

## Operating the MeterMizer:

- A. Position the MeterMizer and Nozzle in approximate location to final setup. It is best at start up to have the Nozzle higher than the MeterMizer outlet. This will make it easier to move any air out of the lubricant line when priming.
  - . Fill the **Reservoirs** with Lubricant.
- C. Bleed air out of the MeterMizer Ejectors by turning set screw located under the bottom Ejector counter clockwise a few turns until lubricant drains out of the fitting. When fluid flows void of air bubbles, close the Bleeder Valve. *This bleeding is done only at startup or if Reservoir is allowed to run dry.*
- D. When starting up it is recommended that the **AIR CONTROL VALVE** for the **AIR OUT AT THE FRONT OF THE EJECTORS** be turned off by turning the knurled knob clockwise.
- E. Open Volume Control on the Ejector by turning Thumb Screw all of the way.
- F. **For MeterMizer with Oscillating Timer and Manual On/Off Valve for Air-In. See Note, bottom of this section.**  
**MM-2001-SA, M-2002-SA, M-2003-SA, MM-2021-SA, MM-2022-SA, M-2023-SA, MM-2050-BG, MM-2052-BG, MM-2060XL, MM-2061-XL, MM-2062-XL, MM-2070-XL & MM-2072-XL**

1. Turn the Manual On/Off Valve ON, allowing air to enter the MeterMizer's Manifold. The Oscillating Timer will start actuating if ON. If in - Off position adjust the Needle Valve at the back of the Oscillating Timer until it starts Oscillating, preferably at a high rate to speed up the fluid movement.
 

*Remember the Tube is long and the MeterMizer dispenses just one small drop per actuation so it will take a while for the lubricant to reach the Nozzle Tip.*
2. When lubricant drips out of the nozzle tip the unit is primed and ready for operation.
3. Turn **Air Control Valve**, at the front of the Ejectors ON. Turn knurled knob counter clockwise. Lubricant will now be mixed with air.
4. Adjust the amount of lubricant needed for the operation, Slow down the Timers pulses per minute and reduce the volume of lubricant dispensed per actuation by turning the Lubricant Volume Control Knobs on the back of the Ejectors clockwise until desired volume is reached. Very little volume is normally needed when operating this unit.
5. Adjust the volume of air being exhausted out of the Nozzle Tip for the desired spray.

**NOTE: If a SOLENOID VALVE is used as a direct substitute for the MANUAL On/Off VALVE the system will be controlled by a LSP Timer. The Timer will receive a signal from a source and then stay on until the source is disconnected. This system eliminates the human factor as it is automatic and tied into the machine. It should be noted that each time the Solenoid Valve is turned OFF the Oscillating Timer stops and also the air being exhausted out of the Nozzle tip will also stop until the Solenoid Valve is reactivated, See Operating instructions if using a LSP Timer.**

- G. **For MeterMizer's with Solenoid Valve in place of Oscillating Timers with Manual On/Off Valve for Air-In:**  
**MM-2011-SA, M-2012-SA, M-2013-SA, M-2031-SA, MM-2032-SA, M-2033-SA, MM-2055-BG, MM-2057-BG, MM-2065-XL, MM-2066-XL, MM2067-XL, MM-2075-XL & MM-2077-XL.**

1. Aim Nozzle Tip down when priming so when lubricant has filled the lubricant line it will be visible when leaving the Nozzle.
2. Turn the Manual On/Off Valve ON, allowing air to enter the MeterMizer's Manifold.
3. The Solenoid Valve used to actuate the Ejectors is controlled by either a LSP Controller, PLC or Limit Switch.. When the Solenoid Valve receives a signal from one of the actuators it will actuate the Ejectors. The Limit Switch will normally be one signal per cycle of the machine. The LSP Controller or a PLC offer a greater amount of flexibility to how the Solenoid Valve will be activated.
4. When lubricant drips out of the nozzle tip the unit is primed and ready for operation.
5. Turn **Air Control Valve**, at the front of the Ejectors ON. Turn knurled knob counter clockwise. Lubricant will now be mixed with air.
6. Adjust the amount of lubricant needed for the operation, Slow down the Timers pulses per minute and reduce the volume of lubricant dispensed per actuation by turning the Lubricant Volume Control Knobs on the back of the Ejectors clockwise until desired volume is reached. Very little volume is needed when operating this unit.
7. Adjust the volume of air being exhausted out of the Nozzle Tip for the desired spray.

**Read Red Note in Section 4 above.**  
**See Operating instructions if using a LSP Controller.**

- H. **For MeterMizer's with Solenoid Valve only at the Air-In, Single Cycle Units**  
**MM-2040-SC, M-2041-SC, M-2042-SC, M-2045-SC, MM-2046-SC, M-2047-SC,**

1. The Solenoid Valve is inserted into the Air-In on the Manifold. This valve controls the Ejector and also exhaust air out of the Nozzle Tip.
2. The Solenoid Valve is controlled by either a LSP Controller, PLC or Limit Switch.. When the Solenoid Valve receives a signal from one of the actuators it will actuate the Ejectors and exhaust air out the Nozzle Tip at the same time.
3. The Limit Switch will normally be one signal per cycle of the machine.
4. The LSP Controller or a PLC offer a greater amount of flexibility to how the Solenoid Valve will be activated.. With these Controllers the MeterMizer can be given multiple actuations each cycle of the machine ; or can actuate on a count, every other cycle or 5th cycle or any cycle up to 99 cycles. The controller can also be a timer, actuating on a prearranged time sequence unrelated to the cycle of the machine.  
**See Operating instructions if using a LSP Controller.**

