GENERAL DATA PUMPS AND MOTORS

Series	Pump type PLP Motor type PLM	Displacement	Max. pressure			Max. speed	Min. speed
			p_1	p_2	p_3		
		in^3/rev (cm^3/rev)	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 (1,6)	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

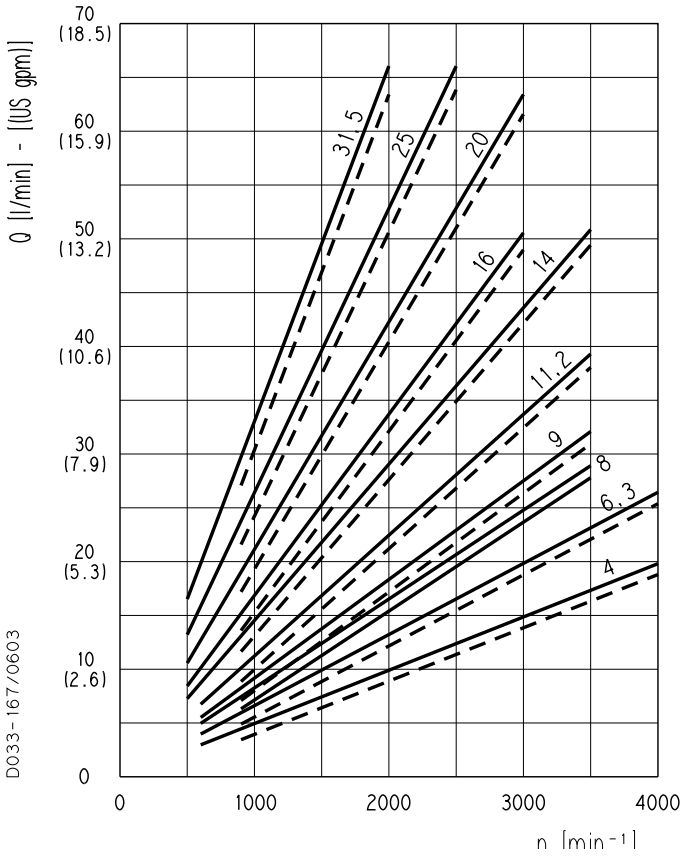
p_1= Max. continuous pressure p_2= Max. intermittent pressure p_3= Max. peak pressure

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

01/10.03

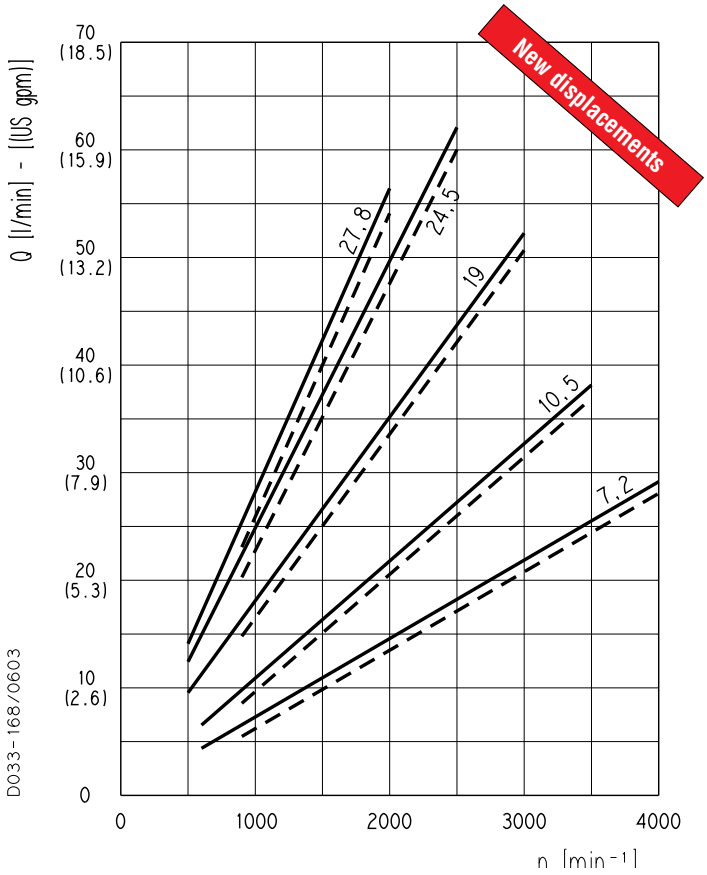
PLP 20 POLARIS 20 GEAR PUMPS PERFORMANCE CURVES

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



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

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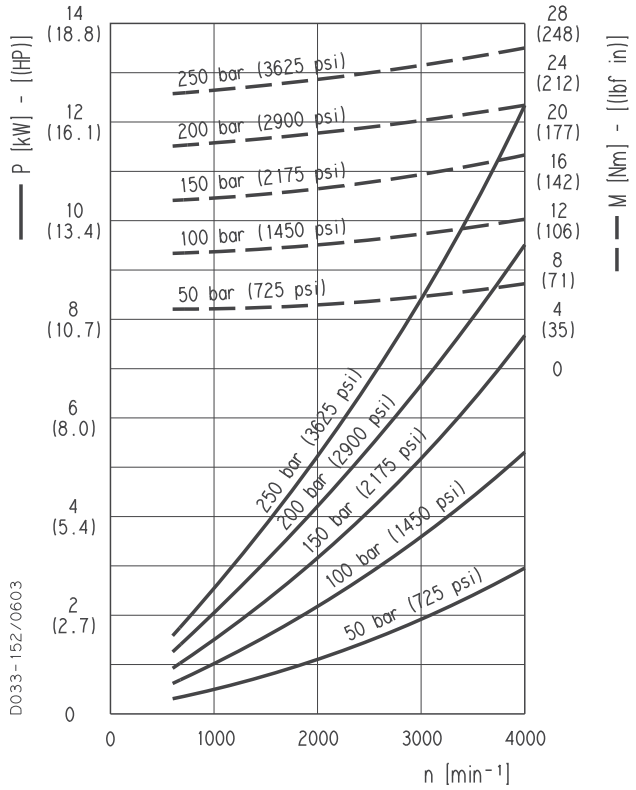
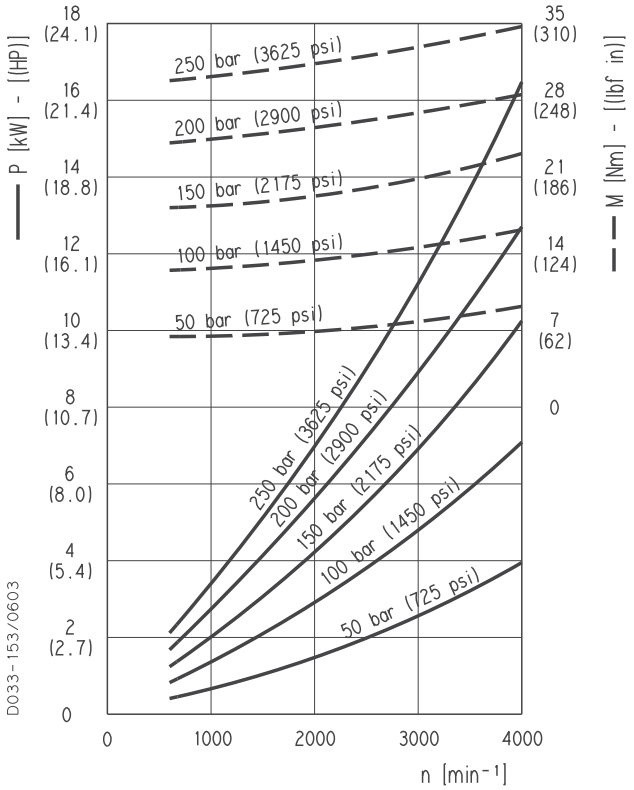
PLP 20 POLARIS 20 GEAR PUMPS PERFORMANCE CURVES

