Backflow Prevention Products

Get the Best Deals on Watts Backflow Prevention Products at Air Delights!

Shop Now!

watts.com
Table of Contents

General Information ...................................................... 2

Backflow Applications .................................................... 2

Section 1 – Double Check Valve Assemblies

757, 757N ................................................................. 4
757N ................................................................. 8
774 ................................................................. 8
709 ................................................................. 10
007 ................................................................. 12
719 ................................................................. 14

Section 2 – Double Check Detector Assemblies

757DCDA, 757NDCDA ................................................... 16
757NudDCDA ............................................................ 18
754DCDA ............................................................... 20
756DCDA ............................................................... 22
007DCDA ............................................................... 24

Section 3 – Reduced Pressure Zone Assemblies

967, 967N, 967Z .......................................................... 26
994 ................................................................. 28
994TSLT, 994NHS ......................................................... 29
909 ................................................................. 30
909 ................................................................. 32
009 ................................................................. 34
919 ................................................................. 36

Section 4 – Reduced Pressure Detector Assemblies

967RPDA, 957NRPDA ................................................... 38
994RPDA ............................................................... 40
909RPDA ............................................................... 42

Section 5 – Dual Check Valves

9 ................................................................. 44
9D ................................................................. 46
SD-2, SD-3 ............................................................... 46
Cu7 ................................................................. 47
LTU-3 ................................................................. 48
7B ................................................................. 48
OTS ................................................................. 48

Section 6 – Vacuum Breakers

8 ................................................................. 49
800MAOT, 800MAFR ................................................... 50
008PCQT .............................................................. 50
184A, 286A, 289, N388 ................................................ 51

Section 7 – Miscellaneous Backflow Products

WB ................................................................. 52
TWS ................................................................. 54
Governor 80 ............................................................. 54
SS07F ................................................................. 54
Test Kits ............................................................... 55
Test Cock ............................................................. 56
Caps & Tethers .......................................................... 56
Air Gaps, Elbows ......................................................... 57
Specific Ranges .......................................................... 58
PUS-1000 Pre-engineered Valve Stations ................................ 59
BAR-1000 Backflow Irrigation Control Stations .................. 60
FR 500 Thermostatic Freeze Relief Kits ................................ 61

Section 8 – Guide to Options ............................................... 62

Section 9 – Flow Charts .................................................... 64

Note: Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

Noryl® is a registered trademark of General Electric Company.
General Information

Backflow is defined as the reverse flow of a liquid into the potable water supply. The installation of a backflow prevention device protects the water supply from contamination from this very serious condition. This product guide includes information on Watts’ complete line of backflow prevention devices. Should you require additional information, contact your local Watts Representative listed on the back of this guide.

Code Requirements

All major plumbing code bodies address protection against backflow. All potential or existing cross connections must be protected from backflow by the installation of a proper backflow prevention device. Consult your national and local plumbing code authorities for more specific information on your code requirements.

Backflow Definitions

Backpressure: pressure, higher than the supply pressure, caused by a pump, elevated tank, boiler, or any other means that may cause backflow

Backsiphonage: backflow caused by negative or reduce pressure in the supply piping

Cross-Connection: a connection or a potential connection between any part of the potable water system and the environment containing substances in a manner that under any circumstances would allow such a substance to enter the potable water system. Other substances may be gases, liquids, or solids, such as chemicals, waste products, steam, water from other sources (potable or non-potable) or any other matter that may change the color or add odor to the water. Bypass arrangements, jumper connections, removable sections, swivel or changeover assemblies, or any other temporary or permanent connecting arrangement through which backflow may occur are considered to be cross connections.

Health Hazard: a cross-connection or potential cross-connection involving any substance that could, if introduced into the potable water supply, cause death, illness, or spread disease, or have a high probability of causing such effects

Non-Health Hazard: a cross-connection or potential cross-connection involving any substance that generally would not be a health hazard but constitutes a nuisance or would be aesthetically objectionable, if introduced into the potable water supply

Backflow Applications

<table>
<thead>
<tr>
<th>TYPE &amp; PURPOSE</th>
<th>DESCRIPTION</th>
<th>INSTALLED AT</th>
<th>EXAMPLES OF INSTALLATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced pressure zone assemblies</td>
<td>Two independent check valves with intermediate relief valves. Supplied with shutoff valves and ball type test cocks.</td>
<td>Man supply lines, Commercial boilers, Hospital equipment, Laboratory equipment, Wash regulators, Car washes</td>
<td>Main supply lines, Commercial boilers, Hospital equipment, Laboratory equipment, Wash regulators, Car washes</td>
</tr>
<tr>
<td>Reduced pressure detector assemblies</td>
<td>Two independent check valves. Checks are replaceable for repair &amp; testing.</td>
<td>Fire protection systems, supply main, Detects leaks and unauthorized use of water.</td>
<td>Fire Sprinkler Lines where additives or foaming agents are utilized.</td>
</tr>
<tr>
<td>Double check valve assemblies</td>
<td>Two independent check valves. Checks are replaceable for repair &amp; testing.</td>
<td>Fire protection systems, supply main, Detects leaks and unauthorized use of water.</td>
<td>Fire Sprinkler Lines where additives or foaming agents are utilized.</td>
</tr>
<tr>
<td>Double check detector assemblies</td>
<td>Two independent check valves. Checks are replaceable for repair &amp; testing.</td>
<td>Fire protection systems, supply main, Detects leaks and unauthorized use of water.</td>
<td>Fire Sprinkler Lines where additives or foaming agents are utilized.</td>
</tr>
</tbody>
</table>

Backflow is defined as the reverse flow of a liquid into the potable water supply. The installation of a backflow prevention device protects the water supply from contamination from this very serious condition. This product guide includes information on Watts’ complete line of backflow prevention devices. Should you require additional information, contact your local Watts Representative listed on the back of this guide.

Code Requirements

All major plumbing code bodies address protection against backflow. All potential or existing cross connections must be protected from backflow by the installation of a proper backflow prevention device. Consult your national and local plumbing code authorities for more specific information on your code requirements.

Backflow Definitions

Backpressure: pressure, higher than the supply pressure, caused by a pump, elevated tank, boiler, or any other means that may cause backflow

Backsiphonage: backflow caused by negative or reduce pressure in the supply piping

Cross-Connection: a connection or a potential connection between any part of the potable water system and the environment containing substances in a manner that under any circumstances would allow such a substance to enter the potable water system. Other substances may be gases, liquids, or solids, such as chemicals, waste products, steam, water from other sources (potable or non-potable) or any other matter that may change the color or add odor to the water. Bypass arrangements, jumper connections, removable sections, swivel or changeover assemblies, or any other temporary or permanent connecting arrangement through which backflow may occur are considered to be cross connections.

Health Hazard: a cross-connection or potential cross-connection involving any substance that could, if introduced into the potable water supply, cause death, illness, or spread disease, or have a high probability of causing such effects

Non-Health Hazard: a cross-connection or potential cross-connection involving any substance that generally would not be a health hazard but constitutes a nuisance or would be aesthetically objectionable, if introduced into the potable water supply

Backflow Applications

<table>
<thead>
<tr>
<th>TYPE &amp; PURPOSE</th>
<th>DESCRIPTION</th>
<th>INSTALLED AT</th>
<th>EXAMPLES OF INSTALLATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced pressure zone assemblies</td>
<td>Two independent check valves with intermediate relief valves. Supplied with shutoff valves and ball type test cocks.</td>
<td>Man supply lines, Commercial boilers, Hospital equipment, Laboratory equipment, Wash regulators, Car washes</td>
<td>Main supply lines, Commercial boilers, Hospital equipment, Laboratory equipment, Wash regulators, Car washes</td>
</tr>
<tr>
<td>Reduced pressure detector assemblies</td>
<td>Two independent check valves. Checks are replaceable for repair &amp; testing.</td>
<td>Fire protection systems, supply main, Detects leaks and unauthorized use of water.</td>
<td>Fire Sprinkler Lines where additives or foaming agents are utilized.</td>
</tr>
<tr>
<td>Double check valve assemblies</td>
<td>Two independent check valves. Checks are replaceable for repair &amp; testing.</td>
<td>Fire protection systems, supply main, Detects leaks and unauthorized use of water.</td>
<td>Fire Sprinkler Lines where additives or foaming agents are utilized.</td>
</tr>
<tr>
<td>Double check detector assemblies</td>
<td>Two independent check valves. Checks are replaceable for repair &amp; testing.</td>
<td>Fire protection systems, supply main, Detects leaks and unauthorized use of water.</td>
<td>Fire Sprinkler Lines where additives or foaming agents are utilized.</td>
</tr>
</tbody>
</table>

Backflow is defined as the reverse flow of a liquid into the potable water supply. The installation of a backflow prevention device protects the water supply from contamination from this very serious condition. This product guide includes information on Watts’ complete line of backflow prevention devices. Should you require additional information, contact your local Watts Representative listed on the back of this guide.

Code Requirements

All major plumbing code bodies address protection against backflow. All potential or existing cross connections must be protected from backflow by the installation of a proper backflow prevention device. Consult your national and local plumbing code authorities for more specific information on your code requirements.

Backflow Definitions

Backpressure: pressure, higher than the supply pressure, caused by a pump, elevated tank, boiler, or any other means that may cause backflow

Backsiphonage: backflow caused by negative or reduce pressure in the supply piping

Cross-Connection: a connection or a potential connection between any part of the potable water system and the environment containing substances in a manner that under any circumstances would allow such a substance to enter the potable water system. Other substances may be gases, liquids, or solids, such as chemicals, waste products, steam, water from other sources (potable or non-potable) or any other matter that may change the color or add odor to the water. Bypass arrangements, jumper connections, removable sections, swivel or changeover assemblies, or any other temporary or permanent connecting arrangement through which backflow may occur are considered to be cross connections.

Health Hazard: a cross-connection or potential cross-connection involving any substance that could, if introduced into the potable water supply, cause death, illness, or spread disease, or have a high probability of causing such effects

Non-Health Hazard: a cross-connection or potential cross-connection involving any substance that generally would not be a health hazard but constitutes a nuisance or would be aesthetically objectionable, if introduced into the potable water supply

Backflow Applications

<table>
<thead>
<tr>
<th>TYPE &amp; PURPOSE</th>
<th>DESCRIPTION</th>
<th>INSTALLED AT</th>
<th>EXAMPLES OF INSTALLATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced pressure zone assemblies</td>
<td>Two independent check valves with intermediate relief valves. Supplied with shutoff valves and ball type test cocks.</td>
<td>Man supply lines, Commercial boilers, Hospital equipment, Laboratory equipment, Wash regulators, Car washes</td>
<td>Main supply lines, Commercial boilers, Hospital equipment, Laboratory equipment, Wash regulators, Car washes</td>
</tr>
<tr>
<td>Reduced pressure detector assemblies</td>
<td>Two independent check valves. Checks are replaceable for repair &amp; testing.</td>
<td>Fire protection systems, supply main, Detects leaks and unauthorized use of water.</td>
<td>Fire Sprinkler Lines where additives or foaming agents are utilized.</td>
</tr>
<tr>
<td>Double check valve assemblies</td>
<td>Two independent check valves. Checks are replaceable for repair &amp; testing.</td>
<td>Fire protection systems, supply main, Detects leaks and unauthorized use of water.</td>
<td>Fire Sprinkler Lines where additives or foaming agents are utilized.</td>
</tr>
<tr>
<td>Double check detector assemblies</td>
<td>Two independent check valves. Checks are replaceable for repair &amp; testing.</td>
<td>Fire protection systems, supply main, Detects leaks and unauthorized use of water.</td>
<td>Fire Sprinkler Lines where additives or foaming agents are utilized.</td>
</tr>
</tbody>
</table>
### Backflow Applications (cont.)

<table>
<thead>
<tr>
<th>TYPE &amp; PURPOSE</th>
<th>DESCRIPTION</th>
<th>INSTALLED AT</th>
<th>EXAMPLES OF INSTALLATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DUAL CHECK VALVE BACKFLOW PREVENTERS</strong>&lt;br&gt;For non-health hazard cross-connections and continuous pressure applications.</td>
<td>Two independent check valves. Checks are replaceable for repair and testing.</td>
<td>Cross-connection where there is a non-health hazard.</td>
<td>Residential Supply Lines (at the meter) humorists and pump systems&lt;br&gt;Post-Mix beverage machines, tea and coffee machines</td>
</tr>
<tr>
<td><strong>SPECIALTY BACKFLOW PREVENTERS with INTERMEDIATE ATMOSPHERIC VENT</strong>&lt;br&gt;For non-health hazard cross-connections in small pipe sizes. Continuous pressure applications.</td>
<td>Two independent check valves with intermediate vacuum breaker and relief vent.</td>
<td>Pressure outlet to prevent backflow of carbon dioxide gas and carbonated water into the water supply system to beverage machines.</td>
<td>Post-Mix carbonated beverage machines, tea and coffee machines, ice machines</td>
</tr>
<tr>
<td><strong>LABORATORY FAUCET DUAL CHECK VALVE with INTERMEDIATE VACUUM BREAKER</strong>&lt;br&gt;In small sizes for health hazard cross-connections not subject to continuous pressure.</td>
<td>Two independent check valves with intermediate vacuum breaker and relief vent.</td>
<td>Cross-connection subject to backpressure or back siphonage where there is a health hazard.</td>
<td>Laboratory Faucets and Pipe Lines Barber shop and Beauty Parlor sinks</td>
</tr>
<tr>
<td><strong>ATMOSPHERIC VACUUM BREAKERS</strong>&lt;br&gt;For health hazard cross-connections not subject to continuous pressure – 6” above flood rim.</td>
<td>Single float and disc with atmospheric port.</td>
<td>Valve is designed for installations in a continuous pressure system 12” above the overflow level of the system being supplied. Protection against back siphonage only.</td>
<td>Process Tanks&lt;br&gt;Chlorine Dampers&lt;br&gt;Building Meters&lt;br&gt;Lawn Sprinklers</td>
</tr>
<tr>
<td><strong>PRESSURE VACUUM BREAKERS</strong>&lt;br&gt;For health hazard cross-connections. Continuous pressure applications – 12” above flood rim.</td>
<td>Spring-loaded float and disc with independent check. Supplied with shutoff valves and ball type test cocks</td>
<td>Valve is designed for installation in a continuous pressure system 12” above the overflow level of the system being supplied. Protection against back siphonage only.</td>
<td>Laboratory equipment&lt;br&gt;Cooling Towers&lt;br&gt;Commercial Laundry Machines&lt;br&gt;Growing Plants&lt;br&gt;Chemical Planting tanks&lt;br&gt;Lawn Sprinklers</td>
</tr>
<tr>
<td><strong>ANTI-SIPHON, SPILL-RESISTANT VACUUM BREAKERS</strong>&lt;br&gt;For health hazard cross-connections. Continuous pressure applications. Factory installed 1” above flood rim. Field installed 6” above flood rim.</td>
<td>Spill-resistant vacuum breaker with integral check and float assembly of thermoplastic. Housing brass body.</td>
<td>Indoor point of use cross-connections.</td>
<td>Chemical Disperser&lt;br&gt;Commercial Dishwasher&lt;br&gt;Stainers</td>
</tr>
<tr>
<td><strong>HOSE CONNECTION VACUUM BREAKERS</strong>&lt;br&gt;For residential and industrial hose supply outlets not subject to continuous pressure.</td>
<td>Single check with atmospheric vacuum breaker vent.</td>
<td>Install directly on hose bibbs, service sinks and well hydrants. Not for continuous pressure.</td>
<td>Hose bibbs&lt;br&gt;Service sinks&lt;br&gt;Hydrants</td>
</tr>
<tr>
<td><strong>ENCLOSURES</strong>&lt;br&gt;To protect backflow preventers installed outdoors from vandalism and cold temperatures.</td>
<td>Aluminum or fiberglass structures used to protect motes, valves, and backflow preventers from vandalism and freeze damage.</td>
<td>Backflow preventer location.</td>
<td>Irrigation systems and domestic service line connections.</td>
</tr>
</tbody>
</table>
Series 757, 757N
Double Check Valve Assemblies

Sizes: 2½” – 10” (65 – 250mm)

Series 757, 757N Double Check Valve Assemblies are used to prevent backflow of pollutants that are objectionable but not toxic, from entering the potable water supply system. This Series can be applied, where approved by the local authority having jurisdiction, on non-health hazard installations. The 757, 757N may be installed under continuous pressure service and may be subjected to backpressure. The 757, 757N consist of two independently operating check valves, two shutoff valves, and four test cocks.

Features
• Extremely compact design
• 70% lighter than traditional designs
• Groove fittings allow integral pipeline adjustment
• Patented tri-link checks provide lowest pressure loss
• Unmatched ease of serviceability
• Available with grooved butterfly valve shutoffs
• May be used for horizontal, vertical or N pattern installations
• Replaceable check disc rubber

Materials
• Housing & Sleeve: 304 (Schedule 40) Stainless Steel
• Elastomers: EPDM, Silicone and Buna-N
• Tri-link Checks: Noryl®, Stainless Steel
• Check Discs: Reversible Silicone or EPDM
• Test Cocks: Bronze Body Nickel Plated
• Pins & Fasteners: 300 Series Stainless Steel
• Springs: Stainless Steel

Pressure – Temperature
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C)
Maximum Working Pressure: 175psi (12.1 bar)

Models
Suffix
NRS - non-rising stem resilient seated gate valves
OSY - UL/FM outside stem and yoke resilient seated gate valves
*OSY FxG - flanged inlet gate connection and grooved outlet gate connection
*OSY GxF - grooved inlet gate connection and flanged outlet gate connection
*OSY GxG - grooved inlet gate connection and grooved outlet gate connection

BFG - 2½” – 8” UL/FM grooved gear operated butterfly valves with tamper switch
QT - 2½” – 3” quarter-turn, ball valves

Approvals

For additional information, request literature ES-757/757N.

See Flow Charts on p. 70
Dimensions – Weights

757, 757N

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>28</td>
<td>31</td>
<td>78</td>
<td>16</td>
<td>3 3/8</td>
<td>4 16</td>
<td>9 3/8</td>
<td>238</td>
<td>3 1/2</td>
<td>89</td>
<td>29</td>
<td>16</td>
<td>38</td>
<td>223</td>
<td>223</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>31</td>
<td>78</td>
<td>16</td>
<td>3 3/8</td>
<td>4 16</td>
<td>9 3/8</td>
<td>238</td>
<td>3 1/2</td>
<td>89</td>
<td>29</td>
<td>16</td>
<td>38</td>
<td>223</td>
<td>223</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>31</td>
<td>78</td>
<td>16</td>
<td>3 3/8</td>
<td>4 16</td>
<td>9 3/8</td>
<td>238</td>
<td>3 1/2</td>
<td>89</td>
<td>29</td>
<td>16</td>
<td>38</td>
<td>223</td>
<td>223</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>31</td>
<td>78</td>
<td>16</td>
<td>3 3/8</td>
<td>4 16</td>
<td>9 3/8</td>
<td>238</td>
<td>3 1/2</td>
<td>89</td>
<td>29</td>
<td>16</td>
<td>38</td>
<td>223</td>
<td>223</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>200</td>
<td>31</td>
<td>78</td>
<td>16</td>
<td>3 3/8</td>
<td>4 16</td>
<td>9 3/8</td>
<td>238</td>
<td>3 1/2</td>
<td>89</td>
<td>29</td>
<td>16</td>
<td>38</td>
<td>223</td>
<td>223</td>
<td></td>
</tr>
</tbody>
</table>

757 BFG, 757N BFG

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>28</td>
<td>15 1/4</td>
<td>735</td>
<td>4 7/8</td>
<td>124</td>
<td>3 13/16</td>
<td>97</td>
<td>30 1/4</td>
<td>768</td>
<td>24 1/2</td>
<td>622</td>
<td>17 1/16</td>
<td>437</td>
<td>111</td>
<td>258</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>31</td>
<td>78</td>
<td>16</td>
<td>3 3/8</td>
<td>4 16</td>
<td>9 3/8</td>
<td>238</td>
<td>3 1/2</td>
<td>89</td>
<td>29</td>
<td>16</td>
<td>38</td>
<td>223</td>
<td>223</td>
<td></td>
</tr>
</tbody>
</table>

757 QT

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>80</td>
<td>30 1/4</td>
<td>124</td>
<td>768</td>
<td>24 1/2</td>
<td>622</td>
<td>17 1/16</td>
<td>437</td>
<td>111</td>
<td>258</td>
<td>107</td>
<td>265</td>
<td>81</td>
<td>217</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

IMPORTANT: Inquire with governing authorities for local installation requirements.
Series 757Na Double Check Valve Assemblies
Sizes: 21/2" – 6" (65 – 150mm)

Series 757Na Double Check Valve Assemblies are used to prevent backflow of pollutants that are objectionable but not toxic, from entering the potable water supply system. This Series can be applied, where approved by the local authority having jurisdiction, on non-health hazard installations. The 757Na may be installed under continuous pressure service and may be subjected to backpressure. The 757Na consist of two independently operating valves, two shutoff valves, and four test cocks.

