

HYDRAULIC GEAR
PUMPS AND
MOTORS

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FEATURES

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 mounting 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.

DISPLACEMENTS

From 0.30 in³/rev (4,95 cm³/rev)
To 4.50 in³/rev (73,82 cm³/rev)

PRESSURE

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

MAX. SPEED

Max. 4000 min⁻¹

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



Modification from former edition.

05/03.2012

FEATURES

Replaces: 04/07.2008

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		Max pressure psi - (bar)	Max speed min ⁻¹	Temperature °F - (°C)			Seals (◆)
Type	Fluid composition			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

05/03.2012

Tab. 2		○		
Working pressure psi (bar)	$\Delta p < 2030$ (140)	$2030 < \Delta p < 3045$ (140) (210)	$\Delta p > 3045$ (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 μ m	10 μ m	
Achieved with filter β_{25} (c) ≥ 200 according to ISO 16889	25 μ m	-	-	

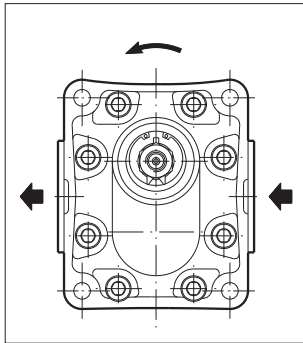
Casappa recommends to use its own production filters:



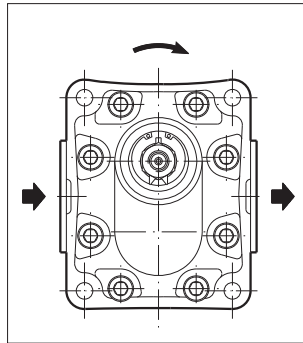
GENERAL NOTES

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.

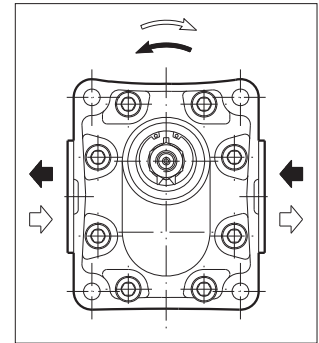
DEFINITION OF ROTATION DIRECTION LOOKING AT THE DRIVE SHAFT



Anti-clock rotation

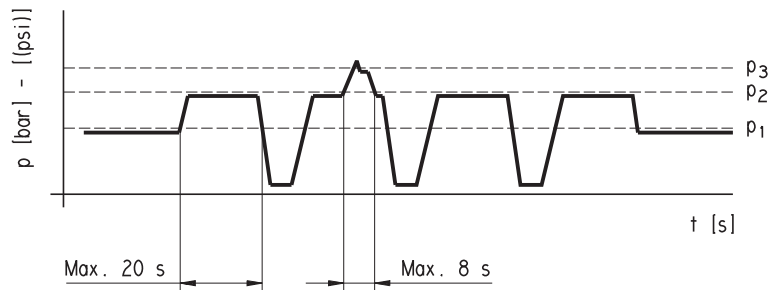


Clockwise rotation



Reversible rotation

PRESSURE DEFINITION



p_1 Max. continuous pressure

p_2 Max. intermittent pressure

p_3 Max. peak pressure

01/03.2002

KAPPA 20 GENERAL DATA PUMPS
KP 20

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

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

KAPPA 30 GENERAL DATA PUMPS
KP 30

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

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.

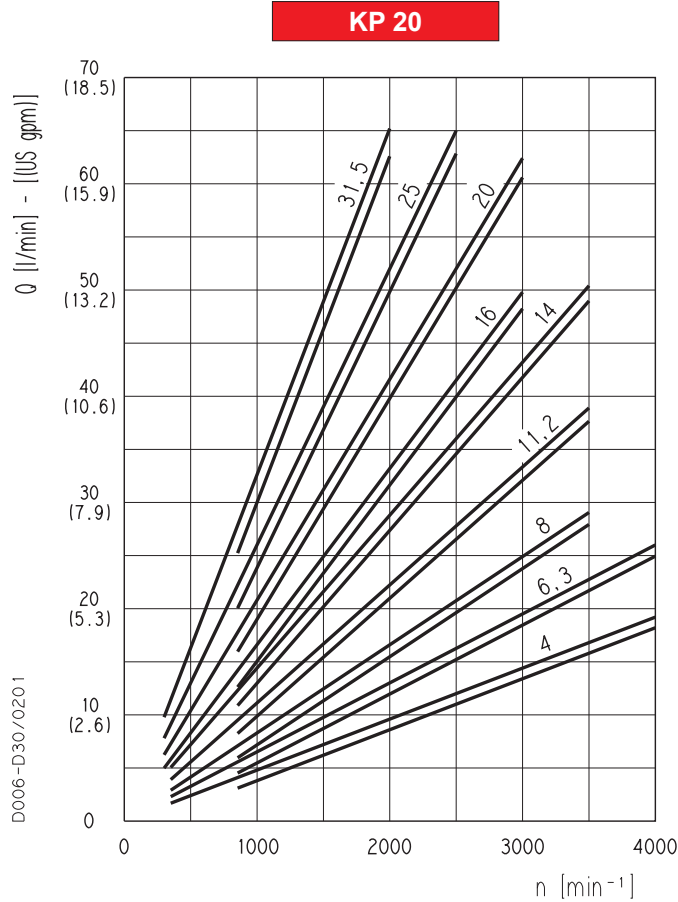
$$\begin{aligned}
 \bullet \quad Q &= Q_{theor.} \cdot \eta_v \\
 Q_{theor.} &= \frac{V \text{ (cm}^3\text{/rev)} \cdot n \text{ (min}^{-1}\text{)}}{1000} \quad [\text{l/min}] \\
 M &= \frac{M_{theor.}}{\eta_{hm}} \quad [\text{Nm}] \\
 M_{theor.} &= \frac{\Delta p \text{ (bar)} \cdot V \text{ (cm}^3\text{/rev)}}{62,83}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

05/03.2012

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

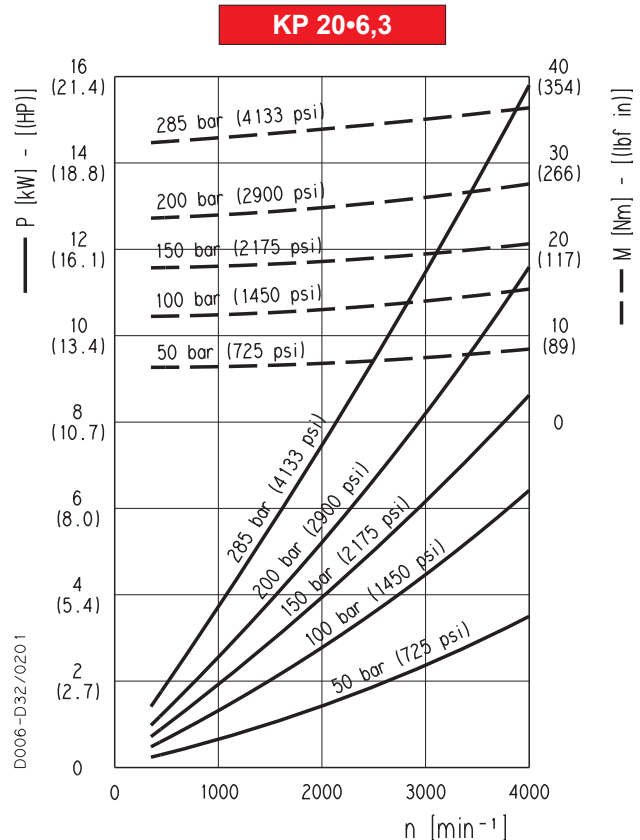
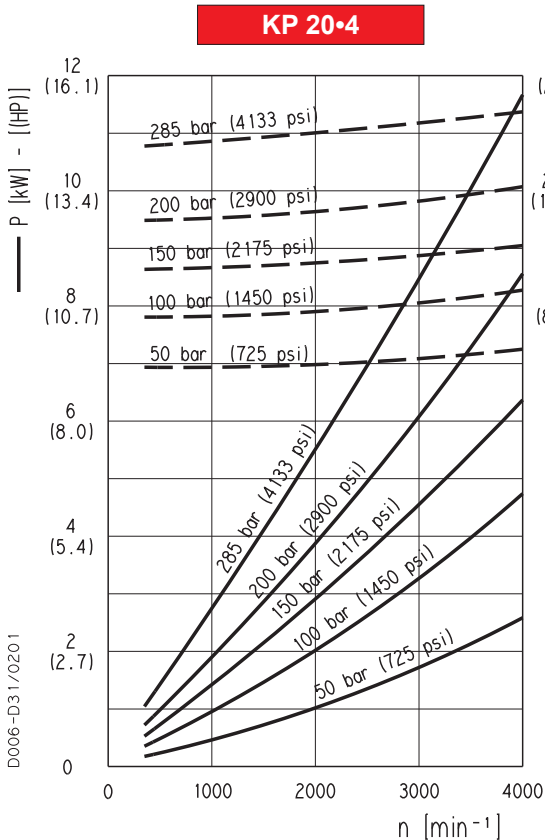
KAPPA 20 GEAR PUMPS PERFORMANCE CURVES

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:

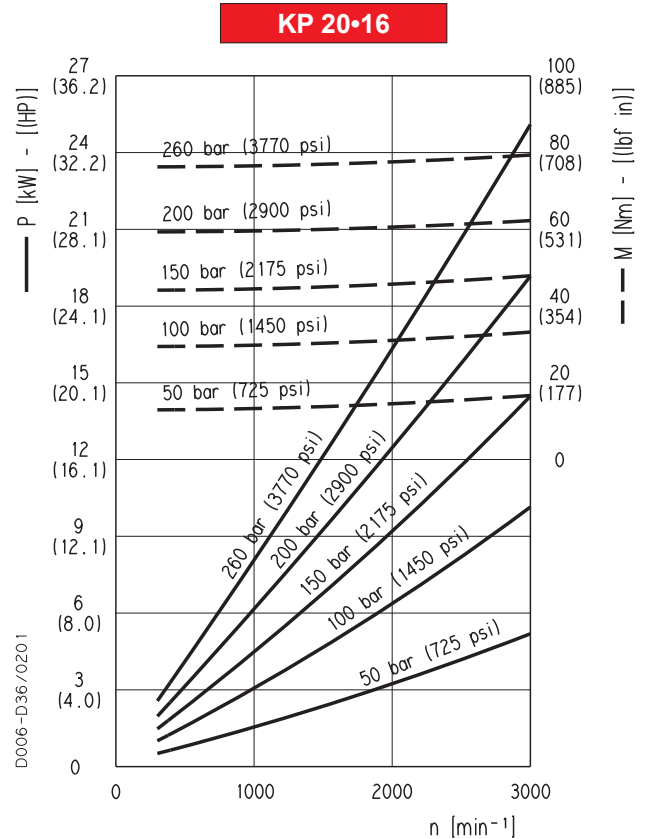
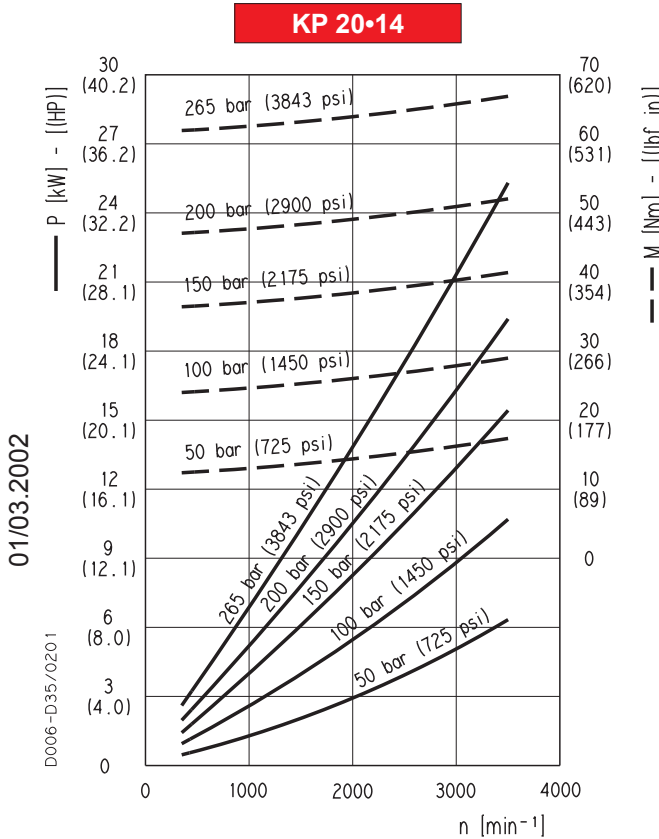
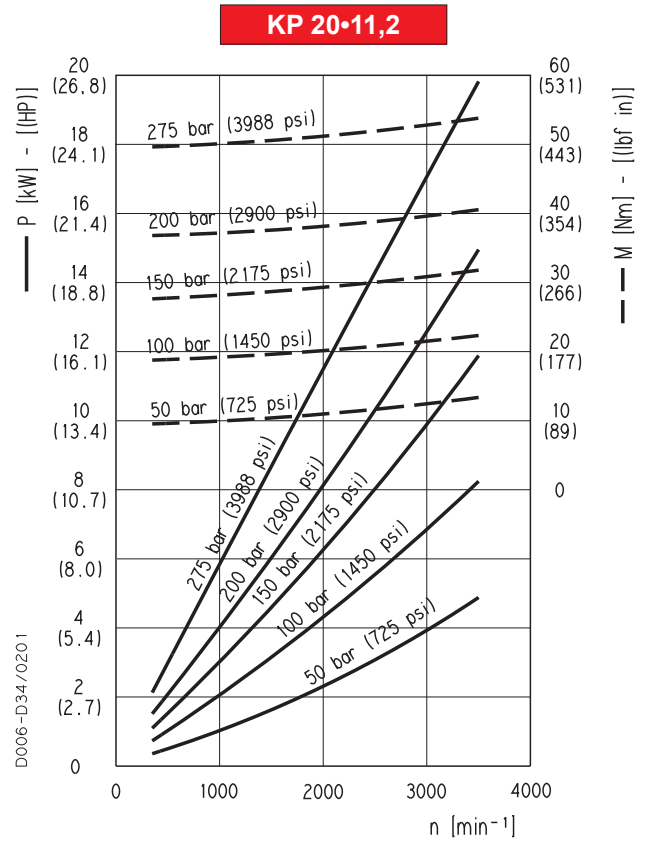
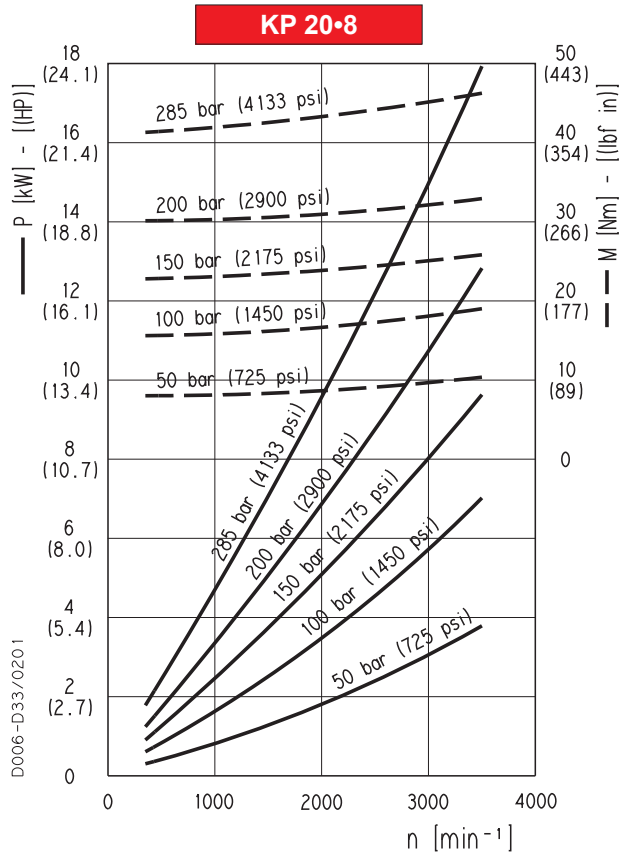
- KP 20•4. 290-4133 psi (20-285 bar)
- KP 20•6,3 290-4133 psi (20-285 bar)
- KP 20•8. 290-4133 psi (20-285 bar)
- KP 20•11,2 290-3988 psi (20-275 bar)
- KP 20•14. 290-3843 psi (20-265 bar)
- KP 20•16. 290-3770 psi (20-260 bar)
- KP 20•20. 290-3045 psi (20-210 bar)
- KP 20•25. 290-2610 psi (20-180 bar)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



01/03.2002

KAPPA 20 GEAR PUMPS PERFORMANCE CURVES

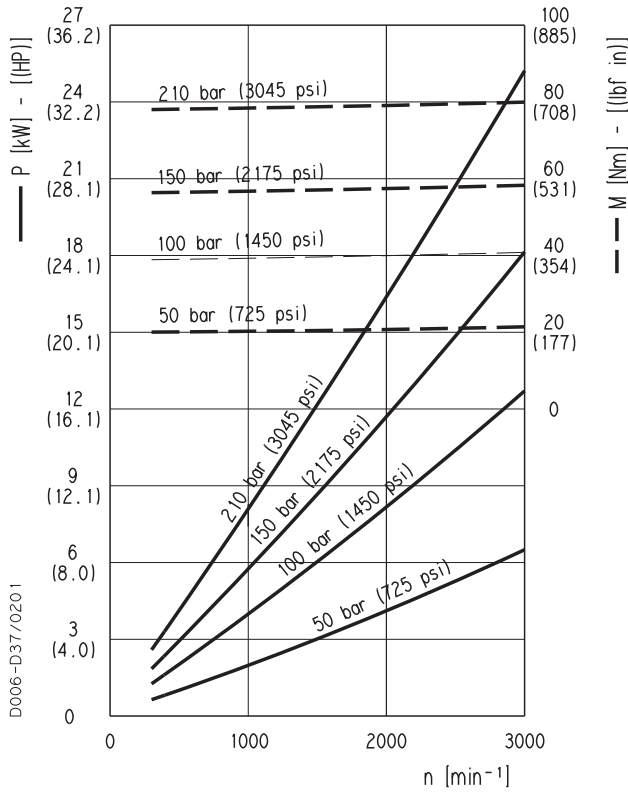
KP 20



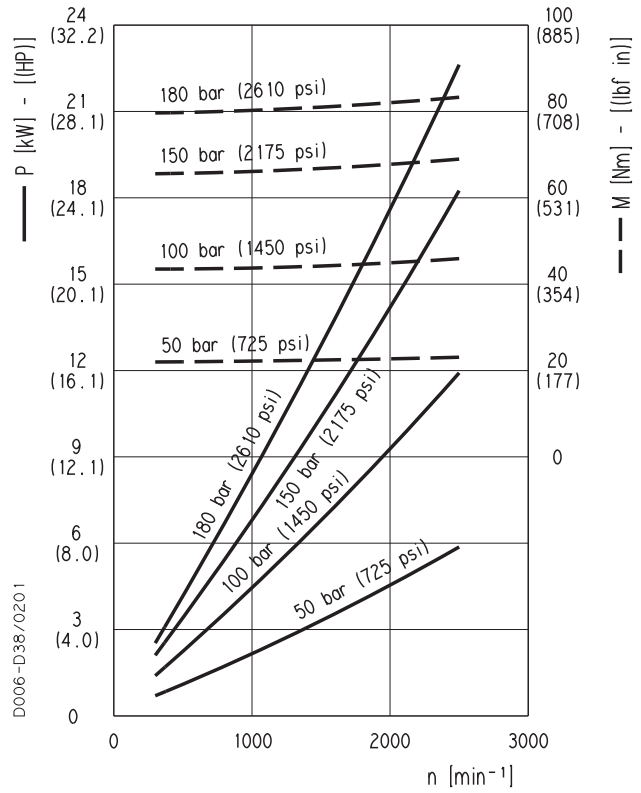
KAPPA 20 GEAR PUMPS PERFORMANCE CURVES

KP 20

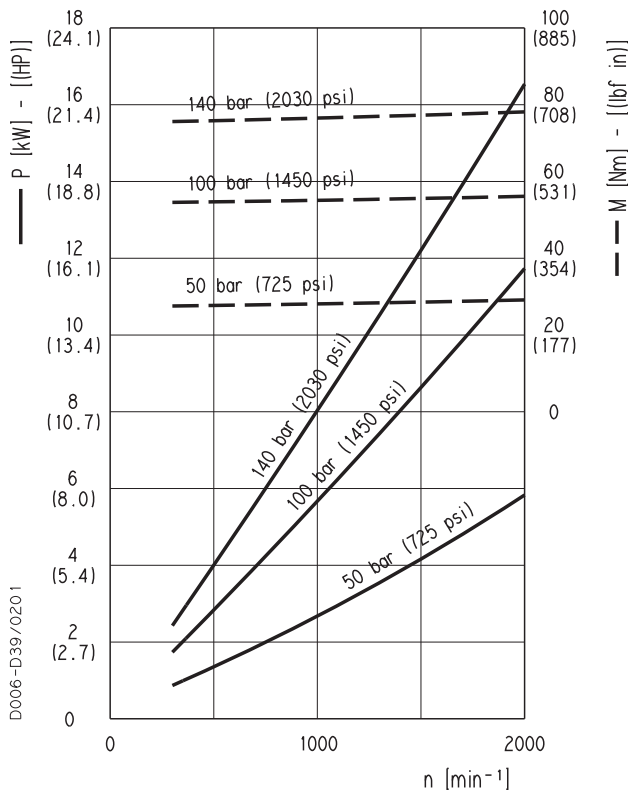
KP 20•20



KP 20•25



KP 20•31,5

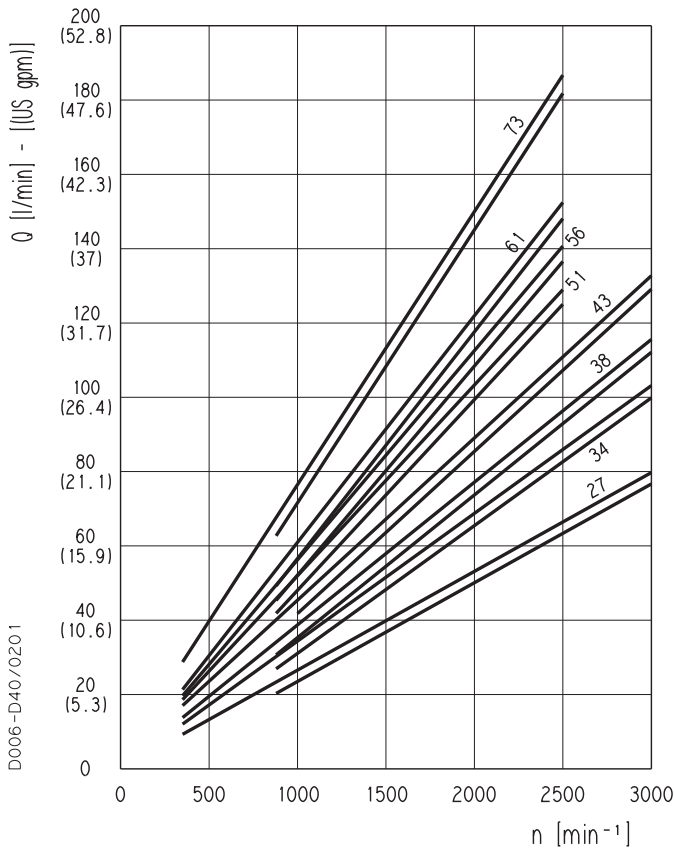


01/03.2002

KAPPA 30 GEAR PUMPS PERFORMANCE CURVES

KP 30

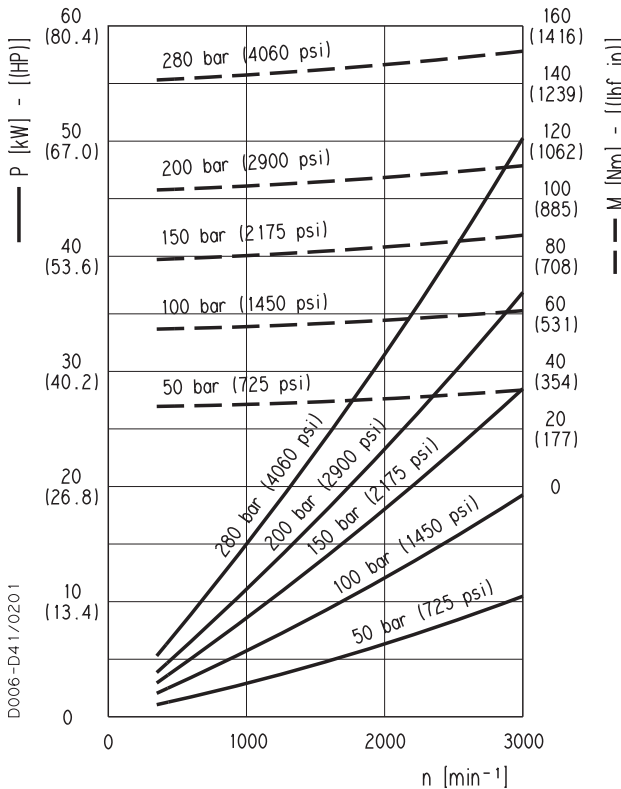
KP 30



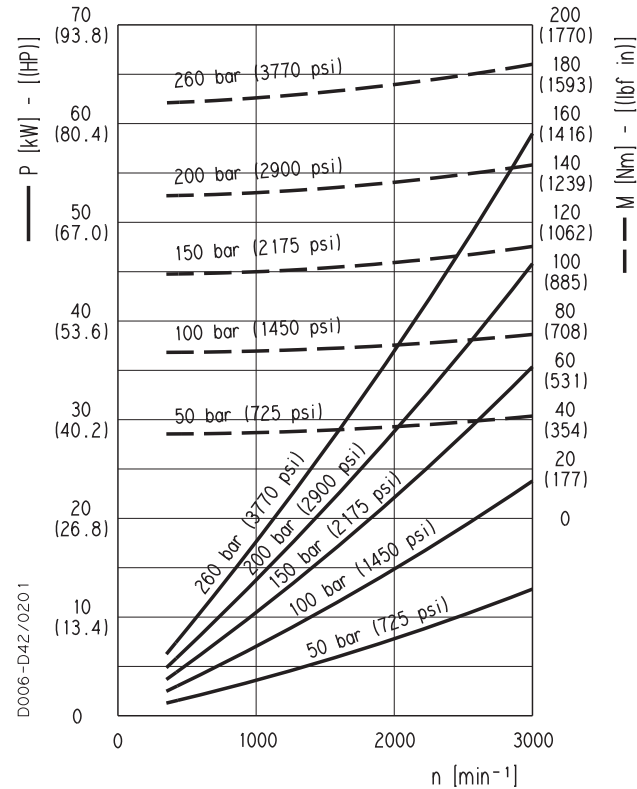
Each curve has been obtained at 122 °F (50 °C), using oil with viscosity 168 SSU (36 cSt) at 104 °F (40 °C) and at these pressures:

- 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

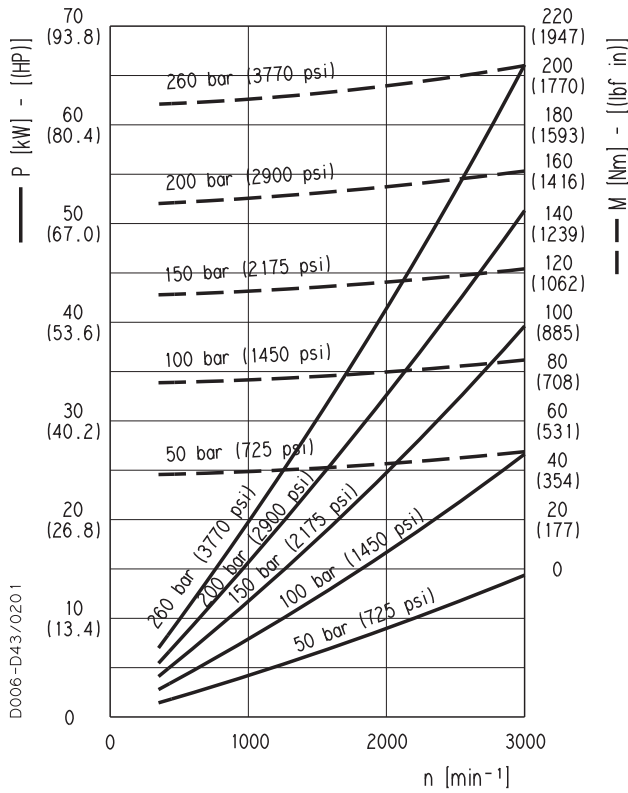


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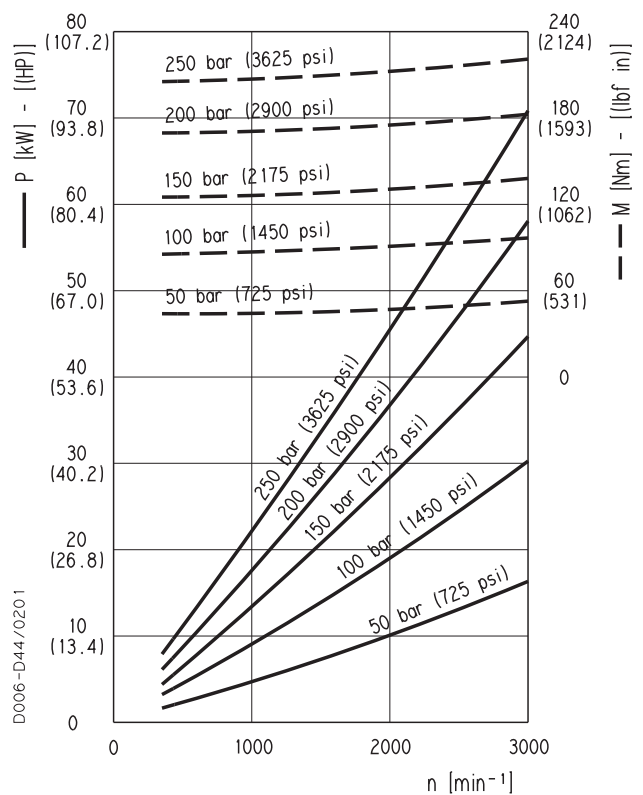
KAPPA 30 GEAR PUMPS PERFORMANCE CURVES

KP 30

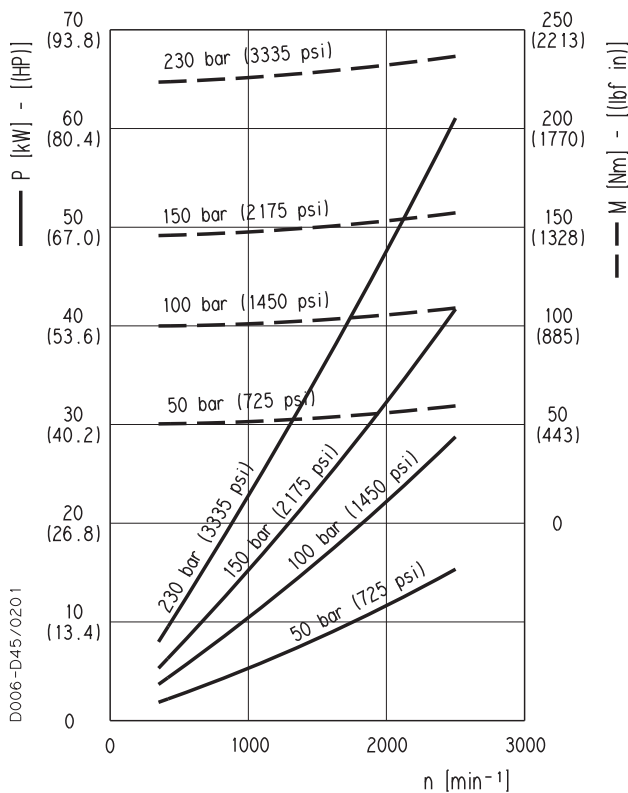
KP 30•38



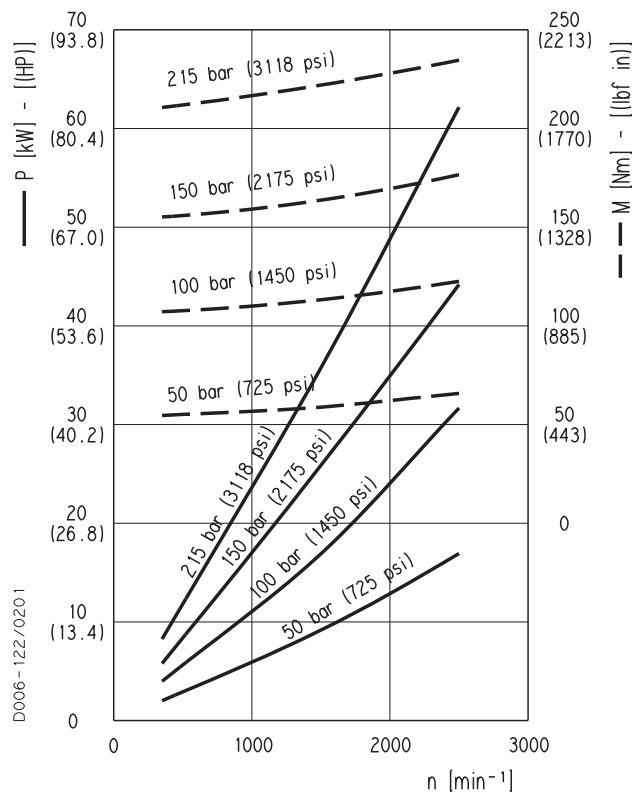
KP 30•43



KP 30•51



KP 30•56

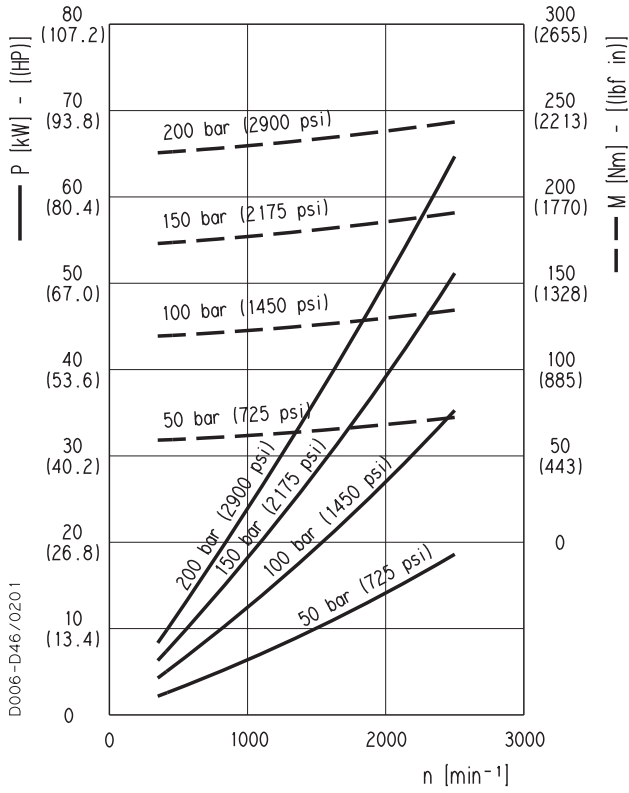


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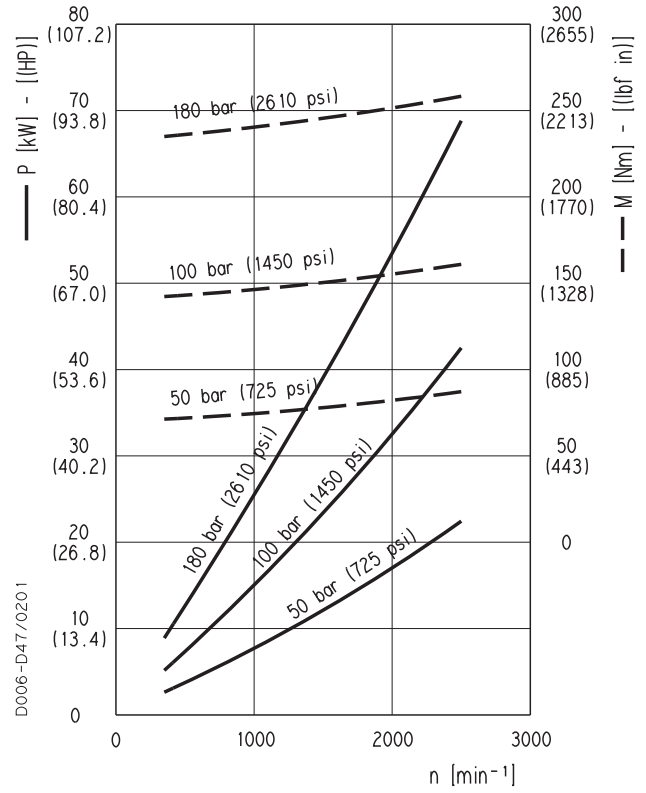
KAPPA 30 GEAR PUMPS PERFORMANCE CURVES

KP 30

KP 30-61

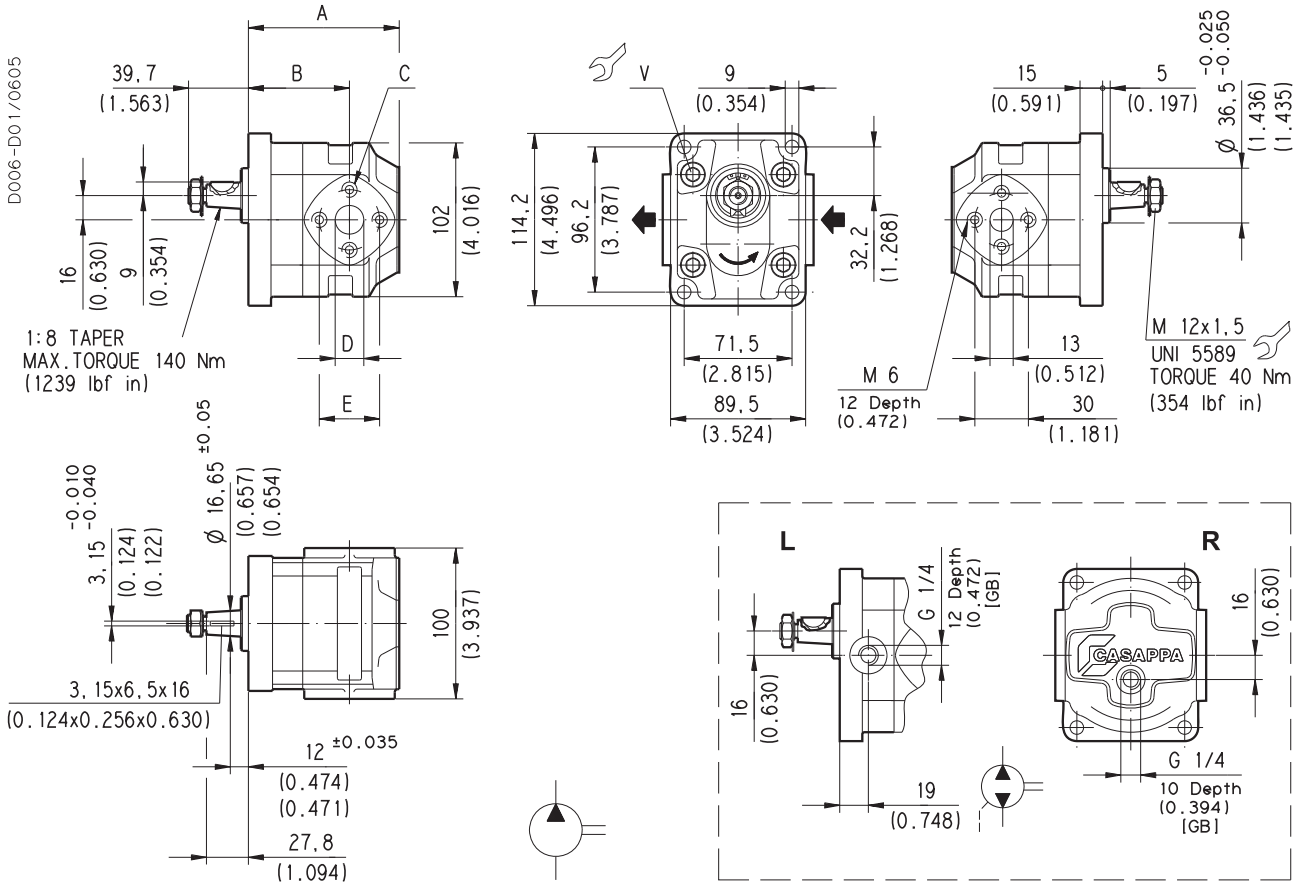


KP 30-73



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
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
SDLRB	KP 20•4	87,5 (3.445)	60 (2.362)	M6 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)	M8 Depth 14 (0.551)	19 (0.748)	40 (1.575)
	KP 20•14	100 (3.937)	67 (2.638)			
	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

