Part number:

076-11429

HYDROMA HYDRAULICKÉ SYSTÉMY

HIDROMA SISTEMS UKŁADY HYDRAULICZNE

HYDROMA ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ

Replaces: K 02 T A

Hydraulic gear pumps and motors

two piece cast iron housing

DISPLACEMENTS

From	0.30 in^3/rev (4,95 cm^3/rev)
To	4.50 in^3/rev (73,82 cm^3/rev)

PRESSURE

Max. Continuous	4133 psi (285 bar)
Max. Intermittent	4350 psi (300 bar)
Max. Peak	4785 psi (330 bar)

MAX. SPEED

4000 min^{-1}

- High operating pressures
- High efficiency at high temperature
- Exceptional working life expectancy

KAPPA pump and motor units consist essentially of a housing and a mounting flange in cast iron of superior mechanical specifications. KAPPA is available with mountig flanges and side or rear ports according to SAE and European standard. The rigidity of assembly and the compact design of KAPPA pumps and motors ensure reliability and high volumetric efficiency also at high operating pressures. Infinite care and attention is taken over the design and construction of each single component, and with quality monitored unceasingly, the result is a consistent, perfectly balanced assembly that guarantees unbroken service under the most arduous operating conditions. KAPPA series is the right choice wherever noise, contamination, non inflammable fluids and size are critical factors. The wide choice of combinations of mounting flanges, shafts and ports ensure to KAPPA series to be applied in a vast range of application.

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02/06.05

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 the 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
							N-H
				-13 (-25)	230 (110)	257 (125)	V
HFA	Oil emulsion in water 5 ÷ 15% of oil	725 (50)	1500	36 (2)	131 (55)		N
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

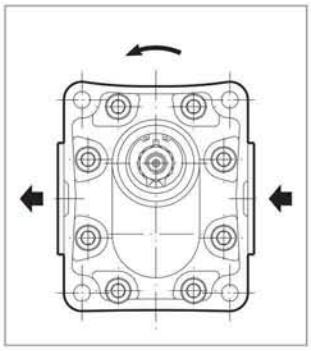
Working presure psi (bar)	Δp<2030 (140)	2030<Δp<3045 (140) (210)	Δp>3045 (210)
Contamination class NAS 1638	10	9	8
Contamination class ISO 4406	21/19/16	20/18/15	19/17/14
Achieved with filter $ßx_{(c)} \geq 75$	25 μm	10 μm	10 μm

Casappa recommends to use its own production filters:

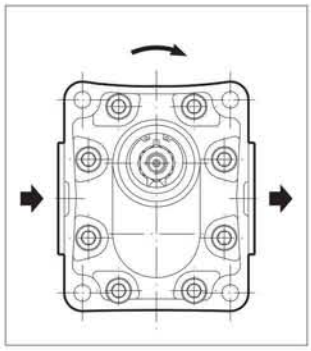
GENERAL NOTES

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.

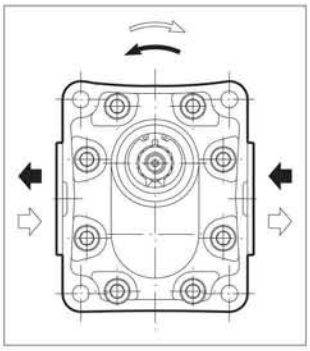
DEFINITION OF ROTATION DIRECTION LOOKING ON THE DRIVE SHAFT



Anti-clock rotation

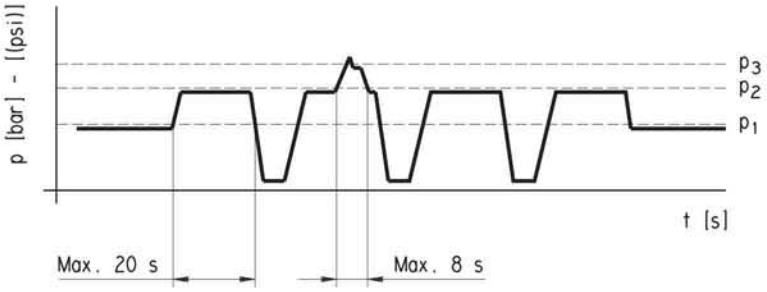


Clockwise rotation



Reversible rotation

PRESSURE DEFINITION



p_1 Max. continuous pressure

p_2 Max. intermittent pressure

p_3 Max. peak pressure

Pump type	Displacement	Max. pressure			Max. speed	Min. speed
		p_1	p_2	p_3		
	in^3/rev (cm^3/rev)	psi (bar)			min^{-1}	
KP 20•4	0.30 (4,95)	4133 (285)	4350 (300)	4785 (330)	4000	350
KP 20•6,3	0.40 (6,61)	4133 (285)	4350 (300)	4785 (330)	4000	350
KP 20•8	0.50 (8,26)	4133 (285)	4350 (300)	4785 (330)	3500	350
KP 20•11,2	0.69 (11,23)	3988 (275)	4205 (290)	4640 (320)	3500	350
KP 20•14	0.89 (14,53)	3843 (265)	4205 (290)	4640 (320)	3500	350
KP 20•16	1.03 (16,85)	3770 (260)	4205 (290)	4640 (320)	3000	300
KP 20•20	1.29 (21,14)	3045 (210)	3335 (230)	3625 (250)	3000	300
KP 20•25	1.61 (26,42)	2610 (180)	2900 (200)	3190 (220)	2500	300
KP 20•31,5	2.01 (33,03)	2030 (140)	2320 (160)	2610 (180)	2000	300

p_1= Max. continuous pressure p_2= Max. intermittent pressure p_3= 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.

Pump type	Displacement	Max. pressure			Max. speed	Min. speed
		p_1	p_2	p_3		
	in^3/rev (cm^3/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

p_1= Max. continuous pressure p_2= Max. intermittent pressure p_3= 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.

DESIGN CALCULATIONS FOR PUMPS

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
Δ**p**	psi (bar)	Pressure
$\eta_v = \eta_v (V, \Delta p, n)$	($\approx 0,98$)	Volumetric efficiency
$\eta_m = \eta_m (V, \Delta p, n)$	($\approx 0,90$)	Mechanical efficiency
$\eta_t = \eta_v \bullet \eta_m$	($\approx 0,88$)	Overall efficiency

$$\mathbf{Q} = V(cm^3/rev) \bullet \eta_v \bullet n \bullet 10^{-3} \quad [l/min]$$

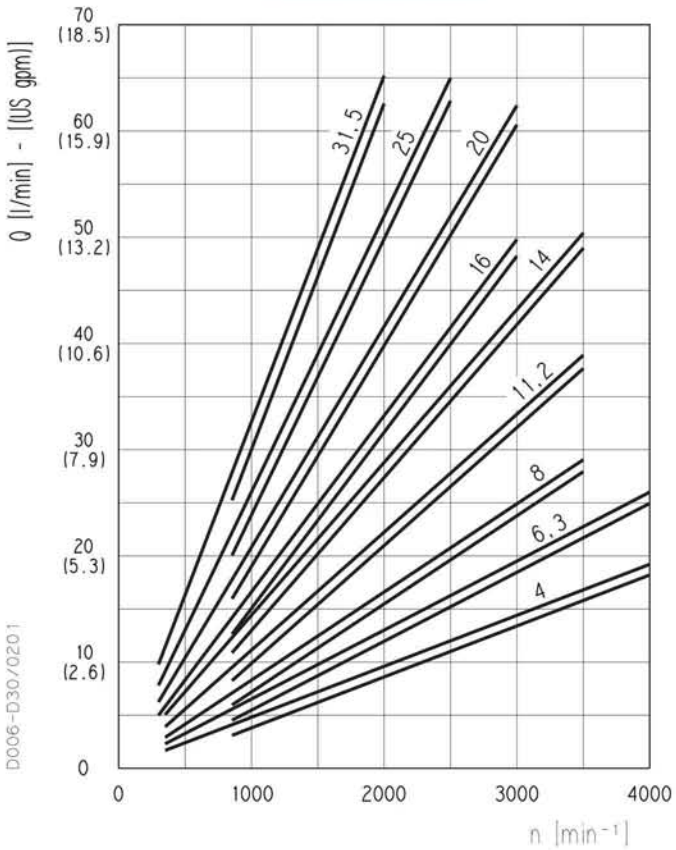
$$\mathbf{M} = \frac{\Delta p\ (bar) \bullet V\ (cm^3/rev)}{62,83 \bullet \eta_m} \quad [Nm]$$

$$\mathbf{P} = \frac{\Delta p\ (bar) \bullet V\ (cm^3/rev) \bullet n}{600 \bullet 1000 \bullet \eta_t} \quad [kW]$$

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

KAPPA 20 GEAR PUMPS PERFORMANCE CURVES

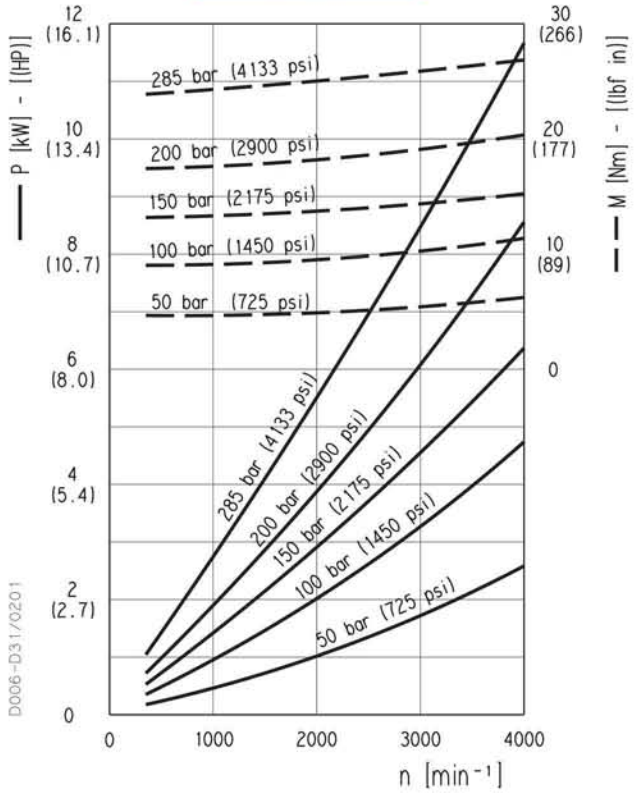
KP 20



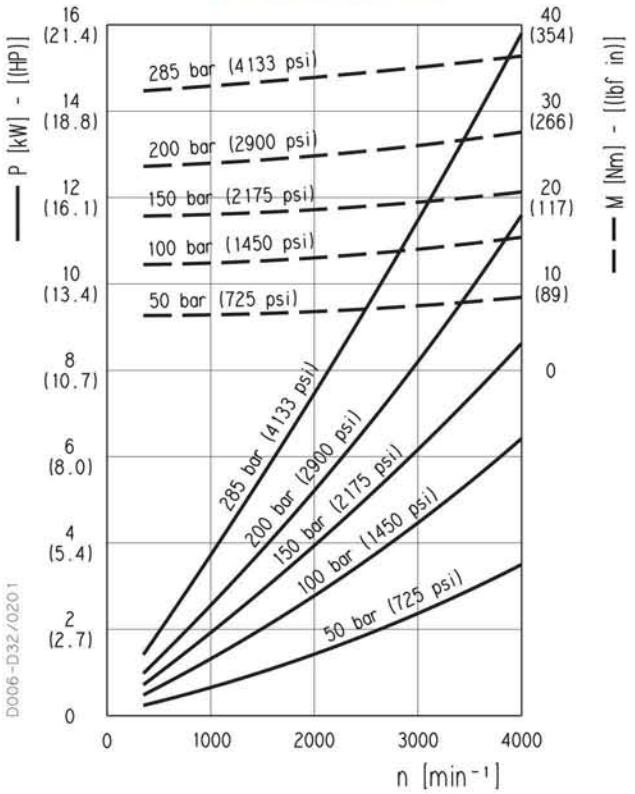
Each curve has been obtained at 122 °F (50 °C), using oil with viscosity 168 SSU (36 cSt) at 104 °F (40 °C) and at these pressures.

KP 20•4 . . . . . 290-4133 psi (20-285 bar)
KP 20•6,3 . . . . 290-4133 psi (20-285 bar)
KP 20•8 . . . . . 290-4133 psi (20-285 bar)
KP 20•11,2 . . . 290-3988 psi (20-275 bar)
KP 20•14 . . . . . 290-3843 psi (20-265 bar)
KP 20•16 . . . . . 290-3770 psi (20-260 bar)
KP 20•20 . . . . . 290-3045 psi (20-210 bar)
KP 20•25 . . . . . 290-2610 psi (20-180 bar)
KP 20•31,5 . . . 290-2030 psi (20-140 bar)

KP 20•4

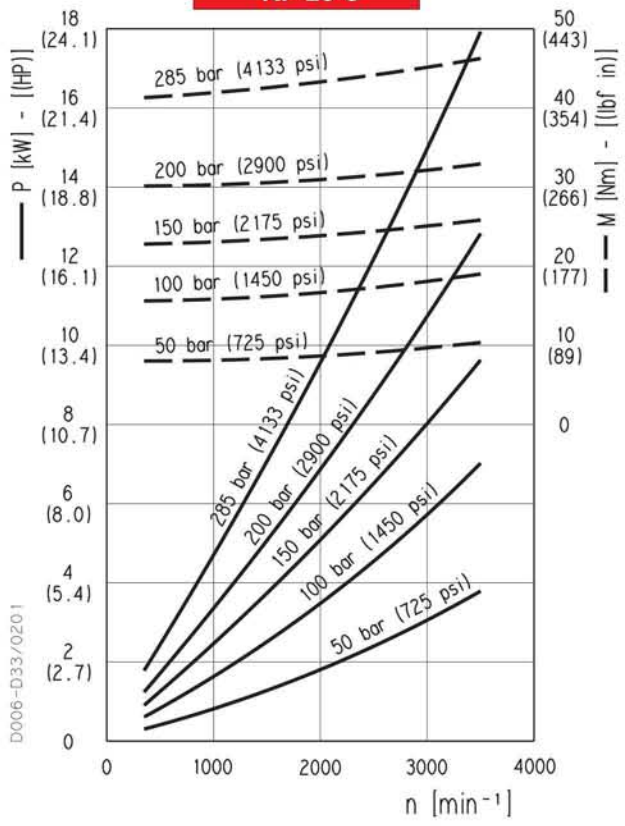


KP 20•6,3

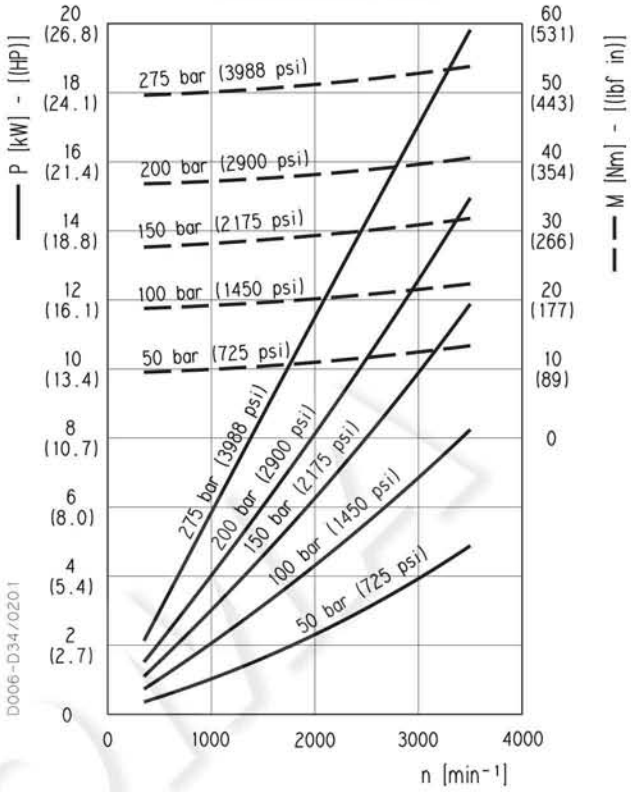


KAPPA 20 GEAR PUMPS PERFORMANCE CURVES

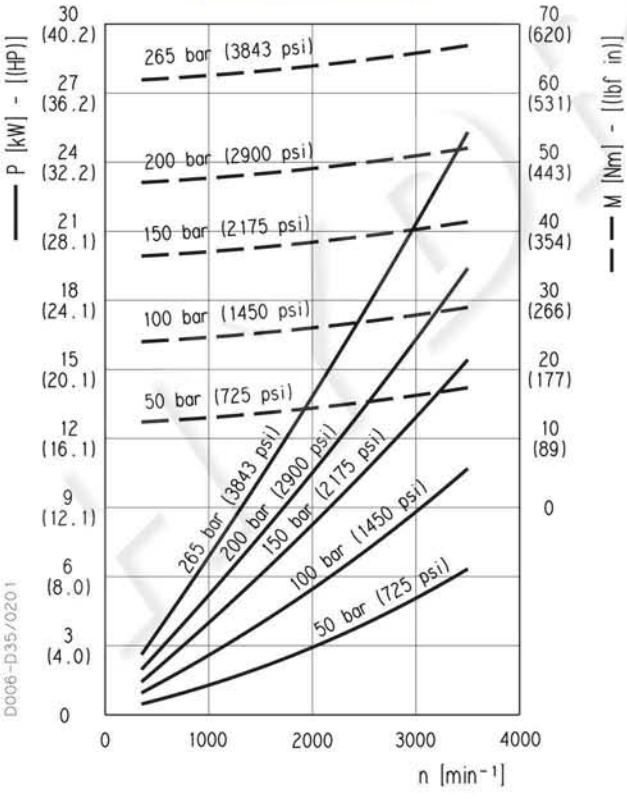
KP 20•8



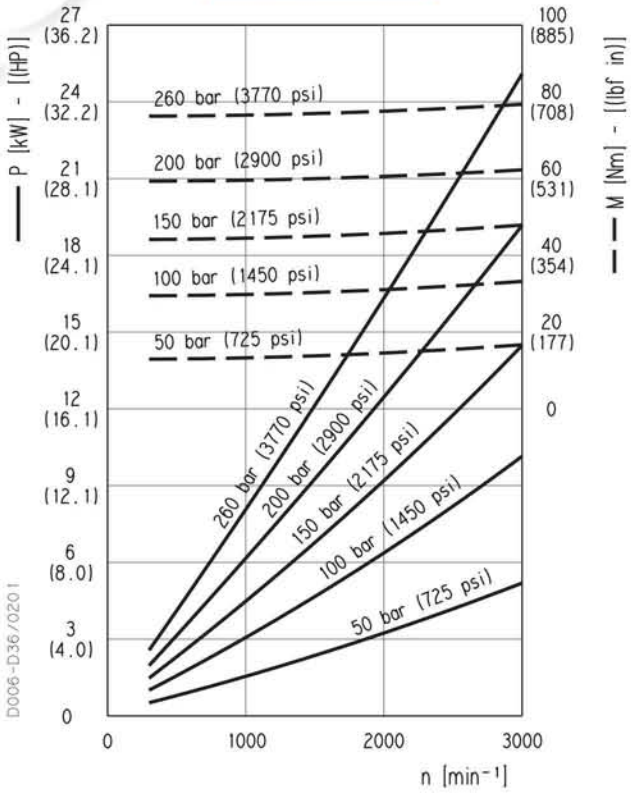
KP 20•11,2



KP 20•14



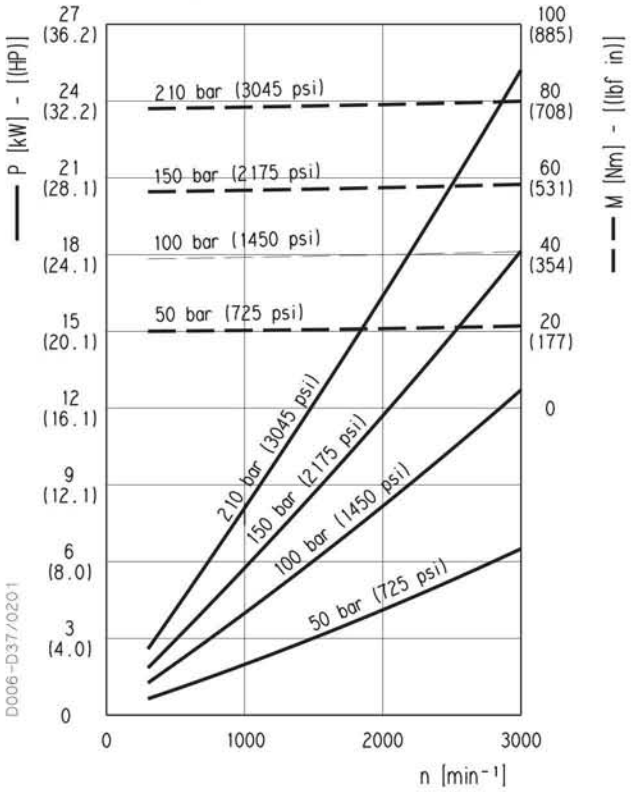
KP 20•16



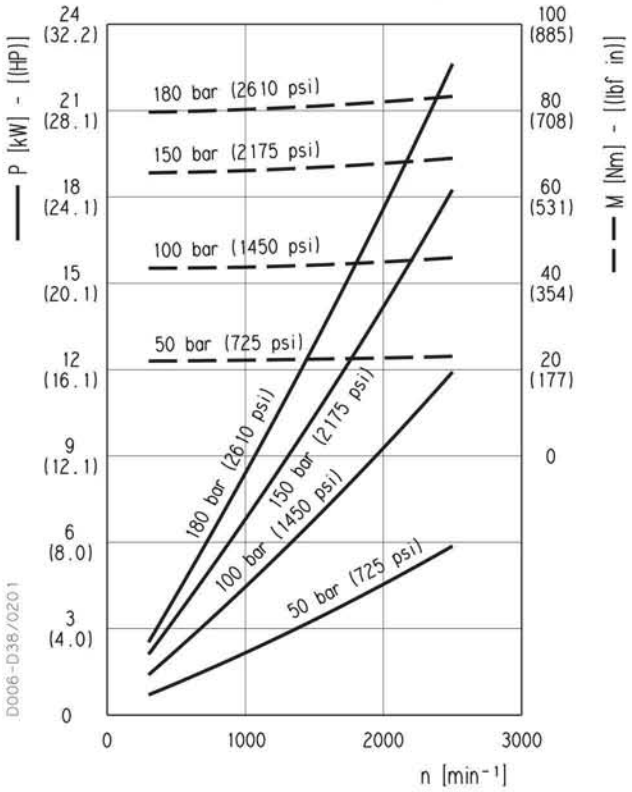
KAPPA 20 GEAR PUMPS PERFORMANCE CURVES

KP 20

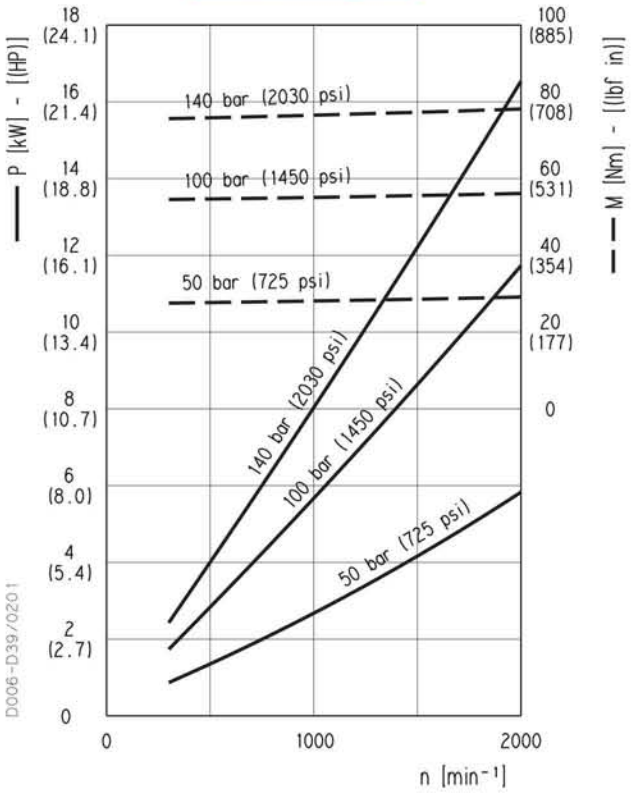
KP 20•20



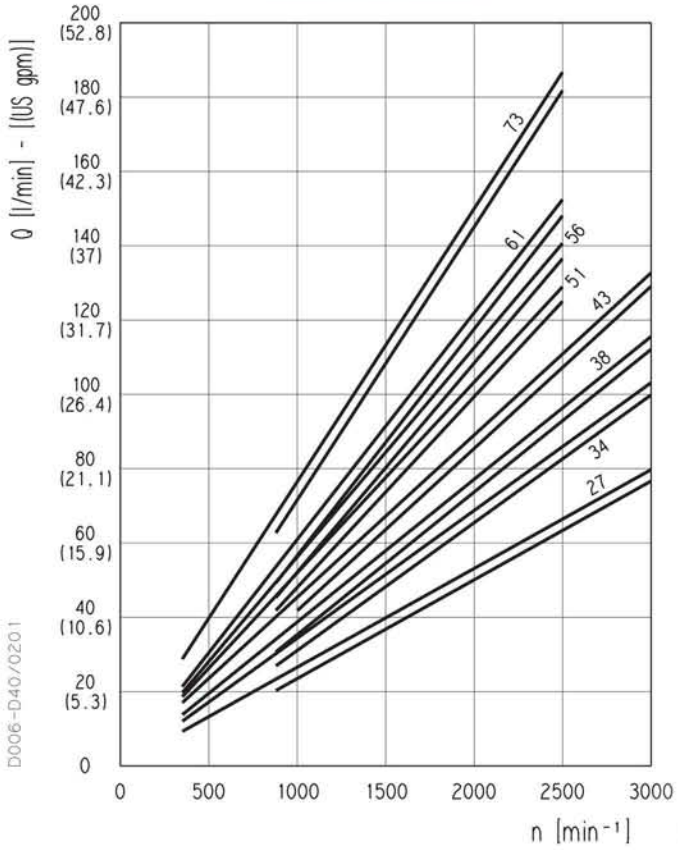
KP 20•25



KP 20•31,5



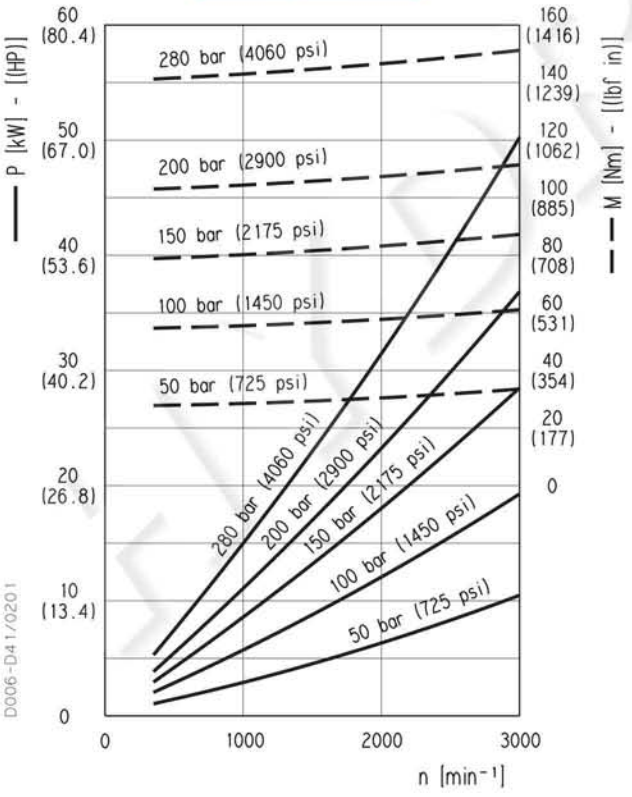
KP 30



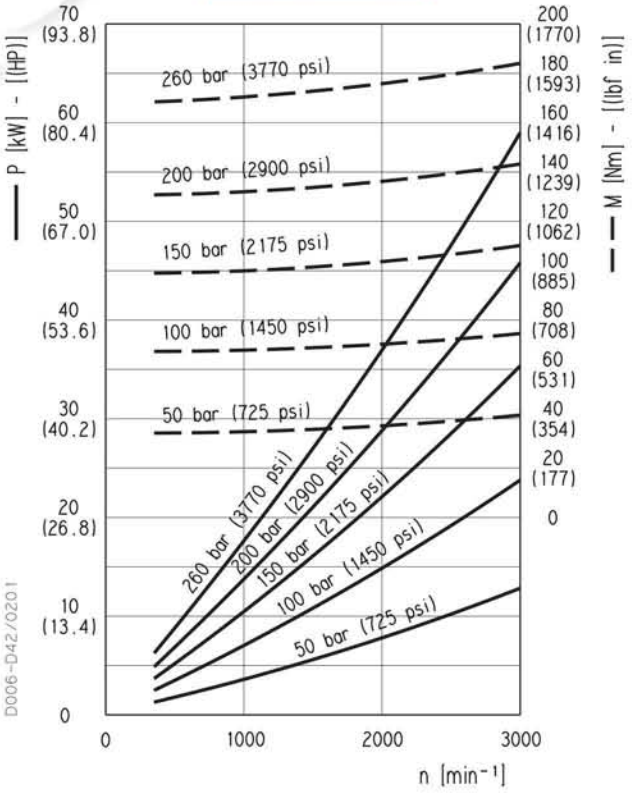
Each curve has been obtained at 122 °F (50°C), using oil with viscosity 168 SSU (36 cSt) at
104 °F (40°C) and at these pressures.

