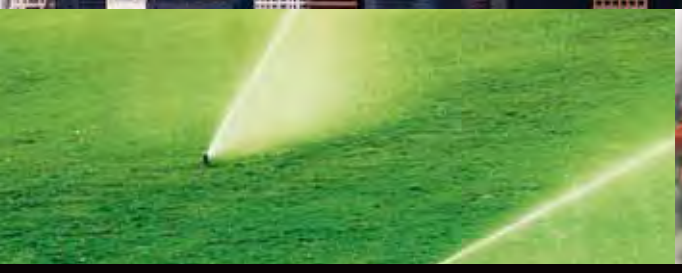
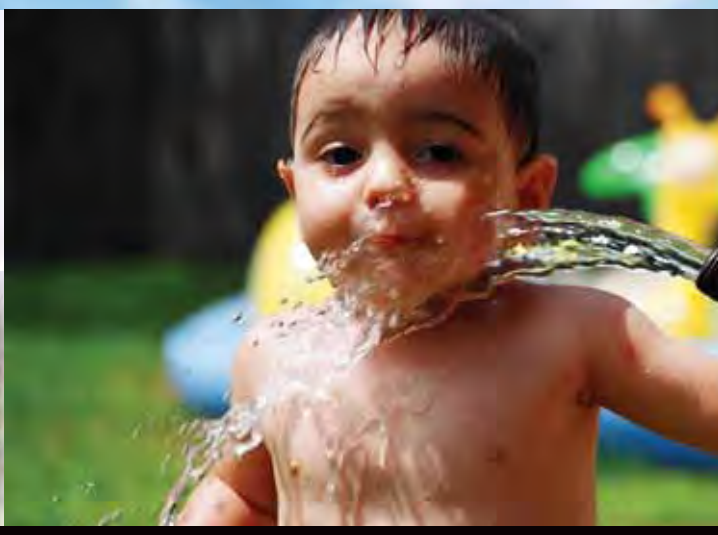
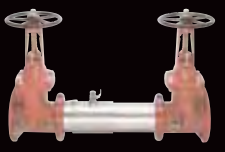




Backflow Prevention Products



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WATTS®

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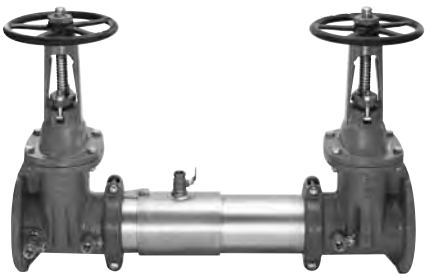
Note: Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without 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.



757 OSY

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

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

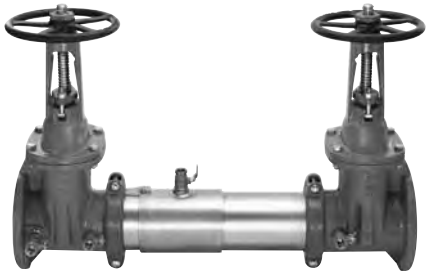
Backflow Applications *(cont.)*

TYPE & PURPOSE	DESCRIPTION	INSTALLED AT	EXAMPLES OF INSTALLATION
DUAL CHECK VALVE BACKFLOW PREVENTERS For non-health hazard cross-connections and continuous pressure applications.	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
SPECIALTY BACKFLOW PREVENTERS with INTERMEDIATE ATMOSPHERIC VENT For non-health hazard cross-connections in small pipe sizes. Continuous pressure applications.	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
LABORATORY FAUCET DUAL CHECK VALVE with INTERMEDIATE VACUUM BREAKER In small pipe sizes for health hazard cross-connections not subject to continuous pressure	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
ATMOSPHERIC VACUUM BREAKERS For health hazard cross-connections not subject to continuous pressure – 6" above flood rim.	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
PRESSURE VACUUM BREAKERS For health hazard cross-connections. Continuous pressure applications – 12" above flood rim.	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
ANTI-SIPHON, SPILL-RESISTANT VACUUM BREAKERS For health hazard cross-connections. Continuous pressure applications. Factory installed 1" above flood rim Field installed 6" above flood rim.	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
HOSE CONNECTION VACUUM BREAKERS For residential and industrial hose supply outlets not subject to continuous pressure.	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
ENCLOSURES To protect backflow preventers installed outdoors from vandalism and cold temperatures.	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.

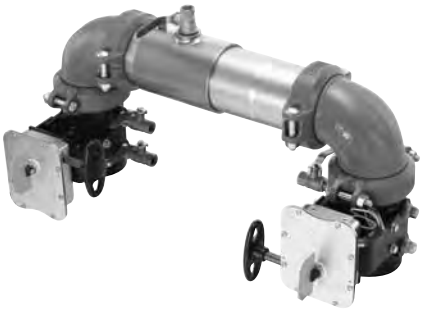
Series 757, 757N

Double Check Valve Assemblies

Sizes: 2½" – 10" (65 – 250mm)



757 OSY



757N BFG

757 OSY (Vertical)

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

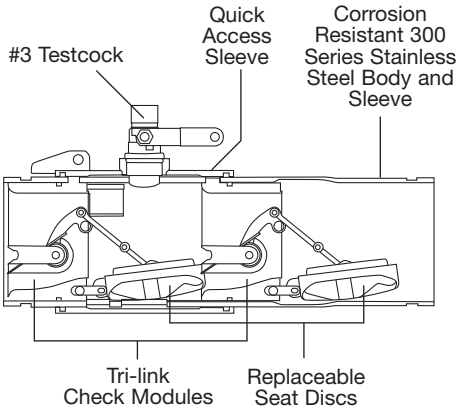
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C)
Maximum Working Pressure: 175psi (12.1 bar)

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

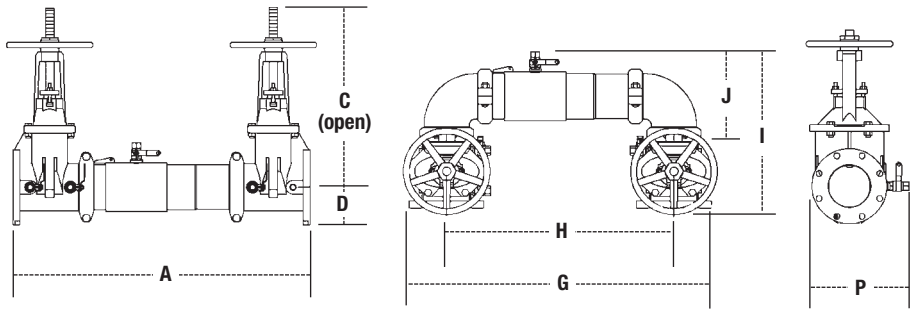
Approvals

1015 (BFG & OSY only) B64.5



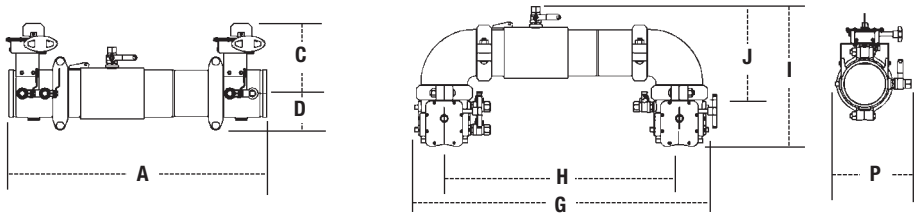
For additional information, request literature ES-757/757N.
See Flow Charts on p. 70

Dimensions – Weights



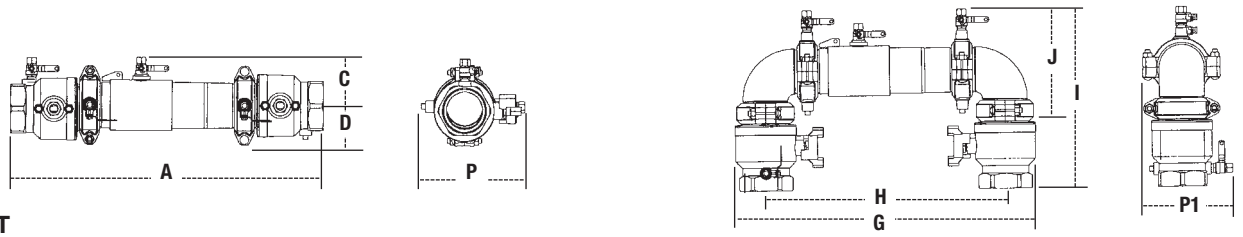
757, 757N

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	16⅜	416	9⅜	238	3½	89	29 1/16	738	22	559	15½	393	8 13/16	223	9 3/16	234	115	52	125	57	123	56	133	60
3	80	31 11/16	805	18⅞	479	10¼	260	3 11/16	94	30¼	768	22¾	578	17⅛	435	9 3/16	233	10½	267	131	59	145	66	144	65	158	72
4	100	33 11/16	856	22¾	578	12 3/16	310	4	102	33	838	24	610	18½	470	9 15/16	252	11 3/16	284	161	73	161	73	184	83	184	83
6	150	43½	1105	30⅛	765	16	406	5½	140	44¾	1137	33¾	857	23 3/16	589	13 1/16	332	15	381	273	124	295	134	314	142	336	152
8	200	50	1270	37¾	959	19 15/16	506	6 11/16	170	54⅛	1375	40⅝	1032	27 7/16	697	15 11/16	399	17 3/16	437	438	199	480	218	513	233	555	252
10	250	57½	1460	45¾	1162	23 13/16	605	8 3/16	208	66	1676	50	1270	32½	826	17 5/16	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	14 15/16	379	8 13/16	223	9	229	56	25	64	29
3	80	28½	724	8 5/16	211	3 11/16	94	30 11/16	779	22¾	578	15 7/16	392	9 3/16	233	9½	241	54	24	67	30
4	100	29 3/16	741	8 15/16	227	3 11/16	94	31 15/16	811	24	610	16¼	412	9 15/16	252	10	254	61	28	84	38
6	150	36½	927	10	254	5	127	43 3/16	1097	33¾	857	19 11/16	500	13 1/16	332	10½	267	117	53	157	71
8	200	43	1092	12¼	311	6½	165	51 1/16	1297	40⅝	1032	23 5/16	592	15 11/16	399	14 3/16	361	261	118	337	153



757 QT

SIZE (DN)		DIMENSIONS (APPROX.)																		WEIGHT	
		A		C		D		G		H		I		J		P		P1			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	65	28 15/16	735	4⅞	124	3 13/16	97	30¼	768	24½	622	16 9/16	421	11⅜	289	10 7/16	265	8 5/16	211	35	16
3	80	30 3/16	767	4 13/16	122	3⅞	98	30¼	768	24½	622	17 3/16	437	11¼	258	10 7/16	265	8 9/16	217	45	21

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 757Na

Double Check Valve Assemblies

Sizes: 2½" – 6" (65 – 150mm)

757Na BFG

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

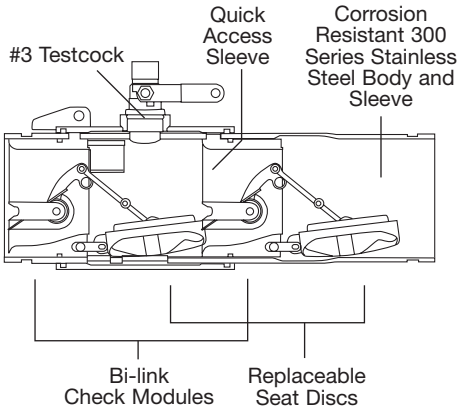
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C)
Maximum Working Pressure: 175psi (12.1 bar)

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

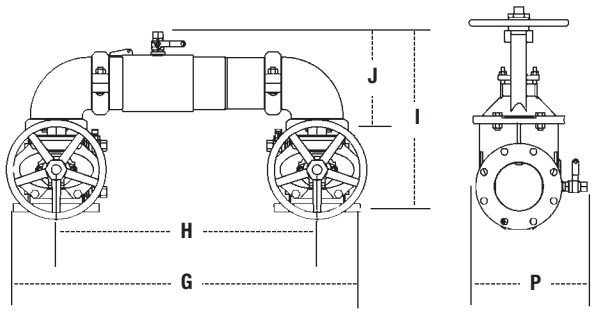
Approvals

1015 (BFG & OSY only) B64.5



For additional information, request literature ES-757a/757Na.
See Flow Charts on p. 70–71

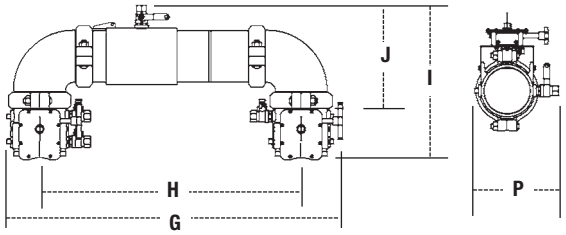
Dimensions – Weights



757Na

SIZE (DN)		DIMENSIONS (APPROX.)										WEIGHT			
		G		H		I		J		P		757Na NRS		757Na OSY	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	65	29 1/16	738	22	559	15½	393	8 13/16	223	9 3/16	234	123	56	133	60
3	80	30¼	768	22¾	578	17⅛	435	9 3/16	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	44¾	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	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	65	29⅞	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 3/16	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

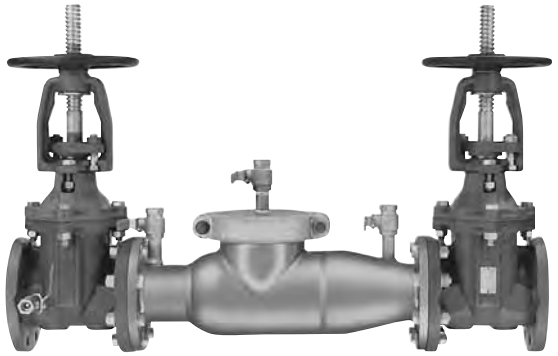
Note: For 2½" – 6" horizontal/vertical installation, see page 4-5.

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 774

Double Check Valve Assemblies

774: Sizes: 2½" – 12" (100 – 300mm)



774 OSY

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

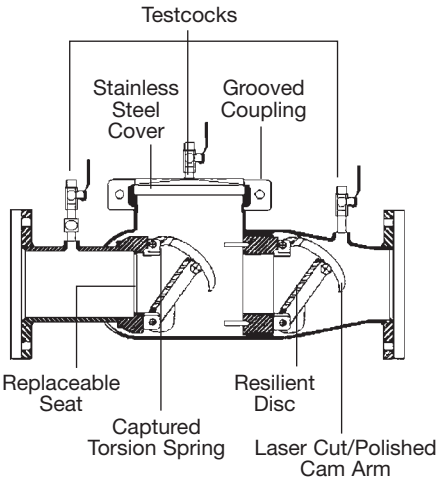
- Patented torsion spring check valve provides low head loss
- Short lay length is ideally suited for retrofit installations
- Stainless Steel body is half the weight of competitive designs reducing installation and shipping cost
- Stainless steel construction provides long term corrosion protection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

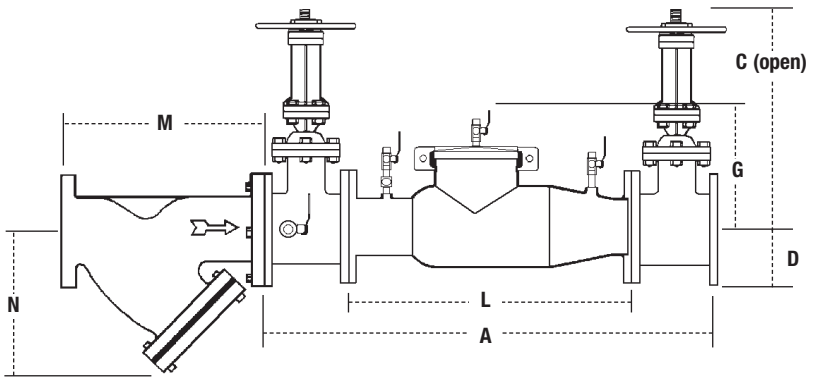
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C) continuous
Maximum Working Pressure: 175psi (12.1 bar)

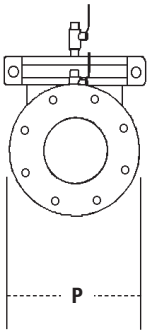


For additional information, request literature ES-774 or ES-774X/774XDCDA.

See Flow Charts on p. 72–73

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	16⅜	416	9⅜	238	3½	89	10	254	22	559	12½	318	10	254	6½	165	155	70	68	31
3	80	38	965	18⅞	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	12 3/16	310	4½	114	10	254	22	559	14½	368	12⅛	308	8¼	210	225	102	58	26
6	150	48½	1232	30⅛	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	19 15/16	506	6¾	171	15	381	29½	749	18¼	464	21⅝	549	15½	394	561	254	169	77
10	250	55½	1410	45¾	1162	23 13/16	605	8	200	15	381	29½	749	19½	495	26	660	18½	470	763	346	179	81
12	300	57½	1461	53⅛	1349	26¾	679	9½	241	15	381	29½	749	21	533	29⅞	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

1015 (OSY only) (OSY only)

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

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 709
Double Check Valve Assemblies

Sizes: 2½" – 10" (65 – 250mm)

709 OSY

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

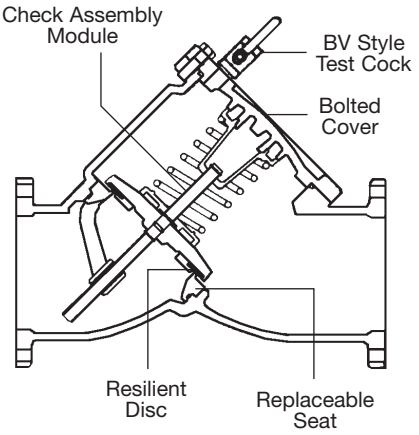
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Design simplicity for easy maintenance
- No Special Tools Required for Servicing
- Captured spring assemblies for safety
- Approved for vertical flow up installation

Materials

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

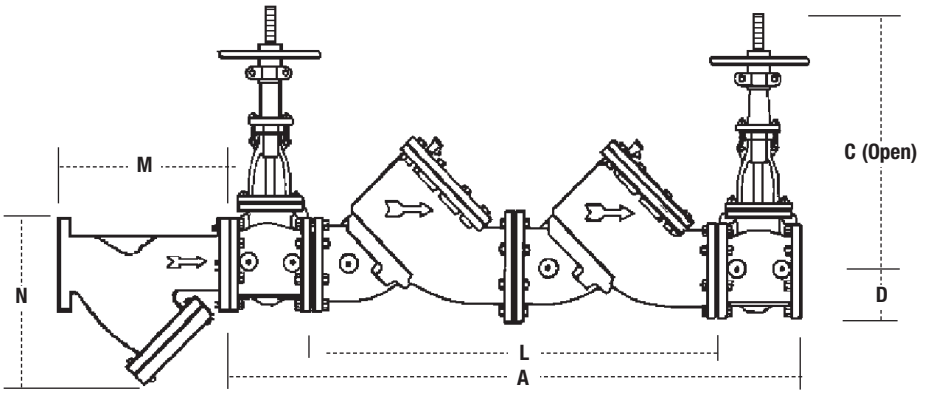
Pressure – Temperature

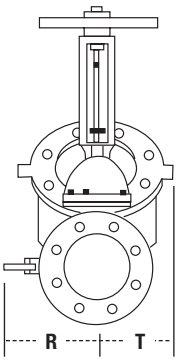
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C) continuous, 140˚F (60˚C) intermittent
Maximum Working Pressure: 175psi (12.1 bar)



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

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	16⅜	416	9⅜	238	3½	89	24	610	4	102	3	76	10	254	6½	165	10	254	195	88	167	76
3	80	40	1016	18⅞	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	12⅜₁₆	310	4½	114	34	864	6	152	6	152	12⅛	308	8¼	210	12	305	428	194	368	167
6	150	63¼	1607	30⅛	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	19¹⁵⁄₁₆	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	23¹³⁄₁₆	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

1015 (OSY only)

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: ½" – 3" (15 – 80 mm)

¾" 007M3QT

2" 007M1QT HC

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

Features

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

Materials

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

Pressure – Temperature

Temperature Range:
½" – 2" (15 – 50mm)
33°F – 180°F (0.5°C – 82°C)
2½" – 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

½" – 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 - 2½" inlet/outlet fire hydrant fitting (2" valve)
S - bronze strainer
PC - polymer coating

Prefix
U - union connections

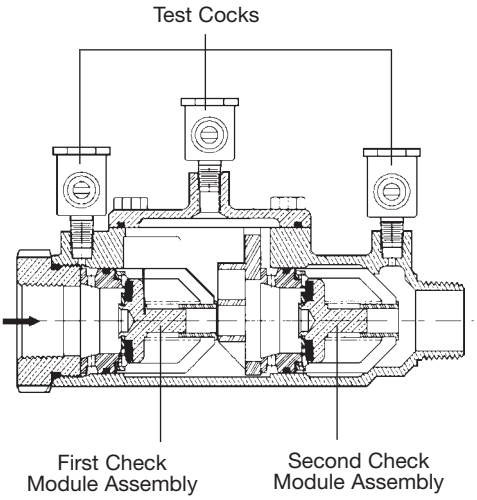
2½" and 3" (65 and 80mm)

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

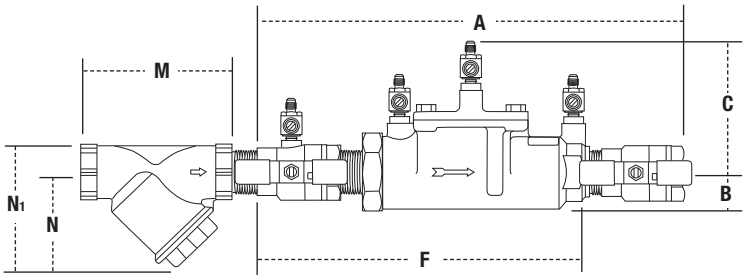
1015

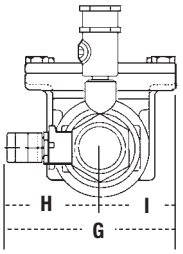
AWWA, IAPMO, UPC
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. Horizontal and vertical "flow up" approval on all sizes.
UL Classified (LF models only)
¾" – 2" (19 – 50mm)
UL Classified with OSY gate valves (2½" & 3")



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

Dimensions – Weights



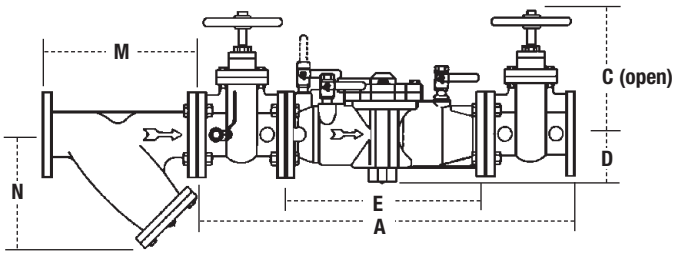


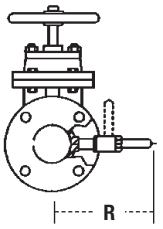
Suffix HC - Fire Hydrant Fittings dimension “A” = 23½" (594mm)

007QT

SIZE (DN)		DIMENSIONS (APPROX.)														STRAINER DIMENSIONS						WEIGHT	
		A		B		C		F		G		H		I		M		N		*N1			
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
½	15	10	254	4⅝	117	2 7/16	62	5	127	3⅜	85	2 5/16	59	2 1/16	52	2¾	70	2¼	57	10	254	4½	2
¾	20	11⅛	282	4	102	3⅛	79	6 3/16	157	3 7/16	87	2⅛	54	1 5/16	33	3 3/16	81	2¾	70	10	254	5	2.3
1	25	13¼	337	5⅛	130	4	102	7½	191	3⅜	85	1 11/16	43	1 11/16	43	3¾	95	3	76	12	305	12	5.4
1¼	32	16⅜	416	5	127	3 5/16	84	9½	241	5	127	3	76	2	50	4 7/16	113	3½	89	20	508	15	6.8
1½	40	16¾	425	4⅞	124	3½	89	9¾	248	5 13/16	148	3⅛	79	2 11/16	68	4⅞	124	4	103	22¾	578	15⅞	7.2
2	50	19½	495	6¼	159	4	102	13⅜	340	6⅛	156	3 7/16	87	2 11/16	68	5 5/16	151	5	127	28	711	25¾	11.7

*Dimensions required for screen removal.

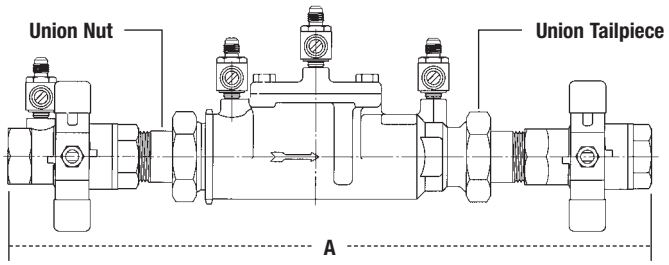




MODEL NO.	SIZE (DN)		DIMENSIONS (APPROX.)										STRAINER DIMENSIONS				WEIGHT	
			A		C		D		E		R		M		N			
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kgs.
007-NRS	2½	65	33⅛	841	9⅜	238	4 5/16	109	18⅛	460	8¾	222	10	254	6½	165	155	70
007-OSY	2½	65	33⅛	841	16⅜	416	4 5/16	109	18⅛	460	8¾	222	10	254	6½	165	158	72
007QT-FDA	2½	65	33⅛	841	6⅜	162	4 5/16	109	18⅛	460	8¾	222	10	254	6½	165	155	70
007-OSY	3	80	34⅛	867	18⅞	479	4 5/16	109	18⅛	460	8¾	222	10⅛	267	7	178	185	84
007-NRS	3	80	34⅛	867	10¼	260	4 5/16	109	18⅛	460	8¾	222	10⅛	267	7	178	185	84
007QT-FDA	3	80	34⅛	867	6⅜	162	4 5/16	109	18⅛	460	8¾	222	10⅛	267	7	178	155	70

U007QT

SIZE (DN)		A	
in.	mm	in.	mm
½	15	12 13/16	325
¾	20	13 13/16	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: ½" – 2" (15 – 50mm)

719QT

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
- ½" – 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 – 2½" 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)

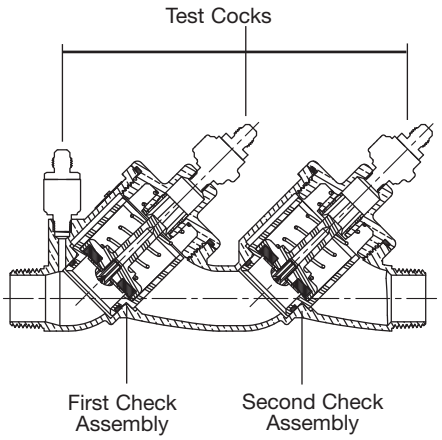
Materials

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

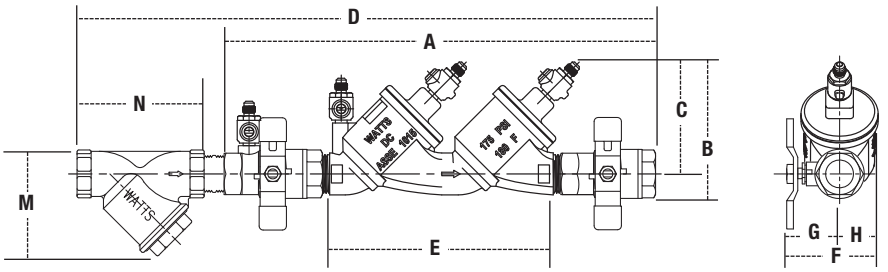
Approvals

ASSE 1015

AWWA Std C510 compliant

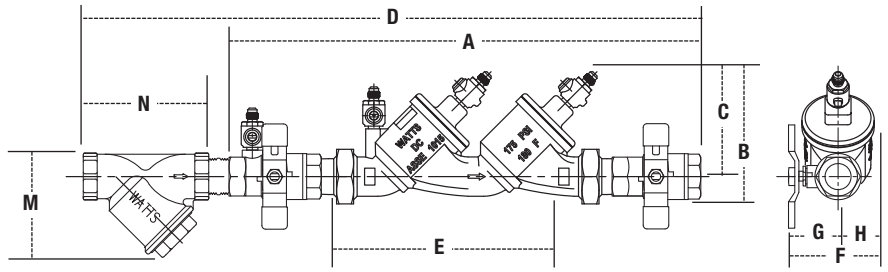


For additional information, request literature ES-719.
See Flow Charts on p. 69



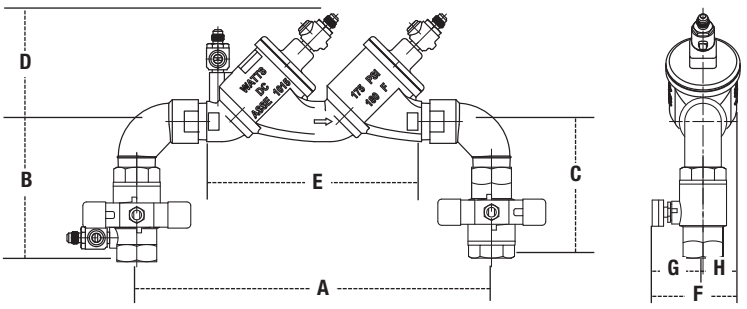
719QT, 719QT-S

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.*
½	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	¾	19	1 3/8	35	2 ¾	70	2.8	1.3	3.8	1.7
¾	20	12 1/8	307	4 ¼	108	3 ½	88	15 7/16	393	7 11/16	195	3 1/8	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 ½	495	9 5/8	244	3 ¾	95	2 7/16	62	1 5/16	33	2 1/8	54	3 ¾	95	7.4	3.4	9.4	4.3
1 ¼	32	18 15/16	480	6 1/8	156	5 1/8	129	24 1/16	610	11 11/16	297	4 ¼	108	2 5/8	67	1 5/8	41	2 ½	64	4 7/16	113	14.0	6.3	18.0	8.1
1 ½	40	18 15/16	480	6 1/8	156	5 1/8	129	25 ¼	640	11 11/16	297	4 ¾	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 3/8	137	3 7/16	87	1 15/16	49	3 9/16	90	5 15/16	151	25.7	11.6	33.4	15.2



U719QT, U719QT-S

SIZE (DN)		DEMENSIONS																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.*
½	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 ¾	70	7.4	3.4	8.4	3.8
¾	20	16 ¼	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 ¾	297	3 ¾	95	2 7/16	62	1 5/16	33	2 1/8	54	3 ¾	95	8.9	4.0	10.9	5.0
1 ¼	32	20 7/8	530	6 1/8	156	5 1/8	129	26	660	15 3/8	390	4 ¼	108	2 5/8	67	1 5/8	41	2 ½	64	4 7/16	113	17.6	8.0	21.6	9.8
1 ½	40	21 9/16	547	6 1/8	156	5 1/8	129	27 7/8	708	15 3/8	390	4 ¾	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 7/16	621	7 1/16	179	5 5/8	142	32 3/16	817	16 ¾	425	5 3/8	137	3 7/16	87	1 15/16	49	3 9/16	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			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
½	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	¾	19	3.4	1.5
¾	20	13 7/16	340	4 13/16	121	4 9/16	116	3 ½	98	7 11/16	195	3 1/8	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 ¾	95	2 7/16	62	1 5/16	33	8.9	4.0
1 ¼	32	15 3/16	386	5 11/16	144	5 11/16	144	5 1/8	129	11 11/16	297	4 ¼	108	2 5/8	67	1 5/8	41	15.7	7.1
1 ½	40	15 13/16	401	6 3/16	156	6 3/16	156	5 1/8	129	11 11/16	297	4 ¾	121	3 1/8	79	1 5/8	41	18.4	8.3
2	50	17 3/8	441	6 5/8	168	6 9/16	167	5 5/8	142	13 3/8	340	5 3/8	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)

757DCDA OSY

757DCDA BFG

757NDCDA OSY

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

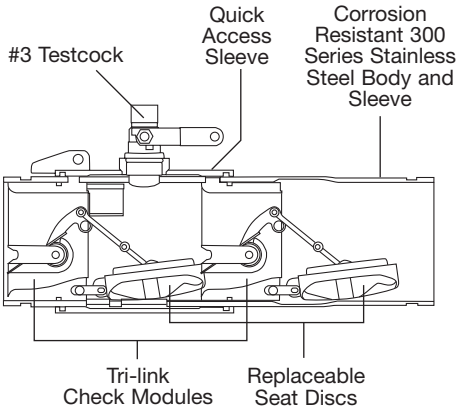
- Extremely compact design
- 70% lighter than traditional designs
- Groove fittings allow integral pipeline adjustment
- Patented tri-link checks provide lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shutoffs
- May be used for horizontal, vertical or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

