DFT in-line check valves began over 70 years ago with a customer’s need for a small metal-seated check valve that could be installed in any position while providing tight shutoff. The Basic-Check® valve was developed to satisfy that need. Over the following decades, other customers’ needs led to the development of the ALC®, DLC®, DSV®, Excalibur®, GLC®, PDC®, SCV®, WLC®, and Y-Calibur™ styles of axial flow, non-slam silent check valves. Each of these DFT check valves addresses the particular needs of a modern day customer. DFT’s objective is to diagnose check valve problems, provide solutions and prevent failures. DFT has learned by listening to customers like you that each industry has special needs that can exceed other check valve designs. We specialize in providing in-line check valves that meet customer requirements as opposed to simply meeting line size. In some cases, minor modifications to our valves have solved customer problems while improving performance and extending service life. The Check Valve Doctor™ continues to grow as a result of satisfying these needs and solving problems, supported by quick response manufacturing and relentless quality control. That’s why DFT non-slam check valves are known around the world as the valve to use to prevent or eliminate water hammer problems. Whatever your size, pressure or piping configurations, DFT has a check valve for you. Thank you for considering DFT for your check valve requirements.

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How DFT Non-Slam Check Valves Prevent Water Hammer

Water hammer is the generation and effect of high-pressure shock waves (transients) in relatively incompressible fluids. Water hammer is caused by the shock waves that are generated when a liquid is stopped abruptly in a pipe by an object such as a valve disc. Symptoms include noise, vibration and hammering pipe sounds which can result in flange breakage, equipment damage, ruptured piping and damage to pipe supports. Whenever incompressible fluids exist in a piping system, the potential exists for water hammer. The risks of water hammer developing are particularly high when the velocity of the fluid is high, when there is a large mass of fluid moving and/or when there are large elevation changes within the piping systems. Since the swing check must rely on gravity and/or fluid flow to help it close, flow reversal must occur before closure begins. When the swing check finally closes, it abruptly stops the flow and causes a pressure surge resulting in shock waves. These shock waves continue until the energy generated from this sudden action dissipates.

Visit www.dft-valves.com to view DFT’s check valve animations.
Features

Designed to prevent “Water Hammer.”

The spring-assisted, axial flow, in-line, nozzle style, non-slam design featured in all DFT® check valves insures that as the forward flow in a pipeline decreases, the disc begins moving closer to the seat. By the time the flow stops, the disc is closed against the seat preventing flow reversal. This prevents the valve from slamming closed which can cause “Water Hammer” and the resultant noise and damage to piping systems.

Designed to open at approx. 0.5 psi differential pressure and fully open at 1.0 psi differential pressure. See product tables for specific cracking pressures.

Can be installed in ANY position.

Including vertical with flow up or down. (Special springs may be required)

MSS SP 126-2000 Steel Non-slam Spring-Assisted Center Guided Check Valves Standard

DFT carbon steel, stainless steel and alloy valves meet this standard. (Does not apply to the Basic-Check, Restrictor Check or Vacuum Breaker)

API 6D- Pipeline Valves

Contact DFT for products that meet API 6D.

API 6FD- Fire Test for Check Valves

ASME Class 150 and 300 GLC meet API 6FD. (Lines sizes 2-24")

Meet or exceed MSS SP-61 leakage requirements.

Metal-to-metal seating is standard in all DFT non-slam check valves. Cast iron valves meet AWWA seat leakage requirements.

Available with soft seats for bubble-tight shutoff.

Soft seat material selected based on operating temperature and chemical compatibility. See page 42 for available options.

Dual-guided stems.

The stem is guided upstream and downstream to guard against vibrations and insure proper disc seating. (Does not apply to the ALC®, Basic-Check®, DLC®, DSV* (1/2"-2"), Restrictor Check, SCV®, SCV-R® or Vacuum Breaker)

Custom sizing available.

The following DFT check valves can be sized to the appropriate flow conditions: ALC®, Excalibur®, GLC®, WLC®, and Y-Calibur™

Pulse-damping design.

The DFT Model PDC® is specifically designed for use on the discharge of reciprocating air or gas compressors. The design includes a pulse-damping chamber to protect against premature seat wear due to chattering.

Liquids, gas or steam.

All DFT non-slam check valves provide positive shutoff for applications involving liquids, gas or steam and can be used in most industries including oil and gas, petrochemical, pulp and paper, textiles, foods and beverage and commercial construction. Applications include chemical lines, fluid injection, condensate recovery, steam, nitrogen, pump and compressor discharge, chiller and boiler feed systems. See page 42 for additional information.

NACE

Optional body and trim materials to meet the NACE standards MR0103-2003 and MR0175/ISO 15156. See page 41.

Maintenance and Installation guides available for all DFT non-slam check valves.

Valve Selection Chart

<table>
<thead>
<tr>
<th>PAGE</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>12</th>
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<td>2 to 3</td>
<td>2 to 4 (300)</td>
<td>2 to 10</td>
<td>2 to 12</td>
<td>2 to 14</td>
<td>2 to 18</td>
<td>2 to 20</td>
<td>2 to 24</td>
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<td>1 to 10</td>
<td>1 to 10</td>
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<td>X</td>
<td>X</td>
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<td>X(1)</td>
<td>X</td>
<td>SW</td>
<td>X(1)</td>
<td>X(1)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>FLG</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>BV</td>
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<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td></td>
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<td>X(5)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<td>X(3)</td>
<td>X(2)</td>
<td>X(3)</td>
<td>X(2)</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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</tbody>
</table>

Notes:
1. NPT x SW available.
2. CWP/RA TERING BSS, BSA, BSE, BSV; Restrictor Check: 450 to 2500 CWP depending on size, BS4504:450 to 6000 CWP depending on size, BS4504:800 to 6000 CWP depending on size.
3. API 2000 and 5000 are available. Contact DFT for sizes.
4. ASME/ANSI Class 108.
5. BODY & SEAT: BSE, BSS, BSV; Restrictor Check: 300 SS, BSA 416 SS.
6. Inconel® X-750 spring is standard.
7. CF8M is the cast grade of 316 SS.

Visit the literature page at dft-valves.com and use the DFT® VALVE DATA SHEET to make your selection based on your requirements. See page 45.
The DFT® Basic-Check Valve is a versatile all-purpose, non-slam valve that provides reliable, low-maintenance service for a wide range of liquids, steam and gases at various pressure/temperature combinations. The valve consists of a guard cage, spring, valve disc, retaining ring and seat. It can be combined with pipe fittings such as reducing couplings, drain elbows, etc. to form a complete check valve unit ideally suited for a broad range of pipeline applications or incorporated into machinery for OEM applications. The metal-to-metal sealing area of the Basic-Check valve’s disc and seat is precision-lapped, providing very tight shutoff of gas, steam and liquid. If bubble-tight shutoff is required, optional resilient soft seats are available.

**FEATURES:**
- 1/4” to 2 1/2” Line size
- 450 to 6000 CWP
- Threaded ends
- Stainless steel construction
- Spring-assisted silent closing
- Horizontal or vertical installation
- Tight shutoff - lapped disc & seat
- Easy maintenance
- Versatile
- Options:
  - Inconel® X-750 spring
  - Soft seat

Can be used with reducing coupling

### Basic-Check Cracking Pressure

<table>
<thead>
<tr>
<th>Line Size Inlet (F NPT)</th>
<th>Outside Thread (MNPT)</th>
<th>Weight</th>
<th>Cv</th>
<th>PSI</th>
<th>Inches of Water</th>
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<td>1/4</td>
<td>1</td>
<td>38</td>
<td>5.8</td>
<td>60 (1)</td>
<td>16.7</td>
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<tr>
<td>3/8</td>
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<td>38</td>
<td>5.8</td>
<td>60 (1)</td>
<td>16.7</td>
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<td>2</td>
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<tr>
<td>2 1/2</td>
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<td>7</td>
<td>90</td>
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*Cracking pressure shown for horizontal installation. Cracking pressure for vertical flow will be slightly different: upward flow, slightly higher; downward flow, slightly less.

