

# NEW

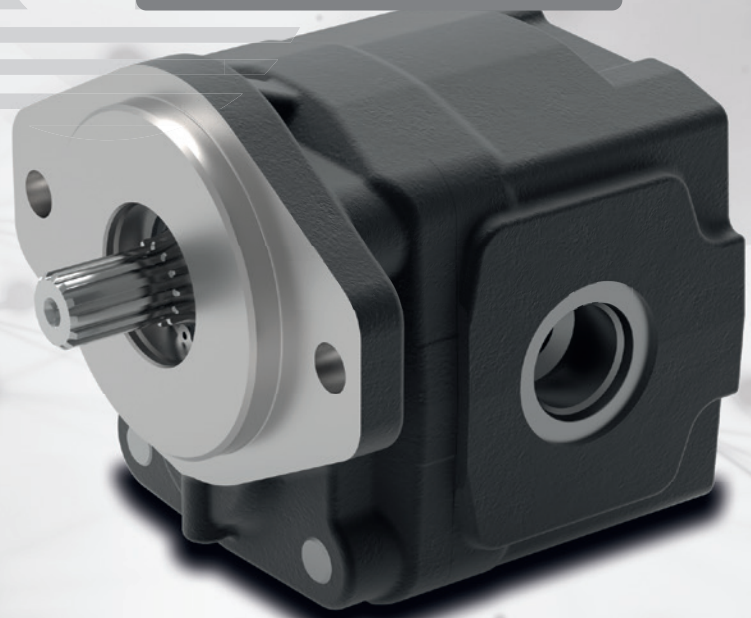
## 3TPW

Cast Iron Gear Pump



# titan

POWER



 **walvoil**  
FLUID POWER EMOTION

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 from 1.46 to 4.87 in <sup>3</sup> /rev
<b>Max continuous pressure</b>	up to	300 bar - 4350 psi
<b>Fluid</b>		hydraulic mineral oil-based
<b>Fluid temperature</b>	with NBR (buna N) seals	from -20 to +80 °C from -4 to +176 °F
<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 (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 version, please contact our Sales Dpt.

