
ADP SERIES

CHEMICAL DOSING PUMP

MODELS: ADP-01141-1 & ADP-01141-2



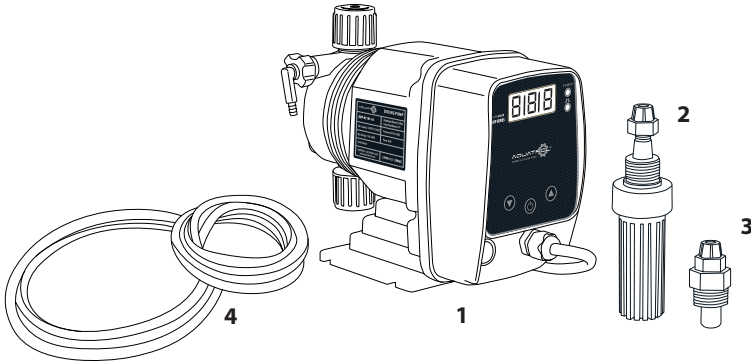
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I. INITIAL INSPECTION



UNPACKING CHECK LIST

Your carton should contain all of the following items. Please notify the carrier immediately if there are any signs of damage to the pump or its parts.

- 1. Aquatrol CHEMDOSE Dosing Pump (1 pc)
- 2. Foot Valve (1 pc)
- 3. Injection Check Valve (1 pc)
- 4. Tubing (2 pcs):
 - Suction tube - Transparent and soft tubing (7.4 ft / 2.25 m)
 - Delivery tube - White and hard tubing (4.9 ft / 1.5 m)

FOR FILE REFERENCE, PLEASE RECORD THE FOLLOWING DATA:

Model No: _____ Serial No: _____
Installation Date: _____ Installation Location: _____

When ordering replacement parts for your Aquatrol ChemDose Pump, please include complete Model Number and Serial Number of your unit.



CAREFULLY READ AND UNDERSTAND ALL PRECAUTIONS BEFORE INSTALLING OR SERVICING ANY METERING



II. PRODUCT SPECIFICATIONS

OPERATION

The metering pump is activated by the Teflon diaphragm mounted on the piston of the electromagnet. When the piston of the electromagnet is activated, the liquid in the pump head is pushed out from the discharge valve. Once the electric impulse is finished and spring mounted on the electromagnet brings the piston back to the initial position; the liquid is sucked into the pump head by the suction valve. Then one work circle is finished.

When the pump specification is programmed, the liquid volume discharged by each stroke is stabilized. The capacity of the pump can be changed by changing the frequency of the stroke. The stroke frequency can be changed by manually adjusting the control between 0-100%.

The actual flow capacity of the pumps will be different when the back pressure of the pump is changed. The user can find the running flow capacity according to the pressure-flow chart of the pump. But if you want to know exact flow capacity of the running pump in the different working condition, you should measure the flow capacity on site.

1. PUMP SPECIFICATIONS

- Max. Capacity: 38 GPD (144 LPD)
- Pressure: 72.5 Psi (5 bar)
- Power: 40 W
- Voltage: 110V or 220V
- Hertz: 50/60 Hz
- Flow: 1.6 gal/h (6 L/h)
- Max. Temperature: 104 °F (40 °C)
- Stroke per minute: 180
- Suction: 2 m
- IP55 protection
- Anticorrosive plastic casing
- Manual stroke frequency control
- Product Weight: 4.85 lbs (2.2 kg)

