KAPPA 30 — HYDRAULIC GEAR PUMPS EUROPEAN STANDARD — A5 E4

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

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

How to order a triple pump

(for double pump omit the intermediate pump)

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

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

(2) For Buna N seals no code

ORDER EXAMPLE

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

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

PORTS CONNECTORS TIGHTENING TORQUE

Tightening torque for low pressure side port.

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

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

EUROPEAN FLANGED PORTS - 4 Bolts — EUROPEAN

CODICE	Nm	(lbf in)	Nm	(lbf in)
EA	8 $^{+0.5}$	71 ÷ 75	8 $^{+0.5}$	71 ÷ 75
EB	15 $^{+1}$	133 ÷ 142	20 $^{+1}$ (KP 20)	177 ÷ 186
			15 $^{+1}$ (KP 30)	133 ÷ 142
ED	20 $^{+1}$	177 ÷ 186	30 $^{+2,5}$	266 ÷ 288
EF	25 $^{+1}$	221 ÷ 230	50 $^{+2,5}$	443 ÷ 465

GAS STRAIGHT THREAD PORTS — BSPP

CODICE	Nm	(lbf in)	Nm	(lbf in)
GB (◆)	15 $^{+1}$	133 ÷ 142	—	—
GC (■)	15 $^{+1}$	133 ÷ 142	—	—
GD	20 $^{+1}$	177 ÷ 186	50 $^{+2,5}$	443 ÷ 465
GE	30 $^{+2,5}$	266 ÷ 288	90 $^{+5}$	797 ÷ 841
GF	50 $^{+2,5}$	443 ÷ 465	130 $^{+10}$	1151 ÷ 1239
GG	60 $^{+5}$	531 ÷ 575	170 $^{+10}$	1505 ÷ 1593

SAE STRAIGHT THREAD PORTS J514 — ODT

CODICE	Nm	(lbf in)	Nm	(lbf in)
03 (✹)	12 $^{+1}$	106 ÷ 115	—	
OA (■)	15 $^{+1}$	133 ÷ 142	—	
OC	30 $^{+2,5}$	266 ÷ 288	70 $^{+5}$	620 ÷ 664
OD	40 $^{+2,5}$	354 ÷ 376	120 $^{+10}$	1062 ÷ 1151
OF	60 $^{+5}$	531 ÷ 575	170 $^{+10}$	1505 ÷ 1593
OG	70 $^{+5}$	620 ÷ 664	200 $^{+10}$	1770 ÷ 1859
OH	100 $^{+5}$	885 ÷ 929	270 $^{+15}$	2390 ÷ 2523

SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI — SSM

CODICE	Nm	(lbf in)	Nm	(lbf in)
MA	12 $^{+1}$	106 ÷ 115	12 $^{+1}$	106 ÷ 115
MB	20 $^{+1}$	177 ÷ 186	25 $^{+1}$	221 ÷ 230
MC	20 $^{+1}$	177 ÷ 186	25 $^{+1}$	221 ÷ 230

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

KAPPA 20 GENERAL DATA MOTORS

KM 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}	
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

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.

01/03.02

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}	
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

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
$\eta_m = \eta_m (V, \Delta p, n)$	($\approx$ 0,88)	Mechanical efficiency
$\eta_t = \eta_v \bullet \eta_m$	($\approx$ 0,85)	Overall efficiency

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

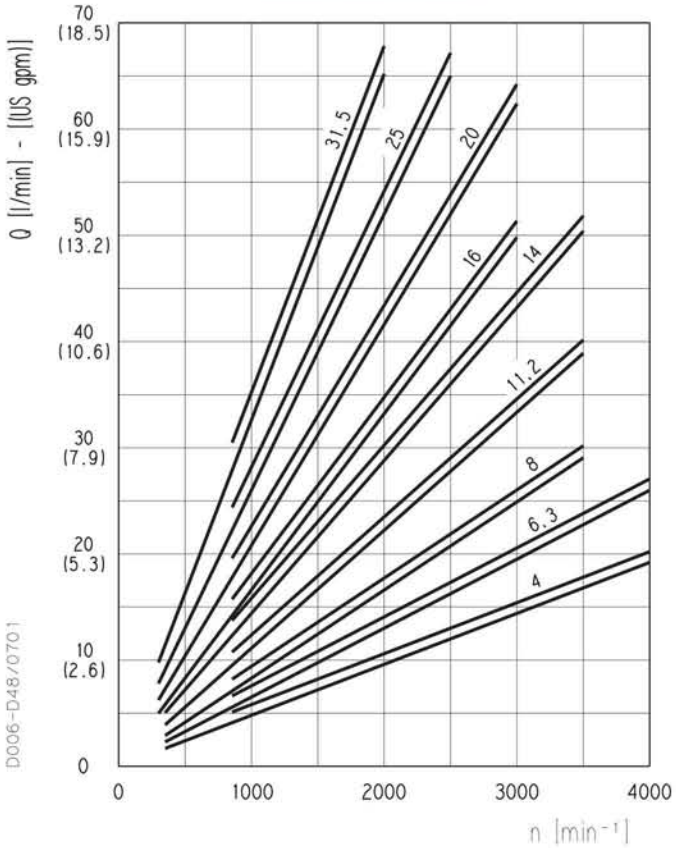
$$\mathbf{M} = \frac{\Delta p\ (bar) \bullet V\ (cm^3/rev) \bullet \eta_m}{62{,}83} \quad [Nm]$$

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

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

KAPPA 20 GEAR MOTORS PERFORMANCE CURVES

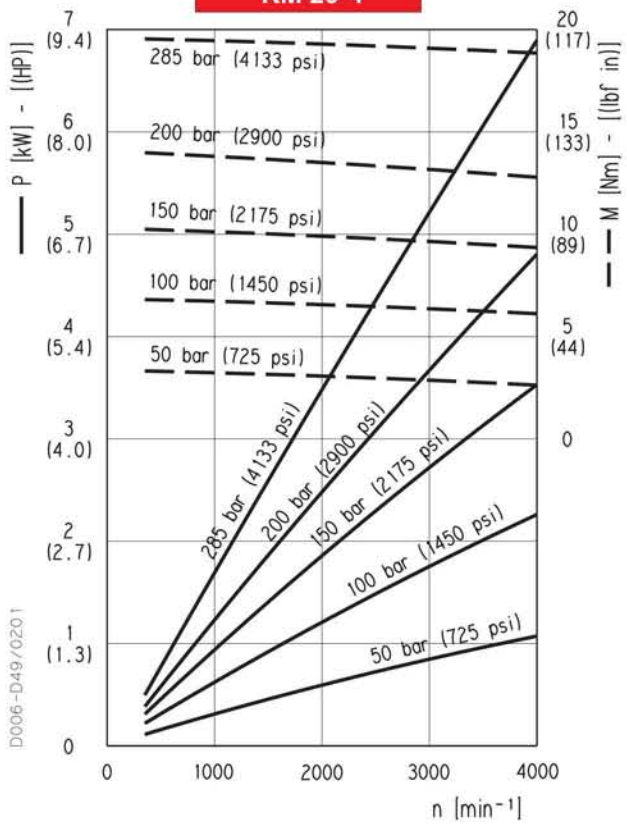
KM 20



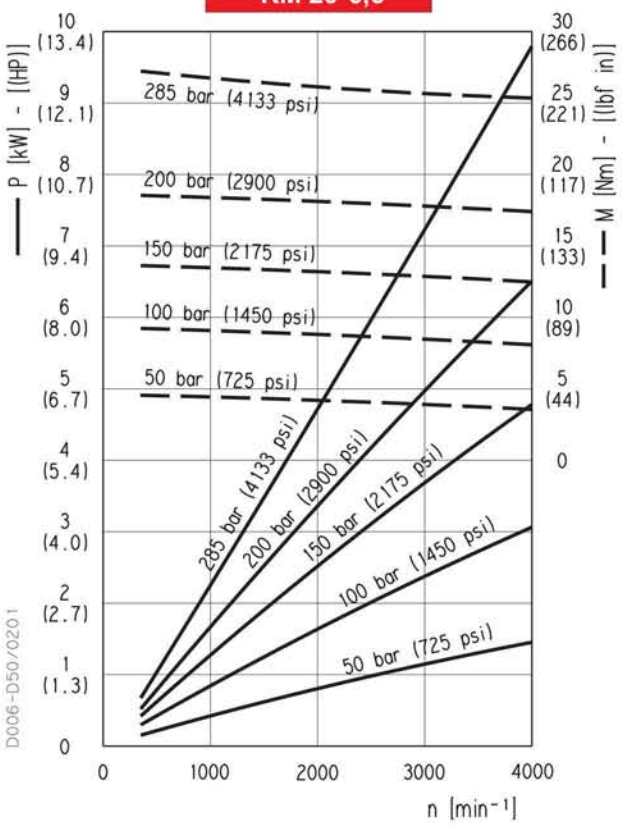
Each curve has been obtained at 122 °F (50 °C), using oil with viscosity 168 SSU (36 cSt) at 104 °F (40 °C) and at these pressures.

