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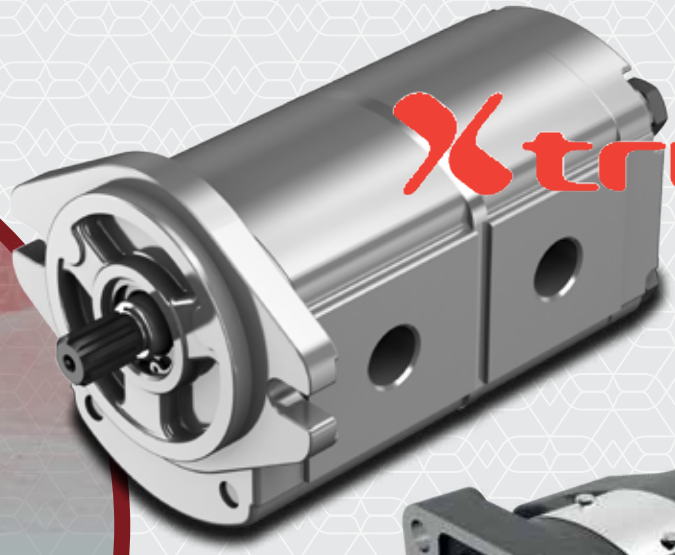
MOTION BY PEOPLE

Xtreme Series
Gear Pumps & Motors



PUMPS & MOTORS

Xtreme Series features

2XP pump and 2XM motor configurations

New range pumps and motors, with Aluminium body and Aluminium and Cast Iron flanges
Its new modular construction ensures an increased versatility maintaining the same configurations of 2SP Series allowing new options.

- High efficiencies
- Reduced number of components
- Reduced overall dimension
- Increased transmissible torque

2XPW pump and 2XMW motor configurations

New range of Cast Iron pumps and motors
These products 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 modular construction allows the same versatility of the Group 2 series with aluminum body, while maintaining the possible configurations in terms of flanges, shafts and integrated valves.

- High efficiencies
- High pressure limits
- Reduced number of components
- Reduced overall dimension

Additional information
This catalogue shows the product in the most standard configurations.
Please, contact Sales Dpt. for more detailed information or special requests.

WARNING!
All specifications of this catalogue refer to the standard product at this date.
Walvoil, oriented to a continuous improvement, reserves the right to discontinue, modify or revise the specifications without notice.

WALVOIL IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY AN INCORRECT USE OF THE PRODUCT.

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Content

Introduction

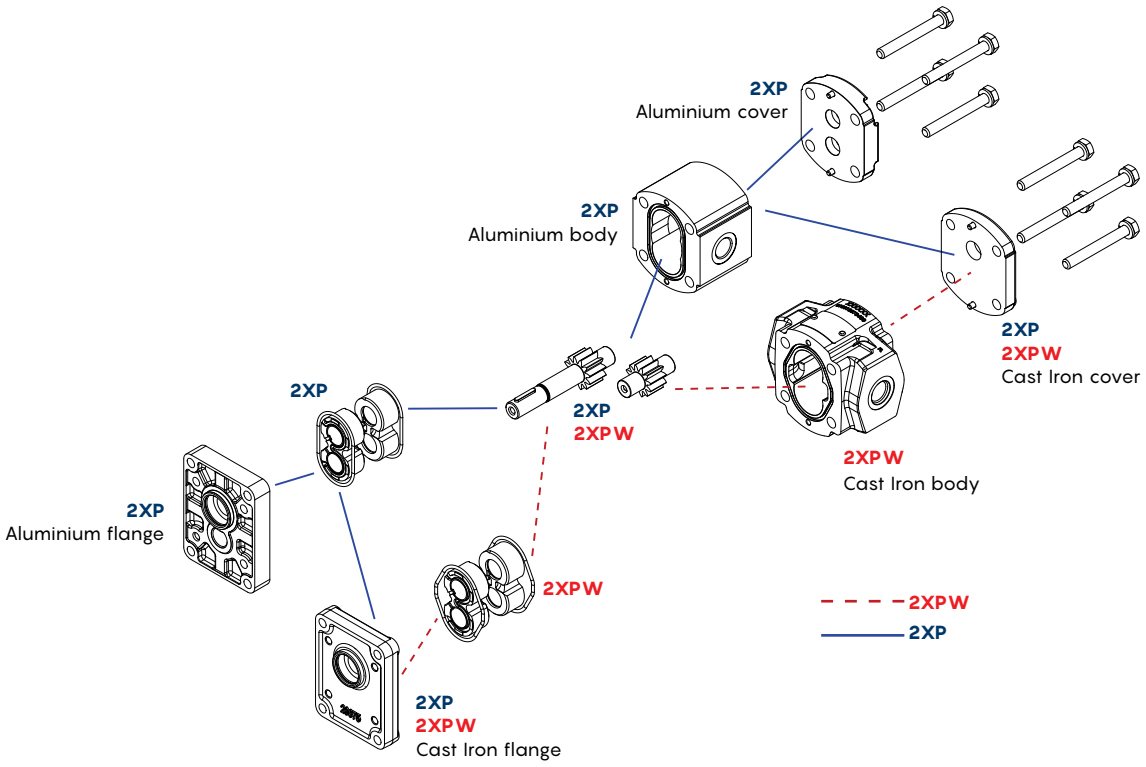
The standard range of **Xtreme** gear pump consists on 11 sizes: from 4 to 31 cm³/rev (*0.244 to 1.89 in³/rev*).
With displacement from 11 cm³/rev (*0.671 in3/rev*) the pump, or the motor, can be assembled with cast iron body option. In this case the pump can work up to 270 bar (*3900 psi*)of working pressure. Several new features are included in these new platforms: the possibility to have the 3/4 shafts versions, the SAE 13T shaft and an improved efficiency of the pump.
A large amount of optimizations are included in the motor versions, that has now a reduced starting pressure and an higher transmissible torque.
Compared to **START** series, **Xtreme** series has several new features.

These new options, allows 6 majors improvements:

- FEMALE SPLINE Compact Tandem Capability (-15 mm / *-0.59 in* on double pump)
- SAE B FRONT FLANGE
- HIGHER SHAFT DIAMETER; up to Ø22 mm (*0.866 in*) and up to 100 Nm (*73.7 lbft*) between stages
- SEPARATE STAGES VERSION double sealing separate stages
- NEW SHAFTS SAE 11T, 3/4 inch keyed
- CAST IRON AND ALUMINUM BODY OPTION same gears and plates
- New REVERSIBLE SEALING

Construction features

To reach the targets and simplify the installations in the active systems, **Xtreme** and **Xtreme power** are using the traditional **START** components when possible. Starting from the same flange, it's possible to introduce the new generation of plates and gears.
For the aluminum body option is therefore possible to use the same body of **START** Series, while cast iron body can be installed on **Xtreme power** only.



Xtreme is available with aluminium body options (2XP) and cast iron body options (2XPW) and has a complete new set of gear, improving compactness & flexibility. A new generation of plates is able to succeed in the most demanding applications.

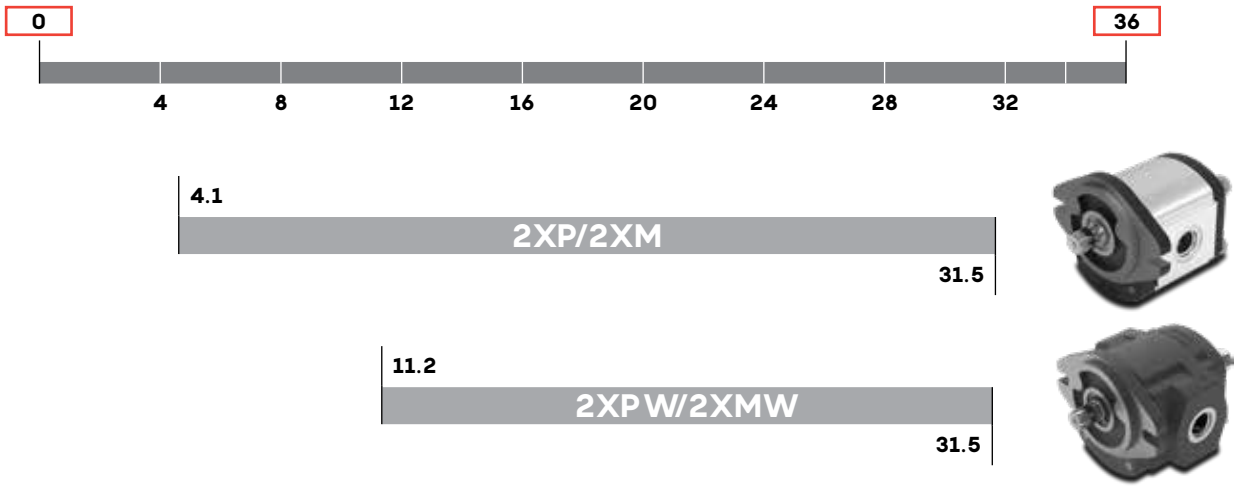
Features

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s (*46 cSt*) viscosity at 40°C (*104°F*) temperature.

		2XP	2XPW
Displacement		from 4.1 to 31.5 cm³/rev *from 0.25 to 1.92 in³/rev*	from 11.2 to 31.5 cm³/rev *from 0.68 to 1.92 in³/rev*
Max continuous pressure	up to	250 bar - *3600 psi*	270 bar - *3900 psi*
Fluid		hydraulic mineral oil-based	
Fluid temperature range	continuous with NBR (buna N) seals	from -20 to +80 °C *from -4 to +176 °F*	
	continuous with FPM (viton) seals	from -15 to +100 °C *from +5 to +212 °F*	
Viscosity	Recommended	from 15 to 92 mm²/s (*cSt*)	
	Permitted for starting	800 mm²/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)*	21/18/15 ISO 4406 *class 10 (NAS 1638)*	

Displacements

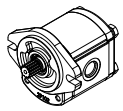
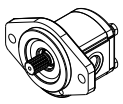
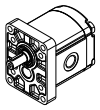
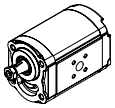


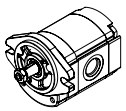
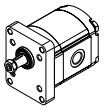
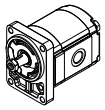
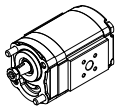
Group 2XP/2XM	Displacement cm³/rev	Displacement *in³/rev*
040	4.1	*0.25*
060	6.1	*0.37*
080	8.7	*0.53*
110	11.2	*0.68*
140	14.2	*0.86*
160	16.8	*1.02*
190	19.8	*1.20*
220	22.9	*1.39*
260	26.4	*1.61*
290	29.1	*1.77*
310	31.5	*1.92*

Group 2XPW/2XMW	Displacement cm³/rev	Displacement *in³/rev*
110	11.2	*0.68*
140	14.2	*0.86*
160	16.8	*1.02*
190	19.8	*1.20*
220	22.9	*1.39*
260	26.4	*1.61*
290	29.1	*1.77*
310	31.5	*1.92*

Features

Flanges range

Standard Flanges					
SAEA	SAEB	EUR	B80	E52	B50
					

Flanges with outboard bearings (SUP versions)				
SUPSAEA		SUPEUR	SUPB80	SUPB50
				

NOTE: for informations, specifications and dimensions of **SUP** type flanges see related pages (from 27 to 32)

Shaft / Standard flange combination

For combination of shafts and flanges with outboard bearing see related pages.

Shafts				Standard flanges					
Type	Description	Diameter (shaft seal)	Transmitted torque (max)	SAEA	SAEB	EUR	B80	E52	B50
10	Tapered 1:8	Ø18 mm - *0.71 in*	140 Nm - *103 lbft*	●	●	●	●	–	●
11	Tapered 1:5	Ø18 mm - *0.71 in*	140 Nm - *103 lbft*	●	●	●	●	–	●
12	EUR parallel shaft	Ø18 mm - *0.71 in*	80 Nm - *59 lbft*	●	●	●	●	–	●
13	SAEA parallel shaft	Ø18 mm - *0.71 in*	90 Nm - *66 lbft*	●	●	●	●	–	●
14	SAEA 9T splined	Ø18 mm - *0.71 in*	100 Nm - *74 lbft*	●	●	●	●	–	●
15	DIN5482 9T (26/24) splined	Ø18 mm - *0.71 in*	100 Nm - *74 lbft*	●	●	●	●	–	●
17	Dihedral claw	Ø18 mm - *0.71 in*	80 Nm - *59 lbft*	–	–	–	–	●	–
30	SAE 11T splined	Ø20 mm - *0.79 in*	180 Nm - *133 lbft*	●	–	–	–	–	–
31	SAE 3/4" (53.8 mm - *2.12 in*) parallel shaft	Ø20 mm - *0.79 in*	140 Nm - *103 lbft*	●	–	–	–	–	–
32	SAE 3/4" (31 mm - *1.22 in*) parallel shaft	Ø20 mm - *0.79 in*	100 Nm - *74 lbft*	●	–	–	–	–	–
40	SAE 10T splined	Ø18 mm - *0.71 in*	130 Nm - *96 lbft*	●	●	–	–	–	–
45	SAEB 13T splined	Ø22 mm - *0.87 in*	280 Nm - *207 lbft*	–	●	–	–	–	–

● = available – = not available
NOTE: for more informations please see dedicated pages (from 31 to 37)

Hydraulic fluid

It is advisable to use hydraulic oils of mineral origin with anti-foaming, antiwear, anti-oxidant and anti-corrosion characteristics and rapid air removal properties and a high viscosity index;

- Start-up viscosity limit 2000 mm^2/s (*2000 cSt*)
- Recommended viscosity 15÷92 mm^2/s (*15÷92 cSt*)
- Max. operating viscosity 750 mm^2/s (*750 cSt*)

During normal operation, the oil temperature must be between 20°C (*68°F*) and 65°C (149°F) with limit values between -20°C (*-4°F*) and 80°C (*176°F*) with NBR seal and limit values between -15°C (*5°F*) and 100°C (*212°F*) with Viton seal.

Suction pressure

The allowed working pressure supplied must be in the range 0.7 - 2 bar (*10.2 - 29 psi*) [absolute].
For higher values (up to 30 bar / *435 psi*), it is necessary to use sealing ring for high pressures.
Particular attention must be given to the sizing of rigid or flexible pipes. avoiding disproportionate lengths, sudden variations in cross section or small curvature radius, in any case selecting pipe cross-sections that guarantee an oil speed between 0.6 and 2 m/s (*1.97 and 6.56 ft/s*)

Filtration

In order to eliminate any oil impurity and to guarantee a longer duration of the pump, the system must be equipped with effective filtration, whose operation must be periodically checked.
The recommended filtration levels are as follows:
Δp < 150 bar (*2175 psi*):
21/19/16 (ISO 4406) - *class 10 (NAS 1638)*
150 bar (*2175 psi*) < Δp < 210 bar (*3050 psi*):
20/18/15 (ISO 4406) - *class 9 (NAS 1638)*
Δp > 210 bar (*3050 psi*):
19/17/14 (ISO 4406) - *class 8 (NAS 1638)*

Installation notes

Before starting the system setting, some precautions are recommended:

- Check that the direction of rotation is consistent with the drive shaft one.
- Remove all dirt, chips and all foreign bodies from flanges connecting inlet and delivery ports.
- Protect the drive shaft sealing ring during pump painting; check that the contact area between ring and shaft is clean: dust or abrasive sediments could accelerate the wear and cause leakages.
- Check that there are no misalignments between the pump/motor shaft and the main shaft.
- With radial and/or axial loads on the pump/motor shaft (such as when driving is carried out through pulleys or chains) use the configurations with outboard bearings (SUP type flange).
- The coupling joint between the spline shafts has to be properly lubricated, free to move axially and of a suitable length to cover both motor and pump shafts.

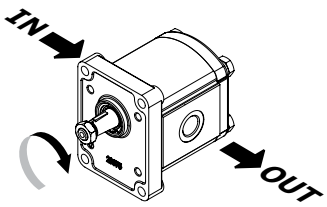
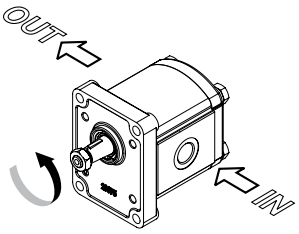
Notes:

- Do not start the system under load at low temperatures or after long stops.
- Check the whole system filling by bleeding off the whole air amount after few minutes of system working.
- Increase the pressure until you reach the operating values by keeping checked the fluid and the moving parts temperature and the rotation speed. Maintain the set values within the limits specified in this catalogue.

Definitions

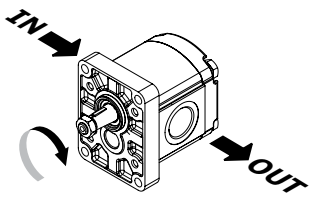
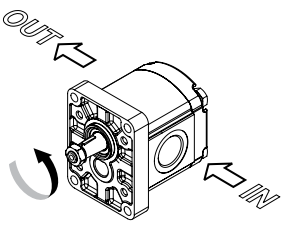
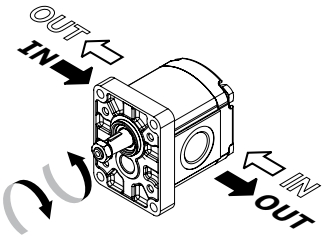
Pump wise rotation

The rotation wise is defined as **S** (counter-clockwise) or **D** (clockwise) by observing the shaft from the front. In case of anti-clockwise rotation **S** the suction will be to the right of the drive shaft while the deliery will be to your left; the opposite will be for pump with **D** wise rotation. When ordering, it is necessary to specify the required rotation; direction or it is possible to modify the internal structure as illustrated on the nex page (reversal).

D	Clockwise rotation	S	Counter-clockwise rotation
Suction - low pressure  **Delivery** - high pressure		**Delivery** - high pressure  **Suction** - low pressure	

Motor wise rotation

The rotation wise is defined by observing the shaft frontally: **S** (counter-clockwise) and **D** (clockwise).
In case of **S** counter-clockwise rotation , outlet port will be the left of the shaft while inlet port to its right; the opposite layout is used in case of **D** clockwise rotation.
When ordering please specify the required rotation wise of monodirectional motors, otherwise modify the internal assembly lay-out as indicated on the next page (wise rotation reversal).

D	Clockwise rotation	S	Counter-clockwise rotation	R	Reversible rotation
Inlet - high pressure  **Outlet** - low pressure		**Outlet** - low pressure  **Inlet** - high pressure		 	

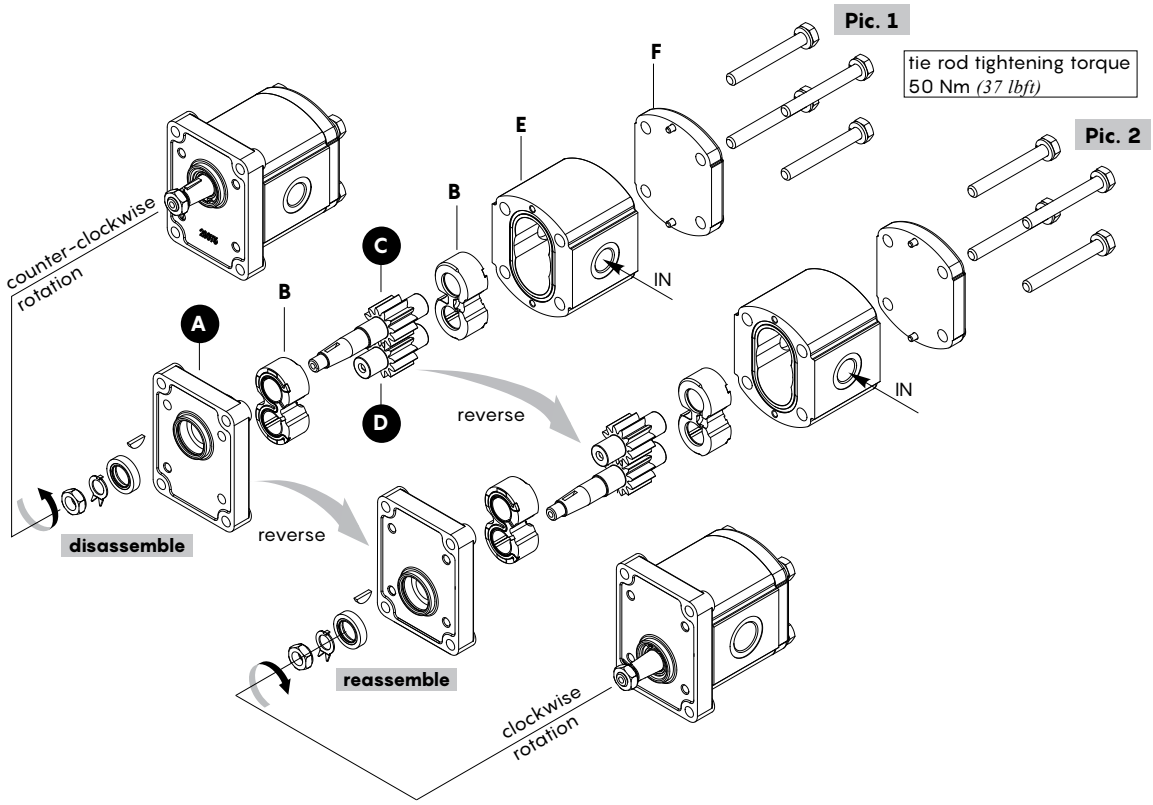
Definitions

Pump/motor rotation reversal

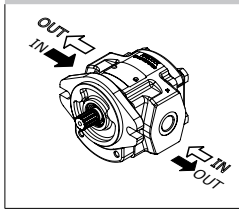
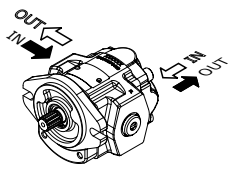
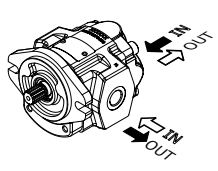
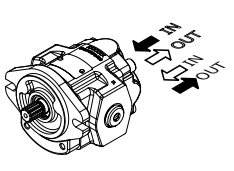
How to invert the wise rotation:

- Disassemble pump or unidirectional motor as shown in pic. 1.
- Pull off C - D gears and reassemble them according to pic. 2.
- Reassemble B bushing as before.
- Reverse the A flange and reassemble the pump by tightening the screws by dynamometric wrench.

The drawing represents the 2XP pump configuration example, for the 2XPW pump the operations are the same..
For technical informations please contact our Sales Dpt..
NOTE: the rotation reversal procedure is not applicable to reversible motors



Ports position

Available connection positions			
0	1	3	4
			

Clockwise rotation - **D**

Counter-clockwise rotation - **S**

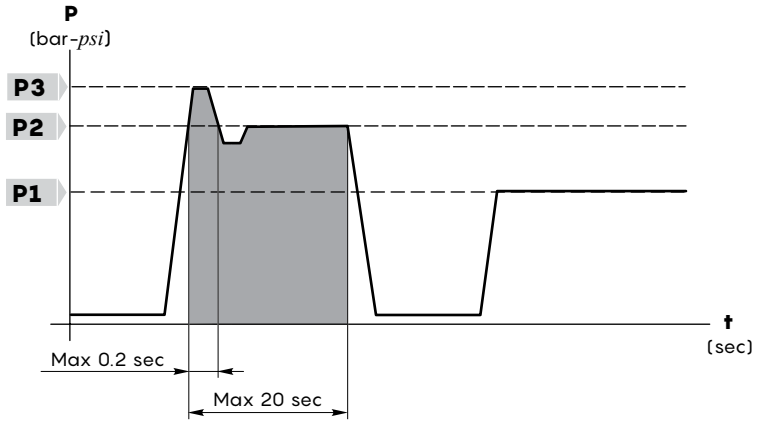
Operative parameters

Hydraulic measures		
Q	Flow	(l/min - *USgpm*)
M	Torque	(Nm - *lbft*)
P	Power	(kW - HP)
V	Displacement	(cm^3/rev - *in^3/rev*)
n	Speed	(rpm - min^{-1})
Δp	Pressure	(bar - *psi*)
η_v	Volumetric efficiency	
η_m	Mechanical efficiency	
η_t	Overall efficiency	

Conversion factor	
1 l/min	*0.2641 USgpm*
1 Nm	*8.851 lbin*
1 Nm	*0.7375 lbft*
1 N	*0.2248 lbf*
1 kW	*1.34 HP*
1 cm^3/rev	*0.061 in^3/rev*
1 bar	*14.5 psi*
1 mm	*0.0394 in*
1 kg	*2.205 lbs*

Working pressure definitions

The pumps can be subjected to the P1, P2 or P3 pressures shown in the performance tables.
The following diagram illustrates the definitions and applicability by respecting the included rotation speed limits.



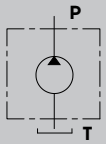
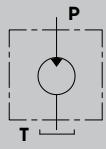
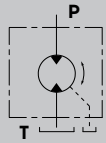
P3 Max allowed pressure peak (overshoot)

P2 Max intermittent pressure (max allowed relief setting)

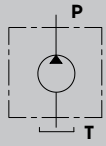
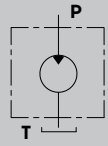
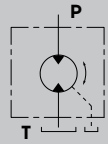
P1 Continuos max pressure (constant service pressure)

Pressure and rotation speed

Aluminium body

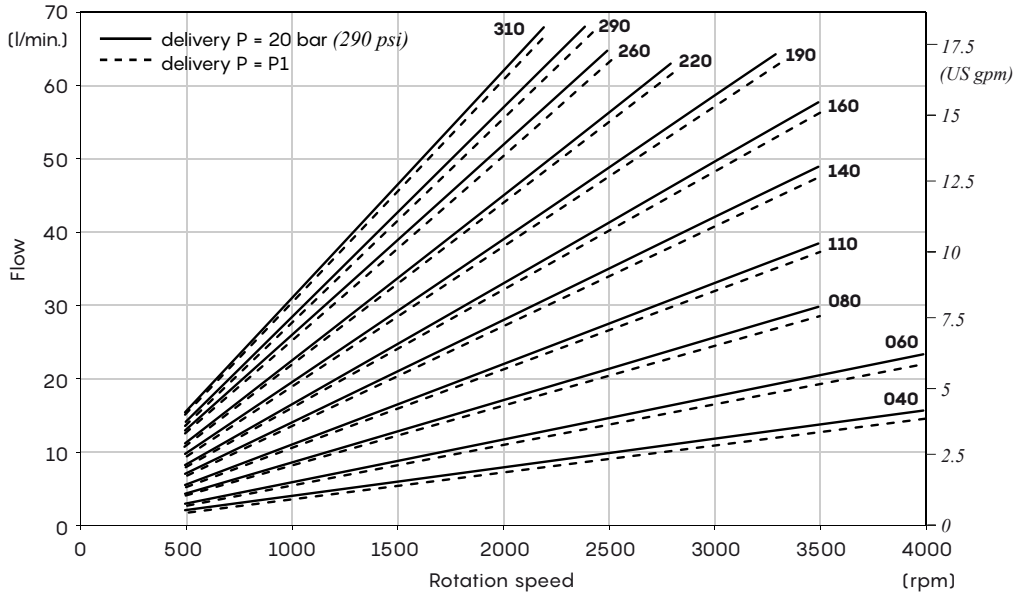
Symbol	Type	Displacement		P1 Max continuous pressure		P2 Max intermittent pressure		P3 Max peak pressure		Rotation speed max	Rotation speed min
		cm³/rev	*in³/rev*	bar	*psi*	bar	*psi*	bar	*psi*	rpm	rpm
Unidirectional pump/motor type											
	**2XP/2XM 040**	4.1	*0.25*	250	*3600*	270	*3900*	290	*4200*	4000	500
	2XP/2XM 060	6.1	*0.37*	250	*3600*	270	*3900*	290	*4200*	4000	500
	2XP/2XM 080	8.7	*0.53*	250	*3600*	270	*3900*	290	*4200*	3500	500
	2XP/2XM 110	11.2	*0.68*	250	*3600*	270	*3900*	290	*4200*	3500	500
	2XP/2XM 140	14.2	*0.86*	250	*3600*	270	*3900*	290	*4200*	3500	500
	2XP/2XM 160	16.8	*1.02*	230	*3350*	240	*3500*	250	*3600*	3500	500
	**2XP/2XM 190**	19.8	*1.20*	210	*3050*	220	*3200*	230	*3350*	3500	500
	2XP/2XM 220	22.9	*1.39*	190	*2750*	200	*2900*	210	*3050*	3000	500
	2XP/2XM 260	26.4	*1.61*	170	*2450*	180	*2600*	190	*2750*	3000	500
	2XP/2XM 290	29.1	*1.77*	150	*2150*	160	*2300*	170	*2450*	2500	500
	2XP/2XM 310	31.5	*1.92*	130	*1900*	140	*2000*	150	*2150*	2500	500
Reversible motor type											
	2XM 040	4.1	*0.25*	250	*3600*	270	*3900*	290	*4200*	4000	500
	2XM 060	6.1	*0.37*	250	*3600*	270	*3900*	290	*4200*	4000	500
	2XM 080	8.7	*0.53*	250	*3600*	270	*3900*	290	*4200*	3500	500
	**2XM 110**	11.2	*0.68*	250	*3600*	270	*3900*	290	*4200*	3500	500
	2XM 140	14.2	*0.86*	250	*3600*	270	*3900*	290	*4200*	3500	500
	2XM 160	16.8	*1.02*	230	*3350*	240	*3500*	250	*3600*	3500	500
	2XM 190	19.8	*1.20*	210	*3050*	220	*3200*	230	*3350*	3500	500
	2XM 220	22.9	*1.39*	190	*2750*	200	*2900*	210	*3050*	3000	500
	2XM 260	26.4	*1.61*	170	*2450*	180	*2600*	190	*2750*	3000	500
	2XM 290	29.1	*1.77*	150	*2150*	160	*2300*	170	*2450*	2500	500
	2XM 310	31.5	*1.92*	130	*1900*	140	*2000*	150	*2150*	2500	500

Cast iron body

Symbol	Type	Displacement		P1 Max continuous pressure		P2 Max intermittent pressure		P3 Max peak pressure		Rotation speed max	Rotation speed min
		cm³/rev	*in³/rev*	bar	*psi*	bar	*psi*	bar	*psi*	rpm	rpm
Unidirectional pump/motor type											
	**2XPW/2XMW 110**	11.2	*0.68*	270	*3900*	290	*4200*	300	*4350*	3500	500
	2XPW/2XMW 140	14.2	*0.86*	270	*3900*	290	*4200*	300	*4350*	3500	500
	2XPW/2XMW 160	16.8	*1.02*	250	*3600*	270	*3900*	280	*4050*	3500	500
	2XPW/2XMW 190	19.8	*1.20*	250	*3600*	270	*3900*	280	*4050*	3500	500
	**2XPW/2XMW 220**	22.9	*1.39*	250	*3600*	270	*3900*	280	*4050*	3000	500
	2XPW/2XMW 260	26.4	*1.61*	230	*3350*	250	*3600*	260	*3750*	3000	500
	2XPW/2XMW 290	29.1	*1.77*	200	*2900*	220	*3200*	230	*3350*	2500	500
	2XPW/2XMW 310	31.5	*1.92*	190	*2750*	210	*3050*	220	*3200*	2500	500
Reversible motor type											
	2XMW 110	11.2	*0.68*	250	*3600*	270	*3900*	280	*4050*	3500	500
	2XMW 140	14.2	*0.86*	250	*3600*	270	*3900*	280	*4050*	3500	500
	2XMW 160	16.8	*1.02*	250	*3600*	270	*3900*	280	*4050*	3500	500
	**2XMW 190**	19.8	*1.20*	250	*3600*	270	*3900*	280	*4050*	3500	500
	2XMW 220	22.9	*1.39*	250	*3600*	270	*3900*	280	*4050*	3000	500
	2XMW 260	26.4	*1.61*	230	*3350*	250	*3600*	260	*3750*	3000	500
	2XMW 290	29.1	*1.77*	200	*2900*	220	*3200*	230	*3350*	2500	500
	2XMW 310	31.5	*1.92*	190	*2750*	210	*3050*	220	*3200*	2500	500

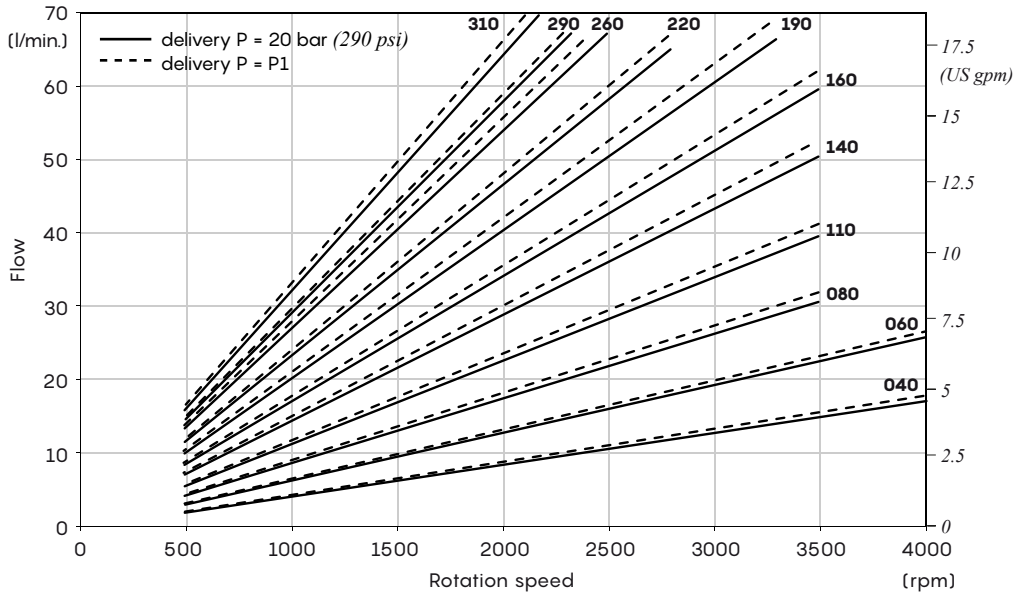
Flow and rotation speed

2XP – 2XPW Pumps



Reference values*
$\eta_v \approx 0.97$
$\eta_m \approx 0.88$
$\eta_t = \eta_v \cdot \eta_m \approx 0.85$

2XM – 2XMW Motors



Reference values*
$\eta_v \approx 0.96$
$\eta_m \approx 0.85$
$\eta_t = \eta_v \cdot \eta_m \approx 0.82$

Hydraulic measures		
Q =	$V \cdot \eta_v \cdot n / 1000$	(l/min)
	$V \cdot \eta_v \cdot n / 231$	*(USgpm)*
M =	$\frac{\Delta p \cdot V}{62.83 \cdot \eta_m}$	(Nm)
	$\frac{\Delta p \cdot V}{2 \cdot 3.14 \cdot \eta_m}$	*(lb.in)*

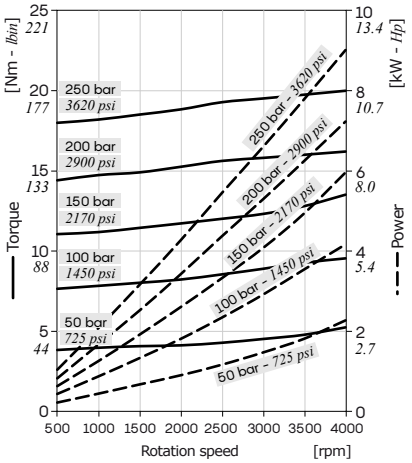
Hydraulic measures		
P =	$\frac{\Delta p \cdot V \cdot n}{600 \cdot 1000 \cdot \eta_t}$	(kW)
	$\frac{\Delta p \cdot V \cdot n}{395934 \cdot \eta_t}$	*(HP)*

