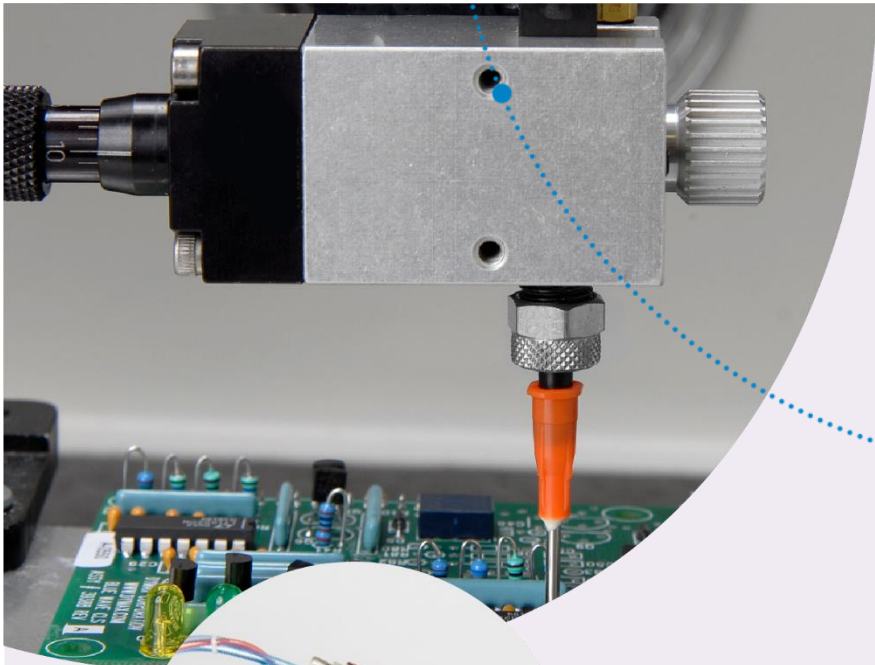


SG-150 Systems

Manually-Controlled Spray Gun System
User Guide



About Dymax

UV/Visible light-curable adhesives. Systems for light curing, fluid dispensing, and fluid packaging.

Dymax manufactures industrial, light-curable, epoxy, and activator-cured adhesives. We also manufacture a complete line of manual fluid dispensing systems, automatic fluid dispensing systems, and light-curing systems. Light-curing systems include LED light sources, spot, flood, and conveyor systems designed for compatibility and high performance with Dymax adhesives.

Dymax adhesives and light-curing systems optimize the speed of automated assembly, allow for in-line inspection, and increase throughput. System designs enable stand-alone configuration or integration into your existing assembly line.

Please note that most dispensing and curing system applications are unique. Dymax does not warrant the fitness of the product for the intended application. Any warranty applicable to the product, its application, and use is strictly limited to that contained in the Dymax standard Conditions of Sale. Dymax recommends that any intended application be evaluated and tested by the user to ensure that desired performance criteria are satisfied. Dymax is willing to assist users in their performance testing and evaluation by offering equipment trial rental and leasing programs to assist in such testing and evaluations. Data sheets are available for valve controllers or pressure pots upon request.

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Introduction

This guide describes how to use Dymax manually-controlled, spray gun systems. These systems include those comprised of an SG-150 spray gun (standard or high-flow model) used in conjunction with any one of the following reservoirs:

- Cartridge reservoir: 6, 12, or 20 (160, 300, or 550 mL)
- Bottle reservoir: 0.25 to 1.0 gal (0.5 to 3.78 L)
- Pail reservoir: 5 gal (15 L)

Sections in this guide describe how to assemble and setup each type of system.

Other Documentation Included

In addition to this guide, the following documentation is included with your spray gun system:

- MAN029 - Dymax Model 110 & 210 spray valve user guide
- OEM user guides for the air regulators
- Pail opener technical bulletin (only included with systems using a pail reservoir)

Intended Audience

Dymax prepared this user guide for experienced process engineers, maintenance technicians, and manufacturing personnel. If you are new to pneumatically-operated fluid dispensing systems and do not understand the instructions, contact Dymax Application Engineering to answer your questions before using the equipment.

Where to Get Help

Customer Support and Application Engineering teams are available in the United States, Monday through Friday, from 8:00 a.m. to 5:30 p.m. Eastern Standard Time. You can also email Dymax at info@dymax.com. Please see the back cover for worldwide contact information.

Additional resources are available to ensure a trouble-free experience with our products:

- Detailed product information on www.dymax.com
- Dymax adhesive product data sheets on our website
- Safety data sheets (SDS) provided with shipments of Dymax adhesives

Safety



WARNING! If you use this fluid dispensing system without first reading and understanding the information in this guide, personal injury can result from the uncontrolled release of high-pressure gas, injection, or exposure to chemicals. To reduce the risk of injury, read and understand this guide before assembling and using the Dymax fluid dispensing system.

General Safety Considerations

All users of Dymax spray gun systems should read and understand this user guide before assembling and using the system.

To learn about the safe handling and use of dispensing fluids, obtain and read the Safety Data Sheet for each fluid before using the fluid. Dymax includes a Safety Data Sheet with each adhesive we sell. You can also request Safety Data Sheets for our products on our website.

Specific Safety Considerations

Using Safe Operating Pressures

Pressurizing the components in the dispensing system beyond the maximum recommended pressure can result in the rupturing of components and serious personal injury. To minimize the risk of rupturing components and injury, do not exceed the maximum operating pressure of the components in your fluid dispensing system. (See system specifications on page 35.)

Preventing Injection Injury

Discharging fluids or compressed air from the spray gun against your skin can cause very serious injection injury. To minimize the risk of injection injury, do not place the spray gun tip in contact with your skin.

Fire and Explosion Hazard for Spraying Applications



WARNINGS! Ground all equipment in the work area. Improper grounding, poor ventilation, open flames, or sparks can cause hazardous conditions and result in a fire, explosion, or other serious injury.



If static sparking occurs or an electric shock is felt while using the equipment, stop spraying immediately. Do not use the equipment until you identify and correct the problem.

Always work in a well-ventilated area. Some materials give off flammable fumes. Upon buildup, these fumes can result in a fire or explosion.

Electrically disconnect all the equipment in the spray area and extinguish all open flames or pilot lights. Do not smoke in the work area.

Do not turn on or off any light switch in the work area while operating or if fumes are present. Do not operate a gasoline engine in the work area.

Parts Included with the System

Your Dymax SG-150-RS or SG-150-RH spray gun system can be one of four types: cartridge reservoir system, bottle reservoir system, pail reservoir system, or a system without a fluid reservoir (customer supplies fluid reservoir system). Each type of system includes different parts as described below.

Parts Included with Cartridge Reservoir Systems

Cartridge reservoir systems include these parts:

- SG-150-RS or SG-150-RH spray gun with controlling air regulators
- Spray gun stand
- Air filter/regulator
- Air precision regulator that includes three pressure gauges:
 - 0-30 psi (0-2 bar) for very low- to medium-viscosity materials
 - 0-60 psi (0-4.1 bar) for medium-viscosity materials
 - 0-100 psi (0-6.9 bar) for high-viscosity materials
- Air line kit—length of blue 1/4-in. (6.3-mm) OD tubing with fitting on one end
- Air line kit—length of blue 1/4-in. (6.3-mm) OD tubing
- Fluid line kit—length of black 3/8-in. (9.5-mm) OD tubing
- One cartridge reservoir retainer for 6-, 12-, or 20-oz (160-, 300-, or 550-mL) cartridge reservoir
- One empty, reusable cartridge reservoir (shipped inside retainer)
- Lab stand

Parts Included with Bottle Reservoir Systems

Bottle reservoir systems include these parts:

- SG-150-RS or SG-150-RH spray gun with controlling air regulators
- Spray gun stand
- Air filter/regulator
- Air precision regulator (mounted on bottle reservoir tank) that includes three pressure gauges:
 - 0-30 psi (0-2 bar) for very low- to medium-viscosity materials
 - 0-60 psi (0-4.1 bar) for medium-viscosity materials
 - 0-100 psi (0-6.9 bar) for high-viscosity materials
- Air line kit—length of blue 1/4-in. (6.3-mm) OD tubing
- Fluid line kit—length of black 3/8-in. (9.5-mm) OD tubing
- One bottle reservoir tank for either 0.26-gal (1-L) and 0.5-gal (2-L) bottle reservoirs or for 0.26-gal (1-L), 0.5-gal (2-L) and 1.0-gal (3.78-L) bottle reservoirs

Parts Included with Pail Reservoir Systems

Pail reservoir systems include these parts:

- SG-150-RS or SG-150-RH spray gun with controlling air regulators
- Spray gun stand
- Air precision regulator (mounted on pail reservoir retainer) that includes three pressure gauges:
 - 0-30 psi (0-2 bar) for very low- to medium-viscosity materials
 - 0-60 psi (0-4.1 bar) for medium-viscosity materials
 - 0-100 psi (0-6.9 bar) for high-viscosity materials
- A pail reservoir tank for 5-gal (15-L) pail reservoirs
- Incoming air filter
- Incoming shutoff valve
- Fluid line kit—length of black 3/8-in. (9.5-mm) OD tubing

Parts for Systems Supplied Without a Retainer or Tank

Systems where the customer provides the holder for the fluid reservoir include these parts:

- SG-150-RS or SG-150-RH with controlling air regulators
- Spray gun stand
- Air filter/regulator
- Air precision regulator that includes three pressure gauges :
 - 0-30 psi (0-2 bar) for very low- to medium-viscosity materials
 - 0-60 psi (0-4.1 bar) for medium-viscosity materials
 - 0-100 psi (0-6.9 bar) for high-viscosity materials
- Air line kit—length of blue 1/4-in. (6.3-mm) OD tubing
- Air line kit—length of blue 1/4-in. (6.3-mm) OD tubing with fitting on one end
- Fluid line kit—length of black 3/8-in. (9.5-mm) OD tubing

Terminology

This user guide uses the following terminology:

Reservoir or Fluid Reservoir—A reservoir or fluid reservoir refers to cartridge reservoirs, bottle reservoirs, and pail reservoirs.

Cartridge Reservoir—A cartridge reservoir is a polypropylene tube with an outlet port on one end and a piston on the other end. Cartridge reservoirs are held and pressurized using a cartridge reservoir retainer.

