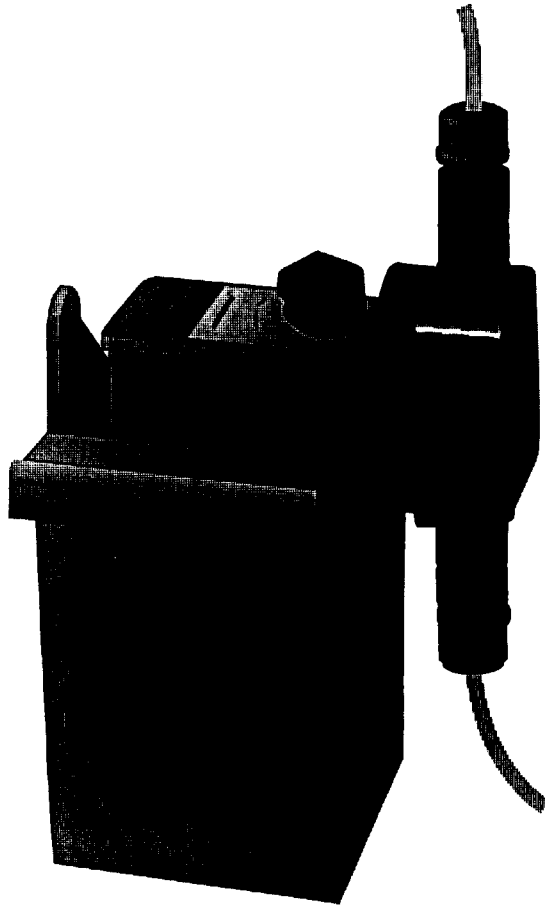


® FPUDT1500 Series

® Heavy Duty Diaphragm-Type Injector Metering Pump



Operator's Manual



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PREFACE

You have received a chemical injector, it is a positive displacement type pump. This little pump is very strong and will inject the chemical in substantially equal amounts even though the line back pressure may vary. The feed rate can easily be adjusted from "0" to full by increasing or decreasing the stroke length. Remember 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, others by impedance coil windings. The latter is not quite as powerful. Please give your pump suggested care and it will give you years of service.....

Remember to protect yourself against the high pressures that may be present when you disconnect a discharge line (wear glasses) also there is always danger of electrical shock when plugging, switching, or just fumbling with electrical instruments. Keep one hand in your pocket while disconnecting, connecting or touching any metal that may be heated by line voltage.....

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Chapter 1 Unpacking Information

1.1 Unpacking inventory

Verify that you have received all of the following equipment:

- One FPU DT1500 Series Pump
- 5 ft. 3/8" od clear PVC flexible suction tubing with FLOW INDICATOR
- 5 ft. 3/8" od opaque high pressure discharge tubing.
- One Threadless injection (T.I.) fitting
- One Combination foot valve and strainer
- One Ceramic weight
- One Mounting bracket with two 1 1/2" and two 1" screws with two 1" anchor shields and one 1/2" by #10 black screw.

NOTE: This manual includes installation and service of pump/tank metering system. See page 8.....

1.2 Features

- 1500 Series pumps are listed by authorities as suitable for exterior installation. See installation instructions.....
- Output adjustment is made by turning a knob that varies the length of the reciprocating diaphragm yoke.....
- Motor shaft, output gear shaft and camshaft bearings are sealed ball bearings with lifetime lubrication. No further gear box or motor bearings lubrication is necessary.....
- Highest grade UV resistant plastic housing, head and fittings....
- All controls are at the top or side so pumps may be wall or shelf mounted.....

Chapter 2 Location - Weather

2.1 A good solid floor such as concrete or brick is desirable. This unit is approved for outdoor installation by authorities however please 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.... Two 1-1/2" screws are finished if you are fastening to wood. Two 1" screws with anchor shields 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..... As shown on following drawing.....

The pump is designed to perform in a wide variety of installations. However, the service life of each part in the pump will vary, depending on many factors such as fluid, temperature, pressure, altitude, etc... Because of the wide variety of installations, the pump has been factory-tested for pressure and performance using water only. Do not use chemicals if you are not satisfied they are compatible with the pump's construction. Contact OMEGA if you need assistance.

