

A3MS (SAE2) Bent Axis Motors

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

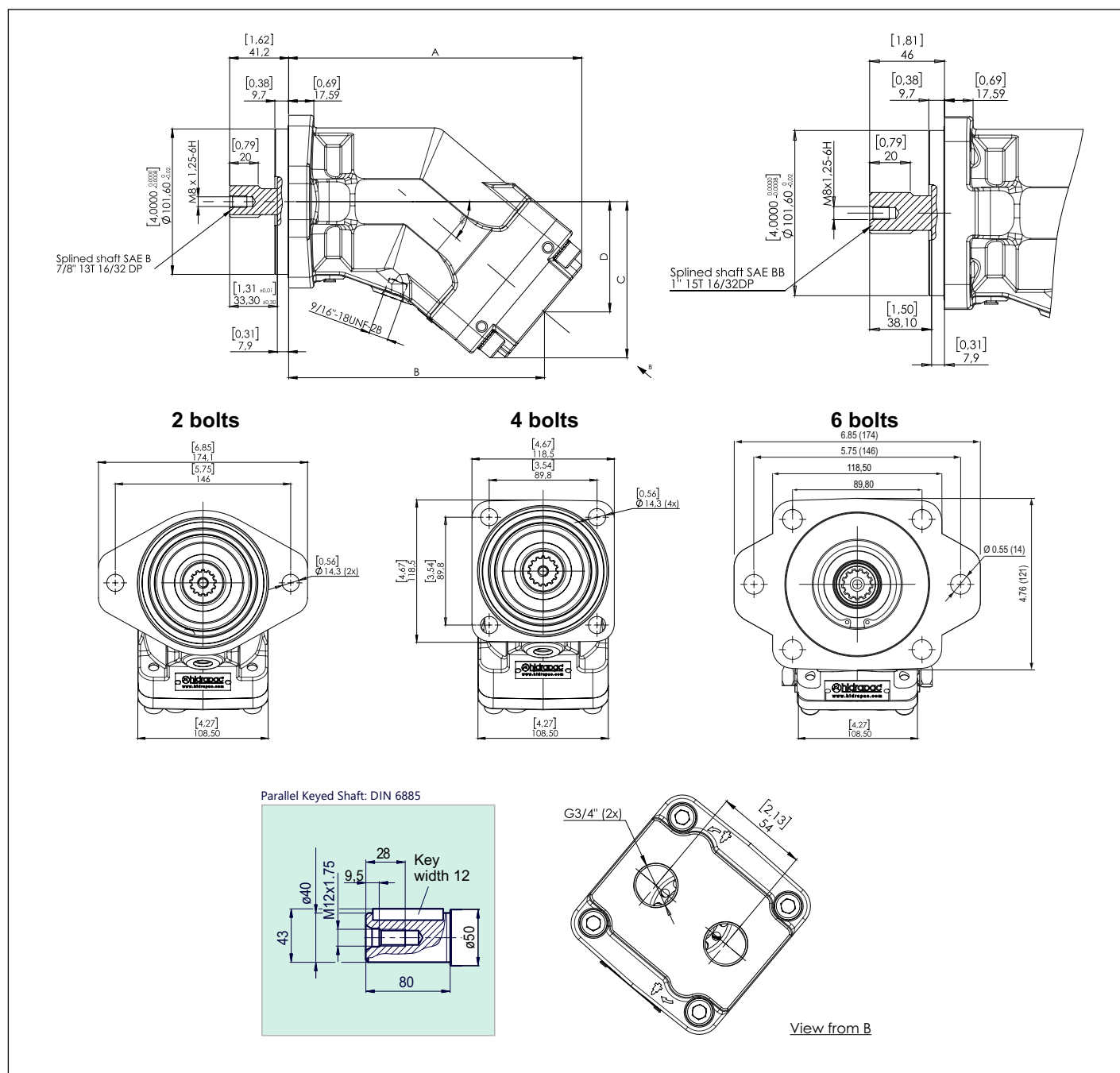
Designation;

