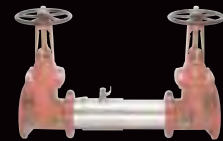




Backflow Prevention Products

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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.

General Information

Backflow is defined as the reverse flow of a liquid into the potable water supply. The installation of a backflow preventer 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

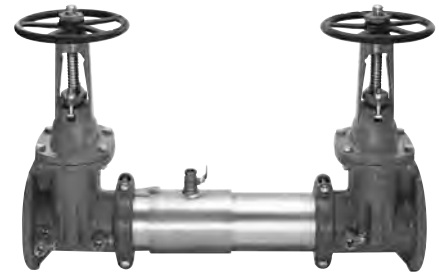
Backpressure: pressure, higher than the supply pressure, caused by a pump, elevated tank, boiler, or any other means that may cause backflow

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 other 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



757 OSY

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Backflow Applications

TYPE & PURPOSE	DESCRIPTION	INSTALLED AT	EXAMPLES OF INSTALLATION
REDUCED PRESSURE ZONE ASSEMBLIES For health hazard cross-connections and continuous pressure applications.	Two independent check valves with intermediate relief valve. Supplied with shutoff valves and ball type test cocks.	All cross-connections subject to backpressure or back siphonage where there is a potential health hazard.	Main supply lines Commercial boilers Hospital equipment Laboratory equipment Waste digesters Car washes
REDUCED PRESSURE DETECTOR ASSEMBLIES Health hazard cross-connections and continuous pressure applications.	RPZ backflow preventers with a water meter and RPZ in the bypass line.	Fire protection system supply main. Detects leaks and unauthorized use of water.	Fire Sprinkler Lines where additives or foaming agents are utilized.
DOUBLE CHECK VALVE ASSEMBLIES For non-health hazard cross-connections and continuous pressure applications.	Two independent check valves. Checks are replaceable for repair & testing.	All cross-connections subject to backpressure or back siphonage where there is a non-health hazard.	Main supply lines Food cookers Tanks and Vats Lawn sprinklers Fire Sprinkler Lines Commercial Pools
DOUBLE CHECK DETECTOR ASSEMBLIES For non-health hazard cross-connections and continuous pressure applications.	Double check valve backflow preventers with water meter and double check in the bypass line.	Fire protection system supply main. Detects leaks and unauthorized use of water.	Fire Sprinkler Lines

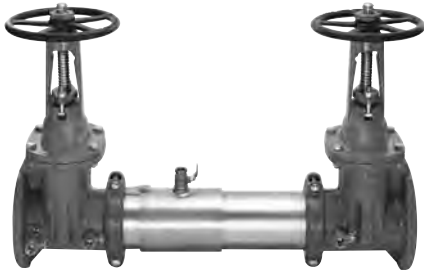
Backflow Applications (cont.)

TYPE & PURPOSE	DESCRIPTION	INSTALLED AT	EXAMPLES OF INSTALLATION
<p>DUAL CHECK VALVE BACKFLOW PREVENTERS</p> <p>For non-health hazard cross-connections and continuous pressure applications.</p>	Two independent check valves. Checks are replaceable for repair and testing.	Cross-connection where there is a non-health hazard.	Residential Supply Lines (at the meter) Residential fire sprinkler systems Post-Mix beverage machines, tea and coffee machines
<p>SPECIALTY BACKFLOW PREVENTERS with INTERMEDIATE ATMOSPHERIC VENT</p> <p>For non-health hazard cross-connections in small pipe sizes. Continuous pressure applications.</p>	Two independent check valves with intermediate vacuum breaker and relief vent.	Cross-connection subject to backpressure or backsiphonage where there is non-health hazard. Continuous pressure.	Boilers (small) Dairy equipment
		Pressure outlet to prevent backflow of carbon dioxide gas and carbonated water into the water supply system to beverage machines	Post-Mix carbonated beverage machine, tea and coffee machines, ice machines
<p>LABORATORY FAUCET DUAL CHECK VALVE with INTERMEDIATE VACUUM BREAKER</p> <p>In small pipe sizes for health hazard cross-connections not subject to continuous pressure</p>	Two independent check valves with intermediate vacuum breaker and relief vent.	Cross-connection subject to backpressure or back siphonage where there is a health hazard.	Laboratory Faucets and Pipe Lines Barber shop and Beauty Parlor sinks
<p>ATMOSPHERIC VACUUM BREAKERS</p> <p>For health hazard cross-connections not subject to continuous pressure – 6" above flood rim.</p>	Single float and disc with atmospheric port	Cross-connection not subject to backpressure or continuous pressure. Install at least 6" above fixture rim. Protection against back siphonage only.	Process Tanks Dishwashers Soap Dispensers Washing Machines Lawn Sprinklers
<p>PRESSURE VACUUM BREAKERS</p> <p>For health hazard cross-connections. Continuous pressure applications – 12" above flood rim.</p>	Spring-loaded float and disc with independent check. Supplied with shutoff valves and ball type test cocks	Valve is designed for installation in a continuous pressure system 12" above the overflow level of the system being supplied. Protection against backsiphonage only.	Laboratory equipment Cooling towers Commercial Laundry Machines Swimming Pools Chemical Planting tanks Lawn Sprinklers
<p>ANTI-SIPHON, SPILL-RESISTANT VACUUM BREAKERS</p> <p>For health hazard cross-connections. Continuous pressure applications. Factory installed 1" above flood rim Field installed 6" above flood rim.</p>	Spill-resistant vacuum breaker with modular check and float assembly of thermoplastic. Housing bronze body.	Indoor point of use cross-connections	Chemical Dispenser Commercial Dishwasher Sterilizers
<p>HOSE CONNECTION VACUUM BREAKERS</p> <p>For residential and industrial hose supply outlets not subject to continuous pressure.</p>	Single check with atmospheric vacuum breaker vent.	Install directly on hose bibbs, service sinks and wall hydrants. Not for continuous pressure.	Hose bibbs Service sinks Hydrants
<p>ENCLOSURES</p> <p>To protect backflow preventers installed outdoors from vandalism and cold temperatures.</p>	Aluminum or fiberglass structures used to protect meters, valves, and backflow preventers from vandalism and freeze damage.	Backflow preventer location.	Irrigation systems and domestic service line connections.

Series 757, 757N

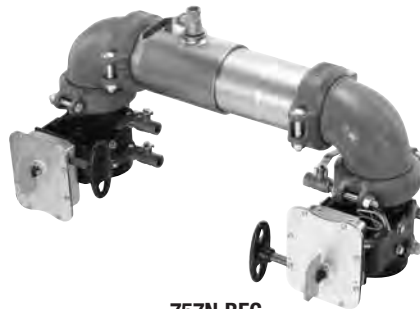
Double Check Valve Assemblies

Sizes: 2½" – 10" (65 – 250mm)



757 OSY

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757N BFG

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757 OSY (Vertical)

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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

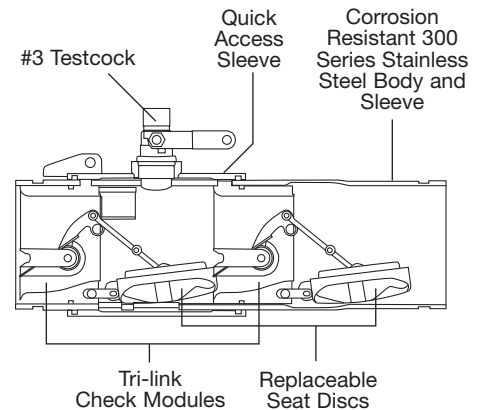
- Housing & Sleeve: 304 (Schedule 40) Stainless Steel
- Elastomers: EPDM, Silicone and Buna-N
- Tri-link Checks: Noryl®, Stainless Steel
- Check Discs: Reversible Silicone or EPDM
- Test Cocks: Bronze Body Nickel Plated
- Pins & Fasteners: 300 Series Stainless Steel
- Springs: Stainless Steel

Pressure – Temperature

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

Models

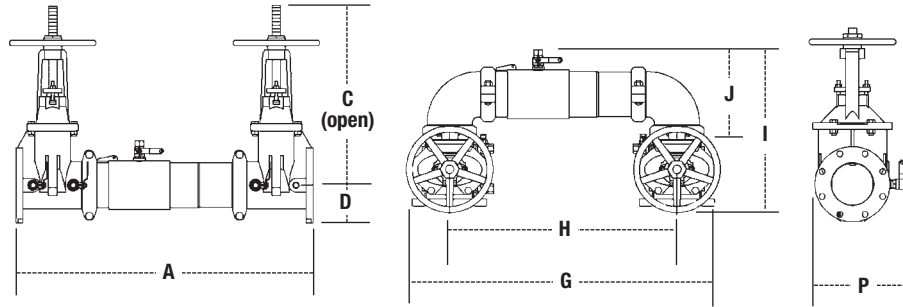
Suffix
NRS - non-rising stem resilient seated gate valves
OSY - UL/FM outside stem and yoke resilient seated gate valves
***OSY FxG** - flanged inlet gate connection and grooved outlet gate connection
***OSY GxF** - grooved inlet gate connection and flanged outlet gate connection
***OSY GxG** - grooved 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
 Available with grooved NRS gate valves - consult factory*
 Post indicator plate and operating nut available - consult factory*
 *Consult factory for dimensions



Approvals

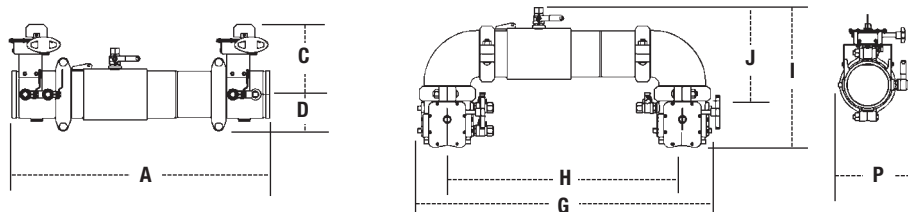


Dimensions – Weights



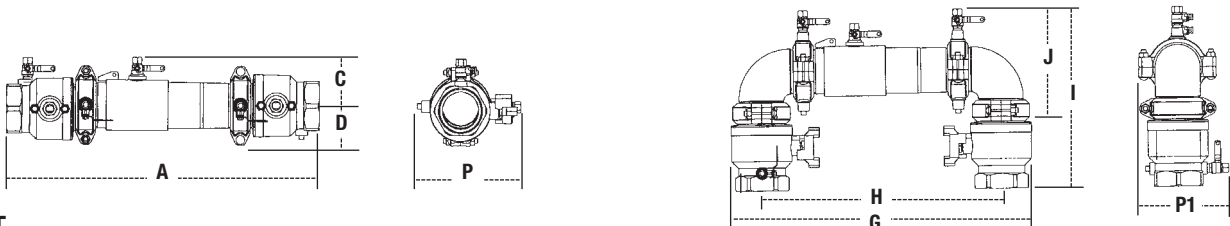
757, 757N

SIZE (DN)	DIMENSIONS (APPROX.)										WEIGHT															
	A		C (OSY)		C (NRS)		D		G		H		I		J		P		757NRS	757OSY	757N NRS	757N OSY				
in. mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.	lbs.	kgs.	lbs.	kgs.
2½ 65	31	787	16¾	416	9¾	238	3½	89	29⅞	738	22	559	15½	393	8⅓	223	9⅜	234	115	52	125	57	123	56	133	60
3 80	31⅛	805	18⅞	479	10¼	260	3⅞	94	30¼	768	22¾	578	17⅞	435	9⅝	233	10½	267	131	59	145	66	144	65	158	72
4 100	33⅛	856	22¾	578	12⅞	310	4	102	33	838	24	610	18½	470	9⅞	252	11⅞	284	161	73	161	73	184	83	184	83
6 150	43½	1105	30⅞	765	16	406	5½	140	44¾	1137	33¾	857	23⅜	589	13⅞	332	15	381	273	124	295	134	314	142	336	152
8 200	50	1270	37¾	959	19⅞	506	6⅞	170	54⅞	1375	40⅞	1032	27⅞	697	15⅞	399	17⅞	437	438	199	480	218	513	233	555	252
10 250	57½	1460	45¾	1162	23⅞	605	8⅞	208	66	1676	50	1270	32½	826	17⅞	440	20	508	721	327	781	354	891	404	951	431



757 BFG, 757N BFG

SIZE (DN)	DIMENSIONS (APPROX.)										WEIGHT									
	A		C		D		G		H		I		J		P		757BFG	757N BFG		
in. mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.
2½ 65	28	711	8	203	3½	89	29⅞	759	22	559	14⅞	379	8⅓	223	9	229	56	25	64	29
3 80	28½	724	8⅝	211	3⅞	94	30⅞	779	22¾	578	15⅞	392	9⅜	233	9½	241	54	24	67	30
4 100	29⅞	741	8⅞	227	3⅞	94	31⅞	811	24	610	16¼	412	9⅞	252	10	254	61	28	84	38
6 150	36½	927	10	254	5	127	43⅞	1097	33¾	857	19⅞	500	13⅞	332	10½	267	117	53	157	71
8 200	43	1092	12¼	311	6½	165	51⅞	1297	40⅞	1032	23⅞	592	15⅞	399	14⅞	361	261	118	337	153



757 QT

SIZE (DN)	DIMENSIONS (APPROX.)										WEIGHT									
	A		C		D		G		H		I		J		P		P1		lbs.	kgs.
in. mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
2½ 65	28⅞	735	4⅞	124	3⅞	97	30¼	768	24½	622	16⅞	421	11⅞	289	10⅞	265	8⅞	211	35	16
3 80	30⅞	767	4⅞	122	3⅞	98	30¼	768	24½	622	17⅞	437	11¼	258	10⅞	265	8⅞	217	45	21

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 757Na

Double Check Valve Assemblies

Sizes: 2½" – 6" (65 – 150mm)

1

Double Check Valve Assemblies



757Na BFG

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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 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

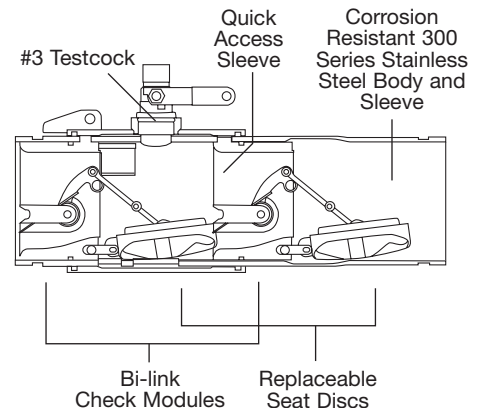
Temperature Range: 33°F – 110°F
(0.5°C – 43°C)
Maximum Working Pressure: 175psi
(12.1 bar)

Models

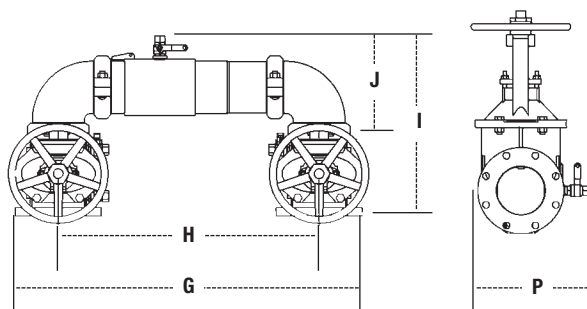
Suffix

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" – 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



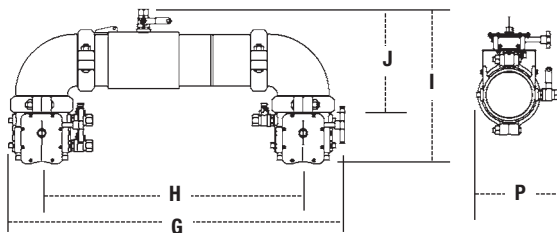
Dimensions – Weights



757Na

SIZE (DN)		DIMENSIONS (APPROX.)										WEIGHT			
		G		H		I		J		P		757Na NRS		757Na OSY	
<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>lbs.</i>	<i>kgs.</i>	<i>lbs.</i>	<i>kgs.</i>
2½	65	29 ¹ / ₁₆	738	22	559	15½	393	8 ¹³ / ₁₆	223	9 ⁹ / ₁₆	234	123	56	133	60
3	80	30 ¹ / ₄	768	22¾	578	17 ⁷ / ₈	435	9 ⁹ / ₁₆	233	10½	267	144	65	158	72
4	100	33	838	24	610	18½	470	9 ¹⁵ / ₁₆	252	11 ³ / ₁₆	284	184	83	184	83
6	150	44 ³ / ₄	1137	33¾	857	23 ³ / ₁₆	589	13 ¹ / ₁₆	332	15	381	314	142	336	152

Note: For 2½" – 6" horizontal/vertical installation, see page 4-5.



757Na BFG

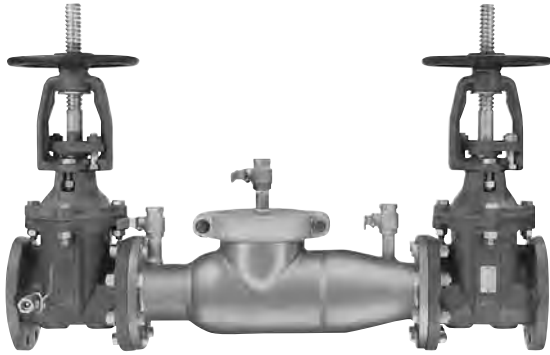
SIZE (DN)		DIMENSIONS (APPROX.)										WEIGHT	
		G		H		I		J		P		757Na BFG	
<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>lbs.</i>	<i>kgs.</i>
2½	65	29 ⁷ / ₈	759	22	559	14 ¹⁵ / ₁₆	379	8 ¹³ / ₁₆	223	9	229	64	29
3	80	30 ¹ / ₁₆	779	22¾	578	15 ⁷ / ₁₆	392	9 ⁹ / ₁₆	233	9½	241	67	30
4	100	31 ¹⁵ / ₁₆	811	24	610	16¼	412	9 ¹⁵ / ₁₆	252	10	254	84	38
6	150	43 ³ / ₁₆	1097	33¾	857	19 ¹ / ₁₆	500	13 ¹ / ₁₆	332	10½	267	157	71

Note: For 2½" – 6" horizontal/vertical installation, see page 4-5.

Series 774

Double Check Valve Assemblies

774: Sizes: 2½" – 12" (100 – 300mm)



774 OSY

Find at Air Delights!

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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

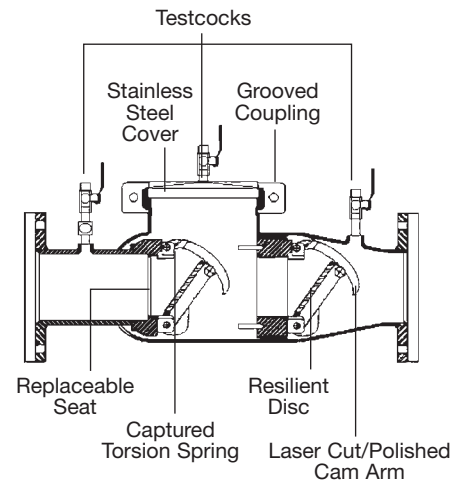
- Patented torsion spring check valve provides low head loss
- Short lay length is ideally suited for retrofit installations
- Stainless Steel body is half the weight of competitive designs reducing installation and shipping cost
- Stainless steel construction provides long term corrosion protection 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

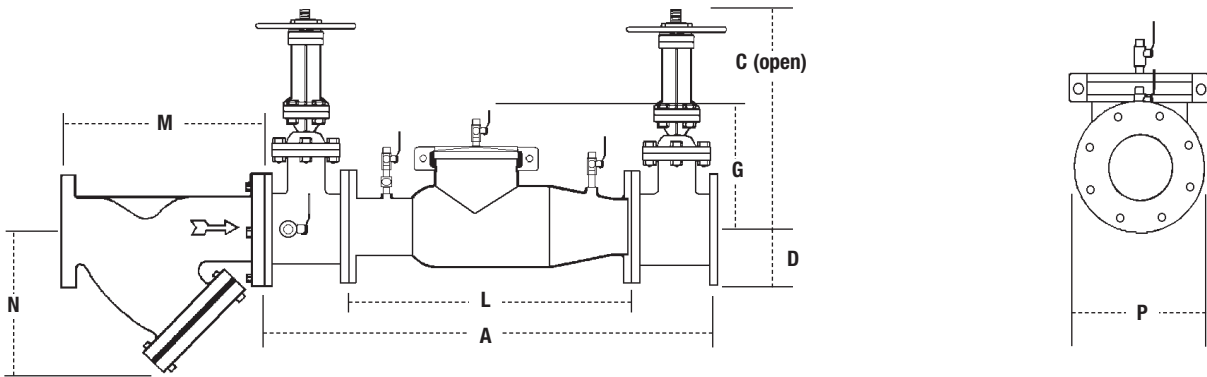
- All internal metal parts: 300 Series stainless steel
- Main valve body: 300 Series stainless steel
- Check assembly: Noryl®

Pressure – Temperature

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



Dimensions – Weights



774

SIZE (DN)		DIMENSIONS (APPROX.)										STRAINER DIMENSIONS				WEIGHT							
		A		C (open)		C (NRS)		D		G		L		P		M		N		w/Gates		w/o Gates	
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg.	lb.	kg.
2½	65	38	965	16¾	416	9¾	238	3½	89	10	254	22	559	12½	318	10	254	6½	165	155	70	68	31
3	80	38	965	18¾	479	10¼	260	3¾	95	10	254	22	559	13	330	10½	257	7	178	230	104	70	32
4	100	40	1016	22¾	578	12¾	310	4½	114	10	254	22	559	14½	368	12½	308	8¼	210	225	102	58	26
6	150	48½	1232	30½	765	16	406	5½	140	15	381	27½	699	15½	394	18½	470	13½	343	375	170	105	48
8	200	52½	1334	37¾	959	19½	506	6¾	171	15	381	29½	749	18¼	464	21½	549	15½	394	561	254	169	77
10	250	55½	1410	45¾	1162	23¾	605	8	200	15	381	29½	749	19½	495	26	660	18½	470	763	346	179	81
12	300	57½	1461	53¾	1349	26¾	679	9½	241	15	381	29½	749	21	533	29¾	759	21¾	552	1033	469	209	95

Models

Suffix

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

***OSY GxG** - grooved inlet gate connection and grooved 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



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

Series 709

Double Check Valve Assemblies

Sizes: 2½" – 10" (65 – 250mm)



709 OSY

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Shop Now!

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

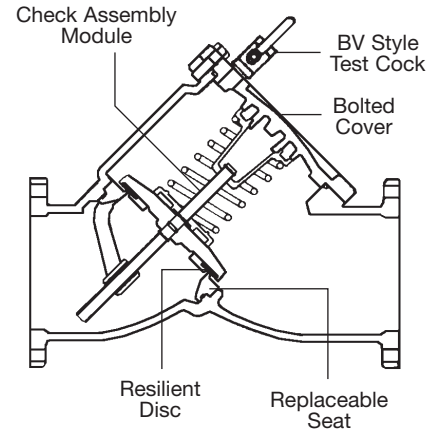
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Design simplicity for easy maintenance
- No Special Tools Required for Servicing
- Captured spring assemblies for safety
- Approved for vertical flow up installation

Materials

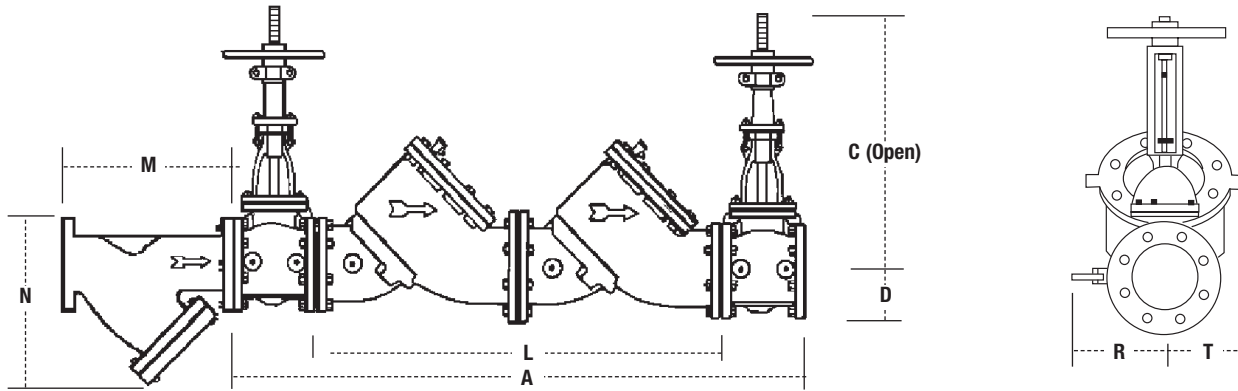
- Check Valve Bodies: Epoxy coated (FDA approved) cast iron
- Seats: Bronze

Pressure – Temperature

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



Dimensions – Weights



709

SIZE (DN)	DIMENSIONS (APPROX.)								STRAINER DIMENSIONS			WEIGHT													
	A		C(OSY)		C(NRS)		D		L		R		T		M		N		*N1		(OSY)		(NRS)		
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.
2½	65	39	991	16¾	416	9¾	238	3½	89	24	610	4	102	3	76	10	254	6½	165	10	254	195	88	167	76
3	80	40	1016	18¾	479	10¼	260	3¾	95	24	610	5	127	3	76	10¼	260	7	178	10	254	201	91	167	76
4	100	52	1321	22¾	578	12¾	310	4½	114	34	864	6	152	6	152	12½	308	8¼	210	12	305	428	194	368	167
6	150	63¼	1607	30½	765	16	406	5½	140	42½	1089	11	279	7½	191	18½	470	13½	343	20	508	860	390	627	284
8	200	75	1905	37¾	959	19½	506	6⅝	168	52	1321	11¼	286	9	229	21⅝	549	15½	394	22¾	578	1448	656	1201	545
10	250	90	2286	45¾	1162	23¾	605	8	203	64	1626	12½	318	10¼	260	26	660	18½	470	28	711	2373	1076	2003	908

*Dimensions needed for screen removal.

Models

Suffix

NRS - non-rising stem resilient seated gate valves

OSY - UL/FM outside stem and yoke resilient seated gate valves

LF - without shutoff valves

S-FDA - FDA epoxy coated strainer

BB - bronze body 2½" – 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.

Sizes 4" – 10" (100 – 250mm) approved horizontal and vertical "flow up"

Size 2½" and 3" (65 and 80mm) approved horizontal only.

Factory Mutual approved 4" – 10" (80 – 250mm) vertical "flow up"

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 007

Double Check Valve Assemblies

Sizes: 1/2" – 3" (15 – 80 mm)

1

Double Check Valve Assemblies



3/4" 007M3QT

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2" 007M1QT HC

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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
- 1/2" – 1" (15 – 25 mm) have tee handles
- 1/2" – 2" (15 – 50mm) cast bronze body construction
- 2 1/2" – 3" (65 – 80mm) fused epoxy coated cast iron body

Materials

- Body: 1/2" – 2" (15 – 50mm) Cast bronze
- 2 1/2" – 3" (65 – 80mm) Fused epoxy coated cast iron body

Pressure – Temperature

Temperature Range:

- 1/2" – 2" (15 – 50mm) 33°F – 180°F (0.5°C – 82°C)
- 2 1/2" – 3" (65 – 80mm) 33°F – 110°F (0.5°C – 43°C) continuous, 140° (60°C) intermittent

Maximum Working Pressure: 175psi (12.1 bar)

Models

1/2" – 2" (15 – 50mm)

Suffix

- QT - quarter turn ball valves
- LF - without shutoff valves
- LH - locking handle ball valves (open position)
- SH - stainless steel ball valve handles
- HC - 2 1/2" inlet/outlet fire hydrant fitting (2" valve)
- S - bronze strainer
- PC - polymer coating

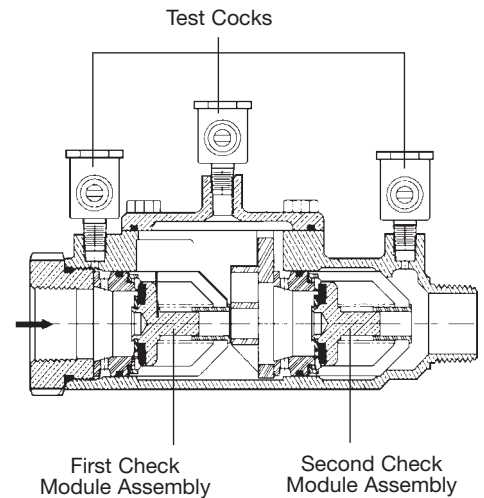
Prefix

- U - union connections

2 1/2" and 3" (65 and 80mm)

Suffix

- NRS - non-rising stem resilient seated gate valves
- OSY - UL/FM outside stem & yoke resilient seated gate valves
- LF - without shutoff valves
- QT-FDA - FDA epoxy coated quarter-turn ball valves

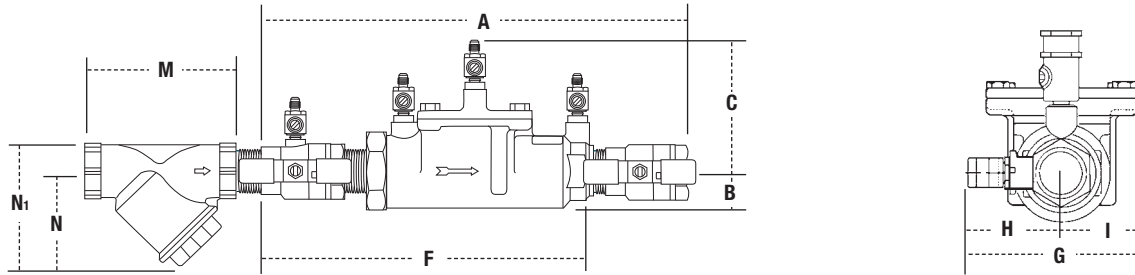


Approvals



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)
 3/4" – 2" (19 – 50mm)
 UL Classified with OSY gate valves (2 1/2" & 3")

Dimensions – Weights

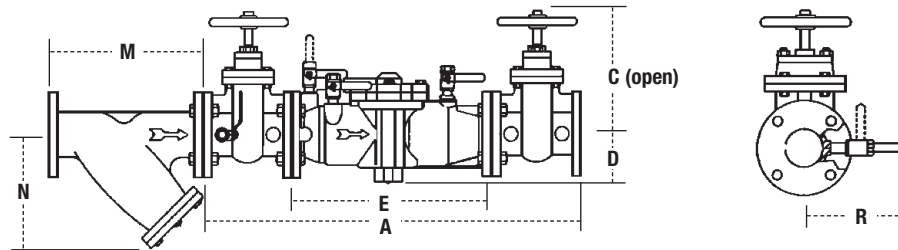


Suffix HC - Fire Hydrant Fittings dimension "A" = 23½" (594mm)

007QT

SIZE (DN)		DIMENSIONS (APPROX.)												STRAINER DIMENSIONS				WEIGHT					
in.	mm	A		B		C		F		G		H		I		M		N		*N ₁		lbs.	kgs.
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
½	15	10	254	4⅝	117	2⅞	62	5	127	3⅝	85	2⅝	59	2¼	52	2¾	70	2¼	57	10	254	4½	2
¾	20	11⅞	282	4	102	3⅞	79	6⅞	157	3⅞	87	2⅞	54	1⅝	33	3⅞	81	2¾	70	10	254	5	2.3
1	25	13¼	337	5⅞	130	4	102	7½	191	3⅝	85	1⅞	43	1⅞	43	3¾	95	3	76	12	305	12	5.4
1¼	32	16⅜	416	5	127	3⅝	84	9½	241	5	127	3	76	2	50	4⅞	113	3½	89	20	508	15	6.8
1½	40	16¾	425	4⅞	124	3½	89	9¾	248	5⅞	148	3⅞	79	2⅞	68	4⅞	124	4	103	22¾	578	15⅞	7.2
2	50	19½	495	6¼	159	4	102	13⅝	340	6⅞	156	3⅞	87	2⅞	68	5⅞	151	5	127	28	711	25¾	11.7

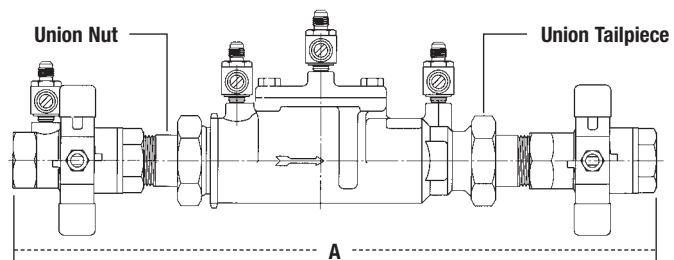
*Dimensions required for screen removal.



