

A2FD

Dual Flow Bent Axis Piston Pump

Twin Flow or Double Flow Piston Pump Special Design



A2FD Pumps have the following advantages ;

- Compact Design,
- Economical Conception,
- High Power Density,
- High Overall Efficiency,
- High Rotating Speeds,
- High Output Pressure,
- 350 bar Cont. Work. Pressure,
- 400 bar Peak Pressure,
- From 5cc to 130cc,
- Reduced Noise Level,
- Increased Reliability,
- No Drain Line Necessary,
- Smaller Installation Dimensions,
- One Piece Pistons with Piston Rings,
- Special Inlet Fittings & Accessories,
- Simple Change of Direction of Rotation

Twin Flow Bent Axis Piston Pumps

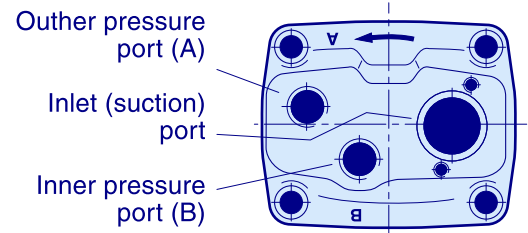
(fixed displacement)

Specifications

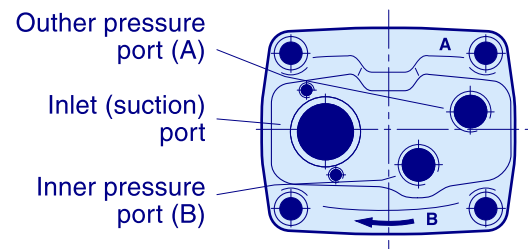
| Frame size | 53/53 | 70/35 |
|---|-------|-------|
| Displacement [cm ³ /rev] | | |
| Port A | 54 | 69 |
| Port B | 52 | 36 |
| Max operating pressure [bar] | 350 | 350 |
| Max shaft speed [rpm] | | |
| (unloaded pump; low pressure) | 2550 | 2550 |
| Max selfpriming speed [rpm] | | |
| Ports A ¹⁾²⁾ and B ¹⁾²⁾ pressurized | 1800 | 1800 |
| Port A ²⁾ unloaded, pressure in port B | 2100 | 2100 |
| Input power [kW] | | |
| Max intermittent ³⁾ | 110 | 110 |
| Max continuous | 88 | 88 |
| Weight [kg] | 19 | 19 |

- 1) Valid with 2 1/2" inlet (suction) line; with 2" inlet line: max 1400 rpm.
- 2) Measured at 1.0 bar abs. inlet pressure.
Please note: A lower inlet pressure affects pump performance.
- 3) Max 6 seconds in any one minute.

'Left hand' and 'right hand' end caps



End cap for right hand rotating pump



End cap for left hand rotating pump

Flow vs. shaft speed (theoretical)

