



**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 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).



## 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)

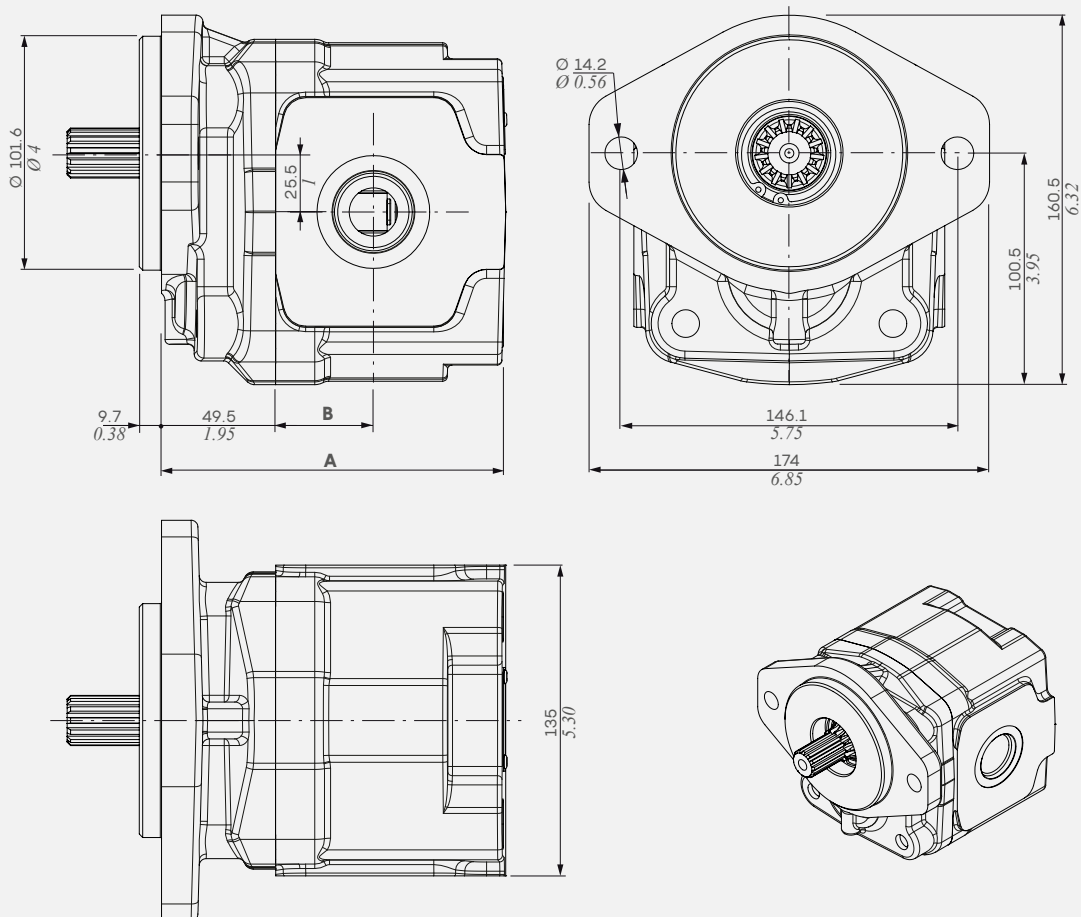
Note: For motor configuration, please contact Sales Department.

