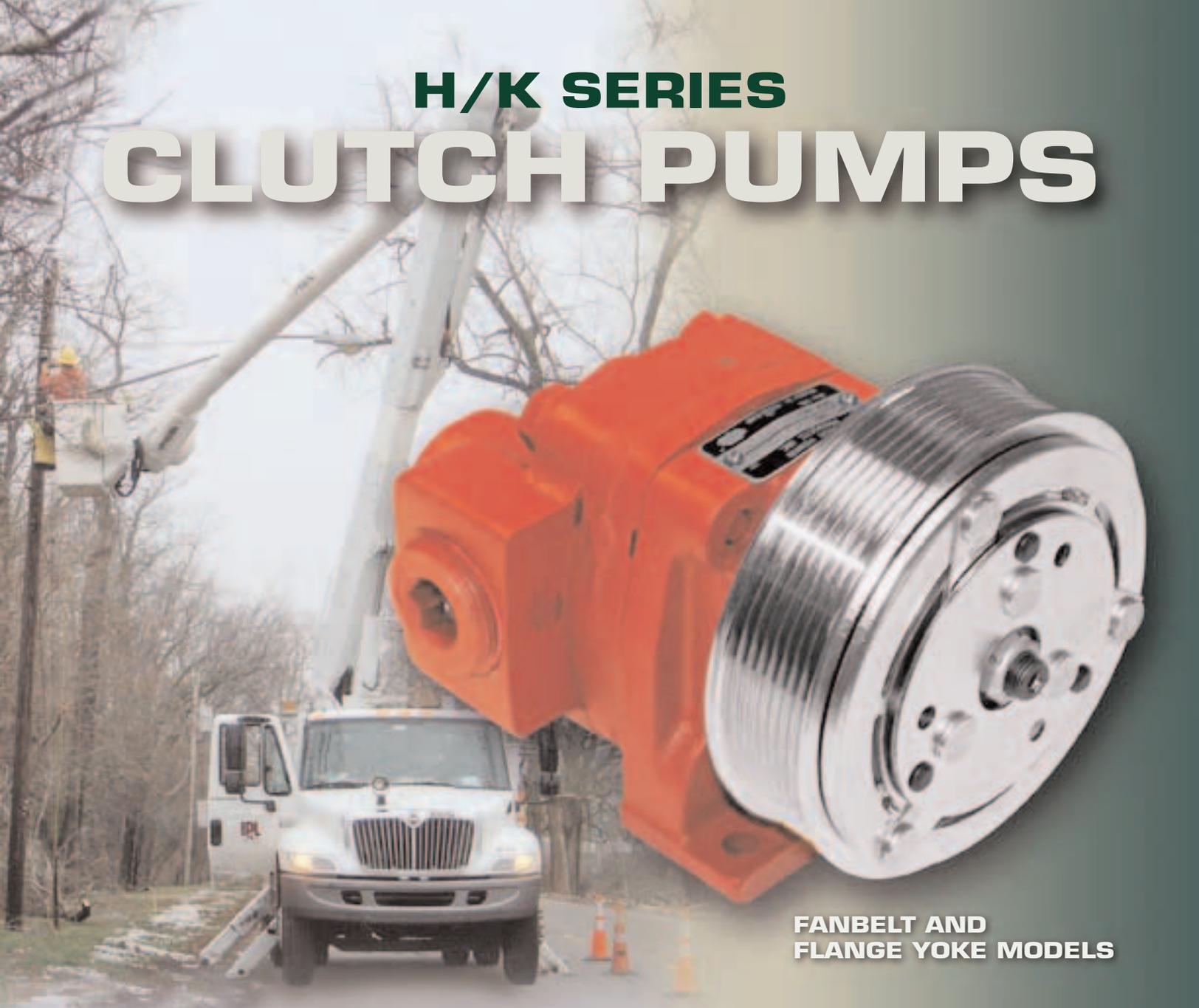


H/K SERIES CLUTCH PUMPS



FANBELT AND
FLANGE YOKE MODELS



H/K SERIES CLUTCH PUMPS

FEATURES

6 PUMP SIZES – 3, 5, 7, 9, 11, 13 GPM @ 1000 RPM (11, 19, 26, 34, 42, 49 LPM).

3 CLUTCH STYLES & TYPES – 32* & 45 HP (24 & 34 KW) FANBELT AND 70 HP (52 KW) FLANGE YOKE.

VERSATILE PORT DESIGN – WITH PORTING ON BOTH THE SIDE AND REAR, GIVING YOU INSTALLATION FLEXIBILITY FOR TIGHT FITTING CHASSIS HOOKUPS.

