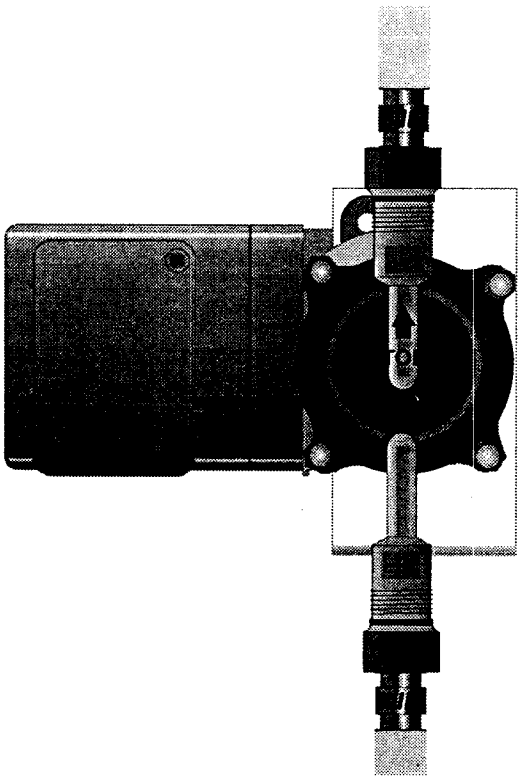
FPUDT3000 Series

High Volume Diaphragm-Type Injection Metering Pumps



5-10 FT of Head

OMEGA®

An OMEGA Technologies Company

Operator's Manual

Unpacking Information

Remove the Packing List and verify that you have received all equipment, including the following (quantities in parentheses):

FPUDT3000 Series Pump (1)
5 Ft. $^5/_8$" OD clear PVC flexible suction tubing (2)
Injection Fitting (1)
Foot Strainer (1)
Hose Clamps (4)
Operator's Manual (1)

If you have any questions about the shipment, please call the OMEGA Customer Service Department.
When you receive the shipment, inspect the container and equipment for signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

NOTE

The carrier will not honor damage claims unless all shipping material is saved for inspection. After examining and removing contents, save packing material and carton in the event reshipment is necessary.

Table of Contents

Chapter 1 Introduction

1.1 Description

The FPUDT3000 Series injector pumps have a large pump head and valves which allow for large volumes of liquid to be pumped. This is an excellent transfer pump, but unlike most transfer pumps, has a side-mounted camtype feed controller and can be run dry without damage to the pump. The unit comes equipped with an acrylic pump head, but it may also be order in polypropylene or polyethylene. These pumps are supplied with an accessory kit package.

Your chemical injector is a positive displacement type pump. This little pump is very strong and will inject the fluid in substantially equal amounts even though the line being treated may have varying pressures. This is a positive displacement pump so the chemical, once in the pump head cannot flow backwards, but must go forward. Be aware, if the flow is blocked the pump will stall and the gearing will be overworked. Some models are protected from burning out by a "thermal protection" automatic reset switch, and others by impedance coil windings. The latter is not quite as powerful. The feed rate can be easily adjusted from "0" to full by increasing or decreasing the stroke length.

Protect yourself (wear glasses) against the high pressure that may be present when you disconnect a discharge line. There is always danger of electrical shock when plugging, switching, or just fumbling with electrical instruments. Make sure your three wire cord receptacle is grounded as required.

1.2 Available Models

PART NUMBER	MAX GPD	MAX mL /min	STROKES MIN.	MAX PSI
FPUDT3001	189	498	60	20
FPUDT3002	398	1047	125	10
FPUDT3003	792	2081	250	5

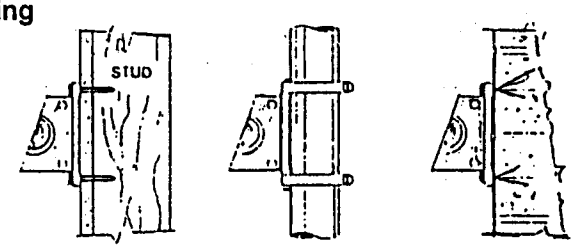
For 230 Vac/60 Hz voltage, add suffix "-230V60" to part number
For 220 Vac/50 Hz voltage, add suffix "-220V50" to part number
For 24 Vac/60 Hz voltage, add suffix "-24V60" to part number
For 24 Vdc voltage, add suffix "-24Vdc" to part number
For 12 Vdc, add suffix "-12V" to part number

