



walvoil
MOTION BY PEOPLE

NEW

titan
POWER

3TPW

Cast Iron Gear Pump



3TPW
CAST IRON
GEAR PUMP

- Long life expectancy
- High efficiency
- High pressure limits
- Reduced number of components
- Reduced overall dimension



Walvoil presents the new range of 3TPW Cast Iron Pumps. These pumps are particularly suitable for all applications where traditional aluminum pumps are used at the limit of their performance; eg. for installation on mobile equipment intended for heavy duty operating cycles, where pressures or mechanical stresses are typically higher.

Its two-piece construction allows an increase in pressures with P1 up to 300 bar (4350 psi) pressure on a wide displacement range of 23.9 to 79.8 cm³/rev (1.46 to 4.87 in³/rev).

The new 3TPW completes the cast iron pump range. Thanks to a wide range of integrated valves, this pump is suitable for mobile applications in Agricultural and Construction/Earth Moving sectors (Skid Steer Loaders, Telehandlers and Backhoe Loaders).



WORKING CONDITIONS

| | | |
|-----------------------------------|--|--|
| Displacement | from 23.9 to 79.8 cm ³ /rev from 1.46 to 4.87 in ³ /rev | |
| Max continuous pressure | Up to | 300 bar 4350 psi |
| Fluid | hydraulic mineral oil-based | |
| Fluid temperature | With NBR (buna N) seals | from -20 to +80 °C from -4 to +176 °F |
| Viscosity | Recommended | from 15 to 92 mm ² /s (cSt) |
| | Permitted for starting | 2000 mm ² /s (cSt) |
| Max level of contamination | Recommended for operating pressure > 150 bar (2150 psi) | 20/18/15 ISO 4406 class 9 (NAS 1638) |
| | Recommended for operating pressure < 150 bar (2150 psi) | 21/19/16 ISO 4406 class 10 (NAS 1638) |

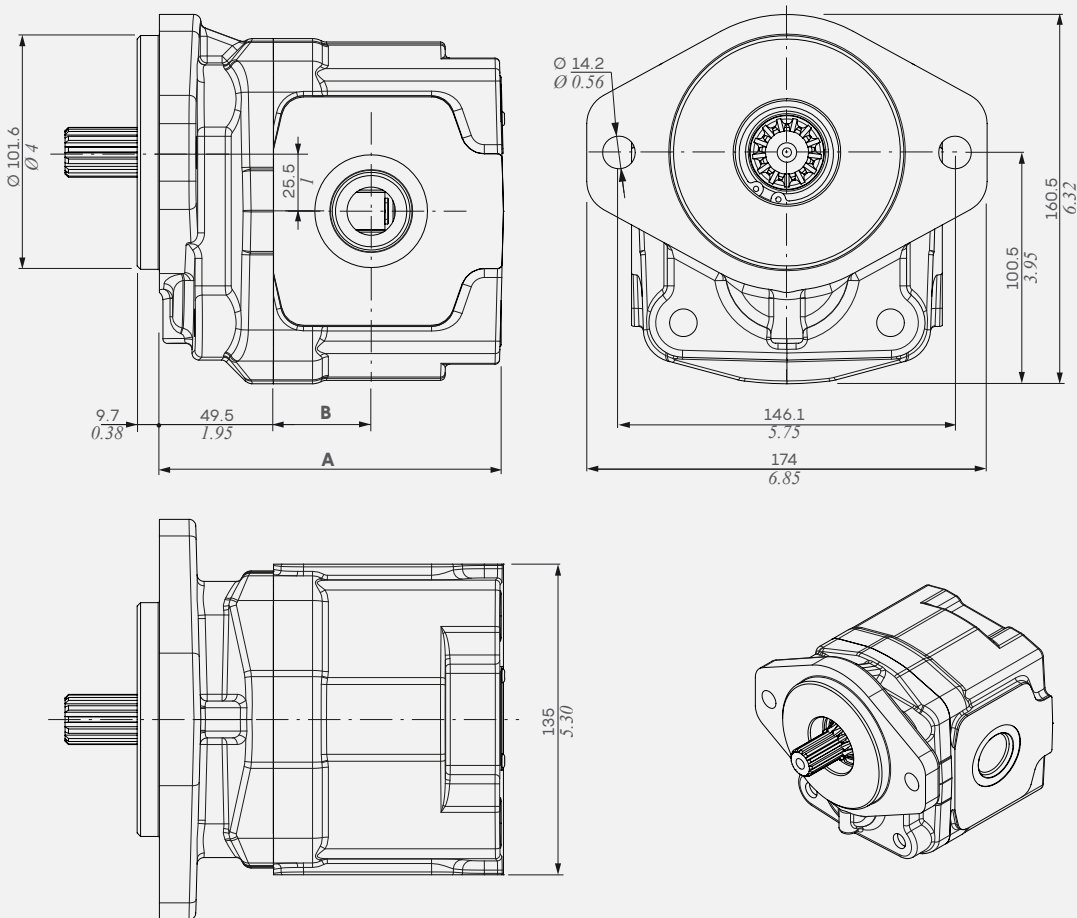
Note: For motor configuration, please contact Sales Department.