HIGH SPEEDS – TO 4000 RPM FOR THOSE HIGH RPM ENGINE APPLICATIONS. HIGH PRESSURES TO 3500 PSI (241 BAR).

PUMP PREASSEMBLED WITH THE CLUTCH – PROVIDES FOR QUICKER INSTALLATION TIMES WITH FEWER PROBLEMS RIGHT OUT OF THE BOX.

HIGH PERFORMANCE – RESULTS FROM PRESSURE BALANCED WEAR PLATE DESIGN WHICH ALSO PRODUCES HIGH SYSTEM EFFICIENCY FOR LOWER HORSEPOWER REQUIREMENTS.

DASH MOUNTED ROCKER SWITCH – PROVIDES INSTANTANEOUS POWER AT THE FLIP OF A SWITCH. SHIPPED COMPLETE WITH ALL WIRING.

* Optional 6 or 8 groove poly v-belt



Switch plate and light for dash mounting included with wiring kit and diode for chassis electrical protection

OPTIONS:

EOS-110 OVERSPEED SWITCH

Electronically controls power equipment with pre-set on/off high and low speed settings. For alternator equipped gasoline or diesel engines.

Brochure MP88-03



STA-9020

HYDRO-THROTTLE CONTROL

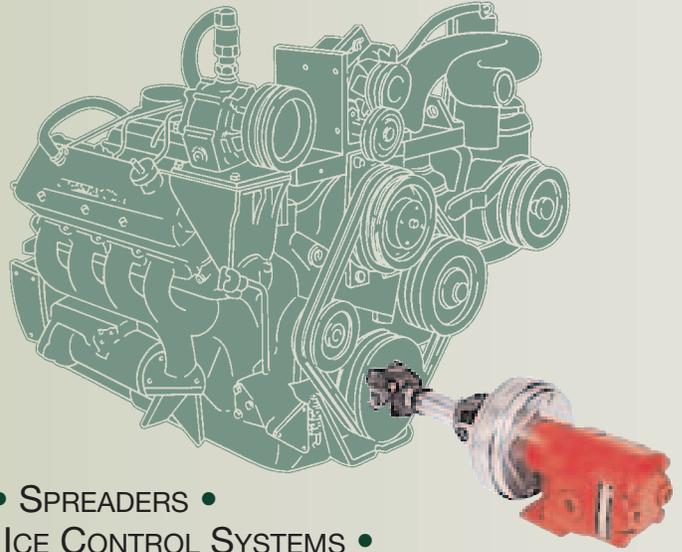
Reduces engine stalling — saves fuel by providing a predetermined throttle setting when power equipment is operating. For gasoline or diesel engines.

Does not work with "Drive by Wire" type engines.