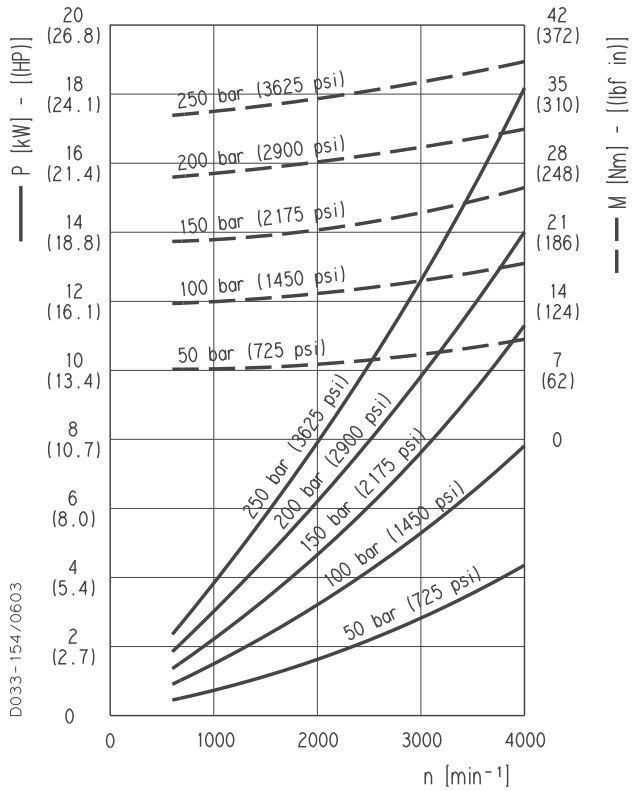
PLP 20•4



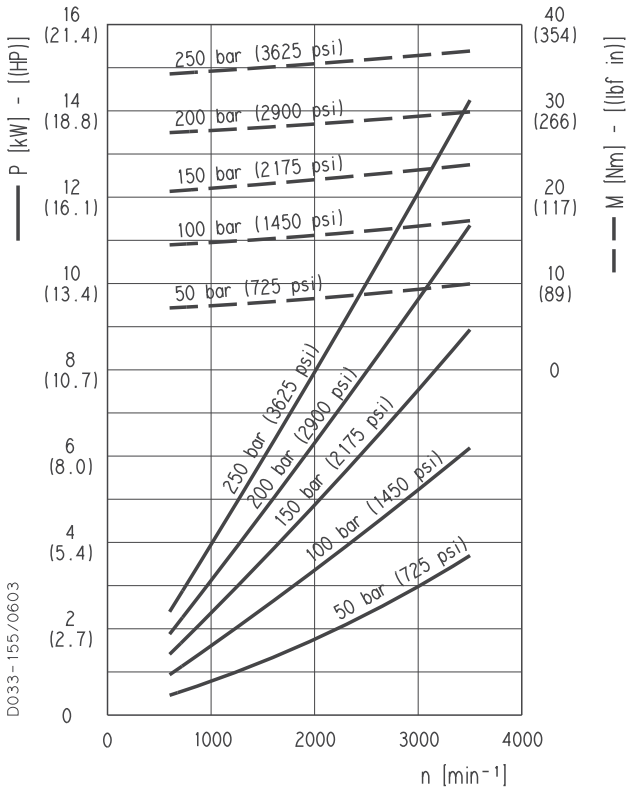
PLP 20•6,3



PLP 20•7,2



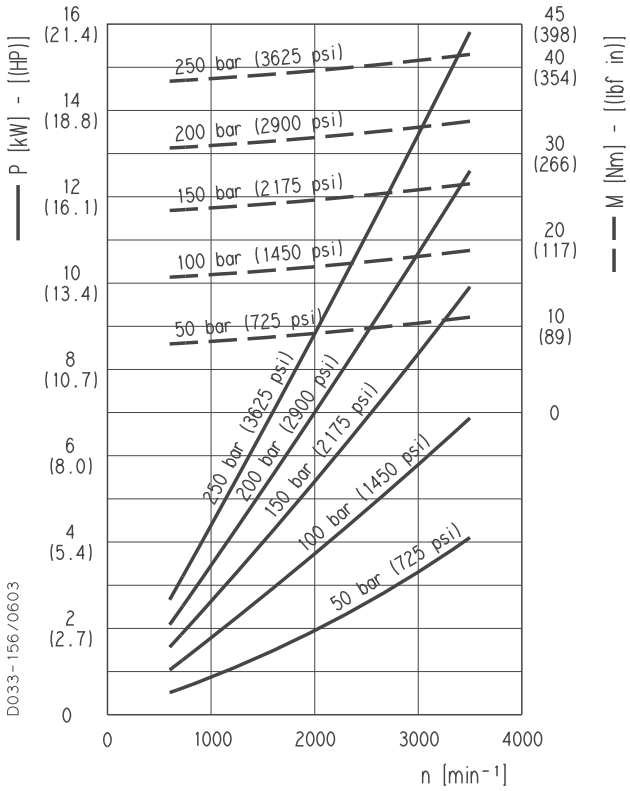
PLP 20•8



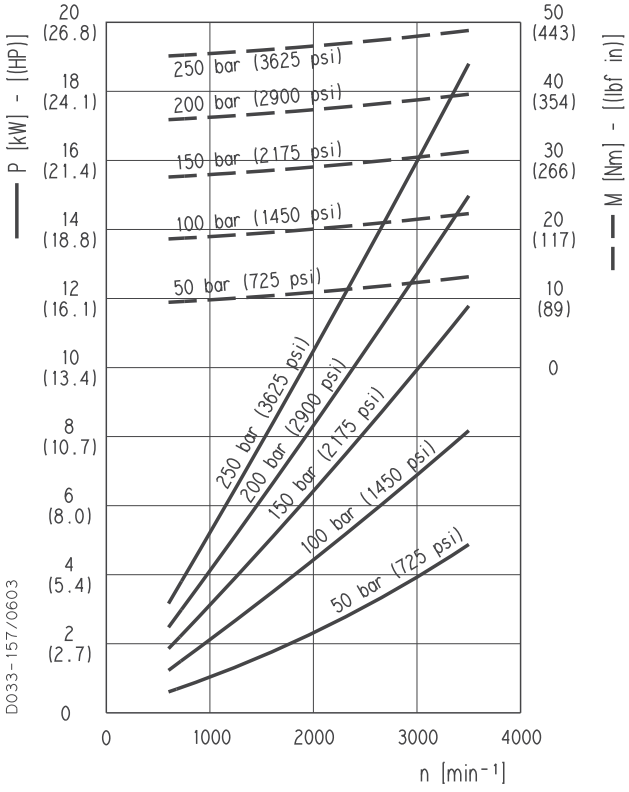
01/10.03

PLP 20 POLARIS 20 GEAR PUMPS PERFORMANCE CURVES

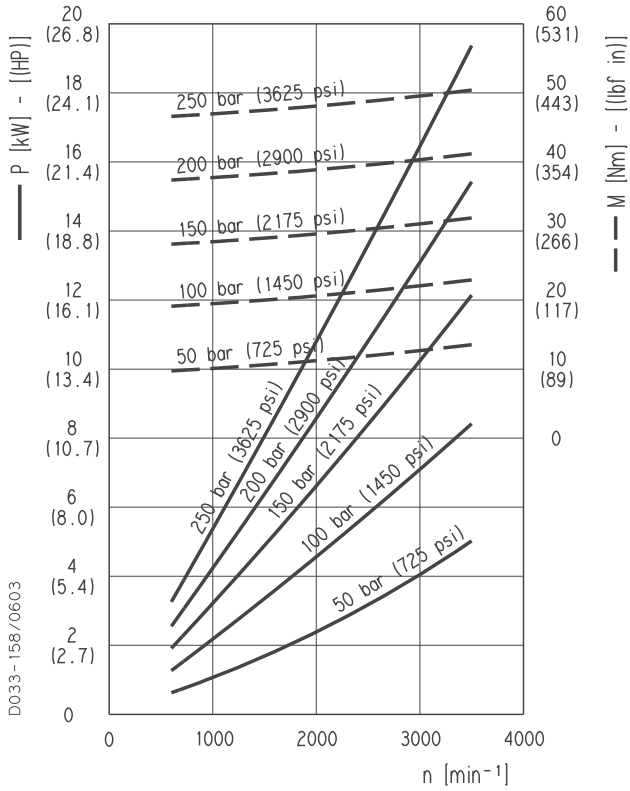
PLP 20•9



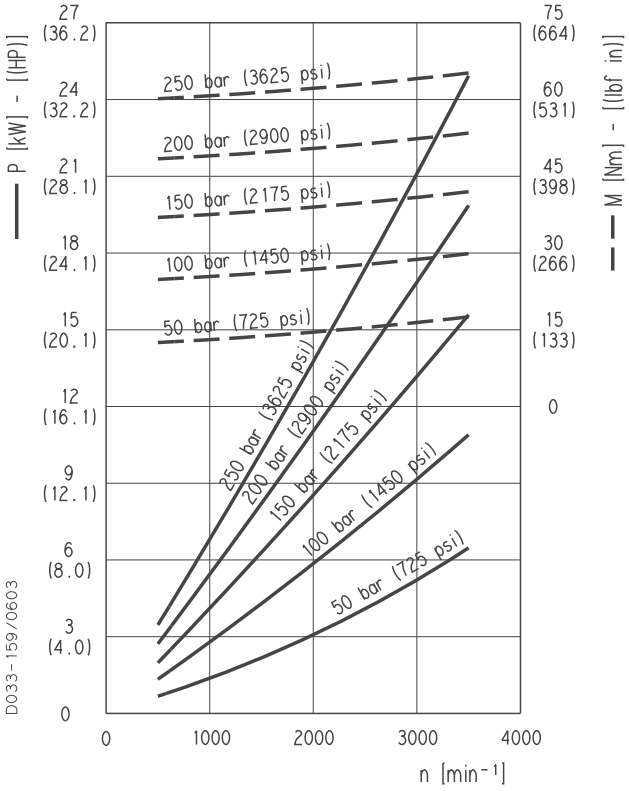
PLP 20•10,5



PLP 20•11,2



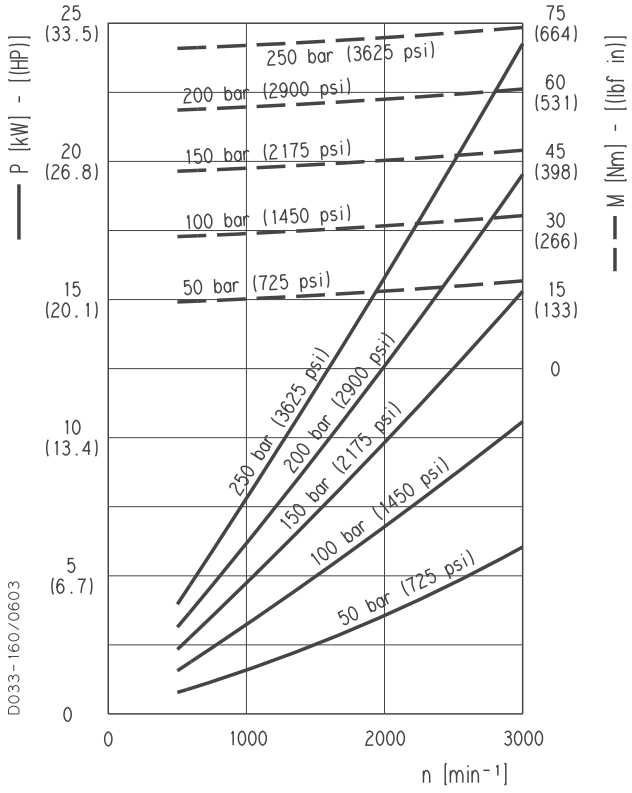
PLP 20•14



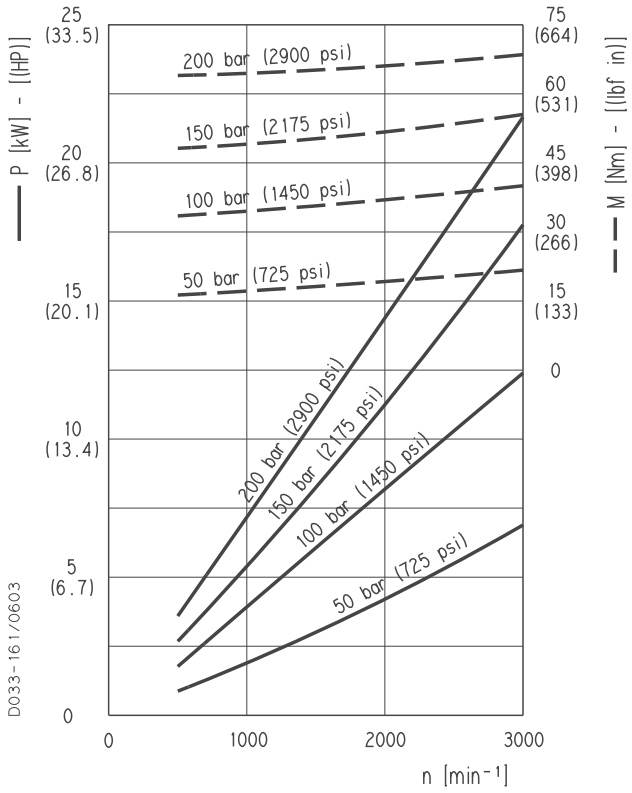
01/10.03

PLP 20 POLARIS 20 GEAR PUMPS PERFORMANCE CURVES

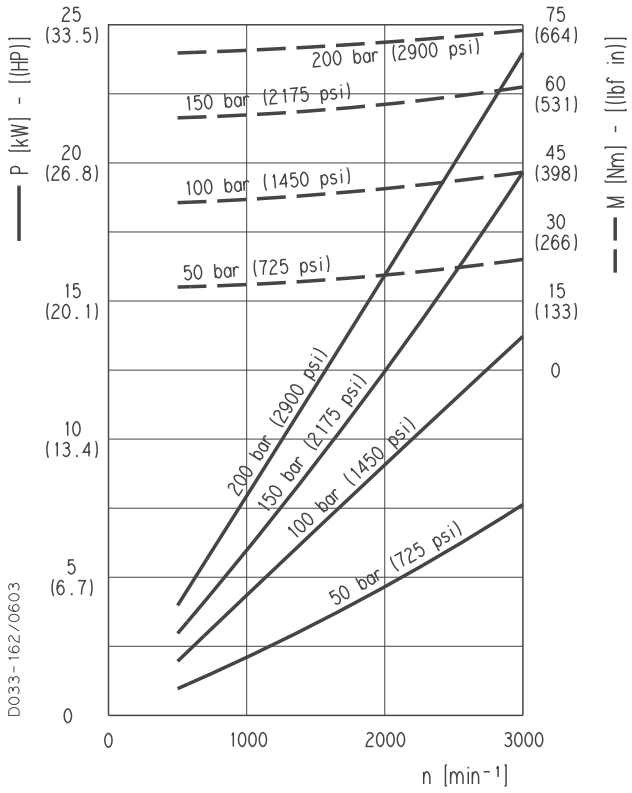
PLP 20•16



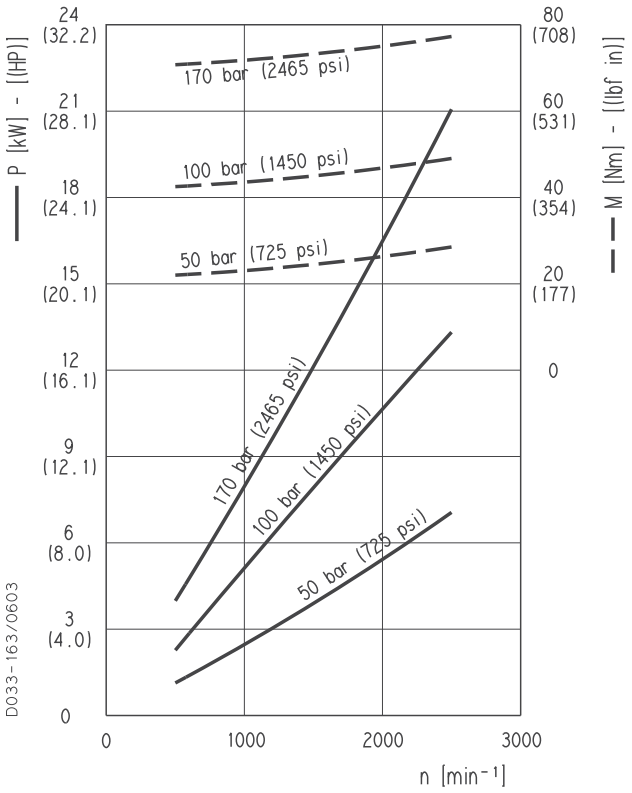
