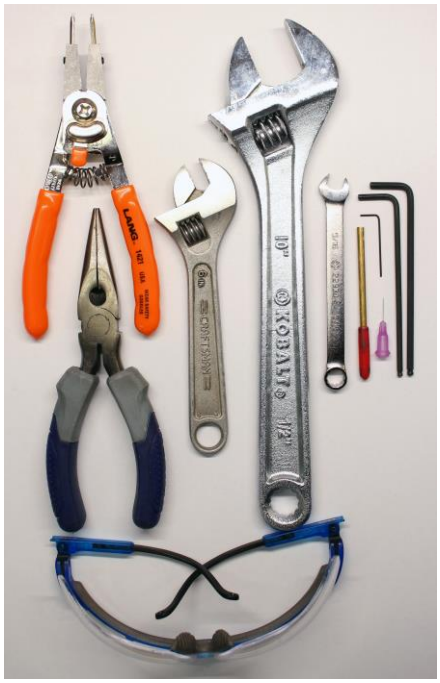
MRT-1082
Spray Fluxer Repair / Rebuild



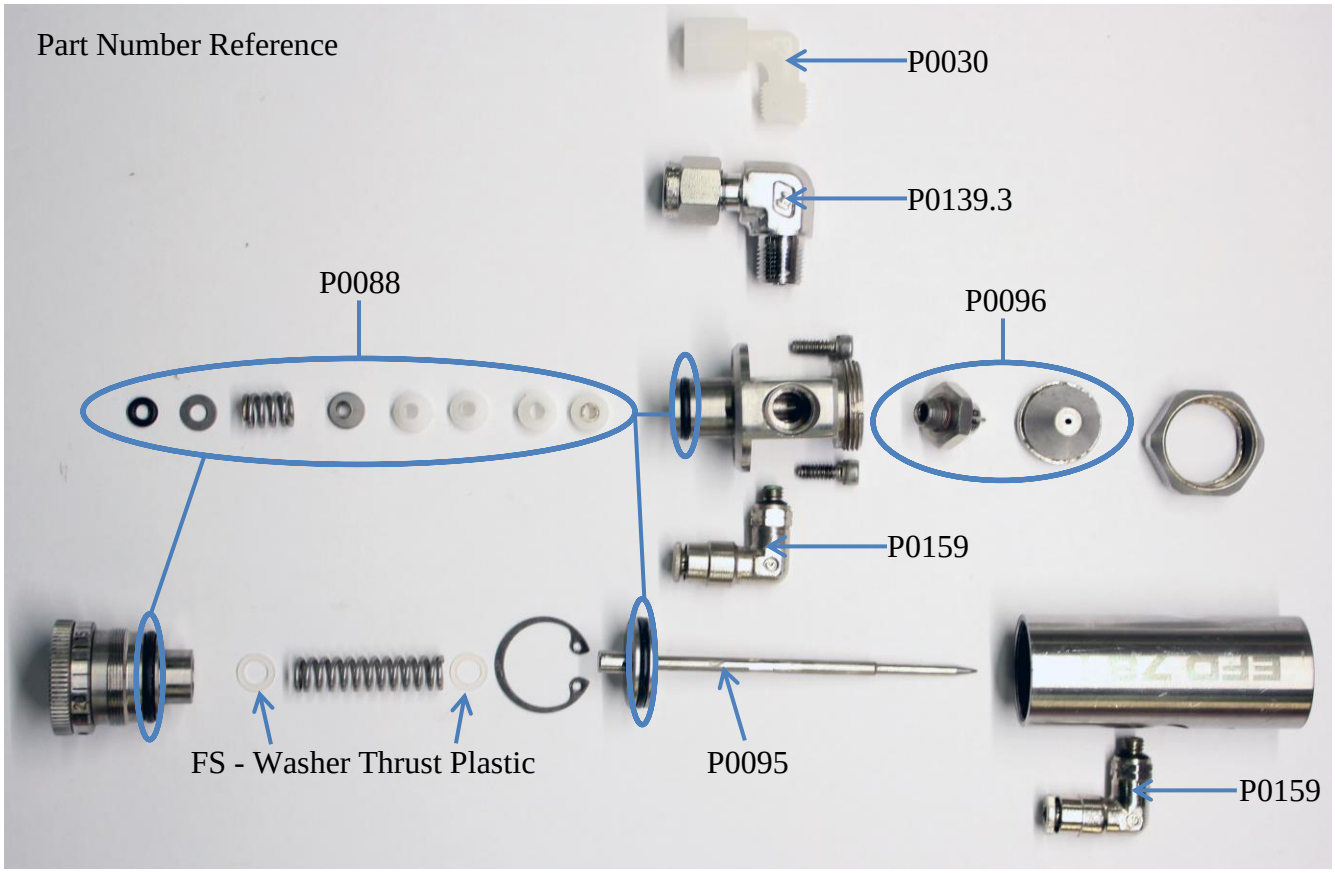
Tool List:

- 3/16” Allen Wrench (included in ship away kit)
- 1/8” Allen Wrench (included in ship away kit)
- 7/64” Allen Wrench (included in ship away kit)
- .035” Allen Wrench (included in ship away kit)
- .140” Brass seal removal pin (included in ship away kit)
- Crescent Wrench that will open between ½” and 7/8”
- Snap ring pliers

