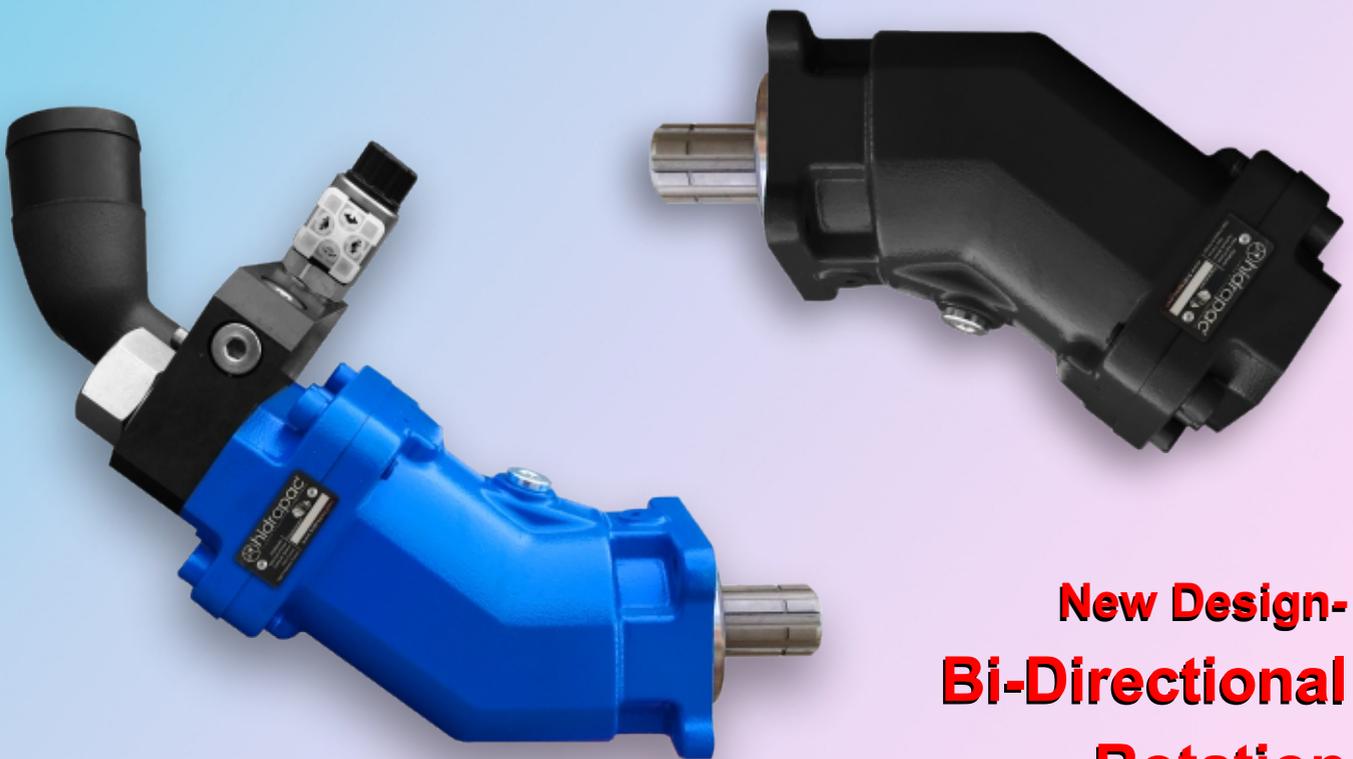


## K2FA (DIN) Bent Axis Pumps -2022-

**New Design- Bi-Directional Rotation**, High Pressure Hydraulic Bent Axis Piston Pumps, 380/420 BAR Working Pressure. High Rotational Speed, High Efficiency, Slim Design, Cast Iron Pump Body, Re-Designed in 2022.

