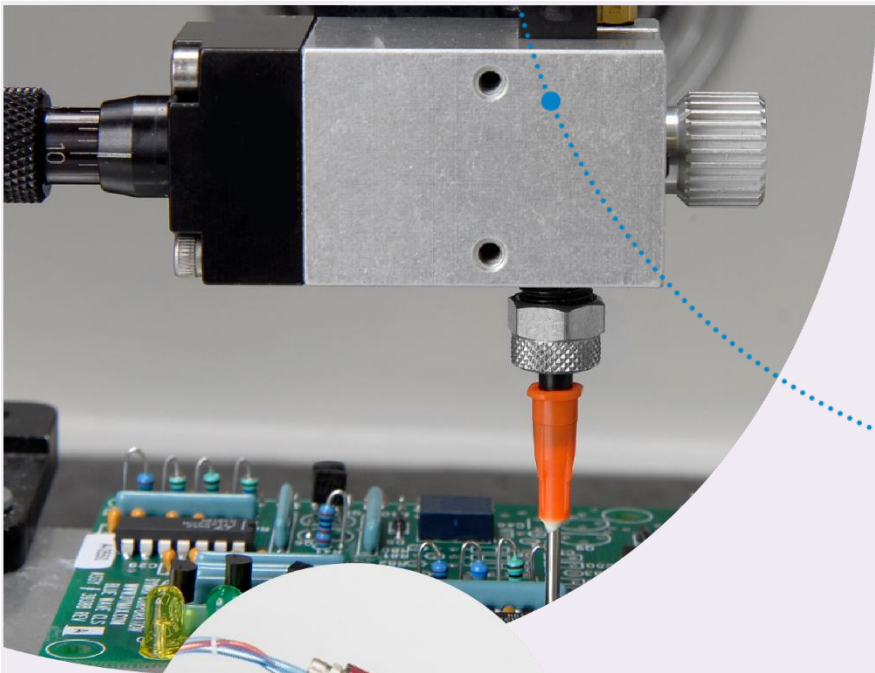


# SG-200 Systems

High-Flow Spray Gun System  
with Remote Timer  
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.

# Contents

<b>Introduction.....</b>	<b>4</b>
Where to Get Help.....	4
<b>Safety.....</b>	<b>4</b>
General Safety Considerations.....	5
Specific Safety Considerations.....	5
<b>Overview of the Spray Gun System .....</b>	<b>6</b>
How the Spray Gun System Works.....	6
Description of Main Components.....	6
<b>Types of Reservoir Retainer &amp; Tanks.....</b>	<b>8</b>
Cartridge Reservoir Retainers .....	9
Bottle Reservoir Tank.....	9
Pail Reservoir Tank .....	11
5-Gal Ram Pump System .....	11
<b>Unpacking &amp; Inspecting Your Shipment.....</b>	<b>13</b>
Parts Included with the System .....	13
<b>Assembling the System.....</b>	<b>14</b>
Utilities Required .....	14
Choosing and Installing an Alternative Pressure Gauge .....	14
Initial Setup of the Spray Gun.....	15
Connecting the Air Filter/Regulator.....	15
Connecting the DVC-345 Controller.....	16
Connecting the Material Reservoir.....	17
<b>Optimizing Spray System .....</b>	<b>23</b>
Adjust the Flow Rate & Spray of the Dispensing System.....	23
<b>Starting, Using, and Stopping the Dispensing System .....</b>	<b>25</b>
Starting and Using the System .....	25
Shutting the System Down.....	26
Restarting the System after Shutdown .....	26
<b>Optional Configurations.....</b>	<b>27</b>
Automated Systems .....	27
<b>Cleaning and Maintenance .....</b>	<b>28</b>
Periodic Maintenance .....	28
System Cleaning.....	28
<b>Troubleshooting .....</b>	<b>32</b>
<b>Spare Parts and Accessories.....</b>	<b>33</b>
<b>Specifications .....</b>	<b>34</b>
<b>Warranty.....</b>	<b>35</b>

# Introduction

This guide describes how to use Dymax SG-200 spray gun systems. These systems are comprised of an SG-200 spray gun used in conjunction with any one of the following reservoirs:

- Cartridge reservoir: 12 or 20 oz (300 or 550 mL)
- Bottle reservoir: 0.25 to 1.0 gal (0.5 to 3.78 L)
- Drop-in pail reservoir: 5 gal (15 L)
- Ram pump: 5-gal straight or taper pails

Sections in this guide describe how to assemble, set up and use each type of system.

## 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](mailto: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](http://www.dymax.com)
- Dymax adhesive Product Data Sheets (PDS) on our website
- Material 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 Material Safety Data Sheet and handling requirements for each fluid before using the fluid. Dymax includes a Material Data Safety Sheet with each adhesive we sell. You can also request Material 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 34.)

### 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 designed specifically for spray applications. 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.

### Personal Protection for Spraying Applications



**WARNINGS!** Inhalation and/or constant contact with certain materials can be hazardous to your health.

To reduce inhalation hazards, ensure adequate ventilation is in place and operational

Protective clothing, organic respirators, face shield, nitrile gloves and hearing protection is recommended when using spray equipment.

# Overview of the Spray Gun System

## How the Spray Gun System Works

The Dymax SG-200 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. A satellite controller is used to control valve actuation. 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.

## Special Features of the Spray Gun System

Features	Benefits
All wetted components on the spray gun are stainless steel, Teflon®, or Kalrez®	Spray gun is compatible with a greater number of fluids
High-volume flow range of 2.5oz to 20oz per minute	Increased throughput for large part applications
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, material protection
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

**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.

**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 (0-to-30 psi and 0-to-100psi) 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.

**Compressed Air Line**—The air line consists of transparent blue polyurethane tubing designed for compressed air use.

**Reservoir Retainer or Reservoir Tank**—The SG-200 spray system is available in the following configurations:

- a. **Cartridge Reservoir Retainer**—A cartridge reservoir retainer is a plastic 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.
- b. **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 (plastic polypropylene container with a screw-on cap for bottle reservoir tanks or 5-gal (15-L) plastic polyethylene pails with a pry-off cover for pail reservoir tanks) 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.
- c. **Positive-Displacement Ram Pail Pumps**—Ram pumps are ideal delivery systems for dispensing high-volume and/or high-viscosity materials. Utilizing a check valve, positive displacement ram-style head, and a downstream regulator, this system provides steady, even flow of material. Dymax's are designed for use with 5-gal straight and/or tapered pails.

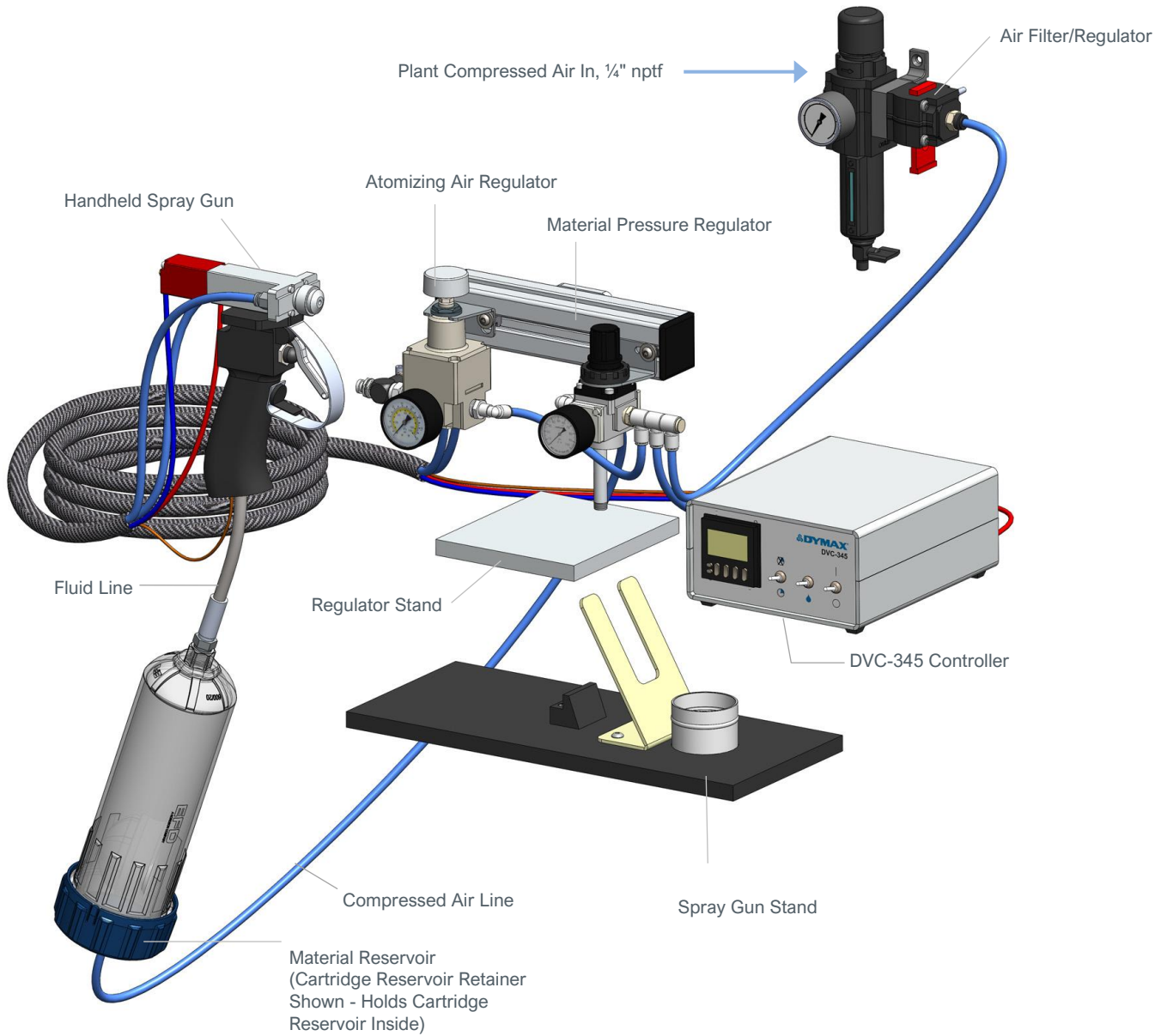
**Fluid Line**—The fluid-dispensing line consists of black light-blocking polyethylene tubing compatible with the chemistries of Dymax fluids and many types of commercial adhesives and fluids.