Brochure MP93-05

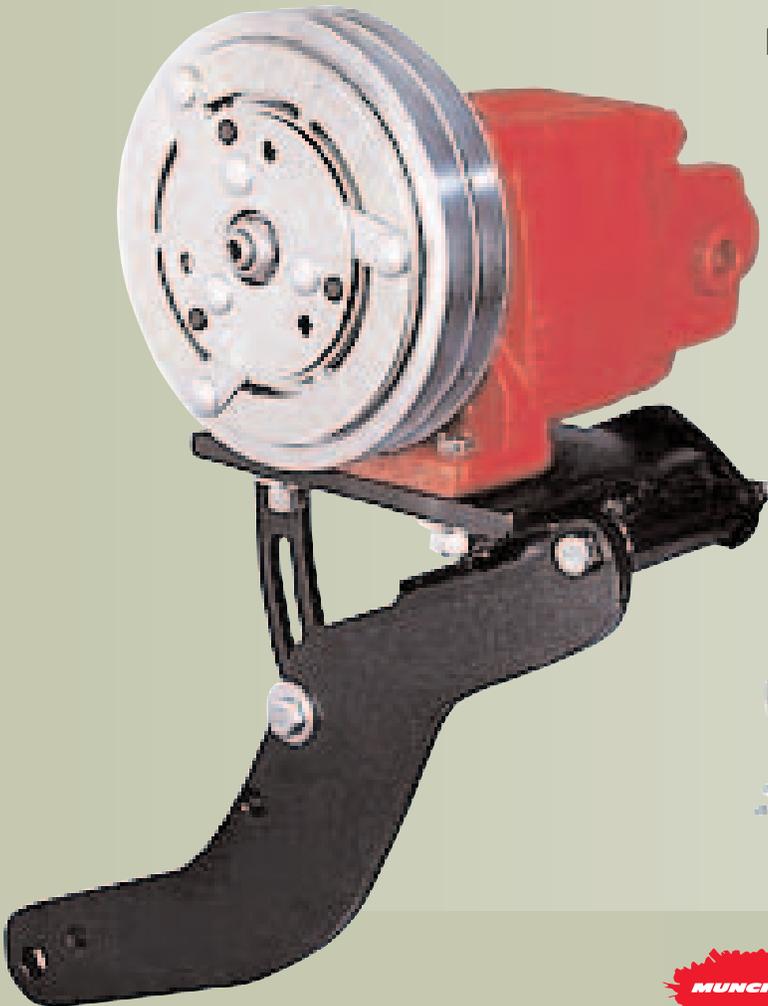


PUMP APPLICATIONS



- WINCHES • SPREADERS •
- SNOW REMOVAL AND ICE CONTROL SYSTEMS •
- TOW TRUCKS • AERIAL EQUIPMENT • FIFTH WHEELS • CRANES •
- DUMP BODIES • FARM BODIES • HYDRAULIC TOOLS •

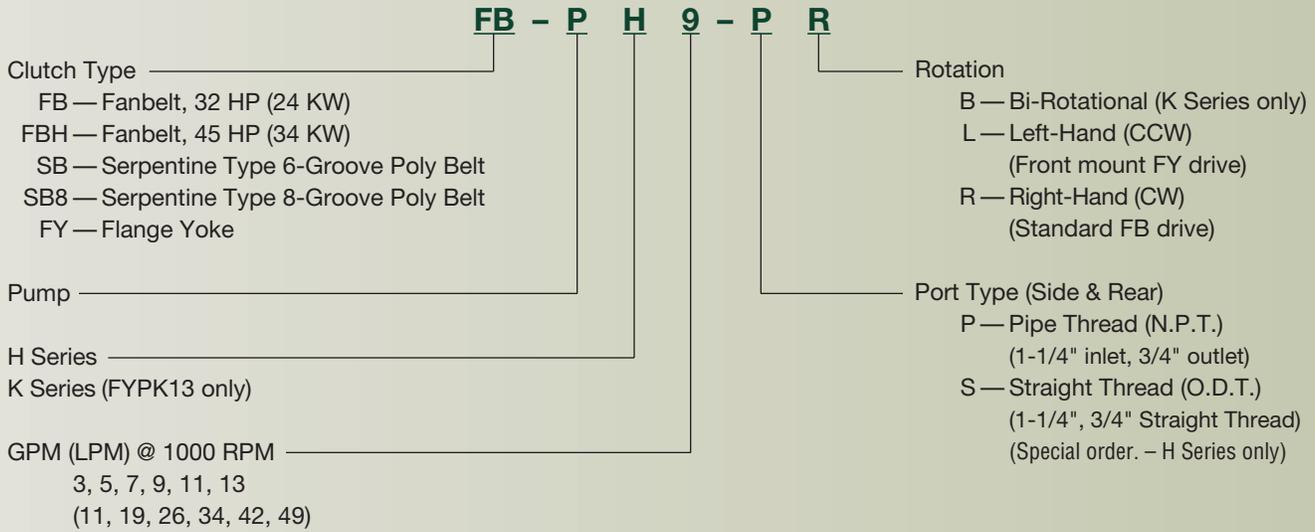
ENGINE MOUNTING KITS



KITS ARE AVAILABLE FOR FAN BELT DRIVEN CLUTCH PUMPS. KITS ARE COMPLETE AND DESIGNED FOR MOST PICKUP SIZE CHASSIS AND ENGINE COMBINATIONS. OTHER CHASSIS SIZES ARE AVAILABLE, INCLUDING THE SERPENTINE ENGINE SYSTEMS. KITS ARE NOT AVAILABLE FOR FY AND SB TYPE CLUTCH PUMPS.