**Features**
- Extremely compact design
- 70% lighter than traditional designs
- Groove fittings allow integral pipeline adjustment
- Patented bi-link checks provide lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shutoffs
- Used for N pattern installations
- Replaceable check disc rubber

**Materials**
- Housing & Sleeve: 304 (Schedule 40) stainless steel
- Elastomers: EPDM and Buna-N
- Bi-link Check: Noryl®, stainless steel
- Check Discs: Reversible EPDM
- Test Cocks: Bronze body nickel plated
- Pins & Fasteners: 300 Series stainless steel
- Springs: Stainless steel

**Pressure – Temperature**
- Temperature Range: 33°F – 110°F (0.5˚C – 43˚C)
- Maximum Working Pressure: 175psi (12.1 bar)

**Models**
- Suffix
  - NRS – non-rising stem resilient seated gate valves
  - OSY – UL/FM outside stem and yoke resilient seated gate valves
  - OSY FG – flanged inlet gate connection and grooved outlet gate connection
  - OSY GFG – grooved inlet gate connection and flanged outlet gate connection
  - OSY GGG – grooved inlet gate connection and grooved outlet gate connection
- BFG – 21/2" – 6" (65 – 150mm) UL/FM grooved gear operated butterfly valves with tamper switch
- Available with grooved NRS gate valves – consult factory
- Post indicator plate and operating nut available – consult factory
- *Consult factory for dimensions

**Approvals**
- UL
- FM
- cUPC
- EPC
- APRO

For additional information, request literature ES-757a/757Na.
### Dimensions – Weights

#### 757Na

<table>
<thead>
<tr>
<th>SIZE (IN)</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>P</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>in.</td>
<td>mm</td>
<td>in. mm</td>
<td>in. mm</td>
<td>in. mm</td>
<td>lbs. kgs.</td>
<td></td>
</tr>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>738</td>
<td>29</td>
<td>1/16</td>
<td>223</td>
<td>81% 355</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>768</td>
<td>30</td>
<td>5/8</td>
<td>225</td>
<td>91% 353</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>828</td>
<td>34</td>
<td>1 1/4</td>
<td>252</td>
<td>81% 353</td>
</tr>
</tbody>
</table>

Note: For 2 1/2” – 6” horizontal/vertical installation, see page 4-5.

#### 757Na BFG

<table>
<thead>
<tr>
<th>SIZE (IN)</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>P</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>in.</td>
<td>mm</td>
<td>in. mm</td>
<td>in. mm</td>
<td>in. mm</td>
<td>lbs. kgs.</td>
<td></td>
</tr>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>738</td>
<td>29</td>
<td>7/8</td>
<td>223</td>
<td>39% 370</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>768</td>
<td>30</td>
<td>1</td>
<td>225</td>
<td>5% 370</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>828</td>
<td>34</td>
<td>1 1/4</td>
<td>252</td>
<td>9% 370</td>
</tr>
</tbody>
</table>

Note: For 2 1/2” – 6” horizontal/vertical installation, see page 4-5.

---

**IMPORTANT:** Inquire with governing authorities for local installation requirements.
Series 774
Double Check Valve Assemblies
774: Sizes: 2½” – 12” (100 – 300mm)

Series 774 and Double Check Valve Assemblies are designed to prevent the reverse flow of polluted water from entering into the potable water system. These models can be applied, where approved by the local authority having jurisdiction, on non-health hazard installations. Series 774 feature short end-to-end dimensions, light weight stainless steel body, and the lowest head loss available.

Features
- Patented torsion spring check valve provides low head loss
- Short lay length is ideally suited for retrofit installations
- Stainless Steel body is half the weight of competitive designs reducing installation and shipping cost
- Stainless steel construction provides long term corrosion protection and maximum strength
- Single top access cover with two-bolt grooved style coupling for ease of maintenance
- Thermoplastic and stainless steel check valves for trouble-free operation
- No special tools required for servicing
- Compact construction allows for smaller vaults and enclosures
- May be installed in horizontal or vertical flow up position

Materials
- All internal metal parts: 300 Series stainless steel
- Main valve body: 300 Series stainless steel
- Check assembly: Noryl®

Pressure – Temperature
Temperature Range: 32°F – 110°F (0.5˚C – 43˚C) continuous
Maximum Working Pressure: 175psi (12.1 bar)

For additional information, request literature ES-774 or ES-774X/774XDCDA.
See Flow Charts on p. 72–73
### Double Check Valve Assemblies

**IMPORTANT:** Inquire with governing authorities for local installation requirements.

### Dimensions – Weights

<table>
<thead>
<tr>
<th>SIZE (IN)</th>
<th>A</th>
<th>C (open)</th>
<th>C (NRS)</th>
<th>D</th>
<th>G</th>
<th>L</th>
<th>P</th>
<th>M</th>
<th>N</th>
<th>w/Gates</th>
<th>w/o Gates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>38.950</td>
<td>91.445</td>
<td>23.81</td>
<td>38.1</td>
<td>222</td>
<td>55.88</td>
<td>238</td>
<td>3.5</td>
<td>89</td>
<td>75.6</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>38.950</td>
<td>91.445</td>
<td>23.81</td>
<td>51.1</td>
<td>260</td>
<td>51.1</td>
<td>260</td>
<td>4.5</td>
<td>95</td>
<td>68.5</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>40.106</td>
<td>101.617</td>
<td>31.75</td>
<td>63.5</td>
<td>315</td>
<td>79.37</td>
<td>315</td>
<td>5.5</td>
<td>114</td>
<td>54.6</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>61.232</td>
<td>155.443</td>
<td>76.22</td>
<td>127</td>
<td>450</td>
<td>114.30</td>
<td>450</td>
<td>8</td>
<td>140</td>
<td>69.9</td>
</tr>
<tr>
<td>8</td>
<td>200</td>
<td>82.513</td>
<td>208.333</td>
<td>95.25</td>
<td>159</td>
<td>606</td>
<td>159.00</td>
<td>606</td>
<td>9</td>
<td>171</td>
<td>85.1</td>
</tr>
<tr>
<td>10</td>
<td>250</td>
<td>101.617</td>
<td>256.542</td>
<td>123.81</td>
<td>222</td>
<td>762</td>
<td>222.00</td>
<td>762</td>
<td>10</td>
<td>200</td>
<td>114</td>
</tr>
<tr>
<td>12</td>
<td>300</td>
<td>127.000</td>
<td>322.000</td>
<td>152.40</td>
<td>279</td>
<td>914</td>
<td>279.00</td>
<td>914</td>
<td>11</td>
<td>238</td>
<td>140</td>
</tr>
</tbody>
</table>

*Models*

- **NRS**: non-rising stem resilient seated gate valves
- **OSY**: UL/FM outside stem & yoke resilient seated gate valves
- **LF**: without shutoff valves
- **S**: cast iron strainer
- **OSY FXG**: flanged inlet gate connection and grooved outlet gate connection
- **OSY GxG**: grooved inlet gate connection and grooved outlet gate connection
- **OSY GxF**: flanged inlet gate connection and flanged outlet gate connection

*OSY GxG and GxF available with grooved NRS gate valves – consult factory*

*Post indicator plate and operating nut available – consult factory*

*Consult factory for dimensions*

### Approvals

- **RPS**
- **UL CUL**

For additional approvals consult factory. Flange dimension in accordance with AWWA Class D.

**IMPORTANT:** Inquire with governing authorities for local installation requirements.
Series 709
Double Check Valve Assemblies
Sizes: 2½" – 10" (65 – 250mm)

Series 709 Double Check Valve Assemblies are designed to prevent the reverse flow of polluted water from entering into the potable water system. This Series can be applied, where approved by the local authority having jurisdiction, on non-health hazard installations. Series 709 features a modular check design concept to facilitate easy maintenance.

Features
• Replaceable bronze seats
• Maximum flow at low pressure drop
• Design simplicity for easy maintenance
• No Special Tools Required for Servicing
• Captured spring assemblies for safety
• Approved for vertical flow-up installation

Materials
• Check Valve Bodies: Epoxy coated (FDA approved) cast iron
• Seats: Bronze

Pressure – Temperature
Temperature Range: 32°F – 110°F (0.0°C – 43°C) continuous, 140°F (60°C) intermittent
Maximum Working Pressure: 175psi (12.1 bar)

For additional information, request literature ES-709L.
See Flow Charts on p. 68
Double Check Valve Assemblies

IMPORTANT: Inquire with governing authorities for local installation requirements

Dimensions – Weights

<table>
<thead>
<tr>
<th>SIZE (IN)</th>
<th>A (OPEN)</th>
<th>C (OSY)</th>
<th>C (NRS)</th>
<th>D</th>
<th>L</th>
<th>R</th>
<th>T</th>
<th>M</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>99</td>
<td>165</td>
<td>79</td>
<td>141</td>
<td>69</td>
<td>165</td>
<td>76</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>101</td>
<td>182</td>
<td>177</td>
<td>306</td>
<td>101</td>
<td>182</td>
<td>177</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>122</td>
<td>222</td>
<td>212</td>
<td>502</td>
<td>122</td>
<td>222</td>
<td>212</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>225</td>
<td>351</td>
<td>299</td>
<td>605</td>
<td>225</td>
<td>351</td>
<td>299</td>
<td>25</td>
</tr>
<tr>
<td>8</td>
<td>200</td>
<td>275</td>
<td>445</td>
<td>355</td>
<td>703</td>
<td>275</td>
<td>445</td>
<td>355</td>
<td>30</td>
</tr>
<tr>
<td>10</td>
<td>250</td>
<td>330</td>
<td>585</td>
<td>465</td>
<td>991</td>
<td>330</td>
<td>585</td>
<td>465</td>
<td>35</td>
</tr>
</tbody>
</table>

*Dimensions needed for screen removal.

Models

Suffixes:
- OSY: UL/FM outside stem and yoke resilient seated gate valves
- LF: without shutoff valves
- S/FDA: FDA epoxy coated strainer
- BB: bronze body 2 1/2" – 3" (65 – 80mm)
- QT: quarter-turn ball valves
- QT-FDA: FDA epoxy coated quarter-turn ball valves

Approvals

- AWWA: Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
- Size 4" – 10" (100 – 250mm) approved horizontal and vertical “flow up”
- Size 2 1/2" and 3" (65 and 80mm) approved horizontal only.
- Factory Mutual approved 4" – 10" (80 – 250mm) vertical “flow up”
Double Check Valve Assemblies

Series 007

Double Check Valve Assemblies

Sizes: ½” – 3” (15 – 80 mm)

Series 007 Double Check Valve Assemblies shall be installed at referenced cross-connections to prevent the backflow of polluted water into the potable water supply. Only those cross-connections identified by local inspection authorities as non-health hazard shall be allowed the use of an approved double check valve assembly.

Features
- Ease of maintenance - only one cover
- Top entry
- Replaceable seats and seat discs
- Modular construction
- Compact design
- Top mounted ball valve test cocks
- Low pressure drop
- No special tools required for servicing
- ½” – 1” (15 – 25 mm) have tee handles
- 1½” – 2” (38 – 50mm) cast bronze body construction
- 2½” – 3” (65 – 80mm) fused epoxy coated cast iron body

Materials
- Body: ½” – 2” (15 – 50mm) Cast bronze
- 2½” – 3” (65 – 80mm) Fused epoxy coated cast iron body

Pressure – Temperature
- Temperature Range:
  ½” – 2” (15 – 50mm):
  32°F – 110°F (0°C – 43°C)
  2½” – 3” (65 – 80mm):
  32°F – 110°F (0°C – 43°C) continuous, 140°F (60°C) intermittent
- Maximum Working Pressure: 175psi (12.1 bar)

Approvals
- AWWA, IAPMO, UPC
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. Horizontal and vertical "flow up" approval on all sizes. UL Classified (LF models only)
- ½” – 3” (15 – 50mm)
- UL Classified with OSY gate valves (2½” & 3”)

For additional information, request literature ES-709L. See Flow Charts on p. 64
Dimensions – Weights

Suffix HC - Fire Hydrant Fittings dimension “A” = 23½” (594mm)

**007QT**

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>M</th>
<th>N</th>
<th>N1</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>½ 15</td>
<td>10</td>
<td>254</td>
<td>4%</td>
<td>117</td>
<td>2%</td>
<td>62</td>
<td>3%</td>
<td>80</td>
<td>5%</td>
<td>52</td>
<td>2%</td>
<td>70</td>
<td>5%</td>
</tr>
<tr>
<td>¾ 20</td>
<td>11</td>
<td>262</td>
<td>4%</td>
<td>102</td>
<td>3%</td>
<td>79</td>
<td>6%</td>
<td>122</td>
<td>3%</td>
<td>87</td>
<td>2%</td>
<td>94</td>
<td>3%</td>
</tr>
<tr>
<td>1 25</td>
<td>13</td>
<td>337</td>
<td>5%</td>
<td>130</td>
<td>4%</td>
<td>100</td>
<td>7%</td>
<td>191</td>
<td>3%</td>
<td>85</td>
<td>5%</td>
<td>43</td>
<td>7%</td>
</tr>
<tr>
<td>1½ 32</td>
<td>16</td>
<td>416</td>
<td>5%</td>
<td>127</td>
<td>3%</td>
<td>84</td>
<td>9%</td>
<td>241</td>
<td>5%</td>
<td>127</td>
<td>3%</td>
<td>76</td>
<td>2%</td>
</tr>
<tr>
<td>2 50</td>
<td>19</td>
<td>495</td>
<td>6%</td>
<td>159</td>
<td>4%</td>
<td>102</td>
<td>13%</td>
<td>340</td>
<td>6%</td>
<td>156</td>
<td>3%</td>
<td>87</td>
<td>2%</td>
</tr>
</tbody>
</table>

*Dimensions required for screen removal.

**U007QT**

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>½ 15</td>
<td>12</td>
<td>325</td>
</tr>
<tr>
<td>¾ 20</td>
<td>13</td>
<td>351</td>
</tr>
<tr>
<td>1 25</td>
<td>16</td>
<td>422</td>
</tr>
<tr>
<td>1½ 32</td>
<td>20</td>
<td>527</td>
</tr>
<tr>
<td>2 50</td>
<td>24</td>
<td>622</td>
</tr>
</tbody>
</table>

**IMPORTANT:** Inquire with governing authorities for local installation requirements.
Double Check Valve Assemblies

Series 719
Double Check Valve Assemblies
Sizes: 1⁄2” – 2” (15 – 50mm)

Series 719 Double Check Valve Assemblies are designed to protect drinking water supplies from dangerous cross connections in accordance with national plumbing codes and water authority requirements.

This series may be used in only those cross-connections identified by local inspection authorities as non-health hazard applications. Check with local authority having jurisdiction regarding vertical orientation, frequency of testing or other installation requirements. Series 719 meets the requirements of ASSE Std. 1015 and AWWA Std. C510.

Features
- Manufactured from bronze alloy
- Separate access, top entry check valve design
- Reversible seat disc rubber, extends check valve life
- Chloramine resistant elastomers
- Replaceable seats and seat discs
- Compact design
- Top mounted screwdriver slotted ball valve test cocks
- Low pressure drop
- 1⁄2” – 1” (15 – 25mm) have Tee handles
- No special tools required for servicing
- Plastic on plastic check guiding reduces potential binding due to mineral deposits

Models

Suffix:
- S – bronze strainer
- LF – without shutoff valves
- LH – locking handle ball valves
- SH – stainless steel ball valve handles
- HC – 21⁄4” inlet/outlet for hydrant fittings 2” valve
- QT – quarter-turn ball valves
- C&T – testcock caps and tethers

Prefix:
- U – union connections
- AQ – street elbows with quarter-turn ball valves

Pressure-Temperature

Temperature Range: 33˚F – 180˚F (0.5˚C – 82˚C)
Maximum Working Pressure: 175psi (12.1 bar)

Materials

- Body: Bronze
- Elastomers: Chloramine resistant silicone and EPDM
- Check seats: FPO
- Disc Holder: FPO

Approvals

AWWA Std C510 compliant

For additional information, request literature ES-719.

See Flow Charts on p. 69
719QT, 719QT-S

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E (LF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1⁄2</td>
<td>15</td>
<td>7</td>
<td>9</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>3⁄4</td>
<td>20</td>
<td>12</td>
<td>11</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>17</td>
<td>16</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>11⁄4</td>
<td>32</td>
<td>21</td>
<td>19</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>11⁄2</td>
<td>40</td>
<td>21</td>
<td>19</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>25</td>
<td>50</td>
<td>21</td>
<td>19</td>
<td>17</td>
<td>24</td>
</tr>
</tbody>
</table>

719AGT

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E (LF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1⁄2</td>
<td>15</td>
<td>7</td>
<td>9</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>3⁄4</td>
<td>20</td>
<td>12</td>
<td>11</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>17</td>
<td>16</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>11⁄4</td>
<td>32</td>
<td>21</td>
<td>19</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>11⁄2</td>
<td>40</td>
<td>21</td>
<td>19</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>25</td>
<td>50</td>
<td>21</td>
<td>19</td>
<td>17</td>
<td>24</td>
</tr>
</tbody>
</table>

IMPORTANT: Inquire with governing authorities for local installation requirements.
Series 757DCDA, 757NDCDA
Double Check Detector Assemblies
Sizes: 2½” – 10” (65 – 250mm)

Series 757DCDA, 757NDCDA Double Check Detector Assemblies are used to prevent backflow of pollutants that are objectionable but not toxic, from entering the potable water supply system. This Series can be applied, where approved by the local authority having jurisdiction, on non-health hazard installations. The 757DCDA, 757NDCDA may be installed under continuous pressure service and may be subjected to backpressure. The 757DCDA, 757NDCDA are used primarily on fire line sprinkler systems when it is necessary to monitor unauthorized use of water.

