

AXVA (SAE) Variable Displacement Piston Pumps

New Development Variable Displacement Piston Pumps, High Pressure Pumps, 380/420 BAR Working Pressure. High Rotational Speed, High Efficiency, Slim Design, Cast Iron Pump Body, Re-Designed.

Designation;

40cc, 60cc, 75cc, 92cc, 120cc



Hidrapac **Store**

www.HIDRAPAC.com.tr

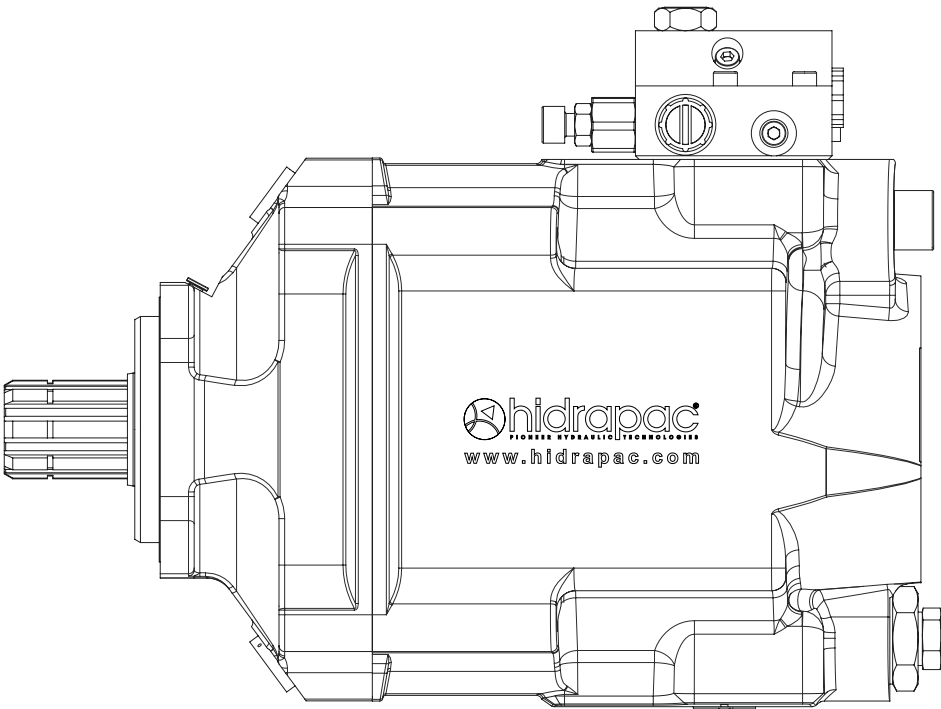
Characteristics of the AXVA (SAE) Variable Dsplcmnt Piston Pumps

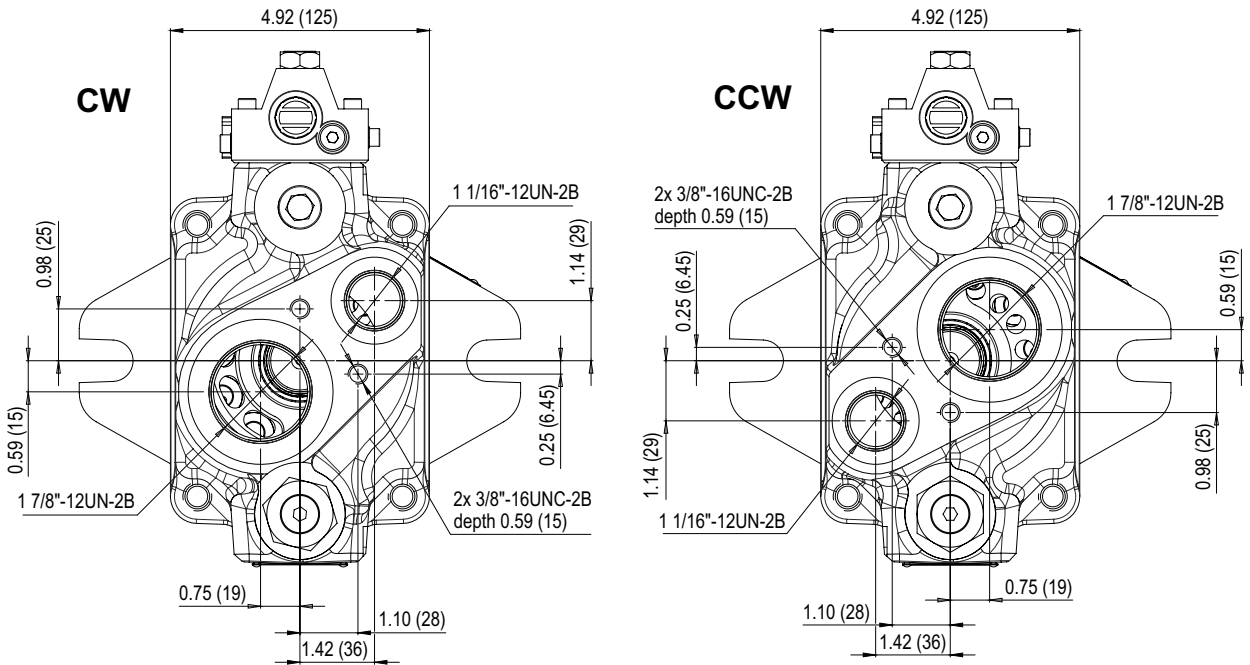
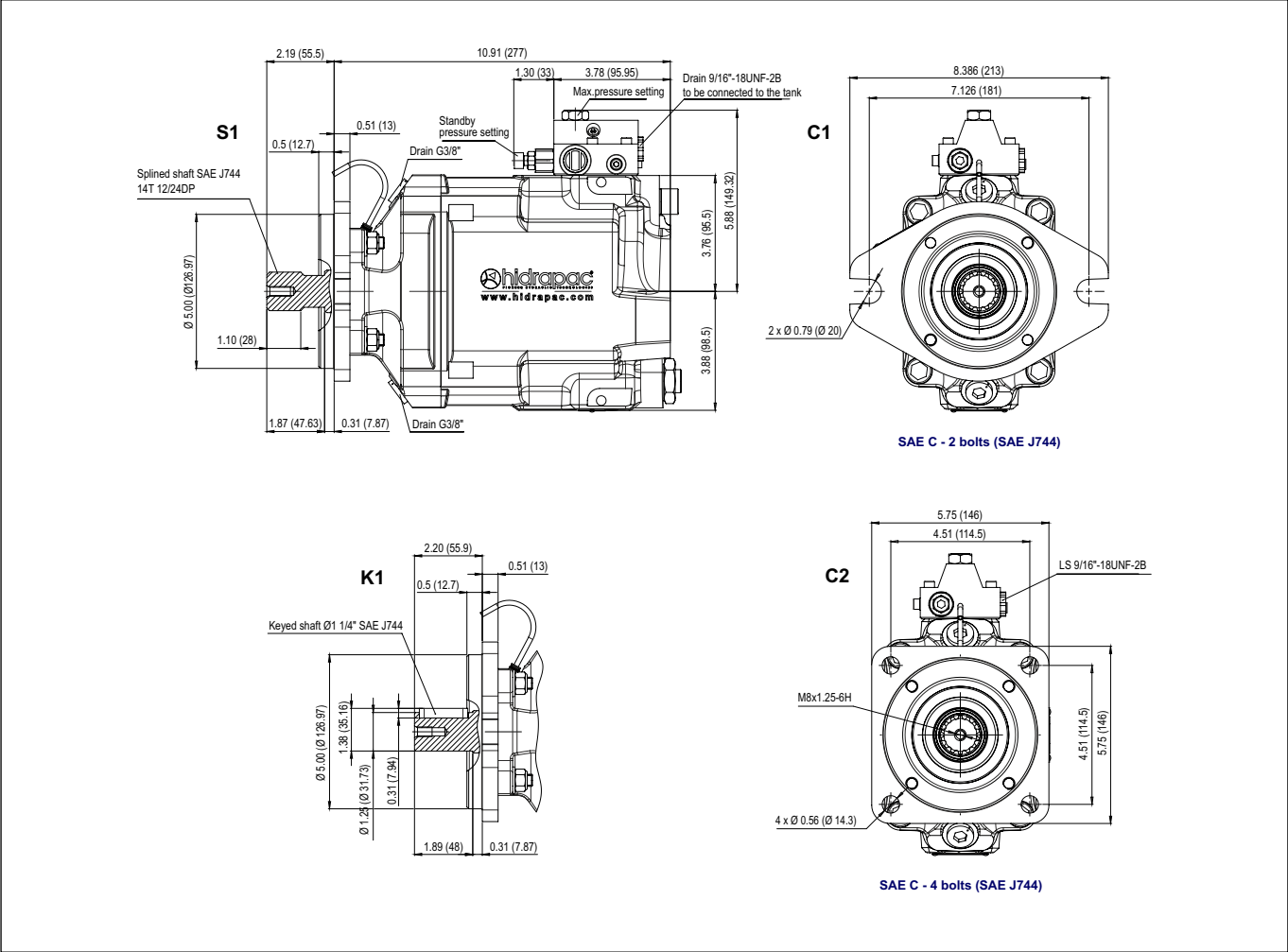
Pump MODEL	DISPL. (cc)	MAX. OPERATING PRESSURE (bar)	MAX. PEAK PRESSURE INTERMITTNT (bar)	TORQUE AT 300 BAR (N.m)	MAX.SPEED AT FULL DISPLACMNT (rpm)	MAX. SPEED IN STAND BY (rpm)	WEIGHT (kg)	OVERHANG TORQUE (N.m)
AXVA (SAE) 40 (CW/CCW)	40	400	420	225	3000	3000	26	34
AXVA (SAE) 60 (CW/CCW)	60	400	420	335	2600	3000	26	34
AXVA (SAE) 75 (CW/CCW)	75	400	420	420	2000	3000	26	34
AXVA (SAE) 92 (CW/CCW)	92	400	420	515	1900	3000	26	34
AXVA (SAE) 120 (CW/CCW)	120	380	400	675	2100	3000	26	34



