



PUMPEN & ZUBEHÖR



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Zahnradpumpen

- Serie XV -

Baugröße 0



Bestellnr.	Typ	Code
D = rechtsdrehend		
010-010-01000	XV0P/0,17D-Ø22-CI.001-1/4-1/4	X0P0102ABBA
010-010-01100	XV0P/0,25D-Ø22-CI.001-1/4-1/4	X0P0202ABBA
010-010-01200	XV0P/0,45D-Ø22-CI.001-1/4-1/4	X0P0402ABBA
010-010-01300	XV0P/0,57D-Ø22-CI.001-1/4-1/4	X0P0502ABBA
010-010-01400	XV0P/0,76D-Ø22-CI.001-1/4-1/4	X0P0602ABBA
010-010-01500	XV0P/0,98D-Ø22-CI.001-1/4-1/4	X0P0702ABBA
010-010-01600	XV0P/1,27D-Ø22-CI.001-1/4-1/4	X0P0902ABBA
010-010-01700	XV0P/1,52D-Ø22-CI.001-1/4-1/4	X0P1102ABBA
010-010-01800	XV0P/2,30D-Ø22-CI.001-1/4-1/4	X0P1302ABBA
S = linksdrehend		
010-010-01050	XV0P/0,17S-Ø22-CI.001-1/4-1/4	X0P0101ABBA
010-010-01150	XV0P/0,25S-Ø22-CI.001-1/4-1/4	X0P0201ABBA
010-010-01250	XV0P/0,45S-Ø22-CI.001-1/4-1/4	X0P0401ABBA
010-010-01350	XV0P/0,57S-Ø22-CI.001-1/4-1/4	X0P0501ABBA
010-010-01450	XV0P/0,76S-Ø22-CI.001-1/4-1/4	X0P0601ABBA
010-010-01550	XV0P/0,98S-Ø22-CI.001-1/4-1/4	X0P0701ABBA
010-010-01650	XV0P/1,27S-Ø22-CI.001-1/4-1/4	X0P0901ABBA
010-010-01750	XV0P/1,52S-Ø22-CI.001-1/4-1/4	X0P1101ABBA
010-010-01850	XV0P/2,30S-Ø22-CI.001-1/4-1/4	X0P1301ABBA

2-Loch-Flansch- Bohrungsabstand = 66 mm / Rezess = Ø 22 mm / Welle -CI.001 -d = Ø 7 mm -M 7x1 -Passfeder = 2,0 mm
max. zulässiges Wellendrehmoment = 2,1 Nm / Ölabschlüsse = IG 1/4 seitlich

einseitig drehende Pumpe - Serie XV

XV-0P

PUMPE STANDARD MIT ANSAUGUNG UND DRUCK AM GEHÄUSE
FLANSCH $\varnothing 22$ - ZYLINDERWELLE



X 0 P 06 02 A B B A

Serie	X	Serie XV
Gruppe	0	Gruppe 0
Kategorie	P	einseitig drehende Pumpe
Hubraum	06	0.76
Flansch	02	$\varnothing 22$ Drehrichtung rechts
Welle	A	C1001 - Zylindrisch $\varnothing 7$ - M7x1 - Scheibenfeder Dicke 2
Gehäuse	IN	B Ansaugung - 1/4" GAS
	OUT	B Druckseite - 1/4" GAS
Deckel	A	Standard

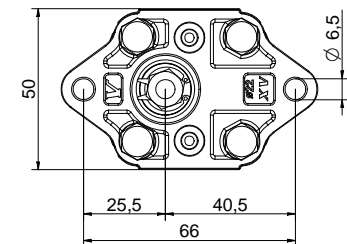
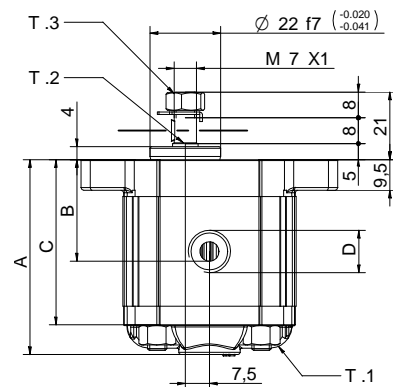
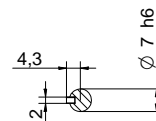
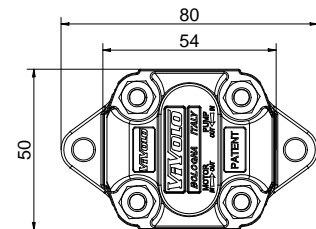


Bezug **XP001**

Technische Datentabelle						
TYP	Hubraum cm ³ /Umdrehung	Maximaldruck		CODE		
		P1 bar	P3 bar	CODE	CODE	CODE
XV-0P/0.17	0,16	220	260	X 0 P 01 01 A B B A	X 0 P 01 02 A B B A	X 0 P 01 02 A B B A
XV-0P/0.25	0,24	220	260	X 0 P 02 01 A B B A	X 0 P 02 02 A B B A	X 0 P 02 02 A B B A
XV-0P/0.45	0,45	220	280	X 0 P 04 01 A B B A	X 0 P 04 02 A B B A	X 0 P 04 02 A B B A
XV-0P/0.57	0,56	220	280	X 0 P 05 01 A B B A	X 0 P 05 02 A B B A	X 0 P 05 02 A B B A
XV-0P/0.76	0,75	220	280	X 0 P 06 01 A B B A	X 0 P 06 02 A B B A	X 0 P 06 02 A B B A
XV-0P/0.98	0,92	220	280	X 0 P 07 01 A B B A	X 0 P 07 02 A B B A	X 0 P 07 02 A B B A
XV-0P/1.27	1,26	220	280	X 0 P 09 01 A B B A	X 0 P 09 02 A B B A	X 0 P 09 02 A B B A
XV-0P/1.52	1,48	220	280	X 0 P 11 01 A B B A	X 0 P 11 02 A B B A	X 0 P 11 02 A B B A
XV-0P/2.30	2,28	190	210	X 0 P 13 01 A B B A	X 0 P 13 02 A B B A	X 0 P 13 02 A B B A

P1) Max. Betriebsdruck - P3) Max. Druckspitze

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments



07/12/04 XP06024B8A.dft

Dimensionstabelle						
TYP	Gewicht kg	A	B	C	D	D
		mm	mm	mm	IN	OUT
XV-0P/0.17	0,400	55,8	26,2	46,8	1/4" BSPP	1/4" BSPP
XV-0P/0.25	0,410	56,4	26,5	47,4	1/4" BSPP	1/4" BSPP
XV-0P/0.45	0,420	58,0	27,3	49,0	1/4" BSPP	1/4" BSPP
XV-0P/0.57	0,430	59,0	27,8	50,0	1/4" BSPP	1/4" BSPP
XV-0P/0.76	0,440	60,5	28,5	51,5	1/4" BSPP	1/4" BSPP
XV-0P/0.98	0,460	62,0	29,3	53,0	1/4" BSPP	1/4" BSPP
XV-0P/1.27	0,480	64,5	30,5	55,5	1/4" BSPP	1/4" BSPP
XV-0P/1.52	0,500	66,5	31,5	57,5	1/4" BSPP	1/4" BSPP
XV-0P/2.30	0,560	72,5	34,5	63,5	1/4" BSPP	1/4" BSPP

T.1 = 11.7÷13.7 [Nm] - Anzugsmoment - Schrauben M6

T.3 = 11.5 [Nm] - Anzugsmoment - Schlüssel 11

T.2 = 2.1 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

einseitig drehende Pumpe - Serie XV

XV-0P

PUMPE STANDARD MIT ANSAUGUNG UND DRUCK AM GEHÄUSE
FLANSCH $\varnothing 22$ - ZYLINDERWELLE



X 0 P 06 02 A B B A

Serie	X	Serie XV
Gruppe	0	Gruppe 0
Kategorie	P	einseitig drehende Pumpe
Hubraum	06	0.76
Flansch	02	$\varnothing 22$ Drehrichtung rechts
Welle	A	C1001 - Zylindrisch $\varnothing 7$ - M7x1 - Scheibenfeder Dicke 2
Gehäuse	IN	B Ansaugung - 1/4" GAS
	OUT	B Druckseite - 1/4" GAS
Deckel	A	Standard

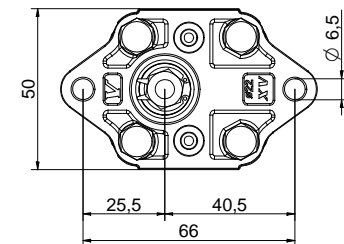
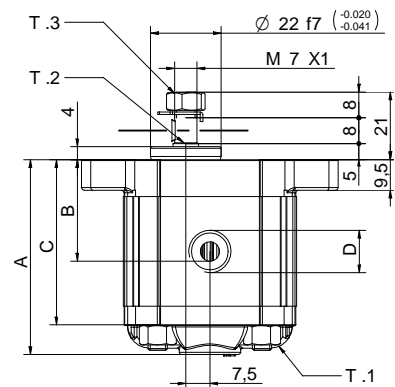
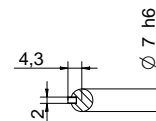
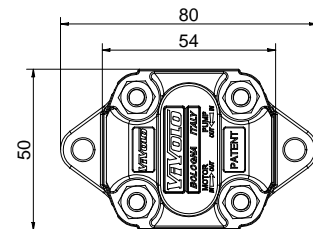


Bezug **XP001**

Technische Datentabelle						
TYP	Hubraum cm ³ /Umdrehung	Maximaldruck		CODE		
		P1 bar	P3 bar	CODE	CODE	CODE
XV-0P/0.17	0,16	220	260	X 0 P 01 01 A B B A	X 0 P 01 02 A B B A	X 0 P 01 02 A B B A
XV-0P/0.25	0,24	220	260	X 0 P 02 01 A B B A	X 0 P 02 02 A B B A	X 0 P 02 02 A B B A
XV-0P/0.45	0,45	220	280	X 0 P 04 01 A B B A	X 0 P 04 02 A B B A	X 0 P 04 02 A B B A
XV-0P/0.57	0,56	220	280	X 0 P 05 01 A B B A	X 0 P 05 02 A B B A	X 0 P 05 02 A B B A
XV-0P/0.76	0,75	220	280	X 0 P 06 01 A B B A	X 0 P 06 02 A B B A	X 0 P 06 02 A B B A
XV-0P/0.98	0,92	220	280	X 0 P 07 01 A B B A	X 0 P 07 02 A B B A	X 0 P 07 02 A B B A
XV-0P/1.27	1,26	220	280	X 0 P 09 01 A B B A	X 0 P 09 02 A B B A	X 0 P 09 02 A B B A
XV-0P/1.52	1,48	220	280	X 0 P 11 01 A B B A	X 0 P 11 02 A B B A	X 0 P 11 02 A B B A
XV-0P/2.30	2,28	190	210	X 0 P 13 01 A B B A	X 0 P 13 02 A B B A	X 0 P 13 02 A B B A

P1) Max. Betriebsdruck - P3) Max. Druckspitze

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments



07/12/04 XP060248BA.dft

Dimensionstabelle						
TYP	Gewicht kg	A	B	C	D	D
		mm	mm	mm	IN	OUT
XV-0P/0.17	0,400	55,8	26,2	46,8	1/4" BSPP	1/4" BSPP
XV-0P/0.25	0,410	56,4	26,5	47,4	1/4" BSPP	1/4" BSPP
XV-0P/0.45	0,420	58,0	27,3	49,0	1/4" BSPP	1/4" BSPP
XV-0P/0.57	0,430	59,0	27,8	50,0	1/4" BSPP	1/4" BSPP
XV-0P/0.76	0,440	60,5	28,5	51,5	1/4" BSPP	1/4" BSPP
XV-0P/0.98	0,460	62,0	29,3	53,0	1/4" BSPP	1/4" BSPP
XV-0P/1.27	0,480	64,5	30,5	55,5	1/4" BSPP	1/4" BSPP
XV-0P/1.52	0,500	66,5	31,5	57,5	1/4" BSPP	1/4" BSPP
XV-0P/2.30	0,560	72,5	34,5	63,5	1/4" BSPP	1/4" BSPP

T.1 = 11.7÷13.7 [Nm] - Anzugsmoment - Schrauben M6

T.3 = 11.5 [Nm] - Anzugsmoment - Schlüssel 11

T.2 = 2.1 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

Zahnradpumpen

- Serie XV -

Baugröße 1



Bestellnr.	Typ	Code
D = rechtsdrehend		
010-060-01000	XV1P/0,9D-3/8-3/8	X1P1602FBBA
010-060-01100	XV1P/1,2D-3/8-3/8	X1P1702FBBA
010-060-01200	XV1P/1,7D-3/8-3/8	X1P1802FBBA
010-060-01300	XV1P/2,2D-3/8-3/8	X1P2002FBBA
010-060-01400	XV1P/2,6D-3/8-3/8	X1P2102FBBA
010-060-01500	XV1P/3,2D-3/8-3/8	X1P2302FBBA
010-060-01600	XV1P/3,8D-3/8-3/8	X1P2502FBBA
010-060-01700	XV1P/4,3D-3/8-3/8	X1P2702FBBA
010-060-01800	XV1P/4,9D-3/8-3/8	X1P2902FBBA
010-060-01900	XV1P/5,9D-3/8-3/8	X1P3102FBBA
010-060-02000	XV1P/6,5D-3/8-3/8	X1P3202FBBA
010-060-02100	XV1P/7,8D-3/8-3/8	X1P3402FBBA
010-060-02200	XV1P/9,8D-3/8-3/8	X1P3602FBBA
S = linksdrehend		
010-060-01050	XV1P/0,9S-3/8-3/8	X1P1601FBBA
010-060-01150	XV1P/1,2S-3/8-3/8	X1P1701FBBA
010-060-01250	XV1P/1,7S-3/8-3/8	X1P1801FBBA
010-060-01350	XV1P/2,2S-3/8-3/8	X1P2001FBBA
010-060-01450	XV1P/2,6S-3/8-3/8	X1P2101FBBA
010-060-01550	XV1P/3,2S-3/8-3/8	X1P2301FBBA
010-060-01650	XV1P/3,8S-3/8-3/8	X1P2501FBBA
010-060-01750	XV1P/4,3S-3/8-3/8	X1P2701FBBA
010-060-01850	XV1P/4,9S-3/8-3/8	X1P2901FBBA
010-060-01950	XV1P/5,9S-3/8-3/8	X1P3101FBBA
010-060-02050	XV1P/6,5S-3/8-3/8	X1P3201FBBA
010-060-02150	XV1P/7,8S-3/8-3/8	X1P3401FBBA
010-060-02250	XV1P/9,8S-3/8-3/8	X1P3601FBBA

Europäischer Standard-4-Loch-Flansch- Bohrungsabstand = 71,9 x 52,4 mm / Rezess = \varnothing 25,4 mm / Welle -CO.001 1:8 -d = \varnothing 10 mm
-M 7x1 -Passfeder = 2,4 mm / max. zulässiges Wellendrehmoment = 43 Nm / Öllanschlüsse = IG 3/8 seitlich

einseitig drehende Pumpe - Serie XV

EUROPÄISCHE STANDARDPUMPE
FLANSCH $\varnothing 25.4$ - KEGELWELLE

XV-1P

X 1 P 25 02 F B B A

Serie	X	Serie XV
Gruppe	1	Gruppe 1
Kategorie	P	einseitig drehende Pumpe
Hubraum	25	3.8
Flansch	02	$\varnothing 25.4$ EUROPÄISCHER STANDARD Drehrichtung rechts
Welle	F	CO001 - Konisch 1:8 - $\varnothing 10$ - M7x1 - Scheibenfeder Dicke 2.4
Gehäuse	IN	B Ansaugung - 3/8" GAS
	OUT	B Druckseite - 3/8" GAS
Deckel	A	Standard



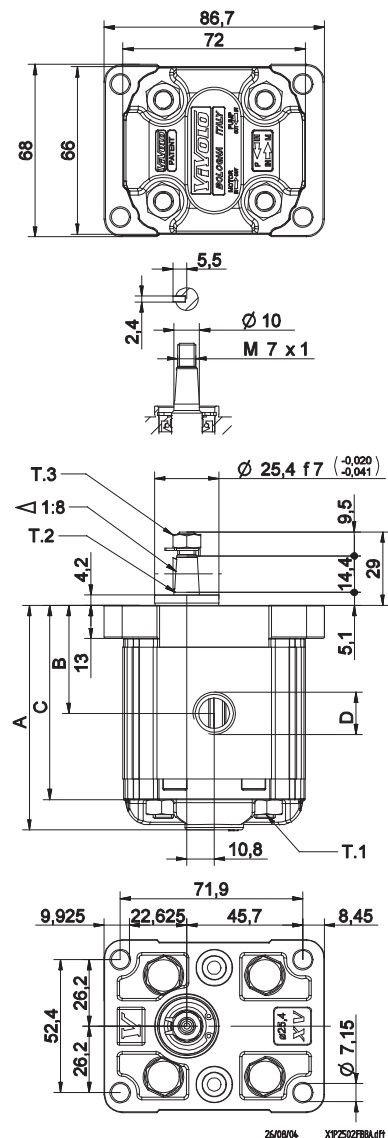
XP105

Technische Datentabelle						
TYP	Hubraum	Maximaldruck		CODE		
		cm ³ /u	P1 bar	P3 bar	Drehung links	Drehung rechts
XV-1P/0.9	0,91	240	280	X 1 P 16 01 F B B A	X 1 P 16 02 F B B A	
XV-1P/1.2	1,17	250	290	X 1 P 17 01 F B B A	X 1 P 17 02 F B B A	
XV-1P/1.7	1,56	250	290	X 1 P 18 01 F B B A	X 1 P 18 02 F B B A	
XV-1P/2.2	2,08	250	290	X 1 P 20 01 F B B A	X 1 P 20 02 F B B A	
XV-1P/2.6	2,60	250	300	X 1 P 21 01 F B B A	X 1 P 21 02 F B B A	
XV-1P/3.2	3,12	250	300	X 1 P 23 01 F B B A	X 1 P 23 02 F B B A	
XV-1P/3.8	3,64	250	300	X 1 P 25 01 F B B A	X 1 P 25 02 F B B A	
XV-1P/4.3	4,16	250	300	X 1 P 27 01 F B B A	X 1 P 27 02 F B B A	
XV-1P/4.9	4,94	250	300	X 1 P 29 01 F B B A	X 1 P 29 02 F B B A	
XV-1P/5.9	5,85	250	300	X 1 P 31 01 F B B A	X 1 P 31 02 F B B A	
XV-1P/6.5	6,50	250	300	X 1 P 32 01 F B B A	X 1 P 32 02 F B B A	
XV-1P/7.8	7,54	220	260	X 1 P 34 01 F B B A	X 1 P 34 02 F B B A	
XV-1P/9.8	9,88	190	230	X 1 P 36 01 F B B A	X 1 P 36 02 F B B A	

P1) Max. Betriebsdruck - P3) Max. Druckspitze

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle						
TYP	Gewicht	A	B	C	D	D
	kg	mm	mm	mm	IN	OUT
XV-1P/0.9	0,950	78,1	37,3	66,1	3/8" BSPP	3/8" BSPP
XV-1P/1.2	0,970	79,0	37,8	67,0	3/8" BSPP	3/8" BSPP
XV-1P/1.7	1,010	80,5	38,5	68,5	3/8" BSPP	3/8" BSPP
XV-1P/2.2	1,030	82,5	39,5	70,5	3/8" BSPP	3/8" BSPP
XV-1P/2.6	1,060	84,5	40,5	72,5	3/8" BSPP	3/8" BSPP
XV-1P/3.2	1,090	86,5	41,5	74,5	3/8" BSPP	3/8" BSPP
XV-1P/3.8	1,120	88,5	42,5	76,5	3/8" BSPP	3/8" BSPP
XV-1P/4.3	1,170	90,5	43,5	78,5	3/8" BSPP	3/8" BSPP
XV-1P/4.9	1,200	93,5	45,0	81,5	3/8" BSPP	3/8" BSPP
XV-1P/5.9	1,260	97,0	46,8	85,0	3/8" BSPP	3/8" BSPP
XV-1P/6.5	1,300	98,5	48,0	86,5	3/8" BSPP	3/8" BSPP
XV-1P/7.8	1,360	103,5	50,0	91,5	3/8" BSPP	3/8" BSPP
XV-1P/9.8	1,500	112,5	54,5	100,5	3/8" BSPP	3/8" BSPP



T.1 = 24.5÷29.4 [Nm] - Anzugsmoment - Schrauben M8

T.3 = 11.5 [Nm] - Anzugsmoment - Schlüssel 11

T.2 = 43 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

Tabelle der Varianten

XV-1P

FLANSCH $\varnothing 25.4$

FLANSCH 25.4		Tabelle der Varianten		Deckel	
Drehung links	Drehung rechts			Drehung links	Drehung rechts
		01	02		
		03	04		
		05	06		
		07	08		

Hubraum	
TYP	CODE
XV-1P/0.9	16
XV-1P/1.2	17
XV-1P/1.7	18
XV-1P/2.2	20
XV-1P/2.6	21
XV-1P/3.2	23
XV-1P/3.8	25
XV-1P/4.3	27
XV-1P/4.9	29
XV-1P/5.9	31
XV-1P/6.5	32
XV-1P/7.8	34
XV-1P/9.8	36

Gehäuse Standard						
Hubraum	cm ³ /u	Standardgewinde				
0.9	I - I	B - B	-	B - Z	Z - Z	G - F
1.2	I - I	B - B	-	B - Z	Z - Z	G - F
1.7	I - I	B - B	-	B - Z	Z - Z	G - F
2.2	I - I	B - B	-	B - Z	Z - Z	G - F
2.6	I - I	B - B	-	B - Z	Z - Z	G - F
3.2	I - I	B - B	-	B - Z	Z - Z	G - F
3.8	I - I	B - B	-	B - Z	Z - Z	G - F
4.3	I - I	B - B	-	B - Z	Z - Z	G - F
4.9	I - I	B - B	-	B - Z	Z - Z	G - F
5.9	I - I	B - B	-	B - Z	Z - Z	G - F
6.5	I - I	B - B	-	B - Z	Z - Z	G - F
7.8	I - I	B - B	-	B - Z	Z - Z	G - F
9.8	I - I	B - B	-	B - Z	Z - Z	G - F

Kombinationstabelle der lagermässig vorrätigen
Standardgewinde und Anflansungen

Gehäuse (Gewinde und Anflansungen)													
	A		B		C		D		E		F		G
	H		I		J		Z						

Zahnradpumpen

- Serie XV -

Baugröße 1



Bestellnr.	Typ	Code
D = rechtsdrehend		
010-070-01000	XV1P/0,9D-Ø30-CO.002	X1P1612GIIA
010-070-01100	XV1P/1,2D-Ø30-CO.002	X1P1712GIIA
010-070-01200	XV1P/1,7D-Ø30-CO.002	X1P1812GIIA
010-070-01300	XV1P/2,2D-Ø30-CO.002	X1P2012GIIA
010-070-01400	XV1P/2,6D-Ø30-CO.002	X1P2112GIIA
010-070-01500	XV1P/3,2D-Ø30-CO.002	X1P2312GIIA
010-070-01600	XV1P/3,8D-Ø30-CO.002	X1P2512GIIA
010-070-01700	XV1P/4,3D-Ø30-CO.002	X1P2712GIIA
010-070-01800	XV1P/4,9D-Ø30-CO.002	X1P2912GIIA
010-070-01900	XV1P/5,9D-Ø30-CO.002	X1P3112GIIA
010-070-02000	XV1P/6,5D-Ø30-CO.002	X1P3212GIIA
010-070-02100	XV1P/7,8D-Ø30-CO.002	X1P3412GIIA
010-070-02200	XV1P/9,8D-Ø30-CO.002	X1P3612GIIA
S = linksdrehend		
010-070-01050	XV1P/0,9S-Ø30-CO.002	X1P1611GIIA
010-070-01150	XV1P/1,2S-Ø30-CO.002	X1P1711GIIA
010-070-01250	XV1P/1,7S-Ø30-CO.002	X1P1811GIIA
010-070-01350	XV1P/2,2S-Ø30-CO.002	X1P2011GIIA
010-070-01450	XV1P/2,6S-Ø30-CO.002	X1P2111GIIA
010-070-01550	XV1P/3,2S-Ø30-CO.002	X1P2311GIIA
010-070-01650	XV1P/3,8S-Ø30-CO.002	X1P2511GIIA
010-070-01750	XV1P/4,3S-Ø30-CO.002	X1P2711GIIA
010-070-01850	XV1P/4,9S-Ø30-CO.002	X1P2911GIIA
010-070-01950	XV1P/5,9S-Ø30-CO.002	X1P3111GIIA
010-070-02050	XV1P/6,5S-Ø30-CO.002	X1P3211GIIA
010-070-02150	XV1P/7,8S-Ø30-CO.002	X1P3411GIIA
010-070-02250	XV1P/9,8S-Ø30-CO.002	X1P3611GIIA

4-Loch-Flansch- Bohrungsabstand = 73 x 56 mm / Rezess = Ø 30 mm / Welle -CO.002 1:8 -d = Ø 14 mm

-M 10x1 -Passfeder = 3,0 mm / max. zulässiges Wellendrehmoment = 119,8 Nm / Ölabschlüsse = Flansch LK 30 seitlich

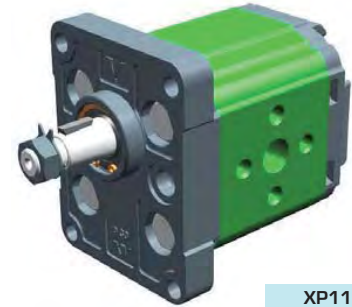
einseitig drehende Pumpe - Serie XV

XV-1P

STANDARDPUMPE
FLANSCH ø30 - KEGELWELLE

X 1 P 25 12 G I I A

Serie	X	Serie XV
Gruppe	1	Gruppe 1
Kategorie	P	einseitig drehende Pumpe
Hubraum	25	3.8
Flansch	12	Ø30 STANDARD Drehrichtung rechts
Welle	G	CO002 - Konisch 1:8 - ø14 - M10x1 - Scheibfeder Dicke 3
Gehäuse	IN	Ansaugung - Ø30 Ø12 M6
	OUT	Druckseite - Ø30 Ø12 M6
Deckel	A	Standard



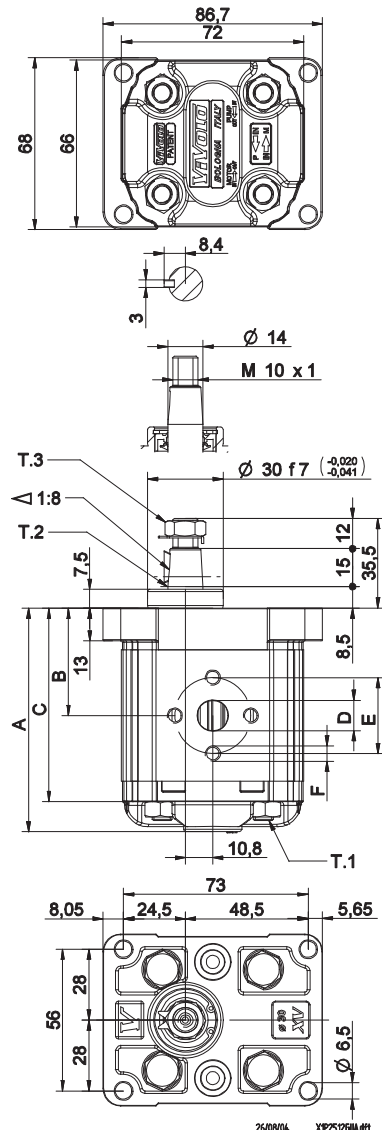
XP113

Technische Datentabelle						
TYP	Hubraum	Maximaldruck		CODE		
		cm ³ /u	P1 bar	P3 bar	Drehung links	Drehung rechts
XV-1P/0.9	0,91	240	280	X 1 P 16 11 G I I A	X 1 P 16 12 G I I A	
XV-1P/1.2	1,17	250	290	X 1 P 17 11 G I I A	X 1 P 17 12 G I I A	
XV-1P/1.7	1,56	250	290	X 1 P 18 11 G I I A	X 1 P 18 12 G I I A	
XV-1P/2.2	2,08	250	290	X 1 P 20 11 G I I A	X 1 P 20 12 G I I A	
XV-1P/2.6	2,60	250	300	X 1 P 21 11 G I I A	X 1 P 21 12 G I I A	
XV-1P/3.2	3,12	250	300	X 1 P 23 11 G I I A	X 1 P 23 12 G I I A	
XV-1P/3.8	3,64	250	300	X 1 P 25 11 G I I A	X 1 P 25 12 G I I A	
XV-1P/4.3	4,16	250	300	X 1 P 27 11 G I I A	X 1 P 27 12 G I I A	
XV-1P/4.9	4,94	250	300	X 1 P 29 11 G I I A	X 1 P 29 12 G I I A	
XV-1P/5.9	5,85	250	300	X 1 P 31 11 G I I A	X 1 P 31 12 G I I A	
XV-1P/6.5	6,50	250	300	X 1 P 32 11 G I I A	X 1 P 32 12 G I I A	
XV-1P/7.8	7,54	220	260	X 1 P 34 11 G I I A	X 1 P 34 12 G I I A	
XV-1P/9.8	9,88	190	230	X 1 P 36 11 G I I A	X 1 P 36 12 G I I A	

P1) Max. Betriebsdruck - P3) Max. Druckspitze

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle										
TYP	Gewicht	A	B	C	D	E	F	D	E	F
	kg	mm	mm	mm	IN			OUT		
XV-1P/0.9	0,950	78,1	37,3	66,1	ø12	30	M6x1	ø12	30	M6x1
XV-1P/1.2	0,970	79,0	37,8	67,0	ø12	30	M6x1	ø12	30	M6x1
XV-1P/1.7	1,010	80,5	38,5	68,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/2.2	1,030	82,5	39,5	70,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/2.6	1,060	84,5	40,5	72,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/3.2	1,090	86,5	41,5	74,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/3.8	1,120	88,5	42,5	76,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/4.3	1,170	90,5	43,5	78,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/4.9	1,200	93,5	45,0	81,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/5.9	1,260	97,0	46,8	85,0	ø12	30	M6x1	ø12	30	M6x1
XV-1P/6.5	1,300	98,5	48,0	86,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/7.8	1,360	103,5	50,0	91,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/9.8	1,500	112,5	54,5	100,5	ø12	30	M6x1	ø12	30	M6x1



T.1 = 24.5÷29.4 [Nm] - Anzugsmoment - Schrauben M8

T.3 = 13 [Nm] - Anzugsmoment - Schlüssel 17

T.2 = 119.8 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

Tabelle der Varianten

XV-1P

FLANSCH $\varnothing 30$

FLANSCH $\varnothing 30$				Tabelle der Varianten				Deckel			
Drehung links		Drehung rechts						Drehung links		Drehung rechts	
	11		12		A		G				A
	13		14		P		O				B
	15		16								C
	17		18								D

Hubraum	
TYP	CODE
XV-1P/0.9	16
XV-1P/1.2	17
XV-1P/1.7	18
XV-1P/2.2	20
XV-1P/2.6	21
XV-1P/3.2	23
XV-1P/3.8	25
XV-1P/4.3	27
XV-1P/4.9	29
XV-1P/5.9	31
XV-1P/6.5	32
XV-1P/7.8	34
XV-1P/9.8	36

Gehäuse Standard							
Hubraum	cm ³ /u	Standardgewinde					
0.9	I - I	B - B	J - J	B - Z	Z - Z	G - F	
1.2	I - I	B - B	J - J	B - Z	Z - Z	G - F	
1.7	I - I	B - B	J - J	B - Z	Z - Z	G - F	
2.2	I - I	B - B	J - J	B - Z	Z - Z	G - F	
2.6	I - I	B - B	J - J	B - Z	Z - Z	G - F	
3.2	I - I	B - B	J - J	B - Z	Z - Z	G - F	
3.8	I - I	B - B	J - J	B - Z	Z - Z	G - F	
4.3	I - I	B - B	J - J	B - Z	Z - Z	G - F	
4.9	I - I	B - B	J - J	B - Z	Z - Z	G - F	
5.9	I - I	B - B	J - J	B - Z	Z - Z	G - F	
6.5	I - I	B - B	J - J	B - Z	Z - Z	G - F	
7.8	I - I	B - B	J - J	B - Z	Z - Z	G - F	
9.8	I - I	B - B	J - J	B - Z	Z - Z	G - F	

Kombinationstabelle der lagermäßig vorrätigen
Standardgewinde und Anflansungen

Gehäuse (Gewinde und Anflansungen)													
	A		B		C		D		E		F		G
	H		I		J		Z						

Zahnradpumpen

- Serie XV -

Baugröße 1



Bestellnr.	Typ	Code
D = rechtsdrehend		
010-160-01000	XV1P/0,9D-BH-Ø32-CF.001-3/8-3/8	X1P1632CBBA
010-160-01100	XV1P/1,2D-BH-Ø32-CF.001-3/8-3/8	X1P1732CBBA
010-160-01200	XV1P/1,7D-BH-Ø32-CF.001-3/8-3/8	X1P1832CBBA
010-160-01300	XV1P/2,2D-BH-Ø32-CF.001-3/8-3/8	X1P2032CBBA
010-160-01400	XV1P/2,6D-BH-Ø32-CF.001-3/8-3/8	X1P2132CBBA
010-160-01500	XV1P/3,2D-BH-Ø32-CF.001-3/8-3/8	X1P2332CBBA
010-160-01600	XV1P/3,8D-BH-Ø32-CF.001-3/8-3/8	X1P2532CBBA
010-160-01700	XV1P/4,3D-BH-Ø32-CF.001-3/8-3/8	X1P2732CBBA
010-160-01800	XV1P/4,9D-BH-Ø32-CF.001-3/8-3/8	X1P2932CBBA
010-160-01900	XV1P/5,9D-BH-Ø32-CF.001-3/8-3/8	X1P3132CBBA
010-160-02000	XV1P/6,5D-BH-Ø32-CF.001-3/8-3/8	X1P3232CBBA
010-160-02100	XV1P/7,8D-BH-Ø32-CF.001-3/8-3/8	X1P3432CBBA
010-160-02200	XV1P/9,8D-BH-Ø32-CF.001-3/8-3/8	X1P3632CBBA
S = linksdrehend		
010-160-01050	XV1P/0,9S-BH-Ø32-CF.001-3/8-3/8	X1P1631CBBA
010-160-01150	XV1P/1,2S-BH-Ø32-CF.001-3/8-3/8	X1P1731CBBA
010-160-01250	XV1P/1,7S-BH-Ø32-CF.001-3/8-3/8	X1P1831CBBA
010-160-01350	XV1P/2,2S-BH-Ø32-CF.001-3/8-3/8	X1P2031CBBA
010-160-01450	XV1P/2,6S-BH-Ø32-CF.001-3/8-3/8	X1P2131CBBA
010-160-01550	XV1P/3,2S-BH-Ø32-CF.001-3/8-3/8	X1P2331CBBA
010-160-01650	XV1P/3,8S-BH-Ø32-CF.001-3/8-3/8	X1P2531CBBA
010-160-01750	XV1P/4,3S-BH-Ø32-CF.001-3/8-3/8	X1P2731CBBA
010-160-01850	XV1P/4,9S-BH-Ø32-CF.001-3/8-3/8	X1P2931CBBA
010-160-01950	XV1P/5,9S-BH-Ø32-CF.001-3/8-3/8	X1P3131CBBA
010-160-02050	XV1P/6,5S-BH-Ø32-CF.001-3/8-3/8	X1P3231CBBA
010-160-02150	XV1P/7,8S-BH-Ø32-CF.001-3/8-3/8	X1P3431CBBA
010-160-02250	XV1P/9,8S-BH-Ø32-CF.001-3/8-3/8	X1P3631CBBA

4-Loch-Flansch-BH-Durchschraubausführung -Bohrungsabstand = 40 x 40 mm / Rezz = Ø 32 mm / Zungenwelle versenkt -CF.001
-max. zulässiges Wellendrehmoment = 13,8 Nm / Öllanschlüsse = IG 3/8 seitlich

einseitig drehende Pumpe - Serie XV

XV-1P

DEUTSCHE STANDARDPUMPE TYP "BH"
FLANSCH $\varnothing 32$ GEFORMT - WELLE MIT GEFRÄSTEM ENDSTÜCK

X 1 P 25 32 C B B A

Serie	X	Serie XV
Gruppe	1	Gruppe 1
Kategorie	P	einseitig drehende Pumpe
Hubraum	25	3.8
Flansch	32	$\varnothing 32$ BH DEUTSCHE NORM Drehrichtung rechts
Welle	C	CF001 - mit gefrästem Endstück $\varnothing 10$ - Dicke 5 ("BH" deutscher Standard)
Gehäuse	IN	B Ansaugung - 3/8" GAS
	OUT	B Druckseite - 3/8" GAS
Deckel	A	Standard



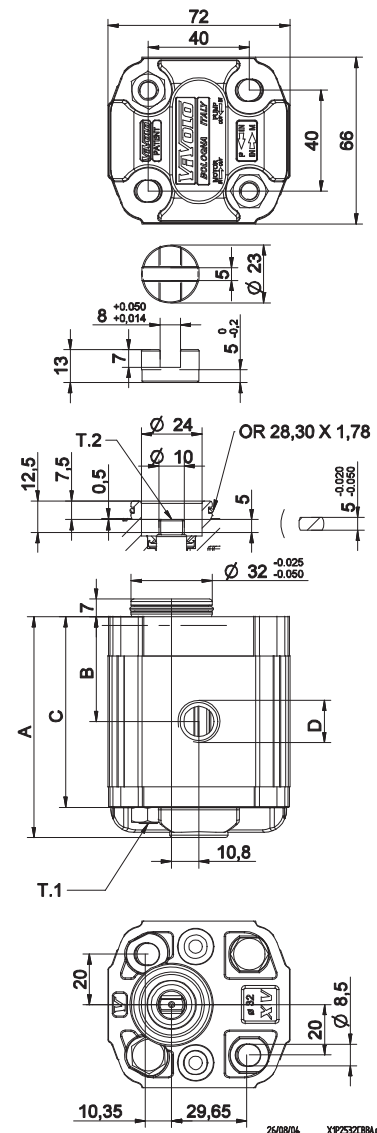
XP161

Technische Datentabelle						
TYP	Hubraum	Maximaldruck		CODE		
		cm ³ /u	P1 bar	P3 bar	Drehung links	Drehung rechts
XV-1P/0.9	0,91	240	280	X 1 P 16 31 C B B A	X 1 P 16 32 C B B A	
XV-1P/1.2	1,17	250	290	X 1 P 17 31 C B B A	X 1 P 17 32 C B B A	
XV-1P/1.7	1,56	250	290	X 1 P 18 31 C B B A	X 1 P 18 32 C B B A	
XV-1P/2.2	2,08	250	290	X 1 P 20 31 C B B A	X 1 P 20 32 C B B A	
XV-1P/2.6	2,60	250	300	X 1 P 21 31 C B B A	X 1 P 21 32 C B B A	
XV-1P/3.2	3,12	250	300	X 1 P 23 31 C B B A	X 1 P 23 32 C B B A	
XV-1P/3.8	3,64	250	300	X 1 P 25 31 C B B A	X 1 P 25 32 C B B A	
XV-1P/4.3	4,16	250	300	X 1 P 27 31 C B B A	X 1 P 27 32 C B B A	
XV-1P/4.9	4,94	250	300	X 1 P 29 31 C B B A	X 1 P 29 32 C B B A	
XV-1P/5.9	5,85	250	300	X 1 P 31 31 C B B A	X 1 P 31 32 C B B A	
XV-1P/6.5	6,50	250	300	X 1 P 32 31 C B B A	X 1 P 32 32 C B B A	
XV-1P/7.8	7,54	220	260	X 1 P 34 31 C B B A	X 1 P 34 32 C B B A	
XV-1P/9.8	9,88	190	230	X 1 P 36 31 C B B A	X 1 P 36 32 C B B A	

P1) Max. Betriebsdruck - P3) Max. Druckspitze

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle						
TYP	Gewicht	A	B	C	D	D
		kg	mm	mm	mm	IN	OUT
XV-1P/0.9	0,950	77,1	36,3	65,1	3/8" BSPP	3/8" BSPP
XV-1P/1.2	0,970	78,0	36,8	66,0	3/8" BSPP	3/8" BSPP
XV-1P/1.7	1,010	79,5	37,5	67,5	3/8" BSPP	3/8" BSPP
XV-1P/2.2	1,030	81,5	38,5	69,5	3/8" BSPP	3/8" BSPP
XV-1P/2.6	1,060	83,5	39,5	71,5	3/8" BSPP	3/8" BSPP
XV-1P/3.2	1,090	85,5	40,5	73,5	3/8" BSPP	3/8" BSPP
XV-1P/3.8	1,120	87,5	41,5	75,5	3/8" BSPP	3/8" BSPP
XV-1P/4.3	1,170	89,5	42,5	77,5	3/8" BSPP	3/8" BSPP
XV-1P/4.9	1,200	92,5	44,0	80,5	3/8" BSPP	3/8" BSPP
XV-1P/5.9	1,260	96,0	45,8	84,0	3/8" BSPP	3/8" BSPP
XV-1P/6.5	1,300	97,5	47,0	85,5	3/8" BSPP	3/8" BSPP
XV-1P/7.8	1,360	102,5	49,0	90,5	3/8" BSPP	3/8" BSPP
XV-1P/9.8	1,500	111,5	53,5	99,5	3/8" BSPP	3/8" BSPP



T.1 = 24.5±29.4 [Nm] - Anzugsmoment - Schrauben M8

T.2 = 13.8 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

Tabelle der Varianten

XV-1P

FLANSCH $\varnothing 32$ Deutsche Standardpumpe "BH"



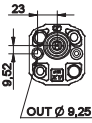
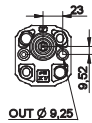


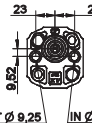
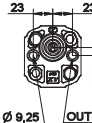
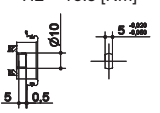
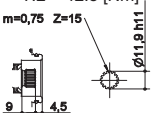



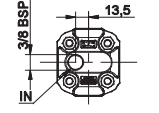
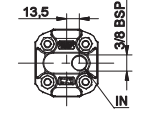
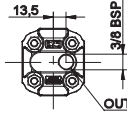
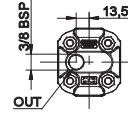
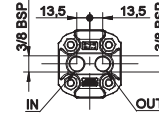
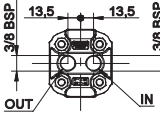
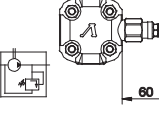
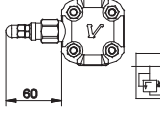
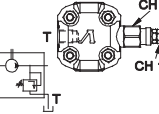
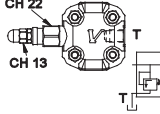
FLANSCH $\varnothing 32$ Deutsche Standardpumpe "BH"			
Drehung links		Drehung rechts	
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	33		34
	35		36
	37		38

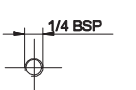
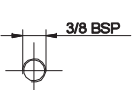
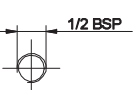
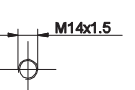
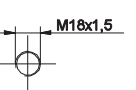
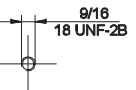
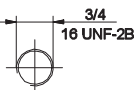
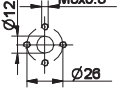
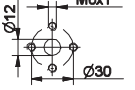
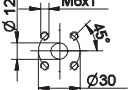
Tabelle der Varianten	
SCF01 - mit gefrästem Endstück T.2 = 13.8 [Nm]  C	SCF01 - genietet T.2 = 42.8 [Nm] m=0,75 Z=15  Q
SCF03 - genietet T.2 = 42.8 [Nm] m=0,75 Z=15  R	

Deckel		
Drehung links	Drehung rechts	
		A
		B
		C
		D
		N
Drainage innen		
		O
Drainage aussen		

Hubraum	
TYP	CODE
XV-1P/0.9	16
XV-1P/1.2	17
XV-1P/1.7	18
XV-1P/2.2	20
XV-1P/2.6	21
XV-1P/3.2	23
XV-1P/3.8	25
XV-1P/4.3	27
XV-1P/4.9	29
XV-1P/5.9	31
XV-1P/6.5	32
XV-1P/7.8	34
XV-1P/9.8	36

Gehäuse Standard							
Hubraum	cm ³ /u	Standardgewinde					
		I - I	B - B	J - J	B - Z	Z - Z	G - F
0.9		I - I	B - B	J - J	B - Z	Z - Z	G - F
1.2		I - I	B - B	J - J	B - Z	Z - Z	G - F
1.7		I - I	B - B	J - J	B - Z	Z - Z	G - F
2.2		I - I	B - B	J - J	B - Z	Z - Z	G - F
2.6		I - I	B - B	J - J	B - Z	Z - Z	G - F
3.2		I - I	B - B	J - J	B - Z	Z - Z	G - F
3.8		I - I	B - B	J - J	B - Z	Z - Z	G - F
4.3		I - I	B - B	J - J	B - Z	Z - Z	G - F
4.9		I - I	B - B	J - J	B - Z	Z - Z	G - F
5.9		I - I	B - B	J - J	B - Z	Z - Z	G - F
6.5		I - I	B - B	J - J	B - Z	Z - Z	G - F
7.8		I - I	B - B	J - J	B - Z	Z - Z	G - F
9.8		I - I	B - B	J - J	B - Z	Z - Z	G - F

Kombinationstabelle der lagermäßig vorrätigen
Standardgewinde und Anflansungen

Gehäuse (Gewinde und Anflansungen)							
	A		B		C		D
	E		F		G		
	H		I		J	Gehäuse Geschlossen	Z

Zahnradpumpen

- Serie XV -

Baugröße 1



Bestellnr.	Typ	Code
D = rechtsdrehend		
010-180-01000	XV1P/0,9D-BH-Ø32-CF.002-3/8-3/8	X1P1642DBBA
010-180-01100	XV1P/1,2D-BH-Ø32-CF.002-3/8-3/8	X1P1742DBBA
010-180-01250	XV1P/1,7D-BH-Ø32-CF.002-3/8-3/8	X1P1842DBBA
010-180-01300	XV1P/2,2D-BH-Ø32-CF.002-3/8-3/8	X1P2042DBBA
010-180-01400	XV1P/2,6D-BH-Ø32-CF.002-3/8-3/8	X1P2142DBBA
010-180-01500	XV1P/3,2D-BH-Ø32-CF.002-3/8-3/8	X1P2342DBBA
010-180-01600	XV1P/3,8D-BH-Ø32-CF.002-3/8-3/8	X1P2542DBBA
010-180-01700	XV1P/4,3D-BH-Ø32-CF.002-3/8-3/8	X1P2742DBBA
010-180-01800	XV1P/4,9D-BH-Ø32-CF.002-3/8-3/8	X1P2942DBBA
010-180-01900	XV1P/5,9D-BH-Ø32-CF.002-3/8-3/8	X1P3142DBBA
010-180-02000	XV1P/6,5D-BH-Ø32-CF.002-3/8-3/8	X1P3242DBBA
010-180-02100	XV1P/7,8D-BH-Ø32-CF.002-3/8-3/8	X1P3442DBBA
010-180-02200	XV1P/9,8D-BH-Ø32-CF.002-3/8-3/8	X1P3642DBBA
S = linksdrehend		
010-180-01050	XV1P/0,9S-BH-Ø32-CF.002-3/8-3/8	X1P1641DBBA
010-180-01150	XV1P/1,2S-BH-Ø32-CF.002-3/8-3/8	X1P1741DBBA
010-180-01200	XV1P/1,7S-BH-Ø32-CF.002-3/8-3/8	X1P1841DBBA
010-180-01350	XV1P/2,2S-BH-Ø32-CF.002-3/8-3/8	X1P2041DBBA
010-180-01450	XV1P/2,6S-BH-Ø32-CF.002-3/8-3/8	X1P2141DBBA
010-180-01550	XV1P/3,2S-BH-Ø32-CF.002-3/8-3/8	X1P2341DBBA
010-180-01650	XV1P/3,8S-BH-Ø32-CF.002-3/8-3/8	X1P2541DBBA
010-180-01750	XV1P/4,3S-BH-Ø32-CF.002-3/8-3/8	X1P2741DBBA
010-180-01850	XV1P/4,9S-BH-Ø32-CF.002-3/8-3/8	X1P2941DBBA
010-180-01950	XV1P/5,9S-BH-Ø32-CF.002-3/8-3/8	X1P3141DBBA
010-180-02050	XV1P/6,5S-BH-Ø32-CF.002-3/8-3/8	X1P3241DBBA
010-180-02150	XV1P/7,8S-BH-Ø32-CF.002-3/8-3/8	X1P3441DBBA
010-180-02250	XV1P/9,8S-BH-Ø32-CF.002-3/8-3/8	X1P3641DBBA

4-Loch-Flansch-BH-Durchschraubausführung -Bohrungsabstand = 40 x 40 mm / Rezz = Ø 32 mm / Zungenwelle vorstehend -CF.002
-max. zulässiges Wellendrehmoment = 13,8 Nm / Ölschlüsse = IG 3/8 seitlich

einseitig drehende Pumpe - Serie XV

XV-1P

PUMPE TYP "BH"
FLANSCH Ø32 GEFORMT - WELLE MIT GEFRÄSTEM ENDSTÜCK

X 1 P 25 42 D B B A

Serie	X	Serie XV
Gruppe	1	Gruppe 1
Kategorie	P	einseitig drehende Pumpe
Hubraum	25	3.8
Flansch	42	Ø32 BH Drehrichtung rechts
Welle	D	CF002 - mit gefrästem Endstück ø10 - Dicke 5
Gehäuse	IN	B Ansaugung - 3/8" GAS
	OUT	B Druckseite - 3/8" GAS
Deckel	A	Standard



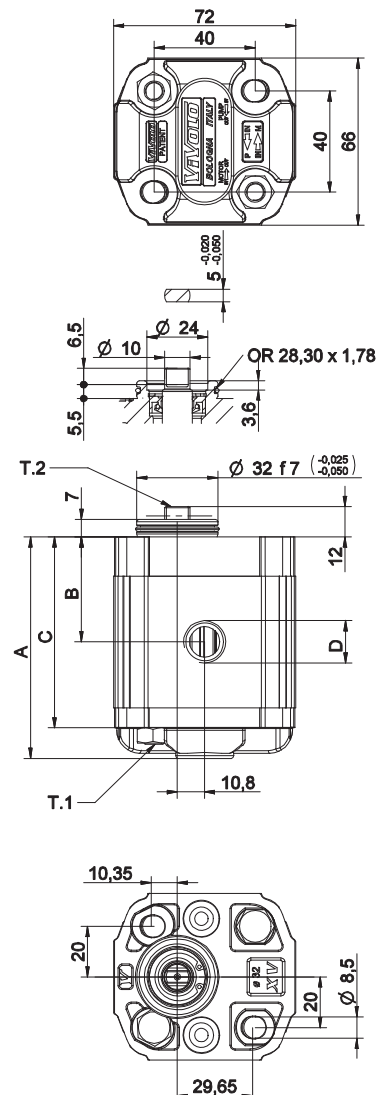
XP119

Technische Datentabelle						
TYP	Hubraum	Maximaldruck		CODE		
		cm3/u	P1 bar	P3 bar	Drehung links	Drehung rechts
XV-1P/0.9	0,91	240	280	X 1 P 16 41 D B B A	X 1 P 16 42 D B B A	
XV-1P/1.2	1,17	250	290	X 1 P 17 41 D B B A	X 1 P 17 42 D B B A	
XV-1P/1.7	1,56	250	290	X 1 P 18 41 D B B A	X 1 P 18 42 D B B A	
XV-1P/2.2	2,08	250	290	X 1 P 20 41 D B B A	X 1 P 20 42 D B B A	
XV-1P/2.6	2,60	250	300	X 1 P 21 41 D B B A	X 1 P 21 42 D B B A	
XV-1P/3.2	3,12	250	300	X 1 P 23 41 D B B A	X 1 P 23 42 D B B A	
XV-1P/3.8	3,64	250	300	X 1 P 25 41 D B B A	X 1 P 25 42 D B B A	
XV-1P/4.3	4,16	250	300	X 1 P 27 41 D B B A	X 1 P 27 42 D B B A	
XV-1P/4.9	4,94	250	300	X 1 P 29 41 D B B A	X 1 P 29 42 D B B A	
XV-1P/5.9	5,85	250	300	X 1 P 31 41 D B B A	X 1 P 31 42 D B B A	
XV-1P/6.5	6,50	250	300	X 1 P 32 41 D B B A	X 1 P 32 42 D B B A	
XV-1P/7.8	7,54	220	260	X 1 P 34 41 D B B A	X 1 P 34 42 D B B A	
XV-1P/9.8	9,88	190	230	X 1 P 36 41 D B B A	X 1 P 36 42 D B B A	

P1) Max. Betriebsdruck - P3) Max. Druckspitze

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle						
TYP	Gewicht	A	B	C	D	D
		mm	mm	mm	IN	OUT
XV-1P/0.9	0,950	77,1	36,3	65,1	3/8" BSPP	3/8" BSPP
XV-1P/1.2	0,970	78,0	36,8	66,0	3/8" BSPP	3/8" BSPP
XV-1P/1.7	1,010	79,5	37,5	67,5	3/8" BSPP	3/8" BSPP
XV-1P/2.2	1,030	81,5	38,5	69,5	3/8" BSPP	3/8" BSPP
XV-1P/2.6	1,060	83,5	39,5	71,5	3/8" BSPP	3/8" BSPP
XV-1P/3.2	1,090	85,5	40,5	73,5	3/8" BSPP	3/8" BSPP
XV-1P/3.8	1,120	87,5	41,5	75,5	3/8" BSPP	3/8" BSPP
XV-1P/4.3	1,170	89,5	42,5	77,5	3/8" BSPP	3/8" BSPP
XV-1P/4.9	1,200	92,5	44,0	80,5	3/8" BSPP	3/8" BSPP
XV-1P/5.9	1,260	96,0	45,8	84,0	3/8" BSPP	3/8" BSPP
XV-1P/6.5	1,300	97,5	47,0	85,5	3/8" BSPP	3/8" BSPP
XV-1P/7.8	1,360	102,5	49,0	90,5	3/8" BSPP	3/8" BSPP
XV-1P/9.8	1,500	111,5	53,5	99,5	3/8" BSPP	3/8" BSPP



26/08/04 XP254288A/01

T.1 = 24.5±29.4 [Nm] - Anzugsmoment - Schrauben M8

T.2 = 13.8 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

Tabelle der Varianten

XV-1P

FLANSCH $\varnothing 32$ "BH" - Geformt

FLANSCH $\varnothing 32$ "BH" – Geformt				Tabelle der Varianten				Deckel			
Drehung links		Drehung rechts						Drehung links		Drehung rechts	
	41		42		D		F		A		
	43		44		L		J		B		
	45		46		Q		R		C		
	47		48						D		

Hubraum	
TYP	CODE
XV-1P/0.9	16
XV-1P/1.2	17
XV-1P/1.7	18
XV-1P/2.2	20
XV-1P/2.6	21
XV-1P/3.2	23
XV-1P/3.8	25
XV-1P/4.3	27
XV-1P/4.9	29
XV-1P/5.9	31
XV-1P/6.5	32
XV-1P/7.8	34
XV-1P/9.8	36

Gehäuse Standard						
Hubraum	cm ³ /u	Standardgewinde				
0.9	I - I	B - B	J - J	B - Z	Z - Z	G - F
1.2	I - I	B - B	J - J	B - Z	Z - Z	G - F
1.7	I - I	B - B	J - J	B - Z	Z - Z	G - F
2.2	I - I	B - B	J - J	B - Z	Z - Z	G - F
2.6	I - I	B - B	J - J	B - Z	Z - Z	G - F
3.2	I - I	B - B	J - J	B - Z	Z - Z	G - F
3.8	I - I	B - B	J - J	B - Z	Z - Z	G - F
4.3	I - I	B - B	J - J	B - Z	Z - Z	G - F
4.9	I - I	B - B	J - J	B - Z	Z - Z	G - F
5.9	I - I	B - B	J - J	B - Z	Z - Z	G - F
6.5	I - I	B - B	J - J	B - Z	Z - Z	G - F
7.8	I - I	B - B	J - J	B - Z	Z - Z	G - F
9.8	I - I	B - B	J - J	B - Z	Z - Z	G - F

Kombinationstabelle der lagermäßig vorrätigen
Standardgewinde und Anflansungen

	N
	O

Drainage innen

Drainage aussen

Gehäuse (Gewinde und Anflansungen)													
	A		B		C		D		E		F		G
	H		I		J	Gehäuse Geschlossen	Z						

Zahnradpumpen

- Serie XV -

Baugröße 2



Bestellnr.	Typ	Code
D = rechtsdrehend		
010-240-01000	XV2P/4D	X2P4102E00A
010-240-01100	XV2P/6D	X2P4302E00A
010-240-01200	XV2P/9D	X2P4502E00A
010-240-01300	XV2P/11D	X2P4702E00A
010-240-01400	XV2P/14D	X2P4902E00A
010-240-01500	XV2P/17D	X2P5102E00A
010-240-01600	XV2P/19D	X2P5302E00A
010-240-01700	XV2P/22D	X2P5502E00A
010-240-01800	XV2P/26D	X2P5702EQPA
010-240-01900	XV2P/30D	X2P5902EQPA
010-240-02000	XV2P/34D	X2P6102EQPA
010-240-02100	XV2P/40D	X2P6302EQPA
S = linksdrehend		
010-240-01050	XV2P/4S	X2P4101E00A
010-240-01150	XV2P/6S	X2P4301E00A
010-240-01250	XV2P/9S	X2P4501E00A
010-240-01350	XV2P/11S	X2P4701E00A
010-240-01450	XV2P/14S	X2P4901E00A
010-240-01550	XV2P/17S	X2P5101E00A
010-240-01650	XV2P/19S	X2P5301E00A
010-240-01750	XV2P/22S	X2P5501E00A
010-240-01850	XV2P/26S	X2P5701EQPA
010-240-01950	XV2P/30S	X2P5901EQPA
010-240-02050	XV2P/34S	X2P6101EQPA
010-240-02150	XV2P/40S	X2P6301EQPA

Europäischer Standard-4-Loch-Flansch- Bohrungsabstand = 96,2 x 71,5 mm / Rezzess = \varnothing 36,5 mm / Welle -CO.001 1:8 -d = \varnothing 17,4 mm
 -M 12x1,5 -Passfeder = 4,0 mm / max. zulässiges Wellendrehmoment = 233,2 Nm / Ölschlüsse = Flansch LK 30/40 seitlich

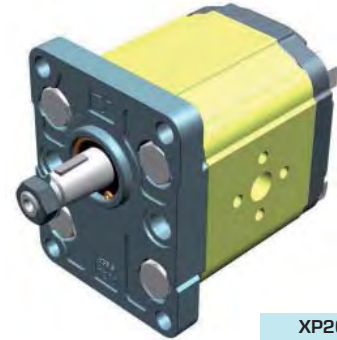
einseitig drehende Pumpe - Serie XV

XV-2P

**EUROPÄISCHE STANDARDPUMPE
FLANSCH ø36.5 - KEGELWELLE**

X 2 P 51 02 E P O A

Serie	X	Serie XV	
Gruppe	2	Gruppe 2	
Kategorie	P	einseitig drehende Pumpe	
Hubraum	51	17	
Flansch	02	Ø36,5 EUROPÄISCHER STANDARD Drehrichtung rechts	
Welle	E	CO001 - Konisch 1:8 - ø17.4 - M12x1.5 - Scheibfeder Dicke 4	
Gehäuse	IN	P	Ansaugung - Ø40 Ø20 M8
	OUT	O	Druckseite - Ø30 Ø13.5 M6
Deckel	A	Standard	

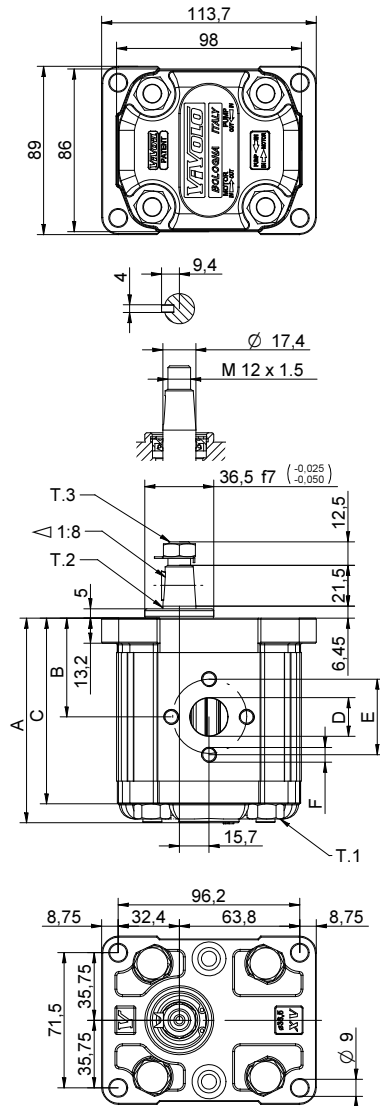


Technische Datentabelle																					
TYP	Hubraum	Maximaldruck		CODE																	
		cm ³ /u	P1 bar	P3 bar	Drehung links			Drehung rechts													
XV-2P/04	4,20	260	300	X	2	P	41	01	E	O	O	A	X	2	P	41	02	E	O	O	A
XV-2P/06	6,00	260	300	X	2	P	43	01	E	O	O	A	X	2	P	43	02	E	O	O	A
XV-2P/09	8,40	260	300	X	2	P	45	01	E	O	O	A	X	2	P	45	02	E	O	O	A
XV-2P/11	10,80	260	300	X	2	P	47	01	E	O	O	A	X	2	P	47	02	E	O	O	A
XV-2P/14	14,40	250	290	X	2	P	49	01	E	P	O	A	X	2	P	49	02	E	P	O	A
XV-2P/17	16,80	230	270	X	2	P	51	01	E	P	O	A	X	2	P	51	02	E	P	O	A
XV-2P/19	19,20	210	250	X	2	P	53	01	E	P	O	A	X	2	P	53	02	E	P	O	A
XV-2P/22	22,80	200	240	X	2	P	55	01	E	P	O	A	X	2	P	55	02	E	P	O	A
XV-2P/26	26,20	170	210	X	2	P	57	01	E	Q	P	A	X	2	P	57	02	E	Q	P	A
XV-2P/30	30,00	160	200	X	2	P	59	01	E	Q	P	A	X	2	P	59	02	E	Q	P	A
XV-2P/34	34,20	150	190	X	2	P	61	01	E	Q	P	A	X	2	P	61	02	E	Q	P	A
XV-2P/40	39,60	140	180	X	2	P	63	01	E	Q	P	A	X	2	P	63	02	E	Q	P	A

P1) Max. Betriebsdruck - P3) Max. Druckspitze

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle										
TYP	Gewicht	A	B	C	D	E	F	D	E	F
		mm	mm	mm	IN			OUT		
XV-2P/04	2,200	87,2	41,7	77,2	ø13,5	30	M6x1	ø13,5	30	M6x1
XV-2P/06	2,300	90,2	43,2	80,2	ø13,5	30	M6x1	ø13,5	30	M6x1
XV-2P/09	2,400	94,2	45,2	84,2	ø13,5	30	M6x1	ø13,5	30	M6x1
XV-2P/11	2,500	98,2	47,2	88,2	ø13,5	30	M6x1	ø13,5	30	M6x1
XV-2P/14	2,700	104,2	50,2	94,2	ø20	40	M8X1,25	ø13,5	30	M6x1
XV-2P/17	2,800	108,2	52,2	98,2	ø20	40	M8X1,25	ø13,5	30	M6x1
XV-2P/19	2,900	112,2	54,2	102,2	ø20	40	M8X1,25	ø13,5	30	M6x1
XV-2P/22	3,050	118,2	57,2	108,2	ø20	40	M8X1,25	ø13,5	30	M6x1
XV-2P/26	3,150	122,2	59,2	112,2	ø23,5	40	M8X1,25	ø20	40	M8X1,25
XV-2P/30	3,400	130,2	63,2	120,2	ø23,5	40	M8X1,25	ø20	40	M8X1,25
XV-2P/34	3,600	137,2	66,7	127,2	ø23,5	40	M8X1,25	ø20	40	M8X1,25
XV-2P/40	3,800	146,2	71,2	136,2	ø23,5	40	M8X1,25	ø20	40	M8X1,25



T.1 = 54+58.9 [Nm] - Anzugsmoment - Schrauben M10

T.3 = 40 [Nm] - Anzugsmoment - Schlüssel 19

T.2 = 233.2 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

Tabelle der Varianten

XV-2P

FLANSCH $\varnothing 36.5$

FLANSCH $\varnothing 36.5$		Welle		Deckel	
Drehung links	Drehung rechts			Drehung links	Drehung rechts

Hubraum		Gehäuse Standard							
TYP	CODE	Hubraum	Standardgewinde						
XV-2P/04	41	4	O - O	S - R	B - B	L - M	Z - Z		
XV-2P/06	43	6	O - O	S - R	B - B	L - M	Z - Z		
XV-2P/09	45	9	O - O	S - R	B - B	L - M	Z - Z		
XV-2P/11	47	11	O - O	S - R	B - B	L - M	Z - Z		
XV-2P/14	49	14	P - O	S - R	C - B	L - M	Z - Z		
XV-2P/17	51	17	P - O	S - R	C - B	L - M	Z - Z		
XV-2P/19	53	19	P - O	S - R	C - B	L - M	Z - Z		
XV-2P/22	55	22	P - O	S - R	C - B	L - M	Z - Z		
XV-2P/26	57	26	Q - P	S - R	D - C	L - M	Z - Z		
XV-2P/30	59	30	Q - P	S - S	D - C	L - M	Z - Z		
XV-2P/34	61	34	Q - P	S - S	D - C	L - M	Z - Z		
XV-2P/40	63	40	Q - P	S - S	D - C	L - M	Z - Z		

*Kombinationstabelle der lagermäßig vorrätigen
Standardgewinde und Anflansungen*

Gehäuse (Gewinde und Anflansungen)									
						Gehäuse Geschlossen			

Zahnradpumpen

- Serie XV -

Baugröße 2



Bestellnr.	Typ	Code
D = rechtsdrehend		
010-250-01000	XV2P/4D-1/2-1/2	X2P4102EBBA
010-250-01100	XV2P/6D-1/2-1/2	X2P4302EBBA
010-250-01200	XV2P/9D-1/2-1/2	X2P4502EBBA
010-250-01300	XV2P/11D-1/2-1/2	X2P4702EBBA
010-250-01400	XV2P/14D-3/4-1/2	X2P4902ECBA
010-250-01500	XV2P/17D-3/4-1/2	X2P5102ECBA
010-250-01600	XV2P/19D-3/4-1/2	X2P5302ECBA
010-250-01700	XV2P/22D-3/4-1/2	X2P5502ECBA
010-250-01800	XV2P/26D-1-3/4	X2P5702EDCA
010-250-01900	XV2P/30D-1-3/4	X2P5902EDCA
010-250-02000	XV2P/34D-1-3/4	X2P6102EDCA
010-250-02100	XV2P/40D-1-3/4	X2P6302EDCA
S = linksdrehend		
010-250-01050	XV2P/4S-1/2-1/2	X2P4101EBBA
010-250-01150	XV2P/6S-1/2-1/2	X2P4301EBBA
010-250-01250	XV2P/9S-1/2-1/2	X2P4501EBBA
010-250-01350	XV2P/11S-1/2-1/2	X2P4701EBBA
010-250-01450	XV2P/14S-3/4-1/2	X2P4901ECBA
010-250-01550	XV2P/17S-3/4-1/2	X2P5101ECBA
010-250-01650	XV2P/19S-3/4-1/2	X2P5301ECBA
010-250-01750	XV2P/22S-3/4-1/2	X2P5501ECBA
010-250-01850	XV2P/26S-1-3/4	X2P5701EDCA
010-250-01950	XV2P/30S-1-3/4	X2P5901EDCA
010-250-02050	XV2P/34S-1-3/4	X2P6101EDCA
010-250-02150	XV2P/40S-1-3/4	X2P6301EDCA

Europäischer Standard-4-Loch-Flansch- Bohrungsabstand = 96,2 x 71,5 mm / Rezzess = \varnothing 36,5 mm / Welle -CO.001 1:8 -d = \varnothing 17,4 mm
-M 12x1,5 -Passfeder = 4,0 mm / max. zulässiges Wellendrehmoment = 233,2 Nm / Ölschlüsse = IG 1/2-3/4-1 seitlich

Tabelle der Varianten

XV-2P

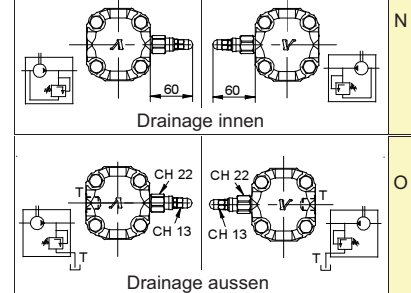
FLANSCH $\varnothing 36.5$

FLANSCH $\varnothing 36.5$		Welle		Deckel	
Drehung links	Drehung rechts			Drehung links	Drehung rechts
		01	02		
		03	04		
		05	06		
		07	08		
		CI001 - Zylindrisch T.2 = 44.1 [Nm]	CI002 - Zylindrisch T.2 = 67.5 [Nm]		
		CO001 - Konisch T.2 = 233.2 [Nm]	CO002 - Konisch T.2 = 233.2 [Nm]		
		SCF02 - genutet T.2 = 86.1 [Nm]	SCF03 - genutet T.2 = 86.1 [Nm]		
		SCF04 - genutet T.2 = 67.1 [Nm]	SCF01 - genutet T.2 = 86.2 [Nm]		

Hubraum	
TYP	CODE
XV-2P/04	41
XV-2P/06	43
XV-2P/09	45
XV-2P/11	47
XV-2P/14	49
XV-2P/17	51
XV-2P/19	53
XV-2P/22	55
XV-2P/26	57
XV-2P/30	59
XV-2P/34	61
XV-2P/40	63

Gehäuse Standard						
Hubraum	cm ³ /u	Standardgewinde				
4	O - O	S - R	B - B	L - M	Z - Z	
6	O - O	S - R	B - B	L - M	Z - Z	
9	O - O	S - R	B - B	L - M	Z - Z	
11	O - O	S - R	B - B	L - M	Z - Z	
14	P - O	S - R	C - B	L - M	Z - Z	
17	P - O	S - R	C - B	L - M	Z - Z	
19	P - O	S - R	C - B	L - M	Z - Z	
22	P - O	S - R	C - B	L - M	Z - Z	
26	Q - P	S - R	D - C	L - M	Z - Z	
30	Q - P	S - S	D - C	L - M	Z - Z	
34	Q - P	S - S	D - C	L - M	Z - Z	
40	Q - P	S - S	D - C	L - M	Z - Z	

Kombinationstabelle der lagermäßig vorrätigen
Standardgewinde und Anflansungen



Gehäuse (Gewinde und Anflansungen)													
	A		B		C		D		E		F		G
	H		I		L		M		N		O		P
	Q		R		S		T		U		V	Gehäuse Geschlossen Z	

Zahnradpumpen

- Serie XV -

Baugröße 1



Bestellnr.	Typ	Code
D = rechtsdrehend		
010-050-01000	XV1P/0,9D	X1P1602FIIA
010-050-01100	XV1P/1,2D	X1P1702FIIA
010-050-01200	XV1P/1,7D	X1P1802FIIA
010-050-01300	XV1P/2,2D	X1P2002FIIA
010-050-01400	XV1P/2,6D	X1P2102FIIA
010-050-01500	XV1P/3,2D	X1P2302FIIA
010-050-01600	XV1P/3,8D	X1P2502FIIA
010-050-01700	XV1P/4,3D	X1P2702FIIA
010-050-01800	XV1P/4,9D	X1P2902FIIA
010-050-01900	XV1P/5,9D	X1P3102FIIA
010-050-02000	XV1P/6,5D	X1P3202FIIA
010-050-02100	XV1P/7,8D	X1P3402FIIA
010-050-02200	XV1P/9,8D	X1P3602FIIA
S = linksdrehend		
010-050-01050	XV1P/0,9S	X1P1601FIIA
010-050-01150	XV1P/1,2S	X1P1701FIIA
010-050-01250	XV1P/1,7S	X1P1801FIIA
010-050-01350	XV1P/2,2S	X1P2001FIIA
010-050-01450	XV1P/2,6S	X1P2101FIIA
010-050-01550	XV1P/3,2S	X1P2301FIIA
010-050-01650	XV1P/3,8S	X1P2501FIIA
010-050-01750	XV1P/4,3S	X1P2701FIIA
010-050-01850	XV1P/4,9S	X1P2901FIIA
010-050-01950	XV1P/5,9S	X1P3101FIIA
010-050-02050	XV1P/6,5S	X1P3201FIIA
010-050-02150	XV1P/7,8S	X1P3401FIIA
010-050-02250	XV1P/9,8S	X1P3601FIIA

Europäischer Standard-4-Loch-Flansch- Bohrungsabstand = 71,9 x 52,4 mm / Rezzess = \varnothing 25,4 mm / Welle -CO.001 1:8 -d = \varnothing 10 mm
-M 7x1 -Passfeder = 2,4 mm / max. zulässiges Wellendrehmoment = 43 Nm / Ölänschlüsse = Flansch LK 30 seitlich

einseitig drehende Pumpe - Serie XV

EUROPÄISCHE STANDARDPUMPE
FLANSCH ø25.4 - KEGELWELLE

XV-1P

X 1 P 25 02 F I I A

Serie	X	Serie XV
Gruppe	1	Gruppe 1
Kategorie	P	einseitig drehende Pumpe
Hubraum	25	3.8
Flansch	02	Ø25.4 EUROPÄISCHER STANDARD Drehrichtung rechts
Welle	F	CO001 - Konisch 1:8 - ø10 - M7x1 - Scheibfeder Dicke 2.4
Gehäuse	IN	I Ansaugung - Ø30 Ø12 M6
	OUT	I Druckseite - Ø30 Ø12 M6
Deckel	A	Standard



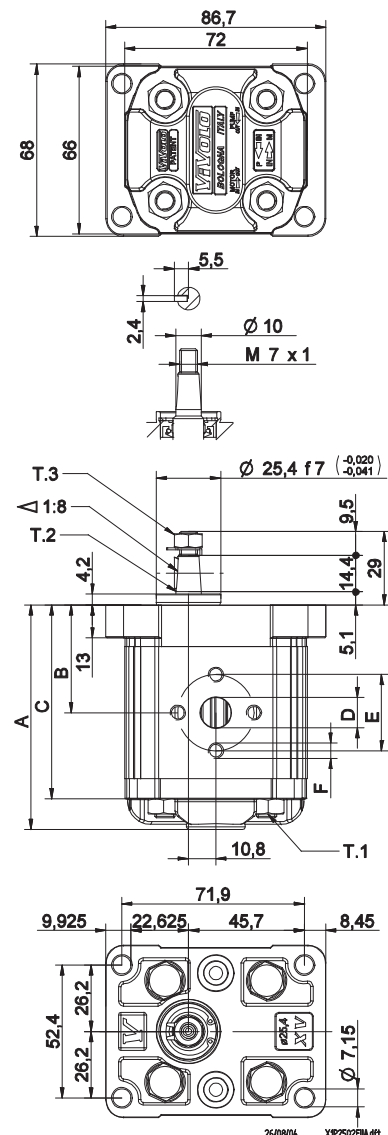
XP101

Technische Datentabelle						
TYP	Hubraum	Maximaldruck		CODE		
		P1 bar	P3 bar	Drehung links		Drehung rechts
		cm ³ /u				
XV-1P/0.9	0,91	240	280	X 1 P 16 01 F I I A	X 1 P 16 02 F I I A	
XV-1P/1.2	1,17	250	290	X 1 P 17 01 F I I A	X 1 P 17 02 F I I A	
XV-1P/1.7	1,56	250	290	X 1 P 18 01 F I I A	X 1 P 18 02 F I I A	
XV-1P/2.2	2,08	250	290	X 1 P 20 01 F I I A	X 1 P 20 02 F I I A	
XV-1P/2.6	2,60	250	300	X 1 P 21 01 F I I A	X 1 P 21 02 F I I A	
XV-1P/3.2	3,12	250	300	X 1 P 23 01 F I I A	X 1 P 23 02 F I I A	
XV-1P/3.8	3,64	250	300	X 1 P 25 01 F I I A	X 1 P 25 02 F I I A	
XV-1P/4.3	4,16	250	300	X 1 P 27 01 F I I A	X 1 P 27 02 F I I A	
XV-1P/4.9	4,94	250	300	X 1 P 29 01 F I I A	X 1 P 29 02 F I I A	
XV-1P/5.9	5,85	250	300	X 1 P 31 01 F I I A	X 1 P 31 02 F I I A	
XV-1P/6.5	6,50	250	300	X 1 P 32 01 F I I A	X 1 P 32 02 F I I A	
XV-1P/7.8	7,54	220	260	X 1 P 34 01 F I I A	X 1 P 34 02 F I I A	
XV-1P/9.8	9,88	190	230	X 1 P 36 01 F I I A	X 1 P 36 02 F I I A	

P1) Max. Betriebsdruck - P3) Max. Druckspitze

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle										
TYP	Gewicht	A	B	C	D	E	F	D	E	F
		mm	mm	mm	IN			OUT		
		kg	mm	mm	mm					
XV-1P/0.9	0,950	78,1	37,3	66,1	ø12	30	M6x1	ø12	30	M6x1
XV-1P/1.2	0,970	79,0	37,8	67,0	ø12	30	M6x1	ø12	30	M6x1
XV-1P/1.7	1,010	80,5	38,5	68,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/2.2	1,030	82,5	39,5	70,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/2.6	1,060	84,5	40,5	72,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/3.2	1,090	86,5	41,5	74,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/3.8	1,120	88,5	42,5	76,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/4.3	1,170	90,5	43,5	78,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/4.9	1,200	93,5	45,0	81,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/5.9	1,260	97,0	46,8	85,0	ø12	30	M6x1	ø12	30	M6x1
XV-1P/6.5	1,300	98,5	48,0	86,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/7.8	1,360	103,5	50,0	91,5	ø12	30	M6x1	ø12	30	M6x1
XV-1P/9.8	1,500	112,5	54,5	100,5	ø12	30	M6x1	ø12	30	M6x1



T.1 = 24.5÷29.4 [Nm] - Anzugsmoment - Schrauben M8

T.3 = 11.5 [Nm] - Anzugsmoment - Schlüssel 11

T.2 = 43 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

Tabelle der Varianten

XV-1P

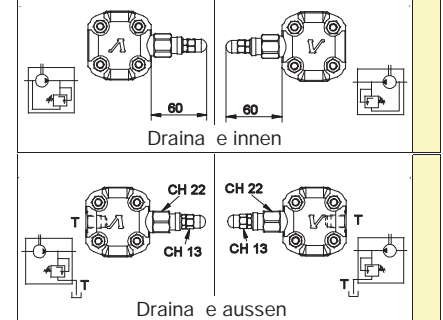
FLANSCH $\varnothing 25.4$

A H		Abmessungen der Varianten				Decke	
Drehun links	Drehun rechts	nisch		mit erstem nist		D	

Hubraum	
TYP	CODE
	16
	17
	18
	20
	21
	23
	25
	27
	29
	31
	32
	34
	36

Gehäusevarianten					
Hubraum	cm ³ /u	Standardgewinde			
					G
					G
					G
					G
					G
					G
					G
					G
					G
					G
					G
					G
					G
					G
					G

*Kombinationstabelle der lagermäßig vorrätigen
Standardgewinde und Anflansungen*



Gehäusegewinde und Anschlüsse													
	A		B		C		D		E		F		G
	H		I		J	Gehäuse Geschlossen	Z						

Zahnradpumpen

- Serie XV -

Baugröße 2



Bestellnr.	Typ	Code
D = rechtsdrehend		
012-020-01000	XV2P/4D-BH-Ø50-CO.002	X2P4112FSRA
012-020-01100	XV2P/6D-BH-Ø50-CO.002	X2P4312FSRA
012-020-01200	XV2P/9D-BH-Ø50-CO.002	X2P4512FSRA
012-020-01300	XV2P/11D-BH-Ø50-CO.002	X2P4712FSRA
012-020-01400	XV2P/14D-BH-Ø50-CO.002	X2P4912FSRA
012-020-01500	XV2P/17D-BH-Ø50-CO.002	X2P5112FSRA
012-020-01600	XV2P/19D-BH-Ø50-CO.002	X2P5312FSRA
012-020-01700	XV2P/22D-BH-Ø50-CO.002	X2P5512FSRA
012-020-01800	XV2P/26D-BH-Ø50-CO.002	X2P5712FSRA
012-020-01900	XV2P/30D-BH-Ø50-CO.002	X2P5912FSSA
012-020-02000	XV2P/34D-BH-Ø50-CO.002	X2P6112FSSA
012-020-02100	XV2P/40D-BH-Ø50-CO.002	X2P6312FSSA
S = linksdrehend		
012-020-01050	XV2P/4S-BH-Ø50-CO.002	X2P4111FSRA
012-020-01150	XV2P/6S-BH-Ø50-CO.002	X2P4311FSRA
012-020-01250	XV2P/9S-BH-Ø50-CO.002	X2P4511FSRA
012-020-01350	XV2P/11S-BH-Ø50-CO.002	X2P4711FSRA
012-020-01450	XV2P/14S-BH-Ø50-CO.002	X2P4911FSRA
012-020-01550	XV2P/17S-BH-Ø50-CO.002	X2P5111FSRA
012-020-01650	XV2P/19S-BH-Ø50-CO.002	X2P5311FSRA
012-020-01750	XV2P/22S-BH-Ø50-CO.002	X2P5511FSRA
012-020-01850	XV2P/26S-BH-Ø50-CO.002	X2P5711FSRA
012-020-01950	XV2P/30S-BH-Ø50-CO.002	X2P5911FSSA
012-020-02050	XV2P/34S-BH-Ø50-CO.002	X2P6111FSSA
012-020-02150	XV2P/40S-BH-Ø50-CO.002	X2P6311FSSA

4-Loch-Flansch-BH-Durchschraubausführung -Bohrungsabstand = 60 x 60 mm / Rezess = Ø 50 mm / Welle -CO.002 1:5 -d = Ø 17,4 mm
-M 12x1,5 -Passfeder = 3,0 mm / max. zulässiges Wellendrehmoment = 233,2 Nm / Ölschlüsse = Flansch LK 35/40 seitlich

einseitig drehende Pumpe - Serie XV

XV-2P

PUMPE TYP "BH"
FLANSCH ø50 GEFORMT - KEGELWELLE

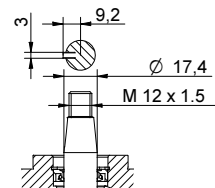
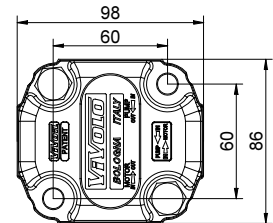
X 2 P 51 12 F S R A

Serie	X	Serie XV
Gruppe	2	Gruppe 2
Kategorie	P	einseitig drehende Pumpe
Hubraum	51	17
Flansch	12	Ø50 DEUTSCHE NORM BH Drehrichtung rechts
Welle	F	CO002 - Konisch 1:5 - ø17.4 - M12x1.5 - Scheibenfeder Dicke 3
Gehäuse	IN	S Ansaugung - Ø40 a 45° Ø20 M6
	OUT	R Druckseite - Ø35 a 45° Ø15 M6
Deckel	A	Standard



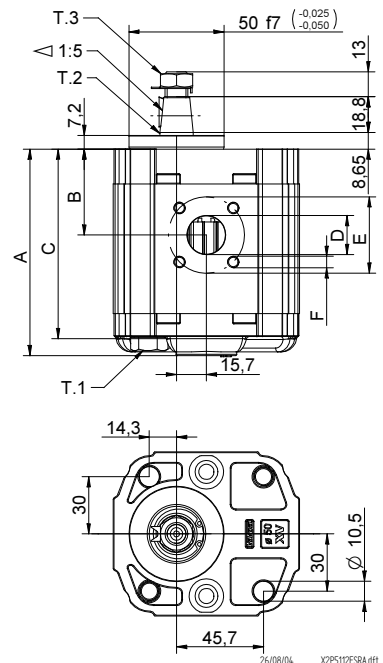
XP210

Technische Datentabelle							
TYP	Hubraum	Maximaldruck		CODE			
		cm3/u	P1 bar	P3 bar	Drehung links		Drehung rechts
XV-2P/04	4,20	260	300	X 2 P 41 11 F S R A	X 2 P 41 12 F S R A	X 2 P 41 12 F S R A	X 2 P 41 12 F S R A
XV-2P/06	6,00	260	300	X 2 P 43 11 F S R A	X 2 P 43 12 F S R A	X 2 P 43 12 F S R A	X 2 P 43 12 F S R A
XV-2P/09	8,40	260	300	X 2 P 45 11 F S R A	X 2 P 45 12 F S R A	X 2 P 45 12 F S R A	X 2 P 45 12 F S R A
XV-2P/11	10,80	260	300	X 2 P 47 11 F S R A	X 2 P 47 12 F S R A	X 2 P 47 12 F S R A	X 2 P 47 12 F S R A
XV-2P/14	14,40	250	290	X 2 P 49 11 F S R A	X 2 P 49 12 F S R A	X 2 P 49 12 F S R A	X 2 P 49 12 F S R A
XV-2P/17	16,80	230	270	X 2 P 51 11 F S R A	X 2 P 51 12 F S R A	X 2 P 51 12 F S R A	X 2 P 51 12 F S R A
XV-2P/19	19,20	210	250	X 2 P 53 11 F S R A	X 2 P 53 12 F S R A	X 2 P 53 12 F S R A	X 2 P 53 12 F S R A
XV-2P/22	22,80	200	240	X 2 P 55 11 F S R A	X 2 P 55 12 F S R A	X 2 P 55 12 F S R A	X 2 P 55 12 F S R A
XV-2P/26	26,20	170	210	X 2 P 57 11 F S R A	X 2 P 57 12 F S R A	X 2 P 57 12 F S R A	X 2 P 57 12 F S R A
XV-2P/30	30,00	160	200	X 2 P 59 11 F S S A	X 2 P 59 12 F S S A	X 2 P 59 12 F S S A	X 2 P 59 12 F S S A
XV-2P/34	34,20	150	190	X 2 P 61 11 F S S A	X 2 P 61 12 F S S A	X 2 P 61 12 F S S A	X 2 P 61 12 F S S A
XV-2P/40	39,60	140	180	X 2 P 63 11 F S S A	X 2 P 63 12 F S S A	X 2 P 63 12 F S S A	X 2 P 63 12 F S S A



P1) Max. Betriebsdruck - P3) Max. Druckspitze
Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle										
TYP	Gewicht	A	B	C	D	E	F	D	E	F
		mm	mm	mm	mm	mm	mm	mm	mm	mm
XV-2P/04	2,100	87,2	38,6	77,2	ø20	40	M6x1	ø15	35	M6x1
XV-2P/06	2,200	90,2	38,6	80,2	ø20	40	M6x2	ø15	35	M6x1
XV-2P/09	2,300	94,2	40,6	84,2	ø20	40	M6x3	ø15	35	M6x1
XV-2P/11	2,400	98,2	45,0	88,2	ø20	40	M6x4	ø15	35	M6x1
XV-2P/14	2,600	104,2	45,0	94,2	ø20	40	M6x5	ø15	35	M6x1
XV-2P/17	2,700	108,2	45,0	98,2	ø20	40	M6x6	ø15	35	M6x1
XV-2P/19	2,800	112,2	45,0	102,2	ø20	40	M6x7	ø15	35	M6x1
XV-2P/22	2,950	118,2	52,5	108,2	ø20	40	M6x8	ø15	35	M6x1
XV-2P/26	3,050	122,2	52,5	112,2	ø20	40	M6x9	ø15	35	M6x1
XV-2P/30	3,300	130,2	60,7	120,2	ø20	40	M6x10	ø20	40	M6x1
XV-2P/34	3,500	137,2	60,7	127,2	ø20	40	M6x11	ø20	40	M6x1
XV-2P/40	3,700	146,2	60,7	136,2	ø20	40	M6x12	ø20	40	M6x1



T.1 = 54+58.9 [Nm] - Anzugsmoment - Schrauben M10
T.2 = 233.2 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).
T.3 = 40 [Nm] - Anzugsmoment - Schlüssel 19

Tabelle der Varianten

XV-2P

FLANSCH ø50 "BH" – Geformt

FLANSCH ø50 "BH" – Geformt				Welle				Deckel			
Drehung links		Drehung rechts						Drehung links		Drehung rechts	
	11		12	CI001 - Zylindrisch T.2 = 44.1 [Nm]	A	CI002 - Zylindrisch T.2 = 67.5 [Nm]	B			A	
	13		14	CO001 - Konisch T.2 = 233.2 [Nm]	E	CO002 - Konisch T.2 = 233.2 [Nm]	F			B	
	15		16	SCF03 - genutet T.2 = 86.1 [Nm]	H					C	
	17		18							D	

Hubraum	
TYP	CODE
XV-2P/04	41
XV-2P/06	43
XV-2P/09	45
XV-2P/11	47
XV-2P/14	49
XV-2P/17	51
XV-2P/19	53
XV-2P/22	55
XV-2P/26	57
XV-2P/30	59
XV-2P/34	61
XV-2P/40	63

Gehäuse Standard						
Hubraum	cm ³ /u	Standardgewinde				
4	O - O	S - R	B - B	L - M	Z - Z	
6	O - O	S - R	B - B	L - M	Z - Z	
9	O - O	S - R	B - B	L - M	Z - Z	
11	O - O	S - R	B - B	L - M	Z - Z	
14	P - O	S - R	C - B	L - M	Z - Z	
17	P - O	S - R	C - B	L - M	Z - Z	
19	P - O	S - R	C - B	L - M	Z - Z	
22	P - O	S - R	C - B	L - M	Z - Z	
26	Q - P	S - R	D - C	L - M	Z - Z	
30	Q - P	S - S	D - C	L - M	Z - Z	
34	Q - P	S - S	D - C	L - M	Z - Z	
40	Q - P	S - S	D - C	L - M	Z - Z	

Kombinationstabelle der lagermäßig vorrätigen
Standardgewinde und Anflansungen

		N
Drainage innen		
		O
Drainage aussen		

Gehäuse (Gewinde und Anflansungen)													
	A		B		C		D		E		F		G
	H		I		L		M		N		O		P
	Q		R		S		T		U		V		Z

Zahnradpumpen

- Serie XV -

Baugröße 2



Bestellnr.	Typ	Code
D = rechtsdrehend		
012-040-01000	XV2P/4D-HY-Ø50-CO.002	X2P4122FSRA
012-040-01100	XV2P/6D-HY-Ø50-CO.002	X2P4322FSRA
012-040-01200	XV2P/9D-HY-Ø50-CO.002	X2P4522FSRA
012-040-01300	XV2P/11D-HY-Ø50-CO.002	X2P4722FSRA
012-040-01400	XV2P/14D-HY-Ø50-CO.002	X2P4922FSRA
012-040-01500	XV2P/17D-HY-Ø50-CO.002	X2P5122FSRA
012-040-01600	XV2P/19D-HY-Ø50-CO.002	X2P5322FSRA
012-040-01700	XV2P/22D-HY-Ø50-CO.002	X2P5522FSRA
012-040-01800	XV2P/26D-HY-Ø50-CO.002	X2P5722FSRA
012-040-01900	XV2P/30D-HY-Ø50-CO.002	X2P5922FSSA
012-040-02000	XV2P/34D-HY-Ø50-CO.002	X2P6122FSSA
012-040-02100	XV2P/40D-HY-Ø50-CO.002	X2P6322FSSA
S = linksdrehend		
012-040-01050	XV2P/4S-HY-Ø50-CO.002	X2P4121FSRA
012-040-01150	XV2P/6S-HY-Ø50-CO.002	X2P4321FSRA
012-040-01250	XV2P/9S-HY-Ø50-CO.002	X2P4521FSRA
012-040-01350	XV2P/11S-HY-Ø50-CO.002	X2P4721FSRA
012-040-01450	XV2P/14S-HY-Ø50-CO.002	X2P4921FSRA
012-040-01550	XV2P/17S-HY-Ø50-CO.002	X2P5121FSRA
012-040-01650	XV2P/19S-HY-Ø50-CO.002	X2P5321FSRA
012-040-01750	XV2P/22S-HY-Ø50-CO.002	X2P5521FSRA
012-040-01850	XV2P/26S-HY-Ø50-CO.002	X2P5721FSRA
012-040-01950	XV2P/30S-HY-Ø50-CO.002	X2P5921FSSA
012-040-02050	XV2P/34S-HY-Ø50-CO.002	X2P6121FSSA
012-040-02150	XV2P/40S-HY-Ø50-CO.002	X2P6321FSSA

4-Loch-Flansch-HY-Durchschraubausführung -Bohrungsabstand = 60 x 60 mm / Rezess = Ø 50 mm / Welle -CO.002 1:5 -d = Ø 17,4 mm
-M 12x1,5 -Passfeder = 3,0 mm / max. zulässiges Wellendrehmoment = 233,2 Nm / Ölschlüsse = Flansch LK 35/40 seitlich

einseitig drehende Pumpe - Serie XV

XV-2P

PUMPE TYP "HY"
FLANSCH ø50 GEFORMT - KEGELWELLE

X 2 P 51 22 F S R A

Serie	X	Serie XV
Gruppe	2	Gruppe 2
Kategorie	P	einseitig drehende Pumpe
Hubraum	51	17
Flansch	22	Ø50 DEUTSCHE NORM HY Drehrichtung rechts
Welle	F	CO002 - Konisch 1:5 - ø17.4 - M12x1.5 - Scheibenfeder Dicke 3
Gehäuse	IN	Ansaugung - Ø40 a 45° Ø20 M6
	OUT	Druckseite - Ø35 a 45° Ø15 M6
Deckel	A	Standard



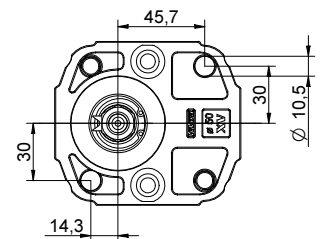
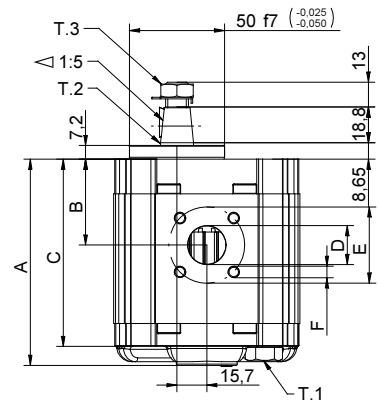
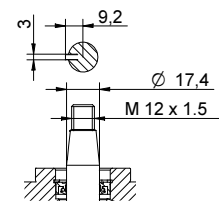
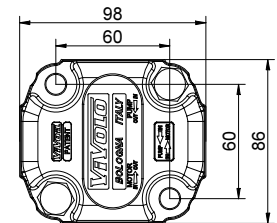
XP213

Technische Datentabelle							
TYP	Hubraum	Maximaldruck		CODE			
		cm3/u	P1 bar	P3 bar	Drehung links		Drehung rechts
XV-2P/04	4,20	260	300	X 2 P 41 21 F S R A	X 2 P 41 22 F S R A	X 2 P 41 22 F S R A	X 2 P 41 22 F S R A
XV-2P/06	6,00	260	300	X 2 P 43 21 F S R A	X 2 P 43 22 F S R A	X 2 P 43 22 F S R A	X 2 P 43 22 F S R A
XV-2P/09	8,40	260	300	X 2 P 45 21 F S R A	X 2 P 45 22 F S R A	X 2 P 45 22 F S R A	X 2 P 45 22 F S R A
XV-2P/11	10,80	260	300	X 2 P 47 21 F S R A	X 2 P 47 22 F S R A	X 2 P 47 22 F S R A	X 2 P 47 22 F S R A
XV-2P/14	14,40	250	290	X 2 P 49 21 F S R A	X 2 P 49 22 F S R A	X 2 P 49 22 F S R A	X 2 P 49 22 F S R A
XV-2P/17	16,80	230	270	X 2 P 51 21 F S R A	X 2 P 51 22 F S R A	X 2 P 51 22 F S R A	X 2 P 51 22 F S R A
XV-2P/19	19,20	210	250	X 2 P 53 21 F S R A	X 2 P 53 22 F S R A	X 2 P 53 22 F S R A	X 2 P 53 22 F S R A
XV-2P/22	22,80	200	240	X 2 P 55 21 F S R A	X 2 P 55 22 F S R A	X 2 P 55 22 F S R A	X 2 P 55 22 F S R A
XV-2P/26	26,20	170	210	X 2 P 57 21 F S R A	X 2 P 57 22 F S R A	X 2 P 57 22 F S R A	X 2 P 57 22 F S R A
XV-2P/30	30,00	160	200	X 2 P 59 21 F S S A	X 2 P 59 22 F S S A	X 2 P 59 22 F S S A	X 2 P 59 22 F S S A
XV-2P/34	34,20	150	190	X 2 P 61 21 F S S A	X 2 P 61 22 F S S A	X 2 P 61 22 F S S A	X 2 P 61 22 F S S A
XV-2P/40	39,60	140	180	X 2 P 63 21 F S S A	X 2 P 63 22 F S S A	X 2 P 63 22 F S S A	X 2 P 63 22 F S S A

P1) Max. Betriebsdruck - P3) Max. Druckschärfe

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle										
TYP	Gewicht	A	B	C	D	E	F	D	E	F
		mm	mm	mm	mm	mm	mm	mm	mm	mm
XV-2P/04	2,100	87,2	38,6	77,2	ø20	40	M6x1	ø15	35	M6x1
XV-2P/06	2,200	90,2	38,6	80,2	ø20	40	M6x2	ø15	35	M6x1
XV-2P/09	2,300	94,2	40,6	84,2	ø20	40	M6x3	ø15	35	M6x1
XV-2P/11	2,400	98,2	45,0	88,2	ø20	40	M6x4	ø15	35	M6x1
XV-2P/14	2,600	104,2	45,0	94,2	ø20	40	M6x5	ø15	35	M6x1
XV-2P/17	2,700	108,2	45,0	98,2	ø20	40	M6x6	ø15	35	M6x1
XV-2P/19	2,800	112,2	45,0	102,2	ø20	40	M6x7	ø15	35	M6x1
XV-2P/22	2,950	118,2	52,5	108,2	ø20	40	M6x8	ø15	35	M6x1
XV-2P/26	3,050	122,2	52,5	112,2	ø20	40	M6x9	ø15	35	M6x1
XV-2P/30	3,300	130,2	60,7	120,2	ø20	40	M6x10	ø20	40	M6x1
XV-2P/34	3,500	137,2	60,7	127,2	ø20	40	M6x11	ø20	40	M6x1
XV-2P/40	3,700	146,2	60,7	136,2	ø20	40	M6x12	ø20	40	M6x1



26/08/04 XP212F5RA.dft

T.1 = 54+58.9 [Nm] - Anzugsmoment - Schrauben M10

T.3 = 40 [Nm] - Anzugsmoment - Schlüssel 19

T.2 = 233.2 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

Tabelle der Varianten

XV-2P

FLANSCH $\varnothing 50$ "HY" – Geformt

FLANSCH $\varnothing 50$ "HY" – Geformt				Welle				Deckel			
Drehung links		Drehung rechts						Drehung links		Drehung rechts	
	21		22	CI001 - Zylindrisch T.2 = 44.1 [Nm]	A	CI002 - Zylindrisch T.2 = 67.5 [Nm]	B			A	
	23		24	CO001 - Konisch T.2 = 233.2 [Nm]	E	CO002 - Konisch T.2 = 233.2 [Nm]	F			B	
	25		26	SCF03 - genutet T.2 = 86.1 [Nm]	H					C	
	27		28							D	

Hubraum	
TYP	CODE
XV-2P/04	41
XV-2P/06	43
XV-2P/09	45
XV-2P/11	47
XV-2P/14	49
XV-2P/17	51
XV-2P/19	53
XV-2P/22	55
XV-2P/26	57
XV-2P/30	59
XV-2P/34	61
XV-2P/40	63

Gehäuse Standard						
Hubraum	cm ³ /u	Standardgewinde				
		O - O	S - R	B - B	L - M	Z - Z
4		O - O	S - R	B - B	L - M	Z - Z
6		O - O	S - R	B - B	L - M	Z - Z
9		O - O	S - R	B - B	L - M	Z - Z
11		O - O	S - R	B - B	L - M	Z - Z
14		P - O	S - R	C - B	L - M	Z - Z
17		P - O	S - R	C - B	L - M	Z - Z
19		P - O	S - R	C - B	L - M	Z - Z
22		P - O	S - R	C - B	L - M	Z - Z
26		Q - P	S - R	D - C	L - M	Z - Z
30		Q - P	S - S	D - C	L - M	Z - Z
34		Q - P	S - S	D - C	L - M	Z - Z
40		Q - P	S - S	D - C	L - M	Z - Z

Kombinationstabelle der lagermäßig vorrätigen
Standardgewinde und Anflansungen

		N
Drainage innen		
		O
Drainage aussen		

Gehäuse (Gewinde und Anflansungen)												
	A		B		C		D		E		F	G
	H		I		L		M		N		O	P
	Q		R		S		T		U		V	Z
											Gehäuse Geschlossen	

Zahnradpumpen

- Serie XV -

Baugröße 2



Bestellnr.	Typ	Code
D = rechtsdrehend		
012-060-01000	XV2P/4D-BH-Ø52-CF.001	X2P4132CSRA
012-060-01100	XV2P/6D-BH-Ø52-CF.001	X2P4332CSRA
012-060-01200	XV2P/9D-BH-Ø52-CF.001	X2P4532CSRA
012-060-01300	XV2P/11D-BH-Ø52-CF.001	X2P4732CSRA
012-060-01400	XV2P/14D-BH-Ø52-CF.001	X2P4932CSRA
012-060-01500	XV2P/17D-BH-Ø52-CF.001	X2P5132CSRA
012-060-01600	XV2P/19D-BH-Ø52-CF.001	X2P5332CSRA
012-060-01700	XV2P/22D-BH-Ø52-CF.001	X2P5532CSRA
012-060-01800	XV2P/26D-BH-Ø52-CF.001	X2P5732CSRA
012-060-01900	XV2P/30D-BH-Ø52-CF.001	X2P5932CSSA
012-060-02000	XV2P/34D-BH-Ø52-CF.001	X2P6132CSSA
012-060-02100	XV2P/40D-BH-Ø52-CF.001	X2P6332CSSA
S = linksdrehend		
012-060-01050	XV2P/4S-BH-Ø52-CF.001	X2P4131CSRA
012-060-01150	XV2P/6S-BH-Ø52-CF.001	X2P4331CSRA
012-060-01250	XV2P/9S-BH-Ø52-CF.001	X2P4531CSRA
012-060-01350	XV2P/11S-BH-Ø52-CF.001	X2P4731CSRA
012-060-01450	XV2P/14S-BH-Ø52-CF.001	X2P4931CSRA
012-060-01550	XV2P/17S-BH-Ø52-CF.001	X2P5131CSRA
012-060-01650	XV2P/19S-BH-Ø52-CF.001	X2P5331CSRA
012-060-01750	XV2P/22S-BH-Ø52-CF.001	X2P5531CSRA
012-060-01850	XV2P/26S-BH-Ø52-CF.001	X2P5731CSRA
012-060-01950	XV2P/30S-BH-Ø52-CF.001	X2P5931CSSA
012-060-02050	XV2P/34S-BH-Ø52-CF.001	X2P6131CSSA
012-060-02150	XV2P/40S-BH-Ø52-CF.001	X2P6331CSSA

4-Loch-Flansch-BH-Durchschraubausführung -Bohrungsabstand = 60 x 60 mm / Rezzess = Ø 52 mm mit O-Ring
Zungenwelle versenkt -CF.001 / max. zulässiges Wellendrehmoment = 60,5 Nm / Ölschlüsse = Flansch LK 35/40 seitlich

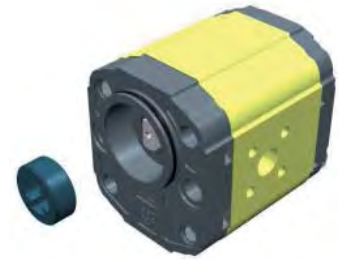
einseitig drehende Pumpe - Serie XV

XV-2P

DEUTSCHE STANDARDPUMPE TYP "BH"
FLANSCH ø52 GEFORMT - WELLE MIT GEFRÄSTEM ENDSTÜCK

X 2 P 51 32 C S R A

Serie	X	Serie XV
Gruppe	2	Gruppe 2
Kategorie	P	einseitig drehende Pumpe
Hubraum	51	17
Flansch	32	Ø52 DEUTSCHE NORM BH Drehrichtung rechts (mit OR)
Welle	C	CF001 - mit gefrästem Endstück ø15 - Dicke 8 ("BH" deutscher Standard)
Gehäuse	IN	S Ansaugung - Ø40 a 45° Ø20 M6
	OUT	R Druckseite - Ø35 a 45° Ø15 M6
Deckel	A	Standard



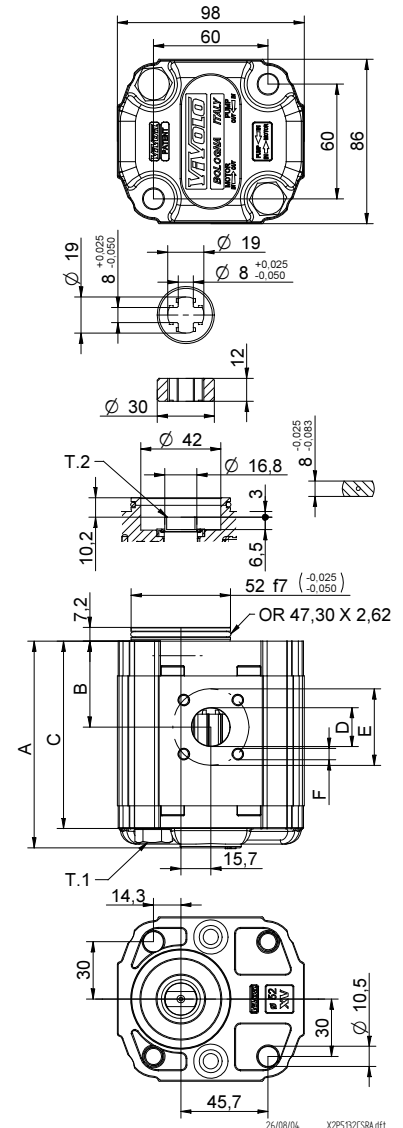
XP216

Technische Datentabelle							
TYP	Hubraum	Maximaldruck		CODE			
		cm3/u	P1 bar	P3 bar	Drehung links		Drehung rechts
XV-2P/04	4,20	260	300	X 2 P 41 31 C S R A	X 2 P 41 32 C S R A	X 2 P 41 32 C S R A	X 2 P 41 32 C S R A
XV-2P/06	6,00	260	300	X 2 P 43 31 C S R A	X 2 P 43 32 C S R A	X 2 P 43 32 C S R A	X 2 P 43 32 C S R A
XV-2P/09	8,40	260	300	X 2 P 45 31 C S R A	X 2 P 45 32 C S R A	X 2 P 45 32 C S R A	X 2 P 45 32 C S R A
XV-2P/11	10,80	260	300	X 2 P 47 31 C S R A	X 2 P 47 32 C S R A	X 2 P 47 32 C S R A	X 2 P 47 32 C S R A
XV-2P/14	14,40	250	290	X 2 P 49 31 C S R A	X 2 P 49 32 C S R A	X 2 P 49 32 C S R A	X 2 P 49 32 C S R A
XV-2P/17	16,80	230	270	X 2 P 51 31 C S R A	X 2 P 51 32 C S R A	X 2 P 51 32 C S R A	X 2 P 51 32 C S R A
XV-2P/19	19,20	210	250	X 2 P 53 31 C S R A	X 2 P 53 32 C S R A	X 2 P 53 32 C S R A	X 2 P 53 32 C S R A
XV-2P/22	22,80	200	240	X 2 P 55 31 C S R A	X 2 P 55 32 C S R A	X 2 P 55 32 C S R A	X 2 P 55 32 C S R A
XV-2P/26	26,20	170	210	X 2 P 57 31 C S R A	X 2 P 57 32 C S R A	X 2 P 57 32 C S R A	X 2 P 57 32 C S R A
XV-2P/30	30,00	160	200	X 2 P 59 31 C S S A	X 2 P 59 32 C S S A	X 2 P 59 32 C S S A	X 2 P 59 32 C S S A
XV-2P/34	34,20	150	190	X 2 P 61 31 C S S A	X 2 P 61 32 C S S A	X 2 P 61 32 C S S A	X 2 P 61 32 C S S A
XV-2P/40	39,60	140	180	X 2 P 63 31 C S S A	X 2 P 63 32 C S S A	X 2 P 63 32 C S S A	X 2 P 63 32 C S S A

P1) Max. Betriebsdruck - P3) Max. Druckschärfe

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle										
TYP	Gewicht	A	B	C	D	E	F	D	E	F
		mm	mm	mm	mm	mm	mm	mm	mm	mm
XV-2P/04	2,100	87,2	38,6	77,2	ø20	40	M6x1	ø15	35	M6x1
XV-2P/06	2,200	90,2	38,6	80,2	ø20	40	M6x2	ø15	35	M6x1
XV-2P/09	2,300	94,2	40,6	84,2	ø20	40	M6x3	ø15	35	M6x1
XV-2P/11	2,400	98,2	45,0	88,2	ø20	40	M6x4	ø15	35	M6x1
XV-2P/14	2,600	104,2	45,0	94,2	ø20	40	M6x5	ø15	35	M6x1
XV-2P/17	2,700	108,2	45,0	98,2	ø20	40	M6x6	ø15	35	M6x1
XV-2P/19	2,800	112,2	45,0	102,2	ø20	40	M6x7	ø15	35	M6x1
XV-2P/22	2,950	118,2	52,5	108,2	ø20	40	M6x8	ø15	35	M6x1
XV-2P/26	3,050	122,2	52,5	112,2	ø20	40	M6x9	ø15	35	M6x1
XV-2P/30	3,300	130,2	60,7	120,2	ø20	40	M6x10	ø20	40	M6x1
XV-2P/34	3,500	137,2	60,7	127,2	ø20	40	M6x11	ø20	40	M6x1
XV-2P/40	3,700	146,2	60,7	136,2	ø20	40	M6x12	ø20	40	M6x1



T.1 = 54±58.9 [Nm] - Anzugsmoment - Schrauben M10

T.2 = 60.5 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

Tabelle der Varianten

XV-2P

FLANSCH ø52 Deutsche Standardpumpe "BH"

FLANSCH ø52 Deutsche Standardpumpe "BH"				Welle		Deckel				
Drehung links		Drehung rechts				Drehung links		Drehung rechts		
	31		32	SCF05 - genietet T.2 = 86.2 [Nm] m=1.6 Z=9 DIN 5482 - 17x14 ø 16.5 H11	C			A		
	33		34			SCF01 - genietet T.2 = 86.2 [Nm] m=1.6 Z=9 DIN 5482 - 17x14 ø 16.5 H11	L			B
	35		36							C
	37		38							D

Hubraum	
TYP	CODE
XV-2P/04	41
XV-2P/06	43
XV-2P/09	45
XV-2P/11	47
XV-2P/14	49
XV-2P/17	51
XV-2P/19	53
XV-2P/22	55
XV-2P/26	57
XV-2P/30	59
XV-2P/34	61
XV-2P/40	63

Gehäuse Standard						
Hubraum	cm ³ /u	Standardgewinde				
4		O - O	S - R	B - B	L - M	Z - Z
6		O - O	S - R	B - B	L - M	Z - Z
9		O - O	S - R	B - B	L - M	Z - Z
11		O - O	S - R	B - B	L - M	Z - Z
14		P - O	S - R	C - B	L - M	Z - Z
17		P - O	S - R	C - B	L - M	Z - Z
19		P - O	S - R	C - B	L - M	Z - Z
22		P - O	S - R	C - B	L - M	Z - Z
26		Q - P	S - R	D - C	L - M	Z - Z
30		Q - P	S - S	D - C	L - M	Z - Z
34		Q - P	S - S	D - C	L - M	Z - Z
40		Q - P	S - S	D - C	L - M	Z - Z

Kombinationstabelle der lagermäßig vorrätigen
Standardgewinde und Anflansungen

		N
Drainage innen		
		O
Drainage aussen		

Gehäuse (Gewinde und Anflansungen)													
	A		B		C		D		E		F		G
	H		I		L		M		N		O		P
	Q		R		S		T		U		V		Z

Zahnradpumpen

- Serie XV -

Baugröße 2



Bestellnr.	Typ	Code
D = rechtsdrehend		
012-070-01000	XV2P/4D-Ø80-CO.002	X2P4142FSRA
012-070-01100	XV2P/6D-Ø80-CO.002	X2P4342FSRA
012-070-01200	XV2P/9D-Ø80-CO.002	X2P4542FSRA
012-070-01300	XV2P/11D-Ø80-CO.002	X2P4742FSRA
012-070-01400	XV2P/14D-Ø80-CO.002	X2P4942FSRA
012-070-01500	XV2P/17D-Ø80-CO.002	X2P5142FSRA
012-070-01600	XV2P/19D-Ø80-CO.002	X2P5342FSRA
012-070-01700	XV2P/22D-Ø80-CO.002	X2P5542FSRA
012-070-01800	XV2P/26D-Ø80-CO.002	X2P5742FSRA
012-070-01900	XV2P/30D-Ø80-CO.002	X2P5942FSSA
012-070-02000	XV2P/34D-Ø80-CO.002	X2P6142FSSA
012-070-02100	XV2P/40D-Ø80-CO.002	X2P6342FSSA
S = linksdrehend		
012-070-01050	XV2P/4S-Ø80-CO.002	X2P4141FSRA
012-070-01150	XV2P/6S-Ø80-CO.002	X2P4341FSRA
012-070-01250	XV2P/9S-Ø80-CO.002	X2P4541FSRA
012-070-01350	XV2P/11S-Ø80-CO.002	X2P4741FSRA
012-070-01450	XV2P/14S-Ø80-CO.002	X2P4941FSRA
012-070-01550	XV2P/17S-Ø80-CO.002	X2P5141FSRA
012-070-01650	XV2P/19S-Ø80-CO.002	X2P5341FSRA
012-070-01750	XV2P/22S-Ø80-CO.002	X2P5541FSRA
012-070-01850	XV2P/26S-Ø80-CO.002	X2P5741FSRA
012-070-01950	XV2P/30S-Ø80-CO.002	X2P5941FSSA
012-070-02050	XV2P/34S-Ø80-CO.002	X2P6141FSSA
012-070-02150	XV2P/40S-Ø80-CO.002	X2P6341FSSA

4-Loch-Flansch- Bohrungsabstand = 100 x 72 mm / Rezzess = Ø 80 mm / Welle -CO.002 1:5 -d = Ø 17,4 mm
 -M 12x1,5 -Passfeder = 3,0 mm / max. zulässiges Wellendrehmoment = 233,2 Nm / Ölschlüsse = Flansch LK 35/40 seitlich

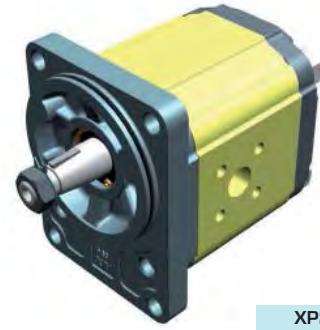
einseitig drehende Pumpe - Serie XV

XV-2P

DEUTSCHE STANDARDPUMPE
FLANSCH $\varnothing 80$ - KEGELWELLE

X 2 P 51 42 F S R A

Serie	X	Serie XV
Gruppe	2	Gruppe 2
Kategorie	P	einseitig drehende Pumpe
Hubraum	51	17
Flansch	42	$\varnothing 80$ DEUTSCHE NORM Drehrichtung rechts (mit OR)
Welle	F	CO002 - Konisch 1:5 - $\varnothing 17.4$ - M12x1.5 - Scheibfeder Dicke 3
Gehäuse	IN	Ansaugung - $\varnothing 40$ a 45° $\varnothing 20$ M6
	OUT	Druckseite - $\varnothing 35$ a 45° $\varnothing 15$ M6
Deckel	A	Standard



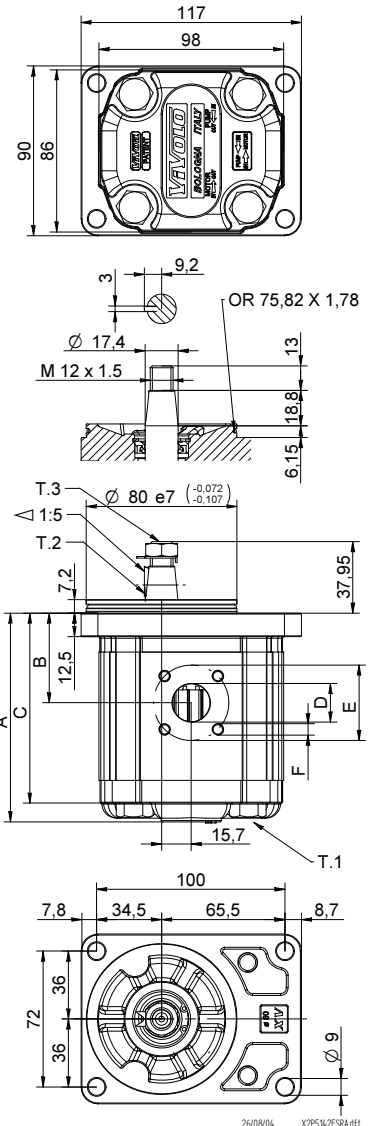
XP217

Technische Datentabelle							
TYP	Hubraum	Maximaldruck		CODE			
		cm ³ /u	P1 bar	P3 bar	Drehung links		Drehung rechts
XV-2P/04	4,20	260	300	X 2 P 41 41 F S R A	X 2 P 41 42 F S R A	X 2 P 41 42 F S R A	X 2 P 41 42 F S R A
XV-2P/06	6,00	260	300	X 2 P 43 41 F S R A	X 2 P 43 42 F S R A	X 2 P 43 42 F S R A	X 2 P 43 42 F S R A
XV-2P/09	8,40	260	300	X 2 P 45 41 F S R A	X 2 P 45 42 F S R A	X 2 P 45 42 F S R A	X 2 P 45 42 F S R A
XV-2P/11	10,80	260	300	X 2 P 47 41 F S R A	X 2 P 47 42 F S R A	X 2 P 47 42 F S R A	X 2 P 47 42 F S R A
XV-2P/14	14,40	250	290	X 2 P 49 41 F S R A	X 2 P 49 42 F S R A	X 2 P 49 42 F S R A	X 2 P 49 42 F S R A
XV-2P/17	16,80	230	270	X 2 P 51 41 F S R A	X 2 P 51 42 F S R A	X 2 P 51 42 F S R A	X 2 P 51 42 F S R A
XV-2P/19	19,20	210	250	X 2 P 53 41 F S R A	X 2 P 53 42 F S R A	X 2 P 53 42 F S R A	X 2 P 53 42 F S R A
XV-2P/22	22,80	200	240	X 2 P 55 41 F S R A	X 2 P 55 42 F S R A	X 2 P 55 42 F S R A	X 2 P 55 42 F S R A
XV-2P/26	26,20	170	210	X 2 P 57 41 F S R A	X 2 P 57 42 F S R A	X 2 P 57 42 F S R A	X 2 P 57 42 F S R A
XV-2P/30	30,00	160	200	X 2 P 59 41 F S S A	X 2 P 59 42 F S S A	X 2 P 59 42 F S S A	X 2 P 59 42 F S S A
XV-2P/34	34,20	150	190	X 2 P 61 41 F S S A	X 2 P 61 42 F S S A	X 2 P 61 42 F S S A	X 2 P 61 42 F S S A
XV-2P/40	39,60	140	180	X 2 P 63 41 F S S A	X 2 P 63 42 F S S A	X 2 P 63 42 F S S A	X 2 P 63 42 F S S A

P1) Max. Betriebsdruck - P3) Max. Druckspitze

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle										
TYP	Gewicht	A	B	C	D	E	F	D	E	F
		mm	mm	mm	IN			OUT		
XV-2P/04	2,330	89,7	41,1	79,7	$\varnothing 20$	40	M6x1	$\varnothing 15$	35	M6x1
XV-2P/06	2,430	92,7	41,1	82,7	$\varnothing 20$	40	M6x2	$\varnothing 15$	35	M6x1
XV-2P/09	2,530	96,7	43,1	86,7	$\varnothing 20$	40	M6x3	$\varnothing 15$	35	M6x1
XV-2P/11	2,630	100,7	47,5	90,7	$\varnothing 20$	40	M6x4	$\varnothing 15$	35	M6x1
XV-2P/14	2,730	106,7	47,5	96,7	$\varnothing 20$	40	M6x5	$\varnothing 15$	35	M6x1
XV-2P/17	2,830	110,7	47,5	100,7	$\varnothing 20$	40	M6x6	$\varnothing 15$	35	M6x1
XV-2P/19	2,930	114,7	47,5	104,7	$\varnothing 20$	40	M6x7	$\varnothing 15$	35	M6x1
XV-2P/22	3,180	120,7	55,0	110,7	$\varnothing 20$	40	M6x8	$\varnothing 15$	35	M6x1
XV-2P/26	3,280	124,7	55,0	114,7	$\varnothing 20$	40	M6x9	$\varnothing 15$	35	M6x1
XV-2P/30	3,530	132,7	63,2	122,7	$\varnothing 20$	40	M6x10	$\varnothing 20$	40	M6x1
XV-2P/34	3,730	139,7	63,2	129,7	$\varnothing 20$	40	M6x11	$\varnothing 20$	40	M6x1
XV-2P/40	3,930	148,7	63,2	138,7	$\varnothing 20$	40	M6x12	$\varnothing 20$	40	M6x1



T.1 = 54+58.9 [Nm] - Anzugsmoment - Schrauben M10

T.3 = 40 [Nm] - Anzugsmoment - Schlüssel 19

T.2 = 233.2 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

Zahnradpumpen

- Serie XV -

Baugröße 2



Bestellnr.	Typ	Code
D = rechtsdrehend		
012-100-01000	XV2P/4D-Ø82,5-SAEA-SCF.04	X2P4152ISRA
012-100-01100	XV2P/6D-Ø82,5-SAEA-SCF.04	X2P4352ISRA
012-100-01200	XV2P/9D-Ø82,5-SAEA-SCF.04	X2P4552ISRA
012-100-01300	XV2P/11D-Ø82,5-SAEA-SCF.04	X2P4752ISRA
012-100-01400	XV2P/14D-Ø82,5-SAEA-SCF.04	X2P4952ISRA
012-100-01500	XV2P/17D-Ø82,5-SAEA-SCF.04	X2P5152ISRA
012-100-01600	XV2P/19D-Ø82,5-SAEA-SCF.04	X2P5352ISRA
012-100-01700	XV2P/22D-Ø82,5-SAEA-SCF.04	X2P5552ISRA
012-100-01800	XV2P/26D-Ø82,5-SAEA-SCF.04	X2P5752ISRA
012-100-01900	XV2P/30D-Ø82,5-SAEA-SCF.04	X2P5952ISSA
012-100-02000	XV2P/34D-Ø82,5-SAEA-SCF.04	X2P6152ISSA
012-100-02100	XV2P/40D-Ø82,5-SAEA-SCF.04	X2P6352ISSA
S = linksdrehend		
012-100-01050	XV2P/4S-Ø82,5-SAEA-SCF.04	X2P4151ISRA
012-100-01150	XV2P/6S-Ø82,5-SAEA-SCF.04	X2P4351ISRA
012-100-01250	XV2P/9S-Ø82,5-SAEA-SCF.04	X2P4551ISRA
012-100-01350	XV2P/11S-Ø82,5-SAEA-SCF.04	X2P4751ISRA
012-100-01450	XV2P/14S-Ø82,5-SAEA-SCF.04	X2P4951ISRA
012-100-01550	XV2P/17S-Ø82,5-SAEA-SCF.04	X2P5151ISRA
012-100-01650	XV2P/19S-Ø82,5-SAEA-SCF.04	X2P5351ISRA
012-100-01750	XV2P/22S-Ø82,5-SAEA-SCF.04	X2P5551ISRA
012-100-01850	XV2P/26S-Ø82,5-SAEA-SCF.04	X2P5751ISRA
012-100-01950	XV2P/30S-Ø82,5-SAEA-SCF.04	X2P5951ISSA
012-100-02050	XV2P/34S-Ø82,5-SAEA-SCF.04	X2P6151ISSA
012-100-02150	XV2P/40S-Ø82,5-SAEA-SCF.04	X2P6351ISSA

2-Loch-SAE-A-Flansch- Bohrungsabstand = 106,4 mm / Rezzess = Ø 82,5 mm mit O-Ring / Welle -SCF.04 -SAEJ498 -d = Ø 15,45 mm z = 9
max. zulässiges Wellendrehmoment = 67,1 Nm / Ölschlüsse = Flansch LK 35/40 seitlich

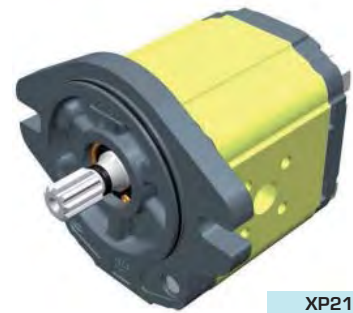
einseitig drehende Pumpe - Serie XV

XV-2P

PUMPE TYP "SAE A"
FLANSCH $\varnothing 82.5$ - KEILWELLE

X 2 P 51 52 I S R A

Serie	X	Serie XV
Gruppe	2	Gruppe 2
Kategorie	P	einseitig drehende Pumpe
Hubraum	51	17
Flansch	52	$\varnothing 82.5$ SAE A Drehrichtung rechts (mit OR)
Welle	I	SCF04 - genutet $\varnothing 15.456$ z=9, H=22.5 - SAE J498 9T 16/32DP
Gehäuse	IN	S Ansaugung - $\varnothing 40$ a 45° $\varnothing 20$ M6
	OUT	R Druckseite - $\varnothing 35$ a 45° $\varnothing 15$ M6
Deckel	A	Standard



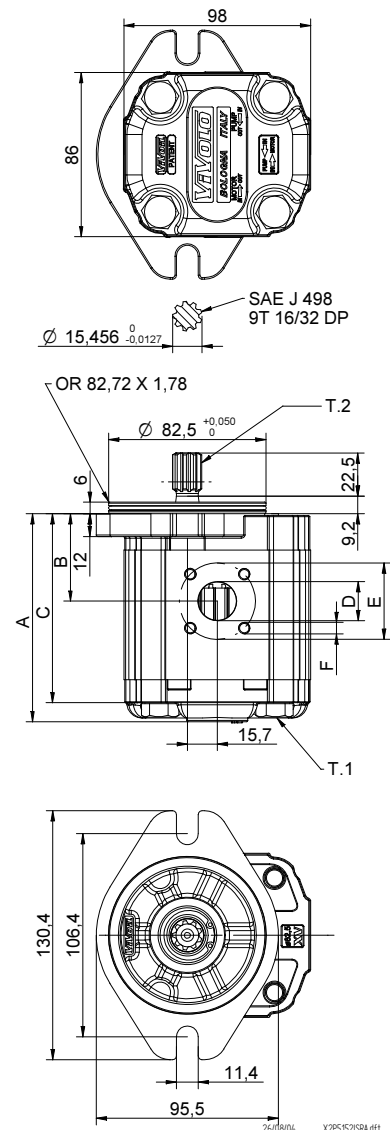
XP219

Technische Datentabelle							
TYP	Hubraum	Maximaldruck		CODE			
		cm ³ /u	P1 bar	P3 bar	Drehung links		Drehung rechts
XV-2P/04	4,20	260	300	X 2 P 41 51 I S R A	X 2 P 41 52 I S R A	X 2 P 41 51 I S R A	X 2 P 41 52 I S R A
XV-2P/06	6,00	260	300	X 2 P 43 51 I S R A	X 2 P 43 52 I S R A	X 2 P 43 51 I S R A	X 2 P 43 52 I S R A
XV-2P/09	8,40	260	300	X 2 P 45 51 I S R A	X 2 P 45 52 I S R A	X 2 P 45 51 I S R A	X 2 P 45 52 I S R A
XV-2P/11	10,80	260	300	X 2 P 47 51 I S R A	X 2 P 47 52 I S R A	X 2 P 47 51 I S R A	X 2 P 47 52 I S R A
XV-2P/14	14,40	250	290	X 2 P 49 51 I S R A	X 2 P 49 52 I S R A	X 2 P 49 51 I S R A	X 2 P 49 52 I S R A
XV-2P/17	16,80	230	270	X 2 P 51 51 I S R A	X 2 P 51 52 I S R A	X 2 P 51 51 I S R A	X 2 P 51 52 I S R A
XV-2P/19	19,20	210	250	X 2 P 53 51 I S R A	X 2 P 53 52 I S R A	X 2 P 53 51 I S R A	X 2 P 53 52 I S R A
XV-2P/22	22,80	200	240	X 2 P 55 51 I S R A	X 2 P 55 52 I S R A	X 2 P 55 51 I S R A	X 2 P 55 52 I S R A
XV-2P/26	26,20	170	210	X 2 P 57 51 I S R A	X 2 P 57 52 I S R A	X 2 P 57 51 I S R A	X 2 P 57 52 I S R A
XV-2P/30	30,00	160	200	X 2 P 59 51 I S S A	X 2 P 59 52 I S S A	X 2 P 59 51 I S S A	X 2 P 59 52 I S S A
XV-2P/34	34,20	150	190	X 2 P 61 51 I S S A	X 2 P 61 52 I S S A	X 2 P 61 51 I S S A	X 2 P 61 52 I S S A
XV-2P/40	39,60	140	180	X 2 P 63 51 I S S A	X 2 P 63 52 I S S A	X 2 P 63 51 I S S A	X 2 P 63 52 I S S A

P1) Max. Betriebsdruck - P3) Max. Druckspitze

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle										
TYP	Gewicht	A	B	C	D	E	F	D	E	F
		mm	mm	mm	IN			OUT		
XV-2P/04	2,280	88,0	39,4	78,0	$\varnothing 20$	40	M6x1	$\varnothing 15$	35	M6x1
XV-2P/06	2,380	91,0	39,4	81,0	$\varnothing 20$	40	M6x2	$\varnothing 15$	35	M6x1
XV-2P/09	2,480	95,0	41,4	85,0	$\varnothing 20$	40	M6x3	$\varnothing 15$	35	M6x1
XV-2P/11	2,580	99,0	45,8	89,0	$\varnothing 20$	40	M6x4	$\varnothing 15$	35	M6x1
XV-2P/14	2,780	105,0	45,8	95,0	$\varnothing 20$	40	M6x5	$\varnothing 15$	35	M6x1
XV-2P/17	2,880	109,0	45,8	99,0	$\varnothing 20$	40	M6x6	$\varnothing 15$	35	M6x1
XV-2P/19	2,980	113,0	45,8	103,0	$\varnothing 20$	40	M6x7	$\varnothing 15$	35	M6x1
XV-2P/22	3,130	119,0	53,3	109,0	$\varnothing 20$	40	M6x8	$\varnothing 15$	35	M6x1
XV-2P/26	3,230	123,0	53,3	113,0	$\varnothing 20$	40	M6x9	$\varnothing 15$	35	M6x1
XV-2P/30	3,480	131,0	61,5	121,0	$\varnothing 20$	40	M6x10	$\varnothing 20$	40	M6x1
XV-2P/34	3,680	138,0	61,5	128,0	$\varnothing 20$	40	M6x11	$\varnothing 20$	40	M6x1
XV-2P/40	3,880	147,0	61,5	137,0	$\varnothing 20$	40	M6x12	$\varnothing 20$	40	M6x1



T.1 = 54 ± 58.9 [Nm] - Anzugsmoment - Schrauben M10

T.2 = 67.1 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

Tabelle der Varianten

XV-2P

FLANSCH $\varnothing 82.5$

FLANSCH $\varnothing 82.5$				Welle				Deckel					
Drehung links		Drehung rechts						Drehung links		Drehung rechts			
				CI001 - Zylindrisch T.2 = 44.1 [Nm]		CI002 - Zylindrisch T.2 = 67.5 [Nm]						A	
51		52		A		B						B	
				CO001 - Konisch T.2 = 233.2 [Nm]		CO002 - Konisch T.2 = 233.2 [Nm]						C	
53		54		E		F						D	
Ohne OR		Ohne OR		SCF04 - genutet T.2 = 67.1 [Nm]		I						N	
				SAE J 498 9T 16/32 DP				Drainage innen		Drainage innen		O	
				$\varnothing 15.456^{+0.017}$								O	
				9.2				Drainage aussen		Drainage aussen		Z	

Hubraum	
TYP	CODE
XV-2P/04	41
XV-2P/06	43
XV-2P/09	45
XV-2P/11	47
XV-2P/14	49
XV-2P/17	51
XV-2P/19	53
XV-2P/22	55
XV-2P/26	57
XV-2P/30	59
XV-2P/34	61
XV-2P/40	63

Gehäuse Standard						
Hubraum	cm ³ /u	Standardgewinde				
4	O - O	S - R	B - B	L - M	Z - Z	
6	O - O	S - R	B - B	L - M	Z - Z	
9	O - O	S - R	B - B	L - M	Z - Z	
11	O - O	S - R	B - B	L - M	Z - Z	
14	P - O	S - R	C - B	L - M	Z - Z	
17	P - O	S - R	C - B	L - M	Z - Z	
19	P - O	S - R	C - B	L - M	Z - Z	
22	P - O	S - R	C - B	L - M	Z - Z	
26	Q - P	S - R	D - C	L - M	Z - Z	
30	Q - P	S - S	D - C	L - M	Z - Z	
34	Q - P	S - S	D - C	L - M	Z - Z	
40	Q - P	S - S	D - C	L - M	Z - Z	

*Kombinationstabelle der lagermäßig vorrätigen
Standardgewinde und Anflansungen*

Gehäuse (Gewinde und Anflansungen)													
	A		B		C		D		E		F		G
	H		I		L		M		N		O		P
	Q		R		S		T		U		V		Z
Gehäuse Geschlossen													

Zahnradpumpen

- Serie XV -

Baugröße 3



Bestellnr.	Typ	Code
D = rechtsdrehend		
014-020-03150	XV3P/32D-Ø101,6-SAE B-SCF.04-LK51/51	X3P7432IBBA
014-020-03250	XV3P/38D-Ø101,6-SAE B-SCF.04-LK51/51	X3P7832IBBA
014-020-03350	XV3P/43D-Ø101,6-SAE B-SCF.04-LK51/51	X3P7932IBBA
014-020-03450	XV3P/54D-Ø101,6-SAE B-SCF.04-LK51/51	X3P8232IBBA
S = linksdrehend		
014-020-03100	XV3P/32S-Ø101,6-SAE B-SCF.04-LK51/51	X3P7431IBBA
014-020-03200	XV3P/38S-Ø101,6-SAE B-SCF.04-LK51/51	X3P7831IBBA
014-020-03300	XV3P/43S-Ø101,6-SAE B-SCF.04-LK51/51	X3P7931IBBA
014-020-03400	XV3P/54S-Ø101,6-SAE B-SCF.04-LK51/51	X3P8231IBBA

2-Loch-SAE-B-Flansch- Bohrungsabstand = 146 mm / Rezess = Ø 101,6 mm / Welle Z13 -CF.004 -d = Ø 21,81 mm
max. zulässiges Wellendrehmoment = 264 Nm / Ölschlüsse = Flansch LK 40/51/62 seitlich

einseitig drehende Pumpe - Serie XV

XV-3P

PUMPE TYP ""SAE B""
FLANSCH ø101.6 - KEILWELLE

X 3 P 78 32 I O O A

Serie	X	Serie XV
Gruppe	3	Gruppe 3
Kategorie	P	einseitig drehende Pumpe
Hubraum	78	38
Flansch	32	Ø101.6 SAE B Drehrichtung rechts
Welle	I	SCF04 - genutet ø21.81 z=13, H=33.55 SAE J498-13T -16/32DP (SAE B)
Gehäuse	IN	Ansaugung - SAE 30,18 X 58,72 - ø32 - 7/16-14UNC-2B
	OUT	Druckseite - SAE 30,18 X 58,72 - ø32 - 7/16-14UNC-2B
Deckel	A	Standard



XP332

Technische Datentabelle

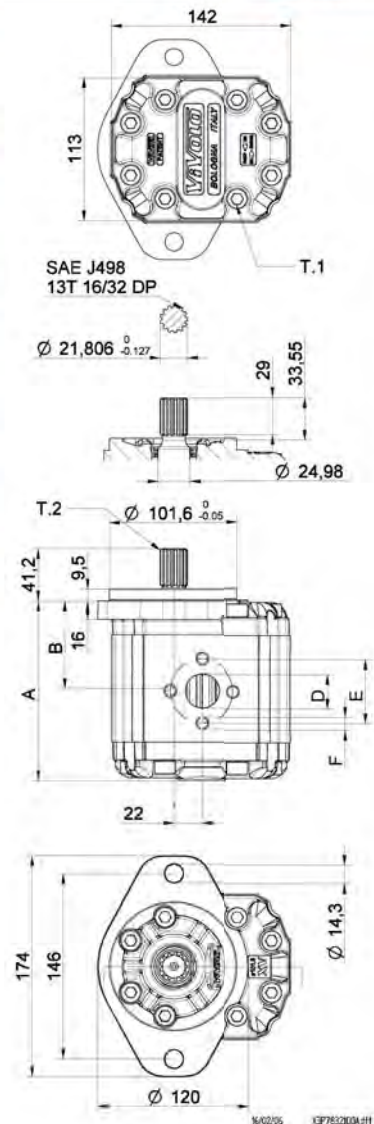
TYP	Hubraum cm ³ /u	Maximaldruck		CODE	
		P1 bar	P3 bar	Drehung	
				links	rechts
XV-3P/15	14,89	300	320	X 3 P 66 31 I A A A	X 3 P 66 32 I A A A
XV-3P/18	17,37	300	320	X 3 P 68 31 I A A A	X 3 P 68 32 I A A A
XV-3P/21	21,10	280	300	X 3 P 70 31 I A A A	X 3 P 70 32 I A A A
XV-3P/27	26,97	250	270	X 3 P 72 31 I A A A	X 3 P 72 32 I A A A
XV-3P/32	32,27	250	270	X 3 P 74 31 I B B A	X 3 P 74 32 I B B A
XV-3P/38	38,47	250	270	X 3 P 78 31 I B B A	X 3 P 78 32 I B B A
XV-3P/43	43,44	250	270	X 3 P 79 31 I B B A	X 3 P 79 32 I B B A
XV-3P/47	47,16	230	250	X 3 P 80 31 I B B A	X 3 P 80 32 I B B A
XV-3P/51	50,88	230	250	X 3 P 81 31 I B B A	X 3 P 81 32 I B B A
XV-3P/54	54,60	230	250	X 3 P 82 31 I B B A	X 3 P 82 32 I B B A
XV-3P/61	60,81	230	250	X 3 P 83 31 I C C A	X 3 P 83 32 I C C A
XV-3P/64	64,53	210	230	X 3 P 85 31 I C C A	X 3 P 85 32 I C C A
XV-3P/70	70,74	200	220	X 3 P 86 31 I C C A	X 3 P 86 32 I C C A
XV-3P/74	74,46	180	200	X 3 P 87 31 I C C A	X 3 P 87 32 I C C A
XV-3P/90	86,87	150	170	X 3 P 89 31 I C C A	X 3 P 89 32 I C C A

P1) Max. Betriebsdruck - P3) Max. Druckspitze

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle

TYP	Gewicht kg	A	B	D	E	F
		mm	mm	IN - OUT		
XV-3P/15	7,010	124,0	61,0	ø 20	40	M8
XV-3P/18	7,070	126,0	62,0	ø 20	40	M8
XV-3P/21	7,150	129,0	63,5	ø 20	40	M8
XV-3P/27	7,250	133,0	65,5	ø 20	40	M8
XV-3P/32	7,390	138,0	68,0	ø 27	51	M10
XV-3P/38	7,520	143,0	70,5	ø 27	51	M10
XV-3P/43	7,630	147,0	72,5	ø 27	51	M10
XV-3P/47	7,710	150,0	74,0	ø 27	51	M10
XV-3P/51	7,790	153,0	75,5	ø 27	51	M10
XV-3P/54	7,870	156,0	77,0	ø 27	51	M10
XV-3P/61	8,010	161,0	79,5	ø 36	62	M10
XV-3P/64	8,090	164,0	81,0	ø 36	62	M10
XV-3P/70	8,220	169,0	83,5	ø 36	62	M10
XV-3P/74	8,300	172,0	85,0	ø 36	62	M10
XV-3P/90	8,570	182,0	90,0	ø 36	62	M10



T.1 = 60+65 [Nm] - Anzugsmoment - Schrauben M10



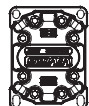
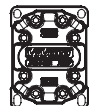
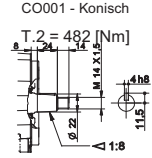
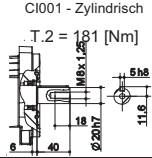
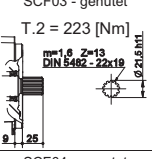
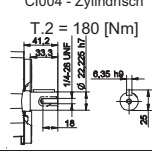
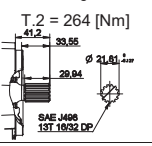
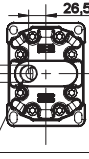
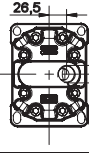
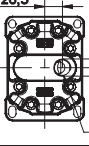
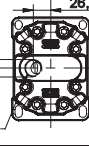
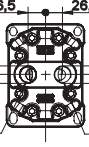
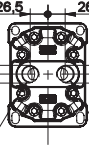
T.2 = 264 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).

