THIS CATALOG

The Humphrey Valve Catalog provides basic decision-making information about our broad range of valve products. View valve fundamentals, principles and background information on the first page of each valve section, then use the index to navigate to the best solution.

Further information, such as detailed specifications, CAD viewers and CAD downloads, are readily available at www.humphrey-products.com. Specifications listed in this catalog and on the website are based on testing data and may vary by environment and application. Dimensions are in nominal inches to depict the overall size of the product.

GET MORE INFORMATION

VISIT WWW.HUMPHREY-PRODUCTS.COM

• FIND A DISTRIBUTOR
  Humphrey markets its products globally through factory trained, authorized stocking distributors
  Click FIND A DISTRIBUTOR to locate one in your local area.

• ENGINEERED SOLUTIONS
  Humphrey produces custom valve solutions and systems through its ENGINEERED SOLUTIONS GROUP.
  Click ENGINEERED SOLUTIONS to view Case History examples of this service.

• ONLINE PRODUCT GUIDE
  The ONLINE PRODUCT GUIDE is a comprehensive real time catalog of products – both valves and cylinders.
  • Search by spec or model number.
  • List prices shown for all products.
  • Specification sheets are in PDF format for easy viewing and download.
  • Product drawings in several formats for downloading and using in 3D CAD software.
  • Configure your product and email the distributor to Request a Quote.

CONTACT HUMPHREY PRODUCTS

FACTORY CUSTOMER SERVICE PHONE  
1-800-477-8707 or 269-381-5500

FACTORY CUSTOMER SERVICE FAX
269-381-4113

FACTORY CUSTOMER SERVICE EMAIL
webcust@humphrey-products.com

WEBSITE
www.humphrey-products.com

TECHNICAL SUPPORT
webtech@humphrey-products.com

LITERATURE AND MARKETING REQUESTS
websales@humphrey-products.com
**MANUAL AND MECHANICAL VALVES**

**INTRODUCTION**

*Humphrey Manual and Mechanical Air Valves feature the exclusive diaphragm-poppet design originated by Humphrey. The design consists of two specially contoured diaphragms mounted to an axial stem within a full orifice valve body. This classic design is simple, versatile, and highly reliable. Valves of this design perform equally well with or without air supply lubrication, and better than competitive products when under poor air conditions.*

Humphrey Manual and Mechanical valves are available in 2-, 3- and 4-way porting types, and in a variety of rugged actuator styles.

- Mechanical actuator styles: Ball, Plunger, Cam and Overstroke-Compensated Cam.

**MANUAL/MECHANICAL VALVE FEATURES:**

- Simple construction
- No lubrication
- Reliable Operation
- Compact and Lightweight
- Rugged
- Cost effective

**FLOW PATH, BASIC NORMALLY CLOSED (NC) AND NORMALLY OPEN (NO) VALVES**

**250 NC, Unactuated**

Media applied to IN routes down, passing through perforations in bottom diaphragm-poppet and becomes primary force holding valve closed. Top diaphragm-poppet is not seated, so OUT port is open to EXHAUST port (backside, not shown).

**250 NC, Actuated**

When the button is depressed, the top diaphragm-poppet seats, while bottom diaphragm-poppet opens, allowing media to pass through to OUT port, while EXHAUST port (backside, not shown), becomes blocked.

**250 NO, Unactuated**

Media applied to IN routes up, passing by unseated diaphragm-poppet to OUT port, and becomes primary force holding valve open. Bottom diaphragm-poppet is seated and OUT port is blocked from the EXHAUST port (backside, not shown).