**Handheld Spray Gun & Regulator Assembly**—The handheld spray gun enables you to easily spray fluids and provides trigger control with optional foot pedal override control. Spraying begins when the operator squeezes the trigger and stops when the trigger is released. The atomizing function on the SG-200 is an “always on” mode, ensuring the heaviest materials atomize upon dispense. The spray gun includes a kit of caps and nozzles of different diameters, allowing users to adjust per flow rates and materials being sprayed. 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.

**DVC-345 Digital Valve Controller**— The DVC-345 digital valve controller's internal 4-way solenoid valve operates Dymax or other pneumatic dispense valves. This controller may be operated via footswitch, manual front panel switch, or remote PLC. Cycle time may be set in a range from .001 to 9.999 seconds in .001-second increments. Front panel mounted controls provide a valve prime function, cycle adjustment, manual or timed dispense, and a multi-color LCD timer display.

**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 1.**  
Typical Setup of the Spray Gun System (Shown with 20-oz Fluid Reservoir)





# Types of Reservoir Retainer & Tanks

Depending on the dispensing system you ordered, your system includes:

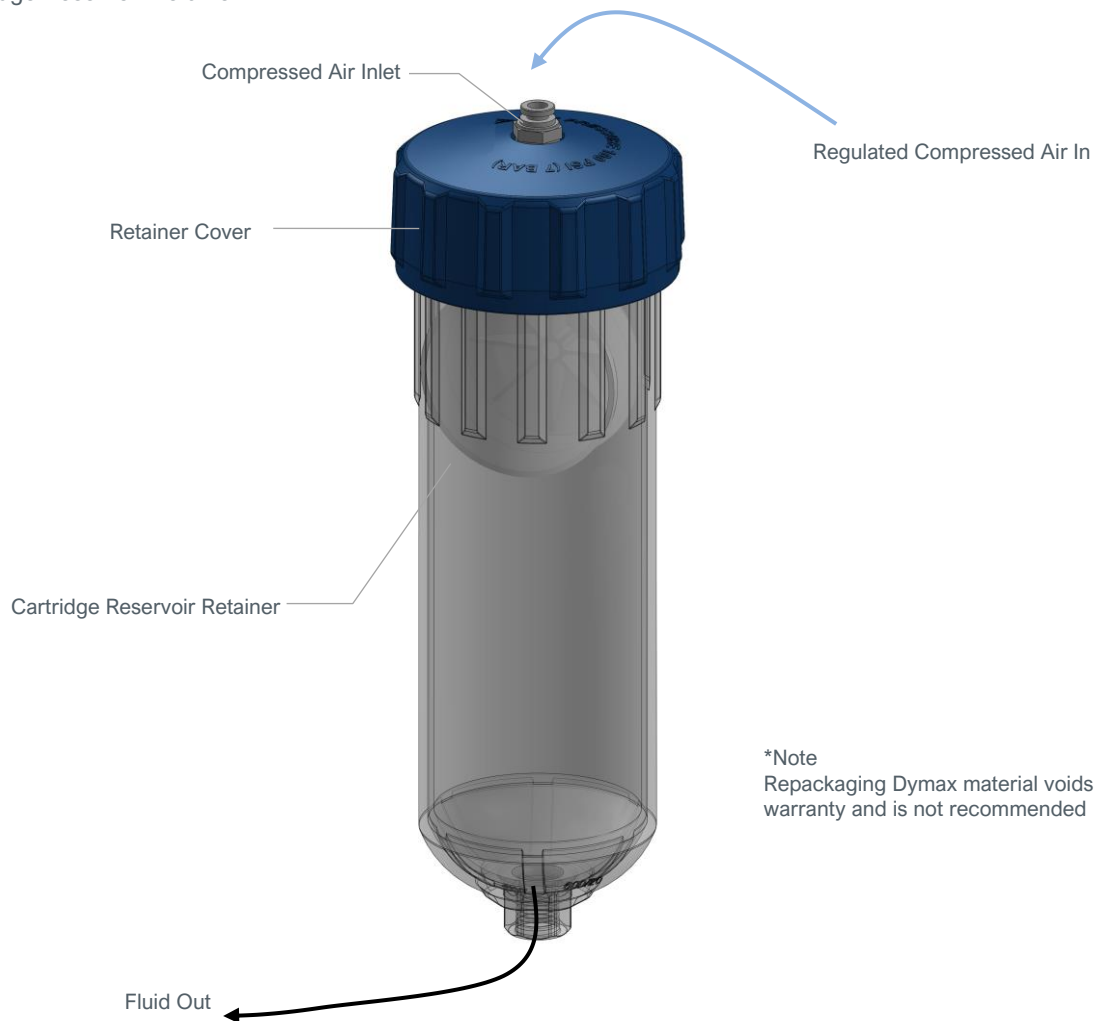
- Cartridge reservoir retainer - for high-flow delivery to small or hard-to-access applications
- Bottle/pail reservoir tank - for applications requiring volume delivery of low/medium-viscosity materials over large areas
- Ram pump system - for applications requiring volume delivery of high-viscosity material over large areas

Retainer, tanks, and ram pump configurations and process connection points are shown in Figure 2, Figure 3, Figure 4, & Figure 5.

## Cartridge Reservoir Retainers

Cartridge reservoir retainers are supplied in two sizes but the design features of each are similar (Figure 2). Each cartridge reservoir retainer includes one empty, reusable cartridge reservoir that can be filled with material for dispensing.

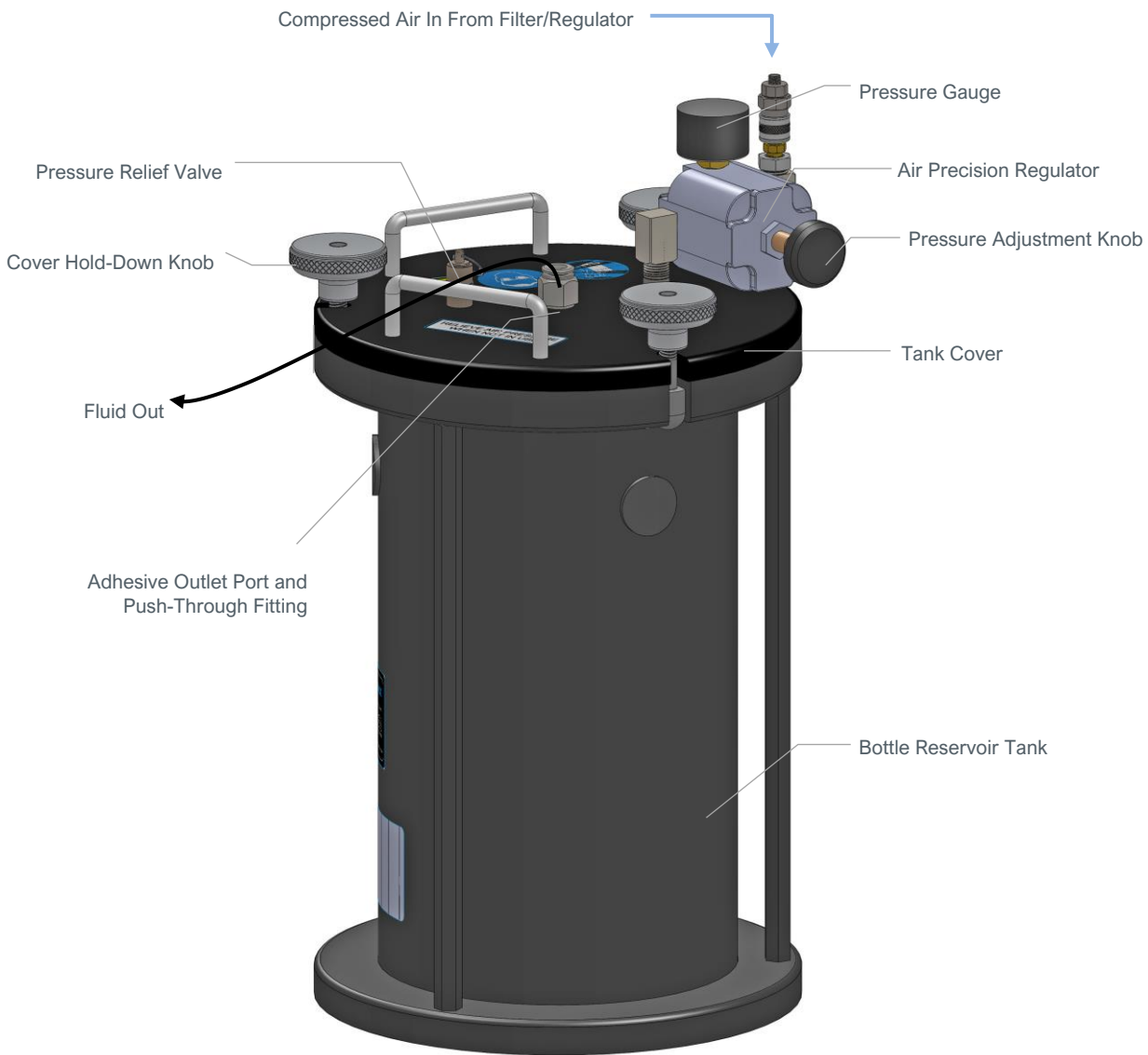
**Figure 2.**  
Cartridge Reservoir Retainer