TECHNICAL DATA

| Group 3TPW | Displacement | | Max continuous pressure | | Max intermittent pressure | | Max peak pressure | | Max rotation speed |
|------------|----------------------|----------------------|-------------------------|-------|---------------------------|-------|-------------------|-------|--------------------|
| | cm ³ /rev | in ³ /rev | bar | psi | bar | psi | bar | psi | rpm |
| 230 | 23.9 | 1.46 | 300 | 4.350 | 320 | 4.640 | 330 | 4.785 | 3000 |
| 280 | 28 | 1.71 | 300 | 4.350 | 320 | 4.640 | 330 | 4.785 | 3000 |
| 320 | 32.2 | 1.96 | 300 | 4.350 | 320 | 4.640 | 330 | 4.785 | 3000 |
| 390 | 39.7 | 2.42 | 300 | 4.350 | 320 | 4.640 | 330 | 4.785 | 3000 |
| 430 | 43.8 | 2.67 | 300 | 4.350 | 320 | 4.640 | 330 | 4.785 | 3000 |
| 470 | 47.9 | 2.92 | 290 | 4.205 | 310 | 4.495 | 320 | 4.640 | 3000 |
| 520 | 52 | 3.18 | 290 | 4.205 | 310 | 4.495 | 320 | 4.640 | 2800 |
| 560 | 56.8 | 3.47 | 290 | 4.205 | 310 | 4.495 | 320 | 4.640 | 2500 |
| 600 | 60.9 | 3.72 | 270 | 3.915 | 290 | 4.205 | 300 | 4.350 | 2500 |
| 650 | 65 | 3.97 | 250 | 3.625 | 270 | 3.915 | 280 | 4.060 | 2500 |
| 710 | 71.6 | 4.37 | 230 | 3.335 | 250 | 3.625 | 260 | 3.770 | 2500 |
| 790 | 79.8 | 4.87 | 210 | 3.045 | 230 | 3.335 | 240 | 3.480 | 2500 |

DIMENSIONAL DATA

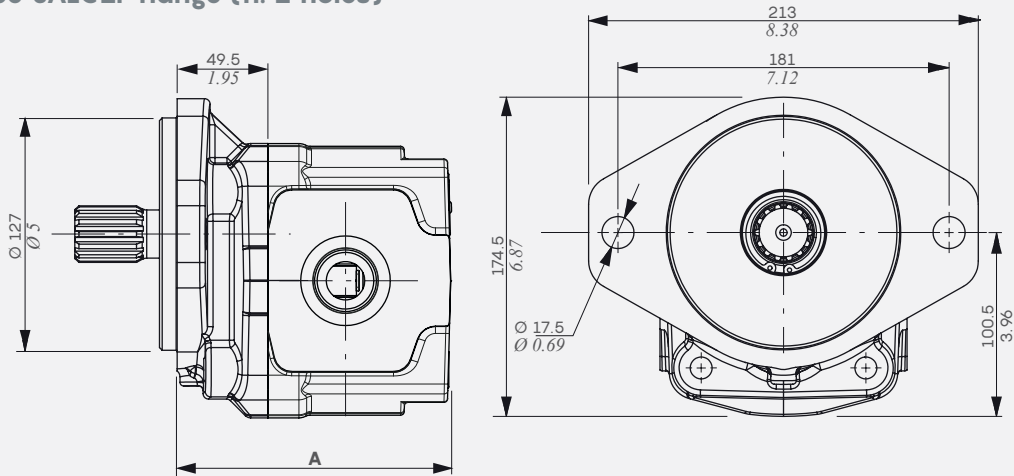
The dimensional drawing represents the version with **SAEB** flange (for other flanges, see the next page).