Not recommended for use on discharge of reciprocating compressors.

Consult pages 42 and 43 for Pressure/Temperature ratings and soft seat materials.

**Materials of Construction**

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<th>COMPONENT</th>
<th>Basic-Check BSS</th>
<th>Basic-Check BSA</th>
<th>Basic-Check BSE</th>
<th>High Pressure Basic-Check BSSH6</th>
<th>High Pressure Basic-Check BSSH7</th>
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<tr>
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<td>303 SS</td>
<td>316 SS</td>
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<td>316 SS</td>
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**Notes:**
1. Light spring available: Cracking Pressure = 24 PSI (6.5 inches of water)
2. Contingent on service ratings of matching pipe and fittings.
3. Saturated steam pressure is given for reference only; pressure limit of valve is the adjusted rating at the given temperature.
4. 1/4”, 3/8” and 1/2” BSS units have a 303 SS guard.

DFT® Basic-Check Valve is a versatile all-purpose, non-slam valve that provides reliable, low-maintenance service for a wide range of liquids, steam and gases at various pressure/temperature combinations. The valve consists of a guard cage, spring, valve disc, retaining ring and seat. It can be combined with pipe fittings such as reducing couplings, drain elbows, etc. to form a complete check valve unit ideally suited for a broad range of pipeline applications or incorporated into machinery for OEM applications. The metal-to-metal sealing area of the Basic-Check valve’s disc and seat is precision-lapped, providing very tight shutoff of gas, steam and liquid. If bubble-tight shutoff is required, optional resilient soft seats are available.

**Features:**
- 1/4” to 2 1/2” Line size
- 450 to 6000 CWP
- Threaded ends
- Stainless steel construction
- Spring-assisted silent closing
- Horizontal or vertical installation
- Tight shutoff - lapped disc & seat
- Easy maintenance
- Versatile
- Options:
  - Inconel® X-750 spring
  - Soft seat

Can be used with reducing coupling

**Basic-Check Cracking Pressure**

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<thead>
<tr>
<th>A</th>
<th>B</th>
<th>Weight</th>
<th>Cv</th>
<th>PSI</th>
<th>Inches of Water</th>
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<tr>
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<td>1</td>
<td>38</td>
<td>5.8</td>
<td>60 (1)</td>
<td>16.7</td>
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<tr>
<td>1</td>
<td>3</td>
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<td>60 (1)</td>
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<tr>
<td>1</td>
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<td>10</td>
<td>38</td>
<td>5.8</td>
<td>60 (1)</td>
<td>16.7</td>
</tr>
</tbody>
</table>

*Cracking pressure shown for horizontal installation. Cracking pressure for vertical flow will be slightly different: upward flow, slightly higher; downward flow, slightly less.

Not recommended for use on discharge of reciprocating compressors.

Consult pages 42 and 43 for Pressure/Temperature ratings and soft seat materials.
Restrictor Check

The DFT® Restrictor Check Valve (RCV) is a versatile, all-purpose, spring-assisted, non-slam check valve for applications that require higher cracking pressures to open the check valve than those offered by other DFT check valves. Cracking pressures are available from 2 to 40 psi depending on valve size. Like the Basic-Check® valve, the Restrictor Check provides reliable, low maintenance service for a wide range of fluids and gases at various pressure/temperature combinations. The valve consists of a guard cage, spring, valve disc, retaining ring and seat. It can be combined with pipe fittings such as couplings, drain elbows, etc. (not provided by DFT) to form a complete check valve unit ideally suited for a broad range of applications. The RCV should not be considered a substitute for a Pressure Relief Valve.

FEATURES:

- Higher cracking pressures (2 to 40 psi — See chart)
- 1/4" to 2 1/2" Line size
- 450 to 2500 CWP
- Threaded ends
- Stainless steel construction
- Spring-assisted silent closing
- Horizontal or vertical installation
- Tight shutoff - lapped disc & seat
- Easy maintenance
-Versatile
-Options:
-Soft seat

COLD, NON-SHOCK PRESSURE RATING (1)

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Consult pages 42 and 43 for Pressure/Temperature ratings and soft seat materials.

Restrictor Check

Sat. Steam
Pressure
(PSIG) Ref. (2)

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<th>1/2&quot;</th>
<th>3/4&quot;</th>
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<td>38</td>
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<td>Weight</td>
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<td>38</td>
<td>38</td>
<td>38</td>
<td>38</td>
<td>38</td>
<td>38</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>Cv</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
</tr>
<tr>
<td>CP</td>
<td>3.3 to 20.4</td>
<td>3.3 to 20.4</td>
<td>3.3 to 20.4</td>
<td>3.3 to 15.5</td>
<td>4.2 to 40.7</td>
<td>1.8 to 18.8</td>
<td>1.8 to 18.8</td>
<td>2.4 to 19.1</td>
<td>2.4 to 19.1</td>
</tr>
</tbody>
</table>

Notes:
1. Contingent on service ratings of matching pipe and fittings.
2. Saturated steam pressure is given for reference only; pressure limit of valve is the adjusted rating at the given temperature.
3. 1/4", 3/8" and 1/2" BSS units have a 303 SS guard.

All dimensions are in inches. Weights are in pounds. For metric measurements, visit www.dft-valves.com. CP: Cracking Pressure (psig)

Not recommended for use on discharge of reciprocating compressors.
The DFT® Model SCV Check Valve is a corrosion-resistant, dependable, versatile and economical spring-assisted, non-slam check valve for a wide range of applications. Whether the fluid is liquid, gas or steam, the SCV provides tight shutoff and protects other equipment in the system from water hammer. Its stainless steel construction assures a long service life.

 FEATURES:

- 1/2” to 3” line size
- 750 & 3600 CP
- NPT & SW ends
- Stainless steel construction
- Inconel® X-750 spring
- Spring-assisted silent closing, non-slam
- Zelon® “O” ring body seal
- Horizontal or vertical installation
- Body-guided disc
- Tight shutoff lapped disc & seat
- Simplified 5-part construction
- Easy maintenance
- Versatile
- Options:
  - 316 SS springs
  - Body seal weld
  - Soft seat
  - Alloy 20 body & seat (ASME 300)
  - Hastelloy® C body & seat (ASME 300)
  - NPT x socket weld ends
  - SCV-R (higher cracking pressure)
  - NACE (Page 41)

 MATERIALS OF CONSTRUCTION

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>750 CWP</th>
<th>3600 CWP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>A351 CF8M</td>
<td>A351 CF8M</td>
</tr>
<tr>
<td>Seat (1)</td>
<td>A351 CF8M</td>
<td>A351 CF8M</td>
</tr>
<tr>
<td>Disc</td>
<td>A240 316</td>
<td>A240 316</td>
</tr>
<tr>
<td>Spring</td>
<td>Inconel® X-750</td>
<td>Inconel® X-750</td>
</tr>
<tr>
<td>Body Seal (7)</td>
<td>Standard Zelon (620°F max)</td>
<td>Standard Zelon (400°F max, 125°F max)</td>
</tr>
<tr>
<td></td>
<td>Option: Body seal weld (700°F max)</td>
<td>Option: Body seal weld (700°F max)</td>
</tr>
</tbody>
</table>

 Consult pages 42 and 43 for Pressure/Temperature ratings and soft seat materials.
The SCV-R Check Valve is a non-slam spring-assisted check valve designed for applications requiring “higher cracking pressures” than the DFT Model SCV® check valve. The SCV-R check valve is a self-contained check valve that installs directly in a pipeline and contains all of the proven features of the SCV check valve.