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

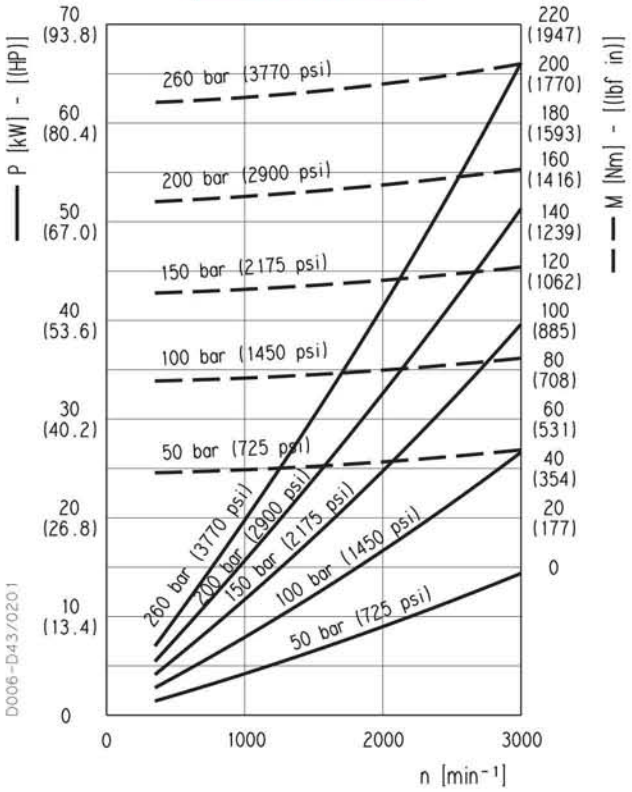


KP 30•34

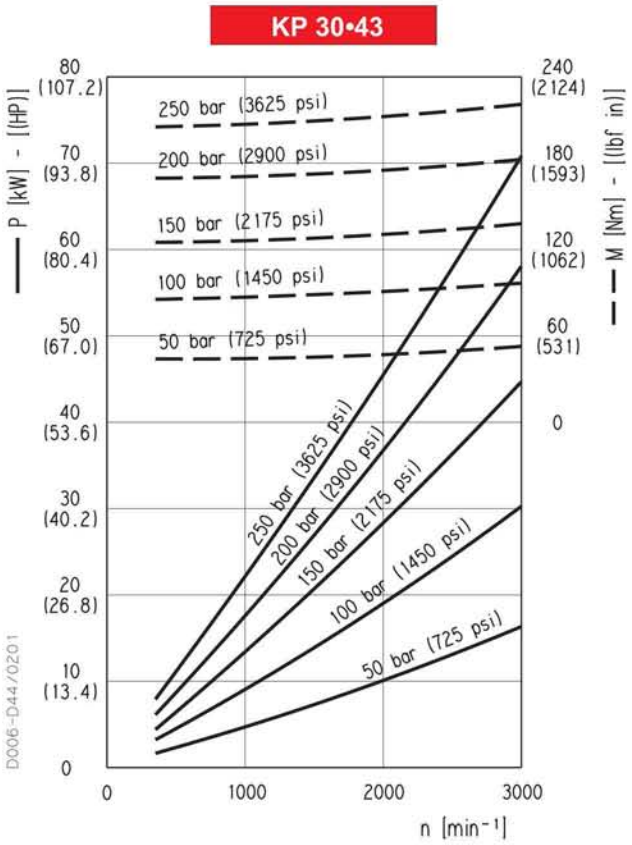


KAPPA 30 GEAR PUMPS PERFORMANCE CURVES

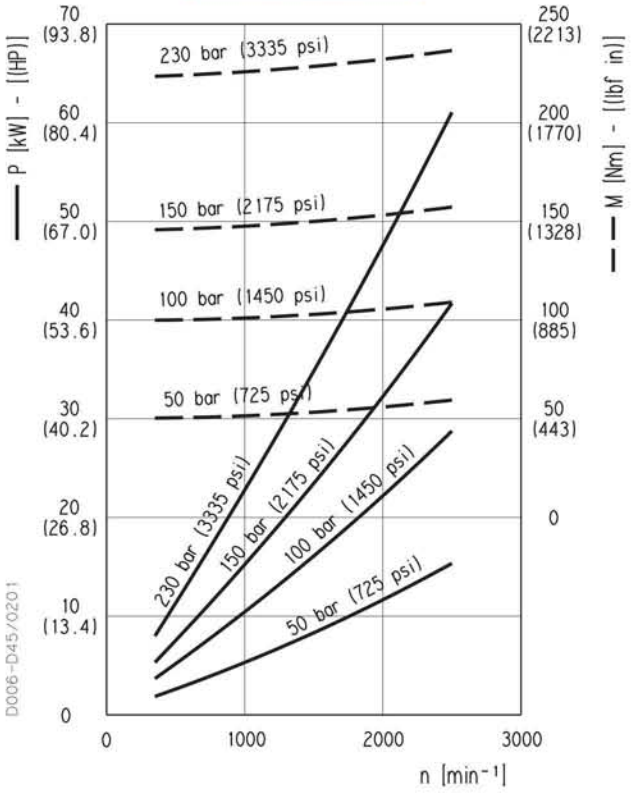
KP 30•38



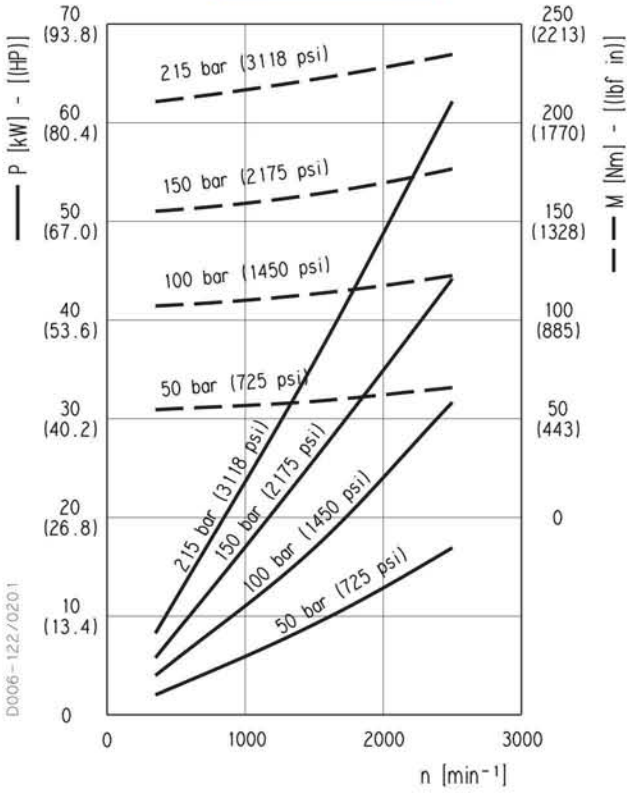
KP 30•43



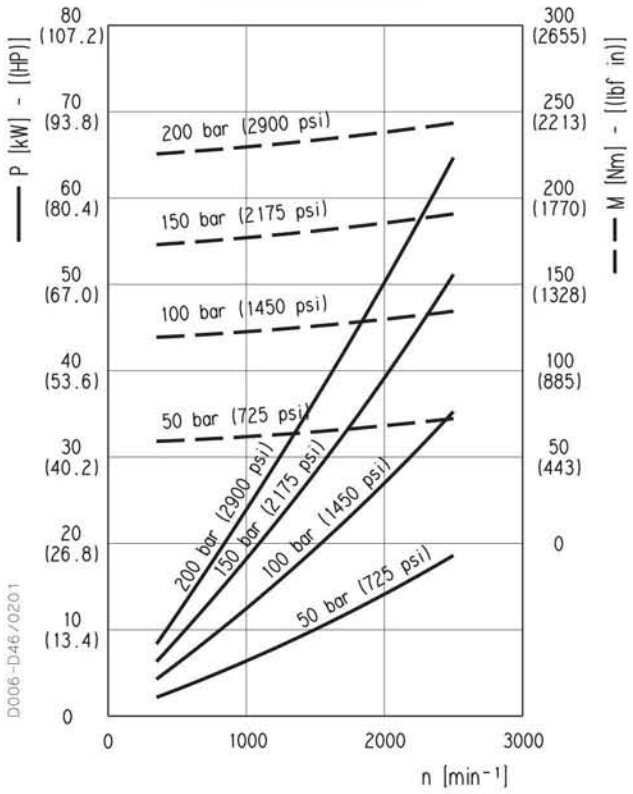
KP 30•51



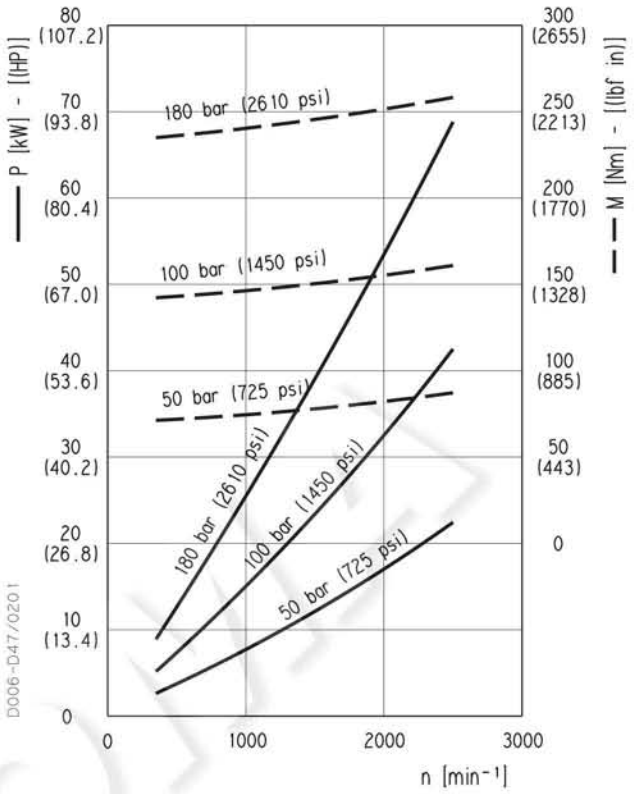
KP 30•56



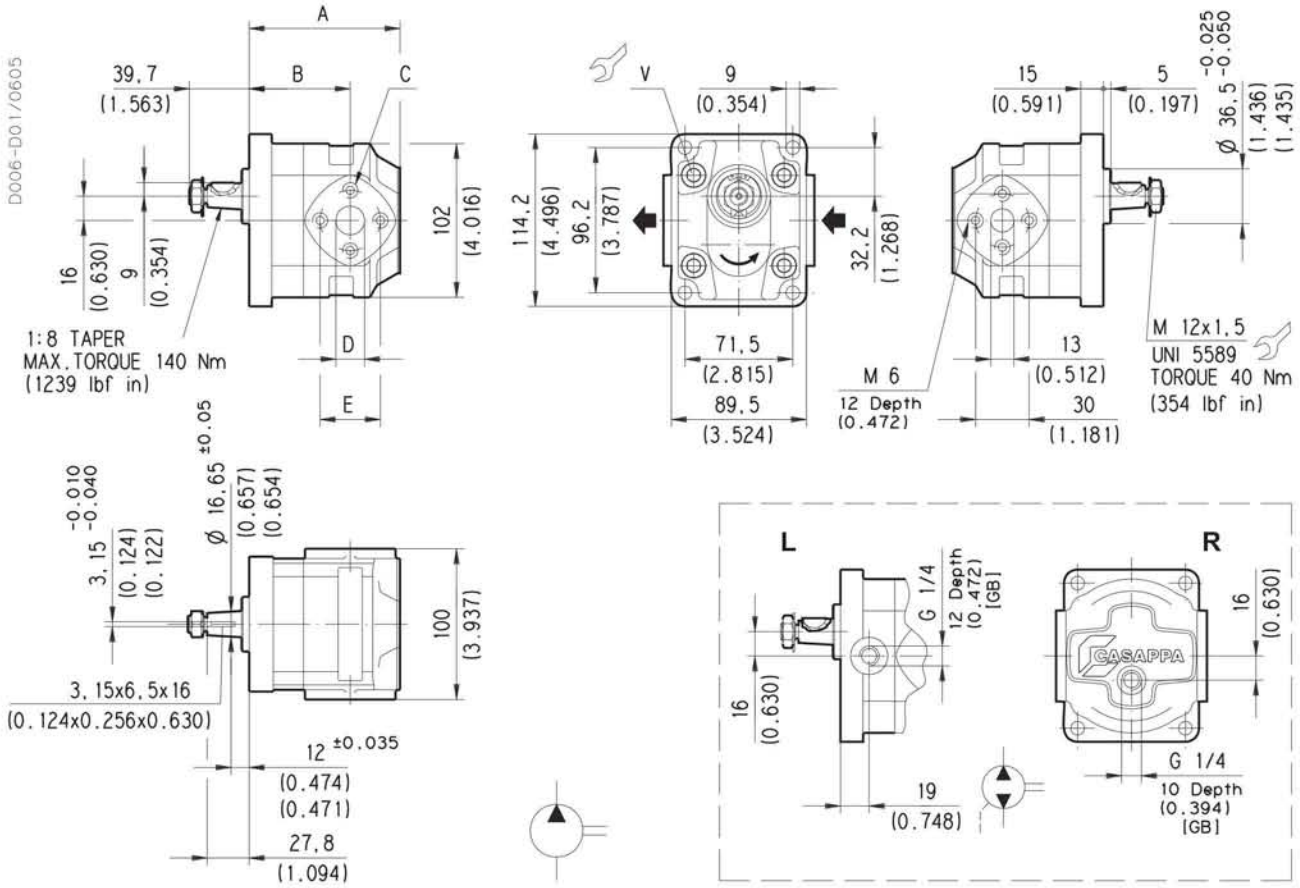
KP 30•61



KP 30•73



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)

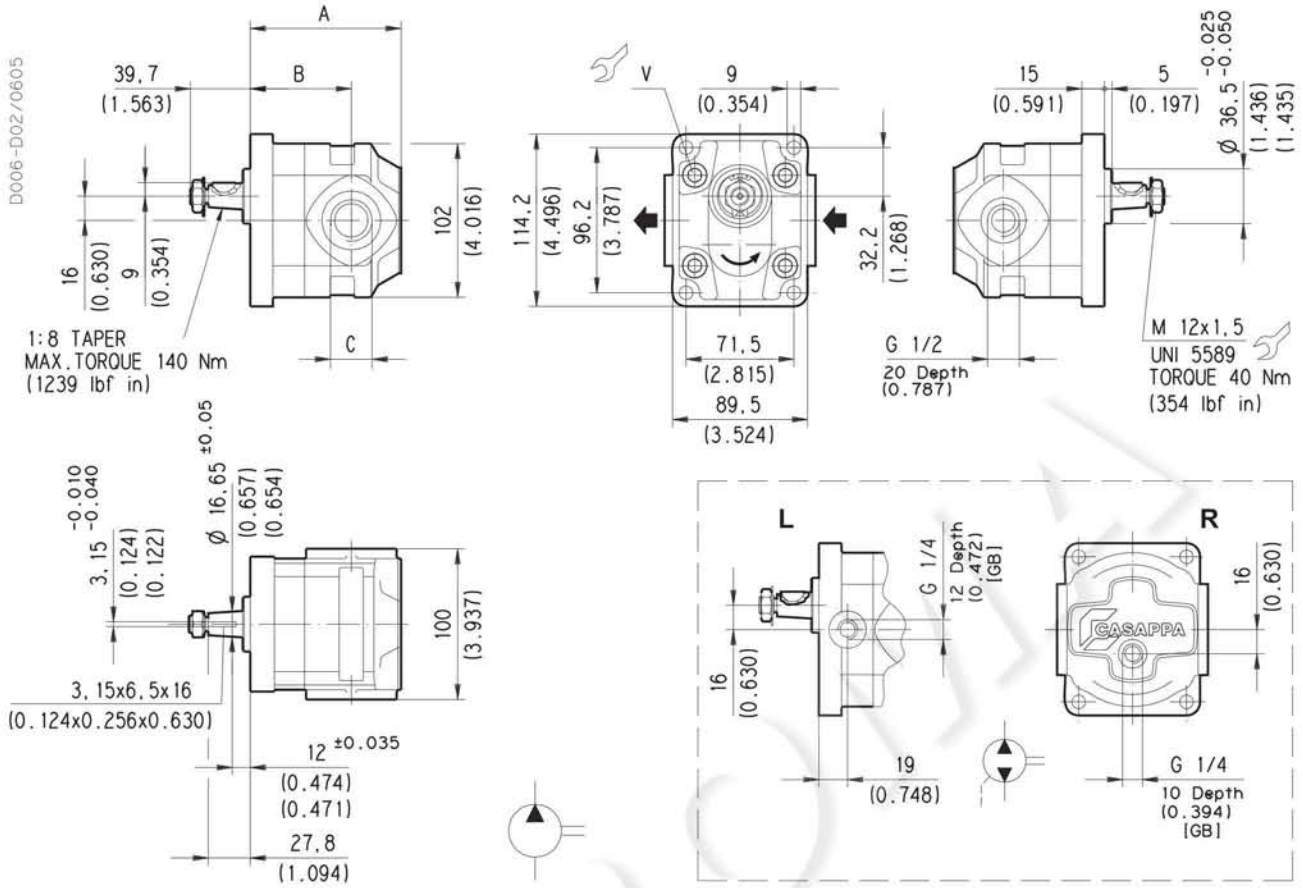
Pump type			A	B	C	D	E
			mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 20•4	S D L R B	0-82 E2-L EA/EA-N	87,5 (3.445)	60 (2.362)	M 6 Depth 12 (0.472)	13 (0.512)	30 (1.181)
KP 20•6,3			90 (3.543)	62,5 (2.461)			
KP 20•8			92,5 (3.642)	65 (2.559)			
KP 20•11,2			96 (3.780)	68,5 (2.697)			
KP 20•14		0-82 E2-L EB/EA-N	100 (3.937)	67 (2.638)	M 8 Depth 14 (0.551)	19 (0.748)	40 (1.575)
KP 20•16			105,5 (4.154)	72,5 (2.854)			
KP 20•20			112 (4.409)	79 (3.110)			
KP 20•25			120 (4.724)	72 (2.835)			
KP 20•31,5			130 (5.118)	82 (3.228)			

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

How to order:

KP 20•4 S0-82 E2-L EA/EA-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)

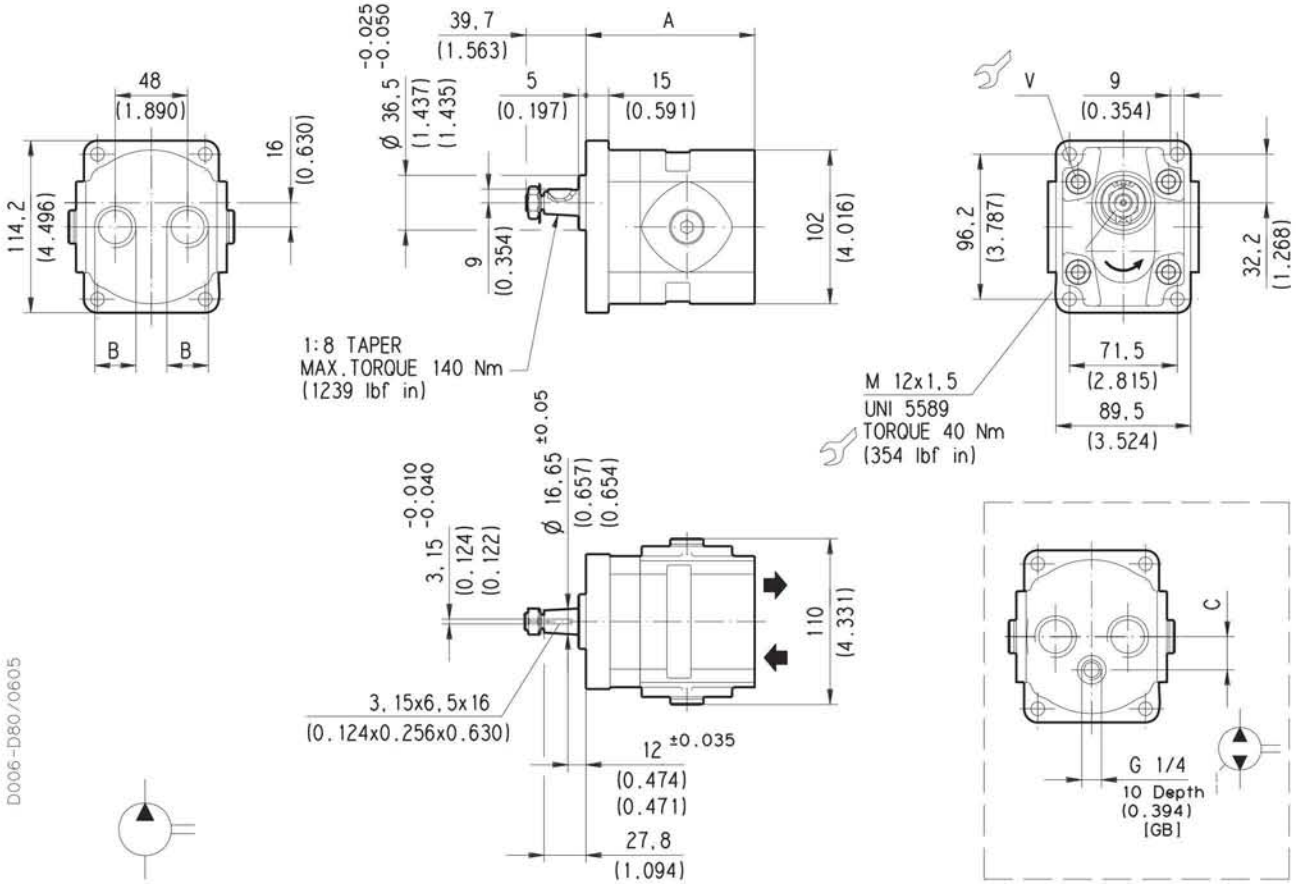
Pump type			A	B	C
			mm (in)	mm (in)	mm (in)
KP 20•4	S D L R B	0-82 E2-L GD/GD-N	87,5 (3.445)	60 (2.362)	G 1/2 Depth 20 (0.787)
KP 20•6,3			90 (3.543)	62,5 (2.461)	
KP 20•8			92,5 (3.642)	65 (2.559)	
KP 20•11,2			96 (3.780)	68,5 (2.697)	
KP 20•14		0-82 E2-L GE/GD-N	100 (3.937)	67 (2.638)	G 3/4 Depth 22 (0.866)
KP 20•16			105,5 (4.154)	72,5 (2.854)	
KP 20•20			112 (4.409)	79 (3.110)	
KP 20•25			120 (4.724)	72 (2.835)	
KP 20•31,5			130 (5.118)	82 (3.228)	

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

How to order:

KP 20•4 S0-82 E2-L GD/GD-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)

Rear ports version.