## 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 3). The air precision regulator is permanently attached to the cover of the tank.

**Figure 3.**  
Retainer for Bottle Drop-In Reservoir

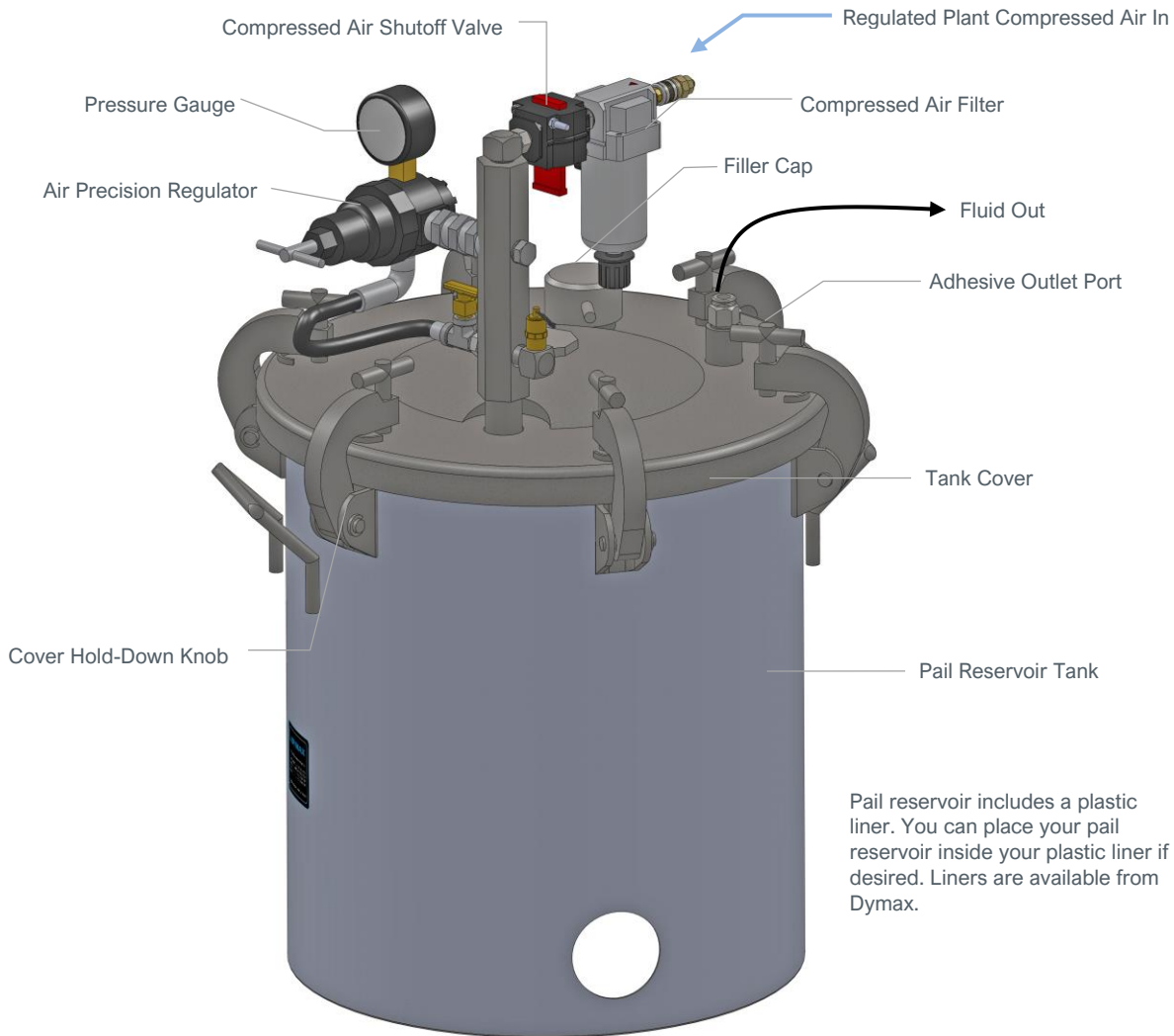


## Pail Reservoir Tank

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 4).

**Figure 4.**  
Pail Reservoir Tank Components

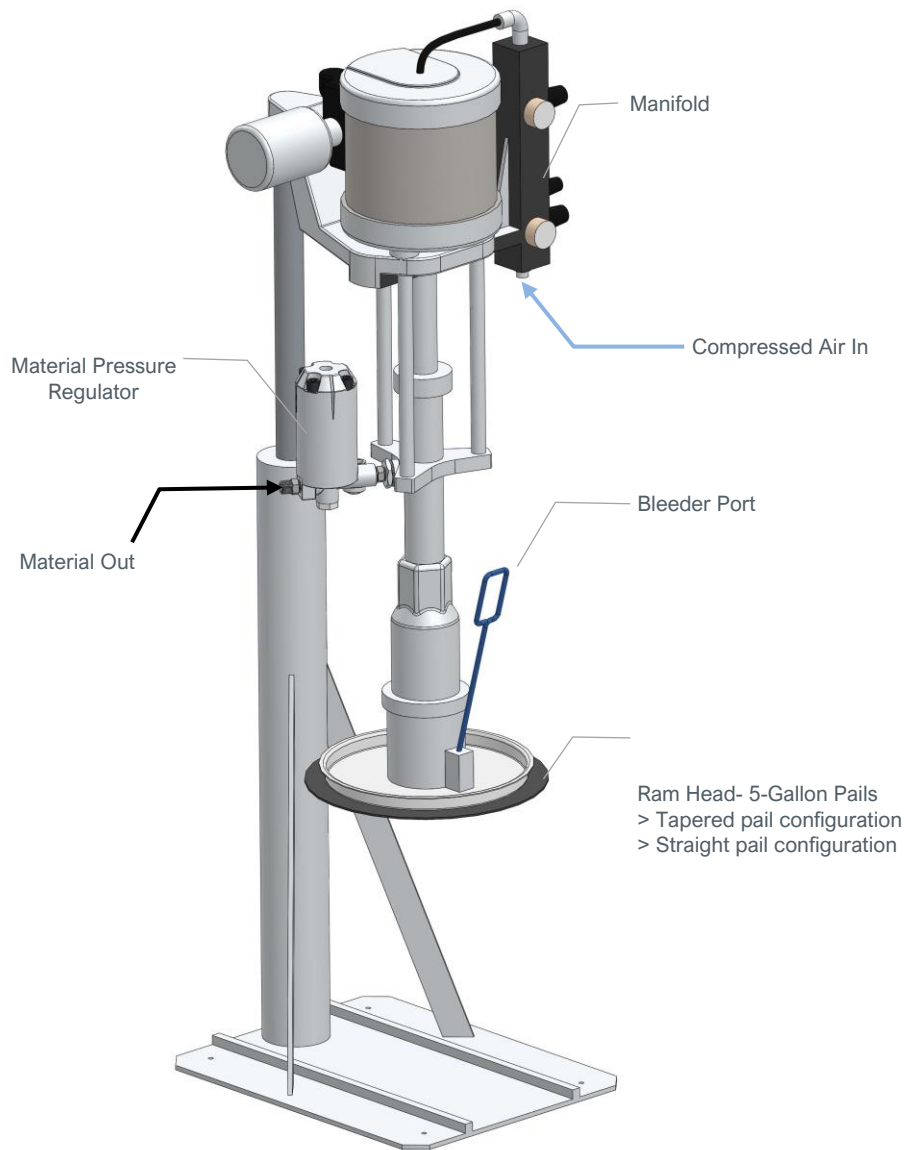


## 5-Gal Ram Pump System

The 5-gallon ram pump system includes a positive displacement, vertical ram head with interchangeable collars for straight or tapered pails. The ram pump operates at 80-100 psi and offers an 11:1 pump ratio. A downstream regulator (1,200 psi input max) is included, and maintains consistent output flow across a range of input pressures. Also included in the high-pressure configuration is a length of stainless, braided hose with compression swivels and fittings to maximize throughput while extending flexibility to the operator.