NOTE: (*) 2XP160@1500 rpm with ISO VG46 Oil @40°C *(104 °F)*

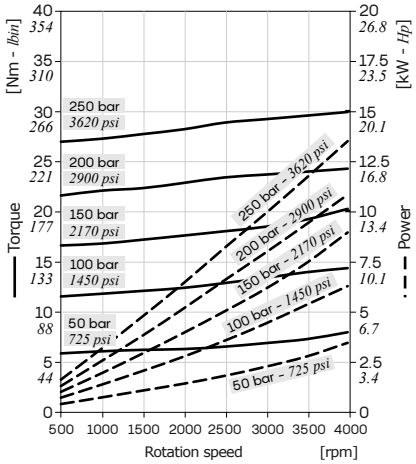
Torque and Power diagrams

2XP pumps

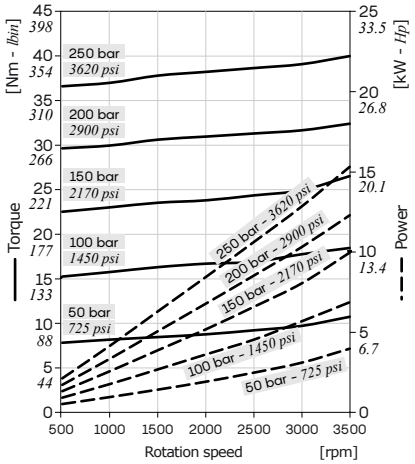
2XP 040



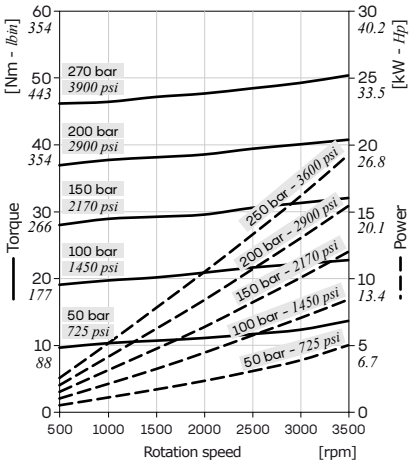
2XP 060



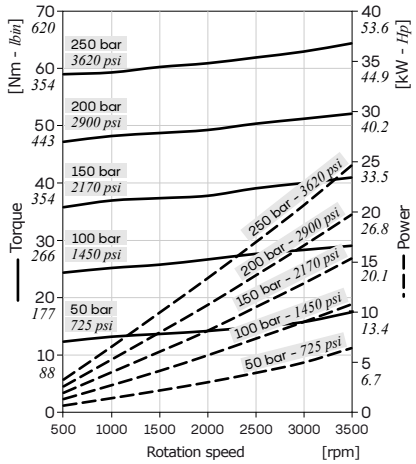
2XP 080



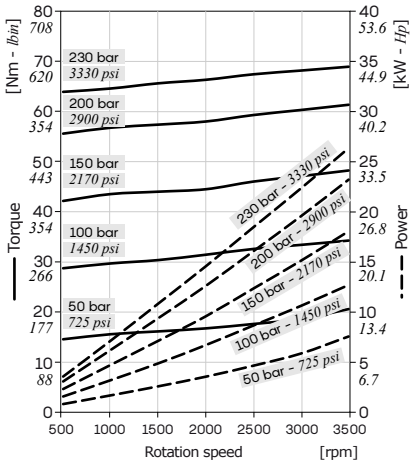
2XP 110



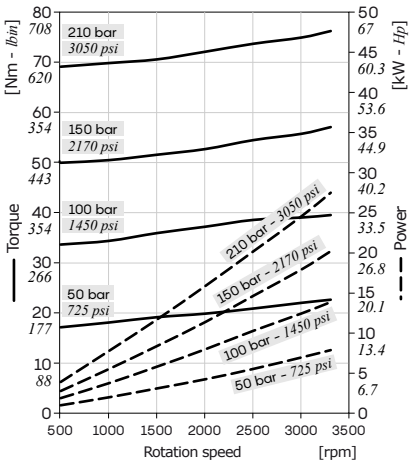
2XP 140



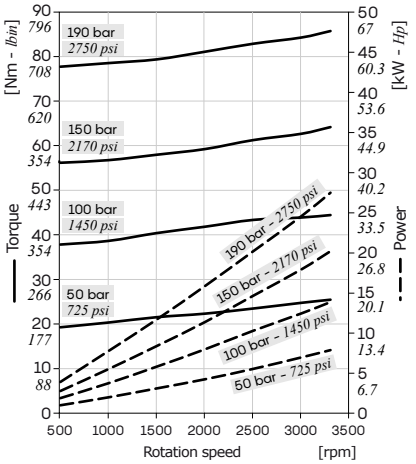
2XP 160



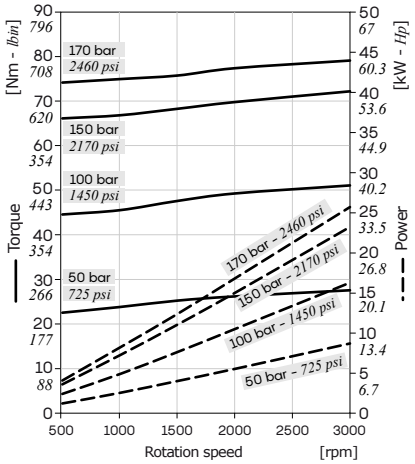
2XP 190



2XP 220



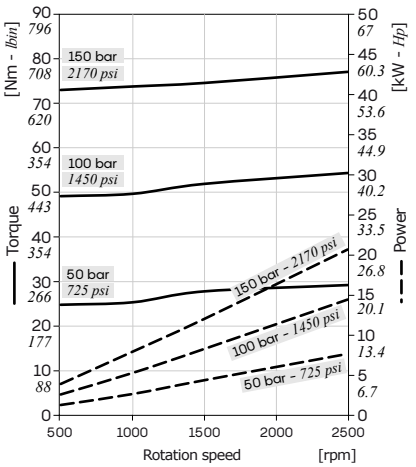
2XP 260



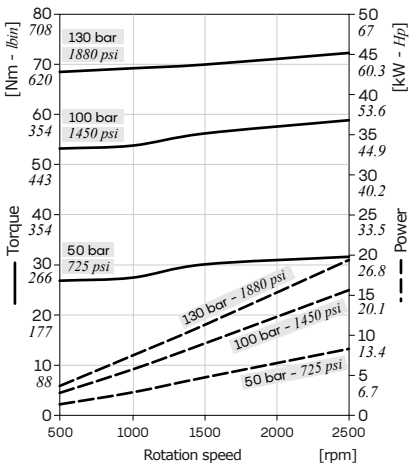
Torque and Power diagrams

2XP pumps

2XP 290

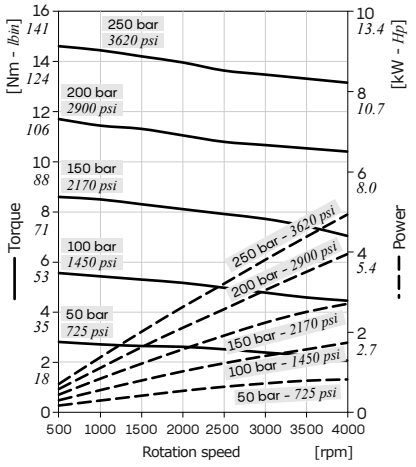


2XP 310

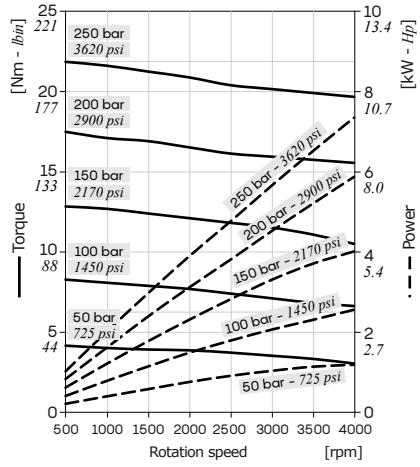


2XM motors

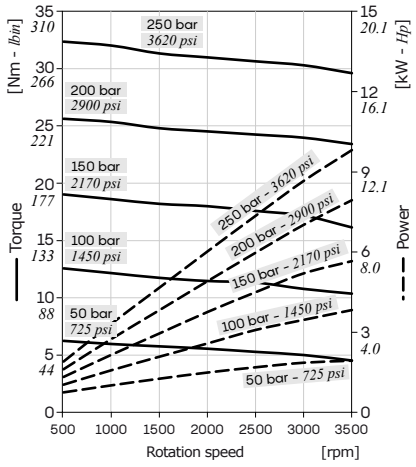
2XM 040



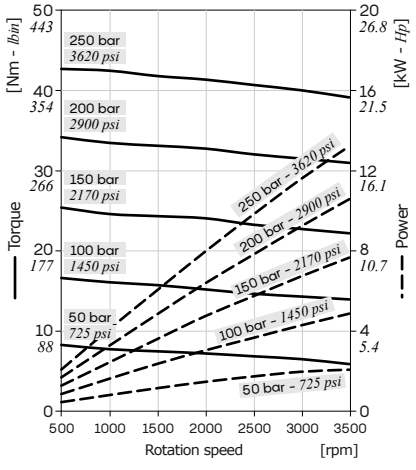
2XM 060



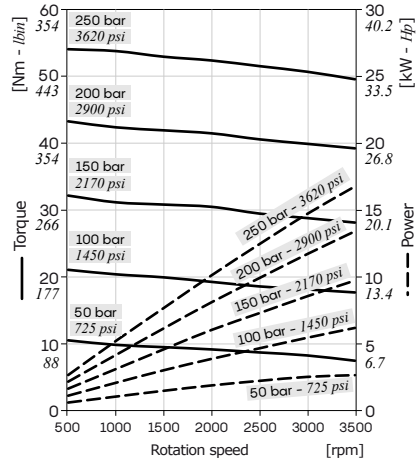
2XM 080



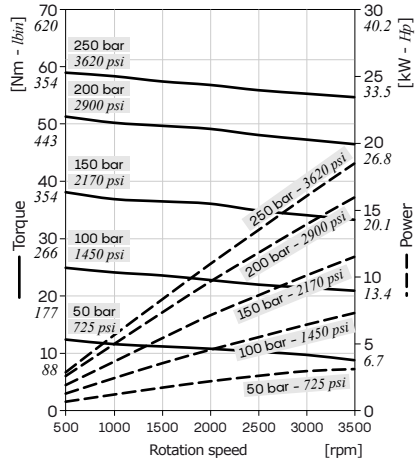
2XM 110



2XM 140



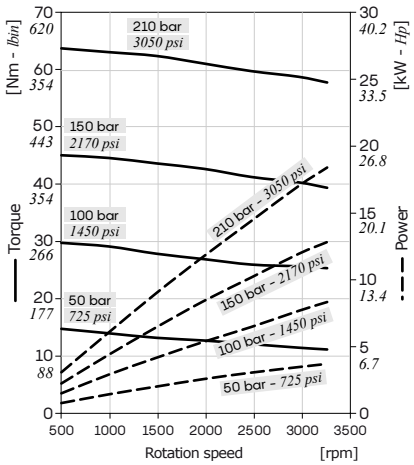
2XM 160



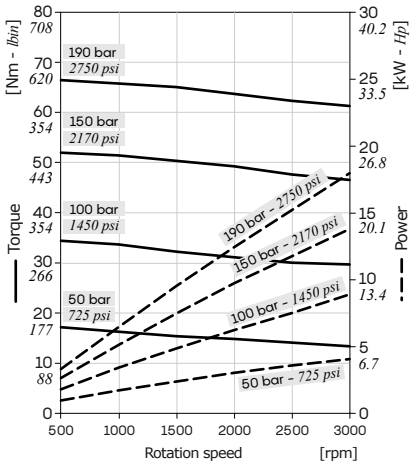
Torque and Power diagrams

2XM motors

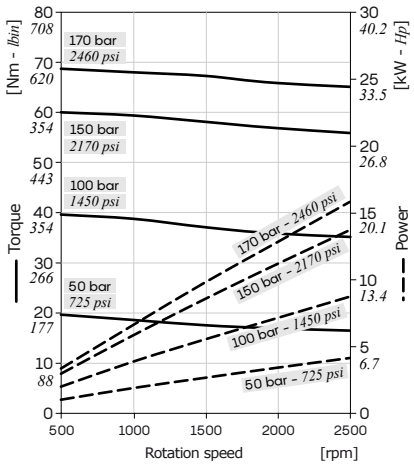
2XM 190



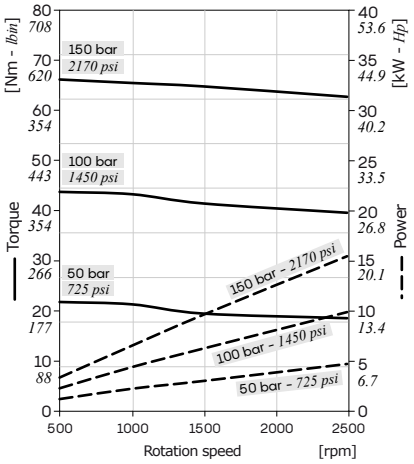
2XM 220



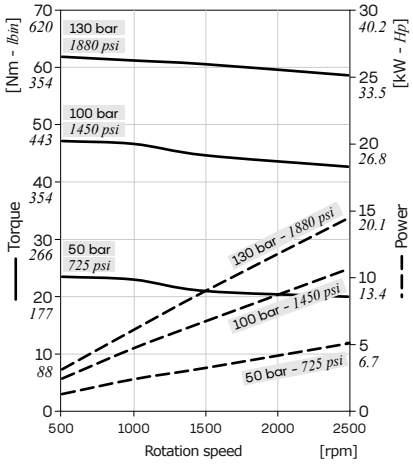
2XM 260



2XM 290



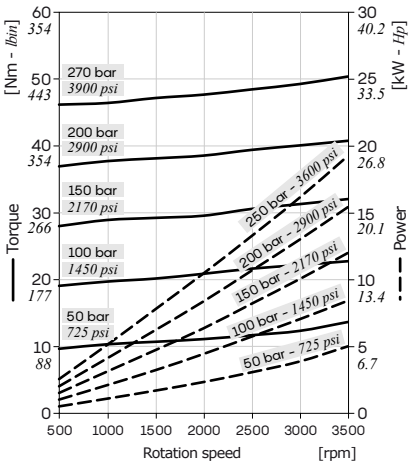
2XM 310



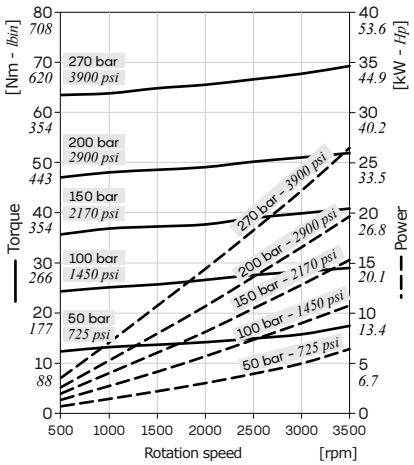
Torque and Power diagrams

2XPW pumps

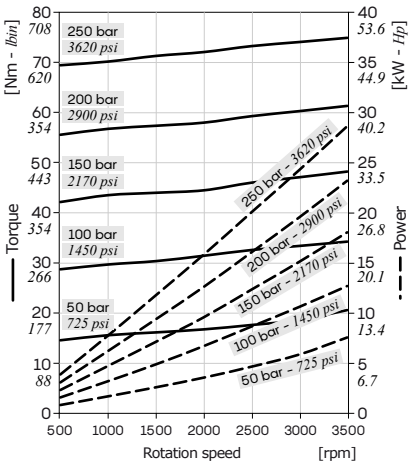
2XPW 110



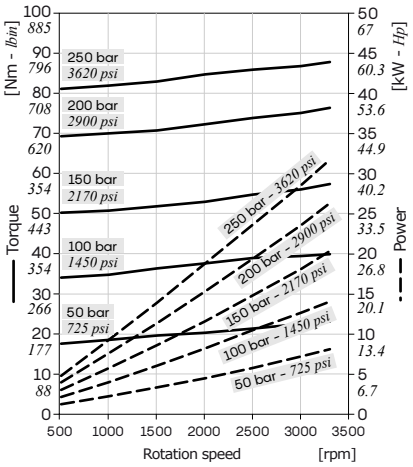
2XPW 140



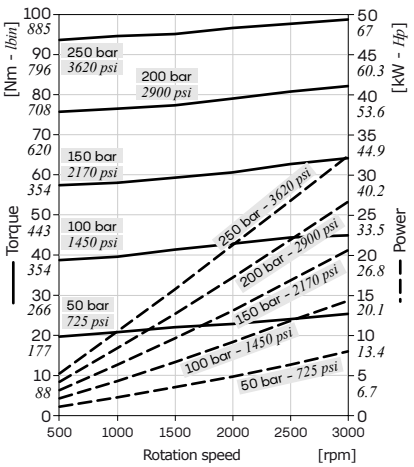
2XPW 160



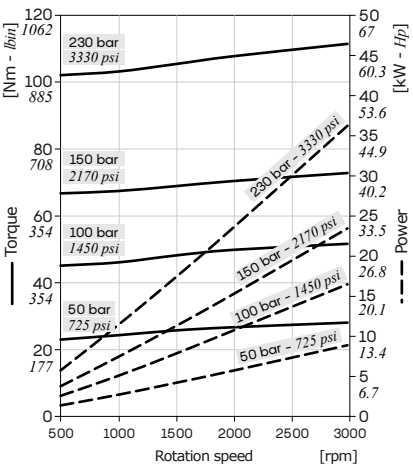
2XPW 190



2XPW 220



2XPW 260



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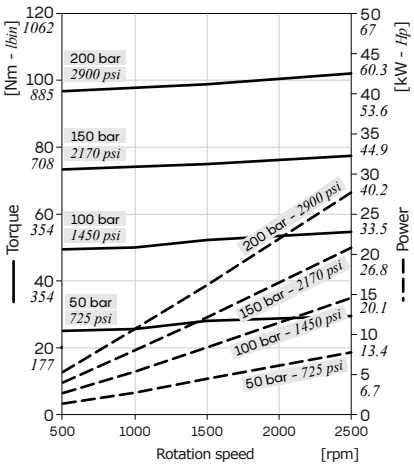
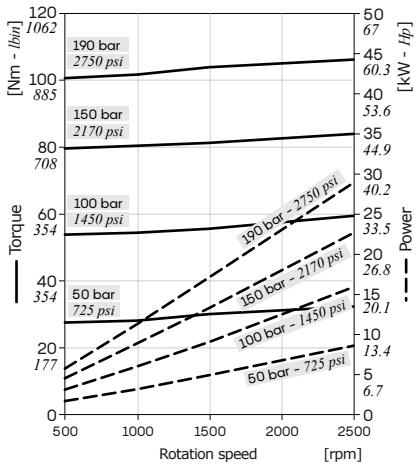


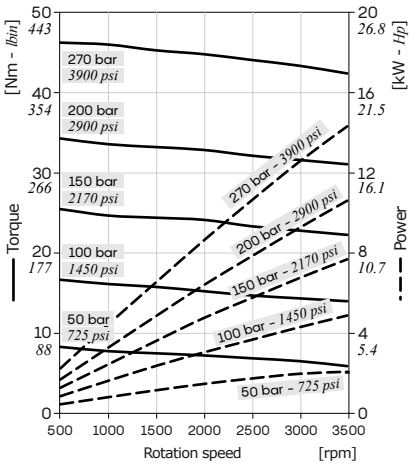
2XPW 310



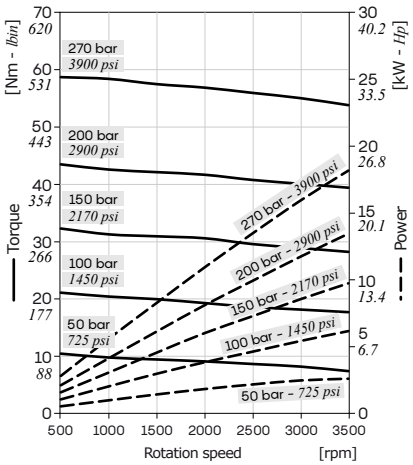
Torque and Power diagrams

2XMW motors

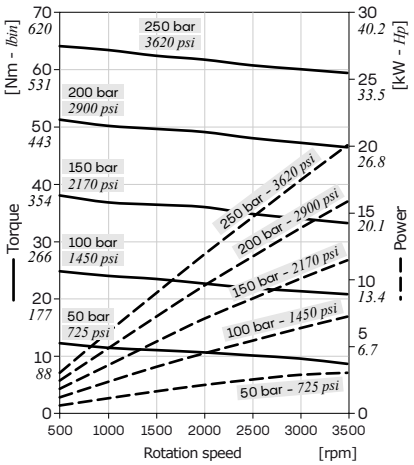
2XMW 110



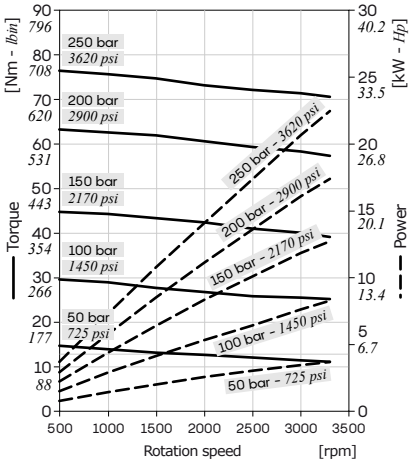
2XMW 140



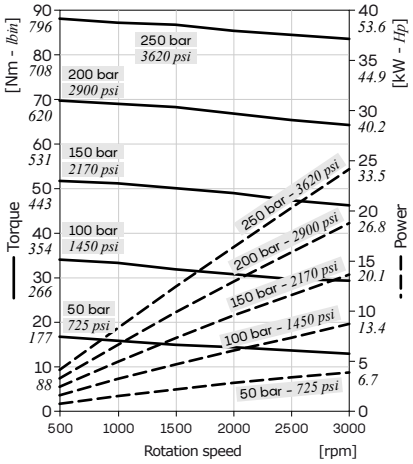
2XMW 160



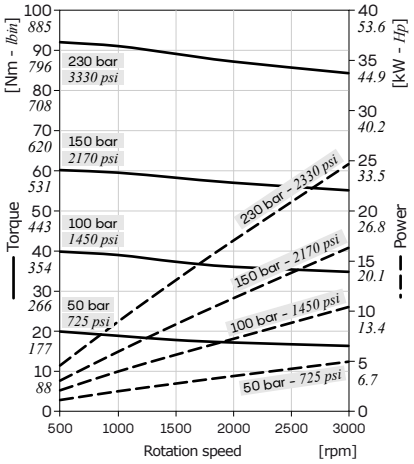
2XMW 190



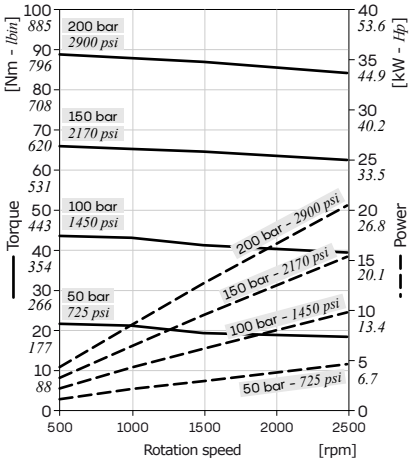
2XMW 220



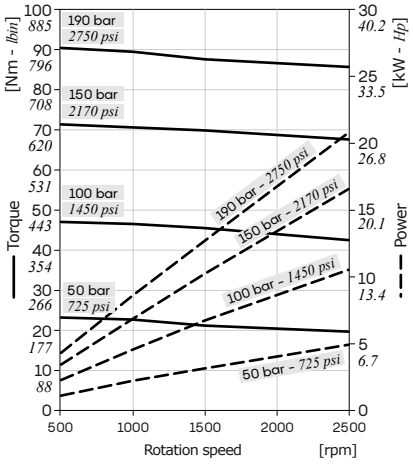
2XMW 260



2XMW 290



2XMW 310



Seal rings

Shaft sealing (main sealing)

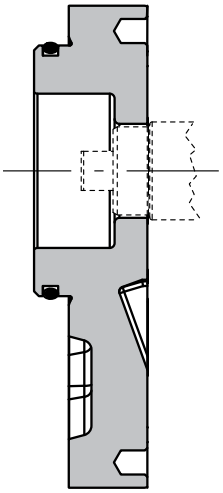
Shaft seal configuration	Pressure code			
	A	B Pumps	H Pumps - Motors motors with external drain	K Unidirectional motors
Without shaft seal	*	–	–	–
With shaft seal (standard)	–	Max pressure up to 3 bar (*43.5 psi*) @ 1000 rpm 0.9 bar (*13 psi*) @ 4000 rpm	Max pressure up to 8 bar (*116 psi*) @ 1000 rpm 2.6 bar (*37.7 psi*) @ 4000 rpm	Max pressure up to 30 bar (*435 psi*) @ 1000 rpm 10.6 bar (*153.7 psi*) @ 4000 rpm
With shaft seal and dust seal (type "2")	–			

"*"= available "–" = not available

Without shaft seal

Flange example: E52

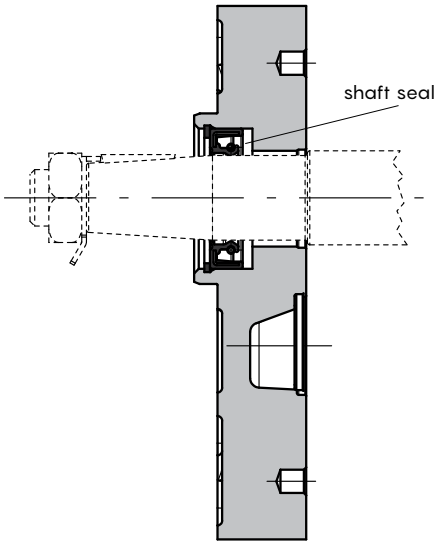
2XP-A-040-D-E52CX-A-N-17-0-G12G12



With shaft seal: standard flange kit

Flange example: EUR

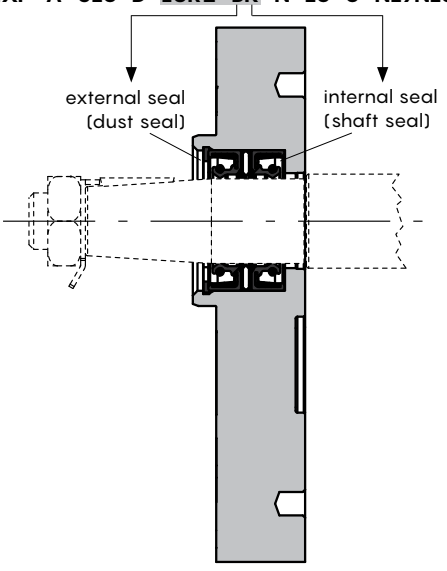
2XP-A-310-D-EUR-B-N-10-0-N19N13



With shaft seal and dust seal

Flange example: EUR

2XP-A-310-D-EUR2-BK-N-10-0-N19N13



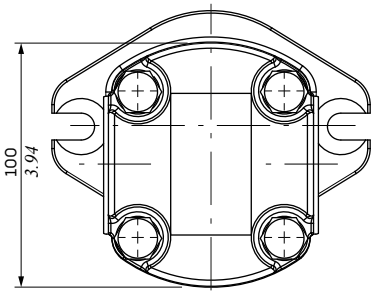
NOTE: NBR and FPM sealing types are available; for other materials and further information contact our Sales Dpt.

2XP/2XM main dimensional data

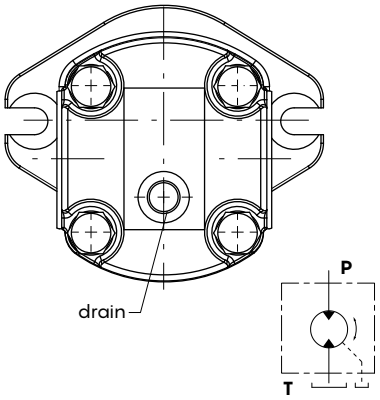
Description example

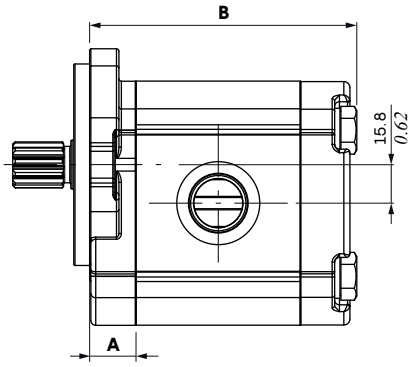
Pump: 2XP-A-140-D-SAEA-B-N-30-0-U12U10
Motor: 2XM-A-140-R-SAEA-B-N-30-0-U12U10-DRENU6

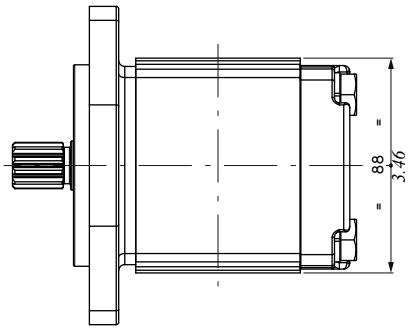
2XP rear view



2XM rear view







	Flange type											
	Dimension A											
	EUR		SAEA		SAEB		B80		B50		E52	
	mm	*in*	mm	*in*	mm	*in*	mm	*in*	mm	*in*	mm	*in*
	19	*0.75*	19	*0.75*	20	*0.79*	21	*0.83*	18.8	*0.74*	16.3	*0.92*
Displacement	Dimension B											
	EUR		SAEA		SAEB		B80		B50		E52	
	mm	*in*	mm	*in*	mm	*in*	mm	*in*	mm	*in*	mm	*in*
040	93.1	*3.67*	93.1	*3.67*	94.1	*3.70*	95.1	*3.74*	92.9	*3.66*	90.4	*3.56*
060	96.4	*3.80*	96.4	*3.80*	97.4	*3.83*	98.4	*3.87*	96.2	*3.79*	93.7	*3.69*
080	100.6	*3.96*	100.6	*3.96*	101.6	*4.00*	102.6	*4.04*	100.4	*3.95*	97.9	*3.85*
110	104.7	*4.12*	104.7	*4.12*	105.7	*4.16*	106.7	*4.20*	104.5	*4.11*	102	*4.02*
140	109.7	*4.32*	109.7	*4.32*	110.7	*4.36*	111.7	*4.40*	109.5	*4.31*	107	*4.21*
160	113.9	*4.48*	113.9	*4.48*	114.9	*4.52*	115.9	*4.56*	113.7	*4.48*	111.2	*4.38*
190	118.9	*4.68*	118.9	*4.68*	119.9	*4.72*	120.9	*4.76*	118.7	*4.67*	116.2	*4.57*
220	123.9	*4.88*	123.9	*4.88*	124.9	*4.92*	125.9	*4.96*	123.7	*4.87*	121.5	*4.78*
260	129.7	*5.11*	129.7	*5.11*	130.7	*5.15*	131.7	*5.19*	129.5	*5.10*	127	*5.00*
290	133	*5.24*	133	*5.24*	134	*5.28*	135	*5.31*	51.8	*2.04*	130.3	*5.13*
310	138.1	*5.44*	138.1	*5.44*	139.1	*5.48*	140.1	*5.52*	137.9	*5.43*	135.4	*5.33*

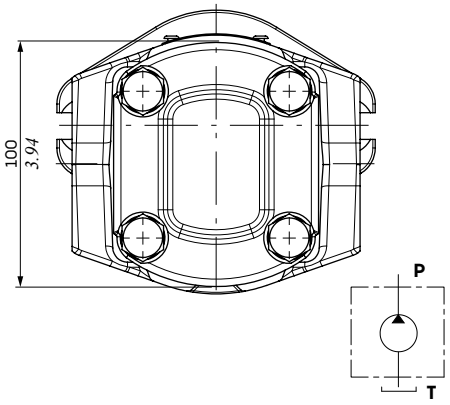
Dimension **B** is referred to alumium pump with standard aluminium rear cover (without ports).
For flanges dimensions see related pages

2XPW/2XMW main dimensional data

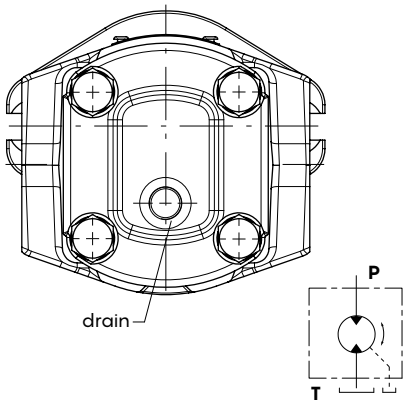
Description example

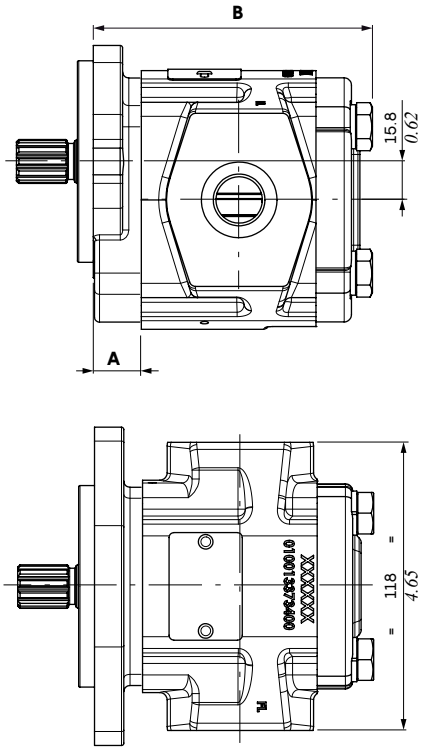
Pump: 2XPW-G-140-D-SAEA-B-N-30-0-U12U10
Motor: 2XMW-G-140-R-SAEA-B-N-30-0-U12U10-DRENU6

2XPW rear view



2XMW rear view





	Flange type							
	Dimension A							
	EUR		SAEA		SAEB		B80	
	mm	*in*	mm	*in*	mm	*in*	mm	*in*
	19	*0.75*	19	*0.75*	20	*0.79*	21	*0.83*
Displacement	Dimension B							
	EUR		SAEA		SAEB		B80	
	mm	*in*	mm	*in*	mm	*in*	mm	*in*
110	104.5	*4.11*	104.5	*4.11*	105.5	*4.15*	106.5	*4.19*
140	109.5	*4.31*	109.5	*4.31*	110.5	*4.35*	111.5	*4.39*
160	113.7	*4.48*	113.7	*4.48*	114.7	*4.52*	115.7	*4.56*
190	118.7	*4.67*	118.7	*4.67*	119.7	*4.71*	120.7	*4.75*
220	123.7	*4.87*	123.7	*4.87*	124.7	*4.91*	125.7	*4.99*
260	129.5	*5.10*	129.5	*5.10*	130.5	*5.14*	131.5	*5.18*
290	132.8	*5.23*	132.8	*5.23*	133.8	*5.27*	133.8	*5.27*
310	137.9	*5.43*	137.9	*5.43*	138.9	*5.47*	139.9	*5.51*

Dimension **B** is referred to cast iron pump with standard cast iron rear cover (without ports).
For flanges dimensions see related pages

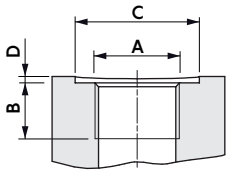
Ports threading and connections

G (BSP) port threading

Displ.	Side ports - Rear drain					
	2XP / 2XM			2XPW / 2XMW		
	IN	OUT	DRAIN	IN	OUT	DRAIN
040	G12	G12	G14	-	-	G14
060	G12	G12	G14	-	-	G14
080	G12	G12	G14	-	-	G14
110	G34	G12	G14	G34	G12	G14
140	G34	G12	G14	G34	G12	G14
160	G34	G12	G14	G34	G12	G14
190	G34	G12	G14	G34	G12	G14
220	G1	G12	G14	G1	G12	G14
260	G1	G12	G14	G1	G12	G14
290	G1	G12	G14	G1	G12	G14
310	G1	G12	G14	G1	G12	G14

	Thread dimension												
	A *	B		C (Ø)		D		IN		OUT		DRAIN	
		mm	*in*	mm	*in*	mm	*in*	Nm	*lbft*	Nm	*lbft*	Nm	*lbft*
G14	G 1/4"	13	*0.51*	21	*0.83*			-	-	-	-	15	*11*
G12	G 1/2"	16	*0.63*	31	*1.22*	0.5	*0.020*	20	*15*	50	*37*	-	-
G34	G 3/4"	18	*0.71*	36	*1.48*	0.5	*0.020*	30	*22*	90	*666*	-	-
G1	G 1"	20	*0.79*	45	*1.77*	0.5	*0.020*	50	*37*	130	*96*	-	-

(*) threading according to ISO 228/1

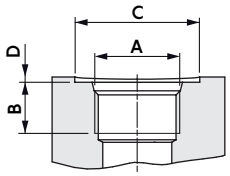


U (UN-UNF) port threading

Displ.	Side ports - Rear drain					
	2XP / 2XM			2XPW / 2XMW		
	IN	OUT	DRAIN	IN	OUT	DRAIN
040	U10	U10	U6	-	-	-
060	U10	U10	U6	-	-	-
080	U10	U10	U6	-	-	-
110	U12	U10	U6	U12	U10	U6
140	U12	U10	U6	U12	U10	U6
160	U12	U10	U6	U12	U10	U6
190	U12	U10	U6	U12	U10	U6
220	U16	U10	U6	U16	U10	U6
260	U16	U10	U6	U16	U10	U6
290	U16	U10	U6	U16	U10	U6
310	U16	U10	U6	U16	U10	U6

	Thread dimension												
	A *	B		C (Ø)		D		IN		OUT		DRAIN	
		mm	*in*	mm	*in*	mm	*in*	Nm	*lbft*	Nm	*lbft*	Nm	*lbft*
U6	9/16-18 (SAE6)	13	*0.51*	25	*0.98*	0.5	*0.020*	-	-	-	-	15	*11*
U10	7/8-14 (SAE10)	17	*0.67*	34	*1.34*	0.5	*0.020*	30	*22*	70	*52*	-	-
U12	1 1/16-12 (SAE12)	20	*0.79*	41	*1.61*	0.5	*0.020*	40	*30*	120	*88*	-	-
U16	1 5/16-12 (SAE16)	20	*0.79*	50	*1.97*	0.5	*0.020*	60	*44*	170	*125*	-	-

(*) threading according to ISO 262 - ANSI B1.1

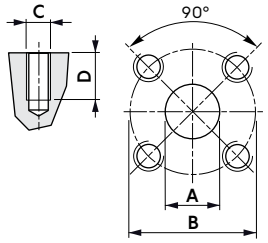


T (GERMAN flange) port connection

Displacement	Side ports - Rear drain					
	2XP / 2XM			2XPW / 2XMW		
	IN	OUT	DRAIN	IN	OUT	DRAIN
040	T20	T15	G14/U6	-	-	-
060	T20	T15	G14/U6	-	-	-
080	T20	T15	G14/U6	-	-	-
110	T20	T15	G14/U6	T20	T15	G14/U6
140	T20	T15	G14/U6	T20	T15	G14/U6
160	T20	T15	G14/U6	T20	T15	G14/U6
190	T20	T15	G14/U6	T20	T15	G14/U6
220	T20	T15	G14/U6	T20	T15	G14/U6
260	T20	T15	G14/U6	T20	T15	G14/U6
290	T20	T15	G14/U6	T20	T15	G14/U6
310	T20	T15	G14/U6	T20	T15	G14/U6

	Thread dimension										
	A (Ø)		B (Ø)		C	D		IN		OUT	
	mm	*in*	mm	*in*		mm	*in*	Nm	*lbft*	Nm	*lbft*
T15	15	*0.59*	35	*1.31*	M6	15	*0.59*	8	*6*	8	*6*
T20	20	*0.79*	40	*1.57*	M6	15	*0.59*	8	*6*	8	*6*

NOTE: for drain connection tightening torque see previous tables



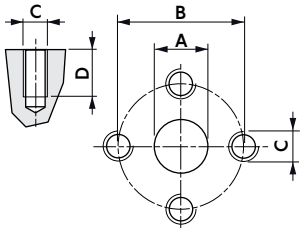
Ports threading and connections

N (EUROPEAN flange) port connection

Displacement	Side ports - Rear drain					
	2XP / 2XM			2XPW / 2XMW		
	IN	OUT	DRAIN	IN	OUT	DRAIN
040	N13	N13	G14/U6	-	-	-
060	N13	N13	G14/U6	-	-	-
080	N13	N13	G14/U6	-	-	-
110	N19	N13	G14/U6	N19	N13	G14/U6
140	N19	N13	G14/U6	N19	N13	G14/U6
160	N19	N13	G14/U6	N19	N13	G14/U6
190	N19	N13	G14/U6	N19	N13	G14/U6
220	N19	N13	G14/U6	N19	N13	G14/U6
260	N19	N13	G14/U6	N19	N13	G14/U6
290	N19	N13	G14/U6	N19	N13	G14/U6
310	N19	N13	G14/U6	N19	N13	G14/U6

	Thread dimension											
	A (Ø)		B (Ø)		C	D		IN		OUT	
	mm	*in*	mm	*in*		mm	*in*	Nm	*lbft*	Nm	*lbft*
N13	13	*0.51*	30	*1.18*	M6	15	*0.59*	8	*6*	8	*6*
N19	19	*0.75*	40	*1.57*	M8	15	*0.59*	15	*11*	15	*11*

NOTE: for drain connection tightening torque see previous tables

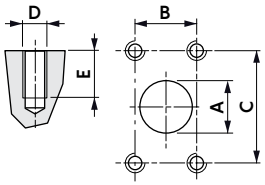


F (proprietary flange) port connection

Displacement	Side ports - Rear drain					
	2XP / 2XM			2XPW / 2XMW		
	IN	OUT	DRAIN	IN	OUT	DRAIN
040	F20	F15	G14/U6	-	-	-
060	F20	F15	G14/U6	-	-	-
080	F20	F15	G14/U6	-	-	-
110	F20	F15	G14/U6	F20	F15	G14/U6
140	F26	F15	G14/U6	F26	F15	G14/U6
160	F26	F15	G14/U6	F26	F15	G14/U6
190	F26	F15	G14/U6	F26	F15	G14/U6
220	F26	F15	G14/U6	F26	F15	G14/U6
260	F26	F15	G14/U6	F26	F15	G14/U6
290	F26	F15	G14/U6	F26	F15	G14/U6
310	F26	F15	G14/U6	F26	F15	G14/U6

	Thread dimension											
	A (Ø)		B		C		D	E		IN		OUT	
	mm	*in*	mm	*in*	mm	*in*		mm	*in*	Nm	*lbft*	Nm	*lbft*
F15	15	*0.51*	17.4	*0.69*	38	*1.50*	M6	15	*0.59*	8	*6*	8	*6*
F20	20	*0.79*	17.4	*0.69*	38	*1.50*	M6	15	*0.59*	8	*6*	8	*6*
F26	26	*1.02*	22.4	*0.88*	47.6	*1.87*	M6	15	*0.59*	8	*6*	8	*6*

NOTE: for drain connection tightening torque see previous tables



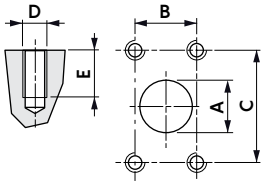
FM** port connection: dimensions according to SAE J518-1 / ISO 6162-1

Port connection FU with UN-UNF screws are available on request

Displacement	Side ports - Rear drain					
	2XP / 2XM			2XPW / 2XMW		
	IN*	OUT*	DRAIN	IN	OUT	DRAIN
040	FM34	FM12	G14/U6	-	-	-
060	FM34	FM12	G14/U6	-	-	-
080	FM34	FM12	G14/U6	-	-	-
110	FM34	FM12	G14/U6	FM34	FM13	G14/U6
140	FM1	FM12	G14/U6	FM1	FM13	G14/U6
160	FM1	FM12	G14/U6	FM1	FM13	G14/U6
190	FM1	FM12	G14/U6	FM1	FM13	G14/U6
220	FM1	FM12	G14/U6	FM1	FM13	G14/U6
260	FM1	FM12	G14/U6	FM1	FM13	G14/U6
290	FM1	FM12	G14/U6	FM1	FM13	G14/U6
310	FM1	FM12	G14/U6	FM1	FM13	G14/U6

	Thread dimension											
	A (Ø)		B		C		D	E		IN		OUT	
	mm	*in*	mm	*in*	mm	*in*		mm	*in*	Nm	*lbft*	Nm	*lbft*
*FM12	13	*0.51*	17.5	*0.69*	38.1	*1.5*	M8	14	*0.55*	15	*11*	15	*11*
*FM34	19	*0.75*	22.3	*0.88*	47.6	*1.87*	M10	18	*0.71*	20	*15*	20	*15*
*FM1	25	*0.98*	26.2	*1.03*	52.4	*2.06*	M10	16	*0.63*	20	*15*	25	*18*