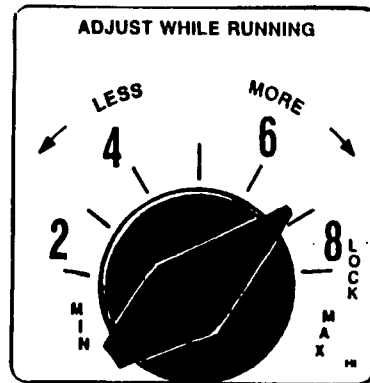
The most common problem is calcium and/or lime build up inside the injector, foot valve and tubing. This is basic material and can easily be removed by running a weak solution of muriatic acid through it. After flushing the pump with clear water place the injector fitting and foot valve with the tubing attached in a container of weak (1-5) solution of commercial grade muriatic, then pump it around and around. After flushing out the wetted parts with clear water again, return pump to service. CAUTION do not allow acid and chlorine products to come together VERY DANGEROUS to your health!

3.3 Output Adjustments

The required feed rate is usually determined by trial and error - the divisions on the dial are for percentages of full rate at given pressures, see pump label, the dial will help you return to any previous setting.....

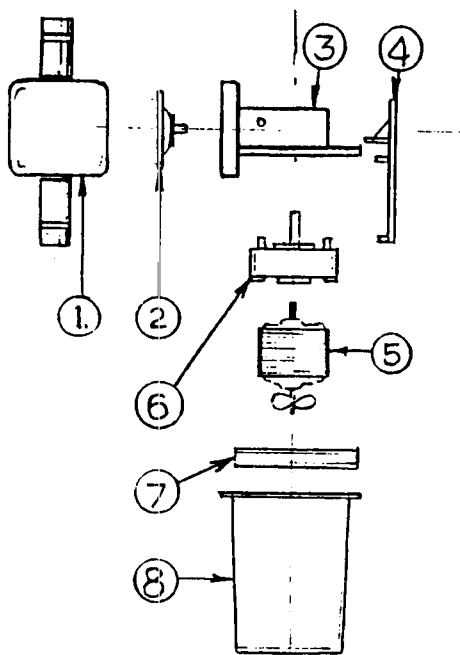
The pump is delivered to you with the adjustment set at full and the pump head may contain water used when testing. It is suggested you start and run your pump with water, then while running turn the thumb screw counter clockwise to loosen the adjustment

knob, turn the knob to a lesser feed then up again to get the feel of it. In the beginning pump less chemical than you estimate you need then re-adjust. After setting the dial knob you must lock it in place by turning the thumb screw clockwise.....



If your installation is at a high altitude priming may be more critical since the atmospheric pressure is decreased. Then if the suction line is dry the diaphragm may not create enough pull - so try this, remove tube from bottom of head and fill with water.. While pump is running slip tube over fitting, when pumping starts place foot valve in chemical..... You have four valves that prevent the fluid from running backwards to lose prime when pump is shut down..... The tank metering set up at the end of this booklet shows the flooded suction installation this is standard procedure with suction pumps other than possibly the Peristaltic type.....

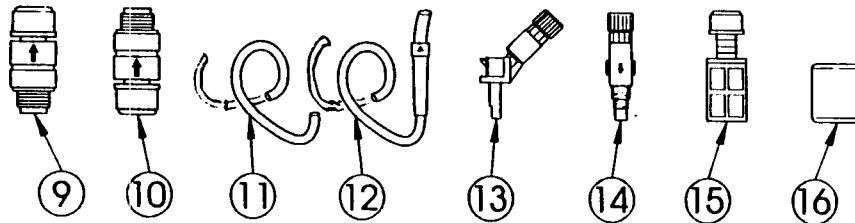
Chapter 4 Replacement Parts



- 1. PUMP HEAD ASSY. C-535A6-6
- 2. DIAPHRAGM C-406T-15N
- 3. MOTOR BRACKET C-1501N
- 4. MOUNTING BRACKET C-628N
- 5. MOTOR A-309-1 24 AC
A-309-2 115 AC
A-309-3 230 AC
A-309-4 220 AC 50 Hz
- 6. GEAR BOX C-618P-14 RPM
C-618P-30 RPM
C-618P-45 RPM
C-618P-60 RPM
C-618P-125 RPM
- 7. COVER CLAMP 76000-630
- 8. HOUSING C-1508PN

