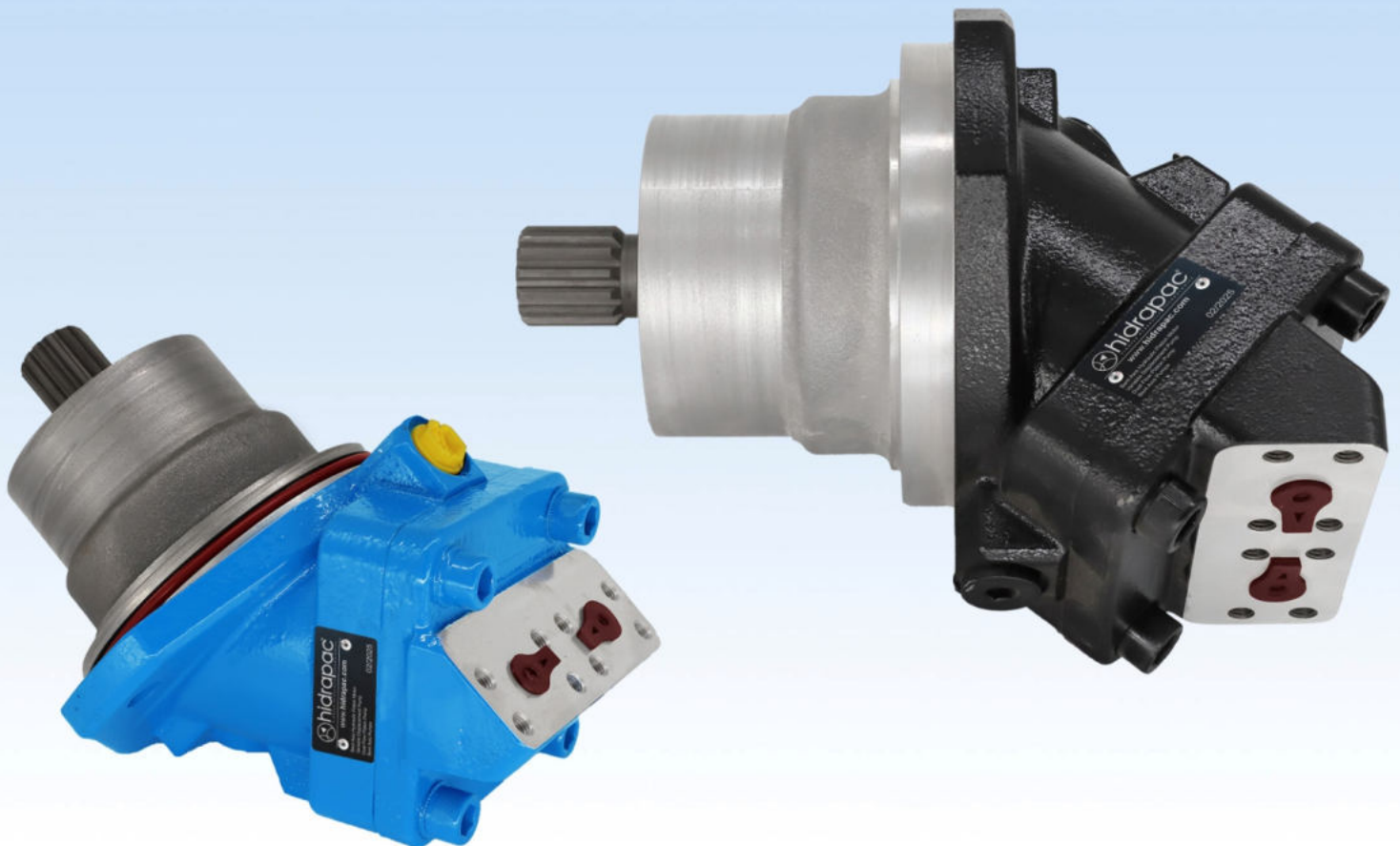


A2FP (Fixed Plugin) Bent Axis Pumps

High Pressure Hydraulic Bent Axis Piston Pumps, High Pressure, 450/500 BAR Working Pressure. High Rotational Speed, High Efficiency, Slim Design, Cast Iron Pump Body, Re-Designed.

Designation;

28cc, 32cc, 41cc, 50cc, 56cc,
63cc, 80cc, 90cc, 108cc, 125cc

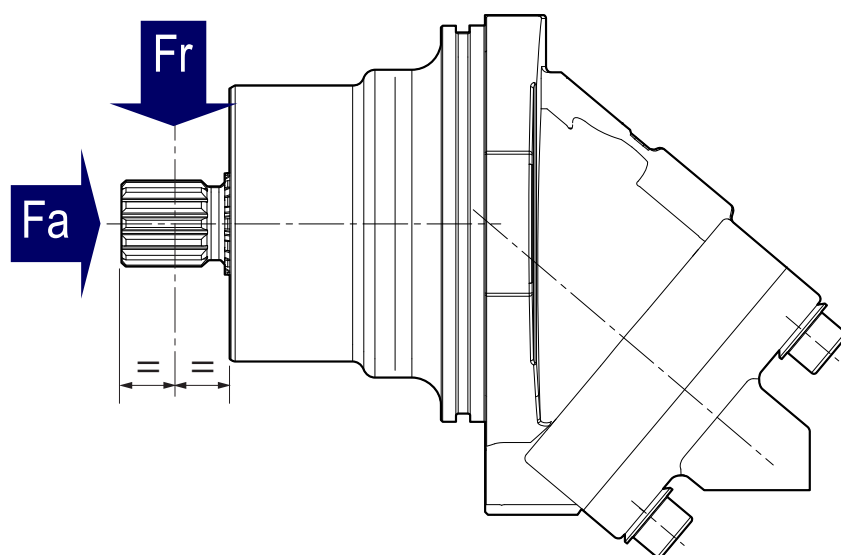


Hidrapac **Store**

www.HIDRAPAC.com.tr

Characteristics of the A2FP (Fixed Plugin) Flange Bent Axis Pumps

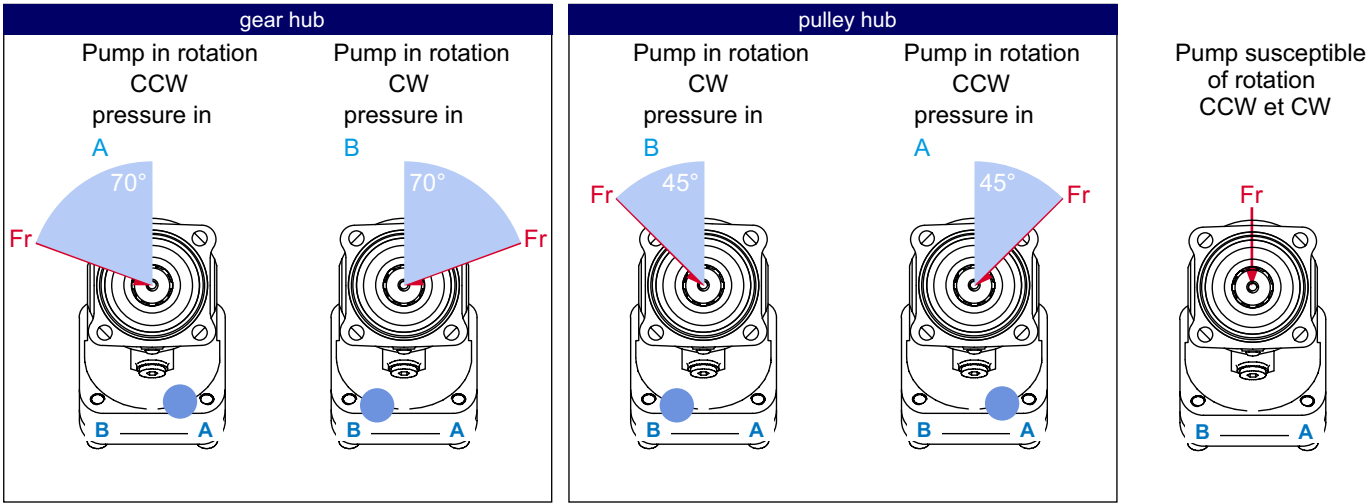
Pump MODEL	DISPL. (cc)	CONTINUOUS MAX. SPEED (rpm)	INTERMITTENT MAX. SPEED (rpm)	MAX. FLOW ABSORBED (l/mn)	TORQUE BAR (m.N/bar)	TORQUE AT 350 BAR (m.N)	THEORETICAL MAX. POWER AT 400 BAR (HP / kW)	MAX. ALLOW PRESSURE CONTN./PEAK (bar)	WEIGHT (kg)
28 cc	28.0	6300	6900	158	0.40	139	140.0 / 104.4	400 / 450	11.4
32 cc	32.0	6300	6900	202	0.50	178	180.5 / 134.4	400 / 450	11.5
41 cc	41.0	5600	6200	230	0.65	228	205.2 / 153.1	400 / 450	11.6
50 cc	50,3	5000	5500	252	0.80	280	224.1 / 167.5	400 / 450	18.1
56 cc	56,0	5000	5500	280	0.90	320	244.5 / 187.1	400 / 450	18.1
63 cc	63.0	5000	5500	315	1.00	351	281.6 / 209.1	400 / 450	18.2
80 cc	80,4	4500	5000	362	1.27	447	323.6 / 241.5	400 / 450	26.1
90 cc	90,1	4500	5000	405	1.43	500	361.5 / 269.9	400 / 450	26.2
108 cc	108	4000	4400	435	1.70	598	328.8 / 245.6	400 / 450	33.2
125 cc	125	3400	4400	428	2.00	698	382.6 / 284.6	400 / 450	33.8