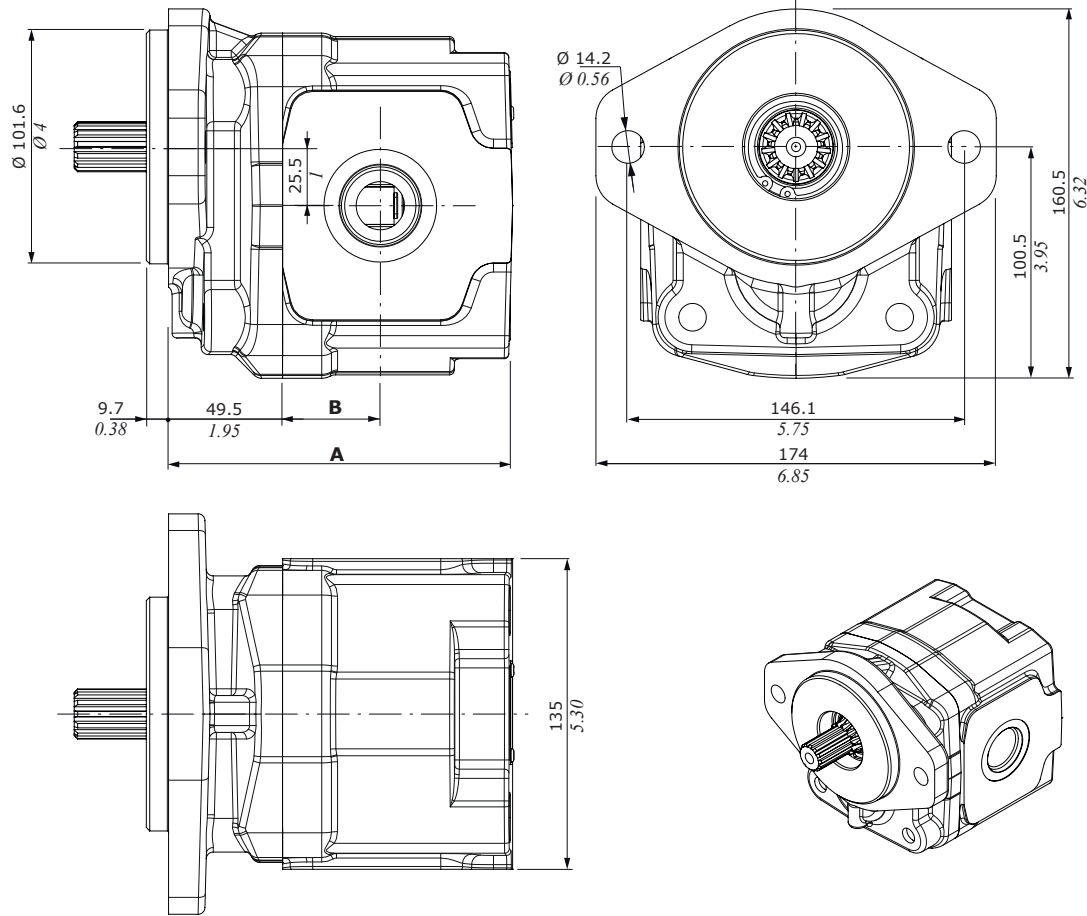
### Technical data

GROUP 3TPW	Displacement		Max continuous pressure		Max intermittent pressure		Max peak pressure		Max rotation speed rpm
	cm <sup>3</sup> /rev	in <sup>3</sup> /rev	bar	psi	bar	psi	bar	psi	
3TPW 230	23.9	1.46	300	4,350	320	4,640	330	4,785	3000
3TPW 280	28	1.71	300	4,350	320	4,640	330	4,785	3000
3TPW 320	32.2	1.96	300	4,350	320	4,640	330	4,785	3000
3TPW 390	39.7	2.42	300	4,350	320	4,640	330	4,785	3000
3TPW 430	43.8	2.67	300	4,350	320	4,640	330	4,785	3000
3TPW 470	47.9	2.92	290	4,205	310	4,495	320	4,640	3000
3TPW 520	52.0	3.18	290	4,205	310	4,495	320	4,640	2800
3TPW 560	56.8	3.47	290	4,205	310	4,495	320	4,640	2500
3TPW 600	60.9	3.72	270	3,915	290	4,205	300	4,350	2500
3TPW 650	65.0	3.97	250	3,625	270	3,915	280	4,060	2500
3TPW 710	71.6	4.37	230	3,335	250	3,625	260	3,770	2500
3TPW 790	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).



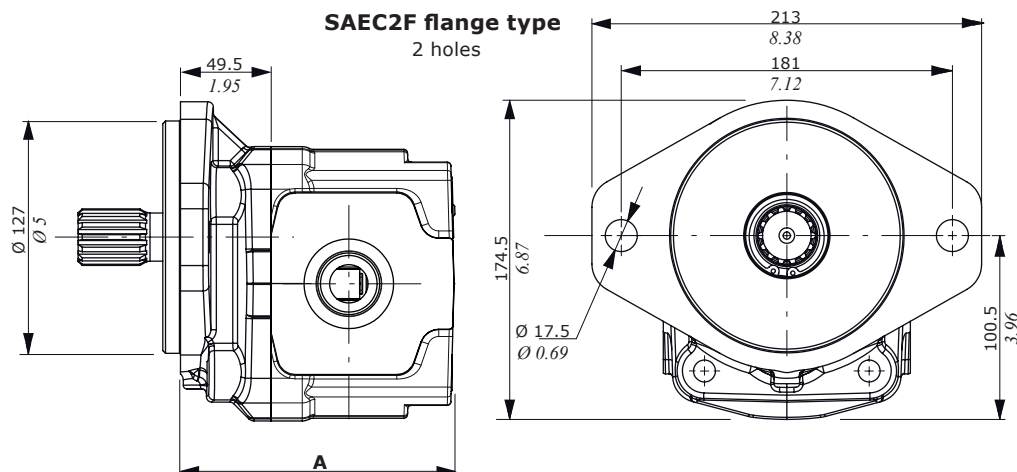
GROUP 3TPW	Dimension A		Dimension B					
			Porting type					
	mm	in	G (BSP) W (UN-UNF) F (SAE)	N (EUROPEAN)		T (GERMAN)		
3TPW 230	125.5	4.94	27	1.06	35	1.37	33	1.30
3TPW 280	128.5	5.06	30	1.18	35	1.37	33	1.30
3TPW 320	131.5	5.18	32	1.26	36	1.41	34	1.33
3TPW 390	137	5.39	36	1.41	37	1.37	36	1.41
3TPW 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

