

Part number:

HYDROMA

HYDRAULICKÉ SYSTÉMY

**HIDROMA
SYSTEMS**

UKŁADY HYDRAULICZNE

HYDROMA

ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ

KAPPA 40 Plus**FEATURES**

Pump type KP	Displacement	Body design	Characteristics	Max. pressure			Max. speed	Min. speed
	cm³/rev (in³/rev)			p ₁	p ₂	p ₃		
				bar (psi)				
KP 40•63	61,43 (3.75)	CSL	Standard	260 (3770)	280 (4060)	300 (4350)	2800	300
KP 40•73	72,60 (4.43)	CSL	Standard	260 (3770)	280 (4060)	300 (4350)	2800	300
KP 40•87	86,56 (5.28)	CSL	Standard	260 (3770)	280 (4060)	300 (4350)	2800	300
KP 40•100	99,79 (6.09)	CSL	Standard	260 (3770)	280 (4060)	300 (4350)	2700	300
KP 40•109	108,90 (6.64)	CSL	Standard	260 (3770)	280 (4060)	300 (4350)	2700	300
KP 40•121	121,80 (7.43)	CSL	Standard	260 (3770)	280 (4060)	300 (4350)	2700	300
KP 40•133	134,03 (8.18)	CSL	Standard	250 (3625)	270 (3915)	290 (4205)	2700	300
KP 40•151	150,79 (9.20)	CSL	Standard	240 (3480)	260 (3770)	280 (4060)	2700	300
KP 40•160	160,77 (9.81)	CSL	Standard	230 (3335)	250 (3625)	270 (3915)	2500	300
KP 40•180	180,73 (11.02)	CSL	Standard	230 (3335)	250 (3625)	270 (3915)	2200	300

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

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

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

Efficiencies

$\eta_v = \eta_v(V, \Delta p, n)$	Volumetric efficiency	Pumps (≈ 0,94)
$\eta_{hm} = \eta_{hm}(V, \Delta p, n)$	Hydro-mechanical efficiency	(≈ 0,88)
$\eta_t = \eta_v \cdot \eta_{hm}$	Overall efficiency	(≈ 0,83)

DESIGN CALCULATIONS FOR PUMP

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

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

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

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

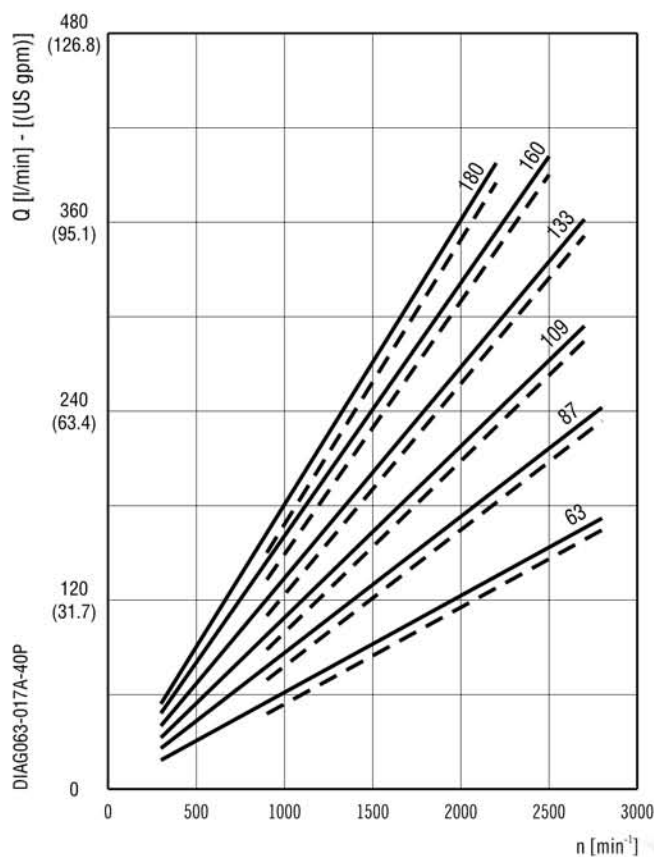
$$P_{\text{IN}} = \frac{P_{\text{OUT}}}{\eta_t} \quad [\text{kW}]$$

