



Fluidyne™
FLUID POWER

MFB Inline Piston Motors

- Fixed Displacement
- High Efficiency
- Compact, High Performance
- 18 Month Warranty



Table of Contents

Introduction.....	3
Fixed Displacement Motors	
<i>MFB Model Series</i>	
Specifications.....	4
Model Code.....	4
<i>MFB5 Model Series</i>	
Performance Characteristics.....	5
Installation Dimensions.....	6
<i>MFB10 Model Series</i>	
Performance Characteristics.....	7
Installation Dimensions.....	8
<i>MFB20/29 Model Series</i>	
Performance Characteristics.....	9
Installation Dimensions.....	10
<i>MFB45 Model Series</i>	
Performance Characteristics.....	11
Installation Dimensions.....	12
Foot Mounting Bracket.....	13
Application and Service Information.....	14



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Introduction

MFB motors are of axial piston, fixed displacement with inline design. The units can be operated in either direction of rotation. MFB motors are variable horsepower - horsepower being approximately proportional to rpm with a given constant operating pressure.

Fluidyne's fixed displacement inline piston motors offer a choice of five torque ratings, speed from 100 to 3600 RPM and pressures to 210 bar (3000 psi). Reversible shaft rotation and flange or foot mountings are available.

Our MFB piston motors are:

- **High Efficiency:** Overall operating efficiency can be as high as 93% and volumetric efficiency as high as 97%, depending on motor size, pressure, speed, fluid viscosity, and temperature.
- **Compact, High Performance:** High speeds, pressures and efficiencies give our inline piston motors power density. The result is high performance in a compact package that requires minimum installation space.
- **Rotation:** It can be reversed simply by reversing the direction of flow through the motor ports.
- **Low Speed Capability:** Minimum speed can vary between 50 and 100 RPM, depending upon motor size and characteristics of the drive load.
- **Reliability:** Our inline design has seen countless hours of rugged service on a variety of machinery applications. This proven design has provided significant cost and weight savings, while taking full advantage of the high efficiency inherent in piston units.
- **Serviceability:** The simplicity of our design not only permits easy servicing (often without removing the unit), and also increased reliability. Our inline motors have fewer parts compared to competitive units.

Application:

Our piston motors are designed to meet the specifications shown in the ratings section of this brochure. To ensure maximum performance in conjunction with your specific application, contact us if your:

- Pressure requirements are above 100 bar (1500 psi)
- Speed is above 1800 RPM rating
- Speed is below minimum recommended speed of 100 RPM
- System requires fire resistant or other fluids
- Operating temperature is not within the range of 38° to 66° C (10°-150°F). With proper application and fluid consideration, a greater temperature range is permissible
- Oil viscosities at operating conditions is not within 100 to 250 SUS
- Application requires an indirect drive
- Oil viscosity at start-up is in excess of 1000 SUS
- Mounting attitude is other than horizontal

Installation Data:

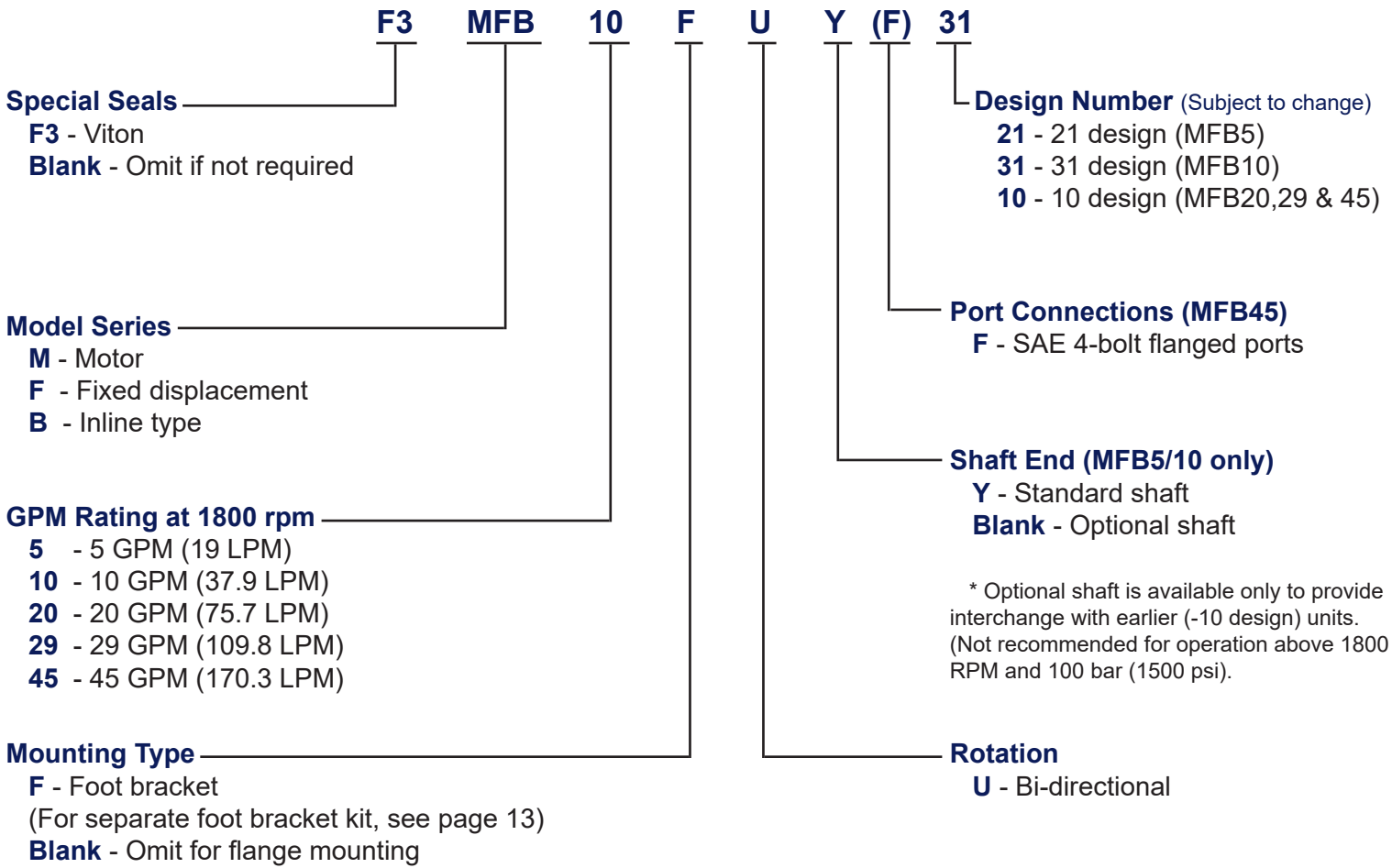
Horizontal mounting is recommended to maintain the necessary case fluid level. The case drain line must be full size and unrestricted, and connected from the uppermost drain port directly to the reservoir in such a manner that the housing remains filled with fluid. The piping of the drain line must prevent siphoning. The drain line should be piped so that it terminates below the reservoir fluid level. No other lines are to be connected to the drain line. Caution must be exercised to never exceed 0.35 bar (5 psi) unit case pressure.