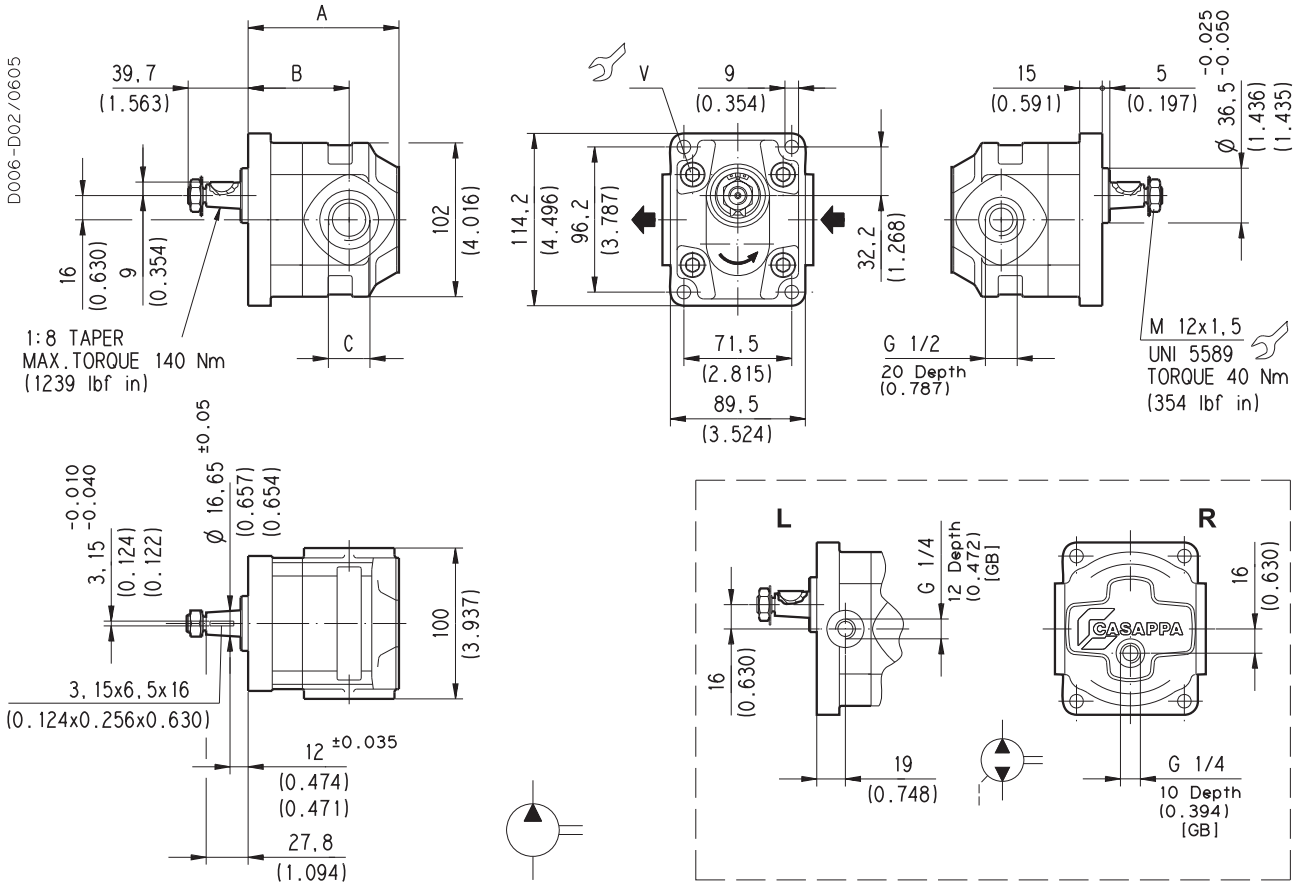
KAPPA 20

HYDRAULIC GEAR PUMPS EUROPEAN STANDARD

82 E2

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	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	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)	

02/06.2005

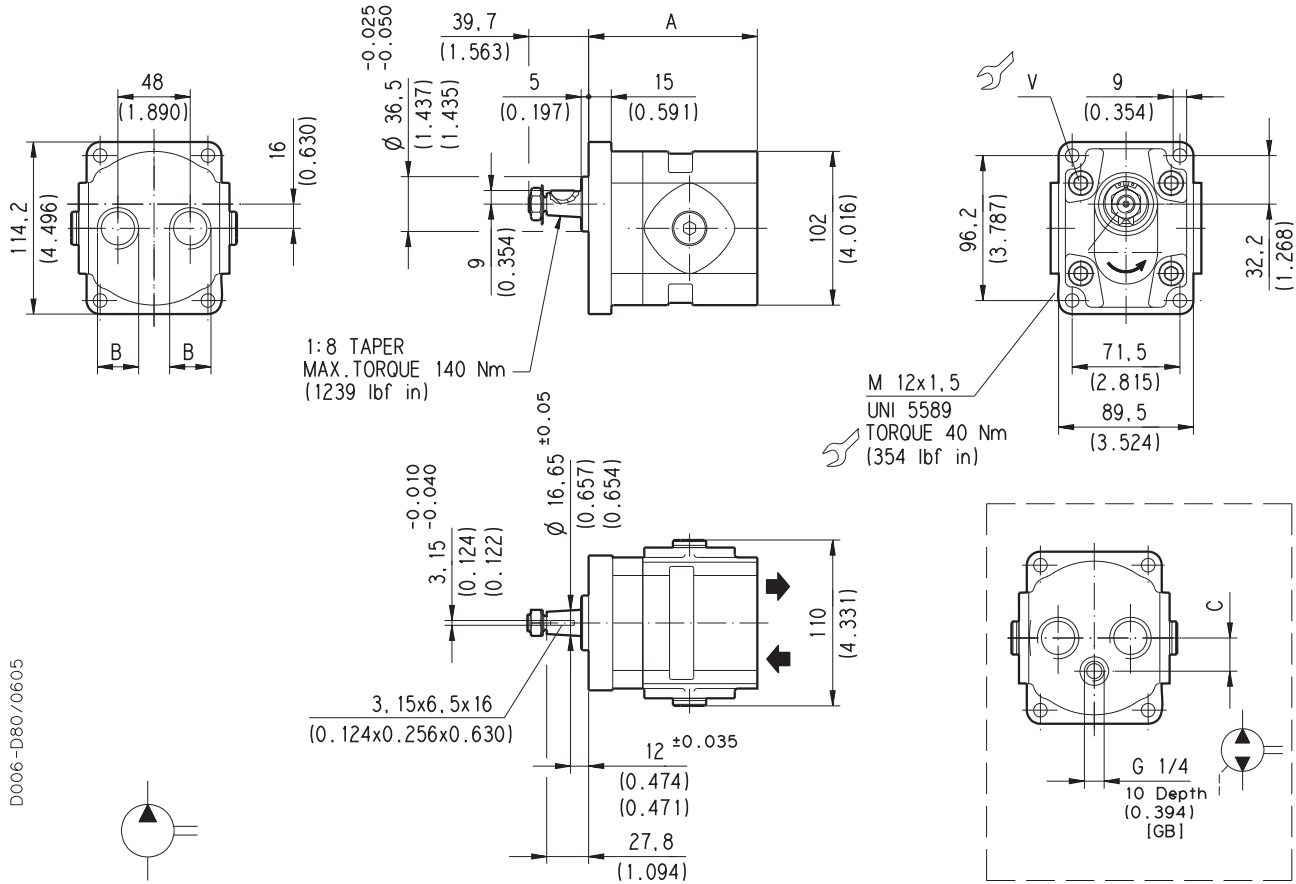
Rotation: S=left - D=right - L=reversible side drain - R=reversible rear drain - B=reversible internal drain

How to order:

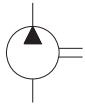
KP 20•4 S0-82 E2-L GD/GD-N

GAS STRAIGHT THREAD PORTS

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



D006-D80/0605



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

02/06.2005

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

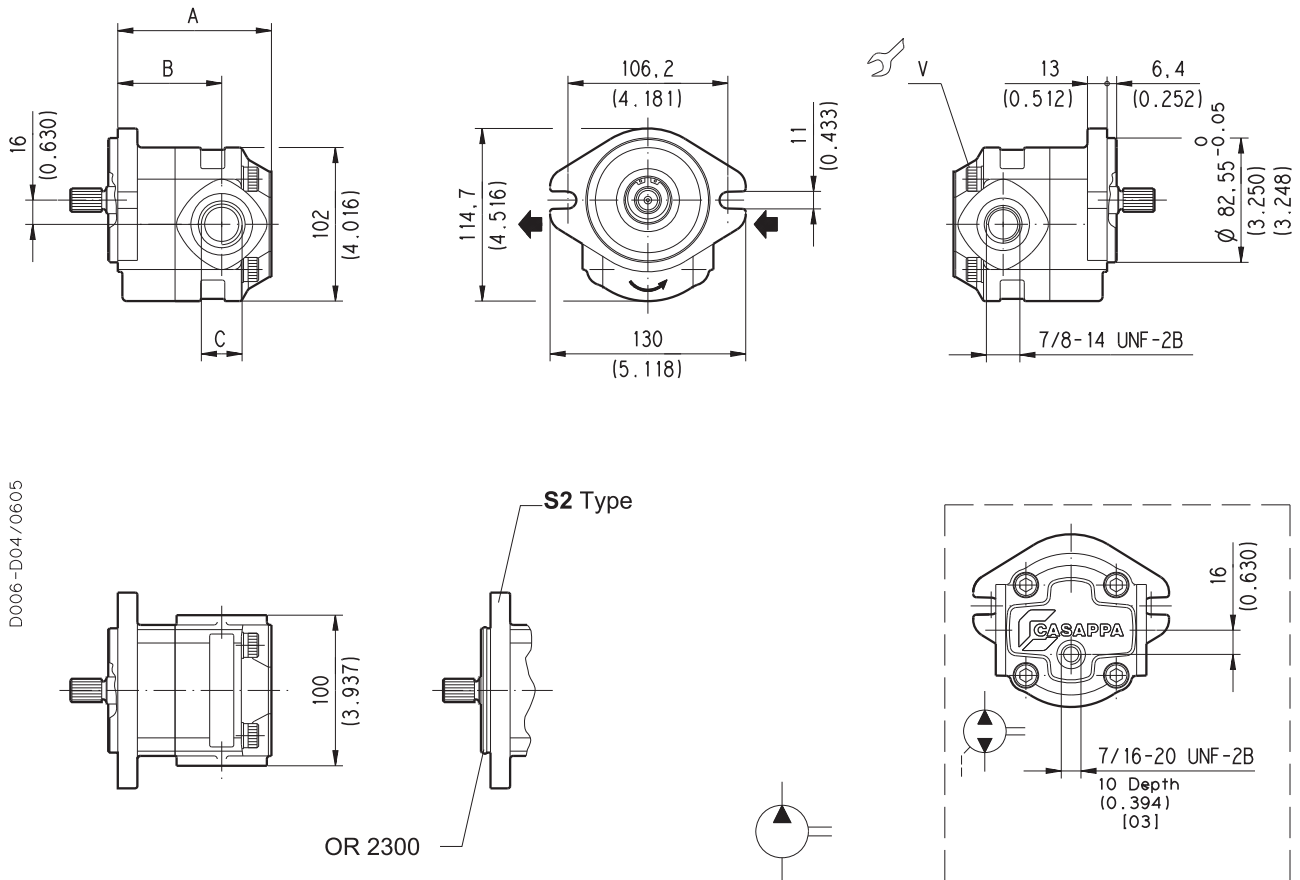
KAPPA 20

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)

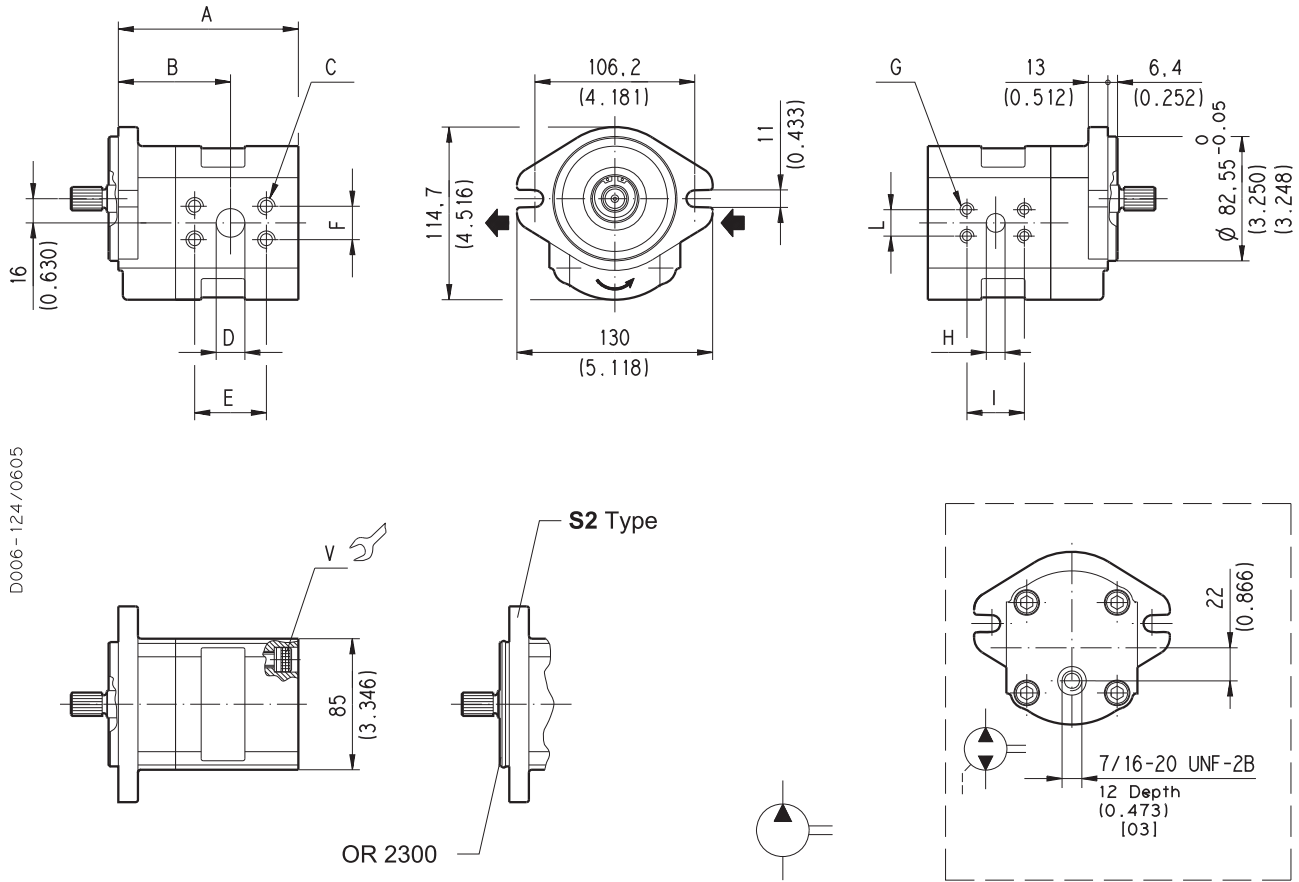
Side ports version (L) - To order see page 22

02/06.2005

Pump type	A	B	C	Ports code	
	mm (in)	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 - 124 / 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)	M8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	M8 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)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MB	MB
KP 20•14	116 (4.567)	69 (2.717)										
KP 20•16	119,5 (4.705)	74,5 (2.933)										
KP 20•20	126 (4.961)	81 (3.189)	M10 Depth 12 (0.472)	25,4 (1.000)	52,4 (2.063)	26,2 (1.031)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MC	MB
KP 20•25	134 (5.276)	74 (2.913)										
KP 20•31,5	144 (5.669)	84 (3.307)										

02/06.2005

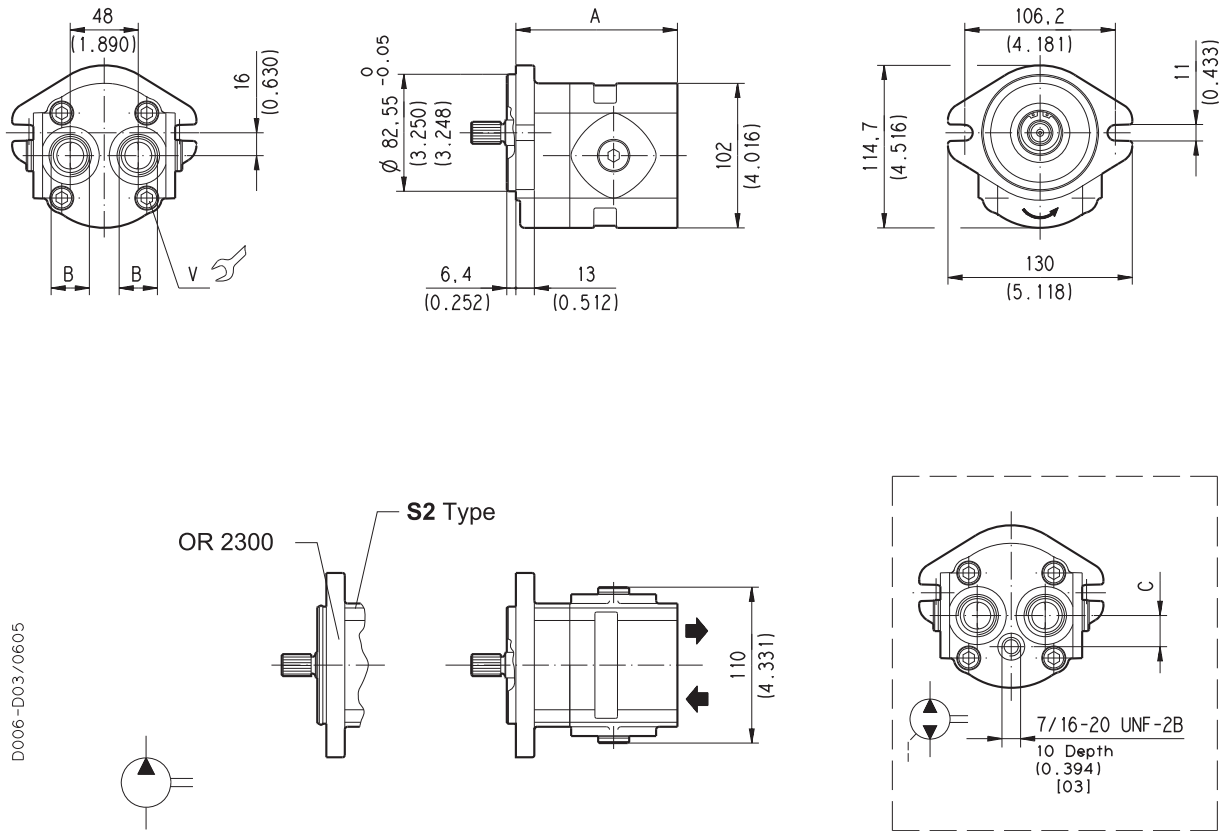
KAPPA 20

HYDRAULIC GEAR PUMPS SAE STANDARD

... S1

SAE STRAIGHT THREAD PORTS J514

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



D006-D03/0605

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

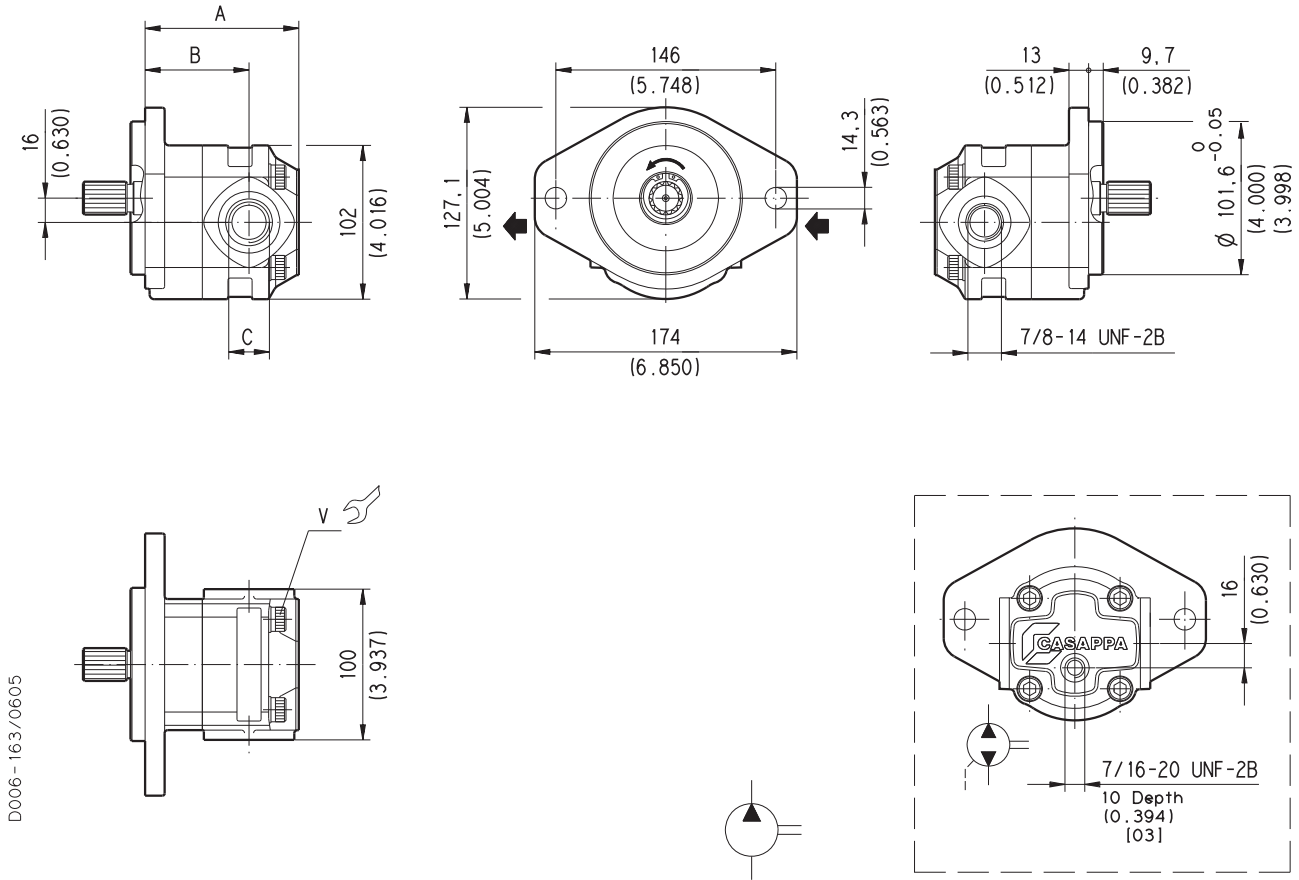
Rear ports version (P) - To order see page 22

02/06.2005

Pump type	A mm (in)	B	C mm (in)	Ports code	
				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



D006-163/0605

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	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)			

02/06.2005

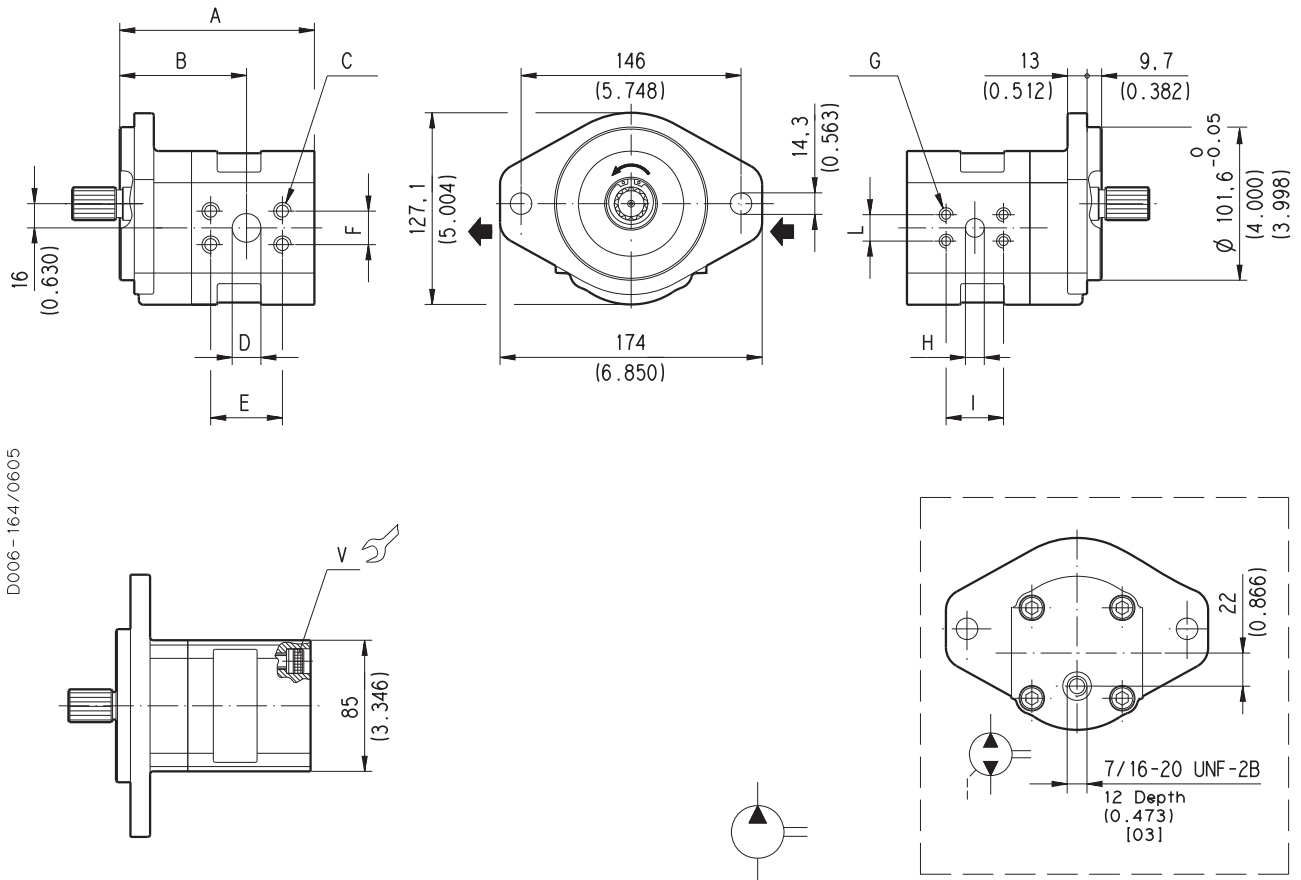
KAPPA 20

HYDRAULIC GEAR PUMPS SAE STANDARD

... S5

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)

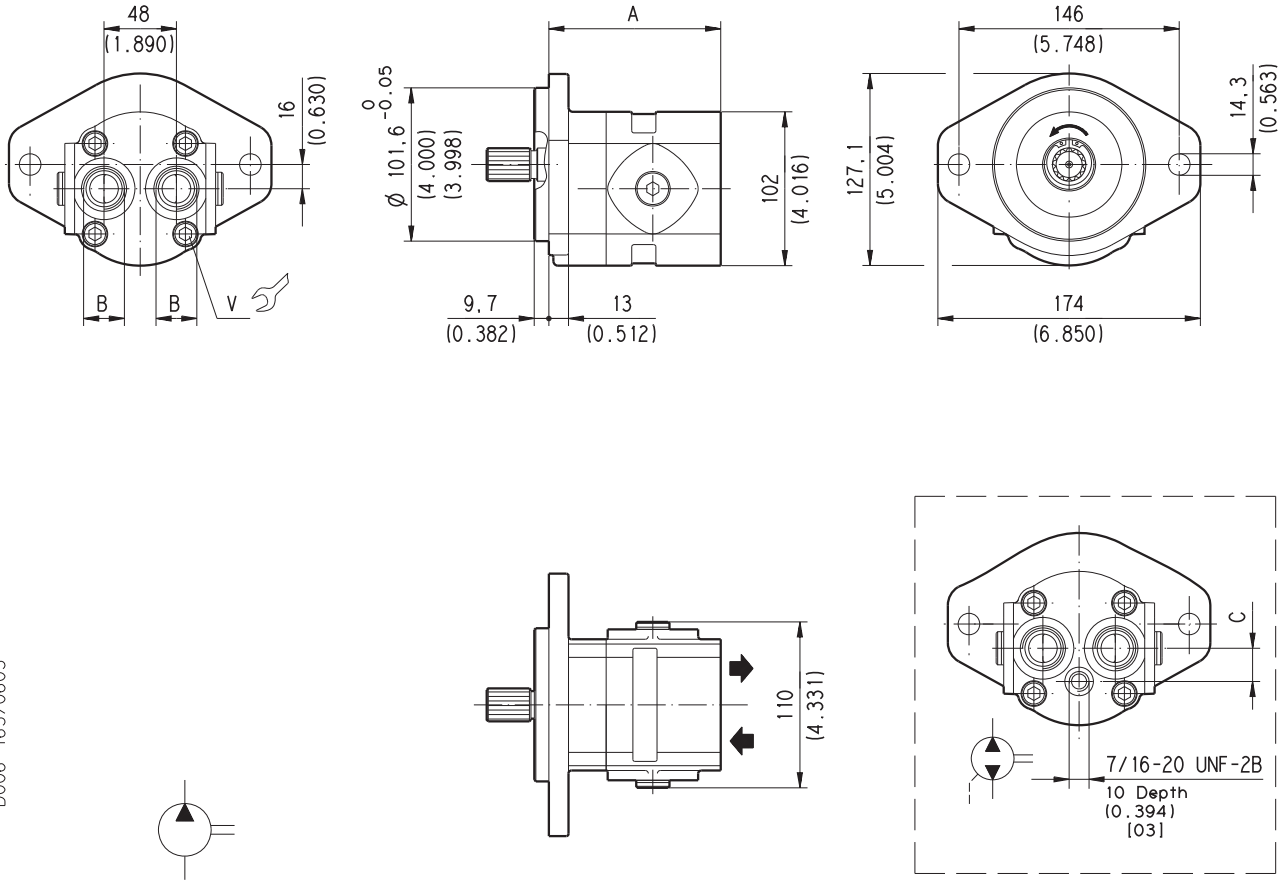
Side ports version (L) - To order see page 22

02/06.2005

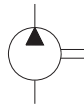
Pump type	A	B	C	D	E	F	G	H	I	L	Ports code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 20-4	101,5 (3.996)	62 (2.441)	M8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	M8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	MA	MA
KP 20-6,3	104 (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)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MB	MB
KP 20-14	116 (4.567)	69 (2.717)										
KP 20-16	119,5 (4.705)	74,5 (2.933)										
KP 20-20	126 (4.961)	81 (3.189)	M10 Depth 12 (0.472)	25,4 (1.000)	52,4 (2.063)	26,2 (1.031)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MC	MB
KP 20-25	134 (5.276)	74 (2.913)										
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 ±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	OC
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)				

02/06.2005

KAPPA 20 END DRIVE SHAFTS

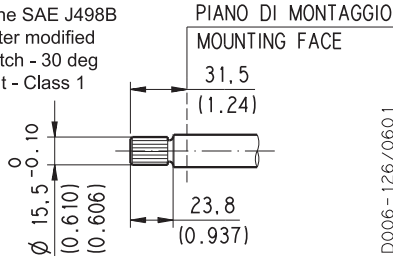
SAE

Replaces: 01/03.2002

SAE "A" SPLINE

03

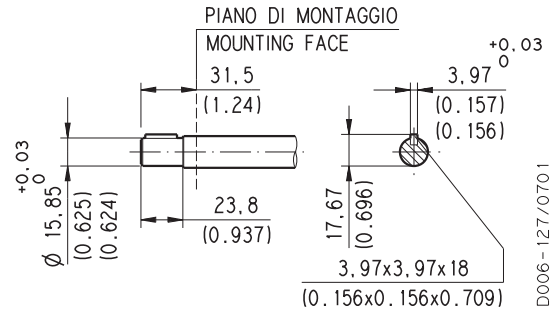
Ext. Involute Spline SAE J498B with major diameter modified 9 teeth - 16/32 Pitch - 30 deg Flat Root - Side fit - Class 1



MAX 885 lbf in (100 Nm)

SAE "A" STRAIGHT

31

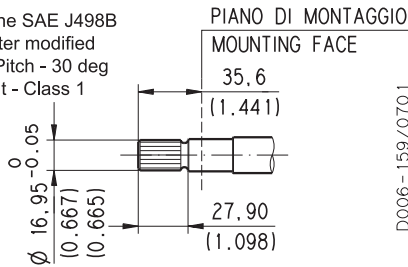


MAX 620 lbf in (70 Nm)

SAE SPLINE

01

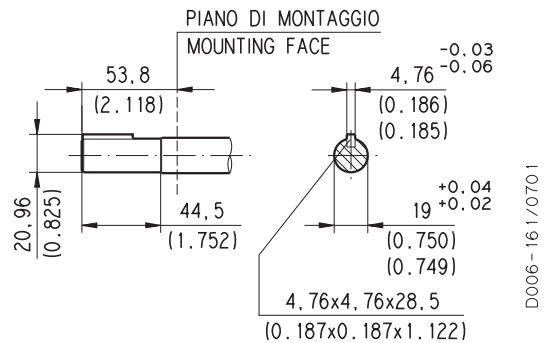
Ext. Involute Spline SAE J498B with major diameter modified 10 teeth - 16/32 Pitch - 30 deg Flat Root - Side fit - Class 1



MAX 1151 lbf in (130 Nm)

STRAIGHT

49

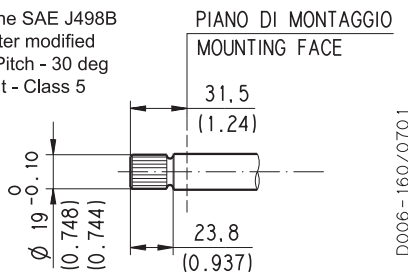


MAX 1239 lbf in (140 Nm)

SAE SPLINE

07

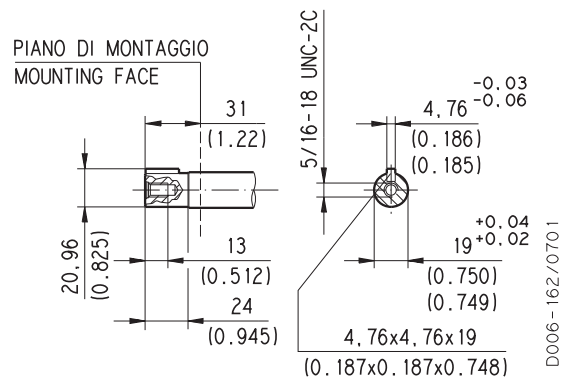
Ext. Involute Spline SAE J498B with major diameter modified 11 teeth - 16/32 Pitch - 30 deg Flat Root - Side fit - Class 5



MAX 1505 lbf in (170 Nm)

STRAIGHT

50



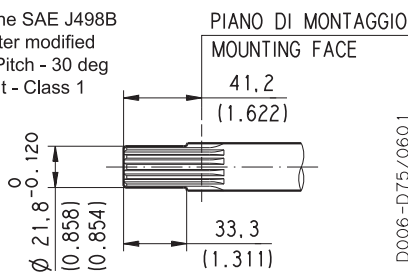
MAX 885 lbf in (100 Nm)

03/03.2006

SAE "B" SPLINE

04

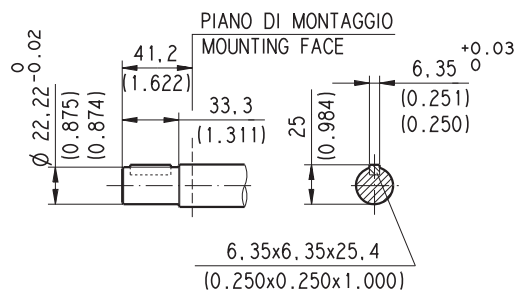
Ext. Involute Spline SAE J498B with major diameter modified 13 teeth - 16/32 Pitch - 30 deg Flat Root - Side fit - Class 1



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 position	Ports IN/OUT	Seals
KP30•17	S	0	– 03	S1	– L	OC/OC	– N

1 Pump Type		CODE
in³/rev	(cm³/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 with 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	Ports position	6
L	Side	
P	Rear	

CODE	Ports IN/OUT		7
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			
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	Seals (b)	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) 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

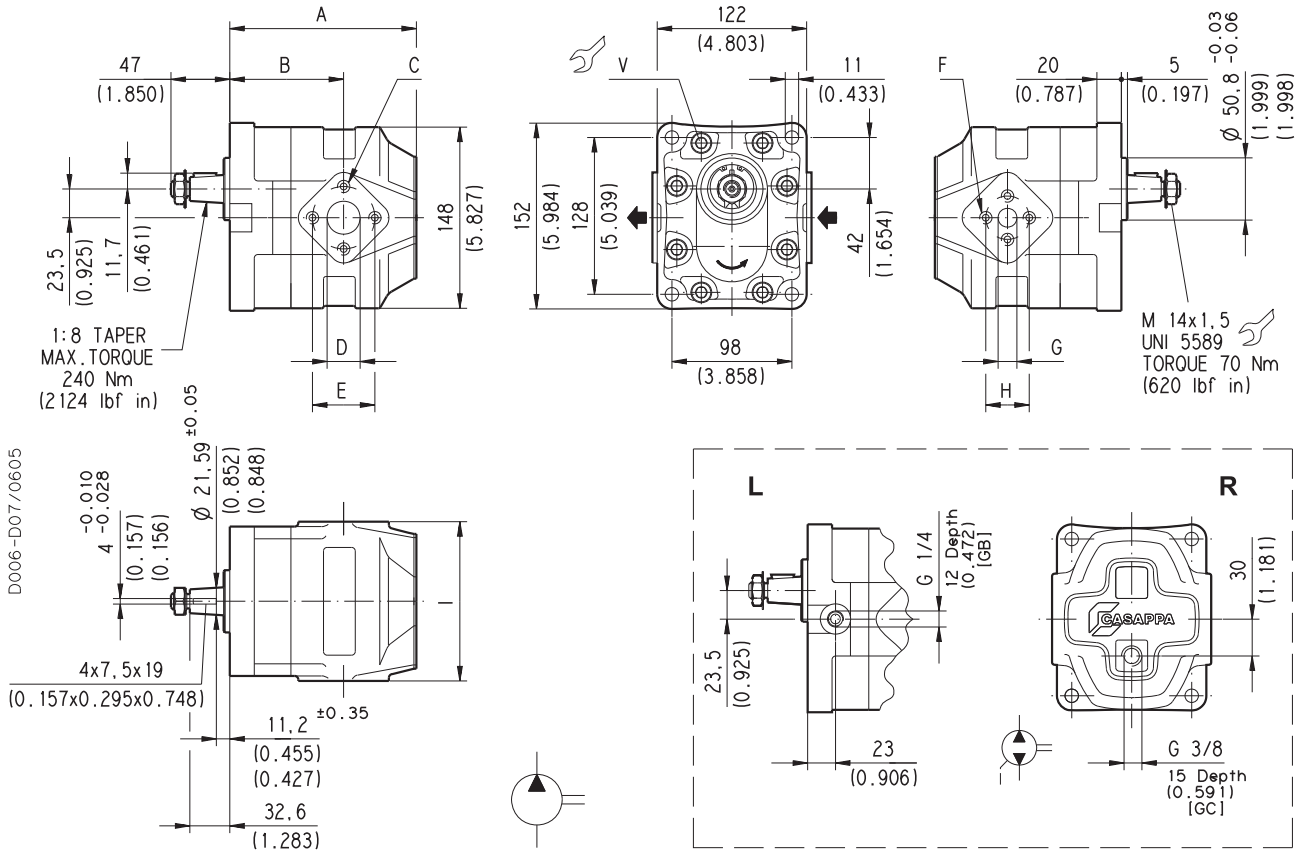
Special version pump KP 20•4 S0 - 04 S5 - L MA/MA - V Bz

KAPPA 30

HYDRAULIC GEAR PUMPS EUROPEAN STANDARD

83 E3

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)
02/06.2005	KP 30-27	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	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