| Group 3TPW | Dimension A | | Dimension B Porting type | | | | | |
|---------------|-------------|------|----------------------------------|------|-----------------|------|---------------|------|
| | | | G (BSP) W (UN-UNF) F (SAE) | | N (EUROPEAN) | | T (GERMAN) | |
| | mm | in | mm | in | mm | in | mm | in |
| 230 | 125.5 | 4.94 | 27 | 1.06 | 35 | 1.37 | 33 | 1.3 |
| 280 | 128.5 | 5.06 | 30 | 1.18 | 35 | 1.37 | 33 | 1.3 |
| 320 | 131.5 | 5.18 | 32 | 1.26 | 36 | 1.41 | 34 | 1.33 |
| 390 | 137 | 5.39 | 36 | 1.41 | 37 | 1.46 | 36 | 1.41 |
| 430 | 140 | 5.51 | 38.5 | 1.51 | 38 | 1.50 | 38.5 | 1.51 |
| 470 | 143 | 5.63 | 41 | 1.61 | 39 | 1.53 | 41 | 1.61 |
| 520 | 146 | 5.75 | 41 | 1.61 | 40 | 1.57 | 41 | 1.61 |
| 560 | 149.5 | 5.88 | 42.5 | 1.67 | 40 | 1.57 | 42.5 | 1.67 |
| 600 | 152.5 | 6 | 43.5 | 1.71 | 40 | 1.57 | 43.5 | 1.71 |
| 650 | 155.5 | 6.12 | 44.5 | 1.75 | 44 | 1.73 | 44.5 | 1.75 |
| 710 | 160.5 | 6.32 | 46 | 1.81 | 49 | 1.93 | 46 | 1.81 |
| 790 | 166.5 | 6.55 | 52 | 2.04 | 55 | 2.16 | 52 | 2.04 |

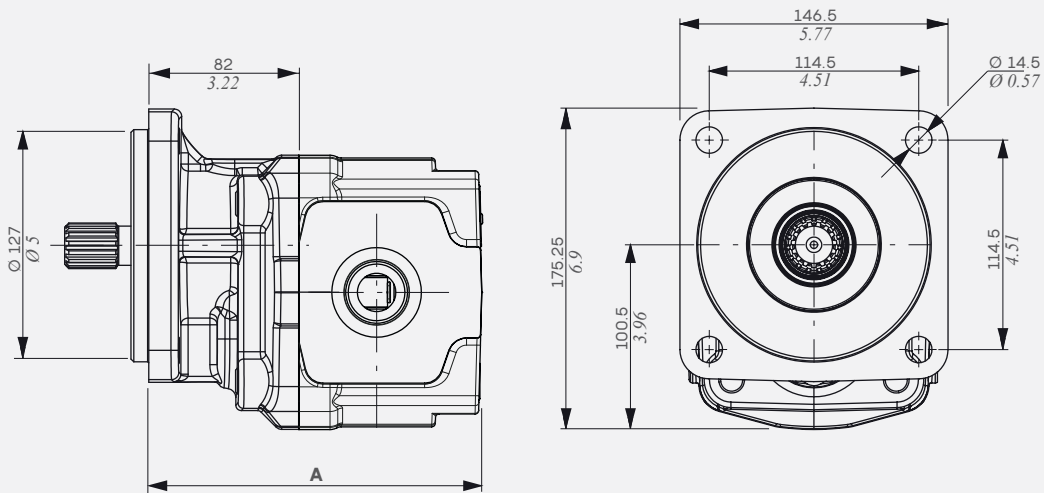
DIMENSIONAL DATA

Type SAEC2F flange (n. 2 holes)