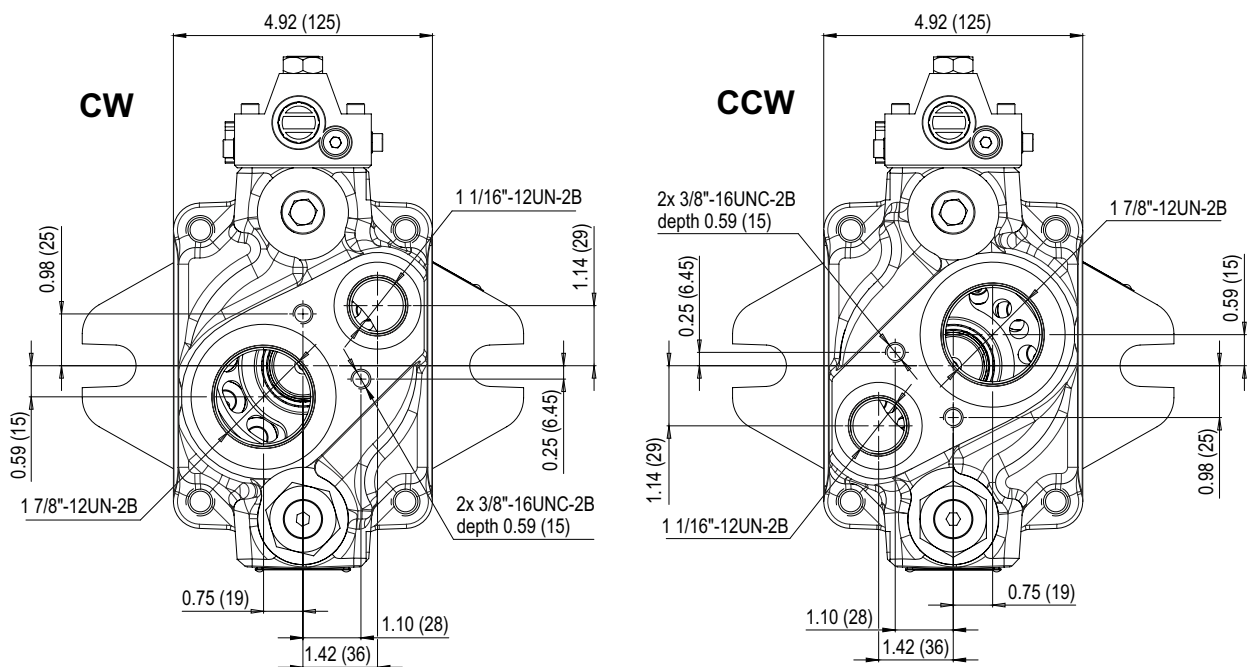
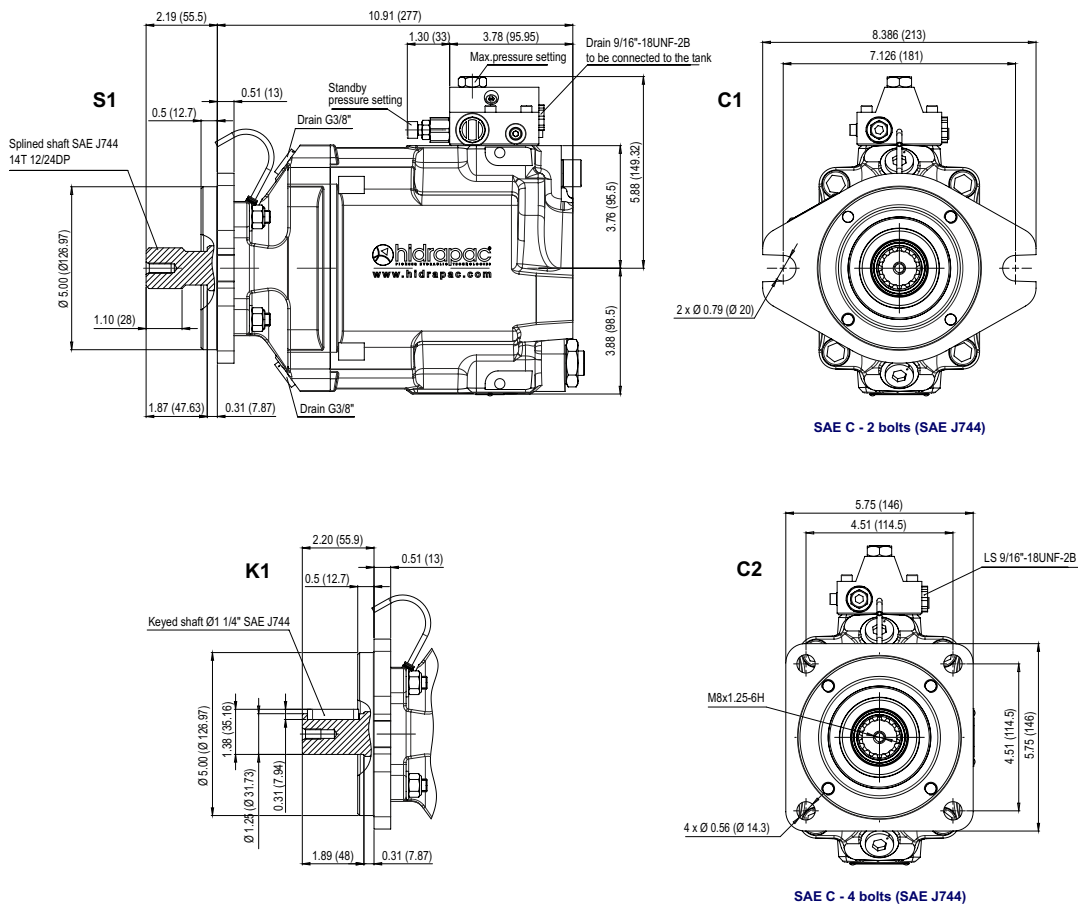
Ordering Code; AXVA (SAE) Variable Dsplcmnt Piston Pumps