**FEATURES:**
- 1/2” to 2” Line size
- 750 CWP
- NPT & SW ends
- Stainless steel construction
- Inconel® X-750 spring
- Spring-assisted silent closing, non-slam
- Cracking Pressures: 0.8 to 40.8 psig (See chart)
- Zelon® “O” ring body seal
- Horizontal or vertical installation
- Body guided disc
- Tight shut-off lapped disc & seat
- Easy maintenance
- Versatile
- Options:
  - 3/16 SS springs
  - Body seal weld
  - Soft seat
  - Alloy 20 body & seat (ASME 300)
  - Hastelloy® C body & seat (ASME 300)
  - NPT x socket weld ends
  - Repair kits
  - Field conversion kits

**PRESSURE TEMPERATURE RATING (PSIG) (2)**

<table>
<thead>
<tr>
<th>Temp. (°F)</th>
<th>750 CWP</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>750</td>
</tr>
<tr>
<td>200</td>
<td>645</td>
</tr>
<tr>
<td>250</td>
<td>610</td>
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<tr>
<td>300</td>
<td>580</td>
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<tr>
<td>400</td>
<td>535</td>
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<tr>
<td>470</td>
<td>510</td>
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**MATERIALS OF CONSTRUCTION 750 CWP**

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>750 CWP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>A351 CF8M</td>
</tr>
<tr>
<td>Seat (1)</td>
<td>A351 CF8M</td>
</tr>
<tr>
<td>Disc</td>
<td>A240 316</td>
</tr>
<tr>
<td>Spring</td>
<td>Inconel® X-750</td>
</tr>
<tr>
<td>“O” ring</td>
<td>Zelon® (470°F max.)</td>
</tr>
<tr>
<td>Spring Retainer</td>
<td>A479 316</td>
</tr>
<tr>
<td>Shims</td>
<td>A240 316</td>
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</table>

**CLASS 750 CWP**

<table>
<thead>
<tr>
<th>Class</th>
<th>750 CWP</th>
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<tbody>
<tr>
<td>A</td>
<td>2.68</td>
</tr>
<tr>
<td>B</td>
<td>1.62</td>
</tr>
<tr>
<td>Weight</td>
<td>1.1</td>
</tr>
<tr>
<td>Cv</td>
<td>6</td>
</tr>
<tr>
<td>CP</td>
<td>1 to 25</td>
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<table>
<thead>
<tr>
<th>Class</th>
<th>750 CWP</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>2.13</td>
</tr>
<tr>
<td>Weight</td>
<td>1.5</td>
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<tr>
<td>Cv</td>
<td>10</td>
</tr>
<tr>
<td>CP</td>
<td>0.80 to 20</td>
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<table>
<thead>
<tr>
<th>Class</th>
<th>750 CWP</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>3.32</td>
</tr>
<tr>
<td>B</td>
<td>2.54</td>
</tr>
<tr>
<td>Weight</td>
<td>1.9</td>
</tr>
<tr>
<td>Cv</td>
<td>17</td>
</tr>
<tr>
<td>CP</td>
<td>1.2 to 23.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>750 CWP</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3.87</td>
</tr>
<tr>
<td>B</td>
<td>3.06</td>
</tr>
<tr>
<td>Weight</td>
<td>3.9</td>
</tr>
<tr>
<td>Cv</td>
<td>33</td>
</tr>
<tr>
<td>CP</td>
<td>7.7 to 22.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>750 CWP</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.75</td>
</tr>
<tr>
<td>B</td>
<td>3.44</td>
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<tr>
<td>Weight</td>
<td>4.7</td>
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<tr>
<td>Cv</td>
<td>36</td>
</tr>
<tr>
<td>CP</td>
<td>1.4 to 40.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>750 CWP</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5</td>
</tr>
<tr>
<td>B</td>
<td>4.4</td>
</tr>
<tr>
<td>Weight</td>
<td>7.7</td>
</tr>
<tr>
<td>Cv</td>
<td>64</td>
</tr>
<tr>
<td>CP</td>
<td>0.9 to 21.4</td>
</tr>
</tbody>
</table>

**NOTES:**
1. Soft seats are available for bubble tight shut-off. See chart. Body seal and soft seat material are the same unless otherwise requested.
2. ASME B16.34-2013

**MATERIALS OF CONSTRUCTION:**

- Body A351 CF8M
- Seat (1) A351 CF8M
- Disc A240 316
- Spring Inconel® X-750
- “O” ring Zelon® (470°F max.)
- Spring Retainer A479 316
- Shims A240 316

**NOTES:**
- All dimensions are in inches. Weights are in pounds. For metric measurements, visit www.dft-valves.com.
- CP: Cracking Pressure (psig)
- Contact DFT for other cracking pressures.
DFT® Vacuum Breakers provide effective protection against collapse of pressure vessels, tanks and rolls. They prevent condensate “back-up” when equipment is shut down or inlet steam is reduced by modulating control valves. In piping systems, DFT Vacuum Breakers are used to break siphons, prevent pipe collapse during transient pressure drops, and to provide addition of air on the downstream side of check valves to dampen water hammer.

FEATURES:
- 1” to 4” size (Outside diameter)
- 450 to 6000 CWP
- Threaded O.D. (MNPT)
- Unthreaded inlet bore
- Stainless steel construction
- Spring-assisted silent closing
- Horizontal or vertical installation
- Tight shutoff - lapped disc & seat
- Easy maintenance
- Versatile
- Options:
  - Inconel® X-750 spring
  - Soft seat

Consult pages 42 and 43 for Pressure/Temperature ratings and soft seat materials.

Vacuum Breaker

DFT® Vacuum Breakers provide effective protection against collapse of pressure vessels, tanks and rolls. They prevent condensate “back-up” when equipment is shut down or inlet steam is reduced by modulating control valves. In piping systems, DFT Vacuum Breakers are used to break siphons, prevent pipe collapse during transient pressure drops, and to provide addition of air on the downstream side of check valves to dampen water hammer.

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- 450 to 6000 CWP
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- Unthreaded inlet bore
- Stainless steel construction
- Spring-assisted silent closing
- Horizontal or vertical installation
- Tight shutoff - lapped disc & seat
- Easy maintenance
- Versatile
- Options:
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  - Soft seat

Consult pages 42 and 43 for Pressure/Temperature ratings and soft seat materials.

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FEATURES:
- 1” to 4” size (Outside diameter)
- 450 to 6000 CWP
- Threaded O.D. (MNPT)
- Unthreaded inlet bore
- Stainless steel construction
- Spring-assisted silent closing
- Horizontal or vertical installation
- Tight shutoff - lapped disc & seat
- Easy maintenance
- Versatile
- Options:
  - Inconel® X-750 spring
  - Soft seat

Consult pages 42 and 43 for Pressure/Temperature ratings and soft seat materials.
The DFT® Model DLC Check Valve is a corrosion-resistant, dependable, versatile and economical spring assisted, non-slam check valve for a wide range of applications. Whether the fluid is liquid, gas or steam, the DLC check valve provides tight shutoff and protects other equipment in the system from water hammer. Its stainless steel construction insures a long service life.