**250 NO, Actuated**

When the button is depressed, the top diaphragm-poppet seats, while bottom diaphragm-poppet opens, allowing media to become blocked from OUT port, while EXHAUST port (backside, not shown), becomes open to OUT port.
### 2-, 3-WAY VALVES

<table>
<thead>
<tr>
<th>Ports</th>
<th>CFM</th>
<th>Valves</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAC</td>
<td>10-32</td>
<td>6</td>
<td>2P, 3P, 2V, 3V, 2VR, 3V</td>
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<tr>
<td>TAC2</td>
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<td>18</td>
<td>31P, 31PPX, 31V, 31V</td>
</tr>
<tr>
<td>125 Series Manual</td>
<td>1/8</td>
<td>18</td>
<td>125PLG, 125P, 125HO, 125T, 125V</td>
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<tr>
<td>125 Series Mechanical</td>
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<td>125B, 125MP, 125MC</td>
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<td>50</td>
<td>250C</td>
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### 4-WAY VALVES

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<td>4P, 4PP, 4PPX, 4V, 4VR</td>
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<td>41P, 41PP, 41PPX, 41V, 41VR</td>
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<td>TAC three-position</td>
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<td>41R-D(S)3, 41T-D(S)3</td>
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<td>TAC3</td>
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<td>42P, 42PP, 42PA, 42A, 42A2</td>
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<td>250-4 Series</td>
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<td>50</td>
<td>250-4F, 250-4H</td>
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</table>

*Nominal flow @100 PSI*

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### Force to Actuate @100 PSI (lbs.)

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<tr>
<th>Manual or Mechanical Actuator Code</th>
<th>B</th>
<th>C</th>
<th>F</th>
<th>H</th>
<th>HO</th>
<th>MC</th>
<th>MP</th>
<th>P</th>
<th>PL</th>
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</tbody>
</table>
Diaphragm-Poppet Manual Valves

250P, 250PL, 250F, 250V, 250HO, 250T

The classic Humphrey diaphragm-poppet design is unique, simple and trouble free. Valve does not leak. Seals tight and cannot stick. Works with clean or poor air. Millions of trouble free cycles are expected, regardless of media or ambient conditions.

Models/Descriptions:
- **250P**: Pushbutton Operated
- **250PL**: Palm Operated
- **250HO**: Hold-On, Detented
- **250T**: Fingertip Operated
- **250V**: Toggle, Detented
- **250F**: Foot Operated

These rugged 2- or 3-way valves are available in normally closed or normally open, or optional brass body construction (for alternate media).

Features
- Full ported 1/4” orifice, 1/4 PIPE ports.
- Fast cycling, high flow, quick dump.
- Hard plumb mount, or base mount.
- Buna N seals standard. Fluorocarbon seals optional.
- 250F includes foot guard.

FOR ADDITIONAL INFORMATION AND SPECIFICATIONS, VISIT WWW.HUMPHREY-PRODUCTS.COM TO ACCESS:

- Non-Catalog Options & Product Configuration Utility
- Additional Specifications & Data Sheets
- CAD Viewer & Model Downloads
- General Information & Handling Instructions

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Design Principle:</th>
<th>Pressure Unbalanced, Air Return, Spring Assist</th>
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<tbody>
<tr>
<td>Porting Type:</td>
<td>2- or 3-Way</td>
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<tr>
<td>Port Size:</td>
<td>1/4 PIPE</td>
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</table>

<table>
<thead>
<tr>
<th>Media:</th>
<th>Air, Inert Gas</th>
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<tbody>
<tr>
<td>Pressure Range:</td>
<td>0–125 PSI, HO: 25–125 PSI</td>
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<tr>
<td>Temperature Range:</td>
<td>-20° to 225°F</td>
</tr>
<tr>
<td>Flow @100 PSI:</td>
<td>50 CFM, 1415 LPM (Cv=0.8)</td>
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</tbody>
</table>
Diaphragm-Poppet Manual Valves

250P, 250PL, 250F, 250V, 250HO, 250T

250F – Foot Valve

250V – Toggle

250T – Finger Tip

HOW TO ORDER

<table>
<thead>
<tr>
<th>Base Model</th>
<th>Ports</th>
<th>Function</th>
<th>Mounting</th>
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<tr>
<td>250F</td>
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<tr>
<td>250V</td>
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</tbody>
</table>

Other Option Codes: FKM Seals: "-VAI"; Brass Body: "-BRB"
To learn more about these new products, please contact your distributor or visit our website at:
www.humphrey-products.com

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