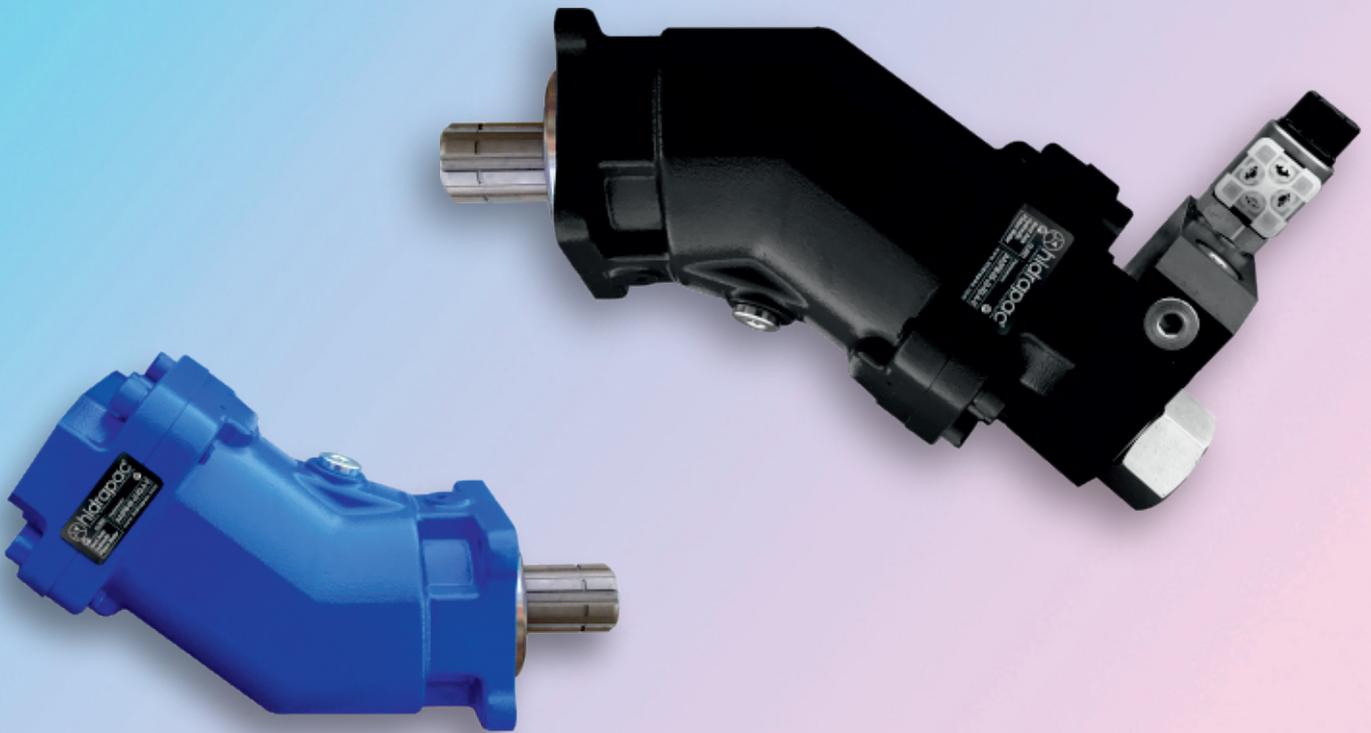


K2FM (DIN) Bent Axis Motors -2022-

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 in 2022.

Designation;

