

# NEW

## 3TPW

Cast Iron Gear Pump



# titan

## POWER



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**walvoil**  
FLUID POWER E|MOTION

A member of



# 3TPW

## Cast Iron Gear Pump



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 cm<sup>3</sup>/ rev (*1.46 to 4.87 in<sup>3</sup>/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).

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

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

NOTE- For motor version, please contact our Sales Dept.

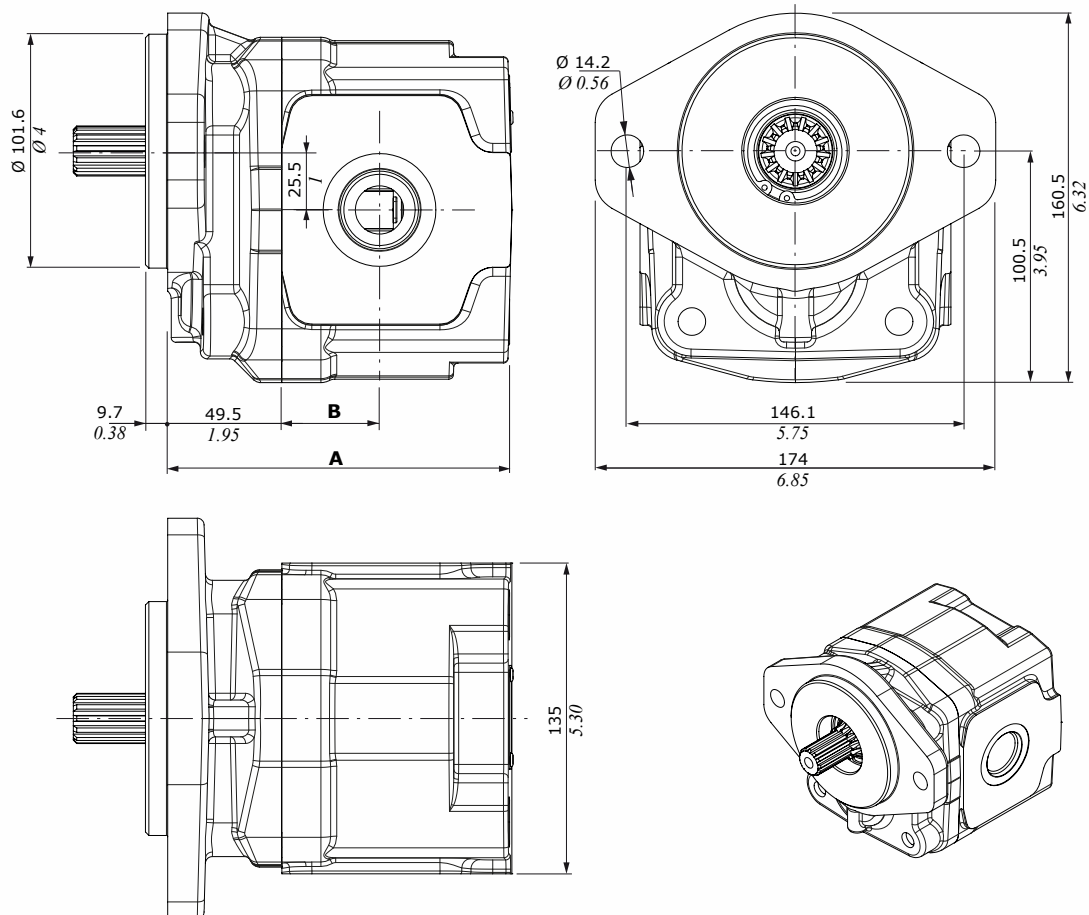
## Technical data

| GROUP<br><b>3TPW</b> | Displacement         |                      | Max continuous pressure |       | Max intermittent pressure |       | Max peak pressure |       | Max rotation speed<br>rpm |
|----------------------|----------------------|----------------------|-------------------------|-------|---------------------------|-------|-------------------|-------|---------------------------|
|                      | cm <sup>3</sup> /rev | in <sup>3</sup> /rev | bar                     | psi   | bar                       | psi   | bar               | psi   |                           |
| <b>3TPW 230</b>      | 23.9                 | 1.46                 | 300                     | 4,350 | 320                       | 4,640 | 330               | 4,785 | 3000                      |
| <b>3TPW 280</b>      | 28                   | 1.71                 | 300                     | 4,350 | 320                       | 4,640 | 330               | 4,785 | 3000                      |
| <b>3TPW 320</b>      | 32.2                 | 1.96                 | 300                     | 4,350 | 320                       | 4,640 | 330               | 4,785 | 3000                      |
