

A2FS (SAE) Bent Axis Pumps -2022-

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 2022.

Designation;

5cc, 10cc, 12cc, 18cc, 25cc, 32cc, 41cc, 50cc,
56cc, 63cc, 80cc, 108cc, 130cc, 160cc, 180cc



Hidrapac **Store**

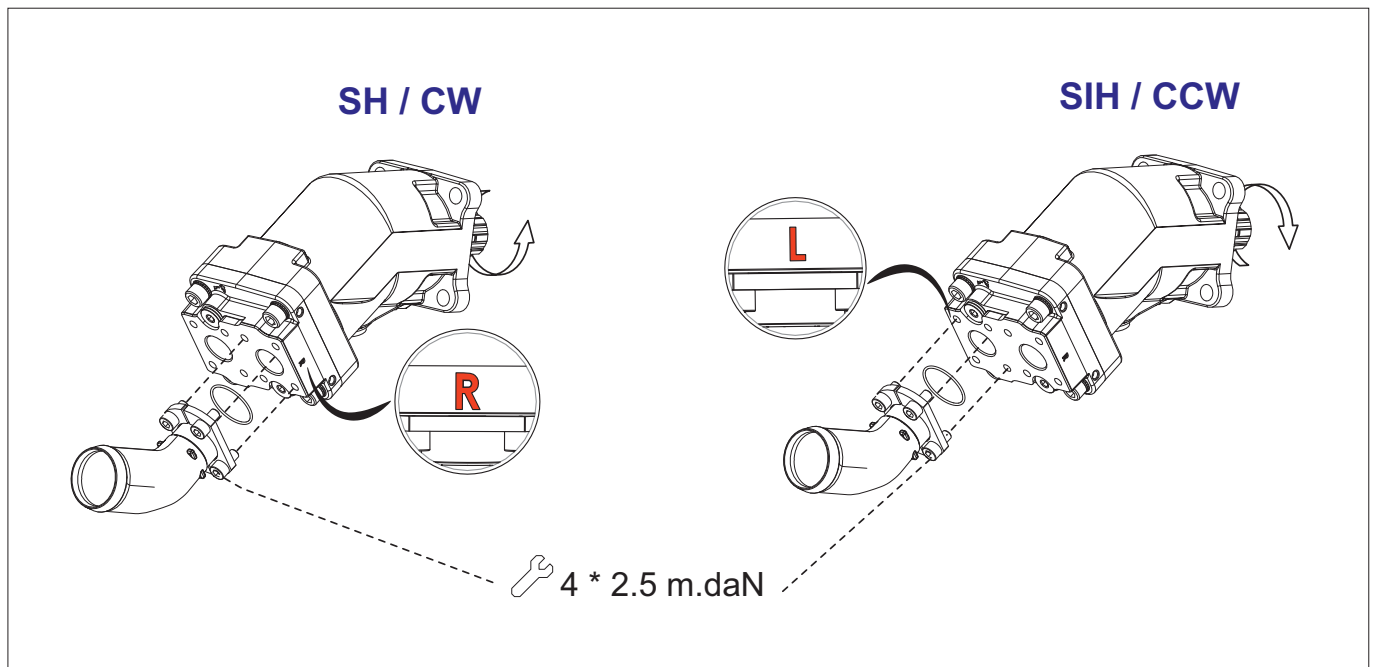
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Characteristics of the A2FS - SAE Flange Bent Axis Pumps

