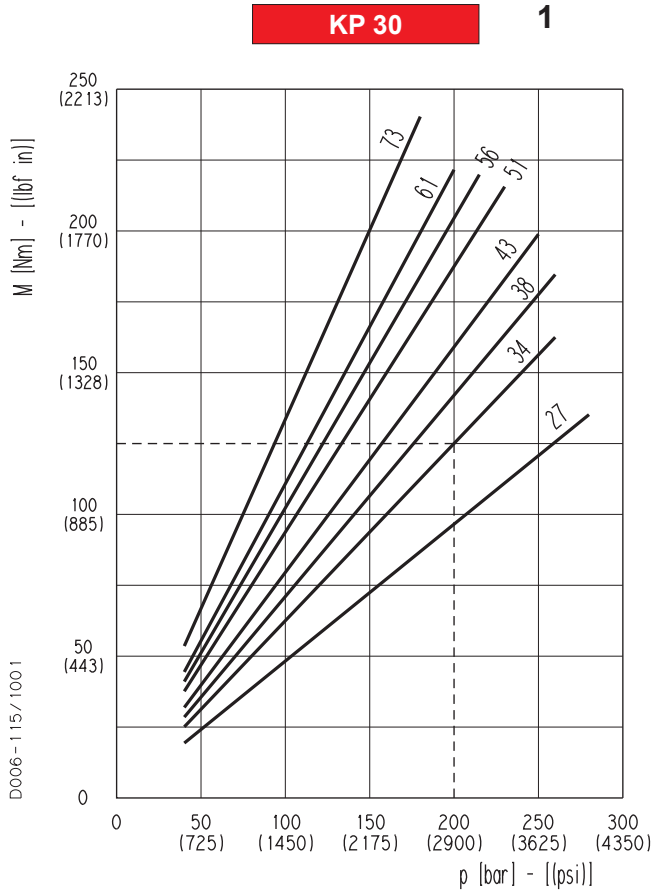
M	lbf in (Nm)	Torque
V	in ³ /rev (cm ³ /rev)	Displacement
Δp	psi (bar)	Pressure
$\eta_{hm} = \eta_{hm}(V, \Delta p, n) \quad (\approx 0,90)$		Hydro-mechanical efficiency

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

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

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. Diagrams providing approximate selection data will be found on page 36.

ABSORBED TORQUE

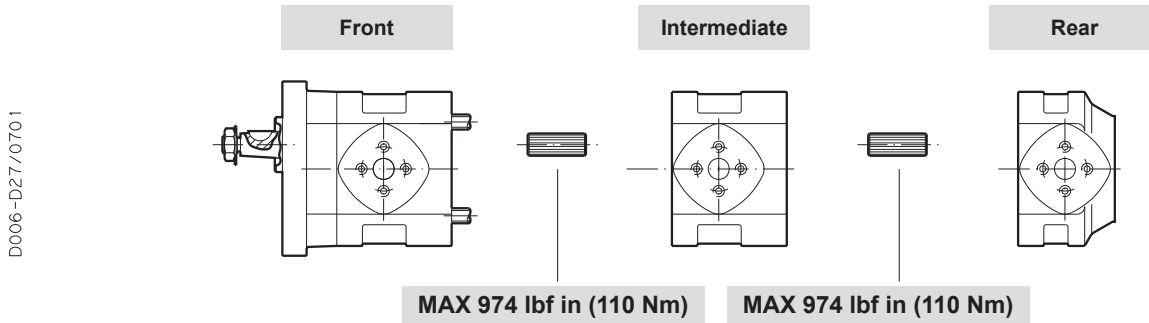


DRIVE SHAFT SELECTION

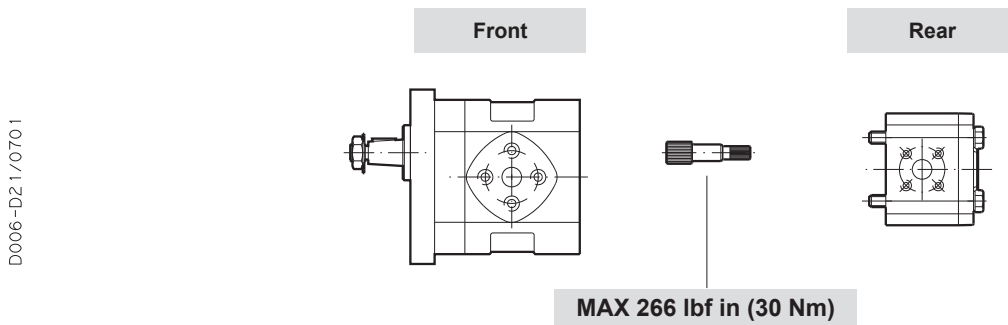
Let us consider a double pump KP30•34+KP20•20. If we suppose that we have to work with the first pump at a pressure of 2900 psi (200 bar) and the second pump at a pressure of 2175 psi (150 bar), the graph 1 shows that the torque absorbed by KP30•34 is 1106 lbf in (125 Nm) and the graph 2 shows that the torque absorbed by KP20•20 is 505 lbf in (57 Nm) acceptable value because it doesn't exceed the maximum drive shaft torque that is 974 lbf in (110 Nm), see page 38. The torque to be transmitted by the first drive shaft will thus be 1106+505= 1611 lbf in (125+57= 182 Nm), this value must not exceed the shaft's maximum rated value.

02/06.2005

KAPPA 20 + KAPPA 20



KAPPA 20 + POLARIS 10

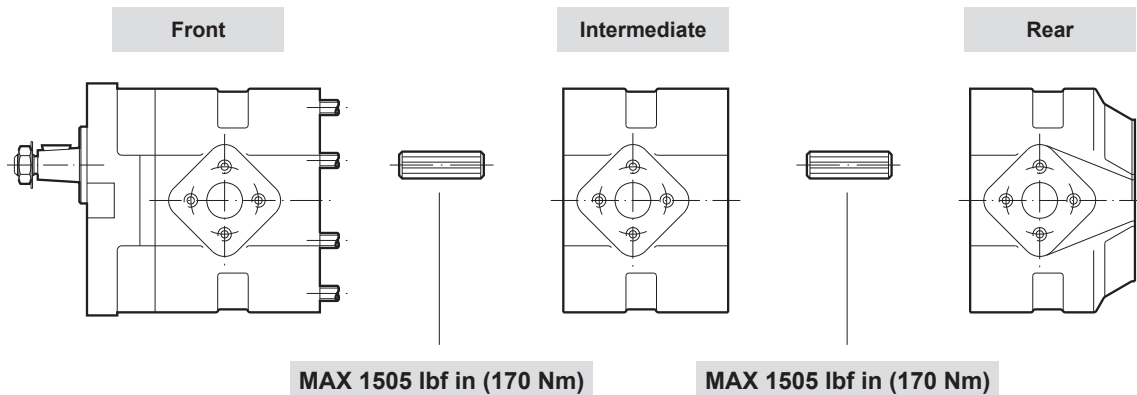


KAPPA 20 END DRIVE SHAFT

EUROPEAN TAPERED 1:8 82 MAX 1239 lbf in (140 Nm)	SAE "A" SPLINE 03 MAX 885 lbf in (100 Nm)	SAE SPLINE 01 MAX 1151 lbf in (130 Nm)
SAE SPLINE 07 MAX 1505 lbf in (170 Nm)	SAE "B" SPLINE 04 MAX 2478 lbf in (280 Nm)	SAE "A" STRAIGHT 31 MAX 620 lbf in (70 Nm)
STRAIGHT 49 MAX 1239 lbf in (140 Nm)	STRAIGHT 50 MAX 885 lbf in (100 Nm)	SAE "B" STRAIGHT 32 MAX 1770 lbf in (200 Nm)

