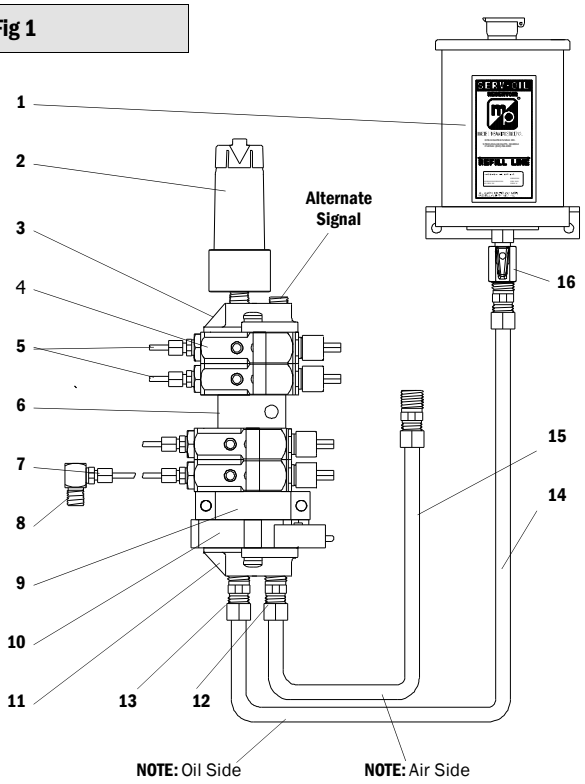
SERV-OIL Multiple Point Lubricator (MPL)

JM/FS 2-28-00
Rev: 05-07-10

MASTER PNEUMATIC - DETROIT, INC.
6701 -18 Mile Rd. | Sterling Heights, MI 48314 | Phone: (586) 254-1000 | Fax: (586) 254-6055 | Email: mp@masterpneumatic.com

Fig 1



The **SERV-OIL** remote mount Multiple Point Lubricator is a modular system which can consist of up to 10 Servo-Meters *(recommended maximum)* capable of lubricating one point each. An assembly of four is shown in fig.1. Lubricant supply may be fed in from top or bottom ¼" ports, *(the bottom port is preferred to allow venting air from oil).* When an air pulse is received from the control valve the Servo-Meters actuate and inject oil. The oil is delivered through 1/8" nylon tubing to the device being lubricated. For a pulsing air source, tee in downstream of an air control valve that operates on a regular sequence with the pneumatic circuit or machine; for example, a valve that operates once every time a part is made. **SERV-OIL** check valves should be installed in pipe tees immediately before the devices being lubricated, or directly in line, as close to point of service as possible to insure a solid column of oil is being maintained.

1 Oil reservoir. See **SERV-OIL** catalog for selections.
2 Sight dome for manually venting air when you use a remote reservoir and to give visual confirmation of oil in Servo-Meters. Part 482R.
3 Mounting clamp. 474-13M
4 Servo-Meter 7001##4B-@ available in 1, 2 or ½ drop. For sizes see **SERV-OIL** catalog.
5 1/8" oil delivery line. 00942M order by meter.
6 Optional block plate. See **SERV-OIL** catalog.
7 Tube connector. 00142W
8 Ball check valve. See **SERV-OIL** catalog for types and pipe threads.
9 Mounting plate. 474-10M.
10 Pneumatic pulse counter. A418-04M.
11 Mounting clamp. 474-13M.
12 Tube connector. 00184W *(air).*
13 Tube connector. 001124W *(liquid).*
14 3/8" nylon liquid supply line. 009126-M order by meter.
15 ¼" Air signal line 00984M, order by meter.
16 476-40 Ball valve

Installation and Start—Up Procedures

Fig 2

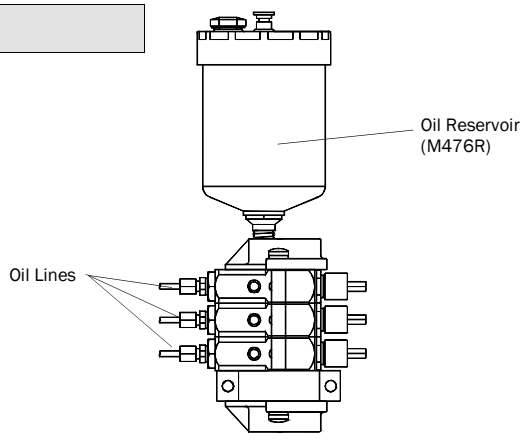
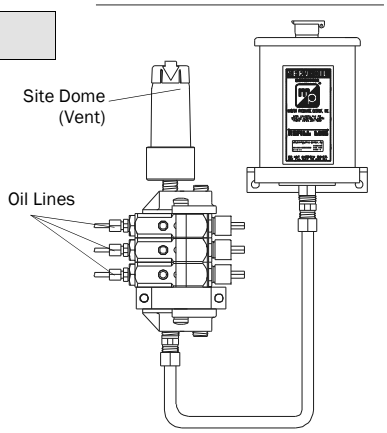