PLP 20•19



PLP 20•20



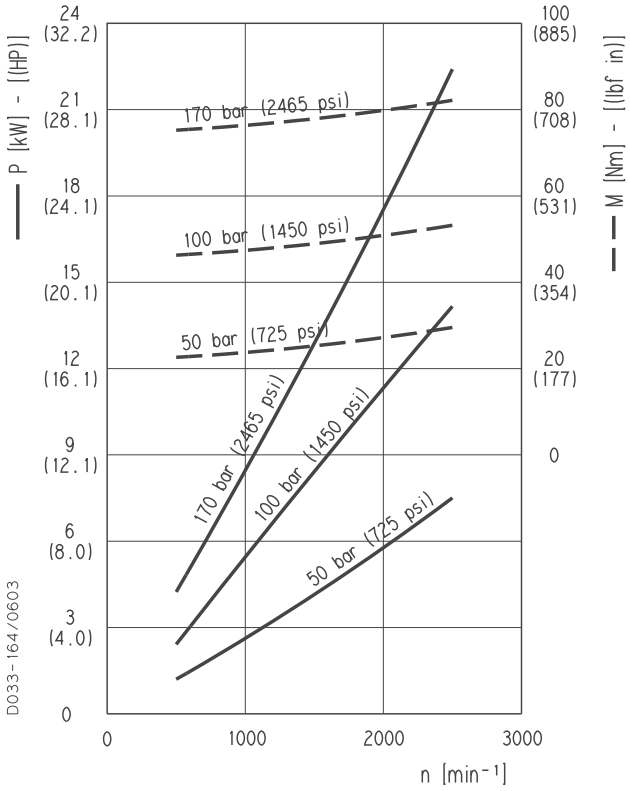
PLP 20•24,5



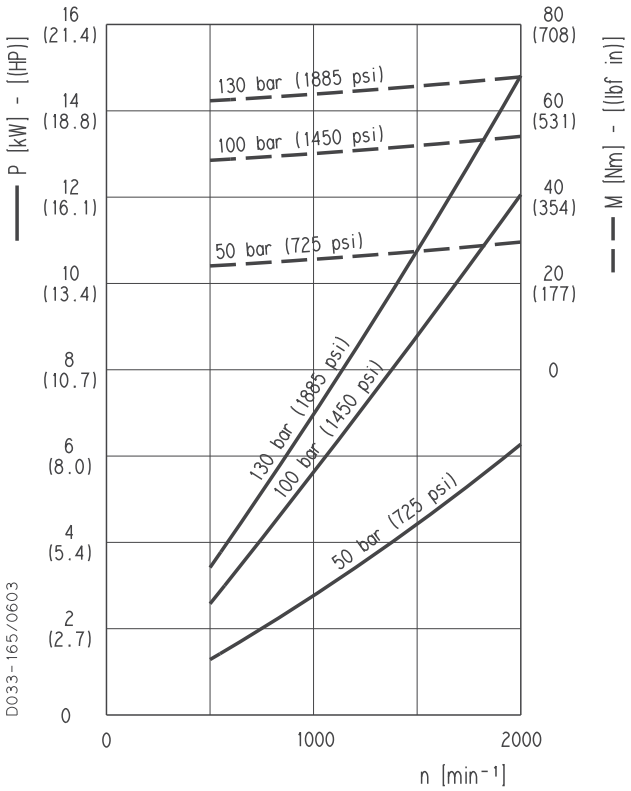
01/10.03

PLP 20 POLARIS 20 GEAR PUMPS PERFORMANCE CURVES

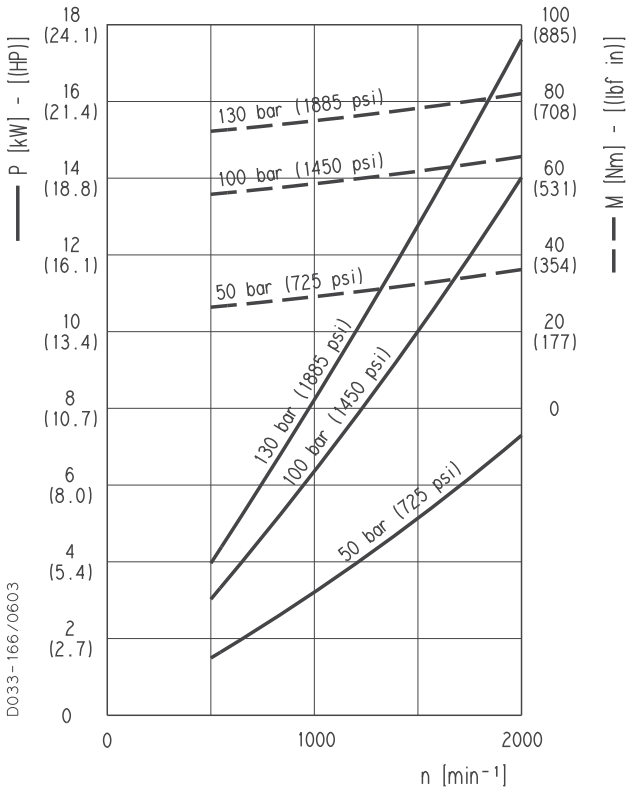
PLP 20•25



PLP 20•27,8

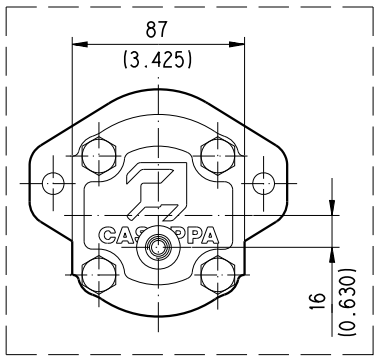


PLP 20•31,5

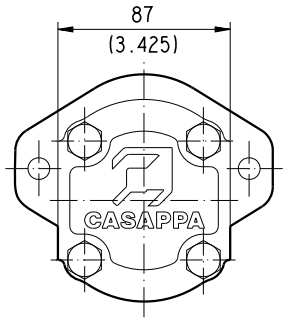


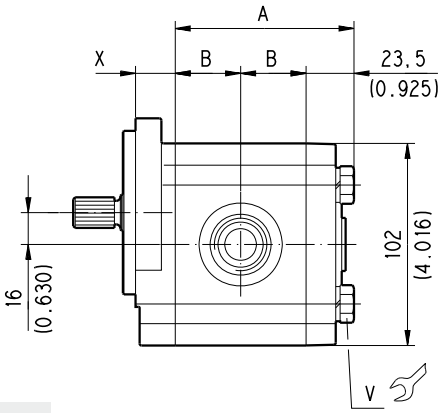
01/10.03

POLARIS 20 — SINGLE UNITS SIDE PORTS — L

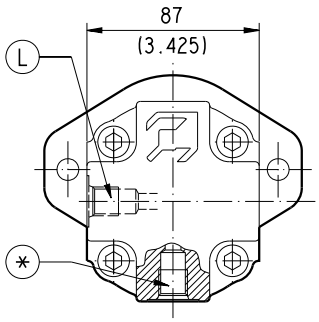


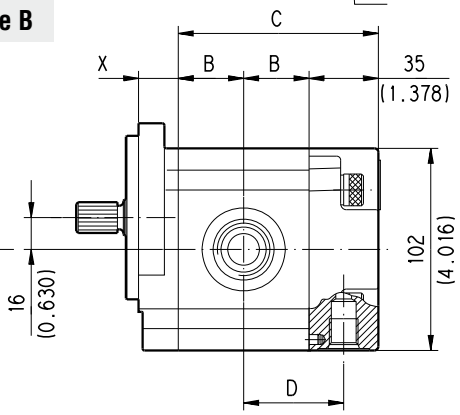
Reversible R





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)