NOTES: for drain connection tightening torque see previous tables.
(*) description is referred to pipe diameter



Description composition

With standard shafts and flanges

5A 5B 6A 6B — Suction port / Delivery port

2XP - A - 140 - D - EUR - B - N - 12 - 0 - G34 G12

(Kit references: 1A 6 — A; 5B 4 / 5A 3A — 140; 1A 2A — EUR; 3A — 12)

Pump/Motor type
2XP: aluminium pump
2XM: aluminium motor
2XPW: cast iron pump
2XMW: cast iron motor

Displacement
040 - 060 - 080 - 110
140 - 160 - 190 - 220
260 - 290 - 310

Flange Type
SAEA - SAEB[1] - **EUR**
B80 - B50[2] - E52[2]
NOTES:
(1) only cast iron
(2) only aluminium

O-ring seals
N: NBR
V: FPM

Connection position
0: side ports
1: left side and rear ports
3: right side and rear ports
4: rear ports

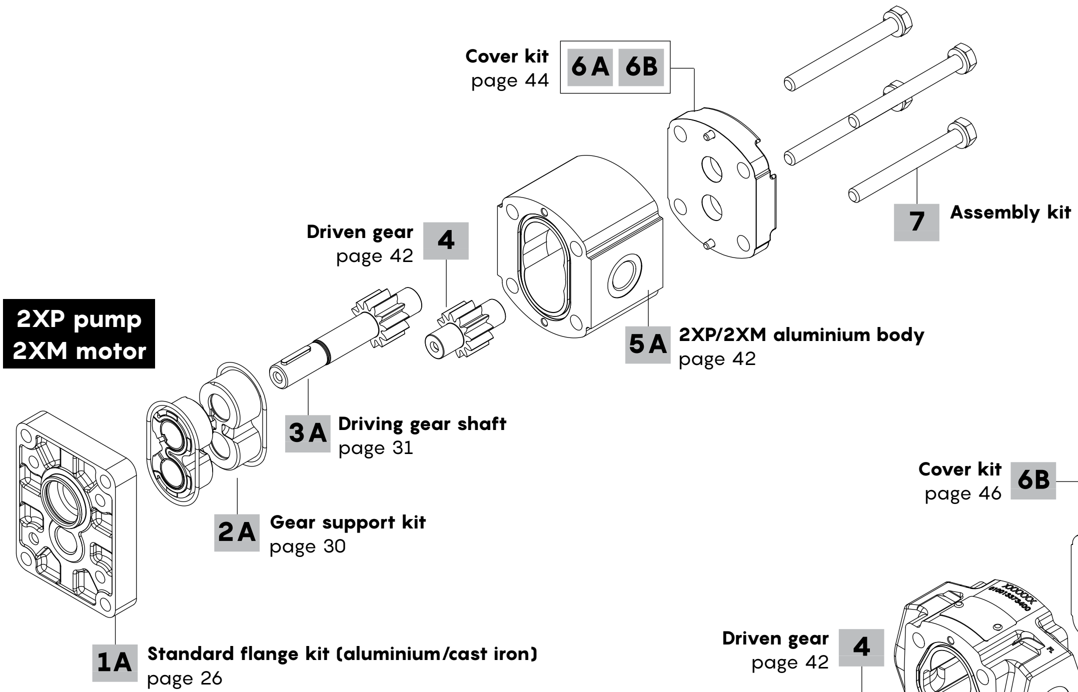
Connection type
G: BSP threading
U: UN-UNF threading
N: european flange
T: german flange
F: proprietary flanging
FM: SAE J518-1 flange
NOTE:
For ports dimensions see previous pages

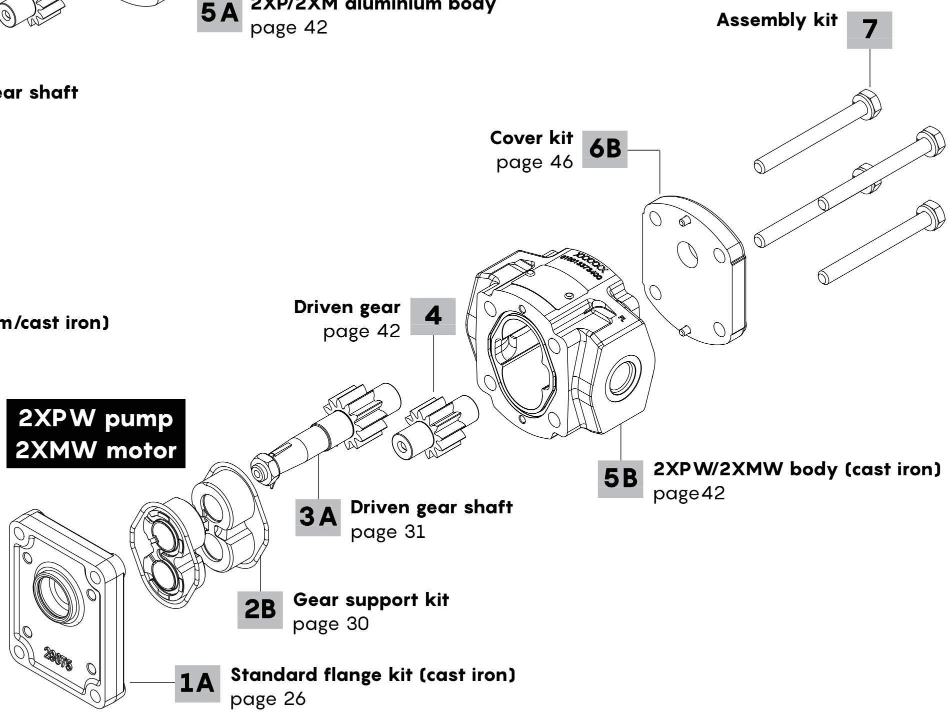
Flange and cover material
A: aluminium flange and cover
AG: aluminium flange/cast iron cover
GA: cast iron flange/aluminium cover
G: cast iron flange and cover

Rotation direction
D: clockwise rotation
S: counter-clockwise rotation
R: reversible
X: reversible with internal drain, please contact Sales Department

Shaft O-ring seals
A: whitout O-ring seals
B: for pressure up to 3 bar - *43.5 psi*
H: for pressure up to 8 bar - *116 psi*
K: for pressure up to 30 bar - *435 psi*

Shaft type
10: tapered 1:8
11: tapered 1:5
12: EUR parallel shaft
13: SAEA parallel shaft
14: SAEA 9T splined
15: DIN5482 9T splined
17: dihedral claw
30: SAE 11T splined
31: SAE 3/4" parallel shaft
32: SAE 3/4" (SHORT) parallel shaft
40: SAE 10T splined





Description composition

With Ø22 shaft and flange

5B 4 · 1C 6 · 5A 3C · 1C 2C · 3C · 5A 5B 6A 6B

Suction port · Delivery port

2XP - G - 140 - D - SAEB - B - N - 45 - 0 - T20 T20

Pump/Motor type
2XP: aluminium pump
2XM: aluminium motor
2XPW: cast iron pump
2XMW: cast iron motor

Displacement
040 - 060 - 080 - 110
140 - 160 - 190 - 220
260 - 290 - 310

Flange Type
SAEB[1]
NOTES:
(1) only cast iron

O-ring seals
N: NBR
V: FPM

Connection position
0: side ports
1: left side and rear ports
3: right side and rear ports
4: rear ports

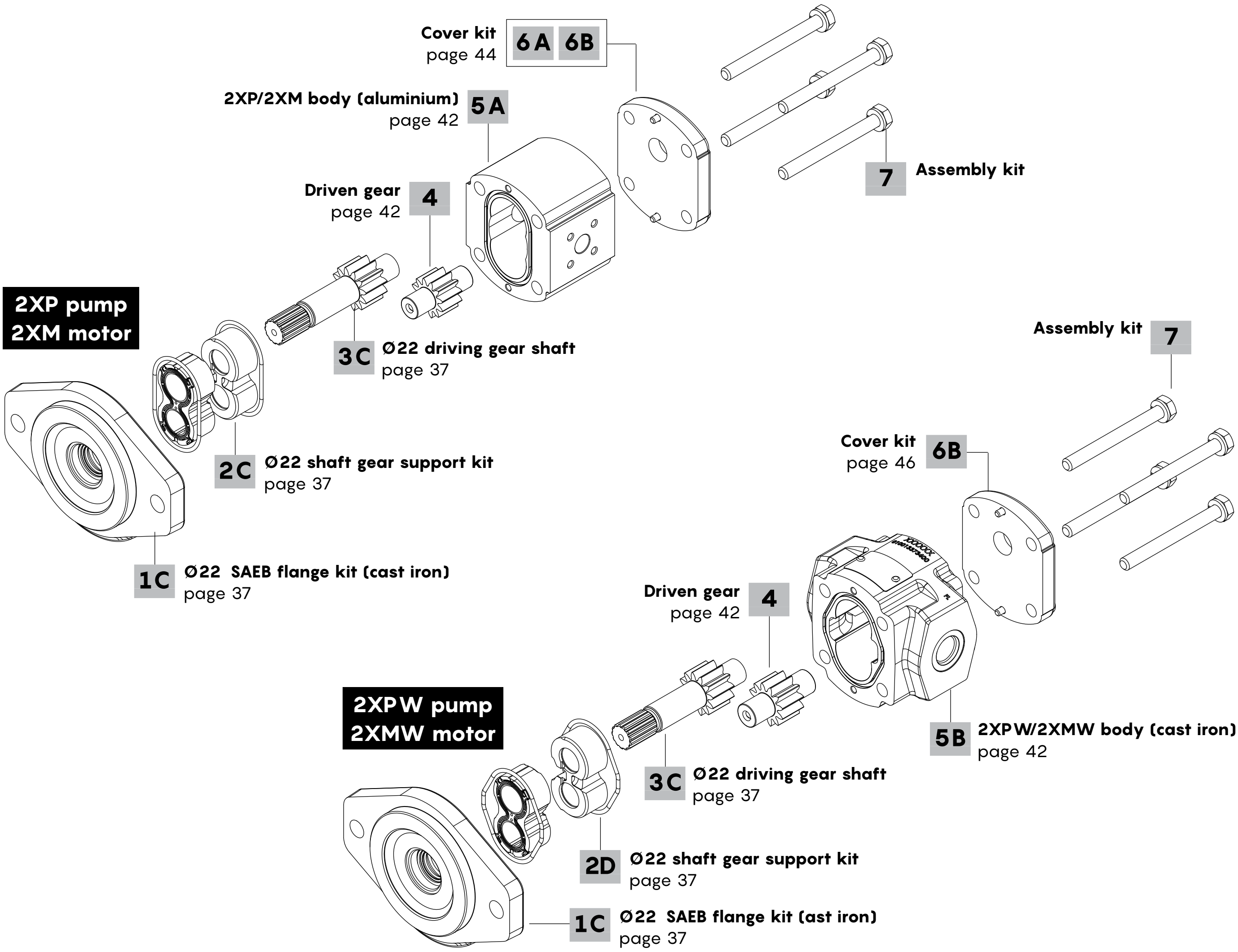
Flange and cover material
G: cast iron flange and cover
GA: cast iron flange/aluminium cover

Rotation direction
D: clockwise rotation
S: counter-clockwise rotation

Shaft O-ring seals
A: whitout O-ring seals
B: for pressure up to 3 bar - *43.5 psi*
H: for pressure up to 8 bar - *116 psi*
K: for pressure up to 30 bar - *435 psi*

Shaft type
45: SAEB 13T splined

Connection type
G: BSP threading
U: UN-UNF threading
N: european flange
T: german flange
F: proprietary flanging
FM: SAE J518-1 flange
NOTE:
For ports dimensions see previous pages



Description composition

Flange kit with outboard bearing (SUP version)

Code example, with the reference codes printed above each part: 2XM - A (1B, 6) - 140 (5B, 4, 5A, 3B) - R - SUPEUR (1B, 2A) - H - N - 10 (1B) - 0 - G12 G12 (5A, 5B, 6A, 6B). Of the two G12 codes, the first is the Suction port and the second is the Delivery port.

Pump/Motor type
2XP: aluminium pump
2XM: aluminium motor
2XPW: cast iron pump
2XMW: cast iron motor

Flange and cover material
A: aluminium

Displacement
040 - 060 - 080 - 110
140 - 160 - 190 - 220
260 - 290 - 310

Rotation direction
D: clockwise rotation
S: counter-clockwise rotation
R: reversible
X: reversible with internal drain, please contact Sales Department

Flange Type [1]
SUPSAEA - **SUPEUR**
SUPB80 - SUPB50
NOTES:
(1) only aluminium

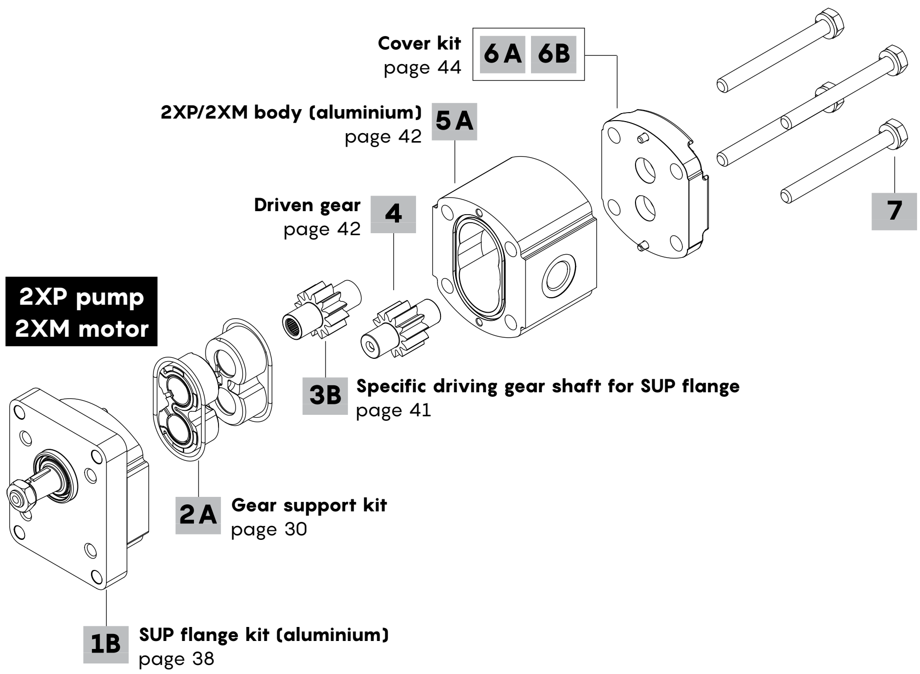
Shaft O-ring seals
A: whitout O-ring seals
B: for pressure up to 3 bar - 43.5 psi
H: for pressure up to 8 bar - *116 psi*
K: for pressure up to 30 bar - *435 psi*

O-ring seals
N: NBR
V: FPM

Shaft type
10: tapered 1:8
11: tapered 1:5
30: SAE 11T splined
31: SAE 3/4" parallel
32: SAE 3/4" (SHORT)
46: parallel Ø18
47: parallel Ø22
48: parallel Ø22 (LONG)
51: conical 1:5

Connection position
0: side ports
1: left side and rear ports
3: right side and rear ports
4: rear ports

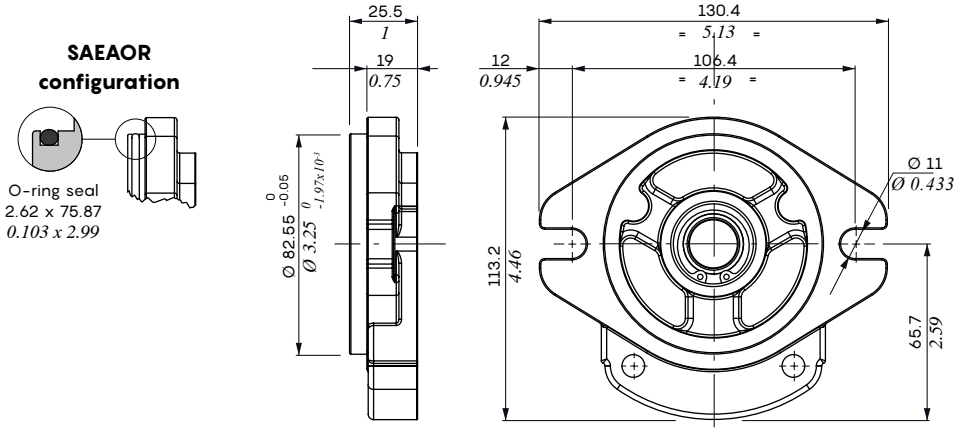
Connection type
G: BSP threading
U: UN-UNF threading
N: european flange
T: german flange
F: proprietary flanging
FM: SAE J518-1 flange
NOTE:
For ports dimensions see previous pages



NOTE: SUP type flanges are combined with spacer and driving gear shaft

Standard flange kits

SAEA flange: aluminium and cast iron types



Aluminium type

Seals material		Ordering codes					
		SAEA flange kit Ø18 mm *(0.709 in)* shaft seal ring			SAEAOR flange kit Ø18 mm *(0.709 in)* shaft seal ring		
		B	H	K	B	H	K
		up to 3 bar *(43.5 psi)*	up to 8 bar *(116 psi)*	up to 30 bar *(435 psi)*	up to 3 bar *(43.5 psi)*	up to 8 bar *(116 psi)*	up to 30 bar *(435 psi)*
NBR	N	5GKFX2P001	5GKFX20001	5GKFX20012	5GKFXP0002	5GKFX2002	5GKFX20013
FPM	V	5GKFX2P001V	5GKFX20001V	5GKFX20012V	5GKFXP0002V	5GKFX2002V	5GKFX20013V

Flanges are compatible with Ø18 mm *(0.709 in)* shaft type: see pages from 31 to 36

Seals material		Ordering codes					
		SAEA flange kit Ø20 mm *(0.787 in)* shaft seal ring			SAEAOR flange kit Ø20 mm *(0.787 in)* shaft seal ring		
		B	H	K	B	H	K
		up to 3 bar *(43.5 psi)*	up to 8 bar *(116 psi)*	up to 30 bar *(435 psi)*	up to 3 bar *(43.5 psi)*	up to 8 bar *(116 psi)*	up to 30 bar *(435 psi)*
NBR	N	5GKFX2P013	-	5GKFX20034	5GKFX2P017	-	5GKFX20053
FPM	V	5GKFX2P013V	-	5GKFX20034V	5GKFX2P017V	-	5GKFX20053V

Flanges are compatible with Ø20 mm *(0.787 in)* shaft type: see pages from 31 to 36

Cast iron type

Seals material		Ordering codes					
		SAEA flange kit Ø18 mm *(0.709 in)* shaft seal ring			SAEAOR flange kit Ø18 mm *(0.709 in)* shaft seal ring		
		B	H	K	B	H	K
		up to 3 bar *(43.5 psi)*	up to 8 bar *(116 psi)*	up to 30 bar *(435 psi)*	up to 3 bar *(43.5 psi)*	up to 8 bar *(116 psi)*	up to 30 bar *(435 psi)*
NBR	N	5GKFX2P008	5GKFX20025	5GKFX20027	5GKFX2P009	5GKFX20026	5GKFX20028
FPM	V	5GKFX2P008V	5GKFX20025V	5GKFX20027V	5GKFX2P009V	5GKFX20026V	5GKFX20028V

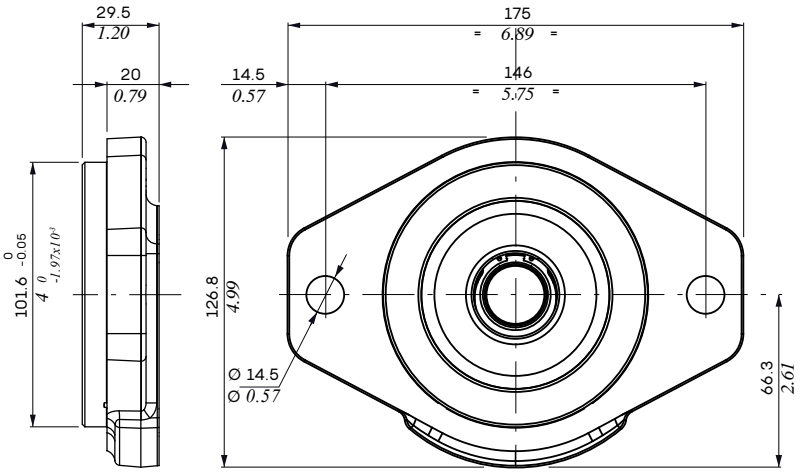
Flanges are compatible with Ø18 mm *(0.709 in)* shaft type: see pages from 31 to 36

Seals material		SAEA flange kit Ø20 mm *(0.787 in)* shaft seal ring		
		B	H	K
		up to 3 bar *(43.5 psi)*	up to 8 bar *(116 psi)*	up to 30 bar *(435 psi)*
NBR	N	5GKFX2P011	-	5GKFX20051
FPM	V	5GKFX2P011V	-	5GKFX20051V

Flanges are compatible with Ø20 mm *(0.787 in)* shaft type: see pages from 31 to 36

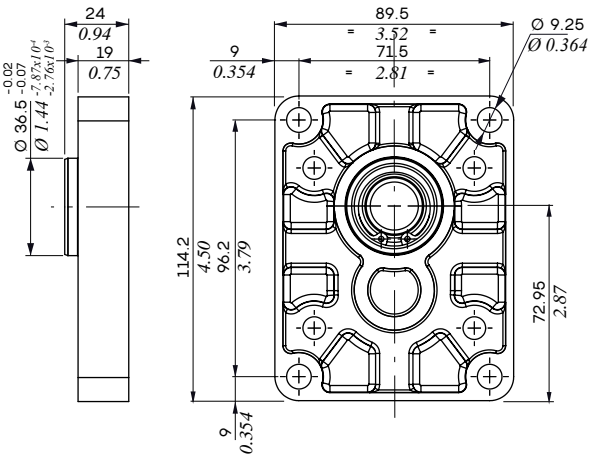
Standard flanges kits

SAEB flange: cast iron type



Seals material		Ordering codes Ø18x30 mm *(0.709x1.18 in)* shaft seal ring B up to 3 bar *(43.5 psi)*	Ordering codes Ø20x30 mm *(0.787x1.18 in)* haft seal ring B up to 3 bar *(43.5 psi)*
NBR	N	5GKFX2P024	5GKFX2P023
FPM	V	5GKFX2P024V	5GKFX2P023V
		Flanges are compatible with Ø18 mm *(0.709 in)* shaft type: see pages 31 to 36	Flanges are compatible with Ø20 mm *(0.787 in)* shaft type: see pages 31 to 36

EUR flange: aluminium and cast iron types



Alumium type

Seals material		Ordering codes Ø18 mm *(0.709 in)* shaft seal ring B up to 3 bar *(43.5 psi)*	Ordering codes Ø18 mm *(0.709 in)* shaft seal ring H up to 8 bar *(116 psi)*	Ordering codes Ø18 mm *(0.709 in)* shaft seal ring K up to 30 bar *(435 psi)*
NBR	N	5GKFX2P000	5GKFX20000	5GKFX20011
FPM	V	5GKFX2P000V	5GKFX20000V	5GKFX20011V

Flanges are compatible with Ø18 mm *(0.709 in)* shaft type: see pages 31 to 36

Cast iron type

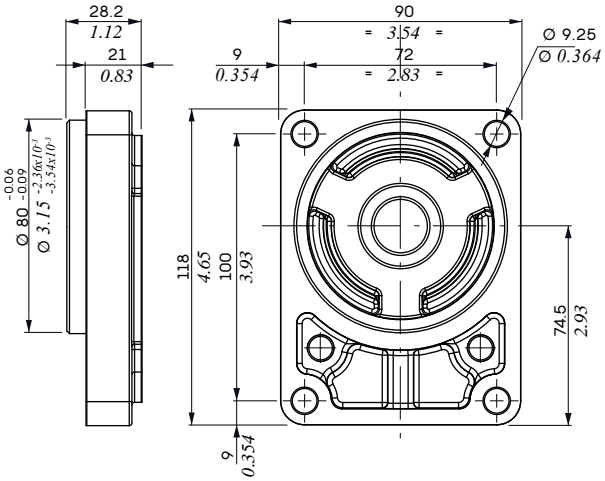
Seals material		Ordering codes Ø18 mm *(0.709 in)* shaft seal ring B up to 3 bar *(43.5 psi)*	Ordering codes Ø18 mm *(0.709 in)* shaft seal ring H up to 8 bar *(116 psi)*	Ordering codes Ø18 mm *(0.709 in)* shaft seal ring K up to 30 bar *(435 psi)*
NBR	N	5GKFX2P007	5GKFX20024	5GKFX20023
FPM	V	5GKFX2P007V	5GKFX20024V	5GKFX20023V

Flanges are compatible with Ø18 mm *(0.709 in)* shaft type: see pages 31 to 36

Standard flanges kits

B80 flange: aluminium and cast iron types

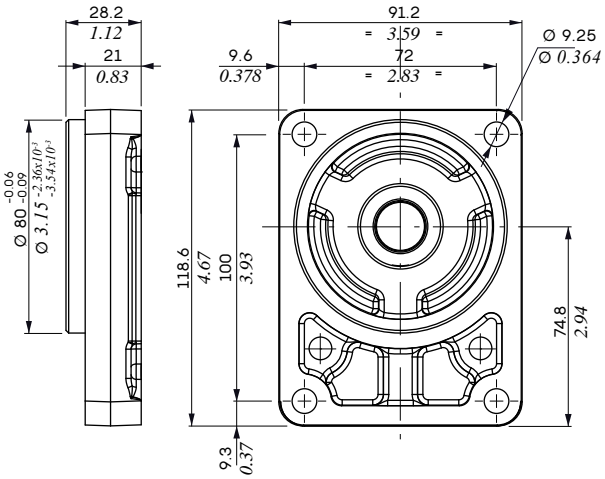
Aluminium type dimensions



Seals material		Ordering codes Ø18 mm (0.709 in) shaft seal ring B up to 3 bar (43.5 psi)	H up to 8 bar (116 psi)	K up to 30 bar (435 psi)
NBR	N	5GKFX2P003	5GKFX20003	5GKFX20014
FPM	V	5GKFX2P003V	5GKFX20003V	5GKFX20014V

Flanges are compatible with Ø18 mm (0.709 in) shaft type: see pages 31 to 36

Cast iron type dimensions

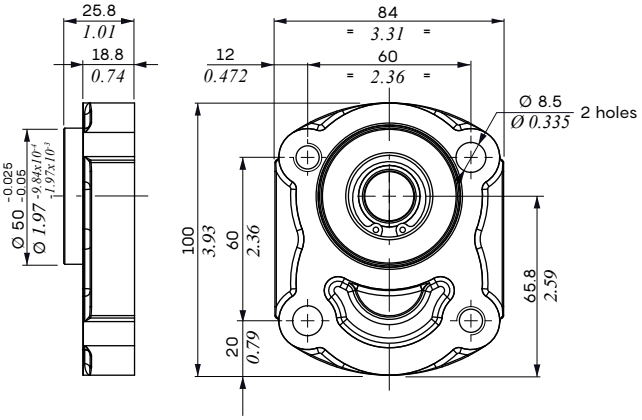


Seals material		Ordering codes Ø18 mm (0.709 in) shaft seal ring B up to 3 bar (43.5 psi)	H up to 8 bar (116 psi)	K up to 30 bar (435 psi)
NBR	N	5GKFX2P021	5GKFX20045	5GKFX20046
FPM	V	5GKFX2P021V	5GKFX20045V	5GKFX20046V

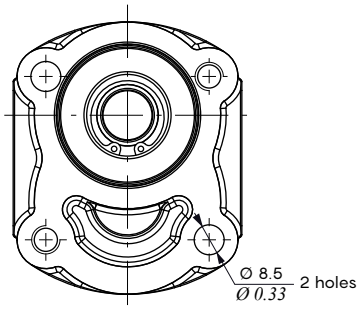
Flanges are compatible with Ø18 mm (0.709 in) shaft type: see pages 31 to 36

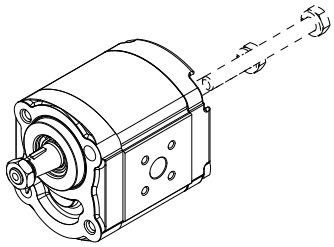
B50 flange: aluminium type

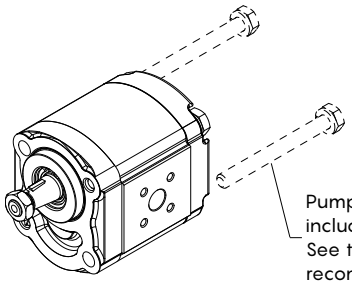
B50CX configuration



B50CY configuration







Pump fixing bolts are not included.
See table for minimum recommended length.

Seals material		Ordering codes					
		B50CX flange kit Ø18 mm *(0.709 in)* shaft seal ring			B50CY flange kit Ø18 mm *(0.709 in)* shaft seal ring		
		B up to 3 bar *(43.5 psi)*	H up to 8 bar *(116 psi)*	K up to 30 bar *(435 psi)*	B up to 3 bar *(43.5 psi)*	H up to 8 bar *(116 psi)*	K up to 30 bar *(435 psi)*
NBR	N	5GKFX2P004	5GKFX20004	5GKFX20015	5GKFX2P006	5GKFX20031	5GKFX20021
FPM	V	5GKFX2P004V	5GKFX20004V	5GKFX20015V	5GKFX2P006V	5GKFX20031V	5GKFX20021V

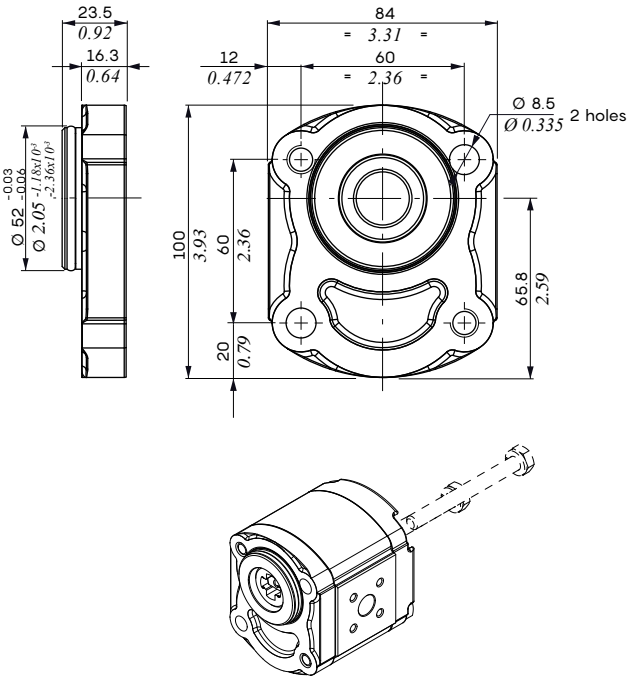
Flanges are compatible with Ø18 mm *(0.709 in)* shaft type: see pages from 31 to 36

Fixing bolts	
Displacement	Min. recommended length
040	105 *(4.13)*
060	105 *(4.13)*
080	110 *(4.33)*
110	115 *(4.53)*
140	120 *(4.72)*
160	125 *(4.92)*
190	130 *(5.12)*
220	135 *(5.32)*
260	140 *(5.51)*
290	145 *(5.71)*
310	150 *(5.91)*

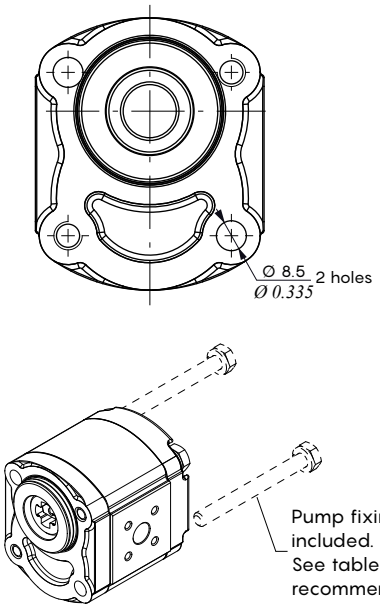
Standard flange kits

E52 flange: aluminium type

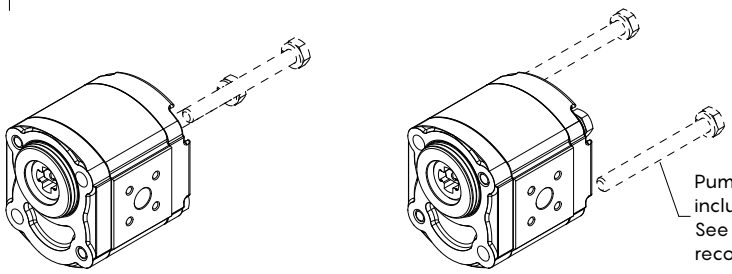
E52CX configuration



E52CY configuration



Fixing bolts	
Displacement	**Min. recommended length**
040	100 (*3.94*)
060	105 (*4.13*)
080	110 (*4.33*)
110	115 (*4.53*)
140	120 (*4.72*)
160	120 (*4.72*)
190	125 (*4.92*)
220	130 (*5.12*)
260	140 (*5.51*)
290	140 (*5.51*)
310	145 (*5.71*)

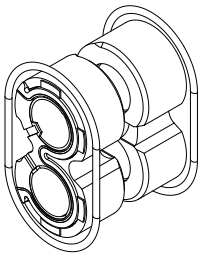


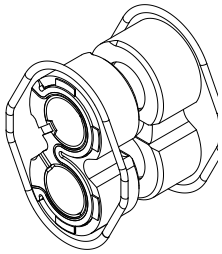
Pump fixing bolts are not included.
See table for minimum recommended length.

Seals material		Ordering codes **E52CX flange kit** **Ø18 mm *(0.709 in)* shaft seal ring** **A** without shaft seal	Ordering codes **E52CY flange kit** **Ø18 mm *(0.709 in)* shaft seal ring** **A** without shaft seal
NBR	**N**	5GKFX20005	5GKFX20030
FPM	**V**	5GKFX20005V	5GKFX20030V

Flanges are compatible only with **17 type** shaft type: see page 34

Gear support kits





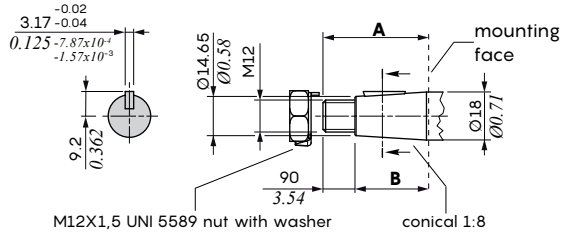
Seals material		2XP/2XM aluminium ordering codes				2XPW/2XMW cast iron ordering codes	
		For standard body		For LAU-MU-SGR special bodies (page 43)			
		Pumps and Unidir. motors	Reversible motors	Pumps and Unidir. motors	Reversible motors	Pumps and Unidir. motors	Reversible motors
NBR	**N**	5GKS20028	5GKS20035	5GKS20027	5GKS20038	5GKS20027	5GKS20038
FPM	**V**	5GKS20029	5GKS20036	5GKS20030	5GKS20039	5GKS20030	5GKS20039

Driving gear shafts

Type 10: conical 1:8 shaft

Ø18 mm (*0.71 in*) seal

Flange	Shaft dimension			
	A		B	
	mm	*in*	mm	*in*
SAEA	39.5	*1.56*	27.5	*1.08*
EUR	39.5	*1.56*	27.5	*1.08*
B80C	37.5	*1.48*	25.5	*1.00*
SAEB Ø18	38.5	*1.51*	26.5	*1.04*



Max transmitted torque = 140 Nm - *103 lbft*
Tightening torque (M12x1.5) = 60 Nm - *44 lbft*

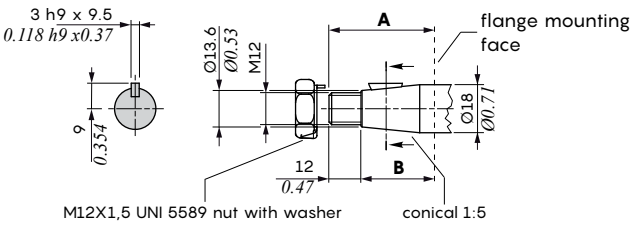
Driving gear shaft kit	
Displacement	**Ordering codes**
040	5GKI2X0002*
060	5GKI2X0003*
080	5GKI2X0004*
110	5GKI2X0005
140	5GKI2X0000
160	5GKI2X0006
190	5GKI2X0007
220	5GKI2X0008
260	5GKI2X0009
290	5GKI2X0011
310	5GKI2X0010

(*) only for 2XP/2XM

Type 11: conical 1:5 shaft

Ø18 mm (*0.71 in*) seal

Flange	Shaft dimension			
	A		B	
	mm	*in*	mm	*in*
SAEA	39.5	*1.56*	27.5	*1.08*
EUR	39.5	*1.56*	27.5	*1.08*
B80C	37.5	*1.48*	25.5	*1.00*
B50	39.5	*1.56*	27.5	*1.08*
SAEB Ø18	38.5	*1.51*	26.5	*1.04*



Max transmitted torque = 140 Nm - *103 lbft*
Tightening torque (M12x1.5) = 60 Nm - *44 lbft*

Driving gear shaft kit	
Displacement	**Ordering codes**
040	5GKI2X0022*
060	5GKI2X0023*
080	5GKI2X0024*
110	5GKI2X0025
140	5GKI2X0026
160	5GKI2X0027
190	5GKI2X0028
220	5GKI2X0029
260	5GKI2X0030
290	5GKI2X0031
310	5GKI2X0032

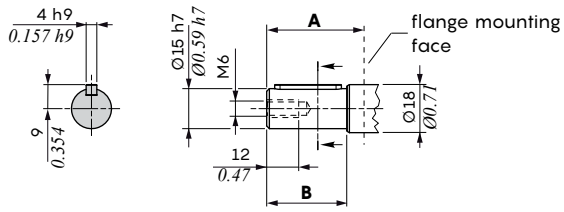
(*) only for 2XP/2XM

Driving gear shafts

Type 12: EUR parallel shaft

Ø18 mm (*0.71 in*) seal

Flange	Shaft dimension			
	A		B	
	mm	*in*	mm	*in*
SAEA	36.5	*1.44*	30	*1.18*
EUR	36.5	*1.44*	30	*1.18*
B80C	34.5	*1.36*	30	*1.18*
SAEB Ø18	35.5	*1.4*	30	*1.18*



Max transmitted torque = 80 Nm - *59 lbft*

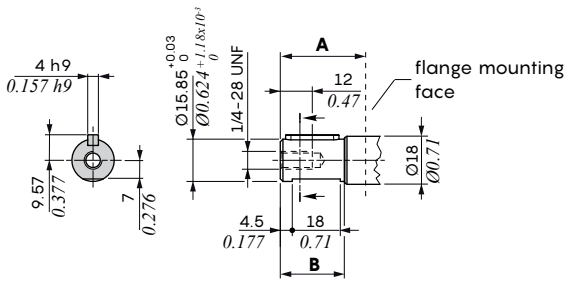
Driving gear shaft kit	
Displacement	**Ordering codes**
040	5GKI2X0033*
060	5GKI2X0034*
080	5GKI2X0035*
110	5GKI2X0036
140	5GKI2X0037
160	5GKI2X0038
190	5GKI2X0039
220	5GKI2X0040
260	5GKI2X0041
290	5GKI2X0042
310	5GKI2X0043

(*) only for 2XP/2XM

Type 13: SAEA parallel shaft

Ø18 mm (*0.71 in*) seal

Flange	Shaft dimension			
	A		B	
	mm	*in*	mm	*in*
SAEA	32	*1.26*	24	*0.94*
EUR	32	*1.26*	24	*0.94*
B80C	30	*1.18*	24	*0.94*
SAEB Ø18	31	*1.22*	24	*0.94*



Max transmitted torque = 90 Nm - *66 lbft*

Driving gear shaft kit	
Displacement	**Ordering codes**
040	5GKI2X0044*
060	5GKI2X0045*
080	5GKI2X0046*
110	5GKI2X0047
140	5GKI2X0048
160	5GKI2X0049
190	5GKI2X0050
220	5GKI2X0051
260	5GKI2X0052
290	5GKI2X0053
310	5GKI2X0054