MODEL NO.	SIZE (DN)		DIMENSIONS (APPROX.)										STRAINER DIMENSIONS				WEIGHT	
	in.	mm	A		C		D		E		R		M		N		lb.	kgs.
			in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
007-NRS	2½	65	33⅞	841	9⅞	238	4⅝	109	18⅞	460	8¾	222	10	254	6½	165	155	70
007-OSY	2½	65	33⅞	841	16⅞	416	4⅝	109	18⅞	460	8¾	222	10	254	6½	165	158	72
007QT-FDA	2½	65	33⅞	841	6⅜	162	4⅝	109	18⅞	460	8¾	222	10	254	6½	165	155	70
007-OSY	3	80	34⅞	867	18⅞	479	4⅝	109	18⅞	460	8¾	222	10⅞	267	7	178	185	84
007-NRS	3	80	34⅞	867	10¼	260	4⅝	109	18⅞	460	8¾	222	10⅞	267	7	178	185	84
007QT-FDA	3	80	34⅞	867	6⅝	162	4⅝	109	18⅞	460	8¾	222	10⅞	267	7	178	155	70

U007QT

SIZE (DN)		A	
in.	mm	in.	mm
½	15	12⅓	325
¾	20	13⅓	351
1	25	16⅝	422
1¼	32	20¾	527
1½	40	21½	546
2	50	24½	622



IMPORTANT: Inquire with governing authorities for local installation requirements

Series 719

Double Check Valve Assemblies

Sizes: 1/2" – 2" (15 – 50mm)

Double Check Valve Assemblies



719QT

Find at Air Delights! [Shop Now!](#)

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 – 2 1/2" inlet/outlet fire hydrant fittings (2" valve)
- QT – quarter-turn ball valves
- C&T – testcock caps and tethers

Prefix:

- U – union connections
- AQT – 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

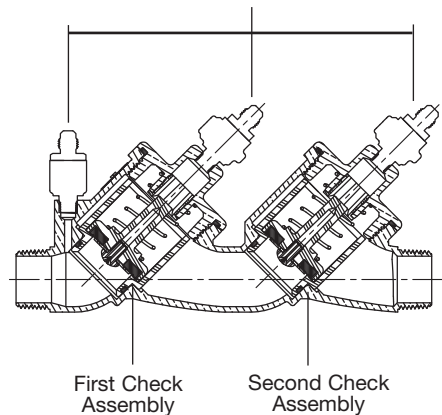
- Body: Bronze
- Elastomers: Chloramine resistant silicone and EPDM
- Check seats: PPO
- Disc Holder: PPO

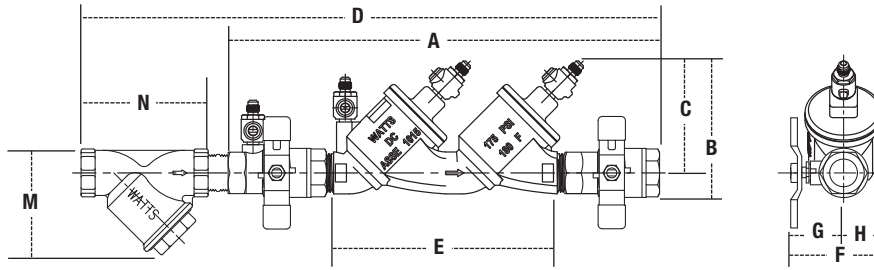
Approvals



AWWA Std C510 compliant

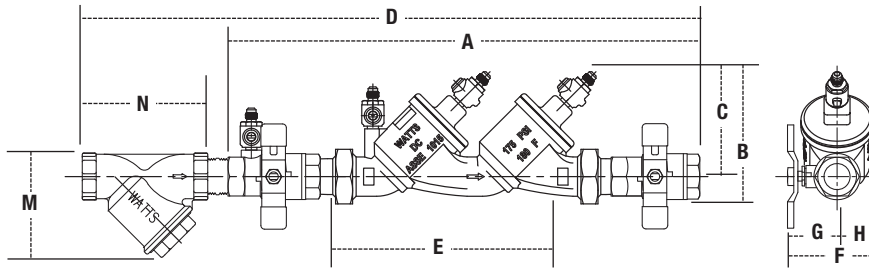
Test Cocks





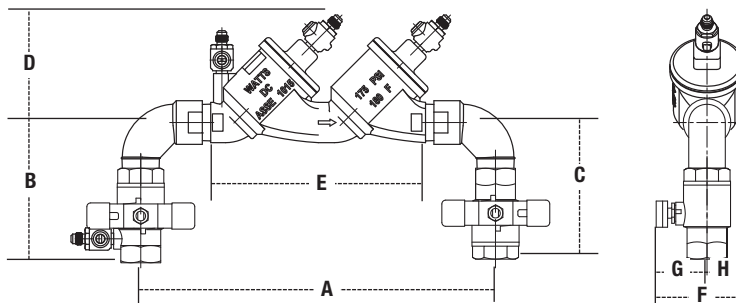
719QT, 719QT-S

SIZE (DN)	DIMENSIONS										STRAINER DIMENSIONS		WEIGHT												
	A		B		C		D		E(LF)		F		G		H		M		N		719QT		719QT-S		
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.
1/2	15	9 ⁹ / ₁₆	242	3 ¹¹ / ₁₆	94	2 ¹⁵ / ₁₆	73	12 ⁹ / ₁₆	318	5 ¹³ / ₁₆	147	2 ⁷ / ₁₆	62	1 ¹¹ / ₁₆	43	3/4	19	1 ³ / ₈	35	2 ³ / ₄	70	2.8	1.3	3.8	1.7
3/4	20	12 ¹ / ₈	307	4 ¹ / ₄	108	3 ¹ / ₂	88	15 ⁷ / ₁₆	393	7 ¹¹ / ₁₆	195	3 ³ / ₈	79	2 ¹ / ₁₆	52	1 ¹ / ₁₆	27	1 ⁵ / ₈	41	3 ³ / ₁₆	81	4.7	2.1	6.4	2.9
1	25	14 ¹³ / ₁₆	376	4 ⁹ / ₁₆	116	3 ⁷ / ₈	98	19 ¹ / ₂	495	9 ⁵ / ₈	244	3 ³ / ₄	95	2 ⁷ / ₁₆	62	1 ⁵ / ₁₆	33	2 ¹ / ₈	54	3 ³ / ₄	95	7.4	3.4	9.4	4.3
1 1/4	32	18 ¹⁵ / ₁₆	480	6 ¹ / ₈	156	5 ¹ / ₈	129	24 ¹ / ₁₆	610	11 ¹¹ / ₁₆	297	4 ¹ / ₄	108	2 ⁵ / ₈	67	1 ⁵ / ₈	41	2 ¹ / ₂	64	4 ⁷ / ₁₆	113	14.0	6.3	18.0	8.1
1 1/2	40	18 ¹⁵ / ₁₆	480	6 ¹ / ₈	156	5 ¹ / ₈	129	25 ¹ / ₄	640	11 ¹¹ / ₁₆	297	4 ³ / ₄	121	3 ¹ / ₈	79	1 ⁵ / ₈	41	3	76	4 ⁷ / ₈	124	16.1	7.3	19.9	9.0
2	50	21 ³ / ₁₆	538	7 ¹ / ₁₆	179	5 ⁵ / ₈	142	28 ¹⁵ / ₁₆	735	13 ³ / ₈	340	5 ⁵ / ₈	137	3 ⁷ / ₁₆	87	1 ¹⁵ / ₁₆	49	3 ³ / ₁₆	90	5 ¹⁵ / ₁₆	151	25.7	11.6	33.4	15.2



U719QT, U719QT-S

SIZE (DN)	DIMENSIONS										STRAINER DIMENSIONS		WEIGHT												
	A		B		C		D		E(LF)		F		G		H		M		N		U719QT		U719QT-S		
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.
1/2	15	15 ¹³ / ₁₆	402	4 ⁹ / ₁₆	116	3 ⁷ / ₈	98	18 ¹³ / ₁₆	478	11 ³ / ₈	289	3	76	1 ¹¹ / ₁₆	43	1 ⁵ / ₁₆	33	1 ³ / ₈	35	2 ³ / ₄	70	7.4	3.4	8.4	3.8
3/4	20	16 ¹ / ₄	412	4 ⁹ / ₁₆	116	3 ⁷ / ₈	98	19 ⁵ / ₈	498	11 ⁵ / ₁₆	287	3 ³ / ₈	86	2 ¹ / ₁₆	52	1 ⁵ / ₁₆	33	1 ⁵ / ₈	41	3 ³ / ₁₆	81	7.9	3.6	9.7	4.4
1	25	17 ⁵ / ₁₆	439	4 ⁹ / ₁₆	116	3 ⁷ / ₈	98	22	558	11 ³ / ₄	297	3 ³ / ₄	95	2 ⁷ / ₁₆	62	1 ⁵ / ₁₆	33	2 ¹ / ₈	54	3 ³ / ₄	95	8.9	4.0	10.9	5.0
1 1/4	32	20 ⁷ / ₈	530	6 ¹ / ₈	156	5 ¹ / ₈	129	26	660	15 ³ / ₈	390	4 ¹ / ₄	108	2 ⁵ / ₈	67	1 ⁵ / ₈	41	2 ¹ / ₂	64	4 ⁷ / ₁₆	113	17.6	8.0	21.6	9.8
1 1/2	40	21 ⁹ / ₁₆	547	6 ¹ / ₈	156	5 ¹ / ₈	129	27 ⁷ / ₈	708	15 ³ / ₈	390	4 ³ / ₄	121	3 ¹ / ₈	79	1 ⁵ / ₈	41	3	76	4 ⁷ / ₈	124	19.8	9.0	23.5	10.7
2	50	24 ³ / ₁₆	621	7 ¹ / ₁₆	179	5 ⁵ / ₈	142	32 ³ / ₁₆	817	16 ³ / ₄	425	5 ⁵ / ₈	137	3 ⁷ / ₁₆	87	1 ¹⁵ / ₁₆	49	3 ³ / ₁₆	90	5 ¹⁵ / ₁₆	151	30.0	13.6	37.7	17.1



719AQT

SIZE (DN)	DIMENSIONS										WEIGHT								
	A		B		C		D		E (LF)		F		G		H		WEIGHT		
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
1/2	15	7 ⁷ / ₈	200	3 ⁵ / ₁₆	84	2 ¹⁵ / ₁₆	73	2 ¹⁵ / ₁₆	73	5 ¹³ / ₁₆	147	2 ⁷ / ₁₆	62	1 ¹¹ / ₁₆	43	3/4	19	3.4	1.5
3/4	20	13 ¹³ / ₁₆	340	4 ¹³ / ₁₆	121	4 ¹ / ₁₆	116	3 ¹ / ₂	98	7 ¹¹ / ₁₆	195	3 ³ / ₈	79	2 ¹ / ₁₆	52	1 ¹ / ₁₆	27	5.7	2.6
1	25	12 ¹¹ / ₁₆	322	5	127	4 ³ / ₈	110	3 ⁷ / ₈	98	9 ⁵ / ₈	244	3 ³ / ₄	95	2 ⁷ / ₁₆	62	1 ⁵ / ₁₆	33	8.9	4.0
1 1/4	32	15 ³ / ₁₆	386	5 ¹¹ / ₁₆	144	5 ¹ / ₁₆	144	5 ¹ / ₈	129	11 ¹¹ / ₁₆	297	4 ¹ / ₄	108	2 ⁵ / ₈	67	1 ⁵ / ₈	41	15.7	7.1
1 1/2	40	15 ¹³ / ₁₆	401	6 ³ / ₁₆	156	6 ³ / ₁₆	156	5 ¹ / ₈	129	11 ¹¹ / ₁₆	297	4 ³ / ₄	121	3 ¹ / ₈	79	1 ⁵ / ₈	41	18.4	8.3
2	50	17 ³ / ₈	441	6 ⁵ / ₈	168	6 ¹ / ₁₆	167	5 ⁵ / ₈	142	13 ³ / ₈	340	5 ⁵ / ₈	137	3 ⁷ / ₁₆	87	1 ¹⁵ / ₁₆	49	29.0	13.1

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 757DCDA, 757NDCDA

Double Check Detector Assemblies

Sizes: 2½" – 10" (65 – 250mm)

2

Double Check Detector Assemblies



757DCDA OSY

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757DCDA BFG

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757NDCDA OSY

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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

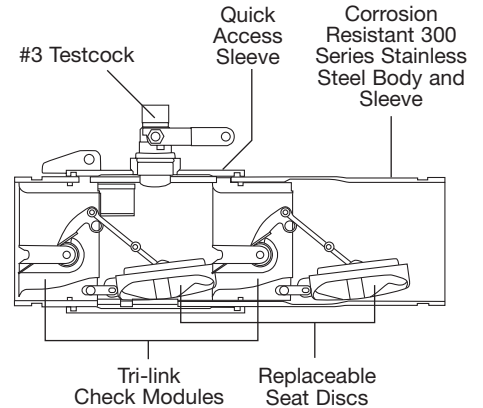
- Extremely compact design
- 70% lighter than traditional designs
- Groove fittings allow integral pipeline adjustment
- Patented tri-link checks provide lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shutoffs
- May be used for horizontal, vertical or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

Materials

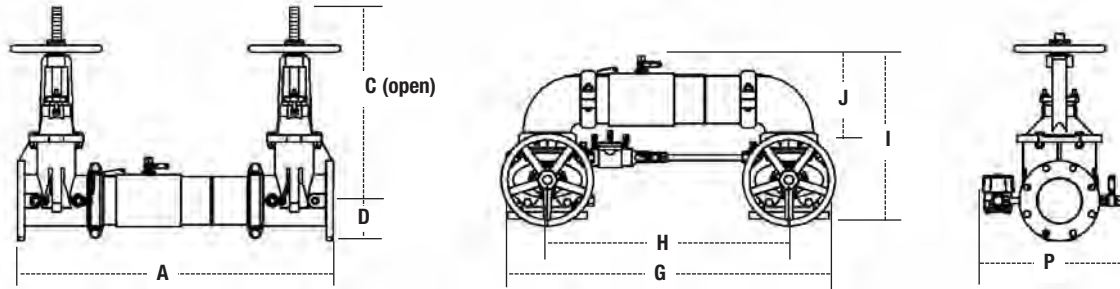
- Housing & Sleeve: 304 (Schedule 40) Stainless Steel
- Elastomers: EPDM, Silicone and Buna-N
- Tri-link Checks: Noryl®, Stainless Steel
- Check Discs: Reversible Silicone or EPDM
- Test Cocks: Bronze Body Nickel Plated
- Pins & Fasteners: 300 Series Stainless Steel
- Springs: Stainless Steel

Pressure-Temperature

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

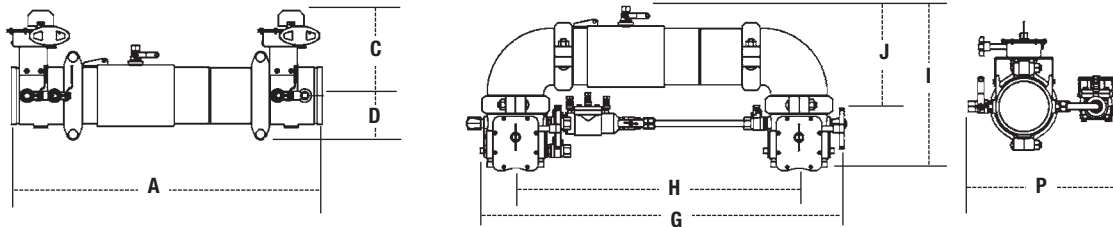


Dimensions – Weights



757DCDA, 757NDCDA

SIZE (DN)		DIMENSIONS (APPROX.)														WEIGHT					
in.	mm	A		C (OSY)		D		G		H		I		J		P		757DCDA		757NDCDA	
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.
2½	65	31	787	16¾	416	3½	89	29⅞	738	22	559	15½	393	8⅜	223	13⅜	335	139	63	147	67
3	80	31⅞	805	18⅞	479	3⅞	94	30¼	768	22¾	578	17⅞	435	9⅜	233	14½	368	159	72	172	78
4	100	33⅞	856	22¾	578	4	102	33	838	24	610	18½	470	9⅞	252	15⅞	386	175	79	198	90
6	150	43½	1105	30⅞	765	5½	140	44¾	1137	33¾	857	23⅞	589	13⅞	332	19	483	309	140	350	159
8	200	50	1270	37¾	959	6⅞	170	54⅞	1375	40⅞	1032	27⅞	697	15⅞	399	21⅞	538	494	224	569	258
10	250	57½	1460	45¾	1162	8⅞	208	66	1676	50	1270	32½	826	17⅞	440	24	610	795	361	965	438



757DCDA BFG, 757NDCDA BFG

SIZE (DN)		DIMENSIONS (APPROX.)														WEIGHT					
in.	mm	A		C		D		G		H		I		J		P		757DCDABFG		757NDCDA BFG	
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.
2½	65	28	711	8	203	3½	89	29⅞	759	22	559	14⅞	379	8⅜	223	13	330	70	32	78	35
3	80	28½	724	8⅞	211	3⅞	94	30⅞	779	22¾	578	15⅞	392	9⅞	233	13½	343	68	31	81	37
4	100	29⅞	741	8⅞	227	3⅞	94	31⅞	811	24	610	16¼	412	9⅞	252	14	356	75	34	98	44
6	150	36½	927	10	254	5	127	43⅞	1097	33¾	857	19⅞	500	13⅞	332	14½	368	131	59	171	78
8	200	43	1092	12¼	311	6½	165	51⅞	1297	40⅞	1032	23⅞	592	15⅞	399	18⅞	462	275	125	351	159

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

BFG - UL/FM grooved gear operated butterfly valves with tamper switch for sizes 2½" – 8" (65 – 200mm)

Available with grooved NRS gate valves - consult factory*

Post indicator plate and operating nut available - consult factory*

*Consult factory for dimensions

Approvals



IMPORTANT: Inquire with governing authorities for local installation requirements

Series 757NaDCDA

Double Check Detector Assemblies

Sizes: 2½" – 6" (65 – 150mm)

2

Double Check Detector Assemblies



757NaDCDA OSY

Find at Air Delights!

Shop Now!

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

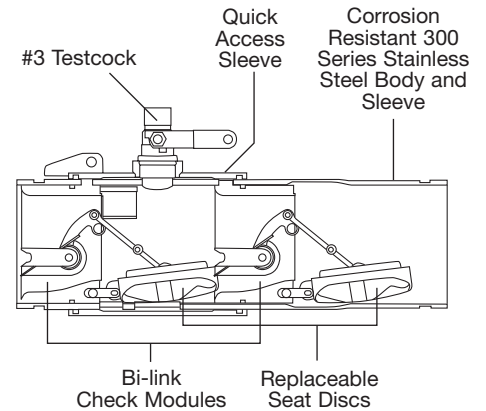
- Extremely compact design
- 70% lighter than traditional designs
- Groove fittings allow integral pipeline adjustment
- Patented bi-link checks provide lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shutoffs
- Used for N pattern installations
- Replaceable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

Materials

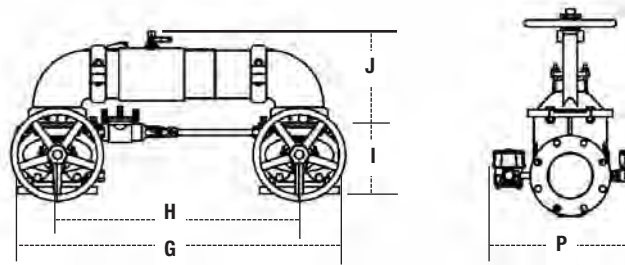
- Housing & Sleeve: 304 (Schedule 40) Stainless Steel
- Elastomers: EPDM and Buna-N
- Bi-link Checks: Noryl®, Stainless Steel
- Check Discs: Reversible EPDM
- Test Cocks: Bronze Body Nickel Plated
- Pins & Fasteners: 300 Series Stainless Steel
- Springs: Stainless Steel

Pressure-Temperature

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



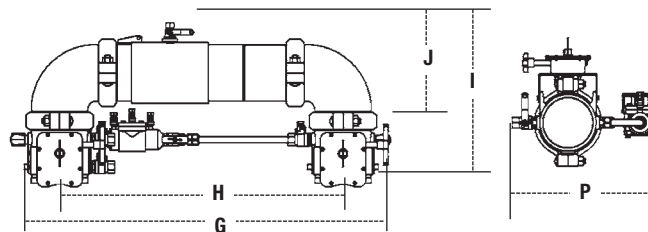
Dimensions – Weights



757NaDCDA

SIZE (DN)		DIMENSIONS (APPROX.)										WEIGHT	
<i>in.</i>	<i>mm</i>	G		H		I		J		P		757NaDCDA	
		<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>lbs.</i>	<i>kgs.</i>
2½	65	29¼	738	22	559	15½	393	8⅜	223	13⅜	335	147	67
3	80	30¼	768	22¾	578	17⅞	435	9⅜	233	14½	368	172	78
4	100	33	838	24	610	18½	470	9⅝	252	15⅜	386	198	90
6	150	44¾	1137	33¾	857	23⅜	589	13⅜	332	19	483	350	159

Note: For 2½" – 6" horizontal/vertical installation, see page 16–17.



757NaDCDA BFG

SIZE (DN)		DIMENSIONS (APPROX.)										WEIGHT	
<i>in.</i>	<i>mm</i>	G		H		I		J		P		757aNDCCDA BFG	
		<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>lbs.</i>	<i>kgs.</i>
2½	65	29⅞	759	22	559	14⅝	379	8⅜	223	13	330	78	35
3	80	30⅞	779	22¾	578	15⅞	392	9⅜	233	13½	343	81	37
4	100	31⅝	811	24	610	16¼	412	9⅝	252	14	356	98	44
6	150	43⅞	1097	33¾	857	19⅞	500	13⅜	332	14½	368	171	78

Note: For 2½" – 6" horizontal/vertical installation, see page 16–17.

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

BFG - 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

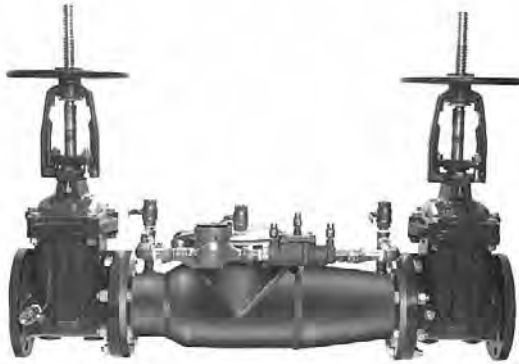


IMPORTANT: Inquire with governing authorities for local installation requirements

Series 774DCDA

Double Check Detector Assemblies

774DCDA: Sizes 2½" – 12" (65 – 300mm)



774DCDA OSY

Find at Air Delights!

Shop Now!

Series 774DCDA Double Check Detector Assemblies are designed for use in accordance with water utility 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 supply. These models can be applied, where approved by the local authority having jurisdiction, on non-health hazard installations.

2

Double Check Detector Assemblies

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 cfm)
- Detects underground leaks and unauthorized water use
- May be installed in horizontal or vertical flow up position

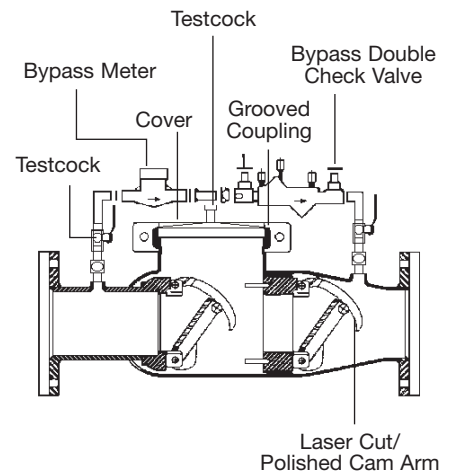
Materials

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

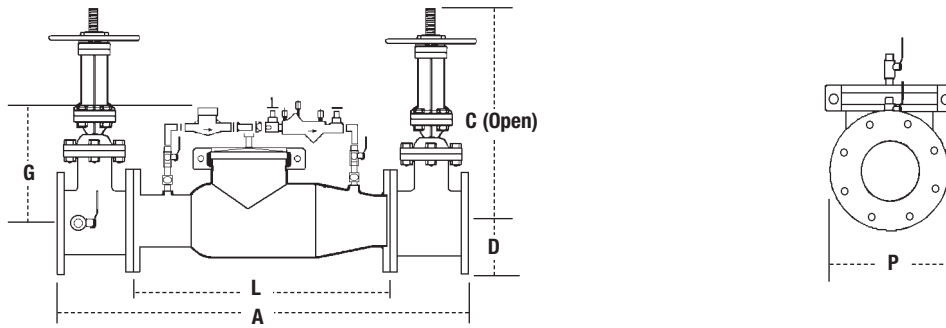
Pressure – Temperature

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

774DCDA



Dimensions – Weights



774DCDA

SIZE (DN)		DIMENSIONS (APPROX.)										WEIGHT					
in.	mm	A		C (open)		D		G		L		P		774DCDA w/Gates		774DCDA w/o Gates	
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg.	lb.	kgs.
2½	65	38	965	16¾	416	3½	89	10	254	22	559	12½	318	155	70	68	31
3	80	38	965	18⅞	479	3¾	95	10	254	22	559	13	330	230	104	70	32
4	100	40	1016	22¾	578	4½	114	10	254	22	559	14½	368	240	109	73	33
6	150	48½	1232	30⅞	765	5½	140	15	381	27½	699	15½	394	390	177	120	54
8	200	52½	1334	37¾	959	6¾	171	15	381	29½	749	18¼	464	572	259	180	82
10	250	55½	1410	45¾	1162	8	200	15	381	29½	749	19½	495	774	351	190	86
12	300	57½	1461	53⅞	1349	9½	241	15	381	29½	749	21	533	1044	474	220	100

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 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
Available with grooved NRS gate valves - consult factory*

Post indicator plate and operating nut available - consult factory*

*Consult factory for dimensions

Approvals

2½" – 10" only (65 - 25mm)



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

IMPORTANT: Inquire with governing authorities for local installation requirements

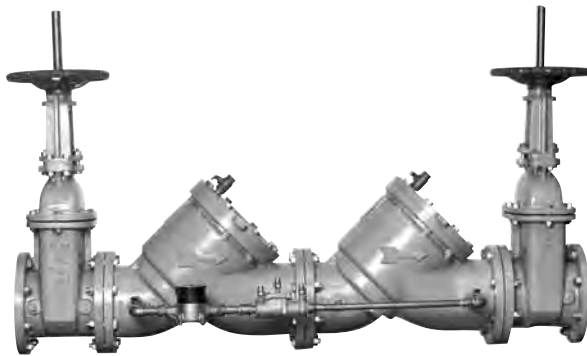
Series 709DCDA

Double Check Detector Assemblies

Sizes: 3" – 10" (80 – 250mm)

2

Double Check Detector Assemblies



709DCDA OSY

Find at Air Delights!

Shop Now!

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 waste.
- 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, $\frac{5}{8}$ " x $\frac{3}{4}$ " (16 x 19mm) meter and ball type test cocks.

Features

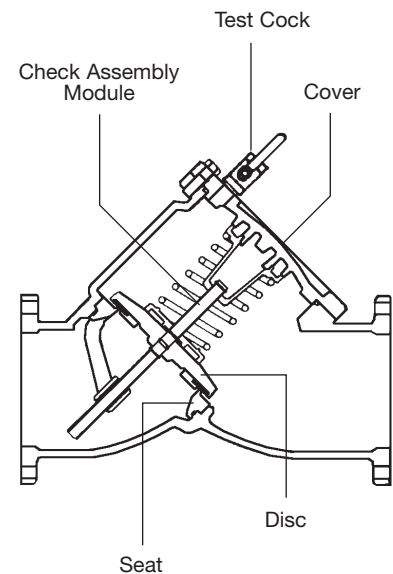
- Body construction fused epoxy coated cast iron
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Compact for economy combined with performance
- Design simplicity for easy maintenance
- Furnished with $\frac{5}{8}$ " x $\frac{3}{4}$ " (16 x 19mm) meter Model 25, bronze
- No special tools required for servicing

Materials

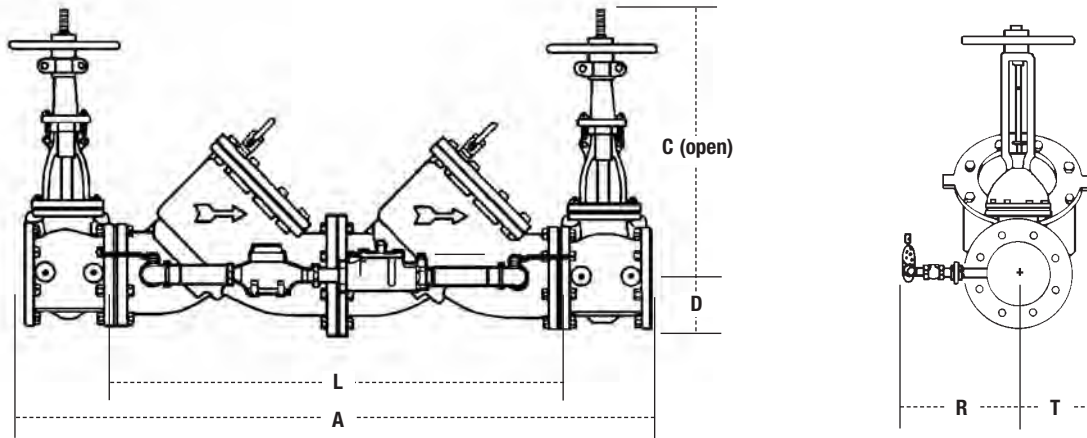
- Body: Epoxy coated cast iron
- Seat and Disc Holder: Replaceable bronze
- Trim: Stainless steel
- Check Valve Discs: Durable, tight-seating rubber
- Test Cocks: Bronze

Pressure – Temperature

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



Dimensions – Weights



709DCDA

SIZE (DN)		DIMENSIONS (APPROX.)										WEIGHT			
		A		C		D		L		R		T		lbs.	kgs.
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
3	80	40	1016	18 ⁷ / ₈	479	3 ³ / ₄	95	24	610	14	356	3	76	190	86
4	100	52	1321	22 ³ / ₄	578	4 ¹ / ₂	114	34	864	15	381	6	152	403	183
6	150	63 ¹ / ₄	1607	30 ¹ / ₈	765	5 ¹ / ₂	140	42 ¹ / ₄	1073	16	406	7 ¹ / ₂	191	727	330
8	200	75	1905	37 ³ / ₄	959	6 ⁵ / ₈	168	52	1321	17	432	9	229	1327	602
10	250	90	2286	45 ³ / ₄	1162	8	203	64	1626	18	457	10 ¹ / ₄	260	2093	949

Models

Suffix

OSY - UL/FM outside stem & yoke resilient seated gate valves

CFM - cubic feet per minute

GPM - gallons per minute meter

LF - without shutoff valves (4" – 10") (100 – 250mm)

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"

Series 007DCDA

Double Check Detector Assemblies

Sizes: 2" – 3" (50 – 80mm)



007DCDA OSY

Find at Air Delights!

Shop Now!

2

Double Check Detector Assemblies

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 5/8" x 3/4" (16 x 19mm) meter.

Features

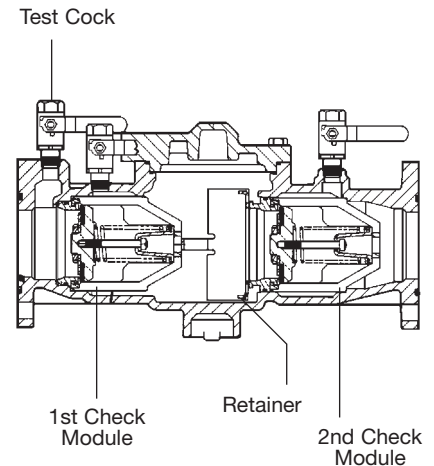
- Fused epoxy coated cast iron unibody 2 1/2" & 3" (65 - 80mm)
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Compact for ease of installation
- Design simplicity for easy maintenance
- No special tools required for servicing
- Bronze body ball valve test cocks
- Modular spring loaded checks
- Furnished with bronze 5/8" x 3/4" (16 x 19mm) meter

Materials

- Body: 2" Bronze, 2 1/2" – 3" (65 - 80mm) FDA approved, epoxy coated cast-iron unibody
- Seats: Bronze
- Discs: Durable, tight-seating silicone
- Springs: Stainless steel
- Meter: 5/8" x 3/4" (16 – 19mm) bronze

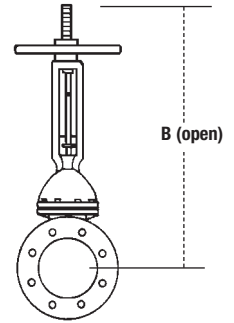
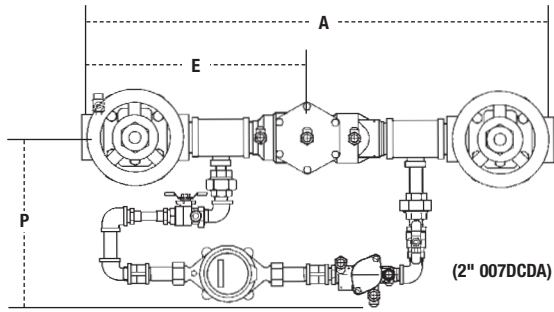
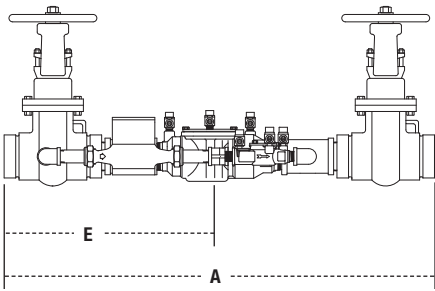
Pressure – Temperature

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

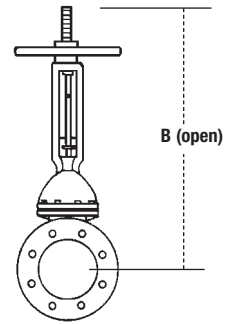
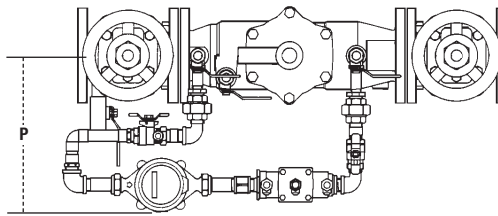
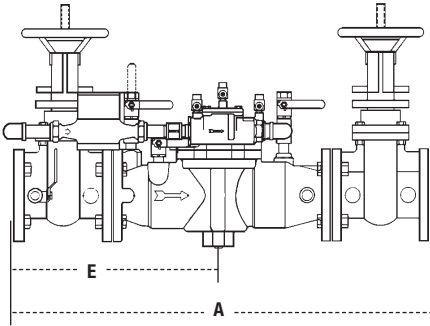


Dimensions – Weights

2" (50mm)



2½" – 3" (65 - 80mm)



007DCDA

SIZE (DN)		DIMENSIONS (APPROX.)								WEIGHT	
in.	mm	A		B		E		P		lbs.	kgs.
2	50	35½	892	13½	343	16¾	426	12¼	311	97	44
2½	65	33¼	845	16⅝	416	16⅝	416	12⅝	313	164	74
3	80	34¼	870	18⅝	479	16⅝	422	12⅝	313	196	89

Models

Suffix

OSY - UL/FM outside stem & yoke resilient seated gate valves

CFM - 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" & 2½" (50 & 65mm) 007DCDA horizontal or vertical flow up position

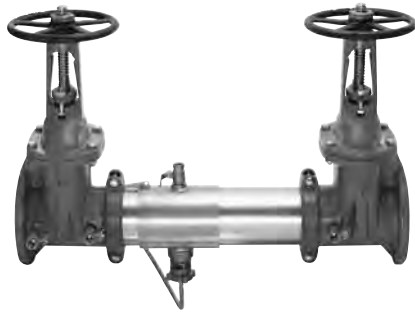
3" (80mm) horizontal only

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 957, 957N, 957Z

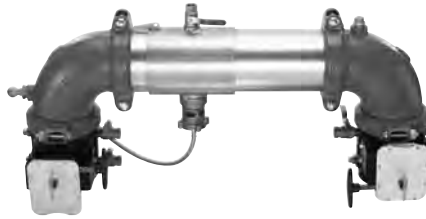
Reduced Pressure Zone Assemblies

Sizes: 2½" – 10" (65 – 250mm)



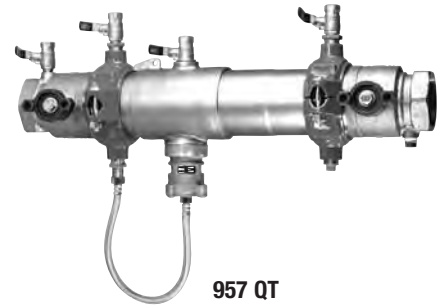
957 OSY

Find at Air Delights! [Shop Now!](#)



957N BFG

Find at Air Delights! [Shop Now!](#)



957 QT

Find at Air Delights! [Shop Now!](#)

Series 957, 957N, 957Z Reduced Pressure Zone Assemblies provide protection to the potable water system from contamination in accordance with national plumbing codes. Series 957, 957N, 957Z are normally used in health hazard applications for protection against backsiphonage or backpressure.

