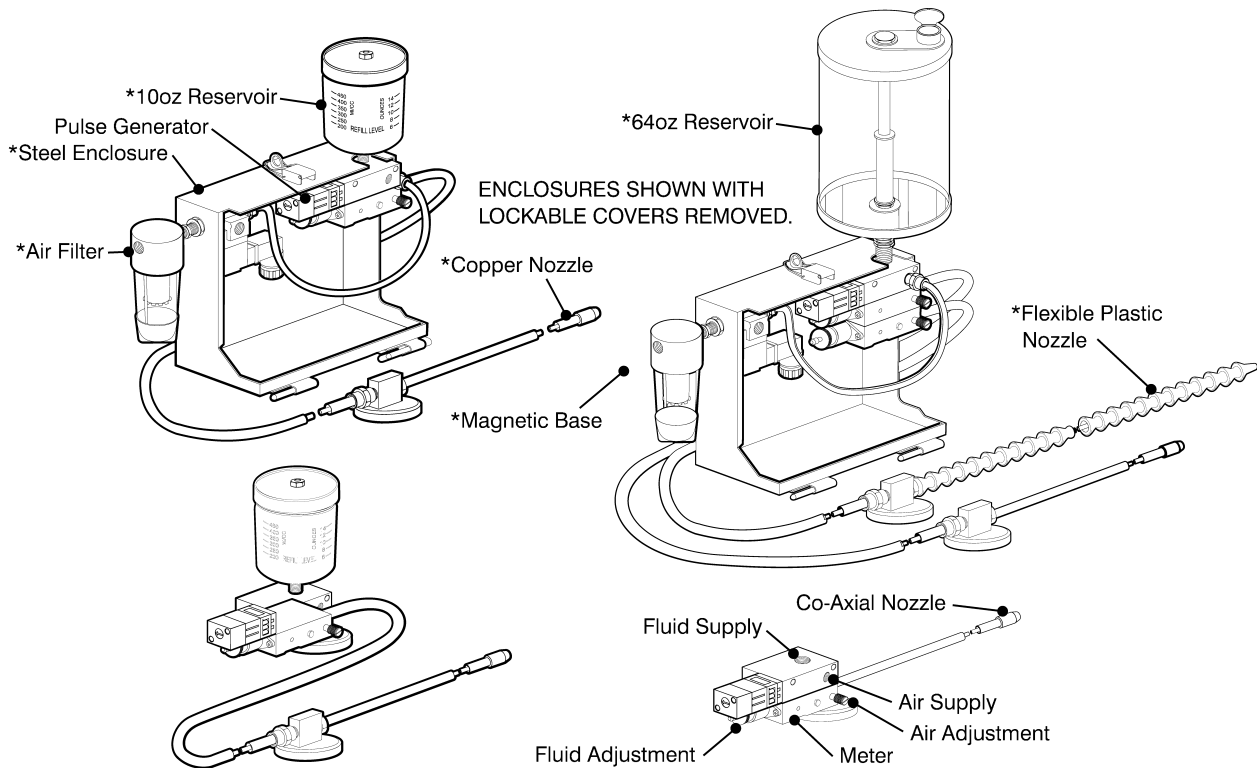




COOLUBRICATOR

TYPICAL CONFIGURATIONS



* CONFIGURATION OPTIONS

BASIC COMPONENTS AND FUNCTION

DESCRIPTION OF OPERATION:

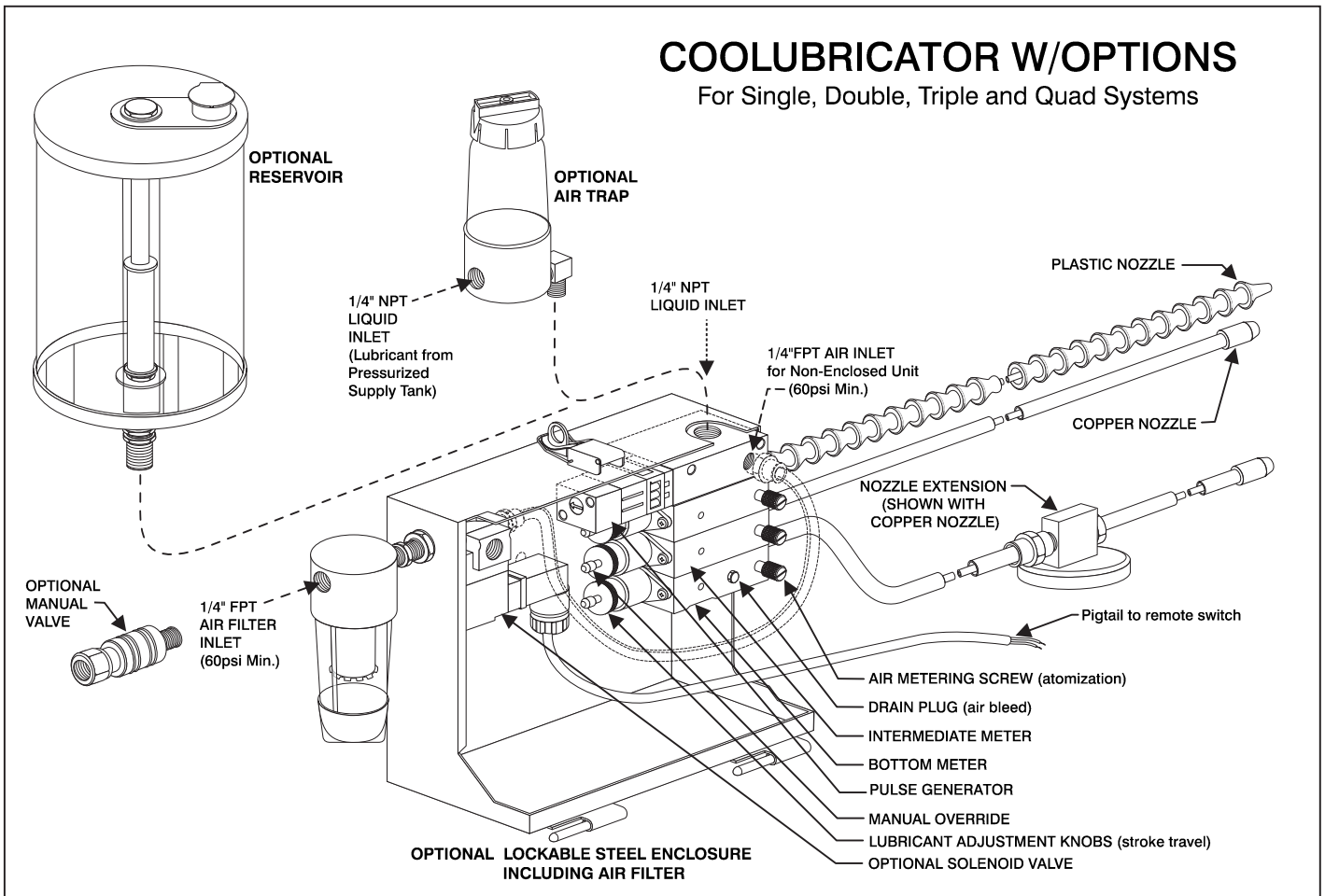
COOLUBRICATOR Systems are completely self-contained, positive displacement continuous spray systems. The System operates when the adjustable pulse generator automatically cycles the metering pump(s). The metering pump stroke and output is also adjustable. Simply supply an **air signal** to operate the system. The output adjustments are simple and the results are always dependable and consistent.