| <b>3TPW 390</b>      | 39.7                 | 2.42                 | 300                     | 4,350 | 320                       | 4,640 | 330               | 4,785 | 3000                      |
| <b>3TPW 430</b>      | 43.8                 | 2.67                 | 300                     | 4,350 | 320                       | 4,640 | 330               | 4,785 | 3000                      |
| <b>3TPW 470</b>      | 47.9                 | 2.92                 | 290                     | 4,205 | 310                       | 4,495 | 320               | 4,640 | 3000                      |
| <b>3TPW 520</b>      | 52.0                 | 3.18                 | 290                     | 4,205 | 310                       | 4,495 | 320               | 4,640 | 2800                      |
| <b>3TPW 560</b>      | 56.8                 | 3.47                 | 290                     | 4,205 | 310                       | 4,495 | 320               | 4,640 | 2500                      |
| <b>3TPW 600</b>      | 60.9                 | 3.72                 | 270                     | 3,915 | 290                       | 4,205 | 300               | 4,350 | 2500                      |
| <b>3TPW 650</b>      | 65-0                 | 3.97                 | 250                     | 3,625 | 270                       | 3,915 | 280               | 4,060 | 2500                      |
| <b>3TPW 710</b>      | 71.6                 | 4.37                 | 230                     | 3,335 | 250                       | 3,625 | 260               | 3,770 | 2500                      |
| <b>3TPW 790</b>      | 79.8                 | 4.87                 | 210                     | 3,045 | 230                       | 3,335 | 240               | 3,480 | 2500                      |