Chapter 2 Locating the Pump

2.1 Weather - Ventilation

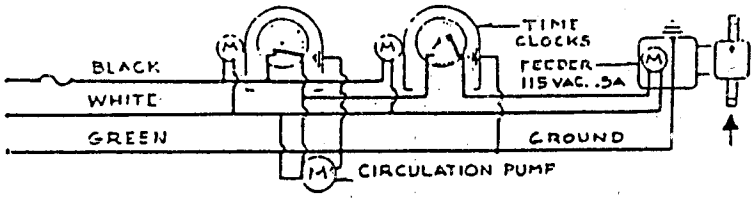
A good solid floor such as concrete or brick is desirable. This unit is approved for outdoor installation by authorities. Select a stud, masonry wall or post in a sheltered, non freezing, but ventilated area. Before you choose the exact spot be sure the chemical container can be located near the installation. You should keep the suction line short as practical. The unit should be offset to one side of any removable tank top. Keep the pump low for best control, about 42" above the floor level.

2.2 Wall Mounting



It is imperative the unit is firmly attached to its support. Wall board or plaster alone will not carry the weight and vibration. Find a wall stud for best results.
Two 1 1/2" screws are furnished if you are fastening to wood. Two 1" screws with anchor shields are used if you are attaching to masonry. The anchor shields require a 1/4" hole 1 1/4" deep. Put the screws in place but leave the heads projecting from the wall a full 1/8" so the key slot holes will fit over the screw heads. Attach bracket to pump case with retainer screw "S" then place unit and bracket over the wall screws and slide down.

2.3 Electrical Requirements



The electrical hookup is very important. The injector must never operate when treated line is shut down. The above diagram shows the injector wired within the cycle of the circulation pump or any system where chemical is used within any cycle but does or does not run a full system cycle. If your system is complicated be sure your electrician knows what is required. Remember chemicals fed to a stopped system can ruin it. The time clocks are not required or furnished. A flow or pressure switch may actuate the metering pump.

WARNING RISK OF ELECTRIC SHOCK

- Make sure you connect the unit to the proper power supply.
- Using the incorrect voltage will cause severe damage to the motor.
- The voltage requirement is printed on the serial number label.
- All pump models are supplied with a junction box and cover.
- To reduce the risk of electric shock, be certain that pump is properly grounded.