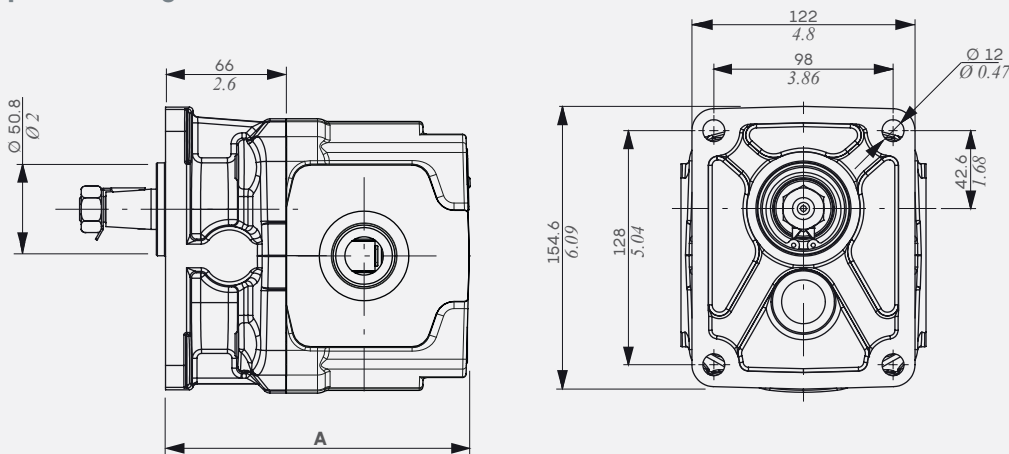
| Group 3TPW | A | |
|------------|-------|------|
| | mm | in |
| 230 | 125.5 | 4.94 |
| 280 | 128.5 | 5.06 |
| 320 | 131.5 | 5.18 |
| 390 | 137 | 5.39 |
| 430 | 140 | 5.51 |
| 470 | 143 | 5.63 |
| 520 | 146 | 5.75 |
| 560 | 149.5 | 5.88 |
| 600 | 152.5 | 6 |
| 650 | 155.5 | 6.12 |
| 710 | 160.5 | 6.32 |
| 790 | 166.5 | 6.55 |

Type SAEC4F flange (n. 4 holes)



| Group 3TPW | A | |
|------------|-------|------|
| | mm | in |
| 230 | 158 | 6.22 |
| 280 | 161 | 6.33 |
| 320 | 164 | 6.45 |
| 390 | 169.5 | 6.67 |
| 430 | 172.5 | 6.78 |
| 470 | 175.5 | 6.90 |
| 520 | 178.5 | 7.02 |
| 560 | 182 | 7.16 |
| 600 | 185 | 7.28 |
| 650 | 188 | 7.40 |
| 710 | 193 | 7.59 |
| 790 | 199 | 7.83 |

Type EUR flange

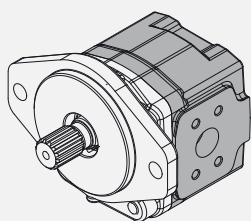


| Group 3TPW | A | |
|------------|-------|------|
| | mm | in |
| 230 | 142 | 5.59 |
| 280 | 145 | 5.7 |
| 320 | 148 | 5.83 |
| 390 | 153.5 | 6.04 |
| 430 | 156.5 | 6.16 |
| 470 | 159.5 | 6.28 |
| 520 | 162.5 | 6.4 |
| 560 | 166 | 6.53 |
| 600 | 169 | 6.65 |
| 650 | 172 | 6.77 |
| 710 | 177 | 6.97 |
| 790 | 183 | 7.20 |

