

SV1217-SS  
SPRAY VALVE

**OPERATING  
MANUAL**





## **I&J FISNAR INC.**

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### **GENERAL DESCRIPTION**

The SV1217-SS spray valve is operated by air pressure, providing precise deposit control for low to medium viscosity fluids. SV1217-SS is designed for use with valve controller and reservoir tank.

The operating air pressure opens the valve, allowing the material to flow. A separate air line creates pressure into the air cap, atomizing the material. Dispensing spray output may be fine tuned by turning the adjustment knob at the top of the valve. Material deposit and flow rate are controlled by the fluid pressure, needle stroke, distance from the valve to the work surface and the duration that the valve is opened.

### **SPECIFICATIONS**

Weight	:	11.7oz (332 gm)
Operating air pressure	:	70 to 100 psi (5 to 7 bar)
Atomizing air pressure	:	1 to 30 psi (0.1 to 2 bar)
Fluid pressure	:	1 to 100 psi (0.1 to 7 bar) – Depends on the viscosity of the material being sprayed
Material viscosity	:	Up to 1000cps
Nozzle diameter	:	0.046” (1.17 mm)
Flow rate	:	Up to 28cc/sec
Operating frequency	:	Over 400 cycles/min
Spray angle	:	14°

Spray pattern : Circular (conical spray)

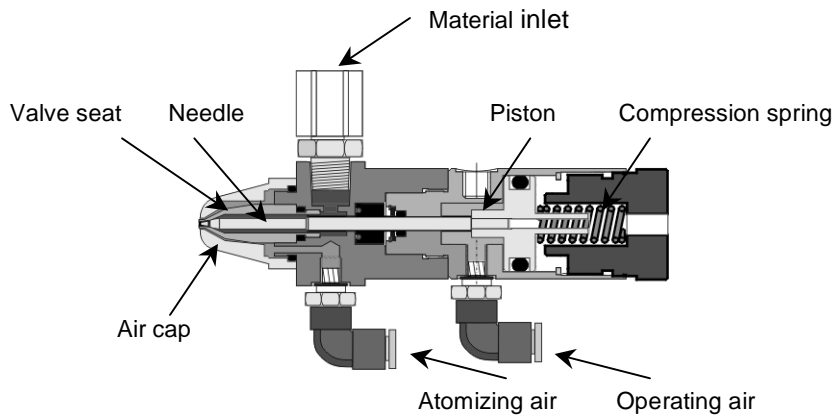
Operating air inlet : 10-32 thread with push-in fitting for 1/4 tube

Atomizing air inlet : 10-32 thread with push-in fitting for 1/4 tube

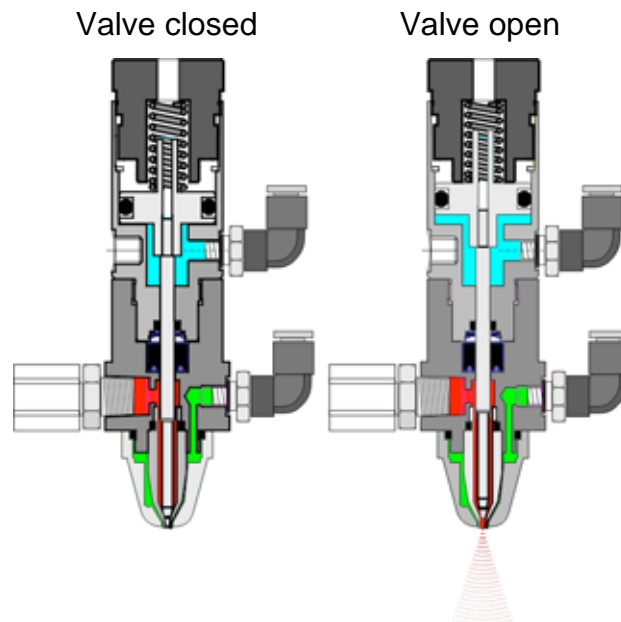
Material inlet : 1/8 NPT with compression fitting for 1/4 tube

## OPERATING INSTRUCTIONS

Applying a minimum of 70 psi (5 bar) air pressure to the air inlet will open the valve. The operating air pressure will force the piston to pull back the needle from the valve seat, allowing the material to flow. Material is supplied to the material inlet through a 1/8 NPT port. The atomizing air supplied through a 10-32 port creates pressure into the air cap, atomizing the dispensing material.