As a system, the SG-200 and ram pump system provide a solution for high-flow, high-viscosity delivery beyond the capabilities of standard pneumatic reservoirs.

**Figure 5.**  
Ram Pump System Components



# Unpacking & 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. If parts are missing, contact your local Dymax representative or our Customer Support team to resolve the problem.

## Parts Included with the System

Your Dymax SG-200 spray gun system can be one of four types: cartridge reservoir system, bottle reservoir system, pail reservoir system, or a system with high pressure, positive displacement ram pump. Each type of system includes different parts as described below.

### Parts Included in Cartridge Reservoir Systems

- SG-200 spray gun with controlling air regulators
- DVC-345 timed shot controller
- Spray gun stand
- Air filter/regulator
- 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
- Fluid line kit—adapter, 3/8-in. (9.5-mm) x 3/8-in. MNPT comp
- One cartridge reservoir retainer: 12-oz (300-mL) or 20-oz (550-mL) cartridge reservoir
- One empty, reusable cartridge reservoir (shipped inside retainer)

### Parts Included in Bottle Drop-In Reservoir Systems

- SG-200 spray gun with controlling air regulators
- DVC-345 timed shot controller
- 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
- Fluid line kit—adapter, 3/8-in. (9.5-mm) x 3/8" MNPT comp
- One bottle reservoir tank fits 0.26-gal (1-L), 0.5-gal (2-L) and 1.0-gal (3.78-L) bottle reservoirs

## Parts Included in Pail Reservoir Systems

- SG-200 spray gun with controlling air regulators
- DVC-345 timed shot controller
- 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 drop-in reservoir tank for up to 5-gal (15-L) pails
- Incoming air filter with dump
- Incoming shutoff valve
- Fluid line kit—length of black 3/8-in. (9.5-mm) OD tubing
- Fluid line kit—adapter, 3/8-in. (9.5-mm) x 3/8-in. MNPT comp

## Parts Included in 5-Gallon Ram Pump Systems

- SG-200 spray gun with controlling air regulators
- DVC-345 timed shot controller
- 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
- 5-Gal, positive displacement ram pump with flow control, downstream regulator (1,200 psi max input)
- Incoming air filter with dump
- Incoming shutoff valve
- Fluid line kit— high-pressure, 3/8-in braided hose x 6 ft
- Fluid line kit—fittings, swivels kit: 3/8-in MNPT x 3/8-in MNPT comp

# Assembling the System

## Utilities Required

The spray gun system requires 80 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 12-15 cfm provides sufficient flow for all systems.

## Choosing and Installing an Alternative Pressure Gauge

Systems using a bottle or pail reservoir tank include a 0- to 60-psi (0- to 4.1-bar) pressure gauge installed on the air precision regulator. The 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 can be installed if needed. If you are not sure of the material/atomization 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.

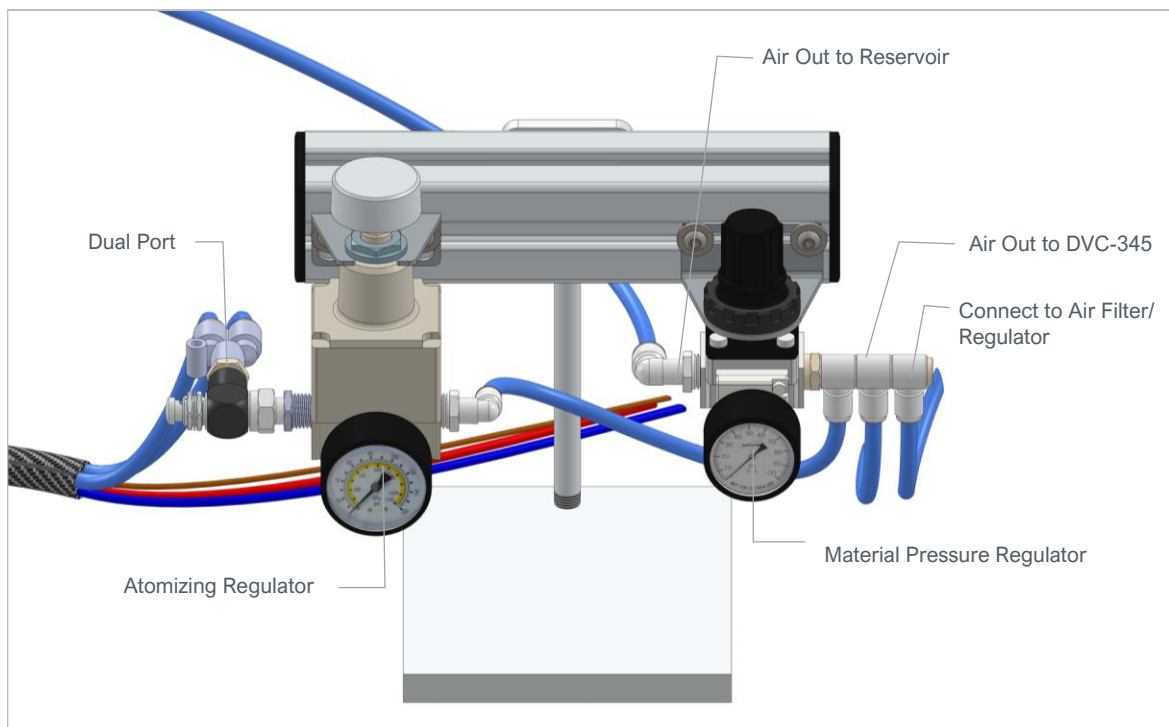
## Initial Setup of the Spray Gun

The SG-200 spray gun is designed for ease of setup. All air connections come pre-installed except for the connection between the shop air and the air filter/regulator and the fluid line must be connected between the materials reservoir and the spray gun. Before operation, check that the material lines and air lines and fitting connections are secure and 100% inserted.

## Connecting the Air Filter/Regulator

1. Check to make sure the dual tubes from the atomizing head on the front of the SG-200 valve is connected to the dual port of the atomizing control regulator. The air line between the atomizing control regulator and material pressure regulator should also be pre-configured. (Figure 6)
2. 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.
3. Connect factory air to the air filter/regulator. Be sure the regulator outlet knob is in the off position.

**Figure 6.**  
Supply & Atomizing Control Valve Stand



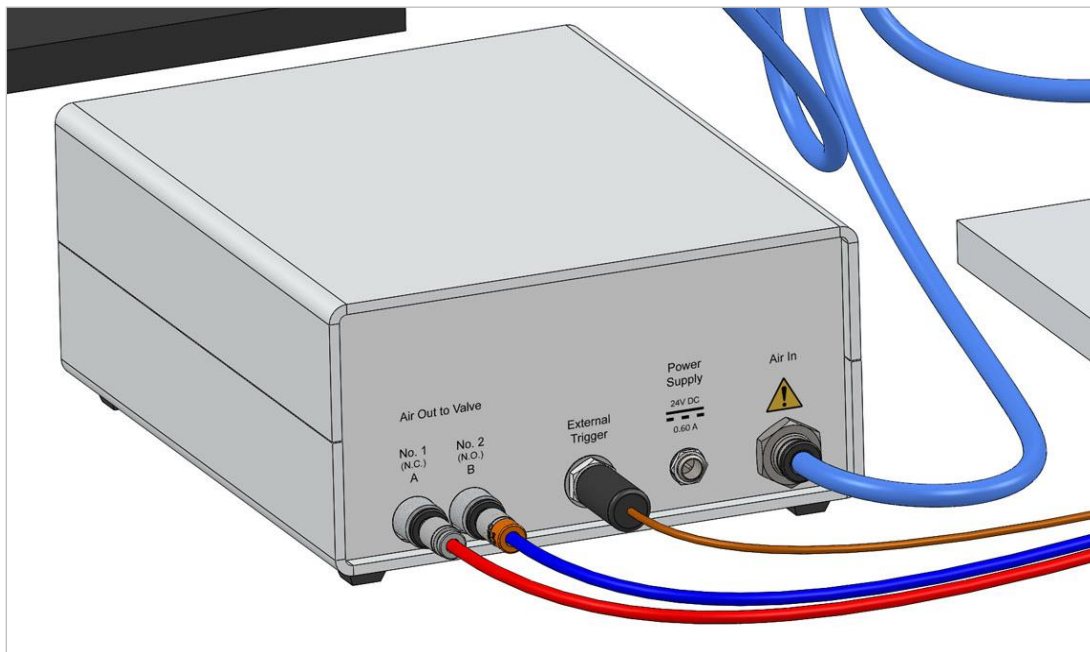
## Connecting the DVC-345 Controller

1. Locate a convenient, clean position to place the controller.

**NOTE:** If using a spray booth or environment where electrical devices are forbidden, position the controller outside of the immediate environment.

2. Connect the power supply to 345 Controller.
3. Connect the tubing from the Spray Gun to the “A” and “B” Outlets located on the back of the Controller. The red tubing connects to Port A. The blue tubing connects to Port B. (Figure 7)
4. Connect the ¼" jack from the spray gun to the External Trigger Jack located on the back of the 345 controller.
5. Connect the DVC-345 Controller Air In Port on the rear panel to the control valves.

