

HYDRAULIC GEAR
PUMPS AND
MOTORS

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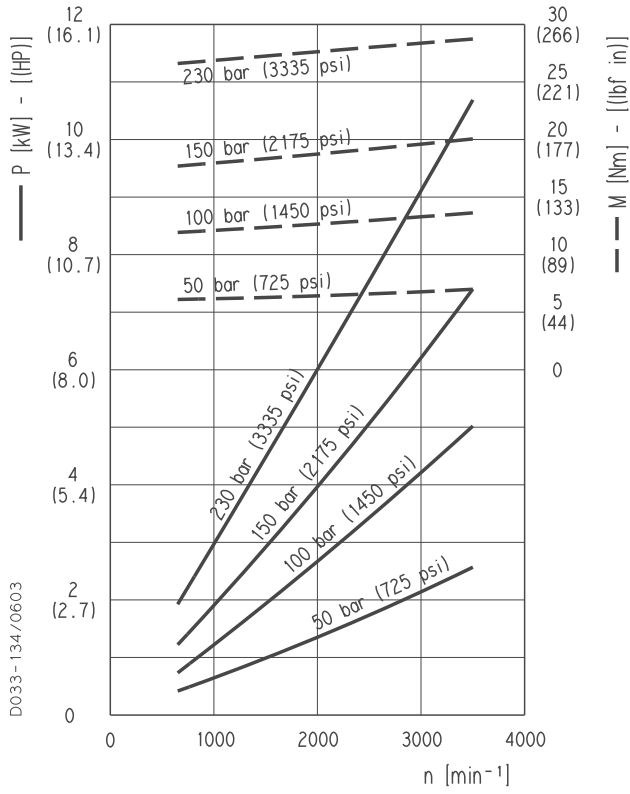
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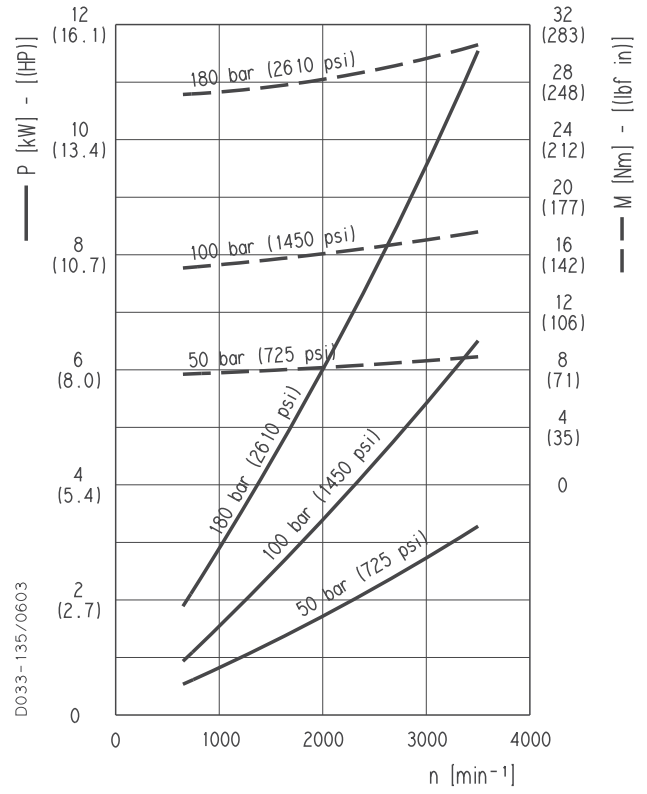
PLP 10

