C Series Valves

- Accurate, repeatable
- Minimal pressure surge
- Smooth, chatter-free bypass
- Adjustable
- Easy to service
- No external springs or moving parts
- Various seal material
- Stainless steel or brass bodies
- Used with any positive displacement pump
C Series Hydra-Cell Valves bypass system fluid to prevent excess system pressure. When a system discharge is completely closed — such as a closed spray gun, closed valved or plugged nozzle — the Hydra-Cell Valve bypasses the total system fluid flow. They also balance system pressure for multiple-gun operations.

The Hydra-Cell Valve design is simple: a tapered plunger with a valve seat. When excess pressure overcomes the adjustable spring pressure on the plunger, the plunger lifts off the seat, allowing fluid to bypass and reduce system pressure. When a Hydra-Cell Valve is mounted in the discharge line, its modified flow-through design reduces wear on the plunger and seat. Baffles on either side of the plunger and seat extend life by directing the flow around these internal components.

For service, simply remove the top of the body and replace the worn internal components. Hydra-Cell Valves can be serviced in place without removing any fittings or plumbing.

C22/C23/C24 Series
C22, C23, and C24 Series Hydra-Cell Regulating Valves are available in a choice of stainless steel, nickel alloy or solid brass materials and accommodate 3/4" to 1-1/4" NPT plumbing.
- Heavy-duty construction
- Flow-through design
- Immediate response

C46 Series
C46 Series Valves are available in a choice of stainless steel or solid brass materials and accommodate 3/8" NPT plumbing.
- Heavy-duty construction
- Flow-through or off-line design
- Quick response
C22/23/24 Series Valves

C-22 with 3/4” NPT Ports

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>gpm</td>
<td>I/min</td>
</tr>
<tr>
<td>C-22</td>
<td>10</td>
<td>37.8</td>
</tr>
<tr>
<td>C-23</td>
<td>20</td>
<td>75.7</td>
</tr>
<tr>
<td>C-24</td>
<td>40</td>
<td>151.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pressure Range</th>
<th>Model Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>psi</td>
<td>AA</td>
</tr>
<tr>
<td>C-22</td>
<td>50-500</td>
</tr>
<tr>
<td>C-23</td>
<td>50-500</td>
</tr>
<tr>
<td>C-24</td>
<td>50-500</td>
</tr>
<tr>
<td>bar</td>
<td>3.5-34.5</td>
</tr>
<tr>
<td>C-23</td>
<td>3.5-34.5</td>
</tr>
<tr>
<td>C-24</td>
<td>3.5-34.5</td>
</tr>
</tbody>
</table>

Max Temperature: 200°F

Inlet and Outlet Ports
- C-22: 3/4” NPT
- C-23: 1” NPT
- C-24: 1-1/4” NPT

Weight
- C-22: 3 lbs (1.3 kg)
- C-23: 6 lbs (2.7 kg)
- C-24: 10 lbs (4.5 kg)
C22/23/24 Series Valves

**C-23 with 1” NPT Ports**

**C-24 with 1-1/4” NPT Ports**

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**Installation Guidelines**

C Series Valves are installed in the discharge line of the pump between the pump and any shut-off device, valve or spray gun. Bypassed fluid should return to the tank or inlet plumbing. Do not install a shut-off device of any kind in the bypass line.

When operating as a pressure-regulating relief valve, 10% of the valve’s rated flow should be bypassed at all times. Check the system periodically to ensure this requirement is met. Failure to do so may result in pressure spikes and premature system wear.

When used as a pressure regulator, system pressure will increase approximately 10% when the system is fully bypassed. Consult operating manual for specific ratings.
# C22/23/24 Series Valves

## Materials of Construction

C22, C23 and C24 Series Valves are manufactured in a choice of heavy-duty materials to meet specific plumbing needs.

<table>
<thead>
<tr>
<th><strong>Valve Bodies/Tops</strong></th>
<th><strong>Valve Seats</strong></th>
<th><strong>Plungers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Brass</td>
<td>316 Stainless Steel</td>
<td>316 Stainless Steel</td>
</tr>
<tr>
<td>Nickel Alloy (Hastelloy Remelt, CMW12D)</td>
<td>17-4 Stainless Steel Hastelloy® C</td>
<td>17-4 Stainless Steel Hastelloy® C</td>
</tr>
<tr>
<td>316 Stainless Steel</td>
<td>Tungsten carbide</td>
<td>Tungsten carbide</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>O-Rings/Seals</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EPDM/Teflon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buna-N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viton® /Teflon</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Valve Seats

- 316 Stainless Steel
- 17-4 Stainless Steel
- Hastelloy® C
- Tungsten carbide
### Ordering Information

A complete C22/23/24 Series Model Number contains 11 digits including 8 customer-specified design options: for example C22DABNSSEF.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 3 Configuration
- C22 3-10 gpm (11.3 - 37.8 l/min)
- C23 3-20 gpm (11.3 - 75.7 l/min)
- C24 5-40 gpm (18.9 - 151.4 l/min)