Liquid output is adjusted with the brass knob on each metering pump. Any amount of air can be added to atomize the liquid. A brass knurled air metering screw controls the flow of air atomizing out the nozzle which determines the density and distance of the spray. There is complete control of spray and accurate placement of the lubricant or other material being applied is assured. The spray output has an included angle of approximately 15-20 degrees depending on the amount of air introduced. The area covered can be increased or decreased by using the air and liquid adjustments.

Multiple metering pumps can be "stacked" in the COOLUBRICATOR, with each pump supplying its own nozzle. This provides additional spray coverage from multiple nozzles. Multiple nozzle COOLUBRICATOR Units are ideal for multiple spindle drills and taps, stock punching, or any application requiring material being sprayed from several points. Nozzle outputs are controlled by independent adjustments of the air metering screw and metering pump stroke adjustment knob - see COOLUBRICATOR Options on page 2. Fluid output may be increased by using 3 drop output pumps (Consult Factory) in place of standard 1 drop pumps.

COOLUBRICATOR W/OPTIONS

For Single, Double, Triple and Quad Systems



COOLUBRICATOR OPERATING INSTRUCTIONS

For Single, Double, Triple and Quad Systems

SYSTEM INSTALLATION

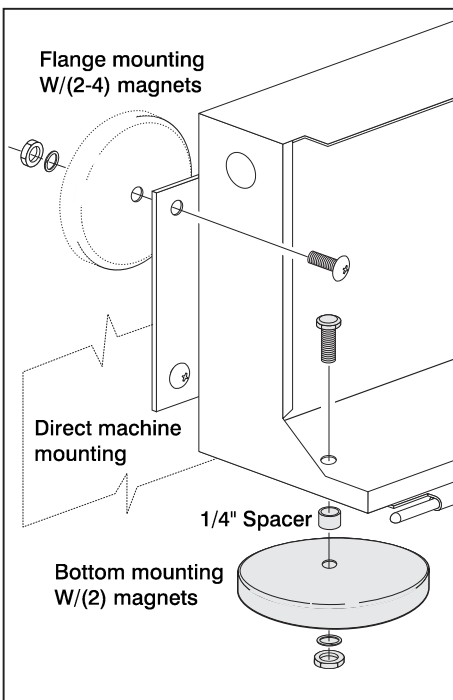


Figure 1. Mounting options

Step 1

Before mounting COOLUBRICATOR to application equipment - Determine position and method of attachment- either directly or with optional magnets *See Figure 1*. Check for any obstructions that may pinch or kink liquid or air feed lines.

Mount COOLUBRICATOR in close proximity to machine application by:

- a. *Mounting directly to machine.*
- b. *Mounting optional magnets to right and left flanges of COOLUBRICATOR case or bottom of case.*

Step 1.1

Mount and position nozzles as desired.

Step 2

Attach air supply line (Full line pressure) to 1/4" FPT inlet on air filter supplied with steel enclosure *See Figure 2*.

For non-enclosed units - attach directly to top manifold block *See Figure 2-1*.

Step 3 (optional)

Reservoir or remote tank Low Level Switch should be hardwired prior to step 4.

See Figure 14 - Page 4 for wiring diagram.

