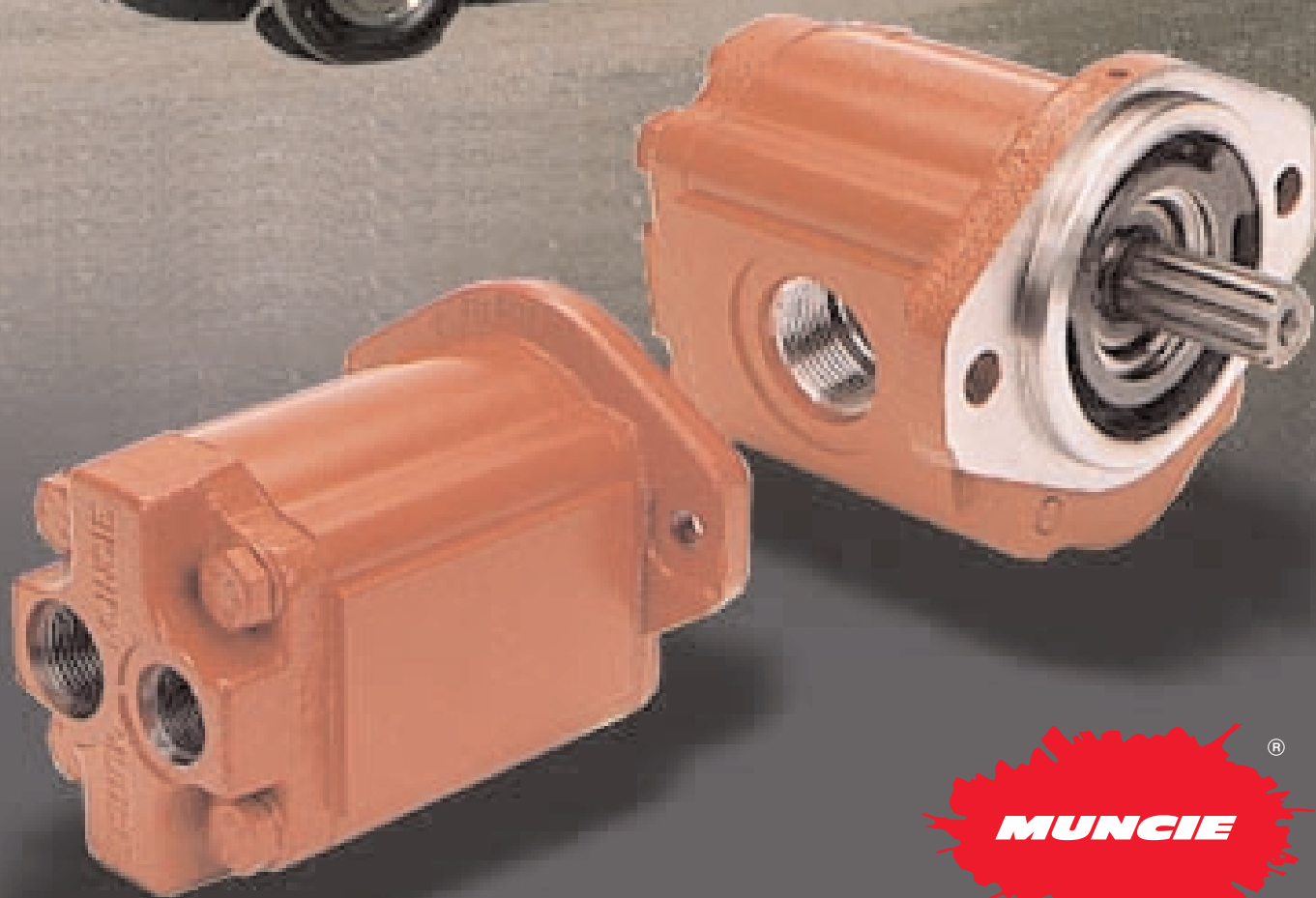


F SERIES GEAR PUMP

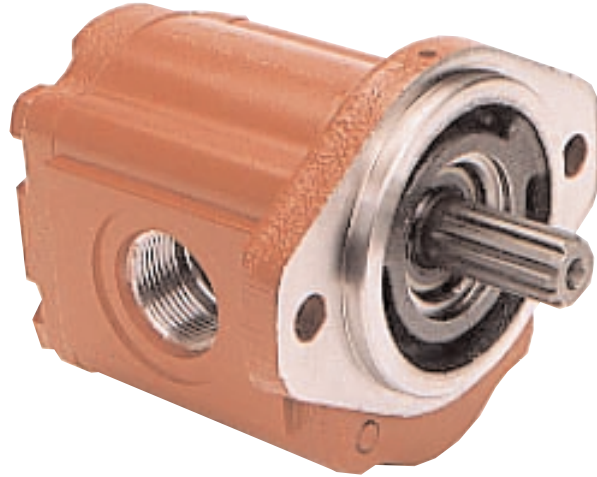
ALL NEW DESIGN



F SERIES GEAR PUMP

ALL NEW DESIGN

“Ultimate power and performance in a small package” best describes the all new F Series gear pumps. Designed exclusively for those low flow applications. The pressure balanced wearblocks and sleeve bearings provide both high performance and extra long life.