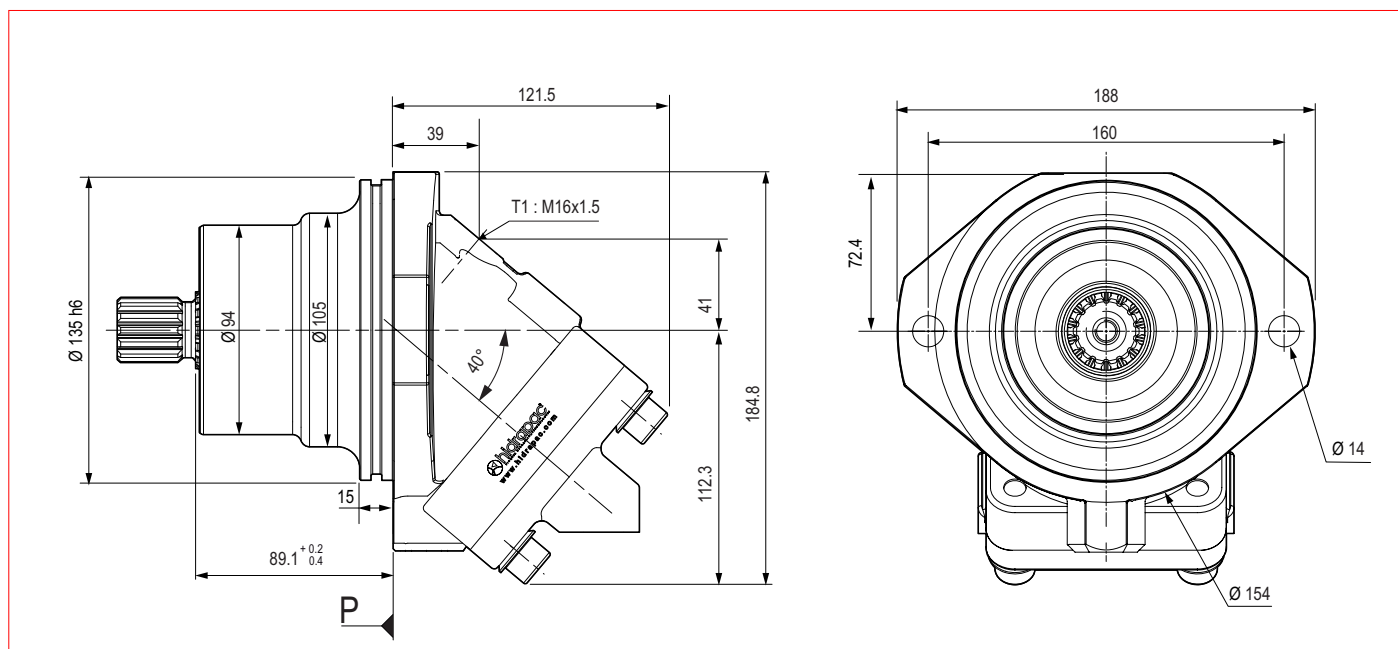
Pump model	28 cc	32 cc	41. 45	50 cc	56, 63cc	80,90,108	125 cc
Fr (lbf)	1350	1462.5	1462.5	1686	2023	2812	3262
Fr (N/bar)	6000	6500	6500	7500	9000	12500	14500
Fa (lbf)	0.42	0.46	0.62	0.62	0.77	1.24	1.33
Fa (N/bar)	(27)	(30)	(40)	(40)	(50)	(80)	(86)

Ordering Code; A2FP (Fixed Plugin) Bent Axis Pumps

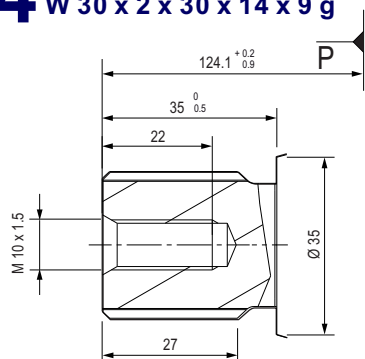
Model Code	Displacement	Shaft Type	Flange Type	Rotation	Sealing
A2FP	28	S14	B2	CW	V
A2FP Bent Axis Hydraulic Pump Fixed Plugin	28	S14 Splined Shaft W30x2x30x14x9g	B2 2 Bolt ISO 3019-2	CW Right Direction of Rotation	V Viton High Pressure Seal
	32				
	41	S16 Splined Shaft W35x2x30x16x9g			
	50				
	56	S18 Splined Shaft W40x2x30x18x9g			
	63				
	80	S21 Splined Shaft W45x2x30x21x9g			
	90				
	108			CCW Left Direction of Rotation	N Nitrile Seal 5/10 Bar
	125				



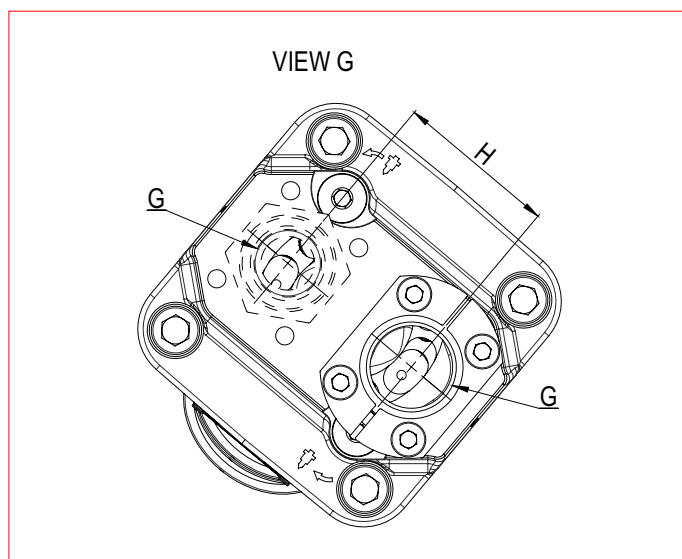
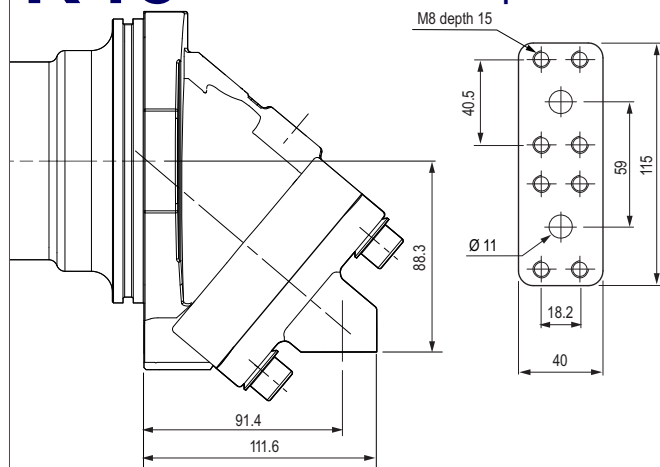
A2FP - 28 cc (Fixed Plugin) - 2 Bolt



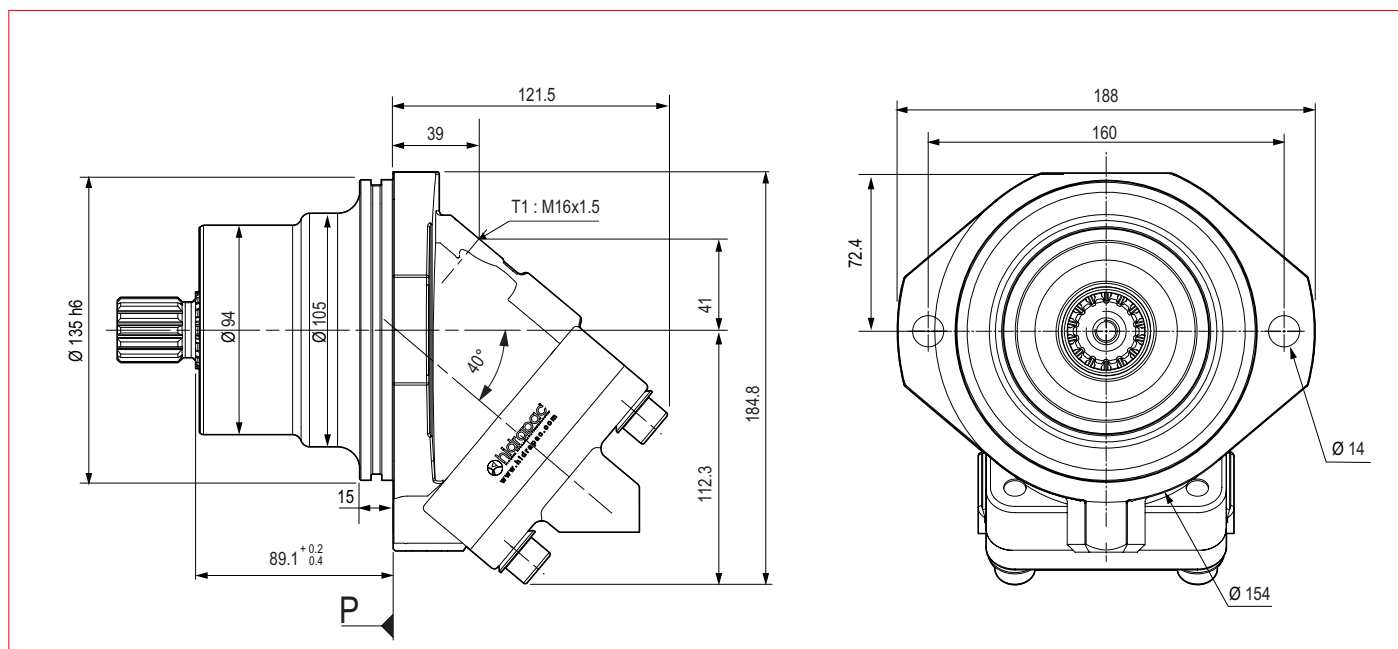
S14 Splined shaft DIN 5480 W 30 x 2 x 30 x 14 x 9 g



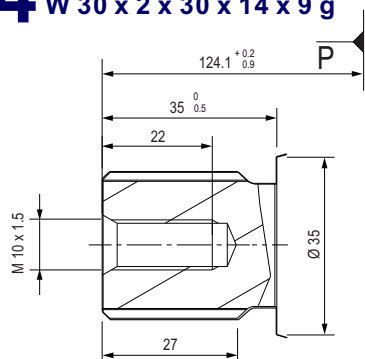
R45 SAE flange ports, bottom 40 degree A and B SAE 1/2" 6000 psi