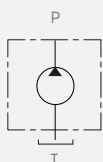
CONFIGURATIONS

G0 body

Single stage

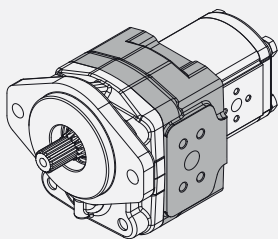


3TPW example

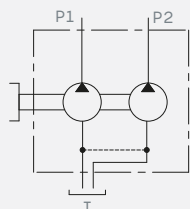


G2 body

Stage for G2 pump connection

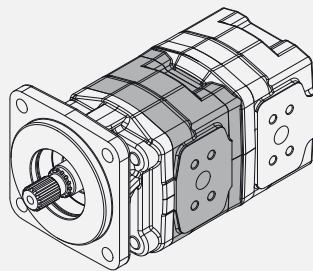


3TPW + 2SP example

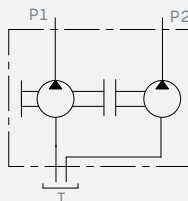


G3 body

Stage for G3 pump connection needs a kit flange for implementing 3TPW+3TPW

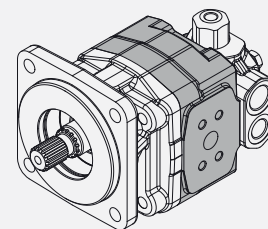


3TPW + 3TPW example

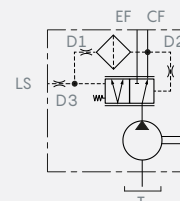


GV body

Stage for auxiliary valves



3TPW + AUX example



| Connection position | | | |
|---------------------|---|---|---|
| 0 | 1 | 3 | 4 |
| | | | |

Clockwise rotation - D

Anti-clockwise rotation - S

| Auxiliary valves for GV body | |
|------------------------------|--|
| VLPI | Pressure relief valve (internal drain) |
| VLPE | Pressure relief valve (external drain) |
| VRF | Flow regulator |
| VRFVLP | Flow divider and relief valve |
| UNLD | Unloading valve |
| CP | Priority valve |
| VA | Anticavitation valve |
| VMA | Anticavitation and Antishock valve |

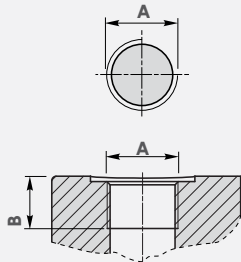
| Portings and connections | porting type | | | | |
|--------------------------|--------------|----|---|---|---|
| | G | W | T | N | F |
| 0 | ● | ● | ● | ● | ● |
| 1 | ● | ● | - | - | - |
| 3 | ● | ● | - | - | - |
| 4 | ●* | ●* | - | - | - |

Note[*]: Only for G0 body

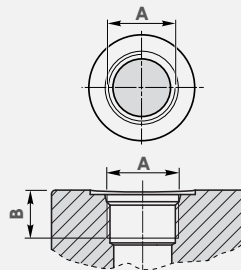
(-): For available connection, please contact our Sales Dpt.