Fig 3



1. If a gravity feed reservoir is used, *(gravity feed is recommended),* install reservoir higher than Multiple Point Lubricators (FIG. 1). If using a pressurized system do not exceed a pressure of 30 P.S.I..
2. Multiple Point Lubricators are easily mounted to a plate or machine with two ¼" bolts.
3. Connect OIL supply to top or bottom *(1/4-18 NPTF*) port in the mounting block. Bottom port is normally recommended.
4. Connect AIR signal line to the bottom *(1/4-18 NPTF)* port in the mounting block when using a pneumatic counter. When not using a pneumatic counter, the AIR signal can be supplied from top or bottom. The air signal should be from the normally unpressurized side of a control, valve.
5. Install oil introduction tees immediately ahead of each device to be lubricated. Oil should be introduced at both ends of horizontally mounted cylinders and rod end of vertically mounted cylinders. Cylinders mounted vertically with the rod facing down, apply oil at blank *(back)* end. Oil is normally introduced at both cylinder ports if stroke exceeds 11 inches.

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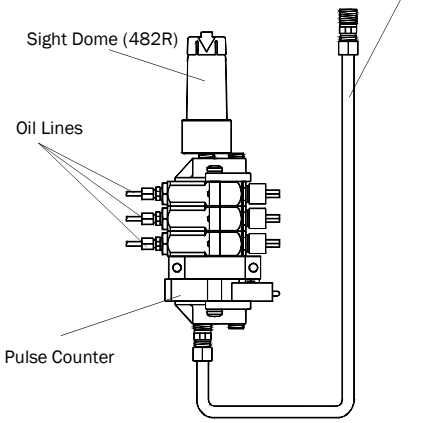
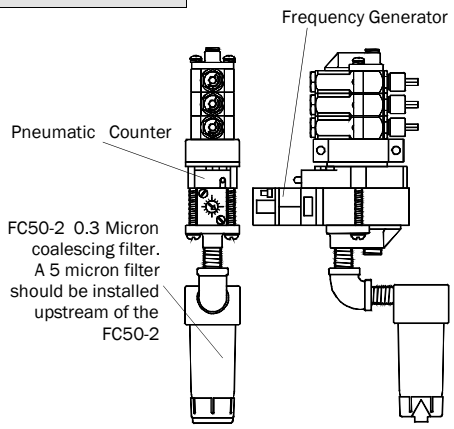
Installation and Start—Up Procedures

Fig 4



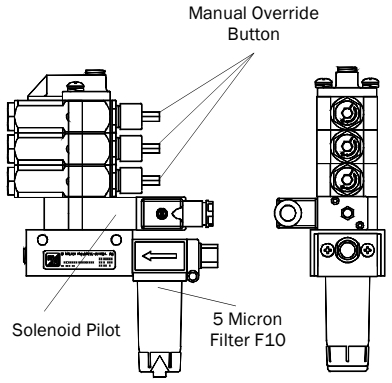
MODEL # 71003104B-C
With 482R sight dome.

Fig 5



MODEL # 71003104B-F
With frequency Control

Fig 6



MODEL # 7A003104B2160
With electrical connection Solenoid Actuated

6. Fill the reservoir with oil *(or connect into the central oil supply).*

7. Install the check valves at the oil introduction pipe tees and attach to prefilled oil delivery lines.

8. Using compression fittings, attach the oil delivery lines to the Servo-Meters. Tighten compression fittings at the Servo-Meters and at the check valves. NOTE: The **SERV-OIL** system is a hydraulic system and all fittings must be absolutely free of leaks.

9. Air venting is strongly recommended for convenience at start-up and also to eliminate air entrapment if a reservoir is allowed to run dry. Air venting is achieved by installing standpipes *(Fig 3)* or manually vented sight dome *(Fig 4).* When venting with sight dome, after installation is complete and oil is added push down on push knob until liquid is visible.

   When venting with a Stand Pipe.
   Stand pipes must be extended higher than the top of the reservoir *(Fig. 3).* Stand pipe venting is automatic when the **SERV-OIL** system is assembled and oil is added, the venting is achieved by gravity. If a standpipe or a manually vented sight dome is not used, it is essential to bleed all air from the oil supply to the Multiple Point Lubricator by loosening the plug in the alternate oil supply port. Oil should be allowed to run until the supply is completely free of all air bubbles.

