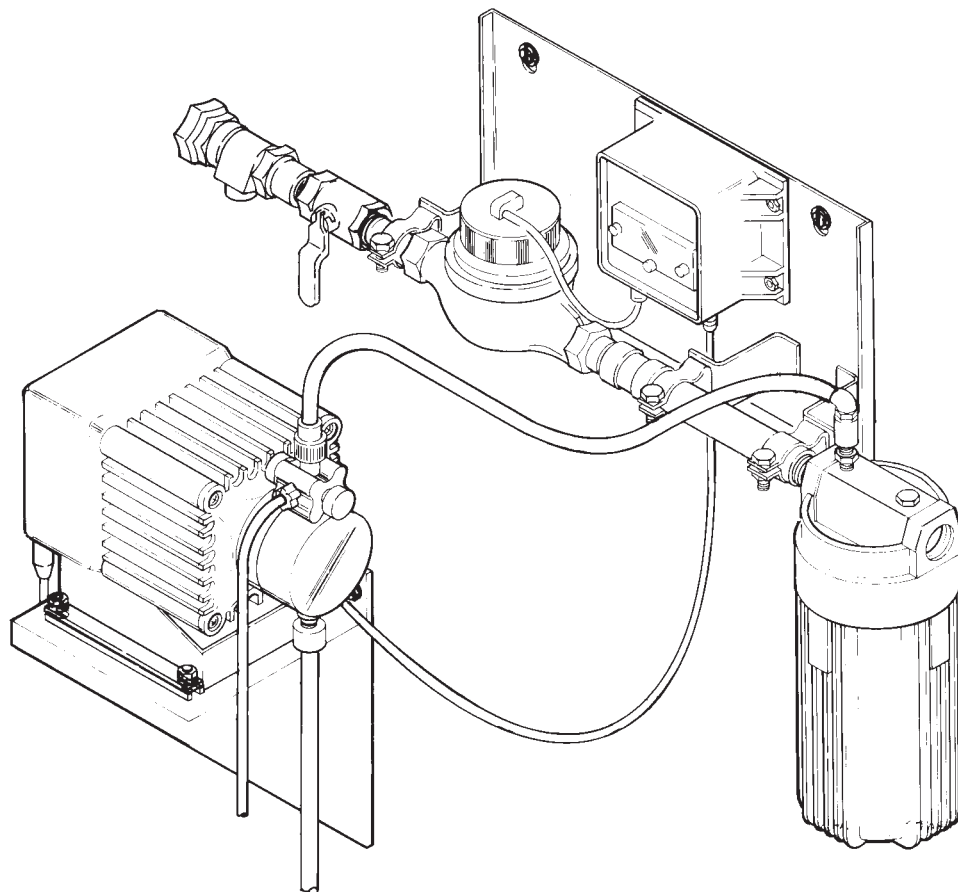


MIKRO-MASTER 300

INSTALLATION AND OPERATION MANUAL



MIKRO-MASTER 300
INSTALLATION AND OPERATION MANUAL

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1.0 PREFACE

This manual has been written to present the basic installation and operational characteristics of the *Mikro-Master 300*. ***This manual applies, in its entirety, to current units.***

Guidelines will be suggested in reference to the preferred method of installation, however, the variety of equipment and the surrounding physical environment will dictate the actual installation of the *Mikro-Master 300*.

WARNING - These installation and servicing instructions are for use by qualified personnel only. The installation must be made in accordance with local plumbing codes.