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



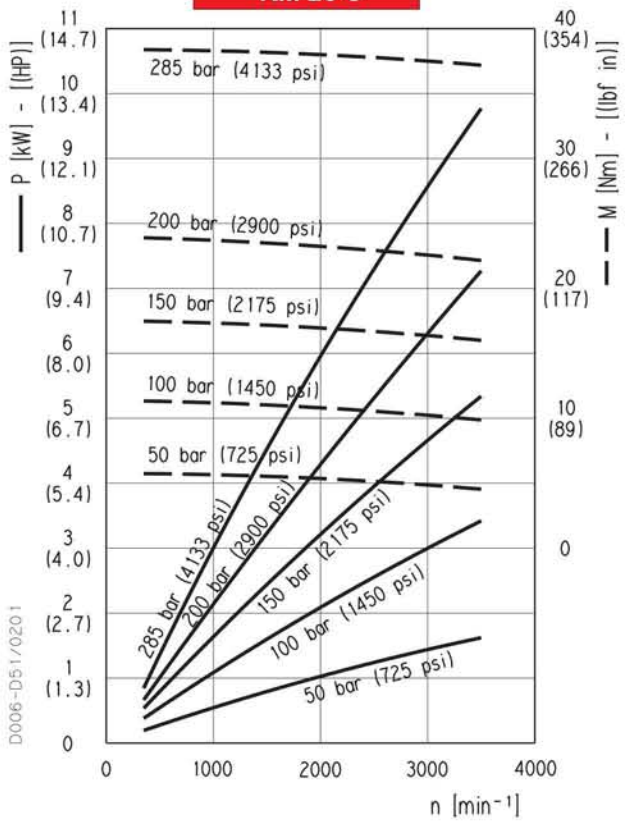
KM 20•6,3



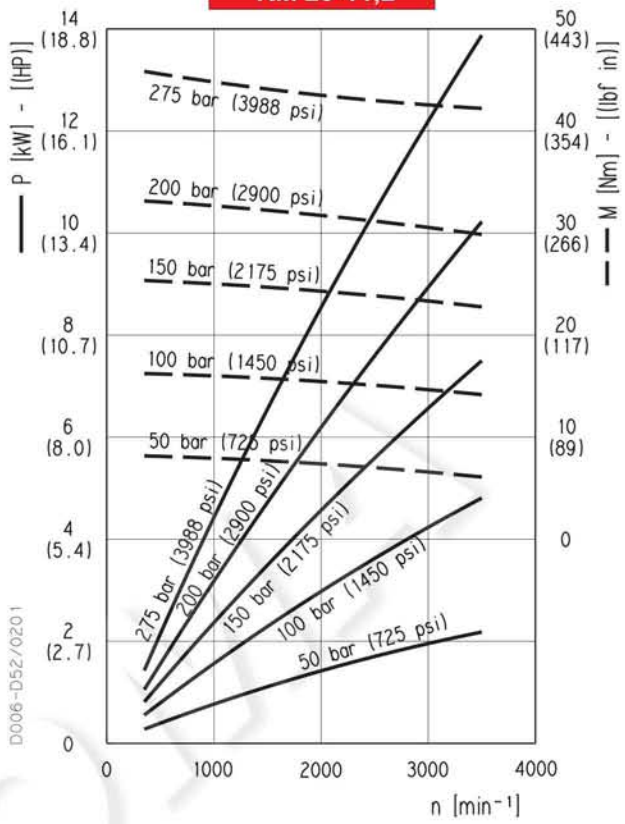
KAPPA 20 GEAR MOTORS PERFORMANCE CURVES

KM 20

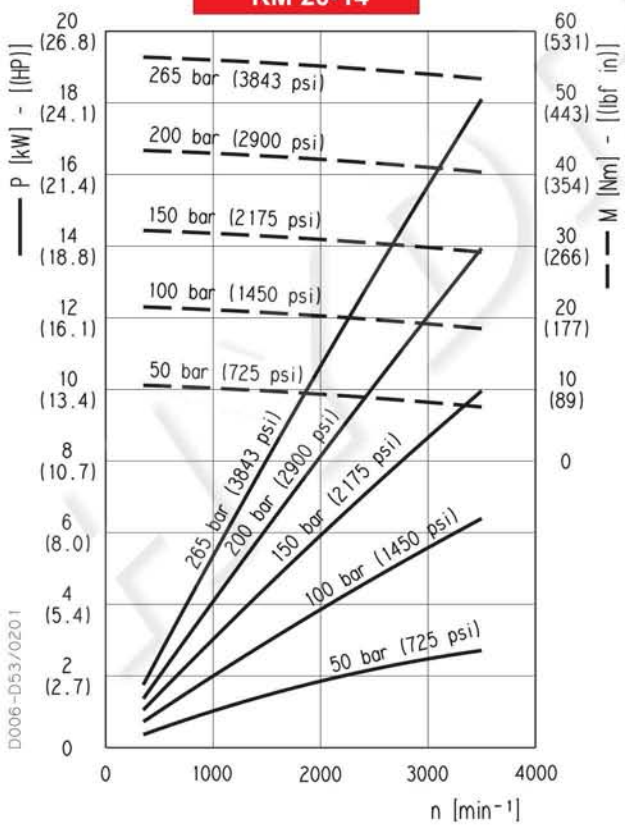
KM 20•8



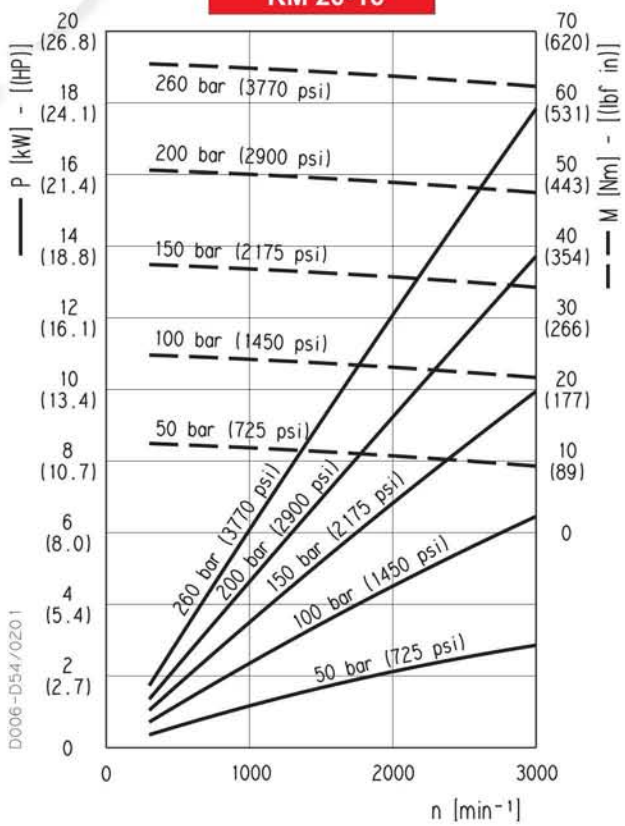
KM 20•11,2



KM 20•14

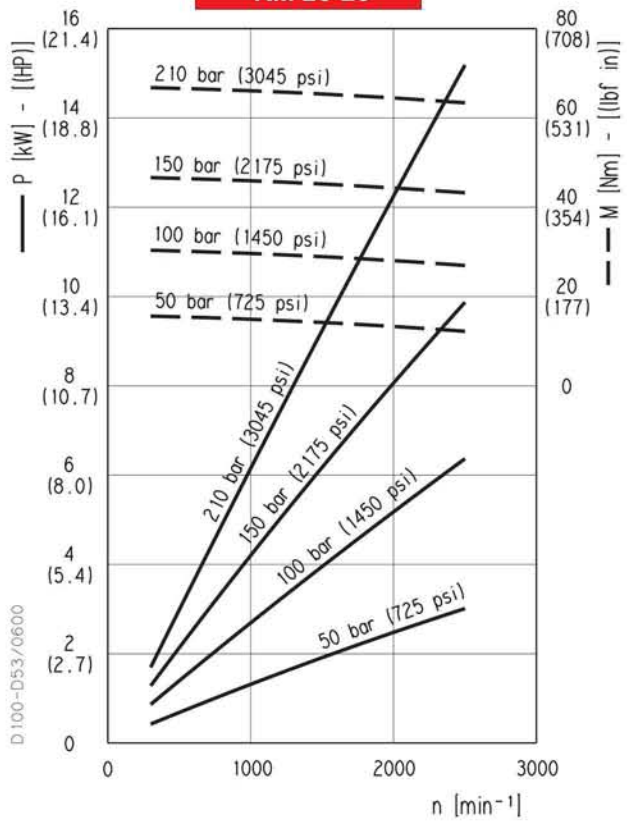


KM 20•16

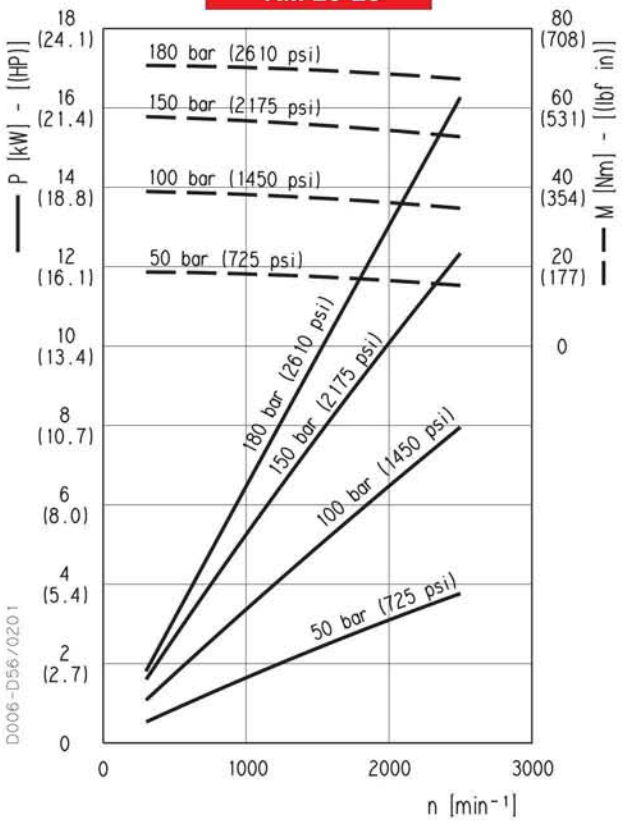


KAPPA 20 GEAR MOTORS PERFORMANCE CURVES

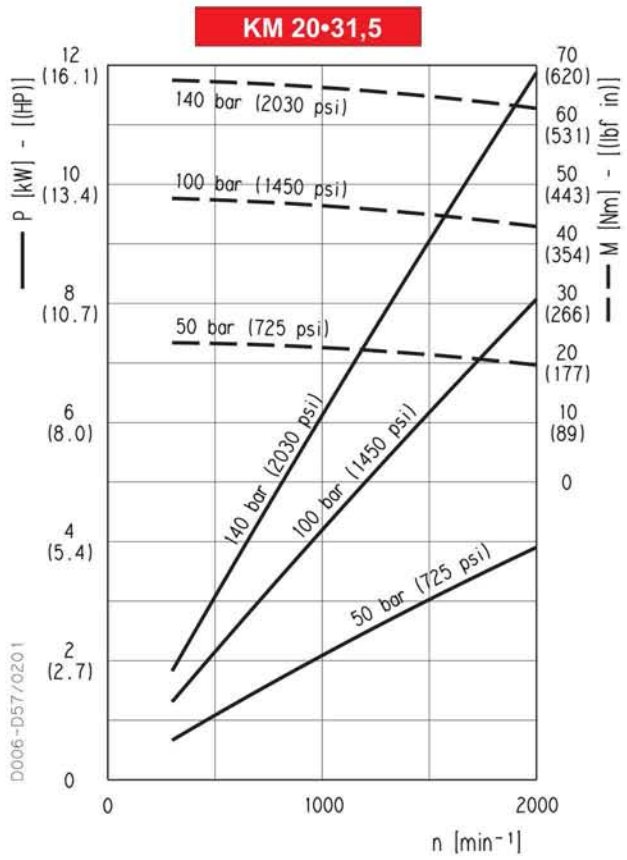
KM 20•20



KM 20•25

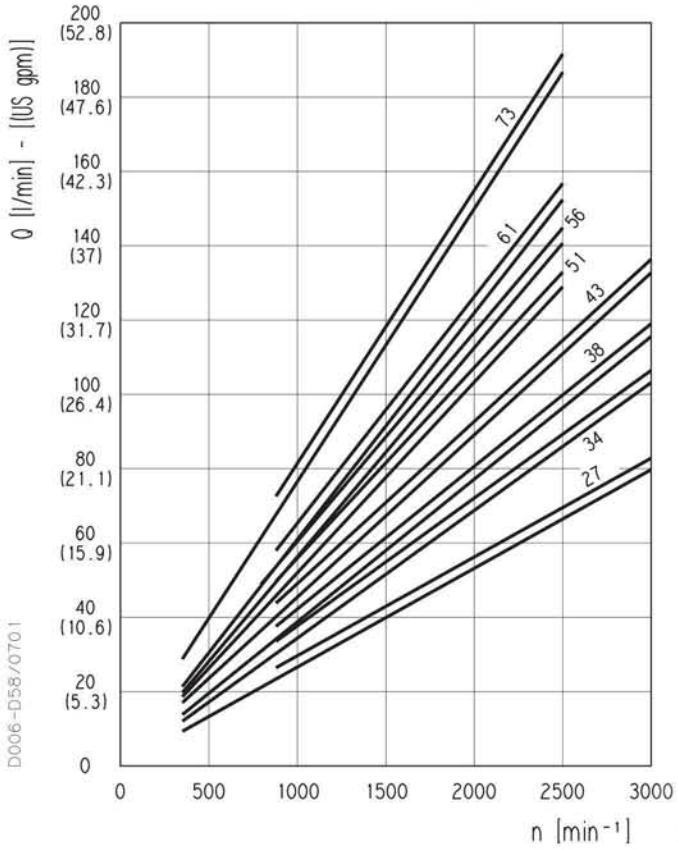


KM 20•31,5



KAPPA 30 GEAR MOTORS PERFORMANCE CURVES

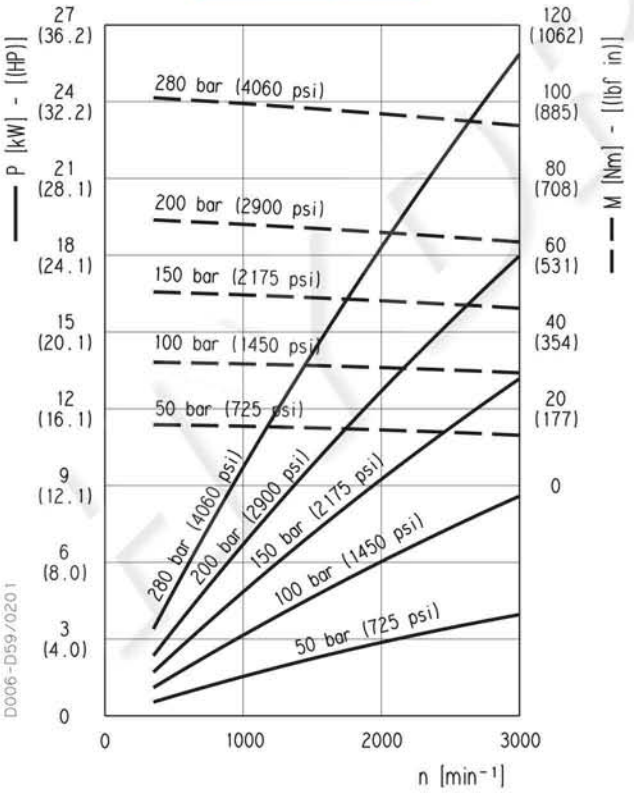
KM 30



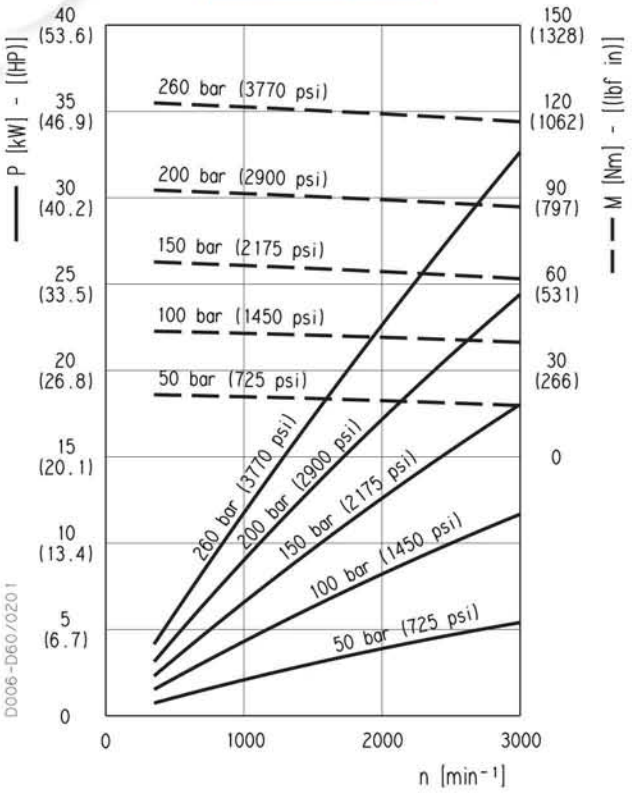
Each curve has been obtained at 122 °F (50 °C), using oil with viscosity 168 SSU (36 cSt) at 104 °F (40 °C) and at these pressures.

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)