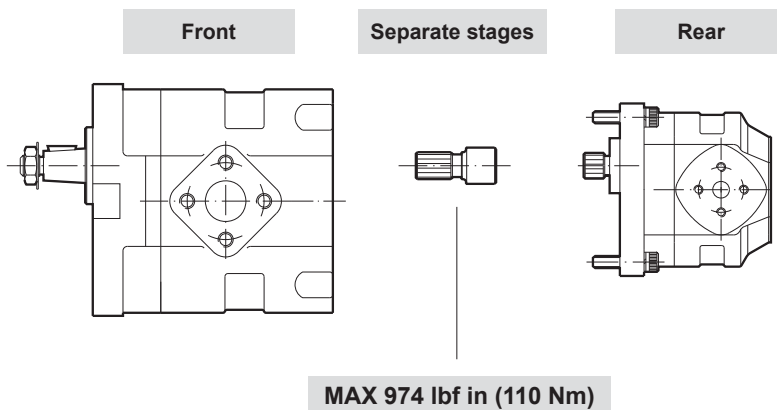
KAPPA 30 + KAPPA 30

D006-D23/0701



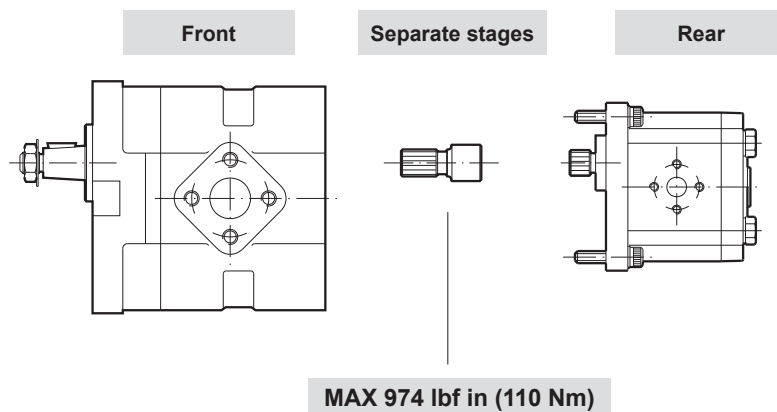
KAPPA 30 + KAPPA 20

D006-D22/0701



KAPPA 30 + POLARIS 20

D006-D26/0701

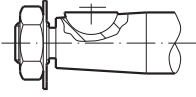


01/03.2002

KAPPA 30 END DRIVE SHAFTS

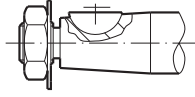
Replaces: 01/03.2002

EUROPEAN TAPERED 1:8 **83**



MAX 2124 lbf in (240 Nm)

EUROPEAN TAPERED 1:8 **84**



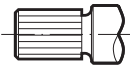
MAX 3098 lbf in (350 Nm)

SAE "B" SPLINE **04**



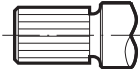
○ MAX 2921 lbf in (330 Nm)

SAE SPLINE **A8**



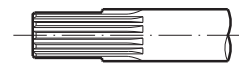
○ MAX 2478 lbf in (280 Nm)

SAE SPLINE **A5**



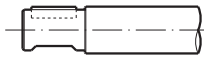
○ MAX 3540 lbf in (400 Nm)

SAE "BB" SPLINE **05**



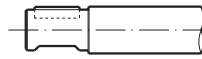
○ MAX 4426 lbf in (500 Nm)

SAE "B" STRAIGHT **32**



MAX 1770 lbf in (200 Nm)

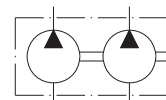
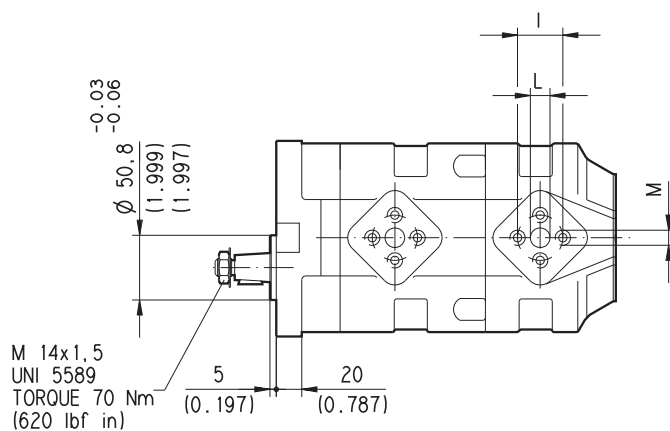
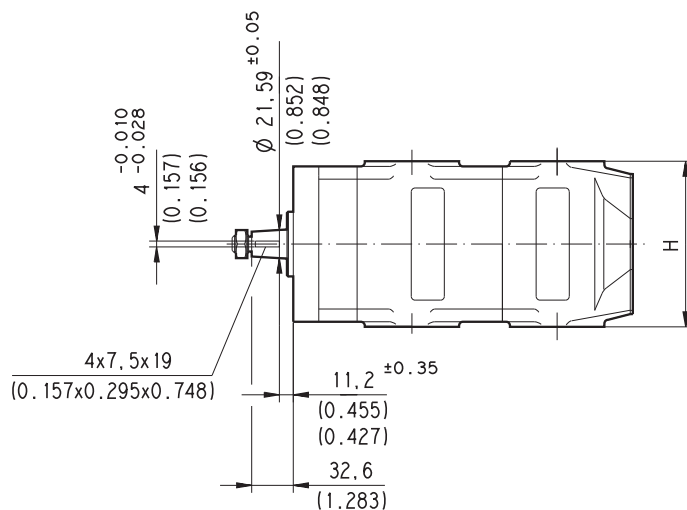
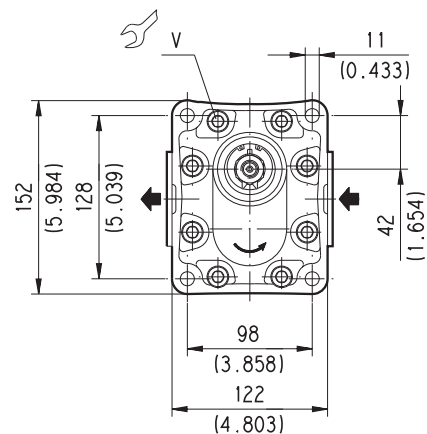
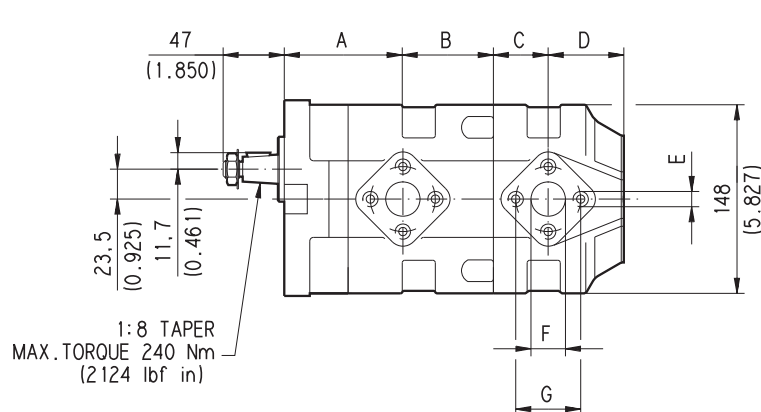
SAE "BB" STRAIGHT **33**



MAX 2478 lbf in (280 Nm)

○ 03/03.2006

EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262



V Screws tightening torque Nm (lbf in)

70 ± 7 (558 $\pm$ 682)

Pump type	A	B	C	D	E	F	G	H	I	L	M							
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)							
KP 30•27	85 (3.346)	63 (2.480)	35 (1.378)	48 (1.890)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)	40 (1.575)	19 (0.748)	M 8 Depth 17 (0.669)							
KP 30•34	90 (3.543)		40 (1.575)															
KP 30•38	93 (3.661)		43 (1.693)															
KP 30•43	96 (3.780)		46 (1.811)															
KP 30•51	93 (3.661)	71 (2.795)	43 (1.693)	56 (2.205)								M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)	51 (2.008)	27 (1.063)	M 10 Depth 17 (0.669)
KP 30•56	97 (3.819)	70 (2.756)	47 (1.850)	55 (2.165)														
KP 30•61	100 (3.937)		50 (1.969)															
KP 30•73	108 (4.252)		58 (2.283)															

The length of a triple pump is obtained with the sum of the following dimensions: **A+B+C+B+C+D**.