When the operating air pressure is released, the compression spring will push the needle/piston assembly back onto the valve seat, closing the material flow. A delay in closing the atomizing air is recommended to make sure that dispensing material is fully atomized after the valve closes.



NOTE: Do not apply air pressure or fluid pressure more than the standard specifications.

## SETUP

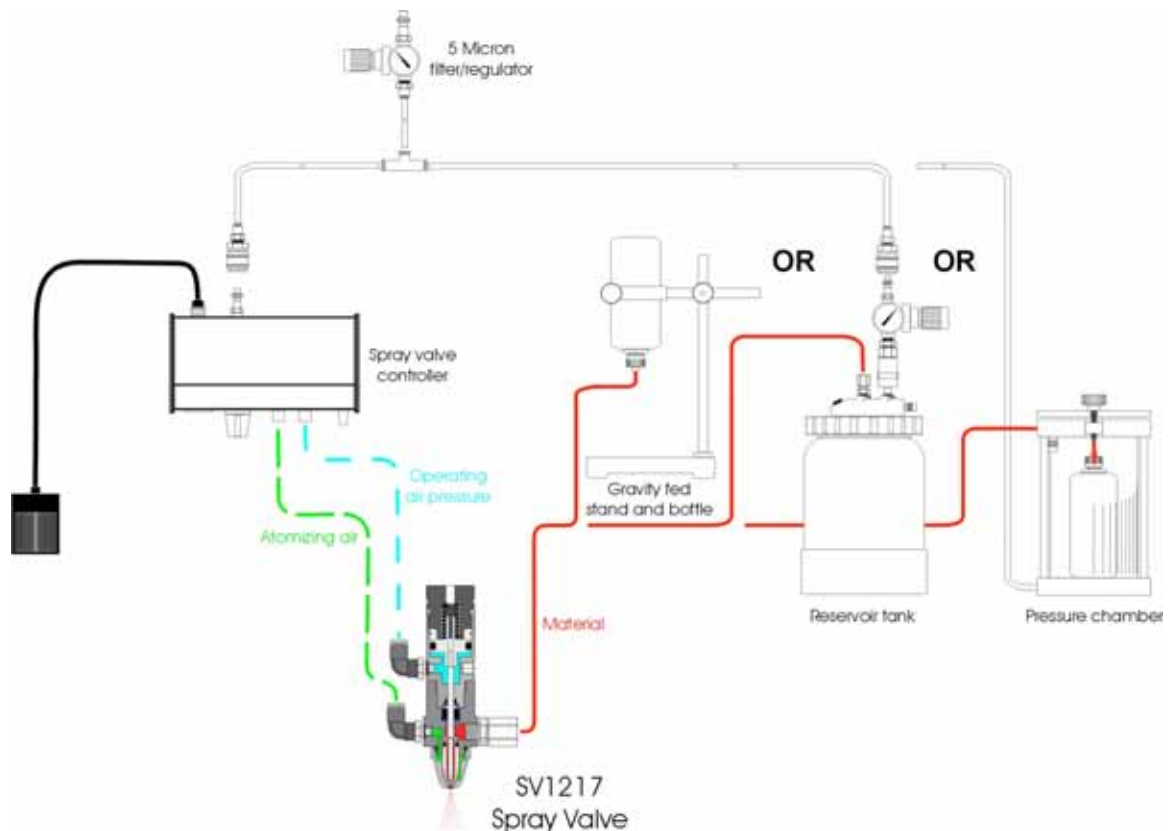
Mount the SV1217-SS spray valve using the rod mount (580033) supplied with the valve.

Connect the material feed tubing from the gravity fed bottle, reservoir tank or pressure chamber to the material inlet port of the valve, using the male connector (560715-BLACK). Set the fluid pressure according to the viscosity of the material being sprayed.

Connect the operating air line from the spray valve controller to the operating air inlet of the valve, through the male elbow push-in fitting (561964). Set the operating air pressure to 70 psi (5 bar).

Connect the atomizing air line from the spray valve controller to the atomizing air inlet of the valve, through the male elbow push-in fitting (561964). Set the atomizing air pressure according to the viscosity of the material being sprayed.