5cc, 10cc, 12cc, 18cc, 25cc, 32cc, 41cc, 50cc,
56cc, 63cc, 80cc, 108cc, 126cc



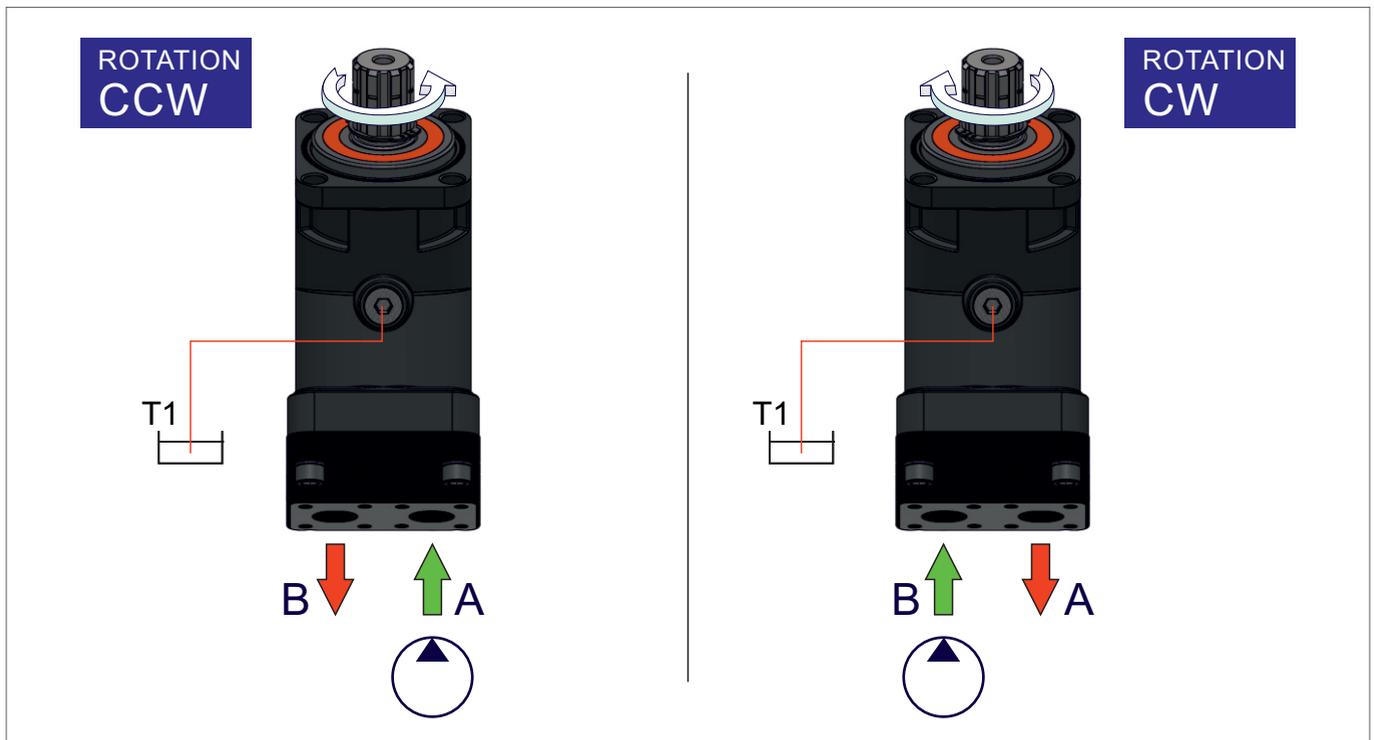
Hidrapac **Store**
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Characteristics of the K2FM - DIN Flange Bent Axis Motors

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)
5 cc	5.1	8800	9600	45	0.09	46	-25 / 110	400 / 450
10 cc	10.2	8600	9400	88	0.14	58	-25 / 110	400 / 450
12 cc	12.0	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	25.0	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	41.0	5600	6200	230	0.65	227	-25 / 110	400 / 450
50 cc	50,3	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	63.0	5000	5500	315	1.00	350	-25 / 110	400 / 450
80 cc	80,4	4500	5000	362	1.27	445	-25 / 110	400 / 450
108 cc	108	4000	4400	435	1.70	595	-25 / 110	400 / 450
126 cc	126	3400	4400	428	2.0	700	-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; K2FM - DIN Flange Bent Axis Motors

