



710 Forest Avenue
Sheboygen Falls, WI 53085

P: (920) 467-7850
email: aerosol@diamondvogel.com
diamondvogel.com/aerosol

Service Team

Reed Beiersdorf - General Manager
Debbie Dowty - Customer Service
Josh Bintzler - Aerosol Manager

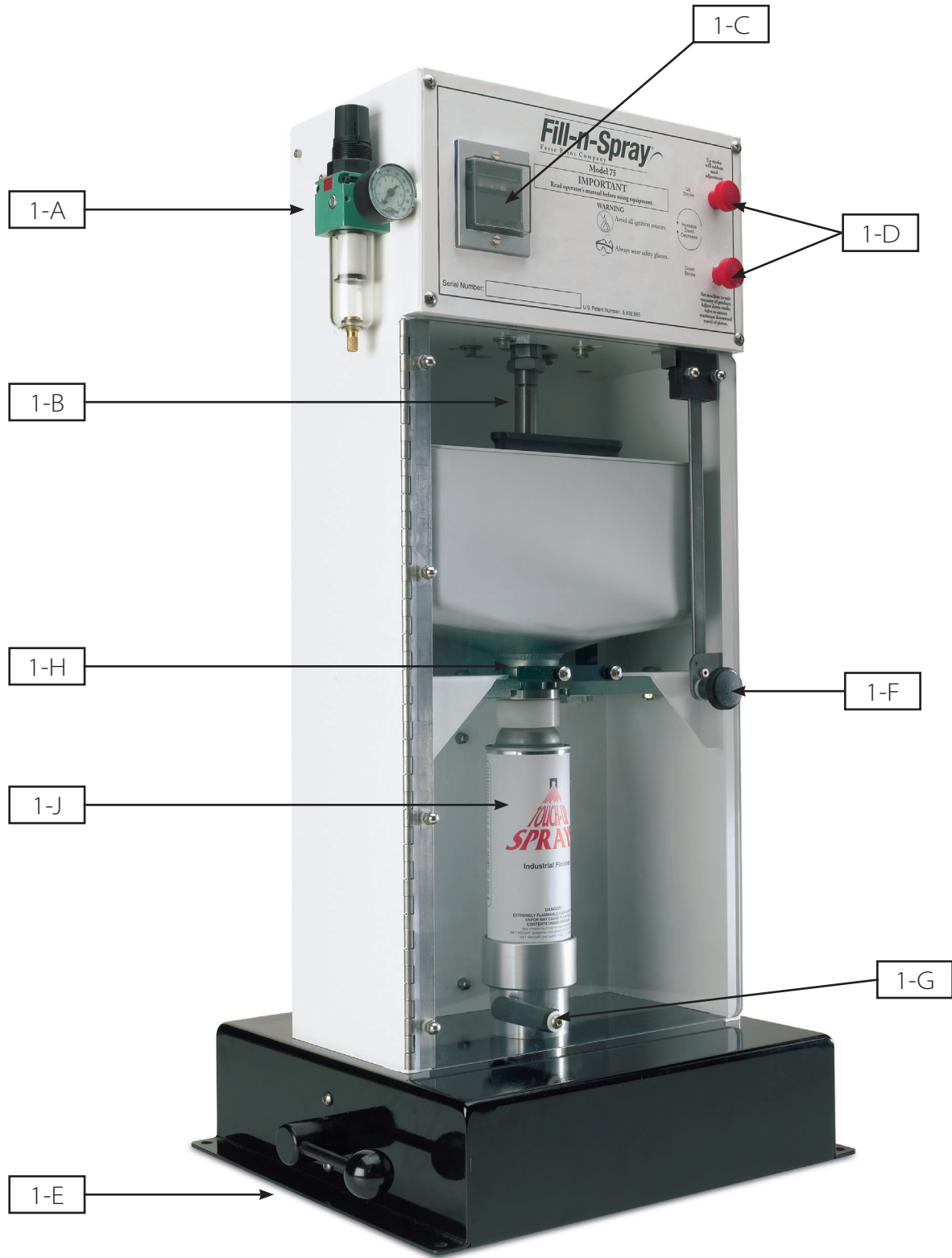


Figure 1

IMPORTANT!