PRODUCT FEATURES:

- 12 standard sizes
- Pressures to 4000 PSI (276 Bar)
- Speeds to 3500 RPM
- Low noise level
- Maximum efficiency
- Compact design
- Multiple pump capabilities
- Dowel pin design
- Optional relief and priority flow control rear covers
- SAE spline or round keyed shaft
- SAE straight thread O-ring ports on either side or rear
- Full one year warranty
- Special design for Ford 4R100 4x4 applications (design F2)
- 100% break in and test

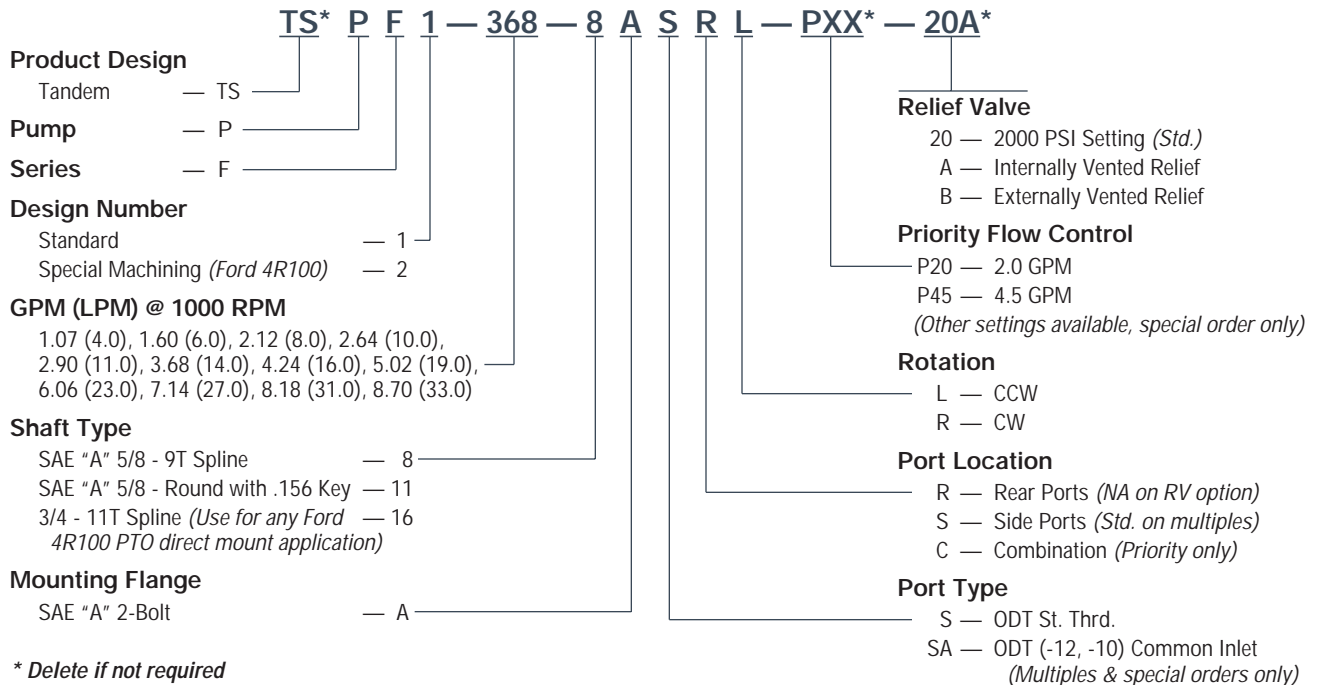
CONSTRUCTION:

- Cast iron front and rear cover – results in high strength with minimal deflection for improved bearing block alignment, long life and high pressure capabilities.
- Extruded aluminum housing – high tensile aluminum results in long life and high pressure capabilities.
- 13 tooth gear design – provides reduced pressure pulsations and extremely quiet operation.
- Solid one piece shafts – turned from high tensile bar, no two piece or compressed powered metal used.
- Pressure balanced – provides high volumetric efficiency with minimal mechanical losses for maximum performance under a variety of operating conditions. PTFE impregnated bushings provide long life.

APPLICATIONS:

Designed to meet a multitude of truck mounted equipment including: Tow and recovery vehicles, snow and ice removal, contractor size dump bodies, lift gates, small utility equipment, and other low flow applications.

MODEL NUMBER CONSTRUCTION



Notes: Multiple pump and special rear cover options are non standard and are special order only. Available only with design no. 1.
Maximum combined inlet flow for pumps with common inlet is 20 gpm; secondary pump maximum flow is 10 gpm.
Additional pumps cannot be fed through the common inlet.
For additional information on PTOs for the Ford 4R100 transmission, see FA Series PTO brochure number MP98-01.