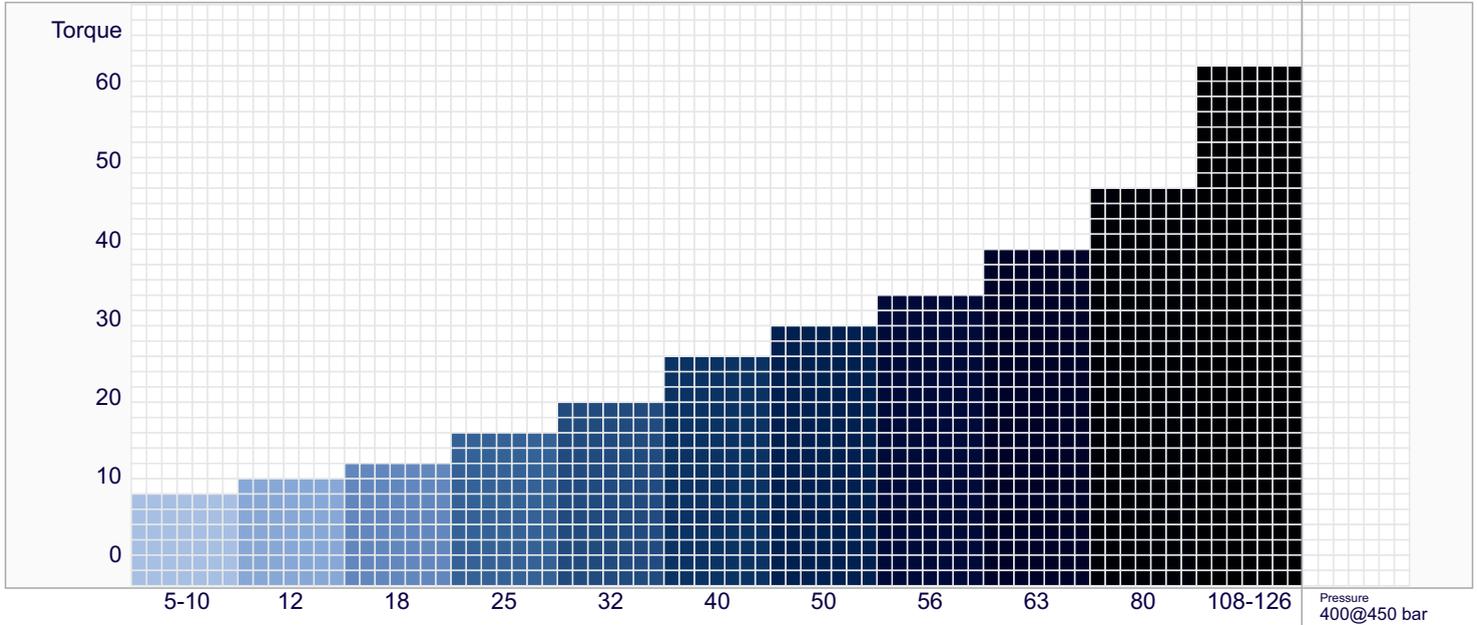
Model Code	Displacement	Shaft Type	Flange Type	Rotation	Sealing
K2FM	108	S	H4	W	V
K2FM Bent Axis Hydraulic Motor DIN Flange	5	S Splined Shaft (default) 8x32x36 DIN ISO 14NF	H4 ISO 7653 Ø80 4 Bolt Flange	W Direction of Rotation Reversible Independent	V Viton High Pressure Seal
	10				
	12				
	18				
	25				
	32				
	41				
	50				
	56				
	63				
	80				
	108				
	126	K Parallel Keyed Shaft (special) DIN 6885			N Nitrile Seal 5/10 Bar

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. \times Mechanical Eff.	$E_{\text{Overall}} = \text{EffVol.} \times \text{EffMech.}$
Pump Volumetric Efficiency	E	Volumetric Efficiency = Actual Flow Rate Output (GPM) / Theoretical Flow Rate Output (GPM) \times 100	$\text{EffVol.} = \text{QAct.} / \text{QTheo.} \times 100$
Pump Mechanical Efficiency	E	Mechanical Efficiency = Theoretical Torque to Drive / 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	Torque = Horsepower \times 63025 / RPM	$T = 63025 \times \text{HP} / \text{RPM}$
		Torque = Pressure (PSIG) \times Pump Displacement (CIPR) / 2 π	$T = P \times \text{CIPR} / 6.28$