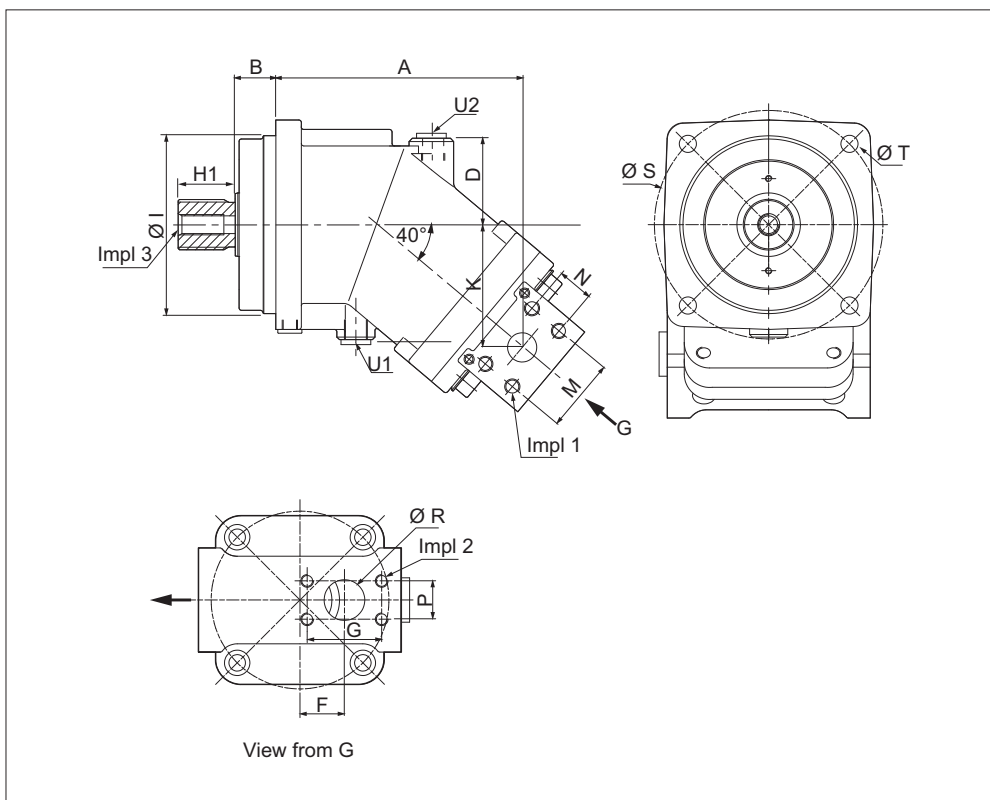
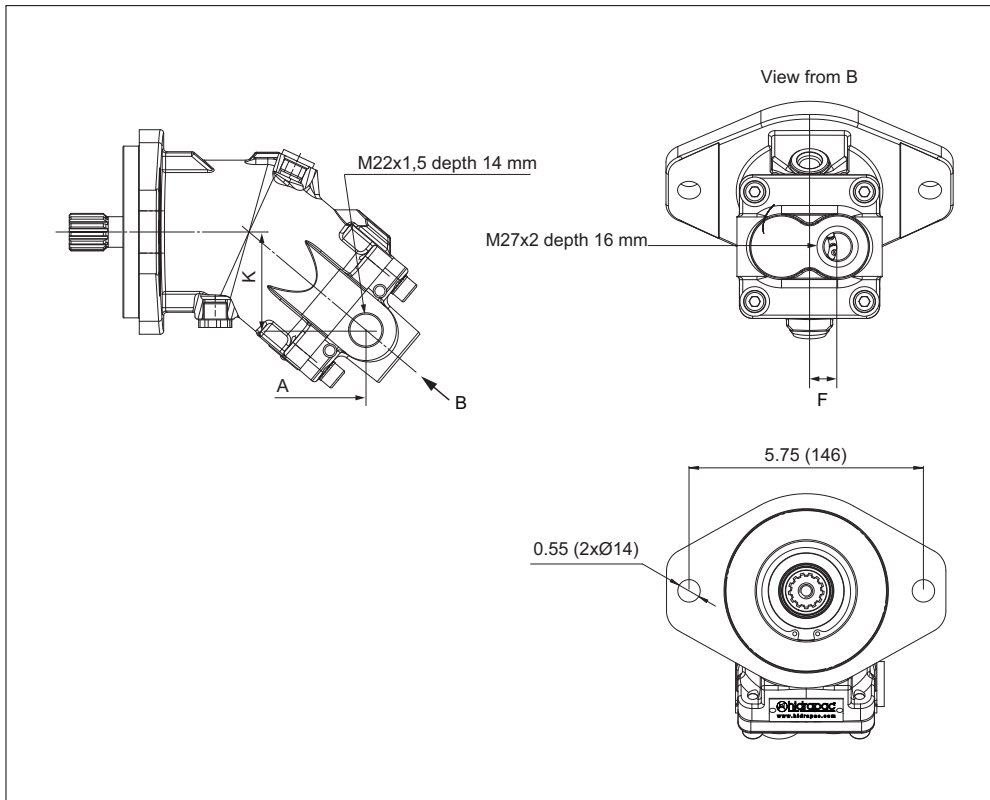
Pump MODEL	DISPL. (cc)	MAX. PEAK/ CONTINUOUS PRESSURE (bar)	MAXIMUM SPEED (rpm)	MAX.TORQUE ABSORBED AT 380 BAR (N.m)	WEIGHT WITHOUT INLET FITTING (kg)	WEIGHT WITH 2" INLET FITTING (kg)	TORQUE WITHOUT FITTING (N.m)	TORQUE WITH FITTING (N.m)
5 cc	5.1	450 / 400	3300	60	9.00	9.40	8.20	8.60
10 cc	10.2	450 / 400	3200	68	9.00	9.40	8.65	9.05
12 cc	12.0	450 / 400	3150	76	9.20	9.60	8.74	9.14
18 cc	18.0	450 / 400	2900	114	9.30	9.70	8.79	9.19
25 cc	25.0	450 / 400	2750	159	11.00	11.40	8.89	9.29
32 cc	32.0	450 / 400	2700	204	11.10	11.50	11.10	11.50
41 cc	41.0	450 / 400	2550	261	11.20	11.60	11.15	11.55
50 cc	50,3	450 / 400	2450	318	17.80	18.20	18.10	18.50
56 cc	56,0	450 / 400	2400	375	17.80	18.20	18.10	18.50
63 cc	63.0	450 / 400	2300	401	17.80	18.20	18.10	18.50
80 cc	80,4	450 / 400	2150	509	24.80	25.20	27.80	28.30
108 cc	108	450 / 400	1900	687	34.90	35.30	37.92	38.42
125 cc	125	450 / 400	1750	827	35.30	35.70	38.70	39.50
160 cc	160	450 / 400	1900	891	44.90	45.30	47.92	48.42
180 cc	180	450 / 400	1750	1006	45.30	45.70	48.70	49.50