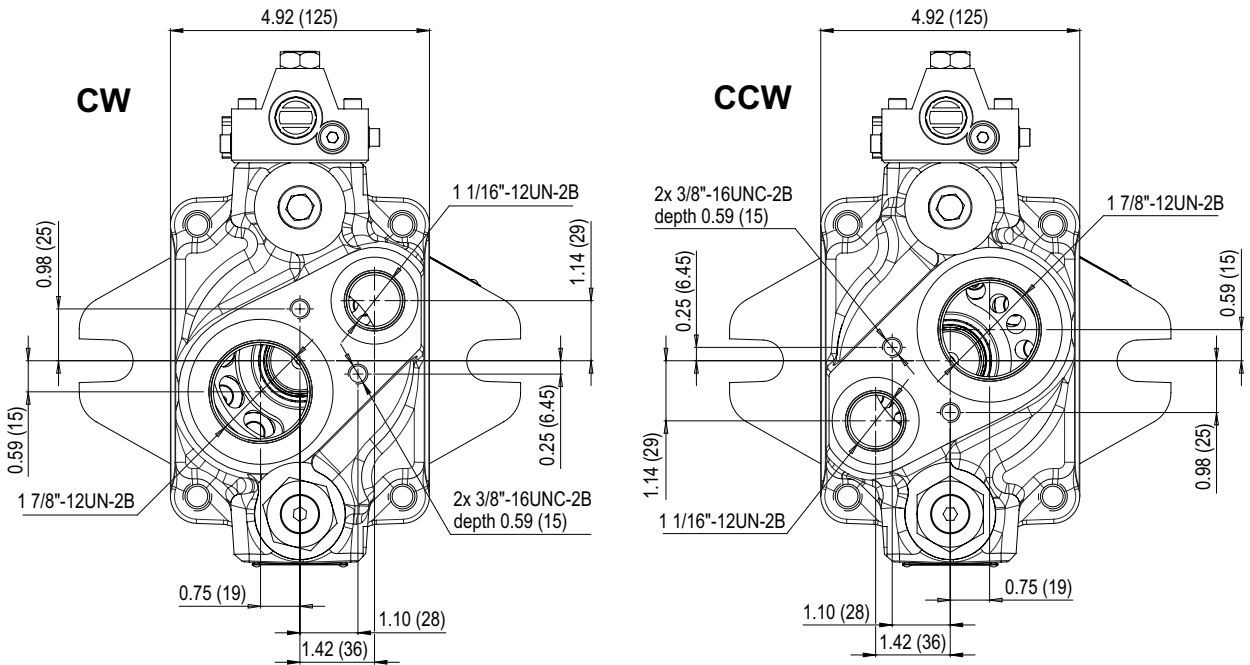
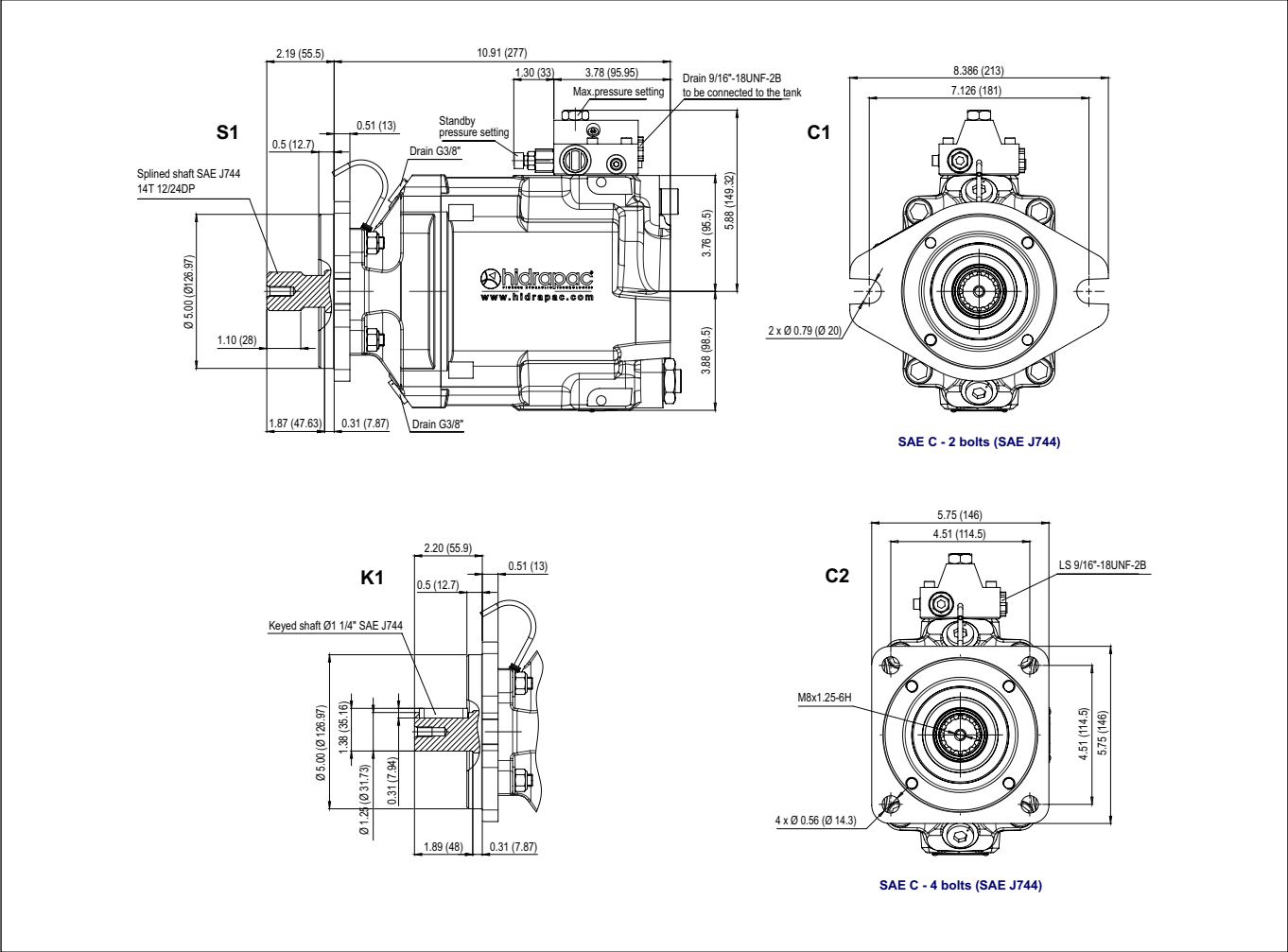
Model Code	Displacement	Shaft Type	Flange Type	Rotation	Sealing
AXVA (SAE)	92	S	H4	CW	V
AXVA (SAE)	40	S	H4	CW	V
Variable Displcmnt Hydraulic Piston Pump	60	Splined Shaft (default) 8x32x36 DIN ISO 14NF	ISO 7653 Ø80 4 Bolt Flange	RIGHT Direction of Rotation	Viton High Pressure Seal
SAE Flge	75				
	92				
	120				
		K		CCW	N
		Parallel Keyed Shaft (special) DIN 6885		LEFT Direction of Rotation	Nitrile Seal 5/10 Bar