014-020

Tabelle der Varianten

XV-3P

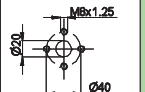
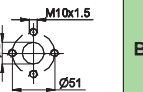
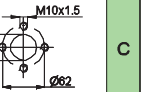


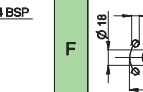
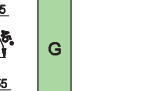
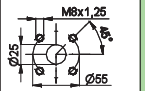
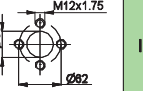
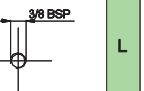
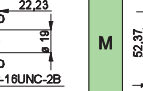
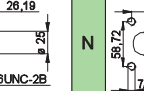
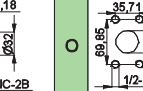
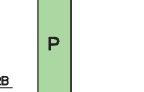
FLANSCH $\varnothing 101.6$ ""SAE B""

FLANSCH $\varnothing 101.6$ ""SAE B""		Tabelle der Varianten		Deckel	
Drehung links	Drehung rechts			Drehung links	Drehung rechts
		31	32		
		CO001 - Konisch T.2 = 482 [Nm] 	CI001 - Zylindrisch T.2 = 181 [Nm] 		
		SCF03 - genietet T.2 = 223 [Nm] 	CI004 - Zylindrisch T.2 = 180 [Nm] 		
		SCF04 - genietet T.2 = 264 [Nm] 			
					
					
					

Hubraum	
TYP	CODE
XV-3P/15	66
XV-3P/18	68
XV-3P/21	70
XV-3P/27	72
XV-3P/32	74
XV-3P/38	78
XV-3P/43	79
XV-3P/47	80
XV-3P/51	81
XV-3P/54	82
XV-3P/61	83
XV-3P/64	85
XV-3P/70	86
XV-3P/74	87
XV-3P/90	89

Gehäuse Standard				
Hubraum	cm ³ /u	Standardgewinde		
14	A - A	D - D	H - H	
17	A - A	D - D	H - H	
21	A - A	D - D	H - H	
26	A - A	E - E	H - H	
32	B - B	E - E	H - H	
38	B - B	E - E	H - H	
43	B - B	E - E	H - H	
47	B - B	E - E	H - H	
51	B - B	E - E	H - H	
54	B - B	E - E	H - H	
61	C - C	F - F		
64	C - C	F - F		
70	C - C	F - F		
74	C - C	F - F		
90	C - C	F - F		

Kombinationstabelle der lagermäßig vorrätigen
Standardgewinde und Anflansungen

Gehäuse (Gewinde und Anflansungen)													
	A		B		C		D		E		F		G
	H		I		L		M		N		O		P
Gehäuse Geschlossen	Z												

014-020

Zahnradpumpen

- Serie XV -

Baugröße 3



Bestellnr.	Typ	Code
D = rechtsdrehend		
014-030-01000	XV3P/15D	X3P6602AAAA
014-030-01100	XV3P/18D	X3P6802AAAA
014-030-01200	XV3P/21D	X3P7002AAAA
014-030-01300	XV3P/27D	X3P7202AAAA
014-030-01400	XV3P/32D	X3P7402ABBA
014-030-01500	XV3P/38D	X3P7802ABBA
014-030-01600	XV3P/43D	X3P7902ABBA
014-030-01700	XV3P/47D	X3P8002ABBA
014-030-01800	XV3P/51D	X3P8102ABBA
014-030-01900	XV3P/54D	X3P8202ABBA
014-030-02000	XV3P/61D	X3P8302ACCA
014-030-02100	XV3P/64D	X3P8502ACCA
014-030-02200	XV3P/70D	X3P8602ACCA
014-030-02300	XV3P/74D	X3P8702ACCA
014-030-02400	XV3P/90D	X3P8902ACCA
S = linksdrehend		
014-030-01050	XV3P/15S	X3P6601AAAA
014-030-01150	XV3P/18S	X3P6801AAAA
014-030-01250	XV3P/21S	X3P7001AAAA
014-030-01350	XV3P/27S	X3P7201AAAA
014-030-01450	XV3P/32S	X3P7401ABBA
014-030-01550	XV3P/38S	X3P7801ABBA
014-030-01650	XV3P/43S	X3P7901ABBA
014-030-01750	XV3P/47S	X3P8001ABBA
014-030-01850	XV3P/51S	X3P8101ABBA
014-030-01950	XV3P/54S	X3P8201ABBA
014-030-02050	XV3P/61S	X3P8301ACCA
014-030-02150	XV3P/64S	X3P8501ACCA
014-030-02250	XV3P/70S	X3P8601ACCA
014-030-02350	XV3P/74S	X3P8701ACCA
014-030-02450	XV3P/90S	X3P8901ACCA

4-Loch-Flansch- Bohrungsabstand = 137 x 98,4 mm / Rezzess = \varnothing 50,8 mm / Welle -CO.001 1:8 -d = \varnothing 22 mm
 -M 14x1,5 -Passfeder = 4,0 mm / max. zulässiges Wellendrehmoment = 482 Nm / Ölschlüsse = Flansch LK 40/51/62 seitlich

einseitig drehende Pumpe - Serie XV

XV-3P

EUROPÄISCHE STANDARDPUMPE
FLANSCH $\varnothing 50.8$ - KEGELWELLE



X 3 P 78 02 A B B A

Serie	X	Serie XV
Gruppe	3	Gruppe 3
Kategorie	P	einseitig drehende Pumpe
Hubraum	78	38
Flansch	02	$\varnothing 50.8$ Drehrichtung rechts
Welle	A	CO001 - Konisch 1:8 - $\varnothing 22$ - Scheibfeder Dicke 4
Gehäuse	IN	B Ansaugung - $\varnothing 51 \varnothing 27$ M10
	OUT	B Druckseite - $\varnothing 51 \varnothing 27$ M10
Deckel	A	Standard



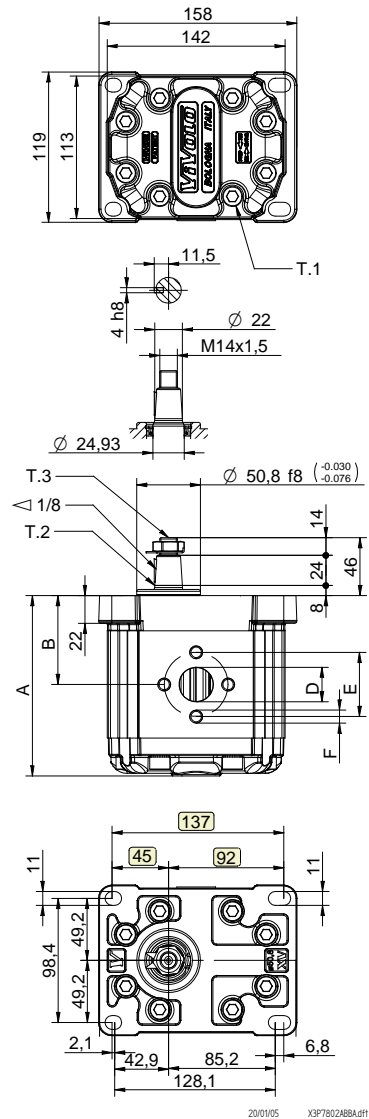
Bezug **XP301**

Technische Datentabelle									
TYP	Hubraum cm ³ /Umdrehung	Maximaldruck		CODE					
		P1 bar	P3 bar	CODE			CODE		
XV-3P/15	14,89	300	320	X 3 P 66 01	A A A A	X 3 P 66 02	A A A A		
XV-3P/18	17,37	300	320	X 3 P 68 01	A A A A	X 3 P 68 02	A A A A		
XV-3P/21	21,10	280	300	X 3 P 70 01	A A A A	X 3 P 70 02	A A A A		
XV-3P/27	26,97	250	270	X 3 P 72 01	A A A A	X 3 P 72 02	A A A A		
XV-3P/32	32,27	250	270	X 3 P 74 01	A B B A	X 3 P 74 02	A B B A		
XV-3P/38	38,47	250	270	X 3 P 78 01	A B B A	X 3 P 78 02	A B B A		
XV-3P/43	43,44	250	270	X 3 P 79 01	A B B A	X 3 P 79 02	A B B A		
XV-3P/47	47,16	230	250	X 3 P 80 01	A B B A	X 3 P 80 02	A B B A		
XV-3P/51	50,88	230	250	X 3 P 81 01	A B B A	X 3 P 81 02	A B B A		
XV-3P/54	54,60	230	250	X 3 P 82 01	A B B A	X 3 P 82 02	A B B A		
XV-3P/61	60,81	230	250	X 3 P 83 01	A C C A	X 3 P 83 02	A C C A		
XV-3P/64	64,53	210	230	X 3 P 85 01	A C C A	X 3 P 85 02	A C C A		
XV-3P/70	70,74	200	220	X 3 P 86 01	A C C A	X 3 P 86 02	A C C A		
XV-3P/74	74,46	180	200	X 3 P 87 01	A C C A	X 3 P 87 02	A C C A		
XV-3P/90	86,87	150	170	X 3 P 89 01	A C C A	X 3 P 89 02	A C C A		

P1) Max. Betriebsdruck - P3) Max. Druckspitze

Für schwere Anwendungen empfiehlt sich eine Prüfung des zulässigen Wellendrehmoments

Dimensionstabelle									
TYP	Gewicht kg	A	B	D	E	F	D	E	F
		mm	mm	IN			OUT		
XV-3P/15	7,010	124,0	61,0	$\varnothing 20$	40	M8	$\varnothing 20$	40	M8
XV-3P/18	7,070	126,0	62,0	$\varnothing 20$	40	M8	$\varnothing 20$	40	M8
XV-3P/21	7,150	129,0	63,5	$\varnothing 20$	40	M8	$\varnothing 20$	40	M8
XV-3P/27	7,250	133,0	65,5	$\varnothing 20$	40	M8	$\varnothing 20$	40	M8
XV-3P/32	7,390	138,0	68,0	$\varnothing 27$	51	M10	$\varnothing 27$	51	M10
XV-3P/38	7,520	143,0	70,5	$\varnothing 27$	51	M10	$\varnothing 27$	51	M10
XV-3P/43	7,630	147,0	72,5	$\varnothing 27$	51	M10	$\varnothing 27$	51	M10
XV-3P/47	7,710	150,0	74,0	$\varnothing 27$	51	M10	$\varnothing 27$	51	M10
XV-3P/51	7,790	153,0	75,5	$\varnothing 27$	51	M10	$\varnothing 27$	51	M10
XV-3P/54	7,870	156,0	77,0	$\varnothing 27$	51	M10	$\varnothing 27$	51	M10
XV-3P/61	8,010	161,0	79,5	$\varnothing 36$	62	M10	$\varnothing 36$	62	M10
XV-3P/64	8,090	164,0	81,0	$\varnothing 36$	62	M10	$\varnothing 36$	62	M10
XV-3P/70	8,220	169,0	83,5	$\varnothing 36$	62	M10	$\varnothing 36$	62	M10
XV-3P/74	8,300	172,0	85,0	$\varnothing 36$	62	M10	$\varnothing 36$	62	M10
XV-3P/90	8,570	182,0	90,0	$\varnothing 36$	62	M10	$\varnothing 36$	62	M10



T.1 = 60÷65 [Nm] - Anzugsmoment - Schrauben M10

T.3 = 75 [Nm] - Anzugsmoment - Schlüssel 22

T.2 = 310 [Nm] - zulässiges Wellendrehmoment (N.B. Zur Auswahl der Welle stets das zulässige Drehmoment prüfen).



einseitig drehende Pumpe - Serie XV

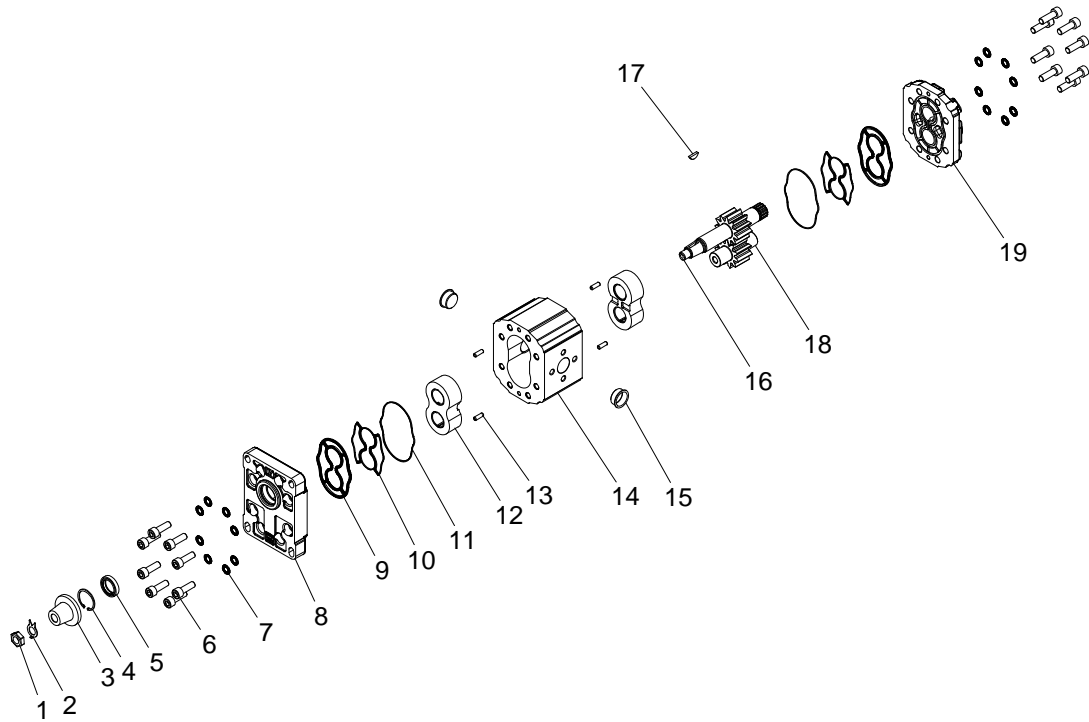
XV-3P

EUROPÄISCHE STANDARDPUMPE
FLANSCH Ø50.8 - KEGELWELLE

Bezug **XP301**

Beispiel Bestellcode

X3P7802ABBA XV3P/38 - Ø50,8 /D - CO001 - Ø51 M10 - Ø51 M10 - .



Basistabelle				
Pos.	Artikelbeschreibung	Artikel	Mass	Menge
1	MUTTER M14x1.5 H=8 UNI 5589 WEISSVERZINKT	540.0070.A	0	1
2	UNTERLEGSCHIEBE MIT NASE XV3 CO001	300.0023.A	0	1
3	KEILSCHUTZ XV3	590.0030.A	0	1
4	SEEGERRING Ø35 INNEN DIN 472	560.0025.A	0	1
5	WELLENDICHTRING 25 x 35 x 6 TCV (BAB SL)	690.0090.A	0	1
6	SCHRAUBE TCCE M10x30 UNI 5931 8.8 WEISSVERZINKT	521.0010.A	L030	16
7	SCHNORR UNTERLEGSCHIEBE Ø10xØ15.8 H=1 BRÜNIERT	550.0015.A	0	16
8	FLANSCH XV3 Ø50.8	300.0032.A	0	1
9	SPRITZGIESSDICHTUNG XV3 (NBR 740/70)	300.0005.C	0	2
10	AUSGLEICHSTÜTZPROFIL XV3	300.0003.A	0	2
11	AUSSERER STÜTZRING XV3	300.0004.A	0	2
12	BUCHSE XV3 H=27	300.0009.A	0	2
13	ZENTRIERSTIFT Ø6x18	570.0044.A	0	4
14	GEFLANSCHTES GEHÄUSE STANDARD - cc=38	300.0044.A	H85	1
15	PLASTIKVERSCHLUSS Ø28	580.0001.A	D28	2
16	COP01 - PRIMÄRKEGELRAD Ø22 1=8	300.0016.A	CC38	1
17	WOODRUFF-FEDER Ø19x4 H=7,5 - XV3	300.0013.A	0	1
18	COND2 - ANGETRIEBENES RAD DURCHBOHRT	300.0010.A	CC38	1
19	DECKEL XV3 STANDARD	300.0034.A	0	1

PL 01 T E

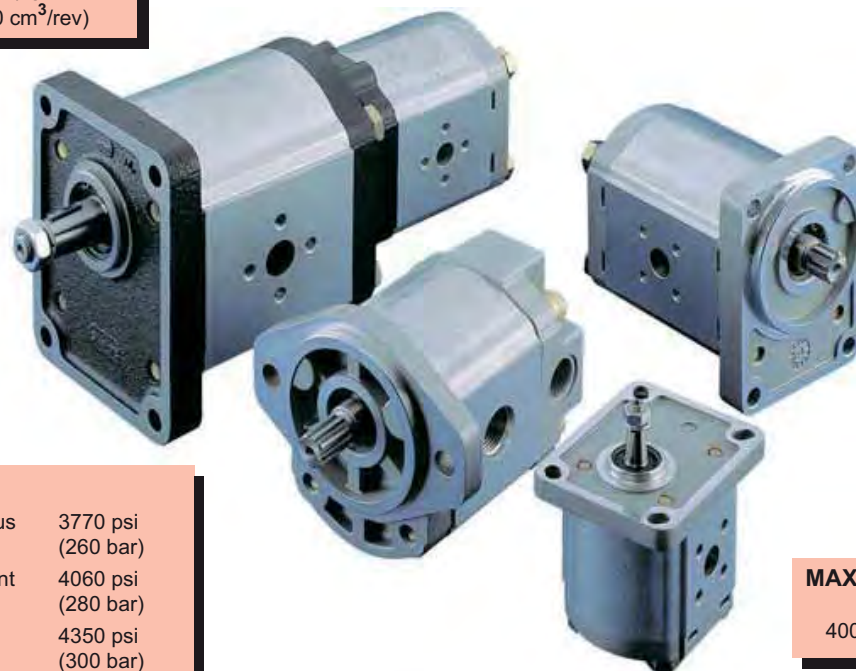
POLARIS®

Hydraulic gear pumps and motors

through bore aluminum body

DISPLACEMENTS

From 0.07 in³/rev
(1.07 cm³/rev)
To 5.56 in³/rev
(91.10 cm³/rev)



PRESSURE

Max. Continuous 3770 psi
(260 bar)
Max. Intermittent 4060 psi
(280 bar)
Max. Peak 4350 psi
(300 bar)

MAX. SPEED

4000 min⁻¹

- Group 1, 2 and 3 with displacements from 0.07 in³/rev (1,07 cm³/rev) to 5.56 in³/rev (91.10 cm³/rev).
- Drive shafts, mounting flanges and ports according to the international standards.
- Combination of multiple pumps in standard version, common inlet and separated stages.
- Integrated outboard bearings for heavy duty application.
- Many types of built-in valves.

"POLARIS" more than fifty years of Casappa experience in design and production of hydraulic components, characterized by large investments in research and development in order to propose new and personalized solutions to the market. Our use of CAD 3D in the development of this generation permit us the 3D modelling and the virtual simulation of the behaviour of the components inserted in the hydraulic circuit. This means that the process will take less time and the quality of the products is better. Polaris pumps and motors are basically composed of a gear housing in aluminium alloy, two gear wheels supported by sleeve bearings and two end plates, the front and the rear cover, either in aluminium or in cast iron with excellent mechanical characteristics. Our success is based largely on the quality of our product. This guarantees the consistencies of the efficiencies and low level of noise emission during the life of our products.

Edition: 01/10.2003



CASAPPA®
FLUID POWER DESIGN



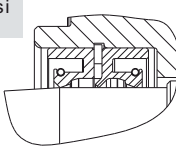
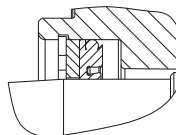
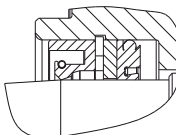
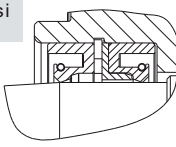
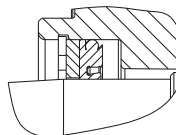
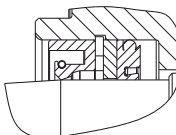
FEATURES

Construction	External gear type pumps and motors
Mounting	EUROPEAN - SAE - GERMAN standard flanges
Line connection	Screw and flange
Direction of rotation (looking on drive shaft)	Anti-clock (S) - clockwise (D) - reversible external drain (L - R) reversible internal drain (B)
Inlet pressure range for pumps	10 ÷ 44 psi [0,7 ÷ 3 bar (abs.)]
Max back pressure for single rotation motors and reversible internal drain motors	p_1 (continuous) max 73 psi (5 bar)
	p_2 (for 20 s) max 116 psi (8 bar)
	p_3 (for 8 s) max 218 psi (15 bar)
Max drain line pressure on the reversible rotation motors	73 psi (5 bar)
Max back pressure on the series motors (reversible motors external drain)	$< p_1$ (max continuous pressure) < 2175 psi (< 150 bar)
Fluid temperature range	See table (1)
Fluid	Mineral oil based hydraulic fluids to ISO/DIN. For other fluids please consult our technical sales department.
Viscosity range	From 60 to 456 SSU [12 to 100 mm ² /s (cSt)] recommended
	Up to 3410 SSU [750 mm ² /s (cSt)] permitted
Filtering requirement	See table (2) page 4

Type	Fluid composition	Max pressure psi - (bar)	Max speed [min ⁻¹]	Temperature °F - (°C)	Seals (●)	Special shaft seals (◆)
ISO/DIN	Mineral oil based hydraulic fluid to ISO/DIN	See page 5	See page 5	-13 ÷ +176 (-25 ÷ +80)	N	D - H - C
				-13 ÷ +230 (-25 ÷ +110)	V	D

(●) N= Buna N (standard) - V= Viton

◆ Shaft seals max pressure and mounting scheme

	D	H	C
	Standard shaft seal with wiper seal	High pressure special shaft seal	High pressure special shaft seal with wiper seal
Single rotation pumps	Max 44 psi (3 bar) DCAT_033_037 	Max 363 psi (25 bar) # DCAT_033_039 	Max 363 psi (25 bar) # DCAT_033_036 
Single rotation motors Reversible rotation pumps and motors	Max 44 psi (3 bar) DCAT_033_038 	DCAT_033_039 	DCAT_033_036 

Pressure could change in connection with shaft speed rotation.
For more information please consult our technical sales department.

01/10.03

FEATURES

Filtration

Tab. 2

Working pressure	$\Delta p > 2900 \text{ psi} - (200 \text{ bar})$	$\Delta p < 2900 \text{ psi} - (200 \text{ bar})$
Contamination class NAS 1638	8	10
Contamination class ISO 4406	19/17/14	21/19/16
Achieved with filter $\beta_{x \geq 75}$	10 μm	25 μm

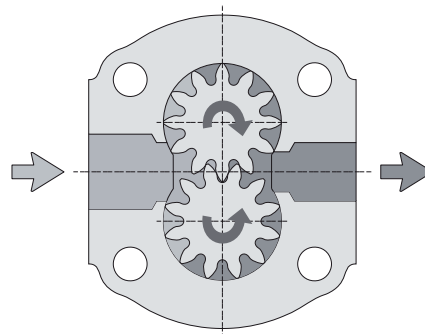
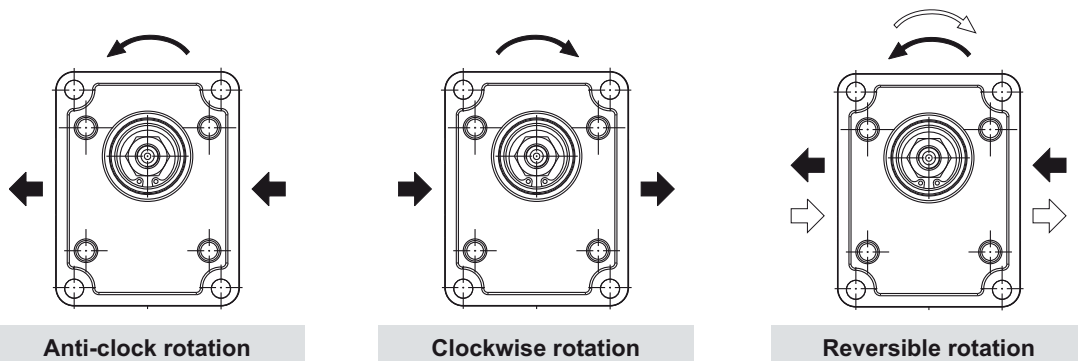
Casappa recommends to use its own production filters:



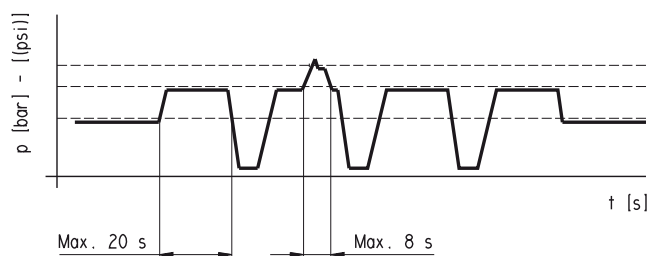
General notes

Available with different inlet and outlet ports.
For more information please consult our technical sales department.

Definition of rotation direction looking on the drive shaft



Pressure definition



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

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GENERAL DATA PUMPS AND MOTORS

Series	Pump type PLP Motor type PLM	Displacement in ³ /rev (cm ³ /rev)	Max. pressure			Max. speed	Min. speed
			p ₁	p ₂	p ₃		
			psi (bar)					min^{-1}
POLARIS 10	PL. 10•1	0.07 (1,07)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•1,5	0.10 (1,60)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•2	0.13 (2,13)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•2,5	0.16 (2,67)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•3,15	0.20 (3,34)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•4	0.26 (4,27)	3625 (250)	3915 (270)	4060 (280)	4000	650
	PL. 10•5	0.33 (5,34)	3625 (250)	3915 (270)	4060 (280)	4000	650
	PL. 10•5,8	0.38 (6,20)	3335 (230)	3625 (250)	3770 (260)	3500	650
	PL. 10•6,3	0.41 (6,67)	3335 (230)	3625 (250)	3770 (260)	3500	650
	PL. 10•8	0.52 (8,51)	2610 (180)	2900 (200)	3045 (210)	3500	650
PL. 10•10	0.65 (10,67)	2030 (140)	2320 (160)	2465 (170)	3500	650	
POLARIS 20	PL. 20•4	0.30 (4,95)	3625 (250)	4060 (280)	4350 (300)	4000	600
	PL. 20•6,3	0.40 (6,61)	3625 (250)	4060 (280)	4350 (300)	4000	600
	PL. 20•7,2	0.44 (7,29)	3625 (250)	4060 (280)	4350 (300)	4000	600
	PL. 20•8	0.50 (8,26)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•9	0.56 (9,17)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•10,5	0.66 (10,9)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•11,2	0.69 (11,23)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•14	0.89 (14,53)	3625 (250)	4060 (280)	4350 (300)	3500	500
	PL. 20•16	1.03 (16,85)	3625 (250)	4060 (280)	4350 (300)	3000	500
	PL. 20•19	1.16 (19,09)	2900 (200)	3190 (220)	3480 (240)	3000	500
	PL. 20•20	1.29 (21,14)	2900 (200)	3190 (220)	3480 (240)	3000	500
	PL. 20•24,5	1.52 (24,84)	2465 (170)	2755 (190)	3045 (210)	2500	500
	PL. 20•25	1.61 (26,42)	2465 (170)	2755 (190)	3045 (210)	2500	500
	PL. 20•27,8	1.72 (28,21)	1885 (130)	2175 (150)	2465 (170)	2000	500
PL. 20•31,5	2.01 (33,03)	1885 (130)	2175 (150)	2465 (170)	2000	500	
POLARIS 30	PL. 30•22	1.34 (21,99)	3625 (250)	3915 (270)	4060 (280)	3000	350
	PL. 30•27	1.63 (26,70)	3625 (250)	3915 (270)	4060 (280)	3000	350
	PL. 30•34	2.11 (34,55)	3480 (240)	3770 (260)	3915 (270)	3000	350
	PL. 30•38	2.40 (39,27)	3480 (240)	3770 (260)	3915 (270)	3000	350
	PL. 30•43	2.68 (43,98)	3335 (230)	3625 (250)	3770 (260)	3000	350
	PL. 30•51	3.16 (51,83)	3045 (210)	3335 (230)	3480 (240)	2500	350
	PL. 30•61	3.74 (61,26)	2755 (190)	3045 (210)	3190 (220)	2500	350
	PL. 30•73	4.50 (73,82)	2465 (170)	2755 (190)	2900 (200)	2500	350
	PL. 30•82	4.98 (81,68)	2320 (160)	2465 (170)	2610 (180)	2200	350
PL. 30•90	5.56 (91,10)	2175 (150)	2320 (160)	2465 (170)	2200	350	

p₁= Max. continuous pressure p₂= Max. intermittent pressure p₃= Max. peak pressure

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

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GENERAL DATA PUMPS AND MOTORS

Q	US gpm (l/min)	Flow
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

Efficiencies

		Pumps	Motors
$\eta_v = \eta_v(V, \Delta p, n)$	Volumetric efficiency	($\approx 0,97$)	($\approx 0,96$)
$\eta_m = \eta_m(V, \Delta p, n)$	Mechanical efficiency	($\approx 0,88$)	($\approx 0,85$)
$\eta_t = \eta_v \cdot \eta_m$	Overall efficiency	($\approx 0,85$)	($\approx 0,82$)

DESIGN CALCULATIONS FOR PUMP

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

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

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

DESIGN CALCULATIONS FOR MOTOR

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

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

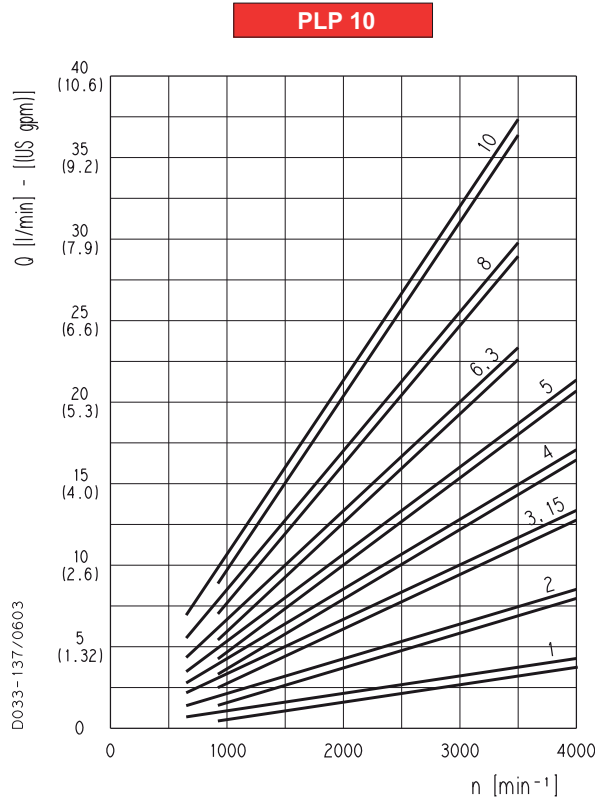
$$P = \frac{\Delta p (\text{bar}) \cdot V (\text{cm}^3/\text{rev}) \cdot n \cdot \eta_t}{600 \cdot 1000} \quad [\text{kW}]$$

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

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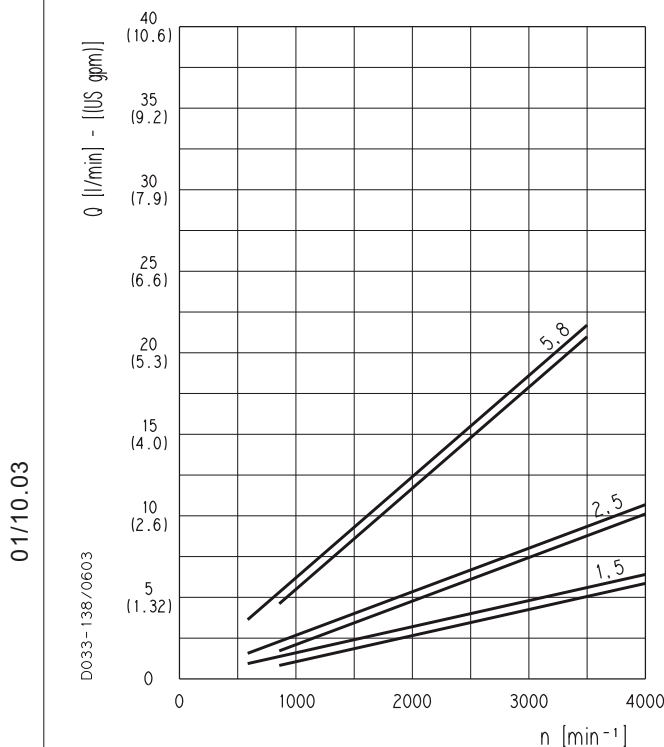
POLARIS 10 GEAR PUMPS PERFORMANCE CURVES

PLP 10



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.

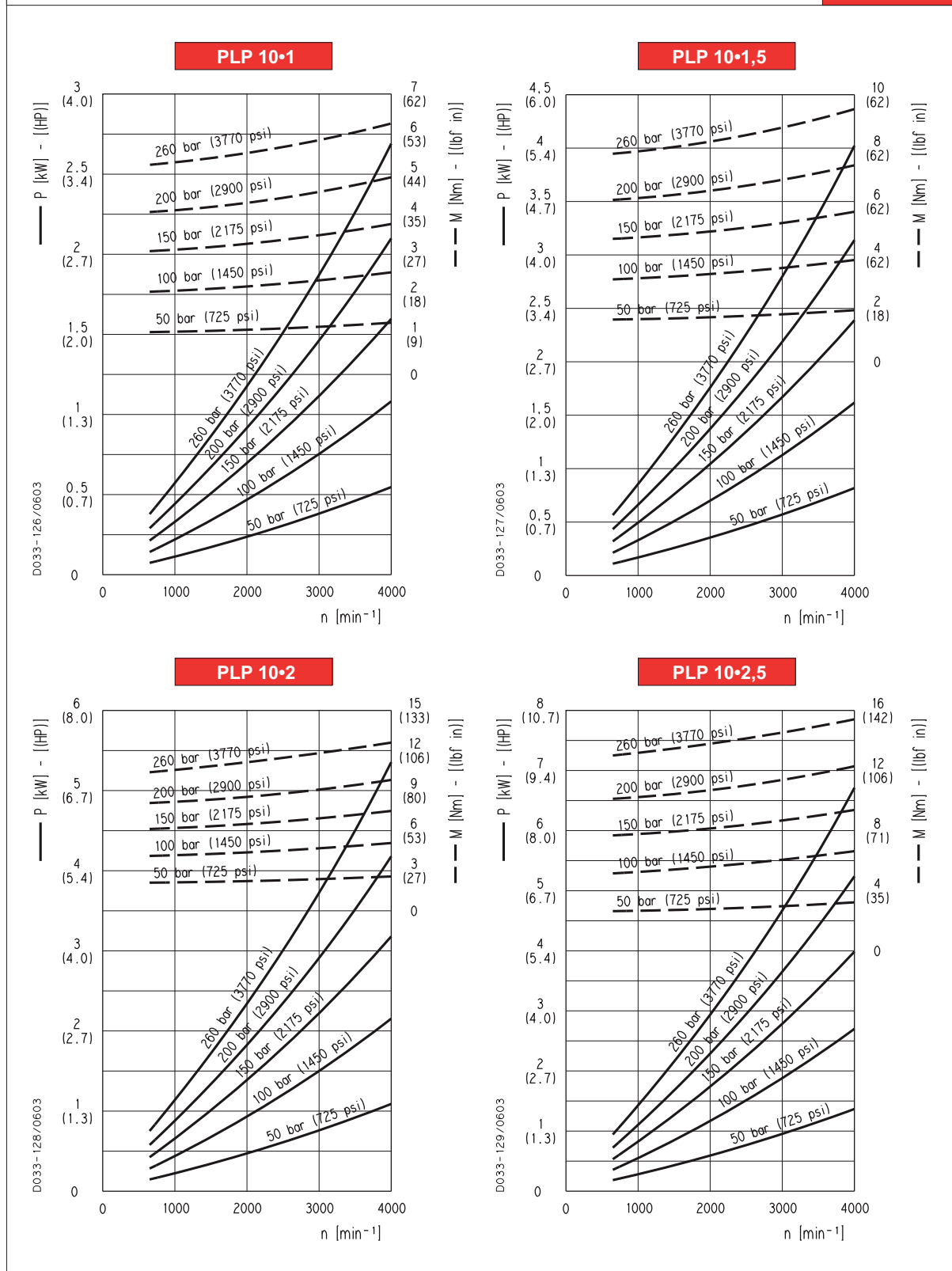
- PLP 10•1 290-3770 psi (20-260 bar)
- PLP 10•2 290-3770 psi (20-260 bar)
- PLP 10•3,15 290-3770 psi (20-260 bar)
- PLP 10•4 290-3625 psi (20-250 bar)
- PLP 10•5 290-3625 psi (20-250 bar)
- PLP 10•6,3 290-3335 psi (20-230 bar)
- PLP 10•8 290-2610 psi (20-180 bar)
- PLP 10•10 290-2030 psi (20-140 bar)



- PLP 10•1,5 290-3770 psi (20-260 bar)
- PLP 10•2,5 290-3770 psi (20-260 bar)
- PLP 10•5,8 290-3335 psi (20-230 bar)

POLARIS 10 GEAR PUMPS PERFORMANCE CURVES

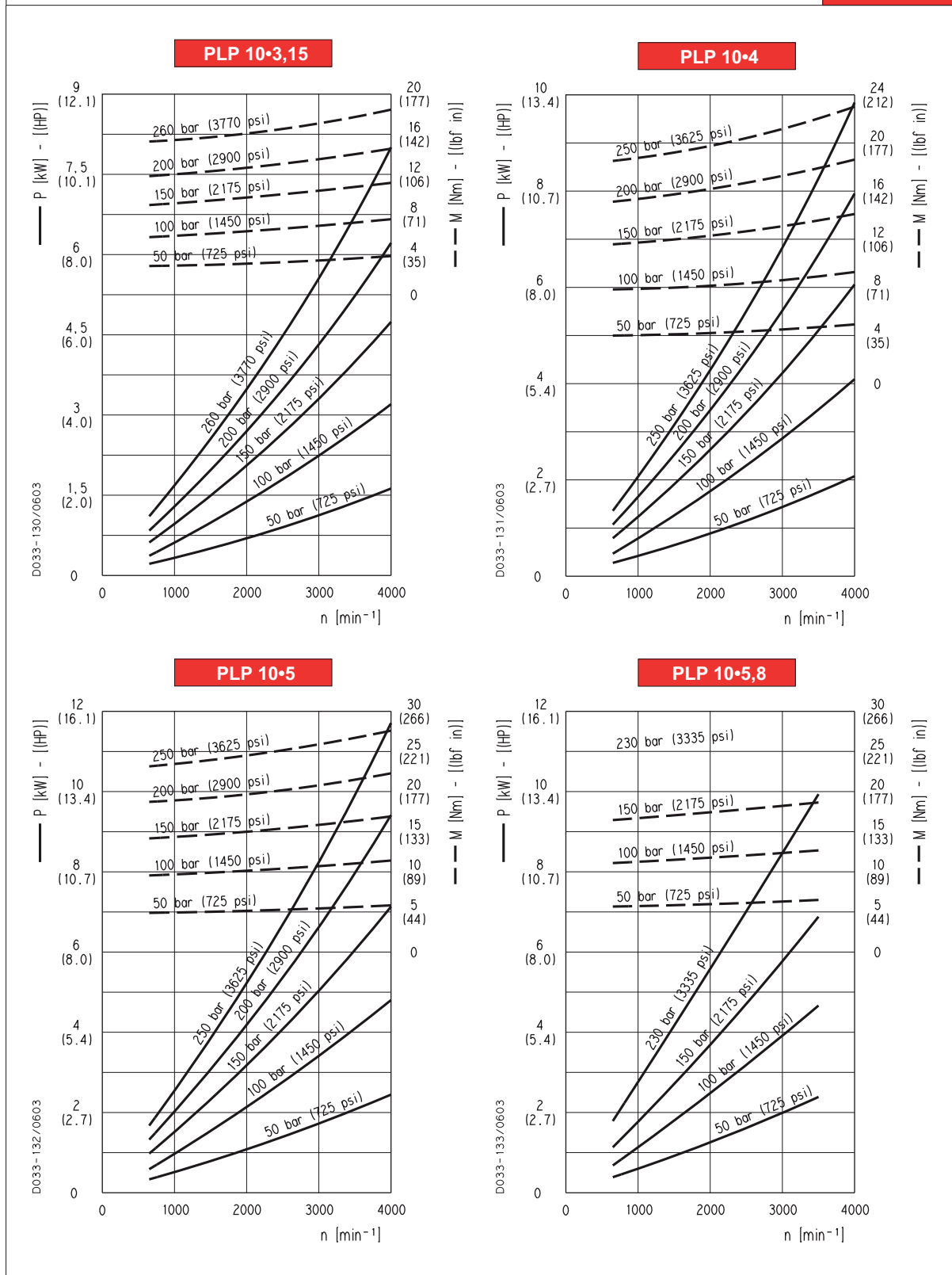
PLP 10



01/10.03

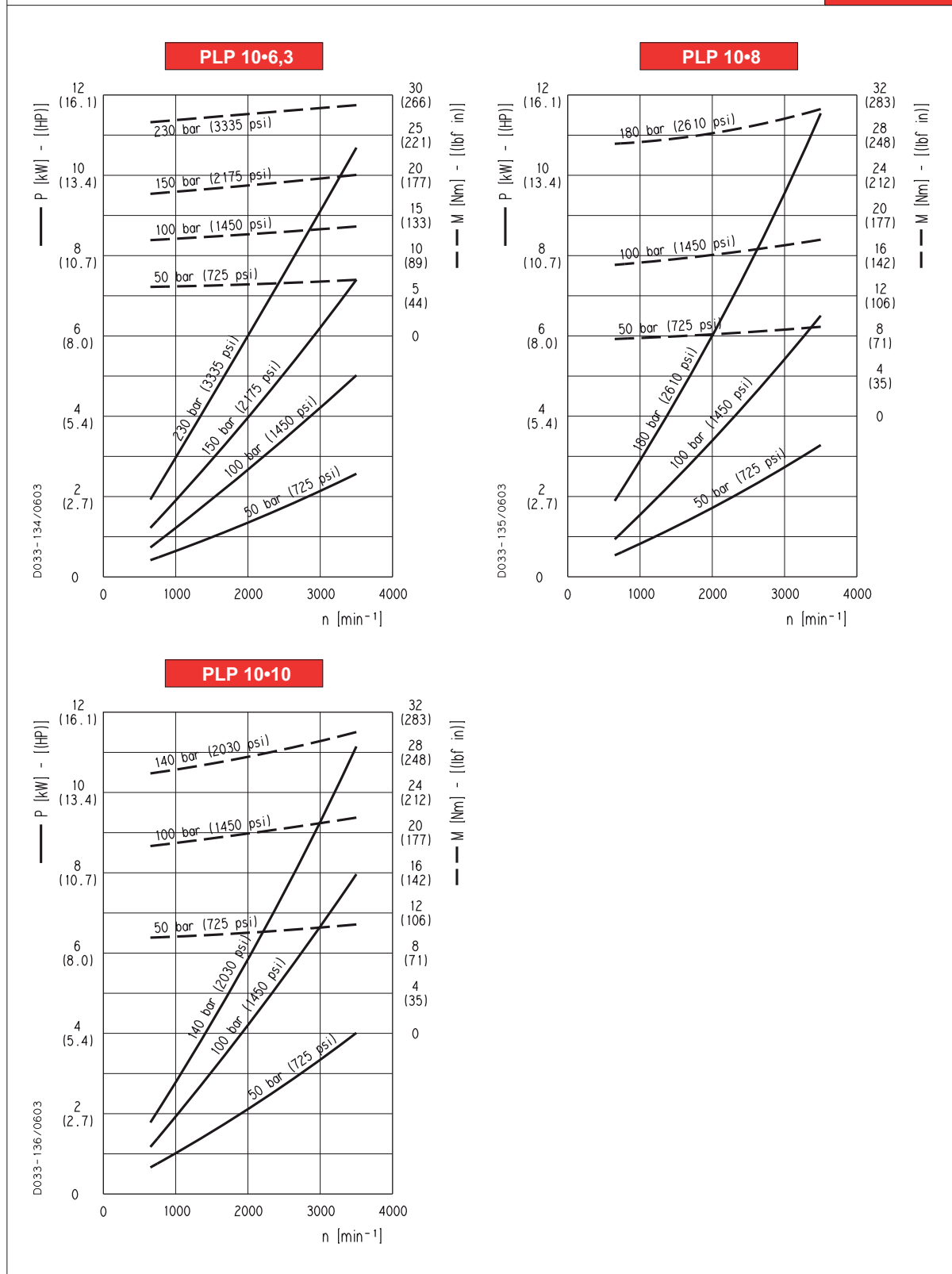
POLARIS 10 GEAR PUMPS PERFORMANCE CURVES

PLP 10



POLARIS 10 GEAR PUMPS PERFORMANCE CURVES

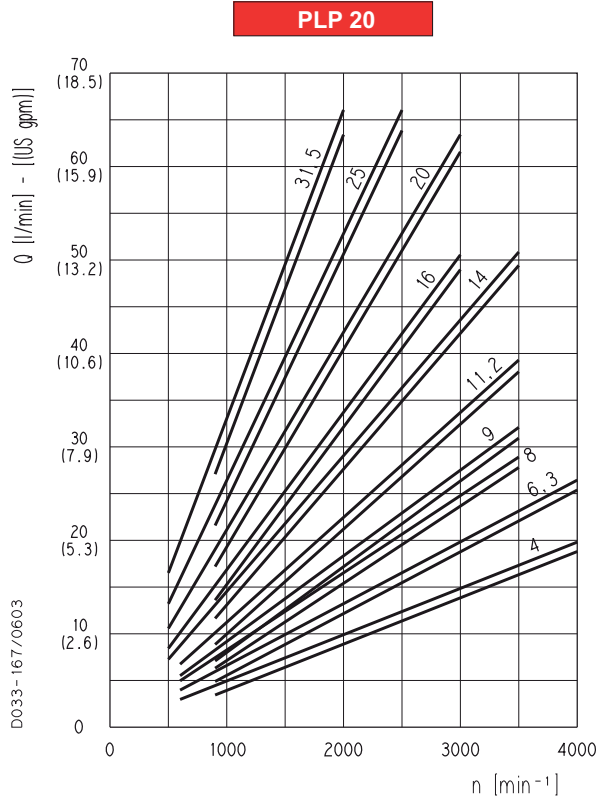
PLP 10



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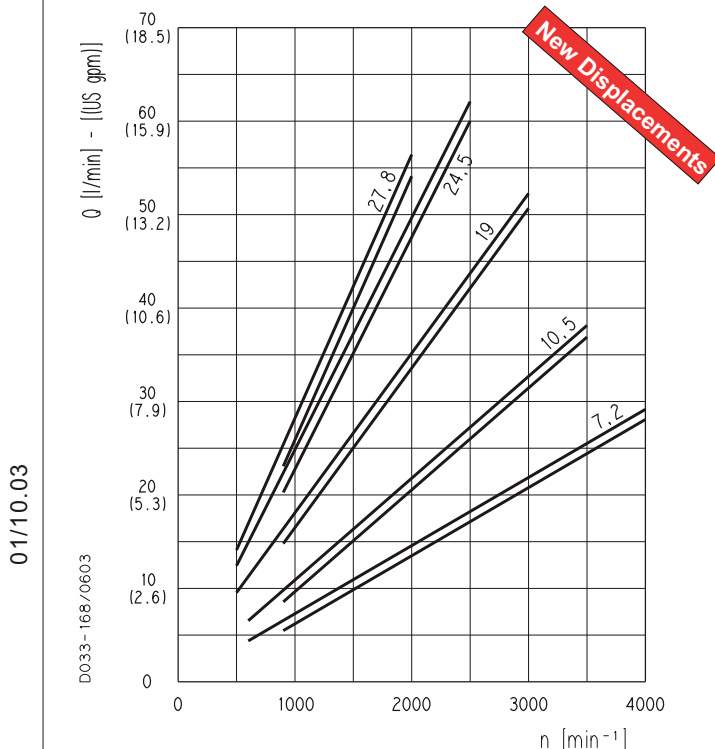
POLARIS 20 GEAR PUMPS PERFORMANCE CURVES

PLP 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.

- PLP 20•4 290-3625 psi (20-250 bar)
- PLP 20•6,3 290-3625 psi (20-250 bar)
- PLP 20•8 290-3625 psi (20-250 bar)
- PLP 20•9 290-3625 psi (20-250 bar)
- PLP 20•11,2 290-3625 psi (20-250 bar)
- PLP 20•14 290-3625 psi (20-250 bar)
- PLP 20•16 290-3625 psi (20-250 bar)
- PLP 20•20 290-2900 psi (20-200 bar)
- PLP 20•25 290-2465 psi (20-170 bar)
- PLP 20•31,5 290-1885 psi (20-130 bar)

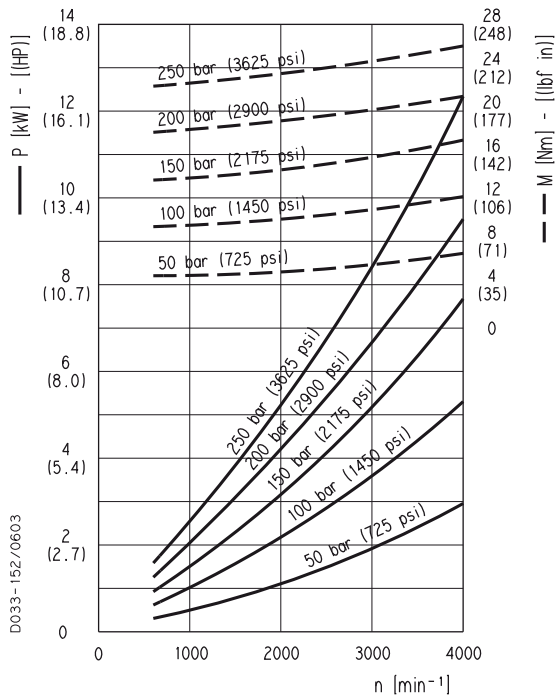


- PLP 20•7,2 290-3625 psi (20-250 bar)
- PLP 20•10,5 290-3625 psi (20-250 bar)
- PLP 20•19 290-2900 psi (20-200 bar)
- PLP 20•24,5 290-2465 psi (20-170 bar)
- PLP 20•27,8 290-1885 psi (20-130 bar)

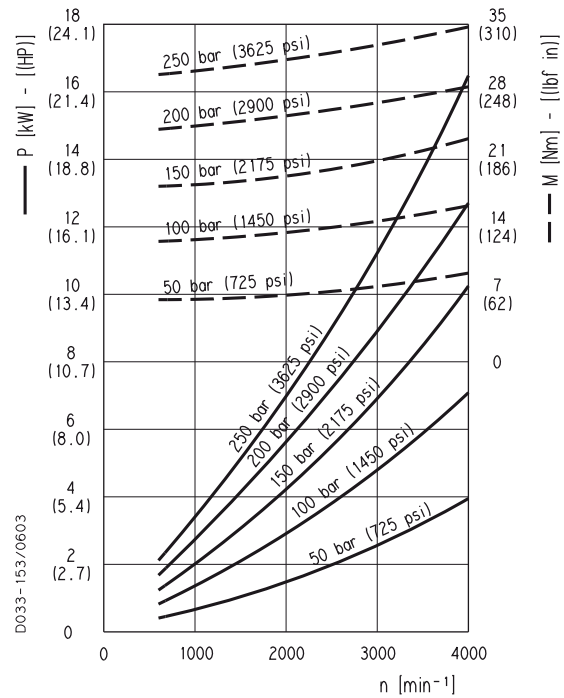
POLARIS 20 GEAR PUMPS PERFORMANCE CURVES

PLP 20

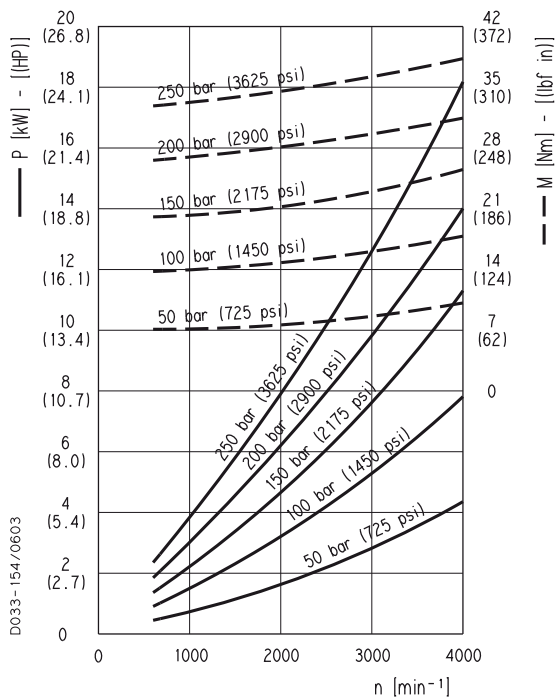
PLP 20-4



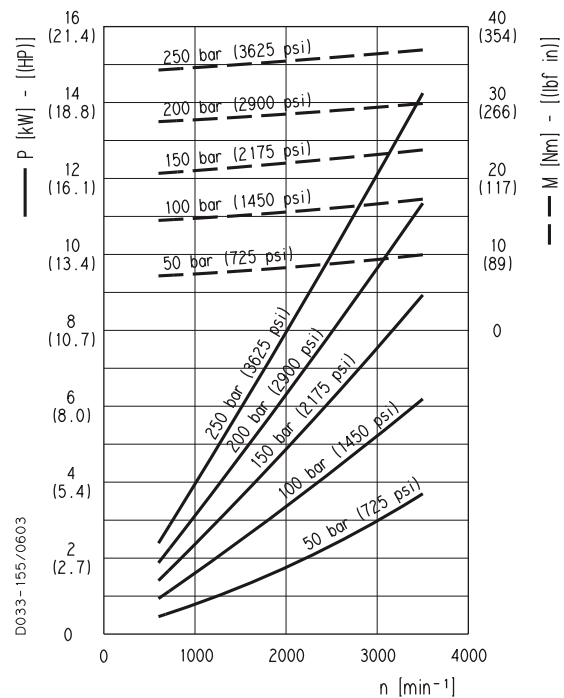
PLP 20-6,3



PLP 20-7,2



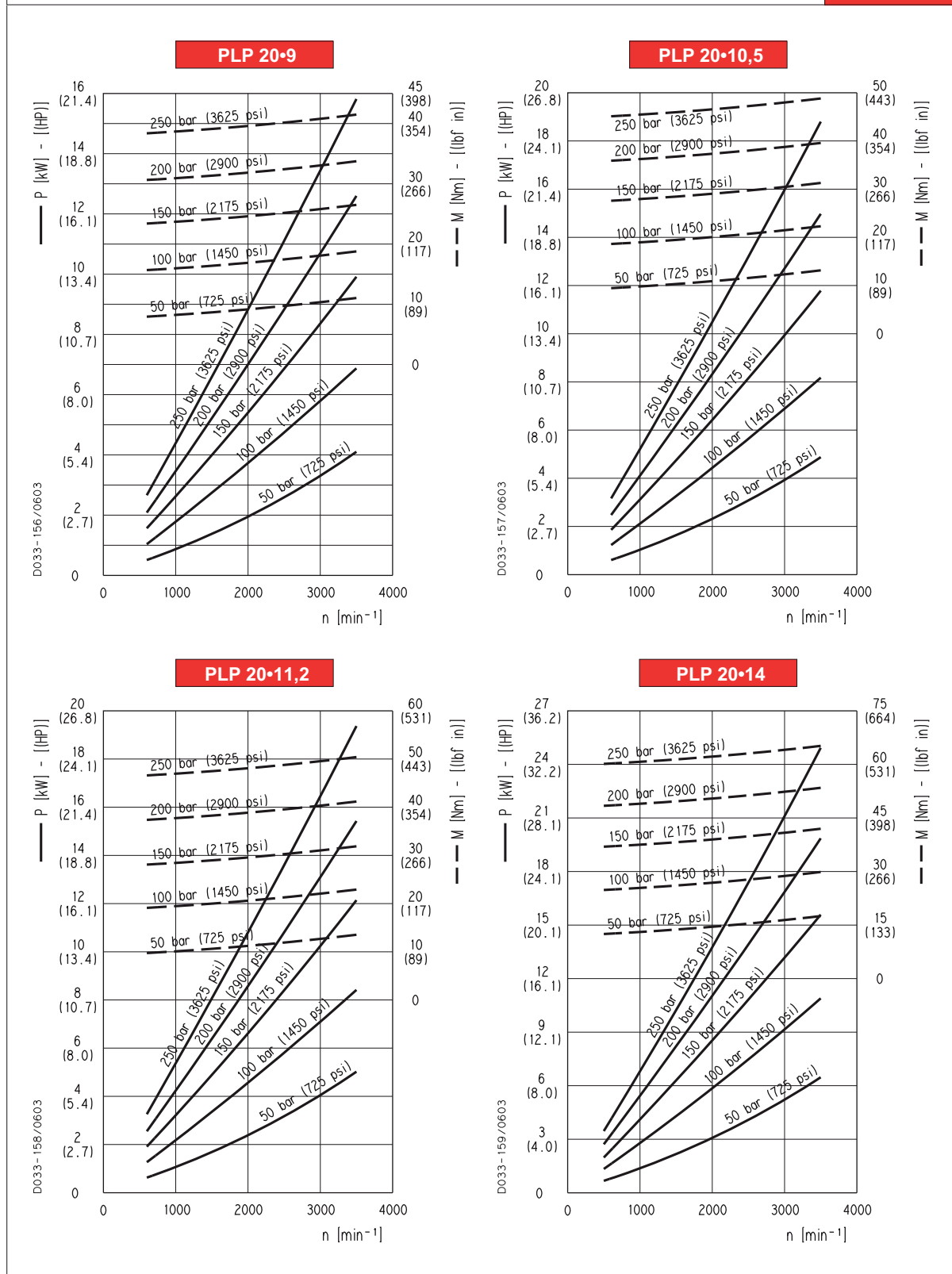
PLP 20-8



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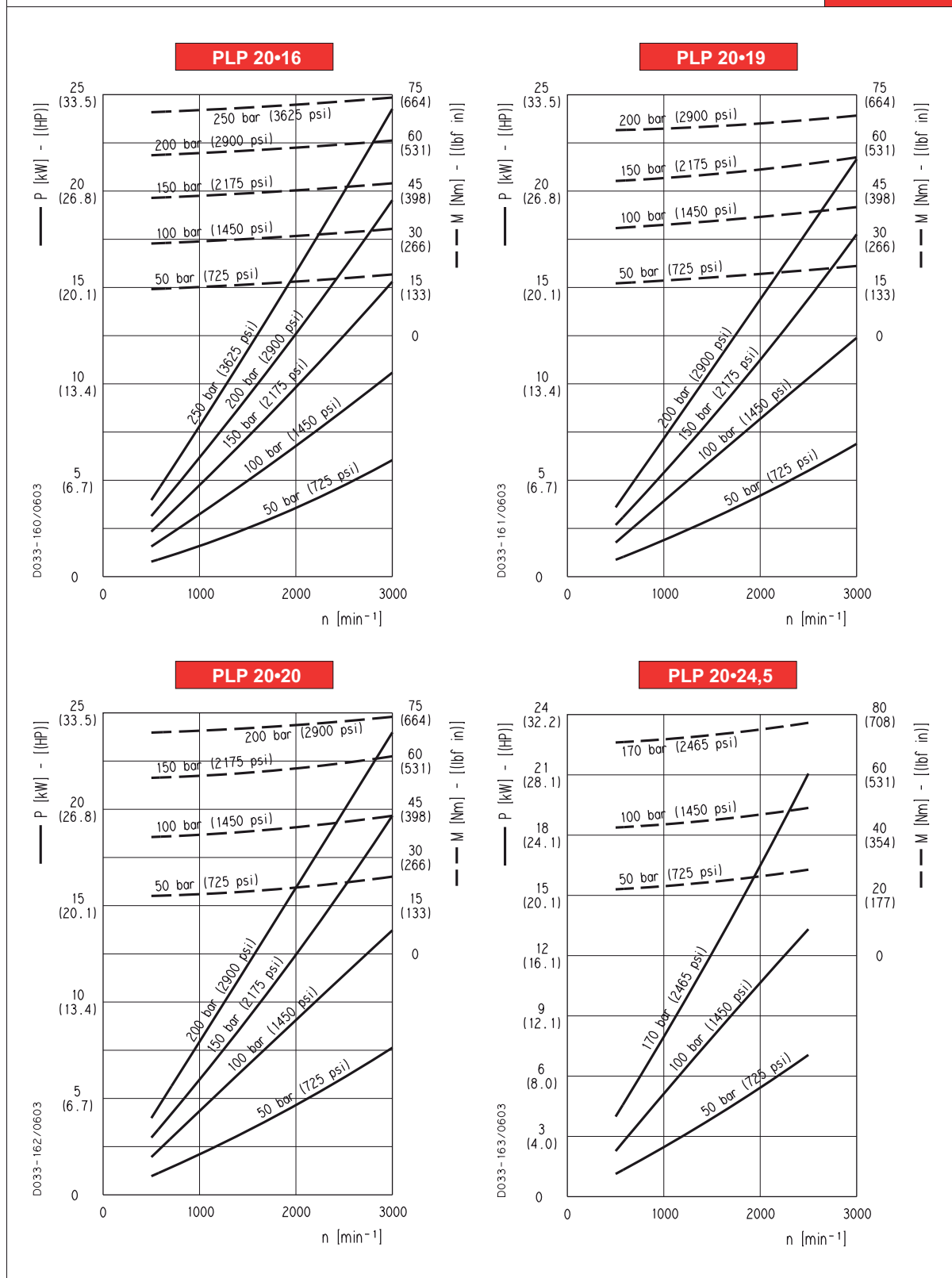
POLARIS 20 GEAR PUMPS PERFORMANCE CURVES

PLP 20



POLARIS 20 GEAR PUMPS PERFORMANCE CURVES

PLP 20

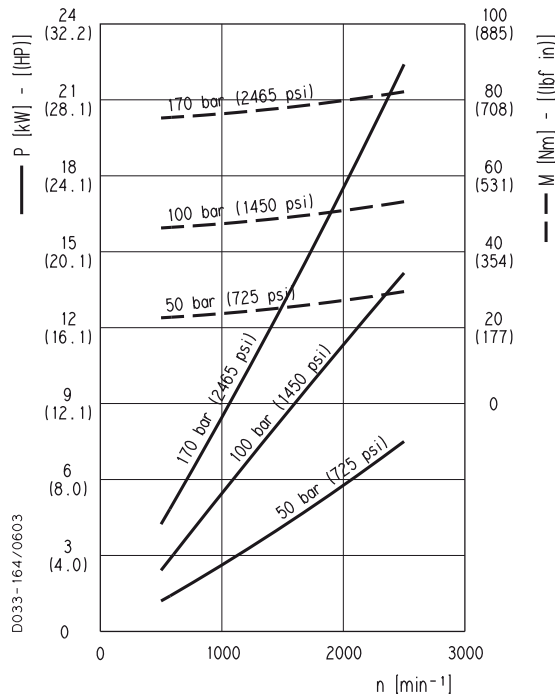


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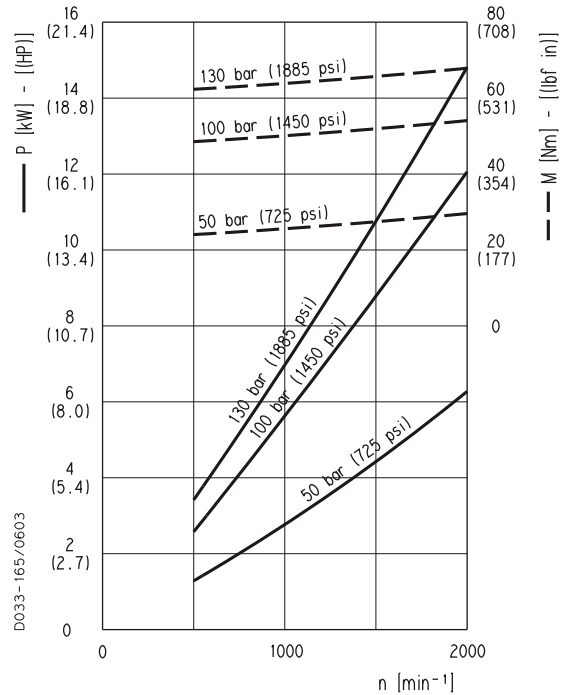
POLARIS 20 GEAR PUMPS PERFORMANCE CURVES

PLP 20

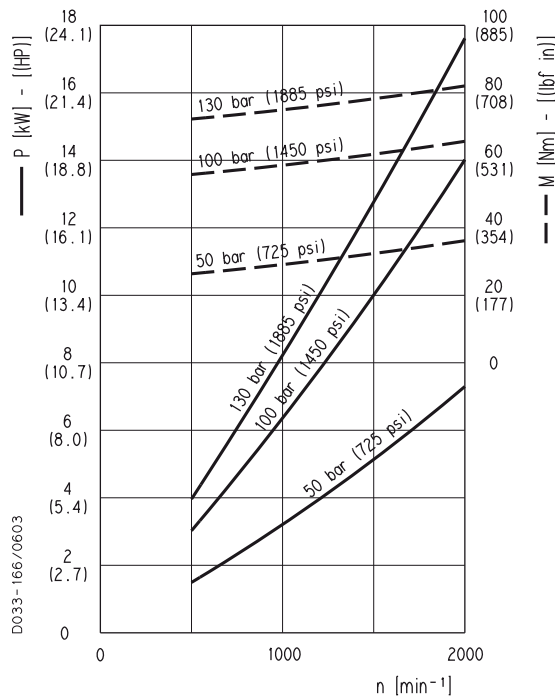
PLP 20•25



PLP 20•27,8



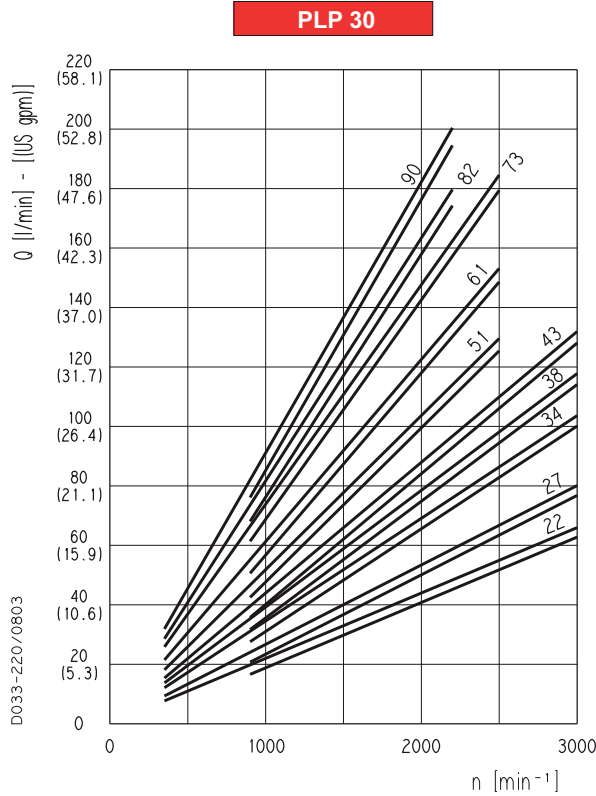
PLP 20•31,5



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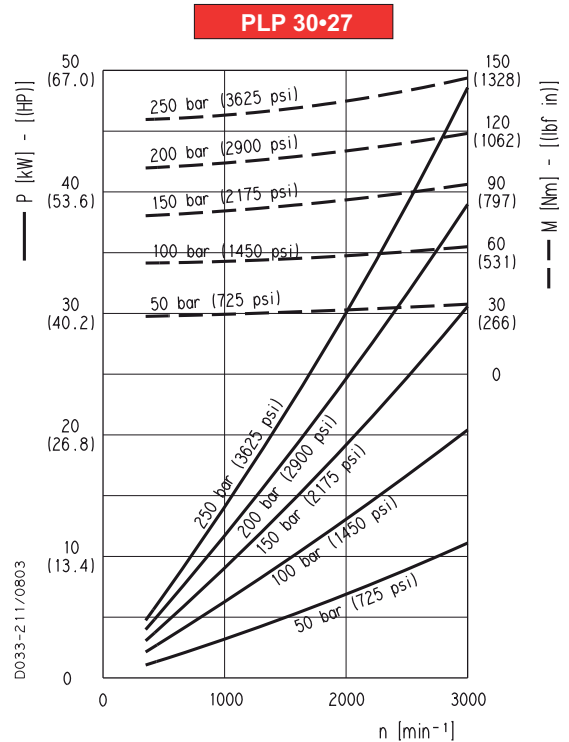
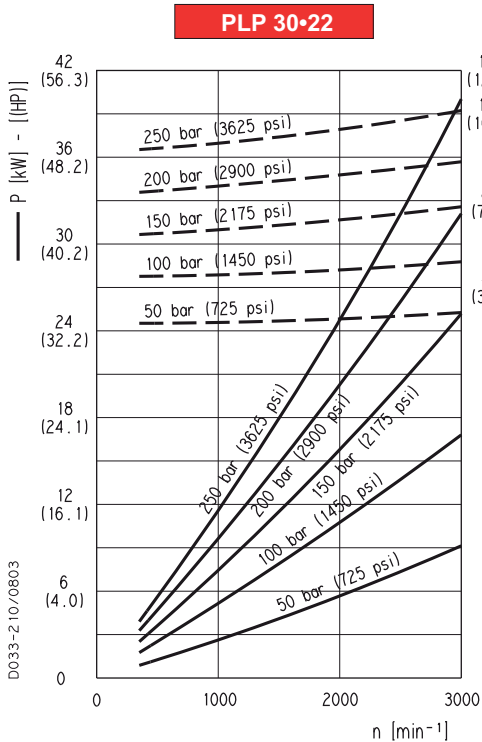
POLARIS 30 GEAR PUMPS PERFORMANCE CURVES

PLP 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.

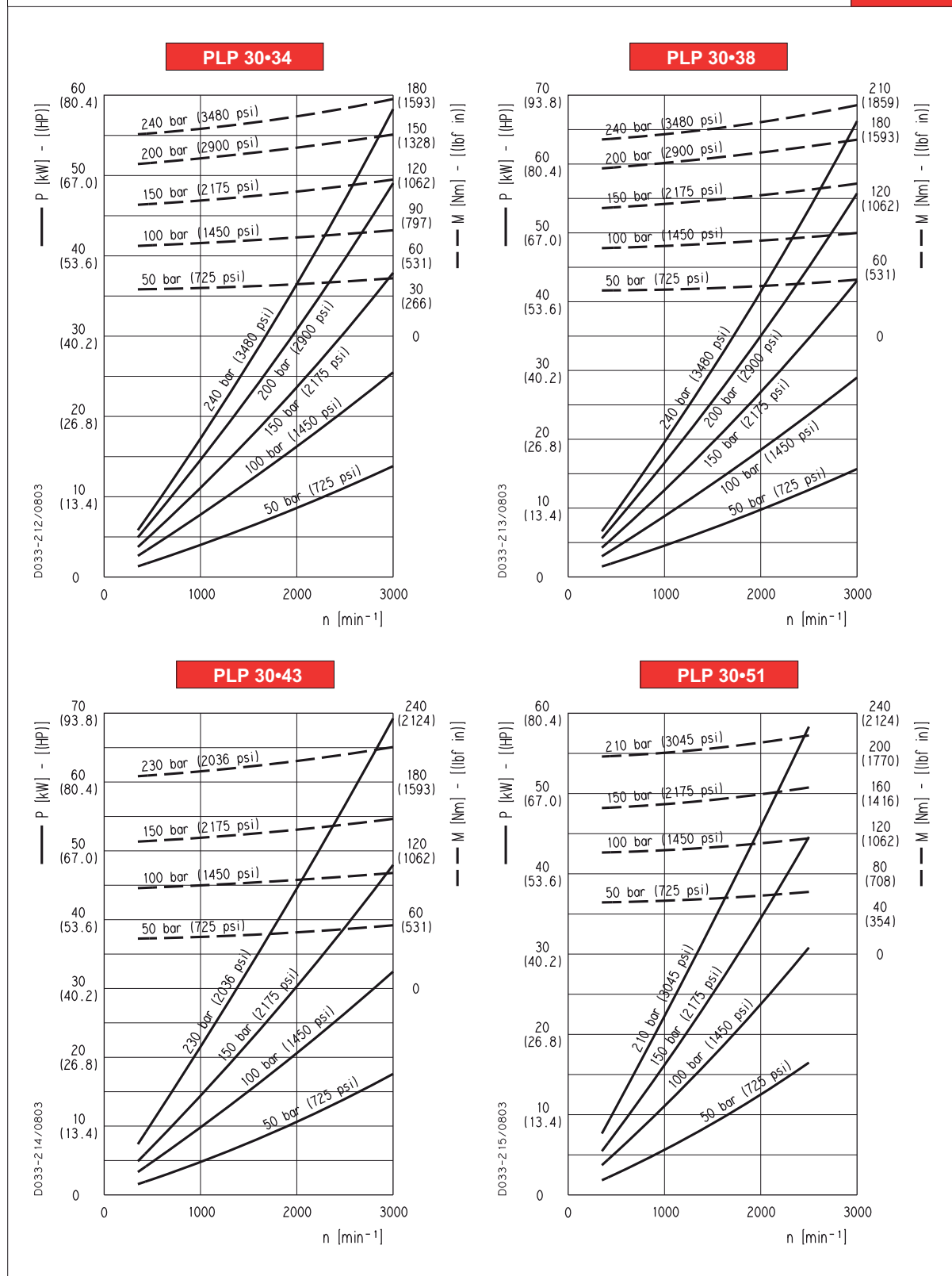
- PLP 30•22 290-3625 psi (20-250 bar)
- PLP 30•27 290-3625 psi (20-250 bar)
- PLP 30•34 290-3480 psi (20-240 bar)
- PLP 30•38 290-3480 psi (20-240 bar)
- PLP 30•43 290-3335 psi (20-230 bar)
- PLP 30•51 290-3045 psi (20-210 bar)
- PLP 30•61 290-2775 psi (20-190 bar)
- PLP 30•73 290-2465 psi (20-170 bar)
- PLP 30•82 290-2320 psi (20-160 bar)
- PLP 30•90 290-2175 psi (20-150 bar)



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POLARIS 30 GEAR PUMPS PERFORMANCE CURVES

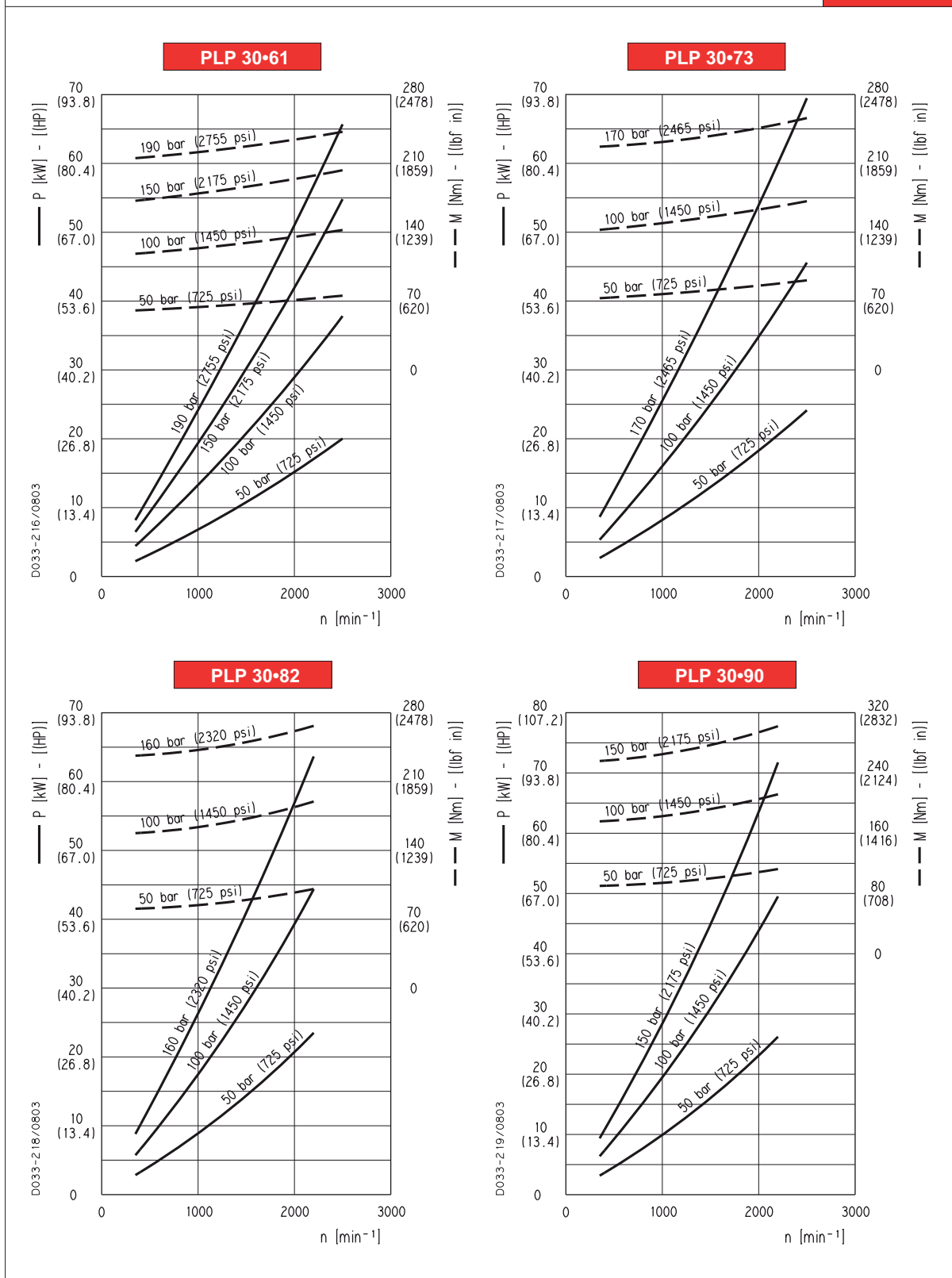
PLP 30



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POLARIS 30 GEAR PUMPS PERFORMANCE CURVES

PLP 30



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MULTIPLE PUMPS

POLARIS series pumps can be coupled together in combination. Where the input power requirements of each section 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.

Available with common inlet and separated stages. For more information please consult our technical sales department.

M	lbf in (Nm)	Torque
V	in ³ /rev (cm ³ /rev)	Displacement
Δp	psi (bar)	Pressure
$\eta_m = \eta_m (V, \Delta p, n) \quad (\approx 0,88)$		Mechanical efficiency

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

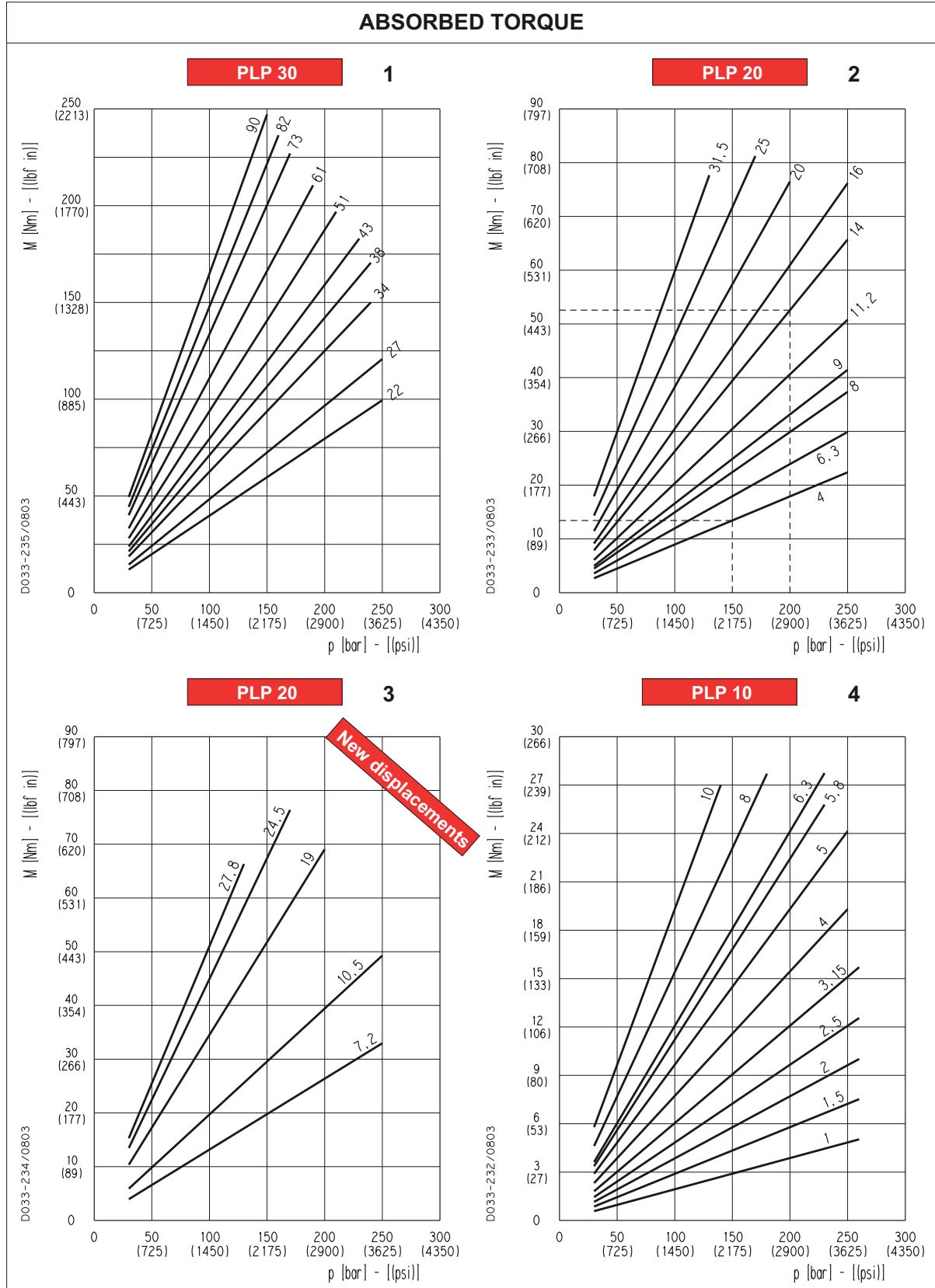
DRIVE SHAFT SELECTION

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 37.

Example

Let us consider a double pump PLP20•14 + PLP20•4. 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 2 shows that the torque absorbed by PLP20•14 is 469 lbf in (53 Nm) and the PLP20•4 absorbs 115 lbf in (13 Nm) (acceptable value because it doesn't exceed the maximum drive shaft torque that is 973 lbf in (110 Nm), see page 39). The torque to be transmitted by the first drive shaft will thus be 469+115= 584 lbf in (53+13= 66 Nm), this value must not exceed the shaft's maximum rated value.

ABSORBED TORQUE



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PL 01 T E

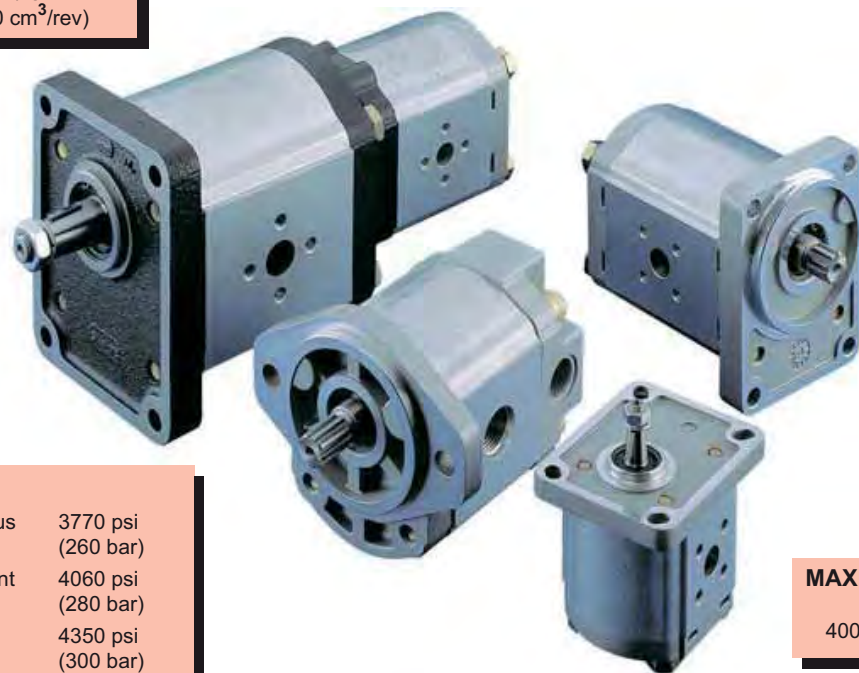
POLARIS®

Hydraulic gear pumps and motors

through bore aluminum body

DISPLACEMENTS

From 0.07 in³/rev
(1.07 cm³/rev)
To 5.56 in³/rev
(91.10 cm³/rev)



PRESSURE

Max. Continuous 3770 psi
(260 bar)
Max. Intermittent 4060 psi
(280 bar)
Max. Peak 4350 psi
(300 bar)

MAX. SPEED

4000 min⁻¹

- Group 1, 2 and 3 with displacements from 0.07 in³/rev (1,07 cm³/rev) to 5.56 in³/rev (91.10 cm³/rev).
- Drive shafts, mounting flanges and ports according to the international standards.
- Combination of multiple pumps in standard version, common inlet and separated stages.
- Integrated outboard bearings for heavy duty application.
- Many types of built-in valves.

"POLARIS" more than fifty years of Casappa experience in design and production of hydraulic components, characterized by large investments in research and development in order to propose new and personalized solutions to the market. Our use of CAD 3D in the development of this generation permit us the 3D modelling and the virtual simulation of the behaviour of the components inserted in the hydraulic circuit. This means that the process will take less time and the quality of the products is better. Polaris pumps and motors are basically composed of a gear housing in aluminium alloy, two gear wheels supported by sleeve bearings and two end plates, the front and the rear cover, either in aluminium or in cast iron with excellent mechanical characteristics. Our success is based largely on the quality of our product. This guaranties the consistencies of the efficiencies and low level of noise emission during the life of our products.

Edition: 01/10.2003



CASAPPA®
FLUID POWER DESIGN



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 should be fitted as indicated in the first pages of the catalogue. Only coarse filters are recommended for pump intake. 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.

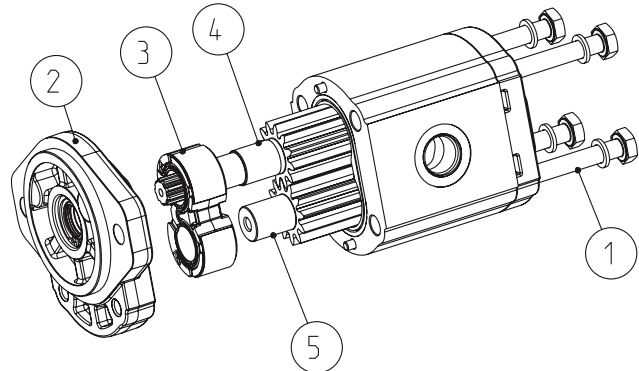
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CHANGING ROTATION

Example of changing rotation: from PLP20 pump clockwise to counterclockwise

To change rotation of Polaris unidirectional pumps and motors it is necessary to operate in the following way:

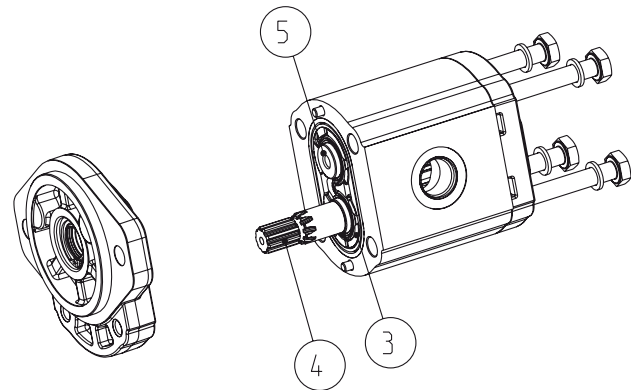
- 1 - Clean the pump externally with care.
- 2 - Loosen, and remove, the clamp bolts (1).
- 3 - Coat the sharp edges of the drive shaft (4) with adhesive tape and smear a layer of clean grease on the shaft end extension to avoid damaging the lip of the shaft seal when removing the mounting flange.
- 4 - Remove the mounting flange (2), taking care to keep the flange as straight as possible during removal. If the flange is stuck, tap around the edge with a fibre or rubber mallet in order to break away from the body. Ensure that while removing the front mounting flange, the drive shaft and other components remain in position.



DCA7_033_040

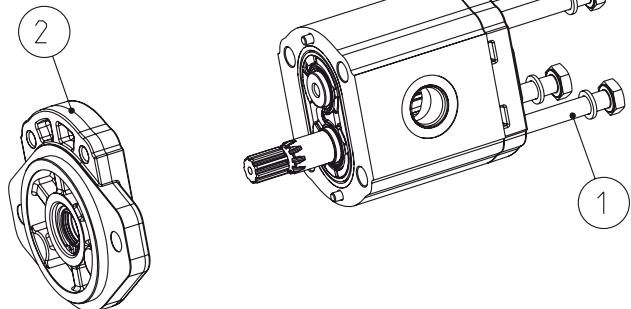
- 5 - Ease the drive gear (4) up to facilitate removal the front plate (3), taking care that the precision ground surfaces do not become damaged, and remove the drive gear.
- 6 - Remove the driven gear (5) without overturning. The rear plate has not to be removed.

- 7 - Re-locate the driven gear (5) in the position previously occupied by the drive gear (4)
- 8 - Re-locate the drive gear (4) in the position previously occupied by the driven gear (5).
- 9 - Replace the front plate (3) in its original position.



DCA7_033_029

- 10 - Gently wipe the machined surface of the mounting flange (2) and the body with a flat hand stone.
- 11 - Refit the front mounting flange (2) turned 180° from its original position.
- 12 - Refit the clamp bolts (1) with the washers and tighten in a crisscross pattern with the following torque value:
70 ⁺⁵ Nm (620 ÷ 664 lbf in) with cast iron cover.
45 ⁺⁵ Nm (398 ÷ 443 lbf in) with one or both cover in aluminium.



DCA7_033_011

- 13 - Check that the pump rotates freely when the drive shaft (4) is turned by hand. If not a pressure plate seal may be pinched.
- 14 - The pump is ready for installation with the original rotation reversed.

01/10.03

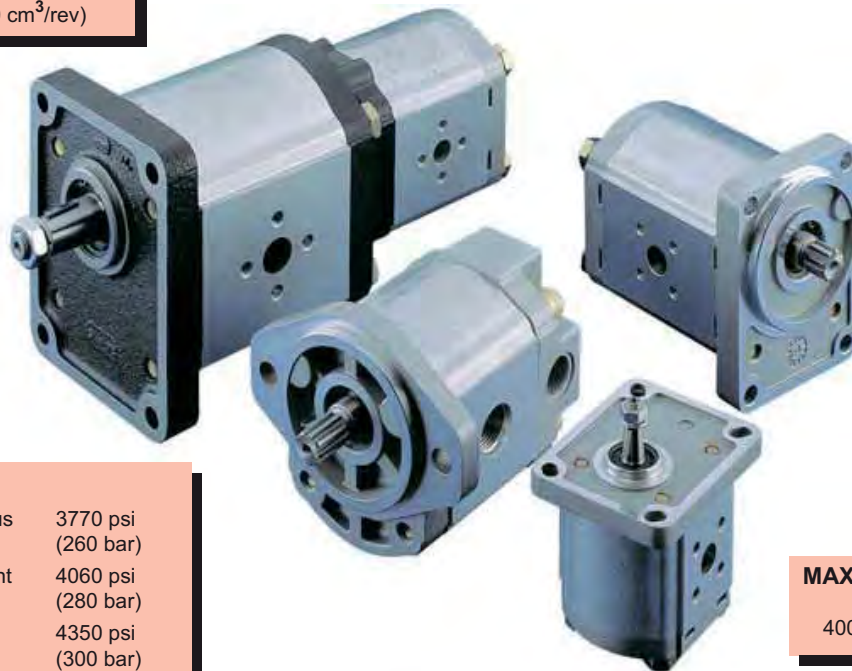
POLARIS®

Hydraulic gear pumps and motors

through bore aluminum body

DISPLACEMENTS

From 0.07 in³/rev
(1.07 cm³/rev)
To 5.56 in³/rev
(91.10 cm³/rev)



PRESSURE

Max. Continuous 3770 psi
(260 bar)
Max. Intermittent 4060 psi
(280 bar)
Max. Peak 4350 psi
(300 bar)

MAX. SPEED

4000 min⁻¹

- Group 1, 2 and 3 with displacements from 0.07 in³/rev (1,07 cm³/rev) to 5.56 in³/rev (91.10 cm³/rev).
- Drive shafts, mounting flanges and ports according to the international standards.
- Combination of multiple pumps in standard version, common inlet and separated stages.
- Integrated outboard bearings for heavy duty application.
- Many types of built-in valves.

"POLARIS" more than fifty years of Casappa experience in design and production of hydraulic components, characterized by large investments in research and development in order to propose new and personalized solutions to the market. Our use of CAD 3D in the development of this generation permit us the 3D modelling and the virtual simulation of the behaviour of the components inserted in the hydraulic circuit. This means that the process will take less time and the quality of the products is better.

Polaris pumps and motors are basically composed of a gear housing in aluminium alloy, two gear wheels supported by sleeve bearings and two end plates, the front and the rear cover, either in aluminium or in cast iron with excellent mechanical characteristics. Our success is based largely on the quality of our product. This guaranties the consistencies of the efficiencies and low level of noise emission during the life of our products.

Edition: 01/10.2003



CASAPPA
FLUID POWER DESIGN



GENERAL DATA PUMPS AND MOTORS

Series	Pump type PLP Motor type PLM	Displacement in ³ /rev (cm ³ /rev)	Max. pressure			Max. speed	Min. speed
			p ₁	p ₂	p ₃		
			psi (bar)					min^{-1}
POLARIS 10	PL. 10•1	0.07 (1,07)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•1,5	0.10 (1,60)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•2	0.13 (2,13)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•2,5	0.16 (2,67)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•3,15	0.20 (3,34)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•4	0.26 (4,27)	3625 (250)	3915 (270)	4060 (280)	4000	650
	PL. 10•5	0.33 (5,34)	3625 (250)	3915 (270)	4060 (280)	4000	650
	PL. 10•5,8	0.38 (6,20)	3335 (230)	3625 (250)	3770 (260)	3500	650
	PL. 10•6,3	0.41 (6,67)	3335 (230)	3625 (250)	3770 (260)	3500	650
	PL. 10•8	0.52 (8,51)	2610 (180)	2900 (200)	3045 (210)	3500	650
	PL. 10•10	0.65 (10,67)	2030 (140)	2320 (160)	2465 (170)	3500	650
POLARIS 20	PL. 20•4	0.30 (4,95)	3625 (250)	4060 (280)	4350 (300)	4000	600
	PL. 20•6,3	0.40 (6,61)	3625 (250)	4060 (280)	4350 (300)	4000	600
	PL. 20•7,2	0.44 (7,29)	3625 (250)	4060 (280)	4350 (300)	4000	600
	PL. 20•8	0.50 (8,26)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•9	0.56 (9,17)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•10,5	0.66 (10,9)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•11,2	0.69 (11,23)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•14	0.89 (14,53)	3625 (250)	4060 (280)	4350 (300)	3500	500
	PL. 20•16	1.03 (16,85)	3625 (250)	4060 (280)	4350 (300)	3000	500
	PL. 20•19	1.16 (19,09)	2900 (200)	3190 (220)	3480 (240)	3000	500
	PL. 20•20	1.29 (21,14)	2900 (200)	3190 (220)	3480 (240)	3000	500
	PL. 20•24,5	1.52 (24,84)	2465 (170)	2755 (190)	3045 (210)	2500	500
	PL. 20•25	1.61 (26,42)	2465 (170)	2755 (190)	3045 (210)	2500	500
	PL. 20•27,8	1.72 (28,21)	1885 (130)	2175 (150)	2465 (170)	2000	500
PL. 20•31,5	2.01 (33,03)	1885 (130)	2175 (150)	2465 (170)	2000	500	
POLARIS 30	PL. 30•22	1.34 (21,99)	3625 (250)	3915 (270)	4060 (280)	3000	350
	PL. 30•27	1.63 (26,70)	3625 (250)	3915 (270)	4060 (280)	3000	350
	PL. 30•34	2.11 (34,55)	3480 (240)	3770 (260)	3915 (270)	3000	350
	PL. 30•38	2.40 (39,27)	3480 (240)	3770 (260)	3915 (270)	3000	350
	PL. 30•43	2.68 (43,98)	3335 (230)	3625 (250)	3770 (260)	3000	350
	PL. 30•51	3.16 (51,83)	3045 (210)	3335 (230)	3480 (240)	2500	350
	PL. 30•61	3.74 (61,26)	2755 (190)	3045 (210)	3190 (220)	2500	350
	PL. 30•73	4.50 (73,82)	2465 (170)	2755 (190)	2900 (200)	2500	350
	PL. 30•82	4.98 (81,68)	2320 (160)	2465 (170)	2610 (180)	2200	350
	PL. 30•90	5.56 (91,10)	2175 (150)	2320 (160)	2465 (170)	2200	350

01/10.03

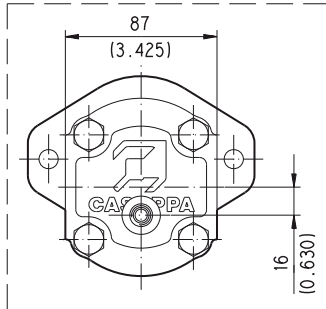
p₁= Max. continuous pressure p₂= Max. intermittent pressure p₃= Max. peak pressure

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

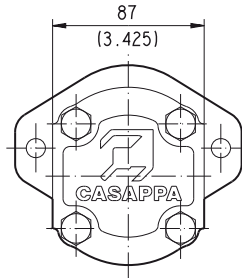
POLARIS 20

SINGLE UNITS SIDE PORTS

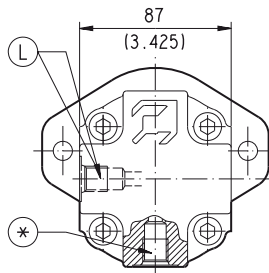
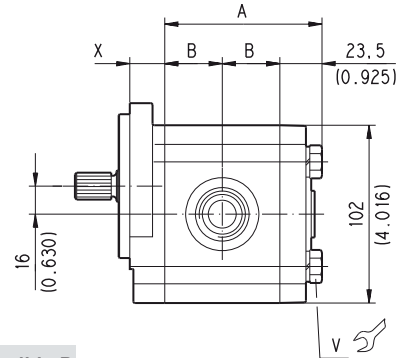
L



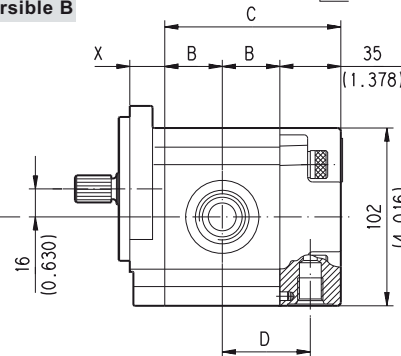
Reversible R



Single rotation S - D and Reversible B



Reversible L



D033-182/0903

Mounting flange type version 0	X	
	mm	(inch)
E2	18	(0.7087)
B2	18,8	(0.7402)
B4	16	(0.6299)
B5	16	(0.6299)
B6	17,7	(0.6969)
S1	20	(0.7874)
S2	20	(0.7874)
S9	20	(0.7874)
S5	20	(0.7874)
W8	32,1	(1.2638)

DRAIN PORT POSITION:

L = Side * = Bottom

DRIVE SHAFTS:

see page 52 ÷ 54

MOUNTING FLANGE:

see page 60 ÷ 64

Mounting flange material	V	
	Screws tightening torque Nm (lbf in)	
Aluminum	45 ⁺⁵	(398 ÷ 403)
Cast iron	70 ⁺⁵	(620 ÷ 664)

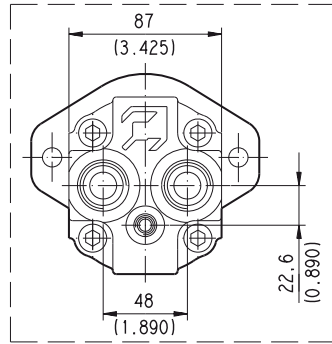
Pump type Motor type	A	B	C	D
	mm (inch)	mm (inch)	mm (inch)	mm (inch)
PL. 20•4	75 (2.9528)	25,75 (1.0138)	86,5 (3.4055)	43,25 (1.7028)
PL. 20•6,3	77,5 (3.0512)	27 (1.0630)	89 (3.5039)	44,5 (1.7520)
PL. 20•7,2	78,5 (3.0905)	27,5 (1.0826)	90 (3.5433)	45 (1.7716)
PL. 20•8	80 (3.1496)	28,25 (1.1122)	91,5 (3.6024)	45,75 (1.8012)
PL. 20•9	81,3 (3.2008)	28,9 (1.1378)	92,8 (3.6535)	46,4 (1.8268)
PL. 20•10,5	84 (3.3070)	30,25 (1.1909)	95,5 (3.7598)	47,75 (1.8799)
PL. 20•11,2	84,5 (3.3268)	30,5 (1.2008)	96 (3.7795)	48 (1.8898)
PL. 20•14	89,5 (3.5236)	33 (1.2992)	101 (3.9764)	50,5 (1.9882)
PL. 20•16	93 (3.6614)	34,75 (1.3681)	104,5 (4.1142)	52,25 (2.0571)
PL. 20•19	96,4 (3.7952)	36,45 (1.4350)	107,9 (4.2480)	53,45 (2.1043)
PL. 20•20	99,5 (3.9173)	38 (1.4961)	111 (4.3701)	55,5 (2.1850)
PL. 20•24,5	105,1 (4.1378)	40,8 (1.6063)	116,6 (4.5905)	58,3 (2.2953)
PL. 20•25	107,5 (4.2323)	42 (1.6535)	119 (4.6850)	59,5 (2.3425)
PL. 20•27,8	110,2 (4.3386)	43,35 (1.7067)	121,7 (4.7913)	60,85 (2.3957)
PL. 20•31,5	117,5 (4.6260)	47 (1.8504)	129 (5.0787)	64,5 (2.5394)

01/10.03

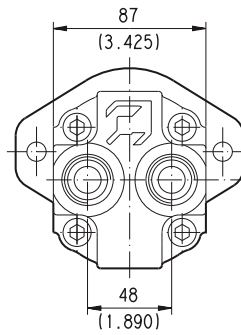
POLARIS 20

SINGLE UNITS REAR PORTS

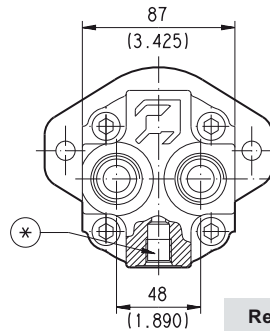
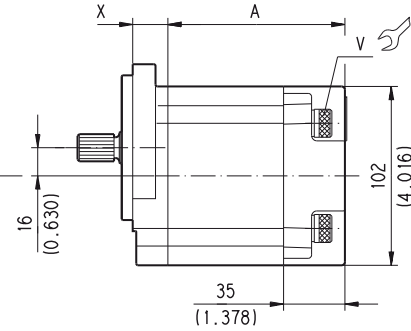
P



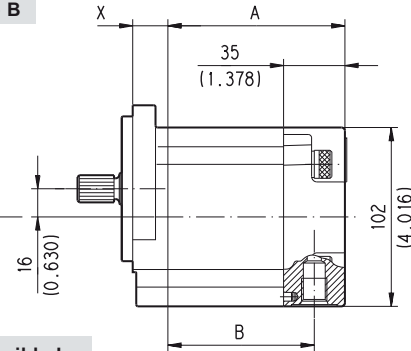
Reversible R



Single rotation S - D e Reversible B



Reversible L



D033-183/0903

Mounting flange type version 0	X	
	mm	(inch)
E2	18	(0.7087)
B2	18,8	(0.7402)
B4	16	(0.6299)
B5	16	(0.6299)
B6	17,7	(0.6969)
S1	20	(0.7874)
S2	20	(0.7874)
S9	20	(0.7874)
S5	20	(0.7874)
W8	32,1	(1.2638)

DRAIN PORT POSITION:
L = Side * = Bottom
DRIVE SHAFTS:
see page 52 ÷ 54
MOUNTING FLANGE:
see page 60 ÷ 64

Mounting flange material	V	
	Screws tightening torque Nm (lbf in)	
Aluminum	45	⁺⁵ (398 ÷ 403)
Cast iron	70	⁺⁵ (620 ÷ 664)

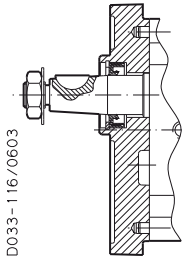
Pump type Motor type	A		B	
	mm	(inch)	mm	(inch)
PL. 20•4	86,5	(3.4055)	69	(2.71765)
PL. 20•6,3	89	(3.5039)	71,5	(2.8150)
PL. 20•7,2	90	(3.5433)	72,5	(2.8543)
PL. 20•8	91,5	(3.6024)	74	(2.9134)
PL. 20•9	92,8	(3.6535)	75,3	(2.9646)
PL. 20•10,5	95,5	(3.7598)	78	(3.0708)
PL. 20•11,2	96	(3.7795)	78,5	(3.0906)
PL. 20•14	101	(3.9764)	83,5	(3.2784)
PL. 20•16	104,5	(4.1142)	87	(3.4252)
PL. 20•19	107,9	(4.2480)	89,9	(3.5393)
PL. 20•20	111	(4.3701)	93,5	(3.6811)
PL. 20•24,5	116,6	(4.5905)	99,1	(3.9016)
PL. 20•25	119	(4.6850)	101,5	(3.9961)
PL. 20•27,8	121,7	(4.7913)	104,2	(4.1024)
PL. 20•31,5	129	(5.0787)	111,5	(4.3898)

01/10.03

VERSIONS

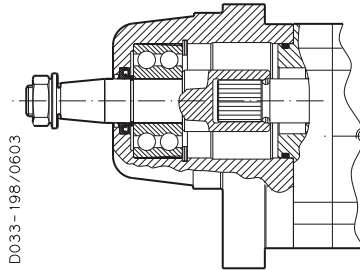
For each version, the possible combination between drive shafts and mounting flanges are shown on pages 57 ÷ 67.

VERSION		0
Available for group:		
10	20	30

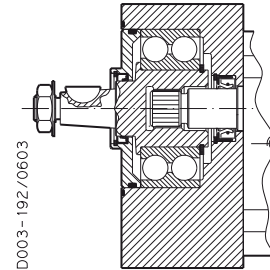


Version for applications without radial and axial load on the drive shaft.

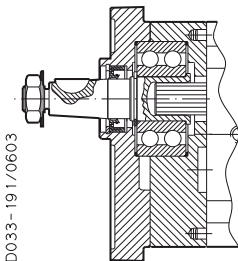
VERSION		W8
Available for group:		
20		



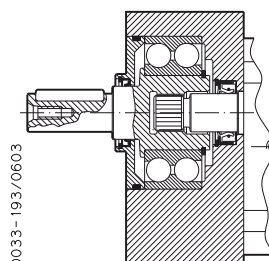
VERSION		4
Available for group:		
20		



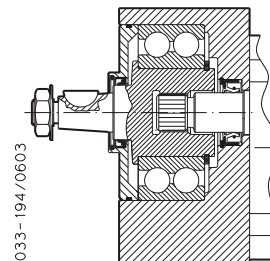
VERSION		5
Available for group:		
20		



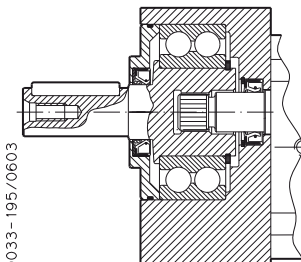
VERSION		6
Available for group:		
20		



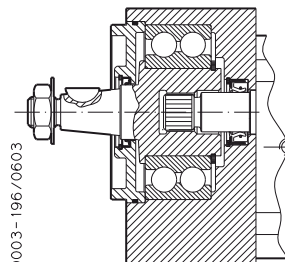
VERSION		7
Available for group:		
20		



VERSION		8
Available for group:		
20		



VERSION		9
Available for group:		
20		



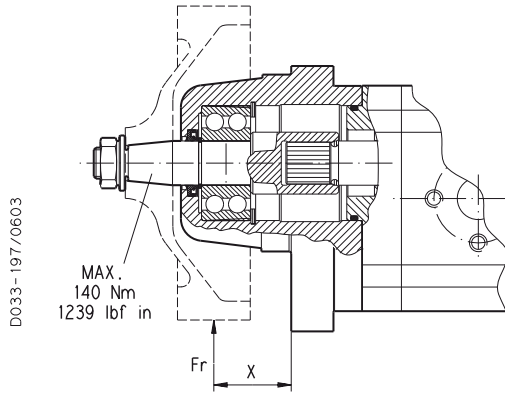
For the outboard bearing life expectancy, diagrams providing approximate selection data will be found on subsequent pages. For particular applications please consult our technical sales department.

01/10.03

POLARIS 20

VERSION WITH OUTBOARD BEARING

W8

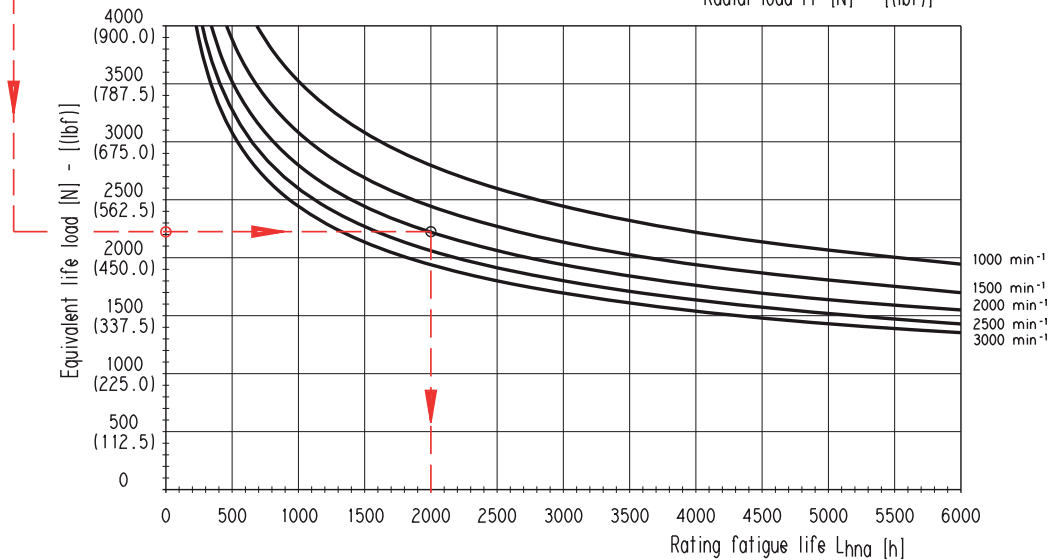
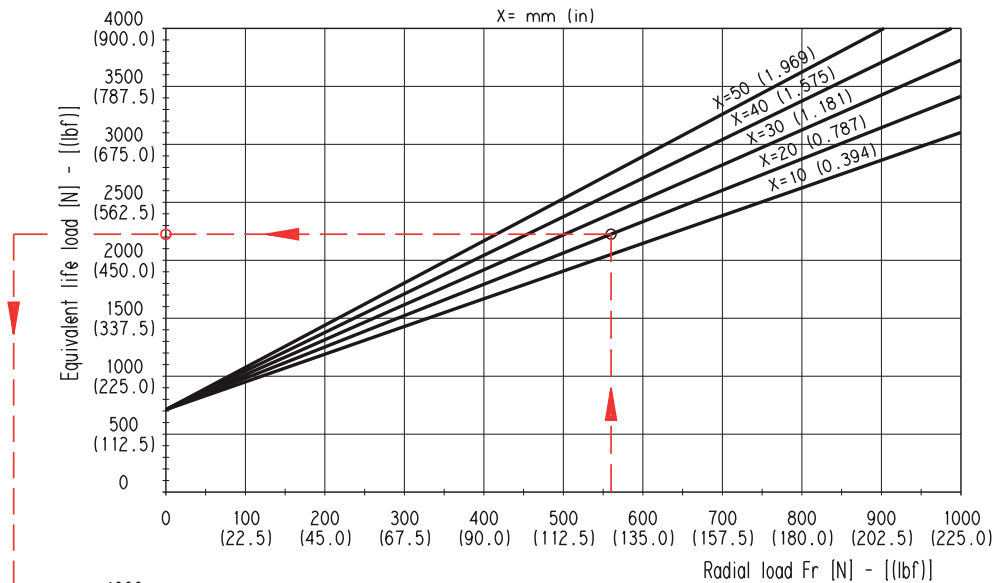


X= Distance of the radial load result from the mounting flange [mm (in)].

Each curve has been obtained at:
Lubricant oil ISO VG 46
Temperature 60 °C (140 °F)
Without or with very low axial load

Example

Fr Radial load	560 N (126.0 lbf)
X	20 mm (0.787 in)
Speed	2000 min ⁻¹
Rating fatigue life	≈ 2000 h



01/10.03

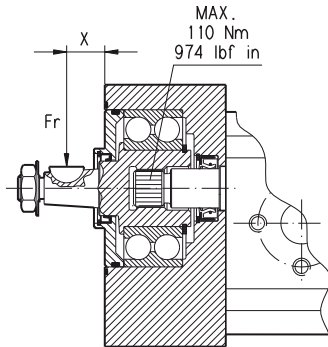
D033-262/1003

POLARIS 20

VERSION WITH OUTBOARD BEARING

4 - 6

D003-114/0603

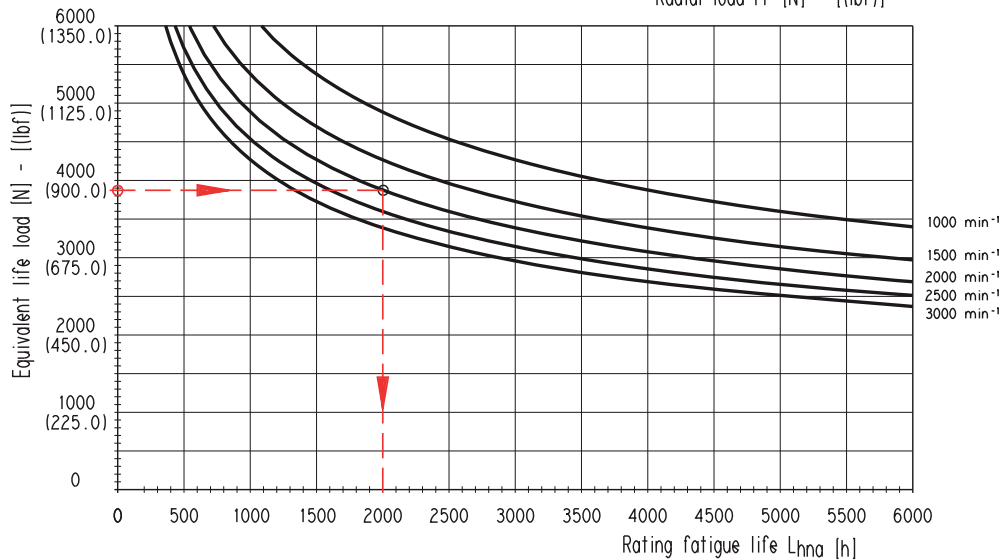
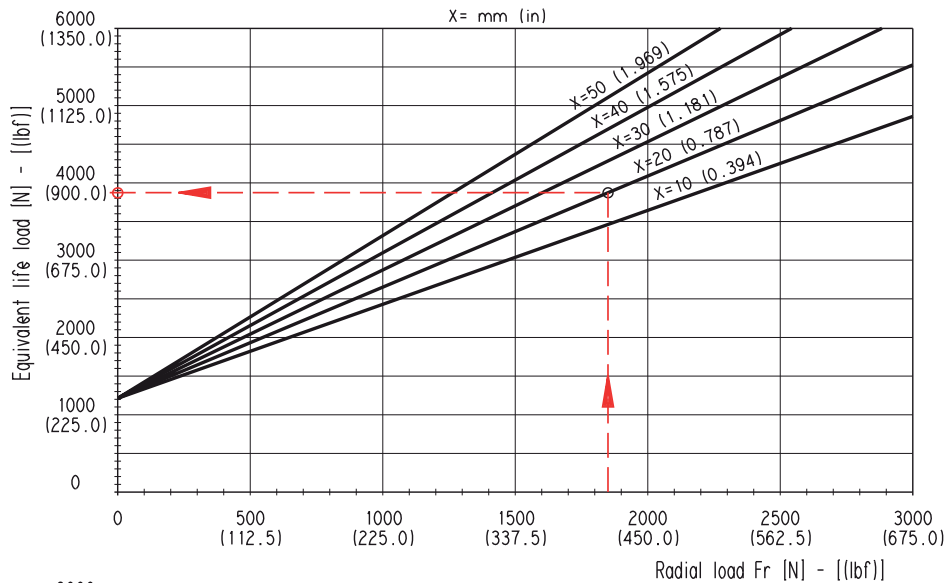


X= Distance of the radial load result from the mounting flange [mm (in)].

Each curve has been obtained at:
Lubricant oil ISO VG 46
Temperature 60 °C (140 °F)
Without or with very low axial load

Example

Fr Radial load	1850 N (416.25 lbf)
X	20 mm (0.787 in)
Speed	2000 min ⁻¹
Rating fatigue life	≈ 2000 h



D033-263/1003

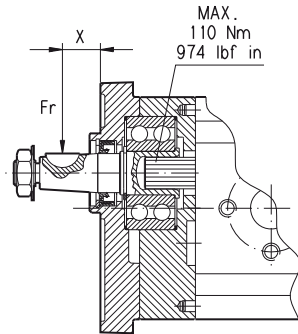
01/10.03

POLARIS 20

VERSION WITH OUTBOARD BEARING

5

D033-115/0603

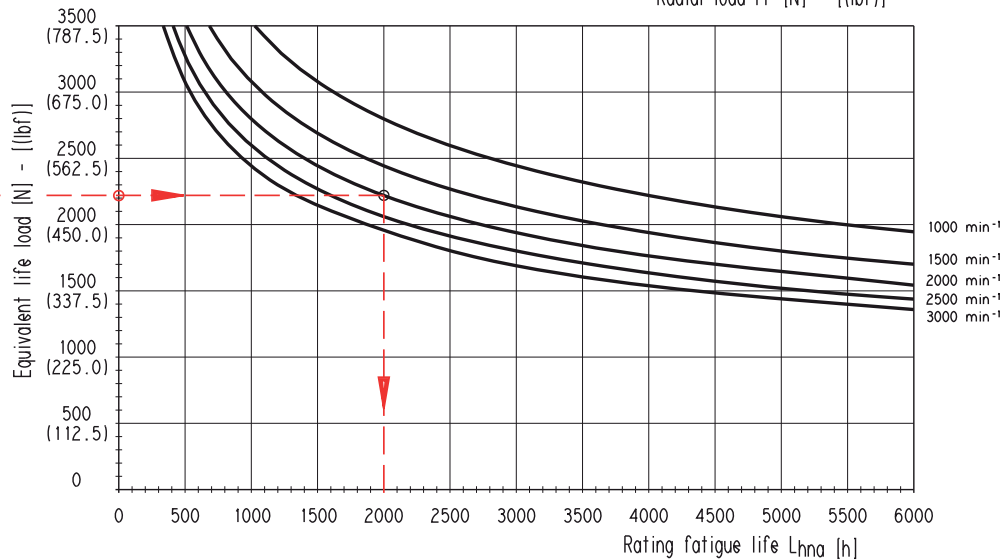
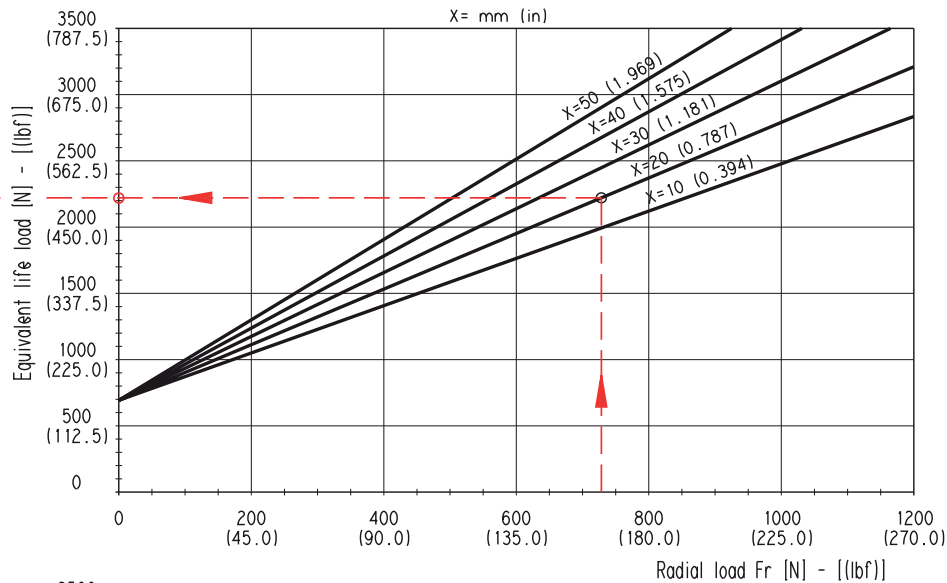


X= Distance of the radial load result from the mounting flange [mm (in)].

Each curve has been obtained at:
Lubricant oil ISO VG 46
Temperature 60 °C (140 °F)
Without or with very low axial load

Example

Fr Radial load	725 N (163.13 lbf)
X	20 mm (0.787 in)
Speed	2000 min ⁻¹
Rating fatigue life	≈ 2000 h



01/10.03

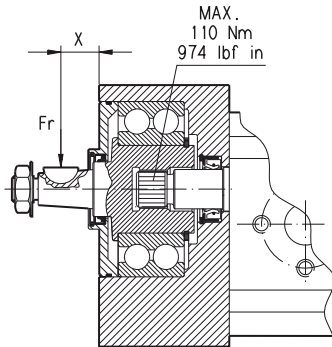
D033-264/1003

POLARIS 20

VERSION WITH OUTBOARD BEARING

7 - 8 - 9

D033-118/0603

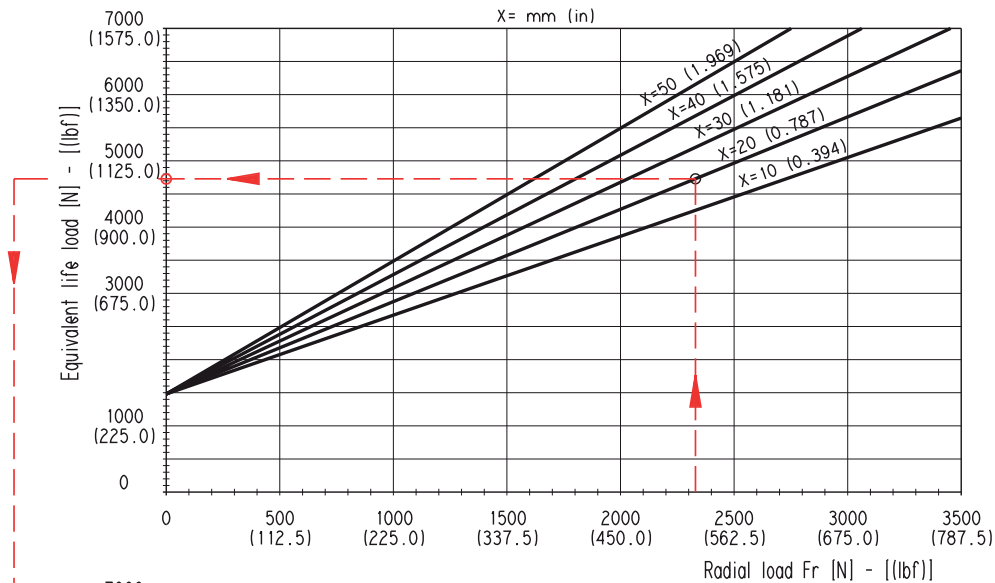


X= Distance of the radial load result from the mounting flange [mm (in)].