Starting:

Before starting, fill case with system fluid through the uppermost drain port. Housing must be kept full at all times to provide internal lubrication.



Model Code Breakdown



Specifications

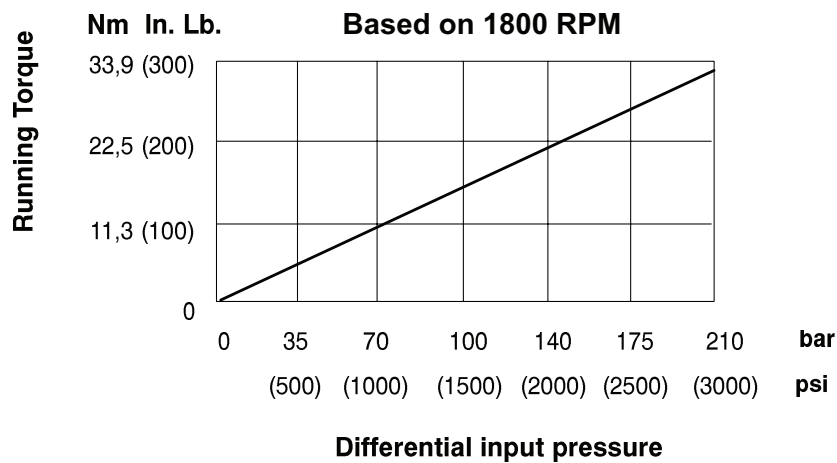
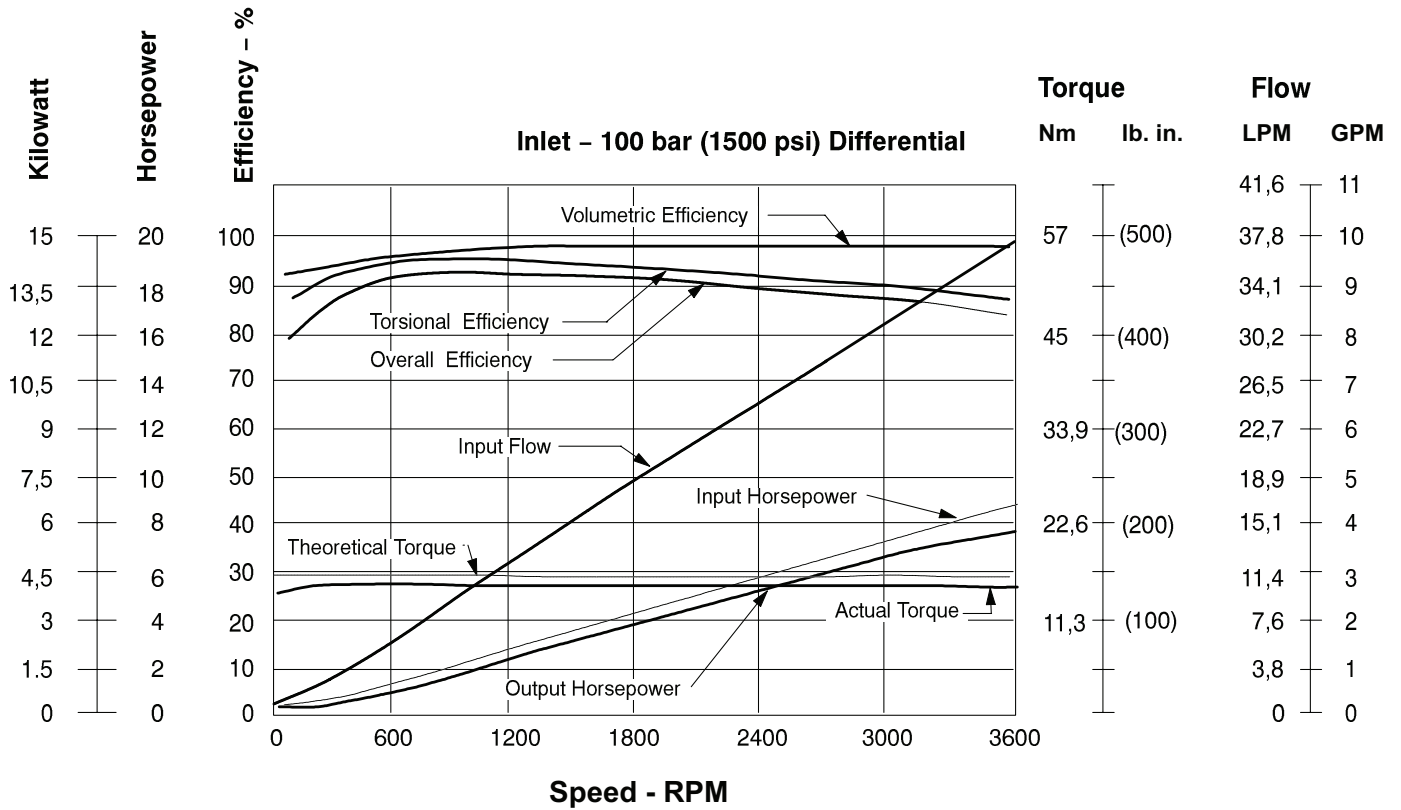
Model	Displacement cc (IN ³)/rev.	Flow LPM (GPM) at 1800 RPM	Operating Speed RPM		Pressure bar (PSI)		Output Torque Nm (lb in)		Weight (lb)
			Rated	Max	Rated	Max	Rated	Max	
MFB5	10.5 (0.64)	19.0 (5.0)	1800	3600	100 (1500)	210 (3000)	15.3 (135)	30.5 (270)	11
MFB10	21.1 (1.29)	37.9 (10.0)	1800	3200	100 (1500)	210 (3000)	32.1 (284)	64.2 (568)	21
MFB20	42.8 (2.61)	75.7 (20.0)	1800	2400	100 (1500)	175 (2500)	50.9 (450)	101.7 (900)	49
MFB29	61.6 (3.76)	109.8 (29.0)	1800	2400	70(1000)	140 (2000)	58.8 (520)	117.5 (1040)	49
MFB45	94.4 (5.76)	170.3 (45.0)	1800	2200	100 (1500)	210 (3000)	135.7 (1200)	271.2 (2400)	73