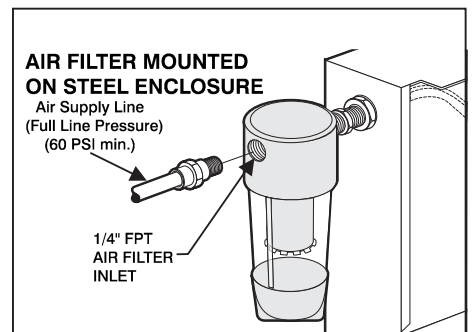


Figure 2. Air supply to filter

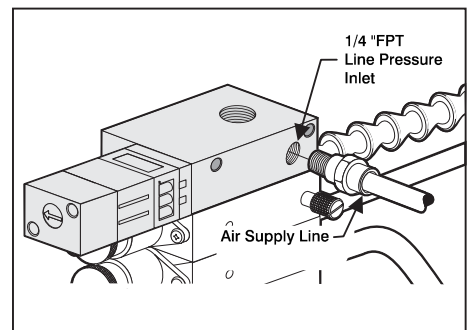


Figure 2-1. Air supply to manifold

GRAVITY FEED RESERVOIRS

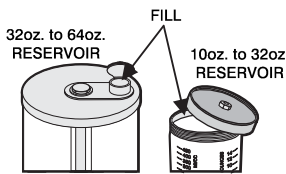


Figure 4. Reservoirs

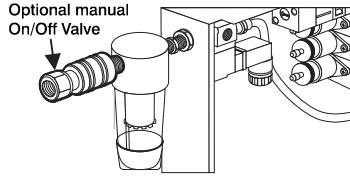


Figure 7. Manual Valve

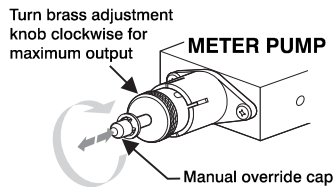


Figure 7.1 Manual override

OPTIONAL AIR TRAP

For fluid from remote reservoir

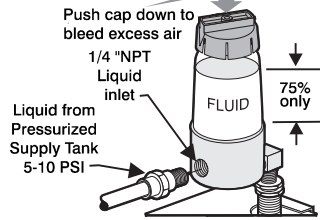
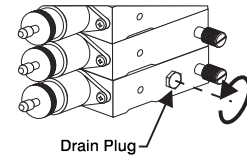


Figure 5. Bleeding Air Trap

REPRIMING UNIT



NOTE: Unit will normally reprime itself after refilling reservoir. Should manual priming become necessary, loosen drain plug to allow air to escape. Set meters to maximum stroke and cycle until fluid flows out of system, then reset meter stroke to previous position.

Figure 6. Repriming

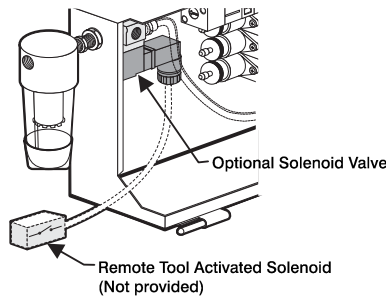


Figure 8. Remote Operation

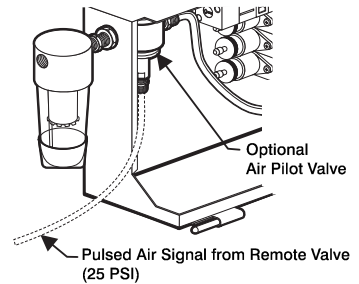


Figure 8.1 Remote Operation

Step 3.1

Wire solenoid valve See Figure 15 or connect air pilot valve See Figure 8.1

Step 4

Fill gravity feed reservoir See Figure 4 or (Air Trap if so equipped See Figure 5) Loosen Drain Plug See Figure 6 until liquid flows free of air. Tighten Drain Plug and cycle unit.

On units supplied with fluid from pressurized supply tank - Set supply tank pressure at 5-10 PSI. Depress air vent cap until trap is 75% full. See Figure 5

Step 5

Turn brass adjustment knob to maximum output setting and begin operating unit by turning air supply on and off with optional manual on/off valve or by manually depressing override cap.

See Figure 7. - 7.1

Or start machine tool with remote switch installed to energize optional electric solenoid on unit. See Figure 8

Or activate air signal to air pilot valve. See Figure 8.1

Step 6

Adjust Pulse Generator to 6-8 pulses per minute. See Figure 9

Step 7

Close air metering screw when fluid is seen coming out of nozzle supply tube with each cycle, open the air metering screw to the desired degree of atomization.

See Figure 11 **NOTE:** Use minimum amount of air atomization to spread lubricant and deliver it to application area.

Step 8

Use the Pulse Generator as the Primary Fluid Adjustment. See Figure 9

LIQUID OUTPUT ADJUSTMENT

Begin Operation and adjustment by: Rotating brass adjustment knobs on meters for correct liquid output. See Figure 10

NOTE: Meters are factory preset for maximum fluid delivery.

RED PLASTIC TIP

1 Drop Meter Output (cc/stroke)
0.0cc. - 0.0015cc. Low Range
0.002cc. - 0.0035cc High Range

For low range adjustment, E-Clip must be in groove that produces shortest stroke. See Figure 12

To decrease fluid flow, turn knob counterclockwise.