12cc, 18cc, 25cc, 32cc, 41cc,
50cc, 56cc, 63cc,



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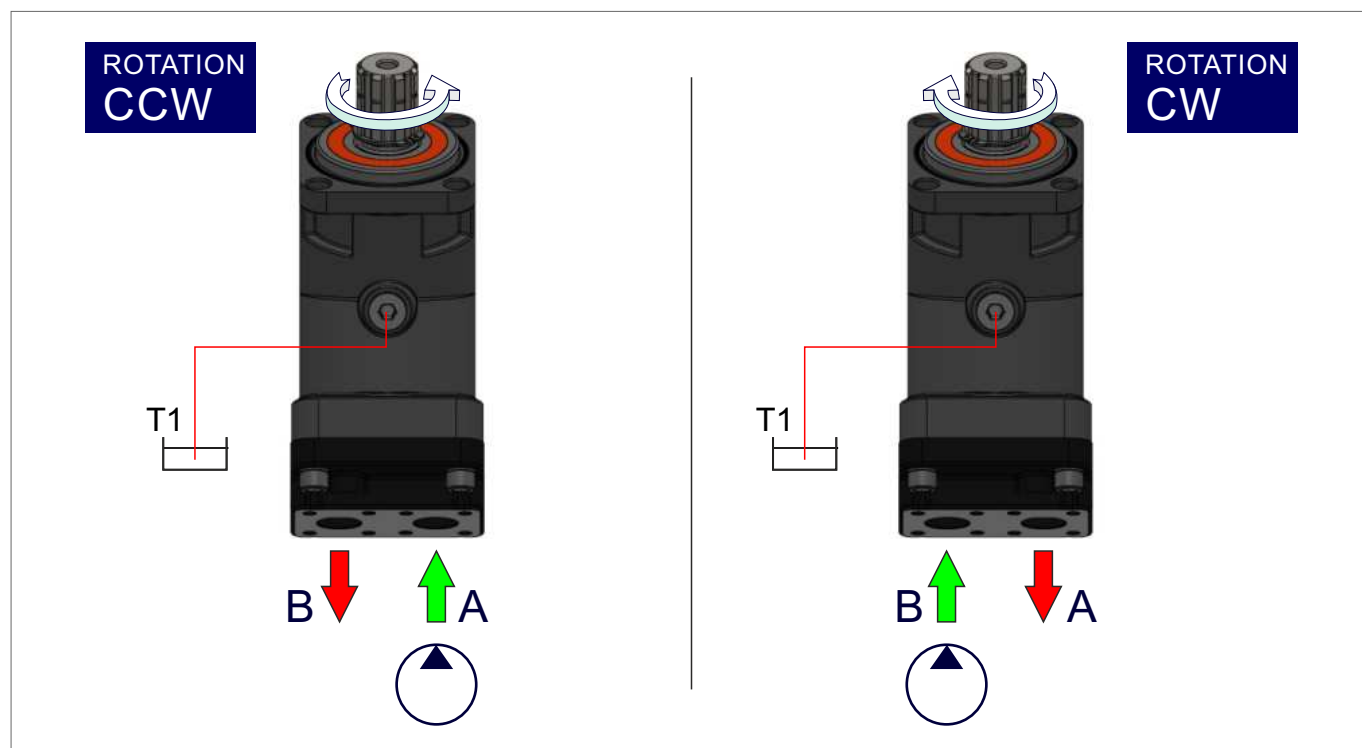
MOTOR MODEL	DISPL. (cc)	A	B	C	D	SHAFT (SPLINED)	SHAFT (KEYED)
12 cc (SAE J744)	12.1	197.2	172.5	103.7	73.0	SAE B 7/8"13T-16/32DP	Parallel Keyed Shaft: DIN 6885
18 cc (SAE J744)	18.0	197.2	172.5	103.7	73.0	SAE B 7/8"13T-16/32DP	Parallel Keyed Shaft: DIN 6885
25 cc (SAE J744)	25.1	197.2	172.5	103.7	73.0	SAE B 7/8"13T-16/32DP	Parallel Keyed Shaft: DIN 6885
32 cc (SAE J744)	32.0	203.2	178.5	108.7	77.0	SAE B 7/8"13T-16/32DP	Parallel Keyed Shaft: DIN 6885
41 cc (SAE J744)	41.2	203.2	178.5	108.7	77.0	SAE B 7/8"13T-16/32DP	Parallel Keyed Shaft: DIN 6885
50 cc (SAE J744)	50.2	214.7	190.0	118.2	86.5	SAE BB 1" 15T-16/32DP	Parallel Keyed Shaft: DIN 6885
56 cc (SAE J744)	56.0	214.7	190.0	118.2	86.5	SAE BB 1" 15T-16/32DP	Parallel Keyed Shaft: DIN 6885
63 cc (SAE J744)	63,3	214.7	190.0	118.2	86.5	SAE BB 1" 15T-16/32DP	Parallel Keyed Shaft: DIN 6885