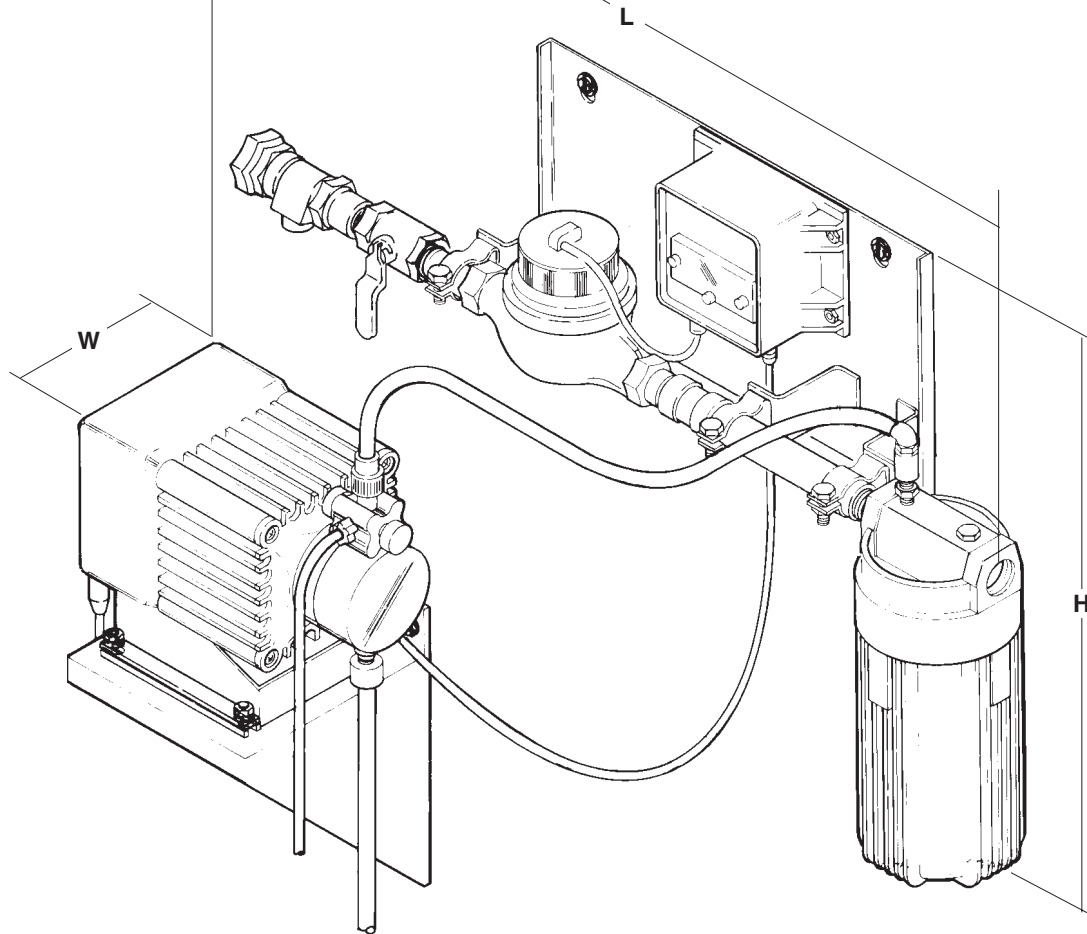
2.0 INTRODUCTION

The Mikro-Master 300 dispenser is a water driven meter, proportioning sanitizer/lube system which offers ease of installation and accurate concentration control. The piston pump injects product from the shipping container into a mixing chamber which is connected in-line with the spray outlets. The flow meter contains an impellar which provides long life over a wide range of accuracies. The flow meter has a straight reading in U.S. gallons. The dispensing system is designed to provide positive metering and dispensing for sanitizing and lube applications.

As liquid flows through the flow meter, a magnetic pick-up, external to the flow stream, senses each rotation of the lightweight, high speed rotor. These high speed pulses are transmitted to the programmable divider mounted above the flow meter. The programmable divider is preset to accumulate any number of these high speed rotor pulses (up to 9,999) for triggering to stroke the pump.

As flow continues, the programmable divider continues to accumulate high speed pulses, and again triggers a stroke of the pump as soon as the preset number is accumulated. When the flow rate increases, pulse accumulation becomes faster and the pump stroke frequency increases in proportion. When flow stops, the pump stops.

3.0 SPECIFICATIONS



Installation Diagram

3.1 Dimension

- Height: 22" (55 cm)
- Length: 48" (121.9 cm)
- Width: 8" (20.3 cm)

3.2 Services Required

- **Water Supply**
Minimum - 10 psi (.69 bar)
Maximum - 90 psi (6.2 bar)
- **Water Volume**
Minimum - 1/2 gal./min. (1.89 liters/min.)
Maximum - 20 gal./min. (75.6 liters/min.)
- **Equipment Water Temperature**
Minimum - 32°F (0°C)
Maximum - 130°F (54.4°C)
- **Electrical 120VAC, 50/60Hz, 1 AMP**

3.3 Equipment Supplied

The Mikro-Master 300 dispenser is supplied with a backflow preventer. This backflow preventer should be installed just before the shut-off valve to the flow meter. The mixing chamber is a water filter that is internally modified to allow maximum mixing of the water and the chemical before going to the distribution system.

