

SuperDos 20

Operating Manual • Mode D'Emploi
Bedienungs Handbuch • Manual de Operación
Manual de operação • Manuale d'uso



Model 0.3%

Model 0.3% PAA

Model 2.5%

Model 2.5 % WSP

Model 5%

Model 10%

Fluid Flow Range:

Débit d'eau:

Durchflussmenge:

Caudal de trabajo:

Vazão Operativa:

Velocità di flusso:

0.04 gpm to 20 gpm

0,15 l/mn to 76 l/mn

Injection Range

Dosage:

Dosierung:

Dosificación:

Injeção:

Dosaggio:

0.025% to 10%

1:4000 to 1:10

Operating Pressure:

Pression:

Druck:

Presión operativa:

Pressão operativa:

Pressione operativa:

5 to 100* psi

0,34 to 6,9 bar

*Specifications vary by model.

*Les données techniques varient selon les modèles.

* Technische Daten sind je nach Modell unterschiedlich.

* Características técnicas varían según modelo.

* Características técnicas variam conforme o modelo.

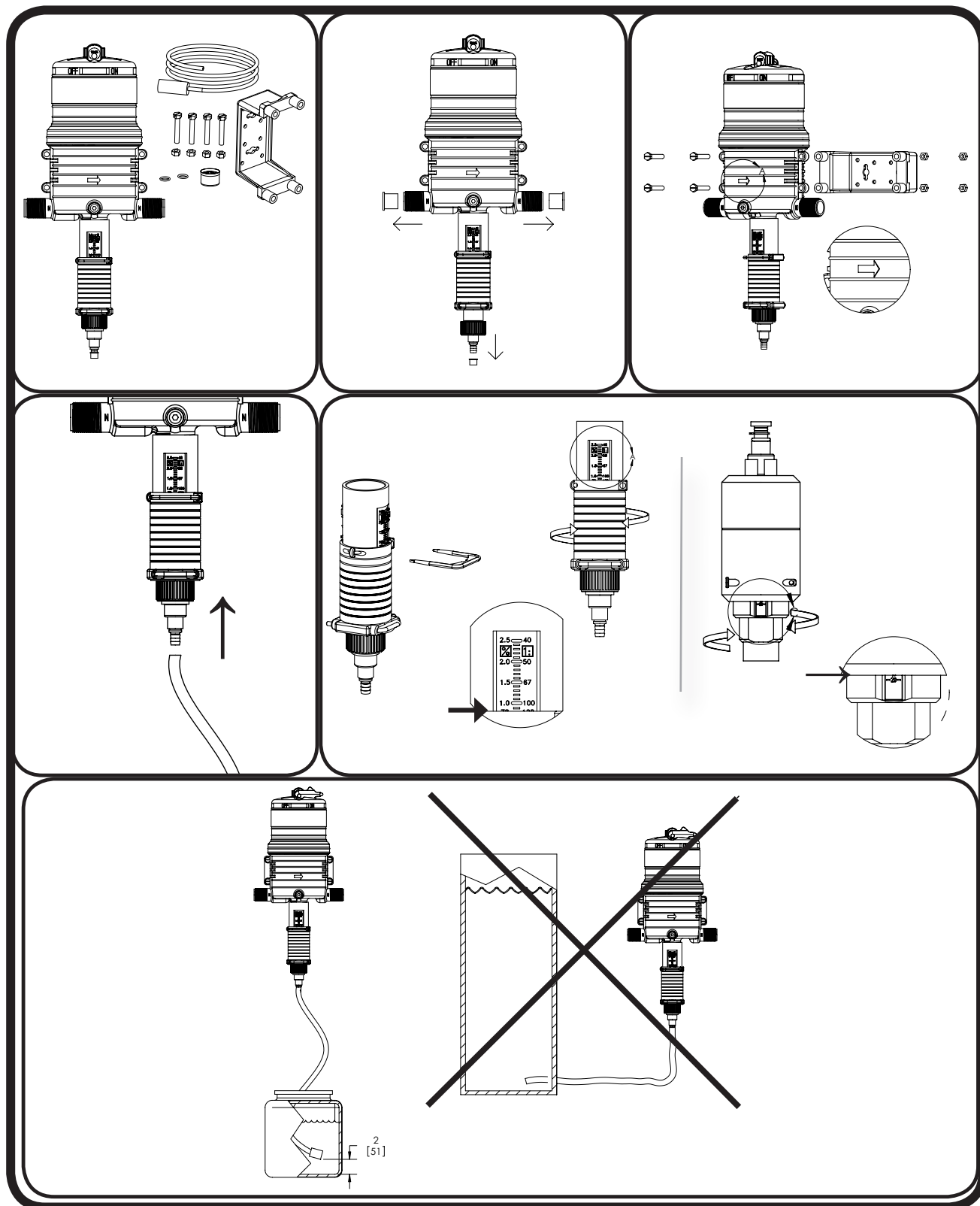
* Le specifiche variano a seconda del modello.

Hydro[®]
systems

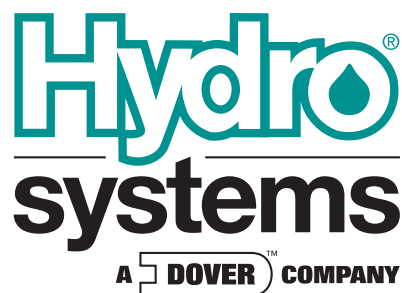
A **DOVER** COMPANY

Quick Start Up
 Démarrage Rapide
 Schnell Antrieb

Puesta en marcha rápida
 Inicialização rápida



Part # 013825 Rev. G



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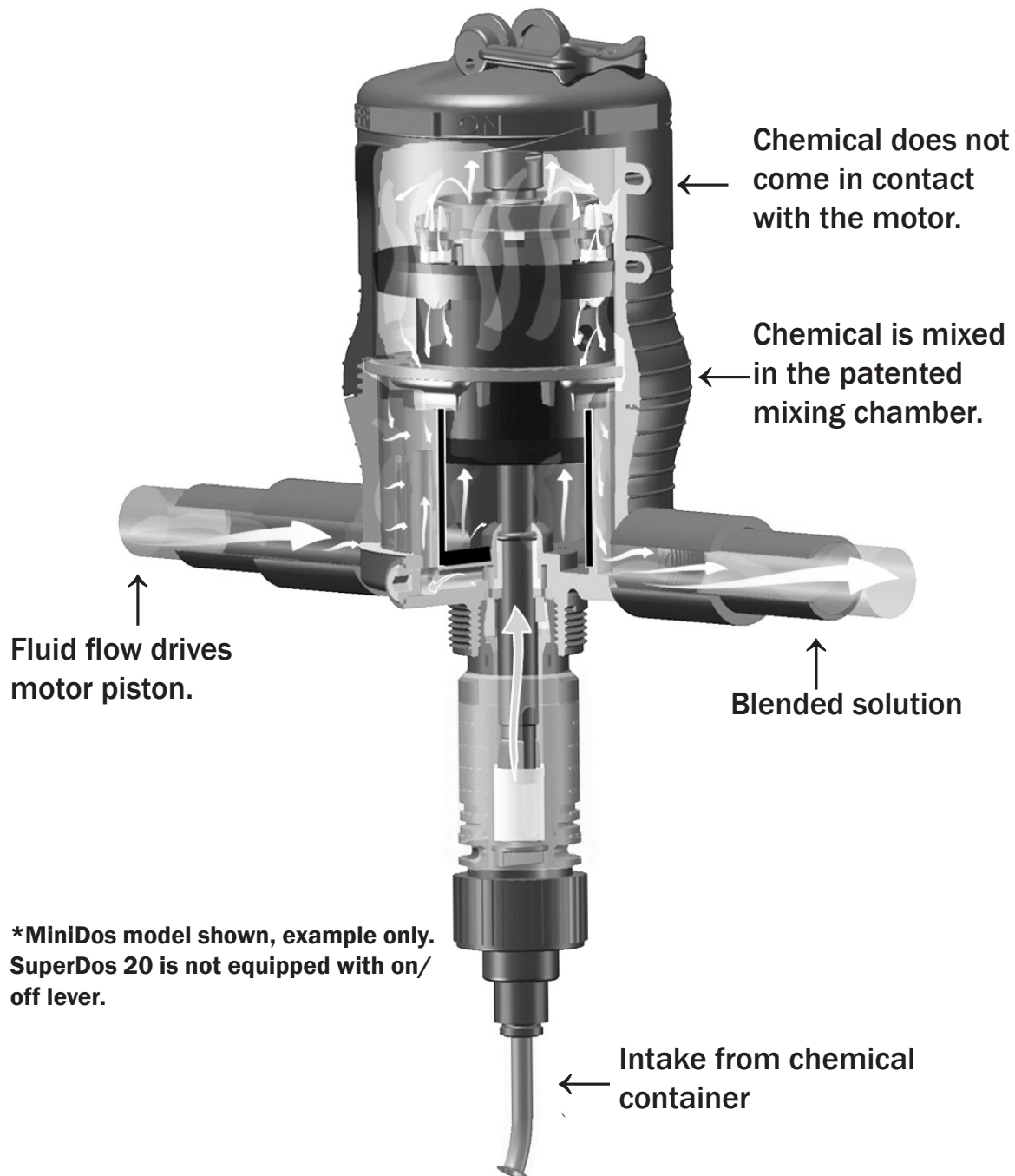
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Operating Principle

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 Systems 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.