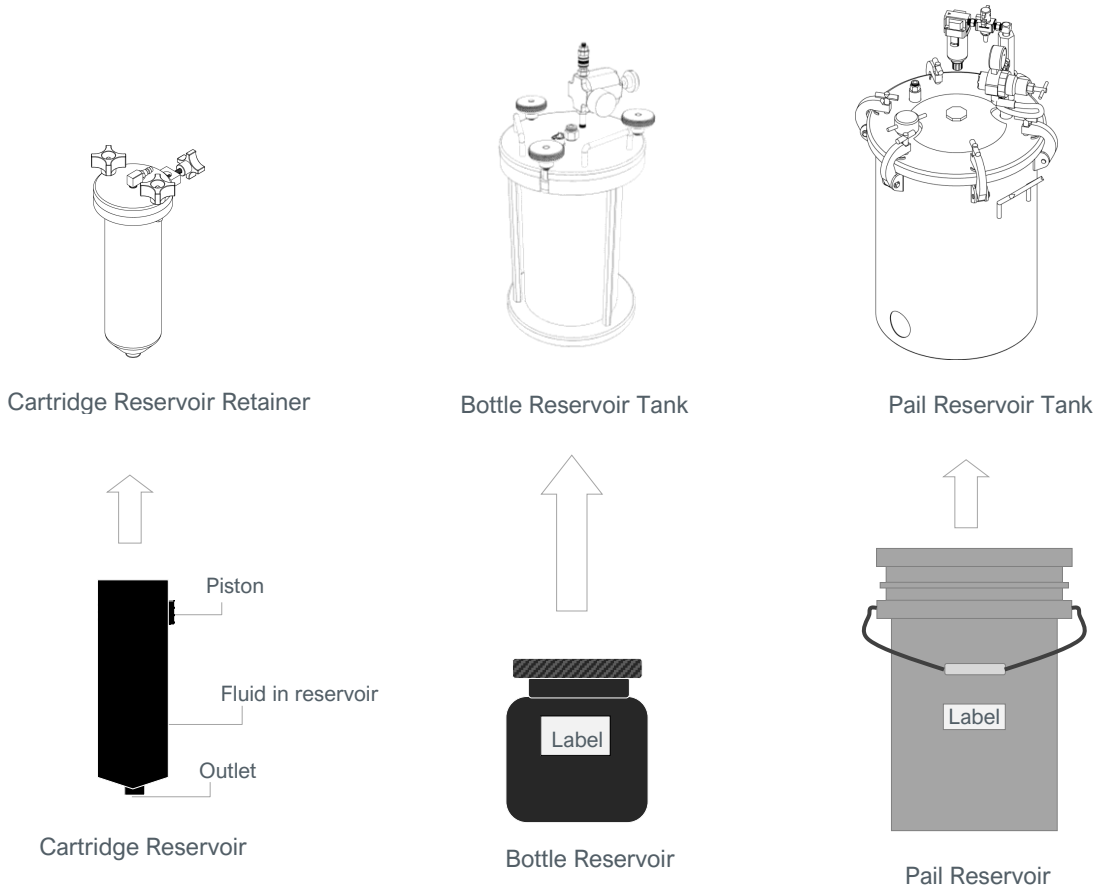
Bottle Reservoir—A bottle reservoir is a plastic polypropylene container with a screw-on cap. You place an opened bottle reservoir into a bottle reservoir tank (Figure 1).

Pail Reservoir—A pail reservoir is a 5-gal (15-L) plastic polypropylene pail with a pry-off cover. You place an opened pail reservoir into a pail reservoir tank.

Cartridge Reservoir Retainer—A cartridge reservoir retainer is a metal housing with a cover that holds a cartridge reservoir. The top of the retainer seals the top of the cartridge reservoir. The bottom of the retainer includes a hole from which the outlet port of the cartridge reservoir protrudes. Pressurizing the top of the retainer pushes the cartridge reservoir piston down which pushes the fluid from the outlet port.

Bottle Reservoir Tank and Pail Reservoir Tank—Bottle and pail reservoir tanks are similar in operational design. For example, you place an opened reservoir bottle in the reservoir tank and seal the tank. A flexible or rigid dip tube with an outlet on the tank cover is submerged in the fluid. When you pressurize the bottle reservoir tank, fluid is driven up the dip tube and out of the tank for dispensing.

Figure 1. Identification of Reservoir Retainer, Reservoir Tanks, and Fluid Reservoirs (illustrations are not to scale)

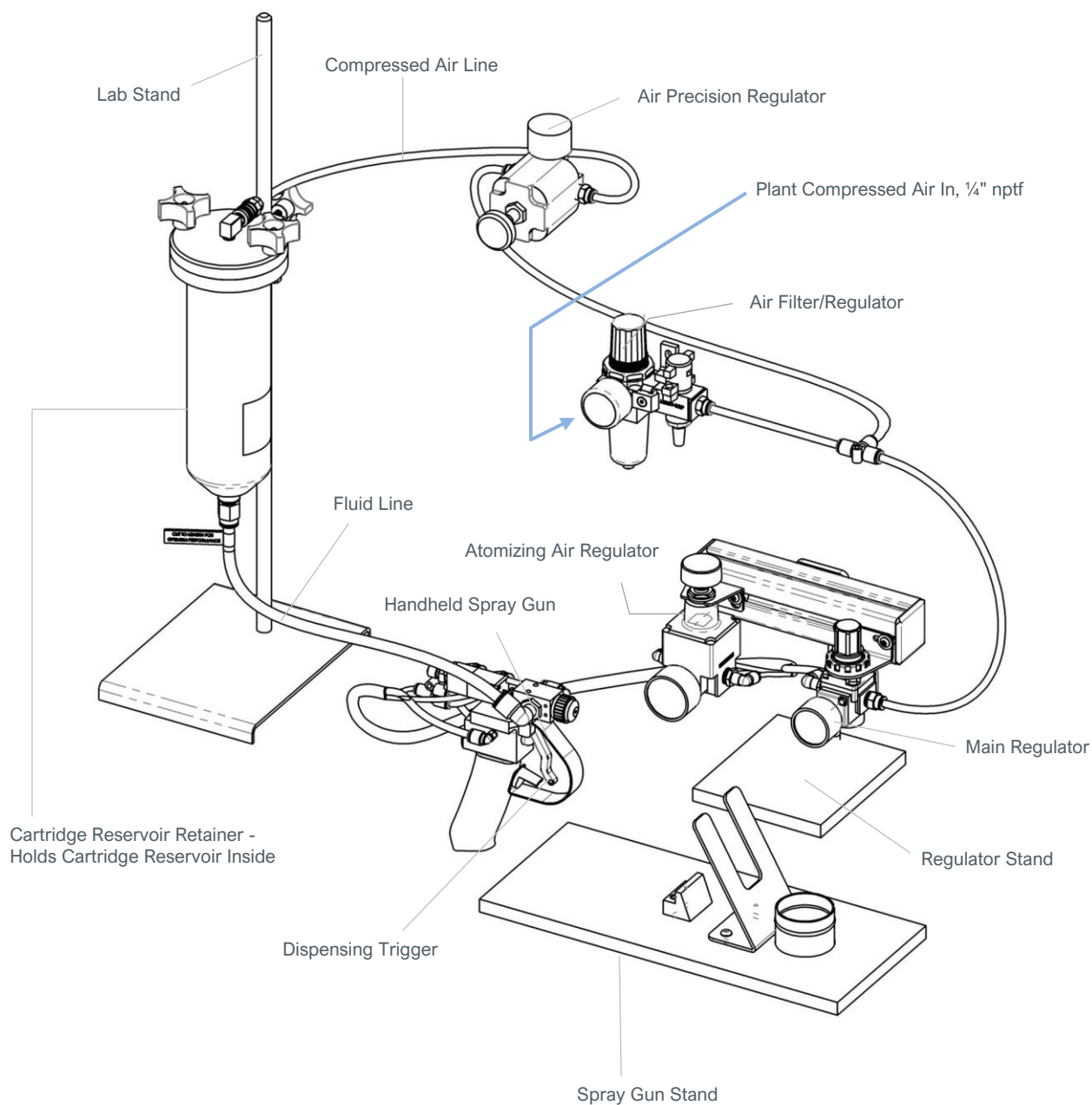


Overview of the Spray Gun System

How the Spray Gun System Works

The Dymax manually-controlled spray gun system uses compressed air to pressurize the fluid reservoir. The pressure pushes fluid from the reservoir through the fluid line to the handheld spray gun. When you open the spray gun by squeezing the trigger, fluid flows into the spray gun where it is atomized and sprays through the spray cap (Figure 2).

Figure 2.
Typical Setup of the Spray Gun System with 20-oz Fluid Reservoir



Special Features of the Spray Gun System

Features	Benefits
All wetted components on the spray gun are stainless steel, PTFE, or KKM	Spray gun is compatible with a greater number of fluids
Lightweight spray gun with low trigger resistance	Ergonomic design allows for hours of effortless spraying
Easy adjustment of material flow and spray atomization	Greater dispensing accuracy with less material waste
Pneumatically operated	No electrical power required
Sealed fluid body with no exposure to ambient conditions	Easy shutdown and cleanup
Safety relief valves on bottle and pail reservoir tanks	Provides a safer system for users
Pail reservoir tanks manufactured from stainless steel	Compatible with a greater number of fluids
Air filter/regulator shutoff valve depressurizes system when shutoff valve is closed	Provides a safer system for users
High quality, air precision regulator supplied with three pressure gauges (with different pressure ranges)	Ability to select the appropriate gauge for accurate measurement and control of reservoir pressure

When replacing system parts, ensure the quality of replacement parts matches the quality of the original equipment parts to maintain the safety and operational performance of the system.