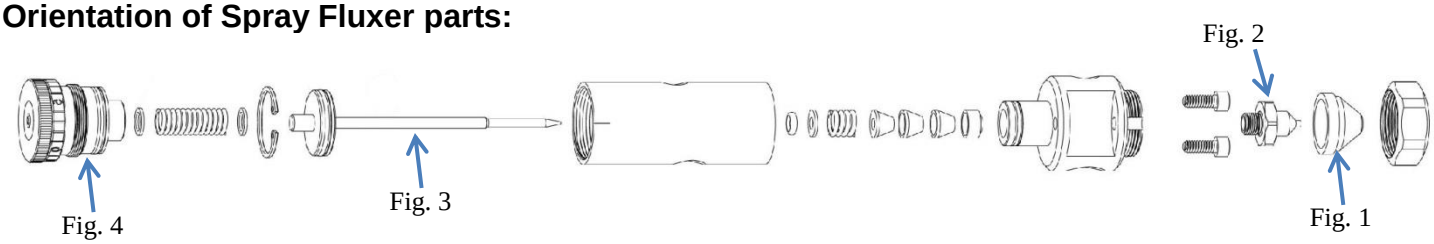
Possible Parts List:

- P0008 – Spray Fluxer
- P0088 - Flux Rebuild Kit
- P0095 - 316 Needle Piston
- P0096 - Nozzle and Round Air Cap
- P0159 - elbow, 5/32 line to 10-32 thread Stainless
- P0030 - 1/8 Tube to 1/8 NPT Compression elbow
- P0139.3 – Yor-Lok elbow fitting, for 3/16 tube 90 degree
- FS - Washer Thrust Plastic - Thrust washer for EFD rebuild kits
- DL0030 – Extraction Tool

Note: Make sure to wear safety glasses. Also, watch out for the thrust washers when removing control knob.



Orientation of Spray Fluxer parts:



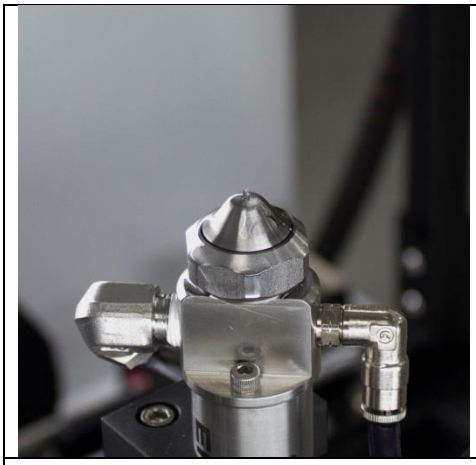
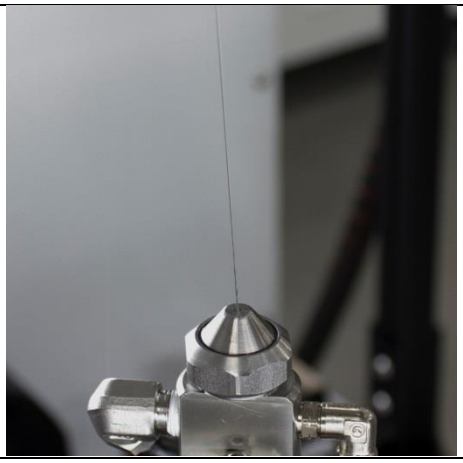
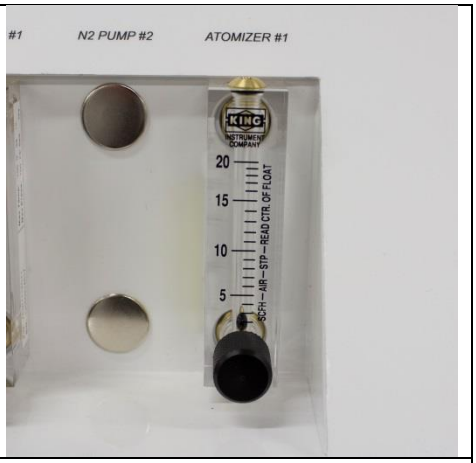
Possible Issues:

Reasons for repairing / cleaning or rebuilding the Spray Fluxer are as follows:

- Spray Fluxer shoots a solid stream of flux and/or no N2 flow.
- Spray Fluxer only has N2 flow and/or no flux flow.
- Spray Fluxer leaks when off.
- Spray Fluxer does not spray straight.

Issue 1:

Spray Fluxer shoots a solid stream of flux and/or no N2 flow when turned on in software. Depending on the fluid control knob setting will depend on how the Spray Fluxer will react when there is no N2 flow. See examples of spray patterns with no N2 flow.

		
Flux flow without N2 flow image 1.	Flux flow without N2 flow image 2.	N2 flow at 0 SCFH while on in software. You may see this float go up to your set point then fall down. This indicates a clogged Atomized Line.