O For single rotation S - D and reversible rotation R and B the rear cover is available in cast iron and aluminium. For reversible rotation L the rear cover is in aluminium only.

DRAIN PORTS POSITION
L = Side * = Bottom

DRIVE SHAFTS: see page 53 ÷ 55
MOUNTING FLANGE: see page 61 ÷ 65
PORTS: see page. 69 ÷ 74

Mounting flange material	Screw tightening torque O Nm (lbf in)
	V
Aluminium	45 ±4,5 (358 ÷ 438)
Cast iron	70 ±7 (558 ÷ 682)

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)

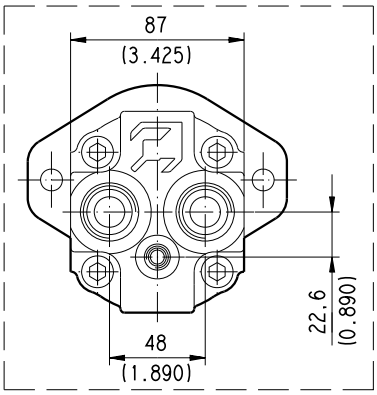
Replaces: 01/10.03

O 02/07.2006

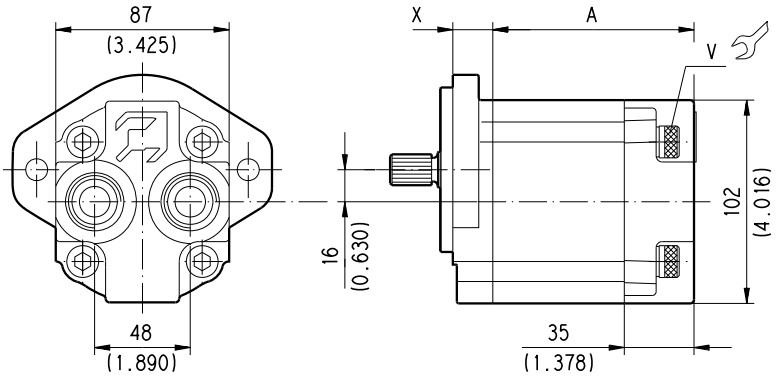
POLARIS 20 — SINGLE UNITS REAR PORTS — P