Read this entire manual before operating this unit. Keep it in a handy place for future reference and trouble-shooting.

GENERAL SAFETY

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

Never alter or modify any part 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. Check the entire system for proper grounding.

SET-UP

After carefully uncrating, examine the machine for shipping damage. If any is found notify the carrier immediately.

Set the machine on a bench, making sure it is securely positioned. Attach green ground wire to proper grounding source. Check local codes for detailed grounding instructions.

AIR SUPPLY

Your Fill-n-Spray automatic pump is designed to use compressed air. A minimum 1 horsepower compressor with a reservoir tank is required, although a 1 1/2 horsepower or larger compressor is recommended to insure consistent air pressure. The compressor needs to supply 3.0 - 5.0 CFM and maintain 65 PSI at all times.

Attached to the left side of the machine is the combination water trap and air regulator (Fig. 1-A, Part # 25-016). Connect the incoming air hose (5/16" ID) to the air regulator on the left side of the unit. The plastic bowl is an air filter and water trap, assuring clean, dry air to operate the pump. During operation water will collect in the filter bowl. Empty the bowl daily by turning the needle stem at the base of the bowl while the system is under pressure (Fig. 2).



Figure 2

Air pressure is adjusted by pulling up on the black knob and turning either left or right (Fig 2). Once the proper setting is attained, push down on the black knob to lock the adjustment. Pressure should be adjusted to approximately 60 PSI. Increasing the pressure above 65 PSI will not speed up the filling operation, but will result in inconsistent filling and excessive stresses on the machine.

PISTON ROD & RESERVOIR

The piston rod is attached to the bottom of the air cylinder by threading the rod into the bottom hole (Fig 1-B). The rod need only be hand tight or gently "snug" with wrench. The piston rod will be removed frequently since the rectangular reservoir cannot be inserted or removed without first removing the piston rod. With the reservoir and piston rod in position the reservoir can be slid forward for easy filling.

DIGITAL COUNTER

The Fill-n-Spray automatic pump is equipped with an automatic digital counter. (Fig 1-C) The digital counter counts the piston strokes and automatically stops the machine. The number of strokes determines the amount of paint filled in each can. To set the



Figure 3

required number of strokes depress and hold the button located to the left and above the numbers. (Fig 3) While holding this button in, depress the buttons below the numbers. The soft protective plastic over the buttons and numbers allows you to press directly over the protective covering.

WARNING: DO NOT OVER-FILL CANS. DO NOT EXCEED THE MAXIMUM NUMBER OF STROKES PER CAN. OVER-FILLING CAUSES BURSTING AND CAN RUPTURE.

LUBRICATION

The new Fill-n-Spray model 75 requires no lubrication. The best preventative maintenance is to have clean, dry, air coming to the machine.

ADJUSTMENT KNOBS

Located on the far right of the instruction faceplate are two black knobs (Fig 1-D) used to adjust the upper and lower dwell time of the piston stroke. The piston should travel a full up and down stroke in a smooth rhythmic pattern. Each stroke should have a slight hesitation at the top of the stroke. The top black knob determines the hesitation at the top of the stroke and the bottom black knob determines the hesitation at the bottom of the stroke. Turning the knob clockwise increases the dwell time. The piston requires little if

any dwell time at the bottom of the stroke. Dwell time at the top of the stroke is required to allow time for paint to fill into the piston cavity after each downward stroke. Heavy viscous paint requires more time to fill the piston cavity.

TESTING

Put reservoir (Part # 100-22) and clean out can into position.

DO NOT PLACE PISTON IN POSITION AT THIS TIME.