3.4 Equipment Not Supplied

Inlet and outlet shut-off valves are not supplied with the installation kit. If a pressure regulator is necessary, it should be installed at the inlet to the back flow preventer. A water filter housing without cartridge, a mounting bracket and a stainless steel water filter cartridge are available if needed. (See optional installation items under Lube Systems in the *Repair Parts Manual*.) This filter should be connected into the input water supply line.

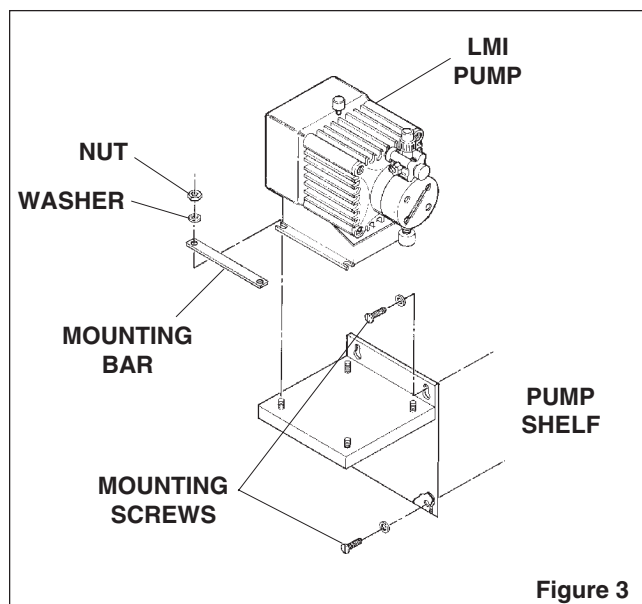
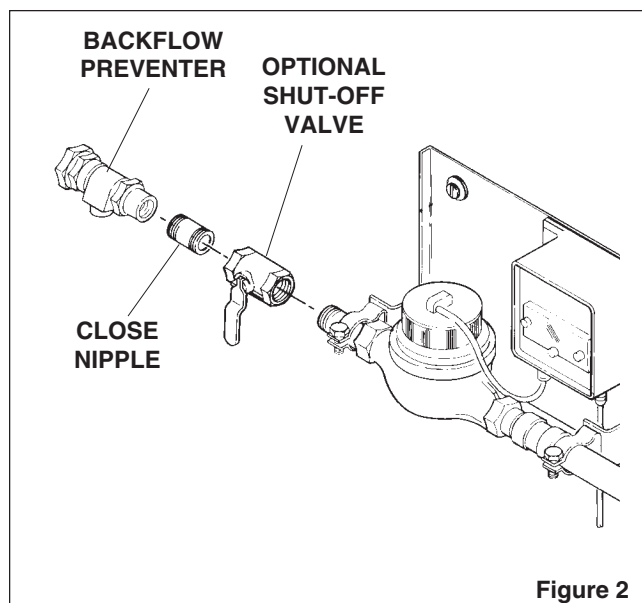
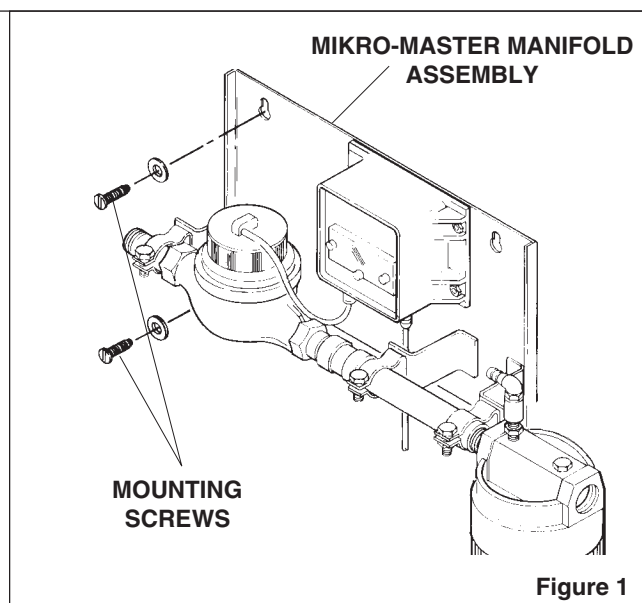
4.0 INSTALLATION PROCEDURES

WARNING - THESE INSTALLATION AND SERVICE INSTRUCTIONS ARE FOR USE BY QUALIFIED PERSONNEL ONLY. THE INSTALLATION MUST BE IN ACCORDANCE WITH THE LOCAL PLUMBING CODES.