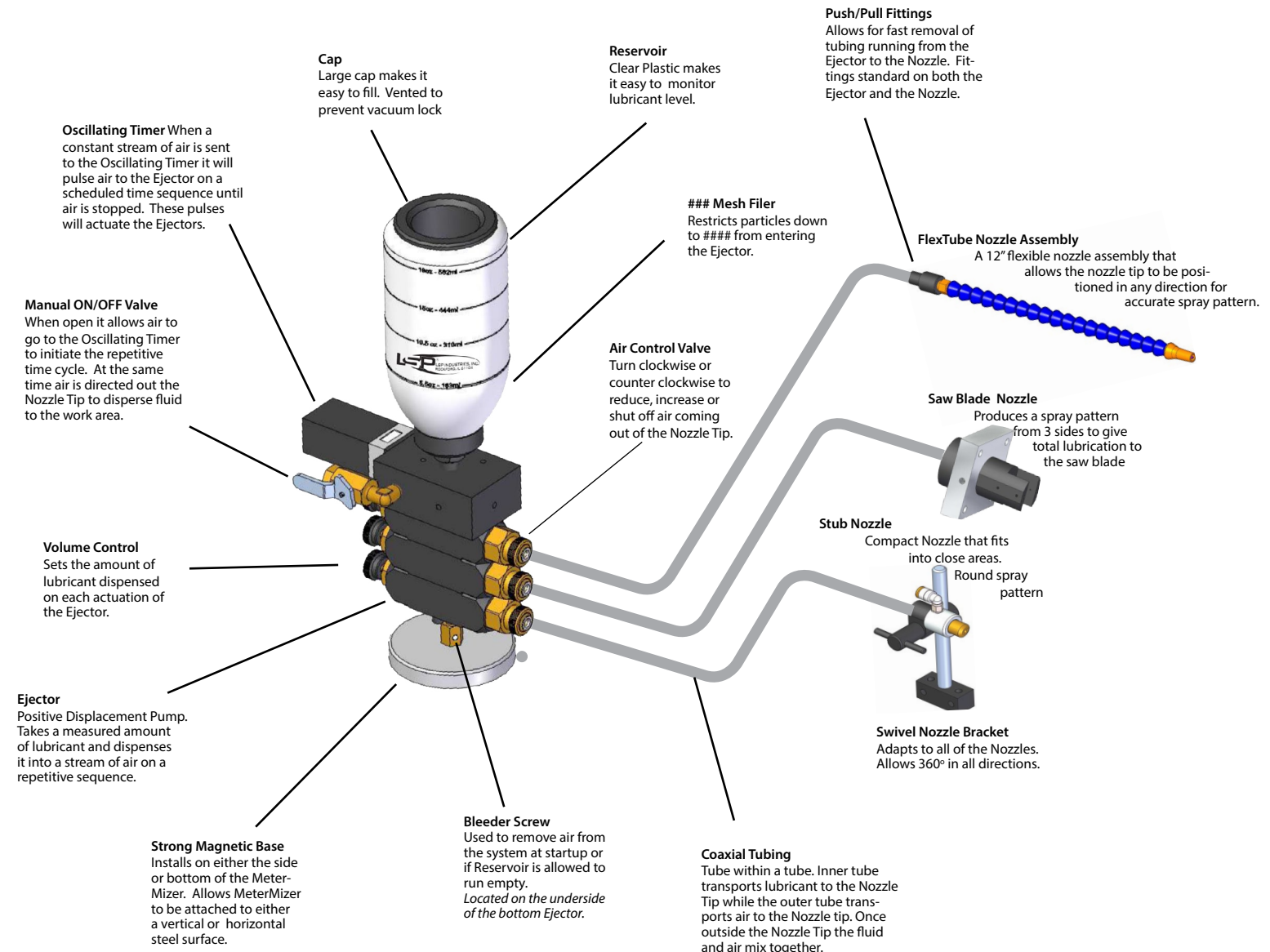


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# MeterMizer SA & SC

## INSTALLATION, OPERATION AND TROUBLE SHOOTING

### For all MeterMizer Models



## Installation and Operation of the MeterMizer

A versatile lubricating system that can be operated with a variety of Nozzles and Actuating Systems. Fluids are dispensed with or without air depending upon the needs of the application. The MeterMizer is normally controlled with an Oscillating Timer but can be operated with a LSP Electronic Controller or other actuating devices.

# MeterMizer Components and Operations

## Actuators

### STAND ALONE, SA, METERMIZER, OSCILLATING TIMER CONTROLLED

MM-2001SA - MM-2006SA, with 19 oz. Reservoir  
 MM-2011SA - MM-2016SA, without Reservoir

#### Oscillating Timer

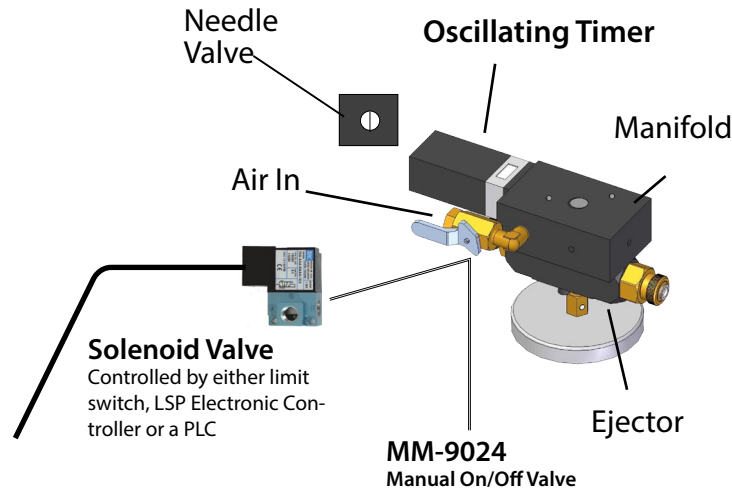
Controls injecting lubricant into the air stream.

1) A **Manual Valve** is used to control the air entering the Manifold. The Manual Valve requires that the operator turn the air on and off manually each time the unit goes into operation or needs to be shut down.

OR

2) If a **Solenoid Valve** is used to control the air entering the Manifold it is setup so that it goes into the "ON" mode each time the machine is in operation and stays on as long as the machine is operational.