## 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	
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

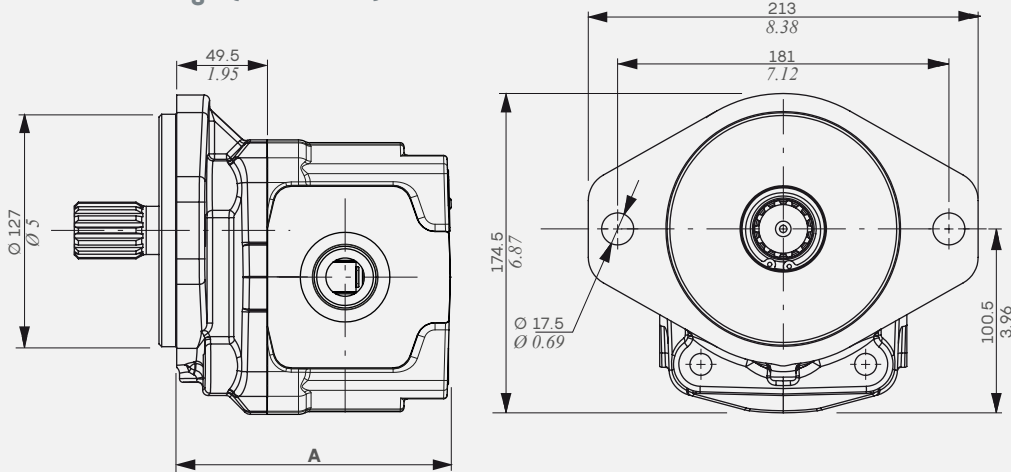
The dimensional drawing represents the version with **SAEB** flange (for other flanges, see the next page).



Group 3TPW	Dimension A		Dimension B Porting type					
	mm	in	G (BSP) W (UN-UNF) F (SAE)		N (EUROPEAN)		T (GERMAN)	
			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