***MiniDos model shown, example only.
SuperDos 20 is not equipped with on/off lever.**

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

This booklet has the information you will need for the use and care of your new Hydro Systems 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 Systems 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. Please review the complete warranty information on page 21.

For Your Records

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

Serial #.....

Date Purchased

This document does not form a contractual engagement on the part of Hydro Systems and is for information only. Hydro Systems reserves the right to alter product specifications or appearance without prior notice.

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)

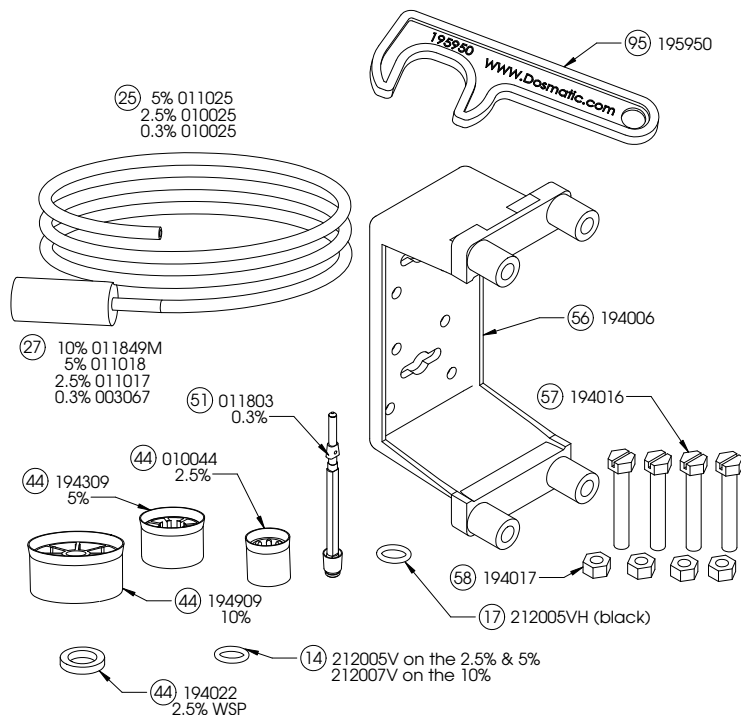
Mounting Bracket

Mounting Nuts and Bolts

Filter

Suction Tube

**Certified ISO 9001:2008 QMS
for the Hydro Systems Brand**



Model	NPT	BSP
0.3% Rotating	113228R	113728R
0.3% PAA Rotating	113228RK	113728RK
2.5%	113205	113705
2.5% WSP	113205WSP	113705WSP
5%	113206	113706
10%	113207	113707
10% Remote Injection	113232	113233

Specifications



SuperDos 20 gpm (100 max. psi)

Model 0.3% 0.025% - 0.30% (1:4000 - 1:333)

Model 2.5% 0.20% - 2.5% (1:500 - 1:40)

Model 5%** 0.4% - 5% (1:250 - 1:20)

Model 10%* 2% - 10% (1:50 - 1:10)

Flow Rate: 0.04 - 20 gpm (0,15 - 76 l/mn)

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

Pipe Coupling: 1" NPT/BSP

* 10% model maximum operating pressure is 65psi (4,5 bar)

**5% with remote injection kit maximum operating pressure is 60 psi (4bar).

Housing	Proprietary Engineered Composite Material
Dosing Accuracy	+/- 10% of ratio
Repeatability	+/- 3% of ratio
Pressure Loss	Available upon request
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: *Contact your representative for specific chemical information	Aflas Viton EPDM FFKM Teflon Coated
Maximum Viscosity	1,500 cP (Ex. Honey)
Recommended Accessories	140 mesh (104 micron) filter, check valve, pressure regulator, flow restrictor.

Safety Precautions Warranty Compliance



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

English

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 Systems'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 labeled:

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

0.3%, 2.5%, 5% - 100 psi (6,9 bar)

10% - 65 psi (4,5 bar)

5% model with remote injection kit has maximum operating pressure of 60 psi (4 bar).

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).

Liquid Concentrate, Soluble Product, Soluble and Wettable Powder use

Ensure that the chemical, when mixing with water, is thoroughly mixed and or completely dissolved before using injector. For soluble and wetttable powder injection, it is recommended to use a Hydro Systems WSP injector or install a WSPL lower end conversion kit to an existing Hydro Systems dosage piston model injector.

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.

SuperDos 20 0.3%, 2.5% 5%

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.

SuperDos 20 10%

1. Remove Ratio Locking Pin (#79) (Fig 1a.).
2. Rotate Outer Cylinder (#7) up or down to the desired setting (Fig. 2b). Use the bottom of the Ratio Adjuster to line up with the desired feed rate setting (Fig 2c)

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

Fig. 1

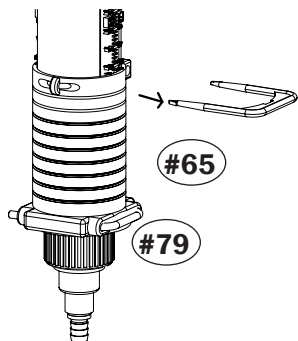


Fig. 1a

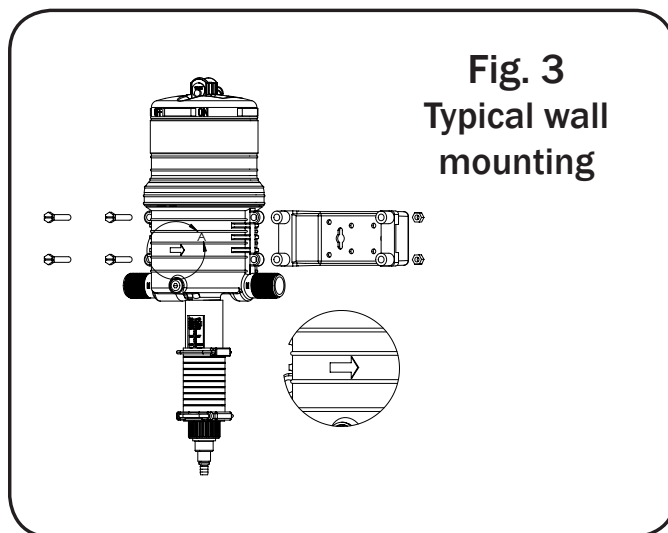
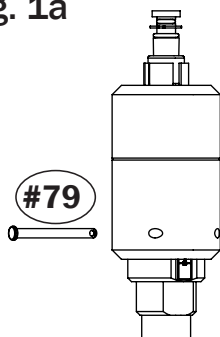


Fig. 3
Typical wall
mounting

Fig. 2

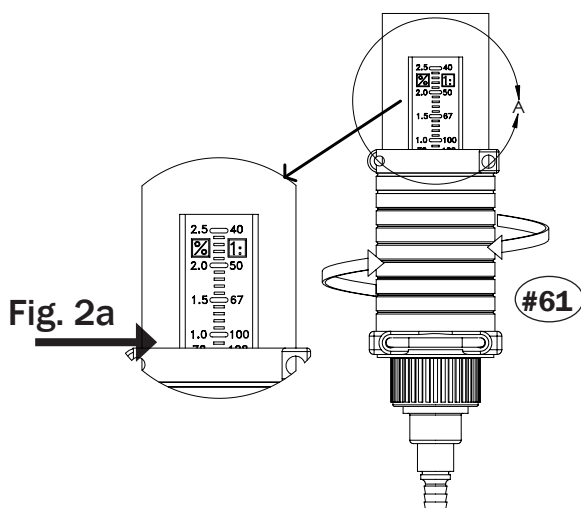


Fig. 2a

Fig. 2b

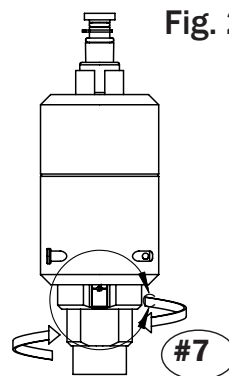
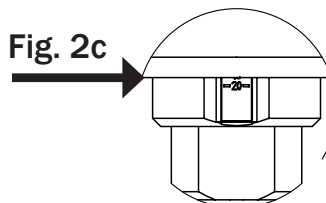


Fig. 2c



Installation and Start-up

Refer to Fig. 3 and Fig. 4

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 Systems 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" (5cm) from the bottom and fill with at least 2" (5cm) 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.