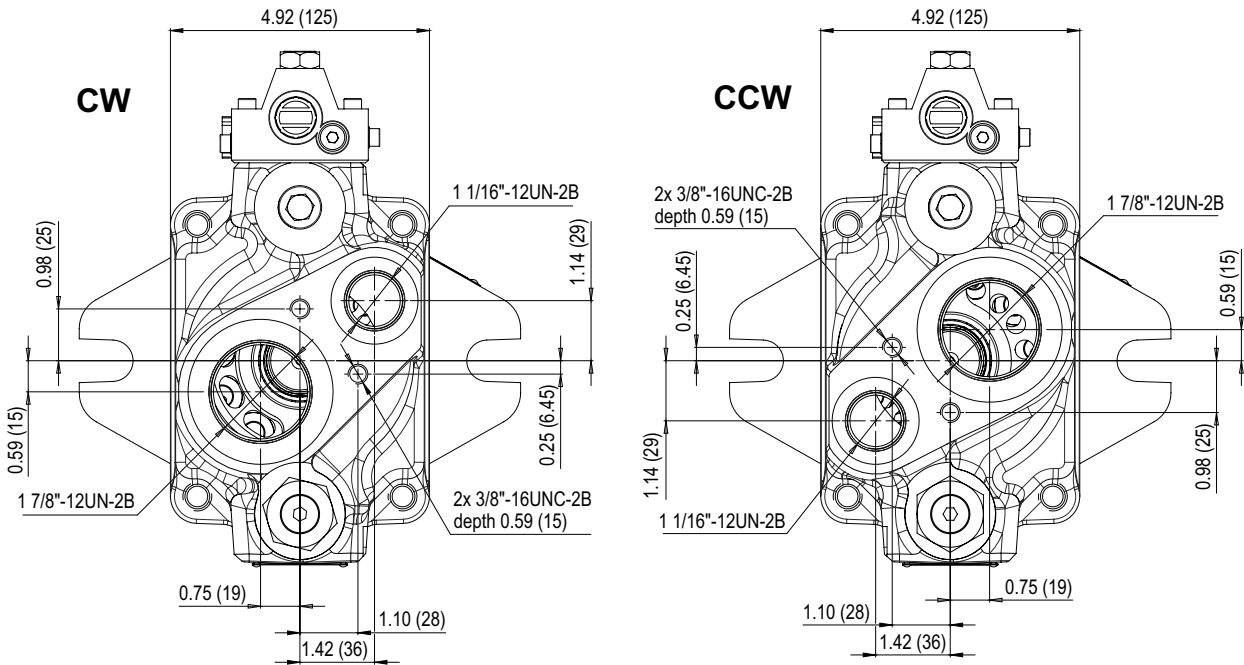
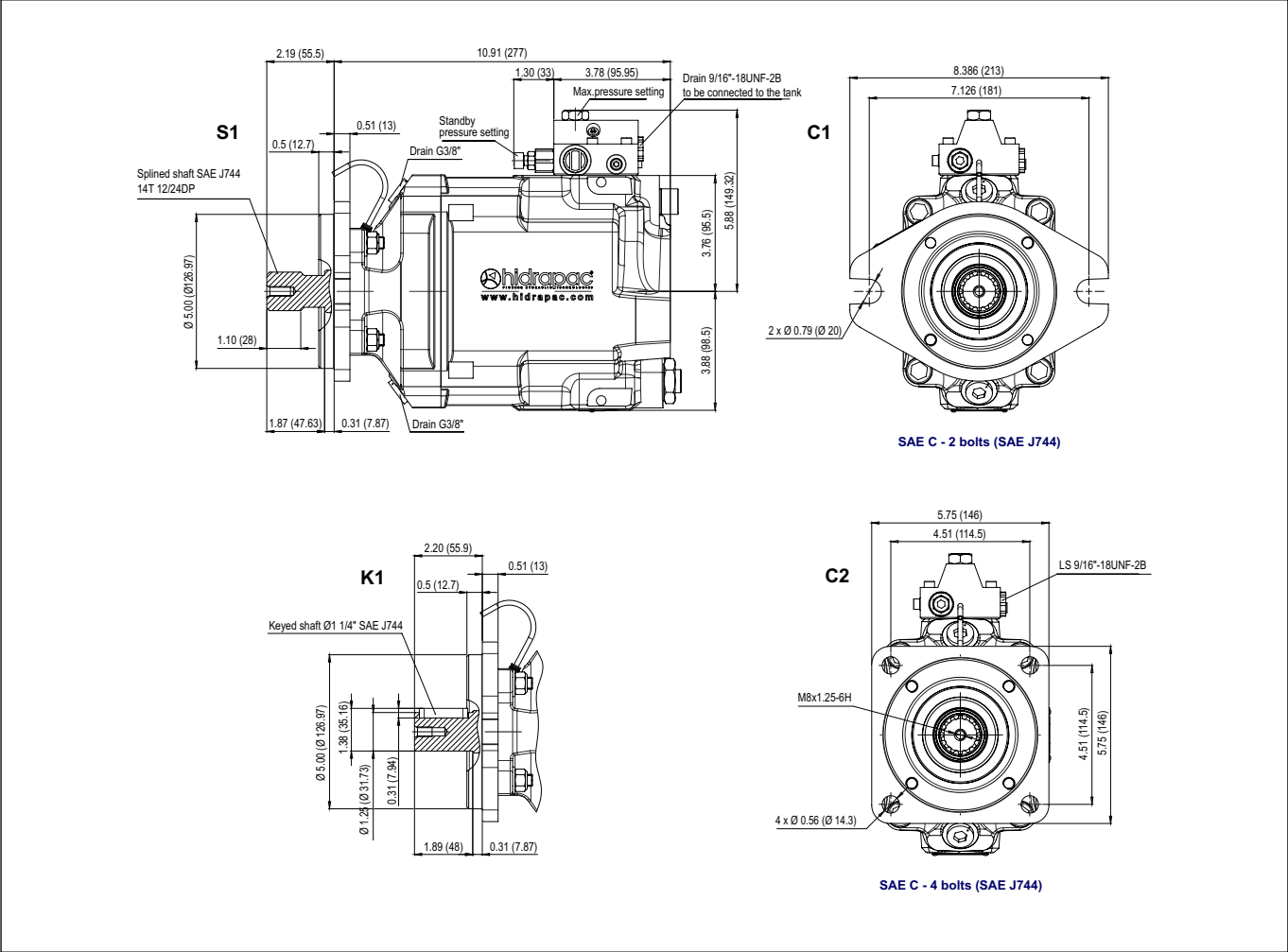