# NEW

## Dimensions

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



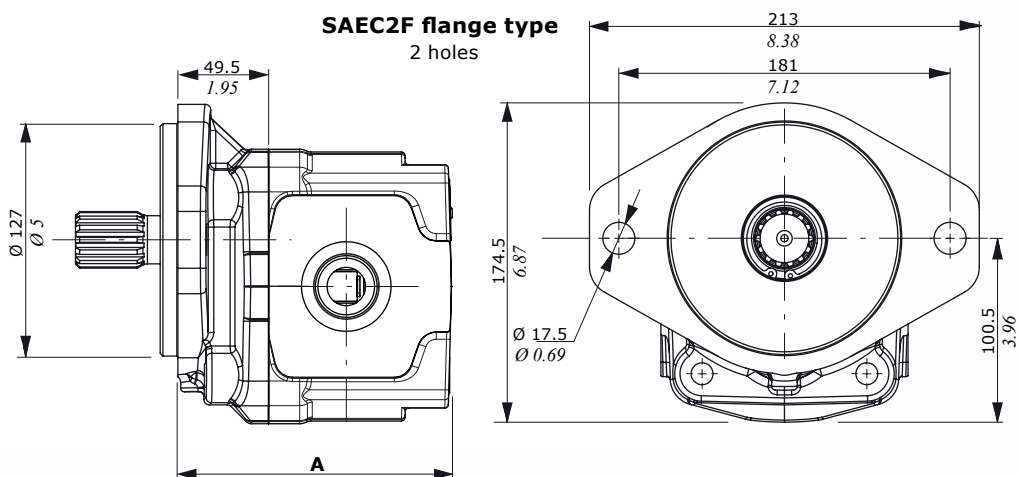
| GROUP<br>3TPW | Dimension A |      | Dimension B                      |      |                 |      |          |      |    |
|---------------|-------------|------|----------------------------------|------|-----------------|------|----------|------|----|
|               |             |      | G (BSP)<br>W (UN-UNF)<br>F (SAE) |      | Porting type    |      | T        |      |    |
|               | mm          | in   | mm                               | in   | N<br>(EUROPEAN) |      | (GERMAN) |      |    |
|               |             |      |                                  | mm   | in              | mm   | in       | mm   | in |
| 3TPW 230      | 125.5       | 4.94 | 27                               | 1.06 | 35              | 1.37 | 33       | 1.30 |    |
| 3TPW 280      | 128.5       | 5.06 | 30                               | 1.18 | 35              | 1.37 | 33       | 1.30 |    |
| 3TPW 320      | 131.5       | 5.18 | 32                               | 1.26 | 36              | 1.41 | 34       | 1.33 |    |
| 3TPW 390      | 137         | 5.39 | 36                               | 1.41 | 37              | 1.37 | 36       | 1.41 |    |
| 3TPW 430      | 140         | 5.51 | 38.5                             | 1.51 | 38              | 1.50 | 38.5     | 1.51 |    |
| 3TPW 470      | 143         | 5.63 | 41                               | 1.61 | 39              | 1.53 | 41       | 1.61 |    |
| 3TPW 520      | 146         | 5.75 | 41                               | 1.61 | 40              | 1.57 | 41       | 1.61 |    |
| 3TPW 560      | 149.5       | 5.88 | 42.5                             | 1.67 | 40              | 1.57 | 42.5     | 1.67 |    |
| 3TPW 600      | 152.5       | 6    | 43.5                             | 1.71 | 40              | 1.57 | 43.5     | 1.71 |    |
| 3TPW 650      | 155.5       | 6.12 | 44.5                             | 1.75 | 44              | 1.73 | 44.5     | 1.75 |    |
| 3TPW 710      | 160.5       | 6.32 | 46                               | 1.81 | 49              | 1.93 | 46       | 1.81 |    |
| 3TPW 790      | 166.5       | 6.55 | 52                               | 2.04 | 55              | 2.16 | 52       | 2.04 |    |