MODEL NUMBER CONSTRUCTION



CLUTCH PUMP SPECIFICATIONS

MODEL NO.	DISPL. CU IN (CC)	MAX RPM	MIN RPM	MAX PSI (BAR)	(FBH)* (CLUTCH)	MAX OIL TEMP.	MAX INLET VACUUM
PH3	0.62 (10)	4000	800	3500 (241)	3500 (241)	200°F (93°C)	5 IN. HG. (.17 BAR)
PH5	1.24 (20)	4000	800	3500 (241)	3500 (241)	200°F (93°C)	5 IN. HG. (.17 BAR)
PH7	1.55 (25)	3600	800	3000 (207)	3500 (241)	200°F (93°C)	5 IN. HG. (.17 BAR)
PH9	2.17 (36)	3000	800	2600 (179)	2900 (200)	200°F (93°C)	5 IN. HG. (.17 BAR)
PH11	2.48 (41)	3000	800	2000 (138)	2500 (172)	200°F (93°C)	5 IN. HG. (.17 BAR)
PK13	2.96 (48)	2500	800	2500 (172)	—	200°F (93°C)	5 IN. HG. (.17 BAR)

* Belt horsepower limitations may result in belt slippage @ rated horsepower even though high torque clutch can carry the pressure. Poly groove belts will typically carry more HP except when pump is installed into OEM belt system. **NOTE:** Never use Teflon Tape on any ports.

CLUTCH PUMP OUTPUT FLOW RATE

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

MODEL	1000 RPM	1500 RPM	2000 RPM	2500 RPM	3000 RPM
PH3	2.25 (9)	3.5 (13)	5.0 (19)	6.5 (25)	7.5 (28)
PH5	4.5 (17)	7.3 (28)	10.1 (38)	12.5 (47)	15.5 (59)
PH7	5.4 (20)	9.1 (34)	12.4 (47)	15.7 (59)	19.0 (72)
PH9	7.6 (29)	12.8 (48)	17.4 (66)	22.0 (83)	26.6 (101)
PH11*	8.9 (34)	14.0 (53)	20.5 (78)	25.0 (95)	30.5 (115)
PK13	10.5 (40)	17.5 (66)	24.0 (91)	30.0 (114)	—

* Tested at 2000 PSI (138 BAR)



INSTALLATION DIMENSIONS

Dimensions are in inches (mm)

FB & SB MODELS

[32 HP (24 KW) • 95 FT.-LBS. (129 NM)]

FBH [45 HP (34 KW) • 130 FT.-LBS. (176 NM)]

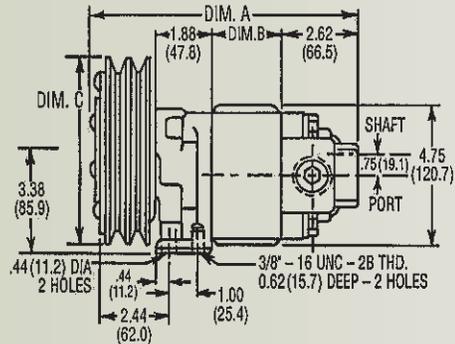
Approx. Shipping Weight: 34 Lbs. (15.4 Kg) for FB & SB
38 Lbs. (17.2 Kg) for FBH

MODEL NO.	DIM A IN (MM)	DIM B IN (MM)
PH3	7.4 (188.0)	0.90 (22.9)
PH5	7.9 (200.7)	1.40 (35.6)
PH7	8.2 (208.3)	1.65 (41.9)
PH9	8.6 (218.4)	2.15 (54.6)
PH11	8.9 (226.1)	2.40 (61.0)

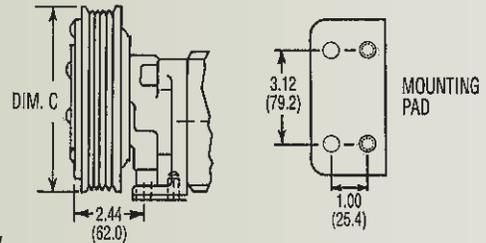
Dim. C: 5.47 in. (138.9 mm) for SB8
6.00 in. (152.4 mm) for FB & SB
7.38 in. (187.5 mm) for FBH

NOTE:

Basic pump dimensions are the same no matter which clutch is installed.
Clutches require 6 Amps @ 12-VDC. Minimum 11.5-V required at clutch.