Characteristics of the A3MS - SAE2 Flange Bent Axis Motors

MOTOR 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)	MOTOR MAX./MIN. TEMP. (celsius)	MAX. ALLOW PRESSURE CONTN./PEAK (bar)
12 cc	12.1	8000	8800	96	0.19	66	-25 / 110	400 / 450
18 cc	18.0	8000	8800	144	0.28	98	-25 / 110	400 / 450
25 cc	25.1	6300	6900	158	0.40	140	-25 / 110	400 / 450
32 cc	32.0	6300	6900	202	0.50	175	-25 / 110	400 / 450
41 cc	41.2	5600	6200	230	0.65	227	-25 / 110	400 / 450
50 cc	50.2	5000	5500	252	0.80	280	-25 / 110	400 / 450
56 cc	56.0	5000	5500	280	0.90	320	-25 / 110	400 / 450
63 cc	63.3	5000	5500	315	1.00	350	-25 / 110	400 / 450

Direction of Rotation; Reversible

The motors rotate clockwise or counter-clockwise depending on the direction of hydraulic flow entering the motor.



Ordering Code; A3MS - SAE2 Flange Bent Axis Motors

Model Code	Displacement	Shaft Type	Flange Type	Rotation	Sealing
A3MS	25	S13	B6	W	V
A3MS Bent Axis Hydraulic Motor SAE2 Flange	12	S13 Splined Shaft SAE B 7/8" 13T-16/32DP	B2 2 Bolt SAE2 Flange Shaft	W Direction of Rotation Reversible Independent	V Viton High Pressure Seal
	18				
	25				
	32	S15 Splined Shaft SAE BB 1" 15T-16/32DP	B4 4 Bolt SAE2 Flange Shaft		N Nitrile Seal 5/10 Bar
	41				
	50				
	56	K40 Keyed Shaft DIN 6885	B6 6 Bolt SAE2 Flange Shaft		
	63				

Formulas

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

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 Motors

POSITION

DIN Flange Bent Axis Motors can be operate any position.

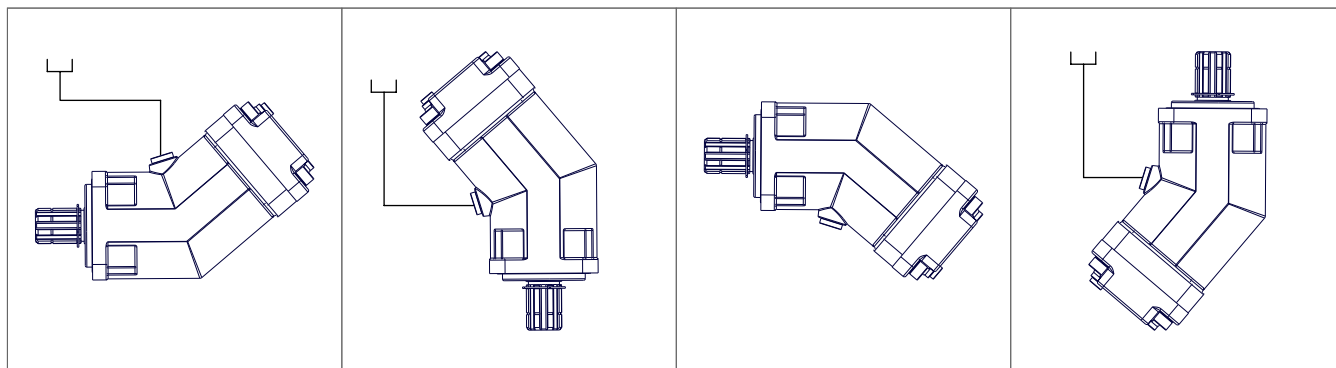
DIRECTION OF ROTATION

DIN Flange Bent Axis Motors can be operate in both directions of rotation.

