

# SuperDos 45

## Operating Manual

**Model 0.3%**

**Model 0.3% HAC**

**Model 2.5%**

**Model 5%**



**Fluid Flow Range:**

0.25 gpm to 45 gpm  
57 lph to 10,000 lph\*

**Injection Range**

**Dosage:**

0.025% to 5%  
1:4000 to 1:20

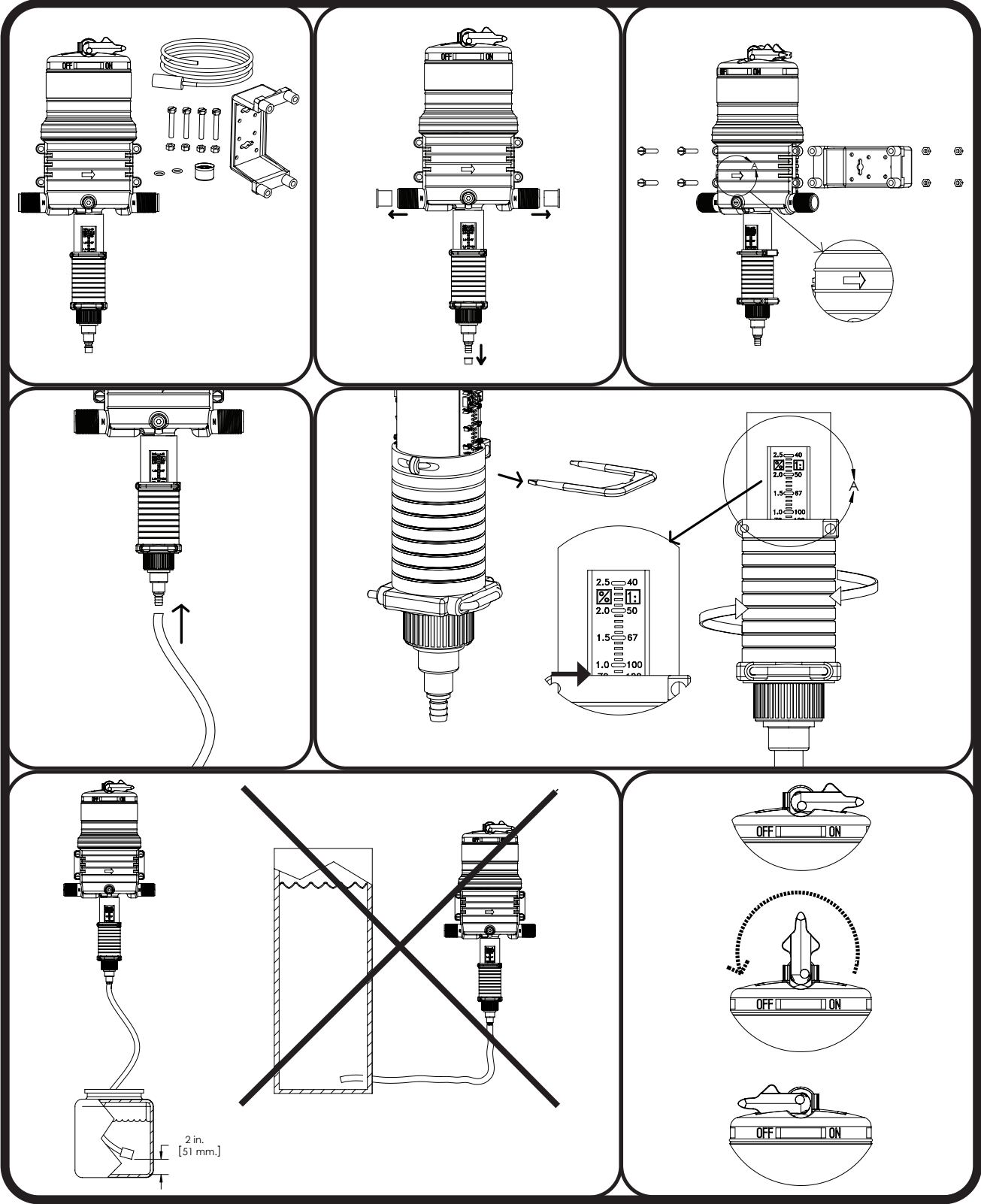
**Operating Pressure:**

5 to 100\* psi  
0,34 to 6,9\* bar

\*Specifications vary by model.



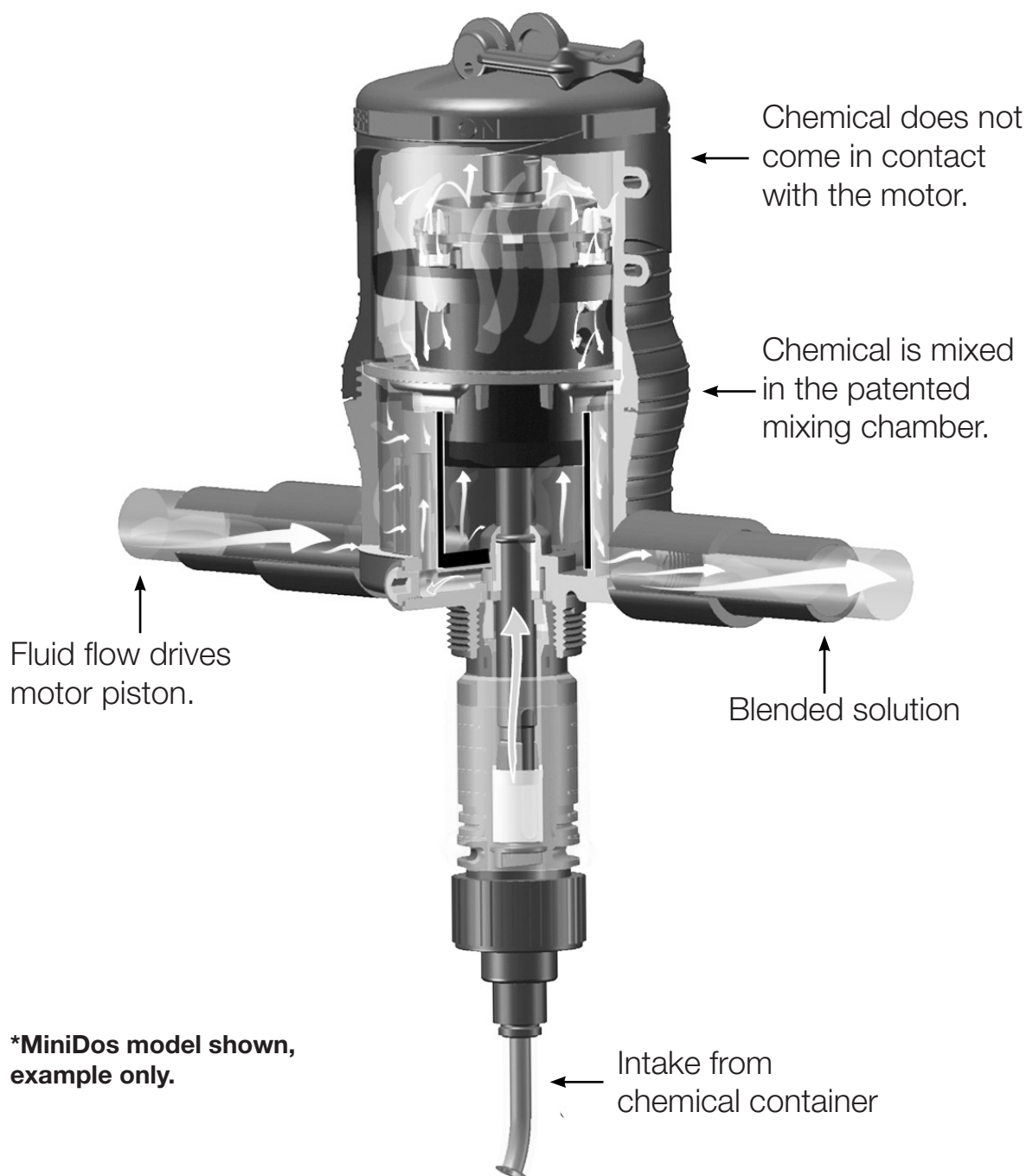
# Quick Start-up



# Operating Principle

## Accurate and Reliable

Installed directly in the fluid supply line, the injector operates without electricity, using fluid (water) pressure as the power source. The fluid drives the injector, which pulls the required percentage of concentrate directly from the chemical solution container. Inside the Hydro patented mixing chamber, the concentrate is mixed with the fluid, and the fluid pressure forces the mixed solution downstream. The amount of concentrate will be directly proportional to the volume of fluid entering the injector, regardless of variations in flow or pressure.