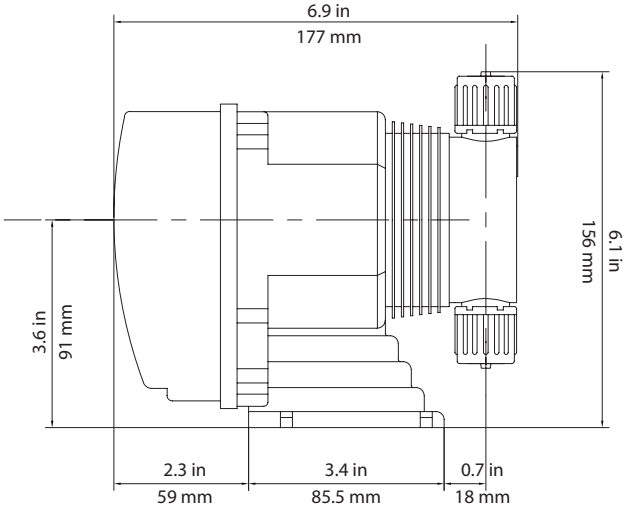
2. MATERIALS OF CONSTRUCTION

Liquid ends materials:

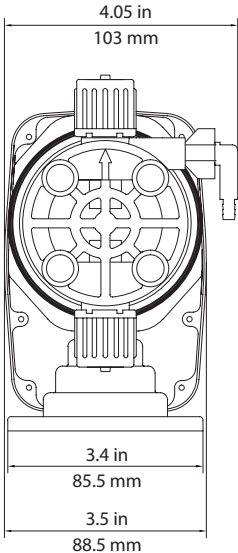
- Diaphragm : TEFLON
- Pump head: PVC, PP, SS316, PTFE
- Suction and the delivery valve: PVC, PP, SS316, PTFE
- Filter: PP
- Injection valve: PP (G1/2")
- Suction tube: PVC, PE, PTFE
- Delivery tube: PVC, PE, PTFE
- Seals: FPM

II. PRODUCT SPECIFICATIONS

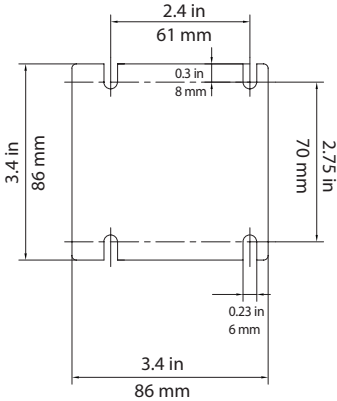
3. PUMP DIMENSIONS:



SIDE



BACK



BASE

III. PRE-INSTALLATION INFORMATION

1. WARNINGS

Your Aquatrol ChemDose pump has been constructed of durable anti-corrosive material and has been designed for long service life. Both electrical and mechanical reliability will be enhanced if it is correctly used and subjected to regular maintenance.

THE FOLLOWING WARNINGS SHOULD BE TAKEN WHEN WORKING WITH AQUATROL CHEMDOSE PUMPS. PLEASE READ THIS SECTION CAREFULLY PRIOR TO INSTALLATION.



PROTECTIVE CLOTHING

ALWAYS WEAR PROTECTIVE CLOTHING, face shield, safety glasses and gloves when working on or near your Aquatrol ChemDose pump. Additional precautions should be taken depending on the solution being pumped. Refer to MSDS precautions from your solution supplier.



WATER PRE-PRIME

All Aquatrol ChemDose pumps are pre-primed with water when shipped from the factory. If your solution is not compatible with water, disassemble the Pump Head Assembly. Thoroughly dry the pump head, valves, seal rings, balls and Liquifram™ (diaphragm). Reassemble head assembly tightening screws in a crisscross pattern. Refill the pump head with the solution to be pumped before priming the pump. (This will aid in priming.)

SOLUTION COMPATIBILITY

Determine if the materials of construction included in the liquid handling portion of your pump are adequate for the solution (chemical) to be pumped. Always refer to the solution supplier and the Aquatrol Chemical Resistance Chart for compatibility of your specific Aquatrol ChemDose pump. Contact your local Aquatrol distributor for further information



PACKAGING MATERIAL DISPOSAL

Packing material should be disposed of accordingly so as to not create pollution. The packing material should be kept out of the reach of children and should not be eaten.