FEATURES:
- ANSI B16.10 Face-to-Face dimensions
- Spring-assisted silent closing, non-slam
- 1/2” to 3” Line size
- ASME Class 150 and 300
- Standard body material: A351 CF8M
- Optional body materials:
  - Alloy 20
  - Hastelloy®
- Stainless steel construction
- Raised face flanged ends
- Inconel® X-750 spring
- Electron beam welded body
- Meets ASME B16.34 - 2013
- Horizontal or vertical installation
- Body-guided disc
- Tight shutoff - lapped disc & seat
- Simplified construction - 4 parts
- Versatile
- Options:
  - 316 SS Springs
  - NACE (Page 41)
  - Soft seat (only Teflon® Encapsulated Viton® available)

MATERIALS OF CONSTRUCTION

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>BODY</th>
<th>SEAT</th>
<th>DISC</th>
<th>SPRING</th>
</tr>
</thead>
<tbody>
<tr>
<td>BODY</td>
<td>A351 CF8M</td>
<td>A351 CF8M</td>
<td>316 SS</td>
<td>Inconel® X-750</td>
</tr>
</tbody>
</table>

PRESURE TEMPERATURE RATINGS (PSIG) (1)

<table>
<thead>
<tr>
<th>Temp. (°F)</th>
<th>ASME 150</th>
<th>ASME 300</th>
<th>Temp. (°F)</th>
<th>ASME 150</th>
<th>ASME 300</th>
<th>ASME 150</th>
<th>ASME 300</th>
</tr>
</thead>
<tbody>
<tr>
<td>460</td>
<td>275</td>
<td>720</td>
<td>-325</td>
<td>230</td>
<td>600</td>
<td>230</td>
<td>600</td>
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<tr>
<td>100</td>
<td>275</td>
<td>720</td>
<td>100</td>
<td>230</td>
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<td>200</td>
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<td>620</td>
<td>200</td>
<td>520</td>
<td>210</td>
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<td>300</td>
<td>215</td>
<td>560</td>
<td>300</td>
<td>180</td>
<td>465</td>
<td>200</td>
<td>520</td>
</tr>
<tr>
<td>400</td>
<td>195</td>
<td>515</td>
<td>400</td>
<td>160</td>
<td>420</td>
<td>190</td>
<td>490</td>
</tr>
<tr>
<td>500</td>
<td>170</td>
<td>480</td>
<td>500</td>
<td>150</td>
<td>390</td>
<td>170</td>
<td>465</td>
</tr>
<tr>
<td>600</td>
<td>140</td>
<td>450</td>
<td>600</td>
<td>140</td>
<td>360</td>
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<td>440</td>
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<tr>
<td>700</td>
<td>110</td>
<td>435</td>
<td>700</td>
<td>110</td>
<td>420</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
2. All dimensions are in inches. Weights are in pounds. For metric measurements, visit www.dft-valves.com.
The DFT® Excalibur Silent Check Valve is a spring-assisted, center guided, non-slam check valve that provides reliable, low-maintenance service for a wide range of fluids and pressure/temperature combinations. The valve consists of a body, gasket, seat, spring, disc with stem and guide bushing. Excalibur check valves are available in a wide range of sizes and pressure ratings and in a variety of metals to meet most check valve requirements.

FEATURES:
- ASME B16.10 Face-to-Face dimensions
- Spring-assisted silent closing, non-slam
- 2" to 24" Line size
- ASME Class 150 to 1500 (See chart)
- Standard body materials: - A216 Grade WC carbon steel
- A351 CF8M stainless steel
- Optional body materials: - Alloy 20
- Duplex SS
- Hastelloy®
- Inconel®
- Monel®
- Nickel-Aluminum Bronze (See page 38)
- Standard ends: - RF Flanged
- Stud - Victaulic®
- RTJ
- Flanged x Butt weld
- Butt weld
- Optional ends (4):
  - RF Flanged
  - NACE (See page 41)
- Standard body materials:
  - ASME Class 150 to 1500 (See chart)
  - 2" to 24" Line size
  - Spring-assisted silent closing, non-slam
  - ASME B16.10 Face-to-Face dimensions
- Optional body materials:
  - A216 Grade WCB carbon steel
  - A351 CF8M stainless steel
  - Optional body materials:
    - Alloy 20
    - Duplex SS
    - Hastelloy®
    - Inconel®
    - Monel®
    - Nickel-Aluminum Bronze (See page 38)
- Standard ends:
  - RF Flanged
  - Stud - Victaulic®
  - RTJ
- Special finishes:
  - Soft seat
  - Inconel® X-750 Spring
  - Stellite® trim
  - Stellite® trim
- Optional ends (4):
  - RF Flanged
  - NACE (See page 41)
- Consult pages 42 and 43 for Pressure/Temperature ratings and soft seat materials.

MATERIALS OF CONSTRUCTION

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CARBON STEEL BODY</th>
<th>STAINLESS STEEL BODY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>A216 Grade WC</td>
<td>A351 CF8M</td>
</tr>
<tr>
<td>Disc/Stem Assembly</td>
<td>A351 CF8M/A479 316</td>
<td>A351 CF8M/A479 316</td>
</tr>
<tr>
<td>Seat</td>
<td>A351 CF8M</td>
<td>A351 CF8M</td>
</tr>
<tr>
<td>Spring (1)</td>
<td>A313 316</td>
<td>A313 316</td>
</tr>
<tr>
<td>Bushing</td>
<td>A479 316</td>
<td>A479 316</td>
</tr>
<tr>
<td>Bolting (2)</td>
<td>A193-87 (Stud) &amp; A194-2h (Nut)</td>
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<tr>
<td>Gasket (3)</td>
<td>Cl. 150 &amp; 300</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cl. 600+</td>
<td></td>
</tr>
<tr>
<td></td>
<td>316 Spiral wound with Flexible Graphite Filler</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Inconel® X-750 spring is available.
2. Contact DFT for stainless steel or other bolting materials.
3. 316 graphite material.
* Consult DFT for valve availability.

All dimensions are in inches. Weights are in pounds. For metric measurements, visit www.dft-valves.com. CP: Cracking Pressure (psig).

Consult pages 42 and 43 for Pressure/Temperature ratings and soft seat materials.
The DFT® Model GLC Silent Check Valve is a spring-assisted, center-guided, non-slam, flanged check valve that provides reliable, low-maintenance service for a wide range of fluids and pressure/temperature combinations. The valve consists of a body, seat, spring, disc with stem, guide bushing and gasket. The DFT GLC check valve has the advantage of minimum pressure loss with silent operation.

**FEATURES:**
- "Short" Face-to-Face dimensions
- API 606 Fire Test
- ASME Class 150 and 300
- "2" to "24"
- Standard body materials:
  - A216 Grade WCB carbon steel
  - A351 CF8M stainless steel
- Optional body materials:
  - Alloy 20
  - Duplex SS
  - Hastelloy®
  - Monel®
  - Nickel-Aluminum Bronze (See page 39)
- One-piece body
- Spring-assisted silent closing, non-slam
- Center-guided
- Dual-guided stem
- Horizontal or vertical installation
- Protected spring
- Easy maintenance
- Versatile
- ASME Class 150 To 2500 (See chart)
- Short" Face-to-Face dimensions

**FEATURES:**
- Axial flow
- Nozzle style
- OPTIONS:
  - Inconel® X-750 Spring
  - Soft seat
  - Custom sizing low flow
  - Severe service trim
  - Stellite® trim
  - RFI Ends (3)
  - NACE (Page 41)

**COMPONENTS:**
- Body
  - A216 WCB
  - A351 CF8M
- Disc/Stem Assembly
  - A351 CF8M/A479 316
  - A351 CF8M/A479 316
- Seat
  - A351 CF8M
  - A351 CF8M
- Spring (1)
  - A131 316
  - A313 316
- Bushing
  - A479 316
  - A479 316
- Gasket (2)
  - CFG/316 SS/Graphite

**MATERIALS OF CONSTRUCTION**

**FEATURES:**
- Optional body materials:
  - A351 CF8M stainless steel
  - A216 Grade WCB carbon steel

**WEIGHTS:**
- Standard body materials:
  - 2" to 24"
  - ASME Class 150 and 300
  - API 606 Fire Test
  - "Short" Face-to-Face dimensions

**NOTES:**
1. Inconel® X-750 spring is available.
2. CGS corrugated flexible graphite (Class 150 & 300, 316 SS/Graphite Spiral Wound (Class 600 & up)
3. Contact DFT for availability.
4. Consult DFT for valve availability.