Possible causes for spray fluxer spraying and then stopping:

- Check Air pressure into machine

Possible causes for no N2 flow to the Spray Fluxer are:

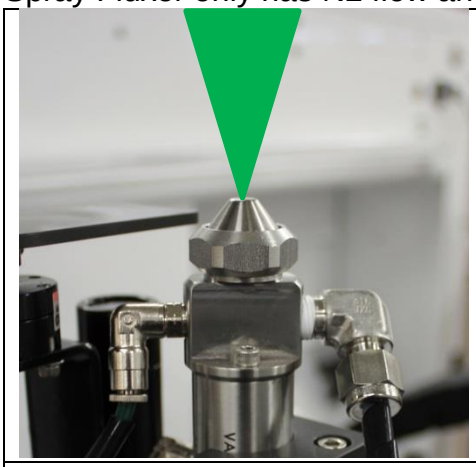
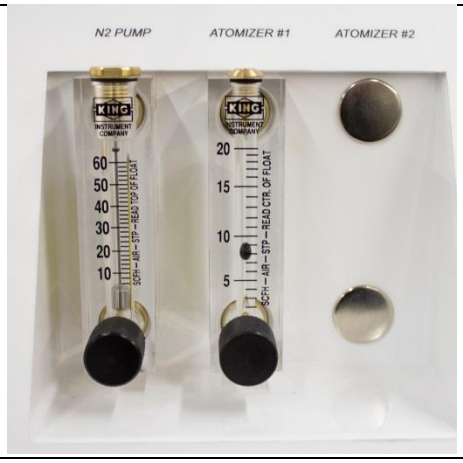
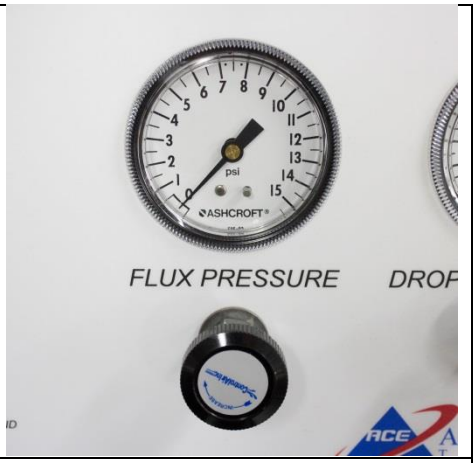
- N2 flowmeter turned all the way down.
- Clogged Atomized Line (Fig. 6 pg. 5).
- Air Cap Clogged (Fig. 1 pg. 2).

Possible solutions:

- Check N2 flowmeter for adjustment.
- Remove Atomized Line from Spray Fluxer. With the finger valve off (Fig. 5 pg. 5) turn on the Spray Fluxer in software. If the Atomized Line has N2 flow then clean out or replace fitting P/N P0159 or check for a clogged Air Cap.
- Remove Air Cap and check for clog (Fig. 1 pg. 2).
- Check N2 flow to machine (N2 fault should be showing in software).

Issue 2:

Spray Fluxer only has N2 flow and/or no flux flow while on in software.

		
Above is simulated N2 flow with no flux or intermittent flux spurts.	Atomized flow is on and has a constant flow rate. (Generally around 8 SCFH).	There may be no flux bottle pressure or N2 is off or too low.

Possible causes for no flux flow are:

- No flux in the bottle.
- No flux bottle pressure / No machine N2 pressure.
- Kinked flux liquid line.
- No incoming compressed air pressure or air pressure is too low (shot pin / needle is not opening. The Spray Fluxer needs a minimum of 70 PSI of compressed air to open the valve).

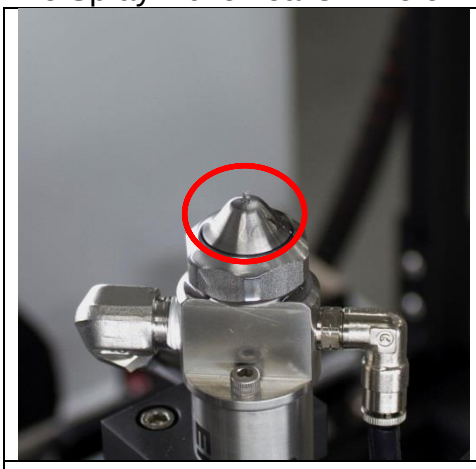
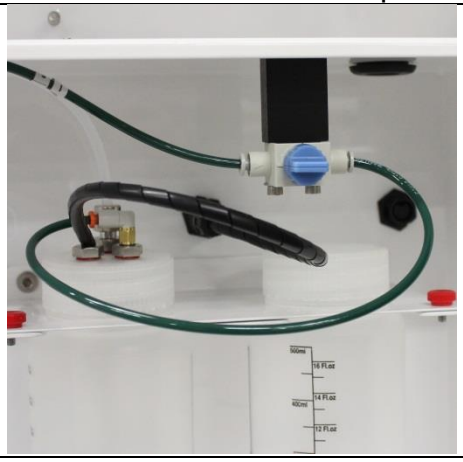
Possible solutions:

- Check for flux in the bottle.
- Check flux bottle pressure.
- Remove flux liquid line and purge line to verify clog or kink (kinked line will need to be replaced).
- Verify compressed air supply to the machine (machine minimum incoming air pressure is 90 PSI). The lack of compressed air would also mean the flux lift cylinder would not actuate as well.