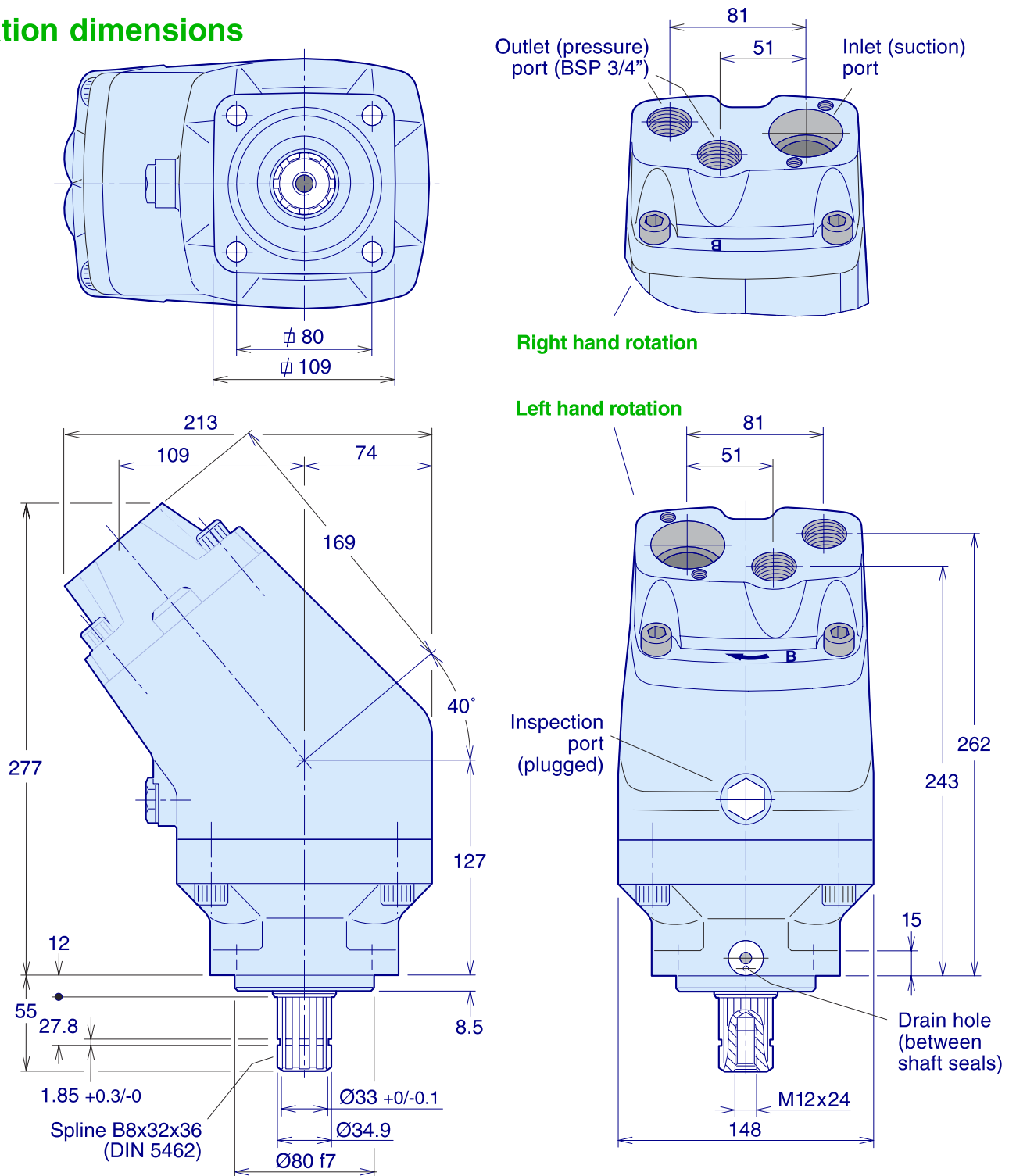
| Pump speed [rpm] | 800 | 1000 | 1200 | 1400 | 1600 | 1800 | 1900 | 2000 | 2100 |
|---------------------------|-----|------|------|------|------|------|------|------|------|
| 53/53 flow [l/min] | | | | | | | | | |
| Port A | 43 | 54 | 65 | 76 | 86 | 97 | - | - | - |
| Port B | 42 | 52 | 62 | 73 | 83 | 94 | 99 | 104 | 109 |
| Total (ports A + B) | 85 | 106 | 127 | 149 | 169 | 191 | - | - | - |
| 70/35 flow [l/min] | | | | | | | | | |
| Port A | 55 | 69 | 83 | 97 | 110 | 124 | - | - | - |
| Port B | 29 | 36 | 43 | 50 | 58 | 65 | 68 | 72 | 76 |
| Total (ports A + B) | 84 | 105 | 126 | 147 | 168 | 189 | - | - | - |

Shaft torque vs. pressure (theoretical)

| Pressure [bar] | 150 | 200 | 250 | 300 | 350 |
|--------------------------|-----|-----|-----|-----|-----|
| 53/53 torque [Nm] | | | | | |
| Port A | 126 | 168 | 210 | 252 | 294 |
| Port B | 124 | 165 | 206 | 248 | 289 |
| Total (ports A and B) | 250 | 333 | 416 | 500 | 583 |
| 70/35 torque [Nm] | | | | | |
| Port A | 164 | 219 | 274 | 329 | 383 |
| Port B | 86 | 114 | 143 | 171 | 200 |
| Total (ports A and B) | 250 | 333 | 417 | 500 | 583 |

