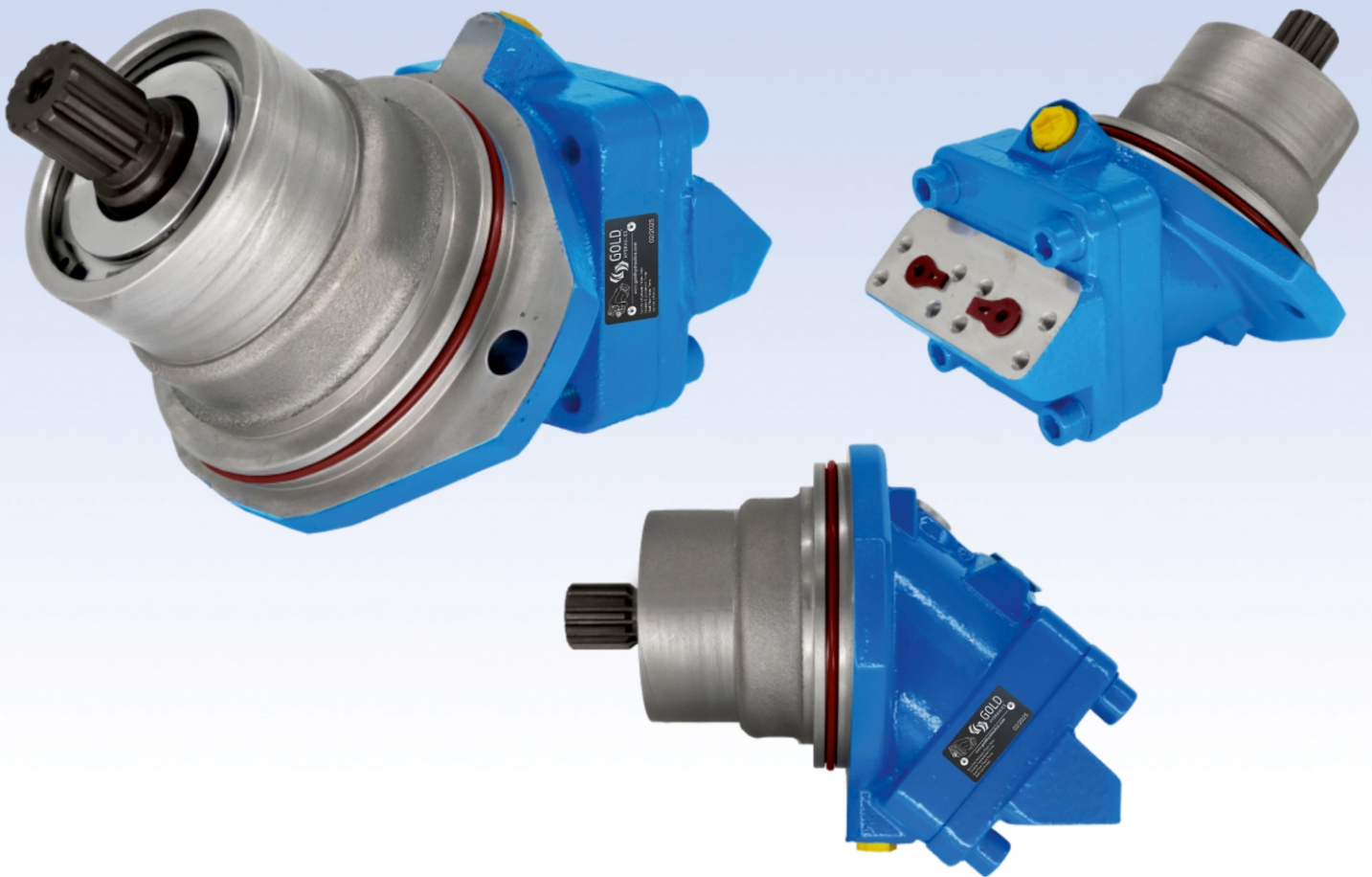


## A8PF (Fixed Plugin) Bent Axis Piston Pump

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 in 2025.

### Designation;

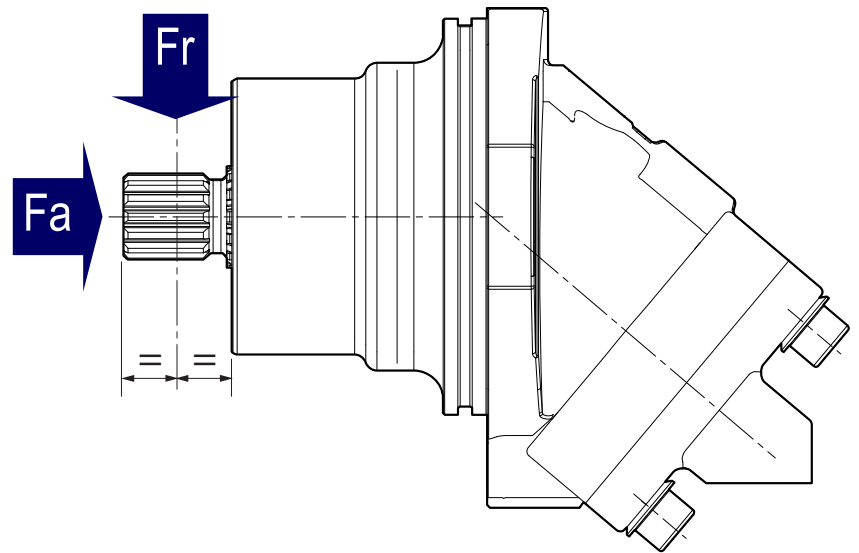
28cc, 32cc, 41cc, 50cc, 56cc,  
63cc, 80cc, 90cc, 108cc, 125cc



[www.goldhydraulics.com](http://www.goldhydraulics.com)

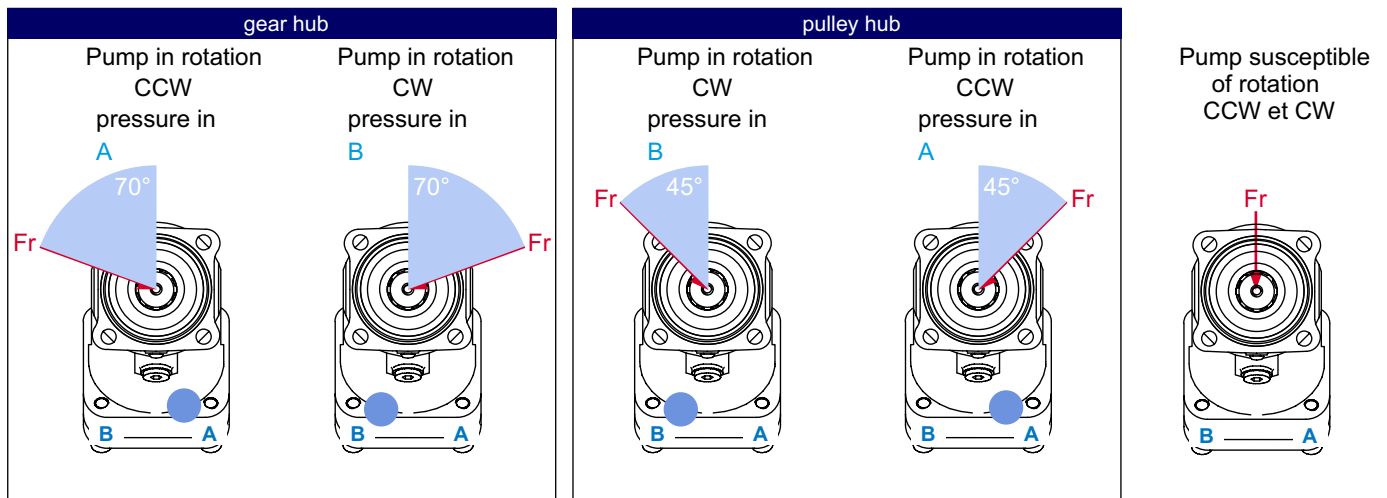
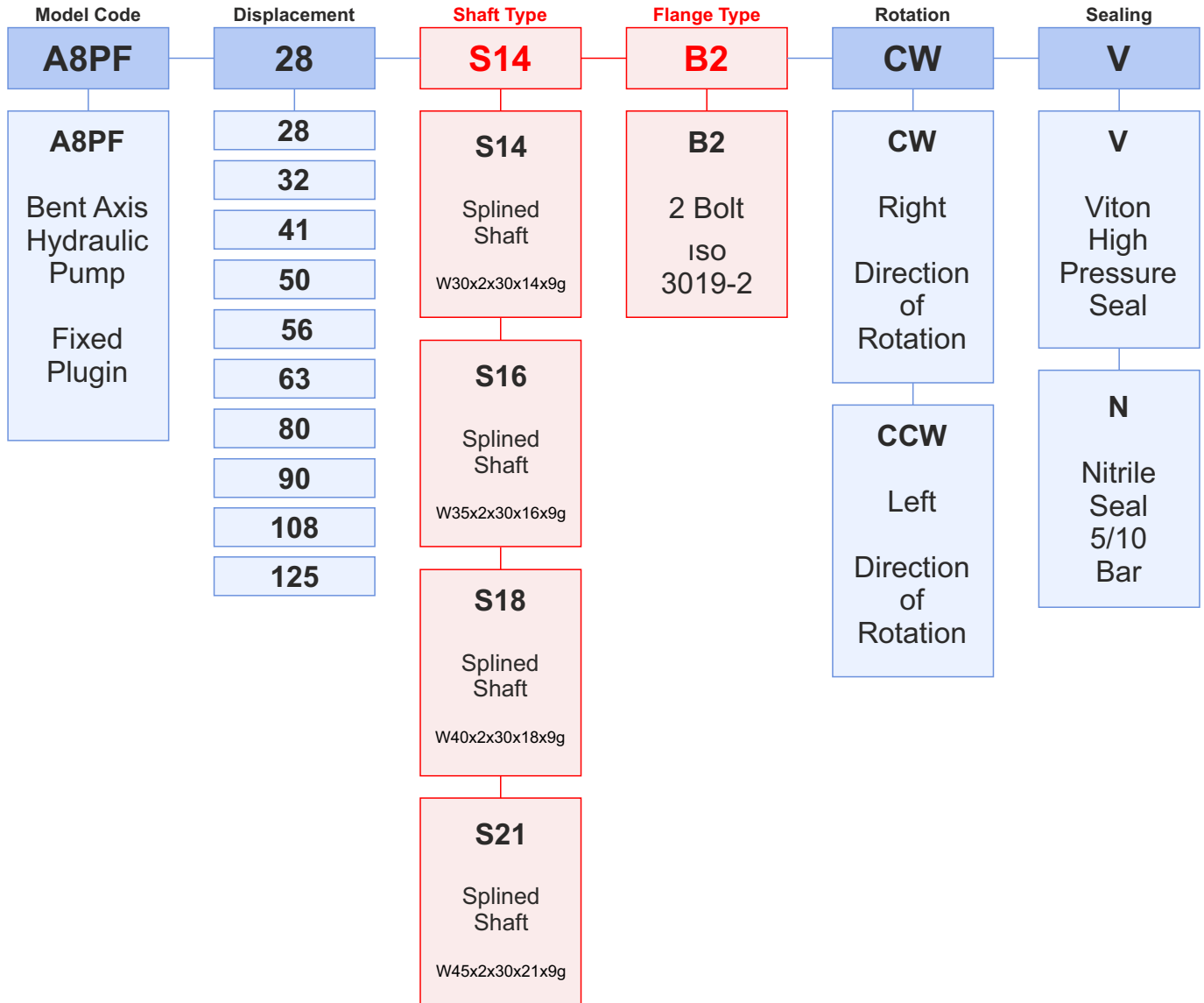
## Characteristics of the A8PF (Fixed Plugin) Flange Bent Axis Pumps

| Pump MODEL | DISPL. (cc) | CONTINUOUS MAX. SPEED (rpm) | INTERMITTED MAX. SPEED (rpm) | MAX. FLOW ABSORBED (l/mn) | TORQUE BAR (m.N/bar) | TORQUE AT 350 BAR (m.N) | THEORETCL 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        |