Combination of Issues 1 and 2:
If the Spray Fluxer has a combination of the above issues, you will not have any flux or N2 flow. Look at the possible causes for both issues 1 and 2 to remedy the issue.

Other possible reasons for the lack of flux and N2 flow may be caused by software not activating solenoids due to the loss of PLC / motion board communications. At this point please contact Nordson SELECT for assistance.

Issue 3:
The Spray Fluxer leaks while off in software and under bottle pressure.

		
Flux leaking from Spray Fluxer while off in software and with a pressurized flux bottle. The leak in most cases will not be this excessive.	Finger valve (P/N P0013) is in the on position.	Flux bottle pressure gauge (P/N DJ0033) is showing N2 pressure. The regulator below the gauge is P/N DJ0037.

Possible causes for a Spray Fluxer that leaks while off in software and under bottle pressure:

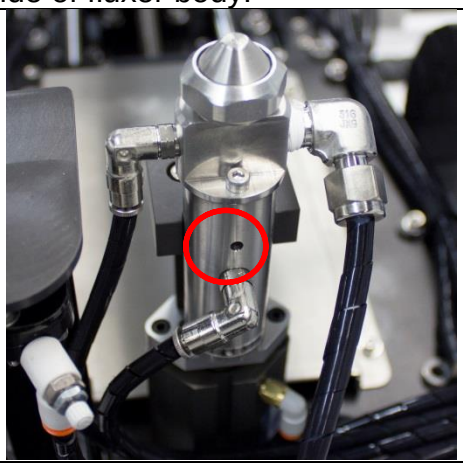
- Fluid control knob is out of adjustment.
- Needle and Piston Assembly (Fig. 3 on pg. 2) and/or the nozzle (Fig. 2 on pg. 2) is damaged.

Possible solutions:

- Fluid control knob (Fig. 4 on pg. 2) may need to be adjusted (see page 10 for adjustment using an 1/8" Allen Wrench).
- Needle and piston assembly (Fig. 3 on pg. 2) and/or the nozzle (Fig. 2 on pg. 2) needs to be replaced. Follow the rebuild procedure on page 5 for replacing. The Nozzle and the Round Air Cap are sold as a set, P/N P0096. The Needle and Piston Assembly is P/N P0095.

Issue 4:

Flux leaks out of side of fluxer body.



If any flux is coming out of the piston pressure relief hole in the side of the body, then the Spray Fluxer will need to be rebuilt.

This is the Flux Rebuild Kit P/N P0088.

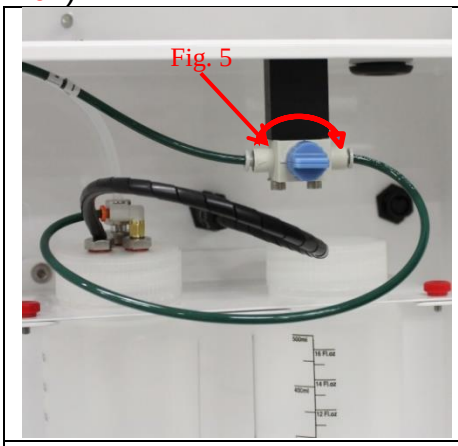
Solution:

Rebuild the Spray Fluxer using the Flux Rebuild Kit P/N P0088. Follow the instruction on the following pages for more info.

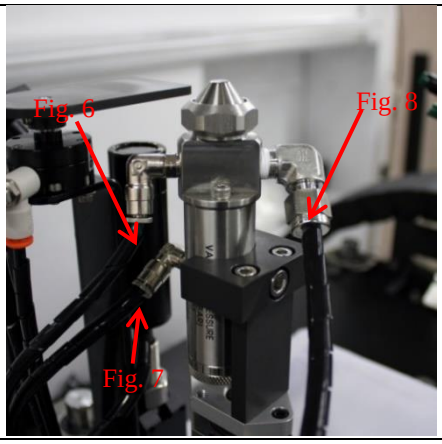
Rebuilding the Spray Fluxer:

Remove the Spray Fluxer.

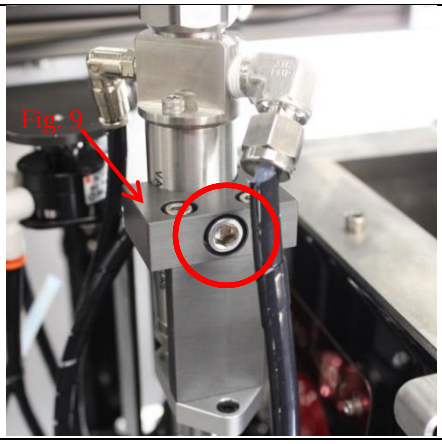
First turn off the finger valve. Remove the liquid line and the airlines, then remove the ¼-28 socket cap screw holding the Spray Fluxer to the Flux Clamp Block. (Note: Make sure to clean up any spilled flux)



Turn off the finger valve (Fig. 5 P/N P0013). Note: This image shows it in the on position.