PUMP SPECIFICATIONS

MODEL NUMBER	DISPL CU IN (CC)	MAX RPM	MIN RPM	MAX PSI (BAR)	MAX INLET VACUUM	APP. WT. LBS (KG)
PF*-107	0.24 (4)	4000	1000	4000 (276)	6 IN.HG. (.20 BAR)	7.51 (3.42)
PF*-160	0.37 (6)	4000	900	4000 (276)	6 IN.HG. (.20 BAR)	7.69 (3.49)
PF*-212	0.49 (8)	4000	900	4000 (276)	6 IN.HG. (.20 BAR)	7.86 (3.56)
PF*-264	0.61 (10)	3600	800	4000 (276)	6 IN.HG. (.20 BAR)	8.02 (3.64)
PF*-290	0.67 (11)	3600	800	4000 (276)	6 IN.HG. (.20 BAR)	8.12 (3.68)
PF*-368	0.85 (14)	3300	600	4000 (276)	6 IN.HG. (.20 BAR)	8.38 (3.80)
PF*-424	0.98 (16)	3000	600	4000 (276)	6 IN.HG. (.20 BAR)	8.55 (3.88)
PF*-502	1.16 (19)	3000	600	4000 (276)	6 IN.HG. (.20 BAR)	8.81 (4.00)
PF*-606	1.40 (23)	2800	600	3400 (235)	6 IN.HG. (.20 BAR)	9.15 (4.15)
PF*-714	1.65 (27)	2500	600	2900 (200)	6 IN.HG. (.20 BAR)	9.49 (4.30)
PF*-818	1.89 (31)	2300	600	2850 (196)	6 IN.HG. (.20 BAR)	9.84 (4.46)
PF*-870	2.01 (33)	2200	600	2700 (186)	6 IN.HG. (.20 BAR)	10.01 (4.54)

Ports: Inlet (All but PF2): -12 ODT Str. Thd. (1-1/16 – 12 UNF)
Inlet (PF2 Only): -16 ODT Str. Thd. (1-5/16 – 12 UNF)
Outlet (All): -10 ODT Str. Thd. (7/8 – 14 UNF)

Notes: For Ford 4R100 4x4 applications, order pump code PF2-***-16ASSR.
PF2-870 (2.01) cu.in. pump not available for Ford 4R100 diesel 4x4 application. PF2-606 & larger pump sizes are not applicable on Ford 4R100 gas 4x4 application.
Maximum oil temperature is 200°F (93.5°C). Buna N seals are standard.



OUTPUT FLOW RATE

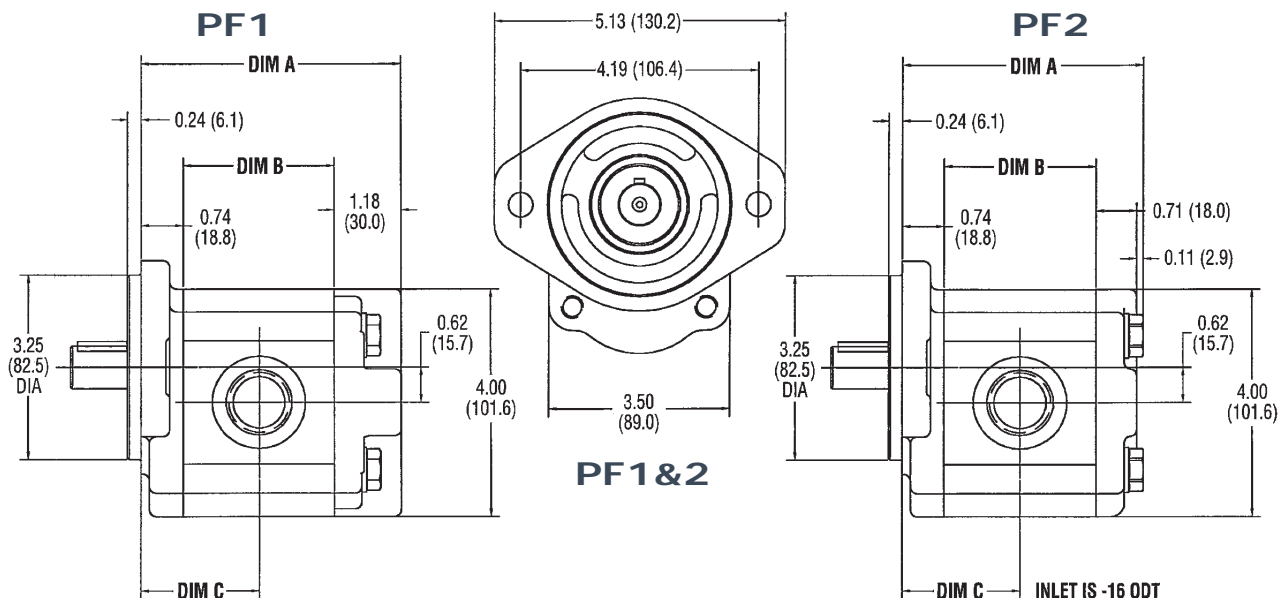
FLOW RATE AT 2500 PSI (172 BAR), MEASURED IN GPM (LPM)