PORTS AND CONNECTIONS

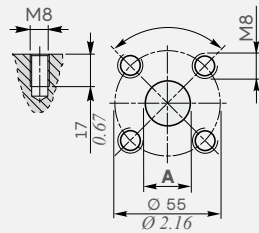
G: BSP



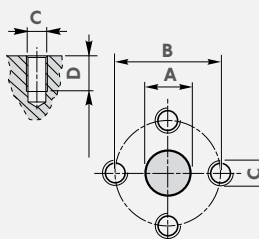
W: UN-UNF



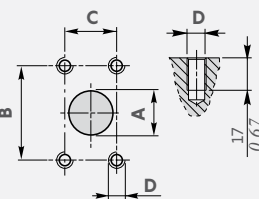
T: German Flange



N: European Flange



F: SAE J518-1 connection



| Group 3TPW | Port Threading | | | | | | | | | | | | | |
|------------|----------------|-------|----|------|----|------|------------|-------|------|------|------------|------|----|------|
| | G (BSP) | | | | | | W (UN-UNF) | | | | T (GERMAN) | | | |
| | A | | IN | | B | | A | | B | | A | | A | |
| IN | OUT | mm | in | mm | in | IN | OUT | mm | in | mm | in | mm | in | |
| 230 | G 1 | G 3/4 | 20 | 0.79 | 18 | 0.71 | SAE16 | SAE12 | 20.5 | 0.81 | 27 | 1.06 | 19 | 0.75 |
| 280 | G 1 | G 3/4 | 20 | 0.79 | 18 | 0.71 | SAE16 | SAE12 | 20.5 | 0.81 | 27 | 1.06 | 19 | 0.75 |
| 320 | G 1 1/4 | G 1 | 20 | 0.79 | 18 | 0.71 | SAE20 | SAE16 | 20.5 | 0.81 | 27 | 1.06 | 19 | 0.75 |
| 390 | G 1 1/4 | G 1 | 20 | 0.79 | 18 | 0.71 | SAE20 | SAE16 | 20.5 | 0.81 | 27 | 1.06 | 19 | 0.75 |
| 430 | G 1 1/4 | G 1 | 20 | 0.79 | 18 | 0.71 | SAE20 | SAE16 | 20.5 | 0.81 | 27 | 1.06 | 19 | 0.75 |
| 470 | G 1 1/4 | G 1 | 20 | 0.79 | 18 | 0.71 | SAE20 | SAE16 | 20.5 | 0.81 | 27 | 1.06 | 19 | 0.75 |
| 520 | G 1 1/4 | G 1 | 20 | 0.79 | 18 | 0.71 | SAE20 | SAE16 | 20.5 | 0.81 | 27 | 1.06 | 19 | 0.75 |
| 560 | G 1 1/4 | G 1 | 20 | 0.79 | 18 | 0.71 | SAE20 | SAE16 | 20.5 | 0.81 | 27 | 1.06 | 19 | 0.75 |
| 600 | G 1 1/4 | G 1 | 20 | 0.79 | 18 | 0.71 | SAE20 | SAE16 | 20.5 | 0.81 | 27 | 1.06 | 19 | 0.75 |
| 650 | G 1 1/4 | G 1 | 20 | 0.79 | 18 | 0.71 | SAE20 | SAE16 | 20.5 | 0.81 | 27 | 1.06 | 19 | 0.75 |
| 710 | G 1 1/4 | G 1 | 20 | 0.79 | 18 | 0.71 | SAE20 | SAE16 | 20.5 | 0.81 | 27 | 1.06 | 19 | 0.75 |
| 790 | G 1 1/4 | G 1 | 20 | 0.79 | 18 | 0.71 | SAE20 | SAE16 | 20.5 | 0.81 | 27 | 1.06 | 19 | 0.75 |

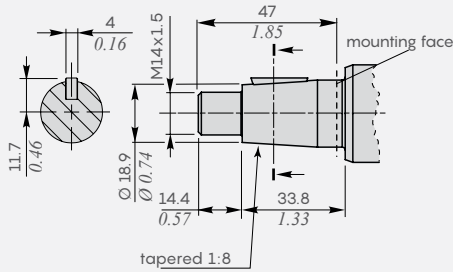
| Group 3TPW | Port Threading | | | | | | | | | | | | | | |
|------------|----------------|------|----|------|----|------|----|------|-----|-----|----|------|----|------|----|
| | N (EUROPEAN) | | | | | | | | | | | | | | |
| | A | | B | | C | | D | | A | | B | | C | | D |
| mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in |
| 230 | 27 | 1.06 | 19 | 0.75 | 51 | 2.01 | 40 | 1.57 | M10 | M8 | 17 | 0.67 | 15 | 0.59 | |
| 280 | 27 | 1.06 | 19 | 0.75 | 51 | 2.01 | 40 | 1.57 | M10 | M8 | 17 | 0.67 | 15 | 0.59 | |
| 320 | 27 | 1.06 | 19 | 0.75 | 51 | 2.01 | 40 | 1.57 | M10 | M8 | 17 | 0.67 | 15 | 0.59 | |
| 390 | 27 | 1.06 | 19 | 0.75 | 51 | 2.01 | 40 | 1.57 | M10 | M8 | 17 | 0.67 | 15 | 0.59 | |
| 430 | 27 | 1.06 | 19 | 0.75 | 51 | 2.01 | 40 | 1.57 | M10 | M8 | 17 | 0.67 | 15 | 0.59 | |
| 470 | 27 | 1.06 | 19 | 0.75 | 51 | 2.01 | 40 | 1.57 | M10 | M8 | 17 | 0.67 | 15 | 0.59 | |
| 520 | 27 | 1.06 | 19 | 0.75 | 51 | 2.01 | 40 | 1.57 | M10 | M8 | 17 | 0.67 | 15 | 0.59 | |
| 560 | 27 | 1.06 | 19 | 0.75 | 51 | 2.01 | 40 | 1.57 | M10 | M8 | 17 | 0.67 | 15 | 0.59 | |
| 600 | 27 | 1.06 | 19 | 0.75 | 51 | 2.01 | 40 | 1.57 | M10 | M8 | 17 | 0.67 | 15 | 0.59 | |
| 650 | 33 | 1.3 | 19 | 0.75 | 62 | 2.44 | 40 | 1.57 | M12 | M8 | 17 | 0.67 | 15 | 0.59 | |
| 710 | 33 | 1.3 | 27 | 1.06 | 62 | 2.44 | 51 | 2.01 | M12 | M10 | 17 | 0.67 | 15 | 0.59 | |
| 790 | 33 | 1.3 | 27 | 1.06 | 62 | 2.44 | 51 | 2.01 | M12 | M10 | 17 | 0.67 | 15 | 0.59 | |

