Diamond Vogel

Fill-n-Spray™ MODEL M-1

OWNER'S MANUAL

Diamond Vogel | AEROSOL COATINGS

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Introduction

Thank you for choosing the Diamond Vogel's, Fill-n-Spray aerosol filling systems. Diamond Vogel Paint has prided itself on 90+ years of service in thepaint and coatings industry and continues to pursue innovation and set new standards in quality for paint manufacturing.

IMPORTANT!

Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid injury or property damage during use. Diamond Vogel Paint cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Contact Diamond Vogel Paint when in doubt as to the proper safety precautions and operations. **Failure to follow the proper safety procedures can cause equipment damage and/or personal injury.**

General Safety

Any misuse of the Fill-n-Spray filling equipment or accessories, such as over pressurizing, modifying parts, using incompatible chemicals and fluid, or using worn or damaged parts, can cause rupture, splashing in eyes and skin or other serious bodily injury, fire, explosion or property damage.

Never alter or modify any party of this equipment; doing so could cause equipment malfunction and/or injury. Check all equipment regularly and repair or replace worn or damaged parts immediately.

Read and follow the paint manufacturer's literature and MSDS sheet regarding the use of product, protective clothing, and equipment.

Fire or Explosion Hazard

Static electricity is created by the flow of liquid through the pump or transfer of fluid from one container to another. If equipment is not properly grounded, sparking may occur and the system may become hazardous. If you experience any static sparking or even a slight shock while using this equipment, STOP FILLING IMMEDIATELY, and check the entire system for proper grounding.

Checklist

After carefully uncrating your Fill-n-Spray model M-1, examine the machine for shipping damage. If any is found notify your carrier immediately. Open the door and remove the paint reservoir. It contains the following parts:

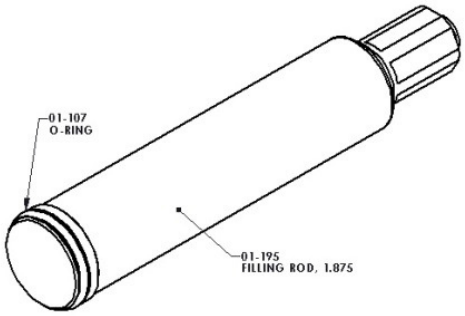


Figure 1, (QTY. 1) P/N: 01-134
(16 oz. Filling Rod Assembly)

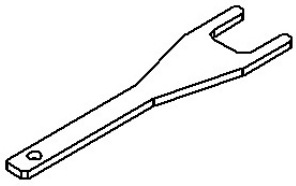


Figure 2, QTY. 1) P/N: 01-171
(Filling Rod Wrench)

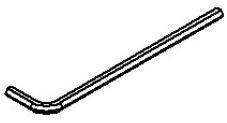


Figure 3, (QTY. 1) P/N: 01-176 (3/16" L-Key)

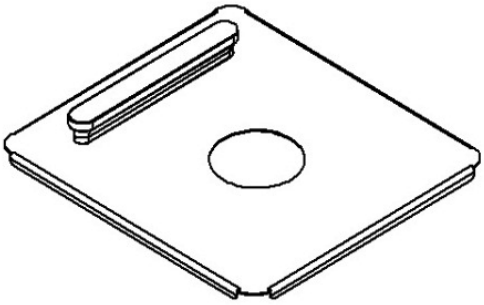


Figure 4, (QTY. 1) P/N: 01-271
(One Gallon Reservoir Lid)

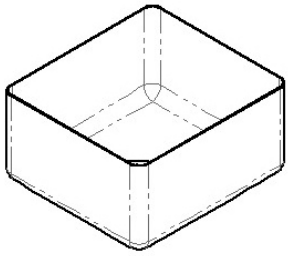


Figure 5, (QTY. 1) P/N: 01-031
(One Gallon Reservoir)

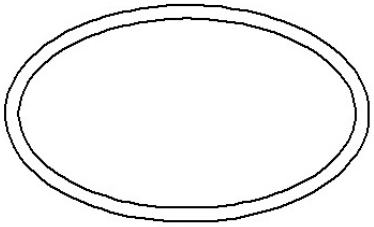


Figure 6, (QTY. 1) P/N: 01-100
(Polyurethane O-ring))

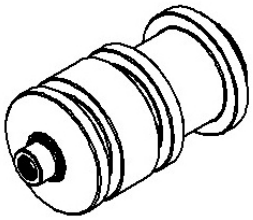


Figure 7, (QTY. 1) P/N: 01-201
(16 oz. Filling Head Assembly)