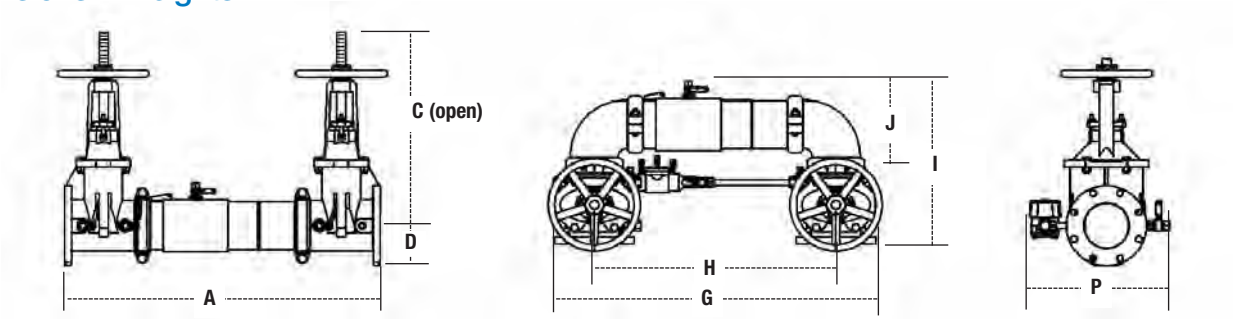
Pressure-Temperature

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



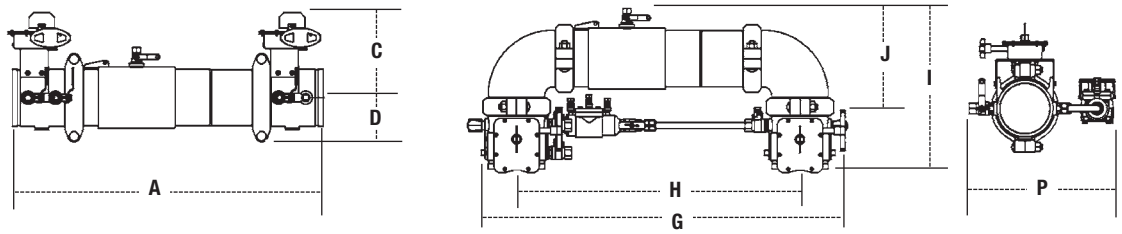
For additional information, request literature ES-757DCDA/757NDCDA.
See Flow Charts on p. 71

Dimensions – Weights



757DCDA, 757NDCDA

SIZE (DN)		DIMENSIONS (APPROX.)																WEIGHT			
		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*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	65	31	787	16⅜	416	3½	89	29 1/16	738	22	559	15½	393	8 13/16	223	13 3/16	335	139	63	147	67
3	80	31 11/16	805	18⅞	479	3 11/16	94	30¼	768	22¾	578	17⅛	435	9 3/16	233	14½	368	159	72	172	78
4	100	33 11/16	856	22¾	578	4	102	33	838	24	610	18½	470	9 15/16	252	15 3/16	386	175	79	198	90
6	150	43½	1105	30⅛	765	5½	140	44¾	1137	33¾	857	23 3/16	589	13 1/16	332	19	483	309	140	350	159
8	200	50	1270	37¾	959	6 11/16	170	54⅛	1375	40⅝	1032	27 7/16	697	15 11/16	399	21 3/16	538	494	224	569	258
10	250	57½	1460	45¾	1162	8 3/16	208	66	1676	50	1270	32½	826	17 5/16	440	24	610	795	361	965	438



757DCDA BFG, 757NDCDA BFG

SIZE (DN)		DIMENSIONS (APPROX.)																WEIGHT			
		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*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	65	28	711	8	203	3½	89	29⅞	759	22	559	14 15/16	379	8 13/16	223	13	330	70	32	78	35
3	80	28½	724	8 5/16	211	3 11/16	94	30 11/16	779	22¾	578	15 7/16	392	9 3/16	233	13½	343	68	31	81	37
4	100	29 3/16	741	8 15/16	227	3 11/16	94	31 15/16	811	24	610	16¼	412	9 15/16	252	14	356	75	34	98	44
6	150	36½	927	10	254	5	127	43 3/16	1097	33¾	857	19 11/16	500	13 1/16	332	14½	368	131	59	171	78
8	200	43	1092	12¼	311	6½	165	51 1/16	1297	40⅝	1032	23 5/16	592	15 11/16	399	18 3/16	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

ASSE 1048 · cULus CLASSIFIED (BFG & OSY only) · FM Approved · CSA B64.5

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 757NaDCDA

Double Check Detector Assemblies

Sizes: 2½" – 6" (65 – 150mm)

757NaDCDA OSY

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

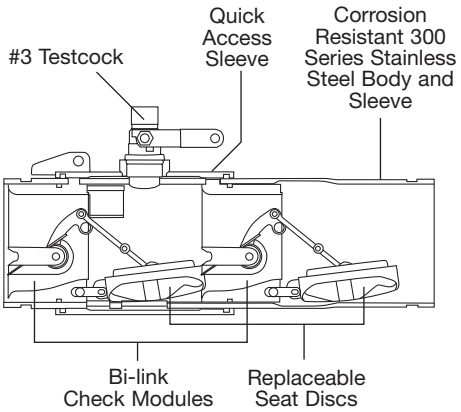
- Extremely compact design
- 70% lighter than traditional designs
- Groove fittings allow integral pipeline adjustment
- Patented bi-link checks provide lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shutoffs
- Used for N pattern installations
- Replaceable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

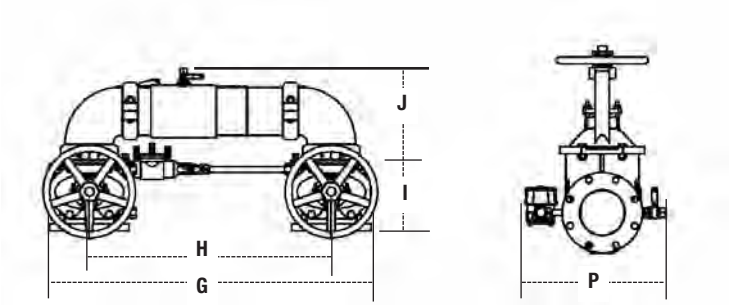
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C)
Maximum Working Pressure: 175psi (12.1 bar)



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

See Flow Charts on p. 72

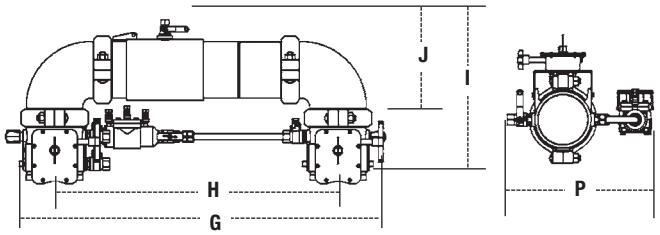
Dimensions – Weights



757NaDCDA

SIZE (DN)		DIMENSIONS (APPROX.)										WEIGHT	
		G		H		I		J		P		757NaDCDA	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	65	29 1/16	738	22	559	15½	393	8 13/16	223	13 3/16	335	147	67
3	80	30¼	768	22¾	578	17⅛	435	9 3/16	233	14½	368	172	78
4	100	33	838	24	610	18½	470	9 15/16	252	15 3/16	386	198	90
6	150	44¾	1137	33¾	857	23 3/16	589	13 1/16	332	19	483	350	159

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



757NaDCDA BFG

SIZE (DN)		DIMENSIONS (APPROX.)										WEIGHT	
		G		H		I		J		P		757aNDCDA BFG	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	65	29⅞	759	22	559	14 15/16	379	8 13/16	223	13	330	78	35
3	80	30 11/16	779	22¾	578	15 7/16	392	9 3/16	233	13½	343	81	37
4	100	31 15/16	811	24	610	16¼	412	9 15/16	252	14	356	98	44
6	150	43 3/16	1097	33¾	857	19 11/16	500	13 1/16	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

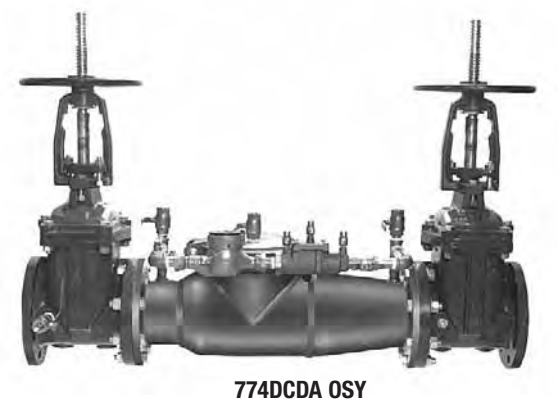
1048 (BFG & OSY only) B64.5

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 774DCDA

Double Check Detector Assemblies

774DCDA: Sizes 2½" – 12" (65 – 300mm)



774DCDA OSY

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.

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 ⅝" x ¾" (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

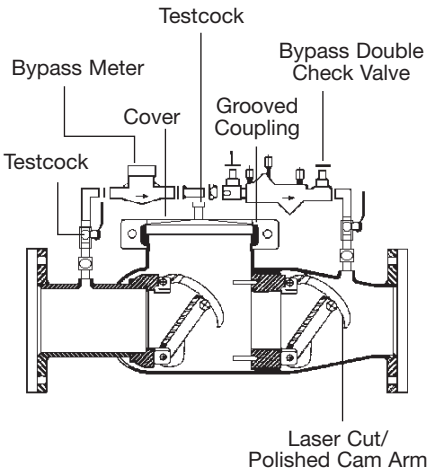
Materials

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

Pressure – Temperature

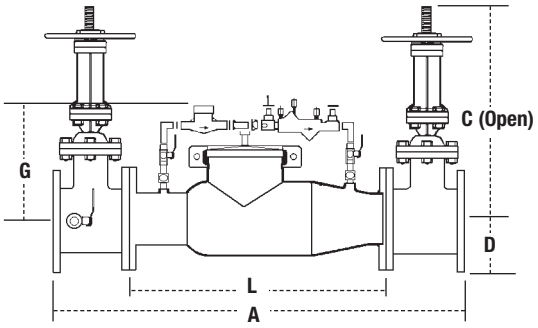
Temperature Range: to 33˚ – 110°F (0.5˚C – 43°C) continuous
Maximum Working Pressures: 175psi (12.1 bar)

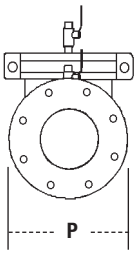
774DCDA



For additional information, request literature ES-774DCDA or ES-774XDCDA.
See Flow Charts on p. 73–74

Dimensions – Weights





774DCDA

SIZE (DN)		DIMENSIONS (APPROX.)												WEIGHT			
		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*	*in.*	*mm*	*lb.*	*kg.*	*lb.*	*kgs.*
2½	65	38	965	16⅜	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	30⅛	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	53⅛	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)

1048 (OSY only) (OSY only)

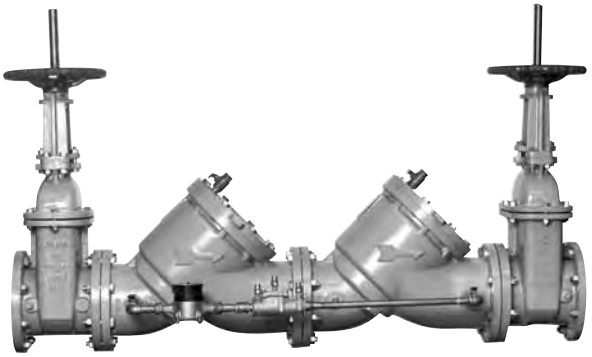
For additional approvals consult factory
Flange dimension in accordance with AWWA Class D

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 709DCDA

Double Check Detector Assemblies

Sizes: 3" – 10" (80 – 250mm)



709DCDA OSY

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, ⅝" x ¾" (16 x 19mm) meter and ball type test cocks.

Features

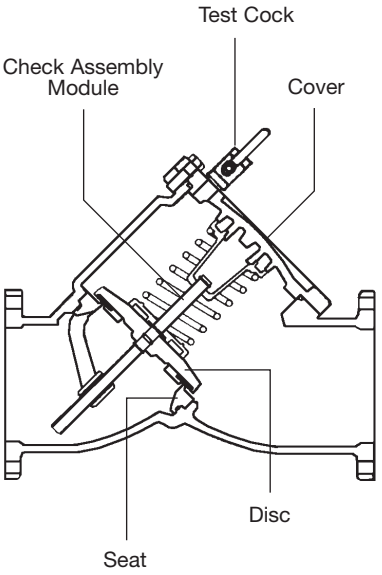
- Body construction fused epoxy coated cast iron
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Compact for economy combined with performance
- Design simplicity for easy maintenance
- Furnished with ⅝" x ¾" (16 x 19mm) meter Model 25, bronze
- No special tools required for servicing

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

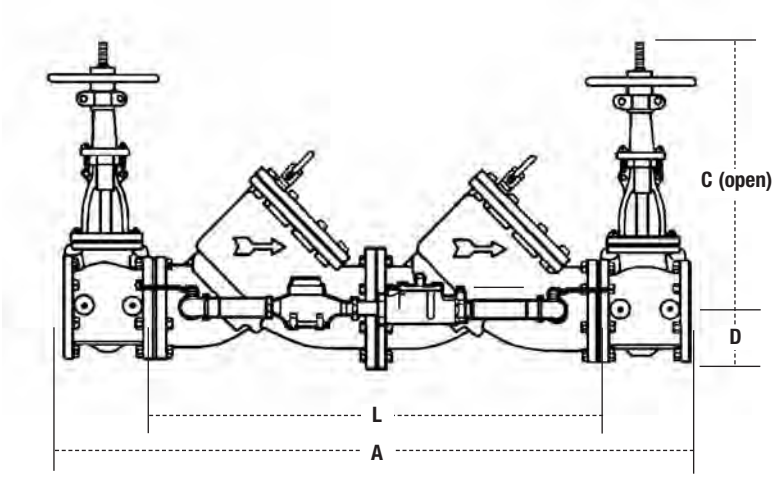
Pressure – Temperature

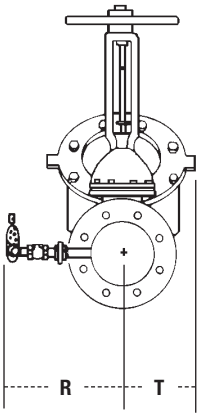
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C) continuous, 140˚ (60˚C) intermittent
Maximum Working Pressure: 175psi (12.1 bar)



For additional information, request literature ES-709DCDA.
See Flow Charts on p. 68–69

Dimensions – Weights





709DCDA

SIZE (DN)		DIMENSIONS (APPROX.)												WEIGHT	
		A		C		D		L		R		T			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
3	80	40	1016	18⅞	479	3¾	95	24	610	14	356	3	76	190	86
4	100	52	1321	22¾	578	4½	114	34	864	15	381	6	152	403	183
6	150	63¼	1607	30⅛	765	5½	140	42¼	1073	16	406	7½	191	727	330
8	200	75	1905	37¾	959	6⅝	168	52	1321	17	432	9	229	1327	602
10	250	90	2286	45¾	1162	8	203	64	1626	18	457	10¼	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

1048

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

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 007DCDA

Double Check Detector Assemblies

Sizes: 2" – 3" (50 – 80mm)

007DCDA OSY

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 ⅝" x ¾" (16 x 19mm) meter.

Features

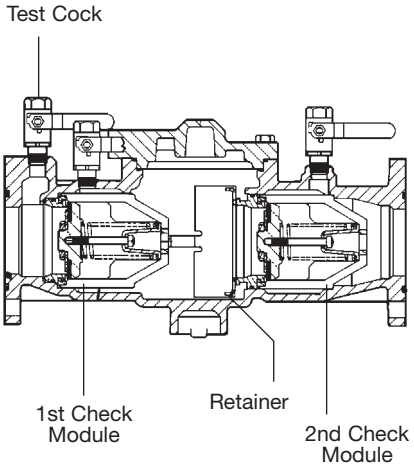
- Fused epoxy coated cast iron unibody 2½" & 3" (65 - 80mm)
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Compact for ease of installation
- Design simplicity for easy maintenance
- No special tools required for servicing
- Bronze body ball valve test cocks
- Modular spring loaded checks
- Furnished with bronze ⅝" x ¾" (16 x 19mm) meter

Materials

- Body: 2" Bronze, 2½" – 3" (65 - 80mm) FDA approved, epoxy coated cast-iron unibody
- Seats: Bronze
- Discs: Durable, tight-seating silicone
- Springs: Stainless steel
- Meter: ⅝" x ¾" (16 – 19mm) bronze

Pressure – Temperature

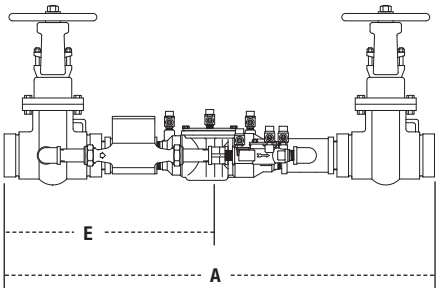
Temperature Range: 33˚F – 110°F (0.5˚C – 43°C) continuous, 140°F (60°C) intermittent
Maximum Working Pressure: 175psi (12.1 bar)

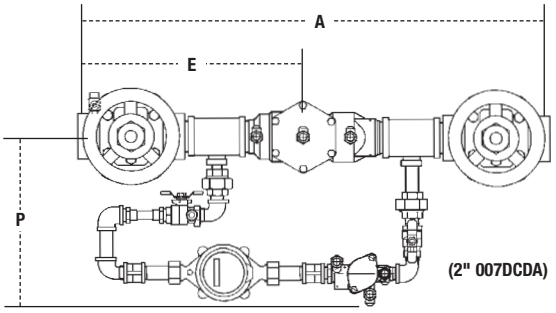


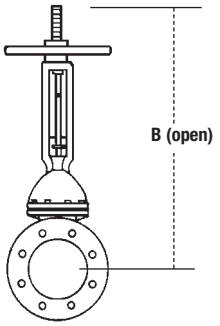
For additional information, request literature ES-007DCDA.
See Flow Charts on p. 64

Dimensions – Weights

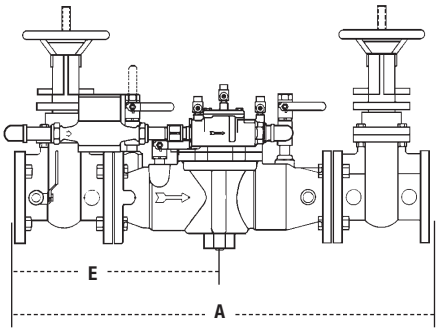
2" (50mm)

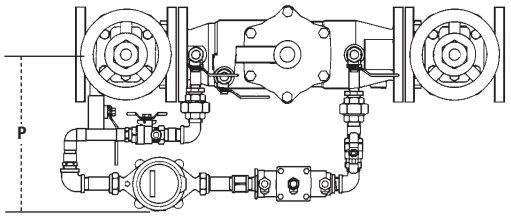


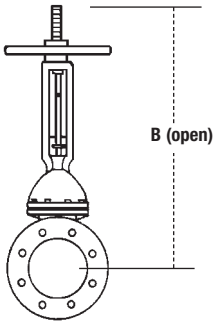




2½" – 3" (65 - 80mm)







007DCDA

SIZE (DN)		DIMENSIONS (APPROX.)								WEIGHT	
		A		B		E		P			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2	50	35⅛	892	13½	343	16¾	426	12¼	311	97	44
2½	65	33¼	845	16⅜	416	16⅜	416	12 5/16	313	164	74
3	80	34¼	870	18⅞	479	16⅝	422	12 5/16	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

ASSE 1048 · c UL us CLASSIFIED (OSY only) · FM Approved (2" size only)

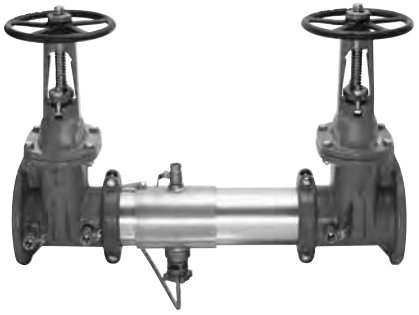
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
2" & 2½" (50 & 65mm) 007DCDA horizontal or vertical flow up position
3" (80mm) horizontal only

IMPORTANT: Inquire with governing authorities for local installation requirements

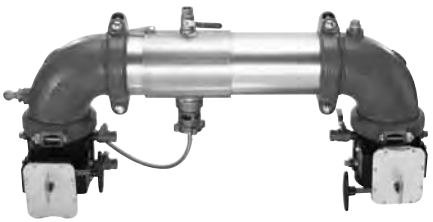
Series 957, 957N, 957Z

Reduced Pressure Zone Assemblies

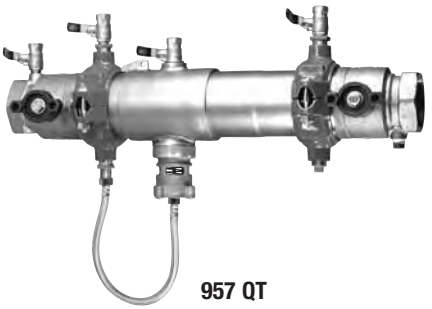
Sizes: 2½" – 10" (65 – 250mm)



957 OSY



957N BFG



957 QT

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

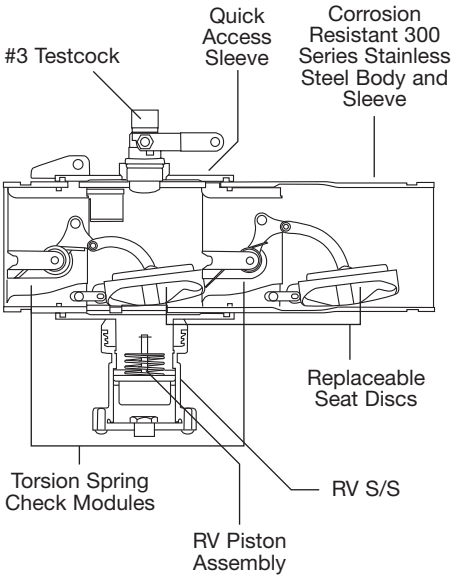
Temperature Range: 33˚F to 110˚F (0.5˚C to 43˚C)
Maximum Working Pressure: 175psi (12.1 bar)

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

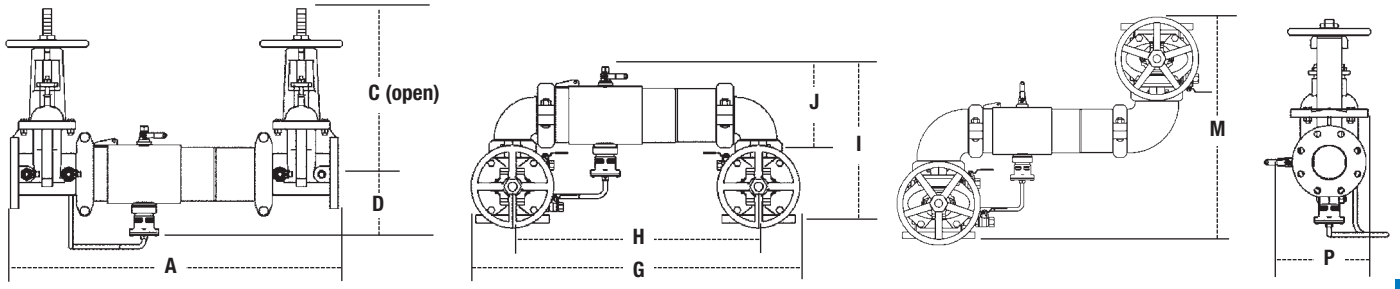
ASSE 1013 · cULus (BFG & OSY only) · FM Approved · CSA B64.4



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

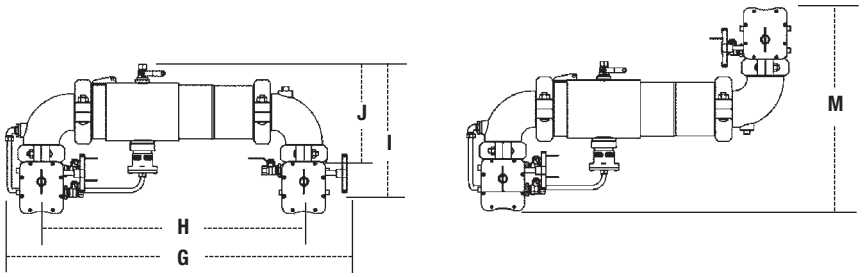
See Flow Charts on p. 76–77

Dimensions – Weights



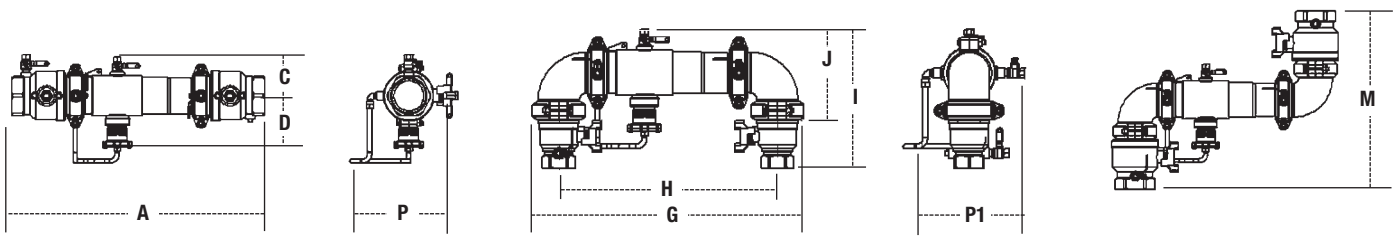
957

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.	lbs.	kgs.
2½	65	31	787	16⅜	416	9⅜	238	6½	165	29 1/16	738	22	559	15½	393	8 13/16	223	21 9/16	548	9 3/16	234	118	54	128	58	126	57	136	62
3	80	31 11/16	805	18⅞	479	10¼	260	6 11/16	170	30¼	768	22¾	578	17⅛	435	9 3/16	233	23⅛	587	10½	267	134	61	148	67	147	67	161	73
4	100	33 11/16	856	22¾	578	12 3/16	310	7	178	33	838	24	610	18½	470	9 15/16	252	26½	673	11 3/16	284	164	74	164	74	187	85	187	85
6	150	43½	1105	30⅛	765	16	406	8½	216	44¾	1137	33¾	857	23 3/16	589	13 1/16	332	32¾	832	15	381	276	125	298	135	317	144	339	154
8	200	50	1270	37¾	959	19 15/16	506	9 11/16	246	54⅛	1375	40⅝	1032	27 7/16	697	15 11/16	399	37⅛	943	17 3/16	437	441	200	483	219	516	234	558	253
10	250	57½	1460	45¾	1162	23 13/16	605	11 3/16	285	66	1676	50	1270	32½	826	17 5/16	440	46⅜	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	lbs.	kgs.
2½	65	32½	826	23½	597	15½	394	9½	241	21 13/16	555	11 13/16	300	67	30
3	80	34	864	24½	622	16 5/16	414	10 1/16	256	23⅛	587	12⅛	308	70	32
4	100	35⅝	905	26	660	17 3/16	437	10 15/16	279	24 15/16	634	12⅝	321	87	39
6	150	46½	1181	35 12/16	908	20½	521	13½	343	28¼	718	15	382	160	73



957 QT

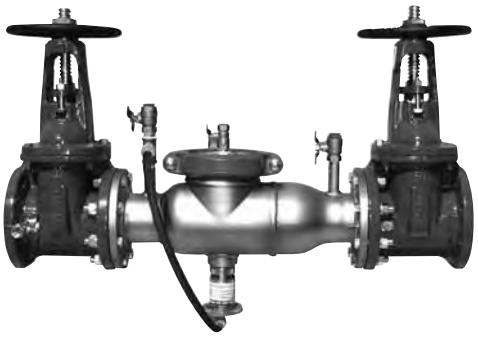
SIZE (DN)		DIMENSIONS (APPROX.)																		WEIGHT	
		A		C		D		G		H		I		J		M		P		P1			
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
2½	65	28 15/16	735	4⅞	124	6⅞	174	30¼	768	24½	622	16 9/16	421	11⅜	289	20 15/16	532	11 5/16	287	11 5/16	287	46	21
3	80	30 3/16	767	4 13/16	122	6⅞	174	30¼	768	24½	622	17 3/16	437	11¼	258	22 3/16	564	11 5/16	287	11 5/16	287	56	25

IMPORTANT: Inquire with governing authorities for local installation requirements

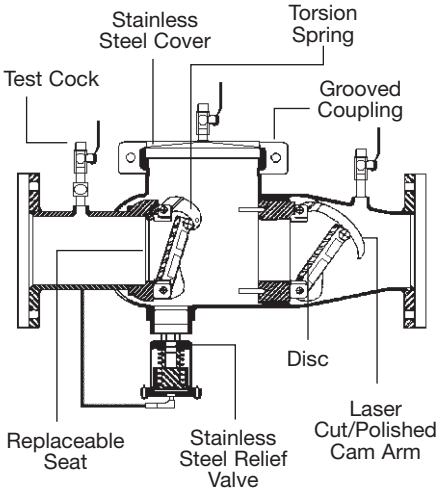
Series 994

Reduced Pressure Zone Assemblies

Sizes 2½" – 10" (65 – 250mm)



994 OSY



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, lightweight 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®

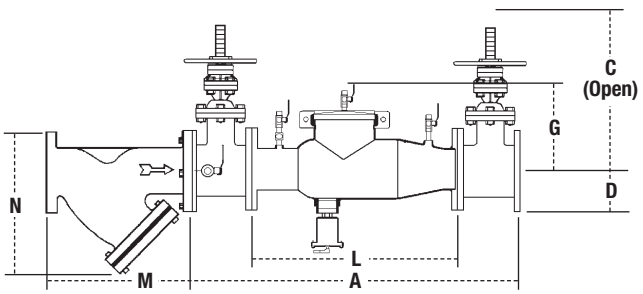
Pressure – Temperature

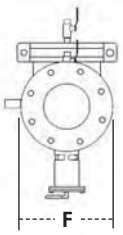
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C), continuous
Maximum Working Pressure: 175psi (12.1 bar)

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

1013 (OSY only) B64.5

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

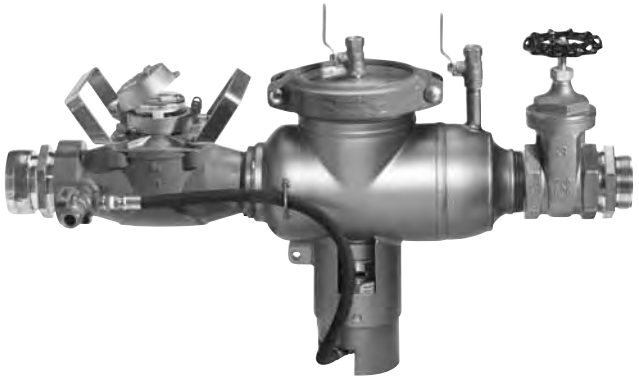
SIZE (DN)		DIMENSIONS (APPROX.)												STRAINER DIMENSIONS				WEIGHT			
		A		C (open)		D		F		G		L		M		N		w/Gates		w/o Gates	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lb.*	*kg.*	*lb.*	*kgs.*
2½	65	37	940	16⅜	419	10½	267	7	178	10	254	22	559	10	254	6½	165	148	67	60	27
3	80	38	965	18⅞	479	10½	267	7½	191	10	254	22	559	10⅛	257	7	178	226	103	62	28
4	100	40	1016	22¾	578	10½	267	9	229	10	254	22	559	12⅛	308	8¼	210	235	107	65	30
6	150	48½	1232	30⅛	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	21⅝	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

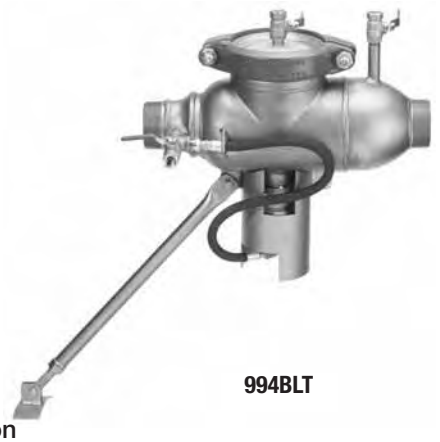
Series 994BLT, 994HMB

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



994BLT

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

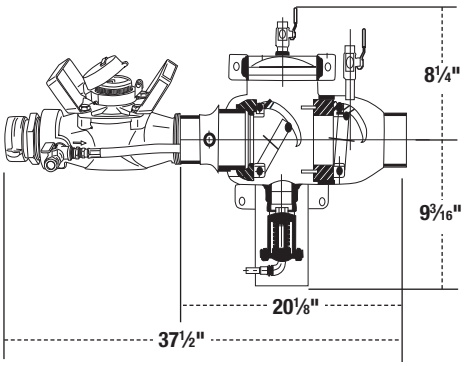
- Heavy-duty relief valve cover prevents vandalism and protects valve from damage when 994HMB is transported to another fire hydrant location
- In-line flow restrictor protects the meter measuring element and the backflow preventer components from damage due to excessive flow (994HMB only)
- Backflow 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

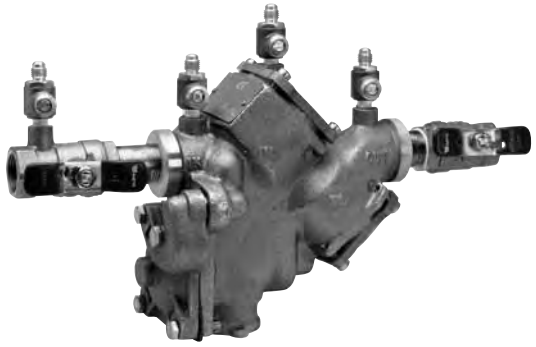
See Flow Charts on p. 78

For additional information, request literature ES-994BLT.