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**Please read this manual carefully before putting the Hydro injector into operation.**

This booklet has the information you will need for the use and care of your new Hydro injector. If you have any further questions about your injector, the warranty, routine maintenance or proper usage, please contact your nearest distributor or Hydro Systems customer service.

These models are designed to inject liquid concentrate or soluble powder that are recommended and approved for injection into fluid systems.

It is the responsibility of the operator to determine the correct dosage settings of the unit using the chemical manufacturers’ recommendation for dispensing their product, and to assure that proper dosage is being maintained.

**Maintenance and Warranty**

Hydro offers a three year limited warranty from the original date of purchase for manufacturing or materials defects only. With proper use and care, your injector should provide you long-term performance.

**For Your Records**

The serial number of your Hydro injector is located on the injector body. Please record this number in the space below and reference it when calling your distributor or Hydro for information, parts and service.

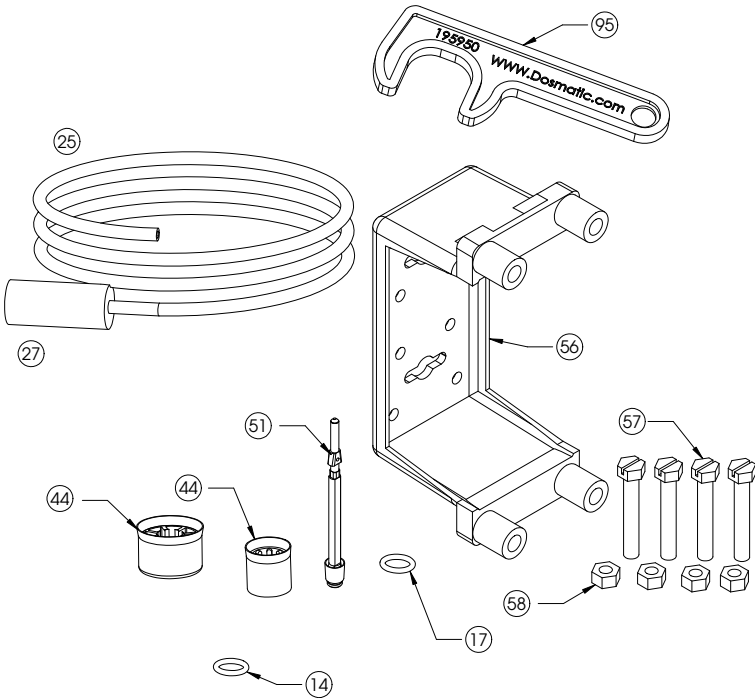
Serial #.....

Date Purchased .....

# Package Contents

The injector is packaged with the following items:

- Injector (not shown)
- Dosage Piston
- O-ring
- Manual (not shown)
- Lower End Wrench (0.3% only)
- Mounting Bracket
- Mounting Nuts and Bolts
- Filter
- Suction Tube



| Model    | NPT       | BSP       |
|----------|-----------|-----------|
| 0.3%     | 113230R   | 113730R   |
| 0.3% HAC | 113230HAC | 113730HAC |
| 2.5%     | 113212    | 113712    |
| 5%       | 113215    | 113715    |

# Specifications



### SuperDos 45 gpm (100 max. psi)

Model 0.3% 0.025% - 0.3% (1:4000 -1:333)

Model 2.5% 0.3% - 2.5% (1:333 -1:40)

Model 5%\* 0.5% - 5% (1:200 -1:20)

Flow Rate:..... 0.25 - 45 gpm\*\* (57 - 10,000 lph)

Operating Pressure: ..5 - 100 psi (0,34 - 6,9 bar)

Pipe Coupling: ..... 1 1/4" NPT/BSP

\* 5% model has maximum operating pressure of 80 psi (5,5 bar).

\*\* 5% model with remote injection kit has maximum flow rate of 20 gpm (75 l/mn).

|                                                                                         |                                                                                                             |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Housing                                                                                 | Proprietary Engineered Composite Material                                                                   |
| Avg. Dosing Accuracy                                                                    | +/- 5% of ratio                                                                                             |
| Repeatability                                                                           | +/- 3% of ratio                                                                                             |
| Maximum Temp.                                                                           | 100°F (38°C)                                                                                                |
| Minimum Temp.                                                                           | 34°F (1°C)                                                                                                  |
| Maximum vertical suction of concentrate                                                 | 13 Feet (3.6 Meter)                                                                                         |
| Maximum horizontal suction of concentrate                                               | 49 Feet (15 Meter)                                                                                          |
| Self-Priming                                                                            | Yes                                                                                                         |
| Seal Material Available:<br>*Contact your distributor for specific chemical information | Aflas - Alkaline concentrates<br>Viton - Acids, oils & pesticides<br>EPDM - Alkaline concentrates<br>Kalrez |

# Safety Precautions/Warranty Compliance



**Warning:** Please read precautions thoroughly before operation. Must meet all applicable local codes and regulations.

## **Remove Red Caps Prior to Installation**

Your injector is 100% factory tested before delivery and may contain a small amount of water. The three red plastic caps are fitted after testing to ensure cleanliness of the injector.

## **Before Applying Aggressive Chemicals**

Please consult your distributor, chemical manufacturer or contact Hydro's customer service to confirm compatibility with your injector. Always wear proper safety protection as recommended by chemical supplier.

## **Label all Fluid Lines, Valves and Connections**

If the solution that is being injected is not suitable for drinking, all fluid lines should be labelled:

**Warning - not for human consumption!**

## **Monitor Outlet Flow**

It is the user's responsibility to monitor the output of chemical injected.

## **A Filter is Recommended and Required**

Install a filter of 140 mesh (104 micron) or finer depending on your fluid quality to prolong the working life of the injector and for the warranty to be valid. A filter is imperative since most fluid contains impurities or particles, especially if the fluid source comes from a well, pond or lake.

## **Avoid a Potentially Hazardous Chemical Accident**

Select a safe location. Chemical container should be kept away from children and/or high usage areas and the location must also not be susceptible to freezing temperatures.

## **Avoid Solution Contamination**

Use only clean FILTERED fluid. Do not allow contaminants to enter the solution container. They can be pumped into the fluid line and may cause the spread of disease. Dirt, debris and other contaminants in the solution container may cause excessive wear to the unit.

## **Fluid Temperature**

Min: 34°F (1°C), Max: 100°F (38°C)

## **Maximum Fluid Pressure**

100 psi (6.9 bar). 5% model has a maximum operating pressure of 80 psi (5.5 bar). Operating pressure and flow are reduced while using remote injection kit.

Install a pressure regulator and/or pressure relief valve to ensure operating pressure does not exceed the maximum specification.

## **Before Removing An Injector From The System**

Release fluid pressure. While the system is in operation, turn off the incoming fluid valve. Leave the out going valve open. This will relieve the pressure at the injector and all parts of the system after the injector. Injector is now safe to remove.

# General Tips

Please read this instruction manual thoroughly. Following the procedures, will increase the life of your injector.

## **For A Long Service Life**

Start with clean fluid by using an inline filter to reduce impurities. Keep the solution container covered and clean. Keep the suction tube filter 2" (5 cm) from the bottom of the container. Perform maintenance procedures as recommended (see Maintenance page 10).

## **Soluble Powder Use**

Ensure the chemical is completely dissolved before starting the injector. If necessary, dissolve the chemical in hot water and allow to cool before using. Failure to thoroughly dissolve the chemical will cause premature wear to the dosage piston and the inner cylinder.

## **Keep From Extreme Temperature**

Protect the injector from freezing temperatures or excessive heat.

## **Rinse Injector After Each Use**

Additive allowed to remain in injector can dry out, foul or damage the lower end at the next start-up (see Maintenance page 10).

## **Injector Not in Use for an Extended Period**

If the injector has not been stored properly deposits may have dried onto the motor (see Maintenance page 10). Before operation, soak entire unit into room temperature water approx. 72°F (22°C) for an eight hour period.

# Operations

## Clicking Sound is Normal

Fluid flowing through the injector will automatically cause the injector to “click” and inject a set amount of solution into the fluid line. The higher the flow rate the more frequent the “clicking”. The injector is designed to inject solution proportionally (at the same set ratio) regardless of fluid flow.

## Service Fluid Flow

Fluid flow and pressure must be within the established specifications (see Specification on page 6) for your model.