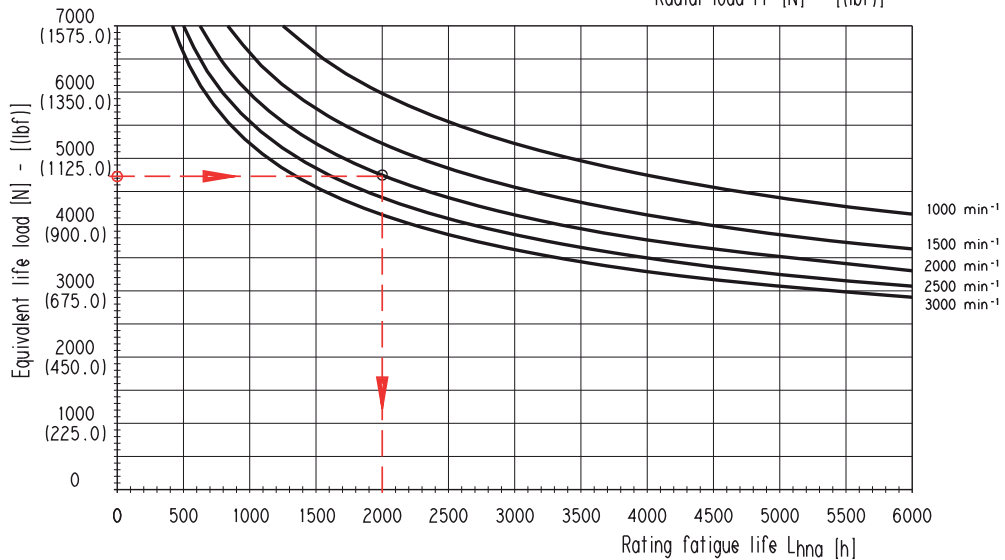
Each curve has been obtained at:
Lubricant oil ISO VG 46
Temperature 60 °C (140 °F)
Without or with very low axial load

Example

Fr Radial load	.....	2330 N (524.25 lbf)
X	.....	20 mm (0.787 in)
Speed	.....	2000 min ⁻¹
Rating fatigue life	.....	≈ 2000 h



D033-265/1003



01/10.03

POLARIS 20

DRIVE SHAFTS

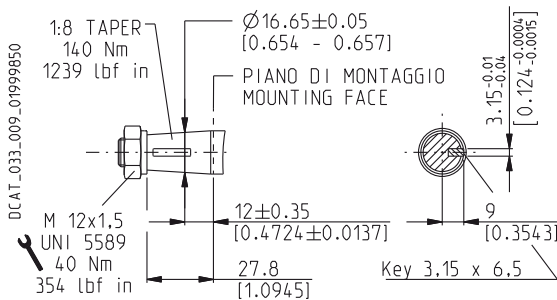
EUROPEAN TAPERED 1:8

82

Not available with size:

20•10,5 - 20•24,5 - 20•27,8

Mounting face refer to flange code **E2**



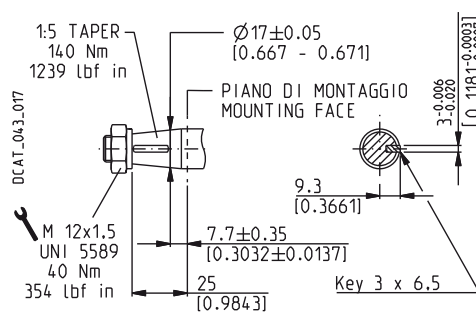
GERMAN TAPERED 1:5

54

Not available with size:

20•7,2 - 20•10,5 - 20•19 - 20•24,5 - 20•27,8 - 20•31,5

Mounting face refer to flanges code **B4** and **B5**

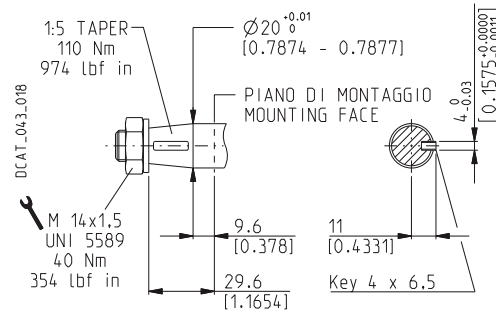


GERMAN TAPERED 1:5

55

Only for version **5, 9** and **W8** with outboard bearing

Mounting face refer to flange code **B2**



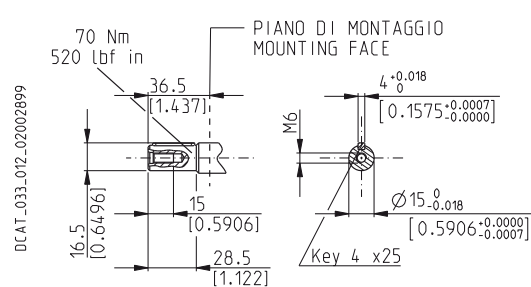
STRAIGHT

46

Not available with size:

20•7,2 - 20•10,5 - 20•19 - 20•24,5 - 20•25 - 20•27,8 - 20•31,5

Mounting face refer to flange code **E2**



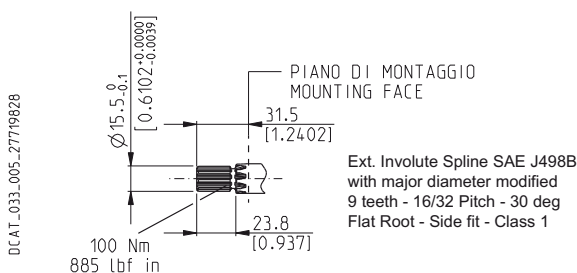
SAE "A" SPLINE

03

Not available with size:

20•24,5 - 20•27,8

Mounting face refer to flange code **S1**



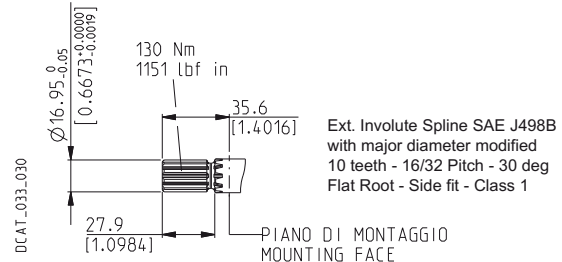
SPLINE

01

Not available with size:

20•6,3 - 20•9 - 20•10,5 - 20•19

Mounting face refer to flange code **S1**



01/10.03

POLARIS 20

DRIVE SHAFTS

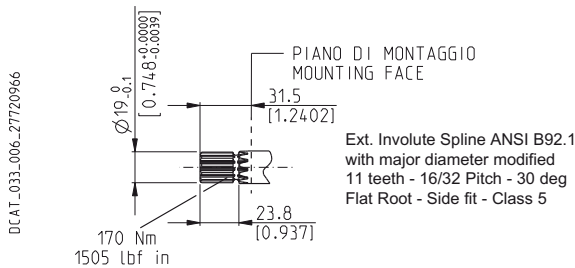
SAE SPLINE

07

Not available with size:

20•7,2 - 20•10,5 - 20•19 - 20•24,5 - 20•27,8

Mounting face refer to flange code S1



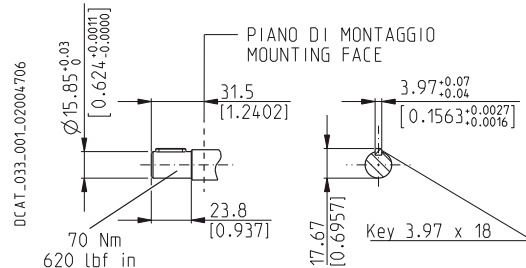
SAE "A" STRAIGHT

31

Not available with size:

20•10,5 - 20•19 - 20•24,5 - 20•27,8

Mounting face refer to flange code S1



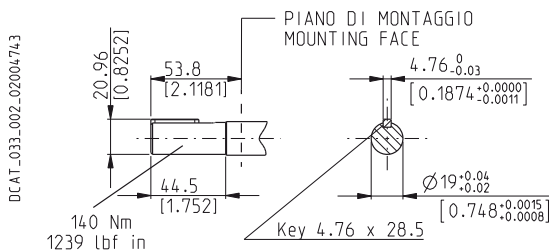
STRAIGHT

49

Not available with size:

20•7,2 - 20•19 - 20•24,5

Mounting face refer to flange code S1



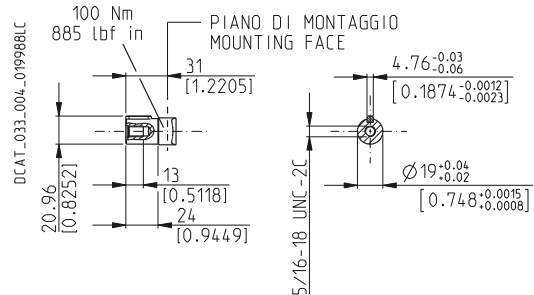
STRAIGHT

50

Not available with size:

20•7,2 - 20•10,5 - 20•19 - 20•24,5 - 20•27,8

Mounting face refer to flange code S1



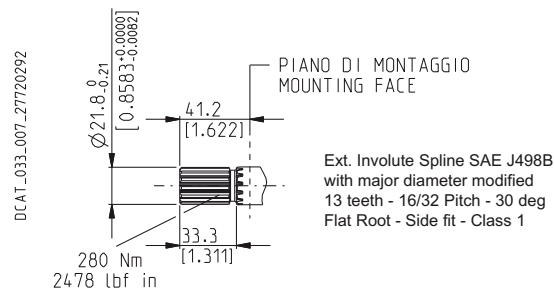
SAE "B" SPLINE

04

Not available with size:

20•4 - 20•7,2 - 20•10,5 - 20•24,5 - 20•27,8

Mounting face refer to flange code S5



SAE "B" STRAIGHT

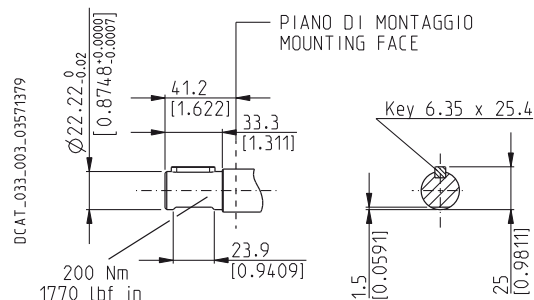
32

Not available with size:

20•4 - 20•7,2 - 20•8 - 20•10,5 - 20•11,2

20•19 - 20•24,5 - 20•27,8

Mounting face refer to flange code S5



01/10.03

POLARIS 20

DRIVE SHAFTS

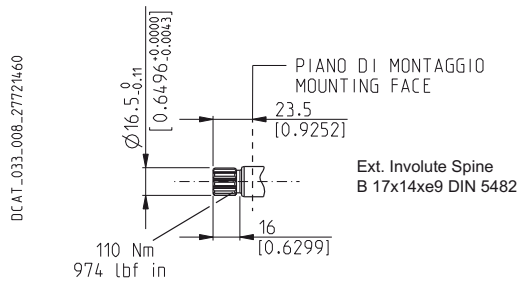
DIN 5482 SPLINE

12

Not available with size:

20•10,5 - 20•19 - 20•24,5 - 20•27,8

Mounting face refer to flange code **B2**



STRAIGHT

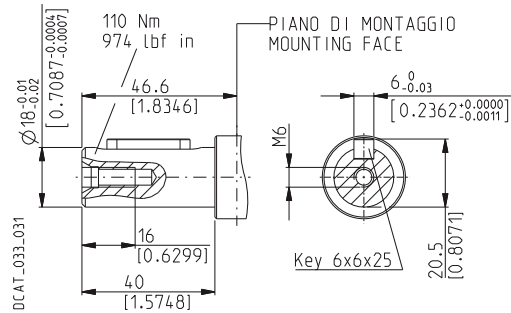
48

Only for version **6** with outboard bearing

Available in 0 version only with size:

20•20

Mounting face refer to flange code **E2**

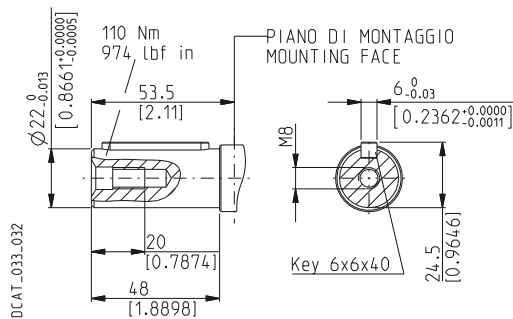


STRAIGHT

B1

Only for version **8** and **5** with outboard bearing

Mounting face refer to flange code **E2**



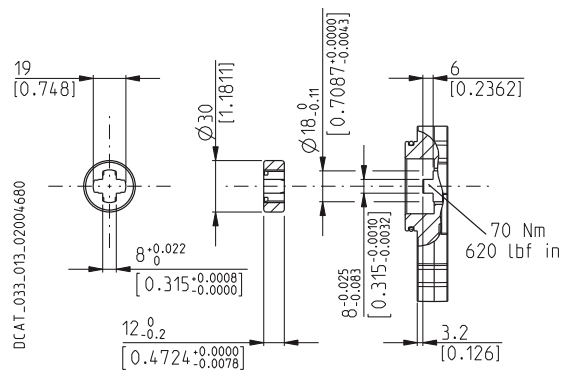
TANG

95

Not available with size:

20•7,2 - 20•10,5 - 20•19 - 20•24,5 - 20•27,8

Mounting face refer to flange code **B6**



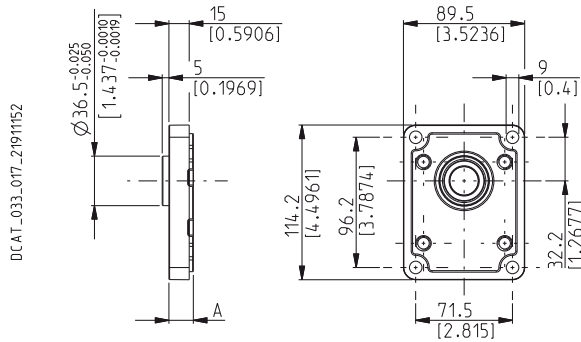
01/10.03

POLARIS 20

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

EUROPEAN

E2

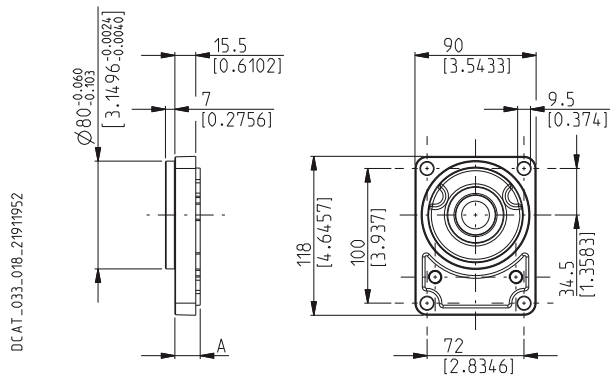


		DRIVE SHAFTS See page 52 ÷ 54											
VERSIONS See page 46	A mm (in)	82	46	B1	03	04	07	12	31	48	49	50	54
0	18 (0.7087)	#	#		x	x	x	x	x	x	x	x	x
4	55,4 (2.1811)	#											
5	43,6 (1.7165)	#		x	x						x	x	x
6	55,4 (2.1811)									#			
7	59,4 (2.3386)	#											
8	59,4 (2.3386)			#									

Standard combination
x Available combination

GERMAN

B2



		DRIVE SHAFTS See page 52 ÷ 54									
VERSIONS See page 46	A mm (in)	12	54	55	01	03	31	46	49	82	
0	18,8 (0.7402)	#	#		x	x	x	x	x	x	
5	44,4 (1.7480)		x	x		x			x	x	
9	59,4 (1.7441)			x							

Standard combination
x Available combination

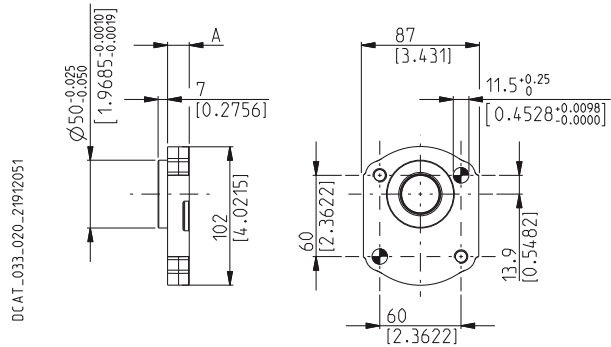
01/10.03

POLARIS 20

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

GERMAN 2 BOLTS

B4



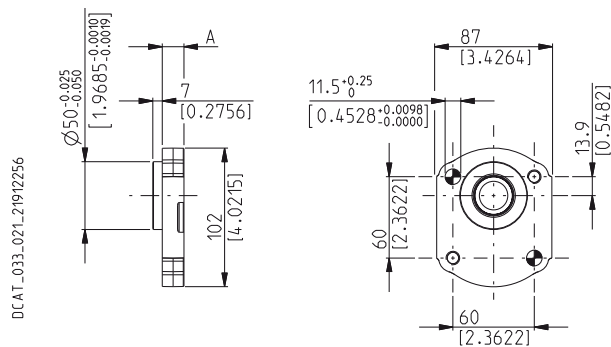
DCA1_033_020_21912051

		DRIVE SHAFTS See page 52 ÷ 54						
VERSIONS See page 46	A mm (in)	54	03	12	31	49	54	82
0	16 (0.63)	#	x	x	x	x	x	x
5	41,6 (1.6378)	x	x			x	x	x

Standard combination
x Available combination

GERMAN 2 BOLTS

B5



DCA1_033_021_21912256

		DRIVE SHAFTS See page 52 ÷ 54						
VERSIONS See page 46	A mm (in)	54	03	12	31	49	54	82
0	16 (0.63)	#	x	x	x	x	x	x
5	41,6 (1.6378)	x	x			x	x	x

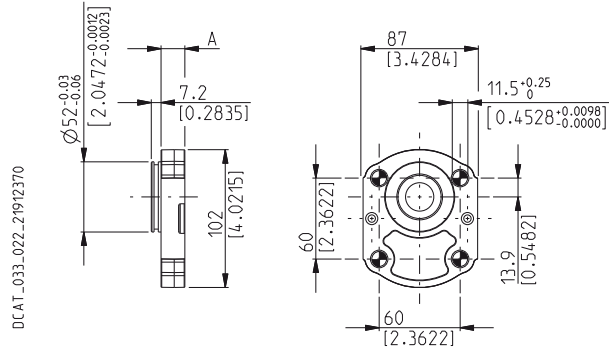
Standard combination
x Available combination

01/10.03

POLARIS 20 MOUNTING FLANGES AND TABLE OF COMPATIBILITY

GERMAN 4 BOLTS

B6



DCAT_033_022_21912370

DRIVE SHAFTS

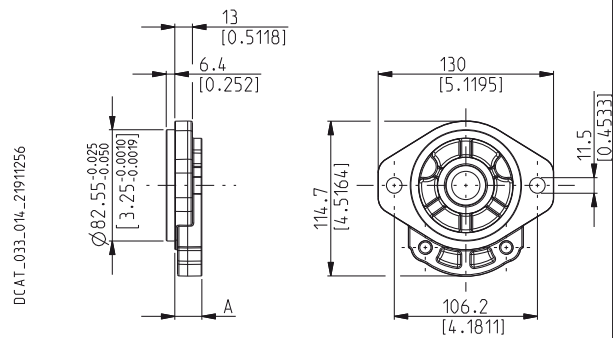
See page 52 ÷ 54

VERSIONS See page 46	A mm (in)	95	07	12
0	17,7 (0.6968)	#	x	x
5	43,3 (1.747)	x		

Standard combination
x Available combination

SAE "A" 2 BOLTS

S1



DCAT_033_014_21911256

DRIVE SHAFTS

See page 52 ÷ 54

VERSIONS See page 46	A mm (in)	01	03	04	07	12	31	32	46	49	50	54	82
0	20 (0.787)	#	#	x	#	x	#	x	x	#	x	x	x
5	45,6 (1.7953)		x							x	x	x	x

Standard combination
x Available combination

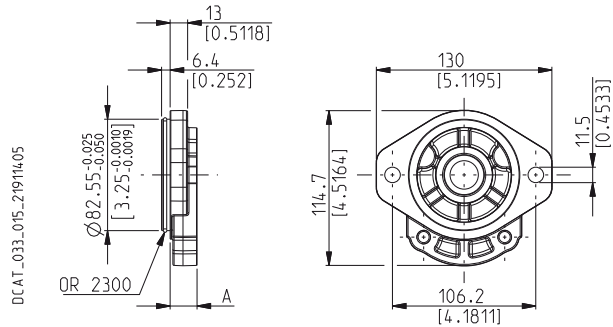
01/10.03

POLARIS 20

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

SAE "A" 2 BOLTS

S2



DRIVE SHAFTS

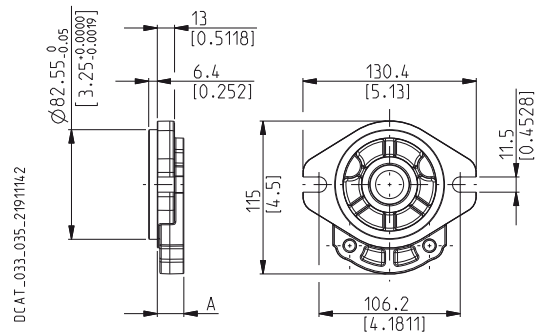
See page 52 ÷ 54

VERSIONS See page 46	A mm (in)	01	03	04	07	12	31	32	46	49	50	54	82
0	20 (0.7874)	#	#	x	#	x	#	x	x	#	x	x	x
5	45,6 (1.7953)		x							x	x	x	x

Standard combination
x Available combination

SAE "A" 2 BOLTS

S9



DRIVE SHAFTS

See page 52 ÷ 54

VERSIONS See page 46	A mm (in)	01	03	04	07	12	31	32	46	49	50	54	82
0	20 (0.7874)	#	#	x	#	x	#	x	x	#	x	x	x
5	45,6 (1.7953)		x							x	x	x	x

Standard combination
x Available combination

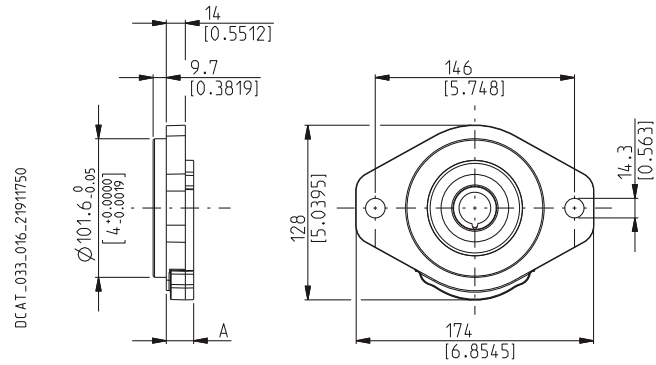
01/10.03

POLARIS 20

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

SAE "B" 2 BOLTS

S5

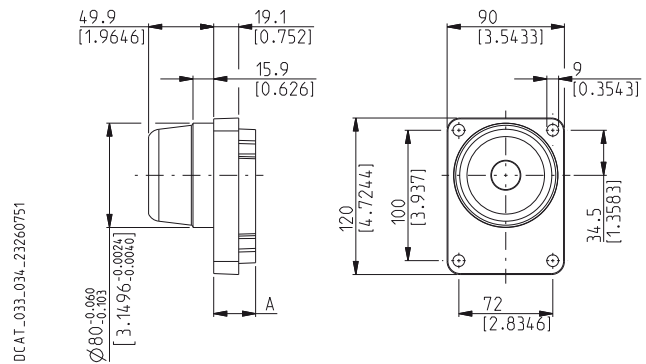


		DRIVE SHAFTS See page 52 ÷ 54		
VERSIONS See page 46	A mm (in)	04	32	49
0	20 (0.7874)	#	#	x
5	45,6 (1.7953)			x

Standard combination
x Available combination

GERMAN

W8



		DRIVE SHAFTS See page 52 ÷ 54
VERSIONS See page 46	A mm (in)	55
W8	32,1 (1.2638)	#

Standard combination
x Available combination

01/10.03


IN/OUT PORTS TYPE																		
PORTS TYPE	SIDE PORTS												REAR PORTS					
	German		European		Split SSM		Split SSS		Gas BSPP		SAE ODT		Gas BSPP		SAE ODT			
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Pump type																		
Motor type	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN
PL. 10•1	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA	
PL. 10•1,5	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA	
PL. 10•2	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA	
PL. 10•2,5	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA	
PL. 10•3,15	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA	
PL. 10•4	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA	
PL. 10•5	BB	BA								GD	GD	OB	OA	GD	GD	OB	OA	
PL. 10•5,8	BB	BA								GD	GD	OB	OA	GD	GD	OB	OA	
PL. 10•6,3	BB	BA								GD	GD	OB	OA	GD	GD	OB	OA	
PL. 10•8	BB	BA								GD	GD	OC	OB	GD	GD	OB	OB	
PL. 10•10	BB	BA								GD	GD	OC	OB	GD	GD	OB	OB	
PL. 20•4	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•6,3	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•7,2	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•8	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•9	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•10,5	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•11,2	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•14	BE	BC	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•16	BE	BC	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•19	BE	BC	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•20	BE	BC	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•24,5	BE	BC	EB	EA	MC	MB	SC	SB	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•25	BE	BC	EB	EA	MC	MB	SC	SB	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•27,8	BE	BC	EB	EA	MC	MB	SC	SB	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•31,5	BE	BC	EB	EA	MC	MB	SC	SB	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 30•22	BM	BL	ED	EB	MB	MA	SB	SA	GF	GF	OF	OD						
PL. 30•27	BM	BL	ED	EB	MC	MB	SC	SB	GF	GF	OF	OD						
PL. 30•34	BM	BL	ED	EB	MC	MB	SC	SB	GF	GF	OF	OD						
PL. 30•38	BM	BL	ED	EB	MD	MC	SD	SC	GF	GF	OG	OF						
PL. 30•43	BM	BL	ED	EB	MD	MC	SD	SC	GF	GF	OG	OF						
PL. 30•46	BM	BL	ED	EB	MD	MC	SD	SC	GF	GF	OG	OF						
PL. 30•51	BM	BL	ED	EB	MD	MC	SD	SC	GF	GF	OG	OF						
PL. 30•61	BM	BL	ED	EB	ME	MD	SE	SD	GG	GF	OH	OG						
PL. 30•73	BM	BL	EF	ED	ME	MD	SE	SD	GG	GF	OH	OG						
PL. 30•82	BM	BL	EF	ED	ME	MD	SE	SD	GH	GG	OH	OG						
PL. 30•90	BM	BL	EF	ED	MF	ME	SF	SE	GH	GG	OH	OG						


01/10.03

EXTERNAL DRAIN PORTS

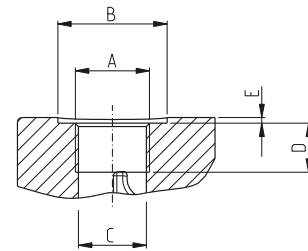
IN/OUT PORTS TYPE	SIDE PORTS						REAR PORTS	
	German	European	Split SSM	Split SSS	Gas BSPP	SAE ODT	Gas BSPP	SAE ODT
PL. 10	GA	–	–	–	GA	03	GA	03
PL. 20	TA	GB	GB	03	GB	03	GB	03
PL. 30	GC	GC	GC	OA	GC	OA	–	–


DRAIN PORTS SIZES

 Tightening torque for low pressure side port.

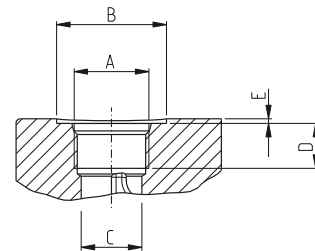
GAS STRAIGHT THREAD PORTS							BSPP
British standard pipe parallel (55°) conforms to UNI - ISO 228							
CODE	Nominal size	A	∅ B	∅ C	D	E	 Nm (lbf in)
GA	1/8"	G 1/8	16,5 (0.6496)	8,75 (0.3444)	12 (0.4724)	1 (0.0394)	5 ^{+0,25} (44 ÷ 46)
GB	1/4"	G 1/4	21,5 (0.8465)	12 (0.4724)	15 (0.5906)	1,5 (0.0591)	15 ⁺¹ (133 ÷ 142)


DCAT_006_026_21064779



METRIC STRAIGHT THREAD PORTS ISO 6149							METRIC
Metric thread ISO 60° conforms to ISO/R 262							
CODE	A	∅ B	∅ C	D	E	 Nm (lbf in)	
TA	M 10x1	22 (0.8661)	9 (0.3543)	13 (0.5118)	0,5 (0.0197)	10 ^{+0,5} (89 ÷ 93)	

DCAT_006_027_21060524




SAE STRAIGHT THREAD PORTS J514							ODT
American straight thread UNC-UNF 60° conforms to ANSI B 1.1							
CODE	A	∅ B	∅ C	D	E	 Nm (lbf in)	
03	7/16"-20 UNF-2B	21 (0.8267)	9,5 (0.3740)	14 (0.5512)	1 (0.0394)	12 ⁺¹ (106 ÷ 115)	

Other drain ports are shown on subsequent pages.

01/10.03

PORTS SIZES

 Tightening torque for low pressure side port.



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

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

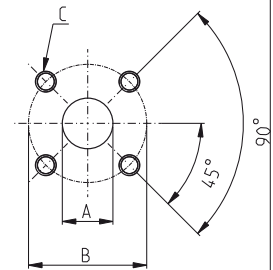
GERMAN FLANGED PORTS - 4 Bolts

GERMAN

Metric thread ISO 60° conforms to ISO/R 262

CODE	A	B	C		
	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
BA	8 (0.3150)	30 (1.1811)	M6 12 (0.4724)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
BB	13 (0.5118)	30 (1.1811)	M6 12 (0.4724)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
BC	15 (0.5906)	35 (1.3780)	M 6 12 (0.4724)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
BE	20 (0.7874)	40 (1.5748)	M 6 12 (0.4724)	15 ⁺¹ (133 ÷ 142)	15 ⁺¹ (133 ÷ 142)
BL	19 (0.7480)	55 (2.1654)	M8 18 (0.7087)	20 ⁺¹ (177 ÷ 186)	20 ⁺¹ (177 ÷ 186)
BM	27 (1.0630)	55 (2.1654)	M8 18 (0.7087)	15 ⁺¹ (133 ÷ 142)	20 ⁺¹ (177 ÷ 186)



DCAT_033_028_17661888



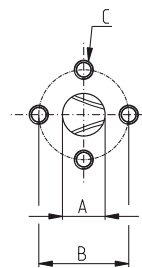
EUROPEAN FLANGED PORTS - 4 Bolts

EUROPEAN

Metric thread ISO 60° conforms to ISO/R 262

CODE	A	B	C		
	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
EA	13 (0.5118)	30 (1.1811)	M 6 13 (0.5118)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
EB	19 (0.7480)	40 (1.5748)	M 8 14 (0.5512)	15 ⁺¹ (133 ÷ 142)	15 ⁺¹ (133 ÷ 142)
			M 8 (◆) 18 (0.7087)	15 ⁺¹ (◆) (133 ÷ 142)	15 ⁺¹ (◆) (133 ÷ 142)
ED	27 (1.0630)	51 (2.0079)	M 10 18 (0.7087)	20 ⁺¹ (177 ÷ 186)	30 ^{+2,5} (266 ÷ 288)
EF	33 (1.2992)	62 (2.4409)	M 12 18 (0.7087)	25 ⁺¹ (221 ÷ 230)	50 ^{+2,5} (443 ÷ 465)


DCAT_006_024_21060533



(◆) For POLARIS 30

01/10.03

PORTS SIZES

 Tightening torque for low pressure side port.



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

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

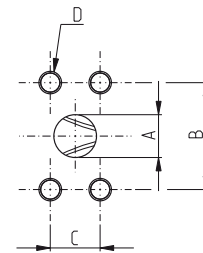
SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

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)
MA	12,5 (0.4921)	38,1 (1.50)	17,5 (0.6890)	M 8	15 ⁺¹	15 ⁺¹
				14 (0.5512)	(133 ÷ 142)	(133 ÷ 142)
				M8 (◆)	20 ⁺¹ (◆)	20 ⁺¹ (◆)
MB	19 (0.7480)	47,6 (1.8740)	22,2 (0.8740)	M 10	20 ⁺¹	25 ⁺¹
				14 (0.5512)	(177 ÷ 186)	(266 ÷ 288)
				M 10 (◆)	20 ⁺¹ (◆)	35 ^{+2,5} (◆)
MC	25,4 (1.0000)	52,4 (2.0630)	26,2 (1.0315)	M 10	20 ⁺¹	25 ⁺¹
				14 (0.5512)	(177 ÷ 186)	(266 ÷ 288)
				M 10 (◆)	20 ⁺¹ (◆)	35 ^{+2,5} (◆)
MD	30,5 (1.2008)	58,7 (2.3110)	30,2 (1.1890)	M 10	20 ⁺¹	30 ^{+2,5}
				15 (0.5906)	(177 ÷ 186)	(266 ÷ 288)
				M 10 (◆)	20 ⁺¹ (◆)	35 ^{+2,5} (◆)
ME	39,3 (1.5472)	69,8 (2.7480)	35,7 (1.4055)	M 12	30 ^{+2,5}	60 ⁺⁵
				22 (0.8661)	(266 ÷ 288)	(531 ÷ 575)
MF	51 (2.0079)	77,8 (3.0630)	42,9 (1.6890)	M 12	30 ^{+2,5}	60 ⁺⁵
				22 (0.8661)	(266 ÷ 288)	(531 ÷ 575)

DCAT_006_025_21064252





(◆) For POLARIS 30

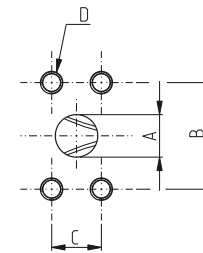
SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

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)
SA	12,5 (0.4921)	38,1 (1.50)	17,5 (0.6890)	5/16-18 UNC-2B	15 ⁺¹	15 ⁺¹
				14 (0.5512)	(133 ÷ 142)	(133 ÷ 142)
				5/16-18 UNC-2B (◆)	20 ⁺¹ (◆)	20 ⁺¹ (◆)
SB	19 (0.7480)	47,6 (1.8740)	22,2 (0.8740)	3/8 - 16 UNC-2B	20 ⁺¹	20 ⁺¹
				14 (0.5512)	(177 ÷ 186)	(177 ÷ 186)
				3/8 - 16 UNC-2B (◆)	30 ^{+2,5} (◆)	20 ⁺¹ (◆)
SC	25,4 (1.0000)	52,4 (2.0630)	26,2 (1.0315)	3/8 - 16 UNC-2B	20 ⁺¹	25 ⁺¹
				14 (0.5512)	(177 ÷ 186)	(221 ÷ 230)
				3/8 - 16 UNC-2B (◆)	20 ⁺¹ (◆)	30 ^{+2,5} (◆)
SD	30,5 (1.2008)	58,7 (2.3110)	30,2 (1.1890)	7/16 - 14 UNC-2B	20 ⁺¹	45 ^{+2,5}
				22 (0.8661)	(177 ÷ 186)	(398 ÷ 420)
SE	39,3 (1.5472)	69,8 (2.7480)	35,7 (1.4055)	1/2 - 13 UNC-2B	30 ^{+2,5}	70 ⁺⁵
				22 (0.8661)	(266 ÷ 288)	(620 ÷ 664)
SF	51 (2.0079)	77,8 (3.0630)	42,9 (1.6890)	1/2 - 13 UNC-2B	30 ^{+2,5} (◆)	70 ⁺⁵
				22 (0.8661)	(266 ÷ 288)	(620 ÷ 664)


DCAT_006_028_21060740




(◆) For POLARIS 30

01/10.03

PORTS SIZES

 Tightening torque for low pressure side port.

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

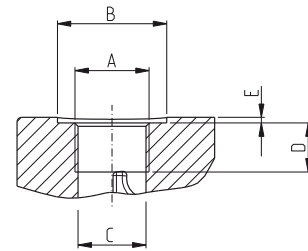
For reversible rotation, please consult only the tightening torque for high pressure side port.



GAS STRAIGHT THREAD PORTS

BSPP

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

DCAT_006_026_21064779




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	3/8"	G 3/8	25 (0.9843)	15 (0.5906)	14 (0.5512)	2 (#) (0.0787)	15 ⁺¹ (#) (133 ÷ 142)	–
			–				20 ⁺¹ (177 ÷ 186)	25 ⁺¹ (221 ÷ 230)
GD	1/2"	G 1/2	–	19 (0.7480)	14 (0.5512)	–	20 ⁺¹ (177 ÷ 186)	50 ^{+2,5} (443 ÷ 465)
							17 (◆) (0.6693)	50 ^{+2,5} (◆) (443 ÷ 465)
GE	3/4"	G 3/4	–	24,5 (0.9646)	18 (0.7087)	–	30 ^{+2,5} (266 ÷ 288)	90 ⁺⁵ (797 ÷ 841)
GF	1"	G 1	–	30,5 (1.2008)	18 (0.7086)	–	50 ^{+2,5} (443 ÷ 465)	130 ⁺¹⁰ (1151 ÷ 1239)
GG	1" 1/4	G 1 1/4	–	39 (1.5354)	22 (0.8661)	–	60 ⁺⁵ (531 ÷ 575)	170 ⁺¹⁰ (1505 ÷ 1593)
GH	1" 1/2	G 1 1/2	–	45 (1.7716)	24 (0.9448)	–	70 ⁺⁵ (620 ÷ 664)	210 ⁺¹⁵ (1859 ÷ 1992)


(#) Drain port

(◆) For POLARIS 20

01/10.03

PORTS SIZES

 Tightening torque for low pressure side port.

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

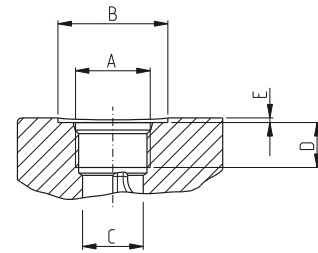
For reversible rotation, please consult only the tightening torque for high pressure side port.



SAE STRAIGHT THREAD PORTS J514

ODT

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

DCAT_006-027-21060524

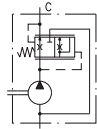
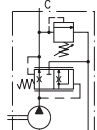
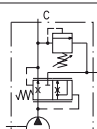
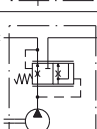
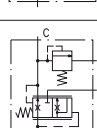
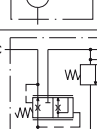
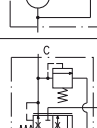
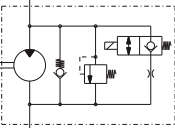
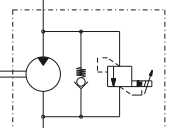
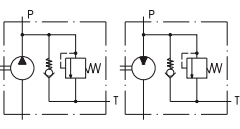
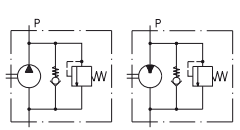
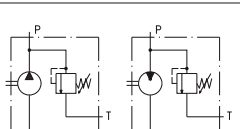
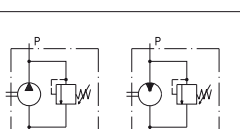
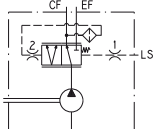
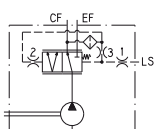
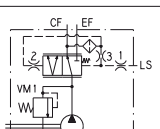
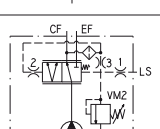
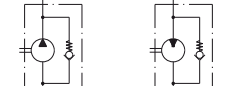


CODE	Nominal size	A	Ø B	Ø C	D	E		
			mm (in)	mm (in)	mm (in)	mm (in)	Nm (lbf in)	Nm (lbf in)
OA	3/8"	9/16" - 12 UNF - 2B	26 (1.0236)	13 (0.5118)	15 (0.5906)	1 (0.03934)	15 ⁺¹ (133 ÷ 142)	25 ⁺¹ (221 ÷ 230)
						2 (#) (0.0787)	15 ⁺¹ (#) (133 ÷ 142)	-
OB	1/2"	3/4" - 16 UNF - 2B	32 (1.2598)	17,5 (0.690)	15 (0.5906)	-	20 ⁺¹ (177 ÷ 186)	45 ^{+2,5} (398 ÷ 420)
OC	5/8"	7/8" - 14 UNF - 2B	35 (1.3780)	20,5 (0.8071)	15 (◆) (0.5906)	0,5 (0.0197)	30 ^{+2,5} (266 ÷ 288)	70 ⁺⁵ (620 ÷ 664)
					17 (0.6693)			
OD	3/4"	1 1/16" - 12 UNF - 2B	42 (1.6535)	24,8 (0.9764)	20 (0.7874)	0,5 (0.0197)	40 ^{+2,5} (354 ÷ 376)	120 ⁺¹⁰ (1062 ÷ 1151)
OF	1"	1 5/16" - 12 UNF - 2B	49 (1.9291)	30,5 (1.2008)	20 (0.7874)	0,5 (0.0197)	60 ⁺⁵ (531 ÷ 575)	170 ⁺¹⁰ (1505 ÷ 1593)
OG	1" 1/4	1 5/8" - 12 UNF - 2B	58 (2.2835)	39,1 (1.5394)	20 (0.7874)	0,5 (0.0197)	70 ⁺⁵ (620 ÷ 664)	200 ⁺¹⁰ (1770 ÷ 1858)
OH	1" 1/2	1 7/8" - 12 UNF - 2B	65 (2.5591)	45 (1.7717)	20 (0.7874)	0,5 (0.0197)	100 ⁺⁵ (885 ÷ 929)	270 ⁺¹⁵ (2389 ÷ 2522)

(#) Drain port

(◆) For POLARIS 10

01/10.03

VALVE OPTIONS (◆)		
PRIORITY VALVE		
P1	Costant delivery and internal recirculation of excess flow.	
P2	Costant delivery at controlled pressure. Internal recirculation of excess flow and drain valve.	
P3	Costant delivery at controlled pressure. Excess flow and drain valve must be connected to tank.	
P4	Costant delivery and excess flow can both be used under load.	
P5T	Costant delivery at controlled pressure with drain valve connected to tank. Excess flow can be used under load.	
P7	Costant delivery. Excess flow at controlled pressure can be used under load. Internal recirculation of drain valve.	
P9	Costant delivery at controlled pressure. Internal recirculation of valve drain. Excess flow can be used under load.	
ELECTRIC VALVE FOR MOTORS		
EC08..	By-pass valve normally closed with max. pressure relief valve and anti-cavitation valve.	
DBVSA..	Proportional relief valve and anti-cavitation valve.	
MAX PRESSURE RELIEF VALVE		
VPEF..	Fixed setting with external drain.	
VPIF..	Fixed setting with internal drain.	
VPER..	Adjustable setting with external drain.	
VPIR..	Adjustable setting with internal drain.	
LOAD SENSING VALVE		
...	Static.	
...	Dynamic.	
...	Dynamic with relief valve fitted on the main line.	
...	Dynamic with relief valve fitted on controlled line.	
CHECK VALVE		
V8	Anti-cavitation valve.	

(◆) For more information please consult our technical sales department.

01/10.03

HOW TO ORDER POLARIS 20 SINGLE UNITS

1 2 3 4 5 6 7 8 9 10 11 12 13

PLP20•4 - L 0 82 E2 - L - EA/EA - N EL C * - GB - FS

1	Type	PUMP TYPE	MOTOR TYPE
	in ³ /rev (cm ³ /rev)		
0.30 (4,95)		PLP 20•4	PLM 20•4
0.40 (6,61)		PLP 20•6,3	PLM 20•6,3
0.44 (7,29)		PLP 20•7,2	PLM 20•7,2
0.50 (8,26)		PLP 20•8	PLM 20•8
0.56 (9,17)		PLP 20•9	PLM 20•9
0.66 (10,9)		PLP 20•10,5	PLM 20•10,5
0.69 (11,23)		PLP 20•11,2	PLM 20•11,2
0.89 (14,53)		PLP 20•14	PLM 20•14
1.03 (16,85)		PLP 20•16	PLM 20•16
1.16 (19,09)		PLP 20•19	PLM 20•19
1.29 (21,14)		PLP 20•20	PLM 20•20
1.52 (24,84)		PLP 20•24,5	PLM 20•24,5
1.61 (26,42)		PLP 20•25	PLM 20•25
1.72 (28,21)		PLP 20•27,8	PLM 20•27,8
2.01 (33,03)		PLP 20•31,5	PLM 20•31,5

2	Rotation	CODE
Left		S
Right		D
Reversible rear external drain		R
Reversible side external drain		L
Reversible internl drain		B

3	Version	CODE
Without outboard bearing		0
With outboard bearing		W8
With outboard bearing		4
With outboard bearing		5
With outboard bearing		6
With outboard bearing		7
With outboard bearing		8
With outboard bearing		9

4	Drive shaft	CODE
European tapered 1:8		82
German tapered 1:5		54
German tapered 1:5		55
Straight		46
SAE "A" spline (9 teeth)		03
SAE spline (10 teeth)		01
SAE "A" spline (11 teeth)		07
SAE "A" straight		31
Straight		49
Straight		50
SAE "B" spline		04
SAE "B" straight		32
DIN 54 82 spline		12
Straight (only for version 6)		48
Straight (only for version 8)		B1
Tang		95

CODE	Mounting flange	5
E2	European	
B2	German	
B4	German 2 bolt	
B5	German 2 bolt	
B6	German 4 bolt	
S1	SAE "A" 2 bolt	
S2	SAE "A" 2 bolt	
S9	SAE "A" 2 bolt	
S5	SAE "B" 2 bolt	
W8	German	

CODE	Ports position	6
L	Side	
P	Rear	

CODE	Ports IN/OUT	7
GERMAN FLANGED PORTS		
Side	Rear	Type
BE/BC		PLP 20 4-6,3-7,2-8-9-10,5-11,2 14-16-19-20-24,5-25 27,8-31,5
BC/BE		PLM 20
EUROPEAN FLANGED PORTS		
Side	Rear	Type
EA/EA		PLP 20 4-6,3-7,2-8-9-10,5-11,2 PLM 20
EB/EA		PLP 20 14-16-19-20-24,5-25 27,8-31,5
EA/EB		PLM 20
SAE FLANGED PORTS (SSM)		
Side	Rear	Type
MA/MA		PLP 20 4-6,3-7,2-8-9-10,5-11,2 PLM 20
MB/MA		PLP 20 14-16-19-20
MA/MB		PLM 20
MC/MB		PLP 20 24,5-25-27,8-31,5
MB/MC		PLM 20
SAE FLANGED PORTS (SSS)		
Side	Rear	Type
SA/SA		PLP 20 4-6,3-7,2-8-9-10,5-11,2 PLM 20
SB/SA		PLP 20 14-16-19-20
SA/SB		PLM 20
SC/SB		PLP 20 24,5-25-27,8-31,5
SB/SC		PLM 20

01/10.03

HOW TO ORDER POLARIS 20 SINGLE UNITS

7		Ports IN/OUT		CODE
GAS STRAIGHT THREAD PORTS (BSPP)				
Type		Side	Rear	
4-6,3-7,2-8-9-10,5-11,2	PLP 20	GD/GD	GD/GD	
	PLM 20			
14-16-19-20-24,5-25 27,8-31,5	PLP 20	GE/GD	GE/GD	
	PLM 20				GD/GE	GD/GE
SAE STRAIGHT THREAD PORTS (ODT)				
Type		Side	Rear	
4-6,3-7,2-8-9-10,5-11,2	PLP 20	OC/OC	OC/OC	
	PLM 20			
14-16-19-20-24,5-25 27,8-31,5	PLP 20	OD/OC	OD/OC	
	PLM 20				OC/OD	OC/OD

8		Seals (a)	CODE
		Buna (standard)	N
		Viton	V

9		Cover options	CODE
		Cast iron mounting flange and rear cover (standard - no code)	
		Aluminium mounting flange and cast iron rear cover	E
		Cast iron mounting flange and aluminium rear cover	L
		Aluminium mounting flange and rear cover	EL

10		Shaft seal options	CODE
		High back pressure seal with wiper seal	C
		Standard seal with wiper seal	D
		High back pressure seal	H

CODE		Drain port position - Rev. rotation L	11
L		Side drain with side port position	
*		Side drain with bottom port position	

CODE		Drain port		12
IN/OUT GERMAN FLANGED PORTS				
Side	Rear	Type		
TA		PLP 20	4-6,3-7,2-8-9-10,5-11,2 24,5-25-27,8-31,5	
		PLM 20		

CODE		Drain port		12
IN/OUT EUROPEAN FLANGED PORTS				
Side	Rear	Type		
GB		PLP 20	4-6,3-7,2-8-9-10,5-11,2 24,5-25-27,8-31,5	
		PLM 20		

CODE		Drain port		12
IN/OUT SAE FLANGED PORTS (SSM)				
Side	Rear	Type		
GB		PLP 20	4-6,3-7,2-8-9-10,5-11,2 24,5-25-27,8-31,5	
		PLM 20		

CODE		Drain port		12
IN/OUT SAE FLANGED PORTS (SSS)				
Side	Rear	Type		
03		PLP 20	4-6,3-7,2-8-9-10,5-11,2 24,5-25-27,8-31,5	
		PLM 20		

CODE		Drain port		12
IN/OUT GAS STRAIGHT THREAD PORTS (BSPP)				
Side	Rear	Type		
GB	GB	PLP 20	4-6,3-7,2-8-9-10,5-11,2 24,5-25-27,8-31,5	
		PLM 20		

CODE		Drain port		12
IN/OUT SAE STRAIGHT THREAD PORTS (ODT)				
Side	Rear	Type		
03	03	PLP 20	4-6,3-7,2-8-9-10,5-11,2 24,5-25-27,8-31,5	
		PLM 20		

CODE		Shaft arrangement	13
FS		Female spline	

(a) Choose the seals according to the temperature shown on page 3.



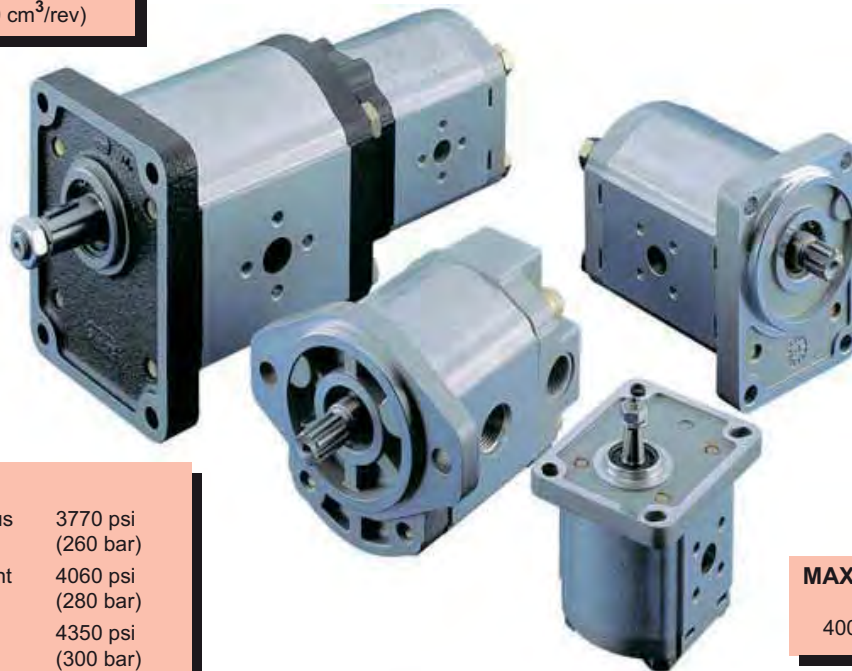
POLARIS

Hydraulic gear pumps and motors

through bore aluminum body

DISPLACEMENTS

From 0.07 in³/rev
(1.07 cm³/rev)
To 5.56 in³/rev
(91.10 cm³/rev)



PRESSURE

Max. Continuous 3770 psi
(260 bar)
Max. Intermittent 4060 psi
(280 bar)
Max. Peak 4350 psi
(300 bar)

MAX. SPEED

4000 min⁻¹

- Group 1, 2 and 3 with displacements from 0.07 in³/rev (1,07 cm³/rev) to 5.56 in³/rev (91.10 cm³/rev).
- Drive shafts, mounting flanges and ports according to the international standards.
- Combination of multiple pumps in standard version, common inlet and separated stages.
- Integrated outboard bearings for heavy duty application.
- Many types of built-in valves.

"POLARIS" more than fifty years of Casappa experience in design and production of hydraulic components, characterized by large investments in research and development in order to propose new and personalized solutions to the market. Our use of CAD 3D in the development of this generation permit us the 3D modelling and the virtual simulation of the behaviour of the components inserted in the hydraulic circuit. This means that the process will take less time and the quality of the products is better.

Polaris pumps and motors are basically composed of a gear housing in aluminium alloy, two gear wheels supported by sleeve bearings and two end plates, the front and the rear cover, either in aluminium or in cast iron with excellent mechanical characteristics. Our success is based largely on the quality of our product. This guaranties the consistencies of the efficiencies and low level of noise emission during the life of our products.

Edition: 01/10.2003



CASAPPA
FLUID POWER DESIGN



GENERAL DATA PUMPS AND MOTORS

Series	Pump type PLP Motor type PLM	Displacement in ³ /rev (cm ³ /rev)	Max. pressure			Max. speed	Min. speed
			p ₁	p ₂	p ₃		
			psi (bar)					min^{-1}
POLARIS 10	PL. 10•1	0.07 (1,07)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•1,5	0.10 (1,60)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•2	0.13 (2,13)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•2,5	0.16 (2,67)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•3,15	0.20 (3,34)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•4	0.26 (4,27)	3625 (250)	3915 (270)	4060 (280)	4000	650
	PL. 10•5	0.33 (5,34)	3625 (250)	3915 (270)	4060 (280)	4000	650
	PL. 10•5,8	0.38 (6,20)	3335 (230)	3625 (250)	3770 (260)	3500	650
	PL. 10•6,3	0.41 (6,67)	3335 (230)	3625 (250)	3770 (260)	3500	650
	PL. 10•8	0.52 (8,51)	2610 (180)	2900 (200)	3045 (210)	3500	650
	PL. 10•10	0.65 (10,67)	2030 (140)	2320 (160)	2465 (170)	3500	650
POLARIS 20	PL. 20•4	0.30 (4,95)	3625 (250)	4060 (280)	4350 (300)	4000	600
	PL. 20•6,3	0.40 (6,61)	3625 (250)	4060 (280)	4350 (300)	4000	600
	PL. 20•7,2	0.44 (7,29)	3625 (250)	4060 (280)	4350 (300)	4000	600
	PL. 20•8	0.50 (8,26)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•9	0.56 (9,17)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•10,5	0.66 (10,9)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•11,2	0.69 (11,23)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•14	0.89 (14,53)	3625 (250)	4060 (280)	4350 (300)	3500	500
	PL. 20•16	1.03 (16,85)	3625 (250)	4060 (280)	4350 (300)	3000	500
	PL. 20•19	1.16 (19,09)	2900 (200)	3190 (220)	3480 (240)	3000	500
	PL. 20•20	1.29 (21,14)	2900 (200)	3190 (220)	3480 (240)	3000	500
	PL. 20•24,5	1.52 (24,84)	2465 (170)	2755 (190)	3045 (210)	2500	500
	PL. 20•25	1.61 (26,42)	2465 (170)	2755 (190)	3045 (210)	2500	500
	PL. 20•27,8	1.72 (28,21)	1885 (130)	2175 (150)	2465 (170)	2000	500
PL. 20•31,5	2.01 (33,03)	1885 (130)	2175 (150)	2465 (170)	2000	500	
POLARIS 30	PL. 30•22	1.34 (21,99)	3625 (250)	3915 (270)	4060 (280)	3000	350
	PL. 30•27	1.63 (26,70)	3625 (250)	3915 (270)	4060 (280)	3000	350
	PL. 30•34	2.11 (34,55)	3480 (240)	3770 (260)	3915 (270)	3000	350
	PL. 30•38	2.40 (39,27)	3480 (240)	3770 (260)	3915 (270)	3000	350
	PL. 30•43	2.68 (43,98)	3335 (230)	3625 (250)	3770 (260)	3000	350
	PL. 30•51	3.16 (51,83)	3045 (210)	3335 (230)	3480 (240)	2500	350
	PL. 30•61	3.74 (61,26)	2755 (190)	3045 (210)	3190 (220)	2500	350
	PL. 30•73	4.50 (73,82)	2465 (170)	2755 (190)	2900 (200)	2500	350
	PL. 30•82	4.98 (81,68)	2320 (160)	2465 (170)	2610 (180)	2200	350
	PL. 30•90	5.56 (91,10)	2175 (150)	2320 (160)	2465 (170)	2200	350

01/10.03

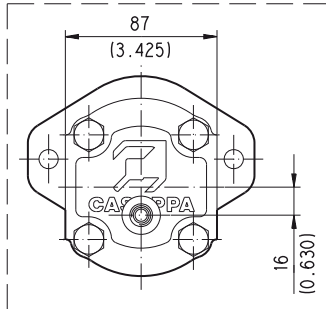
p₁= Max. continuous pressure p₂= Max. intermittent pressure p₃= Max. peak pressure

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

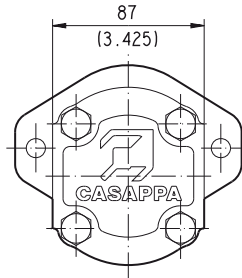
POLARIS 20

SINGLE UNITS SIDE PORTS

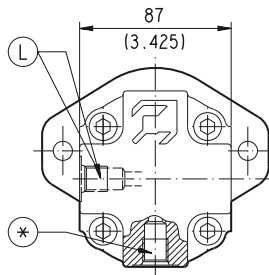
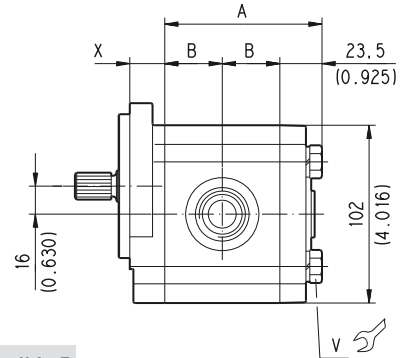
L



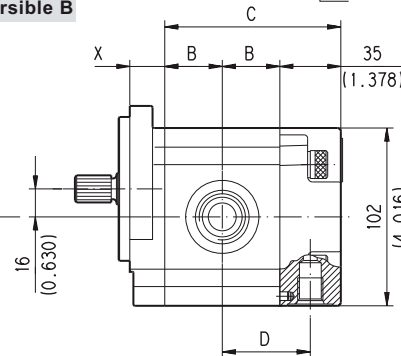
Reversible R



Single rotation S - D and Reversible B



Reversible L



D033-182/0903

Mounting flange type version 0	X	
	mm	(inch)
E2	18	(0.7087)
B2	18,8	(0.7402)
B4	16	(0.6299)
B5	16	(0.6299)
B6	17,7	(0.6969)
S1	20	(0.7874)
S2	20	(0.7874)
S9	20	(0.7874)
S5	20	(0.7874)
W8	32,1	(1.2638)

DRAIN PORT POSITION:

L = Side * = Bottom

DRIVE SHAFTS:

see page 52 ÷ 54

MOUNTING FLANGE:

see page 60 ÷ 64

Mounting flange material	V	
	Screws tightening torque Nm (lbf in)	
Aluminum	45 ⁺⁵	(398 ÷ 403)
Cast iron	70 ⁺⁵	(620 ÷ 664)

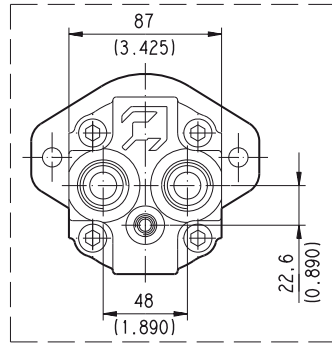
Pump type Motor type	A	B	C	D
	mm (inch)	mm (inch)	mm (inch)	mm (inch)
PL. 20•4	75 (2.9528)	25,75 (1.0138)	86,5 (3.4055)	43,25 (1.7028)
PL. 20•6,3	77,5 (3.0512)	27 (1.0630)	89 (3.5039)	44,5 (1.7520)
PL. 20•7,2	78,5 (3.0905)	27,5 (1.0826)	90 (3.5433)	45 (1.7716)
PL. 20•8	80 (3.1496)	28,25 (1.1122)	91,5 (3.6024)	45,75 (1.8012)
PL. 20•9	81,3 (3.2008)	28,9 (1.1378)	92,8 (3.6535)	46,4 (1.8268)
PL. 20•10,5	84 (3.3070)	30,25 (1.1909)	95,5 (3.7598)	47,75 (1.8799)
PL. 20•11,2	84,5 (3.3268)	30,5 (1.2008)	96 (3.7795)	48 (1.8898)
PL. 20•14	89,5 (3.5236)	33 (1.2992)	101 (3.9764)	50,5 (1.9882)
PL. 20•16	93 (3.6614)	34,75 (1.3681)	104,5 (4.1142)	52,25 (2.0571)
PL. 20•19	96,4 (3.7952)	36,45 (1.4350)	107,9 (4.2480)	53,45 (2.1043)
PL. 20•20	99,5 (3.9173)	38 (1.4961)	111 (4.3701)	55,5 (2.1850)
PL. 20•24,5	105,1 (4.1378)	40,8 (1.6063)	116,6 (4.5905)	58,3 (2.2953)
PL. 20•25	107,5 (4.2323)	42 (1.6535)	119 (4.6850)	59,5 (2.3425)
PL. 20•27,8	110,2 (4.3386)	43,35 (1.7067)	121,7 (4.7913)	60,85 (2.3957)
PL. 20•31,5	117,5 (4.6260)	47 (1.8504)	129 (5.0787)	64,5 (2.5394)

01/10.03

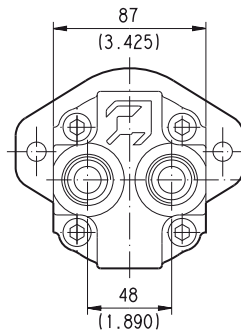
POLARIS 20

SINGLE UNITS REAR PORTS

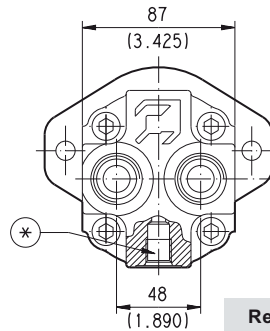
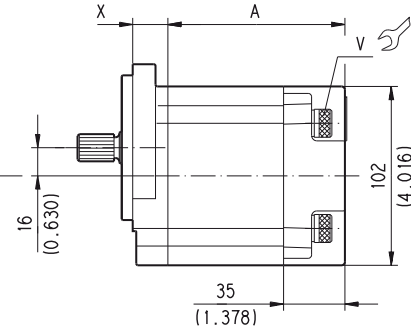
P



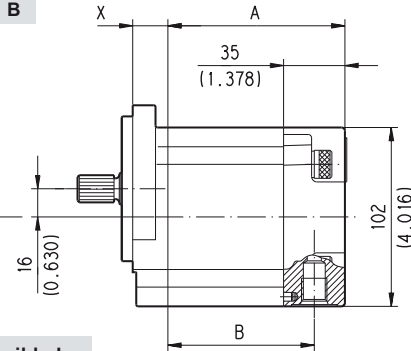
Reversible R



Single rotation S - D e Reversible B



Reversible L



D033-183/0903

Mounting flange type version 0	X	
	mm	(inch)
E2	18	(0.7087)
B2	18,8	(0.7402)
B4	16	(0.6299)
B5	16	(0.6299)
B6	17,7	(0.6969)
S1	20	(0.7874)
S2	20	(0.7874)
S9	20	(0.7874)
S5	20	(0.7874)
W8	32,1	(1.2638)

DRAIN PORT POSITION:

L = Side * = Bottom

DRIVE SHAFTS:

see page 52 ÷ 54

MOUNTING FLANGE:

see page 60 ÷ 64

Mounting flange material	V	
	Screws tightening torque Nm (lbf in)	
Aluminum	45	⁺⁵ (398 ÷ 403)
Cast iron	70	⁺⁵ (620 ÷ 664)

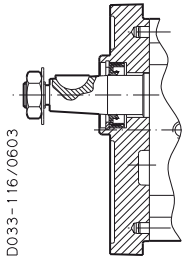
Pump type Motor type	A		B	
	mm	(inch)	mm	(inch)
PL. 20•4	86,5	(3.4055)	69	(2.71765)
PL. 20•6,3	89	(3.5039)	71,5	(2.8150)
PL. 20•7,2	90	(3.5433)	72,5	(2.8543)
PL. 20•8	91,5	(3.6024)	74	(2.9134)
PL. 20•9	92,8	(3.6535)	75,3	(2.9646)
PL. 20•10,5	95,5	(3.7598)	78	(3.0708)
PL. 20•11,2	96	(3.7795)	78,5	(3.0906)
PL. 20•14	101	(3.9764)	83,5	(3.2784)
PL. 20•16	104,5	(4.1142)	87	(3.4252)
PL. 20•19	107,9	(4.2480)	89,9	(3.5393)
PL. 20•20	111	(4.3701)	93,5	(3.6811)
PL. 20•24,5	116,6	(4.5905)	99,1	(3.9016)
PL. 20•25	119	(4.6850)	101,5	(3.9961)
PL. 20•27,8	121,7	(4.7913)	104,2	(4.1024)
PL. 20•31,5	129	(5.0787)	111,5	(4.3898)

01/10.03

VERSIONS

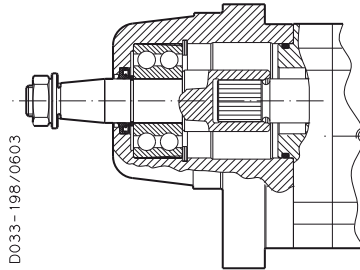
For each version, the possible combination between drive shafts and mounting flanges are shown on pages 57 ÷ 67.

VERSION			0
Available for group:			
10	20	30	

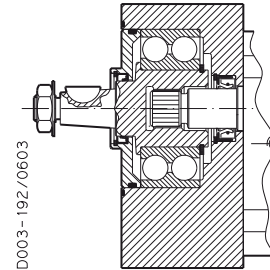


Version for applications without radial and axial load on the drive shaft.

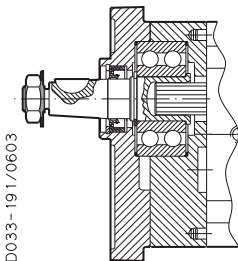
VERSION		W8
Available for group:		
20		



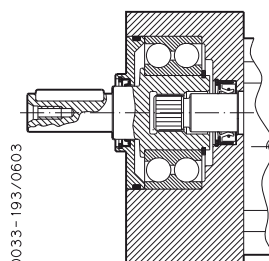
VERSION		4
Available for group:		
20		



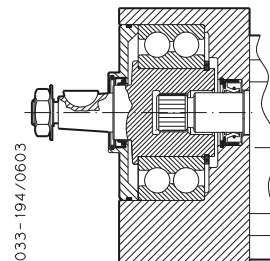
VERSION		5
Available for group:		
20		



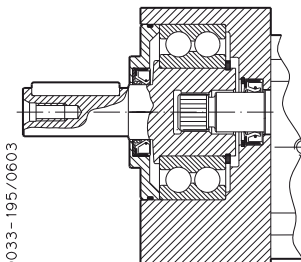
VERSION		6
Available for group:		
20		



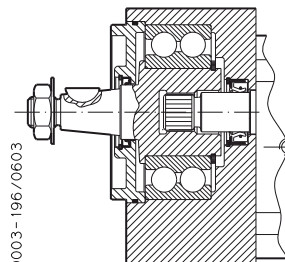
VERSION		7
Available for group:		
20		



VERSION		8
Available for group:		
20		



VERSION		9
Available for group:		
20		



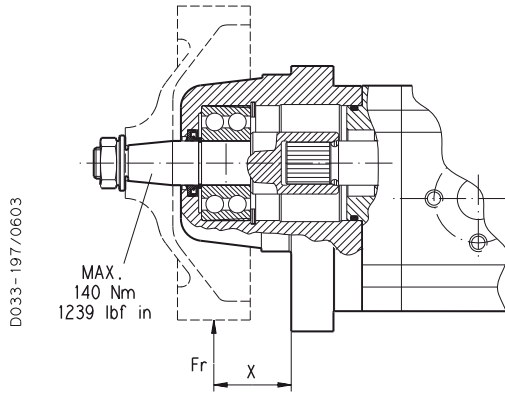
For the outboard bearing life expectancy, diagrams providing approximate selection data will be found on subsequent pages. For particular applications please consult our technical sales department.

01/10.03

POLARIS 20

VERSION WITH OUTBOARD BEARING

W8

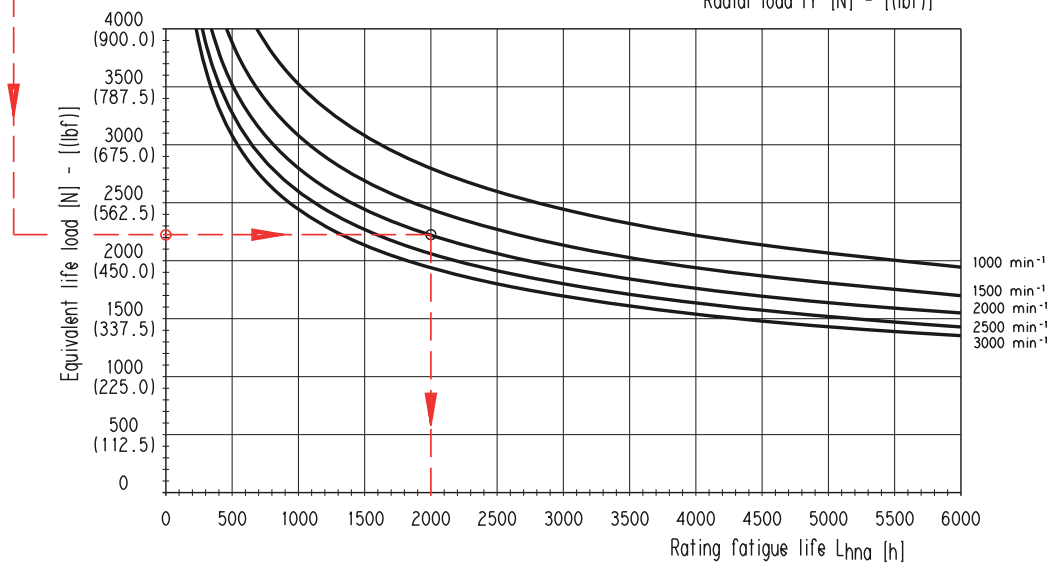
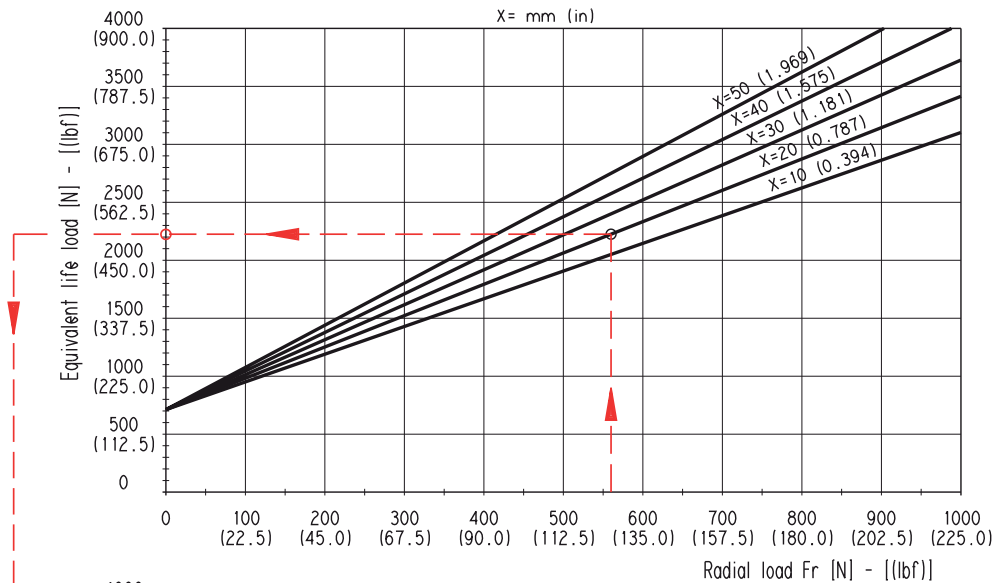


X= Distance of the radial load result from the mounting flange [mm (in)].

Each curve has been obtained at:
Lubricant oil ISO VG 46
Temperature 60 °C (140 °F)
Without or with very low axial load

Example

Fr Radial load	560 N (126.0 lbf)
X	20 mm (0.787 in)
Speed	2000 min ⁻¹
Rating fatigue life	≈ 2000 h



01/10.03

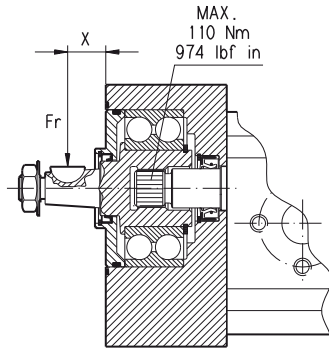
D033-262/1003

POLARIS 20

VERSION WITH OUTBOARD BEARING

4 - 6

D003-114/0603

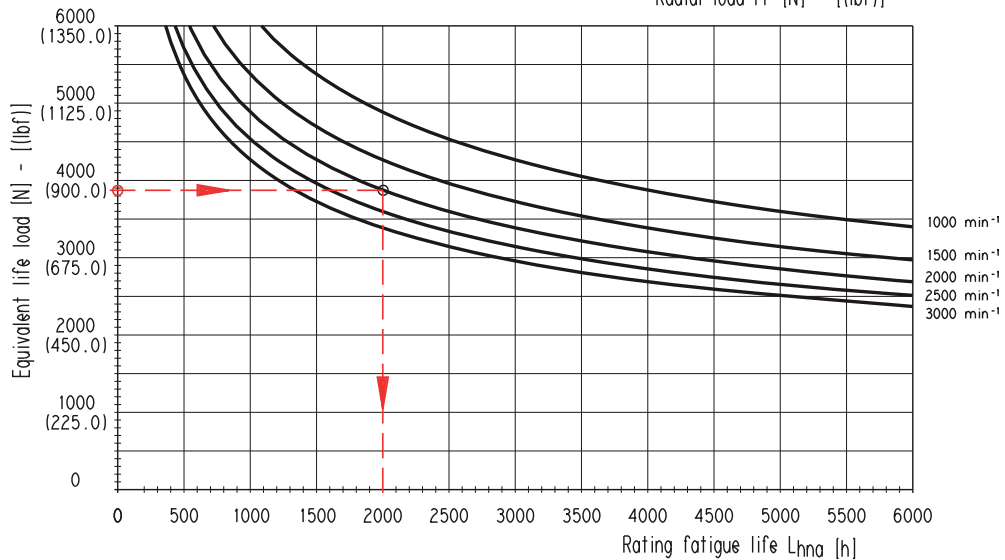
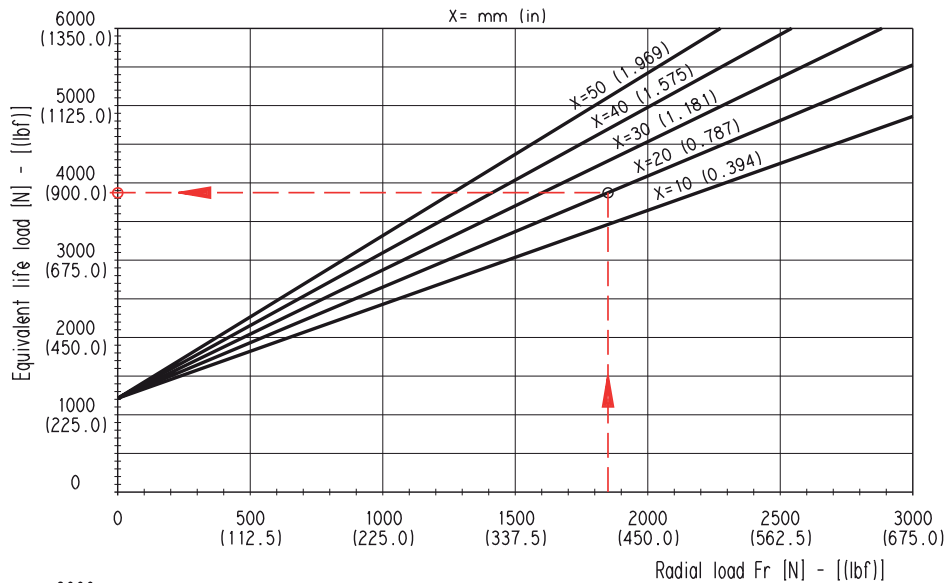


X= Distance of the radial load result from the mounting flange [mm (in)].

Each curve has been obtained at:
Lubricant oil ISO VG 46
Temperature 60 °C (140 °F)
Without or with very low axial load

Example

Fr Radial load	1850 N (416.25 lbf)
X	20 mm (0.787 in)
Speed	2000 min ⁻¹
Rating fatigue life	≈ 2000 h



D033-263/1003

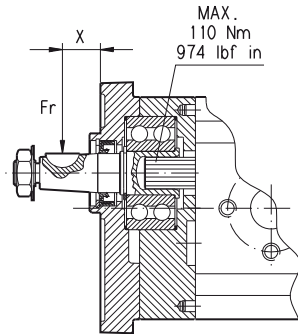
01/10.03

POLARIS 20

VERSION WITH OUTBOARD BEARING

5

D033-115/0603

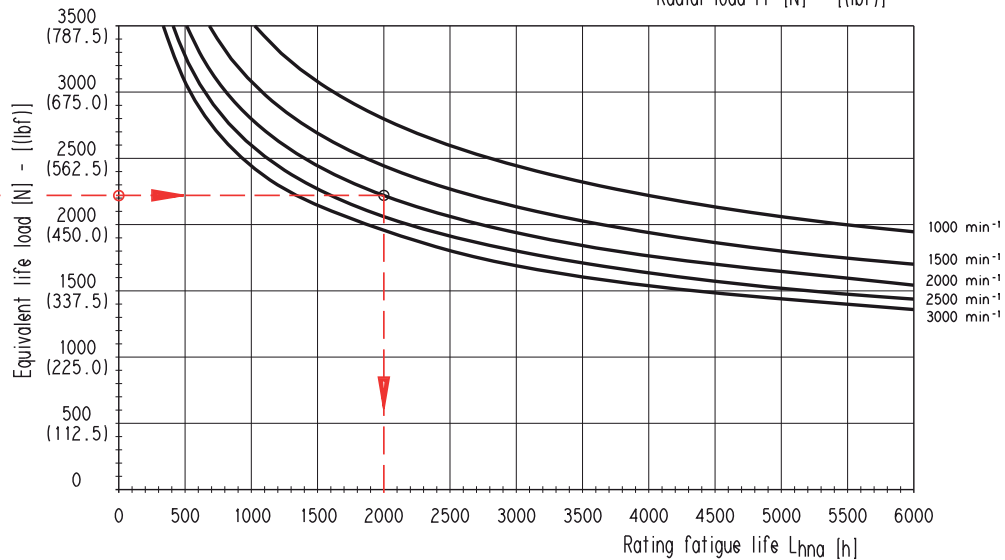
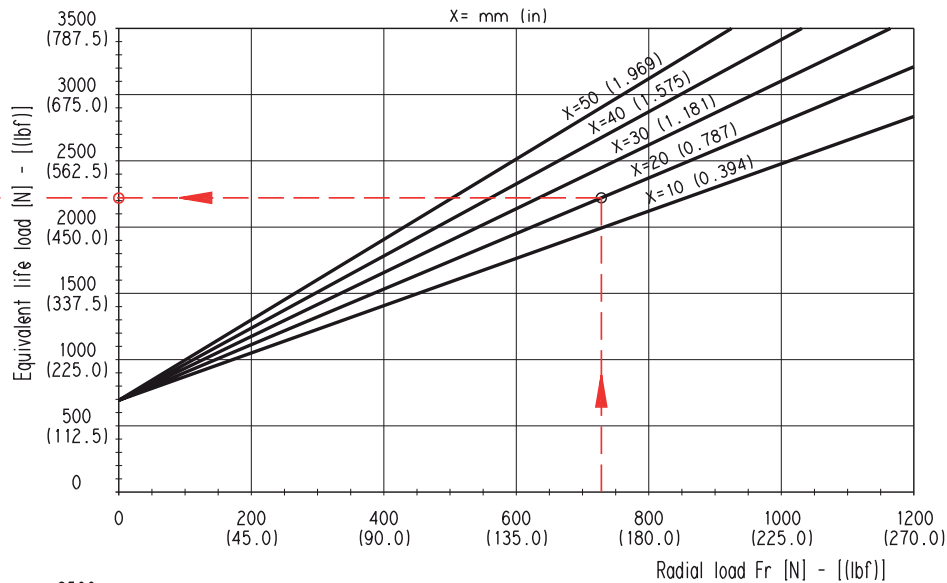


X= Distance of the radial load result from the mounting flange [mm (in)].

Each curve has been obtained at:
Lubricant oil ISO VG 46
Temperature 60 °C (140 °F)
Without or with very low axial load

Example

Fr Radial load	725 N (163.13 lbf)
X	20 mm (0.787 in)
Speed	2000 min ⁻¹
Rating fatigue life	≈ 2000 h



01/10.03

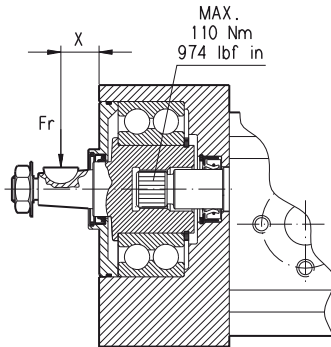
D033-264/1003

POLARIS 20

VERSION WITH OUTBOARD BEARING

7 - 8 - 9

D033-118/0603

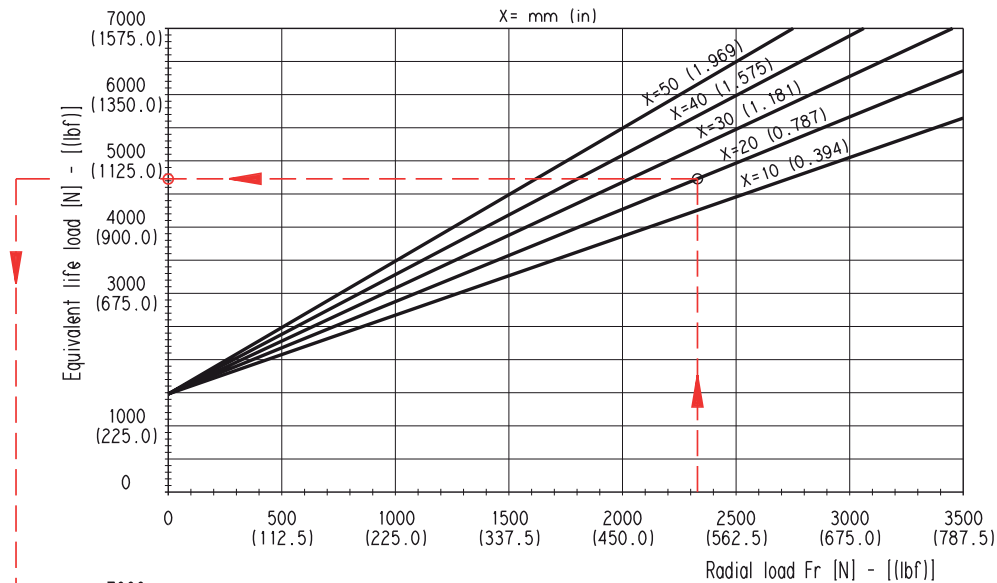


X= Distance of the radial load result from the mounting flange [mm (in)].

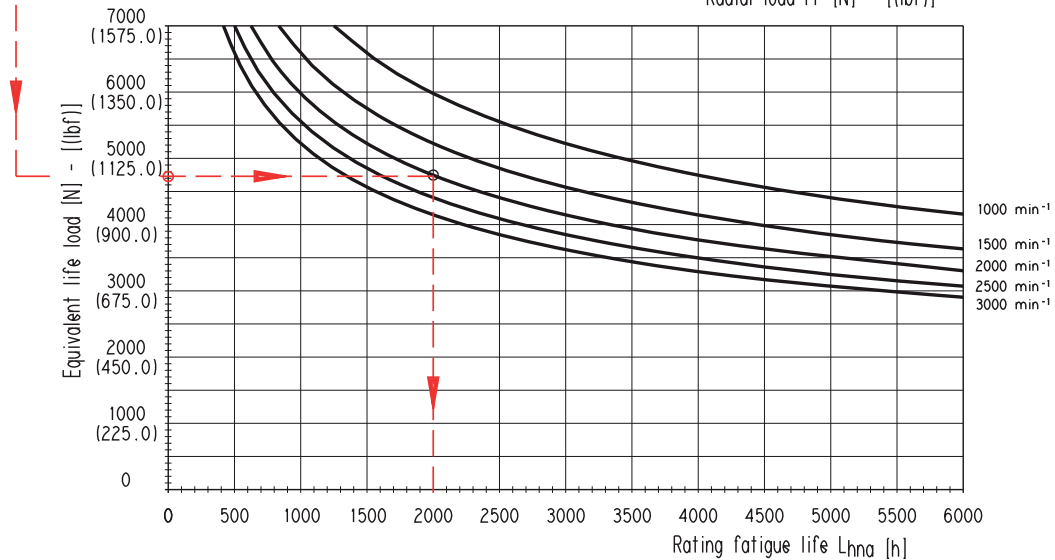
Each curve has been obtained at:
Lubricant oil ISO VG 46
Temperature 60 °C (140 °F)
Without or with very low axial load

Example

Fr Radial load	.....	2330 N (524.25 lbf)
X	.....	20 mm (0.787 in)
Speed	.....	2000 min ⁻¹
Rating fatigue life	.....	≈ 2000 h



D033-265/1003



01/10.03

POLARIS 20

DRIVE SHAFTS

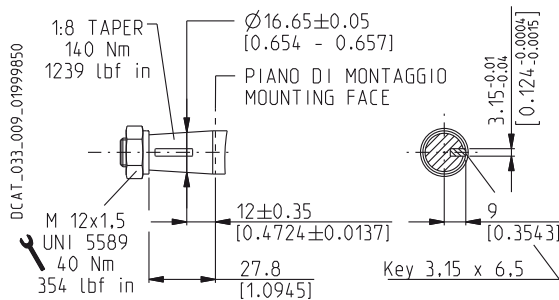
EUROPEAN TAPERED 1:8

82

Not available with size:

20•10,5 - 20•24,5 - 20•27,8

Mounting face refer to flange code E2



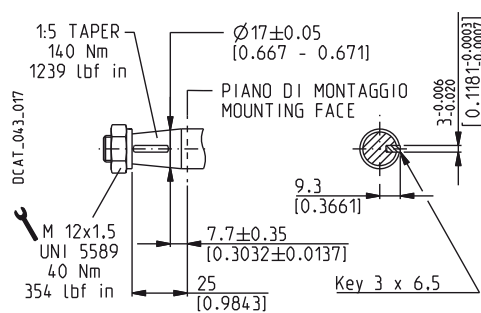
GERMAN TAPERED 1:5

54

Not available with size:

20•7,2 - 20•10,5 - 20•19 - 20•24,5 - 20•27,8 - 20•31,5

Mounting face refer to flanges code B4 and B5

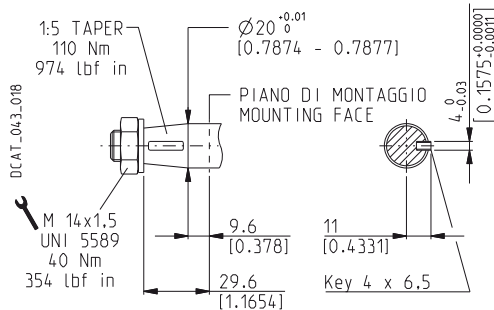


GERMAN TAPERED 1:5

55

Only for version 5, 9 and W8 with outboard bearing

Mounting face refer to flange code B2



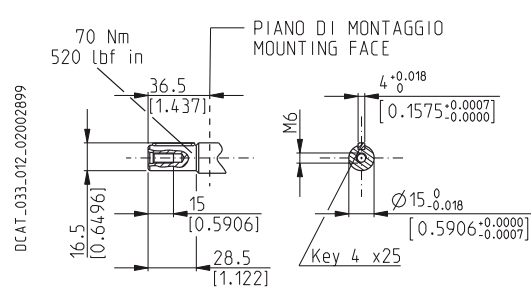
STRAIGHT

46

Not available with size:

20•7,2 - 20•10,5 - 20•19 - 20•24,5 - 20•25 - 20•27,8 - 20•31,5

Mounting face refer to flange code E2



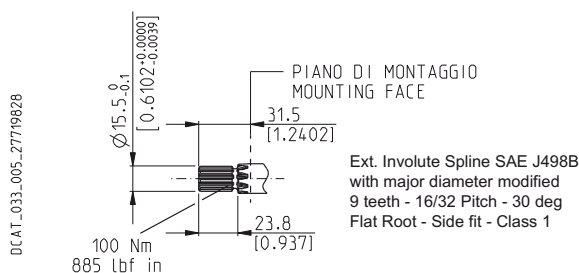
SAE "A" SPLINE

03

Not available with size:

20•24,5 - 20•27,8

Mounting face refer to flange code S1



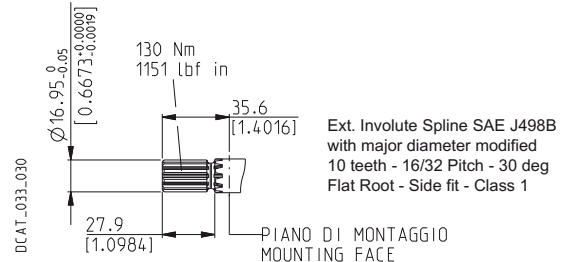
SPLINE

01

Not available with size:

20•6,3 - 20•9 - 20•10,5 - 20•19

Mounting face refer to flange code S1



01/10.03

POLARIS 20

DRIVE SHAFTS

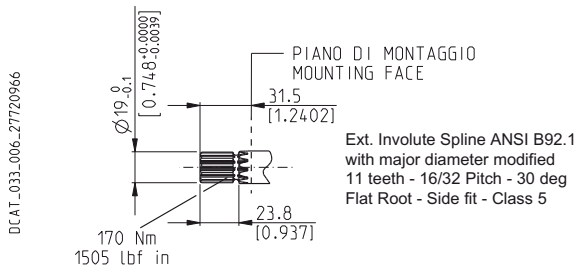
SAE SPLINE

07

Not available with size:

20•7,2 - 20•10,5 - 20•19 - 20•24,5 - 20•27,8

Mounting face refer to flange code S1



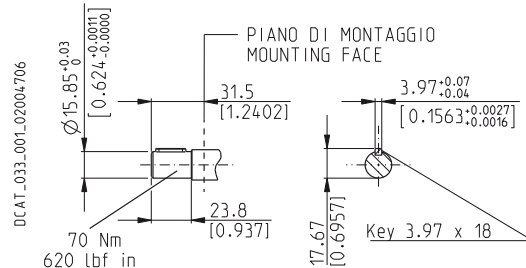
SAE "A" STRAIGHT

31

Not available with size:

20•10,5 - 20•19 - 20•24,5 - 20•27,8

Mounting face refer to flange code S1



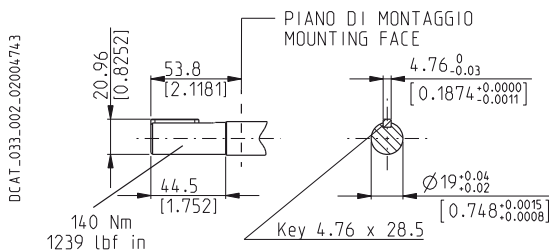
STRAIGHT

49

Not available with size:

20•7,2 - 20•19 - 20•24,5

Mounting face refer to flange code S1



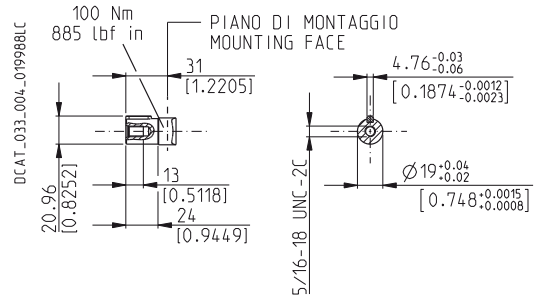
STRAIGHT

50

Not available with size:

20•7,2 - 20•10,5 - 20•19 - 20•24,5 - 20•27,8

Mounting face refer to flange code S1



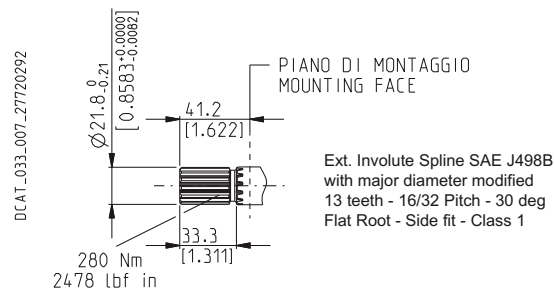
SAE "B" SPLINE

04

Not available with size:

20•4 - 20•7,2 - 20•10,5 - 20•24,5 - 20•27,8

Mounting face refer to flange code S5



SAE "B" STRAIGHT

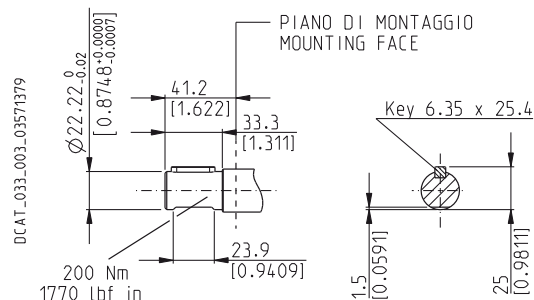
32

Not available with size:

20•4 - 20•7,2 - 20•8 - 20•10,5 - 20•11,2

20•19 - 20•24,5 - 20•27,8

Mounting face refer to flange code S5



01/10.03

POLARIS 20

DRIVE SHAFTS

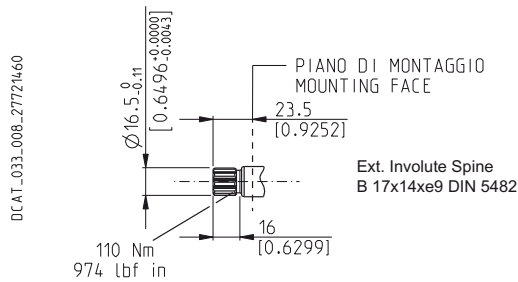
DIN 5482 SPLINE

12

Not available with size:

20•10,5 - 20•19 - 20•24,5 - 20•27,8

Mounting face refer to flange code **B2**



STRAIGHT

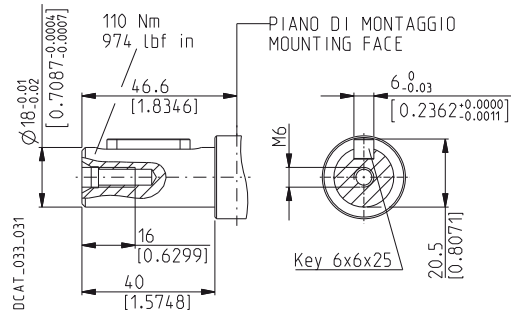
48

Only for version **6** with outboard bearing

Available in 0 version only with size:

20•20

Mounting face refer to flange code **E2**

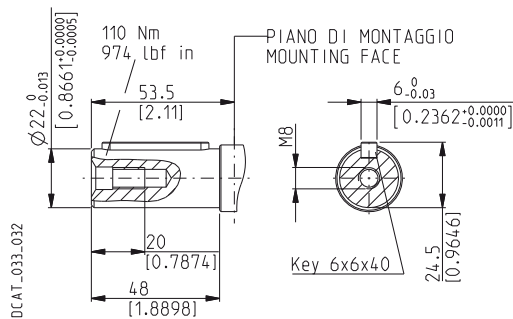


STRAIGHT

B1

Only for version **8** and **5** with outboard bearing

Mounting face refer to flange code **E2**



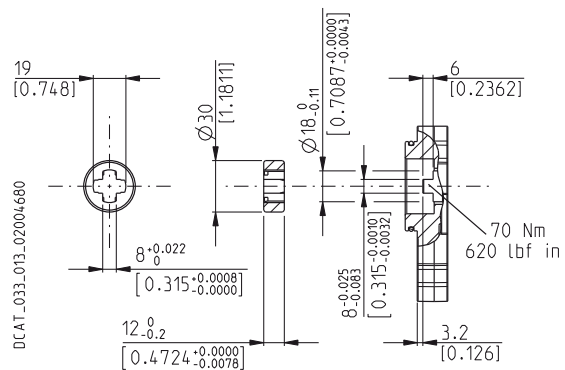
TANG

95

Not available with size:

20•7,2 - 20•10,5 - 20•19 - 20•24,5 - 20•27,8

Mounting face refer to flange code **B6**



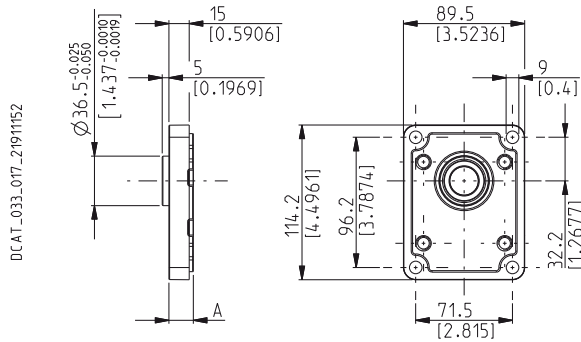
01/10.03

POLARIS 20

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

EUROPEAN

E2

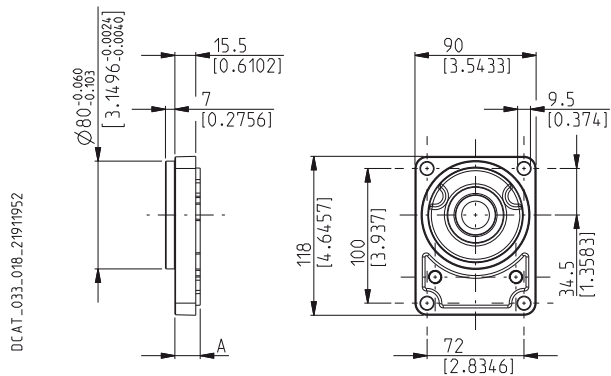


		DRIVE SHAFTS See page 52 ÷ 54											
VERSIONS See page 46	A mm (in)	82	46	B1	03	04	07	12	31	48	49	50	54
0	18 (0.7087)	#	#		x	x	x	x	x	x	x	x	x
4	55,4 (2.1811)	#											
5	43,6 (1.7165)	#		x	x						x	x	x
6	55,4 (2.1811)									#			
7	59,4 (2.3386)	#											
8	59,4 (2.3386)			#									

Standard combination
x Available combination

GERMAN

B2



		DRIVE SHAFTS See page 52 ÷ 54									
VERSIONS See page 46	A mm (in)	12	54	55	01	03	31	46	49	82	
0	18,8 (0.7402)	#	#		x	x	x	x	x	x	
5	44,4 (1.7480)		x	x		x			x	x	
9	59,4 (1.7441)			x							

Standard combination
x Available combination

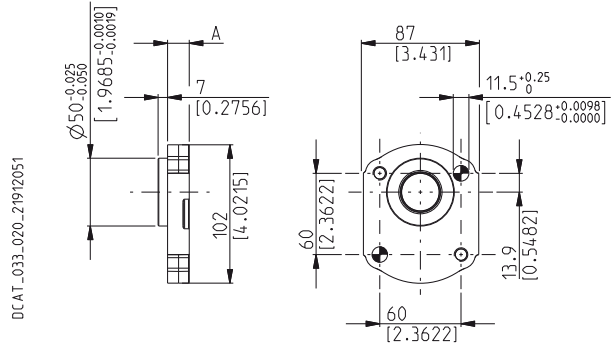
01/10.03

POLARIS 20

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

GERMAN 2 BOLTS

B4

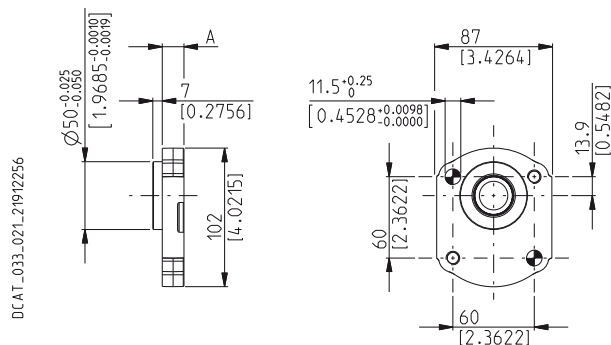


		DRIVE SHAFTS See page 52 ÷ 54						
VERSIONS See page 46	A mm (in)	54	03	12	31	49	54	82
0	16 (0.63)	#	x	x	x	x	x	x
5	41,6 (1.6378)	x	x			x	x	x

Standard combination
x Available combination

GERMAN 2 BOLTS

B5



		DRIVE SHAFTS See page 52 ÷ 54						
VERSIONS See page 46	A mm (in)	54	03	12	31	49	54	82
0	16 (0.63)	#	x	x	x	x	x	x
5	41,6 (1.6378)	x	x			x	x	x

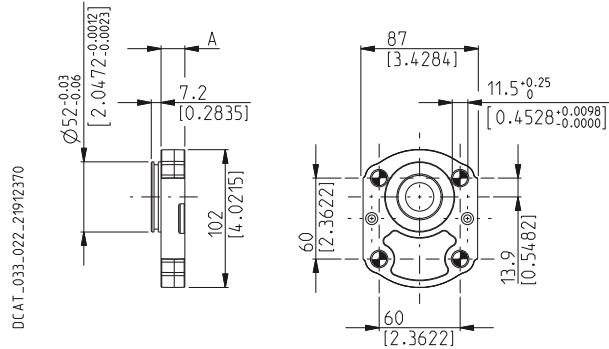
Standard combination
x Available combination

01/10.03

POLARIS 20 MOUNTING FLANGES AND TABLE OF COMPATIBILITY

GERMAN 4 BOLTS

B6



DRIVE SHAFTS

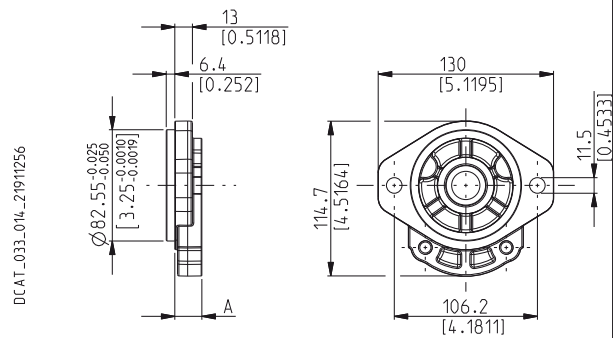
See page 52 ÷ 54

VERSIONS See page 46	A mm (in)	95	07	12
0	17,7 (0.6968)	#	x	x
5	43,3 (1.747)	x		

Standard combination
x Available combination

SAE "A" 2 BOLTS

S1



DRIVE SHAFTS

See page 52 ÷ 54

VERSIONS See page 46	A mm (in)	01	03	04	07	12	31	32	46	49	50	54	82
0	20 (0.787)	#	#	x	#	x	#	x	x	#	x	x	x
5	45,6 (1.7953)		x							x	x	x	x

Standard combination
x Available combination

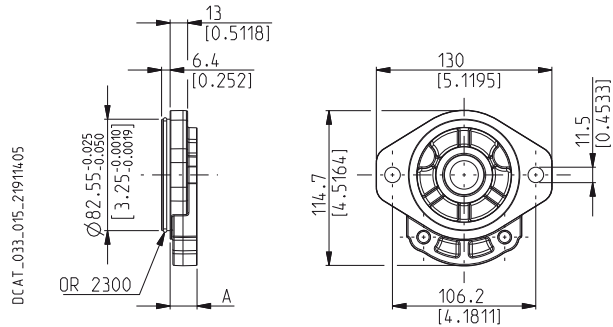
01/10.03

POLARIS 20

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

SAE "A" 2 BOLTS

S2



DRIVE SHAFTS

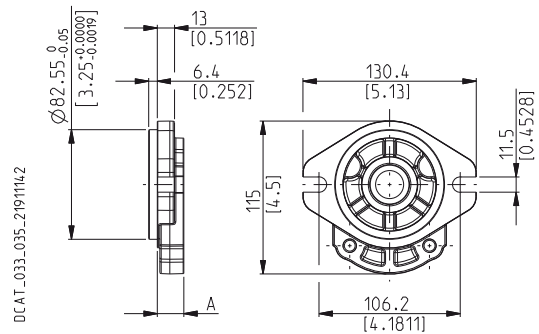
See page 52 ÷ 54

VERSIONS See page 46	A mm (in)	01	03	04	07	12	31	32	46	49	50	54	82
0	20 (0.7874)	#	#	x	#	x	#	x	x	#	x	x	x
5	45,6 (1.7953)		x							x	x	x	x

Standard combination
x Available combination

SAE "A" 2 BOLTS

S9



DRIVE SHAFTS

See page 52 ÷ 54

VERSIONS See page 46	A mm (in)	01	03	04	07	12	31	32	46	49	50	54	82
0	20 (0.7874)	#	#	x	#	x	#	x	x	#	x	x	x
5	45,6 (1.7953)		x							x	x	x	x

Standard combination
x Available combination

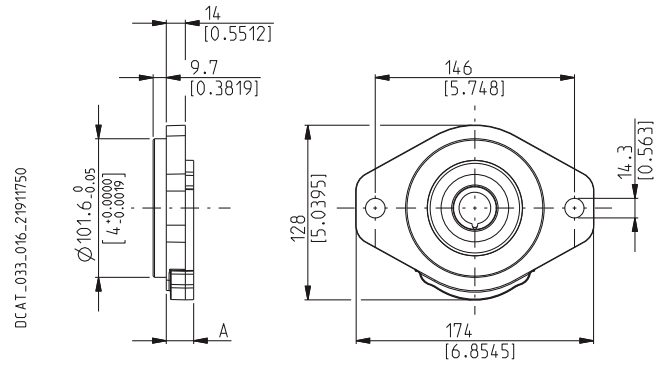
01/10.03

POLARIS 20

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

SAE "B" 2 BOLTS

S5

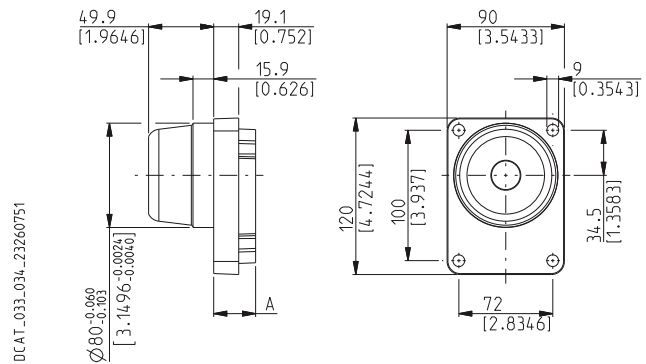


		DRIVE SHAFTS See page 52 ÷ 54		
VERSIONS See page 46	A mm (in)	04	32	49
0	20 (0.7874)	#	#	x
5	45,6 (1.7953)			x

Standard combination
x Available combination

GERMAN

W8



		DRIVE SHAFTS See page 52 ÷ 54
VERSIONS See page 46	A mm (in)	55
W8	32,1 (1.2638)	#

Standard combination
x Available combination

01/10.03


IN/OUT PORTS TYPE																		
PORTS TYPE	SIDE PORTS												REAR PORTS					
	German		European		Split SSM		Split SSS		Gas BSPP		SAE ODT		Gas BSPP		SAE ODT			
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Pump type																		
Motor type	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
PL. 10•1	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA	
PL. 10•1,5	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA	
PL. 10•2	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA	
PL. 10•2,5	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA	
PL. 10•3,15	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA	
PL. 10•4	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA	
PL. 10•5	BB	BA								GD	GD	OB	OA	GD	GD	OB	OA	
PL. 10•5,8	BB	BA								GD	GD	OB	OA	GD	GD	OB	OA	
PL. 10•6,3	BB	BA								GD	GD	OB	OA	GD	GD	OB	OA	
PL. 10•8	BB	BA								GD	GD	OC	OB	GD	GD	OB	OB	
PL. 10•10	BB	BA								GD	GD	OC	OB	GD	GD	OB	OB	
PL. 20•4	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•6,3	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•7,2	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•8	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•9	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•10,5	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•11,2	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC		
PL. 20•14	BE	BC	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•16	BE	BC	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•19	BE	BC	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•20	BE	BC	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•24,5	BE	BC	EB	EA	MC	MB	SC	SB	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•25	BE	BC	EB	EA	MC	MB	SC	SB	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•27,8	BE	BC	EB	EA	MC	MB	SC	SB	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 20•31,5	BE	BC	EB	EA	MC	MB	SC	SB	GE	GD	OD	OC	GE	GD	OD	OC		
PL. 30•22	BM	BL	ED	EB	MB	MA	SB	SA	GF	GF	OF	OD						
PL. 30•27	BM	BL	ED	EB	MC	MB	SC	SB	GF	GF	OF	OD						
PL. 30•34	BM	BL	ED	EB	MC	MB	SC	SB	GF	GF	OF	OD						
PL. 30•38	BM	BL	ED	EB	MD	MC	SD	SC	GF	GF	OG	OF						
PL. 30•43	BM	BL	ED	EB	MD	MC	SD	SC	GF	GF	OG	OF						
PL. 30•46	BM	BL	ED	EB	MD	MC	SD	SC	GF	GF	OG	OF						
PL. 30•51	BM	BL	ED	EB	MD	MC	SD	SC	GF	GF	OG	OF						
PL. 30•61	BM	BL	ED	EB	ME	MD	SE	SD	GG	GF	OH	OG						
PL. 30•73	BM	BL	EF	ED	ME	MD	SE	SD	GG	GF	OH	OG						
PL. 30•82	BM	BL	EF	ED	ME	MD	SE	SD	GH	GG	OH	OG						
PL. 30•90	BM	BL	EF	ED	MF	ME	SF	SE	GH	GG	OH	OG						


01/10.03

EXTERNAL DRAIN PORTS

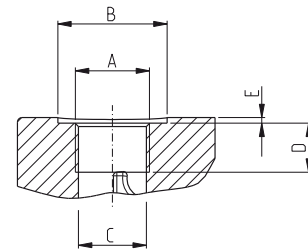
IN/OUT PORTS TYPE	SIDE PORTS						REAR PORTS	
	German	European	Split SSM	Split SSS	Gas BSPP	SAE ODT	Gas BSPP	SAE ODT
PL. 10	GA	–	–	–	GA	03	GA	03
PL. 20	TA	GB	GB	03	GB	03	GB	03
PL. 30	GC	GC	GC	OA	GC	OA	–	–


DRAIN PORTS SIZES

 Tightening torque for low pressure side port.

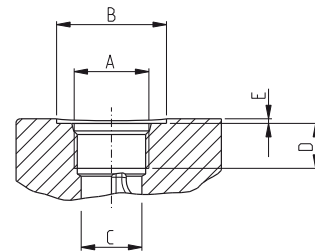
GAS STRAIGHT THREAD PORTS							BSPP
British standard pipe parallel (55°) conforms to UNI - ISO 228							
CODE	Nominal size	A	Ø B	Ø C	D	E	 Nm (lbf in)
GA	1/8"	G 1/8	16,5 (0.6496)	8,75 (0.3444)	12 (0.4724)	1 (0.0394)	5 ^{+0,25} (44 ÷ 46)
GB	1/4"	G 1/4	21,5 (0.8465)	12 (0.4724)	15 (0.5906)	1,5 (0.0591)	15 ⁺¹ (133 ÷ 142)


DCAT_006_026_21064779



METRIC STRAIGHT THREAD PORTS ISO 6149							METRIC
Metric thread ISO 60° conforms to ISO/R 262							
CODE	A	Ø B	Ø C	D	E	 Nm (lbf in)	
TA	M 10x1	22 (0.8661)	9 (0.3543)	13 (0.5118)	0,5 (0.0197)	10 ^{+0,5} (89 ÷ 93)	

DCAT_006_027_21060524





SAE STRAIGHT THREAD PORTS J514							ODT
American straight thread UNC-UNF 60° conforms to ANSI B 1.1							
CODE	A	Ø B	Ø C	D	E	 Nm (lbf in)	
03	7/16"-20 UNF-2B	21 (0.8267)	9,5 (0.3740)	14 (0.5512)	1 (0.0394)	12 ⁺¹ (106 ÷ 115)	

Other drain ports are shown on subsequent pages.

01/10.03

PORTS SIZES

 Tightening torque for low pressure side port.



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

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

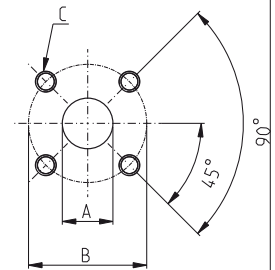
GERMAN FLANGED PORTS - 4 Bolts

GERMAN

Metric thread ISO 60° conforms to ISO/R 262

CODE	A	B	C		
	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
BA	8 (0.3150)	30 (1.1811)	M6 12 (0.4724)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
BB	13 (0.5118)	30 (1.1811)	M6 12 (0.4724)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
BC	15 (0.5906)	35 (1.3780)	M 6 12 (0.4724)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
BE	20 (0.7874)	40 (1.5748)	M 6 12 (0.4724)	15 ⁺¹ (133 ÷ 142)	15 ⁺¹ (133 ÷ 142)
BL	19 (0.7480)	55 (2.1654)	M8 18 (0.7087)	20 ⁺¹ (177 ÷ 186)	20 ⁺¹ (177 ÷ 186)
BM	27 (1.0630)	55 (2.1654)	M8 18 (0.7087)	15 ⁺¹ (133 ÷ 142)	20 ⁺¹ (177 ÷ 186)



DCAT_033_028_17661888



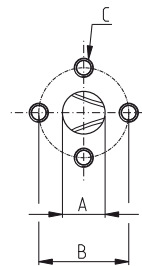
EUROPEAN FLANGED PORTS - 4 Bolts

EUROPEAN

Metric thread ISO 60° conforms to ISO/R 262

CODE	A	B	C		
	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
EA	13 (0.5118)	30 (1.1811)	M 6 13 (0.5118)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
EB	19 (0.7480)	40 (1.5748)	M 8 14 (0.5512)	15 ⁺¹ (133 ÷ 142)	15 ⁺¹ (133 ÷ 142)
			M 8 (◆) 18 (0.7087)	15 ⁺¹ (◆) (133 ÷ 142)	15 ⁺¹ (◆) (133 ÷ 142)
ED	27 (1.0630)	51 (2.0079)	M 10 18 (0.7087)	20 ⁺¹ (177 ÷ 186)	30 ^{+2,5} (266 ÷ 288)
EF	33 (1.2992)	62 (2.4409)	M 12 18 (0.7087)	25 ⁺¹ (221 ÷ 230)	50 ^{+2,5} (443 ÷ 465)


DCAT_006_024_21060533




(◆) For POLARIS 30

01/10.03

PORTS SIZES

 Tightening torque for low pressure side port.



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

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

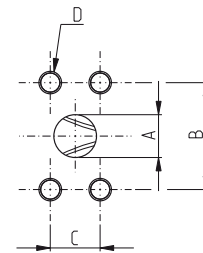
SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

SSM

Metric thread ISO 60° conforms to ISO/R 262

CODE	A mm (in)	B mm (in)	C mm (in)	D Thread Depth mm (in)		
					Nm (lbf in)	Nm (lbf in)
MA	12,5 (0.4921)	38,1 (1.50)	17,5 (0.6890)	M 8	15 ⁺¹	15 ⁺¹
				14 (0.5512)	(133 ÷ 142)	(133 ÷ 142)
				M8 (◆)	20 ⁺¹ (◆)	20 ⁺¹ (◆)
MB	19 (0.7480)	47,6 (1.8740)	22,2 (0.8740)	M 10	20 ⁺¹	25 ⁺¹
				14 (0.5512)	(177 ÷ 186)	(266 ÷ 288)
				M 10 (◆)	20 ⁺¹ (◆)	35 ^{+2,5} (◆)
MC	25,4 (1.0000)	52,4 (2.0630)	26,2 (1.0315)	M 10	20 ⁺¹	25 ⁺¹
				14 (0.5512)	(177 ÷ 186)	(266 ÷ 288)
				M 10 (◆)	20 ⁺¹ (◆)	35 ^{+2,5} (◆)
MD	30,5 (1.2008)	58,7 (2.3110)	30,2 (1.1890)	M 10	20 ⁺¹	30 ^{+2,5}
				15 (0.5906)	(177 ÷ 186)	(266 ÷ 288)
				M 10 (◆)	20 ⁺¹ (◆)	35 ^{+2,5} (◆)
ME	39,3 (1.5472)	69,8 (2.7480)	35,7 (1.4055)	M 12	30 ^{+2,5}	60 ⁺⁵
				22 (0.8661)	(266 ÷ 288)	(531 ÷ 575)
MF	51 (2.0079)	77,8 (3.0630)	42,9 (1.6890)	M 12	30 ^{+2,5}	60 ⁺⁵
				22 (0.8661)	(266 ÷ 288)	(531 ÷ 575)

DCAT_006_025_21064252





(◆) For POLARIS 30

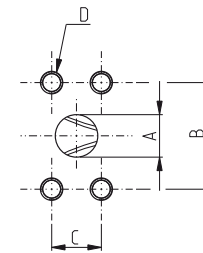
SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

SSS

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

CODE	A mm (in)	B mm (in)	C mm (in)	D Thread Depth mm (in)		
					Nm (lbf in)	Nm (lbf in)
SA	12,5 (0.4921)	38,1 (1.50)	17,5 (0.6890)	5/16-18 UNC-2B	15 ⁺¹	15 ⁺¹
				14 (0.5512)	(133 ÷ 142)	(133 ÷ 142)
				5/16-18 UNC-2B (◆)	20 ⁺¹ (◆)	20 ⁺¹ (◆)
SB	19 (0.7480)	47,6 (1.8740)	22,2 (0.8740)	3/8 - 16 UNC-2B	20 ⁺¹	20 ⁺¹
				14 (0.5512)	(177 ÷ 186)	(177 ÷ 186)
				3/8 - 16 UNC-2B (◆)	30 ^{+2,5} (◆)	20 ⁺¹ (◆)
SC	25,4 (1.0000)	52,4 (2.0630)	26,2 (1.0315)	3/8 - 16 UNC-2B	20 ⁺¹	25 ⁺¹
				14 (0.5512)	(177 ÷ 186)	(221 ÷ 230)
				3/8 - 16 UNC-2B (◆)	20 ⁺¹ (◆)	30 ^{+2,5} (◆)
SD	30,5 (1.2008)	58,7 (2.3110)	30,2 (1.1890)	7/16 - 14 UNC-2B	20 ⁺¹	45 ^{+2,5}
				22 (0.8661)	(177 ÷ 186)	(398 ÷ 420)
SE	39,3 (1.5472)	69,8 (2.7480)	35,7 (1.4055)	1/2 - 13 UNC-2B	30 ^{+2,5}	70 ⁺⁵
				22 (0.8661)	(266 ÷ 288)	(620 ÷ 664)
SF	51 (2.0079)	77,8 (3.0630)	42,9 (1.6890)	1/2 - 13 UNC-2B	30 ^{+2,5} (◆)	70 ⁺⁵
				22 (0.8661)	(266 ÷ 288)	(620 ÷ 664)


DCAT_006_028_21060740




(◆) For POLARIS 30

01/10.03

PORTS SIZES

 Tightening torque for low pressure side port.

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

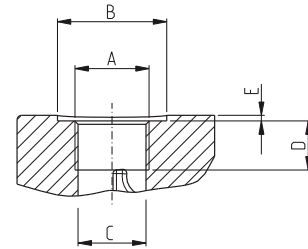
For reversible rotation, please consult only the tightening torque for high pressure side port.



GAS STRAIGHT THREAD PORTS

BSPP

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

DCAT_006_026_21064779




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	3/8"	G 3/8	25 (0.9843)	15 (0.5906)	14 (0.5512)	2 (#) (0.0787)	15 ⁺¹ (#) (133 ÷ 142)	–
			–				20 ⁺¹ (177 ÷ 186)	25 ⁺¹ (221 ÷ 230)
GD	1/2"	G 1/2	–	19 (0.7480)	14 (0.5512)	–	20 ⁺¹ (177 ÷ 186)	50 ^{+2,5} (443 ÷ 465)
							17 (◆) (0.6693)	50 ^{+2,5} (◆) (443 ÷ 465)
GE	3/4"	G 3/4	–	24,5 (0.9646)	18 (0.7087)	–	30 ^{+2,5} (266 ÷ 288)	90 ⁺⁵ (797 ÷ 841)
GF	1"	G 1	–	30,5 (1.2008)	18 (0.7086)	–	50 ^{+2,5} (443 ÷ 465)	130 ⁺¹⁰ (1151 ÷ 1239)
GG	1" 1/4	G 1 1/4	–	39 (1.5354)	22 (0.8661)	–	60 ⁺⁵ (531 ÷ 575)	170 ⁺¹⁰ (1505 ÷ 1593)
GH	1" 1/2	G 1 1/2	–	45 (1.7716)	24 (0.9448)	–	70 ⁺⁵ (620 ÷ 664)	210 ⁺¹⁵ (1859 ÷ 1992)


(#) Drain port

(◆) For POLARIS 20

01/10.03

PORTS SIZES

 Tightening torque for low pressure side port.

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

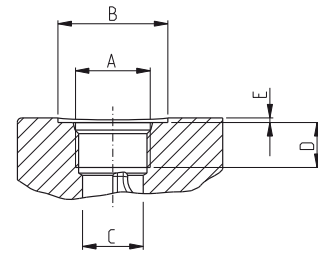
For reversible rotation, please consult only the tightening torque for high pressure side port.



SAE STRAIGHT THREAD PORTS J514

ODT

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

DCAT_006-027-21060524

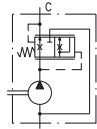
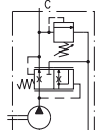
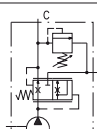
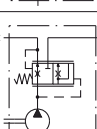
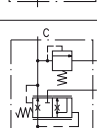
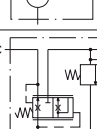
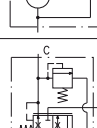
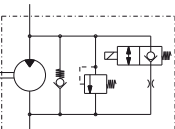
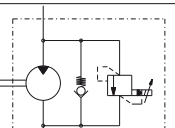
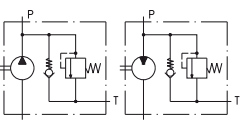
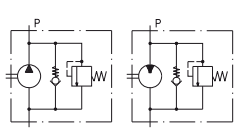
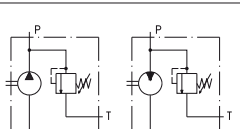
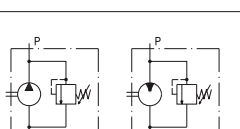
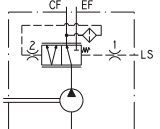
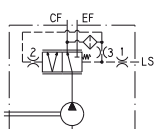
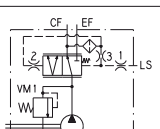
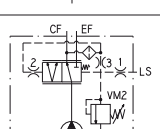
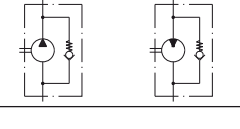


CODE	Nominal size	A	Ø B	Ø C	D	E		
			mm (in)	mm (in)	mm (in)	mm (in)	Nm (lbf in)	Nm (lbf in)
OA	3/8"	9/16" - 12 UNF - 2B	26 (1.0236)	13 (0.5118)	15 (0.5906)	1 (0.03934)	15 ⁺¹ (133 ÷ 142)	25 ⁺¹ (221 ÷ 230)
						2 (#) (0.0787)	15 ⁺¹ (#) (133 ÷ 142)	-
OB	1/2"	3/4" - 16 UNF - 2B	32 (1.2598)	17,5 (0.690)	15 (0.5906)	-	20 ⁺¹ (177 ÷ 186)	45 ^{+2,5} (398 ÷ 420)
OC	5/8"	7/8" - 14 UNF - 2B	35 (1.3780)	20,5 (0.8071)	15 (◆) (0.5906)	0,5 (0.0197)	30 ^{+2,5} (266 ÷ 288)	70 ⁺⁵ (620 ÷ 664)
					17 (0.6693)			
OD	3/4"	1 1/16" - 12 UNF - 2B	42 (1.6535)	24,8 (0.9764)	20 (0.7874)	0,5 (0.0197)	40 ^{+2,5} (354 ÷ 376)	120 ⁺¹⁰ (1062 ÷ 1151)
OF	1"	1 5/16" - 12 UNF - 2B	49 (1.9291)	30,5 (1.2008)	20 (0.7874)	0,5 (0.0197)	60 ⁺⁵ (531 ÷ 575)	170 ⁺¹⁰ (1505 ÷ 1593)
OG	1" 1/4	1 5/8" - 12 UNF - 2B	58 (2.2835)	39,1 (1.5394)	20 (0.7874)	0,5 (0.0197)	70 ⁺⁵ (620 ÷ 664)	200 ⁺¹⁰ (1770 ÷ 1858)
OH	1" 1/2	1 7/8" - 12 UNF - 2B	65 (2.5591)	45 (1.7717)	20 (0.7874)	0,5 (0.0197)	100 ⁺⁵ (885 ÷ 929)	270 ⁺¹⁵ (2389 ÷ 2522)

(#) Drain port

(◆) For POLARIS 10

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VALVE OPTIONS (◆)		
PRIORITY VALVE		
P1	Costant delivery and internal recirculation of excess flow.	
P2	Costant delivery at controlled pressure. Internal recirculation of excess flow and drain valve.	
P3	Costant delivery at controlled pressure. Excess flow and drain valve must be connected to tank.	
P4	Costant delivery and excess flow can both be used under load.	
P5T	Costant delivery at controlled pressure with drain valve connected to tank. Excess flow can be used under load.	
P7	Costant delivery. Excess flow at controlled pressure can be used under load. Internal recirculation of drain valve.	
P9	Costant delivery at controlled pressure. Internal recirculation of valve drain. Excess flow can be used under load.	
ELECTRIC VALVE FOR MOTORS		
EC08..	By-pass valve normally closed with max. pressure relief valve and anti-cavitation valve.	
DBVSA..	Proportional relief valve and anti-cavitation valve.	
MAX PRESSURE RELIEF VALVE		
VPEF..	Fixed setting with external drain.	
VPIF..	Fixed setting with internal drain.	
VPER..	Adjustable setting with external drain.	
VPIR..	Adjustable setting with internal drain.	
LOAD SENSING VALVE		
...	Static.	
...	Dynamic.	
...	Dynamic with relief valve fitted on the main line.	
...	Dynamic with relief valve fitted on controlled line.	
CHECK VALVE		
V8	Anti-cavitation valve.	

(◆) For more information please consult our technical sales department.

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HOW TO ORDER POLARIS 20 SINGLE UNITS

1 2 3 4 5 6 7 8 9 10 11 12 13

PLP20•4 - L 0 82 E2 - L - EA/EA - N EL C * - GB - FS

1	Type	PUMP TYPE	MOTOR TYPE
	in ³ /rev (cm ³ /rev)		
0.30 (4,95)		PLP 20•4	PLM 20•4
0.40 (6,61)		PLP 20•6,3	PLM 20•6,3
0.44 (7,29)		PLP 20•7,2	PLM 20•7,2
0.50 (8,26)		PLP 20•8	PLM 20•8
0.56 (9,17)		PLP 20•9	PLM 20•9
0.66 (10,9)		PLP 20•10,5	PLM 20•10,5
0.69 (11,23)		PLP 20•11,2	PLM 20•11,2
0.89 (14,53)		PLP 20•14	PLM 20•14
1.03 (16,85)		PLP 20•16	PLM 20•16
1.16 (19,09)		PLP 20•19	PLM 20•19
1.29 (21,14)		PLP 20•20	PLM 20•20
1.52 (24,84)		PLP 20•24,5	PLM 20•24,5
1.61 (26,42)		PLP 20•25	PLM 20•25
1.72 (28,21)		PLP 20•27,8	PLM 20•27,8
2.01 (33,03)		PLP 20•31,5	PLM 20•31,5

2	Rotation	CODE
	Left	S
	Right	D
	Reversible rear external drain	R
	Reversible side external drain	L
	Reversible internl drain	B

3	Version	CODE
	Without outboard bearing	0
	With outboard bearing	W8
	With outboard bearing	4
	With outboard bearing	5
	With outboard bearing	6
	With outboard bearing	7
	With outboard bearing	8
	With outboard bearing	9

4	Drive shaft	CODE
	European tapered 1:8	82
	German tapered 1:5	54
	German tapered 1:5	55
	Straight	46
	SAE "A" spline (9 teeth)	03
	SAE spline (10 teeth)	01
	SAE "A" spline (11 teeth)	07
	SAE "A" straight	31
	Straight	49
	Straight	50
	SAE "B" spline	04
	SAE "B" straight	32
	DIN 54 82 spline	12
	Straight (only for version 6)	48
	Straight (only for version 8)	B1
	Tang	95

CODE	Mounting flange	5
E2	European	
B2	German	
B4	German 2 bolt	
B5	German 2 bolt	
B6	German 4 bolt	
S1	SAE "A" 2 bolt	
S2	SAE "A" 2 bolt	
S9	SAE "A" 2 bolt	
S5	SAE "B" 2 bolt	
W8	German	

CODE	Ports position	6
L	Side	
P	Rear	

CODE	Ports IN/OUT	7
GERMAN FLANGED PORTS		
Side	Rear	Type
BE/BC		PLP 20 4-6,3-7,2-8-9-10,5-11,2 14-16-19-20-24,5-25 27,8-31,5
BC/BE		PLM 20
EUROPEAN FLANGED PORTS		
Side	Rear	Type
EA/EA		PLP 20 4-6,3-7,2-8-9-10,5-11,2 PLM 20
EB/EA		PLP 20 14-16-19-20-24,5-25 EA/EB PLM 20 27,8-31,5
SAE FLANGED PORTS (SSM)		
Side	Rear	Type
MA/MA		PLP 20 4-6,3-7,2-8-9-10,5-11,2 PLM 20
MB/MA		PLP 20 14-16-19-20
MA/MB		PLM 20
MC/MB		PLP 20 24,5-25-27,8-31,5
MB/MC		PLM 20
SAE FLANGED PORTS (SSS)		
Side	Rear	Type
SA/SA		PLP 20 4-6,3-7,2-8-9-10,5-11,2 PLM 20
SB/SA		PLP 20 14-16-19-20
SA/SB		PLM 20
SC/SB		PLP 20 24,5-25-27,8-31,5
SB/SC		PLM 20

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HOW TO ORDER POLARIS 20 SINGLE UNITS

7		Ports IN/OUT		CODE
GAS STRAIGHT THREAD PORTS (BSPP)				
Type		PLP 20	Side	Rear
4-6,3-7,2-8-9-10,5-11,2		PLM 20	GD/GD	GD/GD
14-16-19-20-24,5-25 27,8-31,5		PLP 20	GE/GD	GE/GD
		PLM 20	GD/GE	GD/GE
SAE STRAIGHT THREAD PORTS (ODT)				
Type		PLP 20	Side	Rear
4-6,3-7,2-8-9-10,5-11,2		PLM 20	OC/OC	OC/OC
14-16-19-20-24,5-25 27,8-31,5		PLP 20	OD/OC	OD/OC
		PLM 20	OC/OD	OC/OD

8		Seals (a)	CODE
		Buna (standard)	N
		Viton	V

9		Cover options	CODE
		Cast iron mounting flange and rear cover (standard - no code)	
		Aluminium mounting flange and cast iron rear cover	E
		Cast iron mounting flange and aluminium rear cover	L
		Aluminium mounting flange and rear cover	EL

10		Shaft seal options	CODE
		High back pressure seal with wiper seal	C
		Standard seal with wiper seal	D
		High back pressure seal	H

CODE		Drain port position - Rev. rotation L	11
L		Side drain with side port position	
*		Side drain with bottom port position	

CODE		Drain port		12
IN/OUT GERMAN FLANGED PORTS				
Side	Rear	Type		
TA		PLP 20	4-6,3-7,2-8-9-10,5-11,2	
		PLM 20	24,5-25-27,8-31,5	

CODE		Drain port		12
IN/OUT EUROPEAN FLANGED PORTS				
Side	Rear	Type		
GB		PLP 20	4-6,3-7,2-8-9-10,5-11,2	
		PLM 20	24,5-25-27,8-31,5	

CODE		Drain port		12
IN/OUT SAE FLANGED PORTS (SSM)				
Side	Rear	Type		
GB		PLP 20	4-6,3-7,2-8-9-10,5-11,2	
		PLM 20	24,5-25-27,8-31,5	

CODE		Drain port		12
IN/OUT SAE FLANGED PORTS (SSS)				
Side	Rear	Type		
03		PLP 20	4-6,3-7,2-8-9-10,5-11,2	
		PLM 20	24,5-25-27,8-31,5	

CODE		Drain port		12
IN/OUT GAS STRAIGHT THREAD PORTS (BSPP)				
Side	Rear	Type		
GB	GB	PLP 20	4-6,3-7,2-8-9-10,5-11,2	
		PLM 20	24,5-25-27,8-31,5	

CODE		Drain port		12
IN/OUT SAE STRAIGHT THREAD PORTS (ODT)				
Side	Rear	Type		
03	03	PLP 20	4-6,3-7,2-8-9-10,5-11,2	
		PLM 20	24,5-25-27,8-31,5	

CODE		Shaft arrangement	13
FS		Female spline	

(a) Choose the seals according to the temperature shown on page 3.