Optional 6 & 8-Groove Class K-Poly V Belt



FY MODELS

[70 HP (52 KW) • 200 FT.-LBS. (271 NM)]

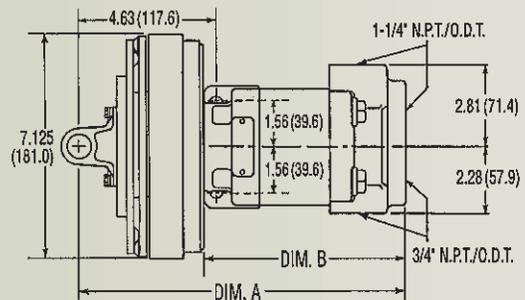
Approx. Shipping Weight:
56 Lbs. (25.4 Kg)
69 Lbs. (31.3 Kg) for PK13
Manual Override Standard

MODEL NO.	DIM A IN (MM)	DIM B IN (MM)
PH3	9.9 (251.5)	5.40 (137.2)
PH5	10.4 (264.2)	5.90 (149.9)
PH7	10.6 (269.2)	6.15 (156.2)
PH9	11.1 (281.9)	6.65 (168.9)
PH11	11.4 (289.6)	6.90 (175.3)
PK13	11.7 (297.2)	7.19 (182.6)

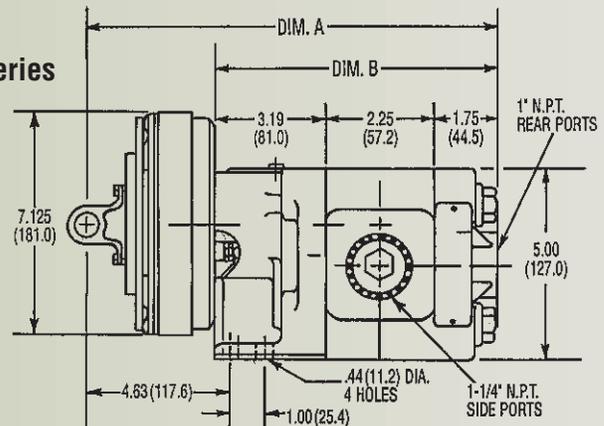
NOTE:

Clutch pumps come pre-assembled and include Rocker Switch and Wiring Kit.
Clutches require 6 Amps @ 12-VDC.
Minimum 11.5-V required at clutch.

H Series



K Series



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

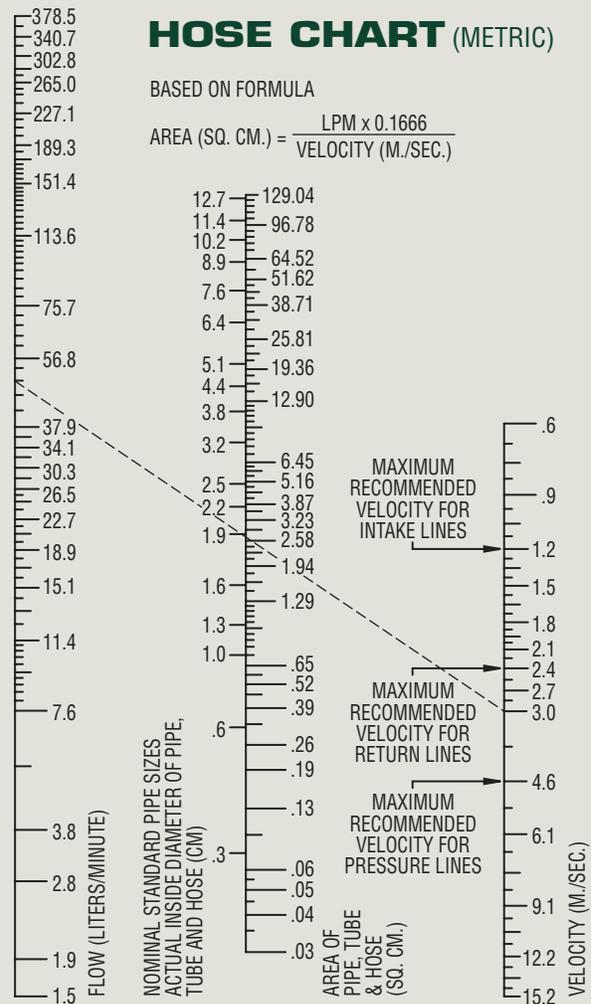
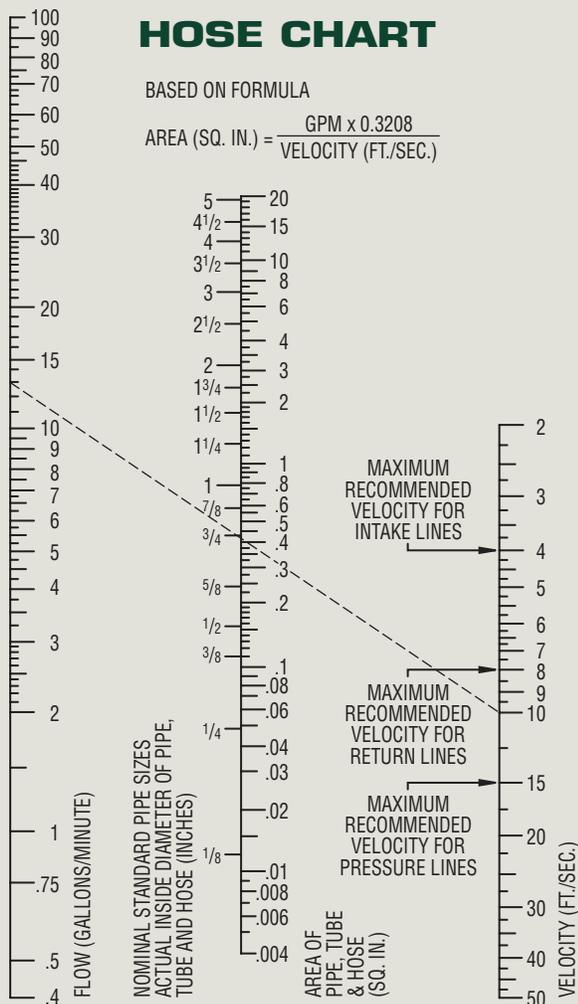
Anti-Wear Additive: .06% Zinc Minimum*