MODEL	1000 RPM	1200 RPM	1500 RPM	1800 RPM	2400 RPM
PF*-107	1.0 (3)	1.2 (4)	1.5 (5)	1.8 (6)	2.5 (9)
PF*-160	1.5 (5)	1.8 (7)	2.2 (8)	2.7 (10)	3.7 (14)
PF*-212	1.9 (7)	2.4 (9)	3.0 (11)	3.6 (13)	4.9 (18)
PF*-264	2.4 (9)	2.9 (11)	3.7 (14)	4.5 (17)	6.1 (23)
PF*-290	2.6 (10)	3.2 (12)	4.0 (15)	4.9 (18)	6.7 (25)
PF*-368	3.2 (12)	3.9 (15)	5.0 (19)	6.2 (23)	8.4 (32)
PF*-424	4.0 (15)	4.8 (18)	6.0 (23)	7.3 (28)	9.8 (37)
PF*-502	4.7 (18)	5.7 (22)	7.2 (27)	8.7 (33)	11.7 (44)
PF*-606	5.8 (22)	7.0 (26)	8.7 (33)	10.5 (40)	14.2 (54)
PF*-714	6.7 (25)	8.0 (30)	10.1 (38)	12.2 (46)	16.5 (62)
PF*-818	7.7 (29)	9.2 (35)	11.6 (44)	14.1 (53)	19.1 (72)
PF*-870	8.0 (30)	9.7 (38)	12.4 (47)	14.9 (56)	20.0 (75)

MOUNTING DIMENSIONS IN INCHES (MM)

PF1 MODEL	OVER ALL DIM "A"	CTR GEAR DIM "B"	PORT LOC. DIM "C"	PF2 MODEL	OVER ALL DIM "A"	CTR GEAR DIM "B"	PORT LOC. DIM "C"
PF1-107	3.84 (97.5)	1.92 (48.7)	1.70 (43.1)	PF2-107	3.48 (88.4)	1.92 (48.7)	1.70 (43.1)
PF1-160	3.96 (100.6)	2.04 (51.8)	1.76 (44.6)	PF2-160	3.60 (91.4)	2.04 (51.8)	1.76 (44.6)
PF1-212	4.08 (103.6)	2.16 (54.7)	1.82 (46.1)	PF2-212	3.72 (94.5)	2.16 (54.7)	1.82 (46.1)
PF1-264	4.20 (106.7)	2.28 (57.9)	1.88 (47.6)	PF2-264	3.84 (97.5)	2.28 (57.9)	1.88 (47.6)
PF1-290	4.32 (109.7)	2.40 (61.0)	1.94 (48.4)	PF2-290	3.96 (100.6)	2.40 (61.0)	1.94 (48.4)
PF1-368	4.44 (112.8)	2.52 (64.0)	2.00 (50.7)	PF2-368	4.08 (103.6)	2.52 (64.0)	2.00 (50.7)
PF1-424	4.56 (115.8)	2.64 (67.1)	2.06 (52.2)	PF2-424	4.20 (106.6)	2.64 (67.1)	2.06 (52.2)
PF1-502	4.74 (120.4)	2.82 (71.6)	2.14 (54.5)	*PF2-502*	4.38 (111.2)	2.82 (71.6)	2.14 (54.5)
PF1-606	4.97 (126.2)	3.05 (77.5)	2.26 (57.5)	PF2-606	4.38 (117.2)	3.05 (77.5)	2.26 (57.5)
PF1-714	5.16 (131.1)	3.29 (83.6)	2.38 (60.5)	PF2-714	4.85 (123.3)	3.29 (83.6)	2.38 (60.5)
PF1-818	5.45 (138.4)	3.53 (89.7)	2.50 (63.6)	*PF2-818*	5.09 (129.4)	3.53 (89.7)	2.50 (63.6)
PF1-870	5.57 (141.5)	3.65 (92.7)	2.56 (65.1)	*PF2-870*	5.21 (132.4)	3.65 (92.7)	2.56 (65.1)

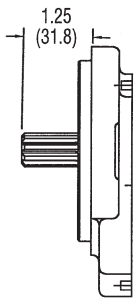
*Note: Due to case interference problems on the Ford 4R100 4x4 application, the largest pump that will fit it on the diesel option is the PF2-818-16ASSR and on the gas engine is the PF2-502-16ASSR.