Features
- Extremely compact design
- 70% lighter than traditional designs
- Groove fittings allow integral pipeline adjustment
- Patented tri-link checks provide lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shuttles
- May be used for horizontal, vertical or “N” pattern installations
- Replaceable check disc rubber

Materials
- Housing & Sleeve: 304 (Schedule 40) Stainless Steel
- Elastomers: EPDM, Silicone and Buna N
- Tri-link Checks: Noryl®, Stainless Steel
- Check Discs: Reversible Silicone or EPDM
- Test Cocks: Bronze Body Nickel Plated
- Fins & Fasteners: 300 Series Stainless Steel
- Springs: Stainless Steel

Pressure-Temperature
Temperature Range: 33°F – 110°F (0.5°C – 43°C)
Maximum Working Pressure: 175psi (12.1 bar)
IMPORTANT: Inquire with governing authorities for local installation requirements

### Dimensions – Weights

#### 757DCDA, 757NDCDA

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>A (in.)</th>
<th>C (mm)</th>
<th>D (in.)</th>
<th>G (mm)</th>
<th>H (mm)</th>
<th>I (in.)</th>
<th>J (in.)</th>
<th>P (lbs.)</th>
<th>757DCDA (lbs)</th>
<th>757NDCDA (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2½ 66</td>
<td>21⁄2</td>
<td>65</td>
<td>31</td>
<td>767</td>
<td>56</td>
<td>10</td>
<td>22</td>
<td>599</td>
<td>333</td>
<td>219</td>
</tr>
<tr>
<td>3 80</td>
<td>3</td>
<td>80</td>
<td>31</td>
<td>767</td>
<td>56</td>
<td>10</td>
<td>22</td>
<td>599</td>
<td>333</td>
<td>219</td>
</tr>
<tr>
<td>4 100</td>
<td>4</td>
<td>100</td>
<td>31</td>
<td>767</td>
<td>56</td>
<td>10</td>
<td>22</td>
<td>599</td>
<td>333</td>
<td>219</td>
</tr>
<tr>
<td>6 150</td>
<td>6</td>
<td>150</td>
<td>31</td>
<td>767</td>
<td>56</td>
<td>10</td>
<td>22</td>
<td>599</td>
<td>333</td>
<td>219</td>
</tr>
<tr>
<td>8 200</td>
<td>8</td>
<td>200</td>
<td>31</td>
<td>767</td>
<td>56</td>
<td>10</td>
<td>22</td>
<td>599</td>
<td>333</td>
<td>219</td>
</tr>
</tbody>
</table>

#### 757DCDA BFG, 757NDCDA BFG

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>A (in.)</th>
<th>C (OSY) (mm)</th>
<th>D (OSY) (in.)</th>
<th>G (OSY) (mm)</th>
<th>H (OSY) (mm)</th>
<th>I (OSY) (in.)</th>
<th>J (OSY) (in.)</th>
<th>P (lbs.)</th>
<th>757DCDA BFG (lbs)</th>
<th>757NDCDA BFG (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2½ 66</td>
<td>21⁄2</td>
<td>65</td>
<td>31</td>
<td>767</td>
<td>56</td>
<td>10</td>
<td>22</td>
<td>599</td>
<td>333</td>
<td>219</td>
</tr>
<tr>
<td>3 80</td>
<td>3</td>
<td>80</td>
<td>31</td>
<td>767</td>
<td>56</td>
<td>10</td>
<td>22</td>
<td>599</td>
<td>333</td>
<td>219</td>
</tr>
<tr>
<td>4 100</td>
<td>4</td>
<td>100</td>
<td>31</td>
<td>767</td>
<td>56</td>
<td>10</td>
<td>22</td>
<td>599</td>
<td>333</td>
<td>219</td>
</tr>
<tr>
<td>6 150</td>
<td>6</td>
<td>150</td>
<td>31</td>
<td>767</td>
<td>56</td>
<td>10</td>
<td>22</td>
<td>599</td>
<td>333</td>
<td>219</td>
</tr>
<tr>
<td>8 200</td>
<td>8</td>
<td>200</td>
<td>31</td>
<td>767</td>
<td>56</td>
<td>10</td>
<td>22</td>
<td>599</td>
<td>333</td>
<td>219</td>
</tr>
</tbody>
</table>

#### Models

**Suffix**
- **OSY** - UL/FM outside stem and yoke resilient seated gate valves
- **OSY FxG** - flanged inlet gate connection and grooved outlet gate connection
- **OSY GxF** - grooved inlet gate connection and flanged outlet gate connection
- **OSY GxG** - grooved inlet gate connection and grooved outlet gate connection

**Approvals**
- **1048 B64.5 (BFG & OSY only)**

**Post indicator plate and operating nut available**
- Consult factory

**IMPORTANT:** Inquire with governing authorities for local installation requirements

- Consult factory for dimensions
Series 757NaDCDA
Double Check Detector Assemblies
Sizes: 2⅜” – 6” (65 – 150mm)

Series 757NaDCDA Double Check Detector Assemblies are used to prevent backflow of pollutants that are objectionable but not toxic, from entering the potable water supply system. These models can be applied, where approved by the local authority having jurisdiction, on non-health hazard installations. The 757NaDCDA may be installed under continuous pressure service and may be subjected to backpressure. The 757NaDCDA are used primarily on fire line sprinkler systems when it is necessary to monitor unauthorized use of water.

Features
• Extremely compact design
• 70% lighter than traditional designs
• Groove fittings allow integral pipeline adjustment
• Patented bi-link checks provide lowest pressure loss
• Unmatched ease of serviceability
• Available with grooved butterfly valve shut-offs
• Used for N pattern installations
• Replaceable check disc rubber

Materials
• Housing & Sleeve: 304 (Schedule 40) Stainless Steel
• Elastomers: EPDM and Buna-N
• Bi-link Checks: Noryl®, Stainless Steel
• Check Discs: Reversible EPDM
• Test Cocks: Bronze Body Nickel Plated
• Pins & Fasteners: 300 Series Stainless Steel
• Springs: Stainless Steel

Pressure-Temperature
Temperature Range: 33°F – 110°F
(0.5˚C – 43˚C)
Maximum Working Pressure: 175psi
(12.1 bar)

For additional information, request literature ES-757aDCDA/757NaDCDA.
Dimensions – Weights

### 757NaDCDA

<table>
<thead>
<tr>
<th>SIZE (IN)</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>P</th>
<th>757NaDCDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
</tr>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>20 1/4</td>
<td>708</td>
<td>22 1/2</td>
<td>568</td>
<td>10 1/4</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>30</td>
<td>3/4</td>
<td>768</td>
<td>22 1/2</td>
<td>578</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>32 1/4</td>
<td>838</td>
<td>24</td>
<td>610</td>
<td>16 1/16</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>44 1/4</td>
<td>1137</td>
<td>33 1/2</td>
<td>857</td>
<td>23 1/4</td>
</tr>
</tbody>
</table>

Note: For 2 1/2” – 6” horizontal/vertical installation, see page 16–17.

### 757NaDCDA BFG

<table>
<thead>
<tr>
<th>SIZE (IN)</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>P</th>
<th>757NaDCDA BFG</th>
</tr>
</thead>
<tbody>
<tr>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
</tr>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>20 1/4</td>
<td>708</td>
<td>22 1/2</td>
<td>568</td>
<td>10 1/4</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>30</td>
<td>3/4</td>
<td>768</td>
<td>22 1/2</td>
<td>578</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>32 1/4</td>
<td>838</td>
<td>24</td>
<td>610</td>
<td>16 1/16</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>44 1/4</td>
<td>1137</td>
<td>33 1/2</td>
<td>857</td>
<td>23 1/4</td>
</tr>
</tbody>
</table>

Note: For 2 1/2” – 6” horizontal/vertical installation, see page 16–17.

---

**Models**
- **Suffix**: OSY - UL/FM outside stem and yoke resilient seated gate valves
- **OSY GxG**: grooved inlet gate connection and grooved outlet gate connection
- **OSY GxG**: grooved inlet gate connection and flanged outlet gate connection
- **OSY GxG**: grooved inlet gate connection and grooved outlet gate connection
- **BFG**: UL/FM grooved gear operated butterfly valve with tamper switch
- Available with grooved NRS gate valves - consult factory
- Post indicator plate and operating nut available
- Consult factory for dimensions

**Approvals**
- UL, FM, CSA, and NSF

**Important**: Inquire with governing authorities for local installation requirements
Double Check Detector Assemblies

Series 774DCDA

Double Check Detector Assemblies

774DCDA: Sizes 2½” – 12” (65 – 300mm)

Features

• Patented torsion spring check valve provides low head loss
• Short lay length is ideally suited for retrofit installations
• Stainless steel body is half the weight of competitive designs reducing installation and shipping cost
• Stainless steel construction provides long term corrosion protection and maximum strength
• Single top access cover with two-bolt grooved style coupling for ease of maintenance
• Thermoplastic and stainless steel check valves for trouble-free operation
• No special tools required for servicing
• Compact construction allows for smaller vaults and enclosures
• Furnished with 5/8” x 3/4” (16 x 19mm) bronze meter (gpm or cft)
• Detects underground leaks and unauthorized water use
• May be installed in horizontal or vertical flow up position

Materials

• All internal metal parts: 300 Series stainless steel
• Main valve body: 300 Series stainless steel
• Check assembly: Noryl®

Pressure – Temperature

Temperature Range: to 33°F – 110°F (0.5°C – 43°C) continuous
Maximum Working Pressures: 175psi (12.1 bar)

For additional information, request literature ES-774DCDA or ES-774XDCDA.

See Flow Charts on p. 73–74
## Dimensions – Weights

### Models

**Suffix**
- **LF**: without shutoff valves
- **OSY**: UL/FM outside stem & yoke resilient seated gate valves
- **CFM**: cubic feet per minute meter
- **GPM**: gallons per minute meter

**OSY GxF** - flanged inlet gate connection and grooved outlet gate connection

**OSY GaG** - grooved inlet gate connection and flanged outlet gate connection

Available with grooved NRS gate valves - consult factory

Post indicator plate and operating nut available - consult factory

**Consult factory for dimensions**

### Approvals

- **2 1/2” – 10” only (65 - 250mm)**

For additional approvals consult factory

Flange dimension in accordance with AWWA Class D

---

### Dimensions - Weights

<table>
<thead>
<tr>
<th>SIZE (IN)</th>
<th>A</th>
<th>B</th>
<th>C (open)</th>
<th>D</th>
<th>E</th>
<th>G</th>
<th>L</th>
<th>P</th>
<th>w/Gates</th>
<th>w/o Gates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>38</td>
<td>965</td>
<td>3/16</td>
<td>88</td>
<td>16</td>
<td>3/8</td>
<td>416</td>
<td>3 1/2</td>
<td>89</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>38</td>
<td>965</td>
<td>3/4</td>
<td>95</td>
<td>10</td>
<td>254</td>
<td>22</td>
<td>559</td>
<td>13 330</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>40</td>
<td>1016</td>
<td>3/16</td>
<td>114</td>
<td>10</td>
<td>254</td>
<td>22</td>
<td>559</td>
<td>14 360</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>46 1/2</td>
<td>1232</td>
<td>3/16</td>
<td>140</td>
<td>15</td>
<td>381</td>
<td>27 1/2</td>
<td>699</td>
<td>16 394</td>
</tr>
<tr>
<td>8</td>
<td>200</td>
<td>52 1/2</td>
<td>1334</td>
<td>3/16</td>
<td>171</td>
<td>15</td>
<td>381</td>
<td>29 1/2</td>
<td>749</td>
<td>18 464</td>
</tr>
<tr>
<td>10</td>
<td>250</td>
<td>57 1/2</td>
<td>1410</td>
<td>3/16</td>
<td>200</td>
<td>15</td>
<td>381</td>
<td>29 1/2</td>
<td>749</td>
<td>19 495</td>
</tr>
<tr>
<td>12</td>
<td>300</td>
<td>57 1/2</td>
<td>1481</td>
<td>3/16</td>
<td>241</td>
<td>15</td>
<td>381</td>
<td>29 1/2</td>
<td>749</td>
<td>21 533</td>
</tr>
</tbody>
</table>

*Consult factory for dimensions*

**IMPORTANT**: Inquire with governing authorities for local installation requirements
Series 709DCDA Double Check Detector Assemblies

Sizes: 3" – 10" (80 – 250mm)

Series 709DCDA Double Check Detector Assemblies are designed exclusively for use in accordance with water authority containment requirements on non-health hazard applications. It is mandatory to prevent the reverse flow of fire protection system substances, i.e. glycerin wetting agents, stagnant water and water of non-potable quality from being pumped or siphoned into the potable water line.

Benefits:
- Detects leaks, with emphasis on the cost of unaccountable water;
- Incorporates a meter which allows the water utility to:
  - Detect leaks underground that historically create great annual cost due to wastes.
  - It provides a detection point for unauthorized use. It can help locate illegal taps.
- Modular check design concept facilitates maintenance and assembly access.

All sizes are standardly equipped with resilient seated OSY shutoff valves, ⅜" x ⅞" (16 x 19mm) meter and ball type test cocks.

Features
- Body construction fused epoxy coated cast iron
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Compact for economy combined with performance
- Design simplicity for easy maintenance
- Furnished with ¼" x ⅜" (16 x 19mm) meter Model 25, bronze
- No special tools required for servicing

Materials
- Body: Epoxy coated cast iron
- Seat and Disc Holder: Replaceable bronze
- Trim: Stainless steel
- Check Valve Discs: Durable, tight-seating rubber
- Test Cocks: Bronze

Pressure – Temperature
- Temperature Range: 33°F – 110°F (0.5˚C – 43˚C) continuous, 140˚F (60˚C) intermittent
- Maximum Working Pressure: 175psi (12.1 bar)

For additional information, request literature ES-709DCDA.

See Flow Charts on p. 68-69
### Dimensions – Weights

<table>
<thead>
<tr>
<th>SIZE (IN)</th>
<th>A</th>
<th>C</th>
<th>D</th>
<th>L</th>
<th>R</th>
<th>T</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>80</td>
<td>40</td>
<td>1016</td>
<td>31⁄8</td>
<td>18</td>
<td>24</td>
<td>610</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>52</td>
<td>1321</td>
<td>45⁄8</td>
<td>221⁄2</td>
<td>34</td>
<td>864</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>831⁄2</td>
<td>1607</td>
<td>51⁄2</td>
<td>351⁄2</td>
<td>421⁄2</td>
<td>1073</td>
</tr>
<tr>
<td>8</td>
<td>200</td>
<td>75</td>
<td>1905</td>
<td>631⁄4</td>
<td>371⁄2</td>
<td>578</td>
<td>959</td>
</tr>
<tr>
<td>10</td>
<td>250</td>
<td>90</td>
<td>2268</td>
<td>751⁄4</td>
<td>451⁄2</td>
<td>1162</td>
<td>1426</td>
</tr>
</tbody>
</table>

#### Approvals

*Approved by the foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (Sizes 4" – 10" (100 – 250mm) approved for horizontal and vertical "flow-up". Size 3" (80mm) approved for horizontal only.)*

*Factory Mutual approved 4" – 10" (100 – 250mm) vertical "flow-up"*

---

**IMPORTANT:** Inquire with governing authorities for local installation requirements.
Series 007DCDA Double Check Detector Assemblies

Sizes: 2” – 3” (50 – 80mm)

Features
- Fused epoxy coated cast iron unibody 2⅝” & 3½” (65 – 80mm)
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Compact for ease of installation
- Design simplicity for easy maintenance
- No special tools required for servicing
- Bronze body ball valve test cocks
- Modular spring loaded checks
- Furnished with bronze ⅛” x ⅛” (16 x 19mm) meter

Materials
- Body: 2” Bronze, 2½” – 3½” (65 – 80mm) FDA approved, epoxy coated cast iron unibody
- Seats: Bronze
- Discs: Durable, tight-seating silicone
- Springs: Stainless steel
- Meter: ⅛” x ⅛” (16 x 19mm) bronze

Pressure – Temperature
- Temperature Range: 39°F – 110°F (3.5°C – 43°C) continuous, 140°F (60°C) intermittent
- Maximum Working Pressure: 175psi (12.1 bar)

Series 007DCDA Double Check Detector Assemblies are designed exclusively for use in accordance with water utility authority non-health hazard containment requirements. It is mandatory to prevent the reverse flow of fire protection system substances, i.e., glycerin wetting agents, stagnant water and water of non-potable quality from being pumped or siphoned into the potable water line.

Benefits: Detects leaks . . . with emphasis on the cost of unaccountable water; incorporates a meter which allows the water utility to:
- Detect underground leaks that historically create great annual cost due to waste.
- Provide a detection point for unauthorized use. It can help locate illegal taps.

Modular check design concept facilitates maintenance and assembly access. All sizes are standardly equipped with resilient seated OSY shutoff valves and ⅛” x ⅛” (16 x 19mm) meter.

See Flow Charts on p. 64

For additional information, request literature ES-007DCDA.
Double Check Detector Assemblies

Important: Inquire with governing authorities for local installation requirements.

### Dimensions – Weights

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>DIMENSIONS (APPROX.)</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>in. mm</td>
<td>in. mm</td>
<td>in. mm</td>
</tr>
<tr>
<td>2</td>
<td>0 3 5 1⁄8 892 13 1/2 343 16 3⁄4 426 12 1⁄4 311 97 44</td>
<td></td>
</tr>
<tr>
<td>21⁄2</td>
<td>65 33 1⁄4 845 16 3⁄8 416 16 3⁄8 416 12 5⁄16 313 164 74</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>80 34 1⁄4 870 18 7⁄8 479 16 5⁄8 422 12 5⁄16 313 196 89</td>
<td></td>
</tr>
</tbody>
</table>

#### Models

- **Suffix**
  - OSY: UL/FM outside stem & yoke resilient seated gate valves
  - CPM: cubic feet per minute meter
  - GPM: gallons per minute meter
  - LF: without shutoff valves

#### Approvals

Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.

- 2" & 21⁄2" (50 & 65mm) 007DCDA horizontal or vertical flow up position
- 3" (80mm) horizontal only

- 2" (50mm)
- 21⁄2" – 3" (65 - 80mm)

- 007DCDA
Series 957, 957N, 957Z Reduced Pressure Zone Assemblies

Sizes: 2½” – 10” (65 – 250mm)

Features
- Extremely compact design
- 70% lighter than traditional designs
- Groove fittings allow integral pipeline adjustment
- Patented torsion spring checks provide lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shuttoffs
- Replaceable check disc rubber
- Bottom mounted cast stainless steel relief valve
- 2½” – 3” sizes available with quarter-turn ball valve shuttoffs

Materials
- Housing & Sleeve: 304 (Schedule 40) Stainless Steel
- Elastomers: EPDM, Silicone and Buna-N
- Torsion Spring Checks: Noryl®, Stainless Steel
- Check Discs: Reversible Silicone or EPDM
- Test Cocks: Bronze Body Nickel Plated
- Pins & Fasteners: 300 Series Stainless Steel
- Springs: Stainless Steel

Pressure – Temperature
- Temperature Range: 33°F to 110°F (0.5°C to 43°C)
- Maximum Working Pressure: 175psi (12.1 bar)

Models
- Suffix: NRS - non-rising stem resilient seated gate valves
- OSY - UL/FM outside stem and yoke resilient seated gate valve
- *OSY FxG - flanged inlet gate connection and grooved outlet gate connection
- *OSY GxF - grooved inlet gate connection and flanged outlet gate connection
- *OSY GxG - grooved inlet gate connection and grooved outlet gate connection
- BFG - UL/FM grooved gear operated butterfly valves with tamper switch.

Materials
- Housing & Sleeve: 304 (Schedule 40) Stainless Steel
- Elastomers: EPDM, Silicone and Buna-N
- Torsion Spring Checks: Noryl®, Stainless Steel
- Check Discs: Reversible Silicone or EPDM
- Test Cocks: Bronze Body Nickel Plated
- Pins & Fasteners: 300 Series Stainless Steel
- Springs: Stainless Steel

Approvals
- UL, CSA, FM

For additional information, request literature ES-957/957N/957Z.