How to order a triple pump

(for double pump omit the intermediate pump)

Front pump	/	Intermediate pump	/	Rear pump		Rotation (1)	-	Seals (2)
---------------	---	----------------------	---	--------------	--	-----------------	---	--------------

KP30•27 / 30•27 / 30•27 / S -

(1) Rotation: S= Left - D= Right

(2) For Buna N seals no code

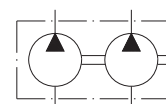
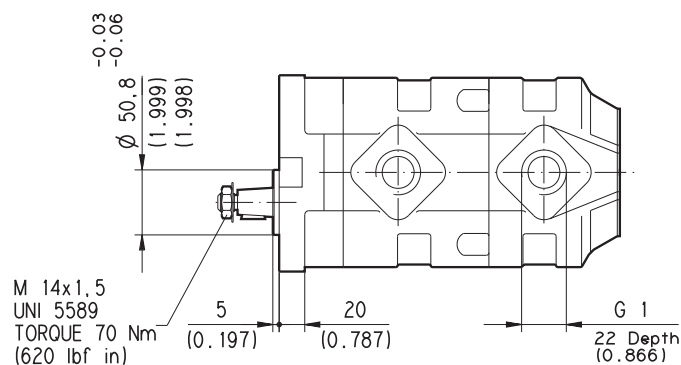
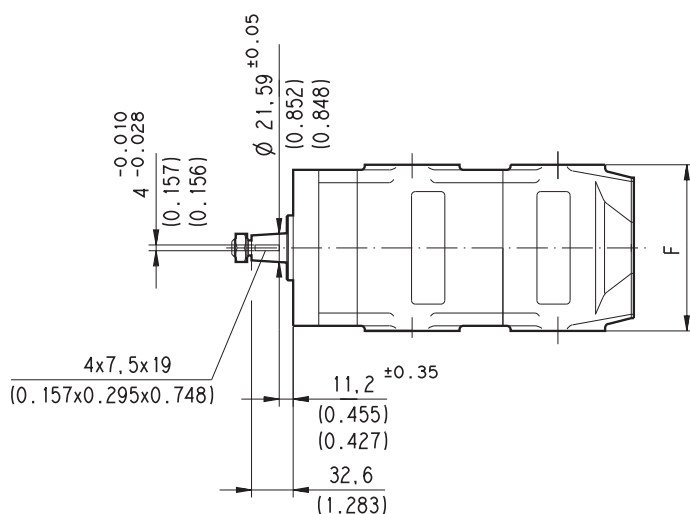
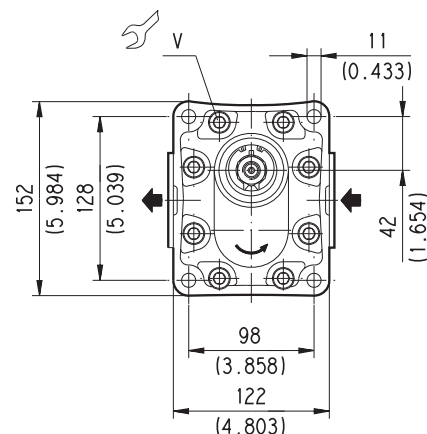
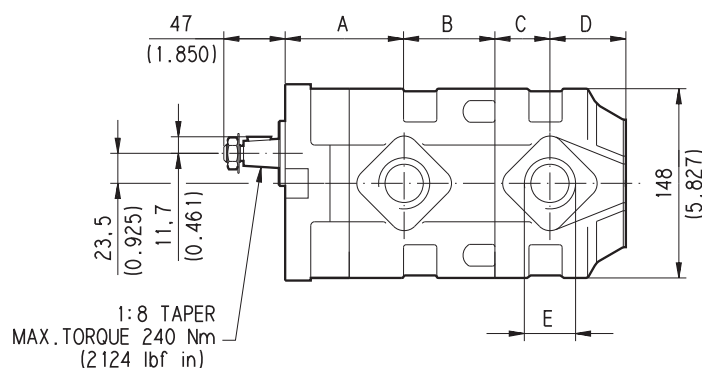
ORDER EXAMPLE

Double pump **KP30•27/30•27 S**

Triple pump **KP30•27/30•27/30•27 S**

GAS STRAIGHT THREAD PORTS

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



V Screws tightening torque Nm (lbf in)

70 ±7 (558 ± 682)

Pump type	A	B	C	D	E	F	Port code					
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT				
KP 30•27	85 (3.346)	63 (2.480)	35 (1.378)	48 (1.890)	G 1 Depth 22 (0.866)	130 (5.118)	GF	GF				
KP 30•34	90 (3.543)		40 (1.575)									
KP 30•38	93 (3.661)		43 (1.693)									
KP 30•43	96 (3.780)		46 (1.811)									
KP 30•51	93 (3.661)	71 (2.795)	43 (1.693)	56 (2.205)					G 1 1/4 Depth 24 (0.945)	135 (5.315)	GG	GF
KP 30•56	97 (3.819)	70 (2.756)	47 (1.850)	55 (2.165)								
KP 30•61	100 (3.937)		50 (1.969)									
KP 30•73	108 (4.252)		58 (2.283)									

The length of a triple pump is obtained with the sum of the following dimensions: **A+B+C+B+C+D**.

How to order a triple pump

(for double pump omit the intermediate pump)

Pump type	/	Ports position	/	Ports IN/OUT	-	Rotation (1)	-	Seals (2)
KP 30•27	/	L	/	GF/GF	/			
Front pump								
30•27	/	L	/	GF/GF	/			
Intermediate pump								
30•27	/	L	/	GF/GF		S	/	-
Rear pump								

(1) Rotation: S= Left - D= Right

(2) For Buna N seals no code

ORDER EXAMPLE

Double pump

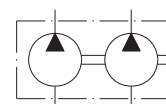
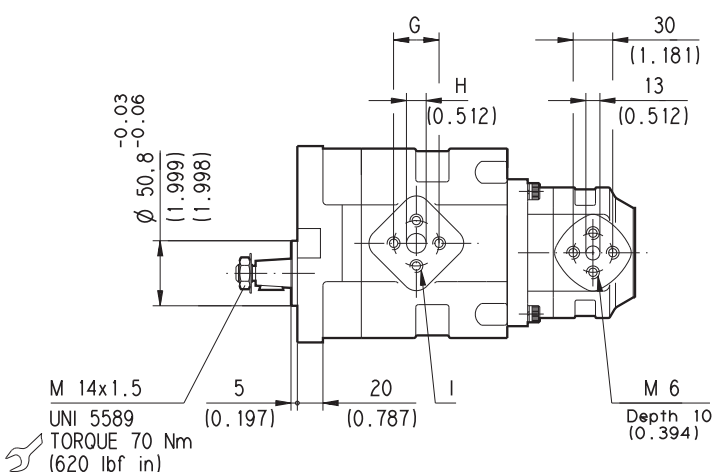
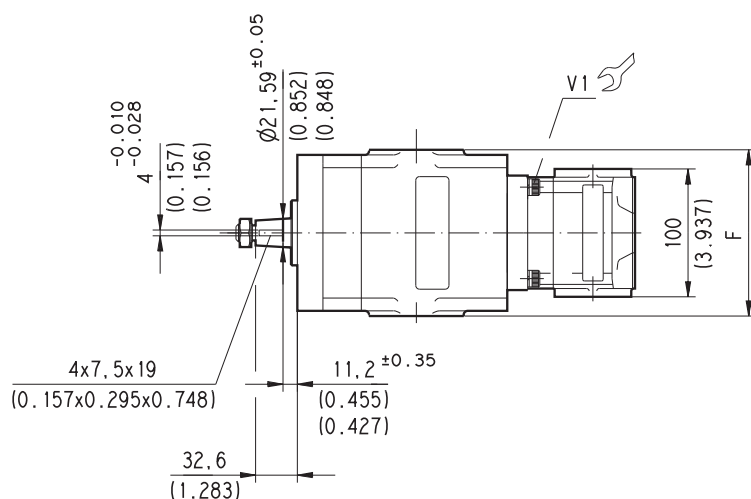
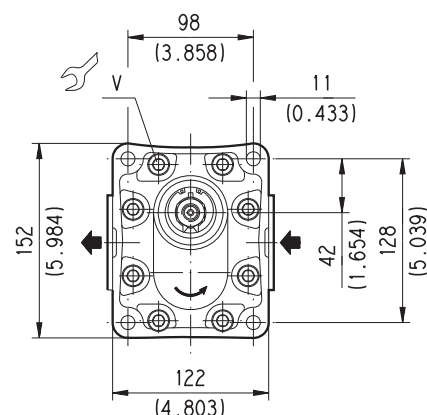
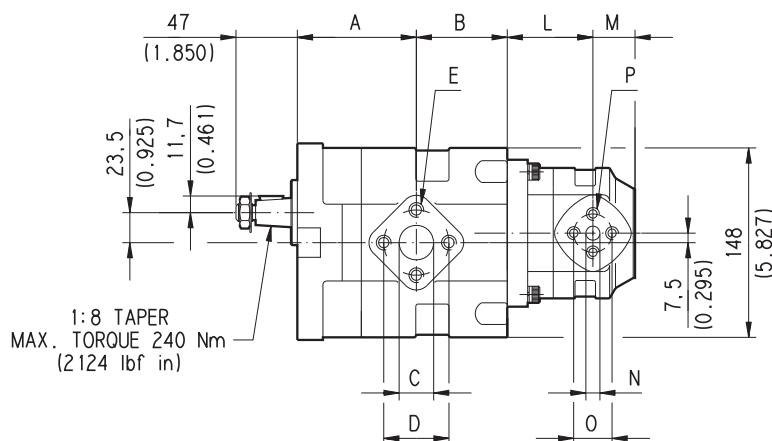
KP30•27-LGF/GF/30•27-LGF/GF S