*All dimensions are in inches. Weights are in pounds. For metric measurements, visit www.dft-valves.com. CP: Cracking Pressure (psig)*
The DFT® Model GLC Silent Check Valve is a spring-assisted, center-guided, non-slam, flanged check valve that provides reliable, low-maintenance service for a wide range of fluids and pressure/temperature combinations. The valve consists of a body, seat, spring, disc with stem and guide bushing. Some valves have O-ring or gasket body seals. The DFT GLC check valve has the advantage of minimum pressure loss with silent operation.

**FEATURES:**
- “Short” Face-to-Face dimensions
- One-piece body
- Spring-assisted silent closing
- Center-guided
- Dual-guided stem
- Horizontal or vertical installation
- Easy maintenance
- Versatile
- ASME Class 125 & 250
- 2 1/2” to 24” Line size (CI.125)
- 2 1/2” to 8” Line size (CI.250)
- Cast Iron Body
- Bronze or 316 SS trim ends
- Flat Face Flanged
- AWWA seat leakage
- Axial flow
- Nozzle style
- Options: Buna-N Soft Seat

**MATERIALS OF CONSTRUCTION**

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAST IRON BODY/BRONZE TRIM</th>
<th>CAST IRON BODY/316 TRIM (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>A126 Class B Cast Iron</td>
<td>A126 Class B Cast Iron</td>
</tr>
<tr>
<td>Disc/Stem Assembly</td>
<td>B584 836 - Bronze</td>
<td>A351 CF8M</td>
</tr>
<tr>
<td>Seat (2)</td>
<td>B584 836 - Bronze</td>
<td>A351 CF8M</td>
</tr>
<tr>
<td>Spring</td>
<td>A313 T302 SS</td>
<td>A313 T302 SS</td>
</tr>
<tr>
<td>Bushing</td>
<td>B584 836 - Bronze</td>
<td>316 SS</td>
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**MAXIMUM OPERATING TEMPERATURES OF MATERIALS**

<table>
<thead>
<tr>
<th>SOFT SEAT (2)</th>
<th>MATERIALS</th>
<th>TEMP. °F</th>
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<tbody>
<tr>
<td></td>
<td>BUNA-N</td>
<td>-70 to 250</td>
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**PRESSURE TEMPERATURE RATING FOR CAST IRON (PSIG)**

<table>
<thead>
<tr>
<th>CLASS 125</th>
<th>CLASS 250</th>
</tr>
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<tbody>
<tr>
<td>Temp. (“F”)</td>
<td>2 1/2” to 12”</td>
</tr>
<tr>
<td>0-150°</td>
<td>200 psig</td>
</tr>
<tr>
<td>200° Max (1)</td>
<td>190 psig</td>
</tr>
</tbody>
</table>

Notes:
1. 316 stainless steel trim recommended for temperatures from 180°F to 200°F.
2. Buna-N soft seat available for bubble-tight shutoff.

All dimensions are in inches.Weights are in pounds. For metric measurements, visit www.dft-valves.com. CP: Cracking Pressure (psig).
The DFT® Model PDC Check Valve is a silent, non-slam check valve specially designed for use on the discharge side of reciprocating air or gas compressors. It includes a pulse-damping chamber to maintain the disc in the open position during the momentary reductions in flow associated with each cycle of a reciprocating compressor and to protect against premature seat wear.

**FEATURES:**
- Pulse-damped design
- Modulating "air" or "gas" applications:
  - Discharge of reciprocating air/gas compressors
  - Self-swing accommodates varying flows without chattering
  - Meets API 6D
  - ASME B16.10 Face-to-Face dimensions
- One-piece body
- Spring-assisted silent closing
- 2” to 20” Line size*
- ASME Class 150 to 1500
- Standard body materials:
  - Carbon steel
  - Stainless steel
  - Stainless steel trim
- Stainless steel spring
- Ends:
  - RF Flanged
  - RTJ
- Center guided trim
- Horizontal or vertical installation
- Tight shutoff
- Protected spring
- Easy maintenance
- Versatile
- Axial flow
- Nozzle style
- OPTIONS:
  - Soft seat
  - Inconel® X-750 spring
  - Monel® trim
  - NACE (Page 41)

**MATERIALS OF CONSTRUCTION**

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CARBON STEEL BODY</th>
<th>STAINLESS STEEL BODY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>A479 316</td>
<td>A516 70</td>
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<tr>
<td>Disc</td>
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<tr>
<td>Seat</td>
<td>A182 F31</td>
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<tr>
<td>Spring (1)</td>
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<tr>
<td>Spring for ball check</td>
<td>Inconel® X-750</td>
<td>Inconel® X-750</td>
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<tr>
<td>Disc Guide</td>
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<tr>
<td>Bushing</td>
<td>Fusion®</td>
<td>Fusion®</td>
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<tr>
<td>Seat Ring</td>
<td>Teflon®/Hastelloy® C276</td>
<td>Teflon®/Hastelloy® C276</td>
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<tr>
<td>Spring Retainer - Ball Check</td>
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<tr>
<td>Guide Ring</td>
<td>Teflon®</td>
<td>Teflon®</td>
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<tr>
<td>Ball Check</td>
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<td>440C SS</td>
</tr>
<tr>
<td>Orifice Plug</td>
<td>A479 316</td>
<td>A479 316</td>
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</tbody>
</table>

Contact DFT for additional sizes/pressure classes.

**Notes:**
1. Inconel® X-750 spring is available (500°F maximum)
2. 500°F maximum.

* Consult DFT for valve availability.

All dimensions are in inches. Weights are in pounds. For metric measurements, visit www.dft-valves.com. CP: Dressing Pressure (psig)

Tel: 610-363-8903 Toll-Free: 800-206-4013 Fax: 610-524-9242
The DSV Check Valve is a non-slam spring-assisted check valve designed to prevent flow reversal in industries with strict cleanliness codes. To accommodate various piping arrangements, the DSV Check Valve is available as a “Vertical” or “Horizontal” valve. The Horizontal valve is for Horizontal lines requiring a self-draining valve. The “Vertical” design is for “Vertical” installations and “Horizontal” lines when a self-draining valve is not required. The DSV Check Valve, with a 316L stainless steel body and seat, is fastened with a quick release clamp and elastomeric body seal to permit fast and easy access to the internals. The internal surface finish is 25 Ra while the disc and seat are lapped to provide excellent shutoff.