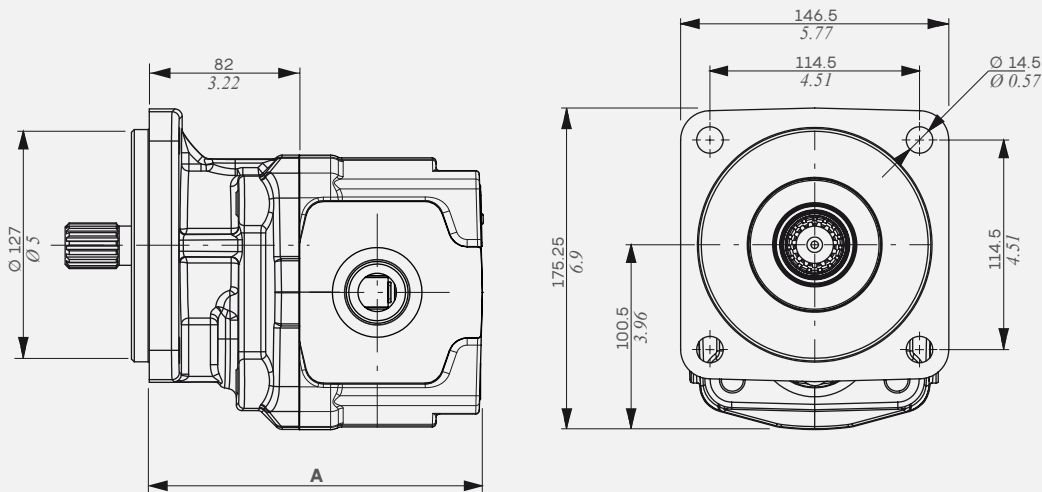
**DIMENSIONAL DATA**

**Type SAEC2F flange (n. 2 holes)**



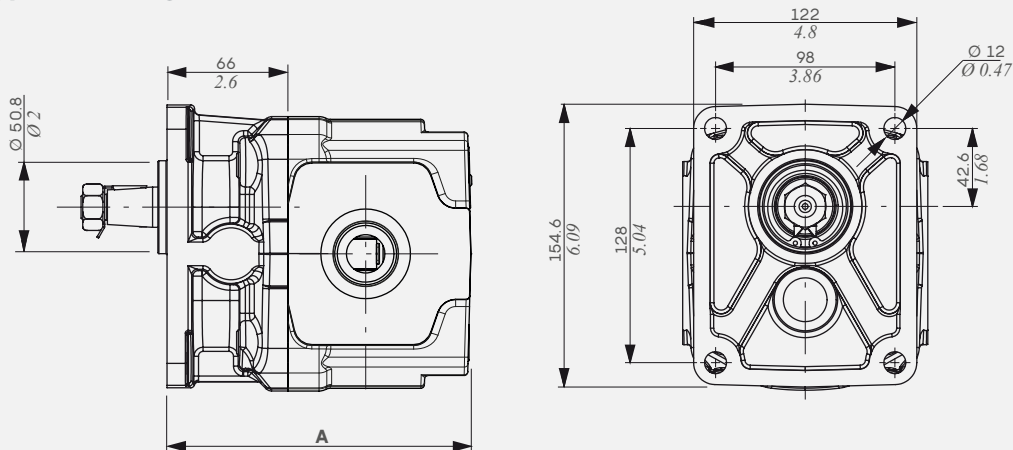
Group 3TPW	A	
	mm	in
230	125.5	4.94
280	128.5	5.06
320	131.5	5.18
390	137	5.39
430	140	5.51
470	143	5.63
520	146	5.75
560	149.5	5.88
600	152.5	6
650	155.5	6.12
710	160.5	6.32
790	166.5	6.55

**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**

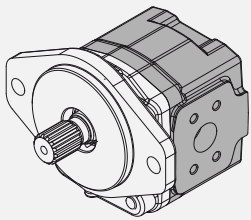


Group 3TPW	A	
	mm	in
230	142	5.59
280	145	5.7
320	148	5.83
390	153.5	6.04
430	156.5	6.16
470	159.5	6.28
520	162.5	6.4
560	166	6.53
600	169	6.65
650	172	6.77
710	177	6.97
790	183	7.20

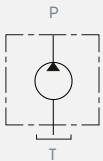
## CONFIGURATIONS

### G0 body

Single stage

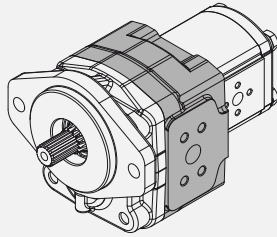


3TPW example

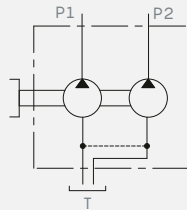


### G2 body

Stage for G2 pump connection

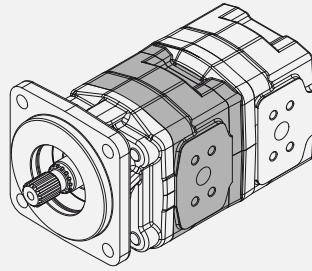


3TPW + 2SP example

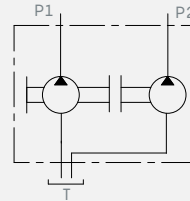


### G3 body

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

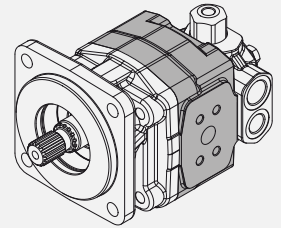


3TPW + 3TPW example

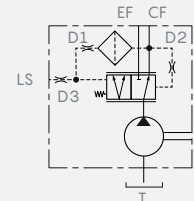


### GV body

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

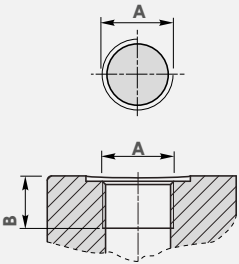
Portings and connections	porting type				
	G	W	T	N	F
0	●	●	●	●	●
1	●	●	-	-	-
3	●	●	-	-	-
4	●*	●*	-	-	-

Note[\*]: Only for G0 body

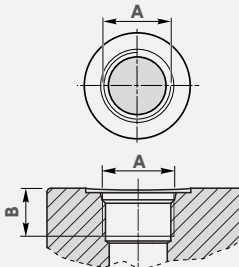
[-]: For available connection, please contact our Sales Dpt.