The **Oscillating Timer** controls air by opening and closing a diaphragm on a repeatable time cycle. The speed of the Timer is set by adjusting the needle valve on the top of the Timer. Each time the diaphragm opens it allows air to pass through it. This air is sent to as many as four ejectors at a time. A piston in the Ejector is energized and dispenses a predetermined amount of fluid into the air stream as it exits the nozzle tip.



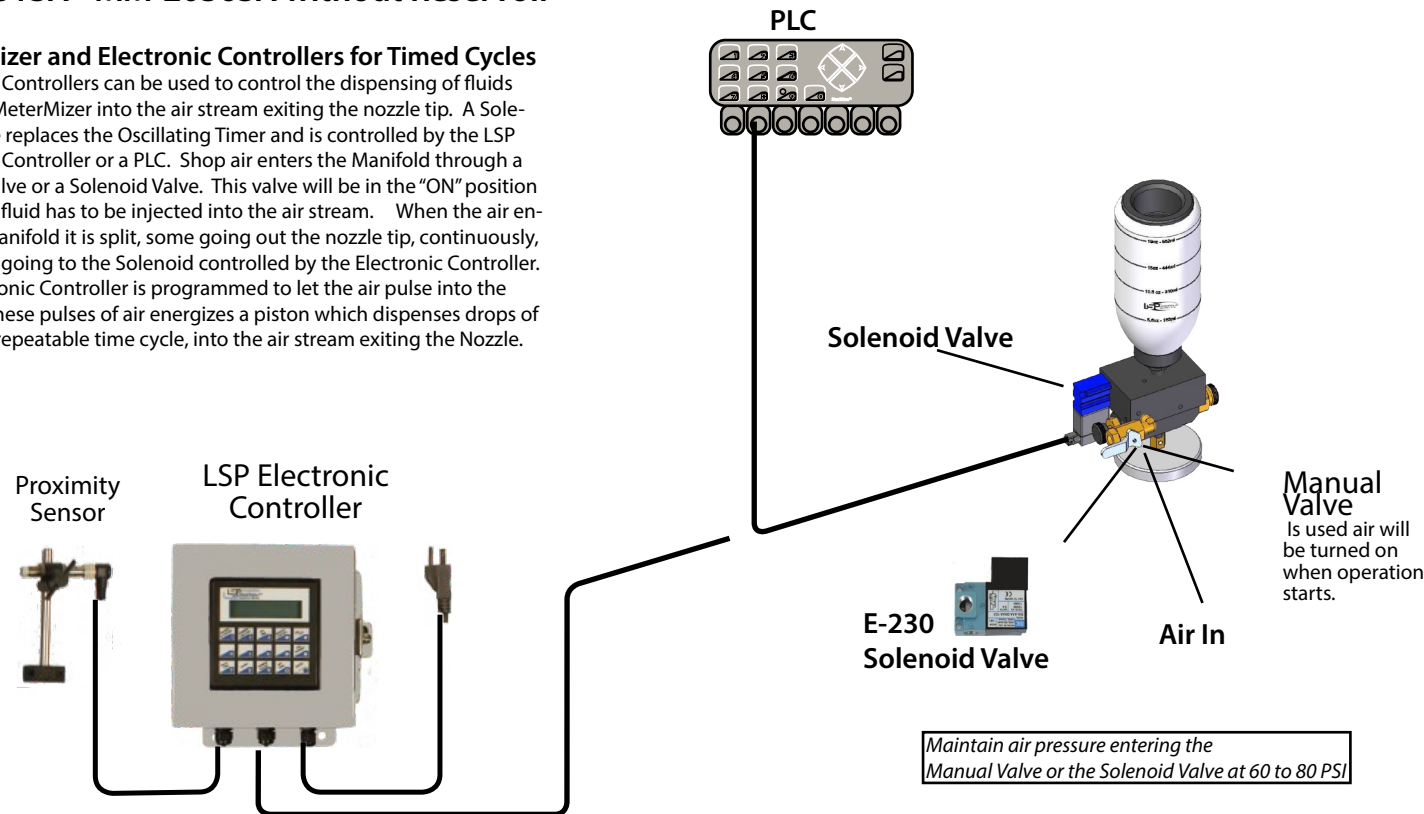
Maintain air pressure entering the Manual Valve or the Solenoid Valve at 60 to 80 PSI

### STAND ALONE, SA, METERMIZER, ELECTRONIC TIMER OR PLC CONTROLLED

MM-2021SA - MM-2026SA, with 19 oz. Reservoir  
 MM-2031SA - MM-2036SA without Reservoir

#### MeterMizer and Electronic Controllers for Timed Cycles

Electronic Controllers can be used to control the dispensing of fluids from the MeterMizer into the air stream exiting the nozzle tip. A Solenoid Valve replaces the Oscillating Timer and is controlled by the LSP Electronic Controller or a PLC. Shop air enters the Manifold through a Manual Valve or a Solenoid Valve. This valve will be in the "ON" position as long as fluid has to be injected into the air stream. When the air enters the Manifold it is split, some going out the nozzle tip, continuously, and some going to the Solenoid controlled by the Electronic Controller. The Electronic Controller is programmed to let the air pulse into the Ejector. These pulses of air energizes a piston which dispenses drops of fluid, in a repeatable time cycle, into the air stream exiting the Nozzle.



Maintain air pressure entering the Manual Valve or the Solenoid Valve at 60 to 80 PSI

2 The **LSP Electronic Controller** Can be programmed on a count, pulsating or timer sequence. Controller will receive a signal from the Proximity Sensor or from a limit switch tied into an operating machine. See catalog for different controllers.