Spare Parts List Includes

	Part#	Part Description
QTY. 1	P/N: 01-107	Filling Rod O-Ring
QTY. 1	P/N:01-100	Polyurethane O-Ring
QTY. 1	FNS-0024	Injector Screen
QTY. 1	FNS-0023	Injector O-Ring
QTY. 1	FNS-0011	Injector Point Assembly
QTY. 1	FNS-0030	Main Body Nut
QTY. 2	-----	Aerosol Clean Out Can

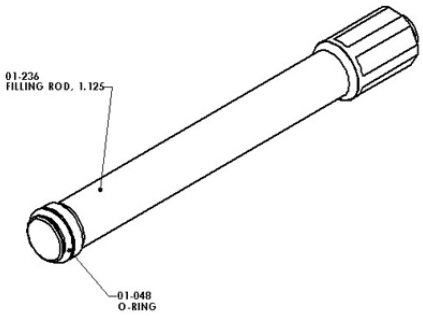


Figure 8, P/N: 01-042 (6 oz. Filling Rod Assembly)

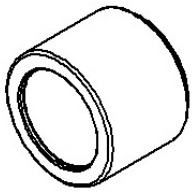


Figure 10, P/N: 100-26 (6 oz. Can Riser)

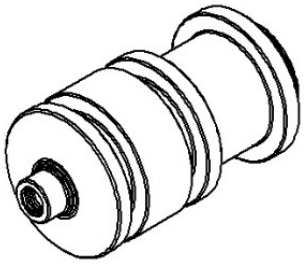


Figure 9, P/N: 01-240 (6 oz. Filling Head)

Setup and Operation

CAUTION! PLEASE PUT SAFETY GLASSES ON PRIOR TO SETUP & OPERATION OF THIS MACHINE AND USE CAUTION WHEN LIFTING MACHINE AS IT IS TOP HEAVY.

Air Supply

The Fill-n-Spray model M-1 requires a 105 psi air supply at the Pressure Filter/Regulator Assembly (P/N: 25-016). A minimum 1-1/4 horsepower compressor with pneumatic accumulator is required for operation of the model M-1. We recommend a 2 horsepower compressor or larger to ensure consistent air pressure. Connect the fitting for the air hose to the 1/4" NPT port on the Pressure Filter/Regulator as shown in **Figure 11**, Air Filter/Regulator (P/N: 25-016).

The built-in air filter will cause water to collect in the Filter Bowl (P/N: 25-016-003) during operation. Empty the bowl daily by turning the stem at the base of the bowl (counter-clockwise) while the system is under pressure. It is important the air pressure remains constant during operation. However, during the filling cycle, the piston pressure may drop to 90 psi, which is normal.

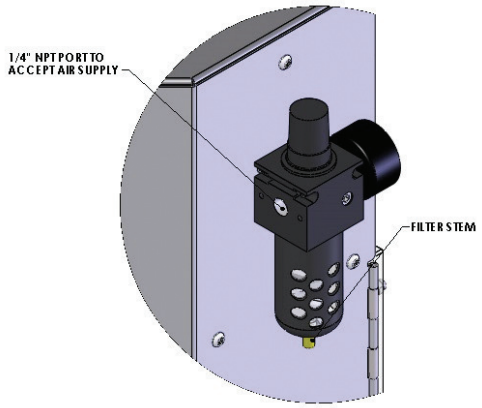


Figure 11, Air Filter/Regulator (P/N: 25-016))

Setup and Operation

1. Place the machine on a sturdy bench then fasten it down with 3/8" diameter fasteners (not provided) at the base of machine as shown in **Figure 16**.
2. Insert the Filling Head/Reservoir Assembly into the machine on the Midcross Plate as shown in **Figure 15**.
3. When filling 6 oz. cans a can riser is needed, if filling 6 oz. cans place can riser on the Can Locator as shown in **Figure 15**.
4. Rotate the Volume Dial located on the top of the machine, to line up with corresponding graduated line. This adjustment allows user to set desired fill volume of aerosol.

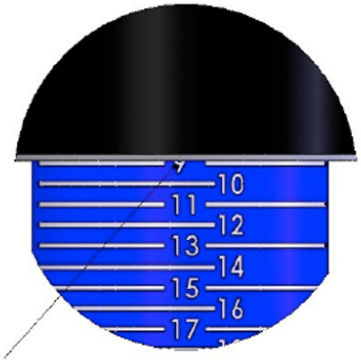


Figure 12, Note: Recommended starting dial setting is 9. See Aerosol Filling Section on Pages 12 & 13 for more information.