Series 909

Reduced Pressure Zone Assemblies

909: Sizes: ¾", 1" (20, 25mm)
909M1: Sizes: 1¼", 1½", 2" (32, 40, 50mm)



909 QT

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 ¾" 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

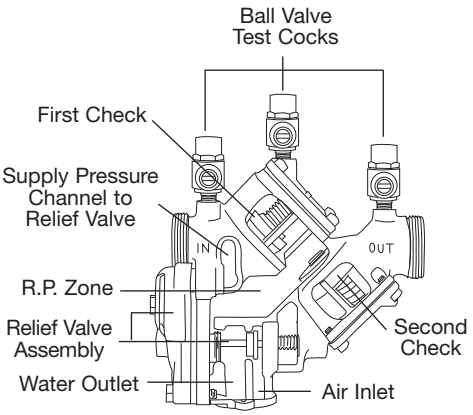
Maximum Operating Pressure: 175psi (12.1 bar)

909

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

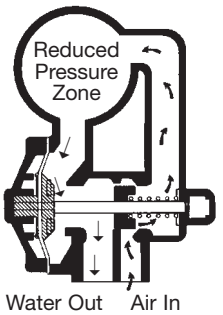
909HW

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



How it Operates

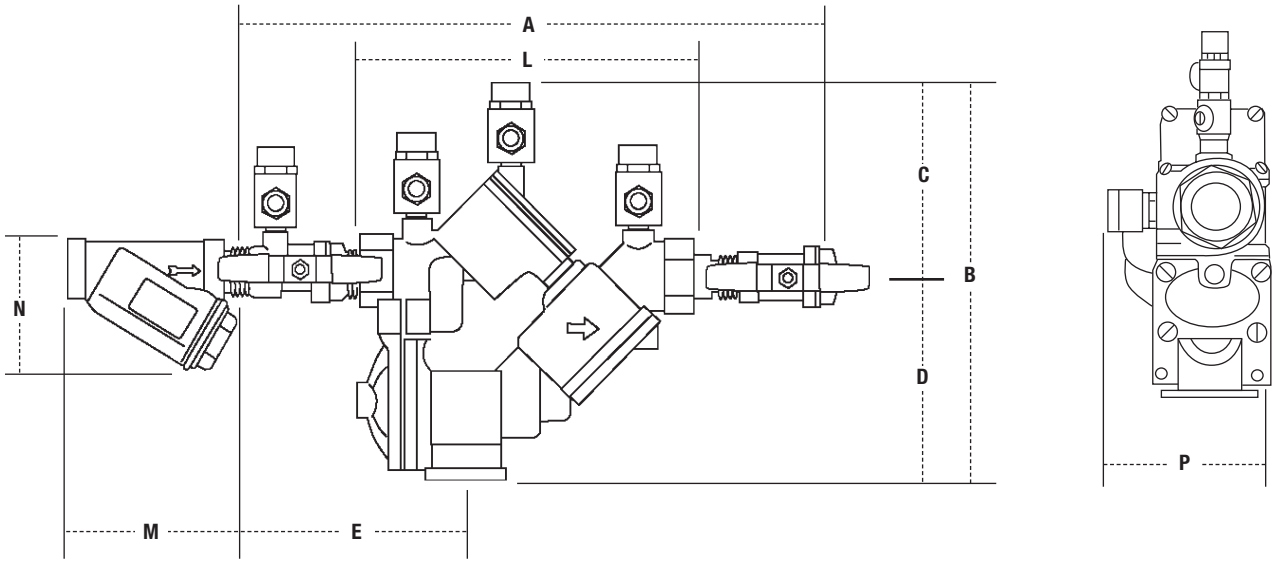
The unique relief valve construction incorporates two channels: one for air, one for water. When the relief valve opens, as in the accompanying air-in/water-out diagram, the right-hand channel admits air to the top of the reduced pressure zone, relieving the zone vacuum. The channel on the left then 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.



Celcon® is a registered trademark of Hoescht Celanese.

For additional information, request literature ES-909S.
See Flow Charts on p. 74

Dimensions – Weights



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

909

SIZE (DN)		DIMENSIONS (APPROX.)														STRAINER DIMENSIONS				WEIGHT	
		A		B		C		D		E		L		P		M		N			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
¾	20	14⅜	365	8¾	222	4	102	4¾	121	6¾	171	7 5/16	186	3⅞	98	3 3/16	81	2¾	70	14	6
1	25	15⅜	391	8¾	222	4	102	4¾	121	7	178	7 5/16	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	4 7/16	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	5 15/16	151	5	127	40	18
*U909QT Dimensions - with integral body unions (Prefix "U")																					
¾	20	14⅝	371	8¾	222	4	102	4¾	121	6¾	171	7 5/16	186	3⅞	98	3 3/16	81	2¾	70	14	6.4
1	25	15⅝	397	8¾	222	4	102	4¾	121	7	178	7 5/16	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	4 7/16	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	5 15/16	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

ASSE 1013 · c SP® us

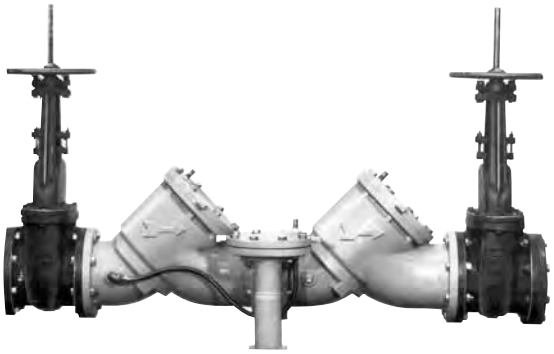
AWWA
Listed by IAPMO
Listed by SBCCI
*Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
Horizontal and vertical "flow-up" USC approval on ¾" and 1" sizes (models 909QT, 909PCQT, and U909QT).

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

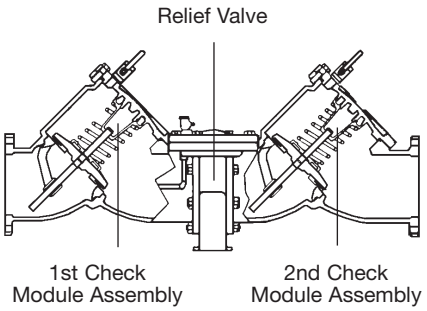
Series 909

Reduced Pressure Zone Assemblies

Sizes: 2½" – 10" (65 – 250mm)



909 OSY



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.

Features

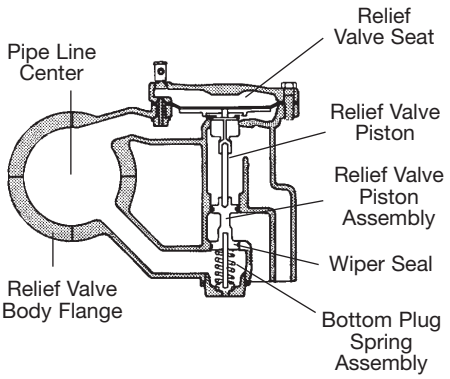
- Replaceable seats
- Stainless steel internal parts
- No special tools required for servicing
- Captured spring check assemblies
- Fused epoxy coated & lined checks
- Industrial strength sensing hose
- Field reversible relief valve
- Air-in/water-out relief valve design provides maximum capacity during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

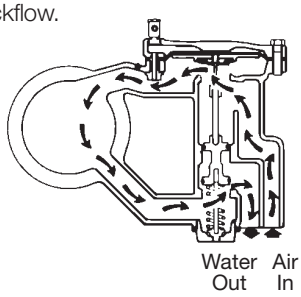
Pressure – Temperature

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



How it Operates

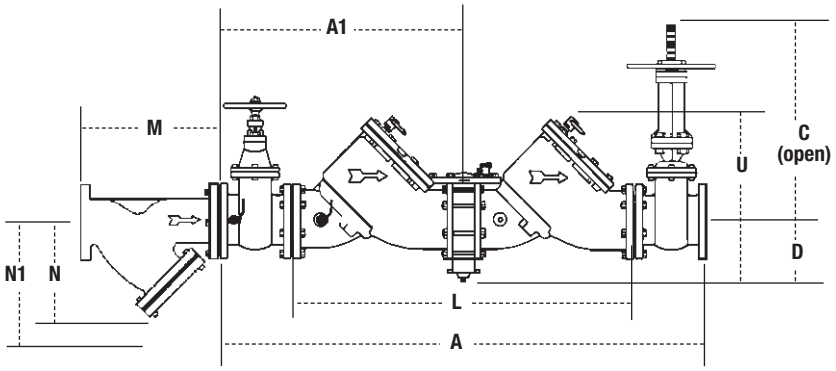
The unique relief valve construction incorporates two channels: one for air, one for water. When the relief valve opens, as in the accompanying air-in/water-out diagram, the right-hand channel admits air to the top of the reduced pressure zone, relieving the zone vacuum. The channel on the left then 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.

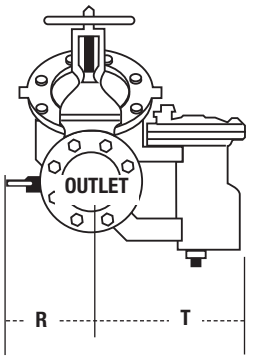


For additional information, request literature ES-909L.

See Flow Charts on p. 74-75

Dimensions – Weights





909

SIZE (DN)		DIMENSIONS (APPROX.)																		WEIGHT					
						C						clearance for check													
		A		A1		(OSY)*		(NRS)		D		L		U		R		R (QT)		T		NRS		OSY		QT	
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	41¼	1048	20⅝	524	16⅜	416	9⅜	238	5¼	133	26⅛	663	11	279	4	102	16	406	9 1/16	230	195	88.4	198	89.8	182	82.6
3	80	42¼	1073	21¼	540	18⅞	479	10¼	260	5¼	133	26⅛	663	11	279	5	127	16	406	9 1/16	230	225	102	230	104	190	86
4	100	55⅛	1400	27⅝	702	22¾	578	12 3/16	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	30⅛	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	39⅜	1000	37¾	959	19 15/16	506	9¾	248	55¼	1403	21	533	11¼	286	11¼	286	19¼	489	1350	612	1456	660	2286	1037
10	250	93⅝	2378	46⅞	1190	45¾	1162	23 13/16	605	9¾	248	67⅜	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			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	65	10	254	10	254	6½	165	28	12.7
3	80	10⅛	257	10	254	7	178	34	15.4
4	100	12⅛	308	12	305	8¼	210	60	27
6	150	18½	470	20	508	13½	343	133	60
8	200	21⅝	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

1013 B64.4

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: ¼" – 3" (8 – 80mm)

009 QT

U009A QT

009M2 QTHC

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 ¼" – 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 - ¼" – 2" (8 – 50mm)
- Fused epoxy coated cast iron body - 2½" and 3" (65 and 80mm)
- Ball valve test cocks - screwdriver slotted - ¼" – 2" (8 – 50mm)
- Large body passages provide low pressure drop
- Compact, space saving design
- No special tools required for servicing

Materials

Sizes ¼" – 2" (8 – 50mm)

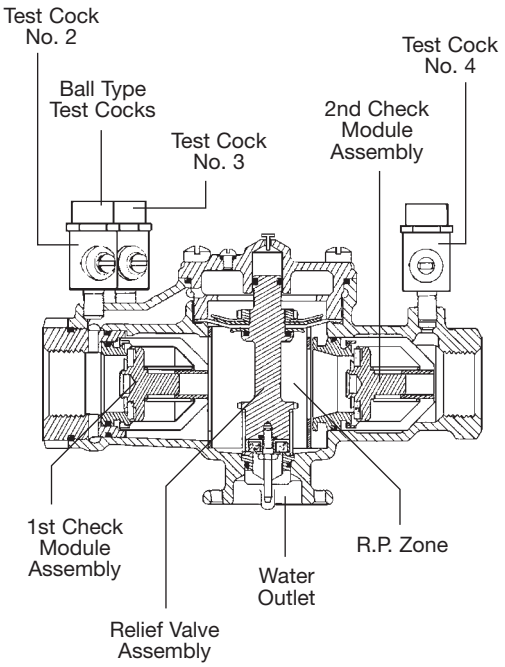
- Body: Bronze
- Check and Relief Valve Discs: Silicone rubber
- Check Seats: Replaceable polymer
- Relief Valve seat: Removable stainless steel
- Cover Bolts: Stainless steel

Sizes 2½" – 3" (65 – 80mm)

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

Pressure – Temperature

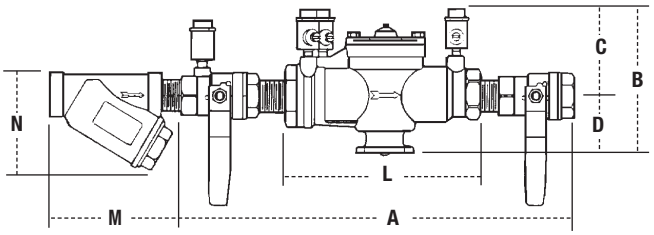
Temperature Range: ¼" – 2" (8 – 50mm) 33˚F – 180˚F (0.5˚C – 82˚C)
2½" – 3" (65 – 80mm) 33˚F – 110˚F (0.5˚C – 43˚C) continuous, 140˚F (60˚C) intermittent
Maximum Working Pressure: 175psi (12.1 bar)



For additional information, request literature ES-009.

See Flow Charts on p. 65-66

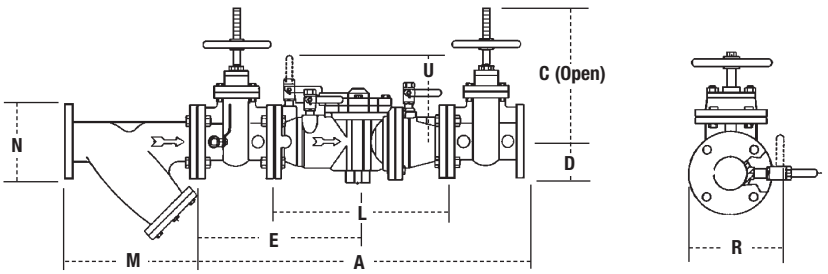
Dimensions – Weights



Suffix HC - Fire Hydrant Fittings dimension "A" = 25 1/16 (637mm)

009 ¼" – 2" (8 – 50mm)

SIZE (DN)		DIMENSIONS (APPROX.)										STRAINER DIMENSIONS				WEIGHT	
		A		B		C		D		L		M		N			
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg.
¼	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
½	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
¾	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 2½" and 3" (65 – 80mm)

MODEL NO.	SIZE (DN)		DIMENSIONS (APPROX.)														STRAINER DIMENSIONS				WEIGHT	
			A		C		D		E		L		R		U		M		N			
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
009LF	2½	65	—	—	—	—	5¼	133	—	—	18⅛	460	—	—	10⅝	270	10	254	6½	165	76	34
009OSY	2½	65	33¼	845	16⅜	416	5¼	133	16⅜	416	18⅛	460	7¾	197	10⅝	270	10	254	6½	165	166	75
009NRS	2½	65	33¼	845	9⅜	238	5¼	133	16⅜	416	18⅛	460	7¾	197	10⅝	270	10	254	6½	165	189	86
009QT	2½	65	33¼	845	6	152	5¼	133	16⅜	416	18⅛	460	7¾	197	10⅝	270`	10	254	6½	165	150	68
009LF	3	80	—	—	—	—	5¼	133	—	—	18⅛	460	—	—	10⅝	270	10⅛	257	7	178	76	34
009OSY	3	80	34¼	870	18⅞	470	5¼	133	16⅝	422	18⅛	460	8¾	222	10⅝	270	10⅛	257	7	178	198	90
009NRS	3	80	34¼	870	10¼	260	5¼	133	16⅝	422	18⅛	460	8¾	222	10⅝	270	10⅛	257	7	178	191	87
009QT	3	80	34¼	870	7	178	5¼	133	16⅝	422	18⅛	460	8¾	222	10⅝	270	10⅛	257	7	178	158	71

Models

Sizes ¼" – 2" (8 – 50mm)

Suffix
QT - quarter-turn ball valves
S - bronze strainer
LF - without shutoff valves
AQT - elbow fittings for 360° rotation (¾" – 2" only) (20 – 50mm only)
PC - internal polymer coating
LH - locking handle ball valves (open position)
SH - stainless steel ball valve handles
HC - 2½" (65mm) inlet/outlet fire hydrant fitting 2" (50mm) valve

Prefix
C - clean and check strainer (¾" – 1" only) (20 – 25mm only)
U - union connections
SS - 316 stainless steel body and stainless steel ball valve, ¼" – 1" (8 – 25mm only)

Sizes 2½" 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

1013

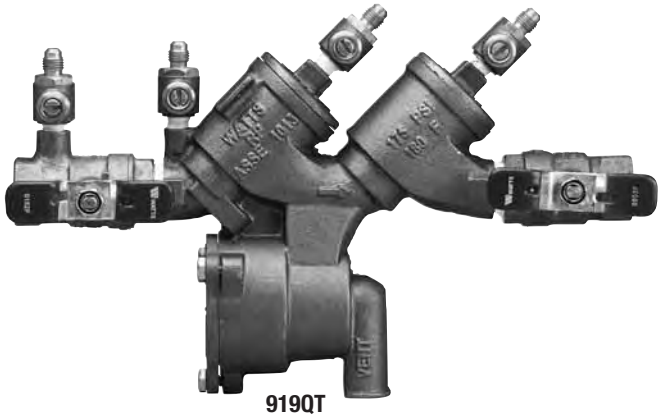
AWWA, IAPMO
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
Approval models QT, AQT, PC, U, NRS, OSY.
UL Classified ¾" – 2" (20 – 50mm) (LF models only), 2½" and 3" (65 – 80mm) with OSY gate valves.

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

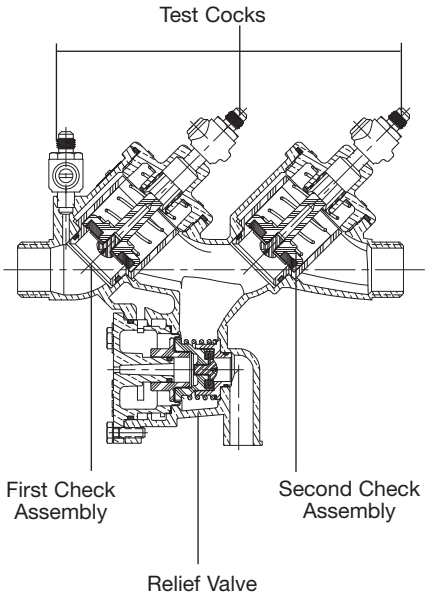
Sizes: ¾" – 2" (20 – 50mm)



919QT

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 ¾" – 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 360º rotation
ZQT – inlet & outlet flow up

Prefix:
U – union connections

Materials

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

Pressure — Temperature

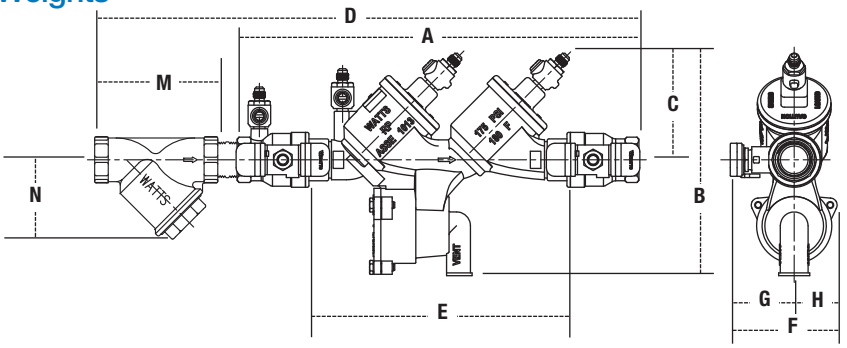
Temperature Range: 33ºF – 180ºF (0.5ºC – 82ºC)
Maximum Working Pressure: 175psi (12.1 bar)

Approvals

ASSE
1013

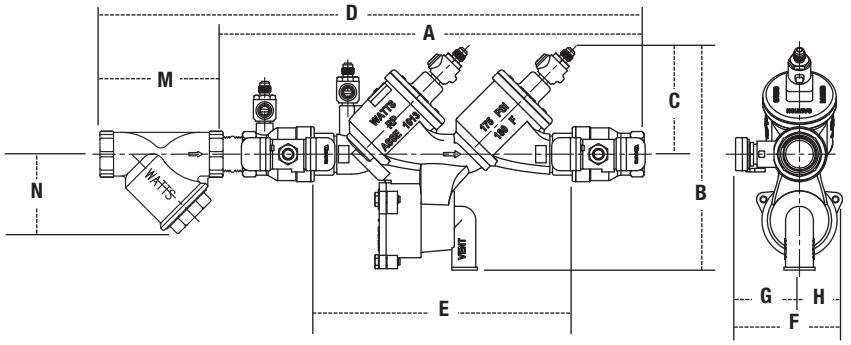
For additional information, request literature ES-919.
See Flow Charts on p. 76

Dimensions – Weights



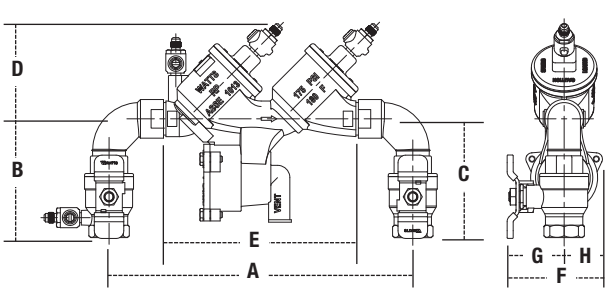
919QT, 919QT-S

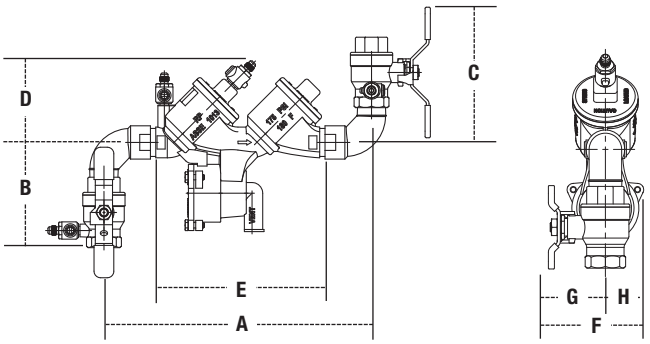
SIZE (DN)		DIMENSIONS																STRAINER DIMENSIONS				WEIGHT			
		A		B		C		D		E (LF)		F		G		H		M		N		919QT		919QT-S	
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.
¾	20	12⅛	307	7 7/16	188	3½	88	15½	393	7 11/16	195	3⅝	92	2 1/16	52	1 9/16	40	1⅝	41	3 3/16	81	8.3	3.7	10.0	4.5
1	25	14½	368	8	202	3⅞	98	19 3/16	487	9 3/16	233	4	102	2 7/16	62	1 9/16	40	2⅛	54	3¾	95	11.8	5.4	13.8	6.3
1¼	32	18⅛	461	11 7/16	290	5⅛	129	23¼	591	11 11/16	297	5⅛	130	2⅝	67	2½	64	2½	64	4 7/16	113	22.3	10.1	26.3	11.9
1½	40	18¾	476	11 7/16	290	5⅛	129	25 1/16	637	11 11/16	297	5⅝	143	3⅛	79	2½	64	3	76	4⅞	124	28.3	12.8	32.0	14.5
2	50	21 1/16	535	12 1/16	307	5⅝	142	28 13/16	732	13⅜	340	5 15/16	151	3 7/16	87	2½	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.
¾	20	16 15/16	430	8 1/16	204	3⅞	98	20 5/16	515	11½	292	3⅝	92	2 1/16	52	1 9/16	40	1⅝	41	3 9/16	81	13.4	6.1	15.1	6.9
1	25	17⅛	435	8 1/16	204	3⅞	98	21 13/16	554	11¾	297	4	102	2 7/16	62	1 9/16	40	2⅛	54	3¾	95	13.3	6.0	15.3	6.9
1¼	32	20 15/16	532	11 7/16	290	5⅛	129	26 1/16	662	15⅜	390	5⅛	130	2⅝	67	2½	64	2½	64	4 7/16	113	25.9	11.8	29.9	13.6
1½	40	21 9/16	547	11 7/16	290	5⅛	129	27⅞	708	15⅜	390	5⅝	143	3⅛	79	2½	64	3	76	4⅞	124	31.9	14.5	35.6	16.2
2	50	24 15/16	633	12 1/16	307	5⅝	142	32 11/16	830	16¾	425	5 15/16	151	3 7/16	87	2½	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			
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
¾	20	10⅜	263	3 15/16	100	3 15/16	100	3½	88	7 11/16	195	3⅝	92	2 1/16	52	1 9/16	40	9.3	4.2
1	25	12¼	311	4 13/16	122	4 13/16	122	3⅞	98	9 3/16	233	4	102	2 7/16	62	1 9/16	40	13.3	6.0
1¼	32	16 1/16	407	5⅞	149	5⅞	149	5⅛	129	11 11/16	297	5⅛	130	2⅝	67	2½	64	24.0	10.9
1½	40	16⅝	421	6½	164	6½	164	5⅛	129	11 11/16	297	5⅝	143	3⅛	79	2½	64	30.5	13.8
2	50	17 5/16	440	6⅝	168	6 9/16	166	5⅛	142	13⅜	340	5 15/16	151	3 7/16	87	2½	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

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

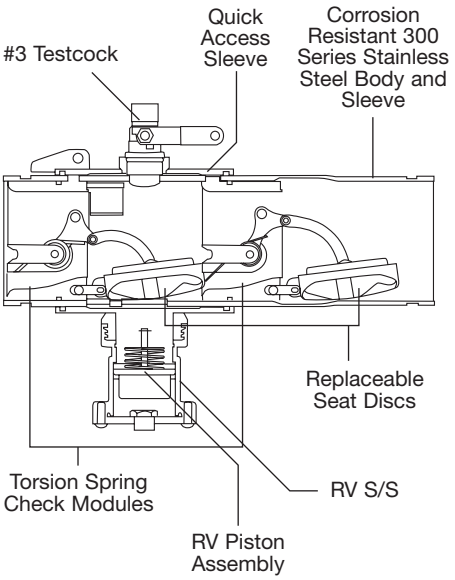
- Extremely compact design
- 70% lighter than traditional designs
- Groove fittings allow integral pipeline adjustment
- Patented torsion spring checks provide lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shutoffs
- Replaceable check disc rubber
- Bottom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

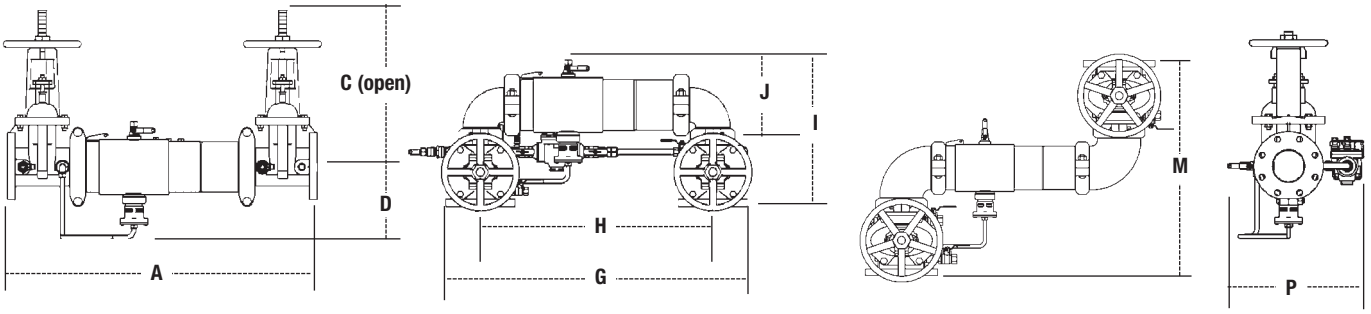
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C)
Maximum Working Pressure: 175psi (12.1 bar)



For additional information, request literature ES-957RPDA/957NRPDA/957ZRPDA.

See Flow Charts on p. 77

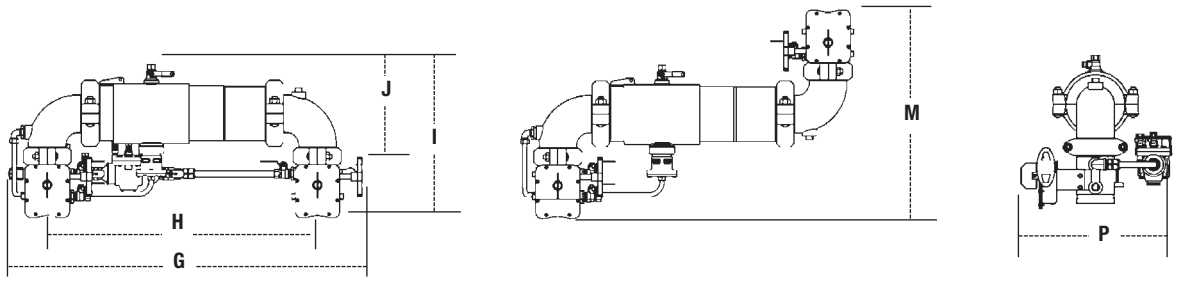
Dimensions – Weights



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*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	65	31	787	16⅜	416	6½	165	29 1/16	738	22	559	15½	393	8 13/16	223	21 9/16	548	13 3/16	335	142	64	150	68
3	80	31 11/16	805	18⅞	479	6 11/16	170	30¼	768	22¾	578	17⅛	435	9 3/16	233	23⅛	587	14½	368	162	73	175	79
4	100	33 11/16	856	22¾	578	7	178	33	838	24	610	18½	470	9 15/16	252	26½	673	15 3/16	386	178	81	201	91
6	150	43½	1105	30⅛	765	8½	216	44¾	1137	33¾	857	23 3/16	589	13 1/16	332	32¾	832	19	483	312	142	353	160
8	200	50	1270	37¾	959	9 11/16	246	54⅛	1375	40⅝	1032	27 7/16	697	15 11/16	399	37⅛	943	21 3/16	538	497	225	572	259
10	250	57½	1460	45¾	1162	11 3/16	285	66	1676	50	1270	32½	826	17 5/16	440	46⅜	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*	*lbs.*	*kgs.*
2½	65	32½	826	23½	597	15½	394	9½	241	21 13/16	555	15 13/16	402	81	37
3	80	34	864	24½	622	16 5/16	414	10 1/16	256	23⅛	587	16⅛	410	84	38
4	100	35⅝	905	26	660	17 3/16	437	10 15/16	279	24 15/16	634	16⅝	422	101	46
6	150	46½	1181	35 12/16	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

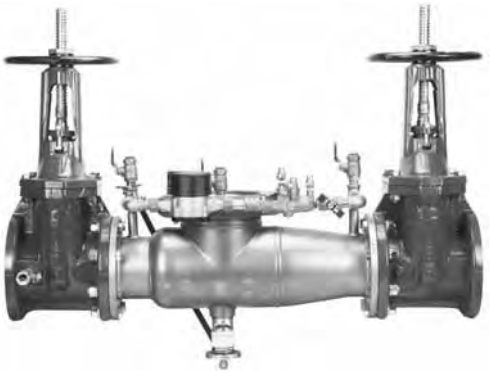
1047 (BFG & OSY only) B64.4

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 994RPDA

Reduced Pressure Detector Assemblies

Sizes 2½" – 6" (65 – 150mm)



994RPDA OSY

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

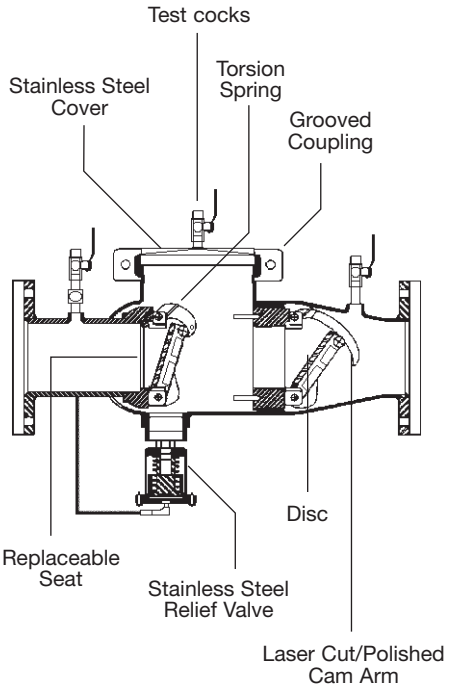
- Stainless steel construction provides long term corrosion resistance and maximum strength
- Stainless steel body is half the weight of competitive designs reducing installation and shipping costs
- Short end to end dimensions makes retrofit easy
- Bottom mounted relief valve reduces clearance requirements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

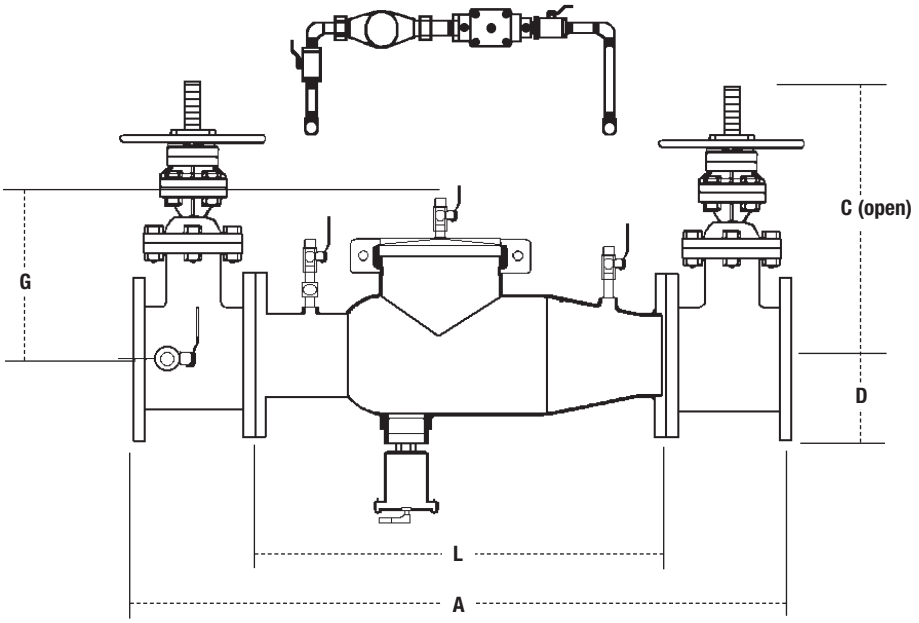
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C) continuous
Maximum Working Pressure: 175psi (12.1 bar)

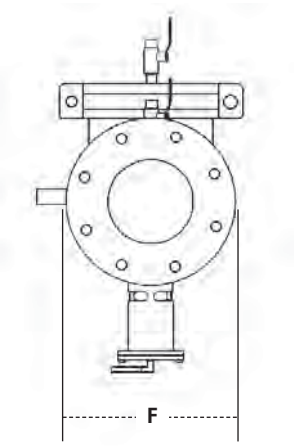


For additional information, request literature ES-994RPDA.