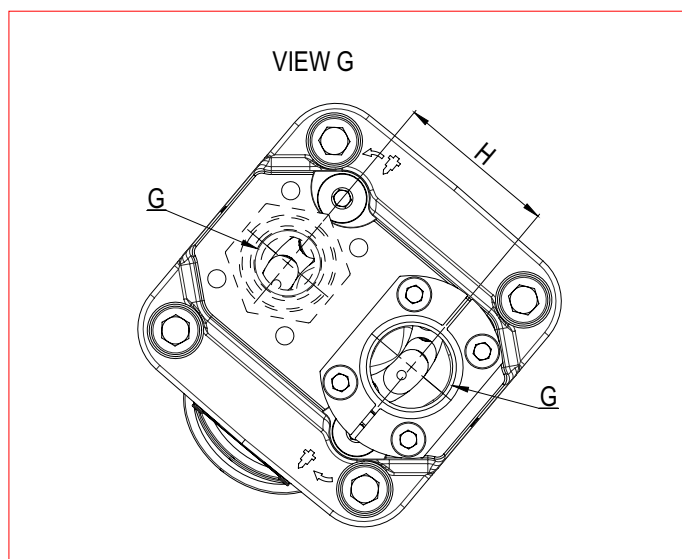
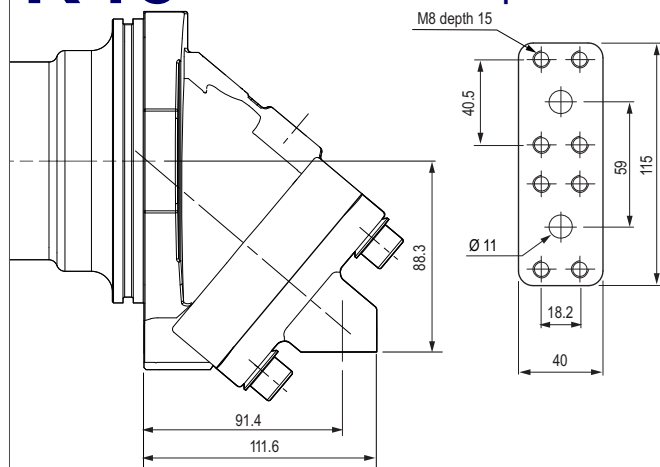
A2FP - 32 cc (Fixed Plugin) - 2 Bolt



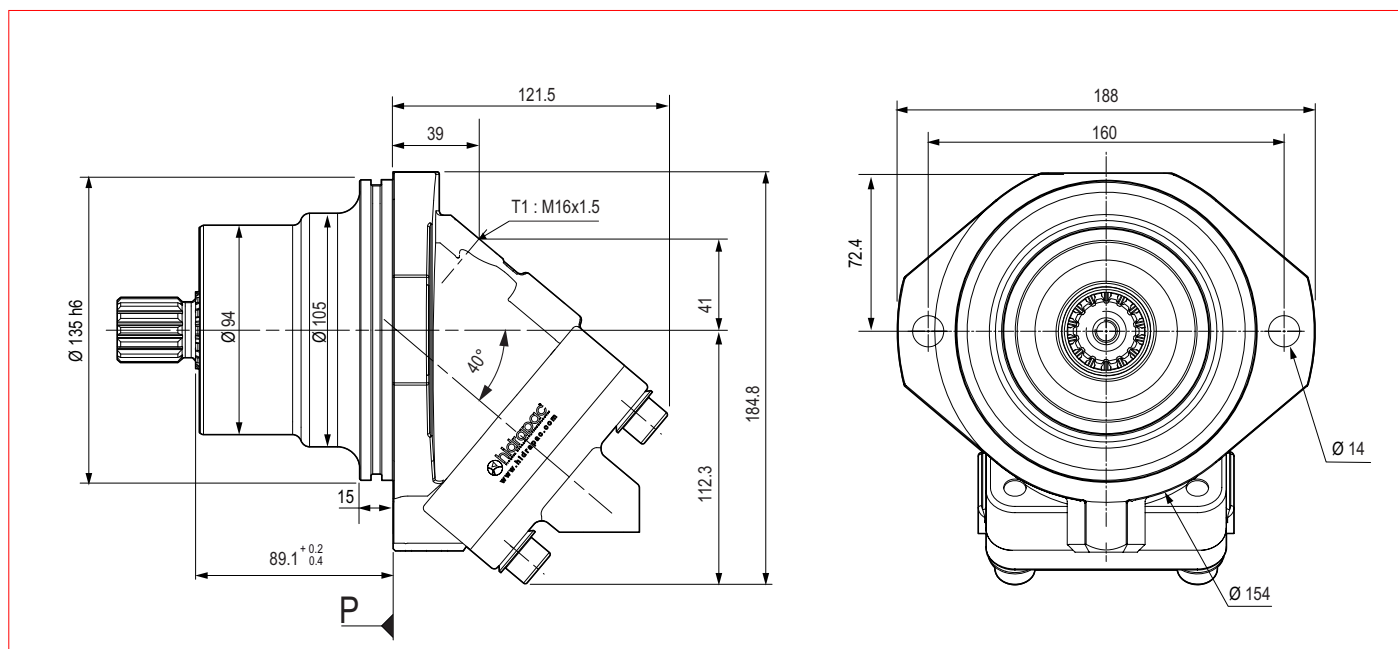
S14 Splined shaft DIN 5480 W 30 x 2 x 30 x 14 x 9 g



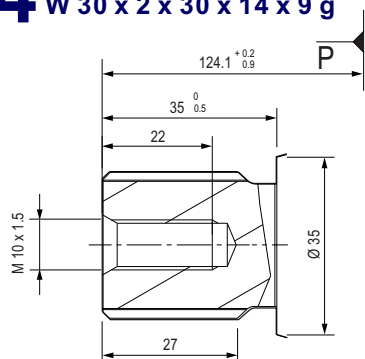
R45 SAE flange ports, bottom 40 degree A and B SAE 1/2" 6000 psi



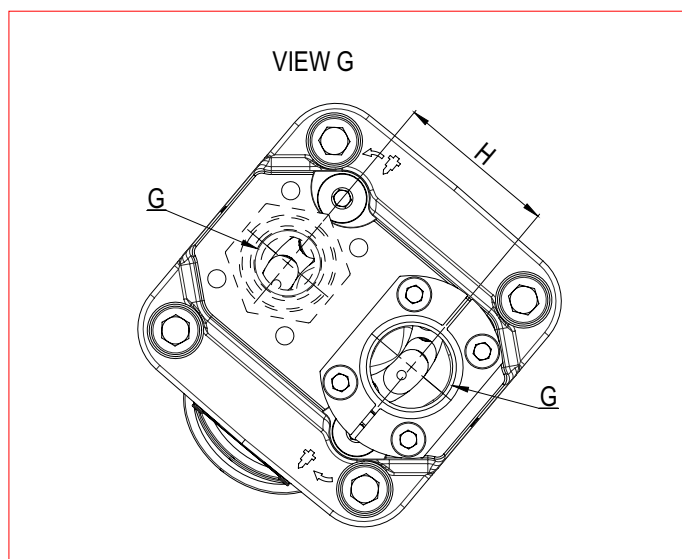
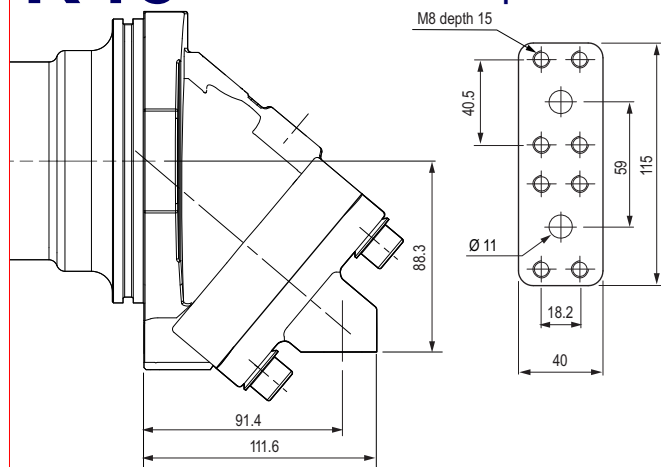
A2FP - 41 cc (Fixed Plugin) - 2 Bolt



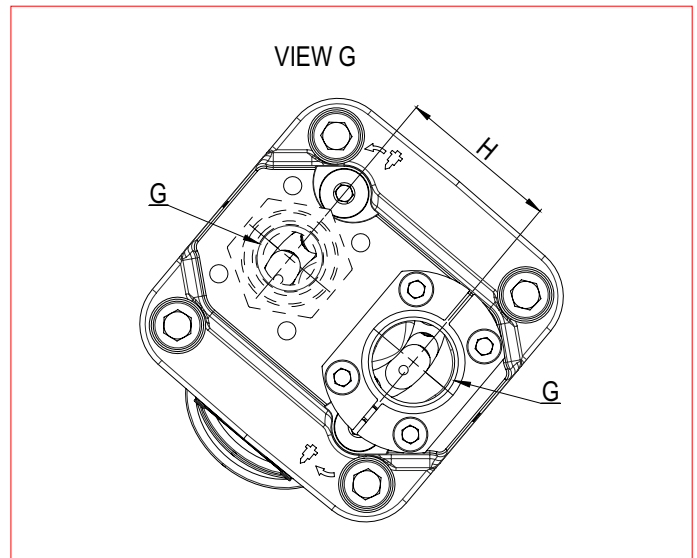
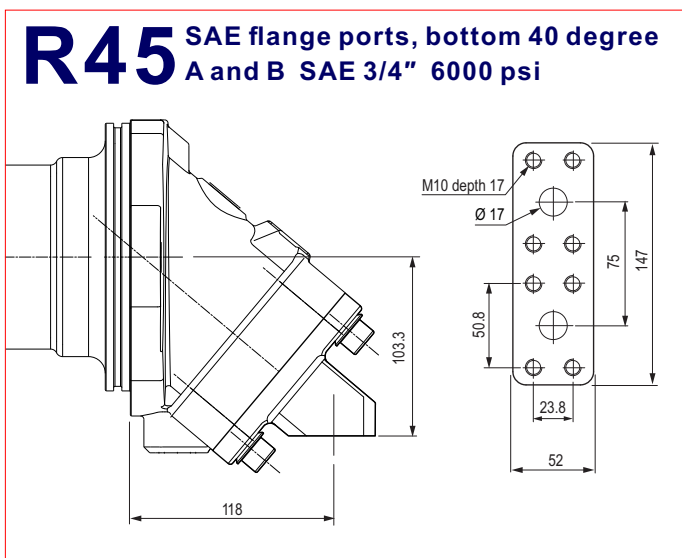
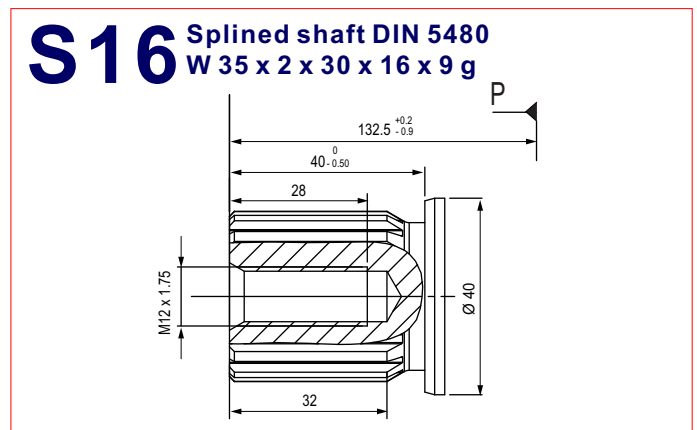
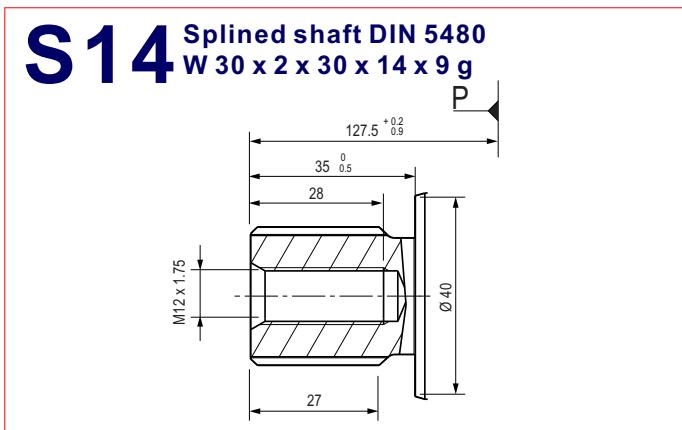
S14 Splined shaft DIN 5480 W 30 x 2 x 30 x 14 x 9 g