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 shutoffs
- Replaceable check disc rubber
- Bottom mounted cast stainless steel relief valve
- 2½" – 3" sizes available with quarter-turn ball valve shutoffs

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

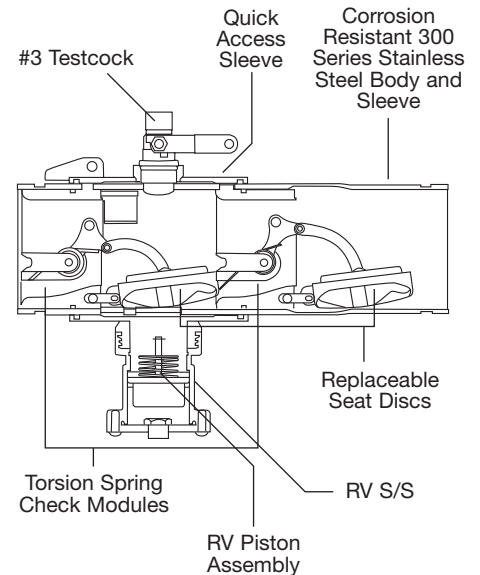
Temperature Range: 33°F to 110°F (0.5°C to 43°C)
Maximum Working Pressure: 175psi (12.1 bar)

Models

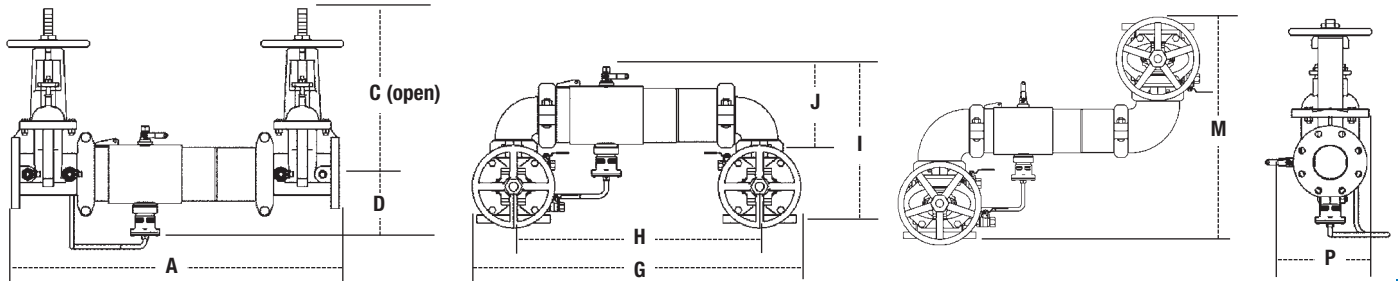
Suffix:

- NRS** - non-rising stem resilient seated gate valves
 - OSY** - UL/FM outside stem and yoke resilient seated gate 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** - UL/FM grooved gear operated butterfly valves with tamper switch. Sizes 2½" – 6" (65 – 150mm) N and Z patterns only
 - QT** - 2½" – 3" (65 – 80mm) quarter-turn ball valves
- Available with grooved NRS gate valves - consult factory*
Post indicator plate and operating nut available - consult factory*
*Consult factory for dimensions

Approvals

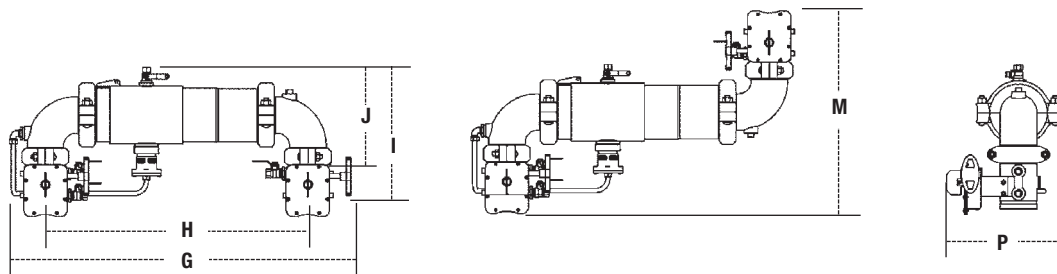


Dimensions – Weights



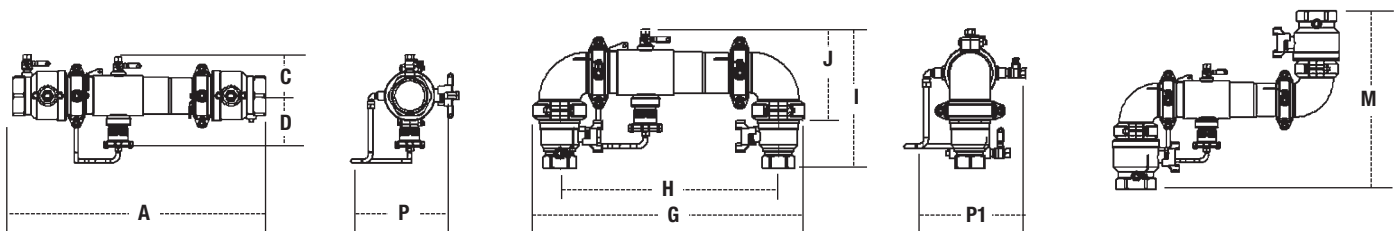
957

SIZE (DN)	DIMENSIONS (APPROX.)										WEIGHT																	
	A		C (OSY)		C (NRS)		D		G		H		I		J		M		P		957NRS	957OSY	957N NRS	957N OSY				
in. mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.	lbs.	kgs.		
2½ 65	31	787	16¾	416	9¾	238	6½	165	29¼	738	22	559	15½	393	8¼	223	21¾	548	9¾	234	118	54	128	58	126	57	136	62
3 80	31⅛	805	18⅞	479	10¼	260	6⅞	170	30¼	768	22¾	578	17⅞	435	9⅞	233	23⅞	587	10½	267	134	61	148	67	147	67	161	73
4 100	33⅛	856	22¾	578	12⅞	310	7	178	33	838	24	610	18½	470	9⅞	252	26⅞	673	11⅞	284	164	74	164	74	187	85	187	85
6 150	43½	1105	30⅞	765	16	406	8½	216	44¾	1137	33¾	857	23⅞	589	13⅞	332	32¾	832	15	381	276	125	298	135	317	144	339	154
8 200	50	1270	37¾	959	19⅞	506	9⅞	246	54⅞	1375	40⅞	1032	27⅞	697	15⅞	399	37⅞	943	17⅞	437	441	200	483	219	516	234	558	253
10 250	57½	1460	45¾	1162	23⅞	605	11⅞	285	66	1676	50	1270	32½	826	17⅞	440	46⅞	1178	20	508	723	328	783	355	893	405	950	431



957N BFG, 957Z BFG

SIZE (DN)	DIMENSIONS (APPROX.)								WEIGHT							
	G		H		I		J		M		P		957N, 957Z			
in. mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
2½ 65	32½	826	23½	597	15½	394	9½	241	21¾	555	11⅞	300	67	30		
3 80	34	864	24½	622	16⅞	414	10⅞	256	23⅞	587	12⅞	308	70	32		
4 100	35⅞	905	26	660	17⅞	437	10⅞	279	24⅞	634	12⅞	321	87	39		
6 150	46½	1181	35⅞	908	20½	521	13½	343	28¼	718	15	382	160	73		



957 QT

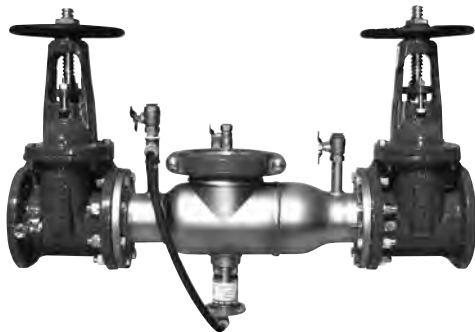
SIZE (DN)	DIMENSIONS (APPROX.)										WEIGHT											
	A		C		D		G		H		I		J		M		P		P1		lbs.	kgs.
in. mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
2½ 65	28⅞	735	4⅞	124	6⅞	174	30¼	768	24½	622	16⅞	421	11⅞	289	20⅞	532	11⅞	287	11⅞	287	46	21
3 80	30⅞	767	4⅞	122	6⅞	174	30¼	768	24½	622	17⅞	437	11¼	258	22⅞	564	11⅞	287	11⅞	287	56	25

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 994

Reduced Pressure Zone Assemblies

Sizes 2½" – 10" (65 – 250mm)



994 OSY Find at Air Delights! Shop Now!

Series 994 Reduced Pressure Zone Assemblies are designed to provide protection of the potable water supply in accordance with national codes. This Series can be used, where approved by the local authority having jurisdiction on health hazard cross-connections. Series 994 features short lay length, light-weight stainless steel body, corrosive resistant stainless steel relief valve, and patented torsion spring check valves.

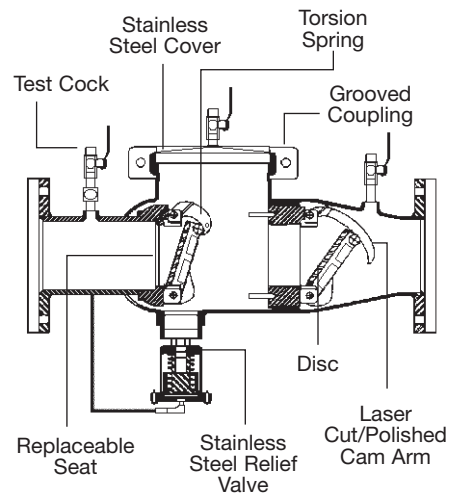
Features

- Stainless Steel construction provides long term corrosion resistance and maximum strength
- Stainless Steel body is half the weight of competitive designs reducing installation & 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 at low pressure drop

- Thermoplastic & 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

Materials

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



Pressure – Temperature

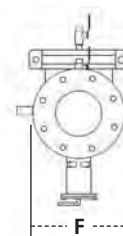
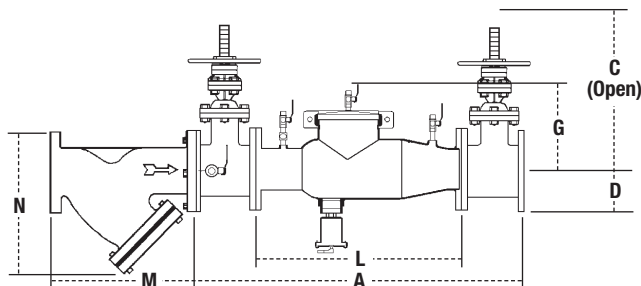
Temperature Range: 33°F – 110°F (0.5°C – 43°C), continuous
Maximum Working Pressure: 175psi (12.1 bar)

Models

Suffix

- 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 GxF** - grooved inlet gate connection and flanged outlet gate connection
 - *OSY GxG** - grooved inlet gate connection and grooved outlet gate connection
- Available with grooved NRS gate valves - consult factory*
*Consult factory for dimensions

Dimensions – Weights



Approvals



AWWA

Approved by the Foundation for cross-connection Control & Hydraulic Research at the University of Southern California 2½" – 6" (65 – 150mm) sizes
Flange dimension in accordance with AWWA Class D

SIZE (DN)	DIMENSIONS (APPROX.)												STRAINER DIMENSIONS		WEIGHT						
	A		C (open)		D		F		G		L		M	N	w/Gates		w/o Gates				
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg.	lb.	kgs.		
2½	65	37	940	16¾	419	10½	267	7	178	10	254	22	559	10	254	6½	165	148	67	60	27
3	80	38	965	18⅞	479	10½	267	7½	191	10	254	22	559	10⅞	257	7	178	226	103	62	28
4	100	40	1016	22¾	578	10½	267	9	229	10	254	22	559	12⅞	308	8¼	210	235	107	65	30
6	150	48½	1232	30⅞	765	11½	292	11	279	15	381	27½	699	18½	470	13½	343	380	172	110	50
8	200	52½	1334	37¾	959	12½	318	13½	343	15	381	29½	749	21⅞	549	15½	394	571	259	179	81
10	250	55½	1410	45¾	1162	12½	318	16	406	15	381	29½	749	26	660	18½	470	773	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.

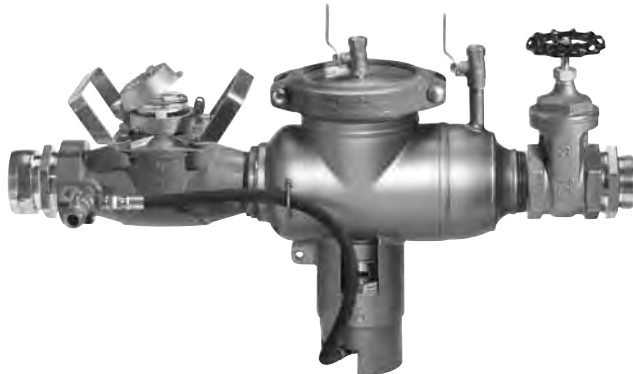
IMPORTANT: Inquire with governing authorities for local installation requirements

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)



994HMB

Find at Air Delights!

Shop Now!



994BLT

Find at Air Delights!

Shop Now!

Series 994 Hydrant Backflow Preventers are designed to provide protection to the potable water supply from fire hydrant or other non-permanent connections in accordance with national codes. This Series can be used, where approved by the local authority having jurisdiction on health hazard cross-connections. Series 994 features short lay length, lightweight stainless steel body, corrosive resistant stainless steel relief valve, and patented torsion spring check valves.

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)

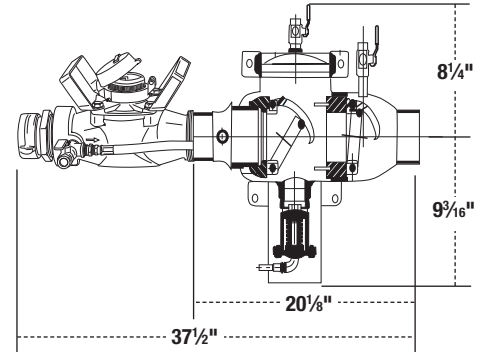
Inlet Modules

- 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



MODEL	WEIGHT	
	lbs.	kgs.
994BLT	62	28
994HMB-GPM	66	30
994HMB-CFM	66	30

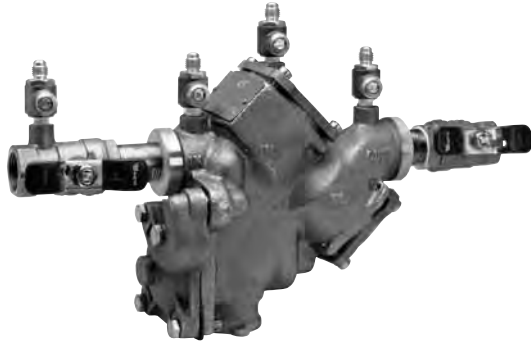
IMPORTANT: Inquire with governing authorities for local installation requirements

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)



909 QT

Find at Air Delights!

Shop Now!

Series 909 Reduced Pressure Zone Assemblies are designed to provide superior cross-connection control protection of the potable water supply in accordance with national plumbing codes and containment control for water authority requirements. Series 909 can be utilized in a variety of installations, including health hazard cross-connections in plumbing systems or for containment at the service line entrance. With its exclusive, design incorporating the patented "air-in/water-out" principle, it provides maximum relief valve discharge during the emergency conditions of combined back-siphonage and back-pressure with both checks fouled. Series 909 is furnished with full port, resilient seated and bronze ball valve shutoffs. Sizes 3/4" and 1" (20, 25mm) shutoffs have tee handles.

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

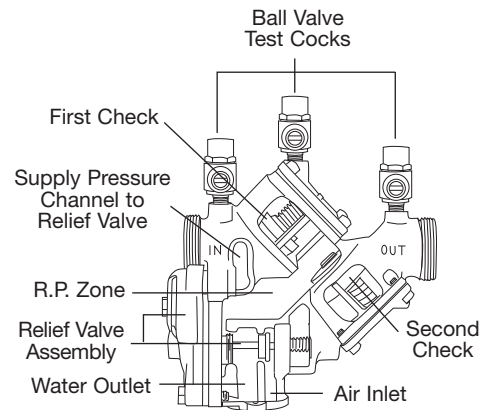
Maximum Operating Pressure: 175psi (12.1 bar)

909

Temperature Range: 33°F – 140°F (0.5°C to 60°C) continuous, 180°F (82°C) intermittent

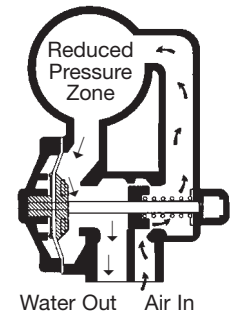
909HW

Temperature Range: 33°F – 210°F (0.5°C – 99°C)

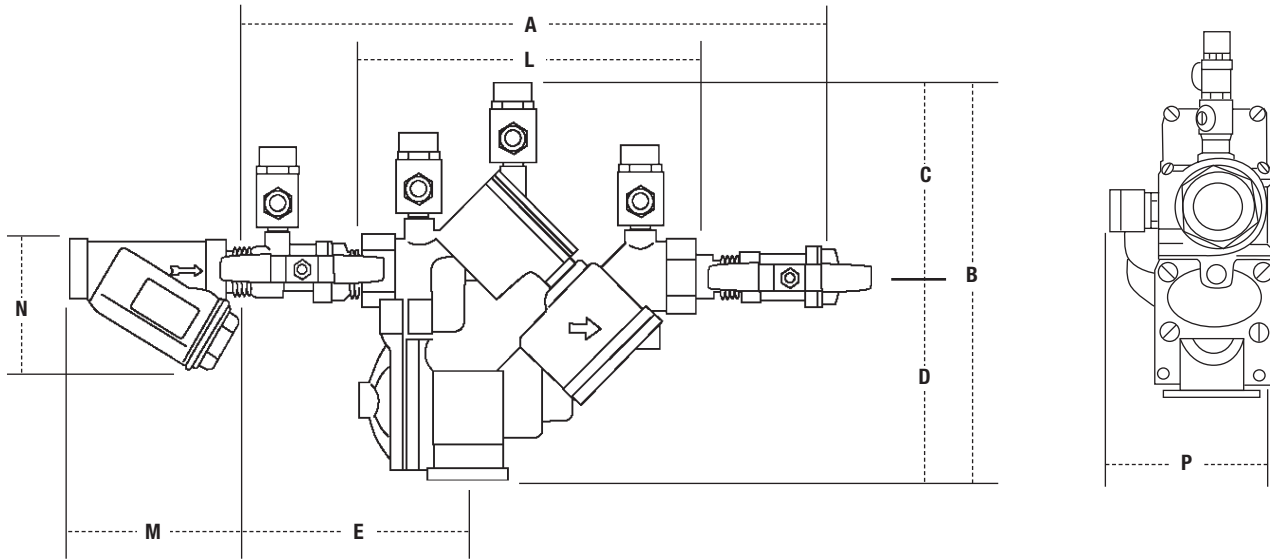


How it Operates

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.



Dimensions – Weights



Suffix HC - Fire Hydrant Fittings dimension "A" = 23¾" (603mm)

909

SIZE (DN)		DIMENSIONS (APPROX.)												STRAINER DIMENSIONS				WEIGHT			
in.	mm	A		B		C		D		E		L		P		M		N		lbs.	kgs.
¾	20	14¾	365	8¾	222	4	102	4¾	121	6¾	171	7⅝	186	3⅞	98	3⅜	81	2¾	70	14	6
1	25	15¾	391	8¾	222	4	102	4¾	121	7	178	7⅝	186	3⅞	98	3¾	95	3	76	15	7
1¼	32	18½	470	11⅝	295	5½	140	6½	165	7½	191	10⅜	264	5¼	133	4⅞	113	3½	89	40	18
1½	40	19	483	11⅝	295	5½	140	6½	165	7½	191	10⅜	264	5¼	133	4⅞	124	4	102	40	18
2	50	19½	495	11⅝	295	5½	140	6½	165	7¾	197	10⅜	264	5¼	133	5⅛	151	5	127	40	18

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

¾	20	14¾	371	8¾	222	4	102	4¾	121	6¾	171	7⅝	186	3⅞	98	3⅜	81	2¾	70	14	6.4
1	25	15¾	397	8¾	222	4	102	4¾	121	7	178	7⅝	186	3⅞	98	3¾	95	3	76	15	6.8

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

1¼	32	19	483	11⅝	295	5½	140	6½	165	7½	191	10⅜	264	5¼	133	4⅞	113	3½	89	40	18.1
1½	40	19¾	502	11⅝	295	5½	140	6½	165	7½	191	10⅜	264	5¼	133	4⅞	124	4	102	40	18.1
2	50	21	533	11⅝	295	5½	140	6½	165	7¾	197	10⅜	264	5¼	133	5⅛	151	5	127	40	18.1

Models

Suffix

QT - quarter-turn ball valves

S - bronze strainer

HW - stainless steel check modules for hot and harsh water conditions

LF - without shutoff valves

LH - locking handle ball valves (open position)

HC - inlet/outlet fire hydrant fitting (2" only)

PC - polymer coating

Prefix

C - clean and check strainer - ¾" and 1" only (20 and 25mm)

U - union connections - ¾" and 1" only (20 and 25mm)

FAE - flanged adapter ends - 1¼", 1½", 2" only (32, 40, 50mm)

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.

Horizontal and vertical "flow-up" USC approval on ¾" and 1" sizes (models 909QT, 909PCQT, and U909QT).

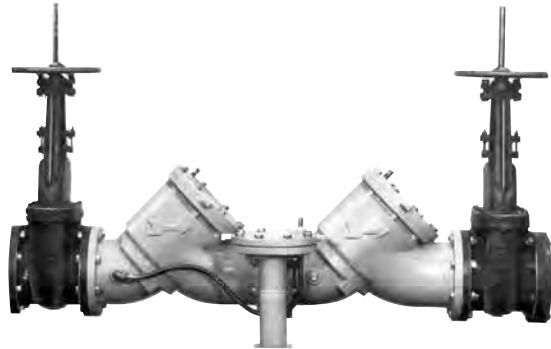
Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 57.

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 909

Reduced Pressure Zone Assemblies

Sizes: 2½" – 10" (65 – 250mm)

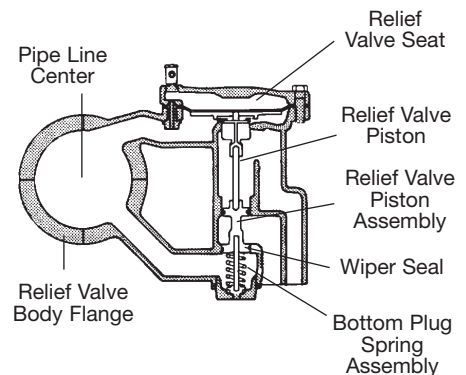
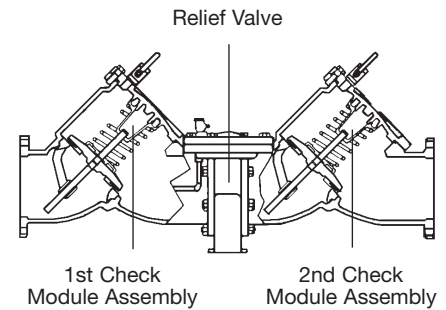


909 OSY

Find at Air Delights!

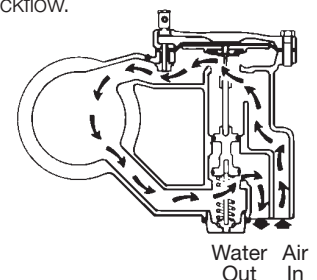
Shop Now!

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 backsiphonage 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 develop, 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

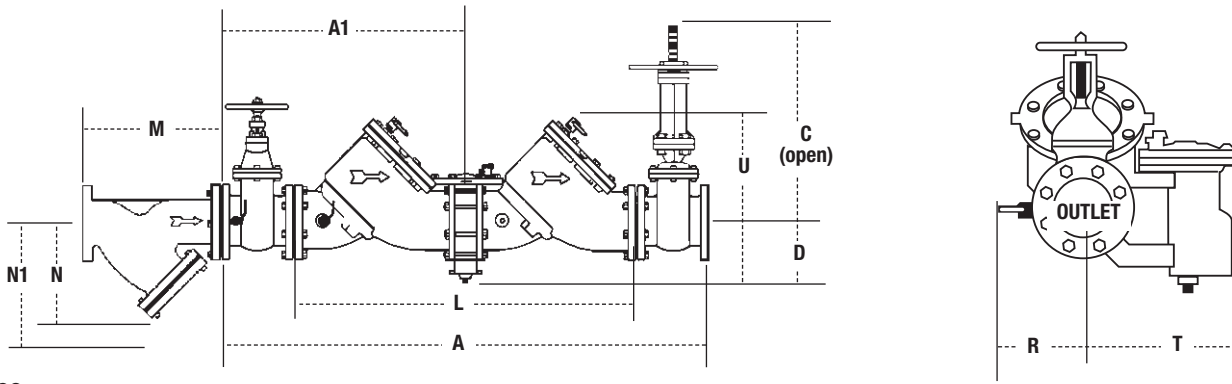
Materials

- Check Valve Bodies: FDA epoxy coated cast iron or bronze
- Seats: Bronze
- Trim: Stainless steel
- Relief Valve Body: 2½" – 3" (60 – 80mm) bronze
4" – 10" (100 – 250mm) FDA epoxy coated cast iron
- Test Cocks: 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)

Dimensions – Weights



909

SIZE (DN)	DIMENSIONS (APPROX.)											WEIGHT															
	A		A1		C		D	L	clearance for check U	R	R (QT)		T	NRS		OSY		QT									
in.	mm	in.	mm	(OSY)* in.	(NRS) mm	in.					mm	in.		mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.	lbs.	kgs.			
2½	65	41¼	1048	20⅝	524	16⅜	416	9⅜	238	5¼	133	26⅞	663	11	279	4	102	16	406	9⅞	230	195	88.4	198	89.8	182	82.6
3	80	42¼	1073	21¼	540	18⅞	479	10¼	260	5¼	133	26⅞	663	11	279	5	127	16	406	9⅞	230	225	102	230	104	190	86
4	100	55⅞	1400	27⅞	702	22¾	578	12¾	310	6	152	37	940	14	356	6	152	19¾	502	14⅜	365	455	206	470	213	352	160
6	150	65½	1664	32¾	832	30⅞	765	16	406	6	152	44½	1130	16	406	11	279	26	660	14⅜	365	718	326	798	362	762	346
8	200	78½	2000	39⅞	1000	37¾	959	19⅞	506	9¾	248	55¼	1403	21	533	11¼	286	11¼	286	19¼	489	1350	612	1456	660	2286	1037
10	250	93⅞	2378	46⅞	1190	45¾	1162	23⅞	605	9¾	248	67⅞	1711	21	533	12½	318	12½	318	21	533	2160	980	2230	1011	3716	1685

*UL, FM approved backflow preventers must include UL/FM approved OSY gate valves.

Strainer Dimensions

SIZE (DN)	DIMENSIONS (APPROX.)						WEIGHT		
	M		N1†		N		lbs.	kgs.	
in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
2½	65	10	254	10	254	6½	165	28	12.7
3	80	10⅞	257	10	254	7	178	34	15.4
4	100	12⅞	308	12	305	8¼	210	60	27
6	150	18½	470	20	508	13½	343	133	60
8	200	21⅞	549	22¾	578	15½	394	247	112
10	250	26	660	28	711	18½	470	370	168

† – Dimension required for screen removal

Models

Suffix

LF - without shutoff valves

NRS - 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

Series 009

Reduced Pressure Zone Assemblies

Sizes: 1/4" – 3" (8 – 80mm)



009 QT

Find at Air Delights! [Shop Now!](#)



U009A QT

Find at Air Delights! [Shop Now!](#)



009M2 QTHC

Find at Air Delights! [Shop Now!](#)

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)

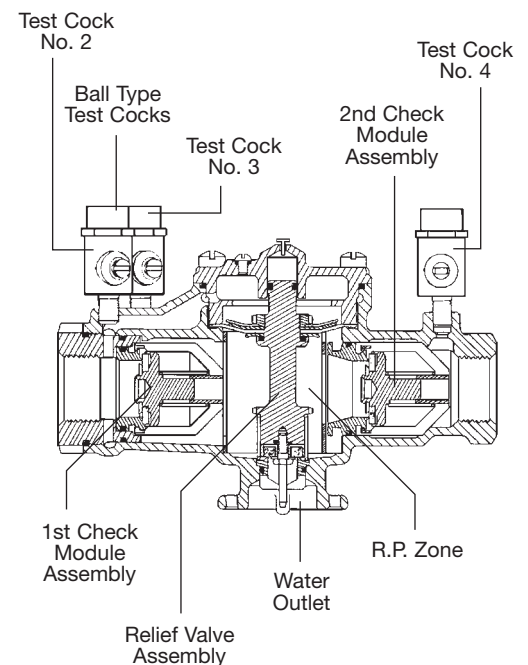
- Body: Bronze
- Check and Relief Valve Discs: Silicone rubber
- Check Seats: Replaceable polymer
- Relief Valve seat: Removable stainless steel
- Cover Bolts: Stainless steel

Sizes 2 1/2" – 3" (65 – 80mm)

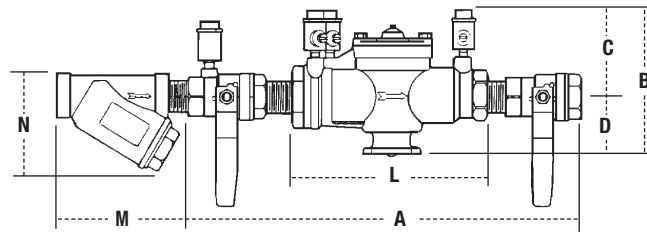
- Body: FDA approved epoxy coated cast iron
- Seats: Bronze
- Relief Valve Seat and Trim: Stainless steel
- Test Cocks: Bronze

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



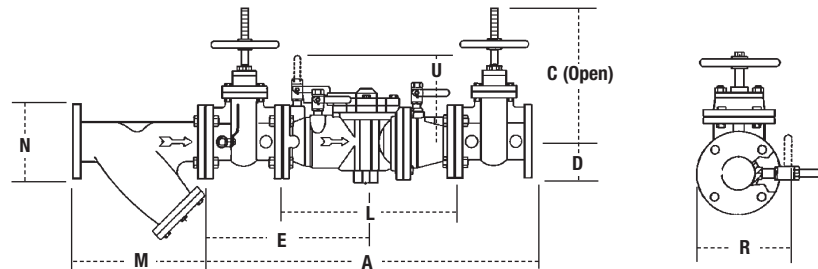
Dimensions – Weights



Suffix HC - Fire Hydrant Fittings dimension "A" = 25¹/₁₆ (637mm)

009 1/4" – 2" (8 – 50mm)

SIZE (DN)		DIMENSIONS (APPROX.)										STRAINER DIMENSIONS				WEIGHT	
in.	mm	A		B		C		D		L		M		N		lbs.	kg.
1/4	8	10	250	4 ⁵ / ₈	117	3 ³ / ₈	86	1 ¹ / ₄	32	5 ¹ / ₂	140	2 ³ / ₈	60	2 ¹ / ₂	64	5	2
3/8	10	10	250	4 ⁵ / ₈	117	3 ³ / ₈	86	1 ¹ / ₄	32	5 ¹ / ₂	140	2 ³ / ₈	60	2 ¹ / ₂	64	5	2
1/2	15	10	250	4 ⁵ / ₈	117	3 ³ / ₈	86	1 ¹ / ₄	32	5 ¹ / ₂	140	2 ³ / ₄	70	2 ¹ / ₄	57	5	2
3/4	20	10 ³ / ₄	273	5	127	3 ¹ / ₂	89	1 ¹ / ₂	38	6 ³ / ₄	171	3 ³ / ₁₆	81	2 ³ / ₄	70	6	3
1	25	16 ³ / ₄	425	5 ¹ / ₂	140	3	76	2 ¹ / ₂	64	9 ¹ / ₂	241	3 ³ / ₄	95	3	76	12	5
1 ¹ / ₄	32	17 ³ / ₈	441	6	150	3 ¹ / ₂	89	2 ¹ / ₂	64	11 ³ / ₈	289	4 ⁷ / ₁₆	113	3 ¹ / ₂	89	15	6
1 ¹ / ₂	40	17 ⁷ / ₈	454	6	150	3 ¹ / ₂	89	2 ¹ / ₂	64	11 ¹ / ₈	283	4 ⁷ / ₈	124	4	102	16	7
2	50	21 ³ / ₈	543	7 ³ / ₄	197	4 ¹ / ₂	114	3 ¹ / ₄	83	13 ¹ / ₂	343	5 ¹⁵ / ₁₆	151	5	127	30	13



009 2¹/₂" and 3" (65 – 80mm)

MODEL NO.	SIZE (DN)		DIMENSIONS (APPROX.)										STRAINER DIMENSIONS				WEIGHT					
	in.	mm	A		C		D		E		L		R		U		M		N		lbs.	kg.
009LF	2 ¹ / ₂	65	—	—	—	—	5 ¹ / ₄	133	—	—	18 ¹ / ₈	460	—	—	10 ⁵ / ₈	270	10	254	6 ¹ / ₂	165	76	34
009OSY	2 ¹ / ₂	65	33 ¹ / ₄	845	16 ³ / ₈	416	5 ¹ / ₄	133	16 ³ / ₈	416	18 ¹ / ₈	460	7 ³ / ₄	197	10 ⁵ / ₈	270	10	254	6 ¹ / ₂	165	166	75
009NRS	2 ¹ / ₂	65	33 ¹ / ₄	845	9 ³ / ₈	238	5 ¹ / ₄	133	16 ³ / ₈	416	18 ¹ / ₈	460	7 ³ / ₄	197	10 ⁵ / ₈	270	10	254	6 ¹ / ₂	165	189	86
009QT	2 ¹ / ₂	65	33 ¹ / ₄	845	6	152	5 ¹ / ₄	133	16 ³ / ₈	416	18 ¹ / ₈	460	7 ³ / ₄	197	10 ⁵ / ₈	270	10	254	6 ¹ / ₂	165	150	68
009LF	3	80	—	—	—	—	5 ¹ / ₄	133	—	—	18 ¹ / ₈	460	—	—	10 ⁵ / ₈	270	10 ¹ / ₈	257	7	178	76	34
009OSY	3	80	34 ¹ / ₄	870	18 ⁷ / ₈	470	5 ¹ / ₄	133	16 ⁵ / ₈	422	18 ¹ / ₈	460	8 ³ / ₄	222	10 ⁵ / ₈	270	10 ¹ / ₈	257	7	178	198	90
009NRS	3	80	34 ¹ / ₄	870	10 ¹ / ₄	260	5 ¹ / ₄	133	16 ⁵ / ₈	422	18 ¹ / ₈	460	8 ³ / ₄	222	10 ⁵ / ₈	270	10 ¹ / ₈	257	7	178	191	87
009QT	3	80	34 ¹ / ₄	870	7	178	5 ¹ / ₄	133	16 ⁵ / ₈	422	18 ¹ / ₈	460	8 ³ / ₄	222	10 ⁵ / ₈	270	10 ¹ / ₈	257	7	178	158	71

Models

Sizes 1/4" – 2" (8 – 50mm)

Suffix

QT - quarter-turn ball valves

S - bronze strainer

LF - without shutoff valves

AQT - elbow fittings for 360° rotation

(3/4" – 2" only) (20 – 50mm only)

PC - internal polymer coating

LH - locking handle ball valves

(open position)

SH - stainless steel ball valve handles

HC - 2¹/₂" (65mm) inlet/outlet fire hydrant fitting 2" (50mm) valve

Prefix

C - clean and check strainer (3/4" – 1" only) (20 – 25mm only)

U - union connections

SS - 316 stainless steel body and stainless steel ball valve, 1/4" – 1" (8 – 25mm only)

Sizes 2¹/₂" and 3" (65 and 80mm)

Suffix

NRS - non-rising stem resilient seated gate valves

OSY - UL/FM outside stem & yoke resilient seated gate valves

LF - without shutoff valves

S - bronze strainer

S-FDA - FDA epoxy coated strainer

QT-FDA - FDA epoxy coated quarter-turn ball valves

Approvals



AWWA, IAPMO

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

Approval models QT, AQT, PC, U, NRS, OSY.

UL Classified 3/4" – 2" (20 – 50mm)

(LF models only), 2¹/₂" and 3" (65 – 80mm) with OSY gate valves.

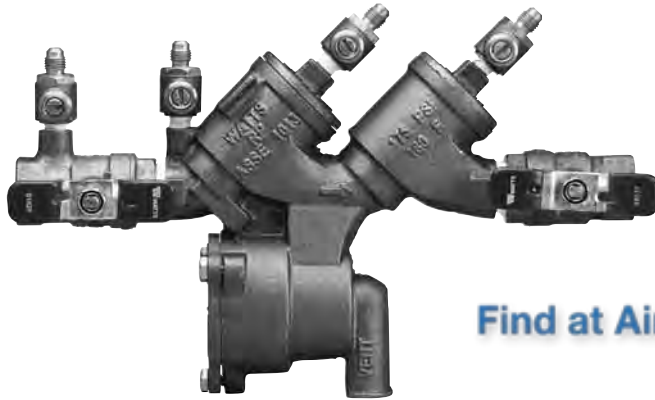
Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 57.

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 919

Reduced Pressure Zone Assemblies

Sizes: 3/4" – 2" (20 – 50mm)



919QT

Find at Air Delights!

Shop Now!