Excellence Under Pressure

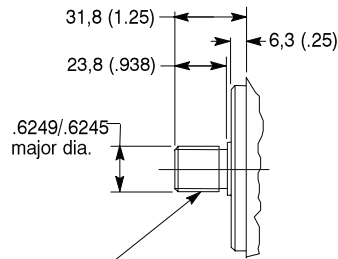
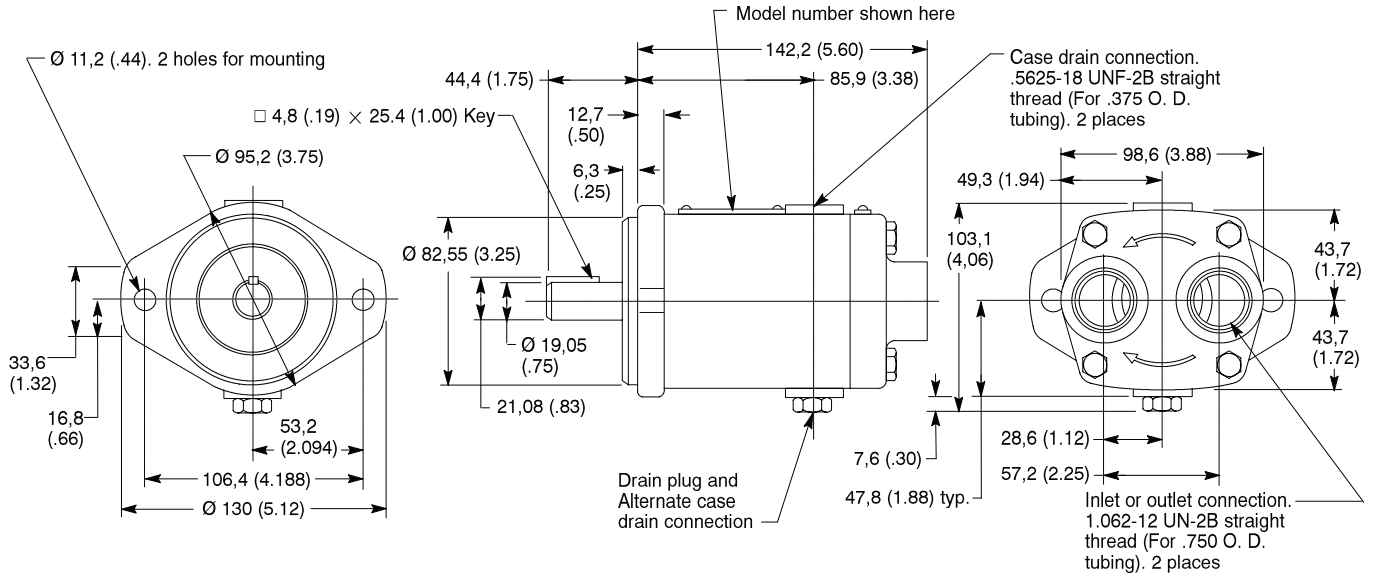
MFB5 Performance Characteristics