Direction of Rotation; CW and CCW

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



Characteristics of the A2FS - SAE Flange Bent Axis Pumps



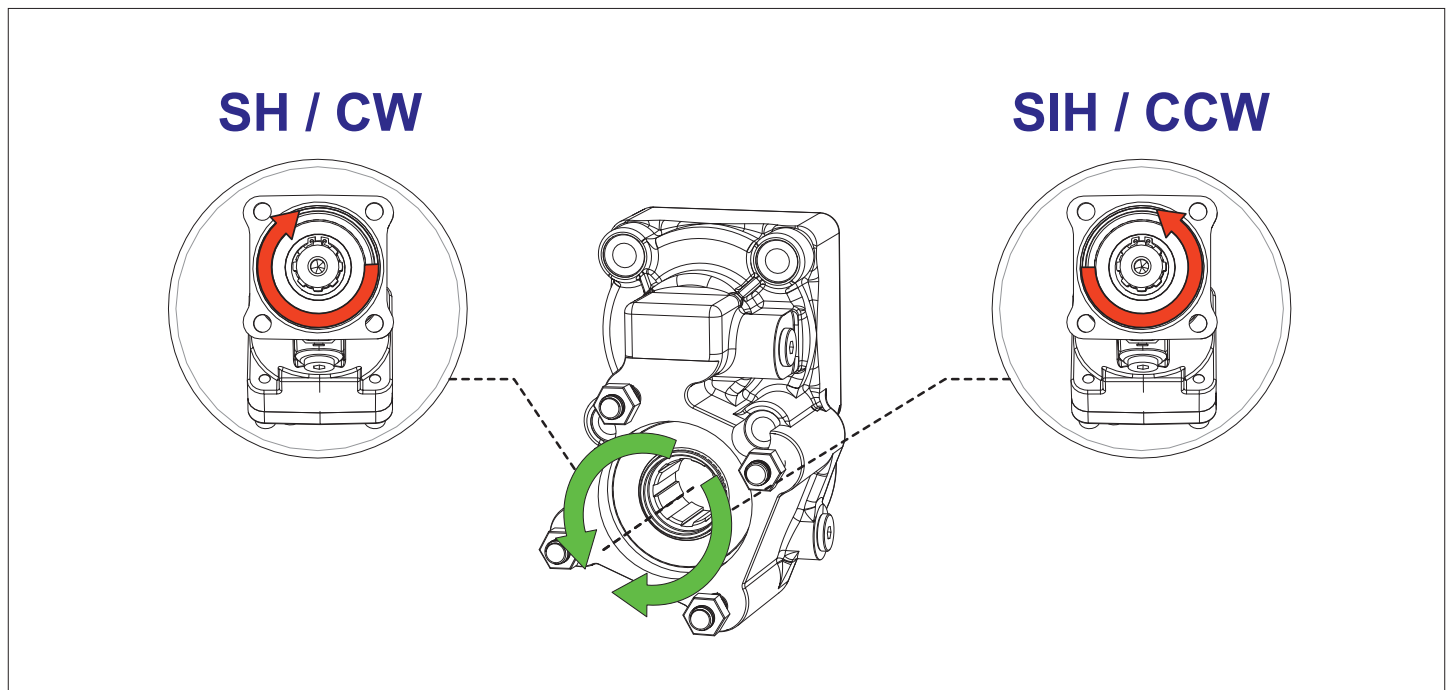
Characteristics of the A2FS - SAE Flange Bent Axis Pumps

Pump MODEL	A	B	D	F	G	I	K	M	N	P	R	S	T
5 cc	134.1	7.9	41.9	17	-	101.6	58	-	-	-	-	SAE-B2	14
10 cc	134.1	7.9	41.9	17	-	101.6	58	-	-	-	-	SAE-B2	14
12 cc	134.1	7.9	41.9	17	-	101.6	58	-	-	-	-	SAE-B2	14
18 cc	134.1	7.9	41.9	17	-	101.6	58	-	-	-	-	SAE-B2	14
25 cc	157.8	7.9	56	22	47.6	127.0	66	40.5	18.2	22.2	19	162	14.3
32 cc	164.0	7.9	56	22	47.6	127.0	71	40.5	18.2	22.2	19	162	14.3
41 cc	164.0	7.9	56	22	47.6	127.0	71	40.5	18.2	22.2	19	162	14.3
50 cc	189.2	7.9	59	30	52.5	127.0	85	50.8	23.8	26.2	25	162	14.3
56 cc	189.2	7.9	59	30	52.5	127.0	85	50.8	23.8	26.2	25	162	14.3
63 cc	189.2	7.9	59	30	52.5	127.0	85	50.8	23.8	26.2	25	162	14.3
80 cc	215.2	7.9	68	35	58.7	152.4	97	57.2	27.8	30.2	32	228.6	21.0
108 cc	235.0	7.9	60	35	69.9	152.4	100.8	66.7	31.8	35.7	38	228.6	21.0
125 cc	235.0	7.9	60	35	69.9	152.4	100.8	66.7	31.8	35.7	38	228.6	21.0
160 cc	267.7	7.9	68	49.5	77.8	152.4	105.7	66.7	31.8	42.9	51	228.6	21.0
180 cc	267.7	7.9	68	49.5	77.8	152.4	105.7	66.7	31.8	42.9	51	228.6	21.0