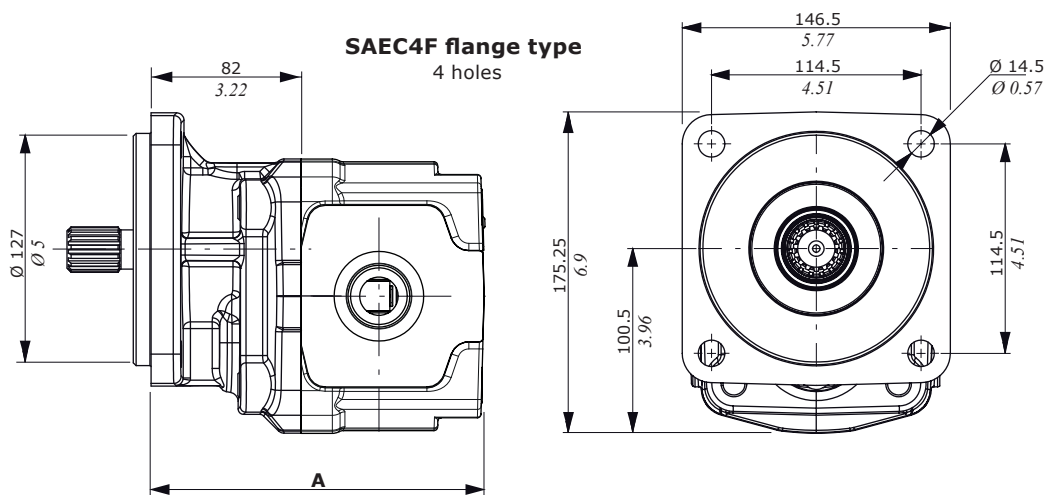
### Dimensions

**SAEC2F flange type**  
2 holes



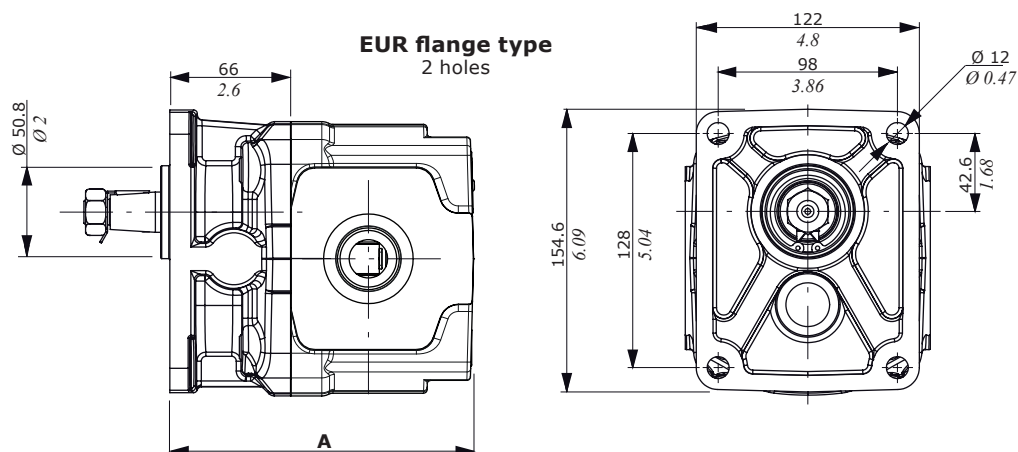
GROUP 3TPW	A	
	mm	in
3TPW 230	125.5	4.94
3TPW 280	128.5	5.06
3TPW 320	131.5	5.18
3TPW 390	137	5.39
3TPW 430	140	5.51
3TPW 470	143	5.63
3TPW 520	146	5.75
3TPW 560	149.5	5.88
3TPW 600	152.5	6
3TPW 650	155.5	6.12
3TPW 710	160.5	6.32
3TPW 790	166.5	6.55

**SAEC4F flange type**  
4 holes



GROUP 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 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