See Flow Charts on p. 76–77
### Dimensions – Weights

#### 957

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>32</td>
<td>15</td>
<td>78</td>
<td>16</td>
<td>3/8</td>
<td>416</td>
<td>9 3/8</td>
<td>238</td>
<td>6 1/2</td>
<td>165</td>
<td>29  1/16</td>
<td>738</td>
<td>22  5/16</td>
<td>559</td>
<td>15 1/2</td>
<td>393</td>
<td>8 13/16</td>
<td>223</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>34</td>
<td>17</td>
<td>100</td>
<td>17</td>
<td>7/16</td>
<td>529</td>
<td>10 1/16</td>
<td>260</td>
<td>7 7/8</td>
<td>318</td>
<td>50  1/16</td>
<td>873</td>
<td>17  1/8</td>
<td>435</td>
<td>9 3/16</td>
<td>233</td>
<td>13/16</td>
<td>301</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>40</td>
<td>20</td>
<td>150</td>
<td>20</td>
<td>7/16</td>
<td>697</td>
<td>12  5/8</td>
<td>326</td>
<td>9 3/8</td>
<td>381</td>
<td>60  1/8</td>
<td>1032</td>
<td>20  5/16</td>
<td>470</td>
<td>9 15/16</td>
<td>252</td>
<td>21  1/2</td>
<td>332</td>
</tr>
</tbody>
</table>

#### 957N, 957Z

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>28</td>
<td>14</td>
<td>72</td>
<td>16</td>
<td>7/8</td>
<td>124</td>
<td>6 7/8</td>
<td>174</td>
<td>30  1/4</td>
<td>768</td>
<td>24  1/2</td>
<td>538</td>
<td>12  1/16</td>
<td>300</td>
<td>7 1/16</td>
<td>289</td>
<td>10 1/2</td>
<td>342</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>34</td>
<td>17</td>
<td>100</td>
<td>17</td>
<td>7/16</td>
<td>414</td>
<td>10 1/4</td>
<td>256</td>
<td>7 7/8</td>
<td>256</td>
<td>60  1/8</td>
<td>1032</td>
<td>17  1/16</td>
<td>437</td>
<td>9 3/16</td>
<td>233</td>
<td>13/16</td>
<td>301</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>40</td>
<td>20</td>
<td>150</td>
<td>20</td>
<td>7/16</td>
<td>529</td>
<td>12  5/8</td>
<td>326</td>
<td>9 3/8</td>
<td>381</td>
<td>60  1/8</td>
<td>1032</td>
<td>20  5/16</td>
<td>470</td>
<td>9 15/16</td>
<td>252</td>
<td>21  1/2</td>
<td>332</td>
</tr>
</tbody>
</table>

#### 957 QT

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>28</td>
<td>13</td>
<td>72</td>
<td>16</td>
<td>7/8</td>
<td>124</td>
<td>6 7/8</td>
<td>174</td>
<td>30  1/4</td>
<td>768</td>
<td>24  1/2</td>
<td>538</td>
<td>12  1/16</td>
<td>300</td>
<td>7 1/16</td>
<td>289</td>
<td>10 1/2</td>
<td>342</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>34</td>
<td>17</td>
<td>100</td>
<td>17</td>
<td>7/16</td>
<td>414</td>
<td>10 1/4</td>
<td>256</td>
<td>7 7/8</td>
<td>256</td>
<td>60  1/8</td>
<td>1032</td>
<td>17  1/16</td>
<td>437</td>
<td>9 3/16</td>
<td>233</td>
<td>13/16</td>
<td>301</td>
</tr>
</tbody>
</table>

**IMPORTANT:** Inquire with governing authorities for local installation requirements.
Series 994
Reduced Pressure Zone Assemblies

Sizes 2 1/2" – 10" (65 – 250mm)

Features
• Stainless Steel construction provides long term corrosion resistance and max-
imum strength
• Stainless Steel body is half the weight of competitive designs reducing instal-
lation & shipping costs
• Short end to end dimensions makes retrofit easy
• Bottom mounted relief valve reduces clearance requirements when installed
against an outside wall
• Patented torsion spring check valves provides maximum flow all the pressure drop

Materials
• All internal metal parts: 300 Series stain-
less steel
• Main valve body: 300 Series stainless steel
• Check assembly: Noryl®

Approvals
• AWWA

Dimensions – Weights
| SIZE (IN) | A | B | C | D | E | F | G | H | L | M | N | vGates | wGates |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 1/2 | 45 | 33 | 940 | 181 | 419 | 101 | 267 | 7 | 178 | 10 | 254 | 22 | 593 | 10 | 254 | 8 | 165 | 148 | 67 | 62 | 27 |
| 3 | 60 | 38 | 965 | 18 1/8 | 479 | 101 | 267 | 7 1/4 | 191 | 10 | 254 | 22 | 593 | 10 | 254 | 8 | 165 | 148 | 67 | 62 | 27 |
| 4 | 80 | 40 | 1016 | 22 1/4 | 578 | 101 | 267 | 9 | 220 | 10 | 254 | 22 | 593 | 12 | 308 | 10 | 254 | 8 | 165 | 210 | 107 | 65 | 29 |
| 6 | 150 | 48 1/2 | 1252 | 30 3/4 | 765 | 11 1/2 | 292 | 11 | 279 | 15 | 381 | 27 1/2 | 699 | 18 | 470 | 13 3/8 | 343 | 305 | 172 | 110 | 50 |
| 8 | 200 | 52 1/2 | 1354 | 37 1/8 | 959 | 12 1/2 | 318 | 13 5/8 | 343 | 15 | 381 | 29 5/8 | 740 | 21 1/2 | 549 | 15 3/8 | 343 | 305 | 172 | 110 | 50 |
| 10 | 250 | 55 | 1410 | 48 1/4 | 1162 | 15 | 381 | 16 1/4 | 410 | 15 | 381 | 30 1/8 | 799 | 26 | 660 | 19 3/8 | 475 | 473 | 351 | 189 | 86 |

Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 57.

IMPORTANT: Inquire with governing authorities for local installation requirements

For additional information, request literature ES-994.
Series 994BLT, 994HMB
Hydrant Meter Backflow Preventers

994BLT: Size 2½" FNPT x 3" MNPT (65mm FNPT x 80mm MNPT)
994HMB: Size 2½" - 7NST x 3" (65mm - 7NST x 80mm)

Features
- Heavy-duty relief valve cover prevents vandalism and protects valve from damage when 994HMB is transported to another fire hydrant location.
- In-line flow restrictor protects the meter measuring element and the backflow preventer components from damage due to excessive flow (994HMB only).
- Backflow preventer made from 300 Series stainless steel for corrosion resistance.
- Portable, lightweight design makes device easily transportable between job sites.
- Accurately measures flow (HMB Series) and protects the water supply from possible contamination.
- Series 994BLT comes less meter.
- Built-in support leg is adjustable in the field.
- Factory assembled and tested; no field assembly required; eliminates leaks and improper assembly.

Options (BLT Series)

Inlet Modules
- 3" (80mm) female or male hydrant thread
- 2½" (65mm) female or male hydrant thread
- 2½" (65mm) male NPT thread
- Customer specified

Outlet Modules
- 3" (80mm) gate w/ female or male hose thread
- 2½" (65mm) gate w/ female or male hose thread
- 3" (80mm) gate valve only, w/ 3" (80mm) INPT thread
- 2½" (65mm) gate valve only, w/ 2½" (65mm) FNPT
- Customer specified

Dimensions – Weight

<table>
<thead>
<tr>
<th>Model</th>
<th>Weight lbs.</th>
<th>Weight kgs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>994BLT</td>
<td>62</td>
<td>28</td>
</tr>
<tr>
<td>994HMB-GPM</td>
<td>66</td>
<td>30</td>
</tr>
<tr>
<td>994HMB-CFM</td>
<td>66</td>
<td>30</td>
</tr>
</tbody>
</table>

IMPORTANT: Inquire with governing authorities for local installation requirements

See Flow Charts on p. 78
For additional information, request literature ES-994BLT.
Series 909 Reduced Pressure Zone Assemblies

909: Sizes: 3/4", 1" (20, 25mm)
909M1: Sizes: 1 1/4", 1 1/2", 2" (32, 40, 50mm)

Features
- Modular design
- Replaceable bronze seats
- Compact for installation ease
- Horizontal or vertical (up or down) installation
- No special tools required for servicing

Materials
- Body: Bronze
- Seats: Celcon®
- Test cocks: Bronze

Model 909HW
- Check seats: Stainless steel
- Relief valve seats: Stainless steel
- Check and Relief Valve Assemblies: Durable tight seating, rubber

Pressure – Temperature
- Maximum Operating Pressure: 175psi (12.1 bar)
- 909
  - Temperature Range: 33°F – 140°F (0.5°C to 60°C) continuous, 180°F (82°C) intermittent
- 909HW
  - Temperature Range: 33°F – 210°F (0.5°C – 99°C)

How it Operates
The unique relief valve construction incorporates two channels: one for air, one for water. When the relief valve opens, as in the accompanying air-in/water-out diagram, the right-hand channel admits air to the top of the reduced pressure zone, relieving the zone vacuum. The channel on the left then drains the zone to atmosphere. Therefore, if both check valves foul, and simultaneous negative supply and positive back-pressure develop, the relief valve uses the air-in/water-out principle to stop potential backflow.
Reduced Pressure Zone Assemblies

**Dimensions – Weights**

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>DIMENSIONS (APPROX.)</th>
<th>STRAINER DIMENSIONS</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>in. mm</td>
<td>in. mm</td>
<td>in. mm in. mm in. mm in. mm in. mm in. mm in. mm in. mm in. mm lbs. kgs.</td>
<td></td>
</tr>
<tr>
<td>3⁄4</td>
<td>20 14 3⁄8 365 8 3⁄4 222 4 102 4 3⁄4 121 6 1⁄2 165 7 7⁄8 191 102 5 133 124 4 102 18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>25 15 3⁄8 371 8 3⁄4 222 4 102 4 3⁄4 121 7 178 7 188 2 1⁄8 93 3 95 3 76 15 1 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 1⁄4</td>
<td>40 13 433 11 5⁄8 295 5 140 6 165 7 181 102 24 4 102 3 178 6 186 4 133 144 4 102 18 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>50 18 495 11 5⁄8 295 5 140 6 165 7 181 102 24 4 102 3 178 6 186 4 133 144 4 102 18 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*U909QT Dimensions - with integral body unions (Prefix “U”)

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>DIMENSIONS (APPROX.)</th>
<th>STRAINER DIMENSIONS</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>in. mm</td>
<td>in. mm</td>
<td>in. mm in. mm in. mm in. mm in. mm in. mm in. mm in. mm lbs. kgs.</td>
<td></td>
</tr>
<tr>
<td>3⁄4</td>
<td>20 16 1⁄2 365 8 3⁄4 222 4 102 4 3⁄4 121 6 1⁄2 165 7 7⁄8 191 102 5 133 124 4 102 18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>25 15 3⁄8 371 8 3⁄4 222 4 102 4 3⁄4 121 7 178 7 188 2 1⁄8 93 3 95 3 76 15 1 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 1⁄4</td>
<td>40 13 433 11 5⁄8 295 5 140 6 165 7 181 102 24 4 102 3 178 6 186 4 133 144 4 102 18 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>50 18 495 11 5⁄8 295 5 140 6 165 7 181 102 24 4 102 3 178 6 186 4 133 144 4 102 18 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*FAE909QT Dimensions - with flanged adapter ends (Prefix “FAE”)

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>DIMENSIONS (APPROX.)</th>
<th>STRAINER DIMENSIONS</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>in. mm</td>
<td>in. mm</td>
<td>in. mm in. mm in. mm in. mm in. mm in. mm in. mm in. mm lbs. kgs.</td>
<td></td>
</tr>
<tr>
<td>1 1⁄4</td>
<td>32 19 483 11 5⁄8 295 5 140 6 165 7 181 102 24 4 102 3 178 6 186 4 133 144 4 102 18 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 1⁄2</td>
<td>40 19 3⁄4 502 11 5⁄8 295 5 140 6 165 7 181 102 24 4 102 3 178 6 186 4 133 144 4 102 18 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>50 21 533 11 5⁄8 295 5 140 6 165 7 181 102 24 4 102 3 178 6 186 4 133 144 4 102 18 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Models**

<table>
<thead>
<tr>
<th>Suffix</th>
<th>Prefix</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QT</td>
<td>C</td>
<td>clean and check 1⁄4&quot; and 1&quot; only (20 and 25mm)</td>
</tr>
<tr>
<td>S</td>
<td>M</td>
<td>union connections - 1⁄4&quot; and 1&quot; only (20 and 25mm)</td>
</tr>
<tr>
<td>HW</td>
<td>FAE</td>
<td>flanged adapter ends - 1⁄4&quot;, 1⁄2&quot;, 2&quot; only (32, 40, 50mm)</td>
</tr>
</tbody>
</table>

**Approvals**

- AWWA Listed by IAPMO
- Listed by SBCCI
- *Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.

1013

Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 57.

IMPORTANT: Inquire with governing authorities for local installation requirements.
Series 909 Reduced Pressure Zone Assemblies

Sizes: 2 1/2" – 10" (65 – 250mm)

Series 909 Reduced Pressure Zone Assemblies are designed to provide cross-connection control protection of the potable water supply in accordance with national plumbing codes. This Series can be utilized in a variety of installations, including health hazard cross-connections in plumbing systems or for containment at the service line entrance. Its exclusive patented relief valve design, incorporating the "air-in/water-out" principle, provides substantially improved relief valve discharge performance during the emergency conditions of combined backslipage and backpressure with both checks fouled.

How it Operates

The unique relief valve construction incorporates two channels: one for air, one for water. When the relief valve opens, as in the accompanying air-in/water-out diagram, the right hand channel admits air to the top of the reduced pressure zone, relieving the zone vacuum. The channel on the left then drains the zone to atmosphere. Thus, should both check valves foul, and simultaneous negative supply and positive back pressure develops, the relief valve uses the air-in-water-out principle to stop potential backflow.

Features

• Replaceable seats
• Stainless steel internal parts
• No special tools required for servicing
• Captured spring check assemblies
• Fused epoxy coated & lined checks
• Industrial strength sensing hose
• Field reversible relief valve
• Air-in/water-out relief valve design provides maximum capacity during emergency conditions

Materials

• Check Valve Bodies: FDA epoxy coated cast iron or bronze
• Seats: Bronze
• Trim: Stainless steel
• Relief Valve Body: 2 1/2" – 3" (60 – 80mm) bronze 4" – 10" (100 – 250mm) FDA epoxy coated cast iron
• Test Cock: Bronze body ball valve

Pressure – Temperature

Temperature Range: 33°F – 110°F (0.5°C – 43°C) continuous, 140°F (60°C) intermittent

Maximum Working Pressure: 175psi (12.1 bar)

Materials

• Check Valve Bodies: FDA epoxy coated cast iron or bronze
• Seats: Bronze
• Trim: Stainless steel
• Relief Valve Body: 2 1/2" – 3" (60 – 80mm) bronze 4" – 10" (100 – 250mm) FDA epoxy coated cast iron
• Test Cock: Bronze body ball valve

For additional information, request literature ES-909L.

See Flow Charts on p. 74-75
IMPORTANT: Inquire with governing authorities for local installation requirements.

Dimensions – Weights

Models

SUFFIX:
- LF: without shutoff valves
- NR: non-rising stem resilient seated gate valves
- OSY: UL/FM outside stem and yoke resilient seated gate valves
- BB: bronze body
- QT: quarter-turn ball valves
- QT-FDA: FDA approved coated quarter-turn ball valves
- S: cast iron strainer
- S-FDA: FDA epoxy coated strainer

Approvals

- AWWA
- IAPMO PS31, SBCCI (Standard Plumbing Code)
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.

Note: Relief valve section is reversible, therefore, can be on either side and is furnished standardly as shown.

Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 57.

IMPORTANT: Inquire with governing authorities for local installation requirements.

Specifications Table:

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>DIMENSIONS (APPROX.)</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A1</td>
<td>GERTY</td>
</tr>
<tr>
<td>in.</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>2 1⁄2</td>
<td>65</td>
<td>165</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>203</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>254</td>
</tr>
<tr>
<td>5</td>
<td>150</td>
<td>381</td>
</tr>
<tr>
<td>6</td>
<td>200</td>
<td>479</td>
</tr>
</tbody>
</table>

Strainer Dimensions

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>DIMENSIONS (APPROX.)</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>N</td>
<td>N1†</td>
</tr>
<tr>
<td>in.</td>
<td>mm</td>
<td>in.</td>
</tr>
<tr>
<td>2 1⁄2</td>
<td>65</td>
<td>165</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>203</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>254</td>
</tr>
<tr>
<td>5</td>
<td>150</td>
<td>381</td>
</tr>
<tr>
<td>6</td>
<td>200</td>
<td>479</td>
</tr>
<tr>
<td>10</td>
<td>250</td>
<td>680</td>
</tr>
</tbody>
</table>

† – Dimension required for screen removal.
Series 009 Reduced Pressure Zone Assemblies

Sizes: 1/4” – 3” (8 – 80mm)

Series 009 Reduced Pressure Zone Assemblies are designed to protect potable water supplies in accordance with national plumbing codes and water authority requirements. This Series can be used in a variety of installations, including the prevention of health hazard cross-connections in piping systems or for containment at the service line entrance.

The 009 Series features two in-line, independent check valves, captured springs and replaceable check seats with an intermediate relief valve. Its compact modular design facilitates easy maintenance and assembly access. Sizes 1/4” – 1” (8 – 25mm) shutoffs have tee handles.

Features
- Single access cover and modular check construction for ease of maintenance
- Top entry - all internals immediately accessible
- Captured springs for safe maintenance
- Internal relief valve for reduced installation clearances
- Replaceable seats for economical repair
- Bronze body construction for durability - 1/4” – 2” (8 – 50mm)
- Fused epoxy coated cast iron body - 2-1/2” and 3” (65 and 80mm)
- Ball valve test cocks - screwdriver slotted - 1/4” – 2” (8 – 50mm)
- Large body passages provide low pressure drop
- Compact, space saving design
- No special tools required for servicing

Materials
Sizes 1/4” – 2” (8 – 50mm)
- Body: Bronze
- Check and Relief Valve Discs: Silicone rubber
- Check Seats: Replaceable polymer
- Relief Valve seat: Removable stainless steel
- Cover Bolts: Stainless steel

Sizes 2-1/2” – 3” (65 – 80mm)
- Body: FDA approved epoxy coated cast iron
- Seats: Bronze
- Relief Valve Seat and Trim: Stainless steel
- Test Cock: Bronze

Pressure – Temperature
Temperature Range: 1/4” – 2” (8 – 50mm)
33°F – 180°F (0.5°C – 82°C)
2-1/2” – 3” (65 – 80mm) 33°F – 140°F (0.5°C – 60°C) continuous, 140°F (60°C) intermittent
Maximum Working Pressure: 175psi (12.1 bar)
### Reduced Pressure Zone Assemblies

**009 21⁄2” and 3” (65 – 80mm)**

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>SIZE (DN)</th>
<th>DIMENSIONS (APPROX.)</th>
<th>STRAINER DIMENSIONS</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in. mm</td>
<td>in. mm</td>
<td>in. mm</td>
<td>lbs. kgs.</td>
</tr>
<tr>
<td>009LF</td>
<td>2 1⁄2</td>
<td>6 5 – 133</td>
<td>5 1⁄4 – 18 1⁄8</td>
<td>10 5⁄8 – 270</td>
</tr>
<tr>
<td>009OSY</td>
<td>2 1⁄2</td>
<td>65 – 133</td>
<td>5 1⁄4 – 18 1⁄8</td>
<td>10 5⁄8 – 270</td>
</tr>
<tr>
<td>009NRS</td>
<td>2 1⁄2</td>
<td>65 – 133</td>
<td>5 1⁄4 – 18 1⁄8</td>
<td>10 5⁄8 – 270</td>
</tr>
<tr>
<td>009QT</td>
<td>2 1⁄2</td>
<td>65 – 133</td>
<td>5 1⁄4 – 18 1⁄8</td>
<td>10 5⁄8 – 270</td>
</tr>
<tr>
<td>009LF</td>
<td>3</td>
<td>80 – 133</td>
<td>5 1⁄4 – 18 1⁄8</td>
<td>10 5⁄8 – 270</td>
</tr>
<tr>
<td>009OSY</td>
<td>3</td>
<td>80 – 133</td>
<td>5 1⁄4 – 18 1⁄8</td>
<td>10 5⁄8 – 270</td>
</tr>
<tr>
<td>009NRS</td>
<td>3</td>
<td>80 – 133</td>
<td>5 1⁄4 – 18 1⁄8</td>
<td>10 5⁄8 – 270</td>
</tr>
<tr>
<td>009QT</td>
<td>3</td>
<td>80 – 133</td>
<td>5 1⁄4 – 18 1⁄8</td>
<td>10 5⁄8 – 270</td>
</tr>
</tbody>
</table>

#### Models

**Sizes 1⁄4” – 2” (8 – 50mm)**

**Suffixes**
- **C:** clean and check strainer
- **LF:** without shutoff valves
- **AGT:** allow fittings for 360° rotation
- **PC:** internal polymer coating
- **SM:** stainless steel ball valve handles
- **HC:** 21⁄2” (50mm) inlet/outlet fire hydrant fitting 2” (50mm) valve

**Prefixes**
- **C:** clean and check strainer
- **LF:** without shutoff valves
- **PC:** internal polymer coating
- **SM:** stainless steel ball valve handles
- **HC:** 21⁄2” (50mm) inlet/outlet fire hydrant fitting 2” (50mm) valve

**Approvals**
- AWWA, IAPMO
- UL Classified (3⁄4” – 2” (20 – 50mm) LF models only, 2 1⁄2” and 3” (65 – 80mm) with OBY gate valves.)
Reduced Pressure Zone Assemblies

Series 919
Reduced Pressure Zone Assemblies
Sizes: 3/4" – 2" (20 – 50mm)

Series 919 Reduced Pressure Zone Backflow Assemblies are designed to protect potable water supplies in accordance with national plumbing codes and water authority requirements. This series can be used in a variety of installations, including the prevention of health hazard cross-connections or for containment at the service line entrance.

This series features two poppet style check valves, replaceable check seats, with an intermediate relief valve. Its compact modular design facilitates easy maintenance and assembly access. Sizes 3/4" – 1" (20 – 25mm) shutoffs have tee handles.