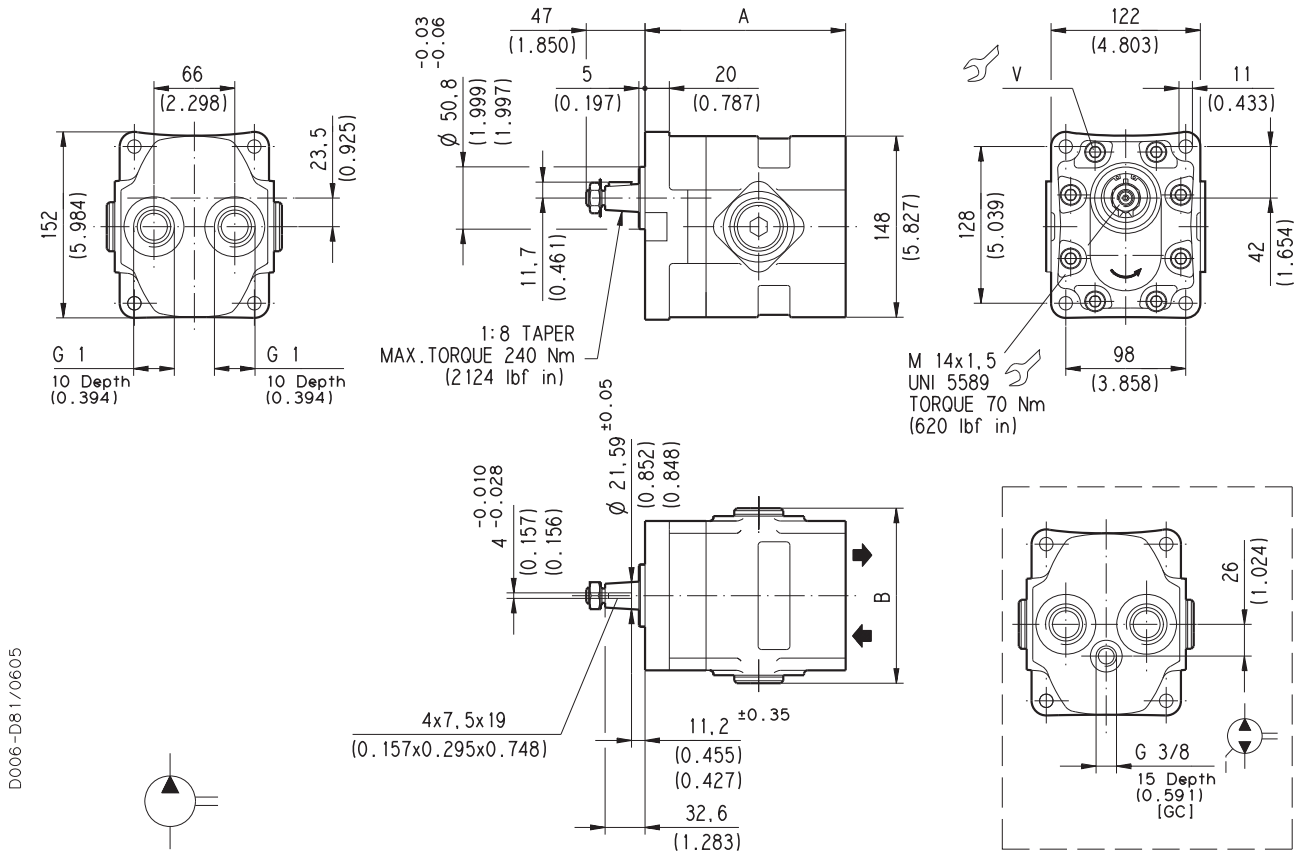
KAPPA 30

HYDRAULIC GEAR PUMPS EUROPEAN STANDARD

83 E3

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 ÷ 682)

Rear ports version (P)

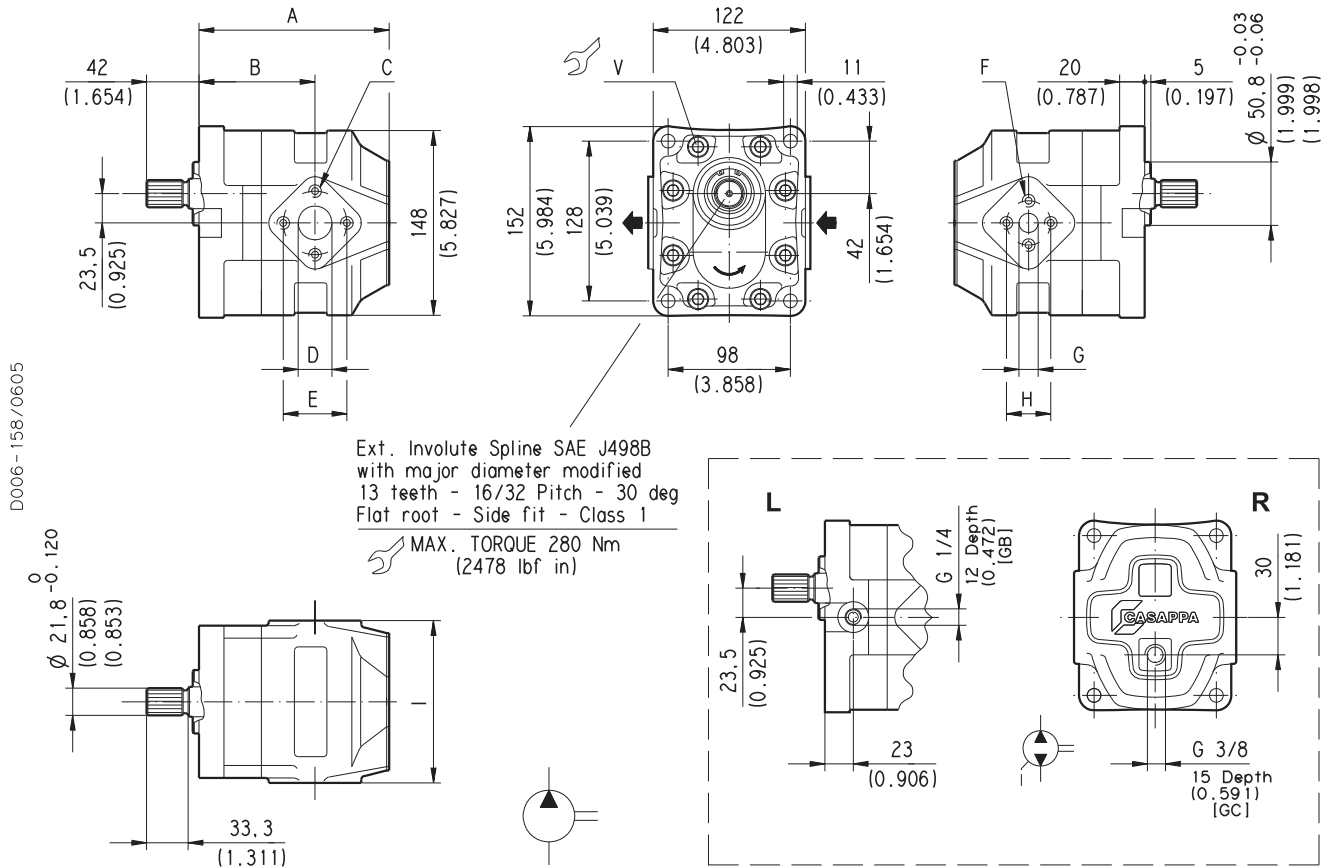
Pump type	A	B
	mm (in)	mm (in)
0-83 E3-P GF/GF-N S D R B	148 (5.827)	143 (5.630)
	153 (6.024)	
	156 (6.142)	
	159 (6.260)	
	164 (6.457)	
	167 (6.575)	148 (5.827)
	170 (6.693)	
	178 (7.008)	

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



D006-158/0605

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 KP 30-34 KP 30-38 KP 30-43 KP 30-51 KP 30-56 KP 30-61	S D L R B	0-83 E3-L ED/EB-N		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)
		133 (5.236)	85 (3.346)							
		138 (5.433)	90 (3.543)							
		141 (5.551)	93 (3.661)							
		144 (5.669)	96 (3.780)							
		149 (5.866)	93 (3.661)							
		152 (5.984)	97 (3.819)							
155 (6.102)	100 (3.937)									
KP 30-73		0-83 E3-L EF/ED-N		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)

02/06.2005

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

How to order:

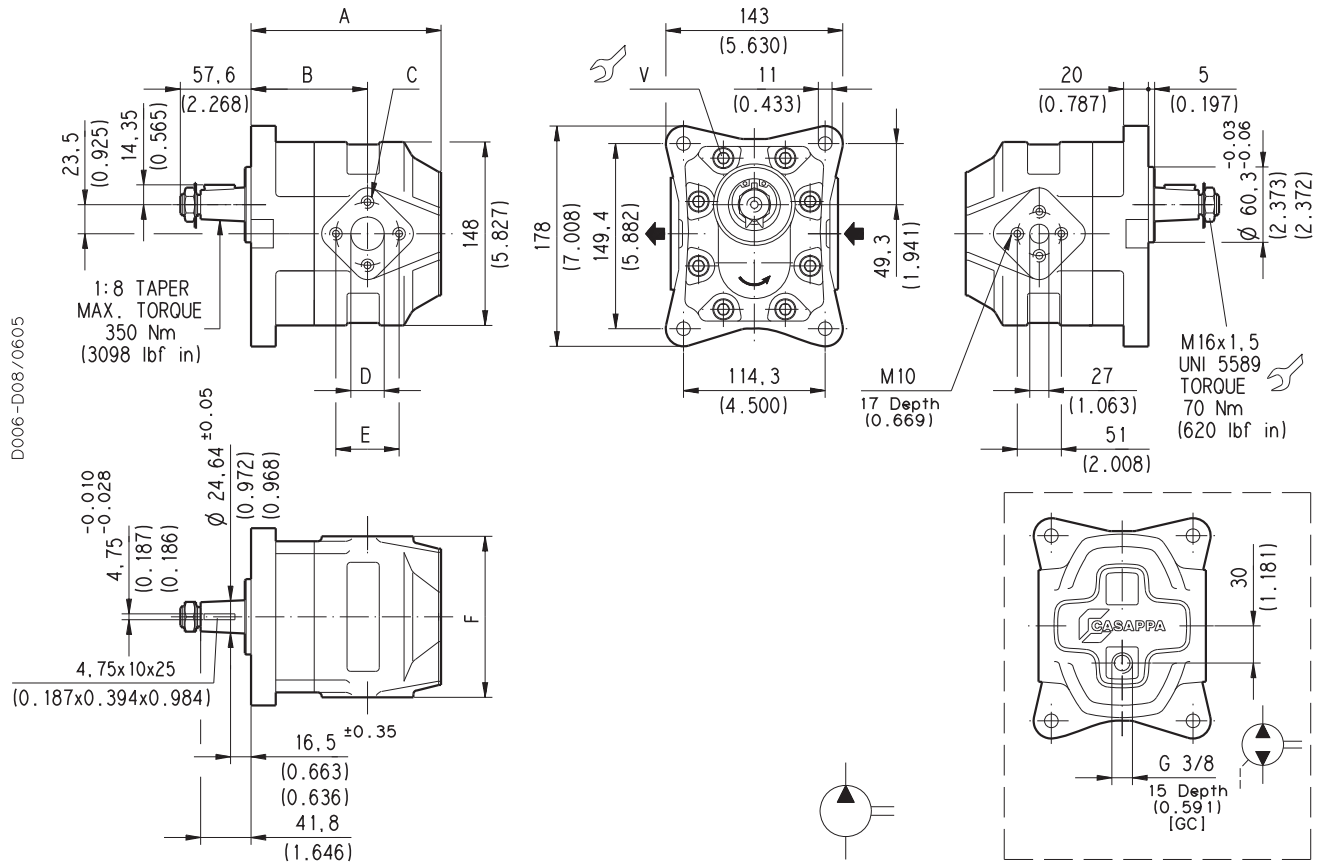
KP 30-27 S0-83 E3-L ED/EB-N

KAPPA 30

HYDRAULIC GEAR PUMPS EUROPEAN STANDARD

84 E4

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	150 (5.906)	94 (3.701)	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)				

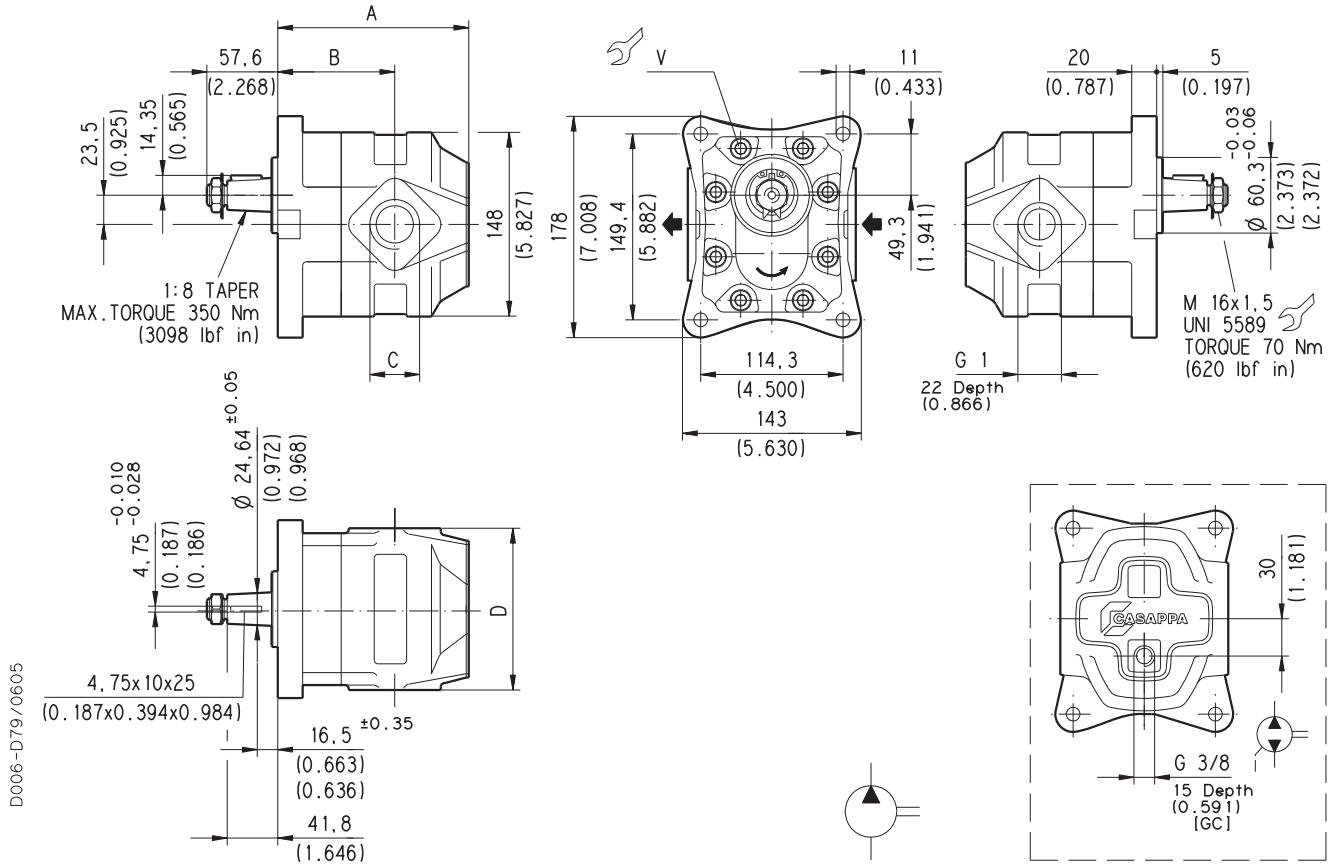
Rotation: S=left - D=right - R=reversible rear drain - B=reversible internal drain

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



D006-D79/0605

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 30-51	S	0-84 E4-L GF/GF-N	150 (5.906)	94 (3.701)	G 1 Depth 22 (0.866)	130 (5.118)
			156 (6.142)	101 (3.976)	G 1 1/4 Depth 24 (0.945)	135 (5.315)
			164 (6.457)	109 (4.291)		

02/06.2005

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

How to order:

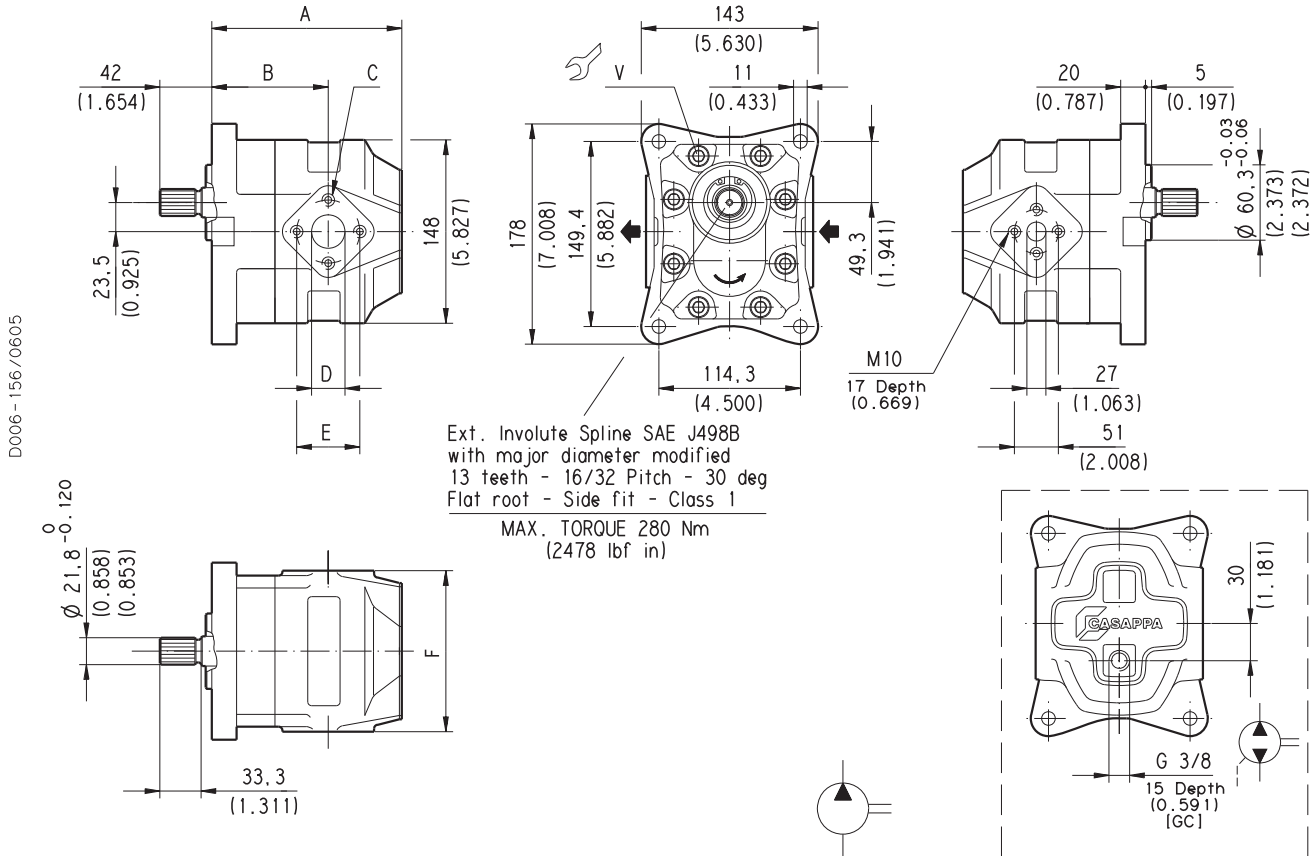
KP 30-51 S0-84 E4-L GF/GF-N

KAPPA 30

HYDRAULIC GEAR PUMPS EUROPEAN STANDARD

A8 E4

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



D006-156/0605

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

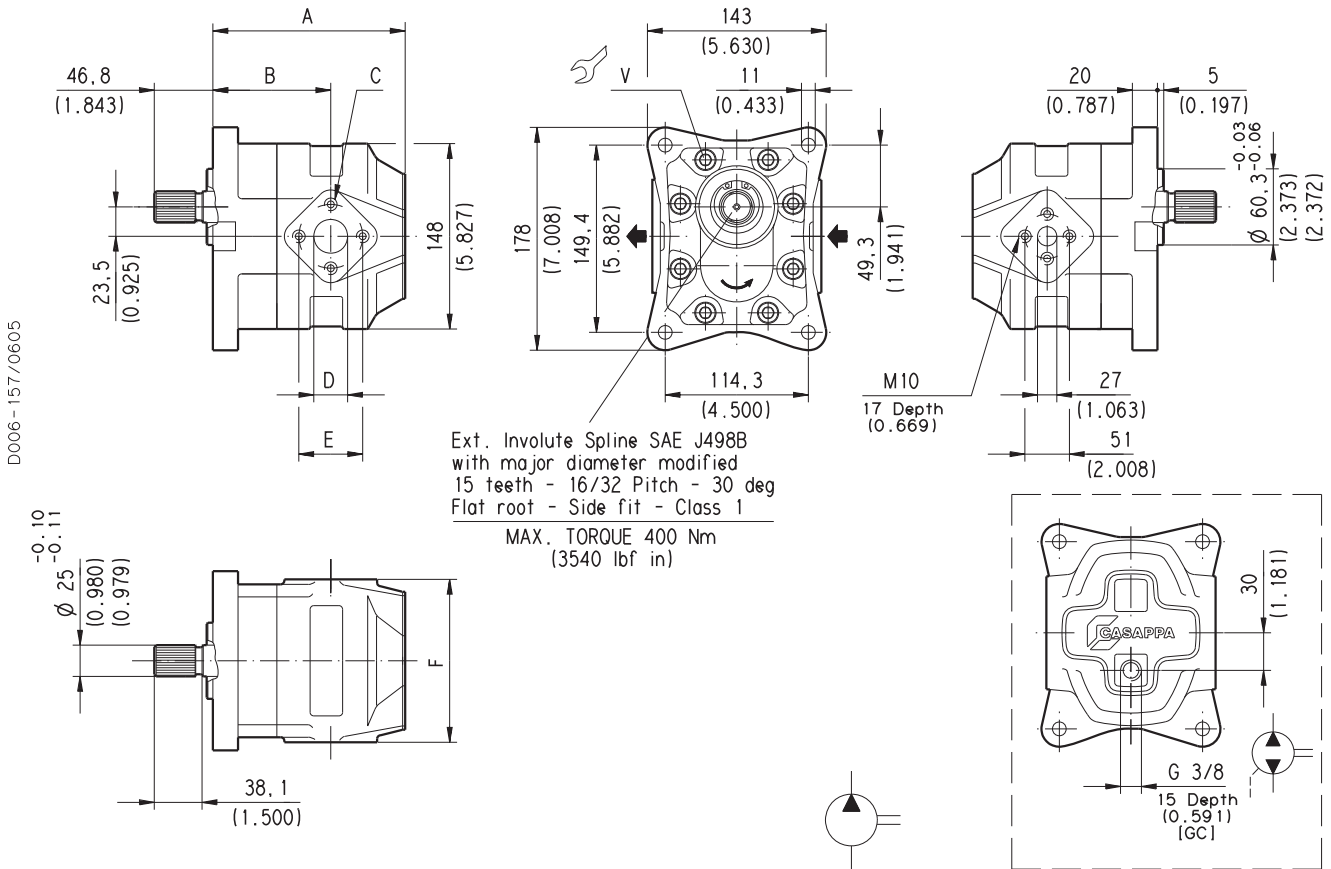
02/06.2005

Pump type		A	B	C	D	E	F			
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)			
KP 30-51	S	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)				

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)
KP 30-51 S	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 D		156 (6.142)	101 (3.976)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)
KP 30-73 B		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

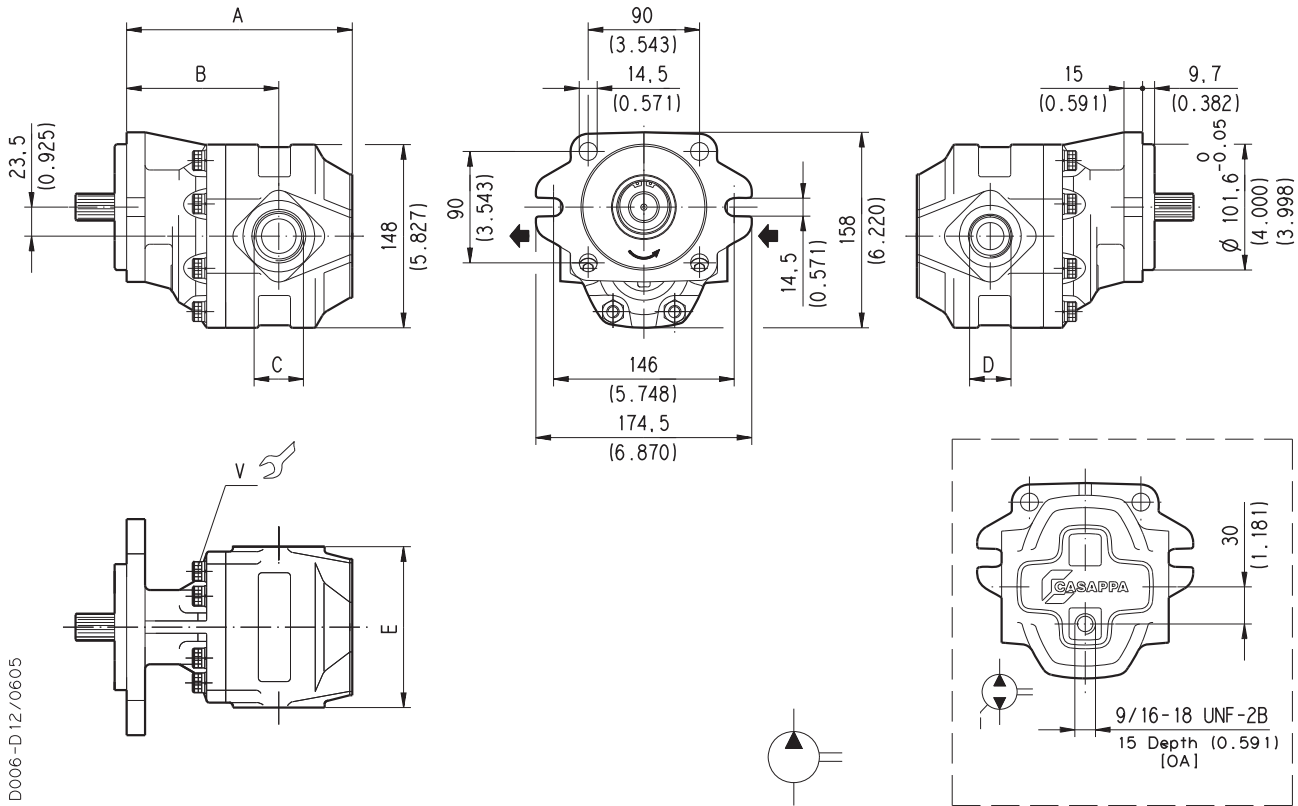
KAPPA 30

HYDRAULIC GEAR PUMPS SAE STANDARD

... S3

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

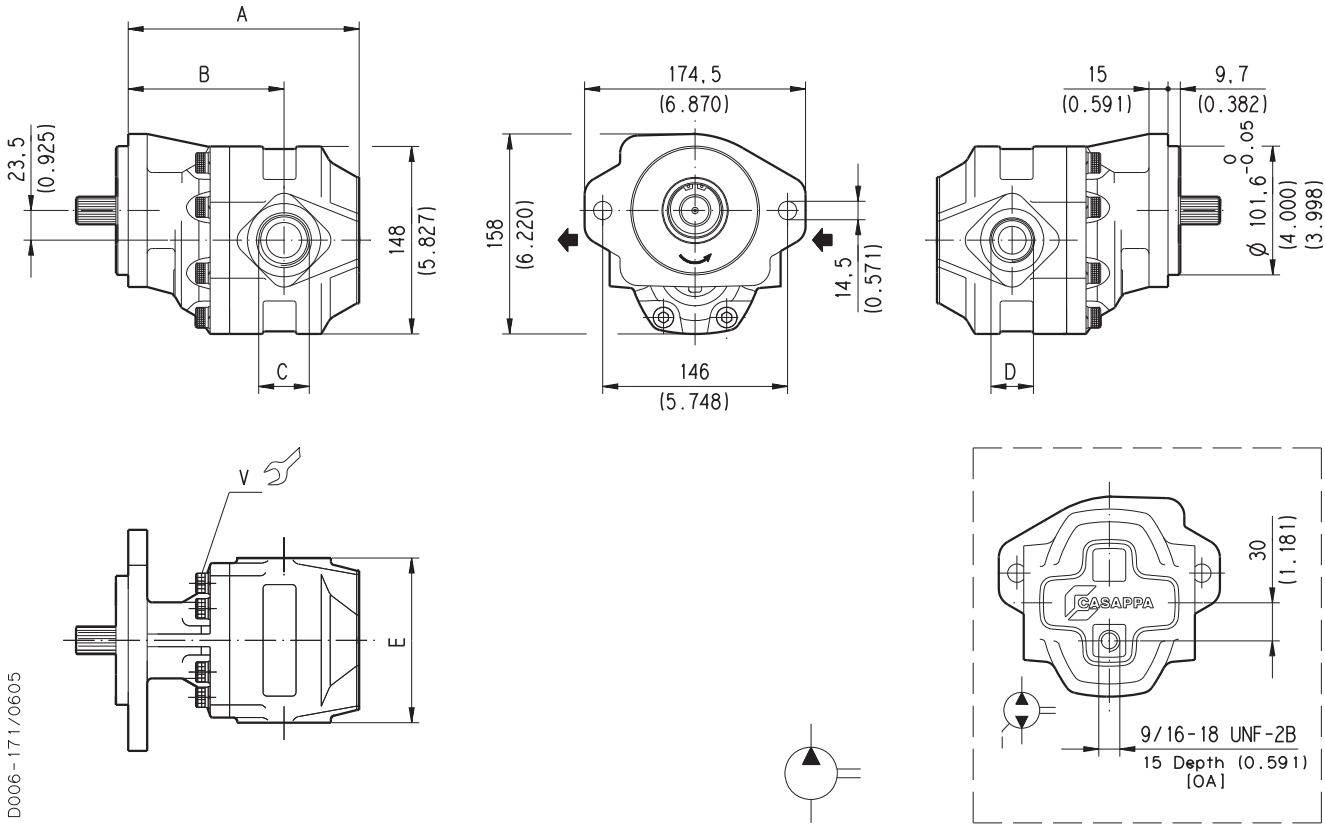
02/06.2005

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	135 (5.433)	OG	OF
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		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



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)					
KP 30-43	175 (6.890)	126 (4.961)	1-5/8-12 UN-2B	1-5/16-12 UN-2B	135 (5.433)	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)					

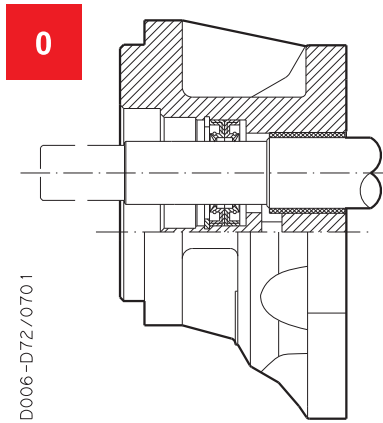
02/06.2005

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

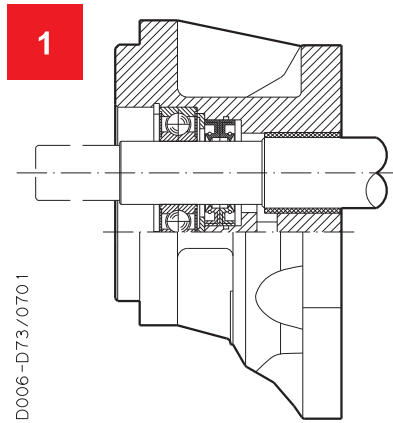
KAPPA 30 SAE VERSION

SAE

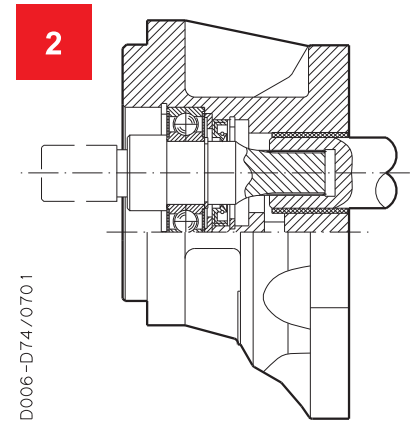
Replaces: 01/03.2002



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.

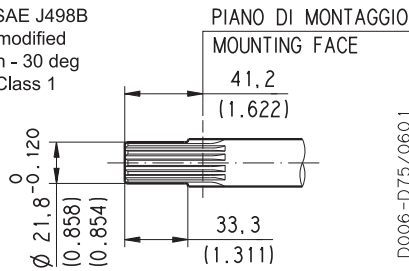
KAPPA 30 END DRIVE SHAFTS

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

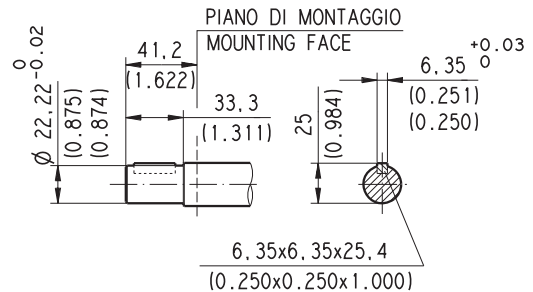


D006-D75/0601

○ **MAX 2921 lbf in (330 Nm) ◆**

SAE "B" STRAIGHT

32



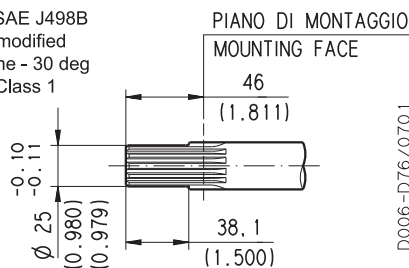
D006-D77/0601

◆ **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

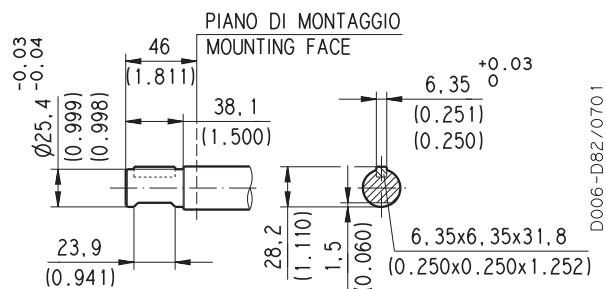


D006-D76/0701

○ **MAX 4426 lbf in (500 Nm) ◆**

SAE "BB" STRAIGHT

33



D006-D82/0701

◆ **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
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 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.

Replaces: 02/06.2005

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

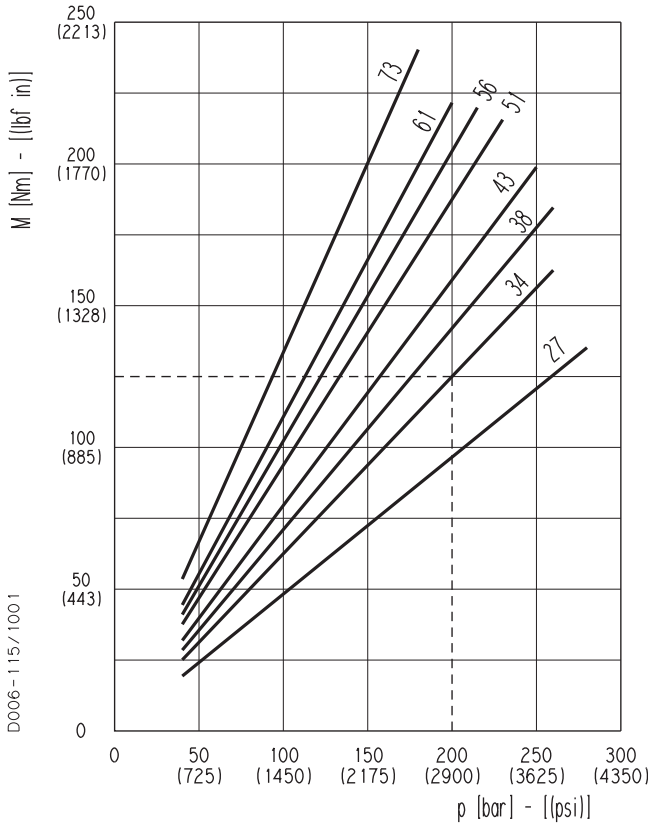
$$\begin{aligned}
 \bullet \quad M &= \frac{M_{theor.}}{\eta_{hm}} \quad [Nm] \\
 M_{theor.} &= \frac{\Delta p \text{ (bar)} \cdot V \text{ (cm}^3\text{/rev)}}{62,83}
 \end{aligned}$$

05/03.2012

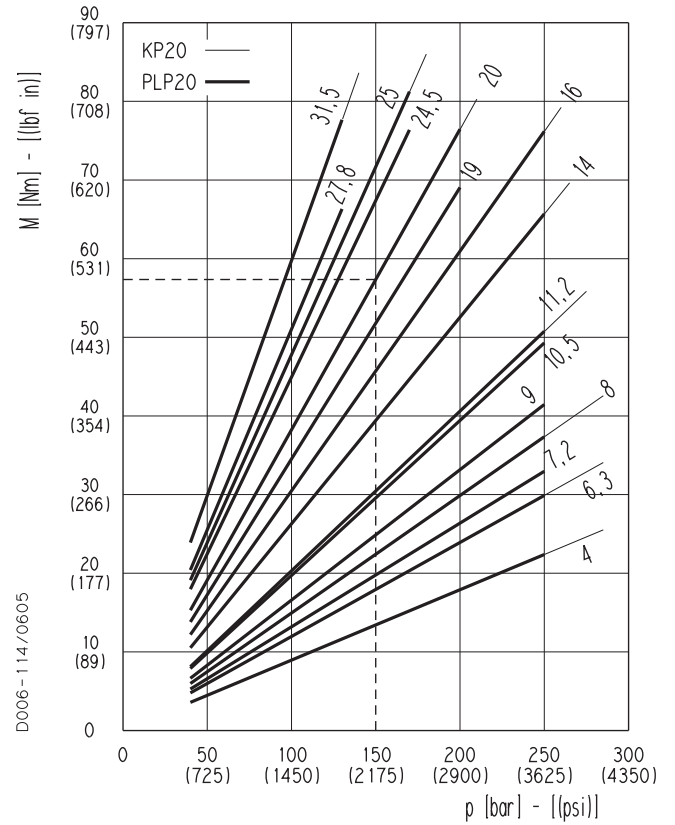
Note: The torque absorbed from the shaft of the first pump results from the sum of the torques due to all single stages. The achieved value must not exceed the maximum torque limit given for the shaft of the first pump. Diagrams providing approximate selection data will be found on page 36.

ABSORBED TORQUE

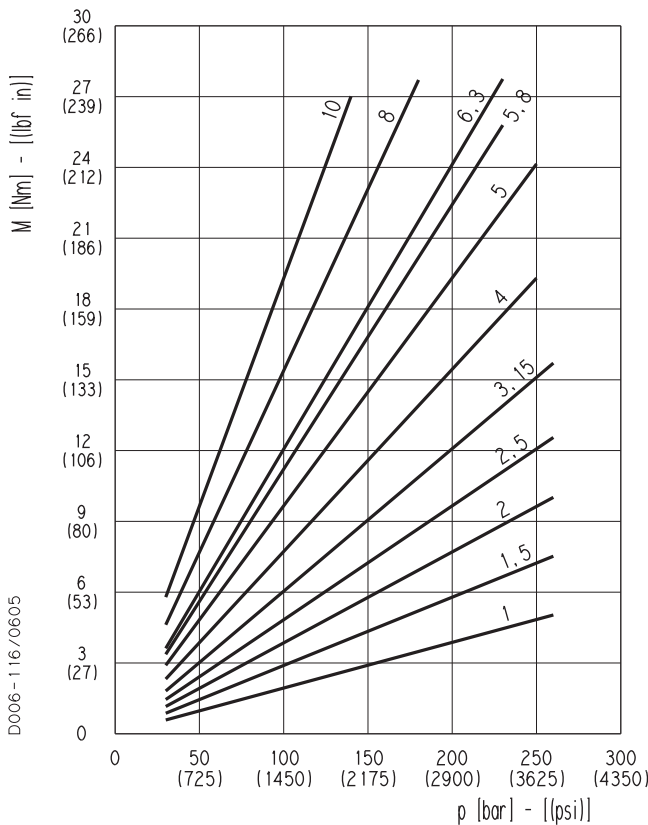
KP 30 1



KP 20 - PLP 20 2



PLP 10 3



DRIVE SHAFT SELECTION

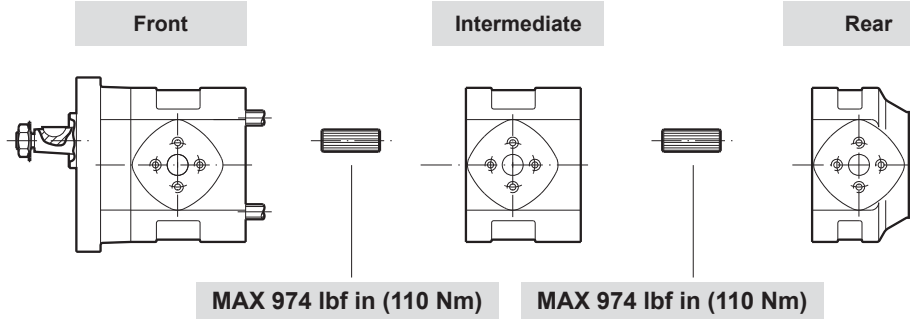
Let us consider a double pump KP30•34+KP20•20. If we suppose that we have to work with the first pump at a pressure of 2900 psi (200 bar) and the second pump at a pressure of 2175 psi (150 bar), the graph 1 shows that the torque absorbed by KP30•34 is 1106 lbf in (125 Nm) and the graph 2 shows that the torque absorbed by KP20•20 is 505 lbf in (57 Nm) acceptable value because it 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.