Based on oil temperature of 49°C (120°F) - Atmospheric Outlet



MFB5 Installation Dimensions

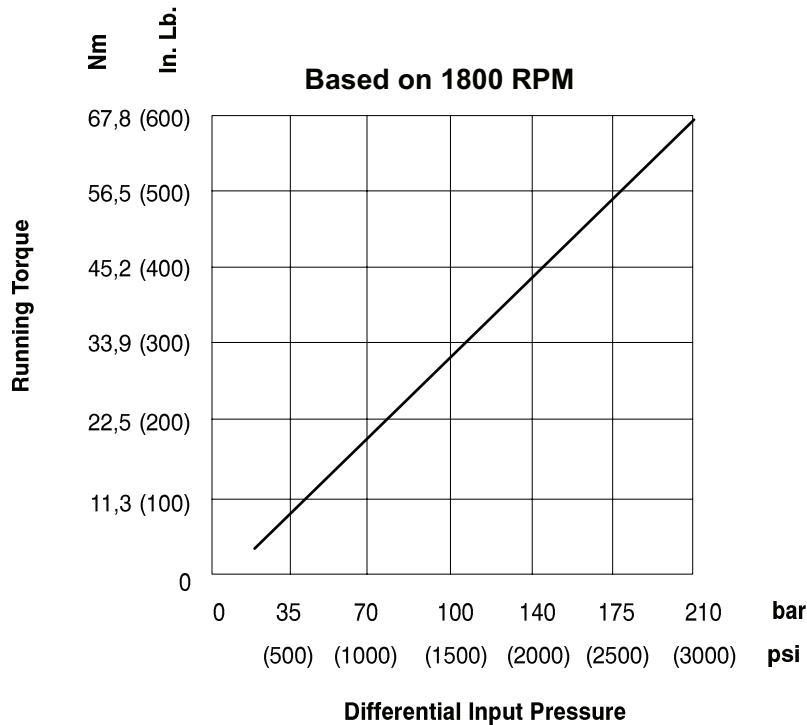
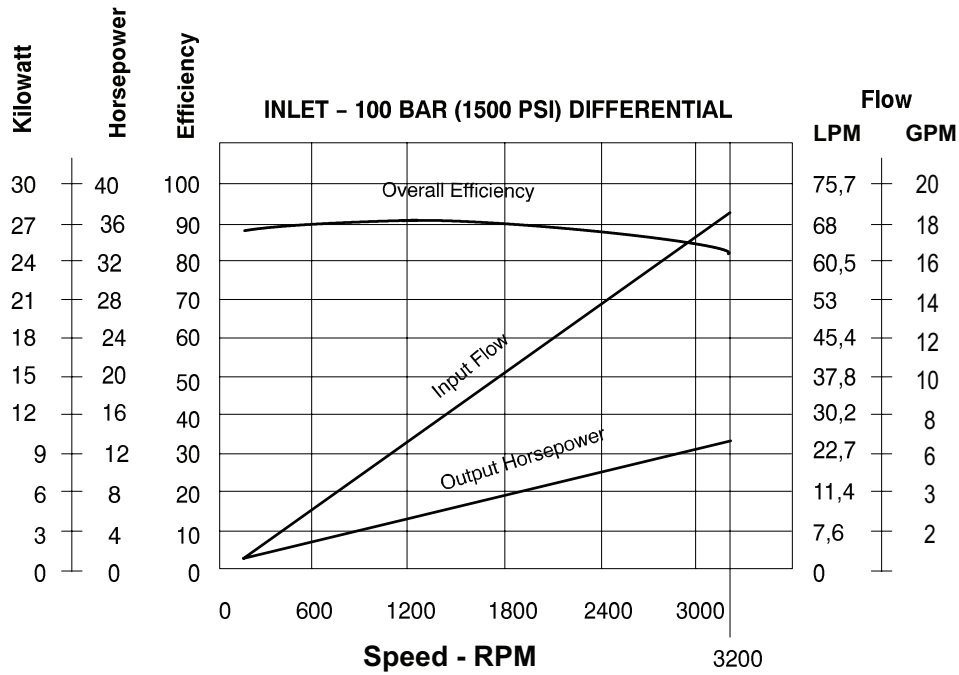
Millimeters (inches)



Optional drive shaft.
SAE standard involute spline.
Flat root major diameter fit.
9 teeth 16/32 pitch.
.5625 pitch diameter ref.
.4835/.4725 minor diameter

MF BIO Performance Characteristics

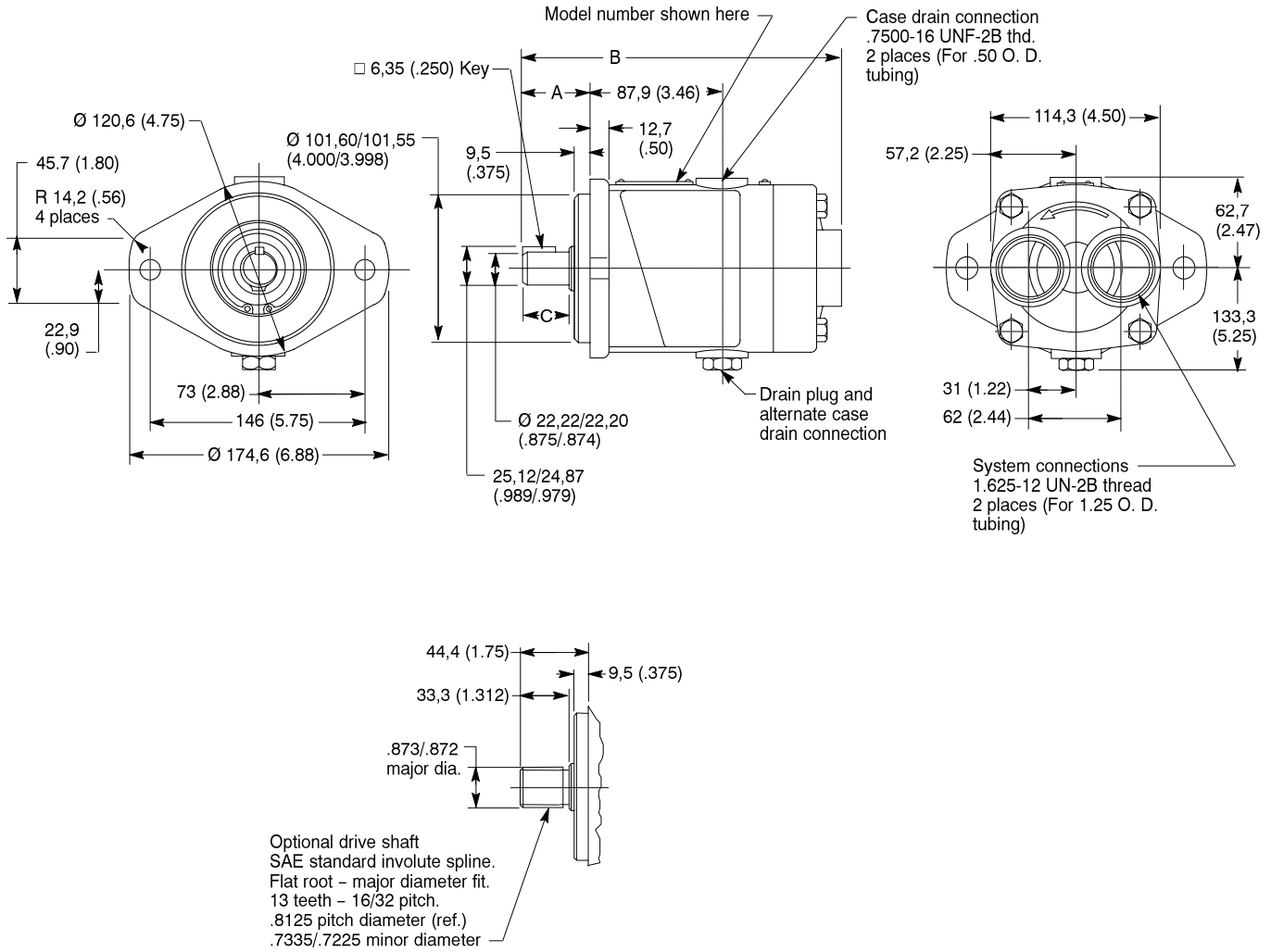
Based on oil temperature of 49°C (120°F), 20.6 cSt (100 SUS) and Atmospheric Outlet