III. PRE-INSTALLATION INFORMATION



TUBING CONNECTIONS

ALWAYS use Aquatrol supplied tubing with your pump, as the tubing is specifically designed for use with the pump fittings. It is recommended that all tubing be shielded to prevent possible injury in case of rupture or accidental damage.

If tubing is exposed to sunlight, black UV resistant tubing should be installed.

Check tubing frequently for cracks and replace as necessary.



FITTINGS AND MACHINE THREADS

All fittings should be hand-tightened. An additional 1/8 - 1/4 turn after the fitting contacts the seal ring may be necessary to provide a leak-proof seal. Excessive overtightening or use of a pipe wrench can cause damage to the fittings, seals, or pump head.

All Aquatrol ChemDose pumps have straight screw machine threads on the head and fittings and are sealed by the seal rings or O-rings. DO NOT use Teflon® tape or pipe dope to seal threads. Teflon® Tape may only be used on the 1/2" NPT thread side of the Injection Check Valve as well as liquid end connections.



PLUMBING

Always adhere to your local plumbing codes and requirements. Be sure installation does not constitute a cross connection. Check local plumbing codes for guidelines. Aquatrol is not responsible for improper installations.



TOXIC AND/OR DANGEROUS LIQUID DOSAGE

- » Always follow the instruction of the dosing liquid manufacturer.
- » Check the hydraulic part of the pump and use it only if it is in perfect condition.
- » Use only the correct materials for the tubing, valves and seals to suit the liquid to be dosed.
- » Before disconnecting the metering pump, make sure to flush out and neutralize the pump head with proper reagent liquid.

III. PRE-INSTALLATION INFORMATION



ELECTRICAL HAZARD WARNINGS

The electrical installation to which the pump is connected must comply with the standards and good practice in force in the country under consideration.

In case of a breakdown or improper pump functioning:

- » **SWITCH THE POWER OFF IMMEDIATELY.**
- » **DO NOT** try to repair the pump without proper instruction from the manufacturer.

Use of electrical equipment always implies observance of some basic rules:

- » Do not touch the pump with wet or damp hands or feet.
- » Do not operate the pump with bare feet (example: swimming pool equipment)
- » Do not allow the pump to be used by children or unskilled individuals.
- » Disconnected pump from the power supply when not in use.

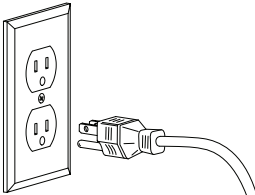


ELECTRICAL CONNECTIONS

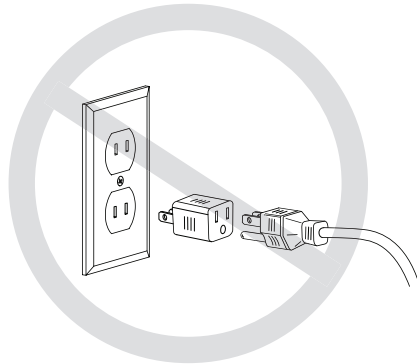
To reduce the risk of electrical shock, the metering pump must be plugged into a grounded outlet with ratings conforming to the data on the pump control panel.

- » The pump **MUST** be connected to a good grounded ground.
- » All wiring must conform to local electrical codes.
- » **DO NOT USE ADAPTERS!**

✓ **CORRECT**



× **INCORRECT**



III. PRE-INSTALLATION INFORMATION

2. TRANSPORTATION AND STORAGE

The pump should always be moved and stored in a vertical position.

3. SHIPPING DAMAGE OR MISSING PARTS

After unpacking the pump, make sure all parts are complete. Claims for any missing parts must be made within 7 business days of arrival.

4. PROPER USE

The pump should be used to dose the liquid which has been expressly designed to dose.

Chemical compatibility of this pump with the following solutions is rated as good.

For chemicals not listed, please contact your local representative or the factory.