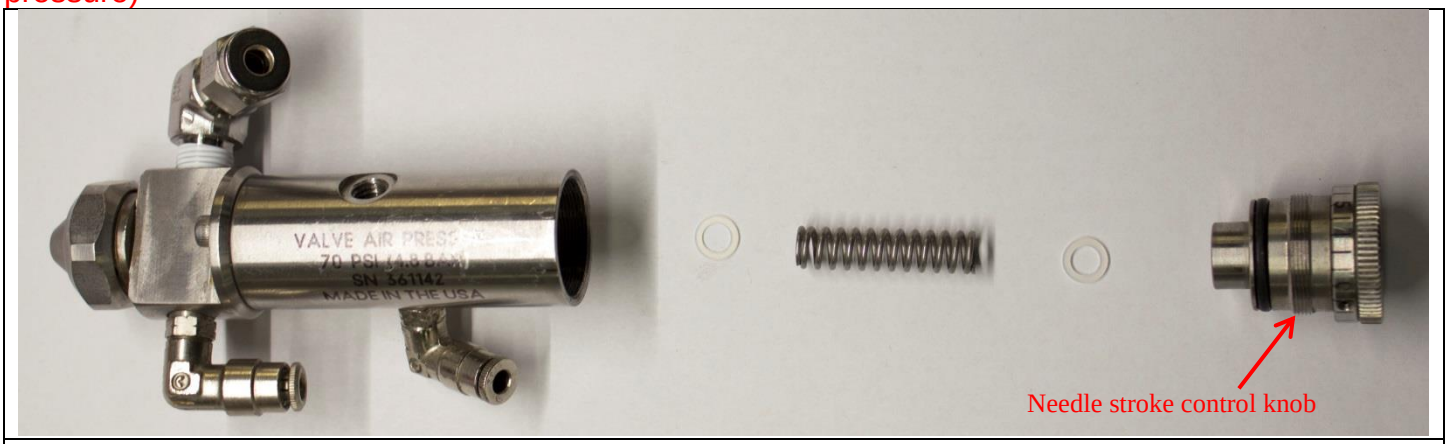
Remove the Atomized Line (Fig. 6), the Shot Pin line (Fig. 7) and the Liquid line (Fig. 8).



Unscrew the ¼ - 28 x 5/8" socket cap screw that mounts the Spray Fluxer to the Flux Clamp (Fig. 9 - P/N 10000803)

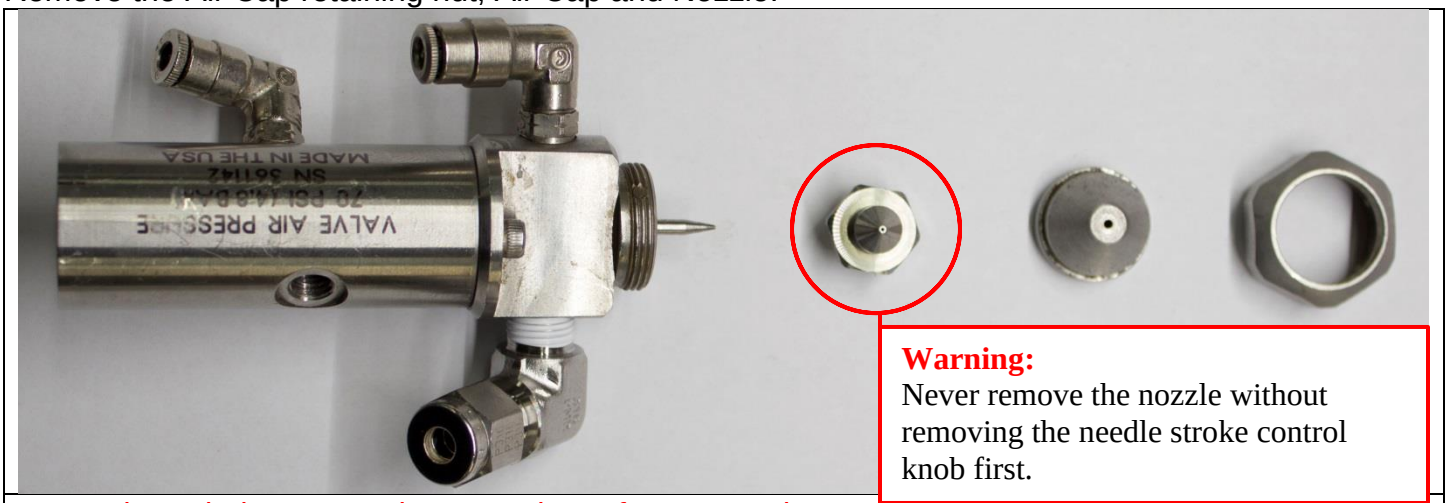
Disassemble the Spray Fluxer.

Remove the needle stroke control knob, return spring and thrust washers. (Caution: Under spring pressure)



Note: Be careful not to lose the thrust washers or spring.

Remove the Air Cap retaining nut, Air Cap and Nozzle.