**FEATURES:**
- Spring-assisted silent closing
- Horizontal or vertical installation
- Sizes 1/2" thru 4"
- 150 CWP, 108 ANSI Pressure Class
- 316L body and seat (A351 CF3M)
- 316 disc, spring and guide assembly
- 25 Ra Internal Surface Finish
- Lapped “metal” seat and disc
- Edge/center-guided disc: 2 1/2", 3", 4"
- Edge-guided disc: 1/2" thru 2"
- 150 CWP, 108 ANSI Pressure Class
- Sizes 1/2" thru 4"
- Spring-assisted silent closing
- 15 Ra Electropolished Internal Finish
- Optional Body Seal: Tuf-Flex® (1)
- Viton®
- EPDM
- Standard body seal: Electropolished finish
- Conical design
- - Low cracking pressures
- - 16 psig to 66 psig
- - CIP (Clean In Place)
- - Electro-polished finish
- - Optional Body Seal: Tuf-Flex® (1)
- - Electropolished finish
- - Standard body seal: EPDM
- - Optional Body Seal: Tuf-Flex® (1)
- - Electro-polished finish
- - CIP (Clean In Place)
- - Clamped ends
- - Seat leakage per MSS SP-61
- - Options: 15 Ra Electro-polished Internal Finish

**Options:**
- Seat leakage per MSS SP-61
- CIP (Clean In Place)
- Clamped ends
- Optional Body Seal: Tuf-Flex® (1)
- Electro-polished finish
- Standard body seal: EPDM
- Optional Body Seal: Tuf-Flex® (1)
- Electro-polished finish
- CIP (Clean In Place)
- Clamped ends
- Seat leakage per MSS SP-61
- Options: 15 Ra Electro-polished Internal Finish

**Dimensions (in inches):**
- Vertical: 1 1/2", 2", 2 1/2", 3", 4"
- Horizontal: 1/2", 3/4", 1", 1 1/2", 2", 2 1/2", 3", 4"
The ALC Check Valve is a non-slam spring-assisted, center-guided "wafer" check valve designed to prevent "water hammer" and "reverse" flow. The lightweight compact design fits between mating flanges and meets API 594 Face-to-Face dimensions. The ALC Check Valve is an easy-to-maintain check valve for applications involving liquids, gases or steam. Tapped holes are provided in the body for lifting lugs to assist with installation (10" and larger sizes only).

**FEATURES:**
- API 594 Face-to-Face dimensions
- RF Wafer ends
- Spring-assisted silent closing
- Sizes 2" thru 24"
- Horizontal or vertical installation
- ASME Class 150 and 300
- Standard body materials:
  - A216 Grade WCB carbon steel
  - A351 CF8M stainless steel
  - Stainless steel seat, disc & bushing
  - Nitronic® 60 stem
  - Inconel® X-750 Spring
- Seat Leakage per MSS SP-61
- Tapped holes in body for lifting lugs (10" size and larger)
- Axial flow
- Nozzle style
- Options:
  - 316 SS spring
  - Custom sizing – low flow
  - Soft seat
  - NACE (See page 41)
- Tapped lug design available (Consult DFT for availability)

**FLOW — STEM**
- FLOW
- STEM
- BODY
- DISC
- BUSHING
- SPRING
- SEAT
- GASKET (10" and larger)

**MATERIALS OF CONSTRUCTION**

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<tr>
<th>COMPONENT</th>
<th>CARBON STEEL BODY</th>
<th>STAINLESS STEEL BODY</th>
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<tbody>
<tr>
<td>Body</td>
<td>A216 Grade WCB</td>
<td>A351 CF8M</td>
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<td>Disc/Stem Assembly</td>
<td>316 SS/Nitronic® 60</td>
<td>316 SS/Nitronic® 60</td>
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<td>Seat</td>
<td>316 SS</td>
<td>316 SS</td>
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<tr>
<td>Spring</td>
<td>Inconel® X-750</td>
<td>Inconel® X-750</td>
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<td>Bushing</td>
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<td>316 SS (1)</td>
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<tr>
<td>Gasket (2)</td>
<td>CFG (3)</td>
<td>CFG (3)</td>
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**NOTES:**
1. Teflon® bushing on 14", 16", 18", 20" and 24".
2. Gaskets only used on valves 10" and larger.
3. 316 Graphite material.
4. All dimensions are in inches. Weights are in pounds. For metric measurements, visit www.dft-valves.com. CP: Cracking Pressure (psig).

**SPECIFICATIONS:**

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<td>Cv</td>
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</table>
The FBC Check Valve is a compact, lightweight, insert wafer check valve that easily installs between two flanges. The non-slam, spring-assisted design prevents “water hammer” and “reverse flow.” The FBC Check Valve contains all of the proven features of the Basic-Check® valve developed originally by DFT® and still in use after 60 years. Like the Basic-Check® Valve, the metal-to-metal sealing area of the disc and seat is precision lapped, providing tight shutoff for applications involving liquids, gases or steam. Resilient soft seats are available for applications requiring bubble-tight shutoff.

FEATURES:
- Spring-assisted silent closing
- Horizontal or vertical installations
- Sizes 1” through 4”
- ASME/ANSI Class 150 and 300
- Stainless steel seat, disc, guard, retaining ring & spring
- Cracking pressure: 0.6 to 0.15 psi (See chart)
- Temperatures to 450°F for standard valves
- Extended tag for easy identification of the installed valve

- Use in Schedule 40 or Schedule 80 pipe (See chart)
- Meets ASME B16.34-2013 & MSS SP-126
- Flange finish per MSS SP-6
- Seat leakage per MSS SP-61
- Options:
  - Soft seat
  - Inconel® X-750 spring

Consult pages 42 and 43 for Pressure/Temperature ratings and soft seat materials.
The DFT® Model WLC Wafer Style Check Valve is a lightweight, spring-assisted, center-guided, non-slam check valve that provides reliable, low-maintenance service for a wide range of fluids and pressure/temperature combinations. The joint between the seat ring and body is sealed by the flange gasket upon installation preventing any leakage through the joint when the valve is in service.

### FEATURES:
- **Wafer design**
- **Standard body material:**
  - A216 Grade WCB carbon steel
  - A351 CF8M stainless steel
- **Optional body materials:**
  - Alloy 20
  - Hastelloy®
  - Inconel® 625
  - Duplex SS
  - Titanium
- **Lightweight**
- **Spring-assisted silent closing**
- **Center-guided/Dual-guided stem**
- **Horizontal or vertical installation**
- **Protected spring**
- **ASME Class 150 to 1500**
  - 1" to 10" Line Size
  - 316 SS trim
- **Wafer RF**
- **Wafer RTJ**
- **MSS-SP 61 seat leakage**
- **MSS 126 Face-to-Face dimension:**
  - Class 150 & 300 RF
  - API 594 Face-to-Face dimension:
    - Class 600 RF
    - Class 900 & 1500 RF
- **Axial flow**
- **Nozzle style**
- **Options:**
  - Inconel® X-750 spring
  - Soft seat
  - Custom sizing - low flow
  - Stellite® trim
    - NACE (page 41)
  - Tapped lug design available
    - (Contact DFT for availability)
- **Materials of construction**:

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CARBON STEEL BODY</th>
<th>STAINLESS STEEL BODY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>A216 Grade WCB</td>
<td>A351 CF8M</td>
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<td>Disc/Stem Assembly</td>
<td>A316/CF8M/A479 316</td>
<td>A316/CF8M/A479 316</td>
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<tr>
<td>Seat</td>
<td>A351 CF8M</td>
<td>A351 CF8M</td>
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<tr>
<td>Spring</td>
<td>A313 316</td>
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<tr>
<td>Bushing</td>
<td>A479 316</td>
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Consult pages 42 and 43 for Pressure/Temperature ratings and soft seat materials.