To completely shut off meter, rotate knob counterclockwise until knob is against E-clip. See Figure 10

BLACK PLASTIC TIP

3 Drop Meter Output (cc/stroke)
0.0cc. - 0.0035cc. Low Range
0.002cc. - 0.100cc High Range

For maximum range adjustment, E-Clip must be in groove that produces longest stroke. See Figure 13

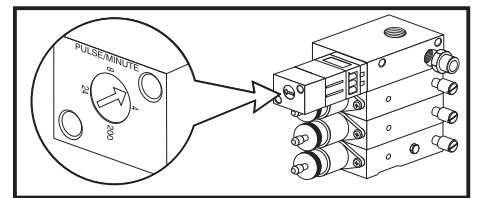


Figure 9. Fluid Adjustments

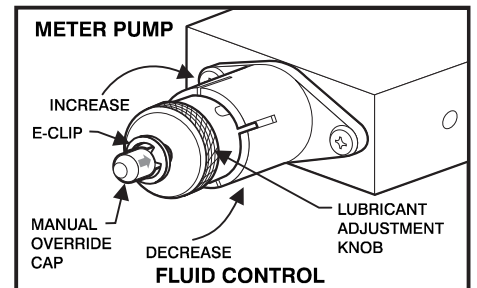


Figure 10. Fluid Adjustments

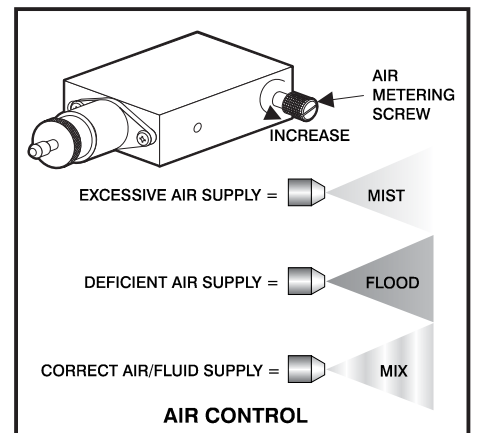


Figure 11. Air Control

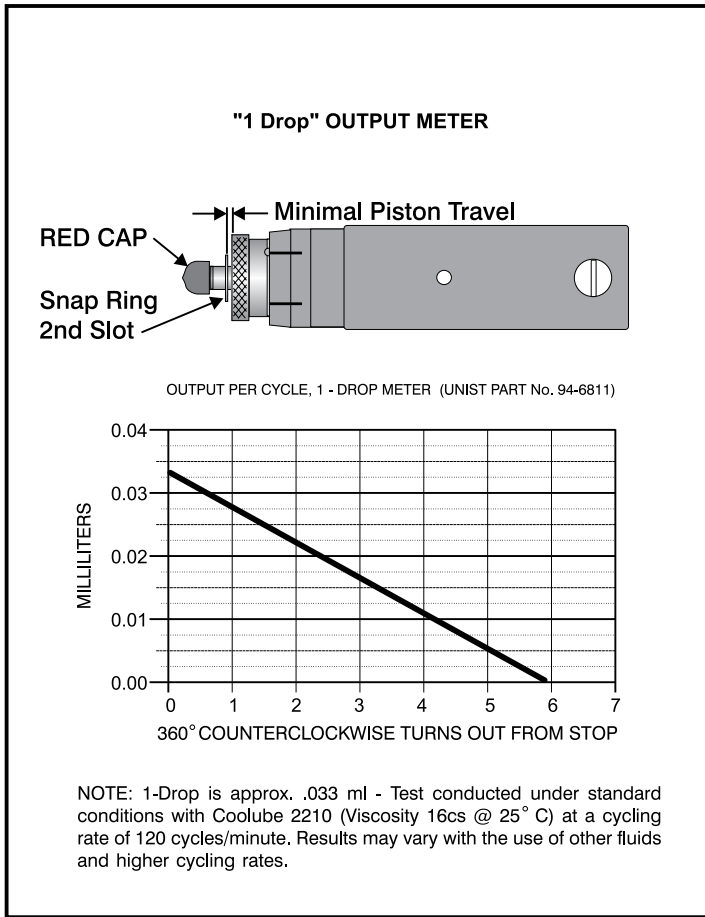


Figure 12. 1-Drop Output Meter