Attach air supply to machine and set to 60 PSI. Set the automatic counter to "12". Raise the can platform by pulling forward the can platform lever (Fig 1-E) located on the left side of the machine base. Close door and turn door knob to the right (Fig 1-F). Turning doorknob to the right activates the machine and will start its cycle (Fig 4). Observe the cycle in operation. The machine should reciprocate between fully extended and fully retracted for the same number of strokes as set on the automatic counter. The machine should reciprocate in a rhythmic manner as discussed in the above section.



Figure 4

SAFETY WARNING: Note that the can platform must be elevated before the door will properly close.

Located at the bottom and backside of the door (Fig 1-G) is a 3", black, rubber rod protruding from the

backside of the door into the machine cavity. Notice that the can platform will not allow the safety rod and door to close properly unless the can platform lever is fully engaged (Fig 5). This is a safety feature to ensure that the aerosol can is elevated into its proper filling position before the filling begins.



Figure 5

At the end of the filling cycle open the door and lower the can platform. If the door is opened before the filling cycle is completed the machine will stop. Closing the door without moving the can platform lever will restart the machine and will continue the counting process.

Opening the door and lowering the can platform re-sets the counter. During the testing phase experiment with starting and stopping the machine using various combinations of operations. Take notice of the digital counter at different phases of the test. Become familiar with the start, stop, and counter position during operation.

SAFETY WARNING: ALWAYS WEAR SAFETY GLASSES WHEN FILLING! USE OF PROTECTIVE CLOTHING RECOMMENDED. USE WITH ADEQUATE VENTILATION. FLAMMABLE. KEEP FROM HEAT, SPARKS AND FLAME. REFER TO FILL-N-SPRAY, ALV SOLVENT BLEND SDS SHEET AND PAINT SDS SHEET FOR COMPLETE SAFETY INFORMATION.

PREPARING TO RUN

Insert reservoir (Part # 100-22) in the notch of the middle shelf located inside the machine (Fig 1-H). Attach piston rod to bottom of air cylinder by threading rod into hole. Piston should be hand tight

or slightly snug with wrench. Do not over tighten. Check to be sure piston lines up with opening at the bottom of the reservoir. To pour paint into the reservoir, pull reservoir forward as far as the piston will allow.

PAINT PREPARATION

Most solvent-based enamels, lacquers, vinyl's and acrylics are suitable for use in the Fill-n-Spray Pump. Paint must be thoroughly mixed and strained before pouring into the reservoir. Even the freshest paint may contain bits of "skin", undispersed pigment or other foreign matter. Particles may block the valve open, allowing can pressure to blow back through the reservoir.

Note: Some exotic solvent-based paints may be suitable for filling, but it is recommended that you test the material before setting up to fill an entire batch. Coarse-grind and water-based (latex) paints cannot be packaged. They will not work.

DO NOT THIN the paint mixture. Pour the unthinned, strained paint carefully into the reservoir. Slide the reservoir forward for ease of pouring. Once the reservoir is filled carefully slide it back into position.

THE FILL-N-SPRAY BLEND

Fill-n-Spray cans come pre-filled with propellant and solvent. Virtually "all", single component, solvent-based coatings are compatible with Fill-n-Spray's "ALV" solvent blend. The "one blend" formula eliminates the need for different solvent blends for various paints. Laboratory assistance and custom blends are available. Consult your Fill-n-Spray representative for additional information. The ALV solvent blend is available in both the 16 fld oz (312 grams, 11 oz net weight) and the 6 fld oz (120 grams, 4.25 oz net weight) sizes.

FILLING

The number of strokes to fill a can varies, depending on the weight, viscosity, opacity, and type of paint. The following chart provides the amount of paint required per can and suggested starting stroke count.

	Gross weight of can before paint	Amount of paint required	Gross weight filled	Number of strokes	Label weight
ALV 6 oz	145 Grams 5.11 oz	35 Grams 1.23 oz	180 Grams 6.35 oz	7	120 Grams 4.25 oz
ALV 16 oz	292 Grams 10.3 oz	122 Grams 4.3 oz	414 Grams 14.6 oz	15	312 Grams 11.0 oz

Note: Gross weights are listed without over caps

FILLING BY WEIGHT

When filling the first can, start by weighing the unfilled can, add the suggested number of strokes of your paint and re-weigh the can. The difference is the amount of paint filled. If the weight is short, add one or two strokes and re-check. If the weight is over, try a new can and reduce the stroke count.