## Replacement Parts List for the MeterMizer

Parts List for the MeterMizer SA (Stand Alone), MeterMizer SC (Single Cycle) & Nozzle Assembly

#### PARTS THAT ARE COMMON for THE MeterMizer with the Oscillating Timer.

Key #	Part #	No. Pc's	Description
1A	CAP-031	1	LID, Top, Reservoir
2A	RES-049	1	RESERVOIR
3A	RGO-055	1	RING, "O" Seal
4A	FIL-005	1	FILTER
5A	ADP082	1	CAP, Threaded
6A	TIM-002	1	TIMER, Oscillating
7A	MAN-026	1	MANIFOLD
8A	FIT-007	1	NIPPLE, 1/8 NPTM X 1/8 NPTM
9A	VAL-004	1	VALVE, Manual
10A	FIT-109	1	ELBOW, 1/8 NPTF x 1/8 NPTM
11A	RGO-052	4	RING, "O" Seal (2 per Ejector)
12A	RGO-030	1	RING, "O" Seal (1 per Ejector)
13A	115EJT02	1	EJECTOR, Middle
14A	115EJT01	1	EJECTOR, Bottom
15A-1	SCR-067	2	SCREW, Socket Hd Cap, (1) EJECTOR
15A-2	SCR-134	2	SCREW, Socket Hd Cap, (2) EJECTOR'S
15A-3	SCR1-35	2	SCREW, Socket Hd Cap, (3) EJECTOR'S
15A-4	SCR-136	2	SCREW, Socket Hd Cap, (4) EJECTOR'S
16A	ADP-083	1	FITTING, Mounting - Bleeder
17A	FIT-022	1	SCREW, Set
18A	MAG-005	1	MAGNET
19A	NUT-114	1	NUT, Lock

#### PARTS FOR THE MeterMizer MODEL SC (Single Cycle). (Replaces Oscillating Timer)

Key #	Part #	No. Pc's	Description
1C	MAN-028	1	MANIFOLD
2C	FIT-007	1	NIPPLE, 1/8 NPTM X 1/8 NPTM
3C	FIT-109	1	ELBOW, 1/8NPTF x 1/8NPTM
4C	VAL-011	1	VALVE, Solenoid, 24V-

#### PARTS FOR THE MeterMizer MODEL SA SERIES W/ (Single Cycle), SOLENOID VALVE. (Replaces Oscillating Timer)

Key #	Part #	No. Pc's	Description
1D	MAN-027	1	MANIFOLD
2D	FIT-007	1	NIPPLE, 1/8 NPTM X 1/8 NPTM
3D	FIT109	1	ELBOW, 1/8 NPTF x 1/8 NPTM
4D	VAL-004	1	VALVE, Manual
5D	SCR-140	2	SCREW, Socket Head Cap
6D	VAL-014	1	SOLENOID, 24V-DC

#### PARTS FOR THE EJECTOR'S

Key #	Part #	No. Pc's	Description
1B	SCR-133	1	SCREW, Set
2B	SPG-061	1	SPRING, Compression
3B	BAL-026	1	BALL
4B	CAP-030	1	CAP, Volume Control
5B	RGO-044	1	RING "O" Seal
6B	RGO-042	1	RING, Quad
7B	PIS-032	1	Piston
8B	SPG-059	1	SPRING, Compression
9B	WAS-027	1	WASHER
10B	RGO-503	1	RING "O" Seal
11B	115EJT02	1	EJECTOR, Middle
12B	115EJT01	1	EJECTOR, Bottom
13B	BAL-025	1	BALL, Check
14B	EYE-007	1	EYELET
15B	SPG-060	1	SPRING, Compression
16B	RGO-052	1	RING "O" Seal
17B	SET-038	1	FITTING, Barb
18B	RGO-014	1	RING "O" Seal
19B	RGO-031	1	RING "O" Seal
20B	OUT-050	1	FITTING
21B	RGO-059	1	RING "O" Seal
22B	115SCR02	1	KNOB, Velocity Control

#### PARTS FOR THE MeterMizer NOZZLE ASSEMBLY

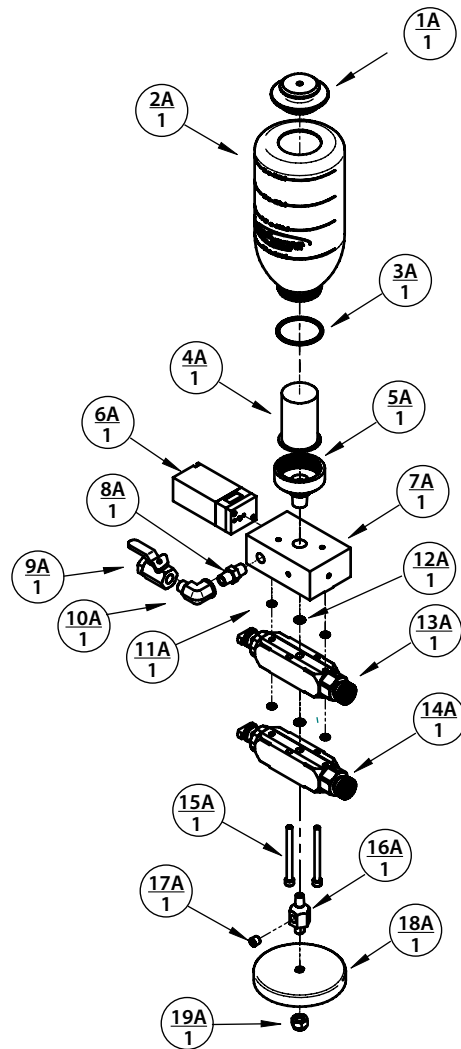
Key #	Part #	No. Pc's	Description
1E	FIT-014	1	FITTING, 1/4 Tube X 1/8 NPTM
2E	ADP-080	1	ADAPTOR, 1/8 NPTM x 1/8 NPTM
3E	SOC-003	1	ADAPTOR 1/8 NPTM X 1/4 LockLine Ball
4E	TUB-082	1	LOCKLINE, 15 Links
5E	SOC-002	1	ADAPTOR, 1/8 NPTM X Internal 1/4 Lockline Ball
6E	NOZ-010	1	NOZZLE, External
7E	BRK-114	1	BRACKET, 1/4-24 X 1/8 NPTM
8E	MAG-005	1	MAGNET
9E	NUT114	1	NUT, Lock
10E	NOZ-011	1	NOZZLE, Internal
11E	TUB-083	1	TUBE, Fluid, Internal, 1/8"
12E	TUB-215	1	TUBE, Air, External, 1/4"