02/06.2005

KAPPA 20 + KAPPA 20

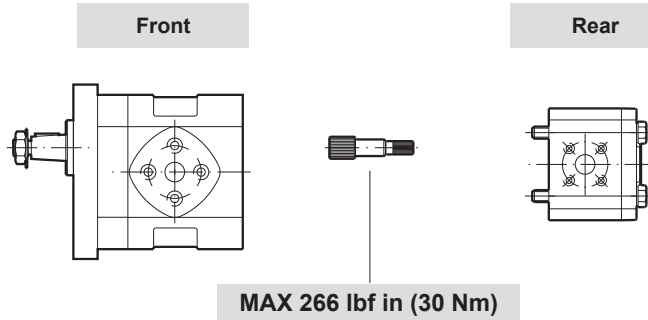
Replaces: 01/03.2002

D006-D27/070 1



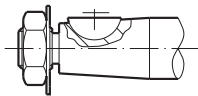
KAPPA 20 + POLARIS 10

D006-D21/070 1



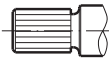
KAPPA 20 END DRIVE SHAFT

EUROPEAN TAPERED 1:8 **82**



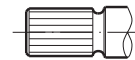
MAX 1239 lbf in (140 Nm)

SAE "A" SPLINE **03**



MAX 885 lbf in (100 Nm)

SAE SPLINE **01**



○ MAX 1151 lbf in (130 Nm)

SAE SPLINE **07**



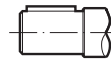
MAX 1505 lbf in (170 Nm)

SAE "B" SPLINE **04**



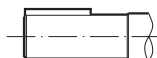
○ MAX 2478 lbf in (280 Nm)

SAE "A" STRAIGHT **31**



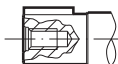
MAX 620 lbf in (70 Nm)

STRAIGHT **49**



MAX 1239 lbf in (140 Nm)

STRAIGHT **50**



MAX 885 lbf in (100 Nm)

SAE "B" STRAIGHT **32**

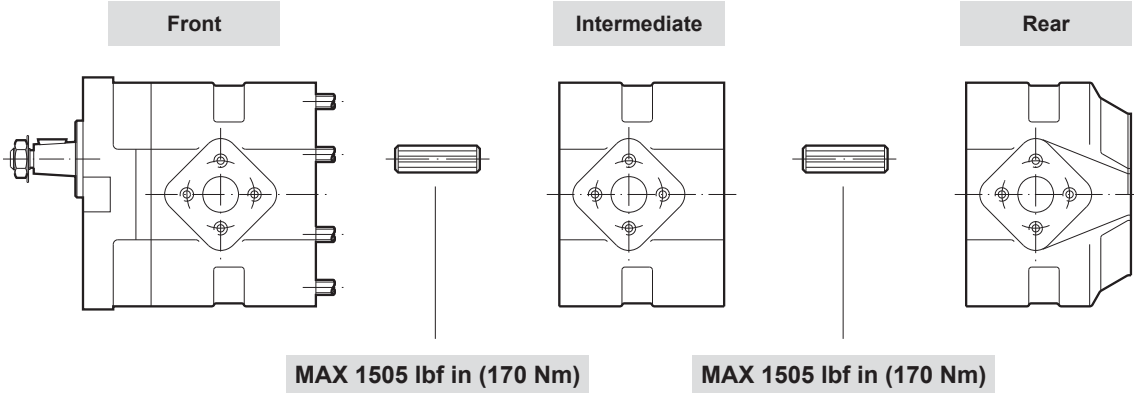


MAX 1770 lbf in (200 Nm)

○ 03/03.2006

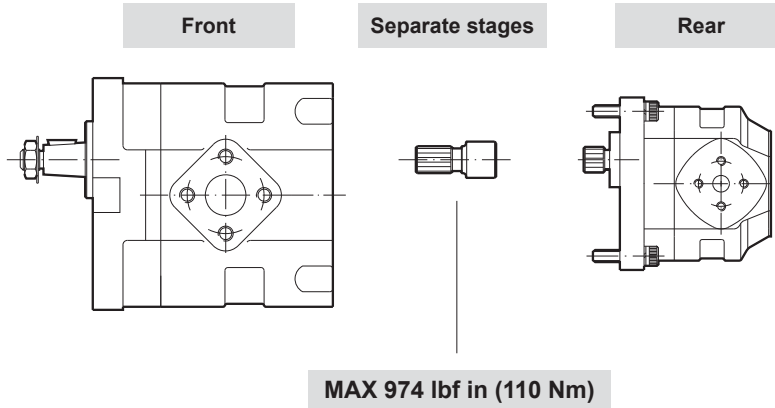
KAPPA 30 + KAPPA 30

D006-D23/0701



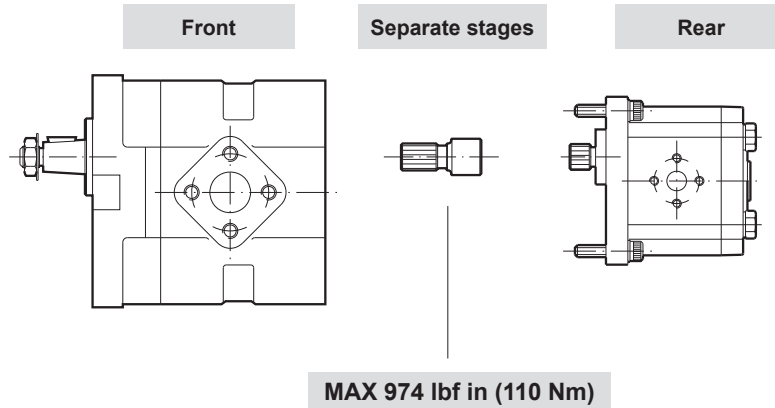
KAPPA 30 + KAPPA 20

D006-D22/0701



KAPPA 30 + POLARIS 20

D006-D26/0701

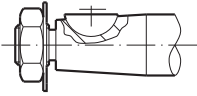


01/03.2002

KAPPA 30 END DRIVE SHAFTS

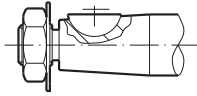
Replaces: 01/03.2002

EUROPEAN TAPERED 1:8 **83**



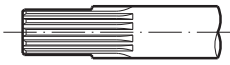
MAX 2124 lbf in (240 Nm)

EUROPEAN TAPERED 1:8 **84**



MAX 3098 lbf in (350 Nm)

SAE "B" SPLINE **04**



○ MAX 2921 lbf in (330 Nm)

SAE SPLINE **A8**



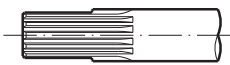
○ MAX 2478 lbf in (280 Nm)

SAE SPLINE **A5**



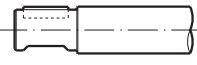
○ MAX 3540 lbf in (400 Nm)

SAE "BB" SPLINE **05**



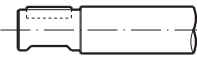
○ MAX 4426 lbf in (500 Nm)

SAE "B" STRAIGHT **32**



MAX 1770 lbf in (200 Nm)

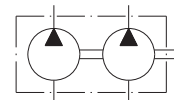
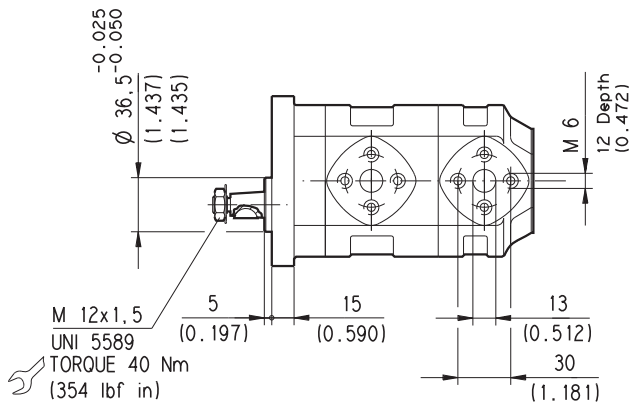
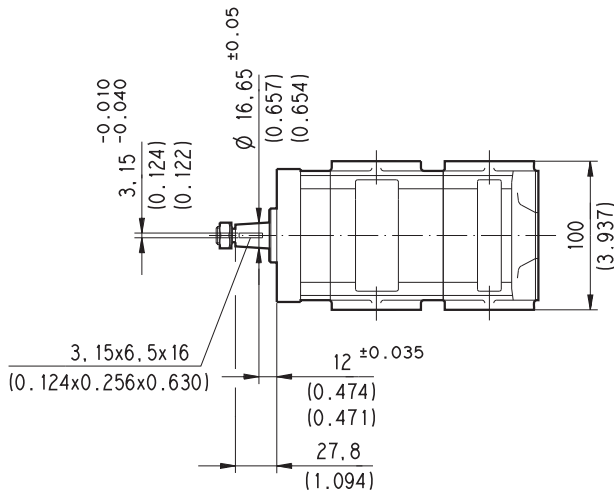
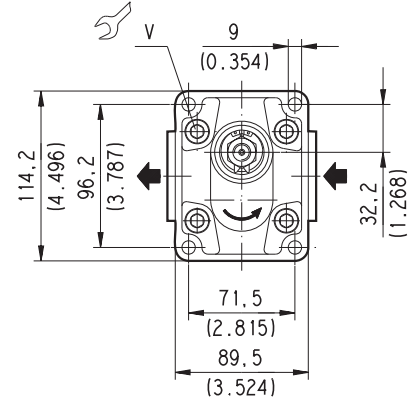
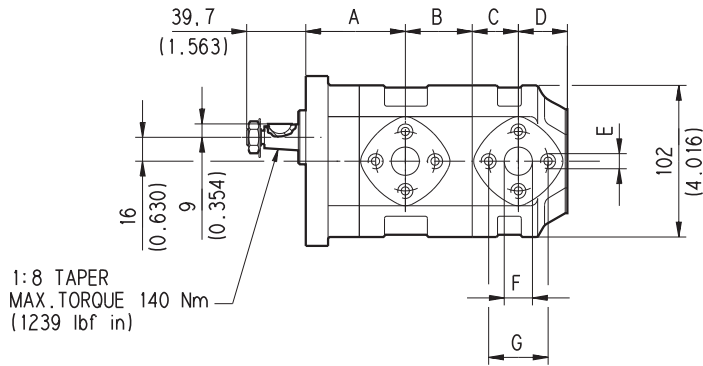
SAE "BB" STRAIGHT **33**



MAX 2478 lbf in (280 Nm)

○ 03/03.2006

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



D006-D05/0605

02/06.2005

V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

KAPPA 20	HYDRAULIC GEAR PUMPS EUROPEAN STANDARD	82 E2
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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)		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)				
KP 20•31,5	82 (3.228)		46 (1.811)				

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)



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

(2) For Buna N seals no code

ORDER EXAMPLE

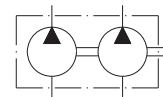
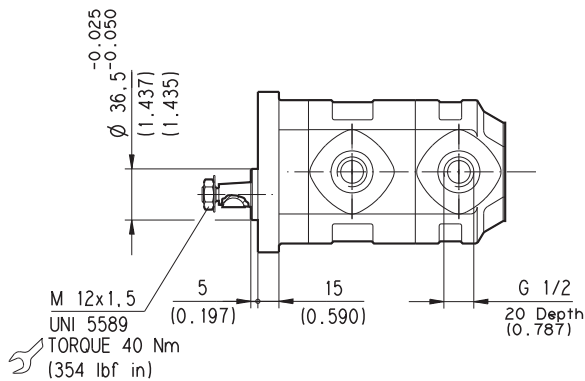
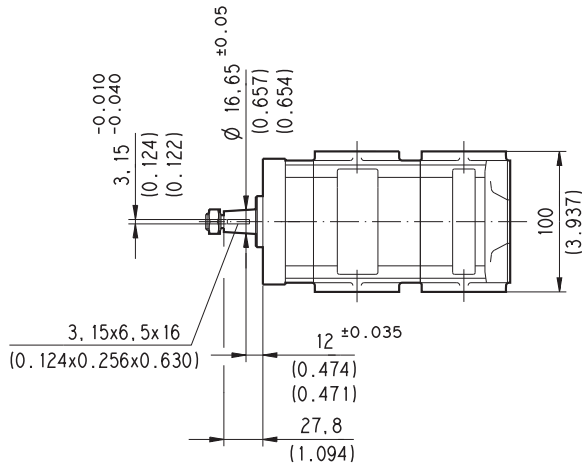
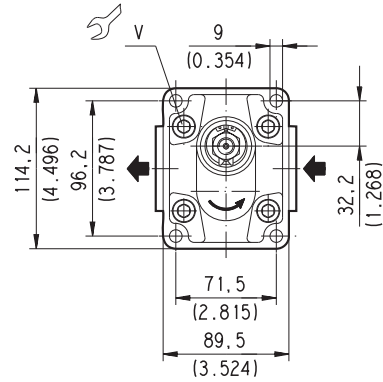
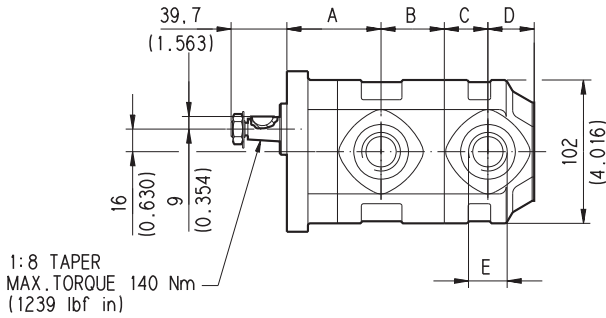
Double pump **KP20•4/20•4 S/FS**

Triple pump **KP20•4/20•4/20•4 S/FS**

02/06.2005

GAS STRAIGHT THREAD PORTS

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



D006-D92/0605

02/06.2005

V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

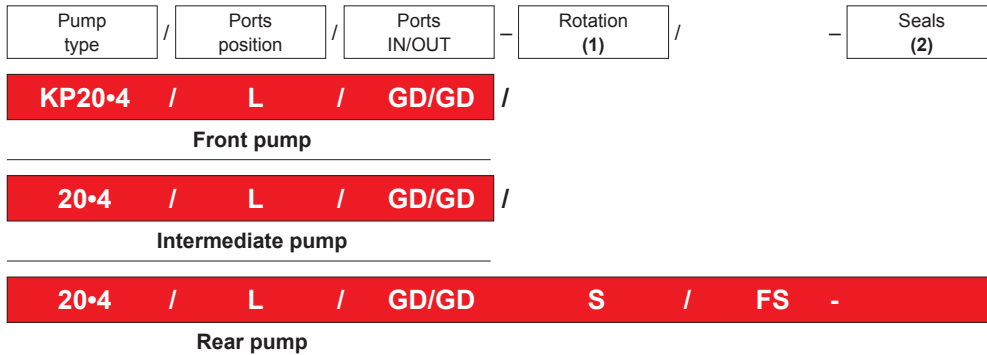
KAPPA 20	HYDRAULIC GEAR PUMPS EUROPEAN STANDARD	82 E2
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Pump type	A	B	C	D	E	Ports code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 20•4	60 (2.362)	37,5 (1.476)	24 (0.945)	27,5 (1.083)	G 1/2 Depth 20 (0.787)	GD	GD
KP 20•6,3	62,5 (2.461)		26,5 (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 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)



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

(2) For Buna N seals no code

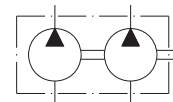
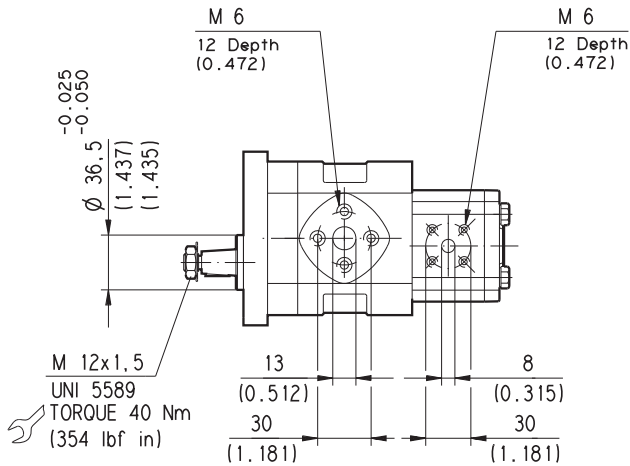
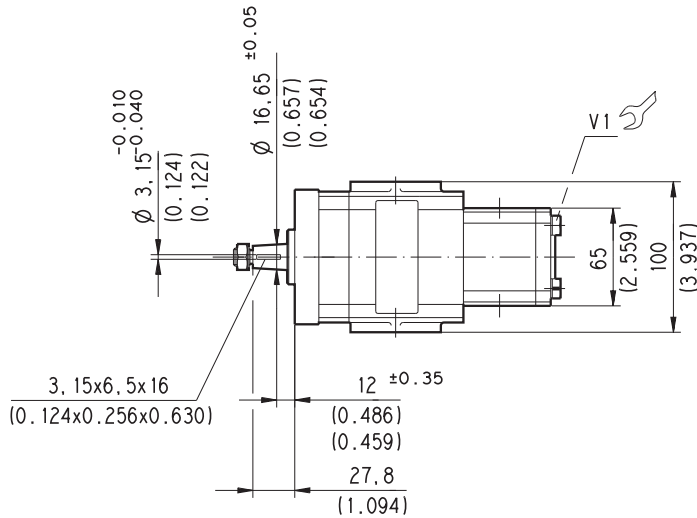
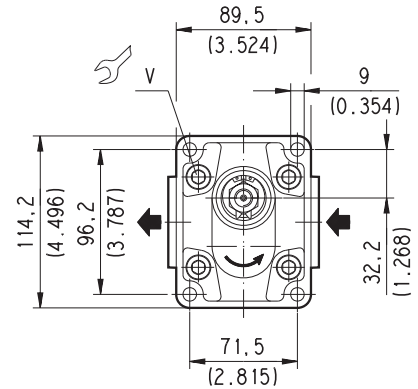
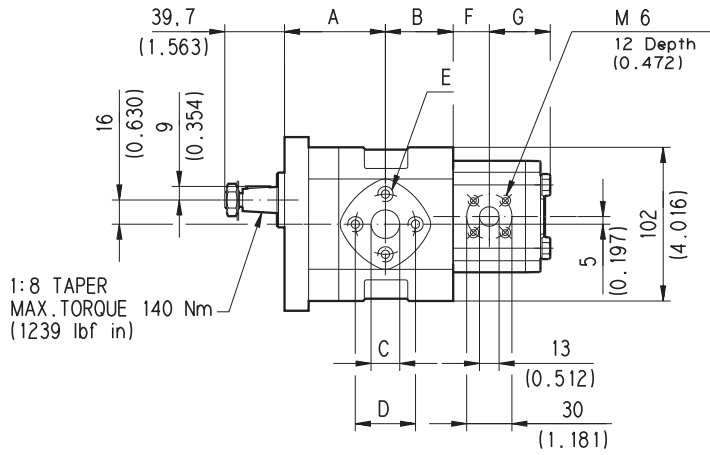
ORDER EXAMPLE

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**

02/06.2005

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



D006-D06/0605

02/06.2005

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)	33 (1.299)	M 8 Depth 14 (0.551)
KP 20•14	67 (2.638)	45 (1.772)	31 (1.220)		
KP 20•16	72,5 (2.854)	43 (1.693)	36,5 (1.437)		
KP 20•20	79 (3.110)	58 (2.283)	43 (1.693)	48 (1.890)	
KP 20•25	72 (2.835)		36 (1.417)		
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

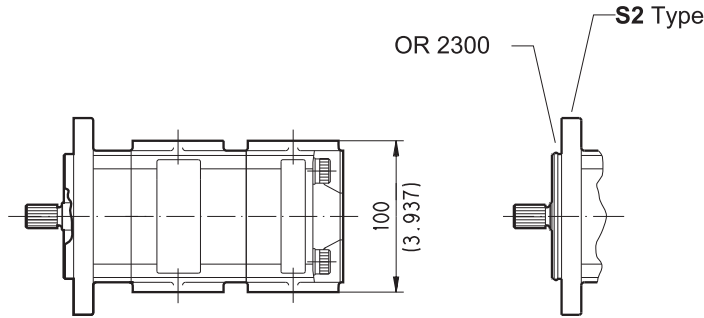
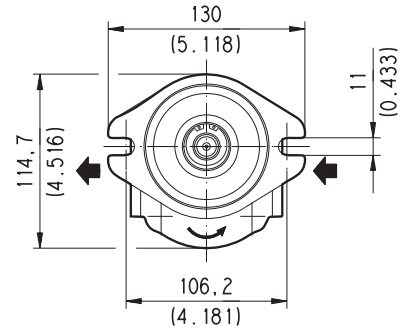
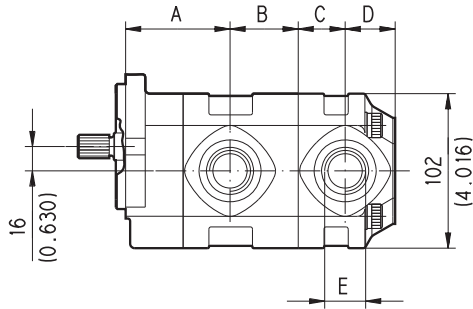
ORDER EXAMPLE

Double pump

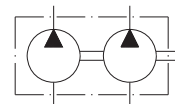
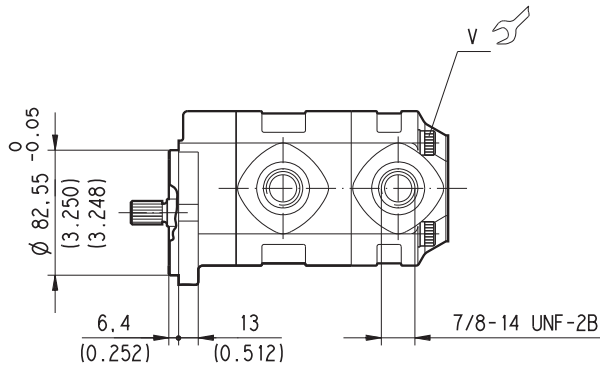
KP20•4/PLP10•1 S/FS

SAE STRAIGHT THREAD PORTS J514

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



D006-D93/0605



02/06.2005

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

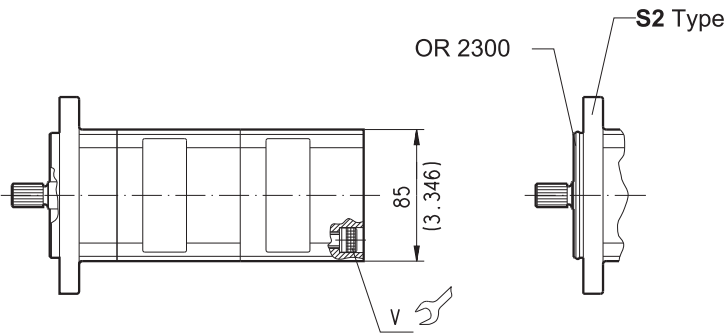
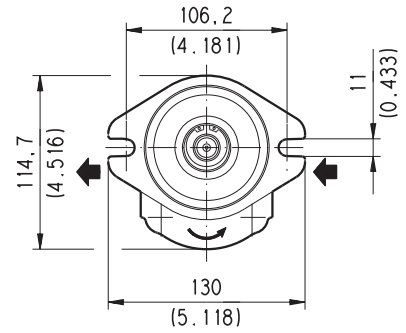
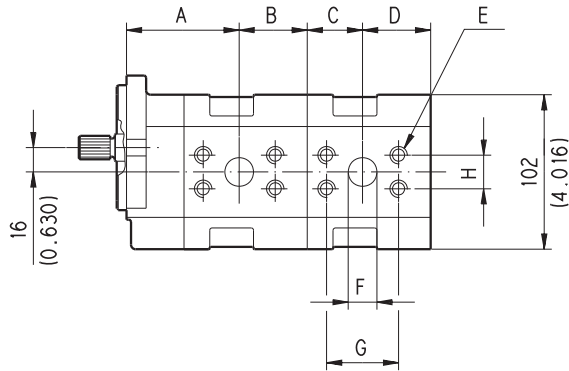
Pump type	A	B	C	D	E	Ports code	
	mm (in)	mm (in)	mm (in)	mm (in)		IN	OUT
KP 20•4	62 (2.441)	37,5 (1.476)	24 (0.945)	27,5 (1.083)	7/8-14 UNF-2B	OC	OC
KP 20•6,3	64,5 (2.539)		26,5 (1.043)				
KP 20•8	67 (2.638)		29 (1.142)				
KP 20•11,2	70,5 (2.776)		32,5 (1.280)				
KP 20•14	69 (2.717)	45 (1.772)	31 (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)				
KP 20•31,5	84 (3.307)		46 (1.811)				

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

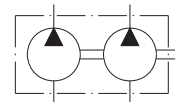
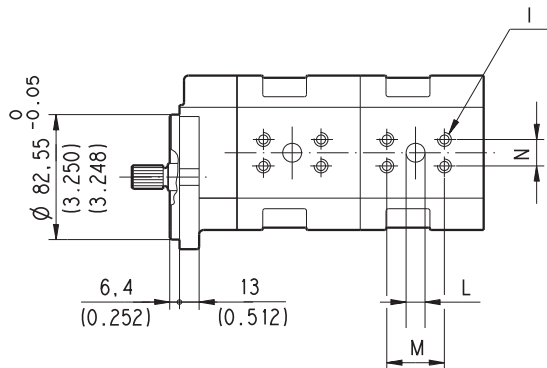
To order see page 54 e 55

SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

Metric thread ISO 60° conforms to ISO/R 262



D006-128/0605



02/06.2005

V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

KAPPA 20	HYDRAULIC GEAR PUMPS SAE STANDARD	... S1
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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 length of a triple pump is obtained with the sum of the following dimensions: **A+B+C+B+C+D**.

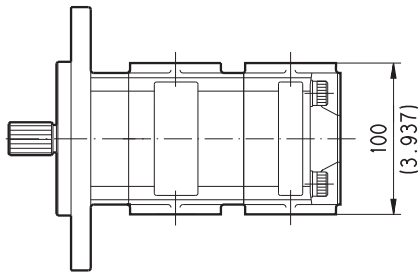
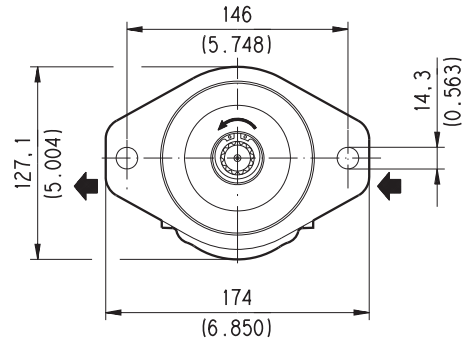
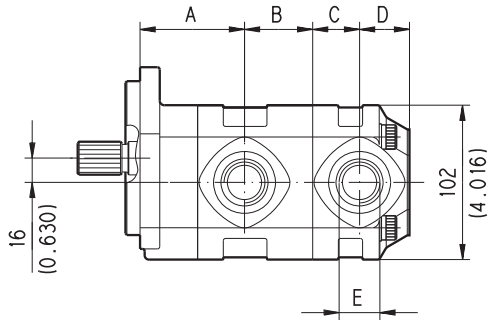
Pump type	E	F	G	H	I	L	M	N	Port code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 20-4	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	M8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	MA	MA
KP 20-6,3										
KP 20-8										
KP 20-11,2										
KP 20-14	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MB	MB
KP 20-16										
KP 20-20										
KP 20-25										
KP 20-31,5		25,4 (1.000)	52,4 (2.063)	26,2 (1.031)		19 (0.748)	47,6 (1.874)	22,2 (0.874)	MC	MB

02/06.2005

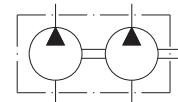
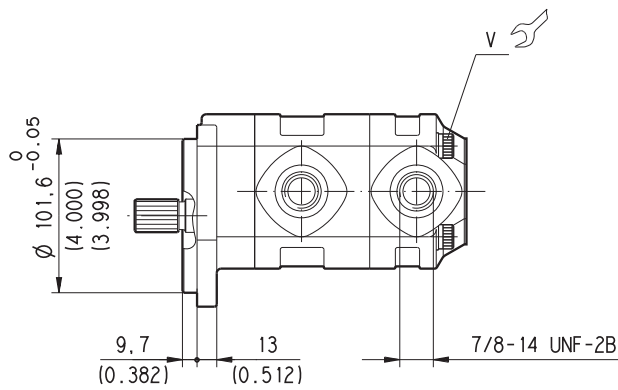
To order see page 54 e 55

SAE STRAIGHT THREAD PORTS J514

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



D006-166/0605



02/06.2005

V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

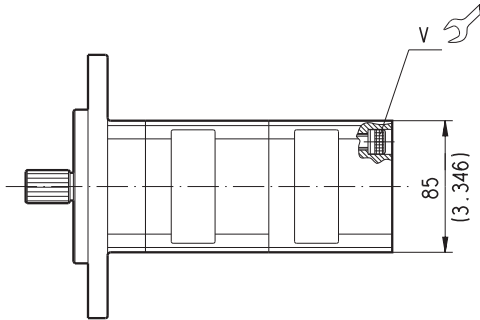
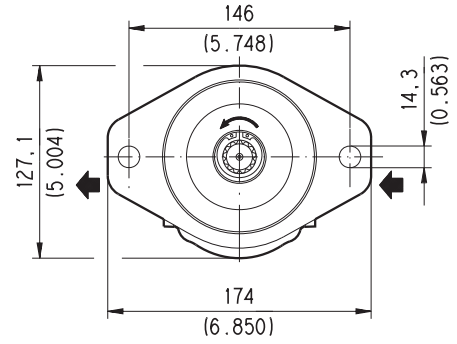
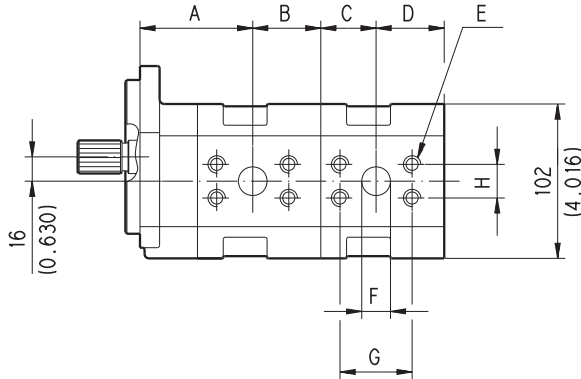
Pump type	A	B	C	D	E	Ports code	
	mm (in)	mm (in)	mm (in)	mm (in)		IN	OUT
KP 20•4	62 (2.441)	37,5 (1.476)	24 (0.945)	27,5 (1.083)	7/8-14 UNF-2B	OC	OC
KP 20•6,3	64,5 (2.539)		26,5 (1.043)				
KP 20•8	67 (2.638)		29 (1.142)				
KP 20•11,2	70,5 (2.776)		32,5 (1.280)				
KP 20•14	69 (2.717)	45 (1.772)	31 (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)				
KP 20•31,5	84 (3.307)		46 (1.811)				

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

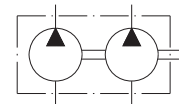
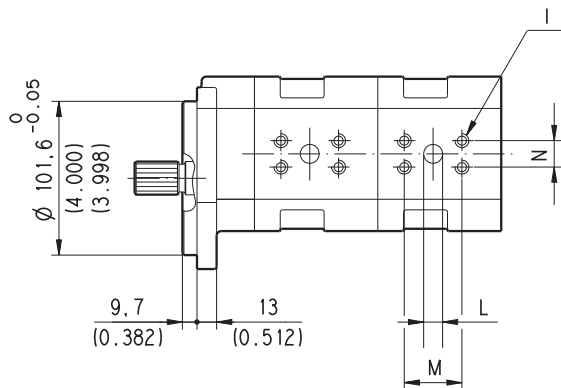
To order see page 54 e 55

SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

Metric thread ISO 60° conforms to ISO/R 262



D006-167/0605



02/06.2005

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 length 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	Port 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)	M8 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)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MB	MB
KP 20-16										
KP 20-20										
KP 20-25										
KP 20-31,5		25,4 (1.000)	52,4 (2.063)	26,2 (1.031)					MC	MB

02/06.2005

To order see page 54 e 55

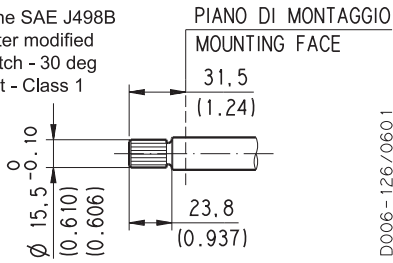
KAPPA 30 SAE VERSION

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

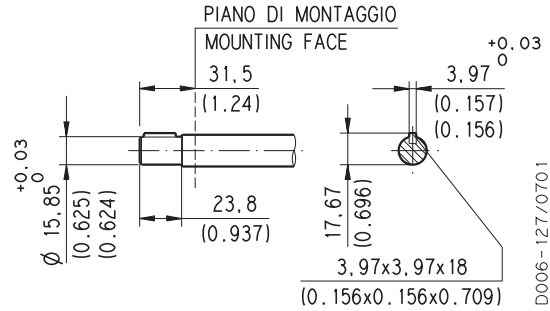


D006-126/0601

MAX 885 lbf in (100 Nm)

SAE "A" STRAIGHT

31



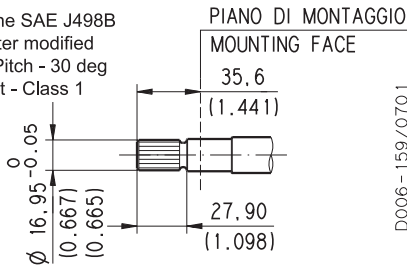
D006-127/0701

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

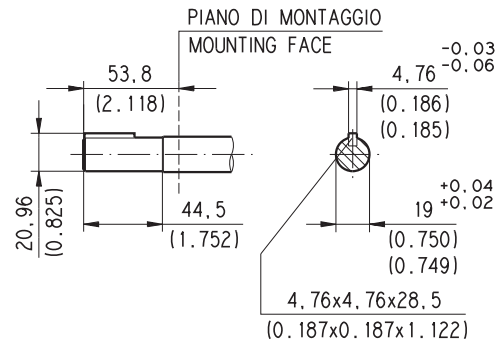


D006-159/0701

MAX 1151 lbf in (130 Nm)

STRAIGHT

49



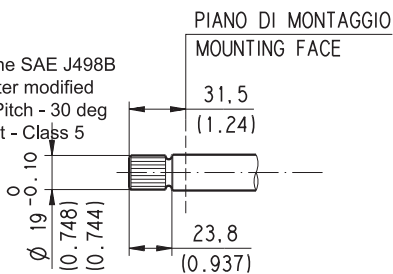
D006-161/0701

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

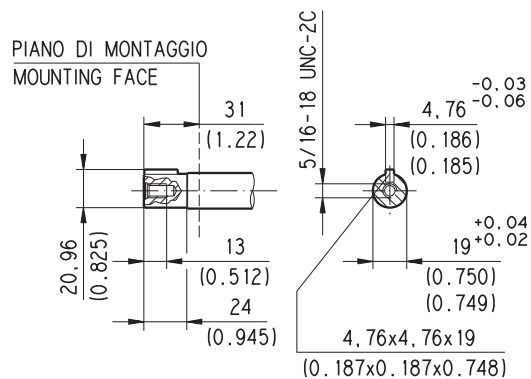


D006-160/0701

MAX 1505 lbf in (170 Nm)

STRAIGHT

50



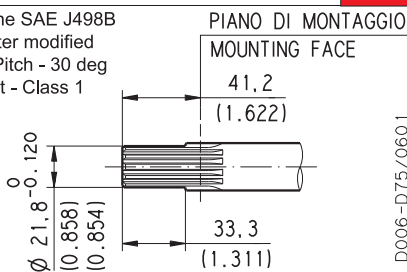
D006-162/0701

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

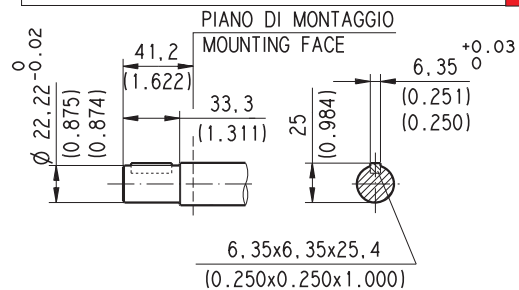


D006-D75/0601

MAX 2478 lbf in (280 Nm)

SAE "B" STRAIGHT

32



D006-D77/0601

MAX 1770 lbf in (200 Nm)

Replaces: 01/03.2002

03/03.2006

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 ump						
20•4	–		L	O/COC	/	
Intermediate ump						
20•4	–		L	OC/OC	S	– 0 N
Rear ump						

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 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

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	Ports IN/OUT	5
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		
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•20
MB/MA		KP 20•16
MC/MB		KP 20•25
MC/MB		KP 20•31,5

CODE	Ports position	6
S	Left	
D	Right	

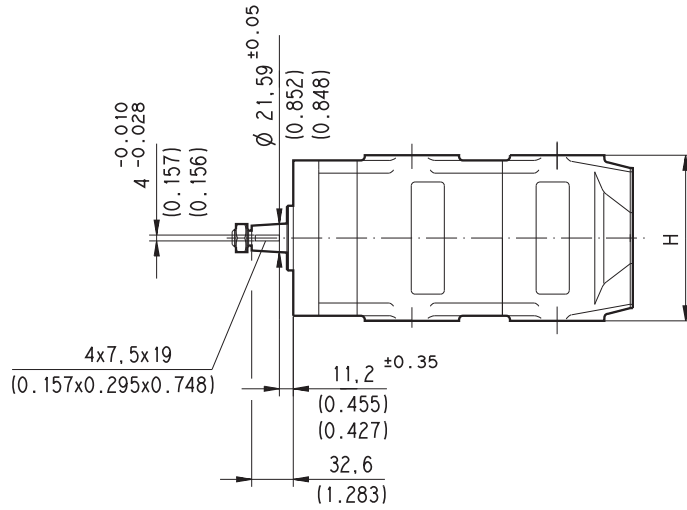
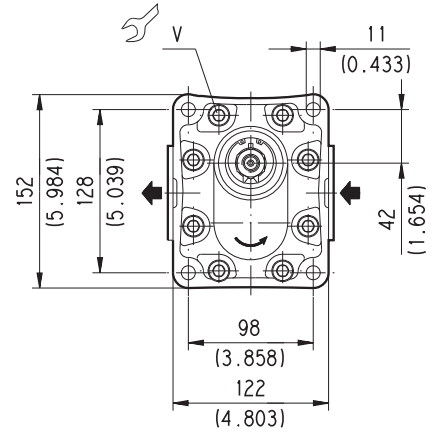
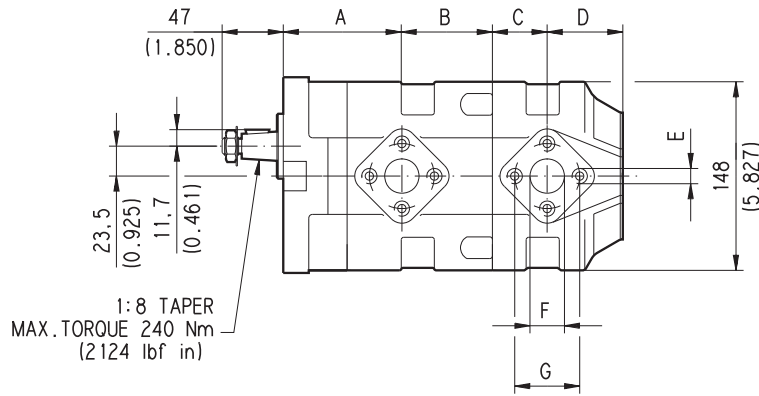
CODE	Seals (b)	7
	Buna N (standard) - no code	
N-H	Buna with high back pressure shaft seals	
V	Viton	
N Bz	Buna N and Bronze thrust plates	
V Bz	Viton and Bronze thrust plates	

(a) Available only with 04 and 32 shaft

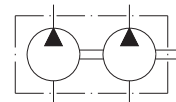
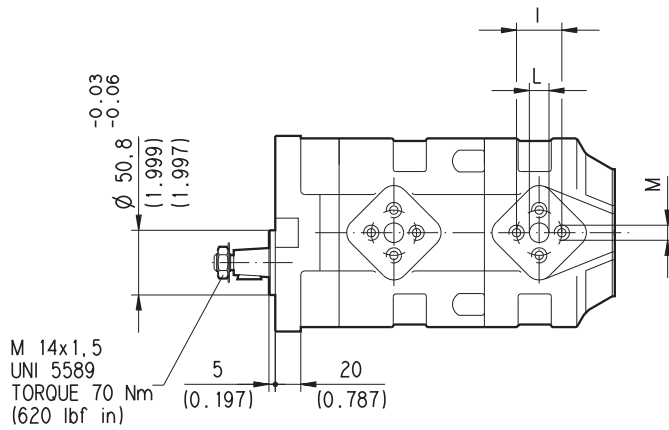
(b) Choose the seals according to the temperature shown on page 1