## Change Feed (Injection) Rate

The feed rate on the injector is adjustable EVEN WHILE OPERATING AND UNDER PRESSURE. To change feed rate see (Fig. 1 and Fig. 2). Do not remove #79 when injector is under pressure.

1. Remove Upper Interlock Pin (#65) (Fig. 1).
2. Rotate Ratio Adjuster Sleeve (#61) up or down to the desired setting (Fig. 2). Use the top of the Ratio Adjuster Sleeve to line up with the desired feed rate on the setting (Fig. 2a).
3. Re-insert Upper Interlock Pin (#65). Clip must be parallel with settings to be able to re-insert.

**NOTE:** Do not screw Ratio Adjuster Sleeve below lowest setting line. Measure outlet fluid to assure desired feed rate is being delivered.

Fig. 1

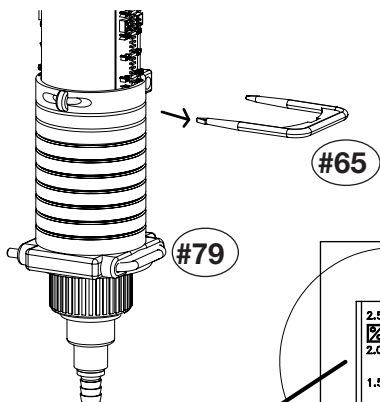


Fig. 2

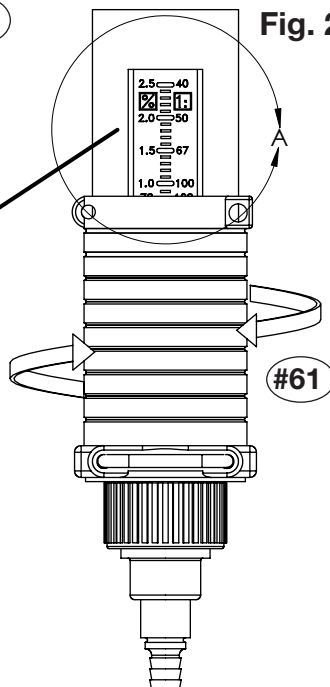
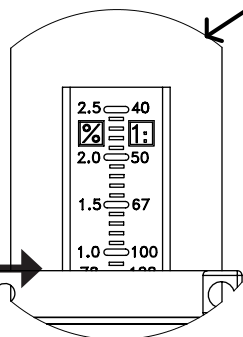


Fig. 2a



## Bypass Operation

Injecting solution into the fluid line can be TEMPORARILY stopped with the On/Off feature (Fig. 3). Moving the On/Off Lever to the OFF position allows service fluid to pass through the injector without injecting chemical. No “clicking” will be heard.

With the On/Off lever set to the ON position the injector will operate as normal and “clicking” will be heard when fluid is flowing. It is recommended to use the three-valve bypass (see Fig. 5), for continued bypassing or servicing of the injector.

Off Position  
(not clicking)

Run Position  
(clicking)

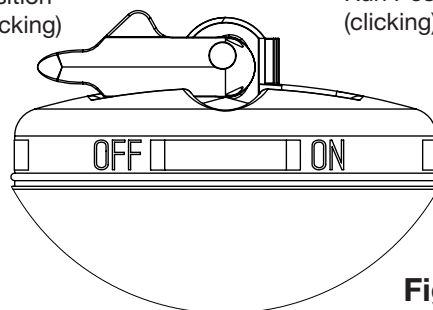


Fig. 3

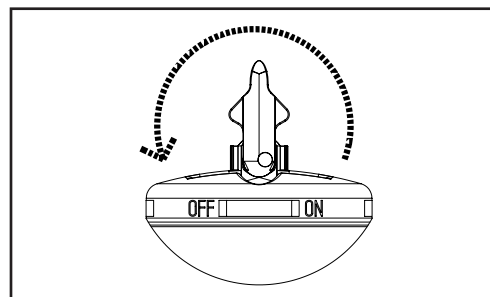
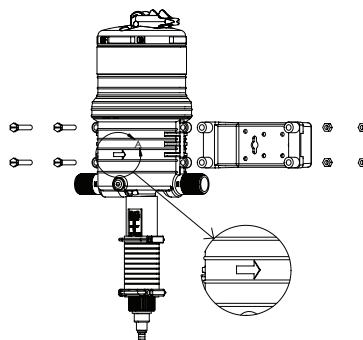


Fig. 4  
Typical wall  
mounting



# Installation & Startup (Refer to Fig. 4 and Fig. 5)

## Fluid Filter (Required)

Install a filter of 140 mesh (104 micron) or finer depending on your fluid quality to prolong the working life of the injector and for the warranty to be valid. Hydro recommends a Twist II Clean® filter that can be ordered with your injector.

## Mounting Injector

Securely fasten your injector to a solid object such as a wall or in a cold fluid line. Note arrow on injector indicates fluid flow.

## Backflow Preventor (Recommended)

Install one that meets local code requirements.

## Pressure Safety Release Device (Recommended)

Prevents pressure from exceeding specifications of the unit.

## Bypass Valve Set-up (Recommended)

Allows the injector to be taken off-line for maintenance or storage when not in use.

## Fluid-Hammer Arrester (Recommended)

Prevents fluid-hammer damage to the injector when operating quick closing solenoid, pneumatic or hand-operated ball valves on the fluid system.

## Anti-Siphon Valve (Optional)

To prevent solution from being siphoned out (from the solution container) into the feed lines when the upstream valve is shut off. The anti-siphon valve must be installed on the downstream outlet.

## Additional Siphoning Prevention

Place solution container on a level below the injector suction tube fitting. Using the inlet side as a shut-off valve could cause full strength solution to siphon into the feed line.

## Solution Container

Use any size container. A lid or cover is recommended. To connect your solution container, gently push the end of the suction tube onto the bottom of the suction tube fitting assembly. Place the filter into the solution container at least 2" (5 cm) from the bottom and fill with at least 2" (5 cm) of chemical solution.

## Never Use Petroleum Based Lubricants

The injector is shipped with a thin coat of silicone around the seals for ease-of-assembly. Petroleum based lubricants such as Vaseline®, baby oil, WD40®, or motor oil on the O-rings or any part of the injector should never be used as this can cause particles to adhere and clog or damage the injector.



## Check System for Leaks and Start-Up Procedures

Open the bypass valve (A), close inlet valve (B) and outlet valve (C) to prevent fluid flow into the injector. SLOWLY turn on the main fluid line. Run fluid flows between 5 - 12 gpm (11-45 l/m) through the plumbing system. Turn on all of the valves located downstream from your injector to release trapped air. SLOWLY turn on the inlet valve (B). Open the outlet valve (C) and close valve (A). As fluid travels through the injector, you will hear a "clicking" sound. Check for leaks and correct if necessary.