Description of Main Components

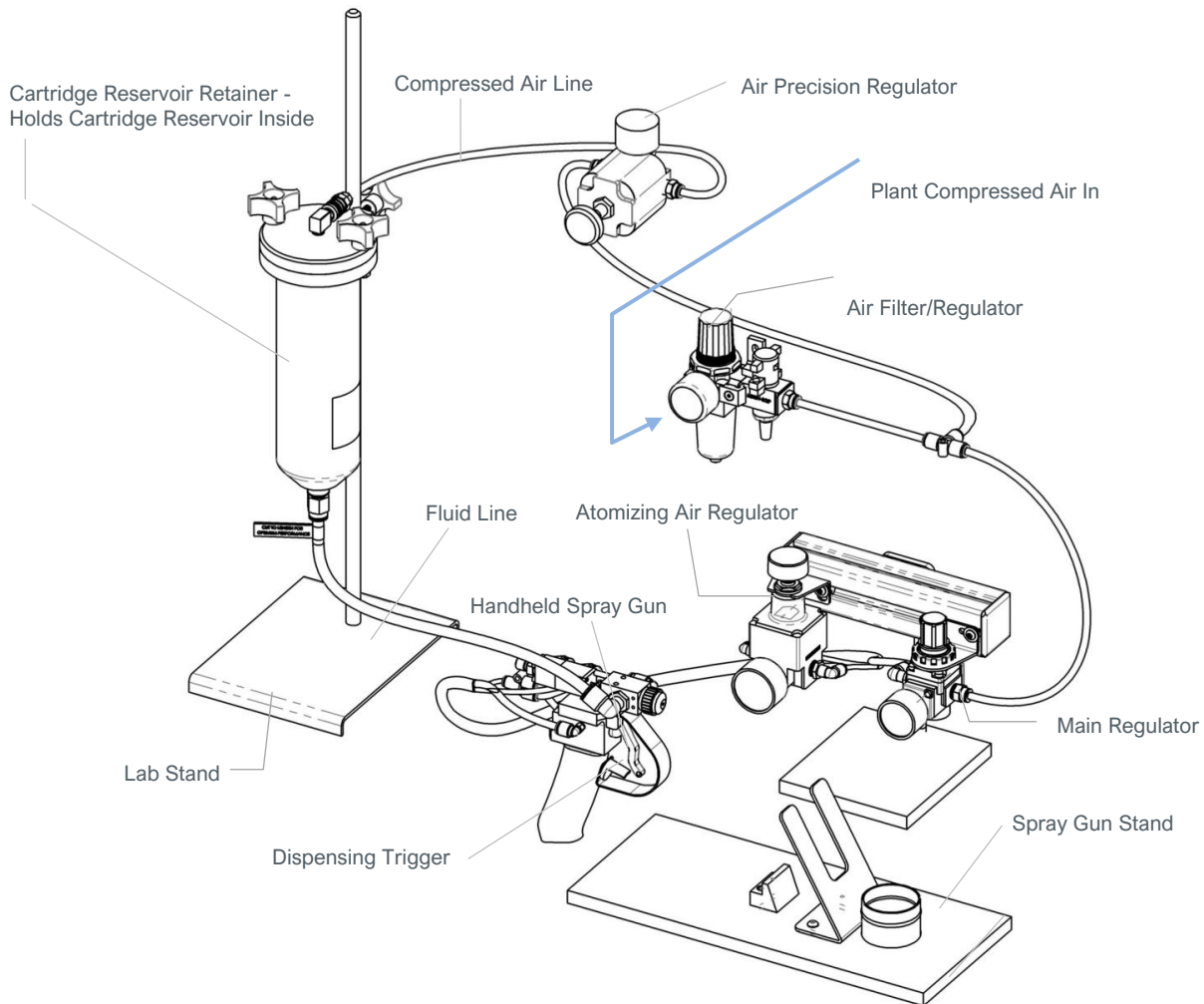
The main components in a manually-controlled spray gun system include (Figure 3):

1. **Air Filter/Regulator**—The air filter/regulator enables you to reduce the pressure of the plant incoming air to a pressure useable by the dispensing system. The air filter/regulator includes:
 - a. Filter bowl with coalescing filter to remove solid and fluid contaminants from the compressed air.
 - b. Pressure gauge that displays the pressure of air after it is regulated.
 - c. Pressure control knob that enables you to adjust the pressure of the air.
 - d. Shutoff valve that enables you to start and stop the flow of air into the system. In the Closed position, the shutoff valve also depressurizes the system by exhausting air through its exhaust port.
2. **Air Precision Regulator**—The air precision regulator enables you to precisely control the air pressure in the fluid reservoir. The air precision regulator includes:
 - a. Pressure gauge that displays the pressure in the fluid reservoir. A 0- to 60-psi (0- to 4.1-bar) pressure gauge is installed on the air regulator. Two alternative-scale pressure gauges are supplied and you can substitute these gauges for the installed gauge to match your operating pressure requirements.
 - b. Pressure control knob that enables you to adjust the pressure of the air entering the reservoir.
3. **Compressed Air Line**—The air line consists of translucent blue polyurethane tubing designed for compressed air use.
4. **Reservoir Retainer or Reservoir Tank**—The reservoir retainers and tanks hold fluid reservoirs. Reservoir retainers accept cartridge reservoirs. Reservoir tanks accept bottle and pail reservoirs.
5. **Fluid Line**—The fluid dispensing line consists of black light-blocking polyethylene tubing compatible with the chemistries of Dymax fluids and many types of commercial adhesives and fluids.
6. **Handheld Spray Gun**—The handheld spray gun enables you to easily spray fluids and provides trigger control. Spraying begins when the operator squeezes the trigger and stops when the trigger is released. *The spray gun*

includes a round spray cap for circular spray pattern but an optional flat spray cap is available for a linear spray pattern. The spray gun assembly also includes two regulators. One for controlling the operating air for the gun and the other for controlling the atomizing air used to create the spray.

7. **Laboratory Stand**—Cartridge reservoir systems include a laboratory stand to support the cartridge reservoir retainer.
8. **Spray Gun Stand**—The spray gun stand provides a convenient way to hold the handheld spray gun in the recommended position when it is not in use.

Figure 3.
Components of a 20-oz (550-mL) Manually-Controlled Spray Gun System



Types of Reservoir Retainer and Tanks

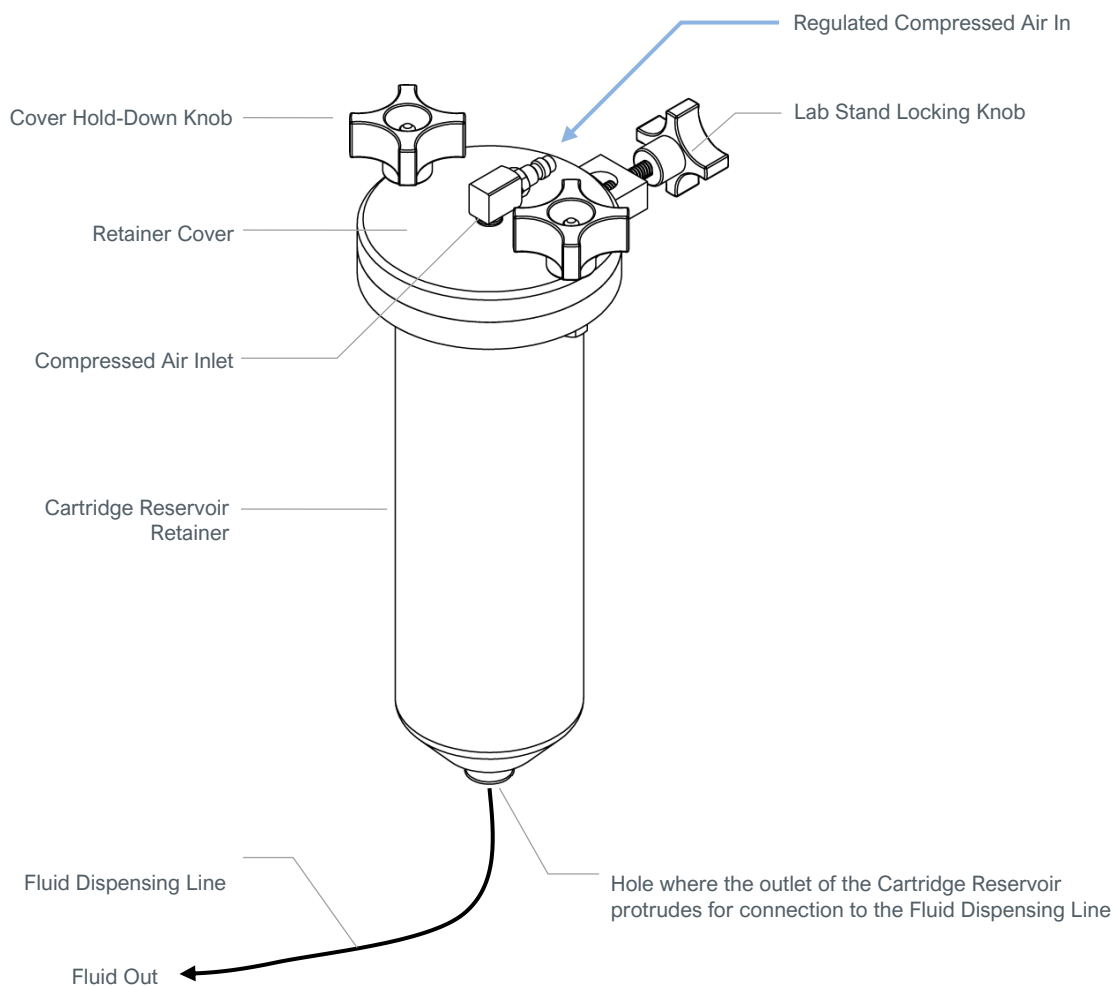
Depending on the dispensing system you ordered, your system includes a cartridge reservoir retainer or a bottle/pail reservoir tank. [If you ordered a system without a retainer/tank, no retainer/tank is included in the order.]

Retainer and tank configurations and process connection points are shown below (Figure 4, Figure 5, and Figure 6).

Cartridge Reservoir Retainers

Cartridge reservoir retainers are supplied in three sizes but the design features of each are similar (Figure 4). Each cartridge reservoir retainer includes one empty, reusable cartridge reservoir that you can fill with fluid for dispensing.

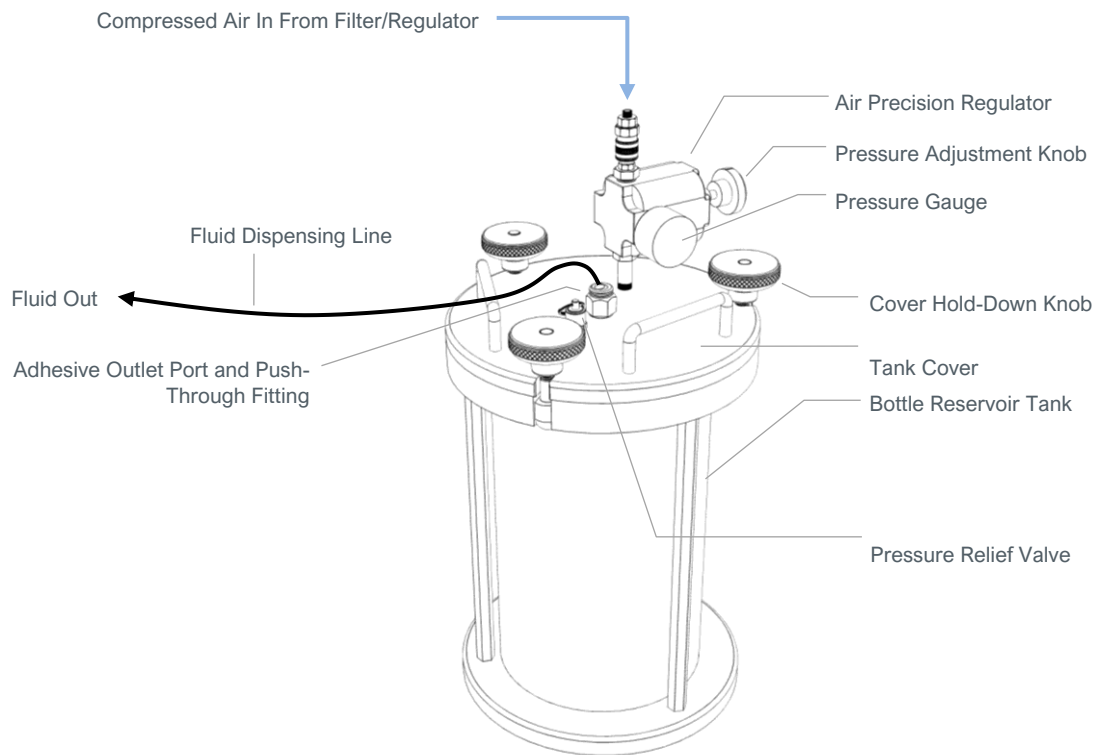
Figure 4.
Reservoir Retainer for Cartridge Reservoir System



Bottle Reservoir Tank

The bottle reservoir tank includes a push-through fitting on the tank cover. You push the fluid dispensing line through the fitting and into the tank to form a dip tube. When the tank is pressurized, the fluid is pushed up the dip tube and into the fluid dispensing line (Figure 5). The air precision regulator is permanently attached to the cover of the tank.