Triple pump

KP30•27-LGF/GF/30•27-LGF/GF/30•27-LGF/GF S

02/06.2005

EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262



Screws tightening torque Nm (lbf in)

V

V1

70 ±7 (558 ÷ 682)

70 ±7 (558 ÷ 682)

KAPPA 30
HYDRAULIC GEAR PUMPS EUROPEAN STANDARD
83 E3+KP20

Pump type	A	B	C	D	E	F	G	H	I
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30•27	85 (3.346)	63 (2.480)	27 (1.063)	51 (2.008)	M 10 Depth 17 (0.669)	130 (5.118)	40 (1.575)	19 (0.748)	M 8 Depth 17 (0.669)
KP 30•34	90 (3.543)								
KP 30•38	93 (3.661)								
KP 30•43	96 (3.780)								
KP 30•51	93 (3.661)	71 (2.795)	33 (1.299)	62 (2.441)	M 12 Depth 17 (0.669)	135 (5.315)	51 (2.008)	27 (1.063)	M 10 Depth 17 (0.669)
KP 30•56	97 (3.819)	70 (2.756)							
KP 30•61	100 (3.937)								
KP 30•73	108 (4.252)								

Pump type	L	M	N	O	P
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 20•4	60 (2.362)	27,5 (1.083)	13 (0.512)	30 (1.181)	M 6 Depth 12 (0.472)
KP 20•6,3	62,5 (2.461)				
KP 20•8	65 (2.559)				
KP 20•11,2	68,5 (2.697)				
KP 20•14	67 (2.638)	33 (1.299)	91 (0.748)	40 (1.575)	M 8 Depth 14 (0.551)
KP 20•16	72,5 (2.854)				
KP 20•20	79 (3.110)				
KP 20•25	72 (2.835)	48 (1.890)			
KP 20•31,5	82 (3.228)				

How to order a double pump

Front pump	—	/	Rear pump	—	Rotation (1)	—	Seals (2)
---------------	---	---	--------------	---	-----------------	---	--------------

KP30•27 / 67 / 20•4 / S -

(1) Rotation: S= Left - D= Right

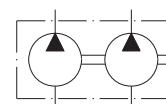
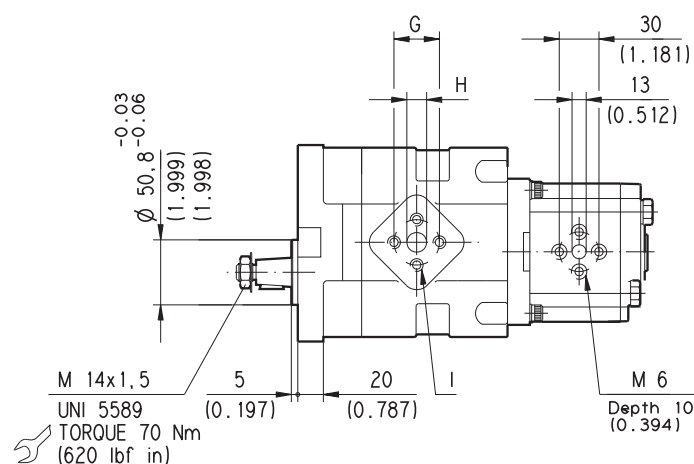
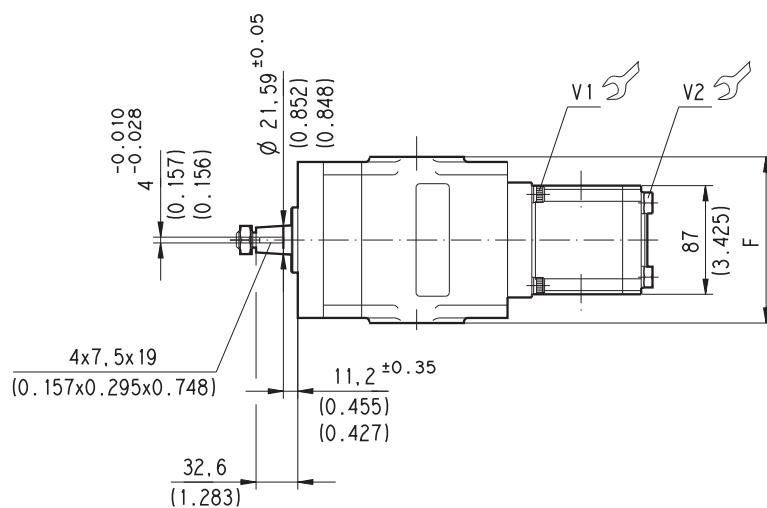
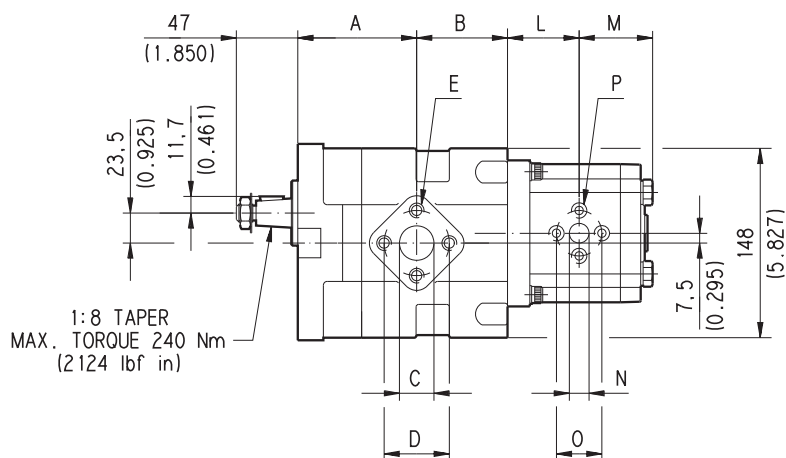
(2) For Buna N seals no code

ORDER EXAMPLE

Double pump

KP30•27-67/20•4 S/FS

EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262



D006-D19/0605

02/06.2005

Screws tightening torque Nm (lbf in)		
V	V1	V2
70 $\pm$ 7 (558 $\div$ 682)	70 $\pm$ 7 (558 $\div$ 682)	70 $\pm$ 7 (558 $\div$ 682)

KAPPA 30
HYDRAULIC GEAR PUMPS EUROPEAN STANDARD
83 E3+PL20

Pump type	A	B	C	D	E	F	G	H	I
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30•27	85 (3.346)	63 (2.480)	27 (1.063)	51 (2.008)	M 10 Depth 17 (0.669)	130 (5.118)	40 (1.575)	19 (0.748)	M 8 Depth 17 (0.669)
KP 30•34	90 (3.543)								
KP 30•38	93 (3.661)								
KP 30•43	96 (3.780)								
KP 30•51	93 (3.661)	71 (2.795)	33 (1.299)	62 (2.441)	M 12 Depth 17 (0.669)	135 (5.315)	51 (2.008)	27 (1.063)	M 10 Depth 17 (0.669)
KP 30•56	97 (3.819)	70 (2.756)							
KP 30•61	100 (3.937)								
KP 30•73	108 (4.252)								