KM 30•27

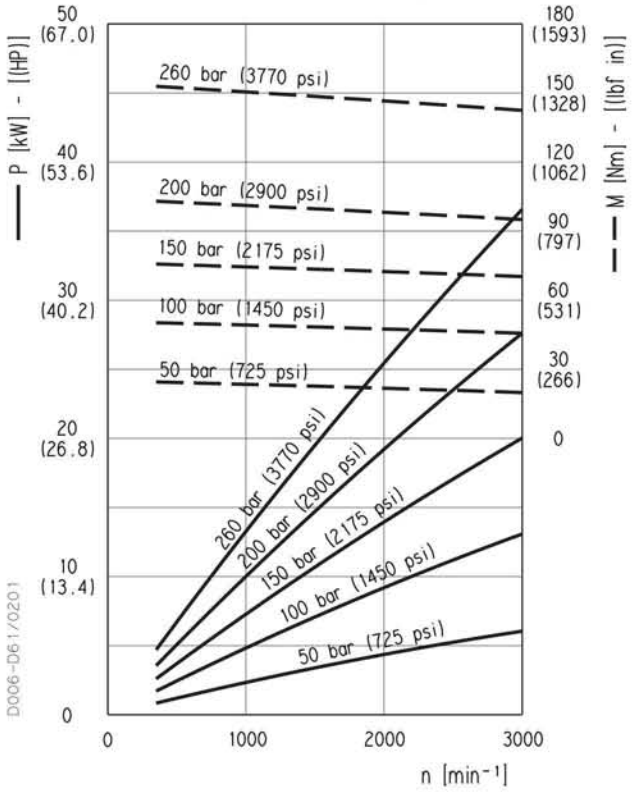


KM 30•34

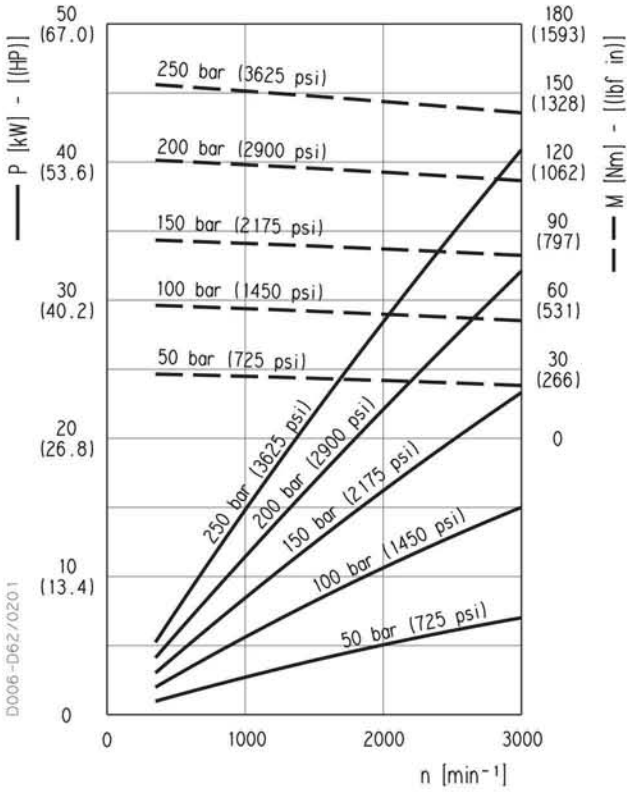


KAPPA 30 GEAR MOTORS PERFORMANCE CURVES

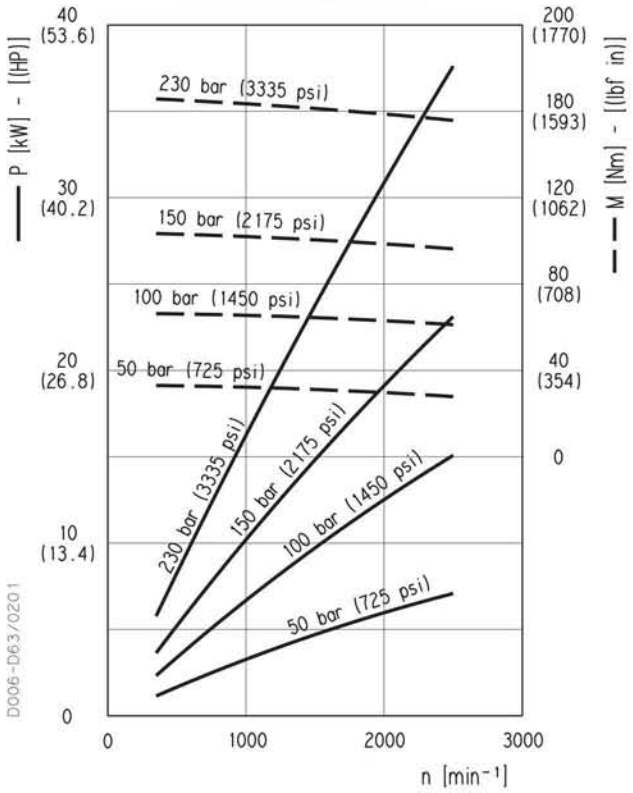
KM 30•38



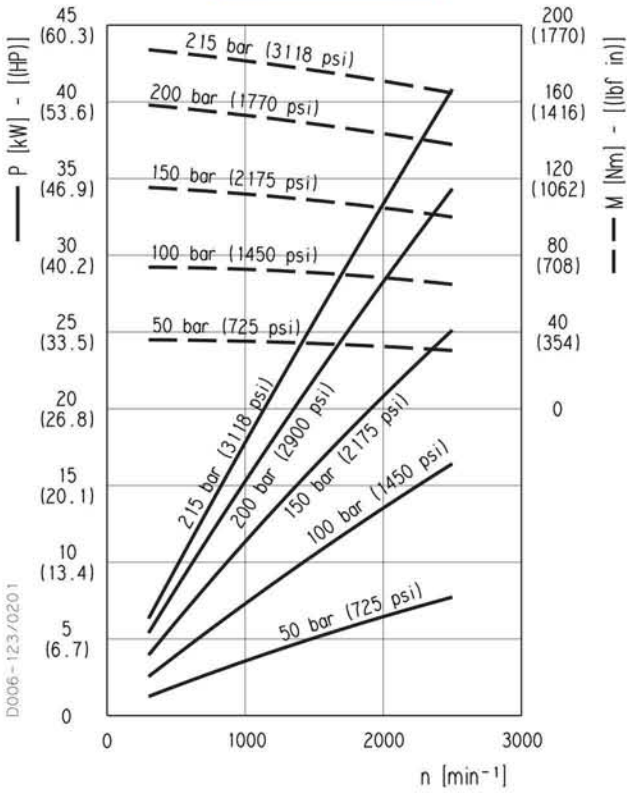
KM 30•43



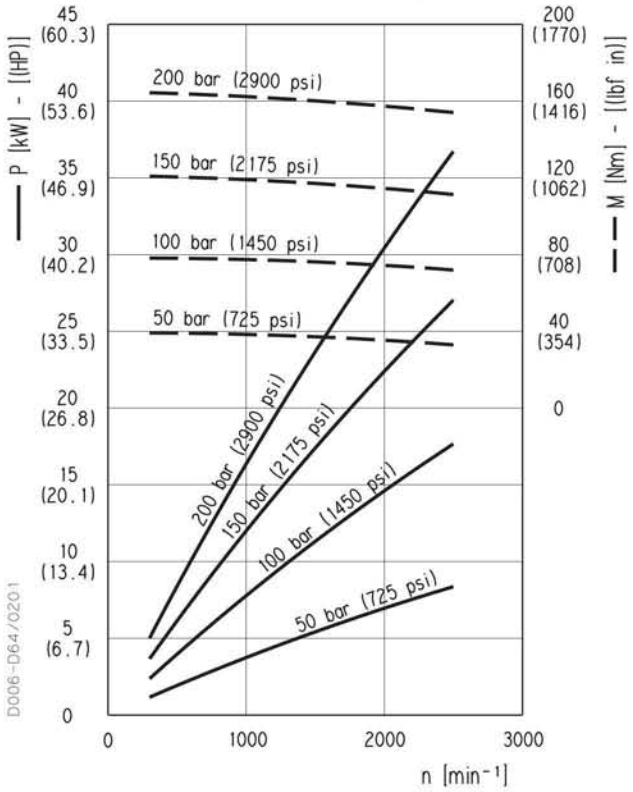
KM 30•51



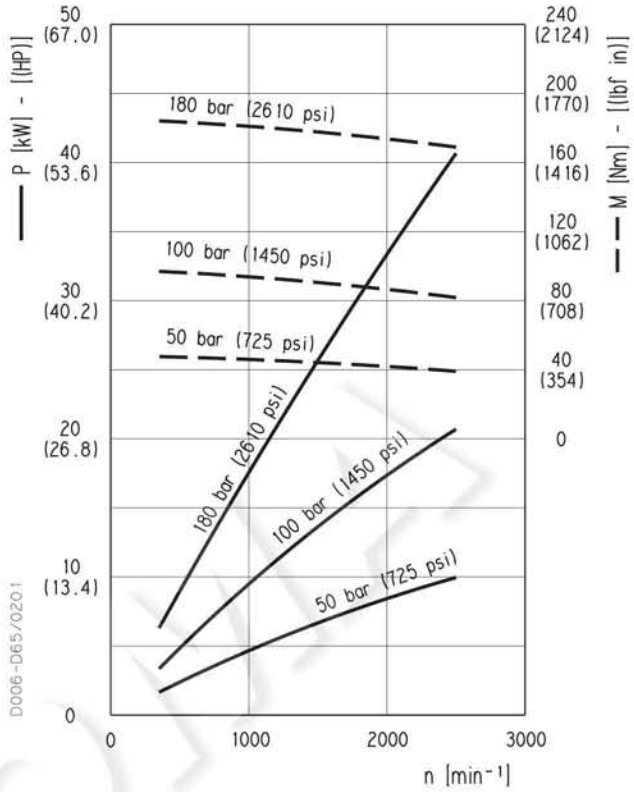
KM 30•56



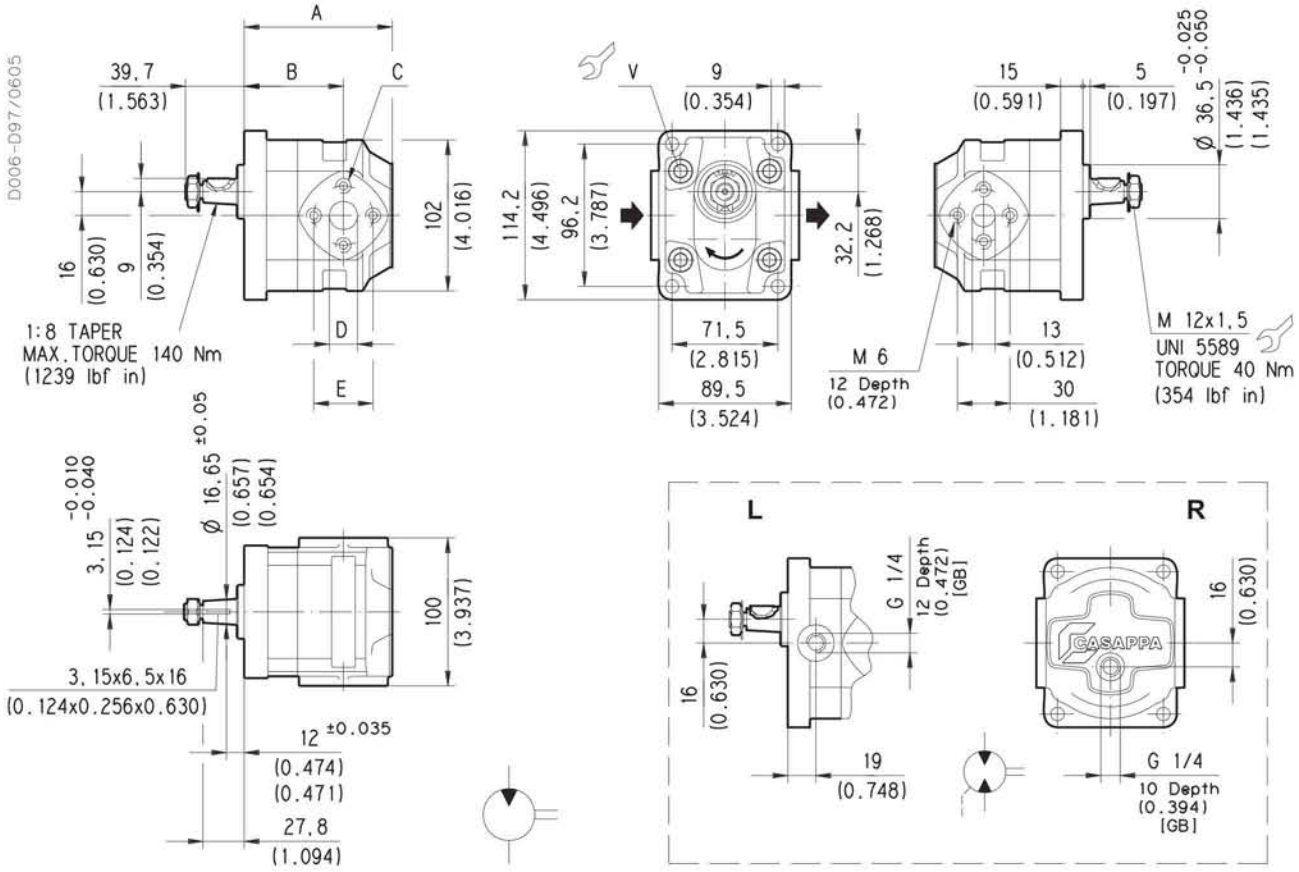
KM 30•61



KM 30•73



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



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

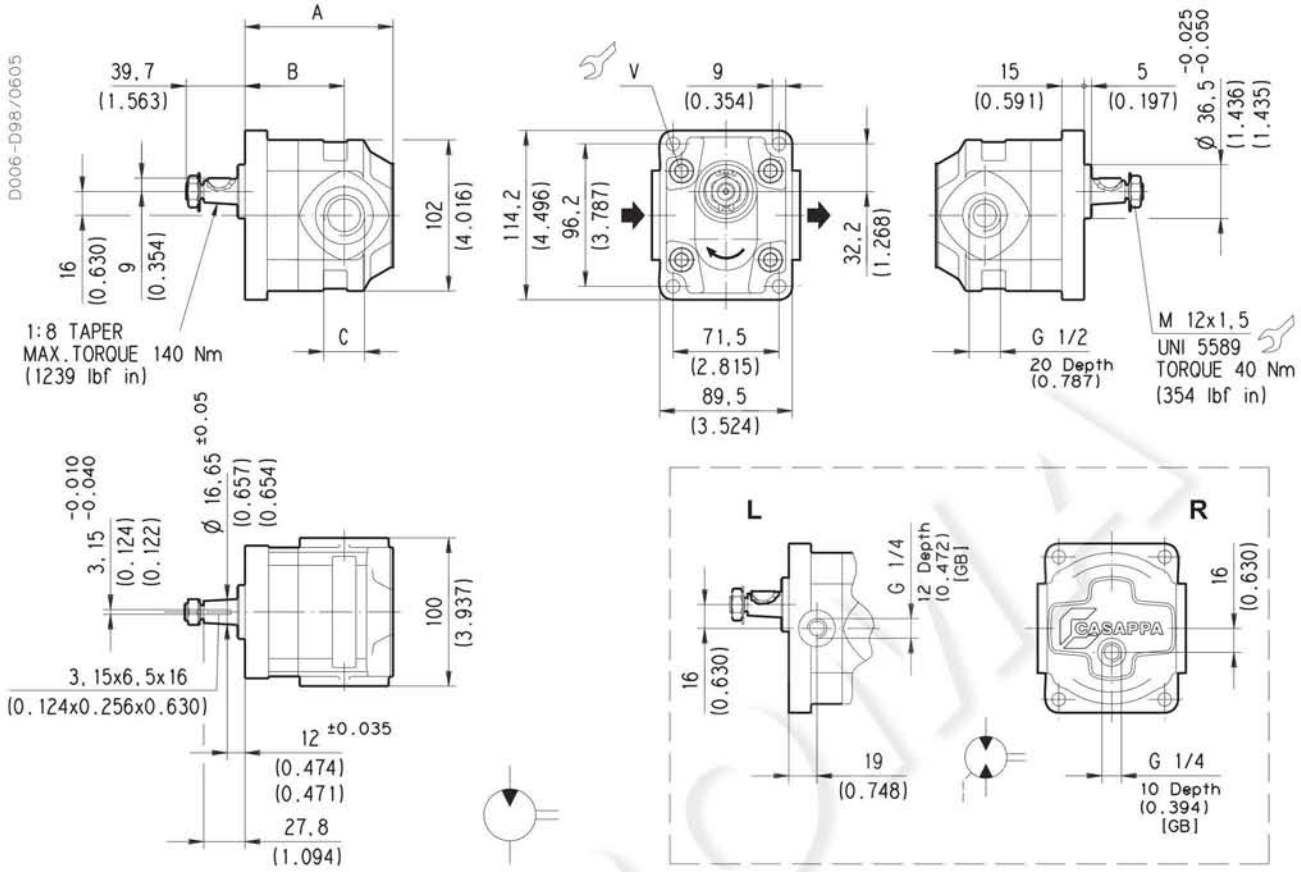
Motor type			A	B	C	D	E
			mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KM 20•4	S D L R B	0-82 E2-L EA/EA-N	87,5 (3.445)	60 (2.362)	M 6 Depth 12 (0.472)	13 (0.512)	30 (1.181)
KM 20•6,3			90 (3.543)	62,5 (2.461)			
KM 20•8			92,5 (3.642)	65 (2.559)			
KM 20•11,2			96 (3.780)	68,5 (2.697)			
KM 20•14		0-82 E2-L EA/EB-N	100 (3.937)	67 (2.638)	M 8 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

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)

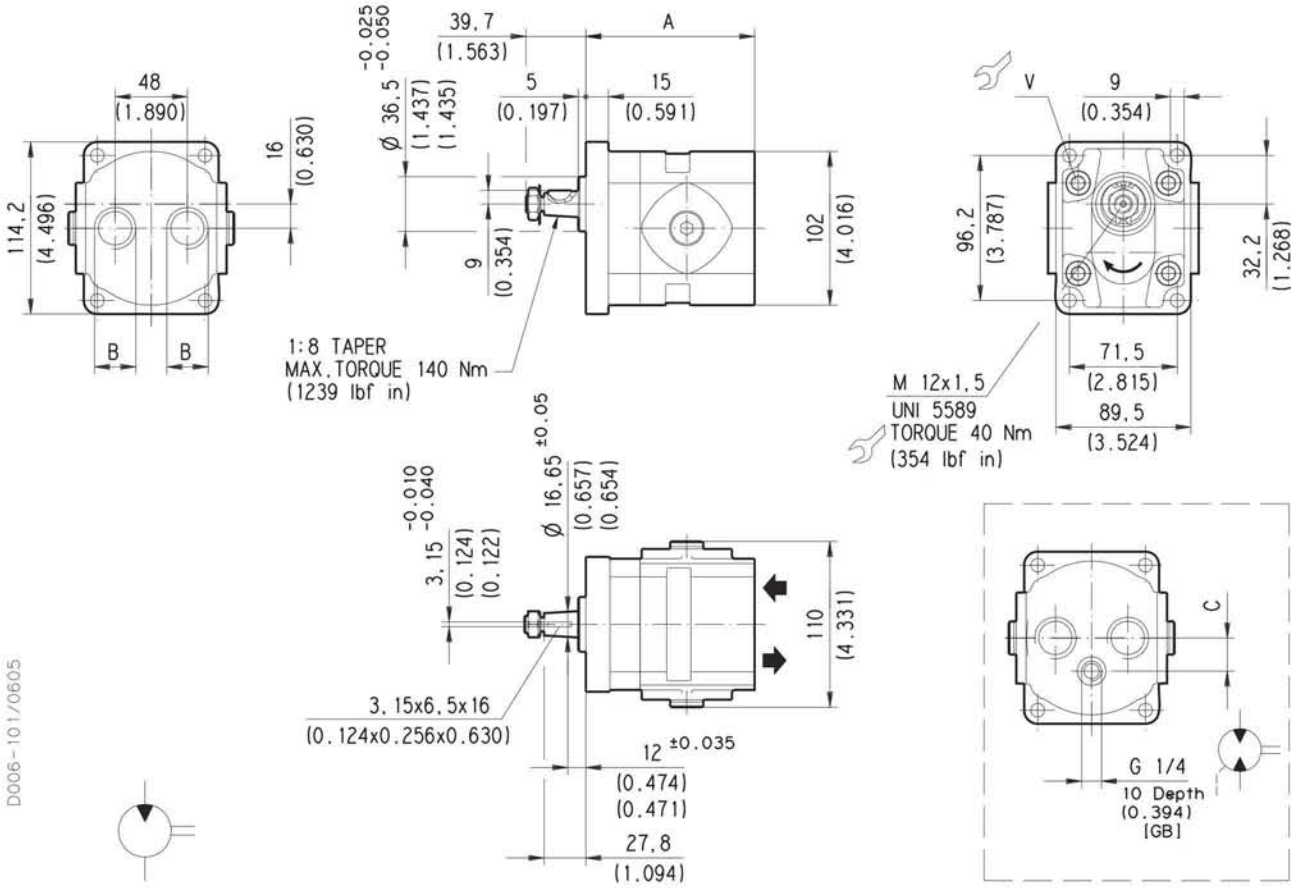
Motor type			A	B	C
			mm (in)	mm (in)	mm (in)
KM 20•4	S D L R B	0-82 E2-L GD/GD-N	87,5 (3.445)	60 (2.362)	G 1/2 Depth 20 (0.787)
KM 20•6,3			90 (3.543)	62,5 (2.461)	
KM 20•8			92,5 (3.642)	65 (2.559)	
KM 20•11,2			96 (3.780)	68,5 (2.697)	
KM 20•14		0-82 E2-L GD/GE-N	100 (3.937)	67 (2.638)	G 3/4 Depth 22 (0.866)
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 GD/GD-N

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



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

Rear ports version.