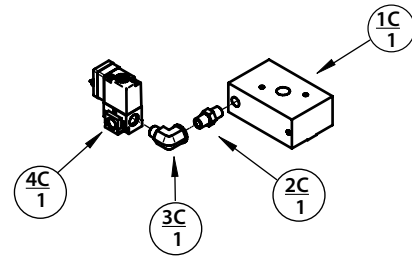
# MeterMizer - Exploded View

Parts List for the MeterMizer SA (Stand Alone), MeterMizer SC (Single Cycle) & Nozzle Assembly

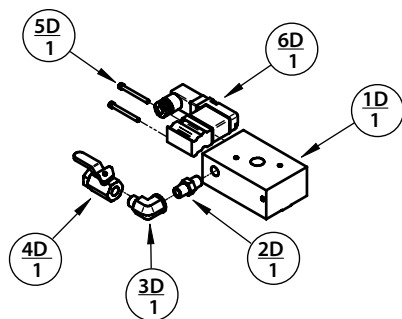
THE MeterMizer with the Oscillating Timer.



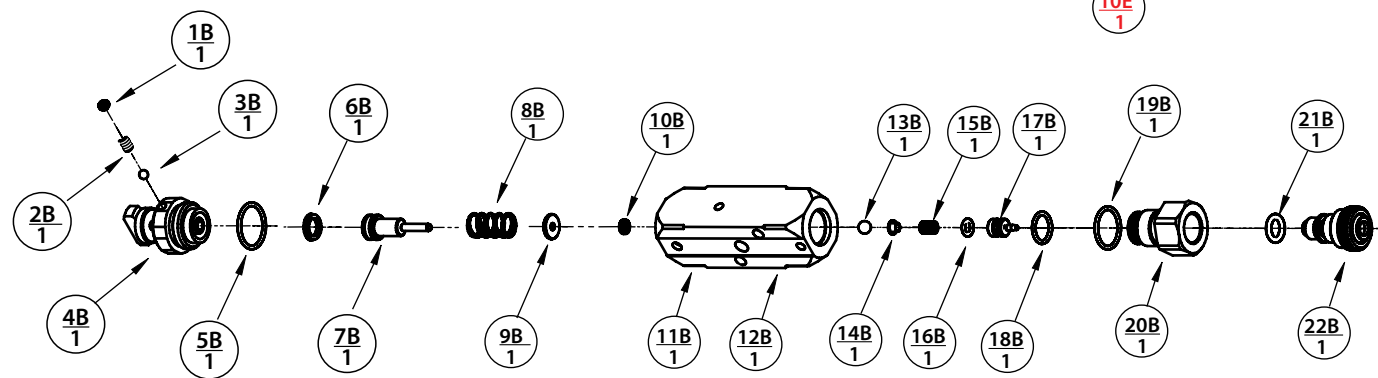
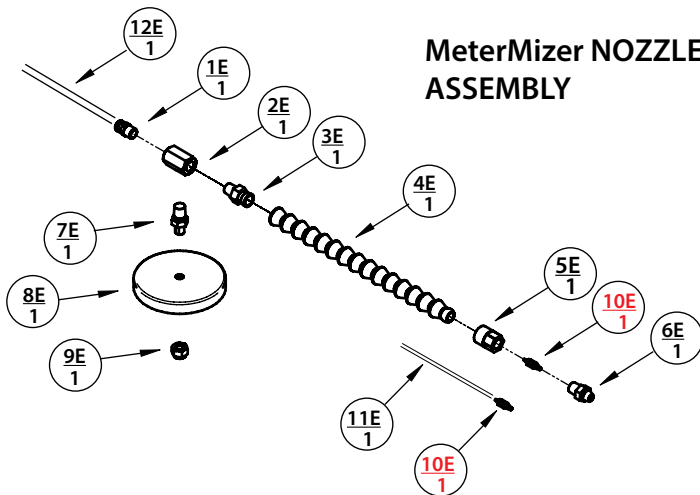
MeterMizer MODEL SC (Single Cycle).  
(Replaces Oscillating Timer)



MeterMizer MODEL SA SERIES W/ (Single Cycle),  
SOLENOID VALVE. (Replaces Oscillating Timer)