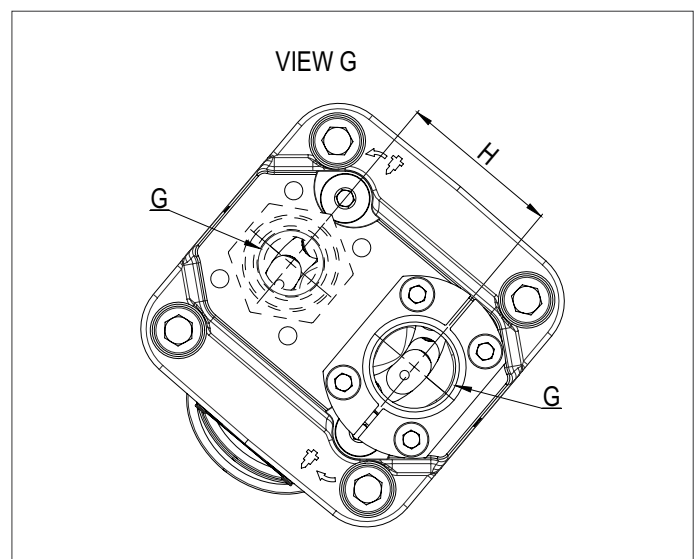
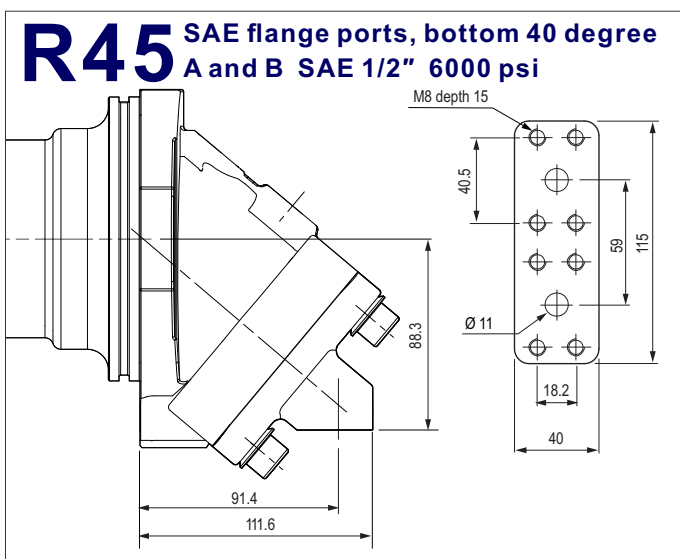
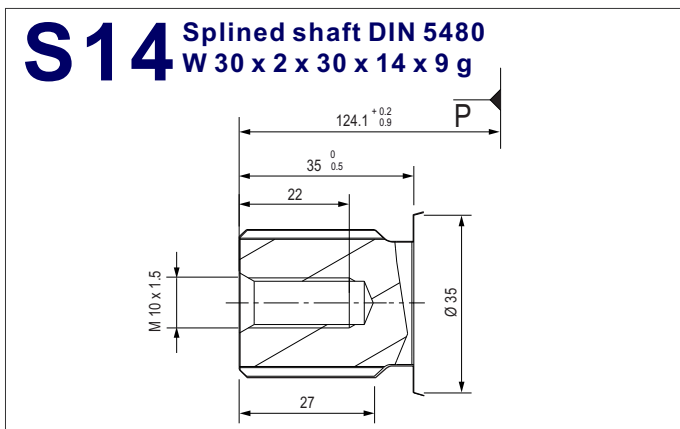
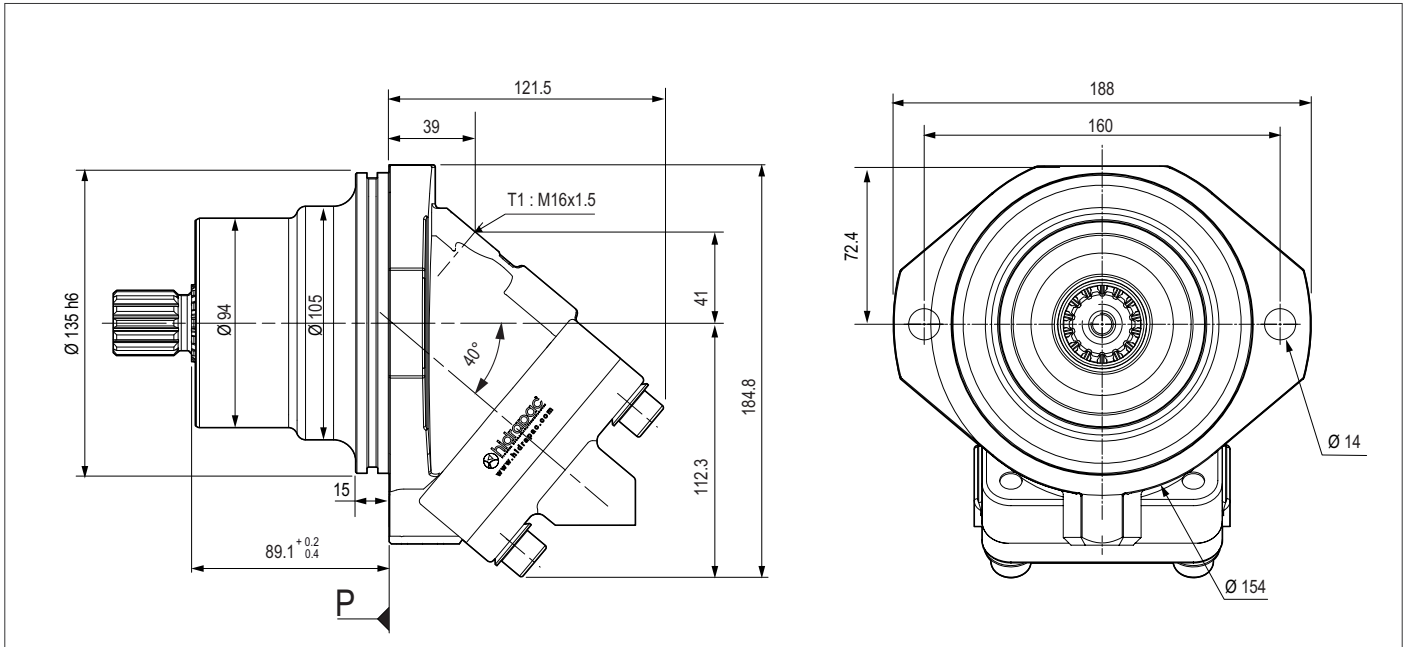


| Pump model  | 28 cc | 32 cc  | 41. 45 | 50 cc | 56, 63cc | 80,90,108 | 125 cc |
|-------------|-------|--------|--------|-------|----------|-----------|--------|
| Fr ( lbf )  | 1350  | 1462.5 | 1462.5 | 1686  | 2023     | 2812      | 3262   |
| Fr ( N/bar) | 6000  | 6500   | 6500   | 7500  | 9000     | 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)   |

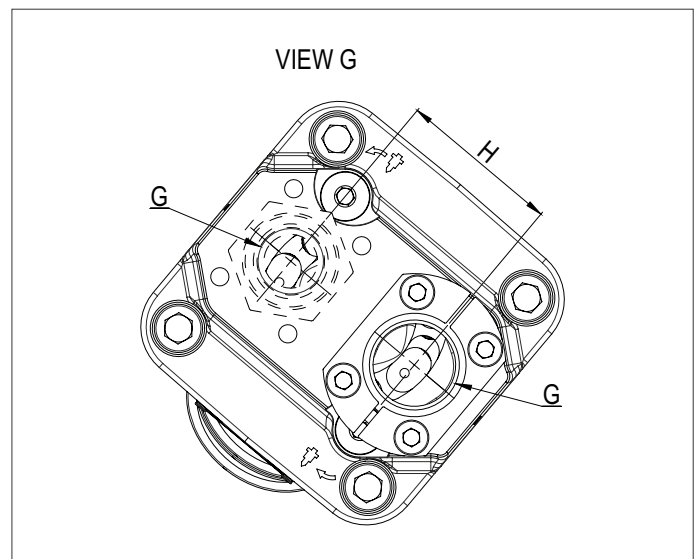
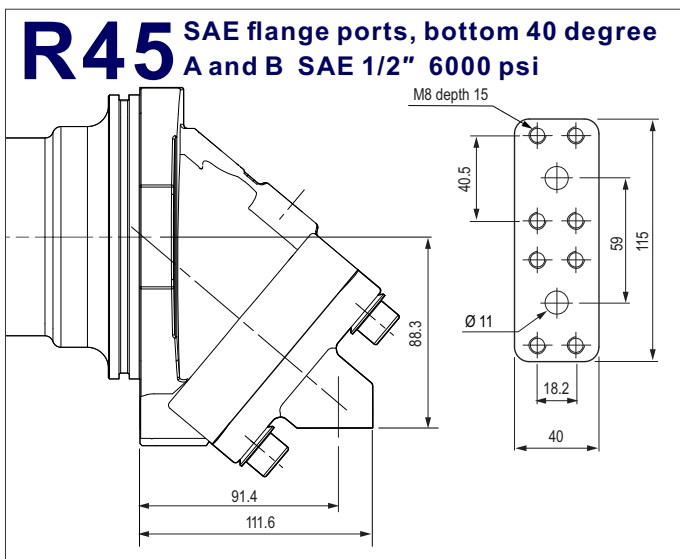
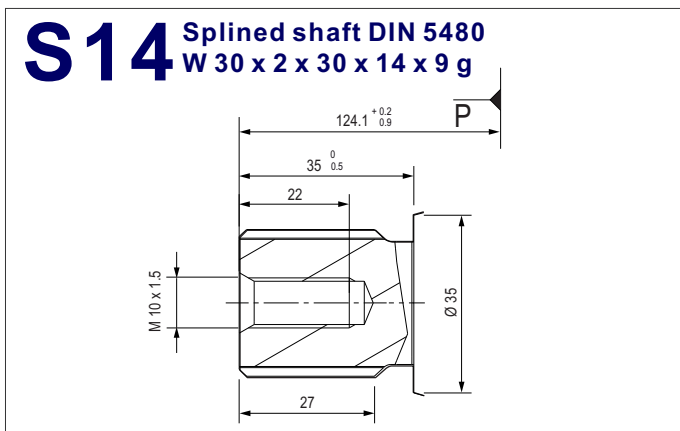
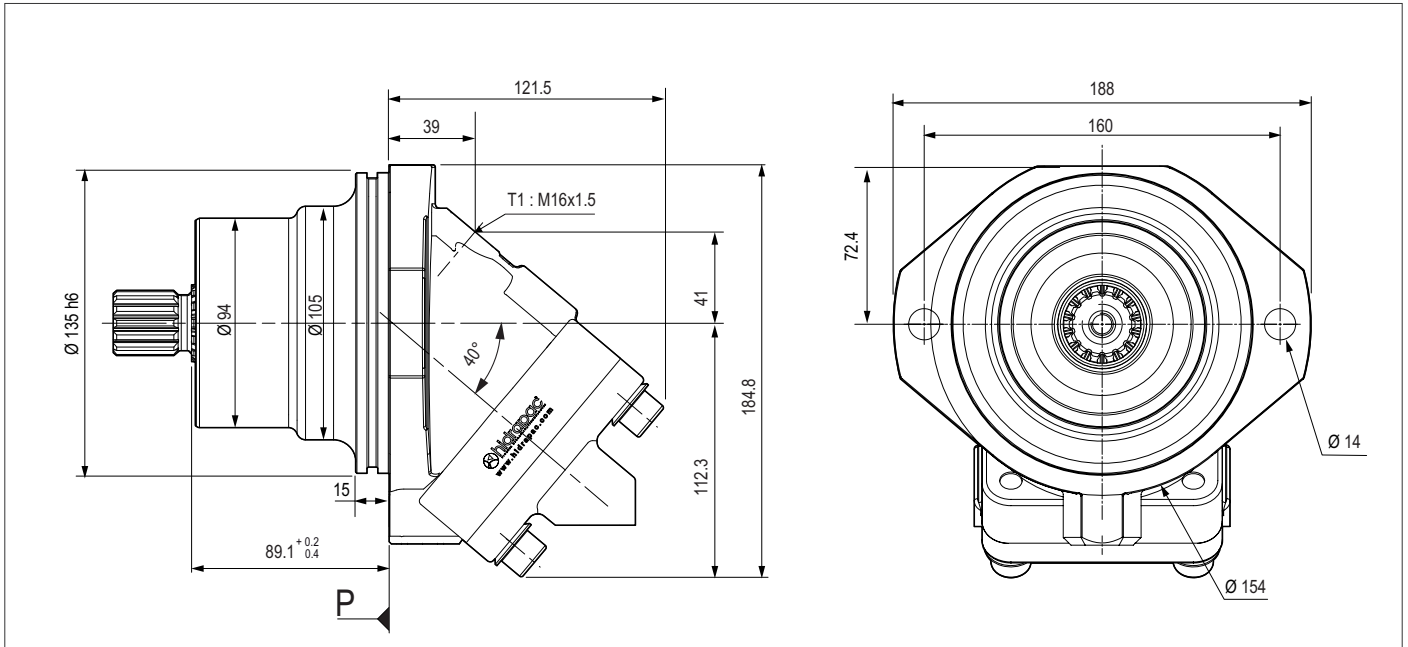
## Ordering Code; A8PF (Fixed Plugin) Bent Axis Pumps