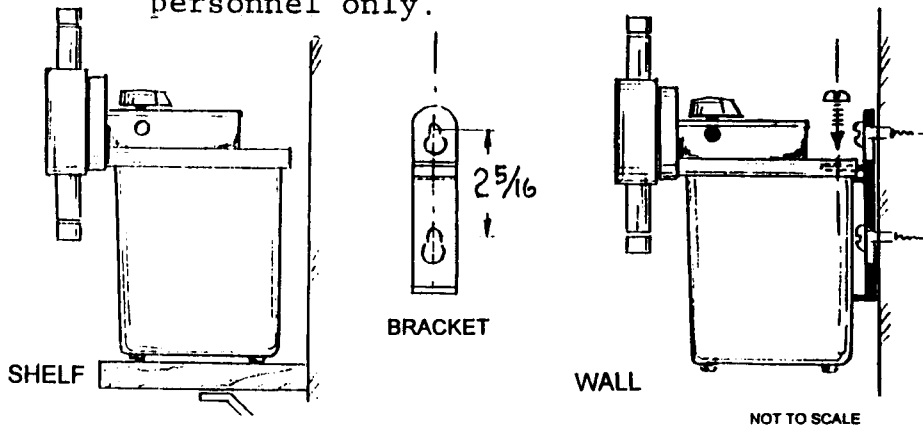
NOTE: When replacing diaphragm be sure drive assembly is in neutral (centered, put pointer on 5...) * Finger tighten diaphragm to yoke's threaded hole.... When re-attaching pump head tighten the four screws a little at a time, do not oversqueeze diaphragm ...Pump head assembly #1 includes top and bottom valves.....

- 9. TOP VALVE FITTING C-537-6V
- 10. BOTTOM VALVE FITTING C-538-6V
- 11. POLY TUBING C-335-6-5 5 FT
- 12. P.V.C. CLEAR TUBING 76000-618 10 FT W/FLOW INDICATOR
- 13. 1/4 AND 1/2 N.P.T. A/S VALVE A014HD-6V
- 14. T.I. A/S VALVE FITTING TI40-6V
- 15. FOOT VALVE C-340N-6V
- 16. CERAMIC WEIGHT C-346



* Make sure the spacer between the nut and backup washer is blue.

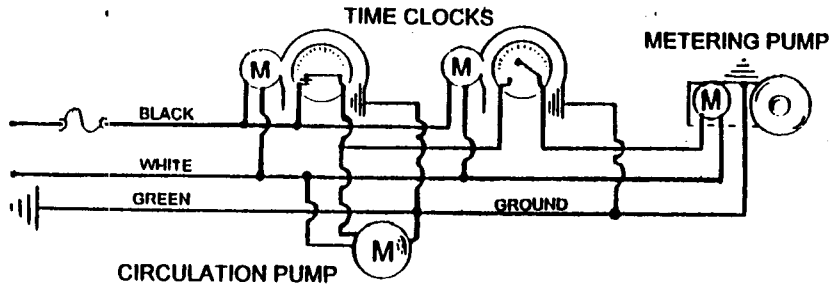
Note: Installation to be performed by a qualified personnel only.



2.3 Electrical Requirements

“WARNING RISK OF ELECTRICAL SHOCK”

- Be certain 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 a grounding conductor is connected to the GREEN ground screw conductor located inside the junction box.....