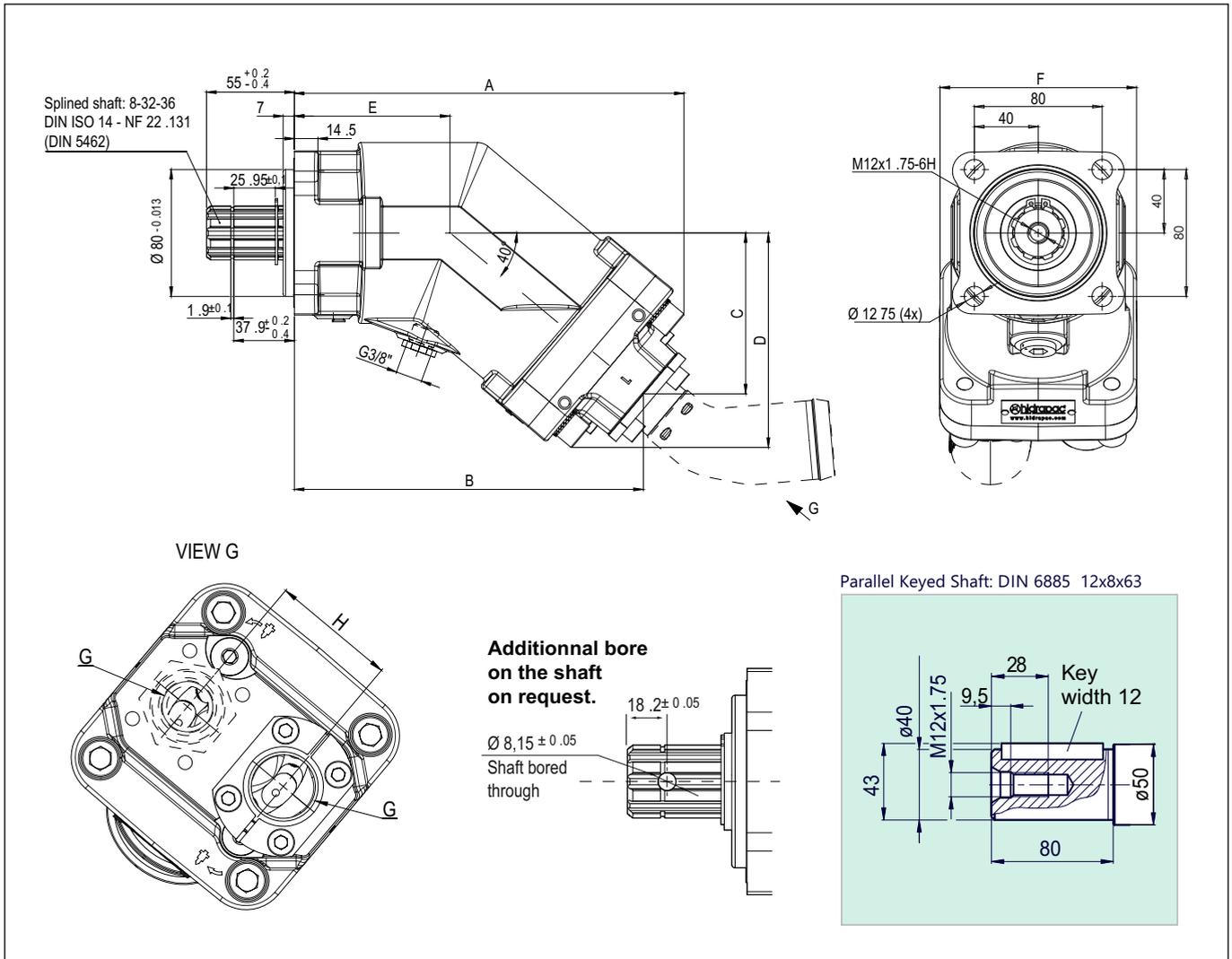
### Designation;

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



**New Design-  
Bi-Directional  
Rotation**

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[www.HIDRAPAC.com.tr](http://www.HIDRAPAC.com.tr)



