Model 455 Dispensing Systems

Systems User Guide
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Safety

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.

Operating Specifications

- Recommended compressed air supply pressure to air filter/regulator = 60 to 90 psi (4.14 to 6.21 bar)
- Recommended pressure setting at air filter/regulator = 75 psi (5.2 bar)
- Maximum pressure setting at air filter/regulator = 100 psi (6.9 bar)
- Power required = 110V power receptacle (customer supplied)
Configuration Overview

1. Controls

Dymax valves and digital controller provide precise and consistent actuation.

- Pneumatic function
- Footswitch, manual, or PLC controlled
- Easy to operate
- Manual or timed dispense mode

2. Dispensing Valve & Accessories

Dymax dispensing valves for handheld and bench-top applications deliver precision solutions for low- to high-viscosity materials. Various style tips and accessories are also available.

3. Reservoirs

Dymax carries a variety of material reservoirs to accommodate most dispensing applications.

- Range of volumes from 6 oz. cartridges to 10-gallon pressure tanks
- Easy change-over and control
Key System Connections

NOTE: Figures 1-4 apply to all systems.

Figure 1. Valve Air & Material Connections

Fluid in from reservoir
Pinch tube should extend no more than 1"
Air in from controller

Figure 2. Controller Connections, Rear Panel

Air out to valve
Foot switch input
Power supply input
Air in from filter regulator

Figure 3. High-Precision Regulator Connections

Air out to reservoir
Air in from filter regulator

Figure 4. Filter Regulator

Supply air in
Air to controller and high-precision regulator for reservoir
Dispensing Tips

A variety of both needle and taper dispense tips in various lengths, gauges, and shapes are available from Dymax. Tip selection is critical when precision is required and the length, shape, and size of the tip used will define the shape of the fluid deposit and the performance of your dispense system.

The following tips are included with this system, and are recommended for use with the Model 485 dispensing valve. Either tip kit can be used depending on the exact viscosity and application.

**P3423** Dispensing Tip Kit for Medium- to High-Viscosity Materials (>500 cP)

<table>
<thead>
<tr>
<th>Part #</th>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3169</td>
<td>Amber</td>
<td>15 GA Needle Tip</td>
</tr>
<tr>
<td>P3170</td>
<td>Green</td>
<td>18 GA Needle Tip</td>
</tr>
<tr>
<td>P3232</td>
<td>Green</td>
<td>18 GA Tapered Tip</td>
</tr>
<tr>
<td>P3247</td>
<td>Red</td>
<td>25 GA Tapered Tip</td>
</tr>
</tbody>
</table>

Additional kits are available (sold separately) for a range of applications using lower viscosity materials.
System Configurations

A  Systems Using a Cartridge Retainer (p. 8-9)

B  Systems Using a Bottle Drop-In Tank (p. 10-12)

C  Systems Using a 10-Gallon Pressure Tank (p. 13-15)
A - Systems Using a Cartridge Retainer

Packaged Components

- **T17725**
  System User Guide

- **T16786**
  Controller Air Line Kit

- **T16789**
  Reservoir Air Line Kit

- **T16307**
  Filter Regulator

- **T16629**
  High-Precision Regulator

- **T11146**
  DVC-345 Controller

- **T15279**
  Lab Stand, 24" [5.08 cm]

- **T15449**
  Mounting Assembly

- **Cartridge Reservoirs**
  - 6 oz **T15257**
  - 12 oz **T14085**
  - 20 oz **T15223**

- **Model 455 Valve**
  - .125" Black PE Tubing **T17555**
  - .095" Black Teflon Tubing **T17552**
  - .066" Black Teflon Tubing **T16029**
Assembled System

User Supplied Items

<table>
<thead>
<tr>
<th>Description</th>
<th>Spare Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-90 psi air supply, ¼ NPT male fitting</td>
<td>¼&quot; male to ¼&quot; quick-disconnect fitting</td>
</tr>
<tr>
<td>110V power receptacle</td>
<td></td>
</tr>
</tbody>
</table>
B - Systems Using a Bottle Drop-In Tank

Packaged Components

- T17423 Tube Assembly, ⅜ to ¼ NPT
- T17555 System User Guide
- T16786 Controller Air Line Kit
- T16789 Reservoir Air Line Kit
- T16307 Filter Regulator
- T11146 DVC-345 Controller
- T15279 Lab Stand, 24"[5.08 cm]
- T15449 Mounting Assembly
- Model 455 Valve
  - .125" Black PE Tubing T17555
  - .095" Black Teflon Tubing T17552
  - .066" Black Teflon Tubing T16029
- T17004 1 Gallon Bottle Drop-In Tank
Assembled System

User Supplied Items

- 60-90 psi air supply, ¼ NPT male fitting
- 110V power receptacle

Spare Parts

- ¼" male to ¼" quick-disconnect fitting
Installing the Fluid Line to the Reservoir

Tube length from top of fitting: 14.5"
End of tubing must be cut at an angle.

1-Liter Bottle
1-Gallon Bottle
C - Systems Using a 10-Gallon Pressure Tank

Packaged Components

- **Model 455 Valve**
  - .125" Black PE Tubing
  - .095" Black Teflon Tubing
  - .066" Black Teflon Tubing

- **10-Gallon Pressure Tank**

- **Controller**
  - DVC-345

- **System User Guide**
  - T17555

- **Controller Air Line Kit**
  - T16786

- **Reservoir Air Line Kit**
  - T16789

- **Filter Regulator**
  - T16307

- **Lab Stand, 24" [5.08 cm]**
  - T15279

- **Mounting Assembly**
  - T15449

- **1.38 to 0.25 NPT Tube Assembly**
  - T17423

- **System User Guide**
  - T17555
Assembled System

- T16307 Filter Regulator
- T16789 Reservoir Air Line Kit
- T17423 Tube Assembly, ¼ to ⅜ NPT
- T16786 Controller Air Line Kit
- T15449 Mounting Assembly
- T11146 DVC-345 Controller
- T3423 Dispense Tip Kit
- T15279 Lab Stand, 24”[5.08 cm]
- Model 455 Valve
  - .125” Black PE Tubing
  - .095” Black Teflon Tubing
  - .066” Black Teflon Tubing
- T16864 10-Gallon Pressure Tank
- T17555 10-Gallon Pressure Tank
- T17552 Dispense Tip Kit
- T16029 Tube Assembly, ⅜ to ¼ NPT

User Supplied Items

- 60-90 psi air supply, ⅜ NPT male fitting
- 110V power receptacle

Spare Parts

- ¼” male to ⅜” quick-disconnect fitting
Installing the Fluid Line to the Reservoir

Tube to be flush with the bottom of the lid tube

15-Liter Pail
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