See Flow Charts on p. 78

Dimensions – Weights





SIZE (DN)		DIMENSIONS (APPROX.)												WEIGHT			
		A		C (open)		D		F		G		L		w/Gates		w/o Gates	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*	*lbs.*	*kgs.*
2½	65	37	940	16⅜	416	10½	267	7	178	10	254	22	559	148	67	60	27
3	80	38	965	18⅞	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	30⅛	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

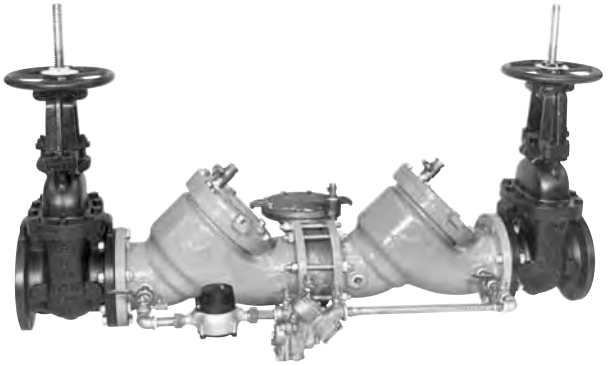
AWWA
Flange dimension in accordance with AWWA Class D

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

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

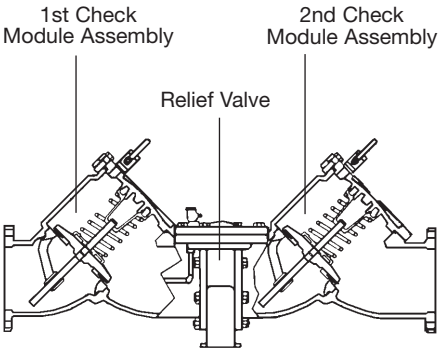
- Body construction fused epoxy coated cast iron
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Compact for economy combined with performance
- Design simplicity for easy maintenance
- Furnished with ⅝" x ¾" (16 x 19mm) recordall meter
- Air-in/water-out relief valve design provides maximum capacity during emergency conditions
- No special tools required for servicing

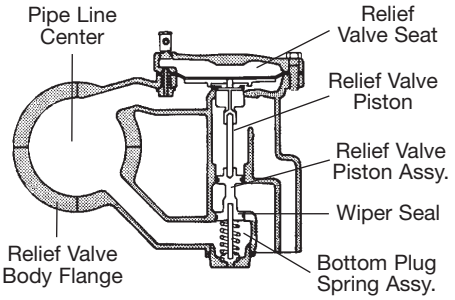
Materials

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

Pressure – Temperature

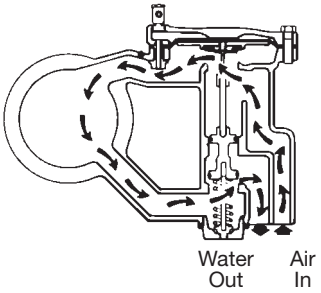
Temperature Range: 33˚F – 140˚F (0.5˚C – 60˚C)
Maximum Working Pressures: 175psi (12.1 bar)





How it Operates

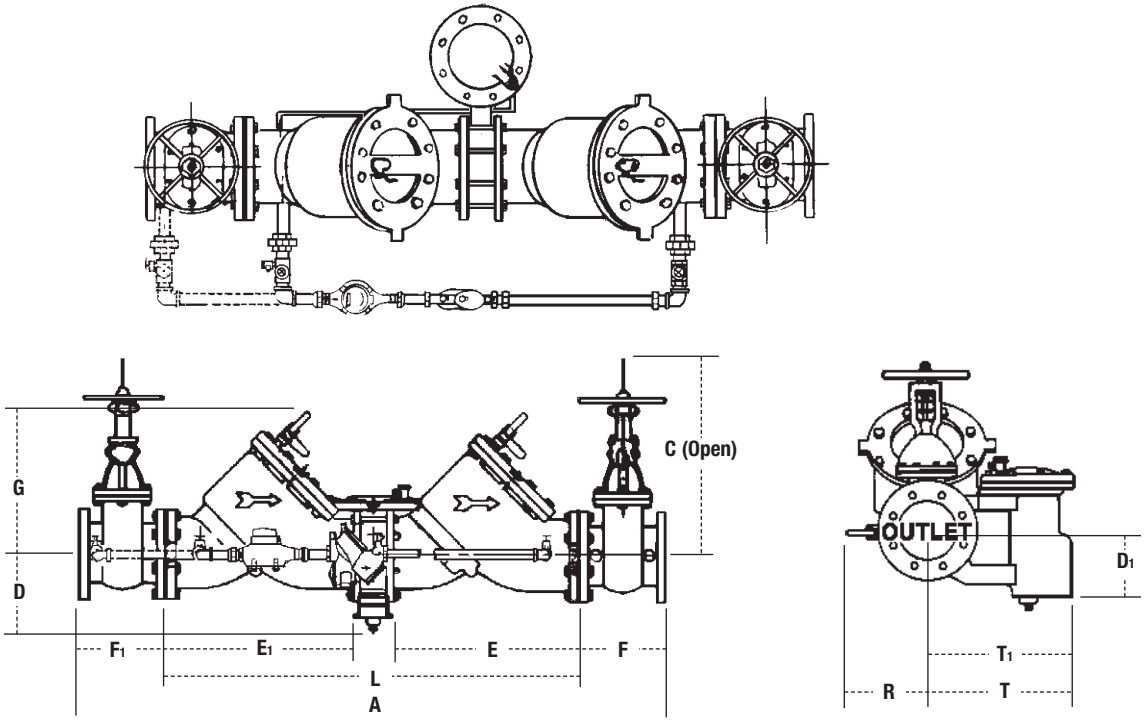
The unique relief valve construction incorporates two channels: one for air, one for water. When the relief vale opens, as in the accompanying air-in/water-out diagram, the right-hand channel admits air to the top of the reduced pressure zone, relieving the zone vacuum. The channel on the left then drains 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.



For additional information, request literature ES-909RPDA.

See Flow Charts on p. 75

Dimensions – Weights



SIZE (DN)		DIMENSIONS (APPROX.)																				WEIGHT	
		A		C (OSY)		D		D1		E, E1		F, F1		G		L		R		T		T1			
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.*
2½	65	42⅛	1070	16⅜	416	5¼	133	4¼	114	12	305	8	203	7	178	26⅛	664	14	356	9	229	7⅝	194	230	104
3	80	42⅛	1070	18⅞	479	5¼	133	4¼	114	12	305	8	203	7	178	26⅛	664	14	356	9	229	7⅝	194	230	104
4	100	55⅛	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	30⅛	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	16⅜	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	16⅜	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

ASSE 1047 · CLASSIFIED C UL US · FM Approved

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: ¼" – ⅜" (8 – 10mm)

N9 CD

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: ¼" (8mm) and ⅜" (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 ⅜" (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 ¾" (20mm) HT male outlet connection. Maximum temperature 180˚F (82˚C). Also available with chrome plating, Model N9-CD-C

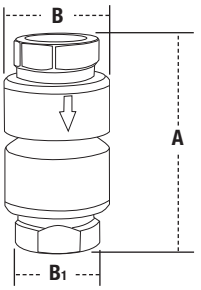
9BD - Special backflow preventer for vending machine water supply lines Complies with FDA food additive regulations. Standard size: ⅜" (10mm) flair copper tube (FCT) inlet and outlet Maximum pressure 150psi (10.3 bar) Maximum temperature 140˚F (60˚C)

912HP - High pressure hose drop backflow preventer for food processing plat washdown lines. Sizes: ¾" (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

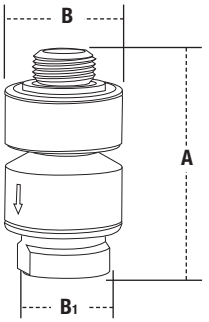
Approvals

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

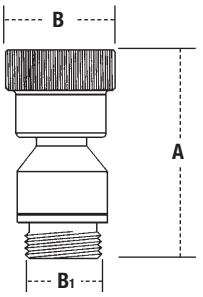
N9/N9C



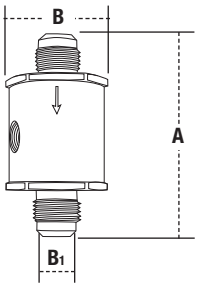
NLF9



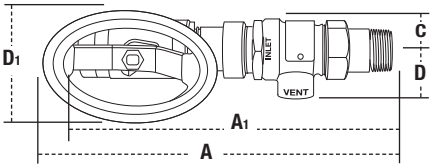
N9-CD



9BD



912HP



Dimensions – Weights

MODEL	SIZE		DIMENSIONS						WEIGHT	
			A		B		B1			
	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
N9C	¼	6	2⅜	60	1¼	32	1	25	.38	.17
N9C	⅜	10	2⅜	60	1¼	32	1	25	.38	.17
N9	¼	6	2⅜	60	1¼	32	1	25	.38	.17
N9	⅜	10	2⅜	60	1¼	32	1	25	.38	.17
NLF9	⅜	10	2⅜	60	1¼	32	1	25	.38	.17
NLF9	¾	20	2⅜	70	1¼	32	1	25	.38	.17
N9 CD	¾	20	2⅜	60	1½	38	1	25	.38	.17
9BD	⅜	10	2¾	70	1⅜	35	–	–	.38	.17
9BD	¼	6	2¾	70	1⅜	35	–	–	.38	.17
9BD	⅜	10	2¾	70	1⅜	35	–	–	.38	.17

912HP

SIZE		DIMENSIONS (APPROX.)										WEIGHT	
		A				A1						C D D1	
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
¾	20	9 3/16	233	8 5/16	211	1	25	1 7/16	37	1½	38	3	1
1	25	10	254	9 5/16	237	1	25	1 7/16	37	1½	38	4	2

IMPORTANT: Inquire with governing authorities for local installation requirements

For additional information, request literature ES-9 or ES-N9-CD or ES/IS-912HP.
See Flow Charts on p. 66

Series 9D

Backflow Preventer with Intermediate Atmospheric Vent

Sizes: ½", ¾" (15, 20mm)

9D

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

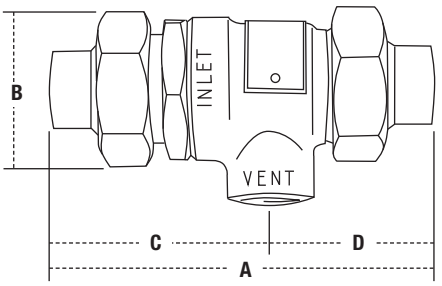
Suffix
S - ½" (15mm) union end solder connections
SC - satin chrome finish
LU - less union

Approvals

ASSE 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	
			A		B		C		D			
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
9D-M3	½	15	4 15/16	125	2 9/16	65	2 9/16	65	1 15/16	49	1.5	.68
9DS-M3	½	15	4 3/8	111	2 9/16	65	2 9/16	65	1 7/8	48	1.5	.68
9D-M2	¾	20	4 15/16	125	2 ½	64	2 9/16	65	1 15/16	49	1.75	.79
9DS-M2	¾	20	4 13/16	122	2 ½	64	2 ¾	70	2 1/16	52	1.75	.79



IMPORTANT: Inquire with governing authorities for local installation requirements

See Flow Charts on p. 67

For additional information, request literature ES-9.

Series SD-2, SD-3

Dual Check Valves

Sizes: ¼" – ⅜" (8 – 10mm)

SD-2

SD-3

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

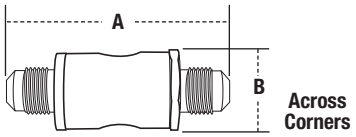
SD-3 Only

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

Materials

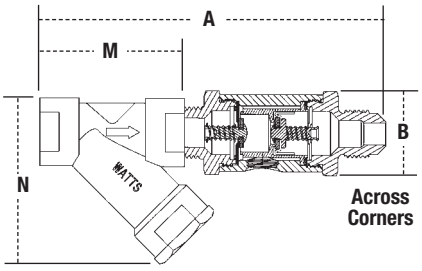
- Body: 316 stainless steel, corrosion resistant
- Internal rubber components, comply with FDA food additive regulations

Dimensions – Weights



SD-2

MODEL	SIZE (DN)		DIMENSIONS (APPROX.)			
			A		B	
	in.	mm	in.	mm	in.	mm
SD2-MN	¼	8	3	76	1 1⁄16	27
	⅜	10	3	76	1 1⁄16	27
SD2-MF	¼	8	2 13⁄16	71	1 1⁄16	27
	⅜	10	3	76	1 1⁄16	27
SD2-FN	¼	8	3	76	1 1⁄16	27
	⅜	10	3	76	1 1⁄16	27
SD2-FF	¼	8	2 13⁄16	71	1 1⁄16	27
	⅜	10	3	76	1 1⁄16	27



SD-3

MODEL	SIZE (DN)		DIMENSIONS (APPROX.)							
			A		B		M		N	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
SD3-MN	¼	8	4½	114	1 1⁄16	27	1 7⁄8	48	1 11⁄16	43
	⅜	10	4½	114	1 1⁄16	27	1 7⁄8	48	1 11⁄16	43
SD3-MF	¼	8	4⅜	111	1 1⁄16	27	1 7⁄8	48	1 11⁄16	43
	⅜	10	4½	114	1 1⁄16	27	1 7⁄8	48	1 11⁄16	43
SD3-FN	¼	8	4½	114	1 1⁄16	27	1 7⁄8	48	1 11⁄16	43
	⅜	10	4½	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
¼" (8mm) SD2-MN - Male NPT
⅜" (10mm) SD2-MN - Male NPT
¼" (8mm) SD2-FN - Female NPT
⅜" (10mm) SD2-FN - Female NPT
¼" (8mm) SD2-MF - SAE Male Flare
⅜" (10mm) SD2-FF - SAE Male Flare
¼" (8mm) SD2-FF - SAE Female Flare
⅜" (10mm) SD2-FF - SAE Female Flare

SD-3
¼" (8mm) SD3-MN - Male NPT
⅜" (10mm) SD3-MN - Male NPT
¼" (8mm) SD3-FN - Female NPT
⅜" (10mm) SD3-FN - Female NPT
¼" (8mm) SD3-MF - SAE Male Flare
⅜" (10mm) SD3-MF - SAE Male Flare
⅜" (10mm) SD3-MF-LS - SAE Male Flare, less strainer

Approvals

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

For additional information, request literature ES-SD2 or ES-SD3.

See Flow Charts on p. 79

Series 7
Dual Check Valves

7 Sizes: ½" – 1¼" (12 – 32mm)
7C Sizes: ⅜" (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.

7

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

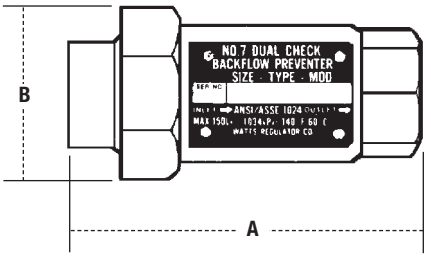
Pressure – Temperature

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

1024 B64.6

Dimensions – Weights



MODEL	SIZE (DN)		DIMENSIONS				WEIGHT	
			A		B			
	in.	mm	in.	mm	in.	mm	lbs.	kgs.
7C	⅜	10	2⅞	73	1¼	32	1.6	0.7
7U2-2	½	15	4⅜	111	2⅜	60	1.75	0.8
7U2-2	¾	20	4⅜	111	2⅜	60	1.75	0.8
7U2-2	1	25	4⅜	111	2⅜	60	1.75	0.8

Flow Charts on p. 66

For additional information, request literature PG-7.

Series Cu7
Copper-Body Dual Check Valves

Sizes: ½" – 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.

Cu7

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

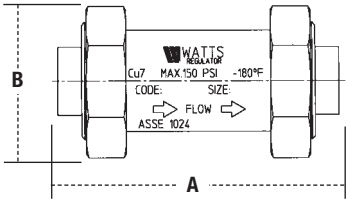
Pressure-Temperature

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

Approvals

1024 Standard 61

Dimensions – Weights



CU7

SIZE (DN)		DIMENSIONS				WEIGHT	
		A		B			
in.	mm	in.	mm	in.	mm	lbs.	kgs.
½	15	4 7/16	113	2⅜	60	1.7	0.8
¾	20	4 7/16	113	2⅜	60	1.7	0.8
1	25	4 11/16	119	2⅜	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

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

ASSE 1024

Flow Charts on p.66

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

ASSE 1024

7B

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 2 13/16" (71mm); Weight 3 lbs (1.4 kg)

Approvals

ASSE 1024

CLASSIFIED C UL US

07S

Flow Charts on p.66

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 8

Hose Connection Vacuum Breakers

Sizes: ⅜" – ¾" (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 expect 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.

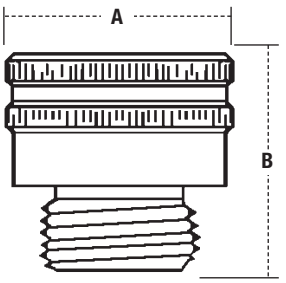
Approvals

1011 B64.2

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

Dimensions – Weights

MODEL	SIZE (DN)		DIMENSIONS (APPROX.)				WEIGHT	
			A		B			
	in.	*mm*	*in.*	*mm*	*in.*	*mm*	*oz.*	*gm.*
8	¾HT	20	1⅜	35	1½	38	4	113.4
8A	¾HT	20	1½	38	1½	38	4	113.4
8AC	¾HT	20	1½	38	1½	38	4	113.4
8B	¾HT	20	1½	38	1⅜	35	4	113.4
8BC	¾HT	20	1⅜	35	1½	38	4	113.4
8C	¾HT	20	1⅜	35	1½	38	4	113.4
NF8	¾HT	20	1½	38	2	50	5.3	151.2
NF8C	¾HT	20	1½	38	2	50	5.3	151.2
8P	¾HT	20	1¾	44	1⅜	35	2	56.7
S8	½F**	15	1¼	32	1½	38	1.5	42.5
S8C	½F**	15	1¼	32	1½	38	4	113.4
S8C	⅜F**	10	1¼	32	1½	38	4	113.4
8FR	¾HT	20	1¾	44	1¾	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

See Flow Charts on p. 66

For additional information, request literature ES-8.

Series 800M4QT, 800M4FR

Pressure Vacuum Breakers

Sizes: ½" – 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.

800M4QT

Features

- Sizes ½" – 1" (15 – 25mm) come standard with tee handle quarter-turn shutoffs
- Sizes 1¼" – 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)

Approvals

ASSE 1020 · CSA c US

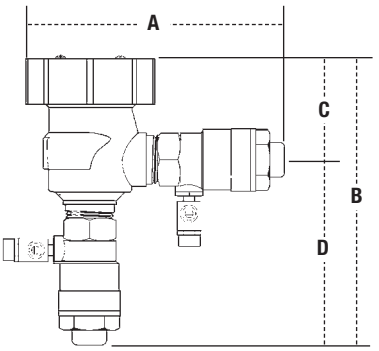
Models

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

800M QT - compact model with self-contained ball valve shutoffs. Available in sizes ½" and ¾" (15 and 20mm).

Dimensions – Weights

MODEL	SIZE (DN)		DIMENSIONS (APPROX.)								WEIGHT	
			A		B		C		D			
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
800M4QT	½	15	5	127	6¼	159	2 9/16	65	3 11/16	94	3.5	1.6
800M4QT	¾	20	5⅜	137	6½	165	2 9/16	65	3 15/16	100	3.5	1.6
800M4QT	1	25	5½	139	7½	191	2¾	70	4¾	121	6	2.7
800M4QT	1¼	32	8⅝	219	9	229	3¼	83	5¾	146	11	4.9
800M4QT	1½	40	9	229	9½	241	3¼	83	6¼	159	13.5	6.1
800M4QT	2	50	9½	241	9⅝	245	3¼	83	6⅜	162	18.5	8.4
800MQT	½	15	4⅞	124	5⅜	137	2½	64	2⅞	73	3	1.4
800MQT	¾	20	4⅞	124	5⅜	137	2½	64	2⅞	73	3	1.4



Flow Charts on p. 74

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

Series 008PCQT

Spill Resistant, Anti-Siphon Vacuum Breakers

Sizes: ⅜" – 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.

008PCQT

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)

Models

SC - satin chrome finish – with wrench flats in place of Tee handles (contact factory)
S - bronze strainer
L - left sided test cock

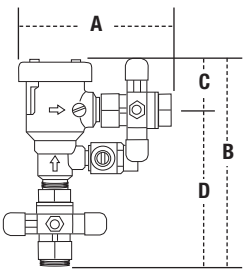
Approvals

ASSE 1056

IAMPO Classified

Dimensions – Weights

MODEL	SIZE (DN)		DIMENSIONS (APPROX.)								WEIGHT	
			A		B		C		D			
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
008PCQT	⅜	10	4⅛	107	5½	140	1 9/16	40	3 15/16	100	1.6	.7
008PCQT	½	15	4⅜	111	5½	140	1 9/16	40	4 3/16	106	1.7	.5
008PCQT	¾	20	4 5/16	125	7	178	2⅜	60	4⅝	117	3.8	1.7
008PCQT	1	25	5	127	7½	191	2⅜	60	5⅛	130	4.8	2.2



IMPORTANT: Inquire with governing authorities for local installation requirements

For additional information, request literature ES-008PCQT.

See Flow Charts on p. 65

Series 188A, 288A, 289, N388

Anti-Siphon Vacuum Breakers

Sizes: ¼" – 3" (8 – 80mm)

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

Models

188A - Sizes ¾" – 2" (20 – 50mm) irrigation vacuum breaker. Plain brass finish

288A - Sizes ¼" – 3" (8 – 80mm). Plain brass finish

288AC - Sizes ¼" – 1" (8 – 25mm). Polished chrome finish

289 - Sizes ⅜" – 1" (10 – 25mm). Spill resistant atmospheric vacuum breakers. NPT male connections

N388 - Sizes ¼" and ⅜" (8 and 10mm) with NPT female bottom inlet and outlet connections. Bronze body

Approvals

Model 188A

1001 B64.1

Models 288A/N388

1001 B64.1

Model 289

1001

Dimensions - Weights

N388

SIZE (DN)		DIMENSIONS (APPROX.)				WEIGHT	
		A		CC			
in.	mm	in.	mm	in.	mm	lb.	kgs.
¼	8	1¾	44	¾	20	.5	.23
⅜	10	1¾	44	⅞	60	.75	.34
¼	8	1¾	44	¾	20	.5	.23
⅜	10	1¾	44	⅞	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.
⅜	10	1½	38	2⅜	60	3¾	95	2	51	.9	.4
½	15	1½	38	2⅜	60	3¾	95	2	51	1	.4
¾	20	2⅜	60	2½	64	5	127	3¾	95	3	1.4
1	25	2⅜	60	2½	64	5	127	3¾	95	4	1.8

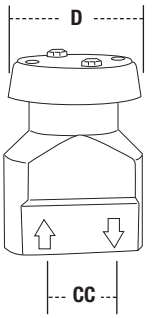
188A

SIZE (DN)		DIMENSIONS (APPROX.)						WEIGHT	
		A		C		D			
in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
¾	20	2¼	57	1⅞	48	1½	38	1.13	.51
1	25	2⅞	73	2⅛	54	1 11/16	43	1.75	.79
1¼	32	2⅞	73	2⅛	54	1 13/16	46	2.13	.96
1½	40	3⅝	92	2 7/16	62	2 3/16	56	3.5	1.64
2	50	4⅛	105	2⅞	73	2½	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.
¼	8	1¾	44	2¼	57	1¼	32	1	25	6	170
⅜	10	1¾	44	2¼	57	1¼	32	1	25	6	170
½	15	2	50	2¾	70	1½	38	1¼	32	8	227
¾	20	2¼	57	3	76	1½	38	1½	38	18	510
1	25	2⅞	73	3⅝	92	1⅞	48	1¾	44	28	794
1¼	32	2⅞	73	3¾	95	1⅞	48	1⅞	48	34	964
1½	40	3⅝	92	4½	114	2¼	57	2¼	57	54	1531
2	50	4	100	5⅛	130	2⅝	67	2½	64	84	2381
2½	65	6½	165	7½	191	4½	114	3	76	256	7258
3	80	6½	165	8	200	4⅝	117	3⅜	86	274	7768

N388



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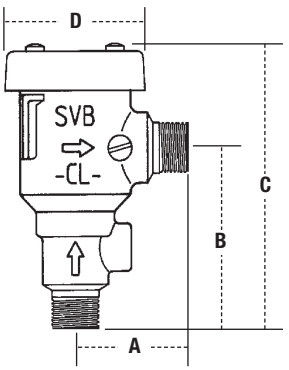

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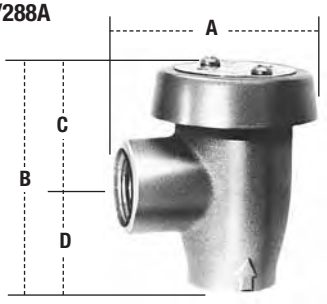


Series WB
WattsBox Insulated Enclosures

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

FITS WATTS VALVES	WATTS MODEL	DIMENSIONS 12" CLEARANCE Length x Width x Height	MOUNTING PAD SIZE
FIBERGLASS			
Thru ¾" (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 1½" (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"
¾" - 1" (20 - 25mm) 800, 008, 288, 289	WB-PVB1	18" x 9" x 18"	19" x 27"
(Increases height by 6")	WB-PVB T1	18" x 9" x 24"	19" x 27"
1¼" - 2" (32 - 50mm) 800, 288	WB-PVB2	26" x 12" x 20"	21" x 35"
(Increases height by 8")	WB-PVB T2	26" x 12" x 28"	21" x 35"
2½" - 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, 2½" - 3" (65 - 80mm) 757DCDA, 2½" - 3" (65 - 80mm) 957QT, 2½" - 3" (65 - 80mm) 957RPDA	WB-N3	70" x 26" x 45"	82" x 38"
4" (100mm) 9940SY / RPDA, 4"(100mm) 7750SY / DCDA, 3" (80mm) 9950SY / RPDA	WB-E3	70" x 26" x 55"	82" x 38"
2½" - 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) 9570SY, 6" (150mm) 957NRS, 8" (200mm) 957NRS	WB-N4	90" x 32" x 50.5"	102" x 44"
6" (150mm) 9570SY, 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) 7750SY / DCDA, 8" (200mm) 7750SY / DCDA, 6" (150mm) 9950SY / RPDA, 8" (200mm) 7570SY, 10" (250mm) 757NRS, 8" (200mm) 757DCDA, 8" (200mm) 9570SY, 8" (200mm) 957RPDA	WB-E6	105" x 36" x 64"	117" x 48"
8" (200mm)709, 909 NRS	WB-N8	118" x 40" x 58"	130" x 52"
8" (200mm)7090SY / DCDA, 8"(200mm) 909, 9940SY / RPDA, 10" (250mm)7740SY / DCDA, 8" (200mm)7570SY / DCDA, 8" (200mm) 9570SY / RPDA, 10" (250mm) 757NRS, 10" (250mm) 957NRS	WB-E8	118" x 40" x 74"	130" x 52"
10" (250mm) 709, 909NRS	WB-N10	142" x 42" x 65"	154" x 54"

continued on next page…

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

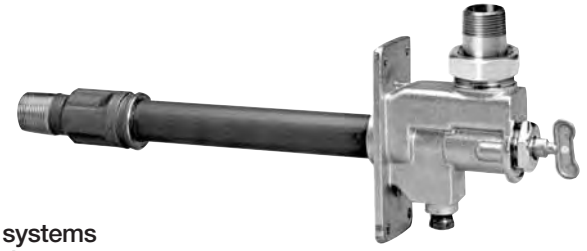
Dimensions *(cont.)*

FITS WATTS VALVES	WATTS MODEL	DIMENSIONS 12" CLEARANCE Length x Width x Height	MOUNTING PAD SIZE
ALUMINUM (CONT.)			
10" (250mm) 709OSY / DCDA, 10" (250mm) 909, 994OSY / RPDA, 10" (250mm) 757OSY / DCDA, 10" (250mm) 957OSY / 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) 757OSY, 2½" - 3" (65 - 80mm) 957NRS / OSY, 4" (100mm) 957NRS	WB 2.75	60" x 22" x 42"	63" x 44"
10" (250mm) 757OSY, 10" (250mm) 757DCDA, 10" (250mm) 957OSY, 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: ¾", 1" (20, 25mm)



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

Pressure – Temperature

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

Models

Sizes: ¾", 1" (20, 25mm), NPT male outlet connection
8", 10", 12" (200, 250, 300mm) shaft lengths

Dimensions

MODEL	SIZE (DN)	
	in.	*mm.*
TWS-8	¾	20
TWS-10	¾	20
TWS-12	¾	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", 11½", 12½" (250, 292, 318mm)

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

Pressure – Temperature

Temperature Range: 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

Dimensions

MODEL	SIZE (DN)	
	in.	*mm*
Gov 80-M1 10	10	250
Gov 80-M1 11½	11½	292
Gov 80-M1 12½	12½	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

UL Listed
FM Approved
8" and 10" (200-250mm) only

For additional information, request literature ES-SS07F.

See Flow Charts on p. 79

Test Kits

Model TK-7

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

MODEL	WEIGHT	
	lbs.	*kgs.*
TK-7	5	2.3

For additional information, request literature IS-TK7 or PG-TK.

Model TK-9A

- ± 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	
	lbs.	*kgs.*
TK-9A	8	3.6

For additional information, request literature IS-TK9A or PG-TK.

Model TK-99D

- 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	
	lbs.	*kgs.*
TK-99D	3	1.4

For additional information, request literature IS-TK-99D or PG-TK.

Model TK-99E

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

MODEL	WEIGHT	
	lbs.	*kgs.*
TK-99E	8	3.6

For additional information, request literature IS-TK-99E or PG-TK.