1. Remove the water manifold assembly from the shipping carton and mount on the wall immediately adjacent to the water line using the screws and wall anchors provided, *refer to Figure 1*. Keep in mind that the flow meter manifold assembly must be mounted horizontally. For the best results, it should be mounted at the lowest horizontal point in the pipeline.

NOTE - If the pipeline is not adjacent to a wall, remove the base from the flow meter manifold assembly and mount it directly into the pipeline. Insure that the pipeline is adequately supported for the extra weight of the manifold assembly.

2. Install anti-siphon valve and shut-off valve (optional) upstream (inlet) of the flow meter manifold assembly, *refer to Figure 2*. Make sure that the orifice size of the valve is at least as large as the nominal size of the flow meter. Plumb the inlet, which is the inlet through the flow meter, on the left-hand side of the manifold assembly
3. Locate an area on the wall that is convenient to both the chemical injection point and the 120VAC/60Hz electrical supply. Mount the pump shelf slightly below the level of the flow meter pulser assembly so that the head of the pump is below the injection point on the manifold assembly mixing chamber (this is to keep air in the line from the pump to the injection point to a minimum), *refer to Figure 3*. Mount the pump on a shelf using the stainless steel mounting bar, nuts and washers provided. For convenience, the pump can be mounted so the head is either to the right or left of the injection point on the flow meter manifold assembly.
4. Plug the cable connector from the programmable divider into the receptacle located under the control panel of the pump, *refer to Figure 4*.



NOTE - insure pump is mounted close enough to flow meter manifold assembly for the length of cable connector wire available from the programmable divider.

5. Using the drum probe, 1/2" (12.7mm) tubing and fittings provided, plumb the drum probe to the bottom connector on the pump head, *refer to Figure 5.*

NOTE - For products that gas off, do not use the drum probe. The tubing should be flexible and as short as possible. The product drum must be placed directly under the pump.

Using the 1/2" (12.7 mm) tube and hose clamp provided, plumb the output port, which is the one on the top of the anti-siphon valve on the pump, to the injection point on the mixing chamber of the manifold assembly. Connect the pump to 120VAC/60Hz electrical supply.

Connect 1/4" (6.4 mm) tubing, which is provided to the tubing nut on the anti-siphon valve on the pump head, and run it back to the drum or the drain. This is for pressure relief during priming.

6. Place the pump switch in the INTERNAL position. As the pump is running, set the stroke length knob at 60% (all dosage ratio calculations are based on 60% stroke length), *refer to Figure 6.*

Set the speed control switch on the pump at 100% and with the pump switch in the internal position, grasp the black and yellow knob on the pump anti-siphon valve and pull outward on both until the product rises in the suction tube and starts to come out the 1/4" (6.4 mm) bypass tube. (Priming is best accomplished with the speed switch set on 100%). The pump is now primed.

SET THE SELECTOR SWITCH ON THE PUMP TO THE EXTERNAL POSITION.