MF BIO Installation Dimensions

Millimeters (inches)

Shaft Type	A	B	C
Std. (Code Y)	58.7 (2.31)	228.1 (8.98)	47.6 (1.87)
Short	44.4 (1.75)	213.9 (8.42)	33.3 (1.31)



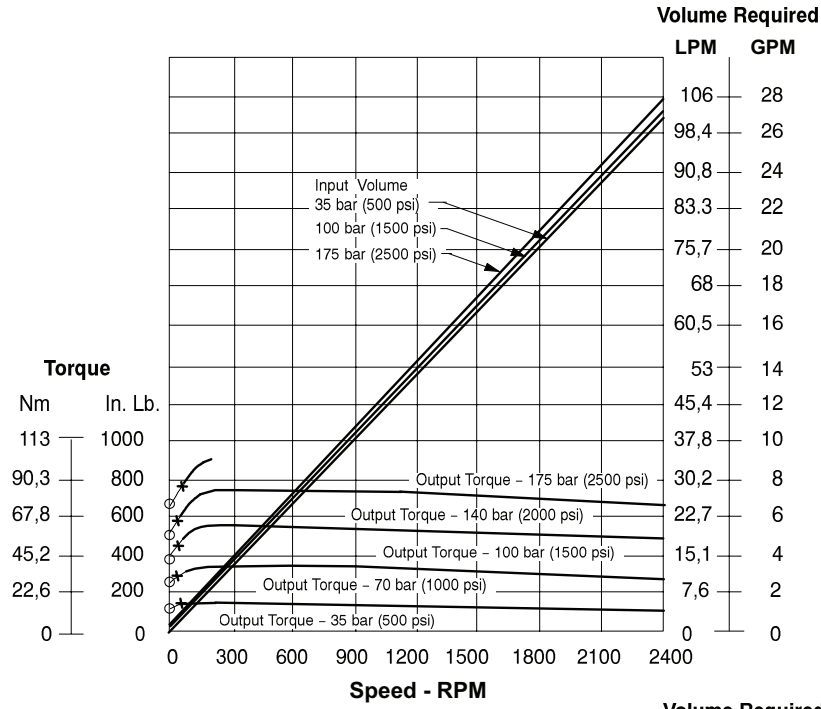
MFB20 & 29 Performance Characteristics

Based on oil temperature of 49°C (120°F), 20.6 cSt (100 SUS)

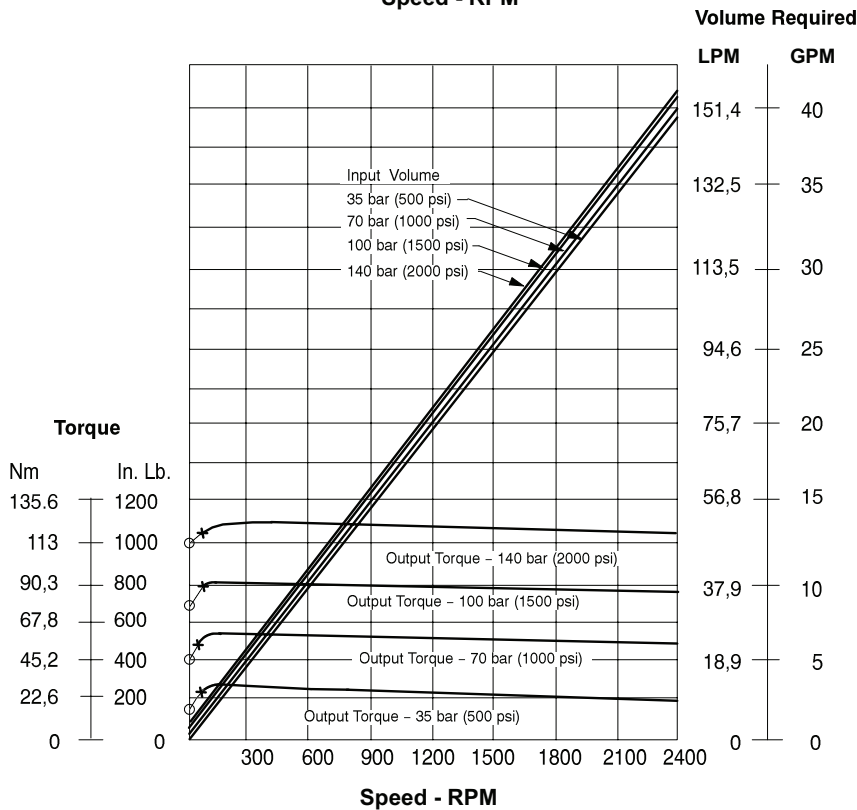
X indicates minimum speed with approx. ± 10% speed variation

