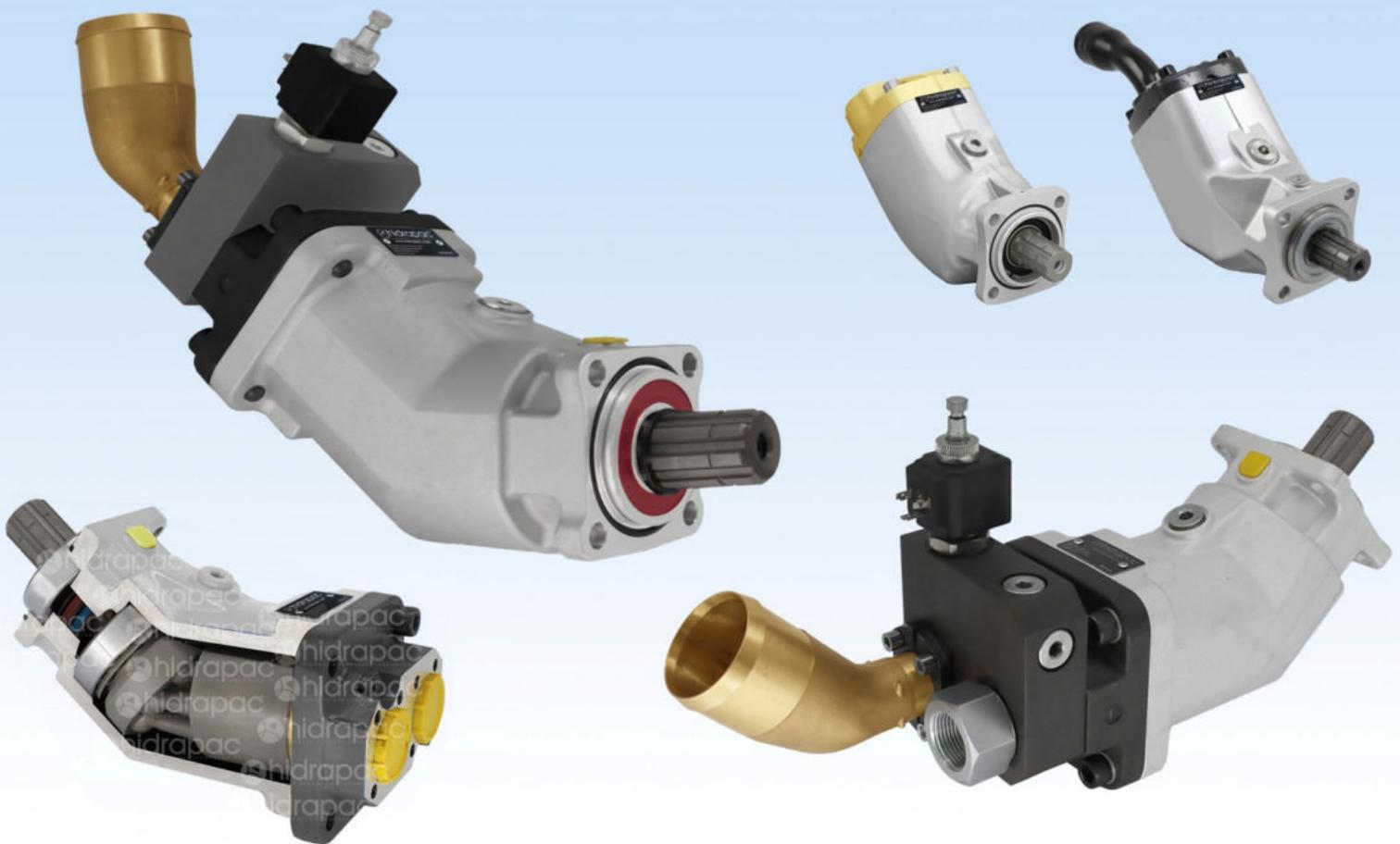# K2FL (Aluminum) Bent Axis Pumps

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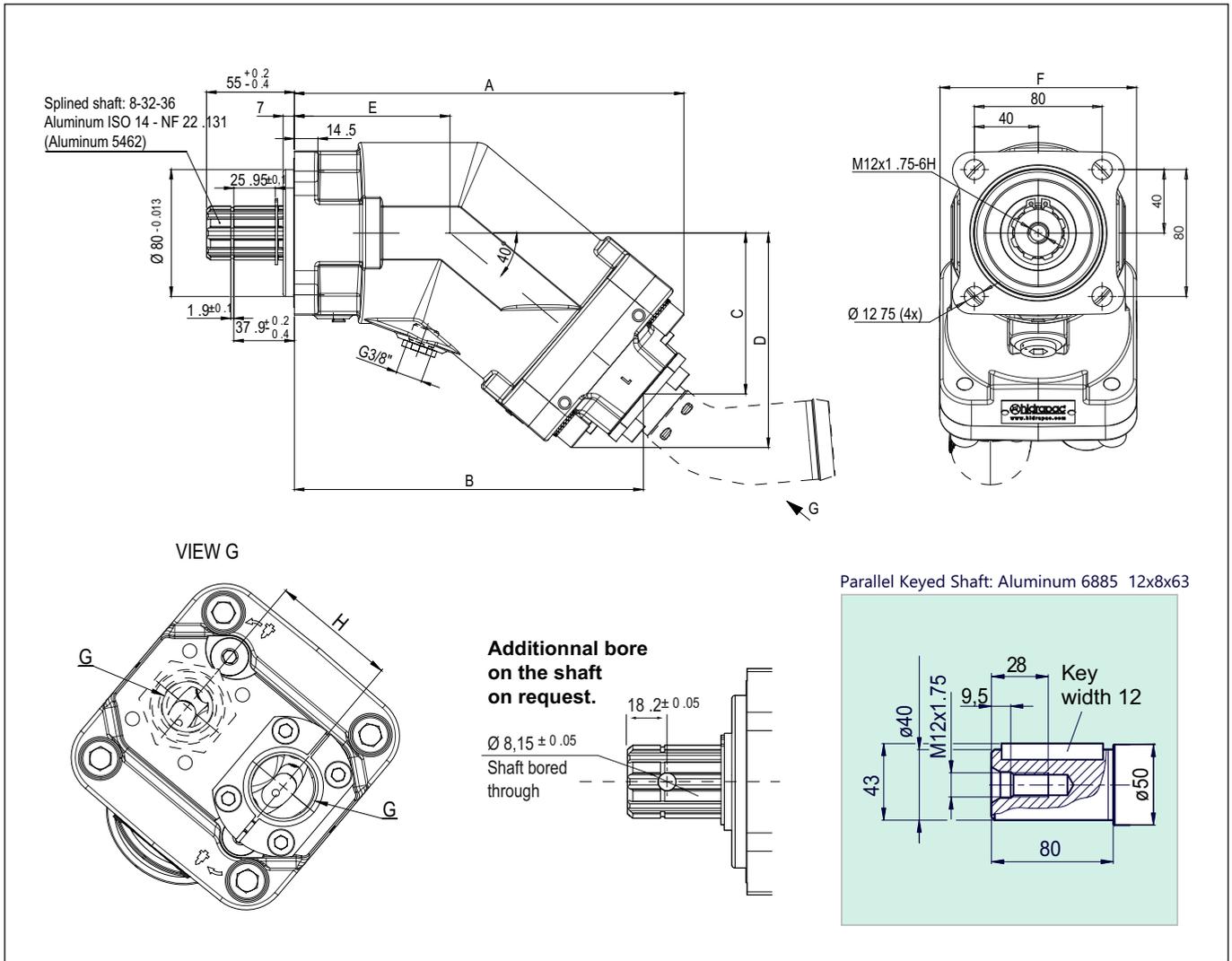
Designation;

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

**Hidrapac** Store
www.HIDRAPAC.com.tr

Splined shaft: 8-32-36
Aluminum ISO 14 - NF 22 .131
(Aluminum 5462)

55 $^{+0.2}_{-0.4}$

7

14.5

E

A

25 .95±0.1

Ø 80 - 0.013

1 .9±0.1

37 .9 $^{+0.2}_{-0.4}$

G3/8"

B

C

D

40

G

M12x1 .75-6H

F
80
40
40
80

Ø 12 75 (4x)

VIEW G

H

G

G

Additionnal bore on the shaft on request.

Ø 8,15 ± 0 .05
Shaft bored through

18 .2± 0 .05

Parallel Keyed Shaft: Aluminum 6885 12x8x63

28
9,5
Key width 12

ø40
M12x1.75
43
ø50
80

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 K2FL - Aluminum Flange Bent Axis Pumps