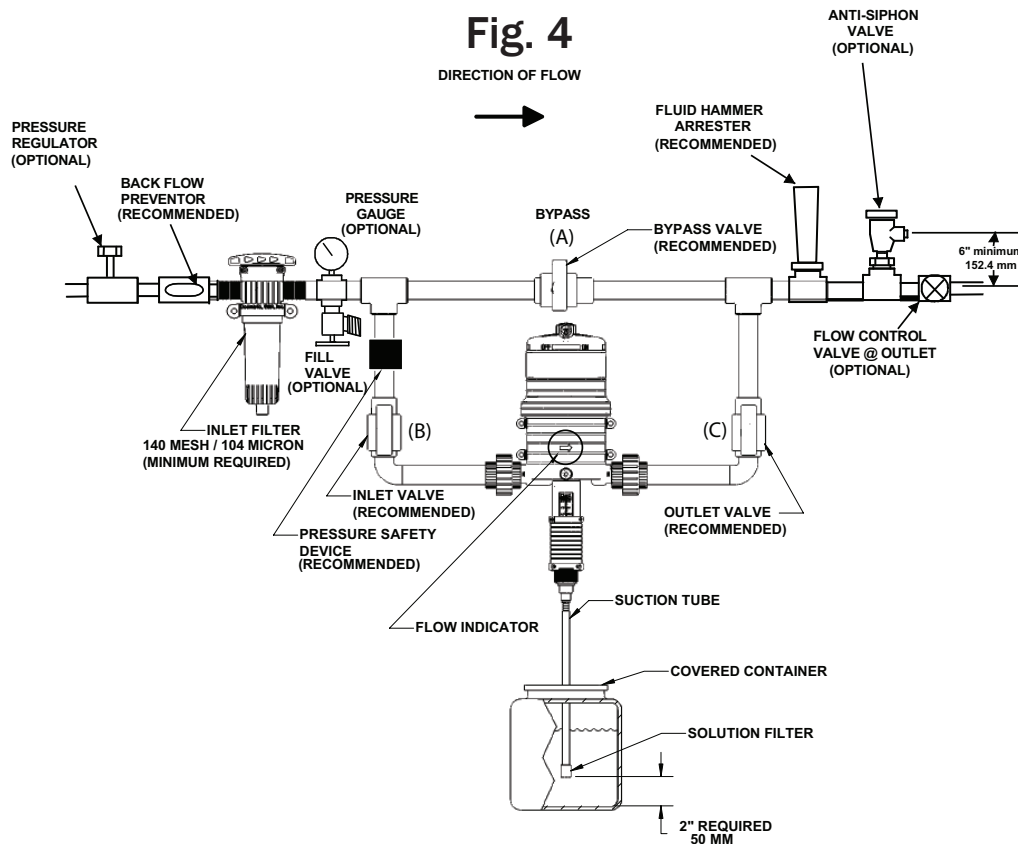


Check System for Leaks and Start-Up Procedures

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. 4



Remote Injecting

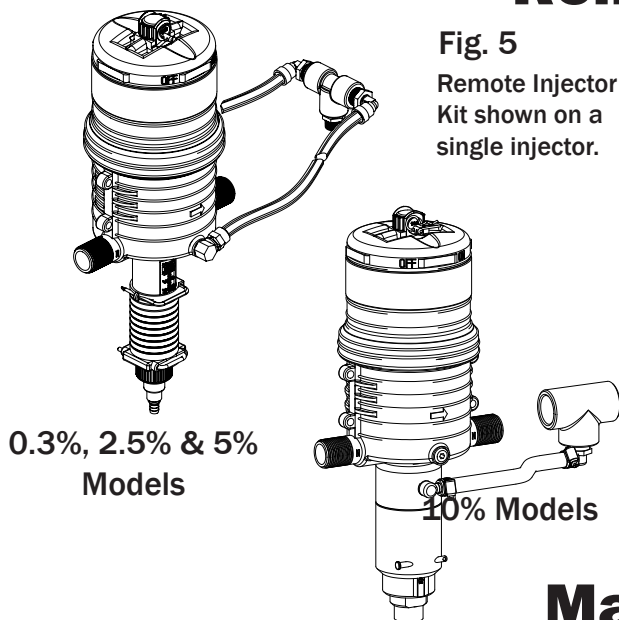


Fig. 5
Remote Injector
Kit shown on a
single injector.

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. 5)

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

Maintenance

Reference numbers refer to Pages 14 - 20

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, 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.

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 page 15 & 16

SuperDos 20 (0.3%) Model (Including PAA)

Every 3 - 6 Months	Every 6 - 12 months	Replace as necessary
1. Clean seal areas (#13). 2. Check #17 O-ring, #68 Cylinder, clean and/or replace as necessary.	1. Replace #17 O-ring and #51 Dosage Piston Shaft Assembly. 2. Clean and/or replace #13 Check Poppet, #11 Suction Tube Fitting.	1. #68 Cylinder 2. #51 Shaft Assembly

Refer to page 17, 18 & 19

SuperDos 20 (2.5% & 2.5% WSP), (5%) Models

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

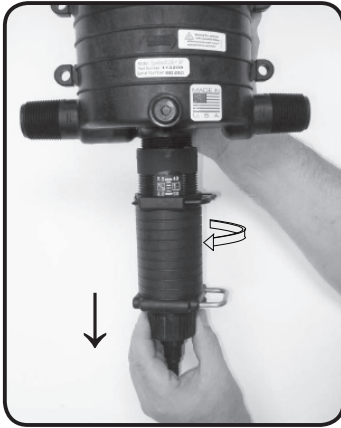
Refer to page 20

SuperDos 20 (10%) Models

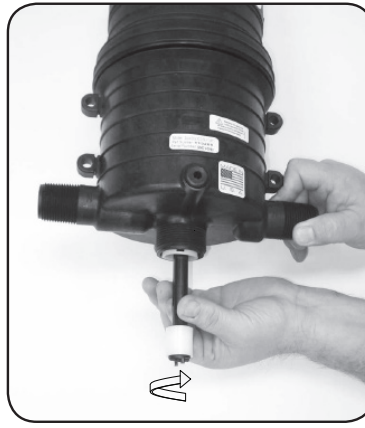
Every 3 - 6 Months	Every 6 - 12 months	Replace as necessary
1. Clean seal areas (#14). 2. Check #17 O-ring, #7 Cylinder, clean and/or replace as necessary.	1. Replace #17 O-ring and #44 Dosage Piston. Clean and/or replace. 2. Replace #60 hose kit.	1. #7 Cylinder 2. #14 O-ring

Routine Maintenance Instructions

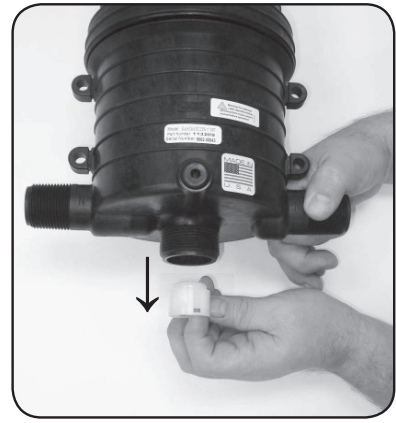
0.3%, 2.5%, 5%



Step 1.
Unscrew LOWER END
CYLINDER ASSEMBLY from
body. Remove LOWER END
CYLINDER ASSEMBLY



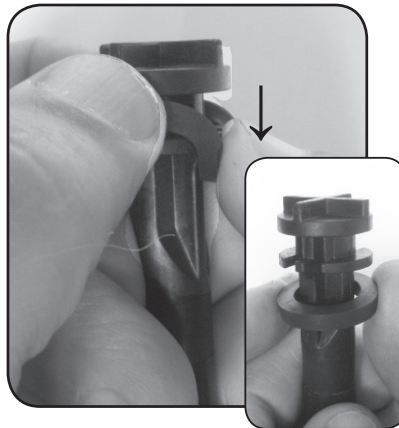
Step 2.
Rotate #51 SHAFT 90° and pull
from body.



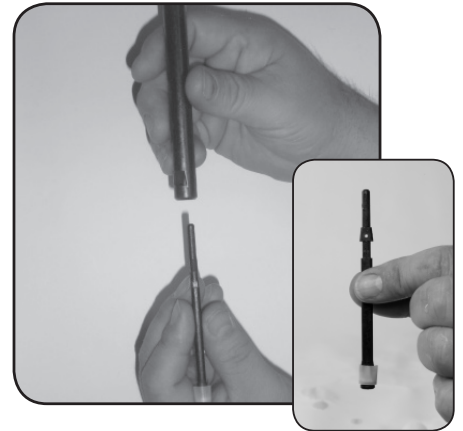
Step 3.
Pry the #15 SEAL RETAINER from
the injector. Pry #17 O-RING from
the unit. NOTE: O-ring may still be
seated at the base of the unit.



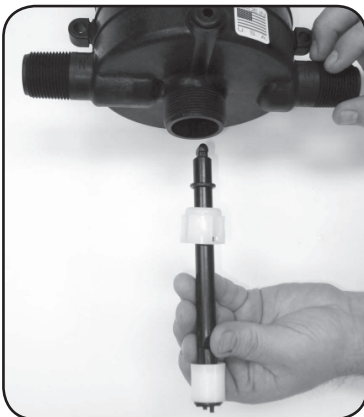
Step 4. For 2.5% & 5%
Replace #44 DOSAGE PISTON
flared-end up and #14 O-RING.