Material deposit and flow rate are controlled by the fluid pressure, atomizing air pressure, needle stroke, distance from the valve to the work surface and the duration that the valve is opened.



## **CLEANING**

It is recommended to clean the wetted parts of the valve, especially when the valve is used to dispense natural hardening type of materials. Clean the valve by continuously dispensing a liquefied detergent before such material hardens. Carefully select a suitable liquefied detergent depending upon the materials.

When disassembling the material chamber of the valve for cleaning, make sure to clean the air cap, valve seat, needle and the material chamber.

## **DISASSEMBLING AND ASSEMBLING**

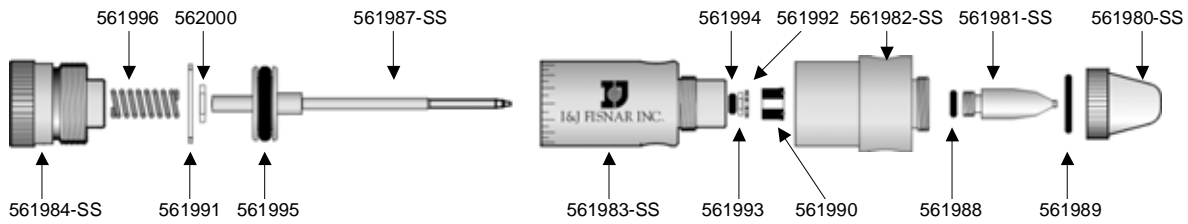
### **Disassembling the material chamber**

- (1) Remove all fittings and hoses from the spray valve.
- (2) Completely unscrew the adjustment knob (561984-SS) and remove the compression spring (561996).
- (3) Remove the air cap (561980-SS), valve seat (561981-SS) and the two O-rings (561988 and 561989).
- (4) Unscrew the air cylinder (561983-SS) from material chamber (561982-SS).
- (5) Remove the deep polypak seal (561990) using the seal removal tool (562004) (not supplied with the valve).

As the valve operates, the deep polypak seal will wear out and must be replaced. See Appendix A for seal replacement instructions.

### **Assembling the material chamber**

- (1) Insert the deep polypak seal (561990) into material chamber (561982-SS), using the seal installation tool (562001) (not supplied with the valve).
- (2) Screw the air cylinder (561983-SS) onto the material chamber (561982-SS). Be careful not to screw in too tightly.
- (3) Reassemble the air cap (561980-SS), the valve seat (561981-SS) and the two O-rings (561988 and 561989).
- (4) Reinstall the compression spring (561996) and the adjustment knob (561984-SS).



### Disassembling the air cylinder

- (1) Remove all fittings and hoses from the spray valve.
- (2) Completely unscrew the adjustment knob (561984-SS) and remove the compression spring (561996).
- (3) Unscrew the air cylinder (561983-SS) from material chamber (561982-SS).
- (4) Remove the internal retaining ring (561991) using pliers.
- (5) Remove the flat washer (562000) and needle/piston assembly (561987-SS).
- (6) Remove the O-ring (561995) from the needle/piston assembly.
- (7) Remove the internal retaining ring (561992) using pliers.
- (8) Remove the nylon washer (561993) and the O-ring (561994).

As the valve operates, the O-rings will wear out and must be replaced. Lubricate the O-rings, the air cylinder internal wall and the needle/piston assembly with suitable lubricant.

### Assembling the air cylinder

- (1) Insert the O-ring (561994) and the nylon washer (561993) into the air cylinder and reinstall the internal retaining ring (561992).
- (2) Reinstall the O-ring (561995) on the needle/piston assembly (561987-SS).
- (3) Insert the needle/piston assembly (561987-SS) into the air cylinder.
- (4) Fit the flat washer (562000) and reinstall the internal retaining ring (561991).
- (5) Screw the air cylinder (561983-SS) onto the material chamber (561982-SS). Be careful not to screw in too tightly.
- (6) Reinstall the compression spring (561996) and the adjustment knob (561984-SS).