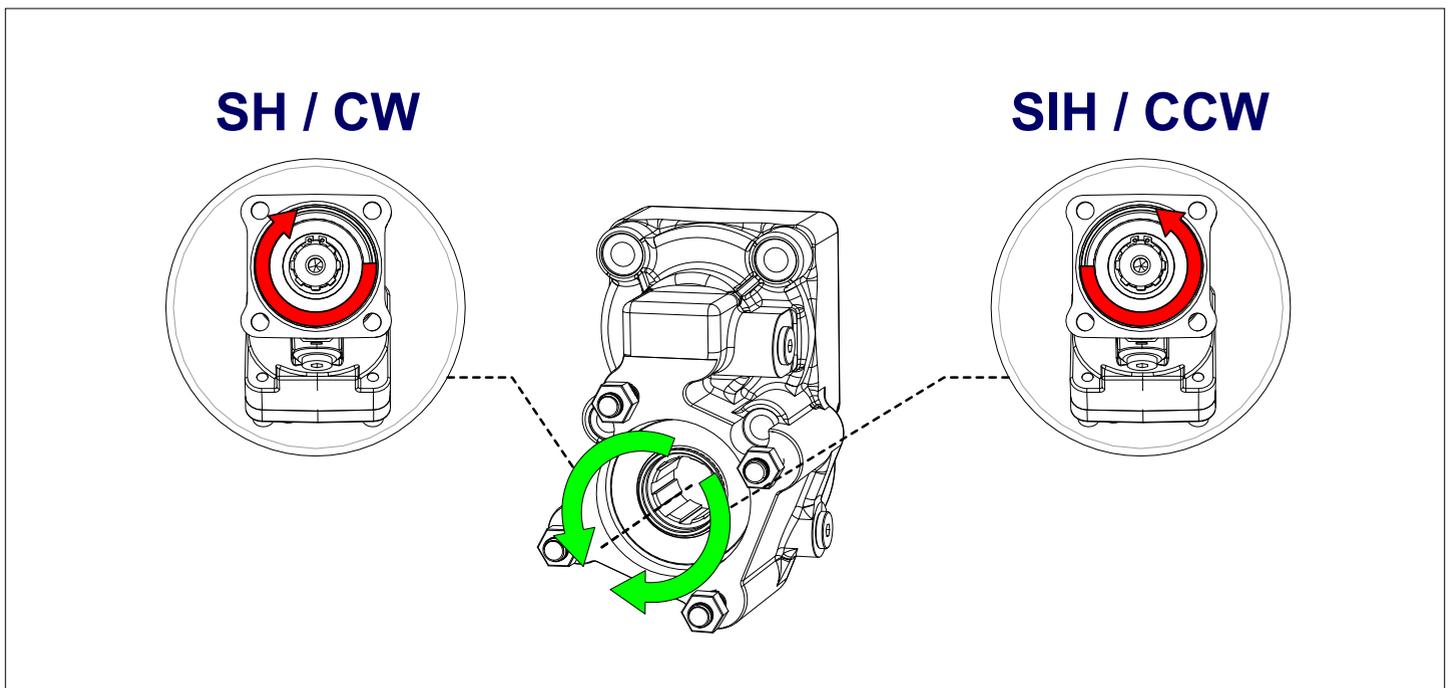| Pump MODEL	DISPL. (cc)	MAX. PEAK/ CONTINUOUS PRESSURE (bar)	MAXIMUM SPEED (rpm)	MAX.TORQUE ABSORBED AT 380 BAR (N.m)	WEIGHT WITHOUT INLET FITTING (kg)	WEIGHT WITH 2" INLET FITTING (kg)	TORQUE WITHOUT FITTING (N.m)	TORQUE WITH FITTING (N.m)
5 cc	5.1	420 / 380	3300	60	9.00	9.40	8.20	8.60
10 cc	10.2	420 / 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

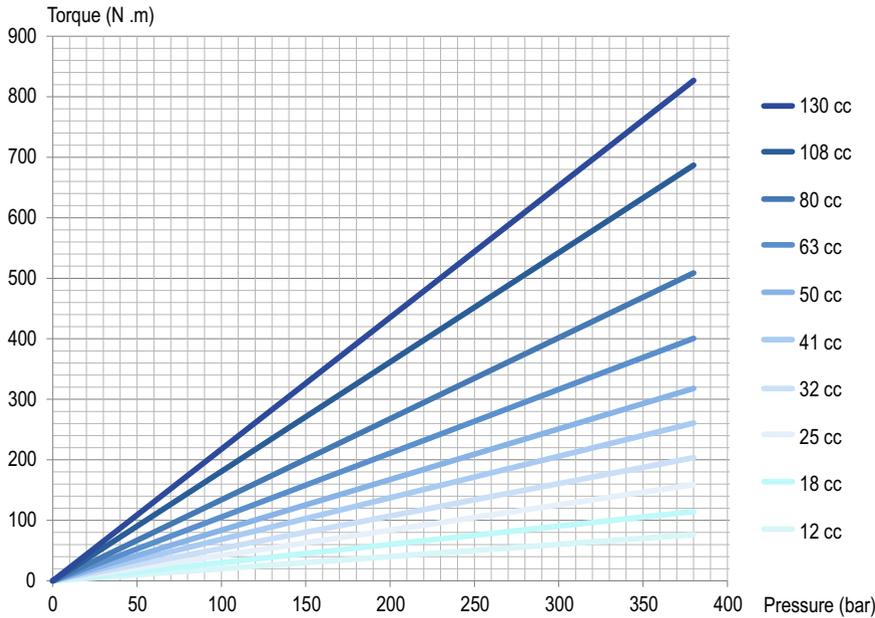The Pumps rotate clockwise or counter-clockwise depenAluminumg on the direction of hydraulic flow entering the Pump.