POLARIS 10 GEAR PUMPS PERFORMANCE CURVES

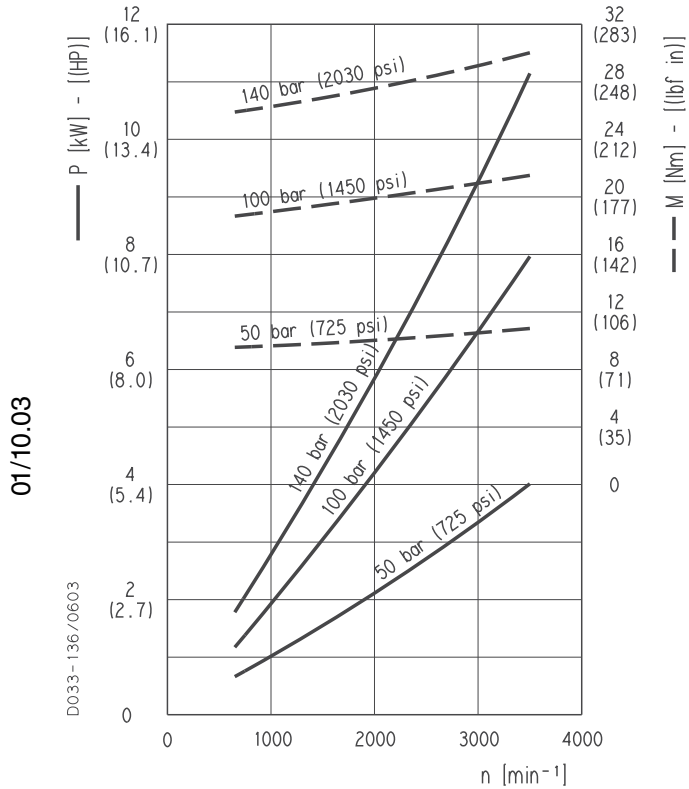
PLP 10•6,3



PLP 10•8



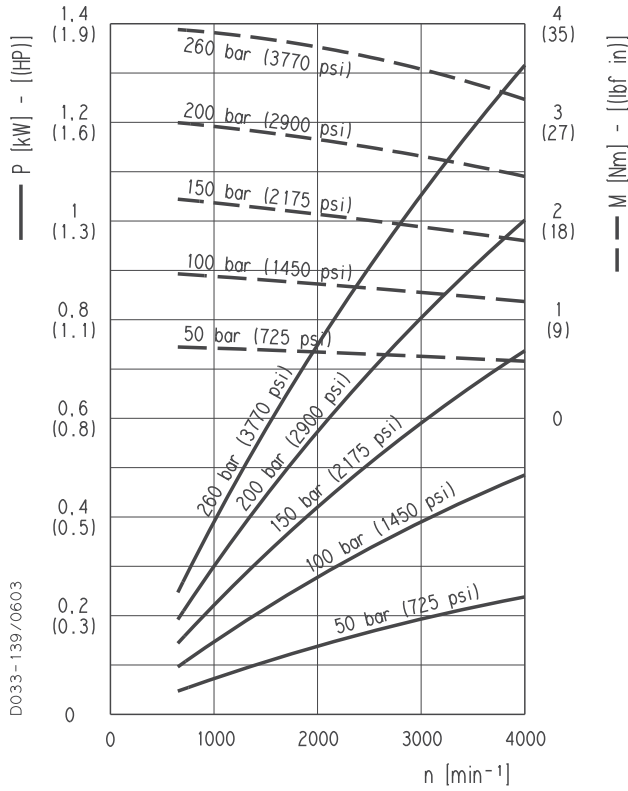
PLP 10•10



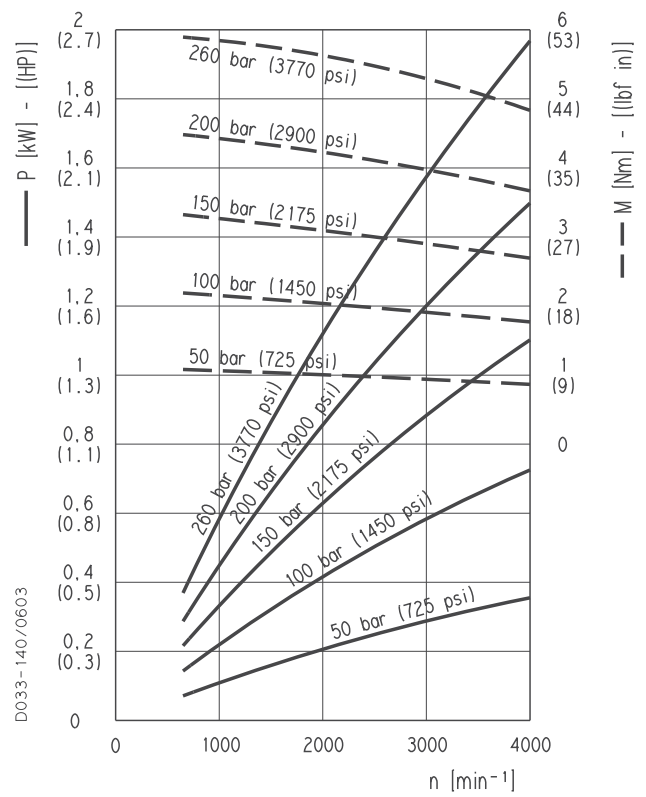
PLM 10

POLARIS 10 GEAR MOTORS PERFORMANCE CURVES