**Figure 7.**  
DVC-345 Connections



6. Turn the Controller to untimed mode for manual use. For timed shot applications, program the controller appropriately. Instructions can be found in MAN028 – DVC-345 Valve Controller User Guide.
7. Test the valve actuation by depressing the trigger on the spray gun. If the gun is not working properly, check the air line connections and controller settings.

**WARNING!** Always aim the spray nozzle away from yourself and others to reduce risk of accident or injury.



# Connecting the Material Reservoir

## A—Cartridge Reservoir Systems

### Prepare the Cartridge Reservoir



**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. Unscrew the cover from the cartridge reservoir retainer. 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. Screw the cover back onto the retainer.
5. To prevent low-viscosity fluids from flowing from the cartridge reservoir when you remove the outlet plug, hold the retainer upside down.
6. Unscrew and remove the plug from the cartridge reservoir outlet.

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.

### Fluid Line Connections

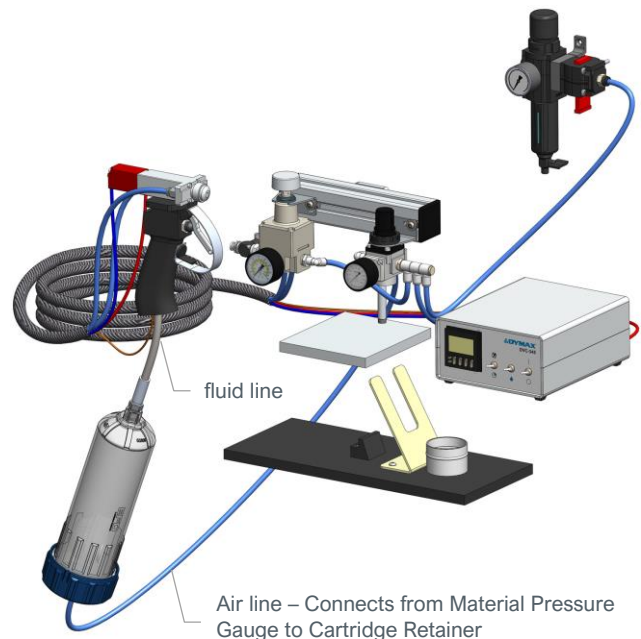
1. Connect one end of the fluid line to the reservoir outlet fitting by pushing the line into the fitting. Attach the other end of the fluid line to the fluid inlet fitting on the spray gun.
2. Allow the cartridge retainer to hang freely below the handle. Use securing clips to harness the pneumatic tubing to the cartridge. This prevents the cartridge from swinging freely while spraying and keeps lines neat and orderly during use.

### Connect Air Line to Cartridge Reservoir

Connect the material pressure regulator (air out) to air inlet fitting on the cartridge reservoir.

**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.

**Figure 8.**  
Cartridge Reservoir Connections



## B— Bottle Drop-In Reservoir Systems

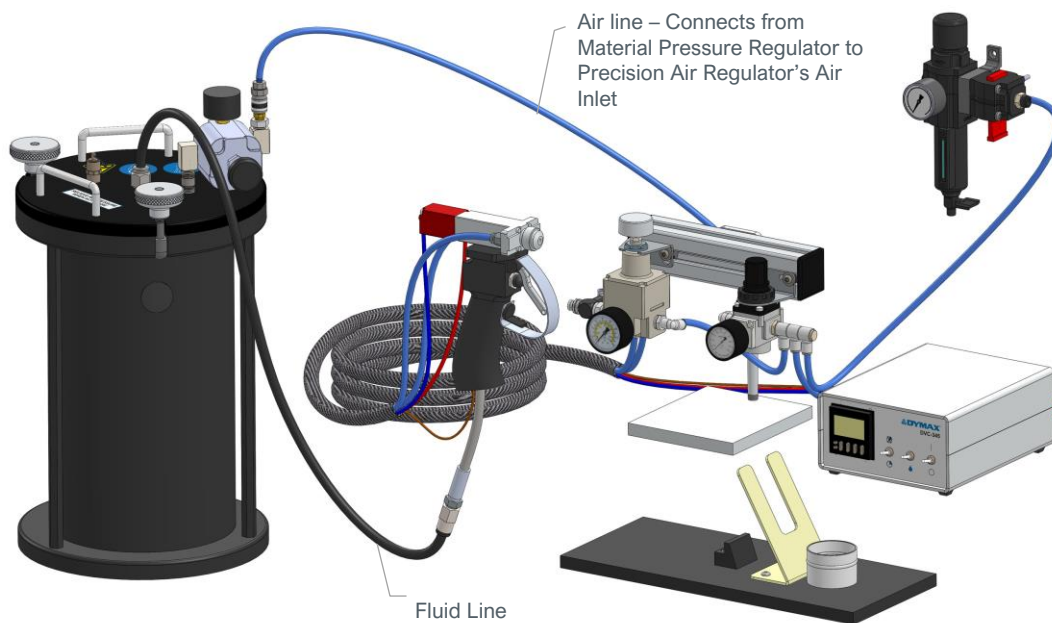
**NOTE:** Ensure that you plumb the air lines correctly at the inlets and outlets of the dispensing system components. The dispensing system will not function properly if you plumb the compressed air lines incorrectly.



**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.

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.

**Figure 9.**  
Bottle Drop-In Reservoir Connections



### Fluid Line Connections

1. 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. Be sure to cut the end of the tube at a 45° angle to ensure free flow of material at bottom of tank.
2. Cut the other end of the dispensing line to a working length (6 ft or less recommended). The dispensing line should be cut as short as possible to reduce pressure losses in the line, but long enough to enable you to reach and work comfortably with the spray gun in the work area.
3. Attach the fluid dispensing line to the fitting on the spray gun.

**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

## Connect Air Line to Reservoir

Connect the air line from the material pressure regulator (air out) to the air inlet fitting on the precision regulator on the tank cover (Figure 9).

## Inserting the Bottle Reservoir in the Tank

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 initiation and curing of light-sensitive fluids.
3. Install the tank cover on the tank, ensuring the dip tube is inserted to the bottom of the bottle reservoir. Complete this step quickly to prevent curing of light-sensitive fluids.
4. Tighten the cover hold-down knobs evenly to ensure uniform sealing.

## **C—Pail Reservoir Systems**

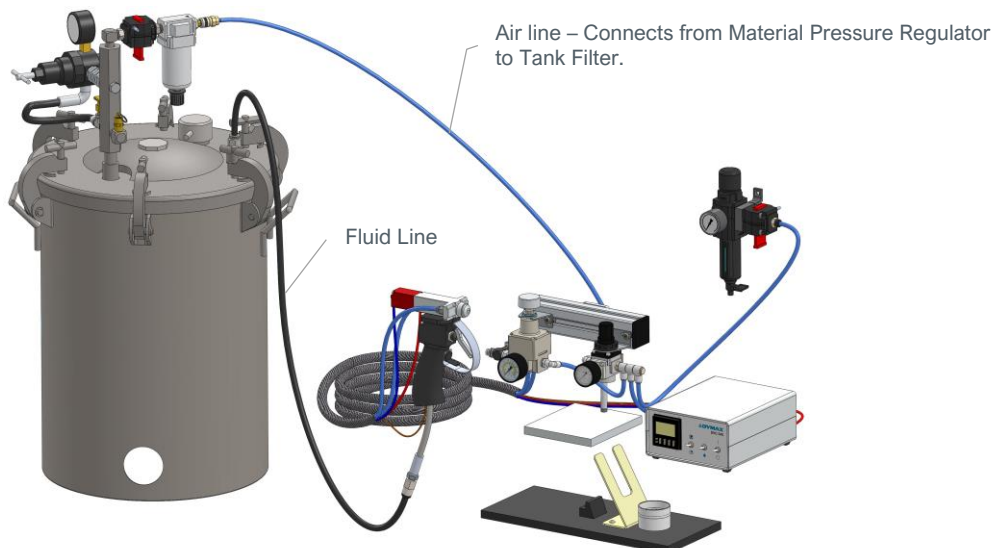
**NOTE:** Ensure that you plumb the air lines correctly at the inlets and outlets of the dispensing system components. The dispensing system will not function properly if the compressed air lines are plumbed incorrectly.



**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.

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.

**Figure 10.**  
Pail Reservoir Connections



## Fluid Line Connections

1. 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 losses 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).*

2. Connect one end of the dispensing line to the outlet fitting on the tank cover by pushing the line into the fitting.
3. Connect the other end of the line to the fluid inlet fitting on the spray gun.

## Connect Air Line to Reservoir

1. Ensure your plant air supply is regulated to 80 to 100 psi (5.5 to 6.9 bar).
2. Ensure the compressed air shutoff valve on the tank cover is in the **Closed** position.
3. Connect the air line from the material pressure regulator (air out) to the inlet of the filter on the tank cover using a customer-supplied 1/4-in. (6.3-mm) male NPT fitting.

## Inserting the Pail Reservoir in the Tank

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 evenly to ensure uniform sealing of the tank.