| Group 3TPW | Port Threading | | | | | | | | | | | | | | |
|------------|---------------------------|------|----|------|------|------|------|------|------|------|------|------|-----|-----|----|
| | F (SAE J518-1 connection) | | | | | | | | | | | | | | |
| | A | | B | | C | | D | | A | | B | | C | | D |
| mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in |
| 230 | 25 | 0.98 | 19 | 0.75 | 52.4 | 2.06 | 47.6 | 1.87 | 26.2 | 1.03 | 22.2 | 0.87 | M10 | M10 | |
| 280 | 25 | 0.98 | 19 | 0.75 | 52.4 | 2.06 | 47.6 | 1.87 | 26.2 | 1.03 | 22.2 | 0.87 | M10 | M10 | |
| 320 | 32 | 1.25 | 19 | 0.75 | 58.7 | 2.31 | 47.6 | 1.87 | 30.2 | 1.19 | 22.2 | 0.87 | M10 | M10 | |
| 390 | 32 | 1.25 | 19 | 0.75 | 58.7 | 2.31 | 47.6 | 1.87 | 30.2 | 1.19 | 22.2 | 0.87 | M10 | M10 | |
| 430 | 32 | 1.25 | 25 | 0.98 | 58.7 | 2.31 | 52.4 | 2.06 | 30.2 | 1.19 | 26.2 | 1.03 | M10 | M10 | |
| 470 | 39 | 1.53 | 25 | 0.98 | 69.8 | 2.75 | 52.4 | 2.06 | 35.7 | 1.4 | 26.2 | 1.03 | M12 | M10 | |
| 520 | 39 | 1.53 | 25 | 0.98 | 69.8 | 2.75 | 52.4 | 2.06 | 35.7 | 1.4 | 26.2 | 1.03 | M12 | M10 | |
| 560 | 39 | 1.53 | 32 | 1.25 | 69.8 | 2.75 | 58.7 | 2.31 | 35.7 | 1.4 | 30.2 | 1.19 | M12 | M10 | |
| 600 | 39 | 1.53 | 32 | 1.25 | 69.8 | 2.75 | 58.7 | 2.31 | 35.7 | 1.4 | 30.2 | 1.19 | M12 | M10 | |
| 650 | 39 | 1.53 | 32 | 1.25 | 69.8 | 2.75 | 58.7 | 2.31 | 35.7 | 1.4 | 30.2 | 1.19 | M12 | M10 | |
| 710 | 39 | 1.53 | 32 | 1.25 | 69.8 | 2.75 | 58.7 | 2.31 | 35.7 | 1.4 | 30.2 | 1.19 | M12 | M10 | |
| 790 | 39 | 1.53 | 32 | 1.25 | 69.8 | 2.75 | 58.7 | 2.31 | 35.7 | 1.4 | 30.2 | 1.19 | M12 | M10 | |