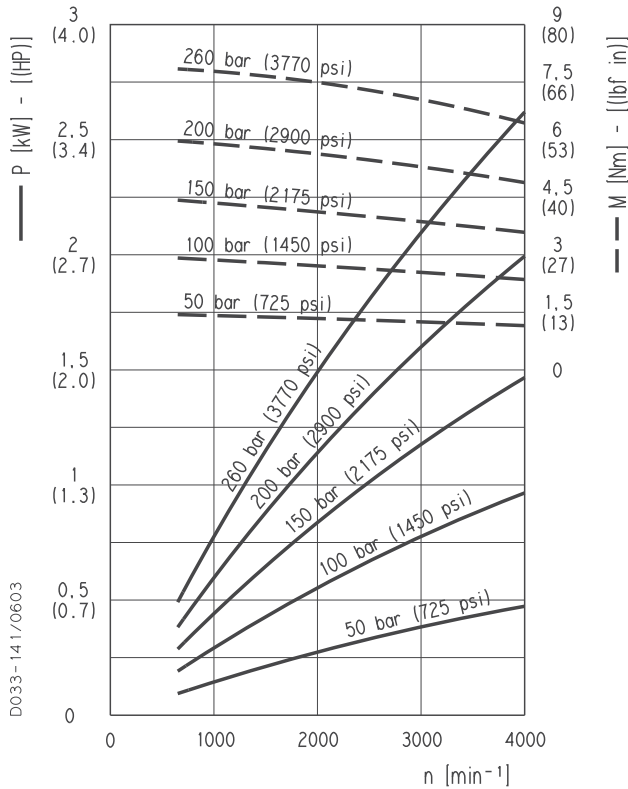
PLM 10•1



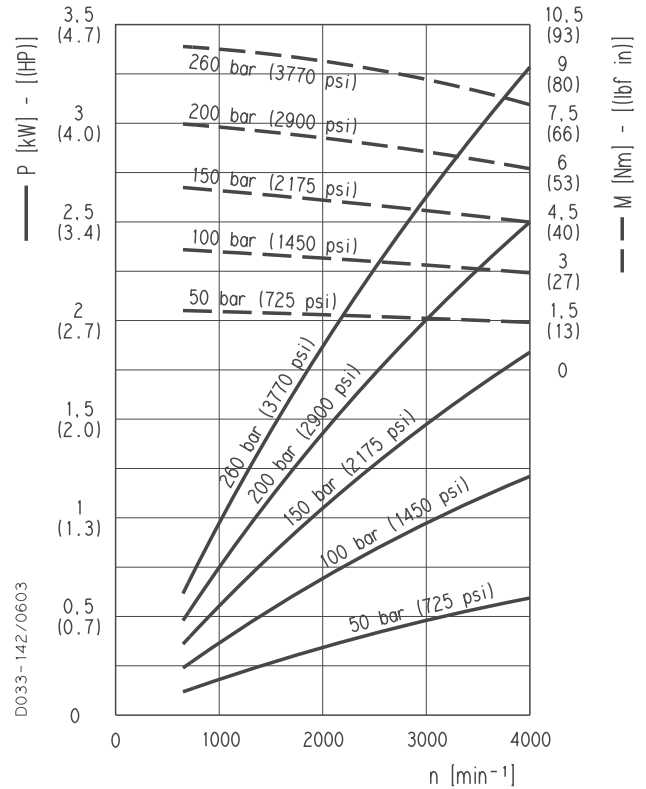
PLM 10•1,5



PLM 10•2



PLM 10•2,5

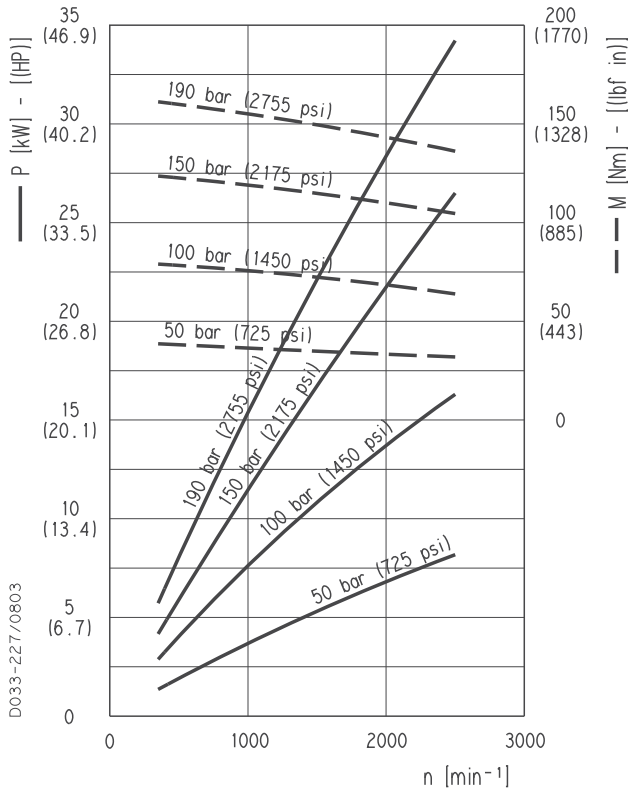


01/10.03

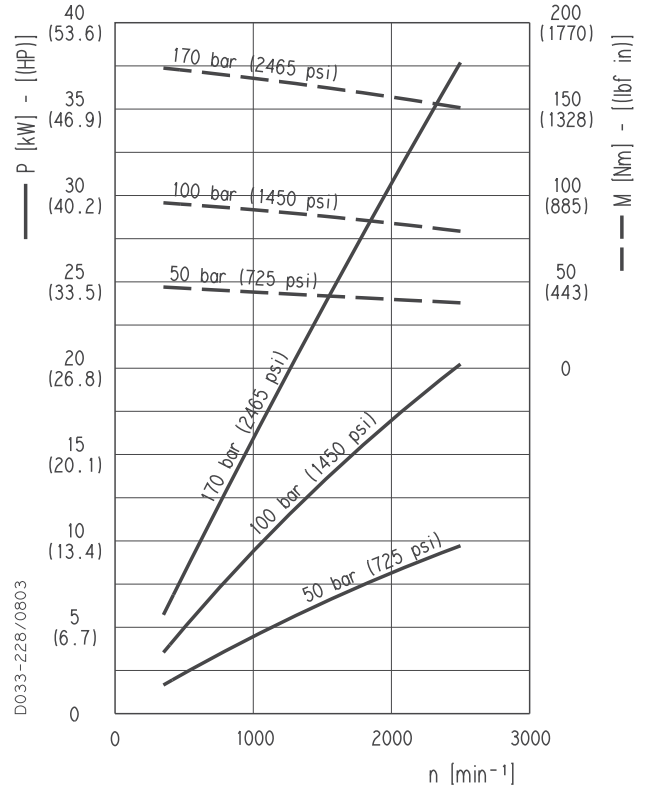
PLM 30