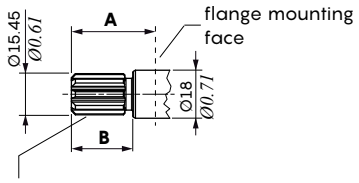
(*) only for 2XP/2XM

Driving gear shafts

Type 14: 9T splined shaft

Ø18 mm (*0.71 in*) seal

Flange	Shaft dimension			
	A		B	
	mm	*in*	mm	*in*
SAEA	31.5	*1.24*	23	*0.91*
EUR	31.5	*1.24*	23	*0.91*
B80C	29.5	*1.16*	23	*0.91*
SAEB Ø18	30.5	*1.2*	23	*0.91*



splined profile: SAEA 9T - 16/32 DP

Max transmitted torque = 100 Nm - *74 lbft*

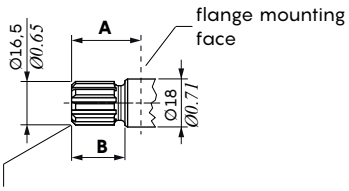
Driving gear shaft kit	
Displacement	**Ordering codes**
040	5GKI2X0019*
060	5GKI2X0020*
080	5GKI2X0021*
110	5GKI2X0012
140	5GKI2X0013
160	5GKI2X0014
190	5GKI2X0015
220	5GKI2X0001
260	5GKI2X0016
290	5GKI2X0017
310	5GKI2X0018

(*) only for 2XP/2XM

Type 15: DIN5482 17x14 9T splined shaft

Ø18 mm (*0.71 in*) seal

Flange	Shaft dimension			
	A		B	
	mm	*in*	mm	*in*
SAEA	26	*1.02*	20	*0.79*
EUR	26	*1.02*	20	*0.79*
B80C	24	*0.94*	20	*0.79*
SAEB Ø18	25	*0.98*	20	*0.79*



splined profile: B 17x14 DIN 5482 -9 teeths

Max transmitted torque = 100 Nm - *74 lbft*

Driving gear shaft kit	
Displacement	**Ordering codes**
040	5GKI2X0055*
060	5GKI2X0056*
080	5GKI2X0057*
110	5GKI2X0058
140	5GKI2X0059
160	5GKI2X0060
190	5GKI2X0061
220	5GKI2X0062
260	5GKI2X0063
290	5GKI2X0064
310	5GKI2X0065

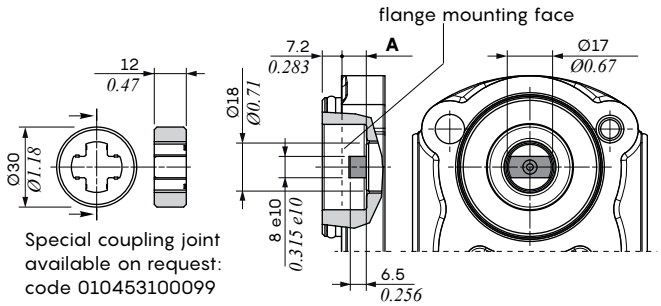
(*) only for 2XP/2XM

Driving gear shafts

Type 17: dihedral craw shaft

Ø18 mm (*0.71 in*) seal

Shaft dimension		
Flange	A	
	mm	*in*
E52	9.3	*0.366*



Special coupling joint available on request: code 010453100099

Driving gear shaft kit	
Displacement	Ordering codes
040	5GKI2X0154*
060	5GKI2X0155*
080	5GKI2X0156*
110	5GKI2X0157
140	5GKI2X0158
160	5GKI2X0159
190	5GKI2X0160
220	5GKI2X0161
260	5GKI2X0162
290	5GKI2X0163
310	5GKI2X0164

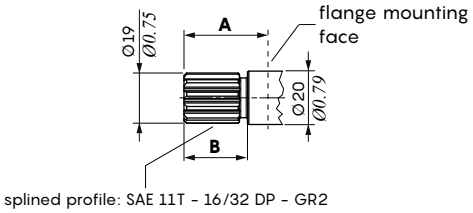
(*) only for 2XP/2XM

Max transmitted torque = 80 Nm - *59 lbft*

Type 30: SAE 11T 16/32 splined shaft

Ø20 mm (*0.79 in*) seal

Shaft dimension				
Flange	A		B	
	mm	*in*	mm	*in*
SAEA	31.5	*1.24*	23.8	*0.94*
SAEB Ø20	30.5	*1.2*	23.8	*0.94*



splined profile: SAE 11T - 16/32 DP - GR2

Driving gear shaft kit	
Displacement	Ordering codes
040	5GKI2X0099*
060	5GKI2X0100*
080	5GKI2X0101*
110	5GKI2X0102
140	5GKI2X0103
160	5GKI2X0104
190	5GKI2X0105
220	5GKI2X0106
260	5GKI2X0107
290	5GKI2X0108
310	5GKI2X0109

(*) only for 2XP/2XM

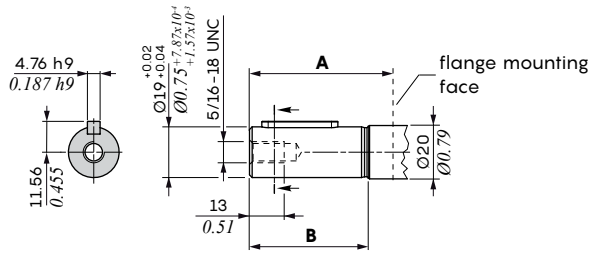
Max transmitted torque = 180 Nm - *133lbft*

Driving gear shafts

Type 31: 4.76 key SAE parallel shaft

Ø20 mm (*0.79 in*) seal

Flange	Shaft dimension			
	A		B	
	mm	*in*	mm	*in*
SAEA	53.8	*2.12*	44.5	*1.75*
SAEB Ø20	52.8	*2.08*	44.5	*1.75*



Driving gear shaft kit	
Displacement	**Ordering codes**
040	5GKI2X0110*
060	5GKI2X0111*
080	5GKI2X0112*
110	5GKI2X0113
140	5GKI2X0114
160	5GKI2X0115
190	5GKI2X0116
220	5GKI2X0117
260	5GKI2X0118
290	5GKI2X0119
310	5GKI2X0120

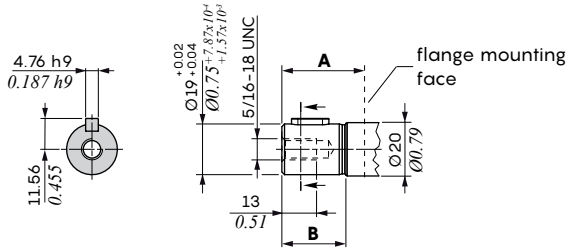
(*) only for 2XP/2XM

Max transmitted torque = 140 Nm - *103 lbft*

Type 32: 4.76 key SAE parallel shaft, short version

Ø20 mm (*0.79 in*) seal

Flange	Shaft dimension			
	A		B	
	mm	*in*	mm	*in*
SAEA	31	*1.22*	24	*0.94*
SAEB Ø20	30	*1.18*	24	*0.94*



Driving gear shaft kit	
Displacement	**Ordering codes**
040	5GKI2X0121*
060	5GKI2X0122*
080	5GKI2X0123*
110	5GKI2X0124
140	5GKI2X0125
160	5GKI2X0126
190	5GKI2X0127
220	5GKI2X0128
260	5GKI2X0129
290	5GKI2X0130
310	5GKI2X0131

(*) only for 2XP/2XM

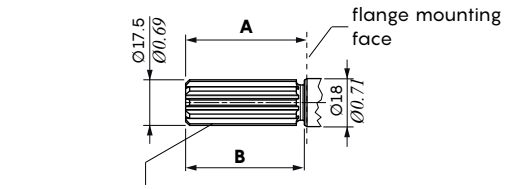
Max transmitted torque = 100 Nm - *74lbft*

Driving gear shafts

Type 40: SAE 10T 16/32 splined shaft

Ø18 mm (*0.71 in*) seal

Flange	Shaft dimension			
	A		B	
	mm	*in*	mm	*in*
SAEA	45.5	*1.79*	44.5	*1.75*
SAEB Ø18	44.5	*1.75*	44.5	*1.75*



splined profile: SAE 10T - 16/32 DP - GR2

Max transmitted torque = 130 Nm - 96 *lbft*

Driving gear shaft kit	
Displacement	**Ordering codes**
040	5GKI2X0143*
060	5GKI2X0144*
080	5GKI2X0145*
110	5GKI2X0146
140	5GKI2X0147
160	5GKI2X0148
190	5GKI2X0149
220	5GKI2X0150
260	5GKI2X0151
290	5GKI2X0152
310	5GKI2X0153

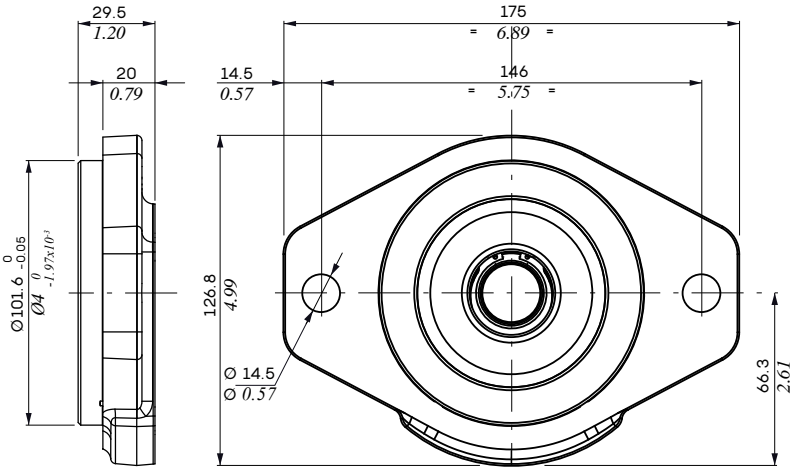
(*) only for 2XP/2XM

Ø22 mm (*Ø0.87 in*) shaft and flange configuration

Flange kit

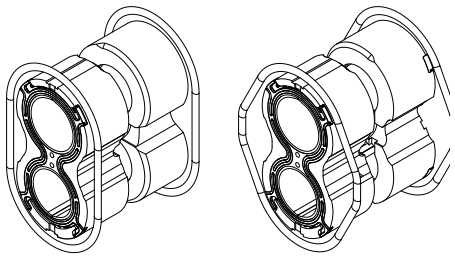
Ø22 mm (*Ø0.87 in*) SAEB flange: cast iron type

This flange kit is specifically designed to be combined with Ø22 mm (*0.866 in*) gear shaft.



Seals material		Ordering codes Ø22x30 mm *(0.866x1.18 in)* shaft seal ring B up to 3 bar (*43.5 psi*)
NBR	N	5GKFX2P016
FPM	V	5GKFX2P016V

Gear support kit



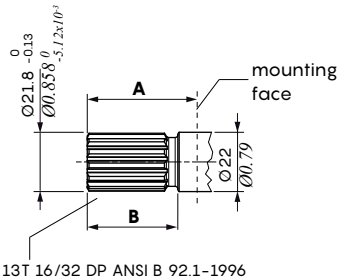
Seals material		Ordering codes 2XP aluminium pump	 2XPW cast iron pump
NBR	N	5GKS20019	5GKS20020
FPM	V	5GKS20049	5GKS20050

Driving gear shafts

Type 45: SAE 13T splined shaft — Ø22 mm (*0.87 in*)

This driving gear shaft can bu used only with its dedicated flange and gear support kit..

Flange	Shaft dimension A mm	 *in*	 B mm	 *in*
SAEB	41.2	*1.62*	34	*1.34*



splined profile: 13T 16/32 DP ANSI B 92.1-1996

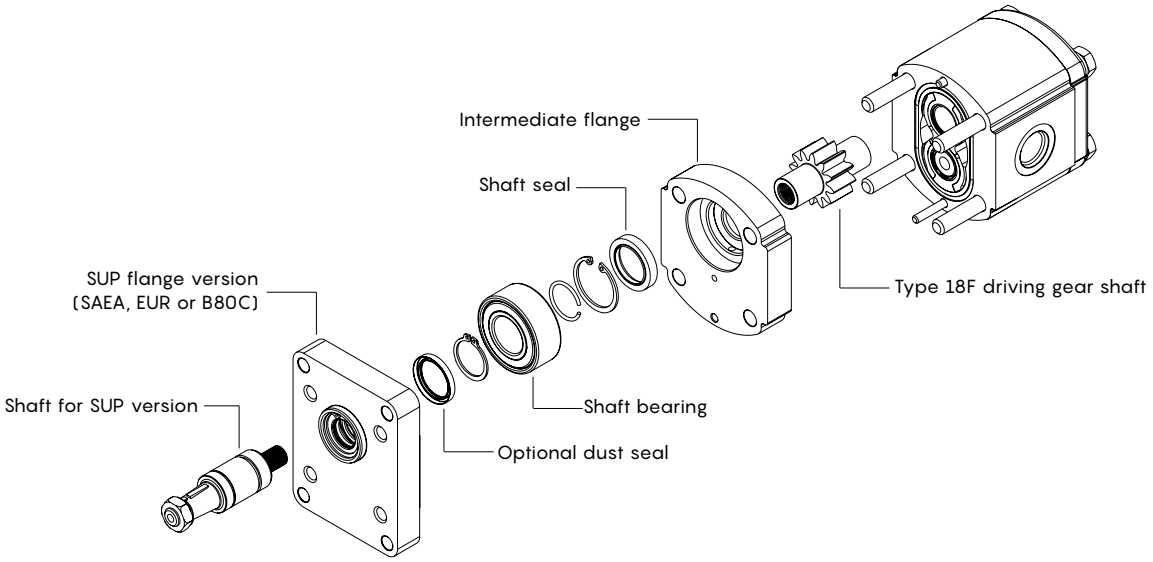
Max transmitted torque = 280 Nm - *207 lbft*

Driving gear shaft kit	
Displacement	Ordering codes
040	5GKI2X0088*
060	5GKI2X0089*
080	5GKI2X0090*
110	5GKI2X0091
140	5GKI2X0092
160	5GKI2X0093
190	5GKI2X0094
220	5GKI2X0095
260	5GKI2X0096
290	5GKI2X0097
310	5GKI2X0098

(*) only for 2XP/2XM

Flange kit with outboard bearing (SUP version)

SUP type flanges are completed with radial load bearing and dedicated shaft.
These flanges require special 18F type drive gear.

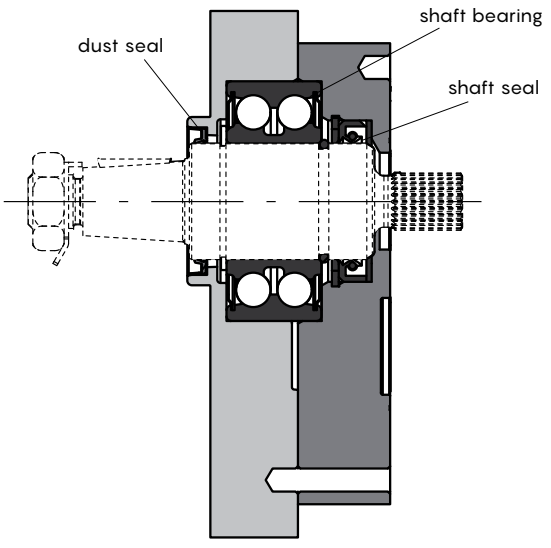


Shaft sealing (main sealing)

Shaft seal configuration	Pressure code	
	H Pumps - Motors motors with external drain	**K** Unidirectional motors
With shaft seal, dust seal and shaft bearing	Max pressure up to 8 bar (*116 psi*) @ 1000 rpm 1.9 bar (*27.5 psi*) @ 4000 rpm	Max pressure up to 30 bar (*435 psi*) @ 1000 rpm 7.6 bar (*110.2 psi*) @ 4000 rpm

With shaft seal, dust seal (optional) and shaft bearing

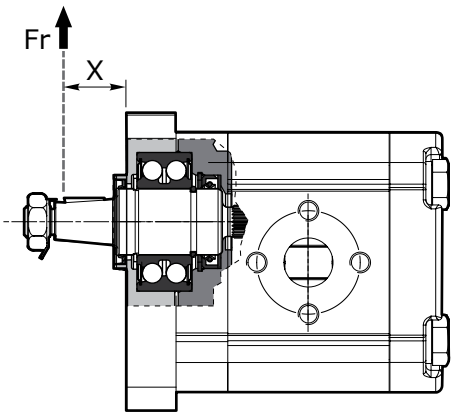
Flange example: SUPEUR
2XP-A-160-R-SUPEUR-H-N-10-0-G34G12



Flange kit with outboard bearing (SUP version)

Bearing life expectancy

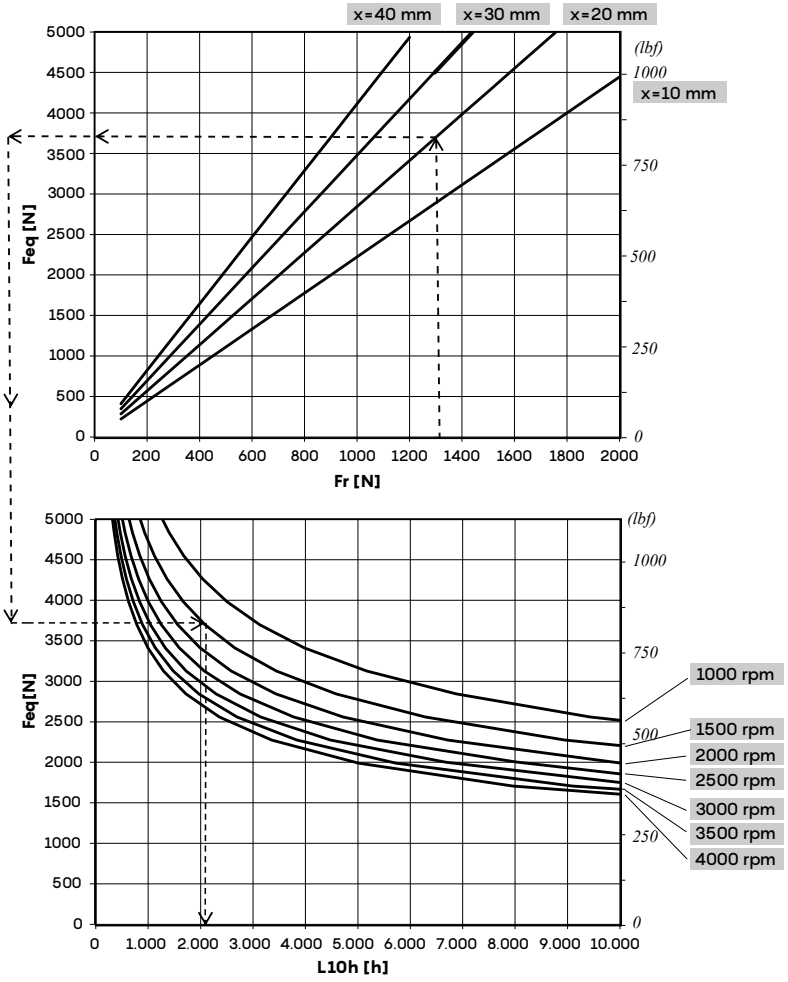
SUP flanges are available with shaft seal, dust seal (optional) and shaft bearing.
The drawings represents the aluminium SUP version. For cast iron version, dedicated shaft features, O-ring combination and other information please contact our Sales Dpt.



X - Distance of the radial load result from the mounting flange mm (in)

Fr - Radial load

Example	
Fr radial load	1300 N (*292 lbf*)
X	20 mm (*0.787 in*)
Speed	1500 rpm
Rated fatigue life	2100 h

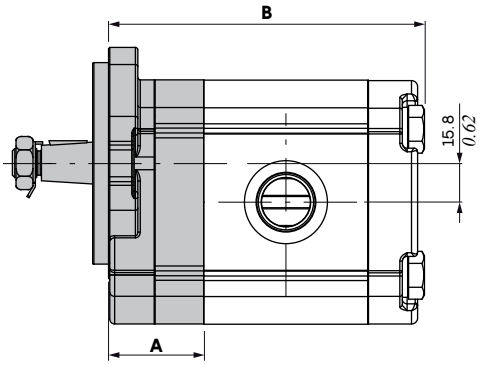


Flange kit with outboard bearing (SUP version)

2XP/2XM main dimensional data

Description example with outboard bearing (SUP version)

Pump: 2XP-A-140-D-SUPSAEA-B-N-30-0-U12U10
Motor: 2XM-A-140-D-SUPSAEA-B-N-10-0-U12U10



Dimension **B** is referred to alumium pump with standard aluminium rear cover (without ports).
For SUP flanges dimensions see related pages

Flange type								
	Dimension A							
	SUPEUR		SUPSAEA		SUPB80		SUPB50	
	mm	*in*	mm	*in*	mm	*in*	mm	*in*
	39	*1.54*	39	*1.54*	41	*1.61*	39	*1.54*

Displacement	Dimension B							
	SUPEUR		SUPSAEA		SUPB80		SUPB50	
	mm	*in*	mm	*in*	mm	*in*	mm	*in*
040	113.1	*4.45*	113.1	*4.45*	115.1	*4.53*	113.1	*4.45*
060	116.4	*4.58*	116.4	*4.58*	118.4	*4.66*	116.4	*4.58*
080	120.6	*4.75*	120.6	*4.75*	122.6	*4.83*	120.6	*4.75*
110	124.7	*4.91*	124.7	*4.91*	126.7	*4.99*	124.7	*4.91*
140	129.7	*5.11*	129.7	*5.11*	131.7	*5.19*	129.7	*5.11*
160	133.9	*5.27*	133.9	*5.27*	135.9	*5.35*	133.9	*5.27*
190	138.9	*5.47*	138.9	*5.47*	140.9	*5.55*	138.9	*5.47*
220	143.6	*5.65*	143.6	*5.65*	145.6	*5.73*	143.6	*5.65*
260	149.7	*5.89*	149.7	*5.89*	151.7	*5.97*	149.7	*5.89*
290	153	*6.02*	153	*6.02*	155	*6.10*	153	*6.02*
310	158.1	*6.22*	158.1	*6.22*	160.1	*6.30*	158.1	*6.22*

Ordering codes

The available **SUP** type flanges codes are listed below.
Different combinations of flanges, shafts and seal types are possible; please contact our Sales Dpt.
Important!
The shafts in the table below highlighted with "*****" are dedicated exclusively to the SUP flanges.

Aluminium types

SUPEUR flange			
Shaft type	**Seal type**		**Code**
10	**NBR**	**H**	5GKU2A1010
		K	5GKU2A1013
	FPM	**H**	5GKU2A1015
		K	-
46*	**NBR**	**H**	5GKU2A4604
		K	5GKU2A4607
	FPM	**H**	5GKU2A4605
		K	-
47*	**NBR**	**H**	5GKU2A4705
		K	5GKU2A4706
	FPM	**H**	5GKU2A4707
		K	-
48*	**NBR**	**H**	5GKU2A4803
		K	5GKU2A4802
			5GKU2A4804
			-

SUPSAEA flange			
Shaft type	**Seal type**		**Code**
30	**NBR**	**H**	5GKU2A3001
		K	5GKU2A3002
	FPM	**H**	5GKU2A3003
		K	-
31	**NBR**	**H**	5GKU2A3104
		K	5GKU2A3105
	FPM	**H**	5GKU2A3106
		K	-
32	**NBR**	**H**	5GKU2A3202
		K	5GKU2A3203
	FPM	**H**	5GKU2A3204
		K	-

SUPB80 flange			
Shaft type	**Seal type**		**Code**
11	**NBR**	**H**	5GKU2A1108
		K	5GKU2A1107
	NBR	**H**	5GKU2A1110
		K	-
51*	**NBR**	**H**	5GKU2A5111
		K	5GKU2A5103
	FPM	**H**	5GKU2A5104
		K	-

SUPB50 flange				
Shaft type	**Seal type**		**B50CX Code**	**B50CY code**
11	**NBR**	**H**	5GKU2A1105	5GKU2A1106
		K	5GKU2A1111	5GKU2A1109
	FPM	**H**	5GKU2A1112	5GKU2A1113
		K	-	-
51*	**NBR**	**H**	5GKU2A5105	5GKU2A5108
		K	5GKU2A5106	5GKU2A5109
	FPM	**H**	5GKU2A5107	5GKU2A5110
		K	-	-

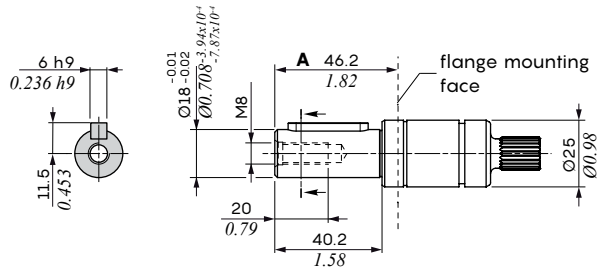
Flange kit with outboard bearing (SUP version)

Shaft dimensions

The shafts represented below are dedicated exclusively to the SUP flanges; for standard shaft see pages from 22 to 26

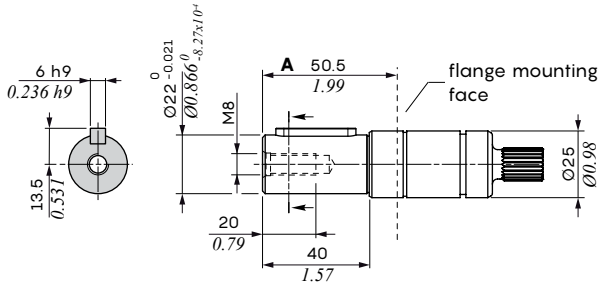
Type 46

Dimension **A** is referred to SUPEUR flange



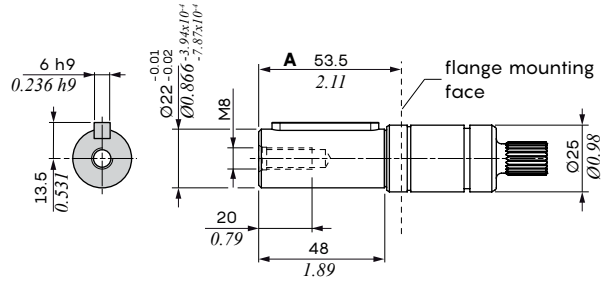
Type 47

Dimension **A** is referred to SUPEUR flange

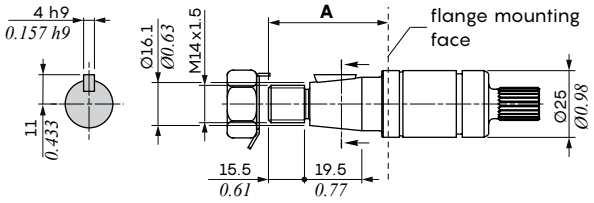


Type 48

Dimension **A** is referred to SUPEUR flange



Type 51: conical 1:5 shaft

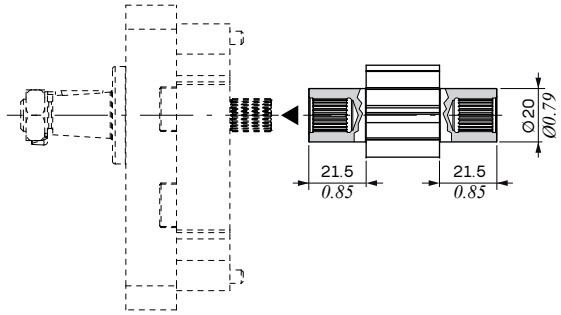


Shaft dimension		
Flange	A	
	mm	*in*
SUPB80	44.9	*1.77*
SUPB50	46.9	*1.85*

Driving gear

Type 18F

SUP type flanges require the female/female driving gear represented below.
This shaft is also used for the secondary stage in tandem pumps



Max transmitted torque = 100 Nm - *74lbft*

Driving gear shaft kit			
Displacement	**Ordering codes**	**Displacement**	**Ordering codes**
040	5GKI2X0132*	**190**	5GKI2X0138
060	5GKI2X0133*	**220**	5GKI2X0139
080	5GKI2X0134*	**260**	5GKI2X0140
110	5GKI2X0135	**290**	5GKI2X0141
140	5GKI2X0136	**310**	5GKI2X0142
160	5GKI2X0137		

(*) only for 2XP/2XM

Driven gears

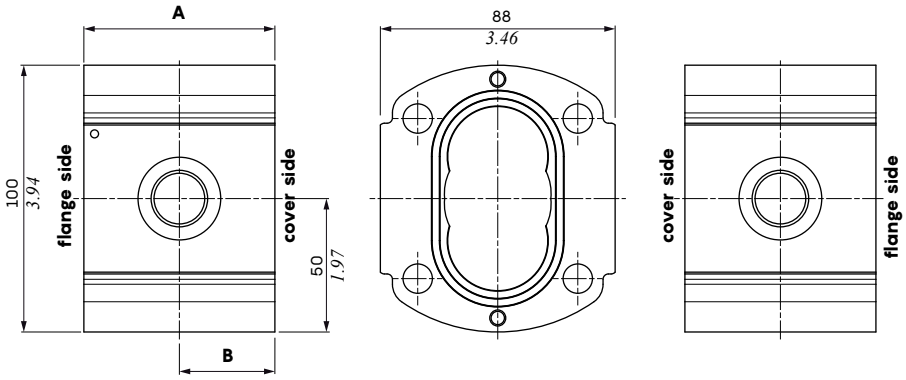
Driven gear shaft					
Displacement	Ordering codes	Displacement	Ordering codes	Displacement	Ordering codes
040	010053334999	140	010053335399	260	010053335799
060	010053335099	160	010053335499	290	010053449099
080	010053335199	190	010053335599	310	010053335899
110	010053335299	220	010053335699		

Standard bodies

Aluminium body

The body kits can't be ordered as spare parts and dimensions are the same for all port connections.
For informations about customization please contact our Sales Dpt.

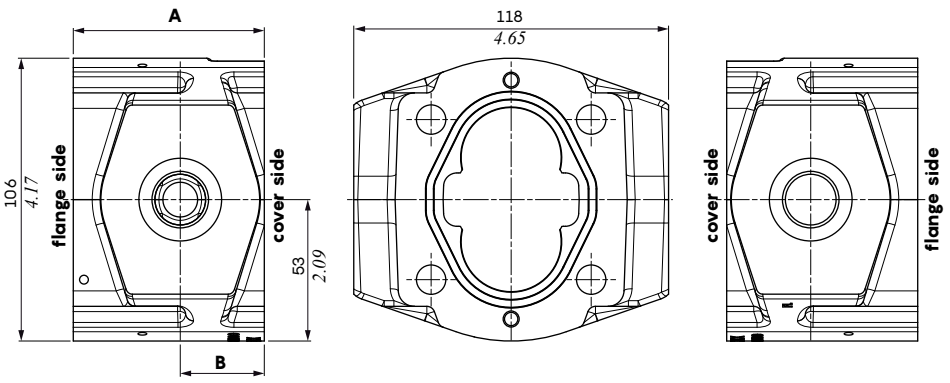
Body dimensions				
Displacement	A		B	
	mm	*in*	mm	*in*
040	50.8	*2*	25.4	*1*
060	54.1	*2.13*	27.05	*1.06*
080	58.3	*2.29*	29.15	*1.15*
110	62.4	*2.46*	31.2	*1.23*
140	67.4	*2.65*	33.7	*1.33*
160	71.6	*2.82*	35.8	*1.41*
190	76.6	*3.01*	38.3	*1.51*
220	81.6	*3.21*	40.8	*1.61*
260	87.4	*3.44*	43.7	*1.72*
290	90.7	*3.57*	45.35	*1.78*
310	95.8	*3.77*	47.9	*1.88*



Cast iron body

The body kits can't be ordered as spare parts and dimensions are the same for all port connections.
For informations about customization please contact our Sales Dpt..

Body dimensions				
Displacement	A		B	
	mm	*in*	mm	*in*
110	62.4	*2.46*	31.2	*1.23*
140	67.4	*2.65*	33.7	*1.33*
160	71.6	*2.82*	35.8	*1.41*
190	76.6	*3.01*	38.3	*1.51*
220	81.6	*3.21*	40.8	*1.61*
260	87.4	*3.44*	43.7	*1.72*
290	90.7	*3.57*	45.35	*1.78*
310	95.8	*3.77*	47.9	*1.88*

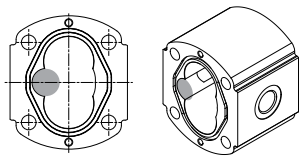
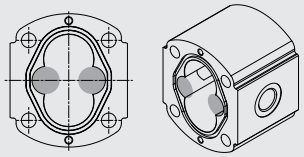
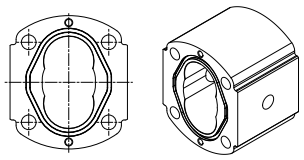


Special and dedicated bodies

Aluminium body

These versions can be used in case of common suction in tandem aluminum configurations or when special rear porting are required.
They are specifically designed for to have the same flow characteristics as the 2XPW/2XMW.
External dimension and ports position are the same of the aluminium standard body; cast iron flange and cover are recommended in the installation due to larger sealing area.

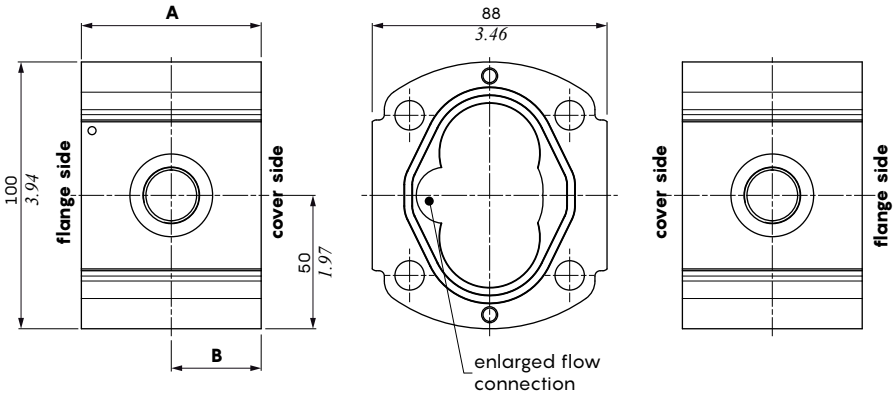
Special body summary table

Body type		Description / Application
LAU		- Single enlarged flow connection - For common suction tandem configuration
MU		- Double enlarged flow connection: suction and delivery - For displacement from 040 to 140 recommended pressures are: P1 = 230 bar *(3350 psi)* P2 = 240 bar *(3500 psi)* P3 =250 bar *(3600 psi)* - For oversized rear porting
SGR		- Configuration without flow connection enlargement and port machining - Only as spare part for tandem secondary section

Description example

Pump: 2XP-A-160(LAU)-D-EUR-B-N-10-4-U12U10

Body dimensions				
Displacement	A		B	
	mm	*in*	mm	*in*
040	50.8	*2*	25.4	*1*
060	54.1	*2.13*	27.05	*1.06*
080	58.3	*2.29*	29.15	*1.15*
110	62.4	*2.46*	31.2	*1.23*
140	67.4	*2.65*	33.7	*1.33*
160	71.6	*2.82*	35.8	*1.41*
190	76.6	*3.01*	38.3	*1.51*
220	81.6	*3.21*	40.8	*1.61*
260	87.4	*3.44*	43.7	*1.72*
290	90.7	*3.57*	45.35	*1.78*
310	95.8	*3.77*	47.9	*1.88*



Standard cover kits

Aluminium cover kits

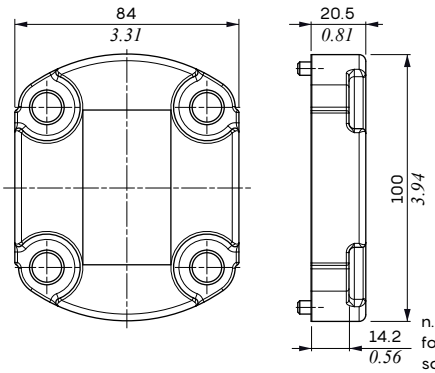
Without ports

For pumps and motors - Description example

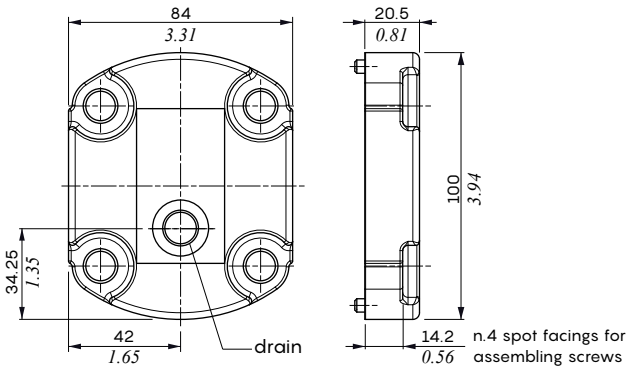
Pump: 2XP-A-040-D-EUR-B-N-10-0-G12G12
Motor: 2XM-A-110-R-EUR-H-N-10-0-G12G12-DRENG14

Available on	
2XP/2XM	2XPW/2XMW
•	–

Connection position 0



Connection position 0 - DREN



Ordering codes								
Pump/motor connection position	Ports code "G" (BSP threading)				Ports code "U" (UN-UNF threading)			
	CODE	IN	OUT	DRAIN**	CODE	IN	OUT	DRAIN**
0	5GKC20005	-	-	-	5GKC20005	-	-	-
0...DREN...	5GKC2G004	-	-	G14	5GKC2U004	-	-	U6

NOTE (**) : plug the DRAIN port in case of pump or unidirectional motor

With ports

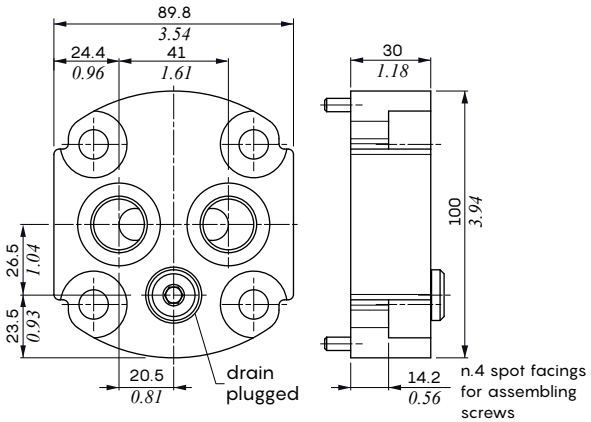
For pumps or unidirectional motors - Description example

Pump: 2XP-A-040-D-EUR-B-N-10-4-G12G12
Motor: 2XM-A-110-D-EUR-H-N-10-4-G12G34

Available on	
2XP/2XM	2XPW/2XMW
•	–

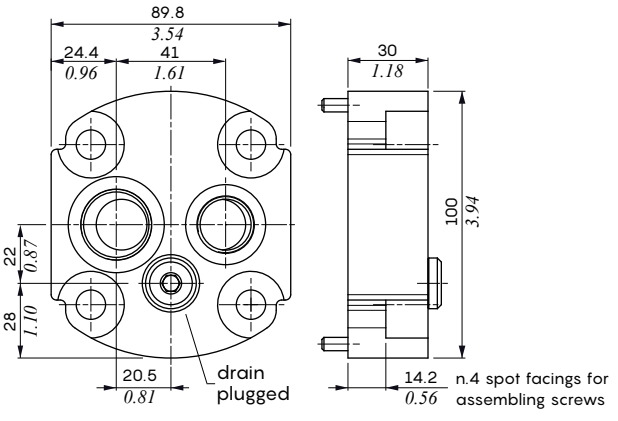
Connection position 1/3/4 - DREN

For suction up to 24 l/min (*6.3 US gpm*) max.



Connection position 1/3/4 - DREN

For suction up to 45 l/min (*11.9 US gpm*) max.
This cover requires type **MU** body kit.