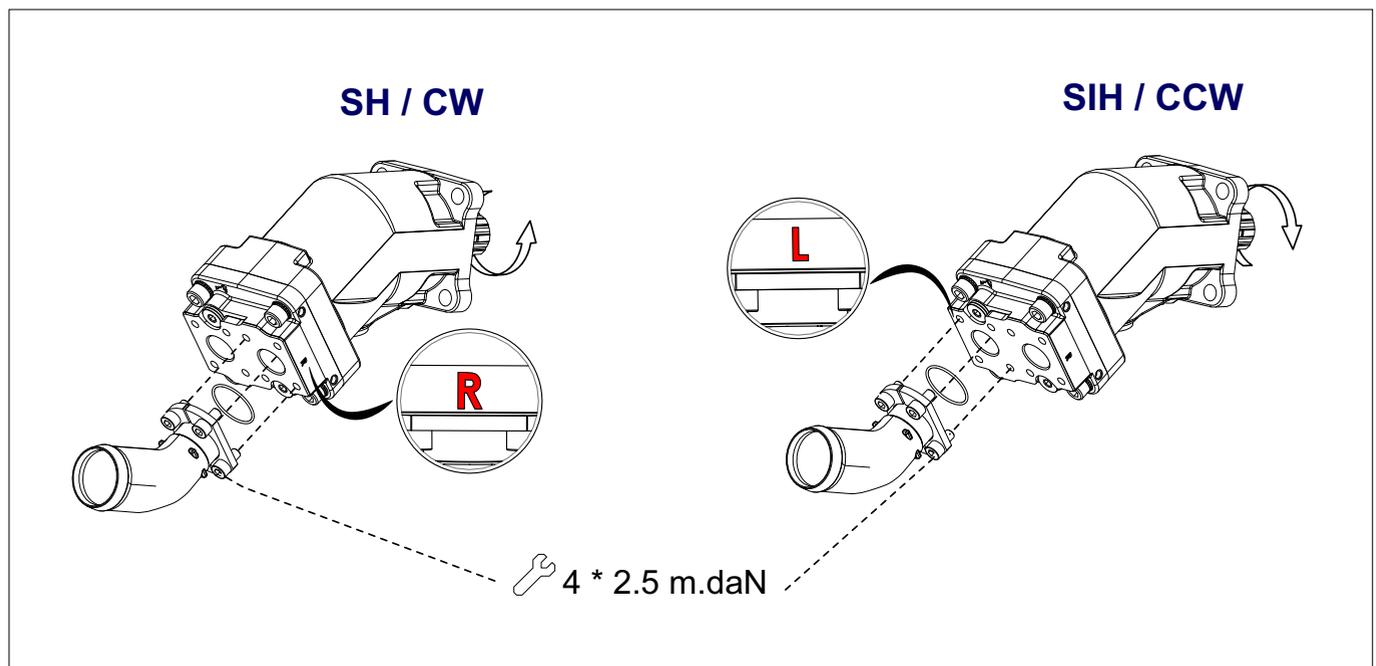
Pump MODEL	DISPL. (cc)	A	B	C	D	E	F	G	H
5 cc	5.1	196.7	177.8	77.1	103.9	85.7	108	G 3/4"	54
10 cc	10.2	196.7	177.8	77.1	103.9	85.7	108	G 3/4"	54
12 cc	12.0	196.7	177.8	77.1	103.9	85.7	108	G 3/4"	54
18 cc	18.0	196.7	177.8	77.1	103.9	85.7	108	G 3/4"	54
25 cc	25.0	196.7	177.8	77.1	103.9	85.7	108	G 3/4"	54
32 cc	32.0	202.8	184.0	82.3	109.1	85.7	108	G 3/4"	54
41 cc	41.0	202.8	184.0	82.3	109.1	85.7	108	G 3/4"	54
50 cc	50.3	214.4	195.5	92.0	118.9	85.7	108	G 3/4"	54
56 cc	56.0	214.4	195.5	92.0	118.9	85.7	108	G 3/4"	54
63 cc	63.0	214.4	195.5	92.0	118.9	85.7	108	G 3/4"	54
80 cc	80.4	241.7	220.9	103.5	133.3	97.4	123	G 1"	60
108 cc	108	241.7	222.5	104.8	133.3	97.4	123	G 1"	60
130 cc	130	244.0	224.8	106.7	135.2	97.4	123	G 1"	60

## Characteristics of the K2FA - DIN 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	420 / 380	3300	60	9.00	9.40	8.20	8.60
10 cc	10.2	420 / 380	3200	68	9.00	9.40	8.65	9.05
12 cc	12.0	420 / 380	3150	76	9.20	9.60	8.74	9.14
18 cc	18.0	420 / 380	2900	114	9.30	9.70	8.79	9.19
25 cc	25.0	420 / 380	2750	159	11.00	11.40	8.89	9.29
32 cc	32.0	420 / 380	2700	204	11.10	11.50	11.10	11.50
41 cc	41.0	420 / 380	2550	261	11.20	11.60	11.15	11.55
50 cc	50,3	420 / 380	2450	318	11.30	11.70	11.75	12.15
56 cc	56,0	420 / 380	2400	375	11.35	11.75	11.80	12.20
63 cc	63.0	420 / 380	2300	401	11.45	11.85	11.85	12.25
80 cc	80,4	420 / 380	2150	509	14.80	15.20	17.80	18.30
108 cc	108	420 / 380	1900	687	14.90	15.30	17.92	18.42
130 cc	130	420 / 380	1750	827	15.30	15.70	18.70	19.50