- » Alum
- » Muriatic Acid (5% Hydrochloric Acid)
- » Potassium Permanganate, 10%
- » Sodium Carbonate
- » Sodium Hypochlorite
- » Sodium Phosphate
- » Vinegar
- » Calcium Hypochlorite
- » Polyphosphates
- » Sodium Bicarbonate
- » Sodium Hydroxide
- » Sodium Hexametaphosphate
- » Sodium Thiosulfate

Any other liquids should be confirmed with the manufacturer for suitability before use.

Use of different liquids is considered improper and can represent a danger to the user and equipment. Improper liquids can damage the pump material can damage the pump or the operator. Aquatrol can help the user select the pump according to the characteristics of the liquid. Aquatrol will not be held responsible for damage deriving from improper use of the pump.

5. ASSEMBLING AND DISMANTLING

- All metering pump cases are supplied fully assembled; no additional work need to be done by the customer other than the required connections.
- Before repairing the pump, please do the following;
 - » Disconnected the power of the pump
 - » Relieve the pressure of the tube and disconnected the tube from the pump
 - » Drain or flush all dosing liquid from the pump head (turn the pump upside-down or dismount the pump head). Always wear protective eye glasses or face shield.
 - » Follow instructions of the technician.

IV. INSTALLATION

1. INSTALLATION OF THE PUMP

Install the pump in a dry place and well away from sources of heat and in any case at environmental temperature not exceeding 104 °F (40 °C).

Location of the pump installation should meet the following criteria and options A, B or C:

- A) The ideal installation location of the pump should always be lower than the liquid level of the tank and the injection part should always be higher than the liquid level of the tank. This will make for an ideal mounting location since the liquid can enter the pump head by its own weight and push air in the pump head out. It also aids in starting the pump for the first time. (Figure 1).

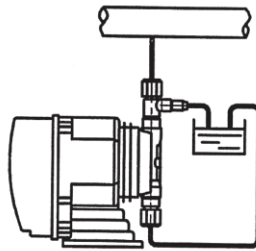


FIGURE 1

- B) The location of the pump is higher than the liquid level of the tank, but lower than the injection part. For this location, the height between the pump head and the liquid level should be shorter than 6.5 ft (2 meters) which is the suction height of the pump. If the height is greater 6.5 ft (2 meters), the pump will not work properly. The pump should always be installed as close as possible to the liquid level of the tank. If the standard tube is not used, the thin tube should be used. This is good for the first start of the pump. (Figure 2).

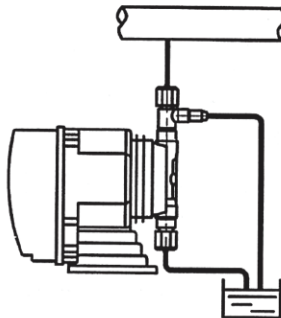


FIGURE 2

IV. INSTALLATION

- C) The injection part is lower than the liquid level of the tank: when the pump is installed in this situation, the siphon will be happened, though you stop the pump, the liquid will flow in the injection part.

The solution for this is:

- » Install the back pressure valve on the delivery tube (*Figure 3*).
- » Install the exhaust valve or drill the exhaust hole on the highest dot of the tube to damage the siphon.

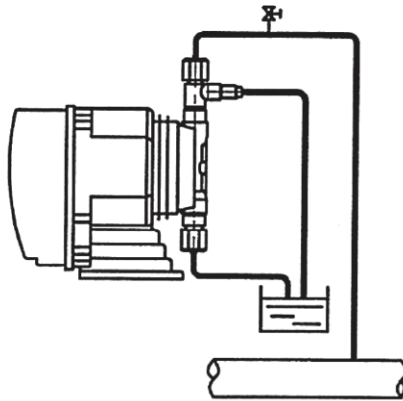


FIGURE 3

IV. INSTALLATION


2. CONNECTING TO POWER


The ADP Series pump is supplied with 4.9 ft (1.5 meter) power cable and plug. However, when the pump is connected to a main circuit, an individual circuit breaker should be added between the pump and the main circuit and grounded to the pump tightly.


- Make sure that the main circuit is switched off when connecting the power cable.