# 3TPW

Cast Iron Gear Pump

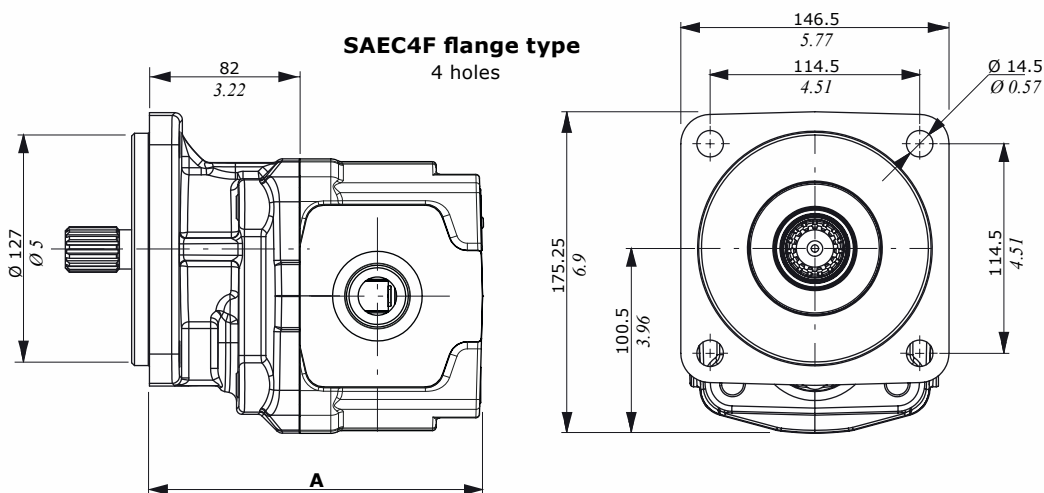
## Dimensions

**SAEC2F flange type**  
2 holes



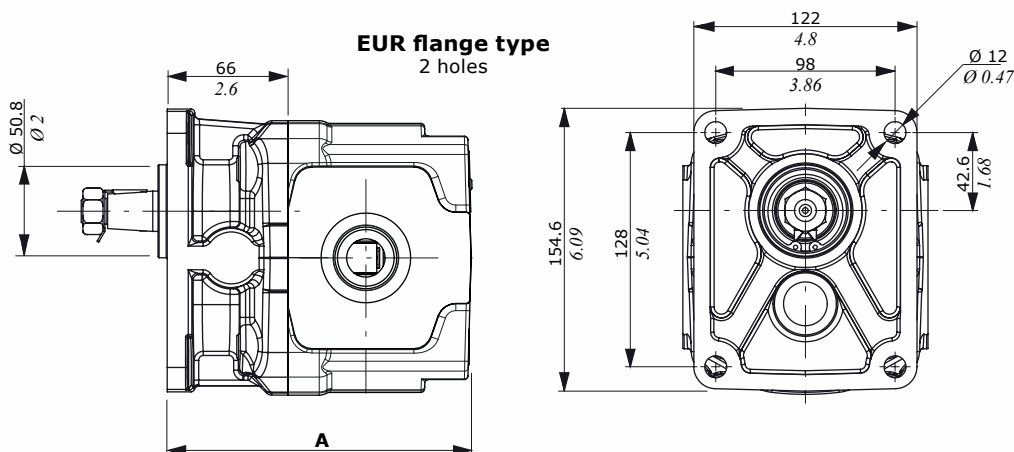
| GROUP<br>3TPW | A     |      |
|---------------|-------|------|
|               | mm    | in   |
| 3TPW 230      | 125.5 | 4.94 |
| 3TPW 280      | 128.5 | 5.06 |
| 3TPW 320      | 131.5 | 5.18 |
| 3TPW 390      | 137   | 5.39 |
| 3TPW 430      | 140   | 5.51 |
| 3TPW 470      | 143   | 5.63 |
| 3TPW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

**SAEC4F flange type**  
4 holes



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

**EUR flange type**  
2 holes

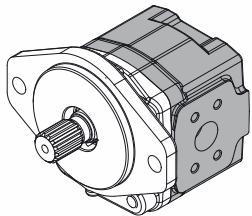


| GROUP<br>3TPW | A     |      |
|---------------|-------|------|
|               | mm    | in   |
| 3TPW 230      | 142   | 5.59 |
| 3TPW 280      | 145   | 5.70 |
| 3TPW 320      | 148   | 5.83 |
| 3TPW 390      | 153.5 | 6.04 |
| 3TPW 430      | 156.5 | 6.16 |
| 3TPW 470      | 159.5 | 6.28 |
| 3TPW 520      | 162.5 | 6.4  |
| 3TPW 560      | 166   | 6.53 |
| 3TPW 600      | 169   | 6.65 |
| 3TPW 650      | 172   | 6.77 |
| 3TPW 710      | 177   | 6.97 |
| 3TPW 790      | 183   | 7.20 |

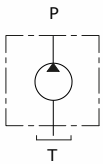
# NEW

## Body options

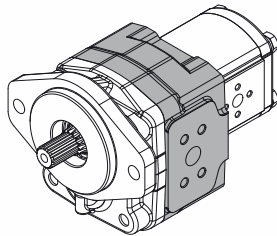
**G0 Body:**  
Single stage.