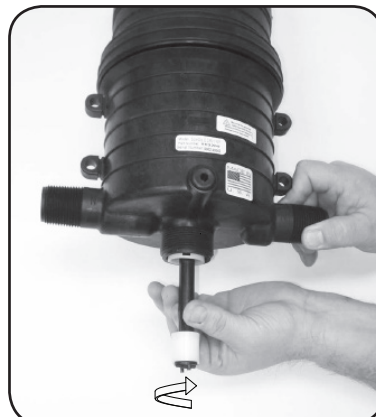
Step 5. For 2.5% WSP
Pinch and pull #44 DOSAGE
GASKET over the retainer lip. Slide
off the #51 SHAFT ASSEMBLY.



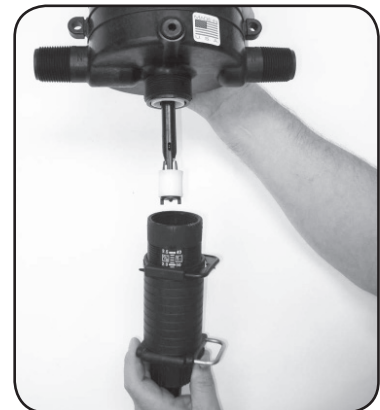
Step 5a. For 0.3%.
Replace LOWER SHAFT ASSEMBLY
#51 into upper shaft.



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.

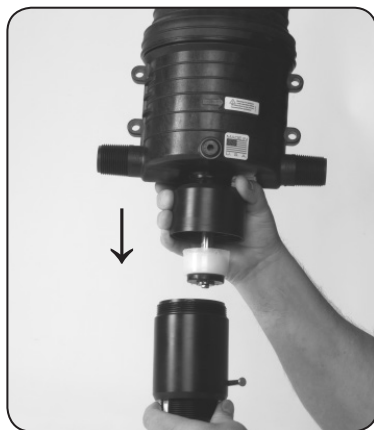


Step 8.
Screw LOWER END CYLINDER
ASSEMBLY onto body. Ensure
#16 GASKET is seated on the top
of cylinder assembly.

Routine Maintenance Instructions - 10%



Step 1.
Unscrew LOWER END ASSEMBLY from body.



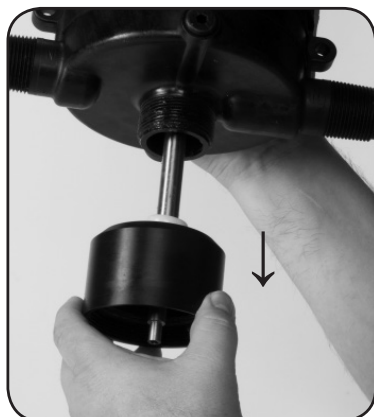
Step 2.
Remove LOWER END ASSEMBLY .



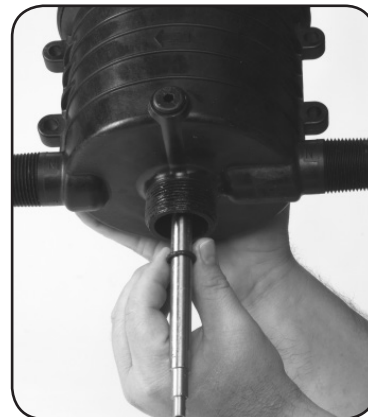
Step 3.
Remove #93 CAPSCREW from the end of the shaft using a wrench and nut driver.



Step 4.
Remove the #73 DOSAGE PISTON GUIDE and replace #44 DOSAGE PISTON and #14 O-ring.



Step 5. Unscrew #72 ADAPTER and remove.



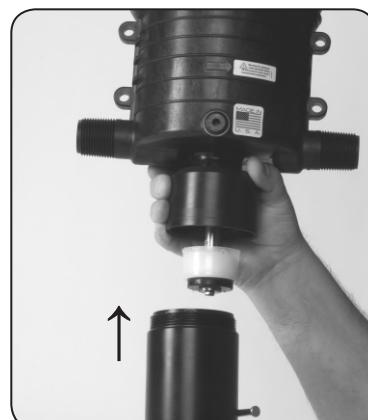
Step 6.
Remove and replace #17 O-RING



Step 7.
Re-install the new #44 DOSAGE PISTON and #73 DOSAGE PISTON GUIDE. Tighten snug using a nut driver.



Step 7a.
NOTE: #44 DOSAGE PISTON must be installed **flared end up**.



Step 8.
Screw LOWER END ASSEMBLY onto body. Hand tighten only.

Troubleshooting

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

Problem	Cause	Solution
No Clicking Sound	Fluid not flowing through system	Are the red plugs at the inlet, outlet and suction tube fitting openings removed? Is the unit installed backward? The arrow on the unit must point in the direction of the fluid flow. If still not clicking, do not open the upper body. Call Hydro Systems Customer Service.
	Fluid flowing through system	Fluid rate is below or exceeds rated service flow of injector. (see Specifications page 6). 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. If below increase flow rate, if above, reduce flow rate. Operating pressure exceeds maximum limit. Install a pressure reducer valve. (see Specifications page 6). By-Pass Valve (A pg.9) not closed. Check and set valve to the OFF position.

English

Injector in Operation or After Scheduled Maintenance

Problem	Cause	Solution
No Clicking Sound	Main Piston Assembly #9 worn	Replace # 9 Main Piston Assembly. Clean fluid filter.
	Cover #1 or main body #40 worn or scored	Replace and install or clean fluid filter.
	By-Pass Valve (A) not closed	Set By-pass valve (A) 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.

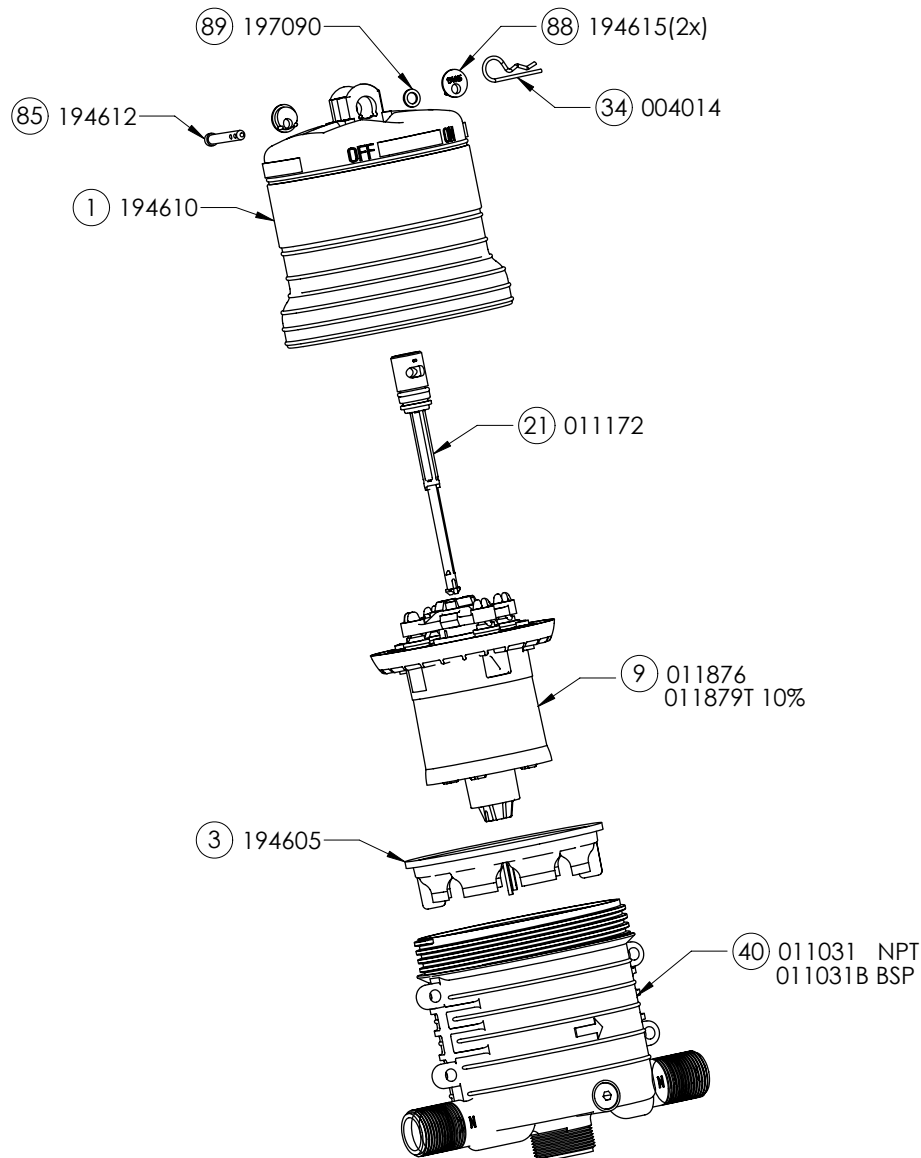
Problem	Cause	Solution
Clicking Sound No Suction Of Solution	Cylinders #7 or #68 worn.	Replace.
	Dosage piston/gasket (WSP model) #44 (0.3% model #51) worn or installed incorrectly	Replace. Ensure during maintenance replacement that #44 was installed correctly flared-end up.
	O-ring retainer #15 installed incorrectly	Install correctly.
	O-ring seat #14 or dosage piston/gasket #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.