POLARIS 30 GEAR MOTORS PERFORMANCE CURVES

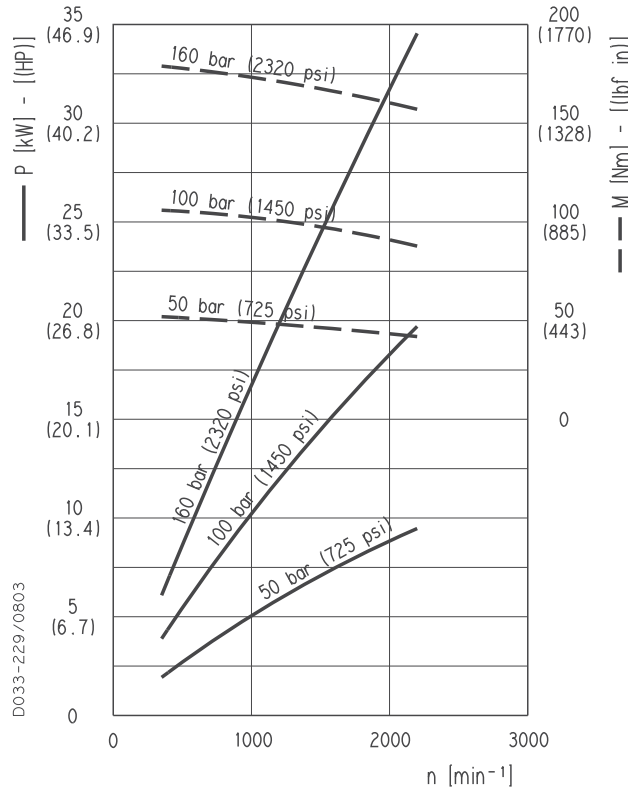
PLM 30•61



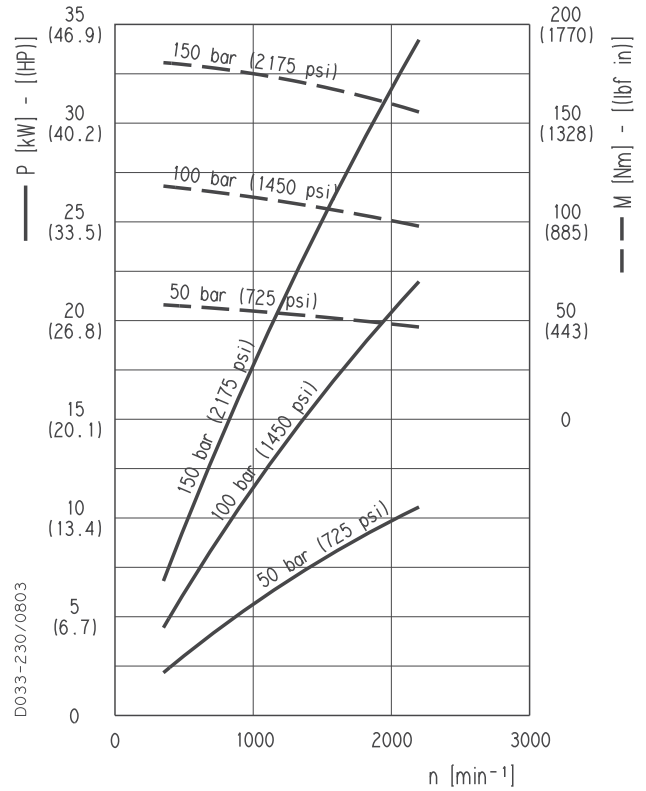
PLM 30•73



PLM 30•82



PLM 30•90



01/10.03

MULTIPLE PUMPS COMBINATION

PLP 30

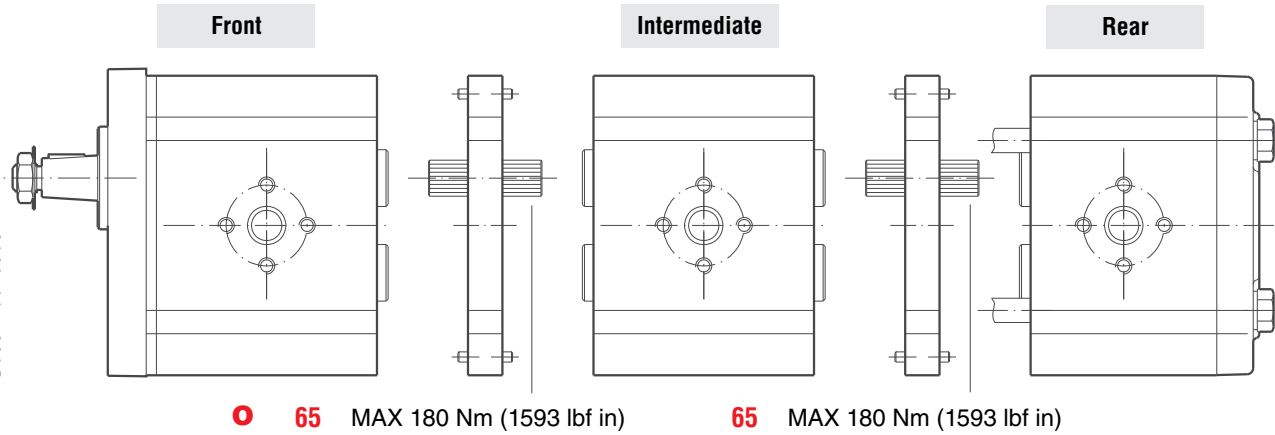