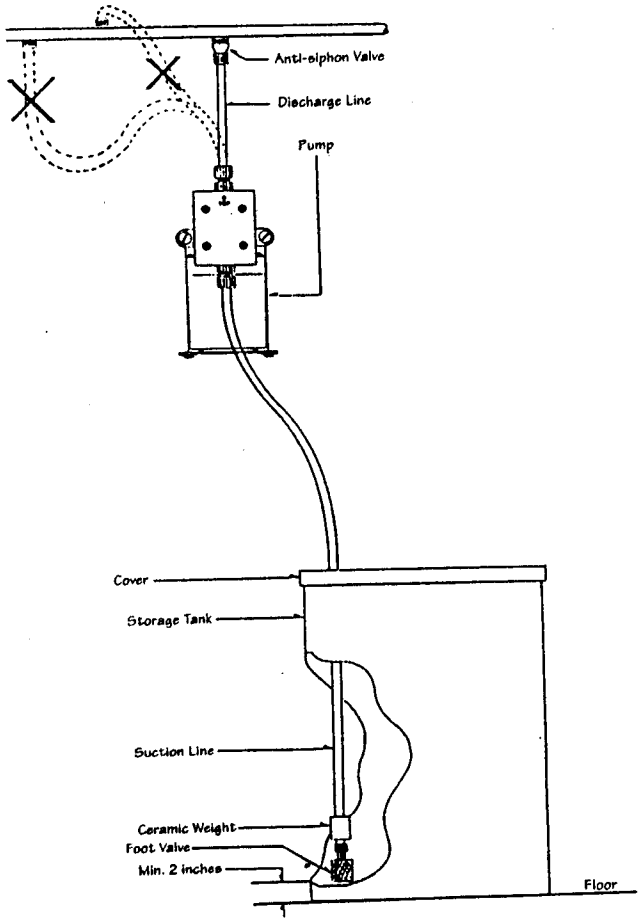
2.4 Supply Tank for Chemicals

Plastic chemical containers must be designed and manufactured for this purpose. Refuse containers must never be used. Your container must be designed for whatever chemical you are using. Also, never place the container in bright sunlight; ultra-violet rays, (UV) attack many materials which makes them become brittle.

Chapter 3 Operation - Maintenance

3.1 Operation

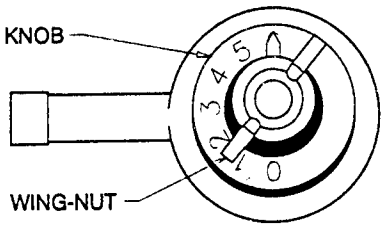
When the injector pump is shut down it does not prevent the chemical from flowing forward when suction (negative pressure) is applied to the discharge line. You must be aware that sometimes the treated line will have negative pressure. This will happen when a circulation pump shuts down and the treated water level is lower than the supply tank. So whenever you have a negative line pressure, even though the pump is shut down, the chemical will attempt to flow downwards to the lower surface (liquid seeks its own level. To prevent the chemical from siphoning downward or forward the anti-siphon valve must be used. See the following diagram.



Certain chemicals such as lime, calcium, sodium, etc. clog and stick to the internal passages. To remove, place the foot valve in a smaller container of clear water and pump through the injector and fitting. Then pump a weak solution (1 cup muriatic acid to 1/2 gallon of water) through the system two or three times. If crusting is really bad, you will have to take the pump apart and wash it. When finished, rinse with clear water.

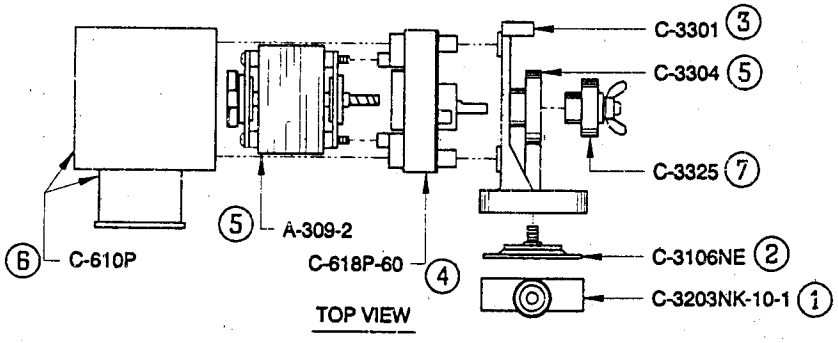
3.2 Output Adjustment

The required feed rate is usually determined by trial and error. The dial will help you return to any previous setting. With the motor stopped hold the knob and loosen the wing nut then rotate the knob so pointer is the desired setting. While holding the knob, tighten the wing nut. The wing nut must be very tight.



Chapter 4 Replacement Parts

4.1 Sub Assemblies



1. Pump Head Assy.	C3203 NK-10-1
2. Diaphragm	C-3106NE
3. Motor Bracket	C-3301
4. Gear Box	C-618P 60 RPM C-618P 125 RPM C-618P 250 RPM
5. Motor	A-309-1 24Vac A-309-2 115Vac A-309-3 230Vac A-309-4 220Vac 50Hz
6. Housing with Junction Box	C-610P
7. Cam Assy. Complete	C-3325
8. Anti-Siphon Valve .50MPT (Not Shown)	C-3395-10E

Chapter 5 Pump Accessories

In-line Check Valve

In-line check valves are installed on the discharged side of the line and prevent the liquid being pumped from flowing backward. Constructed of durable polypropylene, PVC or brass, with Viton O-rings.