Pump type			A	B	C
			mm (in)	mm (in)	mm (in)
KP 20•4	S D R B	0-82 E2-P GD/GD-N	84,5 (3.327)	G 1/2 Depth 17 (0.670)	19 (0.748)
KP 20•6,3			87 (3.425)		
KP 20•8			89,5 (3.524)		
KP 20•11,2			93 (3.661)		
KP 20•14		0-82 E2-P GE/GE-N	112 (4.409)	G 3/4 Depth 18 (0.709)	22 (0.866)
KP 20•16			115,5 (4.547)		
KP 20•20			122 (4.803)		
KP 20•25			130 (5.118)		
KP 20•31,5			140 (5.512)		

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

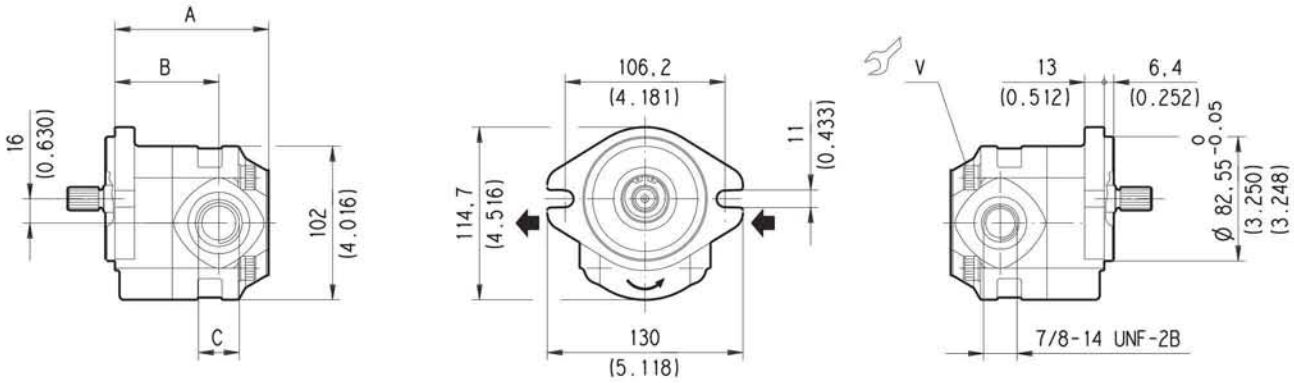
How to order:

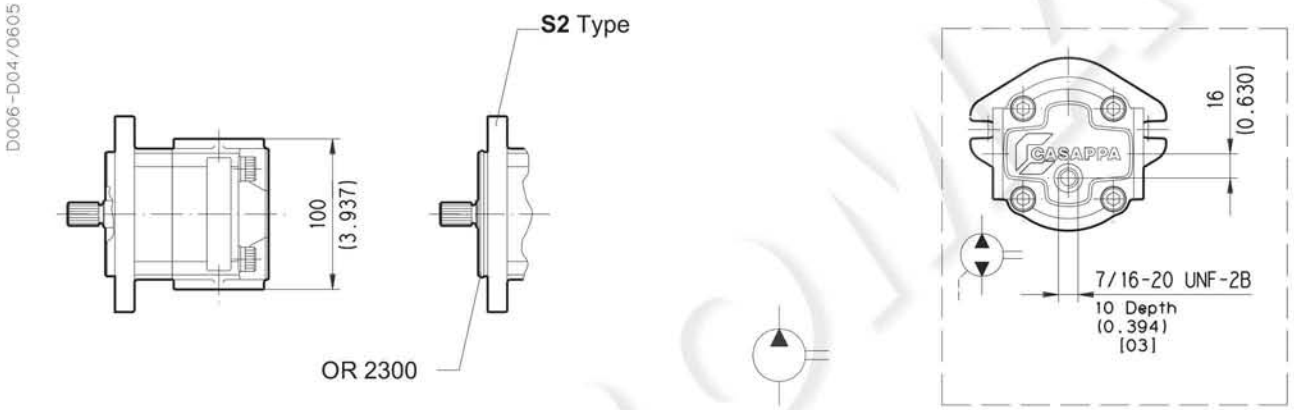
KP 20•4 S0-82 E2-P GD/GD-N

02/06.05

KAPPA 20 — HYDRAULIC GEAR PUMPS SAE STANDARD — ... S1

SAE STRAIGHT THREAD PORTS J514
American straight thread UNC-UNF 60° conforms to ANSI B 1.1



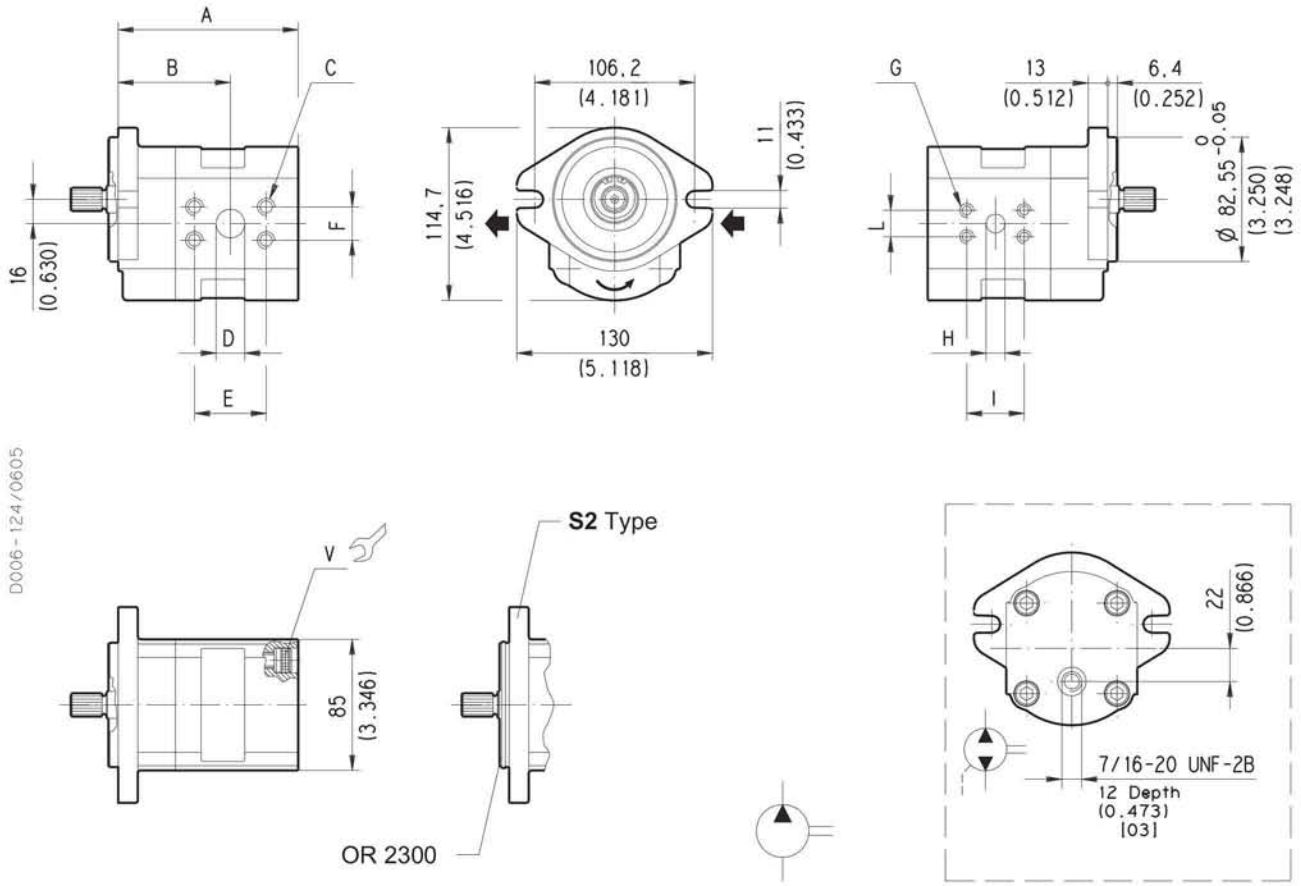


V Screws tightening torque Nm (lbf in)
70 ±7 (558 ÷ 682)

Side ports version (L) - To order see page 22

Pump type	A	B	C	Ports code	
	mm (in)	mm (in)		IN	OUT
KP 20•4	89,5 (3.524)	62 (2.441)	7/8-14 UNF-2B	OC	OC
KP 20•6,3	92 (3.622)	64,5 (2.539)			
KP 20•8	94,5 (3.720)	67 (2.638)			
KP 20•11,2	98 (3.858)	70,5 (2.776)			
KP 20•14	102 (4.016)	69 (2.717)	1-1/16-12 UN-2B	OD	
KP 20•16	107,5 (4.232)	74,5 (2.933)			
KP 20•20	114 (4.488)	81 (3.189)			
KP 20•25	122 (4.803)	74 (2.913)			
KP 20•31,5	132 (5.197)	84 (3.307)			

SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI
Metric thread ISO 60° conforms to ISO/R 262

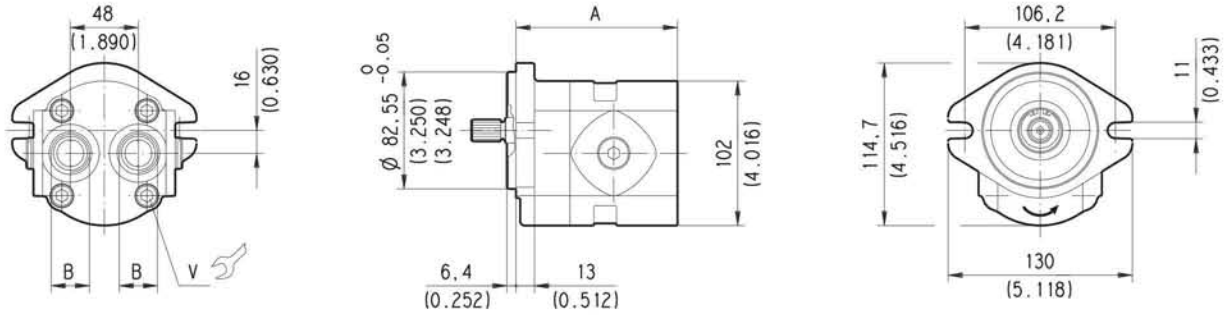


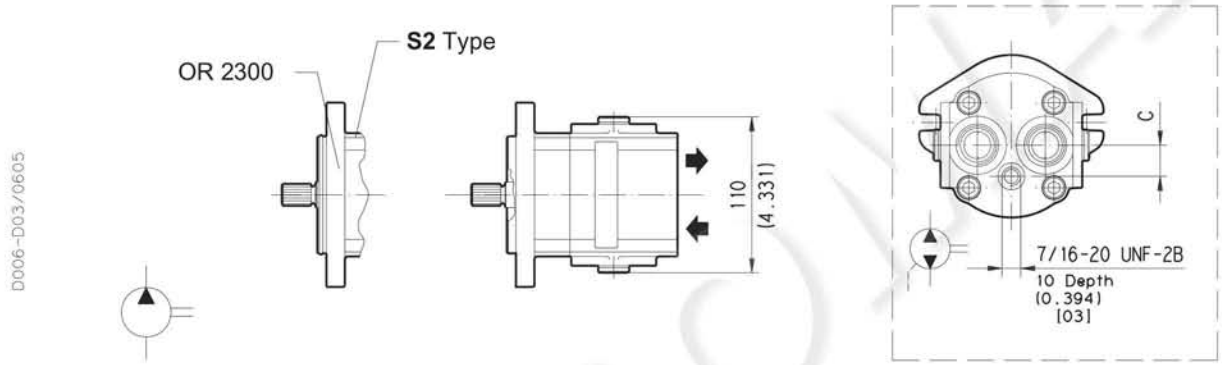
V Screws tightening torque Nm (lbf in)
70 ±7 (558 ÷ 682)

Side ports version (L) - To order see page 22

Pump type	A	B	C	D	E	F	G	H	I	L	Ports code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 20•4	101,5 (3.996)	62 (2.441)	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	MA	MA
KP 20•6,3	104 (4.094)	64,5 (2.539)										
KP 20•8	106,5 (4.193)	67 (2.638)										
KP 20•11,2	111 (4.370)	70,5 (2.776)										
KP 20•14	116 (4.567)	69 (2.717)	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)					MB	
KP 20•16	119,5 (4.705)	74,5 (2.933)										
KP 20•20	126 (4.961)	81 (3.189)										
KP 20•25	134 (5.276)	74 (2.913)		25,4 (1.000)	52,4 (2.063)	26,2 (1.031)	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MC	MB
KP 20•31,5	144 (5.669)	84 (3.307)										

SAE STRAIGHT THREAD PORTS J514
American straight thread UNC-UNF 60° conforms to ANSI B 1.1



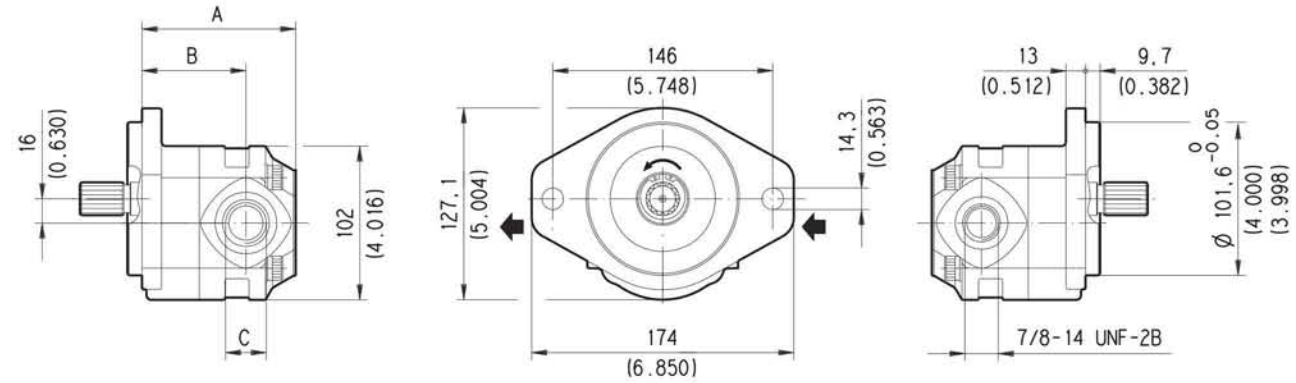


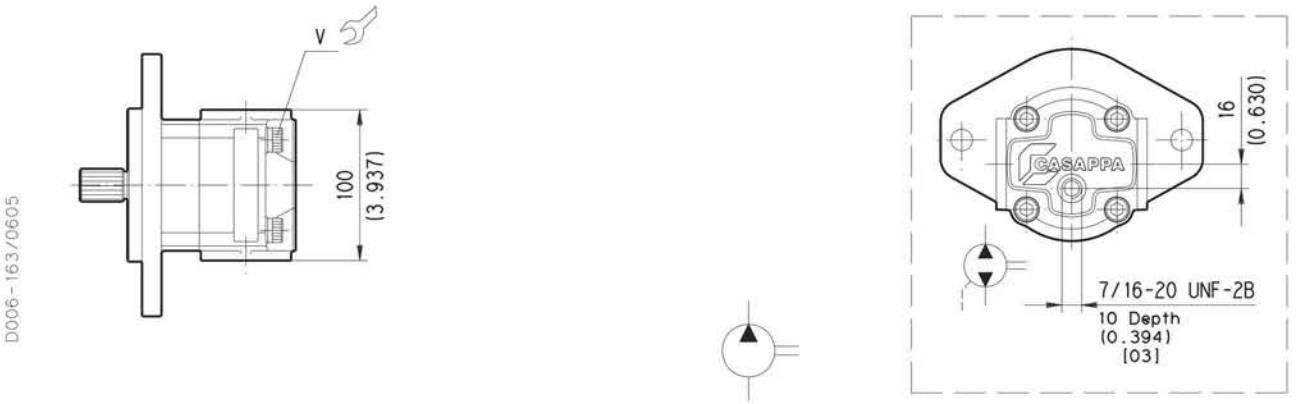
V Screws tightening torque Nm (lbf in)
70 $^{\pm 7}$ (558 ÷ 682)

Rear ports version (P) - To order see page 22

Pump type	A	B	C	Ports code	
	mm (in)		mm (in)	IN	OUT
KP 20•4	86,5 (3.406)	7/8-14 UNF-2B	19 (0.748)	OC	OC
KP 20•6,3	89 (3.504)				
KP 20•8	91,5 (3.602)				
KP 20•11,2	95 (3.740)				
KP 20•14	114 (4.488)	1-1/16-12 UN-2B	22 (0.866)	OD	
KP 20•16	117,5 (4.623)				
KP 20•20	124 (4.882)				
KP 20•25	132 (5.197)				
KP 20•31,5	142 (5.591)				

SAE STRAIGHT THREAD PORTS J514
American straight thread UNC-UNF 60° conforms to ANSI B 1.1



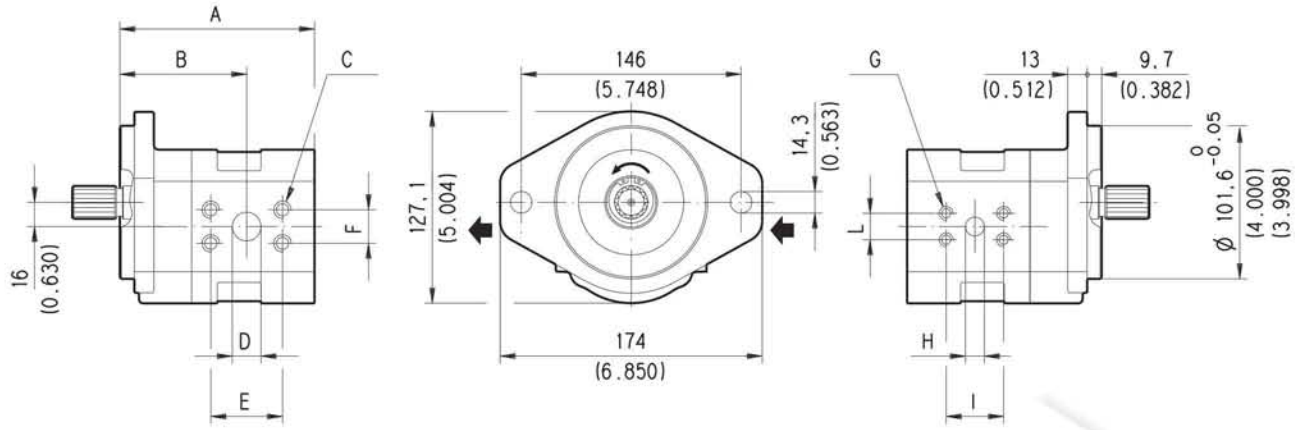


V Screws tightening torque Nm (lbf in)
70 $^{\pm 7}$ (558 ÷ 682)

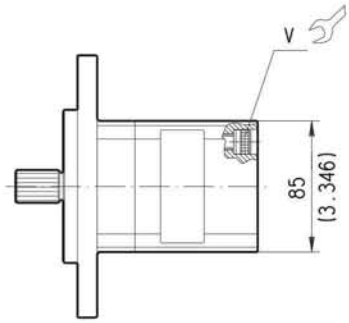
Side ports version (L) - To order see page 22

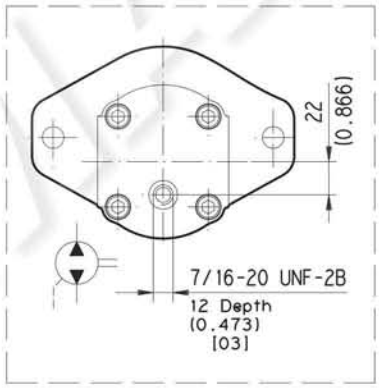
Pump type	A	B	C	Ports code	
	mm (in)	mm (in)		IN	OUT
KP 20•4	89,5 (3.524)	62 (2.441)	7/8-14 UNF-2B	OC	OC
KP 20•6,3	92 (3.622)	64,5 (2.539)			
KP 20•8	94,5 (3.720)	67 (2.638)			
KP 20•11,2	98 (3.858)	70,5 (2.776)			
KP 20•14	102 (4.016)	69 (2.717)	1-1/16-12 UN-2B	OD	
KP 20•16	107,5 (4.232)	74,5 (2.933)			
KP 20•20	114 (4.488)	81 (3.189)			
KP 20•25	122 (4.803)	74 (2.913)			
KP 20•31,5	132 (5.197)	84 (3.307)			

SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI
Metric thread ISO 60° conforms to ISO/R 262



D006-164/0605



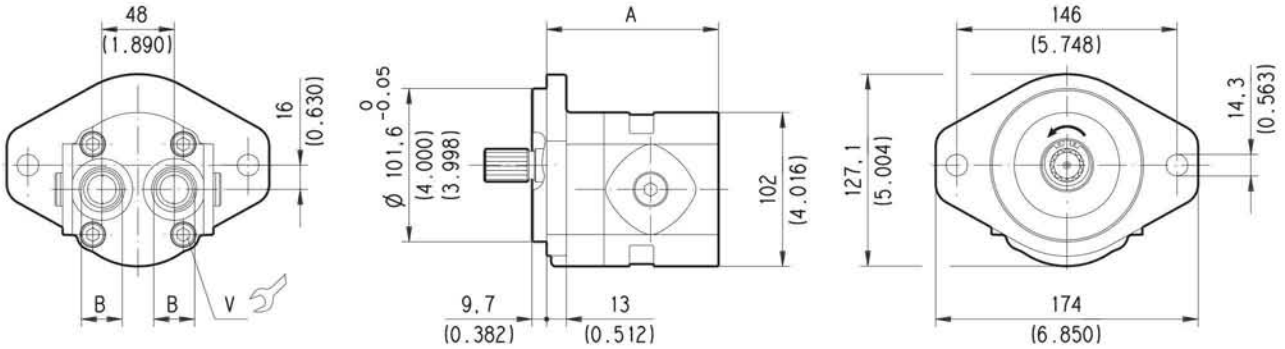


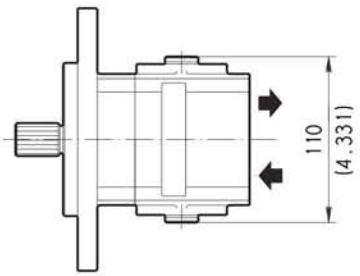
V Screws tightening torque Nm (lbf in)
70 ±7 (558 ÷ 682)

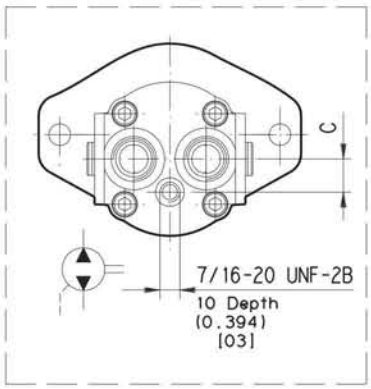
Side ports version (L) - To order see page 22

Pump type	A	B	C	D	E	F	G	H	I	L	Ports code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 20•4	101,5 (3.996)	62 (2.441)	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	MA	MA
KP 20•6,3	104 (4.094)	64,5 (2.539)										
KP 20•8	106,5 (4.193)	67 (2.638)										
KP 20•11,2	111 (4.370)	70,5 (2.776)										
KP 20•14	116 (4.567)	69 (2.717)	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)					MB	
KP 20•16	119,5 (4.705)	74,5 (2.933)										
KP 20•20	126 (4.961)	81 (3.189)										
KP 20•25	134 (5.276)	74 (2.913)		25,4 (1.000)	52,4 (2.063)	26,2 (1.031)	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MC	MB
KP 20•31,5	144 (5.669)	84 (3.307)										

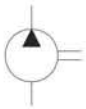
SAE STRAIGHT THREAD PORTS J514
American straight thread UNC-UNF 60° conforms to ANSI B 1.1







D006-165/0605



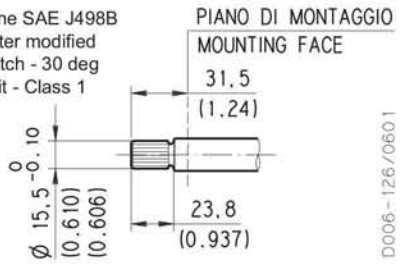
V Screws tightening torque Nm (lbf in)
70 $^{\pm 7}$ (558 ÷ 682)

Rear ports version (P) - To order see page 22

Pump type	A	B	C	Ports code	
	mm (in)		mm (in)	IN	OUT
KP 20•4	86,5 (3.406)	7/8-14 UNF-2B	19 (0.748)	**OC**	**OC**
KP 20•6,3	89 (3.504)				
KP 20•8	91,5 (3.602)				
KP 20•11,2	95 (3.740)				
KP 20•14	114 (4.488)	1-1/16-12 UN-2B	22 (0.866)	**OD**	
KP 20•16	117,5 (4.623)				
KP 20•20	124 (4.882)				
KP 20•25	132 (5.197)				
KP 20•31,5	142 (5.591)				

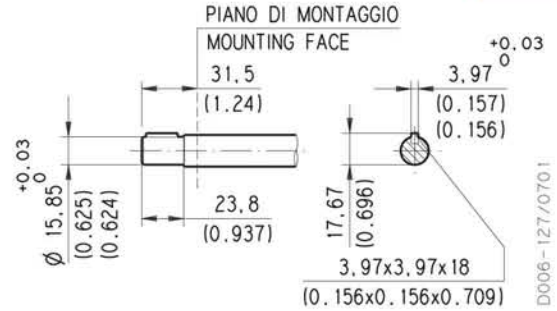
SAE "A" SPLINE 03

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



MAX 885 lbf in (100 Nm)

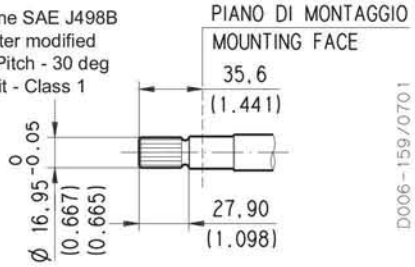
SAE "A" STRAIGHT 31



MAX 620 lbf in (70 Nm)

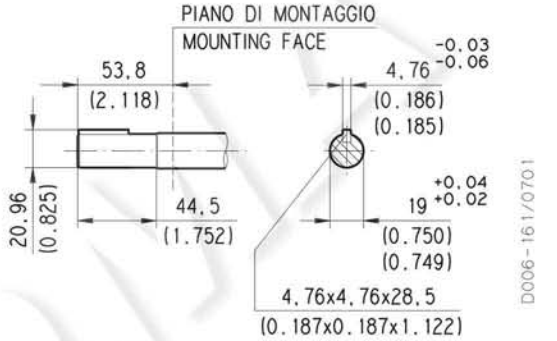
SAE SPLINE 01

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



MAX 1151 lbf in (130 Nm)

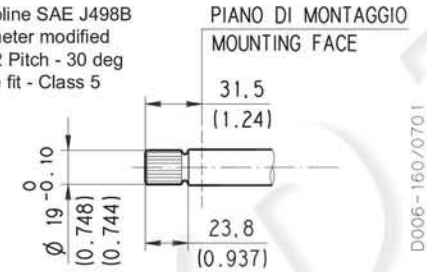
STRAIGHT 49



MAX 1239 lbf in (140 Nm)

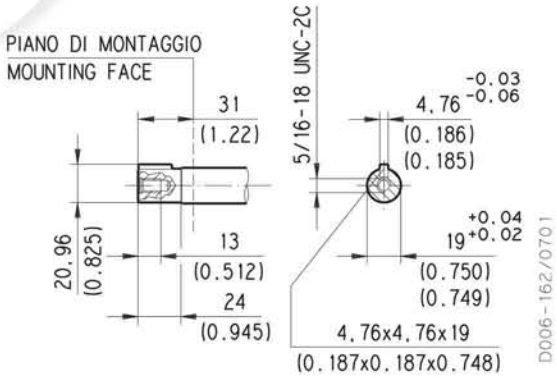
SAE SPLINE 07

Ext. Involute Spline SAE J498B
with major diameter modified
11 teeth - 16/32 Pitch - 30 deg
Flat Root - Side fit - Class 5



MAX 1505 lbf in (170 Nm)

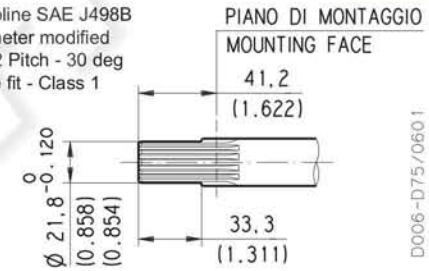
STRAIGHT 50



MAX 885 lbf in (100 Nm)