SH / CW

SIH / CCW

R

L

4 * 2.5 m.daN
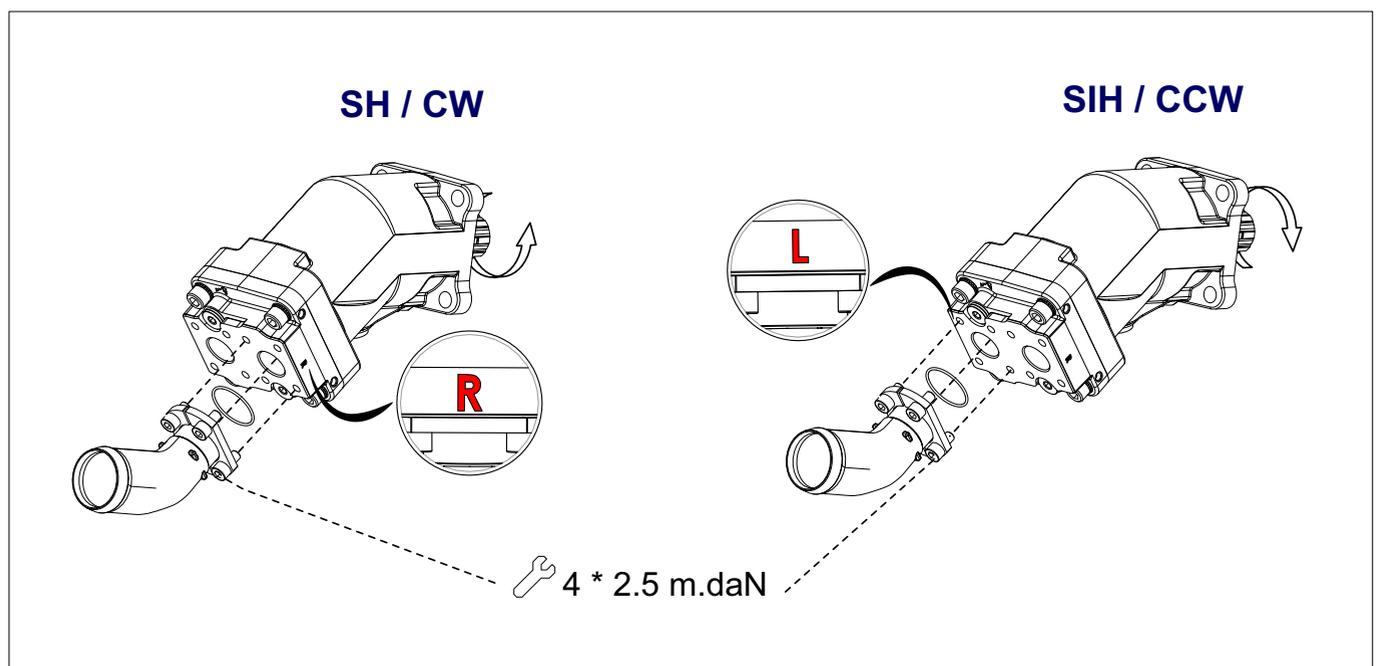
Ordering Code; K2FL - Aluminum Flange Bent Axis Pumps

Model Code	Displacement	Shaft Type	Flange Type	Rotation	Sealing
K2FL	**108**	**S**	**A4**	**BD**	**V**

Model Code	Displacement	Shaft Type	Flange Type	Rotation	Sealing
K2FL Bent Axis Hydraulic Pump Aluminum Flange	**5** **10** **12** **18** **25** **32** **41** **50** **56** **63** **80** **108** **130**	**S** Splined Shaft (default) 8x32x36 Aluminum ISO 14NF **K** Parallel Keyed Shaft (special) Aluminum 6885	**A4** ISO 7653 Ø80 4 Bolt Flange	**BD** Direction of Rotation Bi-Directional	**V** Viton High Pressure Seal **N** Nitrile Seal 5/10 Bar

SH / CW

SIH / CCW

Performance, Torque, Speed and Pressure Charts

$$C = \frac{\Delta\, Cyl \; x \quad P}{62\,8 \; x \; \eta_{meca}}$$

With:

C	=	Torque in N m
Cyl	=	Displacement in cc/rev
ΔP	=	Differential pressure in bar
η_{meca}	=	Mechanical efficiency

► Flow as a function of rotating speed
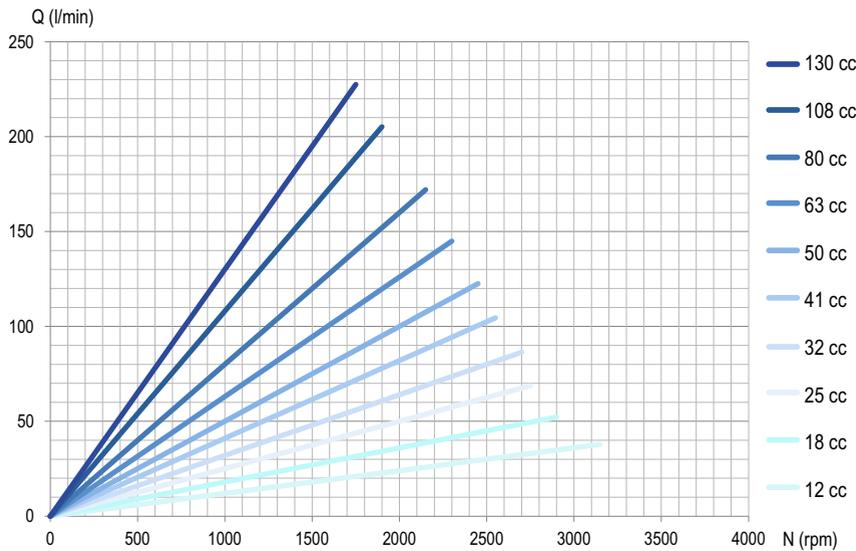
$$Q = \frac{N \quad Cyl \; x \quad x \; \eta_{vol}}{1000}$$