Problem	Cause	Solution
Clicking Sound. Under Injecting	#44 (0.3% model #51) Dosage Piston/gasket (WSP model) worn	Replace.
	#7 (#68 - 0.3%) 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	Replace and install or clean fluid filter.

Problem	Cause	Solution
Fluid Re-filling Solution Tank	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.

Injector Repair Parts

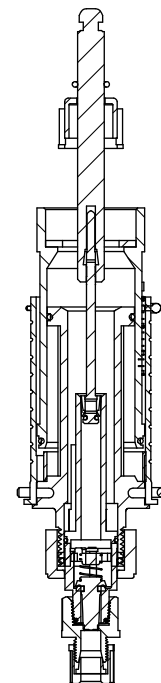
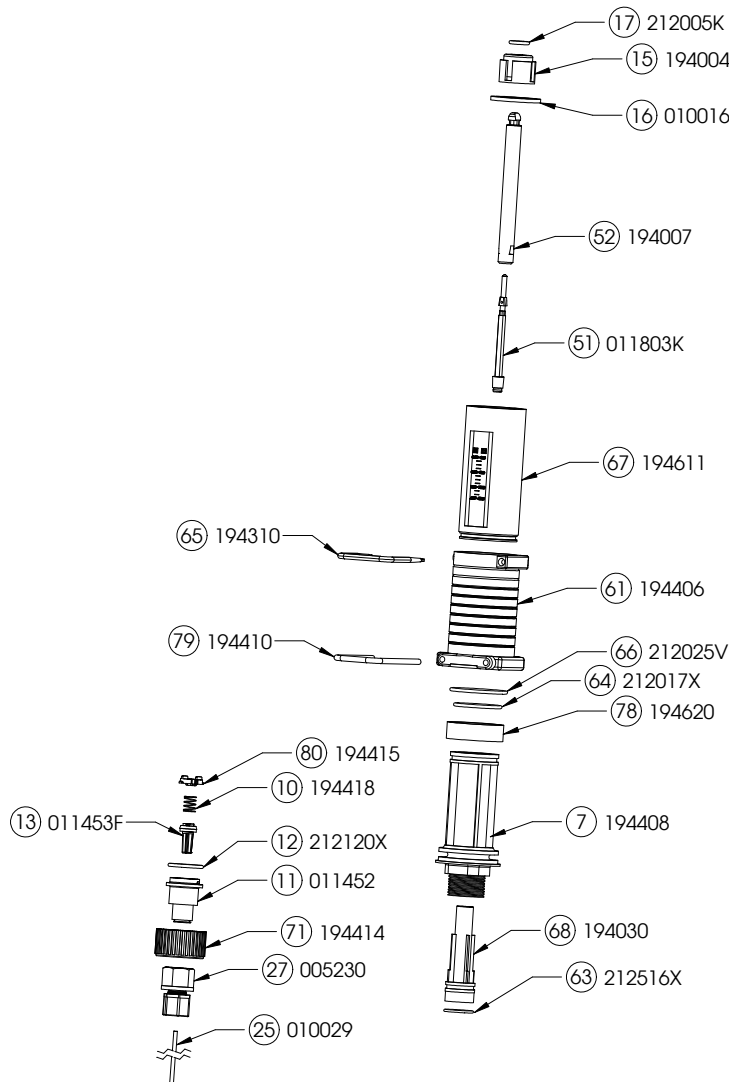
Ref. #	Part #	Description
1	194610	Upper Body (Must Order W/#88)
3	194605	Mixing Chamber Gasket
9	011876VH	Piston Assembly (Must Order With #21)
9	011879T	Piston Assembly 10% (Must Order With #21)
21	011172	Shaft Assembly
34	004014	Hairpin
40	011031	Lower Body NPT 1"
40	011031B	Lower Body BSP 1"
85	194612	Upper Shaft Pin
88	194615	Non Bypass Plug
89	197090	Washer



Lower end & wear parts kits 0.3% PAA(Rotating):

Kit A – Wear Parts Kit (shaft assy, O-ring)	012310K	17, 51
Kit C – Wear Parts Kit (Kit A, inner cylinder, O-ring)	012311RK	17, 51, 63, 68
Kit D – Suction Tube Fitting Assy (O-ring, spring, fitting, twistlock, check poppet)	011463RK	10, 11, 12, 13, 80
Kit E – Wear Parts Kit (Kits C & D, gasket)	012312RK	10, 11, 12, 13, 16, 17, 51, 63, 68, 80
Kit F – Lower End Cylinder Kit (inner & outer cylinder, ratio adjuster, O-rings, pins, gasket, lower end stop)	012313RK	7, 16, 61, 63, 64, 65, 66, 67, 68, 78, 79
Kit G – Complete Lower End, solution tube, compression fitting	012314RK	7, 10, 11, 12, 13, 15, 16, 17, 25, 27, 51, 52, 61, 63, 64, 65, 66, 67, 68, 71, 78, 79, 80
Kit H – Motor Piston Assy	011863	9, 21
Kit M – Mounting Bracket Kit (mounting bracket, 4 hex caps & nuts)	011432	56, 57, 58

Manual Reference	Part #	Description of Part
7	194408	Cylinder, inner
10	194418H	Spring
11	011452	Suction tube fitting
12	212120X	O-ring
13	011453F	Check poppet
15	194004	Seal retainer, O-ring
16	010016S	Lower End Gasket
17	212005K	O-ring
25	010029	Suction tube, 1/4" ID x 5ft
27	005230	Compression fitting
51	011803K	Lower shaft Assy.
52	194007	Upper shaft
61	194406P	Ratio adjustment sleeve
63	212516X	O-ring
64	212017X	O-ring, inner cylinder, lower end
65	194310D	Pin, upper interlock
66	212025V	O-ring, outer cylinder, lower end
67	194611	Cylinder, outer
68	194030	Cylinder, inner for #7
71	194414	Nut, suction tube fitting
78	194620	Lower end stop
79	194410SS	Pin, narrow interlock
80	194415	Twistlock

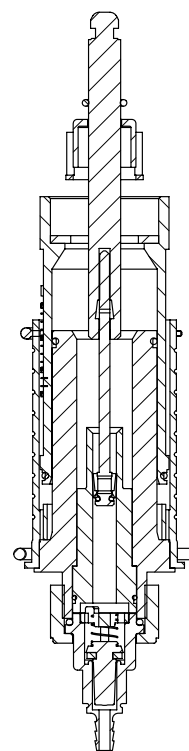
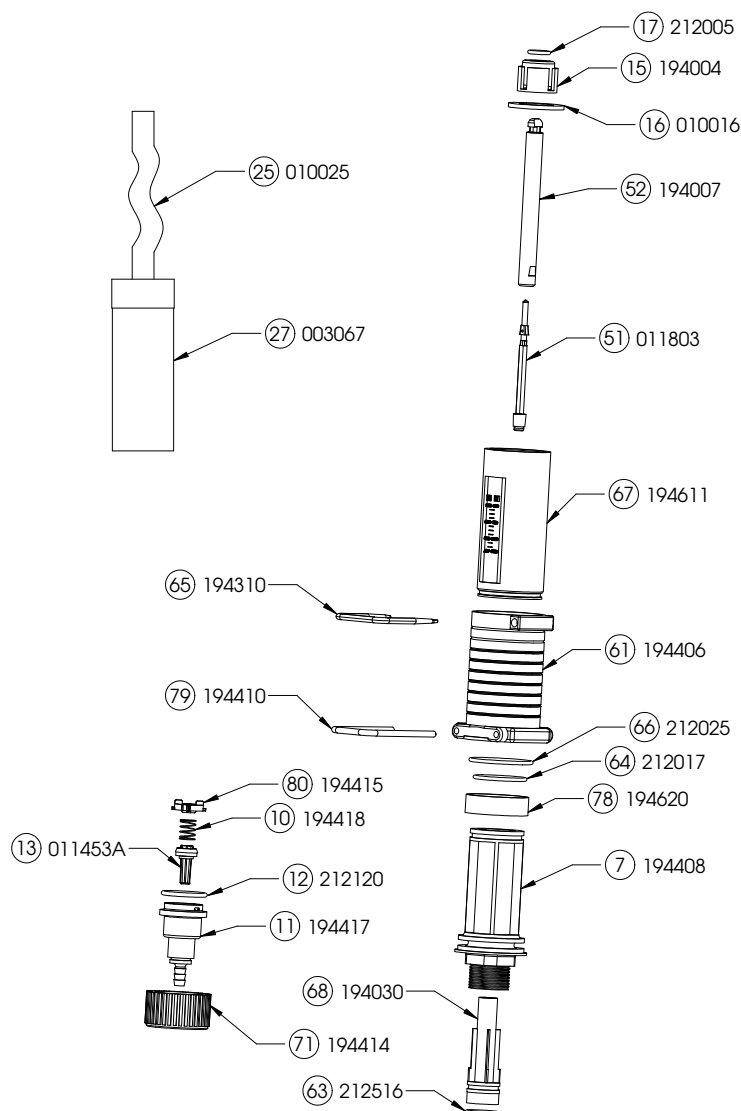