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

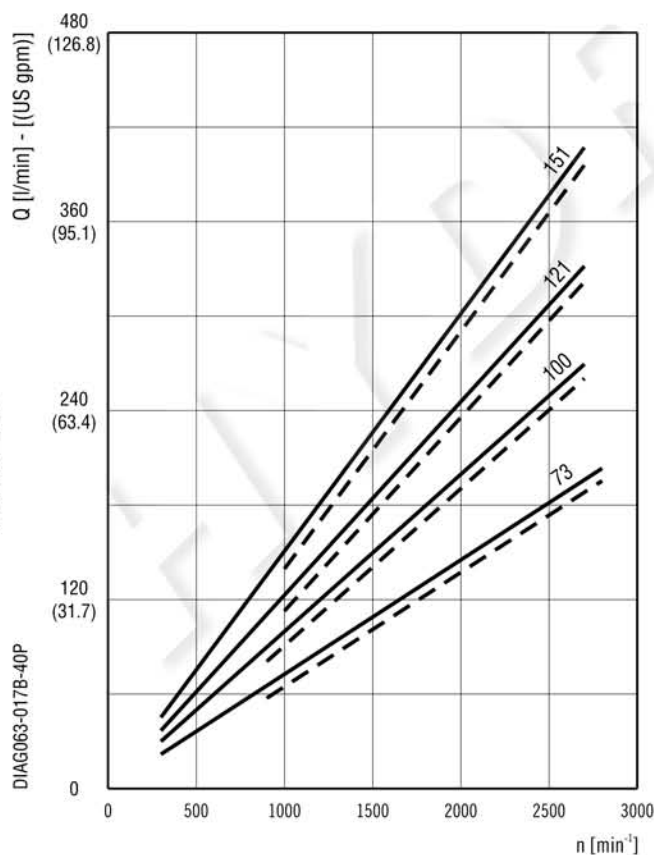
01/09.2019

KAPPA 40 Plus**GEAR PUMPS PERFORMANCE CURVES**

Each curve has been obtained at 50 °C (122 °F), using oil with viscosity 46 cSt (210 SSU) at 40 °C (104 °F) and at these pressures.



KP 40•63	—	20 bar (290 psi)
	- - -	260 bar (3770 psi)
KP 40•87	—	20 bar (290 psi)
	- - -	260 bar (3770 psi)
KP 40•109	—	20 bar (290 psi)
	- - -	260 bar (3770 psi)
KP 40•133	—	20 bar (290 psi)
	- - -	250 bar (3625 psi)
KP 40•160	—	20 bar (290 psi)
	- - -	230 bar (3335 psi)
KP 40•180	—	20 bar (290 psi)
	- - -	230 bar (3335 psi)



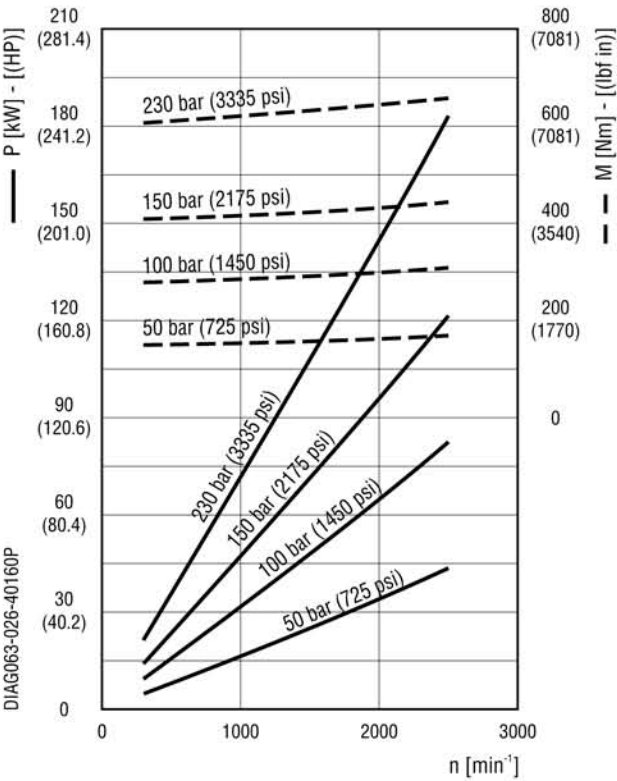
KP 40•73	—	20 bar (290 psi)
	- - -	260 bar (3770 psi)
KP 40•100	—	20 bar (290 psi)
	- - -	260 bar (3770 psi)
KP 40•121	—	20 bar (290 psi)
	- - -	260 bar (3770 psi)
KP 40•151	—	20 bar (290 psi)
	- - -	240 bar (3480 psi)