# Suggested Installation Diagram

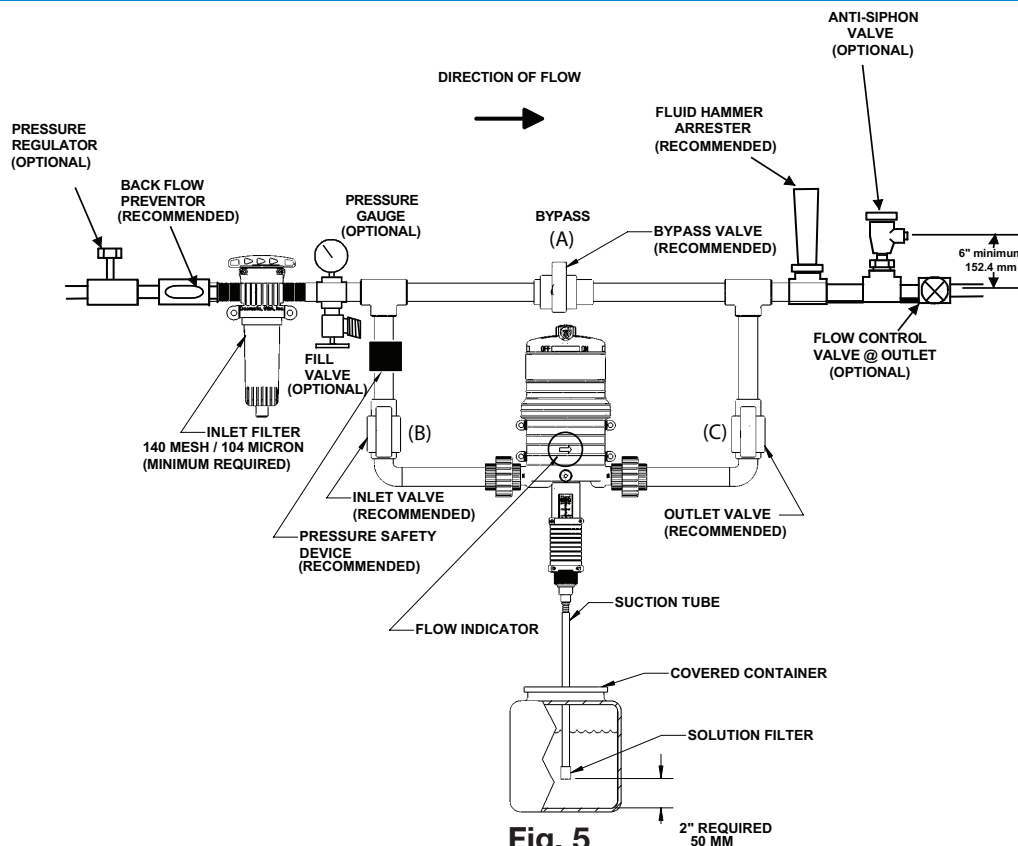
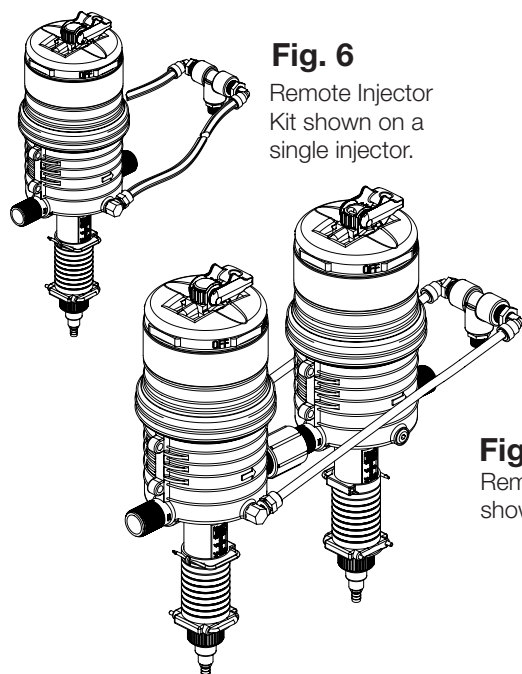


Fig. 5

# Remote Injecting



**Fig. 6**

Remote Injector Kit shown on a single injector.

**Fig. 7**

Remote Injector Kit shown in a series.

## Remote Injector Kit (not included)

Is recommended for the following:

Kit Part Numbers  
012705

### Single Injector:

To prevent mineral buildup within the body of the unit. Use when injecting chemicals that cause minerals to precipitate from fluid (see Fig. 6)

### Injectors In a Series:

When injecting multiple chemical injections, using two or more injectors. Each injector adds chemical to the fluid(water) system, while bypassing the next injector and eliminating the potential damage to that injector (see Fig. 7).

**NOTE:** when mixing more than one chemical, always refer to your chemical manufacturer information guide for proper application. Contact your local distributor or Hydro customer service for information or to order.

## Maintenance

### Rinse Injector After Each Use

Additive allowed to remain in injector can dry, foul or damage the lower end at the next start-up. Place suction tube into a 1 qt. (0.95 liters) or more container of fresh filtered water. Flow fresh water through the injector by operating until container is empty. This procedure is not needed for continuous operation.

### Clean Solution Container

Keep covered to prevent dirt, flies, feathers and other flying debris from entering the container. Rinse container thoroughly and often. Do not mix chemicals together that might react and cause a precipitate. Use FILTERED fluid when filling container.

### Clean Suction Tube Filter Screen

Inspect each time new solution is added. Clean filter screen (#27) and suction tube (#25) as necessary by rinsing in fresh water. Replace if necessary. Keep filter screen off bottom of solution container to prevent dirt and precipitate from clogging filter.

### Clean Inlet Filter

Clean or replace inlet filter as required to increase the life of the unit as well as reduce pressure loss.

### Bypass Injector

When not in use place the injector in bypass mode by using the three valve bypass (preferred) or turn the on/off lever on the top of the injector to the off position.

### Storage

For extended storage, rinse injector (see "Rinse Injector After Each Use") and place underwater in a container. Apply monthly, <0.1 oz. (29 ml) of chlorine bleach to avoid algae growth. KEEP FROM FREEZING.

Perform these maintenance procedures to extend the life of your unit.

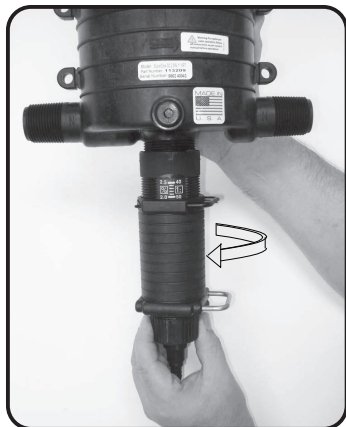
### Refer to pages 14 & 15 SuperDos 45 (0.3%) Model

| Every<br>3 - 6 Months                                                                                        | Every<br>6 - 12 months                                                                                                           | Replace as<br>necessary                                                |
|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| 1. Clean seal areas (# 17, 14 & 13).<br>2. Check #17 O-ring, #7 Cylinder, clean and/or replace as necessary. | 1. Replace #17 O-ring and #44 (0.3% - #51) Dosage Piston.<br>2. Clean and/or replace #13 Check Poppet, #11 Suction Tube Fitting. | 1. #7 Cylinder<br>2. #14 O-ring<br>3. #51 Shaft Assembly Dosage Piston |

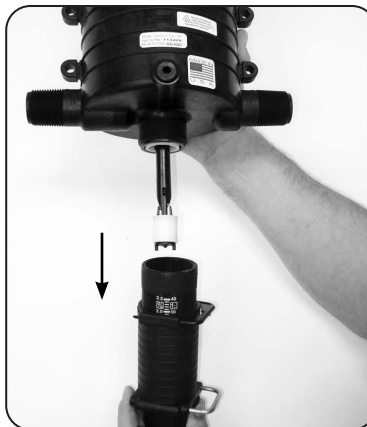
### Refer to pages 16 & 17 SuperDos 45 (2.5%), (5%) Models

| Every<br>3 - 6 Months                                                                                        | Every<br>6 - 12 months                                                                                               | Replace as<br>necessary         |
|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------|
| 1. Clean seal areas (# 17, 14 & 13).<br>2. Check #17 O-ring, #7 Cylinder, clean and/or replace as necessary. | 1. Replace #17 O-ring and #44 Dosage Piston. Clean and/or replace.<br>2. #13 Check Poppet, #11 Suction Tube Fitting. | 1. #7 Cylinder<br>2. #14 O-ring |

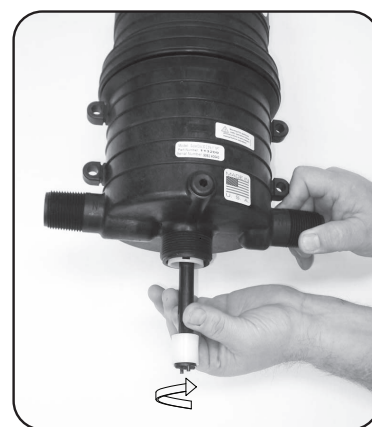
# Routine Maintenance Instructions



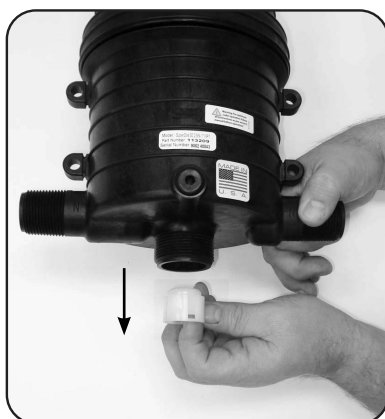
Step 1.  
Unscrew LOWER END  
CYLINDER ASSEMBLY  
from body.



Step 2.  
Remove LOWER END  
CYLINDER ASSEMBLY.



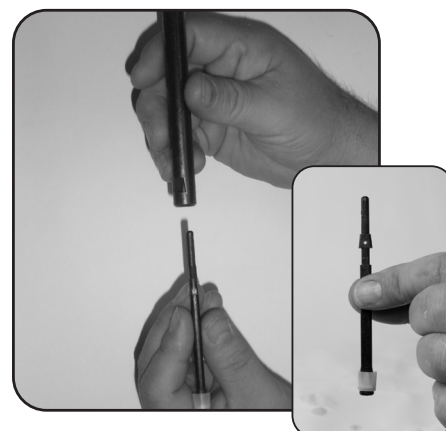
Step 3.  
Rotate #51 SHAFT 90° and pull  
from body.