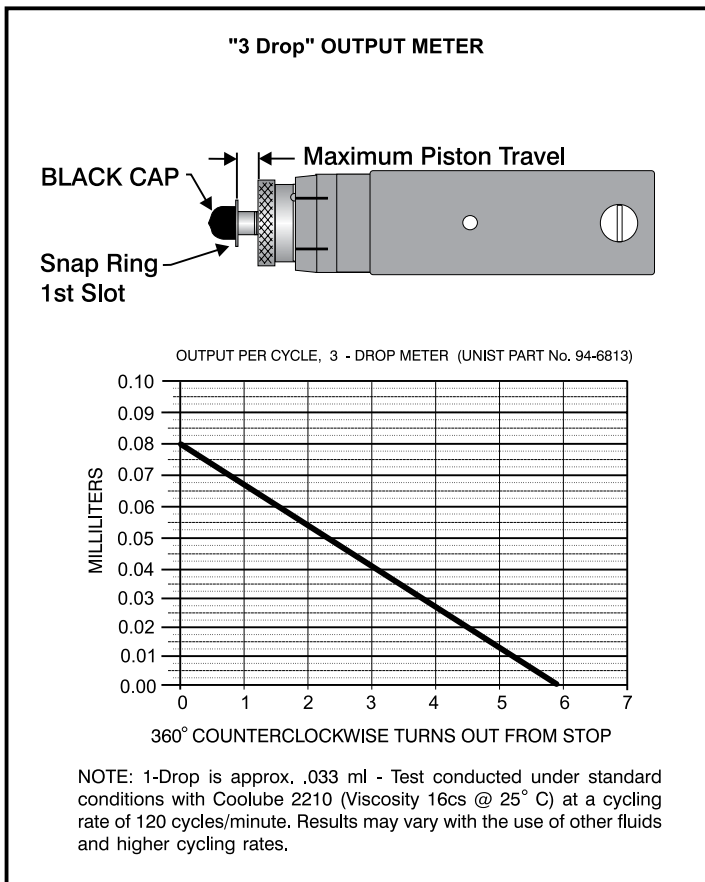


Figure 13. 3-Drop Output Meter

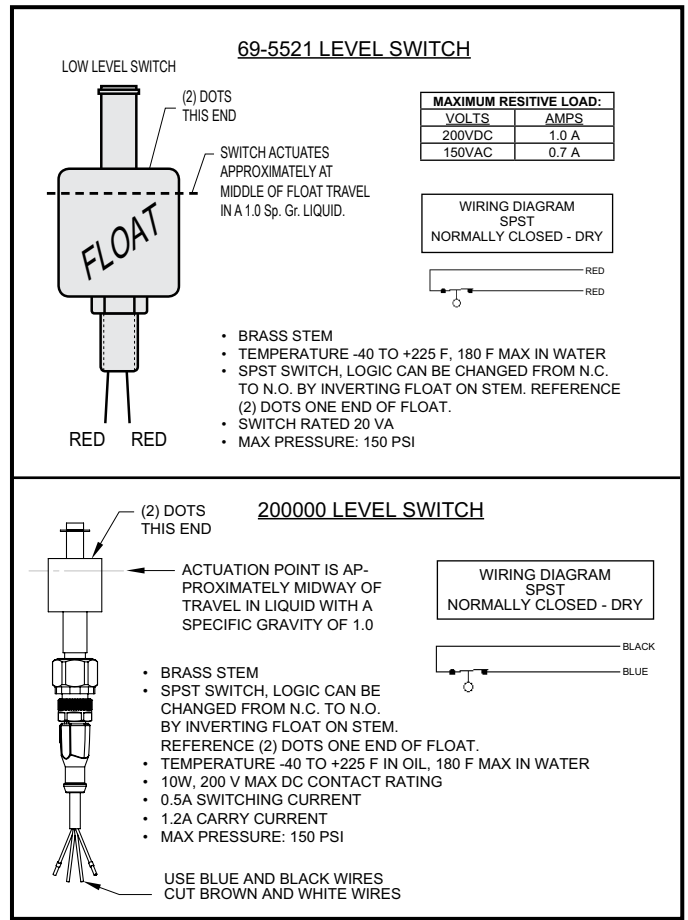


Figure 14. LOW LEVEL SWITCH

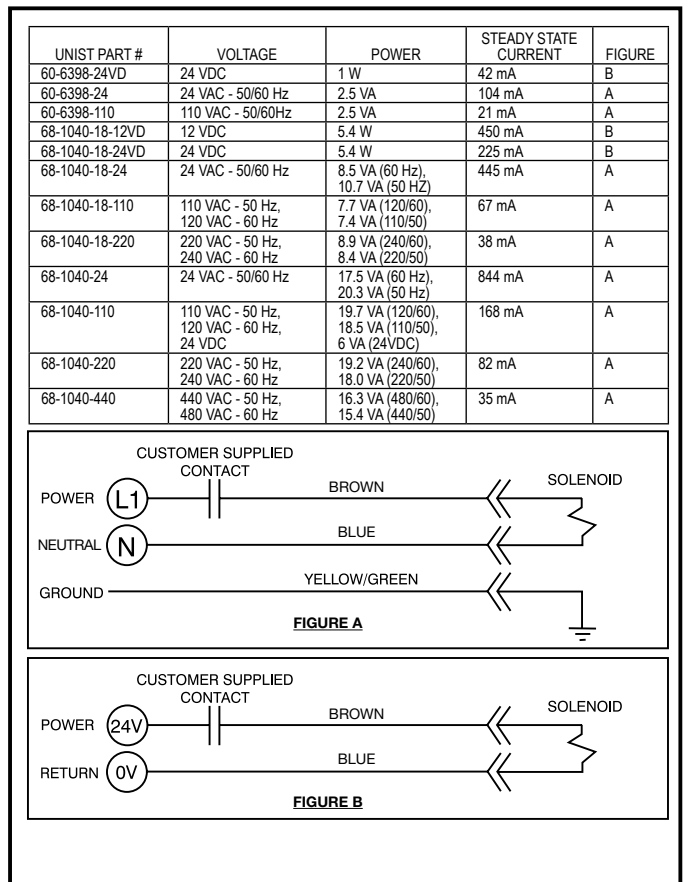
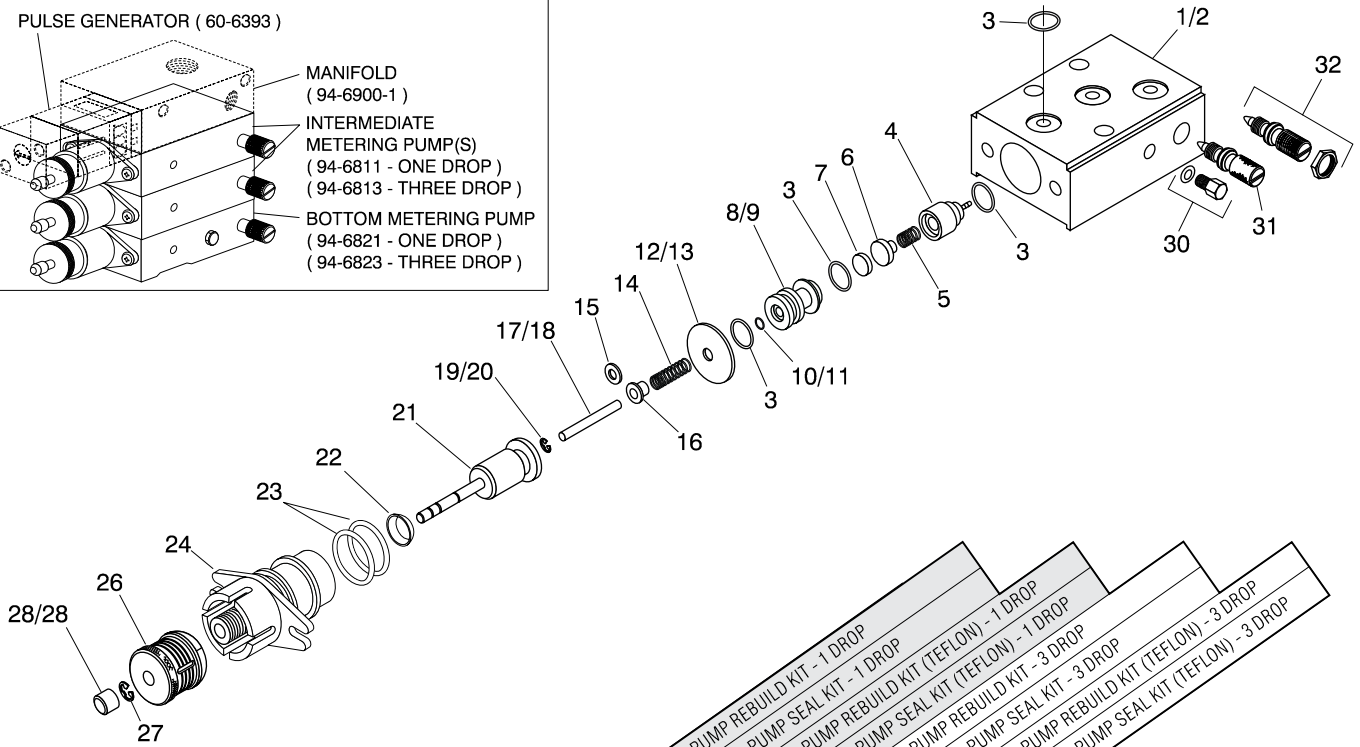
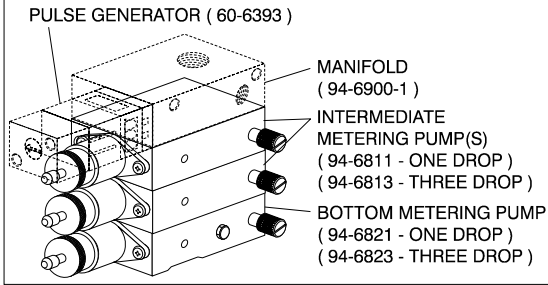
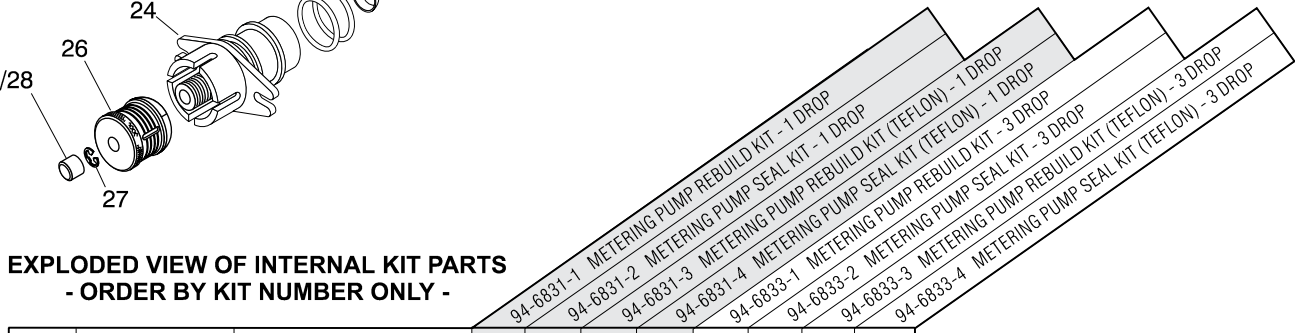