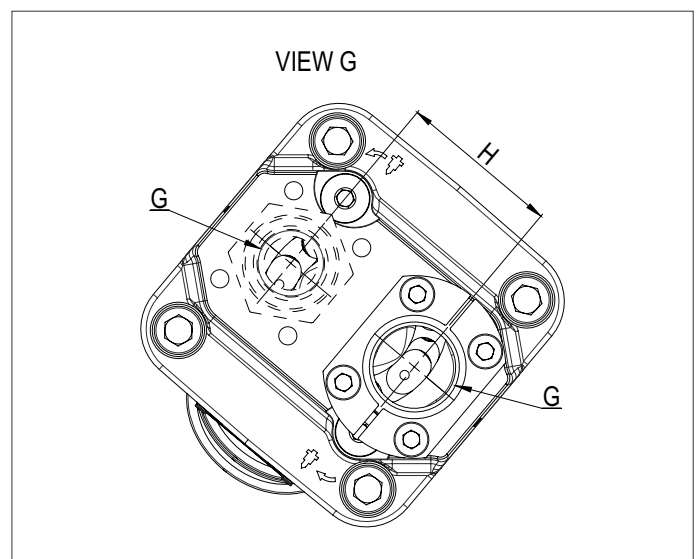
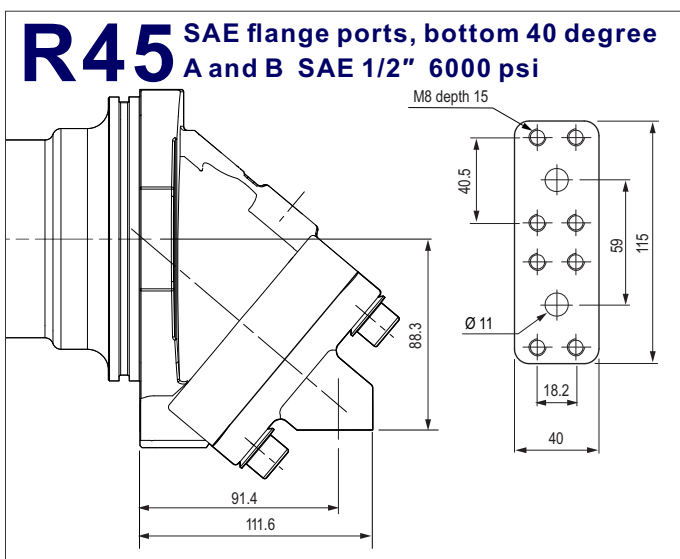
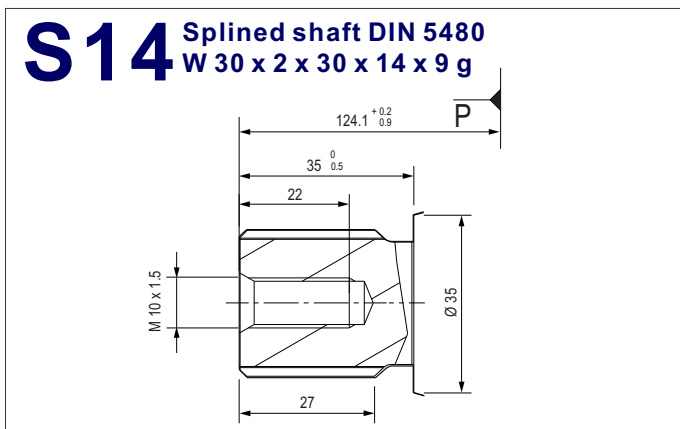
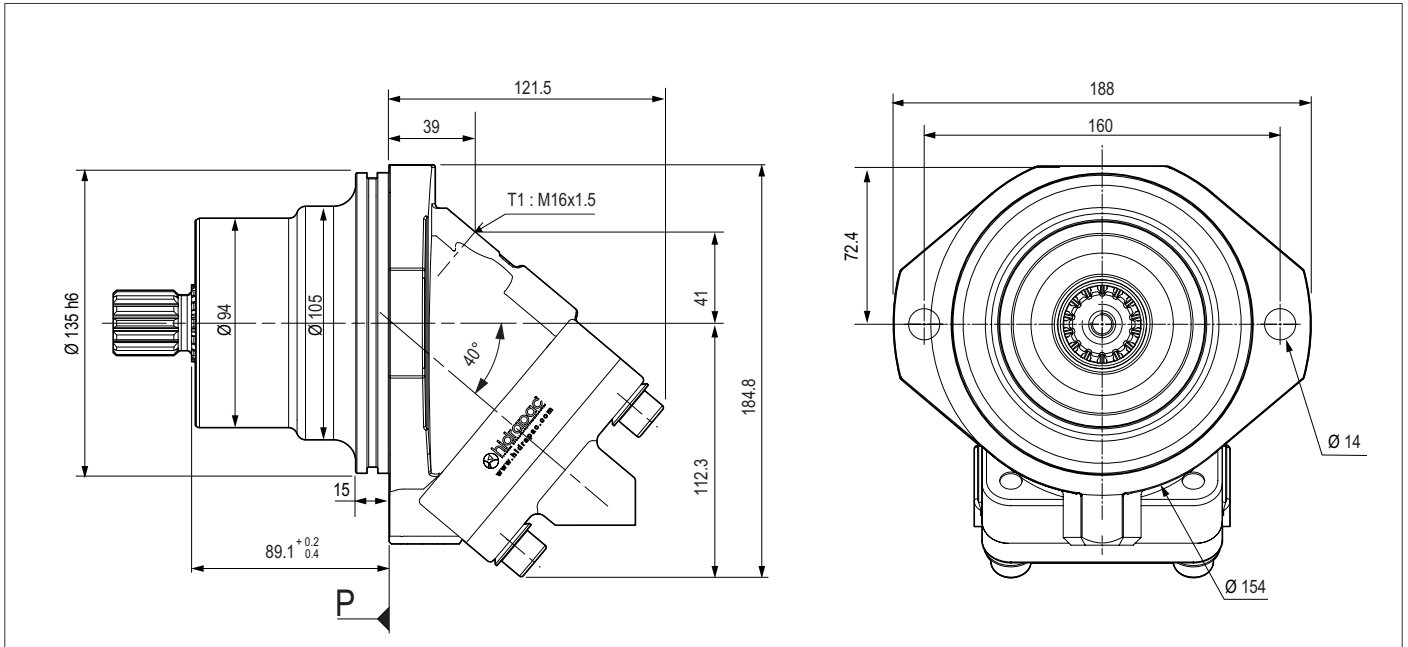
# A8PF - 28 cc (Fixed Plugin) - 2 Bolt



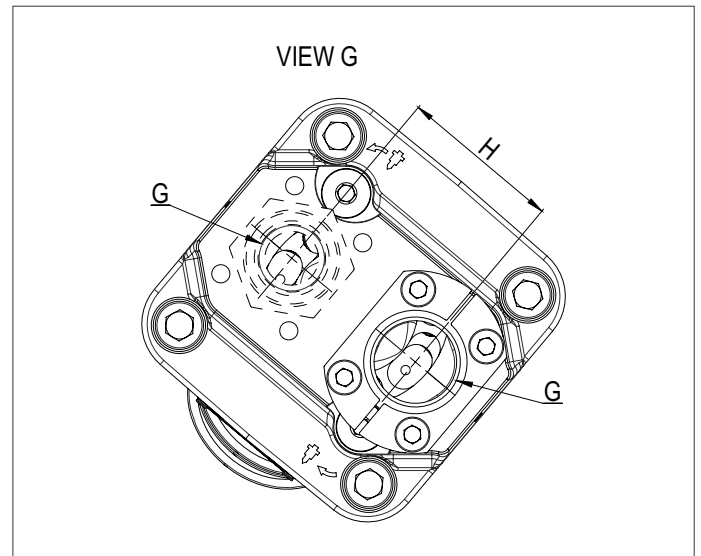
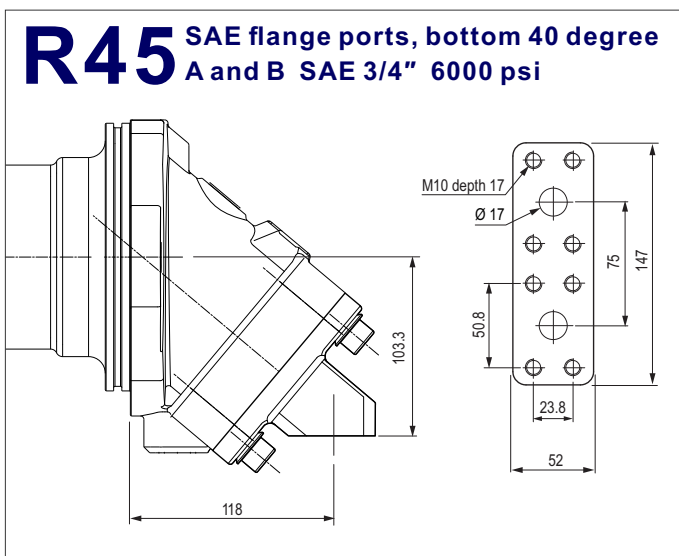
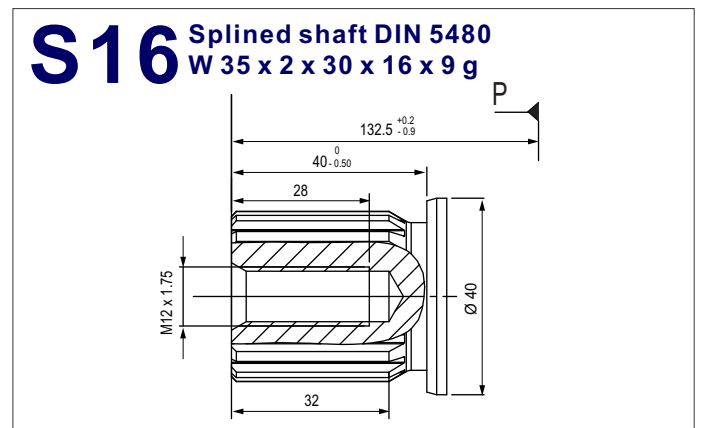
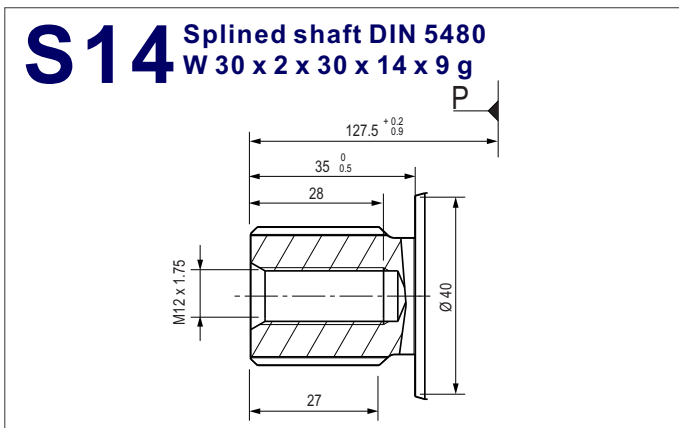
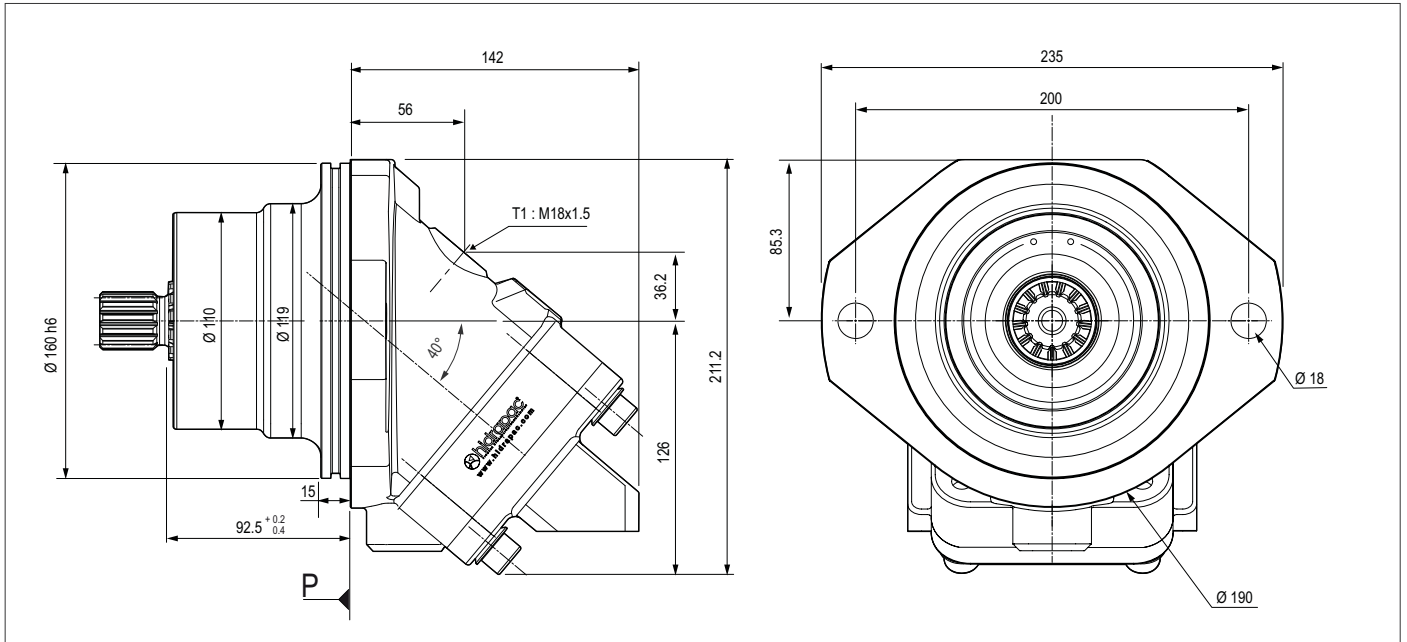
# A8PF - 32 cc (Fixed Plugin) - 2 Bolt



