

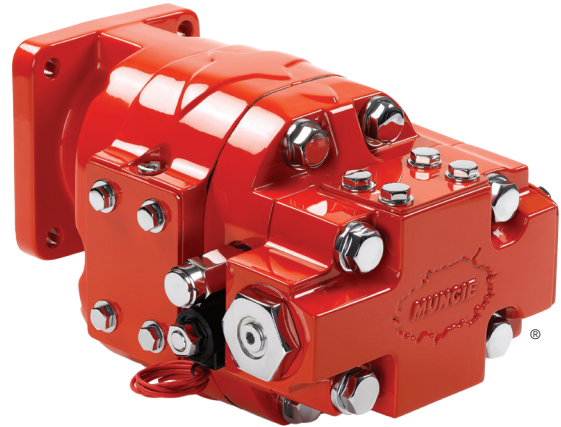
# MLS SERIES M

## LIVE PAK PUMP SYSTEM



### ON DEMAND POWER AT THE FLIP OF A SWITCH

MLS Live Pak is ideally suited for fleets running all routes with either rear loaders, side loaders, or front loaders. Packer efficiency is maximized by allowing the system to operate without electronic or hydraulic overspeed controls, flow controls, or dry valves. All of this is accomplished without fear of hydraulic system saturation and heat build up resulting from overspeed conditions. The user friendly system never shuts down due to overspeed or excess flow.



### KEY FEATURES

- Improved fuel conservation
- Reduced route times for increased productivity and increased profits
- Low unload pressures for minimal system heat generation in the standby mode
- Tamper resistant to prevent operator abuse
- External bypass for less heat generation and inlet flow turbulence
- Continuous oil circulation
- Improved contamination control
- No dry valve or bleed valves
- One component design, no special valve sections required
- Standard gear pump technology requires no special service training
- No pneumatic connections, air valves, or air filters required

### PUMP SPECIFICATIONS

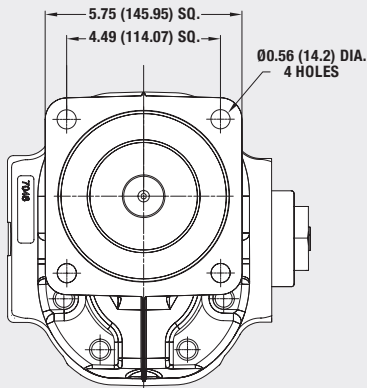
MODEL NUMBER	DISPLACEMENT IN <sup>3</sup> (CC)	MAX RPM	UNLOAD RPM	MIN RPM	MAX PSI (BAR)	MAX INLET VACUUM	WEIGHT LBS (KG)
MLSM 27	6.10 (102)	2,500	3,000	800	3,000 (207)	5 IN HG (.17 BAR)	103 (46.7)
MLSM 31	7.11 (117)	2,500	3,000	800	3,000 (207)	5 IN HG (.17 BAR)	106 (48.0)
MLSM 35	8.20 (132)	2,400	2,500	800	2,750 (190)	5 IN HG (.17 BAR)	108 (49.0)
MLSM 40	9.27 (151)	2,300	2,500	800	2,750 (190)	5 IN HG (.17 BAR)	111 (50.3)
MLSM 44	10.25 (166)	2,200	2,500	800	2,500 (170)	5 IN HG (.17 BAR)	113 (51.2)

Notes:

- Maximum temperature is 200°F (93°C). Non-adjustable pump safety relief valve.