Model TK-DL

With Digital Print-Out and Computer Download Capability

- ± 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	
	lbs.	*kgs.*
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 ⅛" M x ¼" F or ¼" M x ¼" F (3mm M x 8mm F or 8mm M x 8mm F)

SAE-TC

- Full port ball valve design
- Screwdriver slot operation
- ⅛" (3mm) M x SAE

SAE-TC Adapter

- ¼" (8mm) female SAE x 7⁄16" (14mm) FPT
- Adapts to SAE-TC for use with pressure gauge and/or site tube
- SAE-TC Adapter
- ⅛" (3mm) SAE-TC Brass Cap

SilverEagle TC

- ½" (15mm) TC for 2½" – 4" (65 - 100mm) series 757 and 957
- ¾" (20mm) TC for 6" – 10" (150 - 250mm) series 757 and 957
- Full port ball valve design

No. 3 TC with O-Ring

- for 2½" – 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 ¼" (8mm) Female test cocks
- Plastic dust cap and rubber tether
- RK-TC P

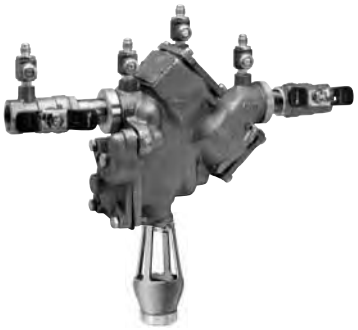
SAE Brass Cap, O-ring and Tether (four required per backflow preventer)

- Fits ⅛" (8mm) M x SAE test cocks
- Brass dust cap with O-ring seal and rubber tether
- RK-SAE-TC-B

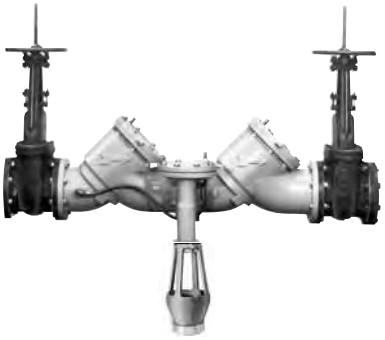
For additional information, request literature ES-AG/EL/TC.

Air Gaps and Elbows
for Reduced Pressure Zone Assemblies

Sizes: ¼" – 10" (8 – 250mm) for RPZ and RPDA



909



909

994

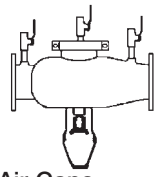
Splash Guard

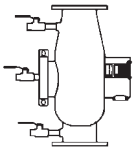
957 AG

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: 2½" – 10" (65 - 250mm)



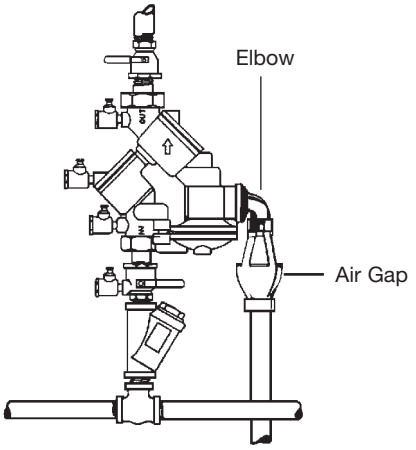


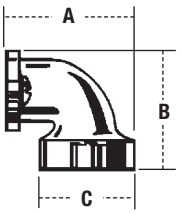
Horizontal Air Gaps

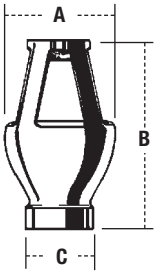
1. Remove two of the relief valve capscrews 180° apart.
2. Remove the relief valve hose from fitting below inlet ball valve.
3. From the top of the air gap, thread the relief valve hose down and out the slot.
4. Use ¼" - 20 UNC x 1" long stainless steel screws.
5. Reconnect relief valve hose to the fitting 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			
		in.	mm	in.	mm	in.	mm	lbs.	kgs.
909AG-A	¼" – ½" 009, ¾" 009M2/M3, ½" – 1" 995	2⅜	60	3⅛	79	½	13	.63	.28
909AG-C	¾" – 1" 009/909, 1 – 1½" 009M2, 1¼" – 2" 995	3¼	83	4⅞	124	1	25	1.50	.68
909AG-F	1¼" – 3" 009/909, 1¼" – 2" 009M1, 2" 009M2	4⅜	111	6¾	171	2	51	3.25	1.47
909AG-K	4" – 6" 909, 8" – 10" 909M1	6⅜	162	9⅝	244	3	76	6.25	2.83
909AG-M	8" – 10" 909	7⅜	187	11¼	286	4	102	15.50	7.03
919AGC	¾" & 1" 919	2⅜	60	3⅛	79	½	13	.63	.28
919AGF	1¼" - 2" 919	4⅜	111	8 7/16	214	3	76	4.26	1.93
957-AG (Complete)	2½" – 10" 957	7½	190	10 3/16	258	2	51	1.5	.68
957-AG (Splash Guard Only)	2½" – 10" 957	—	—	—	—	—	—	—	—
994AGK-P	2½" – 10" 994	8	203	11¼	286	2	51	1.50	0.68
995-AG	3" – 6" 995	5	127	8	203	2⅜	60	—	—

Vent Elbows

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

909EL-A	¼" – ½" 009, ¾" 009M2/M3, ½" – 1" 995	—	—	—	—	—	—	—	—
*909EL-C	¾ – 1" 009/909, 1" – 1½" 009M2, 1¼" – 2" 995	2⅜	60	2⅜	60	—	—	.38	.17
*909EL-F	1¼" – 2" 009M1, 1¼" – 2" 009/909, 2" 009M2	3⅝	92	3⅝	92	—	—	2	.91
*909EL-H	2½" – 3" 009/909	—	—	—	—	2	51	—	—
994EL-F (vertical)	2½" – 10" 994	4⅞	124	9	229	2	51	4	1.8

*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

Spools

SPOOLS

MODEL NO.	SIZE
W-SPL	2½ x 1⅞
W-SPL	2½ x 3⅜
W-SPL	2½ x 3 15⁄16
W-SPL	2½ x 4
W-SPL	2½ x 4 15⁄16
W-SPL	3 x 1⅞
W-SPL	3 x 2½
W-SPL	3 x 3½
W-SPL	3 x 3 15⁄16
W-SPL	3 x 4
W-SPL	4 x 5⅜
W-SPL	4 x 5⅞
W-SPL	4 x 6⅜
W-SPL	4 x 6 13⁄16
W-SPL	4 x 7⅜
W-SPL	4 x 7 15⁄16
W-SPL	4 x 8
W-SPL	4 x 9⅞
W-SPL	4 x 10¼
W-SPL	4 x 10⅞
W-SPL	4 x 11⅞
W-SPL	4 x 12
W-SPL	4 x 14⅞
W-SPL	6 x 5⅛
W-SPL	6 x 8⅜
W-SPL	6 x 9 11⁄16
W-SPL	6 x 10¼
W-SPL	6 x 11
W-SPL	6 x 12 7⁄16
W-SPL	6 x 12½

SPOOLS

MODEL NO.	SIZE
W-SPL	6 x 13⅜
W-SPL	6 x 13⅞
W-SPL	6 x 14
W-SPL	6 x 14⅜
W-SPL	6 x 14⅞
W-SPL	6 x 16⅞
W-SPL	6 x 17⅜
W-SPL	8 x 12⅛
W-SPL	8 x 16⅛
W-SPL	8 x 16½
W-SPL	8 x 17⅜
W-SPL	8 x 18⅜
W-SPL	8 x 21 1⁄16
W-SPL	8 x 21⅛
W-SPL	8 x 22⅜
W-SPL	8 x 22⅞
W-SPL	8 x 23⅜
W-SPL	8 x 25⅝
W-SPL	10 x 16⅛
W-SPL	10 x 16¾
W-SPL	10 x 28⅛
W-SPL	10 x 28⅜
W-SPL	10 x 28½
W-SPL	10 x 29⅞
W-SPL	10 x 29 15⁄16
W-SPL	10 x 32⅜
W-SPL	10 x 32 7⁄16
W-SPL	10 x 34⅜
W-SPL	10 x 37¾

FLANGES

MODEL NO.	SIZE
W-FLG SS-U	2 x ¼
W-FLG SS-U	2 x ½
W-FLG SS-S	2 x ¼
W-FLG SS-S	2 x ½
W-FLG SS-U	2½ x ¼
W-FLG SS-U	2½ x ½
W-FLG SS-S	2½ x ¼
W-FLG SS-S	2½ x ½
W-FLG Z-U	3 x ½
W-FLG Z-U	3 x 1
W-FLG Z-S	3 x ½
W-FLG Z-S	3 x 1
W-FLG SS-U	3 x ¼
W-FLG SS-U	3 x ½
W-FLG SS-S	3 x ¼
W-FLG SS-S	3 x ½
W-FLG Z-U	4 x ½
W-FLG Z-U	4 x 1
W-FLG Z-S	4 x ½
W-FLG Z-S	4 x 1
W-FLG SS-U	4 x ¼
W-FLG SS-U	4 x ½
W-FLG SS-S	4 x ¼
W-FLG SS-S	4 x ½
W-FLG Z-U	6 x ½
W-FLG Z-U	6 x 1
W-FLG Z-S	6 x ½
W-FLG Z-S	6 x 1
W-FLG SS-U	6 x ¼
W-FLG SS-U	6 x ½
W-FLG SS-S	6 x ¼
W-FLG SS-S	6 x ½
W-FLG Z-U	8 x ½
W-FLG Z-U	8 x 1
W-FLG Z-S	8 x ½
W-FLG Z-S	8 x 1
W-FLG SS-U	8 x ¼
W-FLG SS-U	8 x ½
W-FLG SS-S	8 x ¼
W-FLG SS-S	8 x ½
W-FLG SS-U	10 x ¼
W-FLG SS-U	10 x ½
W-FLG SS-S	10 x ¼
W-FLG SS-S	10 x ½

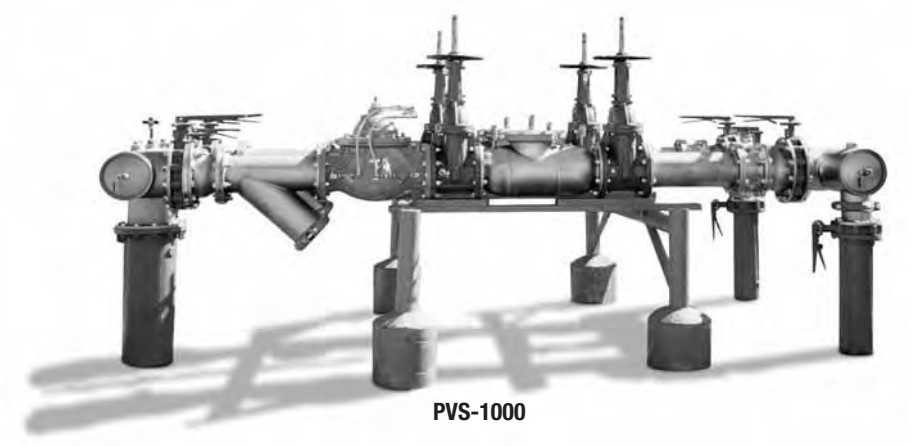
Size = Valve size x Thickness

Z = Zinc SS = 304 Stainless Steel

S = Slotted U = Unslotted

For additional information, request literature F-Spools/Flanges.

Series PVS-1000
Pre-engineered Valve Stations



PVS-1000

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

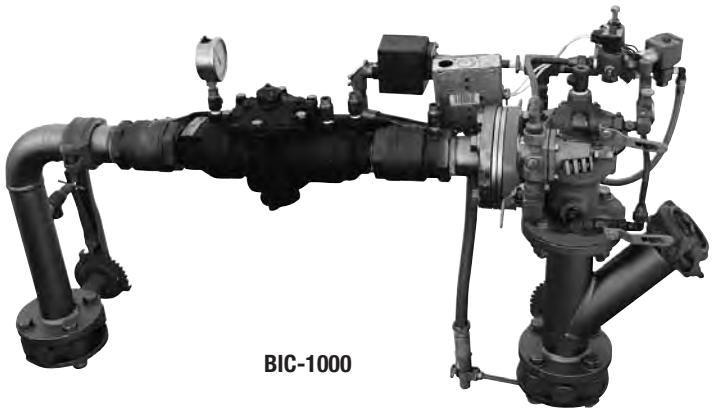
Watts pre-engineered valve stations are custom fit to your specifications and are ideal for a wide variety of flow control applications including:

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

IMPORTANT: Inquire with governing authorities for local installation requirements

Series BIC-1000

Backflow Irrigation Control Stations



BIC-1000

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

For additional information, request literature F-BIC-1000.

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

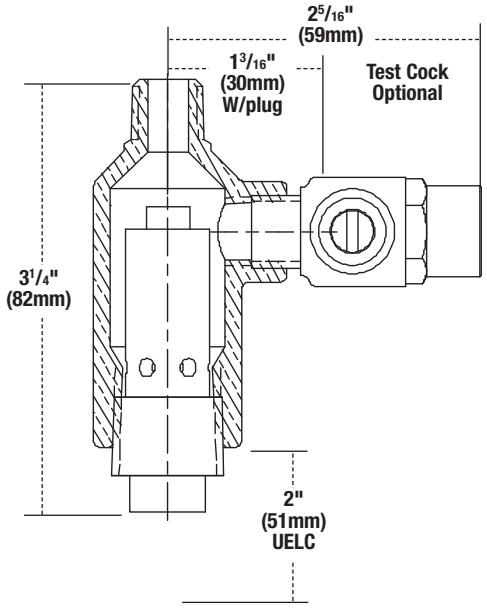
Working Temperature: 35°F (1.6°C)

Maximum Pressure: 175psi (12.1 bar)

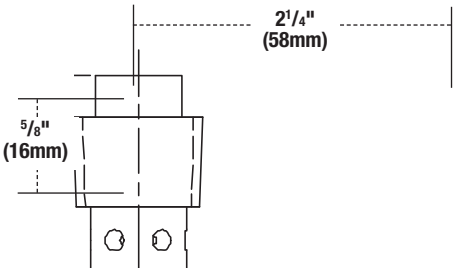
Approvals

IAPMO

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

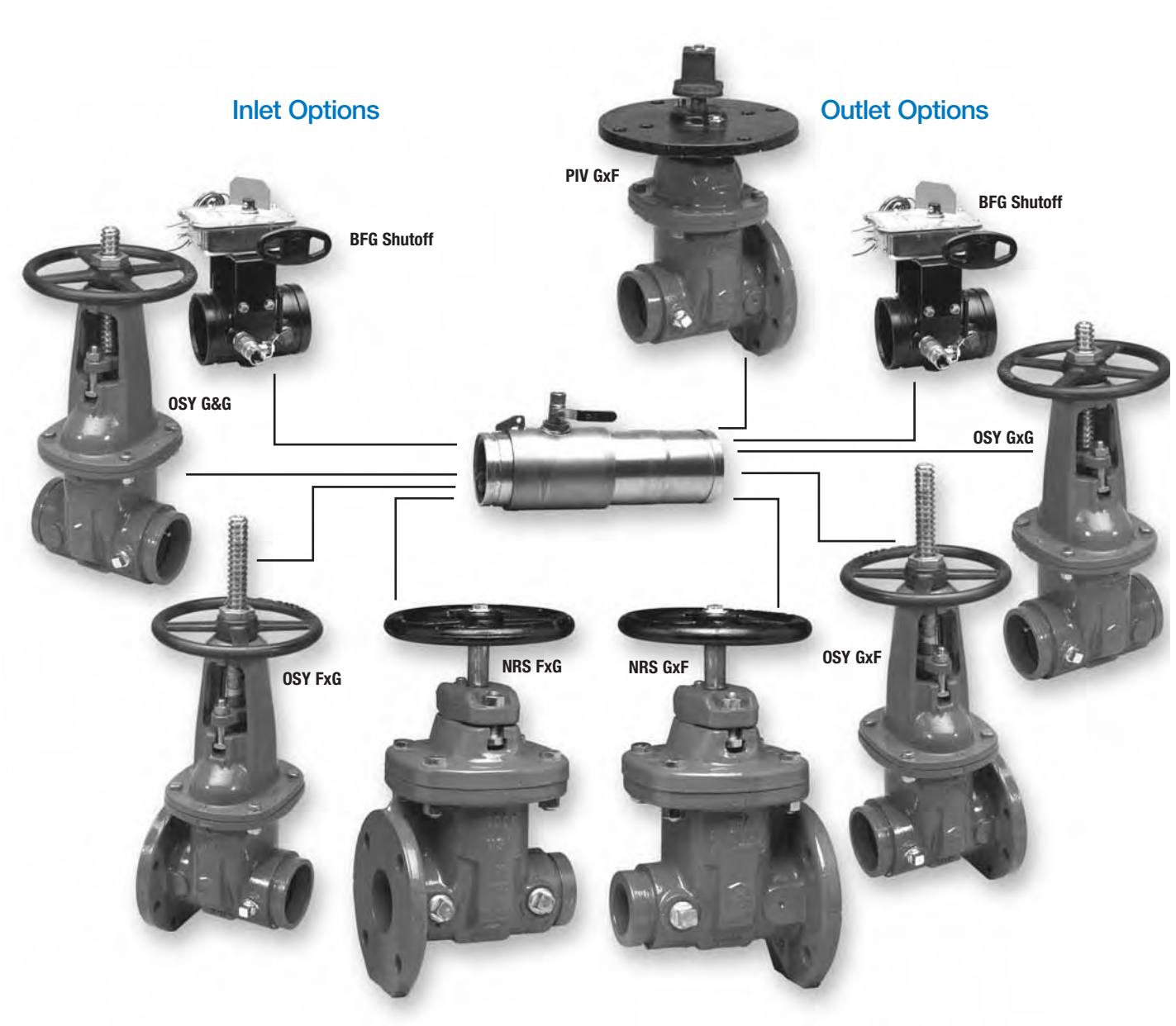
The AQT elbow fittings for 360° rotation option allows the installer to pivot the valve's inlet and outlet in the direction of the piping since often times they do not align exactly. This option provides great flexibility to the installer and saves space, time, materials and money.

Available on series: 009, 919

Shutoff Valve Options

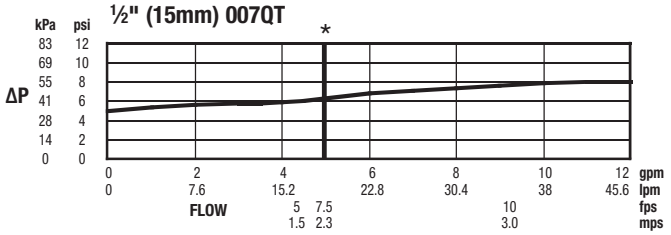
Watts offers a variety of different shutoff valve options and combinations to meet most any installation requirements. Shutoff valve options include: grooved and flanged OSY & NRS gate valves, valves with 2" (50mm) operating nut and post indicator plate and grooved butterfly valves.

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

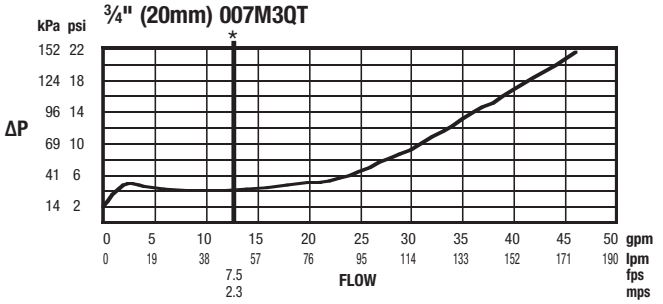


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*

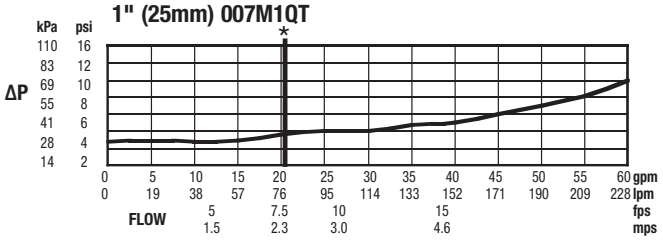
½" (15mm) 007QT



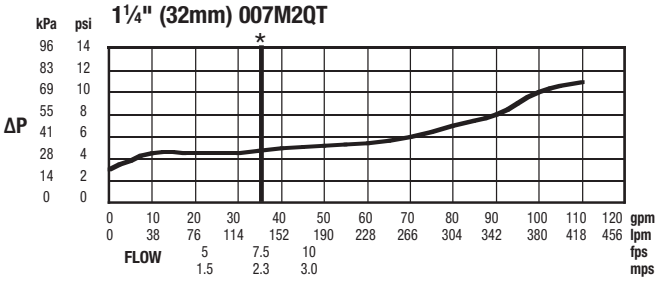
¾" (20mm) 007M3QT



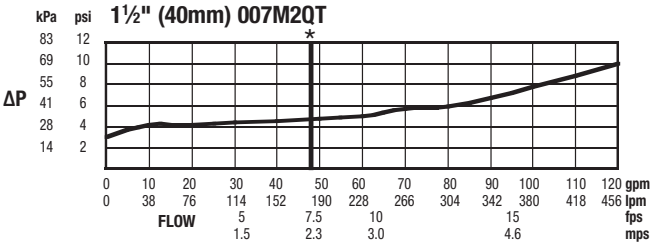
1" (25mm) 007M1QT



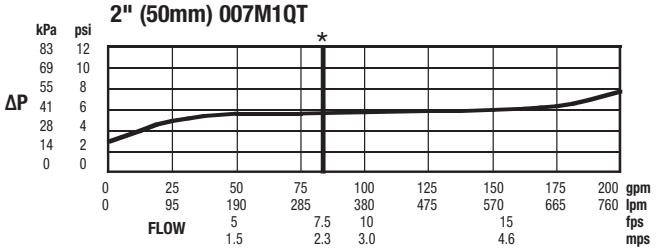
1¼" (32mm) 007M2QT



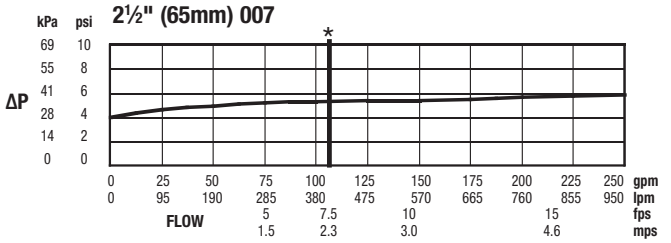
1½" (40mm) 007M2QT



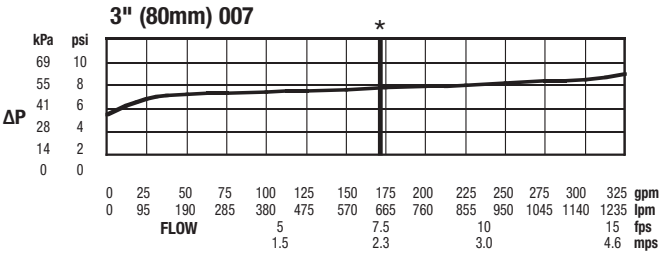
2" (50mm) 007M1QT



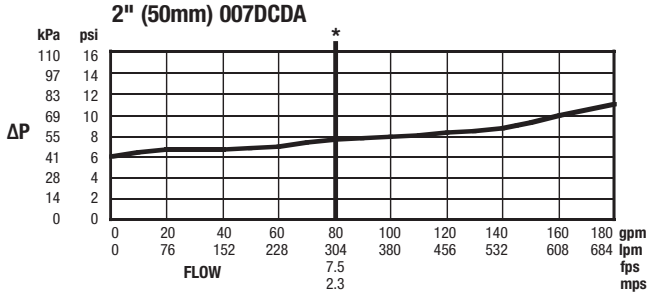
2½" (65mm) 007



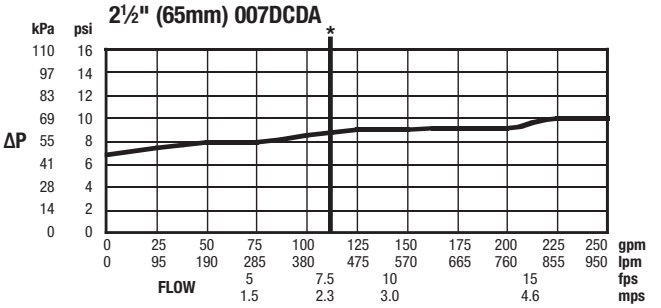
3" (80mm) 007



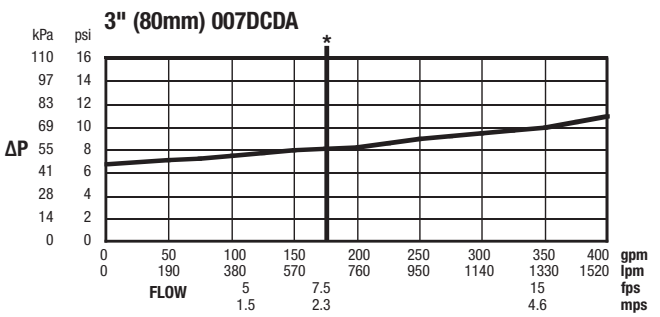
2" (50mm) 007DCDA



2½" (65mm) 007DCDA

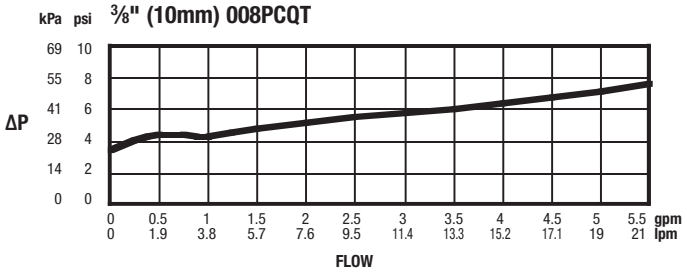


3" (80mm) 007DCDA

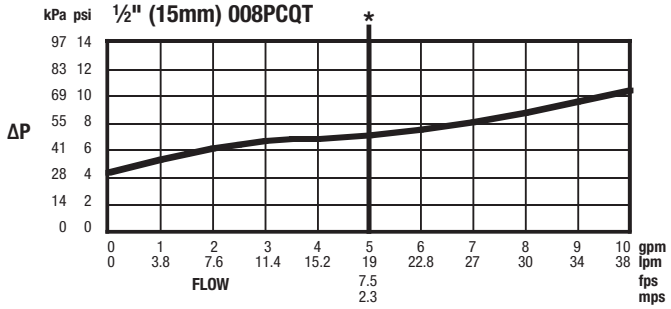


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)