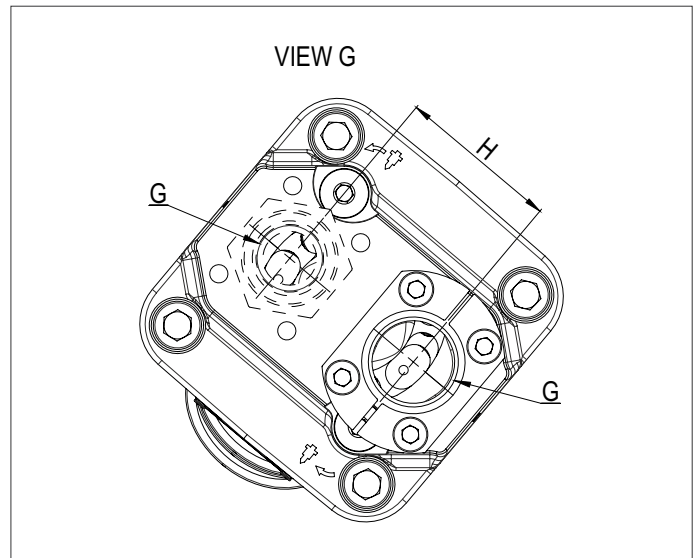
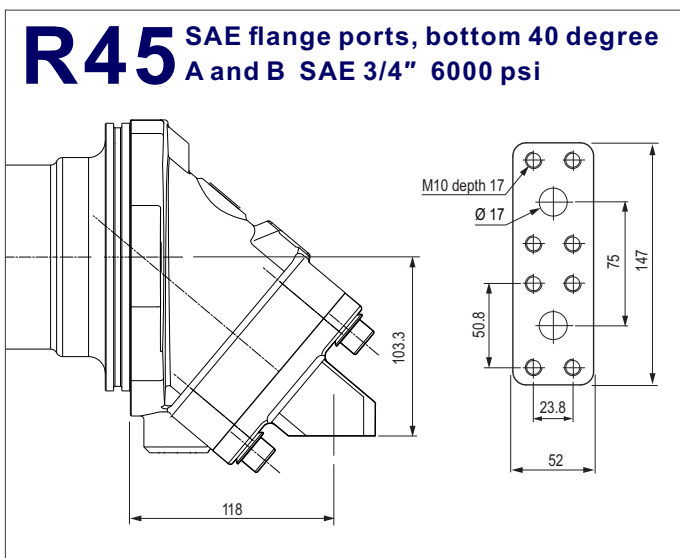
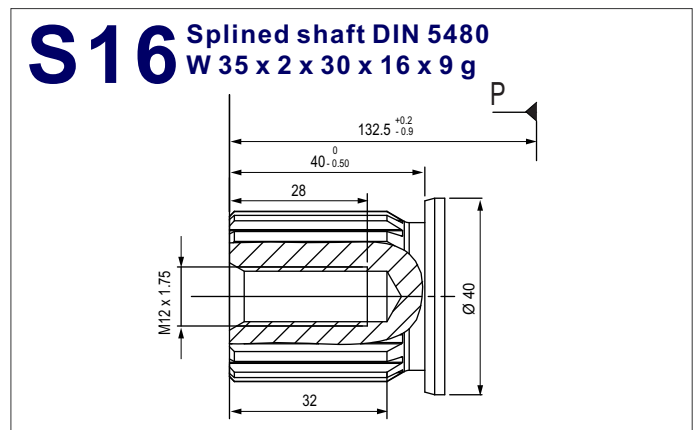
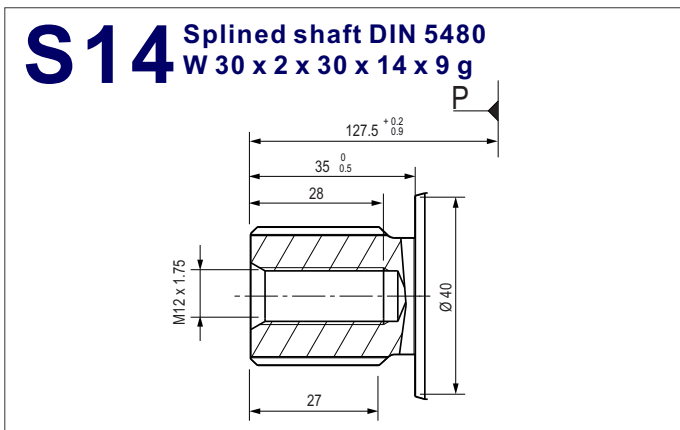
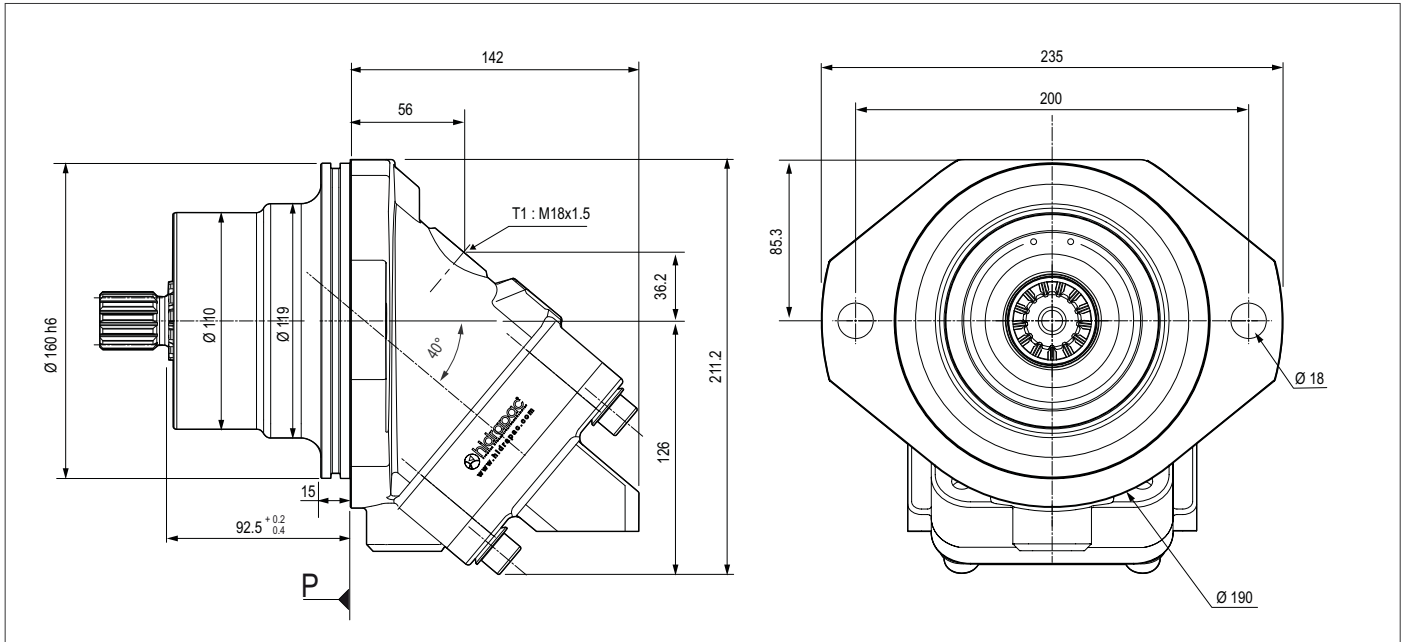
# A8PF - 41 cc (Fixed Plugin) - 2 Bolt