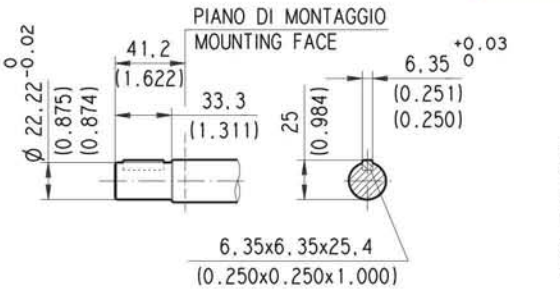
SAE "B"SPLINE 04

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



MAX 2478 lbf in (280 Nm)

SAE "B" STRAIGHT 32



MAX 1770 lbf in (200 Nm)

HOW TO ORDER SINGLE PUMPS

1	2	3		4	5		6	7		8
Pump type	Rotation	Version	–	Drive shaft	Mounting flange	–	Ports positon	Ports IN/OUT	–	Seals
KP20•4	S	0	–	03	S1	–	L	OC/OC	–	N

1 Pump type		CODE
in^3/rev	cm^3/rev	
0.30	4,95	KP 20•4
0.40	6,61	KP 20•6,3
0.50	8,26	KP 20•8
0.69	11,23	KP 20•11,2
0.89	14,53	KP 20•14
1.03	16,85	KP 20•16
1.29	21,14	KP 20•20
1.61	26,42	KP 20•25
2.01	33,03	KP 20•31,5

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

3 Version	CODE
Without outboard bearing	0

4 Drive shaft	CODE
SAE "A" spline (9 teeth)	03
SAE spline (10 teeth)	01
SAE spline (11 teeth)	07
SAE "B" spline (13 teeth)	04
SAE "A" straight	31
Straight	49
Straight	50
SAE "B" straight	32

5 Mounting flange	CODE
SAE "A" 2 holes	S1
SAE "A" 2 holes (with o-ring seal)	S2
SAE "B" 2 holes (a)	S5

CODE	6 Ports position
L	Side
P	Rear

CODE	7 Ports IN/OUT	
SAE STRAIGHT THREAD PORTS (ODT)		
Side	Rear	Pump type
OC/OC	OC/OC	KP 20•4
OC/OC	OC/OC	KP 20•6,3
OC/OC	OC/OC	KP 20•8
OC/OC	OC/OC	KP 20•11,2
OD/OC	OD/OD	KP 20•14
OD/OC	OD/OD	KP 20•16
OD/OC	OD/OD	KP 20•20
OD/OC	OD/OD	KP 20•25
OD/OC	OD/OD	KP 20•31,5
METRIC SAE SPLIT PORTS SAE J518 C		
Side	Rear	Pump type
MA/MA		KP 20•4
MA/MA		KP 20•6,3
MA/MA		KP 20•8
MA/MA		KP 20•11,2
MB/MA		KP 20•14
MB/MA		KP 20•16
MB/MA		KP 20•20
MC/MB		KP 20•25
MC/MB		KP 20•31,5

CODE	8 Seals (b)
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) Available only with 04 and 32 shaft

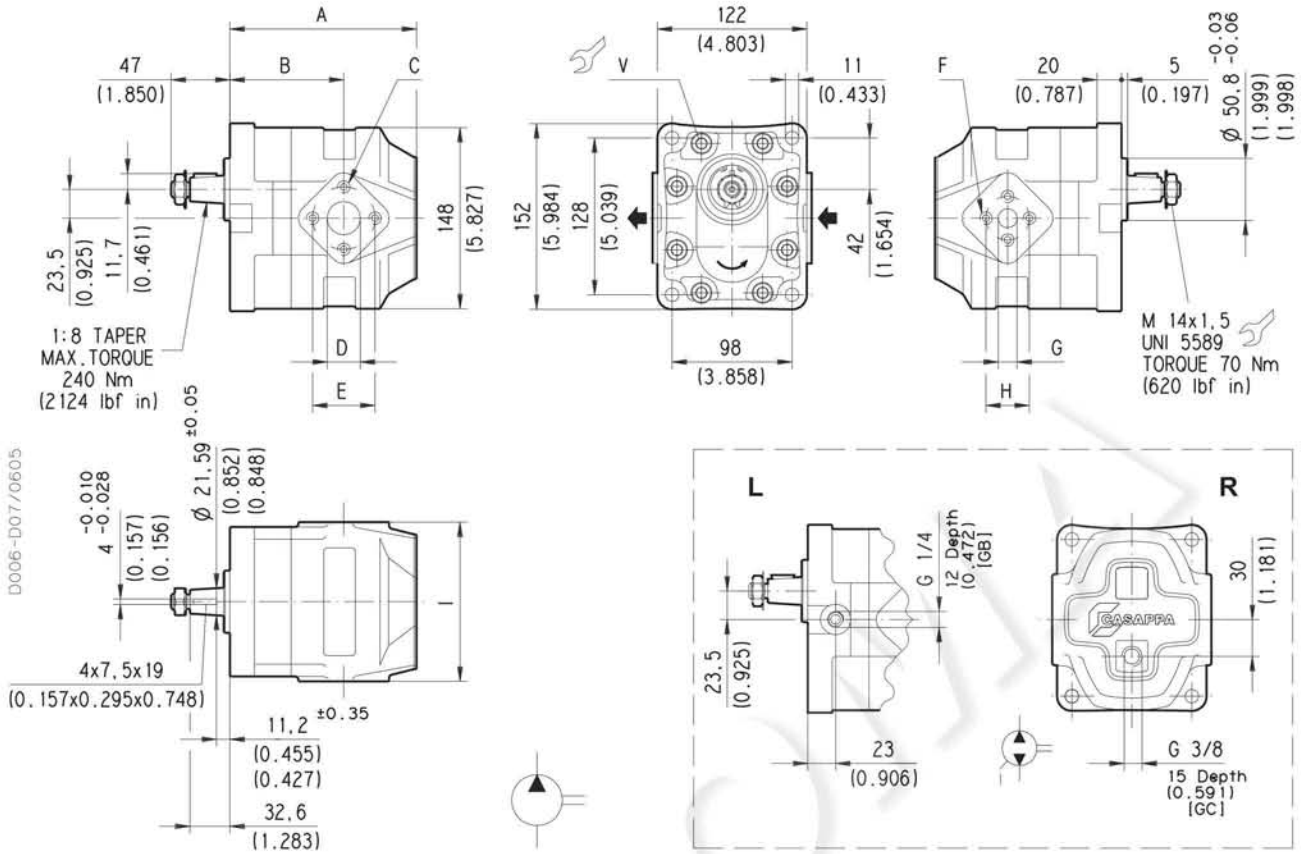
(b) Choose the seals according to the temperature shown on page 1

ORDER EXAMPLE

Standard pump KP 20•4 S0 - 03 S1 - L OC/OC - N

Special version pump KP 20•4 S0 - 04 S5 - L MA/MA - V Bz

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)

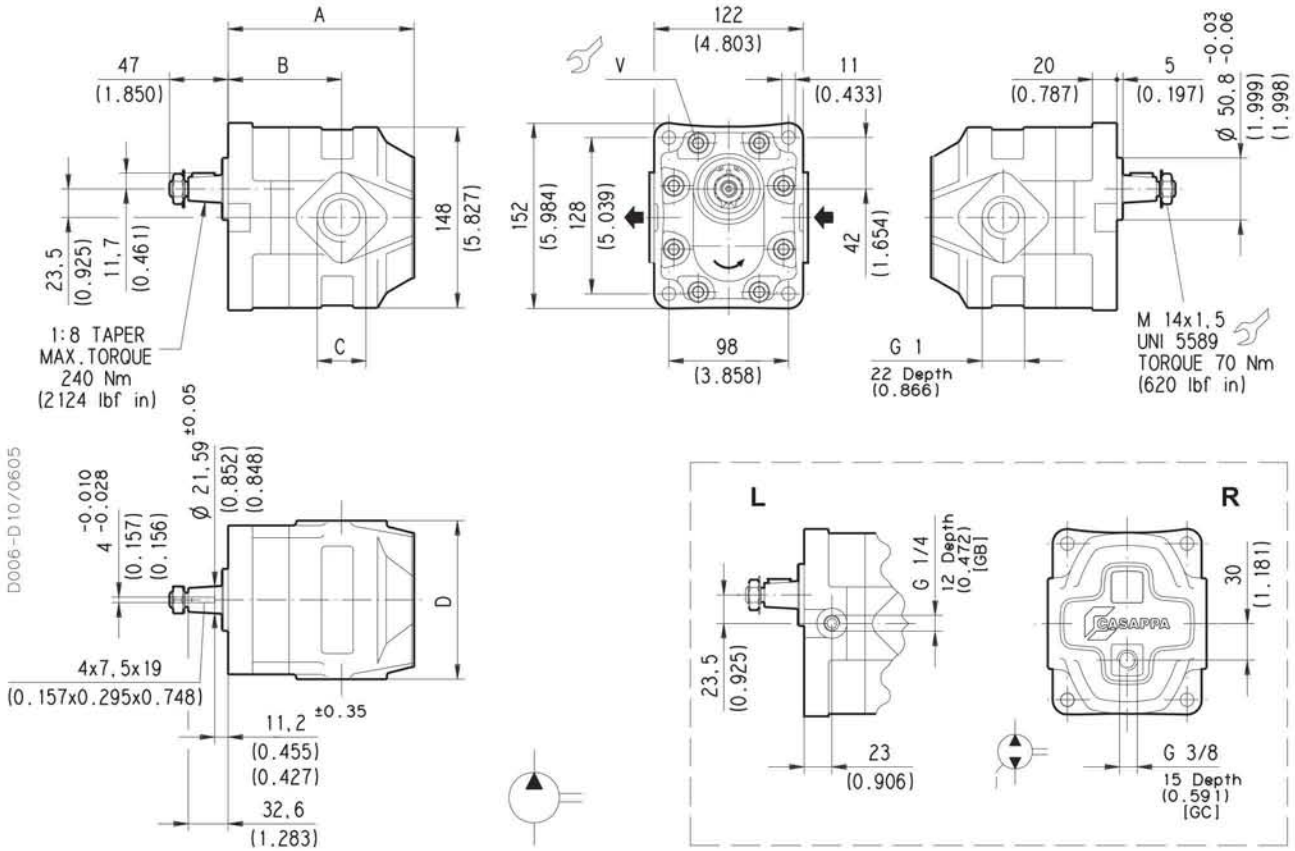
Pump type			A	B	C	D	E	F	G	H	I
			mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30•27	S D L R B	0-83 E3-L ED/EB-N	133 (5.236)	85 (3.346)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	M 8 Depth 17 (0.669)	19 (0.748)	40 (1.575)	130 (5.118)
KP 30•34			138 (5.433)	90 (3.543)							
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)

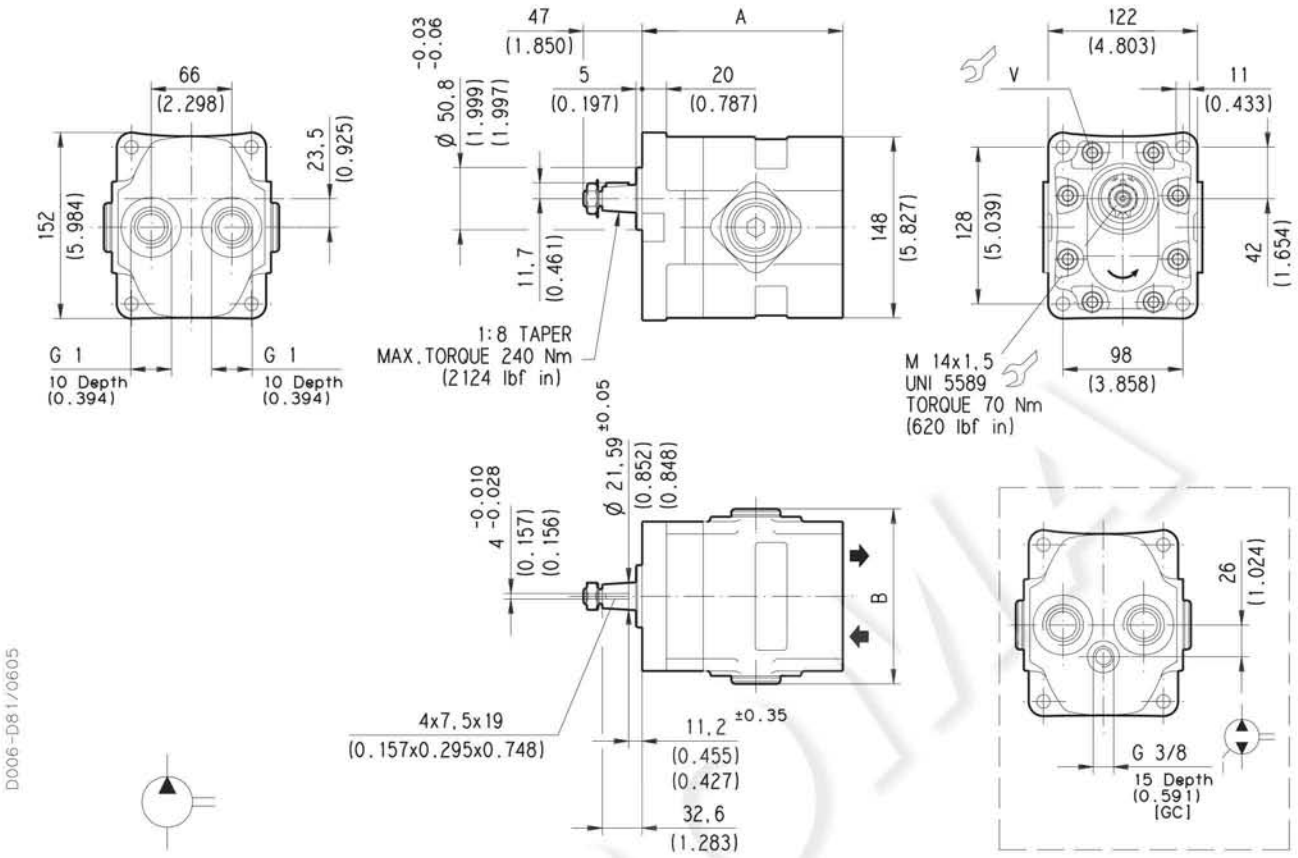
Pump type			A	B	C	D
			mm (in)	mm (in)	mm (in)	mm (in)
KP 30•27	S D L R B	0-83 E3-L GF/GF-N	133 (5.236)	85 (3.346)	G 1 Depth 22 (0.866)	130 (5.118)
KP 30•34			138 (5.433)	90 (3.543)		
KP 30•38			141 (5.551)	93 (3.661)		
KP 30•43			144 (5.669)	96 (3.780)		
KP 30•51			149 (5.866)	93 (3.661)		
KP 30•56			152 (5.984)	97 (3.819)		
KP 30•61			155 (6.102)	100 (3.937)		
KP 30•73		0-83 E3-L GG/GF-N	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



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

Rear ports version (P)

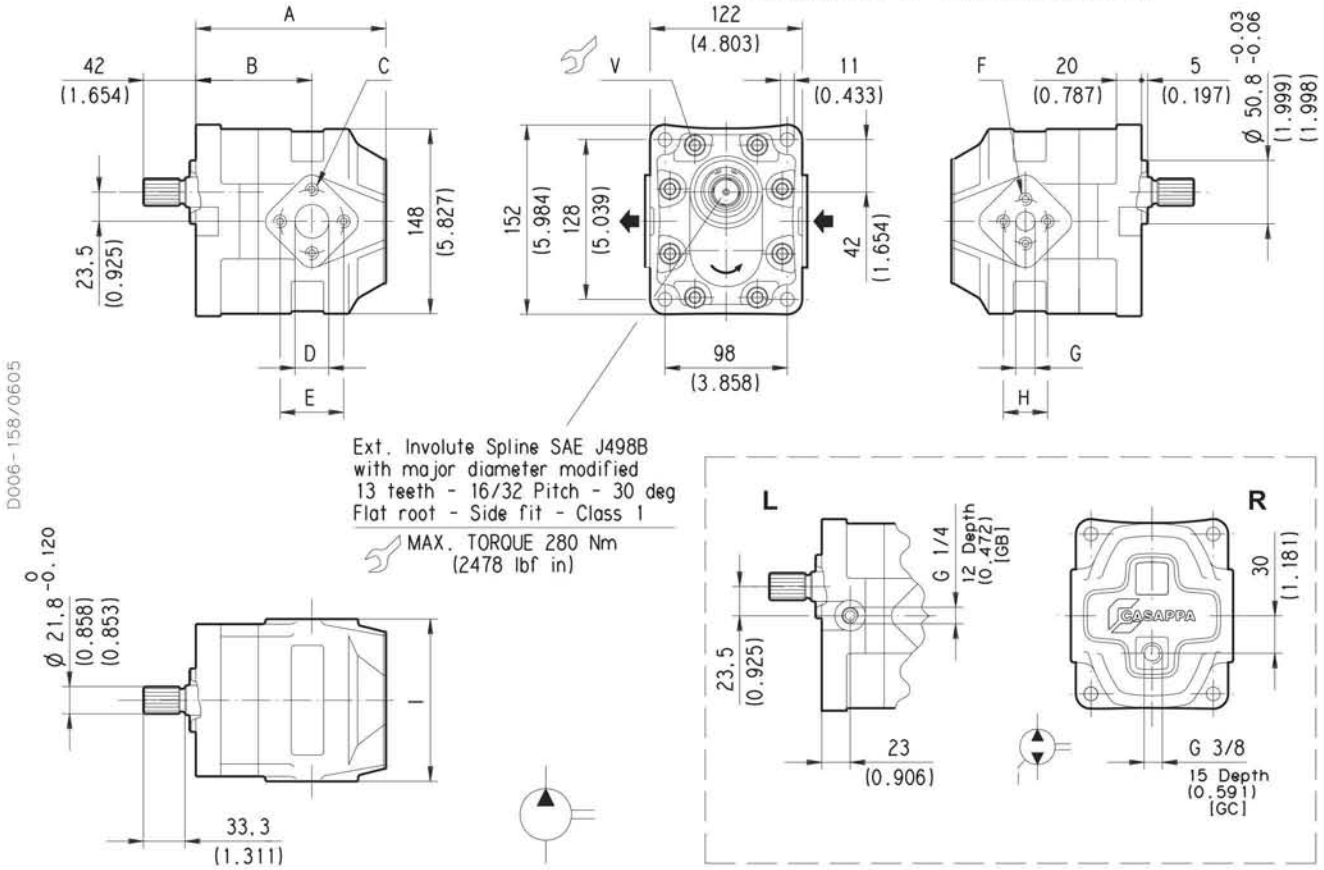
Pump type			A	B
			mm (in)	mm (in)
KP 30•27	S D R B	0-83 E3-P GF/GF-N	148 (5.827)	143 (5.630)
KP 30•34			153 (6.024)	
KP 30•38			156 (6.142)	
KP 30•43			159 (6.260)	
KP 30•51			164 (6.457)	
KP 30•56			167 (6.575)	148 (5.827)
KP 30•61			170 (6.693)	
KP 30•73			178 (7.008)	

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



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

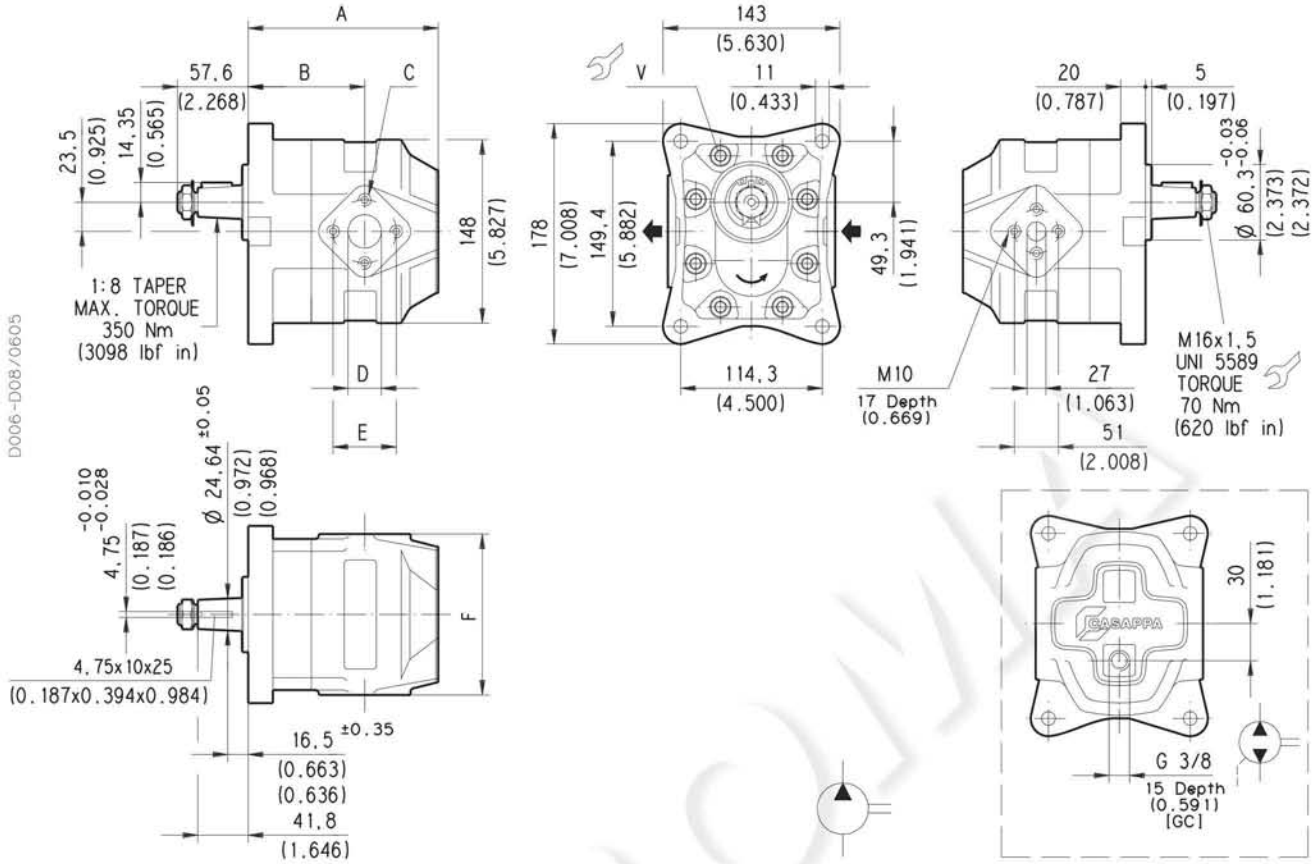
Pump type			A	B	C	D	E	F	G	H	I
			mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30•27	S D L R B	0-83 E3-L ED/EB-N	133 (5.236)	85 (3.346)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	M 8 Depth 17 (0.669)	19 (0.748)	40 (1.575)	130 (5.118)
KP 30•34			138 (5.433)	90 (3.543)							
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

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)

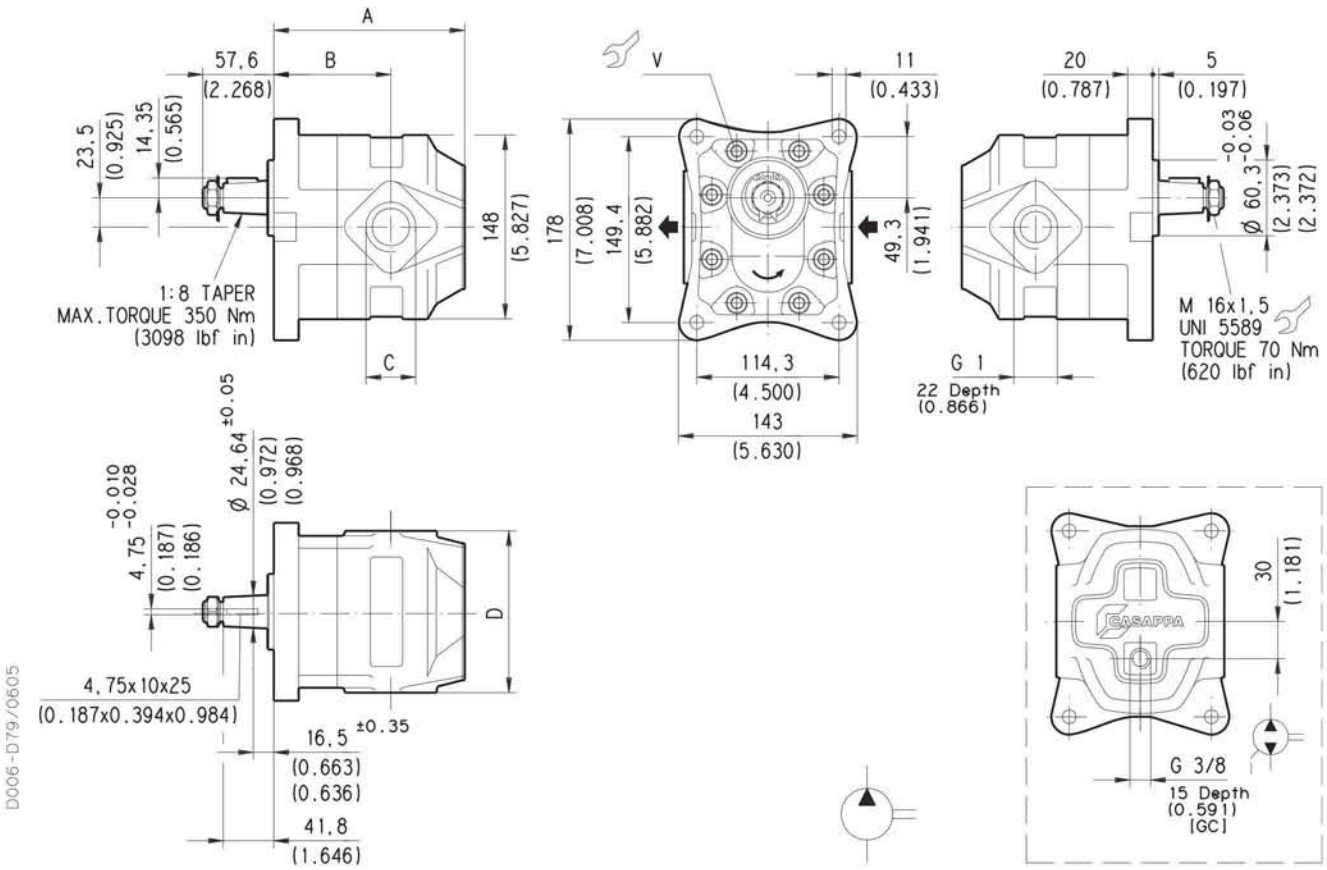
Pump type			A	B	C	D	E	F
			mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30•51	S D R B	0-84 E4-L ED/ED-N	150 (5.906)	94 (3.701)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)
KP 30•61	S D R B	0-84 E4-L EF/ED-N	156 (6.142)	101 (3.976)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)
KP 30•73	S D R B	0-84 E4-L EF/ED-N	164 (6.457)	109 (4.291)	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 S0-84 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)