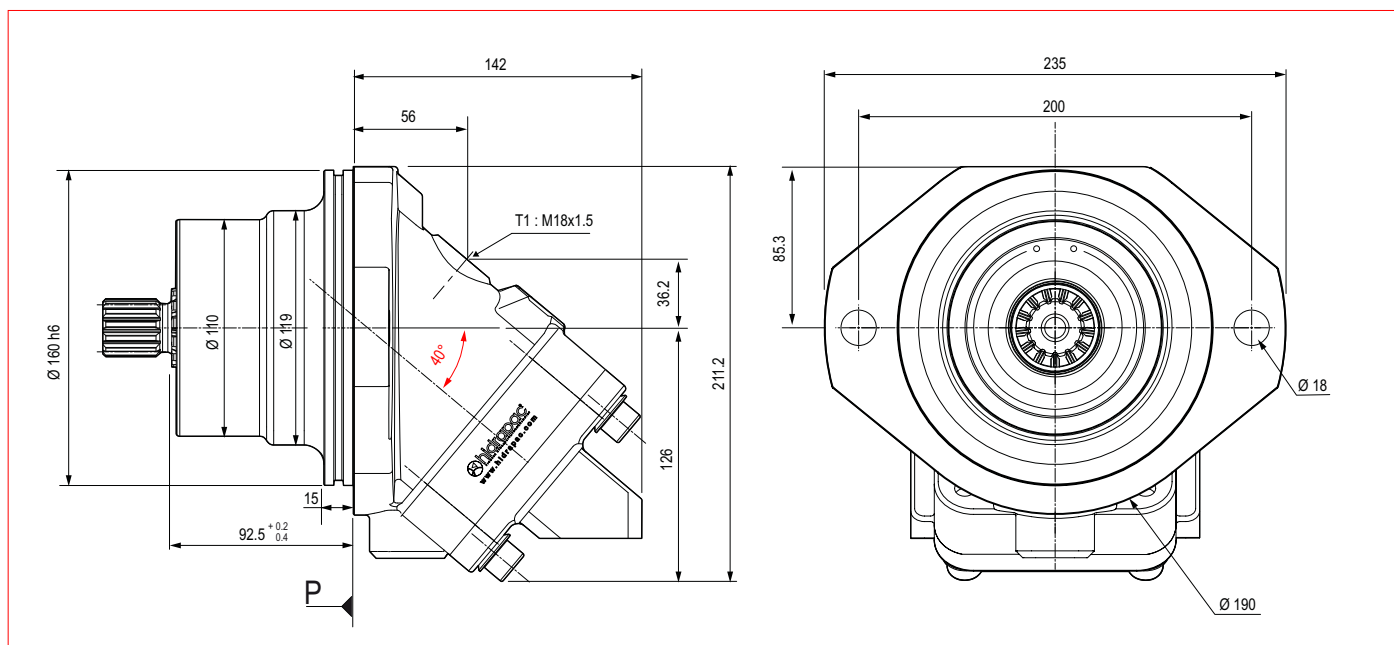
R45 SAE flange ports, bottom 40 degree A and B SAE 1/2" 6000 psi



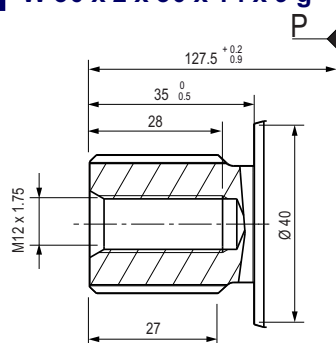
hidrapac[®]
PIONEER HYDRAULIC TECHNOLOGIES



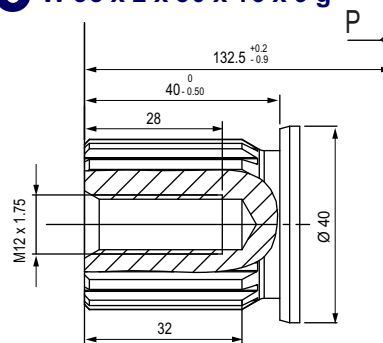
A2FP - 56 cc (Fixed Plugin) - 2 Bolt



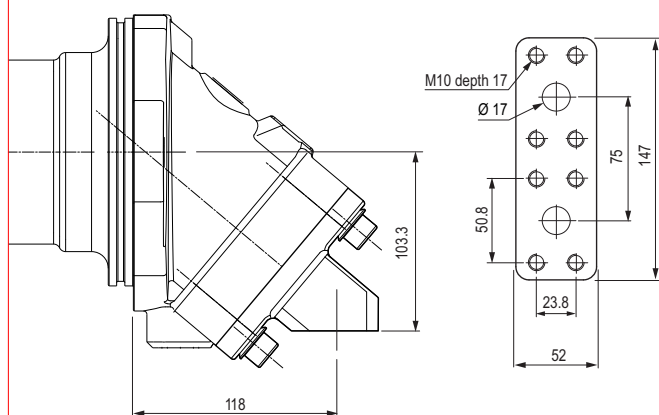
S14 Splined shaft DIN 5480 W 30 x 2 x 30 x 14 x 9 g



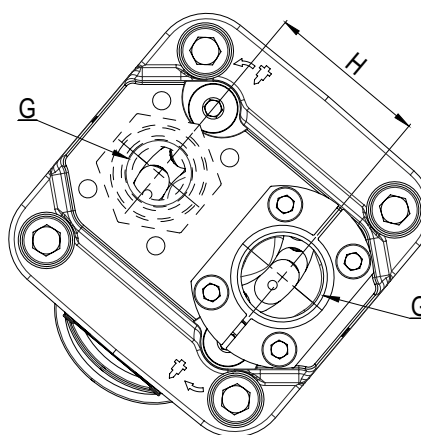
S16 Splined shaft DIN 5480 W 35 x 2 x 30 x 16 x 9 g



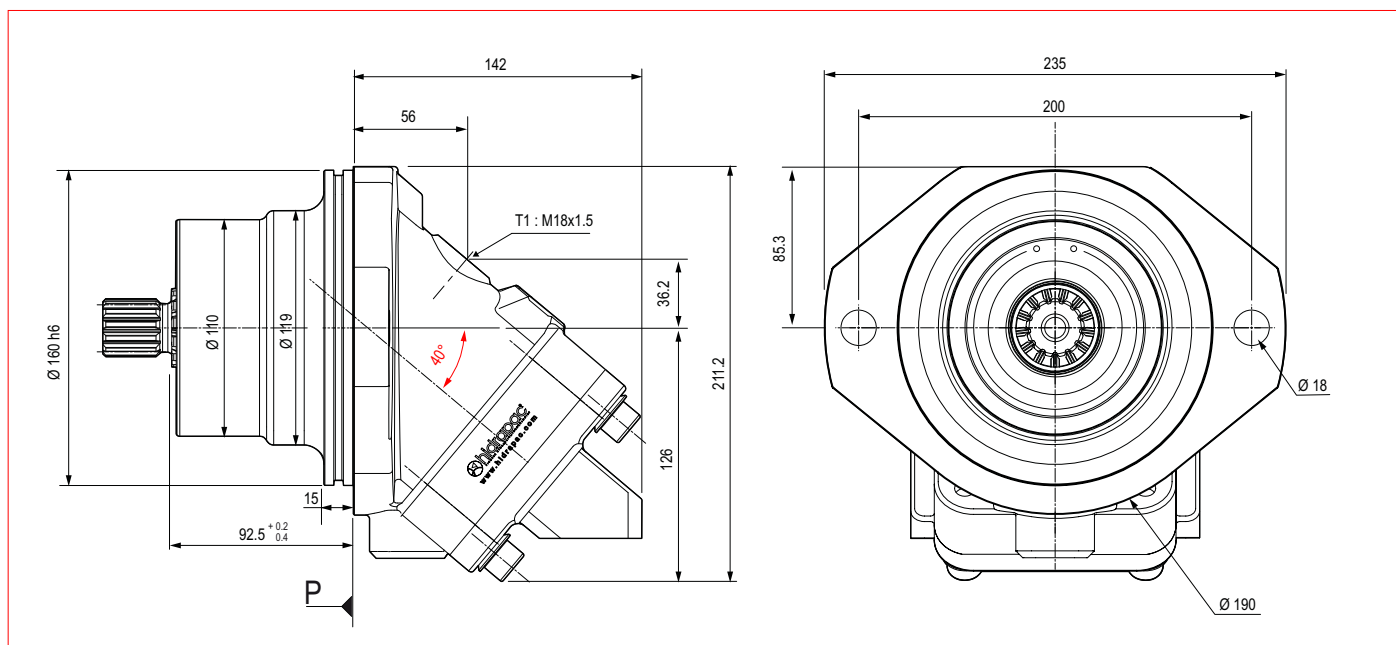
R45 SAE flange ports, bottom 40 degree A and B SAE 3/4" 6000 psi