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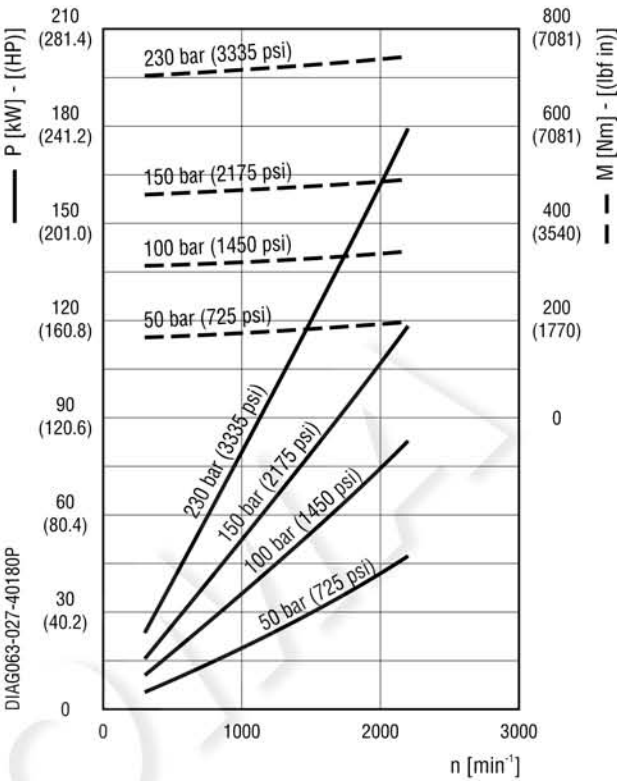
KAPPA 40 Plus