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



TROUBLESHOOTING GUIDE FOR HYDRAULICS

Hydraulic analysis and proper repair require the use of a vacuum gauge and pressure gauge for testing.
Electrical analysis requires using a volt meter for testing.

Possible Pump Trouble	Cause	Cure
Aeration/Cavitation: noisy pump Use vacuum gauge to isolate problem	Low oil supply. Heavy oil / cold oil / wrong oil. Dirty suction strainer. Suction line too small. Restriction in suction line.	Fill to proper level. Change to proper oil. Clean and replace. Increase size. Remove and replace.
Pump takes too long to respond or fails to respond	Low oil supply. Insufficient relief valve pressure. Pump worn or damaged.	Fill to proper level. Use gauge to reset pressure. Repair or replace.
Oil Heating Up	Contamination in relief valve. Oil too light. Dirty oil. Oil level too low. Reservoir capacity too small. Insufficient relief valve pressure or pressure too high. Pump slippage	Remove. Drain and refill with proper oil. Drain, flush, refill with clean oil. Fill to proper level. Install oil cooler. Use gauge to reset pressure. Repair or replace.
Oil Foaming	Air leaking into suction line from tank to pump. Wrong kind of oil. Oil level too low. Improper tank or reservoir baffle. Return line above oil level.	Tighten all connections. Drain & refill w/non-foaming oil. Fill to proper level. Baffle correctly. Install below oil level.
Actuator Slips	Contamination damages control valve and allows check valve to leak. Cylinder or piston packing defective. Valve is cracked. Spool not centering. Incorrect oil. Load check stuck.	Clean out the system. Repair or replace. Replace. Clean contaminants from valve or replace. Replace with correct oil. Open.
Clutch Does Not Engage	Bad electrical connection. Blown fuse. Switch won't activate. Low voltage. Coil bad.	Check wiring, connectors, and source. Replace (9A max) — check for short. Replace switch. Check wiring. Check w/ohmmeter (2.3 ohms) and replace.
Belts Jumping Off	Belts too loose. Belts worn or scratched. Mounting bracket loose. Pulleys misaligned. Drive pulley loose. Diesel vibration/belt slap.	Tighten to specifications. Replace. Tighten or replace bolts. Align properly with straight edge. Tighten. Add back side idler to dampen.
Clutch Slips	Low voltage. Bad ground. Torque overload. Dirt/grease on armature. Armature plate rusted. Pump locked up/damaged.	Check wiring and source. Ground to battery. Reduce flow or pressure. Clean and reburnish. Reburnish. Replace pump.
Clutch Rubs	Pulley bent. Armature plate warped. Coil mounting damaged.	Replace pulley. Replace pulley. Replace coil.



ONE-YEAR PUMP WARRANTY

THE MUNCIE CAST IRON SERIES "H" AND SERIES "K" ARE 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 ONE YEAR FROM 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 BY MUNCIE POWER PRODUCTS, OR IF THE PUMP IS USED UPON ANY EQUIPMENT OTHER THAN THE EQUIPMENT UPON WHICH IT IS FIRST INSTALLED.

AS TO ANY CAST IRON SERIES "H" OR SERIES "K" 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.

Distributed By:



MP89-14 (Rev. 3-05) Printed in the U.S.A.

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