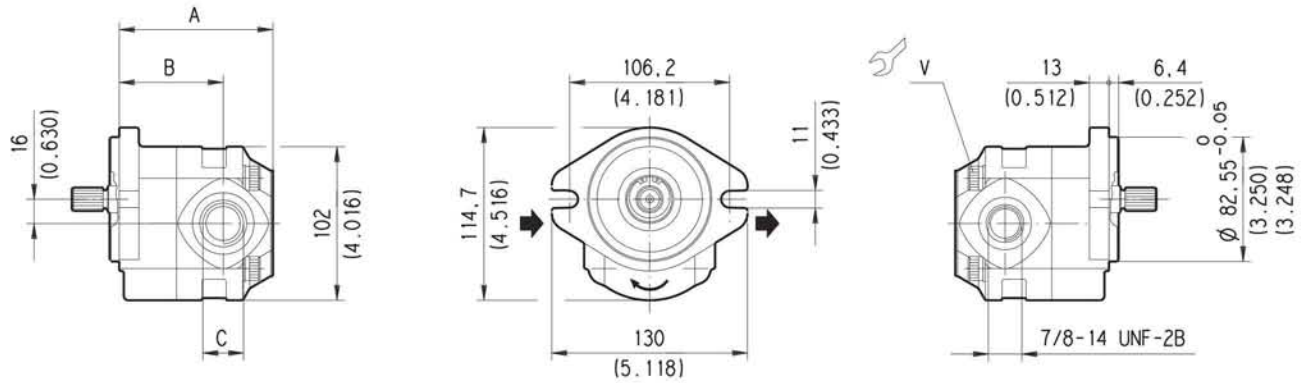
Motor type			A	B	C
			mm (in)	mm (in)	mm (in)
KM 20•4	S D R B	0-82 E2-P GD/GD-N	84,5 (3.327)	G 1/2 Depth 17 (0.670)	19 (0.748)
KM 20•6,3			87 (3.425)		
KM 20•8			89,5 (3.524)		
KM 20•11,2			93 (3.661)		
KM 20•14		0-82 E2-P GE/GE-N	112 (4.409)	G 3/4 Depth 18 (0.709)	22 (0.866)
KM 20•16			115,5 (4.547)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

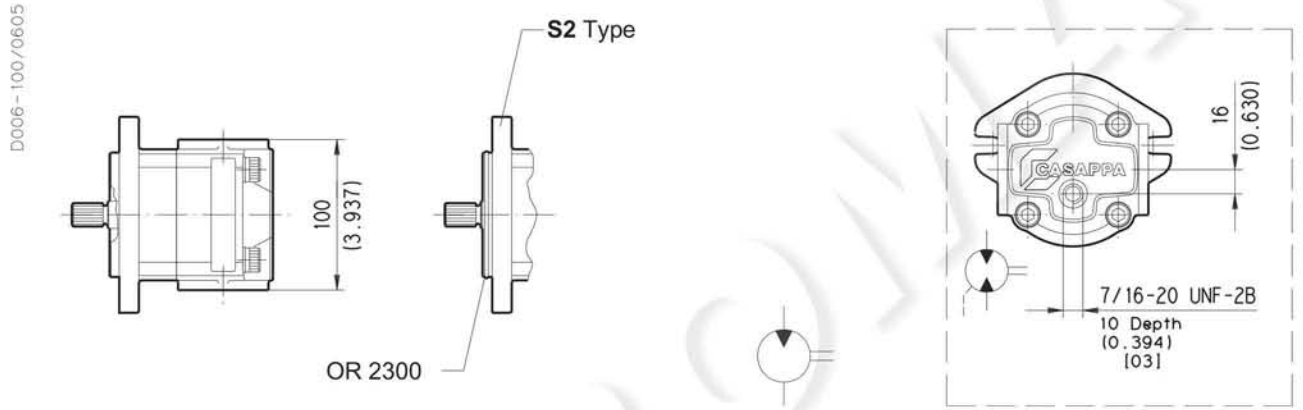
Rotation: S=left - D=right - R=reversible rear drain - B=reversible internal drain

How to order:

KM 20•4 S0-82 E2-P GD/GD-N

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



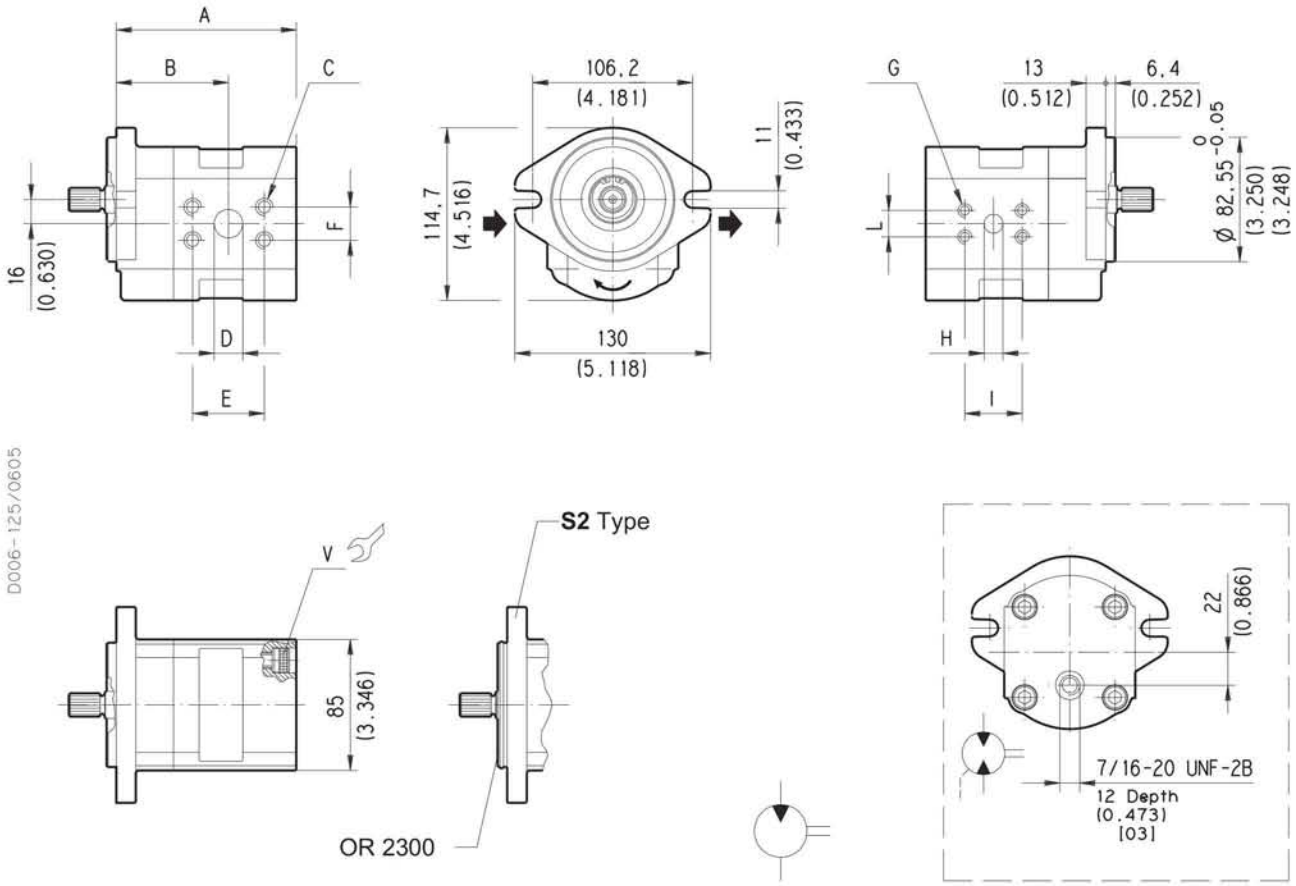


V Screws tightening torque Nm (lbf in)
70 ±7 (558 ÷ 682)

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

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		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

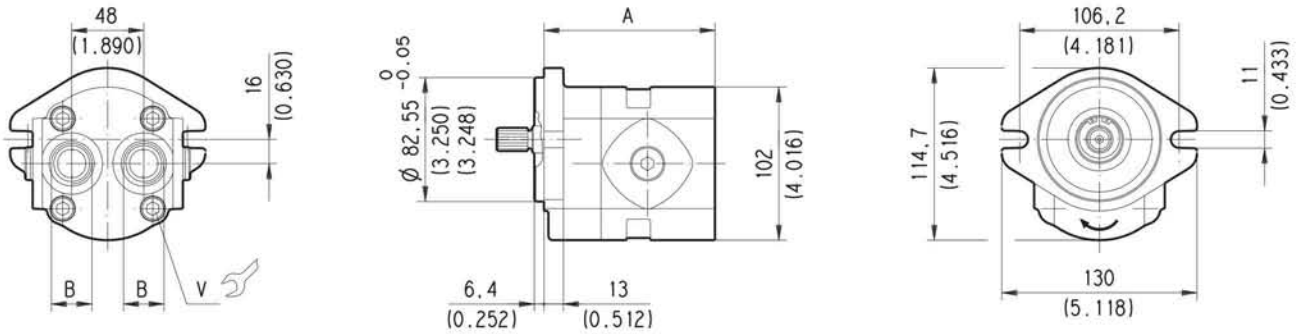


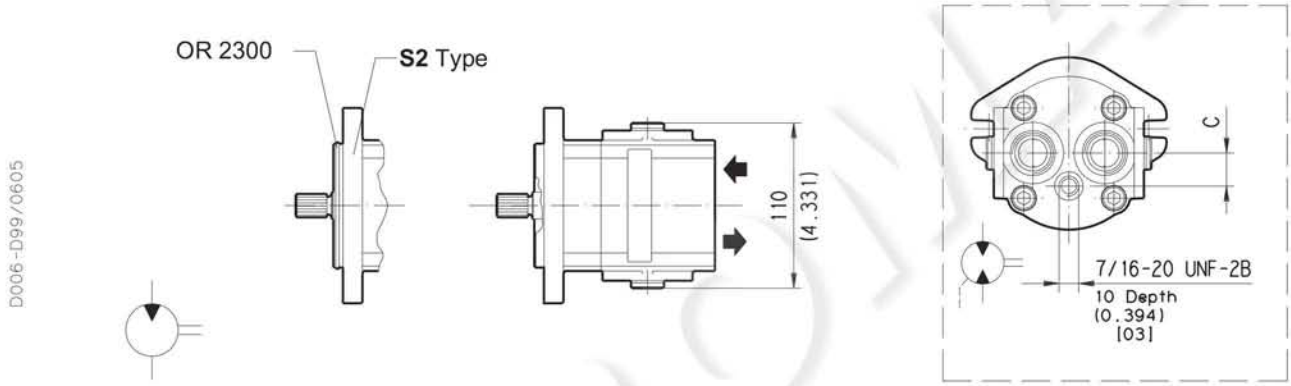
V Screws tightening torque Nm (lbf in)
70 ±7 (558 ÷ 682)

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)	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	MA	MA
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)										
KM 20•14	116 (4.567)	69 (2.717)	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)						MB
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)		25,4 (1.000)	52,4 (2.063)	26,2 (1.031)	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MB	MC
KM 20•31,5	144 (5.669)	84 (3.307)										

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



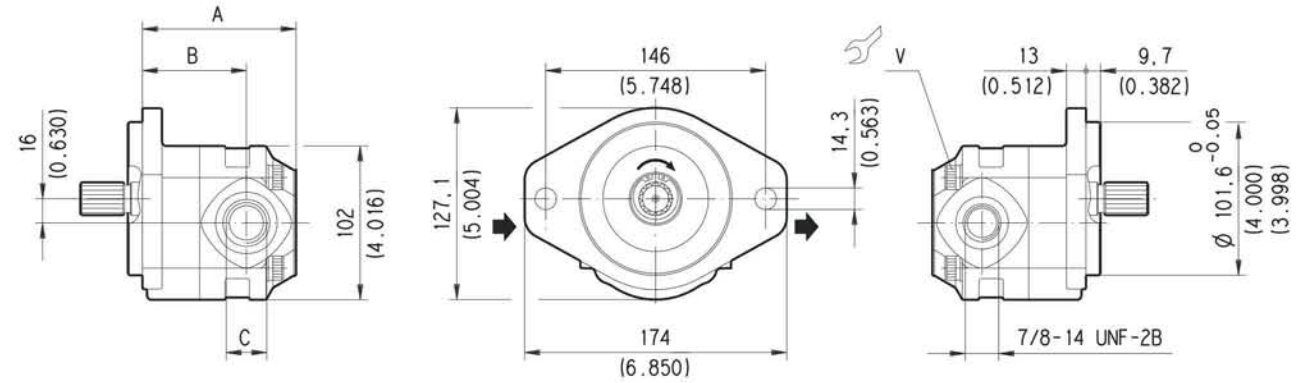


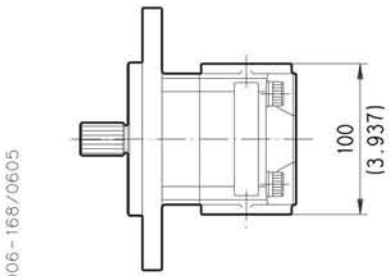
V Screws tightening torque Nm (lbf in)
70 ±7 (558 ÷ 682)

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

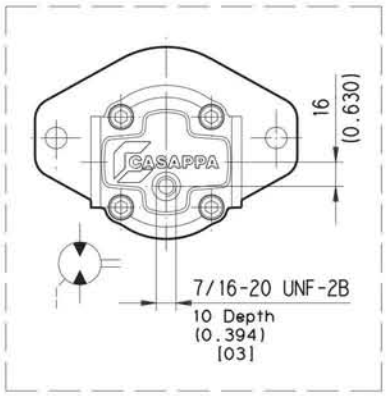
Motor type	A	B	C	Ports code	
	mm (in)	mm (in)	mm (in)	IN	OUT
KM 20•4	86,5 (3.406)	7/8-14 UNF-2B	19 (0.748)	**OC**	**OC**
KM 20•6,3	89 (3.504)				
KM 20•8	91,5 (3.602)				
KM 20•11,2	95 (3.740)				
KM 20•14	114 (4.488)	1-1/16-12 UN-2B	22 (0.866)		**OD**
KM 20•16	117,5 (4.623)				
KM 20•20	124 (4.882)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

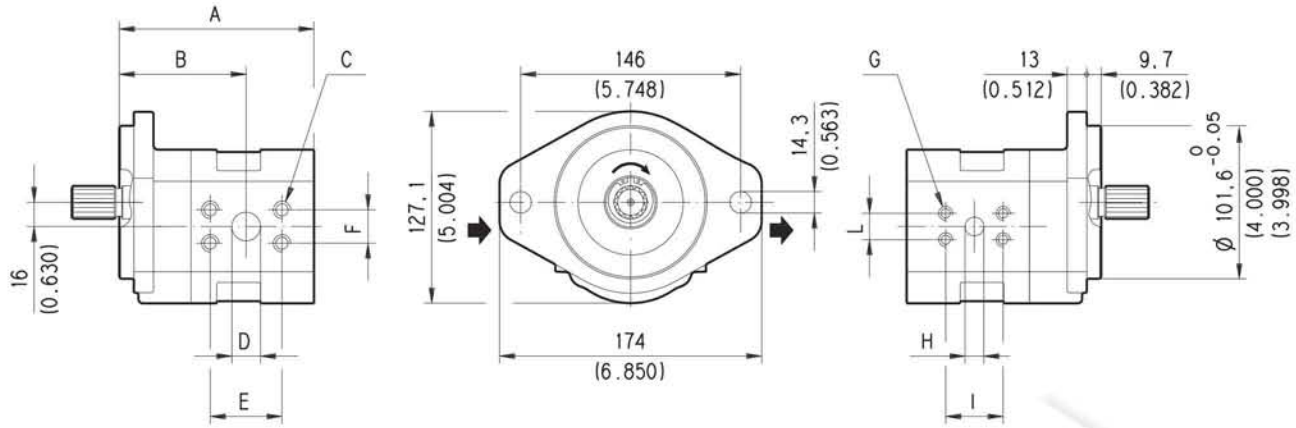


V Screws tightening torque Nm (lbf in)
70 ±7 (558 ÷ 682)

