900D

DRAG® Control Valve

Engineering GREAT Solutions
900D Control Valve

IMI CCI’s DRAG® technology, pioneered in 1961, is the industry’s leading solution for handling demanding service conditions. The 900D is designed to deliver peak process performance with superior control while minimising losses caused by valve leakage. IMI CCI’s proven DRAG® technology will reduce your equipment and maintenance costs through dramatic reductions in cavitation and vibration – the root cause of damage to trim, adjacent equipment and piping. Supported by the world class technical expertise of the Valve Doctor® program, the 900D is a continuation of IMI CCI’s industry leading critical application solutions that customers have come to depend on.

Key features

> Multi-stage DRAG®
  - Eliminates cavitation, noise and vibration
  - Increases life and reduces maintenance costs

> Tight shutoff
  - Reduces leakage
  - Available in Class IV, Class V & VI with soft seat

> Top entry design
  - Teflon and graphite seals available

> Trim characterisation
  - Linear and equal percentage
  - Custom characterisation available to match specific process requirements

> Easy maintenance
  - Quick change trim allows for ease of maintenance, no internal components are screwed or welded into valve body or bonnet

Benefits

> Control and reliability
  The 900D continues IMI CCI’s tradition of customising valve performance to meet the exacting requirements of your application. In addition to linear and equal percentage characterisation, the 900D can be custom characterised for applications that require critical control

> Solves cavitation
  - Maintains the fluid velocity at minimum levels so that local pressures are unlikely to drop below the fluid vapour pressure
  - Should gas bubbles form, DRAG® reduces the energy to a safe level by dividing the flow into many small channels
  - The 900D adheres to ISA guidelines on trim exit velocity

> Solves vibration
  IMI CCI has extensive experience in helping customers eliminate the damage caused by vibration. Chart 1 shows the dramatic results of applying DRAG® technology and kinetic energy control. Customers typically experience a 90% decrease in peak vibration with the application of DRAG®, and that enables them to:
  - Eliminate valve and piping damage.
  - Minimise system trips
  - Minimise downtime and maintenance costs
  - Eliminate additional piping supports

> Solves noise
  IMI CCI’s philosophy on noise control is to avoid the creation of noise as opposed to trying to muffle it once it’s produced. With the 900D the amount of noise that must be absorbed by the pipe wall or insulation is dramatically reduced, and the noise sensed in the vicinity of the valve is at acceptable levels:
  - DRAG® operates <85 dba
  - Eliminates worker safety concerns
  - Eliminate additional insulation & acoustic barriers
  - Maximise process flow rates

Chart 1: Stem vibration velocity for a conventional valve before retrofit (blue line) and after retrofit with DRAG® trim (red line)
## Materials

<table>
<thead>
<tr>
<th>Component</th>
<th>Item No.</th>
<th>Material Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>1</td>
<td>Carbon steel, chrome-moly steel, stainless steel, other</td>
</tr>
<tr>
<td>Bonnet</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Plug</td>
<td>3</td>
<td>316SS Chr Plt or Stellite, 410 SS HT, Inconel 625, UNS S31803</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chr Plt or Stellite, F11 Stellited, F22 Stellited</td>
</tr>
<tr>
<td>Stem</td>
<td>4</td>
<td>316SS Chr Plt, UNS S31803 Chr Plt, 410 SS Heat Treated, Inconel 718, 17-4PH H1150M</td>
</tr>
<tr>
<td>Seat</td>
<td>5</td>
<td>316 SS, 316 SS with Stellite, 410 SS Heat Treated, Inconel 718, UNS S31803, UNS S31803+Stellite, F11+Stellite, F22+Stellite</td>
</tr>
<tr>
<td>Disk Stack</td>
<td>6</td>
<td>316 SS, 410 SS, Inconel718, S31803</td>
</tr>
<tr>
<td>Balance Cylinder</td>
<td>7</td>
<td>Carbon steel, chrome-moly steel, stainless steel, other</td>
</tr>
<tr>
<td>Balance Seal</td>
<td>8</td>
<td>PTFE + 316 SS, Graphite</td>
</tr>
<tr>
<td>Seat Gasket</td>
<td>9</td>
<td>347 SS with Graphite Filler</td>
</tr>
<tr>
<td>Body/Bonnet Gaskets</td>
<td>10</td>
<td>347 SS with Graphite Filler</td>
</tr>
<tr>
<td>Packing Spacer</td>
<td>11</td>
<td>316 SS</td>
</tr>
<tr>
<td>Packing Set</td>
<td>12</td>
<td>Glass Filled PTFE, Graphite</td>
</tr>
<tr>
<td>Packing Follower</td>
<td>13</td>
<td>316 SS</td>
</tr>
</tbody>
</table>

### Applications

#### Oil & Gas
- Extraction Steam Control
- Fire Water Pump Recirculation
- Fire Water Pump Discharge
- Gas Injection
- Gas Withdrawal (Clean)
- Emergency and Service Vents
- Fuel Gas Regulation Valves
- Compressor Anti-surge
- Hot Gas Bypass
- Process gas to Vent/Flare
- Expander Bypass (JT Valves)
  (non-cryogenic)
- Feedstock Flow/Pressure Control
- Passivation Valve
- Feedgas Regulator
- Lean Amine Pump
- Recirculation Control
- Produced Water Injection (Clean)

#### Power application
- HP Heater Emergency Drains
- Feedwater Regulators
- Startup Feed Regulators
- Soot Blowing
- General Turbine Island BOP
- Condensate Pump Recirculation
- Supercritical Startup Valve
- Deaerator Level Control
- DA Pegging
- Auxiliary Steam PCV

#### Nuclear application
- Atmospheric Dump
- Feedwater Pump Recirculation
- Auxiliary Steam to Deaerator
- Blow Down
- Condensate Drain
- Deaerator Level Control
- Feedwater Heater Drains
- Steam Bypass
- Condenser Dump (Turbine Bypass)
- Feedwater Regulator
- Condensate Pump Recirculation

### Performance data

- **Body type**: Globe/Angle
- **Valve sizes**: 1" through 16"
- **Pressure rating (ANSI class)**: 150, 300, 600, 900, 1500, 2500
- **End connections**: Raised Face Flange, RTJ Flange, Butt Weld End

### Shut-off class, ANSI/FCI 70.2
Class IV, V, VI (Soft Seat)

### Trim characteristics
Linear / Equal Percentage / Custom Characterisation

### Internal actuator type options
IMI CCI Spring Diaphragm
IMI CCI Double Acting Piston

### Stroke time**
- < 30 sec (standard)/ < 1 sec to open, < 5 sec to close (fast stroke)

---

*Designed specifically to match customers process requirements **Lower stroking times upon request