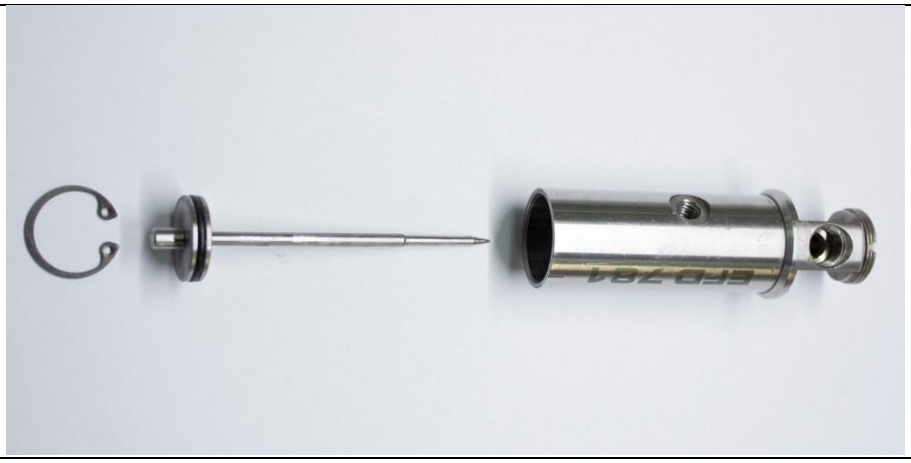


Warning:
Never remove the nozzle without removing the needle stroke control knob first.

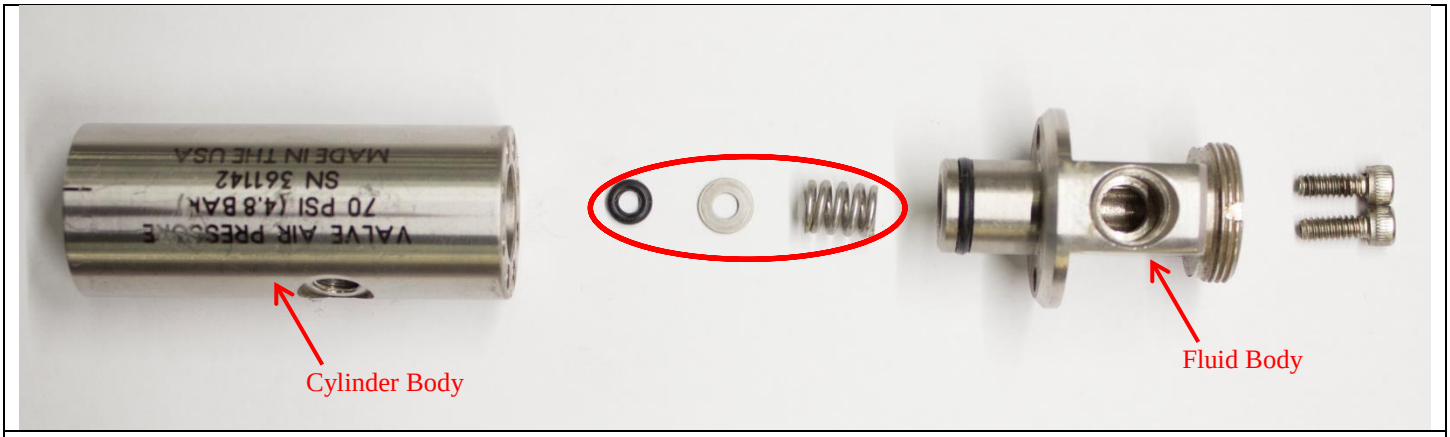
Note: Through these parts in a container of IPA to soak.

Remove the three fittings. (Note: Take time to clean out as much of the teflon tape as possible left behind from the liquid line fitting in the fluid body.)

Using the snap ring pliers remove the snap ring. Now remove the piston and needle.
(Note: You may have to use needle nose pliers to remove the piston and needle from the body. Be careful to not damage the tip of the needle.)

	
Using the snap ring pliers remove the snap ring.	Remove the Needle and Piston Assembly P/N P0095. You may need to use needle nose pliers to pull the assembly out of the Spray Fluxer Body.

Now remove the 2 6-32 x 3/8" socket caps screw holding the fluid body to the cylinder body. Take note of its orientation to the cylinder body as there is multiple positions that it can be installed in. Scribe a timing mark into the metal between the fluid body and cylinder body. Most cleaners will remove marks made by markers.



Note: The spring, washer and O-Ring are come in the P0088 Flux Rebuild Kit.

Using the special push pin tool (.140” precision ground brass rod P/N FS – Fluxer Repair Tool), remove the seal pack from inside the fluid body.

		
Carefully press out the seal pack from the nozzle side.	The seal pack should come out as an assembly.	Exploded view of the seal pack.

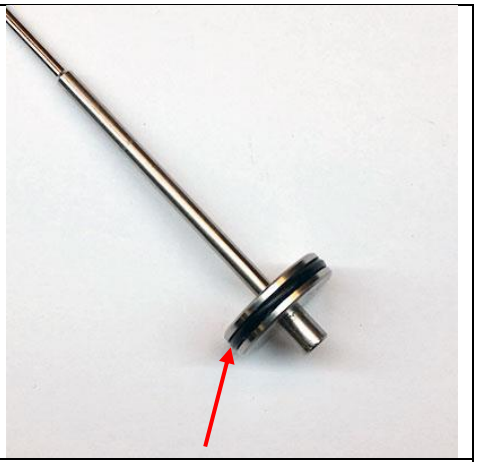
Before rebuilding the Spray Fluxer remove all O-Rings and thoroughly clean all parts. All parts of the Spray Fluxer are made of 316 stainless steel and can withstand most cleaners and detergents along with sonic cleaners. Some Spray Fluxers came with nickel plated air and N2 fittings so take caution when cleaning those fittings (stainless steel fittings are P/N P0159 and are recommended to replace the old plated fittings).