Pump type	L	M	N	O	P
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
PLP 20•4	43,8 (1.722)	49,3 (1.941)	13 (0.512)	30 (1.181)	M 6 Depth 13 (0.512)
PLP 20•6,3	45 (1.772)	50,5 (1.988)			
PLP 20•7,2	45,5 (1.791)	51 (2.008)			
PLP 20•8	46,3 (1.821)	51,8 (2.039)			
PLP 20•9	46,9 (1.846)	52,4 (2.063)			
PLP 20•10,5	48,3 (1.900)	53,8 (2.118)			
PLP 20•11,2	48,5 (1.909)	54 (2.126)	91 (0.748)	40 (1.575)	M 8 Depth 14 (0.551)
PLP 20•14	51 (2.008)	56,5 (2.224)			
PLP 20•16	52,8 (2.077)	58,3 (2.295)			
PLP 20•19	54,5 (2.146)	60 (2.553)			
PLP 20•20	56 (2.205)	61,5 (2.421)			
PLP 20•24,5	58,8 (2.315)	64,3 (2.531)			
PLP 20•25	60 (2.362)	65,5 (2.579)			
PLP 20•27,5	61,4 (2.417)	66,9 (2.634)			
PLP 20•31,5	65 (2.559)	70,5 (2.776)			

How to order a double pump

Front pump	—	/	Rear pump	—	Rotation (1)	—	Seals (2)
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KP30•27 / 67 / PLP20•4 S -

(1) Rotation: S= Left - D= Right

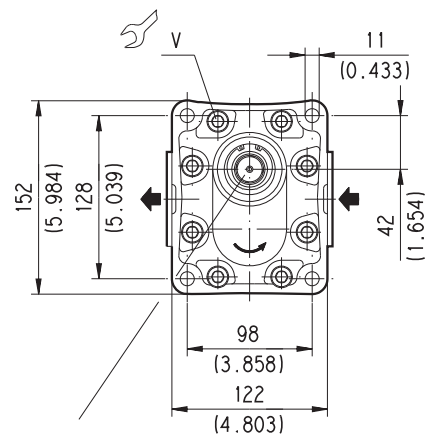
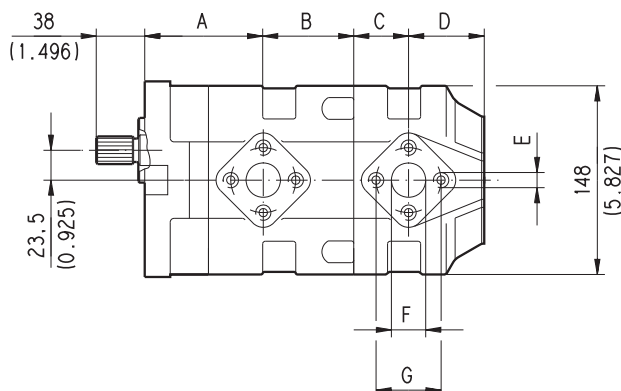
(2) For Buna N seals no code

ORDER EXAMPLE

Double pump

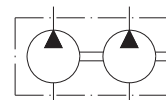
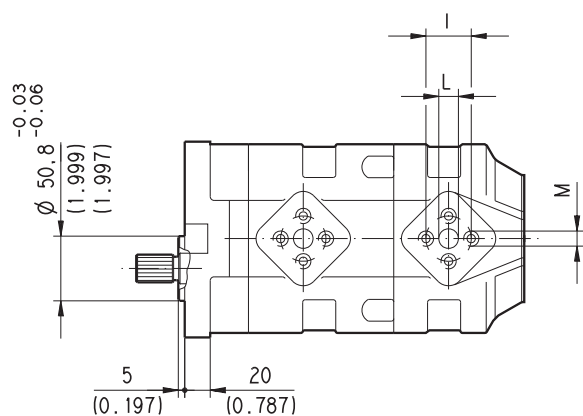
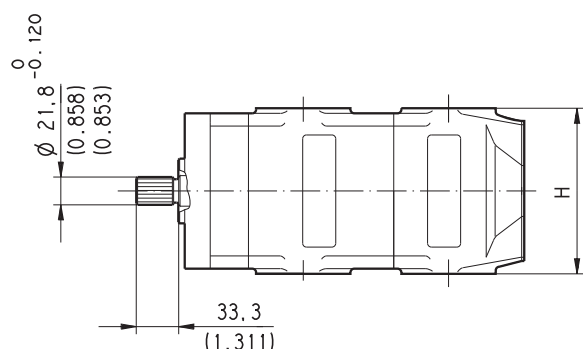
KP30•27-67/PLP20•4 S/FS

EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262



Ext. Involute Spline SAE J498B
with major diameter modified
13 teeth - 16/32 Pitch - 30 deg
Flat root - Side fit - Class 1

MAX. TORQUE 280 Nm
(2478 lbf in)



V Screws tightening torque Nm (lbf in)

70 ±7 (558 ± 682)

KAPPA 30
HYDRAULIC GEAR PUMPS EUROPEAN STANDARD
A8 E3

Pump type	A	B	C	D	E	F	G	H	I	L	M							
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)							
KP 30•27	85 (3.346)	63 (2.480)	35 (1.378)	48 (1.890)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)	40 (1.575)	19 (0.748)	M 8 Depth 17 (0.669)							
KP 30•34	90 (3.543)		40 (1.575)															
KP 30•38	93 (3.661)		43 (1.693)															
KP 30•43	96 (3.780)		46 (1.811)															
KP 30•51	93 (3.661)	71 (2.795)	43 (1.693)	56 (2.205)								M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)	51 (2.008)	27 (1.063)	M 10 Depth 17 (0.669)
KP 30•56	97 (3.819)	70 (2.756)	47 (1.850)	55 (2.165)														
KP 30•61	100 (3.937)		50 (1.969)															
KP 30•73	108 (4.252)		58 (2.283)															

The length of a triple pump is obtained with the sum of the following dimensions: **A+B+C+B+C+D**.

How to order a triple pump

(for double pump omit the intermediate pump)

Front pump	–	Drive shaft	/	Intermediate pump	/	Rear pump		Rotation (1)	–	Seals (2)
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KP30•27 / A8 / 30•27 / 30•27 / S -

(1) Rotation: S= Left - D= Right

(2) For Buna N seals no code

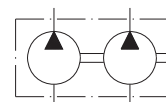
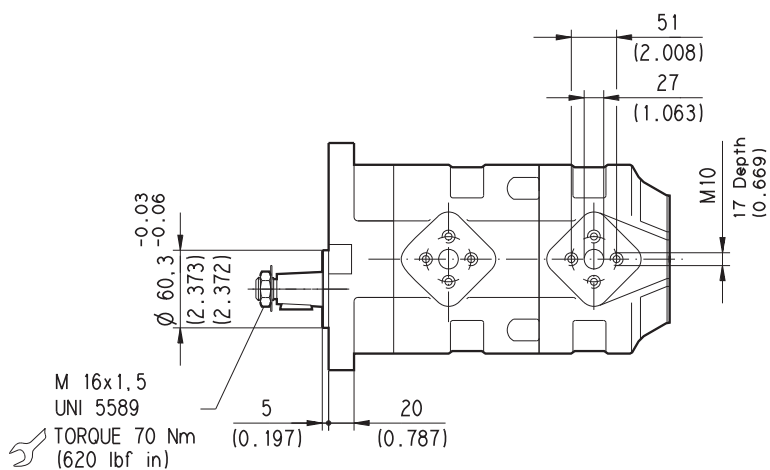
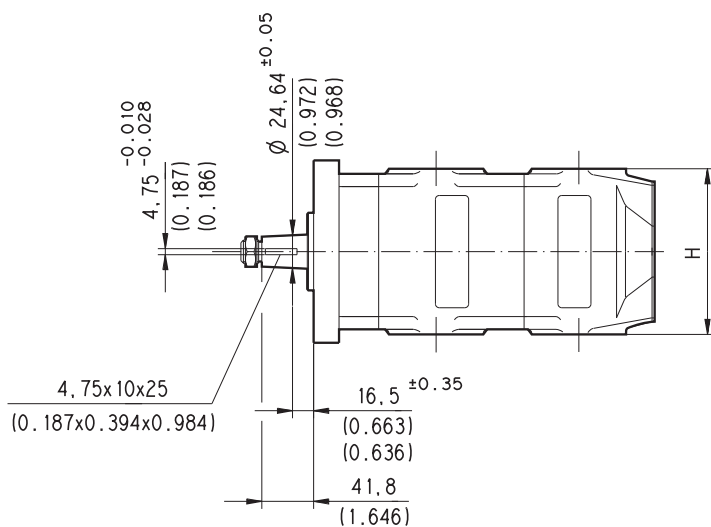
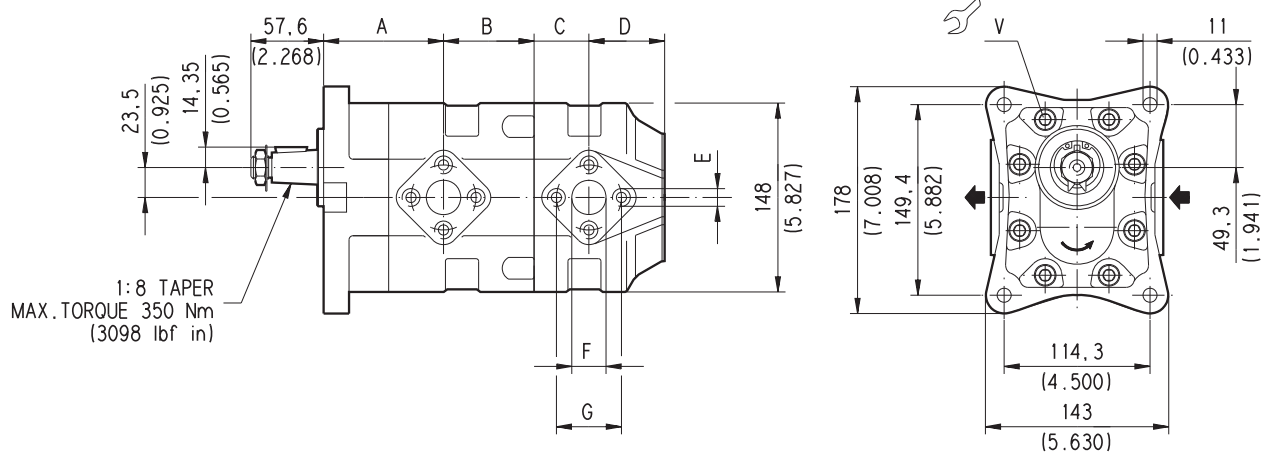
ORDER EXAMPLE