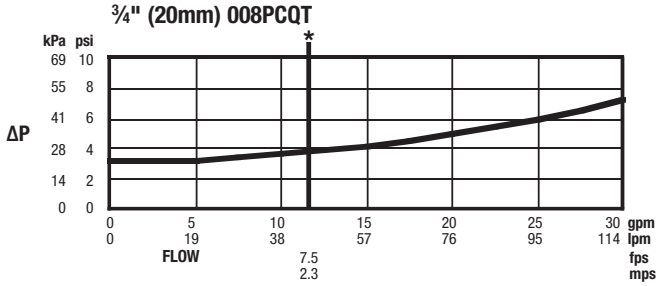
⅜" (10mm) 008PCQT



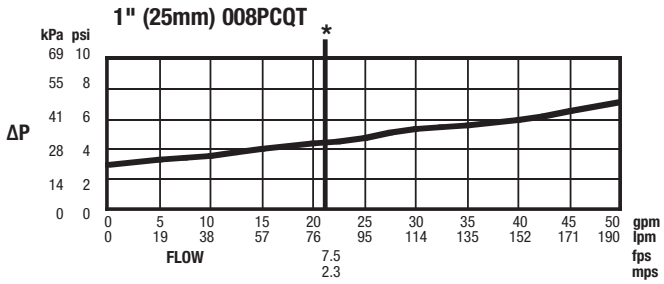
½" (15mm) 008PCQT



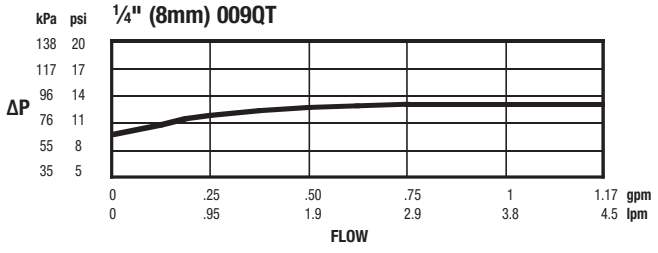
¾" (20mm) 008PCQT



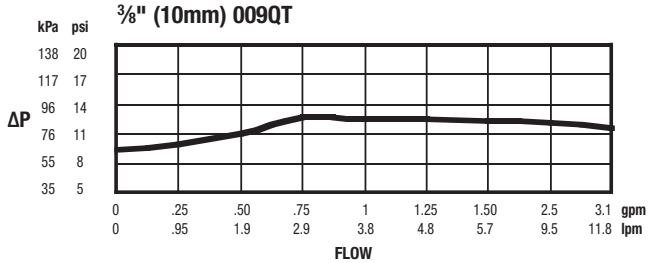
1" (25mm) 008PCQT



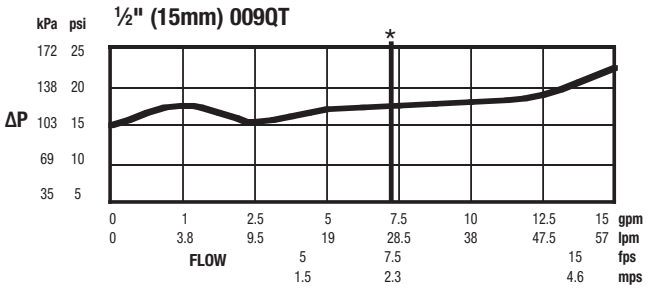
¼" (8mm) 009QT



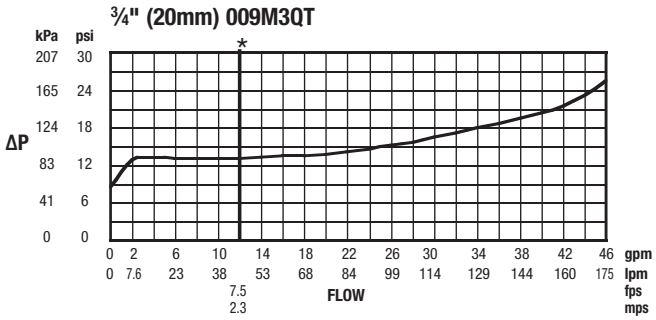
⅜" (10mm) 009QT



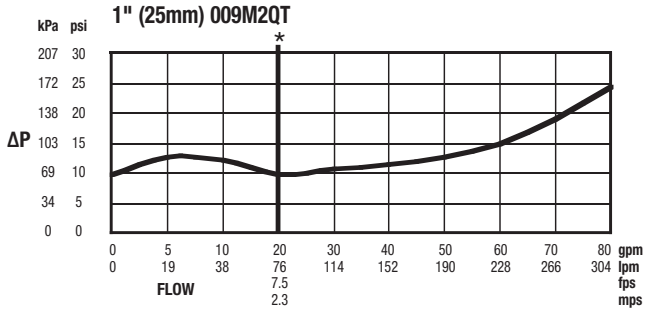
½" (15mm) 009QT



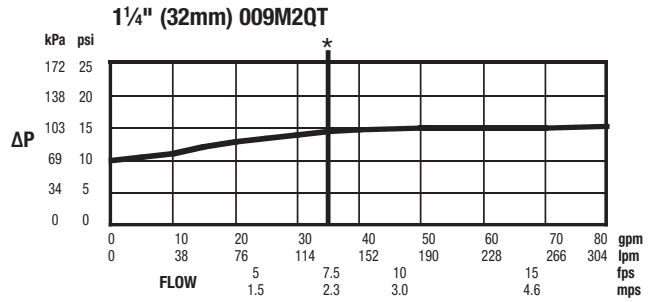
¾" (20mm) 009M3QT



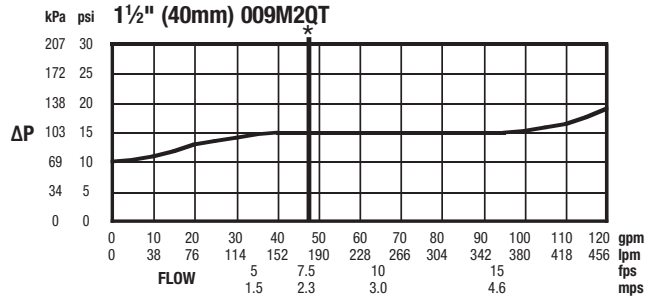
1" (25mm) 009M2QT



1¼" (32mm) 009M2QT

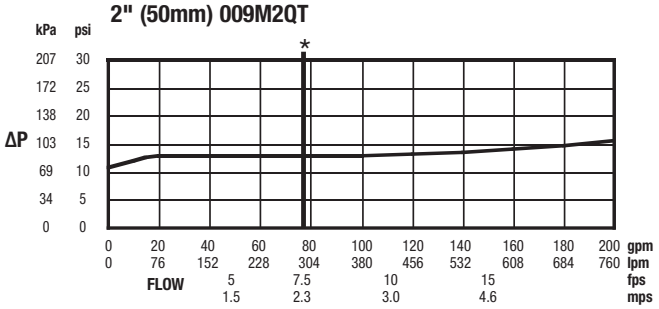


1½" (40mm) 009M2QT

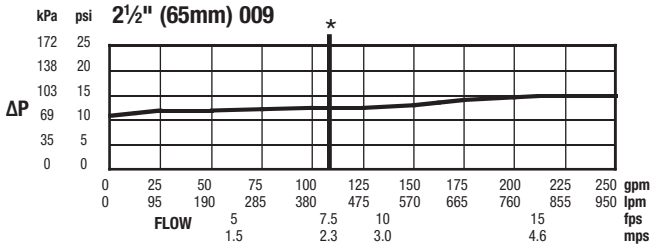


Flow Charts **Typical maximum system flow rate (7.5 feet/sec.)*

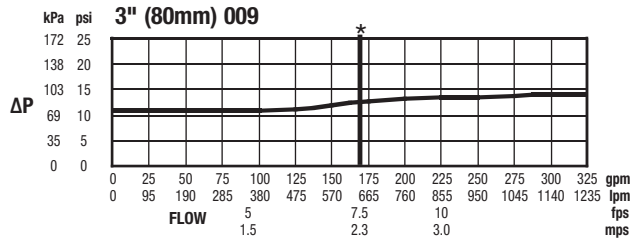
2" (50mm) 009M2QT



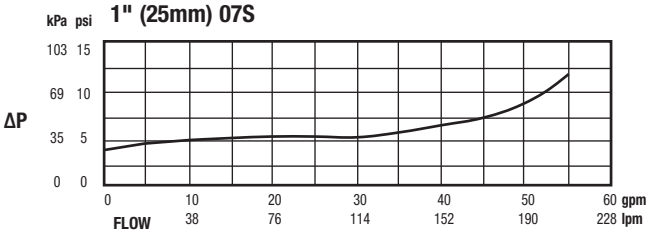
2½" (65mm) 009



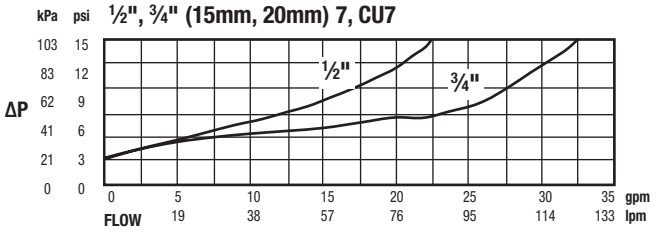
3" (80mm) 009



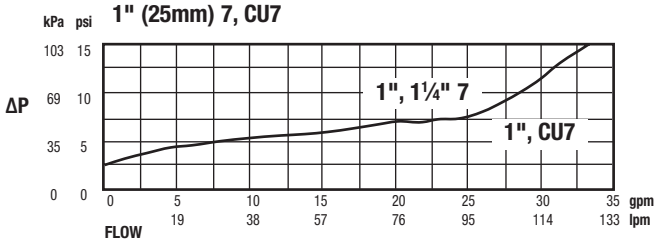
1" (25mm) 07S



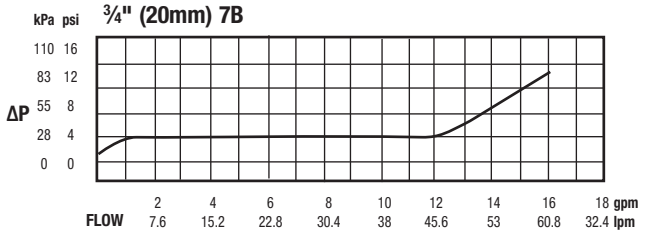
½", ¾" (15mm, 20mm) 7, CU7



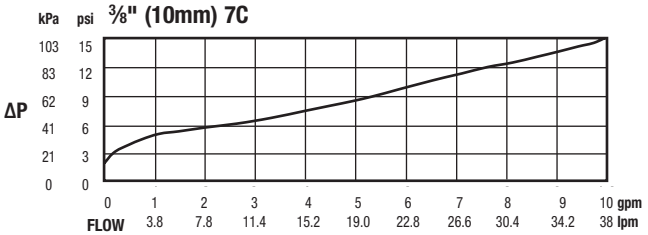
1" (25mm) 7, CU7



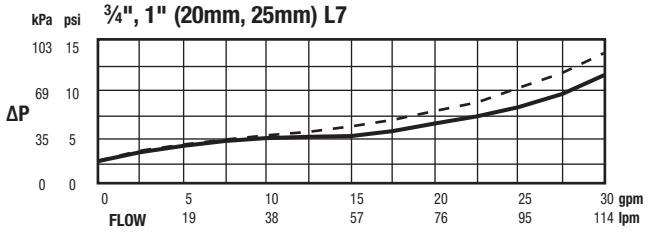
¾" (20mm) 7B



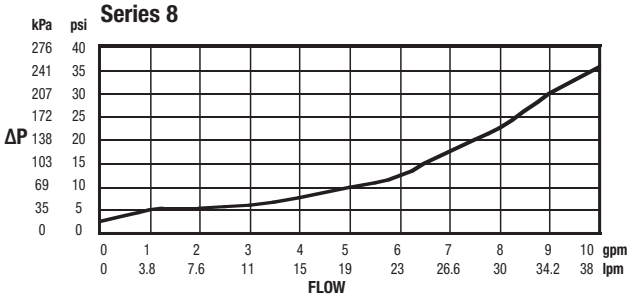
⅜" (10mm) 7C



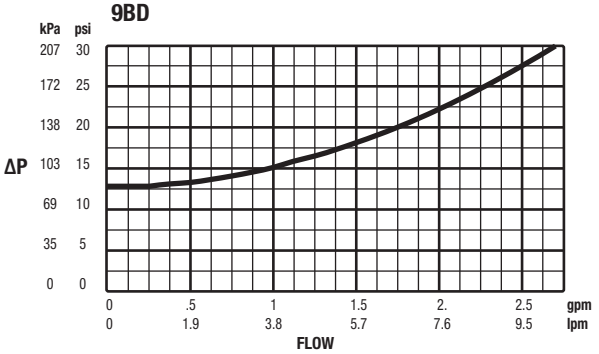
¾", 1" (20mm, 25mm) L7



Series 8

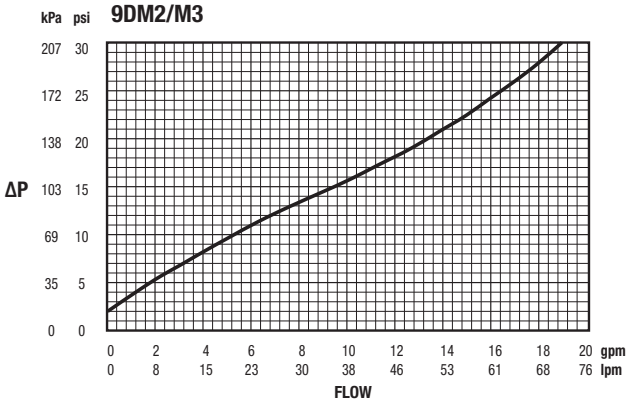


9BD

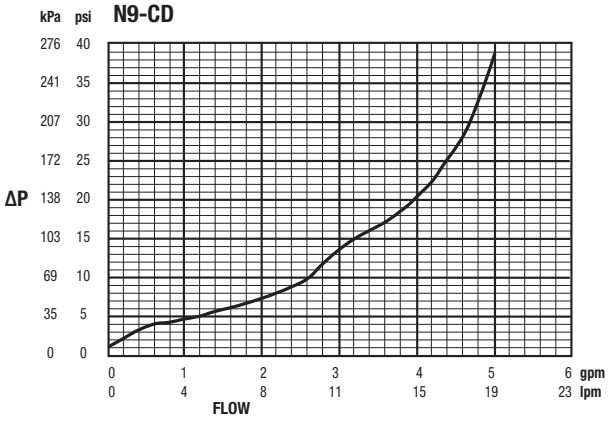


Flow Charts **Typical maximum system flow rate (7.5 feet/sec.)*

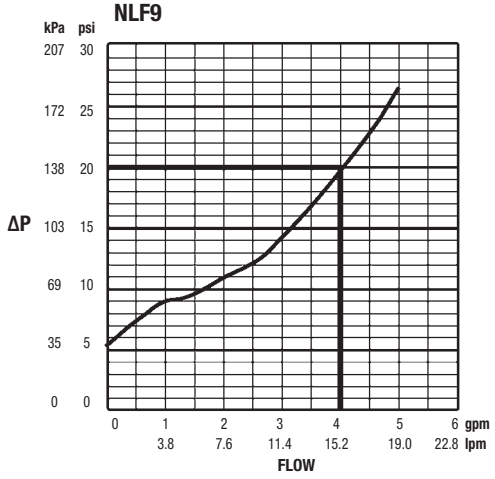
9DM2/M3



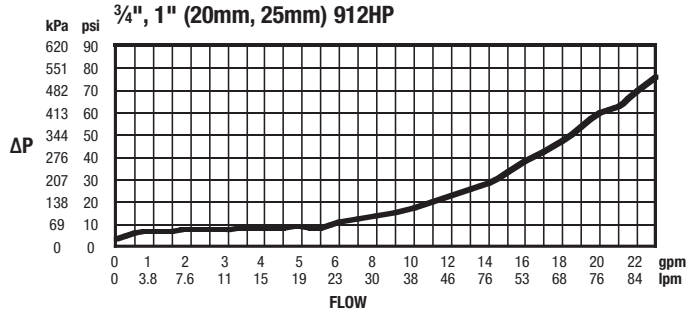
N9-CD



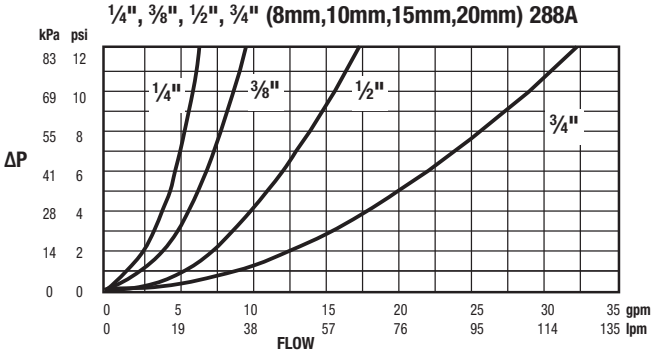
NLF9



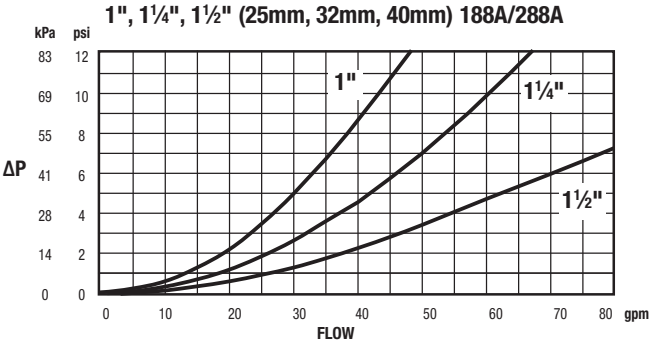
¾", 1" (20mm, 25mm) 912HP



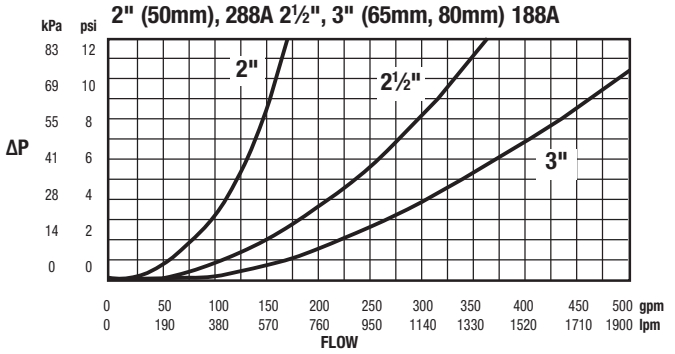
¾" (20mm) 188A
¼", ⅜", ½", ¾" (8mm,10mm,15mm,20mm) 288A



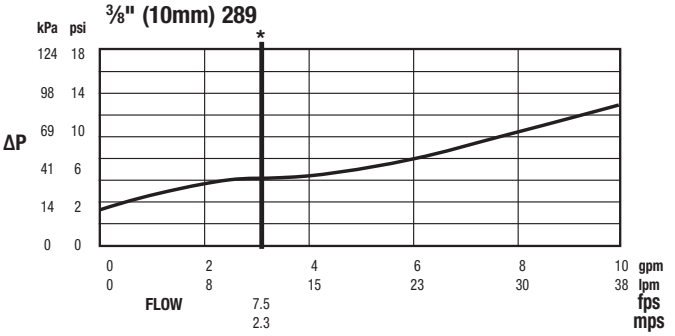
1", 1¼", 1½" (25mm, 32mm, 40mm) 188A/288A



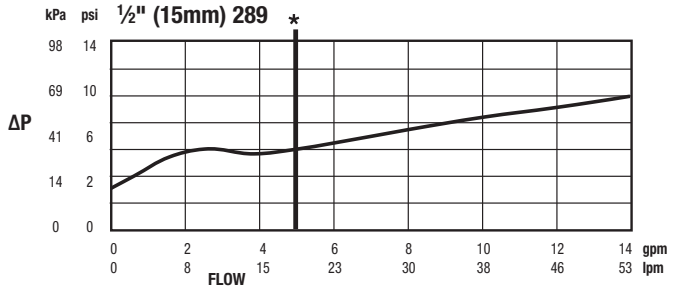
2" (50mm), 288A 2½", 3" (65mm, 80mm) 188A



⅜" (10mm) 289

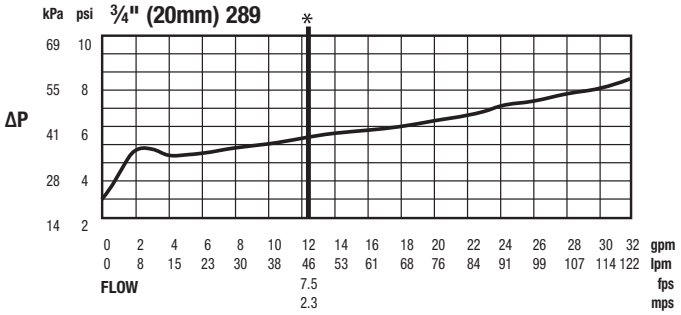


½" (15mm) 289

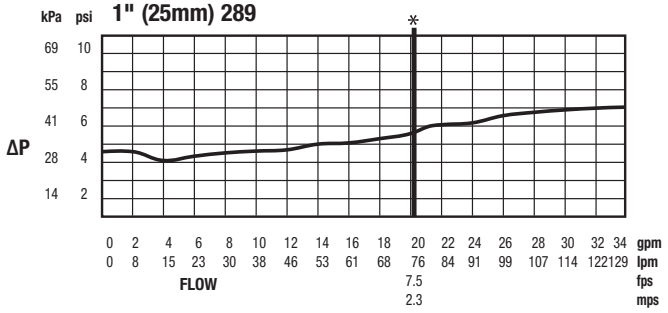


Flow Charts **Typical maximum system flow rate (7.5 feet/sec.)*

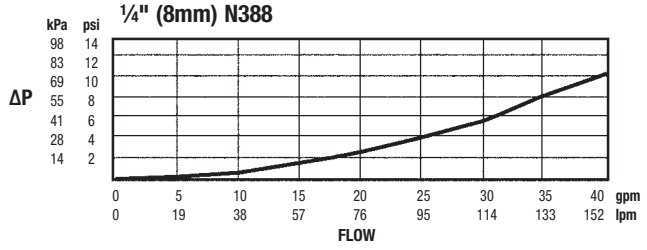
¾" (20mm) 289



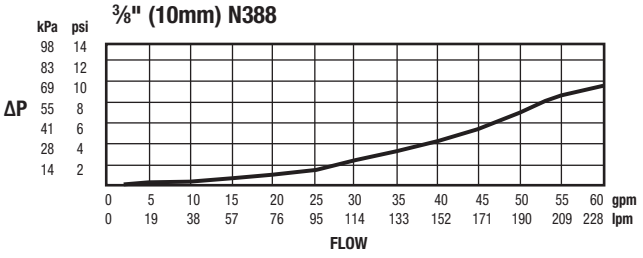
1" (25mm) 289



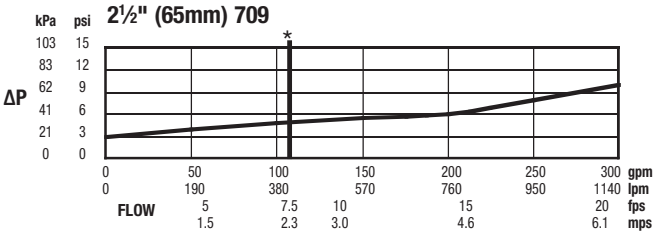
¼" (8mm) N388



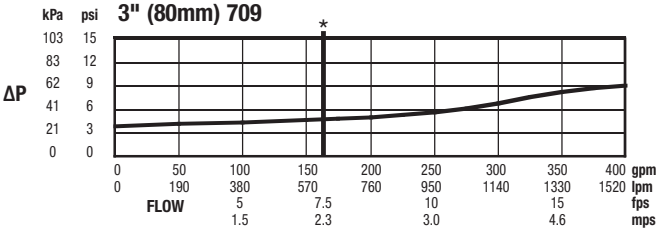
⅜" (10mm) N388



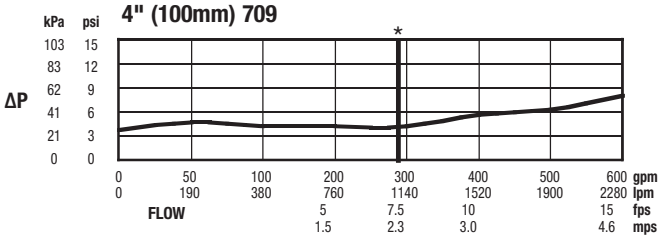
2½" (65mm) 709



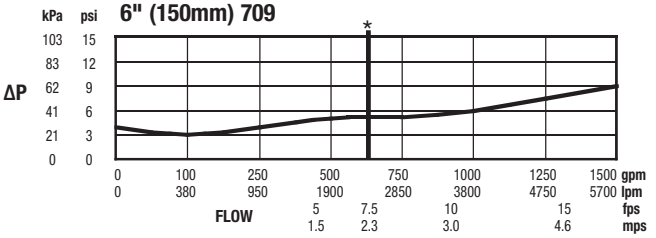
3" (80mm) 709



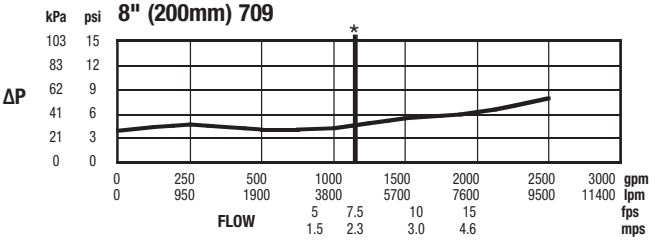
4" (100mm) 709



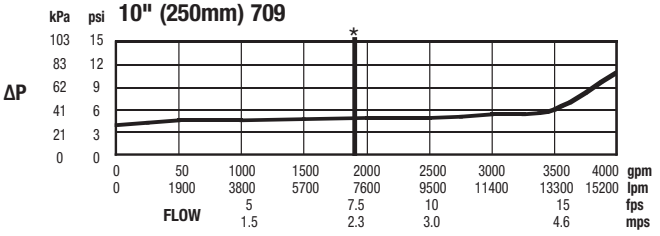
6" (150mm) 709



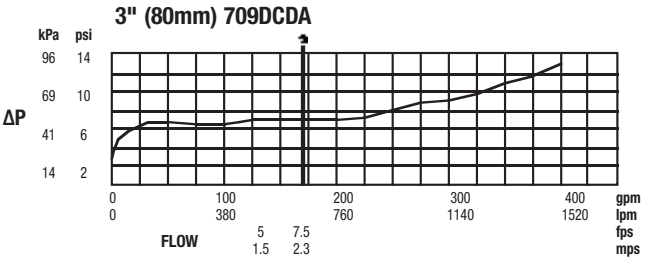
8" (200mm) 709



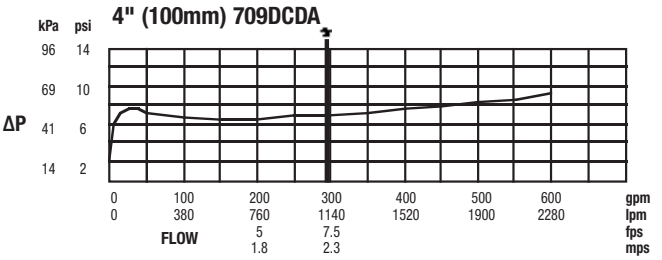
10" (250mm) 709



3" (80mm) 709DCDA

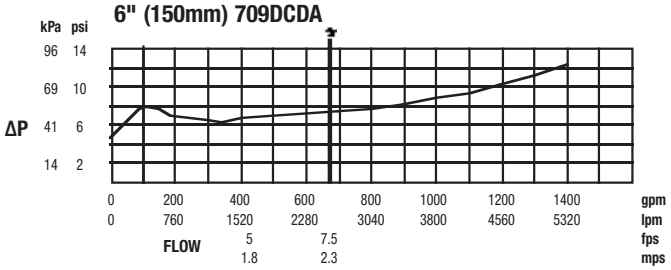


4" (100mm) 709DCDA

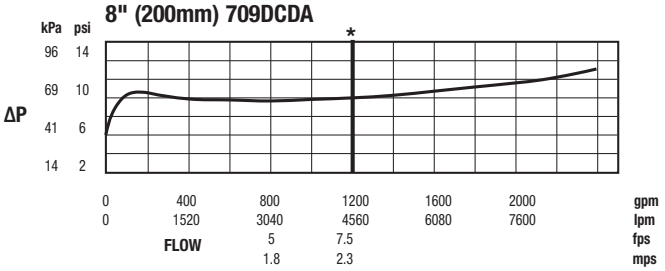


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)