Model No.	Tube Size OD	O-Ring
FPUCV1	3/8"	Viton

Anti-siphon Injection Valve

Designed to prevent liquid being pumped from siphoning through the pump head during both the On and Off cycles, and to keep the liquid in the system from flowing backward through lines and fittings.

Model No.	Tube Size OD	O-Ring
FPURV1	1/4"	EP
FPURV2	1/4"	Viton
FPURV3	3/8"	EP
FPURV4	3/8"	Viton

Pressure Relief Valve

In the event of excessive line pressure, the adjustable valves automatically opens, protecting your pump from damage from excessive pressure. An added feature is the priming valve, which eliminates problems caused by line pressure.

Model No.	Tube Size OD	O-Ring
FPRV1	1/4"	EPDM
FPRV2	1/4"	Viton
FPRV3	3/8"	EPDM
FPRV4	3/8"	Viton

Foot Valve Strainers

Foot valve strainers are constructed of molded polypropylene with polypropylene screens. The screens act as filters (strainers) to keep particles from entering the suction lines and fouling the pump head. They may be used either as a foot valve or as a bulkhead fitting when equipped with adapter nut and gasket.

Part Number	Tube Size OD	O-Ring	Bulkhead Fitting
FPUSV1	1/4"	EP	FPUBV1
FPUSV2	1/4"	Viton	FPUBV2
FPUSV3	3/8"	EP	FPUBV3
FPUSV4	3/8"	Viton	FPUBV4
FPUSV5	5/8"	-	FPUBV5

Feed Indicator

Verify solution feed at a glance, no matter how cloudy or discolored tubing becomes. The rhythmic rising and falling of the float indicates positive flow, while the appearance of air bubbles is an excellent trouble shooting and diagnostic tool. Available individually or in packages of 12.

Individual Unit Part Number	Package of 12 Part Number	Tube Size OD	Float
FPUSG1	FPUSGK1	3/8"	Glass
FPUSG2	FPUSGK2	1/4"	Glass
FPUSG3	FPUSGK3	3/8"	316SS
FPUSG4	FPUSGK4	1/4"	316SS

Chapter 6 Specifications

Pump Head Material:	Acrylic
Diaphrgm Material:	Ethylene Propylene Standard
O-Ring Material:	Ethylene Propylene Standard
Motors:	60, 125, 250 RPM
Voltage:	115Vac/60 Hz, optional, 230Vac/60 Hz, 220Vac/50 Hz, 24Vac/60 Hz, 24Vac/50 Hz, 12Vdc, 24Vdc
Dimensions:	203mm H x 178mm W x 165mm D (8"x7"x6 1/2")
Shipping Weight:	3.6 kg (8lb)

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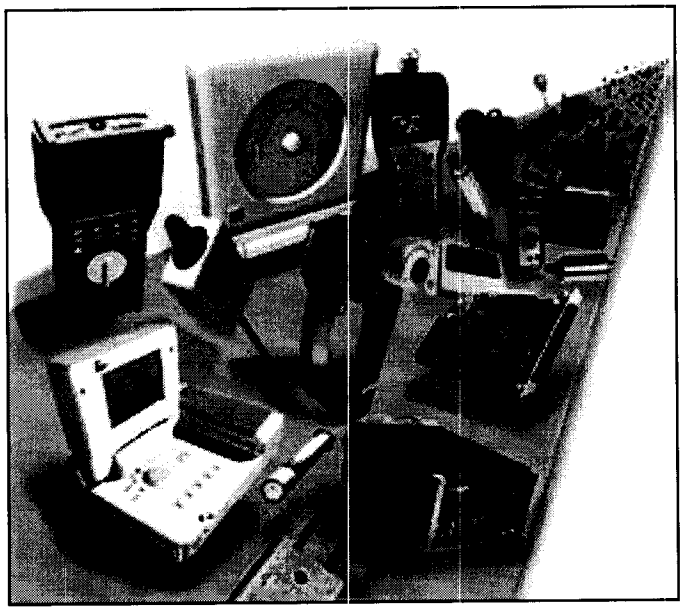

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OMEGA is glad to offer suggestions on the use of its various products. Nevertheless, OMEGA only warrants that the parts manufactured by it will be as specified and free of defects.

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FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

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