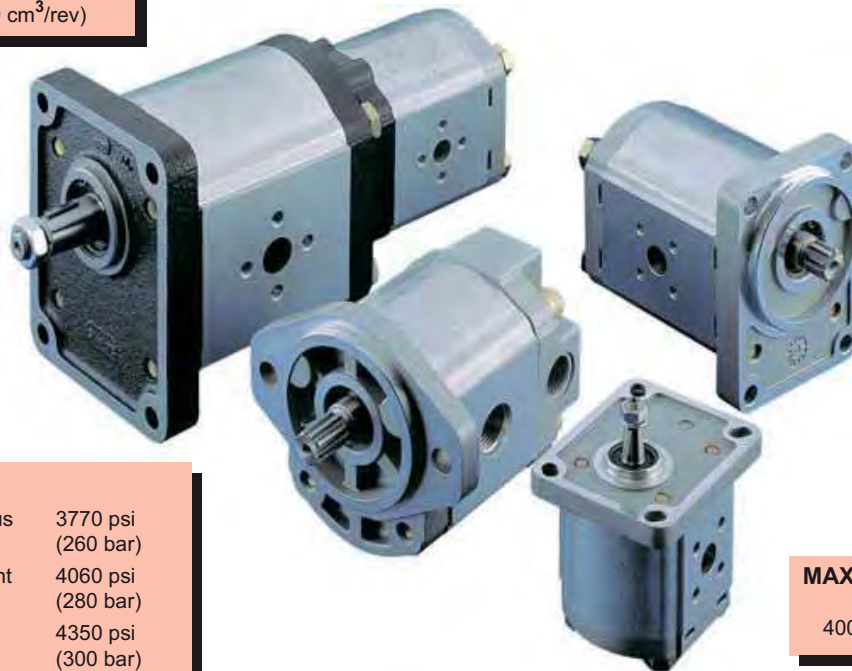


Hydraulic gear pumps and motors

through bore aluminum body

DISPLACEMENTS

From 0.07 in³/rev
(1.07 cm³/rev)
To 5.56 in³/rev
(91.10 cm³/rev)



PRESSURE

Max. Continuous 3770 psi
(260 bar)
Max. Intermittent 4060 psi
(280 bar)
Max. Peak 4350 psi
(300 bar)

MAX. SPEED

4000 min⁻¹

- Group 1, 2 and 3 with displacements from 0.07 in³/rev (1,07 cm³/rev) to 5.56 in³/rev (91.10 cm³/rev).
- Drive shafts, mounting flanges and ports according to the international standards.
- Combination of multiple pumps in standard version, common inlet and separated stages.
- Integrated outboard bearings for heavy duty application.
- Many types of built-in valves.

"POLARIS" more than fifty years of Casappa experience in design and production of hydraulic components, characterized by large investments in research and development in order to propose new and personalized solutions to the market. Our use of CAD 3D in the development of this generation permit us the 3D modelling and the virtual simulation of the behaviour of the components inserted in the hydraulic circuit. This means that the process will take less time and the quality of the products is better.

Polaris pumps and motors are basically composed of a gear housing in aluminium alloy, two gear wheels supported by sleeve bearings and two end plates, the front and the rear cover, either in aluminium or in cast iron with excellent mechanical characteristics. Our success is based largely on the quality of our product. This guaranties the consistencies of the efficiencies and low level of noise emission during the life of our products.

Edition: 01/10.2003



CASAPPA[®]
FLUID POWER DESIGN



GENERAL DATA PUMPS AND MOTORS

Series	Pump type PLP Motor type PLM	Displacement in ³ /rev (cm ³ /rev)	Max. pressure			Max. speed	Min. speed
			p ₁	p ₂	p ₃		
			psi (bar)					min^{-1}
POLARIS 10	PL. 10•1	0.07 (1,07)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•1,5	0.10 (1,60)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•2	0.13 (2,13)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•2,5	0.16 (2,67)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•3,15	0.20 (3,34)	3770 (260)	4060 (280)	4205 (290)	4000	650
	PL. 10•4	0.26 (4,27)	3625 (250)	3915 (270)	4060 (280)	4000	650
	PL. 10•5	0.33 (5,34)	3625 (250)	3915 (270)	4060 (280)	4000	650
	PL. 10•5,8	0.38 (6,20)	3335 (230)	3625 (250)	3770 (260)	3500	650
	PL. 10•6,3	0.41 (6,67)	3335 (230)	3625 (250)	3770 (260)	3500	650
	PL. 10•8	0.52 (8,51)	2610 (180)	2900 (200)	3045 (210)	3500	650
	PL. 10•10	0.65 (10,67)	2030 (140)	2320 (160)	2465 (170)	3500	650
POLARIS 20	PL. 20•4	0.30 (4,95)	3625 (250)	4060 (280)	4350 (300)	4000	600
	PL. 20•6,3	0.40 (6,61)	3625 (250)	4060 (280)	4350 (300)	4000	600
	PL. 20•7,2	0.44 (7,29)	3625 (250)	4060 (280)	4350 (300)	4000	600
	PL. 20•8	0.50 (8,26)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•9	0.56 (9,17)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•10,5	0.66 (10,9)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•11,2	0.69 (11,23)	3625 (250)	4060 (280)	4350 (300)	3500	600
	PL. 20•14	0.89 (14,53)	3625 (250)	4060 (280)	4350 (300)	3500	500
	PL. 20•16	1.03 (16,85)	3625 (250)	4060 (280)	4350 (300)	3000	500
	PL. 20•19	1.16 (19,09)	2900 (200)	3190 (220)	3480 (240)	3000	500
	PL. 20•20	1.29 (21,14)	2900 (200)	3190 (220)	3480 (240)	3000	500
	PL. 20•24,5	1.52 (24,84)	2465 (170)	2755 (190)	3045 (210)	2500	500
	PL. 20•25	1.61 (26,42)	2465 (170)	2755 (190)	3045 (210)	2500	500
	PL. 20•27,8	1.72 (28,21)	1885 (130)	2175 (150)	2465 (170)	2000	500
PL. 20•31,5	2.01 (33,03)	1885 (130)	2175 (150)	2465 (170)	2000	500	
POLARIS 30	PL. 30•22	1.34 (21,99)	3625 (250)	3915 (270)	4060 (280)	3000	350
	PL. 30•27	1.63 (26,70)	3625 (250)	3915 (270)	4060 (280)	3000	350
	PL. 30•34	2.11 (34,55)	3480 (240)	3770 (260)	3915 (270)	3000	350
	PL. 30•38	2.40 (39,27)	3480 (240)	3770 (260)	3915 (270)	3000	350
	PL. 30•43	2.68 (43,98)	3335 (230)	3625 (250)	3770 (260)	3000	350
	PL. 30•51	3.16 (51,83)	3045 (210)	3335 (230)	3480 (240)	2500	350
	PL. 30•61	3.74 (61,26)	2755 (190)	3045 (210)	3190 (220)	2500	350
	PL. 30•73	4.50 (73,82)	2465 (170)	2755 (190)	2900 (200)	2500	350
	PL. 30•82	4.98 (81,68)	2320 (160)	2465 (170)	2610 (180)	2200	350
	PL. 30•90	5.56 (91,10)	2175 (150)	2320 (160)	2465 (170)	2200	350

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p₁= Max. continuous pressure p₂= Max. intermittent pressure p₃= Max. peak pressure

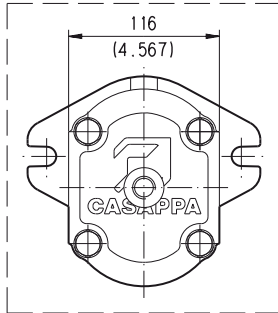
The values in the table refer to unidirectional pumps and motors.
Reversible pump and motors max pressures are 15% lower than those shown in table.
For different working conditions please consult our sales department.

POLARIS 30

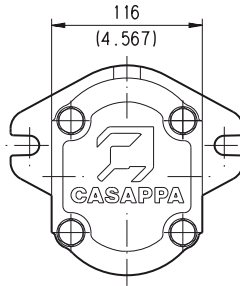
SINGLE UNITS SIDE PORTS

L

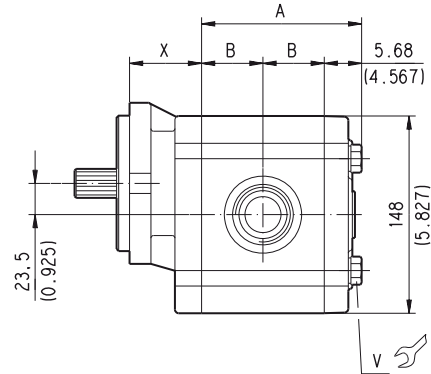
D033-184/0903



Reversible R



Single rotation S - D



Mounting flange type version 0	X
	mm (inch)
E3	24 (0.945)
E4	25 (0.984)
B3	28 (1.102)
S5	54 (2.1260)
U3	20,8 (0.819)

DRIVE SHAFTS:
see page 55 and page 56
MOUNTING FLANGE:
see page 65 ÷ 67

Mounting flange material	V
	Screws tightening torque Nm (lbf in)
Cast iron	100 ⁺⁵ (885 ÷ 929)

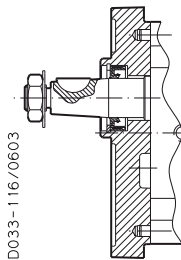
01/10.03

Pump type Motor type	A	B
	mm (inch)	mm (inch)
PL. 30•22	106 (4.1732)	39 (1.5354)
PL. 30•27	109 (4.2913)	40,5 (1.5945)
PL. 30•34	114 (4.4882)	43 (1.6929)
PL. 30•38	117 (4.6063)	44,5 (1.7520)
PL. 30•43	120 (4.7244)	46 (1.8110)
PL. 30•51	125 (4.9212)	48,5 (1.9094)
PL. 30•61	131 (5.1575)	51,5 (2.0276)
PL. 30•73	139 (5.4724)	55,5 (2.1850)
PL. 30•82	144 (5.6693)	58 (2.2835)
PL. 30•90	150 (5.9055)	61 (2.4016)

VERSIONS

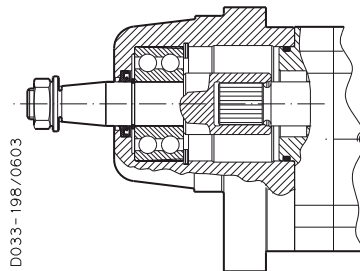
For each version, the possible combination between drive shafts and mounting flanges are shown on pages 57 ÷ 67.

VERSION		0
Available for group:		
10	20	30

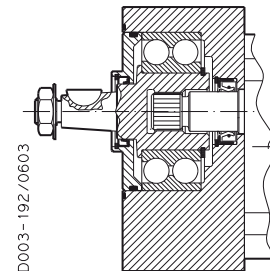


Version for applications without radial and axial load on the drive shaft.

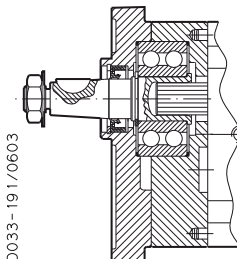
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Available for group:		
20		



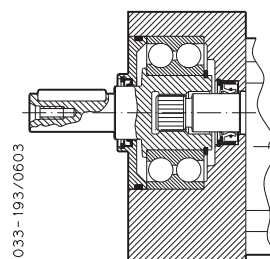
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Available for group:		
20		



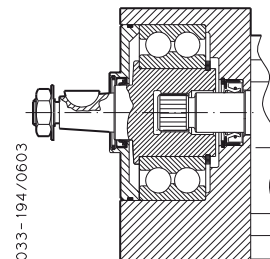
VERSION		5
Available for group:		
20		



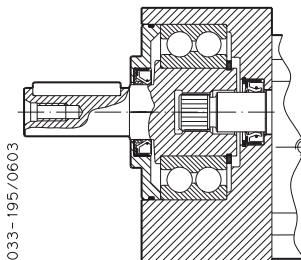
VERSION		6
Available for group:		
20		



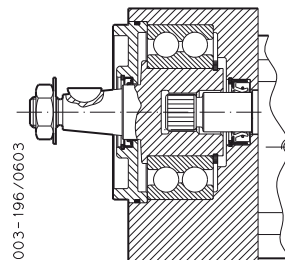
VERSION		7
Available for group:		
20		



VERSION		8
Available for group:		
20		



VERSION		9
Available for group:		
20		



For the outboard bearing life expectancy, diagrams providing approximate selection data will be found on subsequent pages. For particular applications please consult our technical sales department.

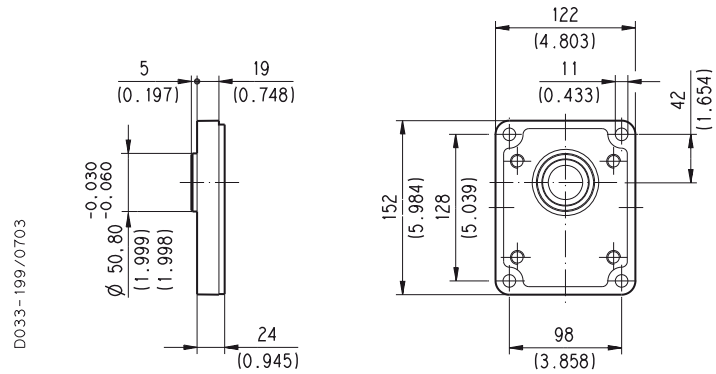
01/10.03

POLARIS 30

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

EUROPEAN

E3



DRIVE SHAFTS

See page 55 e 56

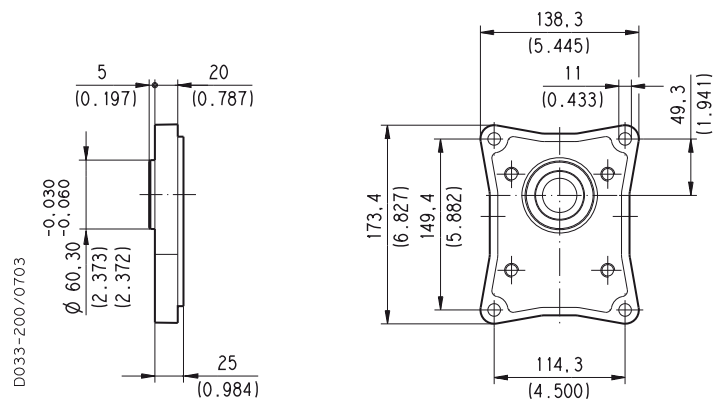
VERSIONS See page 46	83	41	04	05	32	33	A5	A8
0	#	#	x	x	x	x	x	x

Standard combination

x Available combination

EUROPEAN

E4



DRIVE SHAFTS

See page 55 e 56

VERSIONS See page 46	84	41	A5	A8
0	#	x	x	x

Standard combination

x Available combination

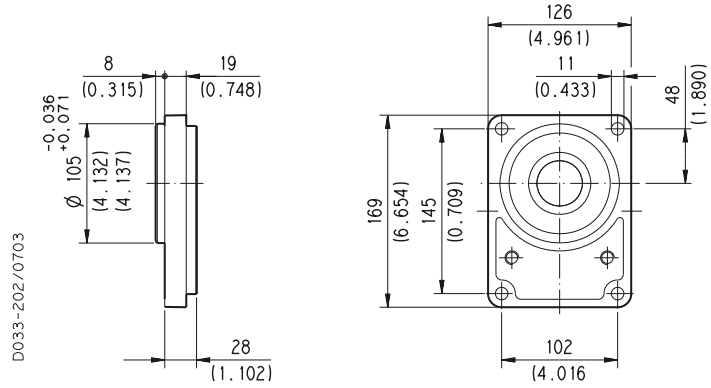
01/10.03

POLARIS 30

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

GERMAN

B3



DRIVE SHAFTS

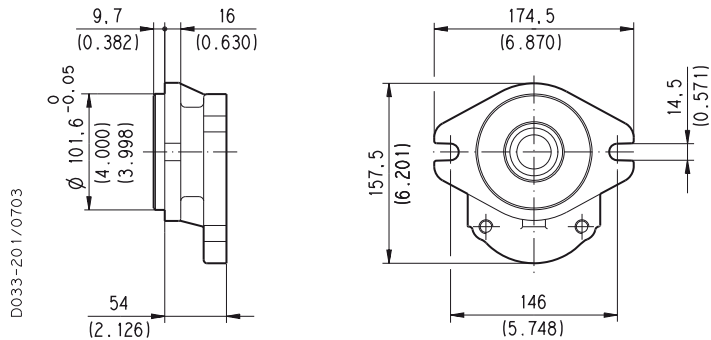
See page 55 e 56

VERSIONS See page 46	56	83	A5	A8
0	#	x	x	x

Standard combination
x Available combination

SAE "B" 2 BOLTS

S5



DRIVE SHAFTS

See page 55 e 56

VERSIONS See page 46	04	05	32	33
0	#	#	#	#

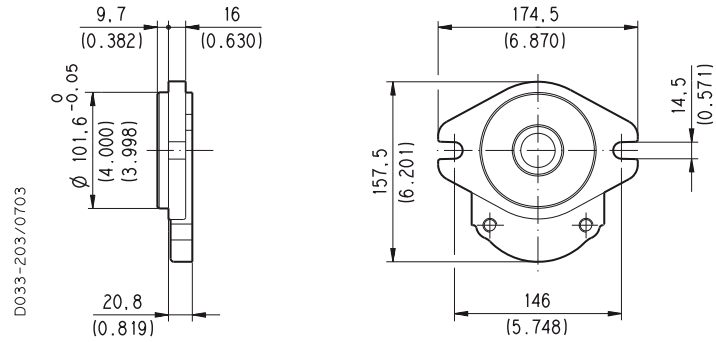
Standard combination
x Available combination

01/10.03

POLARIS 30

MOUNTING FLANGES AND TABLE OF COMPATIBILITY

SAE "B" 2 BOLTS **U3**



D033-203/0703

DRIVE SHAFTS See page 55 e 56			
VERSIONS See page 46	A5	A8	83
0	#	#	x

Standard combination
x Available combination

01/10.03

POLARIS 30

DRIVE SHAFTS

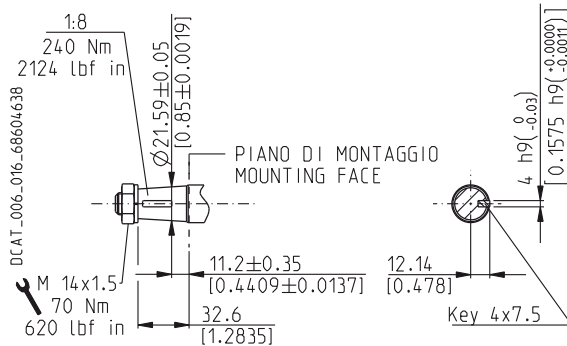
EUROPEAN TAPERED 1:8

83

Not available with size:

30•82 - 30•90

Mounting face refer to flange code E3



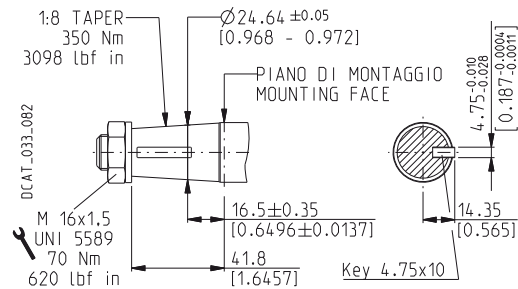
EUROPEAN TAPERED 1:8

84

Not available with size:

30•22 - 30•27 - 30•34 - 30•38

Mounting face refer to flange code E4



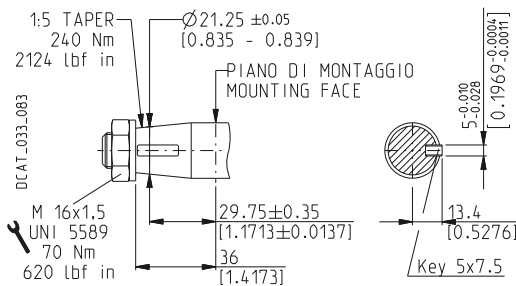
GERMAN TAPERED 1:5

56

Not available with size:

30•61 - 30•73 - 30•82 - 30•90

Mounting face refer to flange code B3



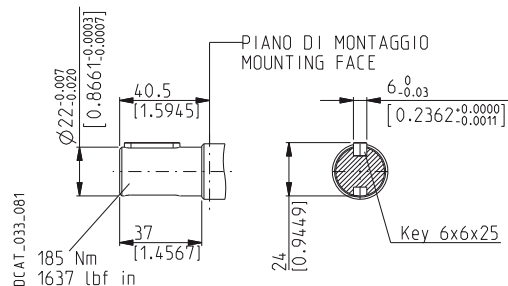
STRAIGHT

41

Not available with size:

30•82 - 30•90

Mounting face refer to flange code E3



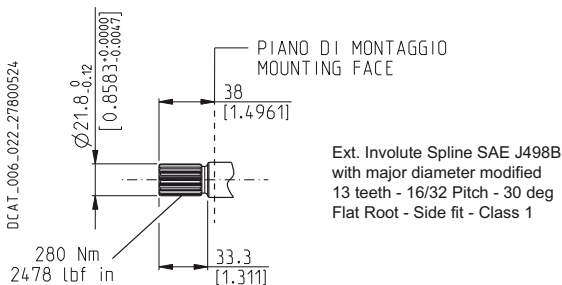
SAE "B" SPLINE

A8

Not available with size:

30•82 - 30•90

Mounting face refer to flange code U3



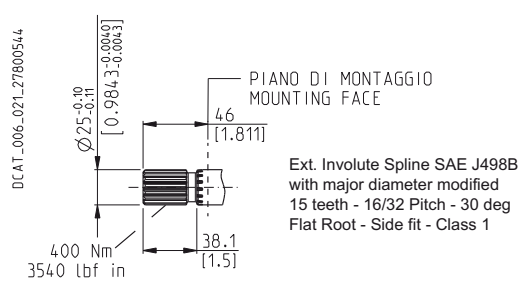
SAE "BB" SPLINE

A5

Not available with size:

30•22 - 30•38 - 30•82 - 30•90

Mounting face refer to flange code U3



01/10.03

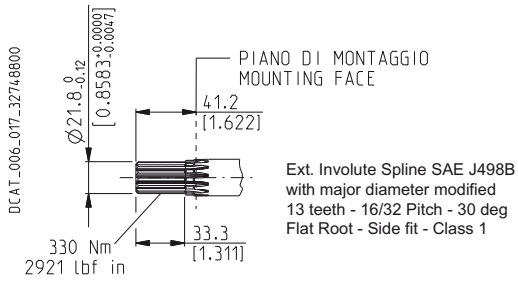
POLARIS 30

DRIVE SHAFTS

SAE "B" SPLINE

04

Mounting face refer to flange code **S5**



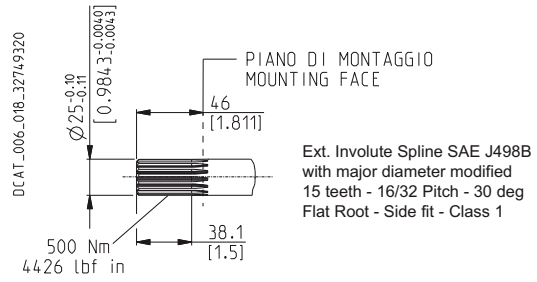
SAE "BB" SPLINE

05

Not available with size:

30•90

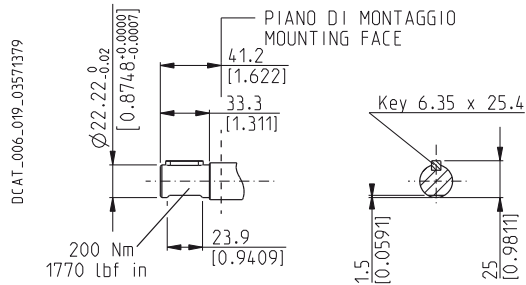
Mounting face refer to flange code **S5**



SAE "B" STRAIGHT

32

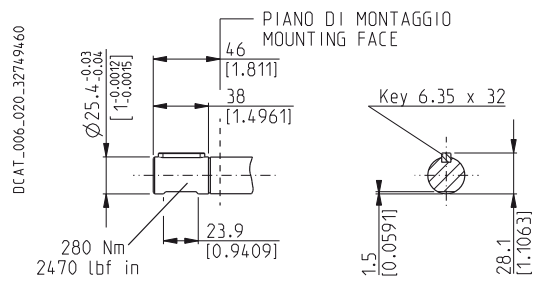
Mounting face refer to flange code **S5**



SAE "BB" STRAIGHT

33

Mounting face refer to flange code **S5**



IN/OUT PORTS TYPE


PORTS TYPE	SIDE PORTS												REAR PORTS				
	German		European		Split SSM		Split SSS		Gas BSPP		SAE ODT		Gas BSPP		SAE ODT		
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
Pump type																	
Motor type	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	
PL. 10•1	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA
PL. 10•1,5	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA
PL. 10•2	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA
PL. 10•2,5	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA
PL. 10•3,15	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA
PL. 10•4	BB	BA								GC	GC	OB	OA	GC	GC	OB	OA
PL. 10•5	BB	BA								GD	GD	OB	OA	GD	GD	OB	OA
PL. 10•5,8	BB	BA								GD	GD	OB	OA	GD	GD	OB	OA
PL. 10•6,3	BB	BA								GD	GD	OB	OA	GD	GD	OB	OA
PL. 10•8	BB	BA								GD	GD	OC	OB	GD	GD	OB	OB
PL. 10•10	BB	BA								GD	GD	OC	OB	GD	GD	OB	OB
PL. 20•4	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC	
PL. 20•6,3	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC	
PL. 20•7,2	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC	
PL. 20•8	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC	
PL. 20•9	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC	
PL. 20•10,5	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC	
PL. 20•11,2	BE	BC	EA	EA	MA	MA	SA	SA	GD	GD	OC	OC	GD	GD	OC	OC	
PL. 20•14	BE	BC	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	GE	GD	OD	OC	
PL. 20•16	BE	BC	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	GE	GD	OD	OC	
PL. 20•19	BE	BC	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	GE	GD	OD	OC	
PL. 20•20	BE	BC	EB	EA	MB	MA	SB	SA	GE	GD	OD	OC	GE	GD	OD	OC	
PL. 20•24,5	BE	BC	EB	EA	MC	MB	SC	SB	GE	GD	OD	OC	GE	GD	OD	OC	
PL. 20•25	BE	BC	EB	EA	MC	MB	SC	SB	GE	GD	OD	OC	GE	GD	OD	OC	
PL. 20•27,8	BE	BC	EB	EA	MC	MB	SC	SB	GE	GD	OD	OC	GE	GD	OD	OC	
PL. 20•31,5	BE	BC	EB	EA	MC	MB	SC	SB	GE	GD	OD	OC	GE	GD	OD	OC	
PL. 30•22	BM	BL	ED	EB	MB	MA	SB	SA	GF	GF	OF	OD					
PL. 30•27	BM	BL	ED	EB	MC	MB	SC	SB	GF	GF	OF	OD					
PL. 30•34	BM	BL	ED	EB	MC	MB	SC	SB	GF	GF	OF	OD					
PL. 30•38	BM	BL	ED	EB	MD	MC	SD	SC	GF	GF	OG	OF					
PL. 30•43	BM	BL	ED	EB	MD	MC	SD	SC	GF	GF	OG	OF					
PL. 30•46	BM	BL	ED	EB	MD	MC	SD	SC	GF	GF	OG	OF					
PL. 30•51	BM	BL	ED	EB	MD	MC	SD	SC	GF	GF	OG	OF					
PL. 30•61	BM	BL	ED	EB	ME	MD	SE	SD	GG	GF	OH	OG					
PL. 30•73	BM	BL	EF	ED	ME	MD	SE	SD	GG	GF	OH	OG					
PL. 30•82	BM	BL	EF	ED	ME	MD	SE	SD	GH	GG	OH	OG					
PL. 30•90	BM	BL	EF	ED	MF	ME	SF	SE	GH	GG	OH	OG					


01/10.03

EXTERNAL DRAIN PORTS

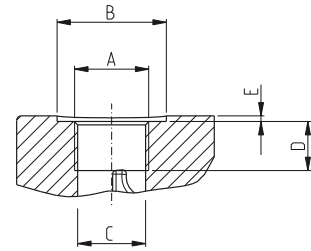
IN/OUT PORTS TYPE	SIDE PORTS						REAR PORTS	
	German	European	Split SSM	Split SSS	Gas BSPP	SAE ODT	Gas BSPP	SAE ODT
PL. 10	GA	–	–	–	GA	03	GA	03
PL. 20	TA	GB	GB	03	GB	03	GB	03
PL. 30	GC	GC	GC	OA	GC	OA	–	–


DRAIN PORTS SIZES

 Tightening torque for low pressure side port.

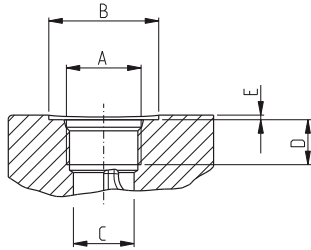
GAS STRAIGHT THREAD PORTS						BSPP	
British standard pipe parallel (55°) conforms to UNI - ISO 228							
CODE	Nominal size	A	Ø B	Ø C	D	E	
			mm (in)	mm (in)	mm (in)	mm (in)	Nm (lbf in)
GA	1/8"	G 1/8	16,5 (0.6496)	8,75 (0.3444)	12 (0.4724)	1 (0.0394)	5 ^{+0,25} (44 ÷ 46)
GB	1/4"	G 1/4	21,5 (0.8465)	12 (0.4724)	15 (0.5906)	1,5 (0.0591)	15 ⁺¹ (133 ÷ 142)


DCAT_006_026_21064779



METRIC STRAIGHT THREAD PORTS ISO 6149						METRIC	
Metric thread ISO 60° conforms to ISO/R 262							
CODE	A	Ø B	Ø C	D	E		
		mm (in)	mm (in)	mm (in)	mm (in)	Nm (lbf in)	
TA	M 10x1	22 (0.8661)	9 (0.3543)	13 (0.5118)	0,5 (0.0197)	10 ^{+0,5} (89 ÷ 93)	

DCAT_006_027_21060524



SAE STRAIGHT THREAD PORTS J514						ODT	
American straight thread UNC-UNF 60° conforms to ANSI B 1.1							
CODE	A	Ø B	Ø C	D	E		
		mm (in)	mm (in)	mm (in)	mm (in)	Nm (lbf in)	
03	7/16"-20 UNF-2B	21 (0.8267)	9,5 (0.3740)	14 (0.5512)	1 (0.0394)	12 ⁺¹ (106 ÷ 115)	

01/10.03

Other drain ports are shown on subsequent pages.

PORTS SIZES

Tightening torque for low pressure side port.

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

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

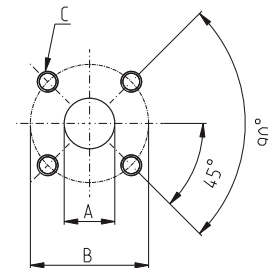
GERMAN FLANGED PORTS - 4 Bolts

GERMAN

Metric thread ISO 60° conforms to ISO/R 262

CODE	A	B	C		
	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
BA	8 (0.3150)	30 (1.1811)	M6 12 (0.4724)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
BB	13 (0.5118)	30 (1.1811)	M6 12 (0.4724)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
BC	15 (0.5906)	35 (1.3780)	M 6 12 (0.4724)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
BE	20 (0.7874)	40 (1.5748)	M 6 12 (0.4724)	15 ⁺¹ (133 ÷ 142)	15 ⁺¹ (133 ÷ 142)
BL	19 (0.7480)	55 (2.1654)	M8 18 (0.7087)	20 ⁺¹ (177 ÷ 186)	20 ⁺¹ (177 ÷ 186)
BM	27 (1.0630)	55 (2.1654)	M8 18 (0.7087)	15 ⁺¹ (133 ÷ 142)	20 ⁺¹ (177 ÷ 186)

DCAT_033_028_17681888



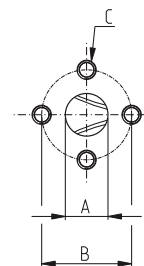
EUROPEAN FLANGED PORTS - 4 Bolts

EUROPEAN

Metric thread ISO 60° conforms to ISO/R 262

CODE	A	B	C		
	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
EA	13 (0.5118)	30 (1.1811)	M 6 13 (0.5118)	8 ^{+0,5} (71 ÷ 75)	8 ^{+0,5} (71 ÷ 75)
EB	19 (0.7480)	40 (1.5748)	M 8 14 (0.5512)	15 ⁺¹ (133 ÷ 142)	15 ⁺¹ (133 ÷ 142)
			M 8 (◆) 18 (0.7087)	15 ⁺¹ (◆) (133 ÷ 142)	15 ⁺¹ (◆) (133 ÷ 142)
ED	27 (1.0630)	51 (2.0079)	M 10 18 (0.7087)	20 ⁺¹ (177 ÷ 186)	30 ^{+2,5} (266 ÷ 288)
EF	33 (1.2992)	62 (2.4409)	M 12 18 (0.7087)	25 ⁺¹ (221 ÷ 230)	50 ^{+2,5} (443 ÷ 465)


DCAT_006_024_21060533




(◆) For POLARIS 30

01/10.03

PORTS SIZES

 Tightening torque for low pressure side port.



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

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

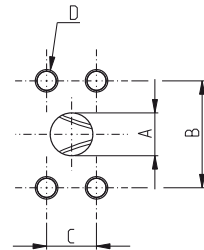
SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

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)
MA	12,5 (0.4921)	38,1 (1.500)	17,5 (0.6890)	M 8	15 ⁺¹	15 ⁺¹
				14 (0.5512)	(133 ÷ 142)	(133 ÷ 142)
				M 8 (◆)	20 ⁺¹ (◆)	20 ⁺¹ (◆)
MB	19 (0.7480)	47,6 (1.8740)	22,2 (0.8740)	M 10	20 ⁺¹	25 ⁺¹
				14 (0.5512)	(177 ÷ 186)	(266 ÷ 288)
				M 10 (◆)	20 ⁺¹ (◆)	35 ^{+2,5} (◆)
MC	25,4 (1.0000)	52,4 (2.0630)	26,2 (1.0315)	M 10	20 ⁺¹	25 ⁺¹
				14 (0.5512)	(177 ÷ 186)	(266 ÷ 288)
				M 10 (◆)	20 ⁺¹ (◆)	35 ^{+2,5} (◆)
MD	30,5 (1.2008)	58,7 (2.3110)	30,2 (1.1890)	M 10	20 ⁺¹	30 ^{+2,5}
				15 (0.5906)	(177 ÷ 186)	(266 ÷ 288)
				M 10 (◆)	20 ⁺¹ (◆)	35 ^{+2,5} (◆)
ME	39,3 (1.5472)	69,8 (2.7480)	35,7 (1.4055)	M 12	30 ^{+2,5}	60 ⁺⁵
				22 (0.8661)	(266 ÷ 288)	(531 ÷ 575)
MF	51 (2.0079)	77,8 (3.0630)	42,9 (1.6890)	M 12	30 ^{+2,5}	60 ⁺⁵
				22 (0.8661)	(266 ÷ 288)	(531 ÷ 575)

DCAT_006_025_27064252





(◆) For POLARIS 30

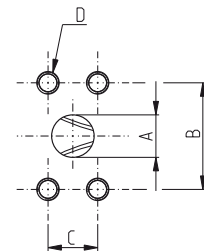
SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

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)
SA	12,5 (0.4921)	38,1 (1.500)	17,5 (0.6890)	5/16-18 UNC-2B	15 ⁺¹	15 ⁺¹
				14 (0.5512)	(133 ÷ 142)	(133 ÷ 142)
				5/16-18 UNC-2B (◆)	20 ⁺¹ (◆)	20 ⁺¹ (◆)
SB	19 (0.7480)	47,6 (1.8740)	22,2 (0.8740)	3/8 - 16 UNC-2B	20 ⁺¹	20 ⁺¹
				14 (0.5512)	(177 ÷ 186)	(177 ÷ 186)
				3/8 - 16 UNC-2B (◆)	30 ^{+2,5} (◆)	20 ⁺¹ (◆)
SC	25,4 (1.0000)	52,4 (2.0630)	26,2 (1.0315)	3/8 - 16 UNC-2B	20 ⁺¹	25 ⁺¹
				14 (0.5512)	(177 ÷ 186)	(221 ÷ 230)
				3/8 - 16 UNC-2B (◆)	20 ⁺¹ (◆)	30 ^{+2,5} (◆)
SD	30,5 (1.2008)	58,7 (2.3110)	30,2 (1.1890)	7/16 - 14 UNC-2B	20 ⁺¹	45 ^{+2,5}
				22 (0.8661)	(177 ÷ 186)	(398 ÷ 420)
SE	39,3 (1.5472)	69,8 (2.7480)	35,7 (1.4055)	1/2 - 13 UNC-2B	30 ^{+2,5}	70 ⁺⁵
				22 (0.8661)	(266 ÷ 288)	(620 ÷ 664)
SF	51 (2.0079)	77,8 (3.0630)	42,9 (1.6890)	1/2 - 13 UNC-2B	30 ^{+2,5} (◆)	70 ⁺⁵
				22 (0.8661)	(266 ÷ 288)	(620 ÷ 664)


DCAT_006_028_27060740




(◆) For POLARIS 30

01/10.03

PORTS SIZES

 Tightening torque for low pressure side port.

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

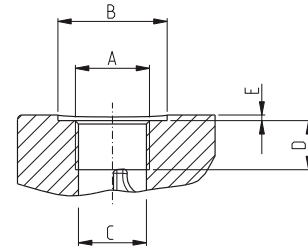
For reversible rotation, please consult only the tightening torque for high pressure side port.



GAS STRAIGHT THREAD PORTS

BSPP

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

DCAT_006_026_21064779




CODE	Nominal size	A	∅ B	∅ C	D	E		
			mm (in)	mm (in)	mm (in)	mm (in)	Nm (lbf in)	Nm (lbf in)
GC	3/8"	G 3/8	25 (0.9843)	15 (0.5906)	14 (0.5512)	2 (#) (0.0787)	15 ⁺¹ (#) (133 ÷ 142)	-
			-				15 ⁺¹ (133 ÷ 142)	25 ⁺¹ (221 ÷ 230)
GD	1/2"	G 1/2	-	19 (0.7480)	14 (0.5512)	-	20 ⁺¹ (177 ÷ 186)	50 ^{+2,5} (443 ÷ 465)
					17 (◆) (0.6693)		20 ⁺¹ (◆) (177 ÷ 186)	50 ^{+2,5} (◆) (443 ÷ 465)
GE	3/4"	G 3/4	-	24,5 (0.9646)	18 (0.7087)	-	30 ^{+2,5} (266 ÷ 288)	90 ⁺⁵ (797 ÷ 841)
GF	1"	G 1	-	30,5 (1.2008)	18 (0.7086)	-	50 ^{+2,5} (443 ÷ 465)	130 ⁺¹⁰ (1151 ÷ 1239)
GG	1" 1/4	G 1 1/4	-	39 (1.5354)	22 (0.8661)	-	60 ⁺⁵ (531 ÷ 575)	170 ⁺¹⁰ (1505 ÷ 1593)
GH	1" 1/2	G 1 1/2	-	45 (1.7716)	24 (0.9448)	-	70 ⁺⁵ (620 ÷ 664)	210 ⁺¹⁵ (1859 ÷ 1992)


(#) Drain port

(◆) For POLARIS 20

01/10.03

PORTS SIZES

 Tightening torque for low pressure side port.

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

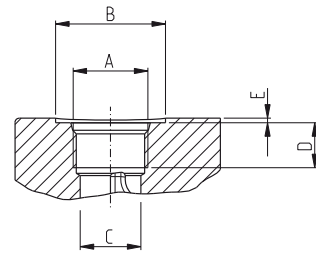
For reversible rotation, please consult only the tightening torque for high pressure side port.



SAE STRAIGHT THREAD PORTS J514

ODT

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

DCAT_006_027_21060524



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	3/8"	9/16" - 12 UNF - 2B	26 (1.0236)	13 (0.5118)	15 (0.5906)	1 (0.03934)	15 ⁺¹ (133 ÷ 142)	25 ⁺¹ (221 ÷ 230)
						2 (#) (0.0787)	15 ⁺¹ (#) (133 ÷ 142)	-
OB	1/2"	3/4" - 16 UNF - 2B	32 (1.2598)	17,5 (0.690)	15 (0.5906)	-	20 ⁺¹ (177 ÷ 186)	45 ^{+2,5} (398 ÷ 420)
OC	5/8"	7/8" - 14 UNF - 2B	35 (1.3780)	20,5 (0.8071)	15 (◆) (0.5906)	0,5 (0.0197)	30 ^{+2,5} (266 ÷ 288)	70 ⁺⁵ (620 ÷ 664)
					17 (0.6693)			
OD	3/4"	1 1/16" - 12 UNF - 2B	42 (1.6535)	24,8 (0.9764)	20 (0.7874)	0,5 (0.0197)	40 ^{+2,5} (354 ÷ 376)	120 ⁺¹⁰ (1062 ÷ 1151)
OF	1"	1 5/16" - 12 UNF - 2B	49 (1.9291)	30,5 (1.2008)	20 (0.7874)	0,5 (0.0197)	60 ⁺⁵ (531 ÷ 575)	170 ⁺¹⁰ (1505 ÷ 1593)
OG	1" 1/4	1 5/8" - 12 UNF - 2B	58 (2.2835)	39,1 (1.5394)	20 (0.7874)	0,5 (0.0197)	70 ⁺⁵ (620 ÷ 664)	200 ⁺¹⁰ (1770 ÷ 1858)
OH	1" 1/2	1 7/8" - 12 UNF - 2B	65 (2.5591)	45 (1.7717)	20 (0.7874)	0,5 (0.0197)	100 ⁺⁵ (885 ÷ 929)	270 ⁺¹⁵ (2389 ÷ 2522)

(#) Drain port

(◆) For POLARIS 10

01/10.03

VALVE OPTIONS (◆)		
PRIORITY VALVE		
P1	Costant delivery and internal recirculation of excess flow.	
P2	Costant delivery at controlled pressure. Internal recirculation of excess flow and drain valve.	
P3	Costant delivery at controlled pressure. Excess flow and drain valve must be connected to tank.	
P4	Costant delivery and excess flow can both be used under load.	
P5T	Costant delivery at controlled pressure with drain valve connected to tank. Excess flow can be used under load.	
P7	Costant delivery. Excess flow at controlled pressure can be used under load. Internal recirculation of drain valve.	
P9	Costant delivery at controlled pressure. Internal recirculation of valve drain. Excess flow can be used under load.	
ELECTRIC VALVE FOR MOTORS		
EC08..	By-pass valve normally closed with max. pressure relief valve and anti-cavitation valve.	
DBVSA..	Proportional relief valve and anti-cavitation valve.	
MAX PRESSURE RELIEF VALVE		
VPEF..	Fixed setting with external drain.	
VPIF..	Fixed setting with internal drain.	
VPER..	Adjustable setting with external drain.	
VPIR..	Adjustable setting with internal drain.	
LOAD SENSING VALVE		
...	Static.	
...	Dynamic.	
...	Dynamic with relief valve fitted on the main line.	
...	Dynamic with relief valve fitted on controlled line.	
CHECK VALVE		
V8	Anti-cavitation valve.	

(◆) For more information please consult our technical sales department.

01/10.03

HOW TO ORDER POLARIS 30 SINGLE UNITS

1
2
3
4
5
6
7
8
9
10

PLP30•22 - R 0 83 E3 - L - ED/EB - N - C - FS

1	Type	PUMP TYPE	MOTOR TYPE
	in ³ /rev (cm ³ /rev)		
	1.34 (21,99)	PLP 30•22	PLM 30•22
	1.63 (26,70)	PLP 30•27	PLM 30•27
	2.11 (34,55)	PLP 30•34	PLM 30•34
	2.40 (39,27)	PLP 30•38	PLM 30•38
	2.68 (43,98)	PLP 30•43	PLM 30•43
	3.16 (51,83)	PLP 30•51	PLM 30•51
	3.74 (61,26)	PLP 30•61	PLM 30•61
	4.50 (73,82)	PLP 30•73	PLM 30•73
	4.98 (81,68)	PLP 30•82	PLM 30•82
	5.56 (91,10)	PLP 30•90	PLM 30•90

2	Rotation	CODE
	Left	S
	Right	D
	Reversible rear external drain	R

3	Version	CODE
	Without outboard bearing	0

4	Drive shaft	CODE
	European tapered 1:8	83
	European tapered 1:8	84
	German tapered 1:5	56
	Straight	41
	SAE "B" spline	A8
	SAE "BB" spline	A5
	SAE "B" spline	04
	SAE "BB" spline	05
	SAE "B" straight	32
	SAE "BB" straight	33

5	Mounting flange	CODE
	European	E3
	European	E4
	German	B3
	SAE "B" 2 bolt	S5
	SAE "B" 2 bolt	U3

6	Ports position	CODE
	Side	L

7	Ports IN/OUT	CODE
GERMAN FLANGED PORTS		
	Type	Side
	22-27-34-38-43	PLP30 BM/BL
	46-51-61-73-82-90	PLM30 BL/BM
EUROPEAN FLANGED PORTS		
	Type	Side
	22-27-34-38-43	PLP30 ED/EB
	46-51-61	PLM30 EB/ED
	73-82-90	PLP30 EF/ED
		PLM30 ED/EF

CODE	Ports IN/OUT		7
SAE FLANGED PORTS (SSM)			
	Side	Type	
	MB/MA	PLP 30	22
	MA/MB	PLM 30	
	MC/MB	PLP 30	27-34
	MB/MC	PLM 30	
	MD/MC	PLP 30	38-43-46-51
	MC/MD	PLM 30	
	ME/MD	PLP 30	61-73-82
	MD/ME	PLM 30	
	MF/ME	PLP 30	90
	ME/MF	PLM 30	

SAE FLANGED PORTS (SSS)			
	Side	Type	
	SB/SA	PLP 30	22
	SA/SB	PLM 30	
	SC/SB	PLP 30	27-34
	SB/SC	PLM 30	
	SD/SC	PLP 30	38-43-46-51
	SC/SD	PLM 30	
	SE/SD	PLP 30	61-73-82
	SD/SE	PLM 30	
	SF/SE	PLP 30	90
	SE/SF	PLM 30	

GAS STRAIGHT THREAD PORTS (BSPP)			
	Side	Type	
	GF/GF	PLP 30	22-27-34-38-43-46-51
		PLM 30	
	GG/GF	PLP 30	61-73
	GF/GG	PLM 30	
	GH/GG	PLP 30	82-90
	GG/GH	PLM 30	

SAE STRAIGHT THREAD PORTS (ODT)			
	Side	Type	
	OF/OD	PLP 30	22-27-34
	OD/OF	PLM 30	
	OG/OF	PLP 30	38-43-46-51
	OF/OG	PLM 30	
	OH/OG	PLP 30	61-73-82-90
	OG/OH	PLM 30	

CODE	Seals (a)	8
N	Buna (standard)	
V	Viton	

CODE	Shaft seal options	9
C	High back pressure seal with wiper seal	
D	Standard seal with wiper seal	
H	High back pressure seal	

CODE	Shaft arrangement	10
FS	Female spline	

(a) Choose the seals according to the temperature shown on page 3.

01/10.03



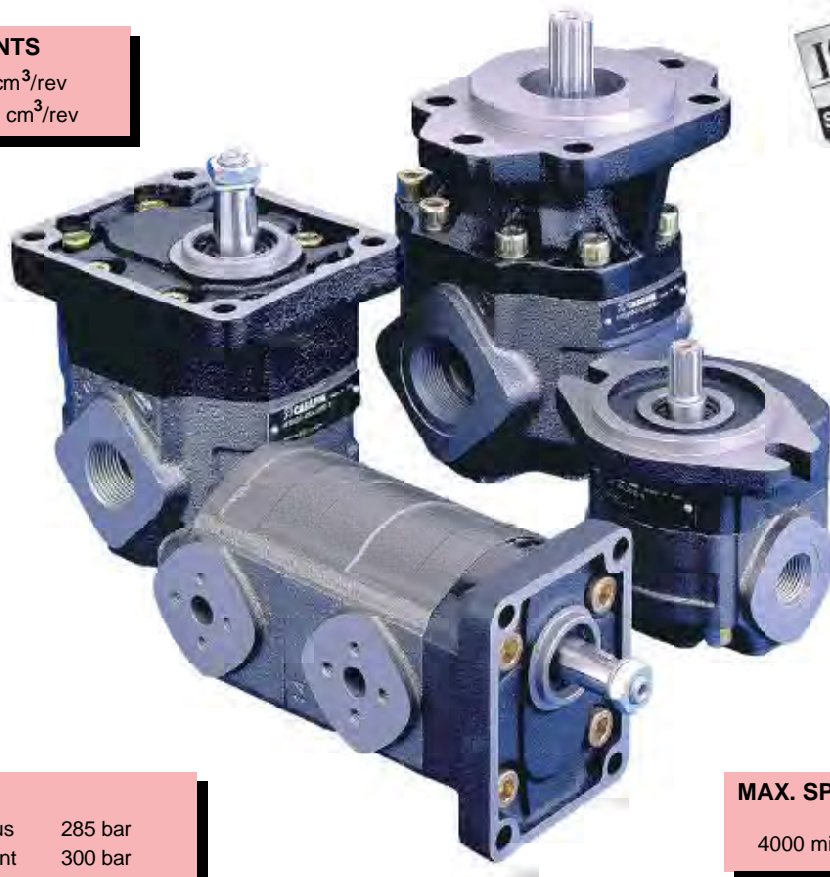
Hydraulic gear pumps

two pieces cast iron housing

Replaces: K 01 T E

DISPLACEMENTS

From 4,95 cm³/rev
To 73,82 cm³/rev



PRESSURE

Max. continuous 285 bar
Max. intermittent 300 bar
Max. peak 330 bar

MAX. SPEED

4000 min⁻¹

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

Edition: 02/09.2002

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.



FEATURES

Construction	External gear type pumps and motors
Mounting	EUROPEAN - SAE - ISO standard flanges
Line connections	Screw and flange
Direction of rotation (looking on drive shaft)	Anti-clock (S) - clockwise (D) - reversible (L, R or B)
Inlet pressure range for pumps	0,7 ÷ 3 bar (abs.)
Max back pressure for single rotation motors	p ₁ (continuous) max 5 bar
	p ₂ (for 20 s) max 8 bar
	p ₃ (for 8 s) max 15 bar
Max drain line pressure on the reversible rotation motors	5 bar
Max back pressure on the series motors	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 12 to 100 mm ² /s (cSt) recommended
	Up to 750 mm ² /s (cSt) permitted
Filtering requirement	See table (2)

Tab. 1

Type	Fluid composition	Max pressure [bar]	Max speed [min ⁻¹]	Temperature [°C]	Seals (◆)
ISO/DIN	Mineral oil based hydraulic fluid to ISO/DIN	See page 3 - 4	See page 3 - 4	-25 ÷ +80	N
					N-H
				-25 ÷ +110	V
HFA	Oil emulsion in water 5 ÷ 15% of oil	50	1500	2 ÷ 55	N
HFB	Water emulsion in oil 40 % of water	120	1500	2 ÷ 60	
HFC	Water - glycol	100	1500	-20 ÷ +60	N Bz
HFD	Phosphate ester	150	1500	-10 ÷ +80	V Bz

(◆) **N**= Buna N (standard) - **N-H**= Buna N and high back pressure shaft seals - **V**= Viton
N Bz= Buna N and Bronze thrust plates - **V Bz**= Viton and Bronze thrust plates

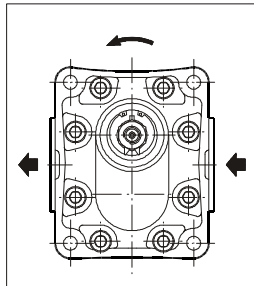
Tab. 2

Working pressure	Δp > 200 bar	Δp < 200 bar
Contamination class NAS 1638	8	10
Contamination class ISO 4406	19/17/14	21/19/16
Achieved with filter β _x =75	10 μm	25 μm

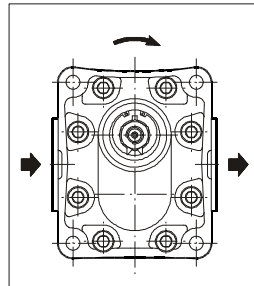
GENERAL NOTES

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

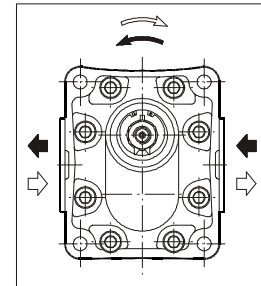
DEFINITION OF ROTATION DIRECTION LOOKING ON THE DRIVE SHAFT



Anti-clock rotation

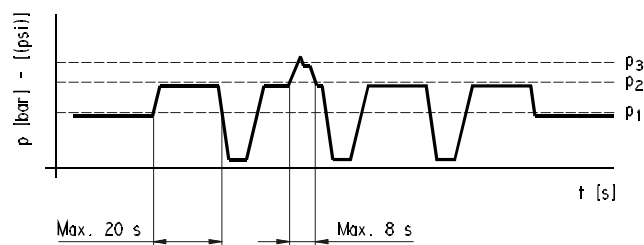


Clockwise rotation



Reversible rotation

PRESSURE DEFINITION



- p_1 Max. continuous pressure
- p_2 Max. intermittent pressure
- p_3 Max. peak pressure

01/01.02

KAPPA 20 GENERAL DATA PUMPS

KP 20

Pump type	Displacement	Max. pressure			Max. speed	Min. speed
		p ₁	p ₂	p ₃		
	cm ³ /rev	bar			min ⁻¹	
KP 20•4	4,95	285	300	330	4000	350
KP 20•6,3	6,61	285	300	330	4000	350
KP 20•8	8,26	285	300	330	3500	350
KP 20•11,2	11,23	275	290	320	3500	350
KP 20•14	14,53	265	290	320	3500	350
KP 20•16	16,85	260	290	320	3000	300
KP 20•20	21,14	210	230	250	3000	300
KP 20•25	26,42	180	200	220	2500	300
KP 20•31,5	33,03	140	160	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.

01/01.02

KAPPA 20	HYDRAULIC GEAR PUMPS EUROPEAN STANDARD	82 E2 - P
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GAS STRAIGHT THREAD PORTS
British standard pipe parallel (55°) conforms to UNI - ISO 228

Rear ports version.

Pump type		A	B	C
		mm (in)	mm (in)	mm (in)
KP 20•4	S D R B	0-82 E2-P GD/GD-N	G 1/2 Depth 17 (0.670)	19 (0.748)
KP 20•6,3				
KP 20•8				
KP 20•11,2				
KP 20•14	0-82 E2-P GE/GE-N	G 3/4 Depth 18 (0.709)	22 (0.866)	
KP 20•16				
KP 20•20				
KP 20•25				
KP 20•31,5				

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

Replaces: 01/01.02

02/09.02

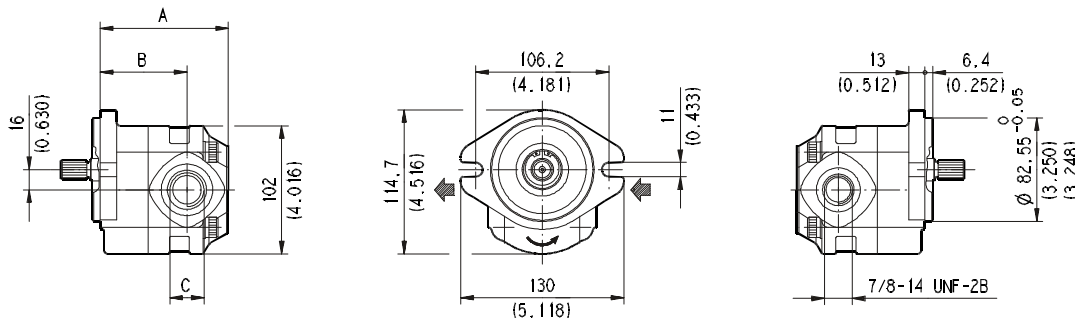
KAPPA 20

HYDRAULIC GEAR PUMPS SAE STANDARD

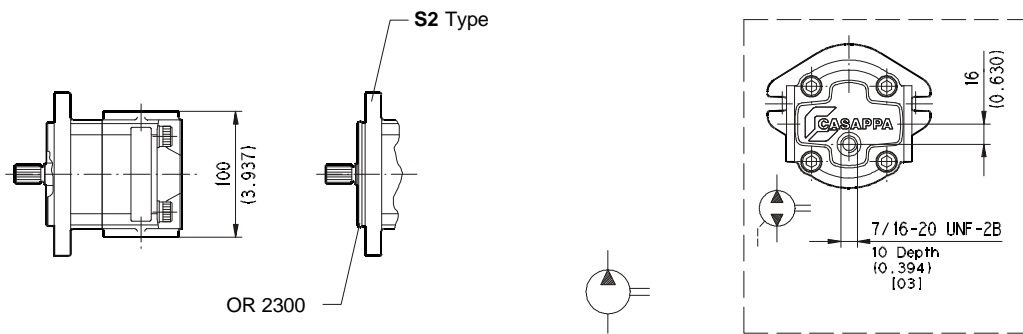
... S1

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

Replaces: 01/01..02



D006-D04/0902



OR 2300

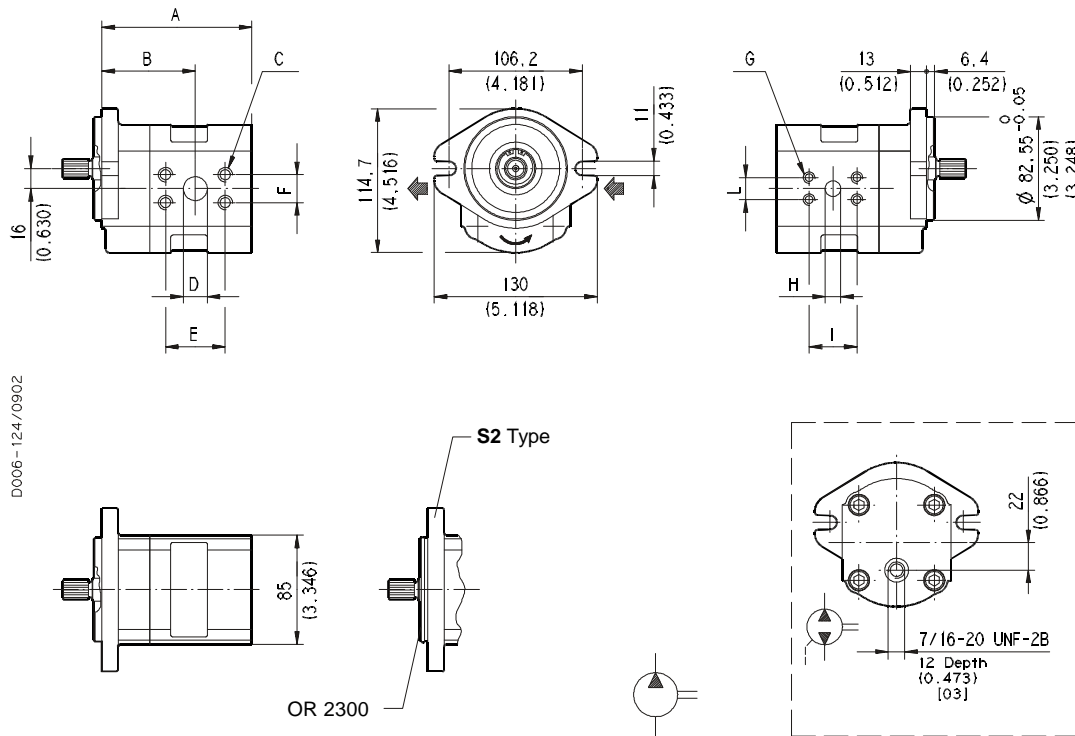
Side ports version (L) - To order see page 22

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	
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	OC	
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)			

02/09.02

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

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



D006-124/0902

Replaces: 01/01.02

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

Pump type	A	B	C	D	E	F	G	H	I	L	Ports code	
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	IN	OUT
KP 20•4	101,5 (3.996)	62 (2.441)	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	M 8 Depth 12 (0.472)	12,5 (0.492)	38,1 (1.500)	17,5 (0.689)	MA	MA
KP 20•6,3	104 (4.094)	64,5 (2.539)										
KP 20•8	106,5 (4.193)	67 (2.638)										
KP 20•11,2	111 (4.370)	70,5 (2.776)	M 10 Depth 12 (0.472)	19 (0.748)	47,6 (1.874)	22,2 (0.874)	M 10 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)										
KP 20•25	134 (5.276)	74 (2.913)										
KP 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)	MC	MB

02/09.02

KAPPA 20	HYDRAULIC GEAR PUMPS SAE STANDARD	... S1
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SAE STRAIGHT THREAD PORTS J514
American straight thread UNC-UNF 60° conforms to ANSI B 1.1

Replaces: 01/01..02

D006-D03/0902

OR 2300

S2 Type

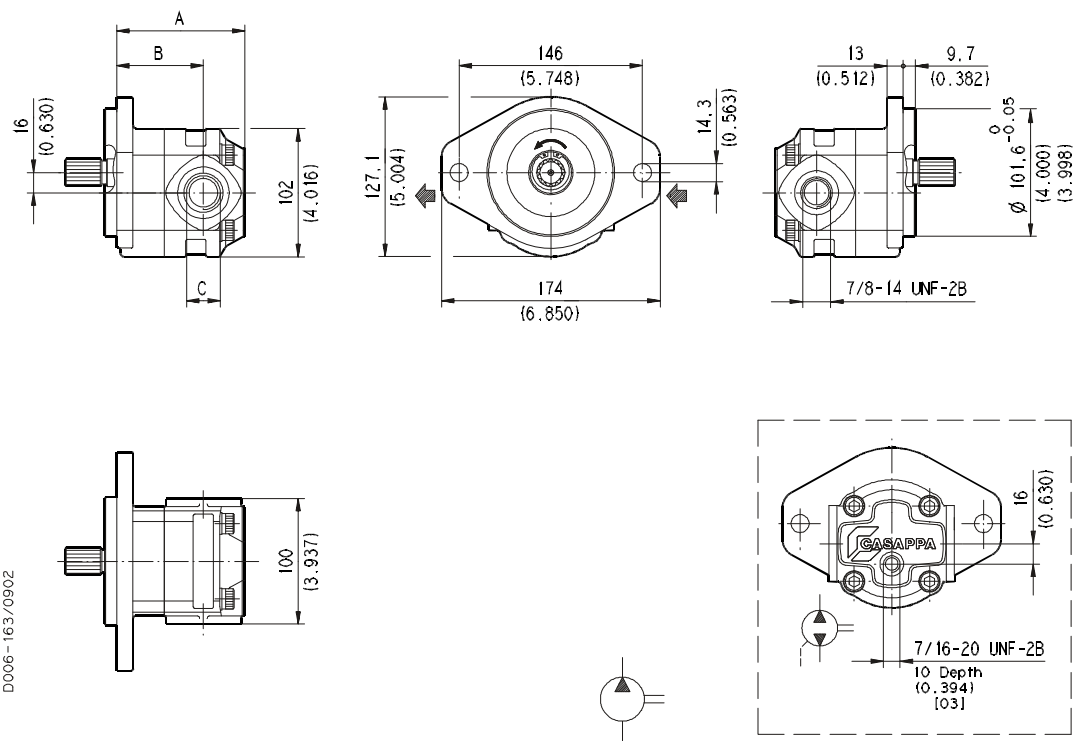
Rear ports version (P) - To order see page 22

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	
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)				

02/09.02

KAPPA 20	HYDRAULIC GEAR PUMPS SAE STANDARD	... S5
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SAE STRAIGHT THREAD PORTS J514
American straight thread UNC-UNF 60° conforms to ANSI B 1.1



D006-163/0902

Replaces: 01/01.02

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)			

02/09.02

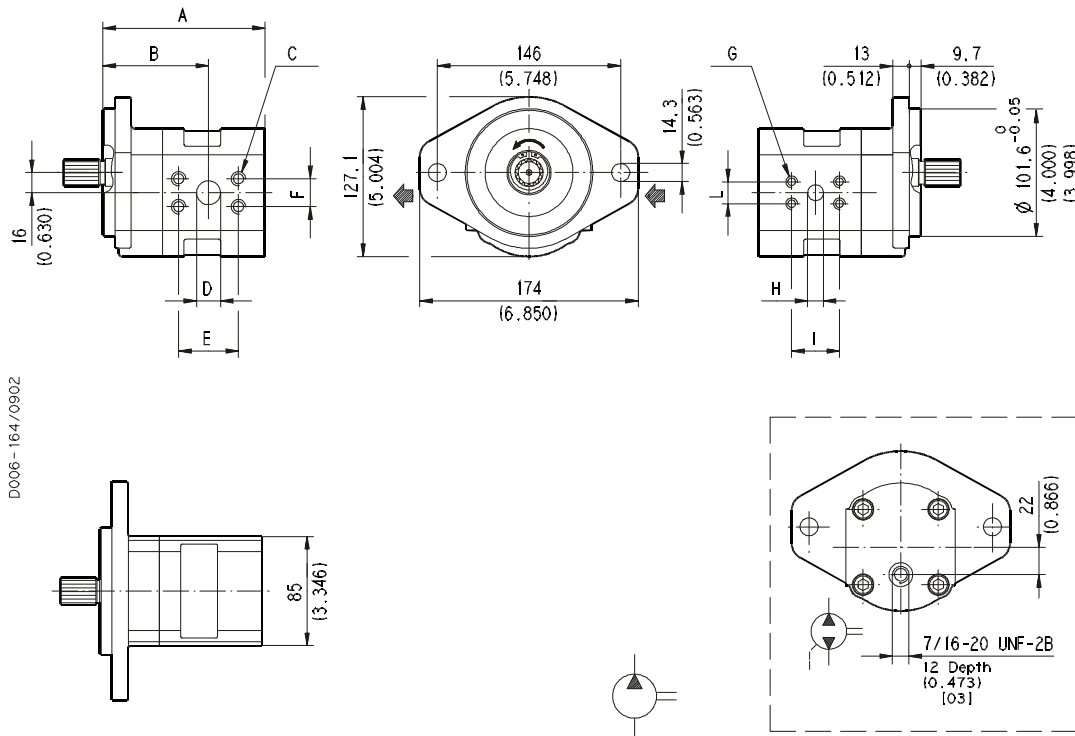
KAPPA 20

HYDRAULIC GEAR PUMPS SAE STANDARD

... S5

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

Replaces: 01/01.02



D006 - 164/9902

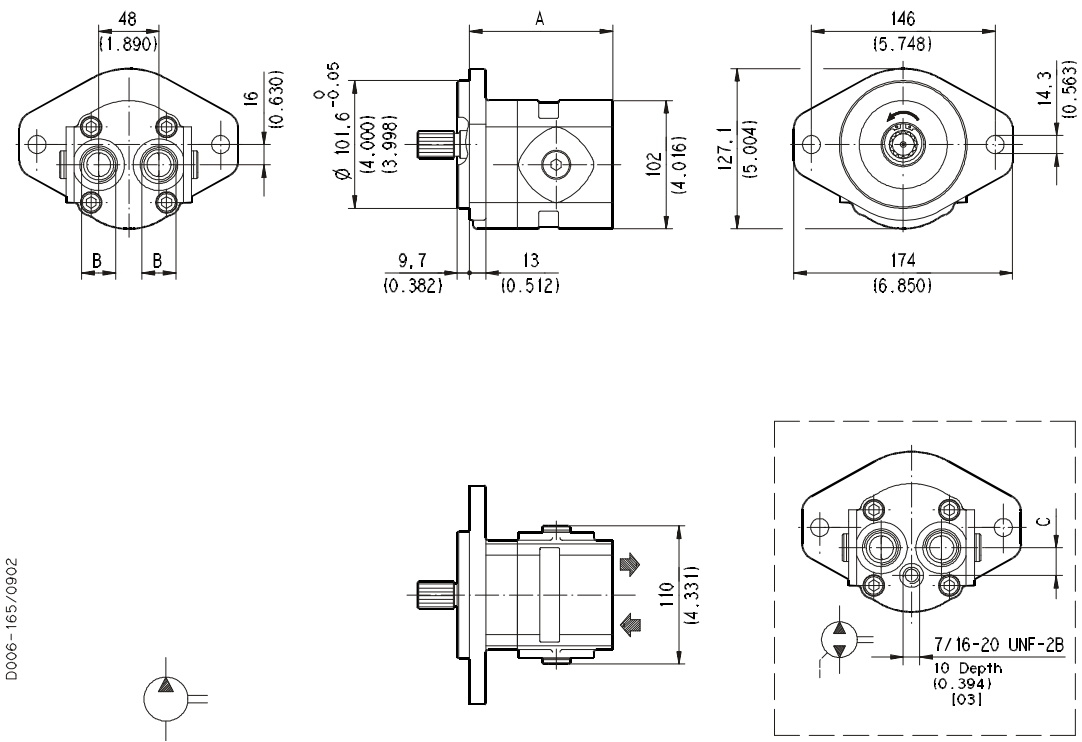
Side ports version (L) - To order see page 22

02/09.02

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

KAPPA 20	HYDRAULIC GEAR PUMPS SAE STANDARD	... S5
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SAE STRAIGHT THREAD PORTS J514
American straight thread UNC-UNF 60° conforms to ANSI B 1.1



D006-185/0902

Replaces: 01/01.02

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

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

02/09.02

Replaces: 01/01.02

02/09.02

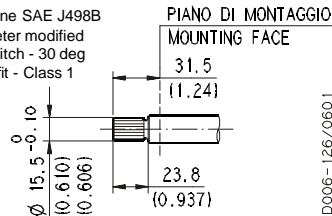
KAPPA 20 END DRIVE SHAFTS

SAE

SAE "A" SPLINE

03

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

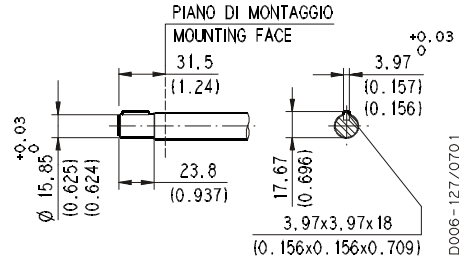


D006-126/0601

MAX 100 Nm (885 lbf in)

SAE "A" STRAIGHT

31



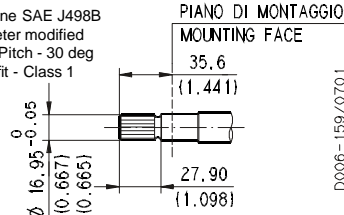
D006-127/0701

MAX 70 Nm (620 lbf in)

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

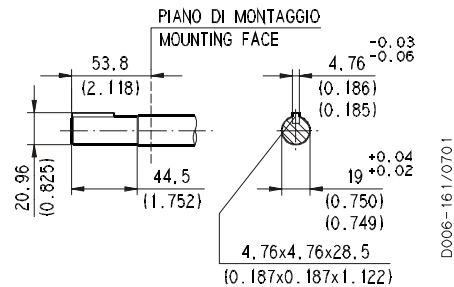


D006-159/0701

MAX 100 Nm (885 lbf in)

STRAIGHT

49



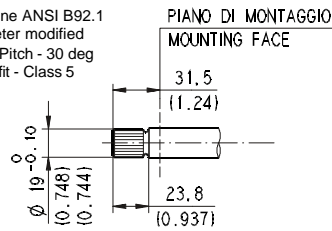
D006-161/0701

MAX 140 Nm (1239 lbf in)

SAE SPLINE

07

Ext. Involute Spline ANSI B92.1
with major diameter modified
11 teeth - 16/32 Pitch - 30 deg
Flat Root - Side fit - Class 5

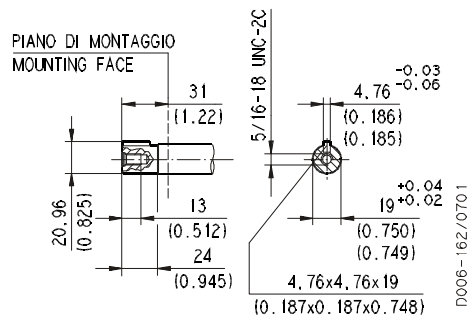


D006-160/0701

MAX 170 Nm (1505 lbf in)

STRAIGHT

50



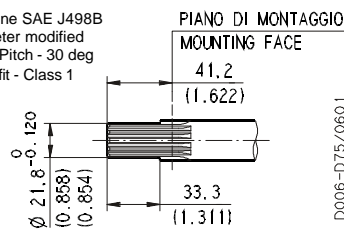
D006-162/0701

MAX 100 Nm (885 lbf in)

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

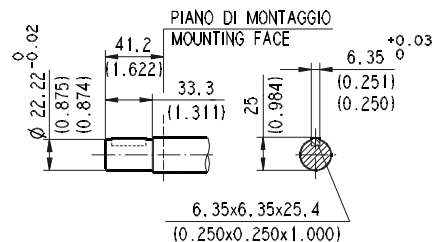


D006-D75/0601

MAX 300 Nm (2655 lbf in)

SAE "B" STRAIGHT

32



D006-D77/0601

MAX 200 Nm (1770 lbf in)

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
KP20•4	S	0	03	S1	L	OC/OC	N

1	Pump type	CODE
	cm ³ /rev	
	4,95	KP 20•4
	6,61	KP 20•6,3
	8,26	KP 20•8
	11,23	KP 20•11,2
	14,53	KP 20•14
	16,85	KP 20•16
	21,14	KP 20•20
	26,42	KP 20•25
	33,03	KP 20•31,5

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

3	Version	CODE
	Without outboard bearing	0

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

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

CODE	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			
	Side	Rear	Pump type
	MA/MA		KP 20•4
	MA/MA		KP 20•6,3
	MA/MA		KP 20•8
	MA/MA		KP 20•11,2
	MB/MA		KP 20•14
	MB/MA		KP 20•16
	MB/MA		KP 20•20
	MC/MB		KP 20•25
	MC/MB		KP 20•31,5

CODE	Seals (b)	8
N	Buna (standard)	
N- H	Buna with high back pressure shaft seals	
V	Viton	
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

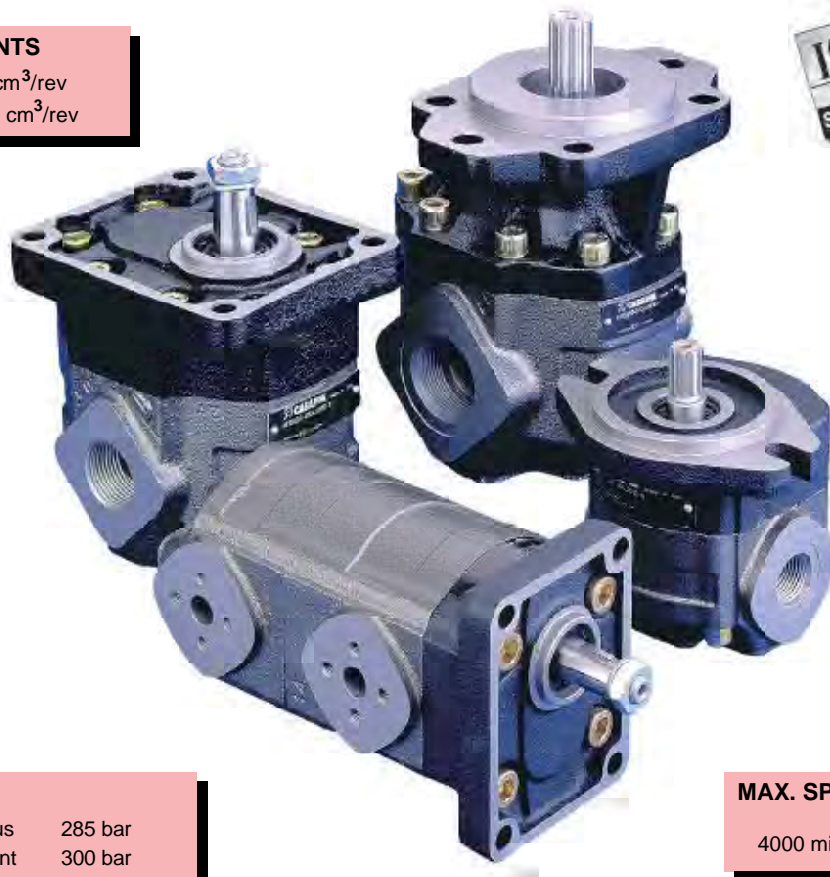


Hydraulic gear pumps

two pieces cast iron housing

DISPLACEMENTS

From 4,95 cm³/rev
To 73,82 cm³/rev



PRESSURE

Max. continuous 285 bar
Max. intermittent 300 bar
Max. peak 330 bar

MAX. SPEED

4000 min⁻¹

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

KAPPA pump and motor units consist essentially of a housing and a mounting flange in cast iron of superior mechanical specifications. KAPPA is available with 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.



FEATURES

Construction	External gear type pumps and motors
Mounting	EUROPEAN - SAE - ISO standard flanges
Line connections	Screw and flange
Direction of rotation (looking on drive shaft)	Anti-clock (S) - clockwise (D) - reversible (L, R or B)
Inlet pressure range for pumps	0,7 ÷ 3 bar (abs.)
Max back pressure for single rotation motors	p ₁ (continuous) max 5 bar
	p ₂ (for 20 s) max 8 bar
	p ₃ (for 8 s) max 15 bar
Max drain line pressure on the reversible rotation motors	5 bar
Max back pressure on the series motors	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 12 to 100 mm ² /s (cSt) recommended
	Up to 750 mm ² /s (cSt) permitted
Filtering requirement	See table (2)

Tab. 1					
Type	Fluid composition	Max pressure [bar]	Max speed [min ⁻¹]	Temperature [°C]	Seals (◆)
ISO/DIN	Mineral oil based hydraulic fluid to ISO/DIN	See page 3 - 4	See page 3 - 4	-25 ÷ +80	N
				-25 ÷ +110	N-H
					V
HFA	Oil emulsion in water 5 ÷ 15% of oil	50	1500	2 ÷ 55	N
HFB	Water emulsion in oil 40 % of water	120	1500	2 ÷ 60	
HFC	Water - glycol	100	1500	-20 ÷ +60	N Bz
HFD	Phosphate ester	150	1500	-10 ÷ +80	V Bz

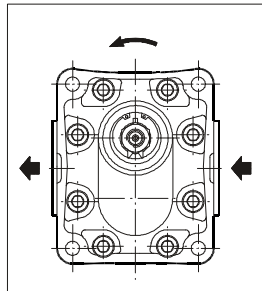
(◆) **N**= Buna N (standard) - **N-H**= Buna N and high back pressure shaft seals - **V**= Viton
N Bz= Buna N and Bronze thrust plates - **V Bz**= Viton and Bronze thrust plates

Tab. 2		
Working pressure	Δp > 200 bar	Δp < 200 bar
Contamination class NAS 1638	8	10
Contamination class ISO 4406	19/17/14	21/19/16
Achieved with filter βx=75	10 μm	25 μm

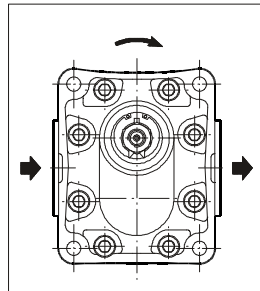
GENERAL NOTES

Available with different inlet and outlet ports. If you use fire resistant fluids specify the type of them at

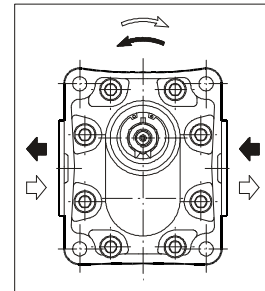
DEFINITION OF ROTATION DIRECTION LOOKING ON THE DRIVE SHAFT



Anti-clock rotation

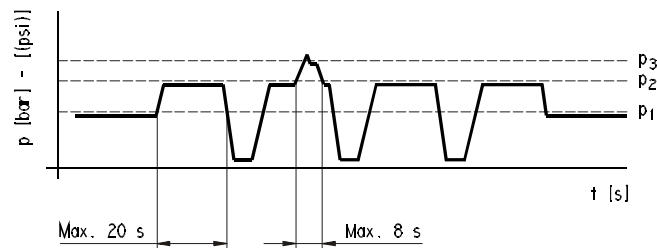


Clockwise rotation



Reversible rotation

PRESSURE DEFINITION



- p_1 Max. continuous pressure
- p_2 Max. intermittent pressure
- p_3 Max. peak pressure

KAPPA 30 GENERAL DATA PUMPS

KP 30

Pump type	Displacement	Max. pressure			Max. speed	Min. speed
		p ₁	p ₂	p ₃		
	cm ³ /rev	bar			min ⁻¹	
KP 30•27	26,7	280	300	310	3000	350
KP 30•34	34,56	260	280	300	3000	350
KP 30•38	39,27	260	280	300	3000	350
KP 30•43	43,98	250	270	290	3000	350
KP 30•51	51,83	230	250	270	2500	350
KP 30•56	56,54	215	235	255	2500	350
KP 30•61	61,26	200	220	240	2500	350
KP 30•73	73,82	180	200	220	2500	350

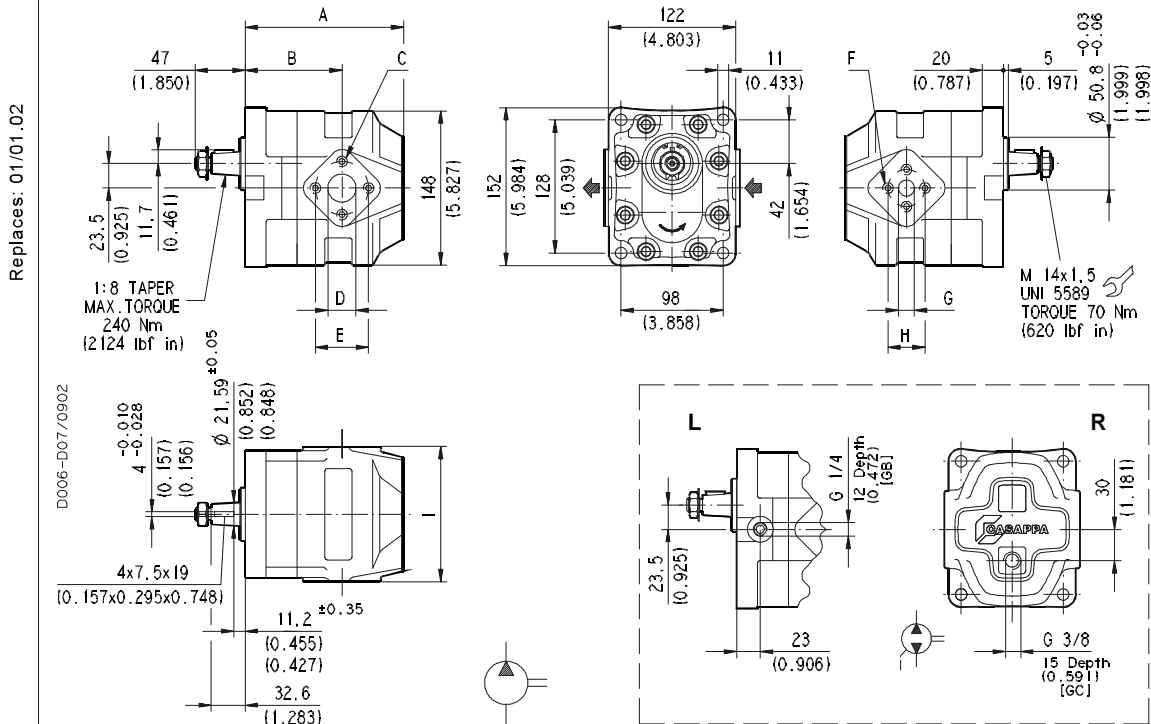
p₁= Max. continuous pressure p₂= Max. intermittent pressure p₃= Max. peak pressure

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

01/01.02

KAPPA 30 HYDRAULIC GEAR PUMPS EUROPEAN STANDARD 83 E3

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



Pump type	A	B	C	D	E	F	G	H	I
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30•27	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

Dimensions:
 A: 133-163 mm (5.236-6.417 in)
 B: 85-108 mm (3.346-4.252 in)
 C: 130 mm (5.118 in)
 D: 135 mm (5.315 in)

Port Specifications:
 - Gas Port: G 1, 22 Depth (0.866)
 - Oil Port: M 14x1.5 UNI 5589, TORQUE 70 Nm (620 lbf in)
 - Side/Rear Drain: G 1/4, 12 Depth (0.472) [GS]
 - Internal Drain: G 3/8, 15 Depth (0.591) [GC]

Material & Torque:
 1:8 TAPER MAX. TORQUE 240 Nm (2124 lbf in)

Surface Finish:
 D006-D 10/0902
 4x7.5x19 (0.157x0.295x0.748)
 11.2 ±0.35 (0.455) (0.427) (1.283)

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

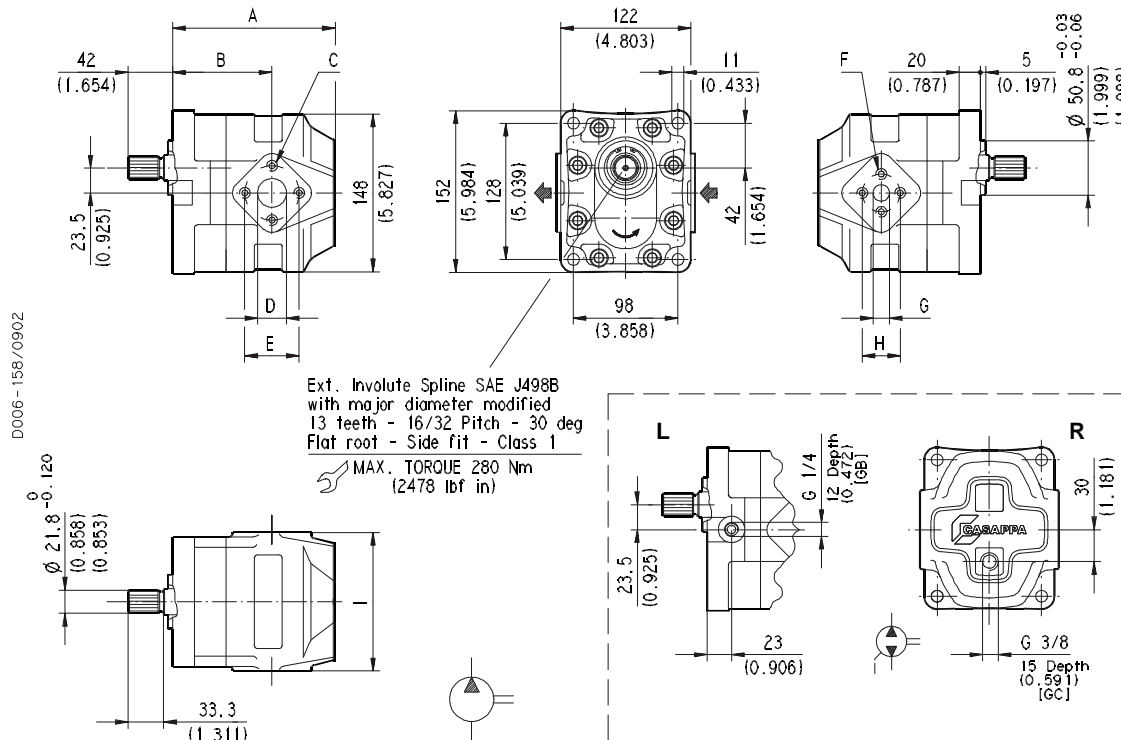
How to order:
KP 30*27 S0-83 E3-L GF/GF-N

Replaces: 01/01.02

02/09.02

KAPPA 30 HYDRAULIC GEAR PUMPS EUROPEAN STANDARD A8 E3

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



Replaces: 01/01.02

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)
SDLRB	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:

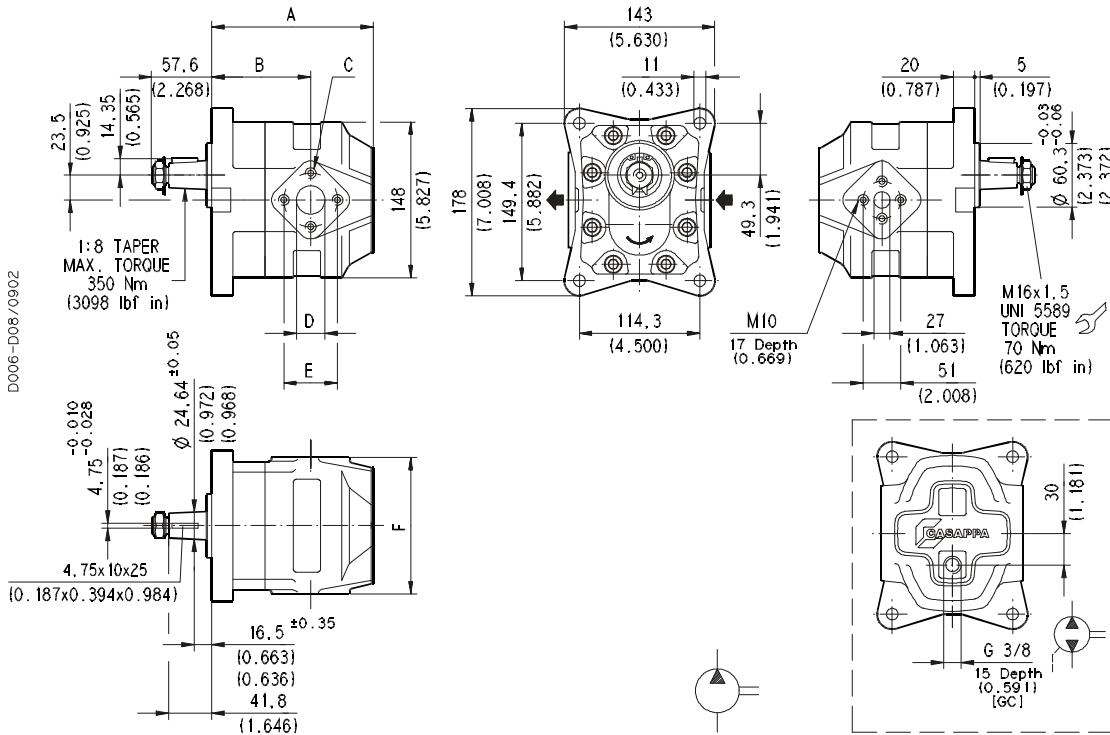
KP 30*27 S0-A8 E3-L ED/EB-N

02/09.02

KAPPA 30 **HYDRAULIC GEAR PUMPS EUROPEAN STANDARD** **84 E4**

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

Replaces: 01/01.02



02/09.02

Pump type		A	B	C	D	E	F
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30•51	S	150 (5.906)	94 (3.701)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)
	D						
KP 30•61	R	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)				

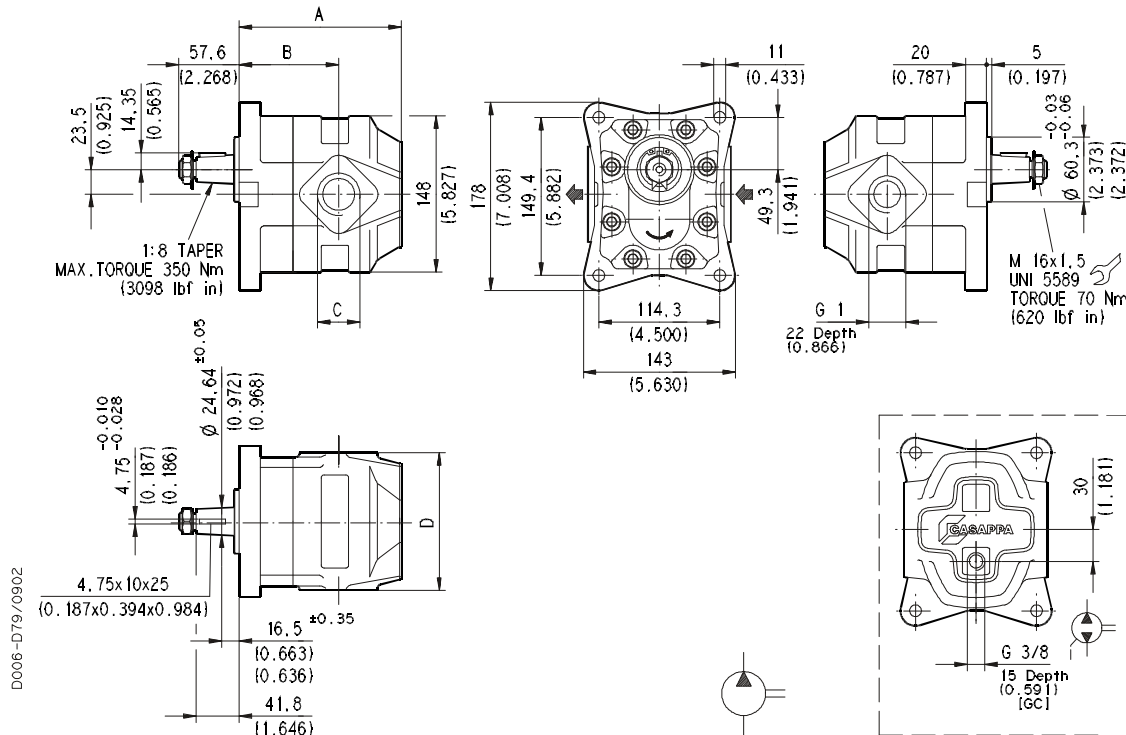
Rotation: S=left - D=right - R=reversible rear drain - B=reversible internal drain

How to order:

KP 30•51 S0-84 E4-L ED/ED-N

KAPPA 30**HYDRAULIC GEAR PUMPS EUROPEAN STANDARD****84 E4**

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



Replaces: 01/01.02

D006-D79/0902

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

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

How to order:

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

02/09.02

KAPPA 30

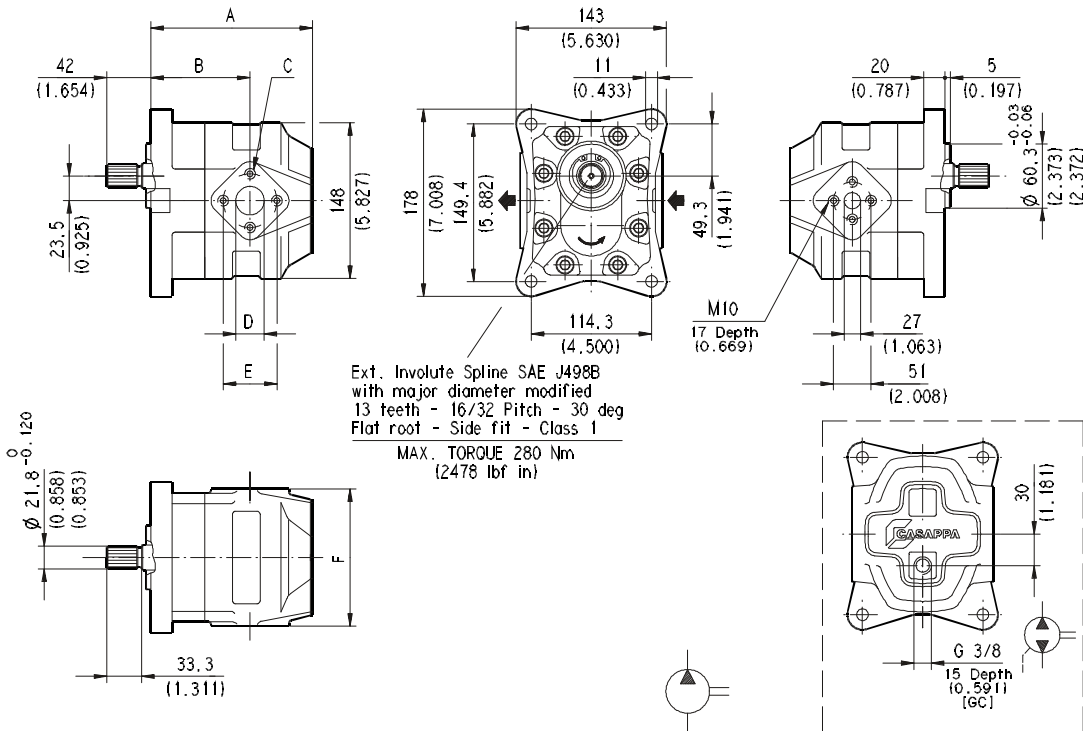
HYDRAULIC GEAR PUMPS EUROPEAN STANDARD

A8 E4

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

Replaces: 01/01.02

D006-156/0902



02/09.02

Pump type		A	B	C	D	E	F
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
KP 30•51	S	150 (5.906)	94 (3.701)	M 10 Depth 17 (0.669)	27 (1.063)	51 (2.008)	130 (5.118)
	D						
KP 30•61	R	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-A8 E4-L ED/ED-N

KAPPA 30	HYDRAULIC GEAR PUMPS EUROPEAN STANDARD	A5 E4
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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)

M10
17 Depth (0.669)
45 ±5 Nm

15 Depth (0.591) [GC]

D006-157/0902

Replaces: 01/01.02

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-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)
	D		156 (6.142)	101 (3.976)	M 12 Depth 17 (0.669)	33 (1.299)	62 (2.441)	135 (5.315)
KP 30•61	R	0-A5 E4-L EF/ED-N	164 (6.457)	109 (4.291)				
KP 30•73	B							

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

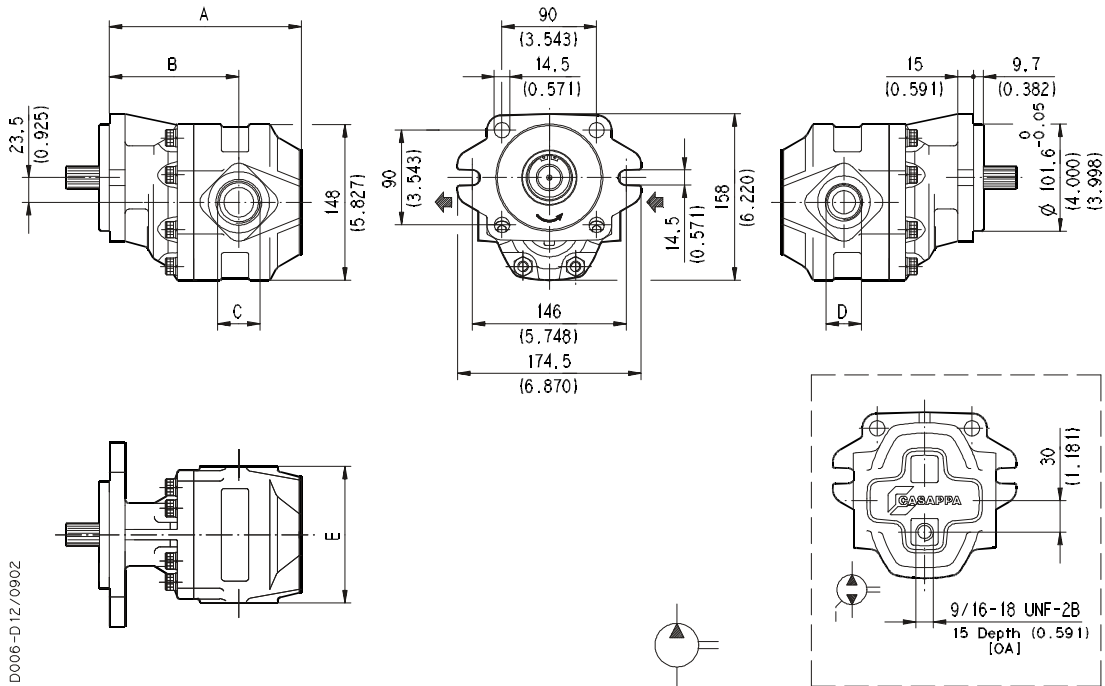
KAPPA 30

HYDRAULIC GEAR PUMPS SAE STANDARD

... S3

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

Replaces: 01/01.02



D006-D12/0902

02/09.02

To order see page 33 - 34.

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

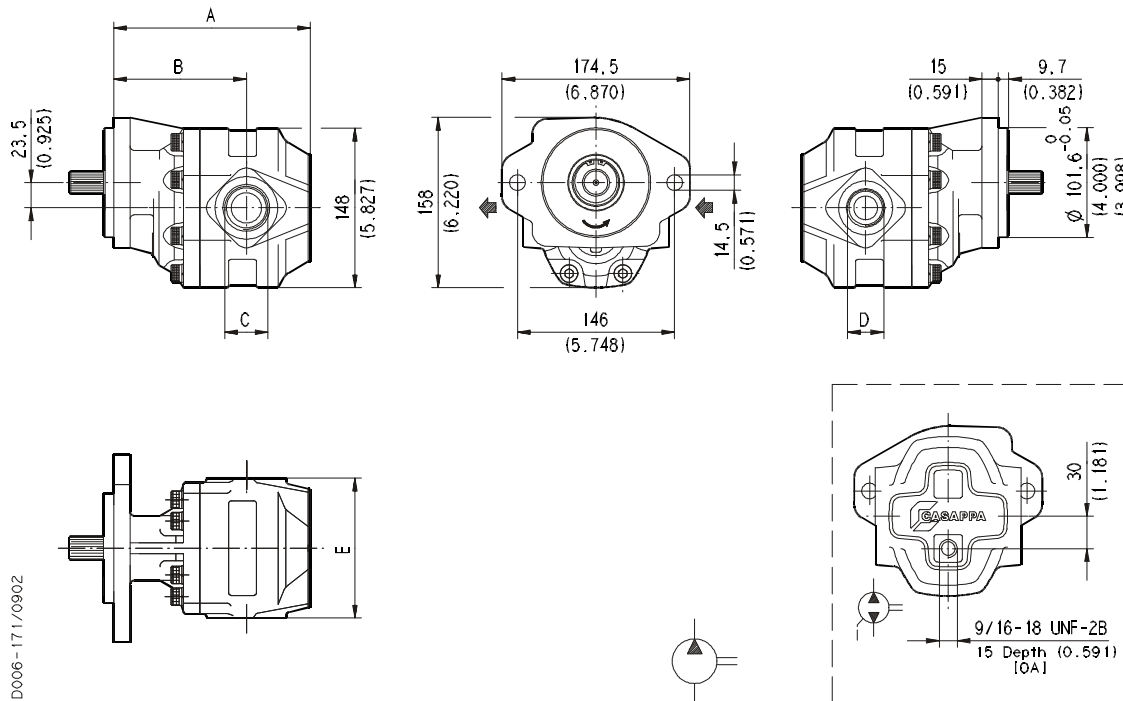
* Available only with 04 and 32 shaft for 0 and 1 version.

KAPPA 30

HYDRAULIC GEAR PUMPS SAE STANDARD

... S5

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



D006-171/0902

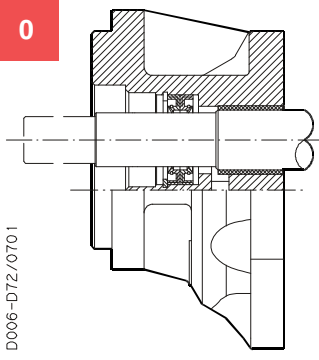
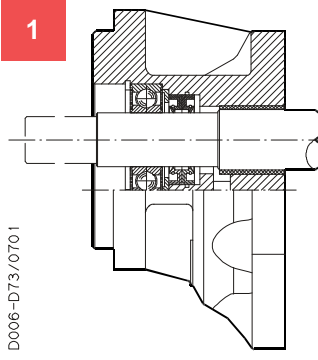
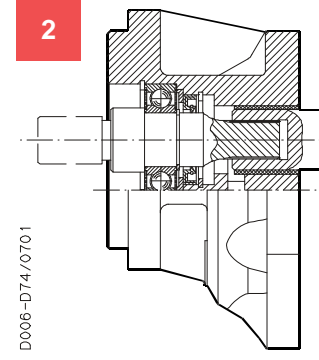
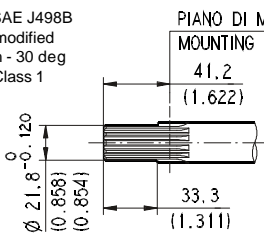
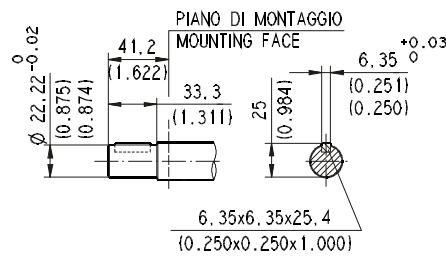
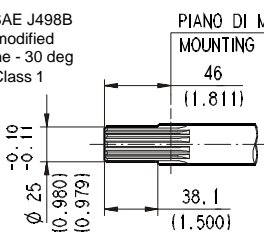
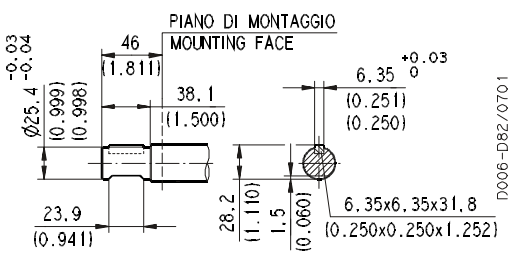
Replaces: 01/01.02

To order see page 33 - 34.

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

02/09.02

KAPPA 30 SAE VERSION		SAE
<div style="background-color: #f08080; color: white; padding: 2px; width: 30px; margin: 0 auto;">0</div>  <p style="font-size: small;">D006-D72/0701</p> <div style="background-color: #d3d3d3; padding: 5px; margin-top: 10px;"> <p>Version for applications without radial and axial load on the drive shaft.</p> </div>	<div style="background-color: #f08080; color: white; padding: 2px; width: 30px; margin: 0 auto;">1</div>  <p style="font-size: small;">D006-D73/0701</p> <div style="background-color: #d3d3d3; padding: 5px; margin-top: 10px;"> <p>Version for applications with low radial load and without axial load on the drive shaft.</p> </div>	<div style="background-color: #f08080; color: white; padding: 2px; width: 30px; margin: 0 auto;">2</div>  <p style="font-size: small;">D006-D74/0701</p> <div style="background-color: #d3d3d3; padding: 5px; margin-top: 10px;"> <p>Special version with independent shaft for applications with low radial load and without axial load on the drive shaft.</p> </div>
KAPPA 30 END DRIVE SHAFTS		SAE
<div style="background-color: #f08080; color: white; padding: 2px; width: 100px; margin: 0 auto;">SAE "B" SPLINE</div> <div style="background-color: #f08080; color: white; padding: 2px; width: 30px; margin: 0 auto;">04</div> <p style="font-size: x-small;">Ext. Involute Spline SAE J498B with major diameter modified 13 teeth - 16/32 Pitch - 30 deg Flat Root - Side fit - Class 1</p>  <p style="font-size: x-small;">PIANO DI MONTAGGIO MOUNTING FACE 41,2 (1.622) 33,3 (1.311) ∅ 21,8 -0.120 (0.858) (0.854)</p> <p style="font-size: x-small;">D006-D75/0601</p> <div style="background-color: #d3d3d3; padding: 5px; margin-top: 10px; text-align: center;"> <p>MAX 300 Nm (2655 lbf in) ◆</p> </div>	<div style="background-color: #f08080; color: white; padding: 2px; width: 100px; margin: 0 auto;">SAE "B" STRAIGHT</div> <div style="background-color: #f08080; color: white; padding: 2px; width: 30px; margin: 0 auto;">32</div>  <p style="font-size: x-small;">PIANO DI MONTAGGIO MOUNTING FACE 41,2 (1.622) 33,3 (1.311) 22,22 -0.02 (0.875) (0.874) 25 (0.984) 6,35 +0.03 (0.251) (0.251)</p> <p style="font-size: x-small;">6,35x6,35x25,4 (0.250x0.250x1.000)</p> <p style="font-size: x-small;">D006-D77/0601</p> <div style="background-color: #d3d3d3; padding: 5px; margin-top: 10px; text-align: center;"> <p>MAX 200 Nm (1770 lbf in) ◆</p> </div>	
<div style="background-color: #f08080; color: white; padding: 2px; width: 100px; margin: 0 auto;">SAE "BB" SPLINE</div> <div style="background-color: #f08080; color: white; padding: 2px; width: 30px; margin: 0 auto;">05</div> <p style="font-size: x-small;">Ext. Involute Spline SAE J498B with major diameter modified 15 teeth - 16/32 Spline - 30 deg Flat Root - Side fit - Class 1</p>  <p style="font-size: x-small;">PIANO DI MONTAGGIO MOUNTING FACE 46 (1.811) 38,1 (1.500) ∅ 25 -0.11 (0.980) (0.979)</p> <p style="font-size: x-small;">D006-D76/0701</p> <div style="background-color: #d3d3d3; padding: 5px; margin-top: 10px; text-align: center;"> <p>MAX 450 Nm (3983 lbf in) ◆</p> </div>	<div style="background-color: #f08080; color: white; padding: 2px; width: 100px; margin: 0 auto;">SAE "BB" STRAIGHT</div> <div style="background-color: #f08080; color: white; padding: 2px; width: 30px; margin: 0 auto;">33</div>  <p style="font-size: x-small;">PIANO DI MONTAGGIO MOUNTING FACE 46 (1.811) 38,1 (1.500) 25,4 -0.04 (0.999) (0.998) 23,9 (0.941) 28,2 (1.110) 1,5 (0.060) 6,35 +0.03 (0.251) (0.251)</p> <p style="font-size: x-small;">6,35x6,35x31,8 (0.250x0.250x1.252)</p> <p style="font-size: x-small;">D006-D82/0701</p> <div style="background-color: #d3d3d3; padding: 5px; margin-top: 10px; text-align: center;"> <p>MAX 280 Nm (2478 lbf in) ◆</p> </div>	
<p>◆ For "2" version whichever end shaft, the max. torque applicable is M= 170 Nm (1505 lbf in)</p>		

01/01.02

HOW TO ORDER SAE SINGLE PUMPS

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

1	Pump type	CODE
	cm ³ /rev	
	26,7	KP 30•27
	34,56	KP 30•34
	39,27	KP 30•38
	43,98	KP 30•43
	51,83	KP 30•51
	56,54	KP 30•56
	61,26	KP 30•61
	73,82	KP 30•73

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

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

4	Drive shaft	CODE
	SAE "B" spline (13 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 (standard)	
N-H	Buna with high back pressure shaft seals	
V	Viton	
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

01/01.02

FEATURES

GUARANTEE

CASAPPA provides a two years guarantee for FORMULA pumps on industrial vehicles if used in accordance with the applications and conditions indicated in this technical catalogue.

WARNING !

Failure or improper use of the product can cause damage at the same product or system.

Make sure that this is the last issue.

Construction	External gear type pumps
Mounting	ISO (ZF), ITALIAN (triangular) and SAE flanges
Line connections	Screw
Direction of rotation (looking on drive shaft)	Anti-clock (S) - clockwise (D) - reversible (R or B)
Inlet pressure range for pumps	0,7 ÷ 3 bar (abs.)
Fluid temperature range	From -25 to +110 °C
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 12 to 100 mm ² /s (cSt) recommended
	Up to 750 mm ² /s (cSt) permitted
Filtering requirement	See table (2)

Type	Fluid composition	Max pressure [bar]	Max speed [min ⁻¹]	Temperature [°C]	Seals
ISO/DIN	Mineral oil based hydraulic fluid to ISO/DIN	See page 3 - 4 - 5	See page 3 - 4 - 5	-25 ÷ +80	N
				-25 ÷ +110	V
HFA	Oil emulsion in water 5 ÷ 15% of oil	50	1500	2 ÷ 55	N
HFB	Water emulsion in oil 40 % of water	120	1500	2 ÷ 60	
HFC	Water - glycol	70	1500	-20 ÷ +60	N Bz
HFD	Phosphate ester (•)	150	1500	-10 ÷ +80	V Bz

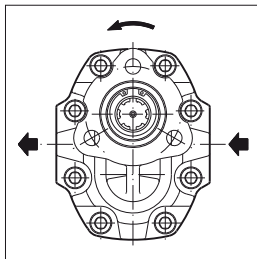
(•) For skydrol phosphate esters please consult our technical sales department.

Working pressure	Seal	
	Δp > 200 bar	Δp < 200 bar
Contamination class NAS 1638	8	10
Contamination class ISO 4406	19/17/14	21/19/16
Achieved with filter β _x ≥ 75	10 μm	25 μm

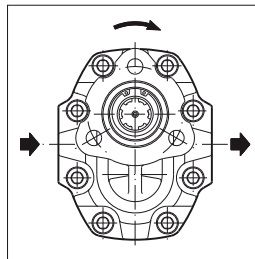
Casappa recommends to use its own production filters:



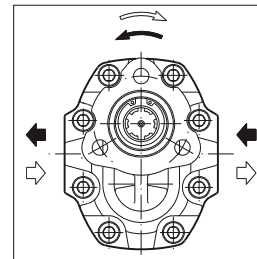
DEFINITION OF ROTATION DIRECTION LOOKING ON THE DRIVE SHAFT



Anti-clock rotation

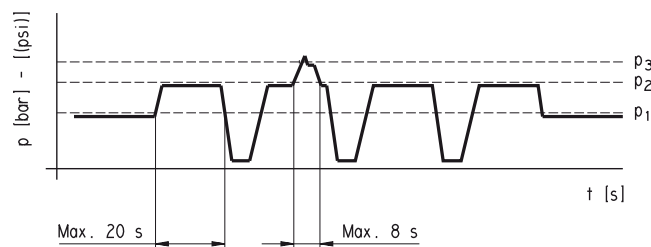


Clockwise rotation



Reversible rotation

PRESSURE DEFINITION




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

GENERAL NOTES

Available with different inlet and outlet ports. Standard pumps are equipped with BUNA N (N) seals for temperature up to 80 °C, for particular operating conditions (V) VITON seals and BUNA or VITON seals with bronze thrust plates (N Bz), (V Bz) are available. If you use fire resistant fluids specify the type of them at the order. For more information please consult our technical sales department.

FORMULA 20 GENERAL DATA PUMPS

FP 20

Pump type	Displacement	Max. pressure			Intermittent max. speed		Min. speed
		p ₁	p ₂	p ₃	At p ₂ press.	Without load	At p ₂ press.
	cm ³ /rev 	bar			min ⁻¹		
FP 20•8 (•)	8,26	280	310	325	2000	4200	300
FP 20•11,2 (•)	11,23	280	310	325	2000	4200	300
FP 20•16	16,85	280	310	325	2000	4200	300
FP 20•20	21,14	260	280	290	2000	4200	300
FP 20•25	26,42	220	250	260	2000	4200	300
FP 20•31,5	33,03	190	210	220	1800	4000	300
FP 20•36 (•)	35,94	170	190	200	1800	4000	300
FP 20•40	39,64	160	180	190	1800	4000	300

(•): Only available in ISO 16 Z0 and ITALIAN 13 T1 version.

p₁= Max. continuous pressure p₂= Max. intermittent pressure p₃= Max. peak pressure

The values in the table refer to unidirectional and reversible pumps.

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FORMULA 30 GENERAL DATA PUMPS

FP 30

Pump type	Displacement	Max. pressure			Intermittent max. speed		Min. speed
		p ₁	p ₂	p ₃	At p ₂ press.	Without load	At p ₂ press.
	cm ³ /rev 	bar			min ⁻¹		
FP 30•17	17,28	290	315	325	3000	4000	300
FP 30•27	26,70	290	315	325	3000	4000	300
FP 30•34	34,56	280	300	310	2800	4200	300
FP 30•38	39,27	280	300	310	2800	3500	300
FP 30•43	43,98	270	290	300	2500	3500	300
FP 30•51	51,83	240	260	280	2500	3500	300
FP 30•61	61,26	220	240	250	2000	3500	300
FP 30•73	73,82	200	220	230	1800	3500	300
FP 30•82	81,68	190	210	220	1800	3500	300
FP 30•100	100,52	180	200	220	1800	3500	300
FP 30•125	125,66	160	180	200	1800	3500	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.

T2 type double shaft flange allow the pumps to work in clockwise or anticlockwise rotation obtaining the reversible advantages and maintaining the general data of unidirectional pumps.

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FORMULA 40 GENERAL DATA PUMPS

FP 40

Pump type	Displacement	Max. pressure			Intermittent max. speed		Min. speed
		p ₁	p ₂	p ₃	At p ₂ press.	Without load	At p ₂ press.
	cm ³ /rev 	bar			min ⁻¹		
FP 40-63	61,43	290	315	325	2700	4200	300
FP 40-73	72,60	280	300	315	2700	4200	300
FP 40-87	86,56	260	280	290	2700	4000	300
FP 40-109	108,90	240	260	280	2700	4000	300
FP 40-133	134,03	220	250	260	2500	4000	300
FP 40-151	150,79	180	210	220	2500	4000	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.

T2 type double shaft flange allow the pumps to work in clockwise or anticlockwise rotation obtaining the reversible advantages and maintaining the general data of unidirectional pumps.

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DESIGN CALCULATIONS FOR PUMPS

Q	[l/min]	Delivery
M	[Nm]	Torque
P	[kW]	Power
V	[cm ³ /rev]	Displacement
n	[min ⁻¹]	Speed
Δp	[bar]	Pressure
$\eta_v = \eta_v(V, \Delta p, n) \quad (\approx 0,98)$		Volumetric efficiency
$\eta_m = \eta_m(V, \Delta p, n) \quad (\approx 0,90)$		Mechanical efficiency
$\eta_t = \eta_v \cdot \eta_m \quad (\approx 0,88)$		Overall efficiency

$$Q = V \cdot \eta_v \cdot n \cdot 10^{-3} \quad [\text{l/min}]$$

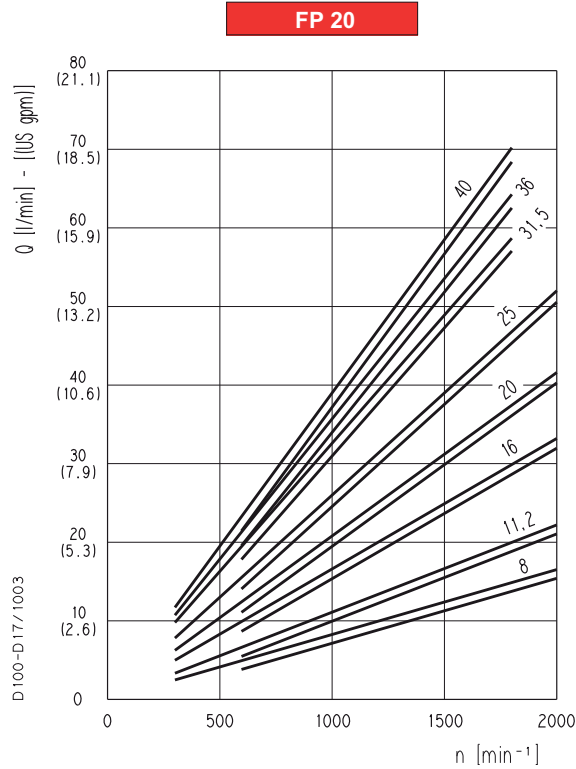
$$M = \frac{\Delta p \cdot V}{62,83 \cdot \eta_m} \quad [\text{Nm}]$$

$$P = \frac{\Delta p \cdot V \cdot n}{600 \cdot 1000 \cdot \eta_t} \quad [\text{kW}]$$

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

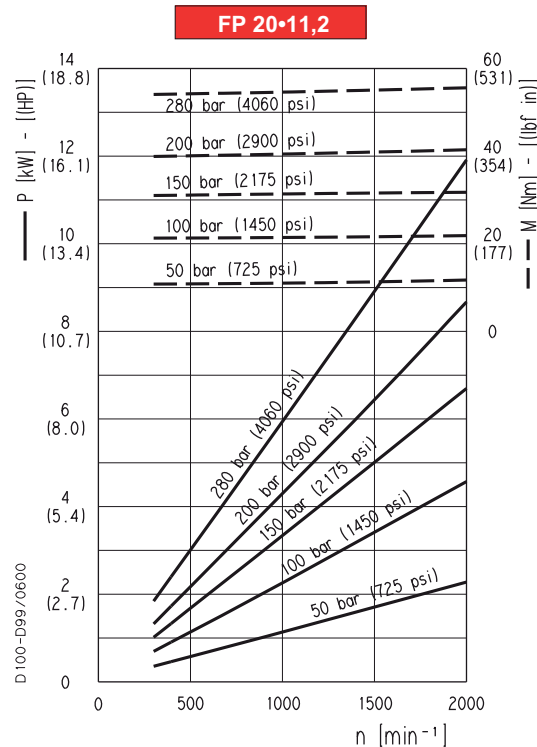
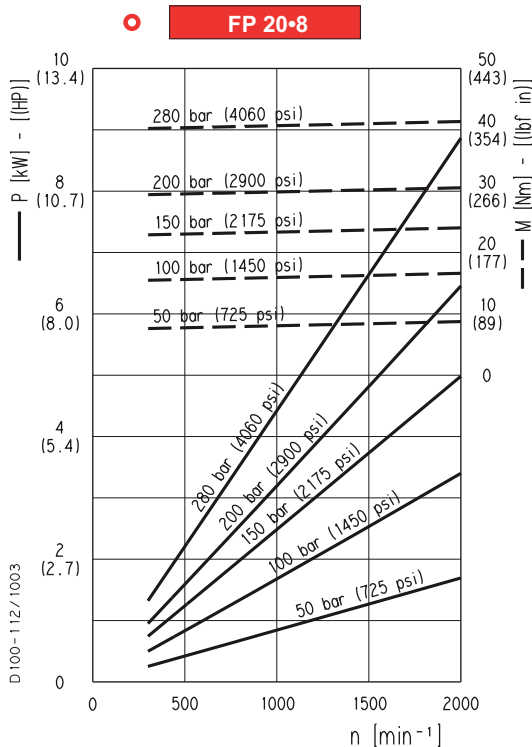
FORMULA 20 GEAR PUMPS PERFORMANCE CURVES

FP 20



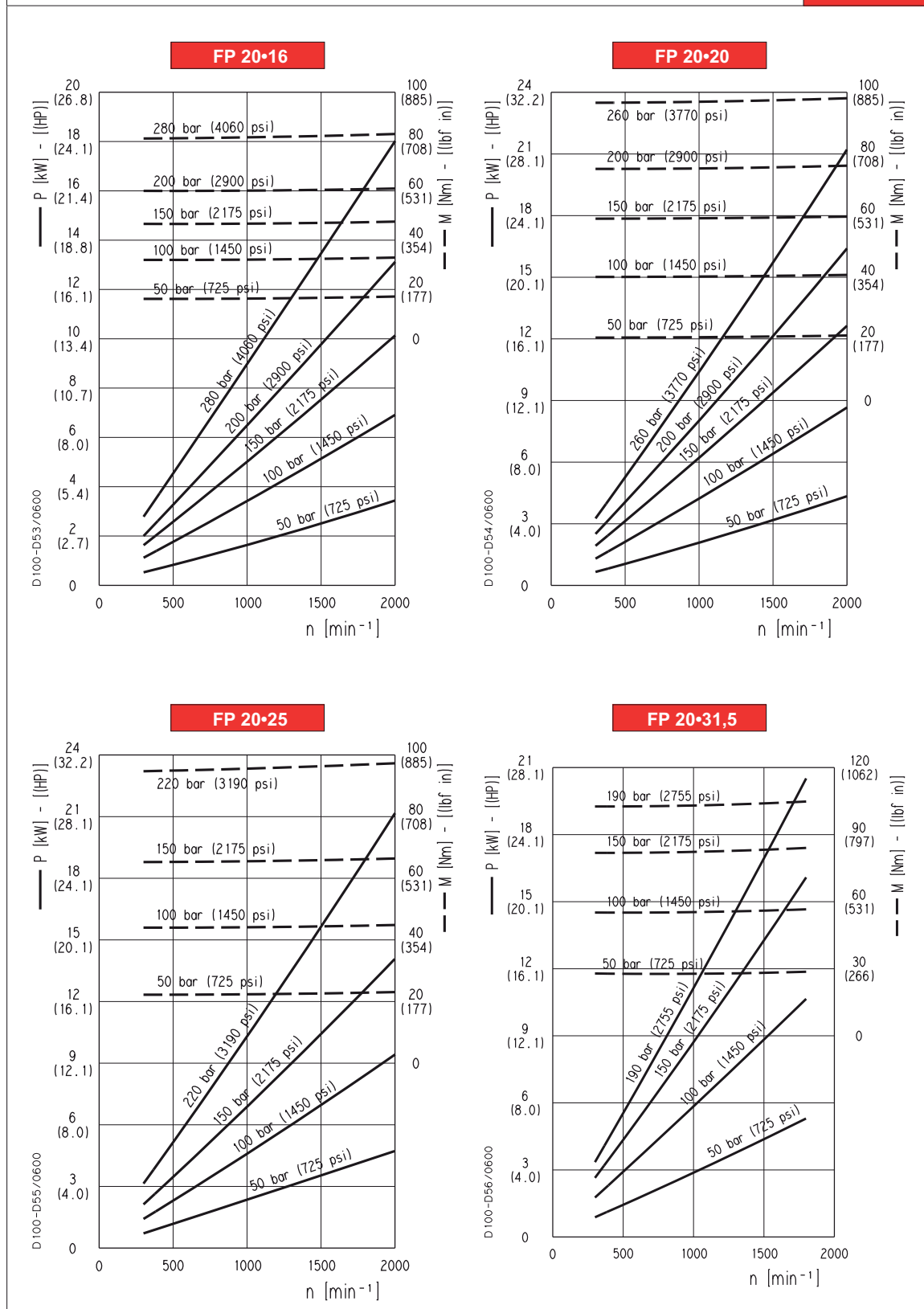
Each curve has been obtained at 50°C, using oil with viscosity 36 mm²/s at 40°C and at these pressures.

- FP 20•8 20-280 bar
- FP 20•11,2 20-280 bar
- FP 20•16 20-280 bar
- FP 20•20 20-260 bar
- FP 20•25 20-220 bar
- FP 20•31,5 20-190 bar
- FP 20•36 20-170 bar
- FP 20•40 20-160 bar



FORMULA 20 GEAR PUMPS PERFORMANCE CURVES

FP 20

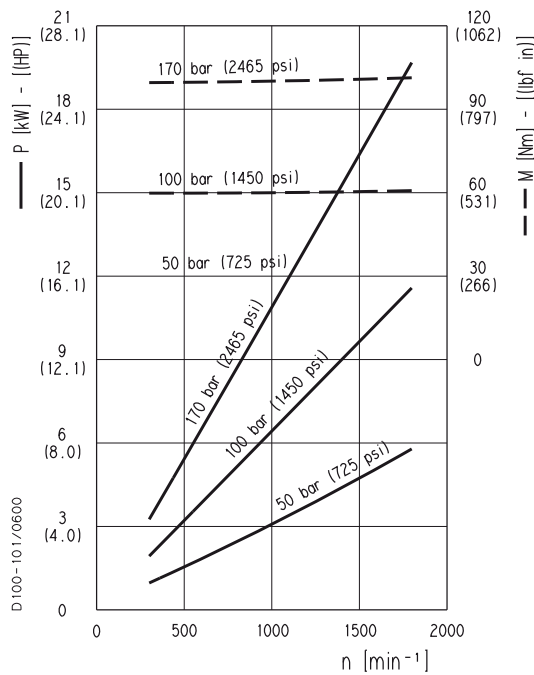


034-000

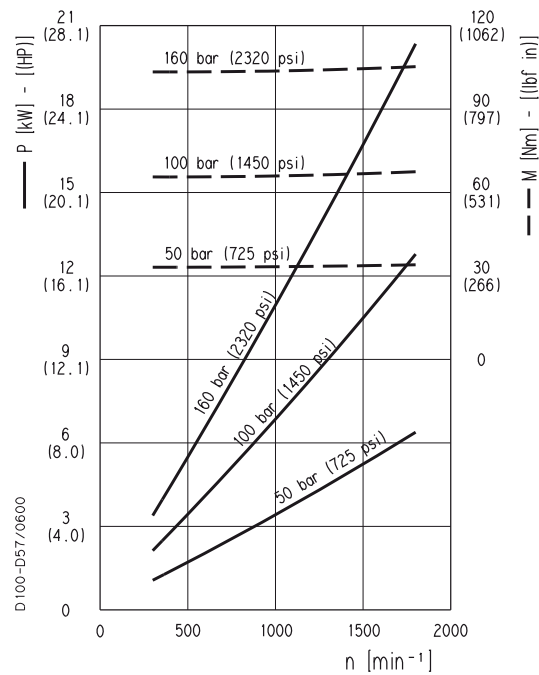
FORMULA 20 GEAR PUMPS PERFORMANCE CURVES

FP 20

FP 20-36

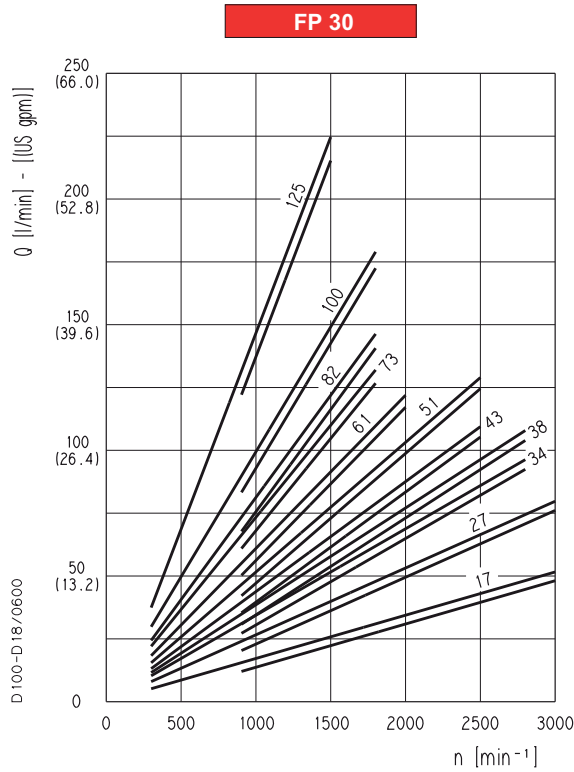


FP 20-40



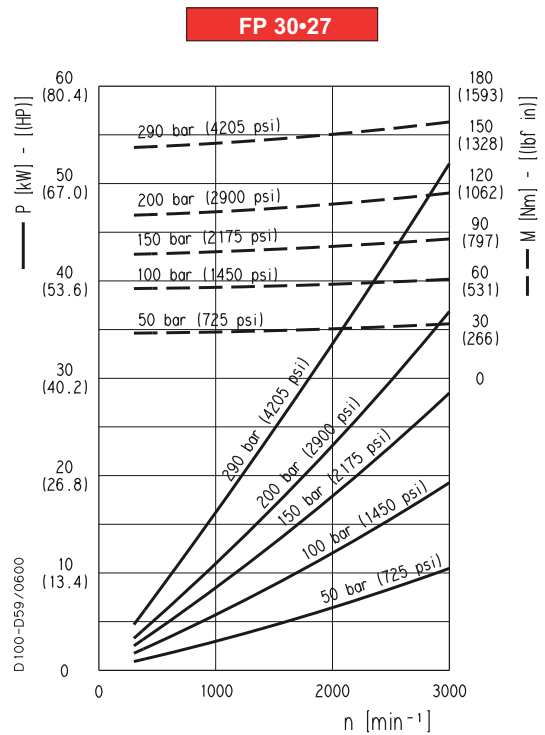
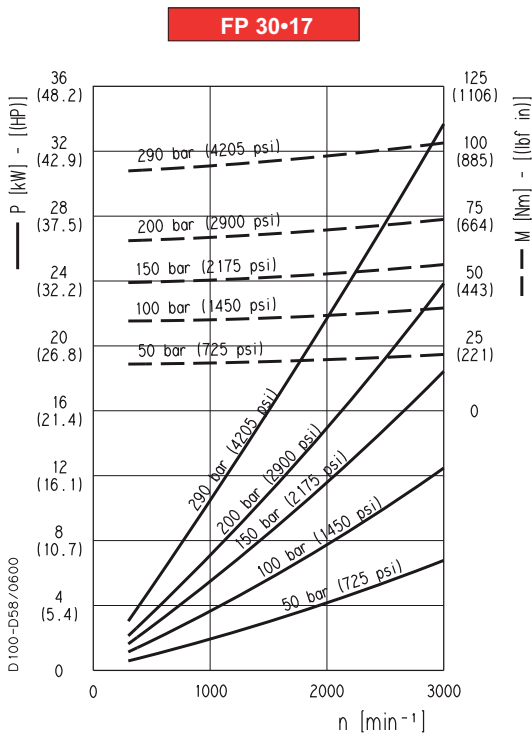
FORMULA 30 GEAR PUMPS PERFORMANCE CURVES

FP 30



Each curve has been obtained at 50°C, using oil with viscosity $36\ mm^2/s$ at 40°C and at these pressures.