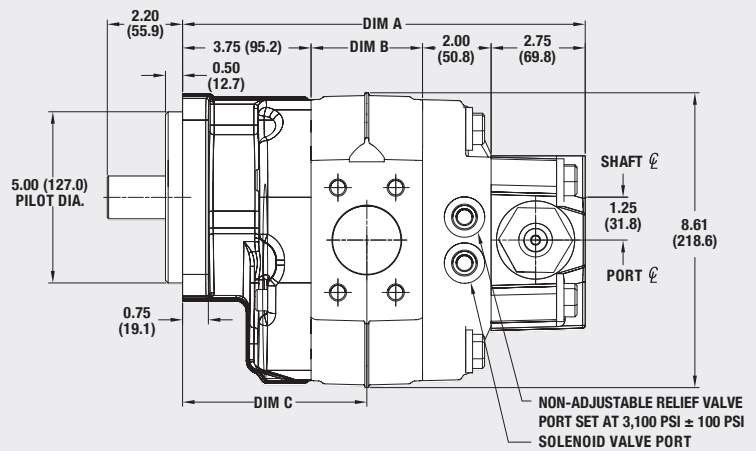
# INSTALLATION DIMENSIONS

Front View



**C FLANGE**  
SAE "C" 4-BOLT  
CCW ROTATION

Profile View

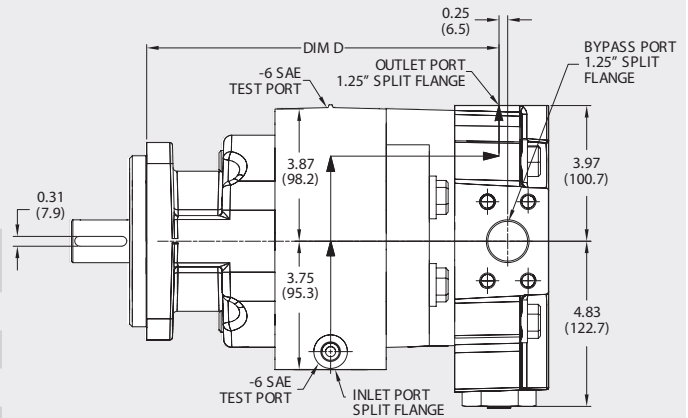


Port Sizes:

MODEL NUMBER	INLET	OUTLET	BYPASS	TEST PORTS
27	1.50" S.F.	1.25" S.F.	1.25" S.F.	-6 O.D.T.
31,35,40,44	2.00" S.F.	1.25" S.F.	1.25" S.F.	-6 O.D.T.

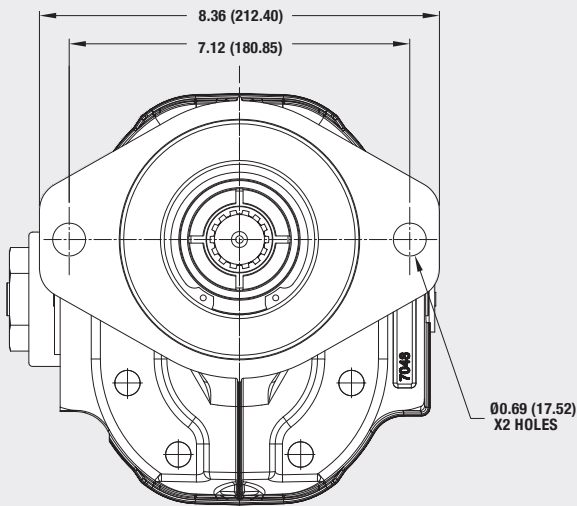
Inches (MM):

MODEL NUMBER	A	B	C	D
27	11.00 (279.4)	2.50 (63.5)	5.00 (127.0)	9.58 (242.8)
31	11.25 (285.8)	2.75 (69.9)	5.12 (130.0)	9.80 (248.9)
35	11.50 (292.1)	3.00 (76.2)	5.25 (133.3)	10.06 (255.5)
40	11.75 (298.5)	3.25 (82.6)	5.38 (136.6)	10.32 (262.1)
44	12.00 (304.8)	3.50 (88.9)	5.50 (139.7)	10.56 (268.2)



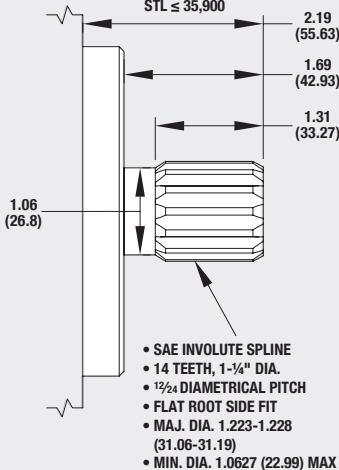
## FLANGE OPTIONS

**L FLANGE**  
SAE "C" 2-BOLT  
CW ROTATION

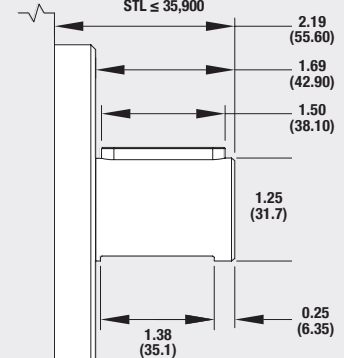


## SHAFT OPTIONS

**05 SHAFT TYPE**  
1/4" - 14T (SAE C)  
STL ≤ 35,900



**07 SHAFT TYPE**  
1/4" - RND. (1/4" KEY)  
STL ≤ 35,900



## SHAFT TORQUE LIMITATIONS

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 by the pump pressure in PSI (IE: D x P = STL).

# PUMP OPERATION AND SELECTION

The pump uses a dual modulating element design to establish a low unload condition of approximately 20 PSI (1 BAR) while returning oil back to the reservoir. Once activated, the low unload condition shuts down and the element varies the flow up to the preset flow limit.