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

INSTALLATION POSITION

See following examples.

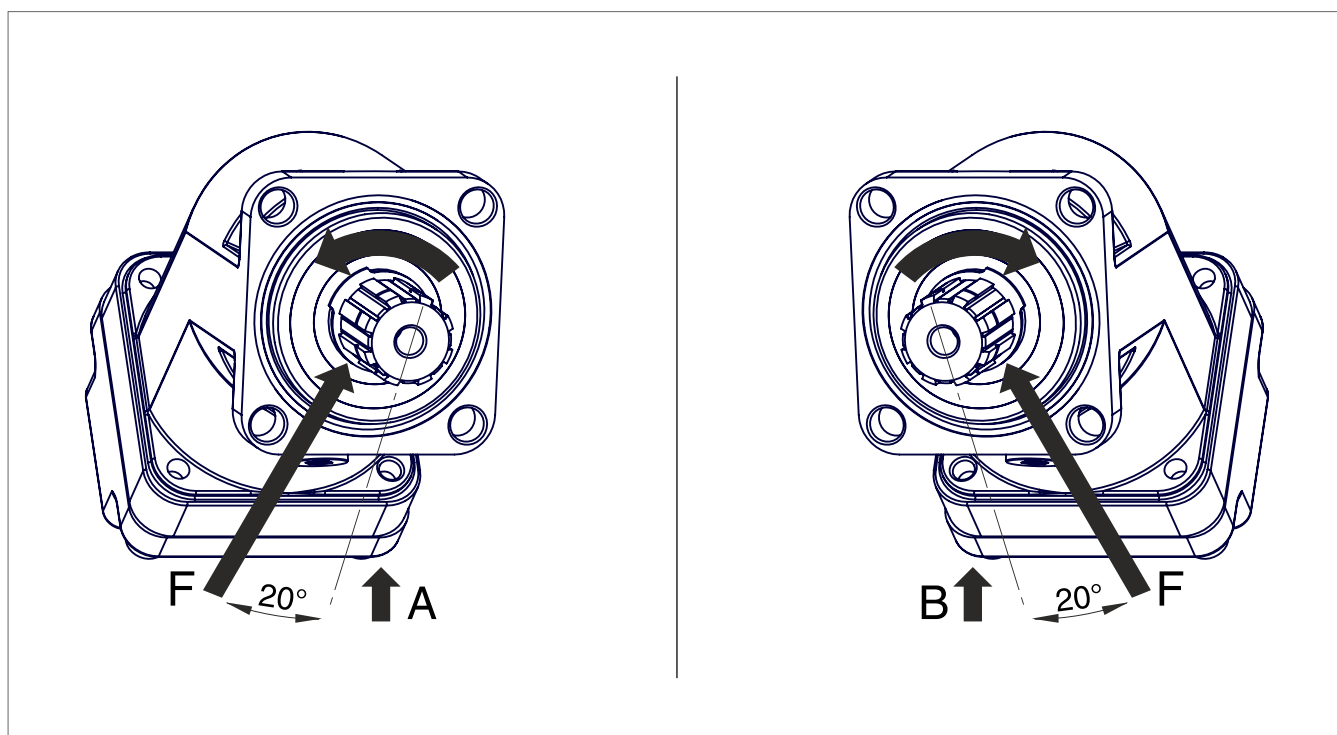


HYDRAULIC FLUID

Recommended ;

Generally : between 15 and 200 cSt.

Maximum : between 5 and 1600 cSt.