Twin Flow Bent Axis Piston Pumps (fixed displacement)

Installation dimensions



Ordering code

| | | |
|-----------|-----------|----------------|
| 53/53 - L | 53/53 - R | Rotation |
| 70/35 - L | 70/35 - R | L : Left |
| 76/76 - L | 76/76 - R | R : Right |
| 64/32 - L | 64/32 - R | |
| 46/46 - L | 46/46 - R | |
| 56/26 - L | 56/26 - R | CW : Right |
| 35/35 - L | 35/35 - R | CCW : Left |
| 40/40 - L | 40/40 - R | |
| 40/20 - L | 40/20 - R | |
| 28/28 - L | 28/28 - R | |
| 20/20 - L | 20/20 - R | W : Bi-Direct. |

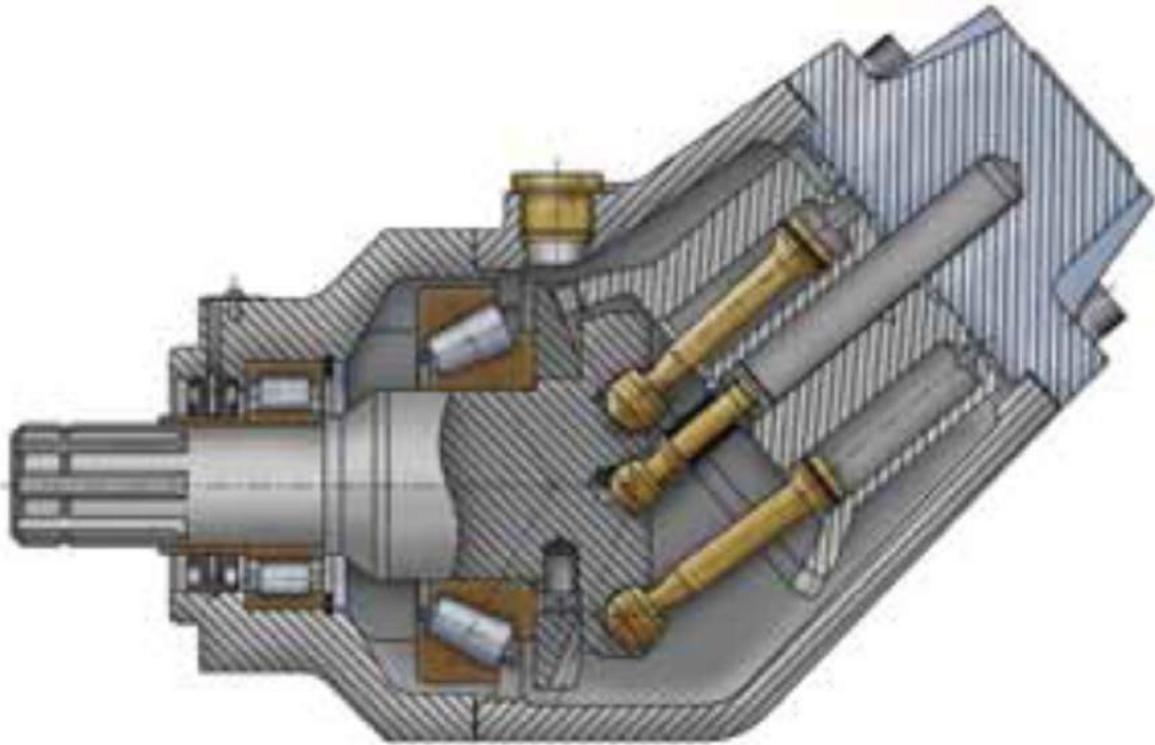
NOTE:

- Before start-up, tighten the inspection port plug to 70–100 Nm.
- To change the direction of rotation, **the end cap must be replaced.**

NOTE: The pump **does not** include a suction fitting; it must be ordered separately. See chapter 9.

