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

Figure 2. Controller Connections, Rear Panel

Figure 3. High-Precision Regulator Connections

Figure 4. Filter Regulator
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>
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</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

- **T17423**  
  Tube Assembly, ⅜ to ¼ NPT

- **T11146**  
  DVC-345 Controller

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

- **T17725**  
  System User Guide

- **T16786**  
  Controller Air Line Kit

- **T16789**  
  Reservoir Air Line Kit

- **T16307**  
  Filter Regulator

- **T16629**  
  High-Precision Regulator

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

- **T15449**  
  Mounting Assembly

- **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>Item Description</th>
<th>Part Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-90 psi air supply, ¼ NPT male fitting</td>
<td>T15257</td>
</tr>
<tr>
<td>110V power receptacle</td>
<td>T14085</td>
</tr>
<tr>
<td>12 oz Cartridge Reservoir</td>
<td>T15223</td>
</tr>
</tbody>
</table>

Spare Parts

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Part Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>¼&quot; male to ¼&quot; quick-disconnect fitting</td>
<td>T16789</td>
</tr>
<tr>
<td>Model 455 Valve</td>
<td>T15449</td>
</tr>
<tr>
<td>.125&quot; Black PE Tubing</td>
<td>T17555</td>
</tr>
<tr>
<td>.095&quot; Black Teflon Tubing</td>
<td>T17552</td>
</tr>
<tr>
<td>.066&quot; Black Teflon Tubing</td>
<td>T16029</td>
</tr>
<tr>
<td>Lab Stand, 24&quot; [5.08 cm]</td>
<td>T15279</td>
</tr>
</tbody>
</table>
B - Systems Using a Bottle Drop-In Tank

Packaged Components

- **T17423**: Tube Assembly, ⅜ to ¼ NPT
- **T17755**: System User Guide
- **T16786**: Controller Air Line Kit
- **T16789**: Reservoir Air Line Kit
- **T16307**: Filter Regulator
- **T15279**: Lab Stand, 24" [5.08 cm]
- **T15449**: Mounting Assembly
- **T17004**: 1 Gallon Bottle Drop-In Tank
- **T11146**: DVC-345 Controller
- **T16306**: Model 455 Valve
  - .125" Black PE Tubing
  - .095" Black Teflon Tubing
  - .066" Black Teflon Tubing
- **T16029**: Mounting Assembly
- **T16786**: Controller Air Line Kit
- **T16789**: Reservoir Air Line Kit
- **T16307**: Filter Regulator
- **T15279**: Lab Stand, 24"[5.08 cm]
- **T15449**: Mounting Assembly
- **T17004**: 1 Gallon Bottle Drop-In Tank
Assembled System

User Supplied Items

<table>
<thead>
<tr>
<th>Item Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-90 psi air supply, ¼ NPT male fitting</td>
</tr>
<tr>
<td>110V power receptacle</td>
</tr>
</tbody>
</table>

Spare Parts

<table>
<thead>
<tr>
<th>Item Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>¼&quot; male to ¾&quot; quick-disconnect fitting</td>
</tr>
</tbody>
</table>
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

- T16786 Controller Air Line Kit
- T17555 System User Guide
- T16789 Reservoir Air Line Kit
- T16307 Filter Regulator
- T17423 Tube Assembly, ¾ to ¼ NPT
- T15279 Lab Stand, 24″[5.08 cm]
- T11146 DVC-345 Controller
- T15449 Mounting Assembly
- Model 455 Valve
  - .125″ Black PE Tubing
  - .095″ Black Teflon Tubing
  - .066″ Black Teflon Tubing
- T16864 10-Gallon Pressure Tank
- T16307 Filter Regulator
**Assembled System**

User Supplied Items

- 60-90 psi air supply, ¼ 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
Please note that most dispensing 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 standard Conditions of Sale published on our website at www.dymax.com/pdf/Conditions_of_Sale.pdf. 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. Data sheets are available for valve controllers or pressure pots upon request.