Pump MODEL	Splined Shaft	H1	Outlet 6000 PSI	Inlet 3000 PSI	Impl 1	Impl 2	Impl 3	U1 / U2
5 cc	13T 16/32 SAE B	33.3	M22x1.5	M27x2	-	-	5/16"-18 UNC	9/19"-18 UNF
10 cc	13T 16/32 SAE B	33.3	M22x1.5	M27x2	-	-	5/16"-18 UNC	9/19"-18 UNF
12 cc	13T 16/32 SAE B	33.3	M22x1.5	M27x2	-	-	5/16"-18 UNC	9/19"-18 UNF
18 cc	13T 16/32 SAE B	33.3	M22x1.5	M27x2	-	-	5/16"-18 UNC	9/19"-18 UNF
25 cc	13T 16/32 SAE B	33.3	SAE 1/2"	SAE 3/4"	M8x1.25 dp 15	M10x1.5 prf 17	7/16"-14 UNC	3/4"-16 UNF
32 cc	13T 16/32 SAE B	33.3	SAE 1/2"	SAE 3/4"	M8x1.25 dp 15	M10x1.5 prf 17	7/16"-14 UNC	3/4"-16 UNF
41 cc	13T 16/32 SAE B	33.3	SAE 1/2"	SAE 3/4"	M8x1.25 dp 15	M10x1.5 prf 17	7/16"-14 UNC	3/4"-16 UNF
50 cc	13T 12/24 SAE C	48.0	SAE 3/4"	SAE 1"	M10x1.5 dp 17	M10x1.5 prf 17	7/16"-14 UNC	3/4"-16 UNF
56 cc	13T 12/24 SAE C	48.0	SAE 3/4"	SAE 1"	M10x1.5 dp 17	M10x1.5 prf 17	7/16"-14 UNC	3/4"-16 UNF
63 cc	13T 12/24 SAE C	48.0	SAE 3/4"	SAE 1"	M10x1.5 dp 17	M10x1.5 prf 17	7/16"-14 UNC	3/4"-16 UNF
80 cc	13T 12/24 SAE C	48.0	SAE 1"	SAE 1" 1/4	M12x1.75 dp 20	M10x1.5 prf 17	7/16"-14 UNC	3/4"-16 UNF
108 cc	13T- 8/16 SAE D	67.0	SAE 1" 1/4	SAE 2"	1/2" - 13 UNC	1/2" - 13 UNC	5/8" - 11 UNC	7/8" - 14 UNF
125 cc	13T- 8/16 SAE D	67.0	SAE 1" 1/4	SAE 2"	1/2" - 13 UNC	1/2" - 13 UNC	5/8" - 11 UNC	7/8" - 14 UNF
160 cc	13T- 8/16 SAE D	67.0	SAE 1" 1/4	SAE 2"	1/2" - 13 UNC	1/2" - 13 UNC	5/8" - 11 UNC	7/8" - 14 UNF
180 cc	13T- 8/16 SAE D	67.0	SAE 1" 1/4	SAE 2"	1/2" - 13 UNC	1/2" - 13 UNC	5/8" - 11 UNC	7/8" - 14 UNF

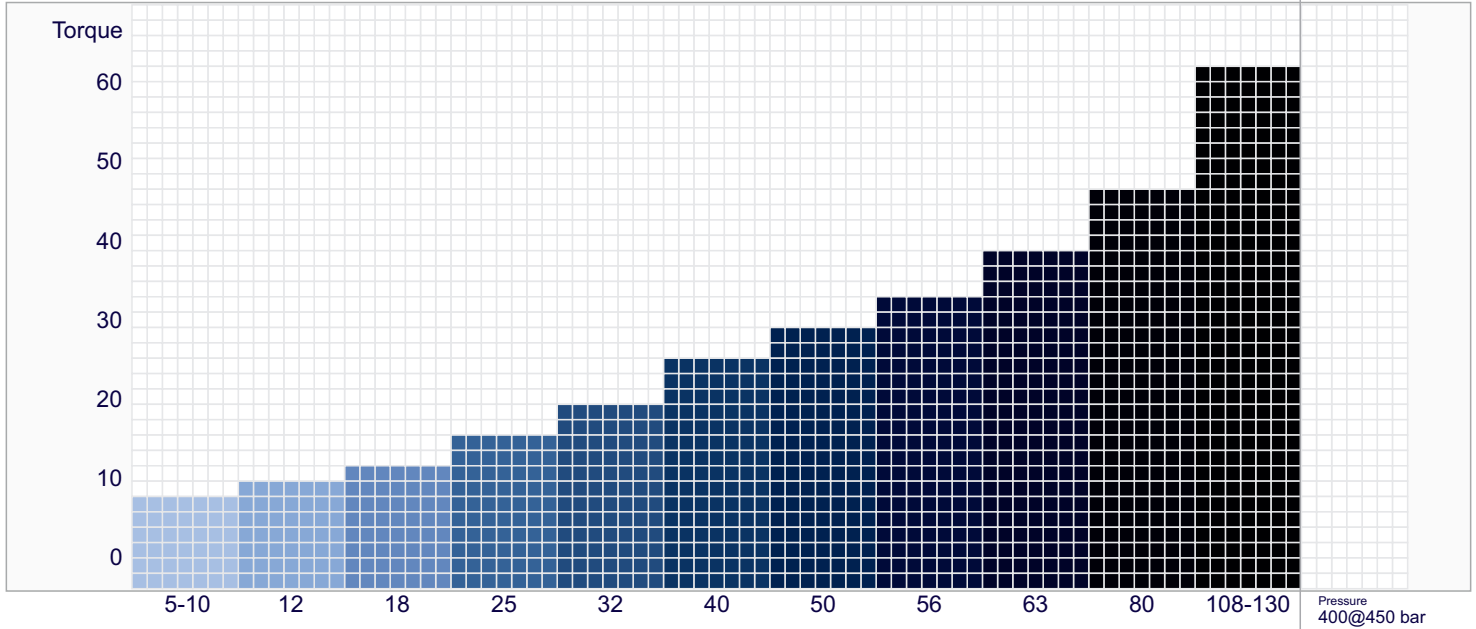
Ordering Code; A2FS - SAE Flange Bent Axis Pumps