Figure 5.
Retainer for Bottle Drop-In Reservoir

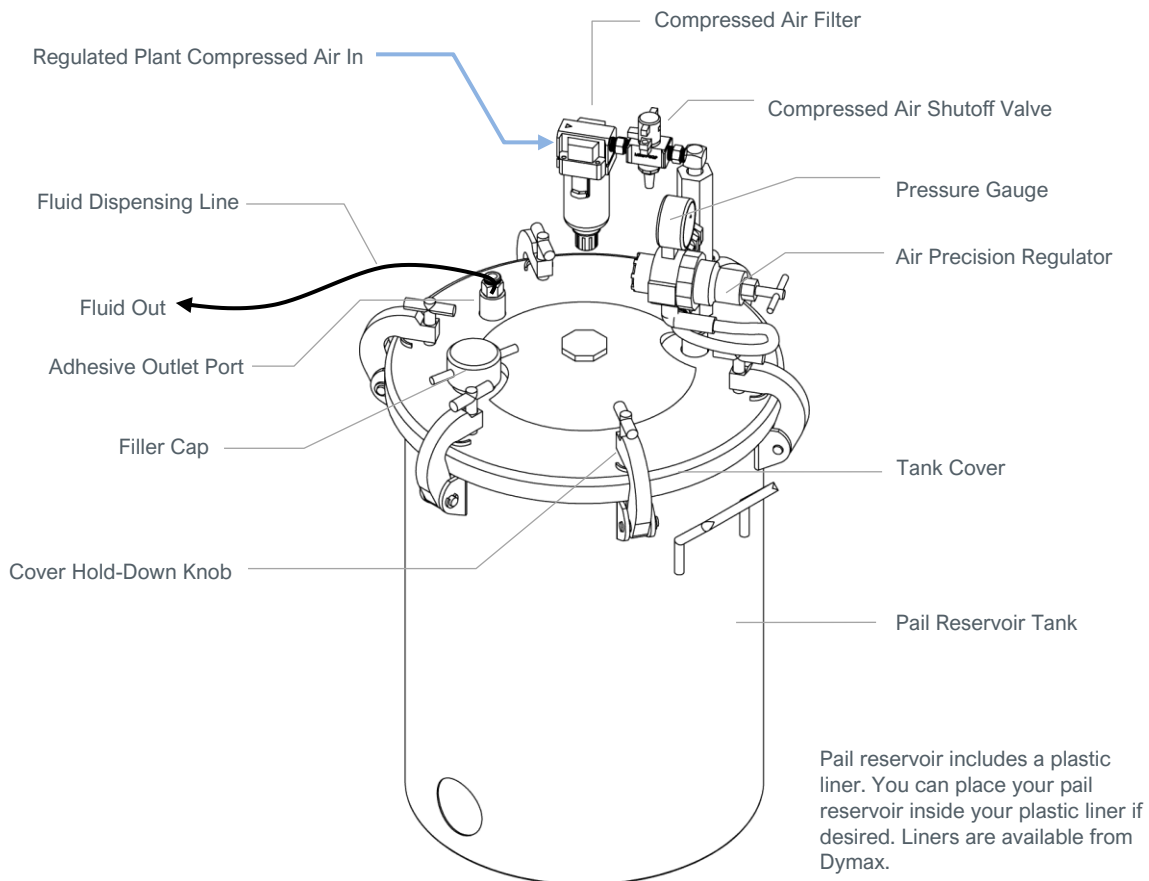


Pail Reservoir Tank

The pail reservoir tank includes a metal dip tube with an outlet fitting on the tank cover. If desired, you can configure the dip tube as a flexible tube using the supplied dispensing line by pushing the line through the supplied push-through fitting.

The fluid dispensing line is connected to the dip tube fitting. The pressure in the tank pushes the fluid up the dip tube and into the fluid dispensing line. The tank cover includes a permanently-mounted compressed air filter and shutoff valve. The cover also includes a permanently attached air precision regulator and safety pressure relief valve (Figure 6).

Figure 6.
Pail Reservoir Tank Components



Assembling the System (All Systems)

Unpacking and Inspecting Your Shipment

Your system arrives in one or more boxes depending upon which system you ordered. Inspect the boxes for damage and notify the shipper of box damage immediately.

Open each box and check for equipment damage. If parts are damaged, notify the shipper and submit a claim for the damaged parts. Contact Dymax so that we can ship new parts to you immediately.

Check that the parts included in your order match those listed in the Parts section on page 7. If parts are missing, contact your local Dymax representative or our Customer Support team to resolve the problem.

Utilities Required

The spray gun system requires 60 to 100 psi (4.1 to 6.9 bar) of clean, dry, compressed air, nitrogen, or other inert gas. A compressed air flow rate of 2-4 scfm provides sufficient flow for all systems.

Choosing and Installing an Alternative Pressure Gauge

Your system includes a 0- to 60-psi (0- to 4.1-bar) pressure gauge installed on the air precision regulator. Your system also includes two alternative pressure gauges — 0 to 30 psi or 0 to 100 psi (0 to 2 bar or 0 to 6.9 bar) — which you can install if needed. If you know you will pressurize the fluid reservoir to the 0 to 30 psi or 0 to 100 psi (0 to 2 bar or 0 to 6.9 bar) pressure range, install the appropriate pressure gauge before assembling your system. If you are not sure of the reservoir pressure range at which you will run the system, start with the installed pressure gauge and change to one of the alternative pressure gauges if needed.

Initial Setup of the Spray Gun

The SG-150 spray gun is designed for ease of setup. All air connections come pre-installed except for the connection between the shop air and the main regulator. The fluid line must be connected to the 3/8" OD tubing fitting (recommended 3/8" OD Fluid Line Kit PN T16787) on the spray valve. Before operation, check that the material lines and air lines are secure and 100% inserted.

Assembling the System

The following chapters describe how to assemble each of the four types of dispensing systems:

- A—Cartridge reservoir systems (Page 17)
- B—Bottle reservoir systems (Page 20)
- C—Pail reservoir systems (Page 22)
- D—Systems with a customer-supplied retainer/tank (Page 24)

A—Assembling Cartridge Reservoir Systems

Assembling a cartridge reservoir system involves completing two main processes:

A1—Connecting air filter/regulator to the air precision regulator, the cartridge retainer and to the spray gun

A2—Connecting the cartridge reservoir to the spray gun

NOTE: Ensure that you plumb the air lines correctly at the inlets and outlets of the dispensing system components. The dispensing system will not function properly if you plumb the compressed air lines incorrectly.

A1—Connecting Air Regulators to the Retainer Cover

1. Assemble the laboratory stand and place it on the work table.
2. Mount the reservoir retainer on the lab stand and secure it in place using the locking knob.
3. Securely mount the air filter/regulator in an upright position (filter bowl at the bottom) in accordance with the OEM instructions supplied with the air filter/regulator. Failing to securely mount the inlet pressure regulator in the upright position will prevent the regulator from removing moisture and particulates from the incoming compressed air.

Find the length of blue 1/4-in.ch (6.3-mm) OD air tubing without the fitting attached. Connect a suitable length of this tubing from the **outlet** port of the air filter/regulator to the **inlet** port on the air precision regulator (Figure 7). To connect the tubing, push the ends of the tubing into the fittings.

4. Find the length of blue 1/4-in.ch (6.3-mm) OD air tubing with the fitting attached. Connect a suitable length of this tubing to the **outlet** port of the air precision regulator by pressing the tubing end into the fitting on the regulator. Connect the fitting on the other end of the tubing to the air **inlet** fitting on the retainer cover.
5. Ensure the shutoff valve on the air filter/regulator is in the **Closed** position.
6. Connect your plant air supply to the **inlet** port of the air filter/regulator.

A2—Connecting the Spray Gun to the Cartridge Reservoir

Choosing a Dispensing Line Size

The first step in connecting the spray gun to the cartridge reservoir is to decide what size fluid line to use. The fluid line from the outlet of the cartridge reservoir to the spray gun can utilize the 3/8-in. (9.5-mm) OD tubing, 1/4-in. (6.3-mm) OD tubing, or the 3/8-in. (9.5-mm) AND 1/4-in. (6.3-mm) OD tubing.

- Use the 3/8-in. (9.5-mm) OD tubing for high flow or high viscosity applications.
- Use the 1/4-in. (6.3-mm) OD tubing for low flow rate applications or when using low viscosity fluids. (Sold separately in spare kit T16793.)
- Use the 3/8-in. (9.5-mm) OD tubing from the fluid reservoir and reduce it to 1/4-in. (6.3-mm) OD tubing near the Spray Gun for low flow rates and when using low viscosity fluids. Using the 1/4-in. (6.3-mm) OD tubing line at the spray gun provides a more flexible line that enables easier physical manipulation of the spray gun. (Sold separately in spare kit T16793.)

NOTE: For optimal dispensing performance, the length of all fluid lines should be as short as possible to reduce fluid pressure drop and other variations that may effect precision dispensing.