AXVA (SAE) - 60 cc Variable Pump

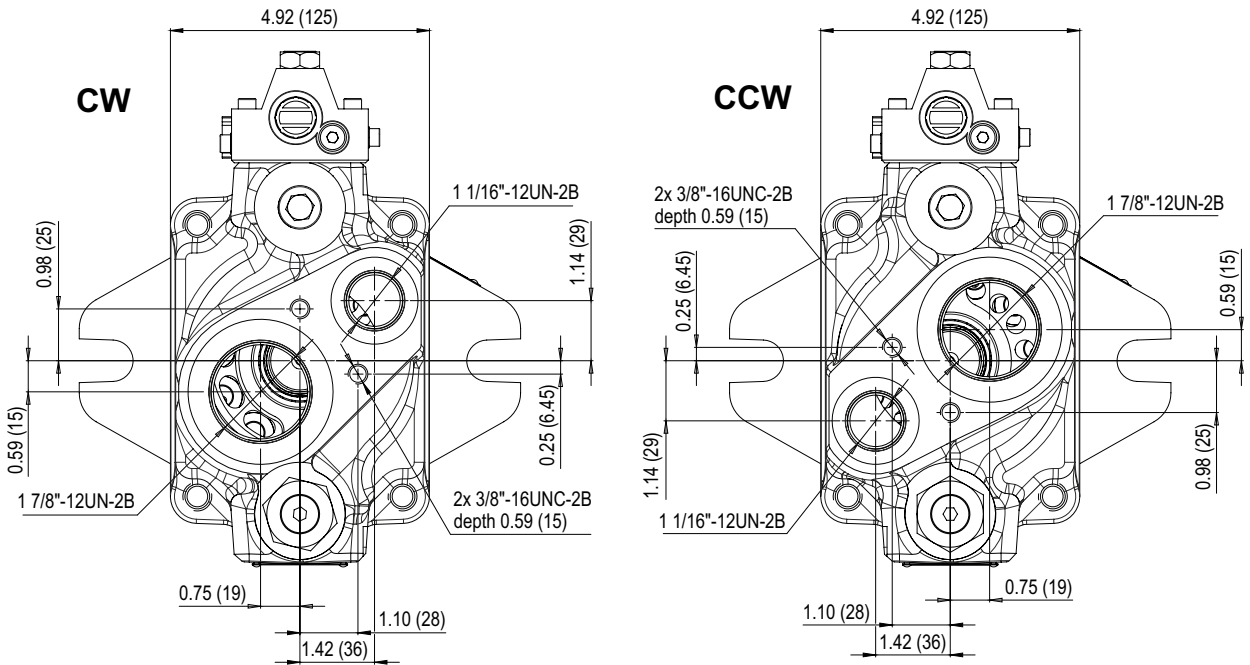
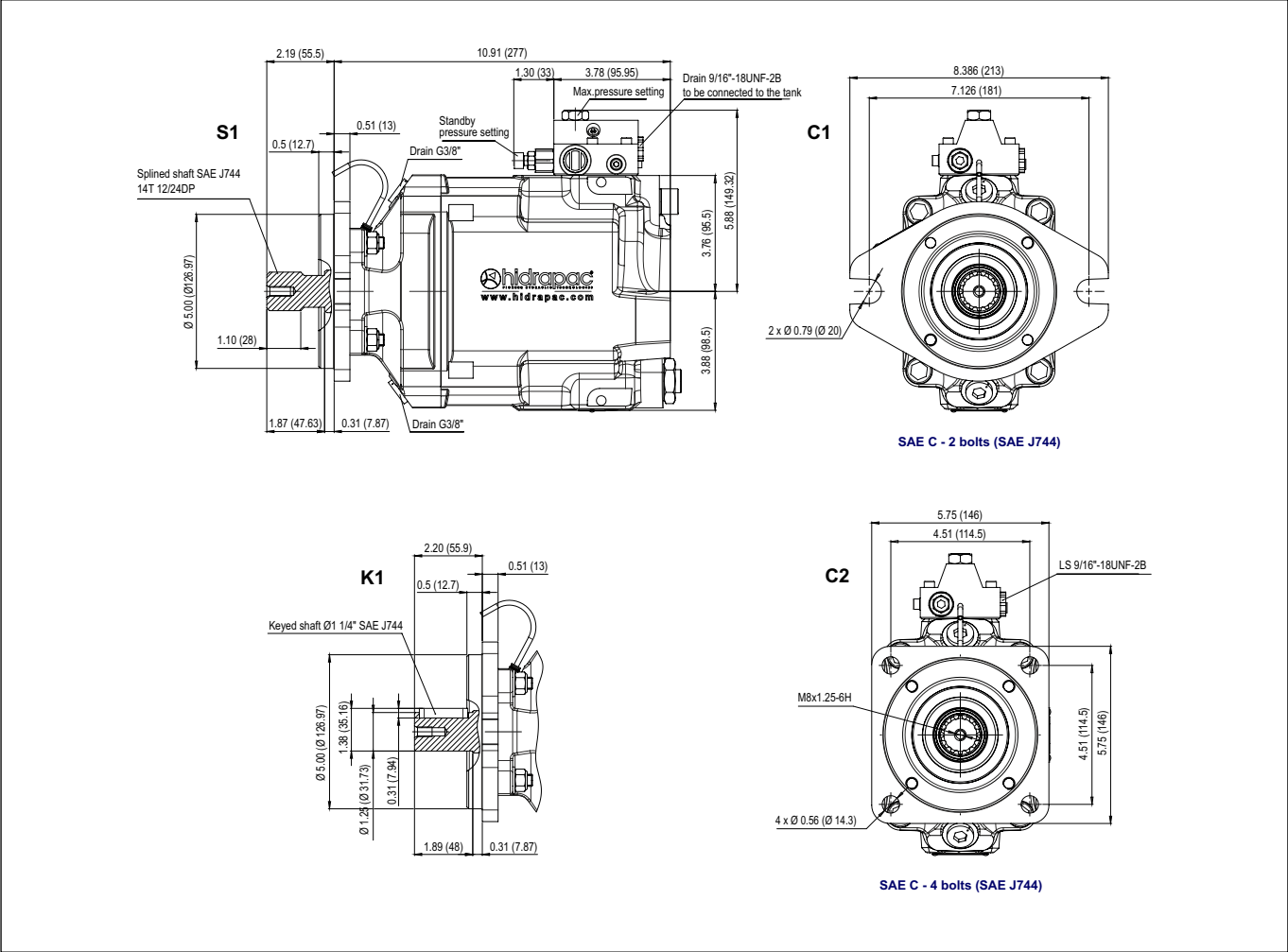