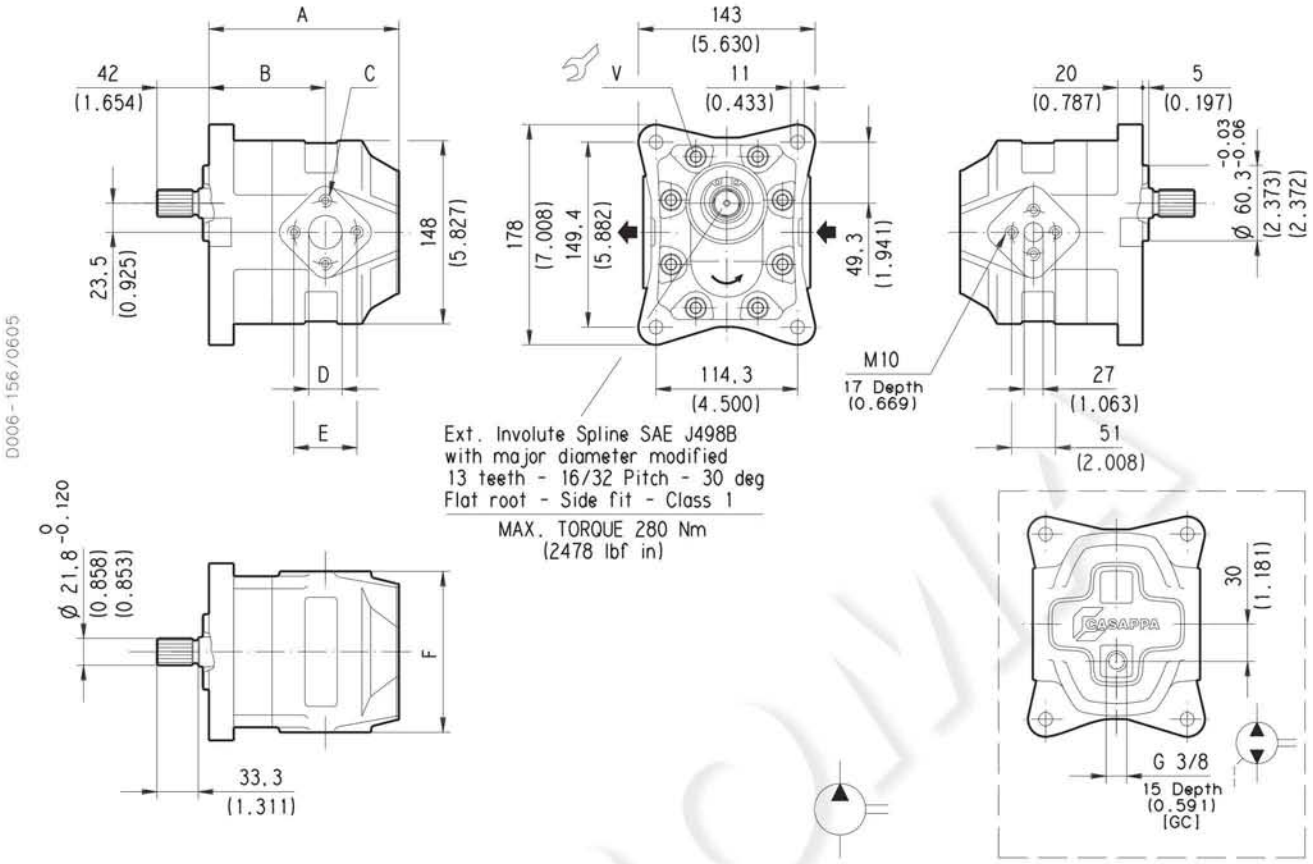
Pump type			A	B	C	D
			mm (in)	mm (in)	mm (in)	mm (in)
KP 30•51	S D R B	0-84 E4-L GF/GF-N	150 (5.906)	94 (3.701)	G 1 Depth 22 (0.866)	130 (5.118)
KP 30•61		0-84 E4-L GG/GF-N	156 (6.142)	101 (3.976)	G 1 1/4 Depth 24 (0.945)	135 (5.315)
KP 30•73			164 (6.457)	109 (4.291)		

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)

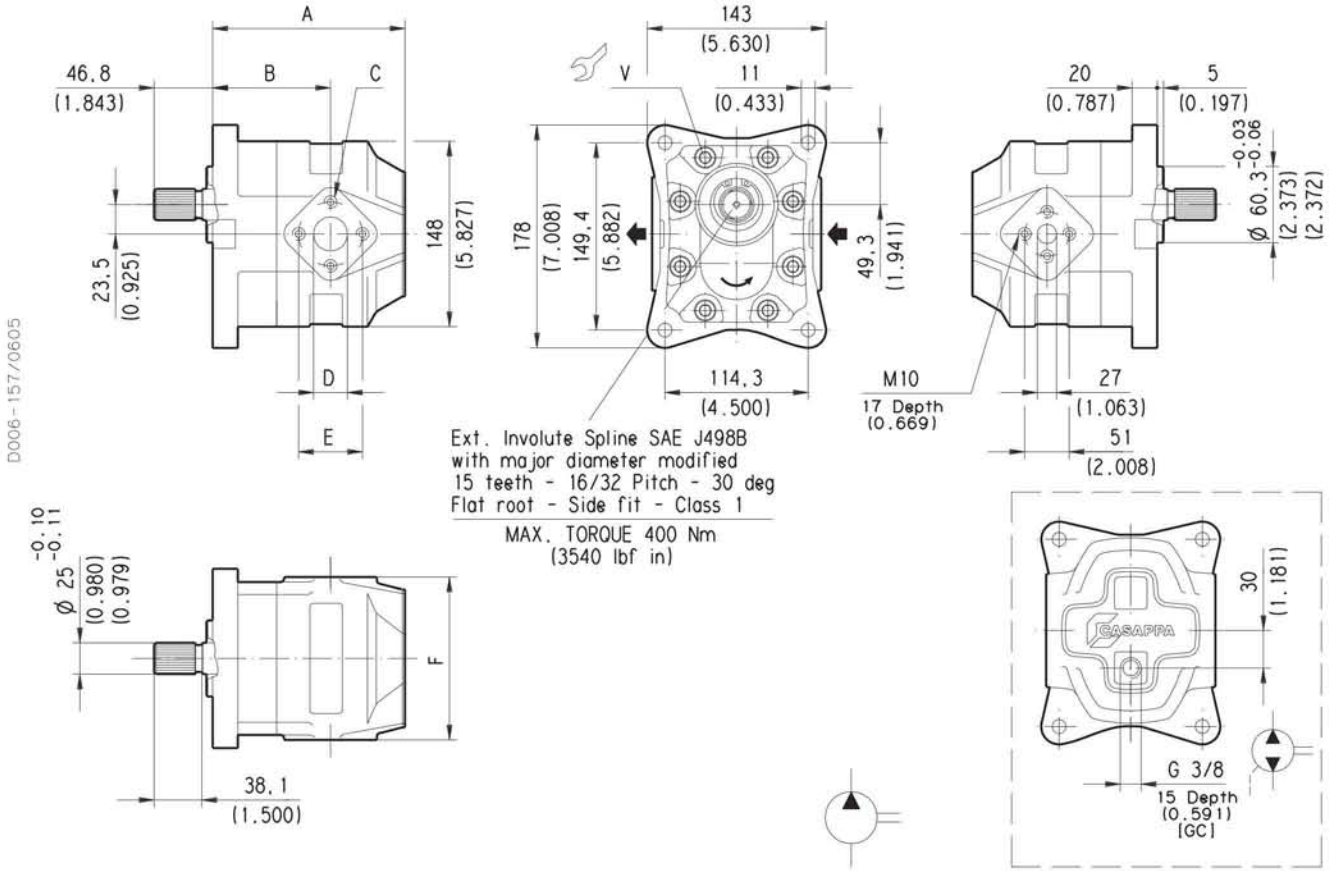
Pump type			A	B	C	D	E	F
			mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30•51	S D R B	0-A8 E4-L ED/ED-N	150 (5.906)	94 (3.701)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)
KP 30•61		0-A8 E4-L EF/ED-N	156 (6.142)	101 (3.976)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)
KP 30•73			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-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)

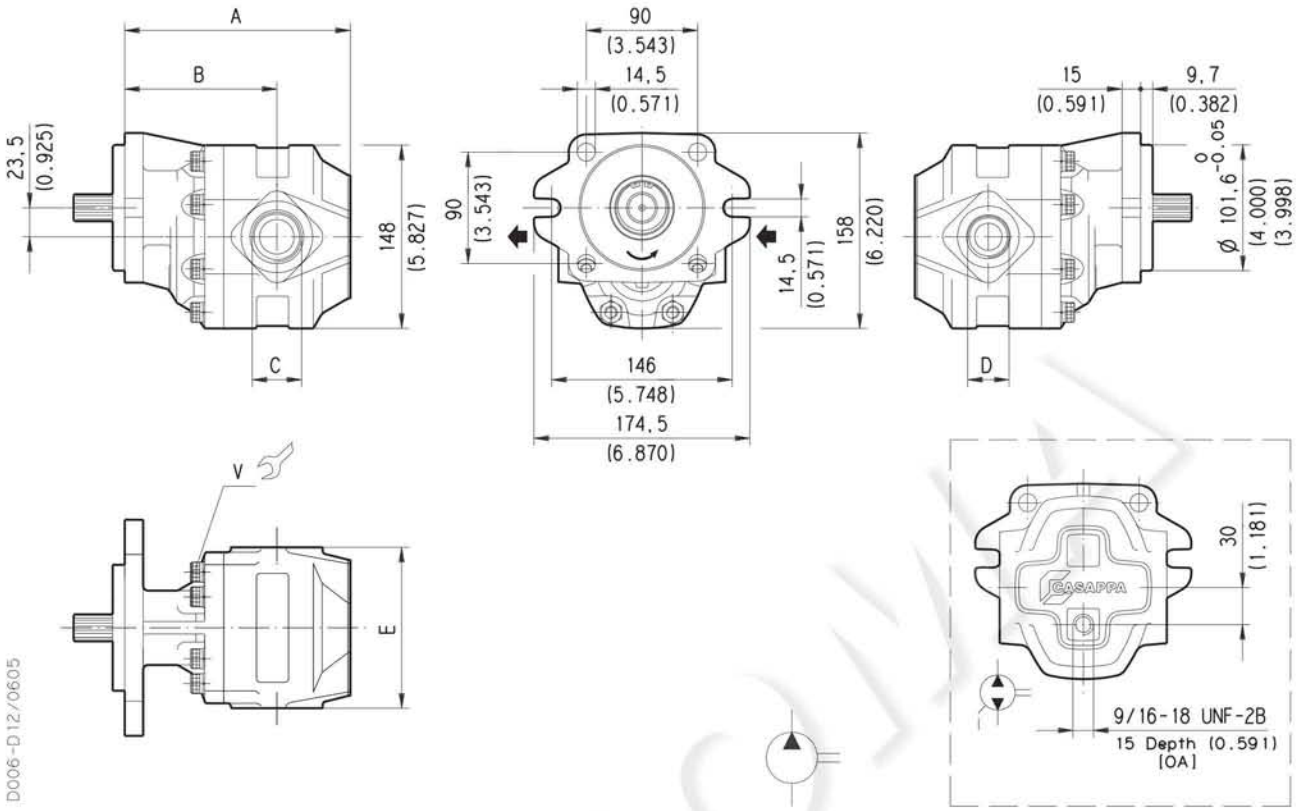
Pump type			A	B	C	D	E	F
			mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30•51	S D R B	0-A5 E4-L ED/ED-N	150 (5.906)	94 (3.701)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)
KP 30•61		0-A5 E4-L EF/ED-N	156 (6.142)	101 (3.976)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)
KP 30•73			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-A5 E4-L ED/ED-N

SAE STRAIGHT THREAD PORTS J514
American straight thread UNC-UNF 60° conforms to ANSI B 1.1



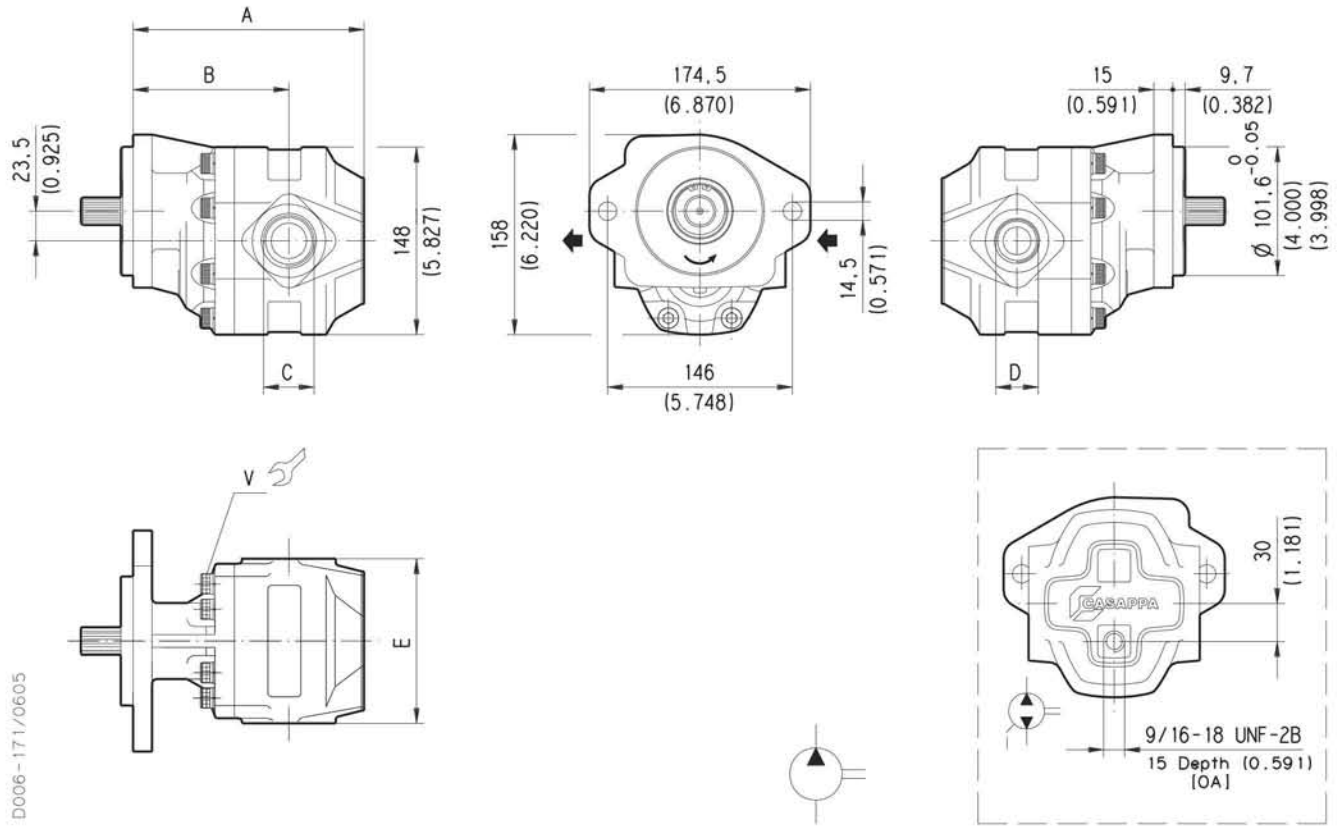
V Screws tightening torque Nm (lbf in)
70 ±7 (558 ÷ 682)

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.

SAE STRAIGHT THREAD PORTS J514
American straight thread UNC-UNF 60° conforms to ANSI B 1.1



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

To order see page 33 - 34.

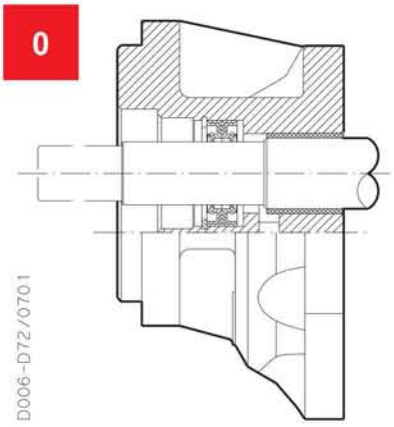
Pump type	A	B	C	D	E	Ports code	
	mm (in)	mm (in)			mm (in)	IN	OUT
KP 30•27	164 (6.457)	115 (4.528)	1-5/16-12 UN-2B	1-1/16-12 UN-2B	130 (5.118)	**OF**	**OD**
KP 30•34	169 (6.654)	120 (4.724)					
KP 30•38	172 (6.772)	123 (4.843)	1-5/8-12 UN-2B	1-5/16-12 UN-2B		**OG**	**OF**
KP 30•43	175 (6.890)	126 (4.961)					
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

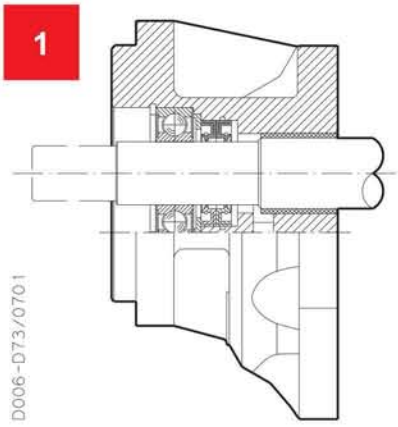
SAE

0



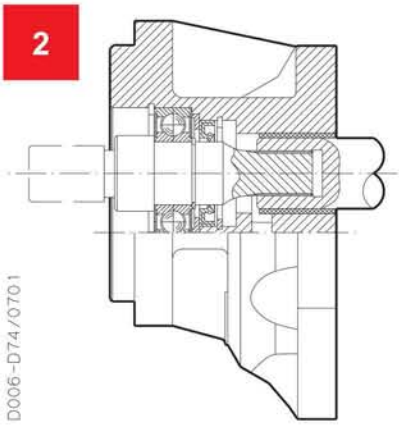
Version for applications without radial and axial load on the drive shaft.

1



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

2



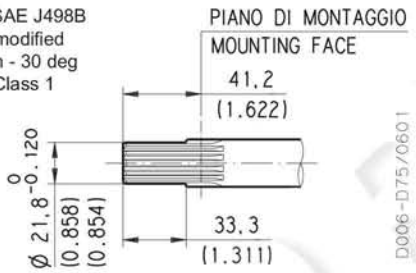
Special version with independent shaft for applications with low radial load and without axial load on the drive shaft.

KAPPA 30 END DRIVE SHAFTS

SAE

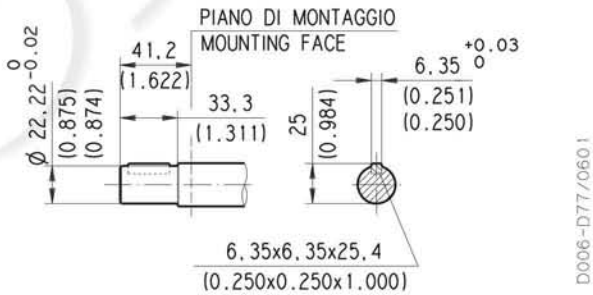
SAE "B" SPLINE — 04

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) ◆

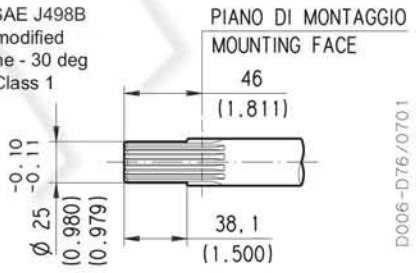
SAE "B" STRAIGHT — 32



MAX 1770 lbf in (200 Nm) ◆

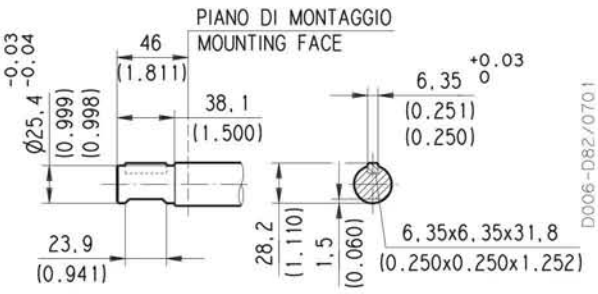
SAE "BB" SPLINE — 05

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 SAE 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
in^3/rev	cm^3/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 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 theeth)	04
SAE "B" straight	32
SAE "BB" spline (15 theeth)	05
SAE "BB" straight	33

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

CODE	6 Ports position
L	Side
P	Rear

CODE	7 Ports IN/OUT	
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	8 Seals (a)
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 imput 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.

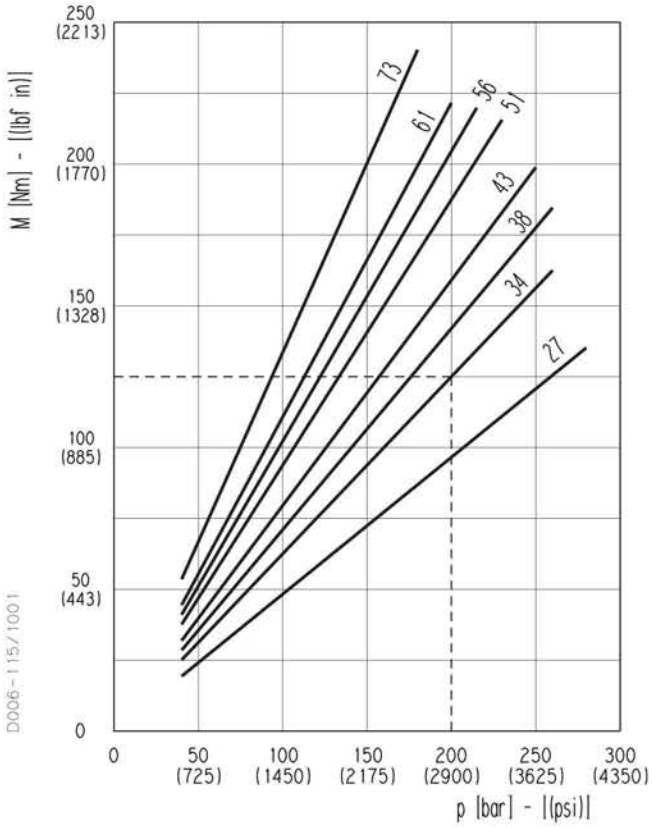
M	lbf in (Nm)	Torque
V	in^3/rev (cm^3/rev)	Displacement
Δp	psi (bar)	Pressure
$\eta_m = \eta_m$ (V,Δp, n)	($\approx$ 0,90)	Mechanical efficiency

$$\mathbf{M} = \frac{\Delta p\ (bar) \cdot V\ (cm^3/rev)}{62{,}83 \cdot \eta_m} \quad [Nm]$$

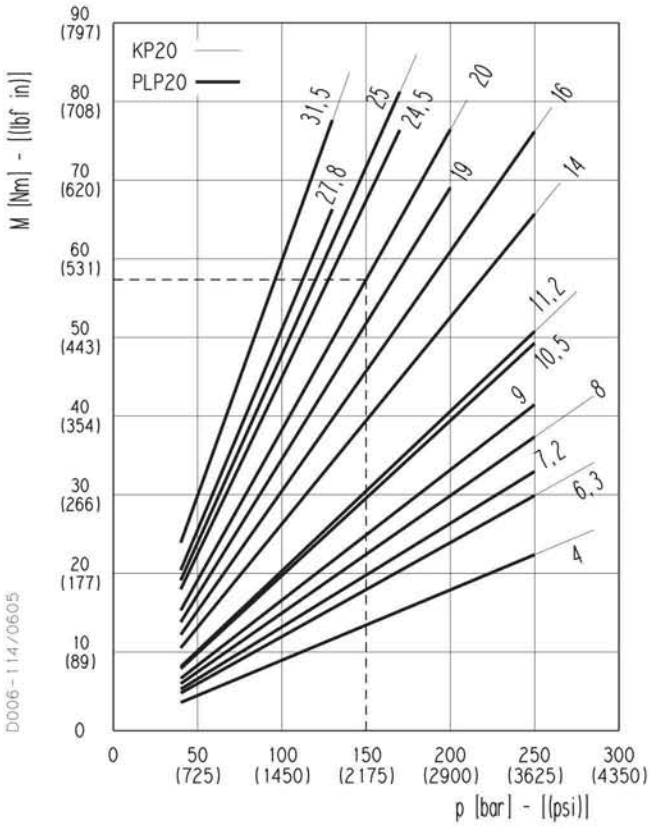
Note: The torque absorbed from the shaft of the first pump results from the sum of the torques due to all single stages. The achieved value must not exceed the maximum torque limit given for the shaft of the first pump. Diagrams providing approximate selection data will be found on page 36.

ABSORBED TORQUE

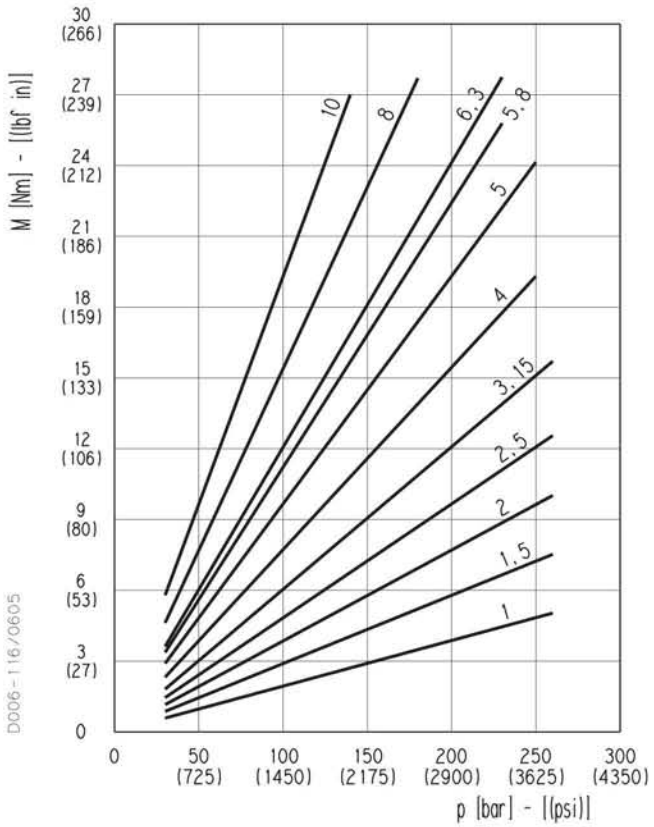
KP 30 — 1



KP 20 - PLP 20 — 2



PLP 10 — 3

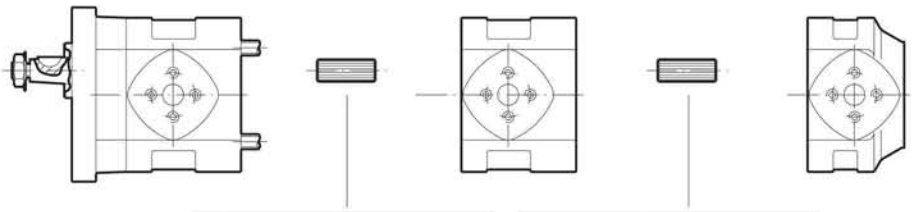


DRIVE SHAFT SELECTION

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 grafh 1 shows that the torque absorbed by KP30•34 is 1106 lbf in (125 Nm) and the grafh 2 shows that the torque absorbed by KP20•20 is 505 lbf in (57 Nm) [acceptable value because it don'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.