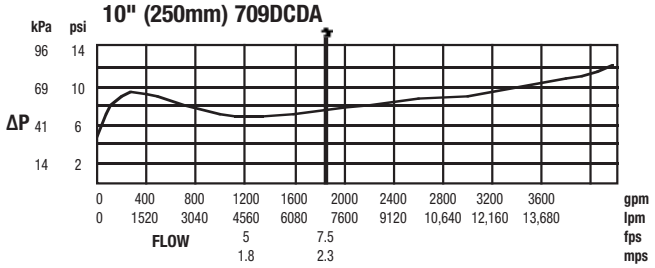
6" (150mm) 709DCDA



8" (200mm) 709DCDA

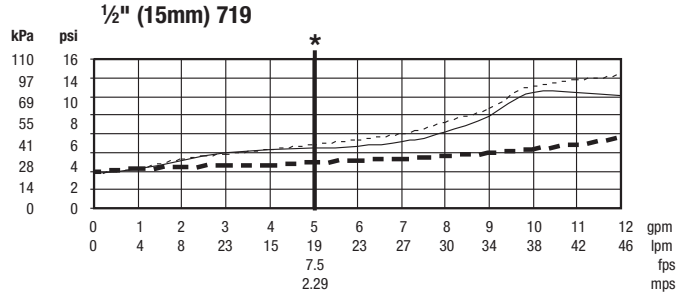


10" (250mm) 709DCDA

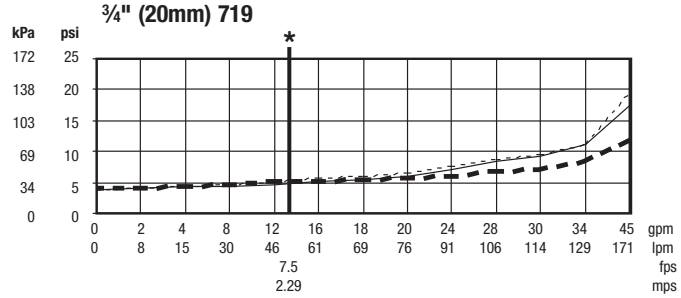


QT AQT UQT

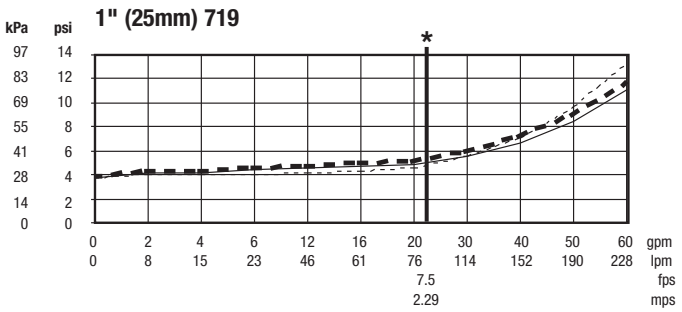
½" (15mm) 719



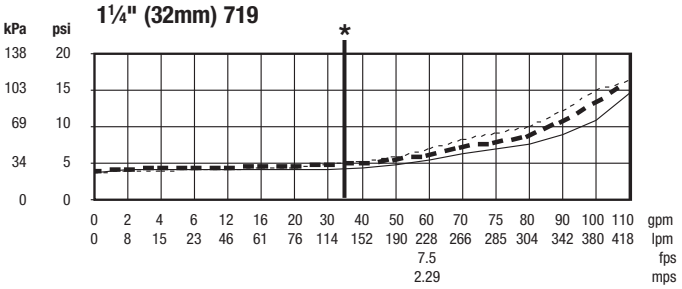
¾" (20mm) 719



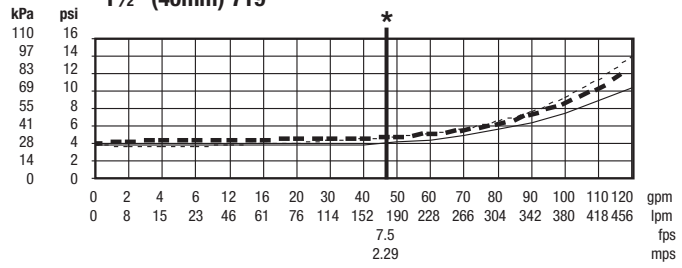
1" (25mm) 719



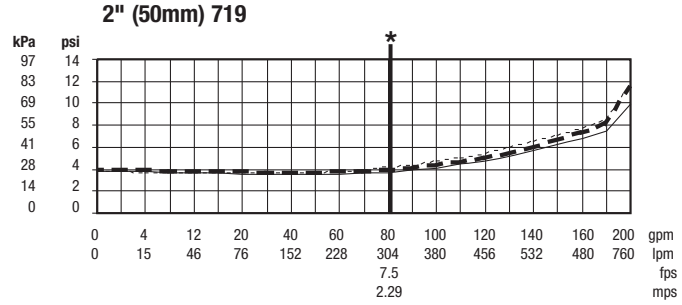
1¼" (32mm) 719



1½" (40mm) 719



2" (50mm) 719

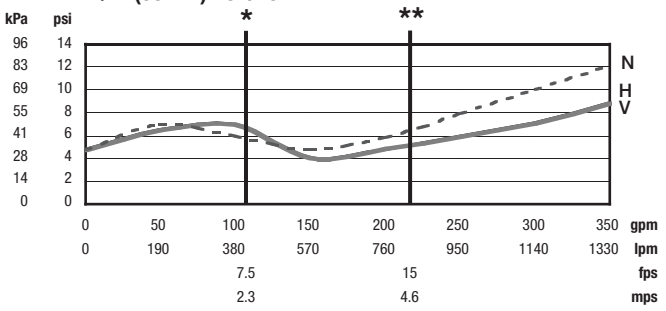


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*

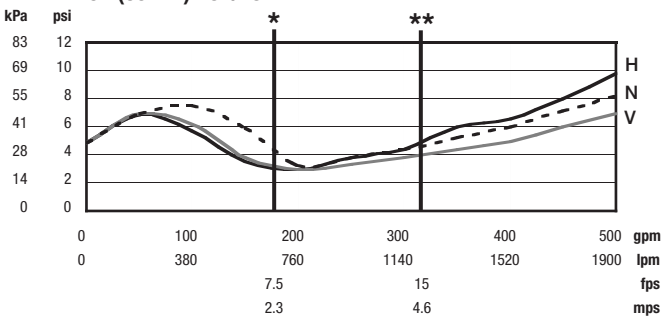
H V N

* = Rated flow ** = UL Rated flow

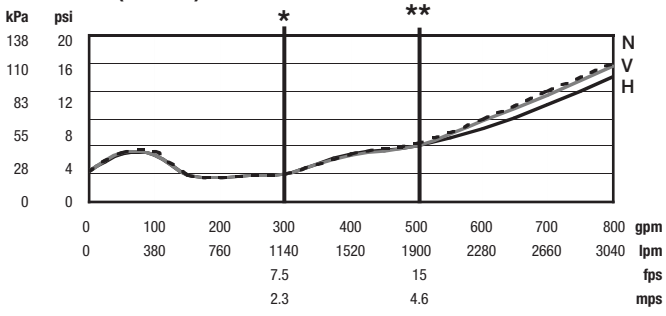
2½" (65mm) 757/757N



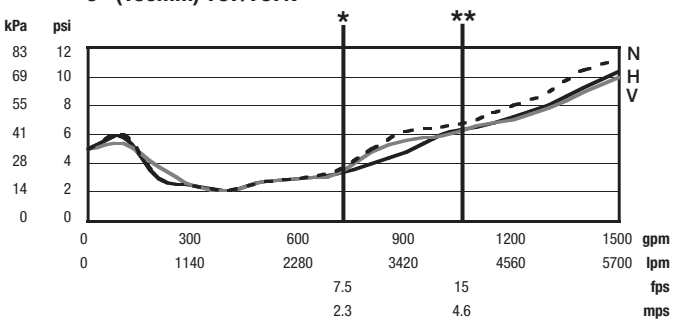
3" (80mm) 757/757N



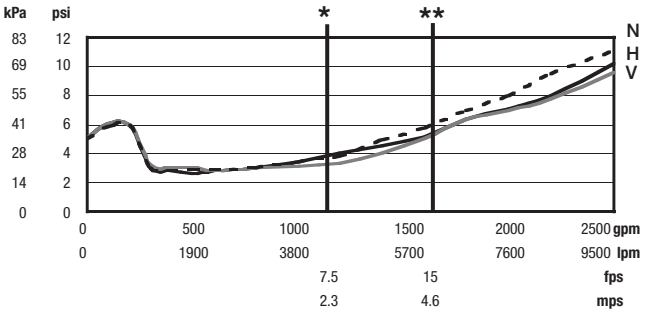
4" (100mm) 757/757N



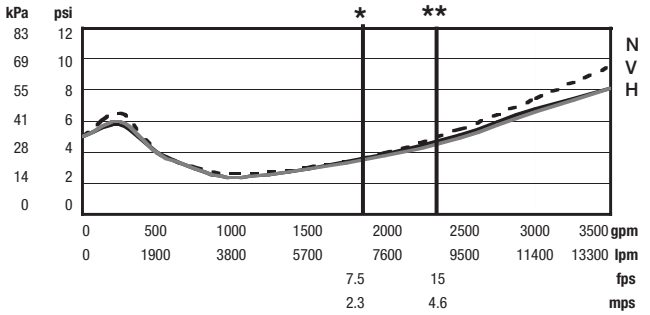
6" (150mm) 757/757N



8" (200mm) 757/757N



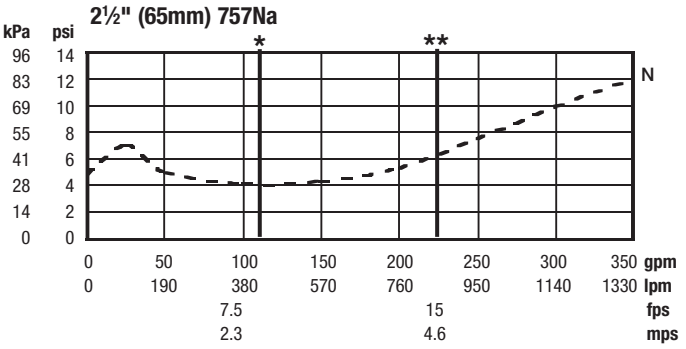
10" (250mm) 757/757N



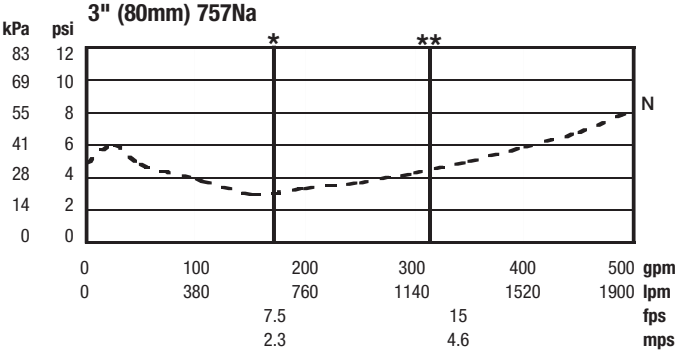
H V N

* = Rated flow ** = UL Rated flow

2½" (65mm) 757Na

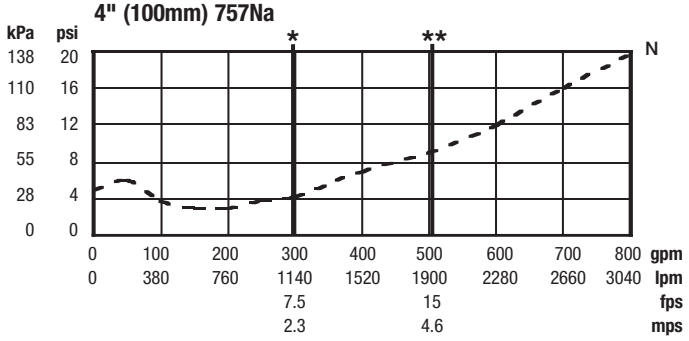


3" (80mm) 757Na

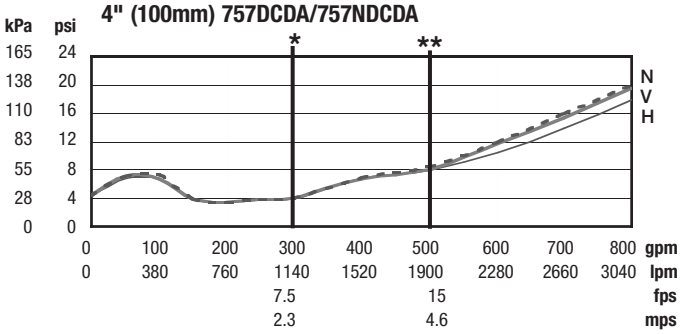


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*

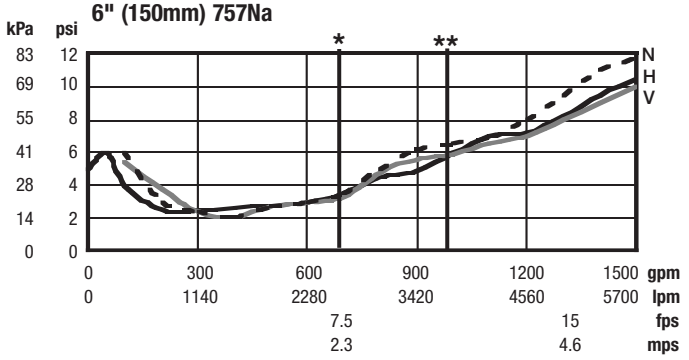
4" (100mm) 757Na



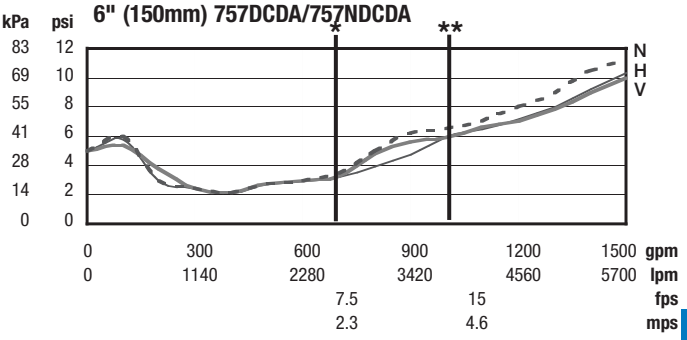
4" (100mm) 757DCDA/757NDCDA



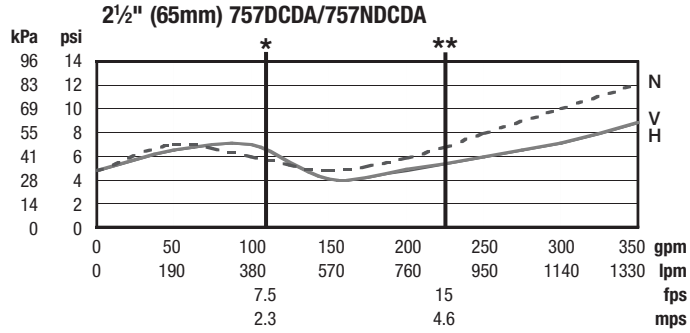
6" (150mm) 757Na



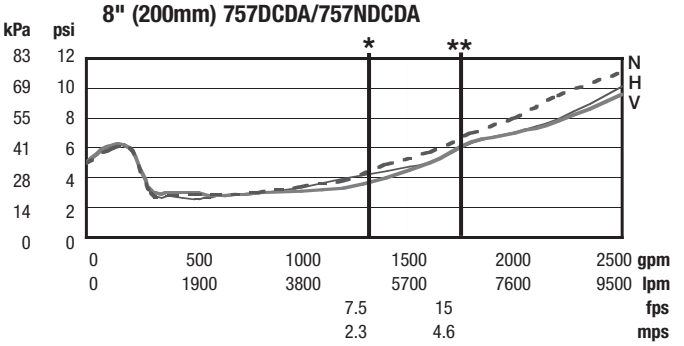
6" (150mm) 757DCDA/757NDCDA



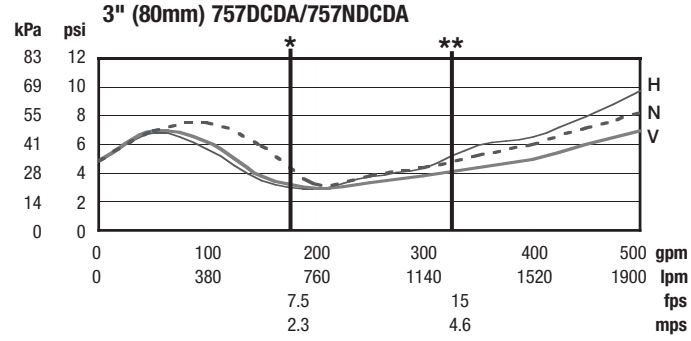
2½" (65mm) 757DCDA/757NDCDA



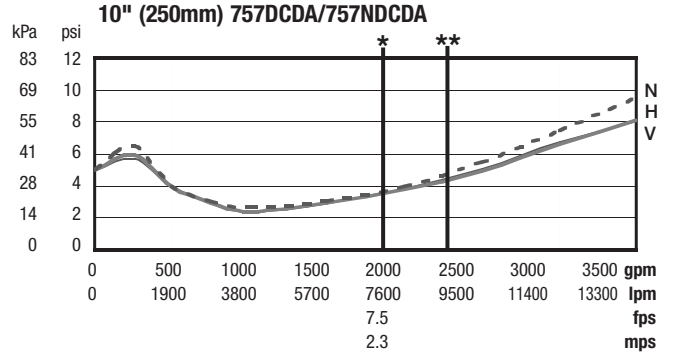
8" (200mm) 757DCDA/757NDCDA



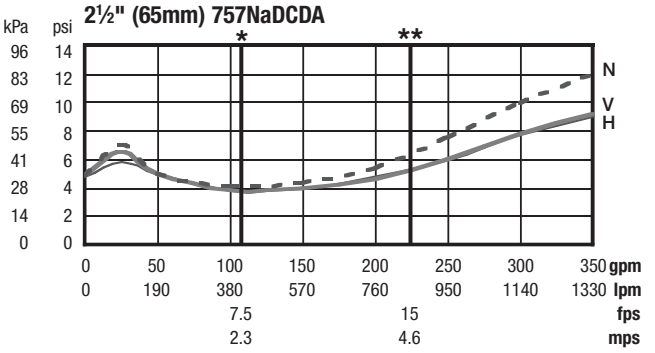
3" (80mm) 757DCDA/757NDCDA

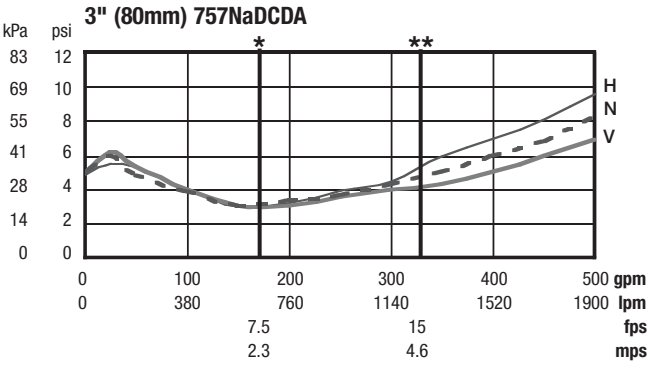


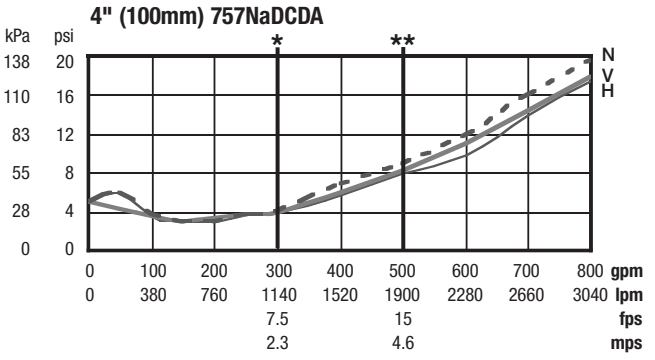
10" (250mm) 757DCDA/757NDCDA

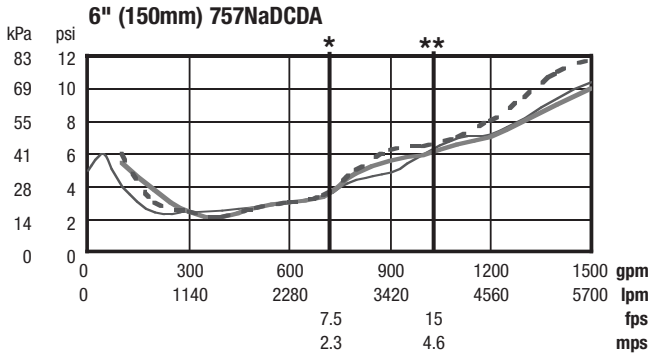


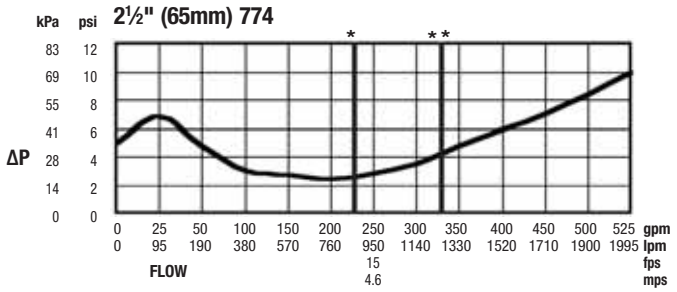
Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*

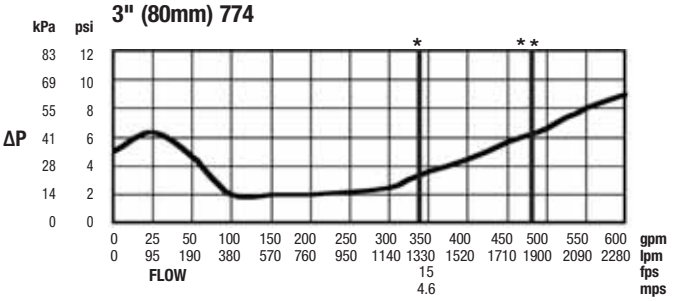


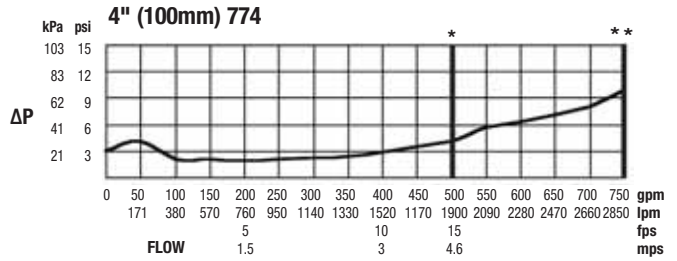


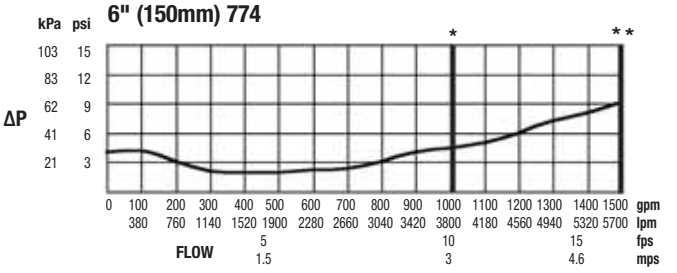


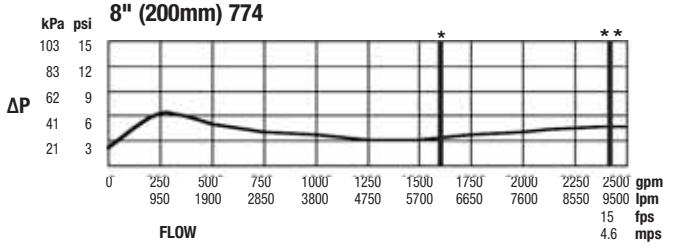






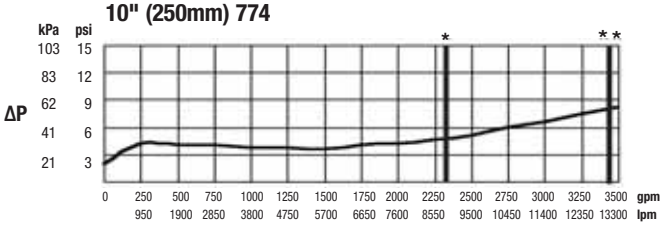




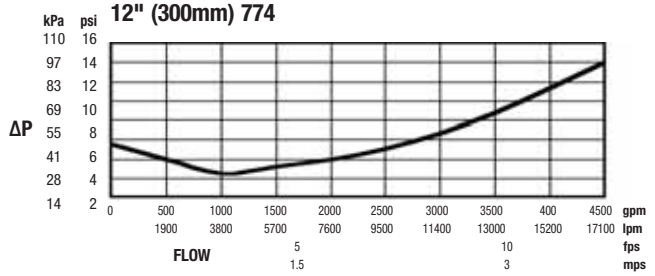


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*

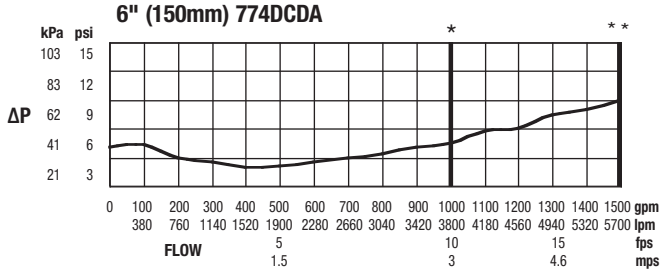
10" (250mm) 774



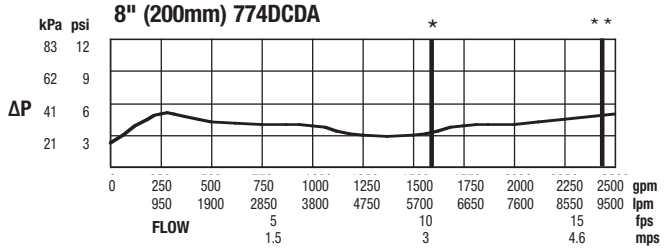
12" (300mm) 774



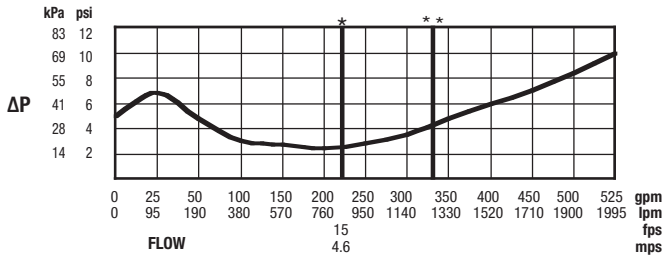
6" (150mm) 774DCDA



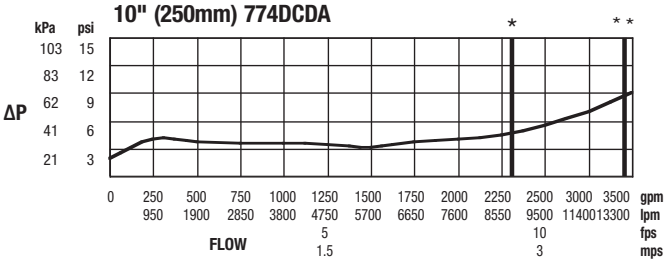
8" (200mm) 774DCDA



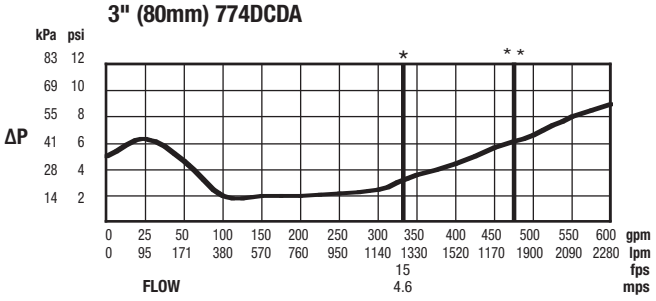
2½" (65mm) 774DCDA



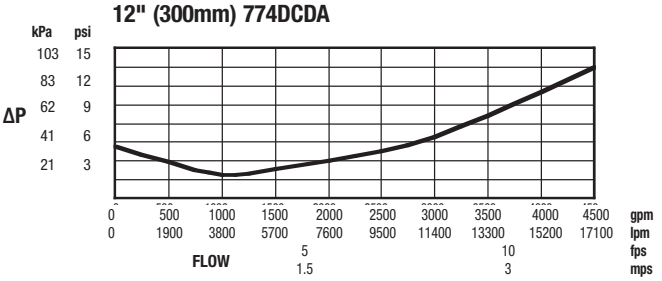
10" (250mm) 774DCDA



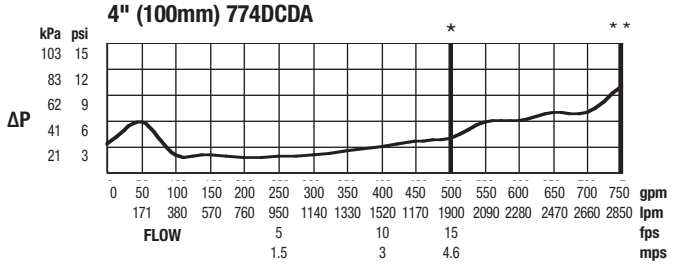
3" (80mm) 774DCDA



12" (300mm) 774DCDA

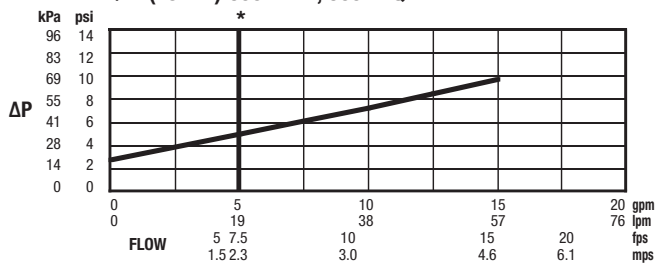


4" (100mm) 774DCDA

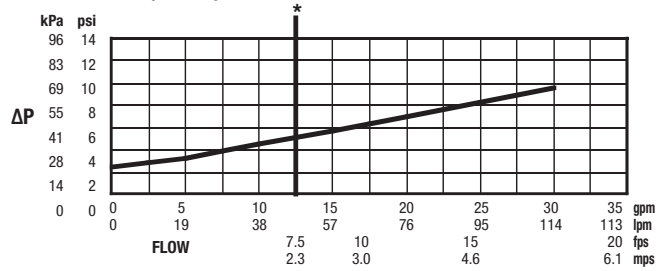


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*

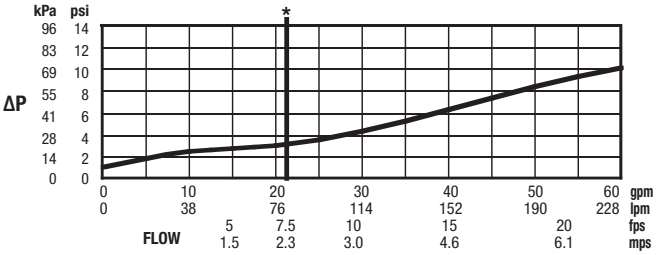
½" (15mm) 800M4FR, 800M4QT



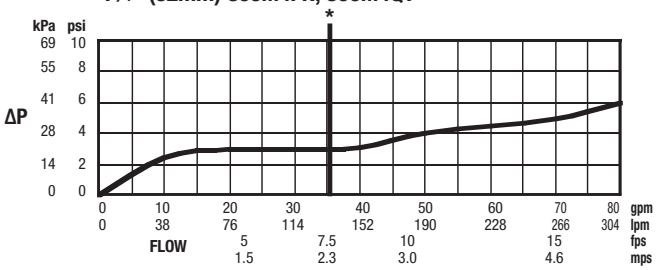
¾" (20mm) 800M4FR, 800M4QT



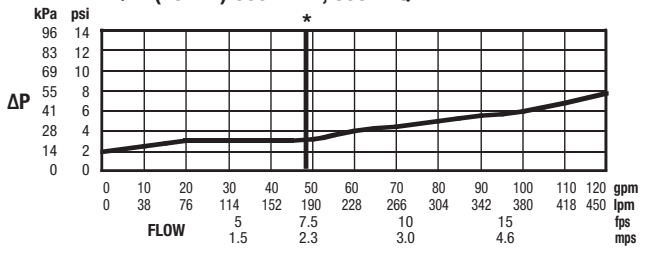
1" (25mm) 800M4FR, 800M4QT



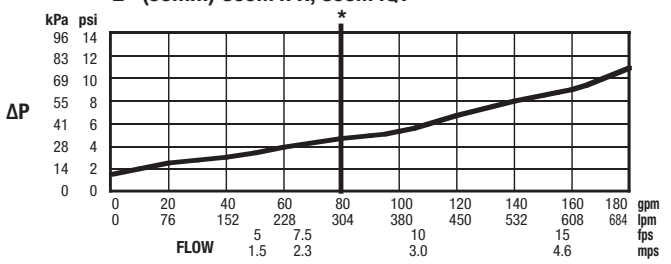
1¼" (32mm) 800M4FR, 800M4QT



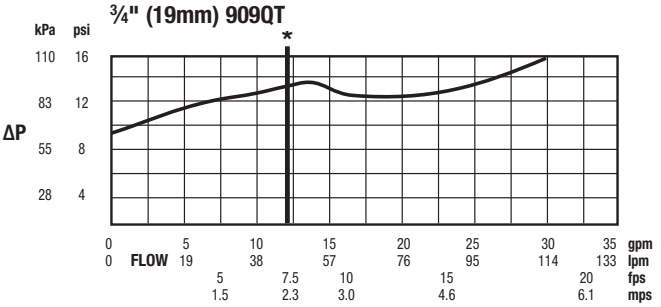
1½" (40mm) 800M4FR, 800M4QT



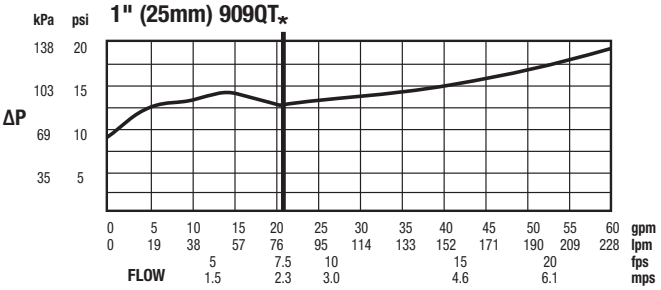
2" (50mm) 800M4FR, 800M4QT



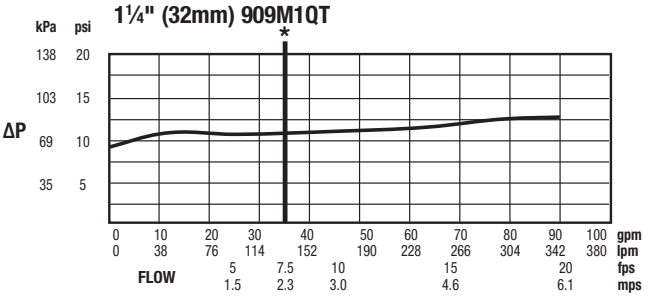
¾" (19mm) 909QT



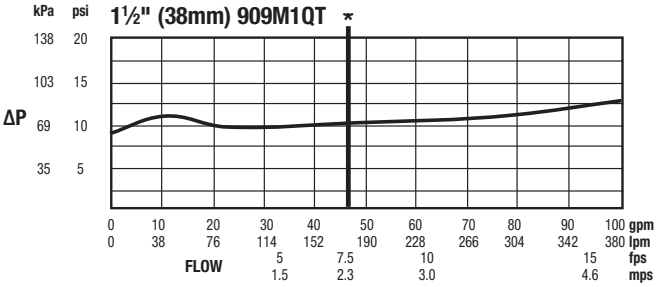
1" (25mm) 909QT*



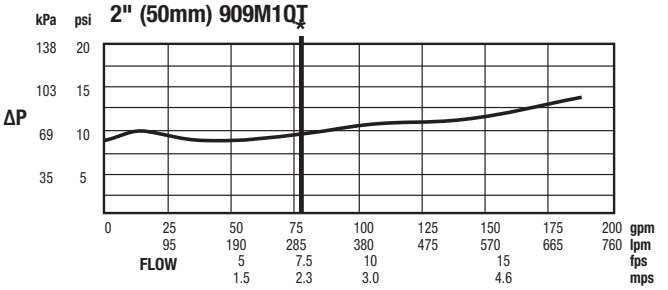
1¼" (32mm) 909M1QT



1½" (38mm) 909M1QT



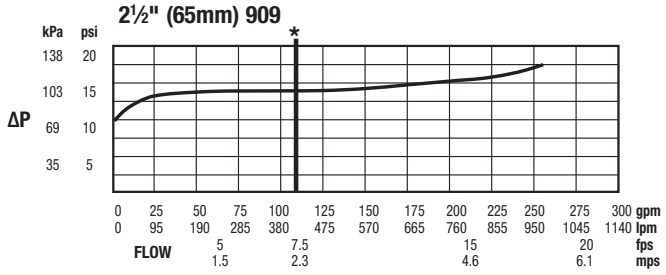
2" (50mm) 909M1QT



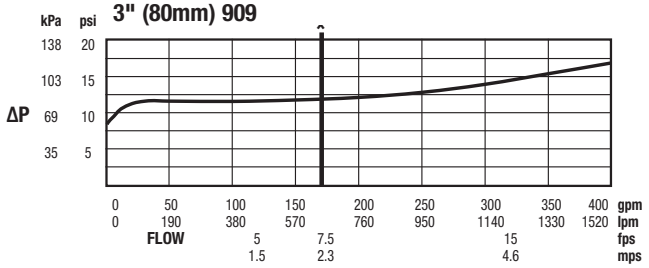
Flow Charts

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

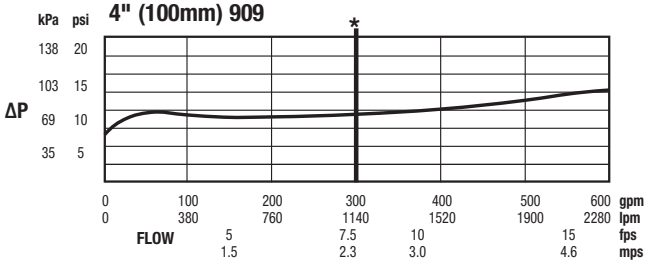
2½" (65mm) 909



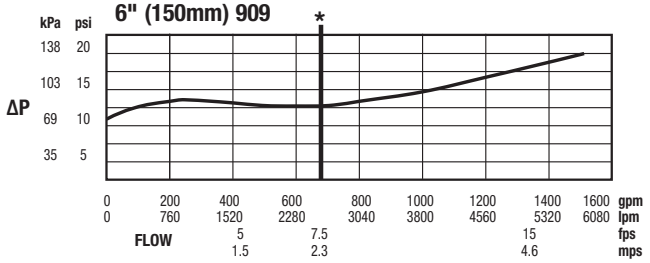
3" (80mm) 909



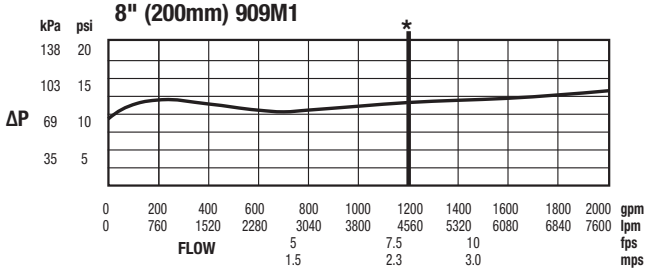
4" (100mm) 909



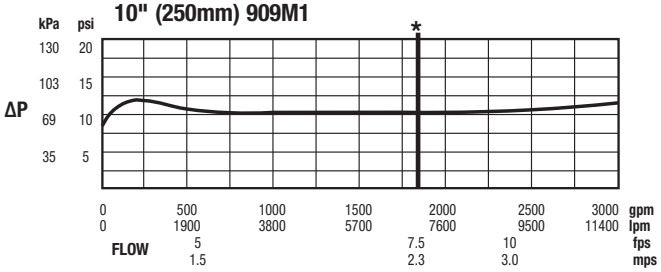
6" (150mm) 909



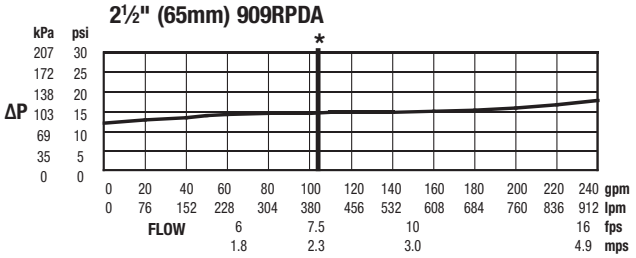
8" (200mm) 909M1



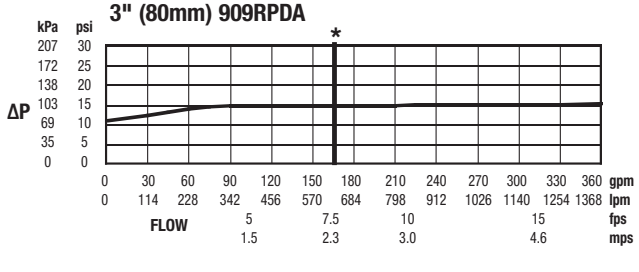
10" (250mm) 909M1



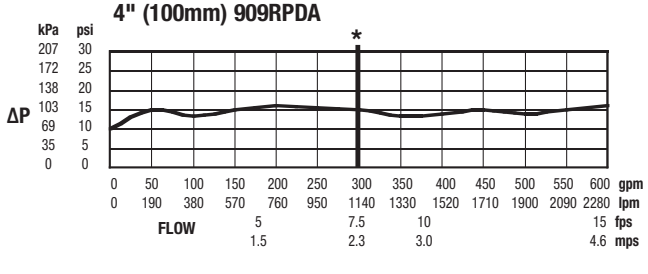
2½" (65mm) 909RPDA



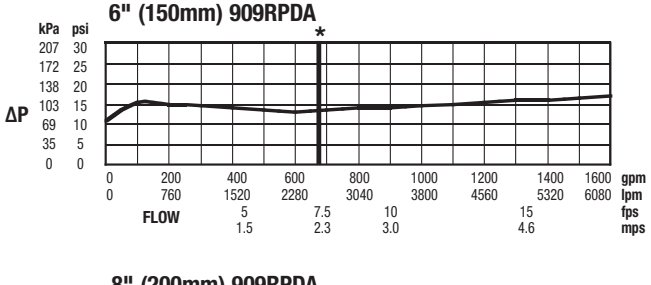
3" (80mm) 909RPDA



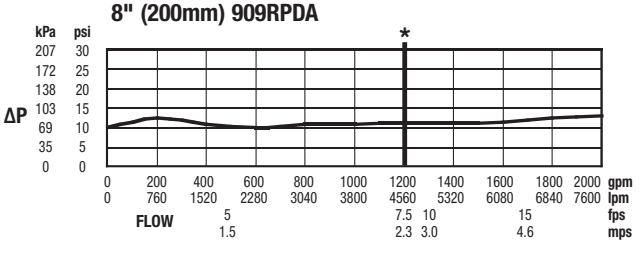
4" (100mm) 909RPDA



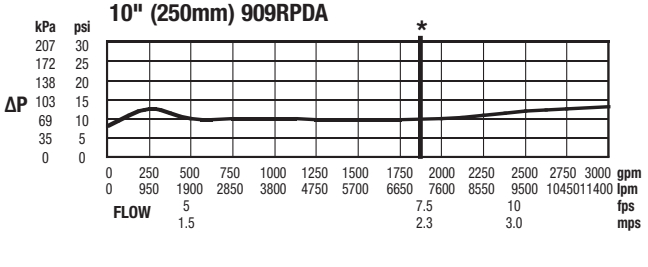
6" (150mm) 909RPDA



8" (200mm) 909RPDA



10" (250mm) 909RPDA



Flow Charts

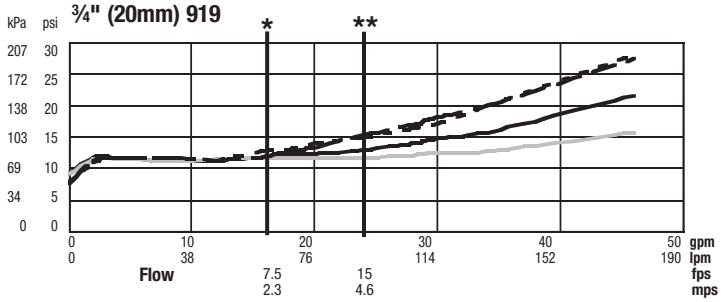
**Typical maximum system flow rate (7.5 feet/sec.)*