FOR USE;

Available via e-mail on request or each motor 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

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

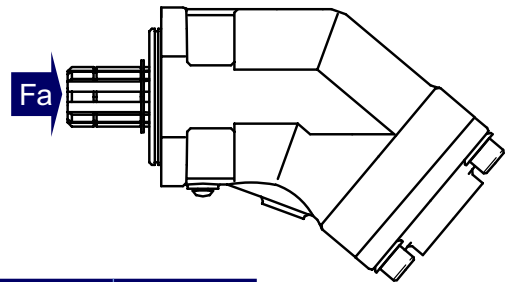
Power

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

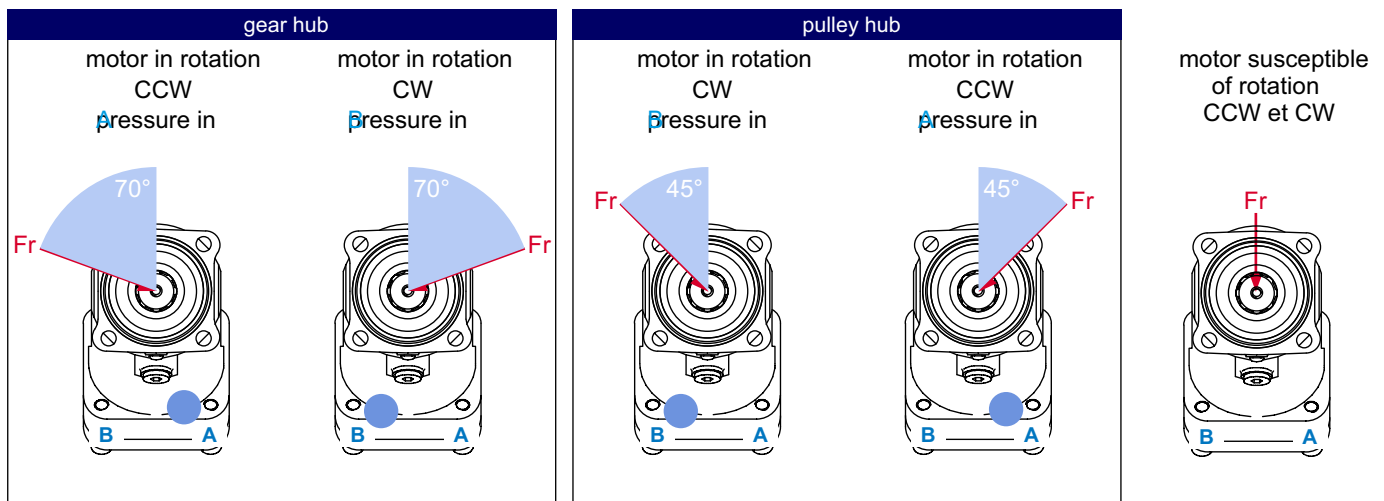
Speed

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

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 ($\eta_t = \eta_v \times \eta_{mh}$)



Motor model	18 cc	25 cc	32 cc	41 cc	50 cc	56, 63cc
Fa (N/bar)	20	30	30	40	40	50



Other Advantages of DIN Flange Bent Axis Motors

Interchangeable and Compatible with other DIN Bent Axis Motors,
 Special Designed Pistons,
 One-Piece Piston with Piston Rings,
 For use in stationary and mobile applications,
 Compact motor 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

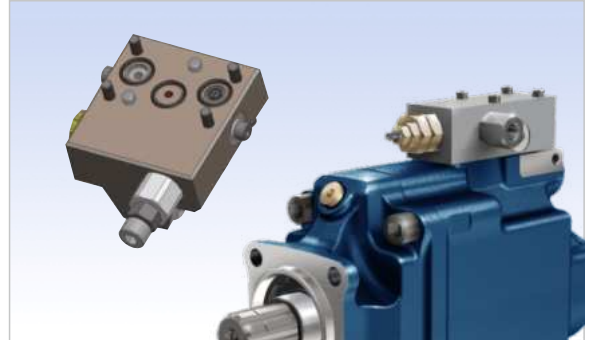
ByPass Valve

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)

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

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