Polaris 30/30

STANDARD VERSION

M6

Replaces: 01/10.03

D033-100/0603



Polaris 30/20

STANDARD VERSION

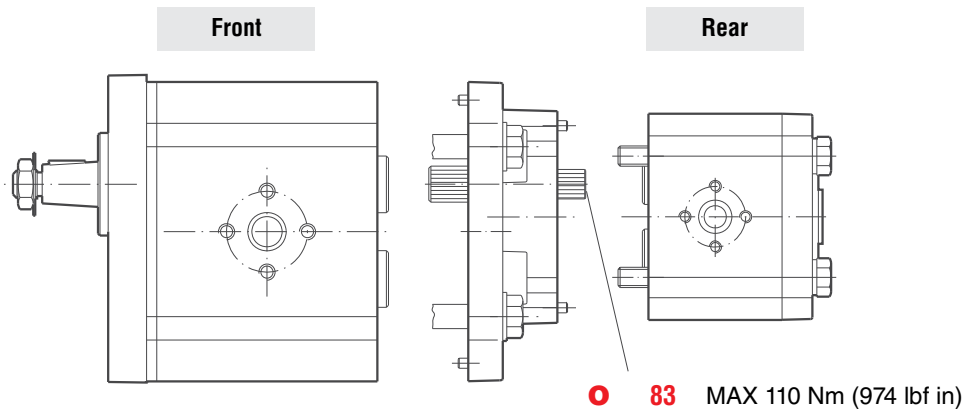
N6

Polaris 30/20

COMMON INLET VERSION

N7

D033-101/0603



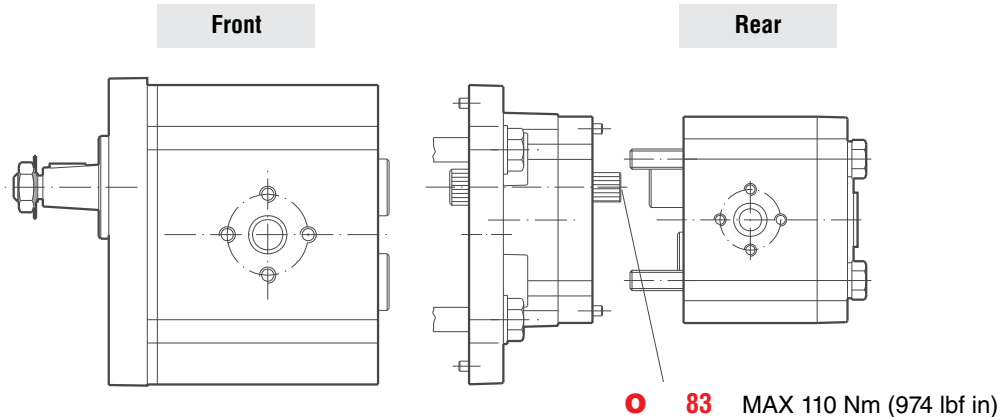