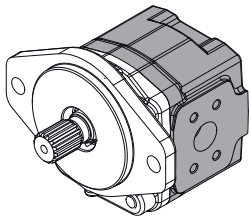
## Body options

**G0 Body:**  
Single stage.

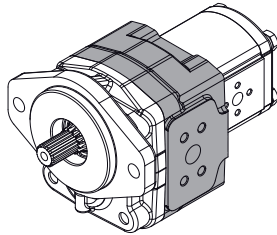
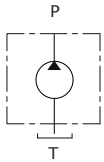
**G2 body:**  
Stage for G2  
pump. connection

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

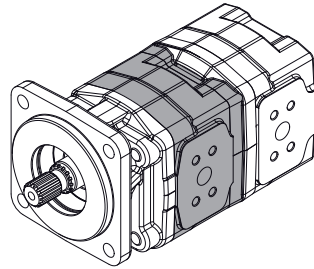
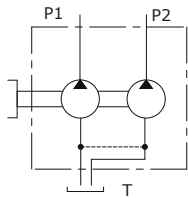
**GV body:**  
Stage for auxiliary  
valves.



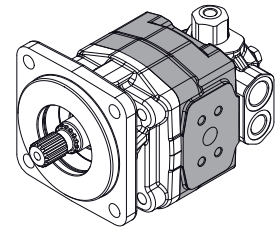
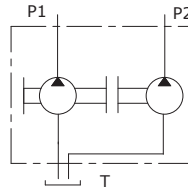
3TPW  
example



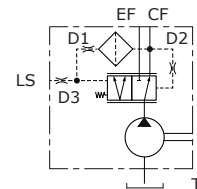
3TPW + 2SP  
example



3TPW + 3TPW  
example



3TPW + AUX  
example



Connection position			
0	1	3	4



Clockwise rotation - **D**



Anti-clockwise rotation - **S**

### Auxiliary valves for GV body

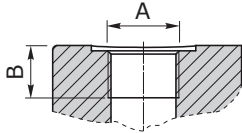
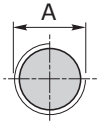
<b>VLPI</b>	Pressure relief valve (internal drain)
<b>VLPE</b>	Pressure relief valve (external drain)
<b>VRF</b>	Flow regulator
<b>VRFVLP</b>	Flow divider and relief valve
<b>UNLD</b>	Unloading valve
<b>CP</b>	Priority valve
<b>VA</b>	Anticavitation valve
<b>VMA</b>	Anticavitation and Antishock valve

# 3TPW

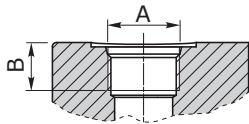
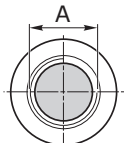
## Cast Iron Gear Pump

### Ports and connections

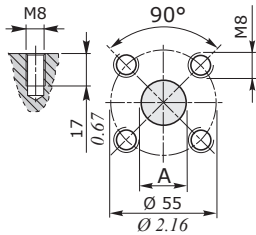
**G: BSP**



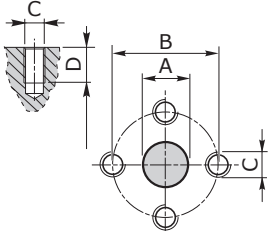
**W: UN-UNF**



**T: German Flange**



**N: European Flange**



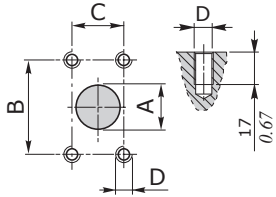
GROUP 3TPW	Port Threading													
	G (BSP)						W (UN-UNF)				T (GERMAN)			
	A		B		A		B		A		A		A	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
3TPW 230	G1	G3/4	20	0.79	18	0.71	SAE16	SAE12	20.5	0.81	27	1.06	19	0.75
3TPW 280	G1	G3/4	20	0.79	18	0.71	SAE16	SAE12	20.5	0.81	27	1.06	19	0.75
3TPW 320	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 3TPW	Port Threading													
	N (EUROPEAN)													
	A		B		C		D		A		A		A	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
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**