O indicates stall torque

MFB20

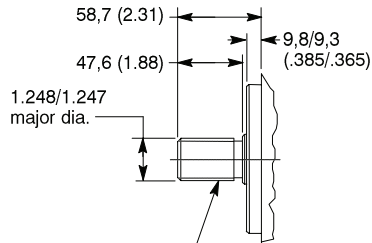
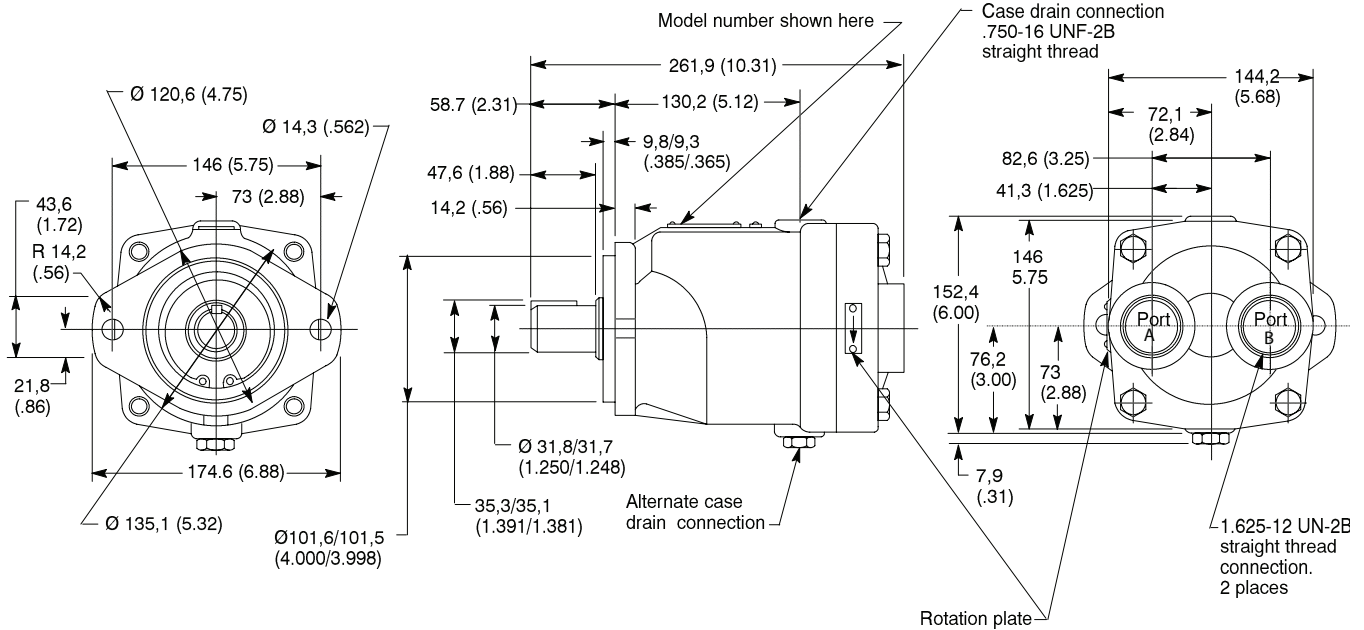


MFB29



MFB20 & 29 Installation Dimensions

Millimeters (inches)



Optional drive shaft
SAE standard involute spline.
Flat root - major diameter fit.
14 teeth - 12/24 pitch.
1.1667 pitch diameter (ref.)
1.0627/1.0497 minor diameter

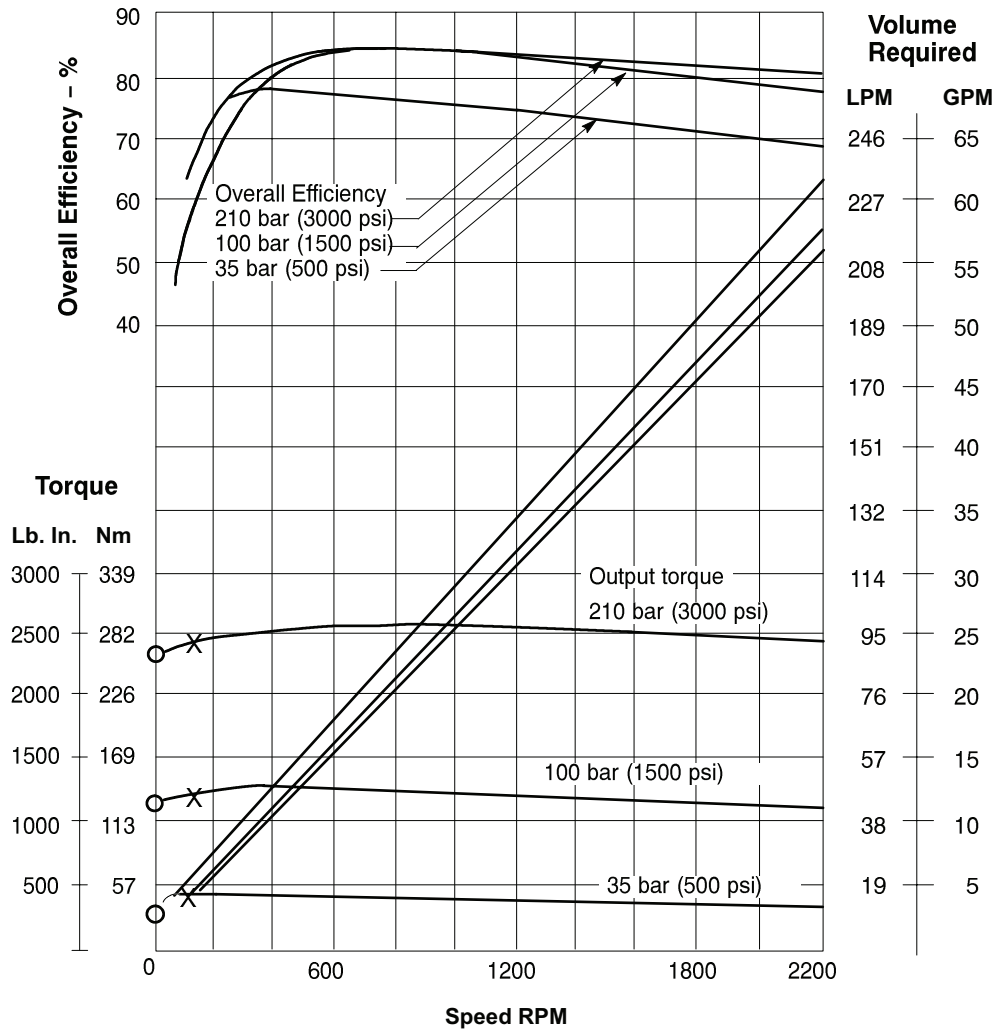
Shaft Rotation	Outlet Port
Right Hand	A
Left Hand	B