02/06.2005

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



D006-D14/0605



02/06.2005

V Screws tightening torque Nm (lbf in)

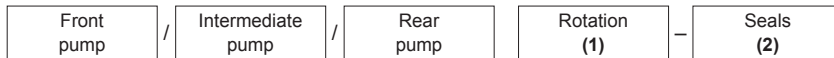
70 \pm 7 (558 \div 682)

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 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)



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

(2) For Buna N seals no code

02/06.2005

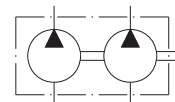
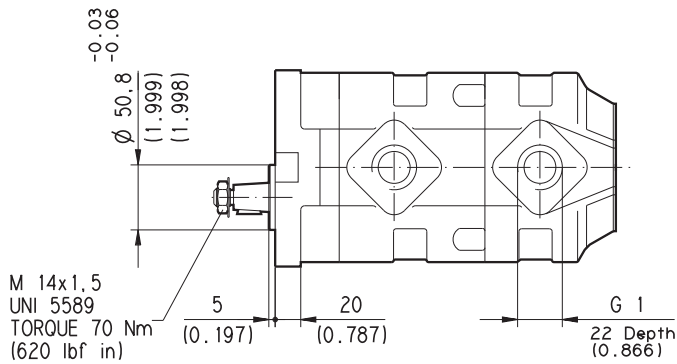
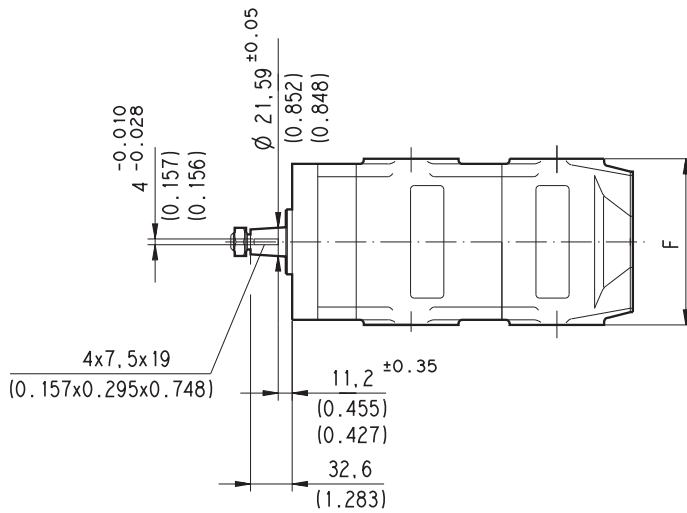
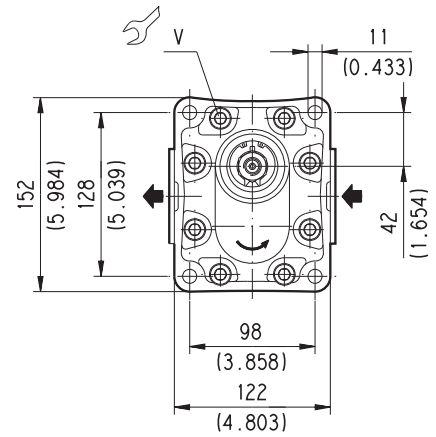
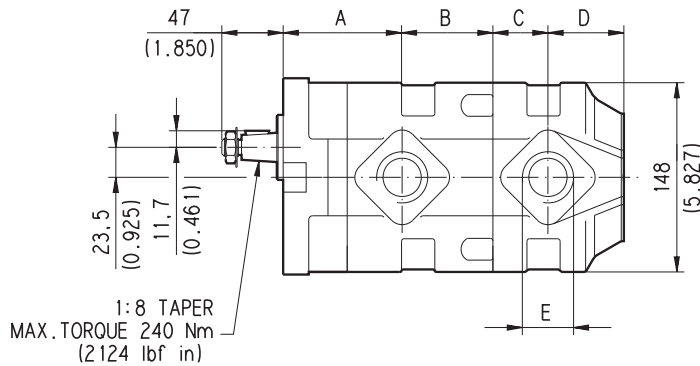
ORDER EXAMPLE

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



D006-D16/0605

02/06.2005

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)				
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 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

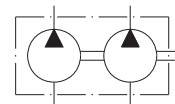
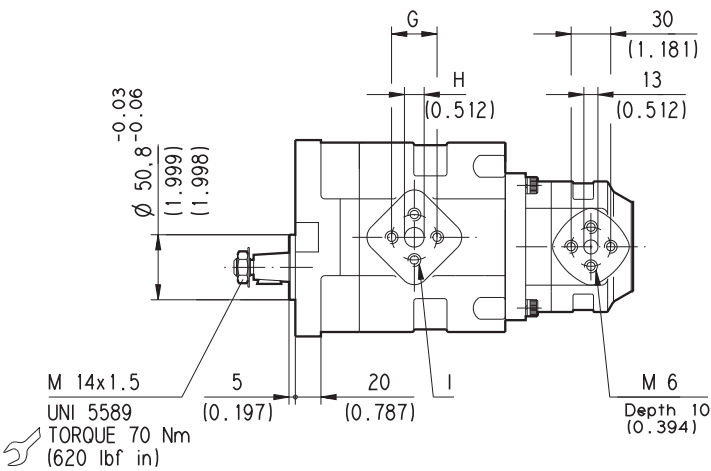
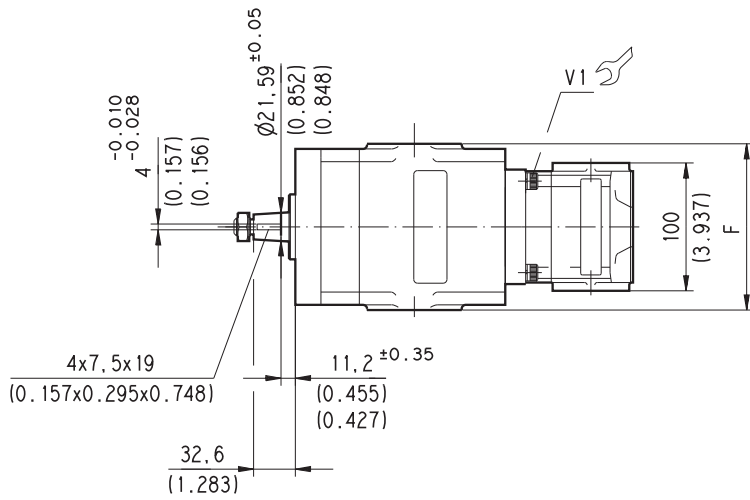
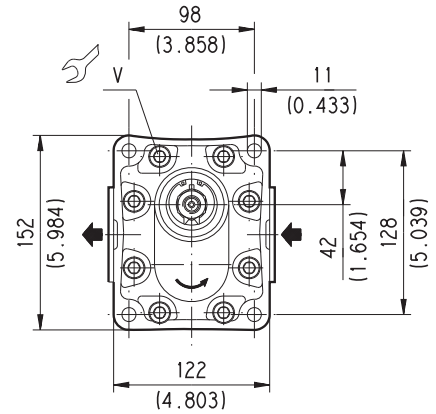
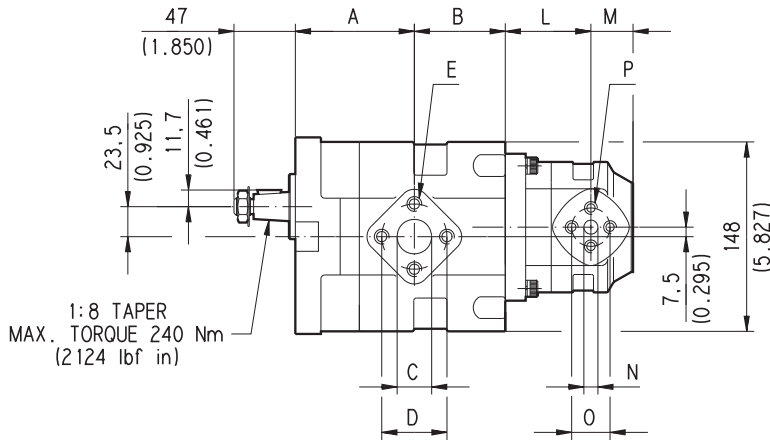
02/06.2005

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

02/06.2005

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)	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)				

02/06.2005

How to order a double pump

Front pump	-	/	Rear pump		Rotation (1)	-	Seals (2)
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KP30•27 / 67 / 20•4 / S -

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

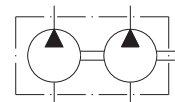
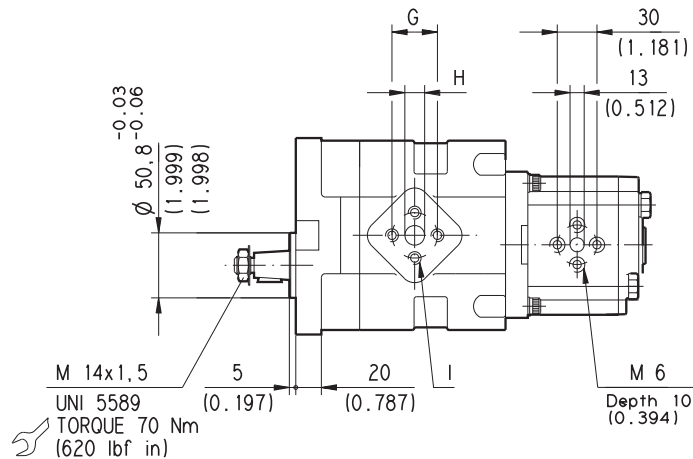
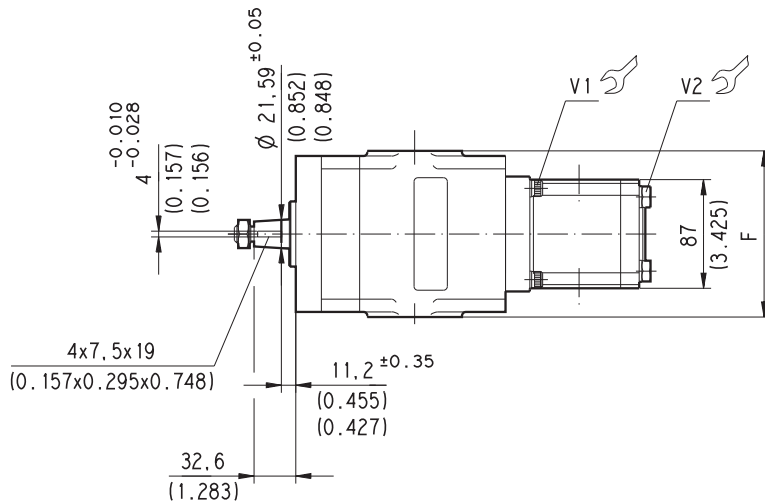
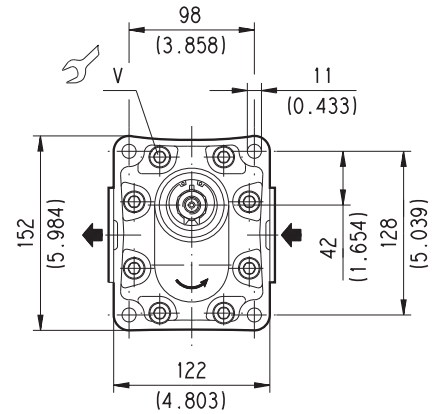
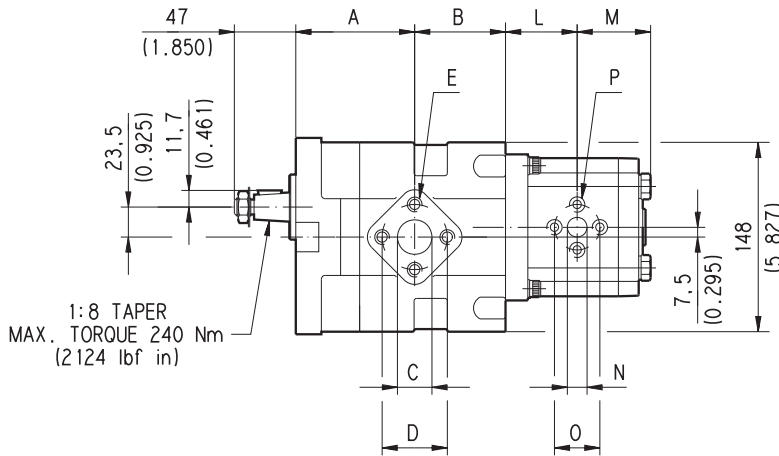
(2) For Buna N seals no code

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 ^{±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)	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)			
PLP 20•14	51 (2.008)	56,5 (2.224)	91 (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)			

02/06.2005

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

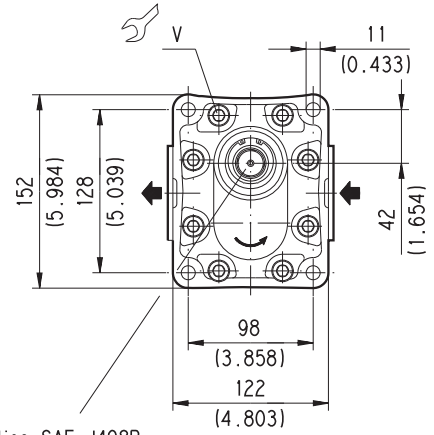
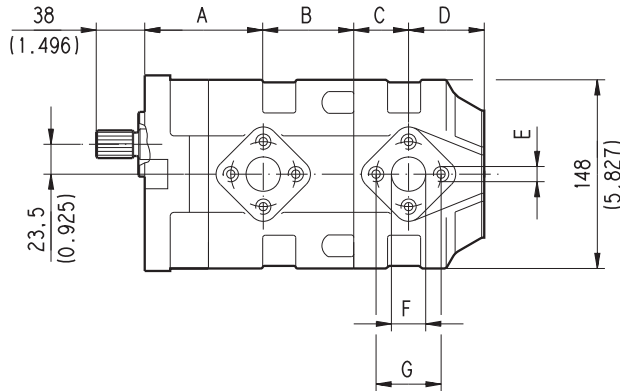
(2) For Buna N seals no code

ORDER EXAMPLE

Double pump

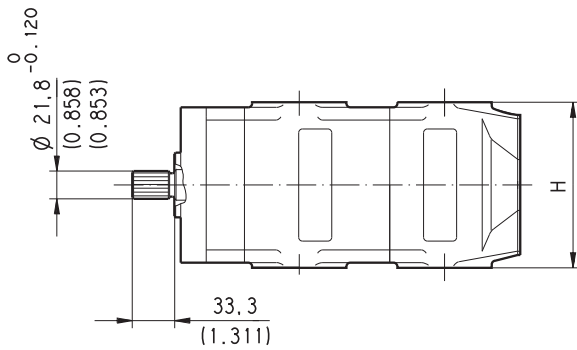
KP30•27-67/PLP20•4 S/FS

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

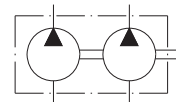
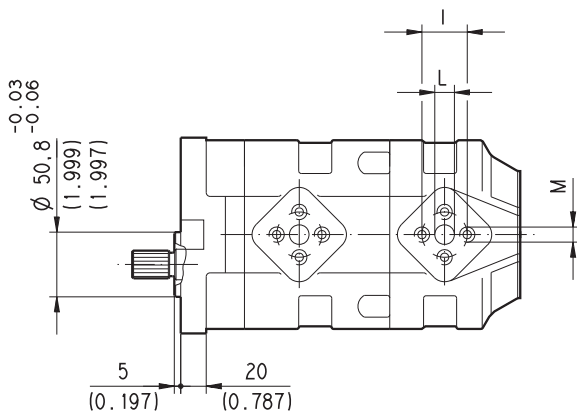


Ext. Involute Spline SAE J498B
with major diameter modified
13 teeth - 16/32 Pitch - 30 deg
Flat root - Side fit - Class 1

MAX. TORQUE 280 Nm
(2478 lbf in)



D006-151/0605



02/06.2005

V Screws tightening torque Nm (lbf in)

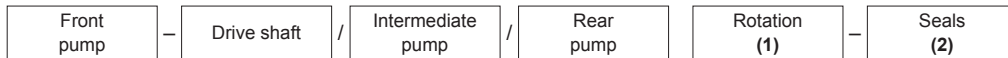
70 ^{±7} (558 ÷ 682)

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 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)



KP30•27 / A8 / 30•27 / 30•27 / S -

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

(2) For Buna N seals no code

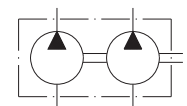
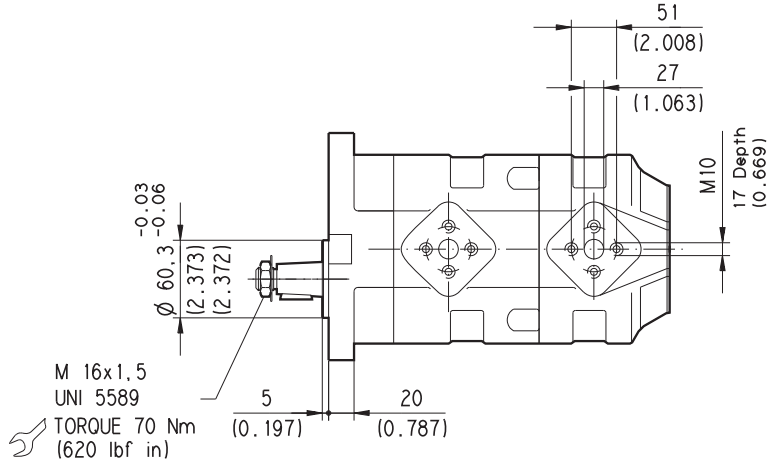
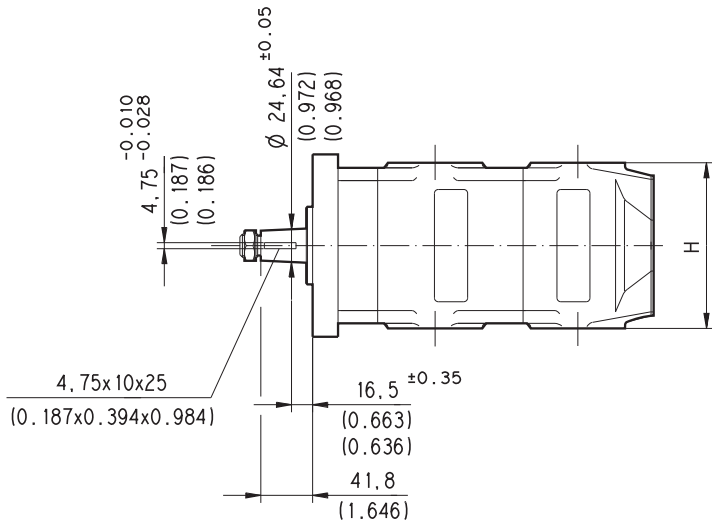
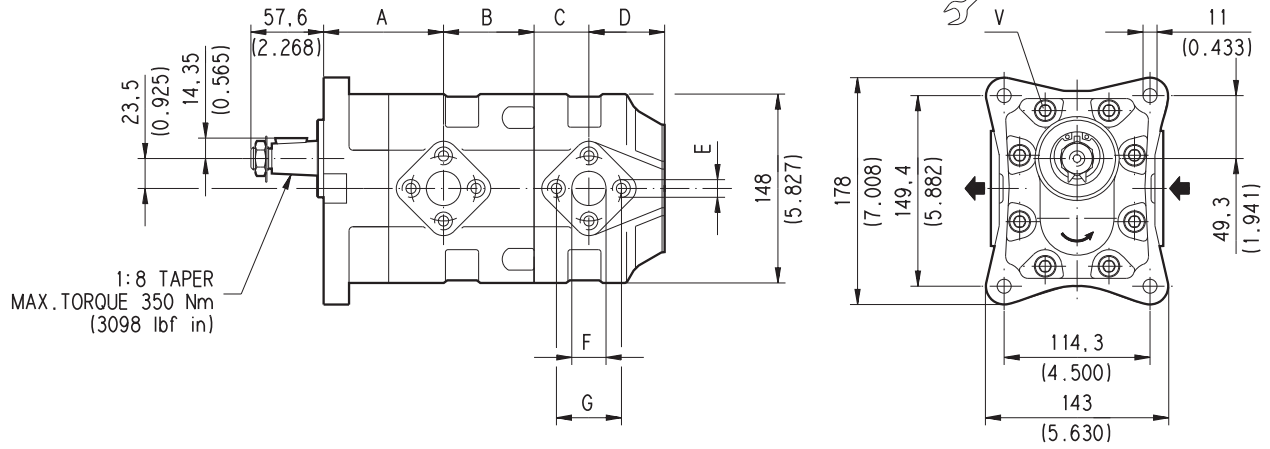
02/06.2005

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



D006-D17/0605

02/06.2005

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

KAPPA 30	HYDRAULIC GEAR PUMPS EUROPEAN STANDARD	84 E4
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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

02/06.2005

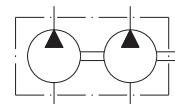
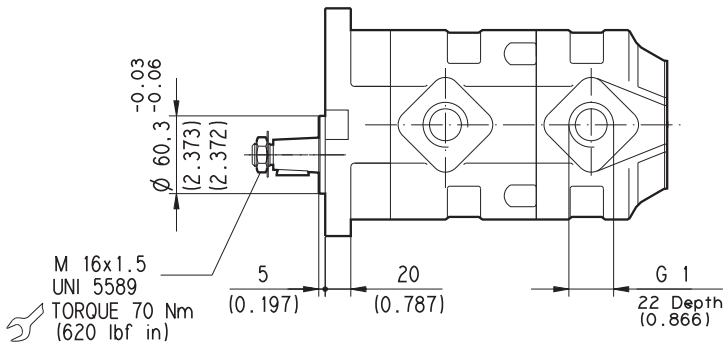
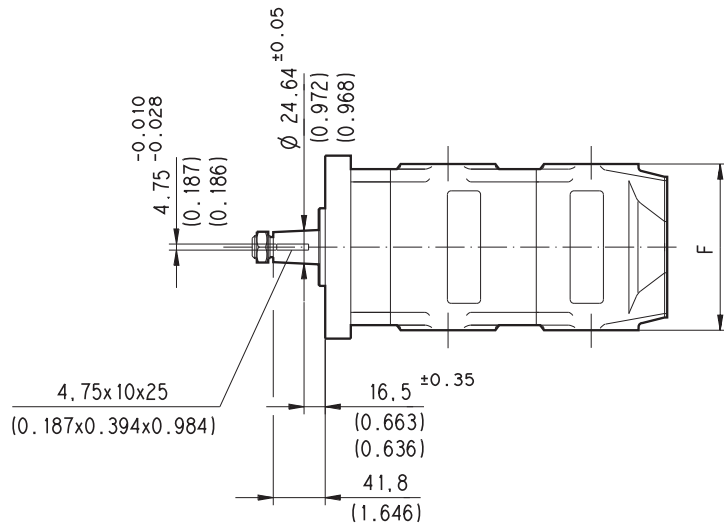
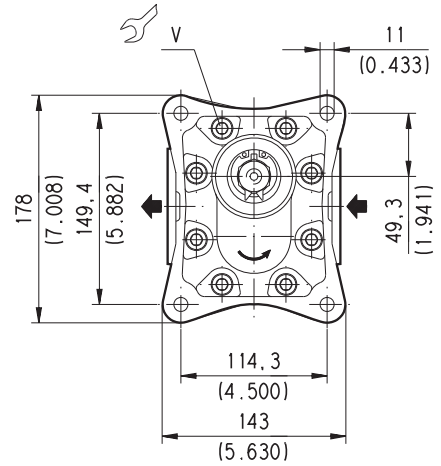
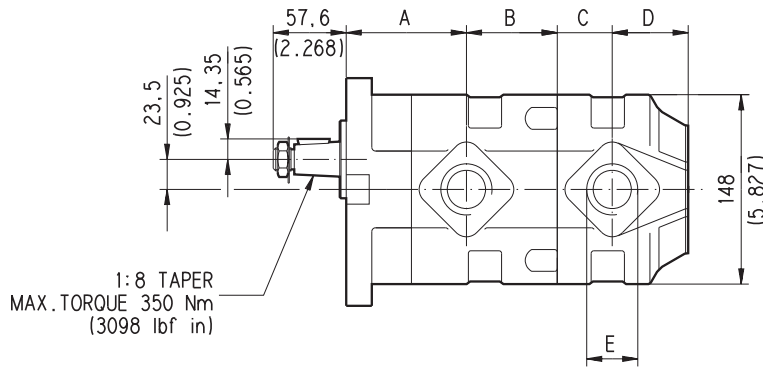
ORDER EXAMPLE

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



D006-D95/0605

02/06.2005

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 30-51	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

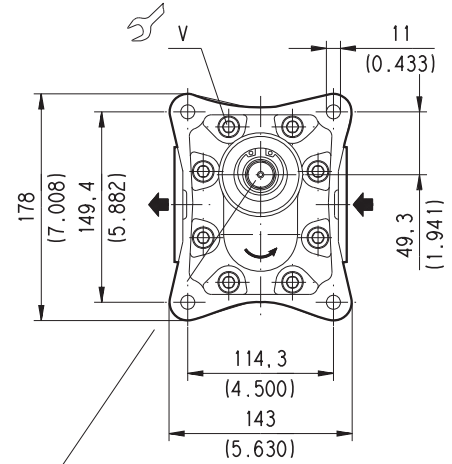
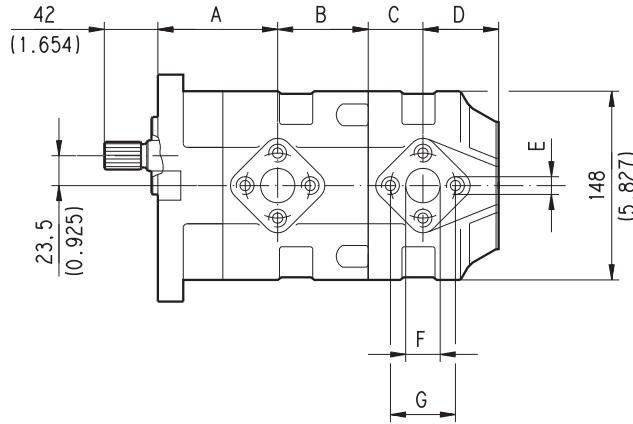
02/06.2005

ORDER EXAMPLE

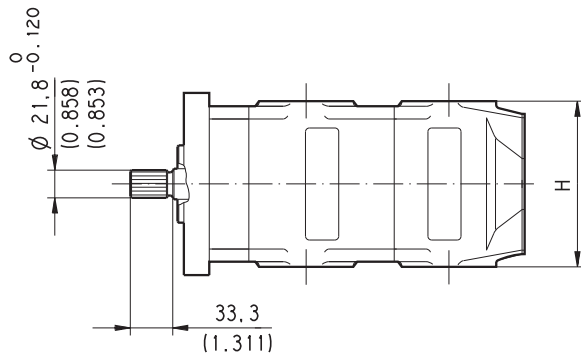
Double pump **KP30-51-84 E4-LGF/GF/30-51-LGF/GF S**

Triple pump **KP30-51-84 E4-LGF/GF/30-51-LGF/GF/30-51-LGF/GF S**

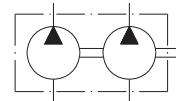
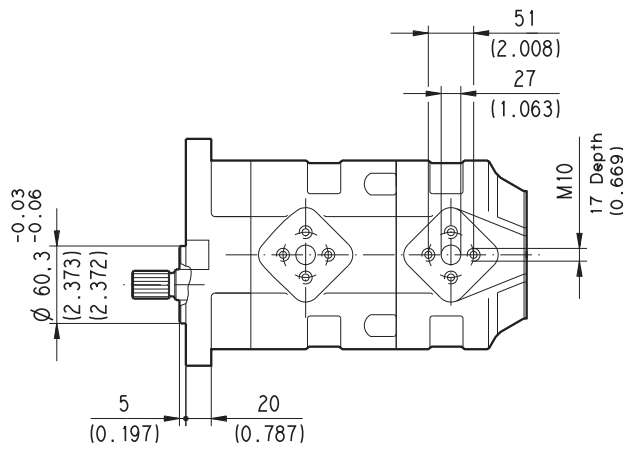
EUROPEAN FLANGED PORTS - 4 Bolts
Metric thread ISO 60° conforms to ISO/R 262



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)



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
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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

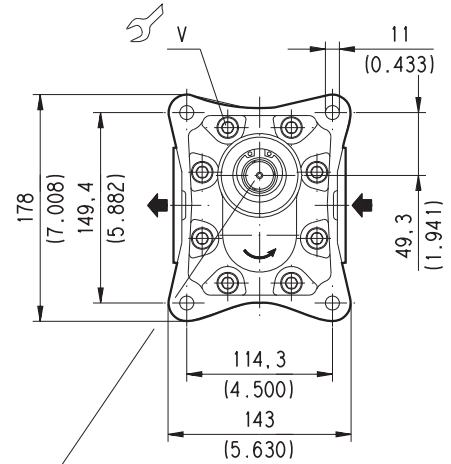
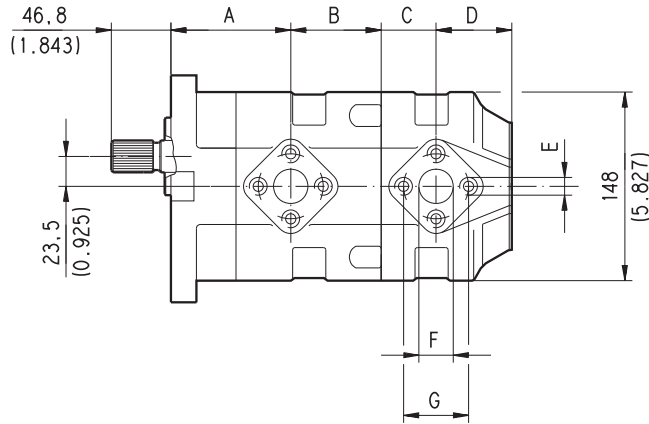
02/06.2005

ORDER EXAMPLE

Double pump **KP30-51-A8 E4-LED/ED/30-51-LED/ED S**

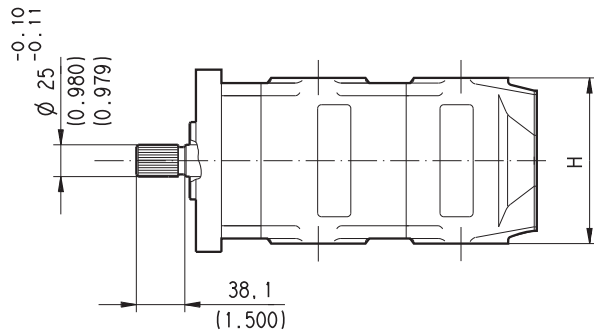
Triple pump **KP30-51-A8 E4-LED/ED/30-51-LED/ED/30-51-LED/ED S**

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

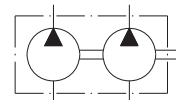
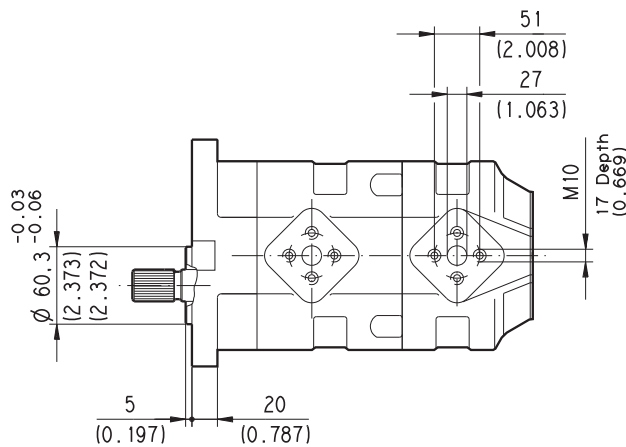


Ext. Involute Spline SAE J498B
with major diameter modified
15 teeth-16/32 Pitch-30 deg
Flat Root-Side fit-Class 1

MAX. TORQUE 400 Nm
(3540 lbf in)



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
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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)		
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

02/06.2005

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
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

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

p₁= Max. continuous pressure

p₂= Max. intermittent pressure

p₃= Max. peak pressure

The values in the table refer to unidirectional motors.
 Reversible motors max pressures are 15% lower than those shown in table.
 For different working conditions please consult our sales department.

Motor type	Displacement	Max. pressure			Max. speed	Min. speed
		p_1	p_2	p_3		
	in ³ /rev (cm ³ /rev)	psi (bar)			min ⁻¹	
KM 30-27	1.63 (26,7)	4060 (280)	4350 (300)	4495 (310)	3000	350
KM 30-34	2.11 (34,56)	3770 (260)	4060 (280)	4350 (300)	3000	350
KM 30-38	2.40 (39,27)	3770 (260)	4060 (280)	4350 (300)	3000	350
KM 30-43	2.68 (43,98)	3625 (250)	3915 (270)	4205 (290)	3000	350
KM 30-51	3.16 (51,83)	3335 (230)	3625 (250)	3915 (270)	2500	350
KM 30-56	3.45 (56,54)	3118 (215)	3408 (235)	3698 (255)	2500	350
KM 30-61	3.74 (61,26)	2900 (200)	3190 (220)	3480 (240)	2500	350
KM 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 motors.

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

For different working conditions please consult our sales department.

DESIGN CALCULATIONS FOR MOTORS

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
$\eta_v = \eta_v (V, \Delta p, n)$		($\approx 0,97$) Volumetric efficiency
$\eta_{hm} = \eta_{hm} (V, \Delta p, n)$		($\approx 0,88$) Hydro-mechanical efficiency
$\eta_t = \eta_v \cdot \eta_m$		($\approx 0,85$) Overall efficiency

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

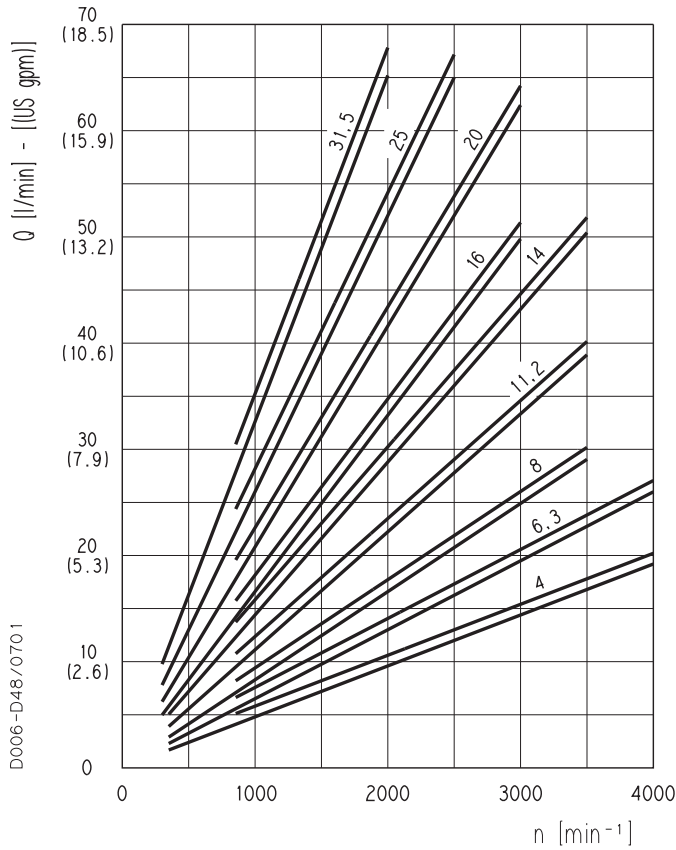
05/03.2012

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

KAPPA 20 GEAR MOTORS PERFORMANCE CURVES

KM 20

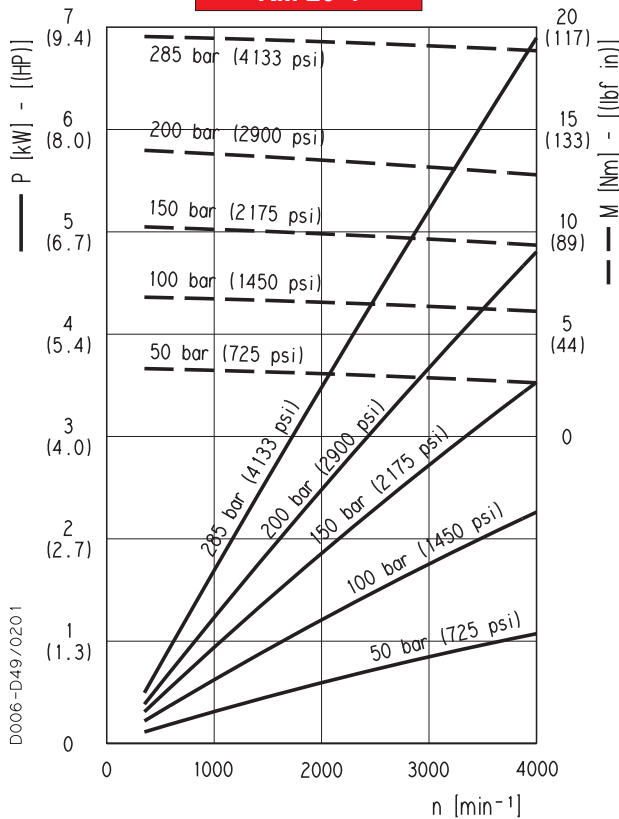
KM 20



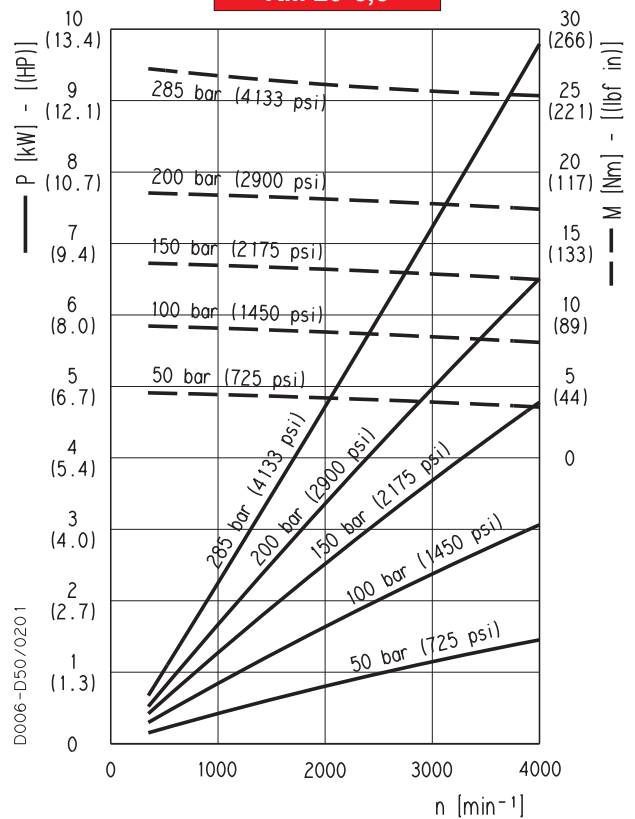
Each curve has been obtained at 122 °F (50 °C), using oil with viscosity 168 SSU (36 cSt) at 104 °F (40 °C) and at these pressures:

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

KM 20•4



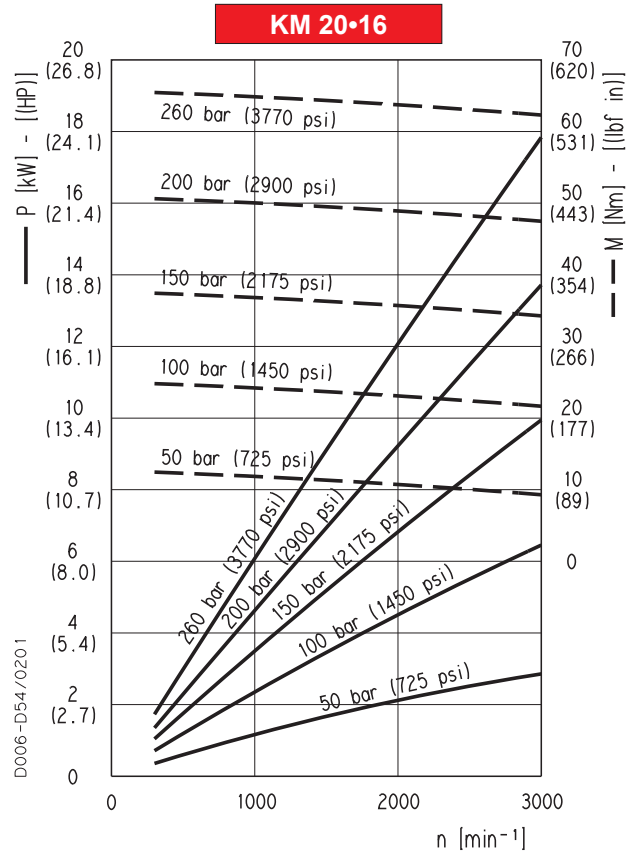
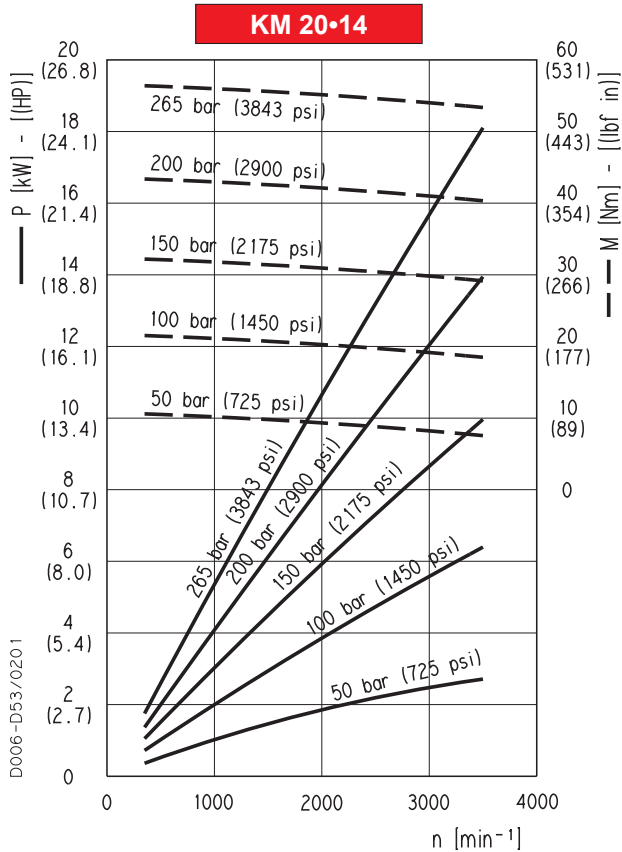
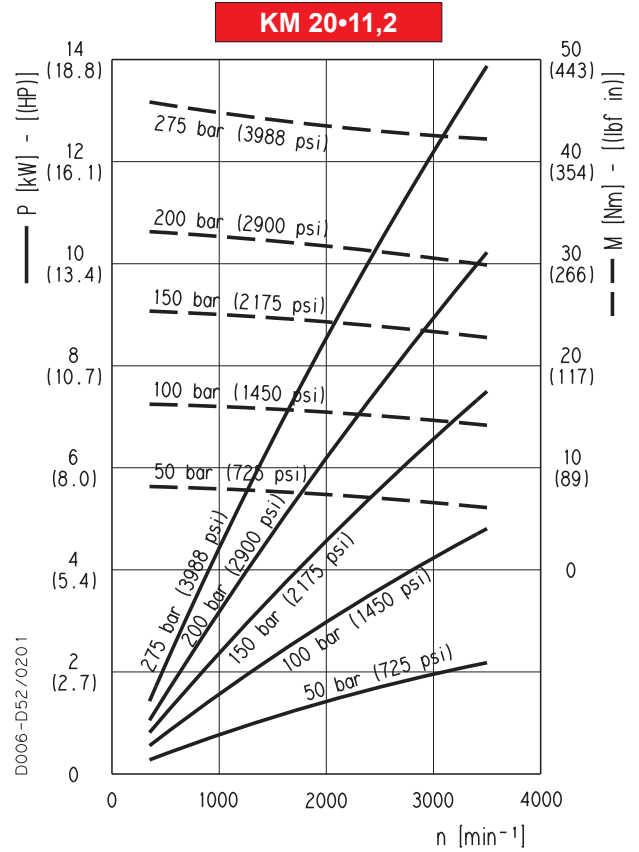
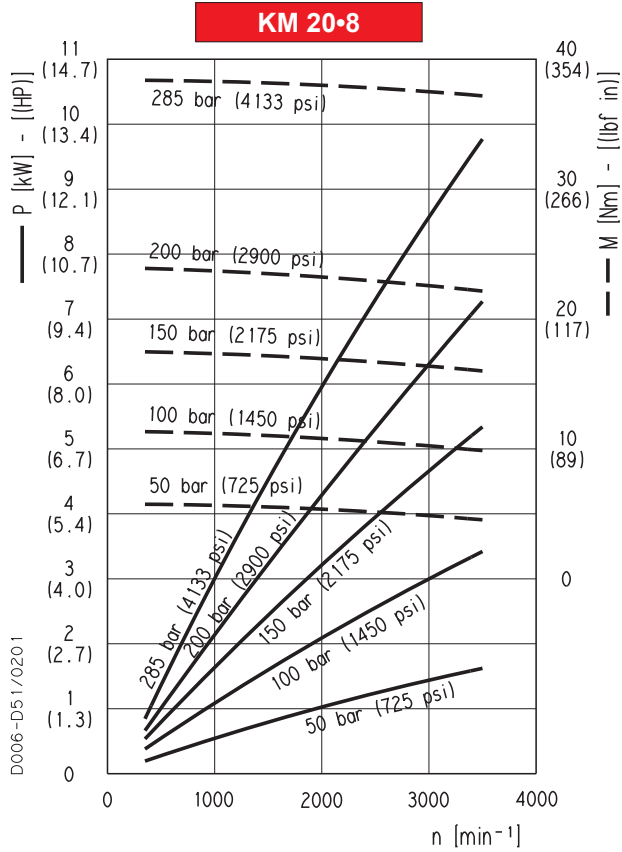
KM 20•6,3



01/03.2002

KAPPA 20 GEAR MOTORS PERFORMANCE CURVES

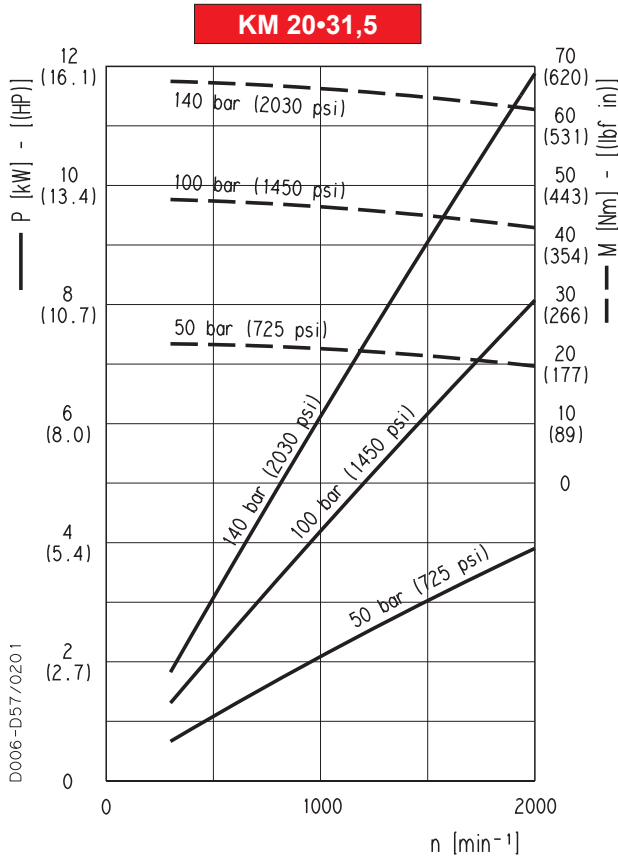
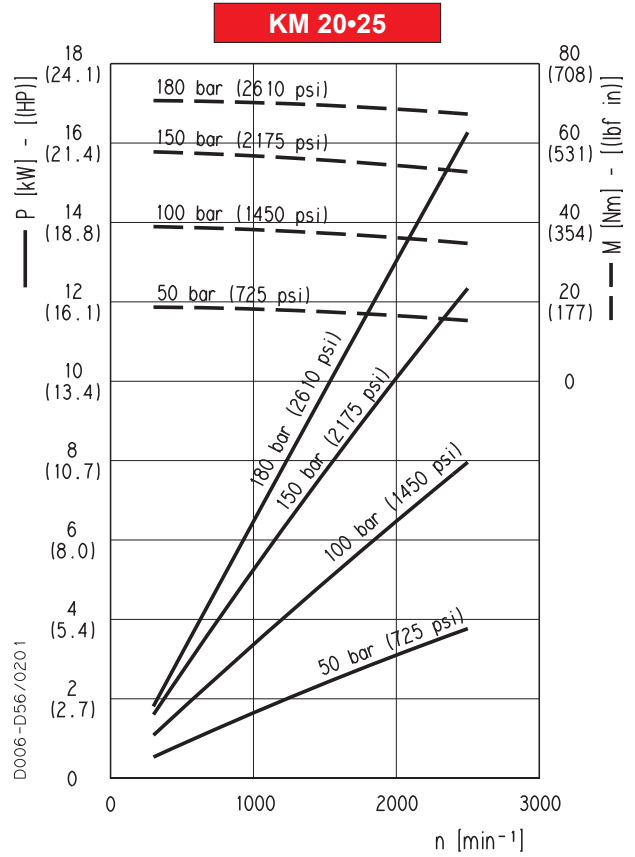
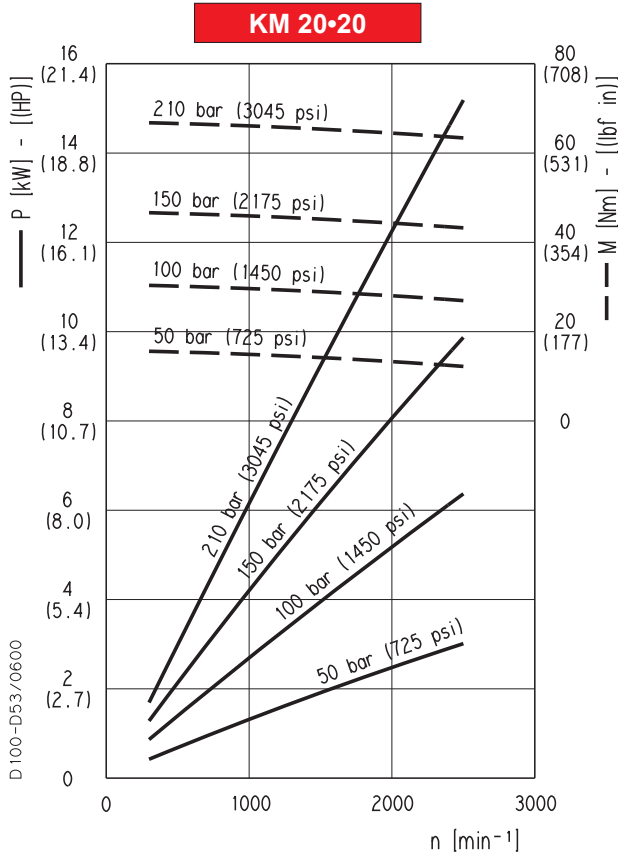
KM 20



01/03.2002

KAPPA 20 GEAR MOTORS PERFORMANCE CURVES

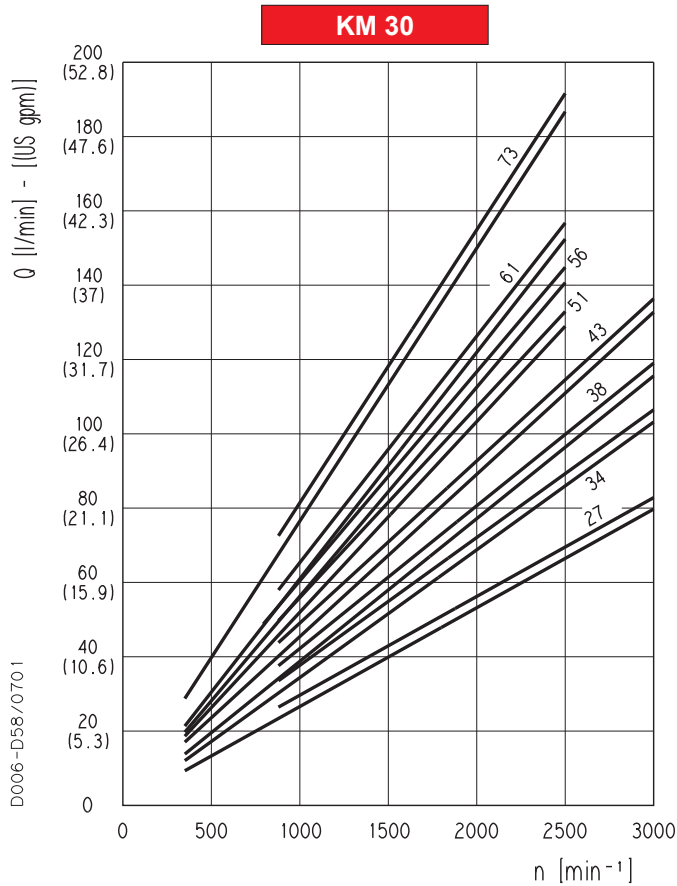
KM 20



01/03.2002

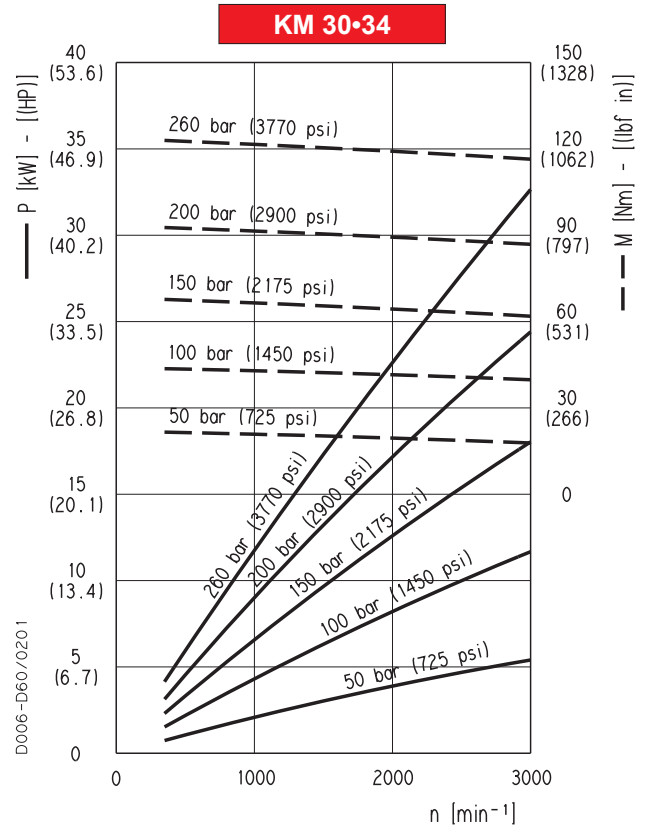
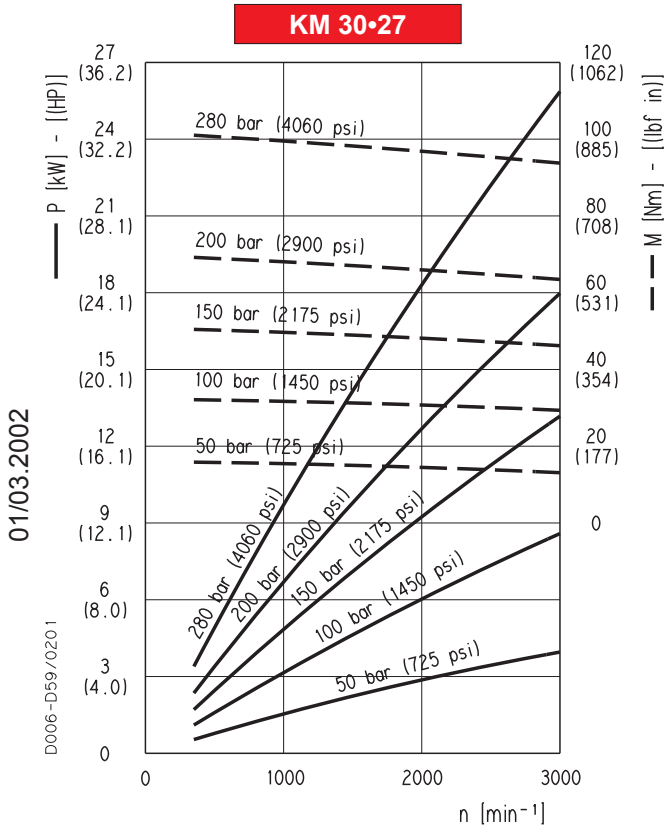
KAPPA 30 GEAR MOTORS PERFORMANCE CURVES

KM 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:

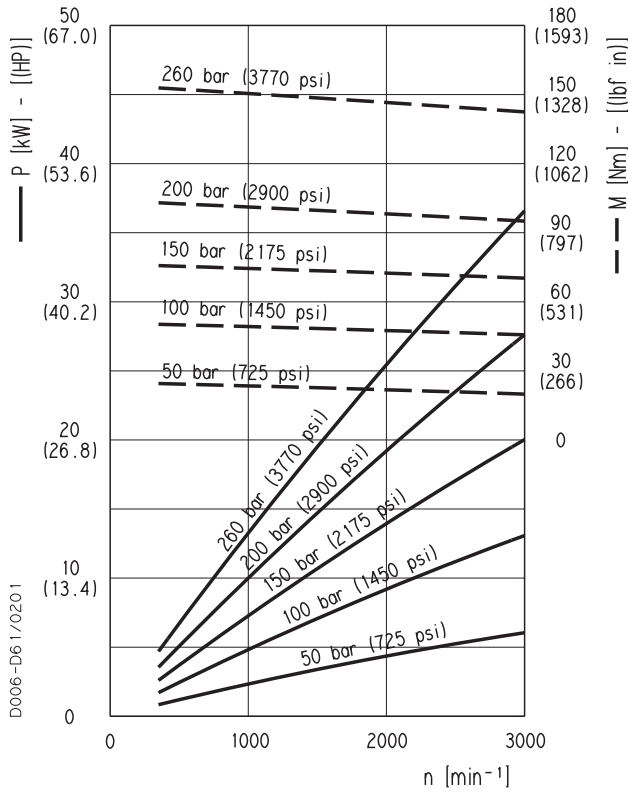
- KM 30•27 290-4060 psi (20-280 bar)
- KM 30•34 290-3770 psi (20-260 bar)
- KM 30•38 290-3770 psi (20-260 bar)
- KM 30•43 290-3625 psi (20-250 bar)
- KM 30•51 290-3335 psi (20-230 bar)
- KM 30•56 290-3118 psi (20-215 bar)
- KM 30•61 290-2900 psi (20-200 bar)
- KM 30•73 290-2610 psi (20-180 bar)



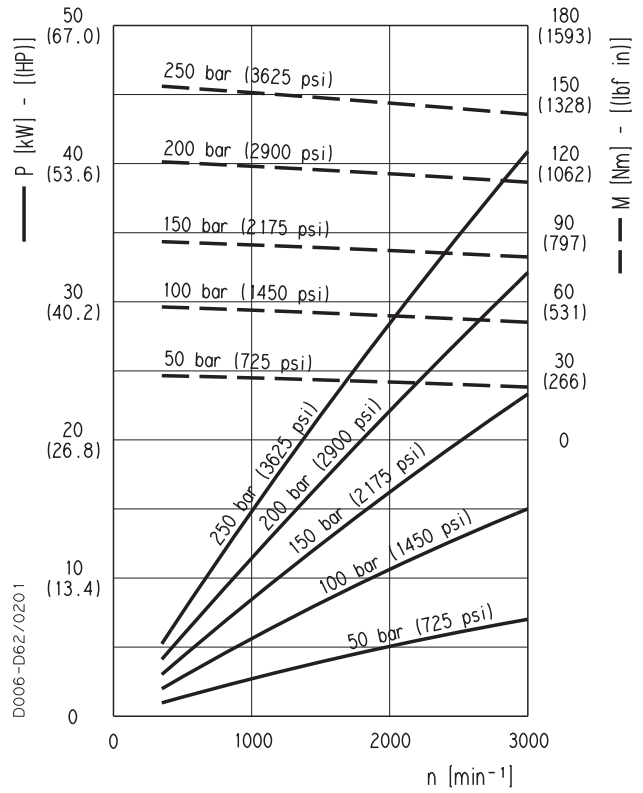
KAPPA 30 GEAR MOTORS PERFORMANCE CURVES

KM 30

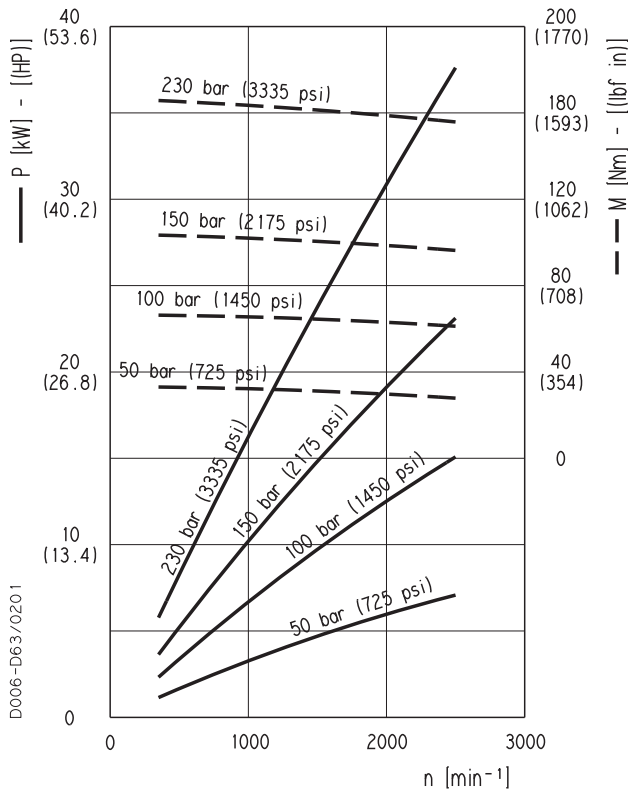
KM 30-38



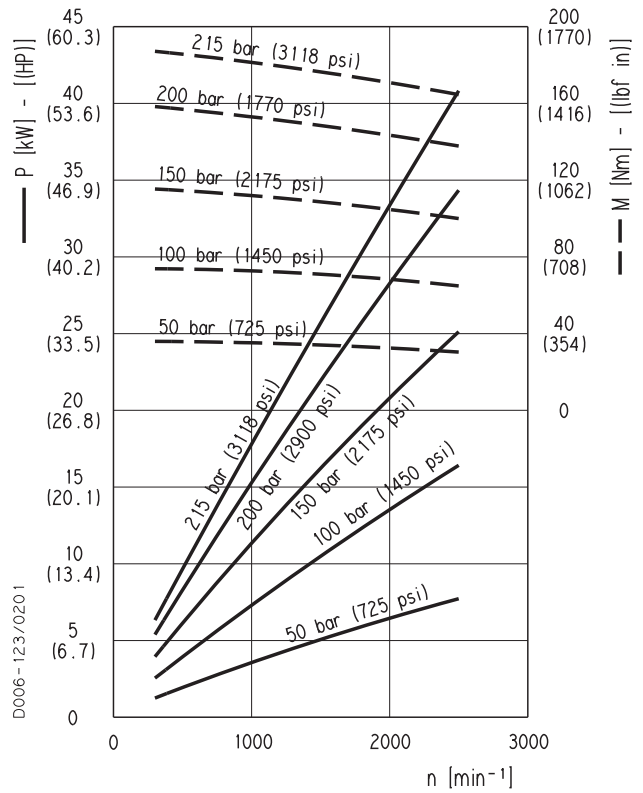
KM 30-43



KM 30-51



KM 30-56

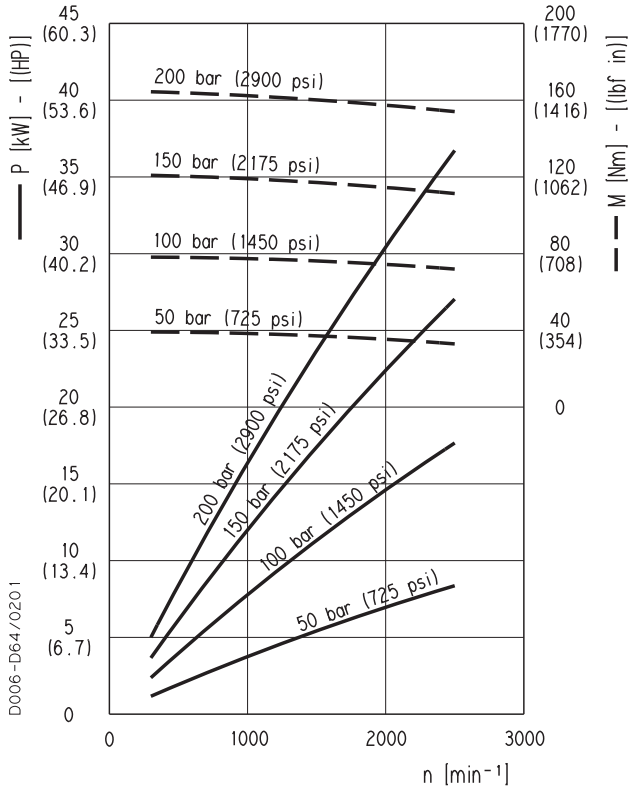


01/03.2002

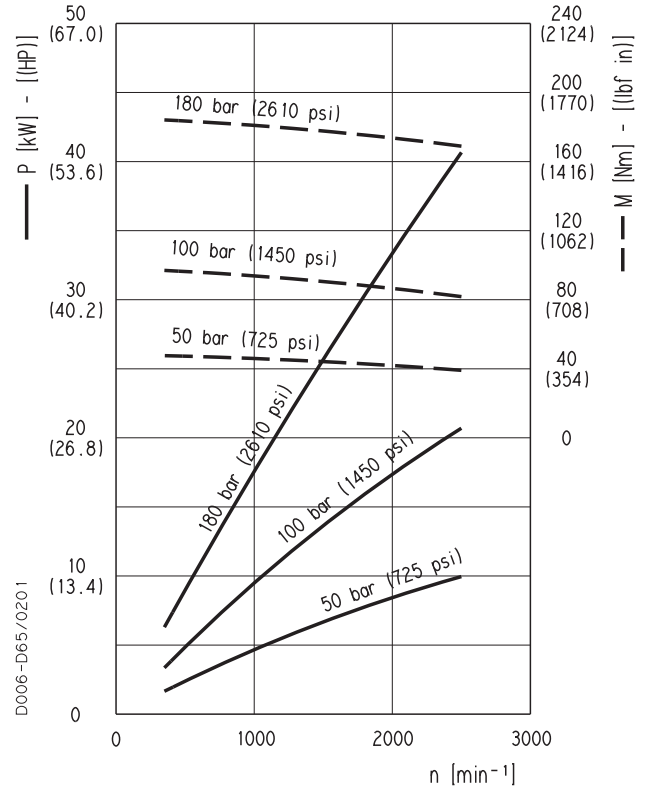
KAPPA 30 GEAR MOTORS PERFORMANCE CURVES

KM 30

KM 30-61

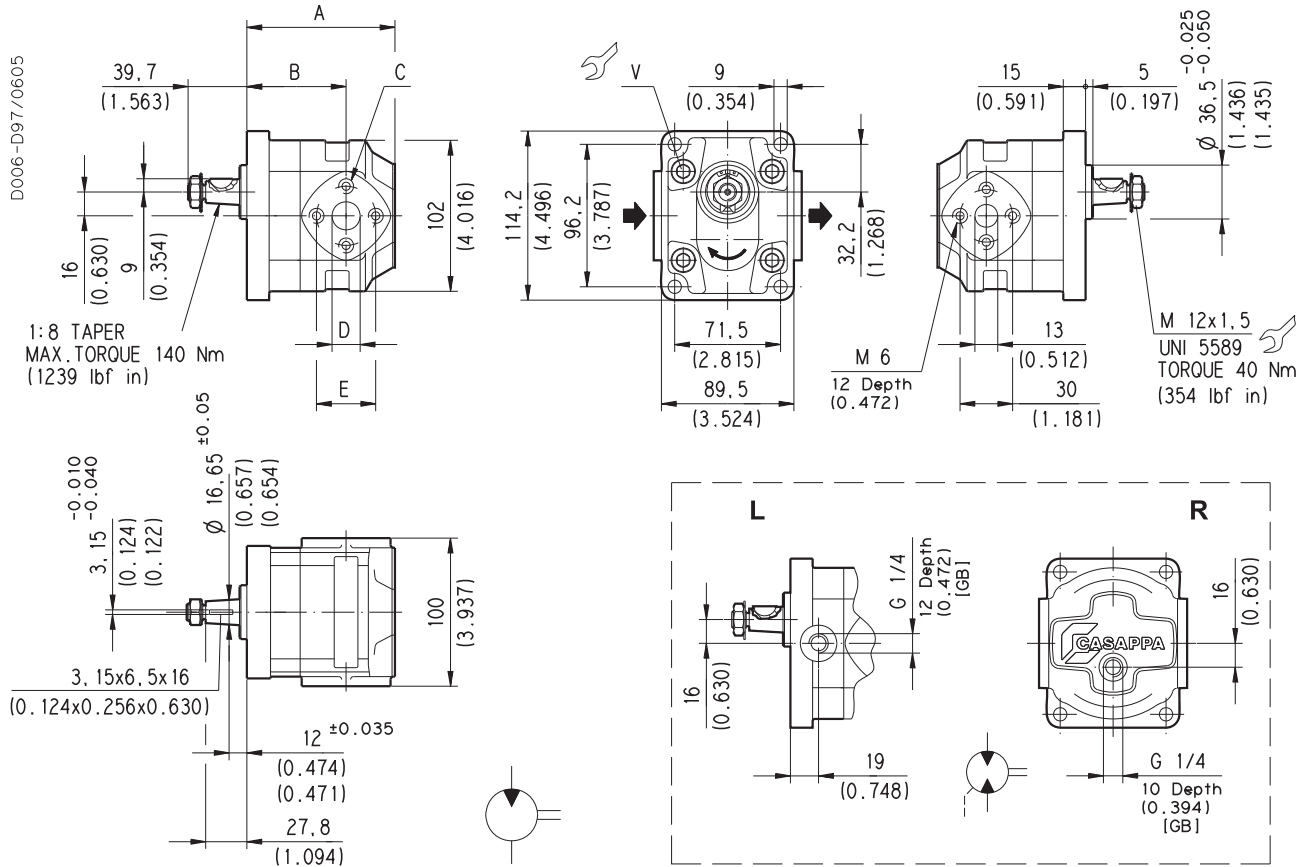


KM 30-73



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)

Motor type		A	B	C	D	E	
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	
S D L R B	0-82 E2-L EA/EA-N	KM 20•4	87,5 (3.445)	60 (2.362)	M6 Depth 12 (0.551)	13 (0.512)	30 (1.181)
		KM 20•6,3	90 (3.543)	62,5 (2.461)			
		KM 20•8	92,5 (3.642)	65 (2.559)			
		KM 20•11,2	96 (3.780)	68,5 (2.697)			
	0-82 E2-L EA/EB-N	KM 20•14	100 (3.937)	67 (2.638)	M8 Depth 14 (0.551)	19 (0.748)	40 (1.575)
		KM 20•16	105,5 (4.154)	72,5 (2.854)			
		KM 20•20	112 (4.409)	79 (3.110)			
		KM 20•25	120 (4.724)	72 (2.835)			
KM 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:

KM 20•4 S0-82 E2-L EA/EA-N

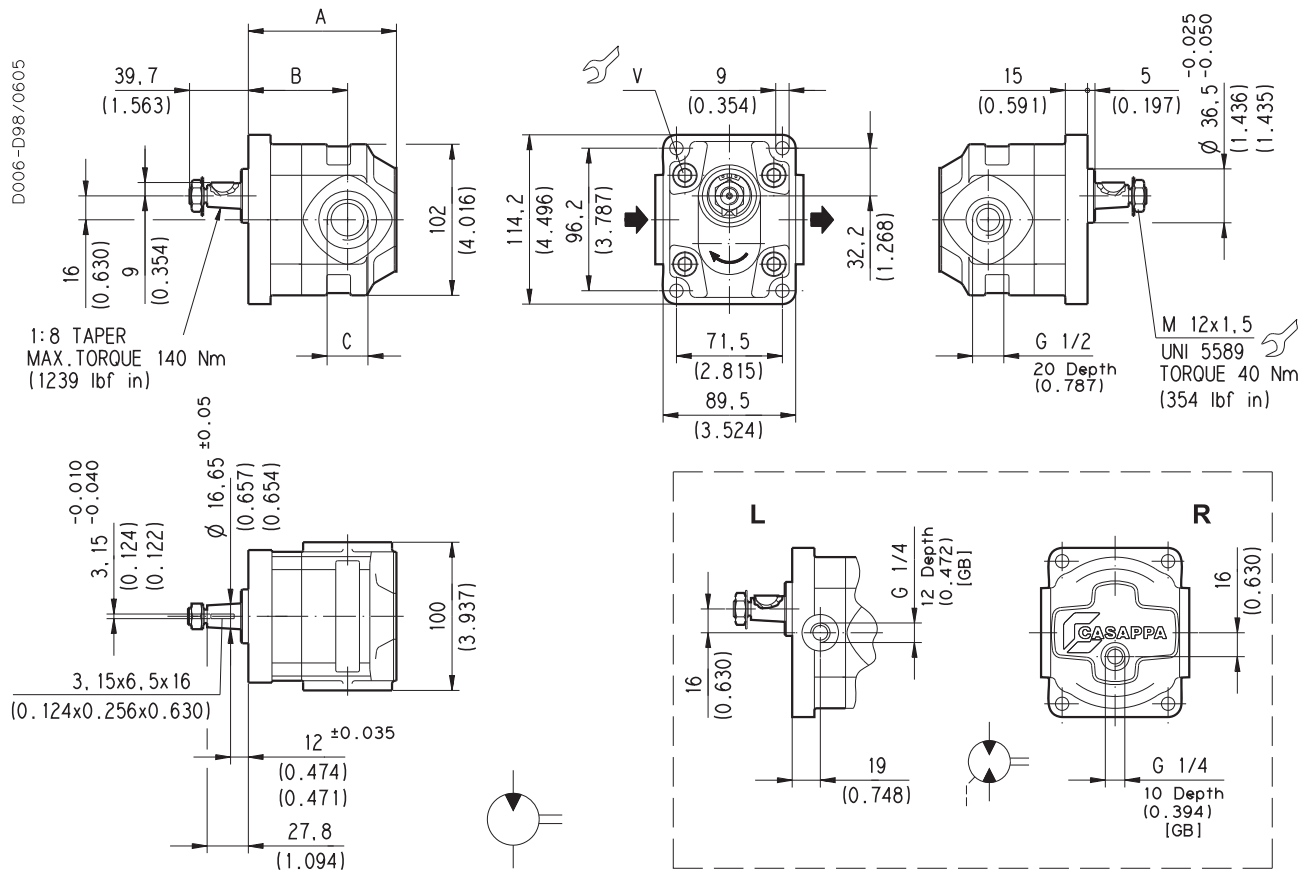
KAPPA 20

HYDRAULIC GEAR MOTORS EUROPEAN STANDARD

82 E2

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)

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

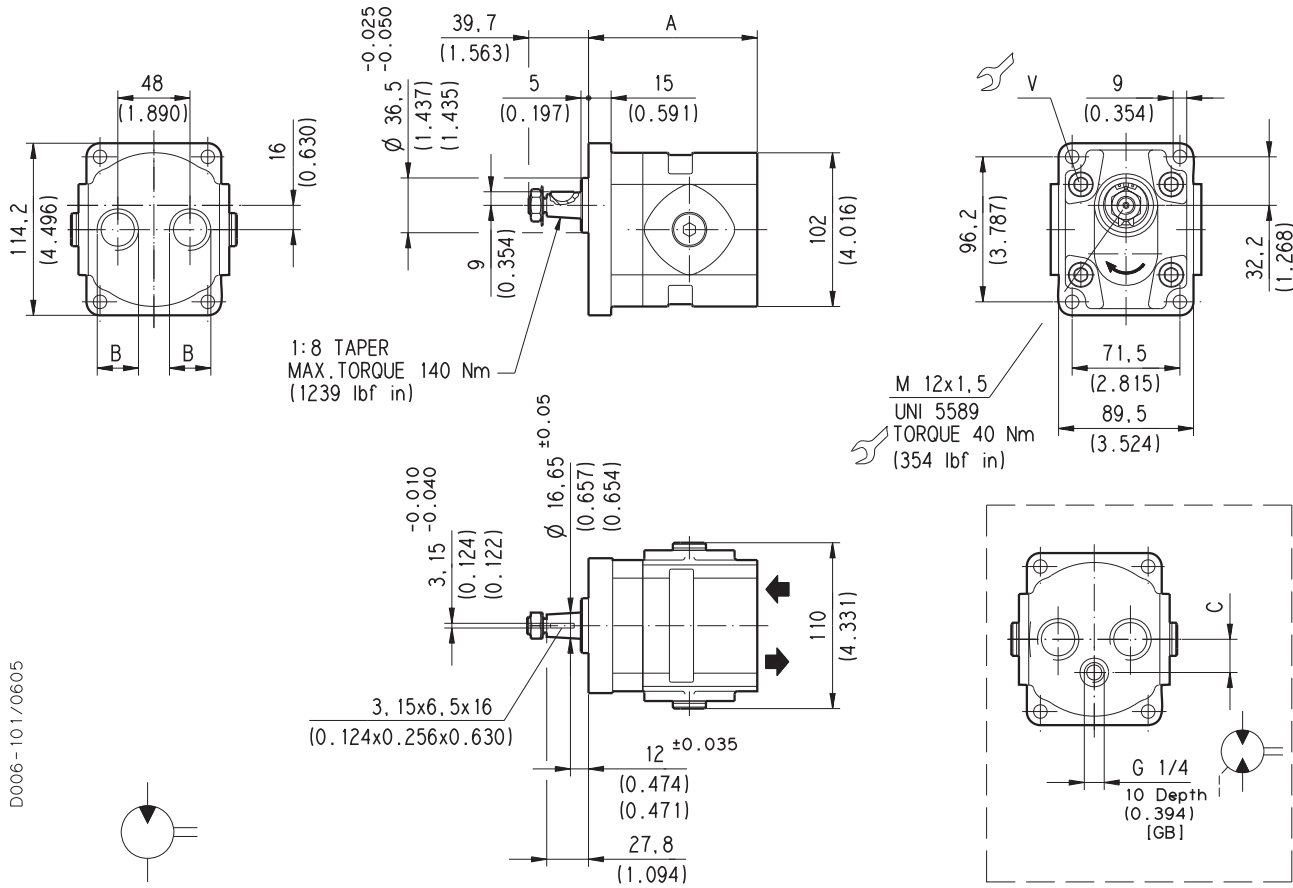
Rotation: S=left - D=right - L=reversible side drain - R=reversible rear drain - B=reversible internal drain

How to order:

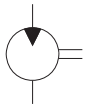
KM 20•4 S0-82 E2-L GD/GD-N

GAS STRAIGHT THREAD PORTS

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



D006-101/0605



V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

Rear ports version

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

02/06.2005

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

How to order:

KM 20•4 S0-82 E2-P GD/GD-N

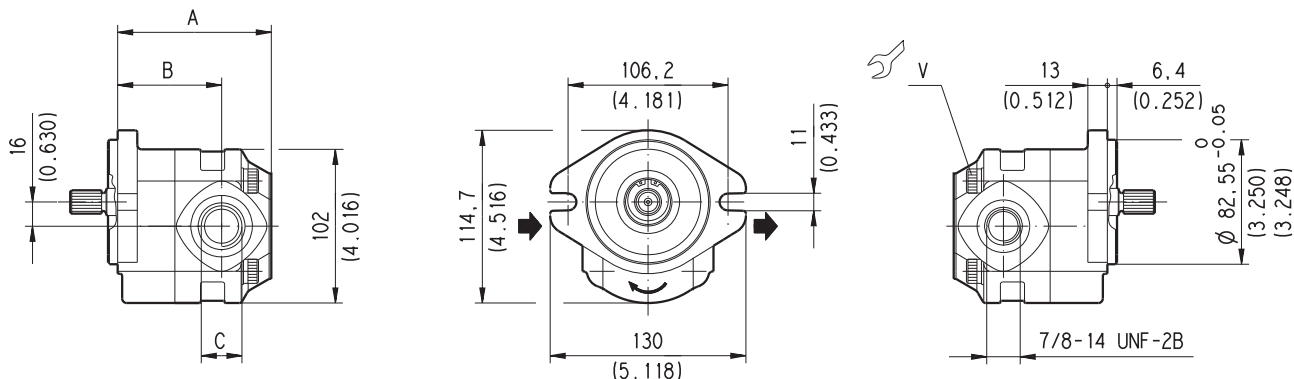
KAPPA 20

HYDRAULIC GEAR MOTORS SAE STANDARD

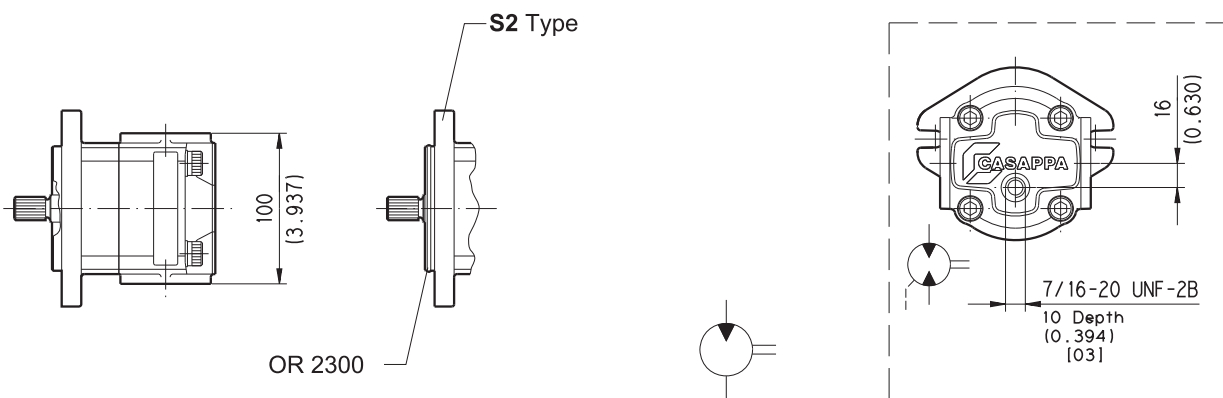
... S1

SAE STRAIGHT THREAD PORTS J514

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



D006-100/0605



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

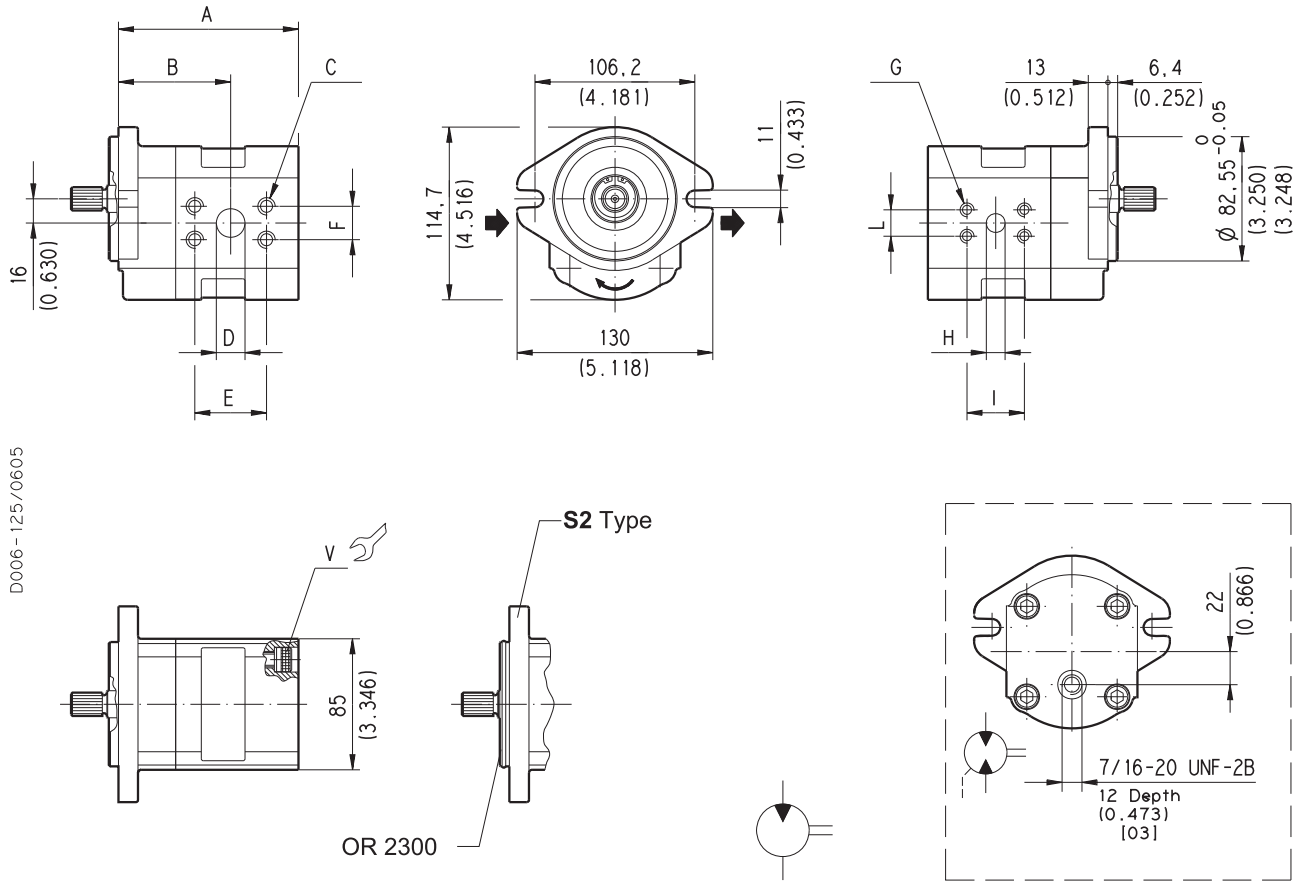
Side ports version (L) - To order see page 93 e 94

02/06.2005

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



D006-125/0605

02/06.2005

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

Side ports version (L) - To order see page 93 e 94

Motor 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
KM 20•4	101,5 (3.996)	62 (2.441)	M8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	M8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	MA	MA
KM 20•6,3	104 (4.094)	64,5 (2.539)										
KM 20•8	106,5 (4.193)	67 (2.638)										
KM 20•11,2	111 (4.370)	70,5 (2.776)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MB	MC
KM 20•14	116 (4.567)	69 (2.717)										
KM 20•16	119,5 (4.705)	74,5 (2.933)										
KM 20•20	126 (4.961)	81 (3.189)										
KM 20•25	134 (5.276)	74 (2.913)										
KM 20•31,5	144 (5.669)	84 (3.307)		25,4 (1.000)	52,4 (2.063)	26,2 (1.031)		19 (0.748)	47,6 (1.874)	22,2 (0.874)		

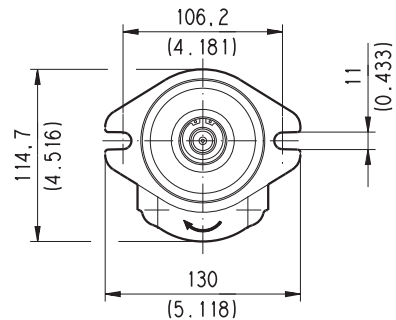
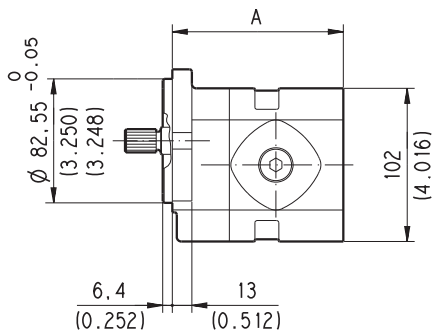
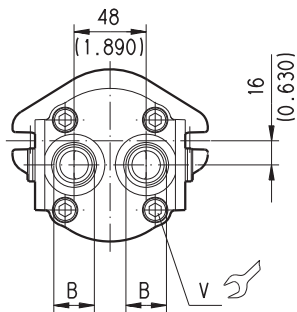
KAPPA 20

HYDRAULIC GEAR MOTORS SAE STANDARD

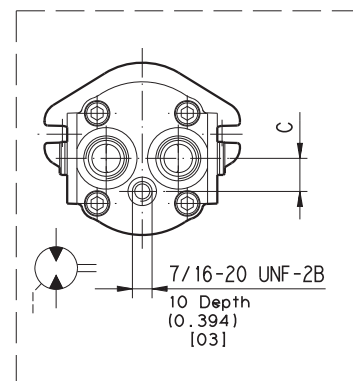
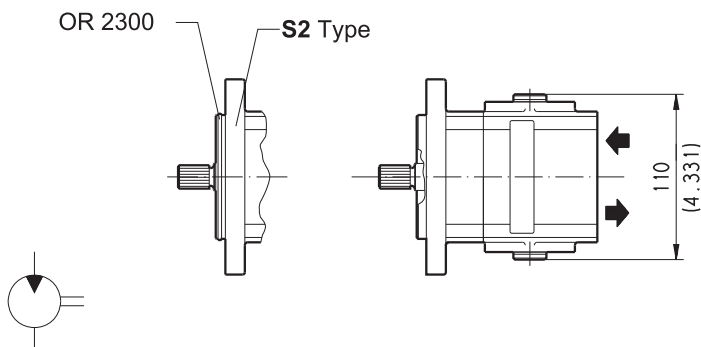
... S1

SAE STRAIGHT THREAD PORTS J514

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



D006-D99/0605



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

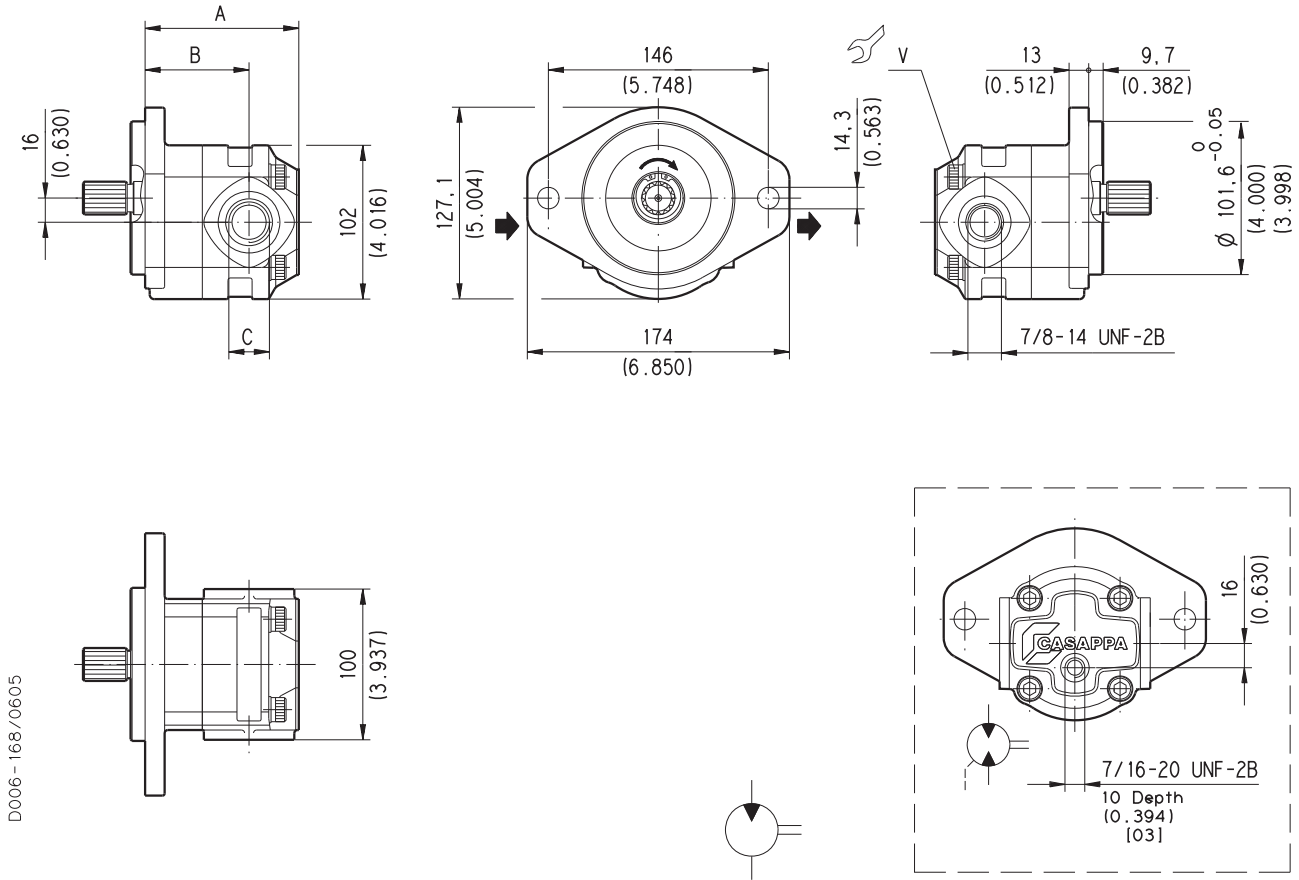
Rear ports version (P) - To order see page 93 e 94

02/06.2005

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

SAE STRAIGHT THREAD PORTS J514

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



D006-168/0605

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

Side ports version (L) - To order see page 93 e 94

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

02/06.2005

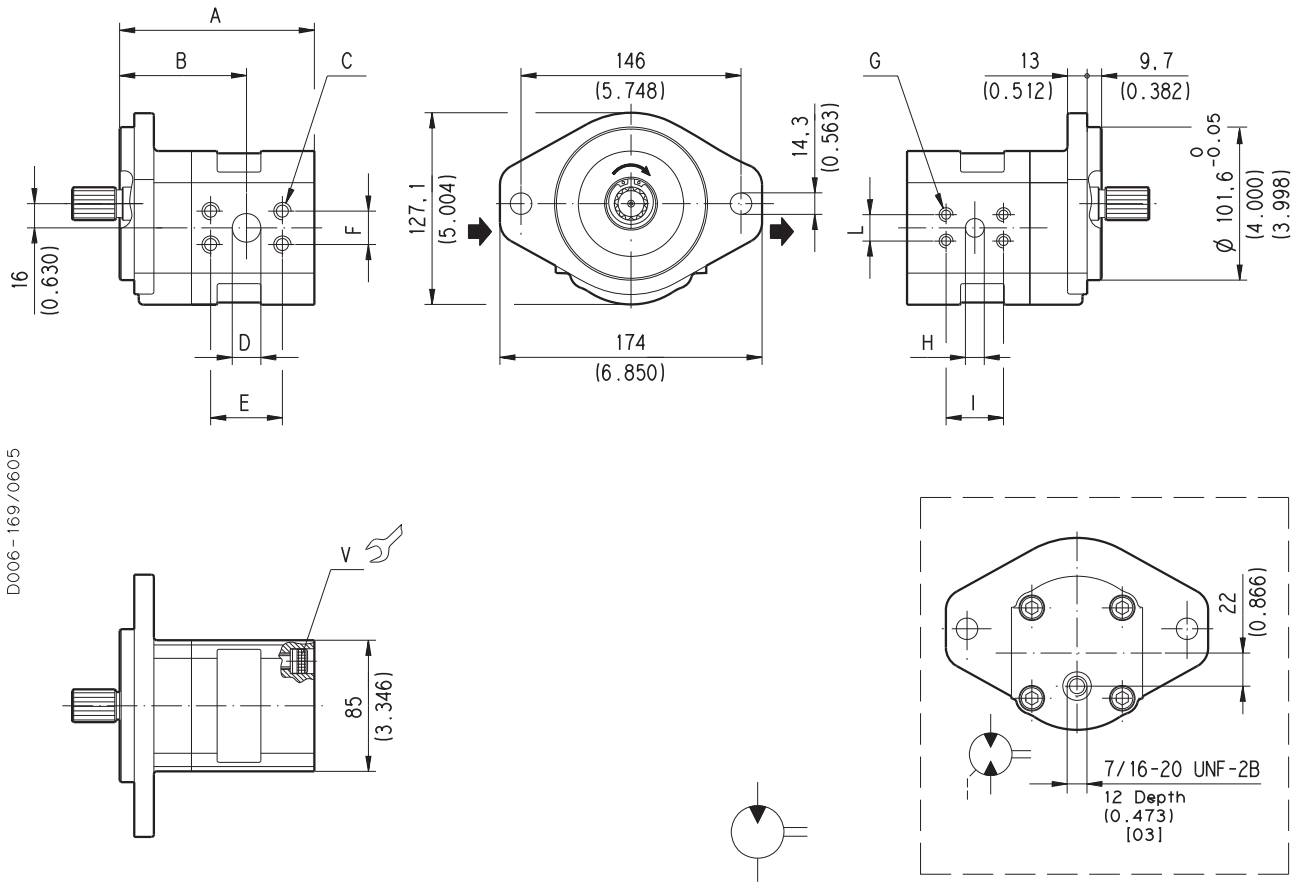
KAPPA 20

HYDRAULIC GEAR MOTORS SAE STANDARD

... S5

SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

Metric thread ISO 60° conforms to ISO/R 262



D006-169/0605

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

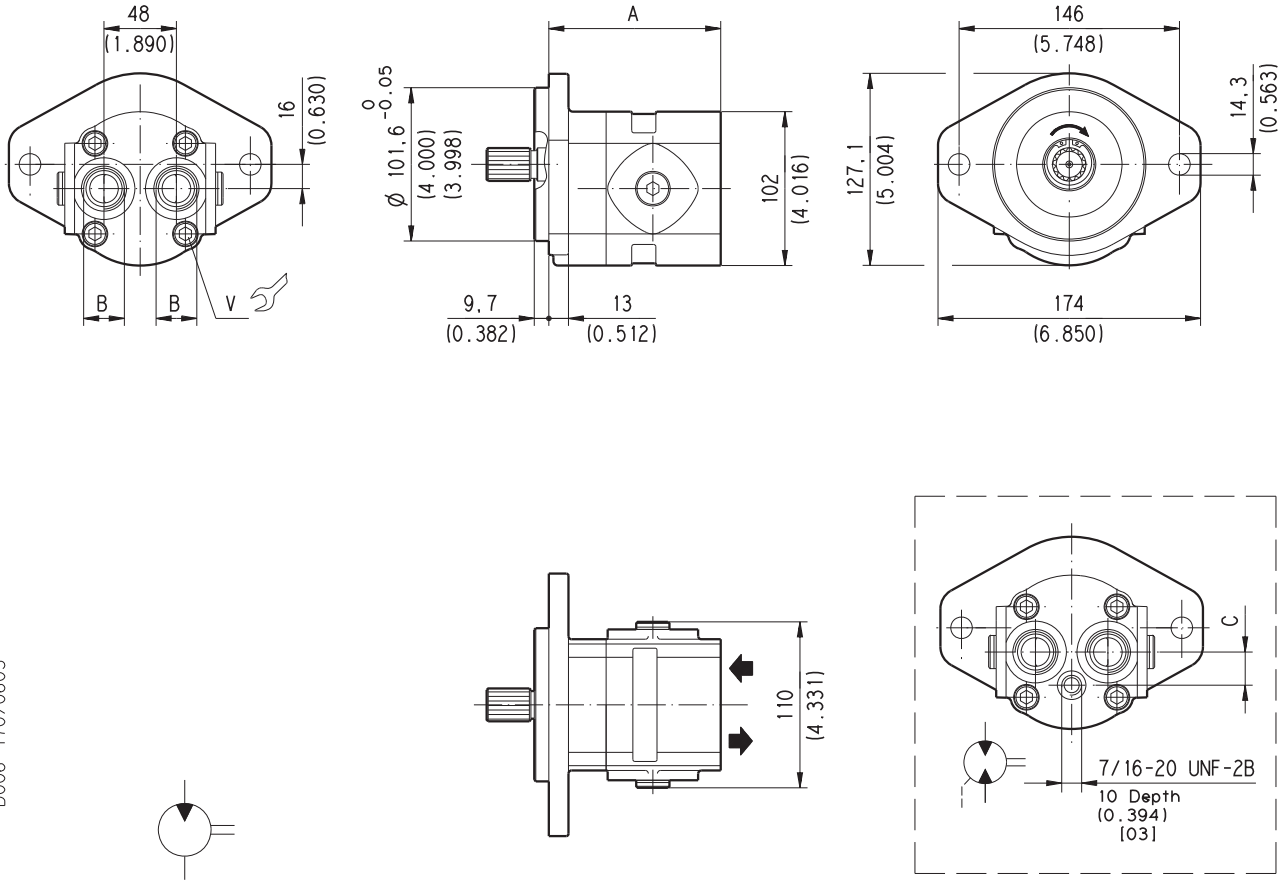
Side ports version (L) - To order see page 93 e 94

02/06.2005

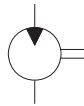
Motor type	A	B	C	D	E	F	G	H	I	L	Ports code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KM 20•4	101,5 (3.996)	62 (2.441)	M8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	M8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	MA	MA
KM 20•6,3	104 (4.094)	64,5 (2.539)										
KM 20•8	106,5 (4.193)	67 (2.638)										
KM 20•11,2	111 (4.370)	70,5 (2.776)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MB	MC
KM 20•14	116 (4.567)	69 (2.717)										
KM 20•16	119,5 (4.705)	74,5 (2.933)										
KM 20•20	126 (4.961)	81 (3.189)										
KM 20•25	134 (5.276)	74 (2.913)										
KM 20•31,5	144 (5.669)	84 (3.307)	M10 Depth 12 (0.472)	25,4 (1.000)	52,4 (2.063)	26,2 (1.031)	M10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MB	MC

SAE STRAIGHT THREAD PORTS J514

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



D006-170/0605



V Screws tightening torque Nm (lbf in)

70 ±7 (558 ÷ 682)

Rear ports version (P) - To order see page 93 e 94

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

02/06.2005

KAPPA 20 END DRIVE SHAFTS

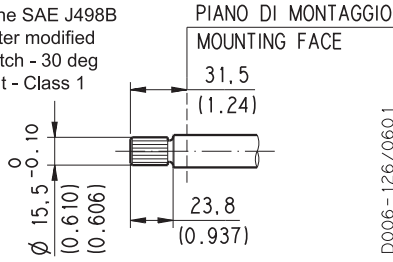
SAE

Replaces: 01/03.2002

SAE "A" SPLINE

03

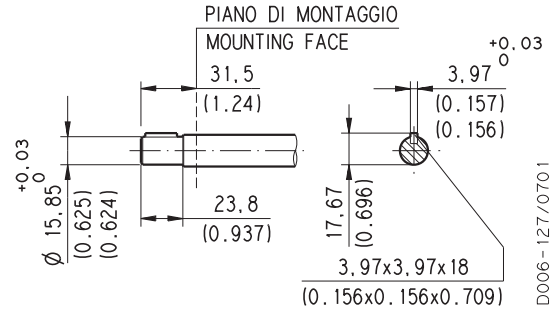
Ext. Involute Spline SAE J498B
with major diameter modified
9 teeth - 16/32 Pitch - 30 deg
Flat Root - Side fit - Class 1



MAX 885 lbf in (100 Nm)

SAE "A" STRAIGHT

31

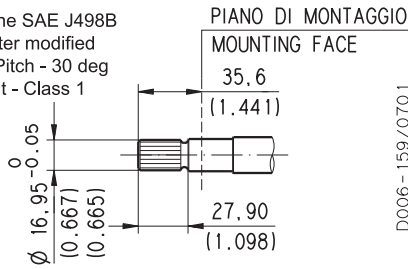


MAX 620 lbf in (70 Nm)

SAE SPLINE

01

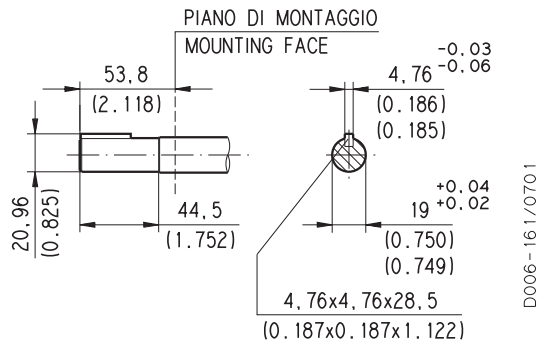
Ext. Involute Spline SAE J498B
with major diameter modified
10 teeth - 16/32 Pitch - 30 deg
Flat Root - Side fit - Class 1



MAX 1151 lbf in (130 Nm)

STRAIGHT

49

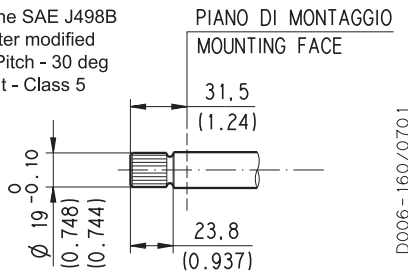


MAX 1239 lbf in (140 Nm)

SAE SPLINE

07

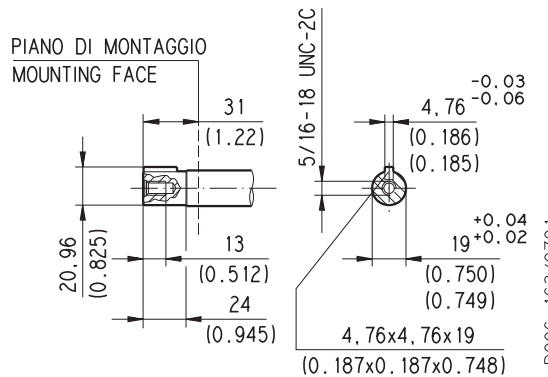
Ext. Involute Spline SAE J498B
with major diameter modified
11 teeth - 16/32 Pitch - 30 deg
Flat Root - Side fit - Class 5



MAX 1505 lbf in (170 Nm)

STRAIGHT

50



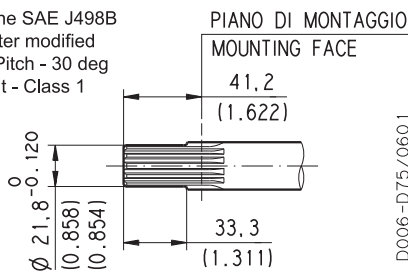
MAX 885 lbf in (100 Nm)

03/03.2006

SAE "B" SPLINE

04

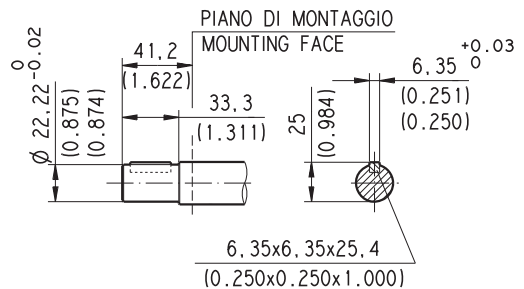
Ext. Involute Spline SAE J498B
with major diameter modified
13 teeth - 16/32 Pitch - 30 deg
Flat Root - Side fit - Class 1



MAX 2478 lbf in (280 Nm)

SAE "B" STRAIGHT

32



MAX 1770 lbf in (200 Nm)

HOW TO ORDER SINGLE MOTORS

1	2	3	4	5	6	7	8			
Motor type	Rotation	Version	–	Drive shaft	Mounting flange	–	Ports position	Ports IN/OUT	–	Seals
KM20•4	S	0	–	03	S1	–	L	OC/OC	–	N

1 Motor Type		CODE
in³/rev	(cm³/rev)	
0.30	4,95	KM 20•4
0.40	6,61	KM 20•6,3
0.50	8,26	KM 20•8
0.69	11,23	KM 20•11,2
0.89	14,53	KM 20•14
1.03	16,85	KM 20•16
1.29	21,14	KM 20•20
1.61	26,42	KM 20•25
2.01	33,03	KM 20•31,5

2 Rotation	CODE
Left	S
Right	D
Reversible	R
Reversible with 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	Ports position	6
L	Side	
P	Rear	

CODE	Ports IN/OUT		7
SAE STRAIGHT THREAD PORTS (ODT)			
Side	Rear	Motor type	
OC/OC	OC/OC	KM 20•4	
OC/OC	OC/OC	KM 20•6,3	
OC/OC	OC/OC	KM 20•8	
OC/OC	OC/OC	KM 20•11,2	
OC/OD	OD/OD	KM 20•14	
OC/OD	OD/OD	KM 20•16	
OC/OD	OD/OD	KM 20•20	
OC/OD	OD/OD	KM 20•25	
OC/OD	OD/OD	KM 20•31,5	

METRIC SAE SPLIT PORTS SAE J518 C		
MA/MA		KM 20•4
MA/MA		KM 20•6,3
MA/MA		KM 20•8
MA/MA		KM 20•11,2
MA/MB		KM 20•14
MA/MB		KM 20•16
MA/MB		KM 20•20
MB/MC		KM 20•25
MB/MC		KM 20•31,5

CODE	Seals (b)	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) Available only with 04 and 32 shaft
- (b) Choose the seals according to the temperature shown on page 1

ORDER EXAMPLE

Standard motor **KM 20•4 S0 - 03 S1 - L OC/OC - N**

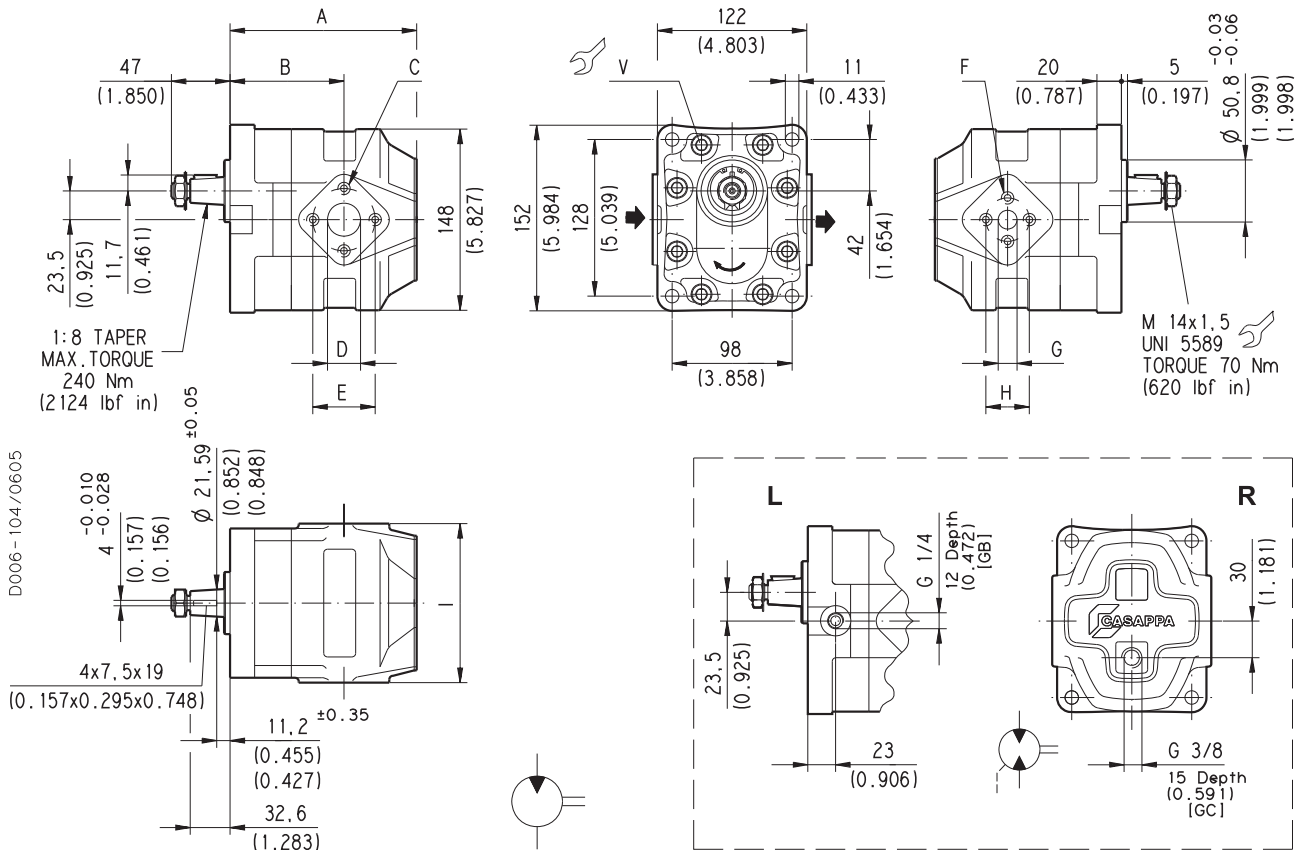
Special version motor **KM 20•4 S0 - 04 S5 - L MA/MA - V Bz**

KAPPA 30

HYDRAULIC GEAR MOTORS EUROPEAN STANDARD

83 E3

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)

Motor 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)	
02/06.2005	S D L R B	KM 30•27	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)
		KM 30•34	138 (5.433)	90 (3.543)							
		KM 30•38	141 (5.551)	93 (3.661)							
		KM 30•43	144 (5.669)	96 (3.780)							
		KM 30•51	149 (5.866)	93 (3.661)							
		KM 30•56	152 (5.984)	97 (3.819)							
		KM 30•61	155 (6.102)	100 (3.937)							
KM 30•73	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)		

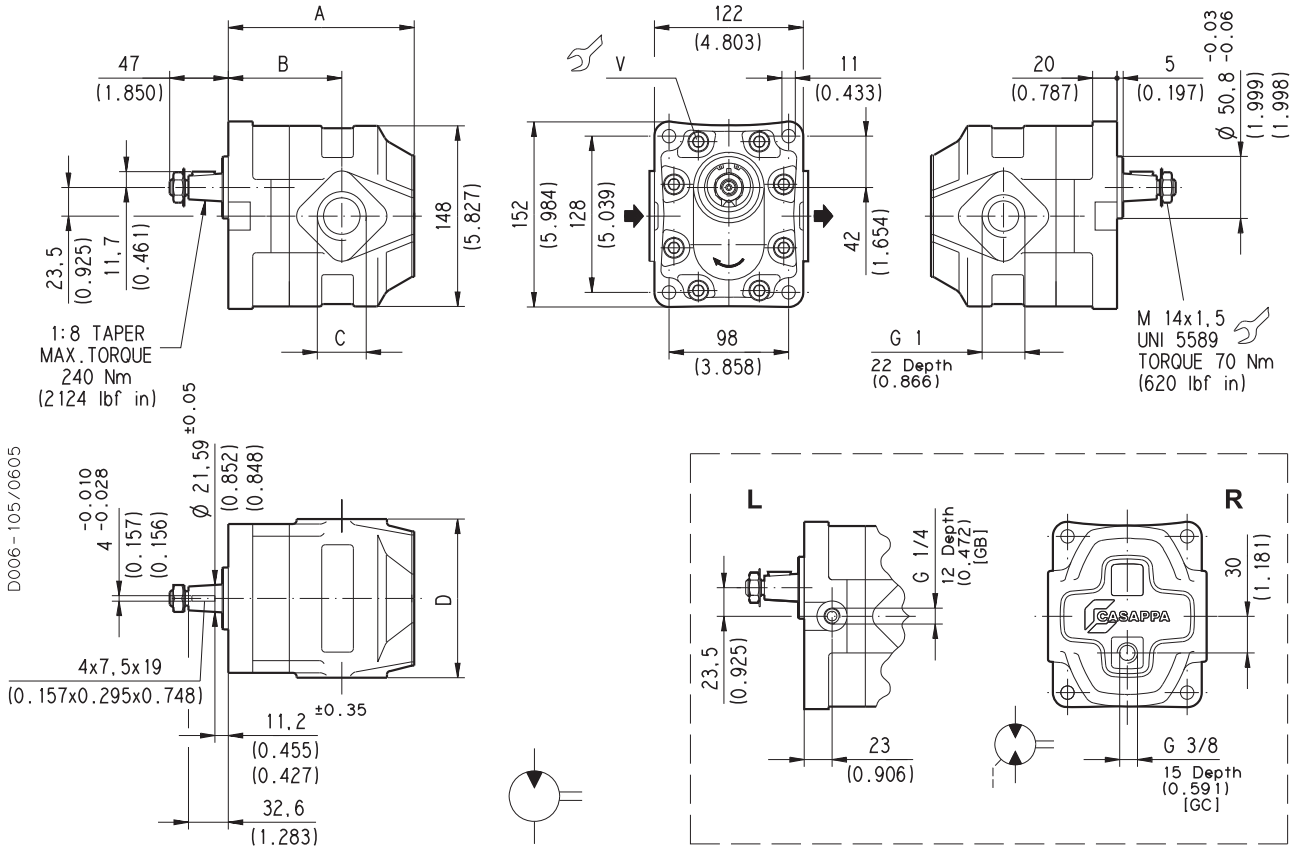
Rotation: S=left - D=right - L=reversible side drain - R=reversible rear drain - B=reversible internal drain

How to order:

KM 30•27 S0-83 E3-L EB/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)

Motor type		A	B	C	D
		mm (in)	mm (in)	mm (in)	mm (in)
KM 30-27 KM 30-34 KM 30-38 KM 30-43 KM 30-51 KM 30-56 KM 30-61	S D L R B	0-83 E3-L GF/GF-N		G 1 Depth 22 (0.866)	130 (5.118)
		133 (5.236)	85 (3.346)		
		138 (5.433)	90 (3.543)		
		141 (5.551)	93 (3.661)		
		144 (5.669)	96 (3.780)		
		149 (5.866)	93 (3.661)		
		152 (5.984)	97 (3.819)		
155 (6.102)	100 (3.937)				
KM 30-73		0-83 E3-L GF/GG-N		G 1 1/4 Depth 24 (0.945)	135 (5.315)
		163 (6.417)	108 (4.252)		

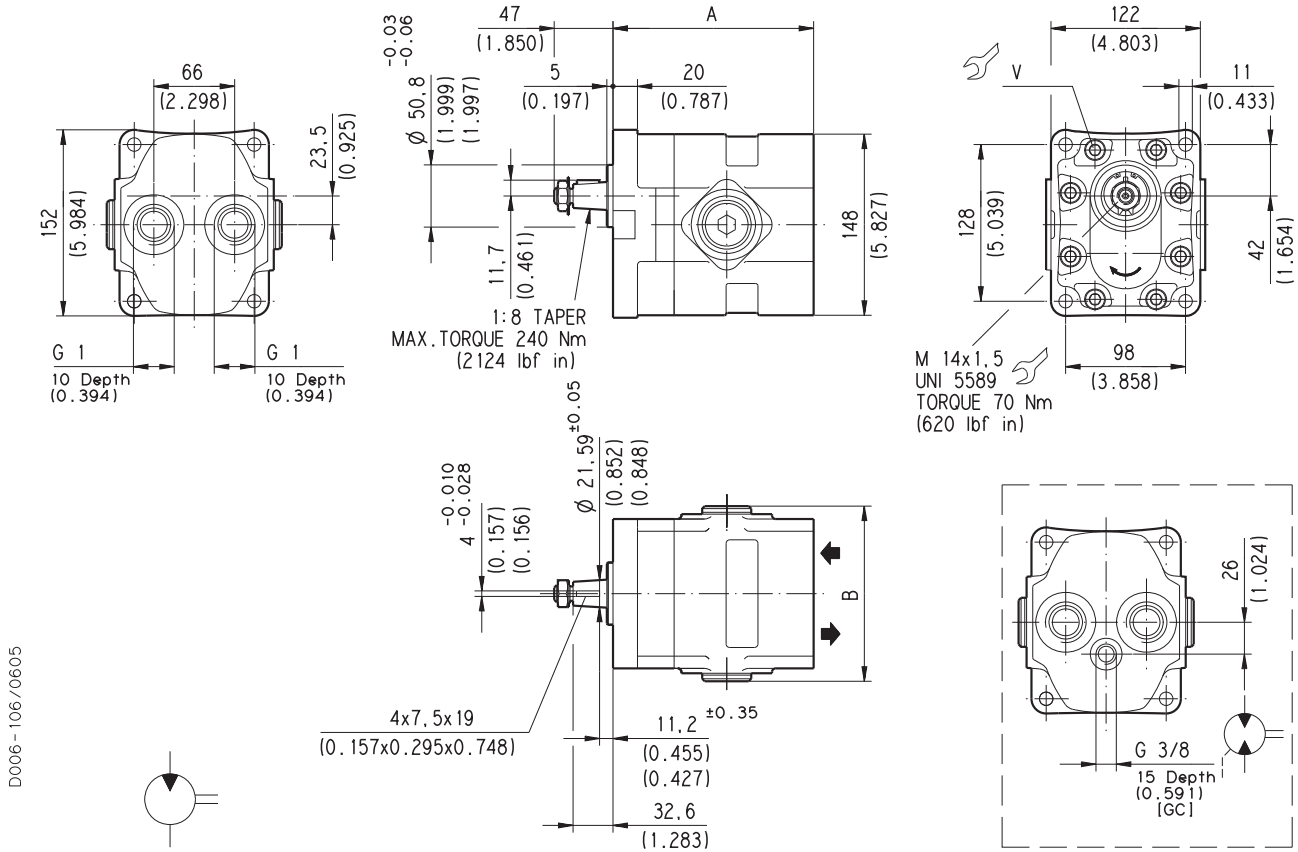
02/06.2005

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

KM 30-27 S0-83 E3-L GF/GF-N

GAS STRAIGHT THREAD PORTS

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



D006-106/0605

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

Rear ports version (P)

