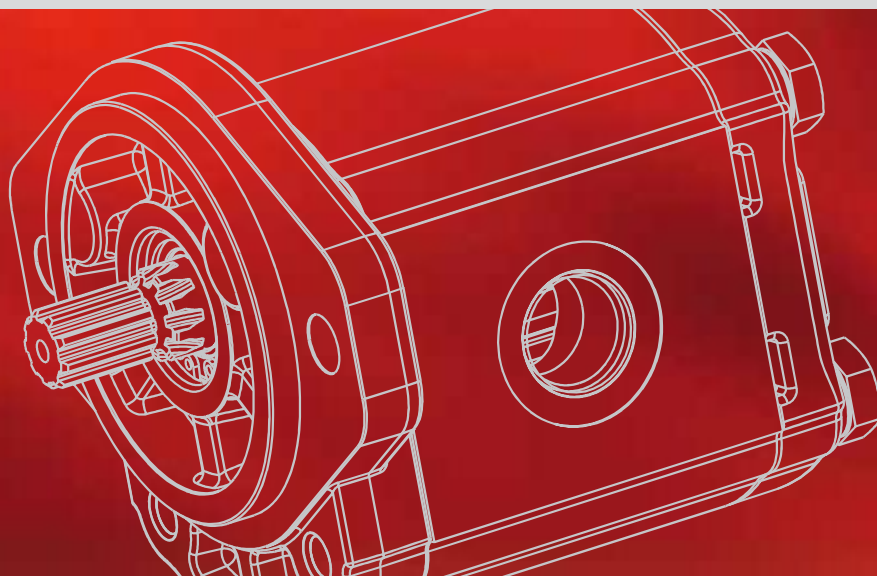


 **CASAPPA**[®]
FLUID POWER DESIGN



HYDRAULIC GEAR
PUMPS AND
MOTORS

POLARIS[®]

HOW TO ORDER POLARIS 10 SINGLE UNITS

PLP10.4 D 0 81 E1 L BB/BA N EL - - - FS
 1 2 3 4 5 6 7 8 9 10 11 12 13
 --- PLP 10-1 --- L --- 0 --- 81 --- E1 --- L --- BB/BA --- N --- EL --- C --- L --- GA --- FS ---

| 1 | Type | Pump type | Motor type |
|---|--|--------------------|--------------------|
| | 0.07 in ³ /rev (1,07 cm ³ /rev) | PLP 10-1 | PLM 10-1 |
| | 0.10 in ³ /rev (1,60 cm ³ /rev) | PLP 10-1,5 | PLM 10-1,5 |
| | 0.13 in ³ /rev (2,13 cm ³ /rev) | PLP 10-2 | PLM 10-2 |
| | 0.16 in ³ /rev (2,67 cm ³ /rev) | PLP 10-2,5 | PLM 10-2,5 |
| | 0.20 in ³ /rev (3,34 cm ³ /rev) | PLP 10-3,15 | PLM 10-3,15 |
| | 0.26 in³/rev (4,27 cm³/rev) | PLP 10-4 | PLM 10-4 |
| | 0.33 in ³ /rev (5,34 cm ³ /rev) | PLP 10-5 | PLM 10-5 |
| | 0.38 in ³ /rev (6,20 cm ³ /rev) | PLP 10-5,8 | PLM 10-5,8 |
| | 0.41 in ³ /rev (6,67 cm ³ /rev) | PLP 10-6,3 | PLM 10-6,3 |
| | 0.52 in ³ /rev (8,51 cm ³ /rev) | PLP 10-8 | PLM 10-8 |
| | 0.65 in ³ /rev (10,67 cm ³ /rev) | PLP 10-10 | PLP 10-10 |

| 2 | Rotation | Code |
|---|--------------------------------|----------|
| | Left | S |
| | Right | D |
| | Reversible rear external drain | R |
| | Reversible side external drain | L |
| | Reversible internal drain | B |

| 3 | Version | Code |
|---|---------------------------------|----------|
| | Without outboard bearing | 0 |

| 4 | Drive shaft | Code |
|---|-----------------------------|-----------|
| | European tapered 1:8 | 81 |
| | European tapered 1:8 | 86 |
| | SAE "AA" spline (9 teeth) | 02 |
| | SAE "AA" straight | 30 |
| | SAE straight | 36 |
| | Straight | 29 |