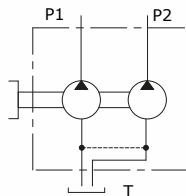
3TPW  
example



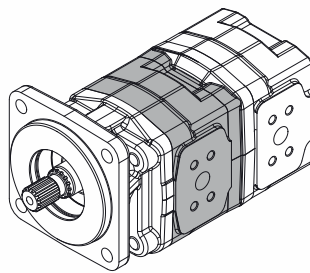
**G2 body:**  
Stage for G2  
pump. connection



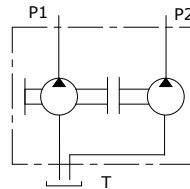
3TPW + 2SP  
example



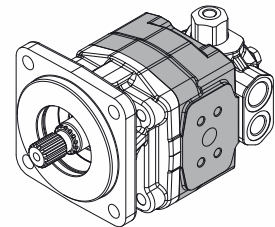
**G3 body:**  
Stage for G3 pump. connection needs a kit  
flange for implementing 3TPW+3TPW



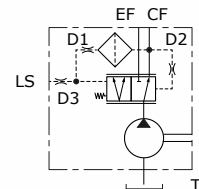
3TPW + 3TPW  
example



**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

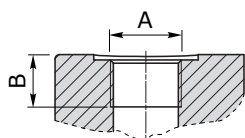
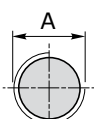
|               |  |
|---------------|--|
| <b>VLPI</b>   | Pressure relief valve (internal drain) |
| <b>VLPE</b>   | Pressure relief valve (external drain) |
| <b>VRF</b>    | Flow regulator                         |
| <b>VRFVLP</b> | Flow divider and relief valve          |
| <b>UNLD</b>   | Unloading valve                        |
| <b>CP</b>     | Priority valve                         |
| <b>VA</b>     | Anticavitation valve                   |
| <b>VMA</b>    | Anticavitation and Antishock valve     |

# 3TPW

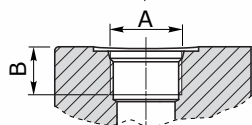
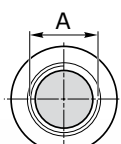
Cast Iron Gear Pump