# A8PF - 50 cc (Fixed Plugin) - 2 Bolt

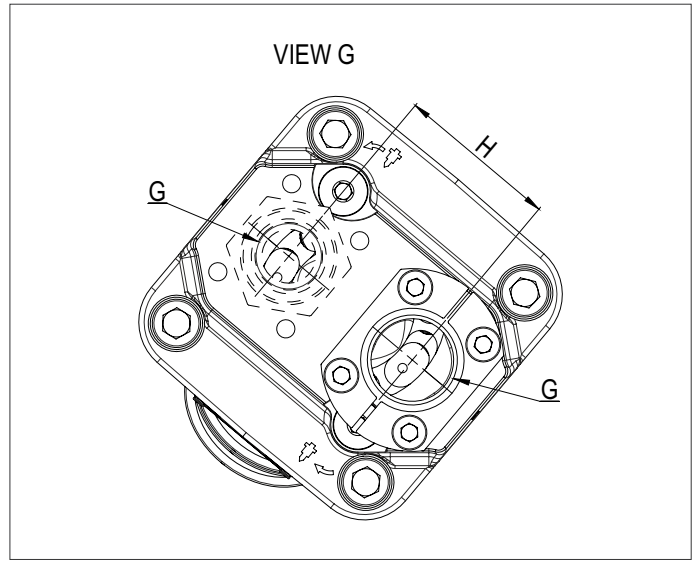
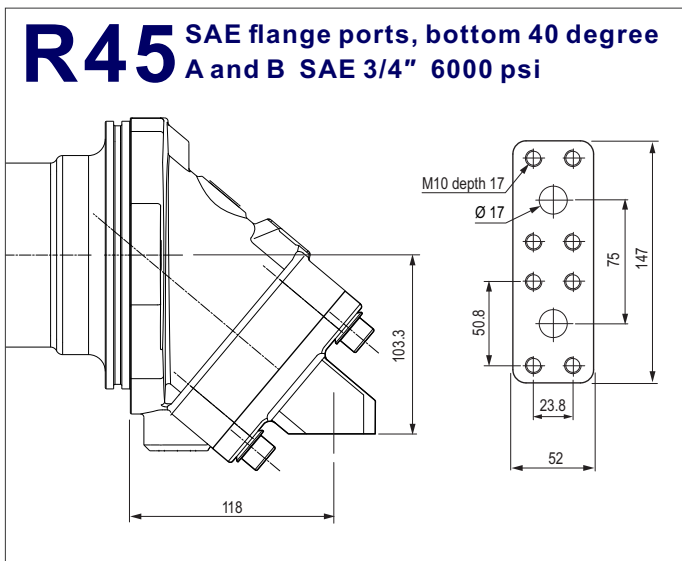
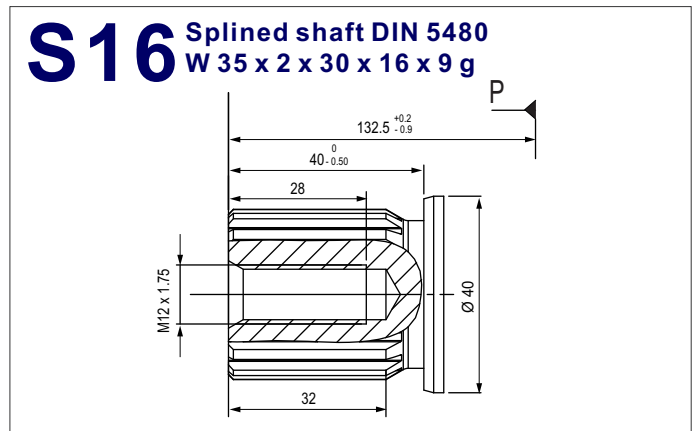
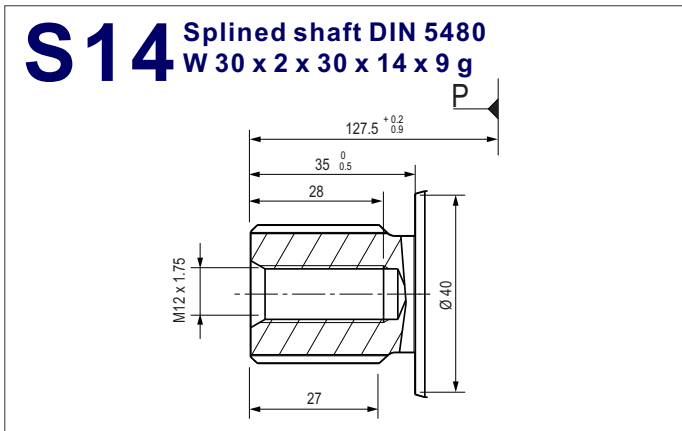
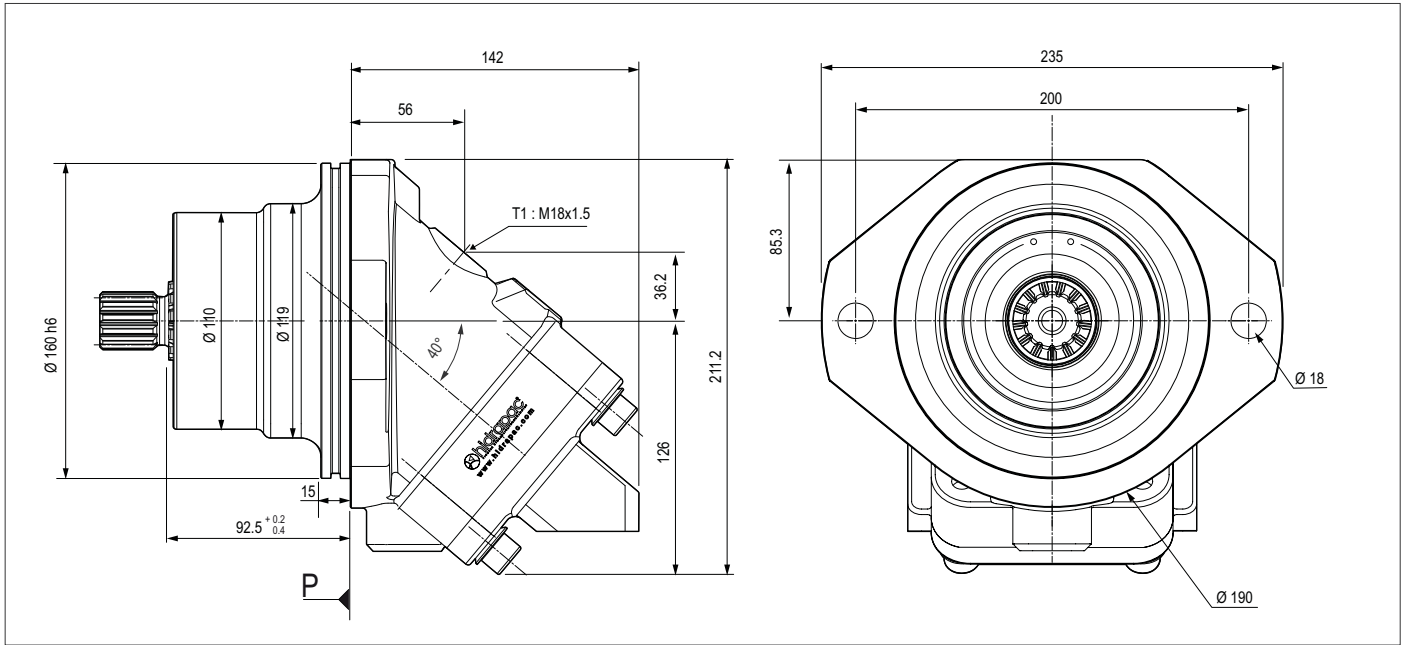


# A8PF - 56 cc (Fixed Plugin) - 2 Bolt

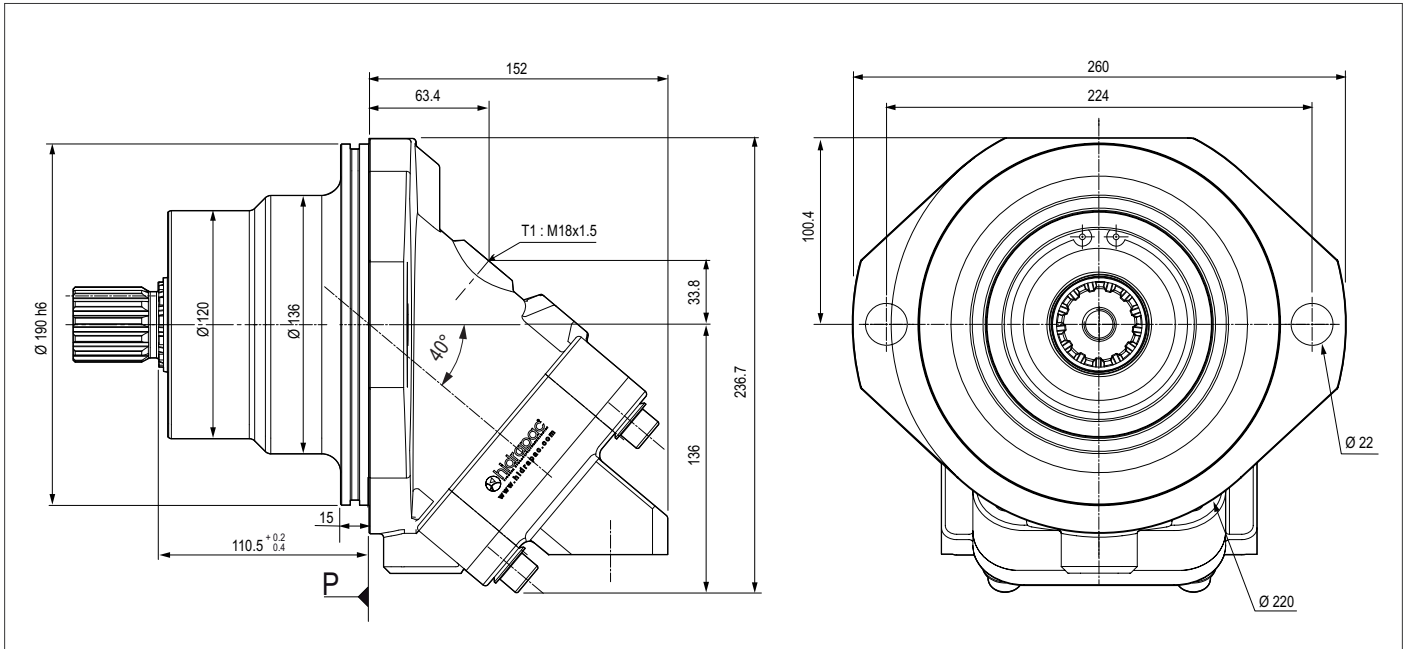




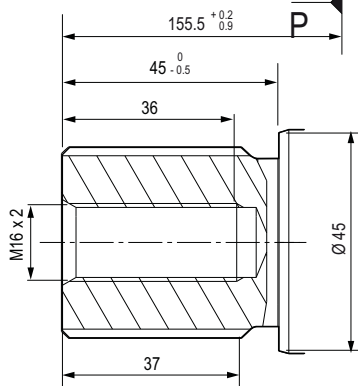
# A8PF - 63 cc (Fixed Plugin) - 2 Bolt



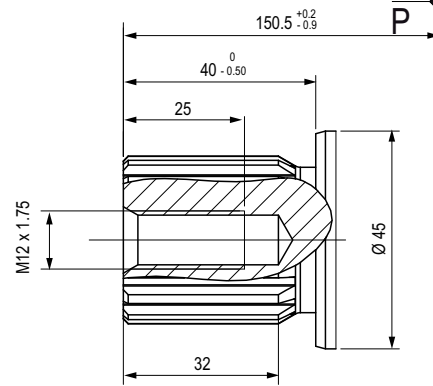
# A8PF - 80 cc (Fixed Plugin) - 2 Bolt



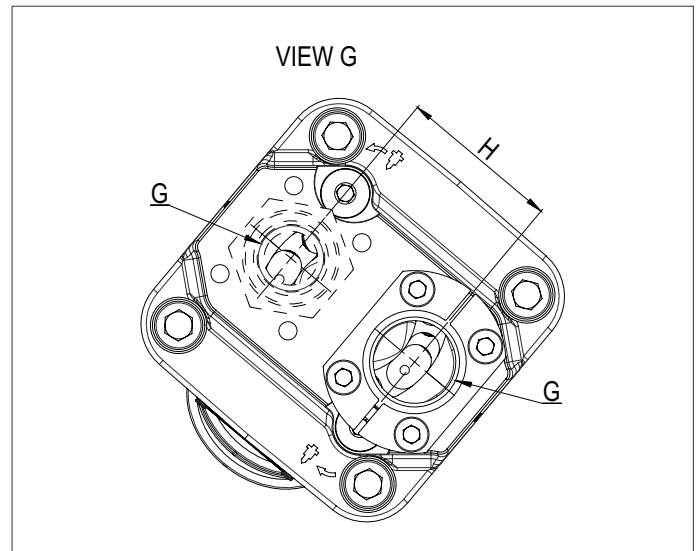
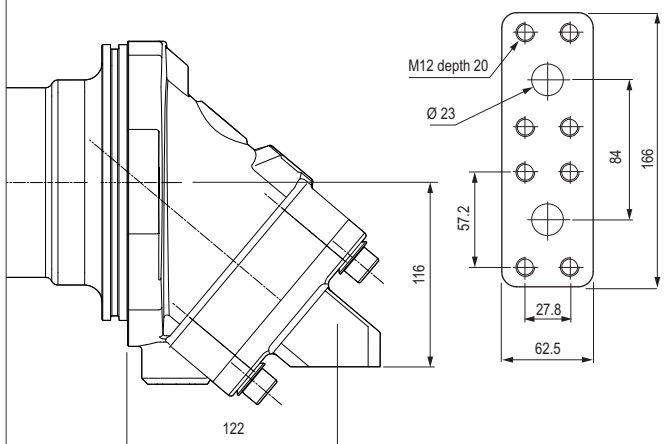
## S18 Splined shaft DIN 5480 W 40 x 2 x 30 x 18 x 9 g