Along with checking the weight of a fill, check the can for spray properties. When filling the first can, select an average number of strokes for a starting point. Clear the can (see instructions on "clearing the valve") and make a test spray-out. Check for spray properties and adequate "hide". If spray does not develop good "hide properties" or appears thin and transparent, add one or two strokes to improve. If hide and transparency is not a problem, pump a second can starting with less strokes. The goal is to achieve the "best possible spray properties" with the least number of strokes and yet hit the minimum net weight stated on the label.

WARNING: DO NOT OVER-FILL CANS. DO NOT EXCEED THE MAXIMUM NUMBER OF STROKES PER CAN. OVER-FILLING MAY CAUSE BURSTING.

FILLING PROCEDURE

Lower the can platform with the can-positioning lever on the left side of the machine. Place the Filln-Spray can on the platform. Pull forward the can

positioning lever (Fig 1-E) to raise the can beneath the reservoir and create a seal between the can and injector assembly (Fig1-J). The 6 fld oz can requires the adapter (Part #100-26). Refer to the filling chart for proper number of strokes to fill the can. Set the digital counter (Fig 1-C) to the corresponding number. Start the machine by closing the door and turning the doorknob (Fig 1- F) to the right. **Remember: Turning doorknob to the right starts the filling process.** The machine will pump the number of strokes set on the counter and stop automatically. When the cycle is completed and the machine has stopped, open the door, lower the can platform and remove the can.

CLEARING THE VALVE

Wipe any excess paint off the top of the aerosol can. Place the spray actuator (button) on top of the can. Insert button into hole with a slight downward pressure and twisting motion. Shake the can vigorously to thoroughly mix the paint and propellant. Prepare the can for storage by holding the can upside down and spraying it into a waste receptacle until only clear propellant comes out (Fig.6). 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. Wipe clean any excess paint from the valve.

VALVE CLEARING TOOL

(Part # FAS-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 an 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 (Fig.7). Wipe the top of the can clean and insert the spray actuator (button).



Figure 6



Figure 7

ADJUSTMENTS

If you need to stop pumping before the full number of strokes has been completed, turn the doorknob to the left. The doorknob latching mechanism is the start and stop function. Turning the knob to the right will start the machine and continue the counting process. If the doorknob is turned left (open) and the can platform is lowered, the counter will reset if the machine is stopped in the middle of the filling process, do not resume filling that same can unless you are sure how many strokes have been completed. It is better to discard the can than to risk over-filling.

If a can needs one or two extra strokes, place the can back on the platform, set the counter to “1” and start the machine. The machine will make one stroke and stop.

When the machine is running, note how the piston hesitates at the top of each stroke. This is to allow time for the paint to completely fill the piston cavity at the bottom of the reservoir between strokes. If erratic filling should occur, it may be necessary to adjust the hesitation, using the two adjustment knobs on the right side of the faceplate (Fig 1-D).

CLEAN-UP

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

IMPORTANT: Position reservoir in machine and fill with solvent. Place empty aerosol cleaning can on platform, raise can up, and pump multiple cans of solvent through filler assembly (Part # FNS-0001). **Be sure to pump sufficient solvent through filler assembly to thoroughly clean injector.** If machine is to be unused for a period of time, pump a very slow evaporating solvent or lightweight oil through assembly.

Cleaning the filler assembly is extremely important to the success of your Fill-n-Spray pump. Within the filler assembly (Part # FNS-0001) is an injector point (Part # FNS-0011), which contains a checkball, spring, and seat. This checking mechanism prevents the propellant from escaping from the can back through the reservoir. Improper cleaning leaves a dry film of paint, which will prevent the ball from creating a proper “check seat” and create a propellant leak the next time you try to fill cans.