Ordering codes								
Pump/motor connection position	Ports code "G" (BSP threading)				Ports code "U" (UN-UNF threading)			
	CODE	IN*	OUT*	DRAIN**	CODE	IN*	OUT*	DRAIN**
1/3/4...DREN...(standard body)	5GKC2G014	G12	G12	plugged	5GKC2U015	U10	U10	plugged
1/3/4...DREN...(MU type body)	5GKC2G012	G12	G34	plugged	5GKC2U000	U10	U12	plugged

NOTE (*): for connection position 1/3 plug the unused port - (**) : plug the DRAIN port in case of pump or unidirectional motor

Standard cover kits

Aluminium cover kits

With ports

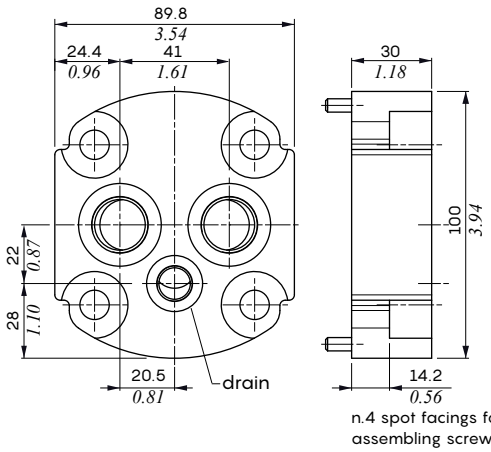
For pumps and motors - Description example

Motor: 2XM-A-110-R-EUR-H-N-10-4-G34G34-DRENG14

Available on	
2XP/2XM	2XPW/2XMW
•	–

Connection position 1/3/4 - DREN

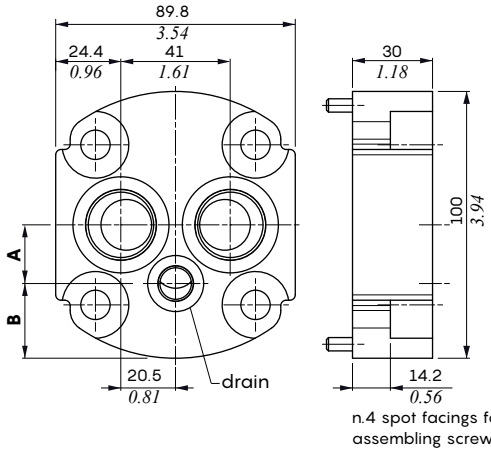
For suction up to 45 l/min (*11.9 US gpm*) max.
This cover requires type **MU** body kit.



n.4 spot facings for assembling screws

Connection position 1/3/4 - DREN

For suction up to 45 l/min (*11.9 US gpm*) max.
This cover requires type **MU** body kit.
Enlarged ports version



n.4 spot facings for assembling screws

Cover dimensions			
Quote		BSP	UN-UNF
A	mm	22	25
	in	*0.87*	*0.98*
B	mm	28	25
	in	*1.10*	*0.98*

Pump/motor connection position	Ordering codes							
	Ports code "G" (BSP threading)				Ports code "U" (UN-UNF threading)			
	CODE	IN*	OUT*	DRAIN**	CODE	IN*	OUT*	DRAIN**
1/3/4...DREN... (MU type body)	5GKC2G000	G12	G12	G14	-	-	-	-
	5GKC2G002	G34	G34	G14	5GKC2U013	U12	U12	U6

NOTE (*): for connection position 1/3 plug the unused port - (**) : plug the DRAIN port in case of pump or unidirectional motor

Standard cover kits

Cast iron cover kits

Pumps and motors with cast iron covers, except for the type without ports, require UNI 5931 screws; for screws kit see page 85.

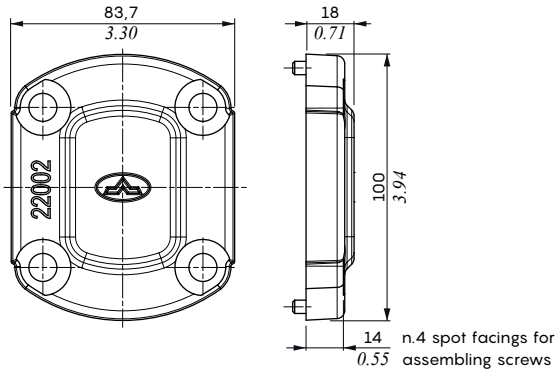
Without ports

Foir pumps and motors - Description example

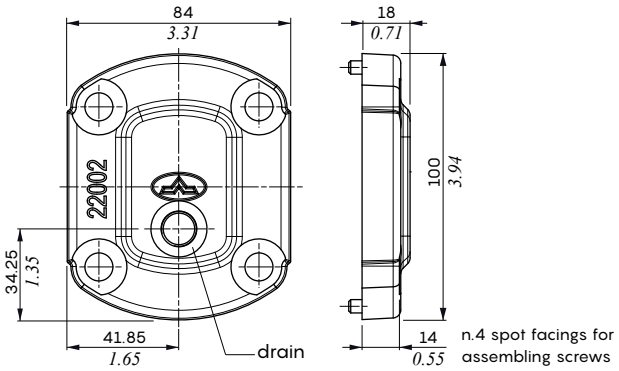
Pump: 2XP-G-040-D-EUR-B-N-10-0-N13N13
Motor: 2XMW-G-110-R-B80C-K-V-15-0-G34G34-DRENG14

Available on	
2XP/2XM	2XPW/2XMW
•	•

Connection position 0



Connection position 0 - DREN



Pump/motor connection position	Ordering codes							
	Ports code "G" (BSP threading)				Ports code "U" (UN-UNF threading)			
	CODE	IN	OUT	DRAIN*	CODE	IN	OUT	DRAIN*
0	5GKC20001	-	-	-	5GKC20001	-	-	-
0...DREN...	5GKC2G207	-	-	G14	5GKC2U003	-	-	U6

NOTE (*) : plug the DRAIN port in case of pump or unidirectional motor

With ports

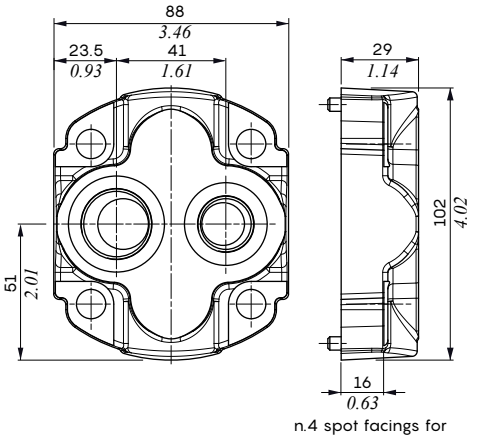
For pumps or unidirectional motors - Description example

Pump: 2XP-G-040-D-SAEA-B-N-14-4-U10U12
Motor: 2XM-G-040-D-SAEA-H-N-14-4-U10U12

Available on	
2XP/2XM	2XPW/2XMW
•	•

Connection position 1/3/4

For suction up to 45 l/min (*11.9 US gpm*) max.
For aluminium pump/motor this cover requires type **MU** body kit.



Pump/motor connection position	Ordering codes			
	Ports code "G" (BSP threading)			
	CODE	IN*	OUT*	DRAIN
1/3/4...DREN... (Aluminium MU type body)	5GKC2G016	G12	G34	-
Pump/motor connection position	**Ports code "U" (UN-UNF threading)**			
	CODE	IN*	OUT*	DRAIN
1/3/4...DREN... (Aluminium MU type body)	5GKC2U011	U10	U12	-

NOTE (*): for connection position 1/3 plug the unused port

Standard cover kits

Cast iron cover kits

With ports

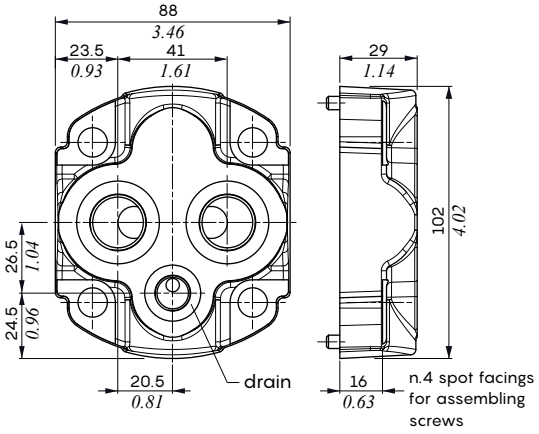
For pumps and motors - Description example

Motor: 2XMW-G-040-R-SAEA-H-N-14-4-U10U10-DRENU6

Available on	
2XP/2XM	2XPW/2XMW
•	•

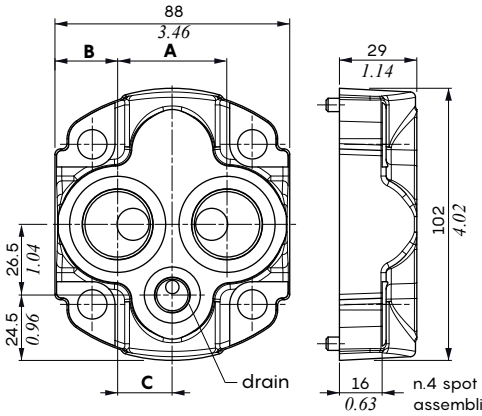
Connection position 1/3/4

For suction up to 24 l/min (*6.3 US gpm*) max.



Connection position 1/3/4

For suction up to 24 l/min (*6.3 US gpm*) max.
Enlarged ports version



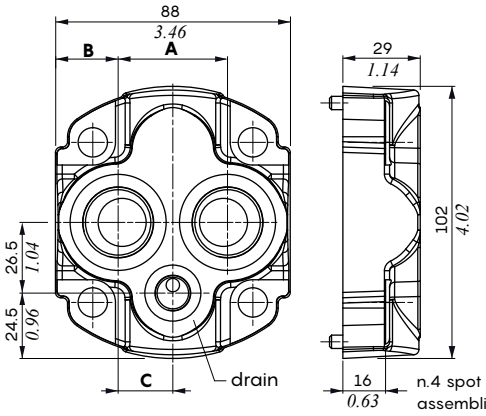
Cover dimensions			
Quote		BSP	UN-UNF
A	mm	41	42
	in	*1.61*	*1.65*
B	mm	23.5	23
	in	*0.93*	*0.91*
C	mm	20.5	21
	in	*0.81*	*0.83*

Pump/motor connection position	Ordering codes							
	Ports code "G" (BSP threading)				Ports code "U" (UN-UNF threading)			
	CODE	IN*	OUT*	DRAIN**	CODE	IN*	OUT*	DRAIN**
1/3/4...DREN...	5GKC2G017	G12	G12	G14	5GKC2U014	U10	U10	U6
	5GKC2G121	G34	G34	G14	5GKC2U010	U12	U12	U6

NOTE (*): for connection position 1/3 plug the unused port - (**) : plug the DRAIN port in case of pump or unidirectional motor

Connection position 1/3/4 - DREN

For suction up to 45 l/min (*11.9 US gpm*) max.
For aluminium pump/motor this cover requires type **MU** body kit.
Enlarged ports version.



Cover dimensions			
Quote		BSP	UN-UNF
A	mm	41	42
	in	*1.61*	*1.65*
B	mm	23.5	23
	in	*0.93*	*0.91*
C	mm	20.5	21
	in	*0.81*	*0.83*

Pump/motor connection position	Ordering codes							
	Ports code "G" (BSP threading)				Ports code "U" (UN-UNF threading)			
	CODE	IN*	OUT*	DRAIN**	CODE	IN*	OUT*	DRAIN**
1/3/4...DREN... (Aluminium MU type body)	5GKC2G120	G34	G34	G14	5GKC2U201	U12	U12	U6

NOTE (*): for connection position 1/3 plug the unused port - (**) : plug the DRAIN port in case of pump or unidirectional motor

Secial cover kits

With auxiliary valves

Cast iron type: C1 configuration

Cover fitted with auxiliary valves; available valves are anti-shock plus anti-cavitation and only anti-cavitation types.
Valve blanking plug is also available.
This cover requires UNI 5931 screws; for screws kit see page 85.
IMPORTANT: for complete cover ordering code please contact Sales Department.

Available on	
2XP/2XM	2XPW/2XMW
•	•

Motor description example

Valve setting (bar)

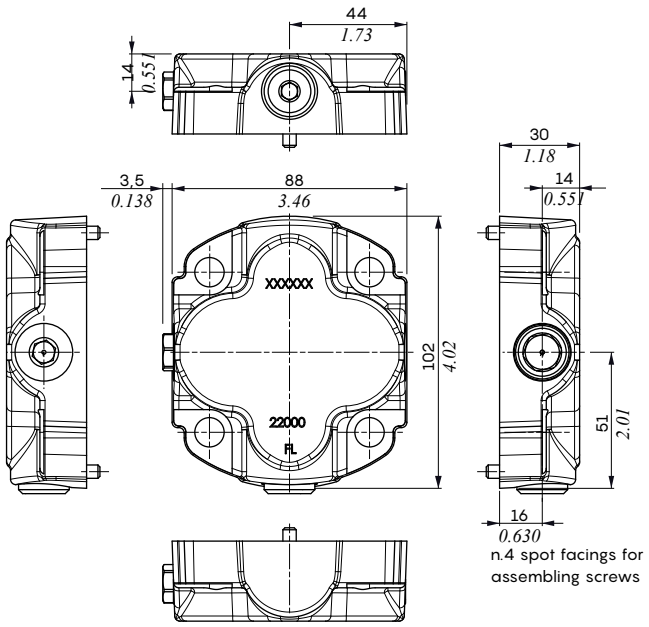
2XMW-G-190-R-SAEA-K-V-10-0-G34G34-C1-DU(140)\S(TAP)-DRENINFG14-<CVN>

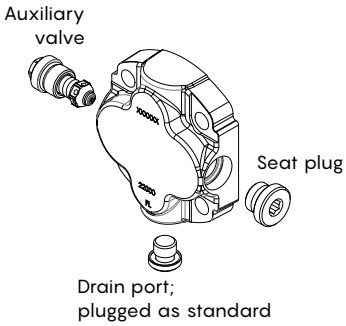
Valve position
D: on clockwise rotation
S: on counterclockwise rotation

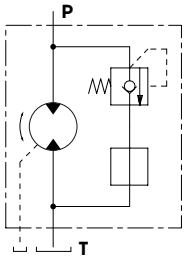
Valve type
See table below

Drain port
G14: G1/4 port
U6: SAE6 port

Drain port position
DRENINF: bottom port
DRENSUP: upper port
DRENTAP: drain plugged







Valves ordering codes				
Valve type	**CODE**	**SYMBOL**	**DESCRIPTION**	**Tightening**
	XTAP522260F	T P	Seat plug	Allen wrench 8 24 Nm *(17.7 lbft)*
TAP	XTAP522441* XTAP522441V**	T P	Valve blanking plug	Wrench 13 24 Nm *(17.7 lbft)*
C	5KIT410000* 5KIT410000V**	T P	Anti-cavitation valve.	Wrench 13 24 Nm *(17.7 lbft)*
U(...) setting (bar)	5KIT332...* 5KIT332...V** setting (bar)	T P	Fixed setting anti-shock and anti-cavitation valves with pressure relief function **Setting** (bar - *psi*): 25 bar *(363 psi)* 30 bar *(435 psi)* 40 bar *(580 psi)* 50 bar *(725 psi)* 63 bar *(914 psi)* 80 bar *(1150 psi)* 100 bar *(1450 psi)* 110 bar *(1590 psi)* 125 bar *(1800 psi)* 140 bar *(2050 psi)* 150 bar *(2150 psi)* 160 bar *(2300 psi)* 175 bar *(2550 psi)* 190 bar *(2750 psi)* 200 bar *(2900 psi)* 210 bar *(3050 psi)* 220 bar *(3190 psi)* 230 bar *(3350 psi)* 240 bar *(3500 psi)* 250 bar *(3600 psi)* 260 bar *(3750 psi)* 270 bar *(3900 psi)* 280 bar *(4050 psi)* 290 bar *(4200 psi)* 300 bar *(4350 psi)* 310 bar *(4500 psi)* 320 bar *(4650 psi)* 340 bar *(4950 psi)* 360 bar *(5200 psi)* 400 bar *(5800 psi)* 420 bar *(6100 psi)*	Wrench 13 24 Nm *(17.7 lbft)*

NOTE: (*) code is referred to valve with NBR O-ring seals. (**) code is referred to valve with FPM O-ring seals.

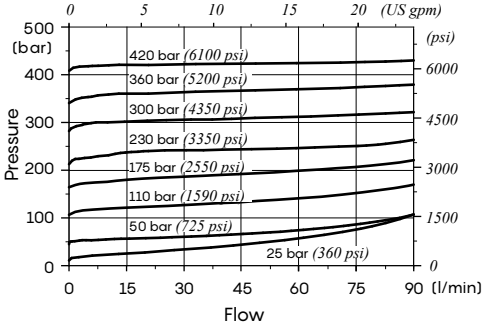
Special cover kits

With auxiliary valves

Cast iron type: C1 configuration

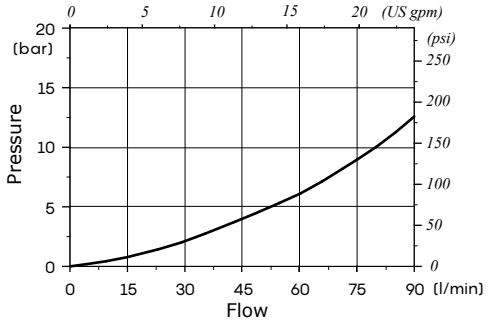
Anti-shock plus anti-cavitation valves setting example

(10 l/min - *2.6 Us gpm*)

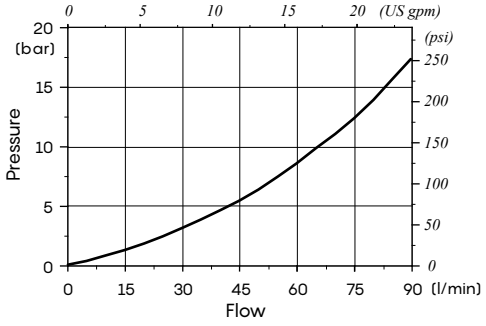


Anti-shock plus anti-cavitation valves pressure drop

(in anticavitation)



Anti-cavitation valve pressure drop



Special cover kits

With auxiliary valves

Cast iron type: C3 (C3V) and C4 (C4V) configurations

These covers are configurable with SAE10/2A cavity relief, check or directional valves; the cavity can be on side or upper/bottom position.
C4 (C4V) configuration includes a dedicated drain line for the valves and can be used on pumps and unidirectional motors.
The covers require UNI 5931 screws; for screws kit see page.
IMPORTANT: for complete cover ordering code please contact Sales Department.

Available on	
2XP/2XM	2XPW/2XMW
•	•

Motor description example

2XMW-G-040-S-EUR-B-N-10-0-G34G12-C3\EF10M20NB\4PD(BQP)\G12\DRENINFG14-12VDC-<CVN>

Cover type
C3: **SAE10/2A cavity on suction side, double drain plugged**
C3V: vertical SAE10/2A cavity, double drain plugged
C4: SAE10/2A cavity on suction side, vertical valve drain line
C4V: vertical SAE10/2A cavity, valve drain line on suction side

Valve type
MC10M(XXX)*: pressure relief valve, direct acting
MP10M(XXX)*: pressure relief valve, pilot operated
MP10T: solenoid proportional pressure relief valve, pilot operated; decreasing pressure with increasing current
MP10X: solenoid proportional pressure relief valve, pilot operated; increasing pressure with decreasing current
UC10A/001B: check valve for anticavitation; free flow from 2 to 1
UC10C/001B: check valve for anticavitation; free flow from 1 to 2
EC10M/20XX**: directional solenoid valves, pilot operated, normally closed, open from 1>2
EF10M/20XX: directional solenoid valves, pilot operated, normally closed, open from 2>1**
EH10M/20XX**: directional solenoid valves, pilot operated, normally closed, check in both direction
TAP: seat plugged

NOTES:
(*) substitute "XXX" with valve setting in bar
(**) substitute "XX" with valve emergency type; see table on page 52
(#) only for solenoid valves

Drain port position
DRENINF: bottom port
DRENSUP: upper port
DRENTAP: drain plugged

Drain port
G14: **G1/4 port**
U6: SAE6 port

Coil voltage #
12VDC, 24VDC

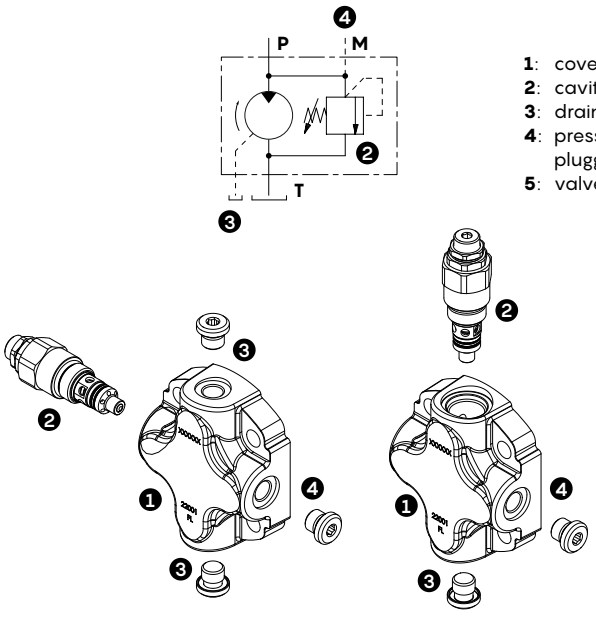
Valve external drain
- : no drain
G12: **G1/2 port**
U10: SAE10 port

Coil type #
- : no coil
BQP, BH, BER: coil type is related to the valve; consult the SAE cartridge catalogue for information

Connector position #
PD: **connection perpedicular to coil axis**
PL: connection parallel to coil axis

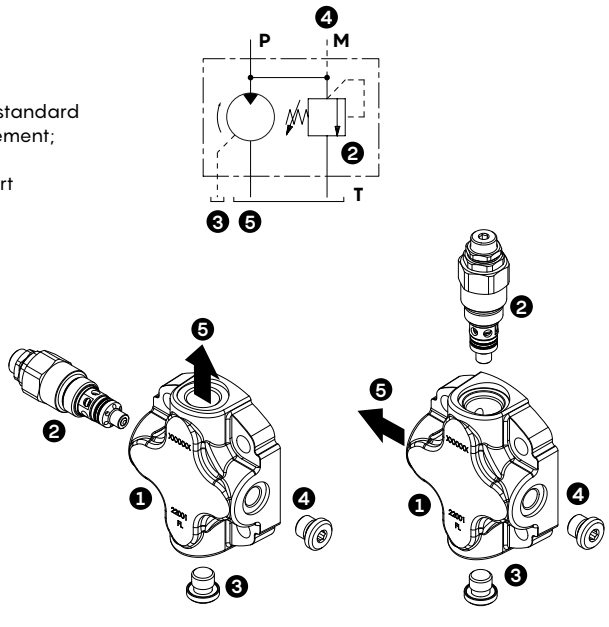
Connector type:#
0: ISO (standard)
2: AMP-JPT
3: Deutsch DT06
4: **Deutsch DT04-2P**
5: Deutsch DT04-4P
6: female Metri-Pack
7: male Metri-Pack
8: male Weather-Pack
9: female Weather-Pack

C3 (C3V) configurations



1: cover type
2: cavity SAE10/2A valve
3: drain port; plugged as standard
4: pressure gauge arrangement; plugged as standard
5: valve external drain port

C4 (C4V) configurations

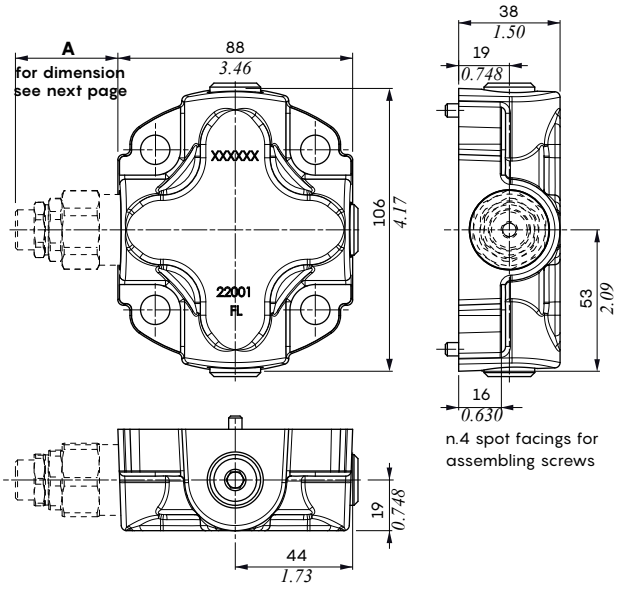


Special cover kits

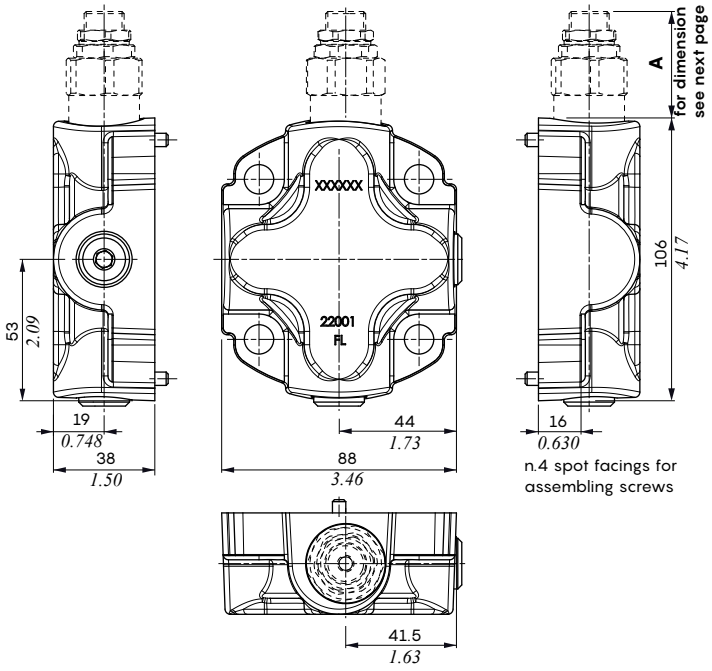
With auxiliary valves

Cast iron type: C3 (C3V) and C4 (C4V) configurations

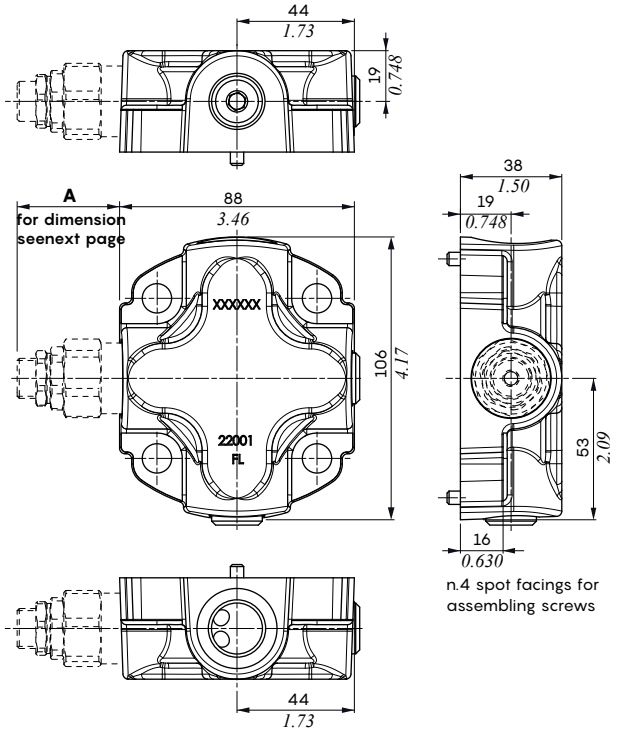
Configuration C3 dimensions



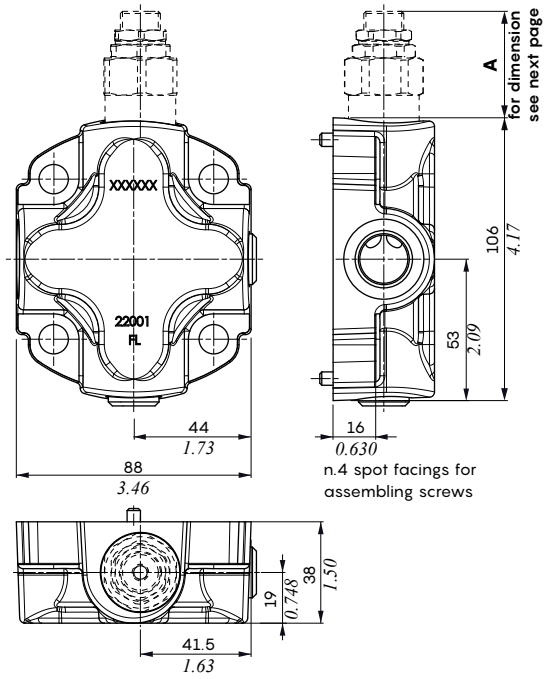
Configuration C3V dimensions



Configuration C4 dimensions



Configuration C4V dimensions

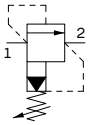
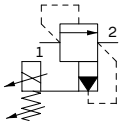
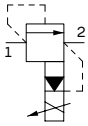
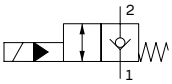
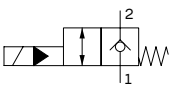
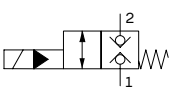


Special cover kits

With auxiliary valves

Cast iron type: C3 (C3V) and C4 (C4V) configurations

For valves data and features curves please consult SAE cavity cartridges valves ctalogue, code D2WWEI01E.

Valves ordering codes					
Valve type	**CODE**	**SYMBOL**	**DESCRIPTION**	**Tightening**	**Dimension A max (see prev. pages)**
	XTAP327460		Seat plug	Wrench 27 50 Nm *(37 lbft)*	6 mm *(0.236 in)*
			Pressure relief valve, direct acting - std. setting @ 5 l/min *(1.3 US gpm)*		
MC10M/0Y2B	0MC10002027		Range 40-110 bar *(580-1900 psi)* Std. setting 80 bar *(1160 psi)*	Wrench 27 50 Nm *(37 lbft)*	40.5 mm *(1.59 in)*
MC10M/0Y3B	0MC10002028		Range 110-220 bar *(1900-3200 psi)* Std. setting 175 bar *(2550 psi)*		
MC10M/0Y4B	0MC10002029		Range 200-260 bar *(2900-3770 psi)* Std. setting 220 bar *(3200 psi)*		
			Pressure relief valve, pilot operated - std. setting @ 5 l/min *(1.3 US gpm)*		
MP10M/0S1B	0MP10002091		Range 5-50 bar *(72.5-725 psi)* Std. setting 30 bar *(435 psi)*	Wrench 27 50 Nm *(37 lbft)*	44.5 mm *(1.75 in)*
MP10M/0S2B	0MP100020A00		Range 50-220 bar *(725-3200 psi)* Std. setting 150 bar *(2200 psi)*		
MP10M/0S3B	0MP10002093		Range 150-350 bar *(2200-5100 psi)* Std. setting 250 bar *(3600 psi)*		
			Solenoid proportional pressure relief valve, pilot operated - Decreasing pressure with increasing current		
MP10T/001B	0MP10002051		Range 8-130 bar *(116-1900 psi)*	Wrench 27 50 Nm *(37 lbft)*	96 mm *(3.78 in)*
MP10T/002B	0MP10002052		Range 8-180 bar *(116-2600 psi)*		
MP10T/003B	0MP10002053		Range 8-240 bar *(116-3500 psi)*		
			Solenoid proportional pressure relief valve, pilot operated - Increasing pressure with decreasing current		
MP10X/001B	0MP10002054		Range 10-120 bar *(145-1750 psi)*	Wrench 27 50 Nm *(37 lbft)*	82 mm *(3.23 in)*
MP10X/002B	0MP10002055		Range 10-160 bar *(145-2300 psi)*		
MP10X/003B	0MP10002056		Range 10-230 bar *(145-3350 psi)*		
MP10X/004B	0MP10002057		Range 10-350 bar *(145-5100 psi)*		
			Check valve for anticavitation		
UC10A/001B	0UC10002000		Opening pressure 0.5 bar *(7.3 psi)* Note: the installation is possibile on C3V and C4V cover types	Wrench 27 50 Nm *(37 lbft)*	10 mm *(0.394 in)*
UC10C/001B	0UC10002009		Opening pressure 0.5 bar *(7.3 psi)*	Wrench 24 60 Nm *(44 lbft)*	4.5 mm *(0.177 in)*
			Directional solenoid valves, pilot operated - Normally closed, open from 1>2		
EC10M/20NB	0EC10002013		Without emergency	Wrench 27 50 Nm *(37 lbft)*	59 mm *(2.32 in)*
EC10M/20FB	0EC10002017		Pull-button emergency		87 mm *(3.43 in)*
EC10M/20TB	0EC10002018		Screw type emergency		73.5 mm *(2.89 in)*
EC10M/20QB	0EC10002019		Pull and twist type with detent emergency		80 mm *(3.15 in)*
			Directional solenoid valves, pilot operated - Normally closed, open from 2>1		
EF10M/20NB	0EF10002001		Without emergency	Wrench 27 50 Nm *(37 lbft)*	59 mm *(2.32 in)*
EF10M/20FB	0EF10002005		Push-button emergency		87 mm *(3.43 in)*
EF10M/20TB	0EF10002006		Screw type emergency		73.5 mm *(2.89 in)*
EF10M/20QB	0EF10002007		Push and twist type with detent emergency		80 mm *(3.15 in)*
			Directional solenoid valves, pilot operated - Normally closed, check in both direction		
EH10M/20NB	0EH10002001		Without emergency	Wrench 27 50 Nm *(37lbft)*	59 mm *(2.32 in)*
EH10M/20FB	0EH10002005		Pull-button emergency		87 mm *(3.43 in)*
EH10M/20TB	0EH10002006		Screw type emergency		73.5 mm *(2.89 in)*
EH10M/20QB	0EH10002007		Push and twist type with detent emergency		80 mm *(3.15 in)*

Special cover kits

With priority valve

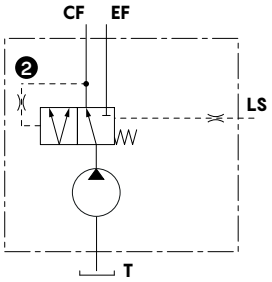
Cast iron type

IMPORTANT: to order the complete cover kit please contact the Sales Department.

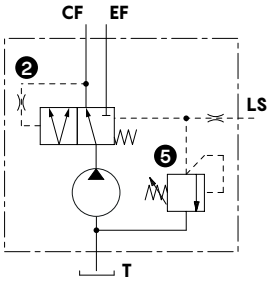
Available on	
2XP/2XM	2XPW/2XMW
•	–

Available circuits

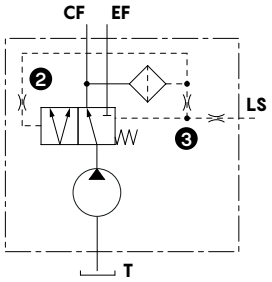
Static type



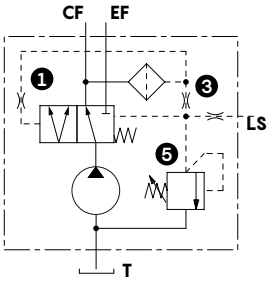
Static type
with pressure relief valve



Dynamic type



Dynamic type
with pressure relief valve



Description example for Dynamic type with pressure relief valve:

Pump: 2XP-G-140-D-SAEB-B-V-45-U10-1M/CP M I (7 \ 1.3 - 0.5) VMP02(S140) - U10 U8 (LSU4)

CF,EF ports position
M: delivery side
A: suction side

LS port position
I: bottom side of the cover
S: upper side of the cover

Damper restrictor

Pressure relief valve
VMP02(V..): valve with range 0-80 bar *(0-1160 psi)*
VMP02(S..): valve with range 50-220 bar ***(725-3200 psi)***
VMP02(R..): valve with range 180-350 bar *(2600-5100 psi)*
- : without valve

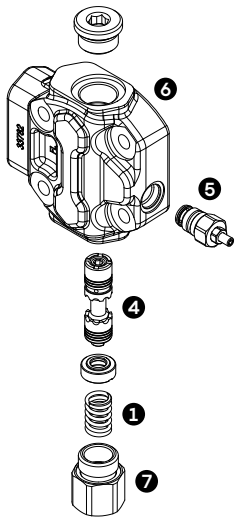
Pressure relief valve setting (bar)

CF port dimension

EF port dimension

LS port dimension

Spring type		Dynamic restrictor		Stand-by pressure value			
				@ 5 l/min *(1.32 US gpm)*		@ 80 l/min *(21.1 US gpm)*	
bar *	*in*	mm *	*in*	bar	*psi*	bar	*psi*
4	*58*	-	-	4	*58*	5.5	*80*
		0.5	*0.019*	5	*72.5*	7	*102*
		0.6	*0.023*	7	*102*	9	*131*
		0.7	*0.027*	8	*116*	11	*160*
7	*102*	-	-	7	*102*	9.5	*138*
		0.5	*0.019*	8.5	*123*	12	*174*
		0.6	*0.023*	12	*174*	15.5	*225*
		0.7	*0.027*	14.5	*210*	19	*276*
10	*145*	-	-	10	*145*	13	*189*
		0.5	*0.019*	13	*189*	16.5	*239*
		0.6	*0.023*	16.5	*239*	21.5	*312*
		0.7	*0.027*	20	*290*	25.5	*370*



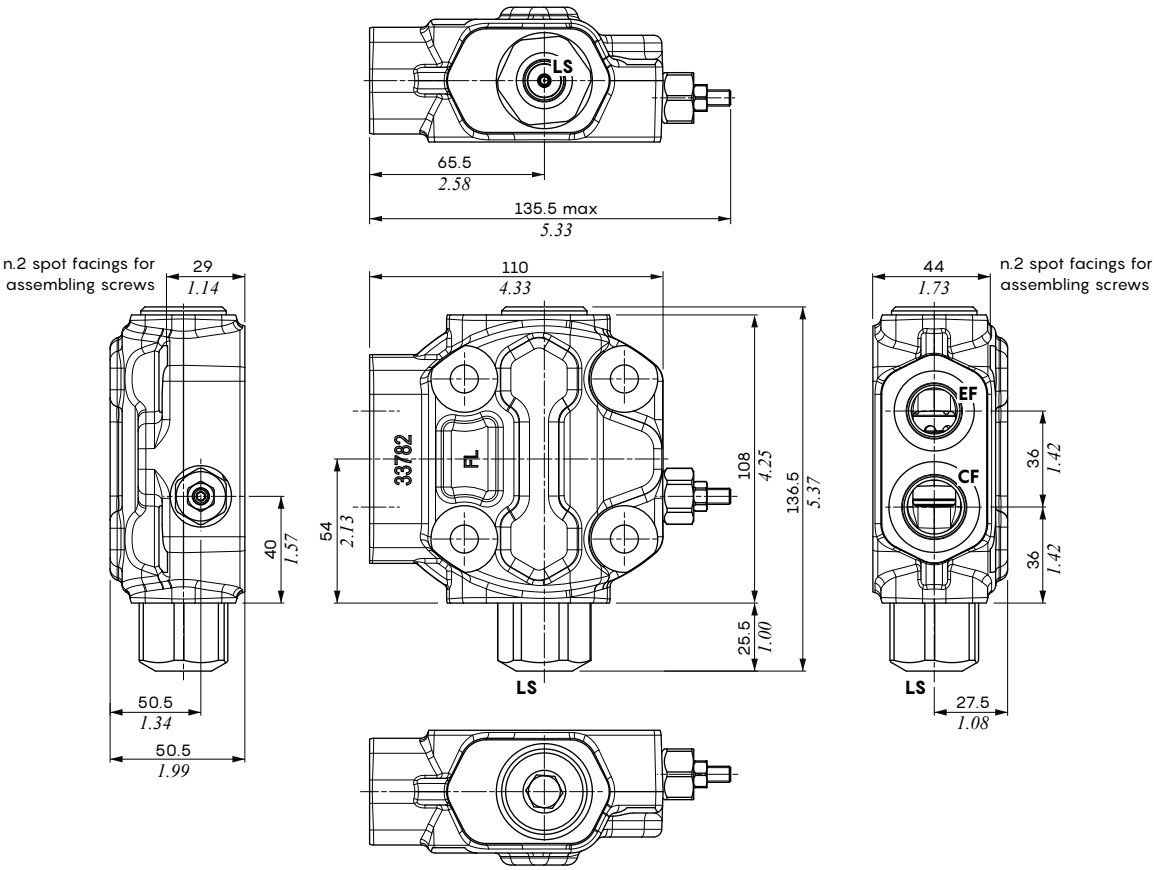
(*): bold text is the reference for the description

Special cover kits

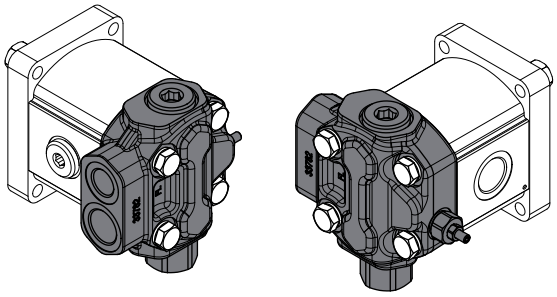
With priority valve

Cast iron type

Dimension example for Dynamic type with pressure relief valve:



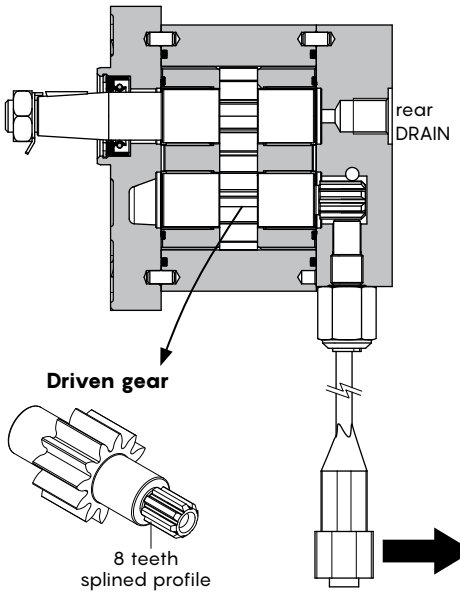
Complete pump example

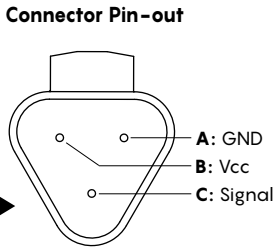


Special cover kits

With speed sensor

These covers require dedicated driven gears.