## TROUBLESHOOTING

No.	PROBLEM	CAUSE	SOLUTION
1	Material is not dispensed.	<ol style="list-style-type: none"> <li>1. Operating air is not properly connected.</li> <li>2. Operating air pressure is too low.</li> <li>3. Valve doesn't open.</li> <li>4. Material is not fed to valve.</li> <li>5. Material is hardened inside the valve.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check air connection, etc. and connect properly.</li> <li>2. Increase operating air pressure to 70 psi (5 bar).</li> <li>3. Check if the adjustment knob is excessively screwed. Adjust properly.</li> <li>4. Increase material pressure.</li> <li>5. Disassemble and clean valve, or replace parts.</li> </ol>
2	Material is not atomized	<ol style="list-style-type: none"> <li>1. Atomizing air pressure is too low.</li> <li>2. Material is hardened between the air cap (561980-SS) and the valve seat (561981-SS).</li> </ol>	<ol style="list-style-type: none"> <li>1. Increase the atomizing air pressure.</li> <li>2. Disassemble the air cap and clean the air cap and the valve seat.</li> </ol>
3	Material doesn't stop.	<ol style="list-style-type: none"> <li>1. Valve is not turned OFF. Needle/piston (561987-SS) assembly doesn't seat properly in the valve seat (561981-SS).</li> <li>2. Air cylinder (561983-SS) was reassembled incorrectly onto the material chamber (561982-SS).</li> <li>3. Compression spring (561996) is damaged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean the needle and the valve seat and replace worn or damaged parts.</li> <li>2. Reassemble the valve following the assembling instruction.</li> <li>3. Replace the compression spring.</li> </ol>
4	Material is not clearly cut off after valve is turned OFF.	Atomizing air pressure is too low.	Increase the atomizing air pressure.



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**TECHNICAL  
 SERVICE  
 INFORMATION**