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
- AQT – elbow fitting for 360° rotation
- ZQT – inlet & outlet flow up

Prefix:

- U – union connections

Materials

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

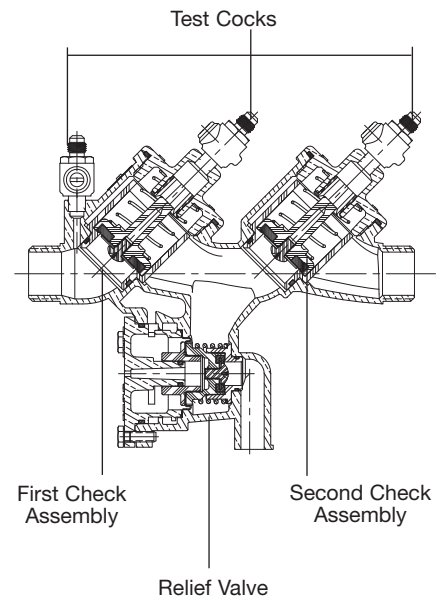
Pressure – Temperature

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

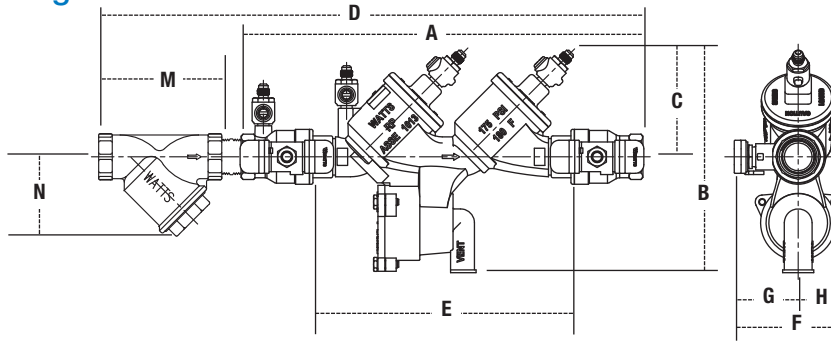
Approvals



1013

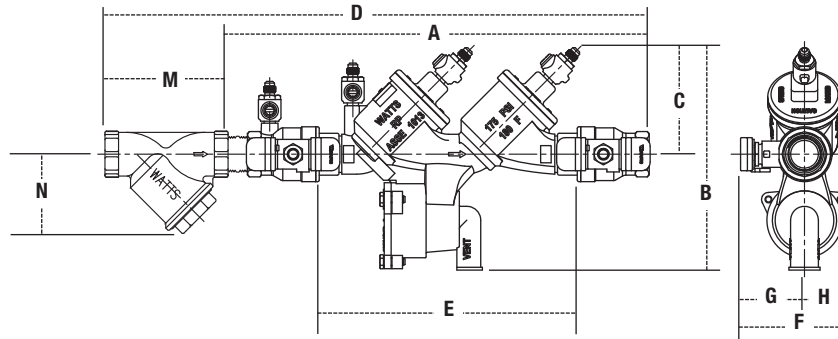


Dimensions – Weights



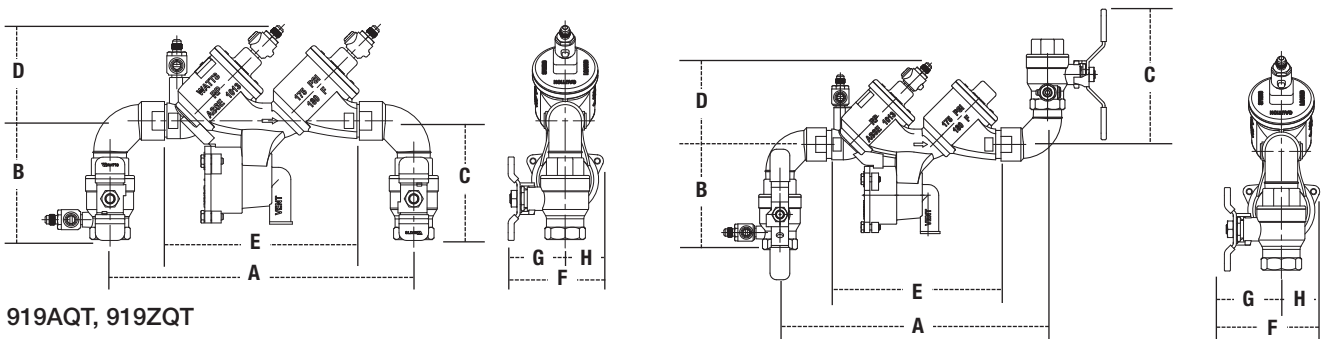
919QT, 919QT-S

SIZE (DN)	DIMENSIONS									STRAINER DIMENSIONS		WEIGHT	
	A	B	C	D	E (LF)	F	G	H	M	N	919QT	919QT-S	
in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kgs.	lbs. kgs.	
3/4 20	12 ¹ / ₈ 307	7 ¹ / ₁₆ 188	3 ¹ / ₂ 88	15 ¹ / ₂ 393	7 ¹¹ / ₁₆ 195	3 ⁵ / ₈ 92	2 ¹ / ₁₆ 52	1 ⁹ / ₁₆ 40	1 ⁵ / ₈ 41	3 ³ / ₁₆ 81	8.3 3.7	10.0 4.5	
1 25	14 ¹ / ₂ 368	8 202	3 ⁷ / ₈ 98	19 ³ / ₁₆ 487	9 ⁹ / ₁₆ 233	4 102	2 ⁷ / ₁₆ 62	1 ⁹ / ₁₆ 40	2 ¹ / ₈ 54	3 ³ / ₄ 95	11.8 5.4	13.8 6.3	
1 ¹ / ₄ 32	18 ¹ / ₈ 461	11 ⁷ / ₁₆ 290	5 ¹ / ₈ 129	23 ¹ / ₄ 591	11 ¹¹ / ₁₆ 297	5 ¹ / ₈ 130	2 ⁵ / ₈ 67	2 ¹ / ₂ 64	2 ¹ / ₂ 64	4 ⁷ / ₁₆ 113	22.3 10.1	26.3 11.9	
1 ¹ / ₂ 40	18 ³ / ₄ 476	11 ⁷ / ₁₆ 290	5 ¹ / ₈ 129	25 ¹ / ₁₆ 637	11 ¹¹ / ₁₆ 297	5 ⁵ / ₈ 143	3 ¹ / ₈ 79	2 ¹ / ₂ 64	3 76	4 ⁷ / ₈ 124	28.3 12.8	32.0 14.5	
2 50	21 ¹ / ₁₆ 535	12 ¹ / ₁₆ 307	5 ⁵ / ₈ 142	28 ¹³ / ₁₆ 732	13 ³ / ₈ 340	5 ¹⁵ / ₁₆ 151	3 ⁷ / ₁₆ 87	2 ¹ / ₂ 64	3 ⁹ / ₁₆ 90	5 ¹⁵ / ₁₆ 151	37.3 16.9	45.0 20.4	



U919QT, U919QT-S

SIZE (DN)	DIMENSIONS									STRAINER DIMENSIONS		WEIGHT	
	A	B	C	D	E (LF)	F	G	H	M	N	U919QT	U919QT-S	
n. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kgs.	lbs. kgs.	
3/4 20	16 ¹⁵ / ₁₆ 430	8 ¹ / ₁₆ 204	3 ⁷ / ₈ 98	20 ⁵ / ₁₆ 515	11 ¹ / ₂ 292	3 ⁵ / ₈ 92	2 ¹ / ₁₆ 52	1 ⁹ / ₁₆ 40	1 ⁵ / ₈ 41	3 ⁹ / ₁₆ 81	13.4 6.1	15.1 6.9	
1 25	17 ¹ / ₈ 435	8 ¹ / ₁₆ 204	3 ⁷ / ₈ 98	21 ¹³ / ₁₆ 554	11 ³ / ₄ 297	4 102	2 ⁷ / ₁₆ 62	1 ⁹ / ₁₆ 40	2 ¹ / ₈ 54	3 ³ / ₄ 95	13.3 6.0	15.3 6.9	
1 ¹ / ₄ 32	20 ¹⁵ / ₁₆ 532	11 ⁷ / ₁₆ 290	5 ¹ / ₈ 129	26 ¹ / ₁₆ 662	15 ³ / ₈ 390	5 ¹ / ₈ 130	2 ⁵ / ₈ 67	2 ¹ / ₂ 64	2 ¹ / ₂ 64	4 ⁷ / ₁₆ 113	25.9 11.8	29.9 13.6	
1 ¹ / ₂ 40	21 ¹ / ₁₆ 547	11 ⁷ / ₁₆ 290	5 ¹ / ₈ 129	27 ⁷ / ₈ 708	15 ³ / ₈ 390	5 ⁵ / ₈ 143	3 ¹ / ₈ 79	2 ¹ / ₂ 64	3 76	4 ⁷ / ₈ 124	31.9 14.5	35.6 16.2	
2 50	24 ¹⁵ / ₁₆ 633	12 ¹ / ₁₆ 307	5 ⁵ / ₈ 142	32 ¹ / ₁₆ 830	16 ³ / ₄ 425	5 ¹⁵ / ₁₆ 151	3 ⁷ / ₁₆ 87	2 ¹ / ₂ 64	3 ⁹ / ₁₆ 90	5 ¹⁵ / ₁₆ 151	41.6 18.9	49.3 22.4	



919AQT, 919ZQT

SIZE (DN)	DIMENSIONS									WEIGHT	
	A	B	C	D	E (LF)	F	G	H	lbs.	kgs.	
in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs.	kgs.	
3/4 20	10 ³ / ₈ 263	3 ¹⁵ / ₁₆ 100	3 ¹⁵ / ₁₆ 100	3 ¹ / ₂ 88	7 ¹¹ / ₁₆ 195	3 ⁵ / ₈ 92	2 ¹ / ₁₆ 52	1 ⁹ / ₁₆ 40	9.3	4.2	
1 25	12 ¹ / ₄ 311	4 ¹³ / ₁₆ 122	4 ¹³ / ₁₆ 122	3 ⁷ / ₈ 98	9 ⁹ / ₁₆ 233	4 102	2 ⁷ / ₁₆ 62	1 ⁹ / ₁₆ 40	13.3	6.0	
1 ¹ / ₄ 32	16 ¹ / ₁₆ 407	5 ⁷ / ₈ 149	5 ⁷ / ₈ 149	5 ¹ / ₈ 129	11 ¹¹ / ₁₆ 297	5 ¹ / ₈ 130	2 ⁵ / ₈ 67	2 ¹ / ₂ 64	24.0	10.9	
1 ¹ / ₂ 40	16 ⁵ / ₈ 421	6 ¹ / ₂ 164	6 ¹ / ₂ 164	5 ¹ / ₈ 129	11 ¹¹ / ₁₆ 297	5 ⁵ / ₈ 143	3 ¹ / ₈ 79	2 ¹ / ₂ 64	30.5	13.8	
2 50	17 ⁵ / ₁₆ 440	6 ⁵ / ₈ 168	6 ⁹ / ₁₆ 166	5 ¹ / ₈ 142	13 ³ / ₈ 340	5 ¹⁵ / ₁₆ 151	3 ⁷ / ₁₆ 87	2 ¹ / ₂ 64	40.6	18.4	

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: 2½" – 10" (65 – 250mm)



957NRPDA OSY

Find at Air Delights!

Shop Now!

Series 957RPDA, 957NRPDA, 957ZRPDA Reduced Pressure Detector Assemblies provide protection to the potable water system from contamination in accordance with national plumbing codes. The 957RPDA, 957NRPDA, 957ZRPDA are normally used in health hazard applications to protect against backsiphonage and backpressure. Series 957RPDA, 957NRPDA, 957ZRPDA are used to monitor unauthorized use of water from fire protection systems.

Features

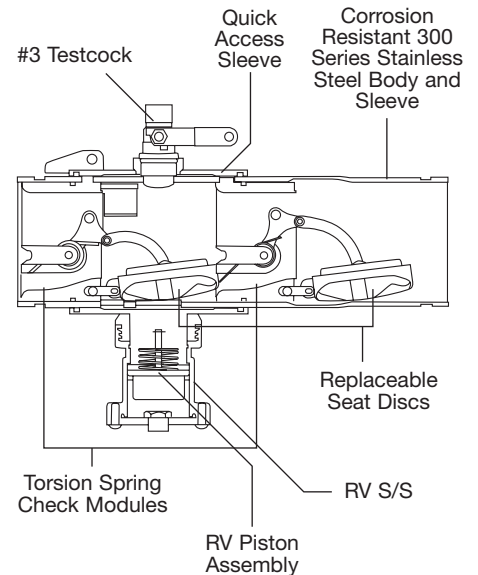
- Extremely compact design
- 70% lighter than traditional designs
- Groove fittings allow integral pipeline adjustment
- Patented torsion spring checks provide lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shutoffs
- Replaceable check disc rubber
- Bottom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

Materials

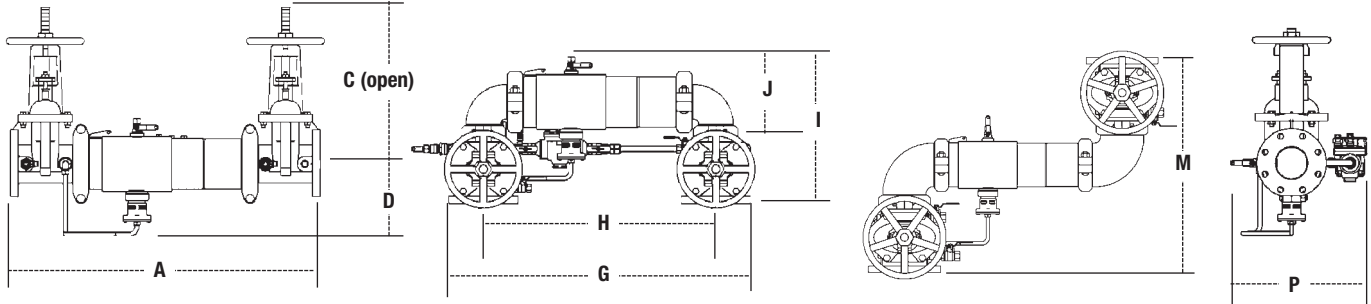
- Housing & Sleeve – 304 (Schedule 40) Stainless Steel
- Elastomers – EPDM, Silicone and Buna-N
- Torsion Spring Checks – Noryl®, Stainless Steel
- Check Discs – Reversible Silicone or EPDM
- Test Cocks – Bronze Body Nickel Plated
- Pins & Fasteners – 300 Series Stainless Steel
- Springs – Stainless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

Pressure – Temperature

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



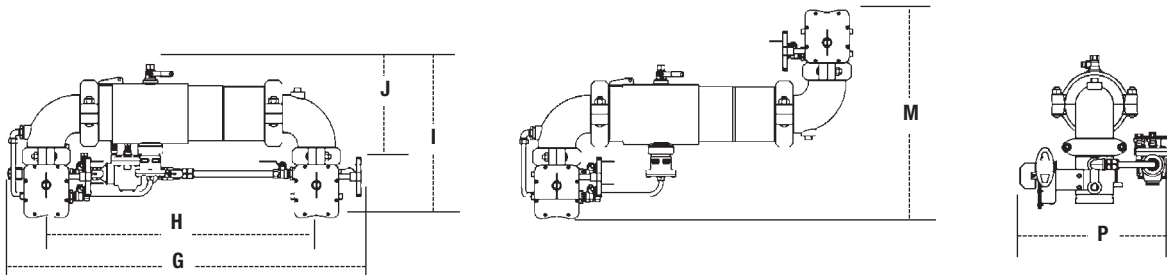
Dimensions – Weights



957RPDA

SIZE (DN)	DIMENSIONS (APPROX.)												WEIGHT								
	A		C (OSY)		D		G		H		I		J		M		P		957RPDA		957NRPDA
in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kgs.	lbs. kgs.	lbs. kgs.	lbs. kgs.
2½ 65	31 787	16⅝ 416	6½ 165	29¼ 738	22 559	15½ 393	8⅜ 223	21⅞ 548	13⅜ 335	142 64	150 68										
3 80	31⅛ 805	18⅝ 479	6⅞ 170	30¼ 768	22¾ 578	17⅞ 435	9⅞ 233	23⅞ 587	14½ 368	162 73	175 79										
4 100	33⅛ 856	22¾ 578	7 178	33 838	24 610	18½ 470	9⅞ 252	26½ 673	15⅞ 386	178 81	201 91										
6 150	43½ 1105	30⅞ 765	8½ 216	44¾ 1137	33¾ 857	23⅞ 589	13⅞ 332	32¾ 832	19 483	312 142	353 160										
8 200	50 1270	37¾ 959	9⅞ 246	54⅞ 1375	40⅞ 1032	27⅞ 697	15⅞ 399	37⅞ 943	21⅞ 538	497 225	572 259										
10 250	57½ 1460	45¾ 1162	11⅞ 285	66 1676	50 1270	32½ 826	17⅞ 440	46⅞ 1178	24 610	797 362	964 437										

957NRPDA / 957ZRPDA BFG



SIZE (DN)	DIMENSIONS (APPROX.)								WEIGHT					
	G		H		I		J		M		P		957RPDABFG	
in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs. kgs.	lbs. kgs.
2½ 65	32½ 826	23½ 597	15½ 394	9½ 241	21⅜ 555	15⅜ 402	81 37							
3 80	34 864	24½ 622	16⅝ 414	10⅞ 256	23⅞ 587	16⅞ 410	84 38							
4 100	35⅝ 905	26 660	17⅞ 437	10⅞ 279	24⅞ 634	16⅞ 422	101 46							
6 150	46½ 1181	35⅞ 908	20½ 521	13½ 343	28¼ 718	19 483	174 79							

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

BFG – UL/FM grooved gear operated butterfly valves with tamper switch for 2½" – 6" (65 – 150mm) N and Z patterns only

Available with grooved NRS gate valves - consult factory*

Post indicator plate and operating nut available - consult factory*

*Consult factory for dimensions

Approvals



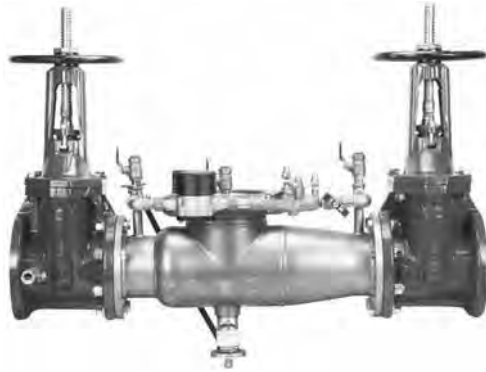
Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 57.

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 994RPDA

Reduced Pressure Detector Assemblies

Sizes 2½" – 6" (65 – 150mm)



994RPDA 0SY

Find at Air Delights!

Shop Now!

4

Reduced Pressure Detector Assemblies

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

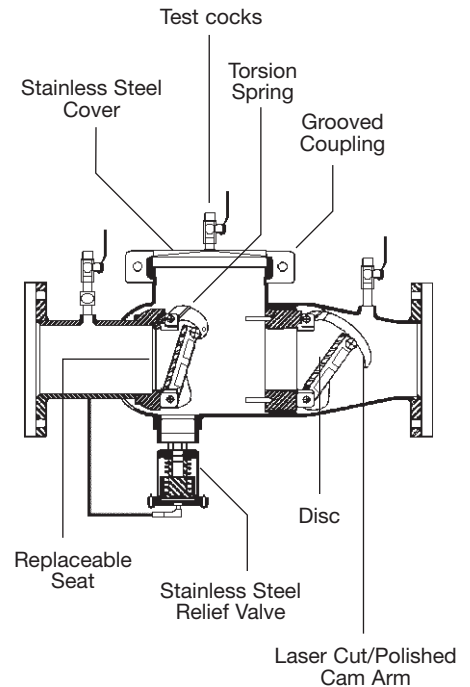
- Stainless steel construction provides long term corrosion resistance and maximum strength
- Stainless steel body is half the weight of competitive designs reducing installation and shipping costs
- Short end to end dimensions makes retrofit easy
- Bottom mounted relief valve reduces clearance requirements 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

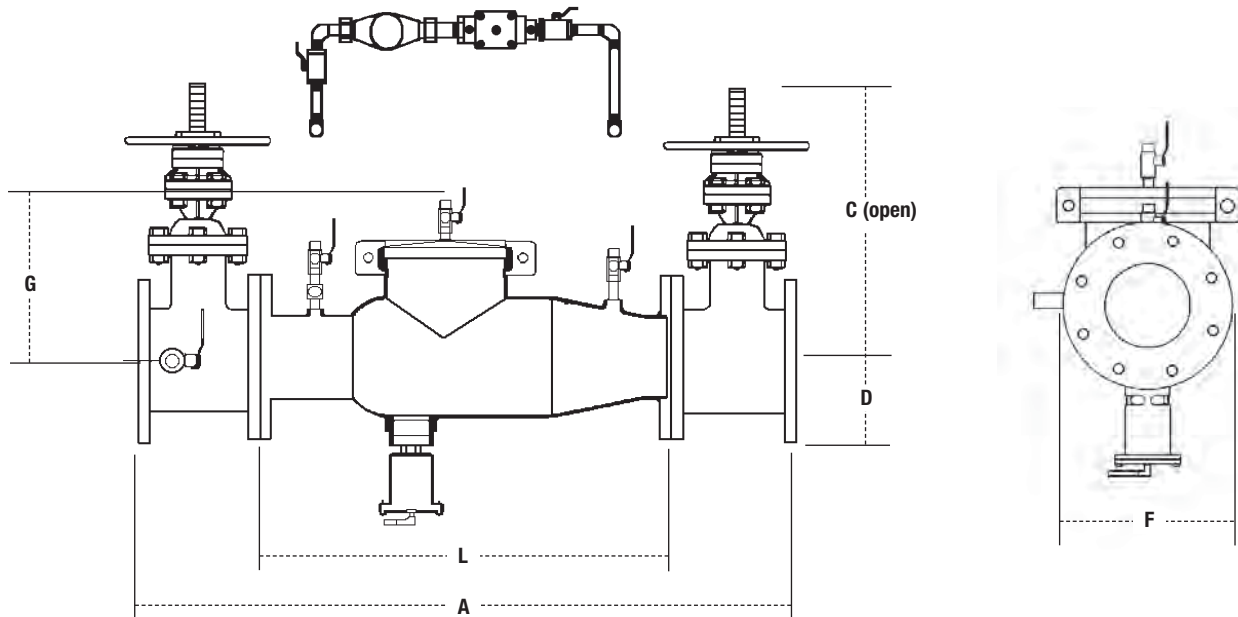
- All internal metal parts: 300 Series stainless steel
- Main valve body: 300 Series stainless steel
- Check assembly: Noryl®

Pressure – Temperature

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



Dimensions – Weights



SIZE (DN)		DIMENSIONS (APPROX.)										WEIGHT					
		A		C (open)		D		F		G		L		w/Gates		w/o Gates	
<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>in.</i>	<i>mm</i>	<i>lbs.</i>	<i>kg.</i>	<i>lbs.</i>	<i>kg.</i>
2½	65	37	940	16¾	416	10½	267	7	178	10	254	22	559	148	67	60	27
3	80	38	965	18¾	479	10½	267	7½	191	10	254	22	559	226	103	62	28
4	100	40	1016	22¾	578	10½	267	9	229	10	254	22	559	235	107	65	30
6	150	48½	1232	30½	765	11½	292	11	279	15	381	27½	699	380	172	110	50

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 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

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

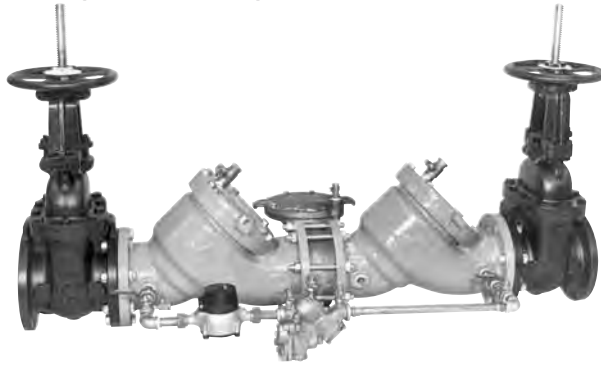
Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 57.

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 909RPDA

Reduced Pressure Detector Assemblies

Sizes: 2½" – 10" (65 – 250mm)



909RPDA OSY

Find at Air Delights!

Shop Now!

4

Reduced Pressure Detector Assemblies

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 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 allow the water utility to:

- Detect leaks that historically create great annual cost due to waste.
- 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.

Features

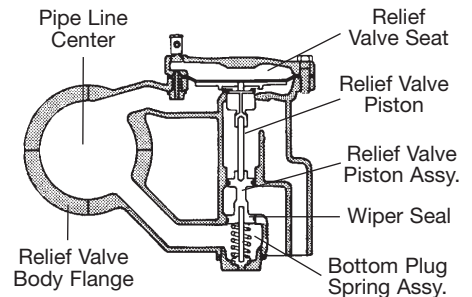
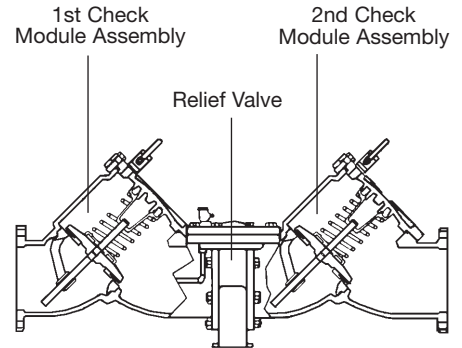
- Body construction fused epoxy coated cast iron
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Compact for economy combined with performance
- Design simplicity for easy maintenance
- Furnished with 5/8" x 3/4" (16 x 19mm) recordall meter
- Air-in/water-out relief valve design provides 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

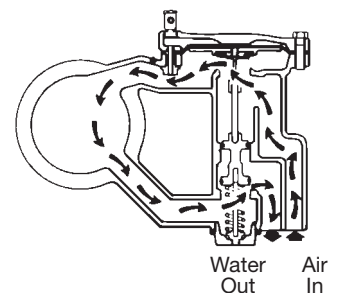
Pressure – Temperature

Temperature Range: 33°F – 140°F (0.5°C – 60°C)
Maximum Working Pressures: 175psi (12.1 bar)

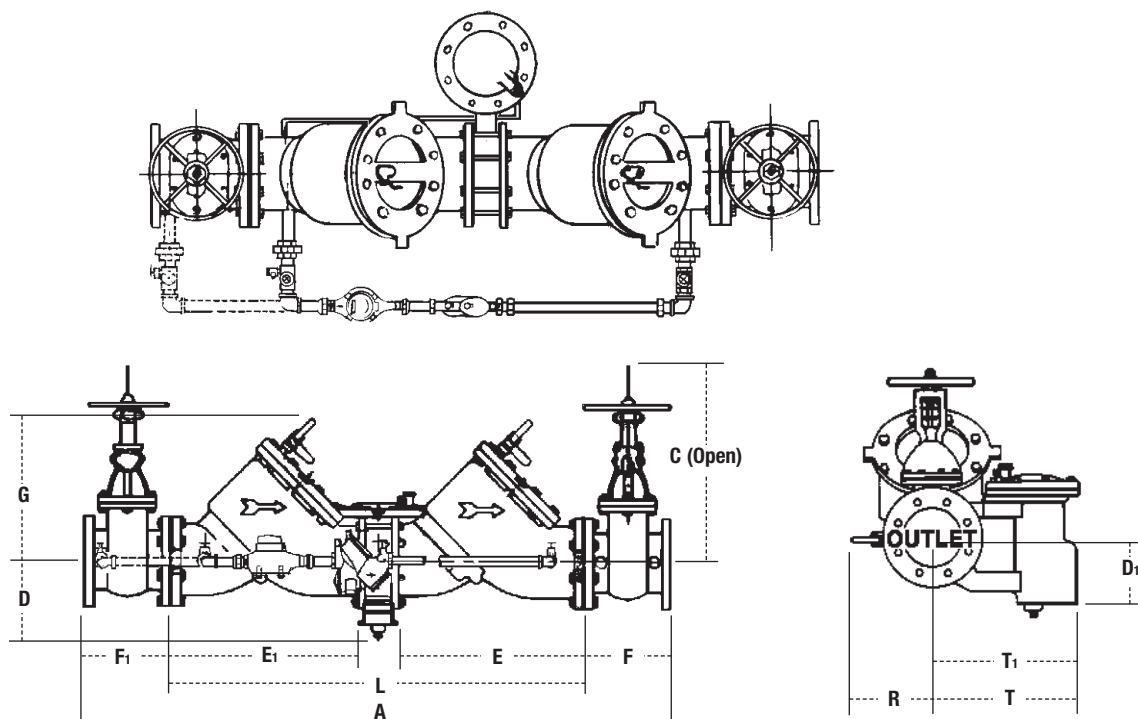


How it Operates

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.



Dimensions – Weights



SIZE (DN)		DIMENSIONS (APPROX.)												WEIGHT											
in.	mm	A		C (OSY)		D		D1		E, E1		F, F1		G		L		R		T		T1		lbs.	kgs.
2½	65	42½	1070	16¾	416	5¼	133	4¼	114	12	305	8	203	7	178	26⅞	664	14	356	9	229	7⅝	194	230	104
3	80	42½	1070	18⅞	479	5¼	133	4¼	114	12	305	8	203	7	178	26⅞	664	14	356	9	229	7⅝	194	230	104
4	100	55½	1400	22¾	578	6	152	5⅞	149	17	432	9	229	9½	241	37	940	15	381	13⅝	346	11¾	299	470	213
6	150	65½	1664	30⅞	765	6	152	6	152	20¾	527	10½	267	14½	368	44½	1130	16	406	13⅝	346	11¾	299	798	362
8	200	78½	1988	37¾	959	9¾	248	8⅝	219	26	660	11½	292	18½	470	55¼	1403	17	432	18½	470	16¾	416	1456	660
10	250	93⅝	2378	45¾	1162	9¾	248	8⅝	219	32	813	13	330	21½	546	67½	1715	18	457	18½	470	16¾	416	2230	1012

Models

Suffix

OSY - UL/FM outside stem & yoke resilient seated gate valves

LF - without shutoff valves (4" – 10") (100 – 250mm)

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

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

Note: Piping for 3" 909 will start from #1 gate valve and connect at #2 check valve.

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 9

Dual Check Vacuum Breakers

Sizes: 1/4" – 3/8" (8 – 10mm)



N9 CD

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5

Dual Check Valves

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: 1/4" (8mm) and 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 3/8" (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 3/4" (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: 3/8" (10mm) flare copper tube (FCT) inlet and outlet. Maximum pressure 150psi (10.3 bar). Maximum temperature 140°F (60°C)

912HP - High pressure drop backflow preventer for food processing plant washdown lines. Sizes: 3/4" (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

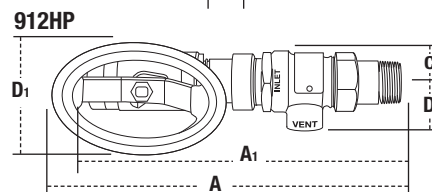
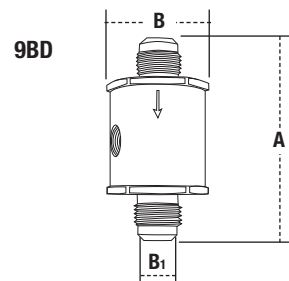
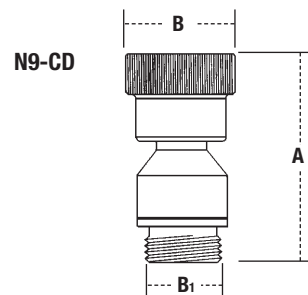
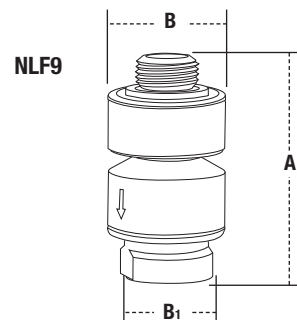
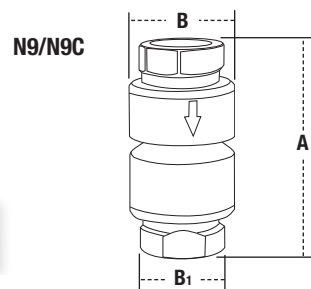
Approvals



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

Dimensions – Weights

MODEL	SIZE	DIMENSIONS			WEIGHT
		A	B	B ₁	
	<i>in. mm</i>	<i>in. mm</i>	<i>in. mm</i>	<i>in. mm</i>	<i>lbs. kgs.</i>
N9C	1/4 6	2 3/8 60	1 1/4 32	1 25	.38 .17
N9C	3/8 10	2 3/8 60	1 1/4 32	1 25	.38 .17
N9	1/4 6	2 3/8 60	1 1/4 32	1 25	.38 .17
N9	3/8 10	2 3/8 60	1 1/4 32	1 25	.38 .17
NLF9	3/8 10	2 3/8 60	1 1/4 32	1 25	.38 .17
NLF9	3/4 20	2 3/8 70	1 1/4 32	1 25	.38 .17
N9 CD	3/4 20	2 3/8 60	1 1/2 38	1 25	.38 .17
9BD	3/8 10	2 3/4 70	1 3/8 35	–	.38 .17
9BD	1/4 6	2 3/4 70	1 3/8 35	–	.38 .17
9BD	3/8 10	2 3/4 70	1 3/8 35	–	.38 .17



912HP

	SIZE		DIMENSIONS (APPROX.)				WEIGHT	
	A	A ₁	C	D	D ₁	lbs.	kgs.	
<i>in. mm</i>	<i>in. mm</i>	<i>in. mm</i>	<i>in. mm</i>	<i>in. mm</i>	<i>in. mm</i>	<i>lbs.</i>	<i>kgs.</i>	
3/4 20	9 3/16 233	8 5/16 211	1 25	1 7/16 37	1 1/2 38	3	1	
1 25	10 254	9 5/16 237	1 25	1 7/16 37	1 1/2 38	4	2	

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 9D

Backflow Preventer with Intermediate Atmospheric Vent

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



9D

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Series 9D Backflow Preventer with Intermediate Atmospheric Vent is specially made for smaller supply lines and ideally suited for laboratory equipment, processing tanks, sterilizers, dairy equipment and similar applications. It is particularly recommended for boiler feed lines to prevent backflow when supply pressure falls below system pressure. 9D is suitable for use on hot or cold water and can be used under continuous pressure. It features a primary check valve utilizing a rubber disc seating against a mating rubber part to ensure tight closing. A secondary check valve utilizes a rubber disc-to-metal seating. In the event of fouling of the downstream check valve, leakage would be vented to atmosphere through the vent port thereby safeguarding the potable water system.

Features

- True line sizes construction allows the check modules to open further allowing dirt and debris to pass more freely reducing check fouling
- Stainless steel internal part
- Maximum flow at low pressure drop
- Furnished with union connections to facilitate removal and replacement for maintenance
- Compact for economy combined with performance
- Design simplicity for easy maintenance
- Can be installed vertically or horizontally

Materials

- Body: Brass
- Internal Parts: Stainless steel
- Check Valve Assemblies: Durable, tight sealing rubber

Pressure – Temperature

Temperature Range: 33°F – 250°F
(0.5°C – 121°C)
Minimum Working Pressure: 25psi
(172 kPa)
Maximum Working Pressure: 175psi
(12.1 bar)

Models

Suffix

- S** - 1/2" (15mm) union end solder connections
- SC** - satin chrome finish
- LU** - less union

Approvals



1012

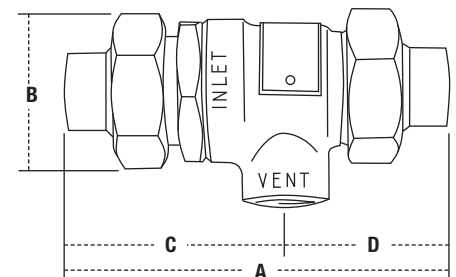
CSA

N.Y.C. BSA 104-75-SM

Tested and approved Conformance with Standard 1012 of the American Society of Sanitary Engineers and by all principal cities, states and areas having these requirements.

Dimensions – Weight

MODEL	SIZE (DN)		DIMENSIONS (APPROX.)								WEIGHT	
	in.	mm	A		B		C		D		lbs.	kgs.
9D-M3	1/2	15	4 15/16	125	2 9/16	65	2 9/16	65	1 15/16	49	1.5	.68
9DS-M3	1/2	15	4 3/8	111	2 9/16	65	2 9/16	65	1 7/8	48	1.5	.68
9D-M2	3/4	20	4 15/16	125	2 1/2	64	2 9/16	65	1 15/16	49	1.75	.79
9DS-M2	3/4	20	4 13/16	122	2 1/2	64	2 3/4	70	2 1/16	52	1.75	.79



IMPORTANT: Inquire with governing authorities for local installation requirements

Series SD-2, SD-3

Dual Check Valves

Sizes: 1/4" – 3/8" (8 – 10mm)

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SD-2



SD-3

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5

Dual Check Valves

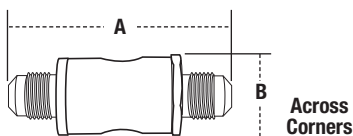
Series SD-2 and SD-3 Dual Check Valves are designed for the protection of the water supply from carbon dioxide gas and carbonated water. These substances can flow from post-mix beverage systems and are very acidic. If acidic water comes in contact with copper pipe, it will cause the leaching of copper 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 end connections are available
- Endurance tested for more than 500,000 pumping cycles
- Shock tested for more than 100,000 pumping cycles

Dimensions – Weights



Across Corners

SD-2

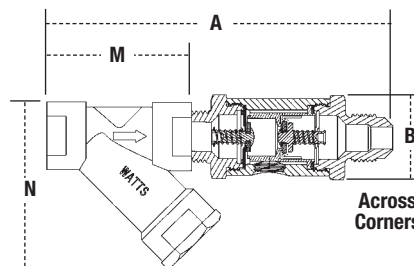
MODEL	SIZE (DN)		DIMENSIONS (APPROX.)			
	in.	mm	A		B	
SD2-MN	1/4	8	3	76	1 1/16	27
	3/8	10	3	76	1 1/16	27
SD2-MF	1/4	8	2 13/16	71	1 1/16	27
	3/8	10	3	76	1 1/16	27
SD2-FN	1/4	8	3	76	1 1/16	27
	3/8	10	3	76	1 1/16	27
SD2-FF	1/4	8	2 13/16	71	1 1/16	27
	3/8	10	3	76	1 1/16	27

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



Across Corners

SD-3

MODEL	SIZE (DN)		DIMENSIONS (APPROX.)							
	in.	mm	A		B		M	N		
SD3-MN	1/4	8	4 1/2	114	1 1/16	27	1 7/8	48	1 11/16	43
	3/8	10	4 1/2	114	1 1/16	27	1 7/8	48	1 11/16	43
SD3-MF	1/4	8	4 3/8	111	1 1/16	27	1 7/8	48	1 11/16	43
	3/8	10	4 1/2	114	1 1/16	27	1 7/8	48	1 11/16	43
SD3-FN	1/4	8	4 1/2	114	1 1/16	27	1 7/8	48	1 11/16	43
	3/8	10	4 1/2	114	1 1/16	27	1 7/8	48	1 11/16	43

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)

Models

SD-2

- 1/4" (8mm) SD2-MN - Male NPT
- 3/8" (10mm) SD2-MN - Male NPT
- 1/4" (8mm) SD2-FN - Female NPT
- 3/8" (10mm) SD2-FN - Female NPT
- 1/4" (8mm) SD2-MF - SAE Male Flare
- 3/8" (10mm) SD2-FF - SAE Male Flare
- 1/4" (8mm) SD2-FF - SAE Female Flare
- 3/8" (10mm) SD2-FF - SAE Female Flare

SD-3

- 1/4" (8mm) SD3-MN - Male NPT
- 3/8" (10mm) SD3-MN - Male NPT
- 1/4" (8mm) SD3-FN - Female NPT
- 3/8" (10mm) SD3-FN - Female NPT
- 1/4" (8mm) SD3-MF - SAE Male Flare
- 3/8" (10mm) SD3-MF - SAE Male Flare
- 3/8" (10mm) SD3-MF-LS - SAE Male Flare, less strainer

Approvals



SD-2 - ASSE 1032; SD-3 ASSE 1022
NSF
ANSI Standard 18

Series 7

Dual Check Valves

7 Sizes: 1/2" – 1 1/4" (12 – 32mm)
7C Sizes: 3/8" (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, types or 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

Flow Charts on p. 66

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)

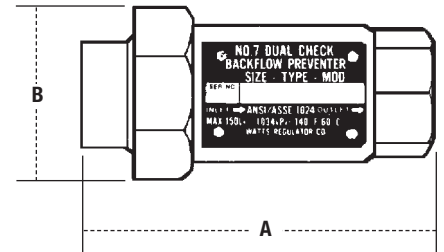
Approvals



7

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Dimensions – Weights



MODEL	SIZE (DN)	DIMENSIONS		WEIGHT	
		A	B	lbs.	kgs.
	<i>in. mm</i>	<i>in. mm</i>	<i>in. mm</i>		
7C	3/8 10	2 7/8 73	1 1/4 32	1.6	0.7
7U2-2	1/2 15	4 3/8 111	2 3/8 60	1.75	0.8
7U2-2	3/4 20	4 3/8 111	2 3/8 60	1.75	0.8
7U2-2	1 25	4 3/8 111	2 3/8 60	1.75	0.8

5

Dual Check Valves

For additional information, request literature PG-7.