| 5 | Mounting flange | Code |
|---|-------------------|-----------|
| | European | E1 |
| | European | E7 |
| | European | E8 |
| | German 2 bolt | B1 |
| | German 4 bolt | K2 |
| | SAE "AA" 2 bolt | S0 |
| | SAE "AA" 2-4 bolt | R9 |
| | SAE 2-4 bolt | R8 |
| | SAE 2 bolt | W9 |

| Code | Ports position | 6 |
|----------|----------------|---|
| L | Side | |
| P | Rear | |

| Code | Ports IN/OUT | 7 |
|---|---------------|--------------------|
| GERMAN FLANGED PORTS | | |
| Side | Rear | Type |
| BB/BA | PLP 10 | 1-1,5-2-2,5-3,15 |
| BA/BB | PLM 10 | 4-5-5,8-6,3-8-10 |
| GAS STRAIGHT THREAD PORTS (BSPP) | | |
| Side | Rear | Type |
| GC/GC | GC/GC | PLP 10 PLM 10 |
| GD/GD | GD/GD | PLP 10 PLM 10 |
| | | 1-1,5-2-2,5-3,15-4 |
| | | 5-5,8-6,3-8-10 |

| SAE STRAIGHT THREAD PORTS (ODT) | | | |
|--|--------------|--------|--------------------|
| Side | Rear | Type | |
| OB/OA | OB/OA | PLP 10 | 1-1,5-2-2,5-3,15-4 |
| OA/OB | OA/OB | PLM 10 | 5-5,8-6,3 |
| OC/OB | OB/OB | PLP 10 | 8-10 |
| OB/OC | OB/OB | PLM 10 | |

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

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

| Code | Shaft seal options | 10 |
|----------|---|----|
| C | High back pressure seal with wiper seal | |
| D | Standard seal with wiper seal | |
| H | High back pressure seal | |

Replaces: 01/10.03

02/07.2006

HOW TO ORDER POLARIS 10 SINGLE UNITS

Replaces: 01/10.03

| 11 | Drain port position - Rev. Rotation L | Code |
|----|---------------------------------------|----------|
| | Side drain with side port position | L |
| | Side drain with bottom port position | * |

| 12 | Drain port | Code |
|--|------------------------------|-------------------|
| IN/OUT GERMAN FLANGED PORTS | | |
| | Type | Side Rear |
| | 1-1,5-2-2,5-3,15 PLP 10 | GA |
| | 4-5-5,8-6,3-8-10 PLM 10 | |
| IN/OUT GAS STRAIGHT THREAD PORTS (BSPP) | | |
| | Type | Side Rear |
| | 1-1,5-2-2,5-3,15 PLP 10 | GA GA |
| | 4-5-5,8-6,3-8-10 PLM 10 | |
| IN/OUT SAE STRAIGHT THREAD PORTS (ODT) | | |
| | Type | Side Rear |
| | 1-1,5-2-2,5-3,15 PLP 10 | 03 03 |
| | 4-5-5,8-6,3-8-10 PLM 10 | |

| 13 | Shaft arrangement | Code |
|----|-------------------|-----------|
| | Female spline | FS |

- (a) Choose the seals according to the temperature shown on page 4.
- (b) Mounting flange material on page 58 ÷ 60
Rear cover material on page 32 ÷ 33