MFB45 Performance Characteristics

Based on oil temperature of 49°C (120°F), 20.6 cSt (100 SUS)

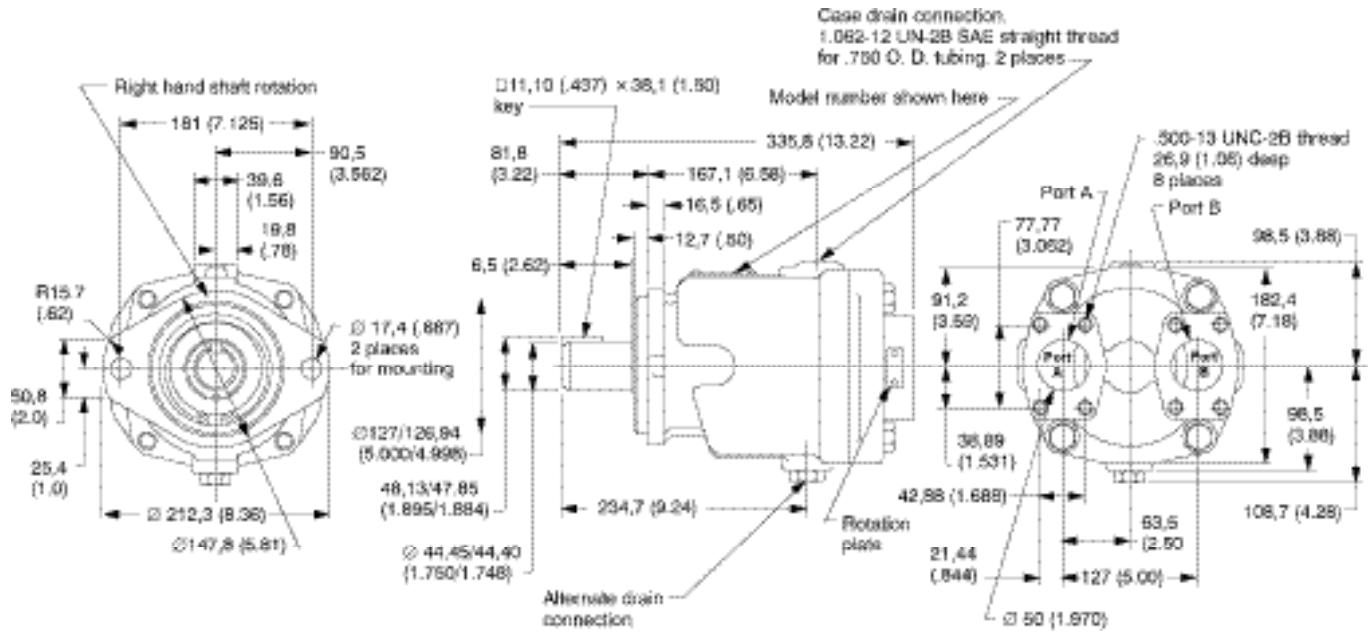
X indicates minimum speed with approx ± 10% speed variation

O indicates stall torque



MFB45 Installation Dimensions

Millimeters (inches)