GEAR PUMPS PERFORMANCE CURVES

KP 40•160



KP 40•180



KAPPA 40 Plus**DOUBLE PUMPS DIMENSIONS - KP40/30****CSL/CSC**

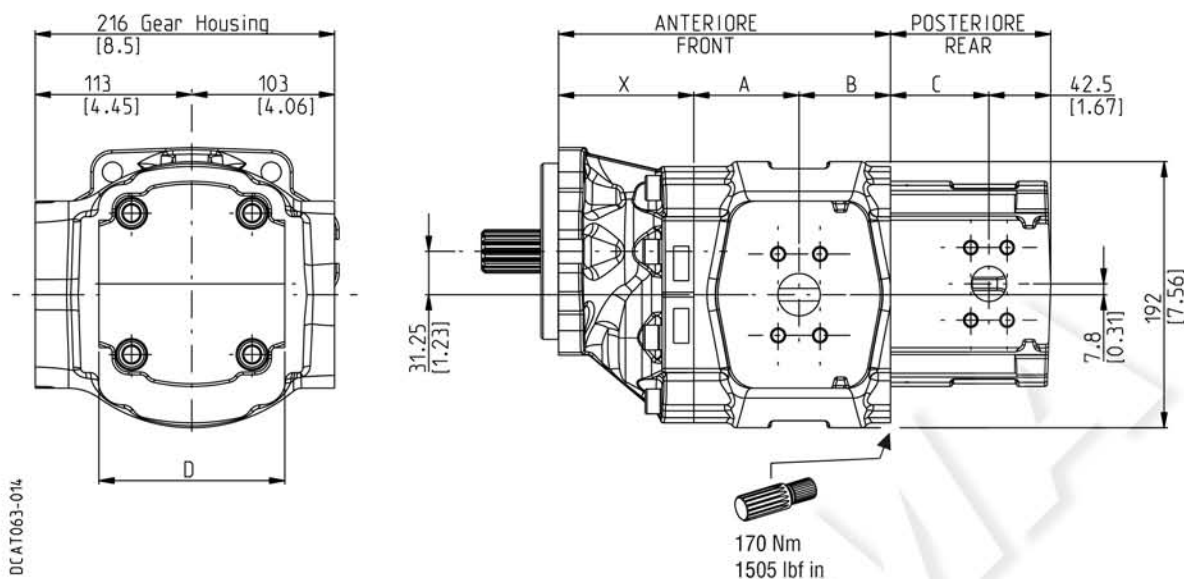
Characteristics: Standard

Drive shafts: page 33

Mounting flange: for X dimension see
page 35

Ports availability: Split

See page 37



	Front	Rear
Body design	CSL	Kappa 30 Series CSC (●)

(●) Available also with body design **BSC** and **HSC**.

For features please consult the proper technical catalog

Pump type	A	B
	mm (in)	mm (in)
KP 40•63	60 (2.36)	60 (2.36)
KP 40•73	64 (2.52)	60 (2.36)
KP 40•87	69 (2.72)	60 (2.36)
KP 40•100	68 (2.68)	66 (2.60)
KP 40•109	71 (2.80)	66 (2.60)
KP 40•121	76 (2.99)	66 (2.60)
KP 40•133	80 (3.15)	66 (2.60)
KP 40•151	71 (2.80)	81 (3.19)
KP 40•160	75 (2.95)	81 (3.19)
KP 40•180	82,2 (3.24)	81 (3.19)

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

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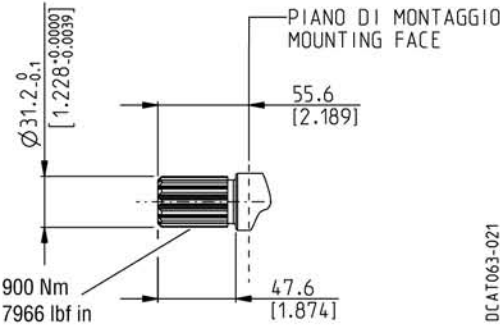
KAPPA 40 Plus

DRIVE SHFTS

SAE "C" SPLINE

06

Mounting face refer to flange code S8



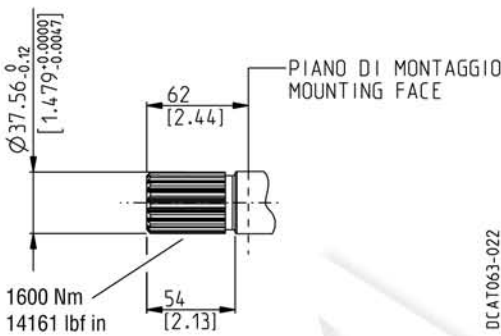
Ext. Involute Spline SAE J498B
with major diameter modified
14 teeth - 12/24 Pitch - 30 deg
Flat root - Side fit - Class 1