Lower End Assembly

Lower end & wear parts kits 0.3% (Rotating):

Kit A – Wear Parts Kit (shaft assy, O-ring)	012310	17, 51
Kit C – Wear Parts Kit (Kit A, inner cylinder, O-ring)	012311R	17, 51, 63, 68
Kit D – Suction Tube Fitting Assy (check poppet, O-ring, spring, fitting, twistlock)	011463V	10, 11, 12, 13, 80
Kit E – Wear Parts Kit (Kits C & D, gasket)	012312R	10, 11, 12, 13, 16, 17, 51, 63, 68, 80
Kit F – Lower End Cylinder Kit (inner & outer cylinder, ratio adjuster, O-rings, pins, gasket, lower end stop)	012313R	7, 16, 61, 63, 64, 65, 66, 67, 68, 78, 79
Kit G – Complete Lower End, filter, solution tube	012314R	7, 10, 11, 12, 13, 15, 16, 17, 25, 27, 51, 52, 61, 63, 64, 65, 66, 67, 68, 71, 78, 79, 80
Kit H – Motor Piston Assy	011863	9, 21
Kit M – Mounting Bracket Kit (mounting bracket, 4 hex caps & nuts)	011432	56, 57, 58

Manual Reference	Part #	Description of Part
7	194408	Cylinder, inner
10	194418H	Spring
11	194417	Fitting, suction tube, 1/4"
12	212120	O-ring
13	011453A	Check poppet
15	194004	Seal retainer, O-ring
16	010016	Lower End Gasket
17	212005	O-ring
25	010025	Suction tube, 1/4" x 5'
27	003067	foot valve 1/4" ID
51	011803	Lower shaft assy.
52	194007	Upper shaft
61	194406P	Ratio adjustment sleeve
63	212516	O-ring, inner cylinder (#68)
64	212017	O-ring, inner cylinder, lower end
65	194310D	Pin, upper interlock
66	212025	O-ring, outer cylinder, lower end
67	194611	Cylinder, outer
68	194030	Cylinder, inner for #7
71	194414	Nut, suction tube fitting
78	194620	Lower end stop
79	194410SS	Pin, narrow interlock
80	194415	Twistlock

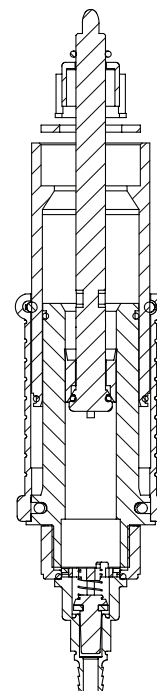
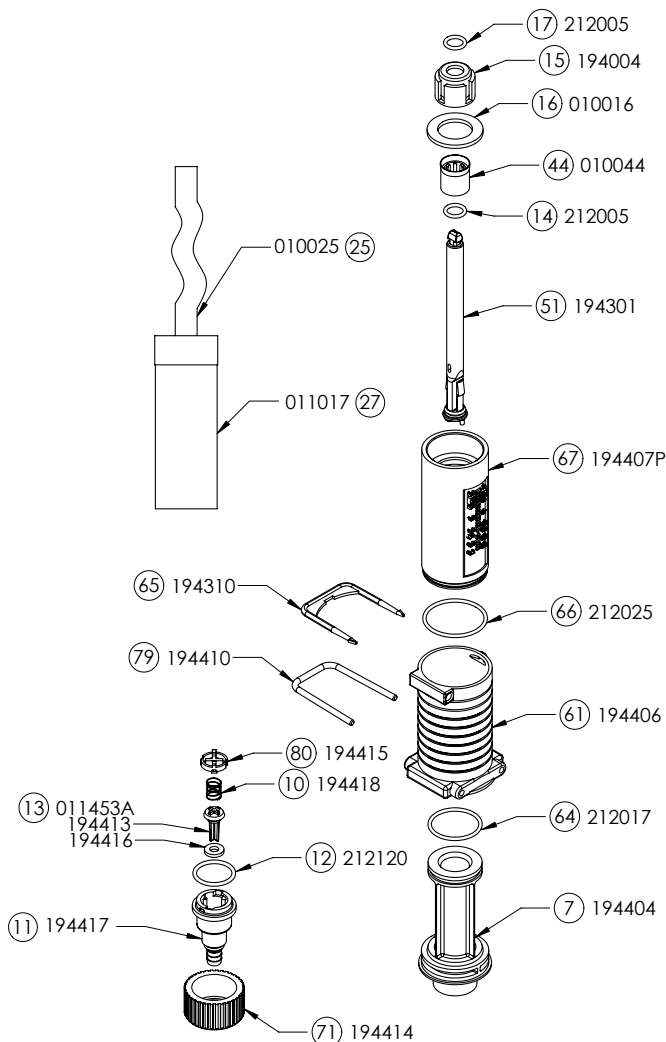


Lower End Assembly

Lower end injector & wear parts kits 2.5%:

Kit A – Wear Parts Kit (dosage piston and O-rings)	011850V	14, 17, 44
Kit B – Wear Parts Kit (Kit A & shaft)	011945V	14, 17, 44, 51
Kit C – Wear Parts Kit (Kit A, inner cylinder and O-ring)	011850CV	7, 14, 17, 44, 64
Kit D – Suction Tube Fitting Assy (check poppet, O-ring, spring, fitting, twistlock)	011463V	10, 11, 12, 13, 80
Kit E – Wear Parts Kit (Kits C & D, shaft, gasket)	011833PV	7, 10, 11, 12, 13, 14, 16, 17, 44, 51, 64, 80
Kit F – Lower End Cylinder Kit (inner & outer cylinder, ratio adjuster, O-rings, pins, gasket)	011961V	7, 16, 61, 64, 65, 66, 67, 79
Kit G – Complete Lower End, filter, solution tube	011843PV	7, 10, 11, 12, 13, 14, 15, 16, 17, 25, 27, 44, 51, 61, 64, 65, 66, 67, 71, 79, 80
Kit H – Motor Piston Assy	011863	9, 21
Kit M – Mounting Bracket Kit (mounting bracket, 4 hex caps & nuts)	011432	56, 57, 58

Manual Reference	Part #	Description of Part
7	194404P	Cylinder, inner
10	194418H	Spring
11	194417	Fitting, suction tube, 1/4"
12	212120 *Must specify material	O-ring
13	011453A	Check poppet
14	212005 *Must specify material	O-ring
15	194004	Seal retainer, O-ring
16	010016	Lower End Gasket
17	212005 *Must specify material	O-ring
25	010025	Suction tube, 1/4" x 5'
27	011017	Filter, for suction tube, 1/4" ID
44	010044P	Dosage Piston
51	194301F	Shaft
61	194406P	Ratio adjustment sleeve
64	212017 *Must specify material	O-ring, inner cylinder, lower end
65	194310D	Pin, upper interlock
66	212025 *Must specify material	O-ring, outer cylinder, lower end
67	194407P	Cylinder, outer
71	194414	Nut, suction tube fitting
79	194410SS	Pin, narrow interlock
80	194415	Twistlock

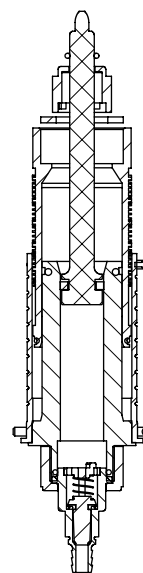
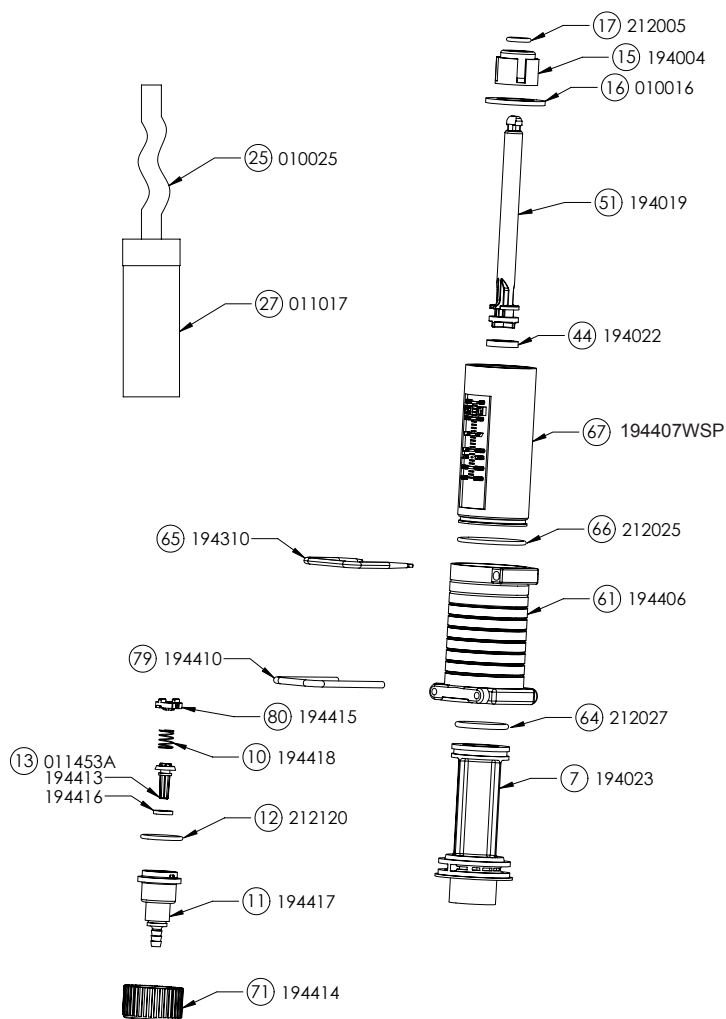