Shaft Rotation	Outlet Port
Right Hand	A
Left Hand	B

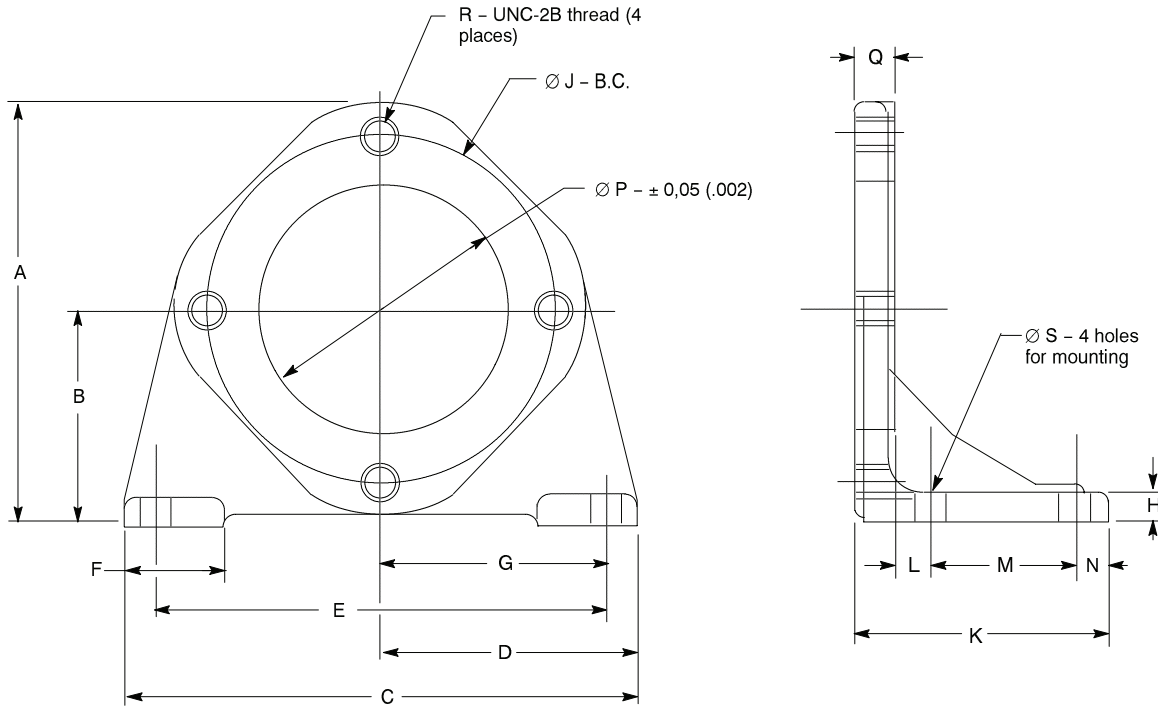


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Foot Mounting Bracket

The foot bracket kits presented below can be used to mount motors having standard SAE-J 744 2-bolt A, B or C mounting flanges. These designations correspond to A, B, and C letters in the foot bracket kit model code number. Each kit includes a bracket and screws for mounting to the motor. Kits are not included with motors and must be ordered separately by the model code number. Call us today at (586) 296-7200 if you have any questions.

Available are a 50V foot bracket, part # V279625 and bolts, part # V214794 (2 required) to fit the SAE D mounting flange.



Kit #	A	B	C	D	E	F	G	H
FB-A-10	134.9 (5.31)	69.9 (2.75)	152.4 (6.00)	76.2 (3.00)	127 (5.00)	36.6 (1.44)	63.5 (2.50)	12.7 (0.50)
FB-B-10	180.8 (7.12)	92.2 (3.63)	171.5 (6.75)	85.8 (3.38)	146 (5.75)	36.6 (1.44)	73.2 (2.88)	12.7 (0.50)
FB-C-10	215.9 (8.50)	109.5 (4.31)	265.2 (10.44)	132.6 (5.22)	235 (9.25)	50.8 (2.00)	117.6 (4.63)	15.7 (0.62)

Dimensions: Millimeter (inch)

Kit #	J	K	L	M	N	P	Q	R	S
FB-A-10	106.4 (4.19)	96 (3.78)	15 (0.59)	50.8 (2.00)	12.7 (0.50)	82.63 (3.25)	17.5 (0.69)	.38-16	11.2 (0.44)
FB-B-10	146 (5.75)	95.8 (3.77)	15 (0.59)	50.8 (2.00)	12.7 (0.50)	101.68 (4.00)	17.3 (0.68)	.50-13	17.3 (0.68)
FB-C-10	181.7 (7.13)	131.6 (5.18)	19 (0.75)	76.2 (3.00)	17.3 (0.68)	127.08 (5.00)	19 (0.75)	.62-11	17.3 (0.68)

Dimensions: Millimeter (inch)

Also available are a 50V foot bracket, part # V279625 and bolts, part # V214794 (2 required) to fit the SAE D mounting flange.



Application and Service Information

Seals:

Nitrile seals are standard in our inline motors. These seals are suitable for use with petroleum, water-glycol, water in oil emulsion, polyol ester and high-water base fluids. Phosphate ester fluids require the use of EPR or EPDM seals.

Installation and Startup:

Horizontal mounting is recommended to maintain the necessary case fluid level. Before starting, fill the case with system fluid through the uppermost drain port. The housing must be kept full at all times to provide internal lubrication.

The case drain line must be full size, unrestricted, and connected from the uppermost drain port directly to the reservoir in such a manner that the housing remains filled with fluid. The line must be piped to prevent siphoning and must terminate below the reservoir fluid level. No other lines are to be connected to the drain line. At initial startup, it may be necessary to bleed air from the motor outlet to permit priming and reduce noise. Bleed by loosening an outlet connection until a solid stream of fluid appears.

Fluid Cleanliness:

Proper fluid condition is essential for long and satisfactory life of hydraulic components and systems. Hydraulic fluid must have the correct balance of cleanliness, materials and additives for protection against wear of components, elevated viscosity and inclusion of air.

Recommended cleanliness levels, using petroleum oil under common conditions, are based on the highest fluid pressure levels in the system and are coded in the chart below. Fluids other than petroleum, severe service cycles, or personnel safety considerations are cause for adjustment of these cleanliness codes.


Life of any hydraulic components is shortened in fluids with higher cleanliness codes than those listed below. These codes have been proven to provide a long trouble-free service life for the products shown, regardless of who the manufacturer is. Fluid cleanliness is important.

Cleanliness codes for petroleum oil usage

Product	System Pressure Level		
	<140 bar (<2000 psi)	140-210 bar (2000-3000 psi)	210+bar (3000+ psi)
Swash plate design motors	18/16/14	17/15/13	16/14/12



Excellence Under Pressure



FluidDyne supports the distributors providing local knowledge and assistance to fluid power customers.

Our people provide extensive support:

- Engineering Expertise
- Decoding special part numbers
- Identification of parts within units
- Advice on component repair and assembly
- Component failure analysis
- 18 month warranty
- New application component selection
- Same day shipment



Reman Units & Parts Available for Racine, Oilgear, Bosch, Continental and More!

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