Features
- Separate access covers for the check valves and relief valve for ease of maintenance
- Top entry all check internals easily accessible
- All rubber elastomers of chloramine resistant material
- Check valve poppet assemblies are fully guided by innovative plastic seat guide
- Replaceable push-in check valve and relief valve seats eliminates threads from the water way
- EZ twist relief valve cover quarter turn locking joint captures the spring load during repair to facilitate disassembly
- Innovative check valve plastic cover bushing provides trouble free guiding of the check valve poppet
- Bottom mounted relief valve provides reduced installation clearances
- Compact, space saving design
- No special tools required for servicing
- Top mounted test cocks for ease in testing and reduced installation clearances
- Standardly furnished with NPT body connections

Models
- Suffix:
  - QT – quarter-turn ball valves
  - S – bronze strainer
  - LF – without shutoff valves
  - ADT – elbow fitting for 360º rotation
  - ZQT – inlet & outlet flow up
- Prefix:
  - U – union connections

Materials
- Body: Bronze
- Discs: Silicone rubber
- Check Seats: Replaceable polymer
- Cover Bolts: Stainless steel

Pressure — Temperature
- Temperature Range: 33ºF – 180ºF (0.5ºC – 82ºC)
- Maximum Working Pressure: 175psi (12.1 bar)

Approvals

For additional information, request literature ES-919.
See Flow Charts on p. 76.
### Dimensions – Weights

#### U919QT, U919QT-S

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>M</th>
<th>N</th>
<th>U919QT</th>
<th>U919QT-S</th>
</tr>
</thead>
<tbody>
<tr>
<td>in. mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>lbs.</td>
<td>kgs.</td>
</tr>
<tr>
<td>3/4</td>
<td>20</td>
<td>12</td>
<td>15</td>
<td>16</td>
<td>19</td>
<td>8</td>
<td>16</td>
<td>1</td>
<td>98</td>
<td>20</td>
<td>5/16</td>
<td>11 1/2</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>14 1/2</td>
<td>18</td>
<td>20</td>
<td>23</td>
<td>10</td>
<td>18</td>
<td>1</td>
<td>102</td>
<td>21</td>
<td>1/2</td>
<td>27 1/2</td>
</tr>
<tr>
<td>1 1/4</td>
<td>32</td>
<td>18 1/4</td>
<td>22</td>
<td>24</td>
<td>27</td>
<td>12</td>
<td>20</td>
<td>1</td>
<td>129</td>
<td>30</td>
<td>2 7/8</td>
<td>51 5/8</td>
</tr>
<tr>
<td>1 1/2</td>
<td>40</td>
<td>16</td>
<td>18 1/2</td>
<td>20</td>
<td>23</td>
<td>25</td>
<td>14</td>
<td>2</td>
<td>129</td>
<td>35</td>
<td>3 1/8</td>
<td>64 3/4</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>17 1/2</td>
<td>20</td>
<td>22</td>
<td>25</td>
<td>17</td>
<td>20</td>
<td>2</td>
<td>129</td>
<td>40</td>
<td>4 1/4</td>
<td>78 7/8</td>
</tr>
</tbody>
</table>

#### U919QT, U919QT-S

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>M</th>
<th>N</th>
<th>U919QT</th>
<th>U919QT-S</th>
</tr>
</thead>
<tbody>
<tr>
<td>in. mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>lbs.</td>
<td>kgs.</td>
</tr>
<tr>
<td>3/4</td>
<td>20</td>
<td>8 1/2</td>
<td>10</td>
<td>9 1/2</td>
<td>12</td>
<td>6 1/2</td>
<td>9 1/2</td>
<td>1</td>
<td>98</td>
<td>20</td>
<td>5/16</td>
<td>11 1/2</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>12 1/2</td>
<td>14</td>
<td>14</td>
<td>17</td>
<td>10 1/2</td>
<td>14</td>
<td>1</td>
<td>102</td>
<td>21</td>
<td>1/2</td>
<td>27 1/2</td>
</tr>
<tr>
<td>1 1/4</td>
<td>32</td>
<td>16 1/2</td>
<td>18</td>
<td>20</td>
<td>22</td>
<td>12 1/2</td>
<td>18</td>
<td>1</td>
<td>129</td>
<td>30</td>
<td>2 7/8</td>
<td>51 5/8</td>
</tr>
<tr>
<td>1 1/2</td>
<td>40</td>
<td>14</td>
<td>16 1/2</td>
<td>18</td>
<td>20</td>
<td>22</td>
<td>14</td>
<td>2</td>
<td>129</td>
<td>35</td>
<td>3 1/8</td>
<td>64 3/4</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>15 1/2</td>
<td>18</td>
<td>20</td>
<td>22</td>
<td>17</td>
<td>20</td>
<td>2</td>
<td>129</td>
<td>40</td>
<td>4 1/4</td>
<td>78 7/8</td>
</tr>
</tbody>
</table>

Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 57.

**IMPORTANT:** Inquire with governing authorities for local installation requirements.
Series 957RPDA, 957NRPDA, 957ZRPDA
Reduced Pressure Detector Assemblies

Sizes: 2\(\frac{1}{4}\) – 10\(\frac{1}{2}\) (65 – 250mm)

Features
- Extremely compact design
- 70% lighter than traditional designs
- Groove fittings allow integral pipeline adjustment
- Patented torsion spring checks provide lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shut-offs
- Replaceable check disc rubber
- Bottom mounted cast stainless steel relief valve

Materials
- Housing & Sleeve – 304 (Schedule 40) Stainless Steel
- Elastomers – EPDM, Silicone and Buna-N
- Torsion Spring Checks – Noryl®, Stainless Steel
- Check Discs – Reversible Silicone or EPDM
- Test Cocks – Bronze Body Nickel Plated
- Pins & Fasteners – 300 Series Stainless Steel
- Springs – Stainless Steel

Pressure – Temperature
Temperature Range: 33˚F – 110˚F
(0.5˚C – 43˚C)
Maximum Working Pressure: 175psi
(12.1 bar)

For additional information, request literature ES-957RPDA/957NRPDA/957ZRPDA.
**Dimensions – Weights**

### 957RPDA / 957ZRPDA BFG

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>A (in)</th>
<th>C (OSY)</th>
<th>D (in)</th>
<th>G (mm)</th>
<th>H (cm)</th>
<th>I (cm)</th>
<th>J (cm)</th>
<th>M (cm)</th>
<th>P (cm)</th>
<th>957RPDA</th>
<th>957ZRPDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2½</td>
<td>61</td>
<td>31</td>
<td>787</td>
<td>16</td>
<td>3⁄8</td>
<td>4</td>
<td>6 1⁄2</td>
<td>165</td>
<td>29 1⁄16</td>
<td>738</td>
<td>22 559</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>35 1⁄8</td>
<td>856</td>
<td>22 3⁄4</td>
<td>7⁄16</td>
<td>5</td>
<td>9</td>
<td>216</td>
<td>31 3⁄8</td>
<td>805</td>
<td>18 768</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>37 7⁄8</td>
<td>1007</td>
<td>25 1⁄8</td>
<td>7⁄16</td>
<td>5</td>
<td>9</td>
<td>248</td>
<td>38</td>
<td>1007</td>
<td>22 378</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>40</td>
<td>1181</td>
<td>34 1⁄2</td>
<td>11⁄16</td>
<td>7 1⁄2</td>
<td>12</td>
<td>470</td>
<td>51 1⁄4</td>
<td>1181</td>
<td>34 1⁄2</td>
</tr>
<tr>
<td>8</td>
<td>200</td>
<td>43 1⁄2</td>
<td>1500</td>
<td>40 1⁄8</td>
<td>11⁄16</td>
<td>7 1⁄2</td>
<td>12</td>
<td>470</td>
<td>51 1⁄4</td>
<td>1500</td>
<td>40 1⁄8</td>
</tr>
</tbody>
</table>

### Models

- **OSY** – UL/FM outside stem and yoke resilient seated gate valves
  - "OSY Fg" – flanged inlet gate connection and grooved outlet gate connection
  - "OSY Gf" – grooved inlet gate connection and flanged outlet gate connection
- **OSY GaG** – grooved inlet gate connection and grooved outlet gate connection

**Approvals**

- UL/FM
- FM Global
- FM Factory Mutual
- FM Global
- FM Factory Mutual
- FM Global

**Note:** The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 57.

**IMPORTANT:** Inquire with governing authorities for local installation requirements.
Series 994RPDA Reduced Pressure Detector Assemblies
Sizes 2½” – 6” (65 – 150mm)

Series 994RPDA Reduced Pressure Detector Assemblies are designed for use in accordance with water authority containment programs. This series is normally used in health hazard applications to protect against backsiphonage and back-pressure. This series can be used to prevent the reverse flow of fire protection substances, i.e., glycerin wetting agents, foam agents, stagnant water, auxiliary supplies and water of non-potable quality from being pumped or siphoned into the potable water supply.

Features
- Stainless steel construction provides long term corrosion resistance and maximum strength
- Stainless steel body is half the weight of competitive designs reducing installation and shipping costs
- Short end to end dimensions makes retrofit easy
- Bottom mounted relief valve reduces clearance requirements when installed against an outside wall
- Patented torsion spring check valves provide maximum flow at low pressure drop
- Thermoplastic and stainless steel check valves for trouble-free operation
- No special tools required for servicing
- Compact construction allows for smaller enclosures
- Stainless steel relief valve features a balanced rolling diaphragm to eliminate sliding seals and lower maintenance costs
- Detects underground leaks and unauthorized water use
- GPM or CFM meter available

Materials
- All internal metal parts: 300 Series stainless steel
- Main valve body: 300 Series stainless steel
- Check assembly: Noryl®

Pressure – Temperature
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C) continuous
Maximum Working Pressure: 175psi (12.1 bar)

Pressure – Temperature
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C) continuous
Maximum Working Pressure: 175psi (12.1 bar)

Materials
- All internal metal parts: 300 Series stainless steel
- Main valve body: 300 Series stainless steel
- Check assembly: Noryl®

For additional information, request literature ES-994RPDA.

See Flow Charts on p. 78
### Dimensions – Weights

<table>
<thead>
<tr>
<th>Size (DN)</th>
<th>A (in)</th>
<th>C (open)</th>
<th>D (in)</th>
<th>F (in)</th>
<th>G (in)</th>
<th>L (in)</th>
<th>w/Gates (lbs)</th>
<th>w/o Gates (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>960</td>
<td>16 1/2</td>
<td>1/8</td>
<td>11</td>
<td>17</td>
<td>194</td>
<td>54</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>965</td>
<td>18 1/4</td>
<td>1/8</td>
<td>13 1/2</td>
<td>19</td>
<td>222</td>
<td>62</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>1016</td>
<td>22 3/4</td>
<td>1/8</td>
<td>15 1/4</td>
<td>21</td>
<td>260</td>
<td>71</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>1322</td>
<td>32 1/2</td>
<td>1/8</td>
<td>17 1/2</td>
<td>23</td>
<td>360</td>
<td>122</td>
</tr>
</tbody>
</table>

Models

- **LP**: without shut off valves
- **CFY**: UL/IFM cutout stem & yoke resilient seated gate valves
- **CFM**: cubic feet per minute meter
- **GPM**: gallons per minute meter
- **OSY FxG**: flanged inlet gate connection and grooved outlet gate connection
- **OSY GxG**: grooved inlet gate connection and grooved outlet gate connection
- **OSY GxF**: grooved inlet gate connection and flanged outlet gate connection

Available with grooved NRS gate valves - consult factory*

Post indicator plate and operating nut available - consult factory*

*Consult factory for dimensions

**Approvals**

- **AWWA**

Flange dimension in accordance with AWWA Class D

**Note:** The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 57.

**IMPORTANT:** Inquire with governing authorities for local installation requirements.
Series 909RPDA
Reduced Pressure Detector Assemblies
Sizes: 2½" – 10" (65 – 250mm)

Find at Air Delights! Shop Now!

Series 909RPDA Reduced Pressure Detector Assemblies are designed exclusively for use in accordance with water utility authority containment requirements on health hazard applications. It is mandatory to prevent the reverse flow of the protection system substances, i.e., glycerin wetting agents, stagnant water and water of non-potable quality from being pumped or siphoned into the potable water line.

Benefits:
- Detects leaks... with emphasis on the cost of unaccountable water;
- It provides a detection point for unauthorized use. It can help locate illegal taps.
- Modular check design concept facilitates maintenance and assembly access. All sizes are standardly equipped with AWWA epoxy coated, UL/FM listed OSY resilient seated gate valves, CFM (cubic feet per minute) or GPM (gallon per minute) meter and ball type test cocks. A pressure differential relief valve is located in a zone between the check valves.

How it Operates
The unique relief valve construction incorporates two channels: one for air, one for water. When the relief valve opens, as in the accompanying air-in/water-out diagram, the right-hand channel admits air to the top of the reduced pressure zone, relieving the zone vacuum. The channel on the left then drains the zone to atmosphere. Therefore, if both check valves foul, and simultaneous negative supply and positive back pressure develops, the relief valve uses the air-in/water-out principle to stop potential backflow.

Features
- Body construction fused epoxy coated cast iron
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Compact for economy combined with performance
- Design simplicity for easy maintenance
- Furnished with ⅜" x ½" (16 x 19mm) recordall meter
- Air-in/water-out relief valve design provides maximum capacity during emergency conditions. No special tools required for servicing

Materials
- Body: Epoxy coated cast iron
- Seat and Disc Holder: Bronze
- Trim: Stainless steel
- Check Valve Disc: Durable, tight seating rubber

Pressure – Temperature
Temperature Range: 32°F – 140°F (0.5°C – 60°C)
Maximum Working Pressure: 175psi (12.1 bar)

For additional information, request literature ES-909RPDA.
### Dimensions – Weights

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 1/2</td>
<td>65</td>
<td>6</td>
<td>1/8</td>
<td>10</td>
<td>80</td>
<td>1/4</td>
<td>130</td>
<td>10</td>
<td>114</td>
<td>12 305</td>
<td>8 203</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>21</td>
<td>3/8</td>
<td>26</td>
<td>22</td>
<td>3/4</td>
<td>7 1/4</td>
<td>28</td>
<td>664</td>
<td>14 356</td>
<td>9 229</td>
</tr>
<tr>
<td>3</td>
<td>90</td>
<td>8</td>
<td>1 1/8</td>
<td>18</td>
<td>7/8</td>
<td>1 1/4</td>
<td>133</td>
<td>7 1/2</td>
<td>114</td>
<td>12 305</td>
<td>8 203</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>29</td>
<td>1 1/2</td>
<td>35</td>
<td>9/16</td>
<td>1 1/4</td>
<td>133</td>
<td>7 1/2</td>
<td>114</td>
<td>12 305</td>
<td>8 203</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td>9</td>
<td>2 1/8</td>
<td>22</td>
<td>5/8</td>
<td>2 3/8</td>
<td>133</td>
<td>7 1/2</td>
<td>114</td>
<td>12 305</td>
<td>8 203</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>14</td>
<td>3 1/8</td>
<td>34</td>
<td>3/4</td>
<td>3 1/4</td>
<td>133</td>
<td>9 3/4</td>
<td>114</td>
<td>12 305</td>
<td>8 203</td>
</tr>
<tr>
<td>8</td>
<td>200</td>
<td>19</td>
<td>4 3/8</td>
<td>47</td>
<td>1 1/2</td>
<td>4 1/4</td>
<td>133</td>
<td>11 1/2</td>
<td>114</td>
<td>12 305</td>
<td>8 203</td>
</tr>
<tr>
<td>10</td>
<td>250</td>
<td>24</td>
<td>6</td>
<td>58</td>
<td>2 1/4</td>
<td>6 1/4</td>
<td>133</td>
<td>13 1/2</td>
<td>114</td>
<td>12 305</td>
<td>8 203</td>
</tr>
</tbody>
</table>

**Note:** The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 57.

**Important:** Inquire with governing authorities for local installation requirements.

---

**Models**

- **Suffix:**
  - OSY - UL/FM outside stem & yoke resilient seated gate valves
  - LF - without shutoff valves (4" – 10"
  - CFM - cubic feet per minute meter
  - GPM - gallons per minute meter

**Approvals**

- Approved by the foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California
Series 9 Dual Check Vacuum Breakers

Sizes: \( \frac{1}{4} \) – \( \frac{3}{8} \) (8 – 10mm)

Series 9 Dual Check Vacuum Breakers are used to prevent the flow of contaminated water into the potable water supply.

Models

- **N9C** - Dual check backflow preventer with atmospheric vent. For continuous pressure applications. Sizes: \( \frac{1}{4} \) (8mm) and \( \frac{3}{8} \) (10mm) NPT female inlet and outlet connections. Maximum pressure 125psi (8.6 bar).
- **N9** - the same as N9C except in brass finish
- **NLF9** - Has a \( \frac{1}{4} \) (10mm) NPT male inlet connection. Maximum pressure 150psi (10.3 bar). For non-continuous pressure applications.
- **N9-CD** - In-line field testable, dual check backflow preventer with atmospheric vent. Non-removable design. Size \( \frac{1}{4} \) (20mm) HT male outlet connection. Maximum temperature 180˚F (82˚C). Also available with chrome plating, Model N9-CD-C
- **9BD** - Special backflow preventer for vending machine water supply lines. Complies with FDA food additive regulations. Standard size: \( \frac{1}{4} \) (10mm) flare copper tube (FCT) inlet and outlet. Maximum pressure 400psi (27.5 bar), Maximum temperature 140˚F (60˚C). Also available with chrome plating, Model 9BD-C
- **912HP** - High pressure hose drop backflow preventer for food processing plant washdown lines. Sizes: \( \frac{1}{4} \) (20mm) and \( 1 \) (25mm) female inlet x male outlet connection. Maximum pressure 400psi (27.5 bar), Maximum temperature 160˚F (71˚C). Patent #: 6,397,878

Approvals

- N9 – CSA B64.8
- N9-CD – ASSE 1052
- NLF9 – ASSE 1035, CSA B64.8
- 9BD – CSA B64.8
- 912HP – ASSE 1035, CSA B64.8

Dimensions – Weights

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>Dimensions (in.)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>5C</td>
<td>( \frac{1}{4} )</td>
<td>2 60 1 12 25 38 17</td>
<td></td>
</tr>
<tr>
<td>5C</td>
<td>( \frac{3}{8} )</td>
<td>2 60 1 12 25 38 17</td>
<td></td>
</tr>
<tr>
<td>6C</td>
<td>( \frac{1}{4} )</td>
<td>2 60 1 12 25 38 17</td>
<td></td>
</tr>
<tr>
<td>6C</td>
<td>( \frac{3}{8} )</td>
<td>2 60 1 12 25 38 17</td>
<td></td>
</tr>
<tr>
<td>7C</td>
<td>( \frac{1}{4} )</td>
<td>2 60 1 12 25 38 17</td>
<td></td>
</tr>
<tr>
<td>7C</td>
<td>( \frac{3}{8} )</td>
<td>2 60 1 12 25 38 17</td>
<td></td>
</tr>
<tr>
<td>9C</td>
<td>( \frac{1}{4} )</td>
<td>2 60 1 12 25 38 17</td>
<td></td>
</tr>
<tr>
<td>9C</td>
<td>( \frac{3}{8} )</td>
<td>2 60 1 12 25 38 17</td>
<td></td>
</tr>
<tr>
<td>9CD</td>
<td>( \frac{1}{4} )</td>
<td>2 60 1 12 25 38 17</td>
<td></td>
</tr>
<tr>
<td>9CD</td>
<td>( \frac{3}{8} )</td>
<td>2 60 1 12 25 38 17</td>
<td></td>
</tr>
<tr>
<td>9CD</td>
<td>( \frac{1}{4} )</td>
<td>2 60 1 12 25 38 17</td>
<td></td>
</tr>
<tr>
<td>9CD</td>
<td>( \frac{3}{8} )</td>
<td>2 60 1 12 25 38 17</td>
<td></td>
</tr>
</tbody>
</table>

IMPORTANT: Inquire with governing authorities for local installation requirements

For additional information, request literature ES-9 or ES-N9-CD or ES/IS-912HP

See Flow Charts on p. 66
Series 9D
Backflow Preventer with Intermediate Atmospheric Vent
Sizes: 1/4", 3/8" (15, 20mm)

Dual Check Valves

IMPORTANT: Inquire with governing authorities for local installation requirements

For additional information, request literature ES-9.