MeterMizer NOZZLE  
ASSEMBLY

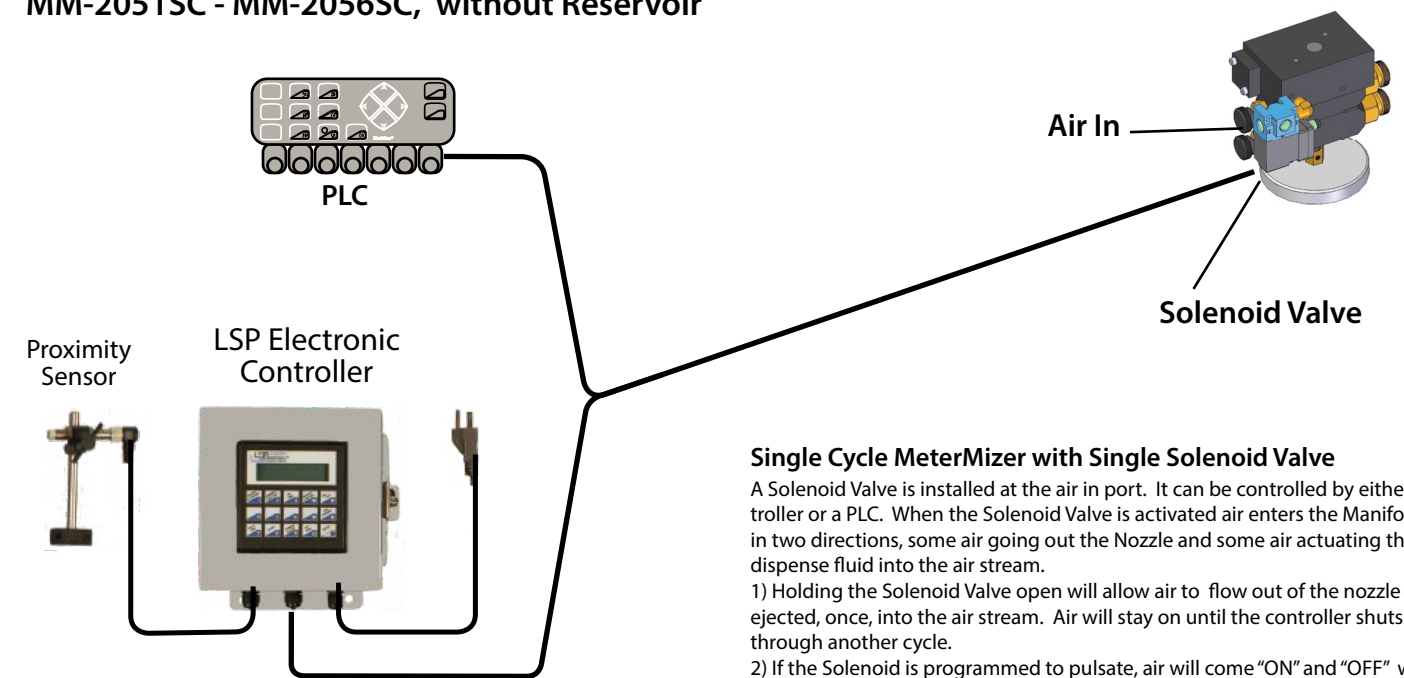


PARTS FOR THE EJECTOR'S

# Actuators, Continued

SINGLE CYCLE, SC, METERMIZER, ELECTRONIC TIMER OR PLC CONTROLLED.

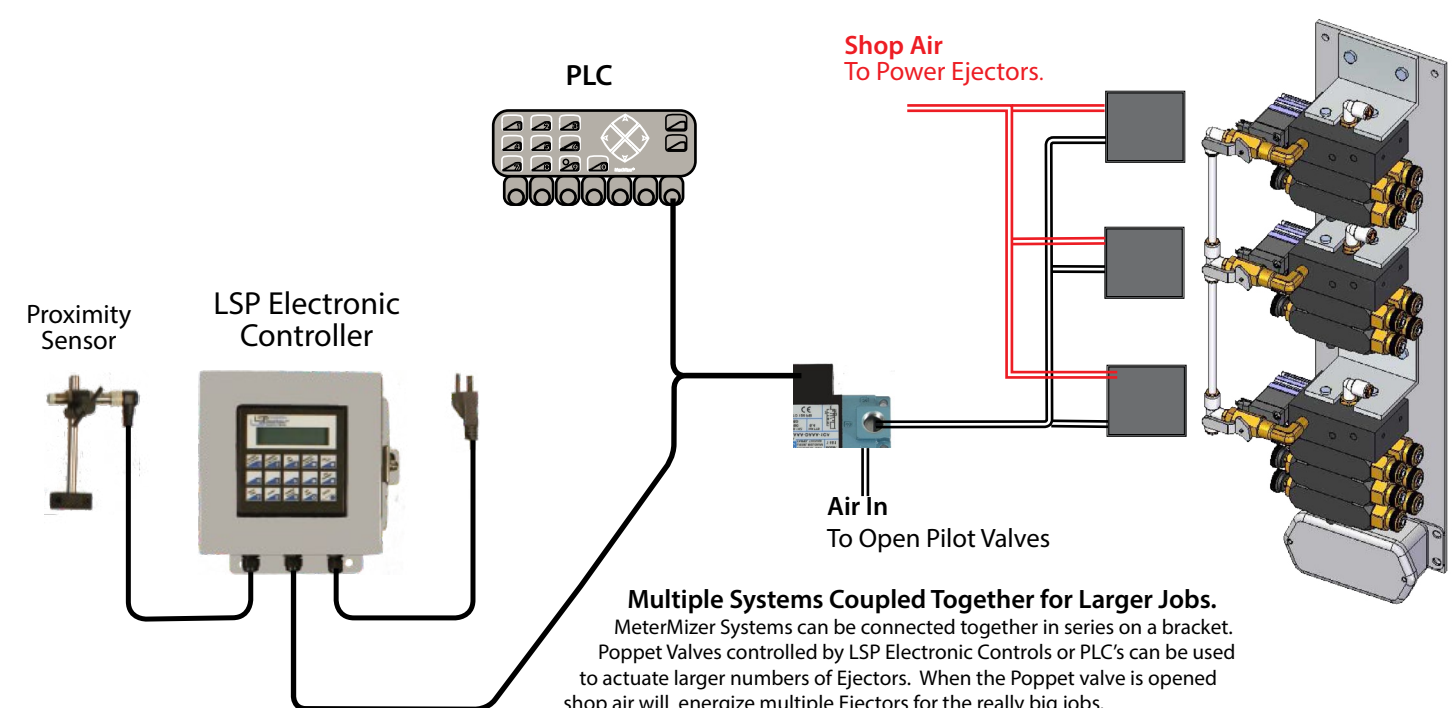
MM-2041SC - MM-2046SC, with 19 oz. Reservoir  
MM-2051SC - MM-2056SC, without Reservoir



**Single Cycle MeterMizer with Single Solenoid Valve**  
A Solenoid Valve is installed at the air in port. It can be controlled by either a LSP Controller or a PLC. When the Solenoid Valve is activated air enters the Manifold and is split in two directions, some air going out the Nozzle and some air actuating the Ejector to dispense fluid into the air stream.  
1) Holding the Solenoid Valve open will allow air to flow out of the nozzle as fluid is ejected, once, into the air stream. Air will stay on until the controller shuts down or goes through another cycle.  
2) If the Solenoid is programmed to pulsate, air will come "ON" and "OFF" with each pulsation. The pulses will also actuate the Ejector so fluid will be injected into each pulse of air going out of the Nozzle Tip.  
This system is recommended for applications where the lubrication is only needed during a single cycle of a machine. Production drilling would be a good application.