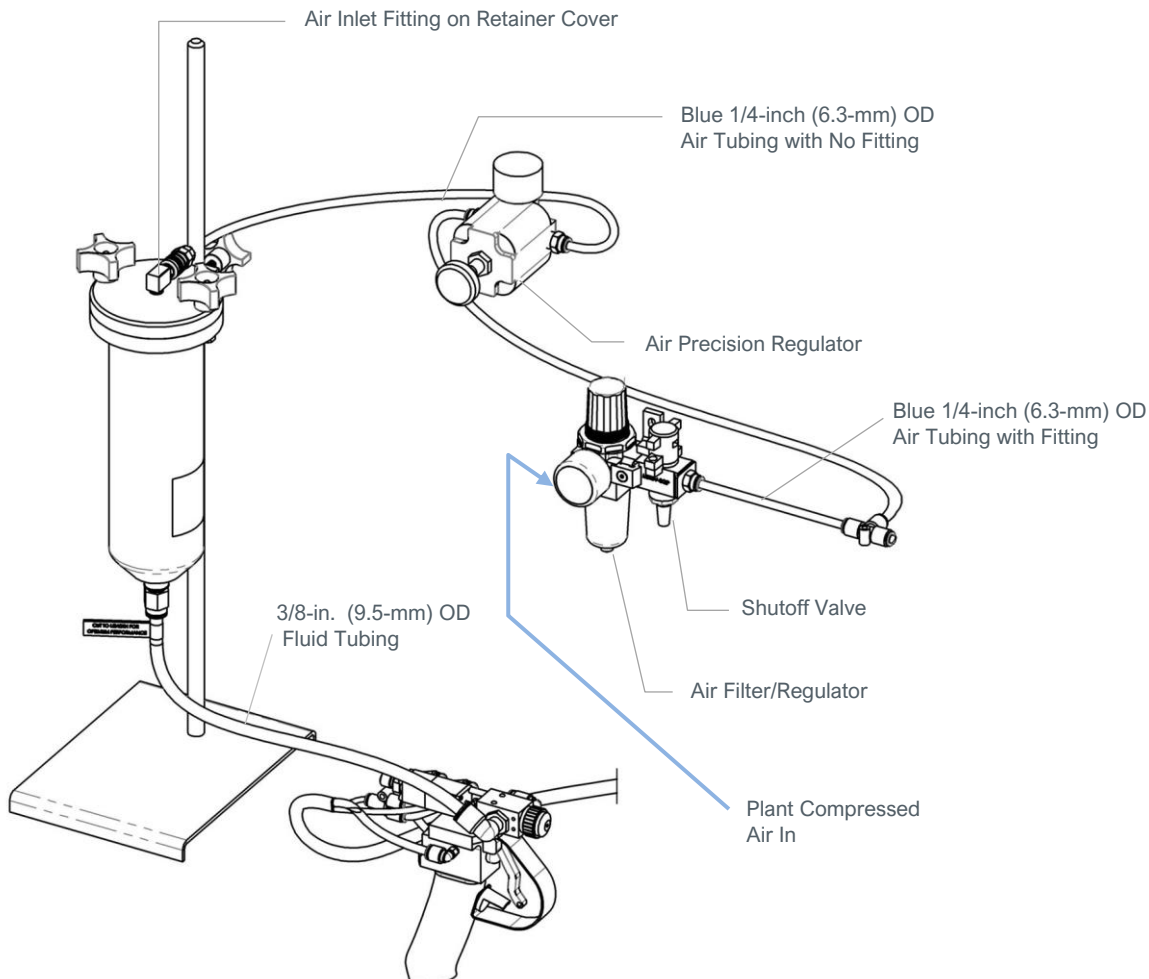
Tubing Reducer

Spare part kit T16793 includes a 3/8- to 1/4-in. (9.5- to 6.3-mm) OD tubing reducer. This reducer enables you to run the 3/8-in. (9.5-mm) fluid line from the reservoir outlet and reduce it to 1/4-in. (6.3-mm) OD tubing near the spray gun.

Stem Fitting Inserts Enable Use of 1/4-in. (6.3 mm) Fluid Tubing

Spare part kit T16793 includes two 3/8- to 1/4-in. (9.5- to 6.3-mm) stem fitting inserts. Pushing these inserts into the 3/8-in. (9.5-mm) fittings used on the cartridge reservoir outlet or the spray gun fluid inlet enables you to connect and use the 1/4-in. (6.3-mm) OD tubing for fluid dispensing.

Figure 7.
Dispensing Line Setup



Connecting the Cartridge Reservoir to the Spray Gun



WARNING! Some Dymax fluids can bond skin together in seconds. It can also irritate skin, eyes, and mucous membranes. To minimize the risk of bonded skin or irritation, wear protective gloves and eyewear when working with Dymax fluids and the hand-held spray gun system.

1. Remove the cover from the 6-, 12-, or 20-ounce reservoir retainer by loosening the cover hold-down knobs. Remove the empty cartridge reservoir if present.
2. Remove the plastic cover from the top of a Dymax or other cartridge reservoir.

3. Place the cartridge reservoir in the retainer so that the fluid outlet at the bottom of the cartridge extends through the hole in the bottom of the retainer.
4. Install the retainer cover on the retainer body and tighten the cover's hold-down knobs.
5. To prevent low viscosity fluids from flowing from the cartridge reservoir when you remove the outlet plug, remove the reservoir retainer from the lab stand and hold the retainer upside down.
6. Remove the plug from the cartridge reservoir outlet by unscrewing the plug.
7. Screw in the supplied 3/8-in. (9.5-mm) fitting into the reservoir outlet until it is just snug; then turn it about one additional half turn.

NOTE: Thread tape should be on the threads of the supplied 3/8-in. (9.5-mm) fitting. If the fitting does not have thread tape installed (or you are reusing the fitting), apply fresh thread tape to the fitting threads to prevent fluid leaks.

The Dymax-supplied 3/8-in. (9.5-mm) fitting is specially designed to fit the cartridge reservoir outlet. (The bottom three threads are machined from the fitting.) Using a standard fitting in place of the Dymax-supplied fitting will split the cartridge outlet port and lead to fluid leaks. Use only the Dymax-supplied fitting on the outlet port of a cartridge reservoir.

8. Determine the size of the dispensing line you want to use.
 - a. If using 3/8-in. (9.5-mm) tubing, go to the next step.
 - b. If using the 1/4-in. (6.3-mm) dispensing line, insert the 3/8- to 1/4-in. (9.5- to 6.3-mm) stem fitting inserts into the fittings on the cartridge reservoir outlet and the spray gun fluid inlet. This will enable you to connect the 1/4-in. (6.3-mm) dispensing line to the fittings.
 - c. If you want to reduce the dispensing line to 1/4 in. (6.3 mm) at the spray gun, insert the 3/8- to 1/4-in. (9.5- to 6.3-mm) stem fitting insert only into the fluid inlet fitting on the spray gun.

Determine the working length of the dispensing line from reservoir to spray gun and cut the line to length. The fluid line should be cut as short as possible to reduce pressure losses in the line, but long enough to enable you to work comfortably with the spray gun in the work area.

NOTE: If you are reducing the dispensing line from 3/8- to 1/4-in. (9.5- to 6.3-mm), cut the 3/8-in. (9.5-mm) line about 12 in. (30.5 cm) shorter than needed. Cut a 12-in. (30.5 cm) length of 1/4-in. (6.3-mm) OD tubing. Use the 3/8- to 1/4-in. (9.5- to 6.3-mm) OD tubing reducer to connect the two lines together (Figure 7). Connect one end of the dispensing line to the reservoir outlet fitting by pushing the line into the fitting.

9. Connect the other end of the dispensing line to the fluid inlet fitting on the spray gun by pushing the line into the fitting.
10. Turn the retainer right side up and install it back on the lab stand using the locking nut and knob on the retainer.

B—Assembling Bottle Reservoir Systems

Assembling a bottle reservoir system involves completing three main processes:

B1—Connecting the air filter/regulator to the bottle tank air precision regulator and to the spray gun

B2—Connecting the spray gun to the bottle tank

B3—Inserting the bottle reservoir in the tank

NOTE: *Ensure that you plumb the air lines correctly at the inlets and outlets of the dispensing system components. The dispensing system will not function properly if you plumb the compressed air lines incorrectly.*

B1—Connecting Air Regulators to the Tank Cover

1. Place the bottle reservoir on the workbench near the work area.
2. Securely mount the air filter/regulator in an upright position (filter bowl at the bottom). Failing to securely mount the air filter/regulator in the upright position will prevent regulator from removing moisture and particulates from the incoming compressed air.
3. Find the length of blue, 1/4-in. ch (6.3-mm) OD air tubing without the fitting attached. Connect a suitable length of this tubing from the outlet port of the air filter/regulator to the inlet port on the air precision regulator by pushing the ends of the tubing into the fittings.
4. Ensure the shutoff valve on the air filter/regulator is in the **Closed** position.
5. Connect your plant air supply to the inlet port of the air filter/regulator.

B2—Connecting the Spray Gun to the Tank Cover

Choose an Adhesive Line Configuration

The first step in connecting the spray gun to the reservoir in the bottle tank is to decide what size fluid line to use. The fluid line from the outlet of the bottle tank to the spray gun can utilize the 3/8-in. (9.5-mm) OD tubing or the 3/8-in. (9.5-mm) AND 1/4-in. (6.3-mm) OD tubing.

- Use the 3/8-in. (9.5-mm) OD tubing for high flow or high viscosity applications.
- Use the 3/8-in. (9.5-mm) OD tubing at the bottle tank and reduce it to 1/4-in. (6.3-mm) OD tubing at the spray gun for low flow rates and when using low viscosity fluids. Using the 1/4-in. (6.3-mm) OD tubing line at the spray gun provides a more flexible line that enables easier physical manipulation of the spray gun. (Sold separately in spare kit T16793.)

NOTE: *For optimal dispensing performance, the length of all fluid lines should be as short as possible to reduce fluid pressure drop and other variations that may affect precision dispensing.*

Tubing Reducer

Spare part kit T16793 includes a 3/8- to 1/4-in. (9.5- to 6.3-mm) OD tubing reducer. This reducer enables you to run the 3/8-in. (9.5-mm) fluid line from the bottle tank and reduce it to 1/4-in. (6.3-mm) OD tubing near the spray gun.

Stem Fitting Inserts Enable Use of 1/4-in. (6.3 mm) Fluid Tubing

Spare part kit T16793 also includes a 3/8- to 1/4-in. (9.5- to 6.3-mm) stem fitting insert. Pushing this insert into the 3/8-in. (9.5-mm) fitting on the fluid inlet of the spray gun enables you to connect the 1/4-in. (6.3-mm) dispensing line when you reduce the size of the line.

Connect the Spray Gun to the Bottle Tank Cover

1. Determine the size of the dispensing line you want to use.
 - a. If using 3/8-in. (9.5-mm) OD tubing, go to the next step.
 - b. If you want to use 3/8-in. (9.5-mm) OD tubing and reduce it to 1/4 in. (6.3 mm) at the spray gun, insert the 3/8- to 1/4-in. (9.5- to 6.3-mm) stem fitting insert into the fluid inlet fitting on the spray gun.
2. Insert the 3/8-in. (9.5-mm) OD tubing through the push-through fitting on the top of the tank cover. Grab the tubing as it protrudes on the underside of the tank cover and pull the tubing through to form a dip tube. The dip tube should be of sufficient length to reach the bottom of the tank when you place the tank cover on the tank.
3. Cut the other end of the dispensing line to a working length. The dispensing line should be cut as short as possible to reduce pressure loses in the line, but long enough to enable you to reach and work comfortably with the spray gun in the work area.