SHAFT OPTIONS

SHAFT TYPE #8

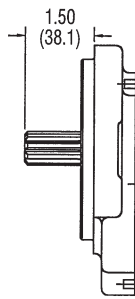
5/8 - 9T (SAE "A")
STL ≤ 6,143



SAE Involute Spline
9 Teeth - 16/32
Flat Root Side Fit
15.32 - 15.47 Major Dia.
(.603 - .609)
12.002 - 12.281 Minor Dia.
(.4725 - .4835)

SHAFT TYPE #16

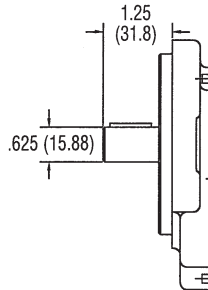
3/4 - 11T (SAE)
STL ≤ 11,216



SAE Involute Spline
11 Teeth - 16/32
Flat Root Side Fit
18.504 - 18.631 Major Dia.
(.7285 - .7335)
15.176 - 15.456 Minor Dia.
(.5975 - .6085)

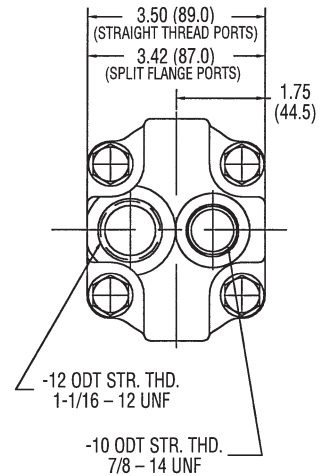
SHAFT TYPE #11

5/8 ROUND WITH
.156 KEY (SAE "A")
STL ≤ 4,380



PORTED REAR COVER

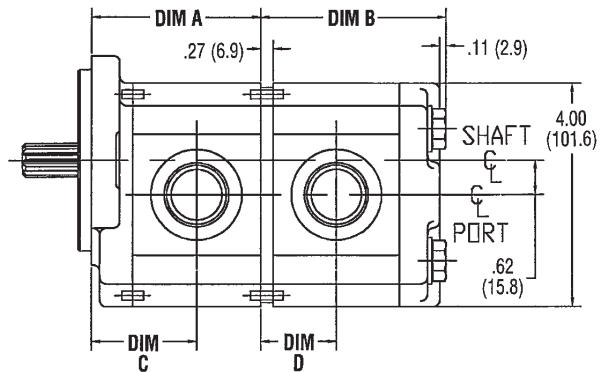
(Not available on PF2)



Note: The pump input shaft can withstand torques up to the designed shaft torque limitation (STL). This figure is based on multiplying the pump cu. in. displacement times the pump pressure (ie: D x P < STL). Tandem pumps are considered two pumps. Individual calculated STL's are added together and cannot exceed limitation figure.
Note: Connector Shaft STL ≤ 5560.

MULTIPLE PUMPS DIMENSIONS (PF1 ONLY) IN INCHES (MM)

MODEL	DIM "A"	DIM "B"	DIM "C"	DIM "D"
PF1-107	2.66 (67.5)	3.01 (76.4)	1.70 (43.1)	1.23 (31.2)
PF1-160	2.78 (70.5)	3.13 (79.6)	1.76 (44.6)	1.29 (32.8)
PF1-212	2.90 (73.6)	3.25 (82.6)	1.82 (46.1)	1.35 (34.3)
PF1-264	3.02 (76.6)	3.37 (85.7)	1.88 (47.6)	1.41 (35.8)
PF1-290	3.08 (78.1)	3.43 (87.2)	1.94 (48.4)	1.44 (36.6)
PF1-368	3.25 (82.7)	3.61 (91.7)	2.00 (50.7)	1.53 (38.9)
PF1-424	3.37 (85.7)	3.73 (94.8)	2.06 (52.2)	1.59 (40.4)
PF1-502	3.55 (90.2)	3.91 (99.3)	2.14 (54.5)	1.68 (42.6)
PF1-606	3.79 (96.3)	4.15 (105.4)	2.26 (57.5)	1.80 (45.7)
PF1-714	4.03 (102.4)	4.39 (111.5)	2.38 (60.5)	1.92 (48.7)
PF1-818	4.27 (108.5)	4.63 (117.5)	2.50 (63.6)	2.04 (51.8)
PF1-870	4.39 (111.5)	4.75 (120.6)	2.56 (65.1)	2.10 (53.3)

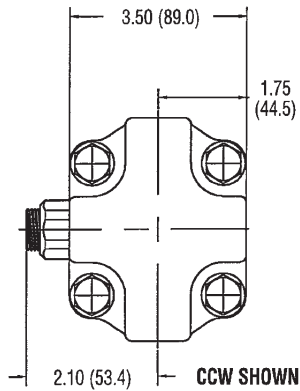
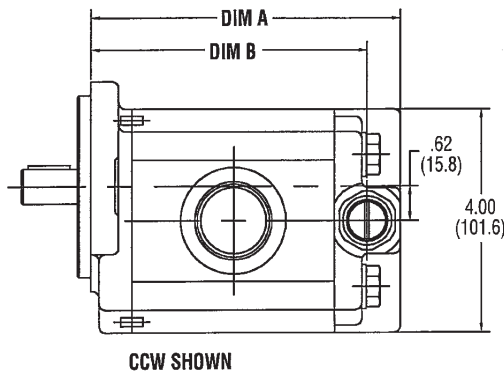


