

# Manzel® Model 76 Pumps

## DESCRIPTION

The Manzel® Model 76 pump is a rugged single-piston pump capable of accurately delivering precise volumes of oil to machinery lubrication points at pressures up to 7500 psi (517 bar).

The Model 76 Pump is designed for use in the Manzel® Model MBL Box Lubricator with half-inch rise cams. The pump is driven from a common camshaft in the MBL reservoir and is adjustable from 1 to 27 drops per stroke. Three (3) pump piston sizes are available from 3/16", 1/4" and 3/8" diameters.

A hardened steel roller following a cam actuates the pump and reduces the torque. The round sight glass well is made of a one-piece injection molded nylon material that is impervious to ultra-violet rays, and is comparable with mineral and synthetic oils.

All working parts are totally enclosed to protect them from dirt, water, and other contaminants and is self-lubricated at all times by the fluid in the MBL Reservoir.

## FEATURES

- Heavy-duty 2 piece steel body construction for high performance and durability
- Hardened steel cam roller, adds to pump and cam life
- Easy serviceability – pumps can be added or removed quickly
- Pump output is easily adjustable
- One piece, injection molded, sight glass for mineral and synthetic oils

## OPERATION

### Pumps with Sight Glass - Suction Type

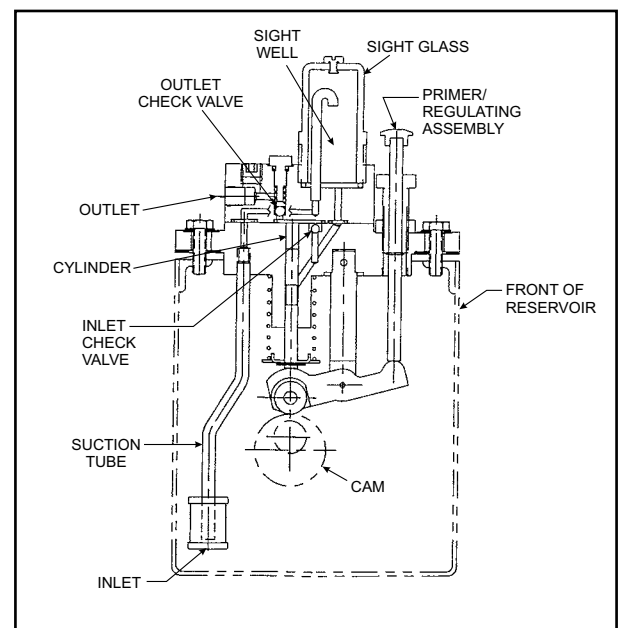
(Refer to Figure 1)

Rotation of the lubricator cam operates the piston pump units in the reservoir. On the pump piston downstroke, lubricant is drawn into the cylinder from the sight well. This creates a pressure reduction (vacuum) in the airtight sight well that causes lubricant from the reservoir to be drawn into the well until the pressure is equalized. On the piston upstroke, the oil in the cylinder is ejected



**Manzel  
Model 76  
Pump**

through the discharge check valve to a machine lubrication point. The number of drops seen falling into the sight well is the amount of oil discharged by the pump. Pump output can be adjusted by means of an external screw. This changes the length of the pump stroke, which changes the pump discharge volume.



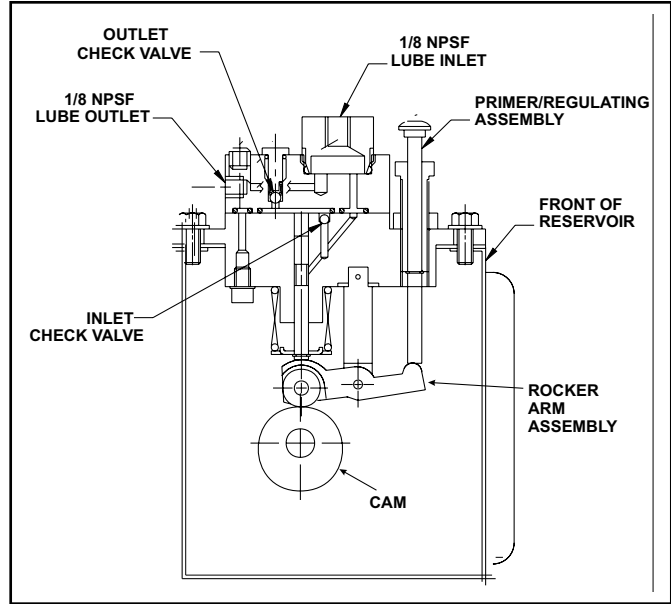
**Suction - Type Pump with Sight Glass**

**Figure 1**

**Pressurized Suction & Gravity Feed-Pumps**

(Refer to Figure 2)

Rotation of the lubricator cam actuates the pump rocker arm assembly to operate the pump piston. On the downstroke, spring pressure is exerted on the piston causing it to follow the cam. As it moves down, a pressure reduction (vacuum) is created between the piston and the discharge check valve causing the check valve to close. This allows the pressurized supply of oil to unseat the supply inlet shut-off ball and pressurize the piston bore with lubricant. On the piston upstroke, the piston forces the supply inlet to seat and shut off the pressurized supply. Lubricant in the piston cylinder is forced out through the discharge check valve to the machine lubrication point. Pump output can be adjusted by means of an external screw. This changes the length of the pump stroke, which changes the pump discharge volume.