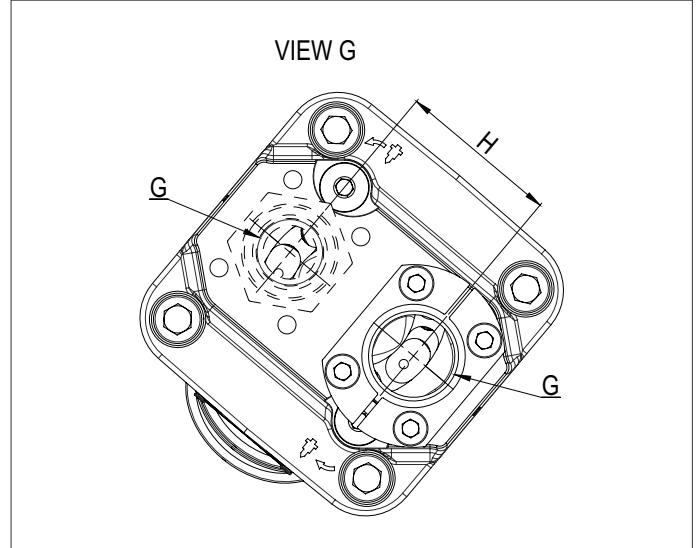
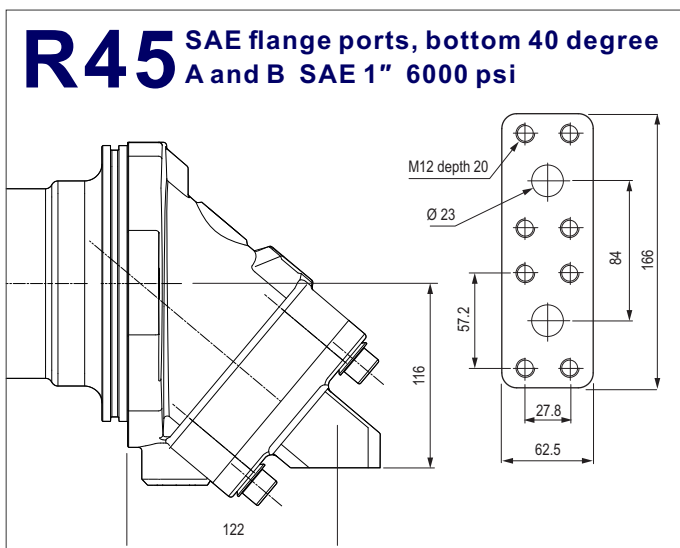
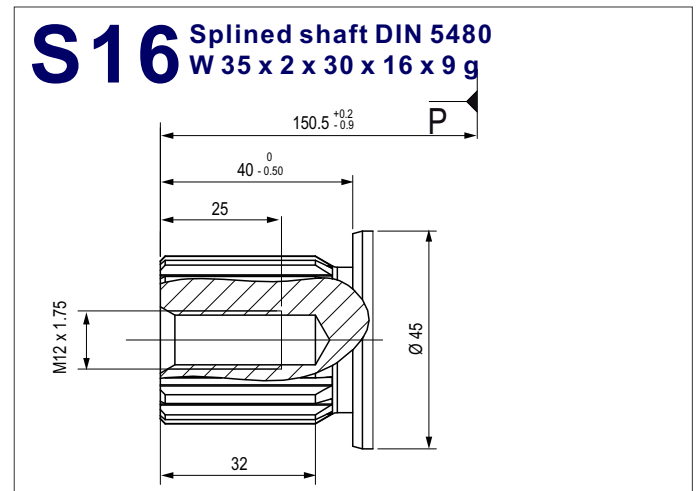
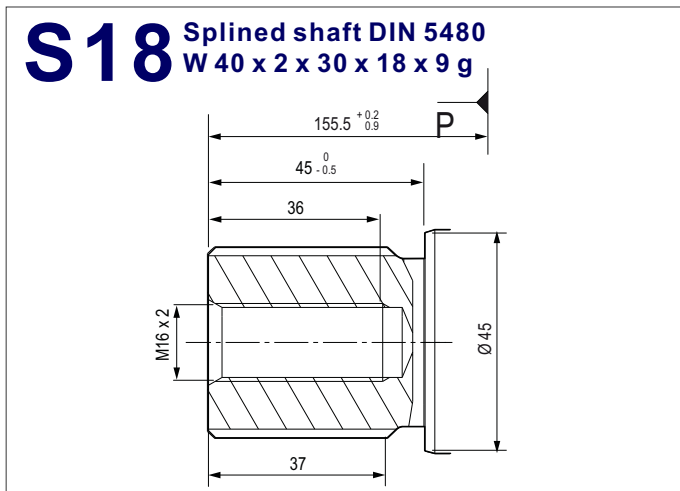
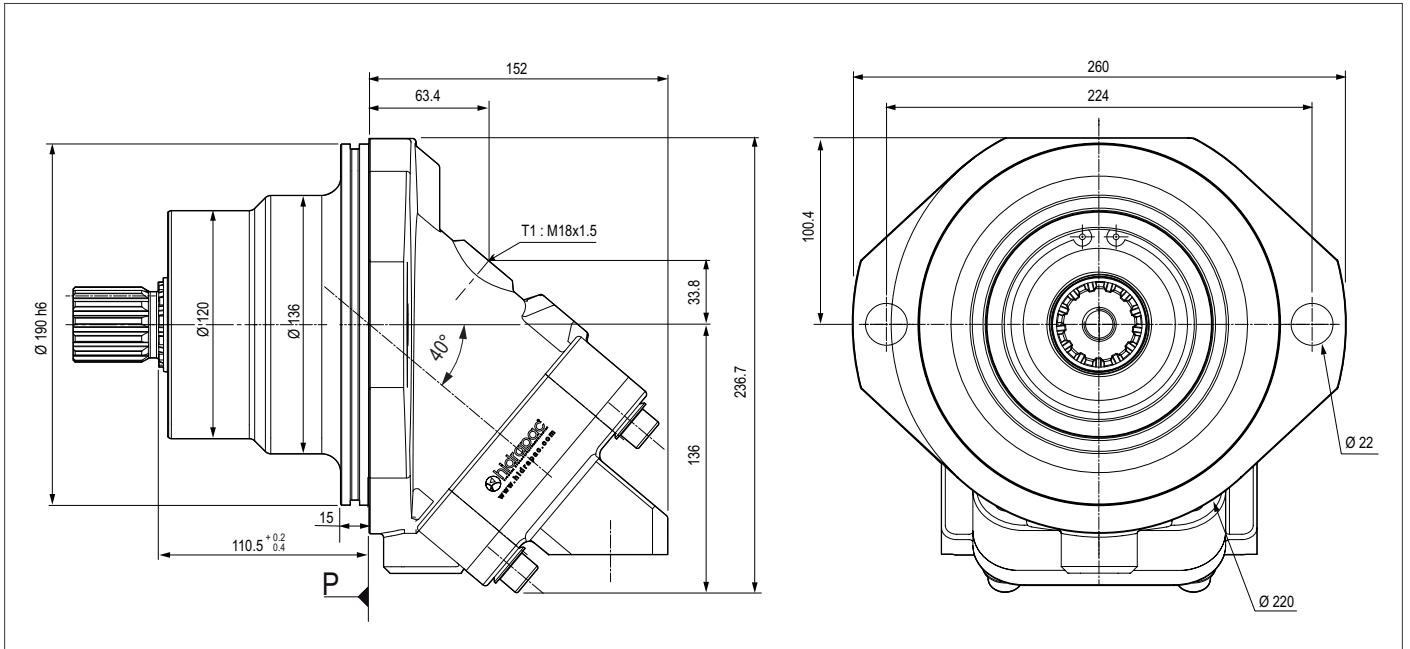
## S16 Splined shaft DIN 5480 W 35 x 2 x 30 x 16 x 9 g



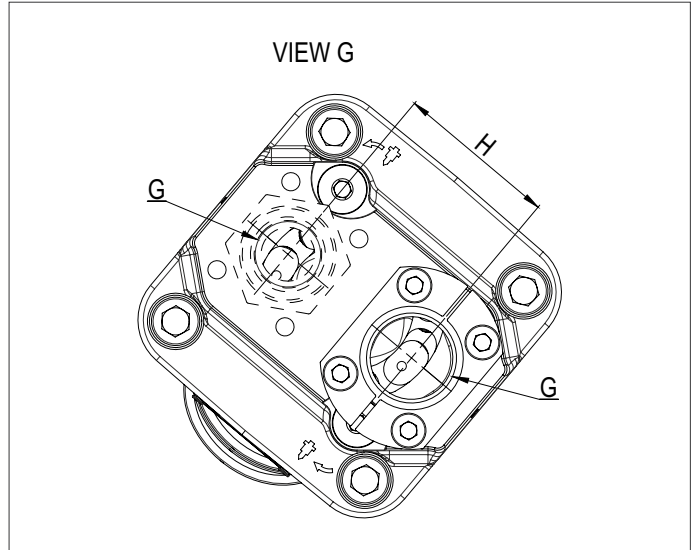
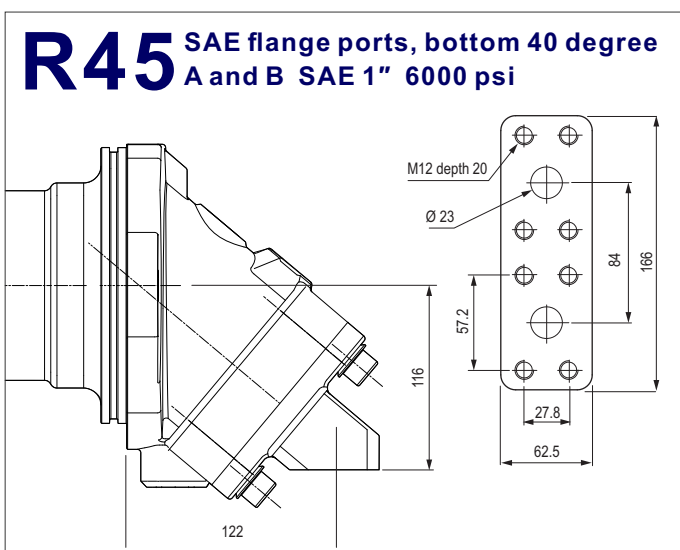
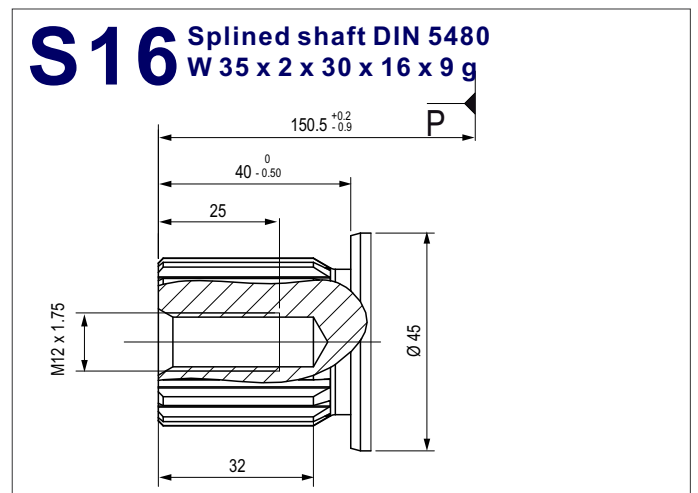
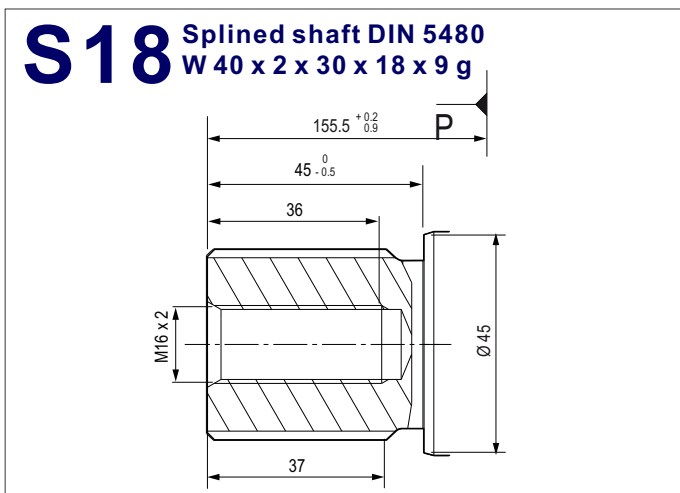
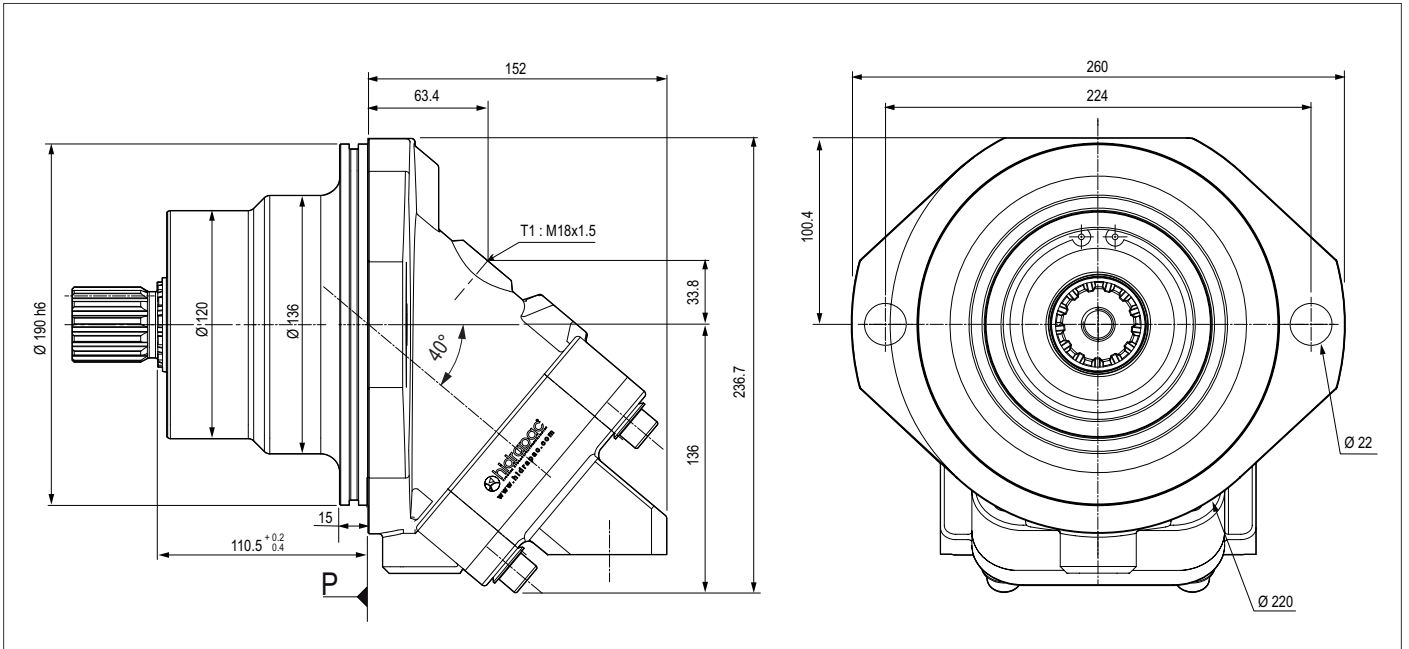
## R45 SAE flange ports, bottom 40 degree A and B SAE 1" 6000 psi