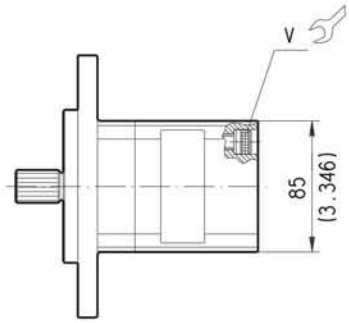
Side ports version (L) - To order see page 93 e 94

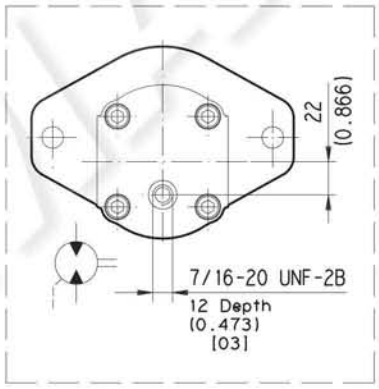
Motor type	A	B	C	Ports code	
	mm (in)	mm (in)	mm (in)	IN	OUT
KM 20•4	89,5 (3.524)	62 (2.441)	7/8-14 UNF-2B	OC	OC
KM 20•6,3	92 (3.622)	64,5 (2.539)			
KM 20•8	94,5 (3.720)	67 (2.638)			
KM 20•11,2	98 (3.858)	70,5 (2.776)			
KM 20•14	102 (4.016)	69 (2.717)	1-1/16-12 UN-2B		OD
KM 20•16	107,5 (4.232)	74,5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



D006-169/0605



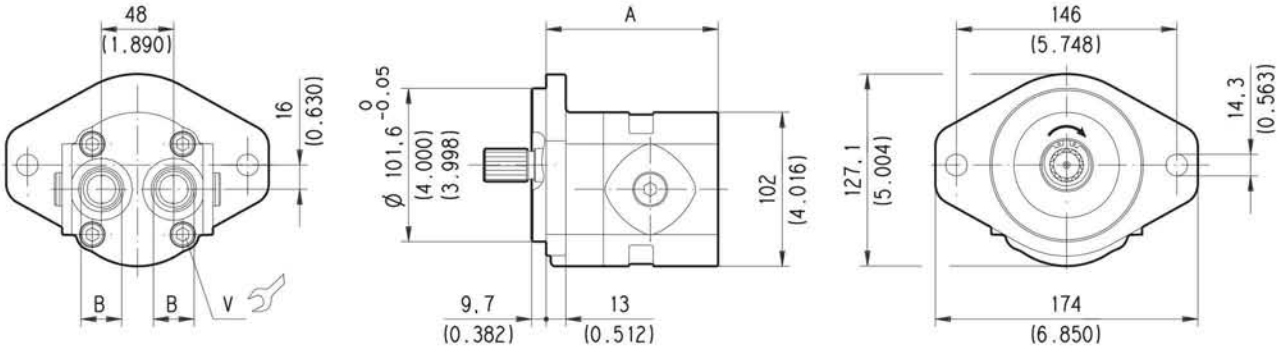


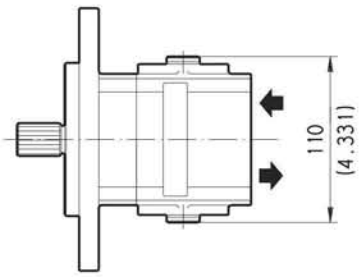
V Screws tightening torque Nm (lbf in)
70 ±7 (558 ÷ 682)

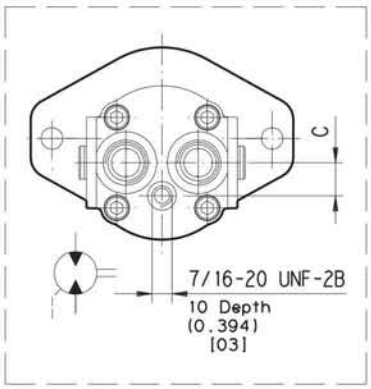
Side ports version (L) - To order see page 93 e 94

Motor type	A	B	C	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)	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	MA	MA
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)										
KM 20•14	116 (4.567)	69 (2.717)	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)						MB
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)		25,4 (1.000)	52,4 (2.063)	26,2 (1.031)	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	MB	MC
KM 20•31,5	144 (5.669)	84 (3.307)										

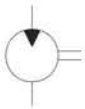
SAE STRAIGHT THREAD PORTS J514
American straight thread UNC-UNF 60° conforms to ANSI B 1.1







D006-170/0605



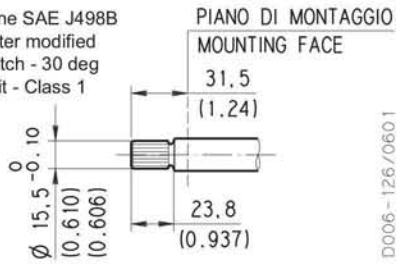
V Screws tightening torque Nm (lbf in)
70 $^{\pm 7}$ (558 ÷ 682)

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)		**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)				

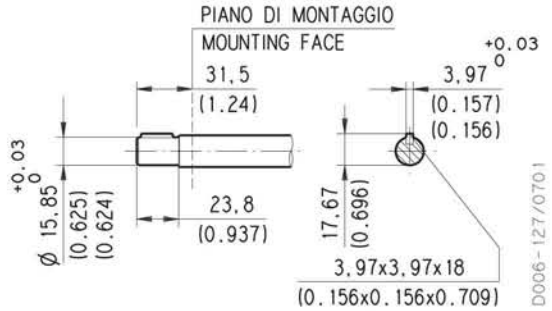
SAE "A" SPLINE 03

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



MAX 885 lbf in (100 Nm)

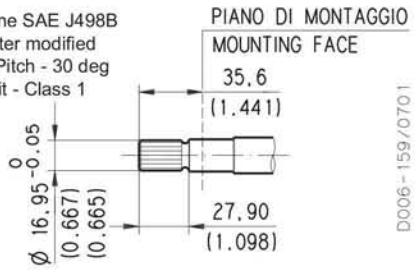
SAE "A" STRAIGHT 31



MAX 620 lbf in (70 Nm)

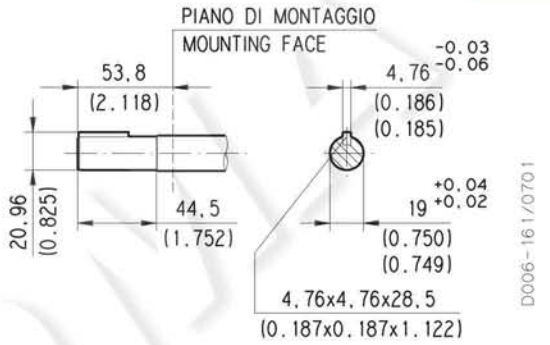
SAE SPLINE 01

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



MAX 1151 lbf in (130 Nm)

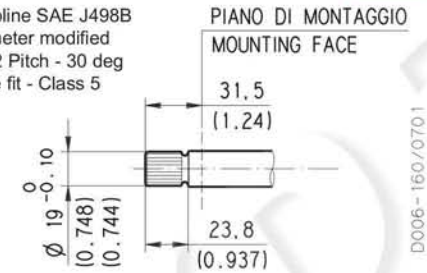
STRAIGHT 49



MAX 1239 lbf in (140 Nm)

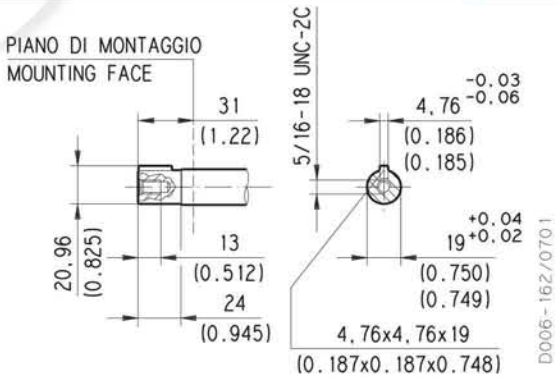
SAE SPLINE 07

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



MAX 1505 lbf in (170 Nm)

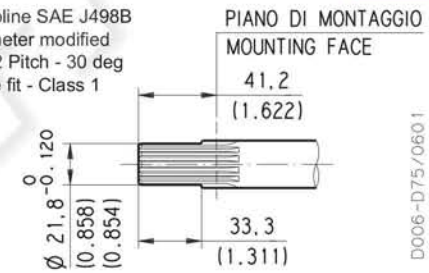
STRAIGHT 50



MAX 885 lbf in (100 Nm)

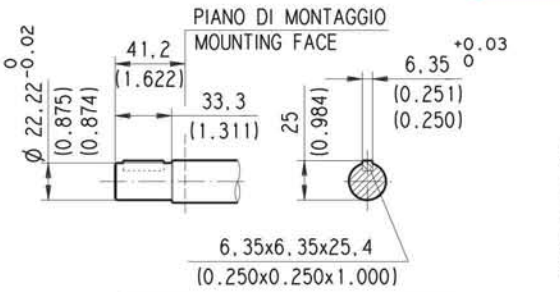
SAE "B" SPLINE 04

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



MAX 2478 lbf in (280 Nm)

SAE "B" STRAIGHT 32



MAX 1770 lbf in (200 Nm)

HOW TO ORDER SAE STADARD 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
in^3/rev	cm^3/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 internal drain	B

3 Version	CODE
Without outboard bearing	0

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

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

CODE	6 Ports position
L	Side
P	Rear

CODE	7 Ports IN/OUT		
SAE STRAIGHT THREAD PORTS (ODT)			
	Side	Rear	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			
	Side	Rear	Motor type
	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	8 Seals (b)
N	Buna N (standard) - No code
N-H	Buna with high back pressure shaft seals
V	Viton
N Bz	Buna N and bronze thrust plates
V Bz	Viton and Bronze thrust plates

(a) Available only with 04 and 32 shaft

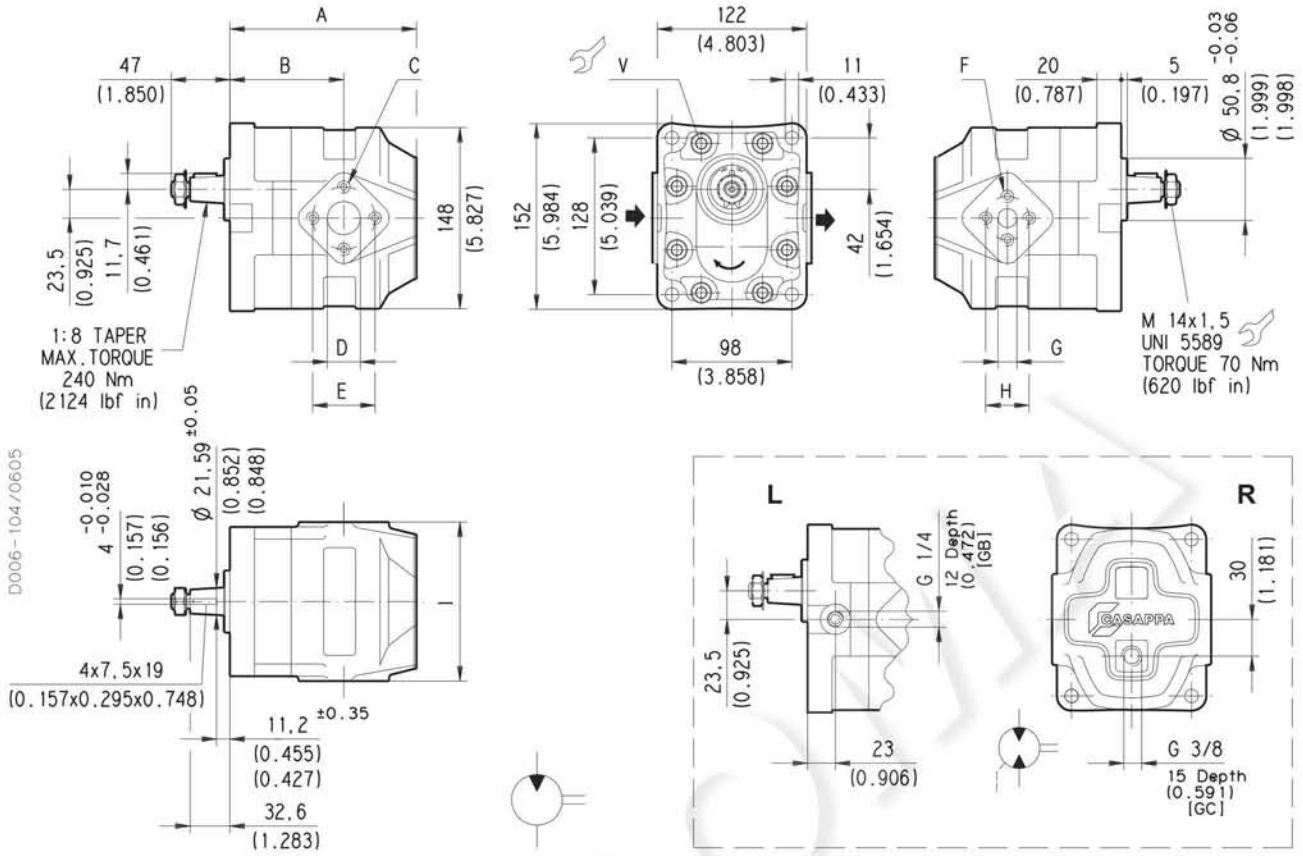
(b) Choose the seals according to the temperature shown on page 1

ORDER EXAMPLE

Standard 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

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)

The following version are also available:
KM 30•22 L0-83 E3-Z EV/EZ-N **KM 30•22 B0-83 E3-Z EV/EZ-N**
(For more information please consult our technical sales department).