KAPPA 20 + KAPPA 20

D006-D27/0701

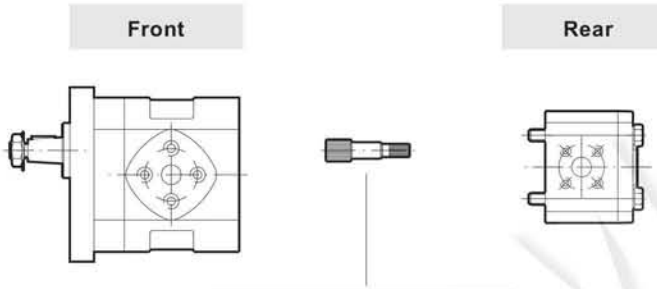


MAX 974 lbf in (110 Nm)

MAX 974 lbf in (110 Nm)

KAPPA 20 +POLARIS 10

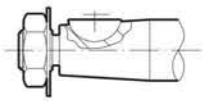
D006-D21/0701



MAX 266 lbf in (30 Nm)

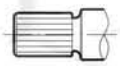
KAPPA 20 END DRIVE SHAFTS

EUROPEAN TAPERED 1:8 **82**



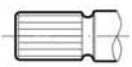
MAX 1239 lbf in (140 Nm)

SAE "A" SPLINE **03**



MAX 885 lbf in (100 Nm)

SAE SPLINE **01**

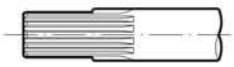


MAX 1151 lbf in (130 Nm)

SAE SPLINE **07**

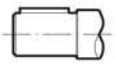
MAX 1505 lbf in (170 Nm)

SAE "B" SPLINE **04**



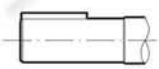
MAX 2478 lbf in (280 Nm)

SAE "A" STRAIGHT **31**



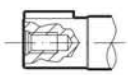
MAX 620 lbf in (70 Nm)

STRAIGHT **49**



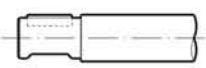
MAX 1239 lbf in (140 Nm)

STRAIGHT **50**



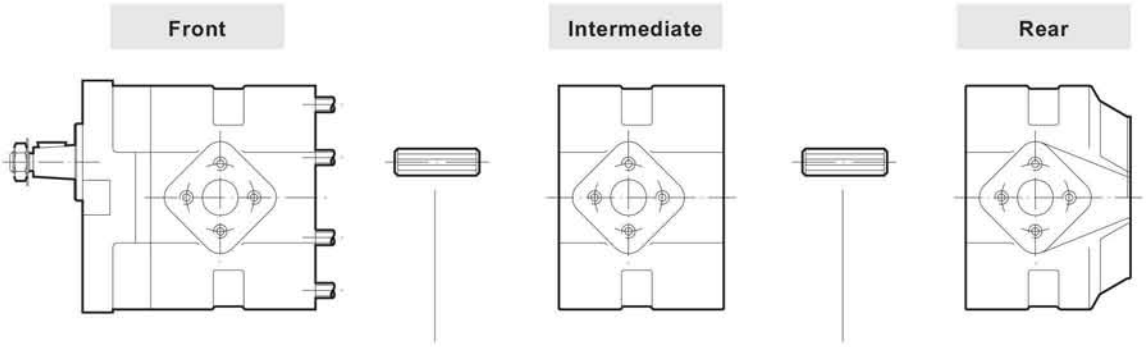
MAX 885 lbf in (100 Nm)

SAE "B" STRAIGHT **32**

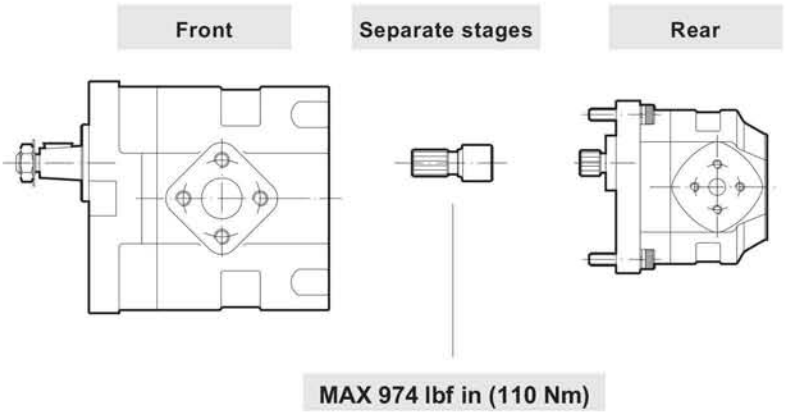


MAX 1770 lbf in (200 Nm)

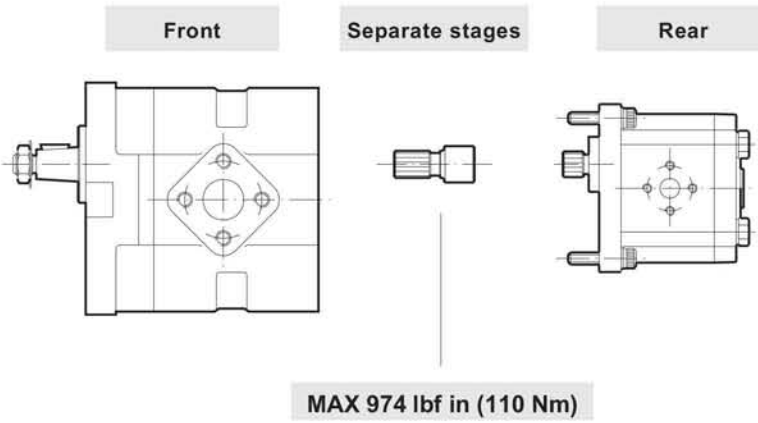
Kappa 30 + Kappa 30



Kappa 30 + Kappa 20



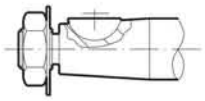
Kappa 30 + Polaris 20



Replaces: 01/03.02

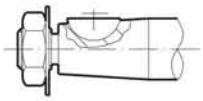
KAPPA 30 END DRIVE SHAFTS

EUROPEAN TAPERED 1:8 **83**



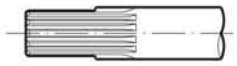
MAX 2124 lbf in (240 Nm)

EUROPEAN TAPERED 1:8 **84**



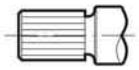
MAX 3098 lbf in (350 Nm)

SAE "B" SPLINE **04**



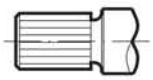
MAX 2921 lbf in (330 Nm)

SAE SPLINE **A8**



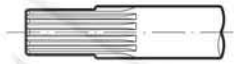
MAX 2478 lbf in (280 Nm)

SAE SPLINE **A5**



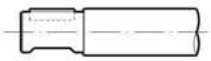
MAX 3540 lbf in (400 Nm)

SAE "BB" SPLINE **05**



MAX 4426 lbf in (500 Nm)

SAE "B" STRAIGHT **32**

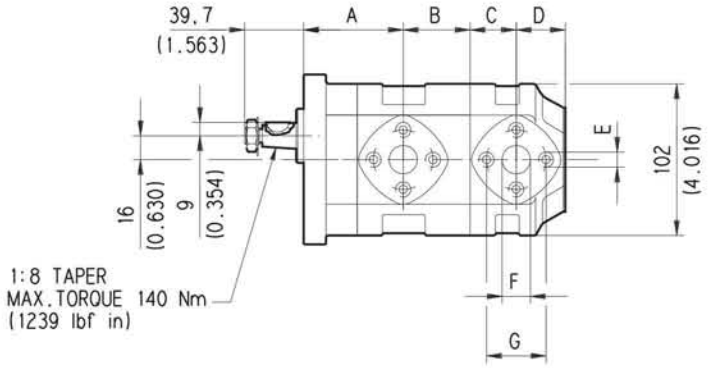


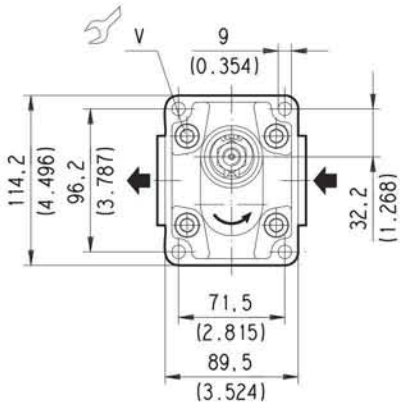
MAX 1770 lbf in (200 Nm)

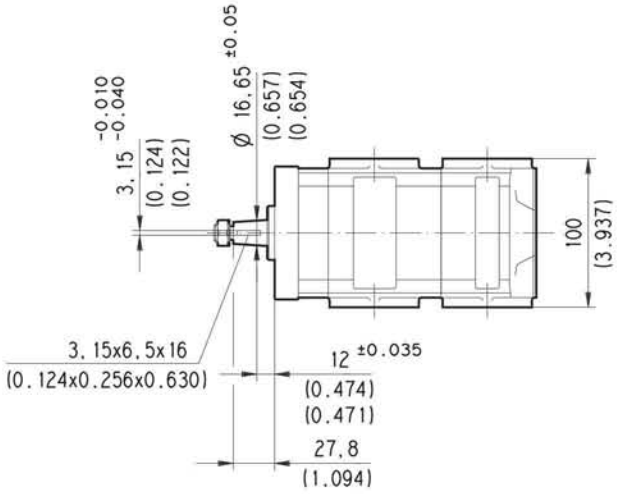
SAE "BB" STRAIGHT **33**

MAX 2478 lbf in (280 Nm)

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







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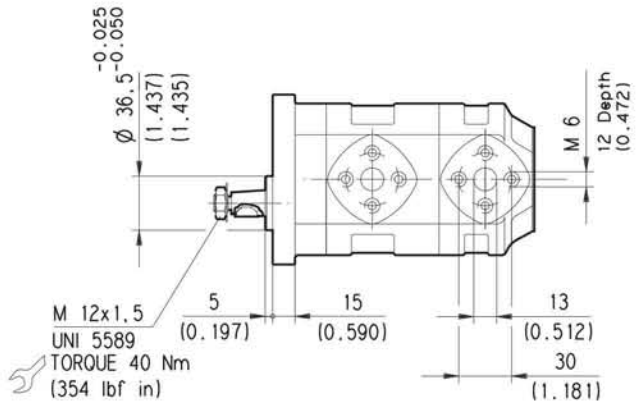
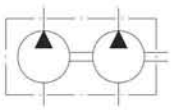




V Screws tightening torque Nm (lbf in)
70 ±7 (558 ÷ 682)

Pump type	A	B	C	D	E	F	G
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 20•4	60 (2.362)	37,5 (1.476)	24 (0.945)	27,5 (1.083)	M 6 Depth 12 (0.472)	13 (0.512)	30 (1.181)
KP 20•6,3	62,5 (2.461)		26,5 (1.043)				
KP 20•8	65 (2.559)		29 (1.142)				
KP 20•11,2	68,5 (2.697)	38,5 (1.51)	32,5 (1.280)				
KP 20•14	67 (2.638)	45 (1.772)	31 (1.220)	33 (1.299)	M 8 Depth 14 (0.551)	19 (0.748)	40 (1.575)
KP 20•16	72,5 (2.854)	43 (1.693)	36,5 (1.437)				
KP 20•20	79 (3.110)		43 (1.693)				
KP 20•25	72 (2.835)	58 (2.283)	36 (1.417)	48 (1.890)			
KP 20•31,5	82 (3.228)		46 (1.811)				

The lenght 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)
KP20•4	/	20•4	/	20•4	S	/	FS	-

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

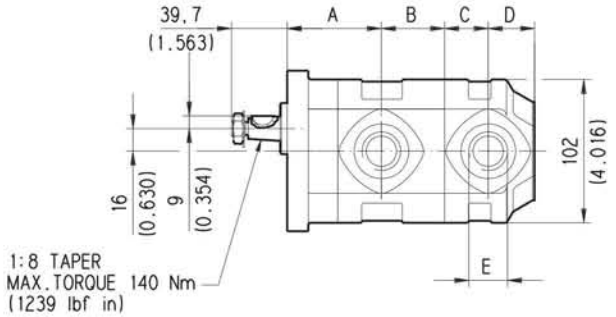
(2) For Buna N seals no code

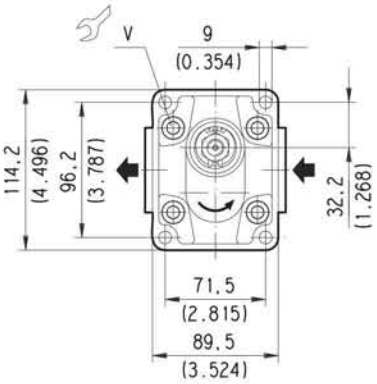
ORDER EXAMPLE

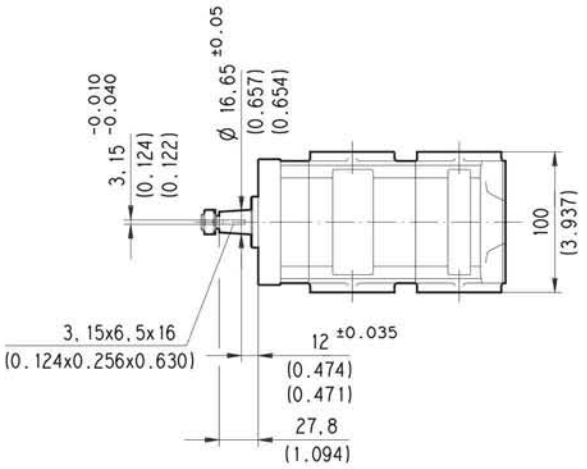
Double pump KP20•4/20•4 S/FS

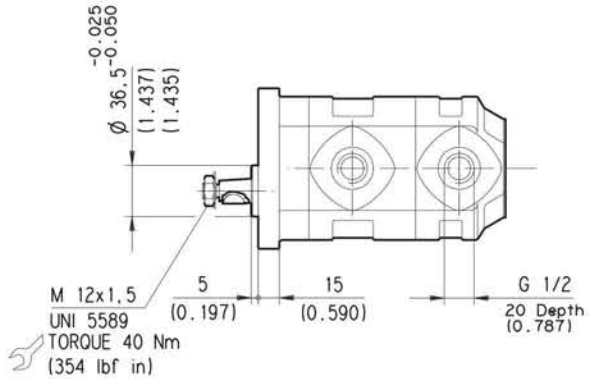
Triple pump KP20•4/20•4/20•4 S/FS

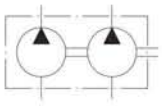
GAS STRAIGHT THREAD PORTS
British standard pipe parallel (55°) conforms to UNI - ISO 228











D006-D92/0605

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

Pump type	A	B	C	D	E	Ports code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 20•4	60 (2.362)	37,5 (1.476)	24 (0.945)	27,5 (1.083)	G 1/2 Depth 20 (0.787)	GD	GD
KP 20•6,3	62,5 (2.461)		26,5 (1.043)				
KP 20•8	65 (2.559)		29 (1.142)				
KP 20•11,2	68,5 (2.697)	38,5 (1.51)	32,5 (1.280)				
KP 20•14	67 (2.638)	45 (1.772)	31 (1.220)	33 (1.299)	G 3/4 Depth 22 (0.866)	GE	
KP 20•16	72,5 (2.854)	43 (1.693)	36,5 (1.437)				
KP 20•20	79 (3.110)		43 (1.693)				
KP 20•25	72 (2.835)	58 (2.283)	36 (1.417)	48 (1.890)			
KP 20•31,5	82 (3.228)		46 (1.811)				

The lenght 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 20•4	–	L	GD/GD	/				
Front pump								
20•4	–	L	GD/GD	/				
Intermediate pump								
20•4	–	L	GD/GD		S	/	FS	-
Rear pump								

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

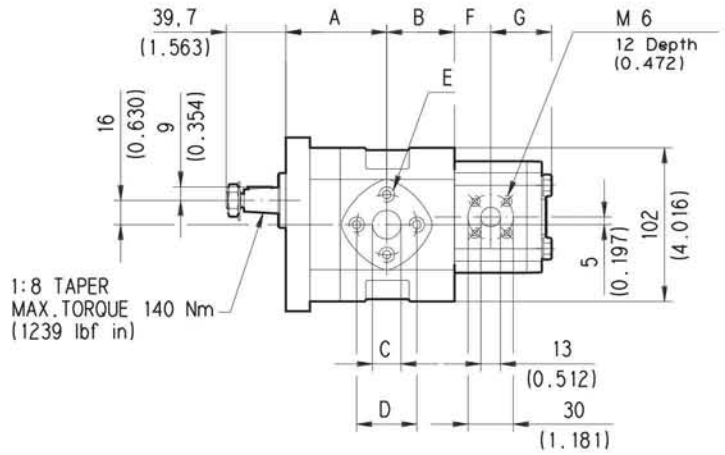
(2) For Buna N seals no code

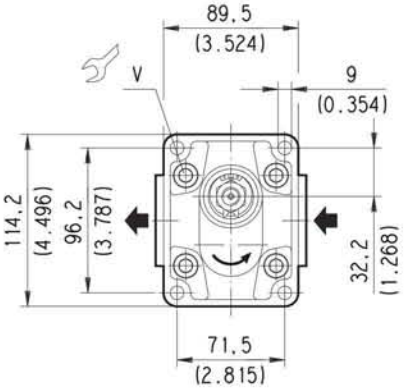
ORDER EXAMPLE

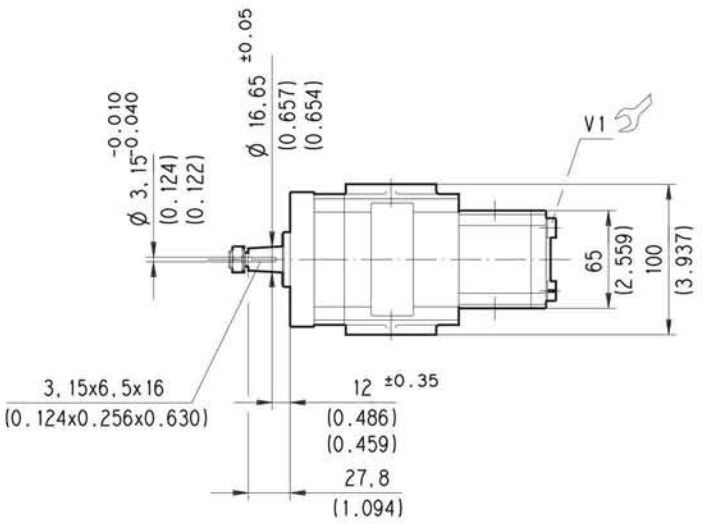
Double pump KP20•4-LGD/GD/20•4-LGD/GD S/FS

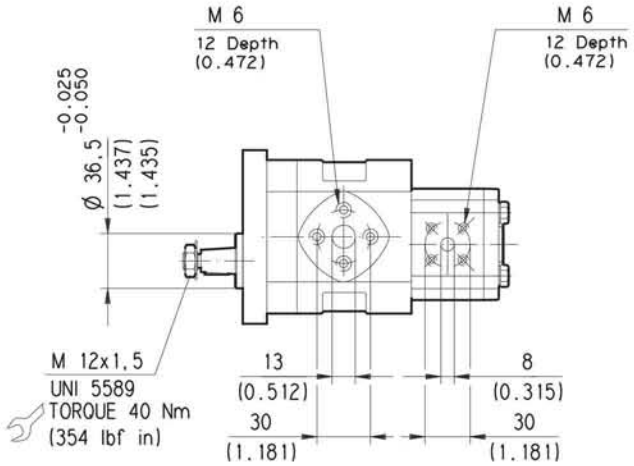
Triple pump KP20•4-LGD/GD/20•4-LGD/GD/20•4-LGD/GD S/FS

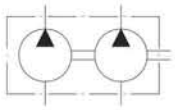
EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262











D006-D06/0605

Screws tightening torque Nm (lbf in)	
V	**V1**
70 ±7 (558 ÷ 682)	25 ±2,5 (199 ÷ 243)

Pump type	A	B	C	D	E
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 20•4	60 (2.362)	37,5 (1.476)	24 (0.945)	27,5 (1.083)	M 6 Depth 12 (0.472)
KP 20•6,3	62,5 (2.461)		26,5 (1.043)		
KP 20•8	65 (2.559)		29 (1.142)		
KP 20•11,2	68,5 (2.697)	38,5 (1.51)	32,5 (1.280)		
KP 20•14	67 (2.638)	45 (1.772)	31 (1.220)	33 (1.299)	M 8 Depth 14 (0.551)
KP 20•16	72,5 (2.854)	43 (1.693)	36,5 (1.437)		
KP 20•20	79 (3.110)		43 (1.693)		
KP 20•25	72 (2.835)	58 (2.283)	36 (1.417)	48 (1.890)	
KP 20•31,5	82 (3.228)		46 (1.811)		

Pump type	F	G
	mm (in)	mm (in)
PL 10•1	17,6 (0.693)	34,6 (1.362)
PL 10•1,5	18,4 (0.724)	35,4 (1.394)
PL 10•2	19,2 (0.756)	36,2 (1.425)
PL 10•2,5	20 (0.787)	37 (1.457)
PL 10•3,15	21 (0.827)	38 (1.496)
PL 10•4	22,4 (0.882)	39,4 (1.551)
PL 10•5	24 (0.945)	41 (1.614)
PL 10•5,8	25,3 (0.996)	42,3 (1.665)
PL 10•6,3	26 (1.024)	43 (1.693)
PL 10•8	28,8 (1.134)	45,8 (1.803)
PL 10•10	32 (1.260)	49 (1.929)

For ports and general data of Polaris series, please see the proper technical catalogue.

How to order a double pump

Front pump	/	Rear pump	Rotation (1)	/	–	Seals (2)
KP20•4	/	PLP10•1	S	/	FS	-

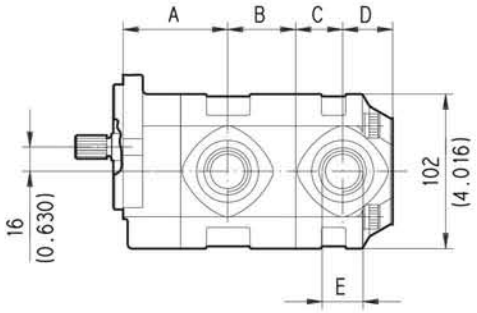
(1) Rotation: S= Left - D= Right

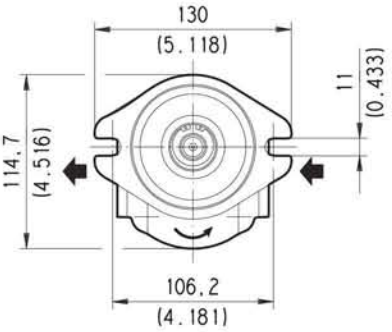
(2) For Buna N seals no code

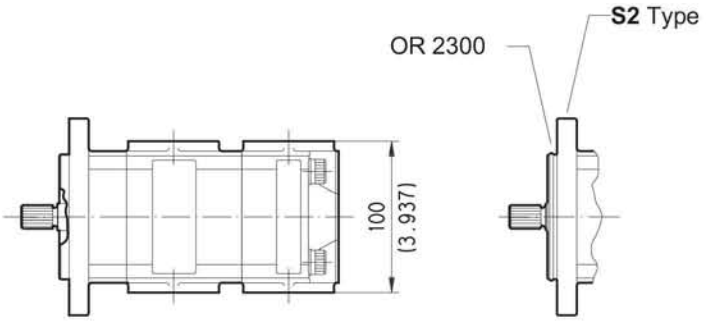
ORDER EXAMPLE

Double pump KP20•4/PLP10•1 S/FS

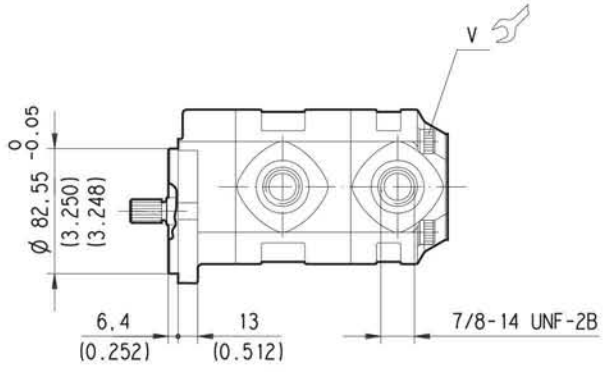
SAE STRAIGHT THREAD PORTS J514
American straight thread UNC-UNF 60° conforms to ANSI B 1.1

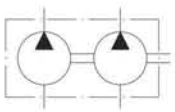






D006-D93/0605





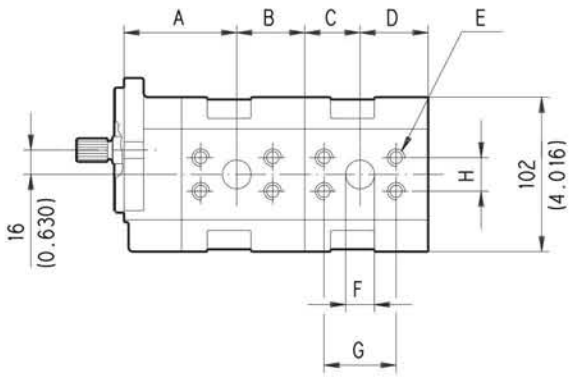
V Screws tightening torque Nm (lbf in)
70 ±7 (558 ÷ 682)

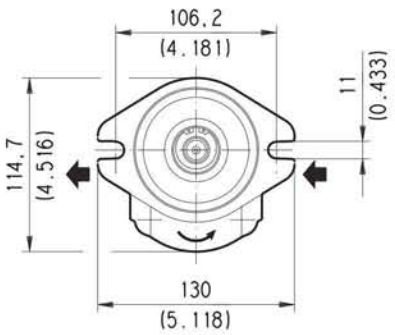
Pump type	A	B	C	D	E	Ports code	
	mm (in)	mm (in)	mm (in)	mm (in)		IN	OUT
KP 20•4	62 (2.441)	37,5 (1.476)	24 (0.945)	27,5 (1.083)	7/8-14 UNF-2B	OC	OC
KP 20•6,3	64,5 (2.539)		26,5 (1.043)				
KP 20•8	67 (2.638)		29 (1.142)				
KP 20•11,2	70,5 (2.776)	38,5 (1.51)	32,5 (1.280)				
KP 20•14	69 (2.717)	45 (1.772)	31 (1.220)	33 (1.299)	1-1/16-12 UN-2B	OD	
KP 20•16	74,5 (2.933)	43 (1.693)	36,5 (1.437)				
KP 20•20	81 (3.189)		43 (1.693)				
KP 20•25	74 (2.913)	58 (2.283)	36 (1.417)	48 (1.890)			
KP 20•31,5	84 (3.307)		46 (1.811)				

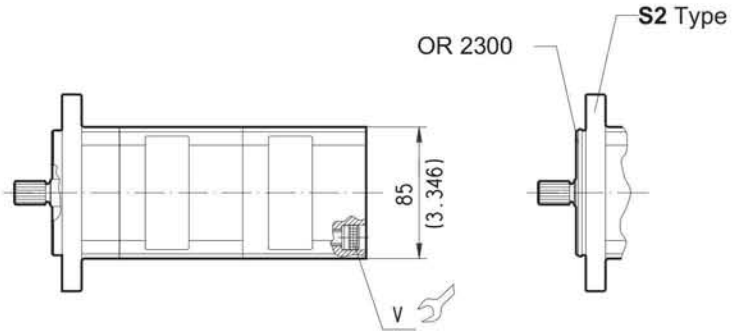
The lenght of a triple pump is obtained with the sum of the following dimensions: **A+B+C+B+C+D**.