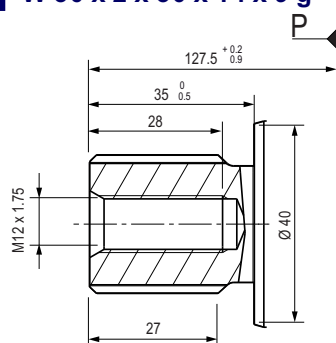
VIEW G



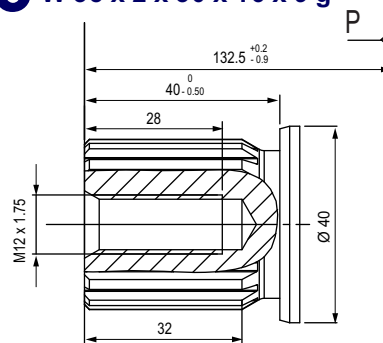
A2FP - 63 cc (Fixed Plugin) - 2 Bolt



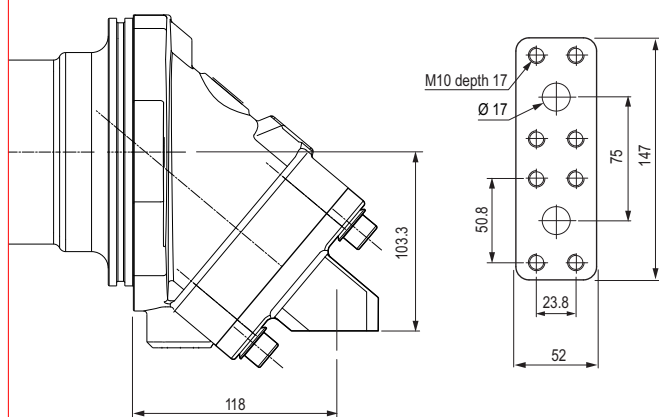
S14 Splined shaft DIN 5480 W 30 x 2 x 30 x 14 x 9 g



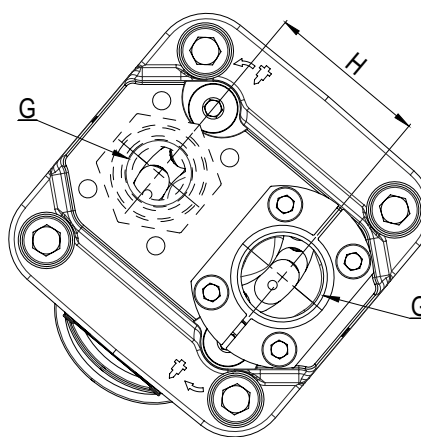
S16 Splined shaft DIN 5480 W 35 x 2 x 30 x 16 x 9 g



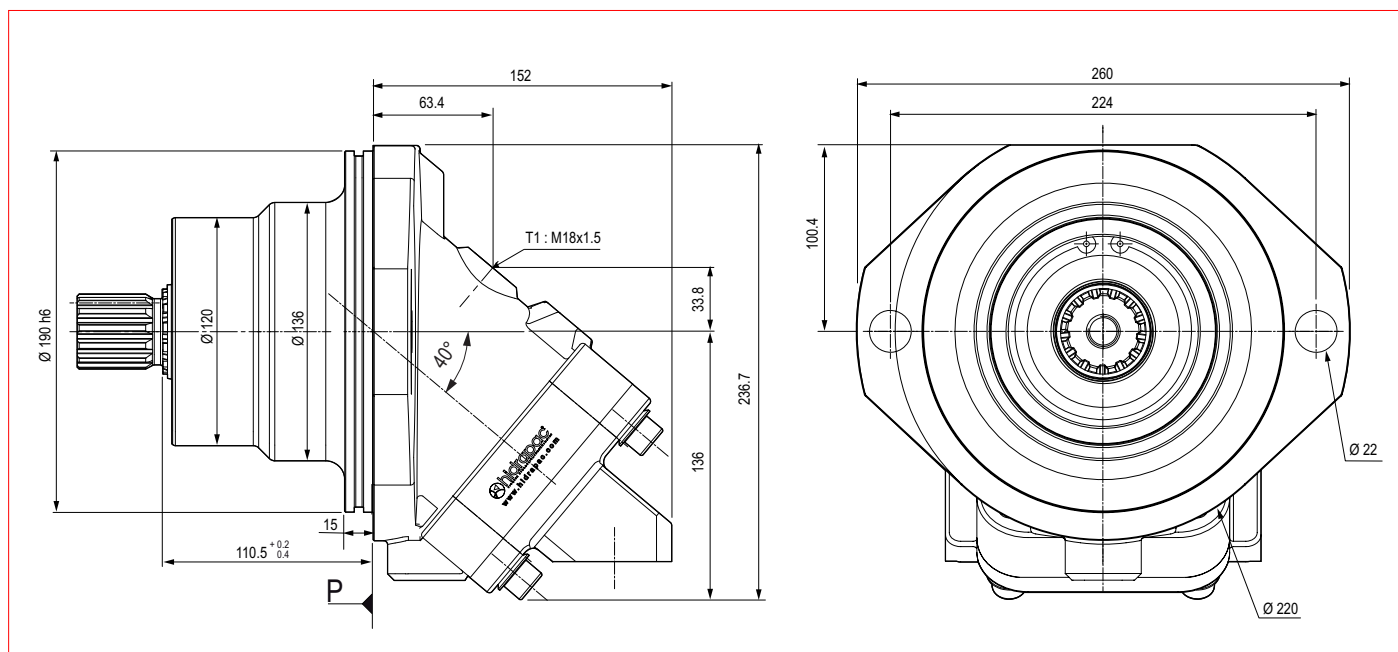
R45 SAE flange ports, bottom 40 degree A and B SAE 3/4" 6000 psi



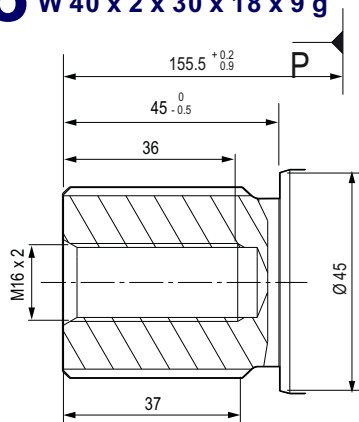
VIEW G



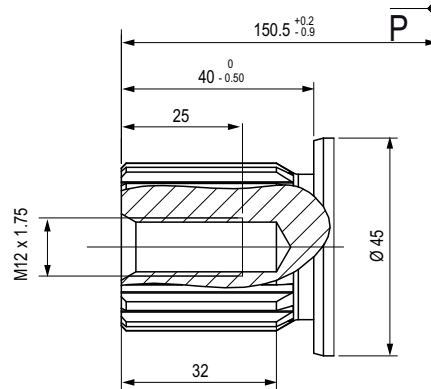
A2FP - 80 cc (Fixed Plugin) - 2 Bolt



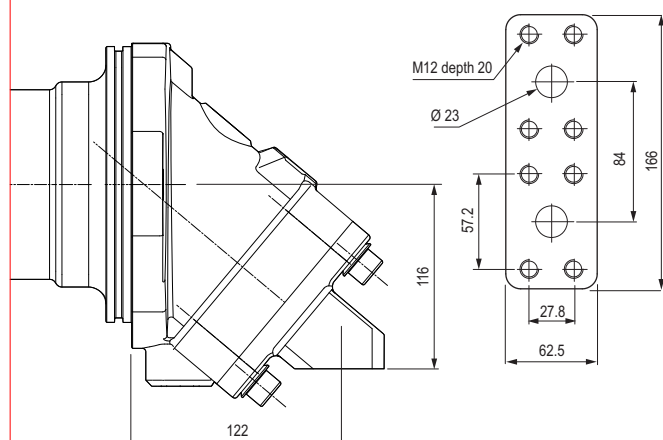
S18 Splined shaft DIN 5480 W 40 x 2 x 30 x 18 x 9 g



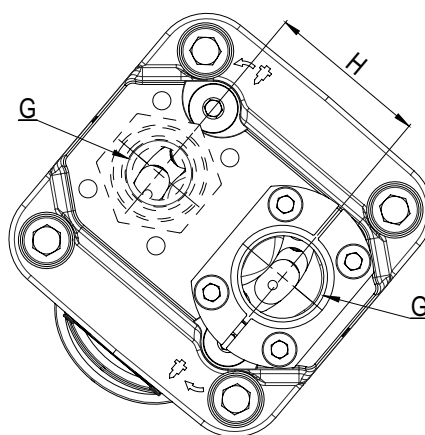
S16 Splined shaft DIN 5480 W 35 x 2 x 30 x 16 x 9 g



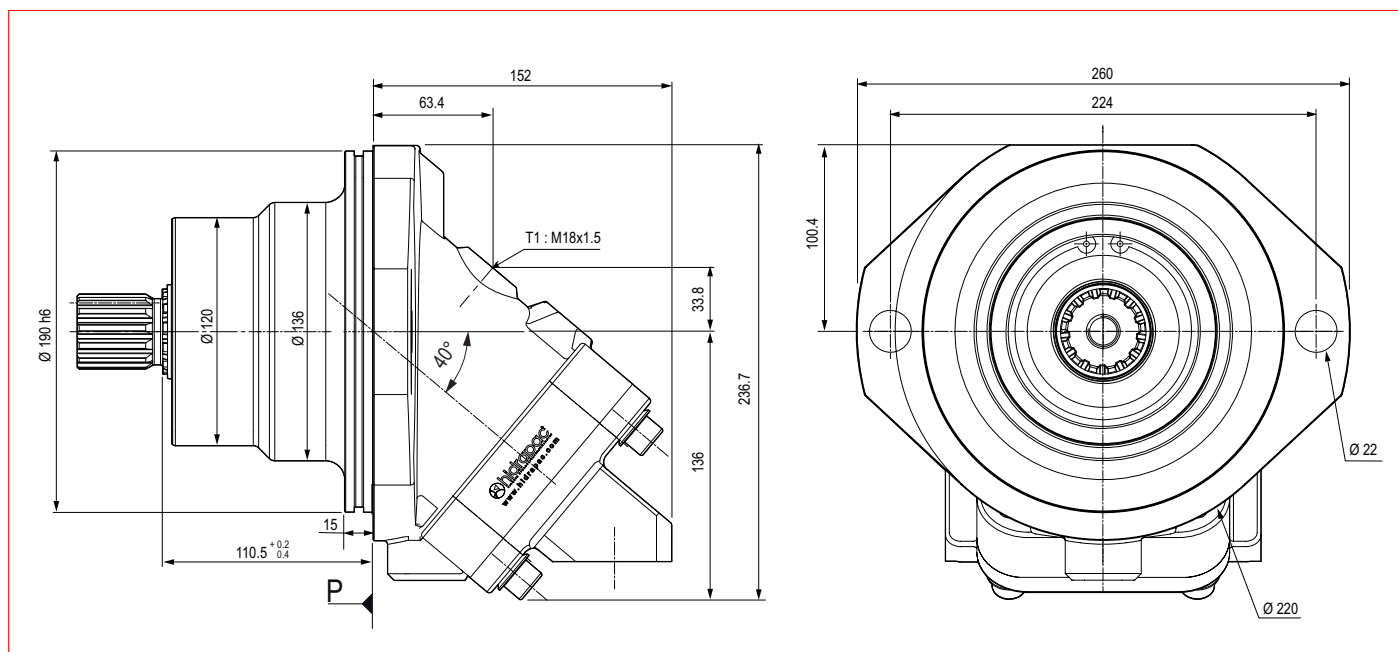
R45 SAE flange ports, bottom 40 degree A and B SAE 1" 6000 psi