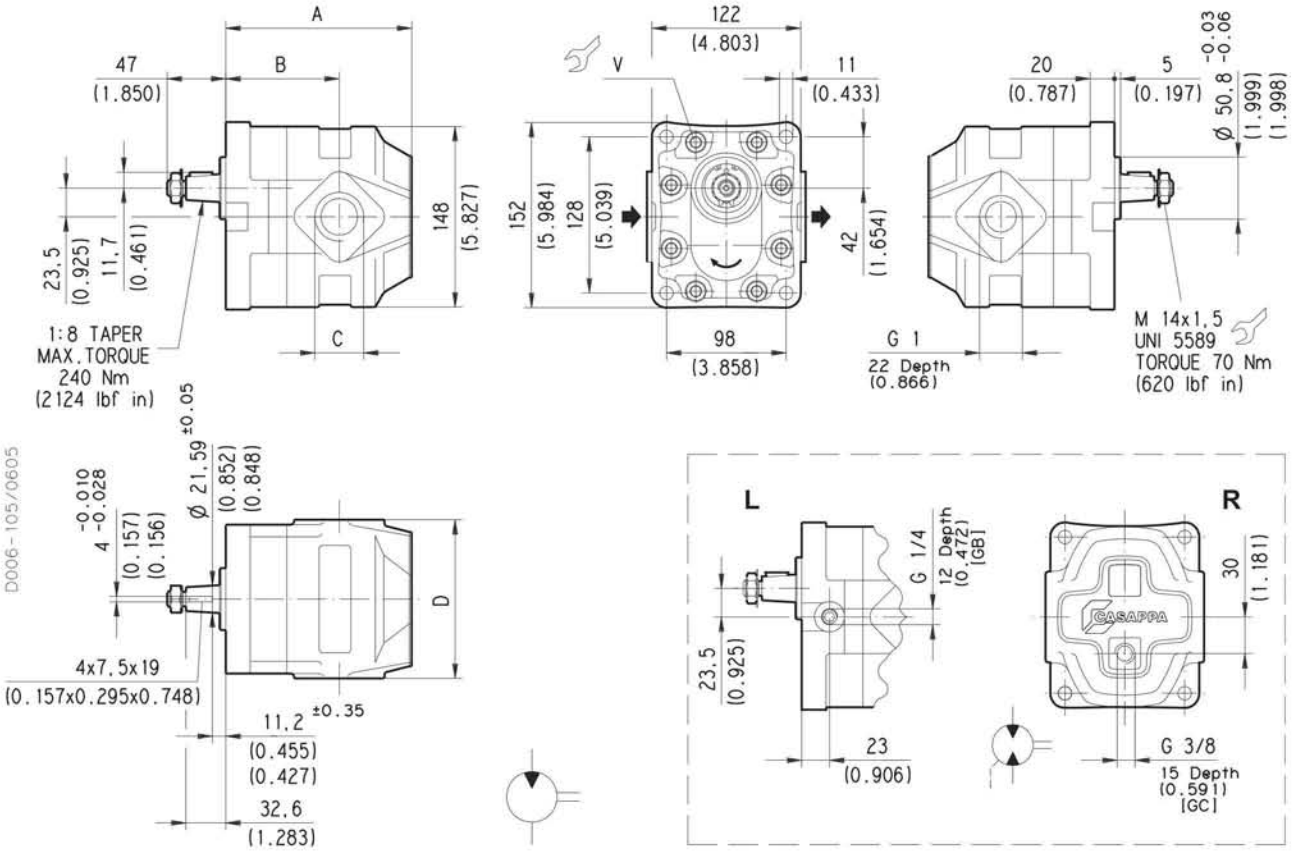
Motor type			A mm (in)	B mm (in)	C mm (in)	D mm (in)	E mm (in)	F mm (in)	G mm (in)	H mm (in)	I mm (in)
KM 30•27	S D L R B	0-83 E3-L EB/ED-N	133 (5.236)	85 (3.346)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	M 8 Depth 17 (0.669)	19 (0.748)	40 (1.575)	130 (5.118)
KM 30•34			138 (5.433)	90 (3.543)							
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		0-83 E3-L ED/EF-N	163 (6.417)	108 (4.252)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	135 (5.315)

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

How to order:

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)

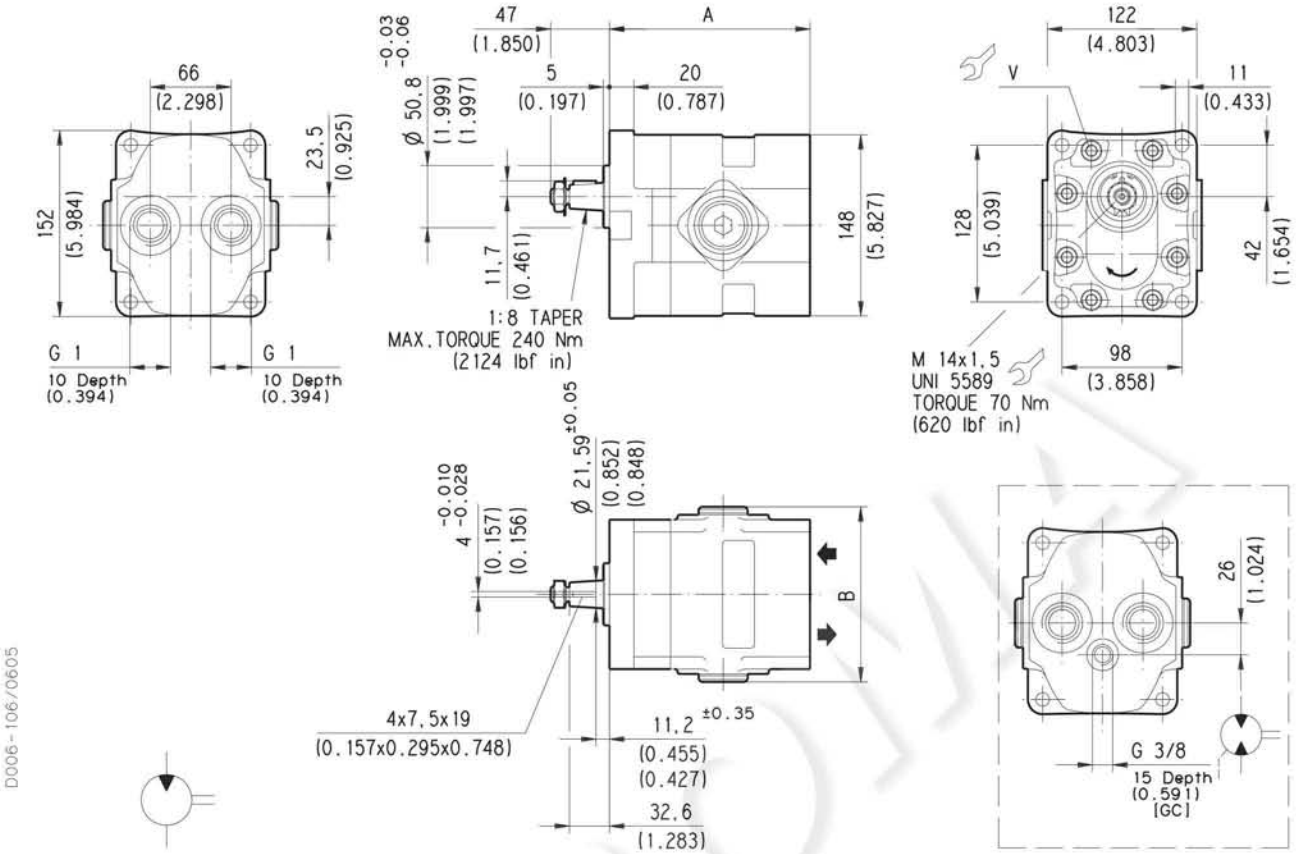
Motor type			A	B	C	I
			mm (in)	mm (in)	mm (in)	mm (in)
KM 30•27	S D L R B	0-83 E3-L GF/GF-N	133 (5.236)	85 (3.346)	G 1 Depth 22 (0.866)	130 (5.118)
KM 30•34			138 (5.433)	90 (3.543)		
KM 30•38			141 (5.551)	93 (3.661)		
KM 30•43			144 (5.669)	96 (3.780)		
KM 30•51			149 (5.866)	93 (3.661)		
KM 30•56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

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

How to order:

KM 30•27 S0-83 E3-L GF/GF-N

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



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

Rear ports version (P)

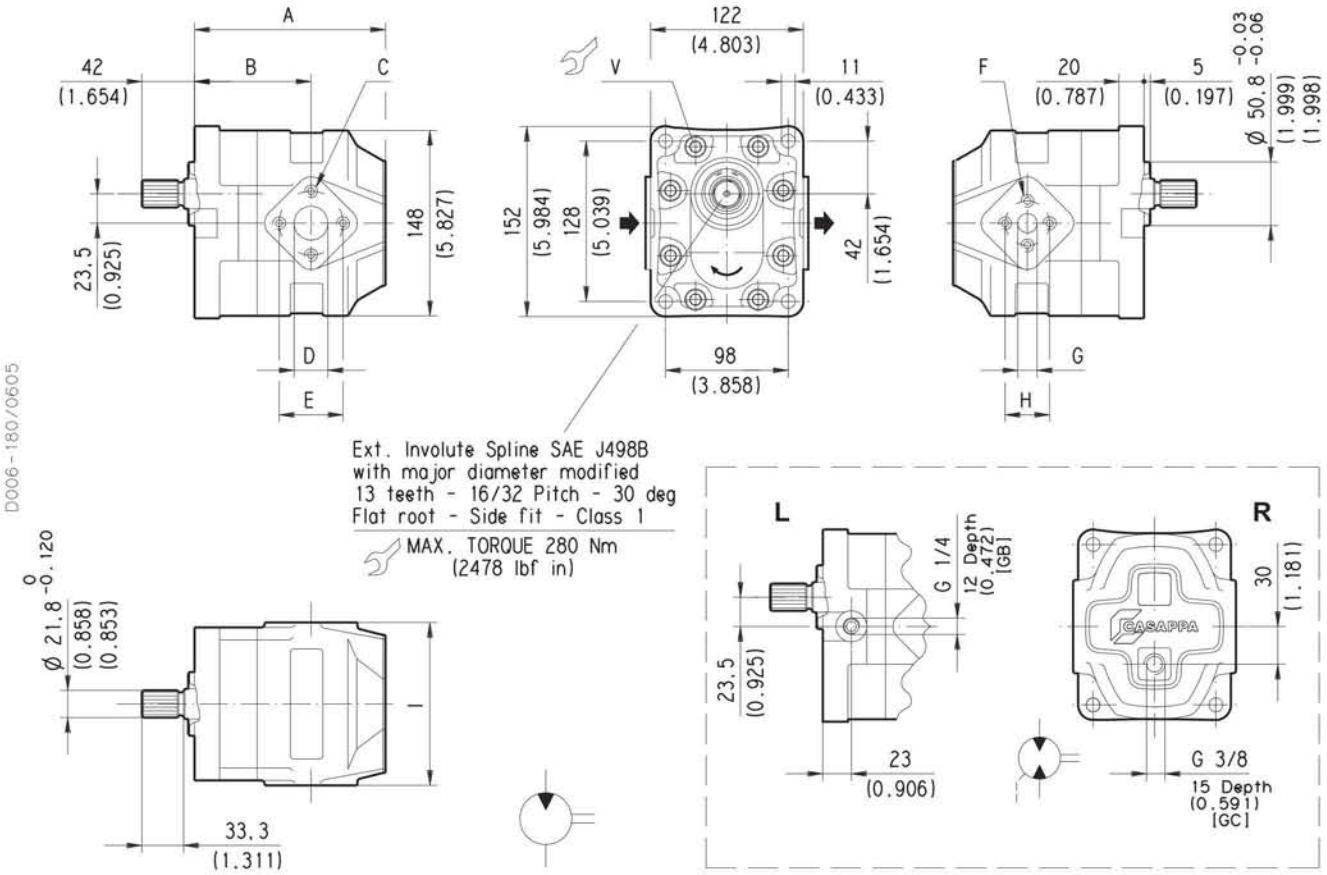
Motor type			A	B
			mm (in)	mm (in)
KM 30•27	S D R B	0-83 E3-P GF/GF-N	148 (5.827)	143 (5.630)
KM 30•34			153 (6.024)	
KM 30•38			156 (6.142)	
KM 30•43			159 (6.260)	
KM 30•51			164 (6.457)	
KM 30•56			167 (6.575)	148 (5.827)
KM 30•61			170 (6.693)	
KM 30•73			178 (7.008)	

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



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

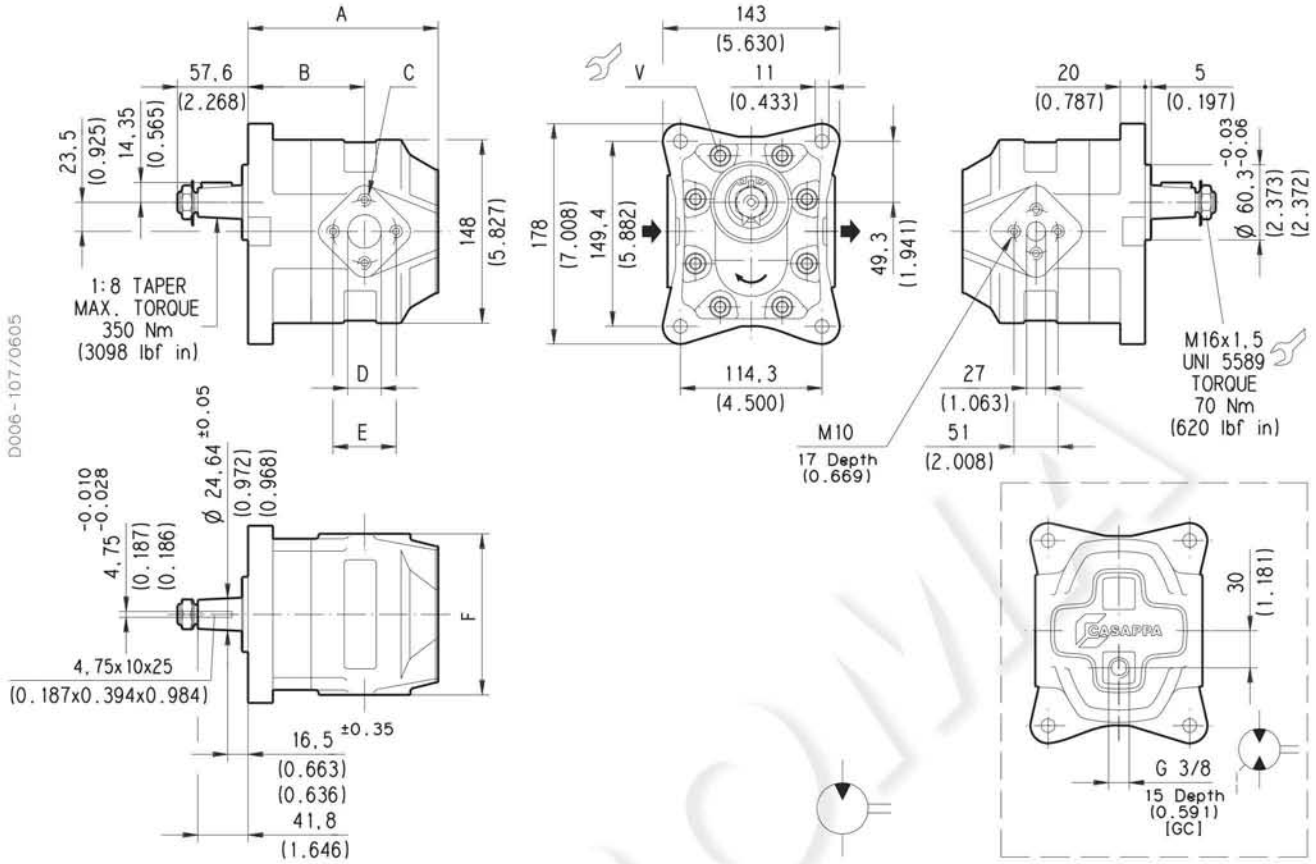
Pump type			A	B	C	D	E	F	G	H	I
			mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KM 30•27	S D L R B	0-83 E3-L ED/EB-N	133 (5.236)	85 (3.346)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	M 8 Depth 17 (0.669)	19 (0.748)	40 (1.575)	130 (5.118)
KM 30•34			138 (5.433)	90 (3.543)							
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		0-83 E3-L EF/ED-N	163 (6.417)	108 (4.252)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	135 (5.315)

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

How to order:

KP 30•27 S0-83 E3-L ED/EB-N

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



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

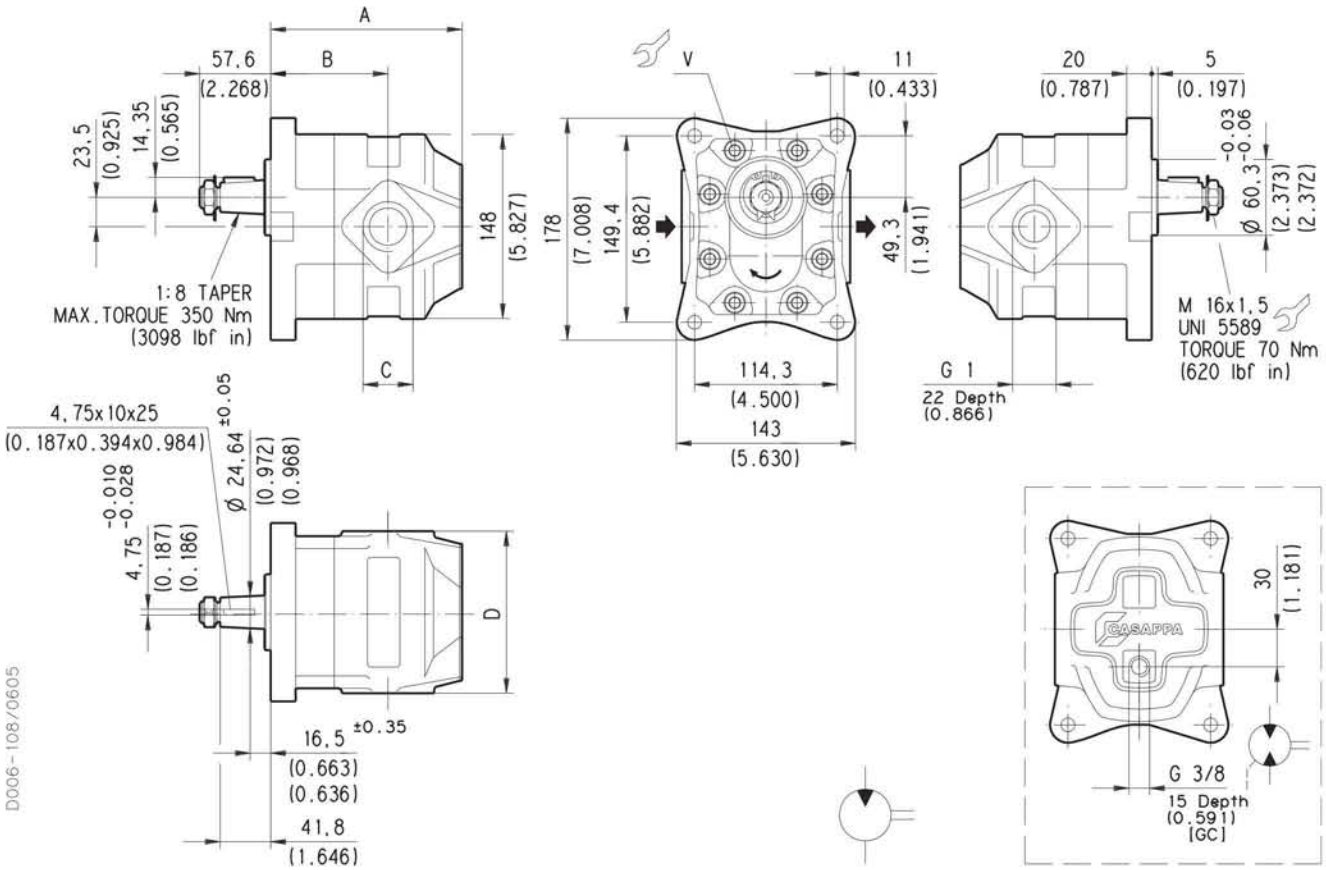
Motor type			A	B	C	D	E	F
			mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KM 30•51	S D R B	0-84 E4-L ED/ED-N	150 (5.906)	94 (3.701)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)
KM 30•61	S D R B	0-84 E4-L ED/EF-N	156 (6.142)	101 (3.976)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)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

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



V
70 $^{\pm 7}$ (558 ÷ 682)

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

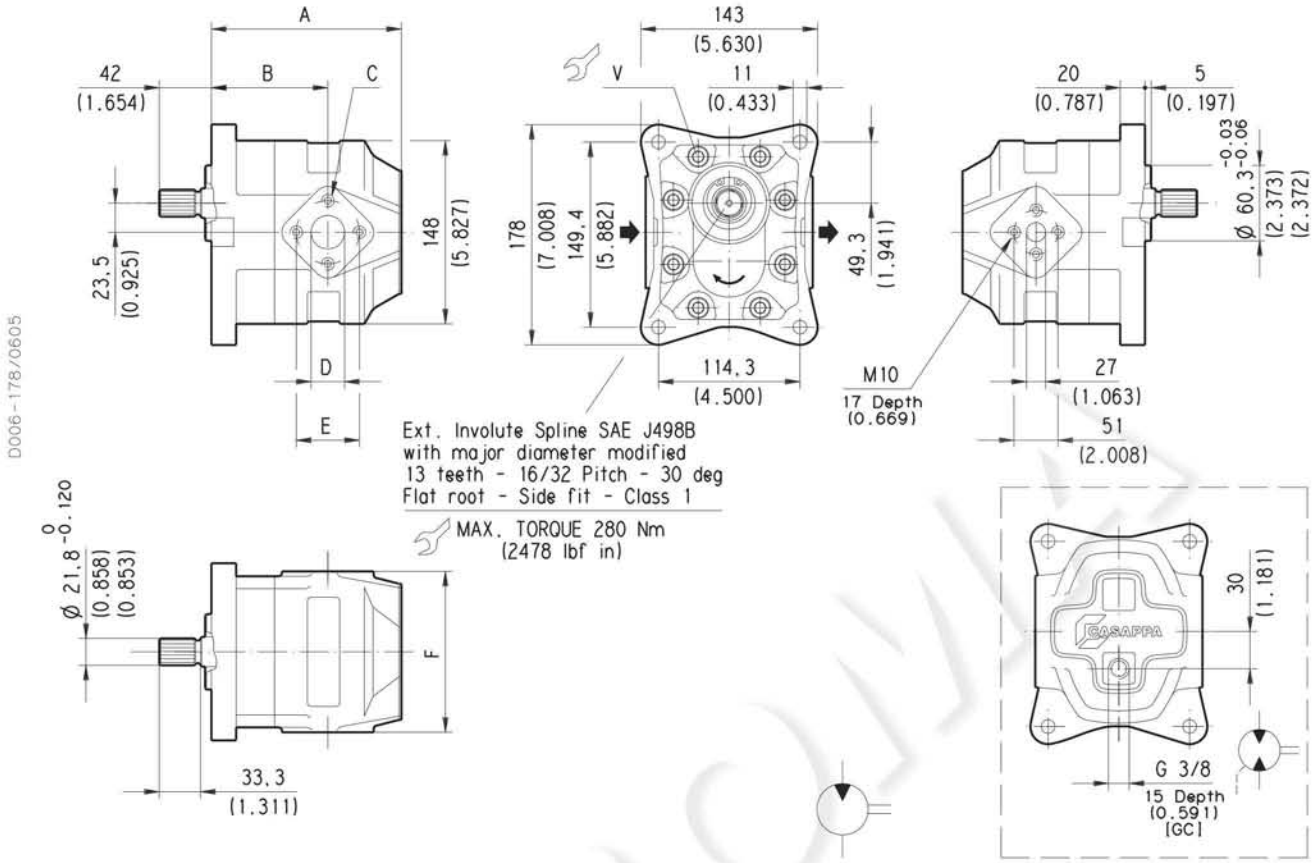
Rotation: S=left - D=right - R=reversible rear drain - B=reversible internal drain

How to order:

KM 30•51 S0-84 E4-L GF/GF-N

02/06.05

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)

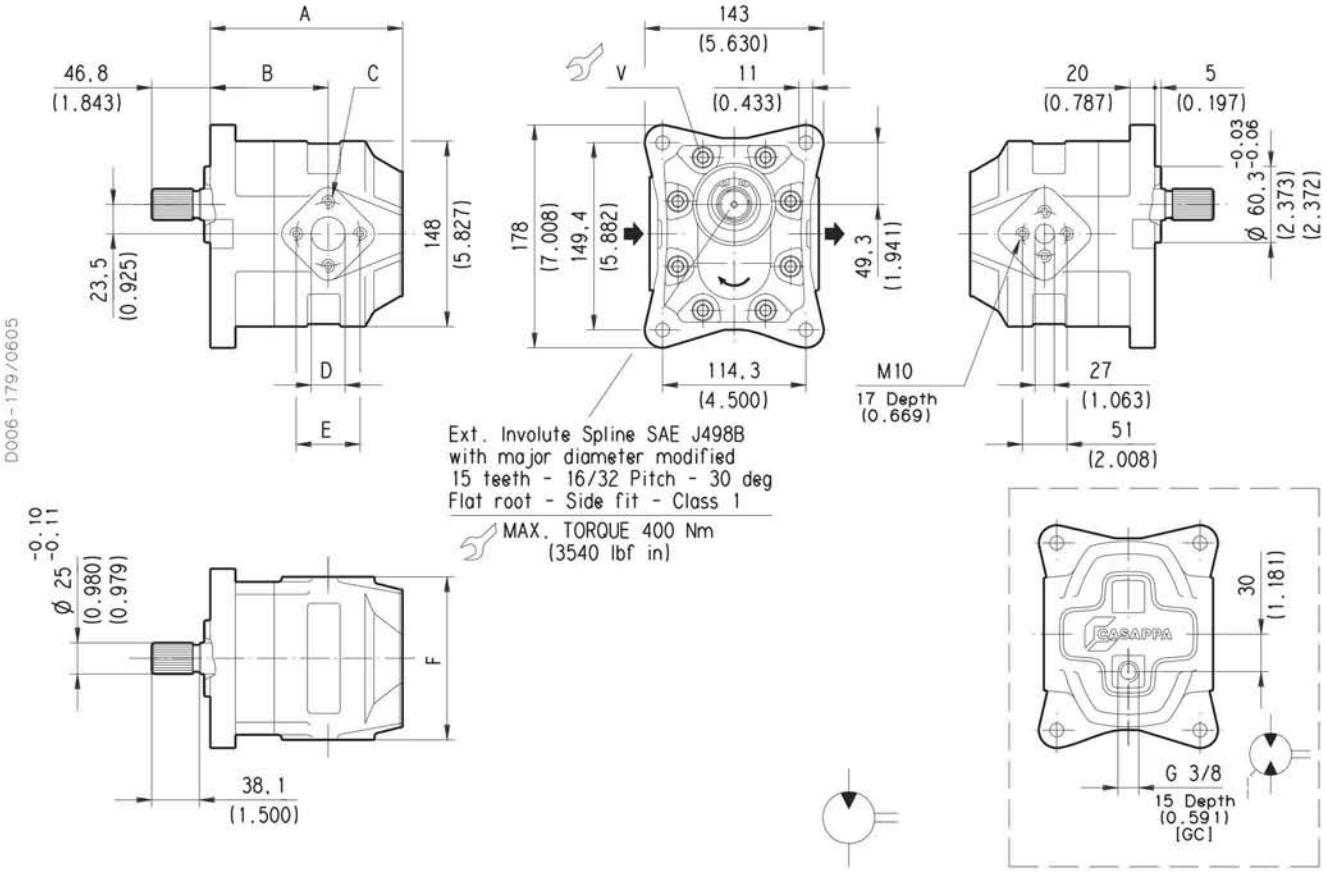
Motor type			A	B	C	D	E	F
			mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KM 30•51	S D R B	0-A8 E4-L ED/ED-N	150 (5.906)	94 (3.701)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)
KM 30•61	S D R B	0-A8 E4-L ED/EF-N	156 (6.142)	101 (3.976)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)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

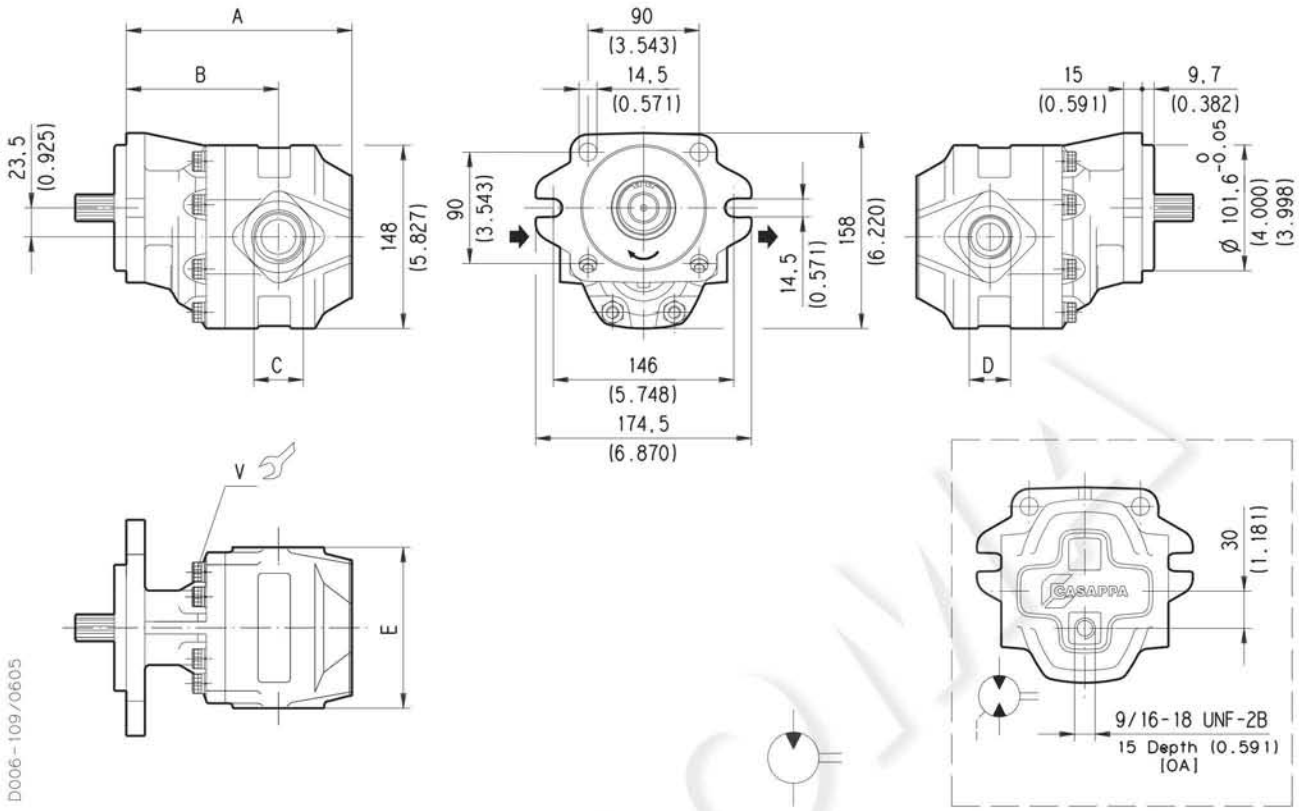
Motor type			A	B	C	D	E	F
			mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KM 30•51	S D R B	0-A5 E4-L ED/ED-N	150 (5.906)	94 (3.701)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)
KM 30•61		0-A5 E4-L ED/EF-N	156 (6.142)	101 (3.976)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)
KM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

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



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

To order see page 104 e 105.

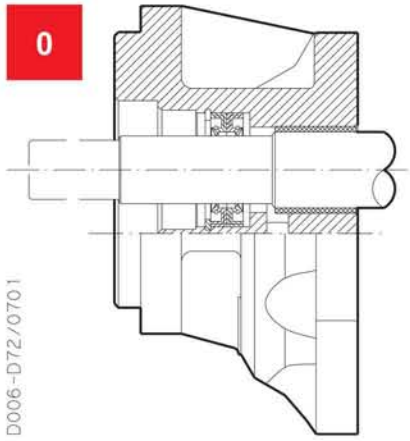
Motor type	A	B	C	D	E	Ports code	
	mm (in)	mm (in)			mm (in)	IN	OUT
KM 30•27	164 (6.457)	115 (4.528)	1-5/16-12 UN-2B	1-1/16-12 UN-2B	130 (5.118)	**OD**	**OF**
KM 30•34	169 (6.654)	120 (4.724)					
KM 30•38	172 (6.772)	123 (4.843)	1-5/8-12 UN-2B	1-5/16-12 UN-2B		**OF**	**OG**
KM 30•43	175 (6.890)	126 (4.961)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

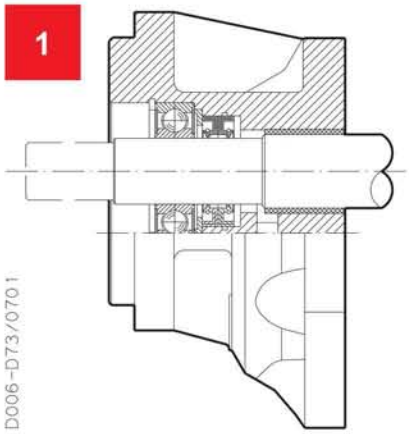
0



D006-D72/0701

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

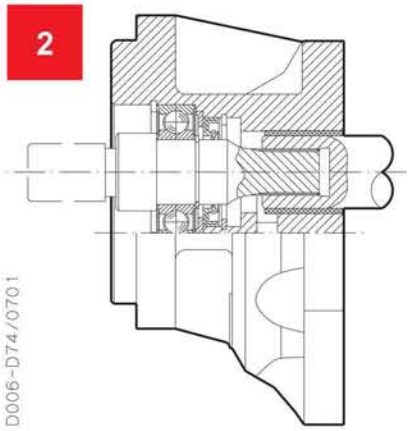
1



D006-D73/0701

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

2



D006-D74/0701

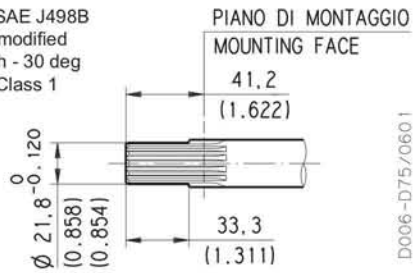
Special version with independent shaft for applications with low radial load and without axial load on the drive shaft.