## Ports and connections

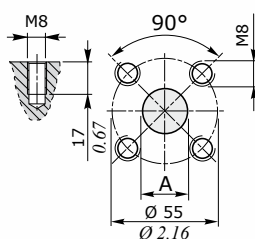
**G: BSP**



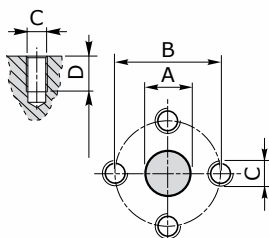
**W: UN-UNF**



**T: German Flange**



**N: European Flange**



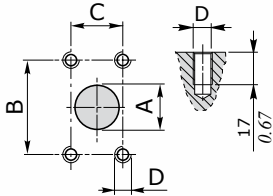
| GROUP<br>3TPW | Port Threading |      |    |      |     |      |            |       |      |      |            |      |     |      |    |
|---------------|----------------|------|----|------|-----|------|------------|-------|------|------|------------|------|-----|------|----|
|               | G (BSP)        |      |    |      |     |      | W (UN-UNF) |       |      |      | T (GERMAN) |      |     |      |    |
|               | A              |      | B  |      | OUT |      | A          |       | B    |      | A          |      | OUT |      |    |
| IN            | OUT            | mm   | in | mm   | in  | IN   | OUT        | mm    | in   | mm   | in         | mm   | in  | mm   | in |
| 3TPW 230      | G1             | G3/4 | 20 | 0.79 | 18  | 0.71 | SAE16      | SAE12 | 20.5 | 0.81 | 27         | 1.06 | 19  | 0.75 |    |
| 3TPW 280      | G1             | G3/4 | 20 | 0.79 | 18  | 0.71 | SAE16      | SAE12 | 20.5 | 0.81 | 27         | 1.06 | 19  | 0.75 |    |
| 3TPW 320      | G1 1/4         | G1   | 20 | 0.79 | 18  | 0.71 | SAE20      | SAE16 | 20.5 | 0.81 | 27         | 1.06 | 19  | 0.75 |    |
| 3TPW 390      | G1 1/4         | G1   | 20 | 0.79 | 18  | 0.71 | SAE20      | SAE16 | 20.5 | 0.81 | 27         | 1.06 | 19  | 0.75 |    |
| 3TPW 430      | G1 1/4         | G1   | 20 | 0.79 | 18  | 0.71 | SAE20      | SAE16 | 20.5 | 0.81 | 27         | 1.06 | 19  | 0.75 |    |
| 3TPW 470      | G1 1/4         | G1   | 20 | 0.79 | 18  | 0.71 | SAE20      | SAE16 | 20.5 | 0.81 | 27         | 1.06 | 19  | 0.75 |    |
| 3TPW 520      | G1 1/4         | G1   | 20 | 0.79 | 18  | 0.71 | SAE20      | SAE16 | 20.5 | 0.81 | 27         | 1.06 | 19  | 0.75 |    |
| 3TPW 560      | G1 1/4         | G1   | 20 | 0.79 | 18  | 0.71 | SAE20      | SAE16 | 20.5 | 0.81 | 27         | 1.06 | 19  | 0.75 |    |
| 3TPW 600      | G1 1/4         | G1   | 20 | 0.79 | 18  | 0.71 | SAE20      | SAE16 | 20.5 | 0.81 | 27         | 1.06 | 19  | 0.75 |    |
| 3TPW 650      | G1 1/4         | G1   | 20 | 0.79 | 18  | 0.71 | SAE20      | SAE16 | 20.5 | 0.81 | 27         | 1.06 | 19  | 0.75 |    |
| 3TPW 710      | G1 1/4         | G1   | 20 | 0.79 | 18  | 0.71 | SAE20      | SAE16 | 20.5 | 0.81 | 27         | 1.06 | 19  | 0.75 |    |
| 3TPW 790      | G1 1/4         | G1   | 20 | 0.79 | 18  | 0.71 | SAE20      | SAE16 | 20.5 | 0.81 | 27         | 1.06 | 19  | 0.75 |    |