02/07.2006

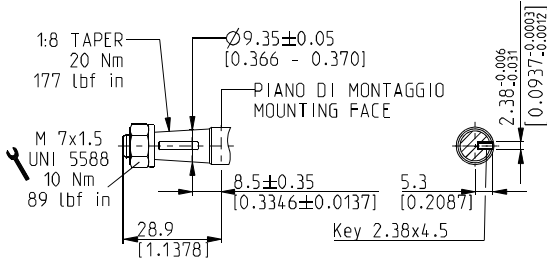
POLARIS 10

DRIVE SHAFTS

EUROPEAN TAPERED 1:8

81

Mounting face refer to flange code **E1**

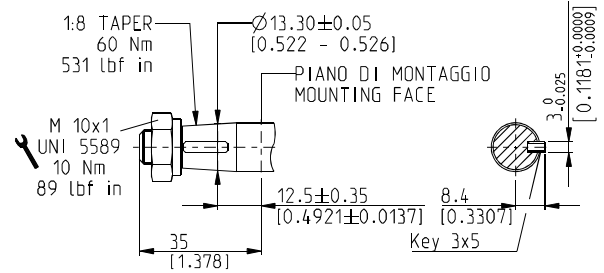


DCAT_033_041

EUROPEAN TAPERED 1:8

86

Mounting face refer to flange code **E7**



DCAT_033_042

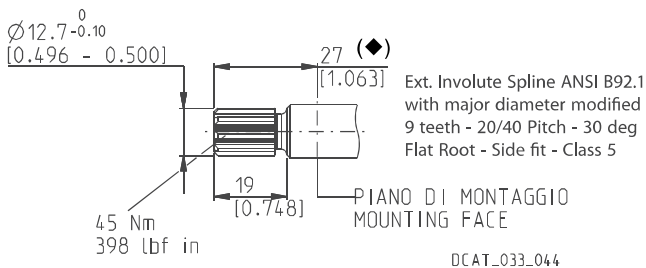
SAE "AA" SPLINE

02

Not available with size:

| | |
|---------------------------------|-----------------------------|
| 10•8 | With flange: E1, E8, K2, S0 |
| 10•1,5 - 10•2,5 - 10•5,8 | With flange: R8, R9 |

Mounting face refer to flange code **R9**



DCAT_033_044

(◆) 24 (0.9449) with flange code **S0**

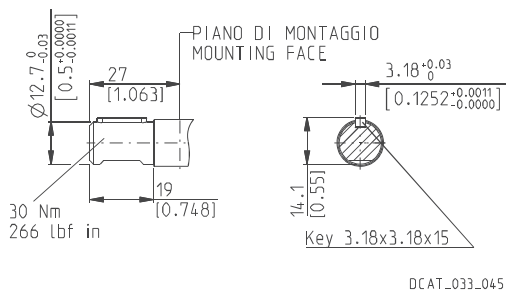
SAE "AA" STRAIGHT

30

Not available with size:

| | |
|---------------------------------|---------------------------------|
| 10•1,5 - 10•2,5 - 10•5,8 | With flange: E7, B1, K2, R8, R9 |
| 10•2,5 - 10•5,8 | With flange: S0 |

Mounting face refer to flange code **S0**



DCAT_033_045

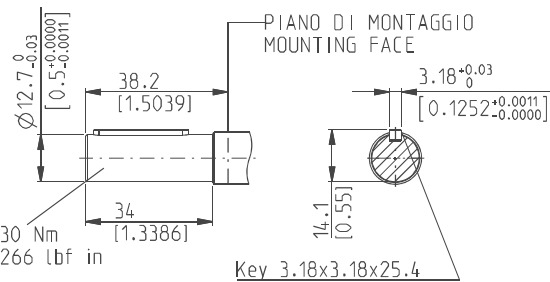
SAE STRAIGHT

36

Not available with size:

| | |
|---------------|---------------|
| 10•1,5 | 10•2,5 |
|---------------|---------------|

Mounting face refer to flange code **R8**



DCAT_033_046

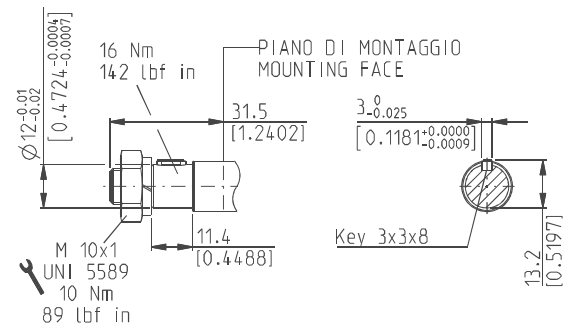
STRAIGHT

29

Not available with size:

| |
|---------------|
| 10•5,8 |
|---------------|

Mounting face refer to flange code **E8**



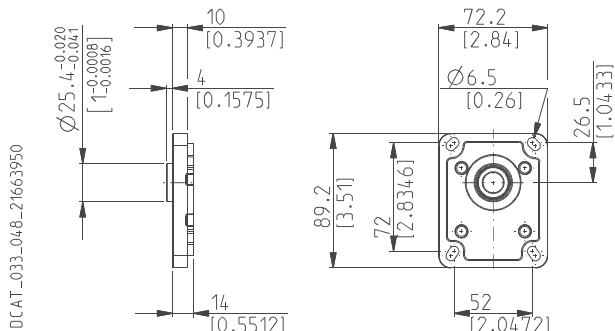
DCAT_033_043

01/10.03

POLARIS 10 MOUNTING FLANGES AND TABLE OF COMPATIBILITY

EUROPEAN E1

Material: cast iron and aluminium



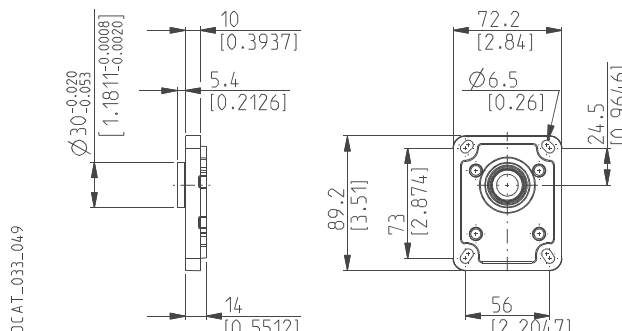
DRIVE SHAFTS
See page 52

| VERSIONS | 81 | 02 | 29 | 86 |
|-------------|----|----|----|----|
| See page 47 | | | | |
| 0 | # | X | X | X |

Standard combination
X Available combination

EUROPEAN E7

Material: cast iron and aluminium



DRIVE SHAFTS
See page 52

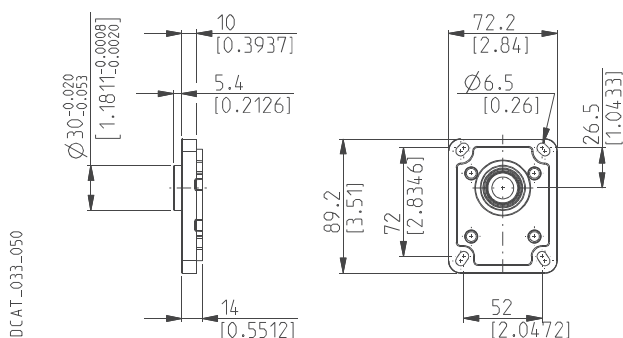
| VERSIONS | 86 | 29 | 30 |
|-------------|----|----|----|
| See page 47 | | | |
| 0 | # | X | X |

Standard combination
X Available combination

Replaces: 01/10.03

EUROPEAN E8

Material: cast iron and aluminium



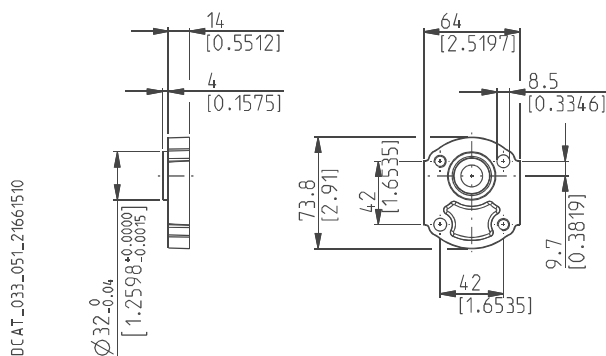
DRIVE SHAFTS
See page 52

| VERSIONS | 29 | 02 |
|-------------|----|----|
| See page 47 | | |
| 0 | # | X |

Standard combination
X Available combination

GERMAN 2 BOLTS B1

Material: aluminium




DRIVE SHAFTS
See page 52


| VERSIONS | 30 | 86 |
|-------------|----|----|
| See page 47 | | |
| 0 | # | 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

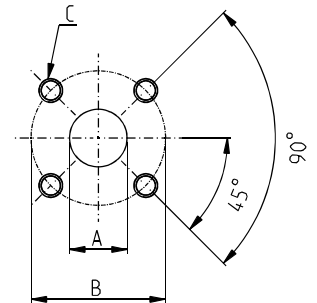
GERMAN FLANGED PORTS - 4 Bolts

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) | 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) |

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EUROPEAN FLANGED PORTS - 4 Bolts

EUROPEAN

Metric thread ISO 60° conforms to ISO/R 262

01/10.03

| 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