Double pump **KP30•27-A8/30•27 S**

Triple pump **KP30•27-A8/30•27/30•27 S**

02/06.2005

EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262



V Screws tightening torque Nm (lbf in)

 $70^{+7} (558 \div 682)$

Pump type	A	B	C	D	E	F	G	H	Port code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 30-51	94 (3.701)	71 (2.795)	43 (1.693)	56 (2.205)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)	ED	ED
KP 30-61	101 (3.976)	70 (2.756)	50 (1.969)	55 (2.165)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)	EF	
KP 30-73	109 (4.291)		58 (2.283)							

The length of a triple pump is obtained with the sum of the following dimensions: **A+B+C+B+C+D**.

How to order a triple pump

(for double pump omit the intermediate pump)

Pump type	Drive shaft	Mounting flange	Ports position	Ports IN/OUT	Rotation (1)	Seals (2)
KP 30-51	-	84	E4	-	L	ED/ED
Front pump						
30-51	-			L	ED/ED	/
Intermediate pump						
30-51	-			L	ED/ED	S -
Rear pump						

(1) Rotation: S= Left - D= Right

(2) For Buna N seals no code

ORDER EXAMPLE

Double pump

KP30-51-84 E4-LED/ED/30-51-LED/ED S

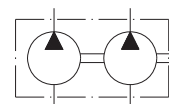
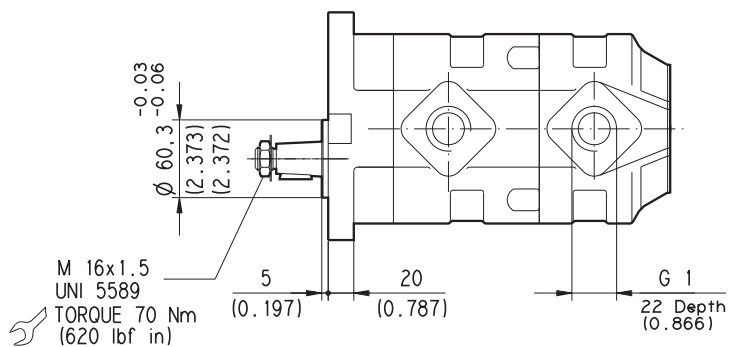
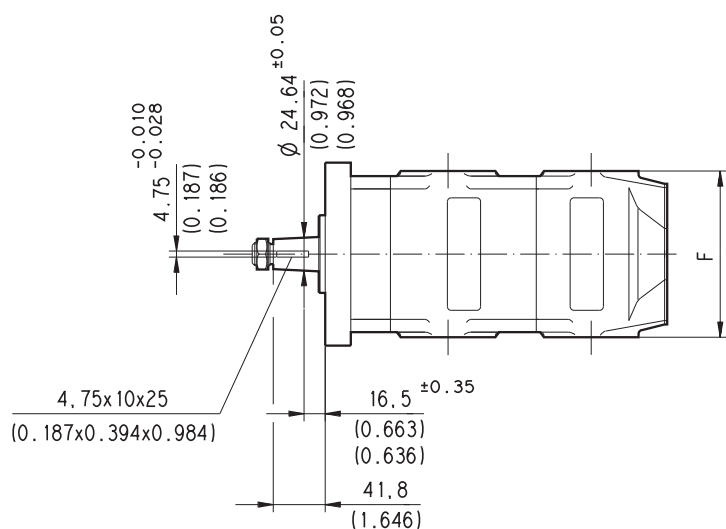
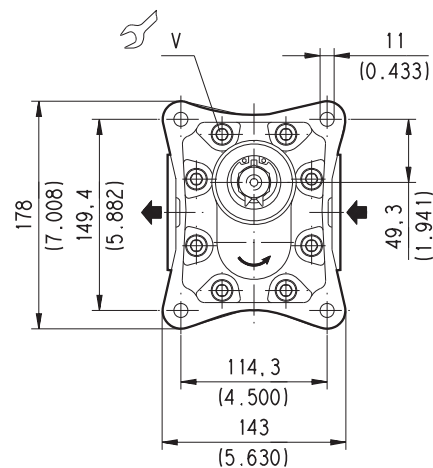
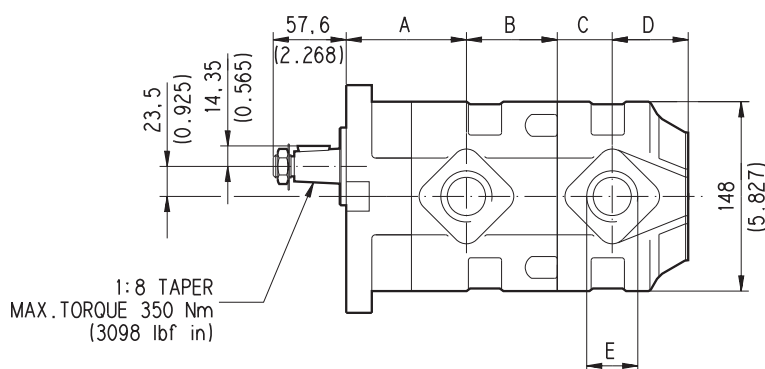
Triple pump

KP30-51-84 E4-LED/ED/30-51-LED/ED/30-51-LED/ED S

02/06.2005

GAS STRAIGHT THREAD PORTS

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



V Screws tightening torque Nm (lbf in)

70 ±7 (558 ± 682)

KAPPA 30
HYDRAULIC GEAR PUMPS EUROPEAN STANDARD
84 E4

Pump type	A	B	C	D	E	F	Port code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 30•51	94 (3.701)	71 (2.795)	43 (1.693)	56 (2.205)	G 1 Depth 22 (0.866)	130 (5.118)	GF	GF
KP 30•61	101 (3.976)	70 (2.756)	50 (1.969)	55 (2.165)	G 1 1/4 Depth 24 (0.945)	135 (5.315)	GG	
KP 30•73	109 (4.291)		58 (2.283)					

The length of a triple pump is obtained with the sum of the following dimensions: **A+B+C+B+C+D**.