Step 4.  
Pry the #15 SEAL RETAINER from  
the injector. Pry #17 O-ring from  
the unit. NOTE: O-ring may still be  
seated at the base of the unit.



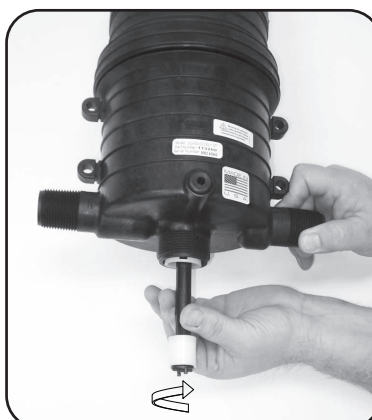
Step 5. For 2.5% & 5%  
Replace #44 DOSAGE PISTON  
flared-end up and #14 O-ring.  
0.3% only: Replace # 51 SHAFT  
ASSEMBLY. See Step 5a.



Step 5a. For 0.3%.  
Replace LOWER SHAFT assembly  
into upper shaft.



Step 6.  
Reinsert #15 SEAL RETAINER  
and #17 O-ring onto # 51  
SHAFT ASSEMBLY.



Step 7.  
Reinsert #51 SHAFT ASSEMBLY  
into body and rotate 90° to lock.  
Confirm the shaft is locked in  
by gently tugging on the shaft.  
Shaft should remain inserted.



Step 8.  
Screw LOWER END CYLINDER  
ASSEMBLY onto body. Ensure  
#16 gasket is seated on the top  
of cylinder assembly.

# Troubleshooting

## New Install - Always Pressure Up Slowly (Follow start up on page 9)

| Problem                  | Cause                          | Solution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>No Clicking Sound</b> | Fluid not flowing through unit | <p>Are the red plugs at the inlet, outlet and suction tube fitting openings removed?</p> <p>Is the unit installed backward? The arrow on the unit must point in the direction of the fluid flow.</p> <p>Has the new injector been stored for an extended period. If so, submerge the injector in room temperature fluid for 24 hours so that the working parts can reabsorb fluid and swell back to the proper size.</p> <p>If still not clicking, do not open the upper body. Call Hydro Customer Service.</p> |
|                          | Fluid flowing through unit     | <p>Fluid rate is below or exceeds rated service flow of injector. (see Specifications for maximum flow rate page 6).</p> <p>If below increase flow rate, if above, reduce flow rate.</p> <p>Operating pressure exceeds maximum limit. Install a pressure reducer valve. (see Specifications for maximum flow rate page 6).</p> <p>On/Off Lever in off position. Place the On/Off lever switch to the ON position.</p> <p>By-Pass Valve not closed. Check and set valve to the ON position.</p>                  |

## Injector in Operation or After Scheduled Maintenance

| Problem                                              | Cause                                                                                        | Solution                                                                                                                                                |
|------------------------------------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>No Clicking Sound</b>                             | Main Piston Assembly #9 worn                                                                 | Replace # 9 Main Piston Assembly. Clean fluid filter.                                                                                                   |
|                                                      | Cover #1 or main body #40 worn or scored                                                     | Lightly sand inside diameter of bores to remove grooves. Install or clean fluid filter.                                                                 |
|                                                      | On/Off Lever in off position                                                                 | Place the On/Off lever switch to the ON position.                                                                                                       |
|                                                      | By-Pass Valve not open                                                                       | Set Valve to the closed position.                                                                                                                       |
|                                                      | Dirty or plugged inlet filter                                                                | Ensure mesh size is correct for proper filtration. Clean filter.                                                                                        |
|                                                      | #17 Worn or not seated properly                                                              | Re-seat #17 or replace.                                                                                                                                 |
| <b>Clicking Sound<br/>No Suction<br/>Of Solution</b> | Cracked or loose Suction Hose                                                                | Check for proper fit and /or replace.                                                                                                                   |
|                                                      | Dosage piston #44 (0.3% model #51) worn or installed incorrectly                             | Replace. Ensure during maintenance replacement that #44 dosage piston was installed correctly flared-end up.                                            |
|                                                      | O-ring retainer #15 installed incorrectly                                                    | Install correctly.                                                                                                                                      |
|                                                      | O-ring seat #14 or dosage piston #44 (0.3% model #51) damaged                                | Replace.                                                                                                                                                |
|                                                      | #17 O-ring worn and/or loose                                                                 | Replace.                                                                                                                                                |
|                                                      | Suction tube #25 or suction tube fitting #11 cracked, leaking or clogged suction tube filter | Replace and/or clean as necessary.                                                                                                                      |
|                                                      | Check valve #13 leaking                                                                      | Clean & replace as necessary.                                                                                                                           |
| <b>Clicking Sound.<br/>Under Injecting</b>           | #44 (0.3% model #51) Dosage Piston worn                                                      | Replace.                                                                                                                                                |
|                                                      | #7 Inner Cylinder worn                                                                       | Replace.                                                                                                                                                |
|                                                      | Unit operates at high-flow and not at low flow                                               | Replace #17 O-ring.                                                                                                                                     |
|                                                      | Main Piston Assembly #9 worn                                                                 | Replace # 9 Main Piston Assembly. Clean fluid filter.                                                                                                   |
|                                                      | Cover #1 or main body #40 worn or scored                                                     | Lightly sand inside diameter of bores to remove O-ring grooves. Install or clean fluid filter.                                                          |
| <b>Fluid<br/>Re-filling<br/>Solution Tank</b>        | Check valve #13 leaking                                                                      | Check seat area on suction tube fitting #11. Check valve and seal must fit loose in the suction tube fitting. Clean seal and inside fitting for debris. |
|                                                      | Washer seal on #13 is swollen or chemical attack                                             | Replace with new check valve assembly.                                                                                                                  |

# Kits & Spare Parts List

## Injector Repair Parts

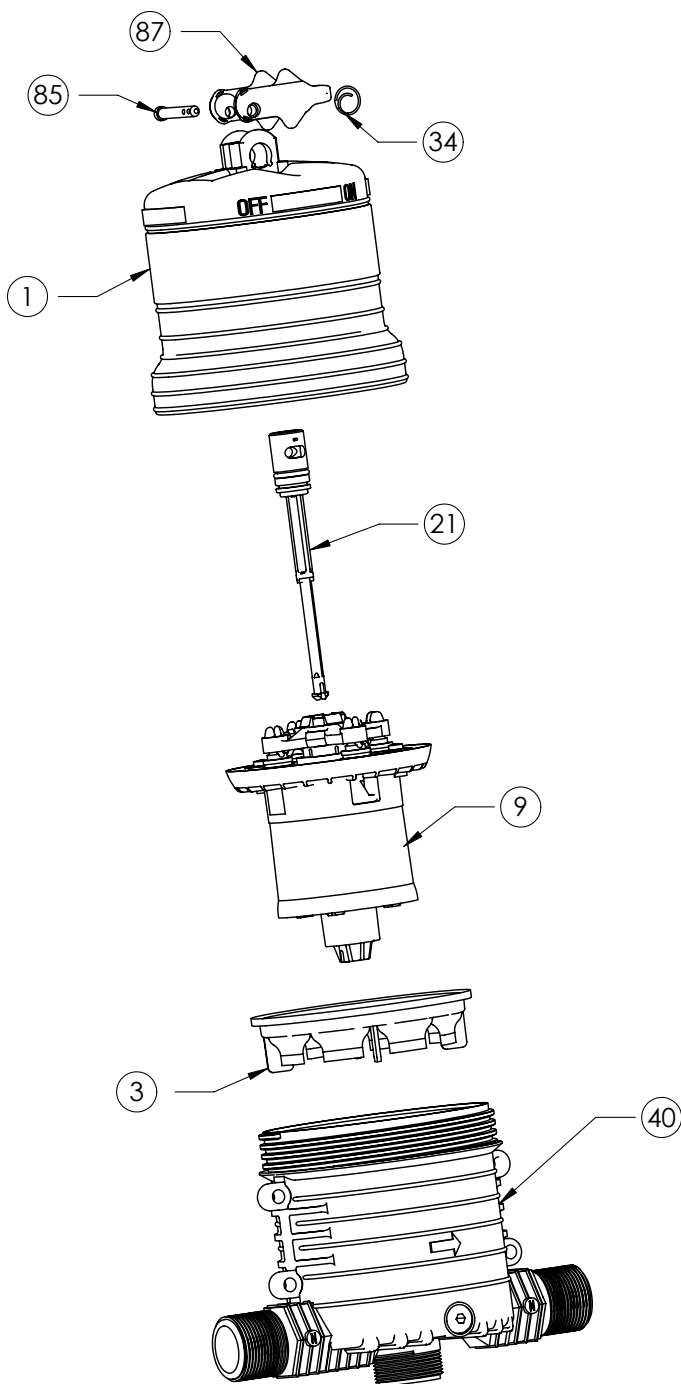
|                             |    |
|-----------------------------|----|
| Injector Repair Parts ..... | 13 |
| 0.3% HAC Rotating: .....    | 15 |
| 0.3% Rotating: .....        | 16 |
| 2.5%: .....                 | 17 |
| 5%: .....                   | 18 |
| Accessories: .....          | 19 |