 Local electrical installation guidelines and regulations **MUST** be observed.


3. CONNECTING THE TUBING

 **INLET AND OUTLET TUBING OR PIPE SIZES MUST NOT BE REDUCED. MAKE SURE THAT ALL TUBING IS SECURELY ATTACHED TO FITTINGS PRIOR TO START-UP.**

 **ALWAYS USE AQUATROL SUPPLIED TUBING WITH YOUR PUMP, AS THE TUBING IS SPECIFICALLY DESIGNED FOR USE WITH THE PUMP FITTINGS.**

 **IT IS RECOMMENDED THAT ALL TUBING BE SHIELDED TO PREVENT POSSIBLE INJURY IN CASE OF RUPTURE OR ACCIDENTAL DAMAGE.**

 **DO NOT USE CLEAR VINYL TUBING ON THE DISCHARGE SIDE OF THE PUMP. THE PRESSURE CREATED BY THE PUMP CAN RUPTURE VINYL TUBING.**

 **BEFORE INSTALLATION, ALL TUBING MUST BE CUT WITH A CLEAN SQUARE END. VALVE AND HEAD CONNECTIONS FROM THE FACTORY ARE CAPPED OR PLUGGED TO RETAIN PRE-PRIME WATER. REMOVE AND DISCARD THESE CAPS OR PLUGS BEFORE CONNECTING TUBING.**

IV. INSTALLATION



DO NOT USE PLIERS OR PIPE WRENCH ON COUPLING NUTS OR FITTINGS.



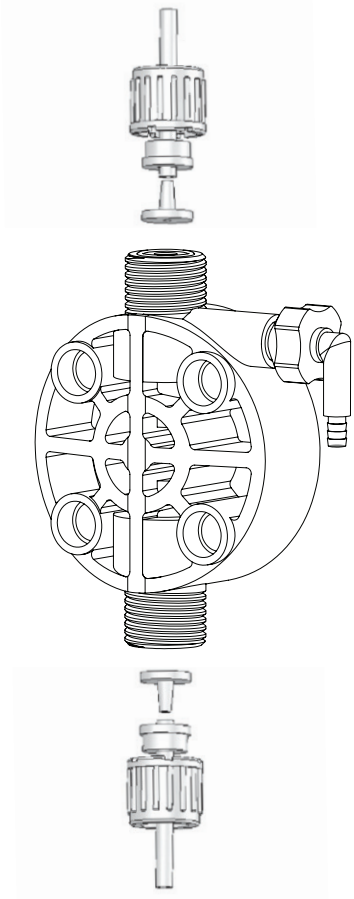
IF TUBING IS EXPOSED TO SUNLIGHT, BLACK UV RESISTANT TUBING SHOULD BE INSTALLED.



CHECK TUBING FREQUENTLY FOR CRACKS AND REPLACE AS NECESSARY.

The pump is supplied with a 7.4 ft (2.25 meter) suction tube, 4.9 ft (1.5 meter) delivery tube, foot valve and injection valve.






- The suction tube is transparent and soft. One side is connected with the foot valve; the other side is connected with the suction valve of the pump.
- The delivery tube is white and hard. One side is connected with the injection valve; the other side is connected with the delivery valve of the pump.
- The size of the injection is 1/2" and can be installed on the pipe directly.



IV. INSTALLATION

4. PROGRAMMING THE ADP PUMP



-  POWER Light Indication
-  Working Light Indication
-  ON/OFF Key
-  UP Key
-  DOWN Key
-  Power Cable
-  LED Screen




PUMP MUST BE INSTALLED ACCORDING TO THE PREVIOUS RECOMMENDATIONS IN THIS CHAPTER



IV. INSTALLATION

STEP 1:

Connect the power  to the pump


STEP 2:

The power light indicator  will turn on.

STEP 3:

Push the ON/OFF button  and the pump will begin to work.

STEP 4:

The working frequency will be displayed on the LED Screen. 