Twin Flow Bent Axis Piston Pumps

(fixed displacement)



Benefits/Features

- **Two separate outlet flows with a single inlet**
- **Operating pressures to 6000 PSI (413.7 BAR) intermittent**
- **Higher overall efficiency**
- **Increased reliability**
- **Low noise level**
- **Compact package that only weighs 42 lbs (19.1 kg).**

Twin Flow Bent Axis Piston Pumps

(fixed displacement)



Fixed Displacement Piston Pumps are widely used on truck applications with operating pressure up to 5000 PSI (350 BAR). These twin flow pumps provide two independent output flows with a single inlet in a compact package. These lightweight, efficient pumps were designed specifically for truck applications including cargo cranes, hook loaders, forest cranes and concrete mixer.

Pump Performance Data

| Model Series | Max. Displacement in ³ /rev (cc/rev) | Outlet Pressure PSI (BAR) | Drive Speed RPM | Flow** @ 1800 RPM | | Max. Input Power HP (KW) |
|--------------|--|------------------------------|--------------------|---------------------|---------------------|--------------------------------|
| | | | | Port A GPM (LPM) | Port B GPM (LPM) | |
| 42/42 | 2.62/2.50 (43/41) | 5000 (350) | 1800 | 204 (77.2) | 19.5 (73.8) | 118 (88.0) |
| 55/28 | 3.36/1.71 (55/28) | 5000 (350) | 1800 | 261 (98.6) | 13.3 (50.3) | 118 (88.0) |
| 53/53 | 3.30/3.17 (54/52) | 5000 (350) | 1800 | 255 (96.5) | 24.8 (93.9) | 147 (109.8) |
| 70/35 | 4.21/2.20 (69/36) | 5000 (350) | 1800 | 327 (123.8) | 17.2 (65.1) | 147 (109.8) |
| 70/70 | 4.15/4.15 (68/68) | 4350 (300) | 1650 | 323 (122.3) | 32.3 (122.3) | 150 (111.9) |

Markets

Applications

| | |
|-------------------|---|
| Forestry | Knuckle Boom Loader, Cranes, Mowers / Cutters |
| Construction | Off-Highway Trucks, Fan Drives |
| Mining | Dump Trucks |
| Material Handling | Truck Mounted Cranes, Lift Trucks |
| Recycling | Vaccum Truck Systems, Refuse Trucks - ASL, Rear Loaders |
| Military | |

Twin Flow Bent Axis Piston Pumps (fixed displacement)

Piston Pumps Model Ordering Code

| Frame Size |
|------------|
| 42/42 |
| 55/28 |
| 53/53 |
| 70/35 |
| 70/70 |

| Code | Rotation |
|------|-----------------|
| L | Left Hand (CCW) |
| R | Right Hand (CW) |

NOTES:

1. Pressure port on 25, 41, 51 and 61 sizes is 3/4". Pressure port on 81 and 101 sizes is 1".
2. Suction fitting must be ordered separately.
3. Use seven digit number when placing order.

| Ordering Code | Ordering No. |
|---------------|--------------|
| 42/42-R | 9378 4042 |
| 42/42-L | 9378 4043 |
| 55/28-R | 9378 4128 |
| 55/28-L | 9378 4129 |
| 53/53-R | 9378 1453 |
| 53/53-L | 9378 1454 |
| 70/35-R | 9378 1470 |
| 70/35-L | 9378 1471 |
| 70/70-R | 9378 4070 |
| 70/70-L | 9378 4071 |

Suction Fittings

A suction fitting consists of a straight, 45°, 90° or 135° suction fitting, 2 clamps, 2 cap screws and an O-ring.

Straight Suction Fittings

| Ordering no. | A in. (mm) | B in. (mm) | C dia. in. (mm) |
|--------------|------------|-------------|-----------------|
| | 0 (0) | 3.35" (85) | 1.5" (38) |
| | 0.67" (17) | 5.35" (136) | 2.0" (50) |
| | 0.98" (25) | 5.71" (145) | 2.5" (63) |
| | 0.67" (17) | 5.35" (136) | 1.77" (45) |
| | 0.67" (17) | 5.35" (136) | 1.77" (48) |

45° Suction Fittings

| Ordering no. | A in. (mm) | B in. (mm) | C dia. in. (mm) |
|--------------|------------|-------------|-----------------|
| | 2.36" (60) | 4.09" (104) | 1.25" (32) |
| | 2.36" (60) | 4.09" (104) | 1.5" (38) |
| | 2.64" (67) | 4.33" (110) | 2" (50) |
| | 2.95" (75) | 4.61" (117) | 2.5" (63) |
| | 2.64" (67) | 4.33" (110) | 1.57" (40) |
| | 2.64" (67) | 4.33" (110) | 1.77" (45) |
| | 2.64" (67) | 4.33" (110) | 1.89" (48) |