With:

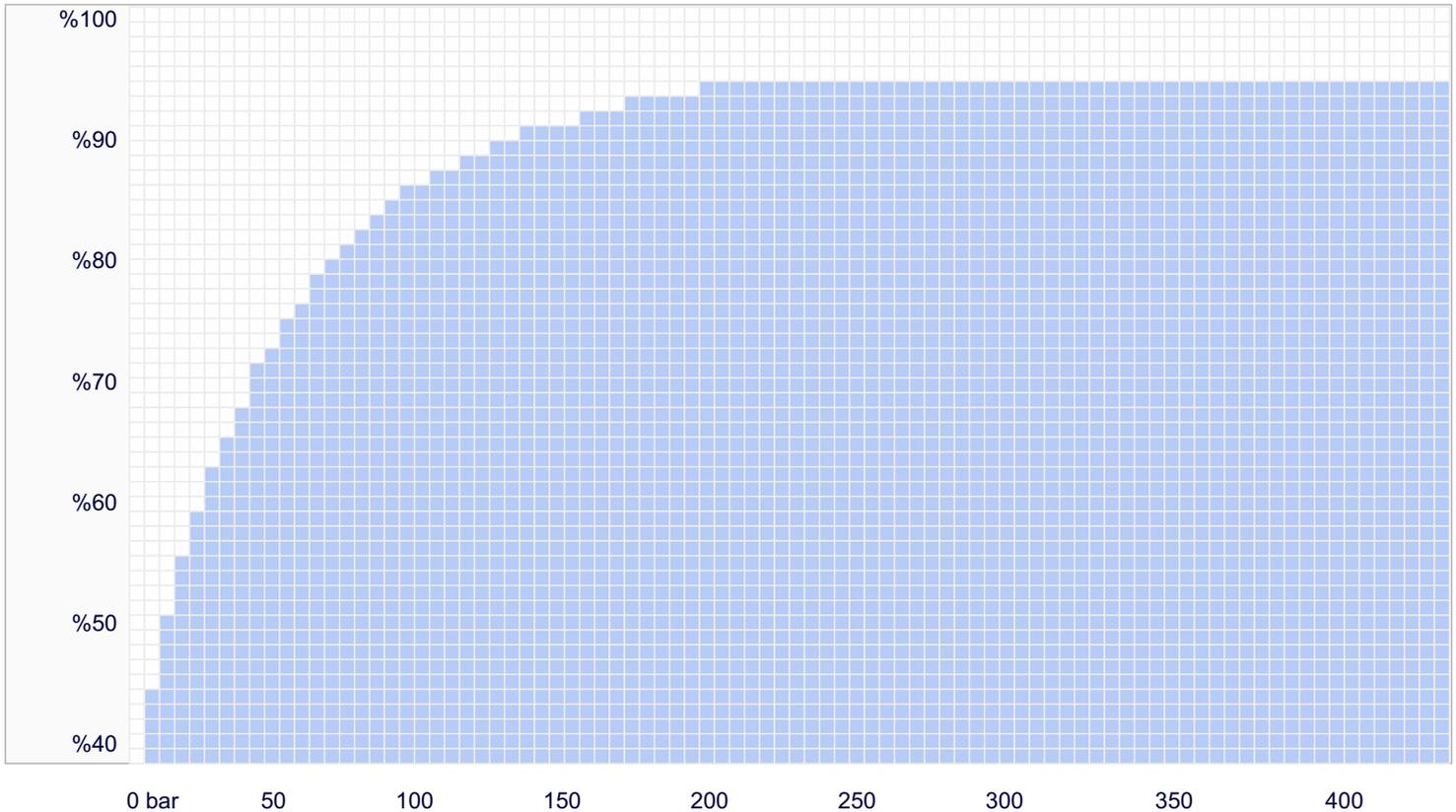|		
Q	=	Flow in l/min
N	=	Speed in rpm
η_{vol}	=	Volumetric efficiency
Cyl	=	Displacement in cc/rev
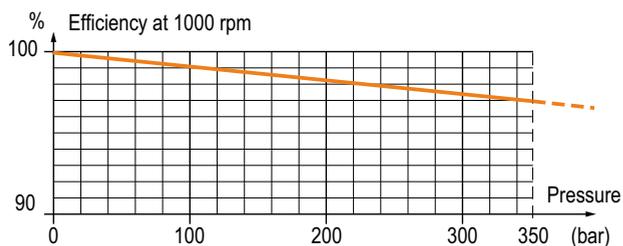
Performance, Torque, Speed and Pressure Charts