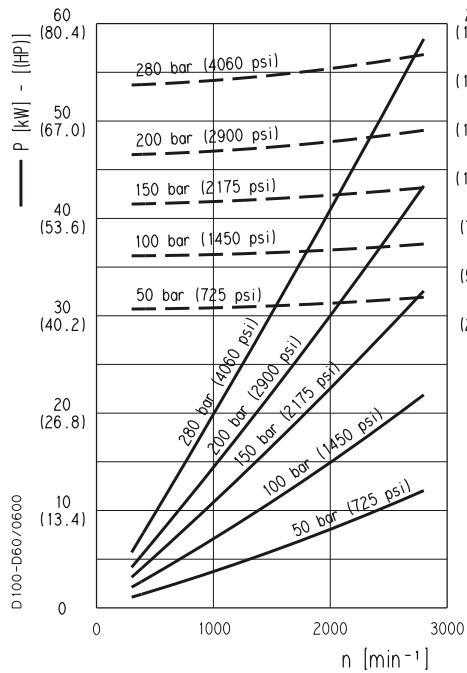
- FP 30•17 20-290 bar
- FP 30•27 20-290 bar
- FP 30•34 20-280 bar
- FP 30•38 20-280 bar
- FP 30•43 20-270 bar
- FP 30•51 20-240 bar
- FP 30•61 20-220 bar
- FP 30•73 20-200 bar
- FP 30•82 20-190 bar
- FP 30•100 20-180 bar
- FP 30•125 20-160 bar



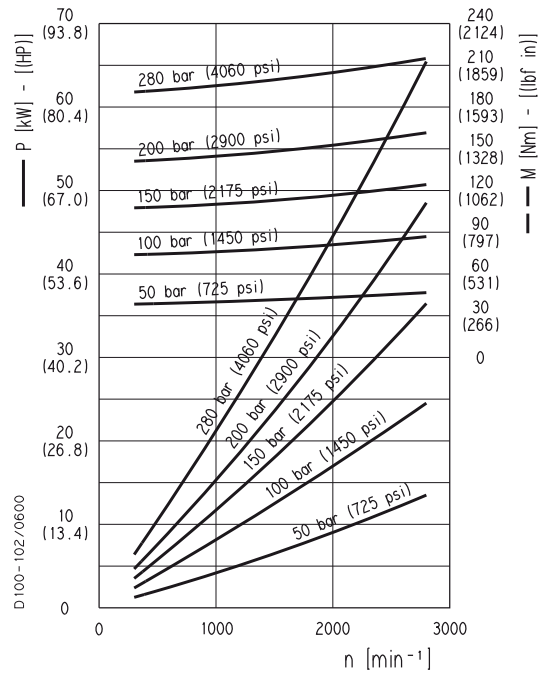
FORMULA 30 GEAR PUMPS PERFORMANCE CURVES

FP 30

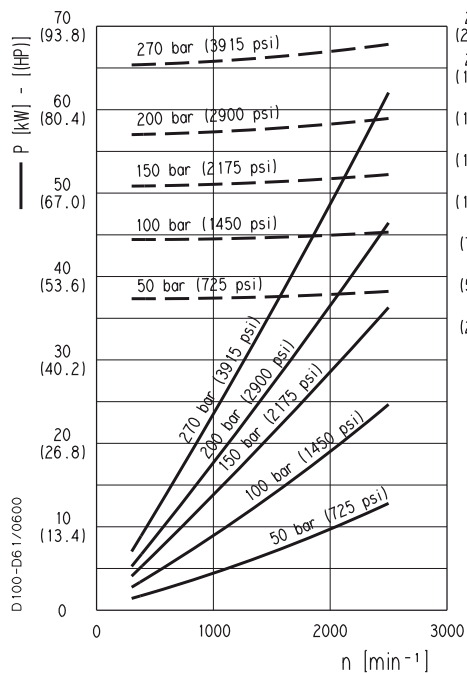
FP 30•34



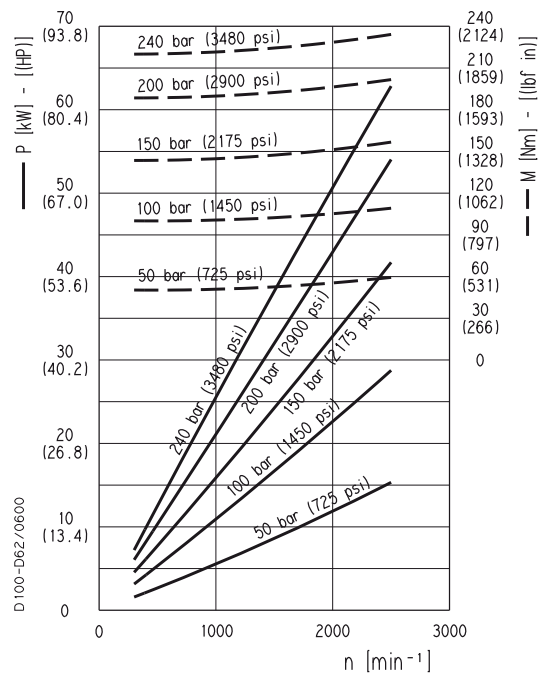
FP 30•38



FP 30•43



FP 30•51

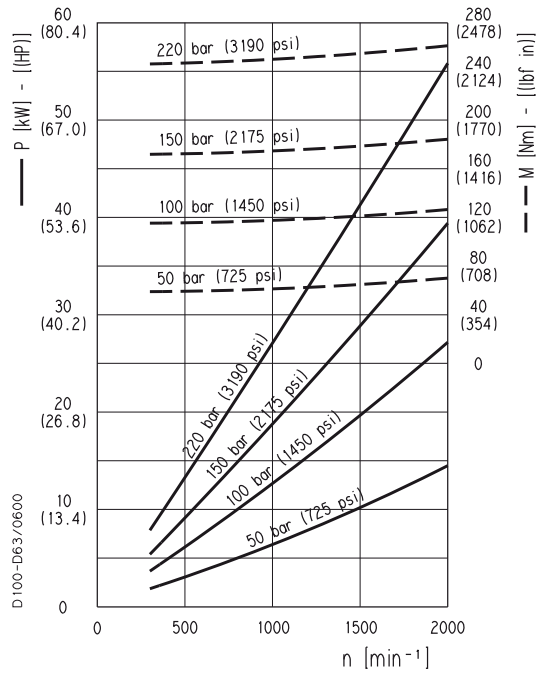


034-000

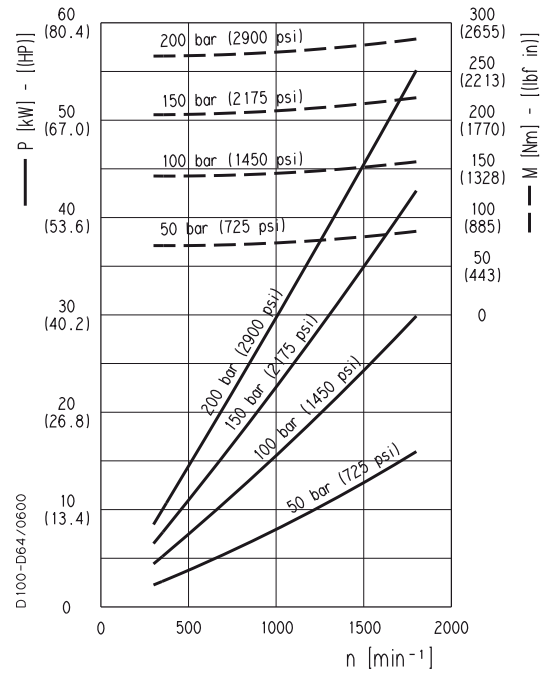
FORMULA 30 GEAR PUMPS PERFORMANCE CURVES

FP 30

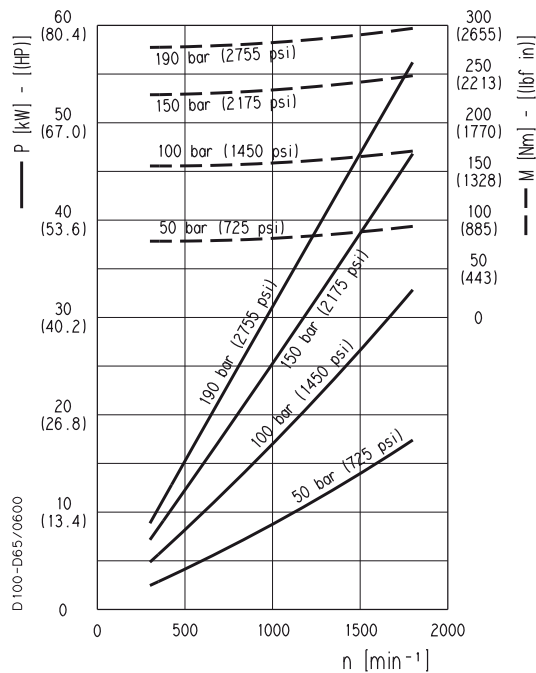
FP 30•61



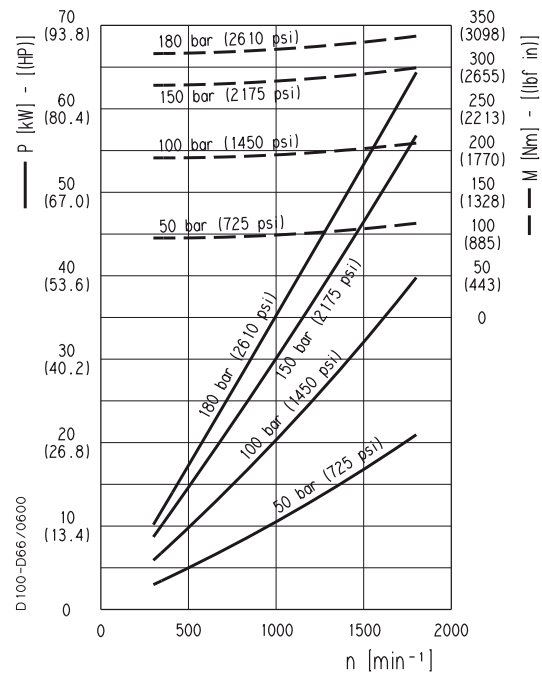
FP 30•73



FP 30•82



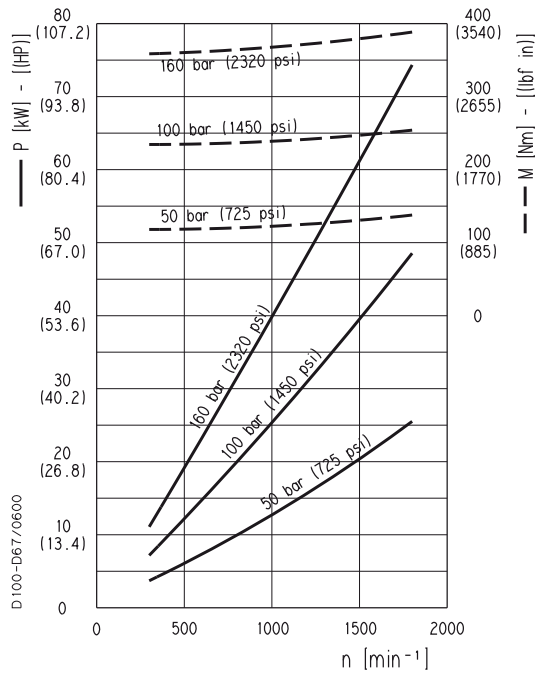
FP 30•100



FORMULA 30 GEAR PUMPS PERFORMANCE CURVES

FP 30

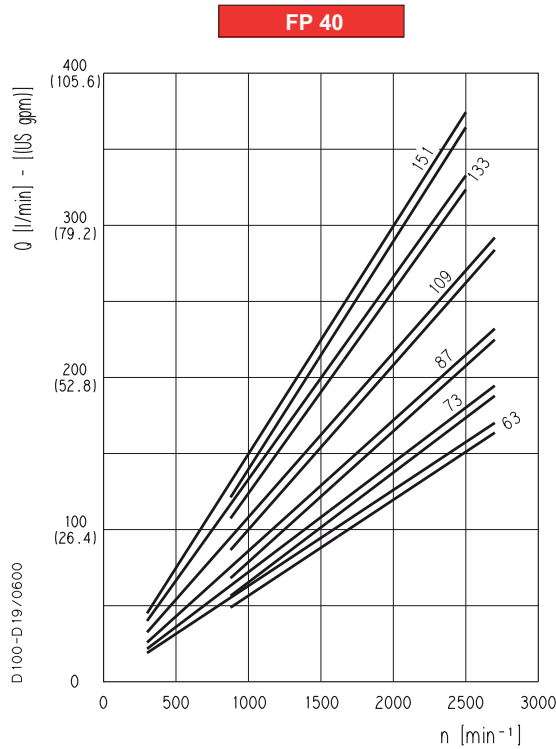
FP 30•125



034-000

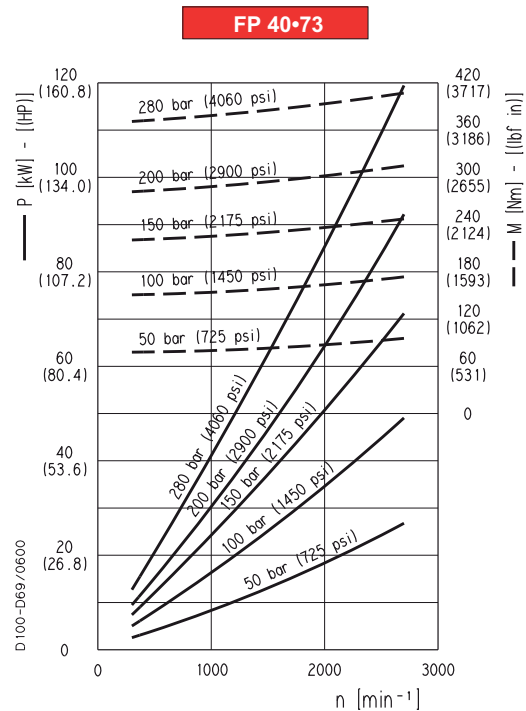
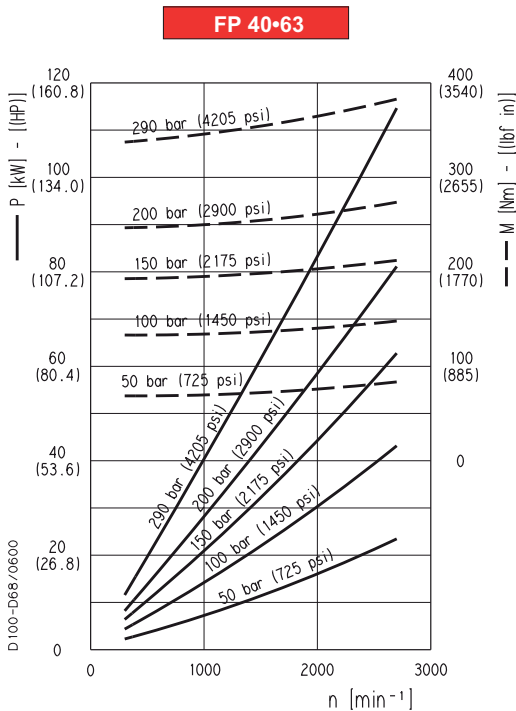
FORMULA 40 GEAR PUMPS PERFORMANCE CURVES

FP 40



Each curve has been obtained at 50°C, using oil with viscosity 36 mm²/s at 40°C and at these pressures.

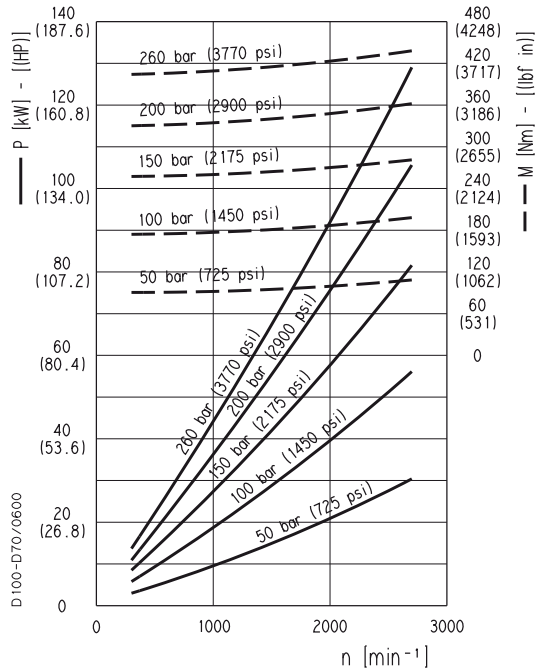
- FP 40•63 20-290 bar
- FP 40•73 20-280 bar
- FP 40•87 20-260 bar
- FP 40•109 20-240 bar
- FP 40•133 20-220 bar
- FP 40•151 20-180 bar



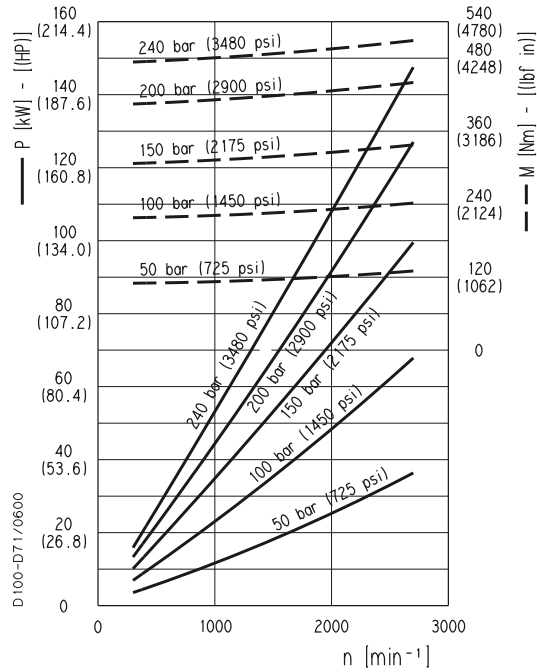
FORMULA 40 GEAR PUMPS PERFORMANCE CURVES

FP 40

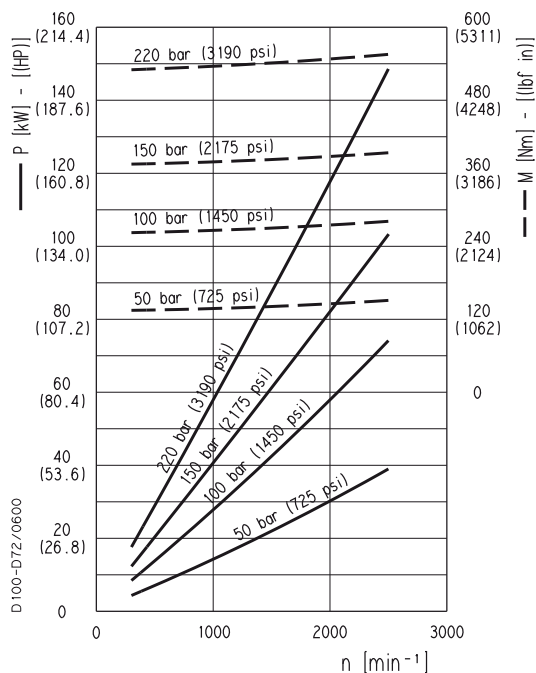
FP 40•87



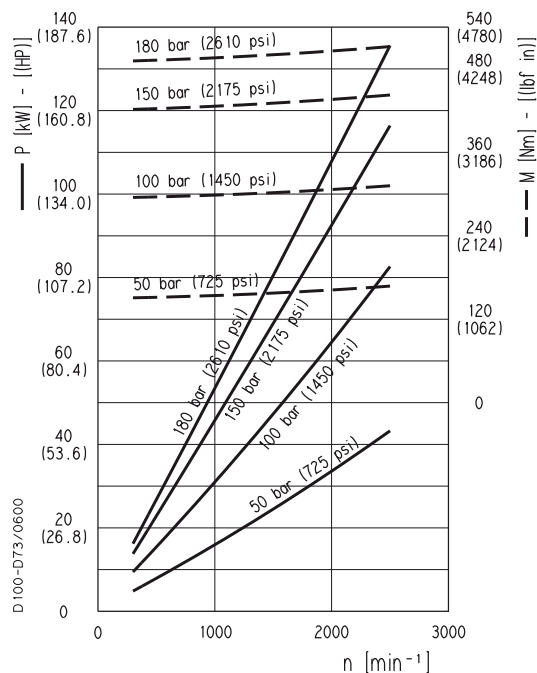
FP 40•109



FP 40•133



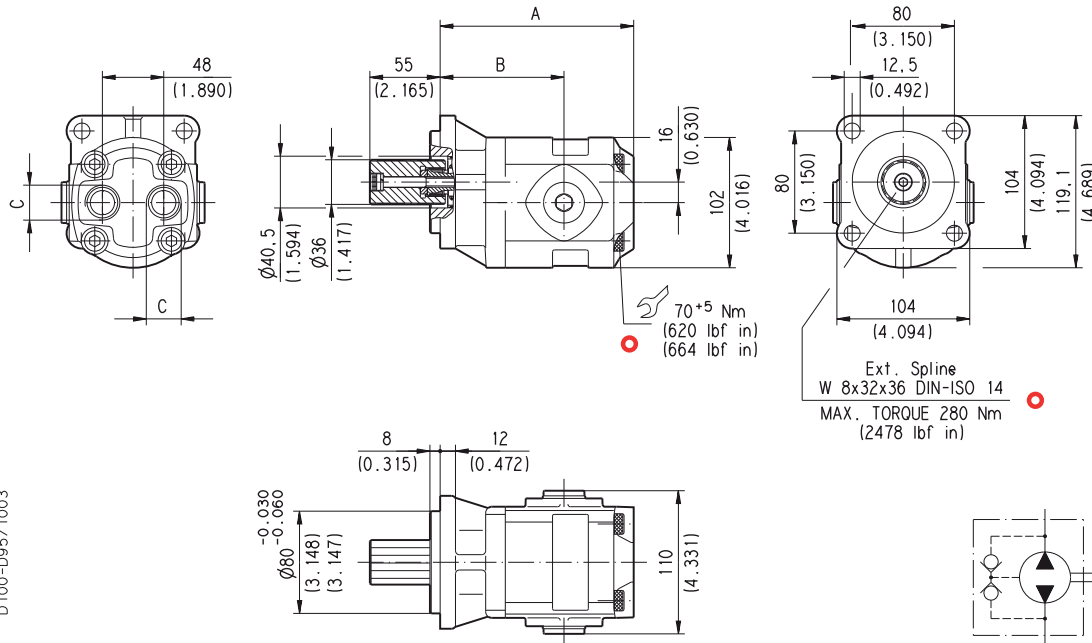
FP 40•151



034-020

GAS STRAIGHT THREAD PORTS

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



D 100-D95/1003

Radial and/or axial load are not allowed.

Standard version pumps have reversible rotation and internal drain.

The drawing shows the version with rear ports.
Removing the lateral plugs all possible combination ports are allowed.

Pump type	A	B	C	Mass
	mm (in)	mm (in)		kg
FP 20•8	104 (4.094)	80 (3.150)	G 1/2	5,31
FP 20•11,2	107,5 (4.232)	83,5 (3.287)		5,70
FP 20•16	117 (4.606)	87,5 (3.445)		6,00
FP 20•20	123,5 (4.862)	94 (3.701)		6,35
FP 20•25	131,5 (5.177)	87 (3.425)	G 3/4	6,80
FP 20•31,5	141,5 (5.571)	97 (3.819)		7,18
FP 20•36	146,4 (5.764)	91,4 (3.598)		7,44
FP 20•40	151,5 (5.965)	97 (3.819)		7,80

How to order:

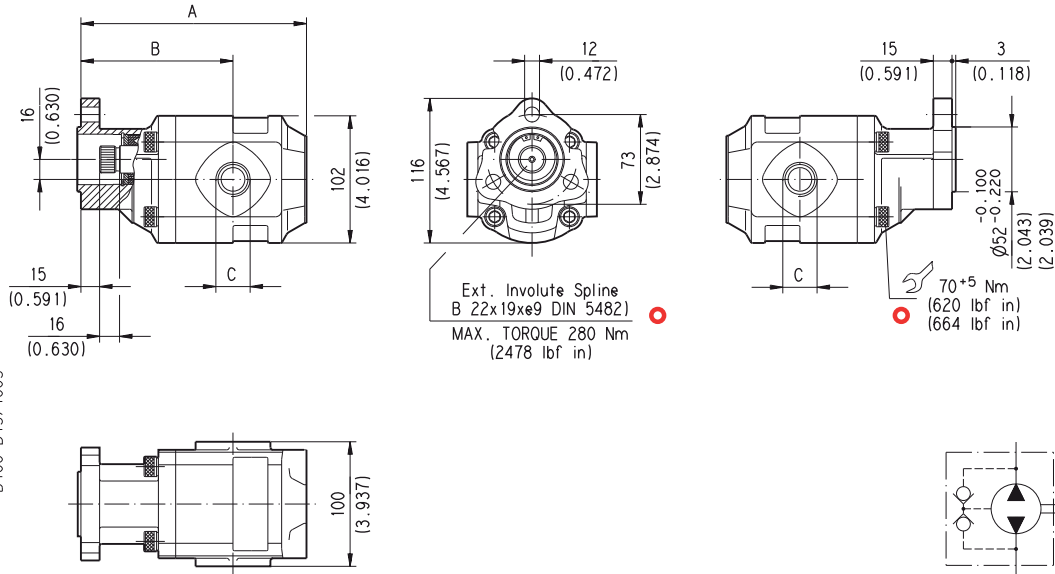
FP 20•8 B0 - 16 Z0 - LP GD/GD - N

FORMULA 20

HYDRAULIC GEAR PUMPS ITALIAN STANDARD

13 T1 - L

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



Standard version pumps have reversible rotation and internal drain.

Pump type	A	B	C	Mass
	mm (in)	mm (in)		kg
FP 20•8	132,5 (5.217)	105 (4.134)	G 1/2	4,8
FP 20•11,2	136 (5.354)	108,5 (4.272)		5
FP 20•16	145,5 (5.728)	112,5 (4.429)		5,2
FP 20•20	152 (5.984)	119 (4.685)		5,3
FP 20•25	160 (6.299)	112 (4.409)	G 3/4	5,9
FP 20•31,5	170 (6.693)	122 (4.803)		6
FP 20•36	175,5 (6.909)	116,5 (4.587)		6,3
FP 20•40	181 (7.126)	122 (4.803)		6,6

How to order:

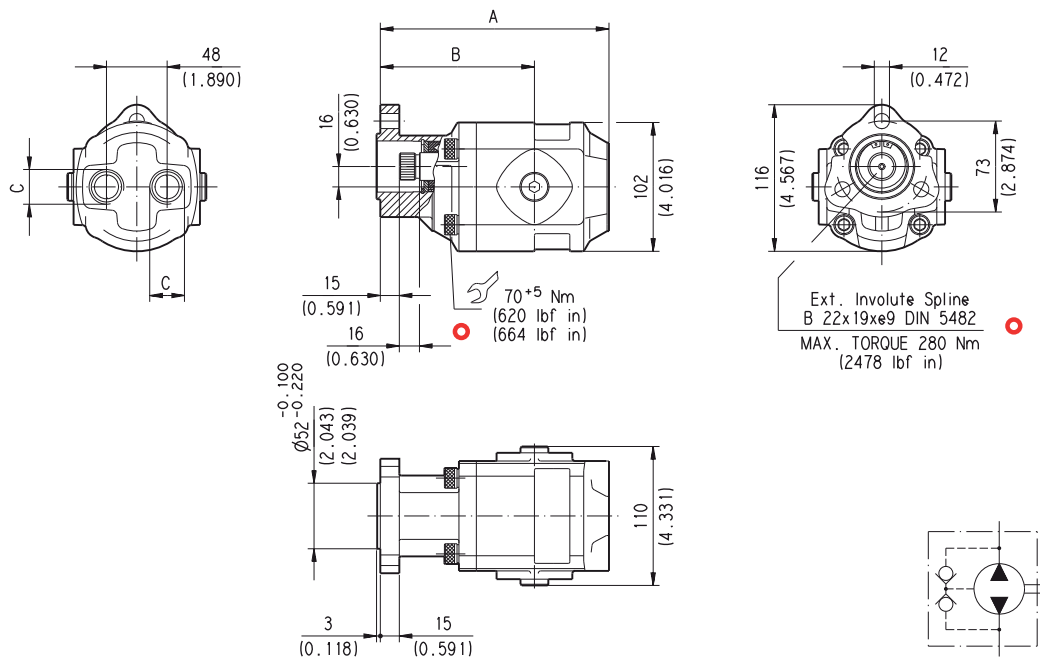
FP 20•8 B0 - 13 T1 - L GD/GD - N

FORMULA 20

HYDRAULIC GEAR PUMPS ITALIAN STANDARD

13 T1 - P

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



D100-D47/1003

Standard version pumps have reversible rotation and internal drain.

The version with rear ports allow, removing the lateral plugs to have all possible combination ports.

Pump type	A	B	C	Mass
	mm (in)	mm (in)		kg
FP 20•8	B0-13 T1-P GD/GD-N	129 (5.079)	G 1/2	4,8
FP 20•11,2		132,5 (5.217)		5
FP 20•16		142 (5.591)		5,2
FP 20•20		148,5 (5.846)		5,3
FP 20•25	B0-13 T1-P GE/GE-N	156,5 (6.161)	G 3/4	5,9
FP 20•31,5	B0-13 T1-(L)P GE/GE-N	166,5 (6.555)		6
FP 20•36		172,5 (6.791)		6,3
FP 20•40		178 (7.008)		6,6

How to order:

FP 20•11,2 B0 - 13 T1 - P GD/GD - N

034-020

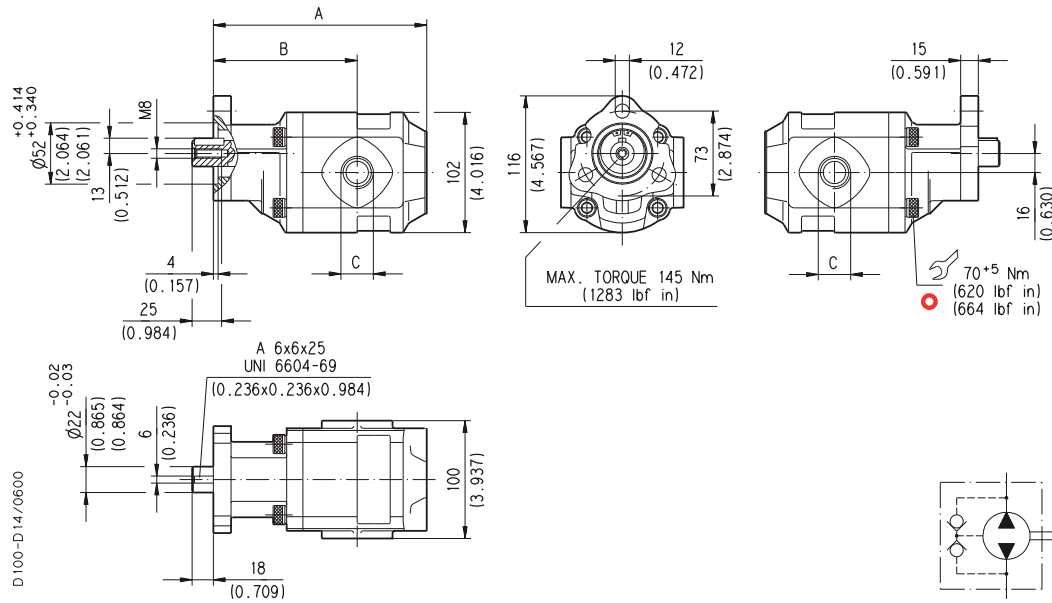
FORMULA 20

HYDRAULIC GEAR PUMPS ITALIAN STANDARD

43 T0 - L

GAS STRAIGHT THREAD PORTS

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



Standard version pumps have reversible rotation and internal drain.

Pump type	A	B	C	Mass	
	mm (in)	mm (in)		kg	
FP 20•16	B0-43 T0-L GD/GD-N	145,5 (5.728)	112,5 (4.429)	G 1/2	5,2
FP 20•20		152 (5.984)	119 (4.685)		5,3
FP 20•25	B0-43 T0-L GE/GE-N	160 (6.299)	112 (4.409)	G 3/4	5,9
FP 20•31,5		170 (6.693)	122 (4.803)		6
FP 20•40		181 (7.126)	122 (4.803)		6,6

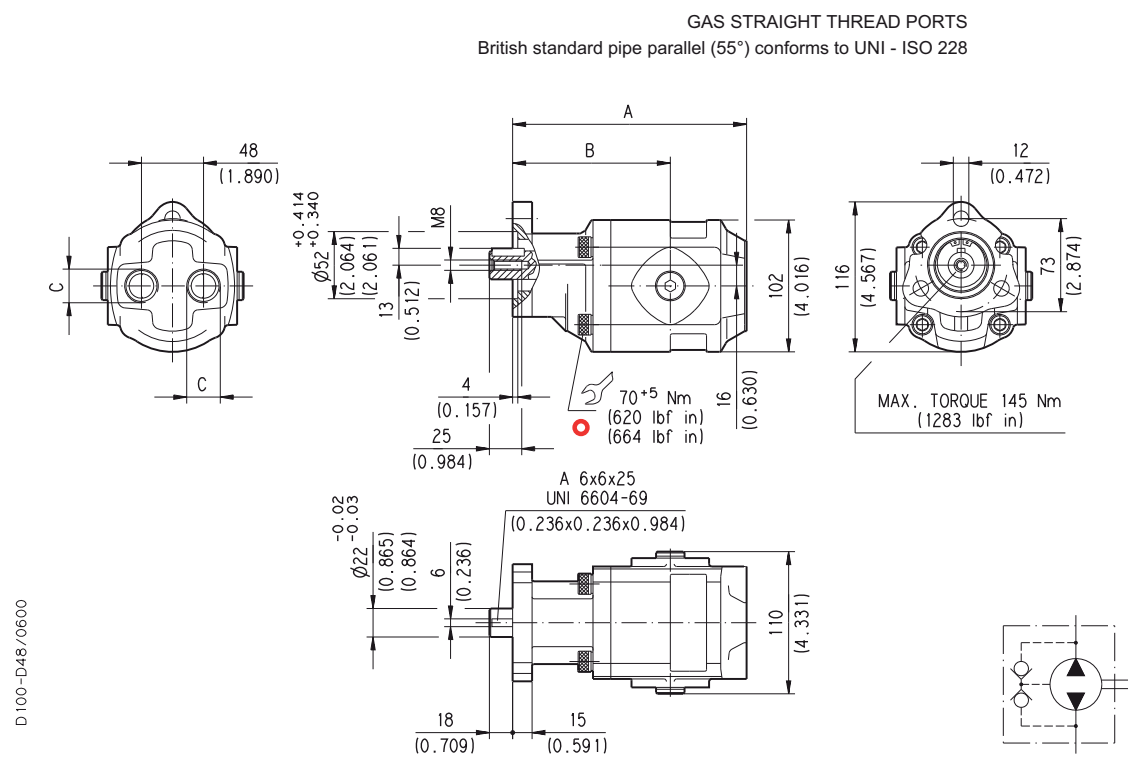
How to order:

FP 20•16 B0 - 43 T0 - L GD/GD - N

FORMULA 20

HYDRAULIC GEAR PUMPS ITALIAN STANDARD

43 T0 - P



D 100-D48/0600

Standard version pumps have reversible rotation and internal drain.

The version with rear ports allow, removing the lateral plugs to have all possible combination ports.

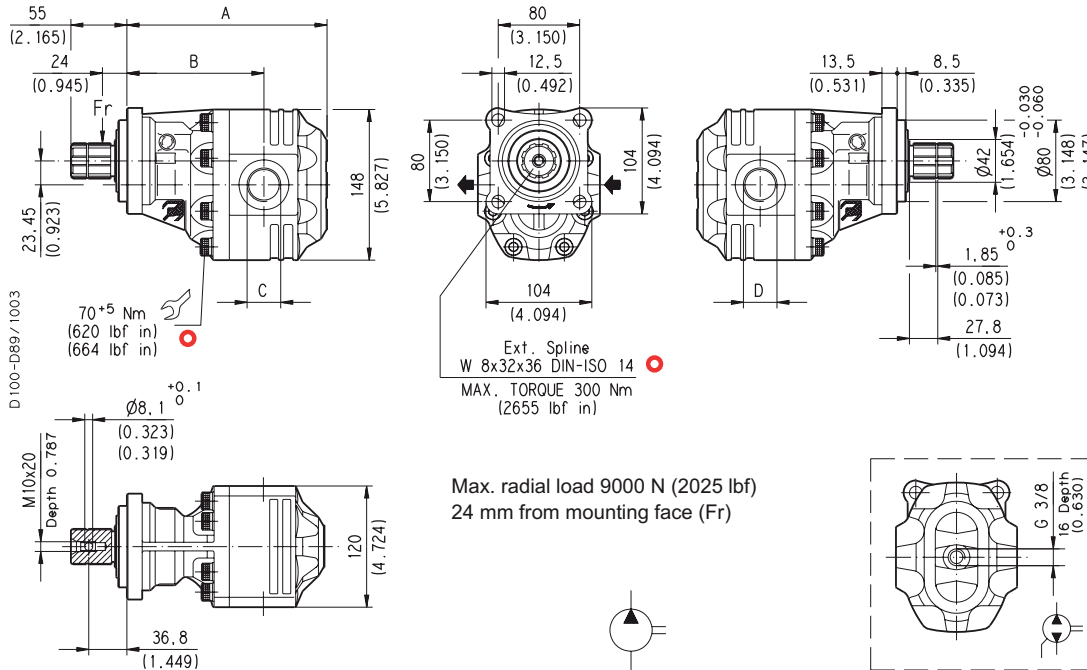
Pump type	A	B	C	Mass
	mm (in)	mm (in)		kg
FP 20•16	142 (5.591)	112,5 (4.429)	G 1/2	5,2
FP 20•20		148,5 (5.846)		5,3
FP 20•25	156,5 (6.161)	112 (4.409)	G 3/4	5,9
FP 20•31,5	166,5 (6.555)	122 (4.803)		6
FP 20•40	178 (7.008)	122 (4.803)		6,6

How to order:

FP 20•16 B0 - 43 T0 - P GD/GD - N

GAS STRAIGHT THREAD PORTS

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



Pump type		A	B	C	D	Mass		
		mm (in)	mm (in)	IN	OUT	kg		
FP 30•17	S D R B	L GD/GD-N	168,5 (6.634)	118,5 (4.665)	G 1/2	G 1/2	10,65	
FP 30•27			174,5 (6.870)	124,5 (4.902)	G 3/4	G 3/4	11,10	
FP 30•34			179,5 (7.067)	124,5 (4.902)			11,56	
FP 30•38			182,5 (7.185)	127,5 (5.020)			12,10	
FP 30•43			185,5 (7.303)	130,5 (5.138)			12,30	
FP 30•51			190,5 (7.500)	128,5 (5.059)			G 1	G 1	12,45
FP 30•61		196,5 (7.736)	134,5 (5.295)	13				
FP 30•73		204,5 (8.051)	135,5 (5.335)	13,70				
FP 30•82		209,5 (8.248)	140,5 (5.531)	14,05				
FP 30•100		226,5 (8.917)	145,5 (5.728)	G 1 1/4	G 1 1/4	15,55		
FP 30•125		242,5 (9.547)	161,5 (6.358)			17,05		

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

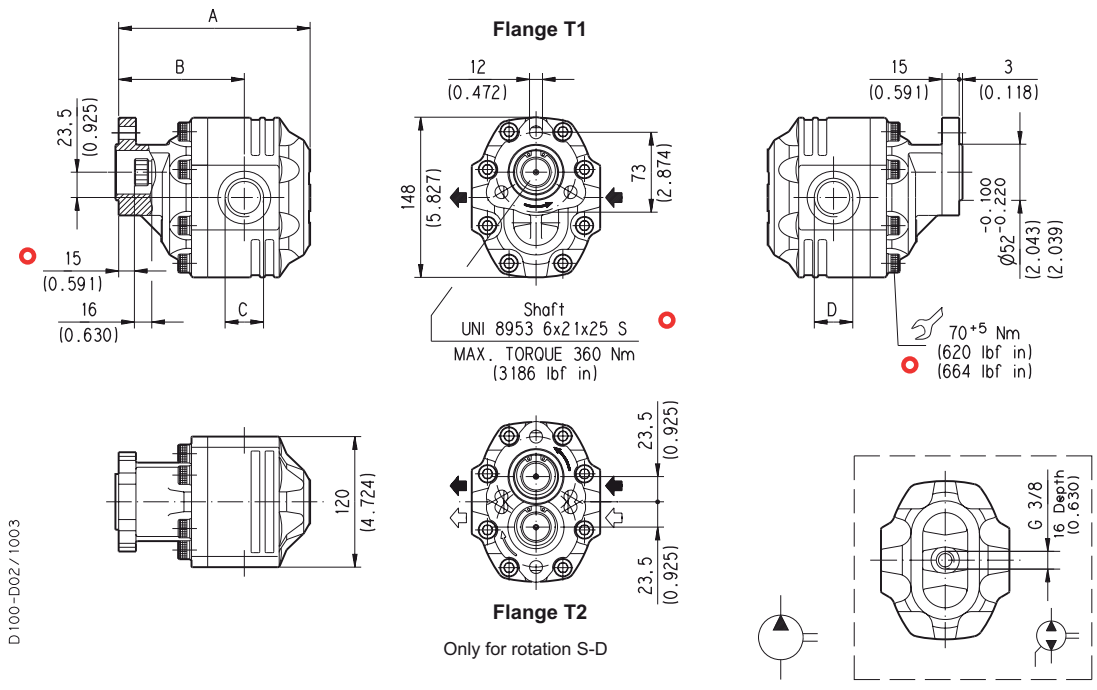
How to order:

FP 30•17 S0 - 16 Z0 - L GD/GD - N

FORMULA 30 **HYDRAULIC GEAR PUMPS ITALIAN STANDARD** **19 T**

GAS STRAIGHT THREAD PORTS

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



D 100-D02 / 1003

Pump type	A	B	C	D	Mass
					kg
FP 30•17	150,5 (5.925)	100,5 (3.957)	G 1/2	G 1/2	9
FP 30•27	156,5 (6.161)	106,5 (4.193)	G 3/4	G 3/4	9,3
FP 30•34	161,5 (6.358)	106,5 (4.193)			9,6
FP 30•38	164,5 (6.476)	109,5 (4.311)			9,8
FP 30•43	167,5 (6.594)	112,5 (4.429)			10
FP 30•51	172,5 (6.791)	110,5 (4.350)			G 1	G 1	10,3
FP 30•61	178,5 (7.028)	116,5 (4.587)	10,7		
FP 30•73	186,5 (7.343)	117,5 (4.623)	10,9		
FP 30•82	191,5 (7.539)	122,5 (4.823)	11		
FP 30•100 (•)	217 (8.543)	136 (5.354)	G 1 1/4	G 1 1/4	11,5
FP 30•125 (•)	233 (9.173)	152 (5.984)			12,3

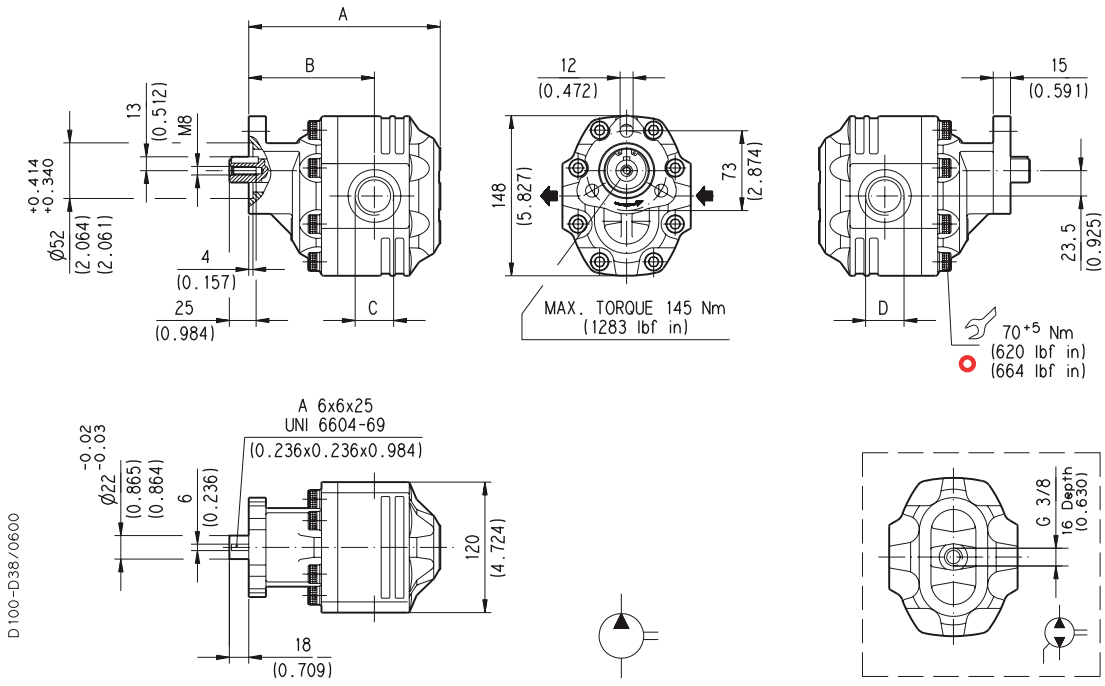
Rotation: S=left - D=right - R=reversible - B=reversible internal drain (•) Only available in T1 version.

How to order:

FP 30•17 S0 - 19 T1 - L GD/GD - N

FORMULA 30 HYDRAULIC GEAR PUMPS ITALIAN STANDARD 43 TO

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



D 100-D38/0600

Pump type		A	B	C	D	Mass
		mm (in)	mm (in)	IN	OUT	kg
FP 30-61	S	178,5 (7.028)	116,5 (4.587)	G 1	G 1	10,7
	D					
FP 30-82	R	191,5 (7.539)	122,5 (4.823)	G 1 1/4		11
	B					

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

FP 30-61 S0 - 43 T0 - L GF/GF - N

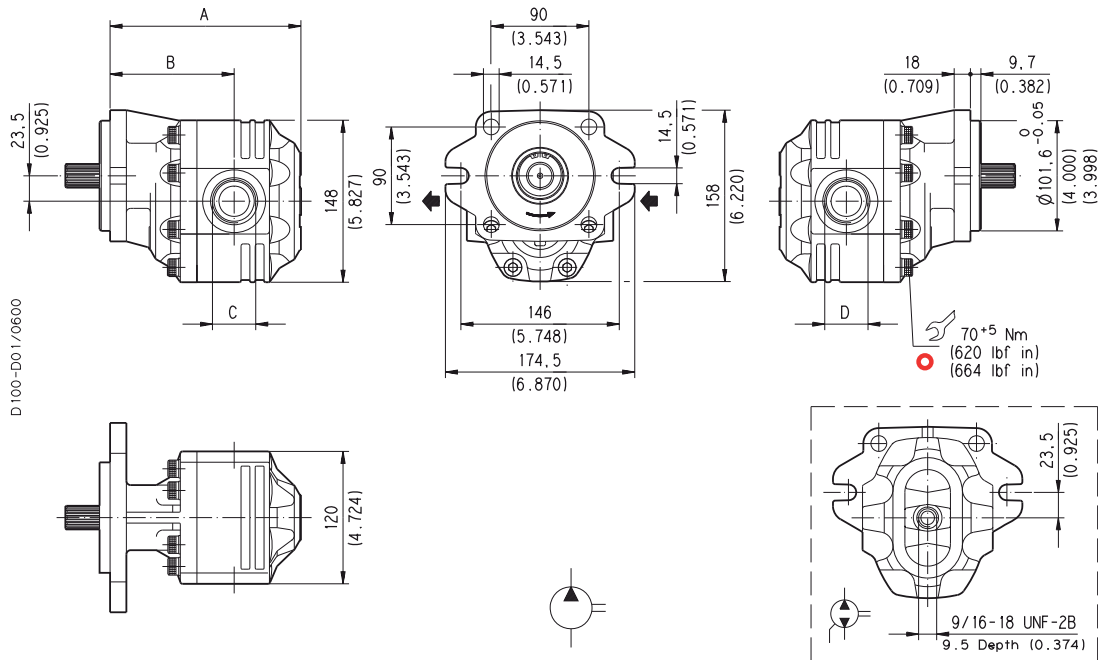
FORMULA 30

HYDRAULIC GEAR PUMPS SAE STANDARD

SAE

SAE STRAIGHT THREAD PORTS J514

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



To order see page 26 - 27.

Pump type	A	B	C	D	Ports code		Mass
	mm (in)	mm (in)	IN	OUT	IN	OUT	kg
FP 30•17 (•)	148 (5.827)	98 (3.858)	3/4-16 UNF-2B	3/4-16 UNF-2B	OB	OB	10,4
FP 30•27	154 (6.063)	104 (4.094)	1-1/16-12 UN-2B	1-1/16-12 UN-2B	OD	OD	10,8
FP 30•34	159 (6.260)	104 (4.094)					11,3
FP 30•38	162 (6.378)	107 (4.213)					11,5
FP 30•43	165 (6.496)	110 (4.331)					11,8
FP 30•51	170 (6.693)	108 (4.252)	1-5/16-12 UN-2B	1-3/16-12 UN-2B	OF	OE	12
FP 30•61	176 (6.929)	114 (4.488)	13				
FP 30•73	184 (7.244)	115 (4.528)	1-5/8-12 UN-2B	1-5/16-12 UN-2B	OG	OF	13,4
FP 30•82	189 (7.441)	120 (4.724)					13,9

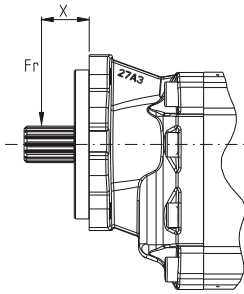
(•) Only available in version 2.

FORMULA 30 SAE VERSION			SAE
<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">0</div> <p style="font-size: small; margin-top: 10px;">D 100-D05/0600</p>	<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">1</div> <p style="font-size: small; margin-top: 10px;">D 100-D06/0600</p>	<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">2</div> <p style="font-size: small; margin-top: 10px;">D 100-D07/0600</p>	<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">SAE</div>
<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">0</div> <p style="font-size: x-small;">Version for applications without radial and axial load on the drive shaft.</p>	<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">1</div> <p style="font-size: x-small;">Version for applications with low radial load and without axial load on the drive shaft.</p>	<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">2</div> <p style="font-size: x-small;">Special version with independent shaft for applications with low radial load and without axial load on the drive shaft.</p>	

FORMULA 30 SAE END DRIVE SHAFTS		SAE	
<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">SAE "B" SPLINE</div>	<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">04</div>	<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">SAE "B" STRAIGHT</div>	<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">32</div>
<p style="font-size: x-small; margin-top: 5px;">Ext. Involute Spline SAE J498B with major diameter modified 13 teeth - 16/32 Pitch - 30 deg Flat Root - Side fit - Class 1</p>	<p style="font-size: x-small;">D 100-D03/0600</p>	<p style="font-size: x-small; margin-top: 5px;">D 100-D20/0600</p>	
<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">○</div> <div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">◆</div> <p style="font-weight: bold; margin: 0;">MAX 330 Nm (2921 lbf in)</p>		<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">○</div> <div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">◆</div> <p style="font-weight: bold; margin: 0;">MAX 200 Nm (1770 lbf in)</p>	
<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">SAE "BB" SPLINE</div>	<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">05</div>	<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">SAE "BB" STRAIGHT</div>	<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">33</div>
<p style="font-size: x-small; margin-top: 5px;">Ext. Involute Spline SAE J498B with major diameter modified 15 teeth - 16/32 Pitch - 30 deg Flat Root - Side fit - Class 1</p>	<p style="font-size: x-small;">D 100-D21/1003</p>	<p style="font-size: x-small; margin-top: 5px;">D 100-D22/0600</p>	
<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">○</div> <div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">◆</div> <p style="font-weight: bold; margin: 0;">MAX 500 Nm (4426 lbf in)</p>		<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">○</div> <div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">◆</div> <p style="font-weight: bold; margin: 0;">MAX 280 Nm (2478 lbf in)</p>	
<div style="background-color: #e60000; color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">◆</div> <p style="font-weight: bold; margin: 0;">For "2" version whichever end shaft, the max. torque applicable is M= 170 Nm (1505 lbf in)</p>			

FORMULA 30 PERMISSIBLE RADIAL LOADING

SAE



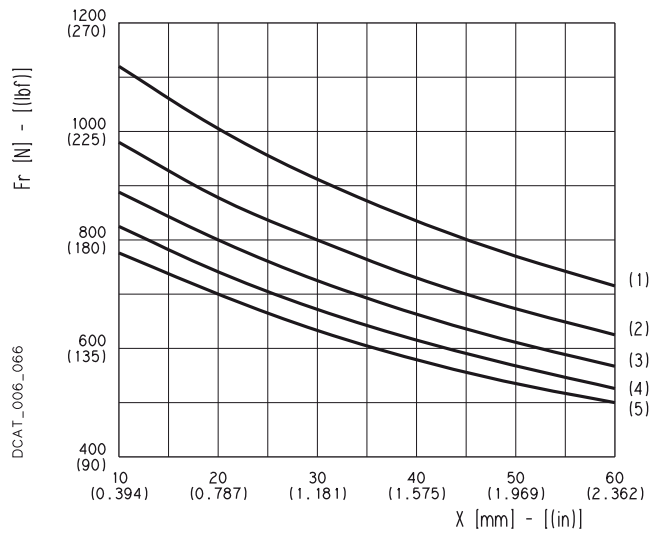
X= Distance of the radial load result from the mounting flange.

Fatigue life (hours) $L_h = 1000$ [h]

Each curve has been obtained at:


- (1) 1000 min^{-1} (4) 2500 min^{-1}
- (2) 1500 min^{-1} (5) 3000 min^{-1}
- (3) 2000 min^{-1}

VERSION
1 - 2



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
FP30•17	S	0	04	S3	L	OD/OD	N

1	Pump type	CODE
cm ³ /rev		
17,28		FP 30•17
26,70		FP 30•27
34,56		FP 30•34
39,27		FP 30•38
43,98		FP 30•43
51,83		FP 30•51
61,26		FP 30•61
73,82		FP 30•73
81,68		FP 30•82

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	Pump type	
OB/OB	FP 30•17	
OD/OD	FP 30•27	
OD/OD	FP 30•34	
OD/OD	FP 30•38	
OF/OD	FP 30•43	
OF/OE	FP 30•51	
OF/OE	FP 30•61	
OG/OF	FP 30•73	
OG/OF	FP 30•82	

CODE	Seals (a)	8
N	Buna (standard)	
V	Viton	
N Bz	Buna and Bronze thrust plates	
V Bz	Viton and Bronze thrust plates	

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

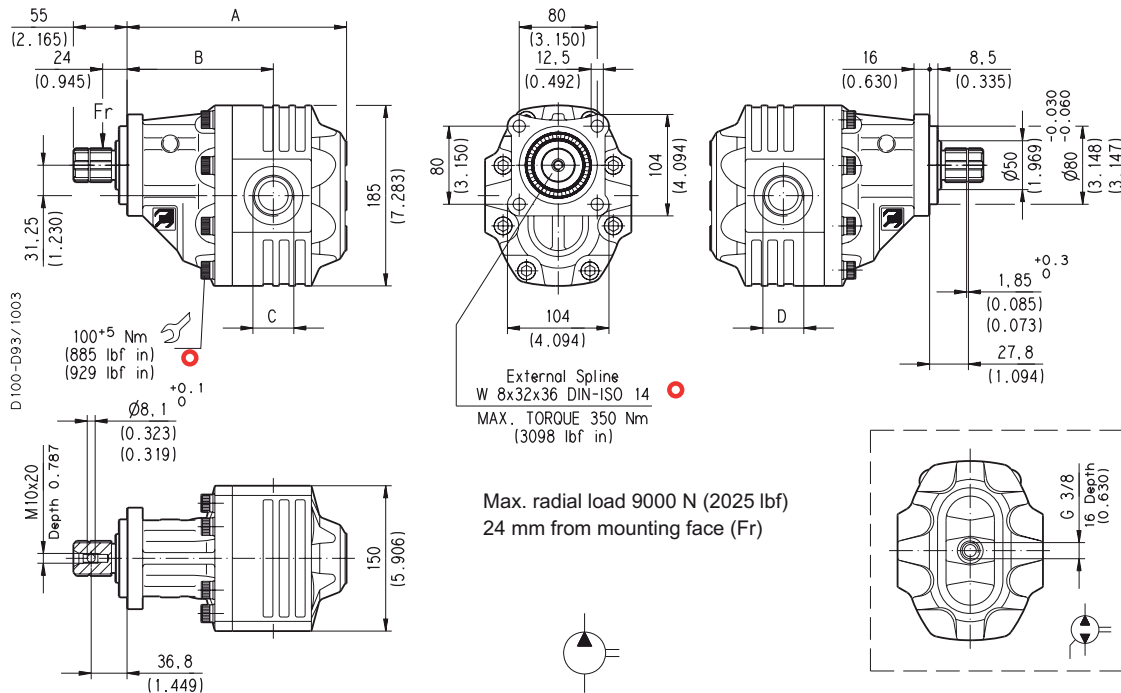
ORDER EXAMPLE

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

Special version pump **FP 30•17 S2 - 32 S3 - L OB/OB - V Bz**

GAS STRAIGHT THREAD PORTS

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



Pump type			A	B	C	D	Mass	
			mm (in)	mm (in)	IN	OUT	kg	
FP 40•63	S D R B	0-16 Z0	L GF/GE-N	199 (7.835)	131 (5.157)	G 1	G 3/4	18,65
				203 (7.992)	135 (5.315)			19,30
			L GG/GF-N	208 (8.189)	140 (5.512)	G 1 1/4	G 1	19,75
				216 (8.504)	141 (5.551)			21
			L GH/GF-N	225 (8.858)	150 (5.906)	G 1 1/2	G 1	22,10
				231 (9.094)	156 (6.142)			22,90

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

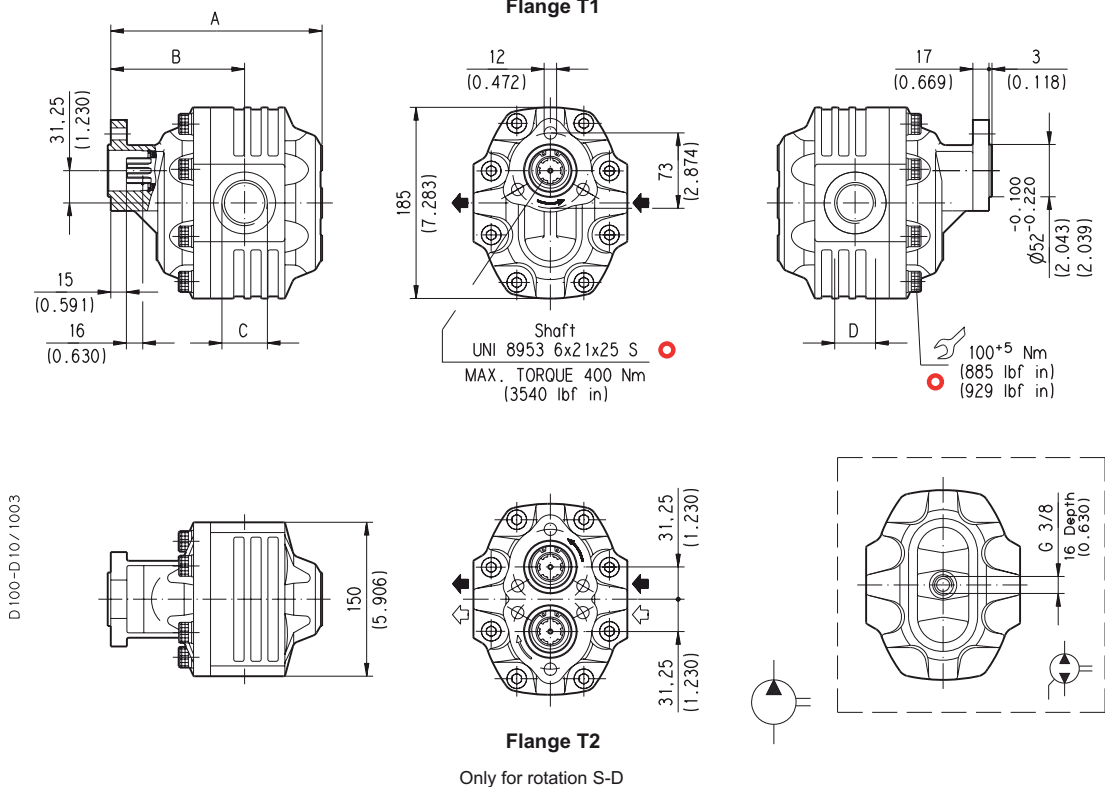
How to order:

FP 40•63 S0 - 16 Z0 - L GF/GE - N

FORMULA 40 **HYDRAULIC GEAR PUMPS ITALIAN STANDARD** **19 T**

GAS STRAIGHT THREAD PORTS

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



D100-D10/1003

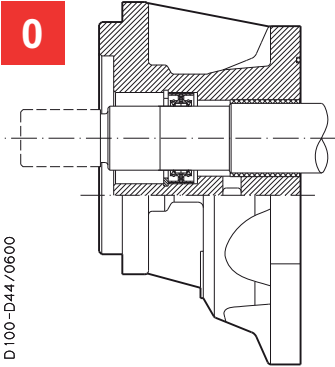
Pump type		A	B	C	D	Mass
S D R B	0-19	T1	L GF/GE-N	G 1	G 3/4	16,1
						16,5
		T2	L GG/GF-N	G 1 1/4	G 1	17
						18
		L GH/GF-N	G 1 1/2	G 1	119,5	
					20	

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

FP 40•63 S0 - 19 T1 - L GF/GE - N

FORMULA 40 SAE VERSION SAE

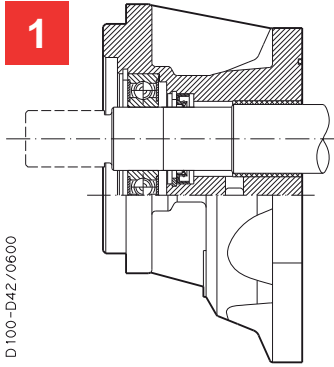
0



D 100-D44 /0600

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

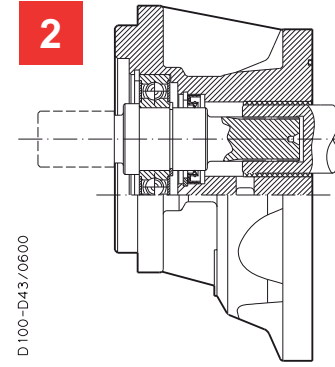
1



D 100-D42 /0600

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

2

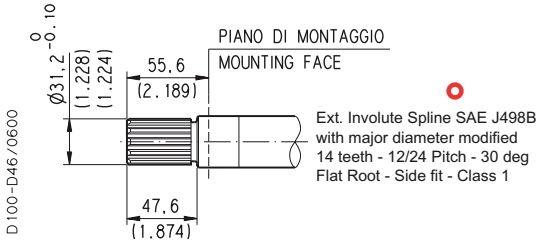


D 100-D43 /0600

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

FORMULA 40 SAE END DRIVE SHAFTS SAE

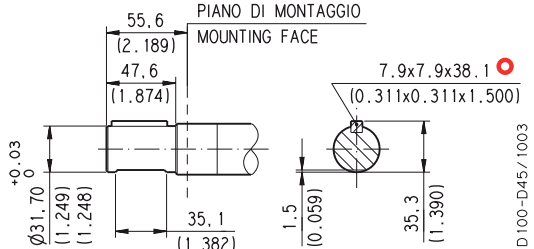
SAE "C" SPLINE 06



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

MAX 900 Nm (7966 lbf in) ◆

SAE "C" STRAIGHT 34



7.9x7.9x38.1 (0.311x0.311x1.500)

MAX 600 Nm (5311 lbf in) ◆

◆ For "2" version whichever end shaft, the max. torque applicable is M= 600 Nm (5311 lbf in)

PUMP - VERSION - SHAFT AVAILABILITY TABLE SAE

Pump type	VERSION			SHAFT
	0	1	2	
FP 40•63	06	06	06 - 34	SHAFT
FP 40•73	06 - 34	06 - 34	06 - 34	
FP 40•87	06 - 34	06 - 34	06 - 34	
FP 40•109	06	06	06 - 34	
FP 40•133	06 - 34	06 - 34	06 - 34	
FP 40•151	06 - 34	06 - 34	06 - 34	

PARAMETRI DI FUNZIONAMENTO POMPE

General data pumps

Pompa tipo Pump type	Cilindrata Displacement	Pressione max. Max pressure			Velocità max Max speed	Velocità min Min speed
		p ₁	p ₂	p ₃		
	cm ³ /giro cu in/rev	bar psi			min ⁻¹	
HDP 30•17 *	17,20 1.05	280 4060	300 4350	320 4640	3000	400
HDP 30•22 *	21,89 1.33					
HDP 30•27	26,58 1.62					
HDP 30•34	34,39 2.09	270 3900	290 4200	310 4500		
HDP 30•43	43,77 2.67	260 3770	280 4060	300 4350		
HDP 30•51	51,59 3.14	230 3300	260 3770	280 4060	2500	300
HDP 30•61	60,97 3.72	200 2900	230 3300	250 3625	2000	250
HDP 30•73	73,47 4.48	190 2750	210 3040	230 3300	1700	
HDP 30•82	81,29 4.96	170 2400	190 2750	210 3040	1500	
HDP 35•50	50,77 3.09	270 3900	280 4060	310 4500	3000	400
HDP 35•63	63,46 3.87					
HDP 35•71	71,92 4.38	250 3625	280 4060	300 4350		
HDP 35•80	80,39 4.90					
HDP 35•90	90,96 5.55	230 3300	260 3770	280 4060	2700	
HDP 35•100	99,43 6.06	210 3040	240 3480	260 3770		
HDP 35•112	112,12 6.84	190 2750	220 3190	240 3480		
HDP 35•125	124,81 7.61	170 2400	200 2900	220 3190	2500	250

I valori in tabella sono riferiti a pompe unidirezionali.

The values in the table refer to unidirectional pumps.

* Disponibili solo nelle versioni 2 e 4

* Available only on 2 and 4 version

p₁= Pressione max. continua
Max. continuous pressure

p₂= Pressione max. intermittente
Max. intermittent pressure

p₃= Pressione max. di punta
Max. peak pressure

Le pressioni max delle pompe reversibili sono inferiori del 15% rispetto a quelle riportate in tabella, per condizioni d'impiego non citate in tabella consultare il nostro servizio tecnico commerciale.
Reversible pumps max pressures are 15% lower than those shown in table. For different working conditions please consult our sales department.

DETERMINAZIONE DI UNA POMPA
Design calculations for pumps

Q	[l/min]	Portata	Delivery
M	[Nm]	Coppia	Torque
P	[kW]	Potenza	Power
V	[cm ³ /giro] - [cm ³ /rev]	Cilindrata	Displacement
n	[min ⁻¹]	Velocità	Speed
Δp	[bar]	Pressione	Pressure
$\eta_v = \eta_v(V, \Delta p, n)$	(≈ 0,98)	Rendimento volumetrico	Volumetric efficiency
$\eta_m = \eta_m(V, \Delta p, n)$	(≈ 0,90)	Rendimento meccanico	Mechanical efficiency
η_t	(≈ 0,88)	Rendimento totale	Overall efficiency

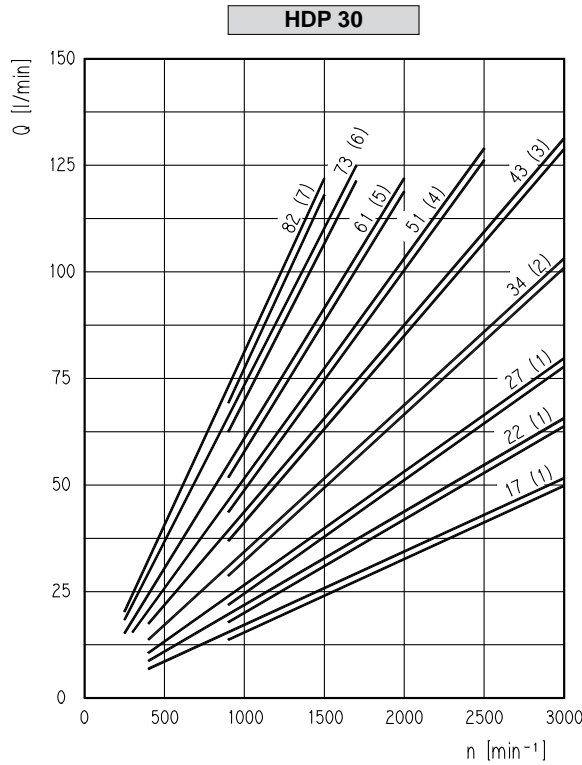
$$Q = V \cdot \eta_v \cdot n \cdot 10^{-3} \quad [\text{l/min}]$$

$$M = \frac{\Delta p \cdot V}{62,8 \cdot \eta_m} \quad [\text{Nm}]$$

$$P = \frac{\Delta p \cdot V \cdot n}{612 \cdot 1000 \cdot \eta_t} \quad [\text{kW}]$$

Nota : Nelle seguenti pagine troverete dei diagrammi che vi permetteranno di fare dei calcoli approssimativi.
Note : Diagrams providing approximate selection data will be found on subsequent pages.

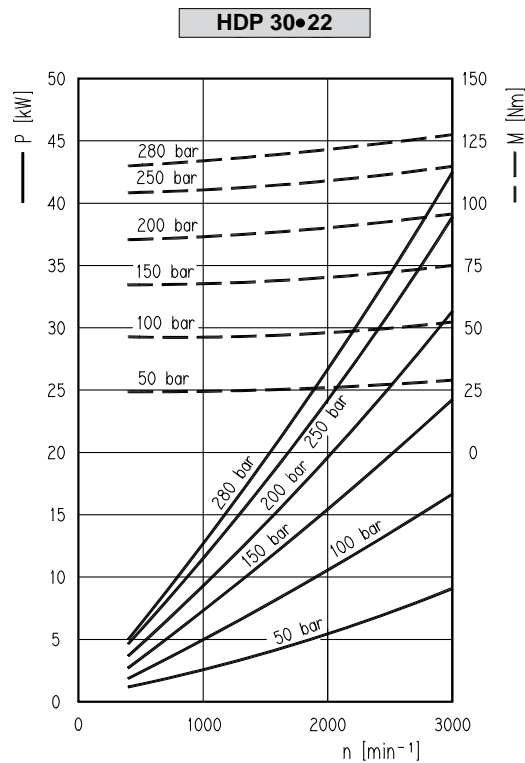
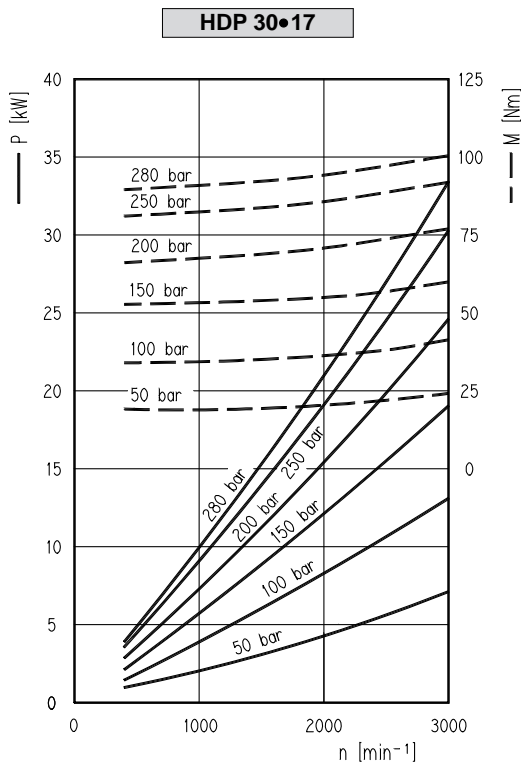
CURVE CARATTERISTICHE POMPE HDP 30
HDP 30 gear pumps performance curves



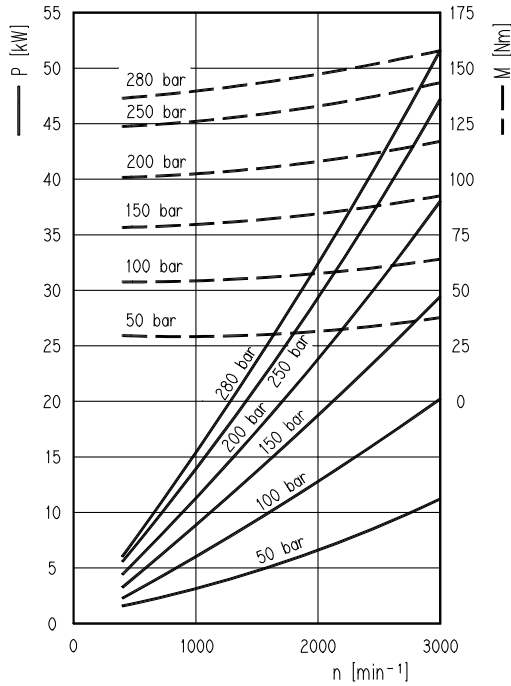
Le curve sono state ottenute alla temperatura di 50°C, utilizzando olio con viscosità 36 mm²/s a 40°C e alle pressioni sotto riportate.

Each curve has been obtained at 50°C, using oil with viscosity 36 mm²/s at 40°C and at these pressures.

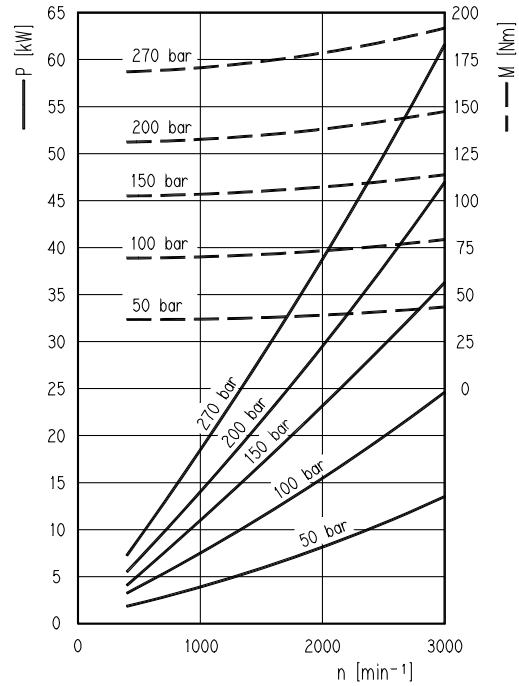
- (1) 20-280 bar
- (2) 20-270 bar
- (3) 20-260 bar
- (4) 20-230 bar
- (5) 20-200 bar
- (6) 20-190 bar
- (7) 20-170 bar



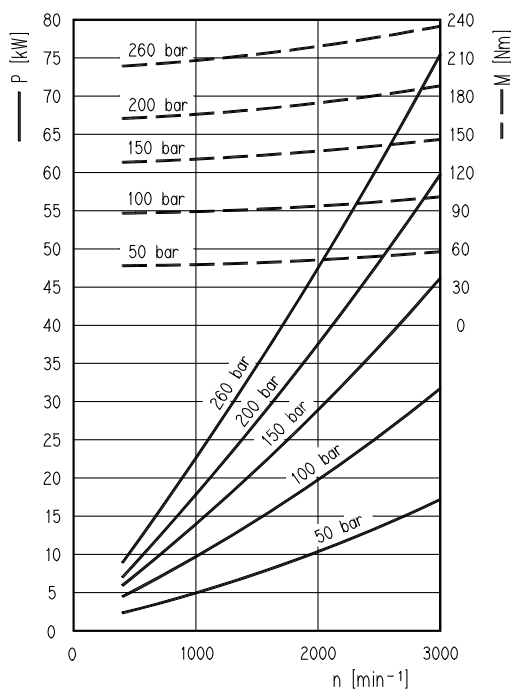
HDP 30•27



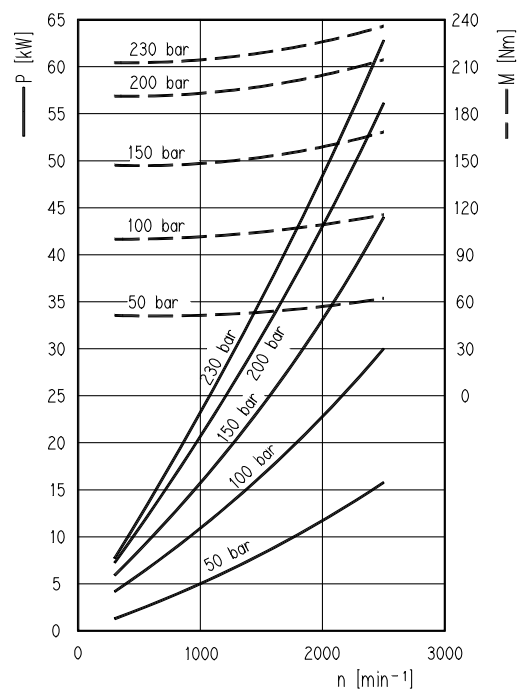
HDP 30•34



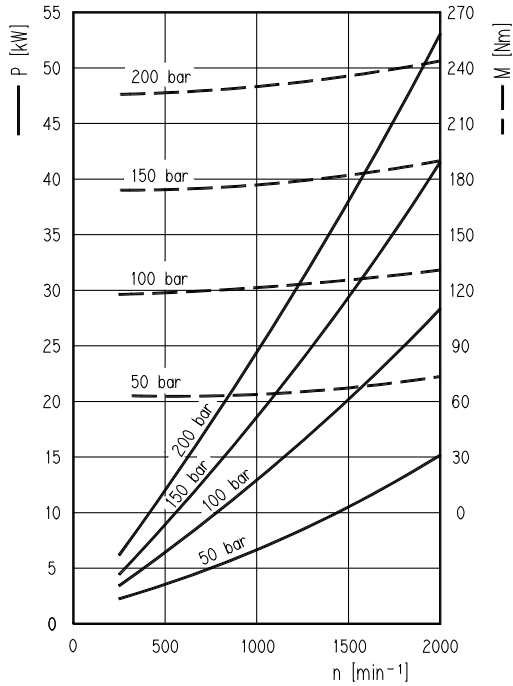
HDP 30•43



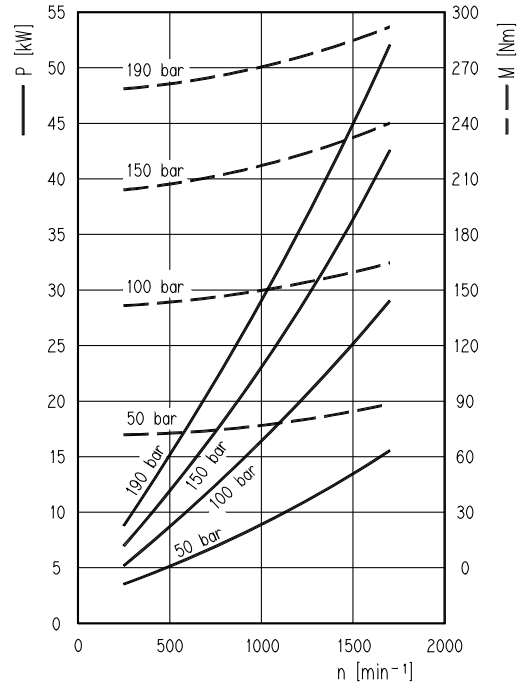
HDP 30•51



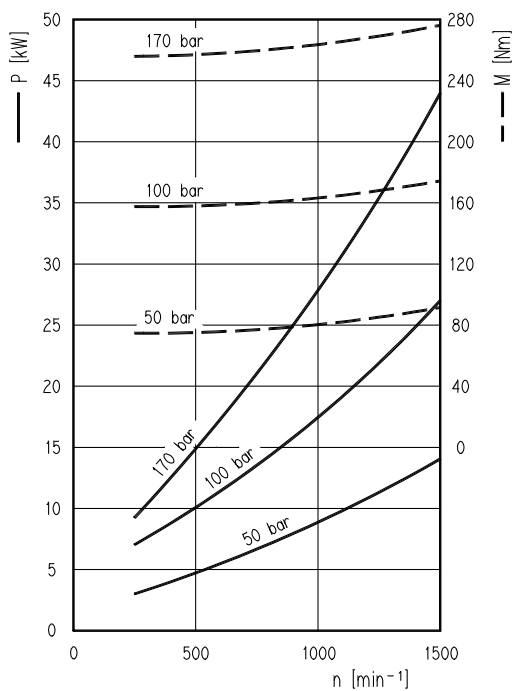
HDP 30•61



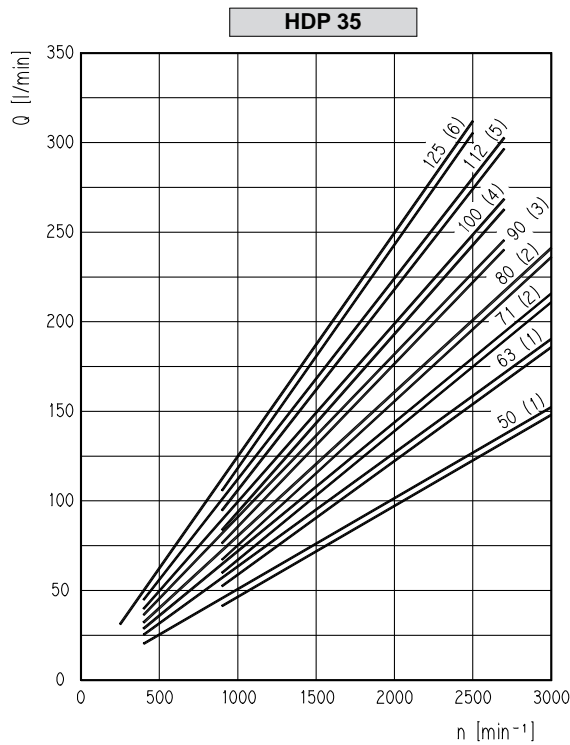
HDP 30•73



HDP 30•82



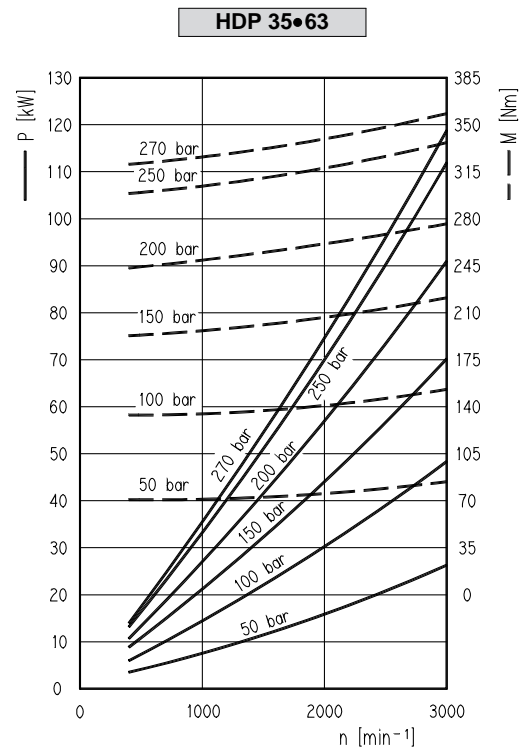
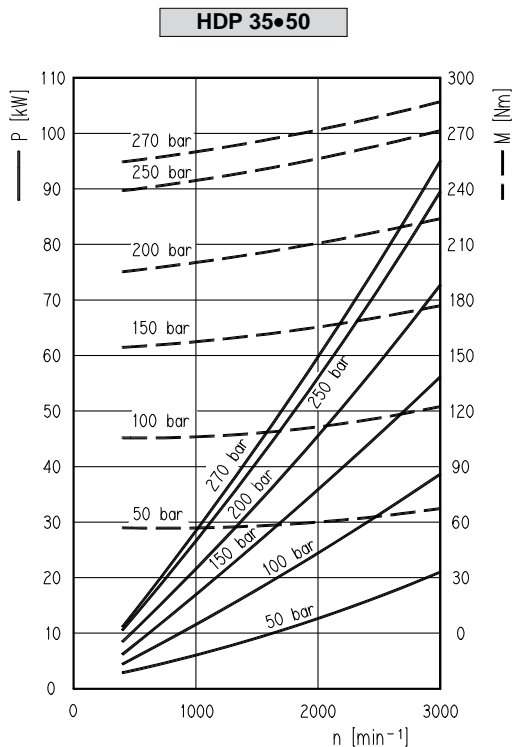
CURVE CARATTERISTICHE POMPE HDP 35
HDP 35 gear pumps performance curves



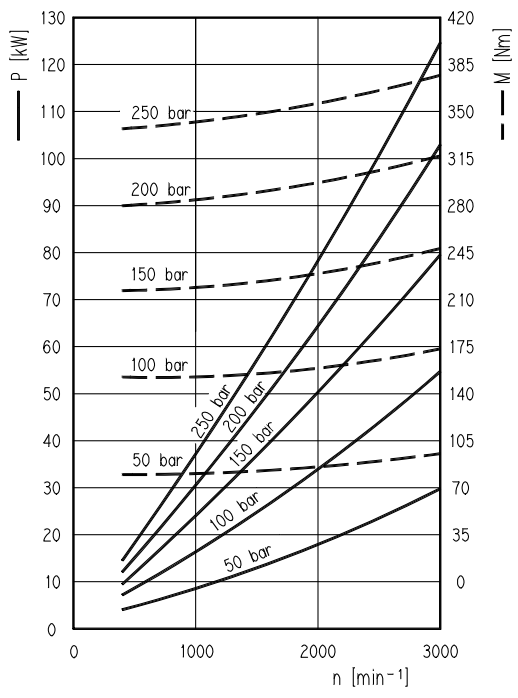
Le curve sono state ottenute alla temperatura di 50°C, utilizzando olio con viscosità 36 mm²/s a 40°C e alle pressioni sotto riportate.

Each curve has been obtained at 50°C, using oil with viscosity 36 mm²/s at 40°C and at these pressures.

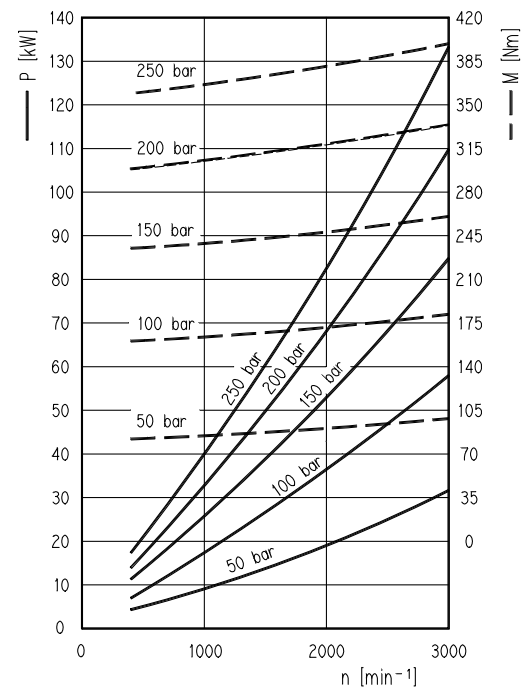
- (1) 20-270 bar
- (2) 20-250 bar
- (3) 20-230 bar
- (4) 20-210 bar
- (5) 20-190 bar
- (6) 20-170 bar



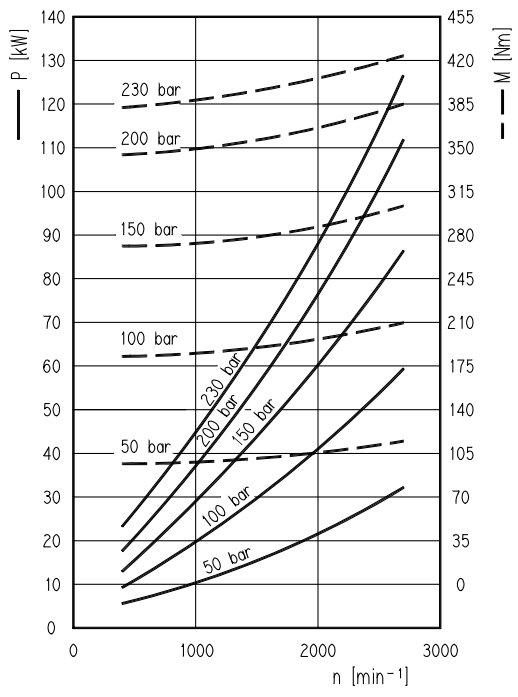
HDP 35•71



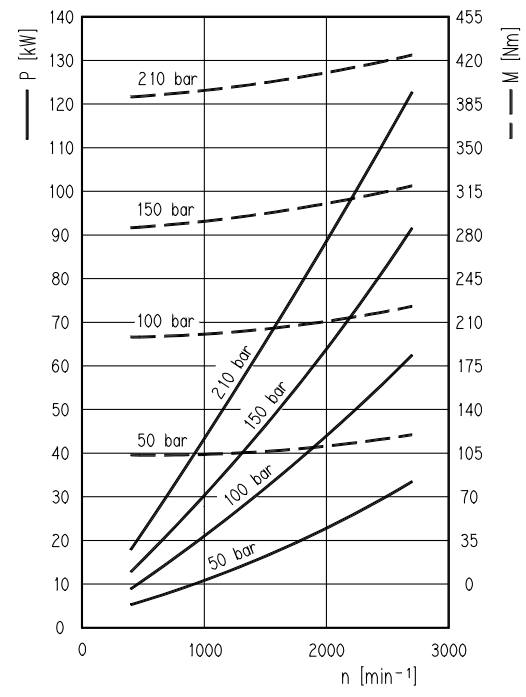
HDP 35•80



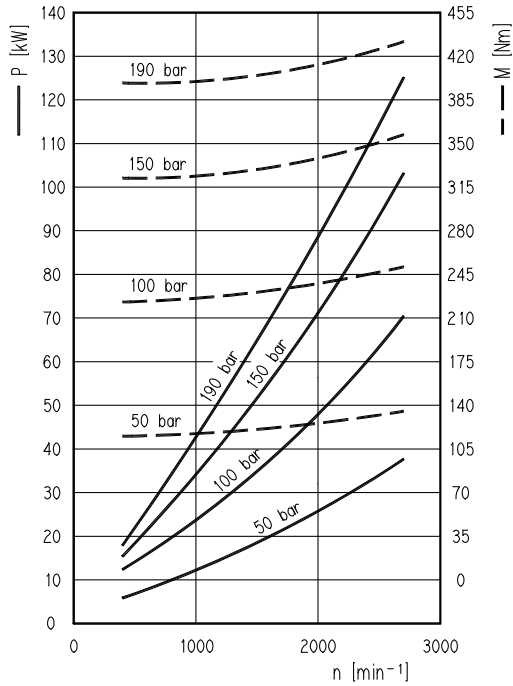
HDP 35•90



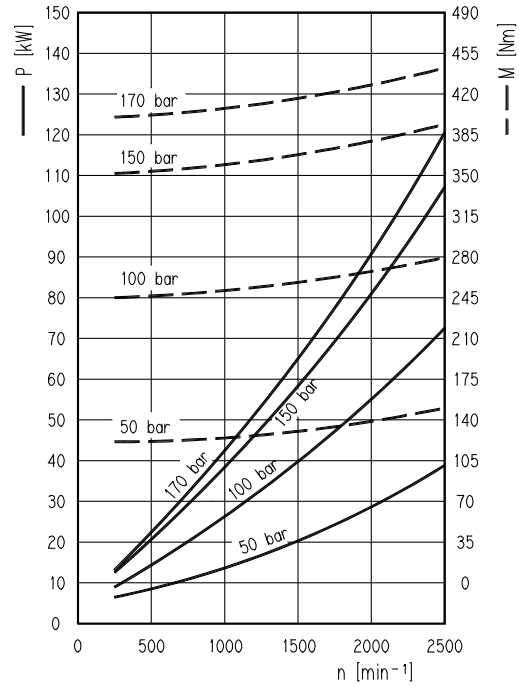
HDP 35•100



HDP 35•112



HDP 35•125



PARAMETRI DI FUNZIONAMENTO MOTORI

General data motors

Motore tipo Motor type	Cilindrata Displacement	Pressione max. Max pressure			Velocità max Max speed	Velocità min Min speed
		p ₁	p ₂	p ₃		
	cm ³ /giro cu in/rev	bar psi			min ⁻¹	
HDM 30•17 *	17,20 1.05	280 4060	300 4350	320 4640	3000	400
HDM 30•22 *	21,89 1.33					
HDM 30•27	26,58 1.62					
HDM 30•34	34,39 2.09	270 3900	290 4200	310 4500	2500	300
HDM 30•43	43,77 2.67	260 3770	280 4060	300 4350		
HDM 30•51	51,59 3.14	230 3300	260 3770	280 4060		
HDM 30•61	60,97 3.72	200 2900	230 3300	250 3625	2000	250
HDM 30•73	73,47 4.48	190 2750	210 3040	230 3300	1700	
HDM 30•82	81,29 4.96	170 2400	190 2750	210 3040	1500	
HDM 35•50	50,77 3.09	270 3900	280 4060	310 4500	3000	400
HDM 35•63	63,46 3.87					
HDM 35•71	71,92 4.38	250 3625	280 4060	300 4350		
HDM 35•80	80,39 4.90					
HDM 35•90	90,96 5.55	230 3300	260 3770	280 4060	2700	250
HDM 35•100	99,43 6.06	210 3040	240 3480	260 3770		
HDM 35•112	112,12 6.84	190 2750	220 3190	240 3480		
HDM 35•125	124,81 7.61	170 2400	200 2900	220 3190	2500	250

I valori in tabella sono riferiti a motori unidirezionali.
The values in the table refer to unidirectional motors.

* Disponibili solo nelle versioni 2 e 4

* Available only on 2 and 4 version

P1= Pressione max. continua
Max. continuous pressure

P2= Pressione max. intermittente
Max. intermittent pressure

P3= Pressione max. di punta
Max. peak pressure

Le pressioni max dei motori reversibili sono inferiori del 15% rispetto a quelle riportate in tabella, per condizioni d'impiego non citate in tabella consultare il nostro servizio tecnico commerciale.
Reversible motors max pressures are 15% lower than those shown in table. For different working conditions please consult our sales department.

DETERMINAZIONE DI UN MOTORE

Design calculations for motors

Q	[l/min]	Portata	Delivery
M	[Nm]	Coppia	Torque
P	[kW]	Potenza	Power
V	[cm ³ /giro] - [cm ³ /rev]	Cilindrata	Displacement
n	[min ⁻¹]	Velocità	Speed
Δp	[bar]	Pressione	Pressure
$\eta_v = \eta_v (V, \Delta p, n)$	($\approx 0,97$)	Rendimento volumetrico	Volumetric efficiency
$\eta_m = \eta_m (V, \Delta p, n)$	($\approx 0,88$)	Rendimento meccanico	Mechanical efficiency
η_t	($\approx 0,85$)	Rendimento totale	Overall efficiency

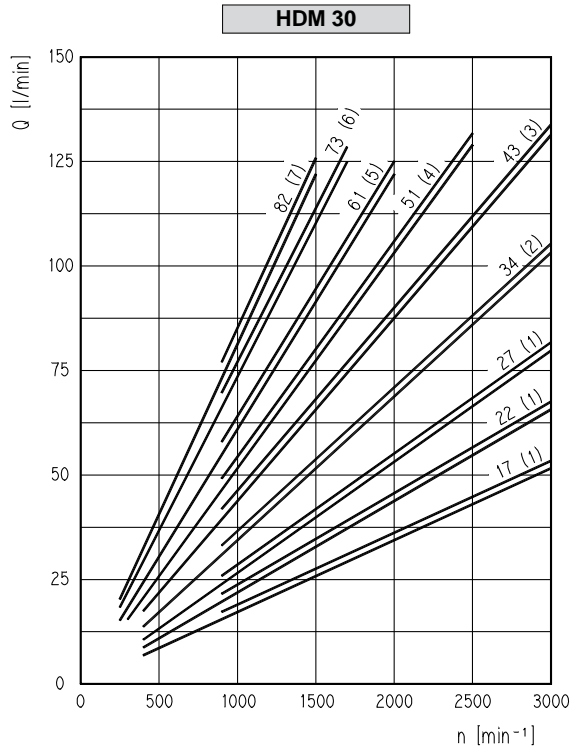
$$Q = \frac{V \cdot n \cdot 10^{-3}}{\eta_v} \quad [l/min]$$

$$M = \frac{\Delta p \cdot V \cdot \eta_m}{62,8} \quad [Nm]$$

$$P = \frac{\Delta p \cdot V \cdot n \cdot \eta}{612 \cdot 1000} \quad [kW]$$

Nota : Nelle seguenti pagine troverete dei diagrammi che vi permetteranno di fare dei calcoli approssimativi.
Note : Diagrams providing approximate selection data will be found on subsequent pages.

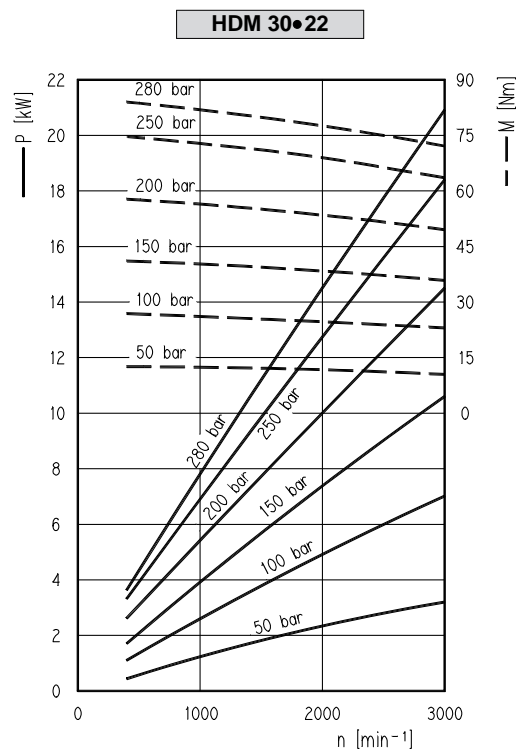
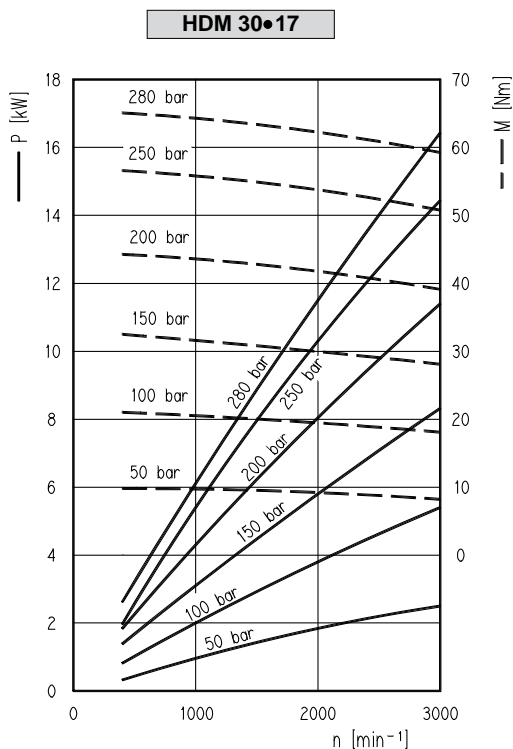
CURVE CARATTERISTICHE MOTORI HDM 30
HDM 30 gear motors performance curves



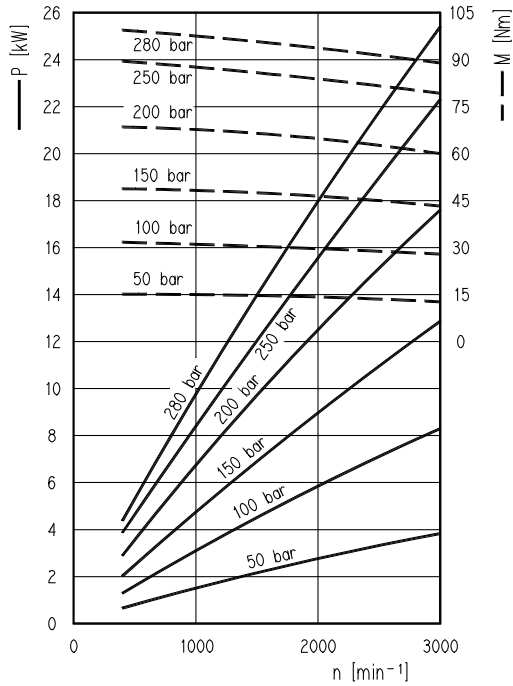
Le curve sono state ottenute alla temperatura di 50°C, utilizzando olio con viscosità 36 mm²/s a 40°C e alle pressioni sotto riportate.

Each curve has been obtained at 50°C, using oil with viscosity 36 mm²/s at 40°C and at these pressures.

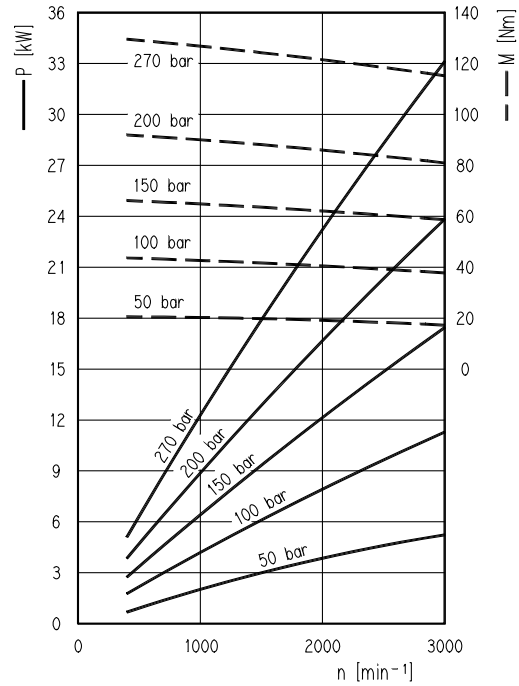
- (1) 20-280 bar
- (2) 20-270 bar
- (3) 20-260 bar
- (4) 20-230 bar
- (5) 20-200 bar
- (6) 20-190 bar
- (7) 20-170 bar



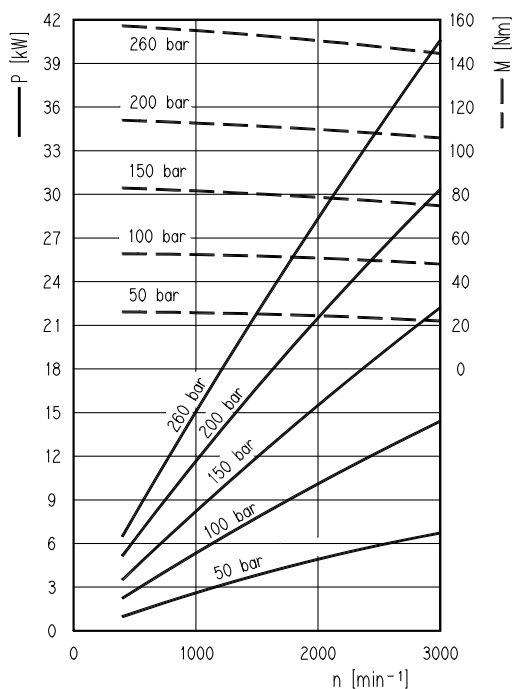
HDM 30•27



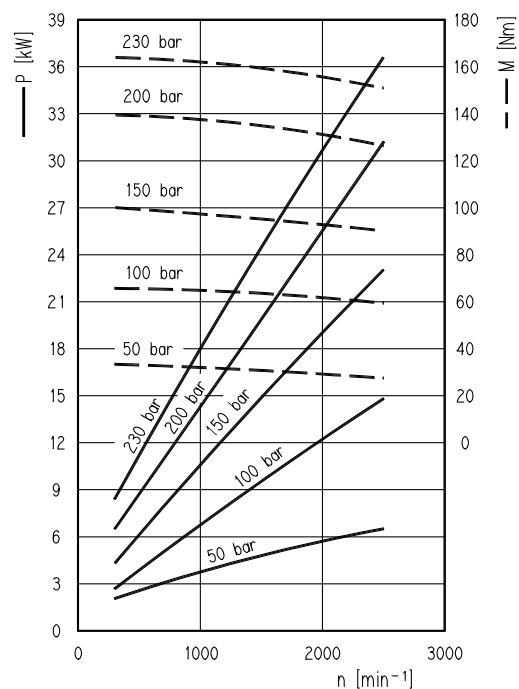
HDM 30•34



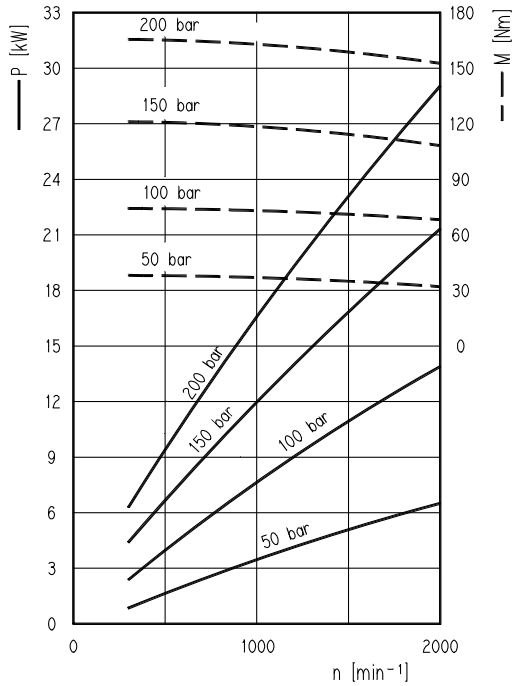
HDM 30•43



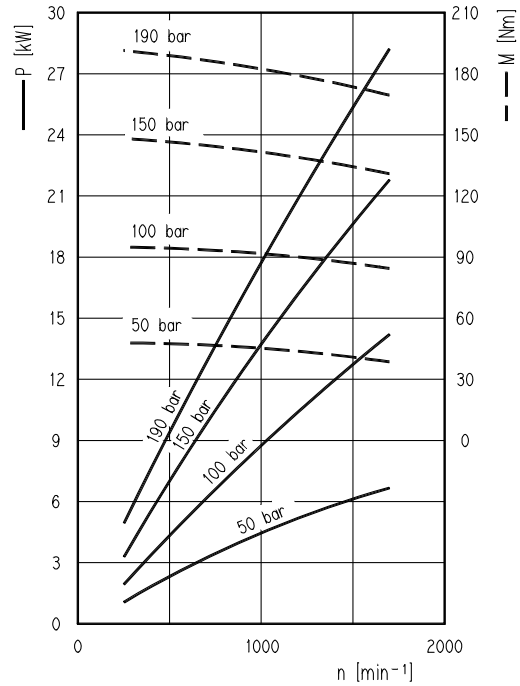
HDM 30•51



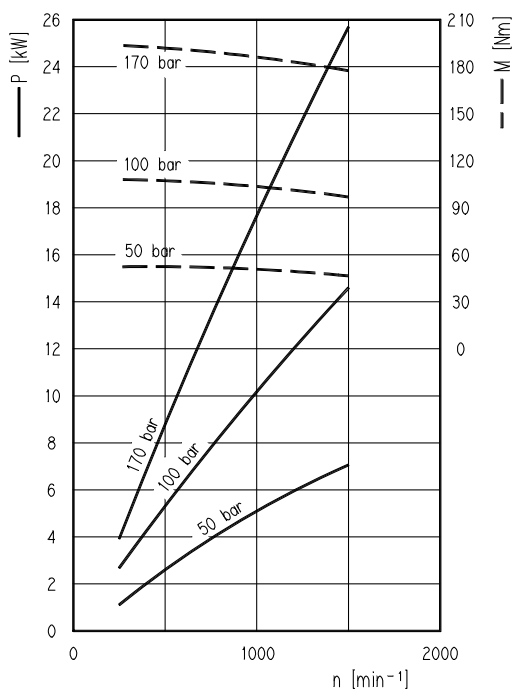
HDM 30•61



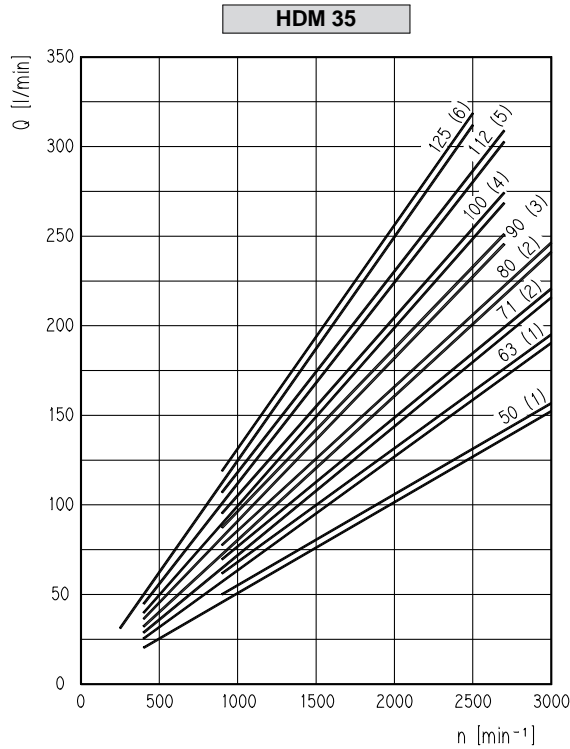
HDM 30•73



HDM 30•82



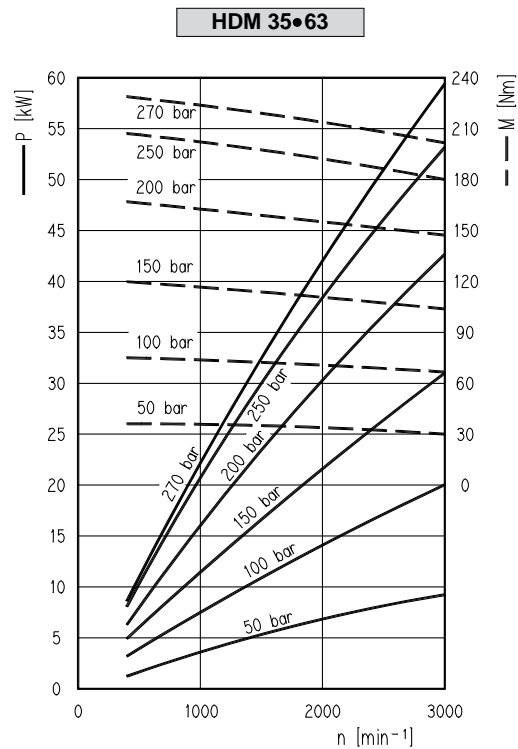
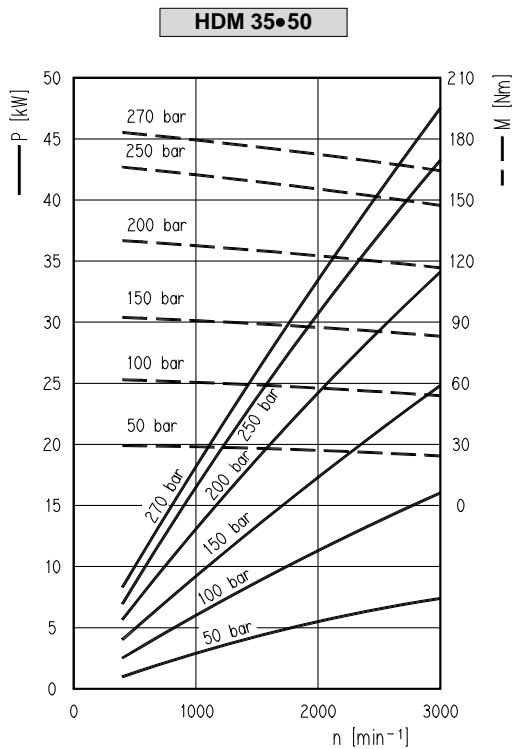
CURVE CARATTERISTICHE MOTORI HDM 35
HDM 35 gear motors performance curves



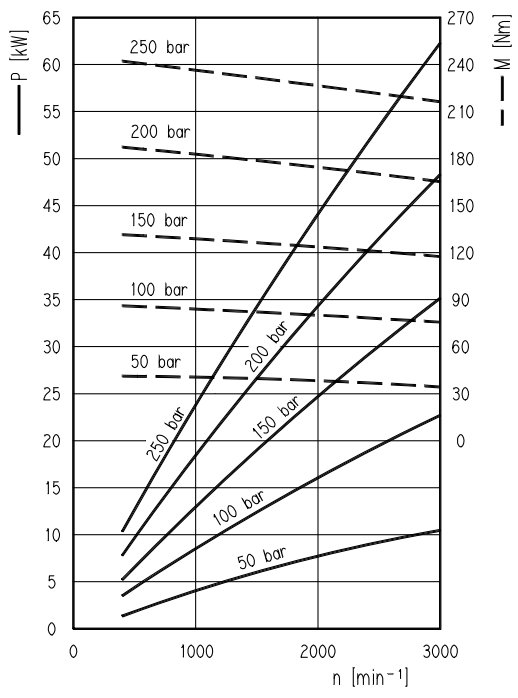
Le curve sono state ottenute alla temperatura di 50°C, utilizzando olio con viscosità 36 mm²/s a 40°C e alle pressioni sotto riportate.

Each curve has been obtained at 50°C, using oil with viscosity 36 mm²/s at 40°C and at these pressures.

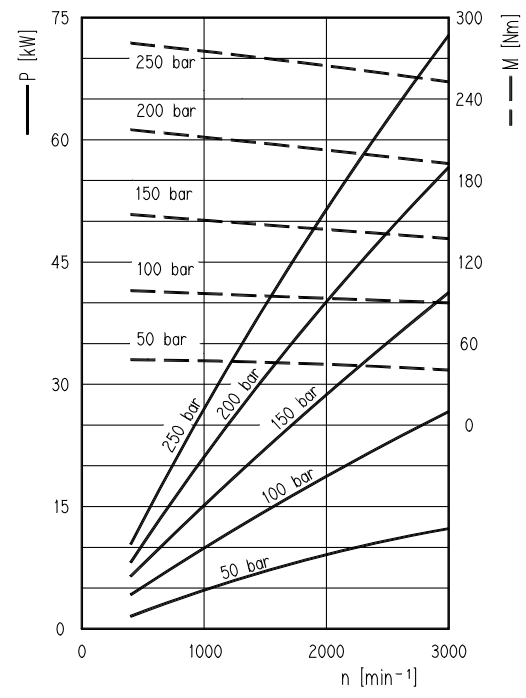
- (1) 20-270 bar
- (2) 20-250 bar
- (3) 20-230 bar
- (4) 20-210 bar
- (5) 20-190 bar
- (6) 20-170 bar



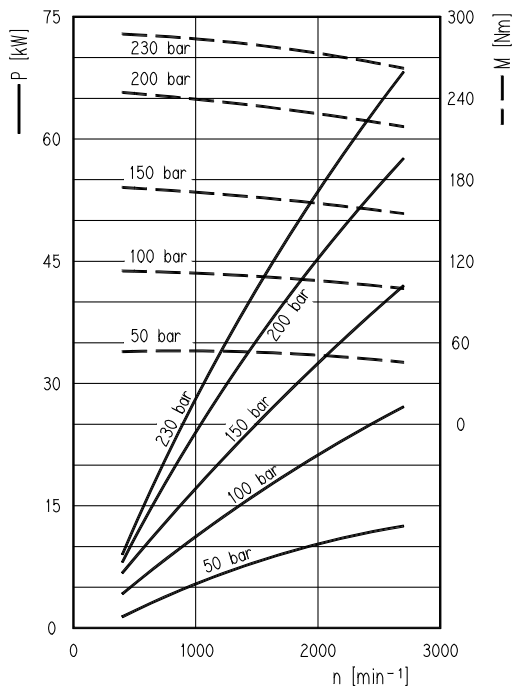
HDM 35•71



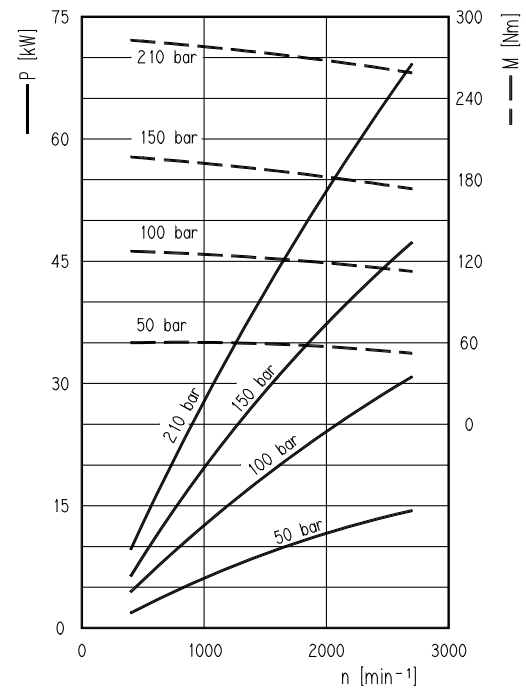
HDM 35•80



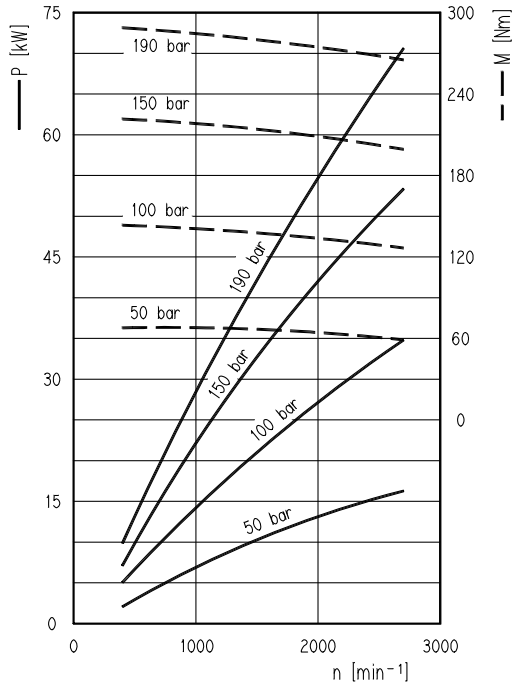
HDM 35•90



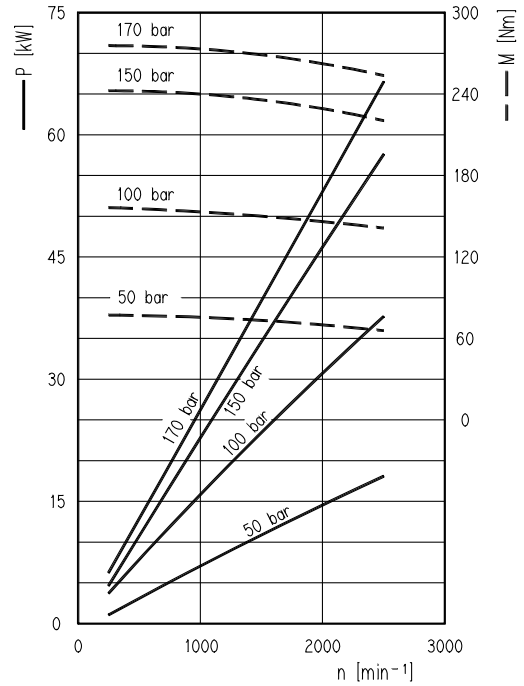
HDM 35•100



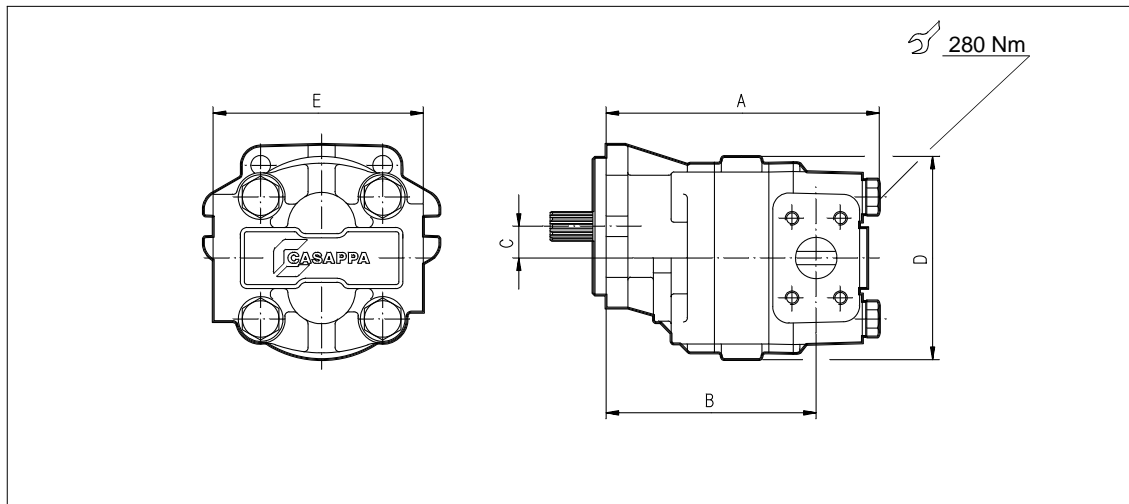
HDM 35•112



HDM 35•125

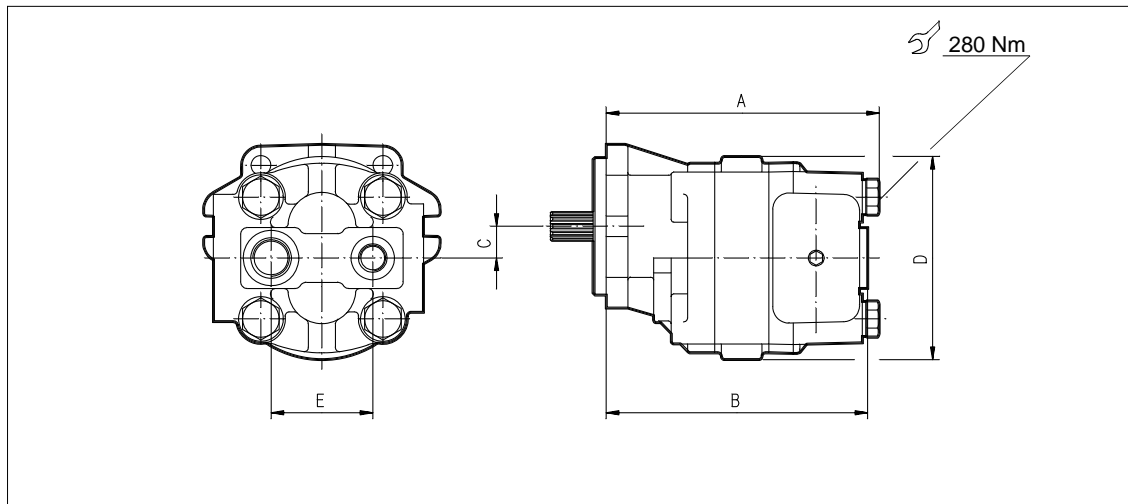


DIMENSIONI UNITA' SINGOLE CON BOCCHIE LATERALI
Single unit dimensions side ports



Pompa tipo Pump type Motore tipo Motor type	A	B	C	D	E	Massa Mass
	mm	mm	mm	mm	mm	kg
HD. 30•17	184,5	138	23,45	150	155	15,50
HD. 30•22	187,5	141				15,80
HD. 30•27	190,5	144				16,20
HD. 30•34	195,5	149				16,80
HD. 30•43	201,5	155				17,60
HD. 30•51	206,5	160				18,20
HD. 30•61	212,5	166				19,00
HD. 30•73	220,5	174				19,70
HD. 30•82	225,5	179				20,30
HD. 35•50	229,5	177	27,35	172	175	23,70
HD. 35•63	235,5	183				24,70
HD. 35•71	239,5	187				25,40
HD. 35•80	243,5	191				26,00
HD. 35•90	248,5	196				26,80
HD. 35•100	252,5	200				27,50
HD. 35•112	258,5	206				28,50
HD. 35•125	264,5	212				29,50

DIMENSIONI UNITA' SINGOLE CON BOCHE POSTERIORI
Single unit dimensions rear ports



Pompa tipo Pump type	A	B	C	D	E	Massa Mass
	mm	mm	mm	mm	mm	kg
HD. 30•17	184,5	173	23,45	150	75	15,50
HD. 30•22	187,5	176				15,80
HD. 30•27	190,5	179				16,20
HD. 30•34	195,5	184				16,80
HD. 30•43	201,5	190				17,60
HD. 30•51	206,5	195				18,20
HD. 30•61	212,5	201				19,00
HD. 30•73	220,5	209				19,70
HD. 30•82	225,5	214				20,30
HD. 35•50	229,5	218	27,35	172	89	23,70
HD. 35• 63	235,5	224				24,70
HD. 35•71	239,5	228				25,40
HD. 35•80	243,5	232				26,00
HD. 35•90	248,5	237				26,80
HD. 35•100	252,5	241				27,50
HD. 35•112	258,5	247				28,50
HD. 35•125	264,5	253				29,50

POMPE MULTIPLE

Multiple pumps

Le pompe **MAGNUM** possono essere combinate in unità multiple tenendo presente che l'assorbimento di potenza di ogni unità deve essere maggiore o uguale di quello della successiva. Le caratteristiche e le prestazioni di ogni pompa sono le stesse delle singole corrispondenti, tuttavia bisogna tenere conto dei seguenti limiti:

Le pressioni sono limitate dalla coppia trasmissibile dall'albero di trascinamento della prima pompa e dall'albero che collega le singole pompe tra loro e possono essere determinate caso per caso con la formula riportata sotto.

La velocità max di rotazione è determinata dalla pompa che ha velocità minore. E' offerta la possibilità di pompe doppie con una sola bocca di aspirazione in comune ai due elementi. Nell' accoppiamento **MAGNUM + KAPPA** e **MAGNUM + serie C** è standard la soluzione a stadi separati.

MAGNUM 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 for the corresponding single pumps, but pressures must be limited by the transmissible torque of the drive shaft and connecting shafts. To have appropriate data, use the formulae below.

The maximum rotational speed is that of the lowest rated speed of the single units incorporated. We offer the possibility to have pumps with only one inlet port for the two elements. Combination **MAGNUM + KAPPA** series and **MAGNUM + C** series are standard the elements sealed internally one from another.

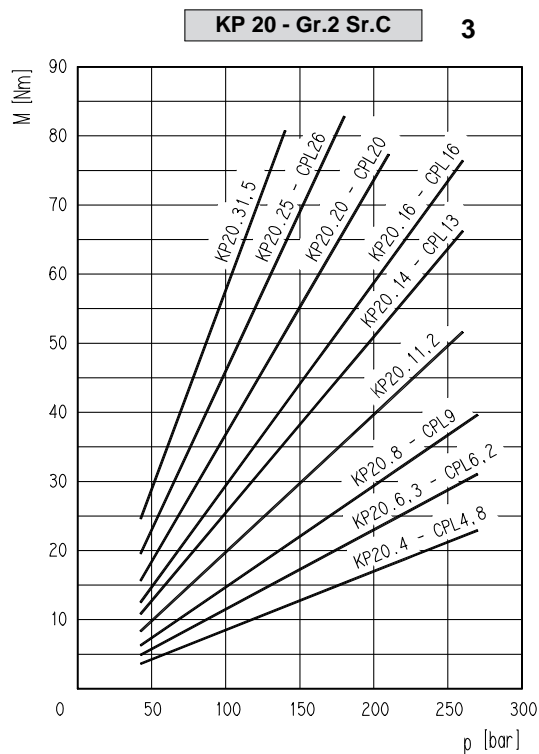
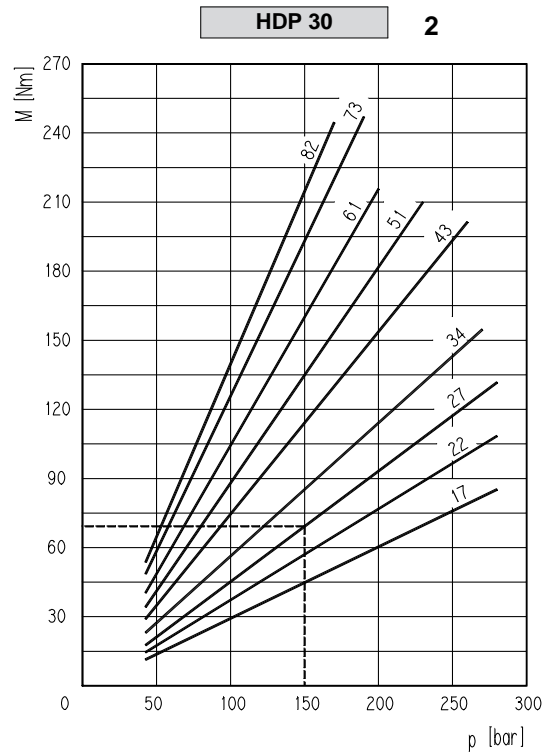
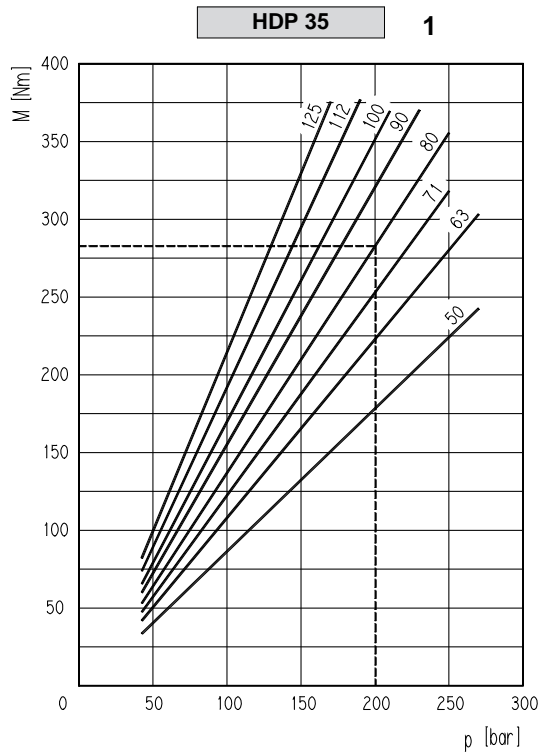
M	[Nm]	Coppia	Torque
V	[cm ³ /giro] - [cm ³ /rev]	Cilindrata	Displacement
Δp	[bar]	Pressione	Pressure
$\eta_m = \eta_m (V, \Delta p, n)$	($\approx 0,90$)	Rendimento meccanico	Mechanical efficiency

$$M = \frac{\Delta p \cdot V}{62,8 \cdot \eta_m} \quad [\text{Nm}]$$

N.B.: La coppia assorbita dall'albero della prima pompa è data dalla somma delle coppie dei singoli stadi. Il valore così ottenuto non deve superare quello massimo ammesso per il tipo di albero prescelto per la prima pompa.

N.B.: 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.

COPPIA ASSORBITA
Absorbed torque



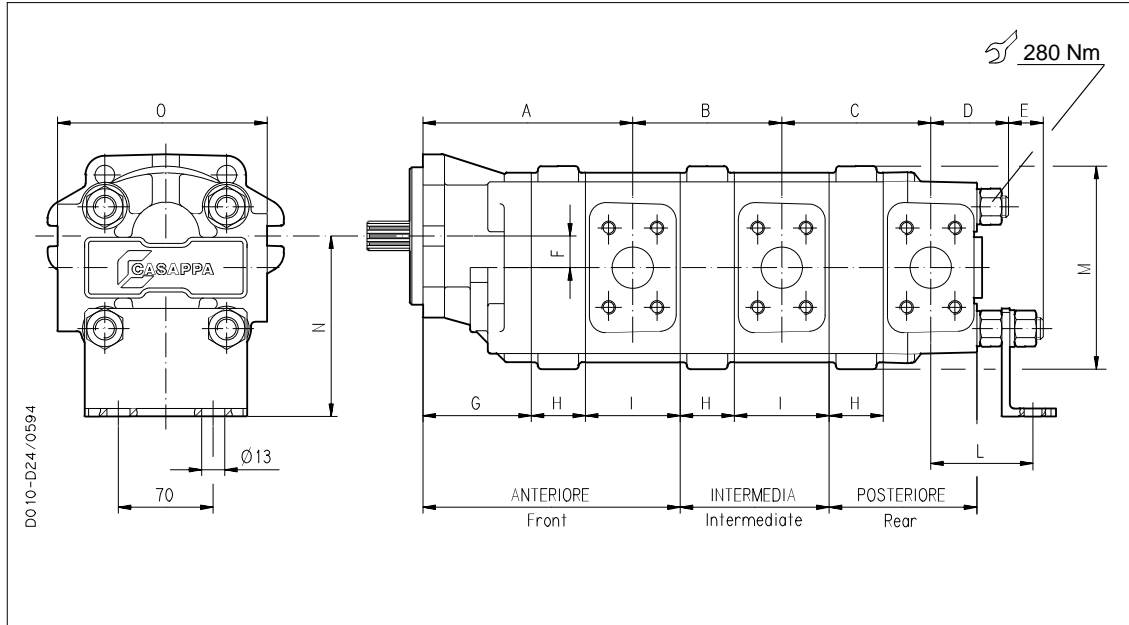
SCELTA DELL'ALBERO DI TRASCINAMENTO

Prendiamo in esame una pompa doppia HDP35•80+ HDP30•27. Supponendo di dover lavorare con la prima pompa ad una pressione di 200 bar e con la seconda ad una pressione di 150 bar, dal grafico 1 troviamo che la coppia assorbita dalla HDP35•80 è di 284 Nm e dal grafico 2 che la HDP30•27 assorbe una coppia di 70 Nm (valore accettabile perché non supera la coppia massima trasmissibile dal manicotto di collegamento fissata a 170 Nm, vedi pag. 1.40 - 1.41). La coppia che dovrà quindi trasmettere l'albero della prima pompa sarà di 284+70= 354 Nm, valore che non deve superare quello limite ammesso dall'albero.