# Kits & Spare Parts List

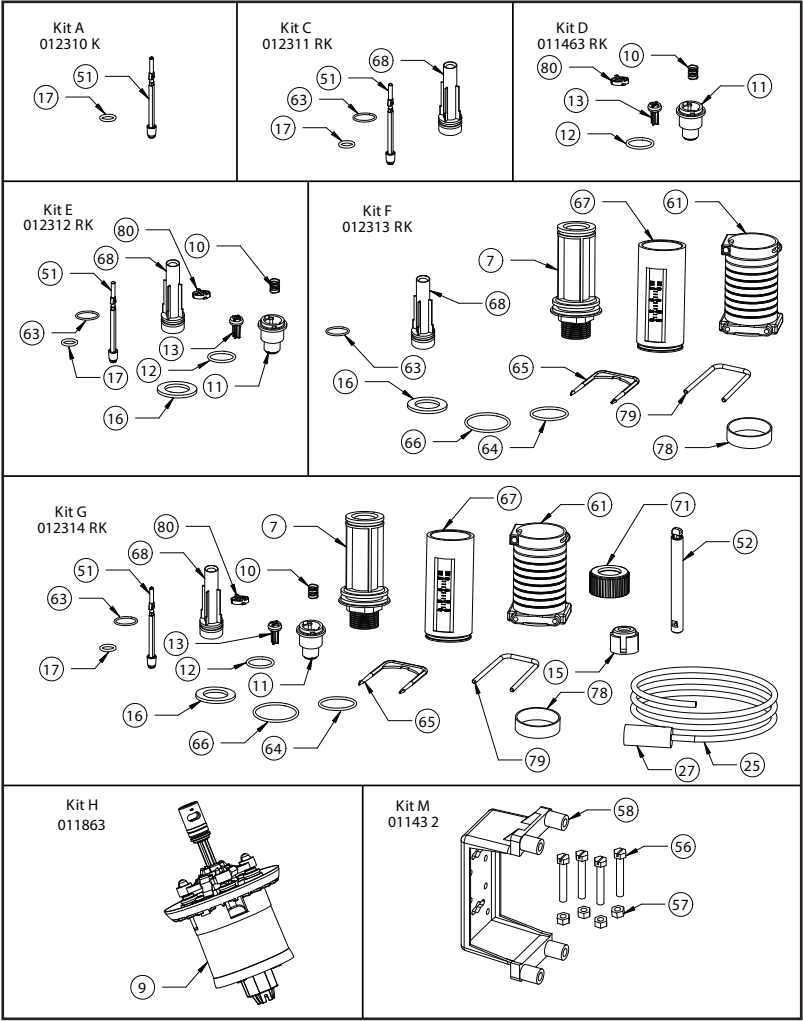
## Injector Repair Parts

| Reference # | Description           |
|-------------|-----------------------|
| 1           | Upper Body            |
| 3           | Mixing Chamber Gasket |
| 9           | Piston Assembly       |
| 21          | Shaft Assembly        |
| 34          | Cotter ring           |
| 40          | Lower Body NPT 1 1/4" |
|             | Lower Body BSP 1 1/4" |
| 85          | Upper Shaft Pin       |
| 87          | On/Off Handle         |

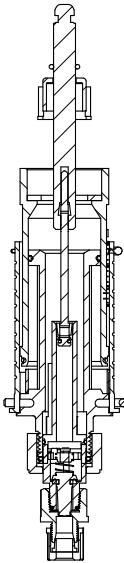


# Kits & Spare Parts List

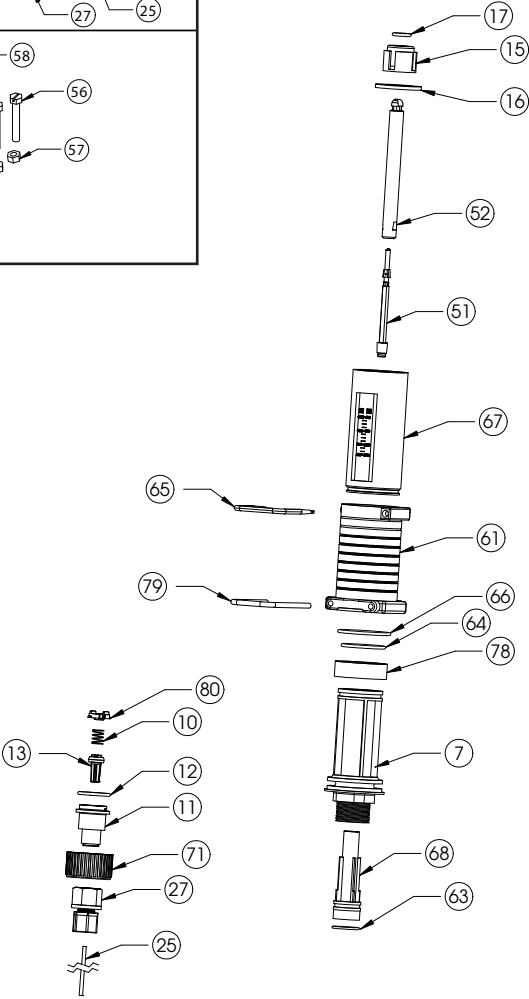
## 0.3% HAC Rotating



| Manual Reference | Description of Part               |
|------------------|-----------------------------------|
| 7                | Cylinder, inner                   |
| 10               | Spring                            |
| 11               | Suction tube fitting              |
| 12               | O-ring                            |
| 13               | Check poppet                      |
| 15               | Seal retainer, O-ring             |
| 16               | Gasket, inlet/outlet and cylinder |
| 17               | O-ring                            |
| 25               | Suction tube, 1/4" ID x 5 ft      |
| 27               | Compression fitting               |
| 51               | Lower shaft                       |
| 52               | Upper shaft                       |
| 61               | Ratio adjustment sleeve           |
| 63               | O-ring                            |
| 64               | O-ring, inner cylinder, lower end |
| 65               | Pin, upper interlock              |
| 66               | O-ring, outer cylinder, lower end |
| 67               | Cylinder, outer                   |
| 68               | Cylinder, inner for #7            |
| 71               | Nut, suction tube fitting         |
| 78               | Lower end stop                    |
| 79               | Pin, narrow interlock             |
| 80               | Twistlock                         |