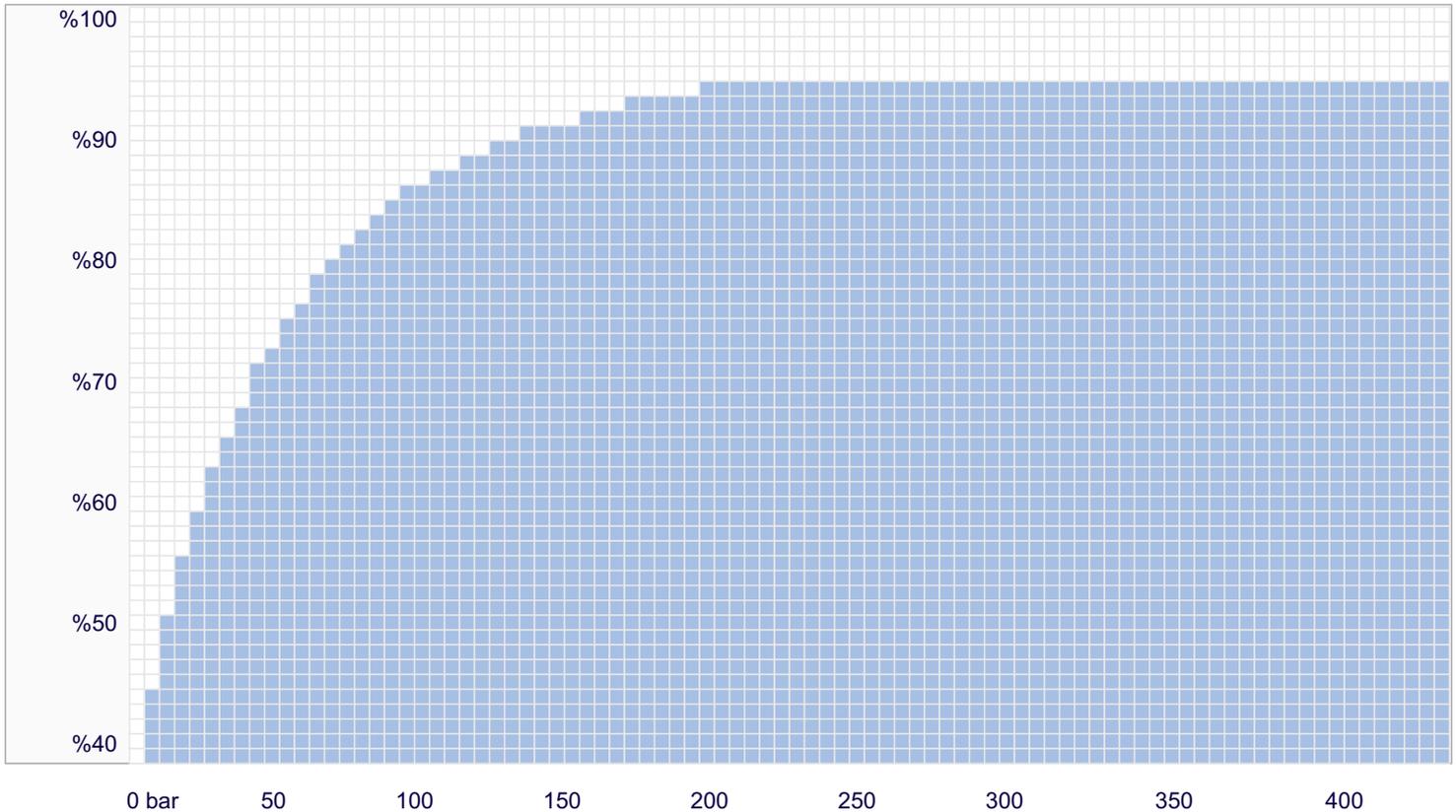
- Horsepower for driving a pump** : For every 1 hp of drive, the equivalent of 1 gpm @ 1500 psi can be produced.
- Horsepower for idling a pump** : To idle a pump when it is unloaded will require about 5% of it's full rated power
- Wattage for heating hydraulic oil** : Each watt will raise the temperature 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.

Performance, Torque, Speed and Pressure Charts

Compare Table of Torque



Efficiency of Bent Axis Motors (1000 rpm)



Installation & Assemble Informations for Bent Axis Motors

POSITION

DIN Flange Bent Axis Motors can be operate any position.

