



A6404†* & A6406†* Installation and Maintenance

MASTER PNEUMATIC

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

07-29-08
REV MJF 06-19-14
ECN 4949

THANK YOU!

You have just purchased a quality Serv-Oil Single Point Lubricator from Master Pneumatic.

With care in its installation and maintenance, you can expect it to have a long and economical service life.
Before you go any further, please take a few minutes to look over this information,



Installation & Operation Procedures

The Serv-Oil Single Point Lubricator with Integral Reservoir

Operating Principle:

A 3-way flow sensing valve opens and pressurizes a pneumatic counter each time an air flow is initiated. When air flow stops, the valve closes and exhausts air from the counter. The counter may be set to pressurize an adjustable servo-meter every cycle, every 5th cycle or every 10th cycle. When the servo-meter is pressurized, oil is injected into an 1/8th" pre-filled nylon tube that is connected to the lubricator outlet and runs inside the air hose to the tool. The amount of oil dispensed when the servo-meter is actuated may be adjusted down to 1/10th of full volume on the 1/2 and 1 drop servo-meters. The adjustment for the 2 drop version is 3/10th of full volume. (Shut off models are also available)

MODEL	PORTS	AIR PRESSURE		OIL SUPPLY		MIN FLOW		RATED FLOW W/ 3 PSI DROP AT 100 PSIG
		PSIG	BAR	PSIG	BAR	SCFM	LITERS/S	
A6404†*	1/2"	60-150	3-10.2	0-30	0-2	5	10.6	60SCFM 127 L/S
A6406†*	3/4"	60-150	3-10.2	0-30	0-2	5	10.6	100SCFM 212 L/S

Installation:

1. Install a filter or filter and regulator before the Serv-Oil Single Point Lubricator.
2. Lubricator has been factory tested with oil. However any air introduced from the oil supply must be evacuated. Follow these start-up procedures:
 - A) Manual fill reservoirs: Fill reservoir with clean oil using the Q Cap or by removing the Q Cap and filling through the port, fill to the O-Ring. Loosen metal pipe plug in oil supply port and drain oil until all air is removed. Make sure both sides of the Servo-Meter Housing are plugged. Open vent on top of reservoir.
 - B) Central Oil Supply: Oil supply tubing to Servo-Meter Housing must be 3/8" O.D minimum. This is essential to prevent air lock. If oil supply runs dry and air enters central oil supply system, start-up procedures must be repeated.
 - C) Manually or pneumatically actuate the lubricator until there is no air present in the capillary tube.
3. Remove red protective cap from barbed fitting in outlet of the lubricator. Push the Manual Override Button several times until oil appears at the fitting.
4. Remove the red cap from one end of the nylon tube and connect to barbed fitting using the following procedures:
 - A) Make a square cut at end of nylon tube using a proper tube cutter.
 - B) Hold tube with M/P modified needle nose pliers (Part # 456-147M). Push and wiggle tube onto barbed fitting until it bottoms out. **Note:** Check Valve holder tool (Part# 456-148) can also be used to hold the brass barb (Part# 420-143) after it is removed from outlet side of Single Point Lubricator.

NOTE: Master Pneumatic offers optional Coaxial Fitting to simply this process.

5. Remove red cap from other end of the 1/8" nylon tube. Cut tube 3-4" shorter than air tool hose as some hoses contracts when pressurized.
 - A) An Internal Check Valve (Part # 420-160) must be used. Install at tool end of nylon tube using M/P modified needle nose pliers (Part # 456-147M) and procedures as described in (6) above. M/P recommends using Check Valve holder tool (Part# 456-148) and modified needle nose pliers (Part# 456-147M) for installing Check Valve on nylon tube.
 - B) Feed tube through hose by pushing and shaking hose or using electricians snake.
6. Connect air tool to air hose and pressurize assembly. Cycle tool until oil appears at tool exhaust. The yellow counter indicator should move out and in with each tool cycle. The manual override button should go in every 5 tool cycles at factory setting, or every 1, 5 or 10 tool cycles if counter has been field adjusted.
 - A) To eliminate any transient air from the system, it is desirable to operate the tool during the first few hours of production with the adjustment at factory setting. However be prepared to readjust units, as some complaints of over-lubrication of smaller tools may result.