Replaces: 01/10.03

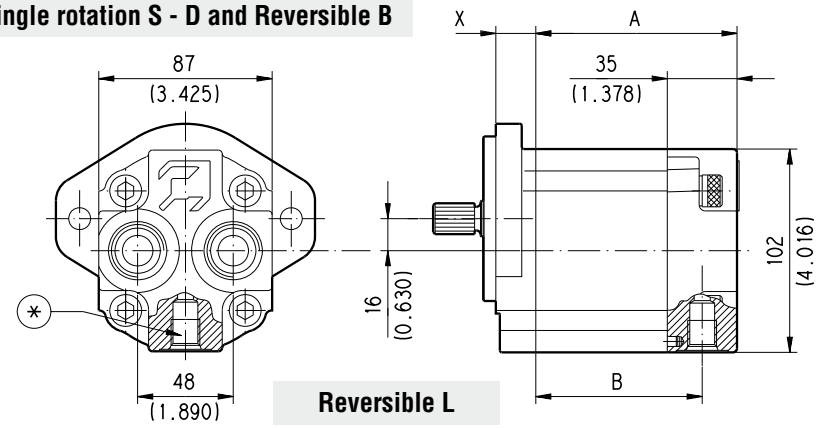
D033-183/0903



Reversible R



Single rotation S - D and Reversible B



Reversible L

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)

O Rear cover in aluminium only.

DRAIN PORTS POSITION
L = Side * = Bottom

DRIVE SHAFTS: see page 53 ÷ 55
MOUNTING FLANGE: see page 61 ÷ 65
PORTS: see page. 69 ÷ 74

Mounting flange material	Screw tightening torque O Nm (lbf in)
	V
Aluminium	45 ±4,5 (358 ÷ 438)
Cast iron	70 ±7 (558 ÷ 682)

O 02/07.2006

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)

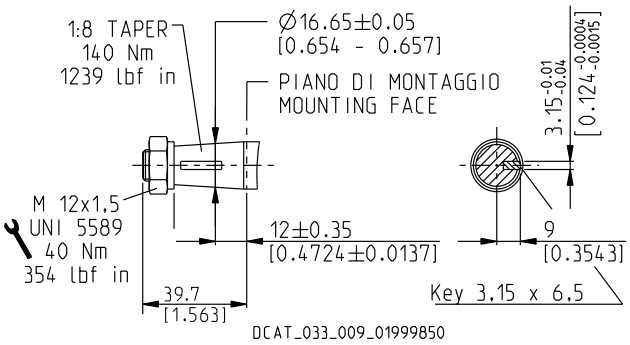
POLARIS 20 DRIVE SHAFTS

EUROPEAN TAPARED 1:8 82

Not available with size:

20•10,5 20•24,5 20•27,8

Mounting face refer to flange code **E2**

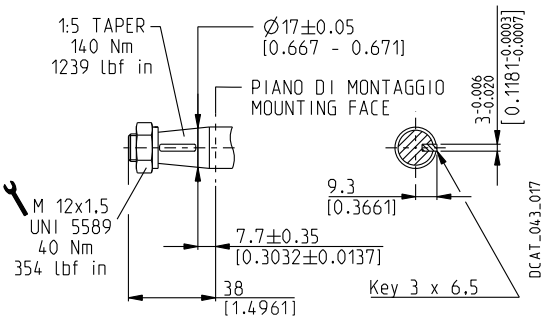


GERMAN TAPERED 1:5 54

Not available with size:

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

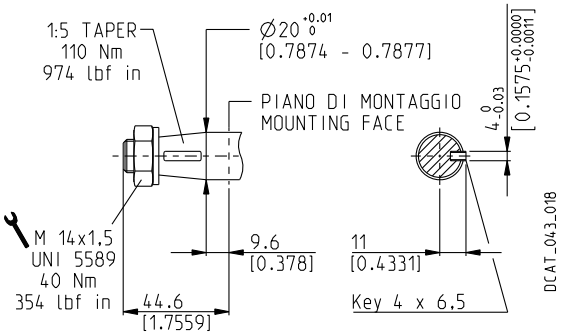
Mounting face refer to flange code **B2**



GERMAN TAPARED 1:5 55

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

Mounting face refer to flange code **B2**

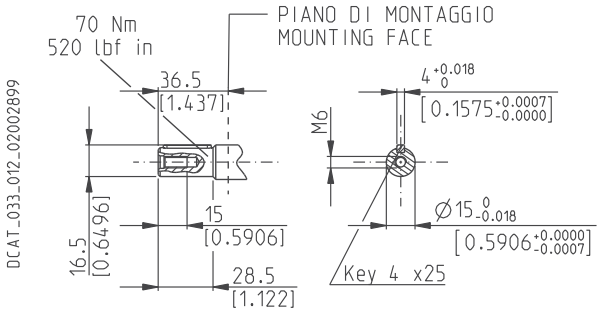


STRAIGHT 46

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**

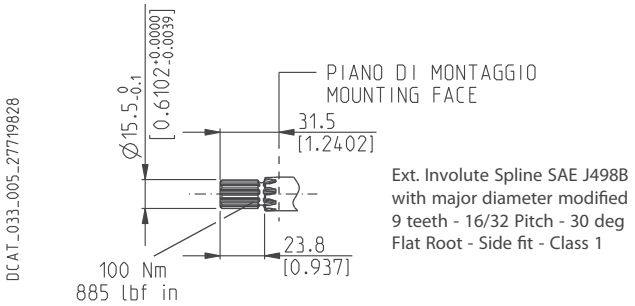


SAE "A" SPLINE 03

Not available with size:

20•24,5 20•27,8

Mounting face refer to flange code **S1**

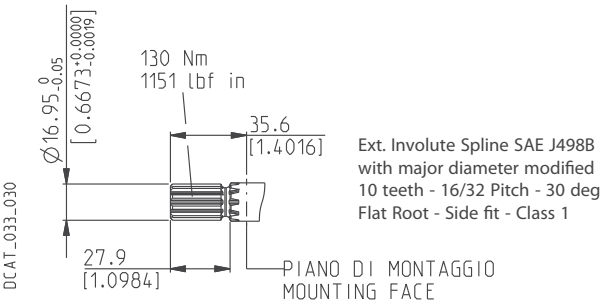


SPLINE 01

Not available with size:

20•6,3 20•9 20•10,5 20•19

Mounting face refer to flange code **S1**



01/10.03

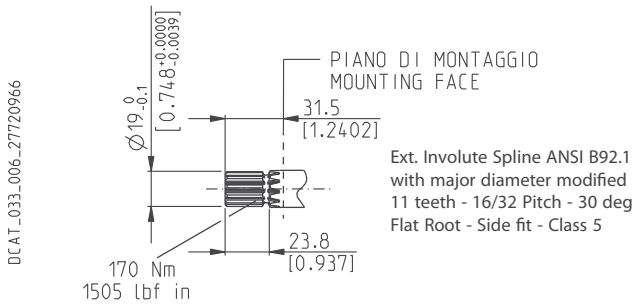
POLARIS 20 DRIVE SHAFTS

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**

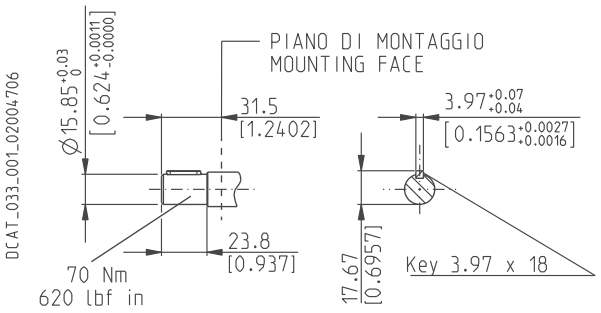


SAE "A" STRAIGHT 31

Not available with size:

20•10,5	20•19	20•24,5	20•27,8	

Mounting face refer to flange code **S1**

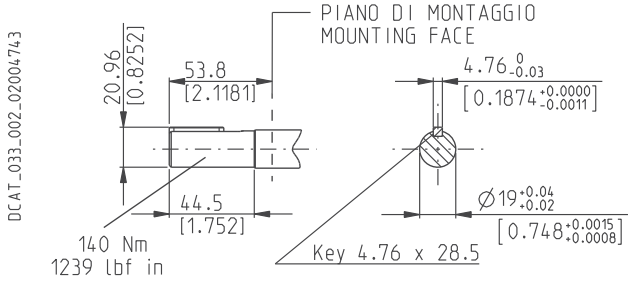


STRAIGHT 49

Not available with size:

20•7,2	20•19	20•24,5	

Mounting face refer to flange code **S1**

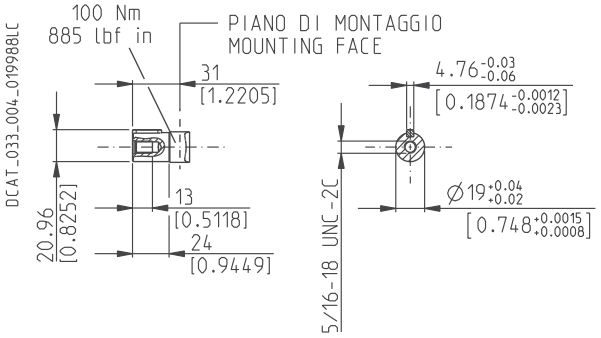


STRAIGHT 50

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**

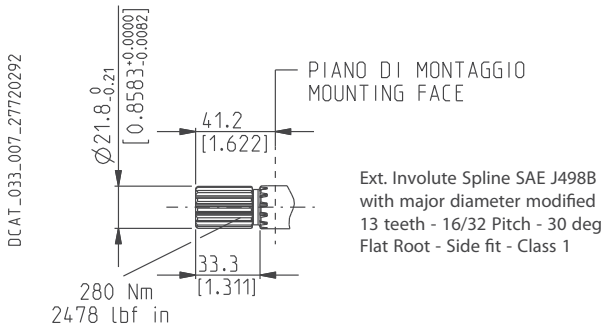


SAE "B" SPLINE 04

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**

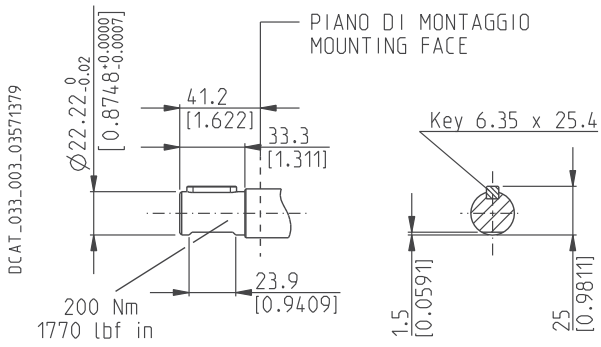


SAE "B" STRAIGHT 32

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

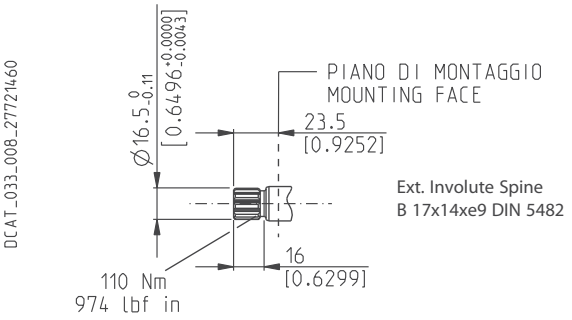
POLARIS 20 DRIVE SHAFTS

DIN 5482 SPLINE 12

Not available with size:

20•10,5	**20•19**	**20•24,5**	**20•27,8**

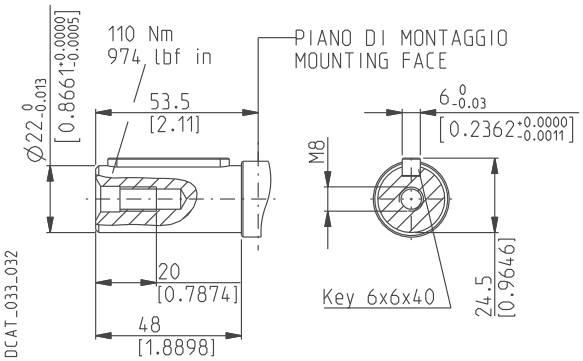
Mounting face refer to flange code **B2**



STRAIGHT B1

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

Mounting face refer to flange code **E2**



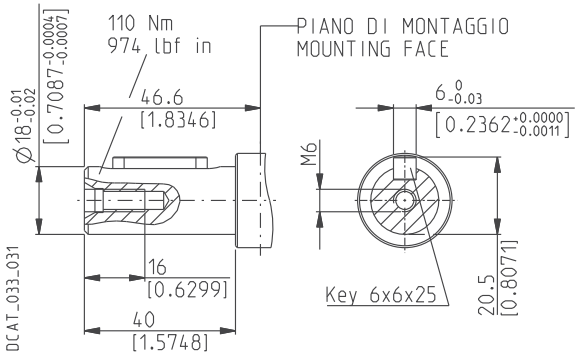
STRAIGHT 48

Only for version **6** with outboard bearing

Available in 0 version only with size:

20•20

Mounting face refer to flange code **E2**

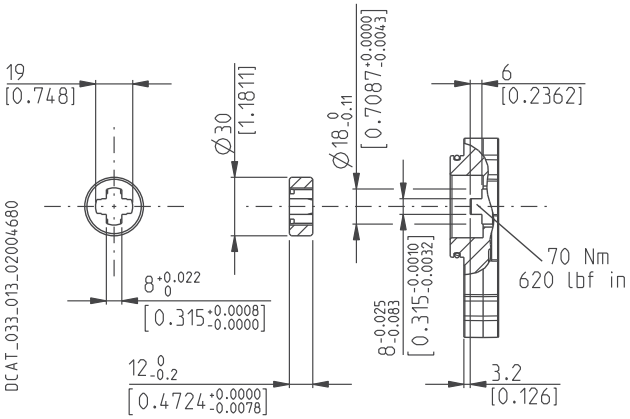


TANG 95

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**



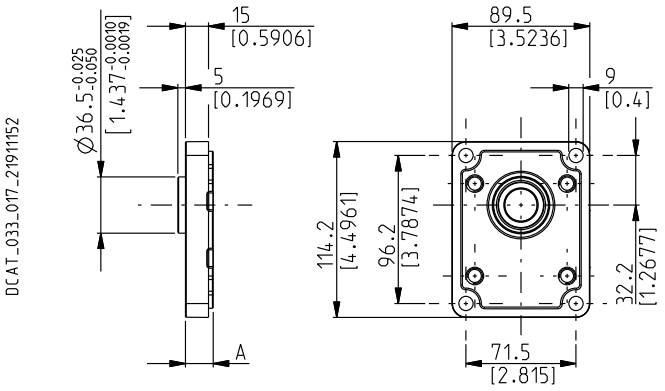
01/10.03

POLARIS 20 MOUNTING FLANGES AND TABLE OF COMPATIBILITY

Replaces: 01/10.03

EUROPEAN E2

Material: cast iron and aluminium O



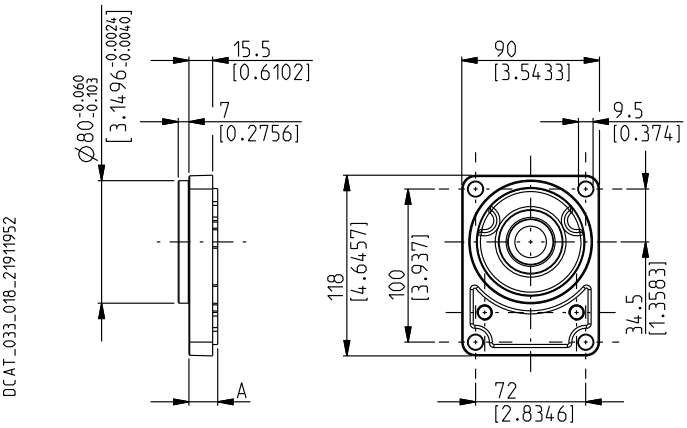
VERSIONS See page 47	A mm (in)	DRIVE SHAFTS See page 53 ÷ 55 82	46	B1	03	04	07	12	31	48	49	50	54
0	18 (0.7087)	#	#		x	x	x	x	x	x	x	x	x
4	55,4 (2.1811)	#											
5	43,6 (1.7165)	#		x	x						x	x	x
6	55,4 (2.1811)									#			
7	59,4 (2.3386)	#											
8	59,4 (2.3386)			#									

Standard combination

x Available combination

GERMAN B2

Material: cast iron and aluminium O



O 02/07.2006

VERSIONS See page 47	A mm (in)	DRIVE SHAFTS See page 53 ÷ 55 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