See Flow Charts on p. 67
Series SD-2, SD-3
Dual Check Valves
Sizes: 1/4” – 3/8” (8 – 10mm)

Series SD-2 and SD-3 Dual Check Valves are designed for the protection of the water supply from carbon dioxide gas and carbonated water. These substances can flow from post-mix beverage systems and are very acidic. If acidic water comes in contact with copper pipe, it will cause the leaching of copper salts into the water supply and if ingested can cause nausea, abdominal pain, and in some cases vomiting. SD-2 and SD-3 prevent the reverse flow of potentially contaminated water into the potable water supply due to back pressure backflow and is used for continuous or intermittent pressure conditions. SD-2 and SD-3 are recommended for use on Post-Mix Carbonated Beverage Equipment and dispensing equipment for tea and coffee.

Features
Both Models
• Certified to ANSI/NSF Standard 18, Manual Food and Beverage Dispensing Equipment
• Streamlined body design minimizes pressure loss and cavitation
• A wide variety of custom and connections are available
• Endurance tested for more than 500,000 pumping cycles
• Shock tested for more than 100,000 pumping cycles

SD-3 Only
• Atmospheric port provides visual indication of failure of the second check
• Wye pattern strainer model for water supply installations

Materials
• Body: 316 stainless steel, corrosion resistant
• Internal rubber components, comply with FDA food additive regulations

Models
SD-2
1/4” (8mm) SD2-MN – Male NPT
1/4” (8mm) SD2-FN – Female NPT
1/4” (8mm) SD2-FF – SAE Male Flare
3/8” (10mm) SD2-FF – SAE Female Flare

SD-3
1/4” (8mm) SD3-MN – Male NPT
1/4” (8mm) SD3-FF – SAE Male Flare
1/4” (8mm) SD3-FN – Female NPT
1/4” (8mm) SD3-MF – SAE Male Flare
3/8” (10mm) SD3-FF – SAE Female Flare

Pressure – Temperature
SD-2
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C)
Maximum Working Pressure: 200psi (13.8 bar)

SD-3
Temperature Range: 33˚F – 130˚F (0.5˚C – 54˚C)
Maximum Working Pressure: 150psi (10.3 bar)

Approvals
• SD-2: ASSE 1032
• SD-3: ASSE 1022
• NSF: ANSI Standard 18

Dimensions – Weights

SD-2

SD-3

For additional information, request literature ES-SD2 or ES-SD3.
Series 7
Dual Check Valves
7 Sizes: 1/4" – 1 1/4" (12 – 32mm)
7C Sizes: 5/8" (10mm)

Series 7 Dual Check Valves are designed for non-health hazard residential water system containment and continuous pressure applications, such as the drinking water supply service entrance or individual outlets. Series 7 uses two compact replaceable check modules and is installed immediately downstream of the residential water meter.

Features
- Can be installed vertically or horizontally
- Available with an extensive combination of inlet/outlet sizes, thread types, thread and end connection including retrofit compression fittings and hose connections
- Can be installed in many piping configurations and with a wide range of meter horns, copper setters and meter boxes
- 7C, chrome-nickel plated brass dual check for in-line continuous pressure application

Materials
- Bronze body: 7 bronze
- 7C chrome-nickel plated
- Check Modules: Durable plastic
- Discs: Silicone
- Seals: Buna-N
- Springs: Stainless steel

Pressure – Temperature
Temperature Range: 33°F – 180°F (0.5°C-82°C) continuous, 180°F (82°C) intermittent
Maximum Working Pressure: 150psi (10.3 bar)

Dimensions – Weights

For additional information, request literature PG-7.

Flow Charts on p. 66
Series L7U2-2
In-Line Testable/Serviceable Dual Check Valves

Series L7U2-2 In-Line Testable/Serviceable Dual Checks are designed to “backup” the local or state plumbing code requirements for each premise served and to provide residential backflow protection from conditions such as mainline flushing, fire fighting and water main breaks. These conditions can siphon domestic water system, drawing potentially polluted water in the system back into the public water supply.

Features
- Plugged test ports for in-line testing
- Sizes ¾" and 1" (20 and 25mm) L7U2-1C with test cocks
- L7U2-2TC-GT with test cocks and quarter-turn shut-offs

Approvals

Model 7B
Dual Check Valves

Sizes: ¾" (19mm)

Features
- Compact design in machine brass construction
- Maximum Pressure: 150psi (10.3 bar)
- Maximum Temperature: 140°F (60°C)
- No 7BU-2 has female union inlet x female union outlet

Approvals

Series 07S
Residential Fire Sprinkler System Dual Check Valves

Sizes: 1, 1¼" (25, 32mm)

Features
- Cast bronze body
- Maximum pressure: 175psi (12.1 bar)
- Maximum temperature: 140°F (60°C)
- Length 6½" (171mm); Height 2½" (64mm); Weight 3 lbs (1.4 kg)

Approvals

Flow Charts on p.66

For additional information, request literature PG-7.
Series 8
Hose Connection Vacuum Breakers

Sizes: 3/8" – 3/4" (10 – 20mm)

Series 8 is a line of unique vacuum breakers specially made to permit the attachment of portable hoses to hose thread faucets. Designed to prevent the flow of contaminated water back into the potable water supply, these devices require no plumbing changes, and screw directly onto a sill cock. Series 8 can be used in a wide variety of installations, such as service sinks, swimming pools, photo developing tanks, laundry tubs, wash racks, dairy barns, marinas and general outside gardening uses.

Materials
- Body: brass (all models expect 8P)
- Stainless steel working parts for longevity
- Durable rubber diaphragm and disc for consistent positive seating

Models
- B* - brass body, removable, non-draining
- 8A* - patented “non-removable” feature, drainable, interlocking spring prevents removal once installed
- 8B* - brass body, with breakaway set screw to prevent removal, drainable
- 8C, 8BC and 8AC - same as above in chrome finish

NF8C - specifically designed for wall and yard hydrants, permits manual draining for freezing conditions. Chrome finish

8P - thermoplastic body with patented “non-removable” feature and equipped to allow sill cock to be drained

8BC - designed for tub and shower hand spray sets. Chrome finish

8FR - with freeze relief features. Protects the valve from freeze damage with or without the hose attached (Patent Pending)

Note: Models 8, 8A and 8B are not suitable for frost-free hydrants. See Model NF8.

Dimensions – Weights

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SIZE (DN)</th>
<th>DIMENSIONS (APPROX.)</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>3/8&quot; HT</td>
<td>1 1/8 35 1 1/8 38</td>
<td>4 oz. 113.4 gm.</td>
</tr>
<tr>
<td>8A</td>
<td>3/8&quot; HT</td>
<td>1 1/8 35 1 1/8 38</td>
<td>4 oz. 113.4 gm.</td>
</tr>
<tr>
<td>8B</td>
<td>3/8&quot; HT</td>
<td>1 1/8 35 1 1/8 38</td>
<td>4 oz. 113.4 gm.</td>
</tr>
<tr>
<td>8C</td>
<td>3/8&quot; HT</td>
<td>1 1/8 35 1 1/8 38</td>
<td>4 oz. 113.4 gm.</td>
</tr>
<tr>
<td>8BC</td>
<td>3/8&quot; HT</td>
<td>1 1/8 35 1 1/8 38</td>
<td>4 oz. 113.4 gm.</td>
</tr>
<tr>
<td>8AC</td>
<td>3/8&quot; HT</td>
<td>1 1/8 35 1 1/8 38</td>
<td>4 oz. 113.4 gm.</td>
</tr>
<tr>
<td>NF8</td>
<td>3/8&quot; HT</td>
<td>1 1/8 35 2 50</td>
<td>5.3 oz. 151.2 gm.</td>
</tr>
<tr>
<td>NF8C</td>
<td>3/8&quot; HT</td>
<td>1 1/8 35 2 50</td>
<td>5.3 oz. 151.2 gm.</td>
</tr>
<tr>
<td>8P</td>
<td>1 1/2&quot; HT</td>
<td>1 1/2 44 1 1/2 38</td>
<td>2 oz. 56.7 gm.</td>
</tr>
<tr>
<td>8FR</td>
<td>1 1/2&quot; HT</td>
<td>1 1/2 44 1 1/2 44</td>
<td>7.0 oz. 200 gm.</td>
</tr>
</tbody>
</table>

Approvals
Series 8, 8A, 8B, 8P, 8FR and NF8 are listed by IAPMO
**Series 800M4QT, 800M4FR**

**Pressure Vacuum Breakers**

Sizes: ½” – 2” (15 – 50mm)

Series 800M QT and 800M4FR Pressure Vacuum Breakers are designed to prevent back-siphonage of contaminated water into the potable water supply and are for health hazard cross-connections subject to continuous pressure. These valves must be installed 12” (305mm) above the highest downstream point of water.

**Features**

- Sizes ½” – 1” (15 – 25mm) come standard with tee handle quarter-turn shuttles
- Sizes 1½” – 2” (32 – 50mm) come standard with lever handles

**Dimensions – Weights**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Size (DN)</th>
<th>External Dimensions (Approx.)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>800M4QT</td>
<td>½</td>
<td>5</td>
<td>127</td>
</tr>
<tr>
<td>800M4QT</td>
<td>¾</td>
<td>137</td>
<td>6</td>
</tr>
<tr>
<td>800M4QT</td>
<td>1</td>
<td>139</td>
<td>7</td>
</tr>
<tr>
<td>800M4QT</td>
<td>1½</td>
<td>229</td>
<td>9</td>
</tr>
<tr>
<td>800M4QT</td>
<td>2</td>
<td>39</td>
<td>141</td>
</tr>
<tr>
<td>800M4QT</td>
<td>2½</td>
<td>39</td>
<td>141</td>
</tr>
<tr>
<td>800M4QT</td>
<td>3</td>
<td>40</td>
<td>141</td>
</tr>
<tr>
<td>800M4QT</td>
<td>3½</td>
<td>40</td>
<td>141</td>
</tr>
<tr>
<td>800M4QT</td>
<td>1⁄2</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>800M4QT</td>
<td>¾</td>
<td>137</td>
<td>6</td>
</tr>
<tr>
<td>800M4QT</td>
<td>1</td>
<td>139</td>
<td>7</td>
</tr>
<tr>
<td>800M4QT</td>
<td>1½</td>
<td>229</td>
<td>9</td>
</tr>
<tr>
<td>800M4QT</td>
<td>2</td>
<td>39</td>
<td>141</td>
</tr>
<tr>
<td>800M4QT</td>
<td>2½</td>
<td>39</td>
<td>141</td>
</tr>
<tr>
<td>800M4QT</td>
<td>3</td>
<td>40</td>
<td>141</td>
</tr>
<tr>
<td>800M4QT</td>
<td>3½</td>
<td>40</td>
<td>141</td>
</tr>
</tbody>
</table>

**Series 008PCQT**

**Spill Resistant, Anti-Siphon Vacuum Breakers**

Sizes: 3⁄8” – 1” (10 – 25mm)

Series 008PCQT Spill Resistant, Anti-Siphon Vacuum Breakers are designed for indoor point of use health hazard applications to prevent back-siphonage of contaminated water back into the potable water supply. Separation of the water supply from the air inlet is accomplished by means of a diaphragm seal. This feature protects against any spillage during start-up or operation.

**Features**

- Standardly supplied with internal polymer coating
- Standardly supplied with Tee handles
- Available with tee handle with stem wrench flats. For use where space is limited
- Available in left-hand to right-handed outlet
- Patented design
- Spill-resistant design for indoor use
- Affordable design
- Modular cartridge for ease of service
- Vent uses an O-ring for reliable operation

**Dimensions – Weights**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Size (DN)</th>
<th>External Dimensions (Approx.)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>in.</td>
<td>mm</td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>008PCQT</td>
<td>3⁄8</td>
<td>10</td>
<td>254</td>
</tr>
<tr>
<td>008PCQT</td>
<td>1⁄2</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>008PCQT</td>
<td>3⁄4</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>008PCQT</td>
<td>1</td>
<td>25</td>
<td>5 1⁄2</td>
</tr>
<tr>
<td>008PCQT</td>
<td>1½</td>
<td>39</td>
<td>141</td>
</tr>
</tbody>
</table>

**Materials**

- Body: Bronze
- Springs: Stainless steel
- Bonnet and Disc Holder: PPO
- Vent Disc: EPDM
- Check Disc: Silicone rubber

**Temperature – Pressure**

- Temperature Range: 33°F – 140°F (0.5°C – 60°C)
- Maximum Working Pressure: 150psi (10.3 bar)

**Approvals**

- IAMPO Classified

**Features**

- Standardly supplied with internal polymer coating
- Standardly supplied with Tee handles
- Available with tee handle with stem wrench flats. For use where space is limited
- Available in left-hand to right-handed outlet
- Patented design
- Spill-resistant design for indoor use
- Affordable design
- Modular cartridge for ease of service
- Vent uses an O-ring for reliable operation

**Materials**

- Body: Bronze
- Springs: Stainless steel
- Bonnet and Disc Holder: PPO
- Vent Disc: EPDM
- Check Disc: Silicone rubber

**Temperature – Pressure**

- Temperature Range: 33°F – 180°F (0.5°C – 83°C)
- Maximum Working Pressure: 150psi (10.3 bar)

**Approvals**

- IAMPO Classified

**Flow Charts**

See Flow Charts on p. 74

For additional information, request literature ES-800M4QT or ES-800M4FR.

For additional information, request literature ES-008PCQT.
Series 188A, 288A, 289, N388

Anti-Siphon Vacuum Breakers

Sizes: ¼” – 3” (8 – 80mm)

Series 188A, 288A, 289, N388 Anti-Siphon Vacuum Breakers are designed to protect against backflowage of contaminated water into the potable water supply. These vacuum breakers are for health hazard cross-connections not subject to continuous pressure and must be installed 6” (150mm) above the highest downstream point of water.

**Models**

188A - Sizes ¼” – 2” (20 – 50mm) irrigation vacuum breaker. Plain brass finish.
288A - Sizes ¼” – 3” (8 – 80mm). Plain brass finish.
288AC - Sizes ¼” – 1” (8 – 25mm). Polished chrome finish.

**Dimensions - Weights**

### N388

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>DIMENSIONS (APPROX.)</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>¼” 8</td>
<td>1½ 1½ 44 ½ 20</td>
<td>25</td>
</tr>
<tr>
<td>½” 10</td>
<td>1½ 1½ 44 ½ 60</td>
<td>1½ 60</td>
</tr>
<tr>
<td>¾” 10</td>
<td>1½ 20 ½ 60</td>
<td>1½ 60</td>
</tr>
</tbody>
</table>

### 289

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>DIMENSIONS (APPROX.)</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>¼” 10</td>
<td>1½ 1½ 38 2½ 60 3½ 95</td>
<td>2 51</td>
</tr>
<tr>
<td>½” 12</td>
<td>1½ 1½ 38 2½ 60 3½ 95</td>
<td>2 51</td>
</tr>
<tr>
<td>¾” 15</td>
<td>2½ 60 2½ 64 3 127 3½ 95</td>
<td>3 1.4</td>
</tr>
<tr>
<td>1” 25</td>
<td>2½ 60 2½ 64 5 127 3½ 95</td>
<td>4 1.8</td>
</tr>
</tbody>
</table>

### 188A

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>DIMENSIONS (APPROX.)</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>¼” 20</td>
<td>2½ 73 1½ 48 1½ 38</td>
<td>1½ 38</td>
</tr>
<tr>
<td>½” 15</td>
<td>2½ 73 2½ 54 1½ 43</td>
<td>2 43</td>
</tr>
<tr>
<td>¾” 32</td>
<td>2½ 73 2½ 54 1½ 40</td>
<td>2½ 40</td>
</tr>
<tr>
<td>1” 40</td>
<td>3½ 64 2½ 62 1½ 56</td>
<td>3½ 56</td>
</tr>
<tr>
<td>1½” 50</td>
<td>4½ 64 3½ 73 2½ 64</td>
<td>3½ 64</td>
</tr>
</tbody>
</table>

### 288A

<table>
<thead>
<tr>
<th>SIZE (DN)</th>
<th>DIMENSIONS (APPROX.)</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>¹⁄₄” 8</td>
<td>1½ 44 ½ 57 1½ 32</td>
<td>1¾ 32</td>
</tr>
<tr>
<td>½” 10</td>
<td>1½ 44 ½ 57 1½ 32</td>
<td>1¾ 32</td>
</tr>
<tr>
<td>¾” 15</td>
<td>2 50 3½ 70 1½ 38</td>
<td>1½ 38</td>
</tr>
<tr>
<td>1” 20</td>
<td>2 50 3½ 70 1½ 38</td>
<td>1½ 38</td>
</tr>
<tr>
<td>1½” 32</td>
<td>2½ 73 3½ 95 1½ 48</td>
<td>1½ 48</td>
</tr>
<tr>
<td>2” 40</td>
<td>3½ 92 2½ 114 2½ 57</td>
<td>2½ 57</td>
</tr>
<tr>
<td>2½” 65</td>
<td>6½ 191 3½ 130 2½ 67</td>
<td>3½ 67</td>
</tr>
<tr>
<td>3” 65</td>
<td>6½ 191 3½ 130 2½ 67</td>
<td>3½ 67</td>
</tr>
</tbody>
</table>

**Approvals**

Model 188A

Model 288A/N388

Model 289

See Flow Charts on p. For additional information, request literature PG-VB.
Features

• Designed to eliminate valve vault entry requirements of OSHA confined space ruling 29CFR 1910.146

• Single source Watts Regulator warranty of the enclosure, the backflow preventer, and the heat source

• Allows for the installation of the backflow preventer “at the service connection” in accordance with AWWA Standards

• Specifically designed to meet NFPA guidelines. The enclosure provides freeze protection to maintain the water supply to the property’s fire protection system (NFPA 3-3.1.8 and 3.6.1.3.2)

• Strategically placed doors provide access to the backflow prevention assembly for testing and repair without removal of the entire unit

• Economical alternative to expensive retrofit installation

• Eliminates potential drainage constraints in existing equipment rooms

• Saves valuable floor space

• Standardly furnished with thermostatically controlled heat source for freeze protection down to 30°F (–34°C)

• Contains no structural wood or particle board for long life

Dimensions

<table>
<thead>
<tr>
<th>OPT. VALVE SIZE</th>
<th>WATTS MODEL</th>
<th>12” CLEARANCE</th>
<th>MOUNTING FAC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-75</td>
<td>19” x 11” x 22”</td>
<td>28” x 20”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-1</td>
<td>27” x 13” x 23”</td>
<td>36” x 22”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-1.5</td>
<td>30” x 21” x 25”</td>
<td>44” x 32”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-2</td>
<td>38” x 13” x 28”</td>
<td>50” x 24”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB1</td>
<td>18” x 9” x 18”</td>
<td>19” x 27”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB1 T1</td>
<td>18” x 9” x 24”</td>
<td>19” x 27”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB2</td>
<td>26” x 12” x 20”</td>
<td>21” x 35”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB2 T2</td>
<td>26” x 12” x 28”</td>
<td>21” x 35”</td>
</tr>
</tbody>
</table>

1” - 2” (25 - 50mm)

<table>
<thead>
<tr>
<th>OPT. VALVE SIZE</th>
<th>WATTS MODEL</th>
<th>12” CLEARANCE</th>
<th>MOUNTING FAC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB3</td>
<td>18” x 9” x 18”</td>
<td>19” x 27”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB3 T1</td>
<td>18” x 9” x 24”</td>
<td>19” x 27”</td>
</tr>
</tbody>
</table>

2” - 3” (50 - 75mm)

<table>
<thead>
<tr>
<th>OPT. VALVE SIZE</th>
<th>WATTS MODEL</th>
<th>12” CLEARANCE</th>
<th>MOUNTING FAC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB4</td>
<td>26” x 12” x 20”</td>
<td>21” x 35”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB4 T1</td>
<td>26” x 12” x 28”</td>
<td>21” x 35”</td>
</tr>
</tbody>
</table>

3” - 4” (75 - 100mm)

<table>
<thead>
<tr>
<th>OPT. VALVE SIZE</th>
<th>WATTS MODEL</th>
<th>12” CLEARANCE</th>
<th>MOUNTING FAC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB5</td>
<td>18” x 9” x 18”</td>
<td>19” x 27”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB5 T1</td>
<td>18” x 9” x 24”</td>
<td>19” x 27”</td>
</tr>
</tbody>
</table>

4” (100mm)

<table>
<thead>
<tr>
<th>OPT. VALVE SIZE</th>
<th>WATTS MODEL</th>
<th>12” CLEARANCE</th>
<th>MOUNTING FAC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB6</td>
<td>26” x 12” x 20”</td>
<td>21” x 35”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB6 T1</td>
<td>26” x 12” x 28”</td>
<td>21” x 35”</td>
</tr>
</tbody>
</table>

5” (125mm)

<table>
<thead>
<tr>
<th>OPT. VALVE SIZE</th>
<th>WATTS MODEL</th>
<th>12” CLEARANCE</th>
<th>MOUNTING FAC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB7</td>
<td>18” x 9” x 18”</td>
<td>19” x 27”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB7 T1</td>
<td>18” x 9” x 24”</td>
<td>19” x 27”</td>
</tr>
</tbody>
</table>

6” (150mm)

<table>
<thead>
<tr>
<th>OPT. VALVE SIZE</th>
<th>WATTS MODEL</th>
<th>12” CLEARANCE</th>
<th>MOUNTING FAC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB8</td>
<td>26” x 12” x 20”</td>
<td>21” x 35”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB8 T1</td>
<td>26” x 12” x 28”</td>
<td>21” x 35”</td>
</tr>
</tbody>
</table>

7” (175mm)

<table>
<thead>
<tr>
<th>OPT. VALVE SIZE</th>
<th>WATTS MODEL</th>
<th>12” CLEARANCE</th>
<th>MOUNTING FAC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB9</td>
<td>18” x 9” x 18”</td>
<td>19” x 27”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB9 T1</td>
<td>18” x 9” x 24”</td>
<td>19” x 27”</td>
</tr>
</tbody>
</table>

8” (200mm)

<table>
<thead>
<tr>
<th>OPT. VALVE SIZE</th>
<th>WATTS MODEL</th>
<th>12” CLEARANCE</th>
<th>MOUNTING FAC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB10</td>
<td>26” x 12” x 20”</td>
<td>21” x 35”</td>
</tr>
<tr>
<td>007, 009, 909, 919</td>
<td>WB-PB10 T1</td>
<td>26” x 12” x 28”</td>
<td>21” x 35”</td>
</tr>
</tbody>
</table>
Dimensions (cont.)