To order see page 54 e 55

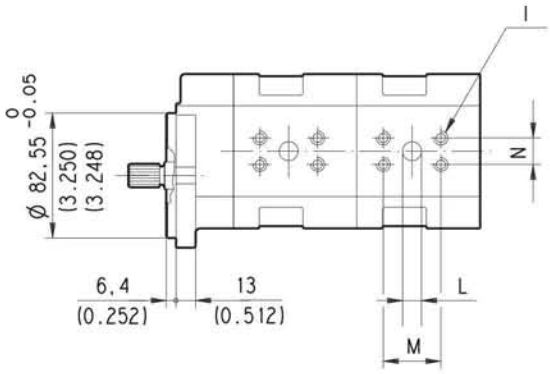
SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI
Metric thread ISO 60° conforms to ISO/R 262

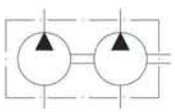






D006-128/0605





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

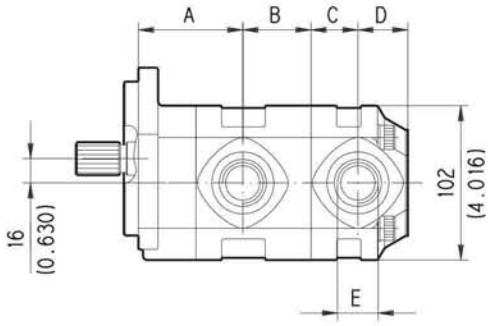
Pump type	A	B	C	D
	mm (in)	mm (in)	mm (in)	mm (in)
KP 20•4	62 (2.441)	37,5 (1.476)	24 (0.945)	39,5 (1.555)
KP 20•6,3	64,5 (2.539)		26,5 (1.043)	
KP 20•8	67 (2.638)		29 (1.142)	
KP 20•11,2	70,5 (2.776)	38,5 (1.51)	32,5 (1.280)	40,5 (1.594)
KP 20•14	69 (2.717)	45 (1.772)	31 (1.220)	47 (1.850)
KP 20•16	74,5 (2.933)	43 (1.693)	36,5 (1.437)	45 (1.772)
KP 20•20	81 (3.189)		43 (1.693)	
KP 20•25	74 (2.913)	58 (2.283)	36 (1.417)	60 (2.362)
KP 20•31,5	84 (3.307)		46 (1.811)	

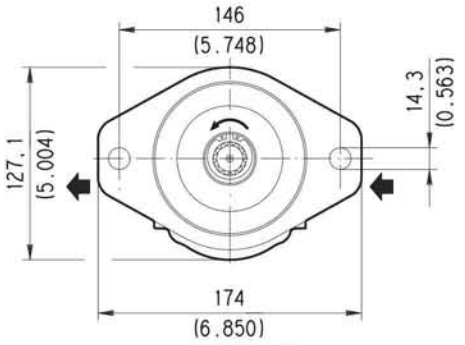
The lenght of a triple pump is obtained with the sum of the following dimensions: **A+B+C+B+C+D**.

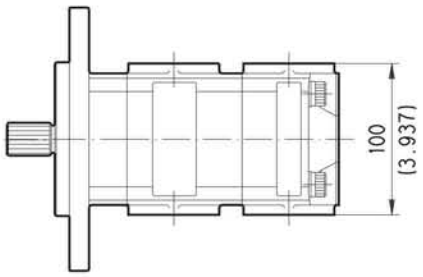
Pump type	E	F	G	H	I	L	M	N	Ports code	
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 20•4	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	MA	MA
KP 20•6,3										
KP 20•8										
KP 20•11,2										
KP 20•14	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)					MB	
KP 20•16										
KP 20•20										
KP 20•25		25,4 (1.000)	52,4 (2.063)	26,2 (1.031)	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MC	MB
KP 20•31,5										

To order see page 54 e 55

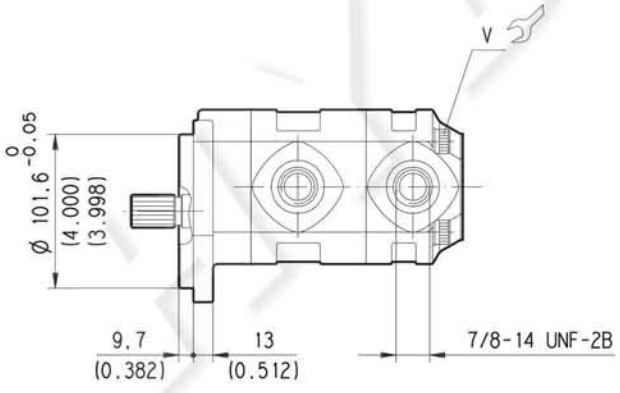
SAE STRAIGHT THREAD PORTS J514
American straight thread UNC-UNF 60° conforms to ANSI B 1.1

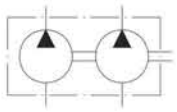






D006-166/0605





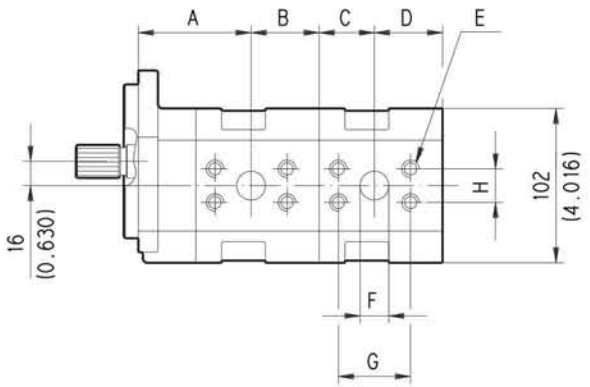
V Screws tightening torque Nm (lbf in)
70 ±7 (558 ÷ 682)

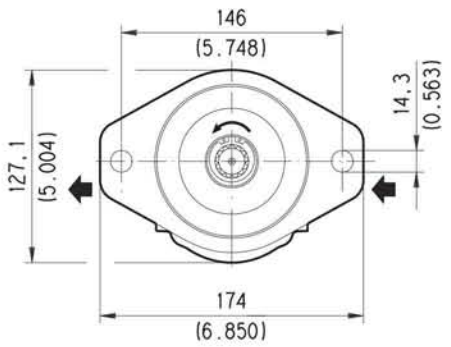
Pump type	A	B	C	D	E	Ports code	
	mm (in)	mm (in)	mm (in)	mm (in)		IN	OUT
KP 20•4	62 (2.441)	37,5 (1.476)	24 (0.945)	27,5 (1.083)	7/8-14 UNF-2B	OC	OC
KP 20•6,3	64,5 (2.539)		26,5 (1.043)				
KP 20•8	67 (2.638)		29 (1.142)				
KP 20•11,2	70,5 (2.776)	38,5 (1.51)	32,5 (1.280)				
KP 20•14	69 (2.717)	45 (1.772)	31 (1.220)	33 (1.299)	1-1/16-12 UN-2B	OD	
KP 20•16	74,5 (2.933)	43 (1.693)	36,5 (1.437)				
KP 20•20	81 (3.189)		43 (1.693)				
KP 20•25	74 (2.913)	58 (2.283)	36 (1.417)	48 (1.890)			
KP 20•31,5	84 (3.307)		46 (1.811)				

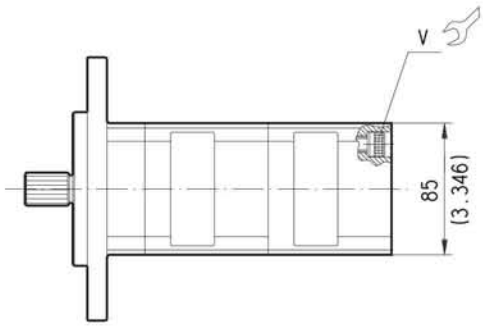
The lenght of a triple pump is obtained with the sum of the following dimensions: **A+B+C+B+C+D**.

To order see page 54 e 55

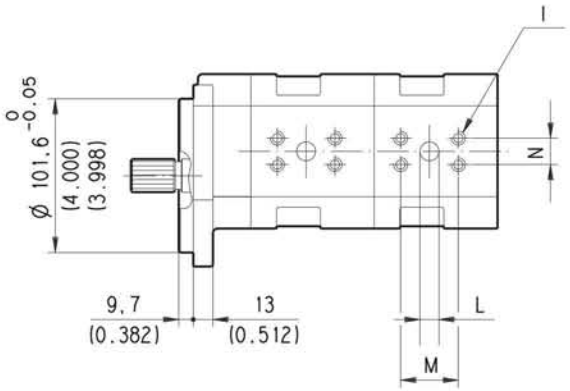
SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI
Metric thread ISO 60° conforms to ISO/R 262

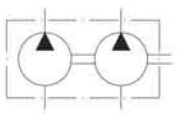






D006-167/0605





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 20•4	62 (2.441)	37,5 (1.476)	24 (0.945)	39,5 (1.555)
KP 20•6,3	64,5 (2.539)		26,5 (1.043)	
KP 20•8	67 (2.638)		29 (1.142)	
KP 20•11,2	70,5 (2.776)	38,5 (1.51)	32,5 (1.280)	40,5 (1.594)
KP 20•14	69 (2.717)	45 (1.772)	31 (1.220)	47 (1.850)
KP 20•16	74,5 (2.933)	43 (1.693)	36,5 (1.437)	45 (1.772)
KP 20•20	81 (3.189)		43 (1.693)	
KP 20•25	74 (2.913)	58 (2.283)	36 (1.417)	60 (2.362)
KP 20•31,5	84 (3.307)		46 (1.811)	

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

Pump type	E	F	G	H	I	L	M	N	Ports code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 20•4	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	MA	MA
KP 20•6,3										
KP 20•8										
KP 20•11,2										
KP 20•14	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)					MB	
KP 20•16										
KP 20•20										
KP 20•25		25,4 (1.000)	52,4 (2.063)	26,2 (1.031)	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MC	MB
KP 20•31,5										

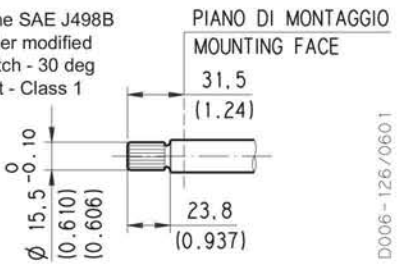
To order see page 54 e 55

KAPPA 20 END DRIVE SHAFTS

SAE

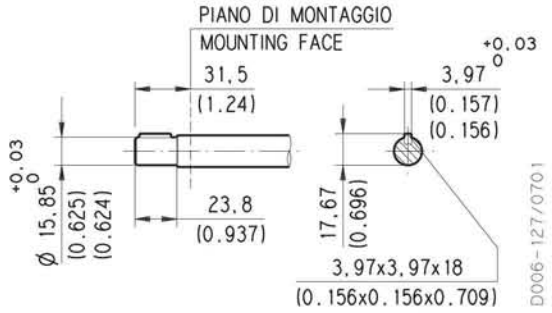
SAE "A" SPLINE — 03

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



MAX 885 lbf in (100 Nm)

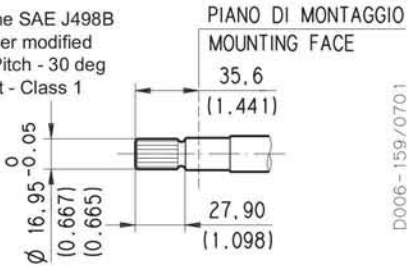
SAE "A" STRAIGHT — 31



MAX 620 lbf in (70 Nm)

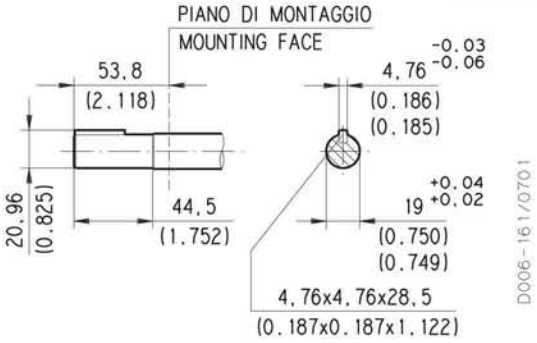
SAE SPLINE — 01

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



MAX 1151 lbf in (130 Nm)

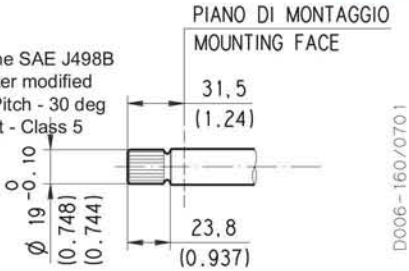
STRAIGHT — 49



MAX 1239 lbf in (140 Nm)

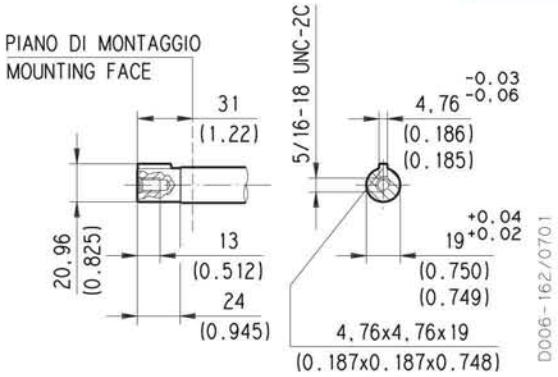
SAE SPLINE — 07

Ext. Involute Spline SAE J498B
with major diameter modified
11 teeth - 16/32 Pitch - 30 deg
Flat Root - Side fit - Class 5



MAX 1505 lbf in (170 Nm)

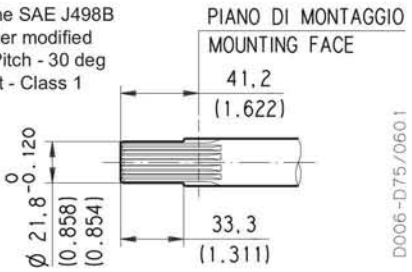
STRAIGHT — 50



MAX 885 lbf in (100 Nm)

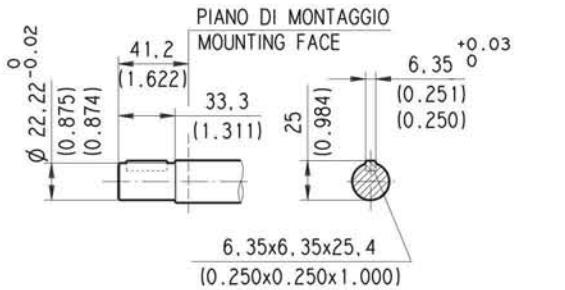
SAE "B" SPLINE — 04

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



MAX 2478 lbf in (280 Nm)

SAE "B" STRAIGHT — 32



MAX 1770 lbf in (200 Nm)

Replaces: 01/03.02

HOW TO ORDER KAPPA 20 MULTIPLE PUMPS

1		2	3		4	5		6		7
Pump type	–	Drive shaft	Mounting flange	–	Ports position	Ports IN/OUT	–	Rotation	/	- Seals
KP 20•4	–	03	S1	–	L	OC/OC	/			
Front pump										
20•4	–				L	O/COC	/			
Intermediate pump										
20•4	–				L	OC/OC		S	/ FS -	
Rear pump										

1 Pump type		CODE
in^3/rev	cm^3/rev	
0.30	4,95	KP 20•4
0.40	6,61	KP 20•6,3
0.50	8,26	KP 20•8
0.69	11,23	KP 20•11,2
0.89	14,53	KP 20•14
1.03	16,85	KP 20•16
1.29	21,14	KP 20•20
1.61	26,42	KP 20•25
2.01	33,03	KP 20•31,5

2 Drive shaft	CODE
SAE "A" spline (9 theeth)	03
SAE spline (10 theeth)	01
SAE spline (11 theeth)	07
SAE "B" spline (13 theeth)	04
SAE "A" straight	31
Straight	49
Straight	50
SAE "B" straight	32

3 Mounting flange	CODE
SAE "A" 2 holes	S1
SAE "A" 2 holes (with o-ring seal)	S2
SAE "B" 2 holes (a)	S5

4 Ports position	CODE
Side	L
Rear (only for rear sections)	P

CODE	5 Ports IN/OUT	
SAE STRAIGHT THREAD PORTS (ODT)		
Side	Rear	Pump type
OC/OC	OC/OC	KP 20•4
OC/OC	OC/OC	KP 20•6,3
OC/OC	OC/OC	KP 20•8
OC/OC	OC/OC	KP 20•11,2
OD/OC	OD/OD	KP 20•14
OD/OC	OD/OD	KP 20•16
OD/OC	OD/OD	KP 20•20
OD/OC	OD/OD	KP 20•25
OD/OC	OD/OD	KP 20•31,5
METRIC SAE SPLIT PORTS SAE J518 C		
Side	Rear	Pump type
MA/MA		KP 20•4
MA/MA		KP 20•6,3
MA/MA		KP 20•8
MA/MA		KP 20•11,2
MB/MA		KP 20•14
MB/MA		KP 20•16
MB/MA		KP 20•20
MC/MB		KP 20•25
MC/MB		KP 20•31,5

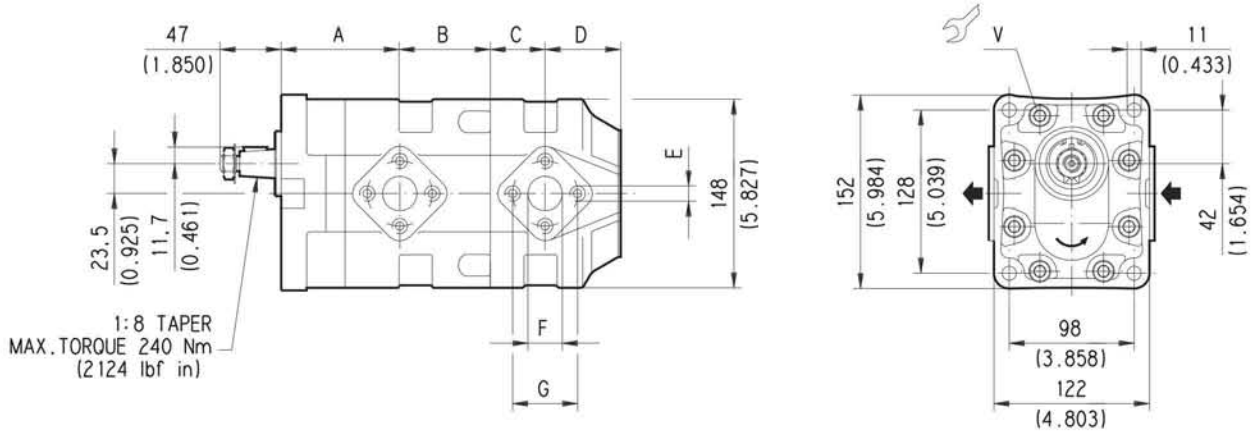
CODE	6 Rotation
S	Left
D	Right

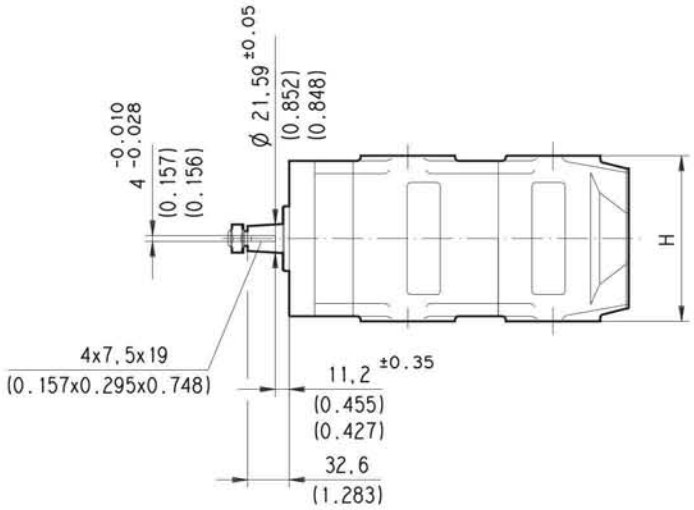
CODE	7 Seals (b)
	Buna N (standard) - No code
N-H	Buna with high back pressure shaft seals
V	Viton
N Bz	Buna N and Bronze thrust plates
V Bz	Viton and Bronze thrust plates

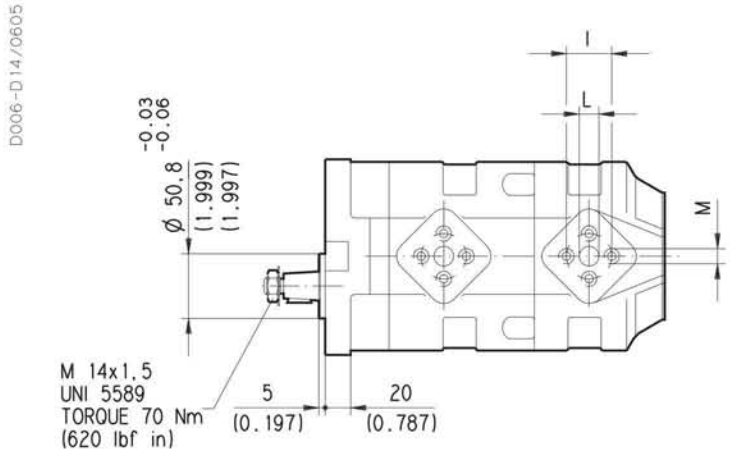
(a) Available only with 04 and 32 shaft

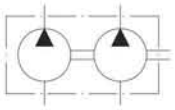
(b) Choose the seals according to the temperature shown on page 1

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	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)							
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)		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)

The lenght 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

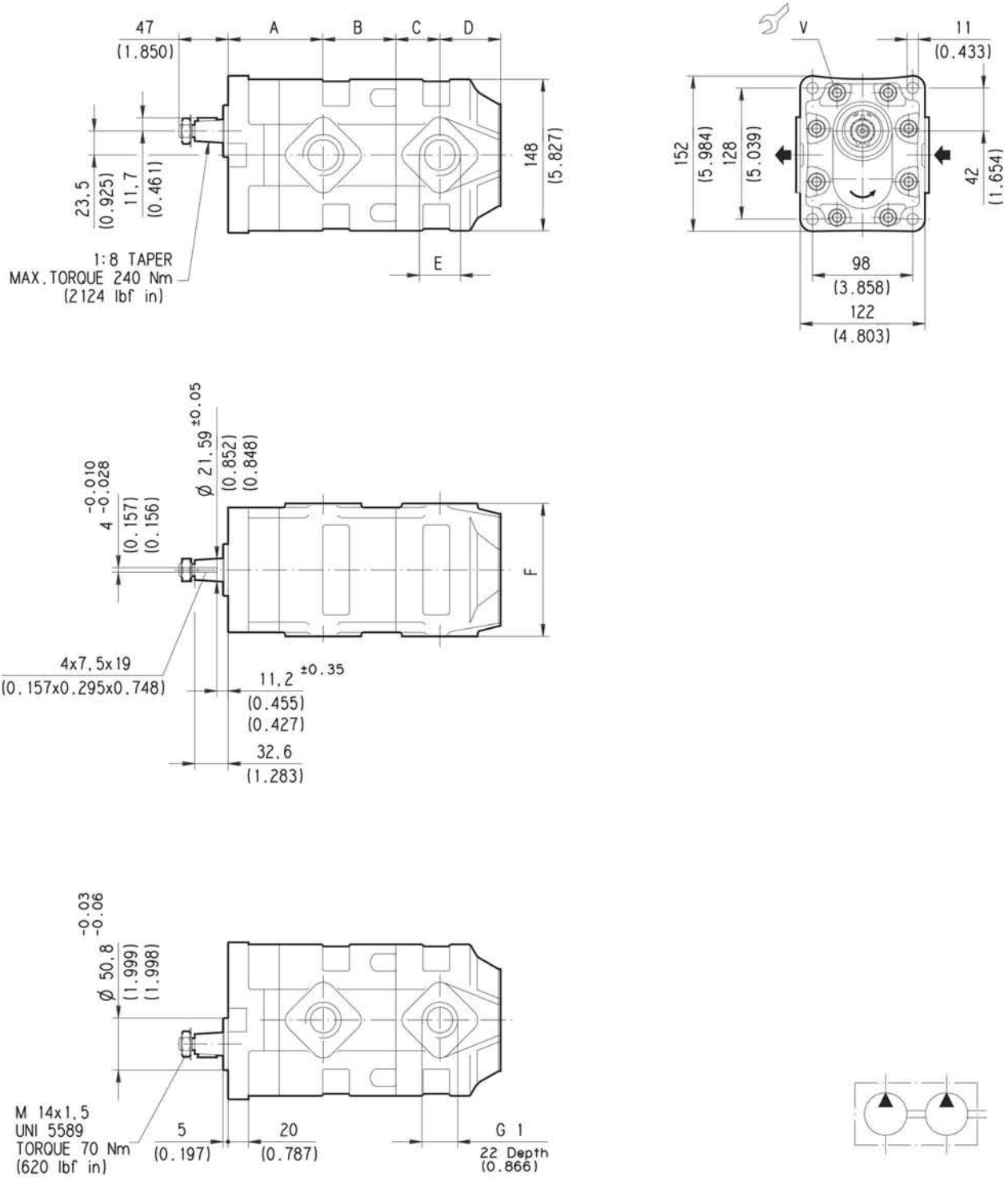
ORDER EXAMPLE

Double pump KP30•27/30•27 S

Triple pump KP30•27/30•27/30•27 S

KAPPA 30 | HYDRAULIC GEAR PUMPS EUROPEAN STANDARD | 83 E3

GAS STRAIGHT THREAD PORTS
British standard pipe parallel (55°) conforms to UNI - ISO 228



D006-D16/0605

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

Pump type	A	B	C	D	E	F	Ports 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)				
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)		G 1 1/4 Depth 24 (0.945)	135 (5.315)	GG	GF