5. Screw the Filling Rod into the base of the Air Cylinder Rod.
6. Pour paint into the Filling Head/Reservoir Assembly. It may be easier to do this by pulling the assembly forward and down as far as the Filling Rod Assembly will allow.
7. Lift the Filling Head/Reservoir Assembly and reposition it back on the Mid-cross plate.
8. Set Air Regulator Pressure Gauge to 105 psi
9. Place an aerosol can on the Can Locator
10. Close the Door and rotate the Door Knob clockwise to start the Filling Rod in motion. The can locator will raise the can to Filling Head Assembly and inject paint into the aerosol can.
11. After the can is filled, rotate the Door Knob counter-clockwise to retract the Filling Rod.
12. Remove aerosol can from machine and prepare the can for storage by placing the spray actuator (button) on top of the can. Insert button into hole with slight downward pressure and twisting motion. **Note:** If using a Valve Clearing Tool (FNS-0100) do not place spray actuator on can.
13. Clear the valve stem by holding the can upside down and spraying it into a waste receptacle until only clear propellant comes out. **Note:** See Page 9 for more Valve Clearing information.
14. Once valve is cleared, place over-cap on the aerosol can.
15. Repeat steps 9 thru 14 to continue filling aerosol cans.
16. After filling cans be sure to properly clean Filling Head/ Reservoir Assembly. Follow instructions listed below.

Setup and Operation

Clean-up

1. When filling is complete or when changing color, remove the reservoir from the machine and carefully pour the remaining paint into its original container.
2. Clean the reservoir in solvent using a self-contained, lid type, parts washer.
3. Wipe and clean any remaining paint on the piston.

IMPORTANT:

4. Position paint reservoir in machine and fill with solvent.
5. Place an empty aerosol clean out container on platform, and cycle the machine. This will pump solvent through the filler assembly. Cycle the machine multiple times to ensure sufficient solvent is pumped through filler assembly to thoroughly clean injector point. If machine is to be unused for a period of time, pump a very slow evaporating solvent or lightweight oil through assembly.

Clearing the Valve

Clearing the Valve

After filling, wipe any excess paint off the top of aerosol can. Place the spray actuator (button) on top of the can by inserting the button into valve opening with a slight downward pressure and in a twisting motion. Shake can vigorously to thoroughly mix the paint and propellant. To prepare the can for storage, hold the can upside down and spray it into a waste receptacle until only clear propellant comes out **(Figure 13.)**. This will clear the valve and dip tube of the small amount of paint left in them and must be done to keep the valve from clogging during storage. Wipe clean any excess paint from the valve.

Figure 13

Valve Clearing Tool

(Part # FNS-0100)

To assist in the valve clearing process a special valve clearing device is available. This accessory speeds up and simplifies the "clearing" process. To use the valve clearing tool, place and secure the cover to and empty 5-gallon pail. Invert the can and insert the valve stem into the opening of the device. Press the can down quickly and firmly for 1-3 seconds **(Figure 14.)** Wipe the top of the can clean and insert the spray actuator (button).

Figure 14

Maintenance & Troubleshooting

Filler Assembly P/N:01-201

If it becomes necessary to disassemble filler assembly (P/N: 01-201) start by removing filler nut (FNS-0030). Push out injector point assembly (FNS-0011), injector o-ring (FNS-0023), and screen (FNS-0024).

WARNING: Do not pull injector point with pliers, but instead push out from the top end with a blunt instrument. Pulling with pliers will damage steel point.

Inspect for damage and replace if necessary. Be sure to keep main body nut (FNS-0030) snug (do not over-tighten) to prevent paint from leaking around injector o-ring (FNS-0023), and injector point assembly (FNS-0011).

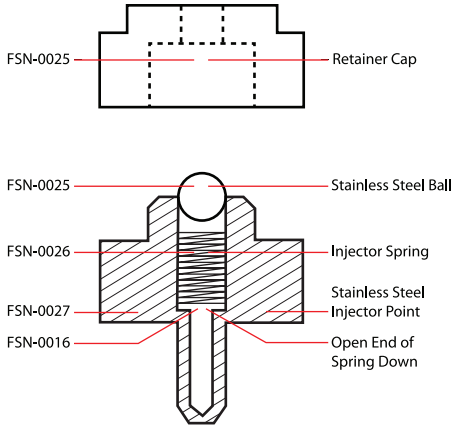


Figure 15, FNS-0011 – Injector Point Assembly

Repairing Injector Point

The injector point assembly is a typical "check valve" consisting of a ball, spring and seat. Use the special tool (FNS-0500) to separate the plastic retainer (FNS-0025) from the stainless steel injector point (FNS-0016). Spread tool open and place assembly in the rounded-out cradle of the tool (pliers), with the knife edge lined up with the seam between plastic retainer and stainless steel point. Gently squeeze tool closed so knife edge splits the plastic cap from the point. Replace the parts diagram below (FNS-0011). Replace spring and ball. Squeeze injector retainer (FNS-0025) together with injector point (FNS-0016) by using end of special pliers tool (FNS-0500 similar to a typical pliers.