| GROUP<br>3TPW | Port Threading |      |       |      |       |      |     |      |     |     |     |      |    |      |    |
|---------------|----------------|------|-------|------|-------|------|-----|------|-----|-----|-----|------|----|------|----|
|               | N (EUROPEAN)   |      |       |      |       |      |     |      |     |     |     |      |    |      |    |
|               | A              |      | B     |      | C     |      | D   |      | IN  |     | OUT |      |    |      |    |
| Ø IN          | Ø OUT          | Ø IN | Ø OUT | Ø IN | Ø OUT | IN   | OUT | mm   | in  | mm  | in  | mm   | in | mm   | in |
| 3TPW 230      | 27             | 1.06 | 19    | 0.75 | 51    | 2.01 | 40  | 1.57 | M10 | M8  | 17  | 0.67 | 15 | 0.59 |    |
| 3TPW 280      | 27             | 1.06 | 19    | 0.75 | 51    | 2.01 | 40  | 1.57 | M10 | M8  | 17  | 0.67 | 15 | 0.59 |    |
| 3TPW 320      | 27             | 1.06 | 19    | 0.75 | 51    | 2.01 | 40  | 1.57 | M10 | M8  | 17  | 0.67 | 15 | 0.59 |    |
| 3TPW 390      | 27             | 1.06 | 19    | 0.75 | 51    | 2.01 | 40  | 1.57 | M10 | M8  | 17  | 0.67 | 15 | 0.59 |    |
| 3TPW 430      | 27             | 1.06 | 19    | 0.75 | 51    | 2.01 | 40  | 1.57 | M10 | M8  | 17  | 0.67 | 15 | 0.59 |    |
| 3TPW 470      | 27             | 1.06 | 19    | 0.75 | 51    | 2.01 | 40  | 1.57 | M10 | M8  | 17  | 0.67 | 15 | 0.59 |    |
| 3TPW 520      | 27             | 1.06 | 19    | 0.75 | 51    | 2.01 | 40  | 1.57 | M10 | M8  | 17  | 0.67 | 15 | 0.59 |    |
| 3TPW 560      | 27             | 1.06 | 19    | 0.75 | 51    | 2.01 | 40  | 1.57 | M10 | M8  | 17  | 0.67 | 15 | 0.59 |    |
| 3TPW 600      | 27             | 1.06 | 19    | 0.75 | 51    | 2.01 | 40  | 1.57 | M10 | M8  | 17  | 0.67 | 15 | 0.59 |    |
| 3TPW 650      | 33             | 1.30 | 19    | 0.75 | 62    | 2.44 | 40  | 1.57 | M12 | M8  | 17  | 0.67 | 15 | 0.59 |    |
| 3TPW 710      | 33             | 1.30 | 27    | 1.06 | 62    | 2.44 | 51  | 2.01 | M12 | M10 | 17  | 0.67 | 15 | 0.59 |    |
| 3TPW 790      | 33             | 1.30 | 27    | 1.06 | 62    | 2.44 | 51  | 2.01 | M12 | M10 | 17  | 0.67 | 15 | 0.59 |    |

# NEW

## Ports and connections

**F: SAE J518-1 connection**

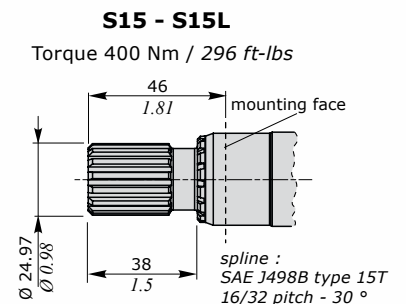
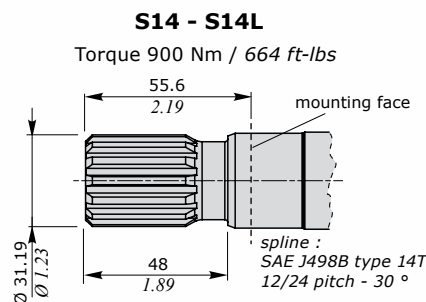
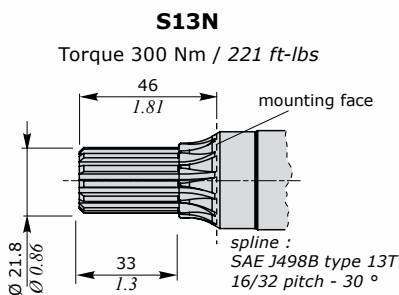
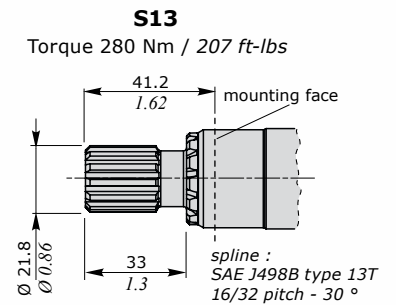
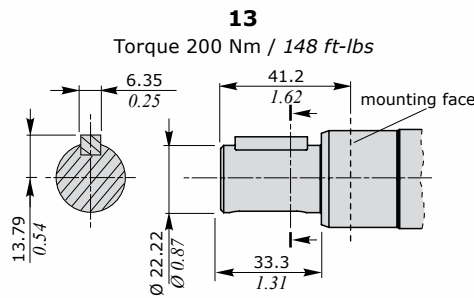
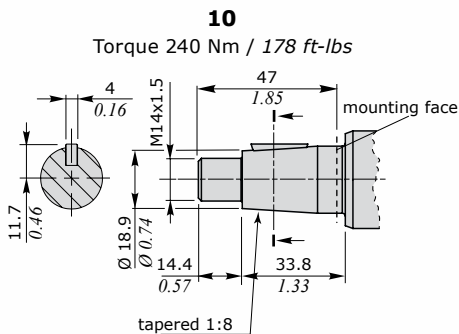