NOTE: If you are reducing the dispensing line from 3/8- to 1/4-in. (9.5- to 6.3-mm) cut the 3/8-in. (9.5-mm) line about 12 in. (30.5 cm) shorter than needed. Cut a 12-in. (30.5 cm) length of 1/4-in. (6.3-mm) OD tubing. Use the 3/8- to 1/4-in. (9.5- to 6.3-mm) OD tubing reducer to connect the two lines (Figure 7).

4. Insert the fluid dispensing line into the fitting on the spray gun by pushing the line into the fitting.

B3—Inserting the Bottle Reservoir in the Tank



WARNING! Some Dymax fluids can bond skin together in seconds. It can also irritate skin, eyes, and mucous membranes. To minimize the risk of bonded skin or irritation, wear protective gloves and eyewear when working with Dymax fluids and the hand-held spray gun system.

NOTE: Exposing Dymax adhesives to light causes most Dymax adhesives and fluids to begin curing. Hence, to prevent unintentional curing during the loading of bottle reservoirs, have the reservoir tank ready to accept the bottle reservoir and complete the loading process quickly after opening the bottle reservoir.

1. Remove the cover from the bottle reservoir tank by loosening the cover hold-down knobs.
2. Unscrew the cover from a 0.26-gal (1-L) or 0.5-gal (2-L) bottle reservoir and place the reservoir into the tank. Complete this step quickly to prevent curing of light-sensitive fluids.
3. Install the tank cover on the tank, ensuring the dip tube is inserted in the bottle reservoir. Complete this step quickly to prevent curing of light-sensitive fluids.
4. Tighten the cover hold-down knobs.

C—Assembling Pail Reservoir Systems

Assembling a pail reservoir system involves completing three main processes:

C1—Connecting the air filter/regulator to the air precision regulator on the tank cover

C2—Connecting the spray gun to the pail tank cover

C3—Inserting the pail reservoir in the tank

NOTE: *Ensure that you plumb the air lines correctly at the inlets and outlets of the dispensing system components. The dispensing system will not function properly if the compressed air lines are plumbed incorrectly.*

C1—Connecting Air Regulators to the Tank Cover

1. Place the pail reservoir on the floor near the work area.
2. Ensure your plant air supply is regulated to 80 to 100 psi (5.5 to 6.9 bar).
3. Ensure the compressed air shutoff valve on the tank cover is in the **Closed** position.
4. Connect your compressed air supply to the inlet of the filter on the tank cover using a customer-supplied 1/4-in. (6.3-mm) male NPT fitting.

C2— Connecting the Spray Gun to the Tank Cover

Choose an Adhesive Line Configuration

The first step in connecting the spray gun to the reservoir in the pail tank is to decide what size fluid line to use. The fluid line from the outlet of the bottle tank to the spray gun can utilize the 3/8-in. (9.5-mm) OD tubing, or the 3/8-in. (9.5-mm) AND 1/4-in. (6.3-mm) OD tubing.

- Use the 3/8-in. (9.5-mm) OD tubing for high flow or high viscosity applications.
- Use the 3/8-in. (9.5-mm) OD tubing at the pail tank and reduce it to 1/4-in. (6.3-mm) OD tubing at the spray gun for low flow rates and when using low viscosity fluids. Using the 1/4-in. (6.3-mm) OD tubing line at the spray gun also provides a more flexible line that enables easier physical manipulation of the spray gun. (Sold separately in spare kit T16793.)

NOTE: *For optimal dispensing performance, the length of all fluid lines should be as short as possible to reduce fluid pressure drop and other variations that may affect precision dispensing.*

Tubing Reducer

Spare part kit T16793 includes a 3/8- to 1/4-in. (9.5- to 6.3-mm) OD tubing reducer. This reducer enables you to run the 3/8-in. (9.5-mm) fluid line from the bottle tank and reduce it to 1/4-in. (6.3-mm) OD tubing at the spray gun.

Stem Fitting Inserts Enable Use of 1/4-in. (6.3 mm) Fluid Tubing

Spare part kit T16793 includes a 3/8- to 1/4-in. (9.5- to 6.3-mm) stem fitting insert. Pushing this insert into the 3/8-in. (9.5-mm) fitting on the fluid inlet of the spray gun enables you to connect the 1/4-in. (6.3-mm) dispensing line when you reduce the size of the line.

Connect the Spray Gun to the Pail Tank

1. Determine the size of the dispensing line you want to use.
 - a. If using 3/8-in. (9.5-mm) OD tubing, go to the next step.
 - b. If you want to use 3/8-in. (9.5-mm) OD tubing and reduce it to 1/4 in. (6.3 mm) at the spray gun, insert the 3/8- to 1/4-in. (9.5- to 6.3-mm) stem fitting insert into the fluid inlet fitting on the spray gun.
2. Determine the working length of the dispensing line from pail tank to the spray gun and cut the line to length. The fluid line should be cut as short as possible to reduce pressure loses in the line, but long enough to enable you to reach and work comfortably with the spray gun in the work area.

NOTE: *If you are reducing the dispensing line from 3/8- to 1/4-in. (9.5- to 6.3-mm), cut the 3/8-in. (9.5-mm) line about 12 in. (30.5 cm) shorter than needed. Cut a 12-in. (30.5 cm) length of 1/4-in. (6.3-mm) OD tubing. Use the 3/8- to 1/4-in. (9.5- to 6.3-mm) OD tubing reducer to connect the two lines together (Figure 7).*
3. Connect one end of the dispensing line to the outlet fitting on the tank cover by pushing the line into the fitting.
4. Connect the other end of the line to the fluid inlet fitting in the spray gun by pushing the line into the fitting.

C3—Inserting the Pail Reservoir in the Tank



WARNING! *Some Dymax fluids can bond skin together in seconds. It can also irritate skin, eyes, and mucous membranes. To minimize the risk of bonded skin or irritation, wear protective gloves and eyewear when working with Dymax fluids and the hand-held spray gun system.*

NOTE: *Exposing Dymax adhesives to light causes most Dymax adhesives and fluids to begin curing. Hence, to prevent unintentional curing during the loading of pail reservoirs, have the reservoir tank ready to accept the pail reservoir and complete the loading process quickly after opening the pail reservoir.*

1. Remove the cover from the pail reservoir tank by loosening the cover hold-down knobs.
2. Ensure the metal dip tube is in place and attached to the bottom of the tank cover.
3. Open the 5-gal (15-L) pail using the pail opener supplied with your pail reservoir system. The enclosed technical bulletin describes how to use the tool.
4. Quickly lift the pail reservoir and place it in the tank.
5. Quickly install the tank cover on the tank, ensuring the dip tube is inserted in the pail reservoir.
6. Tighten the cover hold-down knobs to seal the tank.

D—Assembling Systems with a Customer-Supplied Reservoir Retainer/Tank

If you are supplying your own reservoir retainer/tank, Dymax recommends reviewing the three assembly procedures presented above and choosing the assembly procedures that best matches your retainer/tank configuration. Then adapt that assembly procedure to your system.

Preparing the System for Use

Before using your system, you must complete two steps:

1. Purge the air from the fluid line
2. Adjust the flow rate of the dispensing system to meet your needs

The steps below describe how to accomplish these tasks.



WARNING! Pressurizing the components in the dispensing system beyond the maximum recommended pressure can result in the rupturing of components and serious personal injury. To minimize the risk of rupturing components and injury, do not exceed the maximum operating pressure of the components in your fluid dispensing system.

Discharging fluids or compressed air against your skin can cause very serious injection injury. To minimize the risk of injection injury, do not place the spray cap in contact with your skin.

Purge the Air from the Fluid Line

NOTE: When adjusting the air pressure using the air regulators, turn the adjustment knobs slowly as follows: Turn the adjustment knobs clockwise to increase the pressure entering the system. Turn the adjustment knob counterclockwise to decrease the pressure entering the system.

Follow these steps to purge the air from the fluid line:

1. Close the air precision regulator by rotating the pressure adjustment knob counterclockwise until it stops.
2. Close the air filter/regulator's shutoff valve (or on pail reservoir systems, close the compressed air shutoff valve).
3. Ensure compressed air is being supplied to the inlet of the air filter/regulator.
4. Adjust the pressure on the air filter/regulator to approximately 70 psi (4.8 bar).
5. Adjust the pressure on the air precision regulator to 5 psi (0.35 bar).
6. Place the dispensing end of the spray gun into a waste cup and depress the dispense lever on the gun. After a short period of time, fluid should begin flowing down the fluid line purging the air from the line.
7. If you are using a high viscosity fluid, and the fluid does not flow from the spray gun, increase the reservoir pressure by 5 or 10 psi (0.35 to 0.7 bar) using the air precision regulator.
8. Spray fluids into a waste cup while holding the spray gun at a vertical angle. This will ensure that any small trapped air bubbles are fully bled out of the fluid path. When no small air bubbles are observed, release the dispensing trigger.

You are now ready to adjust the flow rate of the dispensing system to meet your needs.

Adjust the Flow Rate of the Dispensing System to Meet Your Needs

After assembling and purging the air from the dispensing system, follow the steps below to adjust the operating flow rate from the system.

The keys to precise and consistent delivery of fluid include:

- Proper selection of a spray cap
- Proper gross adjustment of the flow control knob on the spray valve
- Precision control and stability of the air pressure in the reservoir

Selecting a Spray Cap and Adjusting the Reservoir Pressure

1. Select the spray cap you will be using for the application and install it on the spray gun. The spray cap will thread onto the end of the spray valve. The SG-150 spray gun comes standard with a round spray cap, but a fan-shaped spray cap is also available for order.

NOTE: Good practice is to setup the system so that it operates at a relatively low pressure; The ideal reservoir operating pressure—as measured and controlled by the precision pressure regulator—is 30 to 50 psi (2.1 to 3.5 bar). You can use higher pressures if, when using the largest needle or tip available, you still cannot achieve the desired flow rate.

2. Adjust the reservoir pressure to about 15 psi (1 bar) using the air precision regulator.
3. Measure the dispensing flow rate. If the flow rate is too high, reduce the reservoir pressure to 10 psi. If the flow rate is too low, increase the reservoir pressure by increments of 2 or 5 psi (0.14 to 0.34 bar).

NOTE: The maximum recommended reservoir operating pressure is 80 psi (5.5 bar) for cartridge reservoir systems. Beyond that, there is a risk that air will infiltrate the cartridge and be entrapped in the fluid.

NOTE: For consistent, repeatable dispensing, it is important that the pressure in the reservoir remains stable even if the supply pressure fluctuates. To maintain uniform pressure in the fluid reservoir, set the pressure of the air precision regulator to at least 10 psi (0.69 bar) less than the air filter/regulator.

4. Repeat steps 2 and 3 until you achieve the desired flow rate.
5. In some circumstances, you may need to adjust the flow control valve on the spray gun to achieve the correct dispensing flow rate.