Series Cu7

Copper-Body Dual Check Valves

Sizes: 1/2" – 1" (13 – 25mm)

Series Cu7 Copper-Body Dual Check Valves feature a poppet-type construction that minimizes pressure drop and provides smooth flow characteristics. Cu7 can be installed horizontally or vertically and its copper body is lead free and is constructed from time proven material. All models are standardly furnished with double unions for ease of installation and repair.

Features

- Can be installed vertically or horizontally
- Lead free copper body
- Module check valves for easy maintenance
- Chloramine resistant materials of construction
- Double unions for installation ease
- Replaceable seats
- Center stem guides for reliable seating

Pressure-Temperature

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

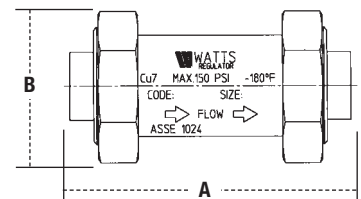
Approvals



Cu7

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Dimensions – Weights



CU7

SIZE (DN)	DIMENSIONS		WEIGHT	
	A	B	lbs.	kgs.
<i>in. mm</i>	<i>in. mm</i>	<i>in. mm</i>		
1/2 15	4 7/16 113	2 3/8 60	1.7	0.8
3/4 20	4 7/16 113	2 3/8 60	1.7	0.8
1 25	4 11/16 119	2 3/8 60	2	0.9

IMPORTANT: Inquire with governing authorities for local installation requirements

See Flow Charts on p. 66

For additional information, request literature PG-7.

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.



L7U2-2

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Flow Charts on p.66

Features

- Plugged test ports for in-line testing
- Sizes ¾" and 1" (20 and 25mm) L7U2-TC with test cocks
- L7U2-2TC-QT with test cocks and quarter-turn shutoffs

Approvals



5

Dual Check Valves

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), ¾" (20mm) inlet and outlet, NPT threaded connections
- No 7BU-2 has female union inlet x female union outlet

- No 7BU2/U2 female union inlet x female union outlet
- Length 4" (100mm); Height 1½" (38mm); Weight 1 lb (.5kg)

Approvals



7B

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Flow Charts on p.66

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 6¾" (171mm); Height 2¹³⁄₁₆" (71mm); Weight 3 lbs (1.4 kg)

Approvals



07S

Flow Charts on p.66

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IMPORTANT: Inquire with governing authorities for local installation requirements

Series 8

Hose Connection Vacuum Breakers

Sizes: 3/8" – 3/4" (10 – 20mm)



8



8B



8FR

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 except 8P)
- Stainless steel working parts for longevity
- Durable rubber diaphragm and disc for consistent positive seating

Models

8* - 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

S8C - designed for tub and shower hand spray sets. Chrome finish

S8 - same as above with plain brass 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.

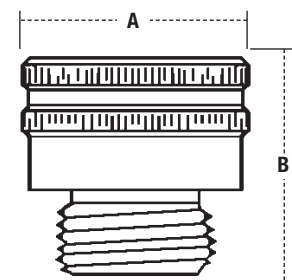
Approvals



Series 8, 8A, 8B, 8P, 8FR and NF8 are listed by IAPMO

Dimensions – Weights

MODEL	SIZE (DN)		DIMENSIONS (APPROX.)				WEIGHT	
	in.	mm	A		B		oz.	gm.
8	3/4HT	20	1 3/8	35	1 1/2	38	4	113.4
8A	3/4HT	20	1 1/2	38	1 1/2	38	4	113.4
8AC	3/4HT	20	1 1/2	38	1 1/2	38	4	113.4
8B	3/4HT	20	1 1/2	38	1 3/8	35	4	113.4
8BC	3/4HT	20	1 3/8	35	1 1/2	38	4	113.4
8C	3/4HT	20	1 3/8	35	1 1/2	38	4	113.4
NF8	3/4HT	20	1 1/2	38	2	50	5.3	151.2
NF8C	3/4HT	20	1 1/2	38	2	50	5.3	151.2
8P	3/4HT	20	1 3/4	44	1 3/8	35	2	56.7
S8	1/2F**	15	1 1/4	32	1 1/2	38	1.5	42.5
S8C	1/2F**	15	1 1/4	32	1 1/2	38	4	113.4
S8C	3/8F**	10	1 1/4	32	1 1/2	38	4	113.4
8FR	3/4HT	20	1 3/4	44	1 3/4	44	7.0	200



HT = Hose threaded connections, female inlet x male outlet connection
 ** Female NPT threaded inlet x male NPT outlet connection

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 800M4QT, 800M4FR

Pressure Vacuum Breakers

Sizes: 1/2" – 2" (15 – 50mm)

Series 800M4 QT and 800M4FR Pressure Vacuum Breakers are designed to prevent backsiphonage 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 1/2" – 1" (15 – 25mm) come standard with tee handle quarter-turn shutoffs
- Sizes 1 1/4" – 2" (32 – 50mm) come standard with lever handles

Temperature – Pressure

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

Dimensions – Weights

Approvals



MODEL	SIZE (DN)		DIMENSIONS (APPROX.)								WEIGHT	
	in.	mm	A		B		C		D		lbs.	kgs.
800M4QT	1/2	15	5	127	6 1/4	159	2 9/16	65	3 11/16	94	3.5	1.6
800M4QT	3/4	20	5 3/8	137	6 1/2	165	2 9/16	65	3 15/16	100	3.5	1.6
800M4QT	1	25	5 1/2	139	7 1/2	191	2 3/4	70	4 3/4	121	6	2.7
800M4QT	1 1/4	32	8 3/8	219	9	229	3 1/4	83	5 3/4	146	11	4.9
800M4QT	1 1/2	40	9	229	9 1/2	241	3 1/4	83	6 1/4	159	13.5	6.1
800M4QT	2	50	9 1/2	241	9 5/8	245	3 1/4	83	6 3/8	162	18.5	8.4
800MQT	1/2	15	4 7/8	124	5 3/8	137	2 1/2	64	2 7/8	73	3	1.4
800MQT	3/4	20	4 7/8	124	5 3/8	137	2 1/2	64	2 7/8	73	3	1.4

Flow Charts on p. 74

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



800M4QT

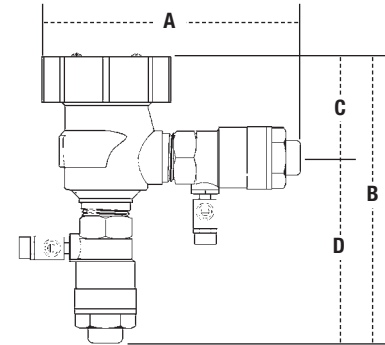
Models

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800M4FR - with relief valve for freeze protection. Patent #5,551,473.

800M QT - compact model with self-contained ball valve shutoffs. Available in sizes 1/2" and 3/4" (15 and 20mm).



6

Vacuum Breakers

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 backsiphonage 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 less Tee handles with stem wrench flats. For use where space is limited
- Available in left-handed or right-handed outlet
- Patented design
- Spill-resistant design for indoors 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

Pressure – Temperature

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

Dimensions – Weights

MODEL	SIZE (DN)		DIMENSIONS (APPROX.)								WEIGHT	
	in.	mm	A		B		C		D		lbs.	kgs.
008PCQT	3/8	10	4 1/8	107	5 1/2	140	1 9/16	40	3 15/16	100	1.6	.7
008PCQT	1/2	15	4 3/8	111	5 1/2	140	1 9/16	40	4 3/16	106	1.7	.5
008PCQT	3/4	20	4 5/16	125	7	178	2 3/8	60	4 5/8	117	3.8	1.7
008PCQT	1	25	5	127	7 1/2	191	2 3/8	60	5 1/8	130	4.8	2.2

IMPORTANT: Inquire with governing authorities for local installation requirements



008PCQT

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Models

SC - satin chrome finish – with wrench flats in place of Tee handles (contact factory)

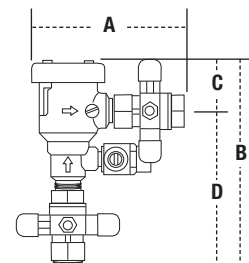
S - bronze strainer

L - left sided test cock

Approvals



IAMPO Classified



Series 188A, 288A, 289, N388

Anti-Siphon Vacuum Breakers

Sizes: 1/4" – 3" (8 – 80mm)

Series 188A, 288A, 289, N388 Anti-Siphon Vacuum Breakers are designed to protect against backsiphonage 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.



289

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Models

188A - Sizes 3/4" – 2" (20 – 50mm) irrigation vacuum breaker. Plain brass finish

288A - Sizes 1/4" – 3" (8 – 80mm). Plain brass finish

288AC - Sizes 1/4" – 1" (8 – 25mm). Polished chrome finish

289 - Sizes 3/8" – 1" (10 – 25mm). Spill resistant atmospheric vacuum breakers. NPT male connections

N388 - Sizes 1/4" and 3/8" (8 and 10mm) with NPT female bottom inlet and outlet connections. Bronze body

Approvals

Model 188A



Models 288A/N388



Model 289



Dimensions - Weights

N388

SIZE (DN)		DIMENSIONS (APPROX.)				WEIGHT	
		A		CC			
in.	mm	in.	mm	in.	mm	lb.	kgs.
1/4	8	1 3/4	44	3/4	20	.5	.23
3/8	10	1 3/4	44	7/8	60	.75	.34
1/4	8	1 3/4	44	3/4	20	.5	.23
3/8	10	1 3/4	44	7/8	60	.75	.34

289

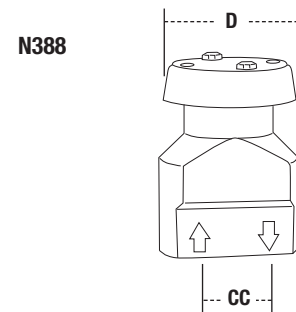
SIZE (DN)		DIMENSIONS (APPROX.)						WEIGHT			
		A		B	C		D				
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kgs.
3/8	10	1 1/2	38	2 3/8	60	3 3/4	95	2	51	.9	.4
1/2	15	1 1/2	38	2 3/8	60	3 3/4	95	2	51	1	.4
3/4	20	2 3/8	60	2 1/2	64	5	127	3 3/4	95	3	1.4
1	25	2 3/8	60	2 1/2	64	5	127	3 3/4	95	4	1.8

188A

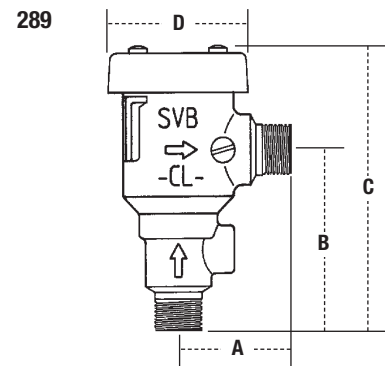
SIZE (DN)		DIMENSIONS (APPROX.)				WEIGHT			
		A		C	D				
in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
3/4	20	2 1/4	57	1 7/8	48	1 1/2	38	1.13	.51
1	25	2 7/8	73	2 1/8	54	1 11/16	43	1.75	.79
1 1/4	32	2 7/8	73	2 1/8	54	1 13/16	46	2.13	.96
1 1/2	40	3 5/8	92	2 7/16	62	2 3/16	56	3.5	1.64
2	50	4 1/8	105	2 7/8	73	2 1/2	64	5.25	2.38

288A

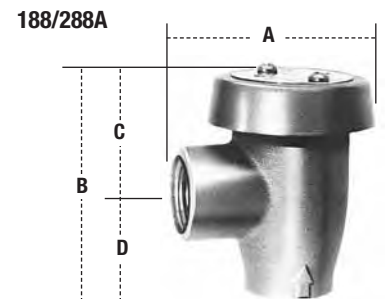
SIZE (DN)		DIMENSIONS (APPROX.)				WEIGHT					
		A		B	C		D				
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	oz.	gm.
1/4	8	1 3/4	44	2 1/4	57	1 1/4	32	1	25	6	170
3/8	10	1 3/4	44	2 1/4	57	1 1/4	32	1	25	6	170
1/2	15	2	50	2 3/4	70	1 1/2	38	1 1/4	32	8	227
3/4	20	2 1/4	57	3	76	1 1/2	38	1 1/2	38	18	510
1	25	2 7/8	73	3 5/8	92	1 7/8	48	1 3/4	44	28	794
1 1/4	32	2 7/8	73	3 3/4	95	1 7/8	48	1 7/8	48	34	964
1 1/2	40	3 5/8	92	4 1/2	114	2 1/4	57	2 1/4	57	54	1531
2	50	4	100	5 1/8	130	2 5/8	67	2 1/2	64	84	2381
2 1/2	65	6 1/2	165	7 1/2	191	4 1/2	114	3	76	256	7258
3	80	6 1/2	165	8	200	4 5/8	117	3 3/8	86	274	7768



N388



289



188/288A

Series WB

WattsBox Insulated Enclosures



WattsRock Enclosure



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
- An 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

FIBERGLASS			
FITS WATTS VALVES	WATTS MODEL	DIMENSIONS	
		12" CLEARANCE Length x Width x Height	MOUNTING PAD SIZE
Thru 3/4" (20mm) 007, 009, 909, 719, 919	WB-75	19" x 11" x 22"	28" x 20"
Thru 1" (25mm) 007, 009, 909, 719, 919	WB-1	27" x 13" x 23"	36" x 22"
Thru 1 1/2" (40mm) 007, 009, 909, 719, 919	WB-1.5	33" x 21" x 25"	44" x 32"
Thru - 2" (50mm) 007, 009, 909, 719, 919	WB-2	39" x 13" x 28"	50" x 24"
3/4" - 1" (20 - 25mm) 800, 008, 288, 289 (Increases height by 6")	WB-PVB1 WB-PVB T1	18" x 9" x 18" 18" x 9" x 24"	19" x 27" 19" x 27"
1 1/4" - 2" (32 - 50mm) 800, 288 (Increases height by 8")	WB-PVB2 WB-PVB T2	26" x 12" x 20" 26" x 12" x 28"	21" x 35" 21" x 35"
2 1/2" - 3" (65 - 80mm) all 007, 009, 009, 909			
4" (100mm) 774 NRS / OSY / DCDA			
4" (100mm) 994NRS, 3" (80mm) 775NRS / OSY / DCDA, 3" (80mm) 995NRS, 4" (100mm) 775NRS, 4" (100mm) 994NRS, 2 1/2" - 3" (65 - 80mm) 757DCDA, 2 1/2" - 3" (65 - 80mm) 957QT, 2 1/2" - 3" (65 - 80mm) 957RPDA	WB-N3	70" x 26" x 45"	82" x 38"
4" (100mm) 994OSY / RPDA, 4" (100mm) 775OSY / DCDA, 3" (80mm) 995OSY / RPDA	WB-E3	70" x 26" x 55"	82" x 38"
2 1/2" - 3" (65 - 80mm) 957N NRS / OSY / BFG / QT, 4" (100mm) 957N NRS / BFG / QT	WB 3000	45" x 35" x 35"	57" x 47"
4" (100mm) 957N OSY, 4" (100mm) 757DCDA	WB 4000	53" x 44" x 44"	65" x 56"
ALUMINUM			
4" (100mm) 709NRS / OSY / DCDA, 4" (100mm) 909NRS / OSY / RPDA, 6" (150mm) 774NRS / OSY / DCDA, 6" (150mm) 994NRS, 6" (150mm) 775NRS, 6" (150mm) 995NRS, 8" (200mm) 775NRS, 4" (100mm) 757NRS / OSY, 6" (150mm) 757NRS / OSY / BFG, 8" (200mm) 757NRS / BFG, 4" 757DCDA, 6" (150mm) 757DCDA, 4" (100mm) 957OSY, 6" (150mm) 957NRS, 8" (200mm) 957NRS	WB-N4	90" x 32" x 50.5"	102" x 44"
6" (150mm) 957OSY, 6" (150mm) 957RPDA	WB-E4	90" x 32" x 57.5"	102" x 44"
6" (150mm) 709NRS / OSY / DCDA, 6" (150mm) 909NRS / OSY / RPDA, 8" (200mm) 774, 994NRS, 10" (250mm) 774 NRS, 10" (250mm) 957NRS	WB-N6	105" x 36" x 53"	117" x 48"
6" (150mm) 994 OSY / RPDA, 8" (200mm) 774 OSY / DCDA, 10" (250mm) 994 NRS, 6" (150mm) 775OSY / DCDA, 8" (200mm) 775OSY / DCDA, 6" (150mm) 995OSY / RPDA, 8" (200mm) 757OSY, 10" (250mm) 757NRS, 8" (200mm) 757DCDA, 8" (200mm) 957OSY, 8" (200mm) 957RPDA	WB-E6 WB-N8	105" x 36" x 64" 118" x 40" x 58"	117" x 48" 130" x 52"
8" (200mm) 709, 909 NRS			
8" (200mm) 709OSY / DCDA, 8" (200mm) 909, 994OSY / RPDA, 10" (250mm) 774OSY / DCDA, 8" (200mm) 757OSY / DCDA, 8" (200mm) 957OSY / RPDA, 10" (250mm) 757NRS, 10" (250mm) 957NRS	WB-E8 WB-N10	118" x 40" x 74" 142" x 42" x 65"	130" x 52" 154" x 54"

continued on next page...

7 Miscellaneous Backflow Products

Features (cont.)

- 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 earthtone brown

Dimensions (cont.)

ALUMINUM (CONT.)			
FITS WATTS VALVES	WATTS MODEL	DIMENSIONS	
		12" CLEARANCE	
		Length x Width x Height	MOUNTING PAD SIZE
10" (250mm) 7090SY / DCDA, 10" (250mm) 909, 9940SY / RPDA, 10" (250mm) 7570SY / DCDA, 10" (250mm) 9570SY / RPDA	WB-E10	142" x 42" x 85"	154" x 54"
2½" - 3" (65 - 80mm) 757N OSY, 4" (100mm) 757N NRS / BFG, 6" (150mm) 757N NRS, BFG, 6" (150mm) 957N BFG	WB 4000AN	53" x 33" x 44"	65" x 45"
4" (100mm) 757N OSY, 3" 757N DCDA, 6" (150mm) 957N NRS, 8" (200mm) 957N NRS, 2½" - 3" (65 - 80mm) 957N RPDA, 4" (100mm) 957N RPDA	WB 4000AE	53" x 44" x 44"	65" x 56"
8" (200mm) 757N NRS, 4" (100mm) 957 QT	WB 6000AN	62" x 39" x 46"	74" x 51"
6" (150mm) 757N OSY, 6" (150mm) 757N DCDA, 6" (150mm) 957N OSY, 8" (200mm) 957N NRS, 6" (150mm) 957N RPDA	WB 6000AE	62" x 53" x 46"	74" x 65"
STUCCO ALUMINUM			
2½" - 3" (65 - 80mm) 757N NRS / BFG / QT	WB 2000A	39" x 24" x 32"	42" x 34"
2½" - 3" (65 - 80mm) 757NRS, QT, BFG, 4" (100mm) 757BFG	WB 2.5	60" x 22" x 30"	63" x 32"
2½" - 3" (65 - 80mm) 7570SY, 2½" - 3" (65 - 80mm) 957NRS / OSY, 4" (100mm) 957NRS	WB 2.75	60" x 22" x 42"	63" x 44"
10" (250mm) 7570SY, 10" (250mm) 757DCDA, 10" (250mm) 9570SY, 10" (250mm) 957RPDA	WB 6 ET	105" x 36" x 80"	108" x 82"
10" (250mm) 757N NRS	WB 8000ANT	73" x 45" x 60"	75" x 62"
8" (200mm) 757N OSY, 8" (200mm) 757N DCDA, 10" (250mm) 757N OSY, 10" (250mm) 757N DCDA, 8" (200mm) 957N OSY, 10" (250mm) 957N NRS, 10" (250mm) 957N OSY, 8" (200mm) 957N RPDA, 10" (250mm) 957N DCDA	WB 8000AET	73" x 67" x 60"	76" x 62"
WATTSROCK - SLATE GREY OR EARTHTONE BROWN			
¾" - 1" (20 - 25mm) 007, 009, 719, 775, 909, 919, 995	WPLRN-1 (shell)	28" x 12" x 23"	40" x 24"
¾" - 1" (20 - 25mm) 007, 009, 719, 775, 909, 919, 995	WPLR-1 (less heat)	26" x 10" x 22"	40" x 24"
¾" - 1" (20 - 25mm) 007, 009, 719, 775, 909, 919, 995	WPHR-1 (w/heat)	26" x 10" x 22"	40" x 24"
1¼" - 2" (32 - 50mm) 007, 009, 719, 775, 909, 919, 995	WPLRN-2 (shell)	45" x 14" x 28"	56" x 22"
1¼" - 2" (32 - 50mm) 007, 009, 719, 775, 909, 919, 995	WPLR-2 (less heat)	43" x 12" x 27"	56" x 22"
1¼" - 2" (32 - 50mm) 007, 009, 719, 775, 909, 919, 995	WPHR-2 (w/heat)	43" x 12" x 27"	56" x 22"
STRAINER MODELS			
¼" - 2" (8 - 50mm)	WB-2S	47" x 13" x 28"	58" x 24"
2½" - 3" (65 - 80mm) NRS	WB-N3S	83" x 26" x 45"	95" x 38"
2½" - 3" (65 - 80mm) OSY	WB-E3S	83" x 26" x 55"	95" x 38"
4" (100mm) NRS	WB-N4S	102" x 32" x 50.5"	114" x 44"
4" (100mm) OSY	WB-E4S	102" x 32" x 57.5"	114" x 44"
6" (150mm) NRS	WB-N6S	125" x 36" x 53"	137" x 48"
6" (150mm) OSY	WB-E6S	125" x 36" x 64"	137" x 48"
8" (200mm) NRS	WB-N8S	142" x 40" x 58"	154" x 52"
8" (200mm) OSY	WB-E8S	142" x 40" x 74"	154" x 52"
10" (250mm) NRS	WB-N10S	172" x 42" x 65"	184" x 54"
10" (250mm) OSY	WB-E10S	172" x 42" x 85"	184" x 54"

Series TWS

Through the Wall shutoffs

Sizes: 3/4", 1" (20, 25mm)

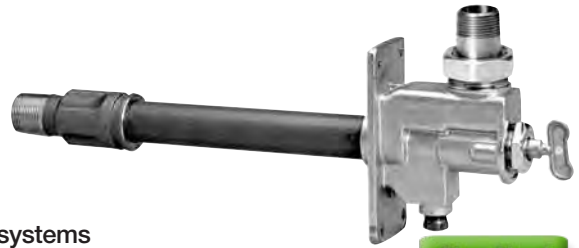
Series TWS Through the Wall shutoffs are for use on irrigation sprinkler systems and feature a provision for a pressure vacuum breaker (PVB), atmospheric vacuum breaker (AVB), double check (DC) or reduced pressure zone (RPZ) backflow preventer. Series TWS provides access to the home's water supply from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

Pressure – Temperature

Temperature Range: 33°F – 140°F (0.5°C - 60°C) continuous, 180°F (82°C) intermittent
 Maximum Working Pressure: 175psi (12.1 bar)

Models

Sizes: 3/4", 1" (20, 25mm), NPT male outlet connection
 8", 10", 12" (200, 250, 300mm) shaft lengths



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Dimensions

MODEL	SIZE (DN)	
	<i>in.</i>	<i>mm.</i>
TWS-8	3/4	20
TWS-10	3/4	20
TWS-12	3/4	20
TWS-8	1	25
TWS-10	1	25
TWS-12	1	25

For additional information, request literature ES-TWS.

Series Governor 80-M1

Ball Cock and Thermal Expansion Relief Valve

Sizes: 10", 11 1/2", 12 1/2" (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: 33°F – 110°F (0.5°C – 43.3°C)
 Relief Valve Set At: 80psi (552 kPa)

Approvals

IAPMO Listed
 CSA Certified for anti-siphon ball cocks
 FDA approved under CFR-21-177-2600
 ANSI/ASSE 1002



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Dimensions

MODEL	SIZE (DN)	
	<i>in.</i>	<i>mm</i>
Gov 80-M1 10	10	250
Gov 80-M1 11 1/2	11 1/2	292
Gov 80-M1 12 1/2	12 1/2	318

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.

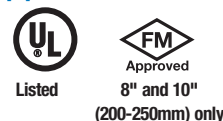
Pressure – Temperature

Temperature Range: 33°F-110°F (0.5°C-43°C)
 Rated working pressure: 175psi (12.1 bar)
 Flange bolt pattern and hole diameter in accordance with ANSI B16.5 Class 125/AWWA C207 Class D

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



Approvals



Test Kits

Model TK-7



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For additional information, request literature [IS-TK7](#) or [PG-TK](#).

- Water column sight tube for testing dual check and double check valves.
- Tests individual check modules of the Watts Model 7, 709 and 007.

MODEL	WEIGHT	
	<i>lbs.</i>	<i>kgs.</i>
TK-7	5	2.3

Model TK-9A



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For additional information, request literature [IS-TK9A](#) or [PG-TK](#).

- $\pm 2\%$ accuracy full scale
- Test kit easily connects to any testable backflow preventer assembly.
- Designed for testing all testable backflow preventers.

Maximum pressure 175psi (12.1 bar).
Maximum temperature 210°F (98.9°C).

MODEL	WEIGHT	
	<i>lbs.</i>	<i>kgs.</i>
TK-9A	8	3.6

Model TK-99D



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For additional information, request literature [IS-TK-99D](#) or [PG-TK](#).

- 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.

MODEL	WEIGHT	
	<i>lbs.</i>	<i>kgs.</i>
TK-99D	3	1.4

Model TK-99E



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For additional information, request literature [IS-TK-99E](#) or [PG-TK](#).

- $\pm 1\%$ accuracy full scale.
- Compact test kit with color coded valves, hoses and top mounted bleed valves.
- Designed for testing all testable backflow preventers.

MODEL	WEIGHT	
	<i>lbs.</i>	<i>kgs.</i>
TK-99E	8	3.6

Model TK-DL

With Digital Print-Out and Computer Download Capability



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- $\pm 0.2\%$ accuracy full scale.
- 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, adapters, digital print-out unit and a rugged case.

MODEL	WEIGHT	
	<i>lbs.</i>	<i>kgs.</i>
TK-DL	15	6.8

IMPORTANT: Inquire with governing authorities for local installation requirements

For additional information, request literature [IS-TK-DL](#) or [PG-TK](#).

Test Cocks

For use with backflow preventers, isolation valve for gauges, isolation valves for small equipment lines.

TC

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



SAE-TC

- Full port ball valve design
- Screwdriver slot operation
- 1/8" (3mm) M x SAE



SAE-TC Adapter

- 1/4" (8mm) female SAE x 7/16" (14mm) FPT
- Adapts to SAE-TC for use with pressure gauge and/or site tube
- SAE-TC Adapter
- 1/8" (3mm) SAE-TC Brass Cap



SilverEagle TC

- 1/2" (15mm) TC for 2 1/2" - 4" (65 - 100mm) series 757 and 957
- 3/4" (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 1/8" (8mm) M x SAE test cocks
- Brass dust cap with O-ring seal and rubber tether
- RK-SAE-TC-B



7

Miscellaneous Backflow Products

Air Gaps and Elbows

for Reduced Pressure Zone Assemblies

Sizes: 1/4" – 10" (8 – 250mm) for RPZ and RPDA



909



909



994

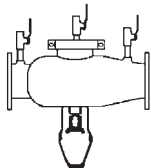


957 AG

Air Gaps

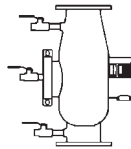
An air gap provides the unobstructed, physical separation between the discharge end of a potable water supply line and an open receiving vessel. The installation of an air gap and drain line are recommended.

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



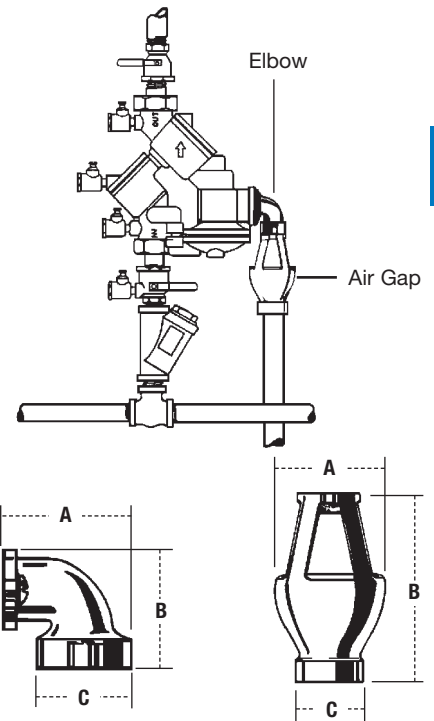
Horizontal Air Gaps

1. Remove two of the relief valve capscrews 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

MODEL NO.	SERIES/SIZES	DIMENSIONS						WEIGHT	
		A		B		C		lbs.	kgs.
		in.	mm	in.	mm	in.	mm		
909AG-A	1/4" – 1/2" 009, 3/4" 009M2/M3, 1/2" – 1" 995	2 3/8	60	3 1/8	79	1/2	13	.63	.28
909AG-C	3/4" – 1" 009/909, 1 – 1 1/2" 009M2, 1 1/4" – 2" 995	3 1/4	83	4 7/8	124	1	25	1.50	.68
909AG-F	1 1/4" – 3" 009/909, 1 1/4" – 2" 009M1, 2" 009M2	4 3/8	111	6 3/4	171	2	51	3.25	1.47
909AG-K	4" – 6" 909, 8" – 10" 909M1	6 3/8	162	9 5/8	244	3	76	6.25	2.83
909AG-M	8" – 10" 909	7 3/8	187	11 1/4	286	4	102	15.50	7.03
919AGC	3/4" & 1" 919	2 3/8	60	3 3/8	79	1/2	13	.63	.28
919AGF	1 1/4" - 2" 919	4 3/8	111	8 7/16	214	3	76	4.26	1.93
957-AG (Complete)	2 1/2" – 10" 957	7 1/2	190	10 3/16	258	2	51	1.5	.68
957-AG (Splash Guard Only)	2 1/2" – 10" 957	—	—	—	—	—	—	—	—
994AGK-P	2 1/2" – 10" 994	8	203	11 1/4	286	2	51	1.50	0.68
995-AG	3" – 6" 995	5	127	8	203	2 3/8	60	—	—

Vent Elbows

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

MODEL NO.	SERIES/SIZES	A	B	C	WEIGHT
		in.	mm	in.	mm
909EL-A	1/4" – 1/2" 009, 3/4" 009M2/M3, 1/2" – 1" 995	—	—	—	—
*909EL-C	3/4" – 1" 009/909, 1" – 1 1/2" 009M2, 1 1/4" – 2" 995	2 3/8	60	2 3/8	60
*909EL-F	1 1/4" – 2" 009M1, 1 1/4" – 2" 009/909, 2" 009M2	3 3/8	92	3 3/8	92
*909EL-H	2 1/2" – 3" 009/909	—	—	2	51
994EL-F (vertical)	2 1/2" – 10" 994	4 7/8	124	9	229

*Epoxy coated

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



FLANGES

MODEL NO.	SIZE
W-FLG SS-U	2 x 1/4
W-FLG SS-U	2 x 1/2
W-FLG SS-S	2 x 1/4
W-FLG SS-S	2 x 1/2
W-FLG SS-U	2 1/2 x 1/4
W-FLG SS-U	2 1/2 x 1/2
W-FLG SS-S	2 1/2 x 1/4
W-FLG SS-S	2 1/2 x 1/2
W-FLG Z-U	3 x 1/2
W-FLG Z-U	3 x 1
W-FLG Z-S	3 x 1/2
W-FLG Z-S	3 x 1
W-FLG SS-U	3 x 1/4
W-FLG SS-U	3 x 1/2
W-FLG SS-S	3 x 1/4
W-FLG SS-S	3 x 1/2
W-FLG Z-U	4 x 1/2
W-FLG Z-U	4 x 1
W-FLG Z-S	4 x 1/2
W-FLG Z-S	4 x 1
W-FLG SS-U	4 x 1/4
W-FLG SS-U	4 x 1/2
W-FLG SS-S	4 x 1/4
W-FLG SS-S	4 x 1/2
W-FLG Z-U	6 x 1/2
W-FLG Z-U	6 x 1
W-FLG Z-S	6 x 1/2
W-FLG Z-S	6 x 1
W-FLG SS-U	6 x 1/4
W-FLG SS-U	6 x 1/2
W-FLG SS-S	6 x 1/4
W-FLG SS-S	6 x 1/2
W-FLG Z-U	8 x 1/2
W-FLG Z-U	8 x 1
W-FLG Z-S	8 x 1/2
W-FLG Z-S	8 x 1
W-FLG SS-U	8 x 1/4
W-FLG SS-U	8 x 1/2
W-FLG SS-S	8 x 1/4
W-FLG SS-S	8 x 1/2
W-FLG SS-U	10 x 1/4
W-FLG SS-U	10 x 1/2
W-FLG SS-S	10 x 1/4
W-FLG SS-S	10 x 1/2

Size = Valve size x Thickness

Z = Zinc SS = 304 Stainless Steel
S = Slotted U = Unslotted

SPOOLS

MODEL NO.	SIZE
W-SPL	2 1/2 x 1 7/8
W-SPL	2 1/2 x 3 3/8
W-SPL	2 1/2 x 3 15/16
W-SPL	2 1/2 x 4
W-SPL	2 1/2 x 4 15/16
W-SPL	3 x 1 7/8
W-SPL	3 x 2 1/2
W-SPL	3 x 3 1/2
W-SPL	3 x 3 15/16
W-SPL	3 x 4
W-SPL	4 x 5 3/8
W-SPL	4 x 5 7/8
W-SPL	4 x 6 3/8
W-SPL	4 x 6 13/16
W-SPL	4 x 7 3/8
W-SPL	4 x 7 15/16
W-SPL	4 x 8
W-SPL	4 x 9 7/8
W-SPL	4 x 10 1/4
W-SPL	4 x 10 7/8
W-SPL	4 x 11 7/8
W-SPL	4 x 12
W-SPL	4 x 14 7/8
W-SPL	6 x 5 1/8
W-SPL	6 x 8 3/8
W-SPL	6 x 9 11/16
W-SPL	6 x 10 1/4
W-SPL	6 x 11
W-SPL	6 x 12 7/16
W-SPL	6 x 12 1/2

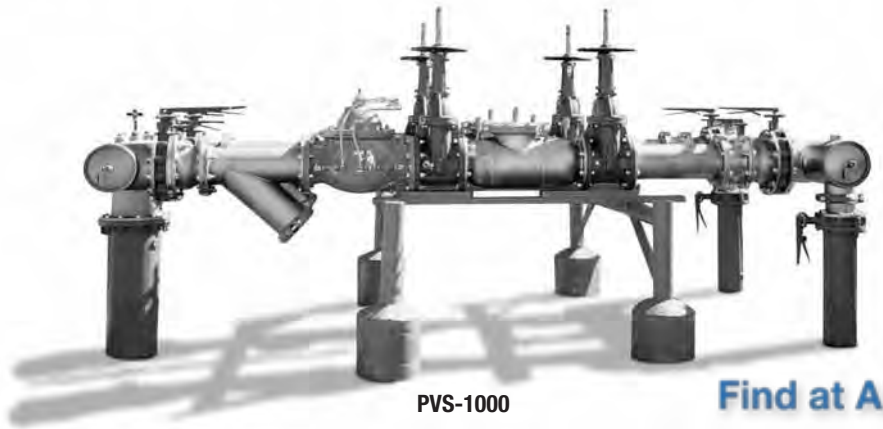
SPOOLS

MODEL NO.	SIZE
W-SPL	6 x 13 3/8
W-SPL	6 x 13 7/8
W-SPL	6 x 14
W-SPL	6 x 14 3/8
W-SPL	6 x 14 7/8
W-SPL	6 x 16 7/8
W-SPL	6 x 17 3/8
W-SPL	8 x 12 1/8
W-SPL	8 x 16 1/8
W-SPL	8 x 16 1/2
W-SPL	8 x 17 3/8
W-SPL	8 x 18 3/8
W-SPL	8 x 21 1/16
W-SPL	8 x 21 1/8
W-SPL	8 x 22 3/8
W-SPL	8 x 22 7/8
W-SPL	8 x 23 3/8
W-SPL	8 x 25 5/8
W-SPL	10 x 16 1/8
W-SPL	10 x 16 3/4
W-SPL	10 x 28 1/8
W-SPL	10 x 28 3/8
W-SPL	10 x 28 1/2
W-SPL	10 x 29 7/8
W-SPL	10 x 29 15/16
W-SPL	10 x 32 3/8
W-SPL	10 x 32 7/16
W-SPL	10 x 34 3/8
W-SPL	10 x 37 3/4

7 Miscellaneous Backflow Products

Series PVS-1000

Pre-engineered Valve Stations



PVS-1000

Find at Air Delights!