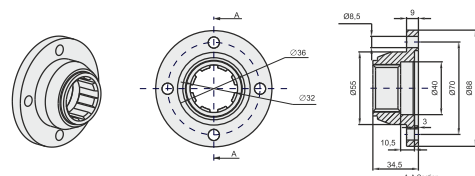
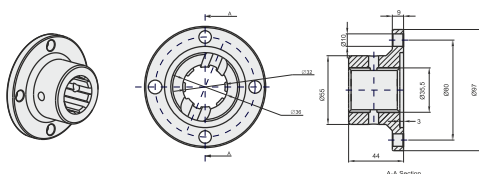
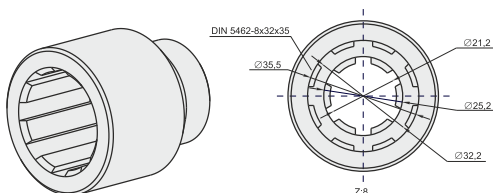
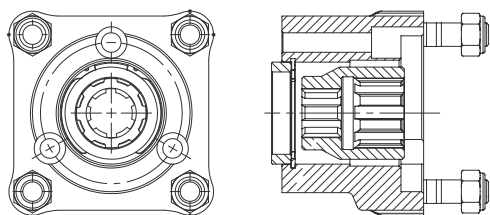
AXVA (SAE) - 120 cc Variable Pump

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PIONEER HYDRAULIC TECHNOLOGIES



90° elbow fittings, swivel

Technical drawing of a 90° elbow fitting. The drawing shows the side profile of the fitting, which has a 90-degree bend. Dimensions are indicated as follows: A is the diameter of the bottom flange; B is the diameter of the top flange; C is the diameter of the central pipe section; D is the height of the bottom flange; E is the height of the top flange; and F is the length of the central pipe section. A small circle with a dot in the center is labeled 'C', indicating the center of the fitting.



- Split Flange
- Seal
- Screw



- 12 V
- 24 V



- PTO Piston Pump Adapter
- PTO Gear Pump Adapter
- Long / Short Adapter



- 1120 (6 Spline)
- 1120 (8 Spline)
- 1300 (6 Spline)
- 1300 (8 Spline)



- 6 x 8 Couplar
- 6 x 8 Couplar (Long)
- 8 x 8 Couplar
- 8 x 8 Couplar (Long)

Calculation of power to be supplied to the shaft as a function of flow and pressure

$$P = \frac{\Delta P \times Q}{600 \times \eta_{\text{global}}}$$

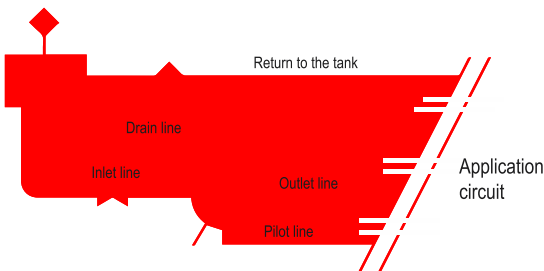
Calculation of torque to determine PTO,
as a function of the displacement and the pressure

$$C = \frac{Cyl \times \Delta P}{62.8 \times \eta_{\text{meca}}}$$

With:

- P = Hydraulic power in kW
- ΔP = Differential pressure in bar
- Q = Flow in l/min
- C = Torque in N.m
- Cyl = Displacement in cc/rev
- η_{meca} = Mechanical efficiency
- η_{global} = Mechanical efficiency + volumetric efficiency

Ideal installation

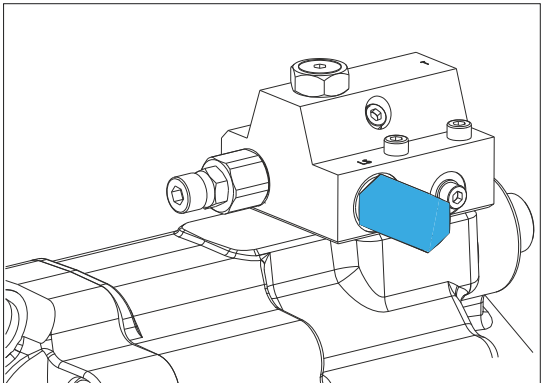
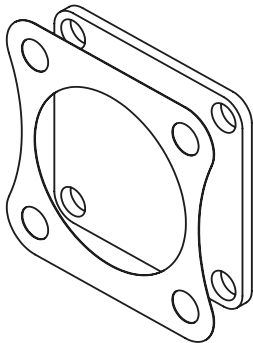
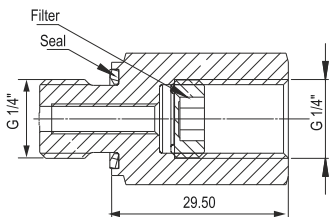
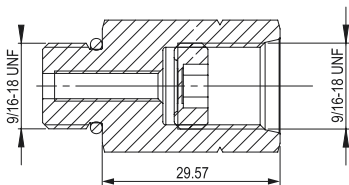
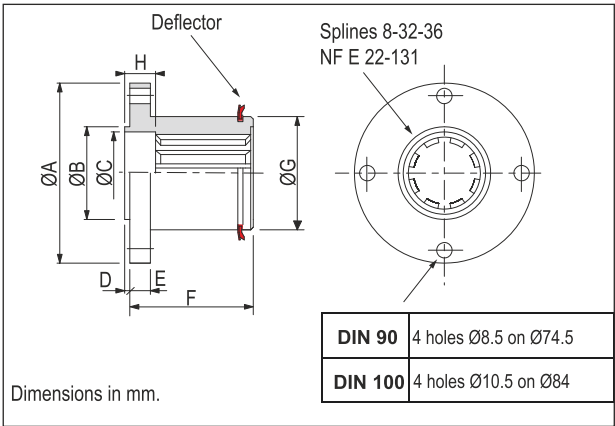
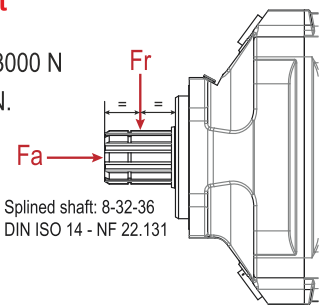