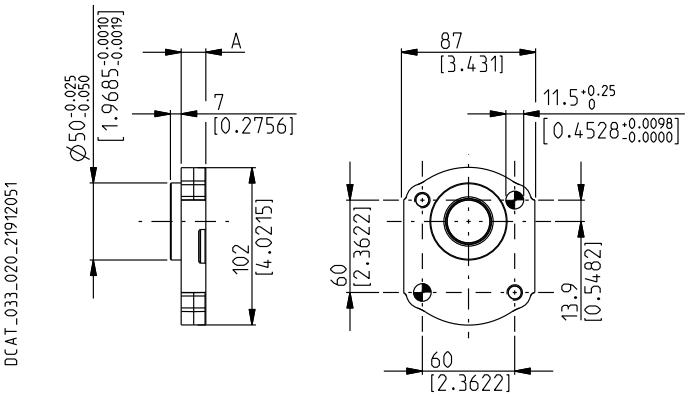
x Available combination

POLARIS 20 MOUNTING FLANGES AND TABLE OF COMPATIBILITY

GERMAN 2 BOLTS B4

Material: cast iron and aluminium

O



Replaces: 01/10.03

VERSIONS See page 47	A mm (in)	DRIVE SHAFTS See page 53 ÷ 55						
		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

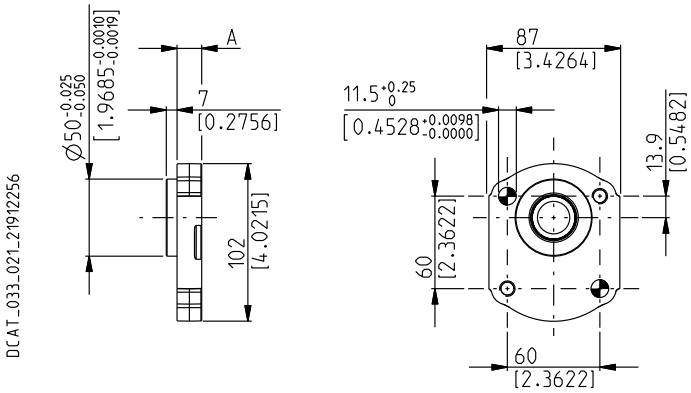
Standard combination

x Available combination

GERMAN 2 BOLTS B5

Material: cast iron and aluminium

O



O 02/07.2006

VERSIONS See page 47	A mm (in)	DRIVE SHAFTS See page 53 ÷ 55						
		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

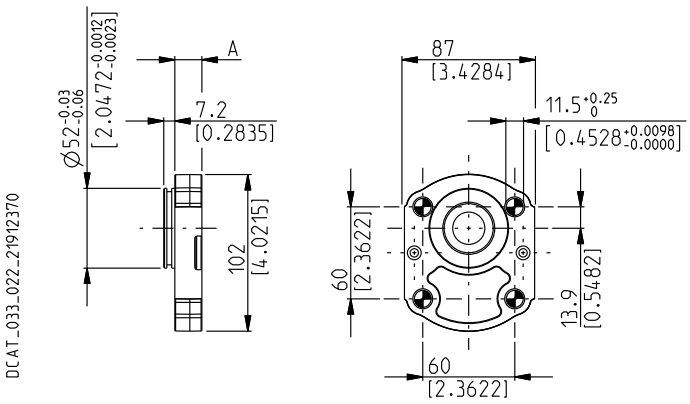
x Available combination

POLARIS 20 MOUNTING FLANGES AND TABLE OF COMPATIBILITY

Replaces: 01/10.03

GERMAN 4 BOLTS — B6

Material: cast iron and aluminium — O



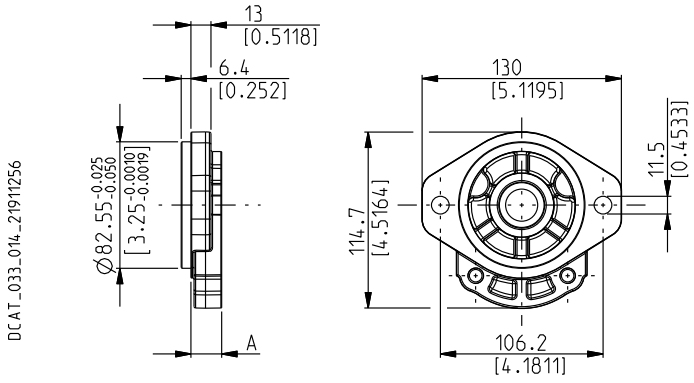
VERSIONS See page 47	A mm (in)	DRIVE SHAFTS See page 53 ÷ 55 95	07	12
0	17,7 (0.6968)	#	x	x
5	43,3 (1.747)	x		

Standard combination

x Available combination

SAE “A” 2 BOLTS — S1

Material: cast iron and aluminium — O



O 02/07.2006

VERSIONS See page 47	A mm (in)	DRIVE SHAFTS See page 53 ÷ 55 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

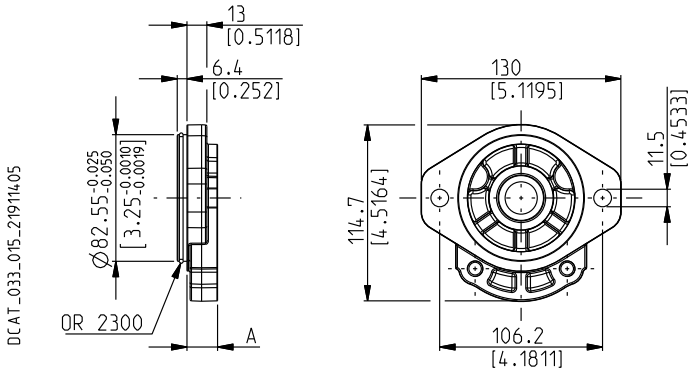
Standard combination

x Available combination

POLARIS 20 MOUNTING FLANGES AND TABLE OF COMPATIBILITY

SAE "A" 2 BOLTS — S2

Material: cast iron and aluminium



Replaces: 01/10.03

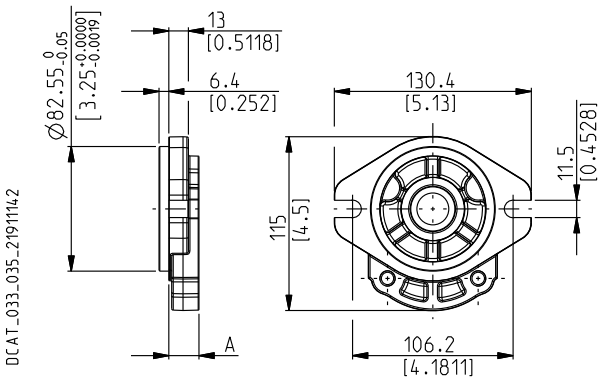
VERSIONS See page 47	A mm (in)	DRIVE SHAFTS See page 53 ÷ 55 01	03	04	07	12	31	32	46	49	50	54	82
0	20 (0.7874)	#	#	x	#	x	#	x	x	#	x	x	x
5	45,6 (1.7953)		x							x	x	x	x

Standard combination

x Available combination

SAE "A" 2 BOLTS — S9

Material: cast iron and aluminium



02/07.2006

VERSIONS See page 47	A mm (in)	DRIVE SHAFTS See page 53 ÷ 55 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

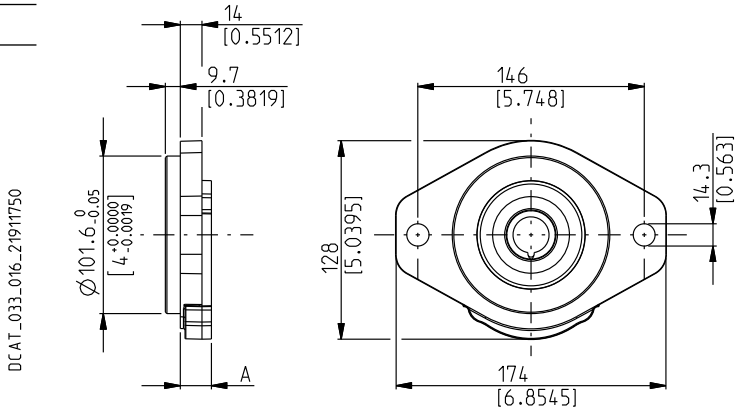
x Available combination

POLARIS 20 MOUNTING FLANGES AND TABLE OF COMPATIBILITY

Replaces: 01/10.03

SAE "B" 2 BOLTS — S5

Material: cast iron — O



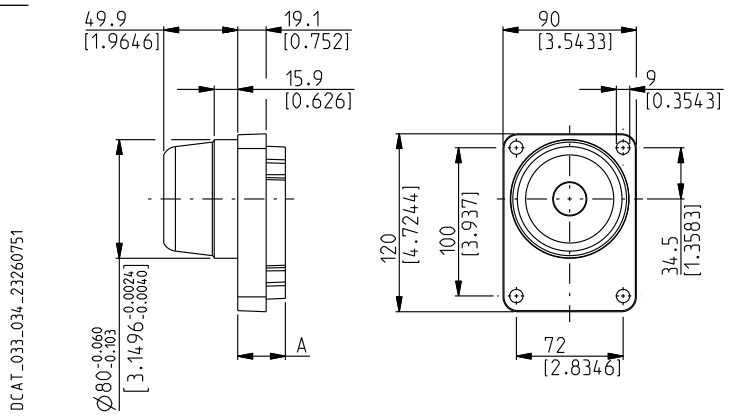
VERSIONS See page 47	A mm (in)	DRIVE SHAFTS See page 53 ÷ 55 04	32	49
0	20 (0.7874)	#	#	x
5	45,6 (1.7953)			x