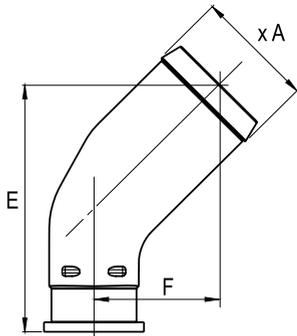
Compare Table of Torque
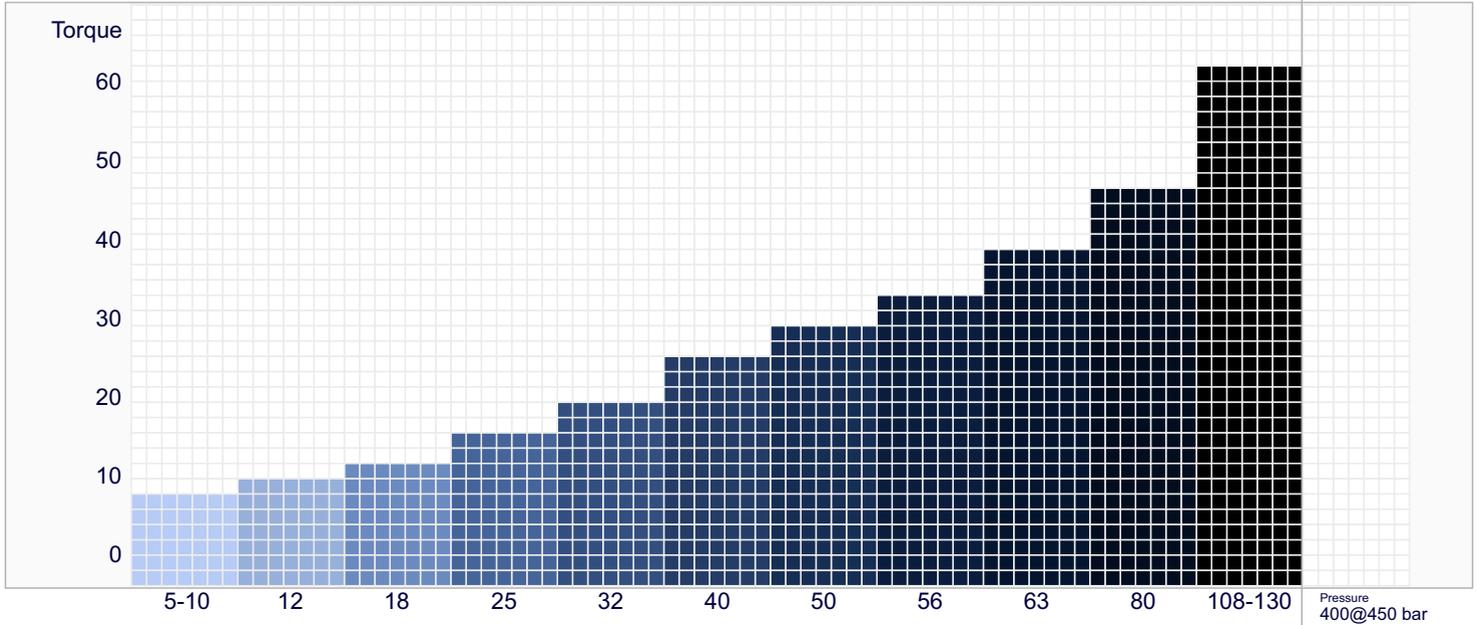
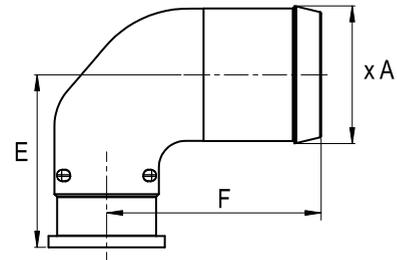## Efficiency of Bent Axis Pumps (1000 rpm)