| GROUP<br>3TPW | Port Threading            |       |      |       |      |       |      |      |      |      |      |       |      |       |
|---------------|---------------------------|-------|------|-------|------|-------|------|------|------|------|------|-------|------|-------|
|               | F (SAE J518-1 connection) |       |      |       |      |       |      |      |      |      |      |       |      |       |
|               | A                         |       | B    |       | C    |       | D    |      | C    |      | D    |       | D    |       |
|               | Ø IN                      | Ø OUT | Ø IN | Ø OUT | Ø IN | Ø OUT | Ø C  | Ø D  | Ø C  | Ø D  | Ø IN | Ø OUT | Ø IN | Ø OUT |
|               | mm                        | in    | mm   | in    | mm   | in    | mm   | in   | mm   | in   | mm   | in    | mm   | in    |
| 3TPW 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   |
| 3TPW 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   |
| 3TPW 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   |
| 3TPW 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   |
| 3TPW 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   |
| 3TPW 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   |
| 3TPW 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   |
| 3TPW 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   |
| 3TPW 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   |
| 3TPW 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   |
| 3TPW 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   |
| 3TPW 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   |

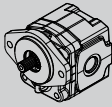
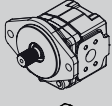
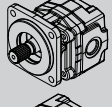
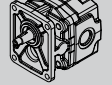
| Portings and connections | Porting type |    |   |   |   |
|--------------------------|--------------|----|---|---|---|
|                          | G            | W  | T | N | F |
| 0                        | ●            | ●  | ● | ● | ● |
| 1                        | ●            | ●  | - | - |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

(\*) Only for G0 body.

## Shaft features

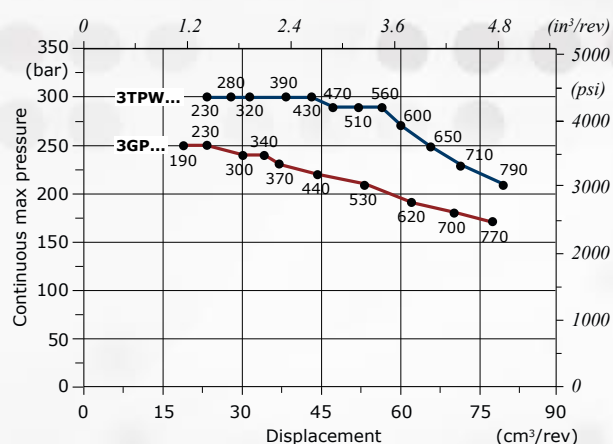


## Flange combination and 3GP - 3TPW comparison

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

◇ = STANDARD COMBINATION

**3GP - 3TPW Series comparison**  
Continuous max. pressure vs. displacement



## Description composition

**3TPW - G0 - 600 - D - SAEB2F - B - N - S13 - 0 - F**

**1      2      3      4      5      6      7      8      9      10**

| Reference | Type                |
|-----------|---------------------|
| <b>1</b>  | Pump type           |
| <b>2</b>  | Body type           |
| <b>3</b>  | Displacement        |
| <b>4</b>  | Rotation direction  |
| <b>5</b>  | Flange type         |
| <b>6</b>  | Shaft seal up 3 bar |
| <b>7</b>  | Seal type NBR       |
| <b>8</b>  | Shaft type          |
| <b>9</b>  | P Side porting      |
| <b>10</b> | Port type           |

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