Lower End Assembly

Lower end injector & wear parts kits 2.5% WSP:

Kit A – Wear Parts Kit (dosage gasket and O-rings)	011850WSP	17, 44
Kit B – Wear Parts Kit (Kit A, & shaft)	011945WSP	17, 44, 51
Kit C – Wear Parts Kit (Kit A, inner cylinder and O-ring)	011850CWSP	7, 17, 44, 64
Kit D – Suction Tube Fitting Assy (check poppet, O-ring, spring, fitting, twistlock)	011463V	10, 11, 12, 13, 80
Kit E – Wear Parts Kit (Kits C & D, shaft, gasket)	011833WSP	7, 10, 11, 12, 13, 16, 17, 44, 51, 64, 80
Kit F – Lower End Cylinder Kit (inner & outer cylinder, ratio adjuster, O-rings, pins, gasket)	011961WSP	7, 16, 61, 64, 65, 66, 67, 79
Kit G – Complete Lower End, filter, solution tube	011843WSP	7, 10, 11, 12, 13, 15, 16, 17, 25, 27, 44, 51, 61, 64, 65, 66, 67, 71, 79, 80
Kit H – Motor Piston Assy	011863	9, 21
Kit M – Mounting Bracket Kit (mounting bracket, 4 hex caps & nuts)	011432	56, 57, 58

Manual Reference	Part #	Description of Part
7	194023	Cylinder, inner
10	194418H	Spring
11	194417	Fitting, suction tube, 1/4"
12	212120 *Must specify material	O-ring
13	011453A	Check poppet
15	194004	Seal retainer, O-ring
16	010016	Lower End Gasket
17	212005 *Must specify material	O-ring
25	010025	Suction tube, 1/4" x 5'
27	011017	Filter, for suction tube, 1/4" ID
44	194022	Dosage Gasket
51	194019	Shaft
61	194406P	Ratio adjustment sleeve
64	212027 *Must specify material	O-ring, inner cylinder, lower end
65	194310D	Pin, upper interlock
66	212025 *Must specify material	O-ring, outer cylinder, lower end
67	194407WSP	Cylinder, outer
71	194414	Nut, suction tube fitting
79	194410SS	Pin, narrow interlock
80	194415	Twistlock



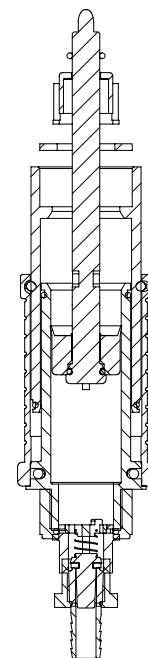
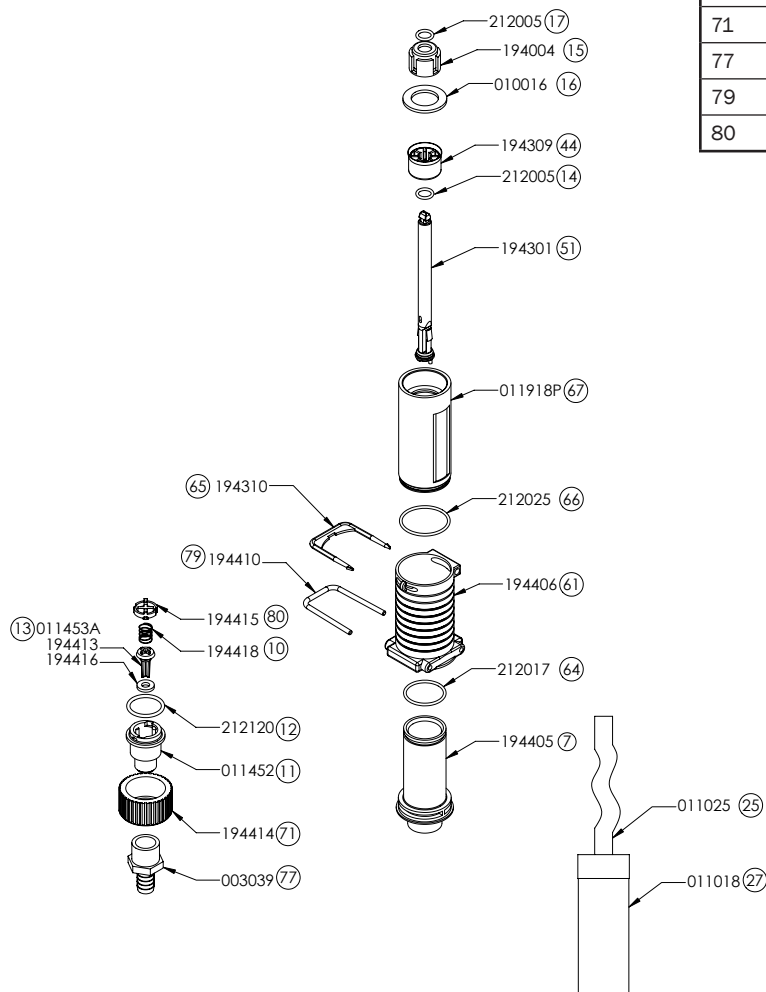
Lower End Assembly

Lower end injector & wear parts kits 5%:

Kit A – Wear Parts Kit (dosage piston and O-rings)	011852PV	14, 17, 44
Kit B – Wear Parts Kit (Kit A, & shaft)	011950V	14, 17, 44, 51
Kit C – Wear Parts Kit (Kit A, inner cylinder and O-ring)	011856PV	7, 14, 17, 44, 64
Kit D – Suction Tube Fitting Assy (check poppet, O-ring, spring, fitting, twistlock, barb)	011462V	10, 11, 12, 13, 77, 80
Kit E – Wear Parts Kit (Kits C & D, shaft, gasket)	011836PV	7, 10, 11, 12, 13, 14, 16, 17, 44, 51, 64, 77, 80
Kit F – Lower End Cylinder Kit (inner & outer cylinder, ratio adjuster, O-rings, pins, gasket)	011963PV	7, 16, 61, 64, 65, 66, 67, 79
Kit G – Complete Lower End, filter, solution tube	011846PV	7, 10, 11, 12, 13, 14, 15, 16, 17, 25, 27, 44, 51, 61, 64, 65, 66, 67, 71, 77, 79, 80
Kit H – Motor Piston Assy	011863	9, 21
Kit M – Mounting Bracket Kit (mounting bracket, 4 hex caps & nuts)	011432	56, 57, 58

Manual Reference	Part #	Description of Part
7	194405P	Cylinder, inner
10	194418H	Spring
11	011452	Suction Tube Fitting
12	212120 *Must specify material	O-ring
13	011453A	Check Poppet
14	212005 *Must specify material	O-ring
15	194004	Seal retainer, O-ring
16	010016	Lower End Gasket
17	212005 *Must specify material	O-ring
25	011025	Suction tube, 1/2" x 5'
27	011018	Filter, for suction tube, 1/2" ID
44	194309	Dosage Piston
51	194301F	Shaft
61	194406P	Ratio adjustment sleeve
64	212017 *Must specify material	O-ring, inner cylinder, lower end
65	194310D	Pin, upper interlock
66	212025 *Must specify material	O-ring, outer cylinder, lower end
67	011918P	Cylinder, outer
71	194414	Nut, suction tube fitting
77	003039	Hose Barb 1/2" x 3/8"
79	194410SS	Pin, narrow interlock
80	194415	Twistlock