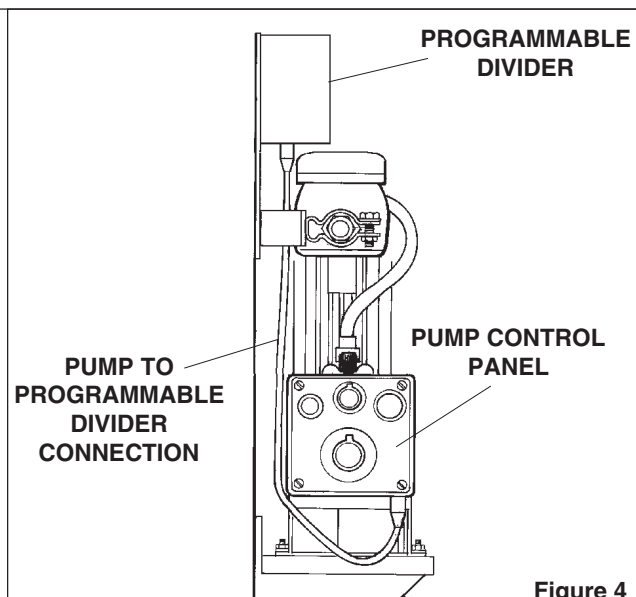


Figure 4

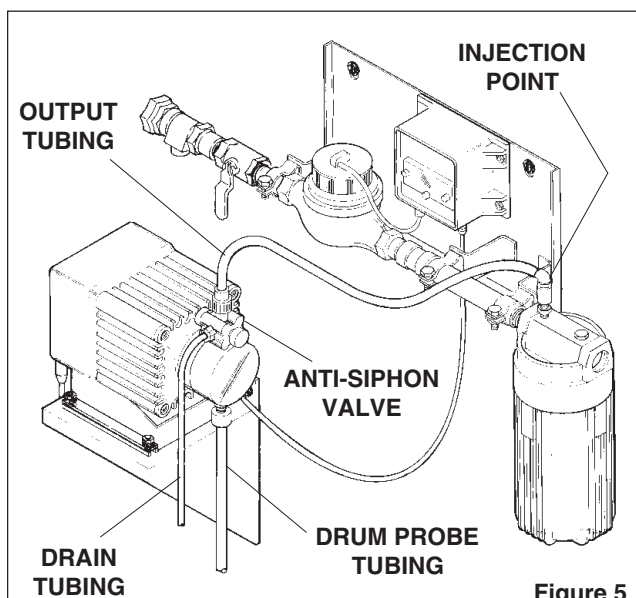


Figure 5

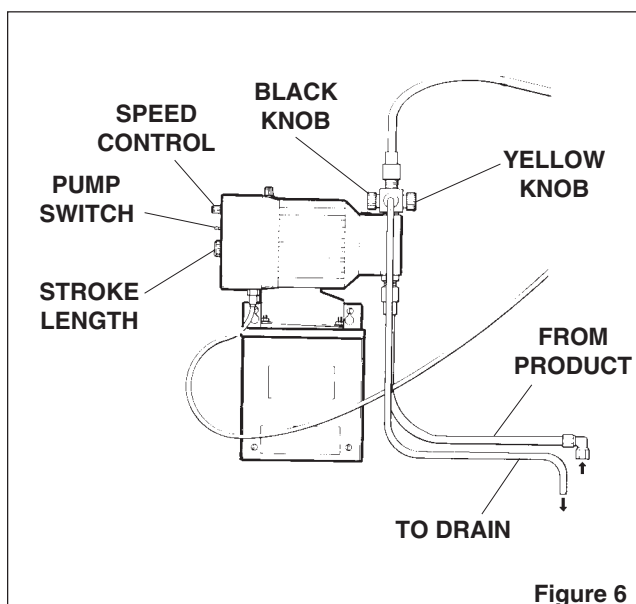


Figure 6

6.0 START-UP PROCEDURES

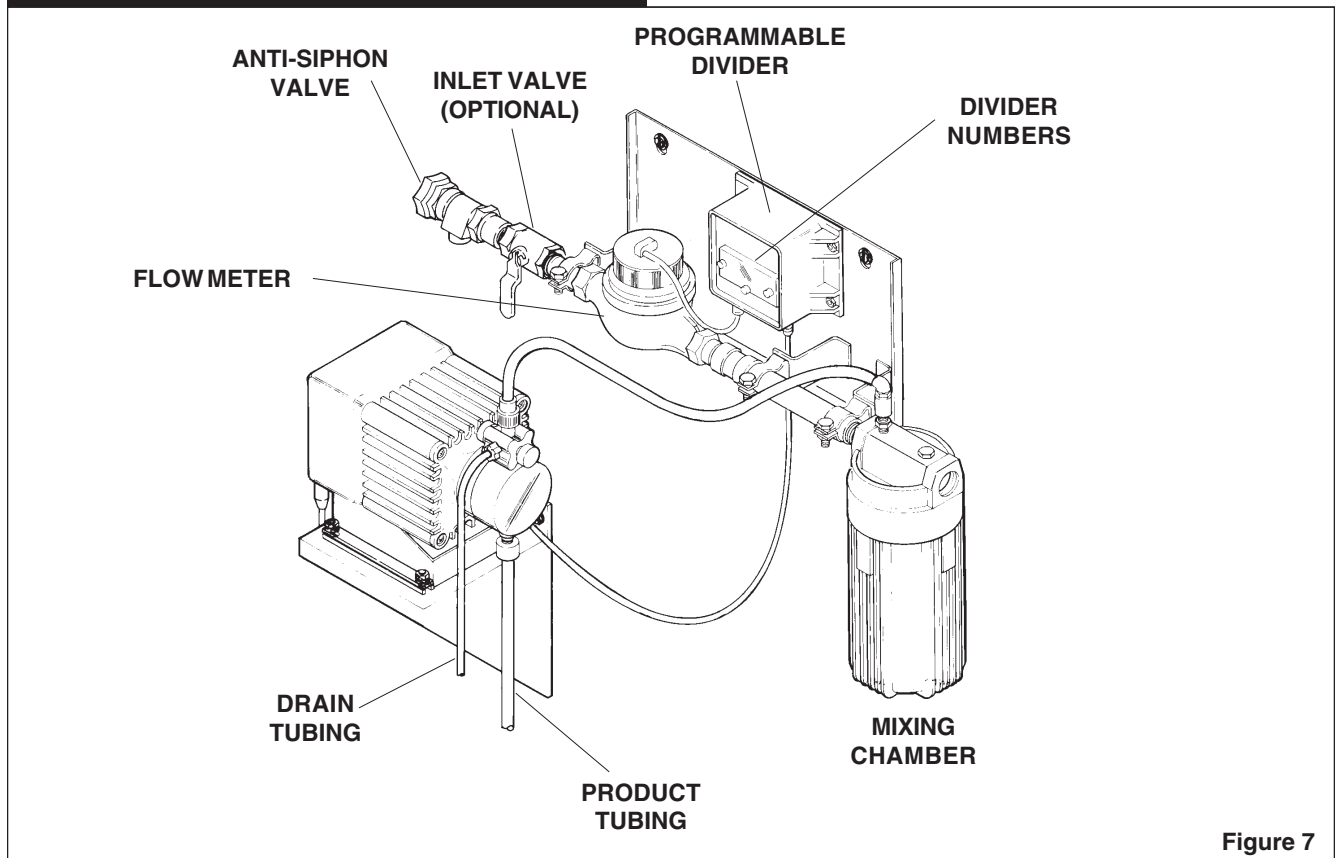


Figure 7

The dosage ratio is an amount of chemical solution to be added or injected into an amount of water using the same unit of measure. Dosage ratios are determined by setting the divider number of the programmable divider.

1. To set the divider number, remove the clear window on the divider. Set thumb wheel switches to divider number determined on the chart located at the right. Divider numbers are precalculated for each sanitizer/lube listed and could vary slightly up or down depending on external conditions.
2. Turn on the water supply to the unit and open the input valve (optional). When water flows through the flow meter, the pump will start pumping, allowing solution to the spray outlets.

IMPORTANT - THE PUMP SHOULD NOT BE ALLOWED TO STROKE MORE THAN 80 STROKES PER MINUTE AS DAMAGE TO THE PUMP WILL RESULT.

3. Check the dosage ratio. If the concentration is too high, set the programmable divider number up slightly. If the concentration is too low, set the divider number down slightly.