Driven gear shaft					
Displacement	Ordering codes	Displacement	Ordering codes	Displacement	Ordering codes
040	010053485999	140	010053486399	260	010053486799
060	010053486999	160	010053486499	290	010053486899
080	010053486199	190	010053486599	310	010053486999
110	010053486299	220	010053486699		

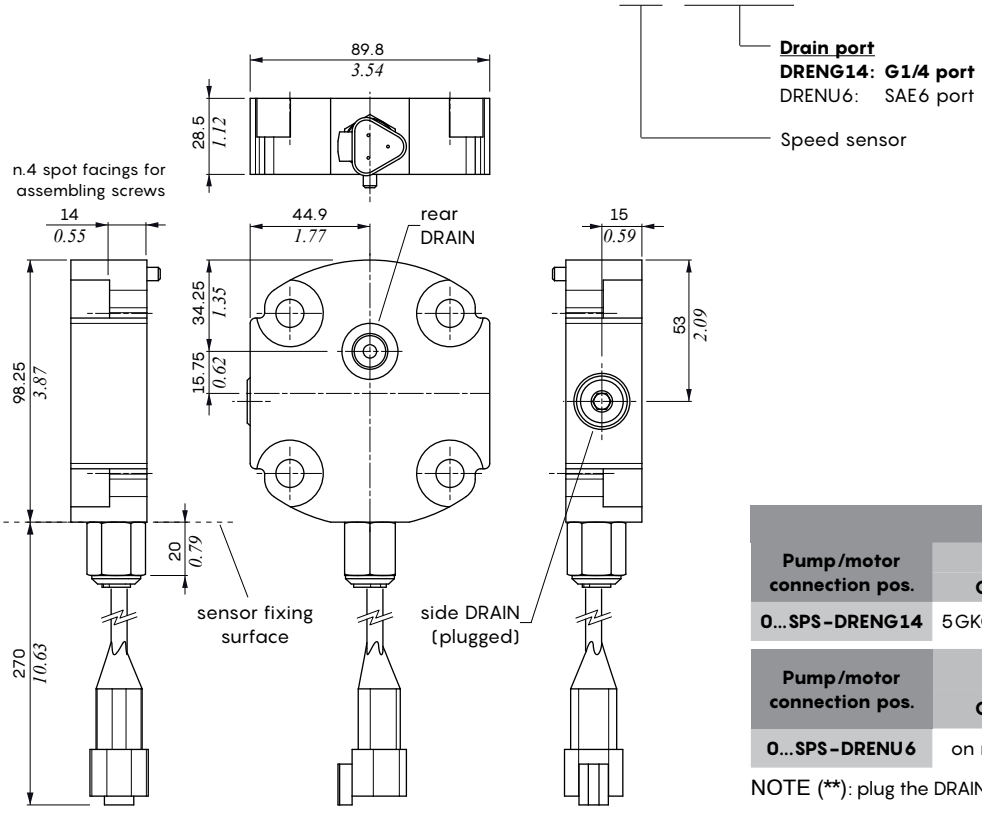
Speed sensor specifications	
Power supply	min. 4.5 V - max. 30 V
Max output current	25 mA
EMC compatibility (according to ISO11452-4 2005)	BCI - Class "C" - 100 mA 1 to 400 MHz
Output signal	Open Collector (NPN)
Environmental temperature for working conditions	from -40 to +150 °C *(from -40 to +302 °F)*
Max pressure (continuous)	400 bar *(5800 psi)*
Connector type	Deutsch DT04-3P
Tightening	wrench 19 - 24 Nm *(17.7 lbft)*

Aluminium type

Description example

Motor:2XM-A-080-R-EUR-H-N-10-0-G12G12-SPS-DRENG14

Available on	
2XP/2XM	2XPW/2XMW
•	–



Ordering codes				
Pump/motor connection pos.	Ports code "G" (BSP threading)			
	CODE	IN	OUT	DRAIN**
0...SPS-DRENG14	5GKC2G204	-	-	G14
Pump/motor connection pos.	Ports code "U" (UN-UNF threading)			
	CODE	IN	OUT	DRAIN**
0...SPS-DRENU6	on request	-	-	U6

NOTE (**): plug the DRAIN port in case of pump or unidirectional motor

Special cover kits

With speed sensor

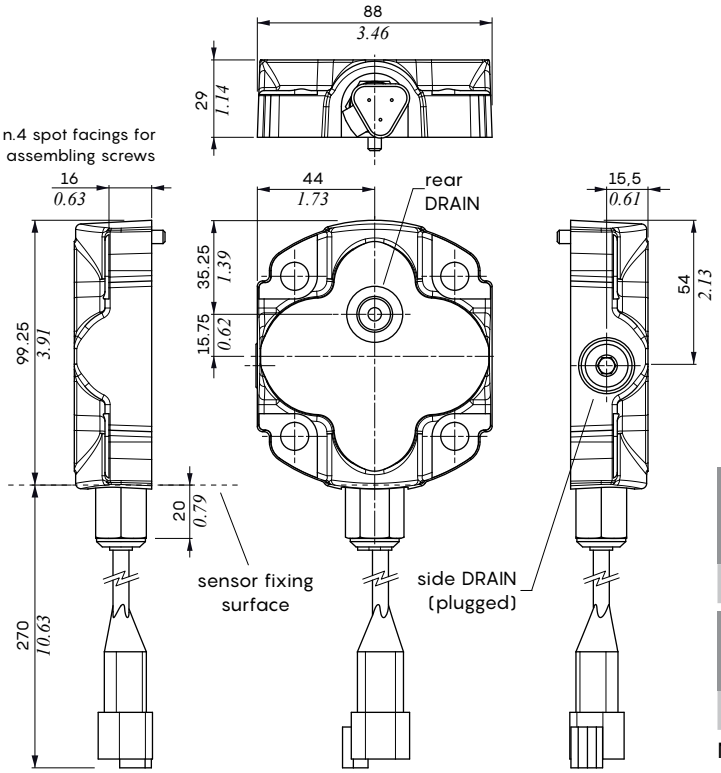
Cast iron type

Pumps/motors with cast iron covers require UNI 5931 screws; for screws kit see page

Description example

Motor: 2XMW-G-080-R-EUR-H-N-10-0-G12G12-SPS-DRENG14 <CVN>

Available on	
2XP/2XM	2XPW/2XMW
•	•



Ordering codes				
Pump/motor connection pos.	Ports code "G" (BSP threading)			
	CODE	IN	OUT	DRAIN*
0...DREN...SPS	5GKC2G218	-	-	G14
Pump/motor connection pos.	Ports code "U" (UN-UNF threading)			
	CODE	IN	OUT	DRAIN*
0...DREN...SPS	-	-	-	U6

NOTE (*): plug the DRAIN port in case of pump or unidirectional motor

Tandem pumps general informations

Walvoil allows tandem kit assembly in several different conditions.
As general indications:
- It is necessary to assemble the units from the largest to the smallest, in terms of power and torque required;
- Maximum rotation speed of multiple pump is equal to the unit with lowest maximum admissible speed;

When using and sizing a tandem pump there are three key points to consider

1) Torque

Each tandem kit allows the transmission of maximum torque between stages. .
It is important to check that the maximum transmitted torque remains below the value allowed by each tandem kit and main shaft.

The torque M of each stage can be calculated with the formula:

$$M = \frac{\Delta p \cdot V}{62.83 \cdot \eta_m}$$

When **Δp** is the maximum pressure created by the circuit on each stage, **V** is the displacement and η_m is the mechanical efficiency.
As example consider a triple pump with shaft type 30
2XP160/TK/2XP080/TK/2XP060.
The maximum pressure peaks that the system can produce at the same time are: 150 bar (*2150 psi*) , 180 bar (*2600 psi*), 120 bar (*1750 psi*)

In this working condition each required torque must be evaluated (an efficiency of 90% is considered).

Stage type	Working pressure		Torque		
	bar	*psi*	Formula	Nm	*lbft*
2XP160	150	*2150*	$M1 = \frac{150 \cdot 16}{62.83 \cdot 0.9}$	42.4	*31.3*
2XP80	180	*2600*	$M2 = \frac{180 \cdot 8}{62.83 \cdot 0.9}$	25.5	*18.8*
2XP60	120	*1750*	$M3 = \frac{120 \cdot 6}{62.83 \cdot 0.9}$	12.7	*9.4*

The main shaft shall transmit a torque **M1+M2+M3** (80.6 Nm - *59.5 lbft*) which must be lower than the limit of shaft type 30 (180 Nm - *133 lbft*).
The first tandem kit shall transmit a torque **M2+M3** (38.2 Nm - *28.2 lbft*) which shall be lower than the limit of the kit TK (100 Nm - *73.8 lbft*); in this case it is acceptable.
The second tandem kit shall transmit a torque **M3** (12.7 Nm - *9.4 lbft*)which shall be lower than the limit of the kit TK (100 Nm - *73.8 lbft*); in this case it is acceptable.

2) Suction

The tandem is always possible with separate suction; in this case each pump uses its own suction pipe.

A common suction feature is available with Walvoil gear pumps.
In the case of common suction, two main conditions must be met.

- Sizing of the common inlet.

In the suction pipe it is recommended to have a cross section that ensures an oil speed between 0.6 and 2 m/s.

- Internal connection between stages

Each kit has a recommended maximum flow.
For example, the **2XP+2XP** double stage pump with **TK** tandem kit allows a max flow of 24 l/min (*6.3 US gpm*) shared between the stages.
This value is provided for each tandem kit and is valid under recommended service conditions.

In case one of the 2 above conditions is not met the pump can cavitate, reducing the life of the components.

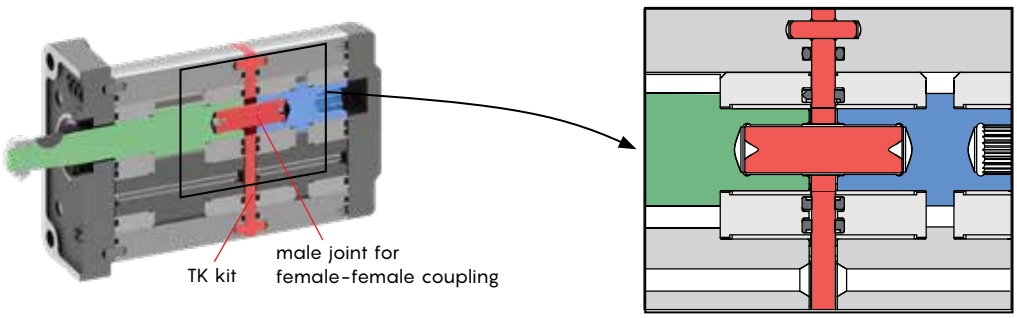
Tandem pumps general informations

3) Stage with "drain" separation (separate stages tandem)

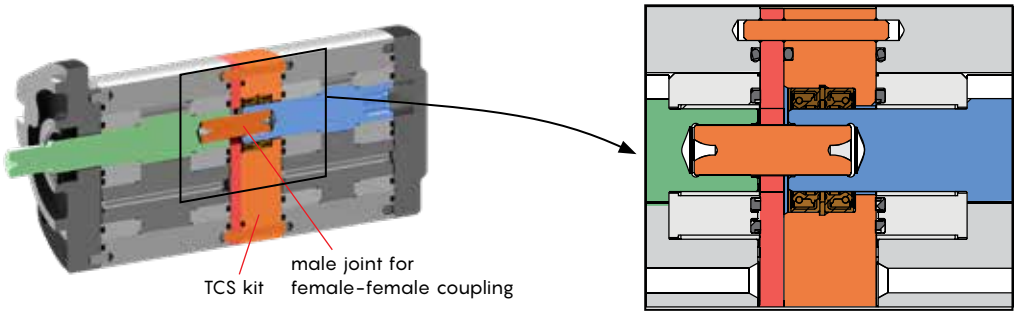
In a tandem pump the internal drain can be common or separate.
A common internal drain minimizes the size of the tandem but does not prevent oil from mixing between stages
The common drain connection cannot be applied when the pump has to operate with different types of oils.
For each application it is important to define if the oil can be mixed inside the pumps.

Example:

TK tandem kit, 2XP+2XP common drain pumps



TCS tandem kit, 2XP+2XP separate drain pumps



Tandem kits – list and specifications

2XP or 2XPW primary stage

Xtreme Series pumps can be used as primary stage with Group 1 secondary stage.

2X_ + 1S tandem kits										
Primary stage + Secondary stage	Kit type	CODE	Common suction compliant	Max. suction flow between stages		Max. transmitted torque		Drain connection	2nd stage shaft type	Note
				l/min	*US gpm*	Nm	*lbft*			
2XP+1SP	TC	5GKTC21X1	No	-	-	30	*22*	Yes	18	Kit fitted with Group 1 aluminium special EUR flange
	TS	5GKTS2110	No	-	-	30	*22*	No	10	This kit requires 1SP secondary stage complete pump with EUR flange
2XP+1XP	TK	5GKTK2110	Yes	16.5	*4.4*	30	*22*	Yes	18F	This kit requires special 1XP body kit; type CR2P. Contact Sales Department

Xtreme Series pumps can be used as primary and secondary stages.

2X_ + 2X_ tandem kits										
Primary stage + Secondary stage	Kit type	CODE	Common suction compliant	Max. suction flow between stages		Max. torque between stages		Drain connection	2nd stage shaft type	Note
				l/min	*US gpm*	Nm	*lbft*			
2XP+2XP	TK	5GKTK2200	Yes	24	*6,3*	100	*73.8*	Yes	18F	
	TCS	5GKTK2201	No	-	-	100	*73.8*	No	18L	
	TS	5GKTS2210	No	-	-	80	*59*	No	10	This kit requires 2XP secondary stage complete pump with EUR flange
	VD	-	Yes						18F	Kit for hi-low pressure tandem pump, fitted with unloader valve. The kit cannot be ordered separately
2XPW+2XP	TK	5GKTK2200	Yes	24	*6,3*	100	*73.8*	Yes	18F	
	TCS	5GKTK2201	No	-	-	100	*73.8*	No	18L	
2XPW+2XPW	TK	5GKTK2202	Yes	45	*12*	100	*73.8*	Yes	18F	
	TCS	5GKTK2201	No	-	-	100	*73.8*	No	18L	

3GP primary stage, 2XP_ secondary stage

Xtreme Series pumps can be used as secondary stage with Group 3, type 3GP, as primary stage.

3GP + 2X_ tandem kits										
Primary stage + Secondary stage	Kit type	CODE	Common suction compliant	Max. suction flow between stages		Max. transmitted torque		Drain connection	2nd stage shaft type	Note
				l/min	*US gpm*	Nm	*lbft*			
3GP+2XP	TC	5GKTC32X1	No	-	-	100	*73.8*	Yes	18F	Kit fitted with Group 2 aluminium EUR flange
	TS	5GKTS3200	No	-	-	100	*73.8*	No	10	This kit requires 2XP secondary stage complete pump with EUR flange

3TPW primary stage, 2X_ secondary stage

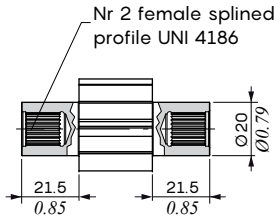
Xtreme Series pumps can be used as secondary stage with Group 3, type 3TPW, as primary stage.

3TPW + 2X_ tandem kits										
Primary stage + Secondary stage	Kit type	CODE	Common suction compliant	Max. suction flow between stages		Max. transmitted torque		Drain connection	2nd stage shaft type	Note
				l/min	*US gpm*	Nm	*lbft*			
3TPW(G2)+2XP	TN	5GKTN3200	No	-	-	100	*73.8*	Yes	18F	Common suction configuration is available on request; special pump bodies are required
3TPW(G2)+2XPW	TN	5GKTN3200	No	-	-	100	*73.8*	Yes	18F	
3TPW(G0D)+2XP	TK	5GKTK3200	No	-	-	100	*73.8*	Yes	18F	
3TPW(G0D)+2XPW	TK	5GKTK3200	No	-	-	100	*73.8*	Yes	18F	
	TKU	5GKTK3201	Yes	45	*12*	100	*73.8*	Yes	18F	

Second stage dedicated driving gears

Type 18F

This shaft is also used for flange with outboard bearings (SUP version).

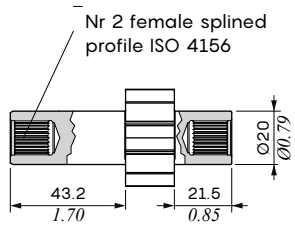


Max transmitted torque = 100 Nm - *74lbft*

Driving gear shaft kit			
Displacement	**Ordering codes**	**Displacement**	**Ordering codes**
040	5GKI2X0132*	**190**	5GKI2X0138
060	5GKI2X0133*	**220**	5GKI2X0139
080	5GKI2X0134*	**260**	5GKI2X0140
110	5GKI2X0135	**290**	5GKI2X0141
140	5GKI2X0136	**310**	5GKI2X0142
160	5GKI2X0137		

(*) only for 2XP/2XM

Type 18L



Max transmitted torque = 100 Nm - *74lbft*

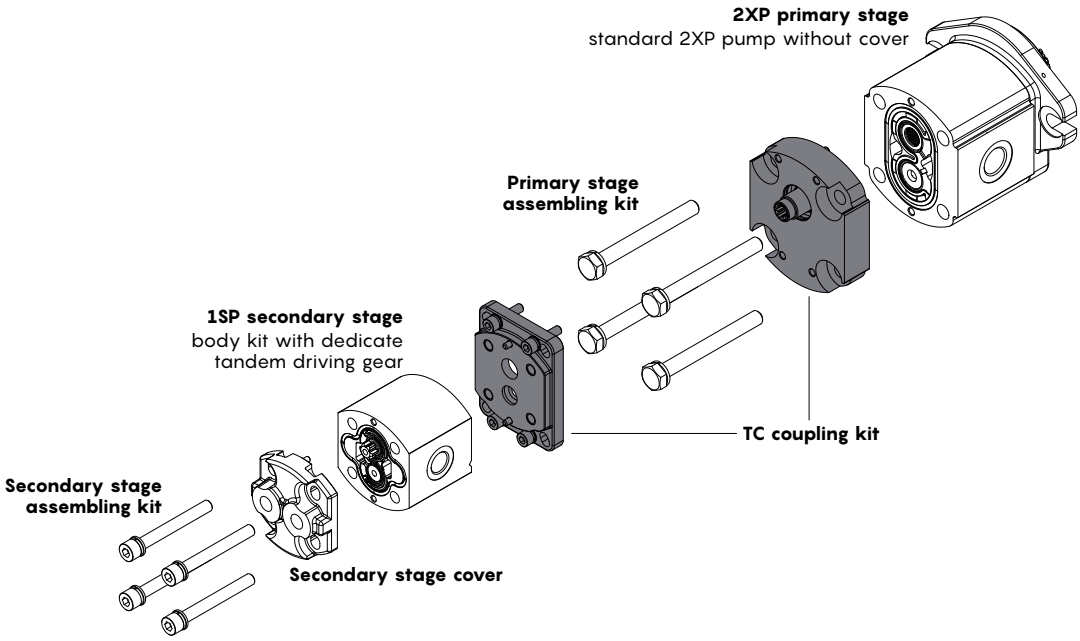
Driving gear shaft kit			
Displacement	**Ordering codes**	**Displacement**	**Ordering codes**
040	010043472199*	**190**	010043472799
060	010043472299*	**220**	010043472899
080	010043472399*	**260**	010043472999
110	010043472499	**290**	010043473099
140	010043472599	**310**	010043473199
160	010043472699		

(*) only for 2XP/2XM

2XP or 2XPW primary stage

2XP+1SP - TC tandem dimension

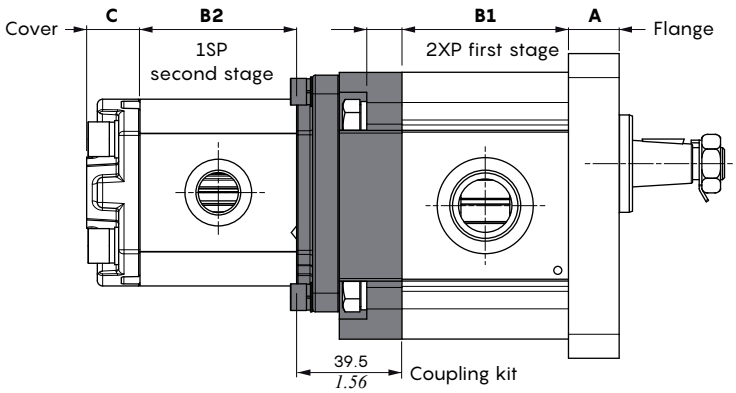
For tandem dimension see table on next page.



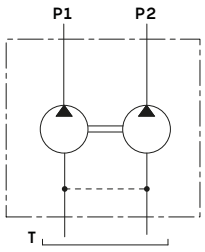
Description example

2XP-A-110-D-EUR-B-N-10-0-G34G12/ TC /1SP-A-063-0-G38G38

First stage | Coupling kit | Second stage



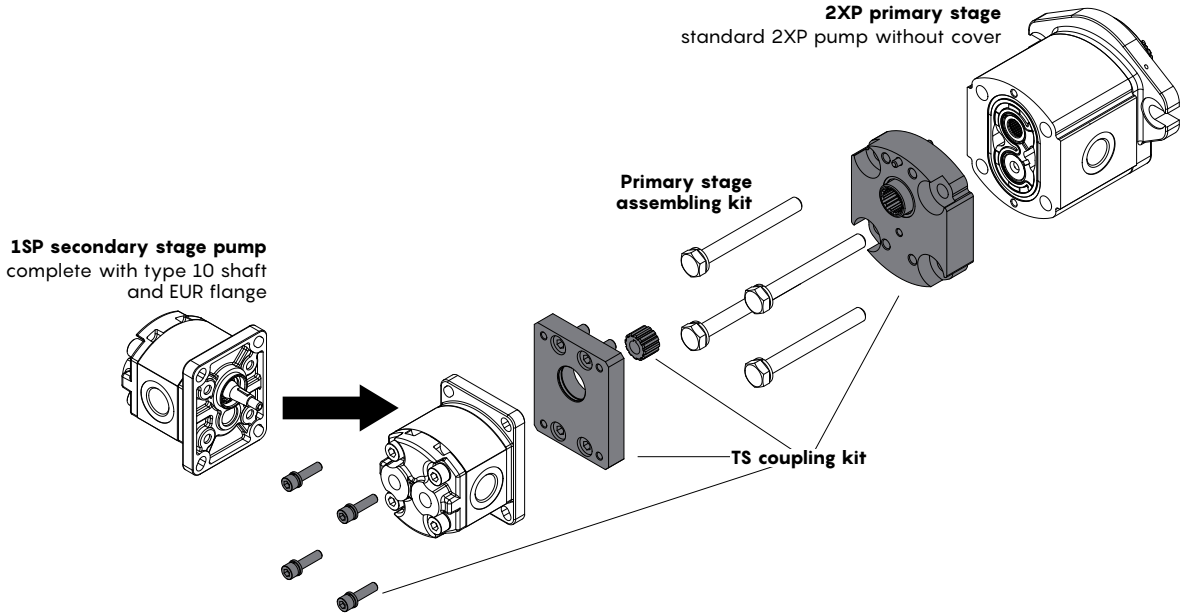
Hydraulic circuit



2XP or 2XPW primary stage

2XP+1SP - TS separate stages tandem dimension

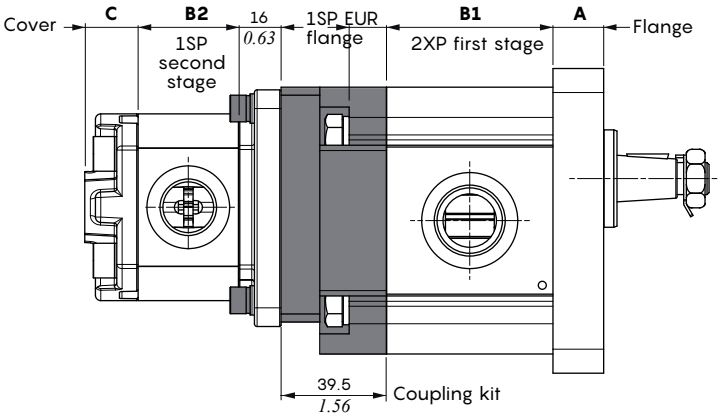
This separate stages tandem is available if you have a complete 1SP pump with 1:8 tapered shaft and EUR flange.



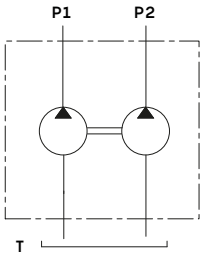
Description example

2XP-A-110-D-EUR-B-N-10-0-G34G12/ TS /1SP-A-063-0-G38G38

First stage — Coupling kit — Second stage



Hydraulic circuit



2XP flange		
Type	A	
	mm	*in*
SAEA	19	*0.75*
SAEB	20	*0.79*
EUR	19	*0.75*
B80	21	*0.83*
B50	18.8	*0.74*
E52	16.3	*0.64*

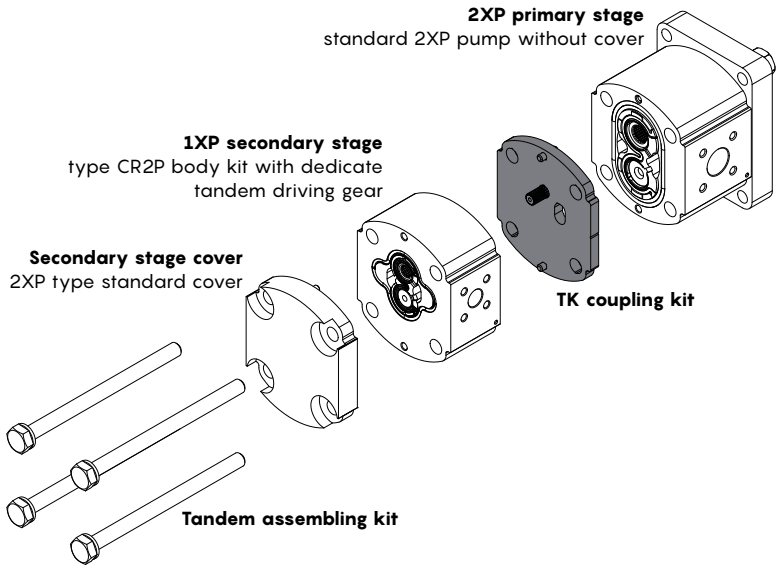
2XP body		
Displacement	B1	
	mm	*in*
040	50.8	*2*
060	54.1	*2.13*
080	58.3	*2.29*
110	62.4	*2.46*
140	67.4	*2.65*
160	71.6	*2.82*
190	76.6	*3.01*
220	81.6	*3.21*
260	87.4	*3.44*
290	90.7	*3.57*
310	95.8	*3.77*

1SP body		
Displacement	B2	
	mm	*in*
009	37.6	*1.48*
012	38.7	*1.52*
016	40.4	*1.59*
020	41.9	*1.65*
025	43.9	*1.73*
032	46.6	*1.83*
037	48.6	*1.91*
042	50.5	*1.99*
050	53.6	*2.11*
063	58.7	*2.31*
078	64.4	*2.54*
098	72.3	*2.85*

1SP cover		
Port configuration	C	
	mm	*in*
0 / 2	20	*0.79*

2XP+1XP - TK tandem dimension

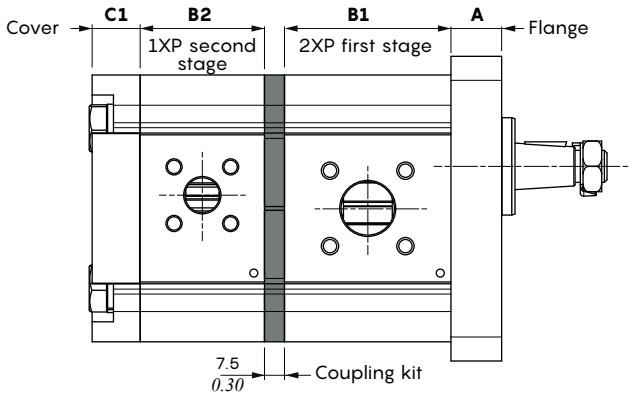
This tandem is dedicated to common suction configuration and it is suitable for installations where the small size of the kit is crucial.



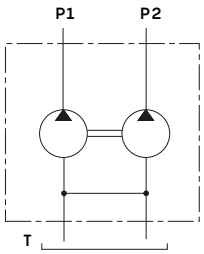
Description example

2XP-A-110-D-EUR-B-N-10-0-T20T15/ TK /1XP-A-032(CR2P)-0-T13T13

First stage — Coupling kit — Second stage



Hydraulic circuit



2XP flange		
Type	A	
	mm	*in*
SAEA	19	*0.75*
SAEB	20	*0.79*
EUR	19	*0.75*
B80	21	*0.83*
B50	18.8	*0.74*
E52	16.3	*0.64*

2XP body		
Displacement	B1	
	mm	*in*
040	50.8	*2*
060	54.1	*2.13*
080	58.3	*2.29*
110	62.4	*2.46*
140	67.4	*2.65*
160	71.6	*2.82*
190	76.6	*3.01*
220	81.6	*3.21*
260	87.4	*3.44*
290	90.7	*3.57*
310	95.8	*3.77*

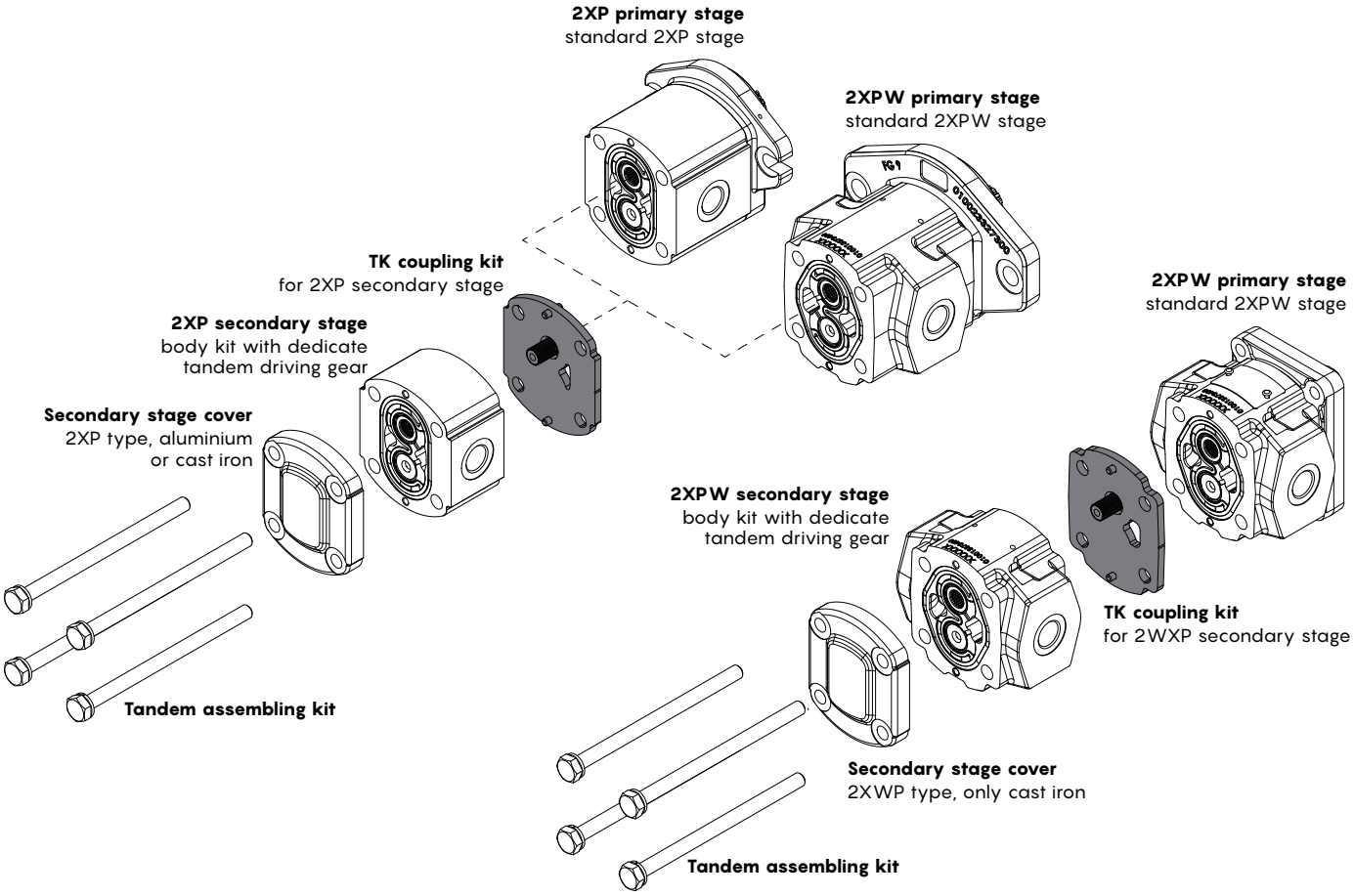
1XP-CRP2 body		
Displacement	B2	
	mm	*in*
009	37.6	*1.48*
012	38.7	*1.52*
016	40.4	*1.59*
020	41.9	*1.65*
025	43.9	*1.73*
032	46.6	*1.83*
037	48.6	*1.91*
042	50.5	*1.99*
050	53.6	*2.11*
063	58.7	*2.31*
078	64.4	*2.54*
098	72.3	*2.85*

2XP cover			
Port configuration		C1	
		mm	*in*
0	aluminium	20.5	*0.81*
	cast iron	18	*0.71*

2XP or 2XPW primary stage

2XP/2XPW - TK tandem dimensions

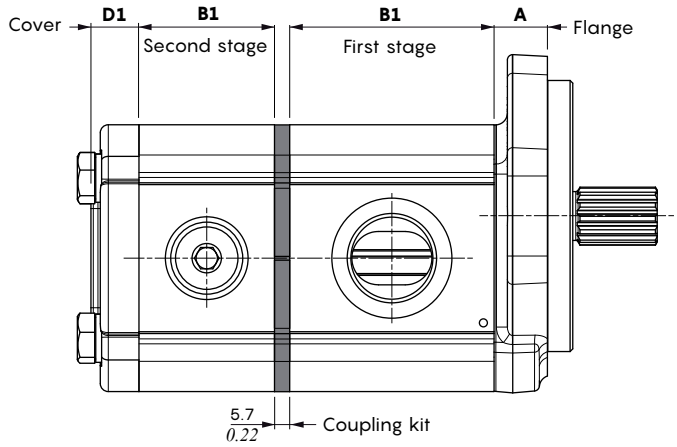
It is possible to combine the 2XP and 2XPW pumps to obtain different tandem configurations, with single and separate suction. The intermediate kit depends on configuration type; only 2XP stages, mixed or only 2XPW stages, as highlighted in the following drawings.