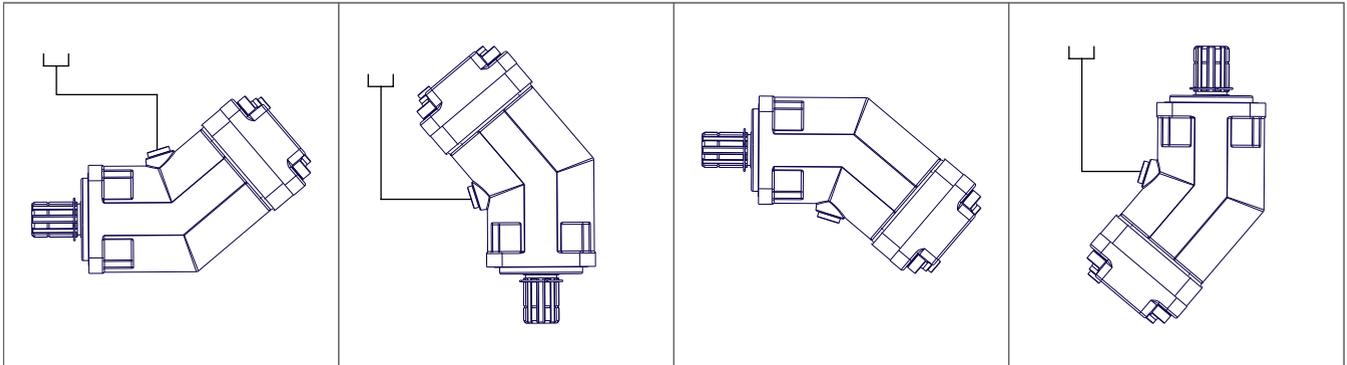
DIRECTION OF ROTATION

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.