## **D—Ram “Pail” Pump Systems**

**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.*



**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.*



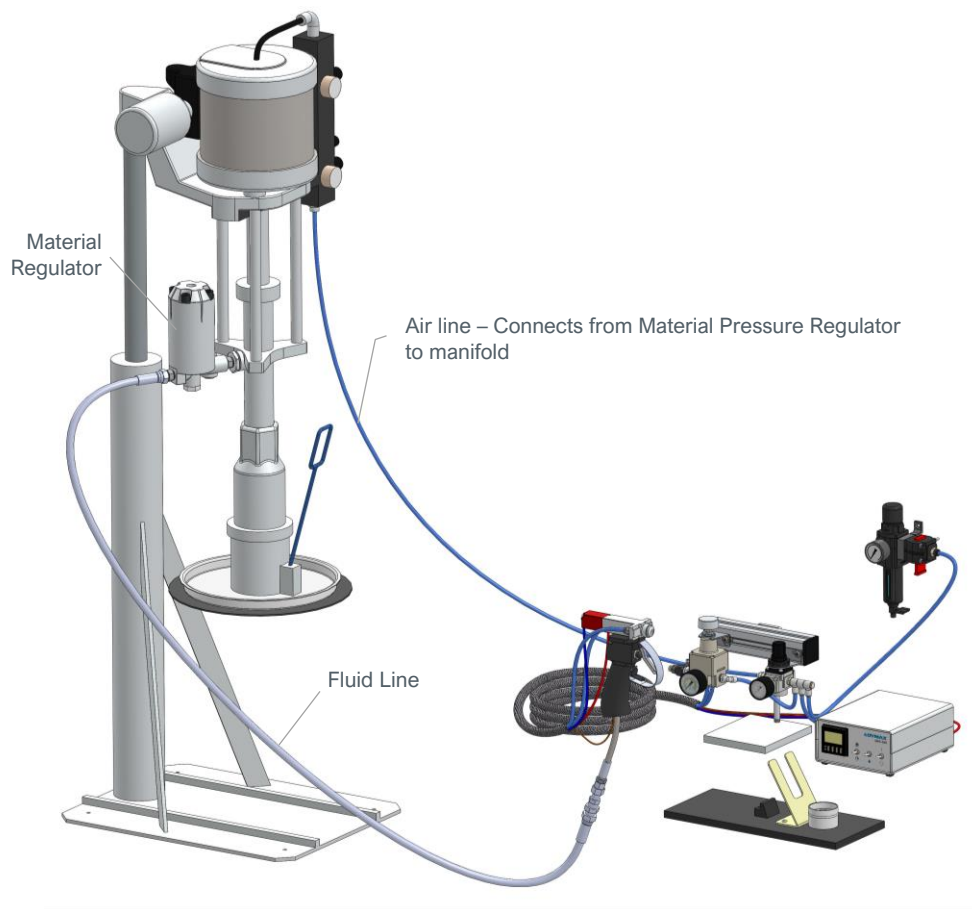
**WARNING!** Some Dymax fluids can bond skin together in seconds. It can also irritate skin, eyes, and mucous membranes. To minimize the risk of bonded skin or irritation, wear protective gloves and eyewear when working with Dymax fluids and the hand-held spray gun system.

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.

### Connecting Air to the Ram Pump

1. Verify that all valves are in the “Off” position before making any connections. See Ram Pump Operator’s Manual for directions. Ensure the pump is mounted and secure per factory use instructions.
2. Determine the distance from the factory air supply line to the ram pump location. Cut 3/8-in tubing to desired length.
3. Locate the push-connect “air in” fitting on the bottom of the ram pump manifold and insert tubing. Connect opposite end of the tubing to the factory air supply using a quick-connect fitting.
4. Ensure piston is lubricated. Test the ram pump actuation by raising and lowering the ram head (See Ram Pump Operator’s Manual for directions).

**Figure 11.**  
Ram Pump Connections



### Connecting the SG-200 spray valve to the Control Valves

1. When using the Ram Pump setup, the “material in” line used in other configurations will be used to supply air to the Ram pump manifold. Open regulator completely, or if supplying air to Ram Pump from outside line, plug port with push-fit plug.
2. Connect factory air to air filter regulator. Be sure regulator outlet knob is in “off” position.
3. Turn on air filter regulator, and pressurize initially to 20 psi. Check for leaks and be sure all fittings are secure.

### Connecting the Material Lines to Valve

The material regulator comes preinstalled on the ram pump. These instructions can be used when replacing the material regulator.

1. Disconnect the air supply from the ram pump.
2. Connect the 3/4" FNPT x 1/2" MNPT pipe adapter directly to the material outlet port on the ram pump.
3. Connect the 1/2" FNPT x 3/8" MNPT adapter.
4. Directly connect downstream regulator to the 3/8" MNPT adapter. Ensure the regulator material flow direction is correct.
5. Connect high-pressure hose to material outlet side of regulator
6. Connect the free end of the high-pressure hose to the material whip supplied with the SG-200. Ensure all connections are tight.

**NOTE:** Use Teflon®/sealant tape on all straight connector and fitting threads. For best performance, keep the hose lengths as short as possible and ensure tight connections between fittings.

### Priming the Ram Pump

1. Connect the air supply to ram pump. Adjust the initial pressure settings on the ram pump manifold to 30-40 psi.
2. Check that the ram pump is tightly assembled, lubricated, and oiled before use.
3. Raise the head until it's fully in the up position.
4. Ensure that the proper head is on the ram pump (straight pail vs. tapered pail).
5. Follow the Ram Pump Operator's Manual for lowering/priming material into the ram and bleeding the piston. *Note: When ram head is lowered to material level, relieve ram head actuation pressure to zero. Gravity & pressure “pulls” the ram down as material is dispensed.*
6. Remove the nozzle, collar, and atomizing cap from the SG-200 spray gun.
7. Turn on the air supply to the ram pump, DVC-345 controller, and spray gun atomizing regulator stand. *Ensure all control valves & regulators turned off.*
8. Turn the controller on and set to manual mode for priming.
9. Turn on the ram pump. Do NOT turn on the atomizing switch. Aim the SG-200 spray gun away from people and unintended target objects. Purge the material into a container vessel by depressing the spray gun trigger. Continue until all air is purged and a steady stream of material flows. This may take several minutes.
10. Flow rates should be evaluated and adjusted at this time. The psi of the ram pump and the material regulator should be adjusted independently to meet the desired flow rates per material.

Do not exceed the psi ratings for the pump, regulator, or material. A suggested starter guide is listed below, please check with Dymax Application Engineering for material details.

**Table 1.**  
PSI Ratings for Dispensing System Components

Viscosity, cP	RAM psi (11:1 ratio)	Material psi	Atomizing psi	Tip Nozzle	Spray Diameter (8-10" distance)
< 20,000	5-10	10-20	10-20	0.040"	8-10"
20,000 - 75,000	20-25	20-25	20-35	0.080"	6-8"
75,000 - 100,000 +	50-75	45-75	50-80	0.120"	6-8"

11. Continue to run the pump and adjust settings until all air is purged from system.
12. Record settings. Turn off the pail pump.
13. Clean valve nozzle threads and securely replace nozzle and nozzle cap on the SG-200 spray gun.

**NOTE:** Wear protective clothing, gloves, and hearing and eye protection when using the pail pump system. Do not place hands near or inside of the ram pump. Refer to the Ram Pump Operator's Manual for repair, cleaning, and use instructions.

## E—Systems with a Customer-Supplied Reservoir Retainer/Tank

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

## Optimizing Spray System



**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.

## Adjust the Flow Rate & Spray of the Dispensing System

After assembling and purging the air from the dispensing system, follow the steps below to adjust spray and flow rate per application needs.

The keys to precise and consistent delivery of fluid include:

- Proper selection of a spray cap
- Proper balance between atomizing and material pressure ratios
- Precision control and stability of the air pressure in the reservoir

## Adjusting the Reservoir Pressure

1. Select the spray cap you will be using for the application and install it on the spray gun. There are 3 nozzle & cap combinations with larger/smaller bores and geometries that affect spray and deposit consistency. It is recommended that spray trials be performed to evaluate performance.

**NOTE:** Good practice is to set up 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 material pressure regulator (on bottle drop-in tanks, adjust the air precision regulator instead).

**NOTES:** 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.

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 material pressure regulator to at least 10 psi (0.69 bar) less than the air filter/regulator.