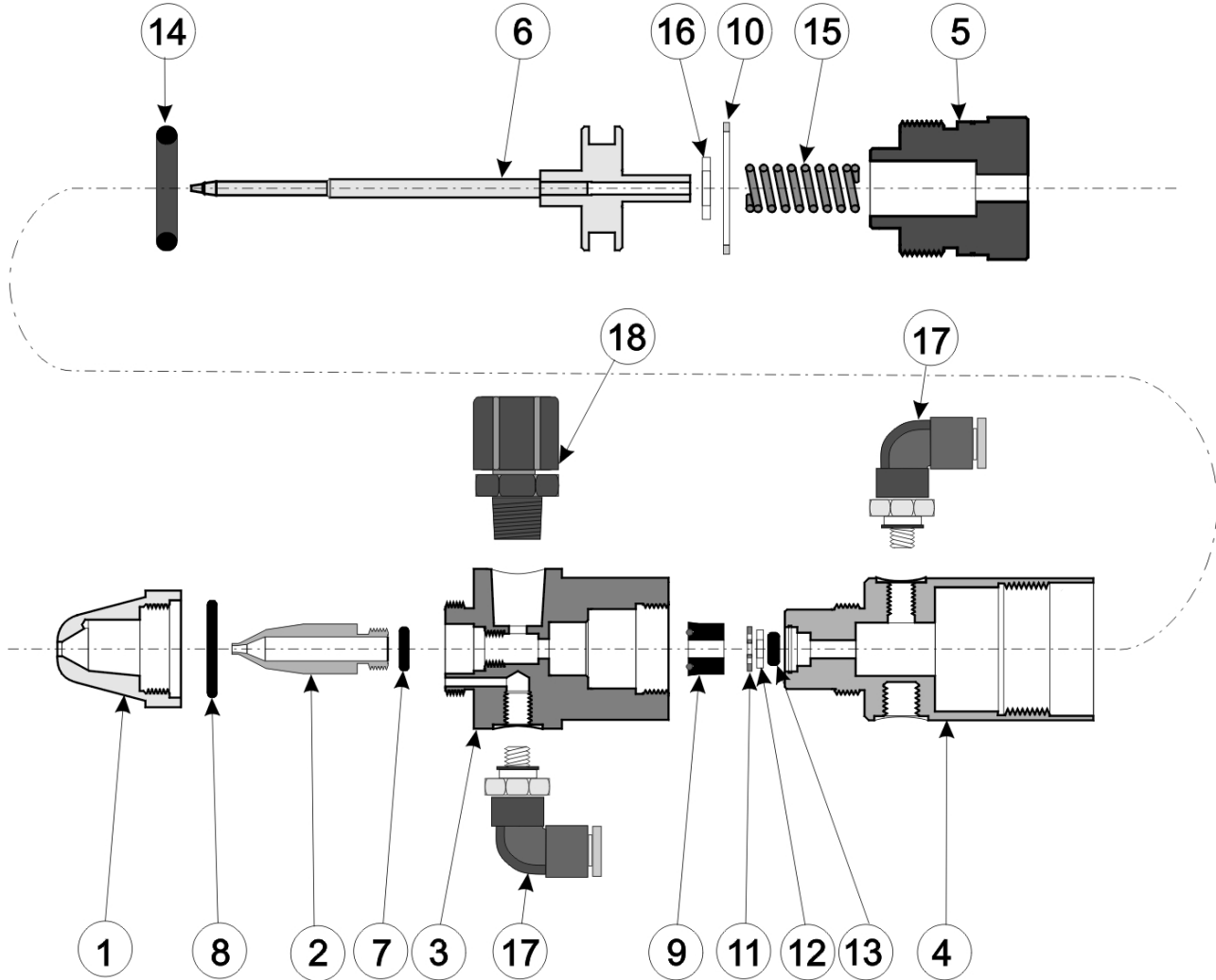
SHEET 1 OF 1

REVISION

A OCT 2, 2003

**PRODUCT  
 DESCRIPTION**

**SV1217-SS SPRAY VALVE**



NO.	PART NUMBER	DESCRIPTION	QTY.	NO.	PART NUMBER	DESCRIPTION	QTY.
11	561992	INTERNAL RETAINING RING	1				
10	561991	INTERNAL RETAINING RING	1	21*	580033	ROD MOUNT	1
9	561990	DEEP POLYPAK SEAL	1	20*	560524	HOSE ASSEMBLY SET, 6 FEET, P.E.	2
8	561989	O-RING	1	19*	561415	TUBING, 6 FEET, 1/4" O.D. P.E.	1
7	561988	O-RING	1	18	560715-BLACK	BLACK MALE CONN.1/4TUBE-1/8PIPE	1
6	561987-SS	NEEDLE/PISTON ASSY., 303SS	1	17	561964	MALE ELBOW PUSH IN FITTING	2
5	561984-SS	ADJUSTMENT KNOB, 303SS	1	16	562000	FLAT WASHER	1
4	561983-SS	AIR CYLINDER, 316SS	1	15	561996	COMPRESSION SPRING	1
3	561982-SS	MATERIAL CHAMBER, 316SS	1	14	561995	O-RING	1
2	561981-SS	VALVE SEAT, 316SS	1	13	561994	O-RING	1
1	561980-SS	AIR CAP, 303SS	1	12	561993	NYLON WASHER	1

\* Not Shown

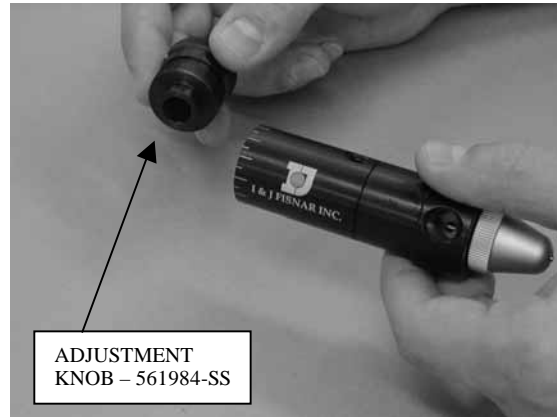
DRAWN BY: D. KITANSKI

DATE DRAWN: 10/2/03

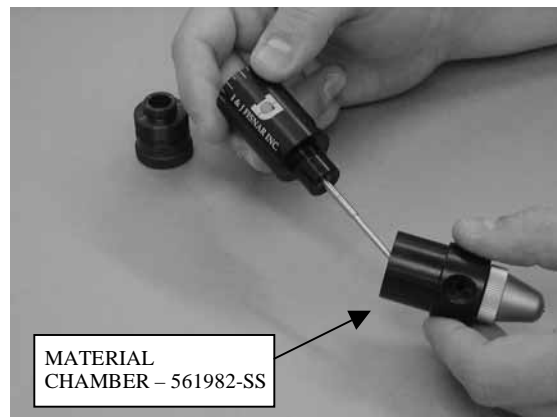
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## SEAL REPLACEMENT INSTRUCTIONS FOR SV1217-SS SPRAY VALVE

- (1) Remove all fittings and hoses from the spray valve.
- (2) Completely unscrew the adjustment knob (561984-SS) and remove the compression spring (561996).