The lenght 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

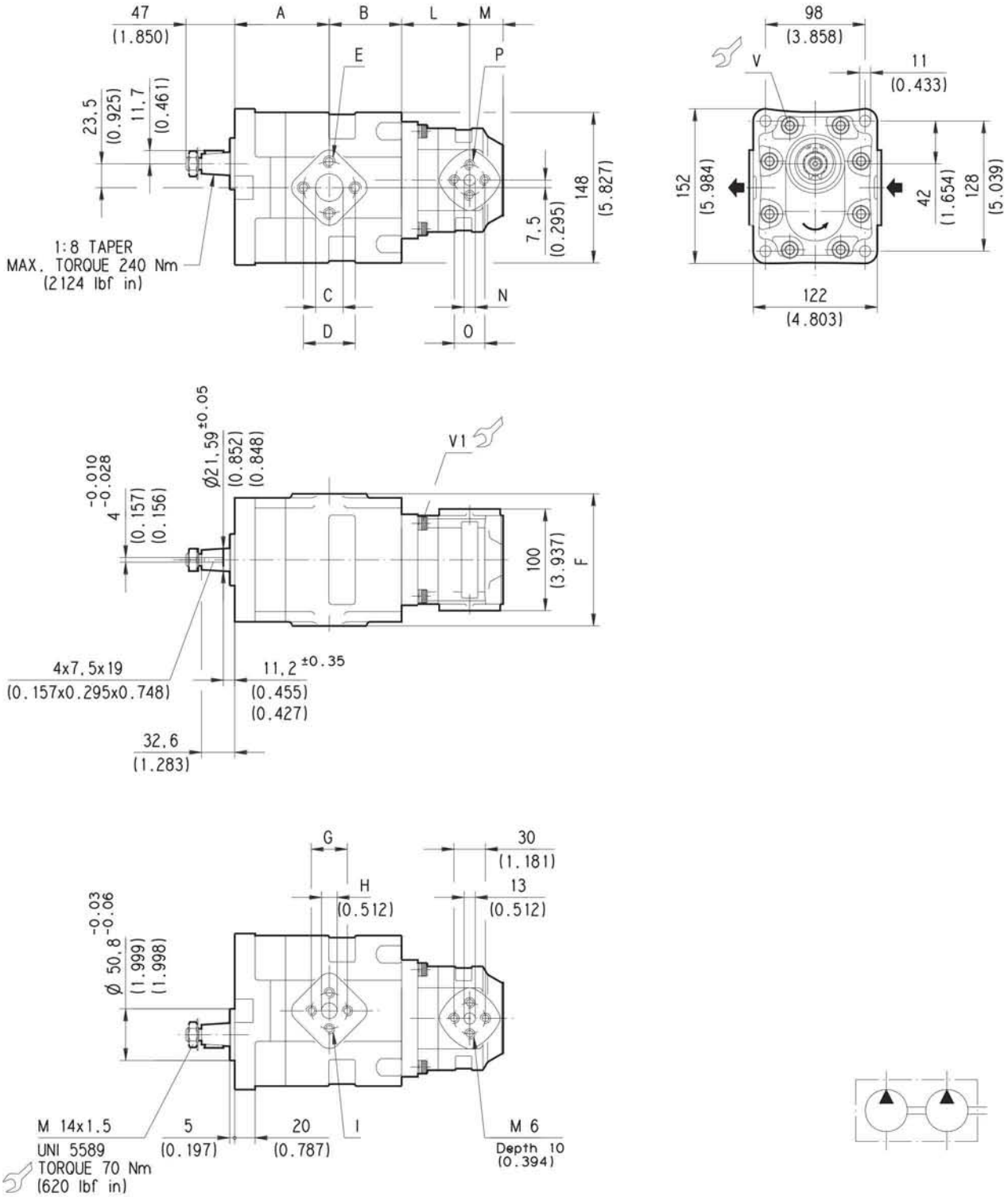
(2) For Buna N seals no code

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

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



D006-D20/0605

Screws tightening torque Nm (lbf in)	
V	**V1**
70 ±7 (558 ÷ 682)	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	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)							
KP 30•56	97 (3.819)	70 (2.756)							
KP 30•61	100 (3.937)								
KP 30•73	108 (4.252)		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)

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	-	

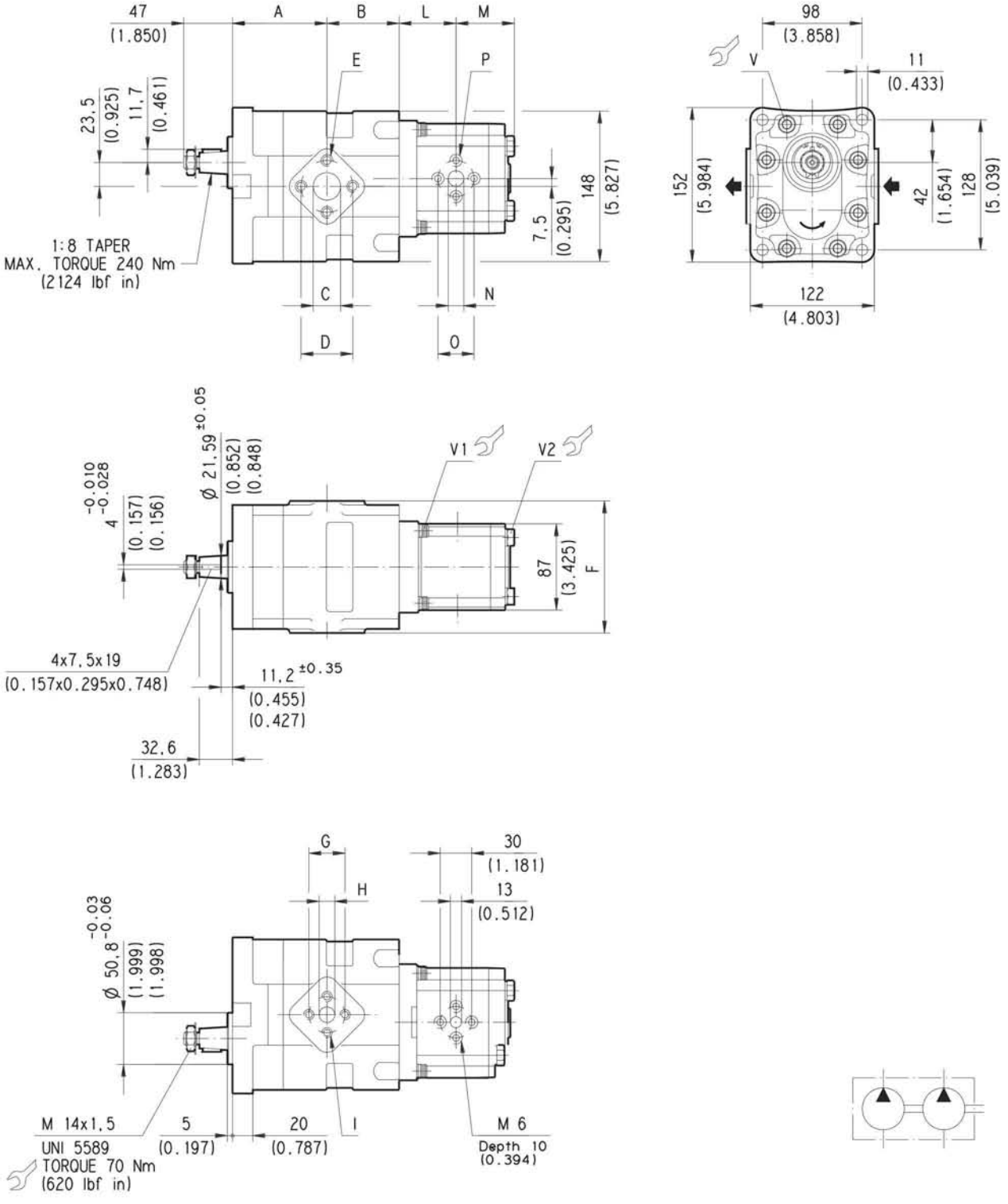
(1) Rotation: S= Left - D= Right

(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

Screws tightening torque Nm (lbf in)		
V	**V1**	**V2**
70 ±7 (558 ÷ 682)	70 ±7 (558 ÷ 682)	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	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)							
KP 30•56	97 (3.819)	70 (2.756)							
KP 30•61	100 (3.937)								
KP 30•73	108 (4.252)		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)

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)			
PLP 20•14	51 (2.008)	56,5 (2.224)	19 (0.748)	40 (1.575)	M 8 Depth 14 (0.551)
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)
KP30•27	-	67	/	PLP20•4	S	-	

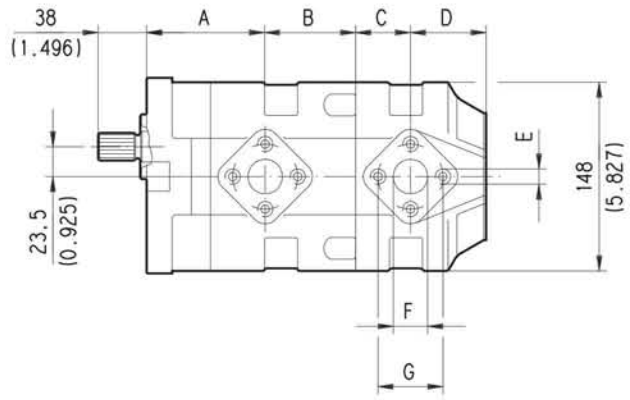
(1) Rotation: S= Left - D= Right

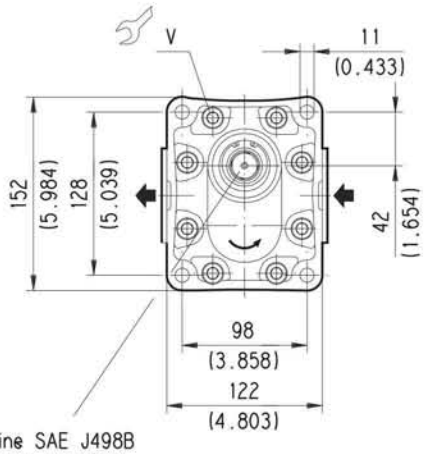
(2) For Buna N seals no code

ORDER EXAMPLE

Double pump KP30•27-67/PLP20•4 S/FS

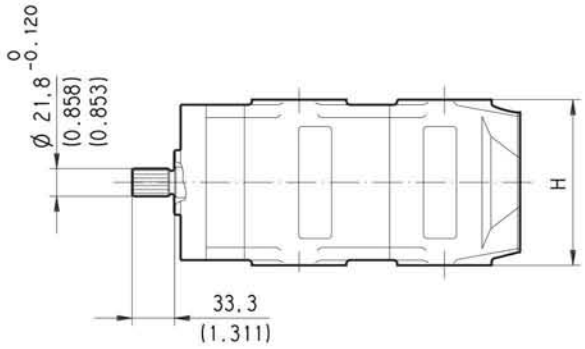
EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262



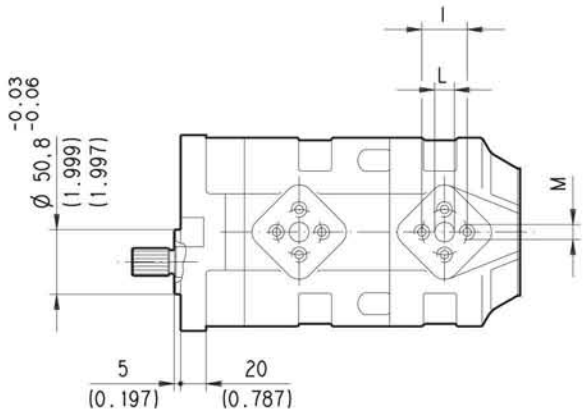


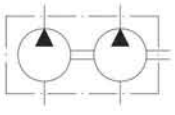
Ext. Involute Spline SAE J498B
with major diameter modified
13 teeth - 16/32 Pitch - 30 deg
Flat root - Side fit - Class 1

MAX. TORQUE 280 Nm
(2478 lbf in)



D006-1511/0605





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

The lenght 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)
KP30•27	-	A8	/	30•27	/	30•27	S	-	

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

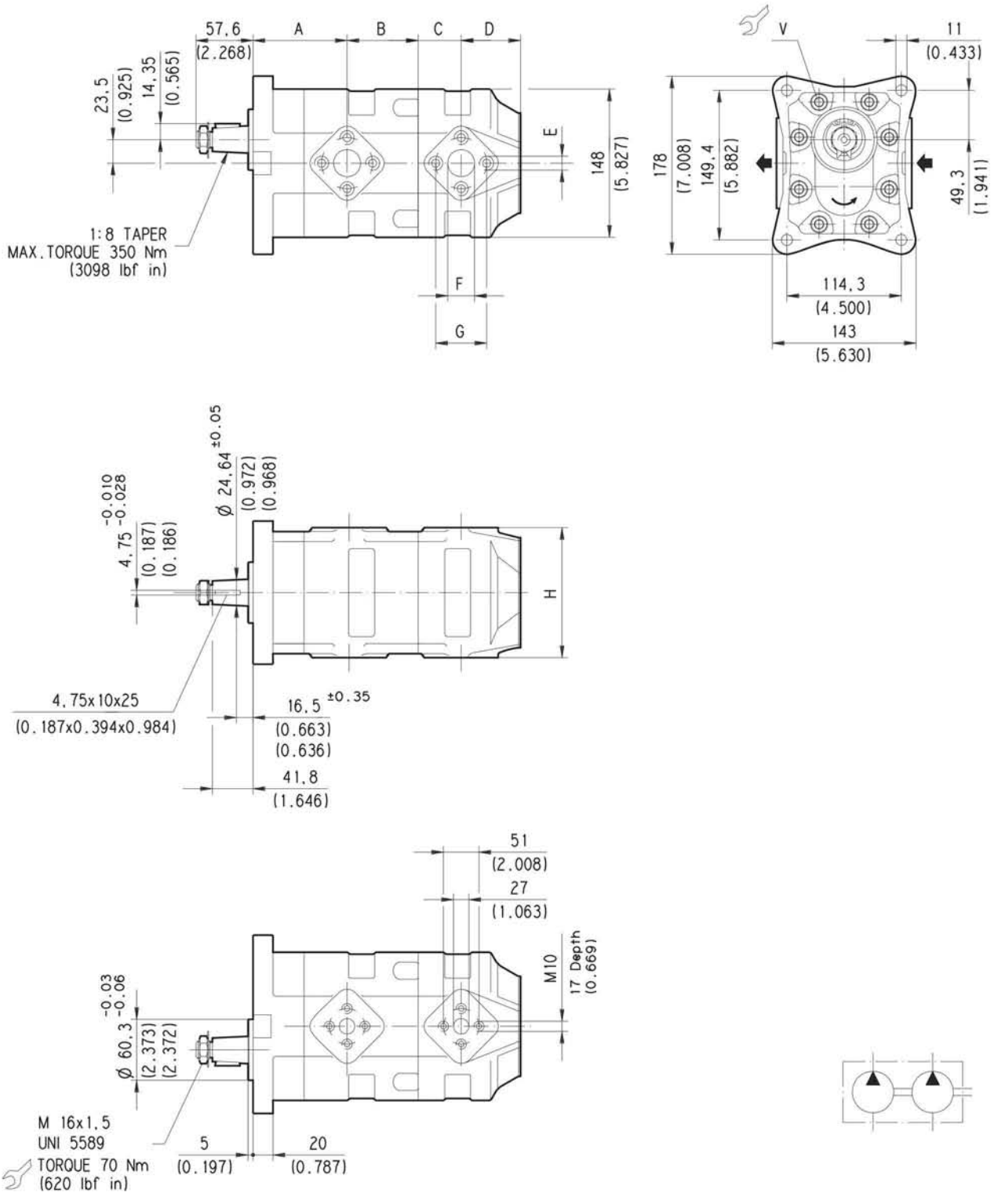
(2) For Buna N seals no code

ORDER EXAMPLE

Double pump KP30•27-A8/30•27 S

Triple pump KP30•27-A8/30•27/30•27 S

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	Ports 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 lenght 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

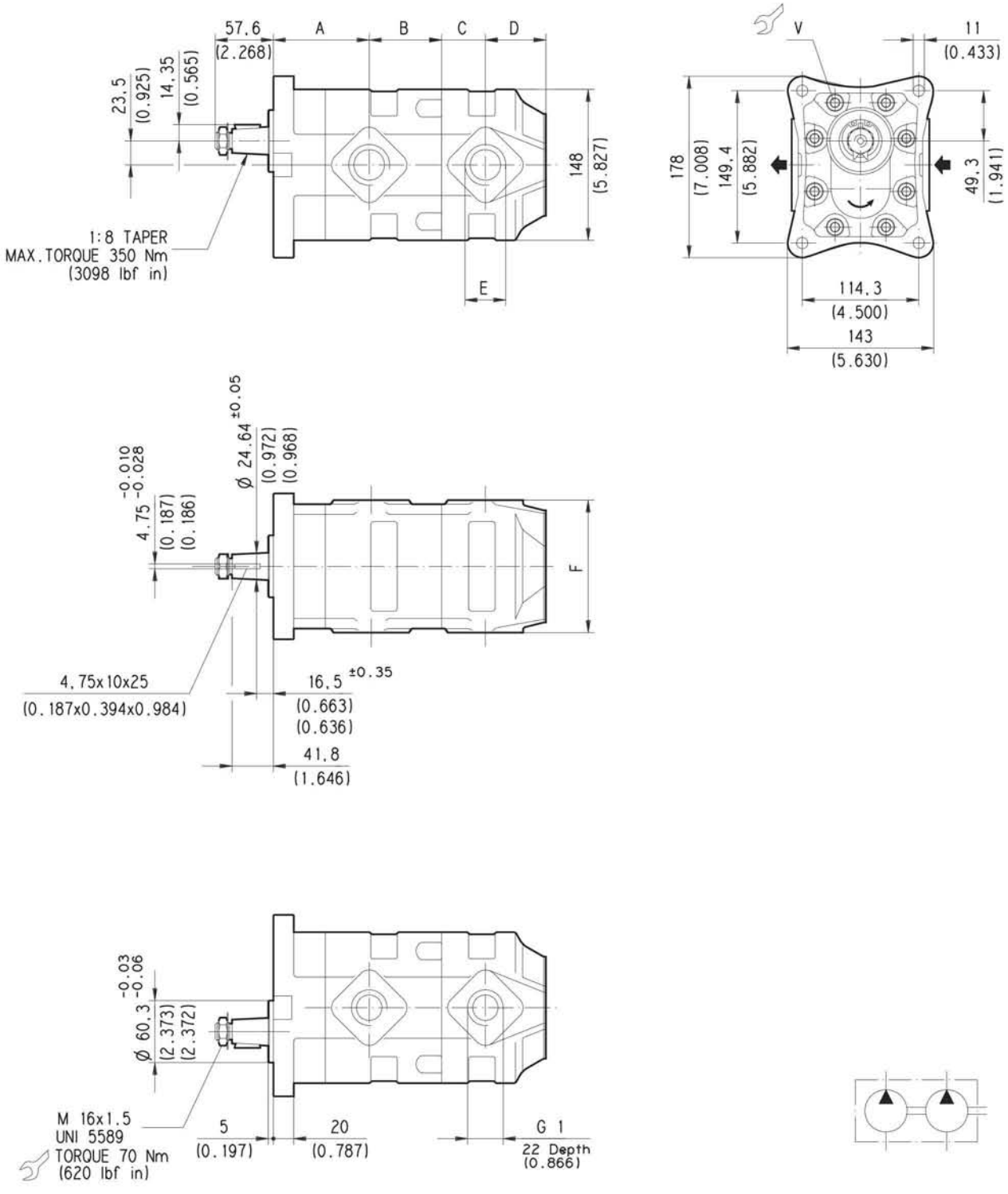
(2) For Buna N seals no code

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

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	Ports 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 lenght 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

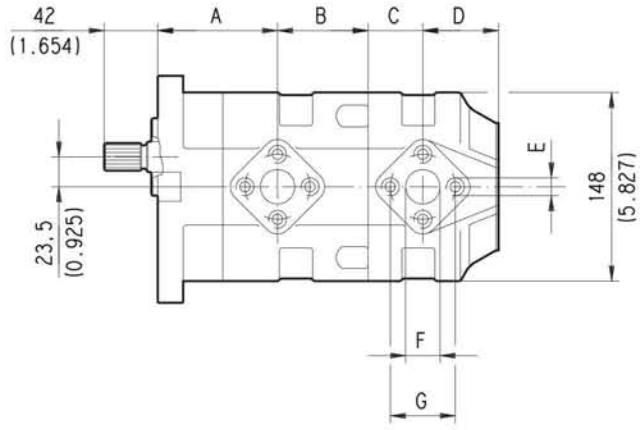
(2) For Buna N seals no code

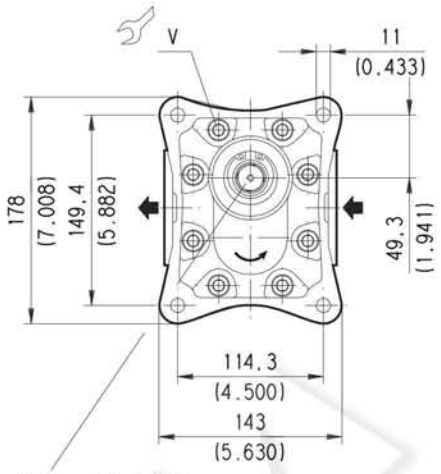
ORDER EXAMPLE

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

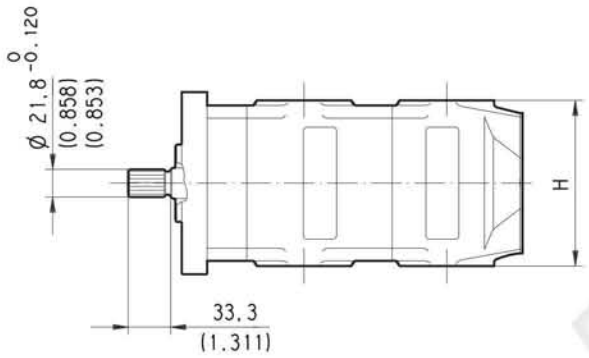
EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262

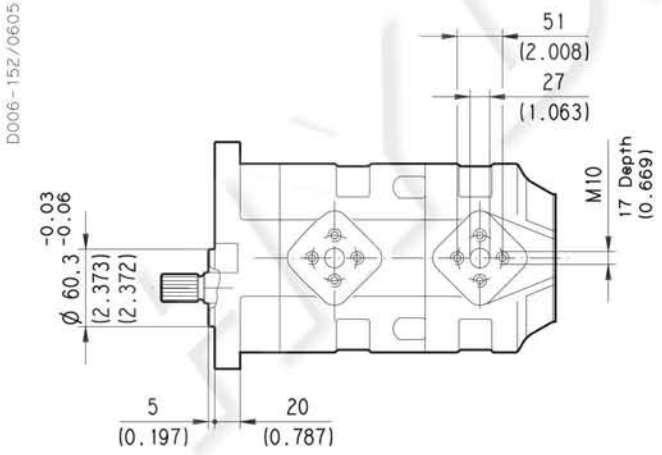


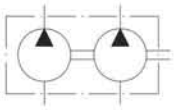


Ext. Involute Spline SAE J498B
with major diameter modified
13 teeth - 16/32 Pitch - 30 deg
Flat root - Side fit - Class 1

MAX. TORQUE 280 Nm
(2478 lbf in)







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

Pump type	A	B	C	D	E	F	G	H	Ports 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 lenght 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

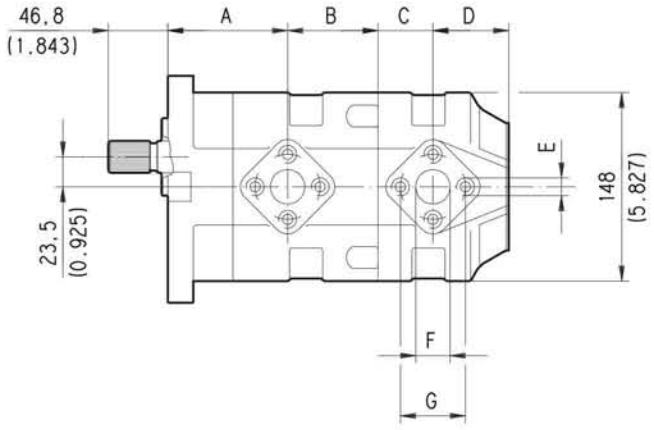
(2) For Buna N seals no code

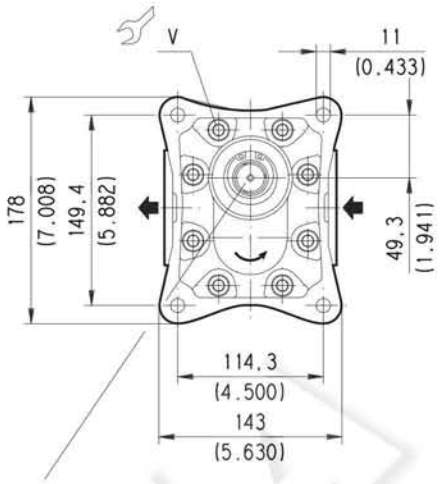
ORDER EXAMPLE

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

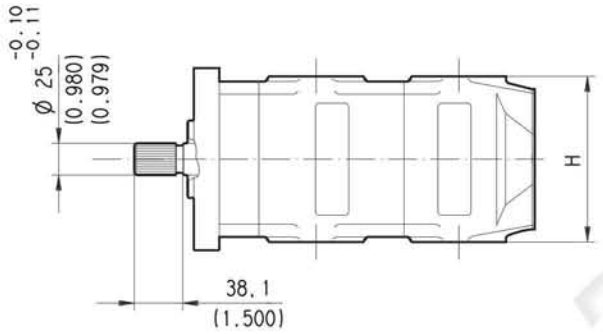
EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262

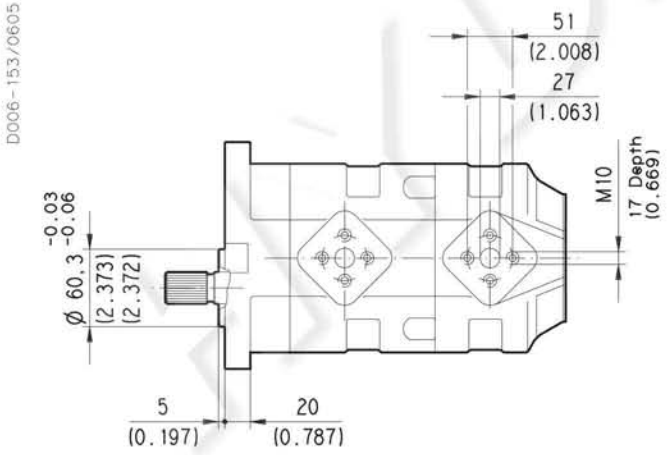


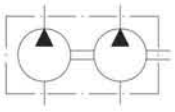


Ext. Involute Spline SAE J498B
with major diameter modified
15 teeth-16/32 Pitch-30 deg
Flat Root-Side fit-Class 1

MAX. TORQUE 400 Nm
(3540 lbf in)







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

Pump type	A	B	C	D	E	F	G	H	Ports 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 lenght 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

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

CODICE	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

CODICE	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 PORTS J514 — ODT

CODICE	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

CODICE	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)