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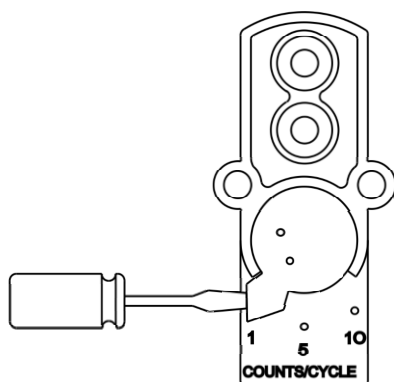
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Installation & Operation Procedures

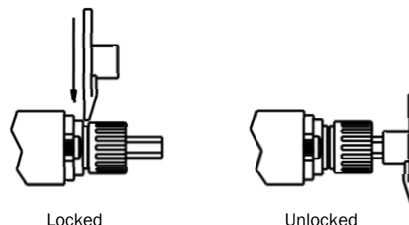
Pneumatic Counter Adjusting Instructions: A418-04M Adjustable Counter:

1. Use small screwdriver to move the lever as shown. The switch is pre-set to operate the servo-meter every 5th tool cycle. If the indicator is moved to #1 setting the servo-meter will be actuated every tool cycle. If moved to the #10 setting, the servo-meter will be actuated every 10th tool cycle.
2. Use adjusting key to adjust oil volume per servo-meter actuation. It is pre-set to deliver 1 full drop and may be adjusted downward to a minimum of 1/10 drop.
3. Adjustment instructions for various tool sizes are provided on the tag attached to each SPL.



Adjustment Knob Locking Instructions:

To put volume control knob into locked position, push on knob until click is felt. To unlock, wedge 457-34 key between volume control knob and shoulder until click is felt. Volume control knob will rotate freely. Use hex socket on key 457-34 to turn manual override button clockwise for more oil and counterclockwise for less oil, or turn volume control manually.



Adjustment Data

MODEL NO	OIL DELIVERY (MAX)	OIL DELIVERY (MIN)	DROPS/ CLICK
A64045*	½ Drop/Cycle	.05 Drop/Cycle	0.01
A64041*	1 Drop/Cycle	.1 Drop/Cycle	0.02
A64042*	2 Drop/Cycle	.6 Drop/Cycle	0.04
A64065*	½ Drop/Cycle	.05 Drop/Cycle	0.01
A64061*	1 Drop/Cycle	.1 Drop/Cycle	0.02
A64062*	2 Drop/Cycle	.6 Drop/Cycle	0.04

Adjustment Recommendation:

A lube rate of 1drop/20 std. Cu. Ft. of air used is recommended. Use formula to calculate.

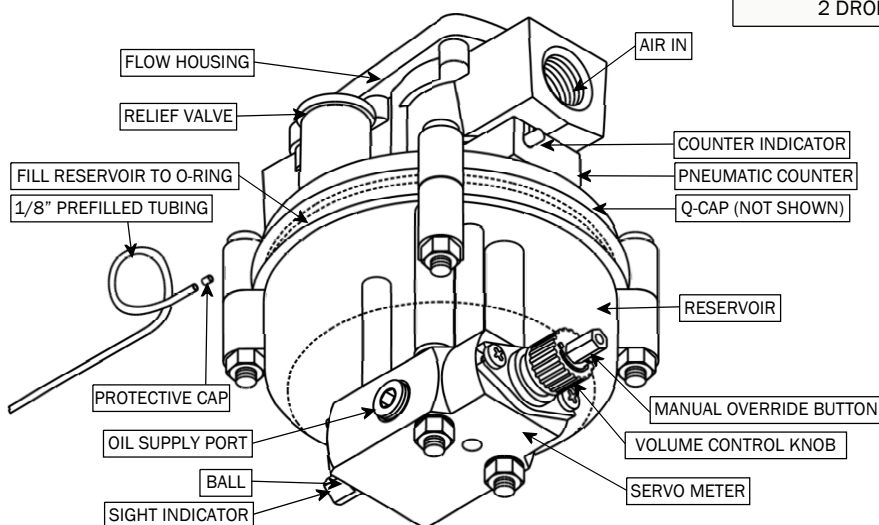
$$\text{Drops/Cycle} = \frac{\text{Air Consumption (SCFM)} \times \text{Duty Cycle (Sec.)}}{1200}$$