Polaris 30/20

SEPARATED STAGES VERSION

Z6

○ 02/07.2006

D033-105/0603



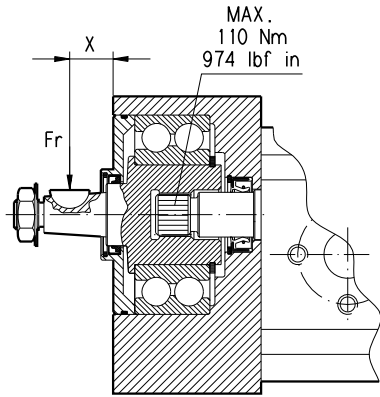
POLARIS 20

VERSION WITH OUTBOARD BEARINGS

7 - 8 - 9

Replaces: 01/10.03

D033-118/0603

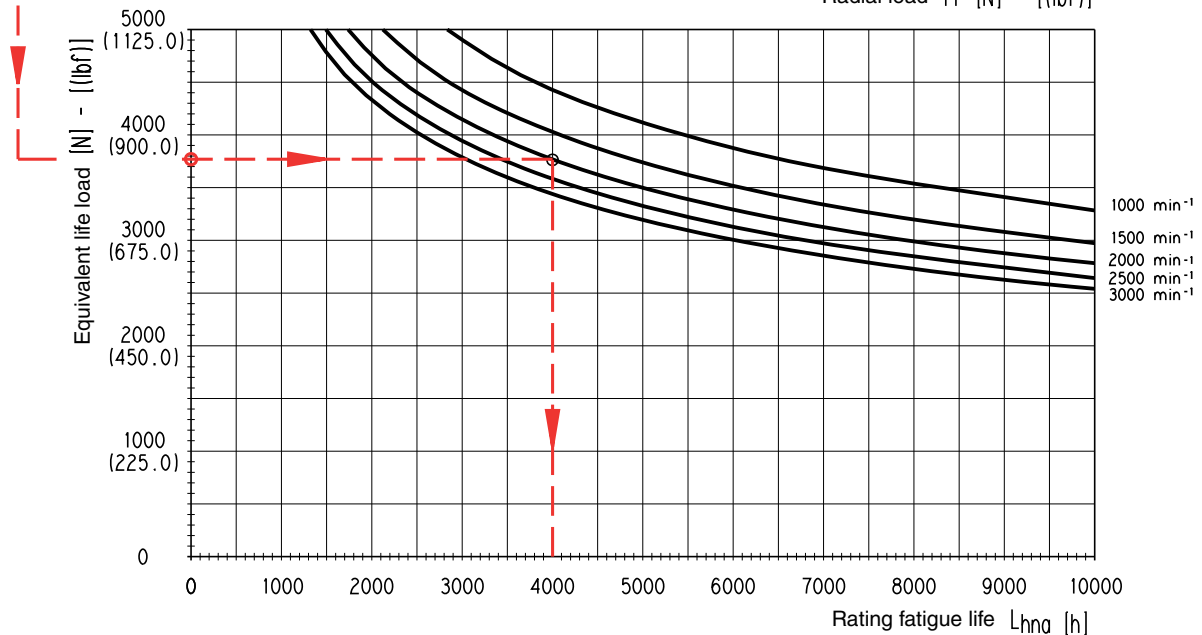