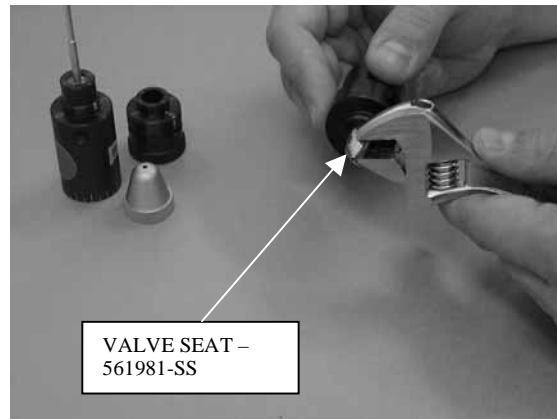
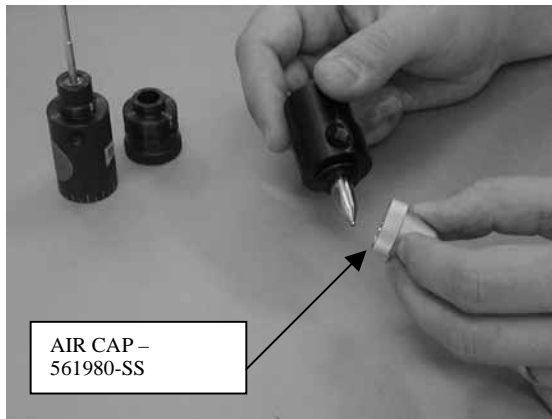


- (3) Unscrew the air cylinder (561983-SS) from material chamber (561982-SS).

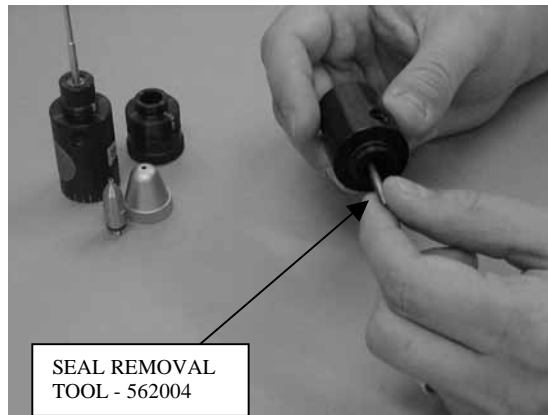


## Appendix A

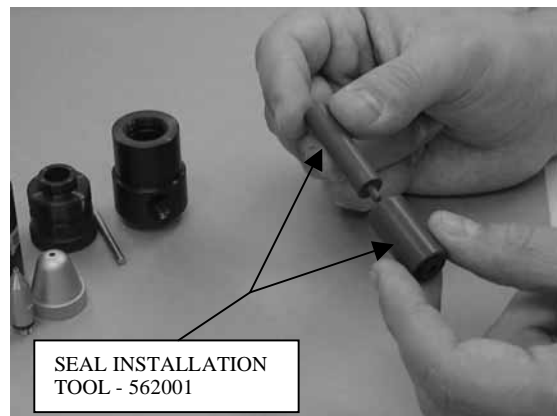
- (4) Remove the air cap (561980-SS), valve seat (561981-SS) and the two O-rings (561988 and 561989).



- (5) Remove the deep polypak seal (561990) using the seal removal tool (562004) included in the seal replacement kit (562005).



- (6) Insert the new seal into the seal installation tool (562001) (included in the kit), and then insert them all together into the material body.



## Appendix A

(7) Press the piston-shape part of the installation tool, so it pushes down the seal into its seat.



Once the seal is in its place remove the installation tool and assemble the valve.

*\*NOTE: Once the valve is disassembled for seal replacement, O-ring routine replacement is recommended.  
All the O-rings are included in the seal replacement kit.*