Inspect all parts for damage before assembling the Spray Fluxer make sure you have all the needed parts before you reassemble the Spray Fluxer (refer to the beginning of this document for part numbers).

Thoroughly clean all parts and use an air nozzle to blow off remaining debris and to air dry before assembly.

Assembling the Spray Fluxer.

Install all the new O-Rings onto the Piston, Fluid Stroke Control Knob and the Fluid Body. A dental pick can be helpful with replacing the O-Rings.

		
The parts in the P0088 Spray Flux Rebuild Kit with fluorocarbon lubricant.	Above shows what each O-Ring is for. We will cover the Cylinder Body O-Ring as a part of building the needle seal pack.	Piston O-Ring.

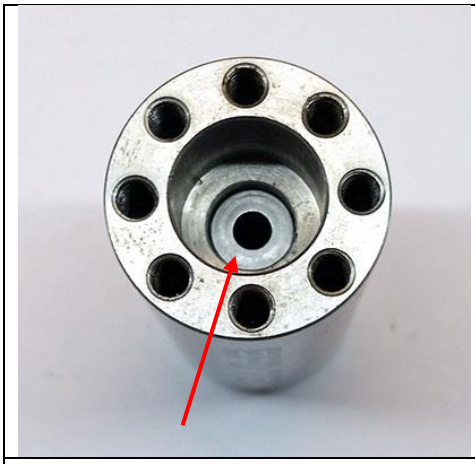
		
Fluid Stroke Control Knob O-ring.	Fluid Body O-ring.	Nozzle O-ring.

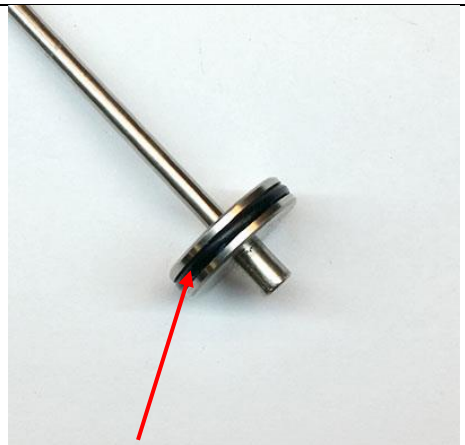
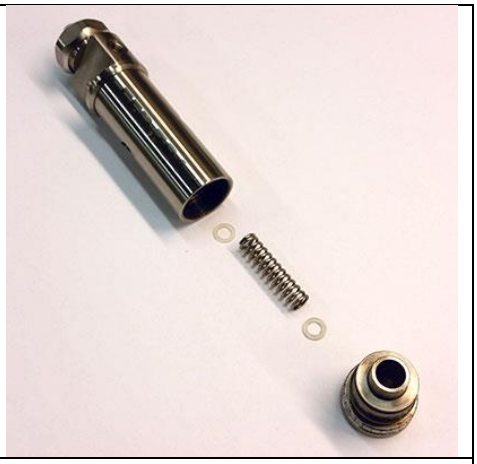
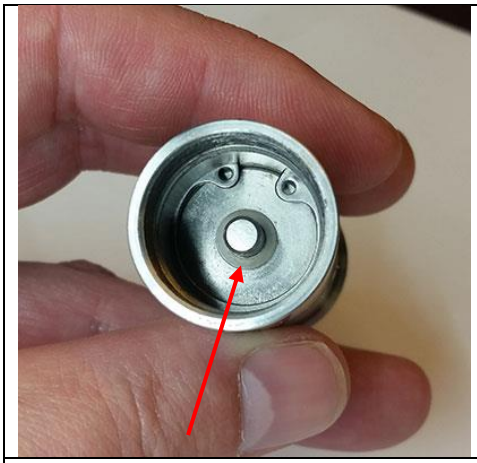
Use the fluorocarbon lubricant and apply liberally to the all the seal pack parts and assemble them into the fluid body. Once the seal pack is installed in the fluid body, lubricate and install the fluid body spring, washer and O-Ring.