PORTS AND CONNECTIONS

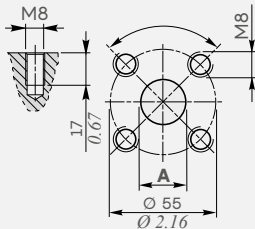
G: BSP



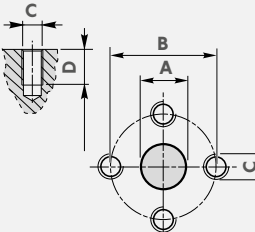
W: UN-UNF



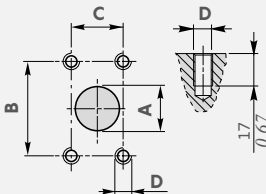
T: German Flange



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

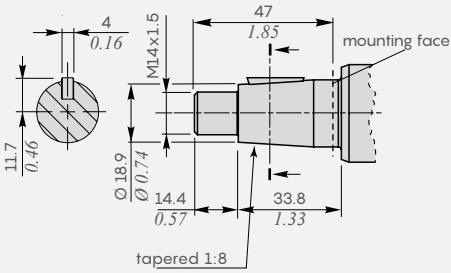
Group 3TPW	Port Threading														
	N (EUROPEAN)														
	A		B		C		D		A		B		C		D
	Ø IN	Ø OUT	Ø IN	Ø OUT	Ø IN	Ø OUT	Ø IN	Ø OUT	mm	in	mm	in	mm	in	
230	27	1.06	19	0.75	51	2.01	40	1.57	M10	M8	17	0.67	15	0.59	
280	27	1.06	19	0.75	51	2.01	40	1.57	M10	M8	17	0.67	15	0.59	
320	27	1.06	19	0.75	51	2.01	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
	Ø IN	Ø OUT	Ø IN	Ø OUT	Ø IN	Ø OUT	Ø IN	Ø OUT	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**