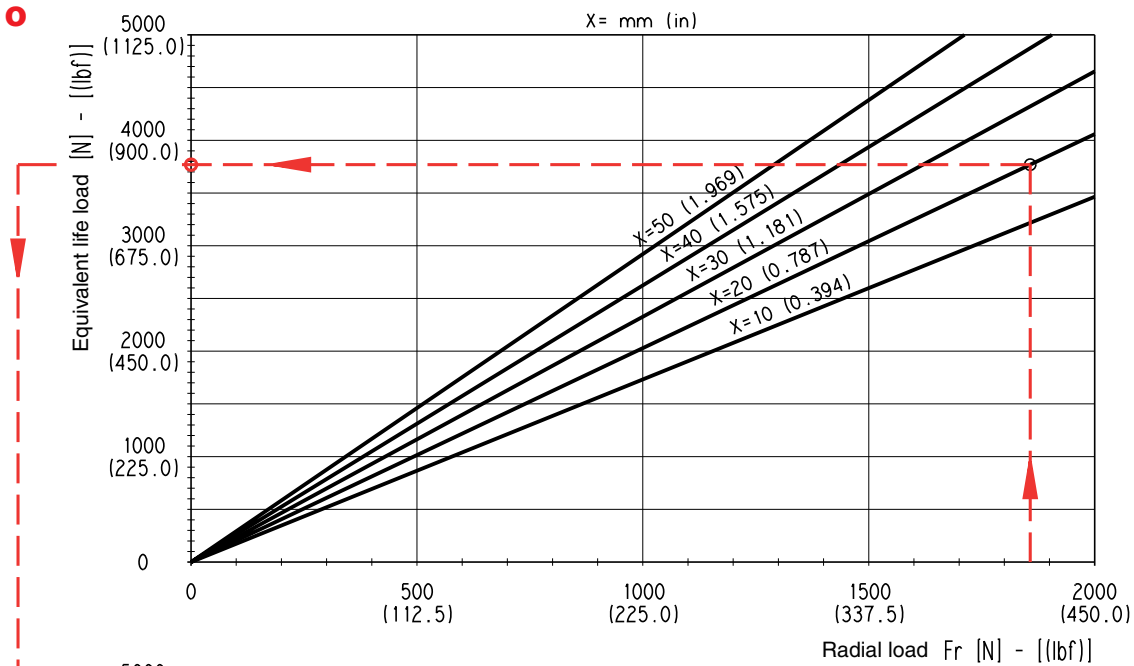


X = Distance of the radial load result from the mounting flange [mm (in)].

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	1858 N (418.05 lbf)
X	20 mm (0.7874 in)
Speed	2000 min ⁻¹
Rating fatigue life	≈ 2000 h