REPLACEMENT PARTS PISTON "O-RINGS"

The bottom end of the piston (Part # 75-048) has a Teflon o-ring (part # FNS-0081), which assures equal amounts of paint pumped with each stroke. A noticeable drop in the weight of cans after filling or an unusually larger number of strokes to fill a can will



Figure 8

indicate the piston o-ring has worn and should be replaced. Remove piston from machine by unthreading piston from main cylinder. Cut off o-ring with a sharp knife or razor blade. Clean piston groove of old dried paint. Place new o-ring on end of piston. Force o-ring into groove by pushing piston downward on

hard surface and roll piston on its edge (Fig 8). O-ring should snap into groove. Before filling cans with new piston o-ring, stroke piston one time through dry main body assembly (Part # FNS-0001) to form and size the o-ring. Slivers of Teflon may result which must be removed from the opening.

FILLER ASSEMBLY FSN-0001

(Parts page 13) If it becomes necessary to disassemble filler assembly (FAS-0001) start by removing filler nut (FAS-0030). Push out injector point assembly (FAS-0011), injector o-ring (FAS-0023), and screen (FAS-0024).

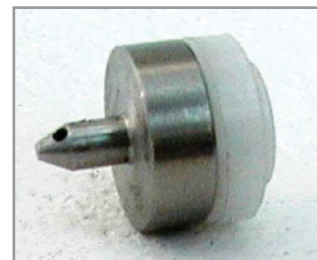
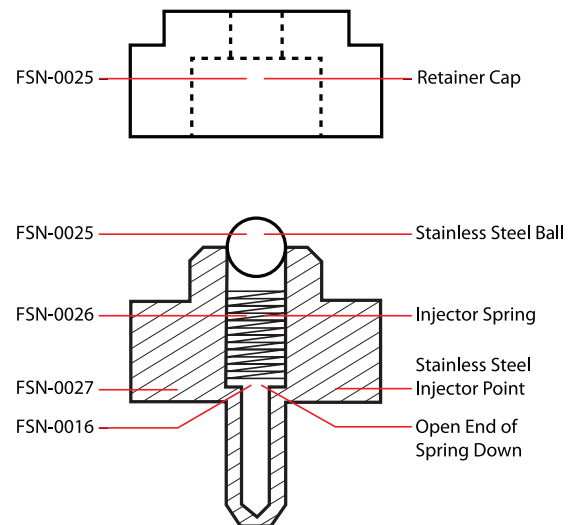
WARNING: Do not pull injector point with a pliers, but instead push out from top end with pencil or blunt instrument. Pulling with a pliers will damage steel point.

Inspect for damage and replace if necessary. Be sure to place parts in their exact order as shown in parts diagram FAS-0001. Be sure to keep main body nut

(FAS-0030) snug (do not over-tighten) to prevent paint from leaking around injector o-ring (FAS-0023), and injector point assembly (FAS-0011).