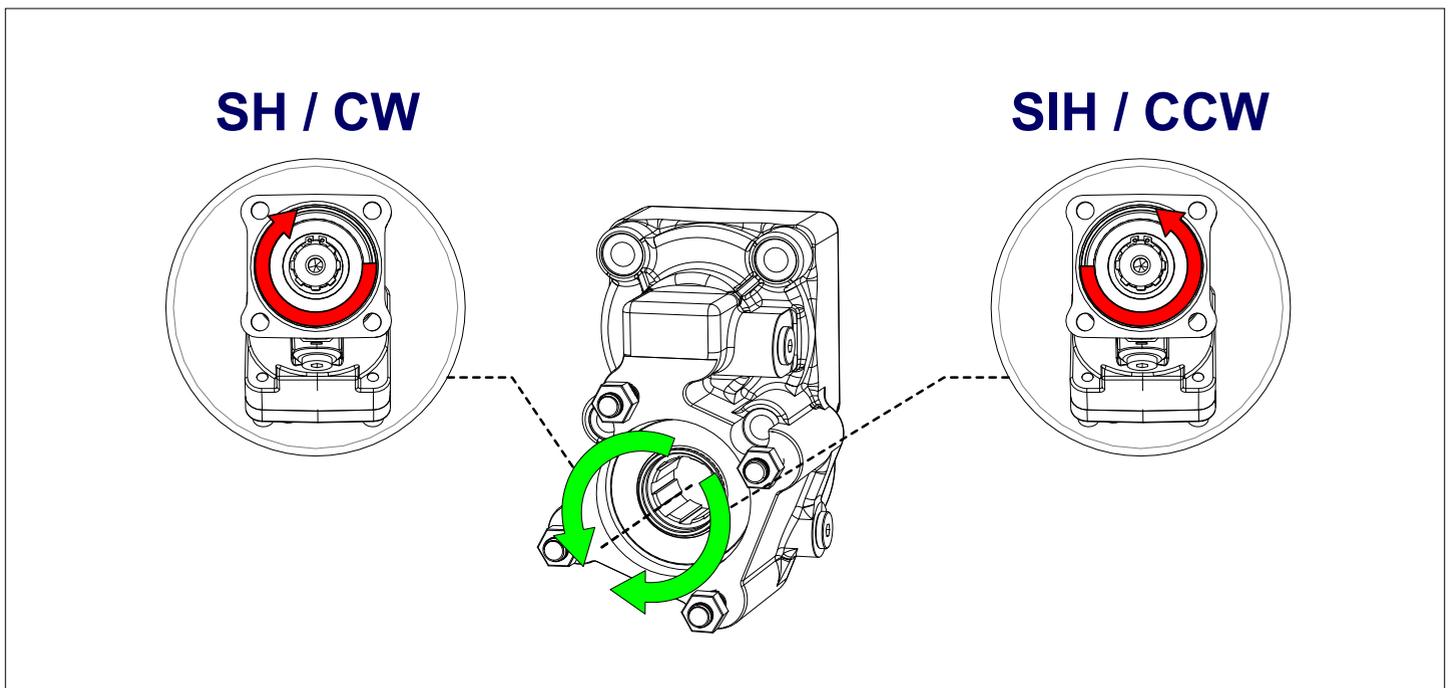
### Direction of Rotation; Bi-Directional