Figure 16, FNS-0500 – Injector Point Tool

Maintenance & Troubleshooting

Problems & Solutions

1. Propellant escapes out of aerosol can and bubbles up through the paint reservoir when can is elevated into the filling position.

A. The check valve within the injector point assembly (FNS-0011) is not creating a seal, because of dried paint inside the injector point assembling, caused by improper cleaning. To fix this issue, pump lacquer thinner, acetone, or MEK through the injector point and into an empty cleanout can to flush dried paint out of the injector point. If bubbling continues after cleaning the injector point, the injector point assembly is damaged or worn and will require replacing.

2. Excessive wet paint fills the cup at the top of the can during the filling process.

A. The exterior surface of the injector point assembly (FNS-0011) has accumulated excess, dry paint and requires cleaning. Clean the injector point with solvent and a soft bristled brush.

B. Filler Assembly (FNS-0003) is not assembled correctly. Check the injector screen (FNS-0023) and injector O-ring (FNS-0023) to be sure they are not twisted, damaged or improperly assembled. Check parts drawing (FNS-0011, page 11) for correct assembly.

C. Main Body Nut (FNS-0030) is not tight Disassemble Filler Assembly (FNS-0003), inspect and clean all parts and reassembly in correct order. Tighten Main Body Nut (FNS-0030) until it is "snug".

3. Piston is moving slowly while pumping paint and/or paint is not being injected into aerosol can.

A. The model M-1 requires a 105 psi air supply at the Pressure Filter/Regulator Assembly (P/N: 25-016). Check Pressure Regulator Gauge to ensure proper air pressure. **(Setup for air supply is found on Page 5, in the Setup and Operation section of owner's manual.)**

B. Injector point assembly (FNS-0011) is partially blocked with dry paint and foreign material and is not allowing paint to flow through the assembly. To fix this issue, pump lacquer thinner, acetone, or MEK through the injector point and into an empty cleanout can to flush dried paint out of the injector point.

C. Injector Screen (FNS-0024) is dirty or partially plugged, preventing paint from flowing through the screen. If screen is packed with paint or damaged replace with a new screen. (Note: not properly straining before pouring paint into the reservoir will result in blockages in the injector screen) See Paint Preparations section on Page 9.

D. Check Piston O-ring (P/N: 01-107) for damage or excessive wear. Replace if necessary.

Aerosol Filling Information

Weights and Measures Information

Aerosol terminology and label directions are a combination of volume and weight expressed in both English and Metric "weights and measures". The various combinations can be very confusing. The following information is a helpful guide in terminology and definitions.

Grams :	A metric unit of measure for weight
Ounces:	An English unit of measure for weight
Fluid Ounces:	An English unit of measure for volume
ALV-6:	Fasse part number for a 6 fld. oz. --- pre-charged aerosol can
ALV-16:	Fasse part number for a 16 fld. oz. ---pre-charged aerosol can

The label of an aerosol can describes the amount of product in the can by weight, not volume Typically an ALV-16 lists the label weight as 12 oz. net weight (340 grams). The can has a maximum capacity of 16 fld. oz. (solvent, propellant & paint) and a net weight of 12 oz. or 340 grams. Cans are not always filled to capacity and therefore have less than 12 oz. (340 grams) of weight. In addition to putting less product in the can, some paint or clearcoats have a very low weight per gallon and therefore have a lower than normal weight listed on the label when the can is filled to capacity by volume. The label weight may give you an idea of how much product is in the can but it does not definitively explain the volume in the can. It may just be a case where the product has a very high or low weight per gallon.

	Gross Weight of Pre-Charged Can*	Amount of Paint Required to Achieve Label Weight	Gross Weight of Filled Can**	Net Label Weight
ALV-16	298 grams	120 grams	418 grams	(11 oz.) 312 grams
	298 grams	135 grams	433 grams	(11.5 oz.) 326 grams
	298 grams	150 grams	448 grams	(12 oz.) 340 grams
ALV-6	148 grams	34 grams	182 grams	(4.25 oz.) 120 grams

* Total weight of pre-charged aerosol (can, solvent & propellant). Does not include tip & cap.