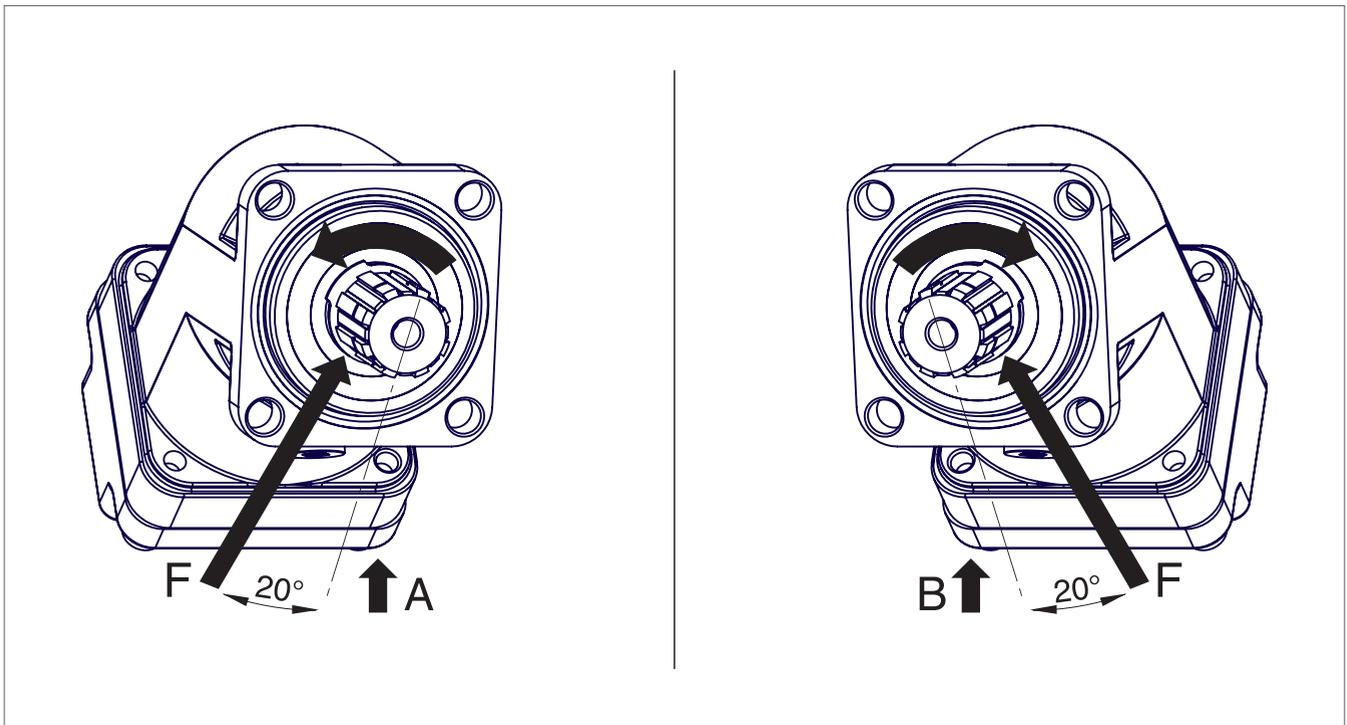


HYDRAULIC FLUID

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

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

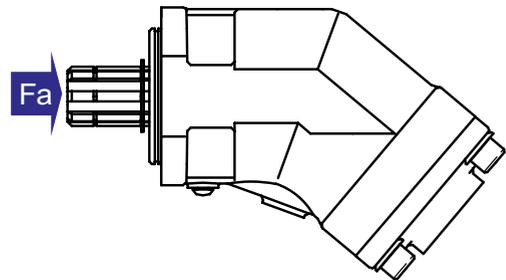
Power

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

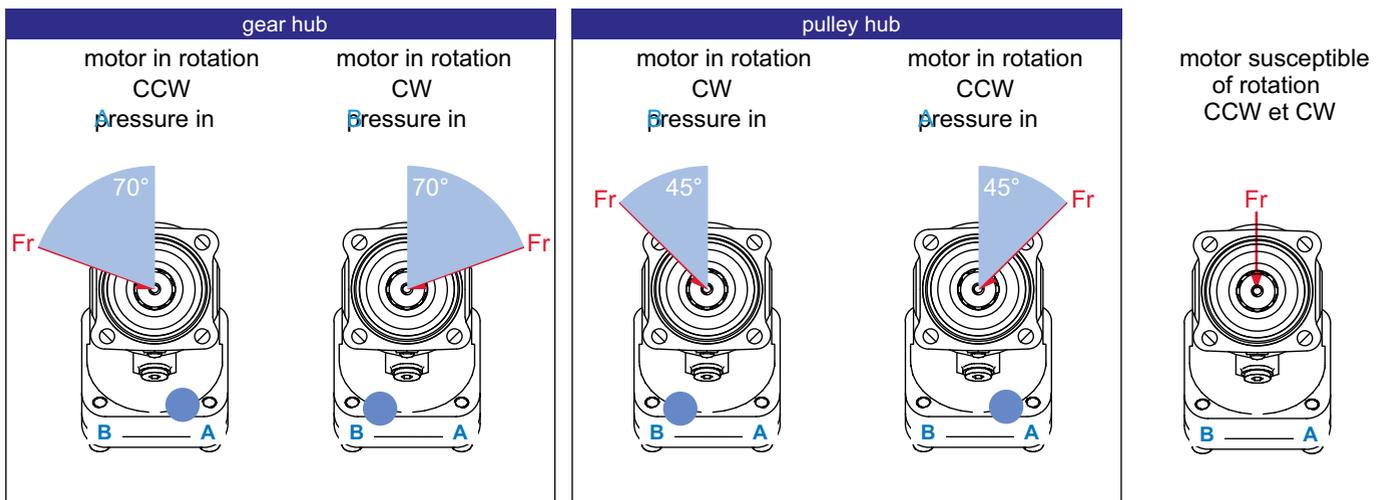
Speed

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

- 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	5, 10, 12	18 cc	25 cc	32 cc	41 cc	50 cc	56, 63cc	80 cc	108 cc	126 cc
Fa (N/bar)	15	20	30	30	40	40	50	60	80	90