$$1 \text{ DROP} = 1/30\text{cc} (0.030 \text{ ml})$$

Recommended oil viscosity: 31 to 1000 SUS @ 100°F. For other viscosities, contact Master Pneumatic.

Drop Conversion chart

1/2DROP	1/60cc	0.015 ml
1 DROP	1/30cc	0.030 ml
2 DROP	1/15cc	0.060 ml





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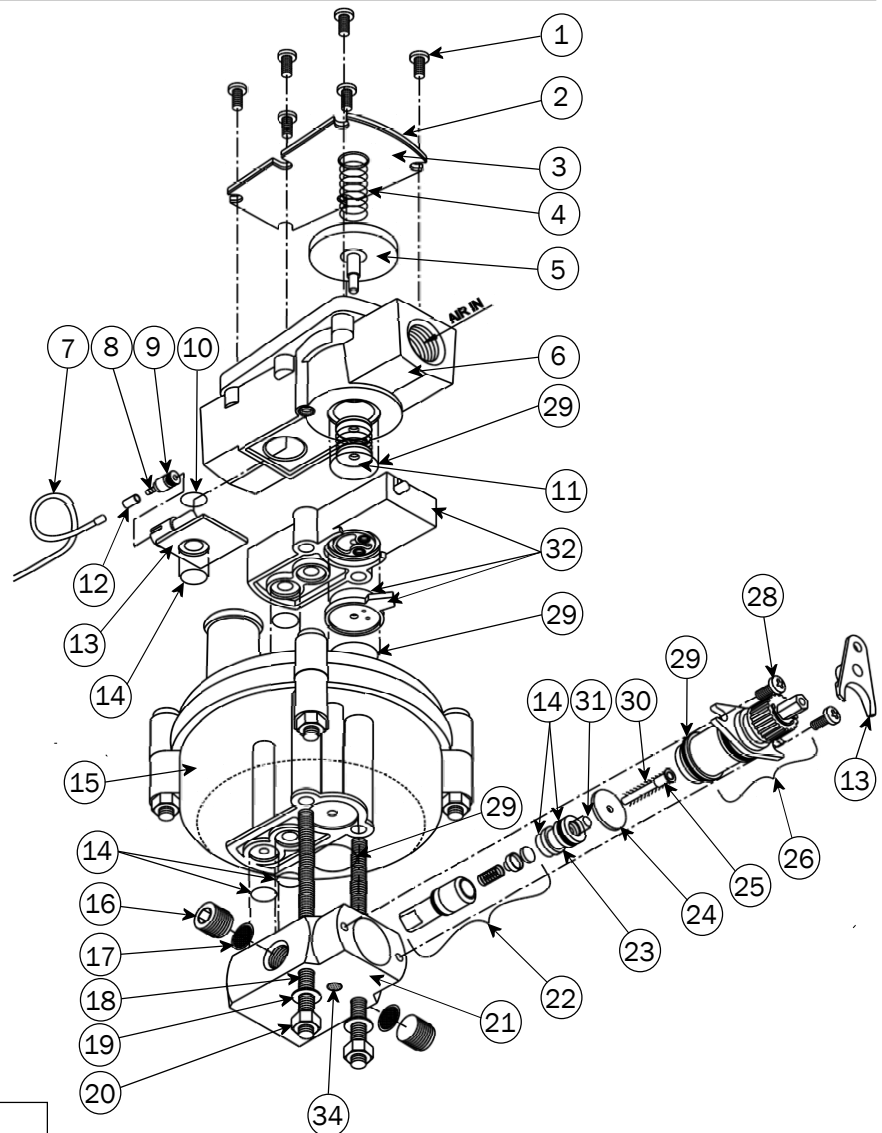
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Parts List