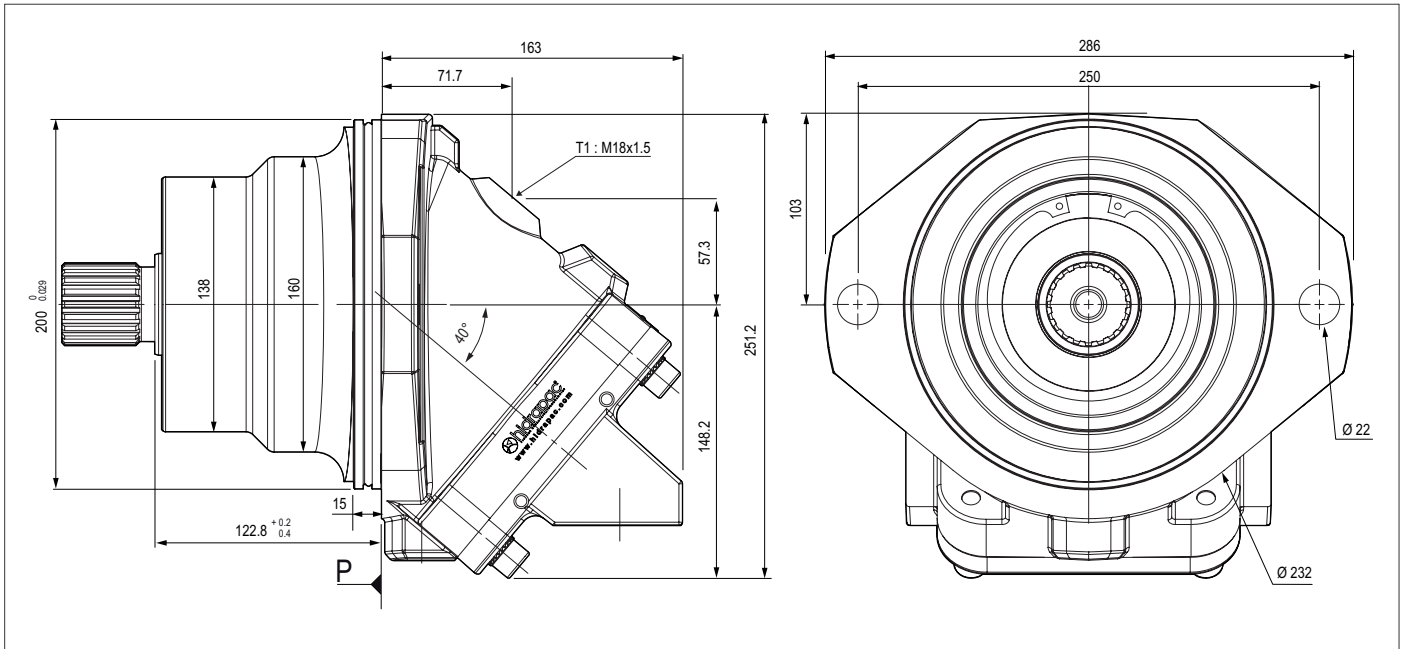
# A8PF - 90 cc (Fixed Plugin) - 2 Bolt



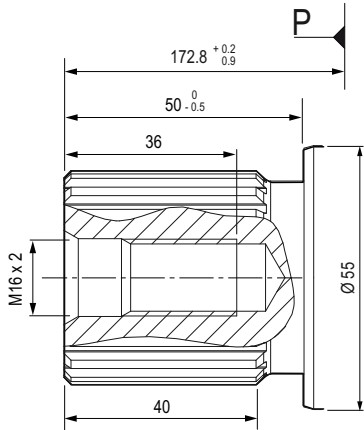
# A8PF - 108 cc (Fixed Plugin) - 2 Bolt



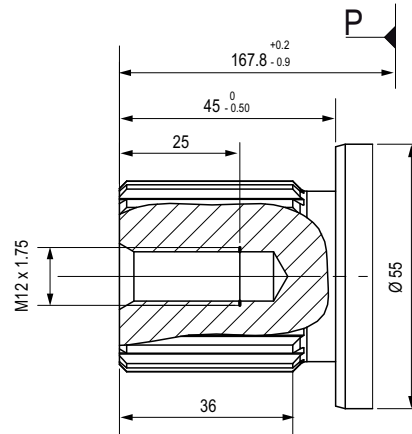
# A8PF - 125 cc (Fixed Plugin) - 2 Bolt



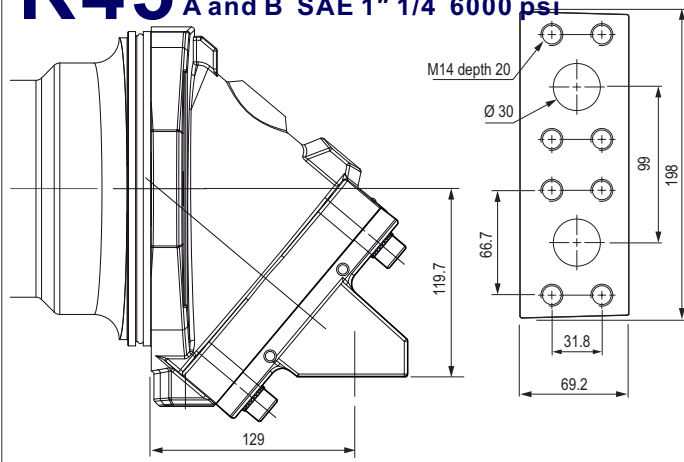
## S21 Splined shaft DIN 5480 W 45 x 2 x 30 x 21 x 9 g



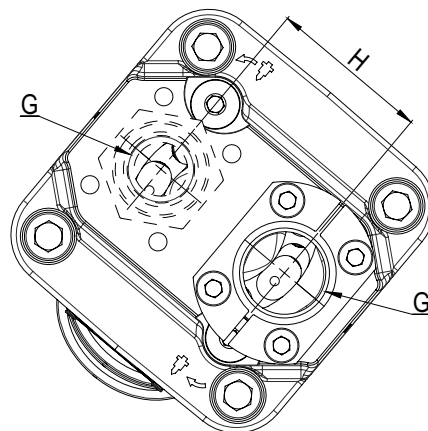
## S18 Splined shaft DIN 5480 W 40 x 2 x 30 x 18 x 9 g