How to order a triple pump

(for double pump omit the intermediate pump)

Pump type	–	Drive shaft	–	Mounting flange	–	Ports position	Ports IN/OUT	–	Rotation (1)	–	Seals (2)
KP 30•51	–	84		E4	–	L	GF/GF	/			
Front pump											
30•51	–					L	GF/GF	/			
Intermediate pump											
30•51	–					L	GF/GF		S	–	
Rear pump											

(1) Rotation: S= Left - D= Right

(2) For Buna N seals no code

ORDER EXAMPLE

Double pump

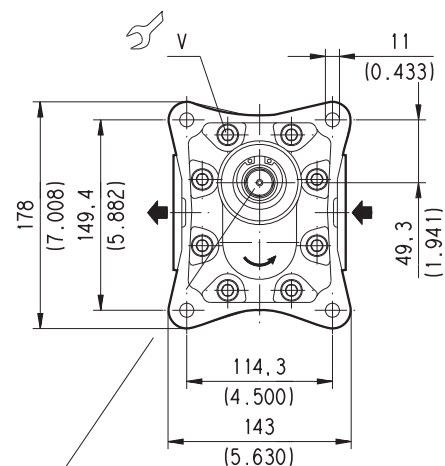
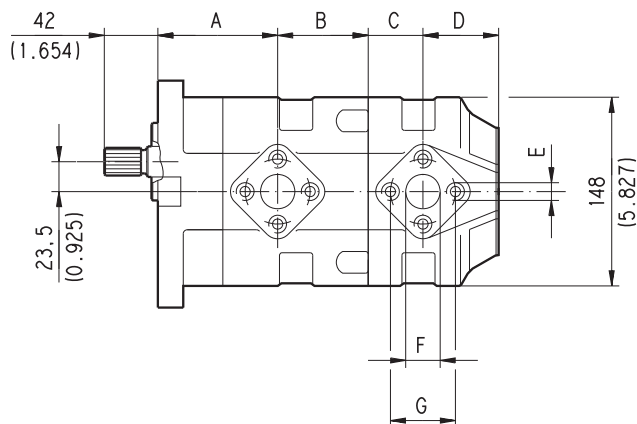
KP30•51-84 E4-LGF/GF/30•51-LGF/GF S

Triple pump

KP30•51-84 E4-LGF/GF/30•51-LGF/GF/30•51-LGF/GF S

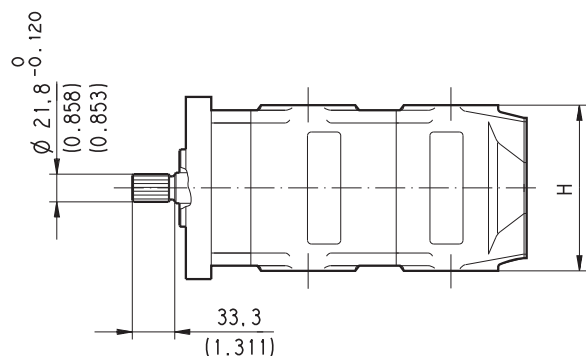
02/06.2005

EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262

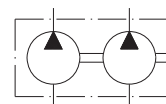
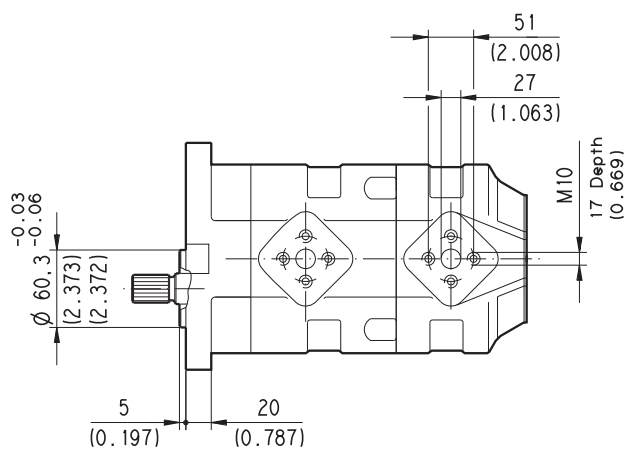


Ext. Involute Spline SAE J498B
with major diameter modified
13 teeth - 16/32 Pitch - 30 deg
Flat root - Side fit - Class 1

MAX. TORQUE 280 Nm
(2478 lbf in)



D006 - 152/0605



02/06.2005

V Screws tightening torque Nm (lbf in)

70 ±7 (558 ± 682)

KAPPA 30
HYDRAULIC GEAR PUMPS EUROPEAN STANDARD
A8 E4

Pump type	A	B	C	D	E	F	G	H	Port code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 30-51	94 (3.701)	71 (2.795)	43 (1.693)	56 (2.205)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)	ED	ED
KP 30-61	101 (3.976)	70 (2.756)	50 (1.969)	55 (2.165)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)	EF	
KP 30-73	109 (4.291)		58 (2.283)							

The length of a triple pump is obtained with the sum of the following dimensions: **A+B+C+B+C+D**.

How to order a triple pump

(for double pump omit the intermediate pump)

Pump type	–	Drive shaft	–	Mounting flange	–	Ports position	Ports IN/OUT	–	Rotation (1)	–	Seals (2)
KP 30-51	–	A8		E4	–	L	ED/ED	/			
Front pump											
30-51	–					L	ED/ED	/			
Intermediate pump											
30-51	–					L	ED/ED		S	–	
Rear pump											

(1) Rotation: S= Left - D= Right

(2) For Buna N seals no code

ORDER EXAMPLE

Double pump

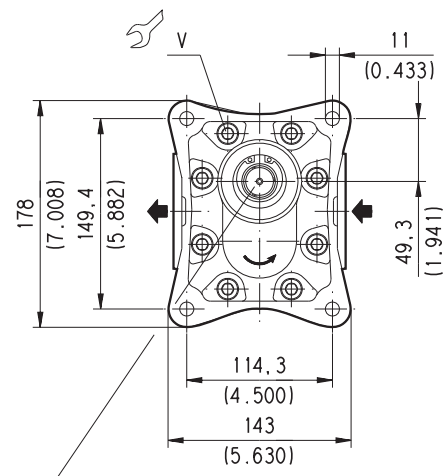
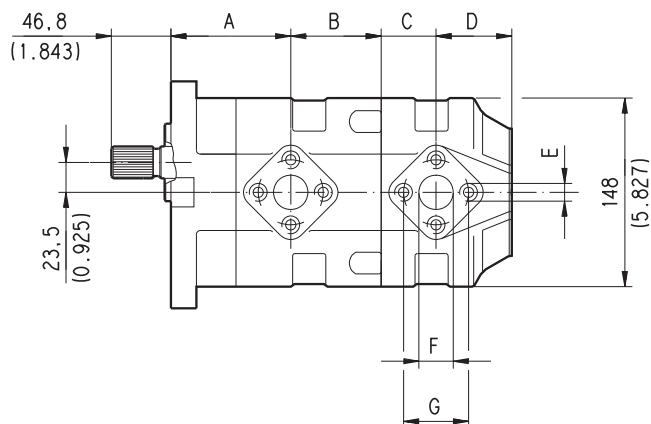
KP30-51-A8 E4-LED/ED/30-51-LED/ED S

Triple pump

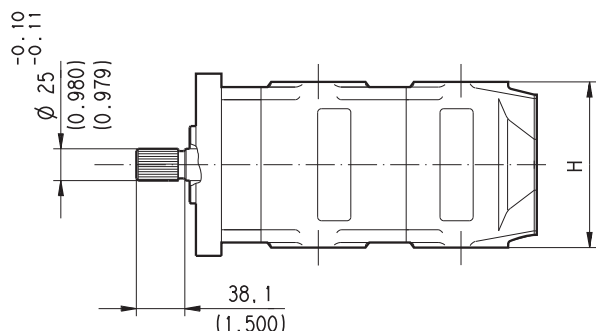
KP30-51-A8 E4-LED/ED/30-51-LED/ED/30-51-LED/ED S

02/06.2005

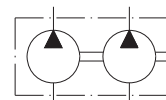
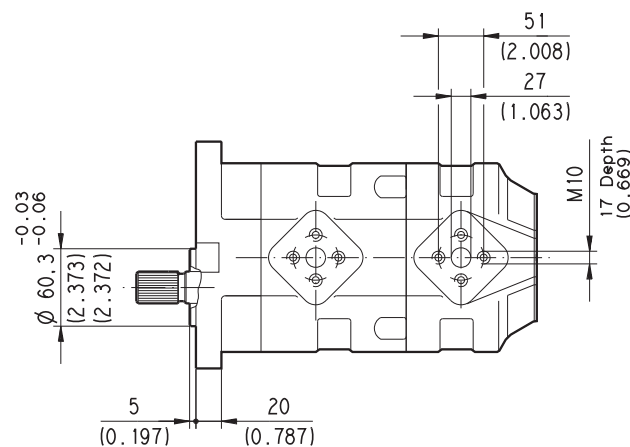
EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262



Ext. Involute Spline SAE J498B
with major diameter modified
15 teeth-16/32 Pitch-30 deg
Flat Root-Side fit-Class 1
MAX. TORQUE 400 Nm
(3540 lbf in)



D006-153/0605



02/06.2005

V Screws tightening torque Nm (lbf in)

70 ±7 (558 ± 682)

KAPPA 30
HYDRAULIC GEAR PUMPS EUROPEAN STANDARD
A5 E4

Pump type	A	B	C	D	E	F	G	H	Port code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 30•51	94 (3.701)	71 (2.795)	43 (1.693)	56 (2.205)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)	ED	ED
KP 30•61	101 (3.976)	70 (2.756)	50 (1.969)	55 (2.165)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)	EF	
KP 30•73	109 (4.291)		58 (2.283)							

The length of a triple pump is obtained with the sum of the following dimensions: **A+B+C+B+C+D**.