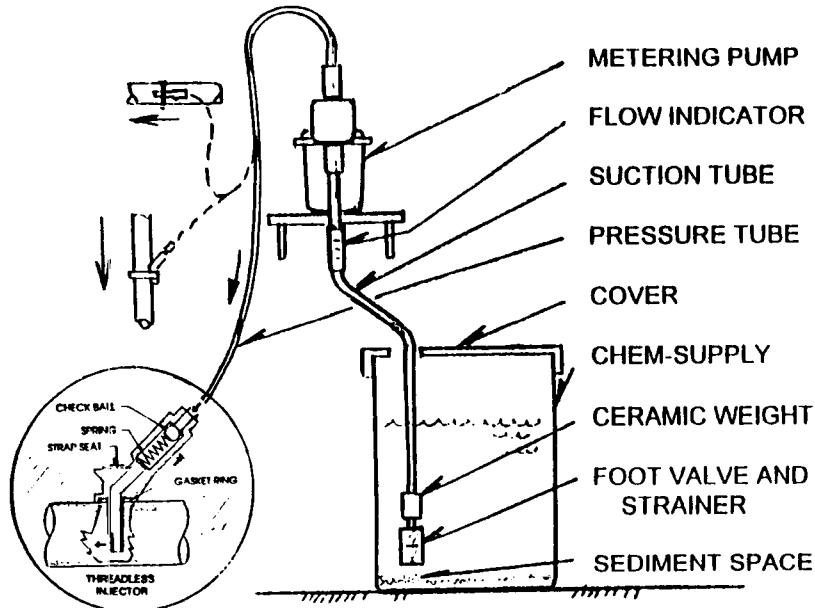


The electrical hookup is very important to success. The injector must never operate when treated line is shut down. Diagram shows injector wired within the cycle of a circulation pump or any system where chemical is used within any cycle but does or does not run a full system cycle. If your system is complicated be sure your electrician knows what is required. Remember chemicals fed to a stopped system can ruin it.....

2.4 Chemical containers of plastic must be designed and manufactured for this purpose. Refuse containers will never be used. Your container must be designed for whatever chemical you are using also never place the container in bright skies or sunlight, ultra violet (UV) attacks many materials then they become brittle..... See page 8.....

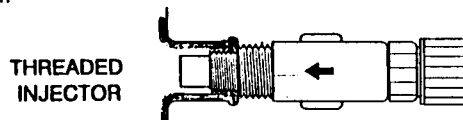
Chapter 3. Operation - Maintenance

3.1 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 for a swimming pool shuts down and the pool water level is lower than the filtering system. So whenever we have a negative line pressure the chemical will attempt to flow downwards to the pool surface (liquid seeks its own level). To prevent the chemical from this siphoning downward or forward the anti-siphon valve must be used..... As shown on the following detail.....



To install the threadless connector (T.I. fitting) drill a 3/8" diameter hole on top or side of treated line. After removing all burrs, sandpaper the surface around the hole nice and smooth, then attach the fitting as shown. Do not over tighten clamp. On overhead pipes install fitting on bottom or side, as shown. Fits 1-1/4", 1-1/2", and 2" I.P.S. only. NOTE 1/4" and/or 1/2" N.P.T. injectors available.....

3.2

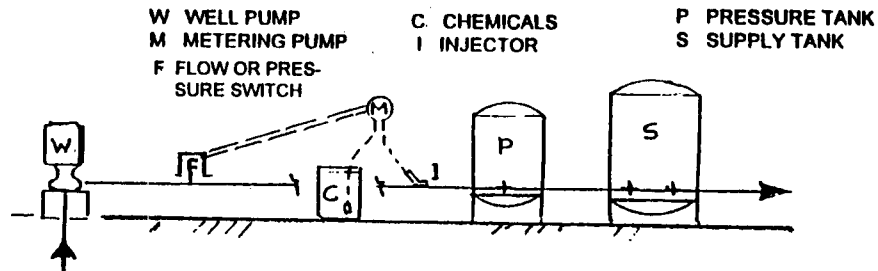
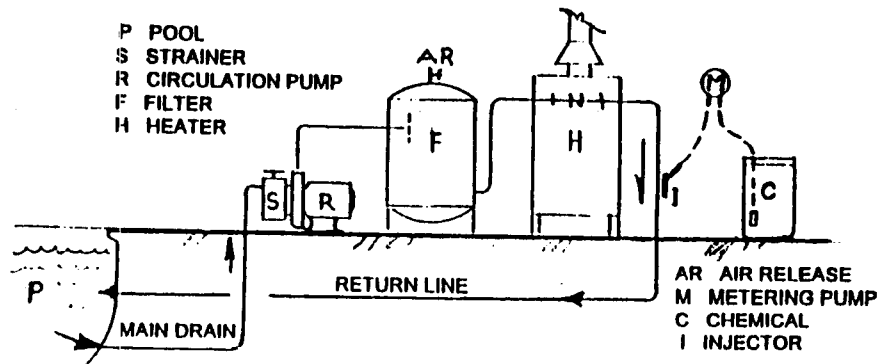


NOTE: These anti-siphon valves have no high vent...