STEP 5:

Push the UP  or DOWN  buttons to adjust to your Frequency.

V. TROUBLESHOOTING

1. MECHANICAL FAULTS

In the rigid structure of the pump, few mechanical faults will appear. Most faults would include the loosening of the joints or broken tubes. Mechanical faults such as a broken diaphragm or leaking seals seldom occur.

- If the pump is working but the flow capacity is lower:
 - » *Clean or change the filter and the suction and delivery valves*

2. ELECTRICAL FAULTS

- Power Indicator is off and the pump is not working:
 - » *Check the power and the fuse. If this does not fix the problem, please remove the pump and return it to the manufacturer or distributor.*
- The power indicator lamp is on but the impulse lamp does not flash and the pump does not work:
 - » *Please remove the pump and return it to the manufacturer or distributor.*
- The power indicator lamp is on and the impulse lamp is on without flashing:
 - » *Shut down the power, remove the pump and return it to the manufacturer or distributor.*
- The pump works only once:
 - » *Remove the pump and return it to the manufacturer or distributor.*

VI. MAINTENANCE

1. PUMP MAINTENANCE

- Check the liquid level of the chemical tank on a regular basis to ensure that the dosing pump is working with the liquid.
- When the pump is working without liquid there is no damage to the pump, but the system process will be affected due to the lack of liquid dosing. A level switch can be installed with the pump so when the liquid dosing level of the tank is lower than the set point the dosing pump can be shut off.
- Check the screws and the seal material of the dosing pump head at least once every six months. If the dosing liquid is particularly aggressive check every three months or more often if necessary and the following should be observed as well.
- Check the indicator lamp to make sure its working
- Check the concentration level of the dosing liquid to make sure the system is operating normally.
 - » If the concentration level is lower, the filter, suction and delivery valves should also be checked. Clean or change them if they are not working properly.



SUCTION AND DELIVERY VALVES ALONG WITH THE FILTER SHOULD BE CLEANED ON A REGULAR BASIS.

2. CHECK VALVE MAINTENANCE

The Check Valves in the body of the pump may on occasion become dirty and/or have an obstruction that may cause them to not operate in an optimal manner. It is suggested that they periodically be checked and replaced if needed.

The Aquatrol ChemDose pump has four (4) internal check valves which can be accessed by removing the nuts from the suction and delivery valve head.

- Once the nuts are removed, the check valves can be removed by using a small pick and hook tool. Insert the pick in the center of the check valve to pull the check valve out.

VI. MAINTENANCE

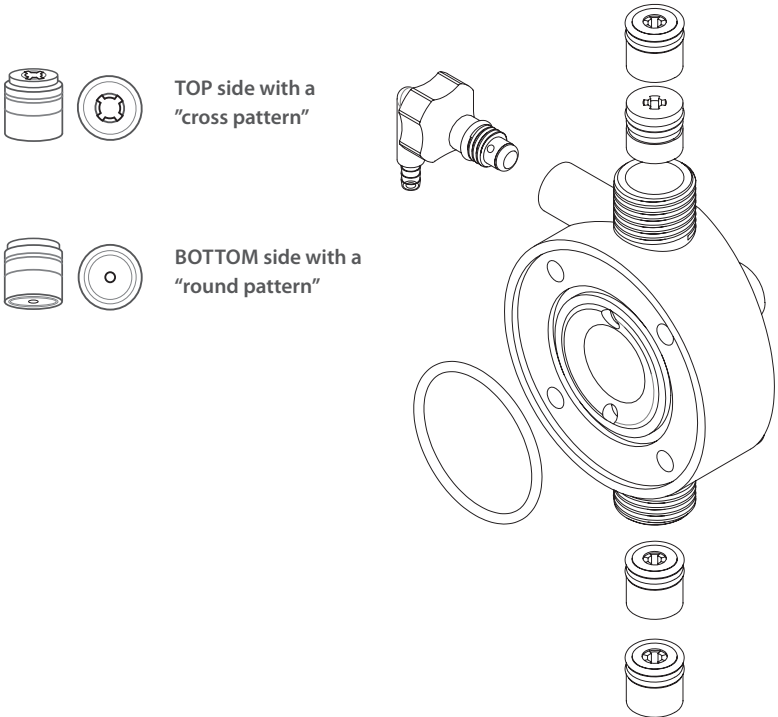
- Once you have removed all four (4) check valves (two on the suction side and 2 on the delivery side), insert the new check valves back into the head. Please make sure that all the check valve O-rings are properly placed and seated and that none are missing.