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

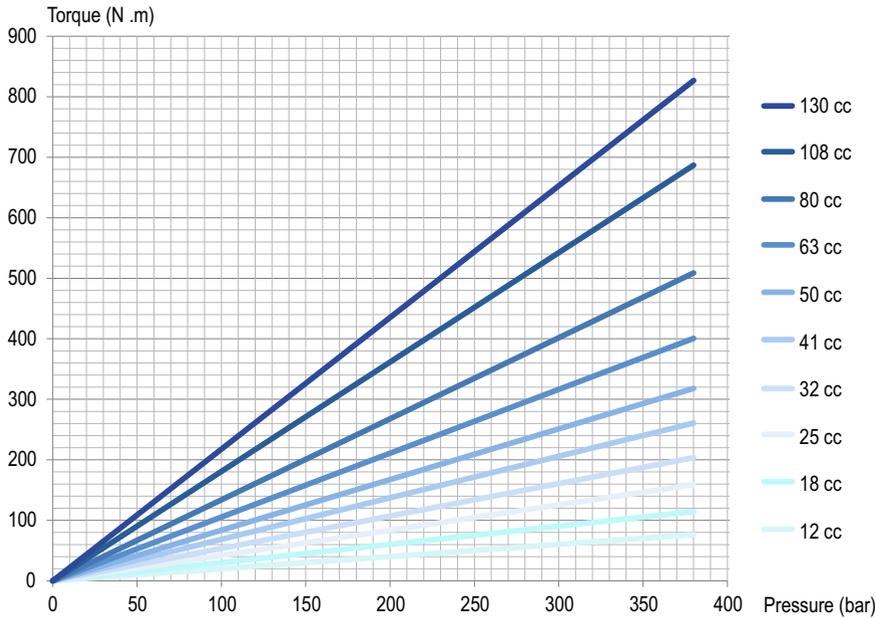


## Ordering Code; K2FA - DIN Flange Bent Axis Pumps

Model Code	Displacement	Shaft Type	Flange Type	Rotation	Sealing
<b>K2FA</b>	<b>108</b>	<b>S</b>	<b>H4</b>	<b>BD</b>	<b>V</b>
<b>K2FA</b>  Bent Axis Hydraulic Pump  DIN Flange	5	<b>S</b>  Splined Shaft (default) 8x32x36 DIN ISO 14NF	<b>H4</b>  ISO 7653 Ø80 4 Bolt Flange	<b>BD</b>  Direction of Rotation  Bi-Directional	<b>V</b>  Viton High Pressure Seal
	10				
	12				
	18				
	25				
	32				
	41	<b>K</b>  Parallel Keyed Shaft (special) DIN 6885	<b>H4</b>  ISO 7653 Ø80 4 Bolt Flange	<b>BD</b>  Direction of Rotation  Bi-Directional	<b>N</b>  Nitrile Seal 5/10 Bar
	50				
	56				
	63				
	80				
	108				
130					



## Performance, Torque, Speed and Pressure Charts

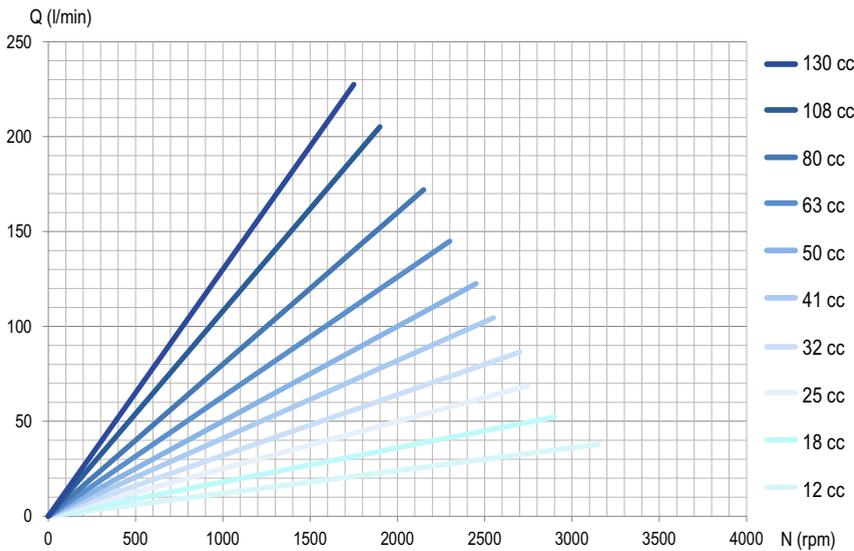


$$C = \frac{\Delta Cyl \times P}{62.8 \times \eta_{meca}}$$

With:

- C = Torque in N m
- Cyl = Displacement in cc/rev
- $\Delta P$  = Differential pressure in bar
- $\eta_{meca}$  = Mechanical efficiency

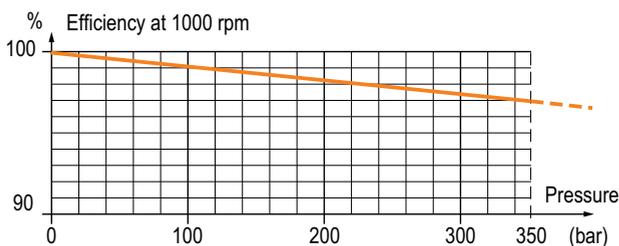
### ► Flow as a function of rotating speed