**ALUMINUM**

<table>
<thead>
<tr>
<th>Material</th>
<th>Dimensions</th>
<th>Model</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>10&quot; (250mm) 757OSY / DCDA, 10&quot; (250mm) 909, 994OSY / RPDA</td>
<td>142&quot; x 42&quot; x 85&quot;</td>
<td>WB-E10</td>
<td>1344 lb (541 kg)</td>
</tr>
<tr>
<td>10&quot; (250mm) 757OSY / DCDA, 10&quot; (250mm) 957OSY / RPDA</td>
<td>142&quot; x 42&quot; x 85&quot;</td>
<td>WB-4350SN</td>
<td>33&quot; x 34&quot;</td>
</tr>
<tr>
<td>2&quot; - 3&quot; (50 - 80mm) 757MRS, 4&quot; (100mm) 976 MRS</td>
<td>53&quot; x 44&quot; x 44&quot;</td>
<td>WB-4000AG</td>
<td>53&quot; x 44&quot; x 44&quot;</td>
</tr>
<tr>
<td>4&quot; (100mm) 757NOSY, 2&quot; (50 - 80mm) 957NRPDA</td>
<td>75&quot; x 34&quot; x 44&quot;</td>
<td>WB-4351SN</td>
<td>52&quot; x 34&quot; x 44&quot;</td>
</tr>
<tr>
<td>6&quot; (150mm) 757NOSY, 6&quot; (150mm) 757DCDA, 6&quot; (150mm) 957NOSY, 6&quot; (150mm) 957NRPDA</td>
<td>75&quot; x 34&quot; x 44&quot;</td>
<td>WB-4350SN</td>
<td>53&quot; x 44&quot; x 44&quot;</td>
</tr>
<tr>
<td>8&quot; (200mm) 757NOSY, 8&quot; (200mm) 957NOSY, 8&quot; (200mm) 957NRPDA</td>
<td>75&quot; x 34&quot; x 44&quot;</td>
<td>WB-4350SN</td>
<td>53&quot; x 44&quot; x 44&quot;</td>
</tr>
</tbody>
</table>

**STUCCO ALUMINUM**

<table>
<thead>
<tr>
<th>Material</th>
<th>Dimensions</th>
<th>Model</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot; - 3&quot; (50 - 80mm) 757MRS, 6&quot; (150mm) 957PDA, 8&quot; (200mm) 957NOSY</td>
<td>142&quot; x 42&quot; x 85&quot;</td>
<td>WB-4350SN</td>
<td>33&quot; x 34&quot;</td>
</tr>
<tr>
<td>4&quot; (100mm) 757NRS / BFG, 4&quot; (100mm) 957NRS, 6&quot; (150mm) 957NRS</td>
<td>53&quot; x 44&quot; x 44&quot;</td>
<td>WB-4000AG</td>
<td>52&quot; x 34&quot; x 44&quot;</td>
</tr>
<tr>
<td>8&quot; (200mm) 757NOSY, 8&quot; (200mm) 957NOSY, 8&quot; (200mm) 957NRPDA</td>
<td>75&quot; x 34&quot; x 44&quot;</td>
<td>WB-4351SN</td>
<td>52&quot; x 34&quot; x 44&quot;</td>
</tr>
</tbody>
</table>

**STRAINER MODELS**

<table>
<thead>
<tr>
<th>Material</th>
<th>Dimensions</th>
<th>Model</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; - 2&quot; (8 - 50mm)</td>
<td>24&quot; x 12&quot; x 28&quot;</td>
<td>WB-2S</td>
<td>60&quot; x 24&quot;</td>
</tr>
<tr>
<td>1/4&quot; - 2&quot; (8 - 50mm)</td>
<td>24&quot; x 12&quot; x 28&quot;</td>
<td>WB-2S</td>
<td>60&quot; x 24&quot;</td>
</tr>
<tr>
<td>1/4&quot; - 2&quot; (8 - 50mm)</td>
<td>24&quot; x 12&quot; x 28&quot;</td>
<td>WB-2S</td>
<td>60&quot; x 24&quot;</td>
</tr>
<tr>
<td>1/4&quot; - 2&quot; (8 - 50mm)</td>
<td>24&quot; x 12&quot; x 28&quot;</td>
<td>WB-2S</td>
<td>60&quot; x 24&quot;</td>
</tr>
<tr>
<td>1/4&quot; - 2&quot; (8 - 50mm)</td>
<td>24&quot; x 12&quot; x 28&quot;</td>
<td>WB-2S</td>
<td>60&quot; x 24&quot;</td>
</tr>
</tbody>
</table>

**STUCCO - SLATE GREY OR EARTHTONE BROWN**

<table>
<thead>
<tr>
<th>Material</th>
<th>Dimensions</th>
<th>Model</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot; - 1&quot; (20 - 25mm)</td>
<td>26&quot; x 12&quot; x 23&quot;</td>
<td>WB-1 (shell)</td>
<td>40&quot; x 24&quot;</td>
</tr>
<tr>
<td>3/4&quot; - 1&quot; (20 - 25mm)</td>
<td>26&quot; x 12&quot; x 23&quot;</td>
<td>WB-1 (less heat)</td>
<td>40&quot; x 24&quot;</td>
</tr>
<tr>
<td>3/4&quot; - 1&quot; (20 - 25mm)</td>
<td>26&quot; x 12&quot; x 23&quot;</td>
<td>WB-1 (less heat)</td>
<td>40&quot; x 24&quot;</td>
</tr>
<tr>
<td>3/4&quot; - 1&quot; (20 - 25mm)</td>
<td>26&quot; x 12&quot; x 23&quot;</td>
<td>WB-1 (less heat)</td>
<td>40&quot; x 24&quot;</td>
</tr>
<tr>
<td>3/4&quot; - 1&quot; (20 - 25mm)</td>
<td>26&quot; x 12&quot; x 23&quot;</td>
<td>WB-1 (less heat)</td>
<td>40&quot; x 24&quot;</td>
</tr>
<tr>
<td>3/4&quot; - 1&quot; (20 - 25mm)</td>
<td>26&quot; x 12&quot; x 23&quot;</td>
<td>WB-1 (less heat)</td>
<td>40&quot; x 24&quot;</td>
</tr>
</tbody>
</table>

**STRAINER MODELS**

<table>
<thead>
<tr>
<th>Material</th>
<th>Dimensions</th>
<th>Model</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; - 2&quot; (8 - 50mm)</td>
<td>24&quot; x 12&quot; x 28&quot;</td>
<td>WB-2S</td>
<td>60&quot; x 24&quot;</td>
</tr>
<tr>
<td>1/4&quot; - 2&quot; (8 - 50mm)</td>
<td>24&quot; x 12&quot; x 28&quot;</td>
<td>WB-2S</td>
<td>60&quot; x 24&quot;</td>
</tr>
<tr>
<td>1/4&quot; - 2&quot; (8 - 50mm)</td>
<td>24&quot; x 12&quot; x 28&quot;</td>
<td>WB-2S</td>
<td>60&quot; x 24&quot;</td>
</tr>
<tr>
<td>1/4&quot; - 2&quot; (8 - 50mm)</td>
<td>24&quot; x 12&quot; x 28&quot;</td>
<td>WB-2S</td>
<td>60&quot; x 24&quot;</td>
</tr>
<tr>
<td>1/4&quot; - 2&quot; (8 - 50mm)</td>
<td>24&quot; x 12&quot; x 28&quot;</td>
<td>WB-2S</td>
<td>60&quot; x 24&quot;</td>
</tr>
</tbody>
</table>

**Features**

- Easy installation aluminum enclosures features interlocking panel which eliminates the use of screws during assembly
- Can be temporarily removed for replacement of the backflow preventer without the need for replacement of freeze protection services
- Flip top fiberglass enclosures standardly furnished with locking pin to lock the lid in the open position
- ASSE 1060 certified
- WattsRock available in slate grey and earhtone brown

- Features (cont.)
- Easy installation aluminum enclosures
- Interlocking panel which eliminates the use of screws during assembly
- Can be temporarily removed for replacement of the backflow preventer without the need for replacement of freeze protection services
- Flip top fiberglass enclosures standardly furnished with locking pin to lock the lid in the open position
- ASSE 1060 certified
- WattsRock available in slate grey and earhtone brown
Series TWS
Through the Wall shutoffs
Sizes: ¾", 1" (20, 25mm)

Series TWS Through the Wall shutoffs are for use on irrigation sprinkler systems and feature a provision for a pressure vacuum breaker (PVB), atmospheric vacuum breaker (AVB), double check (DC), or reduced pressure zone (RPZ) backflow preventer. Series TWS provides access to the home’s water supply from the outside and its shutoff is key operated.

Pressure – Temperature
Temperature Range: 30°F – 140°F (0.5°C – 60°C) continuous, 180°F (82°C) intermittent
Maximum Working Pressure: 175psi (12.1 bar)

Series Governor 80-M1
Ball Cock and Thermal Expansion Relief Valve
Sizes: 10", 11½", 12½" (250, 292, 318mm)

Governor 80-M1 is a triple purpose product: toilet tank ball cock fill valve, anti-siphon backflow preventer and thermal expansion pressure relief valve.

Pressure – Temperature
Temperature Range: 30°F – 110°F (0.5°C – 43.3°C)
Relief Valve Set At: 80psi (552 kPa)

For additional information, request literature S-Gov80.

Series SS07F
Stainless Steel Single Detector Check Valves
Sizes: 4" – 10" (100 – 250mm)

Series SS07F Single Detector Check Valve (DCV) detects any leakage or unauthorized use of water from fire sprinkler systems. During times of minimal water flow, the valve clapper remains closed so that the water flows through a bypass meter (optional). When fire flow is required, the increased demand will open the clapper to allow full flow.

Pressure – Temperature
Temperature Range: 30°F – 110°F (0.5°C – 43°C)
Rated working pressure: 175psi (12.1 bar)

Approvals
EPT Listed
APEC Certified
UL Listed

Body nameplate provides nominal size, direction of flow, psi rating, year of manufacture, and approval marks

Dimensions

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SIZE (IN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWS-8</td>
<td>¾ 20</td>
</tr>
<tr>
<td>TWS-10</td>
<td>¾ 20</td>
</tr>
<tr>
<td>TWS-12</td>
<td>¾ 25</td>
</tr>
<tr>
<td>TWS-8</td>
<td>1 25</td>
</tr>
<tr>
<td>TWS-10</td>
<td>1 25</td>
</tr>
<tr>
<td>TWS-12</td>
<td>1 25</td>
</tr>
</tbody>
</table>

For additional information, request literature ES-SS07F.

See Flow Charts on p. 79
Test Kits

Model TK-7
- Water column sight tube for testing dual check and double check valves.
- Tests individual check modules of the Watts Model 7, 709 and 007.
- ± 1% accuracy full scale.

Model TK-9A
- ± 2% accuracy full scale.
- Test kit easily connects to any testable backflow preventer assembly.
- Designed for testing all testable backflow preventers.
- Water column sight tube for testing dual check and double check valves.
- Tests individual check modules of the Watts Model 7, 709 and 007.
- ± 2% accuracy full scale.

Model TK-99D
- ± 0.25% full scale accuracy.
- LCD display with oversized differential characters and separate supply pressure readout gauge, high impact casing.
- Features 0.25% full scale accuracy.
- Compact, hand held, digital backflow preventer test kit.
- LCD display with oversized differential characters and separate supply pressure readout gauge, high impact casing.
- Tests RPZ’s, Double checks or PVB’s.
- ± 0.25% full scale accuracy.

Model TK-99E
- ± 1% accuracy full scale.
- Compact test kit with color coded valves, hoses and top mounted bleed valves.
- Designed for testing all testable backflow preventers.
- ± 0.25% full scale accuracy.
- Compact, hand held, digital backflow preventer test kit.
- LCD display with oversized differential characters and separate supply pressure readout gauge, high impact casing.
- Tests RPZ’s, Double checks or PVB’s.
- ± 0.25% full scale accuracy.

Model TK-DL
- ± 0.25% full scale accuracy.
- An advanced piece of test equipment designed to make pressure and differential gauges obsolete in the testing of backflow preventers.
- Accuracy, portability, versatility and documentation.
- Contains hoses, adaptors, digital print-out unit and a rugged case.
- ± 0.25% full scale accuracy.
- Compact, hand held, digital backflow preventer test kit.
- LCD display with oversized differential characters and separate supply pressure readout gauge, high impact casing.
- Tests RPZ’s, Double checks or PVB’s.
- ± 0.25% full scale accuracy.
Test Cocks
For use with backflow preventers, isolation valve for gauges, isolation valves for small equipment lines.

TC
• TC full port ball valve design
• Screwdriver slot to open and close
• Available 1/4" M x 1/4" F or 1/8" M x 1/4" F (3mm M x 6mm F or 6mm M x 8mm F)

SAE-TC
• Full port ball valve design
• Screwdriver slot operation
• 1/4" (9mm) M x SAE

SAE-TC Adapter
• 1/4" (8mm) female SAE x 1/4" (14mm) FPT
• Adapts to SAE-TC for use with pressure gauge and/or site tube

SilverEagle TC
• 1/4" (6mm) TC for 2-1/2" – 4" (65 - 100mm) series 757 and 957
• 1/2" (20mm) TC for 6" – 10" (150 - 250mm) series 757 and 957
• Full port ball valve design

No. 3 TC with O-Ring
• for 2-1/2" – 4" (65 - 100mm) series 757 and 957
• for 6" – 10" (150 - 250mm) series 757 and 957

Caps & Tethers
Plastic Cap and tether
(four required per backflow preventer)
• Fits 1/4" (8mm) Female test cocks
• Plastic dust cap and rubber tether
• RK-TC P

SAE Brass Cap, O-ring and Tether
(four required per backflow preventer)
• Fits 1/4" (8mm) M x SAE test cocks
• Brass dust cap with O-ring seal and rubber tether
• RK-SAE-TC-B

For additional information, request literature ES-AG/EL/TC.
Air Gaps and Elbows
for Reduced Pressure Zone Assemblies
Sizes: 1/4" – 10" (8 – 250mm) for RPZ and RPDA

Air Gaps
An air gap provides the unobstructed, physical separation between the discharge end of a potable water supply line and an open receiving vessel. The installation of an air gap and drain line are recommended.

Model 994 and 994RPDA Sizes: 2 1/2" – 10" (65 - 250mm)

Horizontal Air Gaps
1. Remove two of the relief valve cap screws 180° apart.
2. Remove the relief valve hose from fitting below inlet ball valve.
3. From the top of the air gap, thread the relief valve hose down and out the slot.
4. Use 1/4" – 20 UNC x 1" long stainless steel screws.
5. Reconnect relief valve hose to the fitting below the inlet ball valve.

Vertical Air Gaps
1. Detach the sensing line from the inlet ball valve and the elbow on the relief valve.
2. Remove the elbows from the relief valve base.
3. Hang the Air Gap Drain on the body of the relief valve.
4. Reinstall the elbow into the base of the relief valve to hold the Air Gap drain in place.
5. Install the rigid fitting end of the sensing line to the elbow on the base of the relief valve and the swivel end to the fitting on the ball valve.

Air Gaps

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>SUBSIZES</th>
<th>DIMENSIONS</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>909AG-A</td>
<td>1/4&quot; – 1/2&quot;</td>
<td>10</td>
<td>21/2</td>
</tr>
<tr>
<td>909AG-C</td>
<td>3/4&quot; – 1&quot;</td>
<td>21/2</td>
<td>31/4</td>
</tr>
<tr>
<td>909AG-F</td>
<td>1 1/4&quot; – 3&quot;</td>
<td>4 1/2</td>
<td>8 3/4</td>
</tr>
<tr>
<td>909AG-K</td>
<td>4&quot; – 6&quot;</td>
<td>6 1/2</td>
<td>10 3/4</td>
</tr>
<tr>
<td>909AG-M</td>
<td>8&quot; – 10&quot;</td>
<td>7 7/8</td>
<td>12 1/4</td>
</tr>
<tr>
<td>919AGC</td>
<td>3/4&quot; &amp; 1&quot;</td>
<td>21/2</td>
<td>31/4</td>
</tr>
<tr>
<td>919AGF</td>
<td>1 1/4&quot; – 2&quot;</td>
<td>4 1/2</td>
<td>8 3/4</td>
</tr>
<tr>
<td>919AG (Splash Guard Only)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>994AGK-P</td>
<td>2 1/2&quot; – 10&quot;</td>
<td>8</td>
<td>20 1/4</td>
</tr>
<tr>
<td>995-AG</td>
<td>3&quot; – 6&quot;</td>
<td>5</td>
<td>12 1/4</td>
</tr>
</tbody>
</table>

Vent Elbows

Used with Watts Air Gaps for vertical installation of reduced pressure zone assemblies.

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>SUBSIZES</th>
<th>DIMENSIONS</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>*[957E-L]</td>
<td>H – 1/2&quot;</td>
<td>4 1/4</td>
<td>—</td>
</tr>
<tr>
<td>*[957E-F]</td>
<td>1 1/4&quot; – 2&quot;</td>
<td>6</td>
<td>11 1/2</td>
</tr>
<tr>
<td>*[957E-H]</td>
<td>Z 1/4&quot; – 1&quot;</td>
<td>1/2</td>
<td>5</td>
</tr>
<tr>
<td>*[957E-P] (vertical)</td>
<td>2 1/2&quot; – 10&quot;</td>
<td>8</td>
<td>20 1/4</td>
</tr>
</tbody>
</table>

*Epoxy coated

For additional information, request literature ES-AG/E:TC.
Spools and Flanges
For Retrofitting Backflow Preventers

Spools
Watts has created "Make up" Spools for use when retrofitting a backflow preventer into the longer lay length of an existing assembly. Watts spools are available in lightweight 300 series stainless steel or epoxy coated carbon steel and come standard with AWWA 150# class "D" carbon steel flanges. 150# class "D" stainless steel flanges available upon special request.