IMPORTANT: When placing the check valves back into the pump, it is important that they be placed in the correct direction.

You will notice that the check valves have a top side with a “cross pattern” in the center and the bottom side with a “round pattern”. Please make sure that all check valves are introduced into the valve head with the “cross pattern” facing up. (See diagram).

- Once check valves are reinserted in the proper direction reconnect the pump for use.



VII. TERMS AND CONDITIONS

WARRANTY

1 (one) year warranty on diaphragm. 1 (one) year warranty on all other parts. Warranty is prorated from date of sale. Improper use of the equipment invalidates the above guarantee.

Warrantor: AQUATROL - PO BOX 2235 Chino Hills, CA 91709, USA

WARRANTY.

EXCEPT AS EXPRESSLY WARRANTED IN WRITING BY THE SELLER, THE GOODS SOLD BY THE SELLER ARE PURCHASED BY THE BUYER "AS IS." THE SELLER DOES NOT WARRANT THAT THE GOODS ARE OF MERCHANTABILITY QUALITY OR THAT THEY CAN BE USED FOR ANY PARTICULAR PURPOSE. EXCEPT AS EXPRESSLY WARRANTED IN WRITING BY THE SELLER, THE SELLER MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND WITH RESPECT TO THE PRODUCTS.

(a) The Seller warrants that the items sold hereunder shall be free from defects in material or workmanship at the time of shipment by the Seller. The Seller warrants that if within 12 months of delivery of the goods to the Buyer the Buyer returns immediately to the Seller's premises any of the said goods which the Buyer believes to be defective, carrier paid, properly packed and clearly marked with the Buyer's full name and address and any other information such as serial numbers which may be necessary to enable the goods to be identified, together with a complete description of the alleged defect, they will be repaired or new goods will be supplied in exchange and the goods so repaired or such new goods will be delivered to the Buyer free of charge at the Seller's premises; provided, however, that the foregoing warranty shall be applicable only if upon demand by the Seller, the Buyer proves to the Seller's satisfaction: (i) that the defect was due solely to defective workmanship; (ii) that no alterations or repairs have been made to the goods except with the Seller's written consent; (iii) that the defect was not caused by any act of the Buyer or its agents; and (iv) that the defect was not caused by any matter beyond the reasonable control of the Seller, including, without limitation, accident or normal wear and tear. (b) THIS WARRANTY DOES NOT APPLY UNLESS THE SELLER'S PRODUCTS ARE: (I) USED IN DOMESTIC PLUMBING APPLICATIONS; (II) INSTALLED BY A LICENSED CONTRACTOR, PLUMBER OR QUALIFIED EQUIPMENT INSTALLATION PROFESSIONAL; AND (III) INSTALLED AND OPERATED IN ACCORDANCE WITH PUBLISHED HYDROFIT / HYDRONIX WATER TECHNOLOGY SPECIFICATIONS. (c) All costs and expenses, including freight charges, customs duties, and insurance incurred in returning the goods to the Seller's premises in accordance with this provision shall be paid by the Buyer. The benefit of this warranty shall not be assignable by the Buyer. (d) THIS WARRANTY DOES NOT EXTEND TO ANY GOODS NOT MANUFACTURED BY THE SELLER EVEN THOUGH SUPPLIED BY THE SELLER NOR DOES IT EXTEND TO ANY SECOND-HAND OR RECONDITIONED GOODS NOR DOES IT EXTEND TO COMPONENTS MANUFACTURED BY THE SELLER BUT INSTALLED, ATTACHED OR WELDED BY THE BUYER OR HIS CUSTOMER ON EQUIPMENT NOT MANUFACTURED BY THE SELLER. GOODS NOT MANUFACTURED BY THE SELLER CARRY ONLY THE WARRANTY (IF ANY) OF THEIR MAKERS AND THE BUYER IS ENTITLED TO THE BENEFIT THEREOF ONLY SO FAR AS THE SELLER HAS THE POWER TO TRANSFER IT. (E) THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER; THE SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESSED OR IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING, ARE HEREBY DISCLAIMED. (F) NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY TO THE BUYER'S DESIGNS OR SPECIFICATIONS.