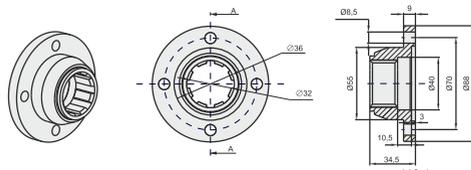# Suction Fittings for K2FL (DIN) Bent Axis Pumps

45° elbow fittings kit

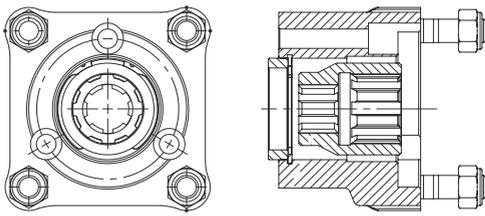| Reference	Ø hose	Ø A	E	F
450039	1 1/2"	39.1	91.7	46.7
450043	42	43	91.7	46.7
450046	1 3/4"	46	91.7	46.7
450051	2"	51.8	108.4	54.4
450064	2 1/2"	64.5	125.2	62.2

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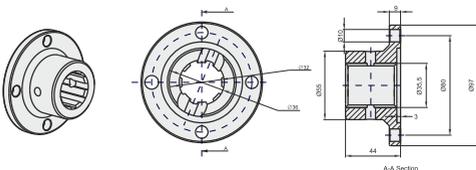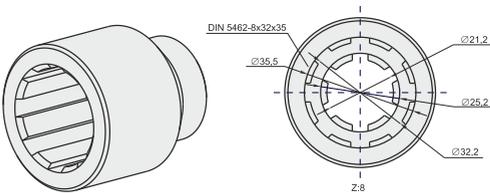
	Inlet Fittings & Installation Parts - Split Flange - Seal - Screw
	By-Pass Valves - 12 V - 24 V
	Hydraulic Adapters - PTO Piston Pump Adapter - PTO Gear Pump Adapter - Long / Short Adapter
	Flanges - 1120 (6 Spline) - 1120 (8 Spline) - 1300 (6 Spline) - 1300 (8 Spline)
	Couplars - 6 x 8 Couplar - 6 x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

ByPass Valve for K2FL (Aluminum) Bent Axis Pumps

Drain G 1/4" (T)
to be connected to the tank

G

H
118
J
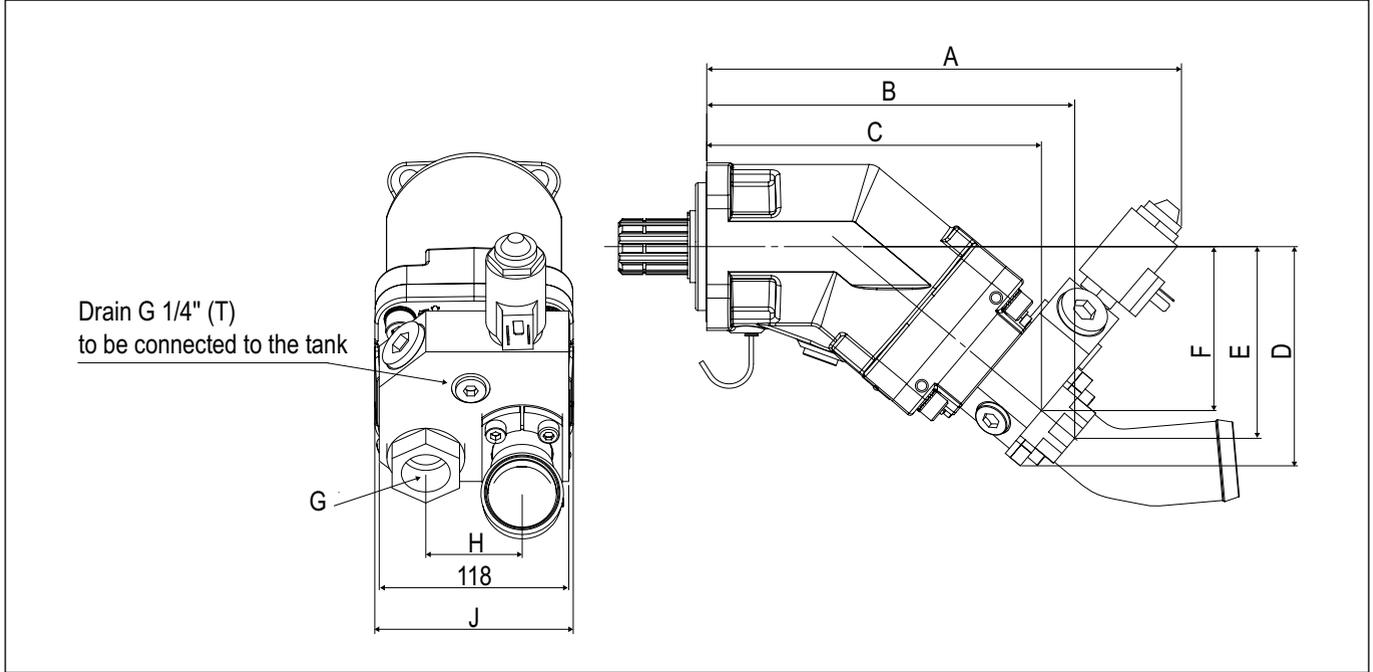
Pump MODEL	DISPL. (cc)	A	B	C	D	E	F	G	H	J
5 cc	5.1	289.35	223.04	202.19	132.20	114.72	97.58	G 3/4"	54	108
10 cc	10.2	289.35	223.04	202.19	132.20	114.72	97.58	G 3/4"	54	108
12 cc	12.0	289.35	223.04	202.19	132.20	114.72	97.58	G 3/4"	54	108
18 cc	18.0	289.35	223.04	202.19	132.20	114.72	97.58	G 3/4"	54	108
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