### MATERIALS OF CONSTRUCTION

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<thead>
<tr>
<th>Class</th>
<th>150 RF</th>
<th>300 RF</th>
<th>600 RF</th>
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</table>

All dimensions are in inches. Weights are in pounds. For metric measurements, visit www.dft-valves.com. CP: Cracking Pressure (psig)

Tel: 610-363-8903  Toll-Free: 800-206-4013  Fax: 610-524-9242

WLC®
WAFER VALVES
WLC®
WAFER VALVES
www.dft-valves.com  dft@dft-valves.com
The DFT® Model WLC-Cast Iron Wafer Style Check Valve is a lightweight, spring-assisted, center-guided, non-slam check valve that provides reliable, low-maintenance service for a wide range of fluids and pressure/temperature combinations. The joint between the seat ring and body is sealed by the flange gasket upon installation, preventing any leakage through the joint when the valve is in service.

**FEATURES:**
- Wafer design
- Lightweight
- Spring-assisted silent closing
- Center-guided with dual-guided stem
- Horizontal or vertical installation
- Protected spring
- ASME Class 125 & 250
- 2" to 10" line size
- Cast iron body
- Bronze or 316 SS trim
- Ends: Wafer FF
- AWWA seat leakage
- Axial flow
- Nozzle style
- Options:
  - Buna-N Soft Seat

**PRESSURE TEMPERATURE RATING FOR CAST IRON (PSIG)**

<table>
<thead>
<tr>
<th>Temp. (°F)</th>
<th>CLASS 125</th>
<th>CLASS 250</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-150°</td>
<td>200 psig</td>
<td>400 psig</td>
</tr>
<tr>
<td>200° Max (1)</td>
<td>190 psig</td>
<td>370 psig</td>
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**MATERIALS OF CONSTRUCTION**

<table>
<thead>
<tr>
<th>COMPONENT</th>
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<th>CAST IRON BODY/316 TRIM (1)</th>
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<td>A126 Class B Cast Iron</td>
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<tr>
<td>Disc/Stem Assembly</td>
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<td>Spring</td>
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<tr>
<td>Bushing</td>
<td>BS84 836 - Bronze</td>
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</tr>
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</table>

**Notes:**
1. 316 stainless steel trim recommended for temperatures from 180°F to 200°F.
2. Buna-N soft seat available for bubble-tight shutoff.

All dimensions are in inches. Weights are in pounds. For metric measurements, visit www.dft-valves.com. CP: Cracking Pressure (psig).
The DFT® Y-Calibur™ Silent Check Valve is an in line repairable, spring-assisted, center guided, non-slam check valve that provides reliable, low-maintenance service for a wide range of fluids and pressure/temperature combinations. The valve consists of a body, bonnet, gasket, seat, spring, disc with stem and guide bushing. Y-Calibur check valves are available in a wide range of sizes and pressure ratings and in a variety of materials to meet most check valve requirements.

FEATURES:
- ASME B16.10 Face-to-Face dimensions
- Spring-assisted silent closing, non-slam
- 4” to 14” Line size
- ASME Class 600 to 2500 (See chart)
- Standard body materials:
  - A216 WCB carbon steel
  - A351 CF8M stainless steel
- Optional body materials:
  - Duplex SS
  - Hastelloy®
  - Inconel® 600
  - Monel®
- Standard ends:
  - Butt weld
  - Stainless steel trim
  - Other materials available
  - Center-guided
  - Dual-guided stem & disc
  - Horizontal or vertical installation
  - Tight shutoff
  - Protected spring
  - Fully repairable in-line
  - Versatile
  - Axial flow/non-slam design
- Options:
  - Inconel® X-750 Spring
  - Custom sizing low flow
  - Severe service trim
  - Stellite® trim
  - NACE (See page 41)

Consult pages 42 and 43 for Pressure/Temperature ratings and soft seat materials.
**Excalibur® - NAB**

The **DFT® Excalibur® NAB (Nickel-Aluminum Bronze) Silent Check Valve** is a spring-assisted, nozzle style, non-slam check valve that is designed to withstand the harsh environments of salt and brackish water applications where corrosion resistance and marine life deterrents are a must. DFT’s center guided check valves provide reliable, low-maintenance service and solve the problems associated with water hammer and severe applications and environments.

**FEATURES:**
- ASME B16.10 Face-to-Face dimensions
- Spring-assisted silent closing, non-slam
- 2” to 24” Line size
- ASME Class 150 & 300
- Standard body materials:
  - Nickel-Aluminum Bronze
- Standard ends:
  - Flat face flanged
- Optional ends:
  - Butt weld
  - Flanged x Butt weld
  - Raised face
- Center-guided
- Dual-guided stem
- Horizontal or vertical installation
  - Axial flow
  - Nozzle style
  - Options:
    - Soft seat
    - Inconel® X-750 Spring
    - Custom sizing low flow
    - Severe service trim
    - Stellite® trim
  - Trim Options:
    - Nickel-Aluminum Bronze
    - Monel®
    - Stainless Steel
    - Duplex SS

**GLC® - NAB**

The **DFT® GLC® NAB (Nickel-Aluminum Bronze) Silent Check Valve** is a spring-assisted, nozzle style, non-slam check valve that is designed to withstand the harsh environments of salt and brackish water applications where corrosion resistance and marine life deterrents are a must. DFT’s center guided check valves provide reliable, low-maintenance service and solve the problems associated with water hammer and severe applications and environments.

**FEATURES:**
- “Short” Face-to-Face dimensions
- Standard body materials:
  - Nickel-Aluminum Bronze
- One-piece body
- Spring-assisted silent closing, non-slam
- Center-guided
- Dual-guided stem
- Horizontal or vertical installation
- Protected spring
- Easy maintenance
- Versatile
- ASME Class 150 & 300
- 1” to 24” Line size
- Flat face flanged ends
- MSS-SP61 seat leakage
- Axial flow
- Nozzle style

**Options:**
- Inconel® X-750 Spring
- Soft seat
- Custom sizing low flow
- Severe service trim
- Stellite® trim
- Trim Options:
  - Nickel-Aluminum Bronze
  - Monel®
  - Stainless Steel
  - Duplex SS

**All dimensions are in inches. Weights are in pounds. For metric measurements, visit www.dft-valves.com. CP: Cracking Pressure (psig).**

**Toll-Free: 800-206-4013**  
**Fax: 610-524-9242**

**Tel: 610-363-8903**
**Codes & Standards**

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<th>Codes &amp; Standards</th>
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<th>GPV®</th>
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**Notes:**
1. Class 125 and 250 Cast Iron valves are leak tested in accordance with AWWA.
2. Cast Iron Valves only.
4. ASME Class 150 & 300, 2” to 24” only
5. ANSI Class 600 RF and 900/1500 RF valves meet face-to-face dimensions.
6. Contact DFT for acceptable materials.
7. Contact DFT for NACE.

---

**NACE**

DFT in-line check valves can meet the “new” NACE Standards NACE MR0175/ISO 15156 and NACE MR0103-2003. The ALC®, DLC®, Excalibur®, GLC®, GPV®, PDC®, SCV®, SCV-R®, WLC®, Y-Calibur® can be constructed of the proper materials depending on the applicable NACE standard.

Prior to April 2003, all NACE applications were handled by NACE Standard MR0175. Compliance allowed 316 (CF8M) body material, 316 stainless steel (CF8M) trim with an Inconel® X-750. In April 2003, the requirements changed with the introduction of NACE MR0103-2003 and the updating of NACE MR0175 to NACE MR0175/ISO 15156.

**NACE MR0103-2003** – “Material Resistant to Sulfide Stress Cracking in Corrosive Petroleum Refining Environments” in April 2003 applies to “refinery” applications. The material restrictions imposed by this standard relate to potential failures due to sulfide stress cracking (SSC). Typical material selection consists of WCB or 316 (CF8M) body material, 316 stainless steel (CF8M) trim with an Inconel® X-750.