Your system is now ready to use.

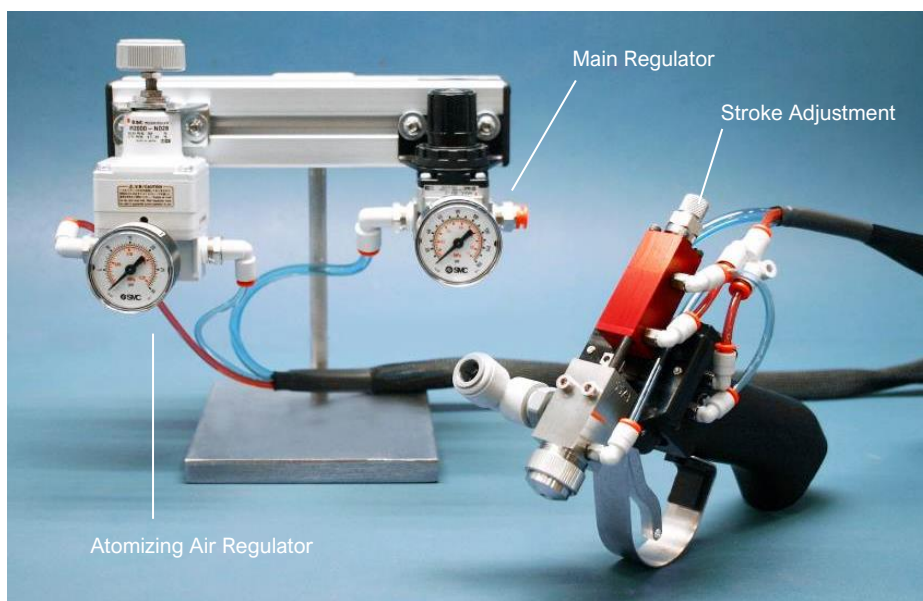
Adjust the Spray Pattern to Meet Your Needs

There are several settings that can be adjusted to fine tune the spray pattern. These settings are determined by the material viscosity as well as the desired pattern and thickness.

- a. Based on the viscosity, the air pressure regulator of the pressure vessel should be adjusted to supply an adequate flow of material to the spray valve.
- b. The stroke adjustment of the spray valve (Figure 8) should be used to fine tune the material flow rate from the valve.
- c. Adjust the atomizing air regulator (Figure 8) to control the volume of air that is used to break up the material and transfer it to the part.

NOTE: Increasing atomizing air pressure will increase your spray pattern width and decrease the coating thickness.

Figure 8.
Spray Gun and Air Regulators



Starting, Using, and Stopping the Dispensing System

Starting and Using the System

1. Be sure that all air pressure to the spray system is off and the system has no built-up pressure. Check that all pressure gauges read zero before proceeding to the next step.
2. At this point, proceed as if the material to be sprayed is already loaded into the pressure vessel of choice and the air pressure to the material pressure vessel is independently controlled by a precision air regulator (PN T16629; Figure 9), with the air supply off.
3. **NOTE:** The precision air regulator comes with three gauges: 0-30 psi (0-2.1 bar), 0-60 psi (0-4.1 bar), and 100 psi (0-6.9 bar). Use the 1-30 psi (0-2.1 bar) gauge with thin materials and increase up to the 0-100 psi (0-6.9 bar) gauge with very thick materials.
4. Open the air supply to the hand-held spray gun.

NOTE: If the Dymax air pressure filter regulator (Figure 9) has been installed, the quick air-shutoff valve (red handle) should already be open with the pressure set to 80 psi (5.5 bar).

5. Adjust the pressure on the air regulator feeding the valve handle to 80 psi.

Figure 9.
Air Pressure Regulators



PN T16307 – Air Pressure Filter Regulator with Quick Air-Shut Off/On Lever

Supply Inlet: 0.25" nptf
Outlet: 0.25" OD push-in fitting



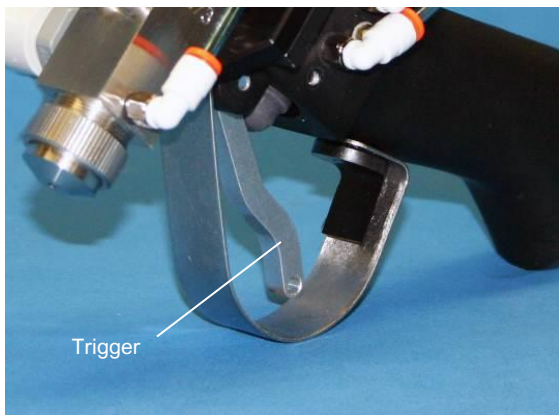
PN T16629 – Precision Air Regulator

Supply and Outlets: 0.25" push-in fittings

6. Depress the trigger on the handle (Figure 10) to cycle the valve open and closed. You should hear the solenoid actuating inside the handle and will be able to see the center needle of the spray valve moving back and forth.

WARNING! Do not look directly into the spray gun. Always view needle position from the side.

Figure 10.
Spray Gun Handle



7. Adjust the pressure on the atomizing air regulator (Figure 8) between 2-3 psi (0.14 – 0.21 bar) for startup.
NOTE: *This pressure setting will only show when the trigger of the handle (Figure 10) is pressed.*
8. To begin the flow of material to the valve, take the necessary step(s) to pressurize the pressure vessel the material is in. Adjust the precision air regulator to achieve the desired material flow rate.
NOTE: *To begin, start off with a low pressure (15 psi [1 bar]) and increase as necessary. For materials over 10,000 cP, start at 30 psi (2.1 bar). Adjust the pressure setting as required.*
9. Hold the valve and trigger handle assembly and aim it to a place where the material can be purged.
10. Depress the trigger of the handle assembly (Figure 10) to begin material flow. Once material begins to spray from the air cap of the valve, continue spraying until all air is removed from the material lines.
11. Adjust the settings and begin to coat.
12. Once the desired flow rate and spray pattern are achieved, lock the stroke adjustment screw (Figure 8).

Shutting the System Down

1. To shut the system down, place the spray gun into the gun stand and close the compressed air shutoff valve on the system to stop the flow of air to the system and to depressurize the reservoir retainer or tank. If the air pressure filter regulator is not being used, shut off the shop air from the system.
2. Next, remove the air pressure from the regulator feeding the valve and trigger handle assembly.
NOTE: *The system should be left unpressurised with material still inside it.*
3. Close the quick air shutoff valve (red handle) if the air filter regulator is installed.

Restarting the System after Shutdown

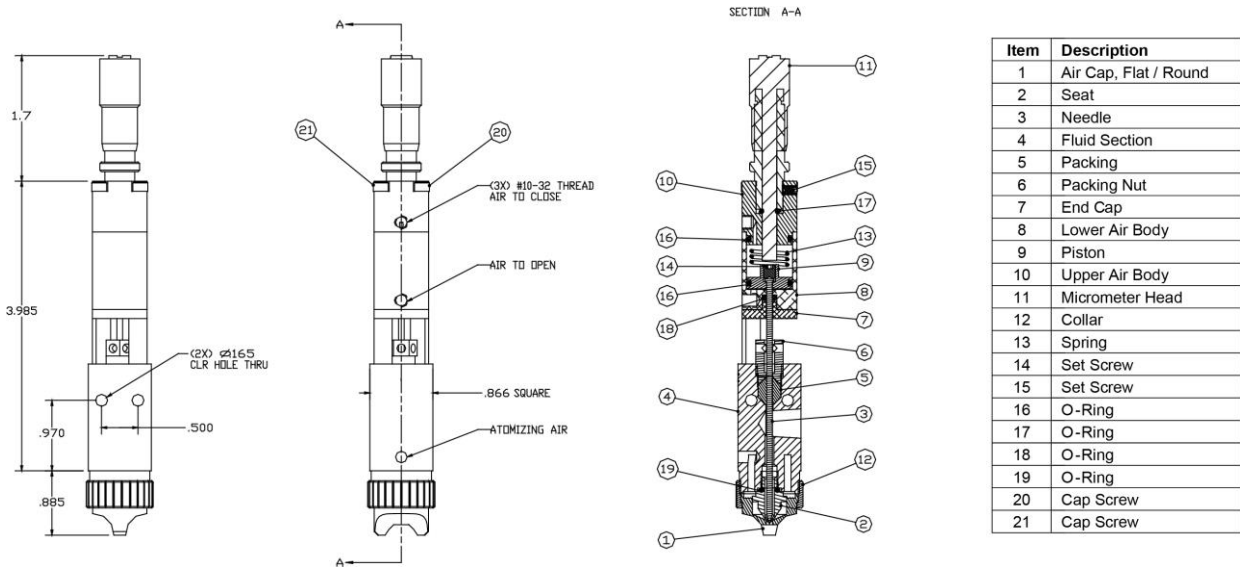
To restart the system after shutting it down for a period of time, open the compressed air shutoff valve on the system. Spray fluid into a waste cup to confirm operation.

If the system has been down for an extended period of time, the material in the spray cap may have cured. Shut the system down and clean or replace the spray cap.

Cleaning and Maintenance

NOTE: Numbers noted in this section refer to part callouts in Figure 11.

Figure 11.
Valve Parts Breakdown



Periodic Maintenance

Maintain the air filter/regulator in accordance with the supplied OEM instructions.

Maintain the air precision regulator in accordance with the supplied OEM instructions.

Lubricate the packing (5) on the valve every 200 hours by placing a few drops of mineral oil or other light oil inside the packing nut.

The packing nut will require occasional tightening, as wear occurs to prevent leaks through the packing.

System Cleaning

Switching to a Different Fluid

To switch your system over from dispensing one fluid to dispensing a new fluid, determine if the fluids are compatible. If you are uncertain about material compatibility, contact Dymax Application Engineering for assistance. If the fluids are compatible, replace the fluid tubing and clean the dispensing valve and spray cap.

Routine Cleaning and Disassembly

Cleaning and rebuilding the valve will be required from time to time. Follow the instructions below to properly do so.

1. Begin disassembly by removing air and fluid pressure from the valve.
2. Remove all pneumatic tubing and fluid delivery fittings, hoses, etc. from the valve.
3. Using the tip of a 3/32" Allen key, loosen the packing nut (6).
4. Using the same 3/32" Allen key, evenly remove the two machine screws (21) that are located on the same corners as the fluid section standoffs (4).

NOTE: During removal that there is a spring (13) forcing the air section away from the fluid section.

5. Pull the air section (red anodized portion) away from the fluid section (stainless steel portion).
6. Clean off the tip of the stainless steel needle (3).
7. From the fluid section of the valve, unthread and remove the packing nut (6), and the packing (5).
8. Unthread and remove the collar ring (12) followed by the air cap (1).
9. Place an M7 wrench onto the flats of the seat extension to hold in place, then use an adjustable wrench to unthread and remove the seat (2).
10. Place the M7 wrench on the flats of the seat extension to unthread and remove from the fluid section followed by the 007 KKFM o-ring (19).