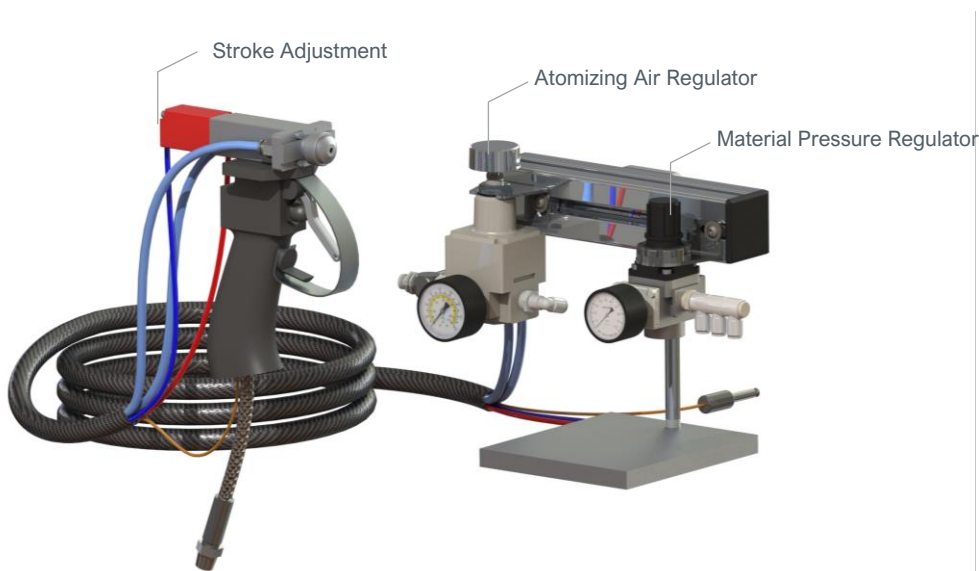
## Adjusting the Spray Pattern

1. Turn on the air supply to the ram pump, DVC-345 controller, and spray gun atomizing regulator stand.
2. With the gun secure and pointing away from people and unintended target objects, turn on the atomizing switch. Air will begin to flow immediately. The atomizing flow is in an “Always On” position.
3. Aim the spray nozzle at the desired surface and depress the trigger to begin material flow.
4. Adjust the nozzle size, pressures, and flow rates as necessary to achieve desired performance.

**NOTE:** Personal protective devices should be worn and the area should be properly ventilated when working with this equipment. See safety protocols and operating procedures for each piece of equipment.

The SG-200 spray system is now ready to use.

**Figure 12.**  
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 the material pressure regulator with the air supply off (except for bottle drop-in tanks which are controlled by an air precision regulator mounted on the lid).

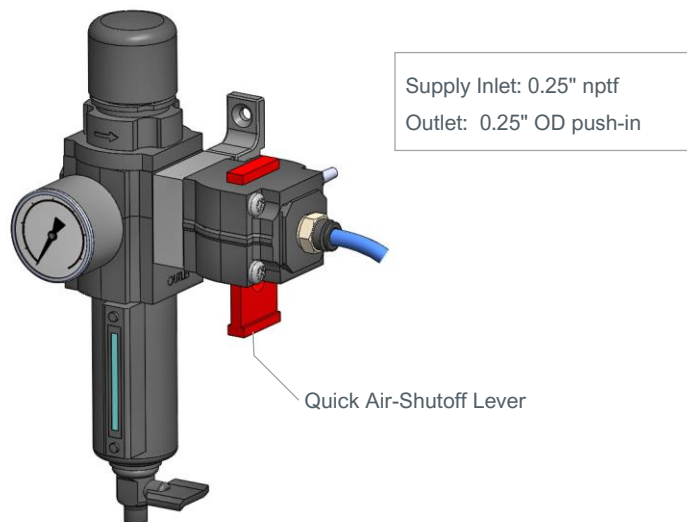
**NOTE:** The bottle drop-in tank's precision air regulator comes with three gauges: 0-30 psi (0-2.1 bar), 0-60 psi (0-4.1 bar), and 100 psi (0-6.9 bar). Use the 1-30 psi (0-2.1 bar) gauge with thin materials and increase up to the 0-100 psi (0-6.9 bar) gauge with very thick materials.

3. Open the air supply to the hand-held spray gun.

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

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

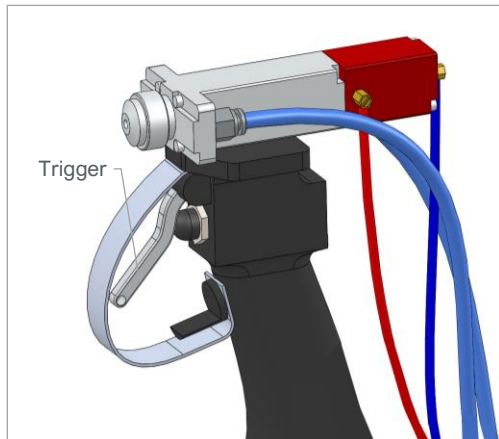
**Figure 13.**  
Air Filter/Regulator with Quick Air-Shutoff Lever (PN T16307)



5. Depress the trigger on the handle (Figure 14) 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 14.**  
Spray Gun Handle



6. Adjust the pressure on the atomizing air regulator (Figure 12) 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 14) is pressed.
7. 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.
8. Hold the valve and trigger handle assembly and aim it to a place where the material can be purged.
9. Depress the trigger of the handle assembly (Figure 14) 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.
10. Adjust the settings and begin to coat.
11. Once the desired flow rate and spray pattern are achieved, lock the stroke adjustment screw (Figure 12).

## 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. This will stop the flow of air to the system and 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 unpressurized 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.

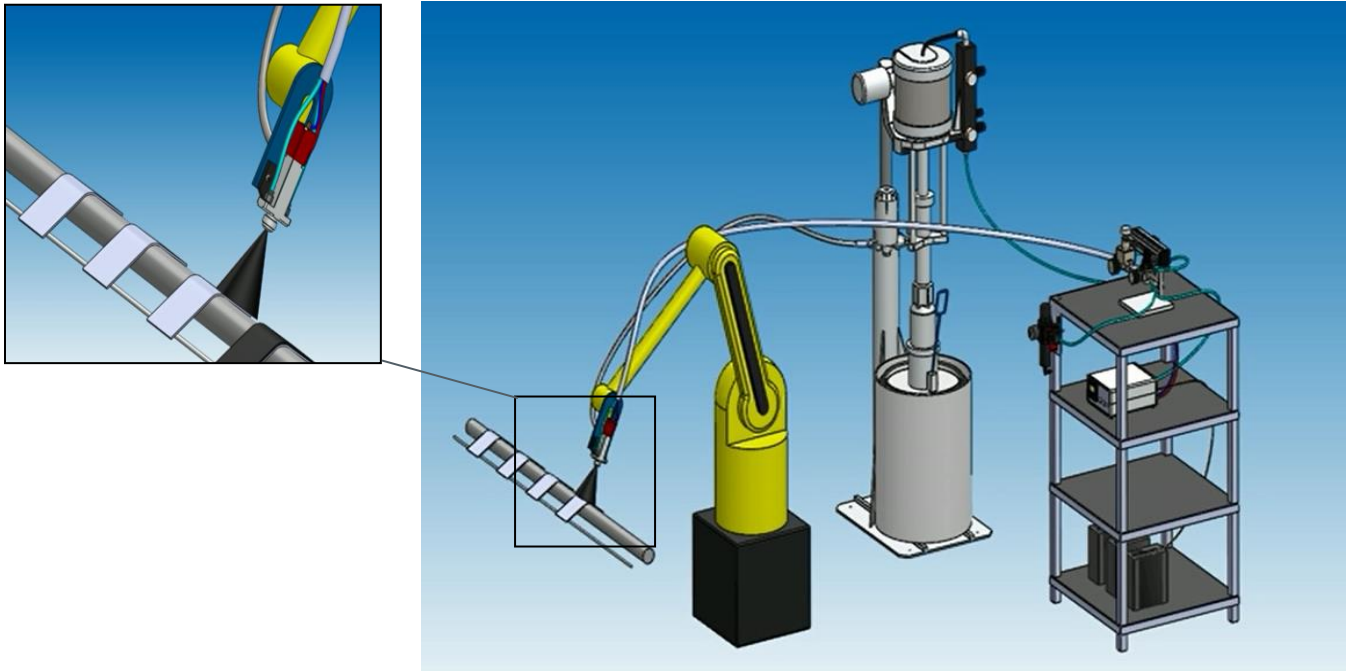
If the system has been down for an extended period of time, the material in the spray cap may have cured. Shut the system down and clean or replace the spray cap.

# Optional Configurations

## Automated Systems

The SG-200 offers versatility beyond hand-held applications. By removing the lower handle portion of the gun, the valve can be mounted to XYZ tables or robotic arms for automated environments, or where application control is critical.