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

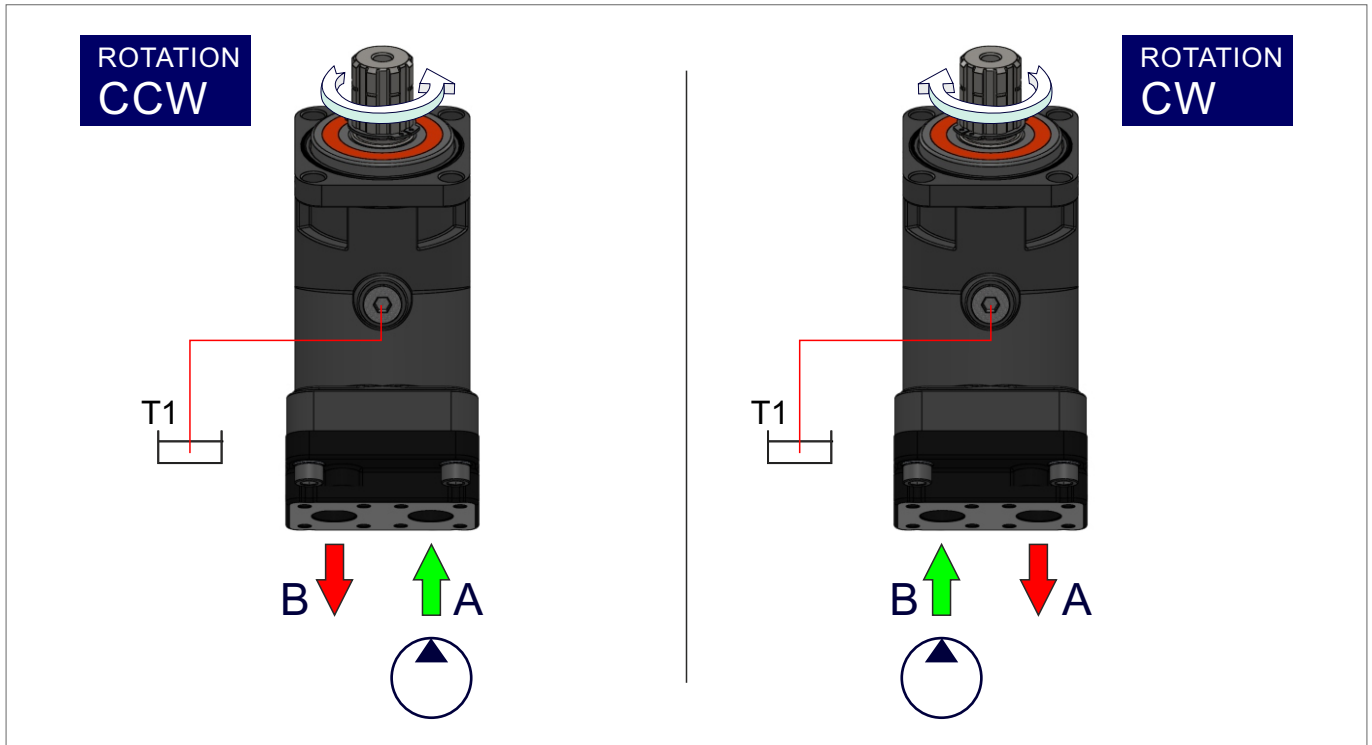


### VIEW G



## Direction of Rotation; CW/CCW

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



| Formulas                          |      |   |  |
|-----------------------------------|------|---|--|
| <b>Pump Output Flow</b>           | GPM  | $GPM = (\text{Speed (rpm)} \times \text{disp. (cu. in.)}) / 231$  | $GPM = (n \times d) / 231$                                   |
| <b>Pump Input Horsepower</b>      | HP   | $HP = GPM \times \text{Pressure (psi)} / 1714 \times \text{Efficiency}$                                 | $HP = (Q \times P) / 1714 \times E$                          |
| <b>Pump Efficiency</b>            | E    | Overall Efficiency = Output HP / Input HP   | $E_{\text{Overall}} = \text{HPOut} / \text{HPIn} \times 100$ |
|                                   |      | Overall Efficiency = Volumetric Eff. $\times$ Mechanical Eff.   | $E_{\text{Overall}} = \text{EffVol.} \times \text{EffMech.}$ |
| <b>Pump Volumetric Efficiency</b> | E    | Volumetric Efficiency = Actual Flow Rate Output (GPM) / Theoretical Flow Rate Output (GPM) $\times$ 100 | $\text{EffVol.} = \text{QAct.} / \text{QTheo.} \times 100$   |
| <b>Pump Mechanical Efficiency</b> | E    | Mechanical Efficiency = Theoretical Torque to Drive / Actual Torque to Drive $\times$ 100               | $\text{EffMech} = \text{TTheo.} / \text{TAct.} \times 100$   |
| <b>Pump Displacement</b>          | CIPR | $\text{Dsplcmnt (In.}^3 \text{ / rev.)} = \text{Flow Rate (GPM)} \times 231 / \text{Pump RPM}$          | $\text{CIPR} = \text{GPM} \times 231 / \text{RPM}$           |
| <b>Pump Torque</b>                | T    | Torque = Horsepower $\times$ 63025 / RPM  | $T = 63025 \times \text{HP} / \text{RPM}$                    |
|                                   |      | Torque = Pressure (PSIG) $\times$ Pump Displacement (CIPR) / $2\pi$                                     | $T = P \times \text{CIPR} / 6.28$                            |

- 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.

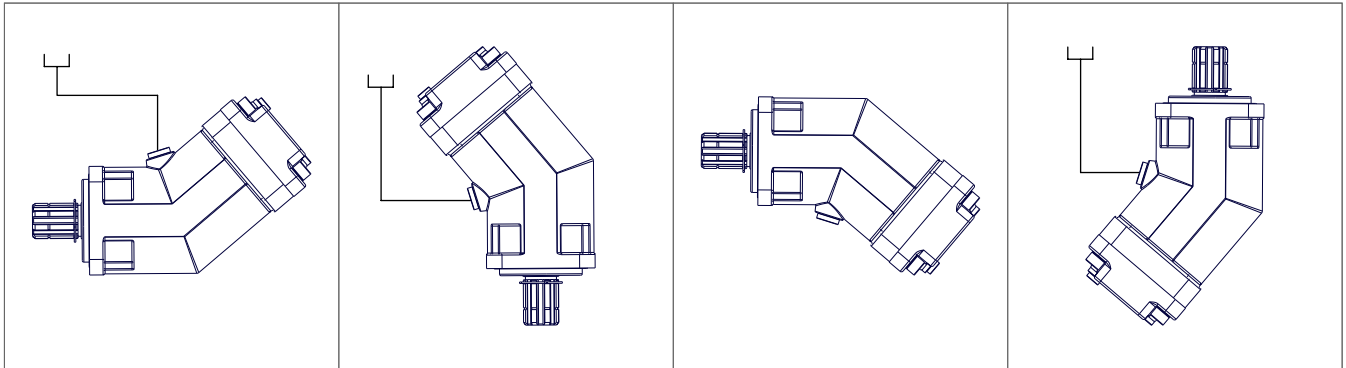
### DIRECTION OF ROTATION

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.

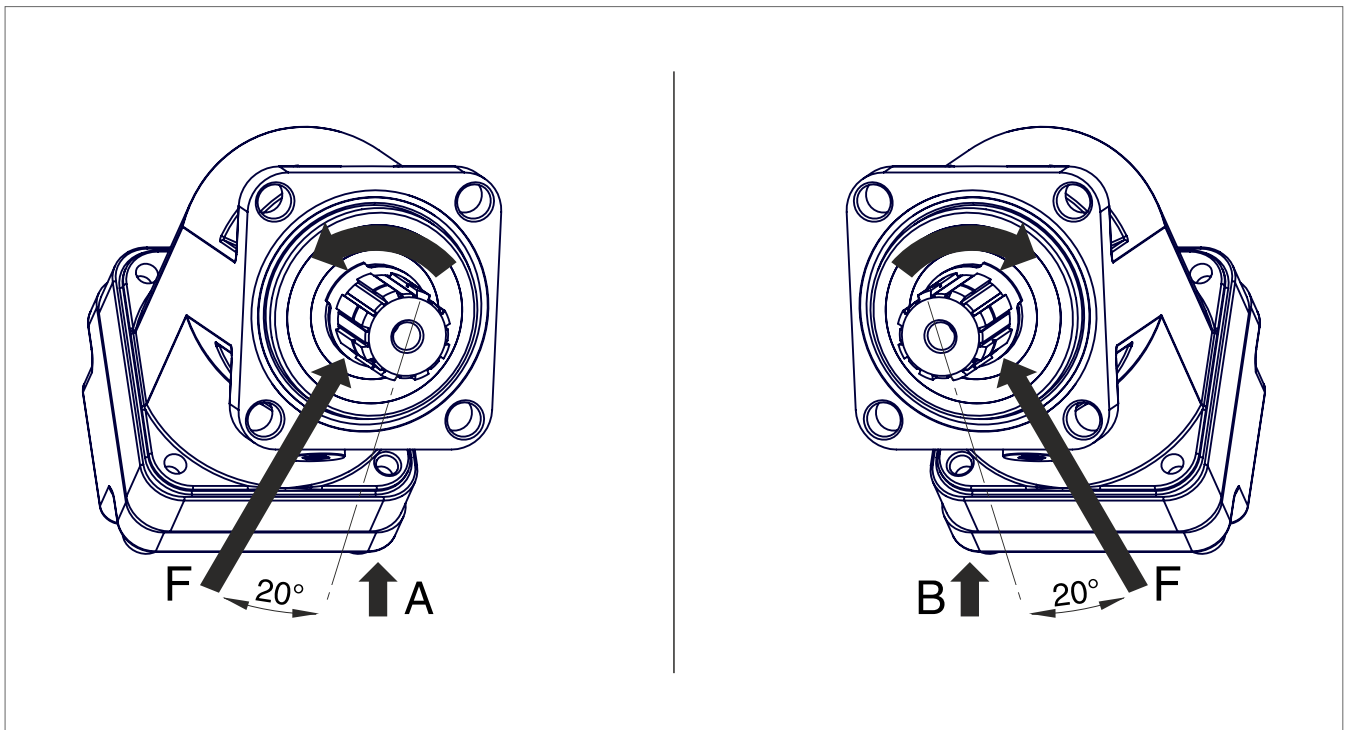


### HYDRAULIC FLUID

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

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

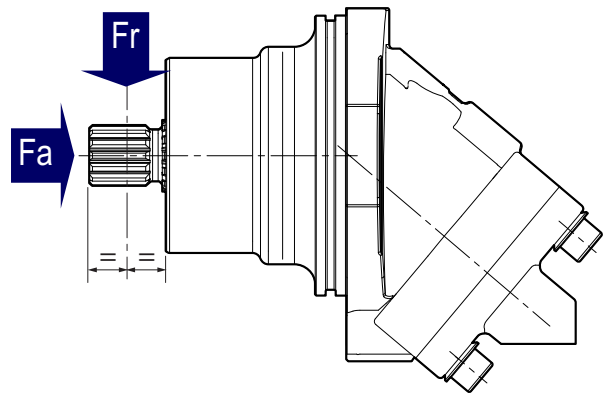
#### Power

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

#### Speed

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

- $V_s$  = Displacement (ccm/rev.)
- $\Delta p$  = Diff. pressure (bar)
- $n$  = Speed (rpm)
- $Q$  = Flow (lpm)
- $\eta_v$  = Volumetric efficiency
- $\eta_{mh}$  = Mechanical-hydraulic efficiency
- $\eta_t$  = 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 |
|-------------------|-------|--------|--------|-------|----------|-----------|--------|
| <b>Fr (lbf)</b>   | 1350  | 1462.5 | 1462.5 | 1686  | 2023     | 2812      | 3262   |
| <b>Fr (N/bar)</b> | 6000  | 6500   | 6500   | 7500  | 9000     | 12500     | 14500  |
| <b>Fa (lbf)</b>   | 0.42  | 0.46   | 0.62   | 0.62  | 0.77     | 1.24      | 1.33   |
| <b>Fa (N/bar)</b> | (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



## Complete Product Range

### Bent Axis Piston Motors

- A9MD** (DIN) Bent Axis Motors
- A9MO** (ISO) Bent Axis Motors
- A9MS** (SAE) Bent Axis Motors
- A9ML** (SAE2) Bent Axis Motors
- A9MF** (Fixed Plugin) Bent Axis Motors
- A10M** (HYBRID) Bent Axis Motors
- A7GM** Hydraulic Gear Motors
- A7GMT** Tandem Hydraulic Gear Motors

### Bent Axis Piston Pumps

- A8PA** (Aluminum) Bent Axis Pumps
- A8PD** (DIN) Bent Axis Pumps
- A8PO** (ISO) Bent Axis Pumps
- A8PS** (SAE) Bent Axis Pumps
- A8PF** (Fixed Plugin) Bent Axis Pumps
- A10** (HYBRID) Bent Axis Pumps
- A11** (ISO2) Bent Axis Pumps
- A11** (SAE2) Bent Axis Pumps

### Variable Displacement Pumps

- A12V** Variable Displacement Piston Pumps

### Dual Flow Piston Pumps

- A8PL** (DIN) Dual Flow Pumps

### Axial Piston & Gear Pumps

- A4PP** Axial Hydraulic Piston Pumps
- A6HP** High Pressure Piston Pumps
- A7GP** Hydraulic Gear Pumps
- A7GPT** Tandem Hydraulic Gear Pumps

### Valve (ByPass) (Flushing) (Cavitation)

- Circulation Valve
- ByPass Valve
- Anti-Cavitation Valve
- Flushing Valve
- LS Valve
- AntiShock Valve
- Speed Sensor

### Hydraulic Spare Parts

- Suction Fittings
- Couplers
- Adapters
- Flanges
- Power Take Off
- Monoblock Valve
- Section Valve

## Hydraulic Pumps, Motors

Bent Axis Hydraulic Piston Motors, Bent Axis Hydraulic Piston Pumps, Piston Pumps, Variable Displacement Piston Pumps, Variable Displacement Piston Motors, Axial Piston Pumps, High Pressure Piston Pumps, Gear Pumps, Gear Motors, Hydraulic Valve.

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### Address;

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No: 73 / C Karatay – Konya, PO Code; 42050, Türkiye

**Address; (Montaj, Sevkiyat)**

Fevzicakmak Mah. Sıla Cad. Kobisan 3 San. Sit.

No: 71 / AD Karatay – Konya, PO Code; 42050, Türkiye

**Phone; +90 551 148 26 88**

[mail@goldhydraulics.com](mailto:mail@goldhydraulics.com)