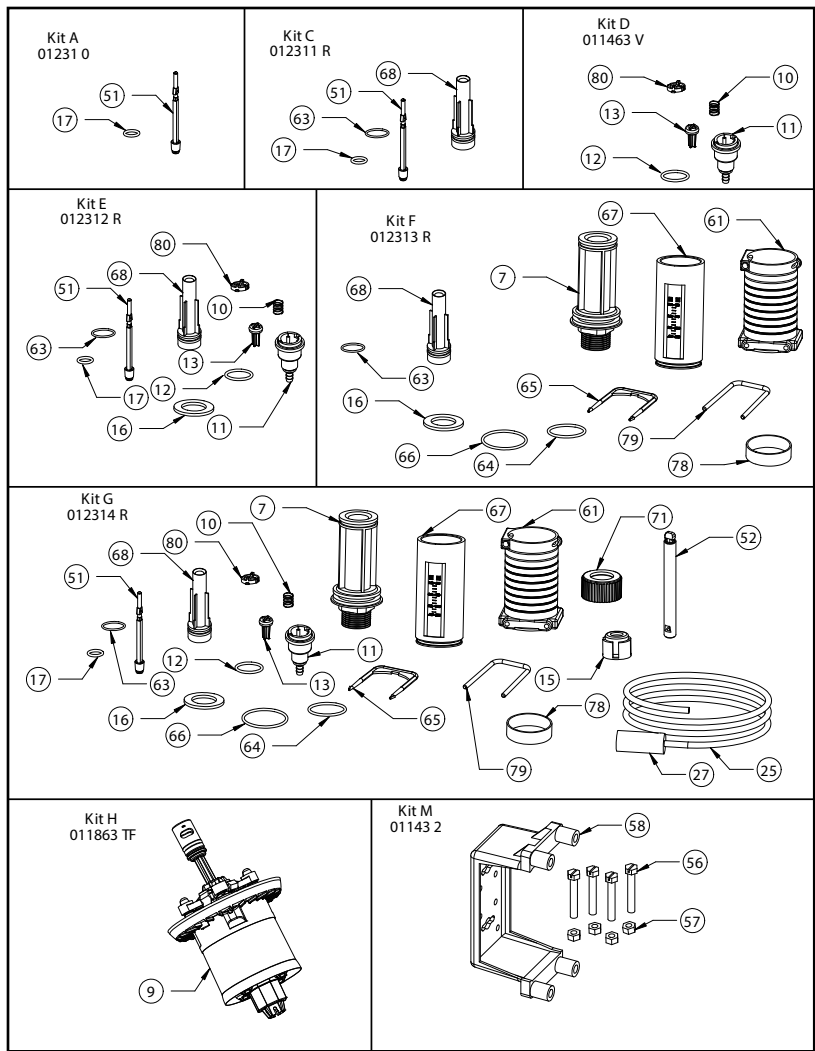


Lower End Assembly



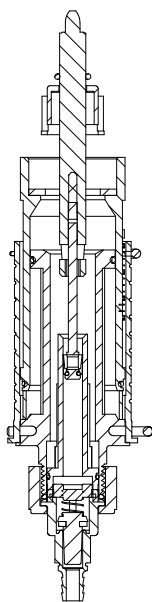
# Kits & Spare Parts List

## 0.3% Rotating

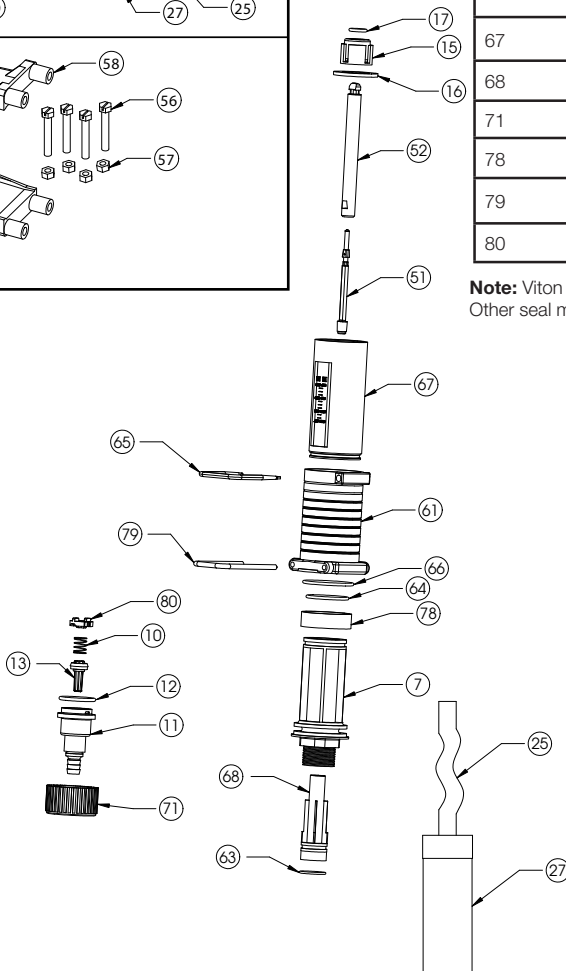


| Manual Reference | Description of Part               |
|------------------|-----------------------------------|
| 7                | Cylinder, Inner                   |
| 10               | Spring                            |
| 11               | Fitting, Suction Tube, 3/8"       |
| 12               | O-ring                            |
| 13               | Check poppet                      |
| 15               | Seal Retainer, O-ring             |
| 16               | Gasket                            |
| 17               | O-ring                            |
| 25               | Suction Tube, 3/8" X 5'           |
| 27               | Filter Suction Tube 3/8" Id       |
| 51               | Shaft, Assy With Dosage Piston    |
| 52               | Upper Shaft                       |
| 61               | Ratio Adjustment Sleeve           |
| 63               | O-ring, Inner Cylinder (#68)      |
| 64               | O-ring, Inner Cylinder, Lower End |
| 65               | Pin, Upper Interlock              |
| 66               | O-ring, Outer Cylinder, Lower End |
| 67               | Ratio Adjuster                    |
| 68               | Cylinder, Inner For #7            |
| 71               | Nut, Suction Tube Fitting         |
| 78               | Lower End Stop                    |
| 79               | Pin, Narrow Interlock             |
| 80               | Twistlock                         |

**Note:** Viton seal materials are standard. Other seal materials are available.

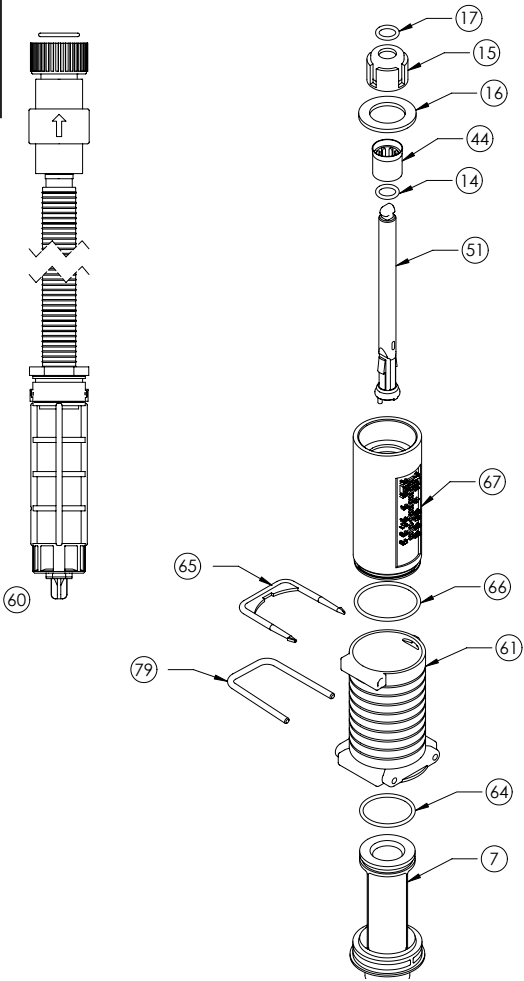
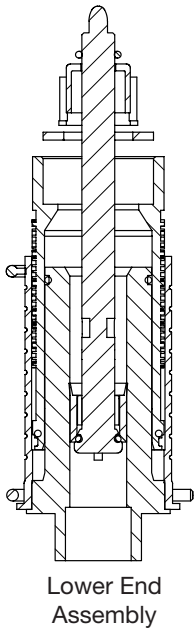
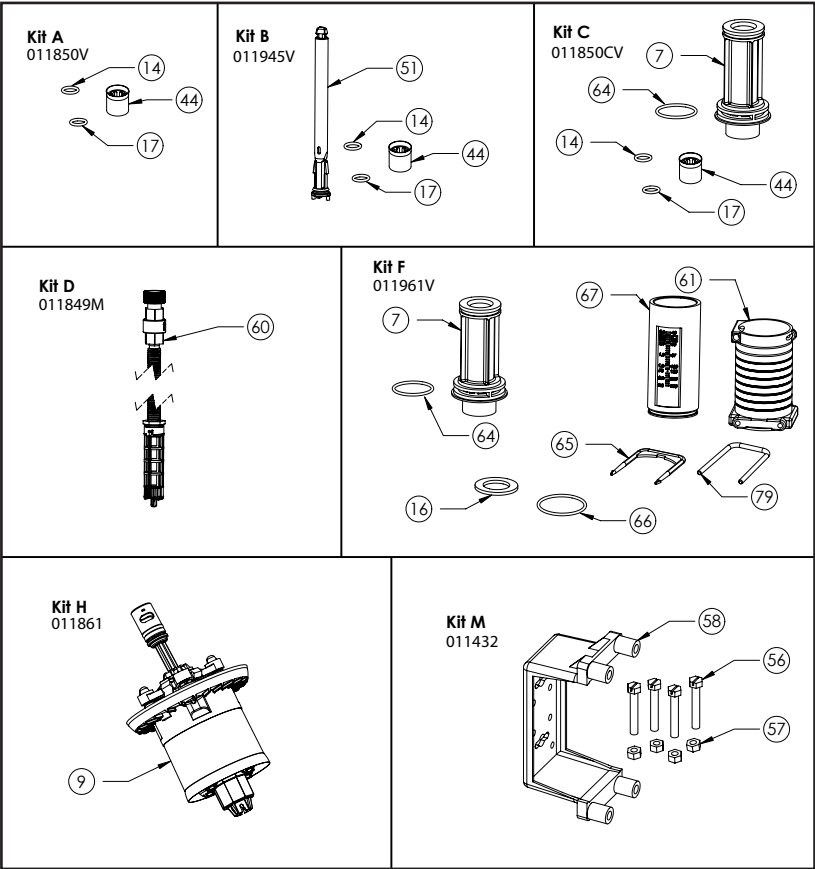