Type		ØA	ØB	C	D	E	F	ØG	H
DIN 90		90	47	43	2	10	62	55	15
DIN 100		100	57	43	2	10	64	55	15

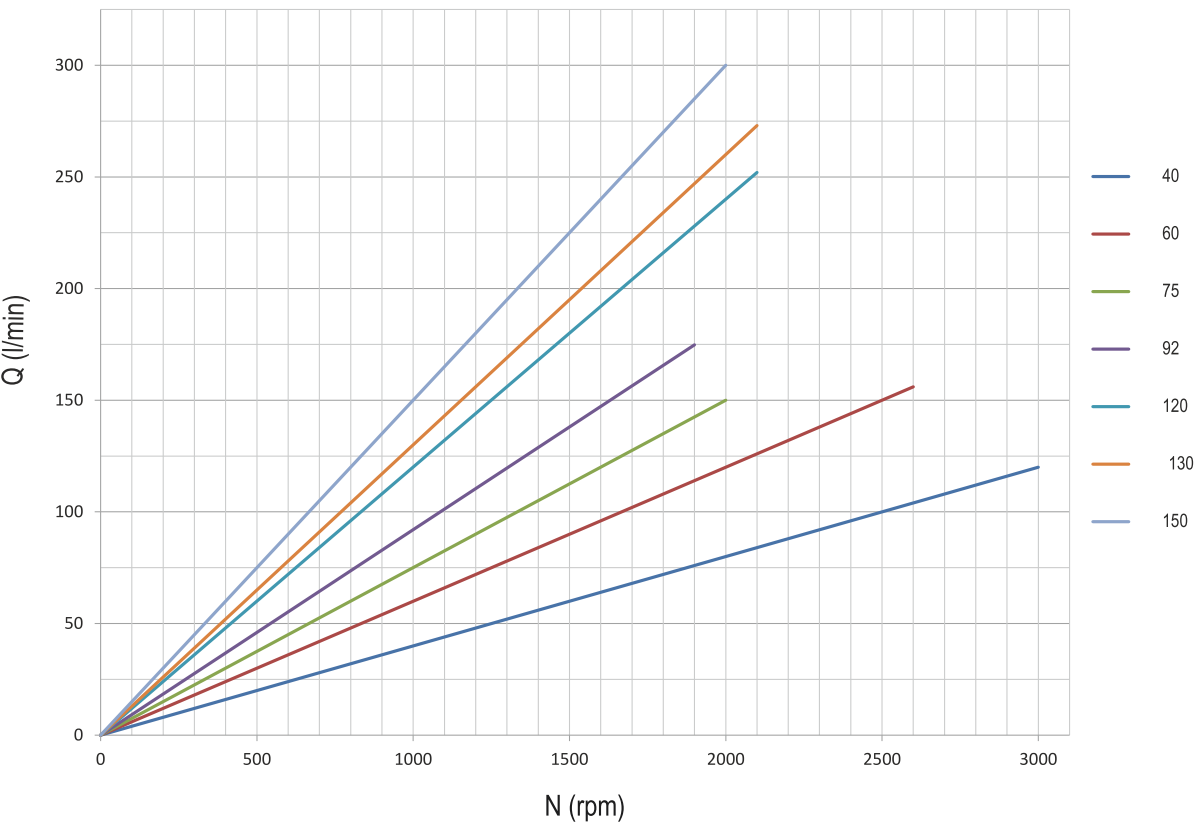
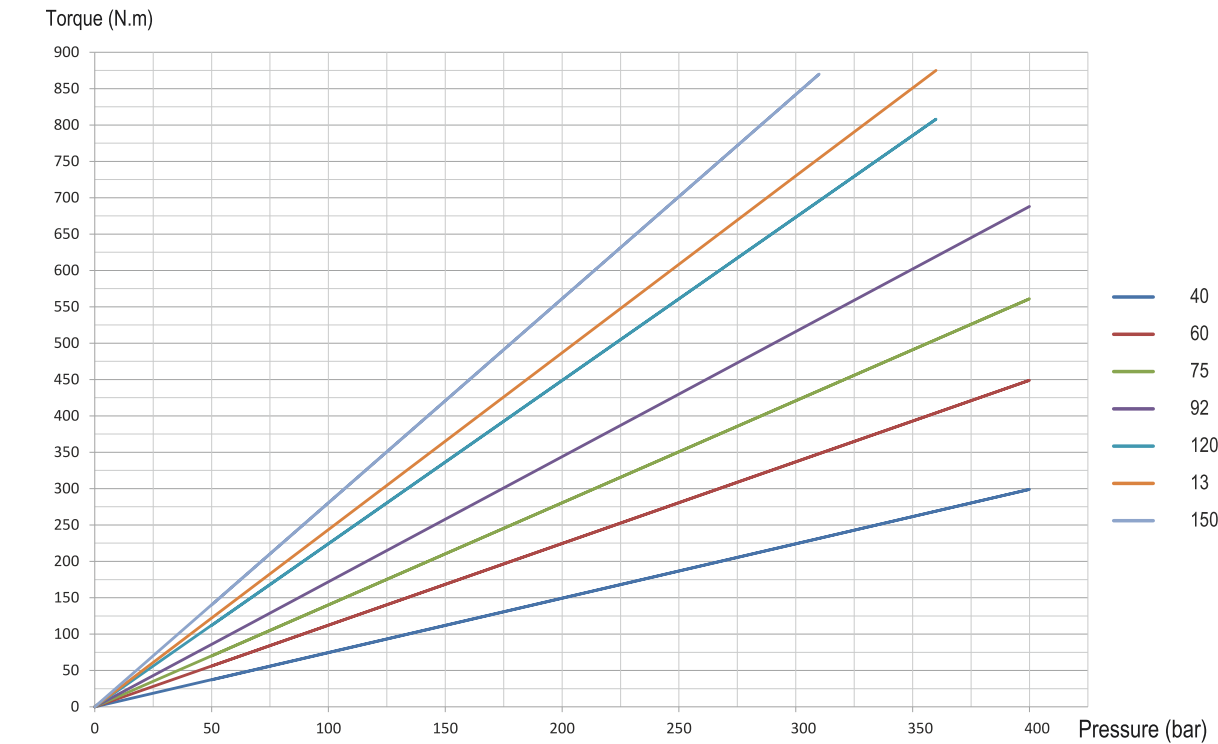
Force on pump shaft

Fr : Acceptable max. radial force = 3000 N

Fa : Acceptable axial force = 1600 N.