How to order a triple pump

(for double pump omit the intermediate pump)

Pump type	–	Drive shaft	–	Mounting flange	–	Ports position	Ports IN/OUT	–	Rotation (1)	–	Seals (2)
KP 30•51	–	A5		E4	–	L	ED/ED	/			
Front pump											
30•51	–					L	ED/ED	/			
Intermediate pump											
30•51	–					L	ED/ED		S	–	
Rear pump											

(1) Rotation: S= Left - D= Right

(2) For Buna N seals no code

ORDER EXAMPLE

Double pump

KP30•51-A5 E4-LED/ED/30•51-LED/ED S

Triple pump

KP30•51-A5 E4-LED/ED/30•51-LED/ED/30•51-LED/ED S

02/06.2005

PORTS CONNECTORS TIGHTENING TORQUE



Tightening torque for low pressure side port.



Tightening torque for high pressure side port [values obtained at 350 bar (5075 psi)]

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

EUROPEAN FLANGED PORTS - 4 Bolts					EUROPEAN
CODE					
	Nm	(lbf in)	Nm	(lbf in)	
EA	8 ^{+0,5}	71 ÷ 75	8 ^{+0,5}	71 ÷ 75	
EB	15 ⁺¹	133 ÷ 142	20 ⁺¹ (KP 20)	177 ÷ 186	
			15 ⁺¹ (KP 30)	133 ÷ 142	
ED	20 ⁺¹	177 ÷ 186	30 ^{+2,5}	266 ÷ 288	
EF	25 ⁺¹	221 ÷ 230	50 ^{+2,5}	443 ÷ 465	
GAS STRAIGHT THREAD PORTS					BSPP
CODE					
	Nm	(lbf in)	Nm	(lbf in)	
GB (◆)	15 ⁺¹	133 ÷ 142	—	—	
GC (■)	15 ⁺¹	133 ÷ 142	—	—	
GD	20 ⁺¹	177 ÷ 186	50 ^{+2,5}	443 ÷ 465	
GE	30 ^{+2,5}	266 ÷ 288	90 ⁺⁵	797 ÷ 841	
GF	50 ^{+2,5}	443 ÷ 465	130 ⁺¹⁰	1151 ÷ 1239	
GG	60 ⁺⁵	531 ÷ 575	170 ⁺¹⁰	1505 ÷ 1593	
SAE STRAIGHT THREAD POTRS J514					ODT
CODE					
	Nm	(lbf in)	Nm	(lbf in)	
03 (✱)	12 ⁺¹	106 ÷ 115	—	—	
OA (■)	15 ⁺¹	133 ÷ 142	—	—	
OC	30 ^{+2,5}	266 ÷ 288	70 ⁺⁵	620 ÷ 664	
OD	40 ^{+2,5}	354 ÷ 376	120 ⁺¹⁰	1062 ÷ 1151	
OF	60 ⁺⁵	531 ÷ 575	170 ⁺¹⁰	1505 ÷ 1593	
OG	70 ⁺⁵	620 ÷ 664	200 ⁺¹⁰	1770 ÷ 1859	
OH	100 ⁺⁵	885 ÷ 929	270 ⁺¹⁵	2390 ÷ 2523	
SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI					SSM
CODE					
	Nm	(lbf in)	Nm	(lbf in)	
MA	12 ⁺¹	106 ÷ 115	12 ⁺¹	106 ÷ 115	
MB	20 ⁺¹	177 ÷ 186	25 ⁺¹	221 ÷ 230	
MC	20 ⁺¹	177 ÷ 186	25 ⁺¹	221 ÷ 230	

(◆) Drain port: KAPPA 20 rear drain (R) and KAPPA 30 side drain (L)

(✱) Drain port: KAPPA 20 rear drain (R)

(■) Drain port: KAPPA 30 rear drain (R)

02/06.2005

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.

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:



HYDRAULIC FLUID

Use hydraulic fluid conforming to ISO/DIN standards, having viscosity 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.

STARTING UP

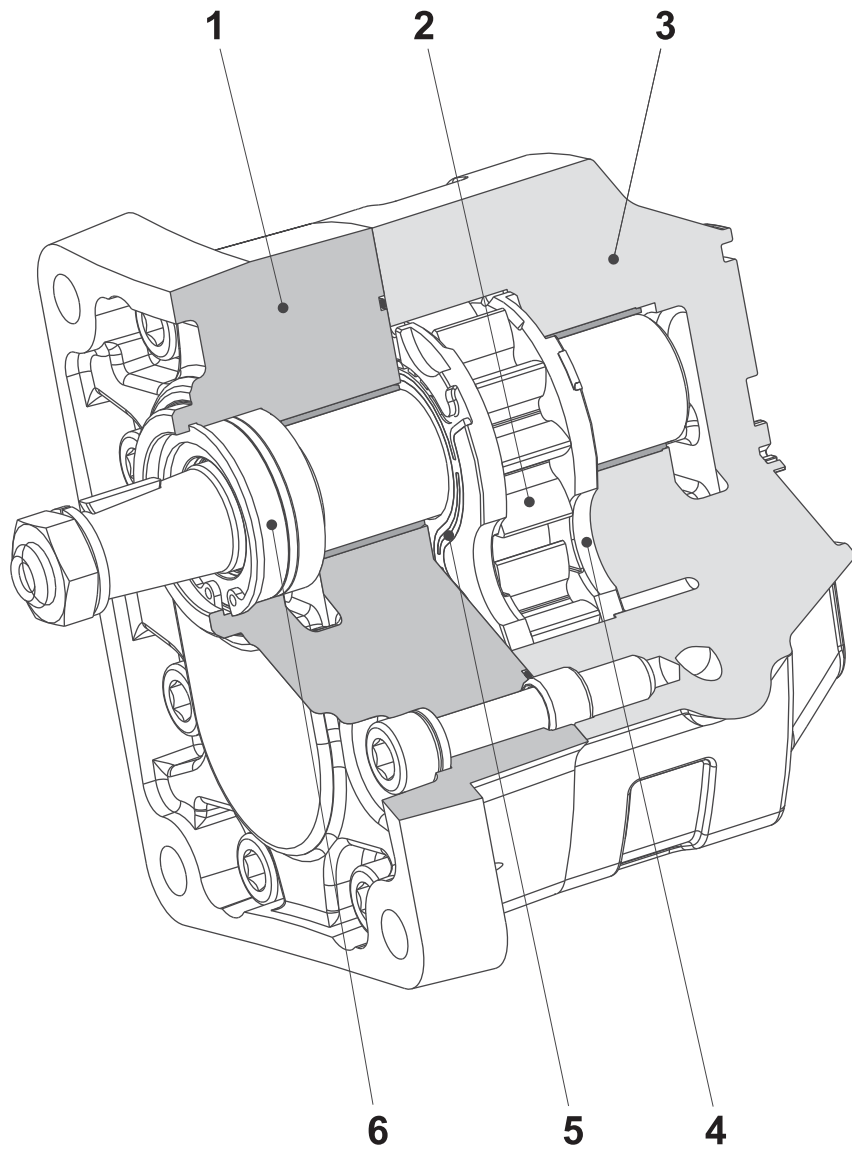
Check that all circuit connections are tight and that the entire system is completely clean. Insert the oil in the tank, using a filter. Bleed the circuit to assist in filling. Set the pressure relief valves to the lowest possible setting. Turn on the system for a few moments at minimum speed, then bleed the circuit again and check the level of oil in the tank. In the difference between pump or motor temperature and fluid temperature exceeds 50 °F (10 °C), 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.

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.

02/06.2005

INSTRUCTIONS



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

01/03.2002

K 05 T A

Edition: 05/03.2012

Replaces: K 04 T A



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