Model Code	Displacement		Shaft Type	Flange Type	Rotation	Sealing
A2FS	25		S	B6	R	V
A2FS Bent Axis Hydraulic Pump SAE Flange	5	56	S Splined Shaft	B2 2 Bolt SAE Flange Shaft	R CW Right Direction of Rotation	V Viton High Pressure Seal
	10	63				
	12	80	K Keyed Shaft	B4 4 Bolt SAE Flange Shaft	L CCW Left Direction of Rotation	N Nitrile Seal 5/10 Bar
	18	108				
	25	125	B6 6 Bolt SAE Flange Shaft	Direction of Rotation	Sealing	
	32	160				
	41	180				
		50				

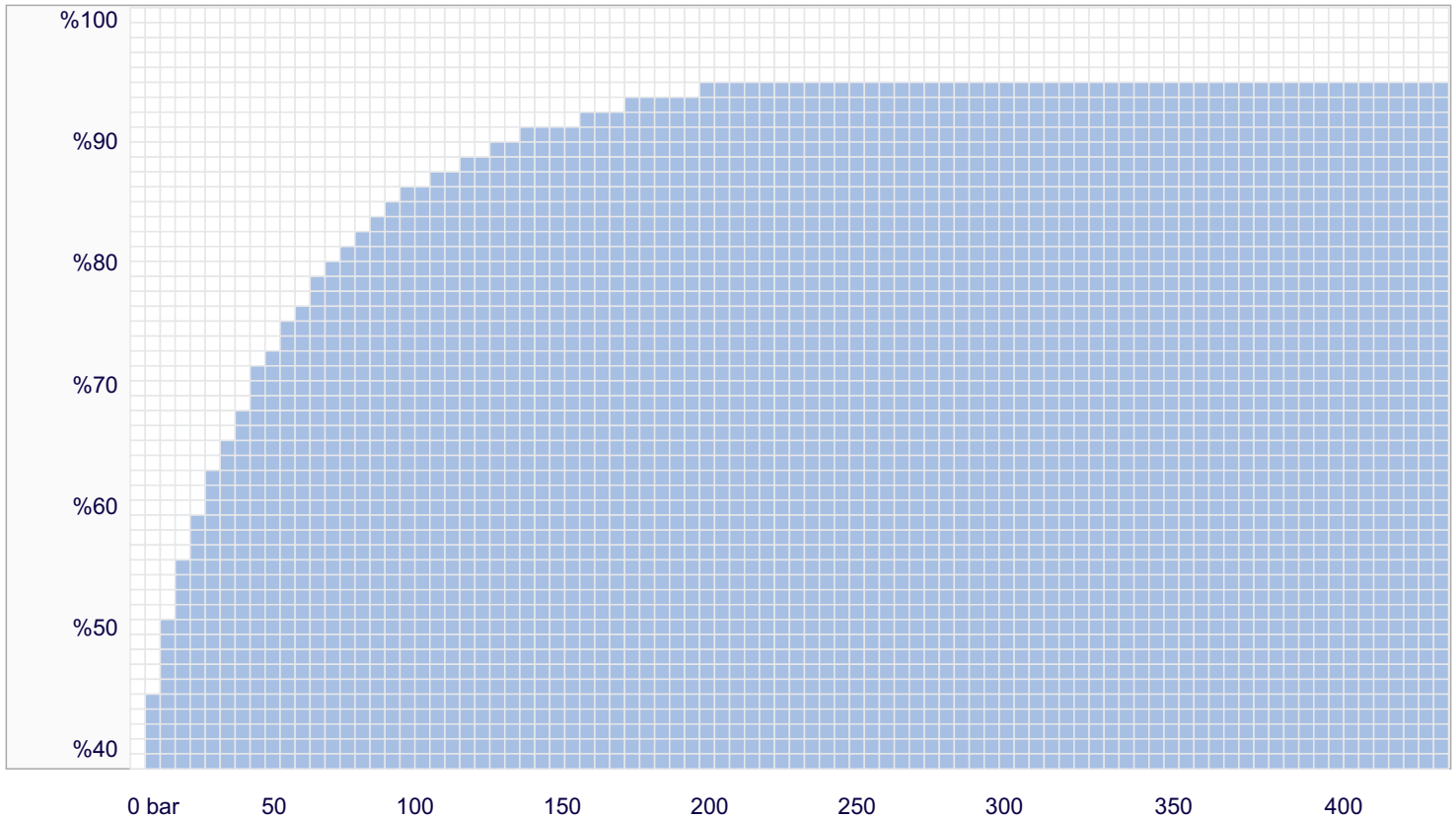


Performance, Torque, Speed and Pressure Charts

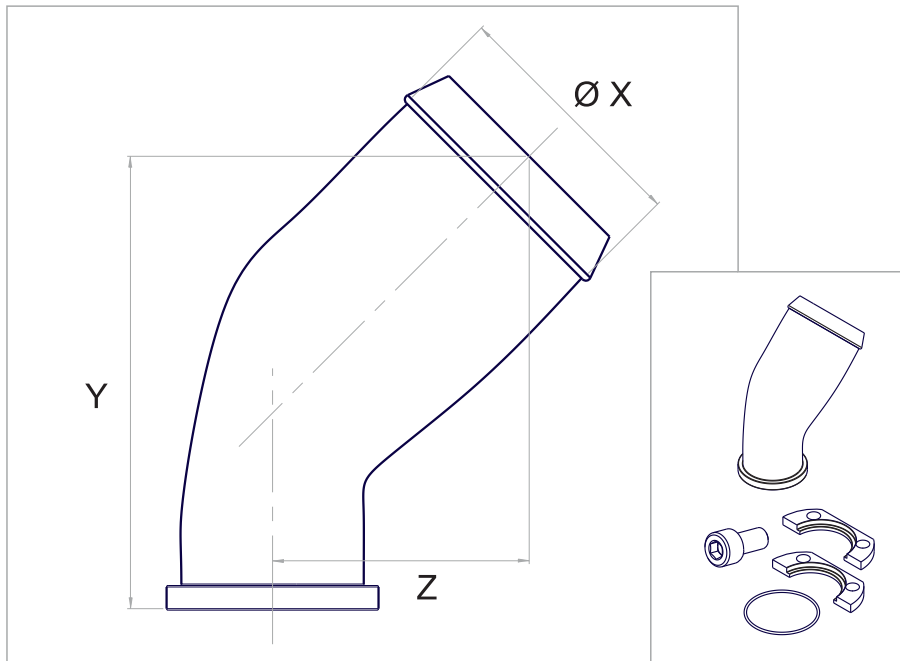
Compare Table of Torque



Efficiency of Bent Axis Pumps (1000 rpm)