$$Q = \frac{N \times Cyl \times \eta_{vol}}{1000}$$

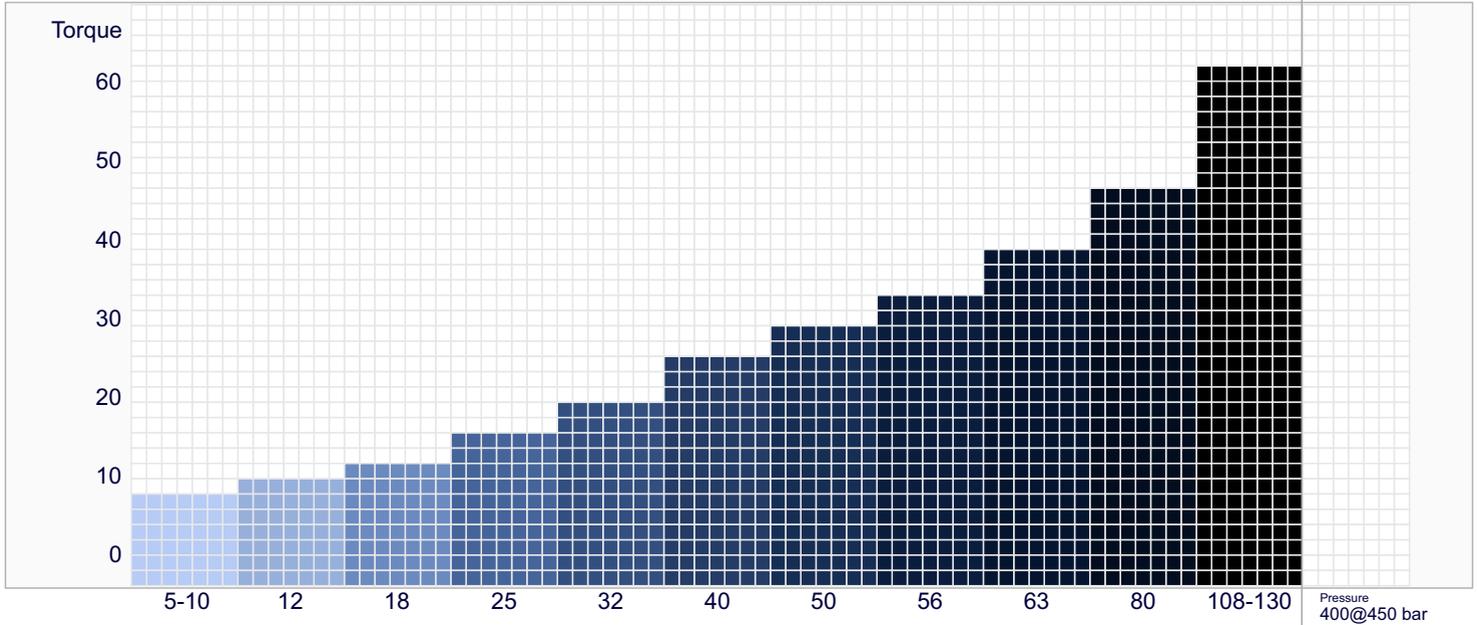
With:

- Q = Flow in l/min
- N = Speed in rpm
- $\eta_{vol}$  = Volumetric efficiency
- Cyl = Displacement in cc/rev