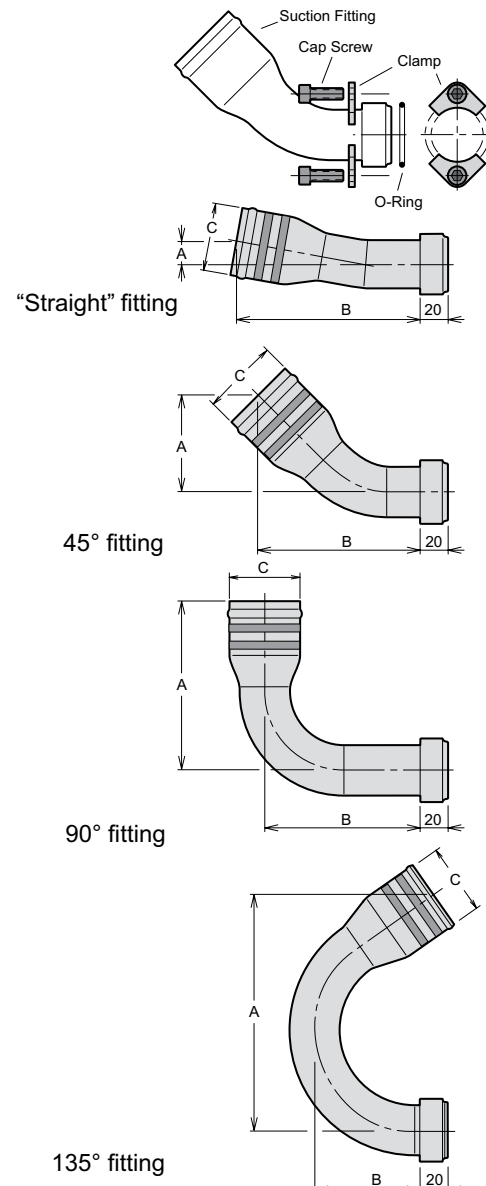
- 1) Suitable for frame size F1-25.
- 2) Suitable for pump sizes F1-41,-51,-61,-81 and -110.

90° Suction Fittings

| Ordering no. | A in. (mm) | B in. (mm) | C dia. in. (mm) |
|--------------|-------------|-------------|-----------------|
| | 4.96" (126) | 3.27" (83) | 1.5" (38) |
| | 5.31" (135) | 3.27" (83) | 2" (50) |
| | 5.31" (135) | 3.27" (83) | 1.77"(45) |
| | 5.31" (135) | 3.27" (83) | 1.89" (48) |
| | 5.79" (147) | 4.06" (103) | 2.5" (63) |

135° Suction Fitting

| Ordering no. | A in. (mm) | B in. (mm) | C dia. in. (mm) |
|--------------|-------------|------------|-----------------|
| | 6.54" (166) | 2.87" (73) | 2" (50) |



Complete Product Range

Piston Pumps

Piston Motors

DIN

DIN 5462 / ISO 14
8x32x35
8x32x36
DIN 6885



KFA2



KFM2

ISO

ISO 3019-2 (4 BOLTS)
DIN 5480 -W25,30,35,40,45
DIN 6885 -Ø20,25,30,35,40,45



A2FO



A2FM

SAE

SAE B2 C4 - SAE D
SAE J498b
SAE J 744



AA2FO



AA2FM

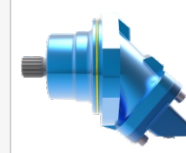
M2

Fixed Plug-in

DIN 5480 / ISO 3019-2
W30 - W35 - W40
M21 - M22 - M23



A2FD - Dual Flow



A2FE - Semi integrated

A4

DIN ISO 14
8x32x36



A2PP Single Flow



A4PD Dual Flow

A6

P2 Connection M8x125
Woodruff key 3x6,5 NF E
27-653 NF R 124-04
(2 BOLTS)



A2HP - High Pressure



**A2GP - Gear Pump
A2GM - Gear Motor**