10. With the adjustment knob in the full clockwise position *(maximum output)*, operate the equipment being lubricated, or push the manual override button, until oil appears at the outlet of the Servo-Meters. This is to ensure elimination of any remaining air in the Servo-Meter oil metering chamber. Normally 25 to 50 operations will be required. If oil does not appear at the outlet of the Servo-Meters, bleed the oil supply again as described in instruction 9 above.

11. Operate the machine or equipment being lubricated. Manual override buttons should actuate every time the control valve is being used as an air signal source is operated. If a pneumatic counter is used in the circuit, manual override buttons actuate once every 1, 5, or 10 cycles of the air signal valve, depending upon the setting on the pneumatic counter.

12. A precise amount of oil can be delivered to most components. Servo-Meters should be adjusted to provide the maximum amount of oil that can be used without contamination or operator objections. Most valves and cylinders are well lubricated with a 10 to 30 counterclockwise click setting of the adjusting knob. Small cylinders and those operating at a rate of 50 cycles per minute or more, require less oil per injection. Valves and cylinders operating infrequently may require a full drop of oil per cycle. Normal adjustment setting for multiple spindle air tools is 30 to 40 counterclockwise clicks. Shut-off occurs between 46 and 50 counterclockwise clicks *(on shut off models only).* These numbers are based on the use of a one drop SERVO-METER. The inclusion of an inexpensive pulse counter provides 5 to 10 times the adjustment.

13. If a control valve or an on / off air signal is not available, a frequency generator can be used *(Fig 5)* to provide needed signal. A frequency generator converts a constant air supply into an on and off signal. Frequency generators will be assembled and tested complete with filter at Master Pneumatic as part of a purchased Serv-Oil system.

14. Master Pneumatic has recently introduced an electronic version *(7A0 series)* of the Multiple Point Lubrication system. This version can easily be interfaced with your machine, the solenoid unit can be actuated by a PLC output. The 7A0 series is assembled and factory tested complete with a 5 micron filter. *(FIG 6)*

15. Additional Serv-O-Meter kits can be ordered to add or replace in modular Multiple Point Lubricator assemblies. *(FIG 7)*

16. Mounting block assemblies can also be ordered along with Serv-O-Meter kits to construct Multiple Point Lubricator assemblies. *(FIG 8)*

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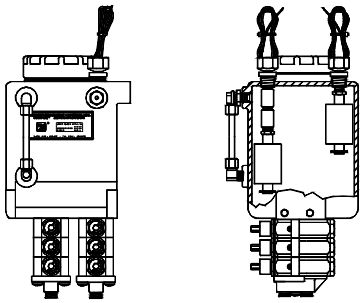
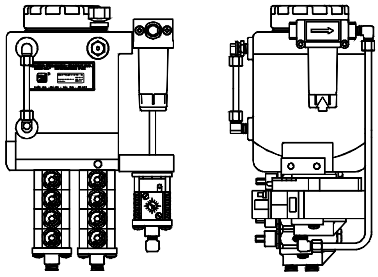
Fig 9



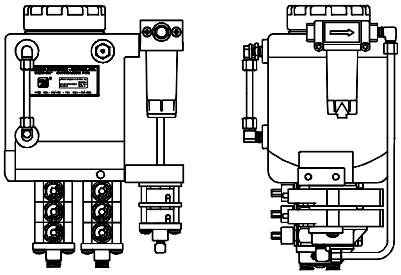
MODEL # 73006104B-GG

Fig 10



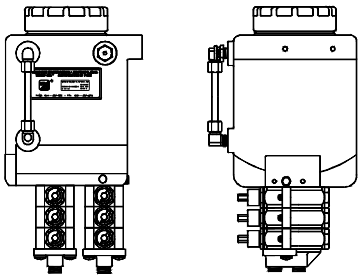
MODEL # 73008104B-F

Fig 11



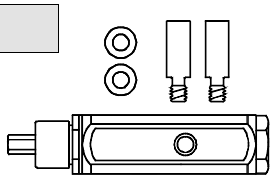
MODEL # 73006104B-CC

Fig 12



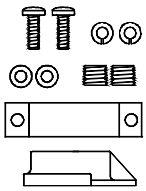
MODEL # 73006104B

Fig 7



SERVO-METER KIT

Fig 8



MOUNTING KIT

Model 730##4B-@** *(Fig 12)*

SERV-OIL Automation Pac is a self-contained, heavy duty; lubrication system designed to supply a precise amount of lubrication to an exact area. The Automation Pac has a built in, half-gallon reservoir and a vented fill cover with filter screen. The Auto Pac will provide precise lubrication for valves, cylinders, fixtures, automation equipment, machine tools and most any wear points. Up to 20 Servo-Meters can be operated with one pneumatic signal. Servo-Meters can be ordered with a maximum oil delivery of ½, 1 or 2 drops, each Servo-Meter can be adjusted to deliver 1/10th of it's maximum output, or optionally with suffix "A" to zero.