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sales@**HIDRAPAC**.com

ByPass Valve for K2FL (Aluminum) Bent Axis Pumps
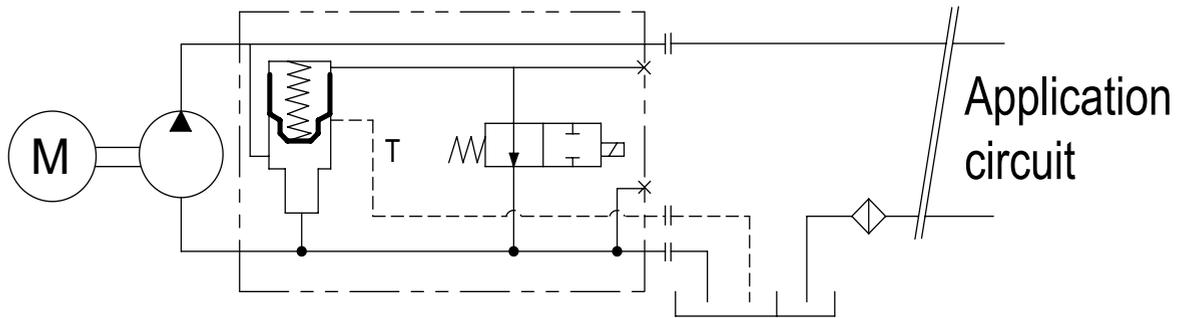
Pump MODEL	DISPL. (cc)	WEIGHT WITHOUT INLET FITTING (kg)	WEIGHT WITH 2" INLET FITTING (kg)	TORQUE WITHOUT FITTING (N.m)	TORQUE WITH FITTING (N.m)
5 cc	5.1	9.00	9.40	8.20	8.60
10 cc	10.2	9.00	9.40	8.65	9.05
12 cc	12.0	9.20	9.60	8.74	9.14
18 cc	18.0	9.30	9.70	8.79	9.19
25 cc	25.0	11.00	11.40	8.89	9.29
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

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PIONEER HYDRAULIC TECHNOLOGIES

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 Aluminum and 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 Aluminum bent axis pumps. Refer to the data sheet order confirmation for the technical data,operating conditions and operating limits of the bent axis piston pumps.

Formulas			
Pump Output Flow	GPM	GPM = (Speed (rpm) × disp. (cu. in.)) / 231	GPM = (n ×d) / 231
Pump Input Horsepower	HP	HP = GPM × Pressure (psi) / 1714 × Efficiency	HP = (Q ×P) / 1714 × 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	Dsplcmnt (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.

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PIONEER HYDRAULIC TECHNOLOGIES

Hydraulic Pumps

K2FA (DIN)	**K2FL (DIN)**	**A2FD (DIN)**	**A2FO (ISO)**	**A2FS (SAE)**
BENT AXIS PISTON PUMPS	ALUMINUM BODY BENT AXIS PISTON PUMPS	DUAL FLOW BENT AXIS PISTON PUMPS	BENT AXIS PISTON PUMPS	BENT AXIS PISTON PUMPS

AXVP Series	**A3PP Series**	**A3PH Series**	**ByPass Valve**	**LS Adapters**
VARIABLE DISPLACEMENT PISTON PUMPS	AXIAL PISTON PUMPS	HIGH PRESSURE PISTON PUMPS	FOR BENT AXIS PISTON PUMPS	FOR VARIABLE PISTON PUMPS

Hydraulic Motors

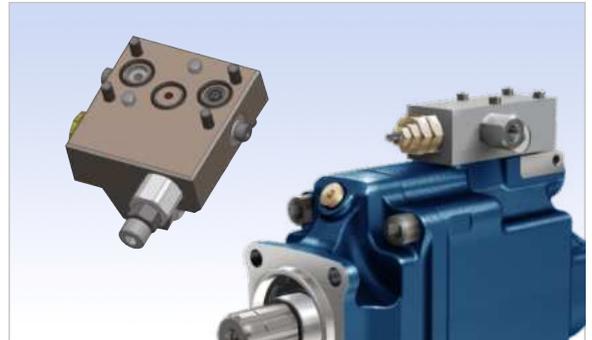| **K2FM (DIN)**	**A2FM (ISO)**	**A2MS (SAE)**	**A2FE (FixedPlug)**	**Anti Cavitation**
BENT AXIS PISTON MOTORS	BENT AXIS PISTON MOTORS	BENT AXIS PISTON MOTORS	BENT AXIS PISTON MOTORS	VALVE BENT AXIS PISTON MOTORS

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. Sıla Cad. Kobisan 3 San. Sit.
No: 73 / C Karatay – Konya,   PO Code; 42050, Turkiye

Address; (ASSEMBLE, SHIPMENT)

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

Phone; +90 551 111 77 44

mail@**hidrapac.com**   www.**hidrapac.com**