** Total weight of filled aerosol (can, solvent, propellant & paint). Does not include tip & cap.

Additional Conversion Facts:

1 gallon= 128 fluid ounces

1 quart = 32 fluid ounces

1 pint = 16 fluid ounces

1 pound = 453.6 grams

1 ounce = 28.35 grams

11 ounces = 312 grams

12 ounces = 340 grams

Replacement Parts

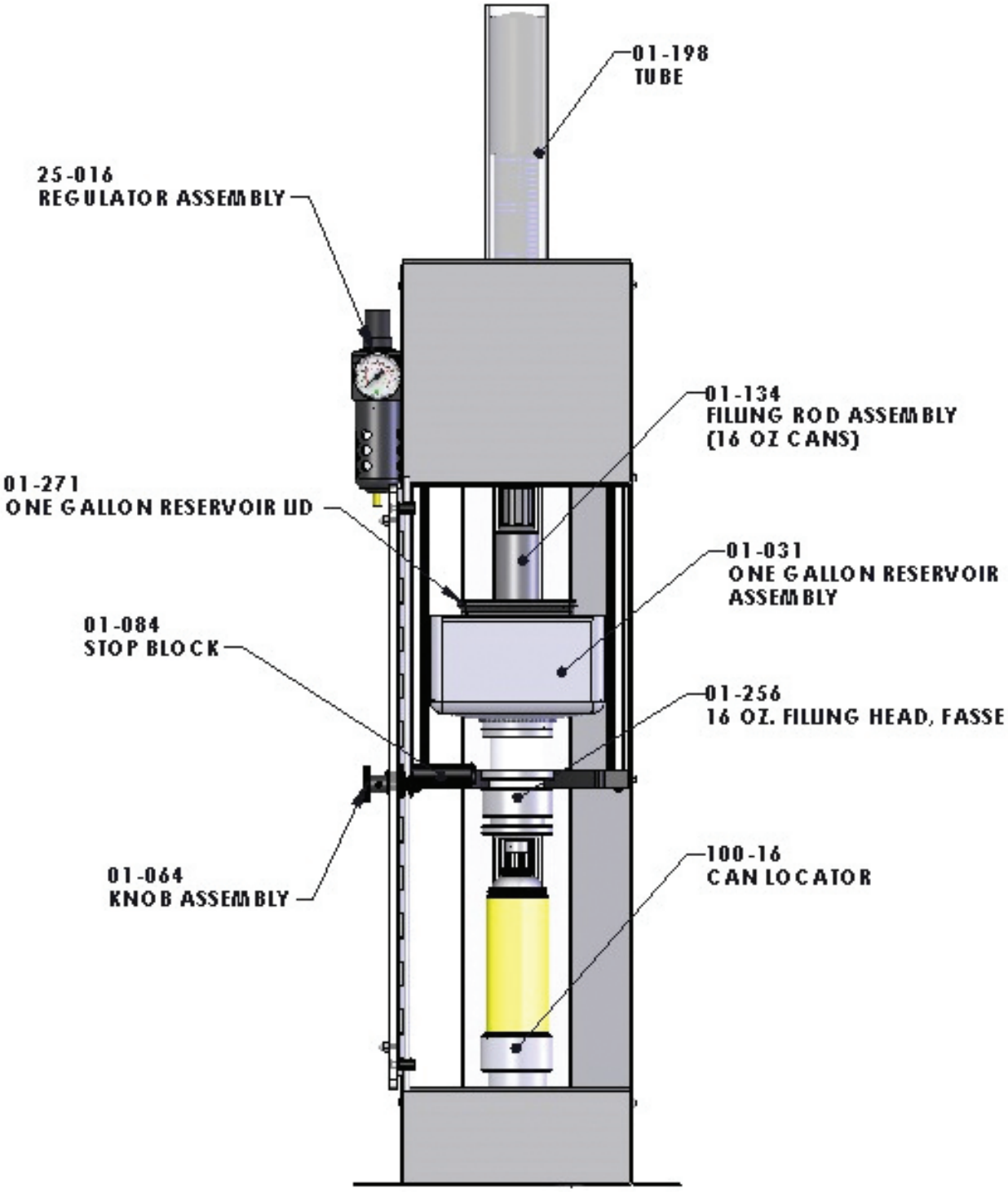


Figure 17