Standard combination

x Available combination

GERMAN — W8

Material: cast iron — O



O 02/07.2006

VERSIONS See page 47	A mm (in)	DRIVE SHAFTS See page 53 ÷ 55 55
W8	32,1 (1.2638)	#

Standard combination

x Available combination

IN/OUT PORTS TYPE

	SIDE PORTS												REAR PORTS			
PORTS TYPE	German		European		Split SSM		Spit SSS		Gas BSPP		SAE ODT		Gas BSPP		SAE ODT	
Pump type	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
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

	SIDE PORTS						REAR PORTS	
IN/OUT PORTS TYPE	German	European	Split SSM	Spit 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	-	-

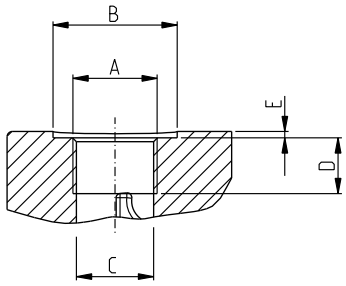
DRAIN PORTS SIZES

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)

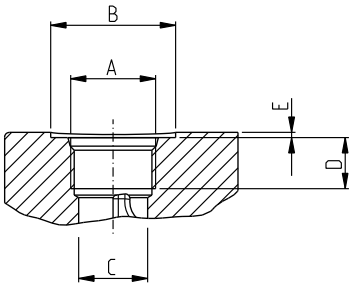


DCAT_006_026_21064779

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 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)

Other drain ports are shown on subsequent pages.

01/10.03

PORTS SIZE

Tightening torque for low pressure side port

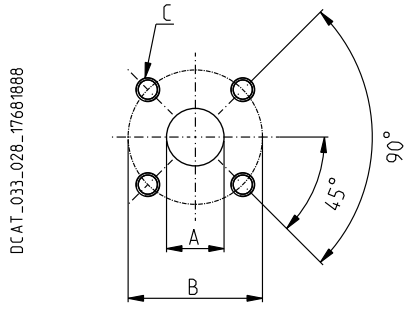
Tightening torque for high pressure side port [values obtained at 5075 psi (350 bar)]

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)	M6 12 (0.4724)	8 +0,5 (71 ÷ 75)	8 +0,5 (71 ÷ 75)
BE	20 (0.7874)	40 (1.5748)	M6 12 (0.4724)	8 +0,5 (71 ÷ 75)	8 +0,5 (71 ÷ 75)
BL	19 (0.7480)	55 (2.1654)	M8 18 (0.7087)	15 +1 (133 ÷ 142)	20 +1 (177 ÷ 186)
BM	27 (1.0630)	55 (2.1654)	M8 18 (0.7087)	15 +1 (133 ÷ 142)	20 +1 (177 ÷ 186)



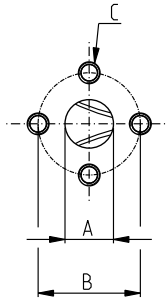
DCAT_033_028_17681888

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)

(◆) For POLARIS 30



DCAT_006_024_21060533

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)]

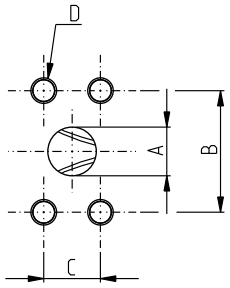
For reversible rotation, please consult only the tightening torque for high pressure side port

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

Metric thread ISO 60° 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 14 (0.5512)	15 +1 (133 ÷ 142)	15 +1 (133 ÷ 142)
				M 8 (◆) 22 (0.8661)	20 +1 (◆) (177 ÷ 186)	20 +1 (◆) (177 ÷ 186)
MB	19 (0.7480)	47,6 (1.8740)	22,2 (0.8740)	M 10 14 (0.5512)	20 +1 (177 ÷ 186)	25 +1 (266 ÷ 288)
				M 10 (◆) 22 (0.8661)	20 +1 (◆) (177 ÷ 186)	35 +2,5 (◆) (310 ÷ 332)
MC	25,4 (1.0000)	52,4 (2.0630)	26,2 (1.0315)	M 10 14 (0.5512)	20 +1 (177 ÷ 186)	25 +1 (266 ÷ 288)
				M 10 (◆) 22 (0.8661)	20 +1 (◆) (177 ÷ 186)	35 +2,5 (◆) (310 ÷ 332)
MD	30,5 (1.2008)	58,7 (2.3110)	30,2 (1.1890)	M 10 15 (0.5906)	20 +1 (177 ÷ 186)	30 +2,5 (266 ÷ 288)
				M 10 (◆) 22 (0.8661)	20 +1 (◆) (177 ÷ 186)	35 +2,5 (◆) (310 ÷ 332)
ME	39,3 (1.5472)	69,8 (2.7480)	35,7 (1.4055)	M 12 22 (0.8661)	30 +2,5 (266 ÷ 288)	60 +5 (531 ÷ 575)
MF	51 (2.0079)	77,8 (3.0630)	42,9 (1.6890)	M 12 22 (0.8661)	30 +2,5 (266 ÷ 288)	60 +5 (531 ÷ 575)

(◆) For POLARIS 30



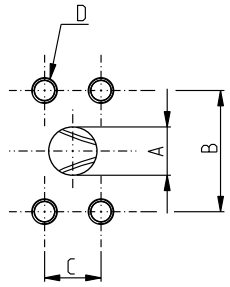
DCAT_006_025_21064252

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

(◆) For POLARIS 30



DCAT_006_028_21060740

01/10.03

PORTS SIZES

Tightening torque for low pressure side port

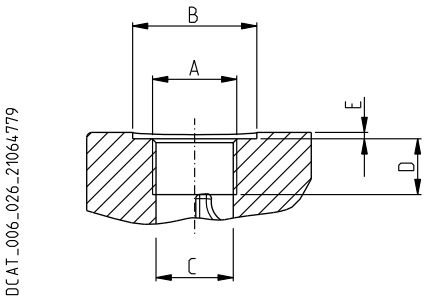
Tightening torque for high pressure side port [values obtained at 5075 psi (350 bar)]

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

Replaces: 01/10.03

GAS STRAIGHT THREAD PORTS — BSPP

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



CODE	Nominal size	A	Ø B	Ø C	D	E		
			mm (in)	mm (in)	mm (in)	mm (in)	Nm (lbf in)	Nm (lbf in)
GC O	3/8”	G 3/8	30 (#) (1.1811)	15 (0.5906)	10 (#) (0.3937)	2 (#) (0.0787)	15 +1 (#) (133 ÷ 142)	—
			—		14 (0.5512)	—	15 +1 (133 ÷ 142)	25 +1 (221 ÷ 230)
GD O	1/2”	G 1/2	—	19 (0.7480)	14 (0.5512)	—	20 +1 (177 ÷ 186)	50 +2,5 (443 ÷ 465)
					17 (◆) (0.6693)			
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

O 02/07.2006

PORTS SIZES

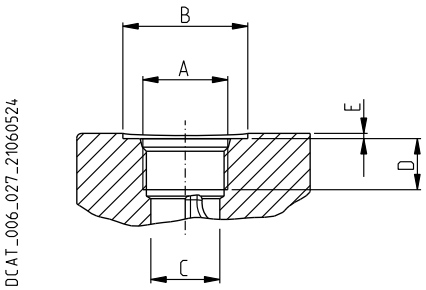
Tightening torque for low pressure side port

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



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” - 18 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 +15 (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