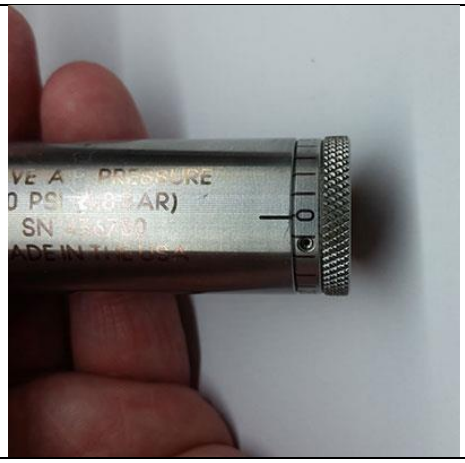
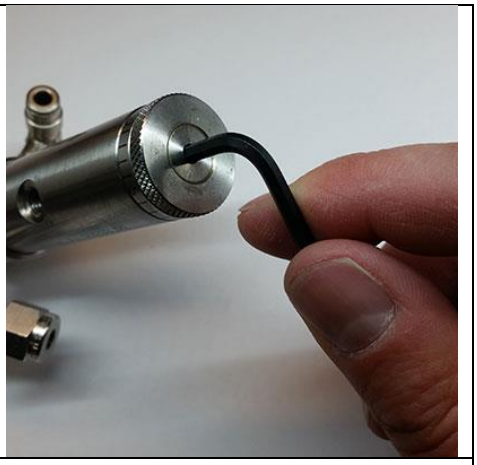
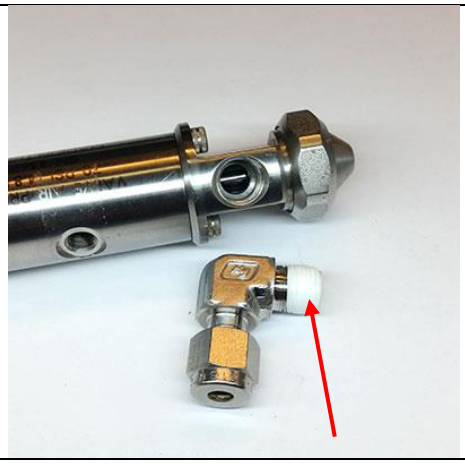
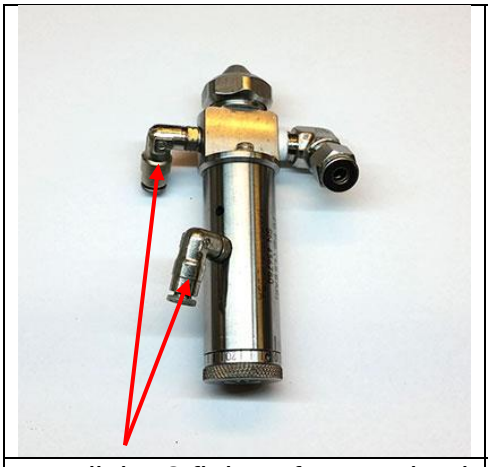
		
Lubricate all the parts of the seal pack and assemble in the order shown above. Once lubricated the seal pack will stay together.	Install the seal pack in the fluid body like shown.	Push the seal pack all the way into the Fluid Body. Here we show using the brass rod to do this.

Use the fluorocarbon lubricant and apply liberally to the O-ring, washer and spring along with the fluid body O-ring.

		
Lubricate the Fluid Body O-ring.	This image shows the Cylinder Body and the order of the O-ring, washer and spring.	Lubricate the Cylinder Body O-ring and drop into the top of the Cylinder Body. You can use a pick to help position it.

		
Lubricate and install the new Cylinder Body washer.	Lubricate and install the Cylinder Body spring.	Install the Fluid Body to the top of the Cylinder Body using the 2 @ 6-32 x 3/8” socket cap screws. Make sure to line them up like mentioned in the disassembly portion of the instructions on page 6.

		
Install the nozzle and tighten.	Lubricate the piston O-Ring.	Lubricate the inner wall of the cylinder body including the threads.
		
Install the needle and piston into the cylinder body. Make sure it is presses in all the way allowing the snap ring to be installed.	Install the snap ring making sure it is in the groove properly.	Here is the order of the spring, thrust washers and fluid stroke control knob.
		
Lubricate and install the thrust washer. The grease should keep the thrust washer in place.	Lubricate the fluid stroke control knob O-Ring and threads.	Lubricate and install the 2nd thrust washer.

		
Lubricate the spring and place it in the fluid stroke control knob.	Install the fluid stroke control knob until it is closed. You should see your 0-dial mark line up with a body hash mark.	Using an 1/8” Allen wrench turn the needle seat adjustment CCW about half a turn. Now turn it CW until you feel it lightly seat. DO NOT over tighten.
		
Install the round air nozzle and retaining nut. Do not over tighten!	Using a piece of Teflon tape about 4” long, fold it in half the long way and apply to the liquid line fitting.	Tighten the liquid line fitting making sure that it is at about a 35 to 40 degree angle.
		Note: The Spray Fluxer ships out of the factory set to 5. To set it properly, close the fluid stroke control knob until it is seated. Turn CCW until you reach your desired setting. In most cases the setting should be between 3 and 8. Any more than this will cause the Spray Fluxer to spray an excessive amount of flux.
Install the 2 fittings for atomized flow and shot pin.	Open the fluid stoke control knob to your last known settings used.	

Now that the Spray Fluxer has been successfully rebuilt, reinstall it in to the machine. Once installed, pressurize the flux bottle and turn on the Spray Fluxer. Leave it on until flux starts to come out of the Spray Fluxer, this could take several minutes. Verify that the flux sprays straight and is not excessive. Adjust the fluid stroke control knob while the unit is off until the desired amount of flux comes out. Spray on the glass plate to be sure you are getting the desired coverage.

Watch for leaks and repair as needed.

Your Spray Fluxer is now ready for use.

NOTE: If machine is down for an extended period, use alcohol to rinse out the spray fluxer using spare bottle sent with the machine. Make sure to prime with flux when ready to use again.

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