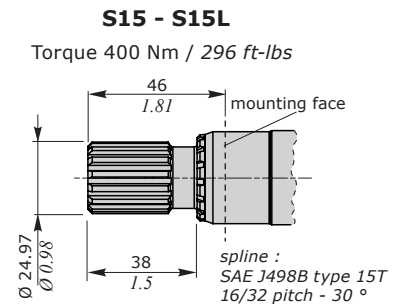
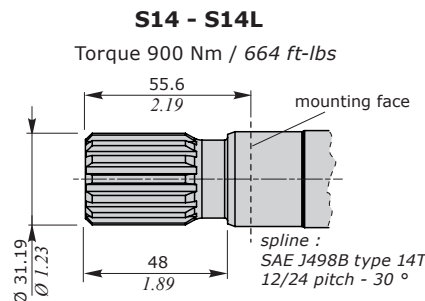
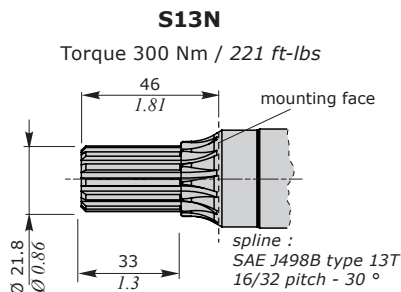
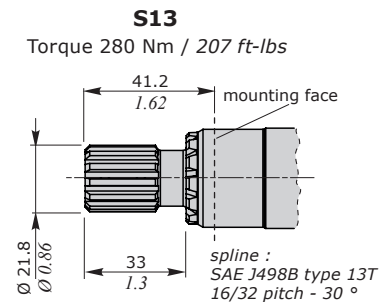
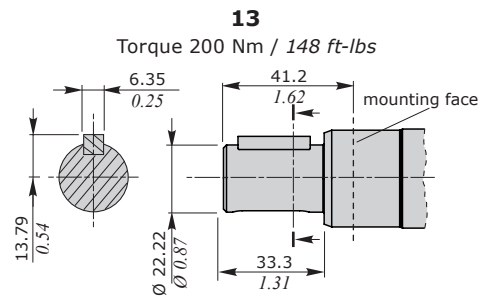
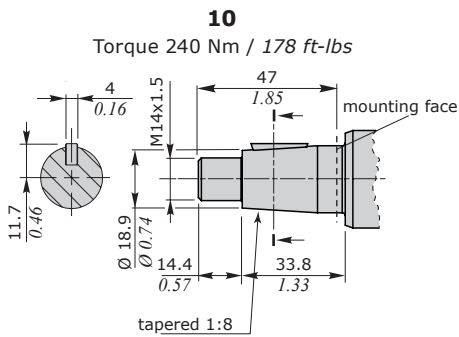


GROUP 3TPW	Port Threading														
	F (SAE J518-1 connection)														
	Ø IN		A		Ø OUT		B		C		C		D		
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	Ø IN	Ø OUT
3TPW 230	25	0.98	19	0.75	52.4	2.06	47.6	1.87	26.2	1.03	22.2	0.87	M10	M10	
3TPW 280	25	0.98	19	0.75	52.4	2.06	47.6	1.87	26.2	1.03	22.2	0.87	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



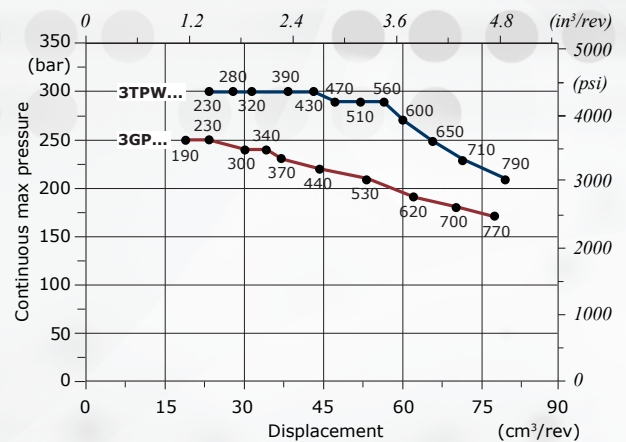
## Flange combination and 3GP - 3TPW comparison

GROUP 3TPW	Shaft type							
	10 Conic 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

### 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
1	Pump type
2	Body type
3	Displacement
4	Rotation direction
5	Flange type
6	Shaft seal up 3 bar
7	Seal type NBR
8	Shaft type
9	P Side porting
10	Port type

**walvoil**  
FLUID POWER EMOTION

**walvoil**

**hydro control**

**Caltech**  
ELECTRONICS

D1WGCM03A - 2<sup>nd</sup> edition October 2019

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