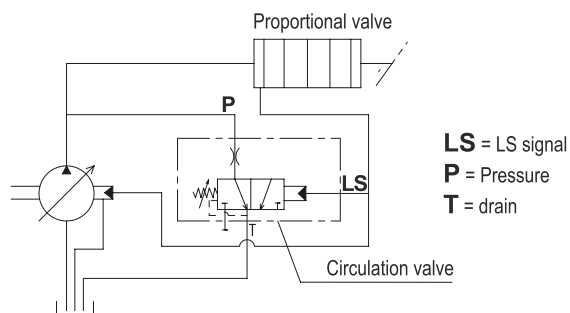
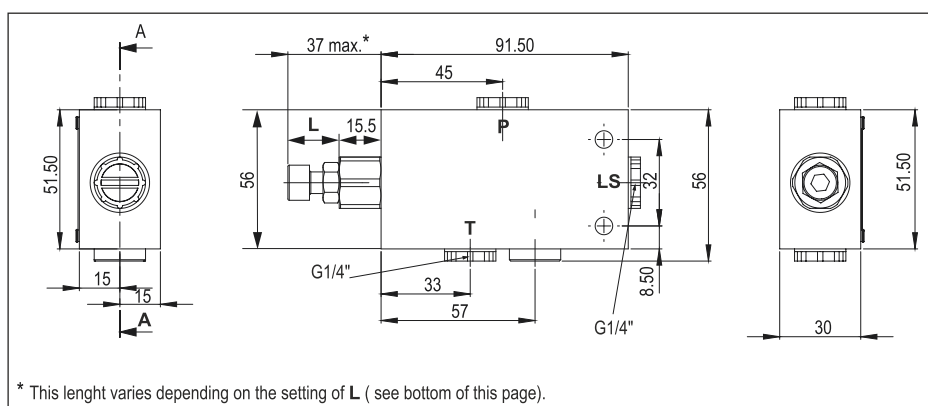
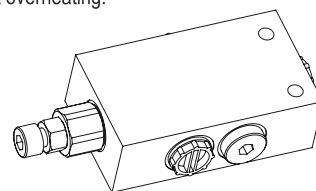


Torque and Flow



FCV - FLUID VALVE CIRCULATION

- The valve flow varies between 20 and 22 l/min for a ΔP at 30 bar.
- Maximum pressure is 420 bar.
- The closing pressure is 2 bar min. and 7 bar max.



Setting of the control pressure LS as a function of **L**

L (mm)	Control pressure LS (bar)*
15	7.0
16	6.0
17	5.0
18	4.0
19	3.0
20	2.0
21	2.0

*With a pressure in T line of 0 bar.

40° bent axis design giving high power, small overall dimensions, optimum efficiency and economic design. Flange and shaft designed for direct mounting on truck gearbox PTO's. The fixed displacement bent axis pumps generates a hydraulic fluid flow. It is designed for use in trucks, commercial vehicles and all stationary hydraulic applications. The Pump a fixed pump with rotary group in bent-axis design open circuits. Flow is proportional to drive speed and displacement.

For axial piston units with bent-axis design, the Pistons are arranged diagonally with respect to the drive shaft. The pump covers the whole displacement range 5 to 130 cm³/rev. The pump has been developed with modern styling and design to satisfy market demand as to designed new generation plate and pistons with give high flow performance, high pressures with high efficiency and very small dimensions.

The pump is available both to DIN and SAE world standards and can be mounted either directly at the gear box or via a drive shaft. If necessary it can also be augmented with a by-pass valve. Other brand bent axis pumps compatible and interchangeable with DIN Hydraulic Piston Pumps. Refer to the data sheet and confirmation for the technical data, operating conditions and operating limits of the bent axis piston pumps.

Formulas			
Pump Output Flow	GPM	$GPM = (\text{Speed (rpm)} \times \text{disp. (cu. in.)}) / 231$	$GPM = (n \times d) / 231$
Pump Input Horsepower	HP	$HP = GPM \times \text{Pressure (psi)} / 1714 \times \text{Efficiency}$	$HP = (Q \times P) / 1714 \times E$
Pump Efficiency	E	Overall Efficiency = Output HP / Input HP	Eoverall = HPOut / HPIn X 100
		Overall Efficiency = Volumetric Eff. × Mechanical Eff.	EOverall = EffVol. × EffMech.
Pump Volumetric Efficiency	E	Volumetric Efficiency = Actual Flow Rate Output (GPM) / Theoretical Flow Rate Output (GPM) × 100	EffVol. = QAct. / QTheo. X 100
Pump Mechanical Efficiency	E	Mechanical Efficiency = Theoretical Torque to Drive / Actual Torque to Drive × 100	EffMech = TTheo. / TAct. × 100
Pump Displacement	CIPR	Displcmnt (In. ³ / rev.) = Flow Rate (GPM) × 231 / Pump RPM	CIPR = GPM × 231 / RPM
Pump Torque	T	Torque = Horsepower × 63025 / RPM	T = 63025 × HP / RPM
		Torque = Pressure (PSIG) × Pump Displacement (CIPR) / 2π	T = P × 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 to 20 ft./sec.; all oil lines in air-over-oil systems; 4 ft./sec.

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



AXVA (SAE) 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

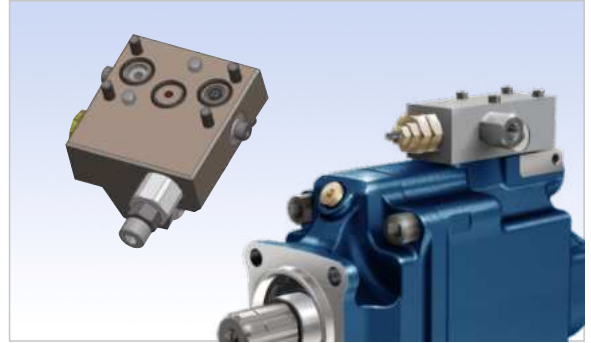
ByPass Valve

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)

Fevzicakmak Mah. Sila Cad. Kobisan 3 San. Sit.
No: 71 / AD Karatay – Konya, PO Code; 42050, Turkiye

Phone; +90 551 111 77 44