DRIVE SHAFT SELECTION

Let us consider a double pump HDP35•80 + HDP30•27. If we suppose that we have to work with the first pump at a pressure of 200 bar and the second pump at a pressure of 150 bar, the graph 1 shows that the torque absorbed by HDP35•80 is 284 Nm and the graph 2 shows that the torque absorbed by HDP30•27 is 70 Nm (acceptable value because it does not exceed the maximum connecting shaft torque that is 170 Nm, see page 1.40 - 1.41). The torque to be transmitted by the first drive shaft will thus be

DIMENSIONI POMPE MULTIPLE
Multiple pumps dimensions



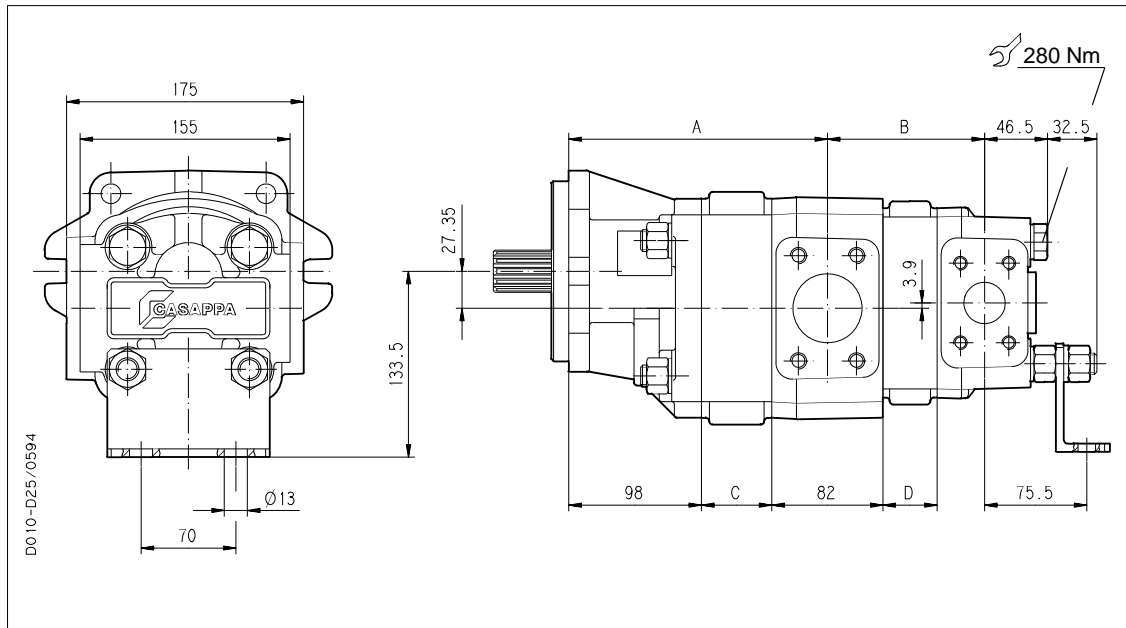
Pompa tipo Pump type	A	B	C	D	E	F	G	H	I	L	M	N	O
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
HDP 30+HDP 30	115+H	70+H	70+H	54,5	24,5	23,45	80	Vedi sotto See below	70	75,5	150	133,5	155
HDP 35+HDP 35	139+H	82+H	82+H	60,5	26,5	27,35	98	Vedi sotto See below	82	91,5	175	162,4	175

Pompa tipo Pump type	H
	mm
HDP 30•17	23
HDP 30•22	26
HDP 30•27	29
HDP 30•34	34
HDP 30•43	40
HDP 30•51	45
HDP 30•61	51
HDP 30•73	59
HDP 30•82	64

Pompa tipo Pump type	H
	mm
HDP 35•50	38
HDP 35•63	44
HDP 35•71	48
HDP 35•80	52
HDP 35•90	57
HDP 35•100	61
HDP 35•112	67
HDP 35•125	73

DIMENSIONI POMPE MULTIPLE HDP 35 + HDP 30

HDP 35 + HDP 30 multiple pumps dimensions



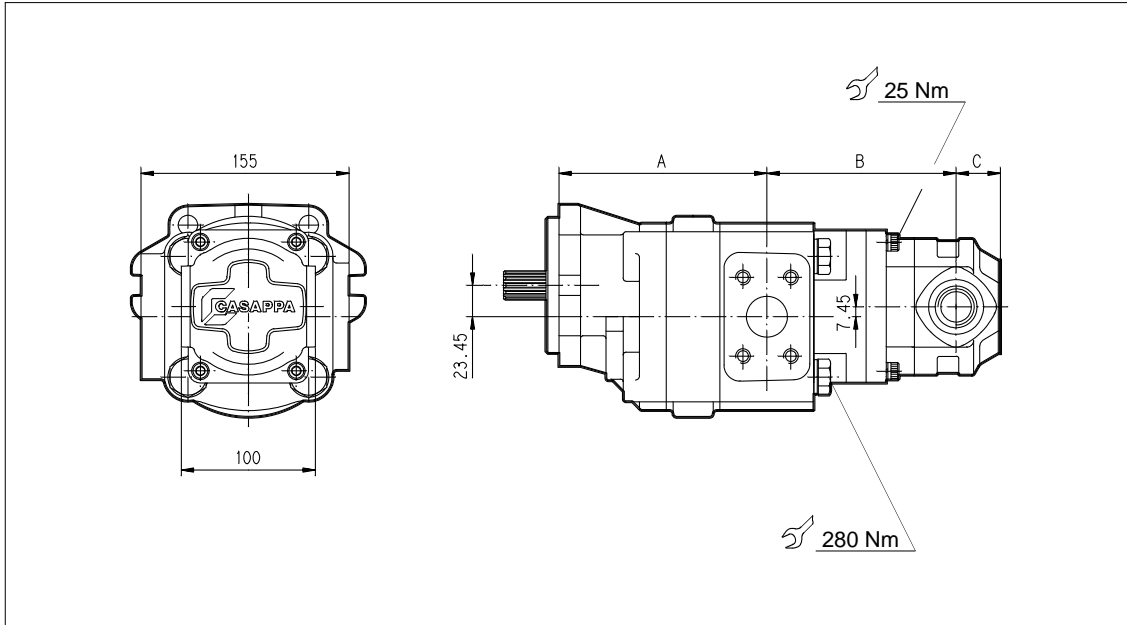
Pompa tipo Pump type	A	B
	mm	mm
HDP 35+HDP 30	139+C	76+D

Pompa tipo Pump type	C
	mm
HDP 35•50	38
HDP 35•63	44
HDP 35•71	48
HDP 35•80	52
HDP 35•90	57
HDP 35•100	61
HDP 35•112	67
HDP 35•125	73

Pompa tipo Pump type	D
	mm
HDP 30•17	23
HDP 30•22	26
HDP 30•27	29
HDP 30•34	34
HDP 30•43	40
HDP 30•51	45
HDP 30•61	51
HDP 30•73	59
HDP 30•82	64

DIMENSIONI POMPE MULTIPLE HDP 30 + KP 20

HDP 30 + KP 20 multiple pumps dimensions

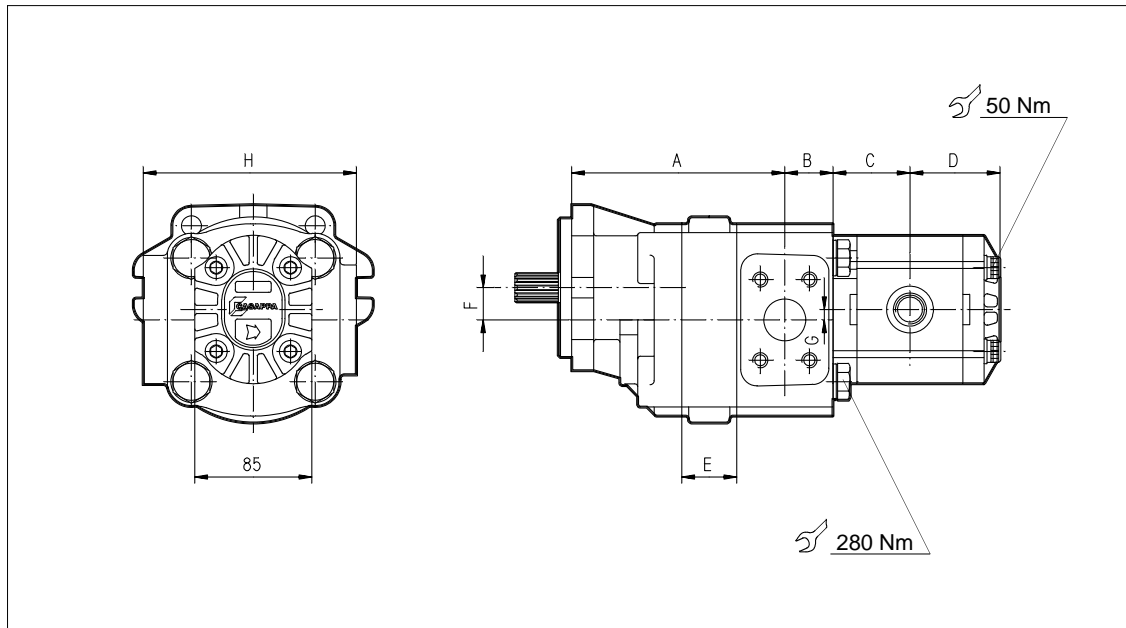


Le caratteristiche di funzionamento delle pompe serie KAPPA sono illustrate sul catalogo tecnico K.
The general data of KAPPA series pumps are explained on K technical catalogue.

Pompa tipo Pump type	A
	mm
HDP 30•17	138
HDP 30•22	141
HDP 30•27	144
HDP 30•34	149
HDP 30•43	155
HDP 30•51	160
HDP 30•61	166
HDP 30•73	174
HDP 30•82	179

Pompa tipo Pump type	B	C
	mm	mm
KP 20•4	139	27,5
KP 20•6,3	141,5	
KP 20•8	144	
KP 20•11,2	147,5	
KP 20•14	146	33
KP 20•16	151,5	
KP 20•20	158	
KP 20•25	151	48
KP 20•31,5	161	

DIMENSIONI POMPE MULTIPLE HDP + Gr. 2 SERIE C
HDP + C series Gr.2 multiple pumps dimensions



Le caratteristiche di funzionamento delle pompe serie C sono illustrate sul catalogo tecnico CP.
The general data of C series pumps are explained on CP technical catalogue.

Pompa tipo Pump type	A	B	C	D	E	F	G	H
	mm	mm	mm	mm	mm	mm	mm	mm
HDP 30 + Gr. 2	115+E	35	Vedi sotto See below	Vedi sotto See below	Vedi sotto See below	23,45	7,55	155
HDP 35 + Gr. 2	139+E	41	Vedi sotto See below	Vedi sotto See below	Vedi sotto See below	27,35	11,55	175

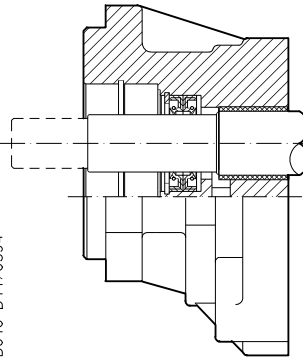
Pompa tipo Pump type	C	D
	mm	mm
CPL 4,8	47,5	57
CPL 6,2		
CPL 9		
CPL 13	56	65,5
CPL 16		
CPL 20		
CPL 26		

Pompa tipo Pump type	E
	mm
HDP 30•17	23
HDP 30•22	26
HDP 30•27	29
HDP 30•34	34
HDP 30•43	40
HDP 30•51	45
HDP 30•61	51
HDP 30•73	59
HDP 30•82	64

Pompa tipo Pump type	E
	mm
HDP 35•50	38
HDP 35•63	44
HDP 35•71	48
HDP 35•80	52
HDP 35•90	57
HDP 35•100	61
HDP 35•112	67
HDP 35•125	73

VERSIONI
Versions

0

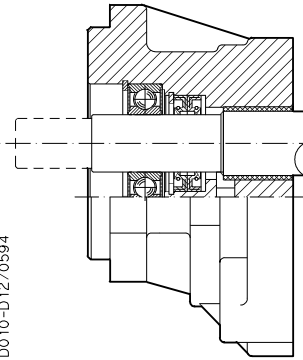


Versione per impieghi senza carichi radiali e assiali sull'albero.

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

D010-D11/0594

1

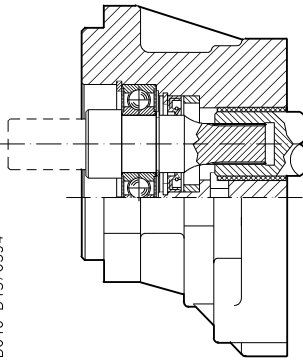


Versione per impieghi con limitati carichi radiali e senza carichi assiali sull'albero.

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

D010-D12/0594

2

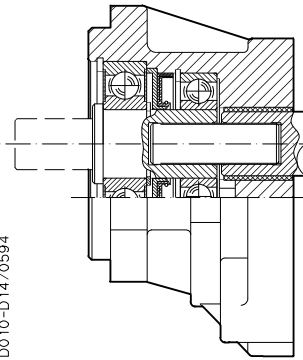


Versione speciale con albero indipendente per impieghi senza carichi radiali e assiali sull'albero.

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

D010-D13/0594

4



Versione per impieghi con carichi radiali e assiali sull'albero.

Version for applications with radial and axial load on the drive shaft.

D010-D14/0594

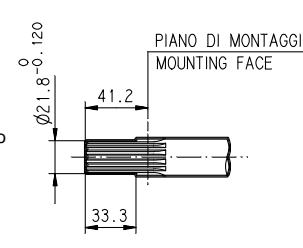
ESTREMITA' ALBERI DI TRASCINAMENTO

End drive shafts

04

SAE B scanalato
13 denti - 16/32 DP
radice piana centraggio
sui fianchi.
ISO 22 - 4

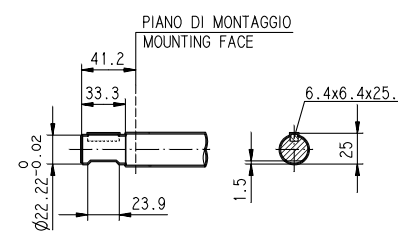
SAE B splined
13 teeth - 16/32 DP
flat root side fit.
SAE J 498 b



MAX 300 Nm*

32

SAE B cilindrico
SAE B keyed

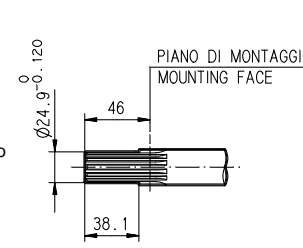


MAX 200 Nm*

05

SAE BB scanalato
15 denti - 16/32 DP
radice piana centraggio
sui fianchi.
ISO 25 - 4

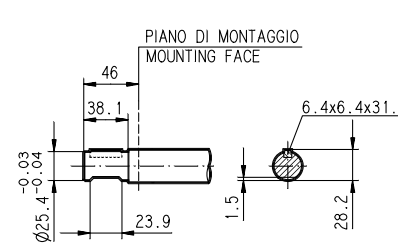
SAE BB splined
15 teeth - 16/32 DP
flat root side fit.
SAE J 498 b



MAX 450 Nm*

33

SAE BB cilindrico
SAE BB keyed

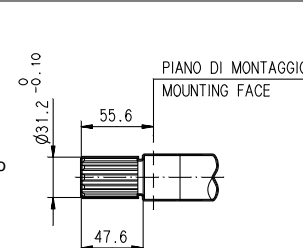


MAX 280 Nm*

06

SAE C scanalato
14 denti - 12/24 DP
radice piana centraggio
sui fianchi.
ISO 32 - 4

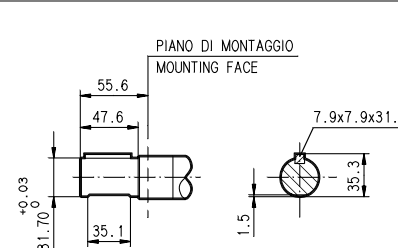
SAE C splined
14 teeth - 12/24 DP
flat root side fit.
SAE J 498 b



HD. 30 MAX 170 Nm*
HD. 35 MAX 900 Nm*

34

SAE C cilindrico
SAE C keyed



HD. 30 MAX 170 Nm*
HD. 35 MAX 600 Nm*

* Per qualsiasi estremità d'albero in caso di versione "2" e "4" HD.30 M_{max}= 170 Nm - HD.35 M_{max}= 350 Nm.

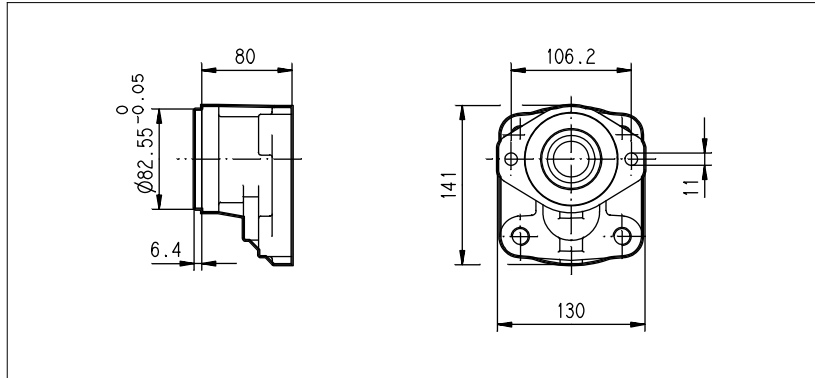
* For "2" and "4" version whichever end shaft HD.30 M_{max}= 170 Nm - HD.35 M_{max}= 350 Nm.

FLANGE DI MONTAGGIO E TABELLA DI COMPATIBILITA'

Mounting flanges and table of compatibility

SAE A 2 FORI
SAE A 2 Holes

S1

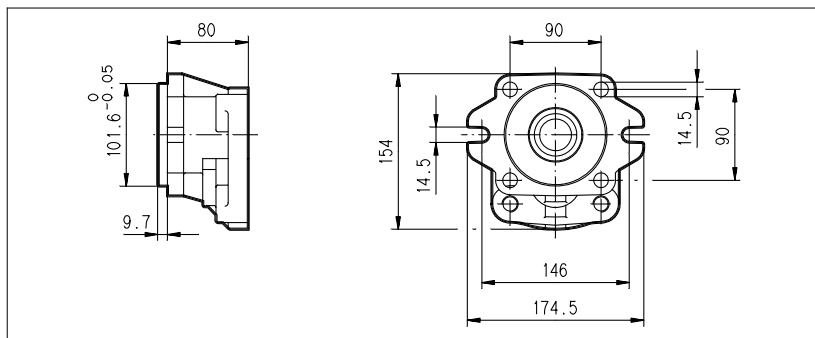


GRUPPO Group	VERSIONI VEDI PAG.1.30 Versions see page 1.30	ALBERI DI TRASCINAMENTO VEDI PAG. 1.31 Drive shafts see page 1.31					
		04	32	05	33	06	34
HD.30	0	■	■	•	•		
	1	•	•	•	•		
	2	■	■	•	•	•	•

- COMBINAZIONE STANDARD - Standard combination
- COMBINAZIONE DISPONIBILE - Available combination

SAE B 2-4 FORI
SAE B 2-4 Holes

S3



GRUPPO Group	VERSIONI VEDI PAG.1.30 Versions see page 1.30	ALBERI DI TRASCINAMENTO VEDI PAG. 1.31 Drive shafts see page 1.31					
		04	32	05	33	06	34
HD.30	0	■	■	•	•		
	1	■	■	•	•		
	2	■	■	•	•	•	•
	4	■	■	•	•	•	•

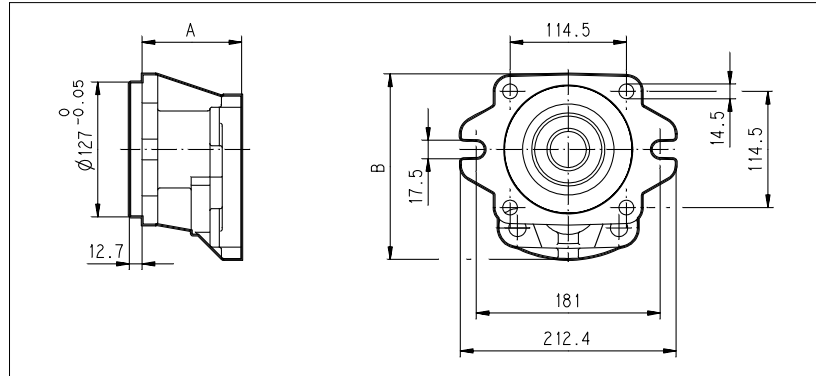
- COMBINAZIONE STANDARD - Standard combination
- COMBINAZIONE DISPONIBILE - Available combination

FLANGE DI MONTAGGIO E TABELLA DI COMPATIBILITA'
Mounting flanges and table of compatibility

SAE C 2-4 FORI
SAE C 2-4 Holes

S8

GRUPPO Group	A	B
HD.30	80	167,9
HD.35	98	182,8

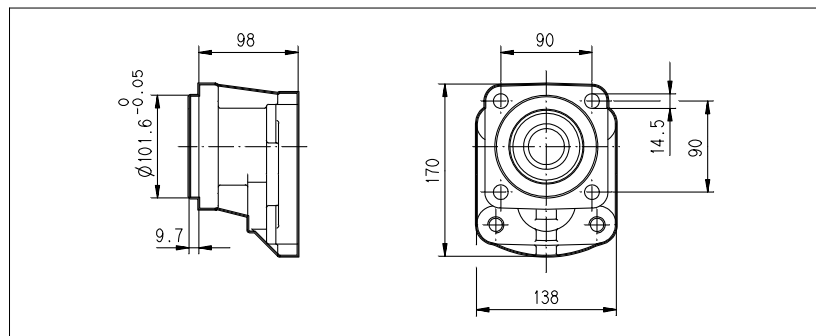


		ALBERI DI TRASCINAMENTO VEDI PAG. 1.31 Drive shafts see page 1.31					
GRUPPO Group	VERSIONI VEDI PAG.1.30 Versions see page 1.30	04	32	05	33	06	34
HD.30	2	•	•	•	•	■	■
	4	•	•	•	•	■	■
HD.35	0					■	■
	1					■	■
	2	•	•	•	•	■	■
	4	•	•	•	•	■	■

- COMBINAZIONE STANDARD - Standard combination
- COMBINAZIONE DISPONIBILE - Available combination

SAE B 4 FORI
SAE B 4 Holes

S4



		ALBERI DI TRASCINAMENTO VEDI PAG. 1.31 Drive shafts see page 1.31					
GRUPPO Group	VERSIONI VEDI PAG.1.30 Versions see page 1.30	04	32	05	33	06	34
HD.35	0					•	•
	1					•	•
	2	■	■	•	•	•	•
	4	■	■	•	•	•	•

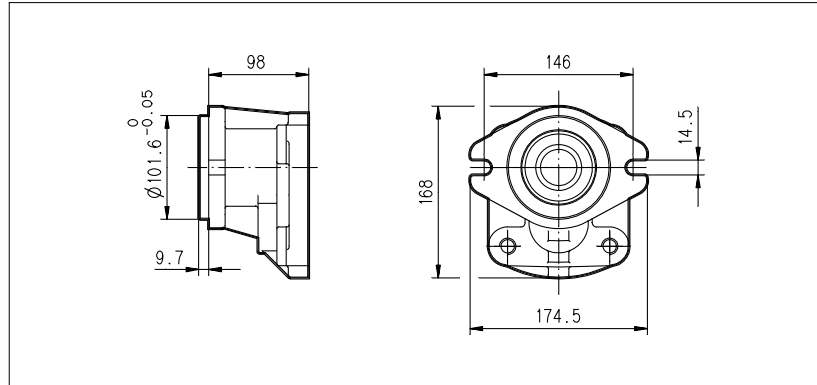
- COMBINAZIONE STANDARD - Standard combination
- COMBINAZIONE DISPONIBILE - Available combination

FLANGE DI MONTAGGIO E TABELLA DI COMPATIBILITA'

Mounting flanges and table of compatibility

SAE B 2 FORI
SAE B 2 Holes

S5

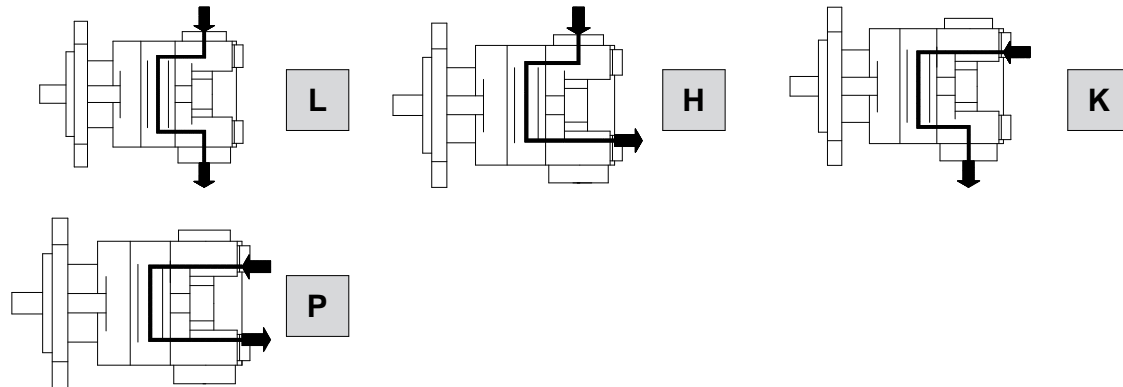


ALBERI DI TRASCINAMENTO VEDI PAG. 1.31
Drive shafts see page 1.31

GRUPPO Group	VERSIONI VEDI PAG.1.30 Versions see page 1.30	04	32	05	33	06	34
HD.35	0					•	•
	1					•	•
	2	■	■	•	•	•	•
	4	■	■	•	•	•	•

- COMBINAZIONE STANDARD - Standard combination
- COMBINAZIONE DISPONIBILE - Available combination

BOCCHIE
Ports

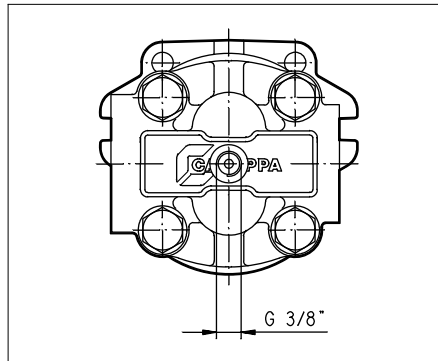


BOCCHIE LATERALI SIDE PORTS									BOCCHIE POSTERIORI REAR PORTS			
BOCCHIE PORTS	SSS		SSM		BSPP		ODT		BSPP		ODT	
POMPA TIPO PUMP TYPE	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
MOTORE TIPO MOTOR TYPE	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN
HD. 30•17	SC	SB	MC	MB	GF	GE	OF	OD	GE	GE	OD	OD
HD. 30•22												
HD. 30•27												
HD. 30•34												
HD. 30•43	SD	SC	MD	MC	GG	GF	OG	OF	GF*	GE		
HD. 30•51												
HD. 30•61	SE	SD	ME	MD								
HD. 30•73												
HD. 30•82												
HD. 35•50	SE	SD	ME	MD	GH	GG	OG	OF	GG*	GF	OF	OD
HD. 35•63												
HD. 35•71												
HD. 35•80												
HD. 35•90	SF	SE	MF	ME	GL	GH	OH	OG				
HD. 35•100												
HD. 35•112												
HD. 35•125												

* NON DISPONIBILE PER POMPE E MOTORI REVERSIBILI CON DRENAGGIO ESTERNO.

* Not available for reversible pumps and motors with external drain.

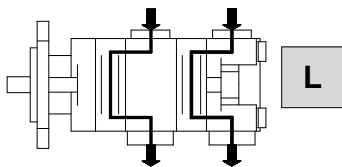
BOCCHE PER DRENAGGIO ESTERNO HD.30 - HD.35
HD.30 - HD.35 external drain ports



Le pompe e i motori reversibili tipo (R) hanno il drenaggio esterno.

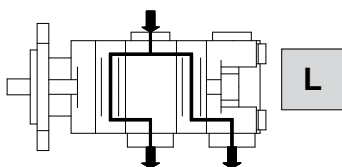
The reversible pumps and motors (R) type have the external drain.

BOCCHE PER POMPE MULTIPLE
Ports for multiple pumps



L'aspirazione e la mandata mantengono le stesse dimensioni delle bocche laterali delle pompe singole (vedi pag. 1.36).

Inlet and outlet ports are the same as side ports of single pumps (see page 1.36).



BOCCHE PORTS	SSS	SSM	BSPP	ODT
POMPA TIPO PUMP TYPE	IN	IN	IN	IN
HDP 30	SE	ME	GG	OG
HDP 35	SF	MF	GL	OH

La mandata mantiene le stesse dimensioni delle bocche di mandata laterali delle pompe singole (vedi pag. 1.36).

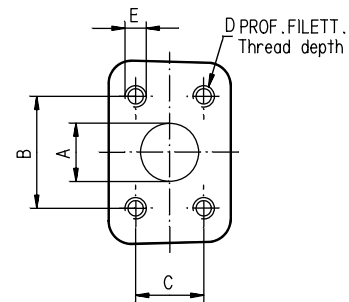
Outlet ports are the same as outlet side ports of single pumps (see page 1.36).

Per altre combinazioni consultare il nostro servizio tecnico commerciale.
For other combinations please consult our sales department.

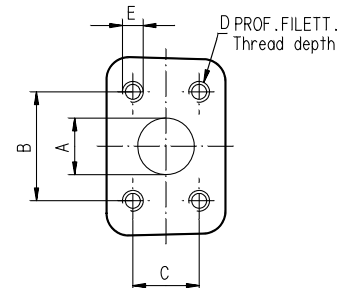
DIMENSIONI BOCHE

Port sizes

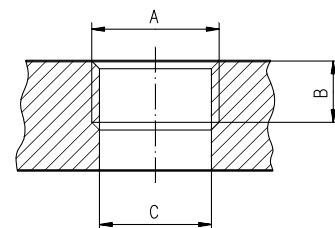
BOCCHIE FLANGIATE SAE CON FILETTATURA UNC (SSS) SAE FLANGED PORTS UNC THREADED (SSS)						
CODICE CODE	DIMENSIONE NOMINALE NOMINAL SIZE	A	B	C	D	E
		mm	mm	mm	mm	
SA	1/2"	12,5	38,1	17,5	24	5/16"-18 UNC-2B
SB	3/4"	19	47,6	22,2	22	3/8"-16 UNC-2B
SC	1"	25,4	52,4	26,2		
SD	1"1/4	30,5	58,7	30,2	28,5	7/16"-14 UNC-2B
SE	1"1/2	39,3	69,8	35,7	27	1/2"-13 UNC-2B
SF	2"	51	77,8	42,9		



BOCCHIE FLANGIATE SAE CON FILETTATURA METRICA (SSM) SAE FLANGED PORTS METRIC THREAD (SSM)						
CODICE CODE	DIMENSIONE NOMINALE NOMINAL SIZE	A	B	C	D	E
		mm	mm	mm	mm	
MA	1/2"	12,5	38,1	17,5	22	M 8
MB	3/4"	19	47,6	22,2		M 10
MC	1"	25,4	52,4	26,2		
MD	1"1/4	30,5	58,7	30,2	27	M12
ME	1"1/2	39,3	69,8	35,7		
MF	2"	51	77,8	42,9		

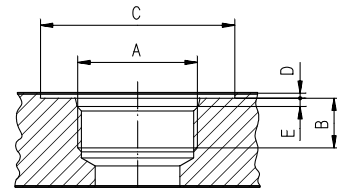


BOCCHIE FILETTATE (BSPP) BRITISH STANDARD PIPE PARALLEL (BSPP)				
CODICE CODE	DIMENSIONE NOMINALE NOMINAL SIZE	A	B	C
			mm	mm
GD	1/2"	G1/2	18	19
GE	3/4"	G3/4	20	24,5
GF	1"	G1	22	30,5
GG	1"1/4	G11/4	24	39,3
GH	1"1/2	G11/2	26	45
GL	2"	G 2	32	56



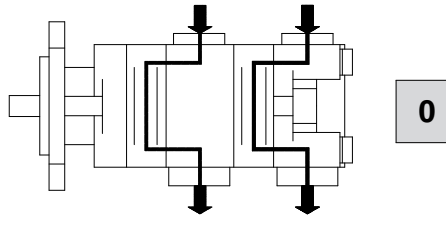
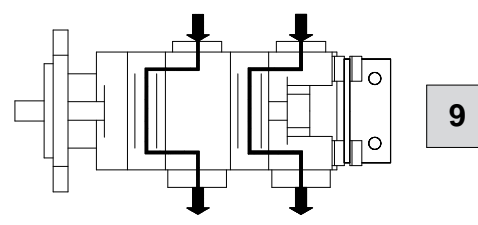
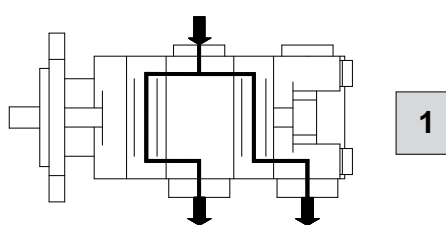
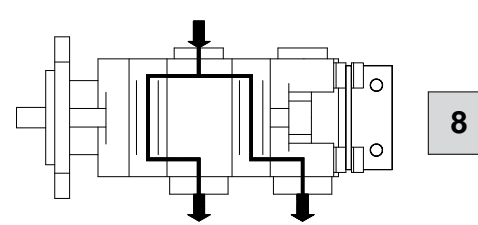
DIMENSIONI BOCHE
Port sizes

BOCCHIE FILETTATE SAE (ODT) SAE STRAIGHT THREAD (ODT)						
CODICE CODE	DIMENSIONE NOMINALE NOMINAL SIZE	A	B	C	D	E
			mm	mm	mm	mm
OB	1/2"	3/4"-16 UNF-2B	15	32	0,5	2,5
OD	3/4"	1"-1/16-12 UN-2B	20	42		3,3
OF	1"	1"-5/16-12 UN-2B		50		
OG	1"1/4	1"-5/8-12 UN-2B		60		
OH	1"1/2	1"-7/8-12 UN-2B		70		



VERSIONI COPERCHIO POSTERIORE
Rear cover versions

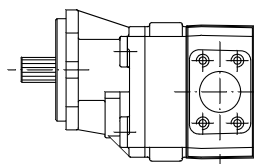
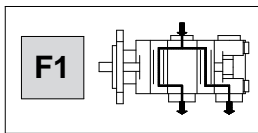
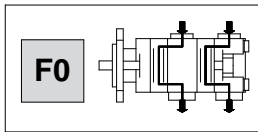
Tutte le pompe multiple con più di due sezioni sono fornite con staffa di fissaggio 8 o 9.
All multiple pumps with more than two sections are available with bracket 8 or 9 version.

	Senza staffa di fissaggio Without bracket	Con staffa di fissaggio With bracket
Aspirazione separata Separated inlet port	 0	 9
Aspirazione comune Common inlet port	 1	 8

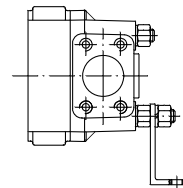
FLANGE INTERMEDIE E ALBERI DI COLLEGAMENTO
Shafts and intermediate flanges for connection

HD. 35 + HD. 35

Flange d' accoppiamento
Connecting flanges



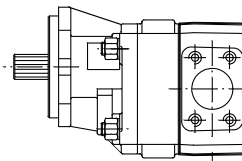
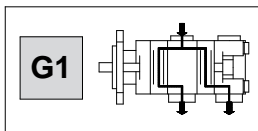
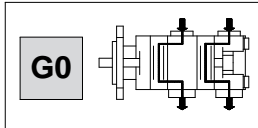
350 Nm



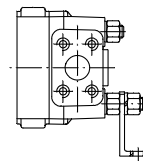
60 Albero di collegamento
Connecting shaft

HD. 35 + HD. 30

Flangia d' accoppiamento
Connecting flange



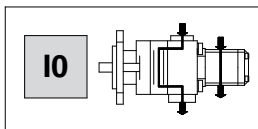
170 Nm



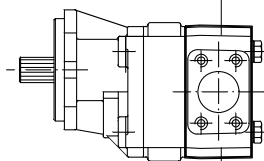
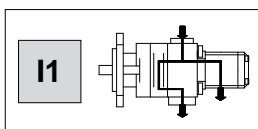
61 Albero di collegamento
Connecting shaft

HD. 35 + Gr. 2 Sr. C

Flangia d' accoppiamento
Connecting flange



Flangia d' accoppiamento
Connecting flange



110 Nm

63 Albero di collegamento
stadi separati
Separate stages
connecting shaft

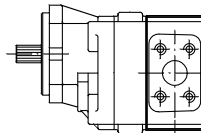
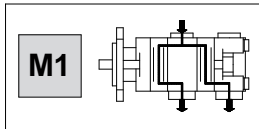
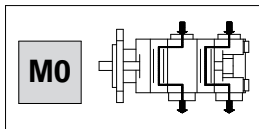
62 Albero di collegamento
Connecting shaft

FLANGE INTERMEDIE E ALBERI DI COLLEGAMENTO

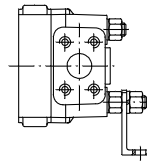
Shafts and intermediate flanges for connection

HDP 30+ HDP 30

Flange d' accoppiamento
Connecting flanges



170 Nm

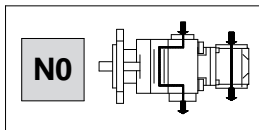


65

Albero di collegamento
Connecting shaft

HDP 30+ KP 20

Flangia d' accoppiamento
Connecting flange

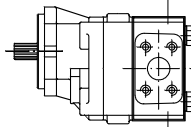
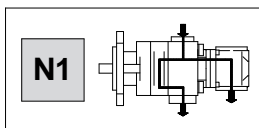


110 Nm

68

Albero di collegamento
stadi separati
Separate stages
connecting shaft

Flangia d' accoppiamento
Connecting flange



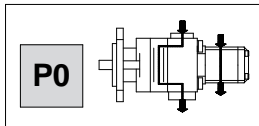
70 Nm

73

Albero di collegamento
Connecting shaft

HDP 30 + Gr. 2 Sr. C

Flangia d' accoppiamento
Connecting flange

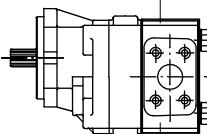
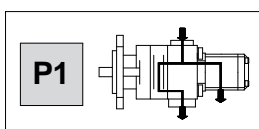


110 Nm

67

Albero di collegamento
stadi separati
Separate stages
connecting shaft

Flangia d' accoppiamento
Connecting flange



70 Nm

66

Albero di collegamento
Connecting shaft

INSTALLAZIONE

Pompa

Assicurarsi, nel caso di pompe unidirezionali, che il senso di rotazione sia coerente con quello dell'albero dal quale deriva il moto. Assicurarsi che la flangia di montaggio realizzi un buon allineamento fra l'albero di trasmissione e l'albero della pompa, il collegamento non deve indurre carichi radiali o assiali sull'albero della pompa nel caso di utilizzo delle versioni 0, 1, 2.

Motore

Assicurarsi, nel caso di motori unidirezionali, che il senso di rotazione sia coerente con i collegamenti del circuito. Assicurarsi che la flangia di montaggio realizzi un buon allineamento fra l'albero dell'utilizzo e l'albero del motore, il collegamento non deve indurre carichi radiali o assiali sull'albero del motore nel caso di utilizzo delle versioni 0, 1, 2.

SERBATOIO

La capacità del serbatoio deve essere in accordo con le condizioni d'esercizio dell'impianto (~ 3 volte l'olio in circolazione), per evitare surriscaldamenti del fluido, se necessario installare uno scambiatore. Nel serbatoio le condotte di ritorno e aspirazione devono essere distanziate (interponendo una paratia verticale) per evitare che l'olio di ritorno venga subito riaspirato.

TUBAZIONI

Le tubazioni devono avere un diametro nominale non inferiore a quello delle bocche della pompa o del motore ed essere perfettamente a tenuta. Per limitare le perdite di carico, realizzare il percorso delle tubazioni più corto possibile riducendo al minimo il numero delle resistenze idrauliche (gomiti, strozzamenti, saracinesche). E' consigliabile interporre sulle tubazioni un tratto di tubo flessibile, per ridurre la trasmissione di vibrazioni. Tutte le tubazioni di ritorno devono finire al di sotto del livello minimo dell'olio, per evitare formazioni di schiuma. Prima di collegare le tubazioni togliere eventuali tappi di chiusura e assicurarsi che siano perfettamente pulite.

FILTRAZIONE

Noi consigliamo una filtrazione su tutta la portata dell'impianto, i filtri devono essere montati rispettando le indicazioni riportate nelle prime pagine del catalogo, sull'aspirazione delle pompe sono consentiti solo se grossolani.

FLUIDO IDRAULICO

Impiegare fluidi idraulici conformi alle tabelle riportate nelle prime pagine del catalogo. Evitare miscele di oli diversi che potrebbero dare origine a una decomposizione dell'olio e ridurre il suo potere lubrificante.

MESSA IN FUNZIONE

Assicurarsi che tutti i collegamenti del circuito siano esatti e che l'impianto sia in condizioni di assoluta pulizia. Immettere l'olio nel serbatoio servendosi sempre di un filtro. Sfiatare il circuito per favorire il riempimento dell'impianto. Tarare le valvole limitatrici di pressione al valore più basso possibile. Avviare l'impianto per qualche istante alla minima velocità quindi sfiatare ulteriormente il circuito e verificare il livello dell'olio nel serbatoio. Se la differenza di temperatura tra la pompa o il motore e quella del fluido supera i 10 °C, avviare e arrestare l'impianto per brevi periodi in modo da realizzare un riscaldamento progressivo. Aumentare infine gradatamente la pressione e la velocità di rotazione fino a raggiungere i valori di esercizio previsti che devono mantenersi entro i limiti dati a catalogo.

CONTROLLI PERIODICI - MANUTENZIONE

Mantenere la superficie esterna pulita soprattutto nella zona della tenuta dell'albero di trascinamento, la polvere abrasiva può infatti accelerare l'usura della tenuta stessa e causare perdite. Sostituire il filtro con regolarità per mantenere il fluido pulito. Il livello dell'olio deve essere controllato e sostituito periodicamente a seconda delle condizioni di lavoro dell'impianto.

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, the connection do not generate an axial or radial load on the pump shaft in the applications of 0, 1, 2 versions.

Motor

The direction of rotation of single-acting motors must match circuit connections. Check that the coupling flange correctly aligns the user shaft and the motor shaft, the connection do not generate an axial or radial load on the motor shaft in the applications of 0, 1, 2 versions.

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 motor or pump 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 should be fitted as indicated in the first pages of the catalogue. Only coarse filters are recommended for pump intake.

HYDRAULIC FLUID

Use hydraulic fluid conforming to the table 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

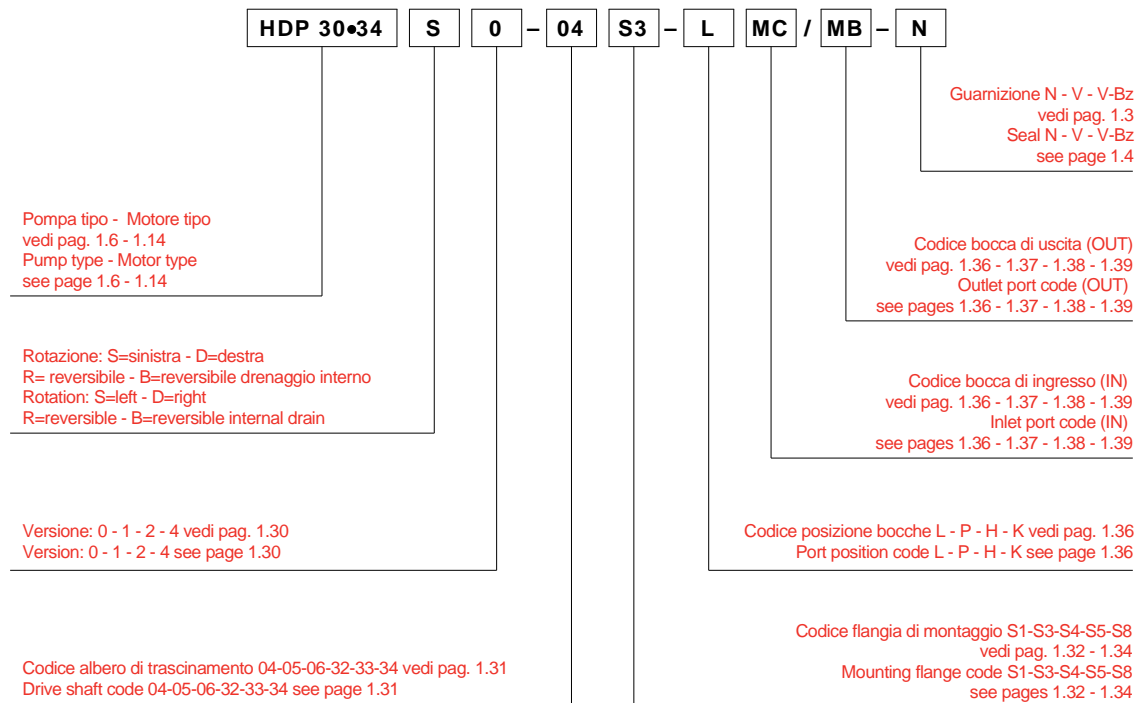
Check that all circuit connections are tight and that the entire system is completely clean. Insert the oil in the tank, using a filter. Bleed the circuit to assist in filling. Set the pressure relief valves to the lowest possible setting. Turn on the system for a few moments at minimum speed, then bleed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

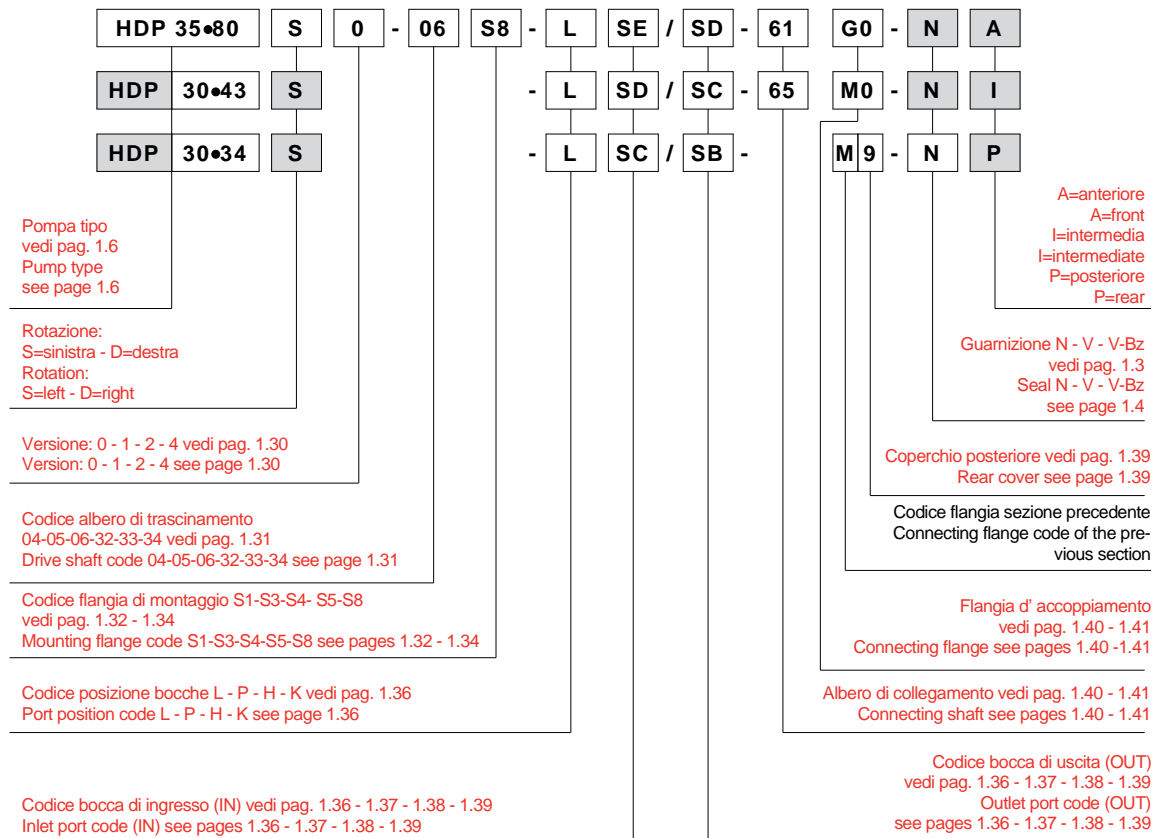
Come ordinare una unità singola
How to order single unit

Prima di ordinare consultare la tabella di compatibilità albero flangia e versione alle pagine 1.32 - 1.33 - 1.34
Before ordering consult shaft flange and version table compatibility at pages 1.32 - 1.33 - 1.34



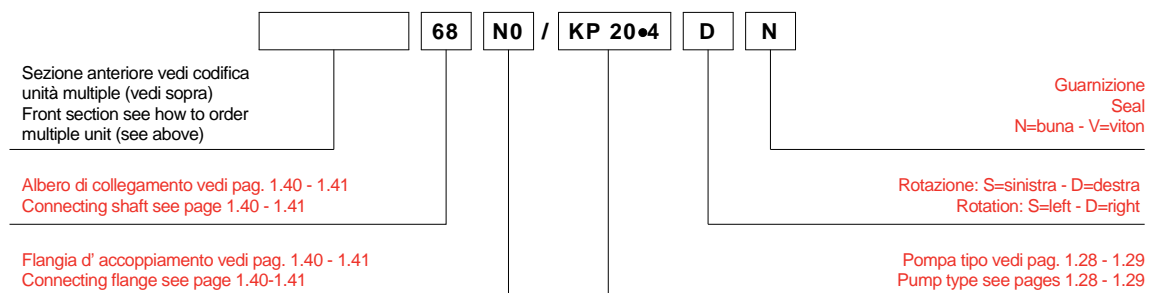
Come ordinare una unità multipla
How to order multiple units

Prima di ordinare consultare la tabella di compatibilità albero flangia e versione alle pagine 1.32 - 1.33 - 1.34
Before ordering consult shaft flange and version table compatibility at pages 1.32 - 1.33 - 1.34



Codice da tralasciare solo nell'ordine di unità assemblate.
Omit code only if ordering complete multiple assembly.

Come ordinare una unità multipla MAGNUM + KP 20 o serie C
How to order multiple units MAGNUM + KP 20 or C series



Per maggiori informazioni su pompe serie KAPPA e serie C, consultare i rispettivi cataloghi tecnici.
For more information on KAPPA and C series, consult the respective technical catalogues.

ESEMPI DI ORDINAZIONE

Order example

Esempio d'ordine di una sezione anteriore
Order example for front section

HDP 35•80 S0-06 S8-L SE/SD-61 G0-N A

Esempio d'ordine di una sezione intermedia
Order example for intermediate section

HDP 30•43 S-L SD/SC-65 M0-N I

Esempio di ordinazione di una sezione posteriore
Order example for rear section

HDP 30•34 S-L SC/SB-M9-N P

Esempio di ordinazione di una unità tripla assemblata
Order example for assembled triple unit

HDP 35•80 S0-06 S8-L SE/SD-61 G0+30•43 L SD/SC-65 M0+30•34 L SC/SB-M9-N

La nostra politica è orientata verso il miglioramento continuo dei prodotti pertanto le caratteristiche degli stessi possono cambiare senza preavviso.

Our policy is one of continuous improvement in product. Specification of items may, therefore, be changed without notice.

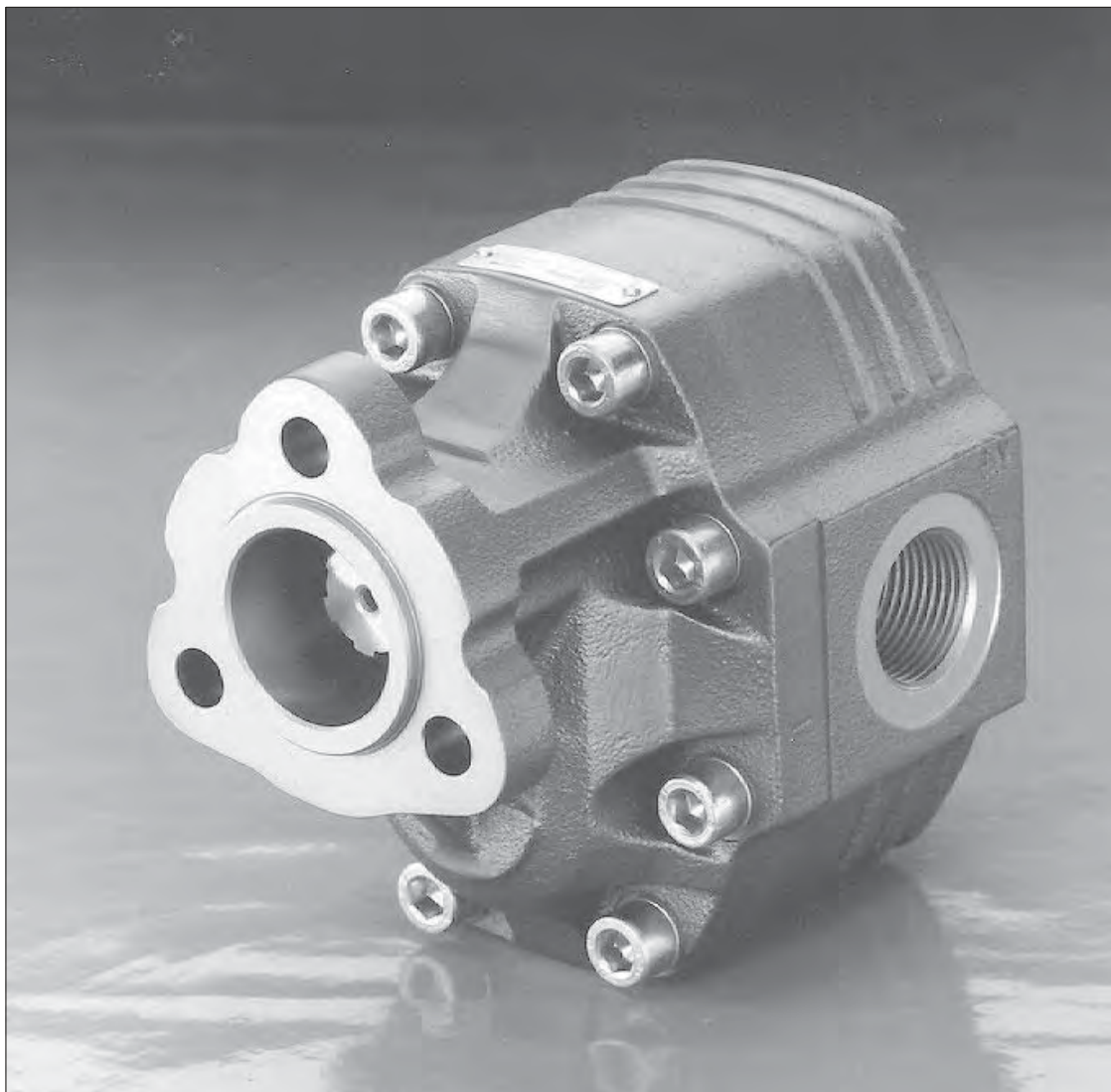
A 03 T IE

POMPE A INGRANAGGI

SERIE APL

GEAR PUMPS

APL SERIES



038-010

QUESTO CATALOGO <i>This catalogue</i>		SOSTITUISCE <i>Replace</i>		AGGIORNAMENTI <i>Revisions</i>	
Codice <i>Code</i>	Edizione <i>Edition</i>	Codice <i>Code</i>	Edizione <i>Edition</i>	Novità pagina <i>News page</i>	Modifiche pagina <i>Review page</i>
A 03 T IE	07.1995	A 02 T IE	10.1992	1.6-1.7-1.8-1.9-1.10-1.11- 1.12-1.13-1.14	

038-010

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ARGOMENTO <i>Section</i>	DA PAG <i>From page</i>	A PAG. <i>to page</i>
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POMPE A INGRANAGGI SERIE APL VERSIONE 43 T0 <i>Hdraulic gear pumps APL series versin 43 T0.</i>	1.4	1.4
POMPE A INGRANAGGI SERIE APL VERSIONE 19 T1 <i>Hdraulic gear pumps APL series versin 19 T1.</i>	1.5	1.5
POMPE A INGRANAGGI SERIE APL VERSIONE 13 T1 <i>CouplingsHdraulic gear pumps APL series versin 13 T1.</i>	1.6	1.6
SUPPORTI PER POMPE VERSIONE 43 T0 <i>Supports for pumps version 43 T0</i>	1.7	1.9
SUPPORTI PER POMPE VERSIONE 13 T1 <i>Supports for pumps version 13 T1</i>	1.10. . . .	1.11
SUPPORTI PER POMPE VERSIONE 19 T1 <i>Supports for pumps version 19 T1</i>	1.12. . . .	1.14
MANICOTTI PER POMPE VERSIONE 43 T0 <i>Couplings for pumps version 43 T0</i>	1.15. . . .	1.15
DESCRIZIONE DEL PRODOTTO <i>Description of the product</i>		
<p>Le pompe della SERIE APL, con corpo in ghisa e rasamenti compensati idraulicamente, sono state progettate per ottenere un' elevata cilindrata in relazione alle ridotte dimensioni di ingombro e un buon funzionamento anche alle basse velocità. Per queste loro caratteristiche sono particolarmente impiegate per applicazioni su macchine agricole e veicoli industriali.</p> <p>The gear pumps APL SERIES presented in this catalogue are in cast iron construction with balanced thrust plates and have a particularly high flow capacity in relation to phisical size and weight. They have been succesfully developed to attain high performance characteristics at both normal and low speed. For these reasons they have wide application in agricultural and mobile machinery.</p>		

CARATTERISTICHE GENERALI

Features

Costruzione	Pompe ad ingranaggi esterni
Tipo di fissaggio	A flangia: triangolare (Italiana)
Collegamentotubi	Raccordi filettati
Senso di rotazione (definito guardando l'albero conduttore)	Reversibile (B) con drenaggio interno
Campopressione di alimentazione per pompe	0,7 ÷ 3 bar (ass.)
Temperatura fluido	Da -15 a +80 °C
Fluido idraulico	Fluidi idraulici a base di oli minerali, secondo le norme ISO/DIN. Per altri fluidi consultare il nostro servizio tecnico commerciale.
Campodiviscosità	Da 12 a 100 mm ² /s. (cSt) consigliato
	Fino a 750 mm ² /s (cSt) consentito
Filtrazione consigliata	20 ÷ 25 mm

Construction	External gear type pumps
Mounting	Triangular (Italian) flange
Line connections	Screw
Direction of rotation (looking on drive shaft)	Reversible (B) internal drain
Inlet pressure range for pumps	0,7 ÷ 3 bar (abs.)
Fluid temperature range	From -15 to +80 °C
Fluid	Mineral oil based hydraulic fluids to ISO/DIN. For other fluids please consult our sales department.
Viscosity range	12 up to 100 mm ² /s (cSt) recommended
	Up to 750 mm ² /s (cSt) permitted
Filtering requirement	20 ÷ 25 mm

PARAMETRI DI FUNZIONAMENTO
General data

Pompa tipo Pump type	Cilindrata Displacement	Pressione max. Max pressure			Velocità max. intermittente Intermittent max. speed		Velocità min. Min. speed
		p ₁	p ₂	p ₃	A press. p ₂ At p ₂ pressure	A vuoto Without load	A press. p ₂ At p ₂ pressure
	cm ³ /giro cu in/rev	bar psi			min ⁻¹		
APL 61	60,97 3.72	180 2610	200 2900	230 3300	1750	2000	350
APL 82	81,29 4.96	160 2320	180 2610	220 3190	1500	1750	
APL 100	99,43 6.06	160 2320	180 2610	210 3040			
APL 125	124,81 1.99	140 2030	160 2320	200 2900			

p₁= Pressione max. continua
Max. continuous pressure

p₂= Pressione max. intermittente
Max. intermittent pressure

p₃= Pressione max. di punta
Max. peak pressure

DETERMINAZIONE DI UNA POMPA
Design calculations for pumps

Q	[l/min]	Portata	Delivery
M	[Nm]	Coppia	Torque
P	[kW]	Potenza	Power
V	[cm ³ /giro] - [cm ³ /rev]	Cilindrata	Displacement
n	[min ⁻¹]	Velocità	Speed
Dp	[bar]	Pressione	Pressure
h _v = η _v (V, Dp, n) (' 0,98)		Rendimento volumetrico	Volumetric efficiency
h _m = η _m (V, Dp, n) (' 0,90)		Rendimento meccanico	Mechanical efficiency
h _t (' 0,88)		Rendimento totale	Overall efficiency

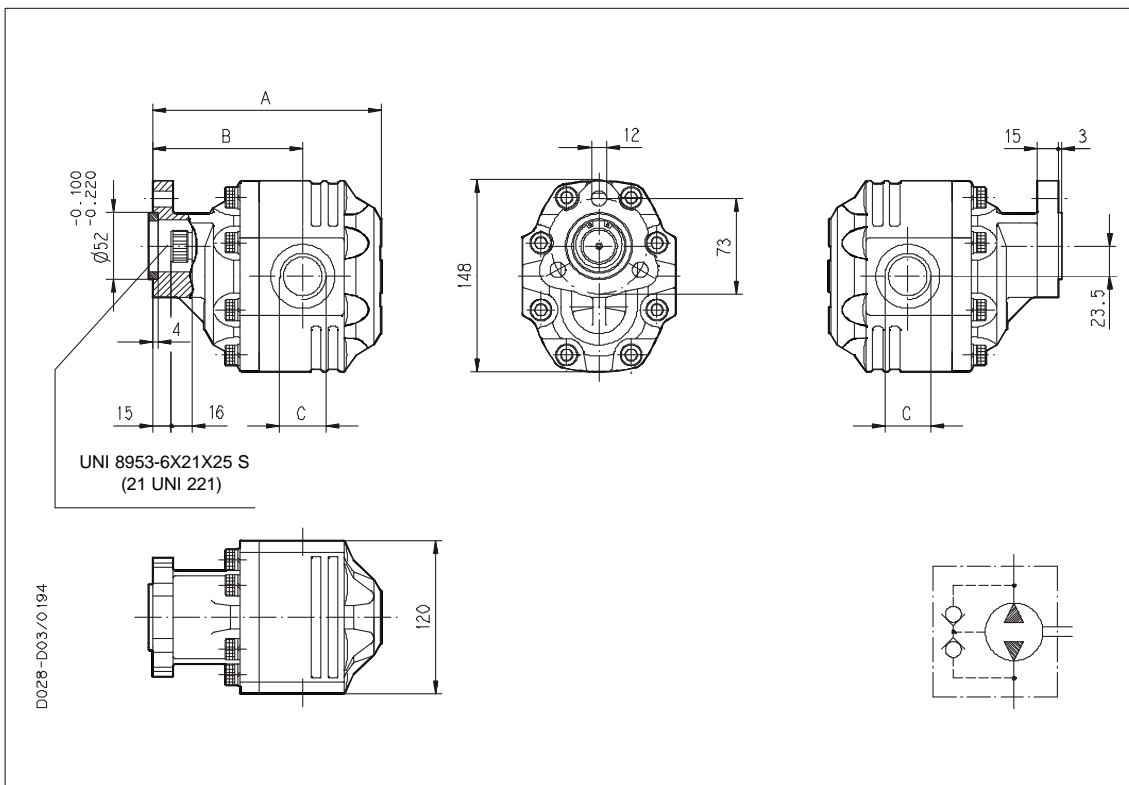
$$Q = V \cdot \eta_v \cdot n \cdot 10^{-3} \quad [\text{l/min}]$$

$$M = \frac{\Delta p \cdot V}{62,8 \cdot \eta_m} \quad [\text{Nm}]$$

$$P = \frac{\Delta p \cdot V \cdot n}{612 \cdot 1000 \cdot \eta_t} \quad [\text{kW}]$$



APL	19 T1
POMPE AD INGRANAGGI UNIFICAZIONE ITALIANA HYDRAULIC GEAR PUMPS ITALIAN STANDARD	



Rotazione reversibile con drenaggio interno.

Reversible rotation with internal drain.

Pompa tipo Pump type	A	B	C	Massa Mass
	mm	mm		kg
APL 61	178,5	116,5	G 1	10,7
APL 82 B 0-19 T1-L GF/GF-N	191,5	122,5	G 1	11
APL 100	218	136	G 1	11,5
APL 125 B 0-19 T1-L GG/GG-N	234	152	G 1 1/4	12,3

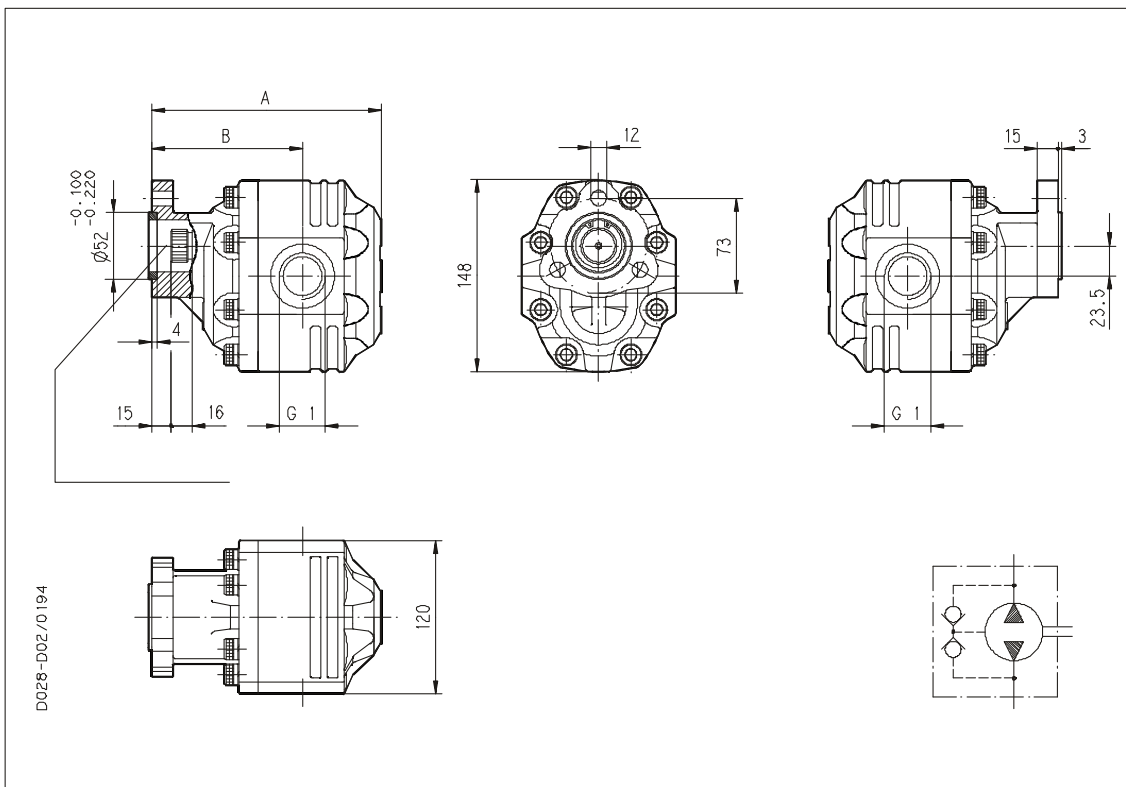
Come ordinare (How to order)

APL 61 B0 - 19 T1 - L GF/GF - N

038-010



APL	13 T1
POMPE AD INGRANAGGI UNIFICAZIONE ITALIANA HYDRAULIC GEAR PUMPS ITALIAN STANDARD	



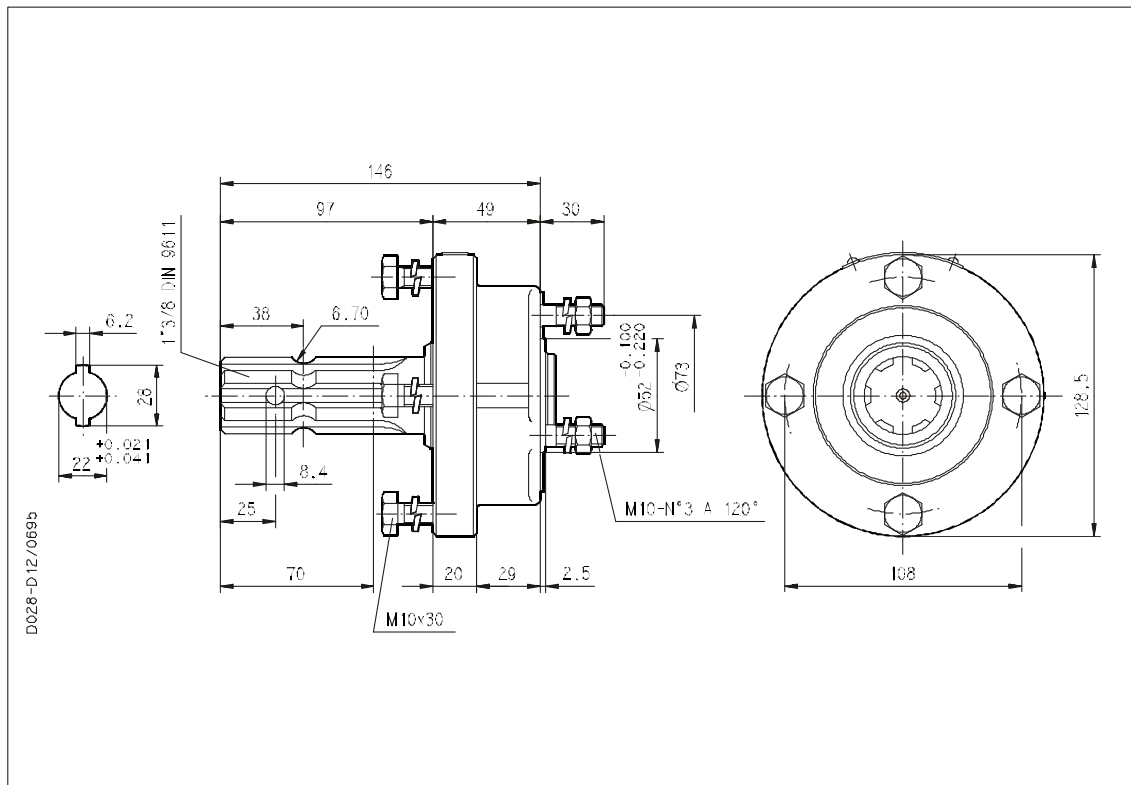
Rotazione reversibile con drenaggio interno.
Reversible rotation with internal drain.

Pompa tipo Pump type	A	B	Massa Mass
	mm	mm	kg
APL 61	178,5	116,5	10,7
APL 82	191,5	122,5	11

Come ordinare (How to order)

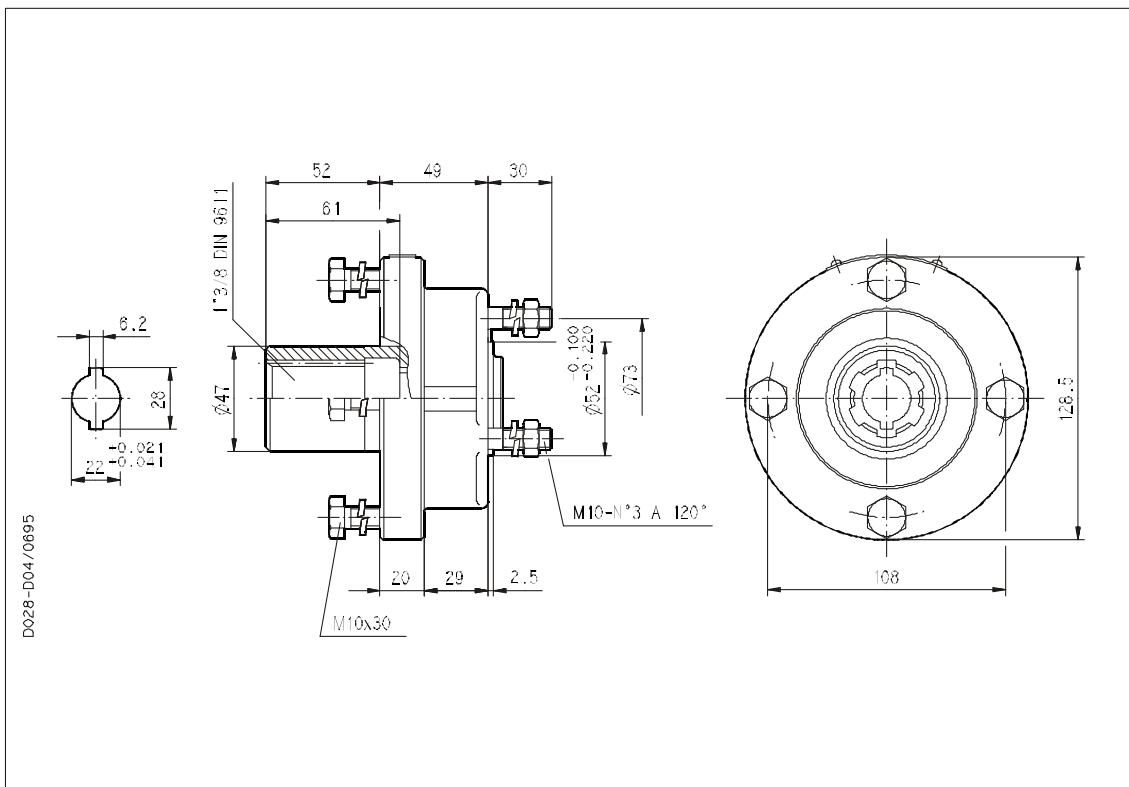
APL 61 B0 - 13 T1 - L GF/GF - N

SML	06892200
SUPPORTI PER POMPE VERSIONE 43 T0 SUPPORTS FOR PUMPS VERSION 43 T0	



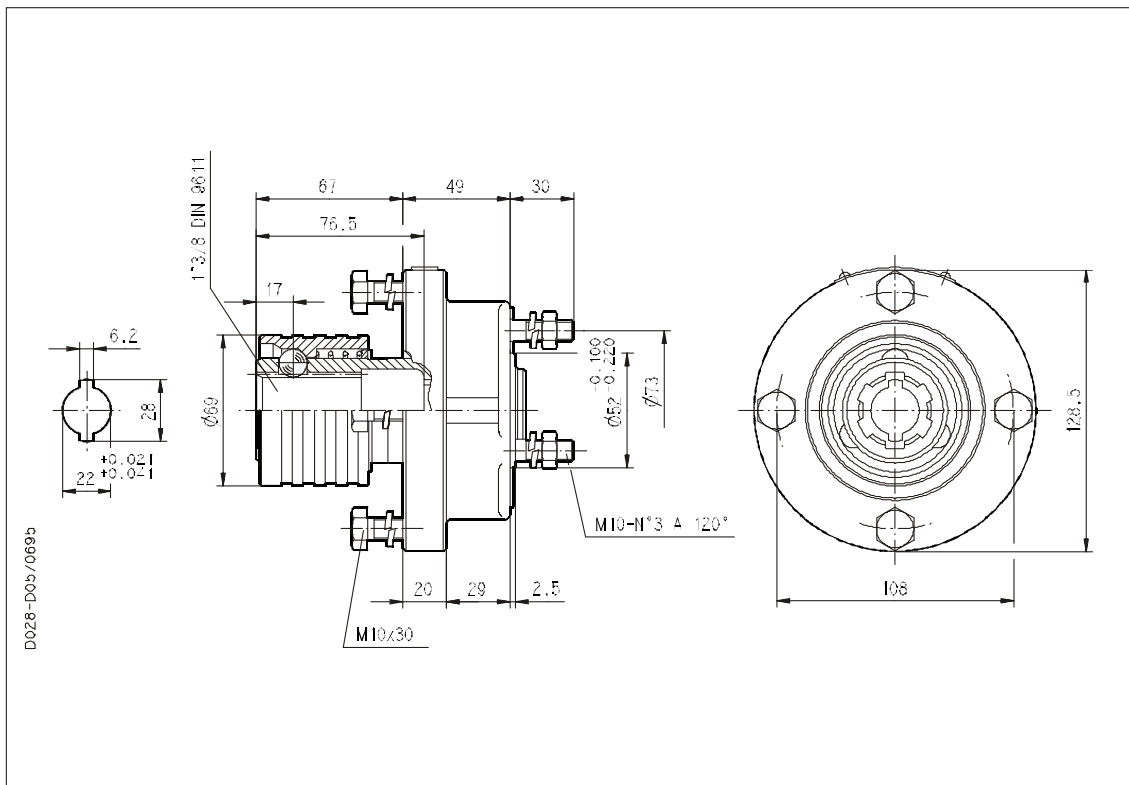


SFL	06890200
SUPPORTI PER POMPE VERSIONE 43 T0 SUPPORTS FOR PUMPS VERSION 43 T0	



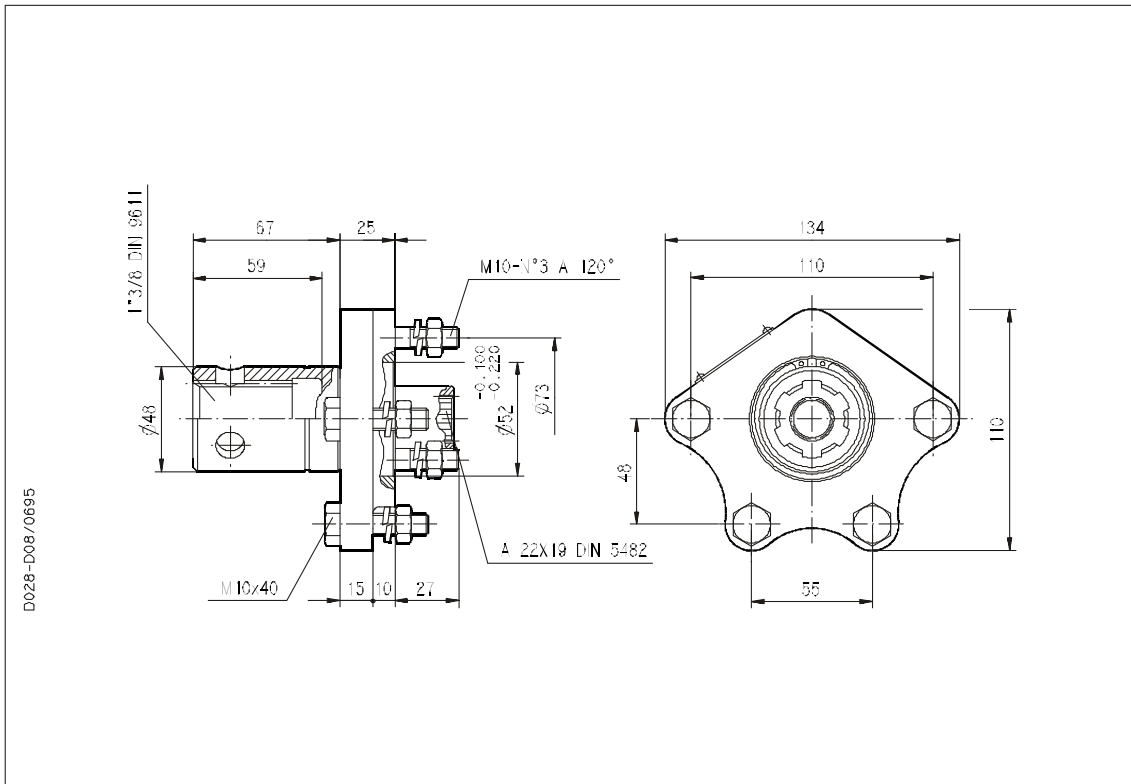


SFL P	06890900
SUPPORTI PER POMPE VERSIONE 43 T0 SUPPORTS FOR PUMPS VERSION 43 T0	

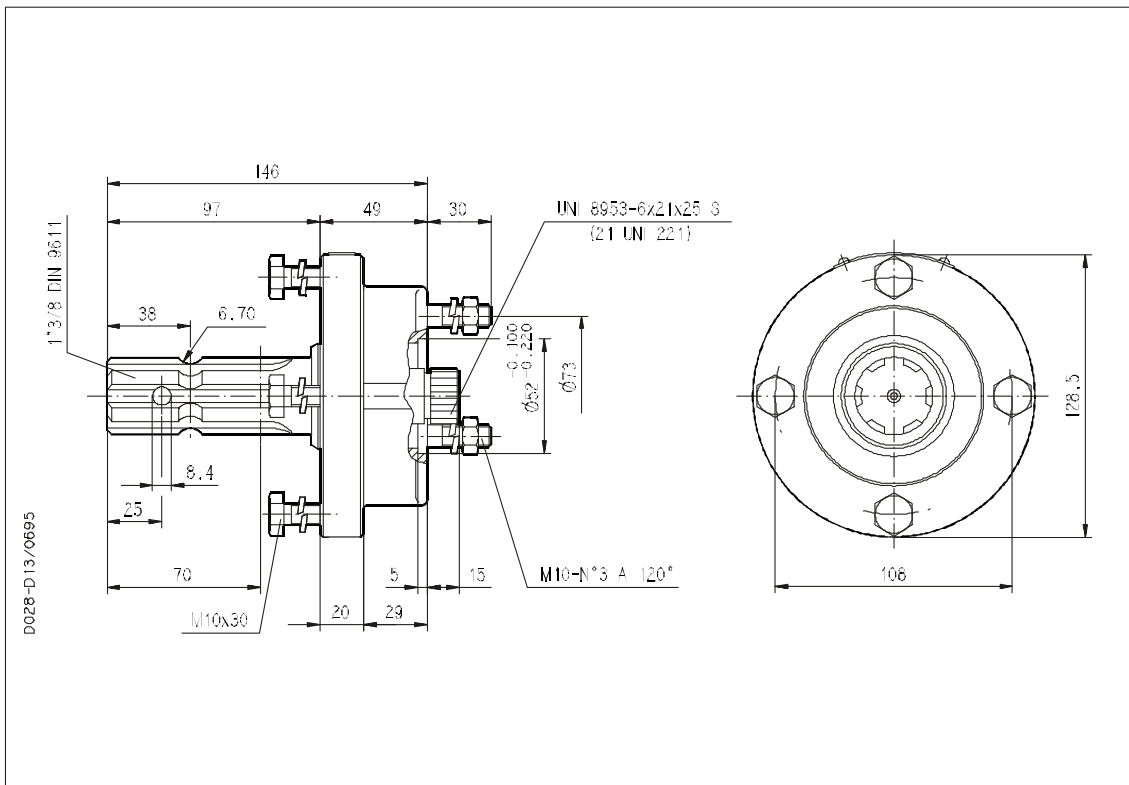




SFL 7/3	06891100
SUPPORTI PER POMPE VERSIONE 13 T1 SUPPORTS FOR PUMPS VERSION 13 T1	

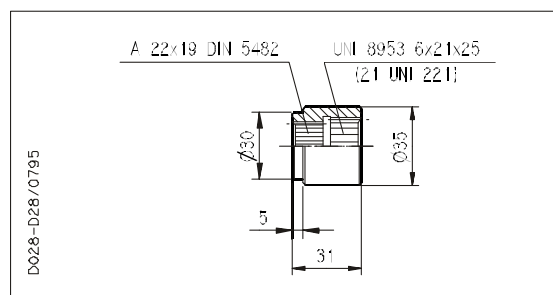
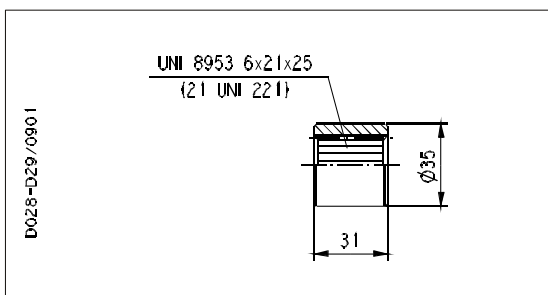


SML 4	06892300
SUPPORTI PER POMPE VERSIONE 19 T1 - 13 T1 SUPPORTS FOR PUMPS VERSION 19 T1 - 13 T1	

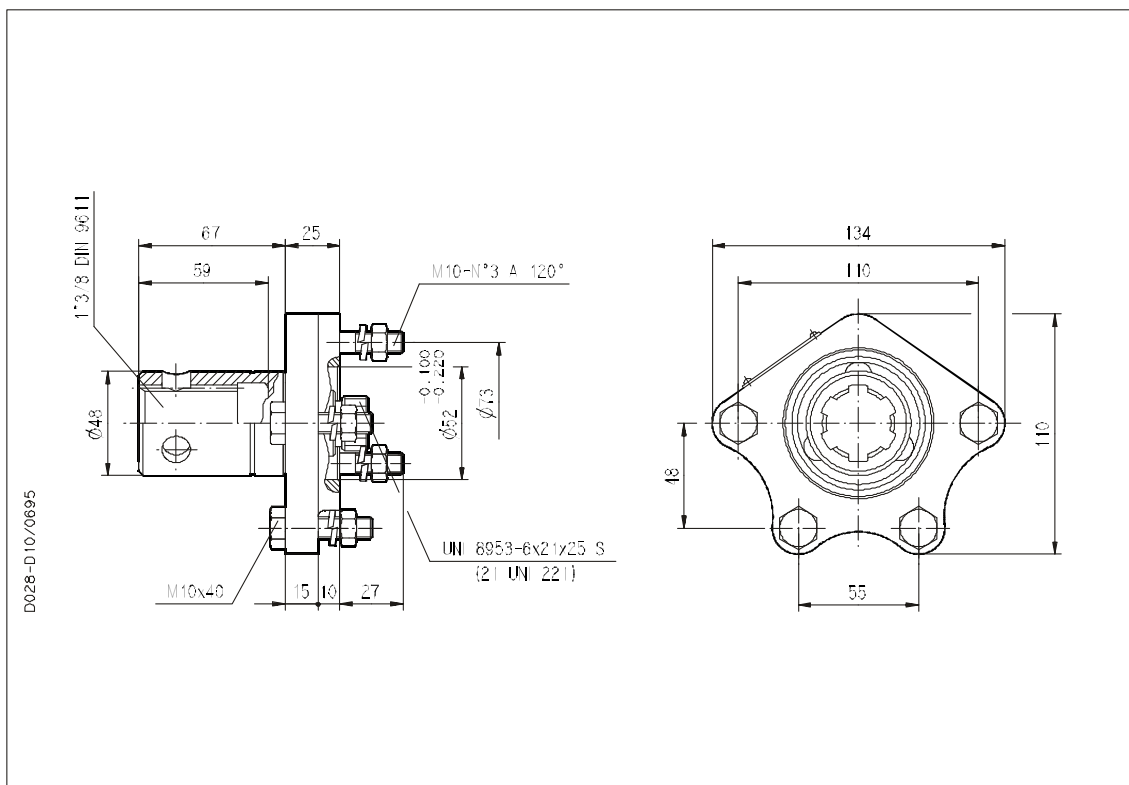


MA6x21x25 UNI 8953	06951400
MANICOTTO PER SUPPORTO SML 4 - 19 T1 COUPLING FOR SUPPORT SML 4 - 19 T1	

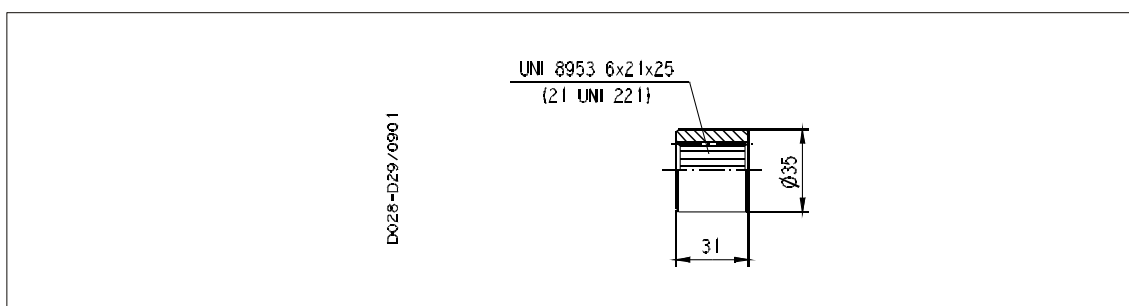
MA6x21x25 UNI 8953/ A 22x19 DIN 5482	06950600
MANICOTTO PER SUPPORTO SML 4 - 13 T1 COUPLING FOR SUPPORT SML 4 - 13 T1	



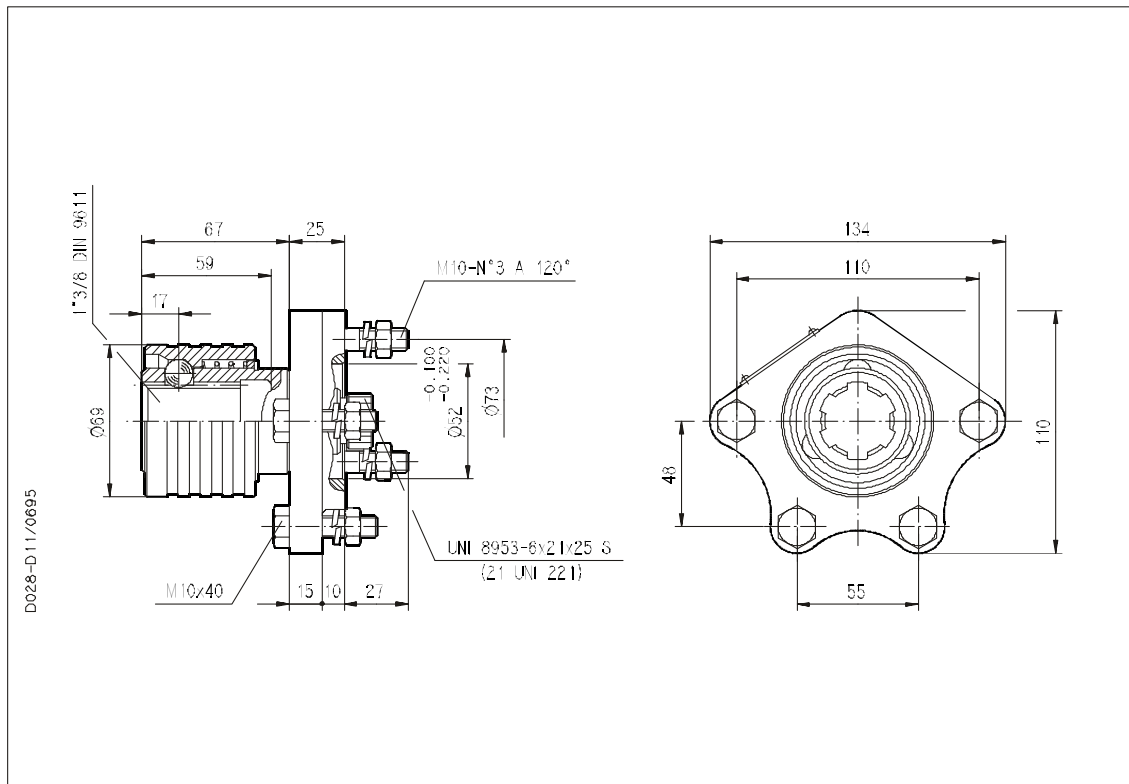
SFL 7/4	06891120
SUPPORTI PER POMPE VERSIONE 19 T1 SUPPORTS FOR PUMPS VERSION 19 T1	



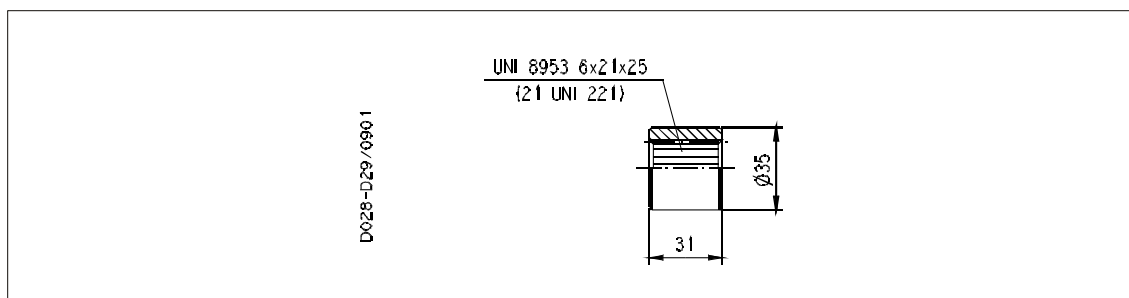
MA6x21x25 UNI 8953	06951400
MANICOTTO PER SUPPORTO SFL 7/4 COUPLING FOR SUPPORT SFL 7/4	



SFL 7/4P	06891060
SUPPORTI PER POMPE VERSIONE 19 T1 SUPPORTS FOR PUMPS VERSION 19 T1	

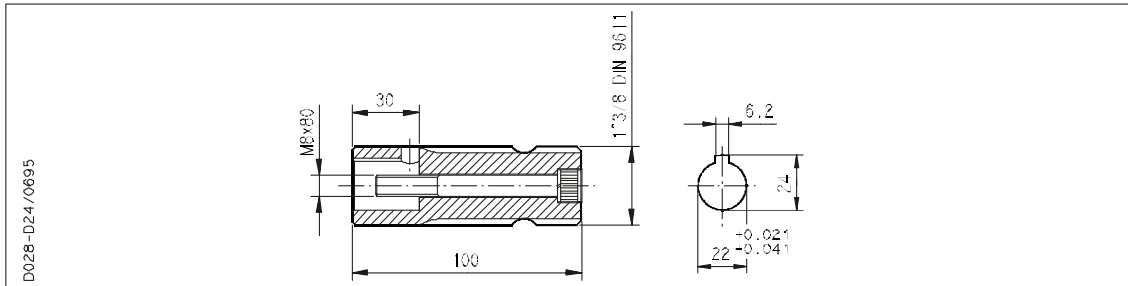


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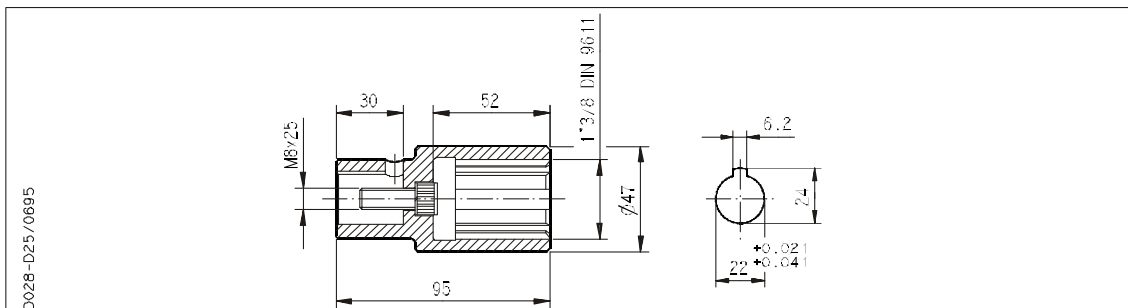


 **CASAPPA**

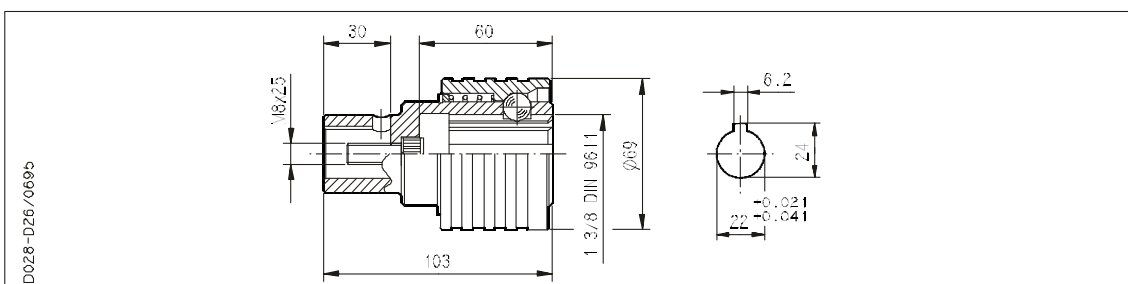
MO22-1 DIN 9611	06900000
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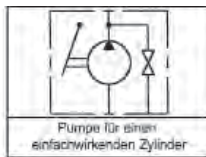
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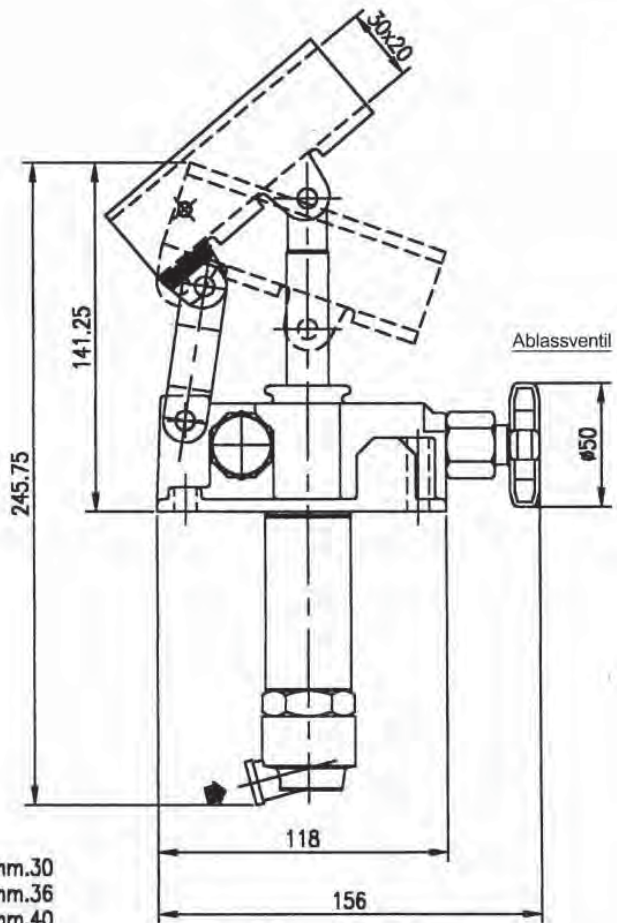
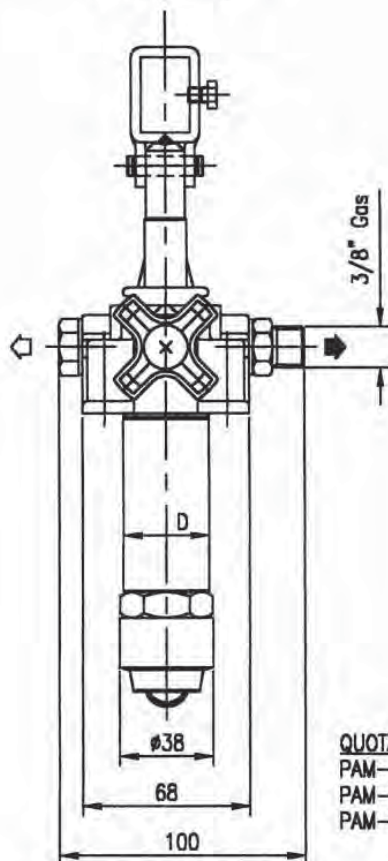
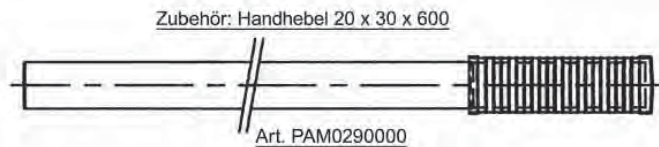
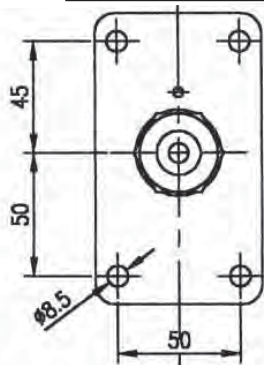
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MANICOTTO PER POMPE VERSIONE 43 T0 COUPLING FOR PUMPS VERSION 43 T0	



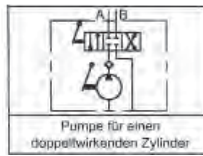
038-010



HANDPUMPEN					
TYP PAM-T		Pumpe einfachwirkend für Tankeinbau			
Bestellnr.	TYP	Artikelnr.	HUBRAUM	MAX. DRUCK	GEWICHT
			cm ³ /U	bar	kg
050-010-01100	PAM-T 12	PAM0141200	12	380	2,850
050-010-01150	PAM-T 25	PAM0142500	25	350	2,950
050-010-01200	PAM-T 45	PAM0144500	45	280	3,150
050-010-01400		bei Bedarf bitte extra bestellen: Handhebel 20 x 30 x 600			PAM0290000



QUOTA *D*	
PAM-T12	mm.30
PAM-T25	mm.36
PAM-T45	mm.40

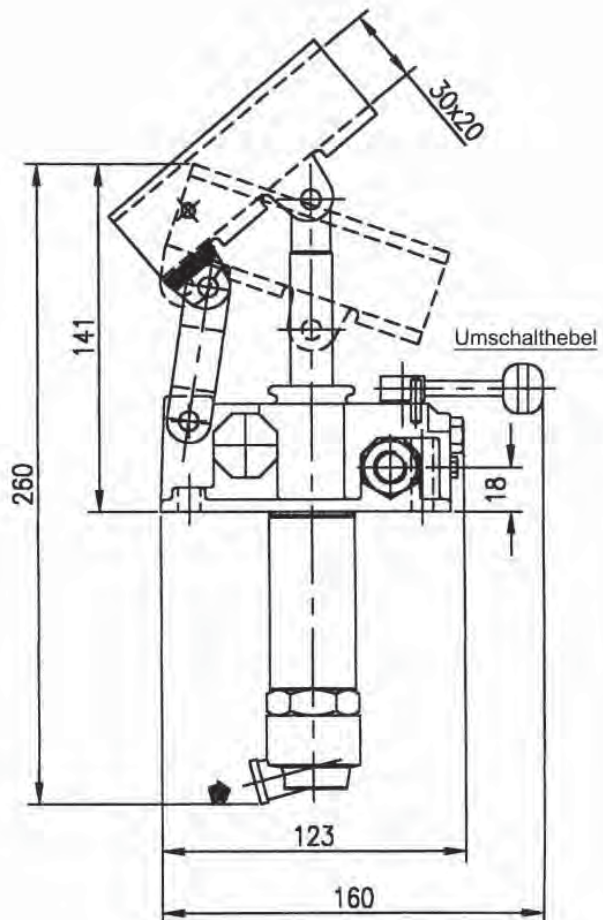
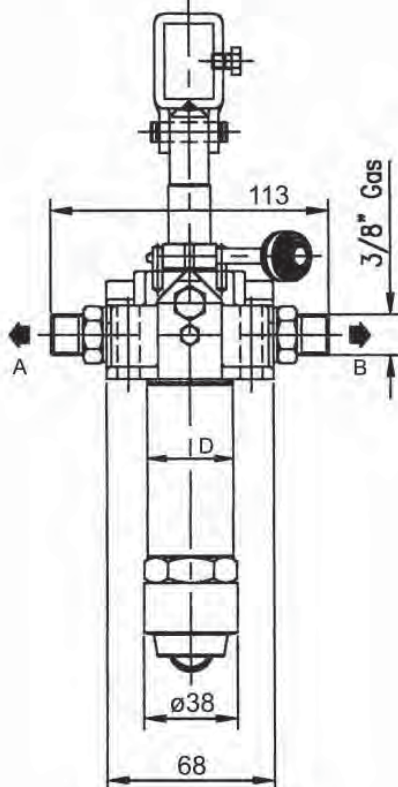
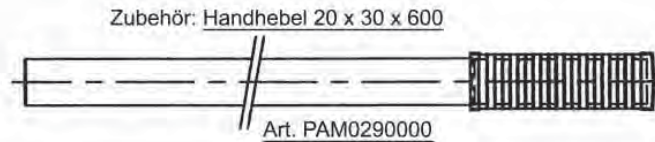
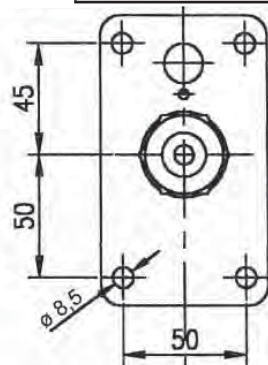


HANDPUMPEN

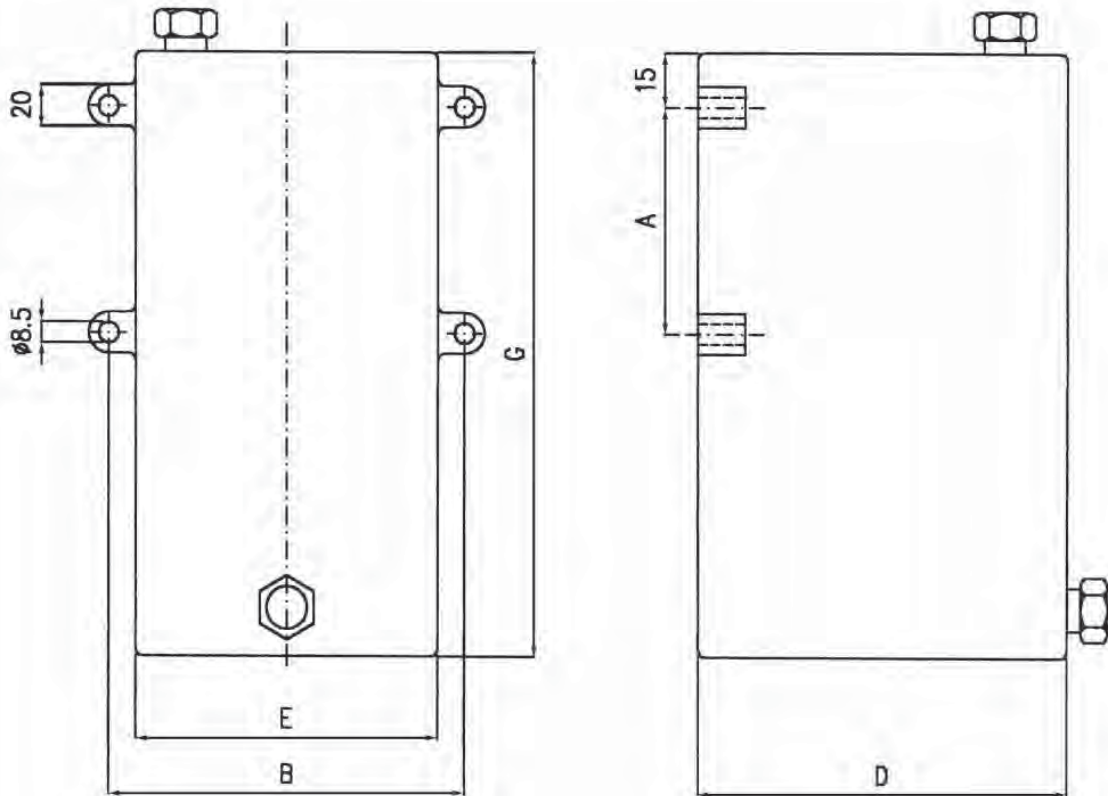
TYP
PAM-TD

Pumpe doppelwirkend
für Tankinbau

Bestellnr.	TYP	Artikelnr.	HUBRAUM	MAX. DRUCK	GEWICHT
			cm ³ /U	bar	Kg
050-010-01250	PAM-TD12	PAM0151200	12	380	2,850
050-010-01300	PAM-TD25	PAM0152500	25	350	2,950
050-010-01350	PAM-TD45	PAM0154500	45	280	3,150
bei Bedarf bitte extra bestellen: Handhebel 20 x 30 x 600 PAM0290000					



Stahltank für Handpumpen

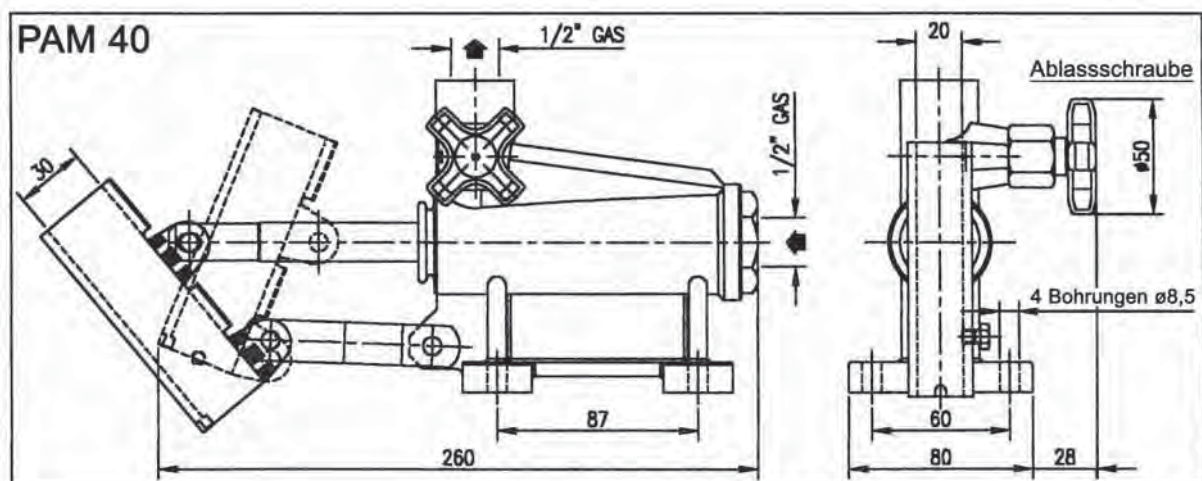
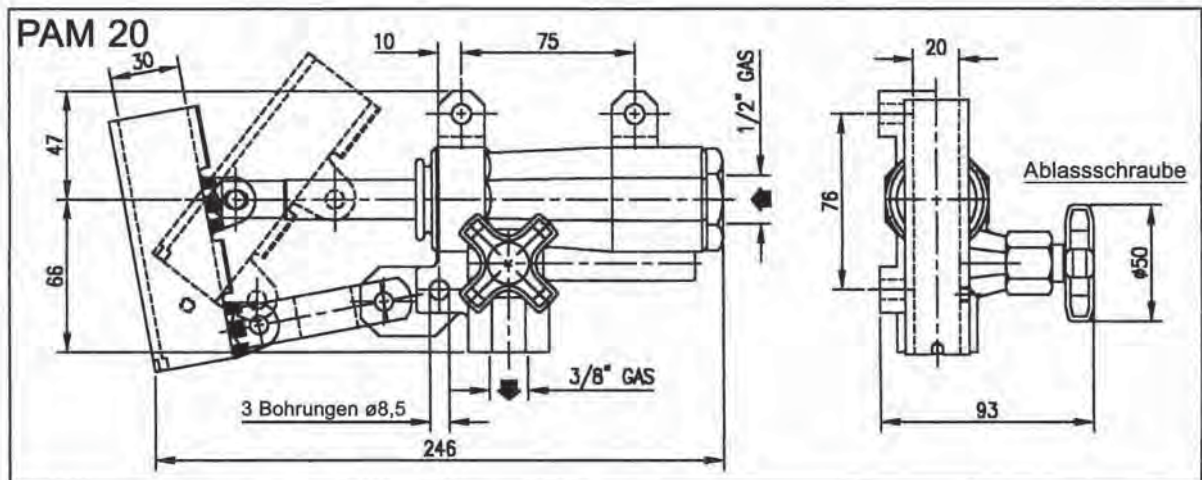
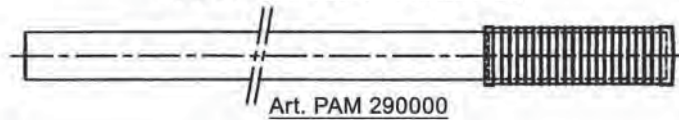


Bestellnr.	Artikelnr.	Tankinhalt (l)	Abmessungen (mm)					Gewicht kg
			A	B	D	E	G	
050-010-01450	PM00220001	1	90	120	150	100	120	2,0
050-010-01500	PM00220002	2					180	2,2
050-010-01550	PM00220003	3					247	2,5
050-010-01600	PM00220005	5	90	195	175	175	200	4,5
050-010-01650	PM00220007	7					269	5,4
050-010-01700	PM00220010	10					376	6,8

Montage: 4 Löcher, Bohrung \varnothing 8,5 mm

		HANDPUMPEN				
		TYP PAM	Pumpe für Rohrleitungseinbau			
Bestellnr.	TYP	Artikelnr.	HUBRAUM cm ³ /U	MAX. DRUCK bar	GEWICHT kg	
	050-010-01000	PAM 20	PAM0142000	20	350	2,750
	050-010-01050	PAM 40	PAM0144000	40	280	3,650
050-010-01400		bei Bedarf bitte extra bestellen: Handhebel 20 x 30 x 600 PAM029000000				

Zubehör: Handhebel 20 x 30 x 600





Variable displacement axial piston pumps, for open circuit.



DISPLACEMENTS

From	29 cm ³ /rev
To	73 cm ³ /rev

MAX. SPEED

3000 min⁻¹

PRESSURE

Max. continuous	280 bar
Max. intermittent	315 bar
Max. peak	350 bar

APPLICATION

Medium, high pressure

SECTOR

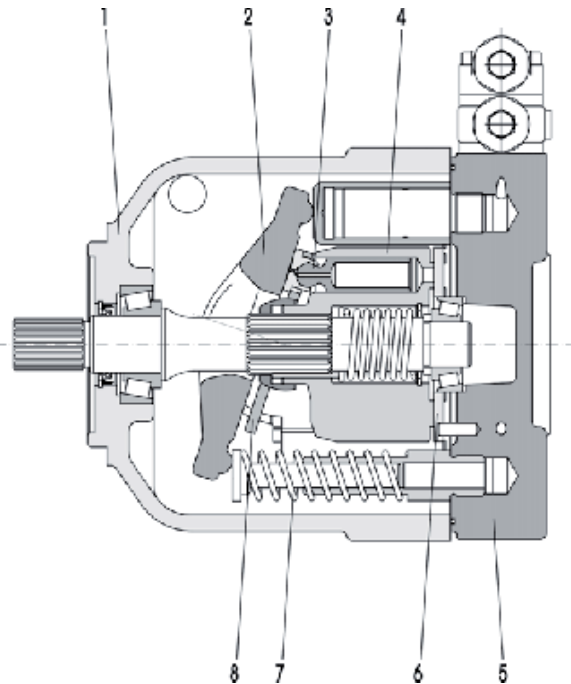
Mobil / Industrial

- Energy savings.
- Low noise emission.
- Operational flexibility.
- Short response time.
- Drive shaft bearing suitable for radial and axial loads.

PLATA pumps meet these requirements in every way. The variable displacement axial piston pump is the optimal solution for open circuit applications. PLATA pumps are available with a wide range of control options. The pump is designed for both radial and axial loads, and supports full torque transmission in multiple body configurations.



GENERAL INFORMATION / INSTRUCTIONS



- 1 - Pump body
- 2 - Swash plate
- 3 - Piston
- 4 - Cylinders block
- 5 - Cover
- 6 - Retaining plate
- 7 - Counterbalancing spring
- 8 - Piston guide plate

INSTALLATION

Check that the maximum coupling eccentricity stays within 0,25 mm to reduce shaft loads due to misalignment. It is advised to use a flexible coupling suitable to absorb eventual water hammer. For applications with axial and radial loads exceeding published standards, consult our sales department. The direction of rotation of the pump must agree with the prime mover rotation. Before installation, the case of the pump must be filled with fluid. Before start-up and during the operation, check that the pump is full of hydraulic oil for at least 3/4 of the volume.

LINES

The lines must have a major diameter which is at least as large as the diameter of pump ports, and must be perfectly sealed. To keep the oil velocity low and increase atmospheric pressure at the pump inlet, the suction lines should be as short as possible. Sources of hydraulic resistance such as elbow, throttling, gate valves, ect. should also be kept to a minimum. A length of flexible tubing is recommended to reduce the transmission of vibrations. Before connecting the lines, remove any plugs and make sure that the lines are perfectly clean. Check that the drain line is dimensioned in a way to guarantee a case pressure lower than 1,5 bar absolute. The drain line must be connected directly (no filter, no valves, no oil cooler) to the tank and must terminate below the oil level. Check that the dimensions of the suction line guarantees a pressure equal or superior to 0,8 bar. Inlet pressure inferior to 0,8 bar could cause an increase of noise emission, decreasing pump performance and a reduction of its life expectancy.

MOUNTING POSITION

The pump can be mounted in a horizontal or vertical (shaft upwards) position, provided that the location of the drain port assures the required filling of the case. The pump can be located above the oil level if the absolute pressure at the inlet port stays within the stated limits. To reduce noise emission, we recommend that the pump be mounted below the oil level, and avoid suction lines with sharp restrictions.

STARTING UP

Check that all connections are secure and that the entire system is completely clean. Add oil to the tank always using a filter. Bleed the air from the circuit to help the filling. 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. Gradually increase the pressure and speed of rotation up to the pre-set operating levels, which must stay within the stated limits as specified in the catalogue.

TECHNICAL DATA

Technical data (with HL or HLP mineral oil based hydraulic fluid to DIN 51524)

Pump type		LVP 30	LVP 48	LVP 75	
Max. displacement (theor.) V_{max}	[cm ³ /rev]	29	46	73	
Max. inlet pressure	[bar abs.]	min.	0,8		
		max.	25		
		cont.	280		
Max. outlet pressure	[bar]	int.	315		
		peak	350		
			1,5		
Max. drain line pressure	[bar abs.]	1,5			
Max. speed n_{max}	[min ⁻¹]	@ V_{max} (1)	3000	2600	2200
Max. delivery (theor.)	[l/min]	@ n_{max}	87	119,6	160,6
		@ 1500 min ⁻¹	43,5	69	109,5
Max. power (theor.) ($\Delta p = 280$ bar)	[kW]	@ n_{max}	39,8	54,7	73,5
		@ 1500 min ⁻¹	19,9	31,6	50,1
Max. torque (theor.)	[Nm]	$\Delta p = 280$ bar	129,3	205,1	325,5
		$\Delta p = 100$ bar	46,2	73,2	116,2
Moment of inertia	[kgm ²]		0,0020	0,0030	0,0080
Max. permissible loading on drive shaft	[N]	F_{ax}	1000	1500	2000
		F_{rad}	1500	1500	3000
Fill capacity	[l]		0,7	0,9	1,5
Mass (without oil)	[kg]		18	24	33
Seals		N= Buna - V= Viton			
Operating temperature	[°C]	with Buna seals	-25 ÷ +90		
		with Viton seals	-10 ÷ +90		

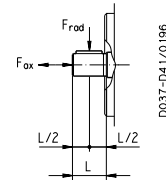
cont. = continuous
int. = intermittent

(1) = with an inlet pressure of 1 bar abs.

For different working conditions, please consult our sales department.

F_{ax} = Axial force
 F_{rad} = Radial force

External load position



Technical data restrictions (with fire resistant fluid)

Hydraulic fluid		Max. pressure [bar]			Max. speed [min ⁻¹]			Operating temperature	Seals	Life bearing
Type	Fluid composition	cont.	int.	peak	LVP 30	LVP 48	LVP 75	[°C]		
HFC	Water - glycol (35 ÷ 55 % of water)	170	185	200	2100	2000	1700	0 ÷ +90	N - V	75 %
HFD	Phosphate ester	200	220	240	2100	2000	1700	-10 ÷ +50	V	90 %

DIRECTION OF ROTATION

Clockwise or anti-clockwise defined looking at the drive shaft.

Q	[l/min]	Delivery
M	[Nm]	Torque
P	[kW]	Power
V	[cm ³ /rev]	Displacement
n	[min ⁻¹]	Speed
Δp	[bar]	Pressure
$\eta_v = \eta_v(V, \Delta p, n)$		Volumetric efficiency
$\eta_m = \eta_m(V, \Delta p, n)$		Mechanical efficiency
$\eta_t = \eta_v \cdot \eta_m$		Overall efficiency

FLUID VISCOSITY

The fluid viscosity range for optimal use of PLATA pump is between 15 and 35 mm²/s (cSt). Limit functional conditions are:
1500 mm²/s at start up at -25 °C
10mm²/s at maximum temperature of 90 °C.

FILTERS

For a maximum pump life, we recommend the use of filtration systems suitable to contain the hydraulic fluid contamination in the class 16/13 conforming to ISO 4406. Satisfactory operation is obtained also with contamination class 19/15 conforming to ISO 4406 or with cleanliness grade 9 conforming to class NAS 1638.

$$Q = V \cdot \eta_v \cdot n \cdot 10^{-3} \quad [\text{l/min}]$$

$$M = \frac{\Delta p \cdot V}{62,83 \cdot \eta_m} \quad [\text{Nm}]$$

$$P = \frac{\Delta p \cdot V \cdot n}{600 \cdot 1000 \cdot \eta_t} \quad [\text{kW}]$$



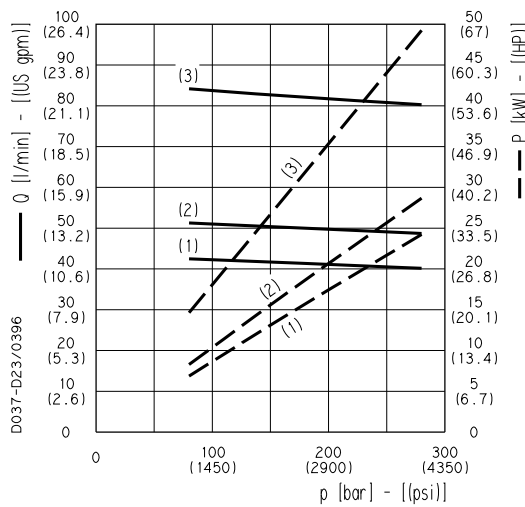
OPERATING CURVES / TECHNICAL DATA

Delivery / power (max. displacement)

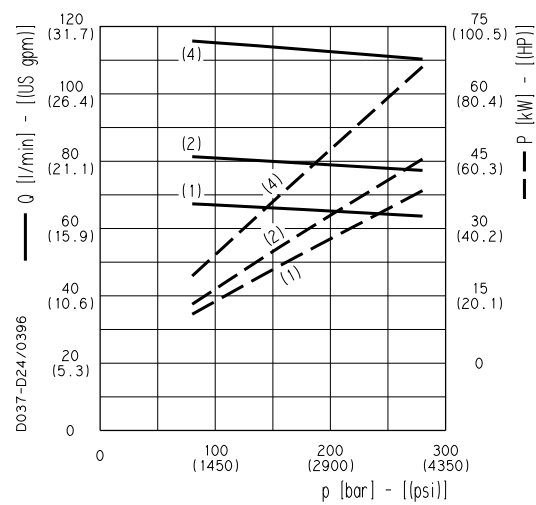
Each curve has been obtained at 50 °C, using oil with viscosity 36 mm²/s at 40 °C and at these speed:

- (1) a 1500 min⁻¹ (3) a 3000 min⁻¹ (5) a 2200 min⁻¹
 (2) a 1800 min⁻¹ (4) a 2600 min⁻¹

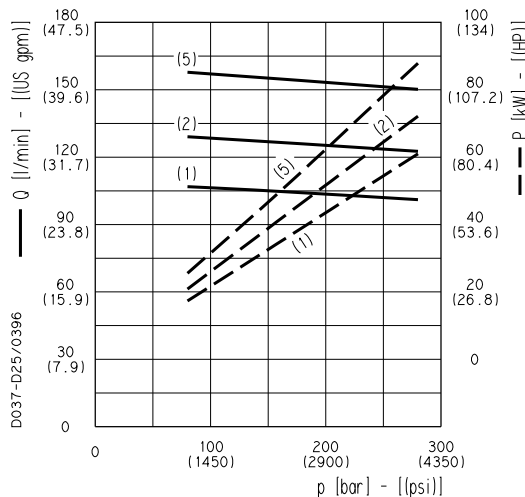
LVP 30



LVP 48



LVP 75



DETERMINATION OF INLET PRESSURE AND FLOW REDUCTION FOR SPEED INCREASING

Inlet pressure [bar abs.]	Displacement %					Speed increasing %
	65	70	80	90	100	
0,8	120	115	105	97	90	Speed increasing %
0,9	120	120	110	103	95	
1,0	120	120	115	107	100	
1,2	120	120	120	113	106	
1,4	120	120	120	120	112	
1,6	120	120	120	120	117	
2,0	120	120	120	120	120	

Example 1

Speed increasing: 120 %
 Inlet pressure: 1,4 bar abs.
 Displacement: 80 %

Example 2

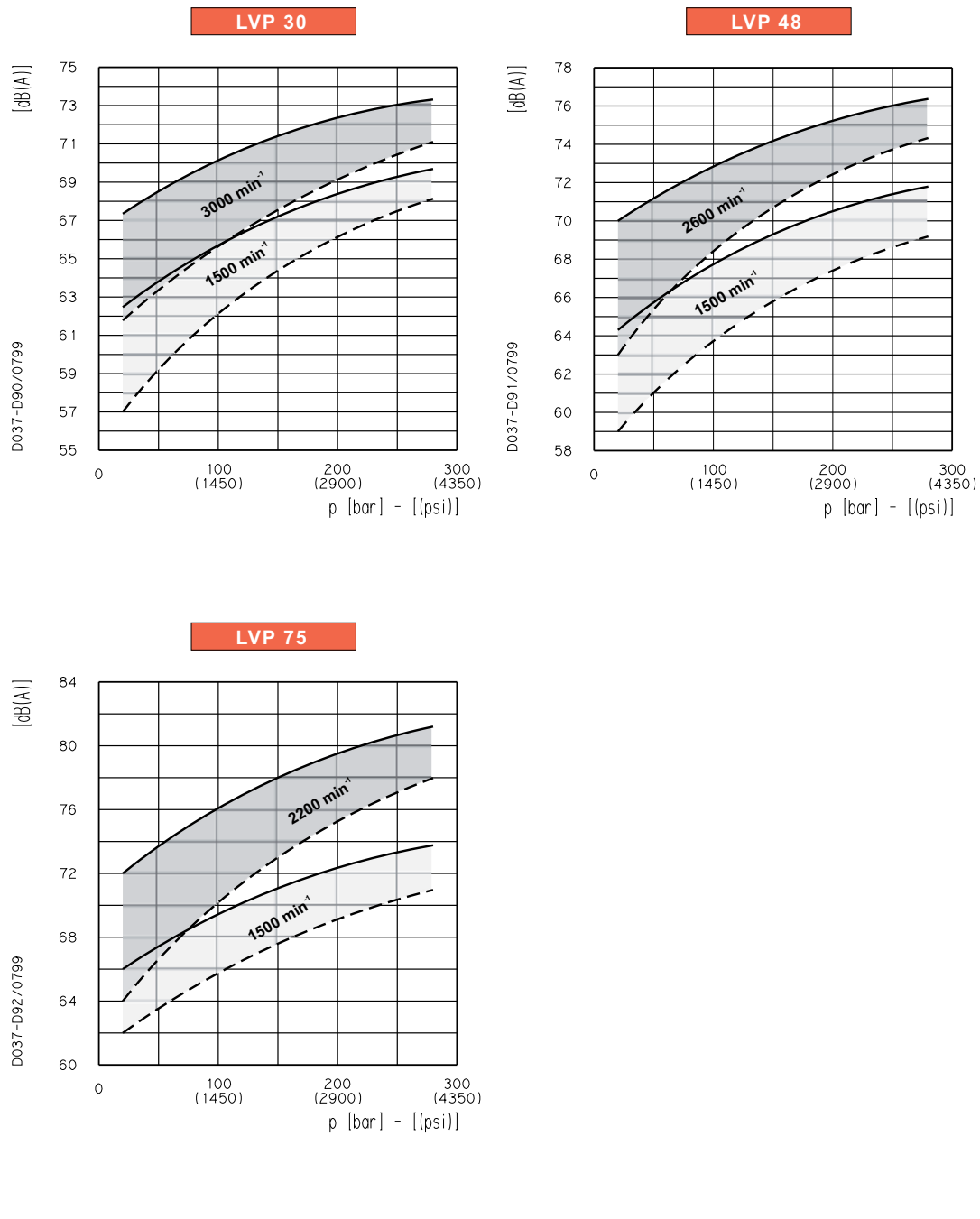
Speed increasing: 113 %
 Inlet pressure: 1,2 bar abs.
 Displacement: 90 %



NOISE LEVEL CURVES

— Q_{max}
- - - Q_{min}

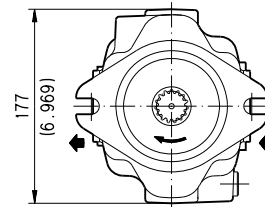
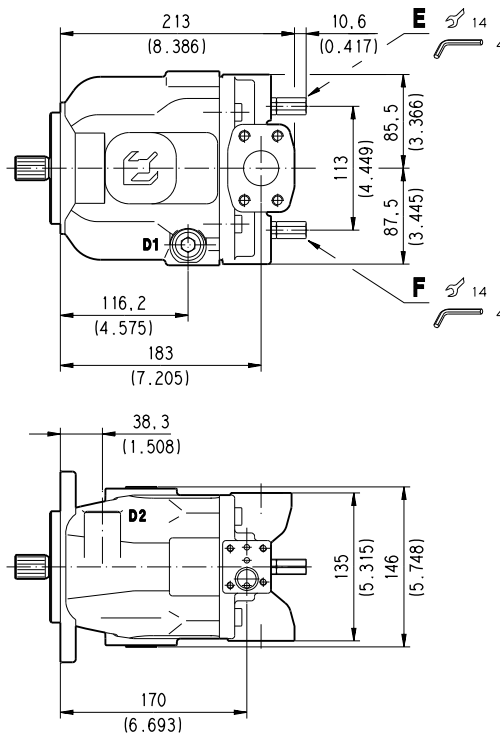
For each curve the sound pressure has been measured in a semi-anechoic chamber at 50 °C, using oil with viscosity 46 mm²/s at 40 °C.
Distance from microphone to pump = 1 m
Measuring error = ± 2 dB (A)



060-010

VERSION WITH SIDE PORTS - DIMENSIONS

LVP 30



PORTS	
IN	OUT
SAE 3000	SAE 6000
Nominal size	
1" 1/4	3/4"

D1, D2: Drain port
Dimensions on page 12

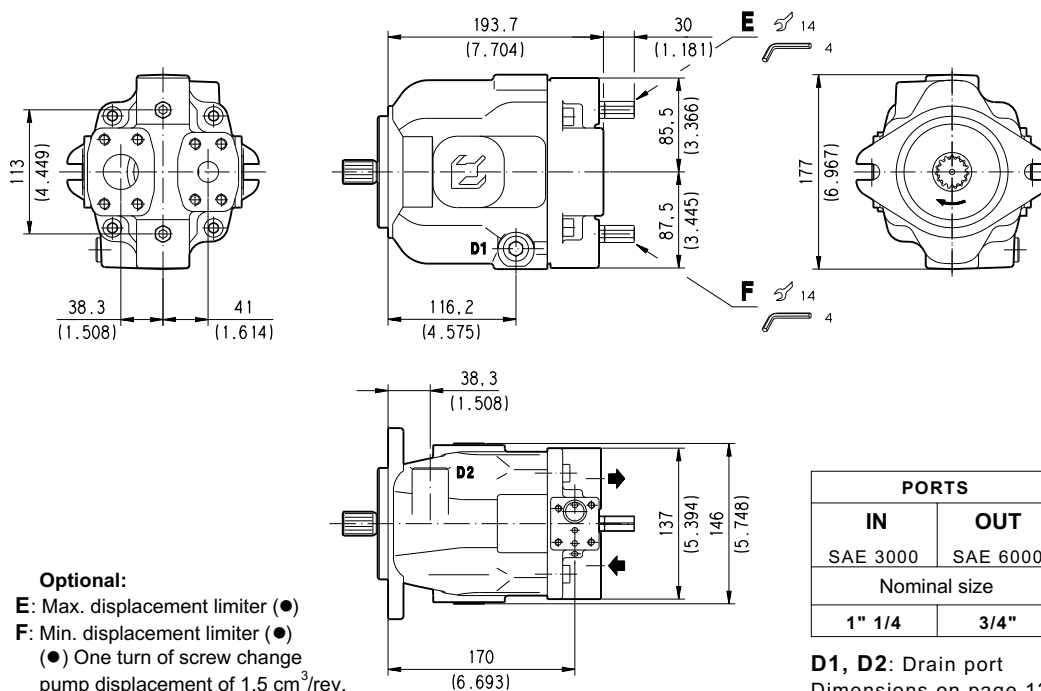
Optional:

- E: Max. displacement limiter (●)
- F: Min. displacement limiter (●)
- (●) One turn of screw change pump displacement of 1,5 cm³/rev.

D037-D78/1099

VERSION WITH REAR PORTS - DIMENSIONS

LVP 30



PORTS	
IN	OUT
SAE 3000	SAE 6000
Nominal size	
1" 1/4	3/4"

D1, D2: Drain port
Dimensions on page 12

Optional:

- E: Max. displacement limiter (●)
- F: Min. displacement limiter (●)
- (●) One turn of screw change pump displacement of 1,5 cm³/rev.