Figure 15. SOLENOID VALVES

STANDARD COMPONENTS



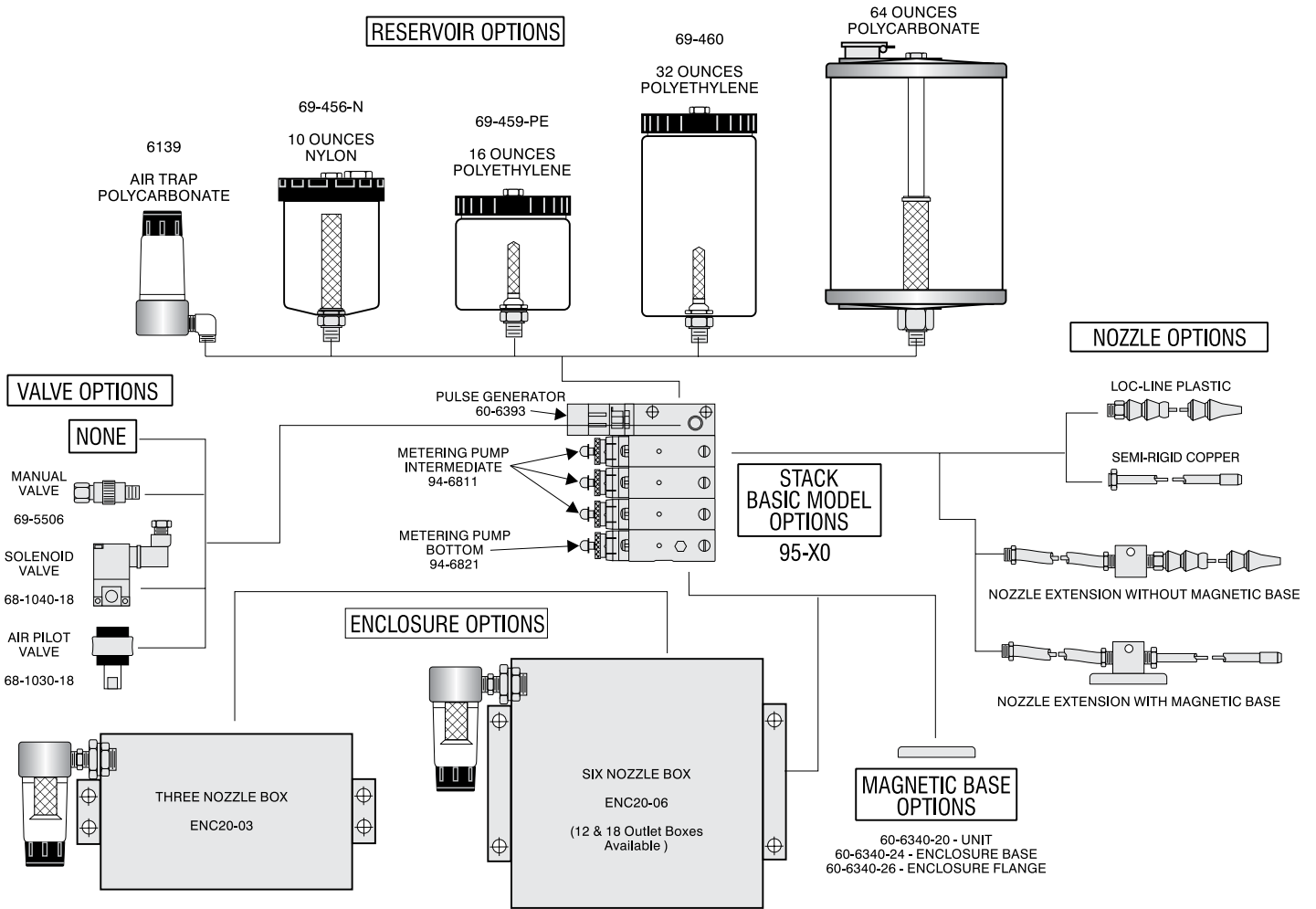
EXPLODED VIEW OF INTERNAL KIT PARTS - ORDER BY KIT NUMBER ONLY -



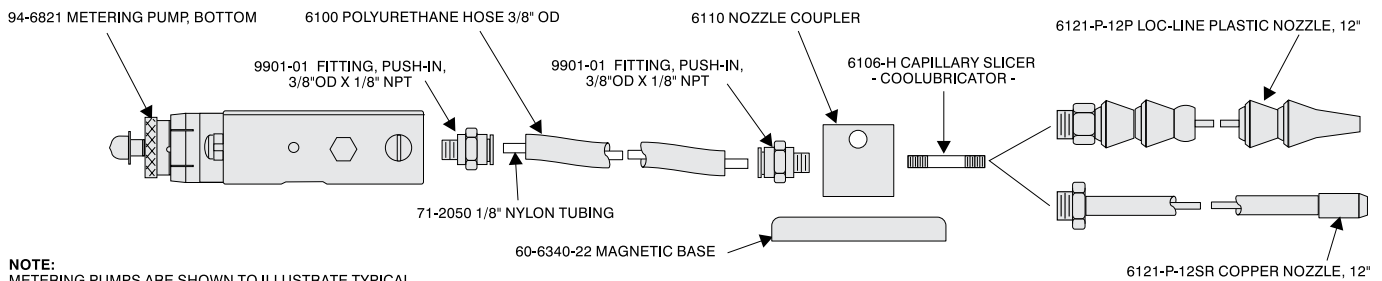
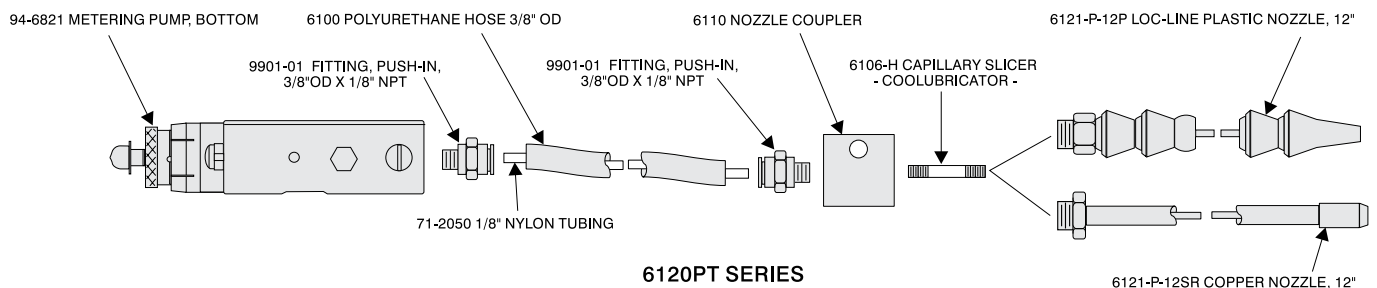
ITEM	PART NUMBER	DESCRIPTION	QTY.	QTY.	QTY.	QTY.	QTY.	QTY.	QTY.	QTY.	QTY.
1	94-6900-2	METER BODY (INTERMEDIATE)	-	-	-	-	-	-	-	-	-
2	94-6900-3	METER BODY (BOTTOM)	-	-	-	-	-	-	-	-	-
3	2-012-V884-75	O-RING	3	3	-	-	3	3	-	-	-
4	89-6900-10A	CHECK HOUSING	-	-	-	-	-	-	-	-	-
5	9303-108	CHECK SPRING	1	-	1	-	1	-	1	-	-
6	9303-107	CHECK BODY	1	-	1	-	1	-	1	-	-
7	9303-106	CHECK SEAL	1	1	-	-	1	1	-	-	-
8	94-6808-12	INSERT	1	-	1	-	-	-	-	-	-
9	94-6808-18	INSERT	-	-	-	-	1	-	1	-	-
10	2-006-V884-75	O-RING	1	1	-	-	-	-	-	-	-
11	2-008-V884-75	O-RING	-	-	-	-	1	1	-	-	-
12	9303-110	WASHER	1	-	1	-	-	-	-	-	-
13	95-1001	WASHER	-	-	-	-	1	-	1	-	-
14	94-6100-8	RETURN SPRING	1	-	1	-	1	-	1	-	-
15	94-6803-1	WASHER	1	-	1	-	-	-	-	-	-
16	94-6800-2	WASHER	-	-	-	-	1	-	1	-	-
17	94-6806-12	LIQUID PIN	1	-	1	-	-	-	-	-	-
18	94-6806-18	LIQUID PIN	-	-	-	-	1	-	1	-	-
19	5103-0012SPPR	RETAINING CLIP	1	-	1	-	-	-	-	-	-
20	5103-0018SPPR	RETAINING CLIP	-	-	-	-	1	-	1	-	-
21	94-6805A	PUSH ROD ASSY.	1	-	1	-	1	-	1	-	-
22	9303-111	U-CUP	1	1	-	-	1	1	-	-	-
23	2-018	O-RING	2	2	-	-	2	2	-	-	-
24	94-6801	END CAP	1	-	1	-	1	-	1	-	-
25	832-3/8PHPHMS	SCREW	-	-	-	-	-	-	-	-	-
26	94-6807	ADJUSTMENT KNOB	1	-	1	-	1	-	1	-	-
27	E-21	RETAINING CLIP	1	-	1	-	1	-	1	-	-
28	701-1R	STOCK CAP, RED	1	-	1	-	-	-	-	-	-
29	701-89	STOCK CAP, BLACK	-	-	-	-	-	-	-	-	-
30	6134	DRAIN PLUG W/GASKET	-	-	-	-	-	-	-	-	-
31	94-6202	METERING SCREW	-	-	-	-	-	-	-	-	-
32	94-6202-J	JAM NUT METER SCREW	-	-	-	-	-	-	-	-	-