Section View

KEY	DESCRIPTION	PART #
1	SCREW	29-17
2	PLATE	M420-02
3	GASKET	M420-03
4	SPRING	415-21
5	SENSING DISC ASSY	A420-165
6	HOUSING	M420-01-Δ
7	OIL DELIVERY LINE	A-00942M
8	OIL TUBE ADAPTER	420-143
9	O-RING	37-22PL
10	O-RING	103-95
11	POPPET ASSY	A420-09
12	CAP	02731
13	OIL TUBE CONNECTOR	420-142
14	O-RING	456-79
15	BOWL ASSEMBLY	PA420-22N
16	ALLEN PLUG	01986DM
17	SCREEN	420-60
18	TIE ROD	420-147
19	LOCK WASHER	420-120
20	NUT	10030
21	SERVO-METER HOUSING	457-40S*
22	SIGHT INDICATOR KIT	KA456-72
23	METERING INSERT	457-12-‡1
24	WASHER	457-11M
25	METERING PIN/ASSY	►
26	END CAP ASSY	A457-42MM
27	KEY	457-34
28	SCREW	60L-05
29	O-RING	33-80
30	RETURN SPRING	456-10A
31	O-RING	§
32	COUNTER ASSY	A418-04M
33	Q'CAP (NOT SHOWN)	A476-32L
34	FILTER	452-18


Torque Nuts (#20)
20-30 in-lbs.

Δ = 1/2 FOR 1/2-14 NPTF, 1/2W FOR 1/2-14 BSPP
 3/4 FOR 3/4-14 NPTF, 3/4W FOR 3/4-14 BSPP
 ► = 456-114-5 FOR HALF DROP SERVO-METER, A456-116 FOR ONE DROP SERVO-METER, 456-114-2 FOR TWO DROP SERVO-METER
 § = 456-110 FOR HALF DROP SERVO-METER, 37-22PL FOR ONE DROP SERVO-METER, 456-111PL FOR TWO DROP SERVO-METER
 ‡ = 5 FOR HALF DROP SERVO-METER, 1 FOR ONE DROP SERVO-METER, 2 FOR TWO DROP SERVO-METER
 * = "W" FOR BSPP THREADS, "J" FOR BSPT THREADS (NPTF STANDARD)

Replacement Part and Accessories

Part Number	Description
PA457-40S-‡*	Servo-Meter Assembly (Sensing Disc Assembly, Servo-Meter Housing, Sight Indicator Kit, Meter Insert, Washer, End Cap Assy, Metering Pin Assy, Springs, Filter, and O-Ring)
PA420-22N	Bowl Assembly (Vent Valve, Strainer, Cover, Bowl, Q-Cap, Spring, Fastener, Nuts, Screws, Tie Rod, Lock washers, and O-Rings)
PAM420-01-Δ	Housing Assembly (Housing, Gasket, Cover Plate, Oil Connector, Oil Tube Adapter, Screws, Spring, and O-Rings)
A420-09	Poppet Assembly (Poppet and Spring)
A418-04M	Counter Assembly (Counter Switch, Housing, Ball, Springs, Ratchet Plate, Cartridge, Piston, Retainer, Yellow Cap Plug, and O-Rings)
A457-42MM	End Cap Assembly (Override Indicator, Adjusting Screw, Adjusting Knob, Piston, End Cap, Insert, U-Cup, and O-Ring)
A420-165	Sensing Disc Assembly (Sensing Disc, Grommet, and Valve Stem)
KA456-72	Sight Indicator Kit (Indicator Housing, Sight Dome, and Indicator Ball)
420-160	Check Valve
456-147M	Bent Nose Pliers
456-148	Check Valve Installation Tool