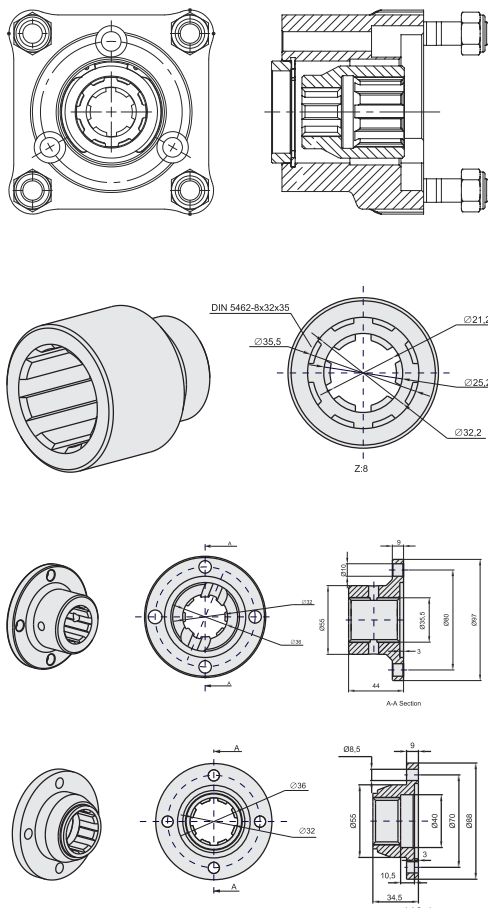


Suction Fittings for A2FS (SAE) Bent Axis Pumps



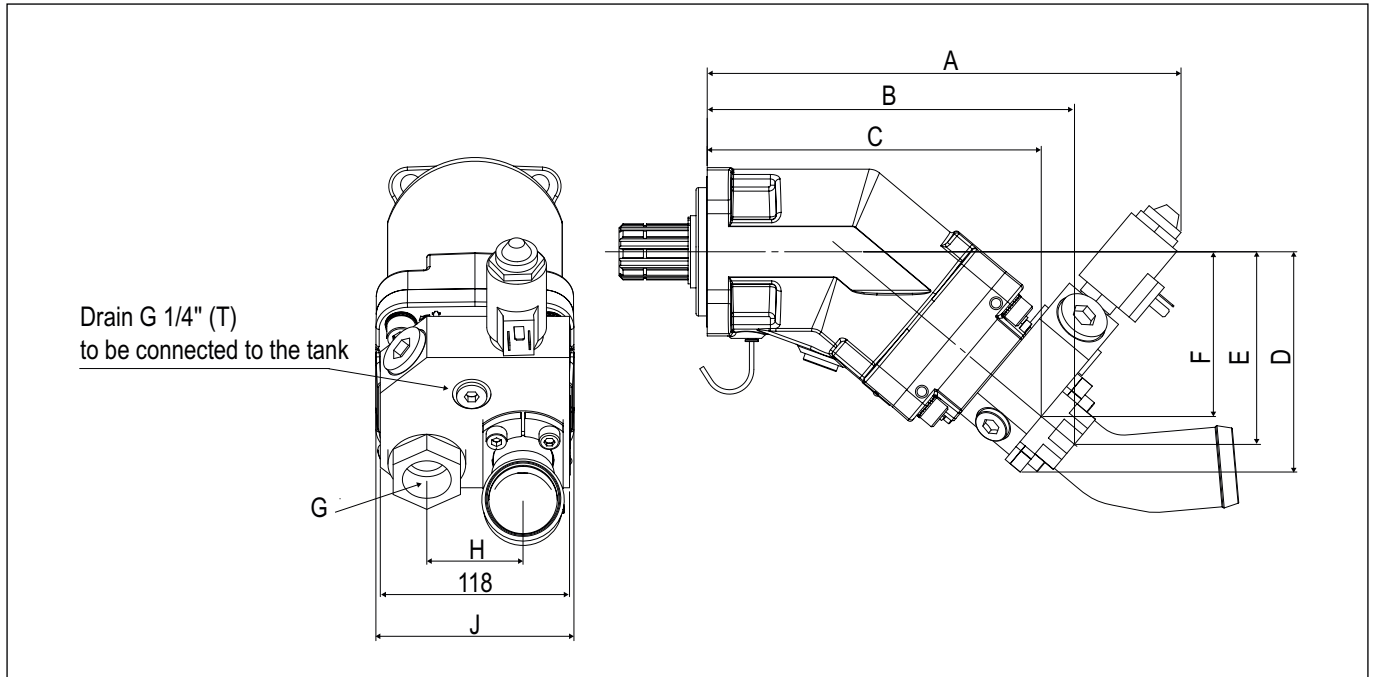
45° elbow fittings			
Ø hose	1 ½"	1 ¾"	2 ½"
Ø X	39	46	64
Y	91	91	125
Z	46	46	62

90° elbow fittings			
Ø hose	1 ½"	2"	2 ½"
Ø X	39	51	64
Y	58	64	71
Z	80	80	87



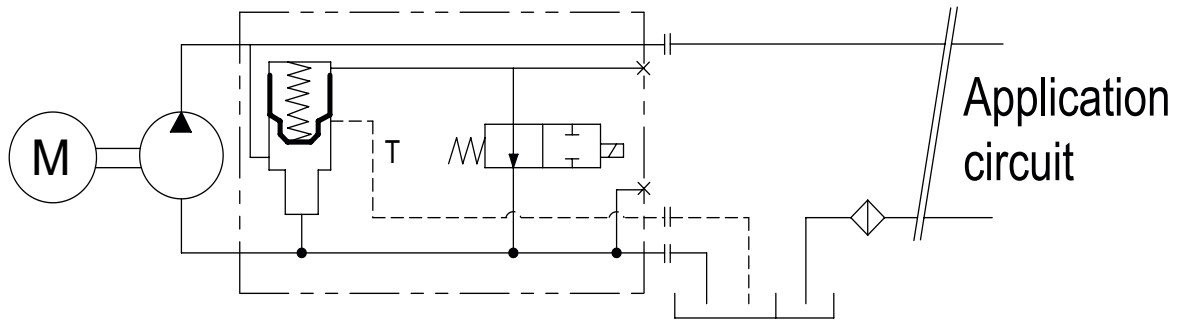
	Inlet Fittings & Installation Parts <ul style="list-style-type: none"> - Split Flange - Seal - Screw
	By-Pass Valves <ul style="list-style-type: none"> - 12 V - 24 V
	Hydraulic Adapters <ul style="list-style-type: none"> - PTO Piston Pump Adapter - PTO Gear Pump Adapter - Long / Short Adapter
	Flanges <ul style="list-style-type: none"> - 1120 (6 Spline) - 1120 (8 Spline) - 1300 (6 Spline) - 1300 (8 Spline)
	Couplers <ul style="list-style-type: none"> - 6 x 8 Couplar - 6 x 8 Couplar (Long) - 8 x 8 Couplar - 8 x 8 Couplar (Long)

ByPass Valve for A2FS (SAE) Bent Axis Pumps