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 injector and fitting. Then pump a weak solution (1 cup muriatic acid to 1/2 gallon water) through the system two or three times. If crusting is real bad you will have to take the pump apart and wash. When finished rinse with clear water.....

4.3 Helpful Hints

1. Chemical containers must be made for that purpose - Trash containers of any kind are not acceptable.....
2. Caution: protect yourself when working with chemicals being pumped under pressure, spraying can occur when tubes are disconnected.....
3. Never attach your system to the potable city water supply - cross connections are illegal! If you have questions ask a certified plumber.....
4. Never store chlorine and acid in the same area!
5. Treating well water with chlorine does not necessarily render it safe to drink, it may need filtering or additional treatment.....
6. Do not over chlorinate - pool water requirement is 2-4 parts per million - note; one part per million is the same proportion as one inch is to fifteen and three-quarter miles!



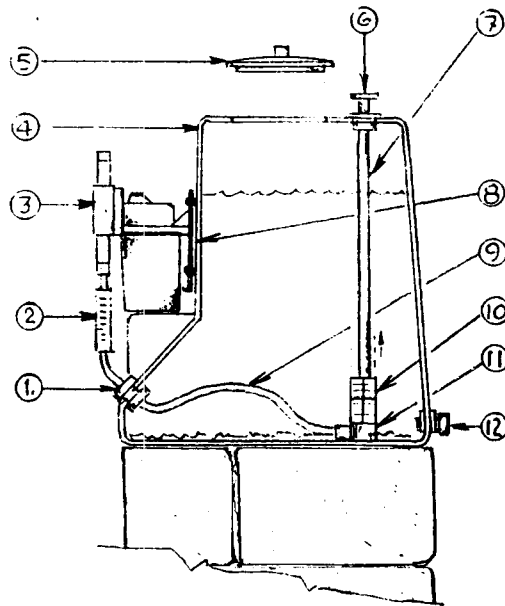
Chapter 5 Tank Metering System

A special designed chemical tank constructed to support the series FPUOT metering pump is available in three capacities, 7, 15 or 30 gallon, complete with inserts for attaching the pump bracket..... The pump is placed low on the tankside to obtain a FLOODED SUCTION. These unique tanks are OMEGA; FTNK 7, 15 or 30 gallon.....

Even though the tank and pump are UV resistant plastic they will be placed in a shaded, protected and well ventilated area.... A well designed installation will have the tank elevated for proper servicing of the pump. Floor to top of pump 24" is easy to achieve..... Concrete blocks, brick, or other safe support.

The base of a 7 gallon tank is 12" X 16" --- 15 gallon 15-1/2" X 19-1/2" --- and a 30 gallon is 20" X 24".....

"A 30 gallon filled with heavy water can weigh 335 # !" Be sure your foundation is concrete or well compacted soil.....



1. Bulk Head Fitting
PN 76000-696
2. Flow Indicator/Tube
PN 70000-700
3. Pump Model
FPU DT1500
4. Supply Tank 15 gal
PN 90007-016
5. Access Cover
PN 90007-028
6. Wand Cap
7. Wand and Cap
PN 70000-989
8. Bracket
PN C-1521N
9. Suction Tube
PN 76000-645
10. Strainer
PN C-345S
11. Sediment Fitting
PN 76000-863
12. Drain Cap
PN 90002-045

SERVICE SUGGESTIONS

Success of this system will be the result of care. Always wear protective glasses and proper clothing when working around chemicals. Many disinfecting chemicals are not used in an emulsion form so we have a precipitation forming at the tank bottom. When it reaches a depth of about 1" it must be removed by washing the tank out with water. In the meantime the strainer 10 may become plugged and need cleaning..... You can remove the strainer to clean by replacing it with your spare..... First remove cover 5 then pull up wand 6 so you can reach strainer assembly..... While holding the strainer and the sediment fitting 11 unscrew the wand by turning counterclockwise..... Lay the wand aside then pull the strainer off the sediment fitting, replace strainer with your clean one, re-assemble the wand and push the cap 6 back in place. Clean the dirty strainer with clear water and weak solution of muriatic acid (1-5) then rinse and store till next time.....

DO NOT PUT ACID IN CHLORINE TANK.....

NEVER STORE CHLORINE AND ACID IN THE SAME AREA.....



WARRANTY

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of **13 months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses, and triacs.

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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2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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