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THE SELLER'S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS AGREEMENT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD. IN NO EVENT SHALL THE SELLER BE LIABLE TO THE BUYER OR ANY THIRD PARTY FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ANY ITEMS SOLD, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY. IN NO EVENT SHALL THE SELLER BE LIABLE TO THE BUYER OR ANY OTHER ENTITY FOR MORE THAN THE INVOICE PRICE RECEIVED BY THE SELLER FOR ANY NON-CONFORMING PRODUCTS. THE SELLER SHALL NOT BE LIABLE TO THE BUYER OR ANY OTHER ENTITY FOR PERSONAL INJURY, PROPERTY DAMAGE, OR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY, SPECIAL, OR OTHER DAMAGES OF ANY KIND, INCLUDING WITHOUT LIMITATION THE COST OF PROCUREMENT OF SUBSTITUTE GOODS, THE LOSS OF PROFITS, PRODUCTS, OR PRODUCTION, OR THE INTERRUPTION OF BUSINESS, HOWEVER CAUSED. THE SELLER SHALL NOT BE LIABLE TO THE BUYER OR ANY OTHER ENTITY ON ANY THEORY OF LIABILITY INCLUDING WITHOUT LIMITATION BREACH OF CONTRACT OR EXPRESS OR IMPLIED WARRANTY, TORT, NEGLIGENCE, FAILURE TO WARN, OR STRICT LIABILITY, AND WHETHER OR NOT THE SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE ESSENTIAL PURPOSE OF THIS PROVISION IS TO LIMIT THE LIABILITY OF THE SELLER ARISING OUT OF THE SALE OF PRODUCTS TO THE BUYER WHETHER FOR BREACH OF CONTRACT, NEGLIGENCE, OR ANY OTHER THEORY OF LIABILITY. THESE LIMITATIONS SHALL APPLY NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY LIMITED REMEDY AND NOTWITHSTANDING THE PROVISIONS OF ANY OTHER AGREEMENT BETWEEN THE SELLER AND THE BUYER.

INDEMNITY FOR INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS.

(a) The Buyer shall defend and indemnify the Seller against all actions, claims, demands, penalties and costs by third parties in tort, or for infringement, or alleged infringement, of patents, trademarks, copyrights, trade dress, trade secret or other rights of any third party resulting from the goods manufactured in accordance with the Buyer's specifications or based on any information provided by the Buyer. The Buyer will defend any action against the Seller for title, patent, trademark, copyright infringement, or other claimed by a third party at the Buyer's sole cost and expense. (b) The Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this provision. The Seller will defend and indemnify the Buyer against allegations of infringement of patents, trademarks, copyrights, trade dress and trade secrets ("Intellectual Property Rights"). The Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against the Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. The Seller's obligation to defend and indemnify the Buyer is contingent on the Buyer notifying the Seller within 10 days after sole control over the defense of any allegations or actions, including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, the Seller may, at its sole expense and option, procure for the Buyer the right to continue using said item, replace or modify said item so as to make it non-infringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, the Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in combination or use in a system of any item sold hereunder. The foregoing in this provision shall constitute the Seller's sole and exclusive liability and the Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.



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