Pump MODEL	DISPL. (cc)	A	B	C	D	E	F	G	H	J
5 cc	5.1	289.35	223.04	202.19	132.20	114.72	97.58	G 3/4"	54	108
10 cc	10.2	289.35	223.04	202.19	132.20	114.72	97.58	G 3/4"	54	108
12 cc	12.0	289.35	223.04	202.19	132.20	114.72	97.58	G 3/4"	54	108
18 cc	18.0	289.35	223.04	202.19	132.20	114.72	97.58	G 3/4"	54	108
25 cc	25.0	289.35	223.04	202.19	132.20	114.72	97.58	G 3/4"	54	108
32 cc	32.0	295.50	229.00	208.30	137.30	120.10	102.70	G 3/4"	54	108
41 cc	41.0	295.50	229.00	208.30	137.30	120.10	102.70	G 3/4"	54	108
50 cc	50,3	307.10	240.40	220.00	147.10	129.70	112.50	G 3/4"	54	108
56 cc	56,0	307.10	240.40	220.00	147.10	129.70	112.50	G 3/4"	54	108
63 cc	63.0	307.10	240.40	220.00	147.10	129.70	112.50	G 3/4"	54	108
80 cc	80,4	334.00	269.00	246.70	157.80	143.90	124.80	G 1"	60	123
108 cc	108	334.00	269.00	246.70	157.80	143.90	124.80	G 1"	60	123
130 cc	130	336.30	271.3	249.00	159.70	145.80	126.70	G 1"	60	123