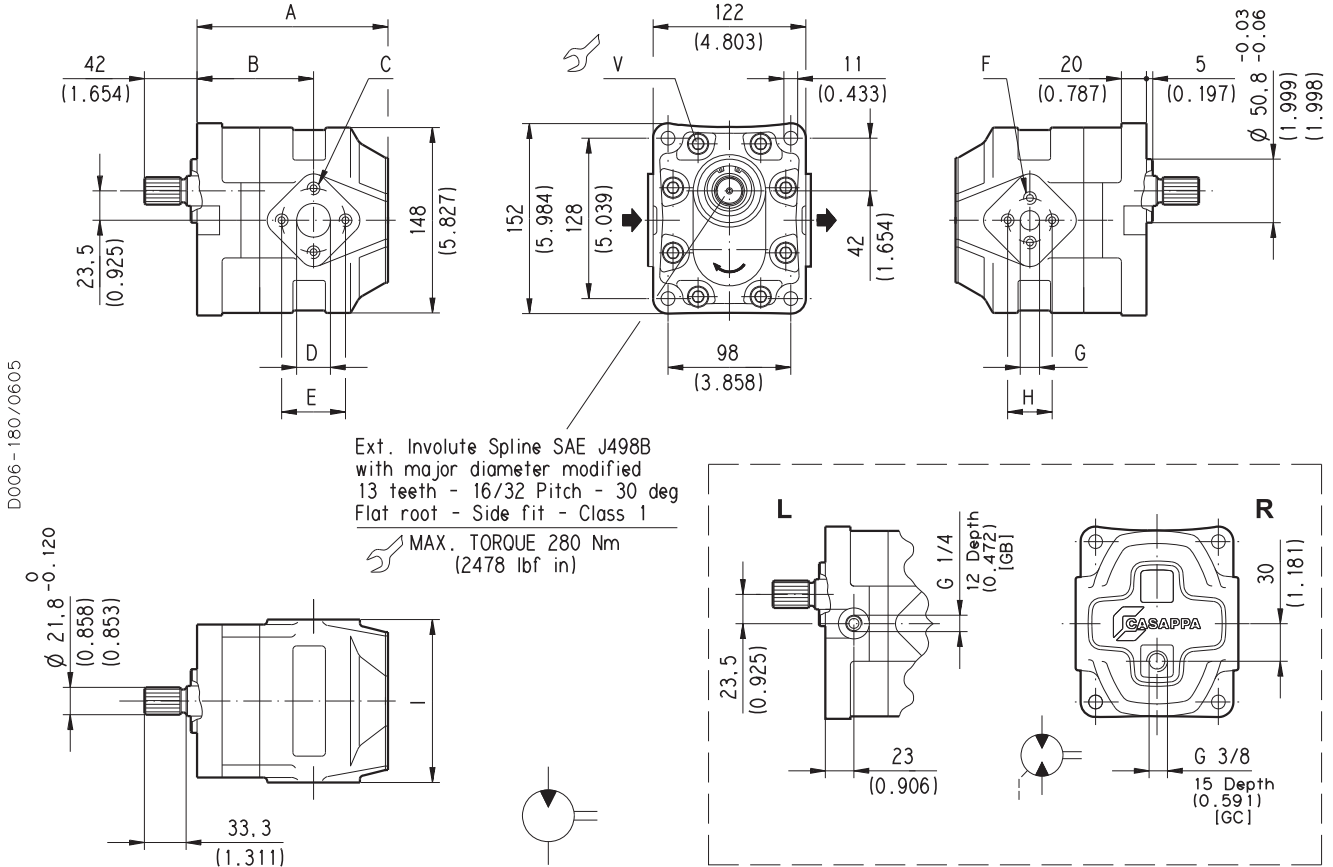
Motor type		A	B	
		mm (in)	mm (in)	
02/06.2005	S D R B	0-83 E3-P GF/GF-N	148 (5.827)	143 (5.630)
			153 (6.024)	
			156 (6.142)	
			159 (6.260)	
			164 (6.457)	
			167 (6.575)	148 (5.827)
			170 (6.693)	
			178 (7.008)	

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

How to order:

KM 30•27 S0-83 E3-P GF/GF-N

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



D006 - 180/0605

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

Motor 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)
KM 30-27 KM 30-34 KM 30-38 KM 30-43 KM 30-51 KM 30-56 KM 30-61	S D L R B	0-83 E3-L ED/EB-N		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)
		133 (5.236)	85 (3.346)							
		138 (5.433)	90 (3.543)							
		141 (5.551)	93 (3.661)							
		144 (5.669)	96 (3.780)							
		149 (5.866)	93 (3.661)							
		152 (5.984)	97 (3.819)							
155 (6.102)	100 (3.937)									
KM 30-73		0-83 E3-L EF/ED-N		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)

02/06.2005

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

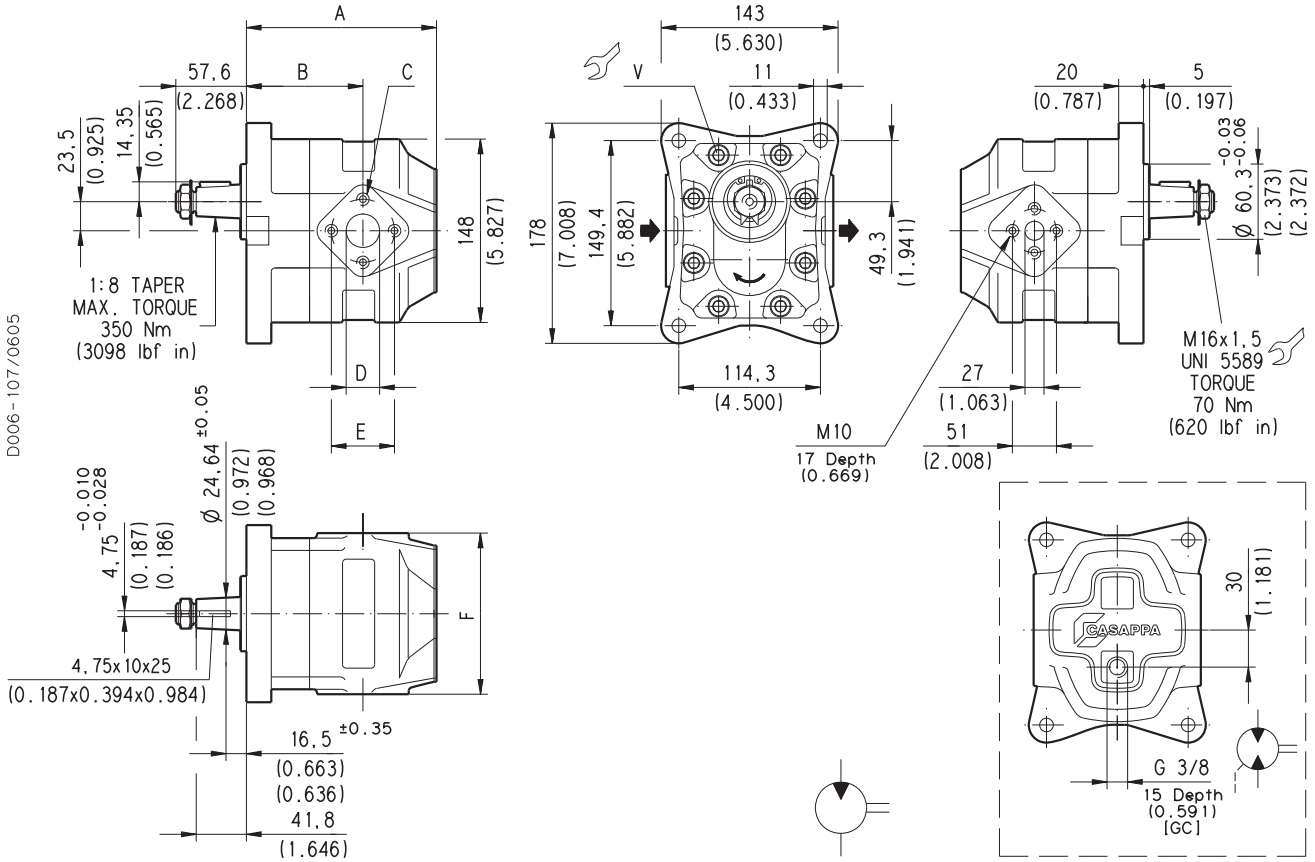
KM 30-27 S0-83 E3-L ED/EB-N

KAPPA 30

HYDRAULIC GEAR MOTORS EUROPEAN STANDARD

84 E4

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

Motor type	A	B	C	D	E	F
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KM 30•51 S	150 (5.906)	94 (3.701)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)
KM 30•61 D	156 (6.142)	101 (3.976)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)
KM 30•73 B	164 (6.457)	109 (4.291)				

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

How to order:

KM 30•51 S0-84 E4-L ED/ED-N

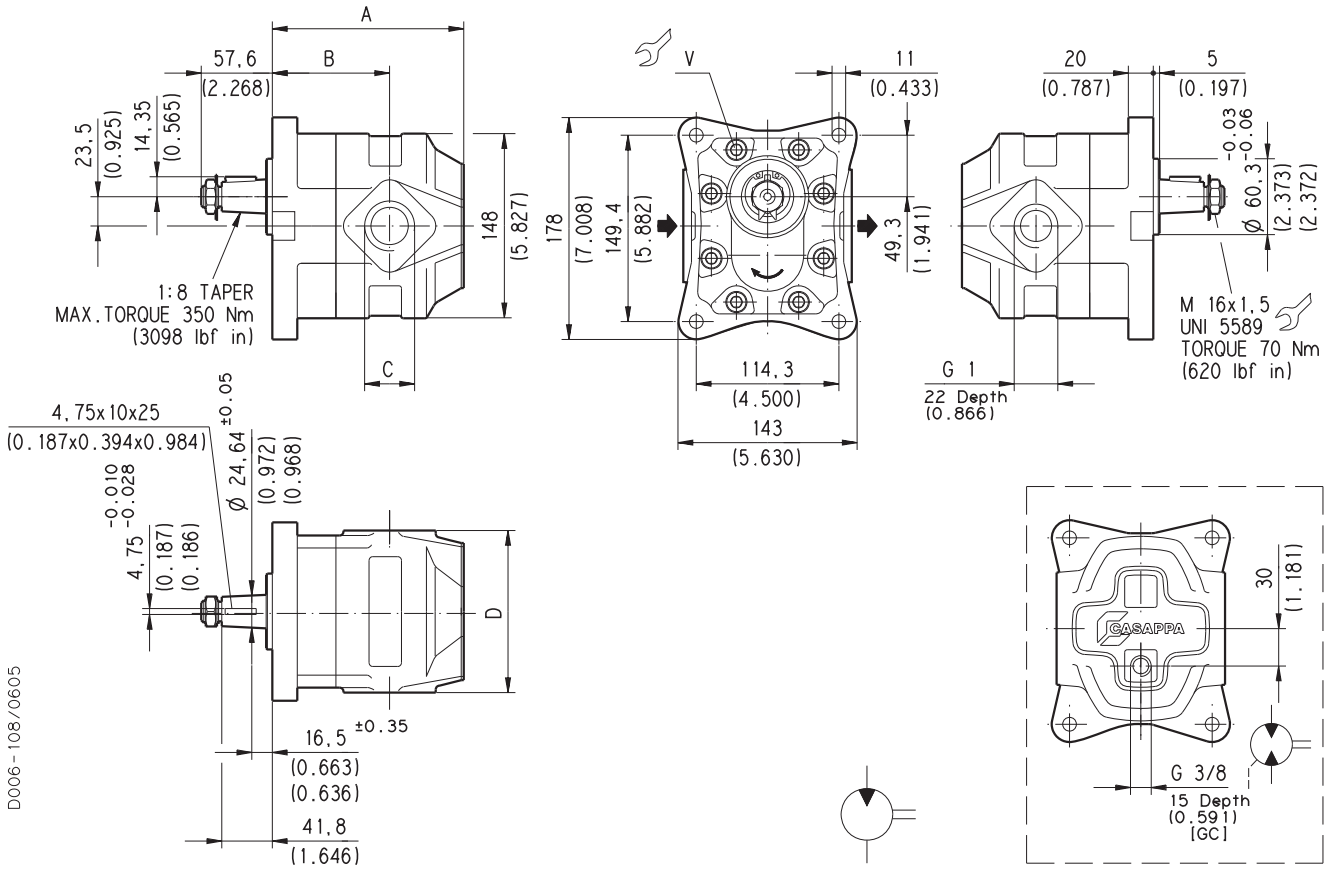
KAPPA 30

HYDRAULIC GEAR MOTORS EUROPEAN STANDARD

84 E4

GAS STRAIGHT THREAD PORTS

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



D006-108/0605

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

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

02/06.2005

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

How to order:

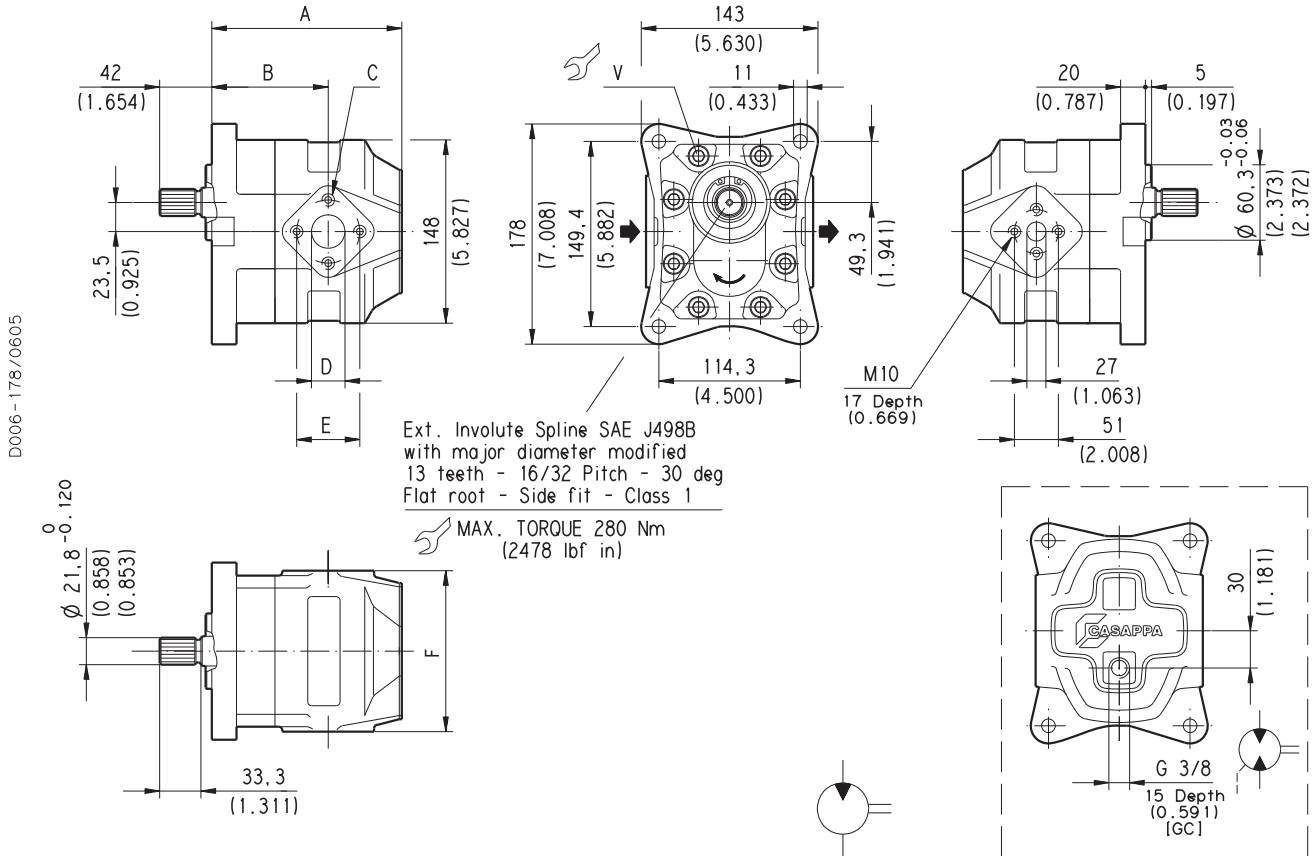
KM 30-51 S0-84 E4-L GF/GF-N

KAPPA 30

HYDRAULIC GEAR MOTORS EUROPEAN STANDARD

A8 E4

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



D006-178/0605

0 21.8 -0.120 (0.858) (0.853)

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

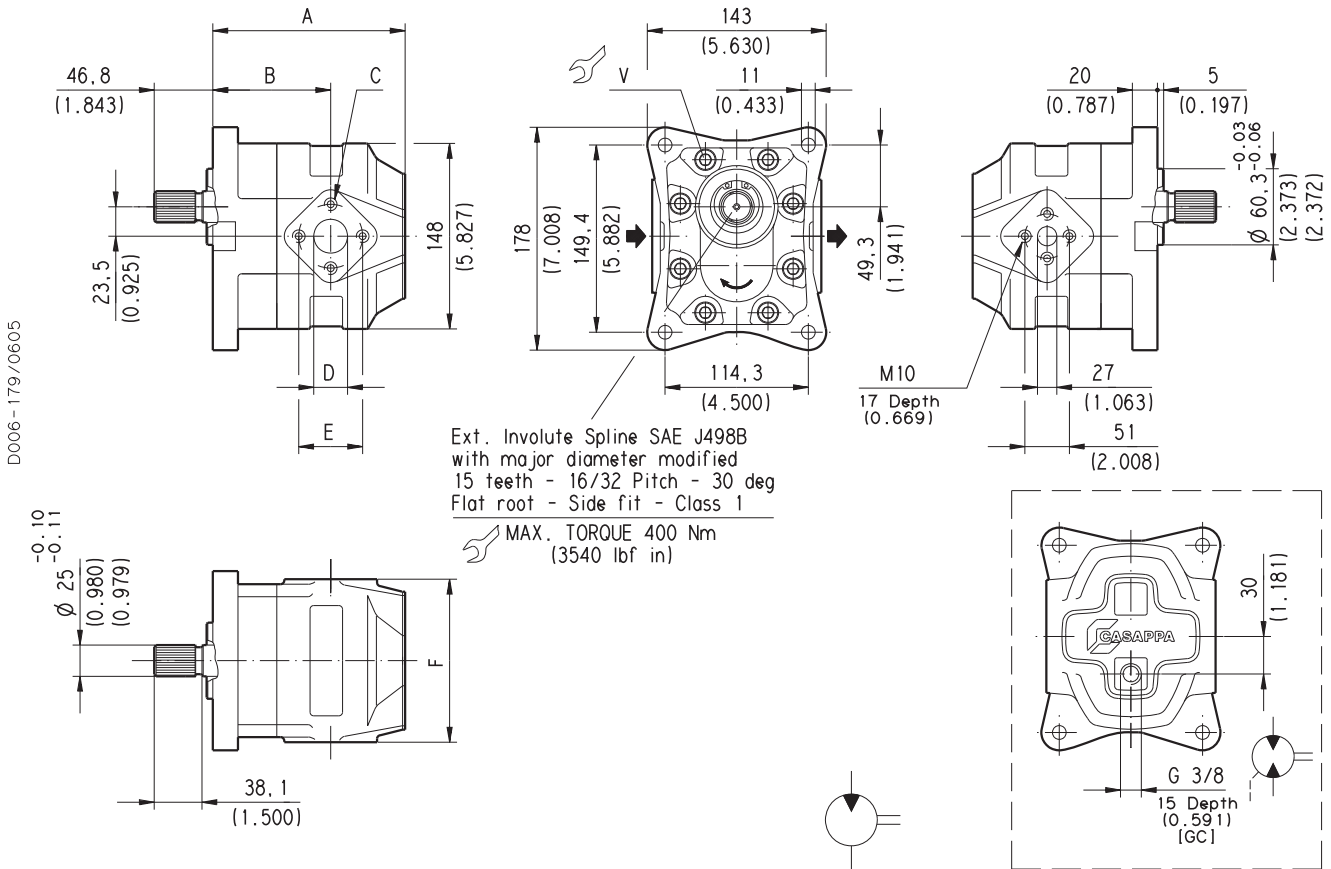
02/06.2005

Motor type	A	B	C	D	E	F	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	
KM 30•51 S	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)
KM 30•61 D		156 (6.142)	101 (3.976)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)
KM 30•73 B	164 (6.457)	109 (4.291)					

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

KM 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)

Motor type		A	B	C	D	E	F	
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	
KM 30-51	S	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)
			156 (6.142)	101 (3.976)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)
			164 (6.457)	109 (4.291)				

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

How to order:

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

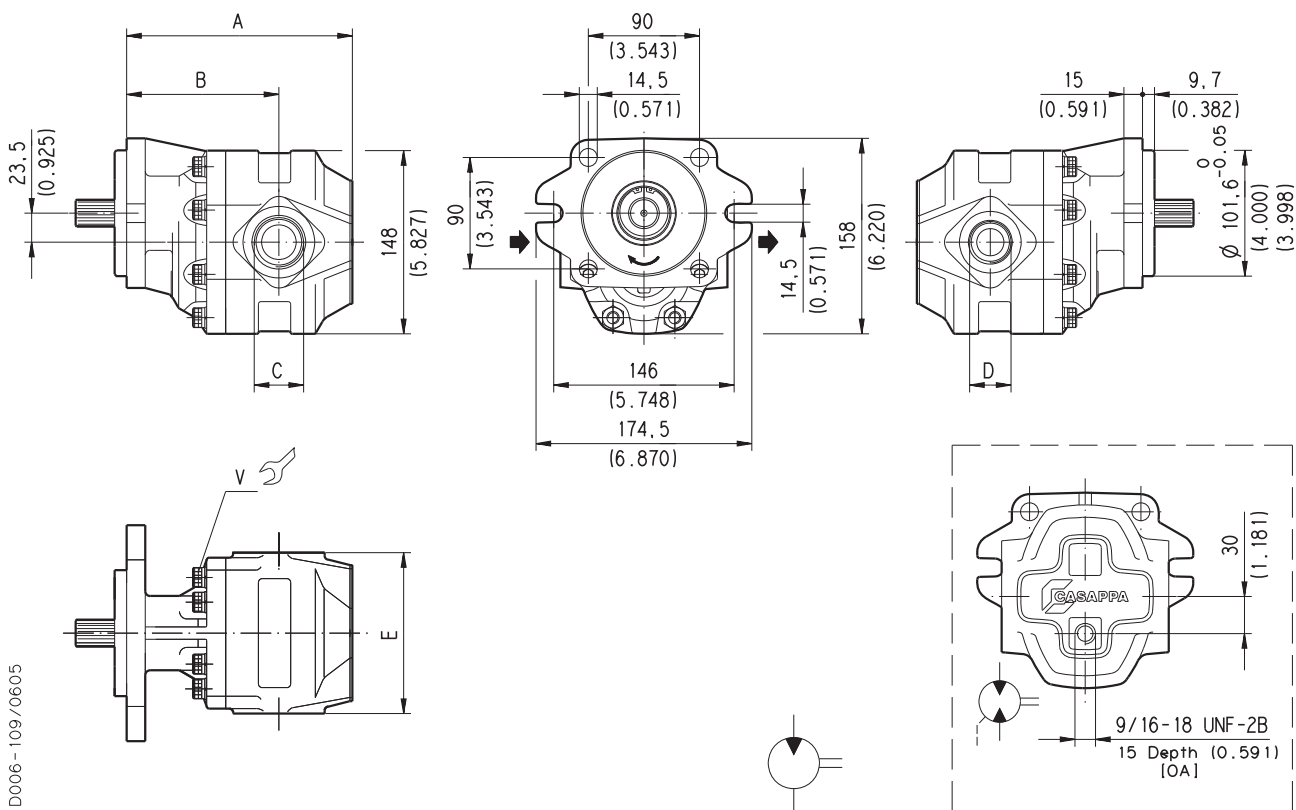
KAPPA 30

HYDRAULIC GEAR MOTORS SAE STANDARD

... S3

SAE STRAIGHT THREAD PORTS J514

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



D006-109/0605

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

To order see page 104 e 105

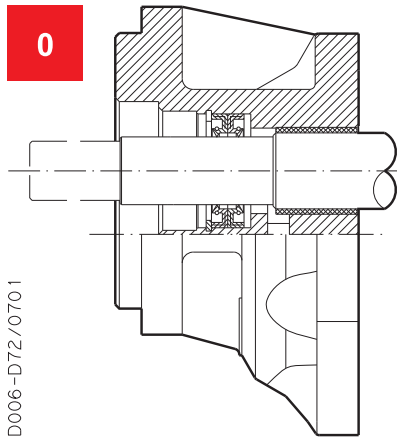
02/06.2005

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

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

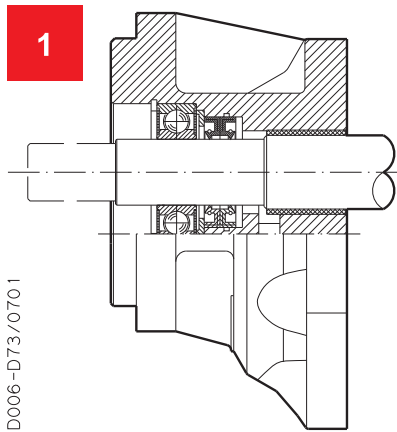
KAPPA 30 SAE VERSION

SAE



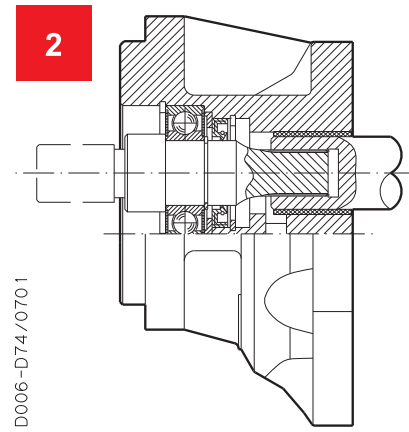
D006-D72/0701

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



D006-D73/0701

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



D006-D74/0701

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

Replaces: 01/03.2002

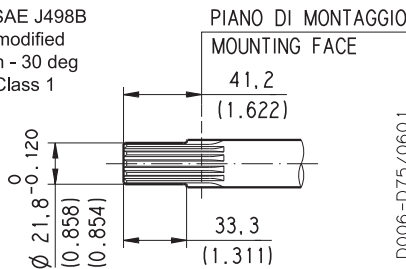
KAPPA 30 END DRIVE SHAFTS

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

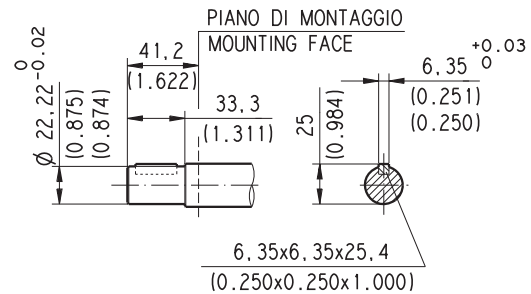


D006-D75/0601

MAX 2921 lbf in (330 Nm)

SAE "B" STRAIGHT

32



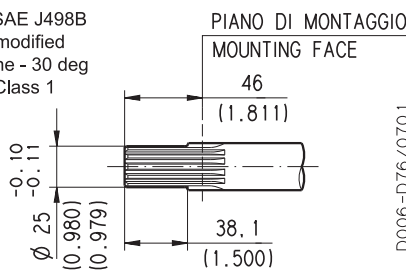
D006-D77/0601

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

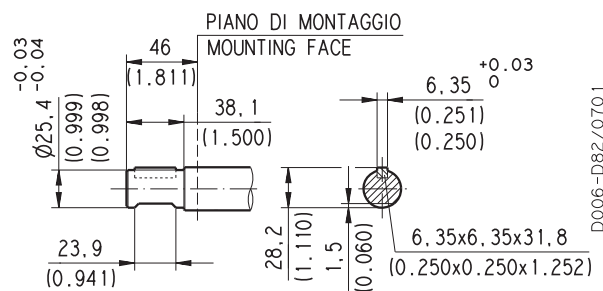


D006-D76/0701

MAX 4426 lbf in (500 Nm)

SAE "BB" STRAIGHT

33



D006-D82/0701

MAX 2478 lbf in (280 Nm)

Replaces: 03/03.2006

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

HOW TO ORDER SINGLE MOTORS

1	2	3		4	5	6	7	8		
Motor type	Rotation	Version	–	Drive shaft	Mounting flange	–	Ports position	Ports IN/OUT	–	Seals
KM30-27	S	0	–	04	S3	–	L	OF/OD	–	N

1 Motor Type		CODE
in ³ /rev	(cm ³ /rev)	
1.63	26,7	KM 30-27
2.11	34,56	KM 30-34
2.40	39,27	KM 30-38
2.68	43,98	KM 30-43
3.16	51,83	KM 30-51
3.45	56,54	KM 30-56
3.74	61,26	KM 30-61
4.50	73,82	KM 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

CODE	Ports position	6
L	Side	

CODE	Ports IN/OUT	7
SAE STRAIGHT THREAD PORTS (ODT)		
Side	Motor type	
OD/OF	KM 30-27	
OD/OF	KM 30-34	
OF/OG	KM 30-38	
OF/OG	KM 30-43	
OF/OG	KM 30-51	
OG/OH	KM 30-56	
OG/OH	KM 30-61	
OG/OH	KM 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 2

ORDER EXAMPLE

Standard motor **KM 30-27 S0 - 04 S3 - L OD/OF - N**

Special version motor **KM 30-27 S2 - 32 S3 - L OD/OF - V Bz**

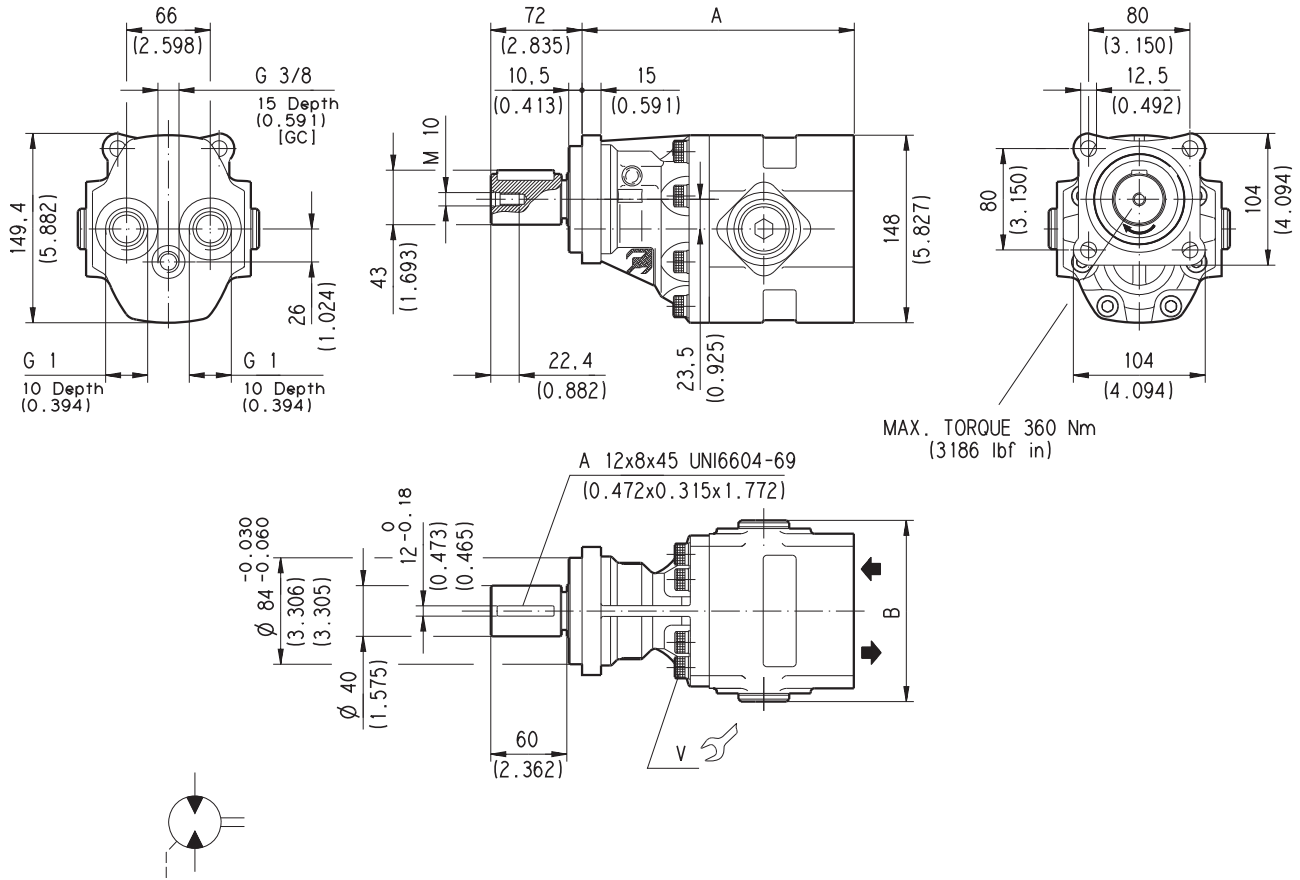
KAPPA 30

HYDRAULIC GEAR MOTORS ISO STANDARD

42 Z0

GAS STRAIGHT THREAD PORTS

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



D006-177/0605

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

Motor type	A	B
	mm (in)	mm (in)
KM 30•27	198 (7.795)	143 (5.630)
KM 30•34	203,5 (8.012)	
KM 30•38	206,5 (8.130)	
KM 30•43	209,5 (8.248)	
R5-42 Z0-P GF/GF-N		

02/06.2005

Rotation: R=reversible rear drain

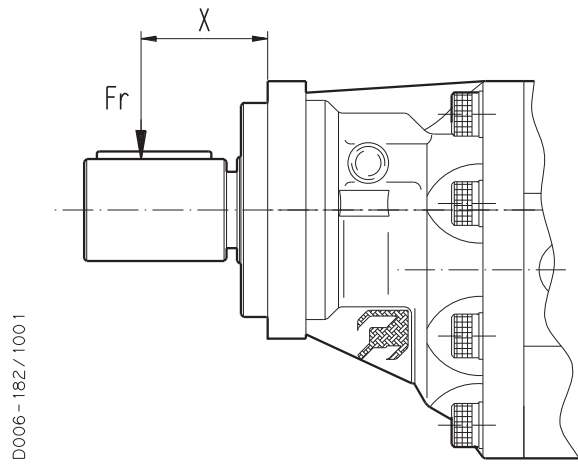
How to order:

KM 30•27 R5-42 Z0-P GF/GF-N

KAPPA 30

PERMISSIBLE RADIAL LOADING ON SUPPORT

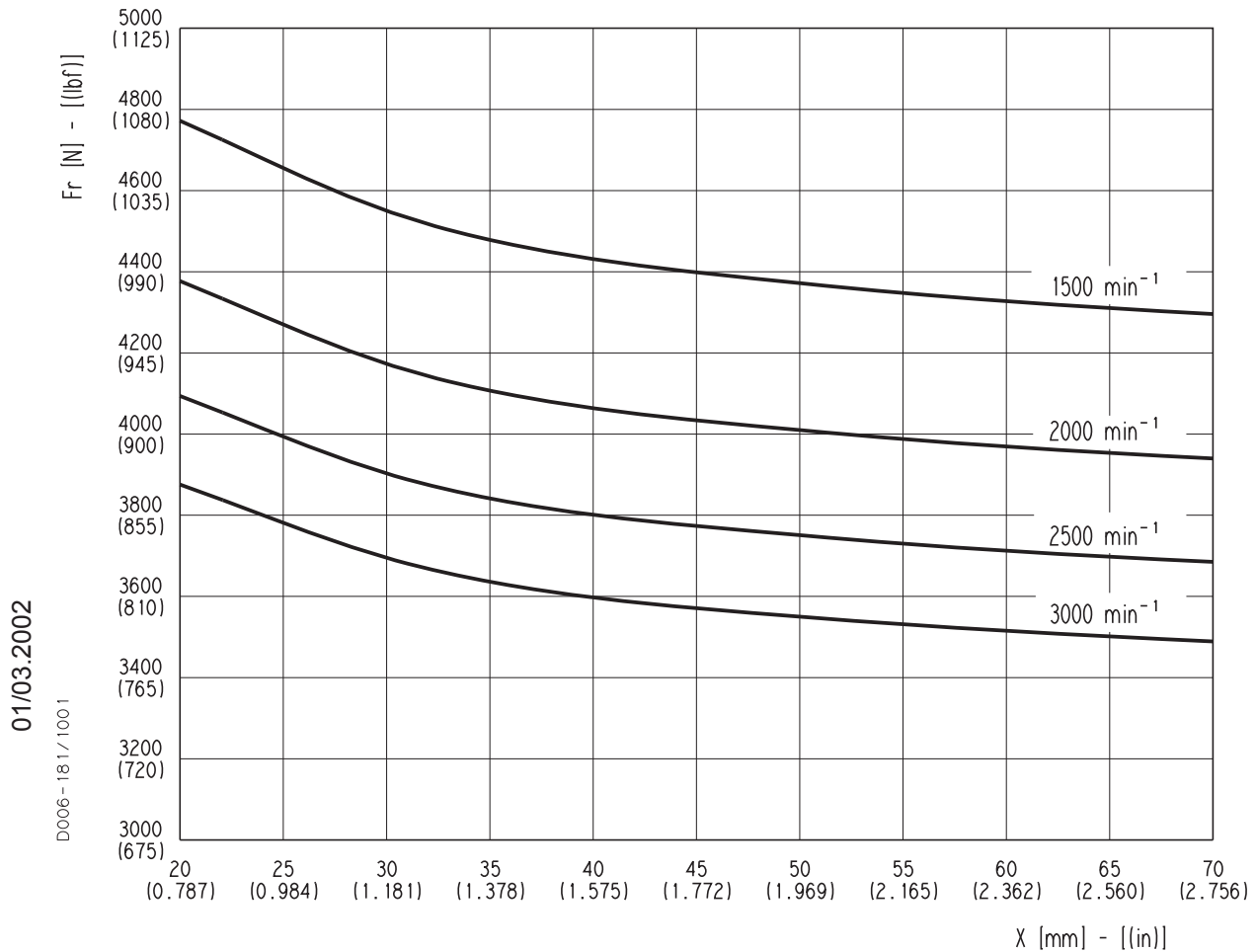
42 Z0



X= Distance of the radial load result from the mounting flange.

Each curve has been obtained at:

- Operating temperature: 140 °F (60 °C)
- Grease lubrication ISO VG 100
- Rating fatigue life (hours) $L_h = 5000$ [h]



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.

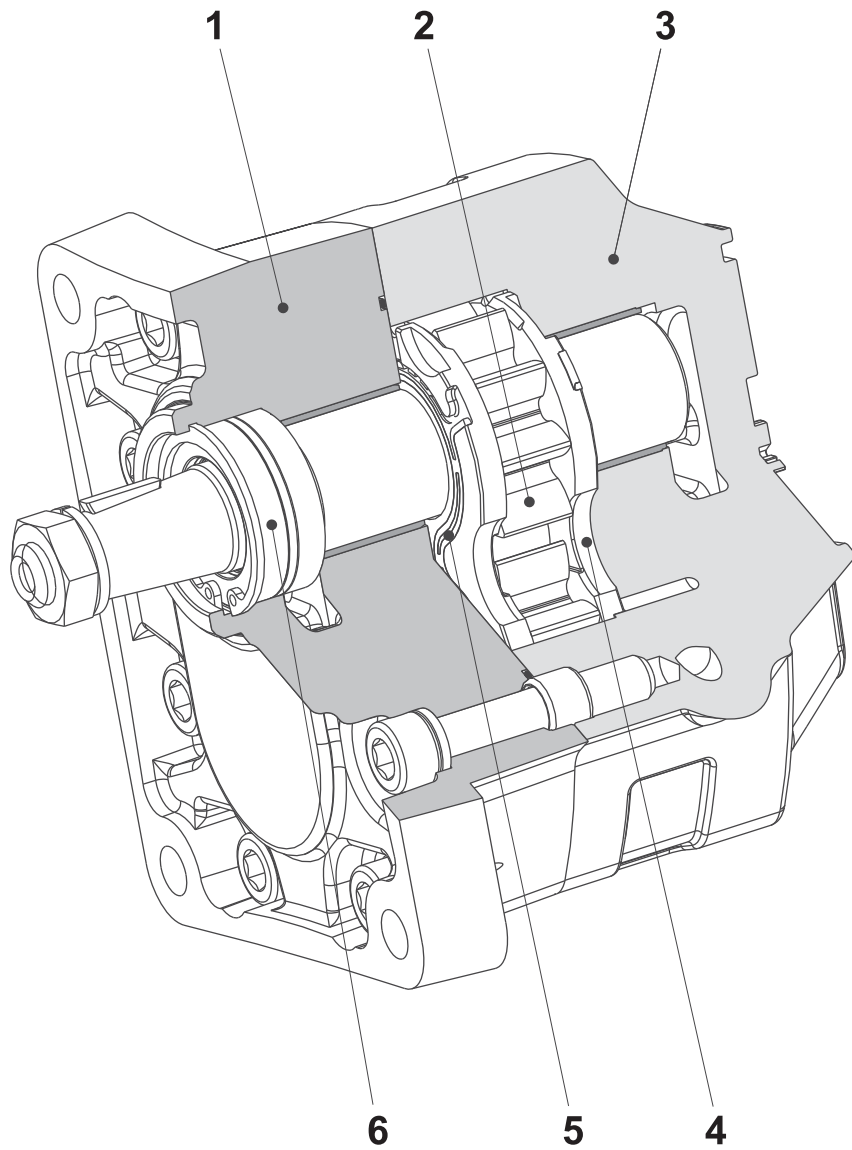
STARTING UP

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 _ Mountig 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



Headquarters:

CASAPPA S.p.A.

Via Balestrieri, 1

43044 Lemignano di Collecchio

Parma (Italy)

Tel. (+39) 0521 30 41 11

Fax (+39) 0521 80 46 00

IP Videoconferencing

E-mail: info@casappa.com

www.casappa.com