DCAT063-021

SAE "CC" SPLINE

DK

Mounting face refer to flange code S8



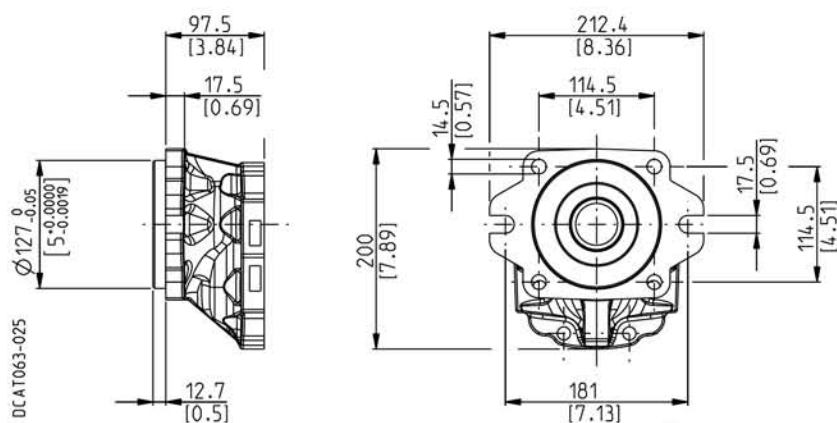
Ext. Involute Spline SAE J498B
with major diameter modified
17 teeth - 12/24 Pitch - 30 deg
Flat root - Side fit - Class 1

DCAT063-022

SAE "C" 2-4 HOLES

S8

Conforms to SAE J744



DRIVE SHAFTS

See page 33

VERSIONS

See page 31

06

DK

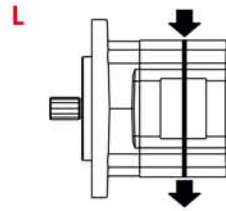
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#

#

Standard combination

x Available combination

KAPPA 40 Plus**PORTS POSITION AND TYPE****SIDE PORTS**

PORTS TYPE	Split SSM		Spit SSS	
Pump type	IN	OUT	IN	OUT
KP 40•63	MF	MC	SF	SC
KP 40•73	MF	MC	SF	SC
KP 40•87	MF	MC	SF	SC
KP 40•100	MG	MD	SG	SD
KP 40•109	MG	MD	SG	SD
KP 40•121	MG	MD	SG	SD
KP 40•133	MG	MD	SG	SD
KP 40•151	MP	ME	SP	SE
KP 40•160	MP	ME	SP	SE
KP 40•180	MP	ME	SP	SE

Different ports are available on request.

For more information please consult our pre-sales department.

PORT SIZES



Tightening torque for low pressure side port.



Tightening torque for high pressure side port.

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

SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

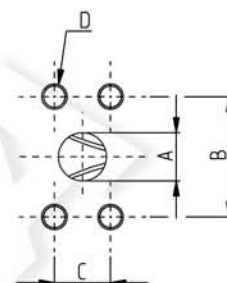
SSM

Metric thread ISO 60° conforms to ISO/R 262

CODE	A	B	C	D		
	mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
MC (#)	25,4 (1.00)	52,4 (2.06)	26,2 (1.03)	M 10 18 (0.71)	—	35 ^{+2,5} (310 ÷ 332)
MD	30,5 (1.20)	58,7 (2.31)	30,2 (1.19)	M 10 22 (0.87)	20 ⁺¹ (177 ÷ 186)	40 ^{+2,5} (354 ÷ 376)
ME	39,3 (1.55)	69,8 (2.75)	35,7 (1.41)	M 12 27 (1.06)	30 ^{+2,5} (266 ÷ 288)	60 ⁺⁵ (531 ÷ 575)
MF	51 (2.01)	77,8 (3.06)	42,9 (1.69)	M 12 27 (1.06)	30 ^{+2,5} (266 ÷ 288)	—
MG (#)	65 (2.56)	88,9 (3.50)	50,8 (2.00)	M 12 27 (1.06)	30 ^{+2,5} (266 ÷ 288)	—
MP (#)	76,2 (3.00)	106,4 (4.19)	61,9 (2.44)	M 12 27 (1.06)	30 ^{+2,5} (266 ÷ 288)	—