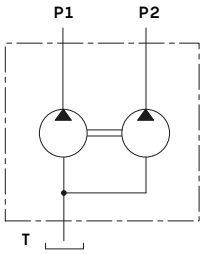
2XP double stage description example

2XP-G-190-D-SAEB-B-N-45-0U-G1G12/ TK /2XP-G-040-0M-G12

First stage — Coupling kit — Second stage



Hydraulic circuit

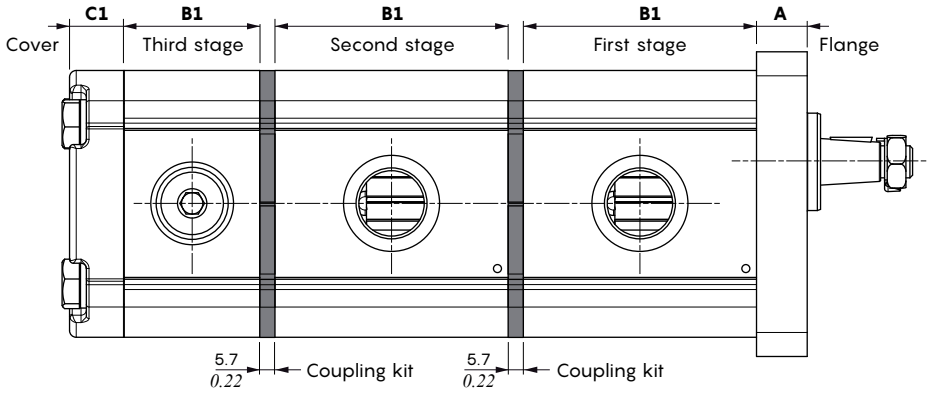


2XP/2XPW - TK tandem dimensions

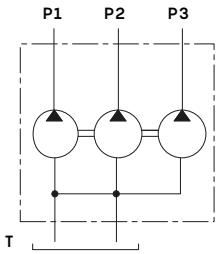
2XP three stages description example

2XP-A-260-D-EUR-B-N-10-0-G34G12/ TK /2XP-A-260-0U-G34G12/ TK /2XP-A-040-0M-G12

First stage — Coupling kit — Second stage — Coupling kit — Third stage



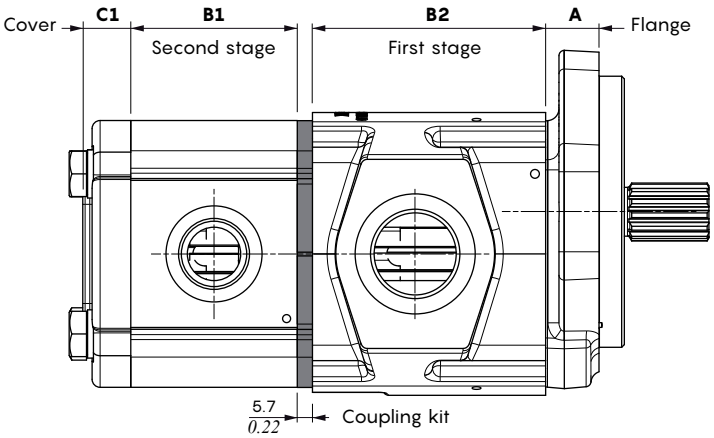
Hydraulic circuit



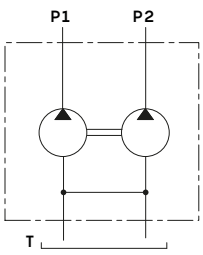
2XPW+2XP double stage description example

2XPW-G-260-D-SAEB-B-N-45-0-G1G12/ TK /2XP-G-110-0-G34G12

First stage — Coupling kit — Second stage



Hydraulic circuit



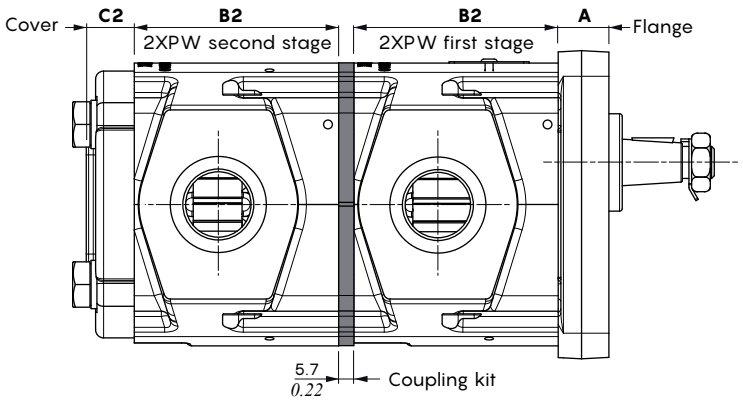
2XP or 2XPW primary stage

2XP/2XPW - TK tandem dimensions

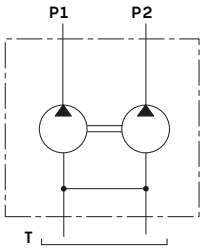
2XPW double stage description example

2XPW-G-190-D-EUR-B-N-10-0-G34G12/ TK /2XPW-G-190-0-G34G12

First stage — Coupling kit — Second stage



Hydraulic circuit



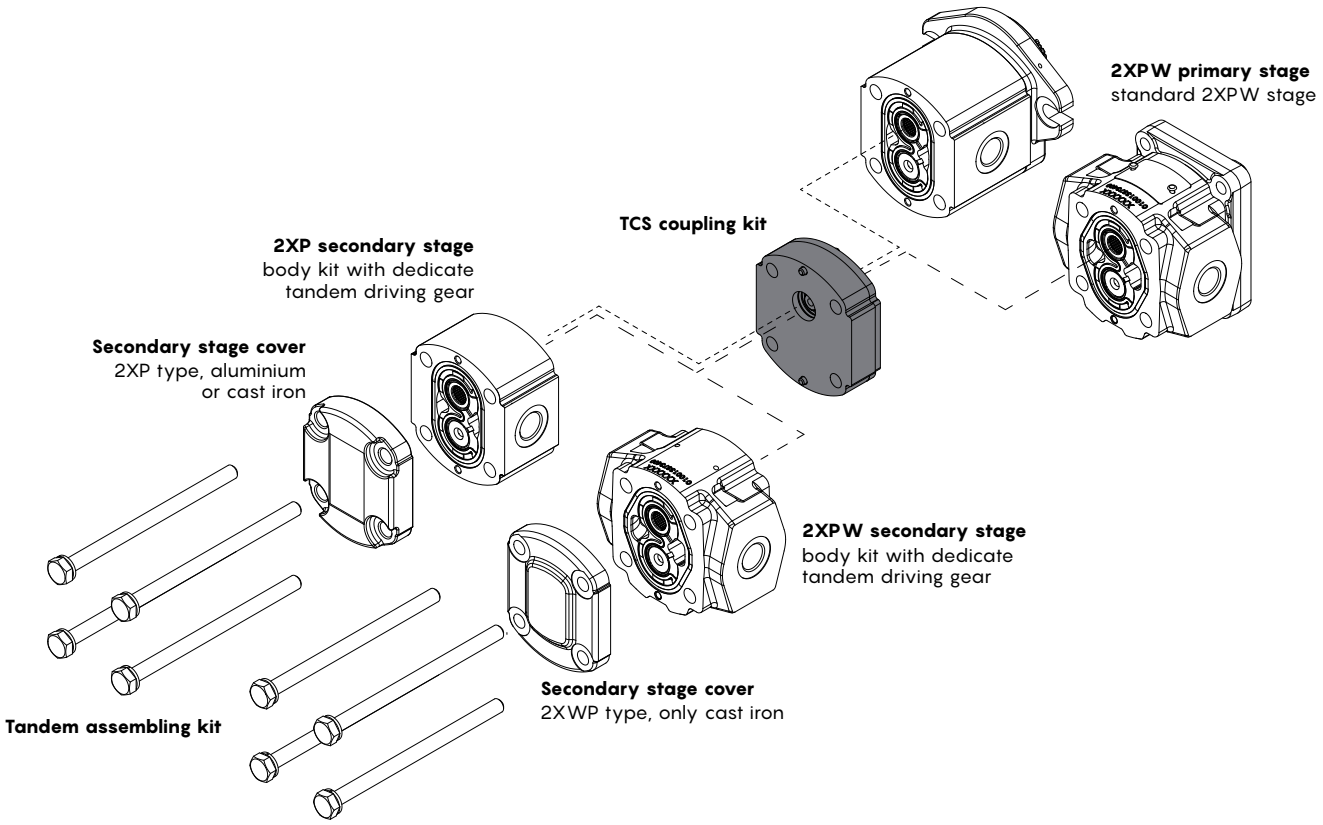
Flange		
Type	A	
	mm	*in*
SAEA	19	*0.75*
SAEB	20	*0.79*
EUR	19	*0.75*
B80	21	*0.83*
B50	18.8	*0.74*
E52	16.3	*0.64*

Body				
Displacement	B1 (2XP)		B2 (2XPW)	
	mm	*in*	mm	*in*
040	50.8	*2*	-	-
060	54.1	*2.13*	-	-
080	58.3	*2.29*	-	-
110	62.4	*2.46*	62.4	*2.46*
140	67.4	*2.65*	67.4	*2.65*
160	71.6	*2.82*	71.6	*2.82*
190	76.6	*3.01*	76.6	*3.01*
220	81.6	*3.21*	81.6	*3.21*
260	87.4	*3.44*	87.4	*3.44*
290	90.7	*3.57*	90.7	*3.57*
310	95.8	*3.77*	95.8	*3.77*

Cover					
Port configuration		C1 (2XP)		C2 (2XPW)	
		mm	*in*	mm	*in*
0	aluminium	20.5	*0.81*	-	-
	cast iron	18	*0.71*	18	*0.71*

2XP/2XPW TCS separate stages tandem dimensions

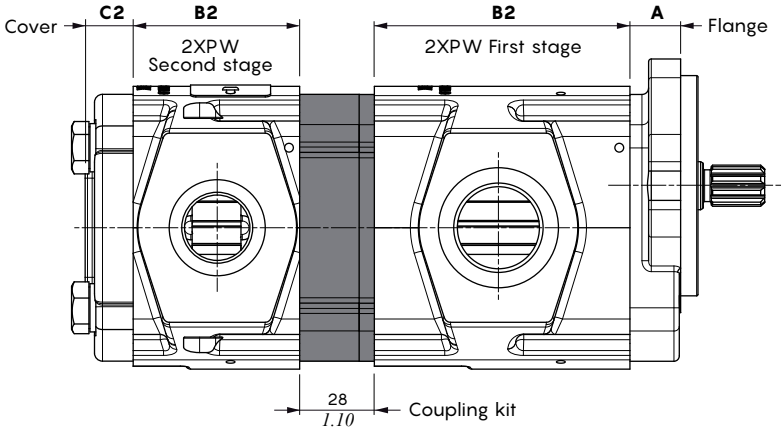
Separete stages tandem is available on 2XP and 2XPW series pumps.
For tandem dimensions see table on page 66.



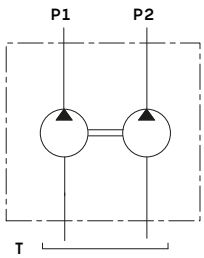
Description example

2XPW-G-310-D-SAEA-B-N-14-0-G34G34/ TCS /2XPW-G-110-0-G12G12

First stage — Coupling kit — Second stage



Hydraulic circuit



2XP or 2XPW primary stage

2XP/2XPW - VD tandem with unloader valve dimension

The hi-low pump is a double stage tandem pump fitted with a sequence valve on the intermediate flange.
When the pumps works at low pressure, the flows of the two pumps add up, allowing a rapid approaching or moving away of the actuator.
When the pressure exceeds the setting value of the sequence valve, the second pump's exhaust goes to the tank.

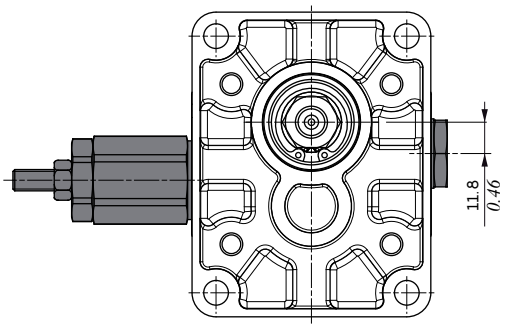
- This pump has single suction and delivery: the suction has always to be at the second stage, while delivery has always to be at the first stage. Not all porting dimensions are available, the configurations must be checked with Technical Department.
- The sequence valve can be set from 25 bar up to 100 bar *(from 362 up to 1450 psi)*

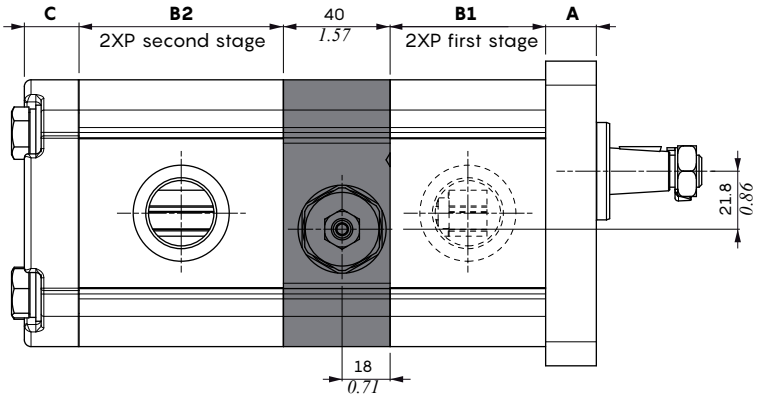
2XP double stage description example

Rotation direction — Valve setting (bar)

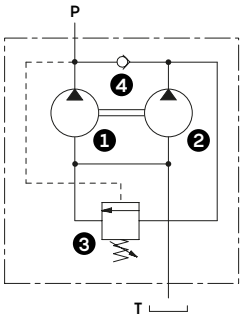
2XP-A-080-D-EUR-B-N-10-0M-G34/ VD(60) /2XP-A-190-0U-G34

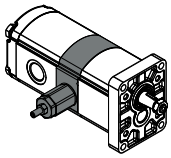
First stage — Coupling kit with unloader valve — Second stage



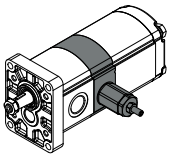


Hydraulic circuit

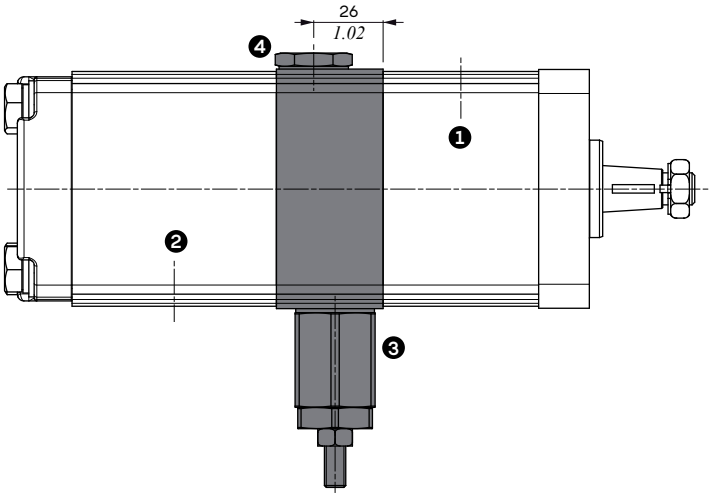




Configuration for "D" clockwise rotation



Configuration for "S" counterclockwise rotation

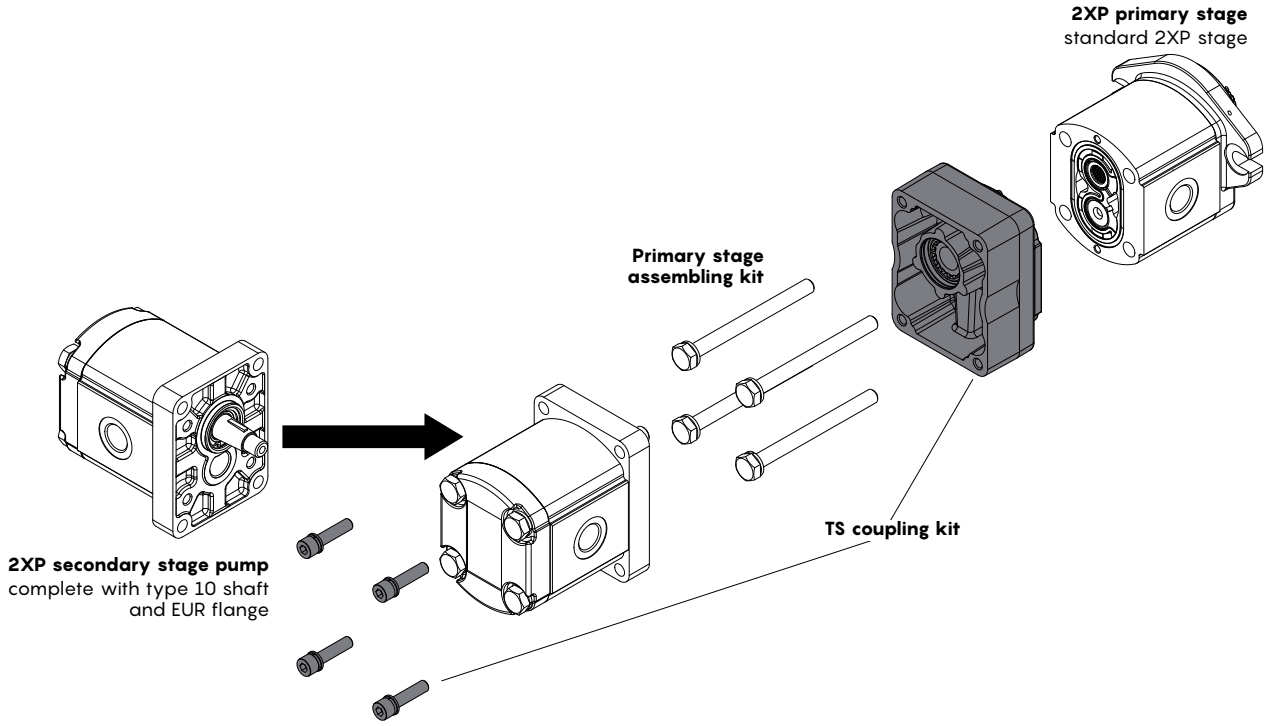


Flange			Body			Body			Cover			
Type	A		1st stage displacement	B1		2nd stage displacement	B2		Port configuration		C)	
	mm	in		mm	in		mm	in			mm	in
SAEA	19	0.75	040	50.8	2	160	71.6	2.82	0	aluminium	20.5	0.81
SAEB	20	0.79	060	54.1	2.13	190	76.6	3.01		cast iron	18	0.71
EUR	19	0.75	080	58.3	2.29	220	81.6	3.21				
B80	21	0.83	110	62.4	2.46	260	87.4	3.44				
B50	18.8	0.74	140	67.4	2.65	290	90.7	3.57				
E52	16.3	0.64				310	95.8	3.77				

2XP or 2XPW primary stage

2XP - TS separate stages tandem dimension

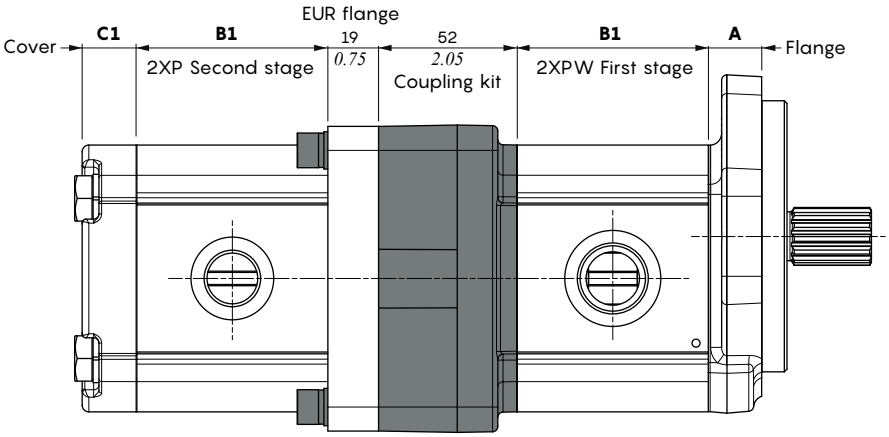
This separate stages tandem is available if you have a complete 2XP pump with 1:8 tapered shaft and EUR flange.
For tandem dimensions see table on page 66.



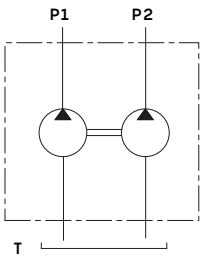
Description example

2XP-GA-140-D-SAEA-B-N-30-0-G34G12/ TS /2XP-A-140-0-G12G12

First stage — Coupling kit — Second stage

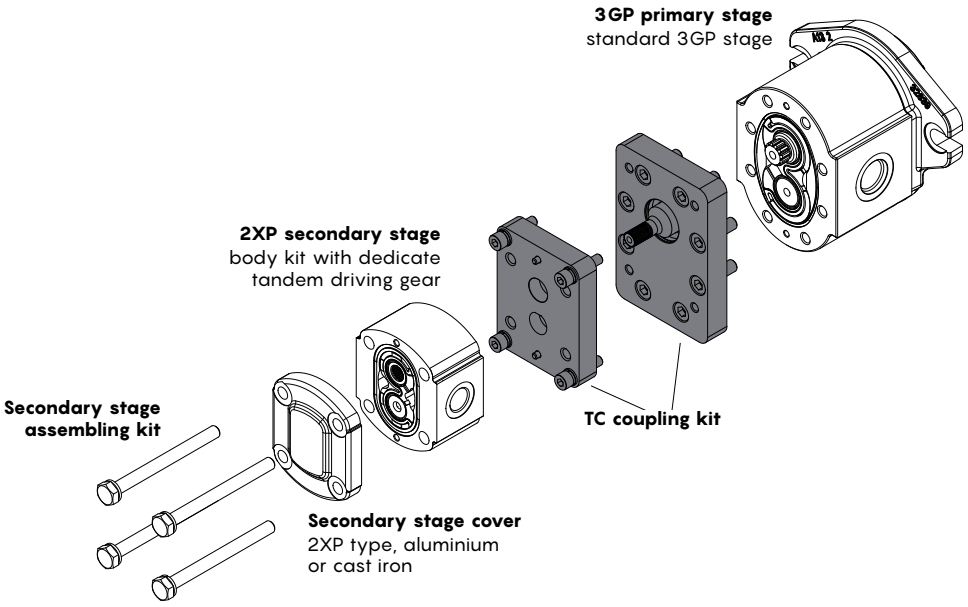


Hydraulic circuit



Group 3 primary stage

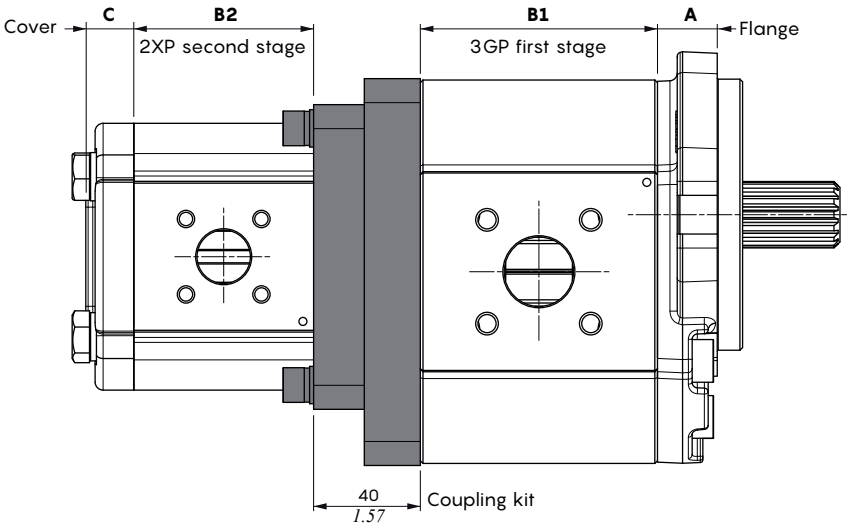
3GP+2XP - TC tandem dimension



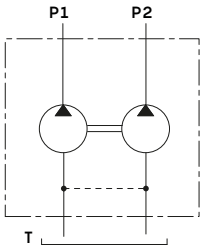
Description example

3GP-G-300-D-SAEB-B-N-C15-0-T26T18/ TC /2XP-G-140-0-T20T15

First stage — Coupling kit — Second stage



Hydraulic circuit



3GP flange		
Type	A	
	mm	*in*
SAEA	19	*0.75*
SAEB	20	*0.79*
EUR	19	*0.75*
B80	21	*0.83*
B50	18.8	*0.74*
E52	16.3	*0.64*

3GP body		
Displacement	B1	
	mm	*in*
190	79.9	*3.15*
230	82.9	*3.26*
300	88.9	*3.5*
340	91.9	*3.62*
370	94.9	*3.74*
440	100.9	*3.97*
530	107.9	*4.25*
620	115.9	*4.56*
700	122.4	*4.82*
770	127.9	*5.04*

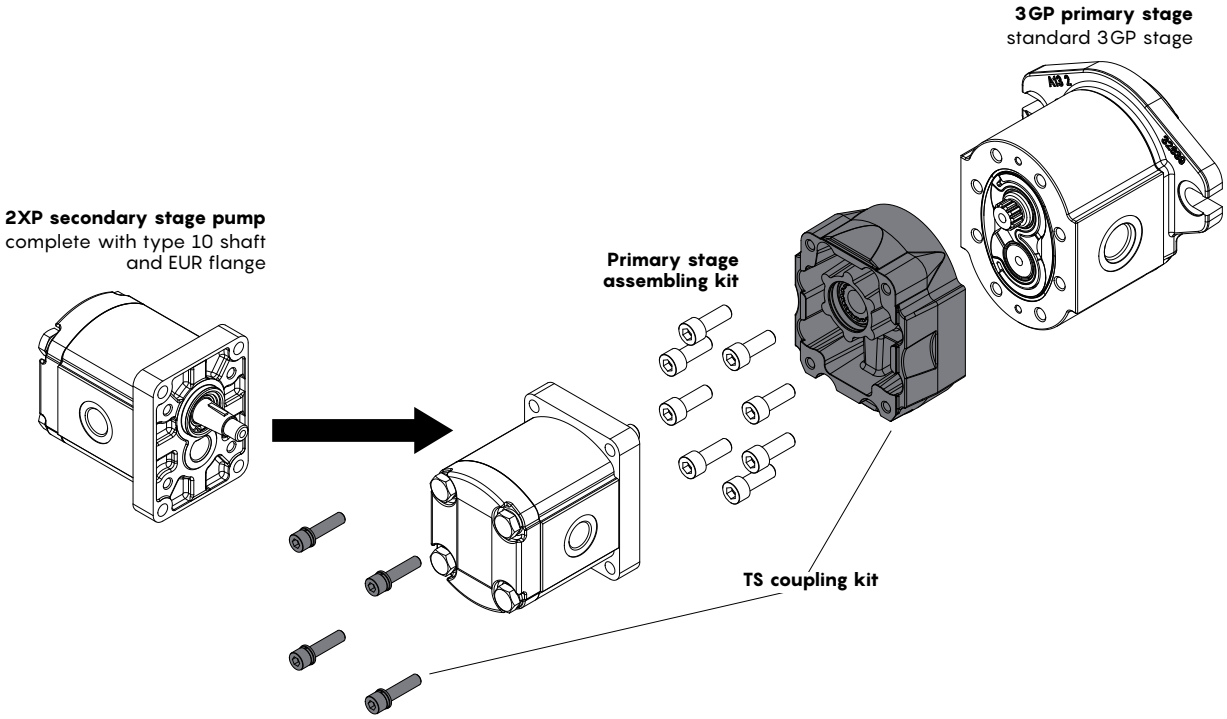
2XP body		
Displacement	B2	
	mm	*in*
040	50.8	*2*
060	54.1	*2.13*
080	58.3	*2.29*
110	62.4	*2.46*
140	67.4	*2.65*
160	71.6	*2.82*
190	76.6	*3.01*
220	81.6	*3.21*
260	87.4	*3.44*
290	90.7	*3.57*
310	95.8	*3.77*

2XP cover			
Port configuration		C	
		mm	*in*
0	aluminium	20.5	*0.81*
	cast iron	18	*0.71*
1 / 3 / 4	aluminium	30	*1.18*
	cast iron	29	*0.97*
0-ACS	cast iron	30	*1.18*
0-SPS	aluminium	28.5	*1.12*
	cast iron	-	-

Group 3 primary stage

3GP+2XP – TS separate stages tandem dimension

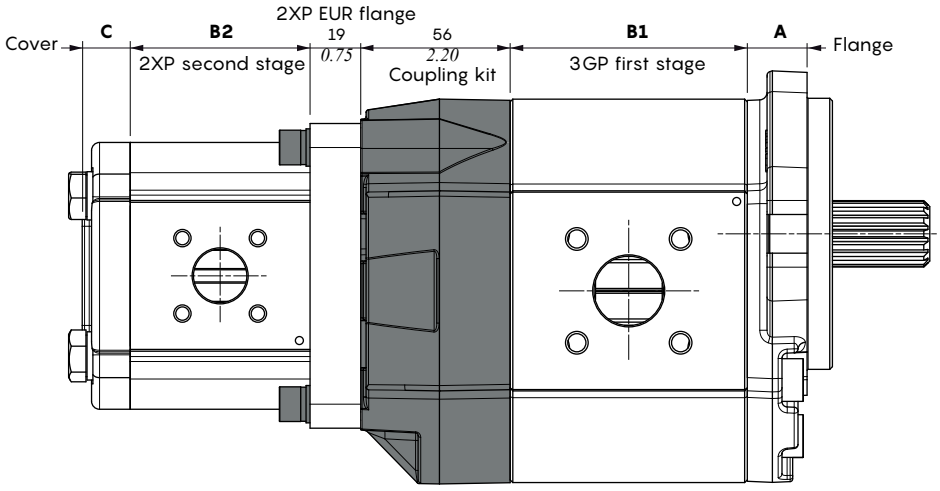
This separate stages tandem is available if you have a complete 2XP pump with 1:8 tapered shaft and EUR flange.
For stages dimensions see table on previous page.



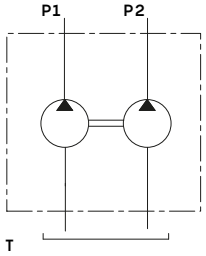
Description example

3GP-G-300-D-SAEB-B-N-C15-0-T26T18/ TS /2XP-A-140-0-T20T15

First stage — Coupling kit — Second stage



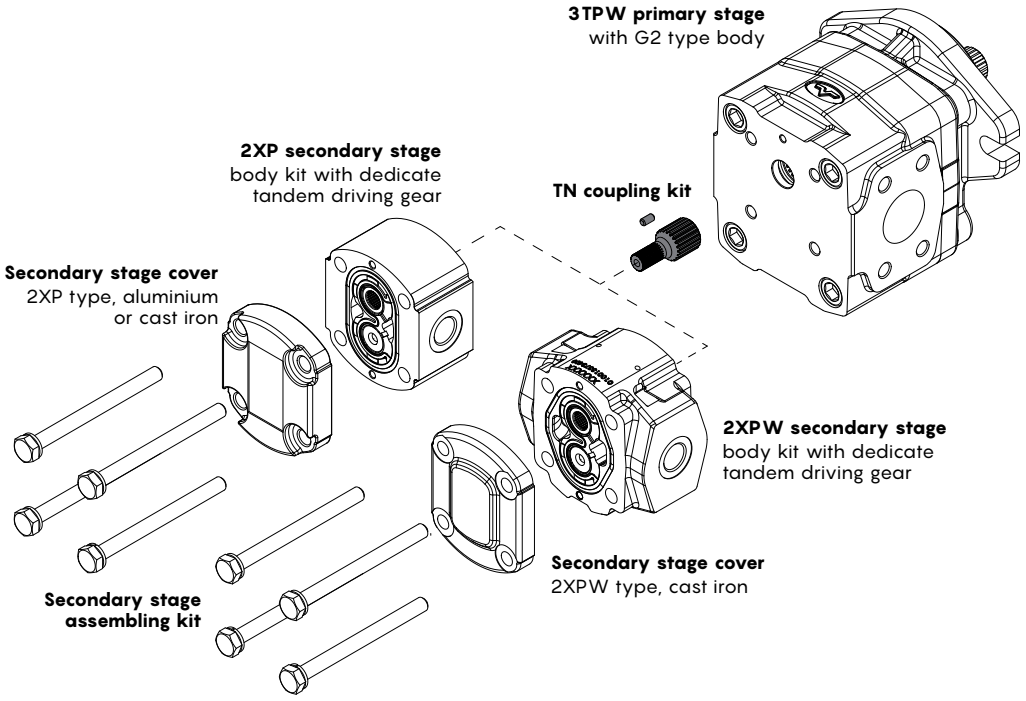
Hydraulic circuit



Group 3 primary stage

3TPW+2XP/2XPW – TN tandem dimensions

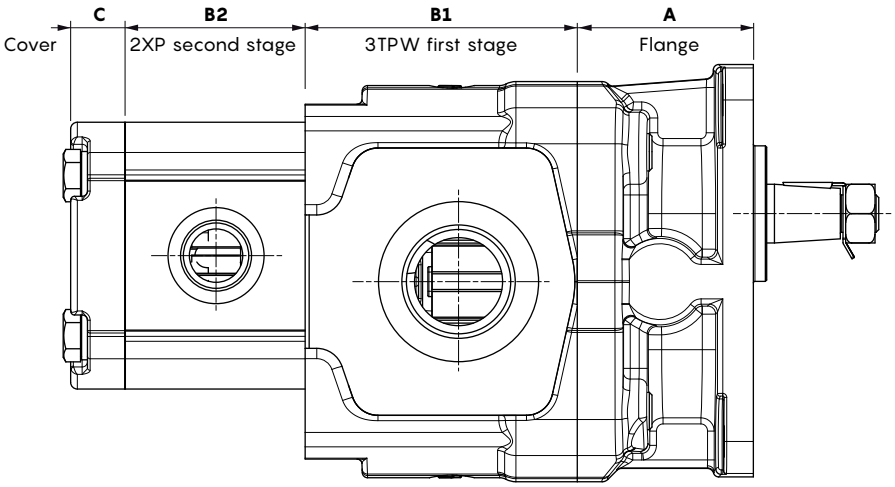
This tandem is available for common and separate suction configurations, and it consists of the first stage type 3TPW with G2 body and second stage type 2XP or 2XPW.
NOTE: In order to install TN coupling kit it's necessary to disassembly the 3TPW main shaft.



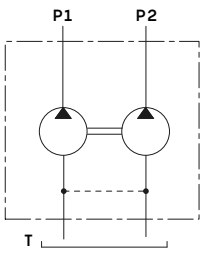
Separate suction description examples

3TPW-G2-650-D-EUR2-B-N-10-0U-G114G1/2XP-A-140-0-G12G12

First stage — Second stage



Hydraulic circuit



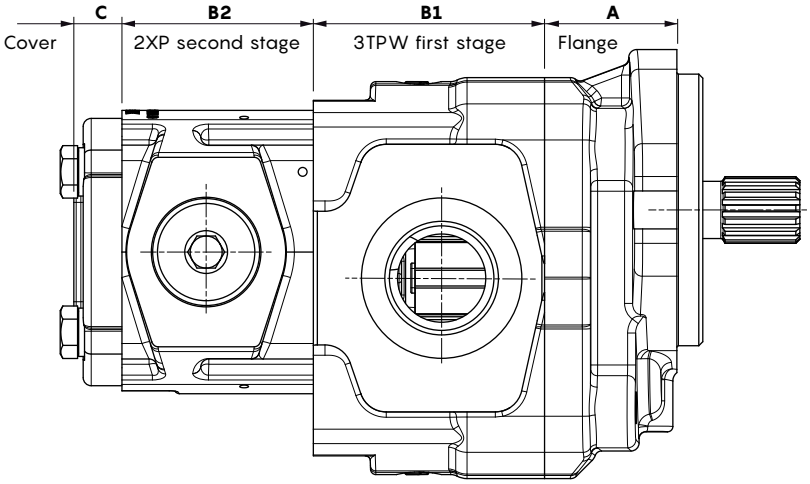
3TPW+2XP/2XPW - TN tandem dimensions

Common suction configuration is available on request; it requires 3TPW pump with type G2U special body.
Contact Sales Department.

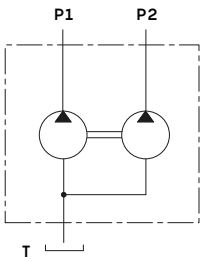
Common suction description example

3TPW-G2U-650-D-EUR2-B-N-10-0U-G114G1/2XPW-G-140-0M-G12G12

First stage — Second stage



Hydraulic circuit



3TPW flange		
Type	A	
	mm	in
SAEB	49.5	1.95
SAEC-2F	49.5	1.95
SAEC-4F	82	3.23
EUR	66	2.60

3TPW-G2/G2U body		
Displacement	B1	
	mm	in
230	72	2.83
280	75	2.99
320	78	3.07
390	83.5	15.35
430	86.5	3.41
470	89.5	3.52
520	92.5	3.64
560	96	3.78
600	99	3.90
650	102	4.02
710	107	4.21
790	113	4.45

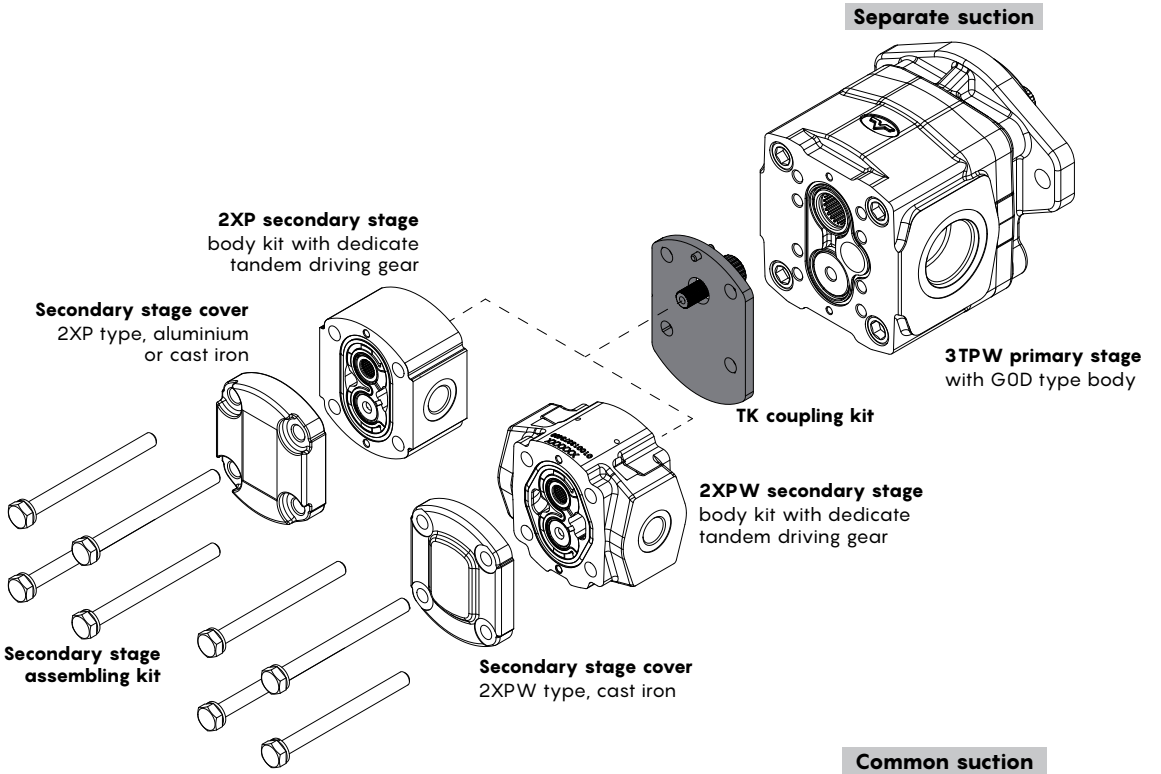
2XP/2XPW body				
Displacement	B2 (2XP)		B2 (2XPW)	
	mm	in	mm	in
040	50.8	2	-	-
060	54.1	2.13	-	-
080	58.3	2.29	-	-
110	62.4	2.46	62.4	2.46
140	67.4	2.65	67.4	2.65
160	71.6	2.82	71.6	2.82
190	76.6	3.01	76.6	3.01
220	81.6	3.21	81.6	3.21
260	87.4	3.44	87.4	3.44
290	90.7	3.57	90.7	3.57
310	95.8	3.77	95.8	3.77

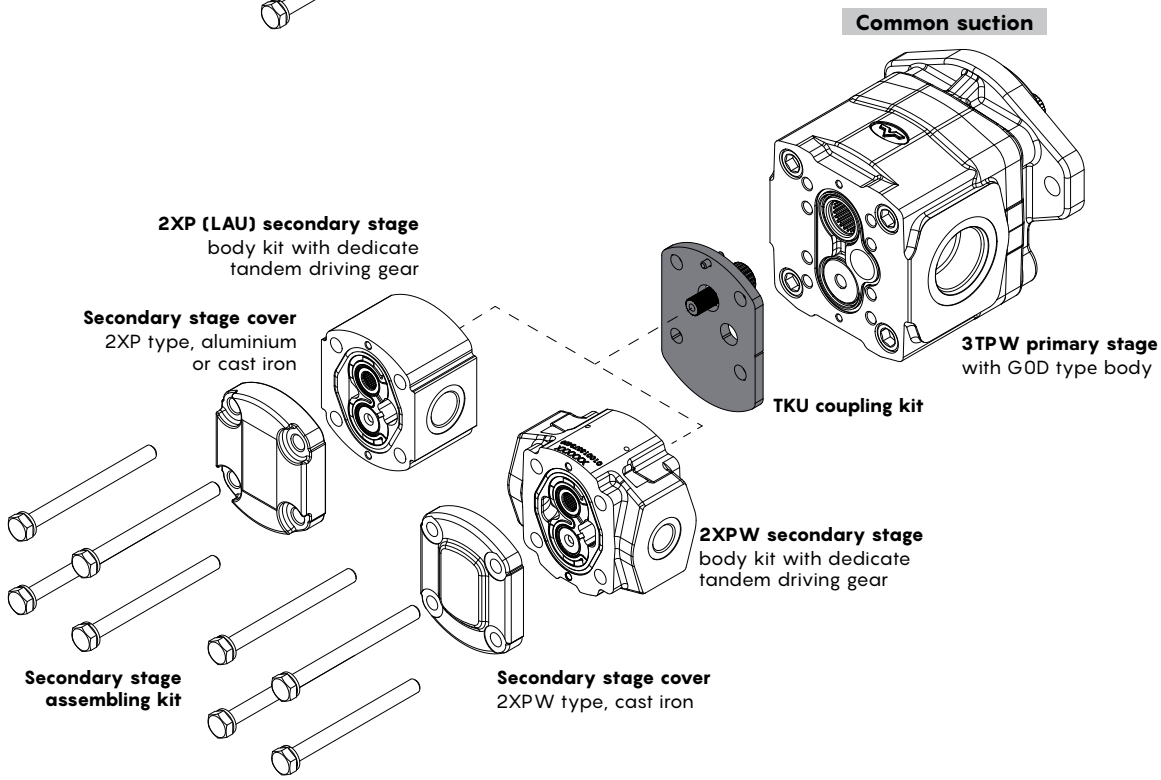
2XP/2XPW cover					
Port configuration		C (2XP)		C (2XPW)	
		mm	in	mm	in
0	aluminium	20.5	0.81	-	-
	cast iron	18	0.71	18	0.71
1 / 3 / 4	aluminium	30	1.18	-	-
	cast iron	29	0.97	29	0.97

Group 3 primary stage

3TPW+2XP/2XPW – TK/TKU tandem dimensions

These tandems require G0D type body for 3TPW first stage and they can be configured for separate or common suction.
Separate suction configuration requires a tandem consisting of the TK kit and standad second stage type 2XP or 2XPW
Common suction requires a tandem with TKU kit and second stage type 2XP with LAU type body or 2XPW standard: max flow is 45 l/min (*11.9 US gpm*).