Replacement Parts

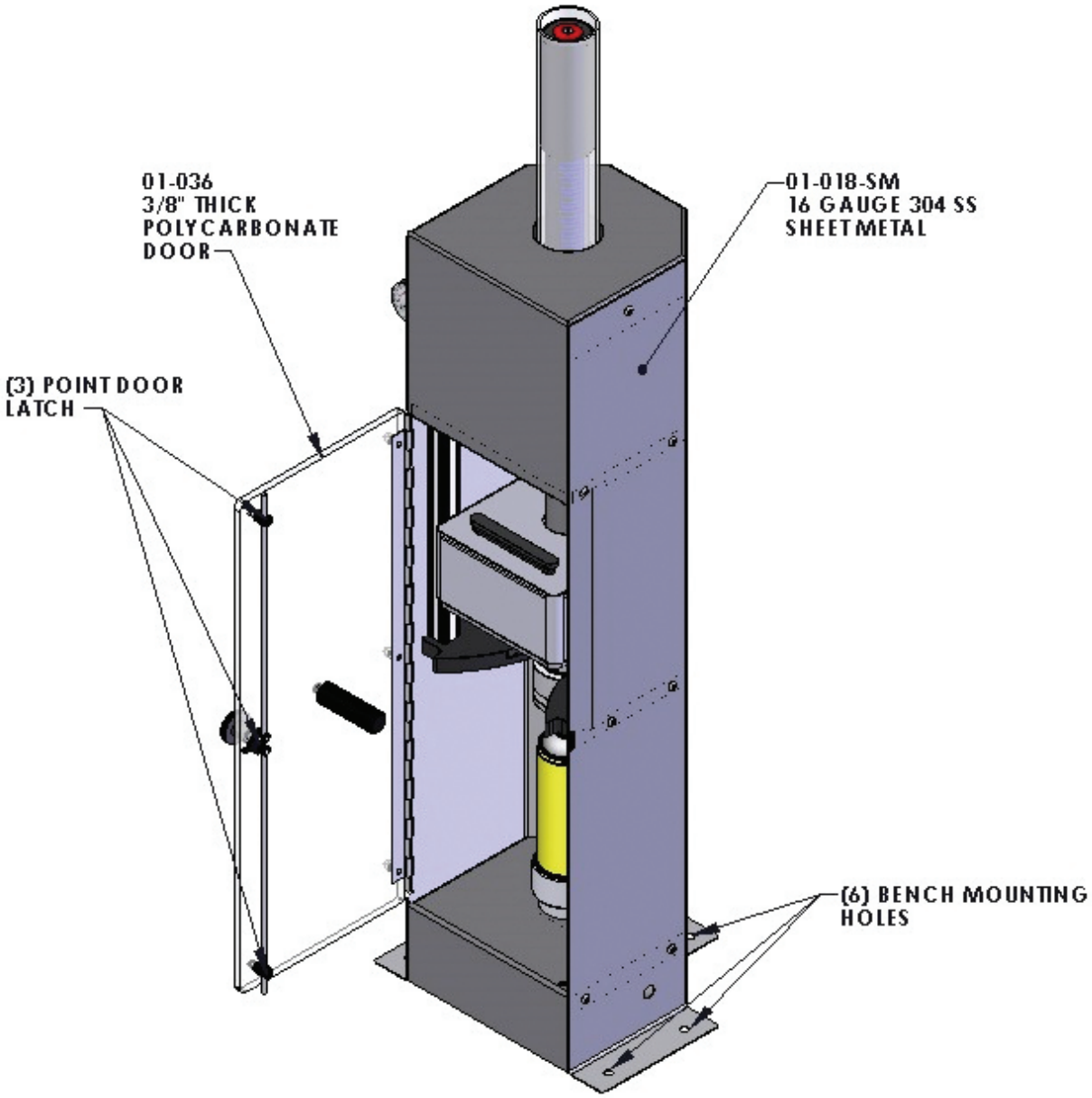


Figure 18

Replacement Parts

Figure 19

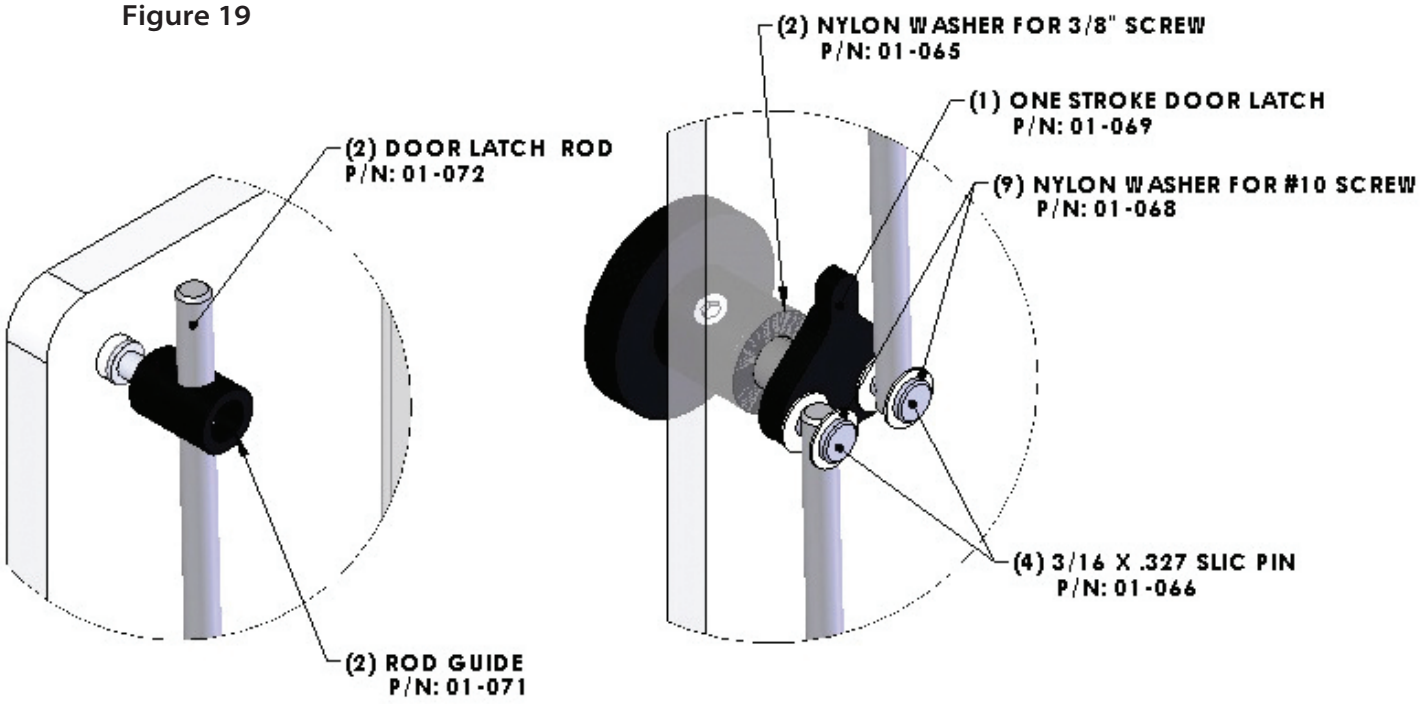
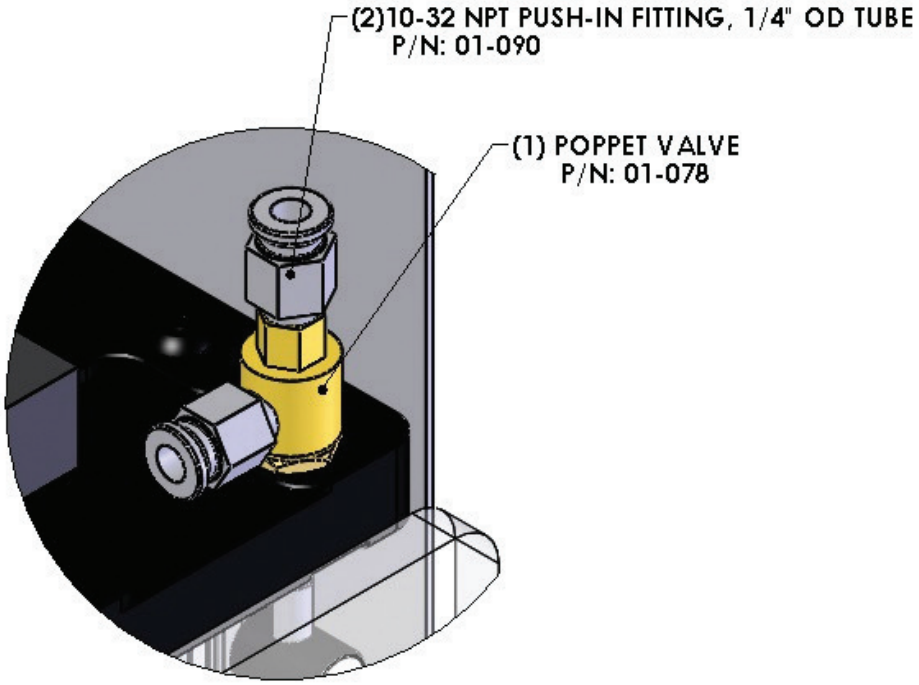