**Figure 15.**  
Robotic System



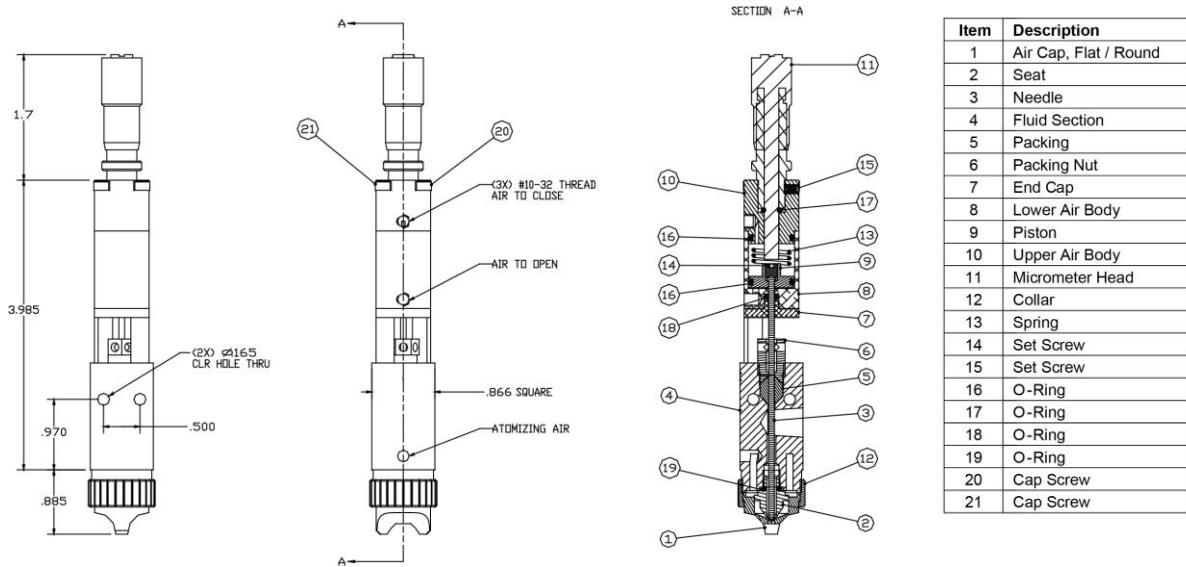
To use the SG-200 in an automated system:

1. Remove the handle from the mounting plate of the valve, and pull tubing and trigger wiring through handle free and clear.
2. Place 345 controller and reservoir in preferred working locations, keeping distances between components as short as possible.
3. Disconnect 0.25" jack from rear of 345 controller, and replace with input from automation/PLC controller.
4. Route material line to valve inlet.
5. Route air actuation lines to valve.
6. Mount valve onto arm/XYZ head (mounting plate not provided).
7. Set 345 controller dispense time and duration in conjunction with XYZ speeds.
8. Purge air and adjust atomizing/delivery ratios using regulators
9. Try different nozzle/cap combinations to adjust fan and deposit patterns across different materials.

# Cleaning and Maintenance

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

**Figure 16.**  
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 with pump and valve components. 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.

Follow Setup Section for all new materials to set RAM pump, material regulator, and atomizing pressures.

### 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.

- Using the tip of a 3/32" Allen key, loosen the packing nut (6).
- 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.

- Pull the air section (red anodized portion) away from the fluid section (stainless steel portion).
- Clean off the tip of the stainless-steel needle (3).
- From the fluid section of the valve, unthread and remove the packing nut (6), and the packing (5).
- Unthread and remove the collar ring (12) followed by the air cap (1).
- 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).
- Place the M7 wrench on the flats of the seat extension to unthread and remove from the fluid section followed by the 007 Kalrez® o-ring (19).

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

- Clean all the wetted parts thoroughly with an appropriate solvent.
- 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.

- 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).
- 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.
- Remove the 004 Buna o-ring (18) from the lower air body (8).
- 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).
- 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).
- 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.
- 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 Kalrez® 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 screwdriver to lock the micrometer in the zero position.

# Troubleshooting

**Table 2.**  
Troubleshooting for the SG-200 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
	Atomization pressure too high impeding material flow	Reduce atomizing pressure, increase nozzle size
	Material cured in fluid section	Disassemble valve and clean
Spray rate too fast	Material PSI too high	Reduce material pressure
Spray rate too slow	Material PSI/flow rate too low	Increase material pressure. Increase nozzle size
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
	Not enough material flow	Nozzle bore too small
	Atomizing air pressure set too high	Reduce atomizing air pressure
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
<b>Air Regulators</b>	
Air Filter Regulator with Air-Shutoff Lever	T16307
Precision Air Regulator for Fluid Pressure	T16629
<b>Air Line Kits</b>	
1/4" OD Air Line Kit	T16789
<b>Caps</b>	
Round Spray Air Cap	T15698
Flat Spray Air Cap	T15697
Nozzle & Round Cap Kit - high viscosity (0.045", 0.080", & 0.120" bores)	T18020
<b>Retainers</b>	
20 oz Handle-Mounted Retainer	
<b>Fittings</b>	
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
<b>Fluid Line Kits</b>	
Fluid Line Kit, 3/8" OD, Black PE, 6 ft	T16787
Fluid Line Kit, 1/4" OD, Black PE	T16793
Fluid Line Kit, 3/8" OD Braided SST Hose with 3/8" Fittings (Ram Pump, High Pressure Only)	T18006
<b>Parts Kits</b> (includes seat, seat wrench, needle, Teflon® packing, and Buna and Kalrez® o-rings)	
SG-200 Replacement Seal, Rebuild Kit	T18021
<b>Stands</b>	
Front Closing Stand with Drip Cup	T15454

# Specifications

## System Specifications



### Materials of Construction—Wetted Parts

Dispensing valve = 303 and 304 stainless steel, Teflon<sup>®</sup>, Kalrez<sup>®</sup>

Spray nozzle = Stainless steel

Fluid tubing = light-blocking, black, polyethylene, Teflon lined stainless steel

Fluid tubing fittings = acetal, stainless steel

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

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

Dymax ram pump (high-pressure systems only) = stainless steel, Teflon<sup>®</sup>

### 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 12oz, and 20-oz (160ml, 300ml) 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

Ram Pump, 5Gal (15L) capacity. Taper or Straight Pail adapters included.

### 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.

**IMPORTANT NOTE:** DYNAMAX CORPORATION RESERVES THE RIGHT TO INVALIDATE ANY WARRANTIES, EXPRESSED OR IMPLIED, DUE TO ANY REPAIRS PERFORMED OR ATTEMPTED ON DYNAMAX EQUIPMENT WITHOUT WRITTEN AUTHORIZATION FROM DYNAMAX. THOSE CORRECTIVE ACTIONS LISTED ABOVE ARE LIMITED TO THIS AUTHORIZATION.

## Index

- Adjusting Fluid Flow Rate, 24
- Adjusting Spay Pattern, 25
- Air Filter/Regulator, 6
- Air Line, 7
- Air Precision Regulation
  - Installing Alternative Gauges, 14
- Assembly, 13
  - Bottle Reservoir Systems, 18
  - Cartridge Reservoir Systems, 16, 20, 21, 22
  - Connect Dispensing Valve to Reservoir, 17
  - Initial Setup, 15
  - Pail Reservoir Systems, 19, 20
  - System with No Reservoir Supplied, 23, 28
  - Utilities, 14
- Cartridge Reservoir Retainer, 7
- Cleaning and Maintenance, 29
- Compressed air requirements, 14
- Contact Information, 4
- Description of Components
  - How the System Works, 6
- Description of System Components, 6
- Features of Spray System, 6
- Flow Rate Adjustment, 24
- Fluid Line, 7
- Help, 4
- Maintenance, 29
- Material Reservoir, 7
- Overview of the Spray Gun System, 6
- Parts, 13
- Parts Included with System
  - Bottle Reservoir Systems, 13
  - Cartridge Reservoir Systems, 13
  - Pail Reservoir Systems, 14
- Preparing the System for Use, 23
- Pressure Regulators, 6
- Process Flow Diagram, 6
- Purging Air From the System, 23
- Reservoir Sizes, 4
- Retainers
  - Bottle Drop-In Reservoirs, 10
  - Cartridge Reservoirs, 9
  - Pail Drop-In Reservoirs, 11
- Retainers and Tanks
  - Types, 9
- Safety, 4
  - Fire and Explosion Hazard for Spraying Applications, 5
  - Preventing Injection Injury, 5
  - Using Safe Operating Pressures, 5
- Shutting the System Down, 27
- Specifications, 32
  - Air Regulator Specifications, 32
  - Operating Specifications, 32
  - Reservoir Specifications, 32
  - System Specifications, 32
- Spray Gun, 7
- Spray Gun Stand, 7
- Spray Pattern Adjustment, 25
- Spray System
  - Special Features, 6
- Starting the System, 26
- Startup, 27
- Tip Selection, 24
- Troubleshooting, 30
- Utilities, 14
- Warranty, 33



[www.dymax.com](http://www.dymax.com)

**Americas**

USA | +1.860.482.1010 | [info@dymax.com](mailto:info@dymax.com)

**Europe**

Germany | +49 611.962.7900 | [info\\_de@dymax.com](mailto:info_de@dymax.com)

Ireland | +353 21.237.3016 | [info\\_ie@dymax.com](mailto:info_ie@dymax.com)

**Asia**

Singapore | +65.67522887 | [info\\_ap@dymax.com](mailto:info_ap@dymax.com)

Shanghai | +86.21.37285759 | [dymaxasia@dymax.com](mailto:dymaxasia@dymax.com)

Shenzhen | +86.755.83485759 | [dymaxasia@dymax.com](mailto:dymaxasia@dymax.com)

Hong Kong | +852.2460.7038 | [dymaxasia@dymax.com](mailto:dymaxasia@dymax.com)

Korea | +82.31.608.3434 | [info\\_kr@dymax.com](mailto:info_kr@dymax.com)

© 2014-2018 Dymax Corporation. All rights reserved. All trademarks in this guide, except where noted, are the property of, or used under license by Dymax Corporation, U.S.A. Teflon & Kalrez are registered trademarks of DuPont.

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. T18413 MAN068 2/8/2018