(# Only for KAPPA 40 Plus

DCAT_006_025_21064252



Replaces: 01/06.2009

SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

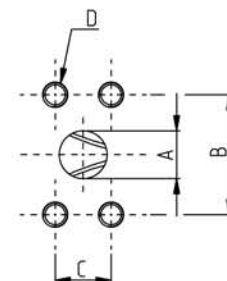
SSS

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

CODE	A	B	C	D		
	mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
SC (#)	25,4 (1.00)	52,4 (2.06)	26,2 (1.03)	3/8 - 16 UNC-2B 17 (0.67)	—	35 ^{+2,5} (310 ÷ 332)
SD	30,5 (1.20)	58,7 (2.31)	30,2 (1.19)	7/16 - 14 UNC-2B 17 (0.67)	20 ⁺¹ (177 ÷ 186)	40 ^{+2,5} (354 ÷ 376)
SE	39,3 (1.55)	69,8 (2.75)	35,7 (1.41)	1/2 - 13 UNC-2B 27 (1.06)	30 ^{+2,5} (266 ÷ 288)	70 ⁺⁵ (620 ÷ 664)
SF	51 (2.01)	77,8 (3.06)	42,9 (1.69)	1/2 - 13 UNC-2B 27 (1.06)	30 ^{+2,5} (266 ÷ 288)	—
SG (#)	65 (2.56)	88,9 (3.50)	50,8 (2.00)	1/2 - 13 UNC-2B 27 (1.06)	30 ^{+2,5} (266 ÷ 288)	—
SP (#)	76,2 (3.00)	106,4 (4.19)	61,9 (2.44)	5/8 - 11 UNC-2B 30 (1.18)	30 ^{+2,5} (266 ÷ 288)	—

(# Only for KAPPA 40 Plus

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PORT SIZES



Tightening torque for low pressure side port.



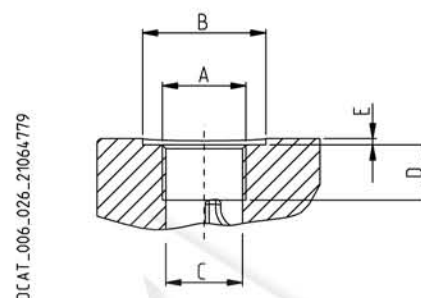
Tightening torque for high pressure side port.

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

GAS STRAIGHT THREAD PORTS

BSPP

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



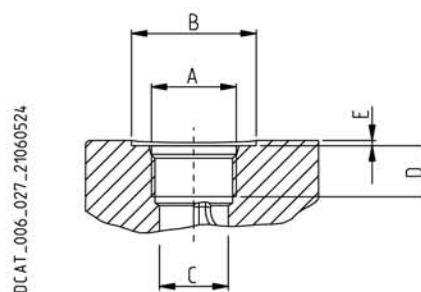
CODE	Nominal size	A	Ø B	Ø C	D	E		
			mm (in)	mm (in)	mm (in)	mm (in)	Nm (lbf in)	Nm (lbf in)
GC (x)	3/8"	G 3/8	25 (0.98)	15 (0.59)	14 (0.55)	1 (0.08)	15 ⁺¹ (133 ÷ 142)	—
GE	3/4"	G 3/4	39 (1.54)	24,5 (0.96)	20 (0.79)	2,5 (0.10)	30 ^{+2,5} (266 ÷ 288)	—
GF	1"	G 1	49 (1.93)	30,5 (1.20)	19 (0.75)	2,5 (0.10)	50 ^{+2,5} (443 ÷ 465)	130 ⁺¹⁰ (1151 ÷ 1239)
GG	1" 1/4	G 1 1/4	60 (2.36)	39 (1.54)	24 (0.95)	2,5 (0.10)	60 ⁺⁵ (531 ÷ 575)	170 ⁺¹⁰ (1505 ÷ 1593)
GH	1" 1/2	G 1 1/2	72 (2.84)	45 (1.77)	26 (1.02)	2,5 (0.10)	70 ⁺⁵ (620 ÷ 664)	210 ⁺¹⁰ (1859 ÷ 1947)