SHAFT TYPES

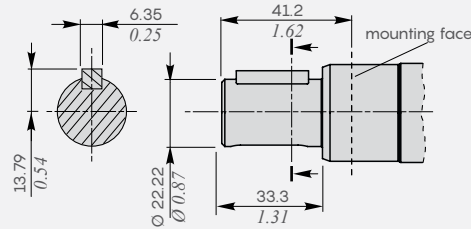
Type 10

Torque 240 Nm - 178 lbft



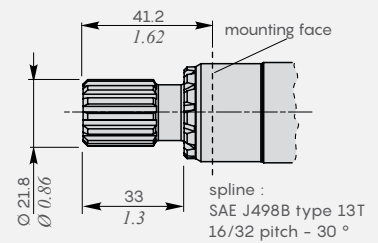
Type 13

Torque 240 Nm - 148 lbft



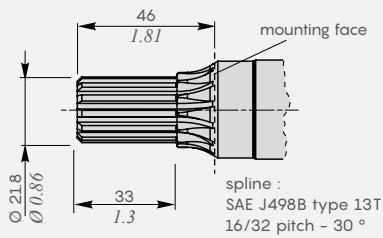
Type S13

Torque 280 Nm - 207 lbft



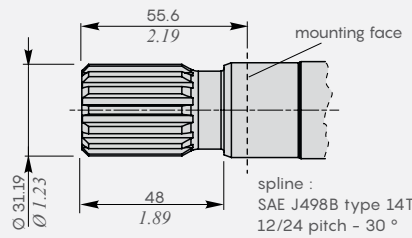
Type S13N

Torque 300 Nm - 221 lbft



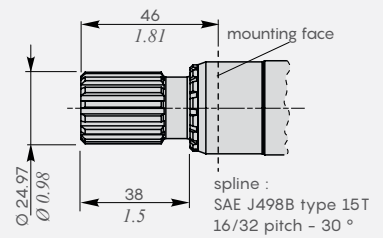
Type S14 - S14L

Torque 900 Nm - 664 lbft



Type S15 - S15L

Torque 400 Nm - 296 lbft



SHAFT - FLANGE COMBINATION

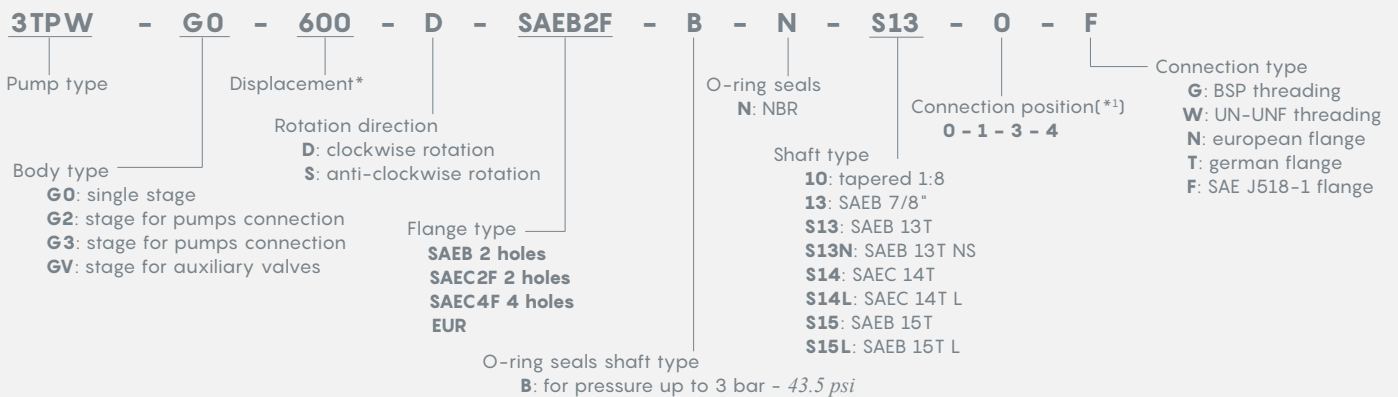
| Group 3TPW | | Shaft type | | | | | | | |
|---------------|--|----------------------|---------------------|---------------------|-------------------------|---------------------|------------------------|---------------------|------------------------|
| | | 10 Tapered 1:8 | 13 SAE B 7/8" | S13 SAE B 13T | S13N SAE B 13T NS | S14 SAE C 14T | S14L SAE C 14T L | S15 SAE B 15T | S15L SAE B 15T L |
| SAEB | | - | ◇ | ◇ | ◇ | ◇ | - | ◇ | - |
| SAEC2F | | - | ◇ | ◇ | ◇ | ◇ | - | ◇ | - |
| SAEC4F | | - | - | - | - | - | ◇ | - | ◇ |
| EUR | | ◇ | - | - | - | - | - | - | - |

◇ = STANDARD COMBINATION

3 GP - 3 TPW COMPARISON



DESCRIPTION COMPOSITION



(*) for displacement types, see "technical data" table

(*1) for position types, see "configuration" table