PRODUCT	DOSAGE RATIO	DIVIDER NO. SETTING
Mikro-Klene DF	1.00 oz. per 10 gal.	40
Bevro-Klene	1.00 oz. per 10 gal.	40
Bac-Flush	1.00 oz. per 52 gal.	117
K-San	1.00 oz. per 2 gal.	8
Mandate	1.00 oz. per 6 gal.	24
Ster-Bac	1.00 oz. per 4 gal.	16
P3 Oxonia Active	1.00 oz. per 3 gal.	10
Fas-Trac (1%)	1.28 oz. per 1 gal.	3
Fas-Trac (.5%)	.64 oz. per 1 gal.	6
Klenz-Glide 1 (1%)	1.28 oz. per 1 gal.	3
Klenz-Glide 1 (.5%)	.64 oz. per 1 gal.	6
Klenz-Glide 5 (1%)	1.28 oz. per 1 gal.	3
Klenz-Glide 5 (.5%)	.64 oz. per 1 gal.	6
Klenz-Glide 10 (1%)	1.28 oz. per 1 gal.	3
Klenz-Glide 10 (.5%)	.64 oz. per 1 gal.	6
Klenz-Glide 20 (1%)	1.28 oz. per 1 gal.	3
Klenz-Glide 20 (.5%)	.64 oz. per 1 gal.	6
Klenz-Glide 30 (1%)	1.28 oz. per 1 gal.	3
Klenz-Glide 30 (.5%)	.64 oz. per 1 gal.	6
Klenz-Glide PL (1%)	1.28 oz. per 1 gal.	3
Klenz-Glide PL (.5%)	.64 oz. per 1 gal.	6
Lubri-Klenz (1%)	1.28 oz. per 1 gal.	3
Lubri-Klenz (.5%)	.64 oz. per 1 gal.	6
Lubri-Klenz LF (1%)	1.28 oz. per 1 gal.	3
Lubri-Klenz LF (.5%)	.64 oz. per 1 gal.	6

Replace clear window to activate programmable divider.