The LSP Electronic Controller Can be programmed on a count pulsating or timer sequence. Controller will receive a signal from the Proximity Sensor or from a limit switch tied into an operating machine. See catalog for deferent controllers.

Maintain air pressure entering the Manual Valve or the Solenoid Valve at 60 to 80 PSI

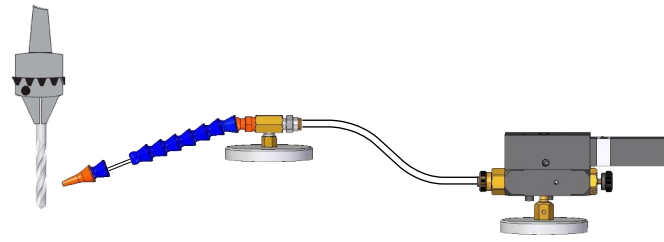


**Multiple Systems Coupled Together for Larger Jobs.**  
MeterMizer Systems can be connected together in series on a bracket. Poppet Valves controlled by LSP Electronic Controls or PLC's can be used to actuate larger numbers of Ejectors. When the Poppet valve is opened shop air will energize multiple Ejectors for the really big jobs.

Maintain air pressure entering the Manual Valve or the Solenoid Valve at 60 to 80 PSI

## Setting up the MeterMizer for Operation:

### 1 Position the Nozzle

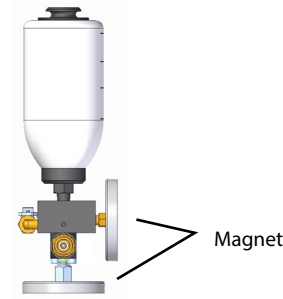


#### Position the Nozzle

For best results it is recommended that the Metermizer Ejector be lower than the Nozzle tip. Any and all air must be evacuated from the system before it will operate properly. The MeterMizer displaces only .055 mL per actuation. By placing the Ejector lower than the nozzle tip it allows the air to move up and out of the system faster.

### 2 Position the MeterMizer

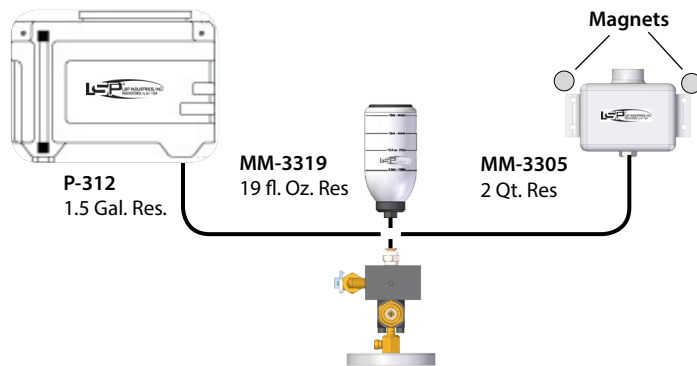
Illustration shows that Magnets can be located on either the bottom or the side of the MeterMizer so that it can be mounted on either a vertical or horizontal steel surface.



#### Positioning the MeterMizer

Place the MeterMizer so that the Coaxial Tubing is not stretched tight to the Nozzle. Position the MeterMizer to a horizontal or vertical surface. Magnets can be used on steel surfaces, studs can be used on non steel surfaces.

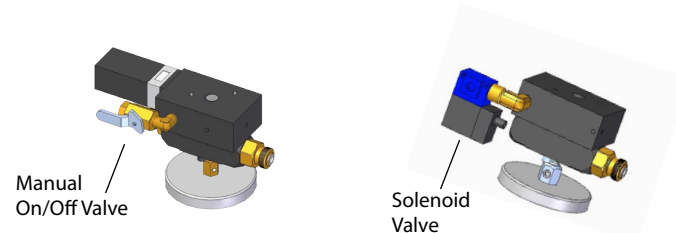
### 3 Reservoir's



#### Attaching Reservoirs

The MM-3319 is screwed directly into the top of the Manifold. Other Reservoirs are normally attached to a vertical surface within five feet of the MeterMizer. Two quart Reservoir can be permanently attached to a vertical surface or held to a steel surface with magnets or attached directly to the MeterMizer.

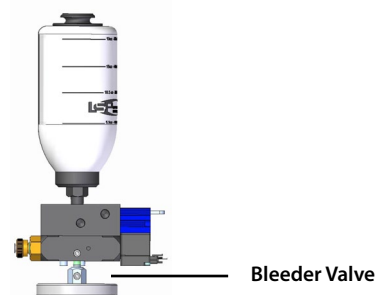
### 4 Air Inlet



#### Attaching Shop Air

The Air Inlet Port is located on the side of the Manifold. The MeterMizer is normally supplied with either a Solenoid Valve or a Manual Valve. It is recommended that either a quick disconnect or a Manual Valve be placed within a close proximity to the MeterMizer should it have to be shut off for maintenance or other reasons. It is also recommended that a pressure regulator be attached to the air inlet to regulate the air pressure to the unit.

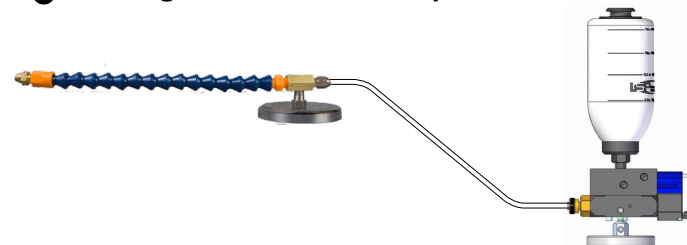
### 5 Bleeding the MeterMizer



#### Bleeding the MeterMizer.

For the MeterMizer to work any trapped air in the Ejector must be bled out. Fill the Reservoir. Loosen the Set Screw located on the Stud under the bottom Ejector until fluid runs freely around the Set Screw void of air bubbles. Tighten the Set Screw. Usually bleeding is accomplished in one operation sometimes it requires more than one bleeding.