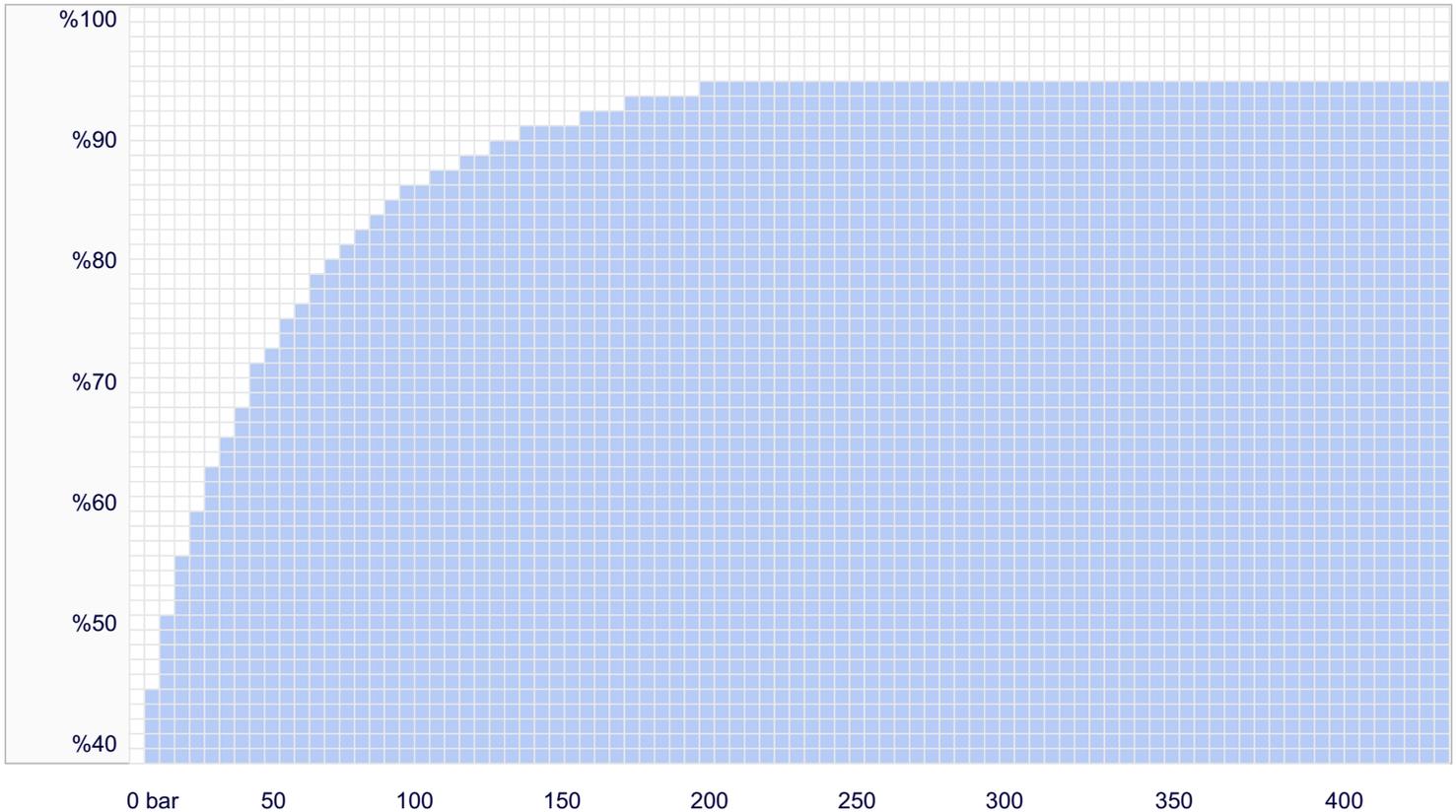


## Performance, Torque, Speed and Pressure Charts

**Compare Table of Torque**

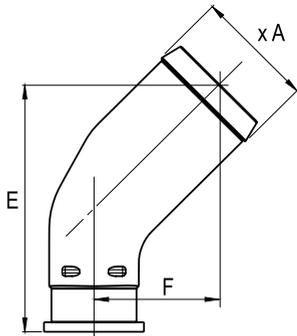


**Efficiency of Bent Axis Pumps ( 1000 rpm )**



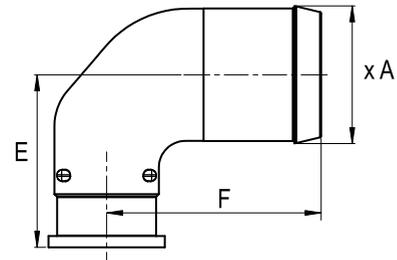
## Suction Fittings for K2FA (DIN) Bent Axis Pumps

### 45° elbow fittings kit

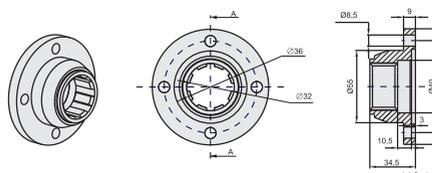
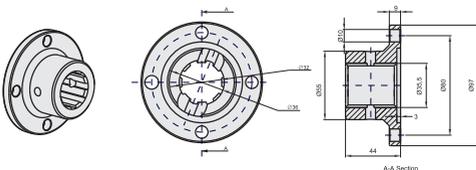
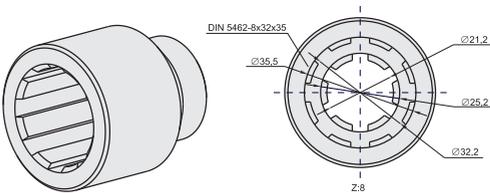
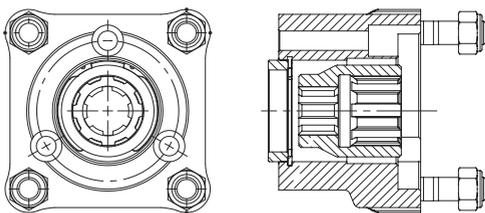


Reference	Ø hose	Ø A	E	F
450039	1 1/2"	39.1	91.7	46.7
450043	42	43	91.7	46.7
450046	1 3/4"	46	91.7	46.7
450051	2"	51.8	108.4	54.4
450064	2 1/2"	64.5	125.2	62.2