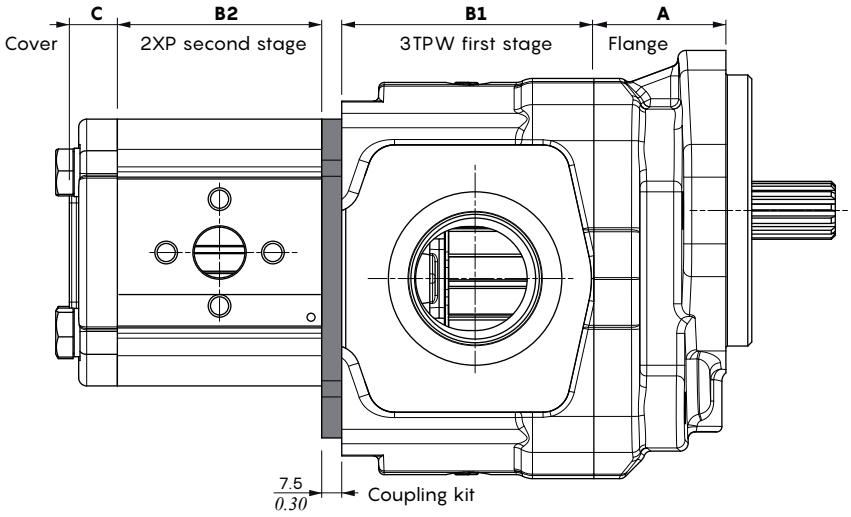


3TPW+2XP/2XPW – TK/TKU tandem dimensions

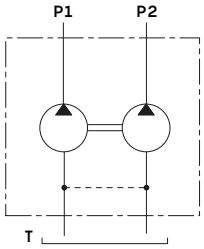
Separate suction description examples

3TPW-G0D-650-D-SAEB-B-N-10-0U-G114G1/ TK /2XP-A-140-0-N19N13

First stage — Coupling kit — Second stage



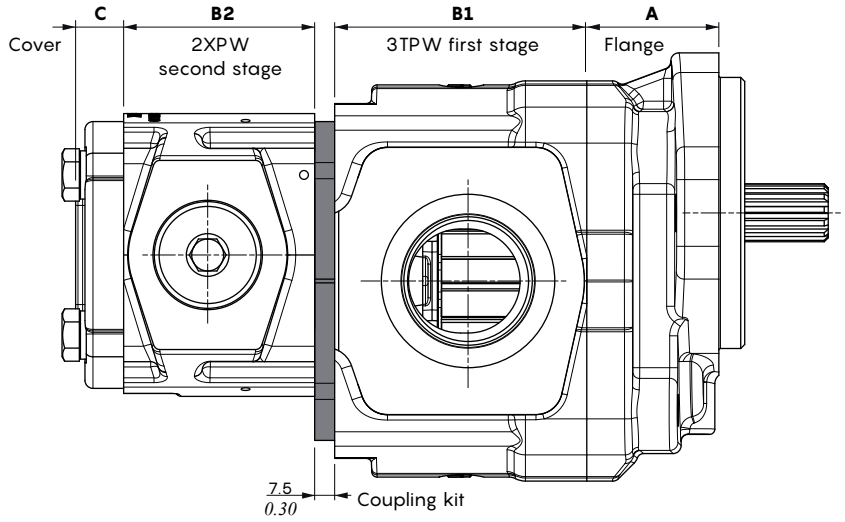
Hydraulic circuit



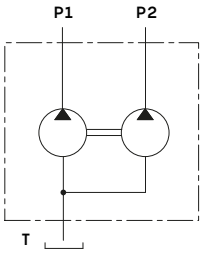
Common suction description example

3TPW-G0D-650-D-SAEB-B-N-10-0U-G114G1/ TKU /2XPW-G-110-0M-G12

First stage — Coupling kit — Second stage



Hydraulic circuit



Group 3 primary stage

3TPW+2XP/2XPW - TK/TKU tandem dimensions

3TPW flange		
Type	A	
	mm	in
SAEB	49.5	1.95
SAEC-2F	49.5	1.95
SAEC-4F	82	3.23
EUR	66	2.60

3TPW-G0D body		
Displacement	B1	
	mm	in
230	64.5	2.54
280	67.5	2.66
320	70.5	2.78
390	76.0	2.99
430	79.0	3.11
470	82.0	3.23
520	85.0	3.35
560	88.5	3.48
600	91.5	3.60
650	94.5	3.72
710	99.5	3.92
790	105.5	4.15

2XP/2XPW body				
Displacement	B2 (2XP)		B2 (2XPW)	
	mm	in	mm	in
040	50.8	2	-	-
060	54.1	2.13	-	-
080	58.3	2.29	-	-
110	62.4	2.46	62.4	2.46
140	67.4	2.65	67.4	2.65
160	71.6	2.82	71.6	2.82
190	76.6	3.01	76.6	3.01
220	81.6	3.21	81.6	3.21
260	87.4	3.44	87.4	3.44
290	90.7	3.57	90.7	3.57
310	95.8	3.77	95.8	3.77

2XP/2XPW cover					
Port configuration		C (2XP)		C (2XPW)	
		mm	in	mm	in
0	aluminium	20.5	0.81	-	-
	cast iron	18	0.71	18	0.71
1 / 3 / 4	aluminium	30	1.18	-	-
	cast iron	29	0.97	29	0.97

Complete pumps ordering codes.

2XP single stage aluminium pumps					
Flange type	**Shaft type**	**Displacement**	**Code**	**Description**	**Notes**
EUR	10	040	1GP20012429	2XP-A-040-D-EUR-B-N-10-0-G12G12	- Side BSP ports - NBR seals - Type B shaft sealing - Aluminium flange and cover
		060	1GP20012570	2XP-A-060-D-EUR-B-N-10-0-G12G12	
		080	1GP20012483	2XP-A-080-D-EUR-B-N-10-0-G12G12	
		110	1GP20012373	2XP-A-110-D-EUR-B-N-10-0-G34G12	
		140	1GP20012290	2XP-A-140-D-EUR-B-N-10-0-G34G12	
		160	1GP20012302	2XP-A-160-D-EUR-B-N-10-0-G34G12	
		190	1GP20012572	2XP-A-190-D-EUR-B-N-10-0-G34G12	
		220	1GP20012981	2XP-A-220-D-EUR-B-N-10-0-G1G12	
		260	1GP20012982	2XP-A-260-D-EUR-B-N-10-0-G1G12	
		290	1GP20012980	2XP-A-290-D-EUR-B-N-10-0-G1G12	
		310	1GP20012979	2XP-A-310-D-EUR-B-N-10-0-G1G12	
EUR	10	040	1GP20012292	2XP-A-040-D-EUR-B-N-10-0-N13N13	- Side N European flange ports - NBR seals - Type B shaft sealing - Aluminium flange and cover
		060	1GP20012293	2XP-A-060-D-EUR-B-N-10-0-N13N13	
		080	1GP20012294	2XP-A-080-D-EUR-B-N-10-0-N13N13	
		110	1GP20012295	2XP-A-110-D-EUR-B-N-10-0-N19N13	
		140	1GP20012296	2XP-A-140-D-EUR-B-N-10-0-N19N13	
		160	1GP20012297	2XP-A-160-D-EUR-B-N-10-0-N19N13	
		190	1GP20012289	2XP-A-190-D-EUR-B-N-10-0-N19N13	
		220	1GP20012298	2XP-A-220-D-EUR-B-N-10-0-N19N13	
		260	1GP20012299	2XP-A-260-D-EUR-B-N-10-0-N19N13	
		290	1GP20012457	2XP-A-290-D-EUR-B-N-10-0-N19N13	
		310	1GP20012300	2XP-A-310-D-EUR-B-N-10-0-N19N13	
SAEA	14	040	1GP20012525	2XP-A-040-D-SAEA-B-N-14-0-G12G12	- Side BSP ports - NBR seals - Type B shaft sealing - Aluminium flange and cover
		060	1GP20012404	2XP-A-060-D-SAEA-B-N-14-0-G12G12	
		080	1GP20012408	2XP-A-080-D-SAEA-B-N-14-0-G12G12	
		110	1GP20012412	2XP-A-110-D-SAEA-B-N-14-0-G34G12	
		140	1GP20012526	2XP-A-140-D-SAEA-B-N-14-0-G34G12	
		160	1GP20012336	2XP-A-160-D-SAEA-B-N-14-0-G34G12	
		190	1GP20012423	2XP-A-190-D-SAEA-B-N-14-0-G34G12	
		220	1GP20012463	2XP-A-220-D-SAEA-B-N-14-0-G1G12	
		260	1GP20012464	2XP-A-260-D-SAEA-B-N-14-0-G1G12	
		290	1GP20012588	2XP-A-290-D-SAEA-B-N-14-0-G1G12	
		310	1GP20012466	2XP-A-310-D-SAEA-B-N-14-0-G1G12	
SAEB	45	040	1GP20011946	2XP-G-040-D-SAEB-B-N-45-0-T20T15	- Side T german flange ports - NBR seals - Type B shaft sealing - Cast iron flange and cover
		060	1GP20011949	2XP-G-060-D-SAEB-B-N-45-0-T20T15	
		080	1GP20011950	2XP-G-080-D-SAEB-B-N-45-0-T20T15	
		110	1GP20011951	2XP-G-110-D-SAEB-B-N-45-0-T20T15	
		140	1GP20011914	2XP-G-140-D-SAEB-B-N-45-0-T20T15	
		160	1GP20011953	2XP-G-160-D-SAEB-B-N-45-0-T20T15	
		190	1GP20011954	2XP-G-190-D-SAEB-B-N-45-0-T20T15	
		220	1GP20011955	2XP-G-220-D-SAEB-B-N-45-0-T20T15	
		260	1GP20011956	2XP-G-040-D-SAEB-B-N-45-0-G12G12	
SAEB	45	040	1GP20012538	2XP-G-060-D-SAEB-B-N-45-0-G12G12	- Side BSP ports - NBR seals - Type B shaft sealing - Cast iron flange and cover
		060	1GP20012539	2XP-G-080-D-SAEB-B-N-45-0-G12G12	
		080	1GP20012540	2XP-G-110-D-SAEB-B-N-45-0-G34G12	
		110	1GP20012388	2XP-G-140-D-SAEB-B-N-45-0-G34G12	
		140	1GP20012440	2XP-G-160-D-SAEB-B-N-45-0-G34G12	
		160	1GP20012441	2XP-G-190-D-SAEB-B-N-45-0-G34G12	
		190	1GP20012442	2XP-G-220-D-SAEB-B-N-45-0-G1G12	
		220	1GP20012669	2XP-G-260-D-SAEB-B-N-45-0-G1G12	
		260	1GP20012670	2XP-G-290-D-SAEB-B-N-45-0-G1G12	
		290	1GP20012671	2XP-G-310-D-SAEB-B-N-45-0-G1G12	
		310	1GP20012672	2XP-A-310-D-SAEA-B-N-14-0-G1G12	

Complete pumps ordering codes

2XPW single stage cast iron pumps					
Flange type	**Shaft type**	**Displacement**	**Code**	**Description**	**Notes**
EUR	10	110	1GP20012183	2XPW-G-110-D-EUR-B-N-10-0-G34G12-<CVN>	- Side BSP ports - NBR seals - Type B shaft sealing
		140	1GP20011923	2XPW-G-140-D-EUR-B-N-10-0-G34G12-<CVN>	
		160	1GP20011924	2XPW-G-160-D-EUR-B-N-10-0-G34G12-<CVN>	
		190	1GP20011925	2XPW-G-190-D-EUR-B-N-10-0-G34G12-<CVN>	
		220	1GP20011926	2XPW-G-220-D-EUR-B-N-10-0-G1G12-<CVN>	
		260	1GP20011927	2XPW-G-260-D-EUR-B-N-10-0-G1G12-<CVN>	
		290	1GP20012184	2XPW-G-290-D-EUR-B-N-10-0-G1G12-<CVN>	
		310	1GP20011928	2XPW-G-310-D-EUR-B-N-10-0-G1G12-<CVN>	
SAEA	14	160	1GP20012325	2XPW-G-160-D-SAEA-B-N-14-0-G34G12-<CVN>	- Side BSP ports - NBR seals - Type B shaft sealing
		190	1GP20012326	2XPW-G-190-D-SAEA-B-N-14-0-G34G12-<CVN>	
		220	1GP20012327	2XPW-G-220-D-SAEA-B-N-14-0-G1G12-<CVN>	
		260	1GP20012328	2XPW-G-260-D-SAEA-B-N-14-0-G1G12-<CVN>	
		290	1GP20012329	2XPW-G-290-D-SAEA-B-N-14-0-G1G12-<CVN>	
		310	1GP20012301	2XPW-G-310-D-SAEA-B-N-14-0-G1G12-<CVN>	
SAEB	45	110	1GP20012333	2XPW-G-110-D-SAEB-B-N-45-0-G34G12-<CVN>	- Side BSP ports - NBR seals - Type B shaft sealing
		140	1GP20012683	2XPW-G-140-D-SAEB-B-N-45-0-G34G12-<CVN>	
		160	1GP20012684	2XPW-G-160-D-SAEB-B-N-45-0-G34G12-<CVN>	
		190	1GP20012685	2XPW-G-190-D-SAEB-B-N-45-0-G34G12-<CVN>	
		220	1GP20012686	2XPW-G-220-D-SAEB-B-N-45-0-G1G12-<CVN>	
		260	1GP20012687	2XPW-G-260-D-SAEB-B-N-45-0-G1G12-<CVN>	
		290	1GP20012690	2XPW-G-290-D-SAEB-B-N-45-0-G1G12-<CVN>	
		310	1GP20012692	2XPW-G-310-D-SAEB-B-N-45-0-G1G12-<CVN>	

Complete motors ordering codes.

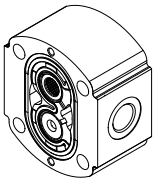
2XM reversible aluminium motors					
Flange type	**Shaft type**	**Displacement**	**Code**	**Description**	**Notes**
EUR	10	040	1GM20013686	2XM-A-040-R-EUR-H-N-10-0-G12G12-DRENG14	-Side BSP ports - NBR seals - Type H shaft sealing - Aluminium flange and cover
		060	1GM20013687	2XM-A-060-R-EUR-H-N-10-0-G12G12-DRENG14	
		080	1GM20013688	2XM-A-080-R-EUR-H-N-10-0-G12G12-DRENG14	
		110	1GM20013689	2XM-A-110-R-EUR-H-N-10-0-G34G34-DRENG14	
		140	1GM20013690	2XM-A-140-R-EUR-H-N-10-0-G34G34-DRENG14	
		160	1GM20013691	2XM-A-160-R-EUR-H-N-10-0-G34G34-DRENG14	
		190	1GM20011773	2XM-A-190-R-EUR-H-N-10-0-G34G34-DRENG14	
		220	1GM20013692	2XM-A-220-R-EUR-H-N-10-0-G34G34-DRENG14	
		260	1GM20013693	2XM-A-260-R-EUR-H-N-10-0-G34G34-DRENG14	
EUR	10	040	1GM20011689	2XM-A-040-R-EUR-H-N-10-0-N13N13-DRENG14	- Side N European flange ports - NBR seals - Type H shaft sealing - Aluminium flange and cover
		060	1GM20011690	2XM-A-060-R-EUR-H-N-10-0-N13N13-DRENG14	
		080	1GM20011740	2XM-A-080-R-EUR-H-N-10-0-N13N13-DRENG14	
		110	1GM20011691	2XM-A-110-R-EUR-H-N-10-0-N19N19-DRENG14	
		140	1GM20011741	2XM-A-140-R-EUR-H-N-10-0-N19N19-DRENG14	
		160	1GM20011742	2XM-A-160-R-EUR-H-N-10-0-N19N19-DRENG14	
		190	1GM20011693	2XM-A-190-R-EUR-H-N-10-0-N19N19-DRENG14	
		220	1GM20011743	2XM-A-220-R-EUR-H-N-10-0-N19N19-DRENG14	
		260	1GM20011744	2XM-A-260-R-EUR-H-N-10-0-N19N19-DRENG14	

2XMW reversible cast iron motors					
Flange type	**Shaft type**	**Displacement**	**Code**	**Description**	**Notes**
EUR	10	110	1GM20013699	2XMW-G-110-R-EUR-H-N-10-0-G34G34-DRENG14<CVN>	- Side BSP ports - NBR seals - Type B shaft sealing
		140	1GM20013700	2XMW-G-140-R-EUR-H-N-10-0-G34G34-DRENG14<CVN>	
		160	1GM20013701	2XMW-G-160-R-EUR-H-N-10-0-G34G34-DRENG14<CVN>	
		190	1GM20013702	2XMW-G-190-R-EUR-H-N-10-0-G34G34-DRENG14<CVN>	
		220	1GM20013703	2XMW-G-220-R-EUR-H-N-10-0-G34G34-DRENG14<CVN>	
		260	1GM20013704	2XMW-G-260-R-EUR-H-N-10-0-G34G34-DRENG14<CVN>	
		290	1GM20013705	2XMW-G-290-R-EUR-H-N-10-0-G34G34-DRENG14<CVN>	
		310	1GM20013710	2XMW-G-310-R-EUR-H-N-10-0-G34G34-DRENG14-<CVN>	
EUR	10	110	1GM20011677	2XMW-G-110-R-EUR-H-N-10-0-N19N19-DRENG14<CVN>	- Side N European flange ports - NBR seals - Type H shaft sealing
		140	1GM20011678	2XMW-G-140-R-EUR-H-N-10-0-N19N19-DRENG14<CVN>	
		160	1GM20011679	2XMW-G-160-R-EUR-H-N-10-0-N19N19-DRENG14<CVN>	
		190	1GM20011680	2XMW-G-190-R-EUR-H-N-10-0-N19N19-DRENG14<CVN>	
		220	1GM20013711	2XMW-G-220-R-EUR-H-N-10-0-N19N19-DRENG14<CVN>	
		260	on request	2XMW-G-260-R-EUR-H-N-10-0-N19N19-DRENG14<CVN>	
		290	on request	2XMW-G-290-R-EUR-H-N-10-0-N19N19-DRENG14<CVN>	
		310	on request	2XMW-G-310-R-EUR-H-N-10-0-N19N19-DRENG14<CVN>	
B80C	11	110	on request	2XMW-G-110-R-B80C-H-N-11-0-G34G34-DRENG14<CVN>	- Side BSP ports - NBR seals - Type H shaft sealing
		140	on request	2XMW-G-140-R-B80C-H-N-11-0-G34G34-DRENG14<CVN>	
		160	on request	2XMW-G-160-R-B80C-H-N-11-0-G34G34-DRENG14<CVN>	
		190	on request	2XMW-G-190-R-B80C-H-N-11-0-G34G34-DRENG14<CVN>	
		220	on request	2XMW-G-220-R-B80C-H-N-11-0-G34G34-DRENG14<CVN>	
		260	on request	2XMW-G-260-R-B80C-H-N-11-0-G34G34-DRENG14<CVN>	
		290	on request	2XMW-G-290-R-B80C-H-N-11-0-G34G34-DRENG14<CVN>	
		310	on request	2XMW-G-310-R-B80C-H-N-11-0-G34G34-DRENG14<CVN>	

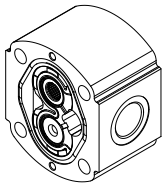
Secondary stages ordering codes

2XP aluminium body

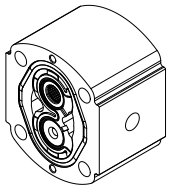
The section kit is supplied complete with plastic protective flanges and plugs



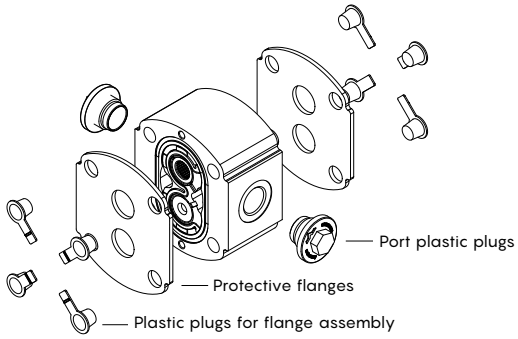
Standard body section



LAU body type section



SGR body type section



STANDARD body				
Shaft type	**Displacement**	**Code**	**Description**	**Notes**
		Standard porting configurations		
18F tandem shaft	040	5GKBP20097	SECTION 2XP-040-D-N-18F-0-G12G12	- Side BSP ports - NBR seals
	060	5GKBP20098	SECTION 2XP-060-D-N-18F-0-G12G12	
	080	5GKBP20165	SECTION 2XP-080-D-N-18F-0-G34G12	
	110	5GKBP20100	SECTION 2XP-110-D-N-18F-0-G34G12	
	140	5GKBP20101	SECTION 2XP-140-D-N-18F-0-G34G12	
	160	5GKBP20102	SECTION 2XP-160-D-N-18F-0-G34G12	
	190	5GKBP20103	SECTION 2XP-190-D-N-18F-0-G34G12	
	220	5GKBP20164	SECTION 2XP-220-D-N-18F-0-G1G12	
	260	5GKBP20163	SECTION 2XP-260-D-N-18F-0-G1G12	
	290	5GKBP20162	SECTION 2XP-290-D-N-18F-0-G1G12	
	310	5GKBP20161	SECTION 2XP-310-D-N-18F-0-G1G12	
		Alternative porting configurations		
	080	5GKBP20099	SECTION 2XP-080-D-N-18F-0-G12G12	
	220	5GKBP20104	SECTION 2XP-220-D-N-18F-0-G34G12	
	260	5GKBP20105	SECTION 2XP-260-D-N-18F-0-G34G12	
	290	5GKBP20106	SECTION 2XP-290-D-N-18F-0-G34G12	
	310	5GKBP20107	SECTION 2XP-310-D-N-18F-0-G34G12	
		Standard porting configurations		
18F tandem shaft	040	5GKBP20134	SECTION-2XP-040-D-N-18F-0-U12U10	- Side UN-UNF ports - NBR seals
	060	5GKBP20135	SECTION-2XP-060-D-N-18F-0-U12U10	
	080	5GKBP20136	SECTION-2XP-080-D-N-18F-0-U12U10	
	110	5GKBP20144	SECTION-2XP-110-D-N-18F-0-U12U10	
	140	5GKBP20143	SECTION-2XP-140-D-N-18F-0-U12U10	
	160	5GKBP20142	SECTION-2XP-160-D-N-18F-0-U12U10	
	190	5GKBP20141	SECTION-2XP-190-D-N-18F-0-U12U10	
	220	5GKBP20174	SECTION-2XP-220-D-N-18F-0-U16U10	
	260	5GKBP20175	SECTION-2XP-260-D-N-18F-0-U16U10	
	290	5GKBP20177	SECTION-2XP-290-D-N-18F-0-U16U10	
	310	5GKBP20176	SECTION-2XP-310-D-N-18F-0-U16U10	
		Alternative porting configurations		
	220	5GKBP20140	SECTION-2XP-220-D-N-18F-0-U16U12	
	260	5GKBP20139	SECTION-2XP-260-D-N-18F-0-U16U12	
	290	5GKBP20138	SECTION-2XP-290-D-N-18F-0-U16U12	
	310	5GKBP20137	SECTION-2XP-310-D-N-18F-0-U16U12	

Secondary stage ordering codes

2XP aluminium body

STANDARD body				
Shaft type	**Displacement**	**Code**	**Description**	**Notes**
18F tandem shaft	040	5GKBP20116	SECTION-2XP-060-D-N-18F-0-T20T15	- Side T german flange ports - NBR seals
	060	5GKBP20117	SECTION-2XP-040-D-N-18F-0-T20T15	
	080	5GKBP20119	SECTION-2XP-080-D-N-18F-0-T20T15	
	110	5GKBP20120	SECTION-2XP-110-D-N-18F-0-T20T15	
	140	5GKBP20121	SECTION-2XP-140-D-N-18F-0-T20T15	
	160	5GKBP20122	SECTION-2XP-160-D-N-18F-0-T20T15	
	190	5GKBP20160	SECTION 2XP-190-D-N-18F-0-T20T15	
	220	5GKBP20159	SECTION 2XP-220-D-N-18F-0-T20T15	
	260	5GKBP20158	SECTION 2XP-260-D-N-18F-0-T20T15	
	290	5GKBP20157	SECTION 2XP-290-D-N-18F-0-T20T15	
	310	5GKBP20156	SECTION 2XP-310-D-N-18F-0-T20T15	
18F tandem shaft	040	5GKBP20072	SECTION 2XP-040-D-N-18F-0-N13N13	- Side N European flange ports - NBR seals
	060	5GKBP20073	SECTION 2XP-060-D-N-18F-0-N13N13	
	080	5GKBP20074	SECTION 2XP-080-D-N-18F-0-N13N13	
	110	5GKBP20075	SECTION 2XP-110-D-N-18F-0-N19N13	
	140	5GKBP20076	SECTION 2XP-140-D-N-18F-0-N19N13	
	160	5GKBP20077	SECTION 2XP-160-D-N-18F-0-N19N13	
	190	5GKBP20078	SECTION 2XP-190-D-N-18F-0-N19N13	
	220	5GKBP20079	SECTION 2XP-220-D-N-18F-0-N19N13	
	260	5GKBP20080	SECTION 2XP-260-D-N-18F-0-N19N13	
	290	5GKBP20166	SECTION 2XP-290-D-N-18F-0-N19N13	
	310	5GKBP20081	SECTION 2XP-310-D-N-18F-0-N19N13	

Secondary stage ordering codes

2XP aluminium body

The section kit is supplied complete with plastic protective flanges and plugs

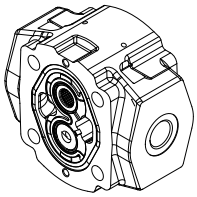
LAU body type				
Shaft type	**Displacement**	**Code**	**Description**	**Notes**
18F tandem shaft	040	5GKBP20180	SECTION 2XP-040(LAU)-D-N-18F-0-G34G12	- Side BSP ports - NBR seals
	060	5GKBP20181	SECTION 2XP-060(LAU)-D-N-18F-0-G34G12	
	080	5GKBP20182	SECTION 2XP-080(LAU)-D-N-18F-0-G34G12	
	110	5GKBP20183	SECTION 2XP-110(LAU)-D-N-18F-0-G34G12	
	140	5GKBP20184	SECTION 2XP-140(LAU)-D-N-18F-0-G34G12	
	160	5GKBP20185	SECTION 2XP-160(LAU)-D-N-18F-0-G34G12	
	190	5GKBP20186	SECTION 2XP-190(LAU)-D-N-18F-0-G34G12	
	220	5GKBP20187	SECTION 2XP-220(LAU)-D-N-18F-0-G1G12	
	260	5GKBP20188	SECTION 2XP-260(LAU)-D-N-18F-0-G1G12	
	290	5GKBP20190	SECTION 2XP-290(LAU)-D-N-18F-0-G1G12	
	310	5GKBP20191	SECTION 2XP-310(LAU)-D-N-18F-0-G1G12	
18F tandem shaft	040	5GKBP20192	SECTION 2XP-040(LAU)-D-N-18F-T20T15	- Side T german flange ports - NBR seals
	060	5GKBP20193	SECTION 2XP-060(LAU)-D-N-18F-T20T15	
	080	5GKBP20194	SECTION 2XP-080(LAU)-D-N-18F-T20T15	
	110	5GKBP20195	SECTION 2XP-110(LAU)-D-N-18F-T20T15	
	140	5GKBP20196	SECTION 2XP-140(LAU)-D-N-18F-T20T15	
	160	5GKBP20197	SECTION 2XP-160(LAU)-D-N-18F-T20T15	
	190	5GKBP20198	SECTION 2XP-190(LAU)-D-N-18F-T20T15	
	220	5GKBP20199	SECTION 2XP-220(LAU)-D-N-18F-T20T15	
	260	5GKBP20200	SECTION 2XP-260(LAU)-D-N-18F-T20T15	
	290	5GKBP20201	SECTION 2XP-290(LAU)-D-N-18F-T20T15	
	310	5GKBP20202	SECTION 2XP-310(LAU)-D-N-18F-T20T15	

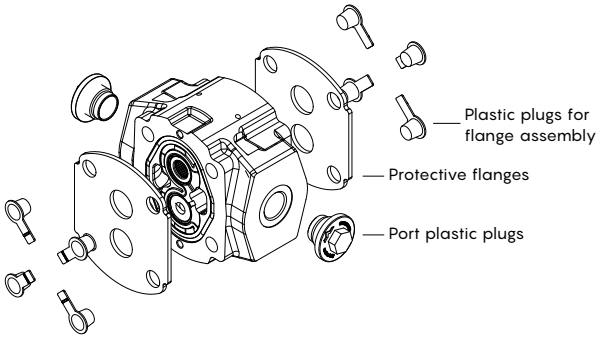
SGR body type				
Shaft type	**Displacement**	**Code**	**Description**	**Notes**
18F tandem shaft	040	5GKBP20145	SECTION 2XP-040(SGR)-D-N-18F-0-B13B13	- Side ports arrangement - NBR seals
	060	5GKBP20146	SECTION 2XP-060(SGR)-D-N-18F-0-B13B13	
	080	5GKBP20147	SECTION 2XP-080(SGR)-D-N-18F-0-B13B13	
	110	5GKBP20148	SECTION 2XP-110(SGR)-D-N-18F-0-B19B13	
	140	5GKBP20149	SECTION 2XP-140(SGR)-D-N-18F-0-B19B13	
	160	5GKBP20150	SECTION 2XP-160(SGR)-D-N-18F-0-B19B13	
	190	5GKBP20151	SECTION 2XP-190(SGR)-D-N-18F-0-B19B13	
	220	5GKBP20152	SECTION 2XP-220(SGR)-D-N-18F-0-B19B13	
	260	5GKBP20153	SECTION 2XP-260(SGR)-D-N-18F-0-B19B13	
	290	5GKBP20154	SECTION 2XP-290(SGR)-D-N-18F-0-B19B13	
	310	5GKBP20155	SECTION 2XP-310(SGR)-D-N-18F-0-B19B13	

Secondary stage ordering codes

2XPW cast iron body

The section kit is supplied complete with plastic protective flanges and plugs





STANDARD body				
Shaft type	**Displacement**	**Code**	**Description**	**Notes**
18F tandem shaft	110	5GKBP20108	SECTION 2XPW-110-D-N-18F-0-G34G12	- Side BSP ports - NBR seals
	140	5GKBP20109	SECTION 2XPW-140-D-N-18F-0-G34G12	
	160	5GKBP20110	SECTION 2XPW-160-D-N-18F-0-G34G12	
	190	5GKBP20111	SECTION 2XPW-190-D-N-18F-0-G34G12	
	220	5GKBP20112	SECTION 2XPW-220-D-N-18F-0-G1G12	
	260	5GKBP20113	SECTION 2XPW-260-D-N-18F-0-G1G12	
	290	5GKBP20114	SECTION 2XPW-290-D-N-18F-0-G1G12	
	310	5GKBP20115	SECTION 2XPW-310-D-N-18F-0-G1G12	
18F tandem shaft	110	5GKBP20089	SECTION 2XPW-G-110-D-N-18F-0-N19N13	- Side N European flange ports - NBR seals
	140	5GKBP20090	SECTION 2XPW-G-140-D-N-18F-0-N19N13	
	160	5GKBP20091	SECTION 2XPW-G-160-D-N-18F-0-N19N13	
	190	5GKBP20092	SECTION 2XPW-G-190-D-N-18F-0-N19N13	
	220	5GKBP20093	SECTION 2XPW-G-220-D-N-18F-0-N19N13	
	260	5GKBP20094	SECTION 2XPW-G-260-D-N-18F-0-N19N13	
	290	5GKBP20095	SECTION 2XPW-G-290-D-N-18F-0-N19N13	
	310	5GKBP20096	SECTION 2XPW-G-310-D-N-18F-0-N19N13	
18F tandem shaft	110	5GKBP20082	SECTION 2XPW-110-D-N-18F-0-U12U10	- Side UN-UNF ports - NBR seals
	140	5GKBP20168	SECTION 2XPW-140-D-N-18F-0-U12U10	
	160	5GKBP20169	SECTION 2XPW-160-D-N-18F-0-U12U10	
	190	5GKBP20170	SECTION 2XPW-190-D-N-18F-0-U12U10	
	220	5GKBP20171	SECTION 2XPW-220-D-N-18F-0-U16U10	
	260	5GKBP20172	SECTION 2XPW-260-D-N-18F-0-U16U10	
	290	5GKBP20173	SECTION 2XPW-290-D-N-18F-0-U16U10	
	310	5GKBP20174	SECTION 2XPW-310-D-N-18F-0-U16U10	

Assembling screws ordering codes

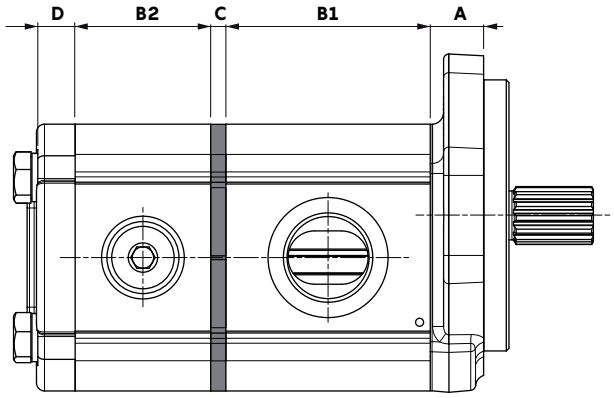
The length of the screws indicated in the tables below refers to pumps/motors configured with aluminium and cast iron standard back cover (vithout aux. valves and sensors).
For different configuration contact our Sales Department.
MPORTANT: rear covers with ports require UNI5931 screws

For 2X single pump/motor

Displacement	For EUR - SAEA - SAEB B80 - B50C flanges	For E52C flange
	Length required	Length required
040	M10x85 (*3.35*)	M10x80 (*3.15*)
060	M10x90 (*3.54*)	M10x85 (*3.35*)
080	M10x90 (*3.54*)	M10x90 (*3.54*)
110	M10x95 (*3.74*)	M10x95 (*3.74*)
140	M10x100 (*3.94*)	M10x100 (*3.94*)
160	M10x105 (*4.13*)	M10x105 (*4.13*)
190	M10x110 (*4.33*)	M10x110 (*4.33*)
220	M10x115 (*4.53*)	M10x115 (*4.53*)
260	M10x120 (*4.72*)	M10x120 (*4.72*)
290	M10x125 (*4.92*)	M10x125 (*4.92*)
310	M10x130 (*5.12*)	M10x125 (*4.92*)

For 2X tandem pump/motor

To correctly order the assembly screws it is necessary to calculate the tandem lenght as shown in the picture.



Flange		
Type	A	
	mm	*in*
SAEA	19	*0.75*
SAEB	20	*0.79*
EUR	19	*0.75*
B80	21	*0.83*
B50	18.8	*0.74*
E52	16.3	*0.64*

Body		
Displacement	B	
	mm	*in*
040*	50.8	*2*
060*	54.1	*2.13*
080*	58.3	*2.29*
110	62.4	*2.46*
140	67.4	*2.65*
160	71.6	*2.82*
190	76.6	*3.01*
220	81.6	*3.21*
260	87.4	*3.44*
290	90.7	*3.57*
310	95.8	*3.77*

(*) displacement only for 2XP/2XM pumps/motors

Coupling kit		
Type	C	
	mm	*in*
TK	5.7	*0.224*
TCS	28	*1.10*
TS*	62	*2.44*
VD	40	*1.57*

Cover			
Port configuration		D	
		mm	*in*
0	aluminium	14.2	*0.559*
	cast iron	14	*0.551*
1/3/4	aluminium	14.2	*0.559*
	cast iron	16	*0.630*
With aux valves	aluminium	-	-
	cast iron	16	-

(*) this kit requires second stage fitted with EUR flange (see page 68)

Assembling screws ordering codes

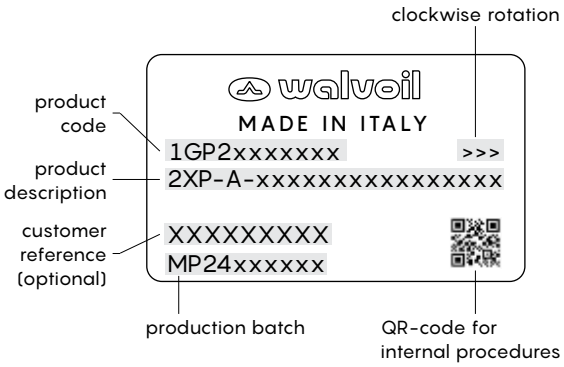
Screw type		
UNI 5737-10.9	UNI 5931-10.9	Length
107010085	101010085	M10x85 *(3.35)*
107010090	101010090	M10x90 *(3.54)*
107010090	101010090	M10x90 *(3.54)*
107010095	101010095	M10x95 *(3.74)*
107010100	101010100	M10x100 *(3.94)*
107010105	101010105	M10x105 *(4.13)*
107010110	101010110	M10x110 *(4.33)*
107010115	101010115	M10x115 *(4.53)*
107010120	101010120	M10x120 *(4.72)*
107010125	101010125	M10x125 *(4.92)*
107010130	101010130	M10x130 *(5.12)*
107010135		M10x135 *(5.31)*
107010140		M10x140 *(5.51)*
107010145		M10x145 *(5.71)*
107010150		M10x150 *(5.91)*
107010155		M10x155 *(6.10)*
107010160		M10x160 *(6.30)*
107010165		M10x165 *(6.50)*
107010170		M10x170 *(6.69)*
107010175		M10x175 *(6.89)*
107010180		M10x180 *(7.09)*
107010185		M10x185 *(7.28)*
107010190		M10x190 *(7.48)*
107010195		M10x195 *(7.68)*
107010200		M10x200 *(7.87)*
107010205		M10x205 *(8.07)*
107010210		M10x210 *(8.27)*
107010215		M10x215 *(8.46)*
107010220		M10x220 *(8.66)*
107010225		M10x225 *(8.86)*
107010230		M10x230 *(9.06)*
107010235		M10x235 *(9.25)*
107010240		M10x240 *(9.45)*
107010245		M10x245 *(9.65)*
107010255		M10x255 *(10.04)*
107010265		M10x265 *(10.43)*
107010275		M10x275 *(10.83)*
107010300		M10x300 *(11.81)*

Tie rod	
Code	Length
010243499299	M10x225 *(8.86)*
010243499399	M10x235 *(9.25)*
010242948999	M10x249 *(9.80)*
010243499499	M10x255 *(8.86)*
010242933599	M10x259 *(10.20)*
010242916599	M10x265 *(10.43)*
010242969999	M10x271 *(10.67)*
010242969499	M10x279 *(10.98)*
010242969599	M10x286 *(11.26)*
010242969699	M10x296 *(11.65)*
010242969799	M10x306 *(12.04)*
010242968499	M10x313 *(12.32)*
010243521899	M10x319 *(12.56)*
010243045299	M10x325 *(12.80)*
010243462199	M10x335 *(13.19)*
010242969899	M10x343 *(13.50)*
010243499599	M10x350 *(13.78)*
010243104399	M10x355 *(13.98)*
010243496399	M10x360 *(14.17)*
010243499699	M10x365 *(14.37)*
010243499799	M10x370 *(14.57)*
010243047099	M10x375 *(14.76)*
010243072799	M10x382 *(15.04)*

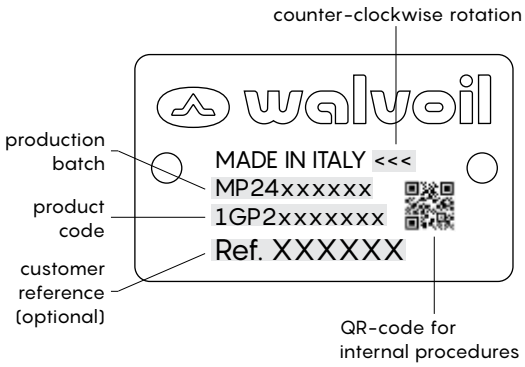
Tie rods require UNI 5587 - M10 nut

Product identification

2XP aluminium pump



2XPW cast iron pump



Notes

WALVOIL NEL MONDO | WALVOIL WORLDWIDE

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Sede principale, Filiali e Uffici di rappresentanza
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