Uni-MAX COOLUBRICATOR COMPONENTS AND OPTIONS

69-461 and 69-461-PC-LL (W/LOW LEVEL)



Uni-MAX COOLUBRICATOR NOZZLE EXTENSIONS



NOTE:
METERING PUMPS ARE SHOWN TO ILLUSTRATE TYPICAL CONFIGURATIONS AND ORIENTATION OF PARTS.
METERING PUMP IS NOT TO BE CONSIDERED PART OF HOSE ASSEMBLY.

TROUBLE SHOOTING OF UNI-MAX SPRAY SYSTEMS

PROBLEM	REMEDY
No fluid output (Manual output moves freely) often following reservoir evacuation.	<ol style="list-style-type: none"> 1. Check reservoir level. 2. Check for stroking of meter (set to max)- use full air line inlet pressure. 3. Check for fluid movement in capillary tubing at each meter stroke. 4. Loosen 5/16" brass hex bleed screw 2 revolutions until only fluid comes out -close screw tightly. -recheck meter output by manually or automatically cycling. 5. Pulse generator cycle rate is set too fast or too slow. 6. Check inlet air - Set to maximum available
Reduced fluid output	<ol style="list-style-type: none"> 1. Check air inlet pressure (maximum available) so that meters operate "crisply". 2. Non-Lubricating fluids such as water and solvents could cause premature wear of internal parts. Consult factory for rebuild kit.
Pulse Generator not functioning (Coolubricator only)	<ol style="list-style-type: none"> 1. Remove pulse generator and check air inlet screen for particulate matter. 2. If none found, replace pulse generator.
Slow (sluggish) meter operation	Be sure air inlet pressure is maximum available. A slow or incomplete return could be caused by a broken spring on inadequate lubrication of U-Cup . Rebuild meter.
Meter depressed and not returning.	A piece of debris in the fluid could cause the liquid pin to "jam". Disassemble and reassemble, checking for foreign particles.If a return spring is broken, rebuild meter.
Fluid flowing continuously out of the nozzle or reservoir emptying without system running.	The check valve seal is not properly functioning. Check the seat for cleanliness (or turn it over). Also, examine the check seal spring.
Fluid accumulation in outer tubing.	This can result in Coolubricator systems due to insufficient atomizing air exiting the nozzle. <ol style="list-style-type: none"> 1. Increase atomizing air flow or 2. Direct nozzle coupler outlet downward to encourage excess fluid to exit nozzle.
Air bubbling upward into fluid reservoir.	Check the valve seat (check seal) for possible leakage (turn over seat). A static sealing o-ring may need replacement. Use a rebuild kit.

NOTES:

Model Number: _____

Serial Number: _____

Purchase Date: _____

Dealer Name: _____

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 In addition to existing U.S. Patents - Other U.S. and Foreign Patents pending.



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