**NACE MR0175/ISO 15156** – “Petroleum and Natural Gas Industries – Materials for Use in H₂S-Containing Environments in Oil and Gas Production” developed with the European Federation of Corrosion replaced the original MR0175. The new standard primarily pertains to “oil field” applications and is concerned with sulfide stress cracking (SSC), chloride stress corrosion cracking, hydrogen-induced cracking and stepwise cracking, stress oriented hydrogen-induced cracking, soft zone cracking and galvanically-induced hydrogen stress.

In order to select materials of construction it is necessary to know the H₂S and Chloride content, pH, operating temperatures, etc. Because of the information required, the standard makes the end user responsible for the proper selection of materials and their performance. It also limits the use of Austenitic Stainless Steels (i.e. 316 stainless steel, CF8M) and certain High Alloy Austenitic Stainless Steels (i.e. Alloy 20) to operating temperatures less than 140°F (60°C). Other stainless materials and alloys are used for temperatures greater than 140°F.

There are three parts to the material selection that must be considered for material selection:
1. General Principles for the Selection of Cracking-Resistant Materials
2. Cracking-Resistant Carbon and Low Alloy Steels
3. Cracking-Resistant Corrosion-Resistant Alloys (CRA’s) and Other Alloys.

A detailed explanation of the “new” NACE standards can be found at the DFT web site www.dft-valves.com. You can also contact DFT Engineering at 610-363-8903 or 800-206-4013 to discuss material selections for DFT non-slam check valves to your NACE requirements.

When contacting DFT for NACE material recommendations, please provide the following information:

**NACE MR0103-2003**

- **Line size**: ASME/ANSI Class
- **Design pressure & temperature**: Operating pressure & temperature
- **Fluid**: pH, H₂S content, Chloride content

**MR0175/ISO 15156**

- **Line size**: ASME/ANSI Class
- **Design pressure & temperature**: Operating pressure & temperature
- **Fluid**: pH
- **H₂S content**: Chloride content

---

**Contact Information**

Tel: 610-363-8903  Toll-Free: 800-206-4013  Fax: 610-524-9242
### Pressure - Temperature Ratings

**WCB (1)**

<table>
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<th>WORKING PRESSURE BY CLASS (PSIG)</th>
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**C3MUN (DUPLEX SS) (3)**

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**CW-12 MW (CAST HASTELLOY® C) (1)**

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**HASTELLOY® C-276 and INCONEL® 625 (1) (8)**

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**LCC (LOW CARBON STEEL) (1)**

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**NAB (NICKEL-ALUMINUM BRONZE)**

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**PRESSURE TEMPERATURE RATING FOR CAST IRON (PSIG) (8, 9)**

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</table>

### Notes:
2. Maximum temperature for WCB A.
3. Maximum temperature for WCB A with 3000 CWP SCV.
4. Maximum temperature for 316 SS spring.
5. Maximum temperature for Inconel® X-750 spring.
6. Maximum temperature for 316 SS spring.
7. But weld end valves only. Flanged ratings terminate at 1000°F.
8. 316 stainless steel trim recommended for temperatures from 180°F to 200°F.
9. Not recommended for gas or steam service.
10. Maximum valve operating temperature is limited by seal and spring material shown above.
11. Zeron is recommended for steam service.

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**Pressure - Temperature Ratings**

1. Maximum temperature for Inconel® X-750 spring.
2. Maximum temperature for 316 SS spring.
3. Maximum temperature for Viton® & Zelon® with 3600 CWP SCV.
4. Maximum temperature for 316 SS spring.
5. But weld end valves only. Flanged ratings terminate at 1000°F.
Valve Data Sheet

**GENERAL INFORMATION**

- **Quantity:** *
- **Line Size:** *
- **Class (ANSI/API):** *
- **Model:**
- **End Connections:** *
- **Material: Body**
  - Brass ___ Stainless ___ Other: _________
- **Spring Seating Metal**
  - Soft
- **Gaskets/O-ring**
- **Bolting**
- **Fluid State**
  - Liquid              Gas                Steam
- **Fluid:** *
  - Specific Gravity: *
- **Design Conditions:**
  - Pressure:                    Temp.: *
- **Operating Conditions:**
  - Flow*           Pressure *    Temperature*
    - Units: (i.e. GPM, PSI, °F, etc.) ________      _________
  - Normal *
  - Maximum
- **INSTALLATION DATA**
  - Orientation: *
  - Vertical: Up         Down
  - Service Application:
- **SPECIAL REQUIREMENTS**
  - Specification Nos.: CE MARK
  - Cert. of Compliance: CMTRs:
    - Body ___ Trim
  - Drawings: Yes No
  - NACE MR 0175/ISO 15156
    - Yes No % H2S:
  - NACE MR 0103-2003
    - Yes No
  - NDE: (Specify)
  - Packaging: Other:
- **NOTES**
- **DELIVERY:** ___ wks.

---

**FLUID DATA**

**INSTALLATION DATA**

**SPECIAL REQUIREMENTS**

**NOTES**

---

**VALVE DATA SHEET**

**NON-SLAM CHECK VALVE**

"CHECK VALVE DOCTOR™"

**Flange Dimensions**

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<th>ANSI CLASS</th>
<th>NOMINAL PIPE SIZE</th>
<th>OUTSIDE DIAMETER OF FLANGE</th>
<th>OUTSIDE DIAMETER OF RAISED FACE</th>
<th>THICKNESS OF FLANGE</th>
<th>DIAMETER OF BOLT CIRCLE</th>
<th>DIAMETER OF BOLT HOLES</th>
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</tbody>
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Notes:

1. Class 150 and 300 flanges have a 0.06" raised face which is not included in the "tf" dimension.
2. Class 600 to 1500 have a 0.25" raised face which is not included in the "tf" dimension.
3. DFT's standard flange finish is 125 - 250 Ra.
4. All dimensions are in inches
5. ASME B16.5-2013 RAISED FACE
# Valve Data Sheet

## Applications

**Chemical Processing**
- Boiler Feed & Discharge
- Compressor Discharge
- Condensate Lines
- Cooling Towers
- Cryogenics
- Evaporators
- Nitrogen Purge
- Process Lines
- Pump Discharge
- Metering Pumps
- Refrigeration
- Steam Lines
- (Digester & Paper Machines)
- Water Treatment
- Condensate Lines

**Textiles**
- Boiler Feed & Discharge
- Chemical Dye Lines
- Compressor Discharge
- Condensate Lines
- Metering Pumps
- Pump Discharge
- Steam Lines
- Water Treatment

**Food, Beverage & Drug**
- Autoclaves
- Boiler Feed & Discharge
- Chemicals
- Compressor Discharge
- Condensate Lines
- Evaporators
- Metering Pumps
- Refrigeration
- Steam Lines
- Vacuum Lines & Breakers

**Primary Metals**
- Chemical Lines
- Condenser Lines
- Extrusion Equipment
- Evaporators
- Hydraulic Lines
- Pressures - Water Inlet & Outlet
- Steam Lines
- Water Lines

**Building Maintenance**
- Condensate Lines
- Compressor Discharge
- Steam Lines
- Water Lines

**Warranty**

Each DFT INC. (DFT) product is warranted against defects in material and workmanship for a period of one year after being placed in service, but not exceeding 18 months after shipment, when these products are properly installed, maintained and used within the service, temperature and pressure ranges for which they were designed and manufactured, and provided they have not been subject to accidents, neglect, alteration, abuse, misuse or the like. This warranty extends to the first purchaser only. All defective material must be returned to the person from whom you purchased the product, transportation prepaid, free of any liens or encumbrances and if found to be defective will be repaired free of charge or replaced, at the warrantor’s or DFT’s option.

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