Shop Now!

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 end 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 (i.e. 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:

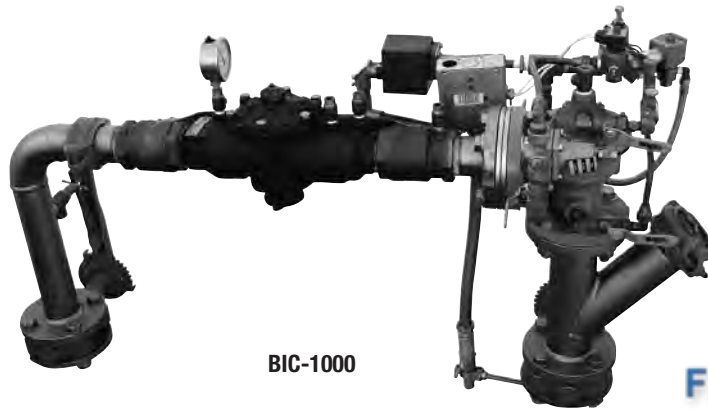
- Hospitals
- Schools
- Multi-Family Dwellings
- Restaurants
- Industrial Facilities
- Other similar buildings

IMPORTANT: Inquire with governing authorities for local installation requirements

For additional information, request literature [PG-ValveStations](#).

Series BIC-1000

Backflow Irrigation Control Stations



Find at Air Delights!

Shop Now!

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 stand-by, 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

7

Miscellaneous Backflow Products

Series FR 500

Thermostatic Freeze Relief Kits

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



1/8" and 1/4"



1/2" and 3/4"

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

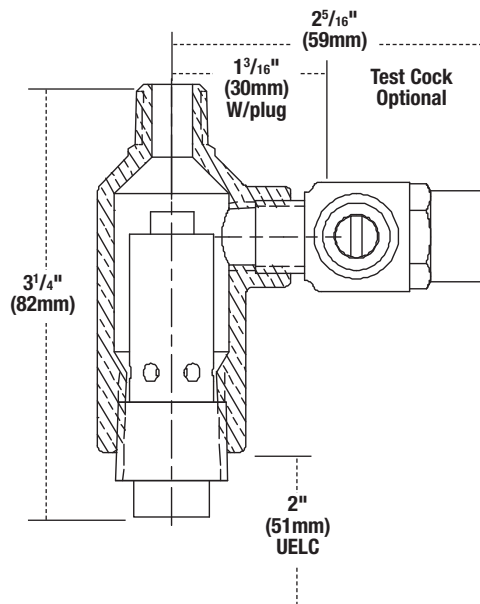
Pressure – Temperature

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

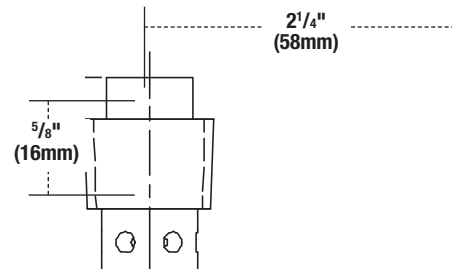
Approvals



Dimensions



Sizes: 1/8" and 1/4" (3 and 8mm)



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

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 options 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.

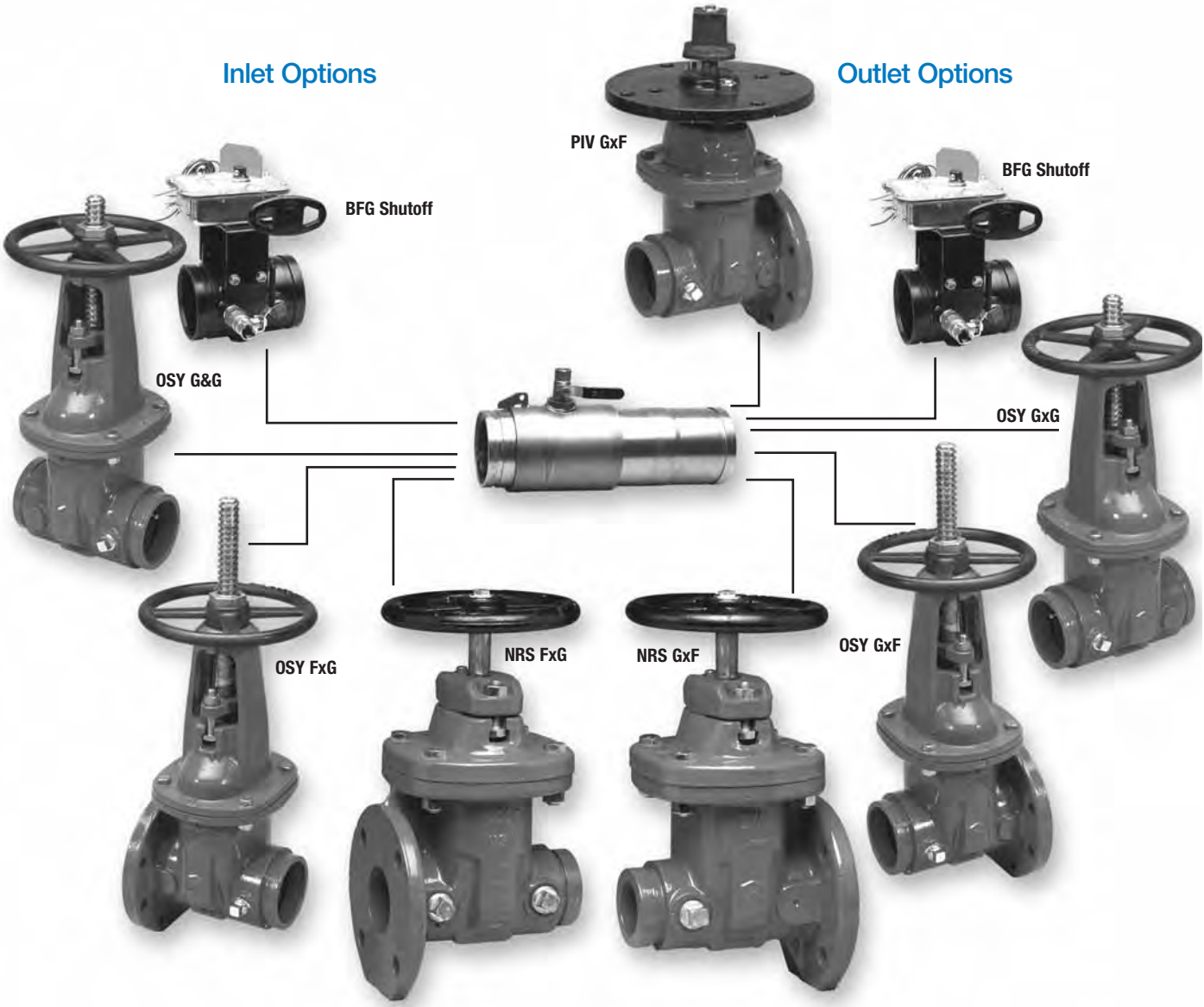
Available on series: 009, 919



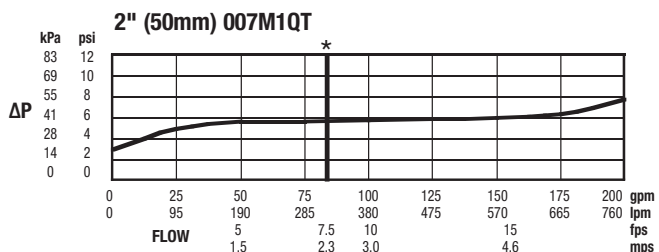
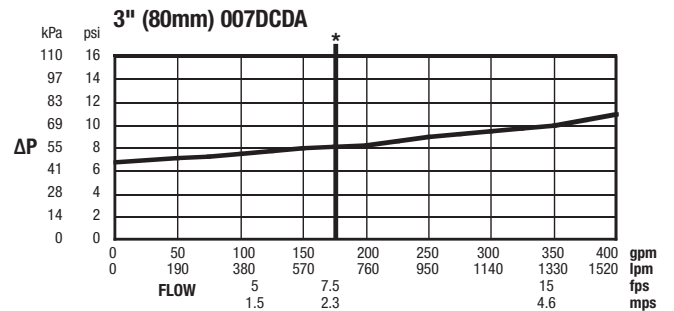
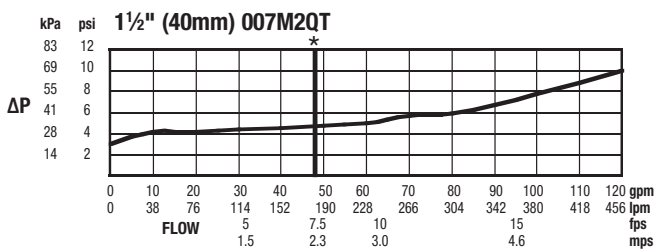
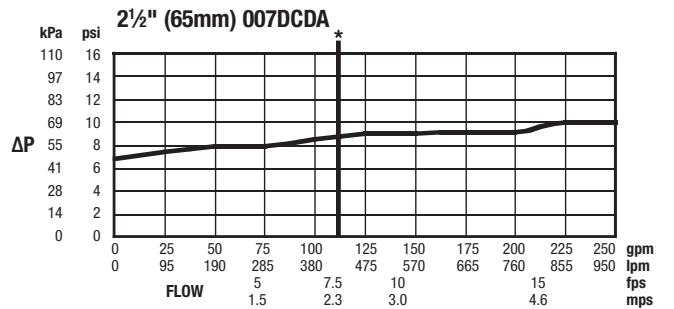
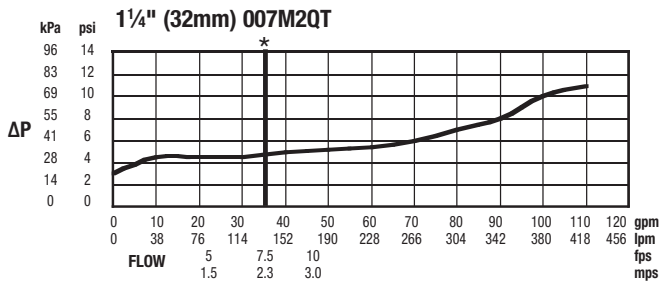
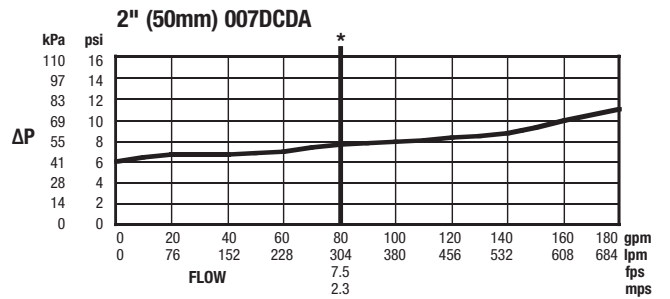
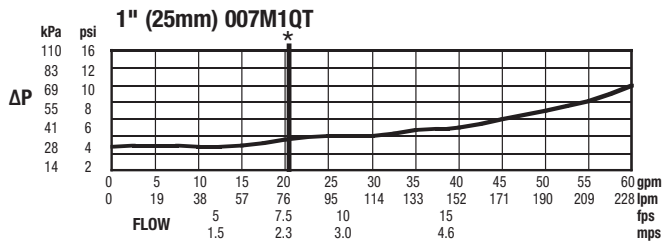
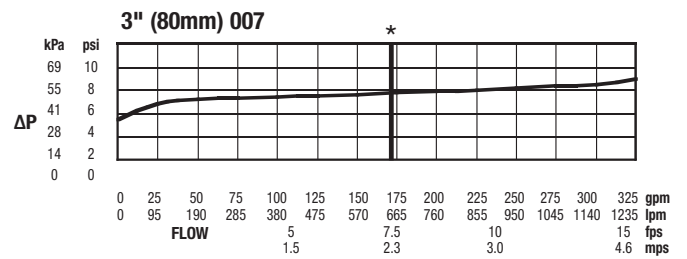
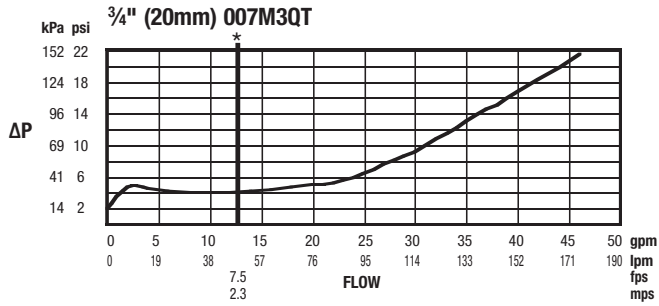
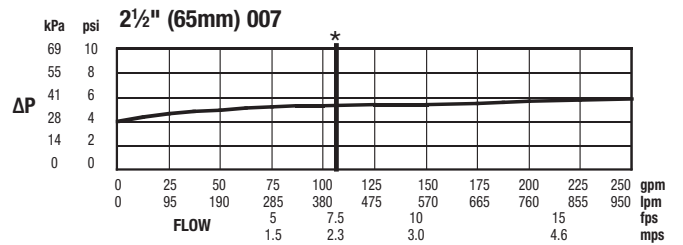
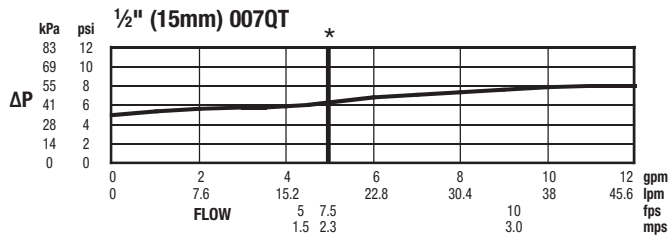
Shutoff Valve Options

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

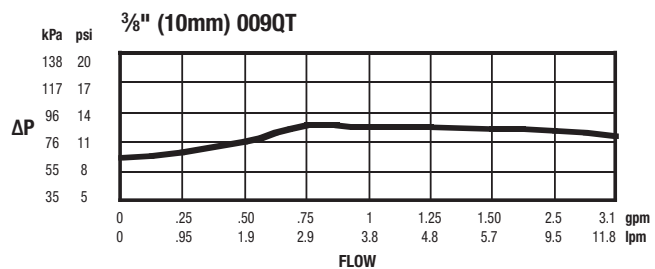
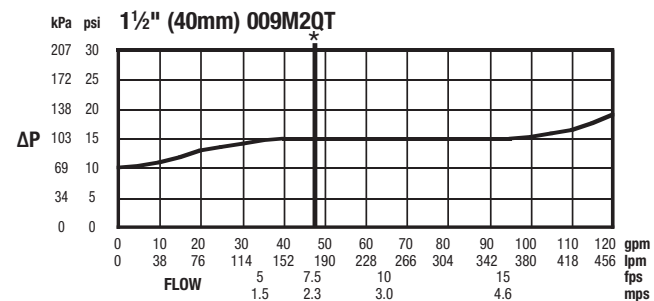
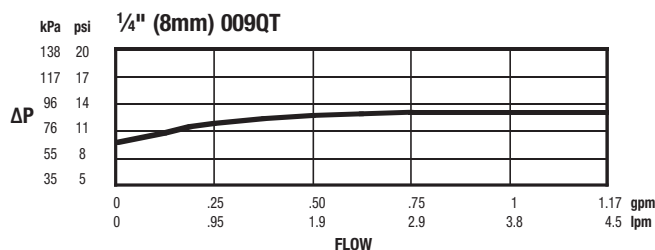
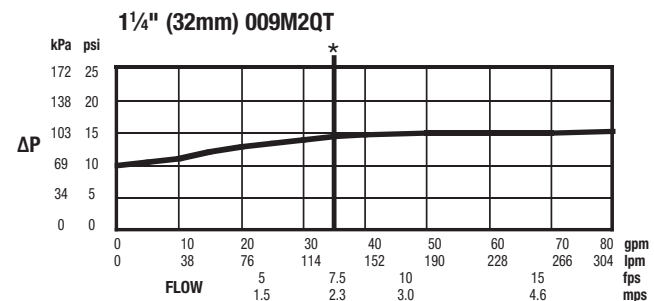
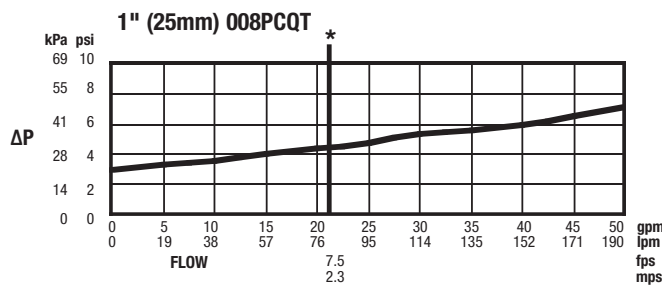
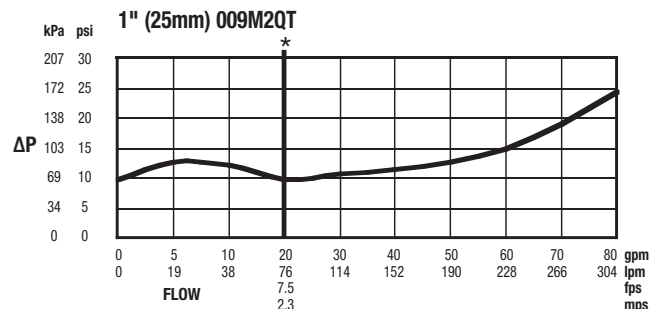
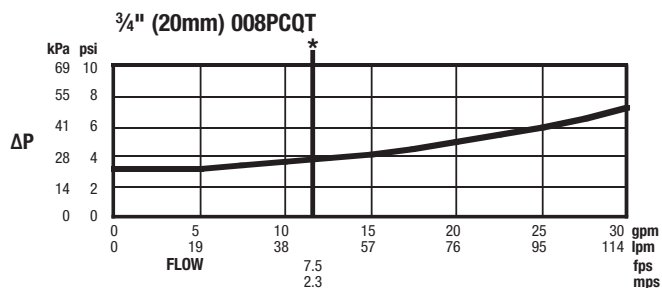
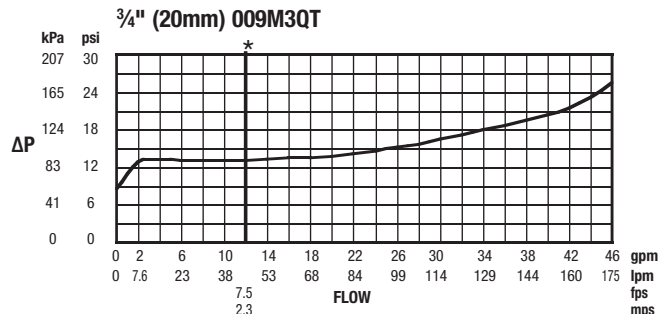
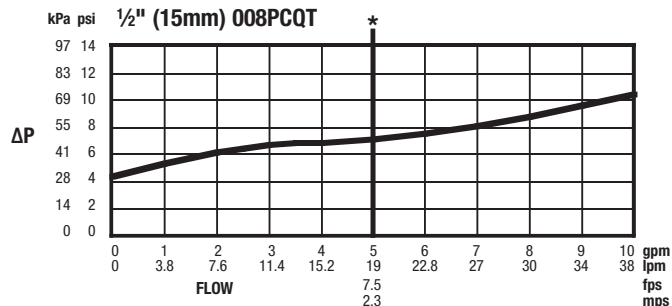
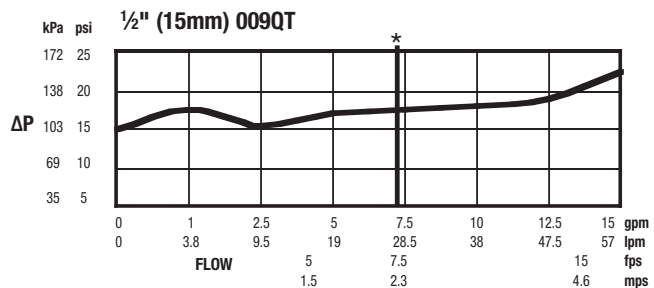
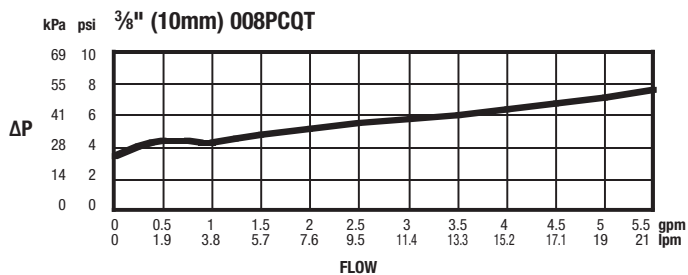


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)

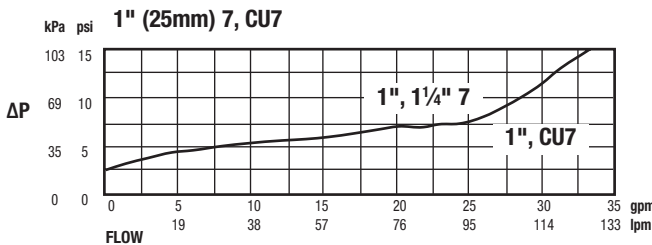
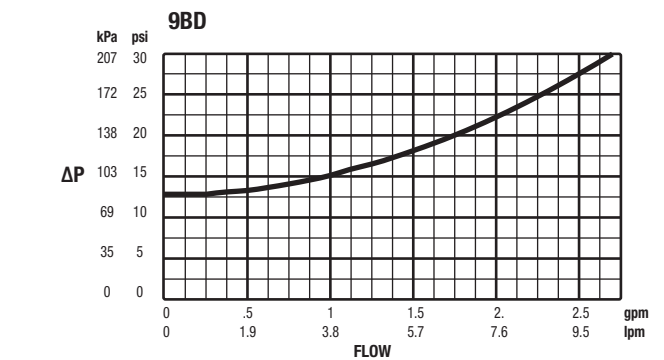
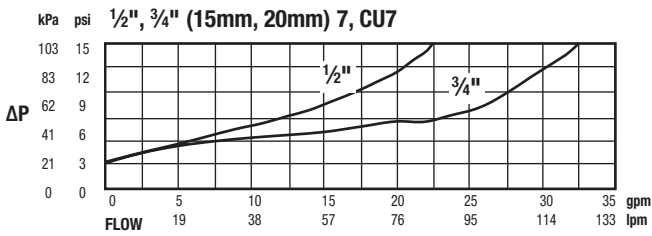
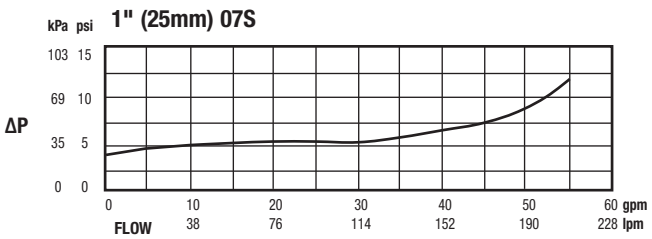
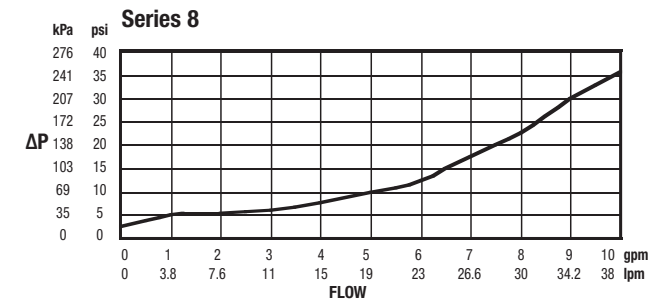
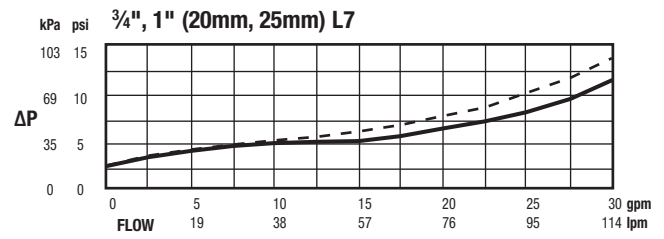
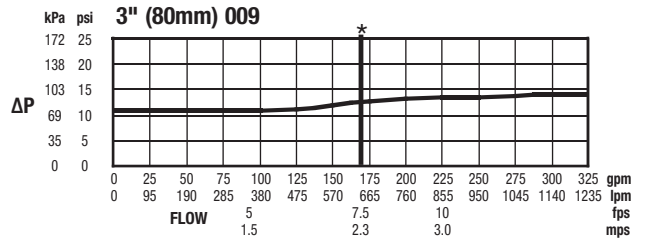
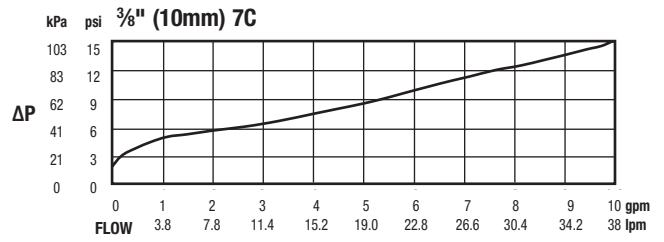
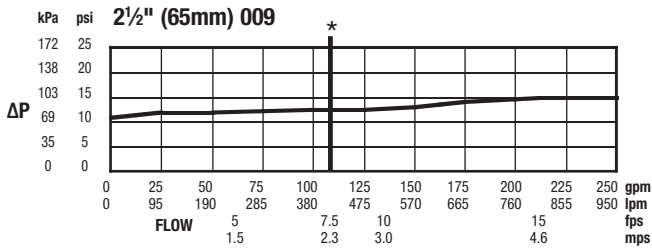
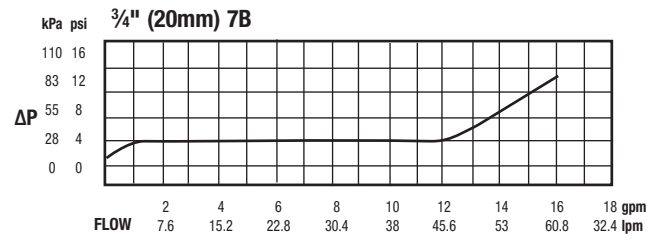
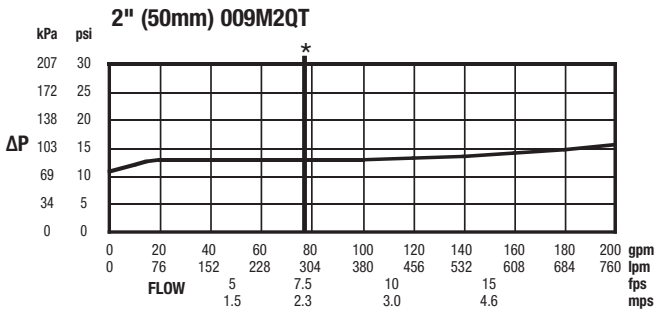


Flow Charts

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

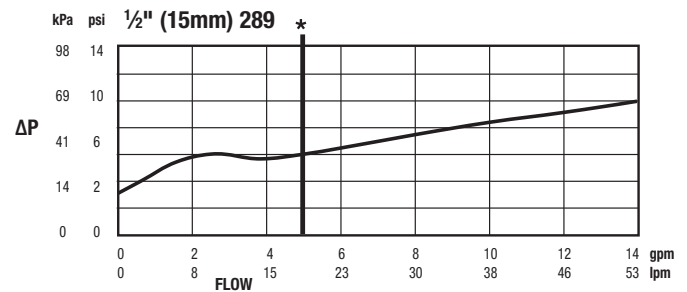
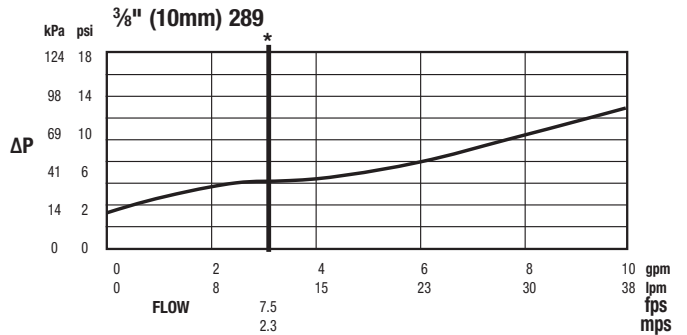
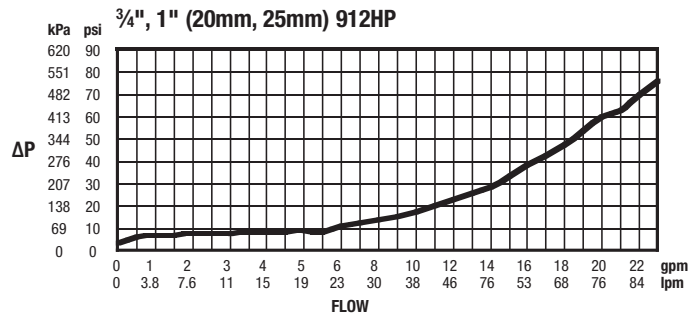
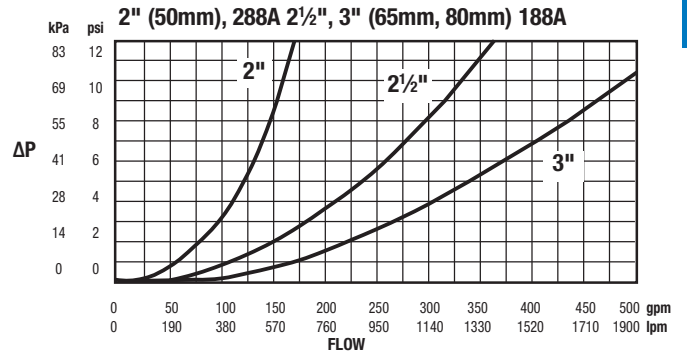
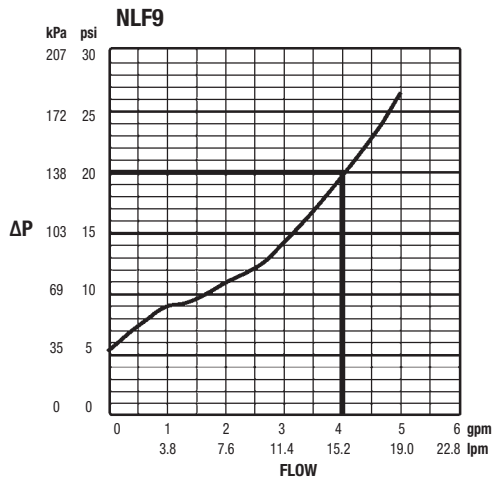
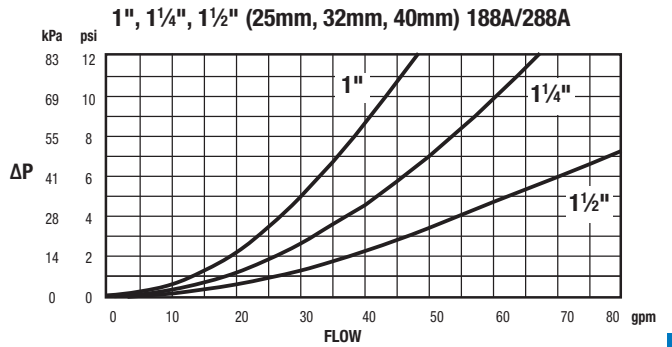
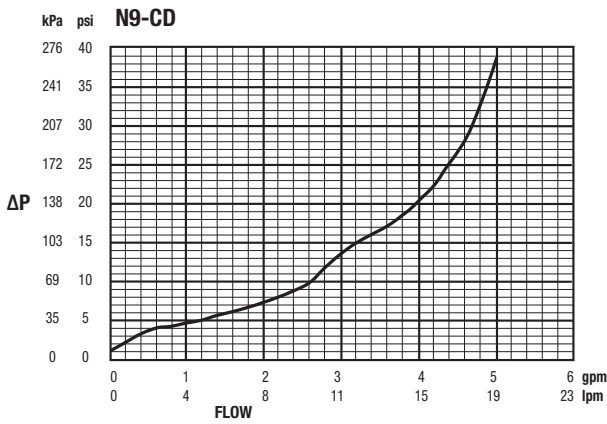
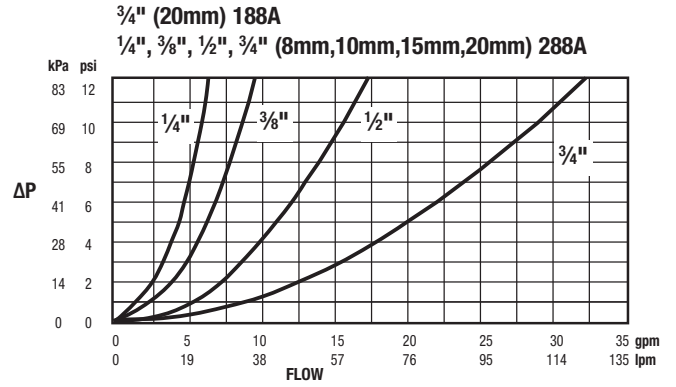
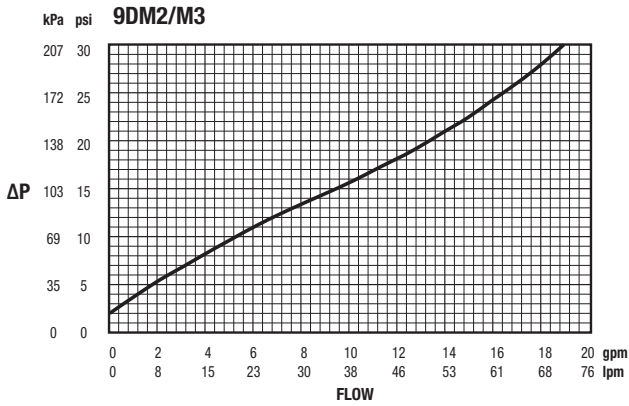


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)