NOTE: An adjustable wrench may be used on the fluid section to separate the parts.

11. Clean all the wetted parts thoroughly with an appropriate solvent.
12. On the air section, use a standard 3/32" Allen key to evenly remove the final two machine screws (20) that thread into the end cap (7).

NOTE: During removal that the spring (13) will force the air section apart.

13. Separate the upper air body (10) from the lower air body (8) to remove the spring (13) then slide the end cap (7) off the needle (3).
14. Holding the lower air body (8) in one hand, grab the needle (3) and push the needle and piston (9) assembly out of the lower air body.
15. Remove the 004 Buna o-ring (18) from the lower air body (8).
16. Hold the piston (9) with an adjustable wrench, then use a 5/64" Allen key to unthread and remove the set screw (14) to remove the needle (3) then remove the 014 Buna o-ring (16) from the piston (9).
17. Remove the 014 Buna o-ring (16) from the upper air body (10) then use a 1/16" Allen key to remove the set screw (15).
18. Using soft tip pliers grip the collar or midsection of the micrometer (1) and turn counter-clockwise to loosen then unthread and remove from the upper air body (10) by hand.
19. Remove the 007 Buna o-ring (17) from the micrometer (11).

Assembly Instructions

General

- All o-rings must be lubricated with a small amount of silicone grease.
- A small amount of removable thread locker should be applied to the set screw (14).
- Assemble the air section and fluid section separately prior to connecting the assemblies.

Air Section

1. Mount one 007 Buna o-ring (17) on the end of the micrometer (11) and slide it up to the threads.
2. Thread the micrometer (11) into the upper air body (10) hand tight.
3. Holding the collar of the micrometer (11) turn the dial counter-clockwise until the number 5 can be seen on the midsection.

4. Using soft tip pliers grab the midsection section of the micrometer and turn clockwise to snug it onto the upper air body (10).
5. Use a 1/16" Allen key to assemble the set screw (16) into the upper air body (10) securing the micrometer (11) in place.
6. Mount one 014 Buna o-ring (16) on the end of the upper air body (10).
7. Drop the needle (3) into the piston (9) and assemble with the set screw (14) using an adjustable wrench and 5/64" Allen key to tighten.
8. Mount the 014 Buna o-ring (16) onto the piston (9).
9. Apply a small amount of silicone grease to the inside of the lower air body (9) then drop in the piston and needle assembly.
10. Mount the 004 Buna o-ring (18) on the end of the needle and slide it down into the groove in the end of the lower air body (8).
11. Slide the end cap (7) onto the needle up to the lower air body (8), place the spring (13) on top of the piston (9), and assemble the two air bodies using two machine screws (20) tightening with a 3/32" Allen key.

NOTE: Be sure the air holes are lined up on the same face and will align with the air hole on the fluid section (4).

Fluid Section

1. Drop the packing (5) into the fluid section (4), and screw in the packing nut (6) but leave finger tight until assembled with the air section.
2. Mount the 007 KKFm o-ring (19) on the seat extension (2) and thread the seat extension into the fluid section (4). Tighten the two parts using an adjustable wrench on the fluid section and an M7 wrench on the flats of the seat extension.
3. Thread the seat (2) into the seat extension. Tighten the two parts using an M7 wrench on the flats of the seat extension and an adjustable wrench on the seat.
4. Place the air cap (1) onto the fluid section (4) over the seat (2) and seat extension then secure it by threading the collar (12) in place.

Assemble Sections

1. Be sure the micrometer adjustment (11) is backed out far enough so at least the number 1 can be seen on the midsection.
2. Apply a small amount of silicone grease to the end of the needle (3) then insert it into the packing nut (6) and slide the two sections together.
3. Align the air holes of the air section on the same face as the atomizing air hole of the fluid section then connect the sections using the two machine screws (21), tightening them down evenly using a 3/32" Allen key.
4. Using the tip of a 3/32" Allen key, tighten the packing nut (6).

Setting Micrometer to Zero

When assembling the valve it will be necessary to re-calibrate the micrometer adjust back to the zero position.

1. Using the micrometer wrench, insert the inside tip of the small end into the orifice of the midsection and rotate it clockwise until the numbered centerline is displayed on a side that can most easily be viewed by an operator.
Note: Valves are supplied from the factory with the center line located 90° left of the fluid inlet.
2. Turn the dial clockwise until the end hits the piston (9).
3. Using soft tip pliers, hold the knurled end of the dial (C) tightly and loosen the screw using a flat head screw driver.

NOTE: Loosen the screw 3-4 turns only. It is not necessary to fully remove the screw.

4. Using a soft dead blow hammer, tap the dial of the micrometer adjust to unlock it from the mid-section. The dial will now spin freely.
5. Rotate the dial to align the zero mark of the dial with the numbered centerline of the midsection and press down firmly to secure the dial in place.
6. Hold the dial securely in one hand maintaining alignment with the zero mark and numbered centerline, then carefully tighten the screw using the flat head screw driver to lock the micrometer in the zero position.

Troubleshooting

Table 1.
Troubleshooting for the SG-150 Spray Gun

Problem	Possible Cause	Corrective Action
Spray valve does not cycle	Air pressure to air section too low	Increase air pressure to 60-100 psi
	Packing nut is too tight	Loosen packing nut until valve just begins to cycle, retighten
	Stroke adjuster is bottomed out	Back out stroke adjuster by turning it counter-clockwise
	Material is cured in the valve	Disassemble and clean valve
	Valve was assembled without lubricating the o-ring seals	Disassemble valve, lubricate seals, and re-assemble
Material leaks from valve tip	Needle and/or seat are worn	Replace parts as necessary
	Seat is not tightened enough against fluid section	Use seat wrench to tighten seat onto fluid section
Valve leaks from mid-section	Packing nut is loose	Tighten packing nut until snug
	Packing is worn	Replace packing
Valve does not spray anything	Fluid pressure is too low	Increase fluid pressure
	Material cured in fluid section	Disassemble valve and clean
Air bubbles in fluid	Valve not properly purged	Flip valve upside down and cycle until air bubbles are removed
	Problem with fluid delivery system	Diagnose and repair
	Atomizing air pressure set too high	Reduce atomizing air pressure
Spray rate too fast	Stroke adjuster set out too far	Turn stroke adjuster clockwise toward the zero mark
Spray rate too slow	Stroke adjuster set too close to the zero mark	Turn stroke adjuster counter-clockwise
Poor spray pattern	Cured material at tip of needle and seat	Remove air cap and clean tip
	Cured material in air cap	Remove air cap and clean
	Incorrect atomizing air pressure	Adjust atomizing air pressure
	Damaged needle and or seat	Replace parts as necessary

Spare Parts and Accessories

The components listed below are considered wear items and disposable material delivery components that should be kept as spare parts to avoid downtime.

Item	Part Number
Air Regulators	
Air Filter Regulator with Air Shut Off	T16307
Precision Air Regulator for Fluid Pressure	T16629
Air Line Kits	
1/4" OD Air Line Kit	T16789
Caps	
Round Spray Air Cap	T15698
Nozzle & Round Cap Kit - high viscosity (0.045", 0.080", & 0.120" bores)	T18020
Flat Spray Air Cap	T15697
Spray Cap Collar	T17304
Fittings	
Spray Gun Inlet Elbow - 90°, 1/8" NPT x Female Luer, Black	T11949
Reducer Fitting – 1/4" OD x 5/32" OD tube	T16316
Tee Fitting – 1/4" OD	T12140
Material Fitting, 1/8" NPT x 3/8" OD Tube, 90° Elbow	T16710
Air Fitting, 10-32 x 5/32" OD Tube, 90° Elbow	T11672
Fluid Line Kits	
Fluid Line Kit, 3/8" OD, Black PE	T16787
Fluid Line Kit, 1/4" OD, Black PE	T16793
Parts Kits (includes seat, seat wrench, needle, PTFE packing, and Buna and KKFM o-rings)	
SG-150-RS (Standard Flow) Rebuild Kit	T18524
SG-150-RH (High Flow) Rebuild Kit	T18526
Stands	
Front Closing Stand with Drip Cup	T15454

Specifications



System Specifications

Materials of Construction—Wetted Parts

Dispensing valve = 303 and 304 stainless steel, PTFE, FFKM (perfluoroelastomer)

Spray nozzle = stainless steel

Fluid tubing = light-blocking, black, polyethylene

Fluid tubing fittings = acetal

Dymax fluid reservoirs (cartridge, bottles, and pails) = polypropylene

Dymax fluid reservoir piston (on cartridge reservoirs only) = polyethylene

Operating Specifications

Recommended clean/dry compressed air supply to main regulator = 80 psi (5.5 bar), using Air Filter Regulator below

Air Filter Regulator with Dump Valve (Recommended)

Pressure gauge installed from factory = 80 psi (5.5 bar); adjust as required, if installed

Main System Air Regulator

Pressure gauge installed from factory = 80 psi (5.5 bar)

Atomized Regulator

Pressure gauge installed from factory = 2-3 psi; higher as required

Precision Air Regulator for Material

This regulator controls the pressure on the material. Set at 15 psi (1 bar) for materials under 10,000 cP and 30 psi (2.1 bar) for materials over 10,000 cP.

Reservoir Retainer/Tank Sizes

Four sizes of cartridge retainers hold 6-, 12-, and 20-oz (160-, 300-, and 550-mL) reservoirs

Bottle reservoir tank holds 0.26-gal (1-L) and 0.5-gal (2-L) reservoirs

Pail reservoir tank holds 5-gal (15-L) reservoirs

Air Precision Regulator Pressure Gauges

Pressure gauge installed from factory = 0 to 60 psi (0 to 4.1 bar)

Alternative gauges supplied = 0 to 30 psi and 0 to 100 psi (0 to 2.1 bar and 0 to 6.9 bar)

Warranty

Dymax Corporation offers a one-year warranty against defects in material and workmanship on all system components with proof of purchase and purchase date. Unauthorized repair, modification, or improper use of equipment may void your warranty benefits. The use of aftermarket replacement parts not supplied or approved by Dymax Corporation, will void any effective warranties and may result in damage to the equipment.

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Please note that most dispensing and curing system applications are unique. Dymax does not warrant the fitness of the product for the intended application. Any warranty applicable to the product, its application and use is strictly limited to that contained in Dymax's standard Conditions of Sale. Dymax recommends that any intended application be evaluated and tested by the user to ensure that desired performance criteria are satisfied. Dymax is willing to assist users in their performance testing and evaluation by offering equipment trial rental and leasing programs to assist in such testing and evaluations. Data sheets are available for valve controllers or pressure pots upon request.

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