Double Pump Overall Length = A+B
First Section Port Centerline = C
Second Section Port Centerline = A+D

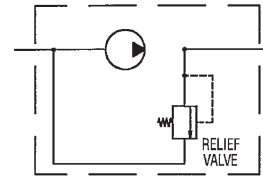
Note: Maximum combined inlet flow for pumps with common inlet is 20 gpm; secondary pump maximum flow is 10 gpm. Additional pumps cannot be fed through the common inlet.



RELIEF VALVES (PF1 ONLY)



INTERNAL BYPASS

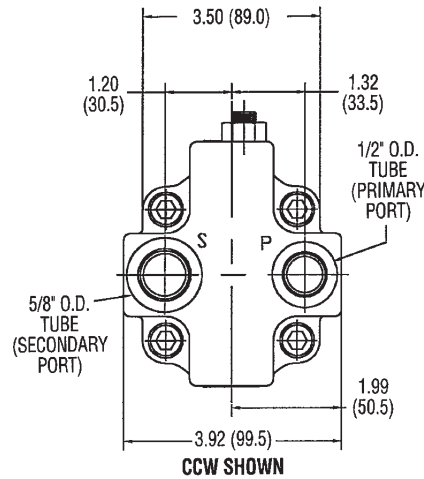
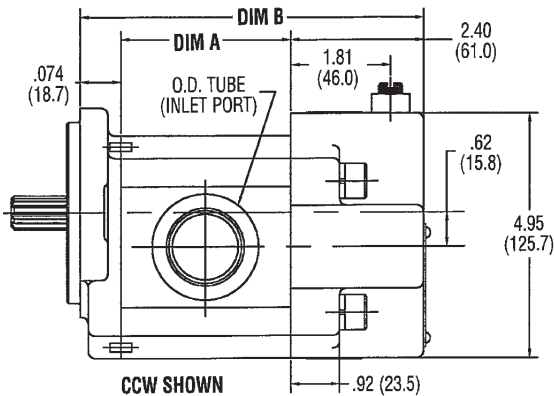


Direct acting screw adjustable relief valve. Adjustment range from 1500 to 3300 PSI @ 5 GPM. Extended use could cause pump to overheat.

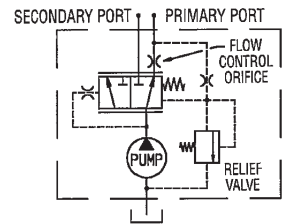
NOTE: -8 ODT EXTERNAL VENT RELIEF OPTION AVAILABLE

MODEL NO.	PF1-107	PF1-160	PF1-212	PF1-264	PF1-290	PF1-368	PF1-424	PF1-502	PF1-606	PF1-714	PF1-818	PF1-870
DIM "A" INCHES (MM)	3.84 (97.5)	3.96 (100.5)	4.08 (103.6)	4.20 (106.6)	4.26 (108.1)	4.44 (112.7)	4.56 (115.7)	4.74 (120.3)	4.97 (126.3)	5.21 (132.4)	5.45 (138.5)	5.57 (141.5)
DIM "B" INCHES (MM)	2.89 (73.4)	3.01 (76.4)	3.13 (79.5)	3.25 (82.5)	3.31 (84.0)	3.49 (88.6)	3.61 (91.6)	3.79 (96.2)	4.02 (102.2)	4.26 (108.3)	4.50 (114.4)	4.62 (117.4)

PRIORITY FLOW & RELIEF VALVE (PF1 ONLY)



STANDARD PRIORITY FLOW DIVIDER



NOTE: RELIEF VALVE BYPASSES FLOW TO THE SECONDARY PORT

Direct acting screw adjustable relief valve. Adjustment range from 1500 to 3300 PSI @ 5 GPM

MODEL NO.	PF1-107	PF1-160	PF1-212	PF1-264	PF1-290	PF1-368	PF1-424	PF1-502	PF1-606	PF1-714	PF1-818	PF1-870
DIM "A" INCHES (MM)	1.92 (48.7)	2.04 (51.8)	2.16 (54.9)	2.28 (57.9)	2.34 (59.4)	2.52 (64.0)	2.64 (67.0)	2.82 (71.6)	3.06 (77.6)	3.29 (83.7)	3.53 (89.8)	3.65 (92.8)
DIM "B" INCHES (MM)	5.06 (128.5)	5.18 (131.5)	5.30 (134.6)	5.42 (137.6)	5.48 (139.1)	5.66 (143.7)	5.78 (146.7)	5.95 (151.2)	6.19 (157.3)	6.43 (163.4)	6.67 (169.5)	6.79 (172.5)

OIL RECOMMENDATIONS

Muncie does not promote specific manufacturers' brands of oil. Recommendations below are guidelines; consult oil manufacturer for exact application needs.