919QT U919QT 919AQT 919ZQT

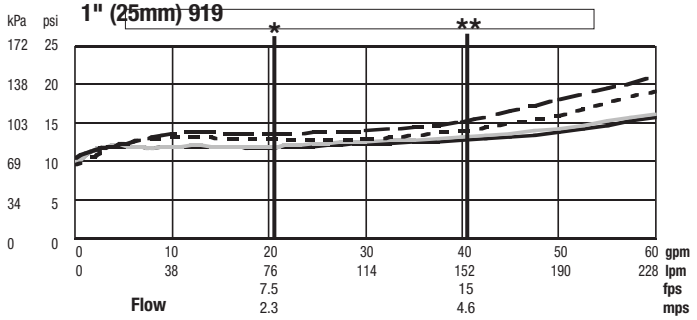
H V Z

* = Rated flow ** = UL Rated flow

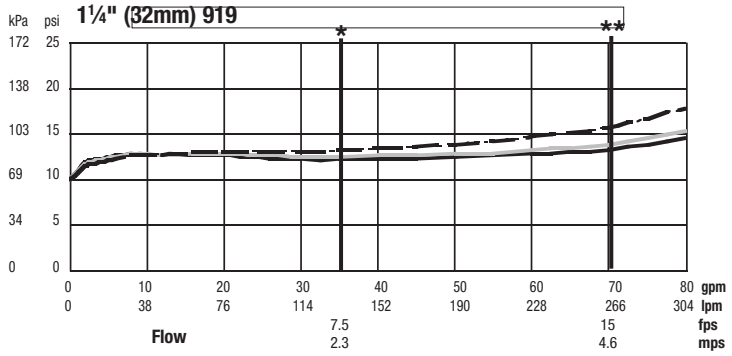
¾" (20mm) 919



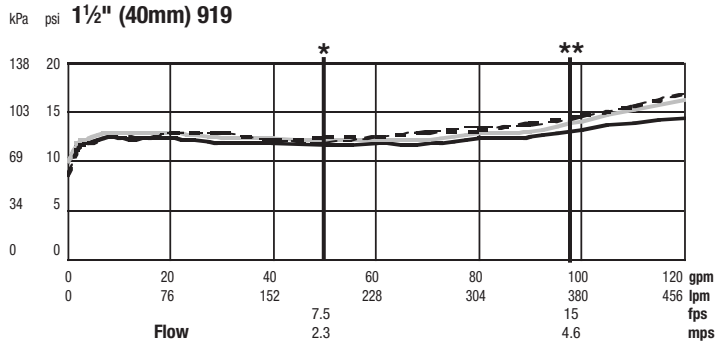
1" (25mm) 919



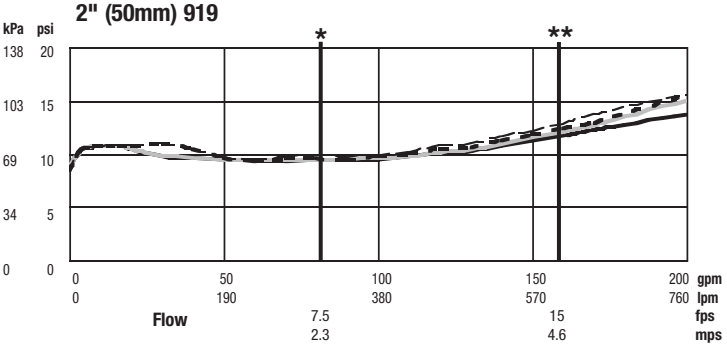
1¼" (32mm) 919



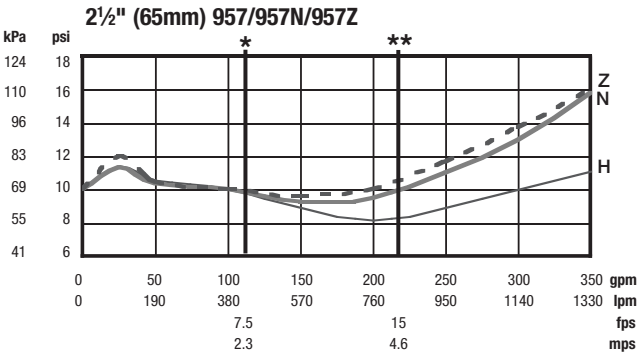
1½" (40mm) 919



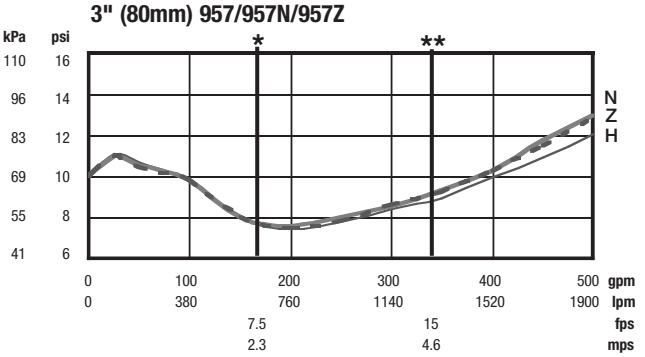
2" (50mm) 919



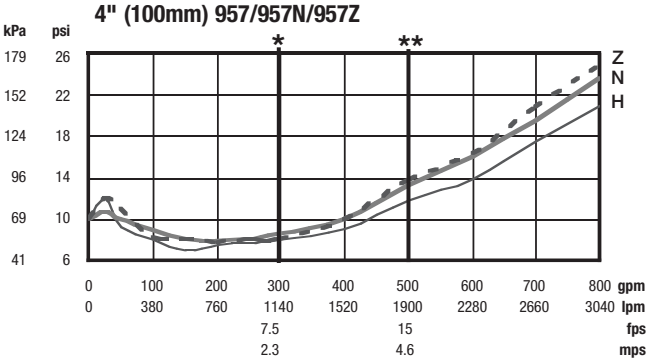
2½" (65mm) 957/957N/957Z



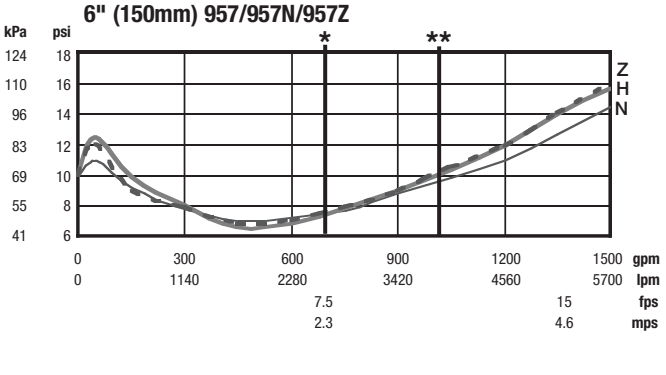
3" (80mm) 957/957N/957Z



4" (100mm) 957/957N/957Z



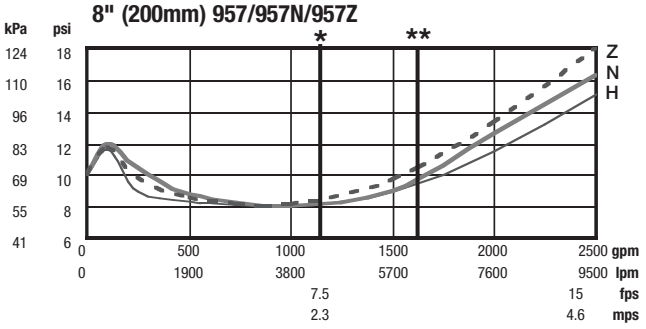
6" (150mm) 957/957N/957Z



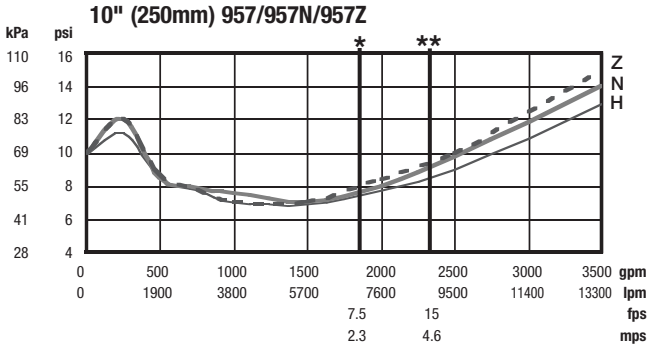
Flow Charts

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

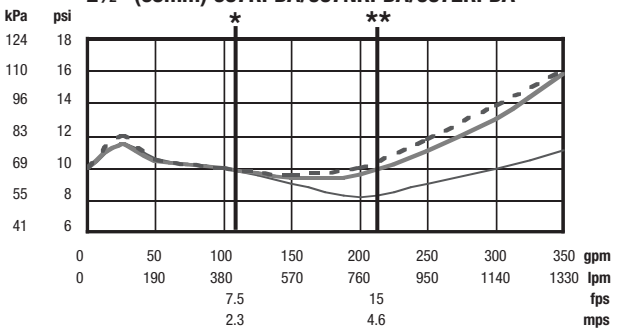
8" (200mm) 957/957N/957Z



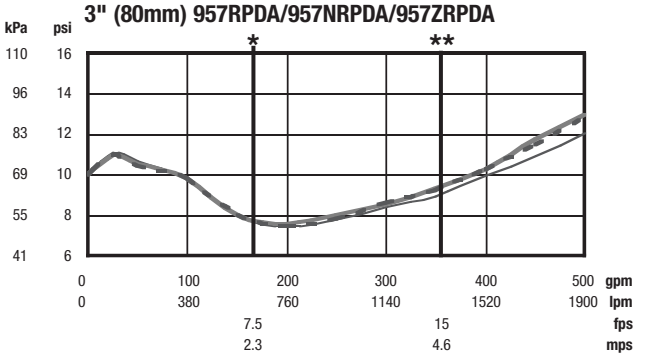
10" (250mm) 957/957N/957Z



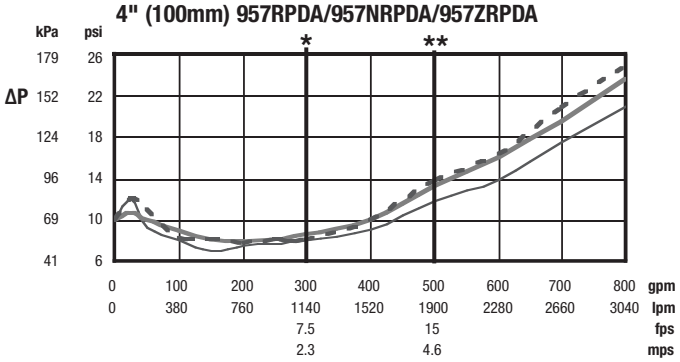
2½" (65mm) 957RPDA/957NRPDA/957ZRPDA



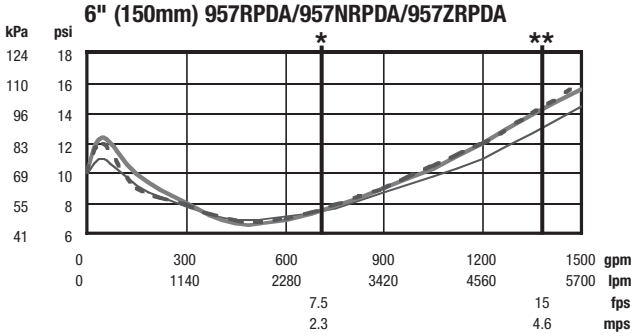
3" (80mm) 957RPDA/957NRPDA/957ZRPDA



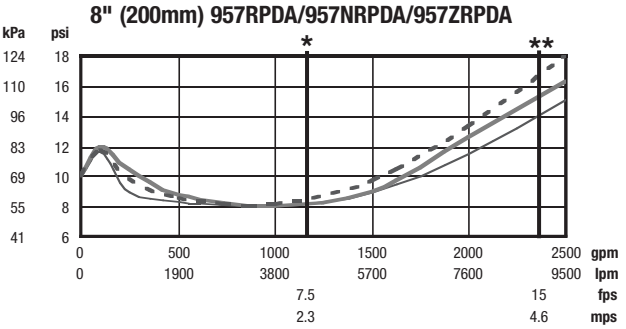
4" (100mm) 957RPDA/957NRPDA/957ZRPDA



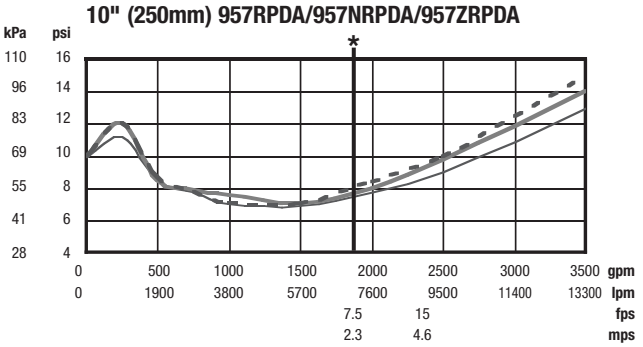
6" (150mm) 957RPDA/957NRPDA/957ZRPDA



8" (200mm) 957RPDA/957NRPDA/957ZRPDA

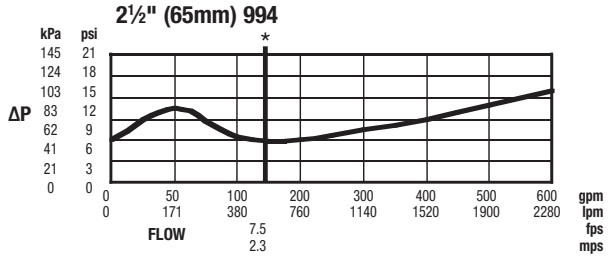


10" (250mm) 957RPDA/957NRPDA/957ZRPDA

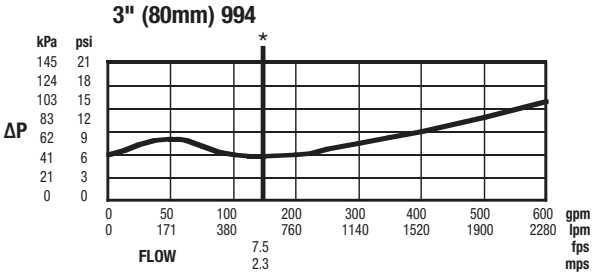


Flow Charts **Typical maximum system flow rate (7.5 feet/sec.)*

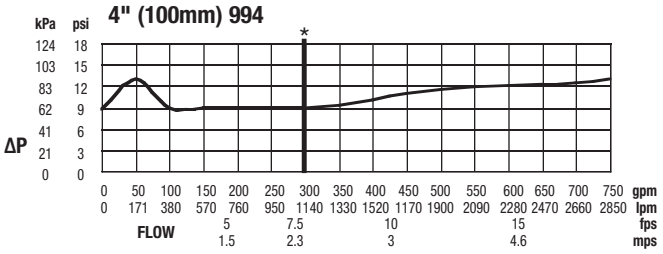
2½" (65mm) 994



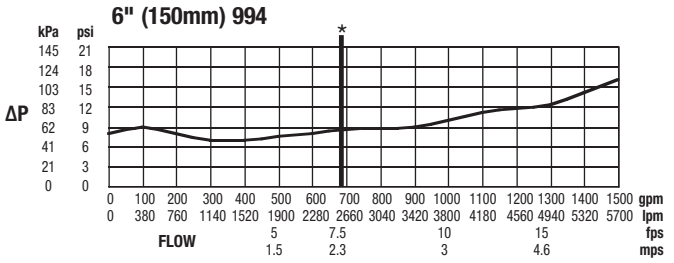
3" (80mm) 994



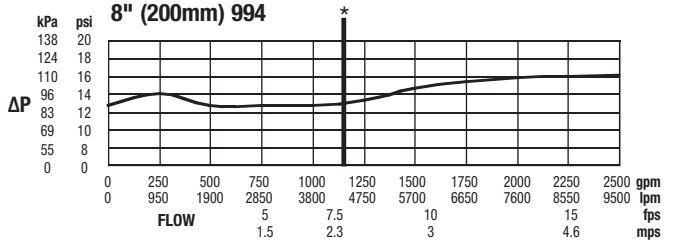
4" (100mm) 994



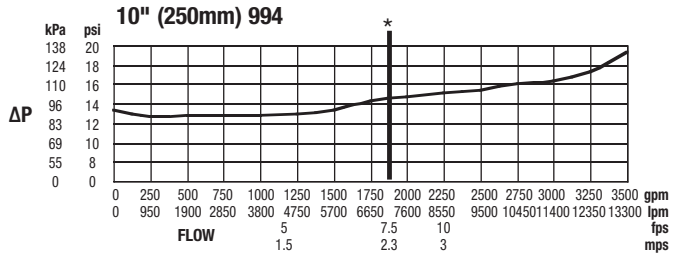
6" (150mm) 994



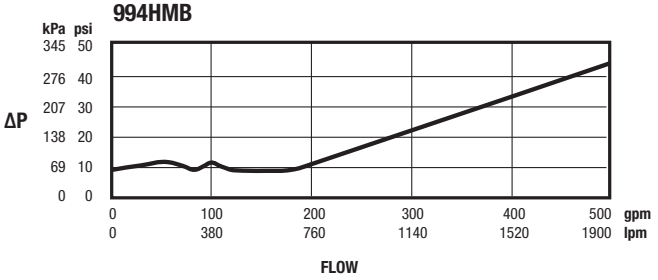
8" (200mm) 994



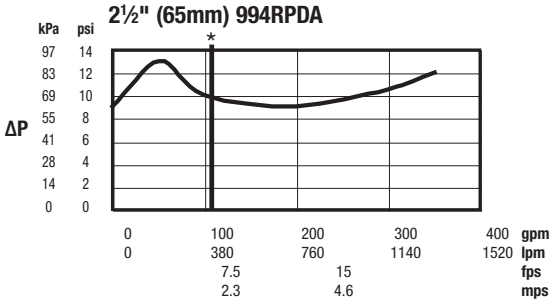
10" (250mm) 994



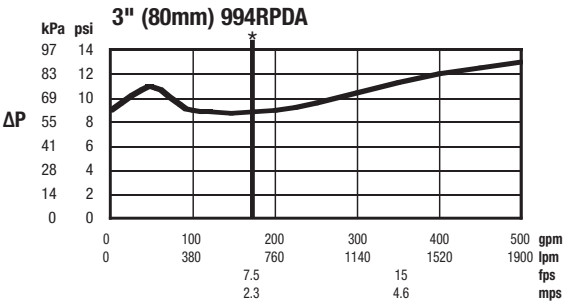
994HMB



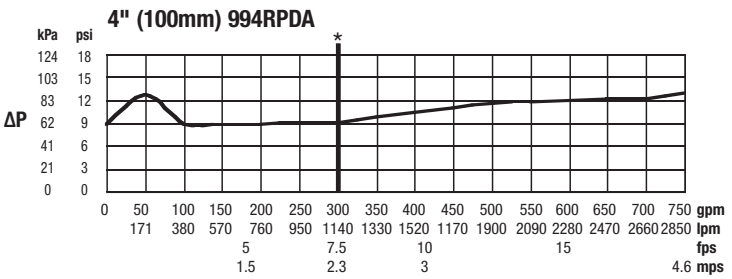
2½" (65mm) 994RPDA



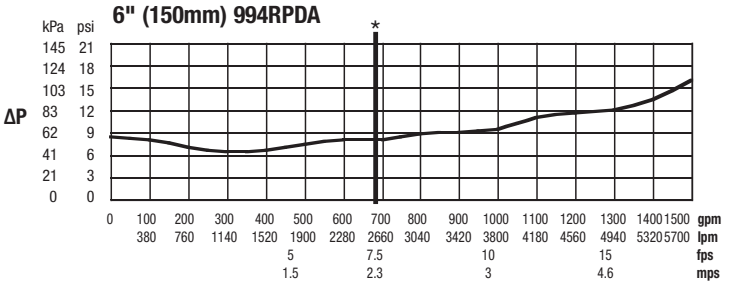
3" (80mm) 994RPDA



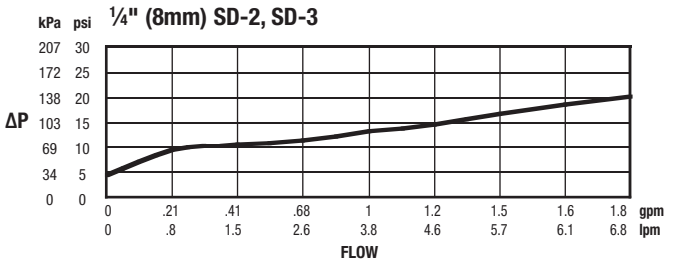
4" (100mm) 994RPDA

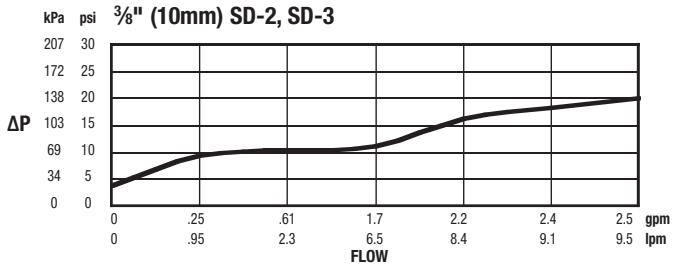


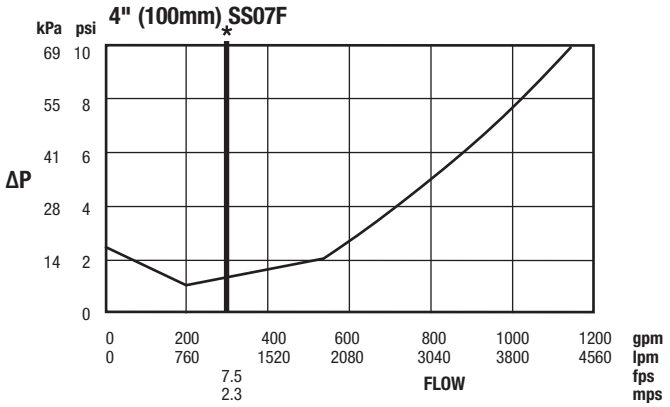
6" (150mm) 994RPDA

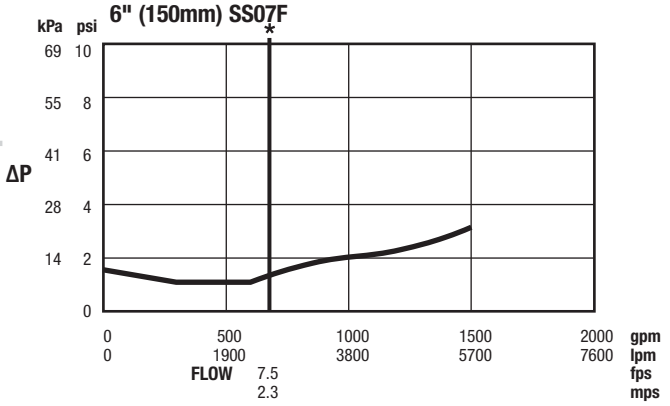


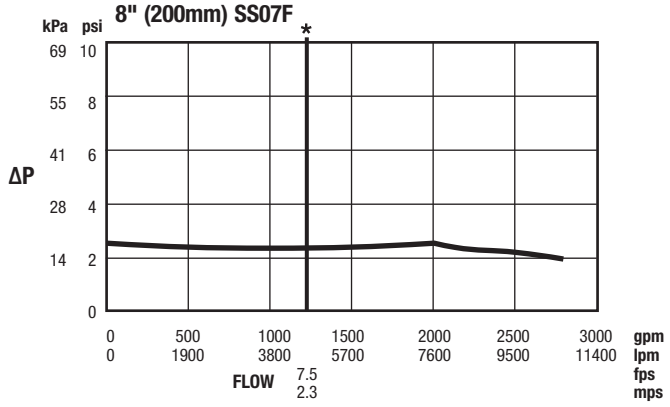
Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)

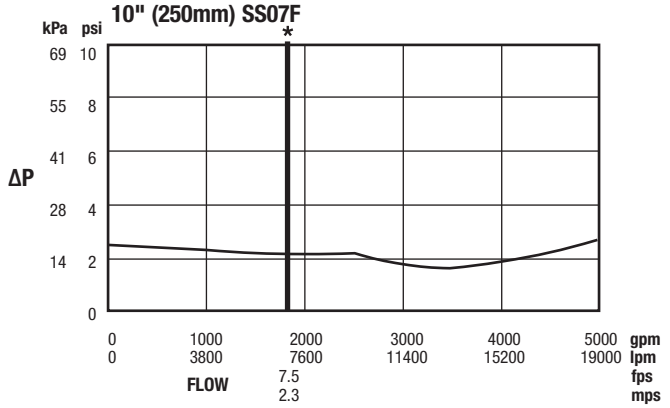












For Technical Assistance Call Your Authorized Watts Agent.

			Telephone	E-mail
	Headquarters: Watts Regulator Company	815 Chestnut St., North Andover, MA 01845-6098 U.S.A.	978 688-1811	watts@watts.com
North East	Edwards, Platt & Deely, Inc.	271 Royal Ave., Hawthorne, NJ 07506	973 427-2898	p044@watts.com
	Edwards, Platt & Deely, Inc.	368 Wyandanch Ave., North Babylon, NY 11703	631 253-0600	p073@watts.com
	Vernon Bitzer Associates, Inc.	980 Thomas Drive, Warminster, PA 18974	215 443-7500	P009@watts.com
	W. P. Haney Co., Inc.	51 Norfolk Ave., South Easton, MA 02375	508 238-2030	p088@watts.com
Mid Atlantic	Disney McLane & Associates	428 McGregor Ave., Cincinnati, OH 45206	800 542-1682	p017@watts.com
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	RMI	Glenfield Bus. Ctr., 2535 Mechanicsville Tpk., Richmond, VA 23223	804 643-7355	rmi@ricmrk.com
	The Joyce Agency, Inc.	8442 Alban Rd., Springfield, VA 22150	703 866-3111	p069@watts.com
	WMS Sales, Inc. (Main office)	9580 County Rd., Clarence Center, NY 14032	716 741-9575	P091@watts.com
South East	Billingsley & Associates, Inc.	2728 Crestview Ave., Kenner, LA 70062-4829	504 602-8100	p013@watts.com
	Billingsley & Associates, Inc.	478 Cheyenne Lane, Madison, MS 39110	601 856-7565	chkenny@billingsley.com
	Francisco J. Ortiz & Co., Inc.	Charlyn Industrial Pk., Road 190 KM1.9 - Lot #8, Carolina, Puerto Rico 00983	787 769-0085	P029@watts.com
	Mid-America Marketing, Inc.	203 Industrial Drive, Birmingham, AL 35211	205 879-3469	sales@midamericamktg.com
	Mid-America Marketing, Inc.	1364 Foster Avenue, Nashville, TN 37210	615 259-9944	john@midamericamktg.com
	Mid-America Marketing, Inc.	5466 Old Hwy. 78, Memphis, TN 38118	901 795-0045	p032@watts.com
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	Mid-Continent Marketing Services Ltd.	1275 Lakeside Drive, Romeoville, IL 60446	630 953-1211	p072@watts.com
	Soderholm & Associates, Inc.	7150 143rd Ave. N.W., Anoka, MN 55303	763 427-9635	company@soderholmrep.com
	Stickler & Associates	333 North 121 St., Milwaukee, WI 53226	414 771-0400	sales@sticklerassociates.com
South Central	Hugh M. Cunningham, Inc.	13755 Benchmark, Dallas, TX 75234	972 888-3808	p031@watts.com
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	Mack McClain & Associates, Inc.	15090 West 116th St., Olathe, KS 66062	913 339-6677	p045@watts.com
	OK! Sales, Inc.	214 NE 12th. St., Ste A Moore, OK 73160	405 794-5200	oksales@coxinet.net
Western	Delco Sales, Inc.	1930 Raymer Ave., Fullerton, CA 92833	714 888-2444	sales@delcosales.com
	Delco Sales, Inc.	111 Sand Island Access Rd., Unit I-10, Honolulu, HI 96819	808 842-7900	p021@watts.com
	Fanning & Associates, Inc.	6765 Franklin St., Denver, CO 80229-7111	303 289-4191	sales@fanningandassociates.com
	Hollabaugh Brothers & Associates	6915 South 194th St., Kent, WA 98032	253 867-5040	p006@watts.com
	Hollabaugh Brothers & Associates	3028 S.E. 17th Ave., Portland, OR 97202	503 238-0313	p001@watts.com
	P I R Sales, Inc.	3050 North San Marcos Place, Chandler, AZ 85225	480 892-6000	sales@pirsales.com
	Preferred Sales	30852 Huntwood Ave., Hayward, CA 94544	510 487-9755	p094@watts.com
	R. E. Fitzpatrick Sales, Inc.	4109 West Nike Dr. (8250 South), West Jordan, UT 84088	801 282-0700	p007@watts.com
Canada	Watts Industries (Canada) Inc. (Watts Regulator Co. Division)	5435 North Service Road, Burlington, Ontario L7L 5H7	905 332-4090	info@wattscanada.ca
	Con-Cur West Marketing, Inc.	71B Clipper Street, Coquitlam, British Columbia V3K 6X2	604 540-5088	dconte@concurwest.com
	D.C. Sales Ltd.	#13-6130 4th St. S.E., Calgary, Alberta T2H 2B6	403 253-6808	barry.graham@dcsalesltd.com
	D.C. Sales Ltd.	16726 111 Ave, Edmonton, Alberta T5M 2S6	780 496-9495	barry.graham@dcsalesltd.com
	GTA Sales Team.	Greater Toronto Area	888 208-8927	gtasales@wattscanada.ca
	Hydro-Mechanical Sales, Ltd.	3700 Joseph Howe Drive, Suite 1, Halifax, Nova Scotia B3L 4H7	902 443-2274	jeff@hydromechanical.ca
	Hydro-Mechanical Sales, Ltd.	P.O. Box 1445 (Mailing), 297 Collishaw St., Suite 7 (shipping) Moncton, New Brunswick E1C 9R2	506 859-1107	mark@hyromechnical.ca
	J.D.S. Sales Ltd.	4 Lancaster Street, St. John's, Newfoundland A1A 5P7	709 579-5771	jds@nf.sympatico.ca
	Les Ent. Roland Lajoie	6221 Marivaux, St-Leonard, QC H1P 3H6	514 328-6645	info@ent-lajoie.com
	Les Ent. Roland Lajoie	23 du Buisson, Pont Rouge, QC G3H 1X9	418 873-2500	strudel@ent-lajoie.com
	Mar-Win Agencies, Ltd.	1333 Clifton St., Winnipeg, Manitoba R3E 2V1	204 775-8194	marwin@mts.net
	Northern Mechanical Sales	P.O. Box 280 (mailing) 163 Pine St. (shipping), Garson, Ontario P3L 1S6	705 693-2715	normec@sympatico.ca
	Palser Enterprises, Ltd.	P.O. Box 28136 (mailing), 1885 Blue Heron Dr., #4, London, Ontario N6H 5L9	519 471-9382	sales@palserent.com
	RAM Mechanical Marketing Inc.	905 Winnipeg Street, Regina, Saskatchewan S4R 1J1	306 525-1986	ram@accesscomm.ca
	RAM Mechanical Marketing Inc.	510 Ave M South, Saskatoon, Saskatchewan S7M 2K9	306 244-6622	info@rammarketing.ca
	Walmar Mechanical Sales	24 Gurdwara Rd., Nepean, Ontario K2E 8B5	613 225-9774	chrisbrown@walmar.net
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