D037-D79/1099

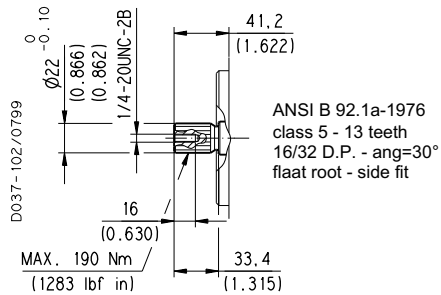
SHAFTS / MOUNTING FLANGES

LVP 30

SAE "B" SPLINE

04

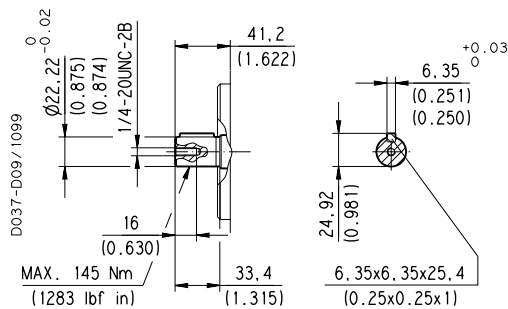
Available with flange code **S5**



SAE "B" STRAIGHT

32

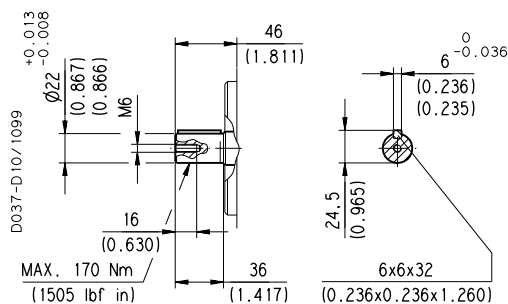
Available with flange code **S5**



STRAIGHT Ø 22

68

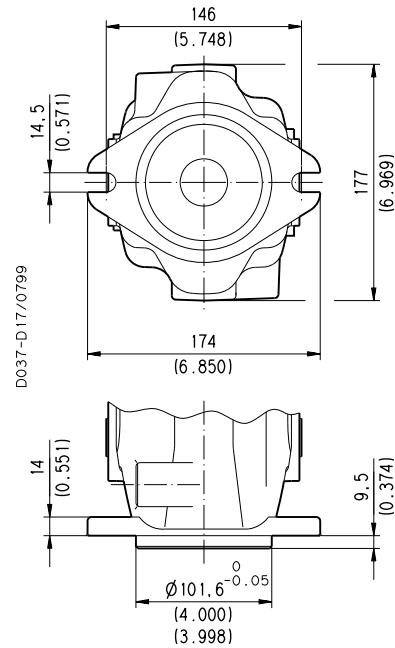
Available with flange code **Z1**



SAE "B" 2 HOLES

S5

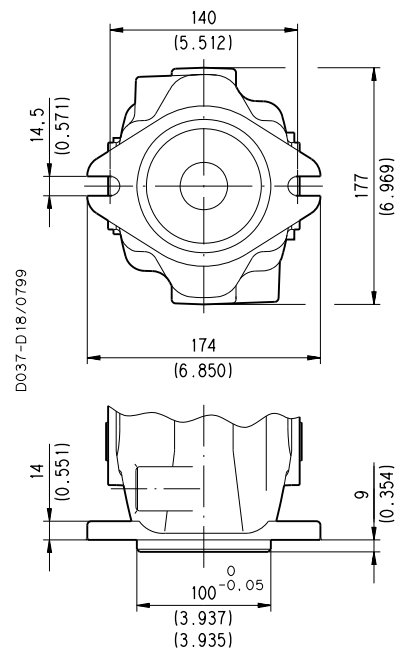
SAE J744 Jul88



ISO Ø 100

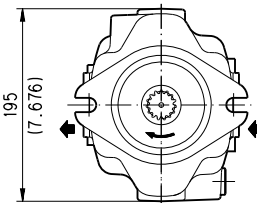
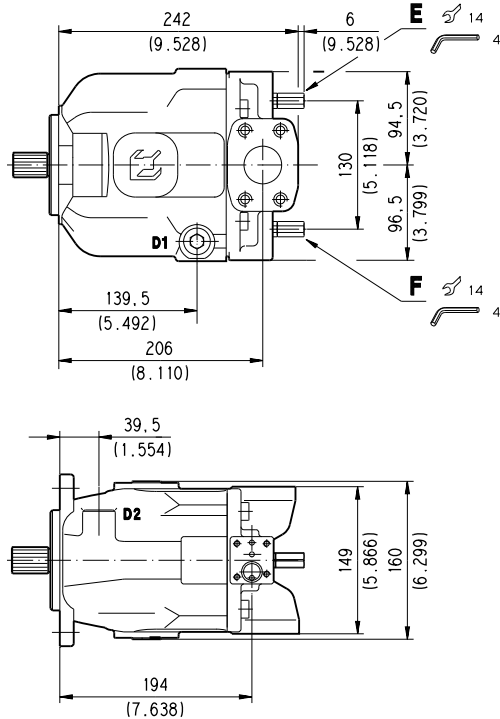
Z1

ISO 3019/2 Feb88



VERSION WITH SIDE PORTS - DIMENSIONS

LVP 48



PORTS	
IN	OUT
SAE 3000	SAE 6000
Nominal size	
1" 1/2	1"

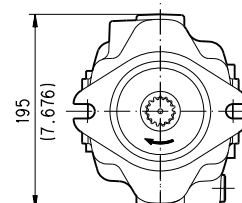
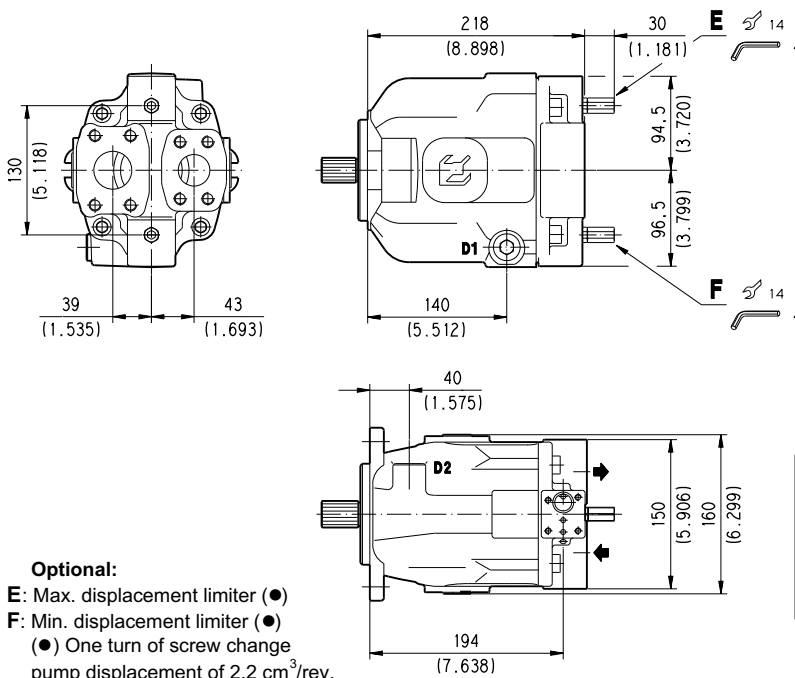
D1, D2: Drain port
Dimensions on page 12

Optional:
E: Max. displacement limiter (●)
F: Min. displacement limiter (●)
 (●) One turn of screw change pump displacement of 2,2 cm³/rev.

D037-D80/1099

VERSION WITH REAR PORTS - DIMENSIONS

LVP 48



PORTS	
IN	OUT
SAE 3000	SAE 6000
Nominal size	
1" 1/2	1"

D1, D2: Drain port
Dimensions on page 12

Optional:
E: Max. displacement limiter (●)
F: Min. displacement limiter (●)
 (●) One turn of screw change pump displacement of 2,2 cm³/rev.

D037-D81/1099

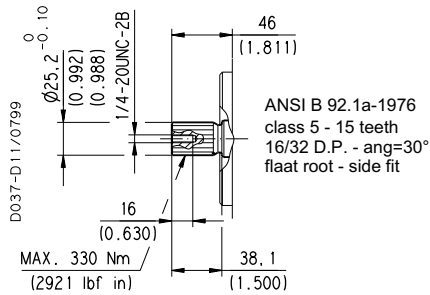
SHAFTS / MOUNTING FLANGES

LVP 48

SAE "BB" SPLINE

05

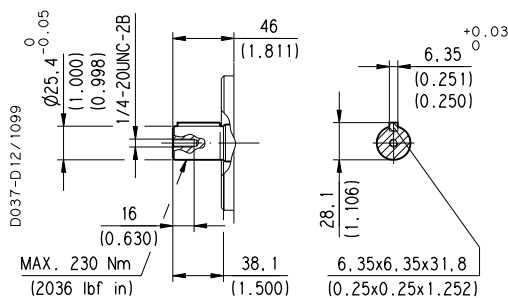
Available with flange code **S5**



SAE "BB" STRAIGHT

33

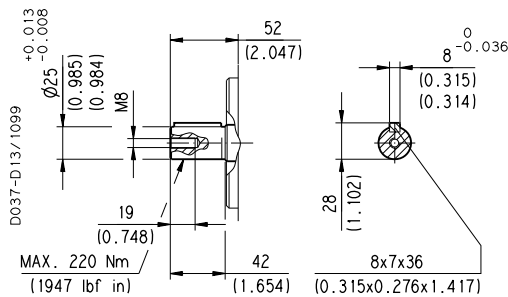
Available with flange code **S5**



STRAIGHT Ø 25

69

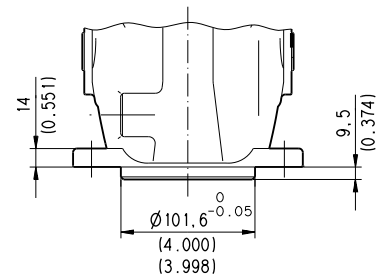
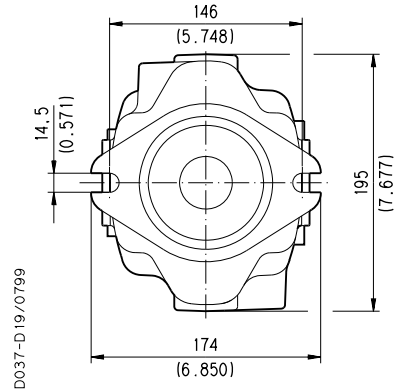
Available with flange code **Z1**



SAE "B" 2 HOLES

S5

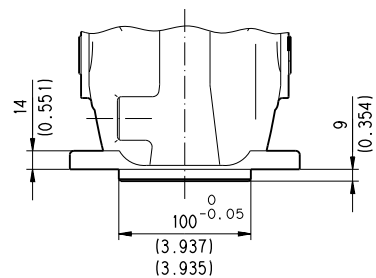
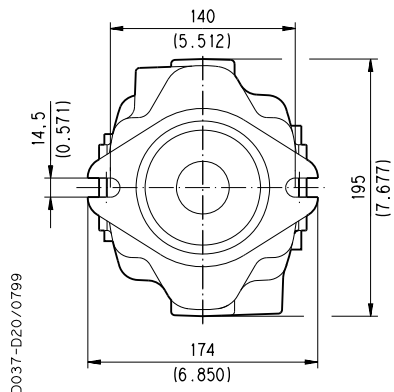
SAE J744 Jul88



ISO Ø 100

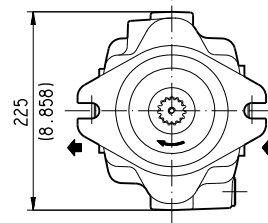
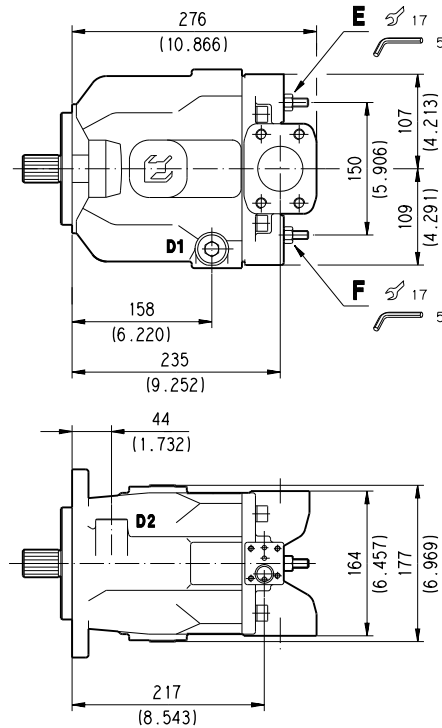
Z1

ISO 3019/2 Feb88



VERSION WITH SIDE PORTS - DIMENSIONS

LVP 75



PORTS	
IN	OUT
SAE 3000	SAE 6000
Nominal size	
2"	1" 1/4

D1, D2: Drain port
Dimensions on page 12

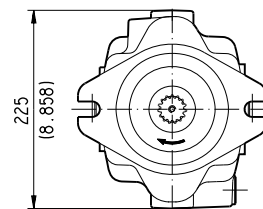
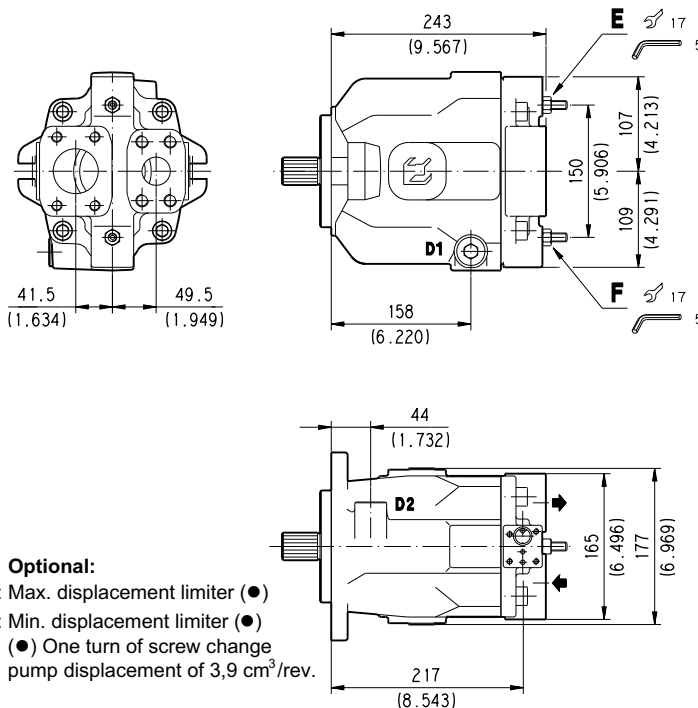
Optional:

- E:** Max. displacement limiter (●)
- F:** Min. displacement limiter (●)
- (●) One turn of screw change pump displacement of 3,9 cm³/rev.

D037-D8Z/1099

VERSION WITH REAR PORTS - DIMENSIONS

LVP 75



PORTS	
IN	OUT
SAE 3000	SAE 6000
Nominal size	
2"	1" 1/4

D1, D2: Drain port
Dimensions on page 12

Optional:

- E:** Max. displacement limiter (●)
- F:** Min. displacement limiter (●)
- (●) One turn of screw change pump displacement of 3,9 cm³/rev.

D037-D83/1099

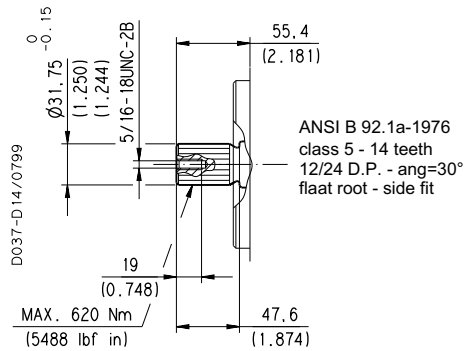
SHAFTS / MOUNTING FLANGES

LVP 75

SAE "C" SPLINE

06

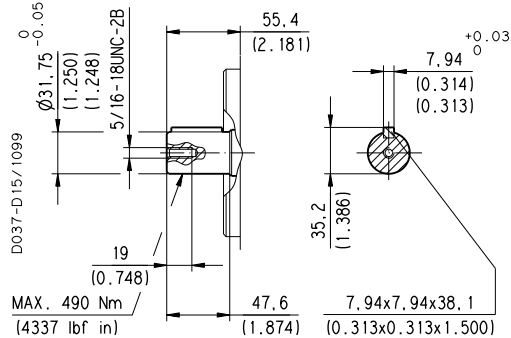
Available with flange code **S7**



SAE "C" STRAIGHT

34

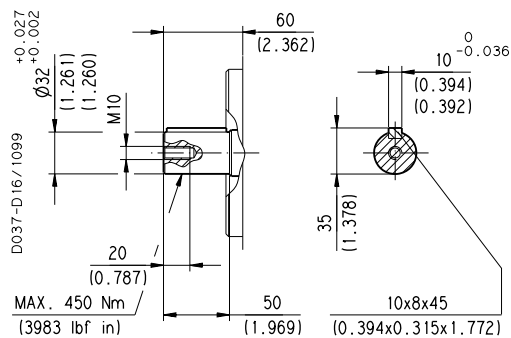
Available with flange code **S7**



STRAIGHT Ø 32

70

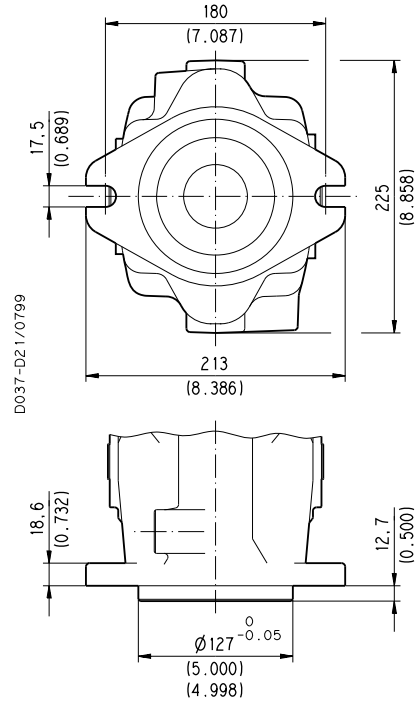
Available with flange code **Z2**



SAE "C" 2 HOLES

S7

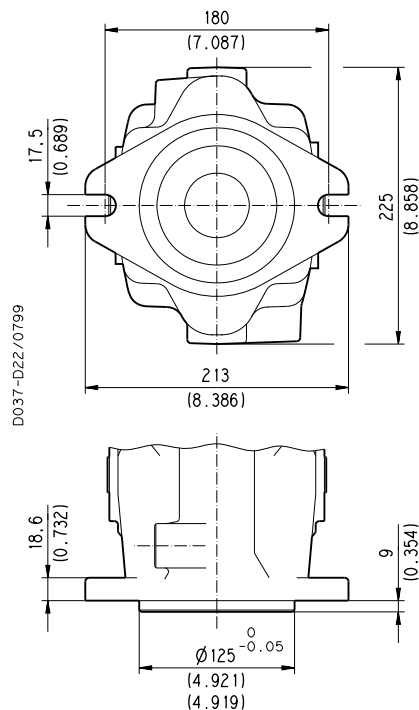
SAE J744 Jul88



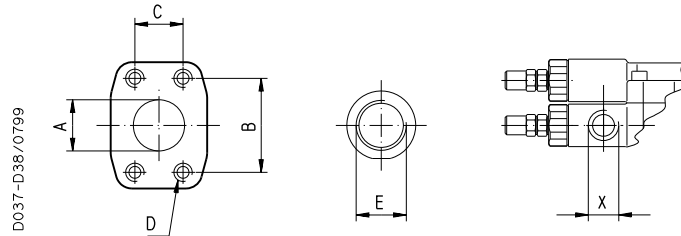
ISO Ø 125

Z2

ISO 3019/2 Feb88



PORT DIMENSIONS



INLET PORT - IN (SAE 3000)						DRAIN PORT D1	LOAD SENSING PORT
SAE FLANGED PORTS METRIC THREAD (SSM)						BRITISH STANDARD BSPP	
CODE	Nominal size	A	B	C	D	E	X
		mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Thread	Thread
MD	1" 1/4	32 (1.260)	58,7 (2.311)	30,2 (1.189)	M 10 28 (1.102)	G 1/2	G 1/8
ME	1" 1/2	38,1 (1.500)	69,9 (2.752)	35,7 (1.406)	M 12 26 (1.024)		
MF	2"	50,8 (2.000)	77,8 (3.063)	42,9 (1.689)	M 12 25 (0.984)	G 3/4	
SAE FLANGED PORTS UNC THREAD (SSS)						SAE STRAIGHT THREAD (ODT)	
CODE	Nominal size	A	B	C	D	E	X
		mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Thread	Thread
SD	1" 1/4	32 (1.260)	58,7 (2.311)	30,2 (1.189)	7/16-14 UNC-2B 28 (1.102)	3/4-16 UNF-2B	7/16-20 UNF-2B
SE	1" 1/2	38,1 (1.500)	69,9 (2.752)	35,7 (1.406)	1/2-13 UNC-2B 26 (1.024)	7/8-14 UNF-2B	
SF	2"	50,8 (2.000)	77,8 (3.063)	42,9 (1.689)	1/2-13 UNC-2B 25 (0.984)		

OUTLET PORT - OUT (SAE 6000)						DRAIN PORT D2	LOAD SENSING PORT
SAE FLANGED PORTS METRIC THREAD (SSM)						BRITISH STANDARD BSPP	
CODE	Nominal size	A	B	C	D	E	X
		mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Thread	Thread
QB	3/4"	19 (0.748)	50,8 (2.000)	23,8 (0.937)	M 10 24 (0.945)	G 1/2	G 1/8
QC	1"	25,4 (1.000)	57,2 (2.252)	27,8 (1.094)	M 10 24 (0.945)		
QD	1" 1/4	32 (1.260)	66,7 (2.626)	31,8 (1.252)	M 14 23 (0.906)	G 3/4	
SAE FLANGED PORTS UNC THREAD (SSS)						SAE STRAIGHT THREAD (ODT)	
CODE	Nominal size	A	B	C	D	E	X
		mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Thread	Thread
VB	3/4"	19 (0.748)	50,8 (2.000)	23,8 (0.937)	3/8-16 UNC-2B 24 (0.945)	3/4-16 UNF-2B	7/16-20 UNF-2B
VC	1"	25,4 (1.000)	57,2 (2.252)	27,8 (1.094)	7/16-14 UNC-2B 20 (0.787)	7/8-14 UNF-2B	
VD	1" 1/4	32 (1.260)	66,7 (2.626)	31,8 (1.252)	1/2-13 UNC-2B 23 (0.906)		

HOW TO ORDER SINGLE PUMPS

1	2	3	4	5	6	7	8	9	10
Pump type	Rotation	Drive shaft	Mounting flange	Ports position	Ports IN/OUT	Seals	Regulators	Additional options	Fluid
LVP 30	S	04	S5	L	MD/QB	N	RP0	E	...

1 Pump type (max displacement)		CODE
in ³ /rev	cm ³ /rev	
1.74	29	LVP 30
2.76	46	LVP 48
4.38	73	LVP 75

2 Rotation		CODE
Anti-clockwise		S
Clockwise		D

3 Drive shaft		CODE
SAE "B" spline (13 teeth)		04
SAE "B" straight		32
straight Ø 22		68
SAE "BB" spline (15teeth)		05
SAE "BB" straight		33
Straight Ø 25		69
SAE "C" spline (14 teeth)		06
SAE "C" straight		34
Straight Ø 32		70

4 Mounting flange		CODE
SAE "B" 2 holes		S5
ISO Ø 100		Z1
SAE "C" 2 holes		S7
ISO Ø 125		Z2

5 Ports position		CODE
Side		L
Rear		P

6 Inlet/outlet ports		CODE	
SAE FLANGED PORTS METRIC THREAD (SSM)			
Pump type	Nominal size		
	Inlet IN SAE 3000	Outlet OUT SAE 6000	
LVP 30	1"1/4	3/4"	MD/QB
LVP 48	1"1/2	1"	ME/QC
LVP 75	2"	1"1/4	MF/QD
SAE FLANGED PORTS UNC THREAD (SSS)			
Pump type	Nominal size		
	Inlet IN SAE 3000	Outlet OUT SAE 6000	
LVP 30	1"1/4	3/4"	SD/VB
LVP 48	1"1/2	1"	SE/VC
LVP 75	2"	1"1/4	SF/VD

CODE	Seals	7
N	Buna (standard)	
V	Viton	

CODE	Regulators	8
RP0	Pressure compensator setting range 20 - 350 bar (a)	
LS0	Flow compensator (b)	
LS2	Flow compensator for remote control (b)	
LS3	Flow compensator for internal control (b)	
RN0	Torque limiter - standard	
RN1	Torque limiter - internal pilot	
S	Proportional flow servocontrol (c)	
SE	Proportional flow servocontrol with integral electronics (c)	
SER	Proportional flow servocontrol with integral electronics and seq. module RES (c)	

CODE	Additional options (d)	9
U..	Unloading valve (e)	
E	Max. displacement limiter (f)	
F	Min. displacement limiter (f)	
G	Min. and max. displacement limiter (f)	

CODE	Fluid	10
...	Mineral oil (no CODE)	
H	HF fluid (please consult our sales department)	

- a) Standard setting 280 bar.
- b) Differential pressure standard setting 14 bar (setting range 10 - 40 bar).
- c) For more informations, please consult our sales department.
- d) For additional options, please consult our sales department.
- e) For voltages availability please see page 20.
- f) Max. up to 50% of the displacement.

ORDER EXAMPLE

SINGLE PUMPS

Standard pump **LVP 30 S-04 S5-L MD/QB-N-LS2**

Pump with special features **LVP 30 S-04 S5-L MD/QB-N-LS2-E H**

ASSEMBLED MULTIPLE PUMPS

Standard double pump **LVP 30-04 S5-L MD/QB-RP0-AS5 04 / 30-04 S5-L MD/QB-N-LS2 S**

Double pump with special features **LVP 75-06 S7-L MF/QD-RP0-E H-AS5 04 / 30-04 S5-L MD/QB-N-LS2 S**

Double Plata pump with different series pumps **LVP 30-04 S5-L MD/QB-RP0-E-AS1 03 / PLP20.4-03 S1-L EA/EA-N S**

INDIVIDUAL SECTIONS

Front section **LVP 30 S-04 S5-L MD/QB-N-RP0-AS5 04**

Rear section **LVP 30 S-04 S5-L MD/QB-N-LS2**



Variable displacement axial piston pumps, for open circuit.



DISPLACEMENTS

From	29 cm ³ /rev
To	73 cm ³ /rev

MAX. SPEED

3000 min⁻¹

PRESSURE

Max. continuous	280 bar
Max. intermittent	315 bar
Max. peak	350 bar

APPLICATION

Medium, high pressure

SECTOR

Mobil / Industrial

- Energy savings.
- Low noise emission.
- Operational flexibility.
- Short response time.
- Drive shaft bearing suitable for radial and axial loads.

PLATA pumps meet these requirements in every way. The variable displacement axial piston pump is the optimal solution for open circuit applications. PLATA pumps are available with a wide range of control options. The pump is designed for both radial and axial loads, and supports full torque transmission in multiple body configurations.





MULTIPLE PUMPS

Through drive

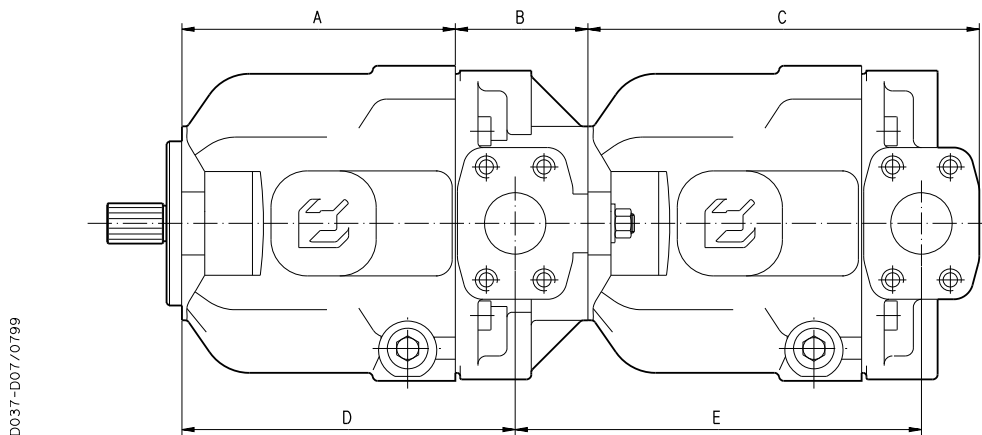
PLATA 3000 through drive axial piston pumps offer the flexibility to obtain different groups able to supply several hydraulic systems. The operating characteristics of each assembled pumps are the same as the corresponding single pumps according to the following conditions:

- 1) Do not exceed the maximum transmissible torque.
- 2) The maximum rotational speed is that of the lowest rated speed of the single unit incorporated.

M	[Nm]	Torque
V	[cm ³ /rev]	Displacement
Δp	[bar]	Pressure
$\eta_m = \eta_m(V, \Delta p, n)$		Mechanical efficiency

$$M = \frac{\Delta p \cdot V}{62,83 \cdot \eta_m} \quad [\text{Nm}]$$

Notes: 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.



Pump type	A		B		C	D	E
	mm (in)	mm (in)	Flanged for	Code			
LVP 30	145 (5.709)	77 (3.031)	SAE A	AS1	213 (8.386)	183 (7.205)	222 (8.740)
			SAE B	AS5			
LVP 48	169 (6.654)	82 (3.228)	SAE A	AS1	242 (9.528)	206 (8.110)	251 (9.882)
			SAE B	AS5			
LVP 75	192 (7.559)	99 (3.898)	SAE A	AS1	276 (10.866)	235 (9.252)	291 (11.445)
			SAE B	AS5			296 (11.654)
			SAE C	AS7			

Overall dimensions: the same as the single pumps.
Ports dimensions on page 12. - Screws are supplied with the first pump.

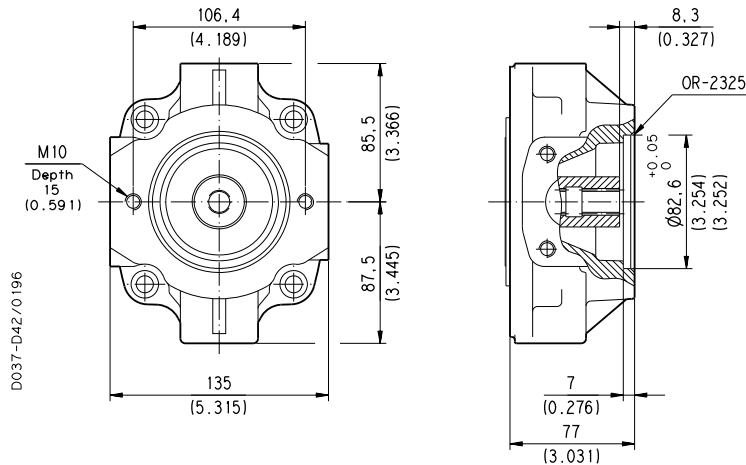
INTERMEDIATE FLANGES

LVP 30

SAE "A" 2 HOLES

AS1

SAE J744 Jul88



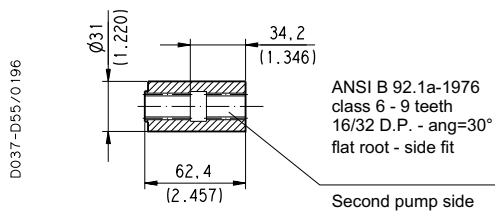
COUPLINGS

LVP 30

SAE "A" SPLINE

03

Available with flange code **AS1**

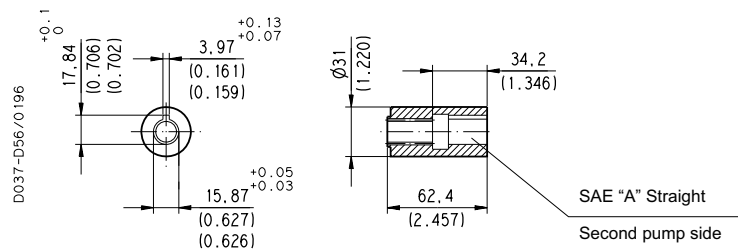


MAX 100 Nm (885 lbf in)

SAE "A" STRAIGHT

31

Available with flange code **AS1**



MAX 60 Nm (531 lbf in)



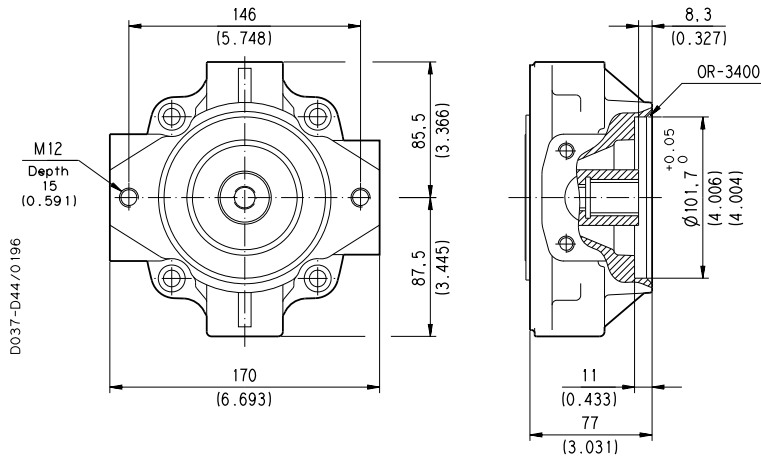
INTERMEDIATE FLANGES

LVP 30

SAE "B" 2 HOLES

AS5

SAE J744 Jul88



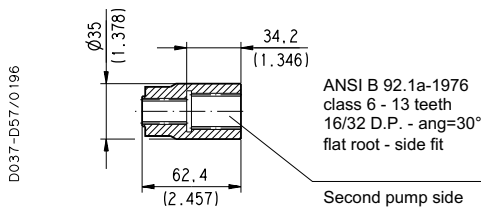
COUPLINGS

LVP 30

SAE "B" SPLINE

04

Available with flange code **AS5**

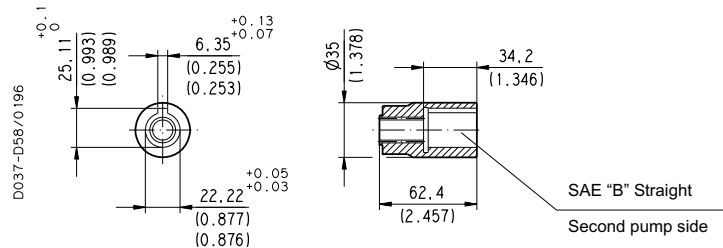


MAX 135 Nm (1195 lbf in)

SAE "B" STRAIGHT

32

Available with flange code **AS5**



MAX 145 Nm (1283 lbf in)

060-050

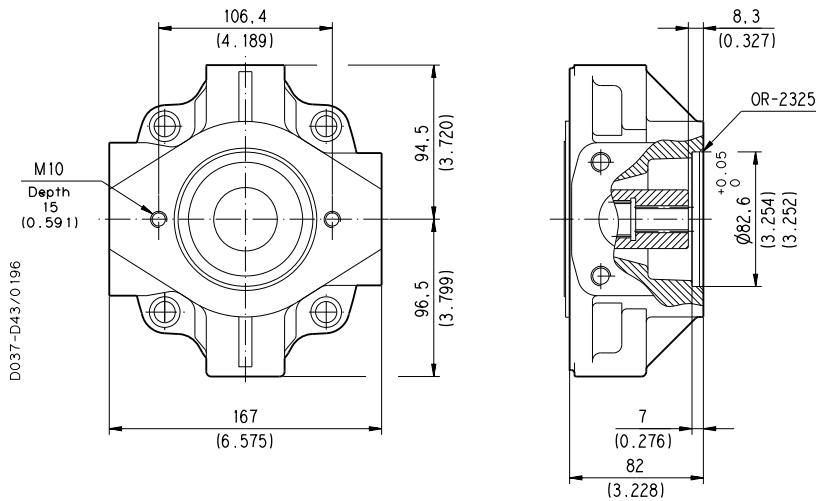
INTERMEDIATE FLANGES

LVP 48

SAE "A" 2 HOLES

AS1

SAE J744 Jul88



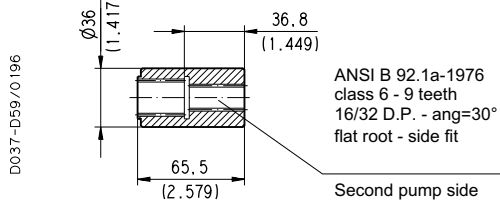
COUPLINGS

LVP 48

SAE "A" SPLINE

03

Available with flange code **AS1**

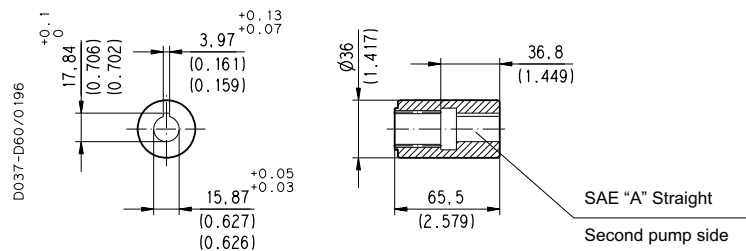


MAX 135 Nm (1195 lbf in)

SAE "A" STRAIGHT

31

Available with flange code **AS1**



MAX 60 Nm (531 lbf in)



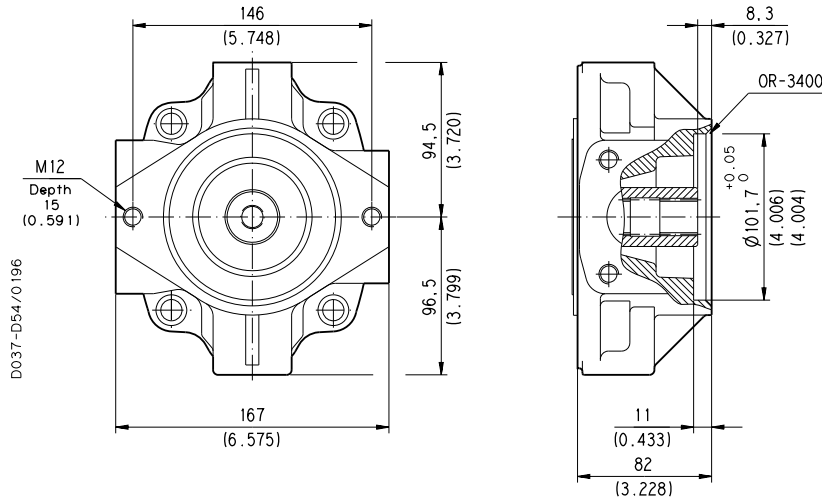
INTERMEDIATE FLANGES

LVP 48

SAE "B" 2 HOLES

AS5

SAE J744 Jul88



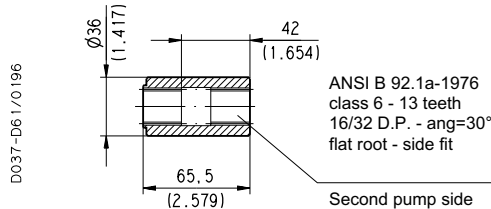
COUPLINGS

LVP 48

SAE "B" SPLINE

04

Available with flange code **AS5**

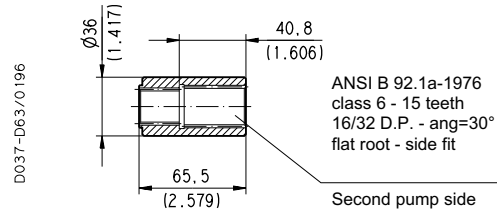


MAX 250 Nm (2213 lbf in)

SAE "BB" SPLINE

05

Available with flange code **AS5**

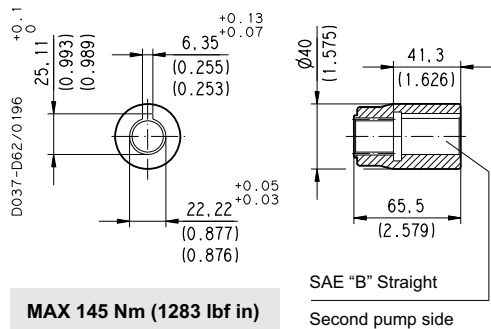


MAX 250 Nm (2213 lbf in)

SAE "B" STRAIGHT

32

Available with flange code **AS5**

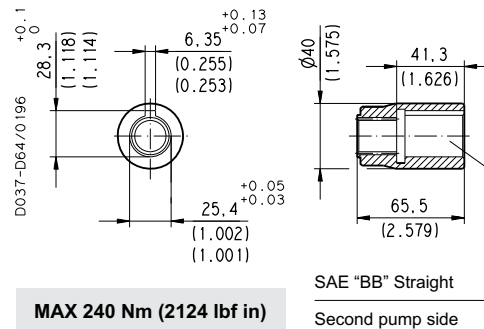


MAX 145 Nm (1283 lbf in)

SAE "BB" STRAIGHT

33

Available with flange code **AS5**



MAX 240 Nm (2124 lbf in)



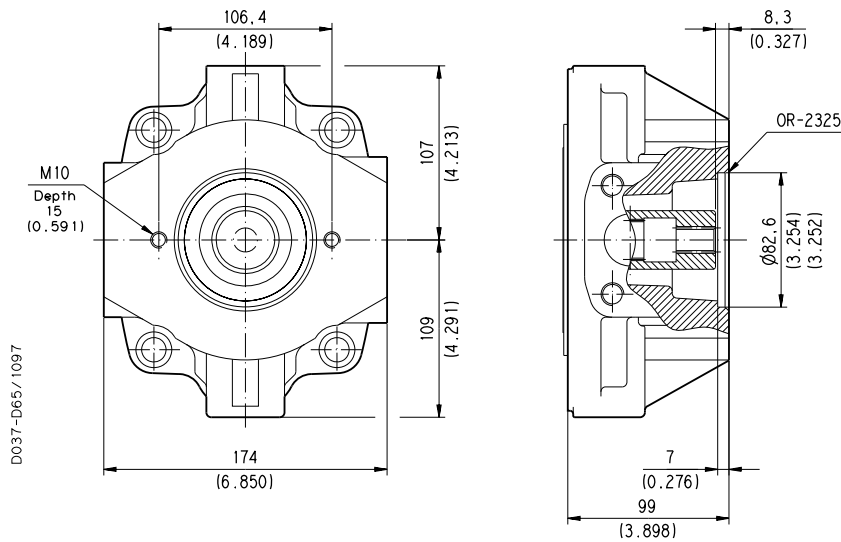
INTERMEDIATE FLANGES

LVP 75

SAE "A" 2 HOLES

AS1

SAE J744 Jul88



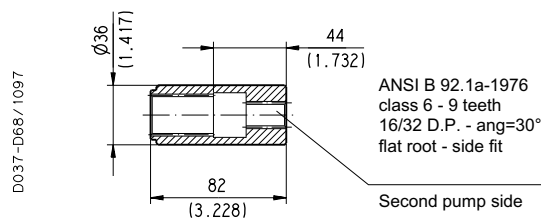
COUPLINGS

LVP 75

SAE "A" SPLINE

03

Available with flange code AS1

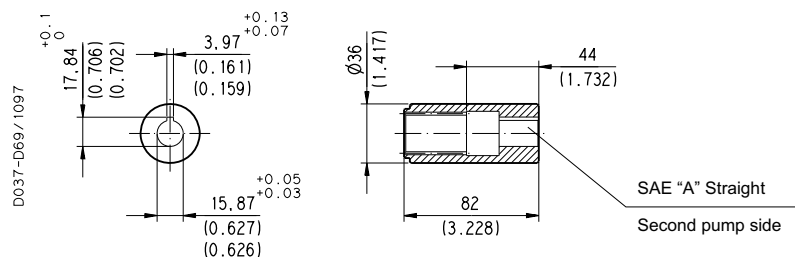


MAX 135 Nm (1195 lbf in)

SAE "A" STRAIGHT

31

Available with flange code AS1



MAX 60 Nm (531 lbf in)

060-050



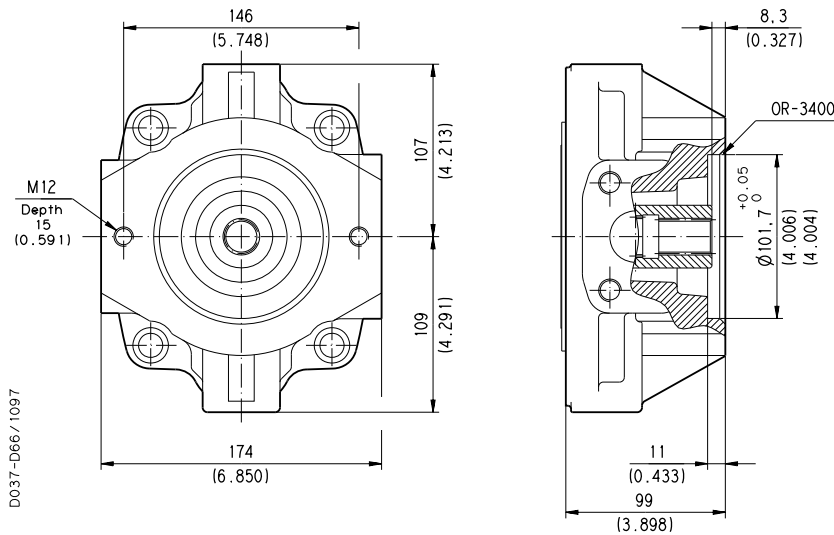
INTERMEDIATE FLANGES

LVP 75

SAE "B" 2 HOLES

AS5

SAE J744 Jul88



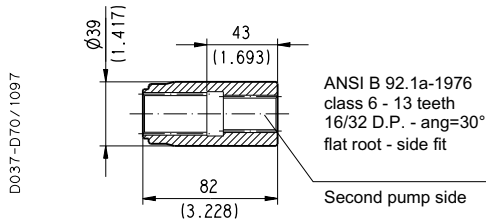
COUPLINGS

LVP 75

SAE "B" SPLINE

04

Available with flange code **AS5**

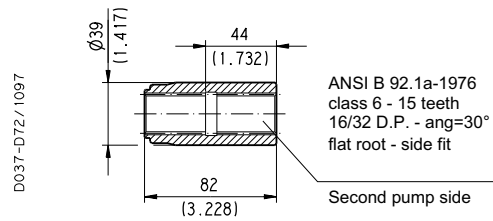


MAX 330 Nm (2921 lbf in)

SAE "BB" SPLINE

05

Available with flange code **AS5**

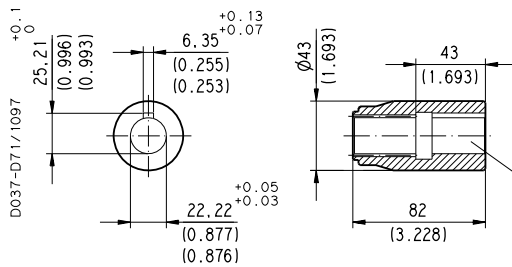


MAX 400 Nm (3540 lbf in)

SAE "B" STRAIGHT

32

Available with flange code **AS5**



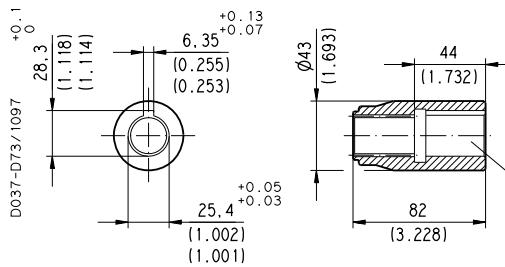
MAX 145 Nm (1283 lbf in)

SAE "B" Straight
Second pump side

SAE "BB" STRAIGHT

33

Available with flange code **AS5**



MAX 240 Nm (2124 lbf in)

SAE "BB" Straight
Second pump side

060-050

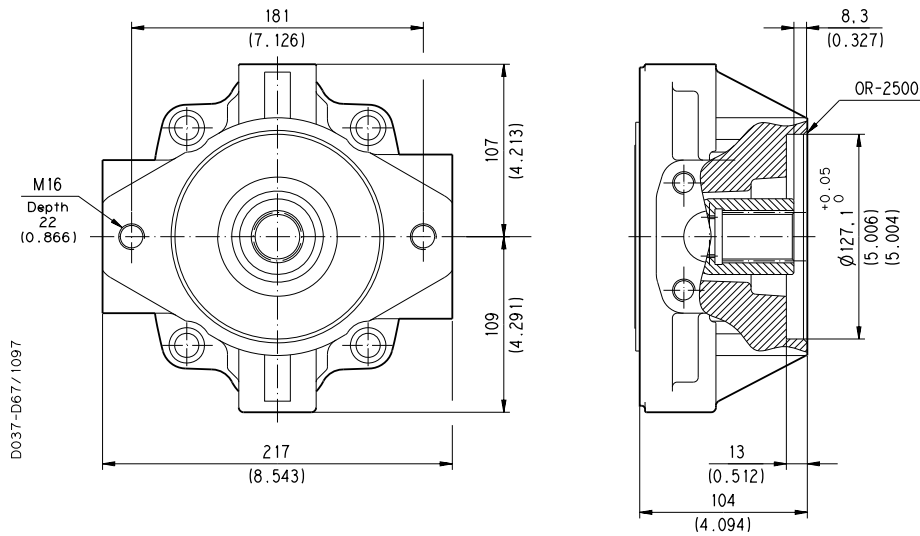
INTERMEDIATE FLANGES

LVP 75

SAE "C" 2 HOLES

AS7

SAE J744 Jul88



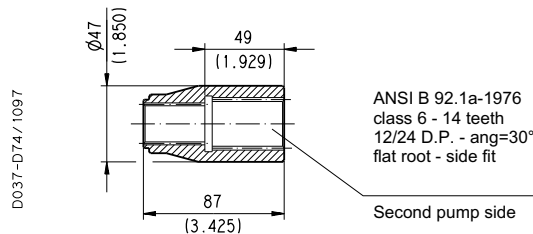
COUPLINGS

LVP 75

SAE "C" SPLINE

06

Available with flange code **AS7**

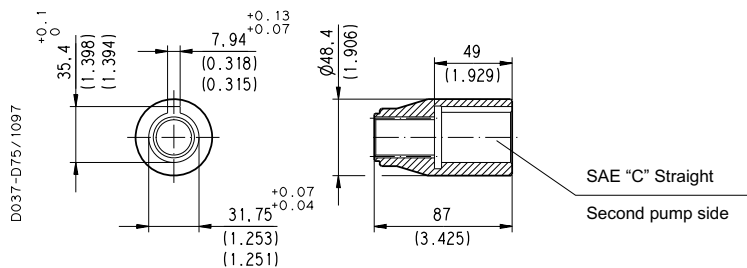


MAX 440 Nm (3894 lbf in)

SAE "C" STRAIGHT

34

Available with flange code **AS7**



MAX 495 Nm (4381 lbf in)

HOW TO ORDER MULTIPLE PUMPS

1	2	3	4	5	6	7	8	9	10	11	12
Pump type	Rotation	Drive shaft	Mounting flange	Ports position	Ports IN/OUT	Seals	Regulators	Addit. options	Fluid	Interm. flange	Coupling
LVP 30	S *	04	S5	L	MD/QB	N #	RP0	E	...	AS5	04
Front section											
LVP 30	S #	04	S5	L	MD/QB	N	LS2	E			
Rear section											

1 Pump type (cilindr. max)		CODE
in ³ /rev	cm ³ /rev	
1.74	29	LVP 30
2.76	46	LVP 48
4.38	73	LVP 75

2 Rotation		CODE
Anti-clockwise		S
Clockwise		D

3 Drive shaft		CODE
SAE "B" spline (13 teeth)		04
SAE "B" straight		32
straight Ø 22		68
SAE "BB" spline (15 teeth)		05
SAE "BB" straight		33
Straight Ø 25		69
SAE "C" spline (14 teeth)		06
SAE "C" straight		34
Straight Ø 32		70

4 Mounting flange		CODE
SAE "B" 2 holes		S5
ISO Ø 100		Z1
SAE "C" 2 holes		S7
ISO Ø 125		Z2

5 Ports position		CODE
Side		L
Rear (a)		P

6 Inlet/outlet ports		CODE	
SAE FLANGED PORTS METRIC THREAD (SSM)			
Pump type	Nominal size		
	Inlet IN	Outlet OUT	
	SAE 3000	SAE 6000	
LVP 30	1"1/4	3/4"	MD/QB
LVP 48	1"1/2	1"	ME/QC
LVP 75	2"	1"1/4	MF/QD
SAE FLANGED PORTS UNC THREAD (SSS)			
Pump type	Nominal size		
	Inlet IN	Outlet OUT	
	SAE 3000	SAE 6000	
LVP 30	1"1/4	3/4"	SD/VB
LVP 48	1"1/2	1"	SE/VC
LVP 75	2"	1"1/4	SF/VD

- * For assembled multiple pumps, the rotation code letter is added at the end of the complete ordering code.
 # Omit code only if ordering assembled multiple pumps.
 a) Not available for front sections.
 b) Standard setting 280 bar.

CODE	Seals	7
N	Buna (standard)	
V	Viton	

CODE	Regulators	8
RP0	Pressure compensator setting range 20 - 350 bar (b)	
LS0	Flow compensator (c)	
LS2	Flow compensator for remote control (c)	
LS3	Flow compensator for internal control (b)	
RN0	Torque limiter - standard	
RN1	Torque limiter - internal pilot	
S	Proportional flow servocontrol (d)	
SE	Proportional flow servocontrol with integral electronics (d)	
SER	Proportional flow servocontrol with integral electronics and seq. module RES (d)	

CODE	Additional options (e)	9
U.	Unloading valve (f)	
E	Max. displacement limiter (g-h)	
F	Min. displacement limiter (g-h)	
G	Min. and max. displacement limiter (g-h)	

CODE	Fluid	10
...	Mineral oil (no CODE)	
H	HF fluid (please consult our sales department)	

CODE	Intermediate flange	11
AS1	SAE "A" 2 holes	
AS5	SAE "B" 2 holes	
AS7	SAE "C" 2 holes	

CODE	Coupling	12
03	SAE "A" spline (9 teeth)	
31	SAE "A" straight	
04	SAE "B" spline (13 teeth)	
32	SAE "B" straight	
05	SAE "BB" spline (15 teeth)	
33	SAE "BB" straight	
06	SAE "C" spline (14 teeth)	
34	SAE "C" straight	

- c) Differential pressure standard setting 14 bar (setting range 10 - 40 bar).
 d) For more informations, please consult our sales department.
 e) For additional options, please consult our sales department.
 f) For voltages availability please see page 20.
 g) Max. up to 50% of the displacement.
 h) LVP30 with flange AS5 and LVP75 with flange AS7 are not available.



ORDER EXAMPLE

SINGLE PUMPS

Standard pump **LVP 30 S-04 S5-L MD/QB-N-LS2**

Pump with special features **LVP 30 S-04 S5-L MD/QB-N-LS2-E H**

ASSEMBLED MULTIPLE PUMPS

Standard double pump **LVP 30-04 S5-L MD/QB-RP0-AS5 04 / 30-04 S5-L MD/QB-N-LS2 S**

Double pump with special features **LVP 75-06 S7-L MF/QD-RP0-E H-AS5 04 / 30-04 S5-L MD/QB-N-LS2 S**

Double Plata pump with different series pumps **LVP 30-04 S5-L MD/QB-RP0-E-AS1 03 / PLP20.4-03 S1-L EA/EA-N S**

INDIVIDUAL SECTIONS

Front section **LVP 30 S-04 S5-L MD/QB-N-RP0-AS5 04**

Rear section **LVP 30 S-04 S5-L MD/QB-N-LS2**



Variable displacement axial piston pumps, for open circuit.



DISPLACEMENTS

From	29 cm ³ /rev
To	73 cm ³ /rev

MAX. SPEED

3000 min⁻¹

PRESSURE

Max. continuous	280 bar
Max. intermittent	315 bar
Max. peak	350 bar

APPLICATION

Medium, high pressure

SECTOR

Mobil / Industrial

- Energy savings.
- Low noise emission.
- Operational flexibility.
- Short response time.
- Drive shaft bearing suitable for radial and axial loads.

PLATA pumps meet these requirements in every way. The variable displacement axial piston pump is the optimal solution for open circuit applications. PLATA pumps are available with a wide range of control options. The pump is designed for both radial and axial loads, and supports full torque transmission in multiple body configurations.



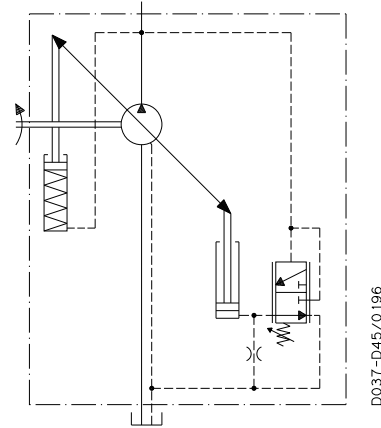
PRESSURE COMPENSATOR

RP

Regulates the pump displacement automatically to equal the flow requirement of the system while maintaining the pre-adjusted pressure.

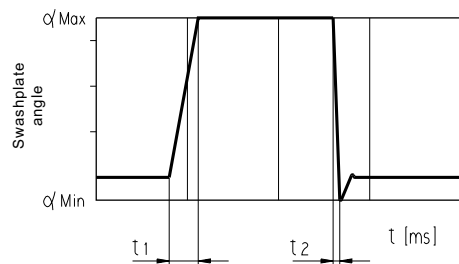
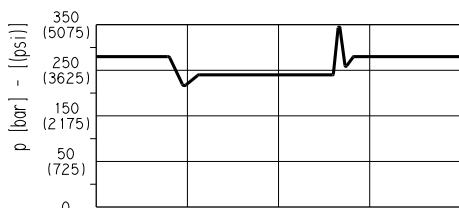
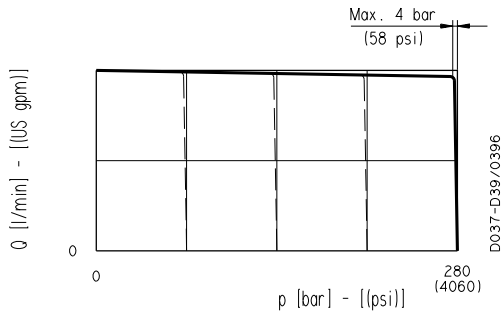
Compensator type	Pressure setting range	Standard setting
	bar	bar
RP0	20 ÷ 350	280

For remote control please consult our sales department.



OPERATING CURVES

Curves have been obtained at the speed of 1500 min⁻¹ and oil temperature 50 °C.



RESPONSE TIME

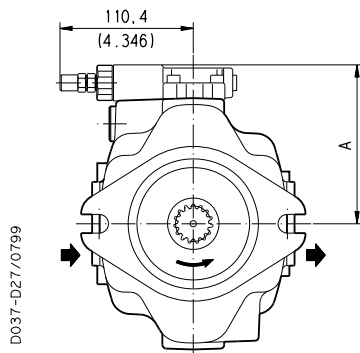
Pump type	t ₁	t ₂
	ms	ms
LVP 30	31	19
LVP 48	44	20
LVP 75	50	25

MOUNTING POSITIONS AND DIMENSIONS (pressure compensator)

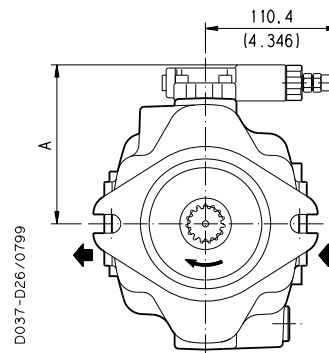
RP

Side ports

Anti-clockwise rotation

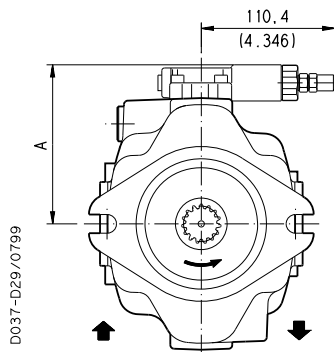


Clockwise rotation

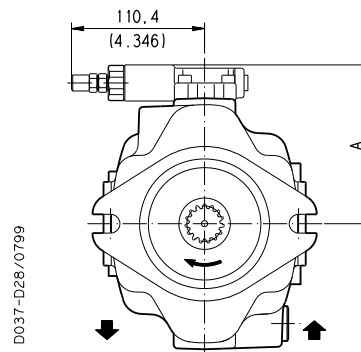


Rear ports

Anti-clockwise rotation



Clockwise rotation



Pump type	A
	mm (in)
LVP 30	114 (4.488)
LVP 48	123 (4.843)
LVP 75	136 (5.354)

NOTES: For different mounting positions, please consult our sales department.

FLOW COMPENSATOR (Load-sensing)

LS

Regulates the pump displacement to maintain a constant (load independent) pressure drop across a flow metering device. In the standard version the flow compensator is combined with pressure compensator.

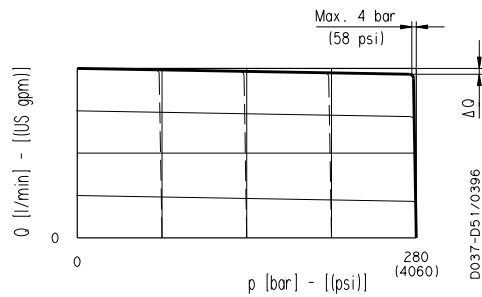
Flow compensator type	Pressure compensator	Differential pressure setting range	Standard setting
		bar	bar
LS0	RP0	10 ÷ 40	14
LS2 *	RP0	10 ÷ 40	14
LS3 •	RP0	10 ÷ 40	14

- * : For remote control Y is plugged.
 - : For internal control and remote pressure control.
- Pilot flow $\approx 1,3 \div 1,5$ [l/min]

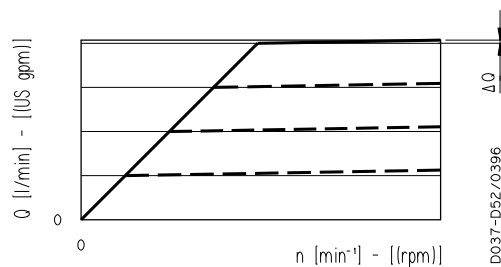
In standard setting conditions (14 bar) the stand-by pressure is $16^{\pm 2}$ bar.

OPERATING CURVES

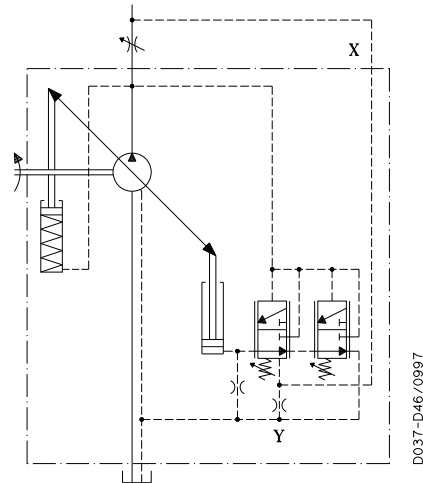
This curve has been obtained at the speed of 1500 min^{-1} and oil temperature 50°C .



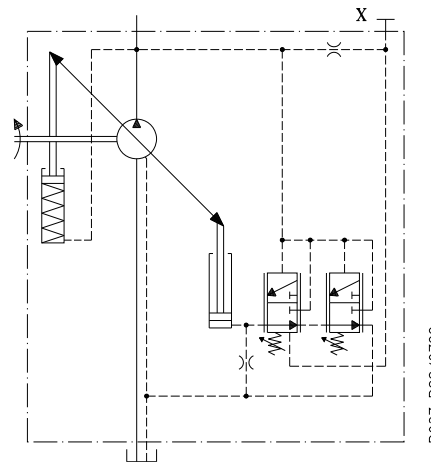
Curve at variable speed



LS0 - LS2 Hydraulic circuits



LS3 Hydraulic circuits



TECHNICAL DATA

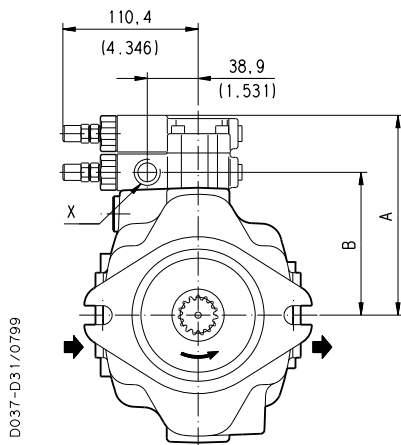
Pump type	ΔQ_{max}
	l/min
LVP 30	0,9
LVP 48	1,7
LVP 75	2,5

MOUNTING POSITIONS AND DIMENSIONS (flow compensator)

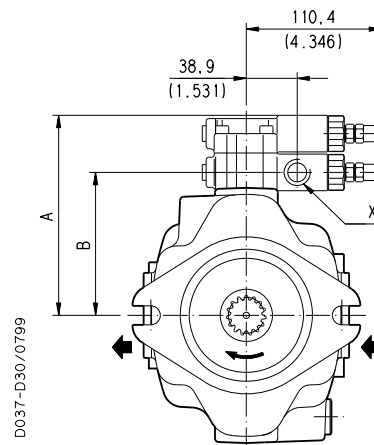
LS

Side ports

Anti-clockwise rotation

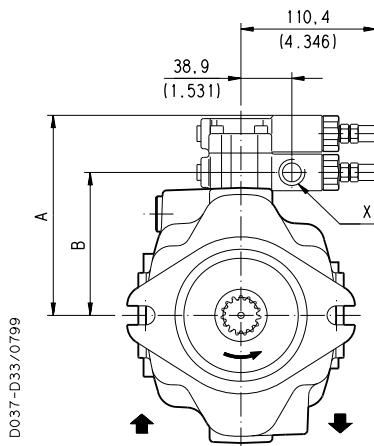


Clockwise rotation

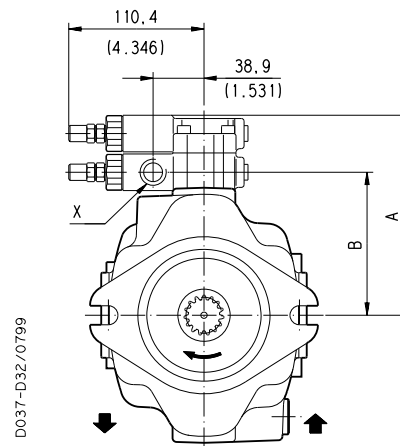


Rear ports

Anti-clockwise rotation



Clockwise rotation



Pump type	A	B
	mm (in)	mm (in)
LVP 30	144 (5.669)	100 (3.937)
LVP 48	153 (6.024)	109 (4.291)
LVP 75	165 (6.496)	122 (4.803)

X: Load sensing port. Dimension on page 12

NOTES: For different mounting positions, please consult our sales department.

TORQUE LIMITER

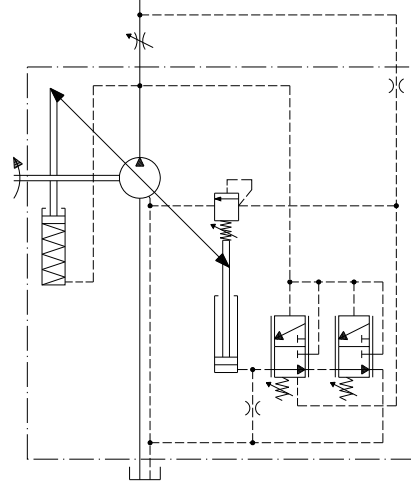
RN

Regulates the pump displacement according to the system pressure, to maintain the pre-adjusted torque value and protect the prime mover from overload.

To have the best torque limiter regulation, the minimum working pressure should be at least 80 bar.

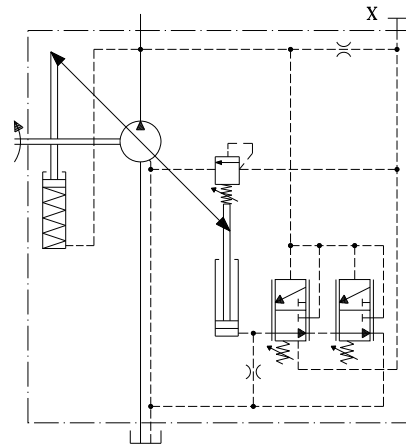
In the order of the torque limiter please specify the requested value of power:
(eg. 10 kW at 1500 min⁻¹)

RN0 - Standard



D037-D50/1099

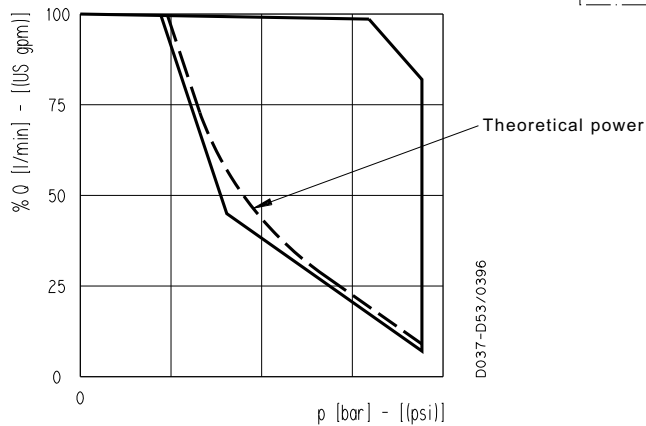
RN1 - Internal pilot



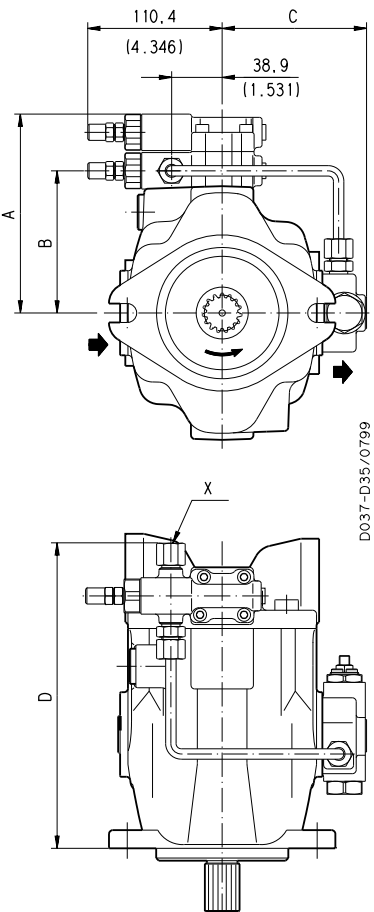
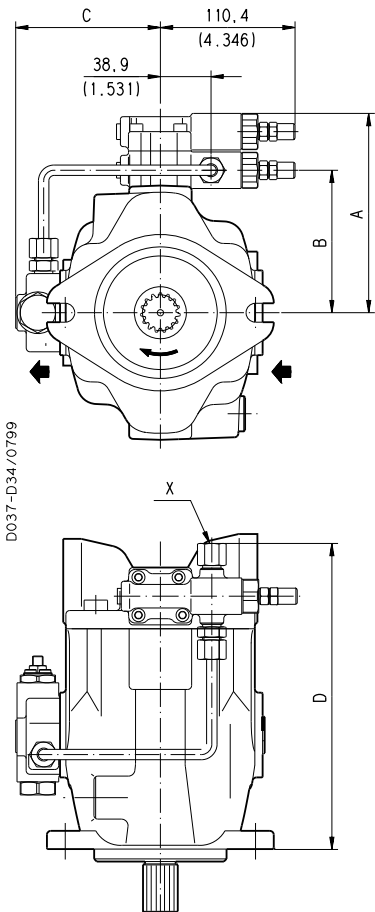
D037-D89/1099

OPERATING CURVES

This curve has been obtained at the speed of 1500 min⁻¹ and oil temperature 50 °C.



D037-D53/0396

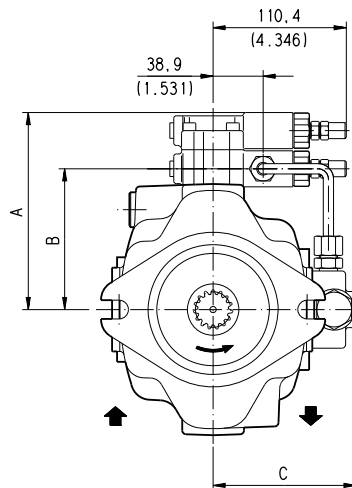
MOUNTING POSITIONS AND DIMENSIONS (torque limiter)	RN																								
Side ports																									
<p>Anti-clockwise rotation</p> 	<p>Clockwise rotation</p> 																								
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Pump type</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> <tr> <th>mm (in)</th> <th>mm (in)</th> <th>mm (in)</th> <th>mm (in)</th> </tr> </thead> <tbody> <tr> <td style="background-color: #e91e63; color: white;">LVP 30</td> <td>144 (5.669)</td> <td>100 (3.937)</td> <td>104 (4.094)</td> <td>211 (8.307)</td> </tr> <tr> <td style="background-color: #e91e63; color: white;">LVP 48</td> <td>153 (6.024)</td> <td>109 (4.291)</td> <td>111 (4.370)</td> <td>235 (9.252)</td> </tr> <tr> <td style="background-color: #e91e63; color: white;">LVP 75</td> <td>165 (6.496)</td> <td>122 (4.803)</td> <td>120 (4.724)</td> <td>258 (10.157)</td> </tr> </tbody> </table> <p style="text-align: center; margin-top: 5px;">X: Load sensing port. Dimension on page 12</p>		Pump type	A	B	C	D	mm (in)	mm (in)	mm (in)	mm (in)	LVP 30	144 (5.669)	100 (3.937)	104 (4.094)	211 (8.307)	LVP 48	153 (6.024)	109 (4.291)	111 (4.370)	235 (9.252)	LVP 75	165 (6.496)	122 (4.803)	120 (4.724)	258 (10.157)
Pump type	A		B	C	D																				
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<p>NOTES: For different mounting positions, please consult our sales department.</p>																									

MOUNTING POSITIONS AND DIMENSIONS (torque limiter)

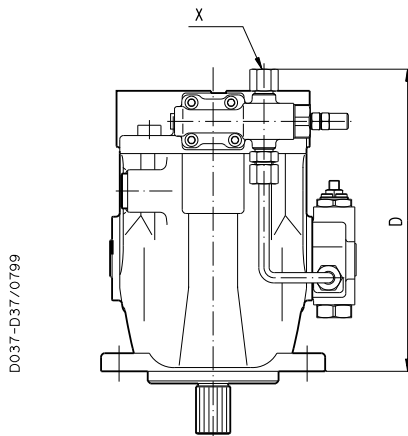
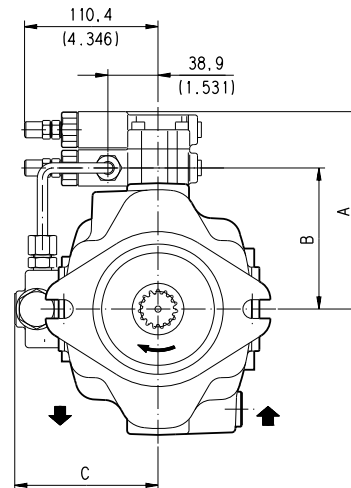
RN

Rear ports

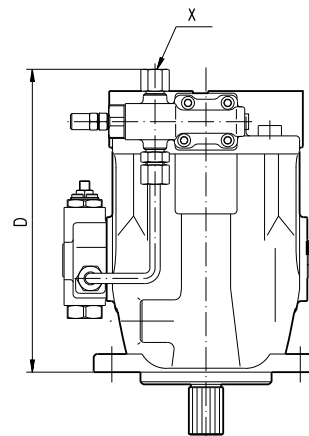
Anti-clockwise rotation



Clockwise rotation



D037-D37/0799



D037-D36/0799

Pump type	A	B	C	D
	mm (in)	mm (in)	mm (in)	mm (in)
LVP 30	144 (5.669)	100 (3.937)	104 (4.094)	211 (8.307)
LVP 48	153 (6.024)	109 (4.291)	111 (4.370)	235 (9.252)
LVP 75	165 (6.496)	122 (4.803)	120 (4.724)	258 (10.157)

X: Load sensing port. Dimension on page 12

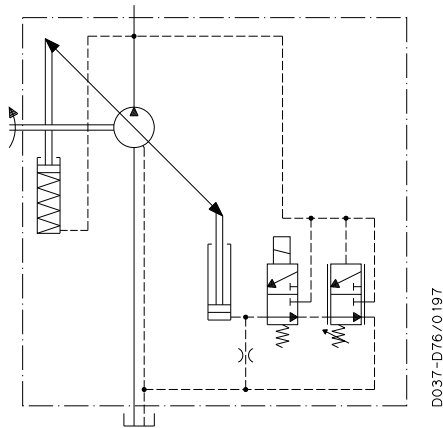
NOTES: For different mounting positions, please consult our sales department.

060-080

UNLOADING VALVE

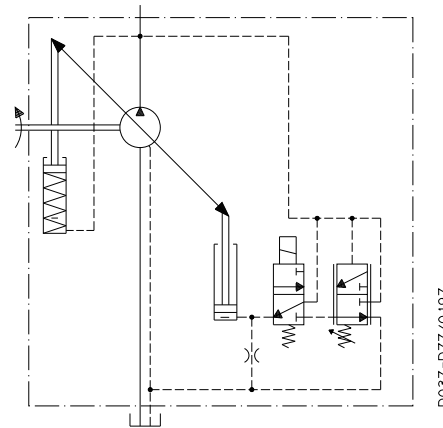
U..

NC (normally closed)



With the valve NC type (normally closed), energizing the solenoid valve the displacement is reset and the pump is unloaded.

NA (normally open)



With the valve NA type (normally open), energizing the solenoid valve the pump is sent to the maximum displacement.

Notes

Unloading valve can be supplied only with pressure compensator RP..

Voltages value availability

Regulator type	Arrangement	Volt
U1	NC	12 V D.C.
U2	NC	24 V D.C.
U3	NC	24 V A.C.
U4	NC	110 V A.C.
U5	NC	220 V A.C.
U6	NA	12 V D.C.
U7	NA	24 V D.C.
U8	NA	24 V A.C.
U9	NA	110 V A.C.
U10	NA	220 V A.C.

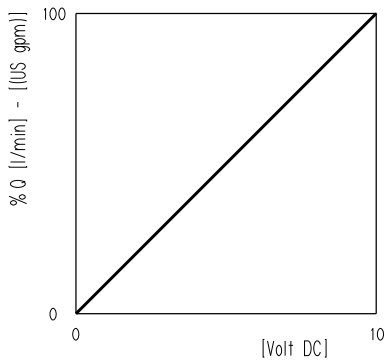
ELECTROHYDRAULIC SERVOCONTROLS

S...

In this line of servocontrols, the displacement variation is regulated by a proportional system in double closed loop with a feedback transducer on the swash plate and a feedback transducer on the proportional valve: in this way high performances and high dynamics can be reached. The regulated displacement have a linear relation with the electronic control signal 0 ÷ 10 Volt DC (see diagram below). The electronic driver can be separated, Eurocard type or integral on the pump.

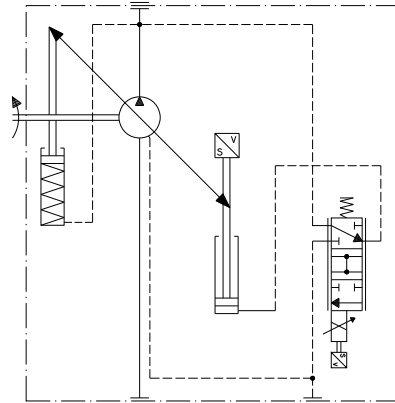
- S** Proportional flow servocontrol.
- SE** Proportional flow servocontrol with integral electronics, single 7-pins connector for electric supply and reference signals.
- SER** As above with sequence module RES to grant a minimum piloting pressure (18 bar) when the actual pressure of the system can fall under that value. This version can be used for the combined control of pressure and flow coupled with an electronic regulator in Eurocard format and with a pressure transducer which can be integral or separated.

Note: The minimum pressure to grant a correct functioning of the servocontrol in S and SE versions cannot be under 18 bar. Pumps with servocontrols type S and SE must be protected for safety with an external relief valve against pressure peaks. This is not necessary for version SER because the sequence module RES includes the maximum pressure protection.



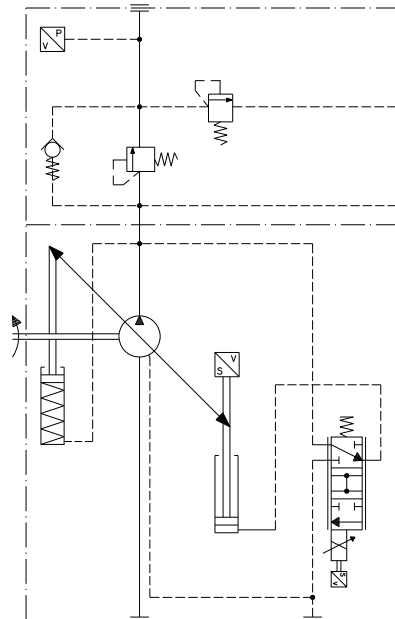
D037-101/1099

S - SE Hydraulic circuits



D037-D96/1099

SER Hydraulic circuits



D037-D97/1099

04/10.99

Technical data (only for pumps with servocontrols type S and SE)

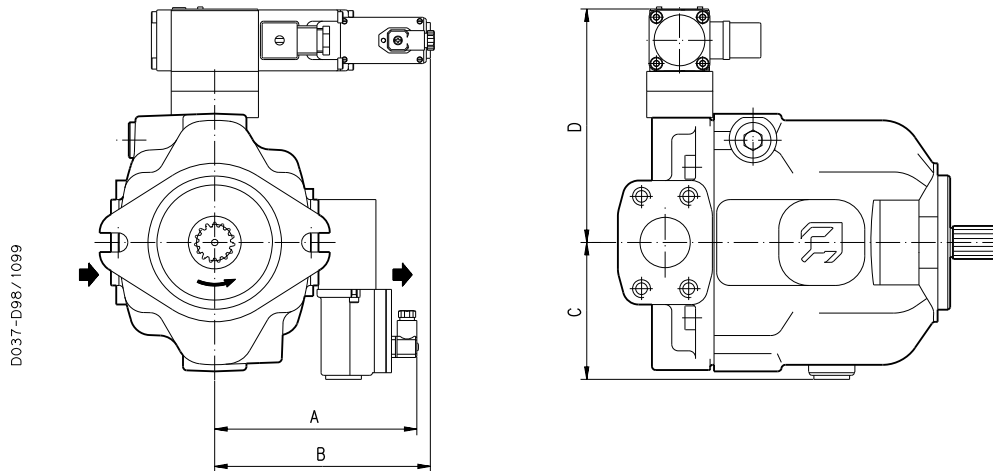
Coil resistance R at 20 °C	3 ÷ 3,3 Ω for standard 12 Volt (DC) coil
Relative duty factor	Countinuous rating (ED= 100 %)
Max. solenoid current	2,6 A for standard 12 Volt (DC) coil
Max. power	35 W

For different mounting positions, please consult our sales department.

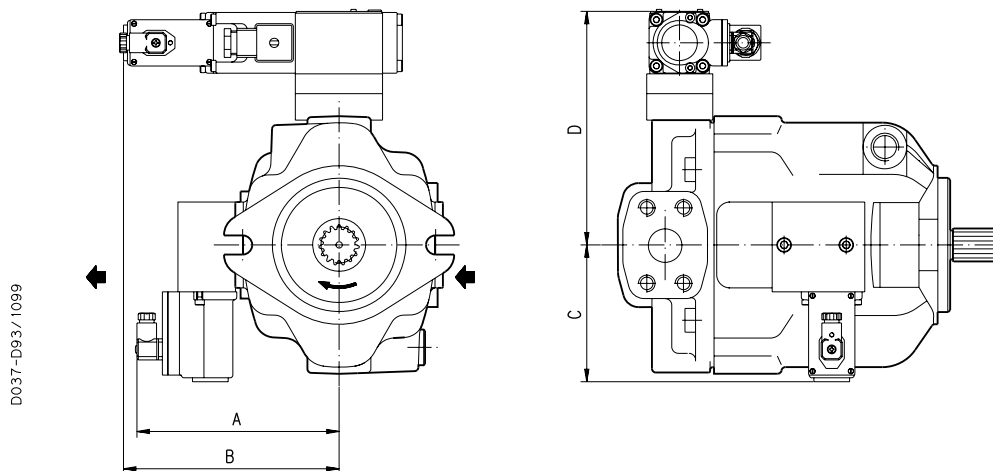
MOUNTING POSITIONS AND DIMENSIONS (electrohydraulic servocontrols)

S

Anti-clockwise rotation (side ports)



Clockwise rotation (side ports)



Pump type	A	B	C	D
	mm (in)	mm (in)	mm (in)	mm (in)
LVP 30	146,3 (5.760)	163 (6.417)	103,5 (4.075)	167,8 (6.606)
LVP 48	153 (6.024)			176,8 (6.961)
LVP 75	161,5 (6.358)			189,3 (7.453)

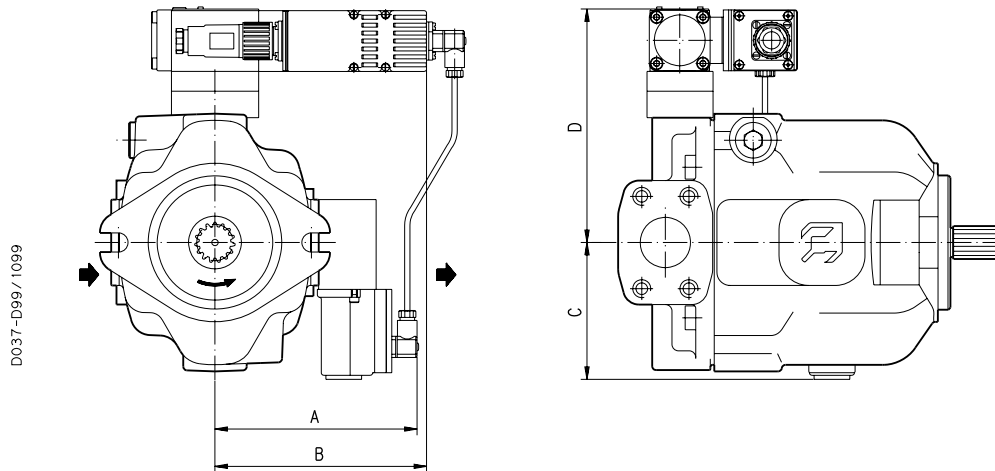
NOTES: For different mounting positions, please consult our sales department.

04/10.99

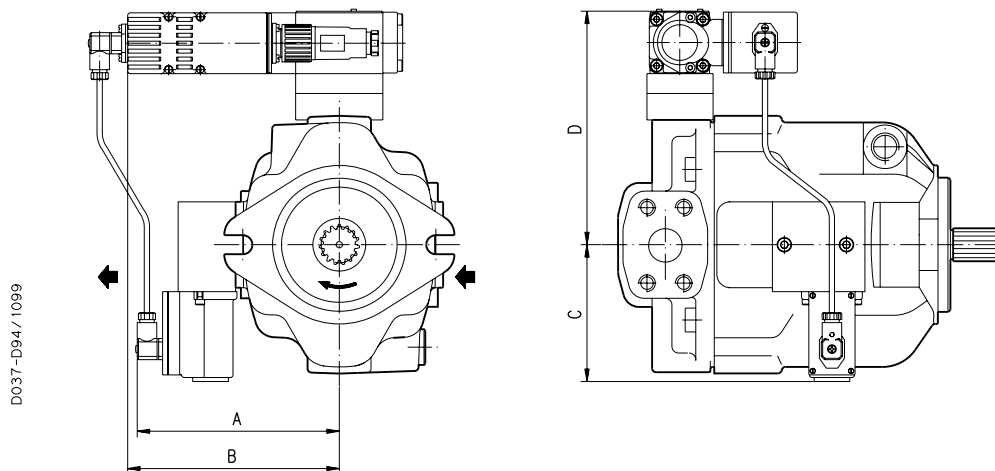
MOUNTING POSITIONS AND DIMENSIONS (electrohydraulic servocontrols)

SE

Anti-clockwise rotation (side ports)



Clockwise rotation (side ports)



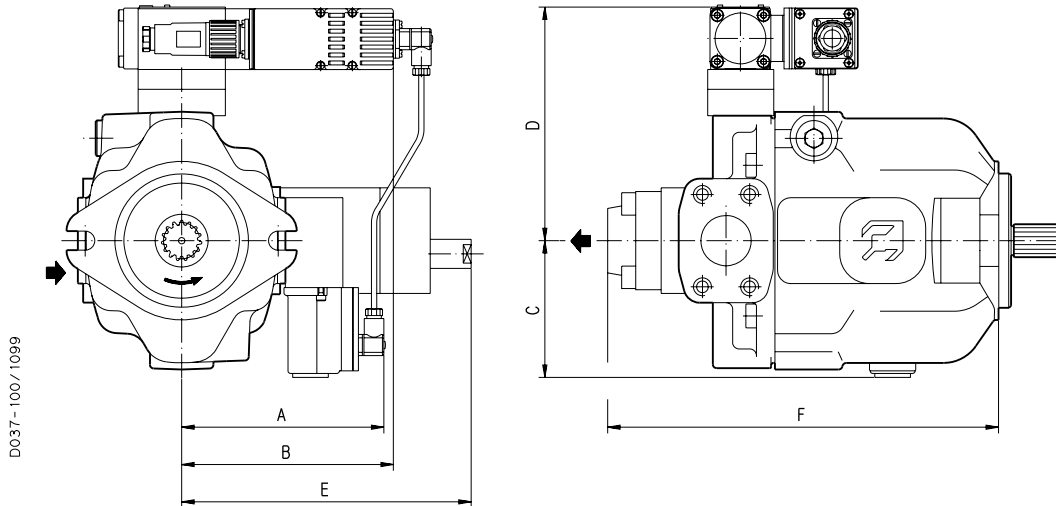
Pump type	A	B	C	D
	mm (in)	mm (in)	mm (in)	mm (in)
LVP 30	146,3 (5.760)	160 (6.299)	103,5 (4.075)	167,8 (6.606)
LVP 48	153 (6.024)			176,8 (6.961)
LVP 75	161,5 (6.358)			189,3 (7.453)

NOTES: For different mounting positions, please consult our sales department.

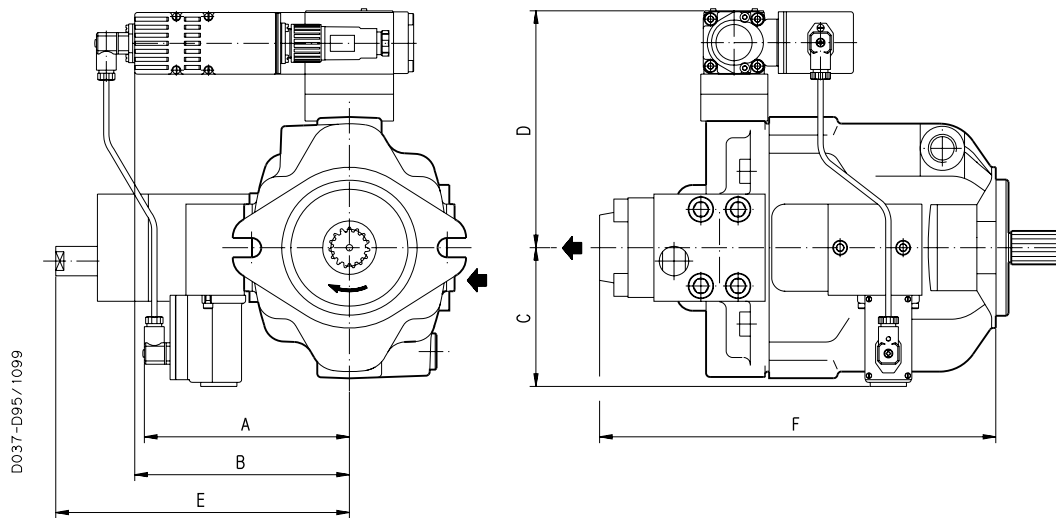
MOUNTING POSITIONS AND DIMENSIONS (electrohydraulic servocontrols)

SER

Anti-clockwise rotation (side ports)



Clockwise rotation (side ports)



Pump type	A	B	C	D	E
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
LVP 30	146,3 (5.760)	160 (6.299)	103,5 (4.075)	167,8 (6.606)	199,5 (7.854)
LVP 48	153 (6.024)			176,8 (6.961)	219 (8.622)
LVP 75	161,5 (6.358)			189,3 (7.453)	226 (8.898)

NOTES: For different mounting positions, please consult our sales department.

HOW TO ORDER SINGLE PUMPS

1	2	3	4	5	6	7	8	9	10
Pump type	Rotation	Drive shaft	Mounting flange	Ports position	Ports IN/OUT	Seals	Regulators	Additional options	Fluid
LVP 30	S	04	S5	L	MD/QB	N	RP0	E	...

1 Pump type (max displacement)		CODE
in ³ /rev	cm ³ /rev	
1.74	29	LVP 30
2.76	46	LVP 48
4.38	73	LVP 75

2 Rotation		CODE
Anti-clockwise		S
Clockwise		D

3 Drive shaft		CODE
SAE "B" spline (13 teeth)		04
SAE "B" straight		32
straight \varnothing 22		68
SAE "BB" spline (15teeth)		05
SAE "BB" straight		33
Straight \varnothing 25		69
SAE "C" spline (14 teeth)		06
SAE "C" straight		34
Straight \varnothing 32		70

4 Mounting flange		CODE
SAE "B" 2 holes		S5
ISO \varnothing 100		Z1
SAE "C" 2 holes		S7
ISO \varnothing 125		Z2

5 Ports position		CODE
Side		L
Rear		P

6 Inlet/outlet ports		CODE	
SAE FLANGED PORTS METRIC THREAD (SSM)			
Pump type	Nominal size		
	Inlet IN	Outlet OUT	
	SAE 3000	SAE 6000	
LVP 30	1"1/4	3/4"	MD/QB
LVP 48	1"1/2	1"	ME/QC
LVP 75	2"	1"1/4	MF/QD
SAE FLANGED PORTS UNC THREAD (SSS)			
Pump type	Nominal size		
	Inlet IN	Outlet OUT	
	SAE 3000	SAE 6000	
LVP 30	1"1/4	3/4"	SD/VB
LVP 48	1"1/2	1"	SE/VC
LVP 75	2"	1"1/4	SF/VD

CODE	Seals	7
N	Buna (standard)	
V	Viton	

CODE	Regulators	8
RP0	Pressure compensator setting range 20 - 350 bar (a)	
LS0	Flow compensator (b)	
LS2	Flow compensator for remote control (b)	
LS3	Flow compensator for internal control (b)	
RN0	Torque limiter - standard	
RN1	Torque limiter - internal pilot	
S	Proportional flow servocontrol (c)	
SE	Proportional flow servocontrol with integral electronics (c)	
SER	Proportional flow servocontrol with integral electronics and seq. module RES (c)	

CODE	Additional options (d)	9
U..	Unloading valve (e)	
E	Max. displacement limiter (f)	
F	Min. displacement limiter (f)	
G	Min. and max. displacement limiter (f)	

CODE	Fluid	10
...	Mineral oil (no CODE)	
H	HF fluid (please consult our sales department)	

- a) Standard setting 280 bar.
- b) Differential pressure standard setting 14 bar (setting range 10 - 40 bar).
- c) For more informations, please consult our sales department.
- d) For additional options, please consult our sales department.
- e) For voltages availability please see page 20.
- f) Max. up to 50% of the displacement.

ORDER EXAMPLE

SINGLE PUMPS

Standard pump

LVP 30 S-04 S5-L MD/QB-N-LS2

Pump with special features

LVP 30 S-04 S5-L MD/QB-N-LS2-E H

ASSEMBLED MULTIPLE PUMPS

Standard double pump

LVP 30-04 S5-L MD/QB-RP0-AS5 04 / 30-04 S5-L MD/QB-N-LS2 S

Double pump with special features

LVP 75-06 S7-L MF/QD-RP0-E H-AS5 04 / 30-04 S5-L MD/QB-N-LS2 S

Double Plata pump with different series pumps

LVP 30-04 S5-L MD/QB-RP0-E-AS1 03 / PLP20.4-03 S1-L EA/EA-N S

INDIVIDUAL SECTIONS

Front section

LVP 30 S-04 S5-L MD/QB-N-RP0-AS5 04

Rear section

LVP 30 S-04 S5-L MD/QB-N-LS2



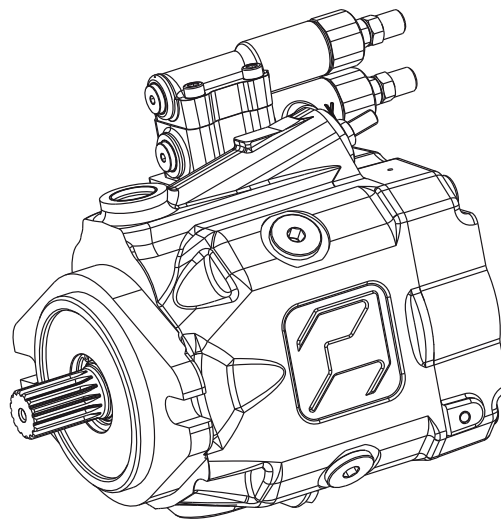
Variable displacement axial piston pumps, for open circuit

DISPLACEMENTS

From	2.75 in ³ /rev (45 cm ³ /rev)
To	5.12 in ³ /rev (84 cm ³ /rev)

MAX SPEED

3000 min⁻¹



PRESSURE

Max. continuous	4060 psi (280 bar)
Max. intermittent	4568 psi (315 bar)
Max. peak	5075 psi (350 bar)

APPLICATION

Medium, high pressure

SECTOR

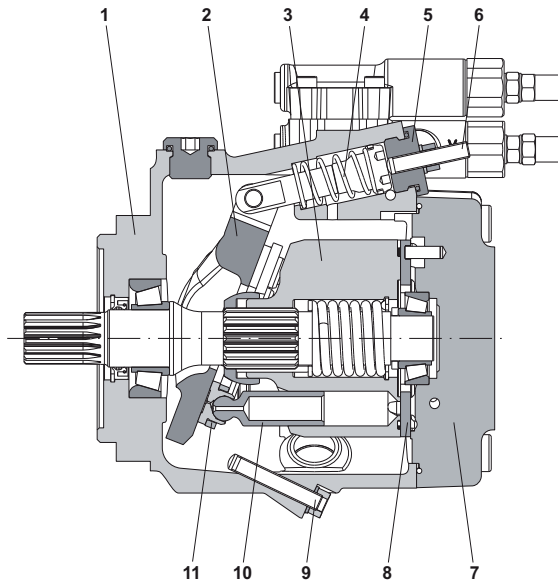
Mobile / Industrial

- Compact design
- Longer service life
- Low noise emission
- Max. and min. displacement limiter
- Drive shaft bearing suitable for radial and axial loads.

Variable displacement axial piston pumps swash plate design ideally suited for medium and high pressure open circuit applications. The compact design allows to be mounted directly on engine motors.



GENERAL INFORMATIONS / INSTRUCTIONS



- 1 - Pump body
- 2 - Swash plate
- 3 - Cylinders block
- 4 - Counterbalancing spring
- 5 - Plug
- 6 - Max. displacement limiter
- 7 - Cover
- 8 - Valve plate
- 9 - Min. displacement limiter
- 10 - Piston
- 11 - Piston guide plate

DIRECTION OF ROTATION

Clockwise or anti-clockwise defined looking at the drive shaft.

HYDRAULIC FLUID

Mineral oil based hydraulic fluid HL or HLP type conforming to DIN 51524 and fire resistant fluids HF type according to the technical data shown in the tables on page 4. The system should be designed to prevent aeration of the hydraulic fluid.

FLUID VISCOSITY

The fluid viscosity range for optimal use of MVP pump is between 77 and 163 SSU (15 and 35 cSt).

Functional limit conditions are:

max.: 6818 SSU (1500 cSt) at start up at -13 °F (-25 °C) with straight and short inlet line.

min.: 58 SSU (10 cSt) at maximum temperature of 194 °F (90 °C)

FILTRATION

To ensure the optimal performance and the maximum life to the pump, the hydraulic fluid must have and maintain a fluid contamination within the values shown in the table below.

Working pressure psi (bar)	$\Delta p < 2030$ (140)	$2030 < \Delta p < 3045$ (140) (210)	$\Delta p > 3045$ (210)
Contamination class NAS 1638	9	8	7
Contamination class ISO 4406:1999	20/18/15	19/17/14	18/16/13
Achieved with filter $\beta_{10(c)} \geq 75$ according to ISO 16889	10 μm	10 μm	10 μm

Casappa recommends to use its own production filters:



INSTALLATION

Check that the maximum coupling eccentricity stays within 0.0098 in (0,25 mm) to reduce shaft loads due to misalignment. It is advised to use a flexible coupling suitable to absorb eventual rotational shock. For applications with axial and radial loads exceeding published standards, consult our sales department. The direction of rotation of the pump must agree with the prime mover rotation. Before installation, the case of the pump must be filled with fluid.

LINES

The lines must have a major diameter which is at least as large as the diameter of pump 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.

Before connecting the lines, remove any plugs and make sure that the lines are perfectly clean.

Check that the drain line is dimensioned in a way to guarantee a case pressure lower than 22 psi (1,5 bar) absolute.

The drain line must be connected directly (no filter, no valves, no oil cooler) to the tank and must terminate below the oil level. Check that the dimensions of the suction line guarantee a pressure equal or superior to 24 in Hg (0,8 bar). Inlet pressure less than 24 in Hg (0,8 bar) could cause an increase of noise emission, decreasing pump performance and a reduction of its life expectancy.

STARTING UP

Check that all connections are secure and that the entire system is completely clean. Add oil to the tank always using a filter. Bleed the air from the circuit to help the filling. 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. Gradually increase the pressure and speed of rotation up to the pre-set operating levels, which must stay within the stated limits as specified in the catalogue.

MOUNTING POSITIONS

Standard pump is available with the D1 drain hole open and D2, D3, D4 plugged.

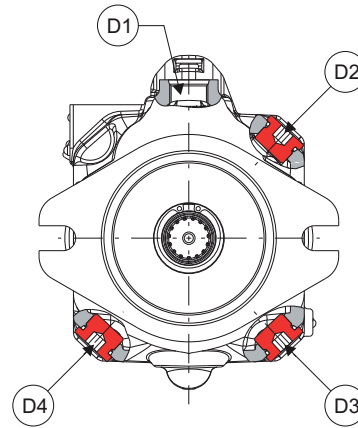
Before installation fill the pump with hydraulic oil for at least 3/4 of the volume keeping it in horizontal position.

The pump can be mounted in a horizontal or vertical position. The highest of the case drain ports must be used to keep the required filling oil.

The pump can be located above the oil level if the absolute pressure at the inlet port stays within the stated limits.

With exception of pump mounted below the oil level, we recommend to interpose a baffle plate between inlet and drain line.

To reduce further noise emission, we recommend that the pump be mounted below the oil level and avoid suction lines with sharp restrictions.



HORIZONTAL MOUNTING		VERTICAL MOUNTING	
	<p>Arrangement inside the tank. Minimum oil level equal or above the pump mounting face. $A \geq 7.874$ in (200 mm)</p>		<p>Arrangement inside the tank. Minimum oil level equal or above the pump mounting face. $A \geq 7.874$ in (200 mm)</p>
	<p>Arrangement inside the tank. Minimum oil level below the pump mounting face. Min. inlet pressure= 24 in Hg (0,8 bar abs.) $B \leq 31.4961$ in (800 mm) $C = 7.874$ in (200 mm)</p>		<p>Arrangement inside the tank. Minimum oil level below the pump mounting face. Min. inlet pressure= 24 in Hg (0,8 bar abs.) $B \leq 31.4961$ in (800 mm) $C = 7.874$ in (200 mm)</p>
	<p>Arrangement outside the tank above oil level. Min. inlet pressure= 24 in Hg (0,8 bar abs.) $B \leq 31.4961$ in (800 mm) $C = 7.874$ in (200 mm)</p>		<p>Arrangement outside the tank above oil level. Min. inlet pressure= 24 in Hg (0,8 bar abs.) $B \leq 31.4961$ in (800 mm) $C = 7.874$ in (200 mm)</p>
	<p>Arrangement outside the tank below oil level. $C = 7.874$ in (200 mm)</p>		

IN= inlet line - D1= drain line - A= min. distance between the line - B+C= permissible suction height - C= line immersion depth

TECHNICAL DATA

Technical data with mineral oil

HL or HLP mineral oil based hydraulic fluid to DIN 51524

Pump type MVP			48•45	48•53	60•60	60•72	60•84
Max. displacement (theor.) V_{max}	in^3/rev (cm^3/rev)		2.75 (45)	3.23 (53)	3.66 (60)	4.39 (72)	5.12 (84)
Inlet pressure	in Hg (bar abs.)	min.	24 (0.8)				
		psi (bar abs.)	max. 363 (25)				
Max. outlet pressure p_{max}	psi (bar)	continuous	4060 (280)	3625 (250)	4060 (280)	4060 (280)	3625 (250)
		intermittent	4568 (315)	4060 (280)	4568 (315)	4568 (315)	4060 (280)
		peak	5075 (350)	4568 (315)	5075 (350)	5075 (350)	4568 (315)
Max. drain line pressure	psi (bar abs.)		22 (1,5)				
Max. speed n_{max}	$[\text{min}^{-1}]$	@ V_{max} (1)	3000	2800	2700	2500	2500
Max. delivery (theor.)	US gpm (l/min)	@ n_{max}	35.7 (135)	39.2 (148,4)	42.8 (162)	47.6 (180)	55.5 (210)
		@ 1800 min^{-1}	21.4 (81)	25.2 (95,4)	28.5 (108)	34.2 (129,6)	39.9 (151,2)
		@ 1500 min^{-1}	17.8 (67,5)	21.0 (79,5)	23.8 (90)	28.5 (108)	33.3 (126)
		@ n_{max}	84.4 (63)	82.8 (61,8)	101.3 (75,6)	112.6 (84,0)	117.3 (87,5)
Max. power (theor.) ($\Delta p = p_{max}$ cont.)	HP (kW)	@ 1800 min^{-1}	50.7 (37,8)	53.3 (39,8)	67.5 (50,4)	81.0 (60,5)	84.4 (63,0)
		@ 1500 min^{-1}	42.2 (31,5)	44.4 (33,1)	56.3 (42,0)	67.5 (50,4)	70.4 (52,5)
		@ p_{max} cont.	1775 (200,5)	1867 (210,9)	2367 (267,4)	2840 (320,9)	2958 (334,2)
Max. torque (theor.)	lbf in (Nm)	@ 1450 psi (100 bar)	634 (71,6)	747 (84,4)	845 (95,5)	1014 (114,6)	1183 (133,7)
		Moment of inertia	$\text{ft}^2 \text{ lbs}$ (kgm^2)	0.07 (0,003)	0.07 (0,003)	0.19 (0,008)	0.19 (0,008)	0.19 (0,008)
Fill capacity	US gallons (l)		0.26 (1)	0.26 (1)	0.34 (1,3)	0.34 (1,3)	0.34 (1,3)
Mass (without oil)	lbs (kg)		41.9 (19)	41.9 (19)	48.5 (22)	48.5 (22)	48.5 (22)
Seals			N= Buna			V= Viton	
Operating temperature	°F (°C)	min.	-13 (-25)			14 (-10)	
		max. cont.	176 (+80)			230 (110)	
		max. peak	212 (+100)			257 (125)	

(1) = with an inlet pressure of 14.5 psi (1 bar abs).

Reducing the displacement or increasing the inlet pressure the max. speed change. See table at page 6.

For different working conditions, please consult our sales department.

TECHNICAL DATA

Technical data restrictions with fire resistant fluid

Water - glycol (35 ÷ 55 % of water) - HFC

Pump type MVP			48•45	48•53	60•60	60•72	60•84
Max. outlet pressure p_{max}	psi (bar)	continuous	2465 (170)				
		intermittent	2683 (185)				
		peak	2900 (200)				
Max. speed n_{max}	$[min^{-1}]$	@ $V_{max} (1)$	2000	2000	1700	1700	1700
Seals			N= Buna - V= Viton				
Operating temperature	°F (°C)	min.	0				
		max.	194 (90)				
Life bearing	%		75 %				

Phosphate ester - HFD

Pump type MVP			48•45	48•53	60•60	60•72	60•84
Max. outlet pressure p_{max}	psi (bar)	continuous	2900 (200)				
		intermittent	3190 (220)				
		peak	3480 (240)				
Max. speed n_{max}	$[min^{-1}]$	@ $V_{max} (1)$	2000	2000	1700	1700	1700
Seals			V= Viton				
Operating temperature	°F (°C)	min.	14 (-10)				
		max.	122 (50)				
Life bearing	%		90 %				

TECHNICAL DATA

Design calculations for pump

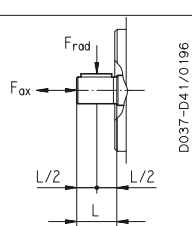
Q	US gpm (l/min)	Flow
M	lbf in (Nm)	Torque
P	HP (kW)	Power
V	in ³ /rev (cm ³ /rev)	Displacement
n	min ⁻¹	Speed
Δp	psi (bar)	Pressure
$\eta_v = \eta_v(V, \Delta p, n)$		Volumetric efficiency
$\eta_m = \eta_m(V, \Delta p, n)$		Mechanical efficiency
$\eta_t = \eta_v \cdot \eta_m$		Overall efficiency

$$Q = V \cdot \eta_v \cdot n \cdot 10^{-3} \quad [\text{l/min}]$$

$$M = \frac{\Delta p \cdot V}{62,83 \cdot \eta_m} \quad [\text{Nm}]$$

$$P = \frac{\Delta p \cdot V \cdot n}{600 \cdot 1000 \cdot \eta_t} \quad [\text{kW}]$$

Max. permissible loading on drive shaft

Max. permissible loading on drive shaft		MVP 48•45	MVP 48•53	MVP 60•60	MVP 60•72	MVP 60•84
F_{ax} Axial force		337 (1500)	337 (1500)	450 (2000)	450 (2000)	450 (2000)
F_{rad} Radial force	@ L/2	337 (1500)	337 (1500)	675 (3000)	675 (3000)	675 (3000)

% Variation of the max. speed in relation of the inlet pressure and/or displacement reduction

Inlet pressure psi (bar abs.)	Displacement %					% Variation of the max. speed
	65	70	80	90	100	
12 (0,8)	120	115	105	97	90	
13 (0,9)	120	120	110	103	95	
14.5 (1,0)	120	120	115	107	100	
17 (1,2)	120	120	120	113	106	
20 (1,4)	120	120	120	120	112	
23 (1,6)	120	120	120	120	117	
29 (2,0)	120	120	120	120	120	

Example 1

Displacement: 100 %
Speed: 100 %
Inlet pressure: 14.5 psi (1,0 bar abs.)

Example 2

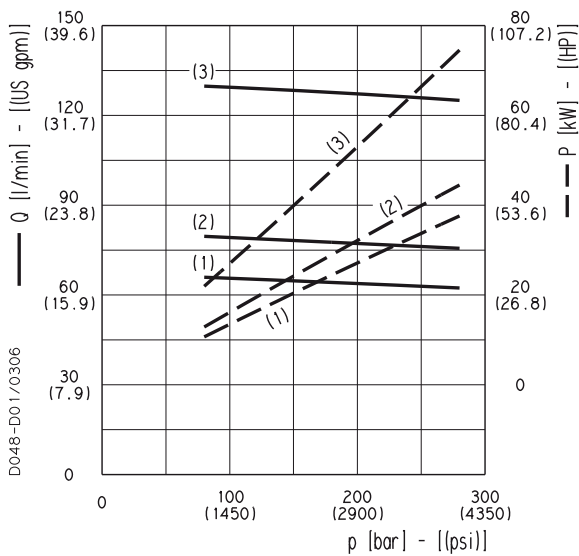
Displacement: 80 %
Inlet pressure: 14.5 psi (1,0 bar abs.)
Speed: 115 %

Delivery / power (max. displacement)

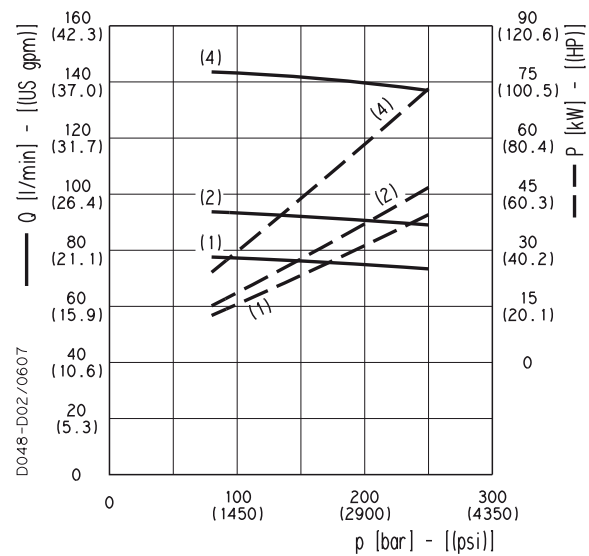
Each curve has been obtained at 122 °F (50 °C), using oil with viscosity 210 SSU (46 cSt) at 104 °F (40 °C) and at these speed:

- (1) 1500 min⁻¹ (3) 3000 min⁻¹
- (2) 1800 min⁻¹ (4) 2800 min⁻¹

MVP48•45



MVP48•53

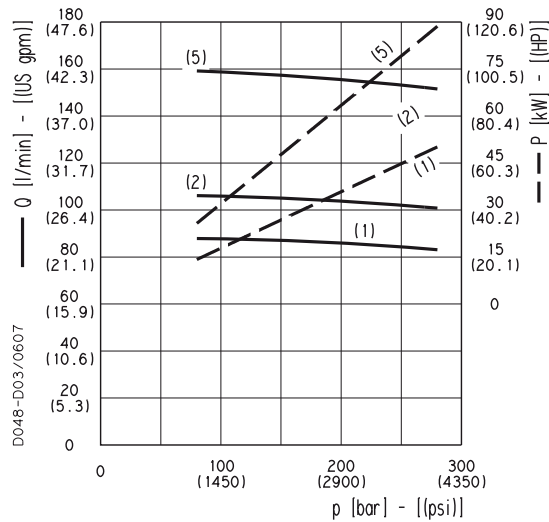


Delivery / power (max. displacement)

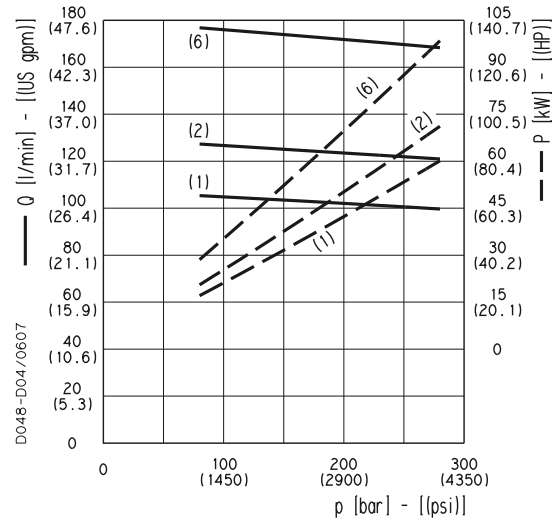
Each curve has been obtained at 122 °F (50 °C), using oil with viscosity 210 SSSU (46 cSt) at 104 °F (40 °C) and at these speed:

- (1) 1500 min⁻¹
- (2) 1800 min⁻¹
- (5) 2700 min⁻¹
- (6) 2500 min⁻¹

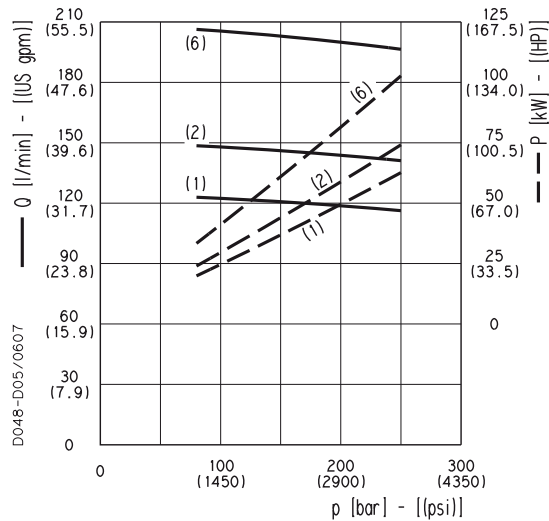
MVP60•60



MVP60•72

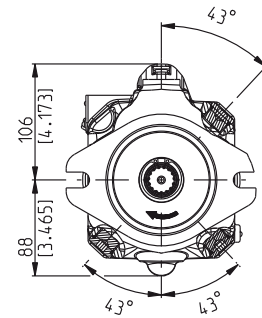
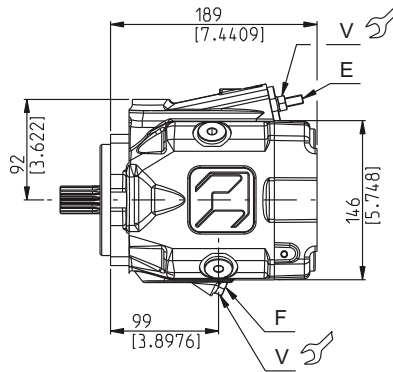
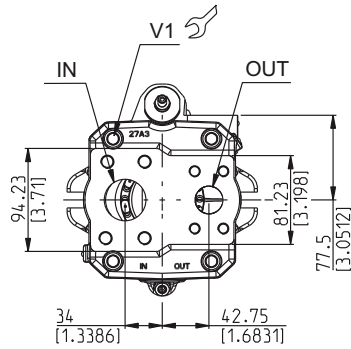


MVP60•84

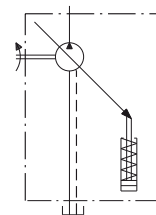
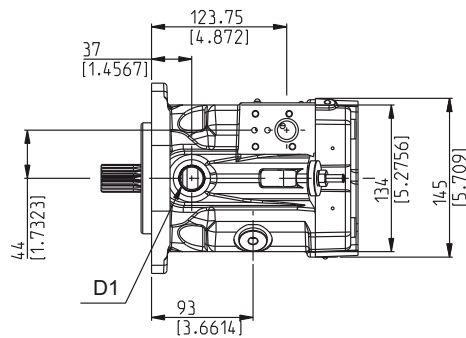
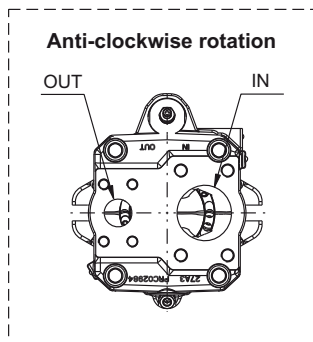


DIMENSIONS

MVP 48



DCAT_048_003



E: Max. displacement limiter
F: Min. displacement limiter

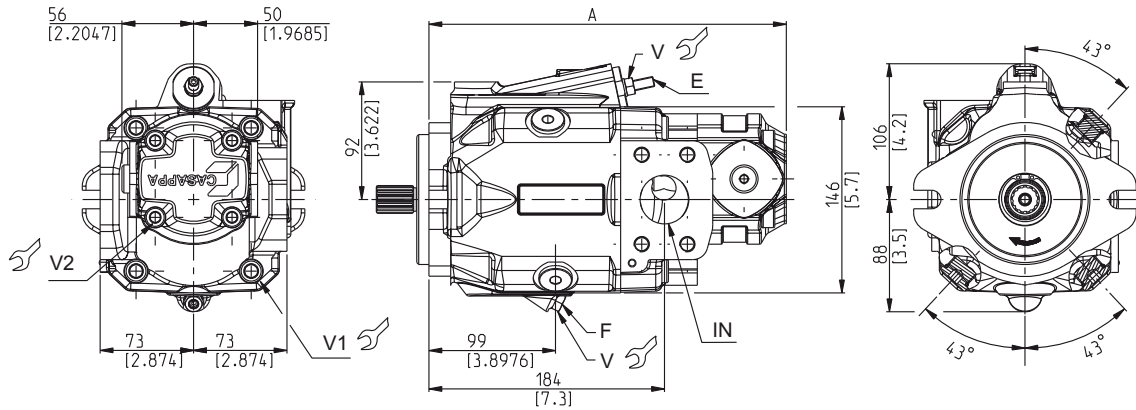
Screws tightening torque Nm (lbf in)	
V	V1
10 ±1 (80 ÷ 97)	130 ±13 (1036 ÷ 1266)

PORTS		
IN	OUT	D1
Nominal size		Drain port
1" 1/2	1"	

Dimensions at page 16

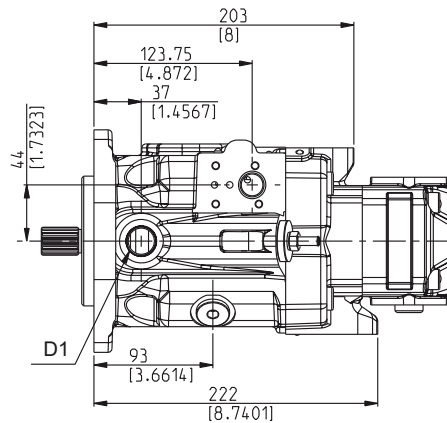
MULTIPLE PUMPS DIMENSIONS

MVP 48/KP20



Screws tightening torque Nm (lbf in)		
V	V1	V2
10 ±1 (80 ÷ 97)	130 ±13 (1036 ÷ 1266)	70 ±7 (558 ÷ 682)

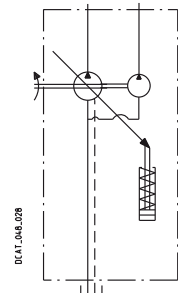
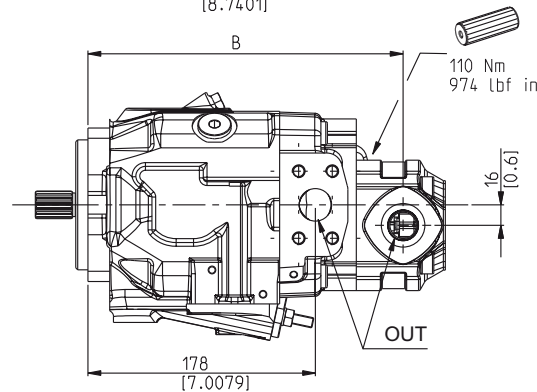
DCAT_048_025



E: Max. displacement limiter
F: Min. displacement limiter

PORTS			
IN	OUT		D1
MVP	MVP	KP20	Drain port
Nominal size			
1" 1/2	1"	1/2"	

Dimensions at page 16

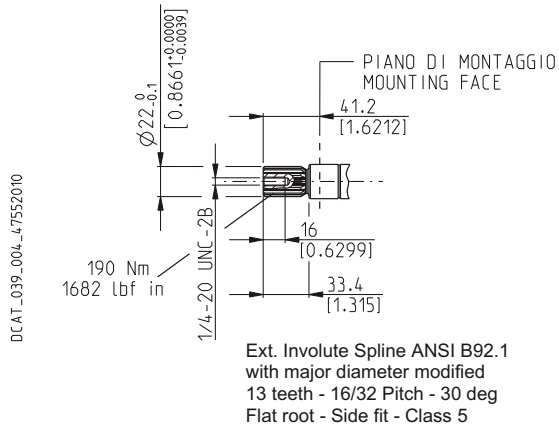


		Gear pump KAPPA							Dimensions	
Pump type	Mounting flange	20•4	20•6,3	20•8	20•11,2	20•14	20•16	20•20	mm (in)	
MVP 48	S5	261,5 (10.2953)	264 (10.3937)	266,5 (10.4921)	270 (10.6299)	274 (10.7874)	280 (11.0236)	286 (11.2598)	mm (in)	A
		234 (9.2126)	236,5 (9.3110)	239 (9.4094)	242,5 (9.5472)	241 (9.4882)	246,5 (9.7047)	253 (9.9606)	mm (in)	B

SAE "B" SPLINE

04

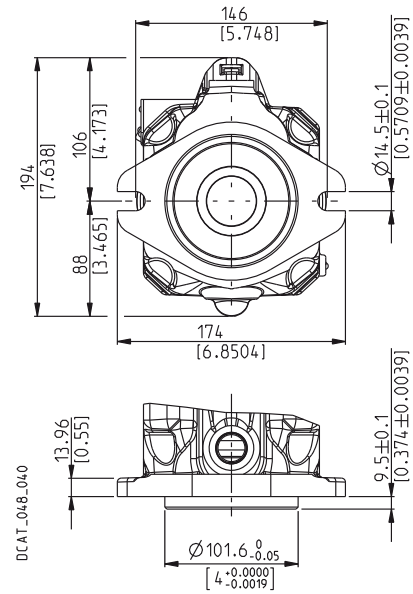
Mounting face refer to flange code **S5**



SAE "B" 2 HOLES

S5

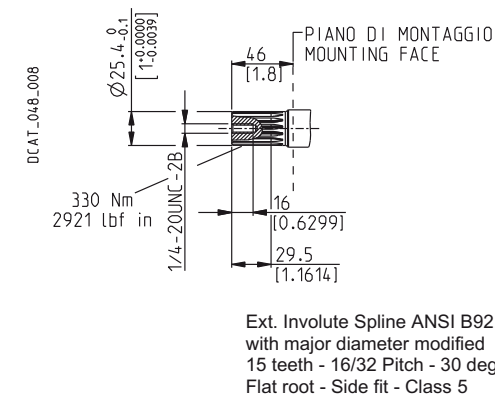
Conforms to SAE J744



SAE "BB" SPLINE

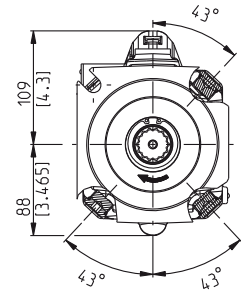
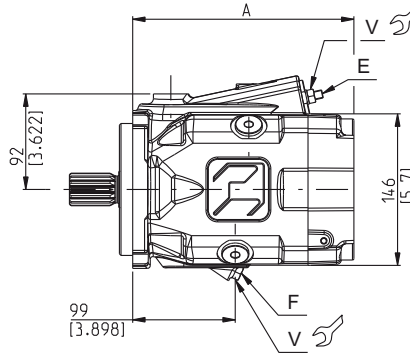
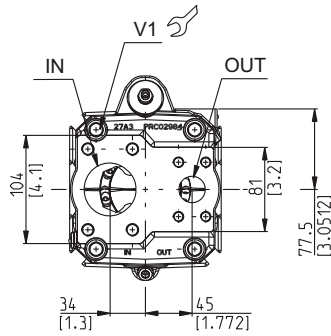
05

Mounting face refer to flange code **S5**

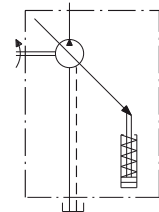
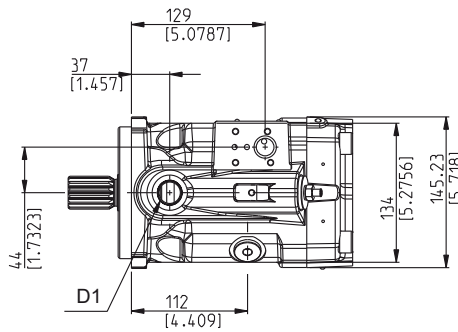
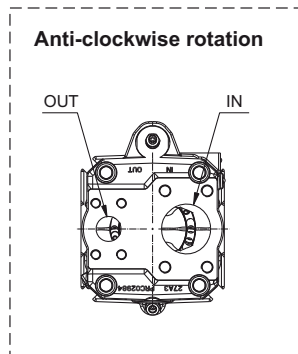


DIMENSIONS

MVP 60



DCAT_048_005



E: Max. displacement limiter
F: Min. displacement limiter

Mounting flange	A
	mm (in)
S5 SAE "B"	213 (8.3858)
S8 SAE "C"	217 (8.5434)

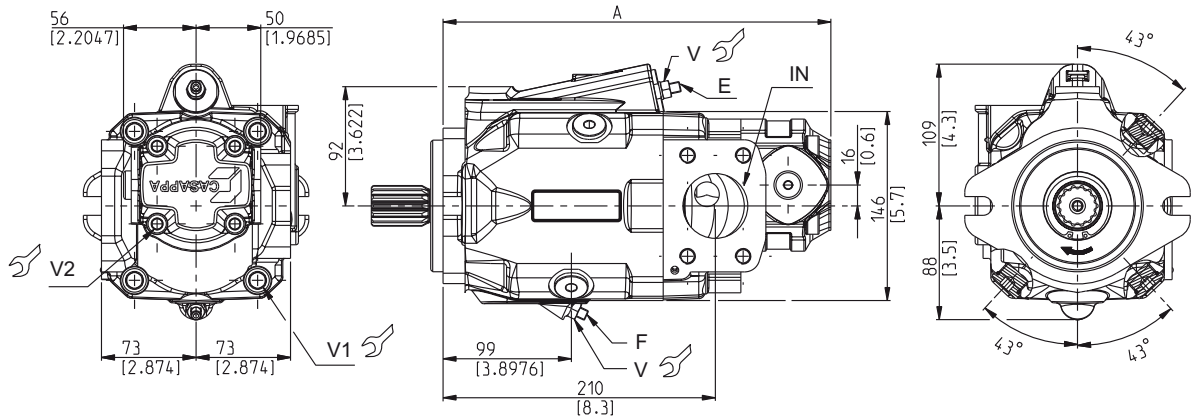
Screws tightening torque Nm (lbf in)	
V	V1
10 ±1 (80 ÷ 97)	130 ±13 (1036 ÷ 1266)

PORTS		
IN	OUT	D1
Nominal size		Drain port
1" 1/2	1"	

Dimensions at page 16

MULTIPLE PUMPS DIMENSIONS

MVP 60/KP20



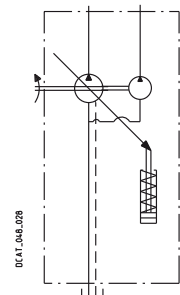
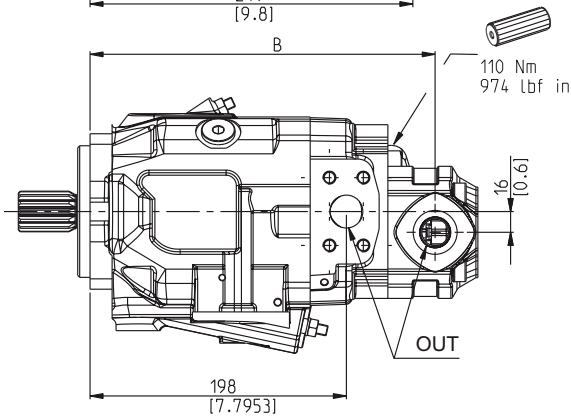
Screws tightening torque Nm (lbf in)		
V	V1	V2
10 ±1 (80 ÷ 97)	130 ±13 (1036 ÷ 1266)	70 ±7 (558 ÷ 682)

DCAT_048_029

E: Max. displacement limiter
F: Min. displacement limiter

PORTS			
IN	OUT		D1
MVP	MVP	KP20	
Nominal size			Drain port
1" 1/2	1"	1/2"	

Dimensions at page 16



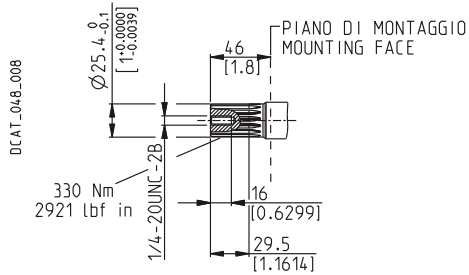
DCAT_048_028

Pump type	Mounting flange	Gear pump KAPPA							Dimensions	
		20•4	20•6,3	20•8	20•11,2	20•14	20•16	20•20	mm (in)	A
MVP 60	S5 - S8	281,5 (11.0827)	284 (11.1811)	286,5 (11.2795)	290 (11.4173)	294 (11.5748)	300 (11.8110)	306 (12.0472)	mm (in)	A
		254 (10.0000)	256,5 (10.0984)	259 (10.1969)	262,5 (10.3346)	261 (10.2756)	266,5 (10.4921)	273 (10.7480)	mm (in)	B

SAE "BB" SPLINE

05

Mounting face refer to flange code **S5**

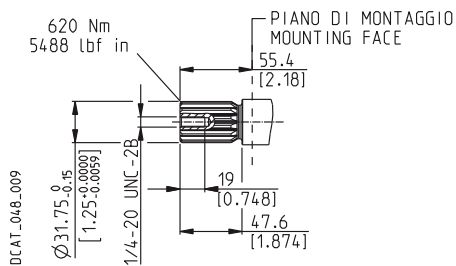


Ext. Involute Spline ANSI B92.1
with major diameter modified
15 teeth - 16/32 Pitch - 30 deg
Flat root - Side fit - Class 5

SAE "C" SPLINE

06

Mounting face refer to flange code **S8**

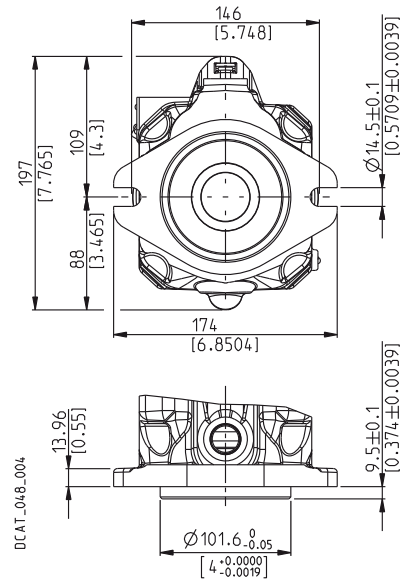


Ext. Involute Spline ANSI B92.1
with major diameter modified
14 teeth - 12/24 Pitch - 30 deg
Flat root - Side fit - Class 5

SAE "B" 2 HOLES

S5

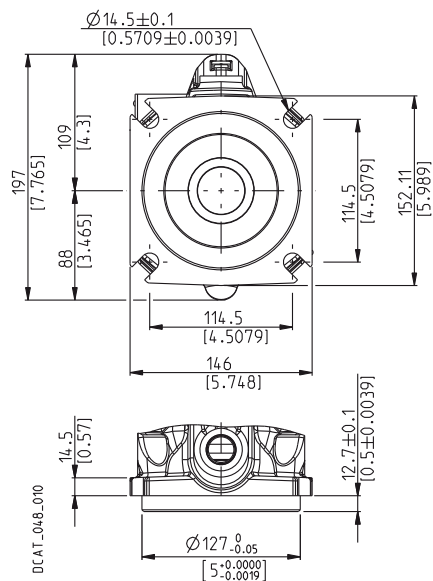
Conforms to SAE J744



SAE "C" 4 HOLES

S8

Conforms to SAE J744



PORTS SIZES

PORTS TYPE	INLET / OUTLET PORTS						DRAIN PORTS		LOAD SENSING PORT		KP20 GEAR PUMP	
	Split SSM		Split SSS		SAE ODT		Gas BSPP	SAE ODT (●)	Gas BSPP	SAE ODT (●)	Gas BSPP	SAE ODT
Pump type	IN	OUT	IN	OUT	IN	OUT	D1	D1	X	X	OUT	OUT
MVP 48	ME	MC	SE	SC	OH	OF	GD	OC	GE	OD	GD	OC
MVP 60	MF	MC	SF	SC	OH	OF	GD	OC	GE	OD	GD	OC

(●) Available only with inlet and outlet ports type Split SSS and SAE ODT.