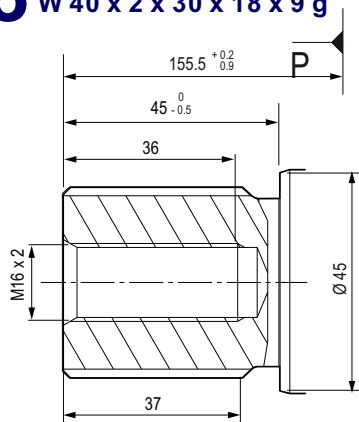
VIEW G



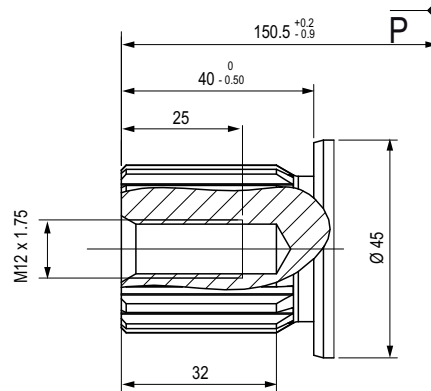
A2FP - 90 cc (Fixed Plugin) - 2 Bolt



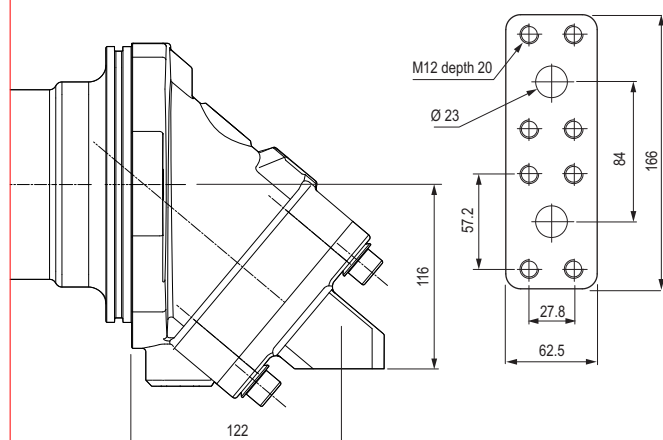
S18 Splined shaft DIN 5480 W 40 x 2 x 30 x 18 x 9 g



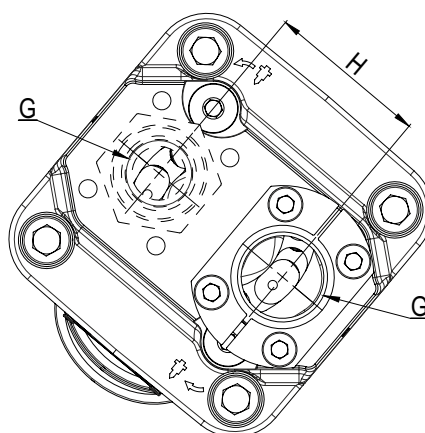
S16 Splined shaft DIN 5480 W 35 x 2 x 30 x 16 x 9 g



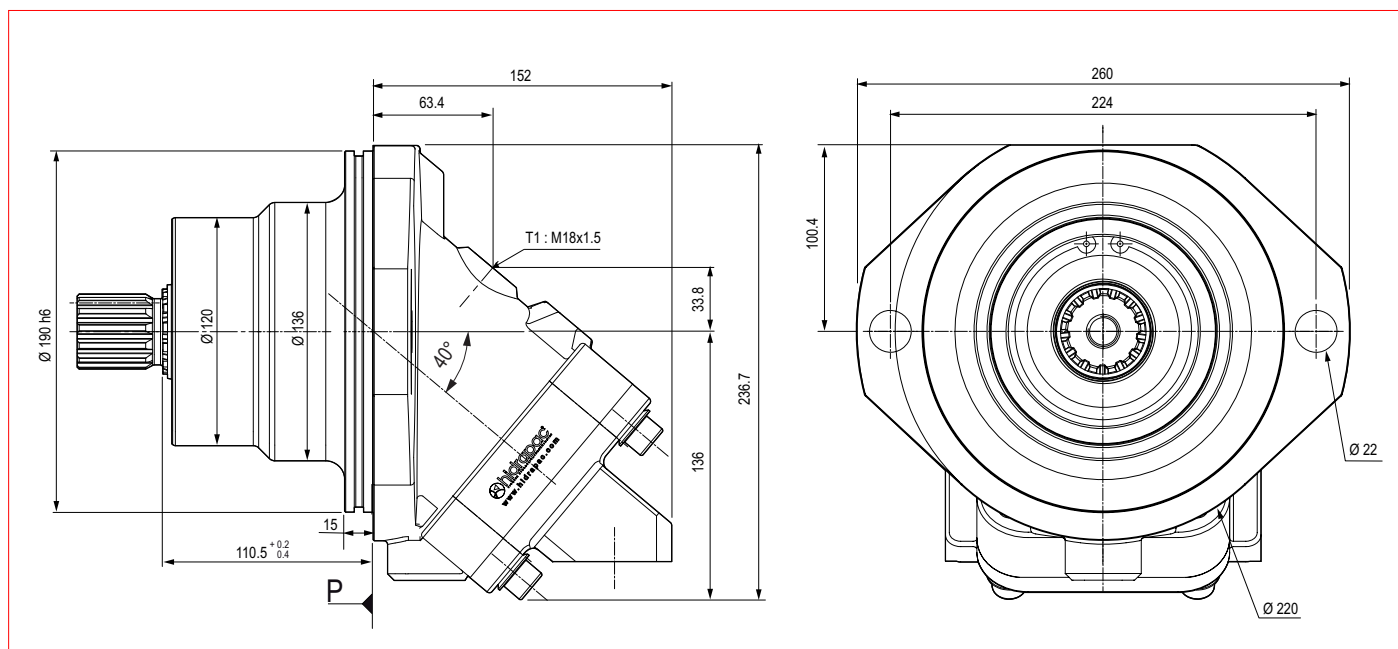
R45 SAE flange ports, bottom 40 degree A and B SAE 1" 6000 psi



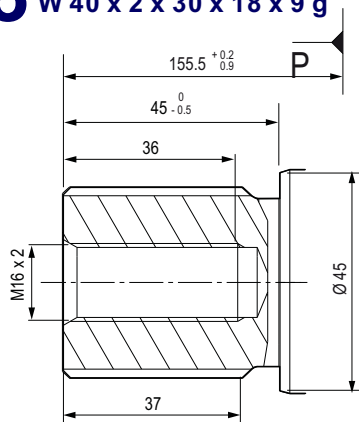
VIEW G



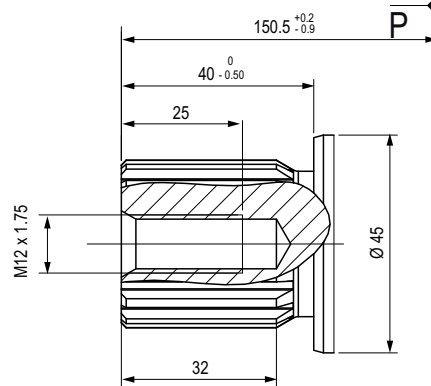
A2FP - 108 cc (Fixed Plugin) - 2 Bolt



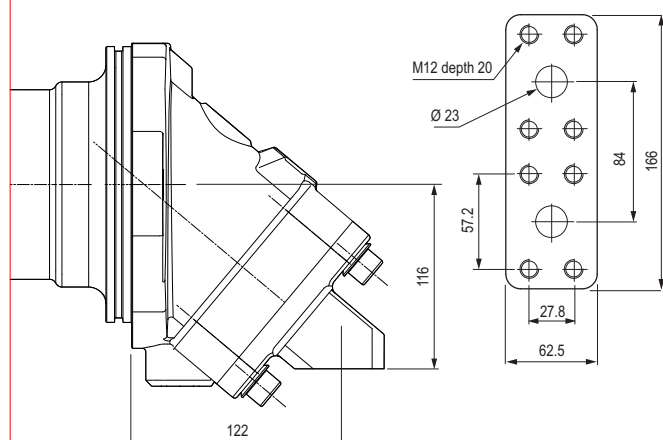
S18 Splined shaft DIN 5480 W 40 x 2 x 30 x 18 x 9 g



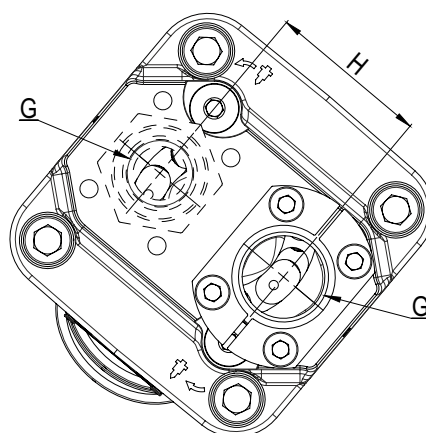
S16 Splined shaft DIN 5480 W 35 x 2 x 30 x 16 x 9 g