Viscosity Range:

- Viscosity Minimum: 50 - 60 SUS (7.5 - 10.5 cST)
- Viscosity Optimum Continuous: 60 - 100 SUS (10.5 - 21.6 cST)
- Viscosity Maximum @ Startup: 7500 SUS (1600 cST)
- Viscosity Index: 90 Minimum
- Aniline Point: 175 Minimum

Pour Point: 15°F (-10°C) Maximum

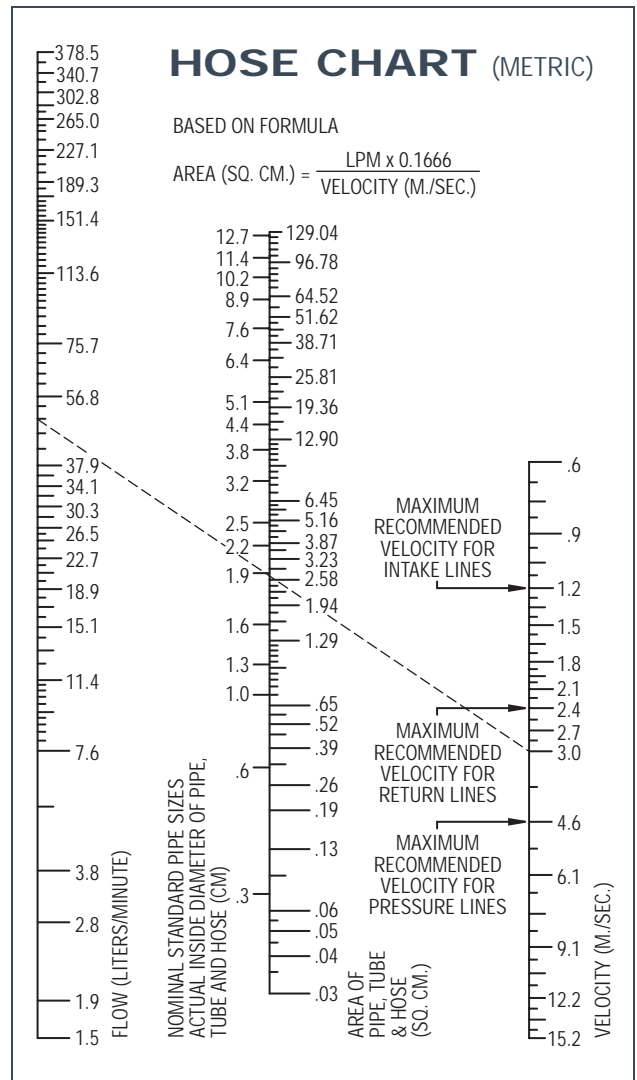
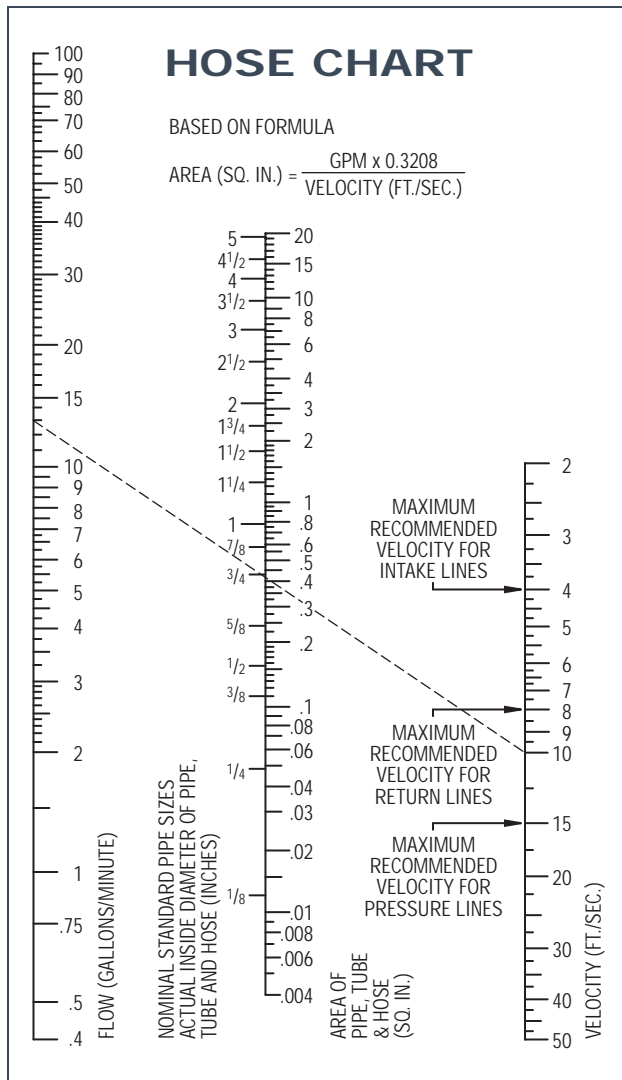
- Foam Resistance: Recommended
- Rust Resistance Inhibitors: Recommended
- Corrosion Resistance: Recommended
- Oxidation Stability: Recommended
- Anti-Wear Additive: .06% Zinc Minimum*