Flanges
Watts has created "Make up" Flanges for use in piping applications where there is a need for additional fitting lay length. Watts flanges are available in three styles:
- AWWA 150# modified class "D" Zinc plated carbon steel with standard bolt pattern
- AWWA 150# modified class "D" Zinc plated carbon steel flanges with standard pattern slotted
- AWWA 150# modified class "D" Stainless steel flanges with standard bolt pattern

### Spools

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>W-SPL 2</td>
<td>1/2 x 3/4</td>
</tr>
<tr>
<td>W-SPL 3</td>
<td>1 1/4 x 1/2</td>
</tr>
<tr>
<td>W-SPL 4</td>
<td>1 1/4 x 1/2</td>
</tr>
<tr>
<td>W-SPL 5</td>
<td>1 1/4 x 1/2</td>
</tr>
<tr>
<td>W-SPL 6</td>
<td>1 1/4 x 1/2</td>
</tr>
</tbody>
</table>

### Flanges

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>W-FLG SS-U 2</td>
<td>1/4 x 1/2</td>
</tr>
<tr>
<td>W-FLG SS-S 2</td>
<td>1/2 x 1/4</td>
</tr>
<tr>
<td>W-FLG Z-U 3</td>
<td>1 1/4 x 1/2</td>
</tr>
<tr>
<td>W-FLG Z-S 3</td>
<td>1 1/4 x 1/2</td>
</tr>
</tbody>
</table>

For additional information, request literature F-Spools/Flanges.
Series PVS-1000 Pre-engineered Valve Stations

Series PVS-1000 Pre-Engineered Valve Stations are custom configured water flow control systems that are assembled from proven, reliable Watts components to meet exacting project application requirements. Watts pre-engineered valve stations are factory pre-assembled, tested and optionally certified by independent agencies to ensure flow performance for critical building demands.

Features

- Maximum flow performance with low pressure drops
- Wide flow control ranges meet standard and emergency peak flow requirements
- Standard flow design to >10,000 gpm
- Integral backflow prevention devices, meter, pressure regulators, automatic control valves, strainers, headers, shutoff valves, and instrumentation as needed to suit specific applications
- UL/FM, ASSE, IAPMO, USC certified or listed components as required for service
- Single point of connection for fire protection, potable water and irrigation services (where approved by local codes)
- Standard vault, vertical, and horizontal mounting configurations
- Integral slip and alignment flanges correct for site variations and relieve pipe stress
- Field proven in over 100 installations and years of history
- Expansion capability
- Built-in protection for system upsets (e.g. seismic shocks)

Benefits

Watts pre-engineered valve stations provide the following benefits:

- Reduction of installation time from days to hours, minimizing installations costs
- Redundant flow paths provide uninterrupted water flow while device is being tested or maintained, reducing overtime labor costs
- Operates below OSHA mandated maximum noise levels
- Corrosion resistant design reduces component maintenance costs
- Optional pre-installation performance certification ensures conformance to design criteria at site
- Reduction in the number of overall components needed through Watts’ innovative design program
- One supplier of components, one source of responsibility, Watts, a leader in valve technology for over 130 years

Applications

Watts pre-engineered valve stations are custom fit to your specifications and are ideal for a wide variety of flow control applications including:

- Hospitals
- Schools
- Multi-Family Dwellings
- Restaurants
- Industrial Facilities
- Other similar buildings

IMPORTANT: Inquire with governing authorities for local installation requirements

For additional information, request literature PG-ValveStations.
Series BIC-1000 Backflow Irrigation Control Stations combine the master valve, regulator valve, backflow preventer, preload valve and high-pressure lockout switch all in one easily located component. Constructed using best practice design principles, these systems maximize operating performance and reduce pipe breaks and leakage within the irrigation system. Watts BIC-1000 station minimizes system operating pressure during both the system operation as well as when there is no flow to the system to reduce water line breaks, has a single warranty policy and is pre-tested to ensure reliable operation “out of the crate”.

**Features**

- **Preload Pilot**. The entire irrigation pressure piping system is maintained with a preload standby, field adjustable, low pressure control valve. This in combination with a higher set point on the regulator and master valve creates a buffer when turned on.
- **High-Pressure Lockout Switch**. When high pressure is detected, the switch will lock out the 24V circuit; making the system inoperable until the problem is addressed. This prevents high pressure shock and water hammer when the system is allowed to turn on.
- **All components are flanged type, nut and bolt modular design for easy replacement.**
- **24-hour monitoring system of the outlet pressure for excessive buildup above set operating pressure.**
- **Water is conserved by reducing or eliminating potential line breaks caused by high pressure. The master valve/regulator is installed at the backflow assembly which provides a shut-off and pressure control of the entire system.**

**System Attributes**

- **All components are above ground level on a stainless steel station**
- **Combines the Master Valve, Regulator Valve, and Backflow Assembly in one easily located component**
Series FR 500
Thermostatic Freeze Relief Kits

Sizes: 1/8", 1/4", 1/2" and 3/4"
(3, 8, 15 and 20mm)

Series FR 500 Thermostatic Freeze Relief Kits are designed to keep water from freezing in the backflow preventer, while avoiding discharges based on the air temperature dropping below freezing. Series FR 500 thermostatically measures the water temperature and opens at 35°F (1.6°C) and closes at 40°F (4.4°C).

Features
- Compact
- Easy to Install
- Low Maintenance
- Controlled by Water Temperature vs. Air Temperature
- IAPMO Approved

Materials
- Body: Bronze
- Springs: Stainless Steel
- Internals: DZR Brass

Pressure – Temperature
- Working Temperature: 35°F (1.6°C)
- Maximum Pressure: 175psi (12.1 bar)

Approvals

Dimensions

For additional information, request literature ES-FR500.
Guide to Options

Hydrant Connections – HC
The hydrant connection option is designed to prevent backflow of contaminants from tank and truck filling operations. A fire hydrant should be considered an open conduit to the water supply system and as such should be protected from actual or potential cross-connections that can occur. While fire hydrants are normally considered to be safety devices for fire fighting purposes, the growing use of them to supply water for construction sites, roadwork, street cleaning equipment and hydroseeding, can lead to the possible contamination of the water supply.

Available on series: 2″ (50mm) 007, 009, 909

Locking Ball Valve Handles – LH
The locking ball valve handles option is designed for use on fire protection systems to prevent accidental closure of the shutoff valve. Locking ball valve handles provide vandal resistance for outdoor installations and prevent the removal of the stem nut and ball valve handle. These locks allow an assembly’s bypass valve to be locked in the open position to prevent isolation of the meter and resultant theft of water.

Available on ½″ – 2″ (15 - 50mm) series: 007, 009, 909

Internal Polymer Coating – PC
The internal polymer coating option provides extended corrosion protection on sensitive sealing areas and machined surfaces. The coating ensures the smooth operation of the sliding and moving parts and common problems such as pitting, mineral build ups and galling are negligible even after lengthy periods in extremely corrosive water conditions.

Available on series: 007, 008, 009, 909

Elbow Fittings for 360° Rotation – AQT
The AQT elbow fittings for 360° rotation option allows the installer to pivot the valve’s inlet and outlet in the direction of the piping since often times they do not align exactly. This option provides great flexibility to the installer and saves space, time, materials and money.

Available on series: 009, 919
Shutoff Valve Options

Watts offers a variety of different shutoff valve options and combinations to meet most any installation requirements. Shutoff valve options include: grooved and flanged OSY & NRS gate valves, valves with 2" (50mm) operating nut and post indicator plate and grooved butterfly valves.

Available on series: 757, 757a, 774, 774X, 757DCDA, 757aDCDA, 774DCDA, 774XDCDA, 957, 994, 957RPDA, 994RPDA

For additional information, request literature S-SilverEagleshutoffs
Flow Charts

*Typical maximum system flow rate (7.5 feet/sec.)

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Flow Rate (gpm)</th>
<th>Flow Rate (lpm)</th>
<th>Flow Rate (fps)</th>
<th>Flow Rate (mps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 (6mm)</td>
<td>0-5</td>
<td>0-1</td>
<td>0-7.6</td>
<td>0-2.3</td>
</tr>
<tr>
<td>1/2 (15mm)</td>
<td>0-25</td>
<td>0-95</td>
<td>0-1.5</td>
<td>0-0.5</td>
</tr>
<tr>
<td>3/4 (20mm)</td>
<td>0-50</td>
<td>0-190</td>
<td>0-2.3</td>
<td>0-0.75</td>
</tr>
<tr>
<td>1 (25mm)</td>
<td>0-75</td>
<td>0-285</td>
<td>0-3.0</td>
<td>0-1.0</td>
</tr>
<tr>
<td>1 1/4 (32mm)</td>
<td>0-100</td>
<td>0-380</td>
<td>0-3.0</td>
<td>0-1.2</td>
</tr>
<tr>
<td>1 1/2 (40mm)</td>
<td>0-125</td>
<td>0-475</td>
<td>0-4.6</td>
<td>0-1.5</td>
</tr>
<tr>
<td>2 (50mm)</td>
<td>0-150</td>
<td>0-760</td>
<td>0-7.5</td>
<td>0-2.5</td>
</tr>
<tr>
<td>2 1/2 (65mm)</td>
<td>0-175</td>
<td>0-950</td>
<td>0-9.0</td>
<td>0-3.0</td>
</tr>
<tr>
<td>3 (80mm)</td>
<td>0-200</td>
<td>0-1140</td>
<td>0-15.2</td>
<td>0-4.6</td>
</tr>
</tbody>
</table>
Flow Charts

*Typical maximum system flow rate (7.5 feet/sec.)
Flow Charts

*Typical maximum system flow rate (7.5 ft/sec.)

- 2" (50mm) 009M2QT
  - ΔP
  - FLOW

- 2\!/₄" (65mm) 009
  - ΔP
  - FLOW

- 3" (80mm) 7
  - ΔP
  - FLOW

- 1/₂", 3/₄" (15mm, 20mm) 7, CU7
  - ΔP
  - FLOW

- 1/₂", 3/₄" (15mm, 20mm) L7
  - ΔP
  - FLOW

- 1\!
  - ΔP
  - FLOW

- 3/₈" (10mm) 7C
  - ΔP
  - FLOW

- 3/₄", 1" (20mm, 25mm) L7
  - ΔP
  - FLOW
Flow Charts

*Typical maximum system flow rate (7.5 feet/sec.)

**Typical maximum system flow rate (2.3 meters/sec.)**
Flow Charts

Typical maximum system flow rate (7.5 feet/sec.)

- **1/4” (8mm) N388**:
  - Flow Rate: 0 to 120 gpm (0 to 455 lpm)
  - Pressure Drop: 0 to 150 kPa (0 to 217 psi)
  - Velocity: 1.5 to 4.6 m/s (5 to 15 fps)

- **3/8” (10mm) N388**:
  - Flow Rate: 0 to 120 gpm (0 to 455 lpm)
  - Pressure Drop: 0 to 150 kPa (0 to 217 psi)
  - Velocity: 1.5 to 4.6 m/s (5 to 15 fps)

- **1” (25mm)**:
  - Flow Rate: 0 to 120 gpm (0 to 455 lpm)
  - Pressure Drop: 0 to 150 kPa (0 to 217 psi)
  - Velocity: 1.5 to 4.6 m/s (5 to 15 fps)

- **1⅛” (32mm)**:
  - Flow Rate: 0 to 120 gpm (0 to 455 lpm)
  - Pressure Drop: 0 to 150 kPa (0 to 217 psi)
  - Velocity: 1.5 to 4.6 m/s (5 to 15 fps)

- **1¼” (32mm) N388**: (Additional chart)

- **4” (100mm)**:
  - Flow Rate: 0 to 1200 gpm (0 to 4550 lpm)
  - Pressure Drop: 0 to 1500 kPa (0 to 2170 psi)
  - Velocity: 1.5 to 4.6 m/s (5 to 15 fps)

- **4” (100mm) DPDA**: (Additional chart)

- **6” (150mm) 709kPa psi**: (Additional chart)

- **8” (200mm) 709kPa psi**: (Additional chart)

- **10” (250mm) 709kPa psi**: (Additional chart)

- **2½” (65mm) 709**: (Additional chart)

- **3” (80mm) 709**: (Additional chart)

- **3” (80mm) 709DCDA**: (Additional chart)

- **4” (100mm) 709DCDA**: (Additional chart)
Flow Charts

*Typical maximum system flow rate (7.5 feet/sec.)
Flow Charts  

*Typical maximum system flow rate (7.5 feet/sec.)

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Flow Rate</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot; (60mm)</td>
<td>15 lpm</td>
<td>83 psi</td>
</tr>
<tr>
<td>3&quot; (80mm)</td>
<td>30 lpm</td>
<td>83 psi</td>
</tr>
<tr>
<td>4&quot; (100mm)</td>
<td>60 lpm</td>
<td>138 psi</td>
</tr>
<tr>
<td>6&quot; (150mm)</td>
<td>90 lpm</td>
<td>138 psi</td>
</tr>
</tbody>
</table>

* = Rated flow  ** = UL Rated flow
Flow Charts
*Typical maximum system flow rate (7.5 feet/sec.)

4" (100mm) 757Na

6" (150mm) 757Na

2½" (65mm) 757DCDA/757NDCDA

8" (200mm) 757DCDA/757NDCDA

3" (80mm) 757DCDA/757NDCDA

10" (250mm) 757DCDA/757NDCDA
Flow Charts

*Typical maximum system flow rate (7.5 feet/sec.)
Flow Charts

*Typical maximum system flow rate (7.5 feet/sec.)*
Flow Charts

*Typical maximum system flow rate (7.5 feet/sec.)
Flow Charts

*Typical maximum system flow rate (7.5 feet/sec.)

![Flow Chart Diagrams](image-url)
Flow Charts

*Typical maximum system flow rate (7.5 feet/sec.)

<table>
<thead>
<tr>
<th>Flow Rate (gpm)</th>
<th>Flow Rate (lpm)</th>
<th>Flow Rate (fps)</th>
<th>Flow Rate (mps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>380</td>
<td>7.5</td>
<td>2.3</td>
</tr>
<tr>
<td>200</td>
<td>760</td>
<td>15</td>
<td>4.6</td>
</tr>
</tbody>
</table>

919QT

1/4" (6mm) 919

3/8" (9.5mm) 919

1/2" (13mm) 919

5/16" (8mm) 919

3/4" (20mm) 919

1" (25mm) 919

1 1/4" (32mm) 919

1 1/2" (40mm) 919

2" (50mm) 919

6" (150mm) 919

* = Rated flow  ** = UL Rated flow

H V Z

N Z H

N Z H

N Z H

N Z H

N Z H


Flow Charts

*Typical maximum system flow rate (7.5 feet/sec.)

<table>
<thead>
<tr>
<th>Diameter</th>
<th>psi</th>
<th>kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot; (200mm)</td>
<td>110</td>
<td>16</td>
</tr>
<tr>
<td>7.5&quot; (150mm)</td>
<td>96</td>
<td>14</td>
</tr>
<tr>
<td>6.5&quot; (165mm)</td>
<td>83</td>
<td>12</td>
</tr>
<tr>
<td>5.5&quot; (140mm)</td>
<td>69</td>
<td>10</td>
</tr>
<tr>
<td>4.5&quot; (115mm)</td>
<td>55</td>
<td>8</td>
</tr>
<tr>
<td>3.5&quot; (90mm)</td>
<td>41</td>
<td>6</td>
</tr>
<tr>
<td>2.5&quot; (60mm)</td>
<td>28</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diameter</th>
<th>gpm</th>
<th>lpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot; (200mm)</td>
<td>0</td>
<td>500</td>
</tr>
<tr>
<td>7.5&quot; (150mm)</td>
<td>1900</td>
<td>3800</td>
</tr>
<tr>
<td>6.5&quot; (165mm)</td>
<td>5700</td>
<td>7600</td>
</tr>
<tr>
<td>5.5&quot; (140mm)</td>
<td>9500</td>
<td>11400</td>
</tr>
<tr>
<td>4.5&quot; (115mm)</td>
<td>13300</td>
<td>15200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diameter</th>
<th>fps</th>
<th>mps</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot; (200mm)</td>
<td>7.5</td>
<td>2.3</td>
</tr>
<tr>
<td>7.5&quot; (150mm)</td>
<td>15</td>
<td>4.6</td>
</tr>
<tr>
<td>6.5&quot; (165mm)</td>
<td>23</td>
<td>6.9</td>
</tr>
<tr>
<td>5.5&quot; (140mm)</td>
<td>30</td>
<td>8.3</td>
</tr>
<tr>
<td>4.5&quot; (115mm)</td>
<td>38</td>
<td>10.0</td>
</tr>
<tr>
<td>3.5&quot; (90mm)</td>
<td>46</td>
<td>12.3</td>
</tr>
<tr>
<td>2.5&quot; (60mm)</td>
<td>55</td>
<td>14.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diameter</th>
<th>psi</th>
<th>kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>10&quot; (250mm)</td>
<td>124</td>
<td>18</td>
</tr>
<tr>
<td>9&quot; (225mm)</td>
<td>110</td>
<td>16</td>
</tr>
<tr>
<td>8&quot; (200mm)</td>
<td>96</td>
<td>14</td>
</tr>
<tr>
<td>7&quot; (175mm)</td>
<td>83</td>
<td>12</td>
</tr>
<tr>
<td>6&quot; (150mm)</td>
<td>69</td>
<td>10</td>
</tr>
<tr>
<td>5&quot; (125mm)</td>
<td>55</td>
<td>8</td>
</tr>
<tr>
<td>4&quot; (100mm)</td>
<td>41</td>
<td>6</td>
</tr>
<tr>
<td>3&quot; (75mm)</td>
<td>28</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diameter</th>
<th>gpm</th>
<th>lpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>10&quot; (250mm)</td>
<td>0</td>
<td>500</td>
</tr>
<tr>
<td>9&quot; (225mm)</td>
<td>1900</td>
<td>3800</td>
</tr>
<tr>
<td>8&quot; (200mm)</td>
<td>3800</td>
<td>7600</td>
</tr>
<tr>
<td>7&quot; (175mm)</td>
<td>5700</td>
<td>11400</td>
</tr>
<tr>
<td>6&quot; (150mm)</td>
<td>7600</td>
<td>15200</td>
</tr>
<tr>
<td>5&quot; (125mm)</td>
<td>9500</td>
<td>22800</td>
</tr>
<tr>
<td>4&quot; (100mm)</td>
<td>11400</td>
<td>34200</td>
</tr>
</tbody>
</table>

**N**

**Z**

**H**
Flow Charts

Typical maximum system flow rate (7.5 feet/sec.)
Flow Charts

*Typical maximum system flow rate (7.5 ft/sec)*

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>SD-2, SD-3</th>
<th>SD-2, SD-3</th>
<th>SD-2, SD-3</th>
<th>SD-2, SD-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; (8mm)</td>
<td>69 psi</td>
<td>55 psi</td>
<td>41 psi</td>
<td>28 psi</td>
</tr>
<tr>
<td>3/8&quot; (10mm)</td>
<td>69 psi</td>
<td>55 psi</td>
<td>41 psi</td>
<td>28 psi</td>
</tr>
<tr>
<td>1&quot; (25mm)</td>
<td>69 psi</td>
<td>55 psi</td>
<td>41 psi</td>
<td>28 psi</td>
</tr>
<tr>
<td>1 1/2&quot; (40mm)</td>
<td>69 psi</td>
<td>55 psi</td>
<td>41 psi</td>
<td>28 psi</td>
</tr>
<tr>
<td>2&quot; (51mm)</td>
<td>69 psi</td>
<td>55 psi</td>
<td>41 psi</td>
<td>28 psi</td>
</tr>
<tr>
<td>3&quot; (76mm)</td>
<td>69 psi</td>
<td>55 psi</td>
<td>41 psi</td>
<td>28 psi</td>
</tr>
<tr>
<td>4&quot; (100mm)</td>
<td>69 psi</td>
<td>55 psi</td>
<td>41 psi</td>
<td>28 psi</td>
</tr>
<tr>
<td>5&quot; (125mm)</td>
<td>69 psi</td>
<td>55 psi</td>
<td>41 psi</td>
<td>28 psi</td>
</tr>
<tr>
<td>6&quot; (150mm)</td>
<td>69 psi</td>
<td>55 psi</td>
<td>41 psi</td>
<td>28 psi</td>
</tr>
<tr>
<td>8&quot; (200mm)</td>
<td>69 psi</td>
<td>55 psi</td>
<td>41 psi</td>
<td>28 psi</td>
</tr>
<tr>
<td>10&quot; (250mm)</td>
<td>69 psi</td>
<td>55 psi</td>
<td>41 psi</td>
<td>28 psi</td>
</tr>
</tbody>
</table>

Flow rate in gpm and lpm for various pressure drops and flow velocities.
For Technical and Ordering Assistance, please call us at 978-688-1811.
To locate your nearest Watts representative, please click on our 
find a sales rep locator on watts.com.