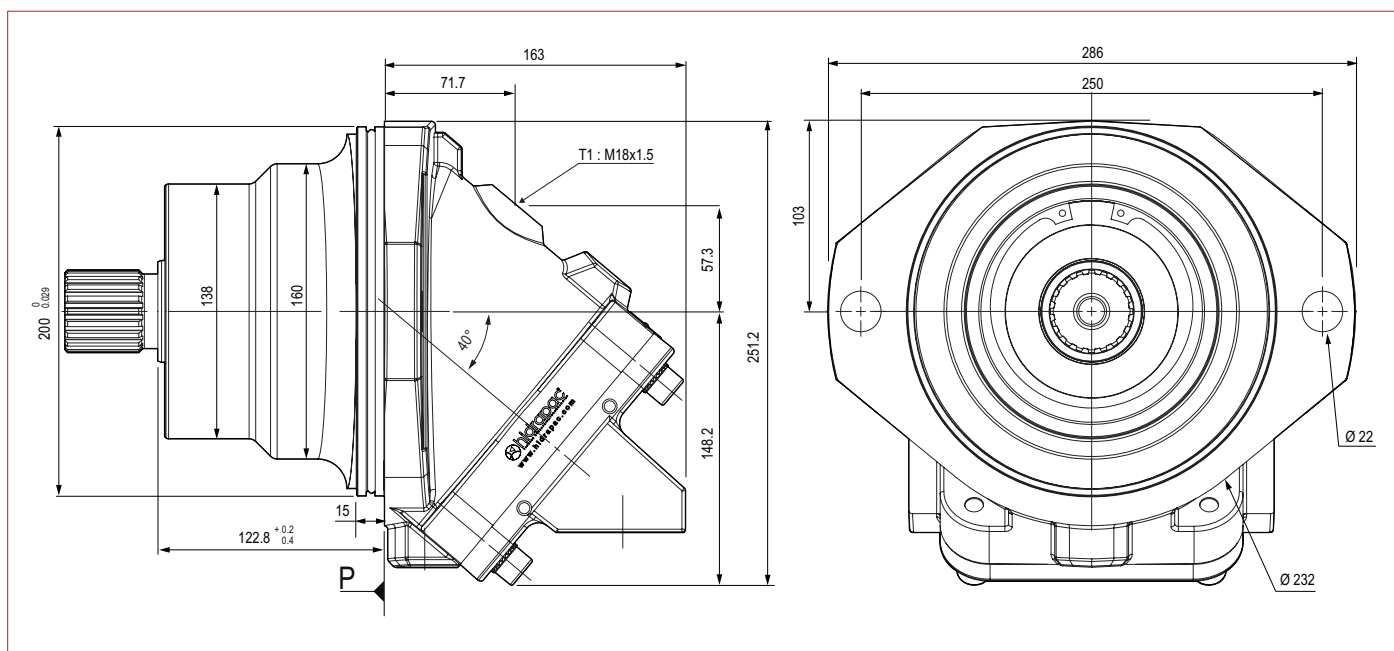
R45 SAE flange ports, bottom 40 degree A and B SAE 1" 6000 psi



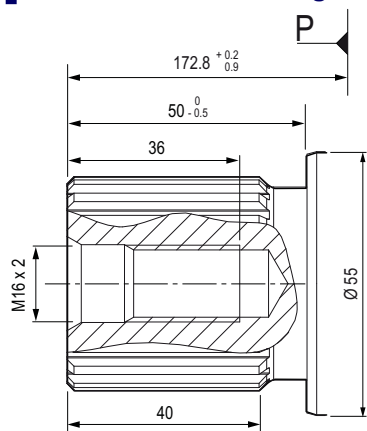
VIEW G



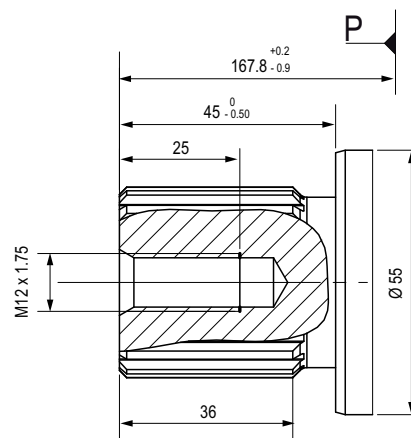
A2FP - 125 cc (Fixed Plugin) - 2 Bolt



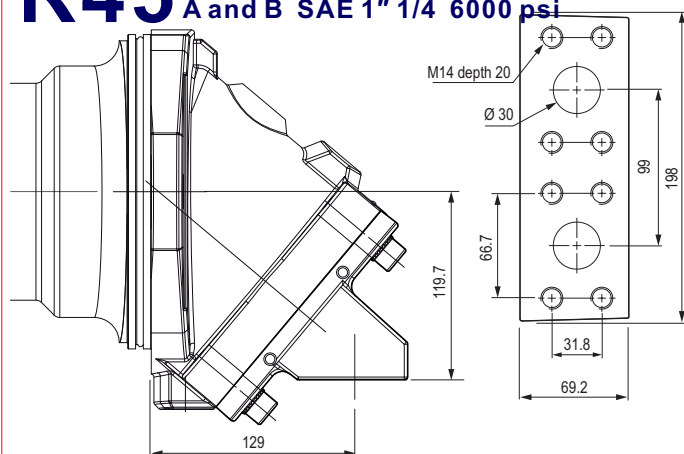
S21 Splined shaft DIN 5480 W 45 x 2 x 30 x 21 x 9 g



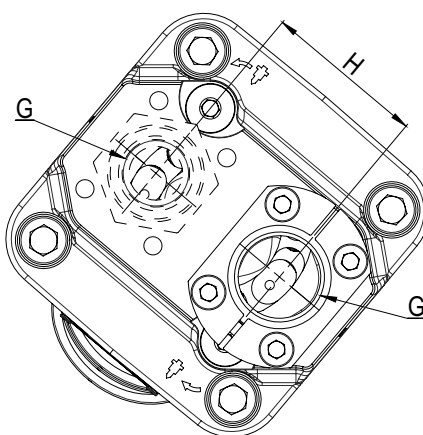
S18 Splined shaft DIN 5480 W 40 x 2 x 30 x 18 x 9 g



R45 SAE flange ports, bottom 40 degree A and B SAE 1" 1/4 6000 psi

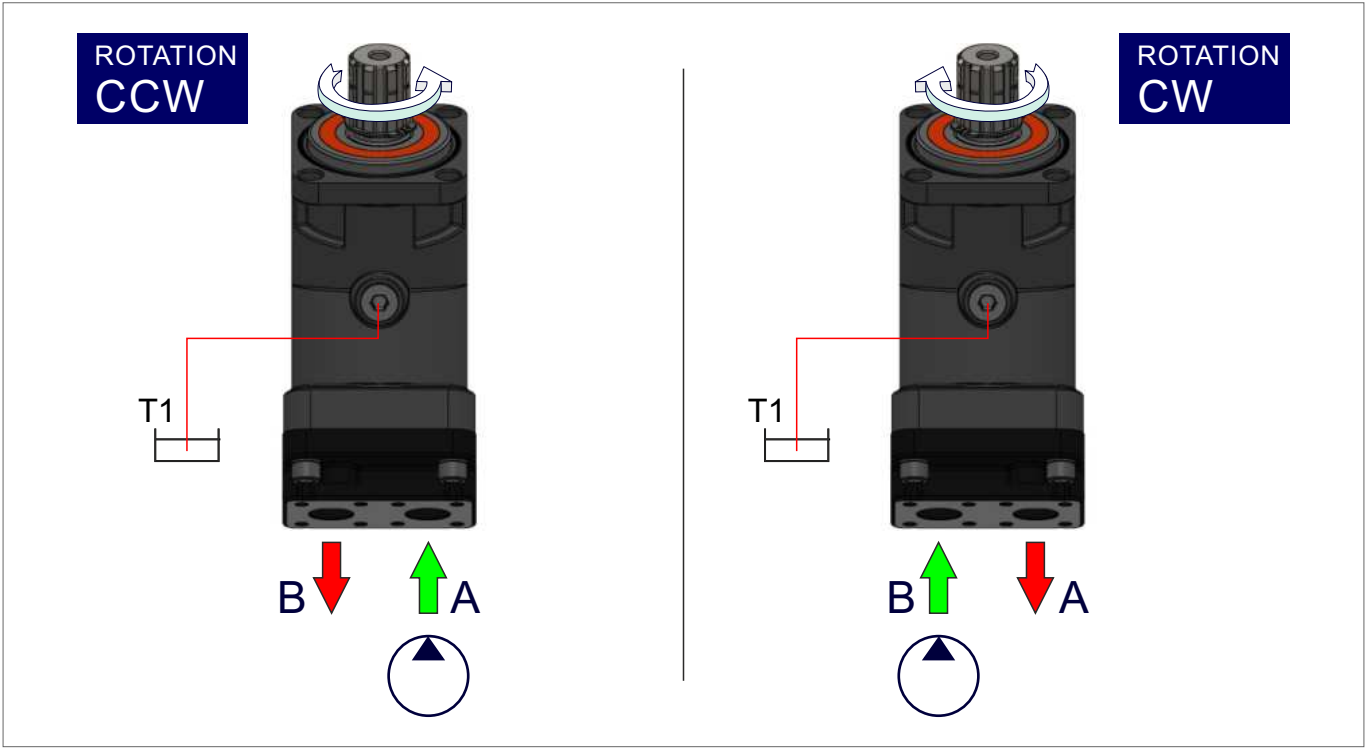


VIEW G



Direction of Rotation; CW/CCW

The Pumps rotate clockwise or counter-clockwise depending on the direction of hydraulic flow entering the Pump.



Formulas			
Pump Output Flow	GPM	$GPM = (Speed\ (rpm) \times disp.\ (cu.\ in.)) / 231$	$GPM = (n \times d) / 231$
Pump Input Horsepower	HP	$HP = GPM \times Pressure\ (psi) / 1714 \times Efficiency$	$HP = (Q \times P) / 1714 \times E$
Pump Efficiency	E	Overall Efficiency = Output HP / Input HP	$E_{overall} = HP_{out} / HP_{in} \times 100$
		Overall Efficiency = Volumetric Eff. $\times$ Mechanical Eff.	$E_{overall} = EffVol. \times EffMech.$
Pump Volumetric Efficiency	E	Volumetric Efficiency = Actual Flow Rate Output (GPM) / Theoretical Flow Rate Output (GPM) $\times 100$	$EffVol. = Q_{act.} / Q_{theo.} \times 100$
Pump Mechanical Efficiency	E	Mechanical Efficiency = Theoretical Torque to Drive / Actual Torque to Drive $\times 100$	$EffMech = T_{theo.} / T_{act.} \times 100$
Pump Displacement	CIPR	$Displcmnt\ (In.^3 / rev.) = Flow\ Rate\ (GPM) \times 231 / Pump\ RPM$	$CIPR = GPM \times 231 / RPM$
Pump Torque	T	Torque = Horsepower $\times 63025 / RPM$	$T = 63025 \times HP / RPM$
		Torque = Pressure (PSIG) $\times$ Pump Displacement (CIPR) / 2π	$T = P \times CIPR / 6.28$

- Horsepower for driving a pump

: For every 1 hp of drive, the equivalent of 1 gpm @ 1500 psi can be produced.
- Horsepower for idling a pump

: To idle a pump when it is unloaded will require about 5% of it's full rated power
- Wattage for heating hydraulic oil

: Each watt will raise the temperature of 1 gallon of oil by 1° F. per hour.
- Flow velocity in hydraulic lines

: Pump suction lines 2 to 4 feet per second, pressure lines up to 500 psi - 10 to 15 ft./sec., pressure lines 500 to 3000 psi - 15 / 20 ft./sec.; all oil lines in air-over-oil systems; 4 ft./sec.

Installation & Assemble Informations for Bent Axis Pumps

POSITION

Fixed Flange Bent Axis Pumps can be operate any position.