Note: Cold weather operation requires special oil considerations. Viscosity should not exceed 7500 SUS (1600 cST) at lowest startup temperature. Continuous operation should range between 60 - 100 SUS (10.5 - 21.6 cST) for all temperature ranges. Never use diesel fuel or kerosene to thin oil.

*Anti-Wear Additives are optional. Typical not required for gear pump or gear motor anti-wear, but some motor manufacturers may recommend.

FLOW CAPACITIES

For Pipe, Tube and Hose at Recommended Flow Capacities



PUMP WARRANTY

THE MUNCIE "F" SERIES GEAR PUMP IS WARRANTED AGAINST ANY DEFECT IN MATERIAL AND WORKMANSHIP WHICH EXISTED AT THE TIME OF SALE BY MUNCIE, ACCORDING TO THE FOLLOWING PROVISIONS, SUBJECT TO THE REQUIREMENTS THAT THE PUMP MUST BE USED ONLY IN ACCORDANCE WITH CATALOGUE AND PACKAGE INSTRUCTIONS.

THE PUMP IS WARRANTED FOR A PERIOD OF TWO YEARS FROM THE DATE OF INSTALLATION. IF DURING THE WARRANTY PERIOD THE PUMP FAILS TO OPERATE TO MUNCIE'S SPECIFICATIONS DUE TO A DEFECT IN ANY PART IN MATERIAL OR WORKMANSHIP THAT EXISTED AT THE TIME OF SALE BY MUNCIE, THE DEFECTIVE PART WILL BE REPAIRED OR REPLACED, AT MUNCIE'S ELECTION, AT NO CHARGE, IF THE DEFECTIVE PART IS RETURNED TO MUNCIE WITH TRANSPORTATION PREPAID.

WARNING. THE ABOVE WARRANTY SHALL TERMINATE IF ANY ALTERATIONS OR REPAIRS ARE MADE TO THE PUMP OTHER THAN AT A SERVICE CENTER OWNED BY MUNCIE, OR IF THE PUMP IS USED ON ANY EQUIPMENT OTHER THAN THE EQUIPMENT UPON WHICH IT IS FIRST INSTALLED.

AS TO ANY MUNCIE "F" SERIES GEAR PUMP WHICH IS REBUILT AND RETESTED AT A SERVICE CENTER OWNED BY MUNCIE, THE PERIOD OF THE ABOVE WARRANTY IS EXTENDED FOR A PERIOD OF ONE ADDITIONAL YEAR FROM THE RETEST DATE.

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER OBLIGATIONS AND LIABILITIES, INCLUDING NEGLIGENCE AND ALL WARRANTIES OF MERCHANTABILITY AND SUITABILITY, EXPRESSED OR IMPLIED AND STATE MUNCIE'S ENTIRE AND EXCLUSIVE LIABILITY AND BUYER'S EXCLUSIVE REMEDY FOR ANY CLAIM OF DAMAGES IN CONNECTION WITH THE SALE, REPAIR OR REPLACEMENT OF THE ABOVE GOODS, THEIR DESIGN, INSTALLATION OR OPERATION. MUNCIE WILL IN NO EVENT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES WHATSOEVER, AND OUR LIABILITY UNDER NO CIRCUMSTANCES WILL EXCEED THE CONTRACT PRICE FOR THE GOODS FOR WHICH LIABILITY IS CLAIMED.

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CALL TODAY FOR ADDITIONAL INFORMATION FOR ALL YOUR MOBILE POWER EQUIPMENT NEEDS

Electric Solenoid Valve This compact hydraulic tank and valve package is designed especially for small underbody hoist and dump bodies, featuring a fully adjustable main relief valve and work port relief valves for double acting hoists. *Brochure MP96-06*

15 Gallon Steel Side Mount Hydraulic Reservoir Features a filler/breather assembly standard with nylon strainer and 40 micron 1/4 turn cap, oil level/temperature sight gauge, dual outlet ports and dual return ports. *Brochure MP95-10*

FA Series Ford Automatic PTO By introducing a transmission driven PTO system for the optional Super Duty F-Series automatic transmission, the long requested need of an alternative to the fanbelt driven clutch pump for the automatic transmission has now been met. *Brochure MP98-01*

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