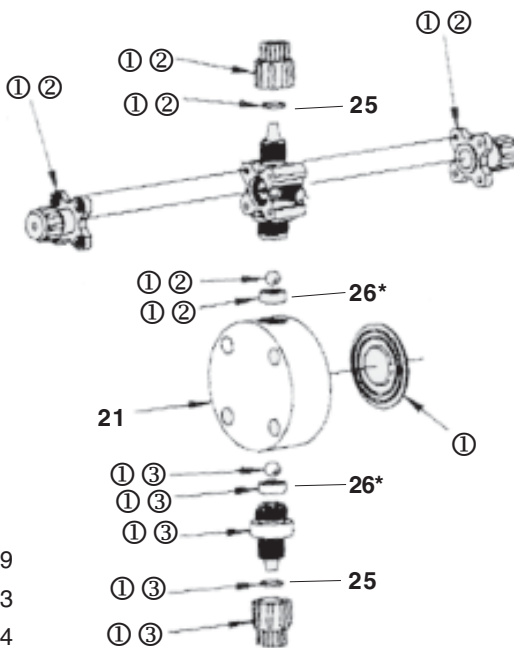
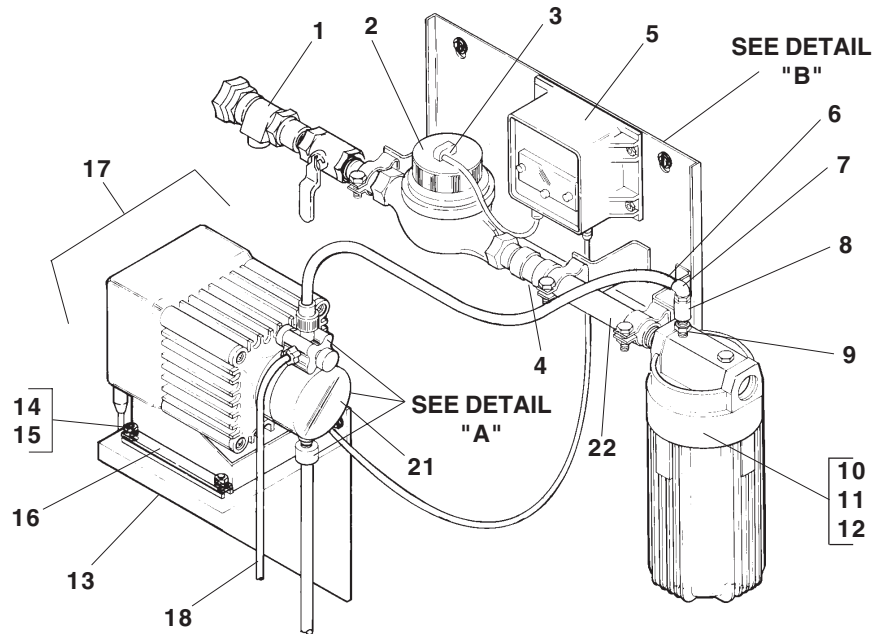
IMPORTANT - THE DIVIDER WILL NOT OPERATE UNLESS WINDOW IS IN PLACE.

7.0 TROUBLESHOOTING

PROBLEM	CAUSE OR FAILURE MODE	ACTION
Mikro-Master 300 does not operate.	No 120VAC power. Internal - OFF - External switch on pump in OFF position. No water flow through the system. Interconnecting cable between the flow meter and the pump is disconnected or loose. Water flow through the system is less than 1/2 gpm. The programmable divider's plastic window is not installed or is loose.	Check power source to pump. Place switch in External position. Check and correct as necessary. Check and correct as necessary. Increase water flow through the system to more than 1 gpm. Install window or tighten mounting screw as necessary.
Pump does not stroke.	Internal - OFF - External switch on pump in OFF position Divider number on programmable divider is set at a high dosage ratio. Flow meter faulty. Pump is faulty. Interconnecting cable between the flow meter and pump is disconnected or loose.	Place switch in External position. Set divider number down. Replace sensor. Replace pump. Check and correct as necessary.
Pump strokes too fast (80 strokes per minute is maximum to avoid damage to the pump).	Divider number of programmable divider is set at a low dosage ratio number.	Set divider number up.
Pump will not prime or will not pump product.	Ceramic valve balls in pump head bad or missing. Teflon seal rings bad or missing. Coupling nuts on pump leaking or cracked. Diaphragm is leaking or cracked. Pressure release cap assembly or anti-siphon cap assembly on anti-siphon valve faulty or cracked. Suction drum probe faulty.	Replace faulty or missing balls from spare parts kit. Replace faulty or missing seal rings from spare parts kit. Replace leaking or cracked coupling nuts from spare parts kit. Replace leaking or cracked diaphragm from spare parts kit. Replace pressure release cap assembly or anti-siphon cap assembly from spare parts kit. Replace suction drum probe.
Pump will not pump against system pressure.	Improper installation where system pressure exceeds 70 psi (4.8 bar).	Install pressure regulator to Mikro-Master 300 system.