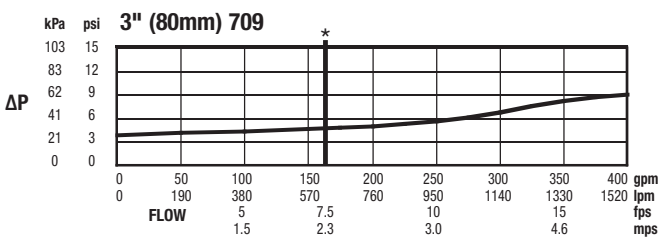
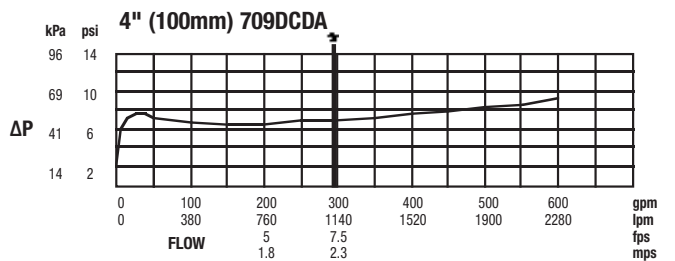
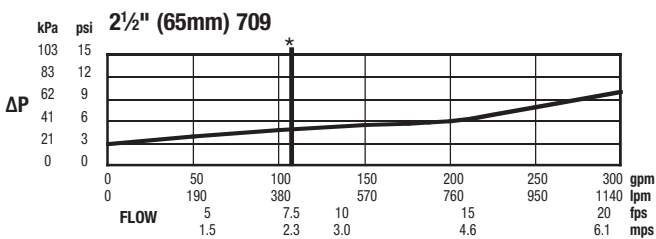
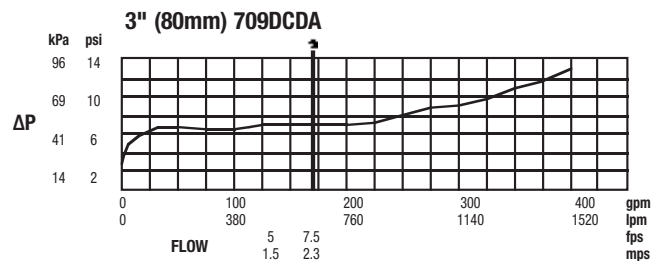
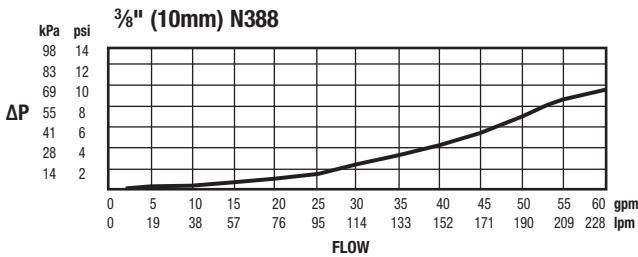
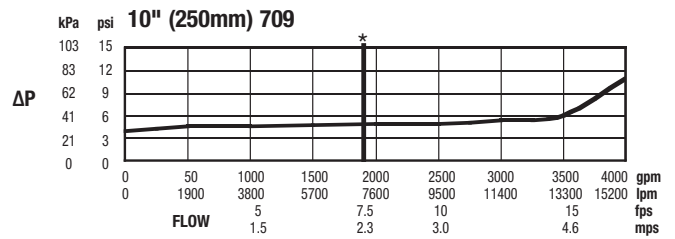
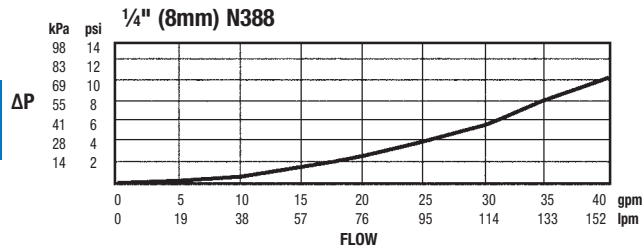
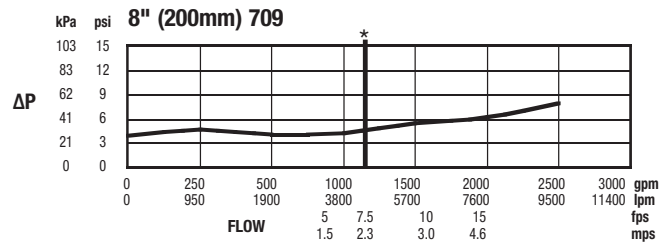
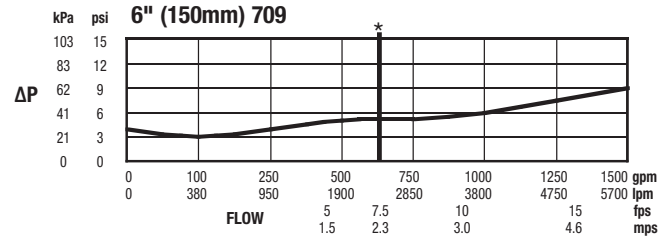
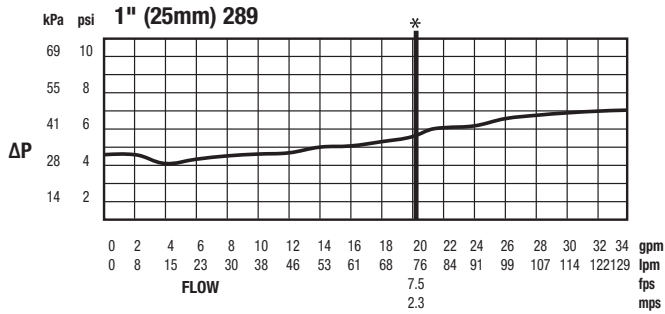
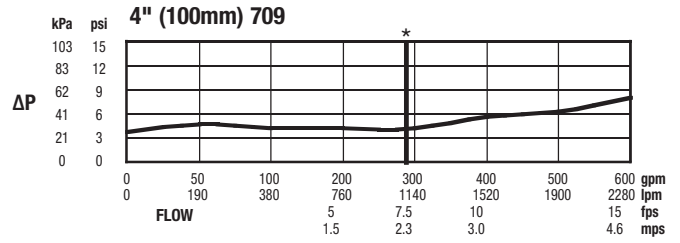
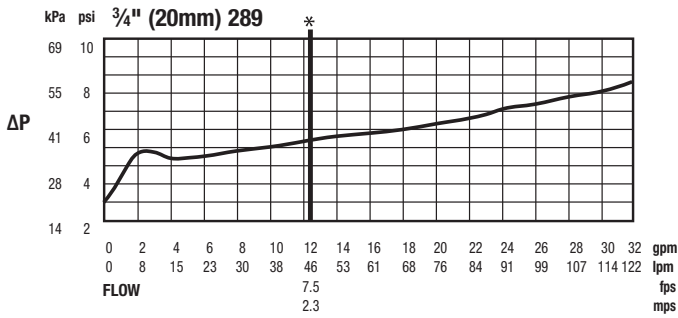


Flow Charts

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

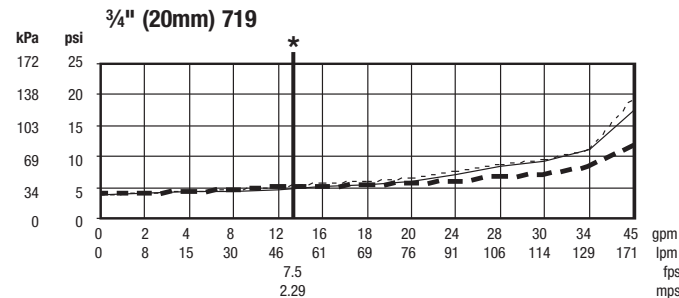
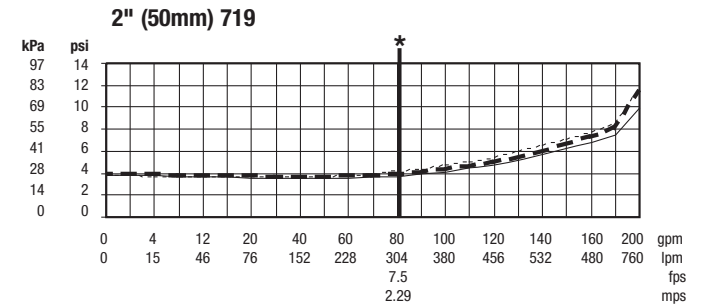
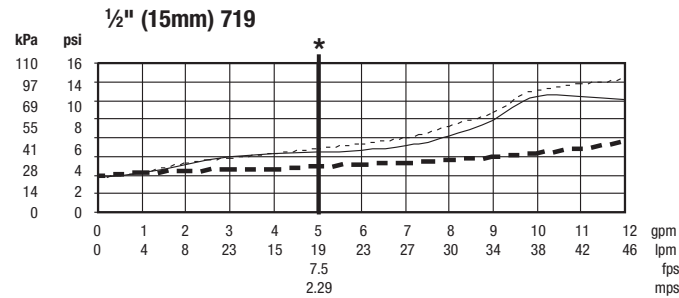
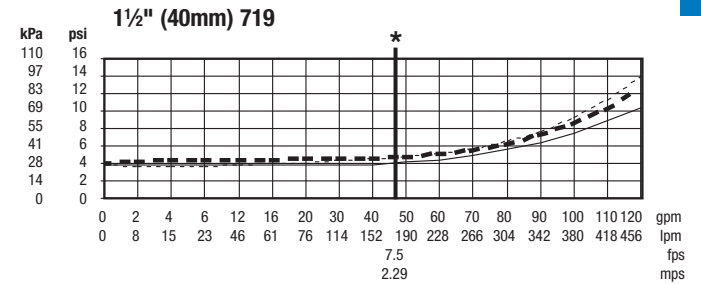
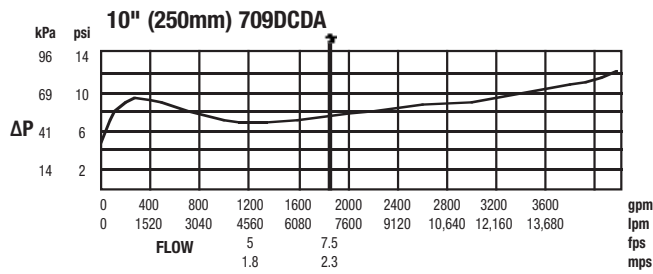
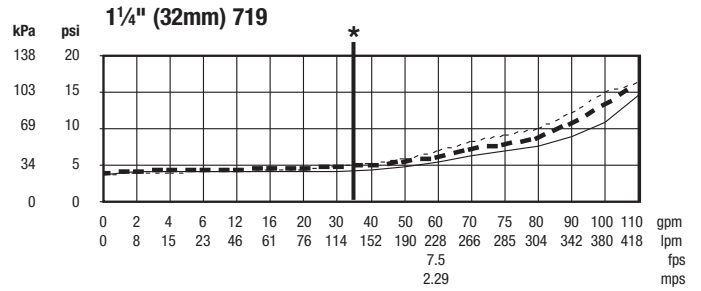
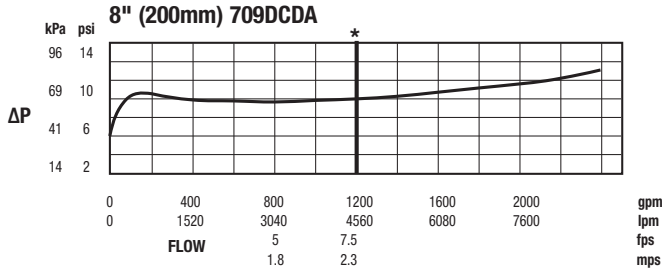
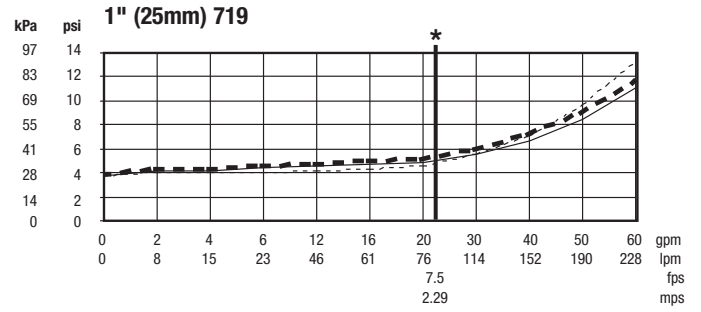
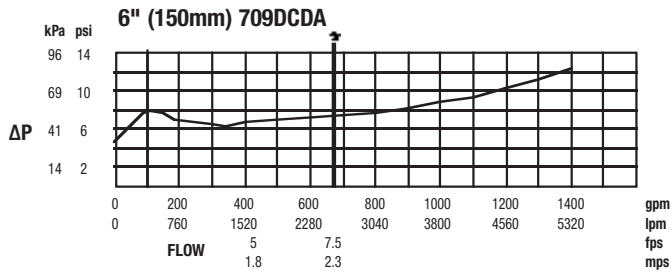


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)



Flow Charts

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



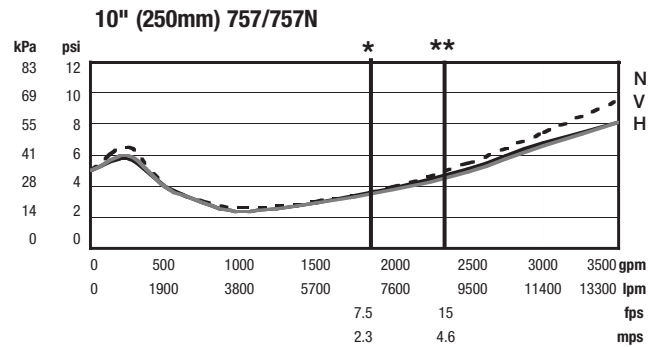
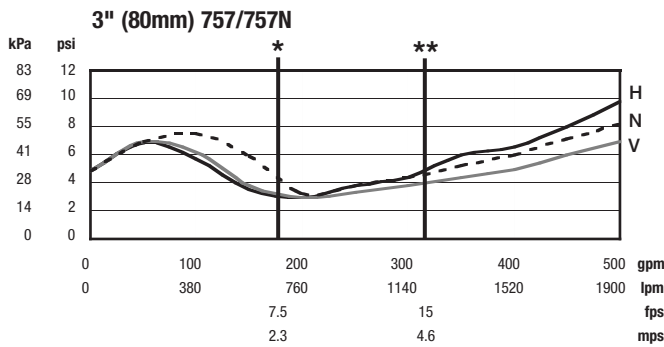
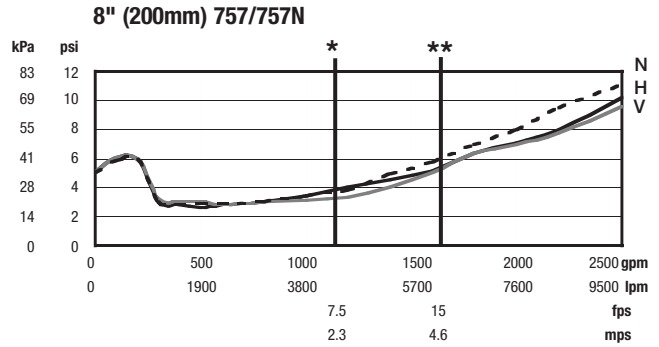
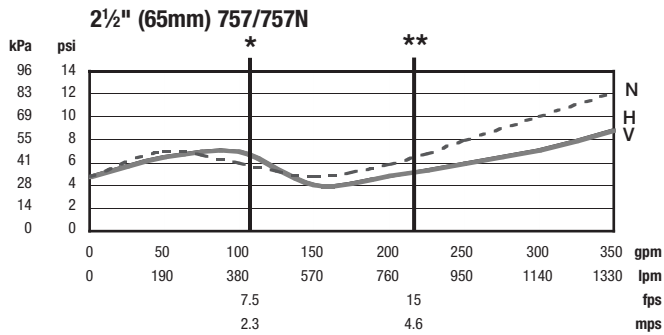
QT AQT UQT

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

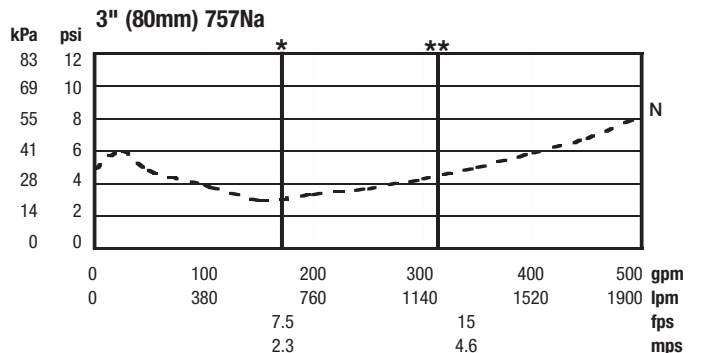
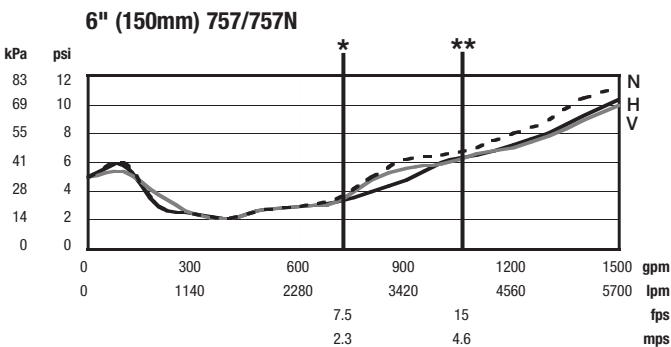
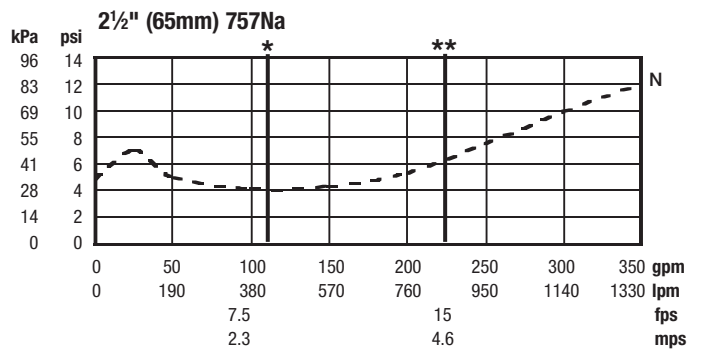
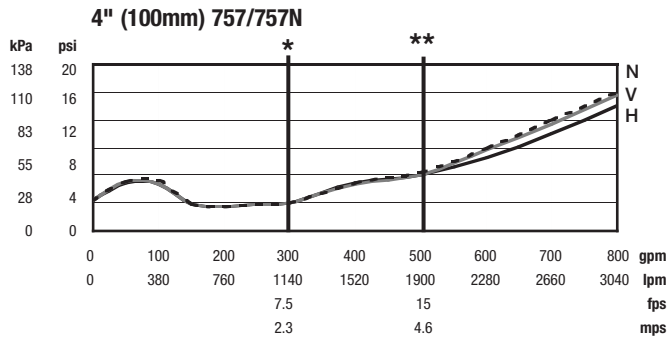
— H — V - - - N

* = Rated flow ** = UL Rated flow



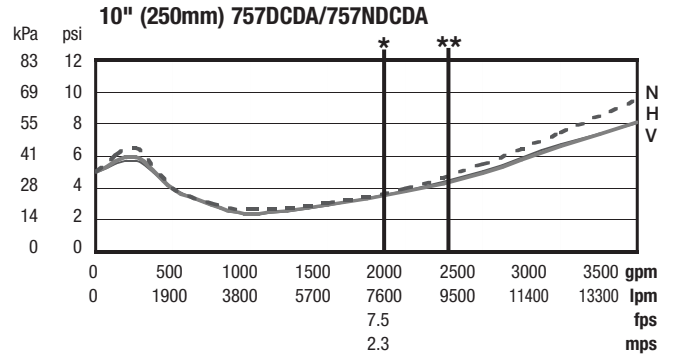
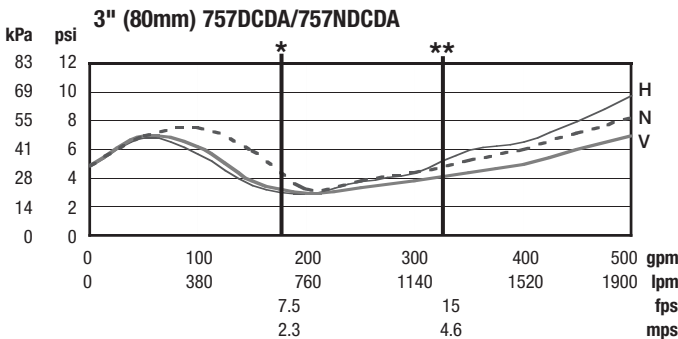
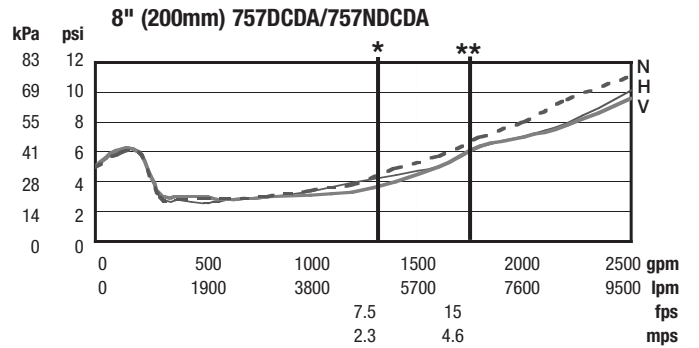
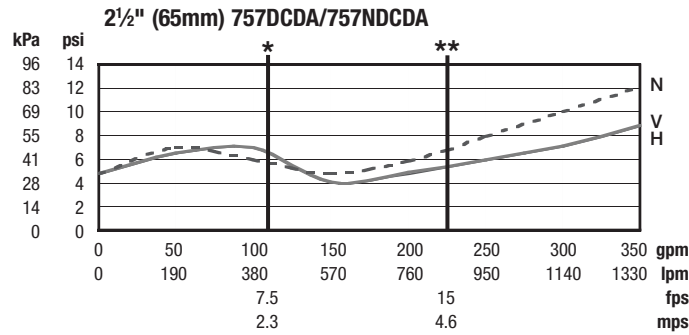
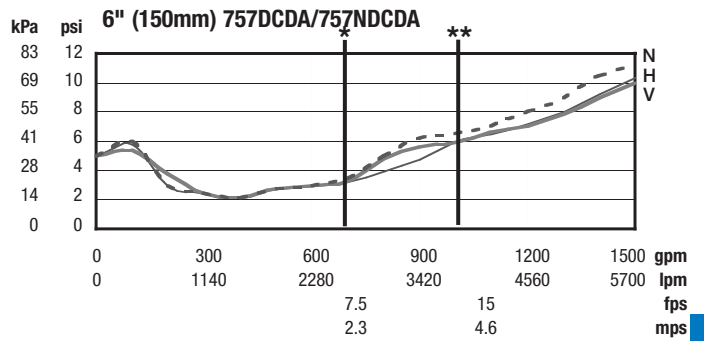
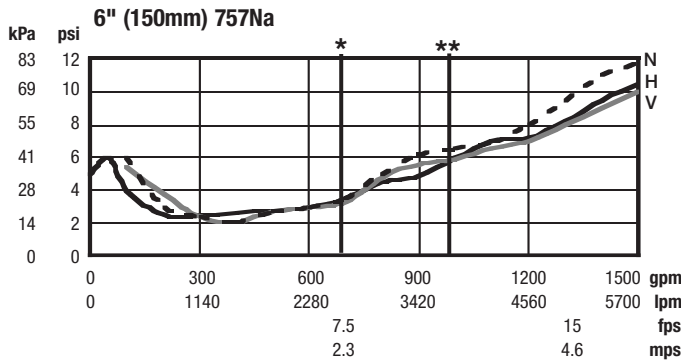
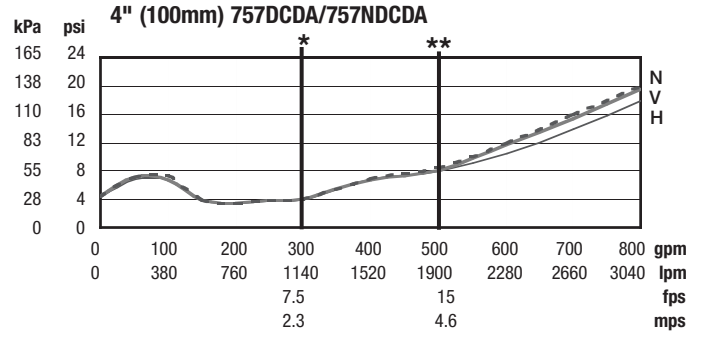
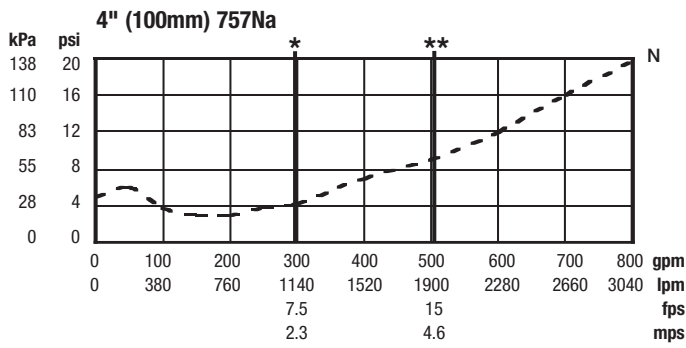
— H — V - - - N

* = Rated flow ** = UL Rated flow

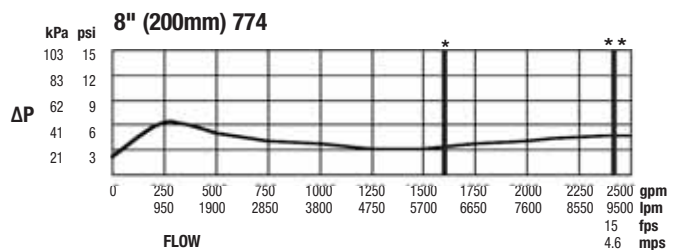
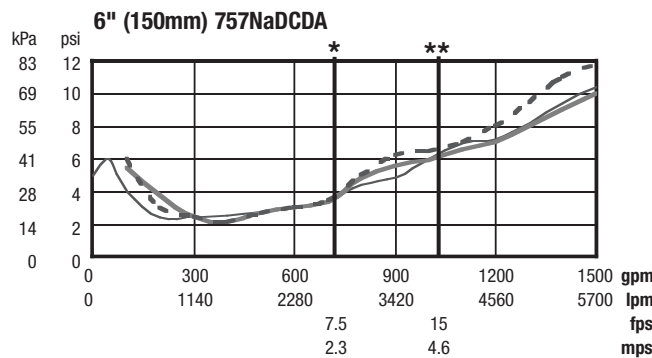
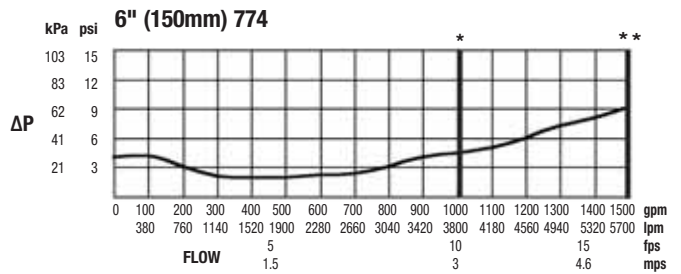
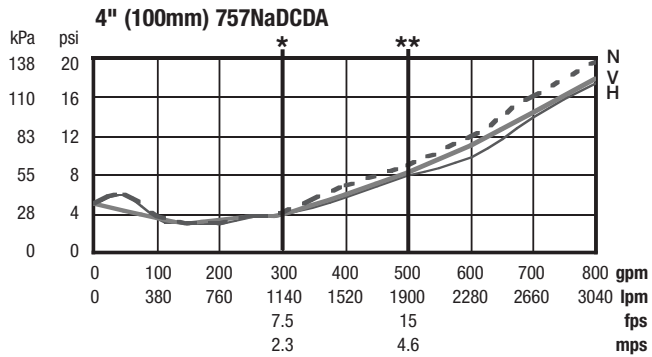
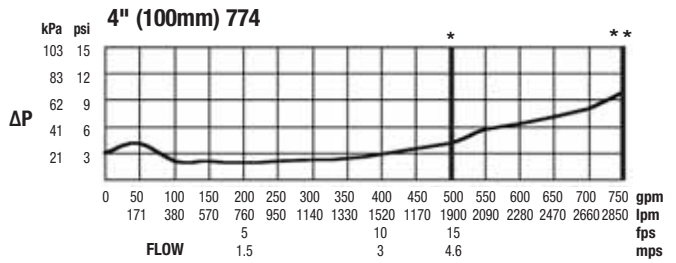
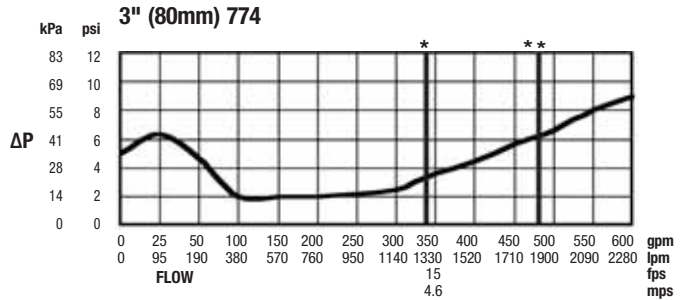
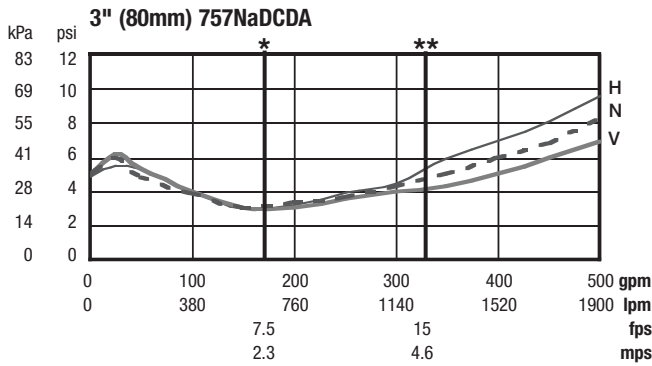
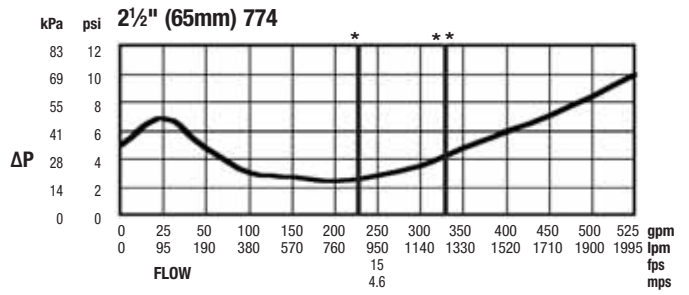
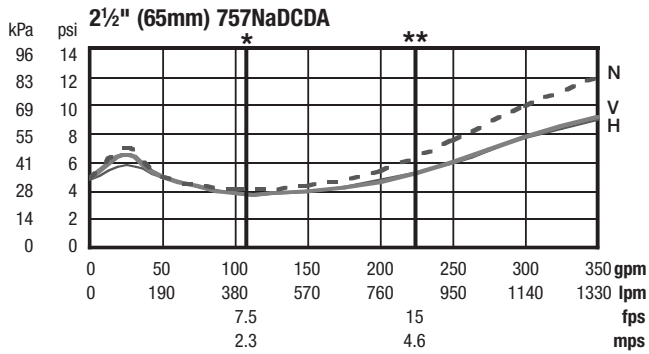


Flow Charts

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

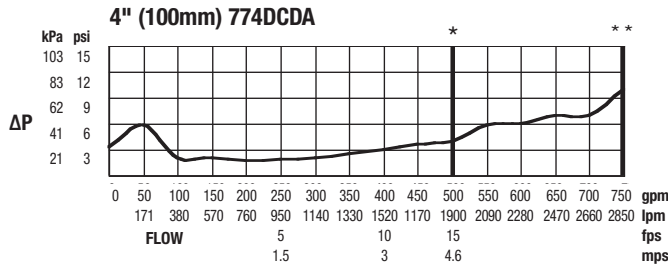
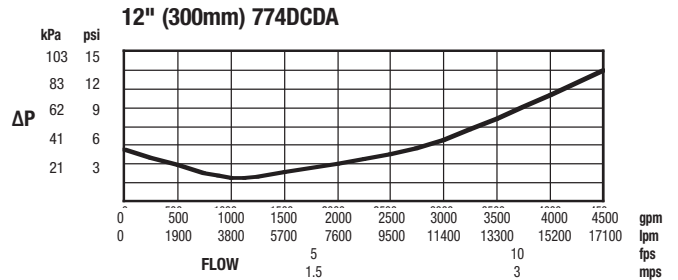
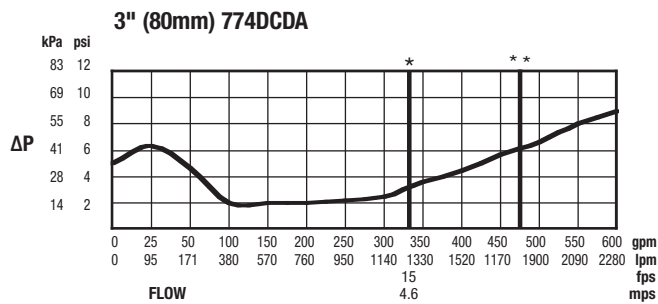
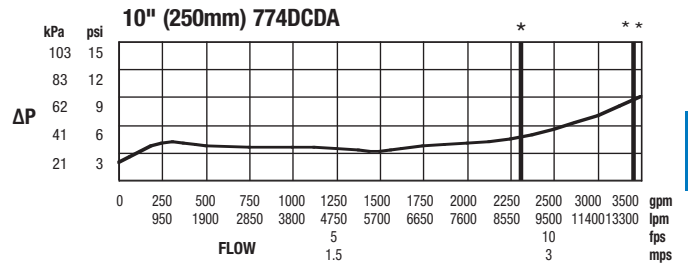
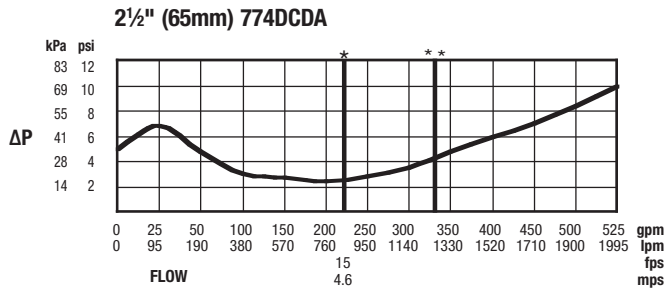
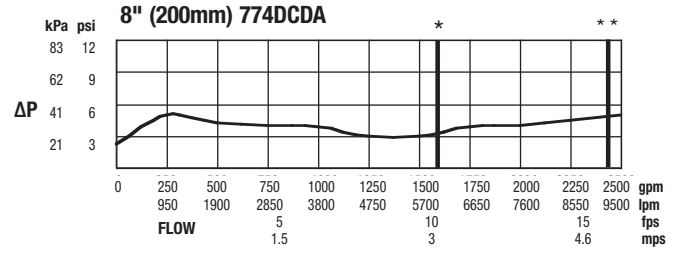
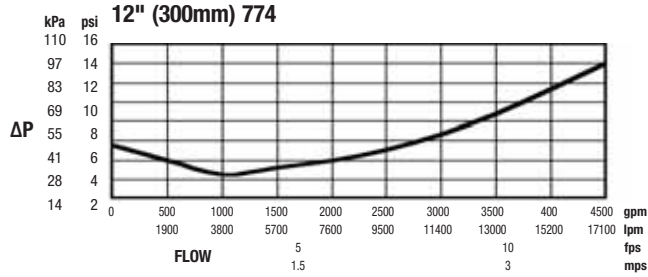
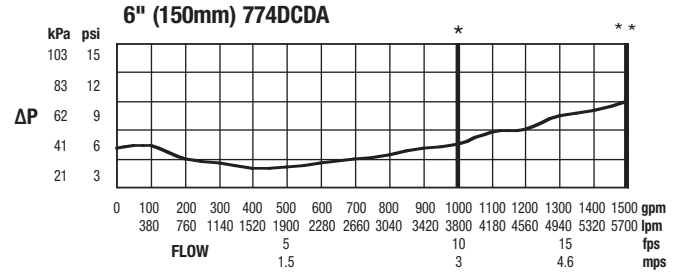
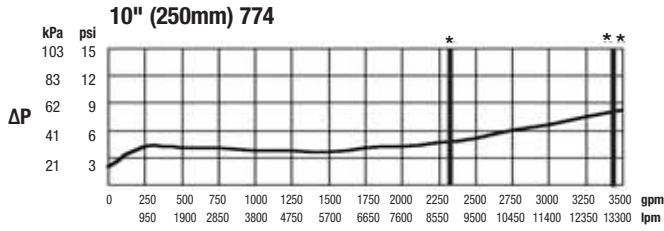


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)



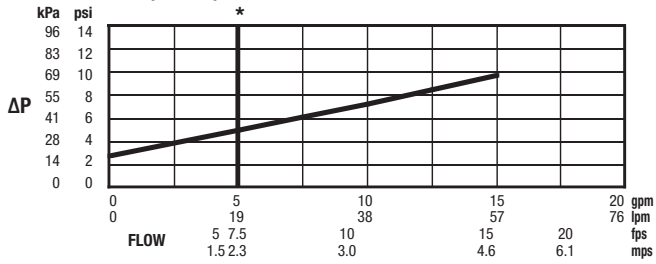
Flow Charts

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

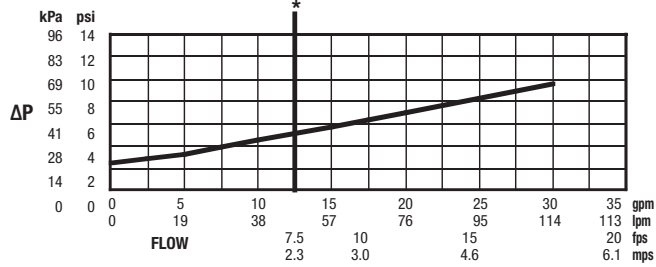


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)