ByPass Valve for A2FS (SAE) Bent Axis Pumps



Pump MODEL	DISPL. (cc)	WEIGHT WITHOUT INLET FITTING (kg)	WEIGHT WITH 2" INLET FITTING (kg)	TORQUE WITHOUT FITTING (N.m)	TORQUE WITH FITTING (N.m)
5 cc	5.1	9.00	9.40	8.20	8.60
10 cc	10.2	9.00	9.40	8.65	9.05
12 cc	12.0	9.20	9.60	8.74	9.14
18 cc	18.0	9.30	9.70	8.79	9.19
25 cc	25.0	11.00	11.40	8.89	9.29
32 cc	32.0	11.10	11.50	11.10	11.50
41 cc	41.0	11.20	11.60	11.15	11.55
50 cc	50,3	11.30	11.70	11.75	12.15
56 cc	56,0	11.35	11.75	11.80	12.20
63 cc	63.0	11.45	11.85	11.85	12.25
80 cc	80,4	14.80	15.20	17.80	18.30
108 cc	108	14.90	15.30	17.92	18.42
130 cc	130	15.30	15.70	18.70	19.50

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 SAE 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 SAE bent axis pumps. Refer to the data sheet and order 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	$E_{\text{Overall}} = \text{HPOut} / \text{HPIn} \times 100$
		Overall Efficiency = Volumetric Eff. × Mechanical Eff.	$E_{\text{Overall}} = \text{EffVol.} \times \text{EffMech.}$
Pump Volumetric Efficiency	E	$\text{Volumetric Efficiency} = \text{Actual Flow Rate Output (GPM)} / \text{Theoretical Flow Rate Output (GPM)} \times 100$	$\text{EffVol.} = \text{QAct.} / \text{QTheo.} \times 100$
Pump Mechanical Efficiency	E	$\text{Mechanical Efficiency} = \text{Theoretical Torque to Drive} / \text{Actual Torque to Drive} \times 100$	$\text{EffMech} = \text{TTheo.} / \text{TAct.} \times 100$
Pump Displacement	CIPR	$\text{Dsplcmnt (In.}^3 \text{ / rev.)} = \text{Flow Rate (GPM)} \times 231 / \text{Pump RPM}$	$\text{CIPR} = \text{GPM} \times 231 / \text{RPM}$
Pump Torque	T	$\text{Torque} = \text{Horsepower} \times 63025 / \text{RPM}$	$T = 63025 \times \text{HP} / \text{RPM}$
		$\text{Torque} = \text{Pressure (PSIG)} \times \text{Pump Displacement (CIPR)} / 2\pi$	$T = P \times \text{CIPR} / 6.28$

- 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 to 20 ft./sec.; all oil lines in air-over-oil systems; 4 ft./sec.

Complete Product Range

Bent Axis Piston Motors

K2FM (DIN) Bent Axis Motor
K3FH (HYBRID) Bent Axis Motor
A2MS (SAE) Bent Axis Motor
A3MS (SAE2) Bent Axis Motor
A2FM (ISO) Bent Axis Motor
A2FE (Fixed Plugin) Bent Axis Motor
A2FE (Two Speed) Bent Axis Motor
A2FT 45 (Inline) Bent Axis Motor

Bent Axis Piston Pumps

K2FA (DIN) Bent Axis Pump
K2FH (HYBRID) Bent Axis Pump
K2FL (Aluminum) Bent Axis Pump
A2FS (SAE) Bent Axis Pump
A3FS (SAE2) Bent Axis Pump
A2FO (ISO) Bent Axis Pump
A3FO (ISO2) Bent Axis Pump
A2FP (Fixed Plugin) Bent Axis Pump

Variable Displacement Motors

AXMV Variable Piston Motor
AXMA Variable Piston Motor
AXMI Variable Piston Motor

Variable Displacement Pumps

AXVP Variable Piston Motor
AXVA Variable Piston Motor
AXVI Variable Piston Motor

Dual Flow Piston Pumps

A2FD (DIN) Dual Flow Pumps
A2FD (SAE) Dual Flow Pumps
A2PD Axial Dual Output Pumps

Axial Piston & Gear Pumps

A3PP Axial Piston Pumps
A3PH High Pressure Pumps
A2GP Gear Pumps
A2GPT Tandem Gear Pumps
A2GM Gear Motors
A2GMT Tandem Gear Motors

Valve (ByPass) (Flushing) (Cavitation)

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

Hydraulic Spare Parts

Suction Fittings
Couplars
Adapters
Flanges
Power Take Off
Monoblock Valve
Section Valve

Hydraulic Pumps, Pumps

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

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