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D033-123/0606

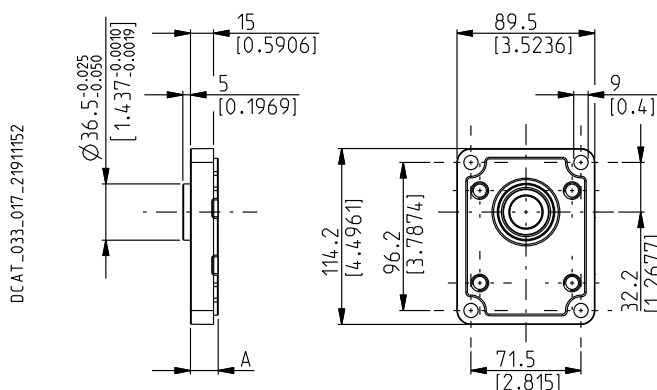
POLARIS 20 MOUNTING FLANGES AND TABLE OF COMPATIBILITY

Replaces: 01/10.03

EUROPEAN

E2

Material: cast iron and aluminium



DRIVE SHAFTS

See page 53 ÷ 55

VERSIONS See page 47	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)			#									

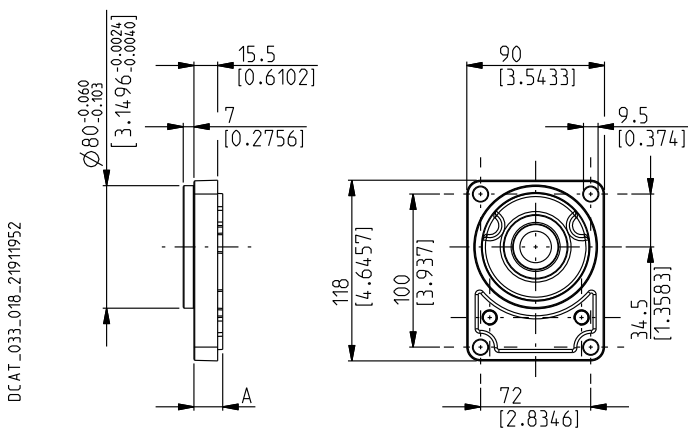
Standard combination

X Available combination

GERMAN

B2

Material: cast iron and aluminium



DRIVE SHAFTS

See page 53 ÷ 55


VERSIONS See page 47	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

02/07.2006

PORTS SIZE

 Tightening torque for low pressure side port



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

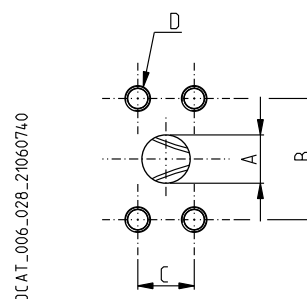
For reversible rotation, please consult only the tightening torque for high pressure side port

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)	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)



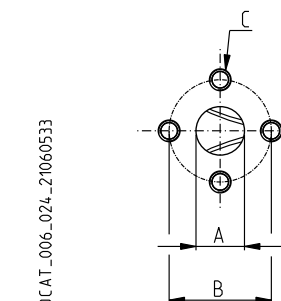
EUROPEAN FLANGED PORTS - 4 Bolts

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)
			M 10 18 (0.7087)	20 ⁺¹ (177 ÷ 186)	30 ^{+2.5} (266 ÷ 288)
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



01/10.03

HOW TO ORDER POLARIS 20 SINGLE UNITS

Replaces: 01/10.03

7	Ports IN/OUT	Code
SAE FLANGED PORTS (SSM)		
Type	Side	Rear
4-6,3-7,2-8-9-10,5-11,2	PLP 20	MA/MA
	PLM 20	
14-16-19-20	PLP 20	MB/MA
	PLM 20	MA/MB
24,5-25-27,8-31,5	PLP 20	MC/MB
	PLM 20	MB/MC
SAE FLANGED PORTS (SSS)		
Type	Side	Rear
4-6,3-7,2-8-9-10,5-11,2	PLP 20	SA/SA
	PLM 20	
14-16-19-20	PLP 20	SB/SA
	PLM 20	SA/SB
24,5-25-27,8-31,5	PLP 20	SC/SB
	PLM 20	SB/SC
GAS STRAIGHT THREAD PORTS (BSPP)		
Type	Side	Rear
4-6,3-7,2-8-9 10,5-11,2	PLP 20	GD/GD
	PLM 20	GD/GD
14-16-19-20-24,5-25 27,8-31,5	PLP 20	GE/GD
	PLM 20	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
	PLM 20	OC/OC
14-16-19-20-24,5-25 27,8-31,5	PLP 20	OD/OC
	PLM 20	OC/OD

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

9	Cover options (b)	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

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

IN/OUT SAE FLANGED PORTS (SSM)		
Side	Rear	Type
GB	PLP 20	4-6,3-7,2-8-9-10,5-11,2
	PLM20	24,5-25-27,8-31,5

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

IN/OUT GAS STRAIGHT THREAD PORTS (BSPP)		
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

IN/OUT SAE STRAIGHT THREAD PORTS (ODT)		
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	Shaft arrangement	13
FS	Female spline	

- (a) Choose the seals according to the temperature shown on page 4.
- (b) Mounting flange material on page 61 ÷ 65
Rear cover material on page 34 ÷ 35

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