Model 730##4B-CC** *(Fig 11)*

Model with "CC" suffix comes factory equipped with two pneumatic pulse counters and a .3 micron coalescing filter. The addition of the two pneumatic counters allows the user to program the frequency of the Servo-meters. The Servo-meters can be programmed to inject every 1, 5, 10, 25, 50 or 100 cycles.

Model 730##4B-F** *(Fig 10)*

Model with the "F" suffix comes equipped with a frequency generator, one pulse counter and a .3 micron coalescing filter. The frequency generator is used when an on off air signal is not available, the frequency generator takes a constant air supply and converts it to an on/off air signal, the frequency generator, when used with pneumatic pulse counter, can be adjusted to actuate the Servo-meters from once every second to once every five minutes.

Model 730##4B-G** *(Fig 9)*

Model with "G" suffix is available with all above options and the addition of a low-level switch, the "GG" suffix indicates a high-low level switch. For example part number 73004104B-CCGG would include, 4 one drop Servo-Meters, two pulse counters and a high low level switch.

Installation and Start—Up Procedures

Installing: Model 730##@@4B

1. Bolt the entire assembly to a mounting plate, using 7/16-14 threaded mounting holes on 4-1/8" centers on rear of reservoir.
2. Select a control valve for signaling that operates in a consistent sequence with the Pneumatic circuit or equipment being lubricated. Install a **filtered** air line, from the control valve to the Auto Pac supply port. Signal pressure must be 60 P.S.I. minimum to 150 P.S.I. maximum.
3. Install compression fittings, pre-filled capillary tube, and ball checks where required.
4. It is recommended that before you connect compression fittings to ball checks that oil lines are completely purged and free of air. This can best be accomplished by adjusting each Servo-Meter to full volume, (turn clockwise to increase volume), and cycling system until air is no longer present. Next attach compression fittings to ball checks and adjust each Servo-Meter to desired output.

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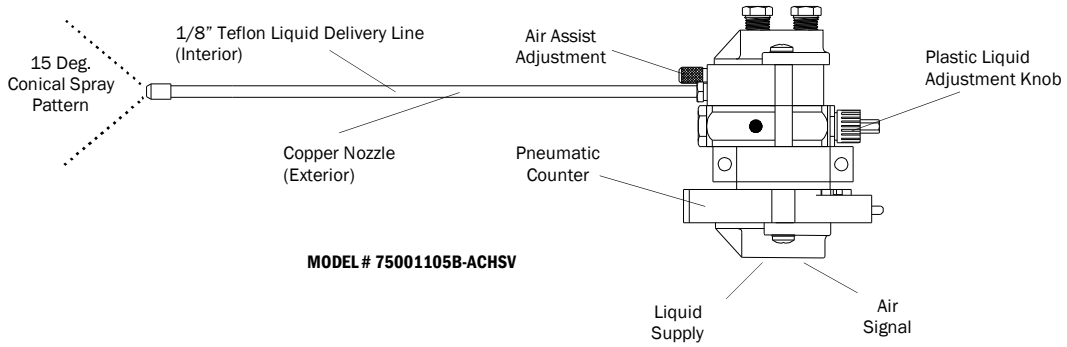
SERV-OIL- The 750 series Jetmaster liquid dispenser is another one of the Master Pneumatic precision liquid application devices. The Jetmaster can produce a 15 degree conical spray to distances up to 10 inches. The amount of liquid can be precisely controlled by the injector adjustment knob, to a minimum of 1/20th of a drop to a maximum of 2 drops per cycle, per meter. The liquid is passed through a 1/8" teflon tube located inside the rigid copper nozzle. The Jetmaster requires an on-off air signal, minimum pressure of 60 P.S.I. (4 bar), and a maximum of 125 P.S.I. (10.5 bar).

To adjust liquid, use plastic liquid adjustment knob, clockwise to increase and counter clockwise to decrease. The air metering screw will control the air assist mode, the amount of air to be passed through the air chamber, (the area outside the 1/8" teflon tube and inside the copper nozzle).



The Jetmaster comes standard with a 12" rigid nozzle and viton seals on the liquid portion of the Serv-O-Meter. Other options include longer lengths for nozzle up to 36 inches, also the nozzles are available in flexible plastic and flexible steel. The Serv-O-Meters are available with maximum output of 1/2, 1 or 2 drops for each activated cycle, viton seals (fluorocarbon) on the liquid end are standard on all Serv-O-Meter pumps. A pneumatic pulse counter can also be added to the Jetmaster assembly to give the operator the ability to set the frequency of the spray to once every, one, five, or ten cycles, (See page 2 step 10). The recommended maximum for injectors per assembly is five.

For more information on liquid spray systems ask for literature on the Master Pneumatic Scorpion and Scorpion Jr.