The element compensates to maintain set discharge flow no matter what the pressure requirements. Because the equipment will typically be operating at higher engine RPMs, smaller pumps can now be used. The flow limiter is set for the system's desired flow but sized so the bypass flow is no higher than 50% of the desired control flow.

Example:

Flow required .....40 GPM (151 LPM)  
 Flow.....57 GPM (216 LPM)  
 From 31 GPM (117 LPM) Pump operating at 2,000 RPM  
 Bypass flow.....17 GPM (64 LPM)  
 Subsequently a 40 GPM (151 LPM) flow limiter will be used.

## PUMP OUTPUT

Flow Rate At 2,500 PSI (172 BAR), Measured In GPM (LPM)

MODEL NUMBER	800 RPM	1,000 RPM	1,500 RPM	2,000 RPM	2,400 RPM
MLSM 27	17.9 (67.7)	22.4 (87.7)	35.6 (134.7)	8.8 (184.7)	59.6 (225.6)
MLSM 31	21.1 (79.8)	26.4 (99.9)	41.8 (158.2)	57.2 (216.5)	69.4 (262.7)
MLSM 35	24.3 (91.9)	30.4 (115.0)	48.0 (181.7)	61.0 (230.9)	79.2 (299.7)
MLSM 40	27.7 (104.8)	34.7 (131.3)	54.2 (205.1)	73.7 (278.9)	89.8 (339.9)
MLSM 44	31.2 (118.1)	39.0 (147.6)	60.4 (228.6)	83.2 (314.9)	100.4 (380.0)

## MODEL NUMBER CONSTRUCTION

**MLSM - 27 - 07 C F S L - V - 35**

**Series MLSM:** \_\_\_\_\_

**GPM (LPM) @ 1000 RPM:** \_\_\_\_\_

Model: 27, 31, 35, 40, 44  
(102, 117, 132, 151, 166)

**Shaft Type:** \_\_\_\_\_

05—SAE "C" 1-¼" 14-Tooth Spline  
 07—SAE "C" 1-¼" (31.75) Rd.  
 with 5/16" (7.93) Key

**Mounting Flange:** \_\_\_\_\_

C—SAE "C" 4-Bolt  
 L—SAE "C" 2-Bolt

**Port Type:** \_\_\_\_\_

F—Split Flange  
 1-½" Inlet (27) 1-¼" Outlet (All)  
 2" Inlet (31, 35, 40, 44) 1-¼" Bypass (All)

**Flow Limiter\*:**

00 — No flow limiter  
 25 — 25 GPM (95 LPM)  
 30 — 30 GPM (114 LPM)  
 35 — 35 GPM (132 LPM)  
 40 — 40 GPM (151 LPM)  
 45 — 45 GPM (170 LPM)  
 50 — 50 GPM (189 LPM)  
 55 — 55 GPM (208 LPM)  
 60 — 60 GPM (227 LPM)  
 \* For higher flows call for assistance.

**Live Pak Valve:**

V — Live Pak Pump Control

**Rotation:**

R — CW  
 L — CCW

**Port Location:**

S — Side

## OIL RECOMMENDATIONS

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

- **Viscosity Range:** (ASTM D-88-56) — @ 100°F (40°C) — 173/187 SSU (37 CS)
- **Foam Resistance** (ASTM D-892, Test. Seq. II) [Ref. 210°F (100°C) — Approx. 45 SSU (5.9 CS) Minimum]
- **Viscosity at Startup** [7500 SSU (1,620 CS) Maximum]
- **Viscosity Index** (ASTM D-567-53) — 100°F (82°C) Optimum
- **Rust Resistance** (ASTM D-665-60) — No Rust
- **Gravity** °API (ASTM D-287-64) — 29°F (-2°C) Minimum
- **Corrosion Resistance** (ASTM D-130-65) — Class. 1

- **Flash Point** (ASTM D-92-57) — 400°F (204°C) Minimum
- **Oxidation Stability** (ASTM D-943) — 1,500 Hours Min.
- **Fire Point** (ASTM D-92-57) — 430°F (221°C) Minimum (Ref.)
- **Aniline Point** (ASTM D-611-64) — 180–220°F (82–104°C)
- **Pour Point** (ASTM D-97-57) — 15°F (-10°C) Maximum
- **Anti-Wear Additive** — .06% Zinc Minimum

**Note:** Cold weather operation requires special oil considerations. Viscosity should not exceed 7,500 SSU (1,620 CS) at lowest startup temperature. Continuous operation should range between 60–1,000 SSU (10.5–216 CS) for all temperature ranges.

NEVER dilute the hydraulic fluid for cold weather operation with, including but not limited to, diesel fuel, kerosene, etc.