REPAIRING INJECTOR POINT

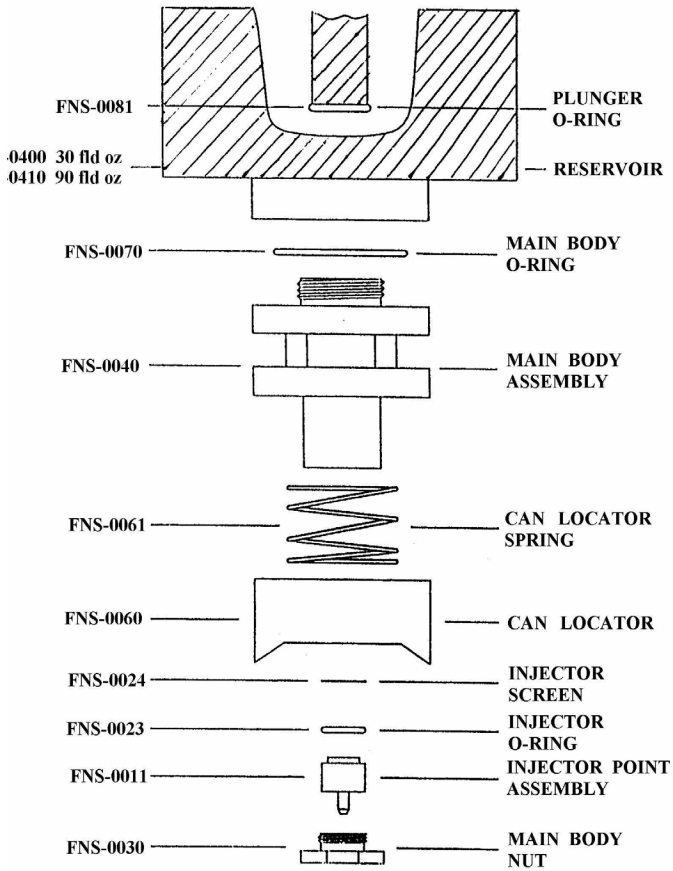
(FAS-0011, parts page 13) The injector point assembly is a typical "check valve" consisting of a ball, spring and seat. Use the special tool (FNS-0500) to separate the plastic retainer (FAS-0025) from the stainless steel injector point (FAS-0016). Spread tool open and place assembly in the rounded-out 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 parts as shown in parts diagram (page 13). Replace spring and ball. Squeeze injector retainer (FNS-0025) together with injector point (FNS-0016) by using end of special tool (FNS-0500) similar to a typical pliers.



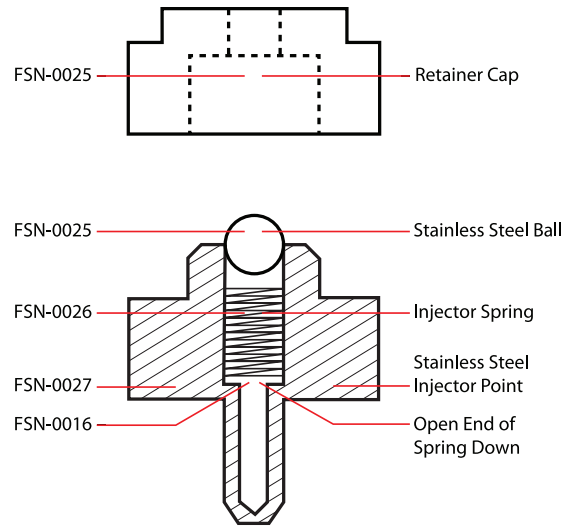
Injector Point Assembly

PROBLEMS & SOLUTIONS

1. Propellant escapes out of can and bubbles up through the reservoir when can is elevated into the filling position
 - a) The check valve within the injector point assembly (FAS-0011) is not creating a seal. Dried paint due to improper cleaning is preventing the ball from creating a seat. Pump 1-2 quarts of lacquer thinner, acetone, or MEK through the injector into the empty cleaning can to flush out dried paint. If after repeated cleaning-cycles the valve continues to leak (propellant bubbles up through reservoir) it is possible the injector point assembly is damaged or worn and requires replacing.
2. Excessive wet paint fills the cup at the top of the can during the filling process
 - b) The exterior surface of the injector point assembly (FAS-0011) has accumulated excess, dry paint. Clean injector point with solvent and soft bristle brush.
 - c) Filler Assembly (FAS-0001) is not assembled correctly. Check injector screen (FNS-0024) and injector o-ring (FAS-0023) to be sure parts are not twisted, damaged or improperly assembled. Check parts drawing (FNS-0001, page 13) for correct assembly.
 - d) Main body nut (FAS-0030) is not tight. Disassemble Filler Assembly (FAS-0001), inspect and clean all parts and reassemble in correct order. Keep main body nut (FAS-0030) "snug"
3. Piston is not moving in a smooth, rhythmic pattern, but instead is erratic and appears to be short-stroking with each stroke.
 - a) The paint may be too thick and needs more time to fill the piston cavity at the top of each stroke. Adjust the top adjustment knob (Fig 1D) to allow more dwell time at the top of each stroke.
 - b) The piston may not be traveling to the very end of the downward stroke. Adjust the lower adjustment knob (Fig 1D) to create a slight hesitation at the bottom of the stroke.
 - c) Injector point assembly (FAS-0011) is partially packed tight with dry paint or foreign material and is not allowing paint to flow through the assembly freely. Pump clean solvent through injector point assembly, disassemble injector point and clean thoroughly or replace with new injector point assembly.
 - d) Injector screen (FAS-0024) is dirty or partially plugged, preventing paint from flowing freely. If screen is packed full of dried paint or damaged replace with new screen.
4. There does not appear to be enough paint entering the can with each stroke or with the total number of average strokes.
 - a) 15 strokes of the piston should equal 5.3 fluid ounces of paint. Check calibration of machine by placing empty cleaning can in position and pump 15 strokes of solvent into can. Measure liquid to ensure 5.3 fluid ounces.
 - b) Follow all instructions 3a through 3d.
 - c) Check piston o-ring (FNS-0081) for damage or excessive wear. Replace if necessary.