Tightening torque for low pressure side port





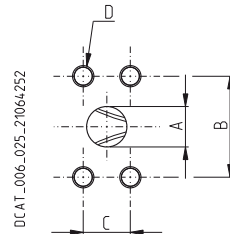
Tightening torque for high pressure side port [values obtained at 5075 psi (350 bar)]

SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

SSM

Metric thread ISO 60° conforms to ISO/R 262



CODE	Nominal size	A	B	C	D		
		mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
MC	1"	25,4 (1.0000)	52,4 (2.0630)	26,2 (1.0315)	M 10 17 (0.6693)	—	35 ^{+2,5} (310 ÷ 332)
ME	1" 1/2	38,1 (1.5000)	69,8 (2.7480)	35,7 (1.4055)	M 12 20 (0.7874)	30 ^{+2,5} (266 ÷ 288)	—
MF	2"	51 (2.0079)	77,8 (3.0630)	42,9 (1.6890)	M 12 20 (0.7874)	30 ^{+2,5} (266 ÷ 288)	—

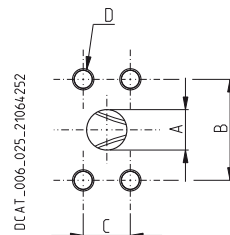


SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI



SSS

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

CODE	Nominal size	A	B	C	D		
		mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Nm (lbf in)	Nm (lbf in)
SC	1"	25,4 (1.0000)	52,4 (2.0630)	26,2 (1.0315)	3/8 - 16 UNC-2B 17 (0.6693)	—	35 ^{+2,5} (310 ÷ 332)
SE	1" 1/2	38,1 (1.5000)	69,8 (2.7480)	35,7 (1.4055)	1/2 - 13 UNC-2B 20 (0.7874)	30 ^{+2,5} (266 ÷ 288)	—
SF	2"	51 (2.0079)	77,8 (3.0630)	42,9 (1.6890)	1/2 - 13 UNC-2B 20 (0.7874)	30 ^{+2,5} (266 ÷ 288)	—



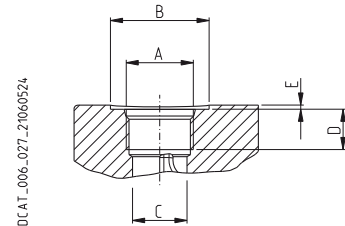
PORTS SIZES



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

SAE STRAIGHT THREAD PORTS J514

ODT

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



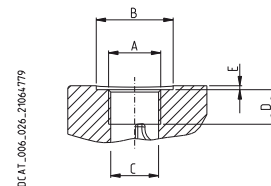
CODE	Nominal size	A	Ø B	Ø C	D	E		
			mm (in)	mm (in)	mm (in)	mm (in)	Nm (lbf in)	Nm (lbf in)
03 (X)	1/4"	7/16" - 20 UNF - 2B	—	9,5 (0.3740)	—	—	—	35 ⁺¹ (133 ÷ 142)
OC (●)	5/8"	7/8" - 14 UNF - 2B	35 (1.3780)	20,5 (0.8071)	—	2 (0.0787)	30 ^{+2,5} (266 ÷ 288)	—
OC (◆)			34 (1.3386)	20,5 (0.8071)	17 (0.6693)	0,5 (0.0197)	—	70 ⁺⁵ (620 ÷ 664)
OF	1"	1 5/16" - 12 UNF - 2B	—	30,5 (1.2008)	20 (0.7874)	—	—	170 ⁺¹⁰ (1505 ÷ 1593)
OH	1" 1/2	1 7/8" - 12 UNF - 2B	—	45 (1.7717)	20 (0.7874)	—	100 ⁺⁵ (885 ÷ 929)	—



- (X) = Load sensing port
 (●) = Drain port
 (◆) = KP 20 outlet 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)
GA (X)	1/8"	G 1/8	—	8,75 (0.3444)	12 (0.4724)	—	—	35 ⁺¹ (133 ÷ 142)
GD (●)	1/2"	G 1/2	30 (1.1811)	19 (0.7480)	17 (0.6693)	1 (0.0394)	20 ⁺¹ (177 ÷ 186)	—
GD (◆)			—		20 (0.7874)	—	—	50 ^{+2,5} (443 ÷ 465)

- (X) = Load sensing port
 (●) = Drain port
 (◆) = KP 20 outlet port

HOW TO ORDER SINGLE PUMPS

1	2	3	4	5	6	7	8	9	10					
Pump type	Rotation	–	Drive shaft	Mounting flange	–	Ports position	Ports IN/OUT	–	Seals	–	Regulators	–	Additional options	Fluid
MVP 48•45	D	–	04	S5	–	P	ME/MC	–	N	–	RP0	–	E	...

1	Pump type (max displacement)	CODE
	in ³ /rev	cm ³ /rev
	2.75	45
	3.23	53
	3.66	60
	4.39	72
	5.12	84
		MVP 48•45
		MVP 48•53
		MVP 60•60
		MVP 60•72
		MVP 60•84

2	Rotation	CODE
	Anti-clockwise	S
	Clockwise	D

3	Drive shaft	CODE
	SAE "B" spline (13 teeth)	04
	SAE "BB" spline (15teeth)	05
	SAE "C" spline (14 teeth)	06

4	Mounting flange	CODE
	SAE "B" 2 holes	S5
	SAE "C" 4 holes	S8

5	Ports position	CODE
	Rear	P

6	Inlet/outlet ports	CODE
SAE FLANGED PORTS METRIC THREAD (SSM)		
Pump type	Nominal size	
	Inlet IN SAE 3000	Outlet OUT SAE 3000
MVP 48	1"1/2	2"
MVP 60	2"	1"
		ME/MC
		MF/MC
SAE FLANGED PORTS UNC THREAD (SSS)		
Pump type	Nominal size	
	Inlet IN SAE 3000	Outlet OUT SAE 3000
MVP 48	1"1/2	1"
MVP 60	2"	1"
		SE/SC
		SF/SC
SAE STRAIGHT THREAD PORTS (ODT)		
Pump type	Nominal size	
	Inlet IN SAE 3000	Outlet OUT SAE 3000
MVP 48	1"1/2	1"
MVP 60	1"1/2	1"
		OH/OF
		OH/OF

CODE	Seals	7
N	Buna (standard)	
V	Viton	

CODE	Regulators	8
RP0	Pressure compensator - setting range 290 - 5075 psi (20 - 350 bar) (a)	
LS0	Flow compensator (b)	
LS2	Flow compensator for remote control (b)	
LS3	Flow compensator for internal control (b)	
RN0	Torque limiter - standard	
RN1	Torque limiter - internal pilot	

CODE	Additional options (c)	9
	Without additional options (no code)	
E	Max. displacement limiter (d)	
F	Min. displacement limiter (d)	
G	Min. and max. displacement limiter (d)	

CODE	Fluid	10
	Mineral oil (no code)	
H	HF fire resistant fluid (e)	

- a) For standard setting see page 18. ●
- b) Differential pressure standard setting 203 psi (14 bar) - Setting range 145 - 580 psi (10 - 40 bar).
- c) For additional options, please consult our sales department.
- d) Max. up to 50% of the displacement.
- e) For HF fire resistant fluid please consult our sales department.



HOW TO ORDER DOUBLE PUMPS

1	2	3	4	5	6	7	8	9	10
Pump type	Rotation	Drive shaft	Mounting flange	Ports position	Ports IN/OUT	Seals	Regulators	Additional options	Fluid
MVP 48•53	D	05	S5	L	ME/MC	N	LS0	G	...
Front section									
KP 20.6,3 (#)				L	**/GD				
Rear section									

1	Pump type (max displacement)	CODE
in ³ /rev	cm ³ /rev	
2.75	45	MVP 48•45
3.23	53	MVP 48•53
3.66	60	MVP 60•60
4.39	72	MVP 60•72
5.12	84	MVP 60•84

2	Rotation	CODE
Anti-clockwise		S
Clockwise		D

3	Drive shaft	CODE
SAE "B" spline (13 teeth)		04
SAE "BB" spline (15teeth)		05
SAE "C" spline (14 teeth)		06

4	Mounting flange	CODE
SAE "B" 2 holes		S5
SAE "C" 4 holes		S8

5	Ports position	CODE
Side		L

6	Inlet/outlet ports	CODE
SAE FLANGED PORTS METRIC THREAD (SSM)		
Pump type	Nominal size	
	Inlet IN SAE 3000	Outlet OUT SAE 3000
MVP 48	1"1/2	2" ME/MC
MVP 60	2"	1" MF/MC
SAE FLANGED PORTS UNC THREAD (SSS)		
Pump type	Nominal size	
	Inlet IN SAE 3000	Outlet OUT SAE 3000
MVP 48	1"1/2	1" SE/SC
MVP 60	2"	1" SF/SC
SAE STRAIGHT THREAD PORTS (ODT)		
Pump type	Nominal size	
	Inlet IN SAE 3000	Outlet OUT SAE 3000
MVP 48	1"1/2	1" OH/OF
MVP 60	1"1/2	1" OH/OF

CODE	Seals	7
N	Buna (standard)	
V	Viton	

CODE	Regulators	8
RP0	Pressure compensator - setting range 290 - 5075 psi (20 - 350 bar) (a)	
LS0	Flow compensator (b)	
LS2	Flow compensator for remote control (b)	
LS3	Flow compensator for internal control (b)	
RN0	Torque limiter - standard	
RN1	Torque limiter - internal pilot	

CODE	Additional options (c)	9
	Without additional options (no code)	
E	Max. displacement limiter (d)	
F	Min. displacement limiter (d)	
G	Min. and max. displacement limiter (d)	

CODE	Fluid	10
	Mineral oil (no code)	
H	HF fire resistant fluid (e)	

- a) For standard setting see page 18. ○
- b) Differential pressure standard setting 203 psi (14 bar) - Setting range 145 - 580 psi (10 - 40 bar).
- c) For additional options, please consult our sales department.
- d) Max. up to 50% of the displacement.
- e) For HF fire resistant fluid please consult our sales department.

#: KP 20 Gear pumps:
Displacements: see page 11 and page 14
Ports: see page 16 and page 17
For more informations, please see the respective technical catalogue.



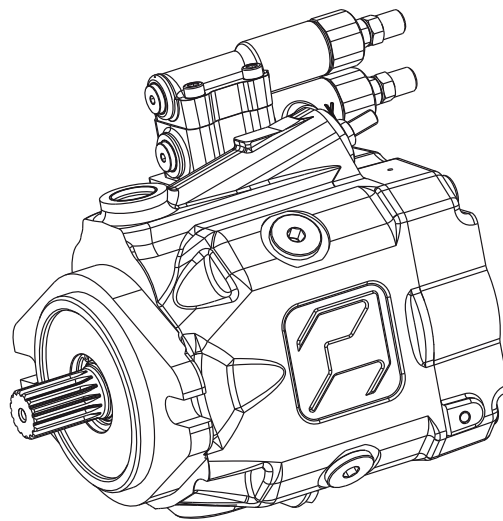
Variable displacement axial piston pumps, for open circuit

DISPLACEMENTS

From	2.75 in ³ /rev (45 cm ³ /rev)
To	5.12 in ³ /rev (84 cm ³ /rev)

MAX SPEED

3000 min⁻¹



PRESSURE

Max. continuous	4060 psi (280 bar)
Max. intermittent	4568 psi (315 bar)
Max. peak	5075 psi (350 bar)

APPLICATION

Medium, high pressure

SECTOR

Mobile / Industrial

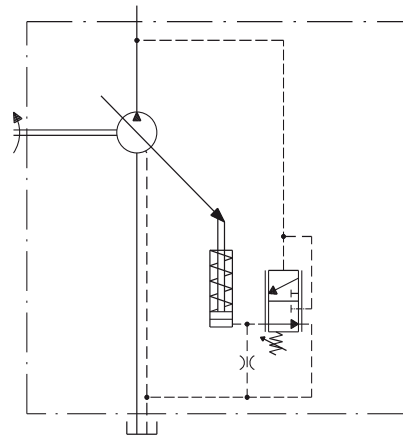
- Compact design
- Longer service life
- Low noise emission
- Max. and min. displacement limiter
- Drive shaft bearing suitable for radial and axial loads.

Variable displacement axial piston pumps swash plate design ideally suited for medium and high pressure open circuit applications. The compact design allows to be mounted directly on engine motors.



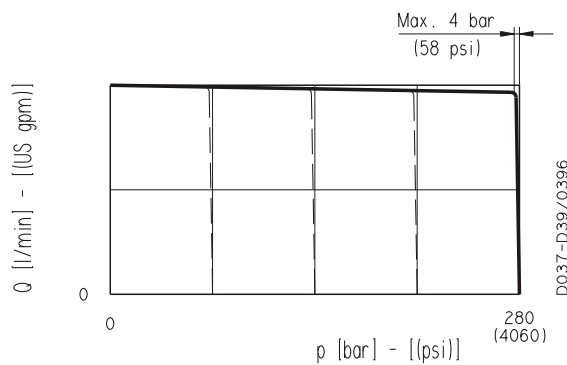
Regulates the pump displacement automatically to equal the flow requirement of the system while maintaining the pre-adjusted pressure.

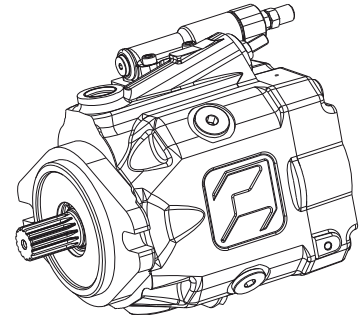
Compensator type	Pump type	Pressure setting range	Standard setting
		psi (bar)	psi (bar)
RP0	MVP 48•45	290 ÷ 5075 (20 ÷ 350)	4060 (280)
	MVP 48•53		3625 (250)
	MVP 60•60		4060 (280)
	MVP 60•72		4060 (280)
	MVP 60•84		3625 (250)



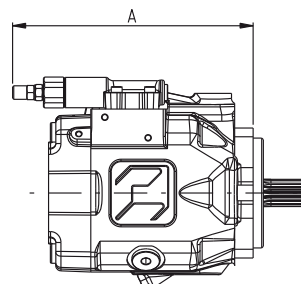
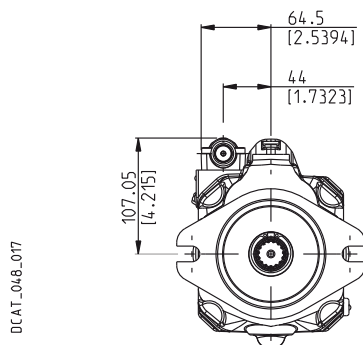
OPERATING CURVES

Curves have been obtained at the speed of 1500 min⁻¹ and oil temperature 122 °F (50 °C).





Position for clockwise and anti-clockwise rotation



Pump type	Mounting flange	A	
		mm	(in)
MVP 48	S5	222	(8.7402)
MVP 60	S5	227	(8.9370)
	S8	231	(9.0945)

FLOW COMPENSATOR (Load-sensing)

LS

Regulates the pump displacement to maintain a constant (load independent) pressure drop across a flow metering device. In the standard version the flow compensator is combined with pressure compensator.

Flow compensator type	Pressure compensator	Differential pressure setting range	Standard setting
		psi (bar)	psi (bar)
LS0	RP0	145 ÷ 580 (10 ÷ 40)	203 (14)
LS2 (◆)	RP0		
LS3 (●)	RP0		

(◆): For remote control Y is plugged.

(●): For internal control and remote pressure control.

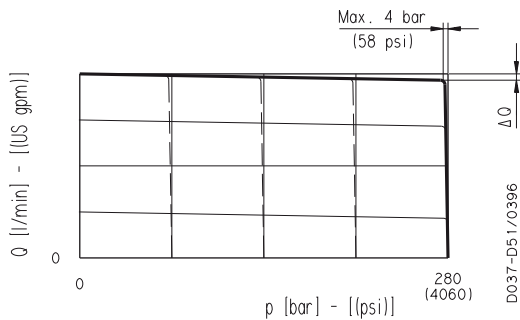
Pilot flow ≈ 0.34 ÷ 0.40 US gpm (1,3 ÷ 1,5 l/min)

In standard setting conditions 203 psi (14 bar) the stand-by pressure is 218^{± 29} psi (15^{± 2} bar).

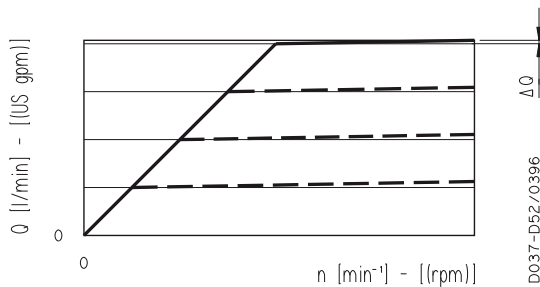


OPERATING CURVES

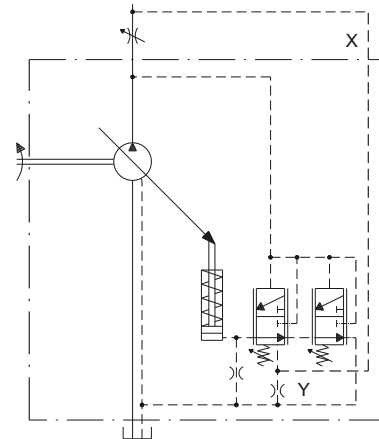
Curves have been obtained at the speed of 1500 min⁻¹ and oil temperature 122 °F (50 °C).



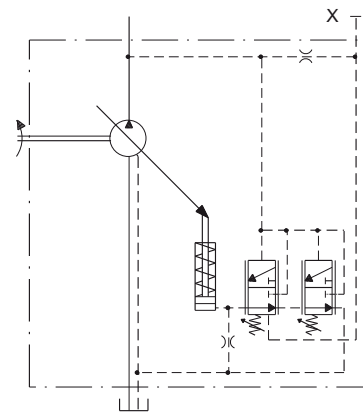
Curve at variable speed



LS0 - LS2 Hydraulic circuits

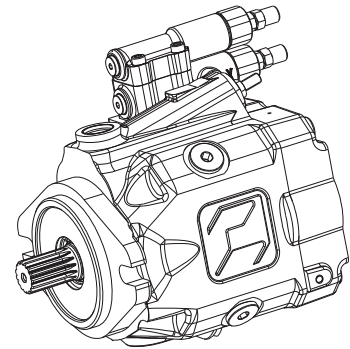


LS3 Hydraulic circuits

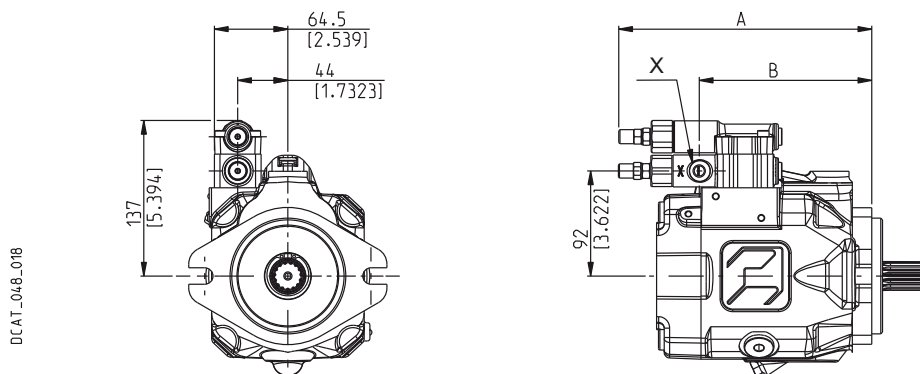


TECHNICAL DATA

Pump type	ΔQ max
	US gpm (l/min)
MVP 48	0.45 (1,7)
MVP 60	0.66 (2,5)



Position for clockwise and anti-clockwise rotation



Pump type	Mounting flange	A	B
		mm (in)	mm (in)
MVP 48	S5	222 (8.7402)	151,5 (5.9646)
MVP 60	S5	227 (8.9370)	157 (6.1811)
	S8	231 (9.0945)	161 (6.3386)

X: Load sensing port. Dimensions at page 16

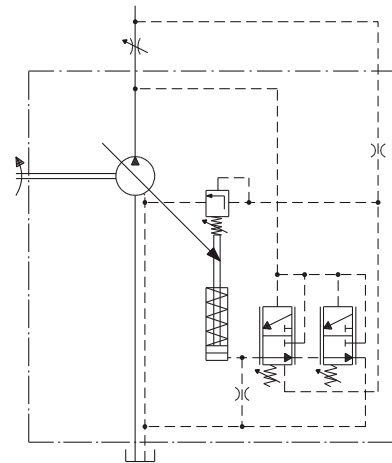
Regulates the pump displacement according to the system pressure, to maintain the pre-adjusted torque value and protect the prime mover from overload. To have the best torque limiter regulation, the pre-adjusted absorbed torque has to be higher than the value shown in the following table.

Pump type		MVP 48	MVP 60
Min. torque	lbf in (Nm)	602 (68)	956 (108)
Min. power (at 1500 min ⁻¹)	HP (kW)	14.3 (10,7)	22.8 (17)

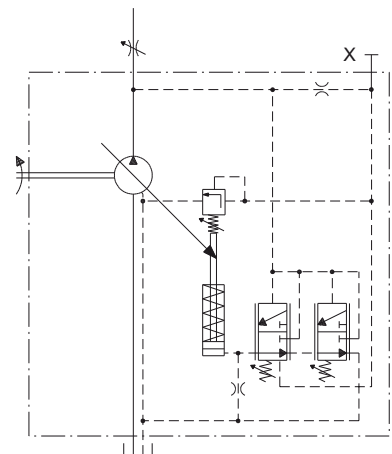
For lower torque setting values, the regulator limits the maximum working pressure to a value lower than the standard setting for the pressure regulator [4060 psi (280 bar)].

When ordering the torque limiter please specify the requested value of torque [eg. 620 lbf in (70 Nm)] or the requested power [eg. 13.4 HP (10 kW) at 1500 min⁻¹].

RN0 - Standard

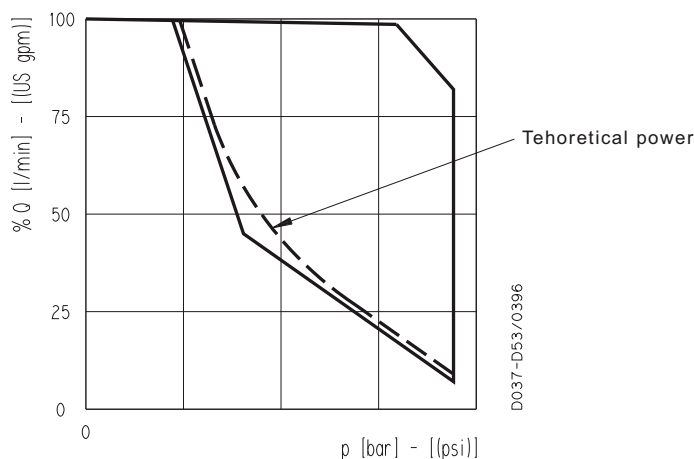


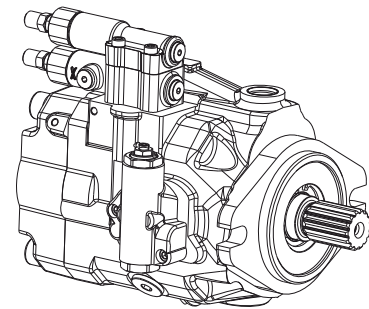
RN1 - Internal pilot



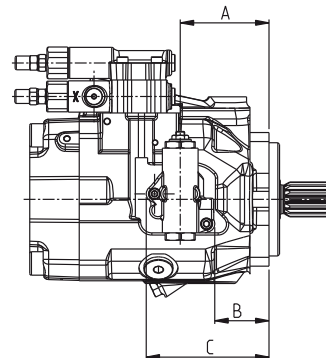
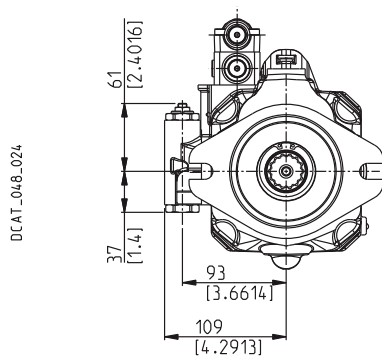
OPERATING CURVES

This curve has been obtained at the speed of 1500 min⁻¹ and oil temperature 122 °F (50 °C).





Position for clockwise and anti-clockwise rotation



Pump type	Mounting flange	A	B	C
		mm (in)	mm (in)	mm (in)
MVP 48	S5	68,9 (2.7126)	37,95 (1.4921)	103,4 (4.0709)
MVP 60	S5	79,5 (3.1299)	48,5 (1.9094)	114 (4.4882)
	S8			

X: Load sensing port. Dimensions at page 16

HOW TO ORDER SINGLE PUMPS

1	2	3	4	5	6	7	8	9	10
Pump type	Rotation	Drive shaft	Mounting flange	Ports position	Ports IN/OUT	Seals	Regulators	Additional options	Fluid
MVP 48•45	D	04	S5	P	ME/MC	N	RP0	E	...

1 Pump type (max displacement)		CODE
in ³ /rev	cm ³ /rev	
2.75	45	MVP 48•45
3.23	53	MVP 48•53
3.66	60	MVP 60•60
4.39	72	MVP 60•72
5.12	84	MVP 60•84

2 Rotation		CODE
Anti-clockwise		S
Clockwise		D

3 Drive shaft		CODE
SAE "B" spline (13 teeth)		04
SAE "BB" spline (15teeth)		05
SAE "C" spline (14 teeth)		06

4 Mounting flange		CODE
SAE "B" 2 holes		S5
SAE "C" 4 holes		S8

5 Ports position		CODE
Rear		P

6 Inlet/outlet ports			CODE
SAE FLANGED PORTS METRIC THREAD (SSM)			
Pump type	Nominal size		
	Inlet IN SAE 3000	Outlet OUT SAE 3000	
MVP 48	1"1/2	2"	ME/MC
MVP 60	2"	1"	MF/MC
SAE FLANGED PORTS UNC THREAD (SSS)			
Pump type	Nominal size		
	Inlet IN SAE 3000	Outlet OUT SAE 3000	
MVP 48	1"1/2	1"	SE/SC
MVP 60	2"	1"	SF/SC
SAE STRAIGHT THREAD PORTS (ODT)			
Pump type	Nominal size		
	Inlet IN SAE 3000	Outlet OUT SAE 3000	
MVP 48	1"1/2	1"	OH/OF
MVP 60	1"1/2	1"	OH/OF

CODE	Seals	7
N	Buna (standard)	
V	Viton	

CODE	Regulators	8
RP0	Pressure compensator - setting range 290 - 5075 psi (20 - 350 bar) (a)	
LS0	Flow compensator (b)	
LS2	Flow compensator for remote control (b)	
LS3	Flow compensator for internal control (b)	
RN0	Torque limiter - standard	
RN1	Torque limiter - internal pilot	

CODE	Additional options (c)	9
	Without additional options (no code)	
E	Max. displacement limiter (d)	
F	Min. displacement limiter (d)	
G	Min. and max. displacement limiter (d)	

CODE	Fluid	10
	Mineral oil (no code)	
H	HF fire resistant fluid (e)	

- a) For standard setting see page 18. ●
- b) Differential pressure standard setting 203 psi (14 bar) - Setting range 145 - 580 psi (10 - 40 bar).
- c) For additional options, please consult our sales department.
- d) Max. up to 50% of the displacement.
- e) For HF fire resistant fluid please consult our sales department.

HOW TO ORDER DOUBLE PUMPS

1	2	3	4	5	6	7	8	9	10
Pump type	Rotation	Drive shaft	Mounting flange	Ports position	Ports IN/OUT	Seals	Regulators	Additional options	Fluid
MVP 48•53	D	05	S5	L	ME/MC	N	LS0	G	...

Front section

KP 20.6,3 (#)	L	** / GD
---------------	---	---------

Rear section

1 Pump type (max displacement)		CODE
in ³ /rev	cm ³ /rev	
2.75	45	MVP 48•45
3.23	53	MVP 48•53
3.66	60	MVP 60•60
4.39	72	MVP 60•72
5.12	84	MVP 60•84

2 Rotation		CODE
Anti-clockwise		S
Clockwise		D

3 Drive shaft		CODE
SAE "B" spline (13 teeth)		04
SAE "BB" spline (15teeth)		05
SAE "C" spline (14 teeth)		06

4 Mounting flange		CODE
SAE "B" 2 holes		S5
SAE "C" 4 holes		S8

5 Ports position		CODE
Side		L


6 Inlet/outlet ports		CODE	
SAE FLANGED PORTS METRIC THREAD (SSM)			
Pump type	Nominal size		
	Inlet IN SAE 3000	Outlet OUT SAE 3000	
MVP 48	1"1/2	2"	ME/MC
MVP 60	2"	1"	MF/MC
SAE FLANGED PORTS UNC THREAD (SSS)			
Pump type	Nominal size		
	Inlet IN SAE 3000	Outlet OUT SAE 3000	
MVP 48	1"1/2	1"	SE/SC
MVP 60	2"	1"	SF/SC
SAE STRAIGHT THREAD PORTS (ODT)			
Pump type	Nominal size		
	Inlet IN SAE 3000	Outlet OUT SAE 3000	
MVP 48	1"1/2	1"	OH/OF
MVP 60	1"1/2	1"	OH/OF

CODE	Seals	7
N	Buna (standard)	
V	Viton	

CODE	Regulators	8
RP0	Pressure compensator - setting range 290 - 5075 psi (20 - 350 bar) (a)	
LS0	Flow compensator (b)	
LS2	Flow compensator for remote control (b)	
LS3	Flow compensator for internal control (b)	
RN0	Torque limiter - standard	
RN1	Torque limiter - internal pilot	

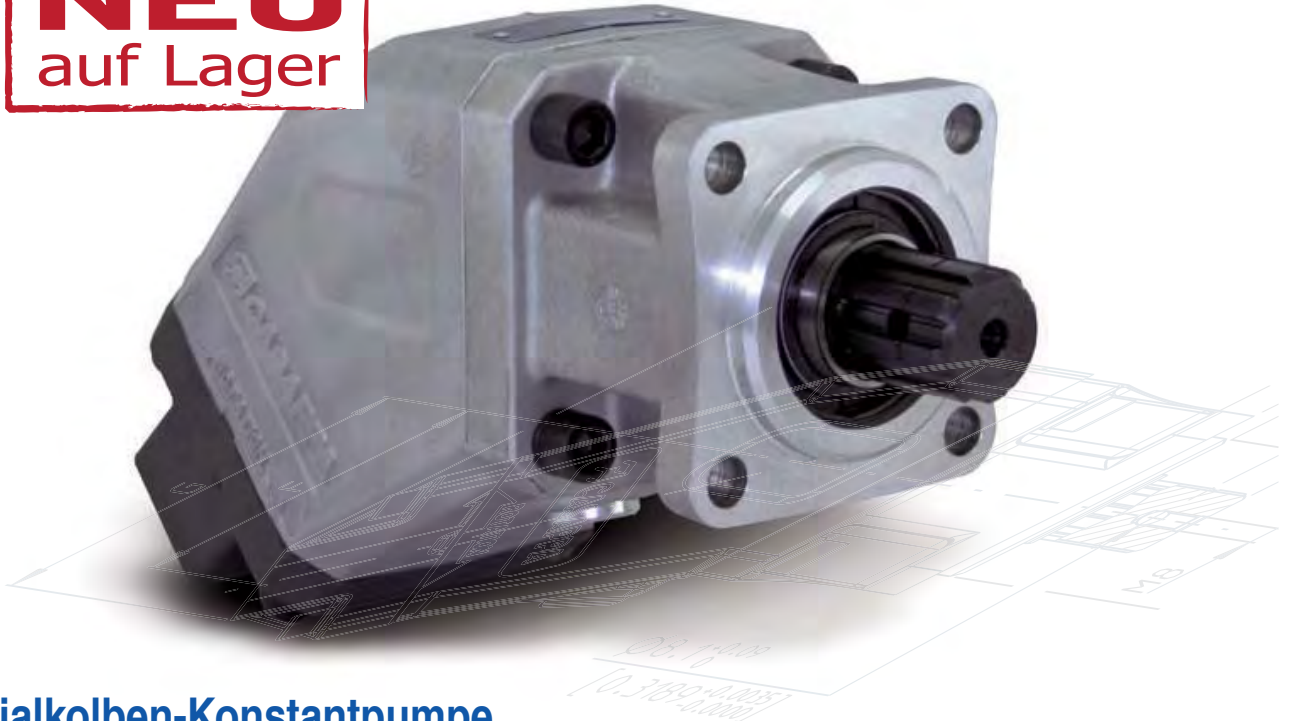
CODE	Additional options (c)	9
	Without additional options (no code)	
E	Max. displacement limiter (d)	
F	Min. displacement limiter (d)	
G	Min. and max. displacement limiter (d)	

CODE	Fluid	10
	Mineral oil (no code)	
H	HF fire resistant fluid (e)	

- a) For standard setting see page 18. 
- b) Differential pressure standard setting 203 psi (14 bar) - Setting range 145 - 580 psi (10 - 40 bar).
- c) For additional options, please consult our sales department.
- d) Max. up to 50% of the displacement.
- e) For HF fire resistant fluid please consult our sales department.

#: KP 20 Gear pumps:
Displacements: see page 11 and page 14
Ports: see page 16 and page 17
For more informations, please see the respective technical catalogue.

NEU
auf Lager



Axialkolben-Konstantpumpe für Direktmontage an Nebenantrieben (PTO) von Fahrzeugen

Qualitätsprodukt aus Europa – Niedriger Geräuschpegel – Wellendichtring aus Viton

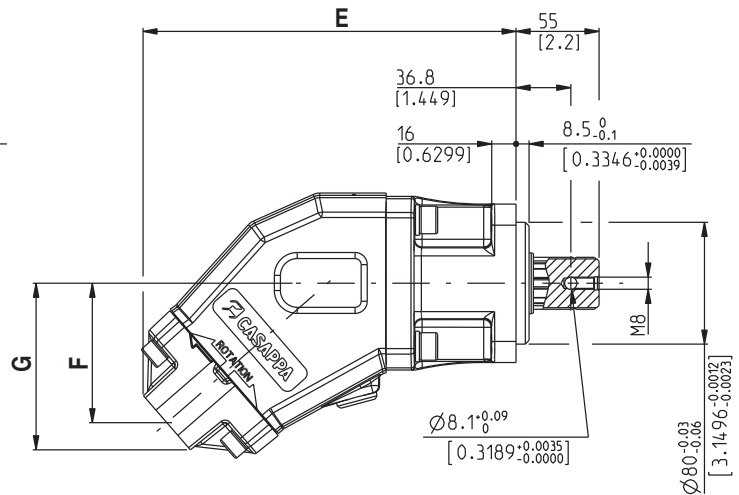
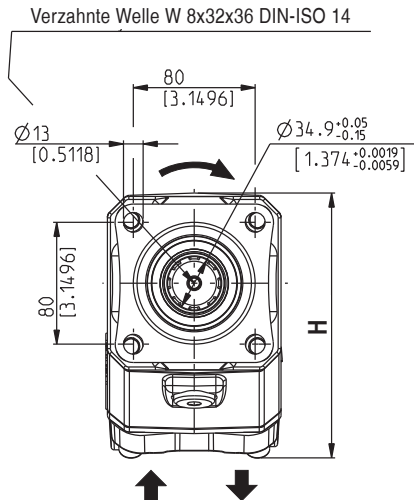
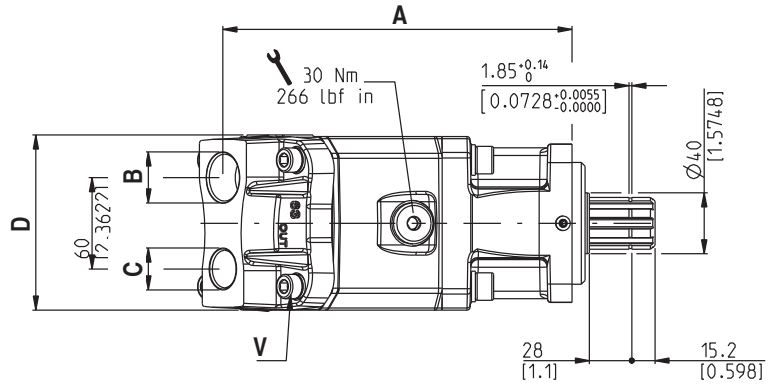
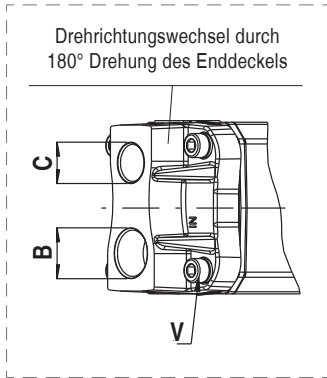
Bestellbezeichnung	Fördermenge (ccm/U)	Drehrichtung	Dauerdruck/Spitzendruck (bar)	Nmax (U/min) bei Pmax	Nmax (U/min) Drucklos
BAP32-40-D0-16Z0-PGF/GE-N	40,9	Rechts	350	1850	2950
BAP32-40-S0-16Z0-PGF/GE-N		Links	400		
BAP32-50-D0-16Z0-PGF/GE-N	50,1	Rechts	350	1700	2750
BAP32-50-S0-16Z0-PGF/GE-N		Links	400		
BAP32-63-D0-16Z0-PGF/GE-N	63,0	Rechts	350	1600	2450
BAP32-63-S0-16Z0-PGF/GE-N		Links	400		
BAP32-71-D0-16Z0-PGF/GE-N	71,6	Rechts	315	1300	2250
BAP32-71-S0-16Z0-PGF/GE-N		Links	350		
BAP32-80-D0-16Z0-PGF/GE-N	78,3	Rechts	315	1300	2200
BAP32-80-S0-16Z0-PGF/GE-N		Links	350		
BAP37-80-D0-16Z0-PGG/GF-N	79,1	Rechts	350	1300	2500
BAP37-80-S0-16Z0-PGG/GF-N		Links	400		
BAP37-110-D0-16Z0-PGG/GF-N	110,0	Rechts	300	1300	2300
BAP37-110-S0-16Z0-PGG/GF-N		Links	350		



Bestellbezeichnung	Saugstutzen	
SGN40HR16	Saugstutzen 0° – 1" BSP – NW40	für BAP32
SGN40HR1645K	Saugstutzen 45° – 1" BSP – NW40	
SGN40HR1690K	Saugstutzen 90° – 1" BSP – NW40	
SGN50HR16	Saugstutzen 0° – 1" BSP – NW50	für BAP32
SGN50HR1645K	Saugstutzen 45° – 1" BSP – NW50	
SGN50HR1690K	Saugstutzen 90° – 1" BSP – NW50	
SGN50HR20	Saugstutzen 0° – 1 ¼" BSP – NW50	für BAP37
SGN50HR2045K	Saugstutzen 45° – 1 ¼" BSP – NW50	
SGN50HR2090K	Saugstutzen 90° – 1 ¼" BSP – NW50	

062-010

NEU
auf Lager



Typbezeichnung			A	B	C	D	E	F	G	H	V	Gewicht
			(mm)	- IN - (Nm)	- OUT - (Nm)	(mm)	(mm)	(mm)	(mm)	(mm)	Anzugs- drehmoment (Nm)	(kg)
BAP32-40	S/D	0-16 Z0-P GF/GE-N	229	70 ⁺⁵	90 ⁺⁵	115	245	91	109	173	45 ^{±4.5}	10
BAP32-50	S/D	0-16 Z0-P GF/GE-N	229	70 ⁺⁵	90 ⁺⁵	115	245	91	109	173	45 ^{±4.5}	10
BAP32-63	S/D	0-16 Z0-P GF/GE-N	229	70 ⁺⁵	90 ⁺⁵	115	245	91	109	173	45 ^{±4.5}	10
BAP32-71	S/D	0-16 Z0-P GF/GE-N	229	70 ⁺⁵	90 ⁺⁵	115	245	91	109	173	45 ^{±4.5}	10
BAP32-80	S/D	0-16 Z0-P GF/GE-N	229	70 ⁺⁵	90 ⁺⁵	115	245	91	109	173	45 ^{±4.5}	16
BAP37-80	S/D	0-16 Z0-P GG/GF-N	251	110 ⁺¹⁰	150 ⁺¹⁵	127	268	108	128	202	75 ^{±7.5}	16
BAP37-110	S/D	0-16 Z0-P GG/GF-N	251	110 ⁺¹⁰	150 ⁺¹⁵	127	268	108	128	202	75 ^{±7.5}	17

Ölviskosität von 10 cSt bis 400 cSt – Filterfeinheit 10 mic

062-010



Fixed displacement bent axis piston pumps

for truck applications

Replaces: STN 01 T A
Modification from former edition

DISPLACEMENTS

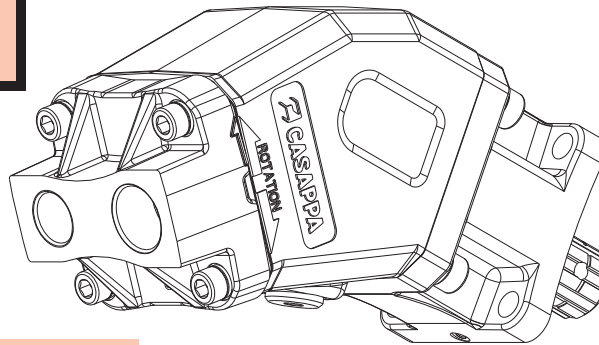
From 2.49 in³/rev
(40,9 cm³/rev)
To 6.71 in³/rev
(110 cm³/rev)

APPLICATION

High pressure

SECTOR

Mobil hydraulic



PRESSURE

Max. continuous 5075 psi (350 bar)
Max. peak 5800 psi (400 bar)

MAX. SPEED

2950 min⁻¹

- Low noise level
- Direct mounting on the PTOs
- Compact design
- High speed
- High volumetric, mechanical and overall efficiency
- Clockwise or anti-clockwise rotation turning the end cover 180°
- Standard ISO with Viton shaft seal

Pump type		BAP32•40	BAP32•50	BAP32•63	BAP32•71	BAP32•80	BAP37•80	BAP37•110
Displacement	in ³ /rev (cm ³ /rev)	2.49 (40,9)	3.06 (50,1)	3.8 (63)	71.6 (4,37)	4.78 (78,3)	4.83 (79,1)	6.71 (110)
Max. pressure P _{max}	psi (bar)	continuous	5075 (350)	5075 (350)	5075 (350)	4568 (315)	5075 (350)	4350 (300)
		peak	5800 (400)	5800 (400)	5800 (400)	5075 (350)	5075 (350)	5800 (400)	5075 (350)
Max. speed Inlet pressure 14.5 psi (1 bar abs.)	min ⁻¹	@ P _{max} cont.	1850	1700	1600	1300	1300	1300
		without load	2950	2750	2450	2250	2200	2500	2300
Mass	lbs (kg)	22.05 (10)	22.05 (10)	22.05 (10)	22.05 (10)	22.05 (10)	35.28 (16)	37.49 (17)

Edition: 01/04.2007

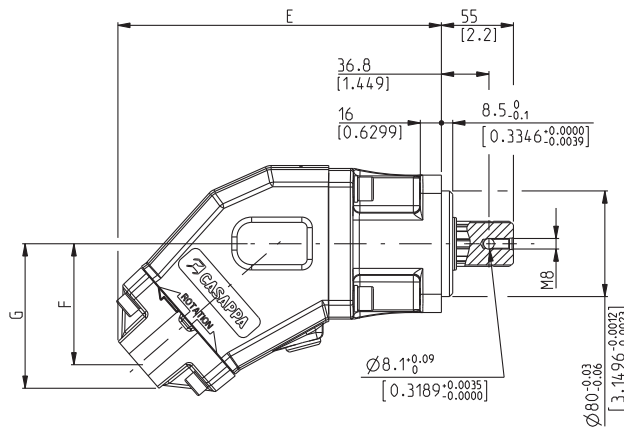
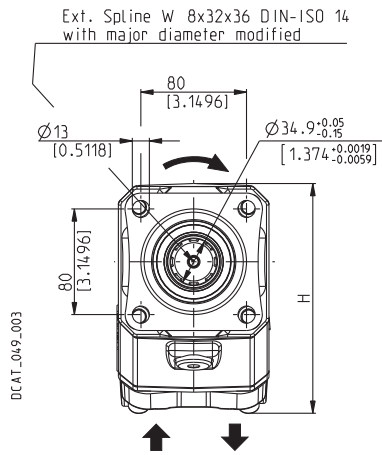
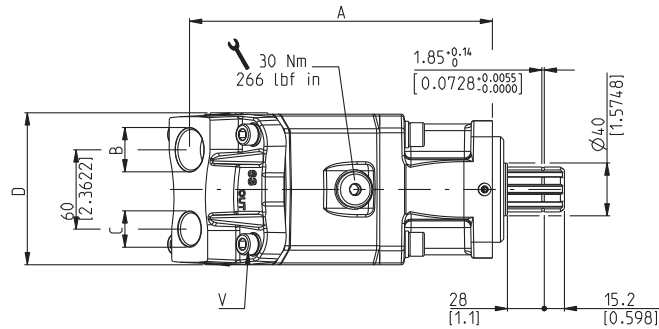
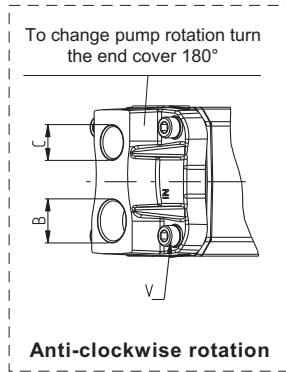
Fill with oil before start-up	
Direction of rotation (looking on drive shaft)	Clockwise or anti-clockwise rotation
Inlet pressure range	25 in Hg (0.85 bar abs.) ÷ 29 psi (2 bar abs.)
Operating temperature	176 °F (80 °C)
Fluid	Mineral oil based hydraulic fluids to DIN 51524
Viscosity range	From 58 SSU (10 cSt) to 1819 SUS (400 cSt) recommended 4546 SSU (1000 cSt) tolerated for cold starting
Filtering requirement	Cleanliness grade 8 according to class NAS 1638



062-010

HYDRAULIC PISTON PUMPS ISO STANDARD

16 Z0



Replaces: STN 01 T A

Pump type	V Bolts tightening torque lbf in (Nm)
BAP 32	358 ÷ 438 (45 ±4,5)
BAP 37	597 ÷ 730 (75 ±7,5)

Pump type	A	B (IN)	C (OUT)	D	E	F	G	H		
		BSP	BSP							
	in (mm)	lbf in (Nm)	lbf in (Nm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)		
BAP 32•40	S D	0-16 Z0-P GF/GE-N TN	9.0157 (229)	G 1 620 ÷ 664 (70 ⁺⁵)	G 3/4 797 ÷ 841 (90 ⁺⁵)	4.5276 (115)	9.6457 (245)	3.5827 (91)	4.2913 (109)	6.8110 (173)
BAP 32•50										
BAP 32•63										
BAP 32•71										
BAP 32•80										
BAP 37•80	0-16 Z0-P GG/GF-N TN	9.8819 (251)	G 1 1/4 974 ÷ 1062 (110 ⁺¹⁰)	G 1 1328 ÷ 1460 (150 ⁺¹⁵)	5.0000 (127)	10.5512 (268)	4.2520 (108)	5.0394 (128)	7.9528 (202)	
BAP 37•110										

Rotation: S=anti-clockwise - D=clockwise

How to order

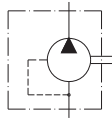
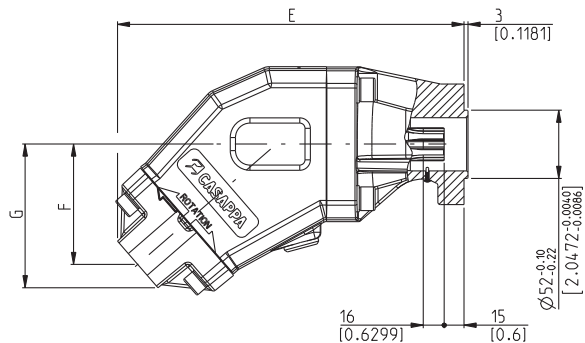
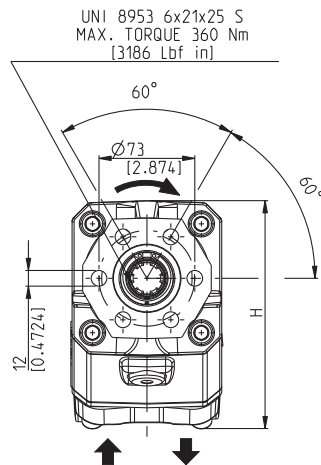
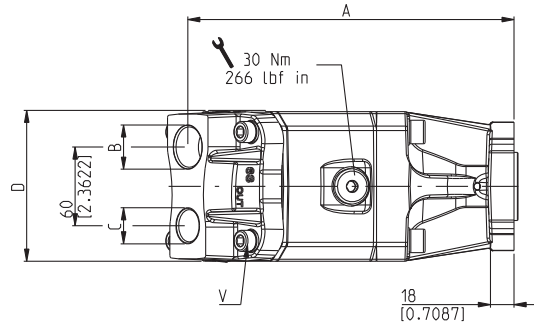
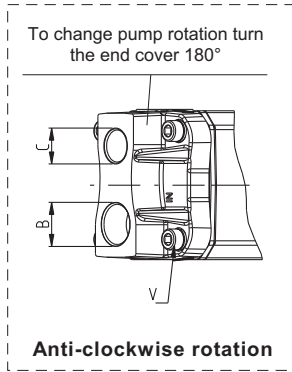
BAP 32•40 S0 - 16 Z0 - P GF/GE - N TN

01/04.2007

HYDRAULIC PISTON PUMPS ITALIAN STANDARD

19 T1

Replaces: STN 01 T A



Pump type	V Bolts tightening torque lbf in (Nm)
BAP 32	358 ÷ 438 (45 ^{+4,5})

01/04.2007

Pump type	A in (mm)	B (IN)	C (OUT)	D in (mm)	E in (mm)	F in (mm)	G in (mm)	H in (mm)
		BSPP lbf in (Nm)	BSPP lbf in (Nm)					
BAP 32•40	9.8031 (249)	G 1 620÷664 (70 ⁺⁵)	G 3/4 797÷841 (90 ⁺⁵)	4.5276 (115)	10.3937 (264)	3.5827 (91)	4.2913 (109)	6.8110 (173)
BAP 32•50								
BAP 32•63								
BAP 32•71								
BAP 32•80								

Rotation: S=anti-clockwise - D=clockwise

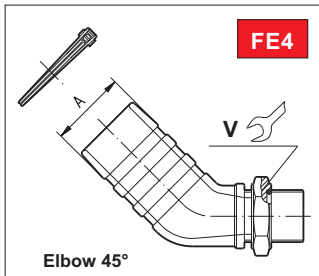
How to order

BAP 32•40 S0 - 19 T1 - P GF/GE - N TN

062-010

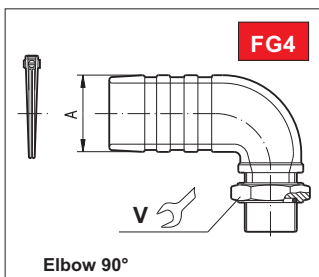
GAS BSPP THREADED PORT CONNECTORS

Inlet



Brass elbow 45°. They are supplied complete with O-Ring and hose clamp.

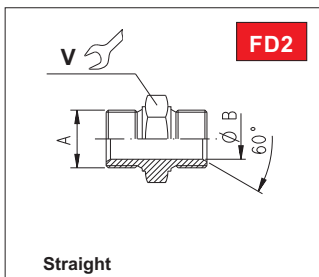
Connector type	A Tubing nominal size	V		Pump type
		Chey	lbf in (Nm)	
FE4-GF/N112-N	1" 1/2	41	354 ÷ 443 (45 ±5)	BAP 32
FE4-GF/N200-N	2"	41	354 ÷ 443 (45 ±5)	
FE4-GG/N200-N	2"	50	398 ÷ 487 (50 ±5)	BAP 37
FE4-GG/N212-N	2" 1/2	50	398 ÷ 487 (50 ±5)	



Brass elbow 90°. They are supplied complete with O-Ring and hose clamp.

Connector type	A Tubing nominal size	V		Pump type
		Chey	lbf in (Nm)	
FG4-GF/N112-N	1" 1/2	41	354 ÷ 443 (45 ±5)	BAP 32
FG4-GF/N134-N	1" 3/4	41	354 ÷ 443 (45 ±5)	
FG4-GF/N200-N	2"	41	354 ÷ 443 (45 ±5)	
FG4-GG/N200-N	2"	50	398 ÷ 487 (50 ±5)	BAP 37

Outlet - max. 5075 psi (350 bar)



Steel straight port connector

Connector type	A Tubing nominal size	Ø B in (mm)	V		Pump type
			Chey	lbf in (Nm)	
FD2-GE/MG34	G 3/4"	0.669 (17)	32	797 (90) [●]	BAP 32
FD2-GF/MG1	G 1"	0.906 (23)	41	1328 (150) [●]	BAP 37

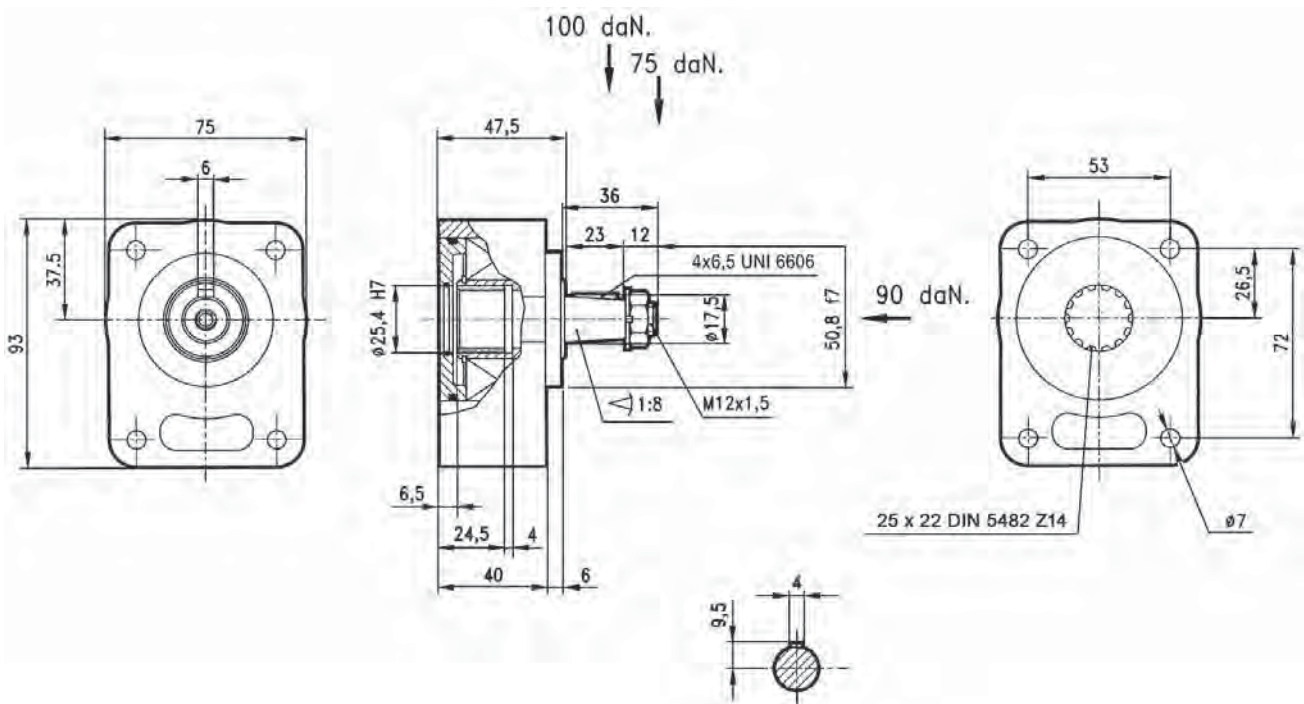
[●] Tightening torque tolerance to be applied to the values shown in the table: +10 %

Vorsatzlager

- für Pumpen BG 1
- Eingangszentrierbund $\varnothing 25,4$ mm
- Lochabstand 72×53 mm
- Ausgang konische Welle 1:8 - $\varnothing 17,5$ mm
- Ausgangszentrierbund $\varnothing 50,8$ mm

Front bearing

- for gr. 1 pumps
- inlet centering $\varnothing 25,4$ mm
- mounting 72×53 mm
- tapered shaft 1:8 - $\varnothing 17,5$ mm
- outlet centering $\varnothing 50,8$ mm



Bestell-Nr. code	Typ type
608-010-01000	25401

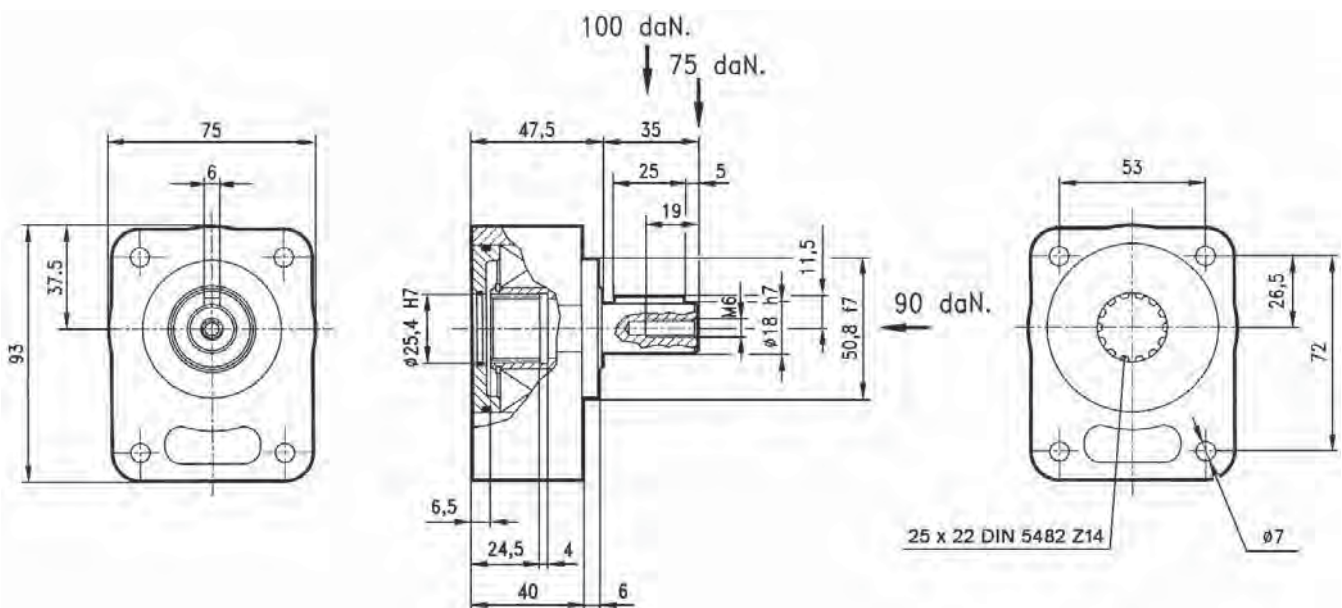
608-010

Vorsatzlager

- für Pumpen BG 1
- Eingangszentrierbund \varnothing 25,4 mm
- Lochabstand 72 x 53 mm
- Ausgang zylindrische Welle - \varnothing 18 mm
- Ausgangszentrierbund \varnothing 50,8 mm

Front bearing

- for gr. 1 pumps
- inlet centering \varnothing 25,4 mm
- mounting 72 x 53 mm
- parallel shaft - \varnothing 18 mm
- outlet centering \varnothing 50,8 mm



Bestell-Nr. code	Typ type
608-030-01000	25601

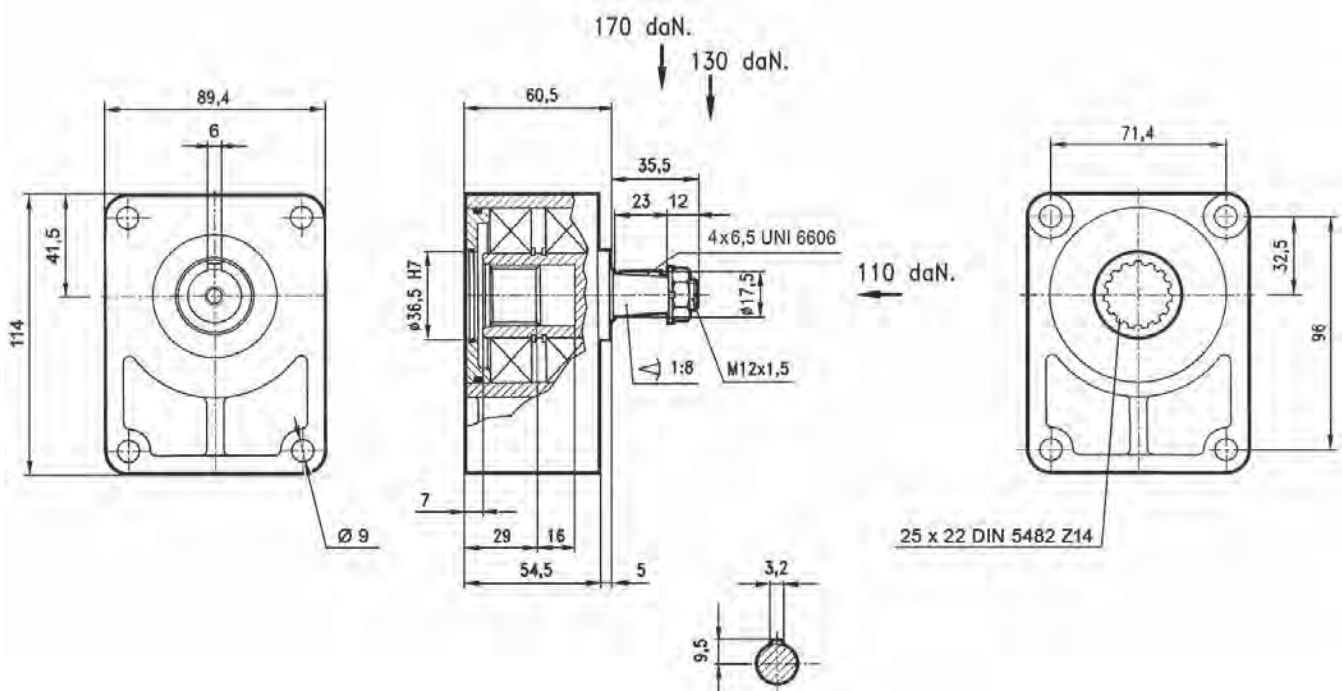
608-030

Vorsatzlager

- für Pumpen BG 2 - Standard
- Eingangszentrierbund Ø 36,5 mm
- Lochabstand 96 x 71,4 mm
- Ausgang konische Welle 1:8 - Ø 17,5 mm
- Ausgangszentrierbund Ø 36,5 mm

Front bearing

- for gr. 2 pumps - standard
- inlet centering Ø 36,5 mm
- mounting 96 x 71,4 mm
- tapered shaft 1:8 - Ø 17,5 mm
- outlet centering Ø 36,5 mm



Bestell-Nr. code	Typ type
608-050-01000	25402

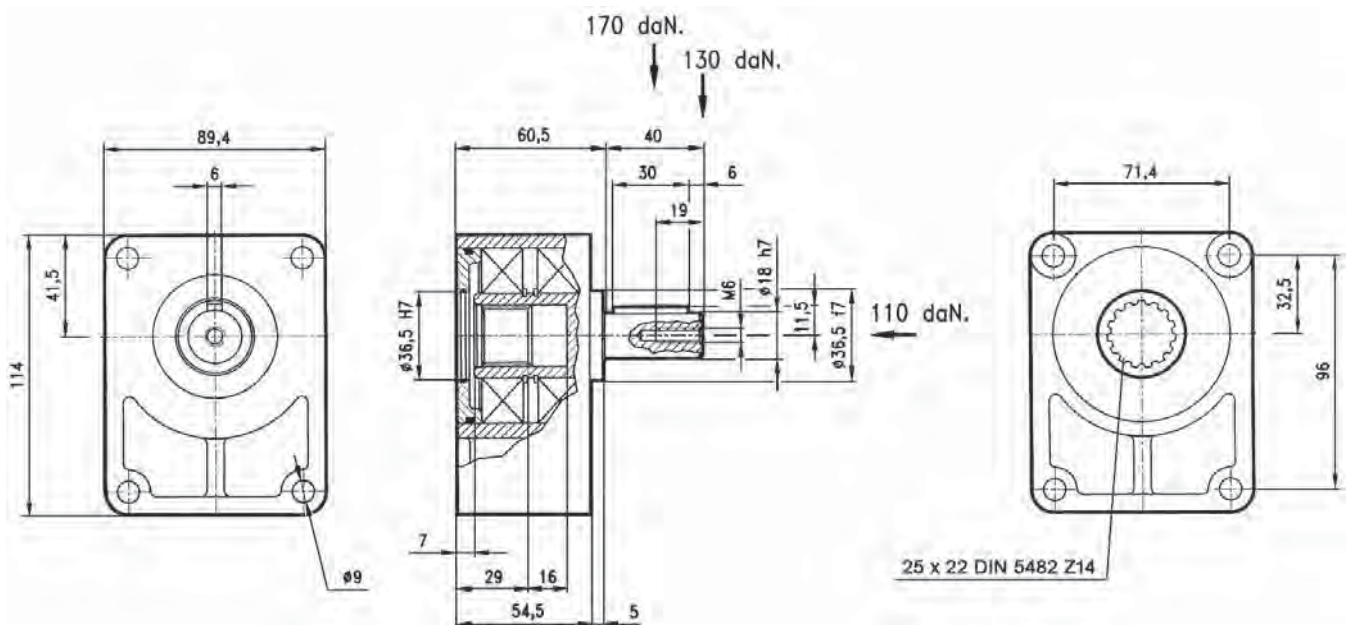
608-050

Vorsatzlager

- für Pumpen BG 2 - Standard
- Eingangszentrierbund Ø 36,5 mm
- Lochabstand 96 x 71,4 mm
- Ausgang zylindrische Welle - Ø 18 mm
- Ausgangszentrierbund Ø 36,5 mm

Front bearing

- for gr. 2 pumps - standard
- inlet centering Ø 36,5 mm
- mounting 96 x 71,4 mm
- parallel shaft - Ø 18 mm
- outlet centering Ø 36,5 mm



Bestell-Nr. code	Typ type
608-070-01000	25602

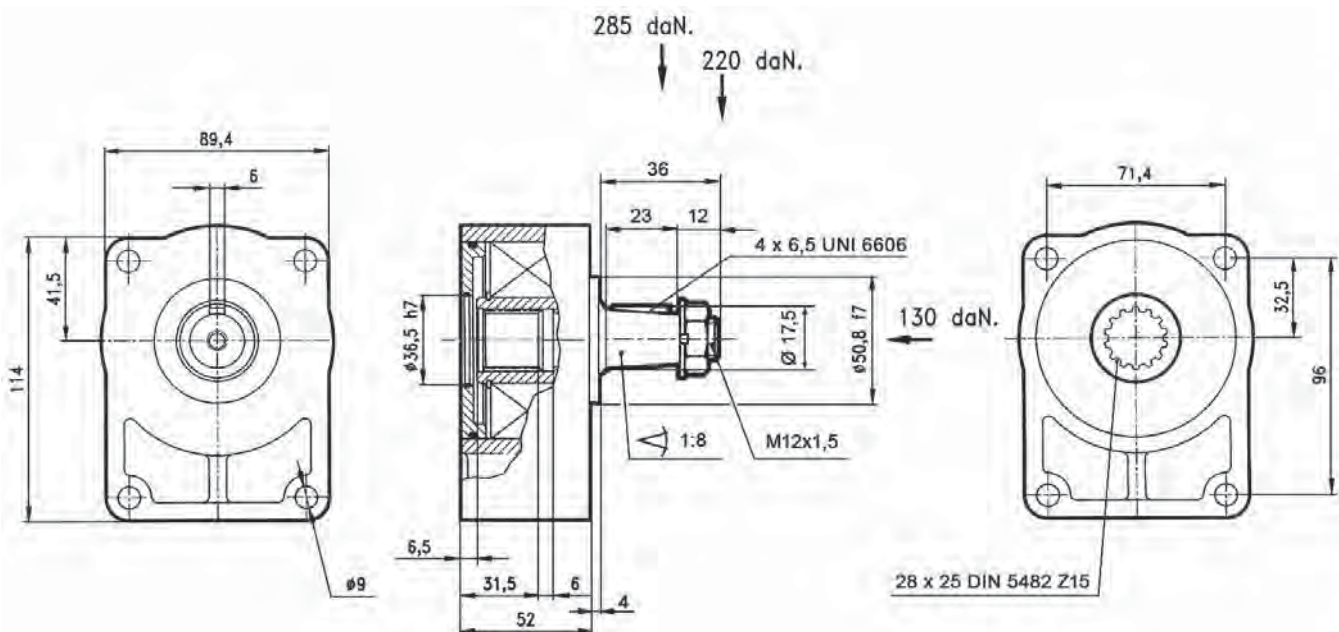
608-070

Vorsatzlager

- für Pumpen BG 2 - verstärkte Version
- Eingangszentrierbund \varnothing 36,5 mm
- Lochabstand 96 x 71,4 mm
- Ausgang konische Welle 1:8 - \varnothing 17,5 mm
- Ausgangszentrierbund \varnothing 50,8 mm

Front bearing

- for gr. 2 pumps - reinforced version
- inlet centering \varnothing 36,5 mm
- mounting 96 x 71,4 mm
- tapered shaft 1:8 - \varnothing 17,5 mm
- outlet centering \varnothing 50,8 mm



Bestell-Nr. code	Typ type
608-080-01000	25403.1

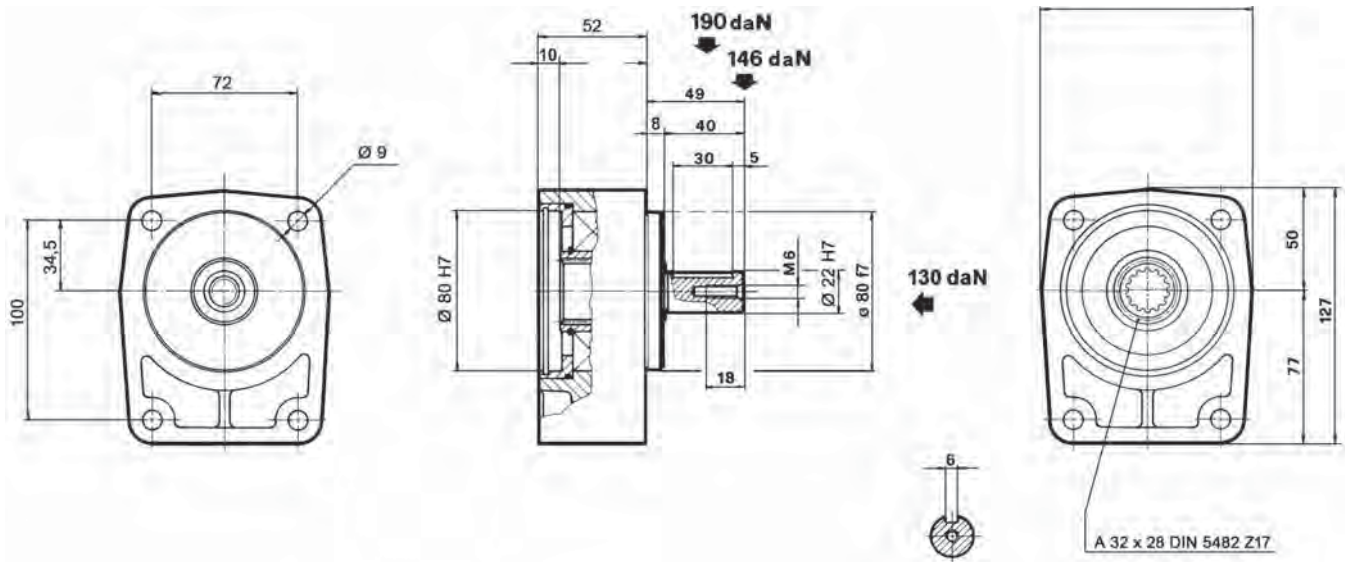
608-080

Vorsatzlager

- für Pumpen deutscher Standard ZF.2
- Eingangszentrierbund \varnothing 80 mm
- Lochabstand 100 x 72 mm
- Ausgang zylindrische Welle \varnothing 22 mm
- Ausgangszentrierbund \varnothing 80 mm

Front bearing

- for german standardized ZF.2 pumps
- inlet centering \varnothing 80 mm
- mounting 100 x 72 mm
- parallel shaft \varnothing 22 mm
- outlet centering \varnothing 80 mm



Bestell-Nr. code	Typ type
608-140-01000	25606

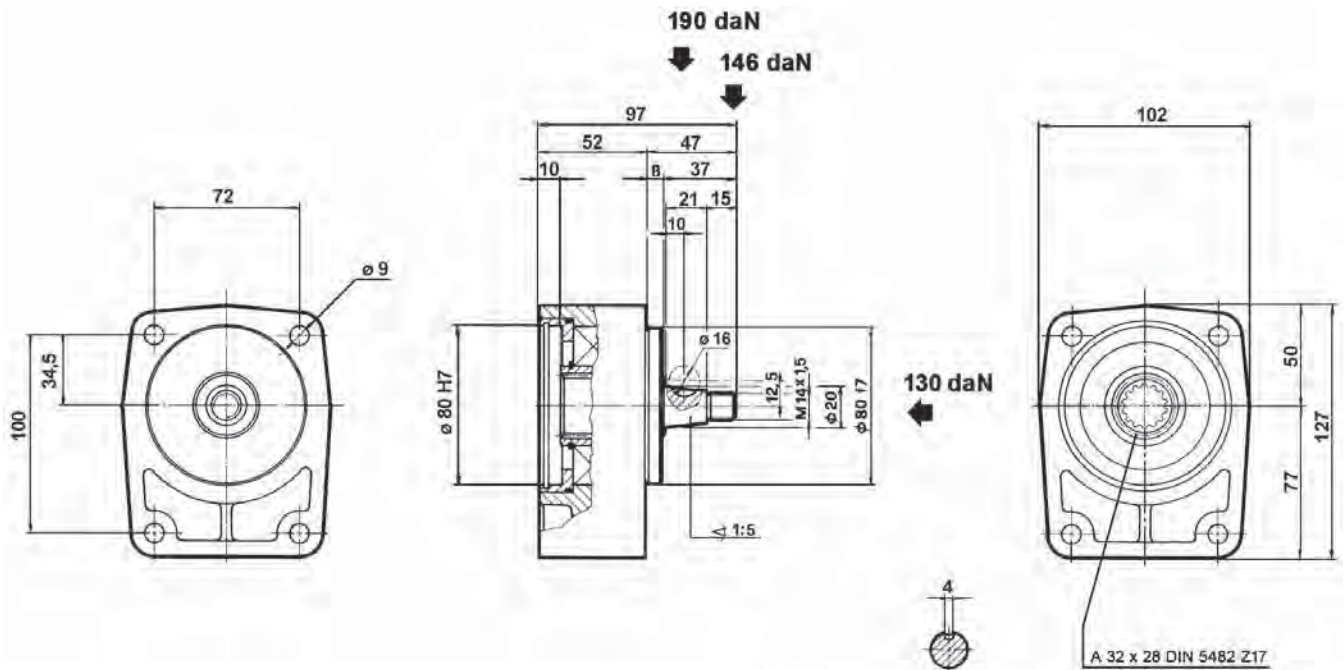
608-140

Vorsatzlager

- für Pumpen deutscher Standard ZF.2
- Eingangszentrierbund Ø 80 mm
- Lochabstand 100 x 72 mm
- Ausgang konische Welle 1:5 - Ø 20 mm
- Ausgangszentrierbund Ø 80 mm

Front bearing

- for german standardized ZF.2 pumps
- inlet centering Ø 80 mm
- mounting 100 x 72 mm
- tapered shaft 1:5 - Ø 20 mm
- outlet centering Ø 80 mm



Bestell-Nr. code	Typ type
608-160-01000	25406

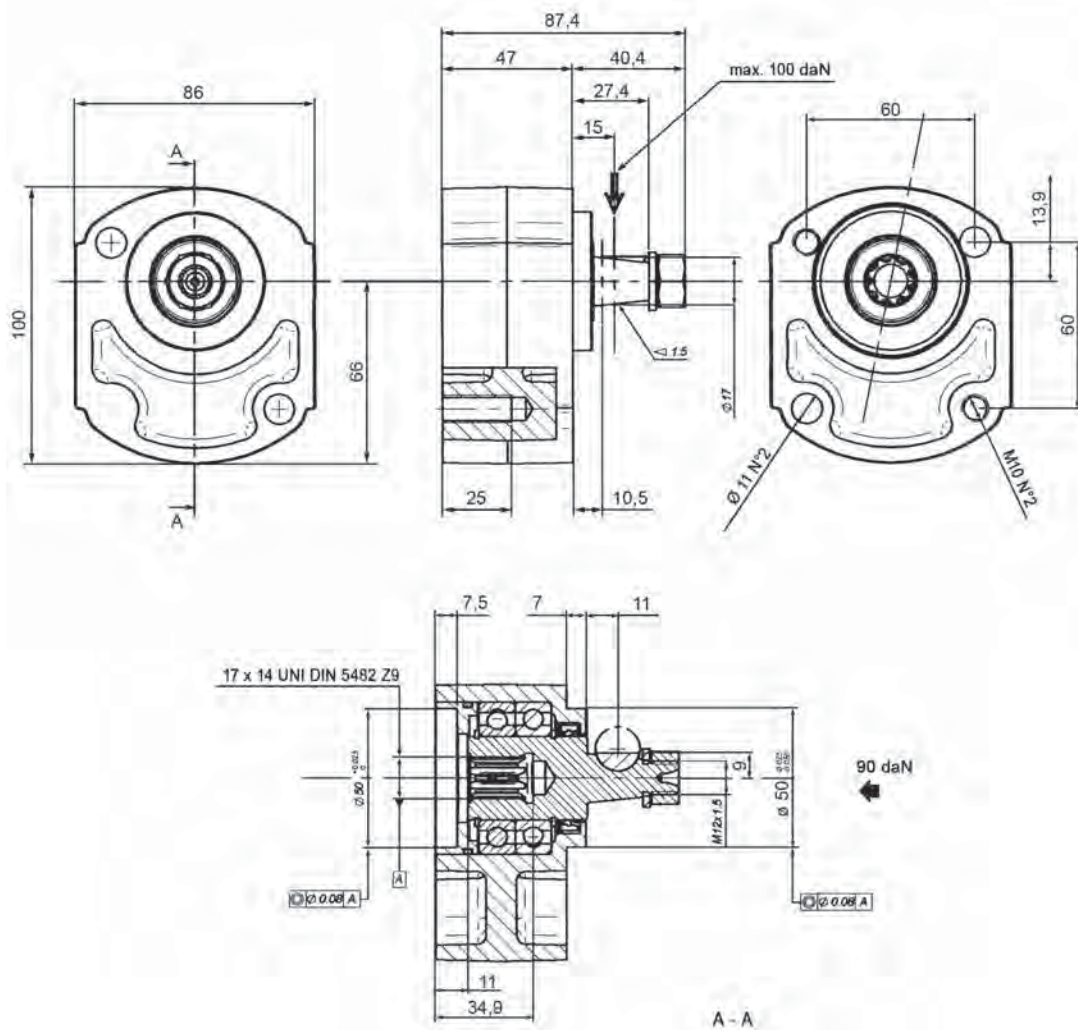
608-160

Vorsatzlager

- für deutsche Pumpen BG 2 -HY mit verzahnter Welle 17 x 14 - DIN 5482 - Z9
- Eingangszentrierbund Ø 50 mm
- Lochabstand 60 x 60 mm
- Ausgang konische Welle 1:5 - Ø 17 mm
- Ausgangszentrierbund Ø 50 mm

Front bearing

- for german gr. 2 -HY pumps with splined shaft
- inlet centering Ø 50 mm
- mounting 60 x 60 mm
- tapered shaft 1:5 - Ø 17 mm
- outlet centering Ø 50 mm



Bestell-Nr. code	Typ type
608-170-01000	25409

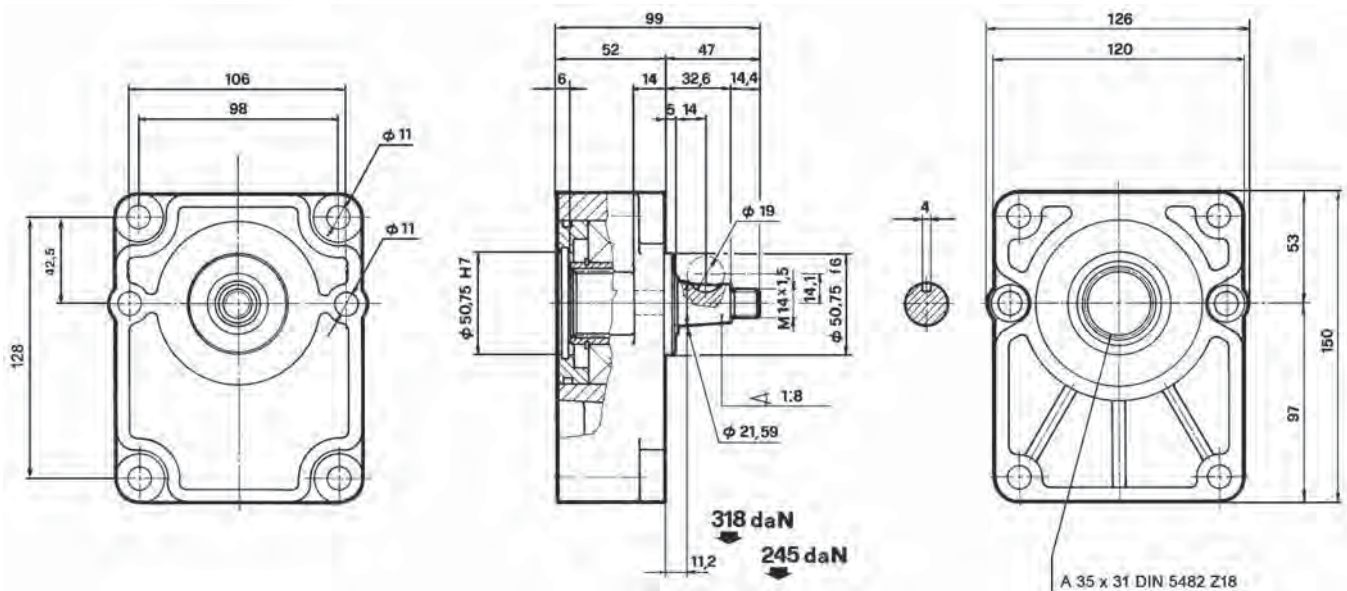
608-170

Vorsatzlager

- für Pumpen BG 3 - Standard
- Eingangszentrierbund Ø 50,8 mm
- Lochabstand 128 x 98 mm
- Ausgang konische Welle 1:8 - Ø 21,59 mm
- Ausgangszentrierbund Ø 50,8 mm

Front bearing

- for gr. 3 pumps - standard
- inlet centering Ø 50,8 mm
- mounting 128 x 98 mm
- tapered shaft 1:8 - Ø 21,59 mm
- outlet centering Ø 50,8 mm



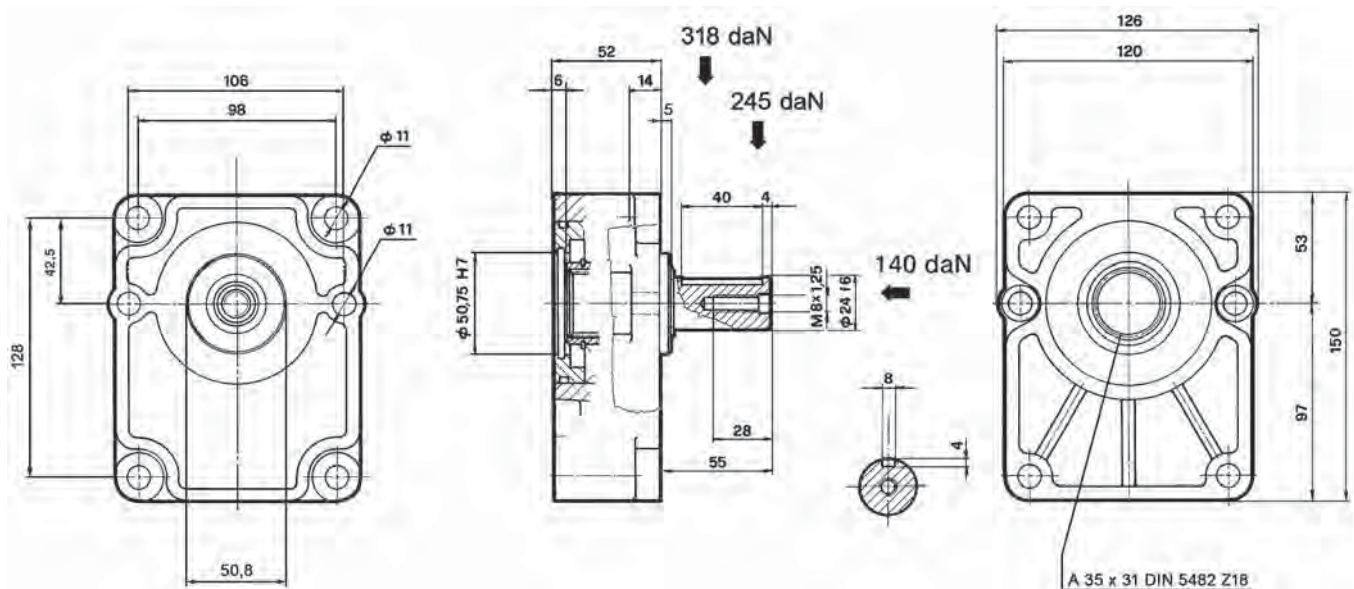
Bestell-Nr. code	Typ type
608-180-01000	25404/6

Vorsatzlager

- für Pumpen BG 3 - Standard
- Eingangszentrierbund Ø 50,8 mm
- Lochabstand 128 x 98 mm
- Ausgang zylindrische Welle - Ø 24 mm
- Ausgangszentrierbund Ø 50,8 mm

Front bearing

- for gr. 3 pumps - standard
- inlet centering Ø 50,8 mm
- mounting 128 x 98 mm
- parallel shaft - Ø 24 mm
- outlet centering Ø 50,8 mm



Bestell-Nr. code	Typ type
608-200-01000	25604/6

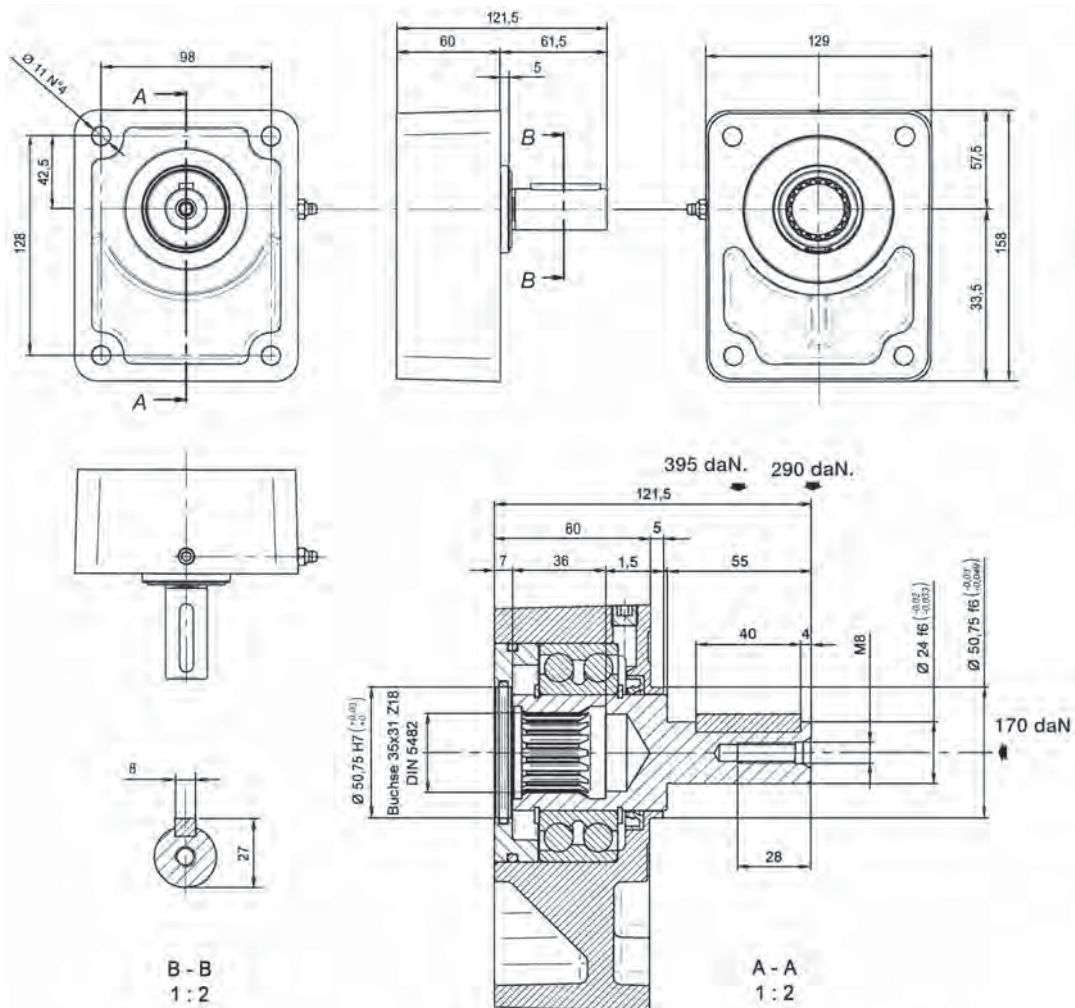
608-200

Vorsatzlager für Stahlgusspumpen

- für Pumpen BG 3
- Eingangszentrierbund $\varnothing 50,8$ mm
- Lochabstand 128 x 98 mm
- Ausgang zylindrische Welle - $\varnothing 24$ mm
- Ausgangszentrierbund $\varnothing 50,8$ mm

Front bearing for cast steel pumps

- for gr. 3 pumps
- inlet centering $\varnothing 50,8$ mm
- mounting 128 x 98 mm
- parallel shaft - $\varnothing 24$ mm
- outlet centering $\varnothing 50,8$ mm



Bestell-Nr. code	Typ type
608-260-01000	25610/24

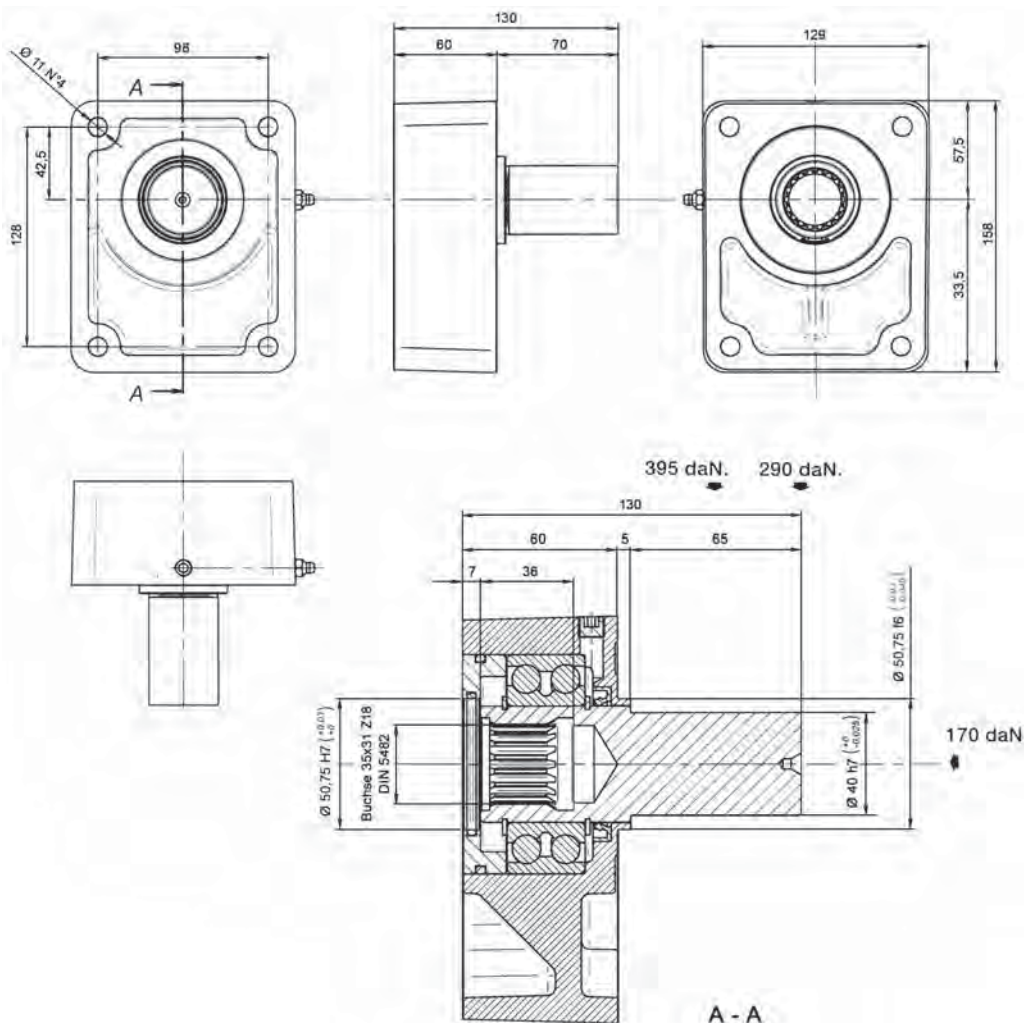
608-260

Vorsatzlager für Stahlgusspumpen

- für Pumpen BG 3
- Eingangszentrierbund $\varnothing 50,8$ mm
- Lochabstand 128 x 98 mm
- Ausgang zylindrische Welle - $\varnothing 40$ mm
- Ausgangszentrierbund $\varnothing 50,8$ mm

Front bearing for cast steel pumps

- for gr. 3 pumps
- inlet centering $\varnothing 50,8$ mm
- mounting 128 x 98 mm
- parallel shaft - $\varnothing 40$ mm
- outlet centering $\varnothing 50,8$ mm



Bestell-Nr. code	Typ type
608-280-01000	25610/40

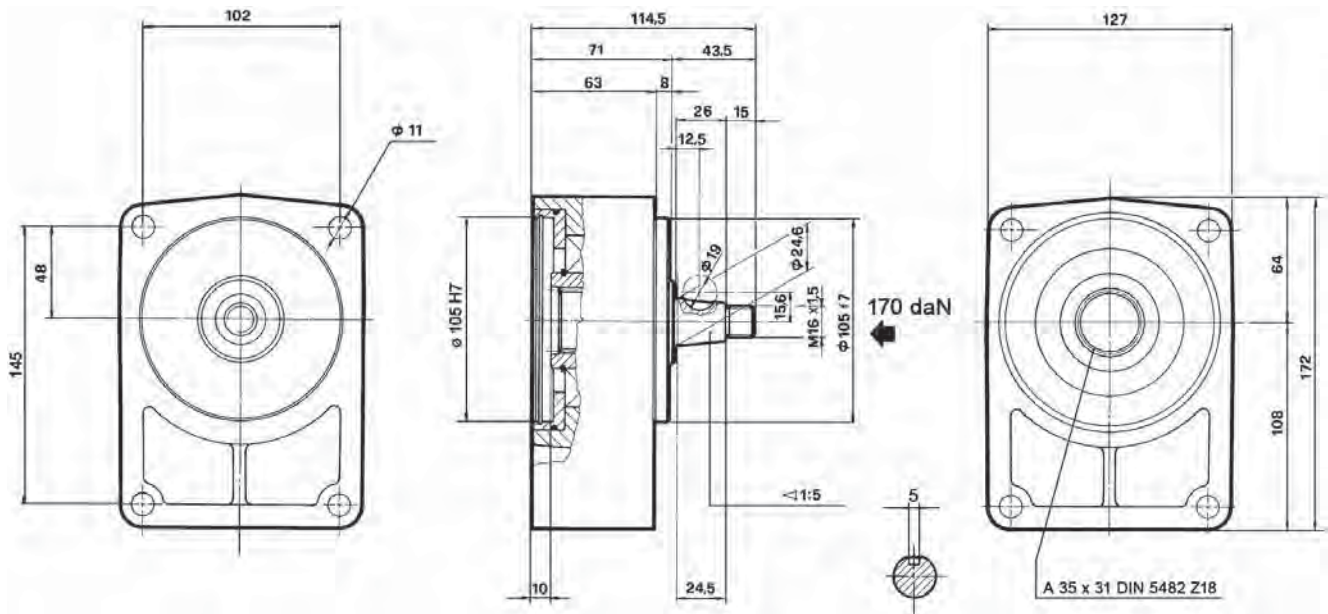
608-280

Vorsatzlager

- für Pumpen deutscher Standard ZF.3
- Eingangszentrierbund Ø 105 mm
- Lochabstand 145 x 102 mm
- Ausgang konische Welle 1:5 - Ø 24,6 mm
- Ausgangszentrierbund Ø 105 mm

Front bearing

- for german standardized ZF.3 pumps
- inlet centering Ø 105 mm
- mounting 145 x 102 mm
- tapered shaft 1:5 - Ø 24,6 mm
- outlet centering Ø 105 mm



Bestell-Nr. code	Typ type
608-300-01000	25407

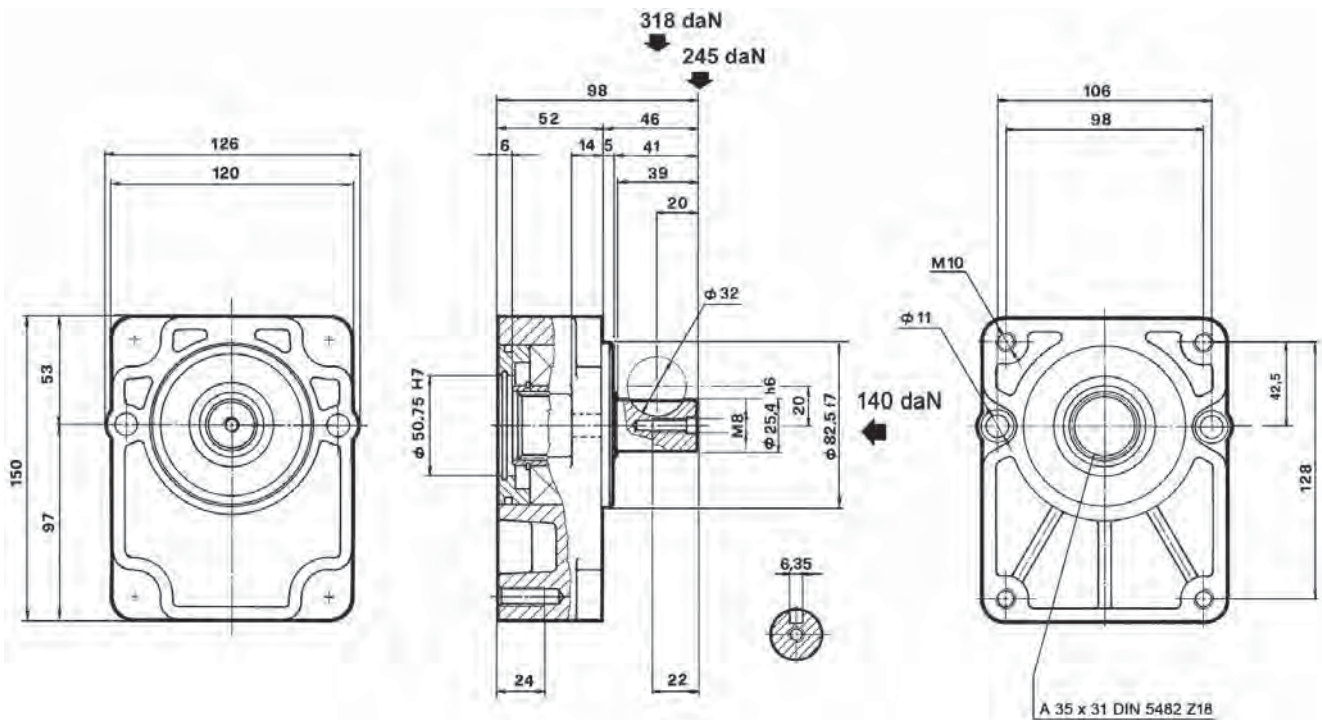
608-300

Vorsatzlager

- für Pumpen BG 3
- Eingangszentrierbund $\varnothing 50,8$ mm
- Lochabstand 128×98 mm
- Ausgang zylindrische Welle - $\varnothing 25,4$ mm
- Ausgangszentrierbund $\varnothing 82,5$ mm - SAE „A“

Front bearing

- for gr. 3 pumps
- inlet centering $\varnothing 50,75$ mm
- mounting 128×98 mm
- parallel shaft - $\varnothing 25,4$ mm
- outlet centering $\varnothing 82,5$ mm - SAE „A“



Bestell-Nr. code	Typ type
608-320-01000	25607

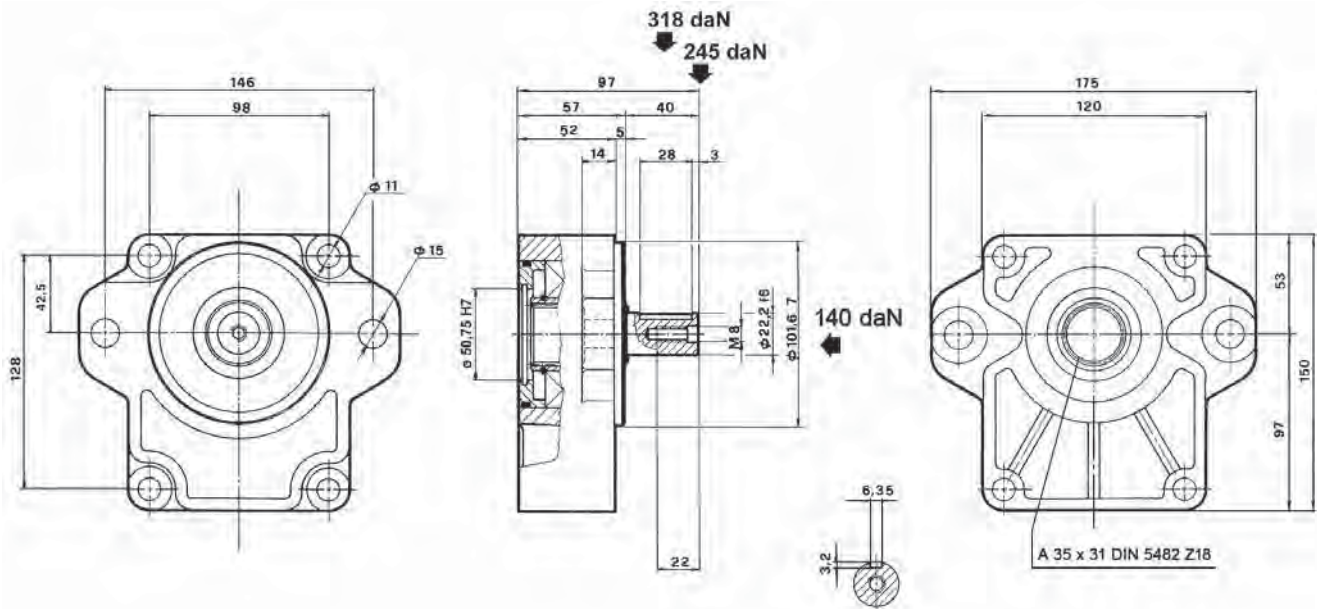
608-320

Vorsatzlager

- für Pumpen BG 3
- Eingangszentrierbund $\varnothing 50,75$ mm
- Lochabstand 128 x 98 mm
- Ausgang zylindrische Welle - $\varnothing 22,2$ mm
- Ausgangszentrierbund $\varnothing 101,6$ mm - SAE „B“
- Lochabstand Ausgang 128 x 98 mm

Front bearing

- for gr. 3 pumps
- inlet centering $\varnothing 50,75$ mm
- mounting 128 x 98 mm (inlet)
- parallel shaft - $\varnothing 22,2$ mm
- outlet centering $\varnothing 101,6$ mm - SAE „B“
- mounting 128 x 98 mm (outlet)



Bestell-Nr. code	Typ type
608-340-01000	25608

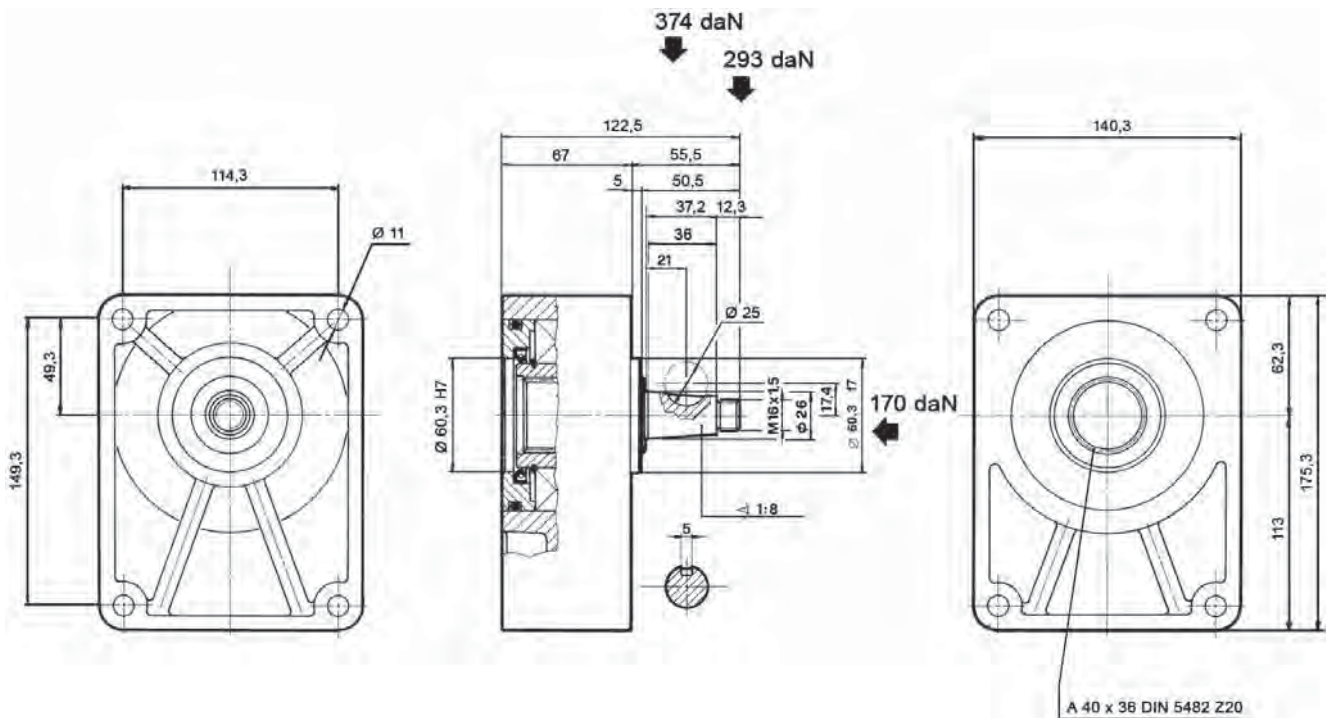
608-340

Vorsatzlager

- für Pumpen BG 3,5
- Eingangszentrierbund \varnothing 60,3 mm
- Lochabstand 149,3 x 114,3 mm
- Ausgang konische Welle 1:8 - \varnothing 26 mm
- Ausgangszentrierbund \varnothing 60,3 mm

Front bearing

- for gr. 3.5 pumps
- inlet centering \varnothing 60,3 mm
- mounting 149,3 x 114,3 mm
- tapered shaft 1:8 - \varnothing 26 mm
- outlet centering \varnothing 60,3 mm



Bestell-Nr. code	Typ type
608-360-01000	25405

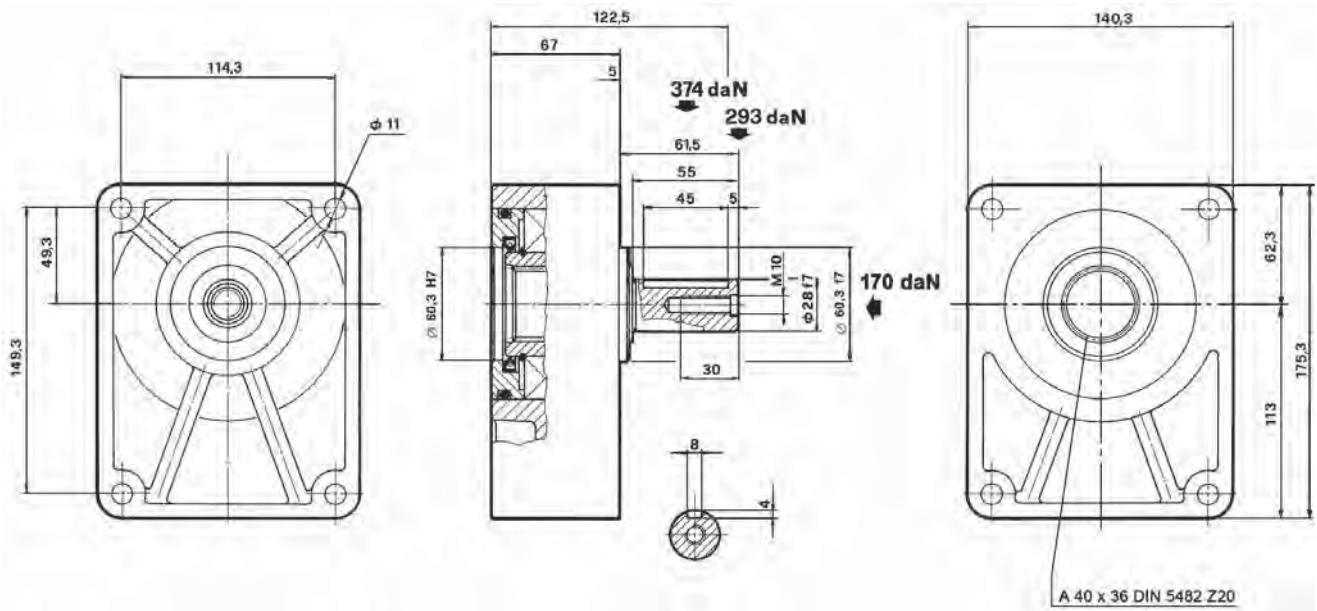
608-360

Vorsatzlager

- für Pumpen BG 3,5
- Eingangszentrierbund \varnothing 60,3 mm
- Lochabstand 149,3 x 114,3 mm
- Ausgang zylindrische Welle 1:8 - \varnothing 28 mm
- Ausgangszentrierbund \varnothing 60,3 mm

Front bearing

- for gr. 3.5 pumps
- inlet centering \varnothing 60,3 mm
- mounting 149,3 x 114,3 mm
- parallel shaft 1:8 - \varnothing 28 mm
- outlet centering \varnothing 60,3 mm

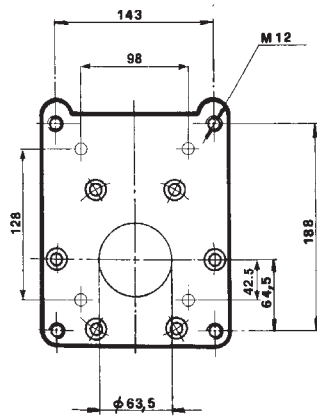


Bestell-Nr. code	Typ type
608-380-01000	25605

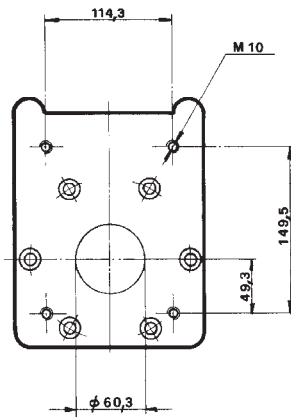
608-380

Flansche für Universal-Vorsatzlager

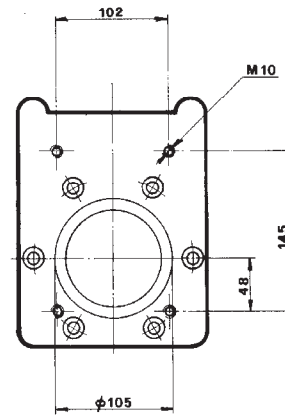
Flanges for universal-front bearing



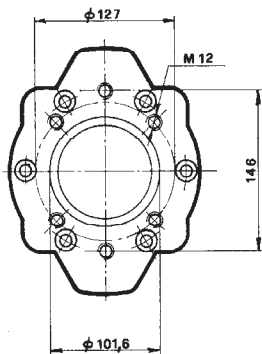
4 P 30403
3 P 30401



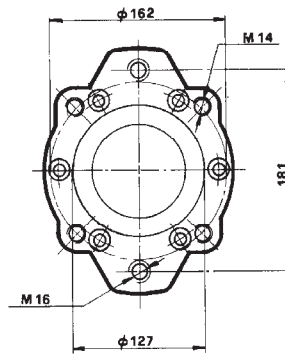
3,5 P 30402



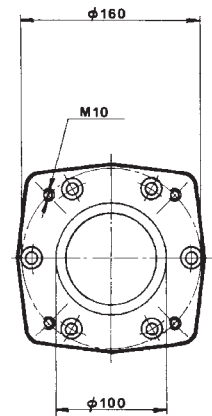
Bosch ZG3 30417



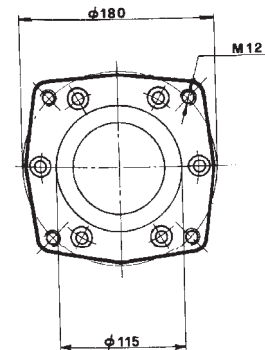
SAE B 2-4 fori
30421 - 30422



SAE C 2-4 fori
30431 - 30432



Linde Guldner PF 20-35-50
30461 - 30462



Linde Guldner PF 75
30463

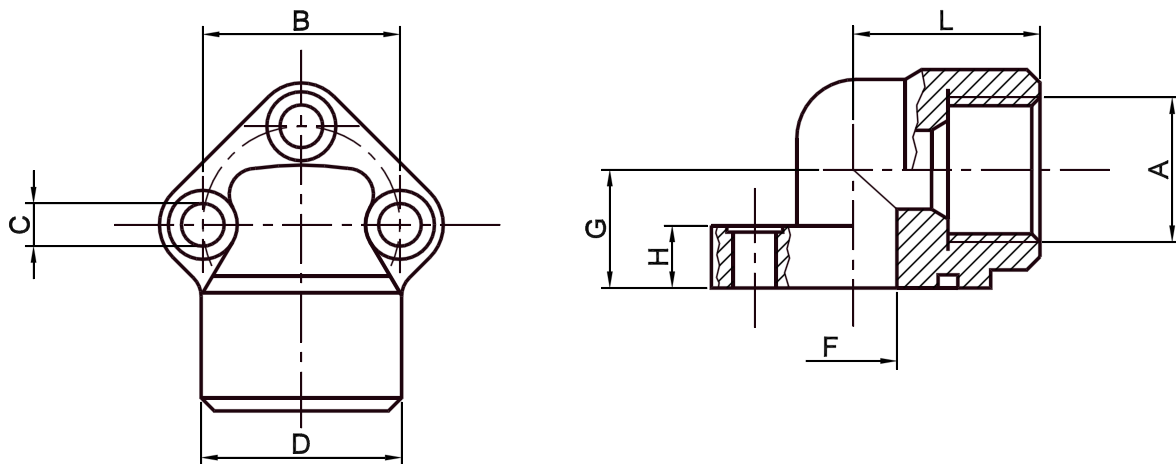
Bestell-Nr. code	Typ type	BG
508-400-02000	30403	4
508-400-02050	30401	3
508-400-02100	30402	3,5
508-400-02150	30417	Bosch ZG3
508-400-02200	30421	SAE B 2 Loch
508-400-02250	30422	SAE B 4 Loch
508-400-02300	30431	SAE C 2 Loch
508-400-02350	30432	SAE C 4 Loch
508-400-02400	30461	ISO 2 Linde & Guldner PF 20-35
508-400-02450	30462	Linde & Guldner PF 50
508-400-02500	30463	Linde & Guldner PF 75

3L-Winkelflansch RG

- Material: Stahl

Elbow coupling RG

- material: steel



Bestell-Nr. code	Typ type	max. Druck max. pressure bar	A	B	C	D	F	G	H	L	Bohrungen holes	Schrauben screws	O-Ring	O-Ring Größe
670-010-01000	RG26-38	300	3/8"	26	5,5	30,5	11,5	18	9,5	27	3	M5 x 20	2056	14,00 x 1,78
670-010-01050	RG26-12	300	1/2"	26	5,5	30,5	11,5	18	9,5	27	3	M5 x 20	2056	14,00 x 1,78
670-010-01100	RG30-38	300	3/8"	30	6,5	30,5	11,5	18	9,5	27	3	M6 x 20	121	15,88 x 2,62
670-010-01150	RG30-12	300	1/2"	30	6,5	30,5	11,5	18	9,5	27	3	M6 x 20	121	15,88 x 2,62
670-010-01200	RG40-38	300	3/8"	40	8,5	40	20	21	10,5	38	3	M8 x 25	132	23,81 x 2,62
670-010-01250	RG40-12	300	1/2"	40	8,5	40	20	21	10,5	38	3	M8 x 25	2100	25,12 x 1,78
670-010-01300	RG40-34	300	3/4"	40	8,5	40	20	21	10,5	38	3	M8 x 25	2100	25,12 x 1,78
670-010-01350	RG51-34	300	3/4"	51	10,5	45	25	27	13,5	47	3	M10 x 30	3125	31,42 x 2,62
670-010-01400	RG51-100	300	1"	51	10,5	45	25	27	13,5	47	3	M10 x 30	3125	31,42 x 2,62
670-010-01450	RG56-34	300	3/4"	56	10,5	45	34	27	13,5	47	3	M10 x 30	3150	37,77 x 2,62
670-010-01500	RG56-100	300	1"	56	10,5	45	34	27	13,5	47	3	M10 x 30	3150	37,77 x 2,62
670-010-01550	RG62-100-M10	300	1"	62	10,5	60	36	36	19	56	3	M10 x 35	4150	37,69 x 3,53
670-010-01600	RG62-114-M10	300	1 1/4"	62	10,5	60	36	36	19	56	3	M10 x 35	4150	37,69 x 3,53
670-010-01650	RG62-100-M12	300	1"	62	12,5	60	36	36	19	56	3	M12 x 35	4150	37,69 x 3,53
670-010-01700	RG62-114-M12	300	1 1/4"	62	12,5	60	36	36	19	56	3	M12 x 35	4150	37,69 x 3,53
670-010-01750	RG72,5-112	300	1 1/2"	72,5	12,5	62	38	38	16	58	3	M12 x 35	4187	47,22 x 3,53

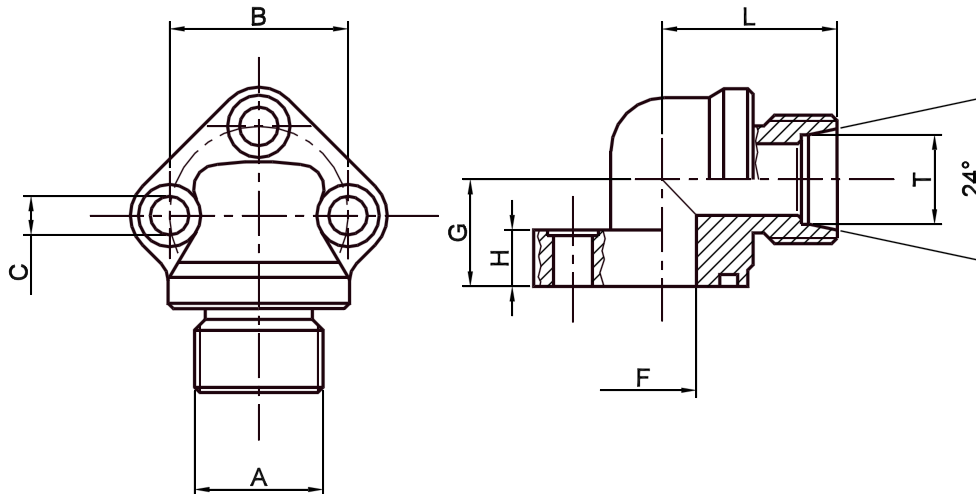
670-010

3L-Winkelflansch RGAD

- Material: Stahl

Elbow coupling RGAD

- material: steel



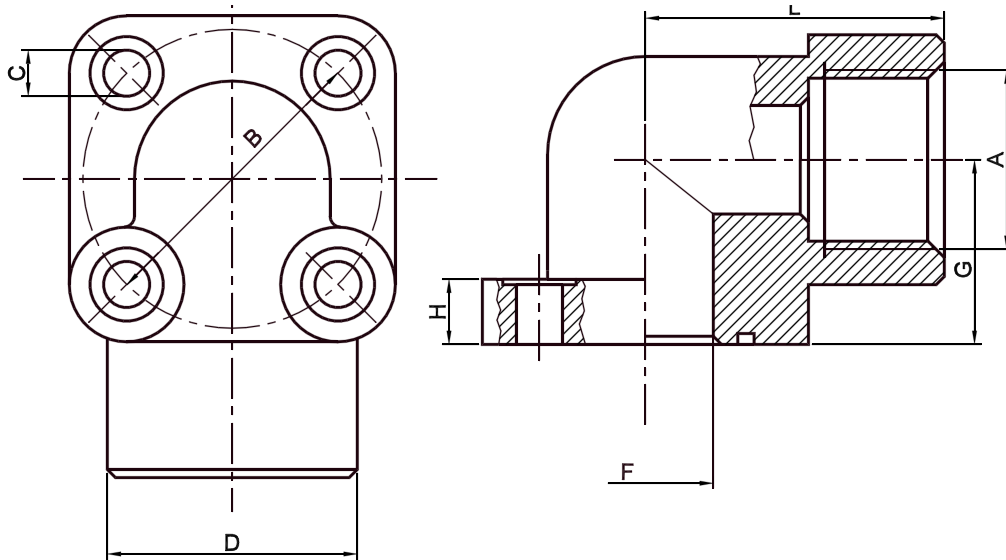
Bestell-Nr. code	Typ type	max. Druck max. pressure bar	A	B	C	F	G	H	L	T	Bohrungen holes	Schrauben screws	O-Ring	O-Ring Größe
670-020-01000	RGAD26-T10	300	M16x1,5	26	5,5	11,5	18	9,5	27	T10	3	M5 x 20	2056	14,00 x 1,78
670-020-01050	RGAD26-T12	300	M18x1,5	26	5,5	11,5	18	9,5	27	T12	3	M5 x 20	2056	14,00 x 1,78
670-020-01100	RGAD26-T15	200	M22x1,5	26	5,5	11,5	18	9,5	27	T15	3	M5 x 20	2056	14,00 x 1,78
670-020-01150	RGAD26-T16	300	M24x1,5	26	5,5	11,5	18	9,5	27	T16	3	M5 x 20	2056	14,00 x 1,78
670-020-01200	RGAD30-T10	300	M16x1,5	30	6,5	11,5	18	9,5	27	T10	3	M6 x 20	121	15,88 x 2,62
670-020-01250	RGAD30-T12	300	M18x1,5	30	6,5	11,5	18	9,5	27	T12	3	M6 x 20	121	15,88 x 2,62
670-020-01300	RGAD30-T15	200	M22x1,5	30	6,5	11,5	18	9,5	27	T15	3	M6 x 20	121	15,88 x 2,62
670-020-01350	RGAD30-T16	300	M24x1,5	30	6,5	11,5	18	9,5	27	T16	3	M6 x 20	121	15,88 x 2,62
670-020-01400	RGAD40-T15	200	M22x1,5	40	8,5	20	21	10,5	38	T15	3	M8 x 25	132	23,81 x 2,62
670-020-01450	RGAD40-T18	100	M26x1,5	40	8,5	20	21	10,5	38	T18	3	M8 x 25	132	23,81 x 2,62
670-020-01500	RGAD40-T20	200	M30x2	40	8,5	20	21	10,5	38	T20	3	M8 x 25	132	23,81 x 2,62
670-020-01550	RGAD40-T22	100	M30x2	40	8,5	20	21	10,5	38	T22	3	M8 x 25	132	23,81 x 2,62

4L-Winkelflansch RGB

- Material: Stahl

Elbow coupling RGB

- material: steel



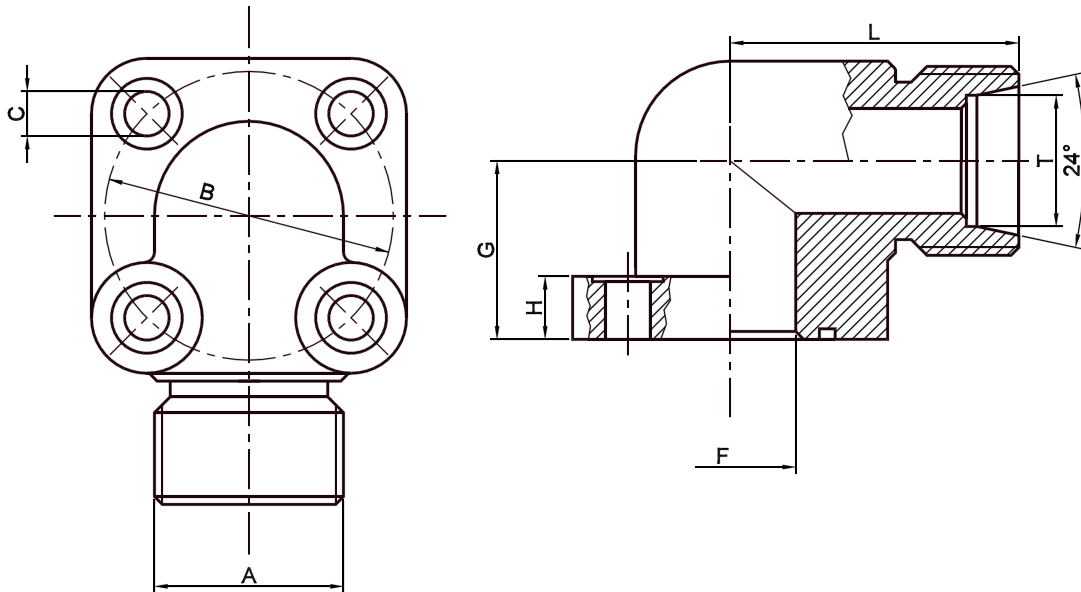
Bestell-Nr. code	Typ type	max. Druck max. pressure bar	A	B	C	D	F	G	H	L	Bohrungen holes	Schrauben screws	O-Ring	O-Ring Größe
670-030-10000	RGB30-38	300	3/8"	30	6,5	34	12	19	11	41	4	M6 x 20 M6 x 35	121	15,88 x 2,62
670-030-10050	RGB30-12	300	1/2"	30	6,5	34	12	19	11	41	4	M6 x 20 M6 x 35	3075	18,72 x 2,62
670-030-10100	RGB35-38	300	3/8"	35	6,5	32	13,5	18	11	40	4	M6 x 25 M6 x 45	132	23,81 x 2,62
670-030-10150	RGB35-12	300	1/2"	35	6,5	32	13,5	18	11	40	4	M8 x 25	4118	29,74 x 3,53
670-030-10200	RGB40-12	300	1/2"	40	6,5	35	20	24	10	45	4	M8 x 25		
670-030-10250	RGB40-34	300	3/4"	40	6,5	35	20	24	10	45	4	M8 x 60		
670-030-10300	RGB55-34	300	3/4"	55	8,5	46	25	35	13	54	4			
670-030-10350	RGB55-100	300	1"	55	8,5	46	25	35	13	54	4			

4L-Winkelflansch RTA

- Material: Stahl

Elbow coupling RTA

- material: steel



Bestell-Nr. code	Typ type	max. Druck max. pressure bar	A	B	C	F	G	H	L	T	Bohrungen holes	Schrauben screws	O-Ring	O-Ring Größe
670-040-10000	RTA30-T10	300	M16x1,5	30	6,5	12	19	11	41	10	4	M6 x 20 M6 x 35	121	15,88 x 2,62
670-040-10050	RTA30-T12	300	M18x1,5	30	6,5	12	19	11	41	12	4			
670-040-10100	RTA30-T15	250	M22x1,5	30	6,5	12	19	11	41	15	4			
670-040-10150	RTA30-T16	300	M24x1,5	30	6,5	12	19	11	41	16	4	M6 x 20 M6 x 35	3075	18,72 x 2,62
670-040-10200	RTA35-T10	300	M16x1,5	35	6,5	13,5	18	11	40	10	4			
670-040-10250	RTA35-T12	300	M18x1,5	35	6,5	13,5	18	11	40	12	4			
670-040-10300	RTA35-T15	250	M22x1,5	35	6,5	13,5	18	11	40	15	4	M6 x 25 M6 x 45	132	23,81 x 2,62
670-040-10350	RTA35-T16	300	M24x1,5	35	6,5	13,5	18	11	40	16	4			
670-040-10400	RTA40-T15	100	M22x1,5	40	6,5	20	24	10	45	15	4			
670-040-10450	RTA40-T18	100	M26x1,5	40	6,5	20	24	10	45	18	4	M8 x 25 M8 x 60	4118	29,74 x 3,53
670-040-10500	RTA40-T20	250	M30x2	40	6,5	20	24	10	45	20	4			
670-040-10550	RTA40-T22	100	M30x2	40	6,5	20	24	10	45	22	4			
670-040-10600	RTA40-T28	100	M36x2	40	6,5	20	24	10	45	28	4	M8 x 25 M8 x 60	4118	29,74 x 3,53
670-040-10650	RTA55-T20	250	M30x2	55	8,5	25	35	13	54	20	4			
670-040-10700	RTA55-T25	250	M36x2	55	8,5	25	35	13	54	25	4			
670-040-10750	RTA55-T30	250	M42x2	55	8,5	25	35	13	54	30	4			

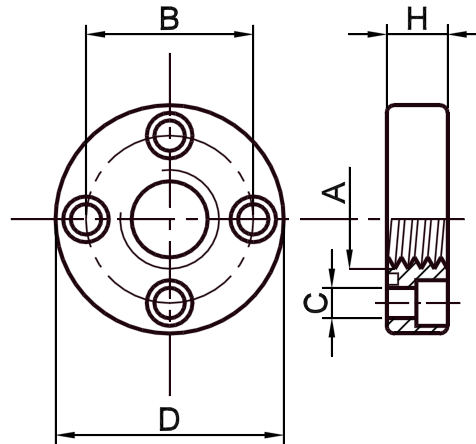
670-040

4L-Flansch RF gerade

- Material: Stahl

Straight connectors RF

- material: steel



RF

Bestell-Nr. code	Typ type	max. Druck max. pressure bar	A	B	C	D	F	G	H	L	Bohrungen holes	Schrauben screws	O-Ring	O-Ring Größe
670-050-10800	RF30-38	250	3/8"	30	6,5	45	15	-	13	-	4	M6 x 20	2075	18,77 x 1,78
670-050-01000	RF35-38	250	3/8"	35	6,5	50	15	-	13	-	4	M6 x 20	2075	18,77 x 1,78
670-050-01050	RF35-12	250	1/2"	35	6,5	50	15	-	25	-	4	M6 x 30	3075	18,72 x 2,62
670-050-01100	RF40-12	250	1/2"	40	8,5	60	19	-	15	-	4	M8 x 25	2100	25,12 x 1,78
670-050-01150	RF40-34	250	3/4"	40	6,5	60	19	-	27	-	4	M6 x 30	132	23,81 x 2,62
670-050-01200	RF51-34	250	3/4"	51	10,5	75	24	-	17	-	4	M10 x 30	3125	31,42 x 2,62
670-050-01250	RF51-100	250	1"	51	10,5	75	24	-	29	-	4	M10 x 35	3125	31,42 x 2,62
670-050-01300	RF56-34	250	3/4"	56	10,5	80	20	-	18	-	4	M10 x 35	3150	37,77 x 2,62
670-050-01350	RF56-100	250	1"	56	10,5	80	30	-	29	-	4	M10 x 35	3150	37,77 x 2,62
670-050-01400	RF62-114-M10	180	1 1/4"	62	10,5	80	33	-	39	-	4	M10 x 40	4150	37,69 x 3,53
670-050-01450	RF72,5-112	180	1 1/2"	72,5	12,5	92	42	-	43	-	4	M12 x 45	153	49,21 x 3,53

670-050