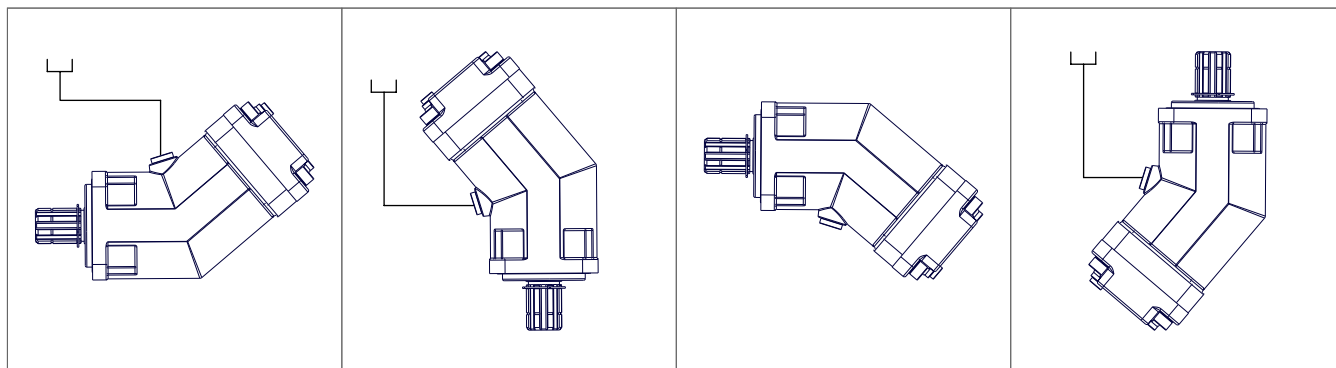
DIRECTION OF ROTATION

Fixed Flange Bent Axis Pumps can be operate in both directions of rotation.

Before of Installation operation, the Pump must be filled with hydraulic fluid and air bled.

INSTALLATION POSITION

See following examples.

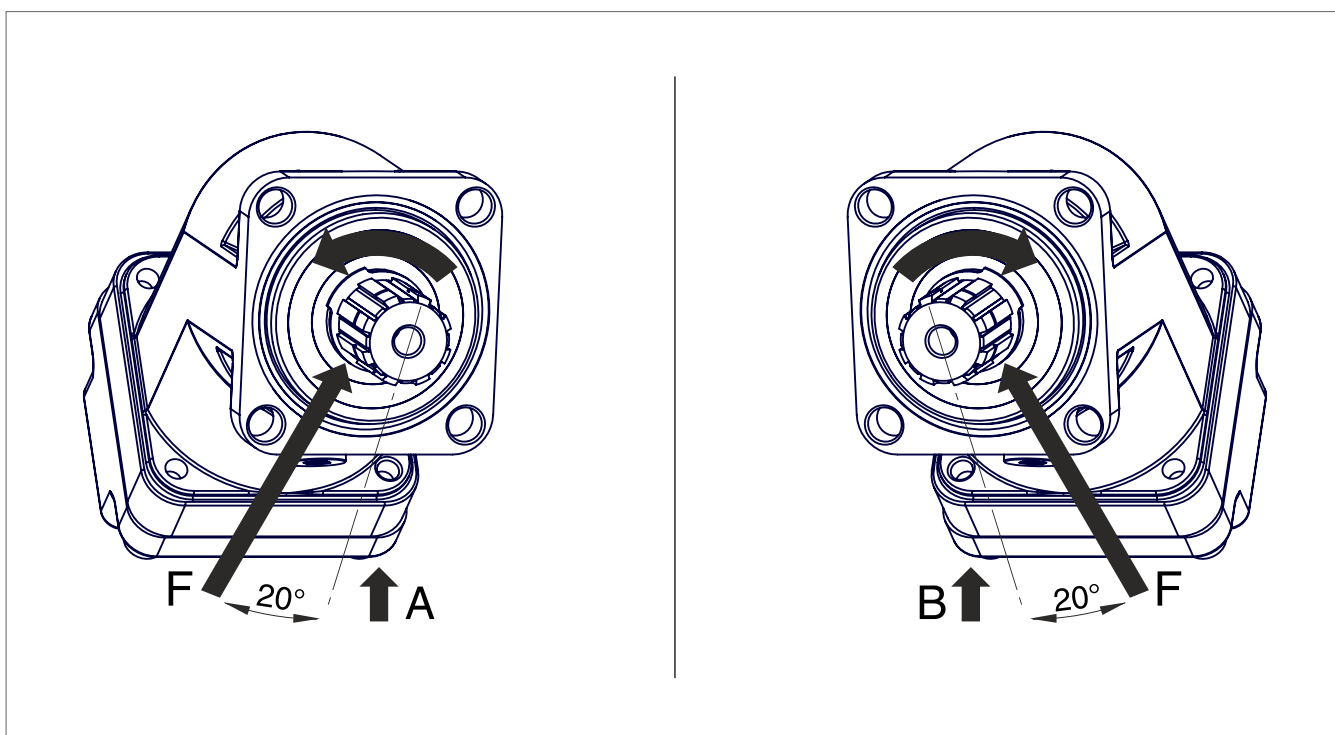


HYDRAULIC FLUID

Recommended ;

Generally : between 15 and 200 cSt.

Maximum : between 5 and 1600 cSt.



FOR USE;

Available via e-mail on request or each Pump is supplied via Starting datasheet.

Formulas, Calculations, Installation Guide

Quick Calculation

Flow rate

$$Q = \frac{V_s \cdot n}{1000 \eta_v} \text{ (lpm)}$$

Torque

$$M = \frac{V_s \cdot \Delta p \cdot \eta_{mh}}{63} \text{ (Nm)}$$

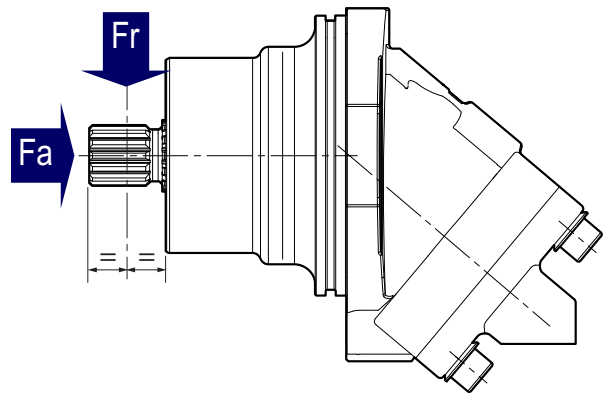
Power

$$P = \frac{2\pi \cdot M \cdot n}{60000} = \frac{M \cdot n}{9549} = \frac{Q \cdot \Delta p \cdot \eta_t}{600} \text{ (kW)}$$

Speed

$$n = \frac{1000 \cdot Q \cdot \eta_v}{V_s} \text{ (rpm)}$$

- V_s = Displacement (ccm/rev.)
 Δp = Diff. pressure (bar)
 n = Speed (rpm)
 Q = Flow (lpm)
 η_v = Volumetric efficiency
 η_{mh} = Mechanical-hydraulic efficiency
 η_t = Total efficiency ($\eta_t = \eta_v \times \eta_{mh}$)



Pump model	28 cc	32 cc	41.45	50 cc	56, 63cc	80,90,108	125 cc
Fr (lbf)	1350	1462.5	1462.5	1686	2023	2812	3262
Fr (N/bar)	6000	6500	6500	7500	9000	12500	14500
Fa (lbf)	0.42	0.46	0.62	0.62	0.77	1.24	1.33
Fa (N/bar)	(27)	(30)	(40)	(40)	(50)	(80)	(86)

Other Advantages of Flange Bent Axis Pumps

Interchangeable and Compatible with other Bent Axis Pumps,
 Special Designed Pistons,
 One-Piece Piston with Piston Rings,
 For use in stationary and mobile applications,
 Compact Pump design and extra durable parts,
 High Operational Reliability and High Starting Torque
 Extra Warranty with Wide Service

Hydraulic Pumps



K2FA (DIN)

BENT AXIS PISTON PUMPS



K2FL (DIN)

ALUMINUM BODY
BENT AXIS PISTON PUMPS



A2FD (DIN)

DUAL FLOW
BENT AXIS PISTON PUMPS



A2FO (ISO)

BENT AXIS PISTON PUMPS



A2FS (SAE)

BENT AXIS PISTON PUMPS



AXVP Series

VARIABLE DISPLACEMENT
PISTON PUMPS



A3PP Series

AXIAL PISTON PUMPS



A3PH Series

HIGH PRESSURE
PISTON PUMPS



ByPass Valve

FOR
BENT AXIS PISTON PUMPS



LS Adapters

FOR
VARIABLE PISTON PUMPS

Hydraulic Motors



K2FM (DIN)

BENT AXIS PISTON MOTORS



A2FM (ISO)

BENT AXIS PISTON MOTORS



A2MS (SAE)

BENT AXIS PISTON MOTORS



A2FE (FixedPlug)

BENT AXIS PISTON MOTORS



Anti Cavitation

VALVE
BENT AXIS PISTON MOTORS

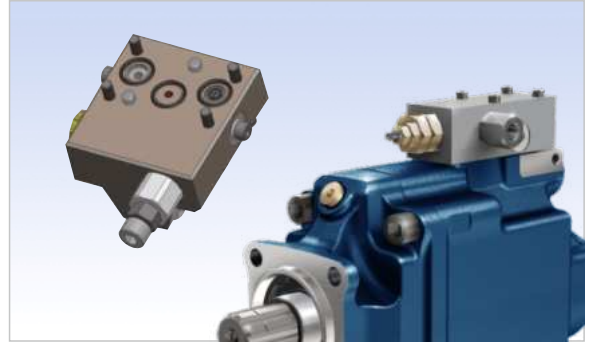
ByPass Valve

for Bent Axis Piston Pumps



LS Adapter

for Variable Displacement Piston Pump



Suction Fittings

for Bent Axis Piston Pumps



Flushing Valve

for Bent Axis Piston Motors



Adapter

for Bent Axis Piston Pumps



Flange, Couplar

for Bent Axis Piston Pumps



Hydraulic Pumps, Hydraulic Motors

Bent Axis Hydraulic Piston Pumps, Bent Axis Piston Motors,
Dual Flow Hydraulic Piston Pumps, Variable Displacement Piston Pumps,
High Pressure Piston Pumps, Straight Axial Piston Pumps..



Address;

HIDRAPAC HYDRAULIC PUMP & MOTORS

Address; (PRODUCTION)

Fevzicakmak Mah. Sila Cad. Kobisan 3 San. Sit.
No: 73 / C Karatay – Konya, PO Code; 42050, Turkiye

Address; (ASSEMBLE, SHIPMENT)

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