(x) = Drain port

SAE STRAIGHT THREAD PORTS J514

ODT

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



CODE	Nominal size	A	Ø B	Ø C	D	E		
			mm (in)	mm (in)	mm (in)	mm (in)	Nm (lbf in)	Nm (lbf in)
OA (x)	3/8"	9/16" - 12 UNF - 2B	26 (1.02)	13 (0.51)	15 (0.59)	2 (0.08)	15 ⁺¹ (133 ÷ 142)	—
OD	3/4"	1 1/16" - 12 UNF - 2B	42 (1.65)	24,8 (0.98)	20 (0.79)	2 (0.08)	40 ^{+2,5} (354 ÷ 376)	120 ⁺¹⁰ (1062 ÷ 1151)
OF	1"	1 5/16" - 12 UNF - 2B	49 (1.93)	30,5 (1.20)	20 (0.79)	2 (0.08)	60 ⁺⁵ (531 ÷ 575)	170 ⁺¹⁰ (1505 ÷ 1593)
OG	1" 1/4	1 5/8" - 12 UNF - 2B	58 (2.28)	39,1 (1.54)	20 (0.79)	2 (0.08)	70 ⁺⁵ (620 ÷ 664)	200 ⁺¹⁰ (1770 ÷ 1859)
OH	1" 1/2	1 7/8" - 12 UNF - 2B	65 (2.56)	45 (1.77)	20 (0.79)	2 (0.08)	100 ⁺⁵ (885 ÷ 929)	270 ⁺¹⁵ (1770 ÷ 1859)

(x) = Drain port

01/09.2019

KAPPA 40**HOW TO ORDER - DOUBLE PUMPS DIFFERENT GROUPS****KP40 / KP30**

1	2	3	4	5	6	7	8	10	11	12	13	14
KP40•63	-	06	S8	-	L	ME/MD	-	43	-	CSL	/	
Front section												
KP30•51	-		L	MD/MC	-		-	CSC	-	S	0	-
Rear section												
										V	-	C4
												VGR01

KP40 / PHP20

1	2	3	4	5	6	7	8	9	10	11	12	13	14
KP40•63 - 06 S8 - L ME/MD - 41 -							CSC /						
Front section													
PHP20•19 -				L MB/MA -			-	L - S 0 / FS V - C4 VGR01					
Rear section													

KP40 / PLP20

1	2	3	4	5	6	7	8	9	10	11	12	13	14
KP40•63 - 06 S8 - L ME/MD - 41 -						CSC /							
Front section													
PLP20•14 -				L MB/MA -			-	L - S 0 / FS V - C4 VGR01					
Rear section													

1	Type (a)	Pump type
	The same of multiple pumps on page 48	KP 40•...
2	Drive shaft	Code
	The same of multiple pumps on page 48	...
3	Mounting flange	Code
	The same of multiple pumps on page 48	...
4	Ports position	Code
	Side	L
5	Ports IN/OUT	Code
	The same of multiple pumps on page 48	.../...
6	Connecting shaft	Code
	Combination KP40/KP30	43
	Combination KP40/PHP20 and KP40/PLP20	41

Code	Body for common inlet (b)	7
C5	Combination KP40/KP30	
N7	Combination KP40/PHP20 and KP40/PLP20	
Code	Body design	8
FRONT SECTION		
CSL	Combination KP40/KP30	
CSC	Combination KP40/PHP20 and KP40/PLP20	
Code	Rear cover options	9
...	Cast iron (standard) no code	
L	Aluminium	
Code	Rotation	10
S	Anti-clockwise	
D	Clockwise	
Code	Versions - Outboard bearing options	11
...	The same of multiple pumps on page 46	

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KAPPA 40**HOW TO ORDER - DOUBLE PUMPS DIFFERENT GROUPS**

Replaces: 01/09.2019

12	Seals	Pump type
The same of multiple pumps on page 47		
13	Shaft seal options	Code
The same of multiple pumps on page 47		...
14	Painting 	Code
Black painting (standard) no code (c)		...
Grey painting (c)		VGR01

- (a) For KP 30, PHP 20 and PLP 20 features please consult the proper technical catalogue
- (b) Please write this code only for common inlet pumps. (see page 53)
- (c) Salt spray resistance of 300 hours. For more information please consult our pre-sales department

 02/05.2020