English

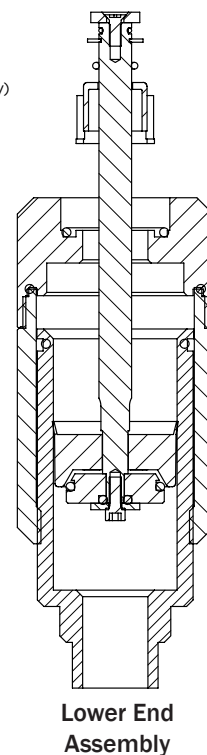
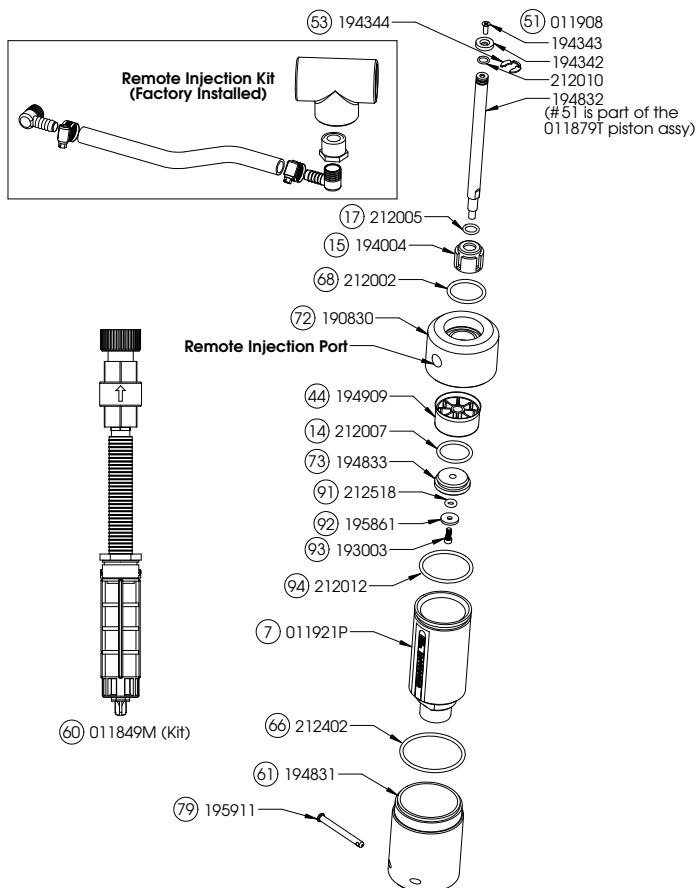
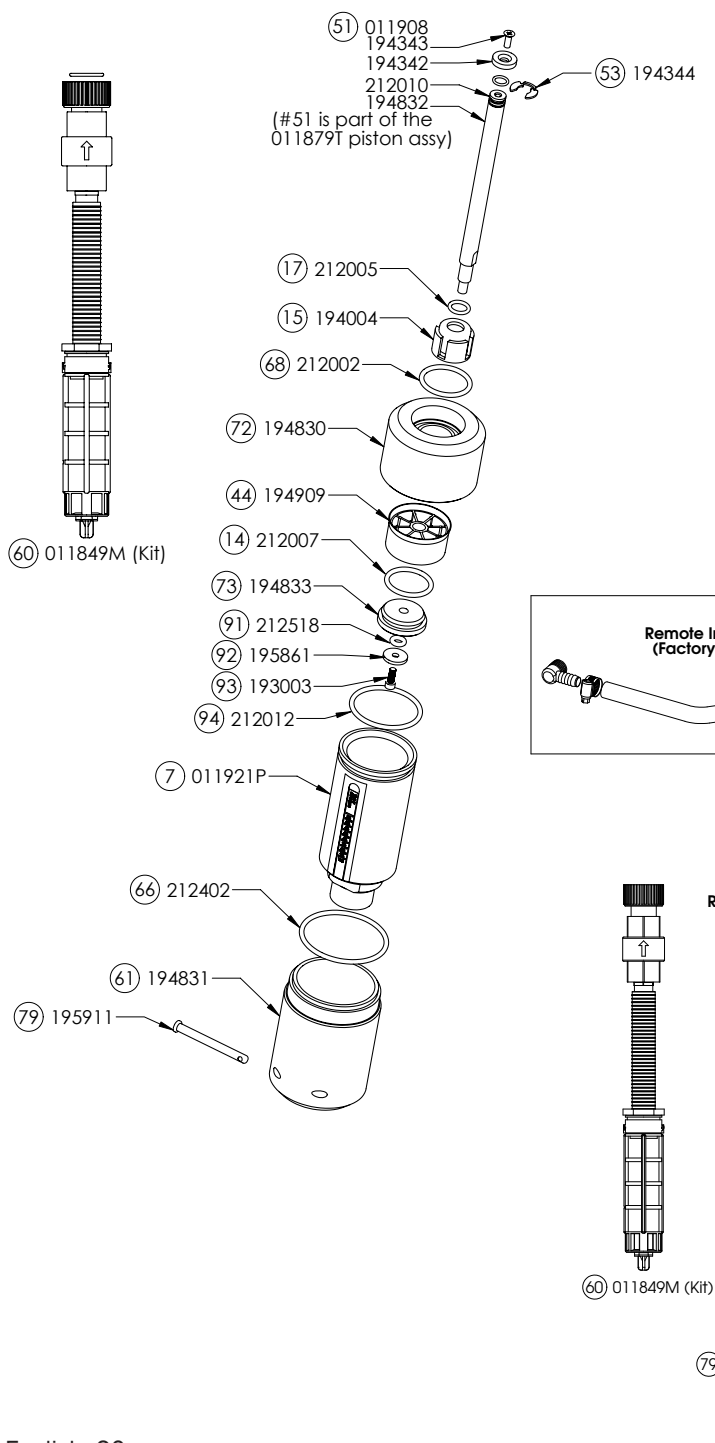


Lower End Assembly

Lower end injector & wear parts kits 10%:

Kit A - Wear Parts Kit (Dosage Piston, O-rings)	011138	14, 17, 44
Kit B - Wear Parts Kit (Hose kit)	011849M	60
Kit C - Wear Parts Kit (Kit A, O-ring)	011107	7, 14, 17, 44, 91
Kit H - Motor Piston Assy	011879T	9, 21
Kit M - Mounting Bracket Kit (mounting bracket, 4 hex caps & nuts)	011432	56, 57, 58

Manual Reference	Part #	Description of Part
7	011921P	Outer Cylinder
14	212007 *Must specify material	O-ring, Dosage Piston Guide
15	194004	Seal Retainer, O-ring
17	212005 *Must specify material	O-ring
44	194909	Dosage Piston
51	011908	Shaft Assembly, Stainless Steel
53	194344	Klipring
61	194831	Ratio Adjuster
66	212402 *Must specify material	O-ring, Outer Cylinder, Lower End
68	212002 *Must specify material	O-ring, Cylinder Adapter, Lower End
72	194830 - Standard 190830 - Remote Injection	Adapter
73	194833	Dosage Piston Guide
79	195911	Ratio Locking Pin
93	193003	Capscrew 10-32 X 1/2" Ss Hex
92	195861	Shaft Cap
94	212012 *Must specify material	O-ring, Outer Cylinder
91	212518 *Must specify material	O-ring, Dosage Piston Guide
60	011849M *Must specify material	Hose Kit



Warranty



Congratulations on Your Purchase

We make the best and most reliable fluid-driven injectors available. Our warranty provides the best coverage in the industry. Hydro Systems will provide for replacement of all parts proven to be defective in material or workmanship from the date of purchase for the following periods:

3 years	The cover and body
2 years	The motor piston assembly
1 year	The lower end (Chemical pump)

Hydro Systems products are warranted to be free from defects in materials and workmanship for the above time frames. Hydro Systems will at its sole option repair or replace any component that fails in normal use. Any repairs made under warranty shall not extend the initial warranty period.

To Maintain Your Warranty

Your only responsibility is ordinary maintenance - filtering incoming fluid, replacing the O-ring and dosage piston when worn. Seals and O-rings are not covered under the warranty.

This warranty is not valid if the defects are found to be due to the product's misuse, lack of maintenance, fluid continued...

impurities such as sand or iron, defective installation, freezing, fluid hammer, abuse, unwanted side effects due to the chemicals you choose to inject or service provided by anyone who is not an authorized service provider. Hydro Systems declines any responsibility if the product is not used in compliance with the operating instructions and specifications as indicated in this owner's manual.

Warranty may be void if injector body is disassembled. If you suspect you are having a problem in the motor piston assembly or inside the body please contact Hydro Systems or any authorized repair center to arrange to send the injector in to be evaluated and/or repaired.

IN NO EVENT SHALL Hydro Systems BE LIABLE FOR ANY INCIDENTAL, SPECIAL; INDIRECT, OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE OR INABILITY TO USE THIS PRODUCT OR FROM DEFECTS IN THE PRODUCT.

There is no warranty expressed or implied relating in any way to products used in conjunction with Hydro Systems.

Hydro Systems or authorized distributor shall not be liable for incidental or consequential damage, such as any economic loss. Hydro Systems retains the exclusive right to repair or replace the product. Such remedy shall be your sole and exclusive remedy for any breach of warranty. There are no warranties, expressed or implied, which extend beyond those described above.

To Return an injector for Warranty or Non-Warranty repair:

See page 3 for Hydro Systems contact information.

1. Thoroughly flush the injector with water of any chemical and drain. Ensure proper packing for shipment.
2. To EXPEDITE warranty evaluation and repair or non-warranty product repair, please include the following: a copy of the original invoice, serial number of the unit, chemical used, contact information and a Return Authorization (RA) number, contact your country's Hydro Systems Customer Service to obtain.
3. Send freight prepaid and ship to Hydro Systems or your local distributor. For the name of your local distributor or if returning to Hydro Systems, contact your country's Hydro Systems Customer Service.
4. For a WARRANTED injector: upon inspection and determination that the unit has defects in materials or workmanship, the unit will be repaired or replaced at Hydro Systems's option, free of charge and shipped back freight prepaid.
5. For a NON-WARRANTED injector: upon inspection Hydro Systems or a local distributor will call the customer with a repair estimate.