Figure 20



Replacement Parts

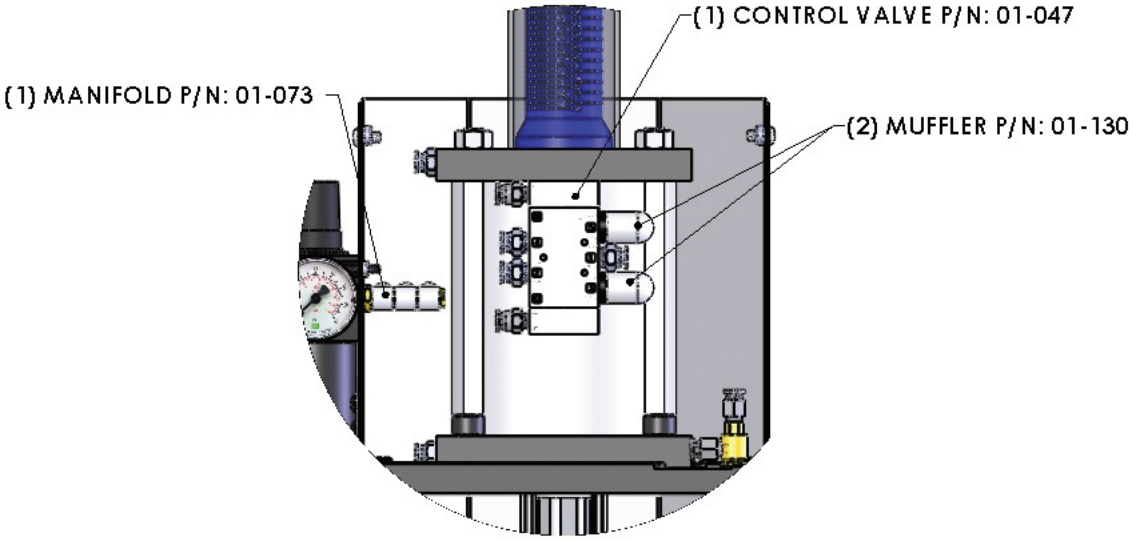


Figure 21

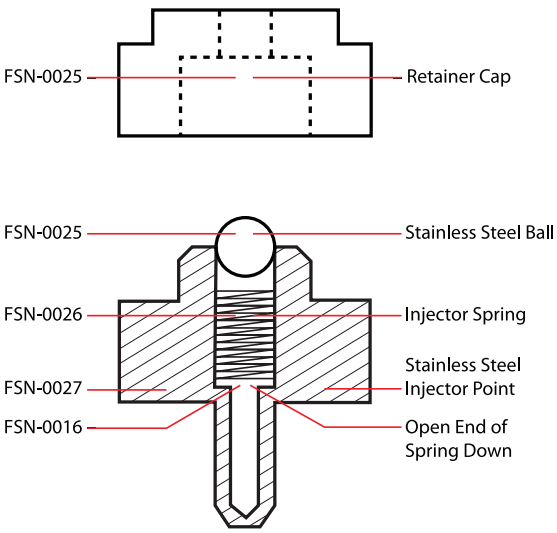


Figure 22

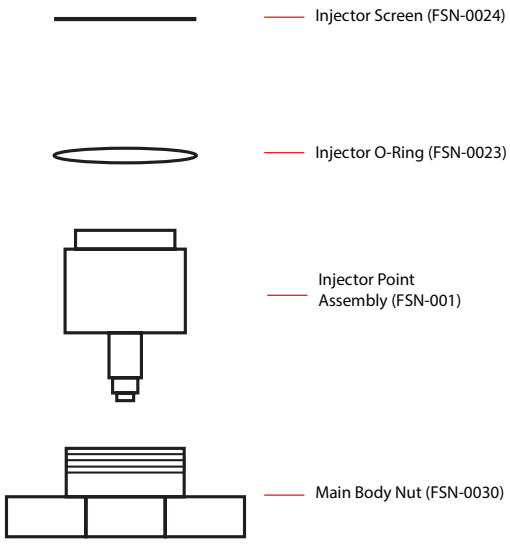


Figure 23

Setup and Operation

Part #	Part Description
Machine Body Parts List	
01-198	Dial Adjustment Cover Tube
01-084	Stop Block Reservoir Plate
01-036	3/8" Polycarbonate Door
100-16	Can Locator
01-064	Door Knob Assembly
01-072	Door Latch Rod
01-071	Door Latch Rod Guide
01-069	Door Latch

Air Supply Parts List	
25-016	Regulator Assembly
25-016-003	Filter Regulator Bowl
01-090	10-32 NPT Push-In Fitting (1/4" OD Tube)
01-078	Poppet Valve
01-073	Air Manifold
01-047	Pneumatic Control Valve
01-130	Control Valve Muffler

Part #	Part Description
Filling Parts List	
01-031	One Gallon Reservoir Assembly
01-271	One Gallon Reservoir Lid
01-100	Main Body Polyurethane O-ring
01-134	16 oz. Filling Rod Assembly
01-195	16 oz. Filling Rod
01-107	16 oz. Filling Rod O-ring
01-201	16 oz. Filling Head Assembly
01-042	6 oz. Filling Rod Assembly
01-236	6 oz. Filling Rod
01-048	6 oz. Filling Rod O-ring
01-240	6 oz. Filling Head Assembly
100-26	6 oz. Can Riser
FNS-0011	Injector Point Assembly
FNS-0025	Retainer Cap
FNS-0026	Stainless Steel Ball
FNS-0027	Injector Spring
FNS-0016	Stainless Steel Injector Point
FNS-0024	Injector Screen
FNS-0023	Injector O-ring
FNS-0030	Main Body Nut

Tool Parts List:	
01-171	Filling Rod Wrench
01-176	3/16" L-Key
FNS-0500	Injector Point Tool
FNS-0100	Valve Clearing Tool

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