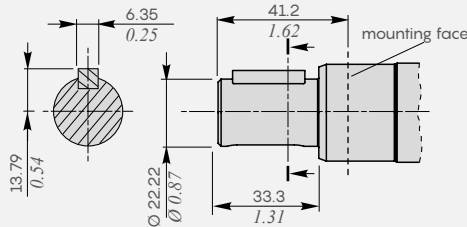
**Type 10**

Torque 240 Nm - 178 lbft



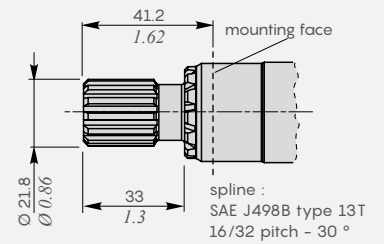
**Type 13**

Torque 240 Nm - 148 lbft



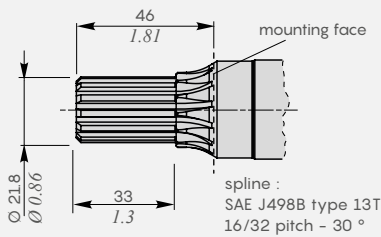
**Type S13**

Torque 280 Nm - 207 lbft



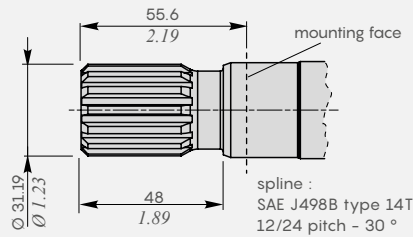
**Type S13N**

Torque 300 Nm - 221 lbft



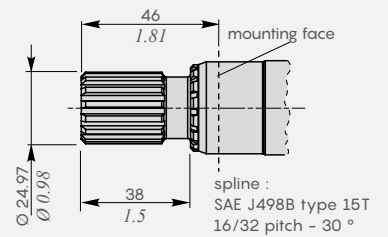
**Type S14 - S14L**

Torque 900 Nm - 664 lbft



**Type S15 - S15L**

Torque 400 Nm - 296 lbft

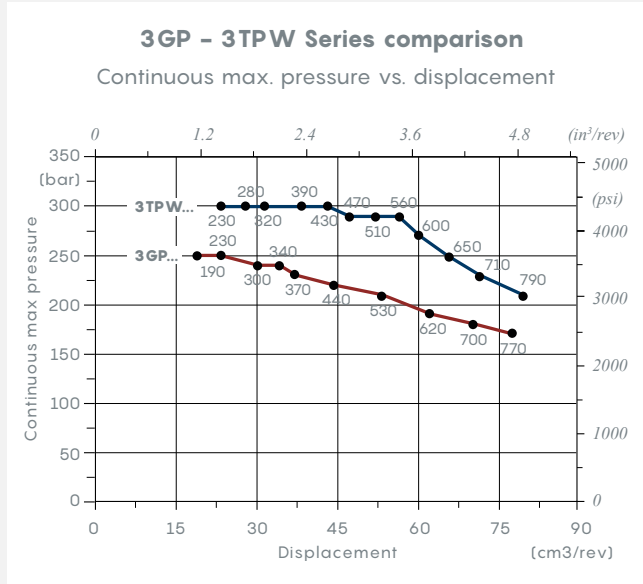


**SHAFT - FLANGE COMBINATION**

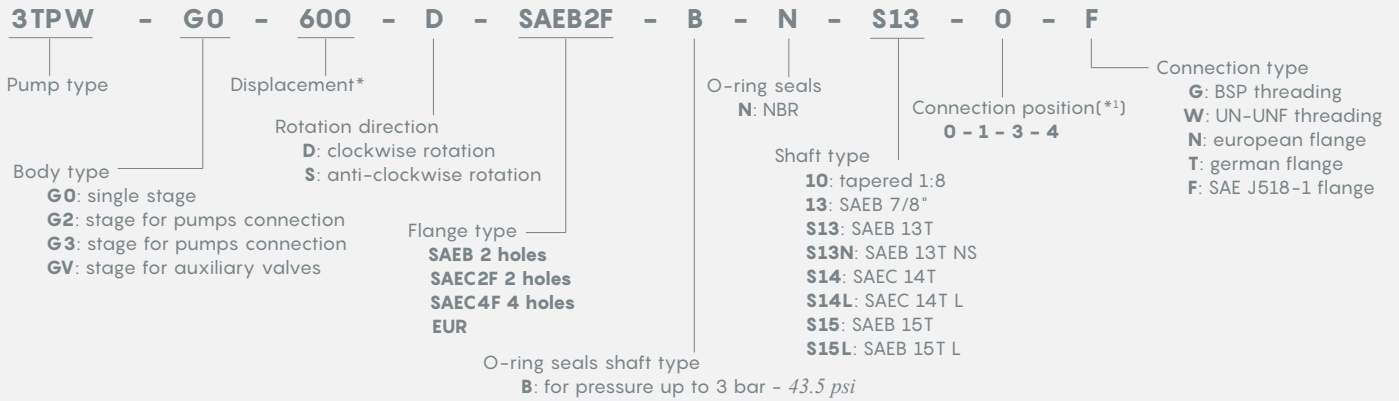
Group 3TPW	Shaft type							
	10 Tapered 1:8	13 SAE B 7/8"	S13 SAE B 13T	S13N SAE B 13T NS	S14 SAE C 14T	S14L SAE C 14T L	S15 SAE B 15T	S15L SAE B 15T L
SAEB	-	◇	◇	◇	◇	-	◇	-
SAEC2F	-	◇	◇	◇	◇	-	◇	-
SAEC4F	-	-	-	-	-	◇	-	◇
EUR	◇	-	-	-	-	-	-	-

◇ = STANDARD COMBINATION

### 3GP - 3TPW COMPARISON



### DESCRIPTION COMPOSITION



(\* ) for displacement types, see

"technical data" table

(\*1) for position types, see

"configuration" table