**Gravity - Feed Pump**

**Figure 2**

<b>MODEL 76 VACUUM PUMP WITH SIGHT GLASS &amp; SUCTION TUBE</b>										
<b>Part No. (Old Part No.)</b>	<b>Piston Size inches (mm)</b>	<b>Max Pressure psi (bar)</b>	<b>Drops Per Stroke</b>		<b>Cubic Inches Per Stoke</b>		<b>Cubic cm Per Stroke</b>		<b>Strokes Per Minute</b>	
			<b>Min</b>	<b>Max</b>	<b>Min</b>	<b>Max</b>	<b>Min</b>	<b>Max</b>	<b>Min</b>	<b>Max</b>
562953 (376-000-000)	3/16 (4.8)	7500 (517)	1	6	0.002	0.013	0.033	0.213	3	50
562955 (376-000-010)	1/4 (6.4)	6000 (414)	2	12	0.004	0.024	0.066	0.393	3	50
562957 (376-000-030)	3/8 (9.5)	2500 (172)	4	27	0.008	0.055	0.131	0.901	3	50



<b>MODEL 76 VACUUM PUMP WITH 7/8 IN SHORT SUCTION TUBE &amp; 1/8 IN NPTF VERTICAL OUTLET ADAPTER</b>										
Part No. (Old Part No.)	Piston Size inches (mm)	Max Pressure psi (bar)	Drops Per Stroke		Cubic Inches Per Stoke		Cubic cm Per Stroke		Strokes Per Minute	
			Min	Max	Min	Max	Min	Max	Min	Max
562959 (376-000-040)	3/16 (4.8)	7500 (517)	1	6	0.002	0.013	0.033	0.213	3	50
562960 (376-000-050)	1/4 (6.4)	6000 (414)	2	12	0.004	0.024	0.066	0.393	3	50
- (376-000-070)	3/8 (9.5)	2500 (172)	4	27	0.008	0.055	0.131	0.901	3	50



<b>MODEL 76 PRESSURIZED SUPPLY PUMP (WITHOUT SIGHT GLASS)</b>										
Part No. (Old Part No.)	Piston Size inches (mm)	Max Pressure psi (bar)	Drops Per Stroke		Cubic Inches Per Stoke		Cubic cm Per Stroke		Strokes Per Minute	
			Min	Max	Min	Max	Min	Max	Min	Max
562961 (376-000-120)	3/16 (4.8)	7500 (517)	1	6	0.002	0.013	0.033	0.213	3	50
562963 (376-000-130)	1/4 (6.4)	6000 (414)	2	12	0.004	0.024	0.066	0.393	3	50
562965 (376-000-150)	3/8 (9.5)	2500 (172)	4	27	0.008	0.055	0.131	0.901	3	50



**MODEL 76 VACUUM PUMPS - FOR ALARM WITH 1/2 IN SHORT SUCTION**

Part No. (Old Part No.)	Piston Size inches (mm)	Max Pressure psi (bar)	Drops Per Stroke		Cubic Inches Per Stoke		Cubic cm Per Stroke		Strokes Per Minute	
			Min	Max	Min	Max	Min	Max	Min	Max
- (376-000-160)	3/8 (9.5)	2500 (172)	4	27	0.008	0.055	0.131	0.901	3	50

**MODEL 76 VACUUM PUMPS - FOR ALARM WITH 7/8 IN SHORT SUCTION**

Part No. (Old Part No.)	Piston Size inches (mm)	Max Pressure psi (bar)	Drops Per Stroke		Cubic Inches Per Stoke		Cubic cm Per Stroke		Strokes Per Minute	
			Min	Max	Min	Max	Min	Max	Min	Max
- (376-000-170)	3/8 (9.5)	2500 (172)	4	27	0.008	0.055	0.131	0.901	3	50

**NOTE:**

1. Pump output specifications are based on 500 SUS oil at 70°F ambient. Heavier oil will produce fewer but larger drops.
2. When approaching maximum outputs, some oils will stream rather than form drops in sight glass.
3. For operating pressures over 50% of the rated maximum, consult the factory.
4. A lowable viscosity range independent of temperature: 80-5000 SUS.
5. Maximum allowable inlet pressure: Pressurized pump, 100 PSI; Pressurized pump with sight glass, 10 PSI.

**NOTE:** Any static positive pressure applied to the pump inlet has the potential to cause leakage flow through a pump at rest or adjusted for zero stroke unless offset by a check valve of comparable pressure rating located at the pump outlet.

**ORDERING INFORMATION**

Description	Part No.	Old Part No.
Sight Glass Kit, Nylon, Sight Glass, O-Ring & Vent Screw	-	560-000-200

All written and visual data contained in this document are based on the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.

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