### 90° elbow fittings kit

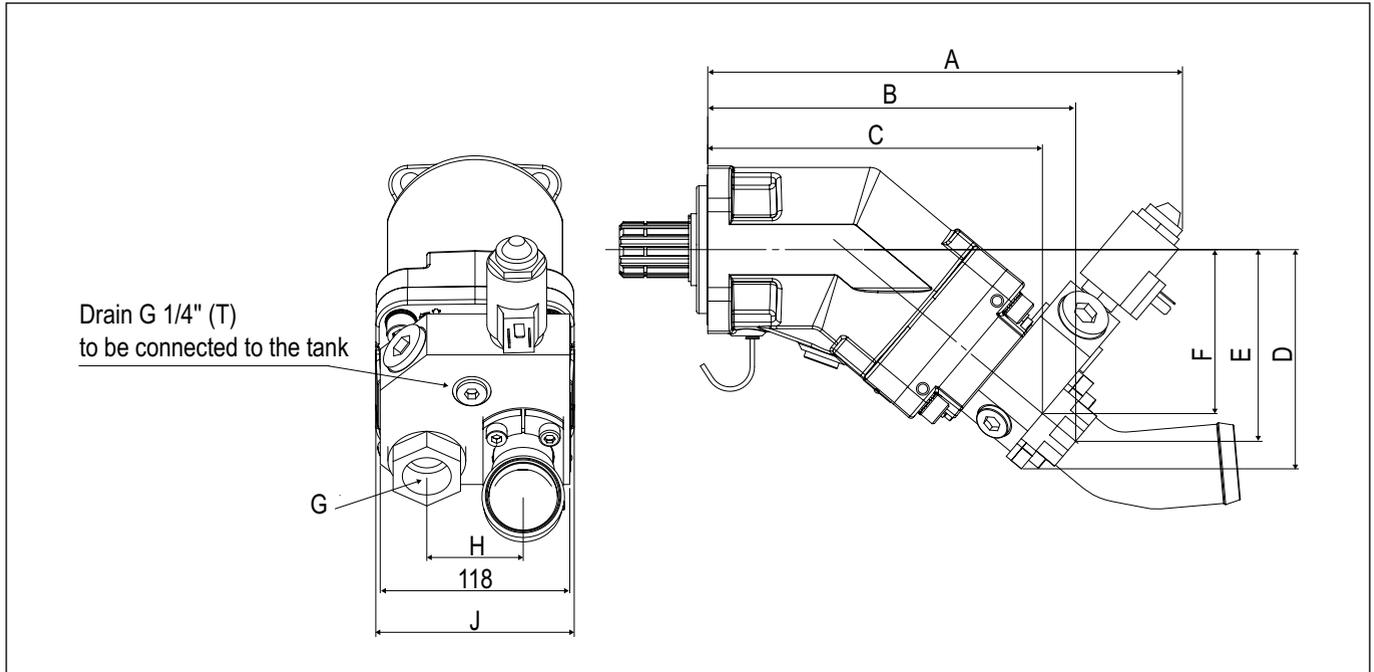


Reference	Ø hose	Ø A	E	F
900039	1 1/2"	39.1	58.6	79.5
900051	2"	51.8	64.9	80.2
900064	2 1/2"	64.5	71.3	87.5



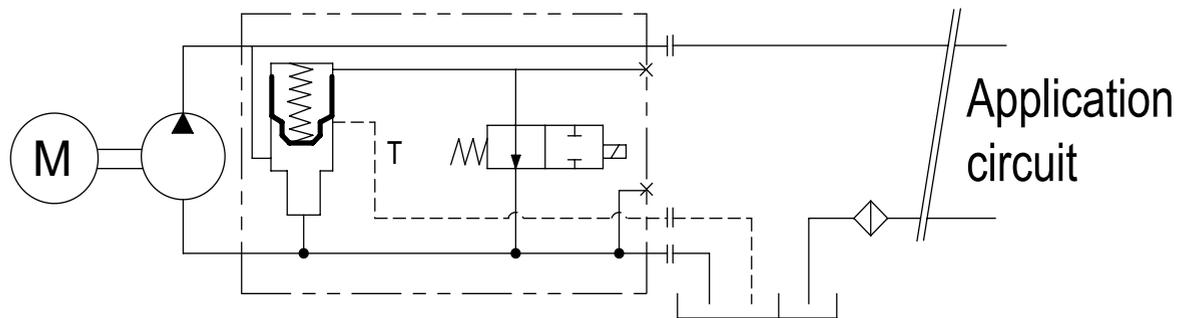
	<b>Inlet Fittings &amp; Installation Parts</b> - Split Flange - Seal - Screw
	<b>By-Pass Valves</b> - 12 V - 24 V
	<b>Hydraulic Adapters</b> - PTO Piston Pump Adapter - PTO Gear Pump Adapter - Long / Short Adapter
	<b>Flanges</b> - 1120 ( 6 Spline ) - 1120 ( 8 Spline ) - 1300 ( 6 Spline ) - 1300 ( 8 Spline )
	<b>Couplars</b> - 6 x 8 Couplar - 6 x 8 Couplar ( Long ) - 8 x 8 Couplar - 8 x 8 Couplar ( Long )

## ByPass Valve for K2FA (DIN) 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 K2FA (DIN) 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 cm<sup>3</sup>/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 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			
<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. × 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) × 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 × 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 × 63025 / RPM	$T = 63025 \times \text{HP} / \text{RPM}$
		Torque = Pressure (PSIG) × Pump Displacement (CIPR) / 2π	$T = P \times \text{CIPR} / 6.28$

- 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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Address; Fevzicakmak Mah. Sıla Cad. Kobisan 3 San. Sit.  
No:73 / C Karatay – Konya, PO Code; 42050, Türkiye

Phone; +90 551 111 77 44

VAT Number; 462 077 9143

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

[MAIL@HIDRAPAC.com](mailto:MAIL@HIDRAPAC.com)

[INFO@HIDRAPAC.com](mailto:INFO@HIDRAPAC.com)

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