Lower End Assembly



# Kits & Spare Parts List

## 2.5% Rotating

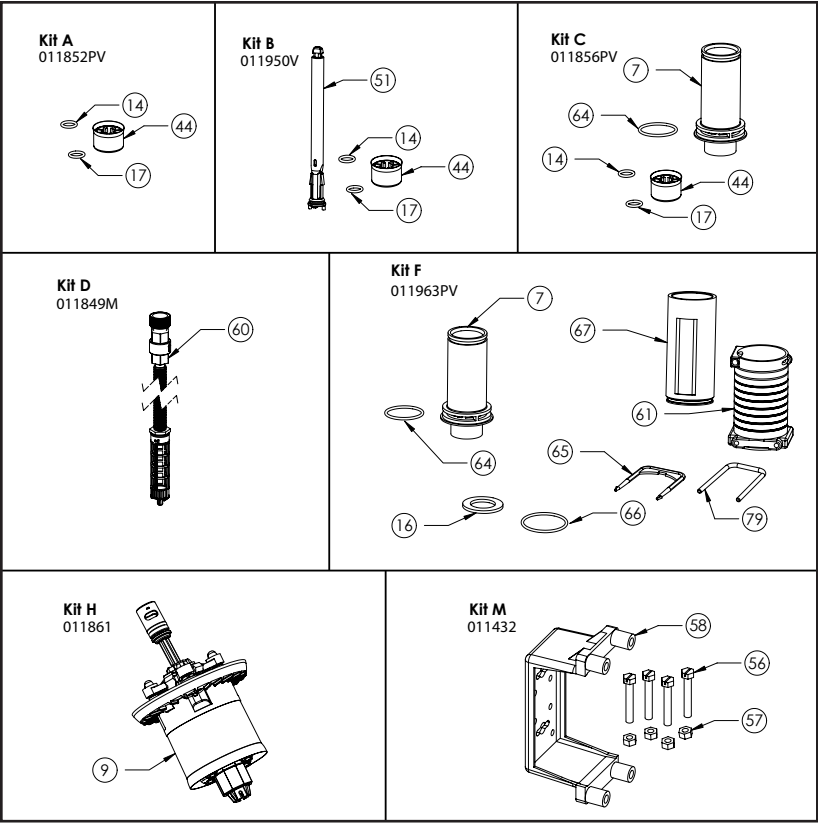


| Manual Reference | Description of Part               |
|------------------|-----------------------------------|
| 7                | Cylinder, Inner                   |
| 14               | O-ring                            |
| 15               | Seal Retainer, O-ring             |
| 16               | Gasket                            |
| 17               | O-ring                            |
| 44               | Dosage Piston                     |
| 51               | Shaft                             |
| 60               | Hose Braid Kit                    |
| 61               | Ratio Adjustment Sleeve           |
| 64               | O-ring, Inner Cylinder, Lower End |
| 65               | Pin, Upper Interlock              |
| 66               | O-ring, Outer Cylinder, Lower End |
| 67               | Cylinder, Outer                   |
| 79               | Pin, Narrow Interlock             |

**Note:** Viton seal materials are standard. Other seal materials are available.

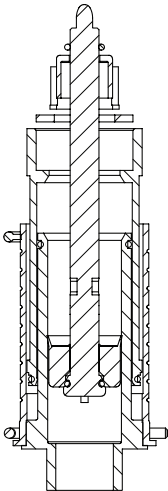
# Kits & Spare Parts List

5%

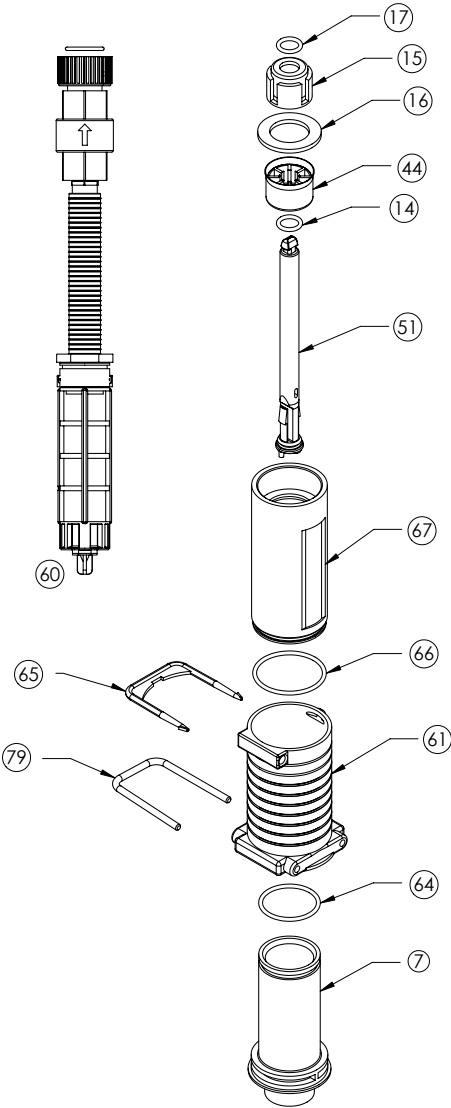


| Manual Reference | Description of Part               |
|------------------|-----------------------------------|
| 7                | Cylinder, Inner                   |
| 14               | O-ring                            |
| 15               | Seal Retainer, O-ring             |
| 16               | Gasket                            |
| 17               | O-ring                            |
| 44               | Dosage Piston                     |
| 51               | Shaft                             |
| 60               | Hose Braid Kit                    |
| 61               | Ratio Adjustment Sleeve           |
| 64               | O-ring, Inner Cylinder, Lower End |
| 65               | Pin, Upper Interlock              |
| 66               | O-ring, Outer Cylinder, Lower End |
| 67               | Cylinder, Outer                   |
| 79               | Pin, Narrow Interlock             |

**Note:** Viton seal materials are standard. Other seal materials are available.



Lower End Assembly



# Accessories



**Twist II Clean Inline Filter®**

**Available In:**

3/4" - 25 gpm (95 l/mn) 100 psi (7 bar)  
1" - 39 gpm (114 l/mn) 100 psi (7 bar)  
1.5" - 78 gpm (295 l/mn) 100 psi (7 bar)  
2" - 150 gpm (568 l/mn) 100 psi (7 bar)  
\* Various mesh sizes available.



**Mobile Cart**

# Warranty

## Limited Warranty

**Seller** warrants solely to **Buyer** the products will be free from defects in material and workmanship under normal use and service for a period of one year from the date of completion of manufacture. This limited warranty does not apply to (a) hoses; (b) products that have a normal life shorter than one year; or (c) failure in performance or damage caused by chemicals, abrasive materials, corrosion, lightning, improper voltage supply, physical abuse, mishandling or misapplication. In the event the products are altered or repaired by **Buyer** without **Seller's** prior written approval, all warranties will be void.

**No other warranty, oral, expressed or implied, including any warranty of merchantability or fitness for any particular purpose, is made for these products, and all other warranties are hereby expressly excluded.**

**Seller's** sole obligation under this warranty will be, at **Seller's** option, to repair or replace F.O.B. **Seller's** facility in Cincinnati, Ohio any Products found to be other than as warranted.

## Limitation of Liability

**Seller's** warranty obligations and **Buyer's** remedies are solely and exclusively as stated herein. **Seller** shall have no other liability, direct or indirect, of any kind, including liability for special, incidental, or consequential damages or for any other claims for damage or loss resulting from any cause whatsoever, whether based on negligence, strict liability, breach of contract or breach of warranty.



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