KAPPA 30 END DRIVE SHAFTS

SAE

SAE "B" SPLINE — 04

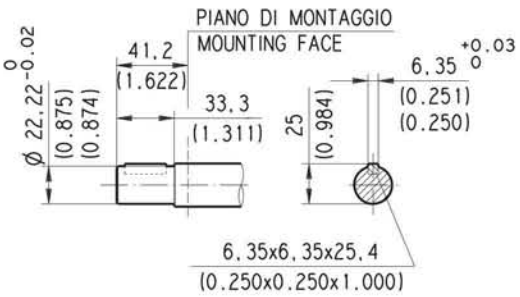
Ext. Involute Spline SAE J498B
with major diameter modified
13 teeth - 16/32 Pitch - 30 deg
Flat Root - Side fit - Class 1



D006-D75/0601

MAX 2921 lbf in (330 Nm) ◆

SAE "B" STRAIGHT — 32

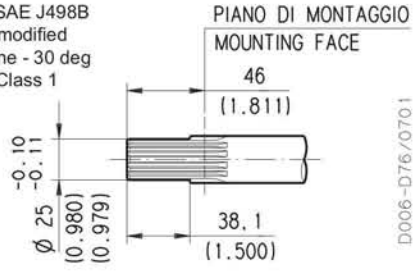


D006-D77/0601

MAX 1770 lbf in (200 Nm) ◆

SAE "BB" SPLINE — 05

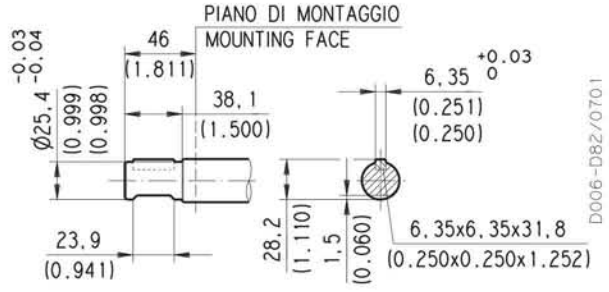
Ext. Involute Spline SAE J498B
with major diameter modified
15 teeth - 16/32 Spline - 30 deg
Flat Root - Side fit - Class 1



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 SAE STADARD 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 internal drain	B

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

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

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

CODE	6 Ports position
L	Side

CODE	7 Ports IN/OUT	
SAE STRAIGHT THREAD PORTS (ODT)		
Side	Motor type	
OD/OF	KM 30•27	
O/DOF	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	8 Seals (a)
N	Buna N (standard) - No code
N-H	Buna with high back pressure shaft seals
V	Viton
N Bz	Buna N and Bronze thrust plates
V Bz	Viton and Bronze thrust plates

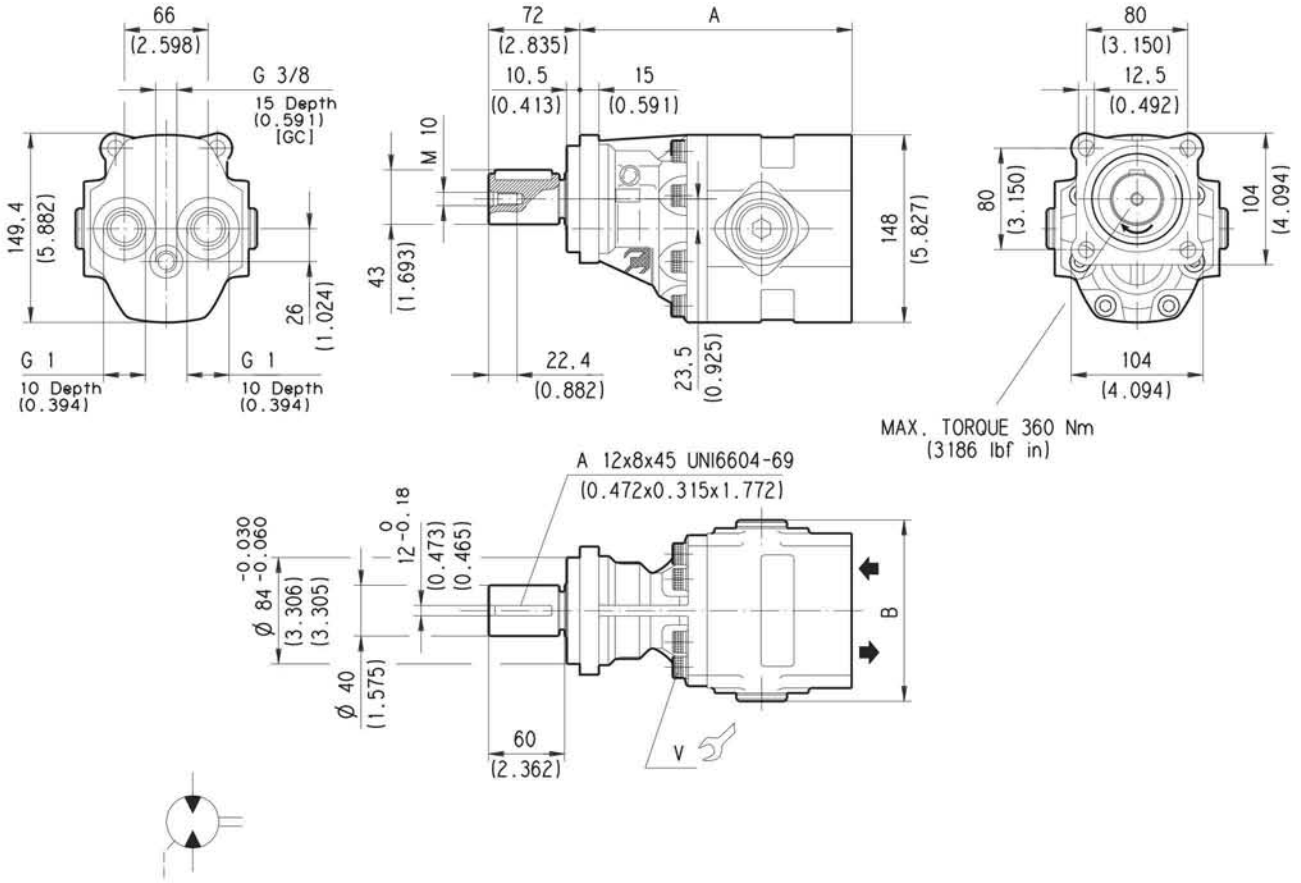
(a) Choose the seals according to the temperature shown on page 2

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

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



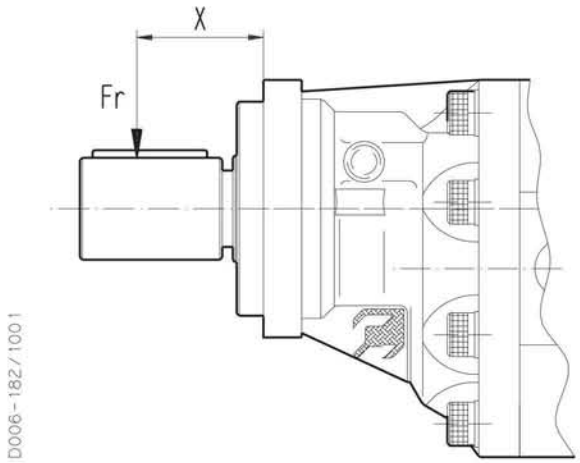
V
70 $^{\pm 7}$ (558 ÷ 682)

Motor type		A	B
		mm (in)	mm (in)
KM 30•27	R5-42 Z0-P GF/GF-N	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)	

Rotation: R=reversible rear drain

How to order:

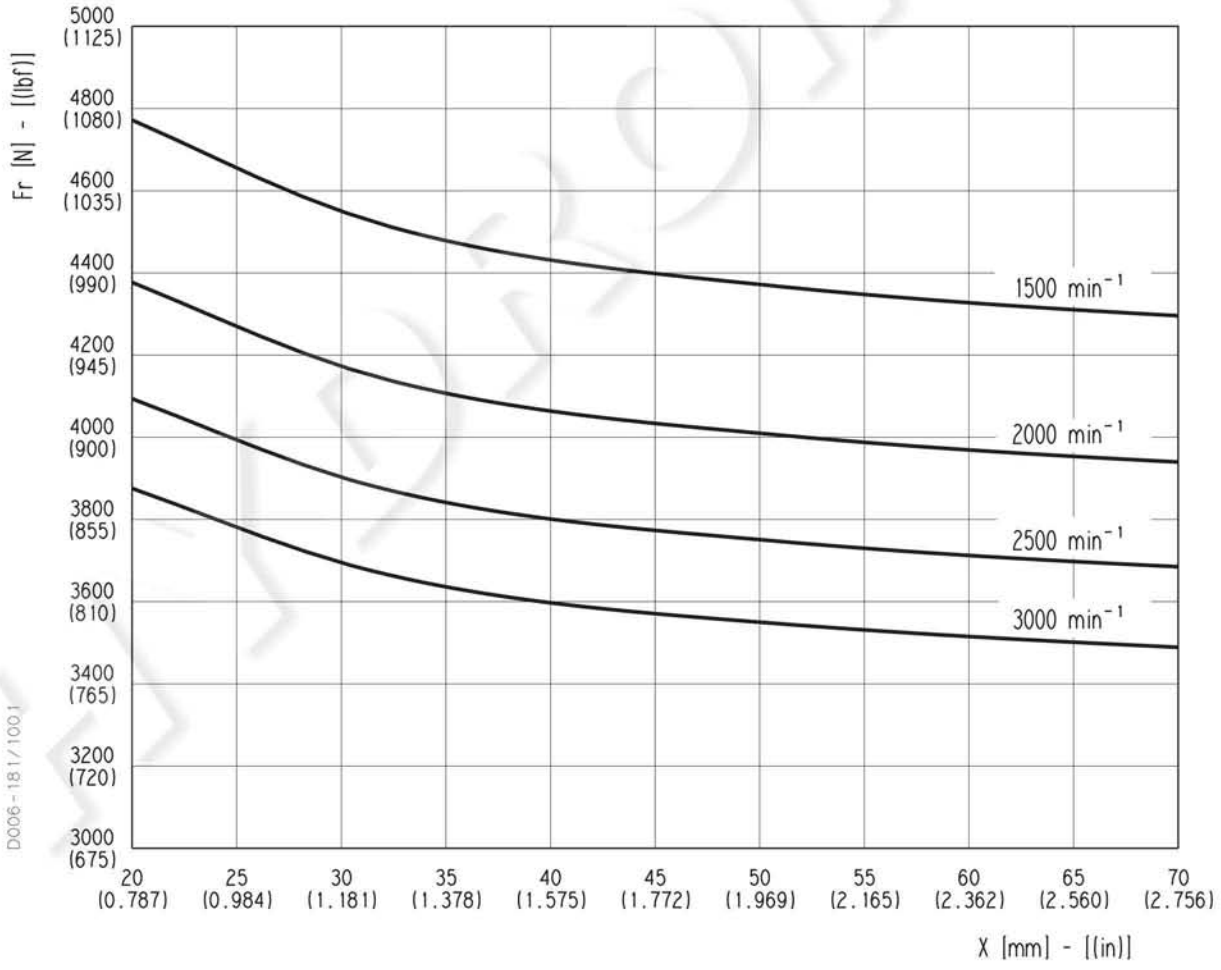
KM 30•27 R5-42 Z0-P GF/GF-N



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

Each curve has been obtained at:

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



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) wich 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) wich 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:

IKRON
Fluid Filtration

HYDRAULIC FLUID

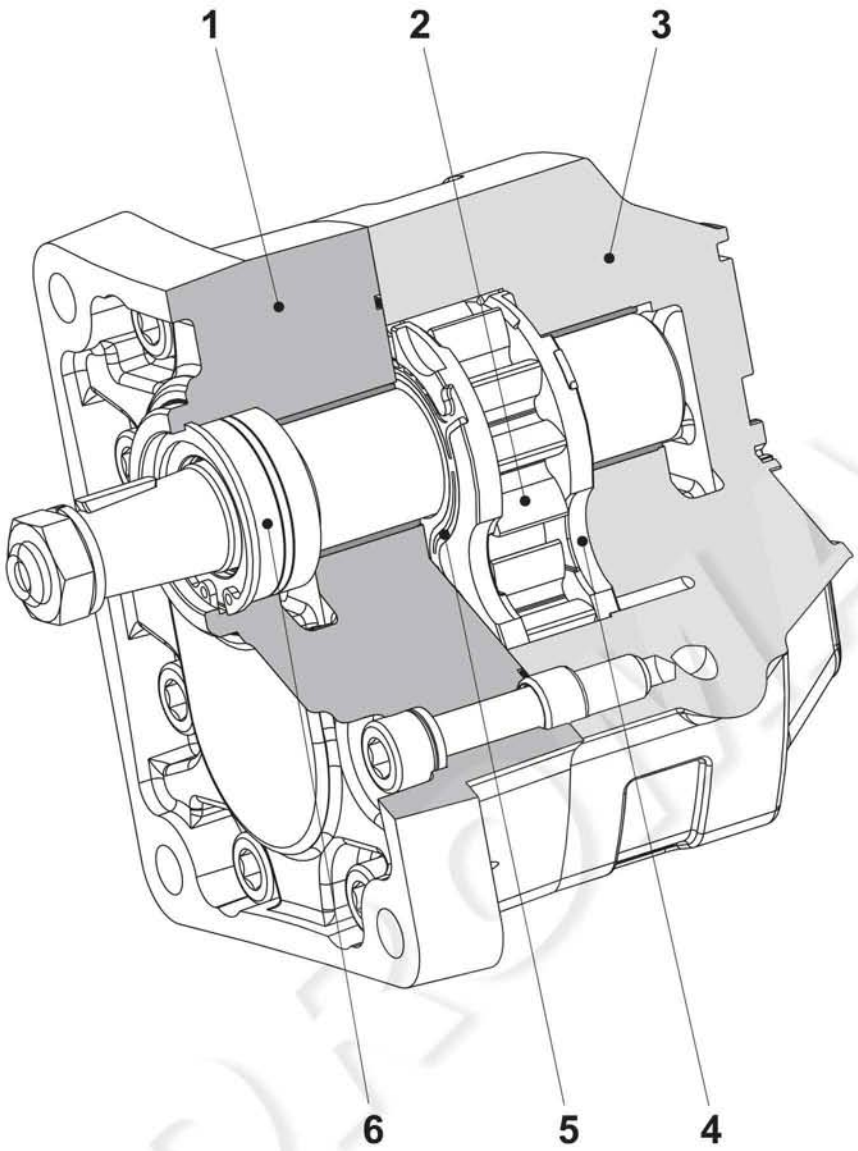
Use hydraulic fluid conforming to ISO/DIN standards, having viscosity as specified in the first pages of the catalogue. Avoid using mixtures of different oils which could result in decomposition and reduction of the oil's lubricating power.

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.



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

Casappa:
Fluid Power Design
at 360°

WHISPER

Gear pumps.
High performace, low noise.

PLATA®

Variable displacement axial piston pumps,
for open circuit.

STRADA®

Fixed displacement bent axis piston pumps,
for truck applications.

MAGNUM®

Cast iron gear pumps and
motors of three part construction.

FORMULA®

Cast iron gear pumps,
for truck applications.

KAPPA®

Cast iron gear pumps and
motors of two part construction.

POLARIS®

Gear pumps and
motors in aluminium.

UpEasy®

Double acting hydraulic hand pumps
with or without reservoir.

IKRON Fluid Filtration

Filters : suction filters, return filters, in line filters spin-on
type, for medium and high pressure filters.