FNS-0001 Filler Asseblly



FNS-0011 Injector Point Assembly

FILL-N-SPRAY MODEL 75 PARTS LIST

25-001	Set Screw	35-055	Mount Plate
25-002	Stop	35-056	Slide Block Safety Valve Mount
25-003	Cam Shaft	35-057	Valve w/Ball Actuator
25-004	Cam	35-058	Spring, Return
25-005	Handle Ball	35-059	Valve, Main
25-006	Handle Stem	35-060	Counter
25-007	Handle Mount	35-061	Cover w/Frame
25-015	Gauge	35-062	Manifold
25-016	Filter Regulator (complete)	75-008	Base
25-017	Filter Bowl	75-009	Door Safety Stop
25-018	Filter Element	75-010	Door w/Knob & Latch
25-019	Screw	75-011	Hinge
25-020	Fitting	75-012	Reservoir Locator, Front
25-021	Air Chamber	75-013	Cabinet
25-024	Mounting Bracket w/screws	75-014	Stiffner Plate
25-027	Screw -Valve Mounting	75-022	Top Cover
25-028	Screw-Manifold Mount	75-023	Identification Plate
25-029	Gasket	75-023	Decal
25-030	Muffler	75-048	Pump Piston
25-031	Manifold Block	75-063	Bushing, Cam Shaft Inner
25-032	Bolt Cycle Cap	75-064	Block
25-033	O-Ring Manifold Block	75-065	Bushing, Cam Shaft Outer
25-035	O-Ring	75-066	Stand Off-Valve Mount
25-036	Barrel, Main Cycle	75-067	Splash Shield
25-037	Nut	75-068	Rear Reservoir Locator
25-038	Piston, Main Cycle	100-43	Valve, Stop
25-039	Seal, Piston	100-16	Can Platform
25-040	O-Ring, Rod to Piston	100-22	Reservoir, Gallon
25-041	Rod, Main Cycle	100-23	Reservoir Lid w/Handle
25-042	O-Ring Manifold Tube	100-45	Rod Wiper
25-043	Manifold Tube	100-49	Seal, Main Cycle Rod
25-044	Bushing, Main Cycle Rod	FNS-0011	Injector Point Assembly
25-046	Cylinder Base	FNS-0023	Injector O-Ring
25-048	Bottom Cap Main Cycle	FNS-0024	Injector Screen
25-052	Screw, Can Platform	FNS-0030	Main Body Nut
25-054	Support Bushing	FNS-0040	Main Body, Assembly
35-025	Start Valve	FNS-0060	Can Locator
35-026	Timing Valve	FNS-0061	Can Locator Spring
35-026	Flow Control	FNS-0070	Main Body O-Ring
35-034	Top Cap Main Cycle	FNS-0081	Plunger O-Ring
35-053	Platform Shaft-Sub Assembly		



710 Forest Avenue • Sheboygen Falls, WI 53085
P: (920) 467-7850 • email: aerosol@diamondvogel.com • diamondvogel.com/aerosol