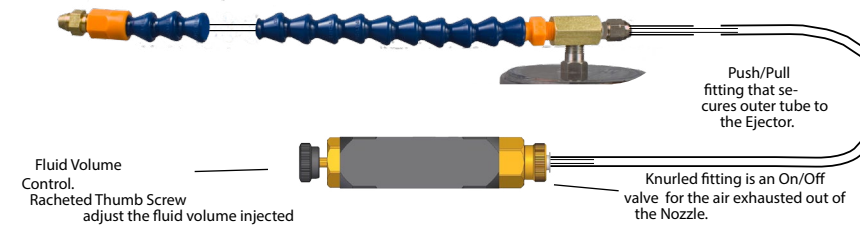
### 6 Making the MeterMizer Operational



#### To Start up the MeterMizer.

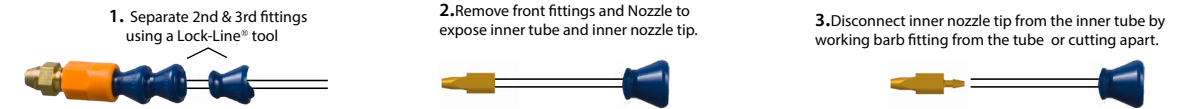
Turn the air on and put the Actuator being used into high speed. Remember each actuation of the ejector moves just a small quantity of fluid each time so it will take a while for the fluid to reach the Nozzle Tip. When fluid reaches the nozzle tip the fluid will still contain some pockets of air so the dispersion will be erratic until all of the air is evacuated. Once the air is gone fluid will pulse out with each cycle of the ejector. Open the air valve at the front of the Ejector so fluid and air mix on each cycle.

## Nozzle Assemblies and Coaxial Tubing

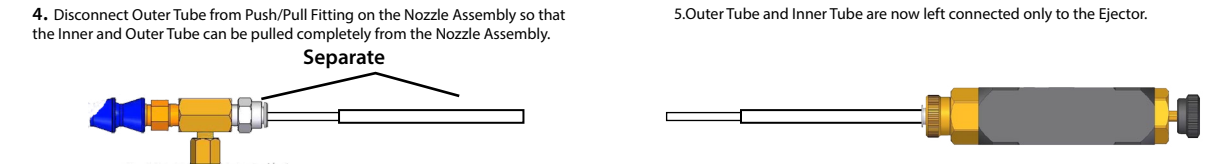


The Nozzle Assemblies come in a variety of configurations. A Coaxial Tubing attaches the Nozzle to the Ejector. The Coaxial Tubing is a tube within a Tube. The outer tube carries shop air out the nozzle tip while the inner tube carries the lubricant from the Ejector to the Nozzle Tip where it mixes with the shop air and is dispensed on the work piece. All controls for the volume of lubricant and the volume of air exhausting out of the Nozzle Tip is controlled at the Ejector.

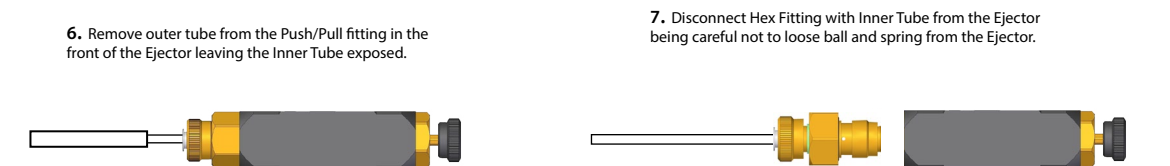
#### A. Disassemble Nozzle and Tube from the Ejector



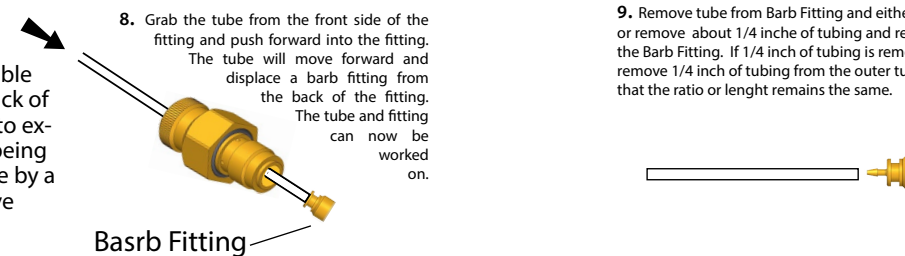
#### B. Disassemble Inner and Outer Tube from Nozzle Assembly



#### C. Disassemble Inner and Outer Tube from Ejector



#### D. Disassemble Fitting at back of Hex Fitting to expose Tube being held in place by a plastic sleeve



**10. IMPORTANT REASSEMBLY INSTRUCTIONS**  
The inner nozzle tip should extend about .250 inch beyond the Outer Nozzle Tip before the Outer Nozzle Tip is threaded into the Loc-Line. After the measurement is done screw on the Outer Nozzle Tip. The Inner Tube will collapse enough so that the Inner Nozzle Tip is as close to the outlet as possible and give the best spray pattern.

#### Short Nozzle

Use for getting into tight spots by using it in conjunction with the Swivel Bracket. For extended range attach to the Nozzle Extender and Swivel Bracket.

#### Nozzle



#### Adjustable Nozzle Bracket



#### The Saw Nozzle

A Nozzle that is split so that lubricant and air are dispensed from three directions within the split totally encapsulating the cutting edge of a saw blade. The Nozzle slides into a Mounting Bracket and the Bracket is permanently attached to the cover of a circular saw or affixed in some manner to a band saw. The Nozzle has a one inch travel within the Nozzle Bracket. An Allen screw will hold the Nozzle securely in place.

#### Low Pressure Fan Nozzle

Produces short narrow fan spray pattern. Useful for certain stamping applications or some applications. Attaches to the Swivel Bracket.