Other Advantages of DIN Flange Bent Axis Motors

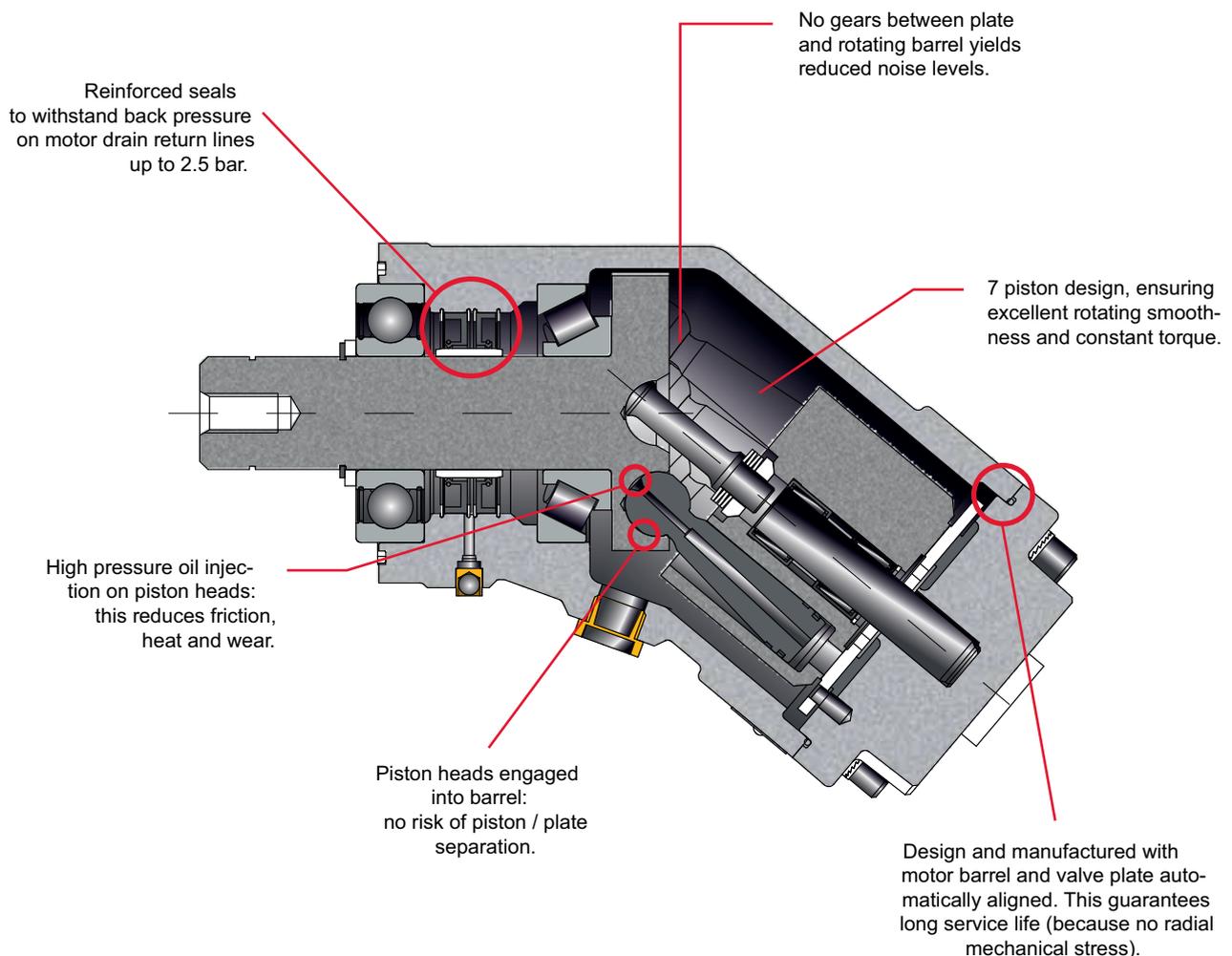
- Interchangeable and Compatible with other DIN Bent Axis Motors,
- Special Designed Pistons,
- One-Piece Piston with Piston Rings,
- For use in stationary and mobile applications,
- Compact motor design and extra durable parts,
- High Operational Reliability and High Starting Torque
- Extra Warranty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

Bent Axis Hydraulic Piston Motors

40° bent axis design giving high power, small overall dimensions, optimum efficiency and economic design. Flange and shaft designed for direct mounting on the equipments. The fixed displacement bent axis motors generates a hydraulic fluid flow. It is designed for use in trucks, commercial vehicles, construction type equipments and all stationary hydraulic applications. The DIN Flange is a motor with rotary group in bent-axis design. 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 motor covers the whole displacement range 5 to 126 cm³/rev. The motor has been developed with modern styling and design to satisfy market demand as to designed new generation plate, extra parts and pistons with give high flow performance, high pressures with high efficiency and very small dimensions.

The motor is available both to DIN and SAE world standards and can be mounted either directly at the gear box or via a drive shaft. Other brand bent axis motors compatible and interchangeable with DIN FI. bent axis motors. Refer to the data sheet and order confirmation for the technical data, operating conditions and operating limits of the bent axis piston motors.



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, Motors

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

www.HIDRAPAC.com

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