#### 5 Pressure Range
- A 50-500 psi (3.5-34.5 bar)
- B 500-1000 psi (34.5-69 bar)
- C 1000-1500 psi (69-103 bar)
- E 1500-2500 psi (103-172 bar) – Model C22 only

#### 6 Bodies/Tops Material
- B Brass
- H Nickel Alloy (Hastelloy Remelt, CMW12D)
- S 316 Stainless Steel

#### 7 O-Rings/Seals
- E EPDM/Teflon
- N Buna-N
- V Viton®/Teflon

#### 8 Valve Seats
- R 17-4 Stainless Steel
- S 316 Stainless Steel
- H Hastelloy® C
- T Tungsten carbide

#### 9 Plungers
- R 17-4 Stainless Steel
- S 316 Stainless Steel
- H Hastelloy® C
- T Tungsten carbide

#### 10 Seat Size
- E C-22
- J C-23
- N C-24

#### 11 Port Size
- F C-22 (3/4")
- G C-23 (1")
- H C-24 (1-1/4")
**C46 Series Valves**

**Capacity**

<table>
<thead>
<tr>
<th></th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>gpm</td>
<td>l/min</td>
</tr>
<tr>
<td>C-46 (Off-Line)</td>
<td>10</td>
<td>37.8</td>
</tr>
<tr>
<td>C-46 (In-Line)</td>
<td>7</td>
<td>26.5</td>
</tr>
</tbody>
</table>

**Pressure Range**

- Low Spring: 50-500 psi (3.5-34.5 bar)
- Medium Spring: 100-900 psi (6.9-62 bar)
- Standard Spring: 200-1500 psi (13.8-103 bar)

**Max Temperature**

- 180°F

**Inlet and Outlet Ports**

- 3/8” NPT

**Weight**

- 12 oz (0.33 kg)

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**Materials of Construction**

C46 Series Valves are manufactured in a choice of heavy-duty materials to meet specific pumping needs.

**Bodies**

- Brass
- 316 Stainless Steel

**Piston**

- 316 Stainless Steel

**Valve Seat**

- 316 Stainless Steel

**O-Rings**

- EPDM
- Buna-N
- Viton®

**Piston Seal**

- EPDM
- Buna-N
- Viton®

**Spring**

Low, Medium or Standard Chrome Vanadium-plated

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**C46 for Off-Line Mount**

**C46 for In-Line Mount**
### Ordering Information

A complete C46 Series Model Number contains 11 digits including 4 customer-specified design options: example C46AABSESEE.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>4</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S</td>
<td>S</td>
<td>E</td>
<td>E</td>
</tr>
</tbody>
</table>

#### Mounting Design
- **A** In-Line
- **B** Off-Line

#### Pressure Range (Spring Selection)
- **A** Low Spring 50-500 psi (3.5-34.5 bar)
- **B** Medium Spring 100-900 psi (6.9-62 bar)
- **C** Standard Spring 200-1500 psi (13.8-103 bar)

#### Body Material
- **B** Brass
- **S** 316 Stainless Steel

#### O-Rings
- **E** EPDM
- **N** Buna-N
- **V** Viton®
When we say "Simply Built to Last", we mean it! Wanner Engineering Hydra-Cell valves have proven their performance and reliability in some of the toughest industrial equipment and processes.

**Applications**
- Hot fluids
- Reclaim water
- Corrosive fluids
- Slurries
- Abrasives
- Liquid gases
- Wettable powders
- Fertilizers
- Cutting fluids
- Viscous fluids
- Ultrapure fluids
- Chemicals
- Adhesives
- Soap solutions
- Salt water
- and many more...

**Features**
- Various seat materials available: stainless or brass bodies, PTFE diaphragm, etc.
- Made in America
- Heavy-duty industrial construction
- Accurate, repeatable
- Flow-through design
- Minimal pressure surge
- Smooth, chatter-free bypass
- No external springs or moving parts
- Use with any positive displacement pump
- Immediate response
- Adjustable, easy to service

**Capacity**
<table>
<thead>
<tr>
<th></th>
<th>Maximum: 14 gpm (53 l/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum: 1 gpm (3.8 l/min)</td>
<td></td>
</tr>
</tbody>
</table>

**Pressure Range**
- Configuration A: 50-500 psi (3.5-34.5 bar)
- Configuration B: 500-2500 psi (34.5-172 bar)

**Max Temperature**
- 200°F

**Inlet and Outlet Ports**
- 3/4" NPT (BSPT)

**Weight**
- 4 lbs (1.8 kg)

**Materials of Construction**
Attention to detail. Wanner Engineering doesn’t stop with a great design. We will custom fit your valve with the materials best suited for your specific application.

**Bodies/Tops Material**
- Brass
- Nickel Alloy
  (Hastelloy Remelt, CMW12D)
- 316 Stainless Steel

**Valve Seats**
- Hastelloy® C
- 17-4 Stainless Steel
- 316 Stainless Steel

**Plungers**
- Hastelloy® C
- 17-4 Stainless Steel
- 316 Stainless Steel

**O-Rings/Diaphragms**
- PTFE/PTFE
- Viton®/PTFE

**Dimensions**

**Dimensions**

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**C62 Series**

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