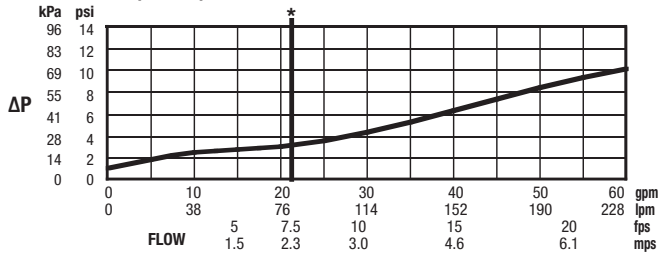
½" (15mm) 800M4FR, 800M4QT



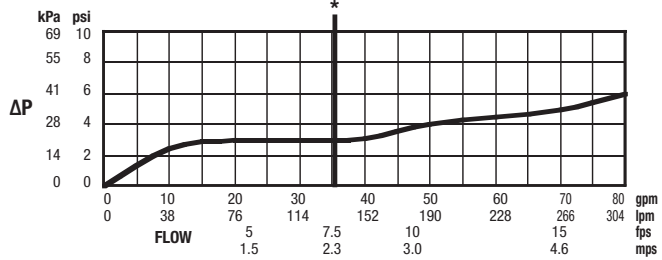
¾" (20mm) 800M4FR, 800M4QT



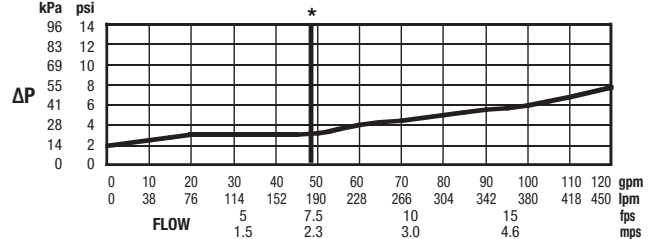
1" (25mm) 800M4FR, 800M4QT



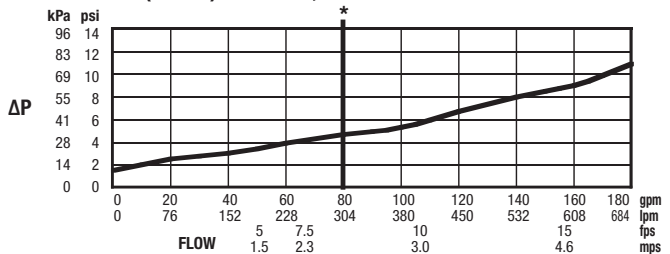
1¼" (32mm) 800M4FR, 800M4QT



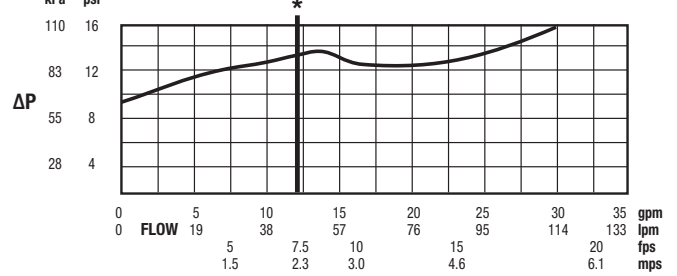
1½" (40mm) 800M4FR, 800M4QT



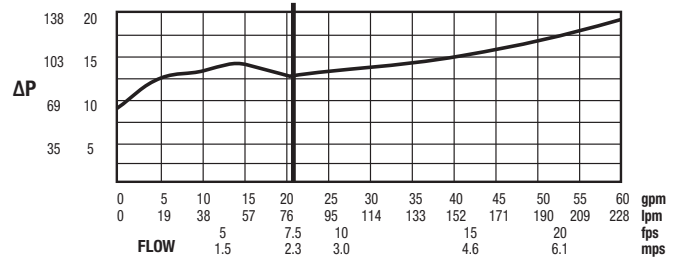
2" (50mm) 800M4FR, 800M4QT



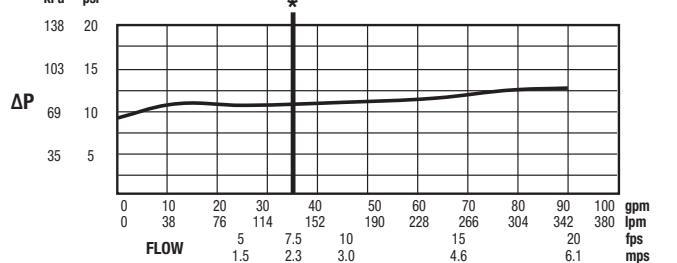
¾" (19mm) 909QT



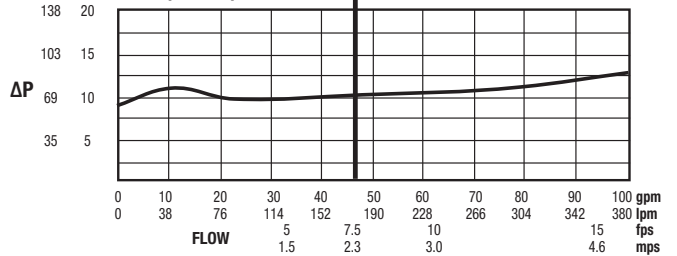
1" (25mm) 909QT*



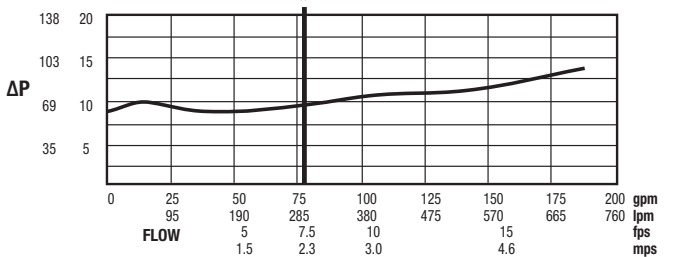
1¼" (32mm) 909M1QT



1½" (38mm) 909M1QT

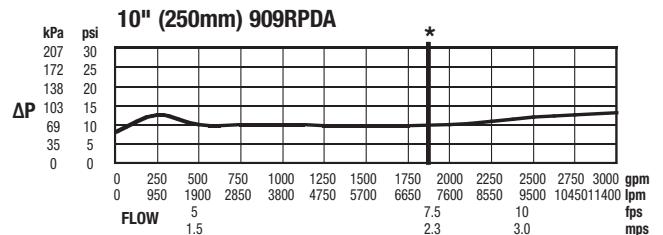
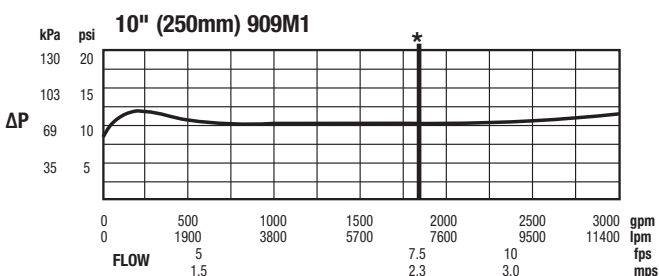
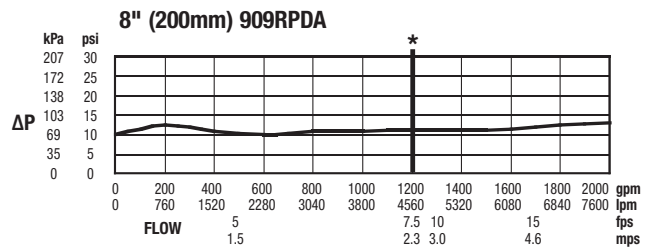
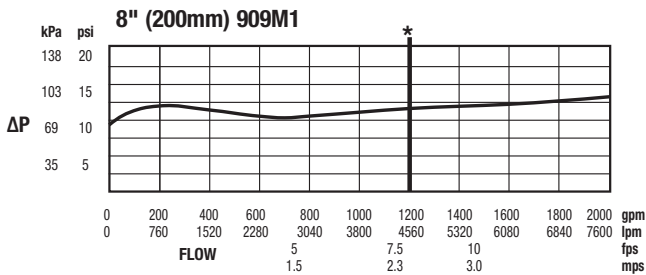
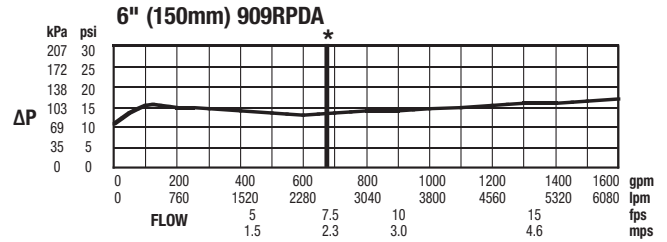
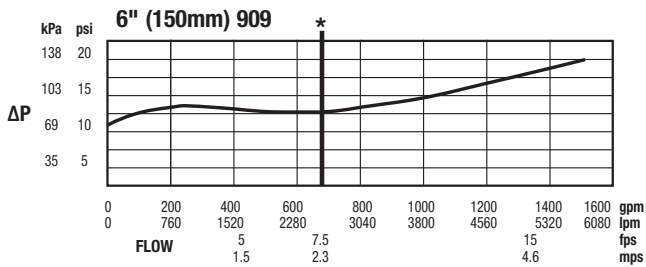
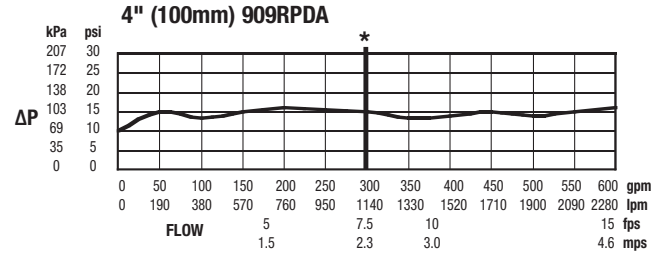
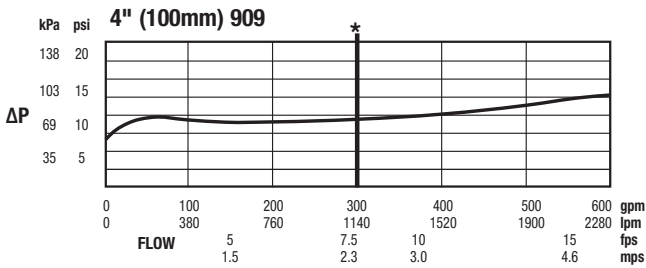
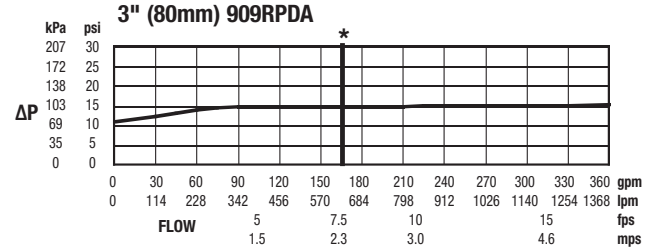
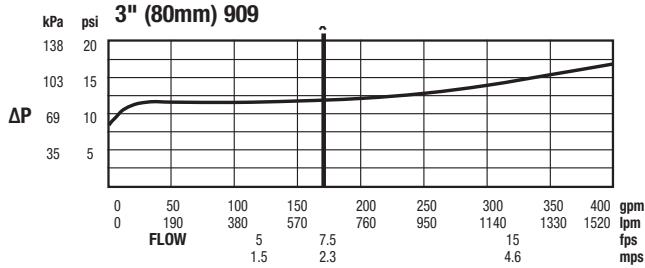
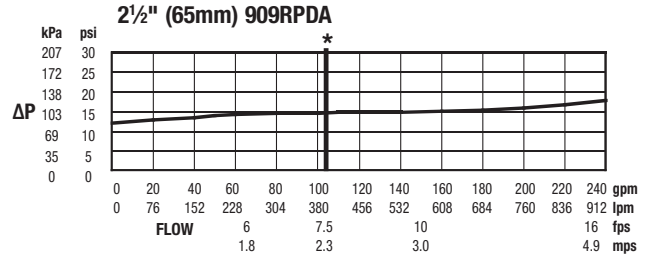
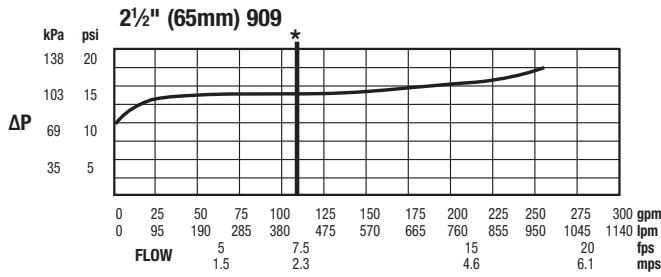


2" (50mm) 909M1QT



Flow Charts

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



Flow Charts

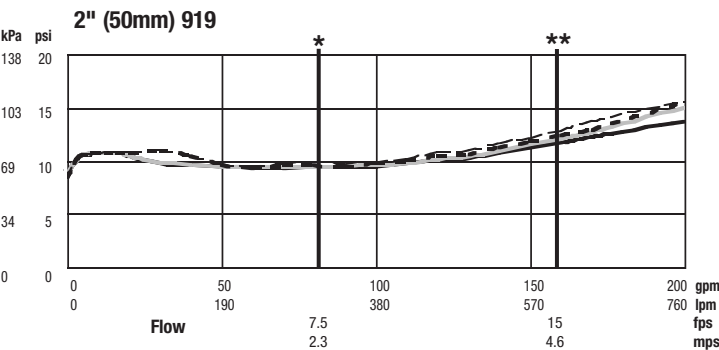
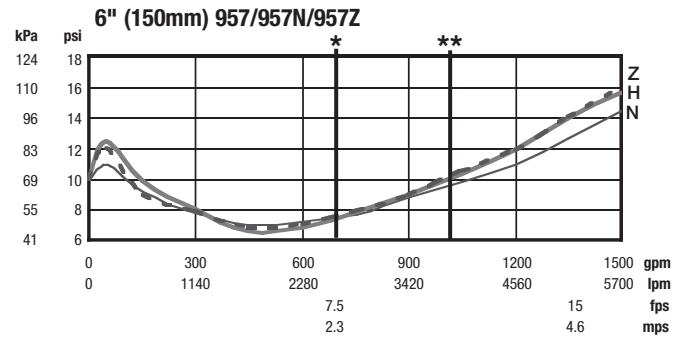
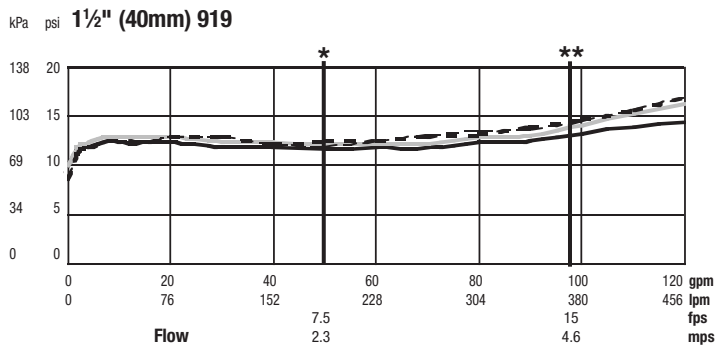
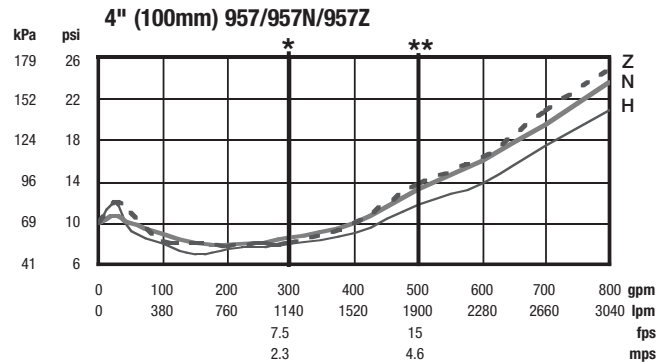
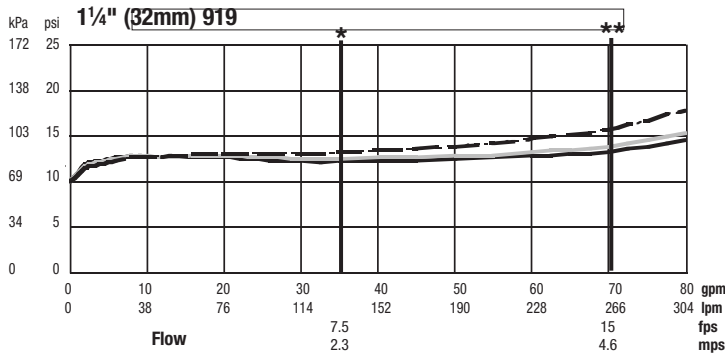
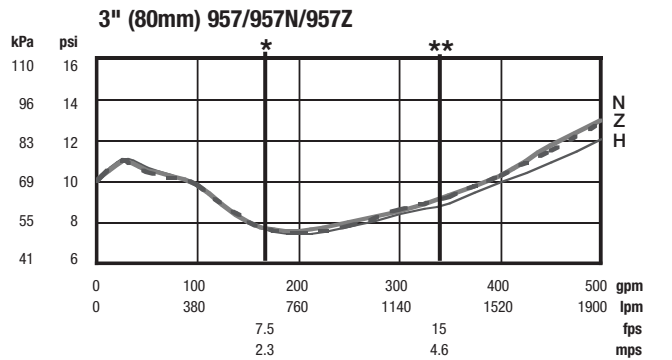
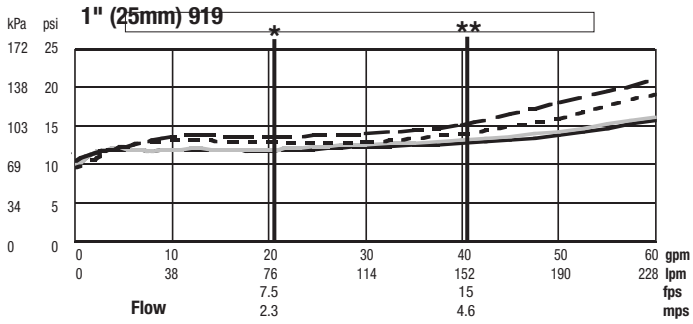
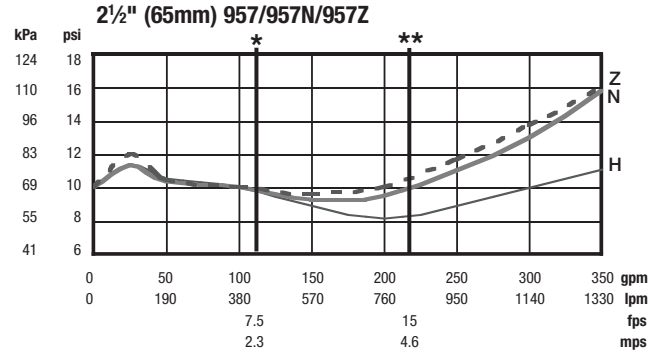
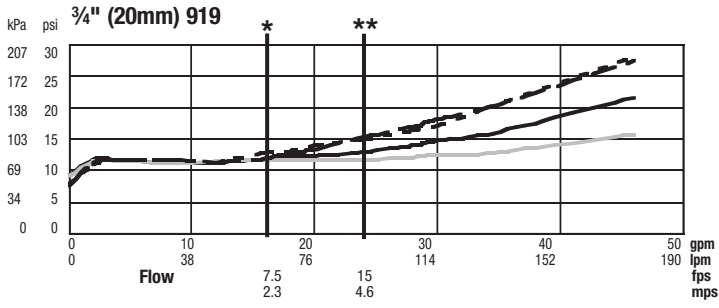
Flow Charts

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

— 919QT — U919QT - - - - 919AQT - - - 919ZQT

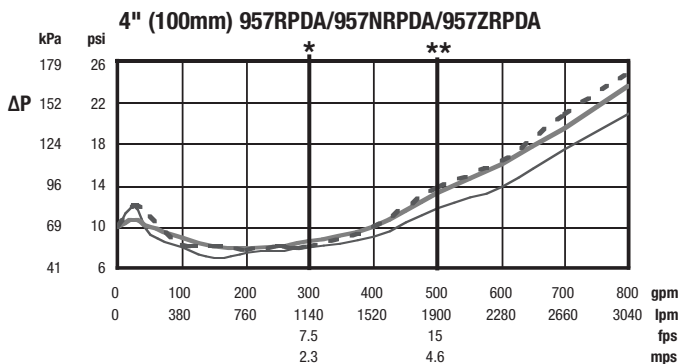
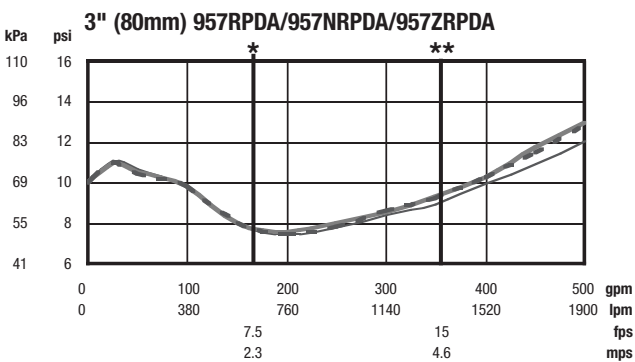
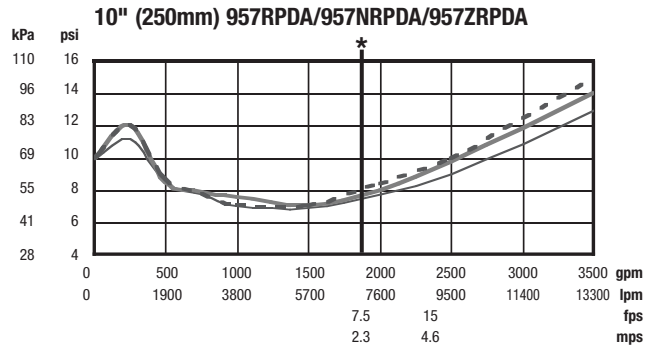
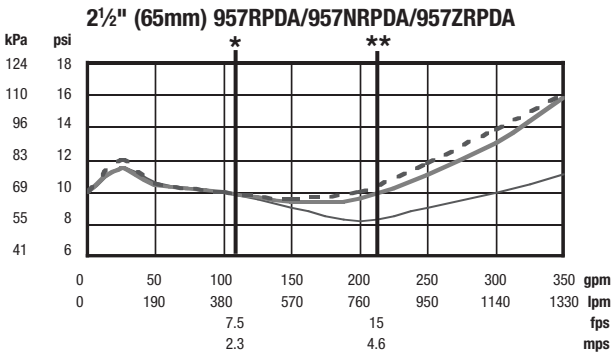
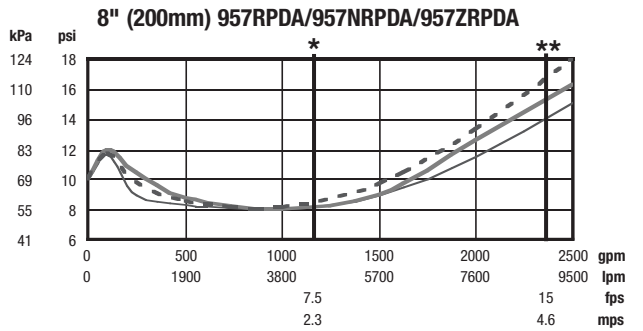
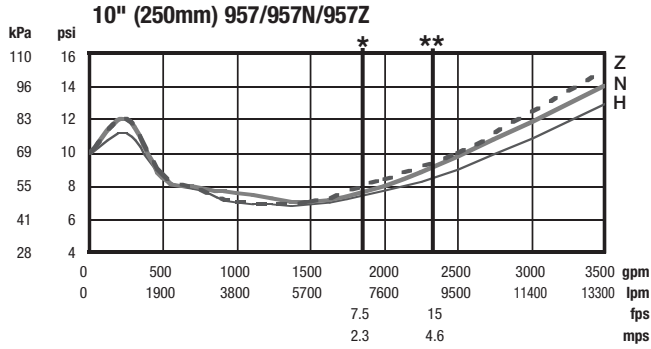
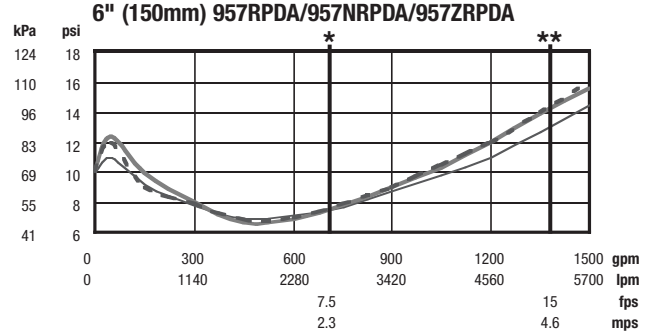
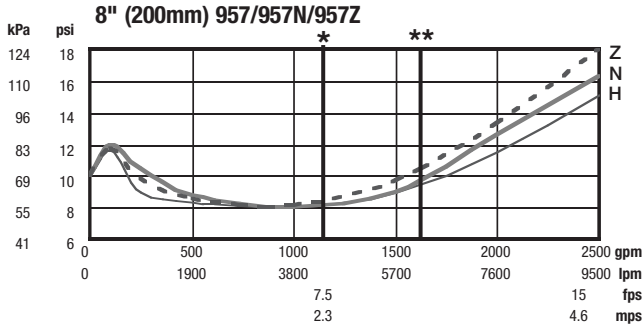
— H — V - - - - Z

* = Rated flow ** = UL Rated flow



Flow Charts

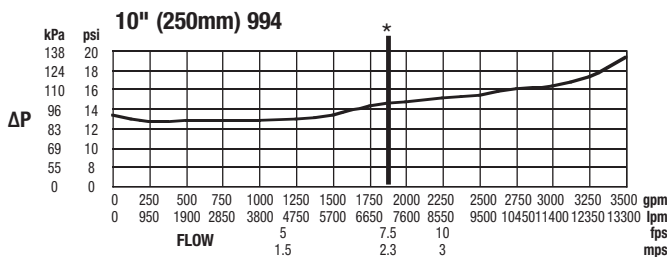
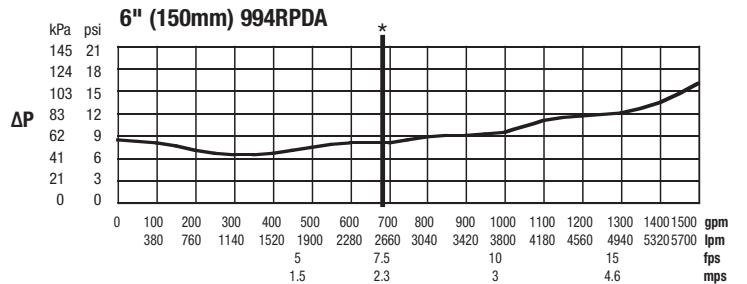
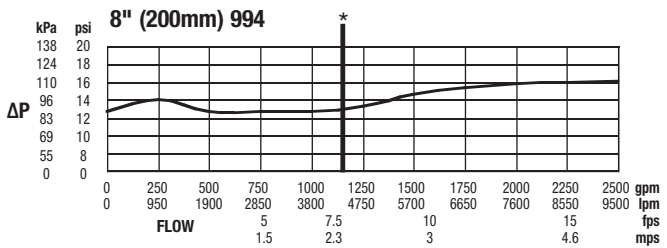
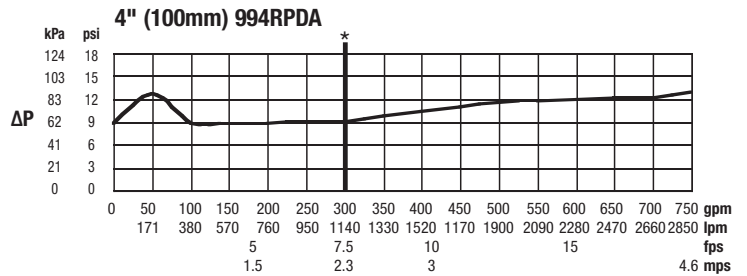
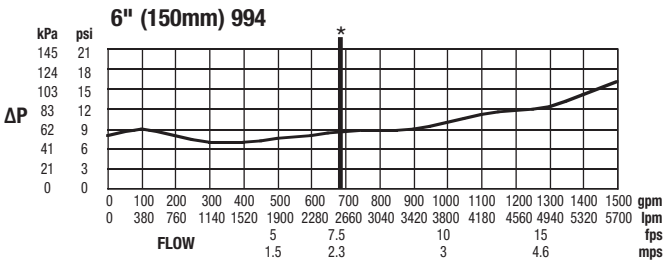
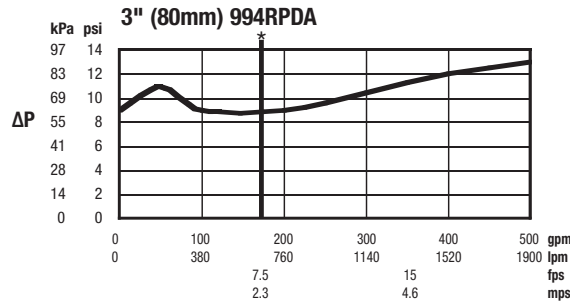
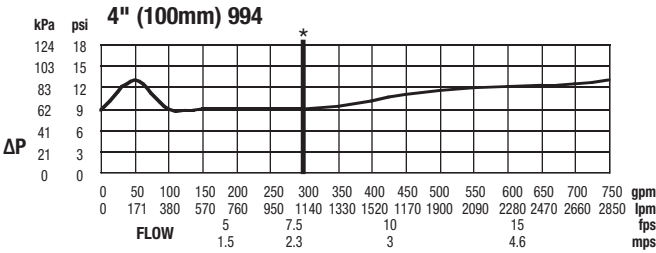
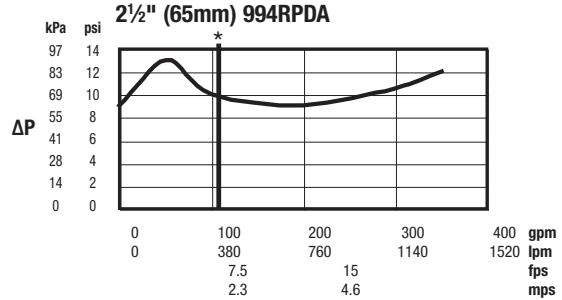
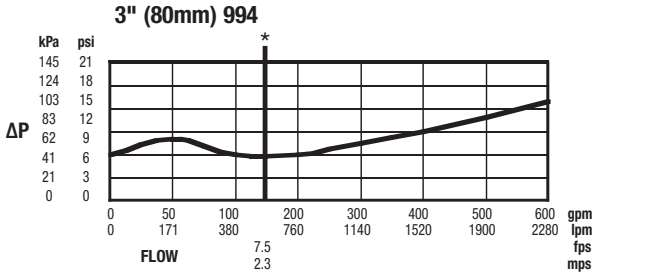
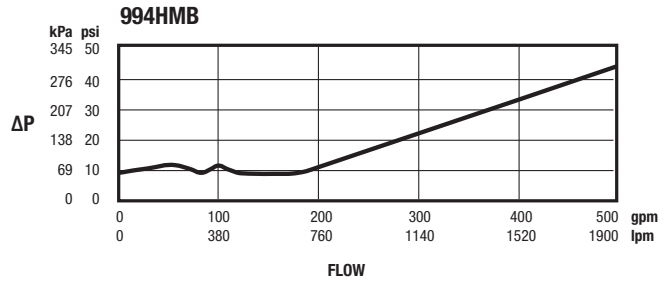
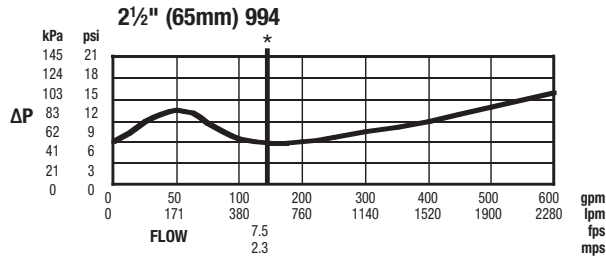
*Typical maximum system flow rate (7.5 feet/sec.)



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

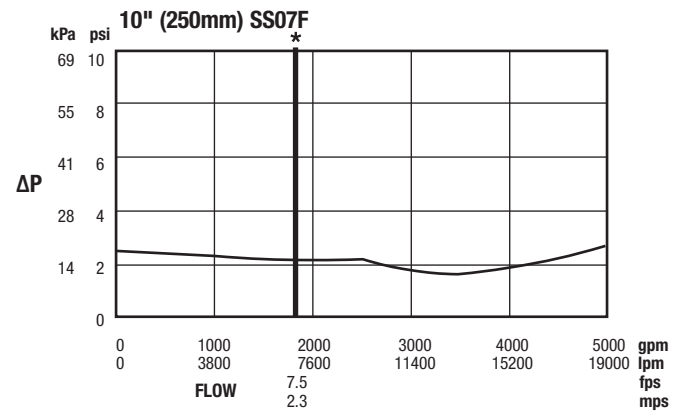
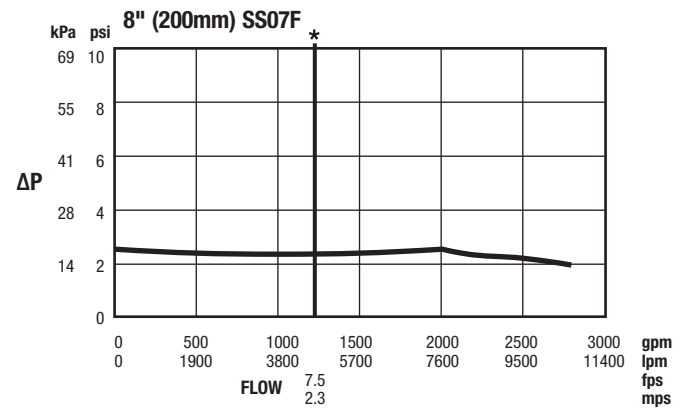
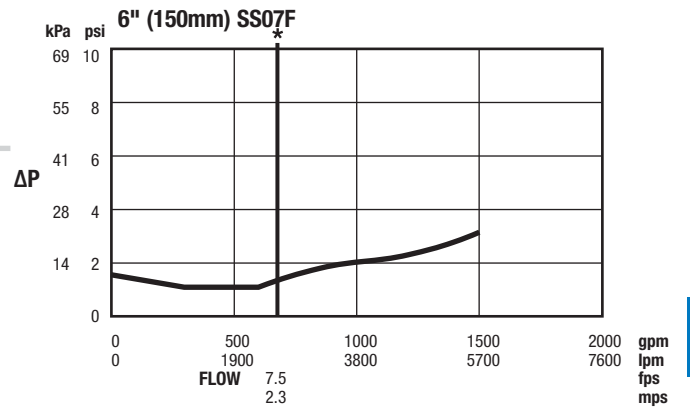
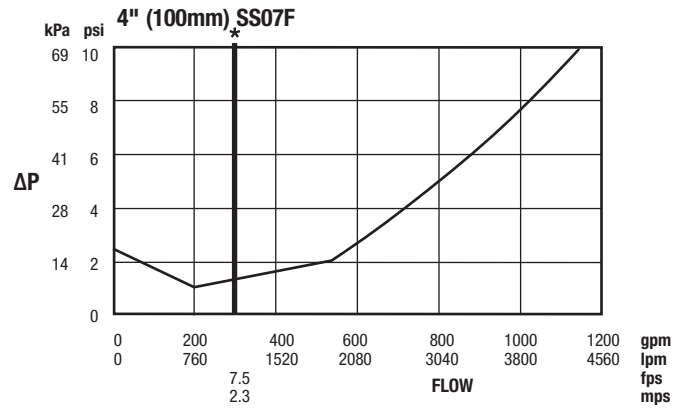
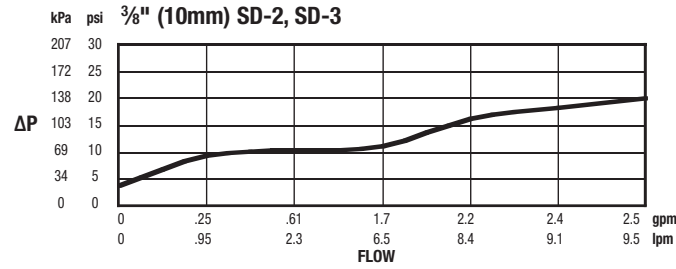
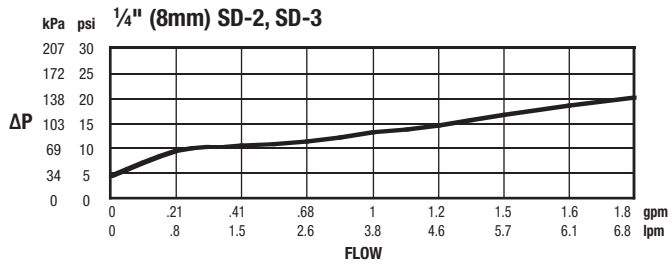
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Flow Charts



Flow Charts

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



Notes

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