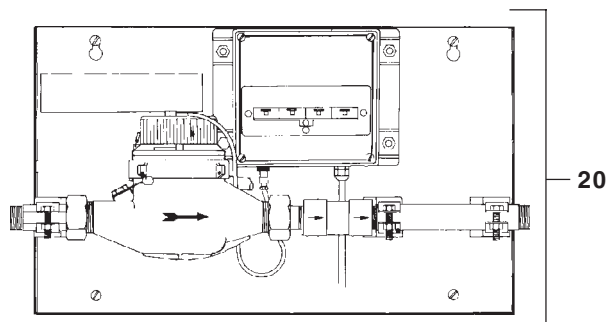
REPLACEMENT PARTS

MIKRO-MASTER 300



- ① INCLUDED WITH KIT REF. NO. 19
- ② INCLUDED WITH KIT REF. NO. 23
- ③ INCLUDED WITH KIT REF. NO. 24

DETAIL A



DETAIL B (MM-300 Conversion Kit)

SECTION:

MIKRO-MASTER

REPLACEMENT PARTS

MIKRO-MASTER 300

REF.

NO.	PART NO.	DESCRIPTION
1	8524-1511	BACKFLOW PREVENTER 3/4 FPT
2	#8495-0179	WATER METER (INCLUDES REF. NO. 3)
3	8480-5969	SENSOR ASM
4	8524-4044	CHECK VALVE 3/4" FPT DELRYN
5	8480-5951	PROGRAMMABLE DIVIDER
6	8730-1149	HOSE CLAMP, IDEAL 6207 SS
7	8578-5236	HOSE END ELBOW, 3/8ID X 1/4 MPT POLYP
8	8603-3016	COUPLING, 1/4 304 SS
9	8524-3038	CHECK VALVE, 1/4MPT SS
10	9401-9072	MIXING CHAMBER
11	8730-1032	HOSE CLAMP, 11/16 TO 1-1/4 SS
12	8501-5774	PLASTIC TUBE, 7/8 ID PVC CLEAR
13	9403-7538	WALL MOUNT BASE
14	8842-0088	NUT 10-32 HEX MACHINE SCREW SS
15	8852-2602	LOCKWASHER #10 EXT SHK/PRF SS
16	9403-9294	BAR,PUMP HOLD DOWN
17	#8460-4495	METERING PUMP, LMI 721
18	9219-0214	PLASTIC TUBE, 1/4 ODX 10 FT. POLY-FLO
19	① 8480-3717	SPARE PARTS KIT INCLUDES: ANTI-SIPHON CAP ASM PRESSURE RELIEF CAP BALL, CERAMIC SEAL RING, TEFLON COUPLING NUT, POLYP DIAPHRAGM CLAMP RINGS SST

REF.

NO.	PART NO.	DESCRIPTION
20	9403-1077	MM-300 METER CONVERSION KIT
21	8480-7734	PUMP HEAD ONLY
22	8511-1706	NIPPLE, 3/4 X 7
23	② 8480-3857	4-FUNCTION VALVE KIT
24	③ 8480-3840	SUCTION VALVE KIT
25	8480-3719	CLAMP RING 1/2 SST
26	*8480-3720	SEAL RING TEFLON
	*8480-3721	SEAL RING HYPALON
	•8531-0100	THUMB-TROL PLASTIC NOZZLE
	•8310-9108	ADHESIVE BACK CABLE TIE MOUNT
	•8310-9041	CABLE TIE, 3/16 X 7-3/8 POLYP
	•9403-2067	INSTALLATION AND OPERATION MANUAL
	•9403-1000	PRESSURE REGULATOR W/ GAUGE (OPTIONAL)

PARTS MUST BE RETURNED TO BELOIT

• ITEM NOT SHOWN

* USE HYPALON IN ALL APPLICATIONS EXCEPT POAA'S AND MANDATE PLUS - THEN USE TEFLON

SECTION:

MIKRO-MASTER