Now includes our
LEAD FREE* product offering

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.

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General Information

Backflow is defined as the reverse flow of contaminated or undesirable substance into the potable water supply. Installing a backflow preventer can protect the water supply from this very serious type of situation. This product guide includes information on Watts' complete line of backflow prevention devices.

Code Requirements

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

Backflow Definitions

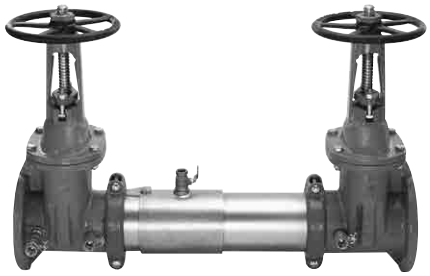
Backpressure: Pressure, higher than the supply pressure, caused by a pump, elevated tank, boiler, or other means that can cause backflow.

Backsiphonage: Backflow caused by negative or reduced pressure in the supply piping.

Cross-connection: A connection or potential connection between any part of the potable water system and another environment where undesirable substances could enter the potable water system. Contaminated or undesirable substances can include gases, liquids, or solids, such as chemicals, waste products, steam, water from other sources (potable or non-potable), or any other matter that can change the color of or add odor to the water. Bypass arrangements, jumper connections, removable sections, swivel or changeover assemblies, or any other temporary or permanent connecting arrangement where backflow can occur are considered cross-connections.

Health hazard: A cross-connection or potential cross-connection where any substance that could cause death, illness, or spread disease, or have a high probability of causing such effects, could be introduced into the potable water supply.

Non-health hazard: A cross-connection or potential cross-connection where any substance introduced into the potable water supply would generally not be considered a health hazard, but would constitute a nuisance or be aesthetically objectionable.



757 OSY

LEAD FREE

Backflow prevention has critical implications in potable water supply systems. With the changeover to Lead Free in the United States effective January 4, 2014, Lead Free backflow prevention devices are required in many applications and/or settings. The Watts backflow preventer product line includes a full complement of Lead Free versions of our trusted & reliable backflow products.

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 backsiphonage where there is a potential health hazard.	Main supply lines Commercial boilers Hospital equipment Laboratory equipment Waste digesters Car washes
REDUCED PRESSURE DETECTOR ASSEMBLIES For 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 used.
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 backsiphonage 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

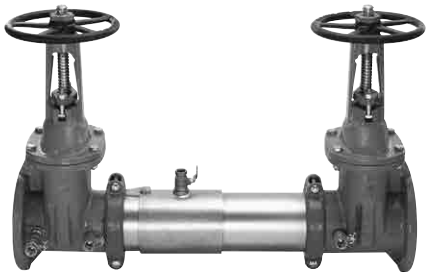
Backflow Applications *(cont.)*

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 For 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 backsiphonage where there is a health hazard.	Laboratory faucets, 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 tocontinuous 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.

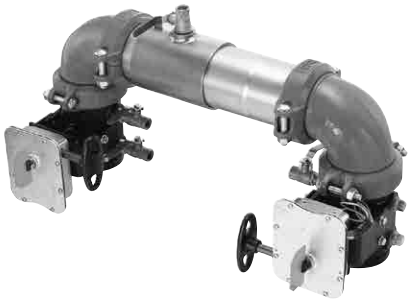
Series 757, 757N

Double Check Valve Assemblies

Sizes: 2½" – 10" (65 – 250mm)



757 OSY



757N BFG

757 OSY (Vertical)

Features

- Extremely compact design
- 70% Lighter than traditional designs
- 304 (Schedule 40) Stainless steel housing & sleeve
- Groove fittings allow integral pipeline adjustment
- Patented tri-link check provides lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shutoffs
- Available for horizontal, vertical or N pattern installations
- Replaceable check disc rubber
- Sizes 2½", 3" and 4" (65, 80 and 100mm) available with quarter-turn ball valve shutoffs

Pressure-Temperature

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

757, 757N

LEAD FREE

Series 757, 757N Double Check Valve Assemblies are used to prevent backflow of non-health hazard pollutants that are objectionable but not toxic, from entering the potable water supply system. Series 757, 757N may be installed under continuous pressure service and may be subjected to backpressure and backsiphonage. Series 757, 757N consists of two independently operating check valves, two shutoff valves, and four test cocks.

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

Models

Suffix:

NRS – non-rising stem resilient seated gate valves
OSY – UL/FM outside stem and yoke, resilient seated gate valves
BFG – UL/FM grooved gear operated butterfly valves with tamper switch
QT – 2½", 3" and 4" (65, 80 and 100mm) quarter-turn ball 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

Available with grooved NRS gate valves - consult factory**
Post indicator plate and operating nut available - consult factory**
****Consult factory for dimensions**

Approvals

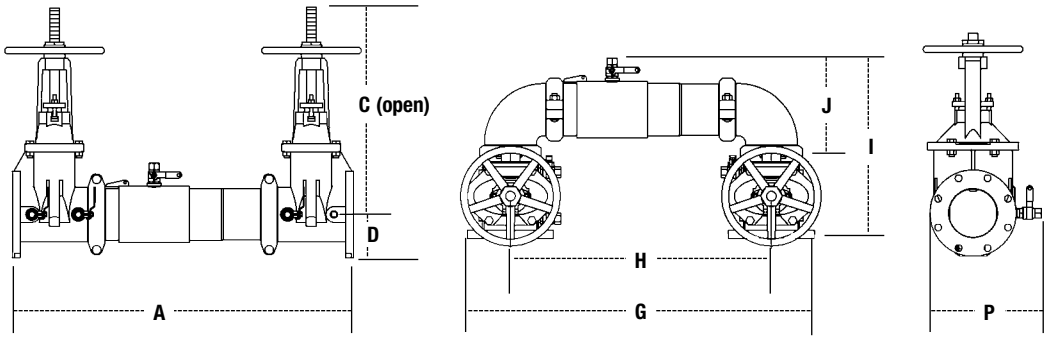
ASSE 1015 · CSA B64.5 · FM Approved (BFG & OSY only) · cULus · NSF Certified to NSF/ANSI 61-G

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

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

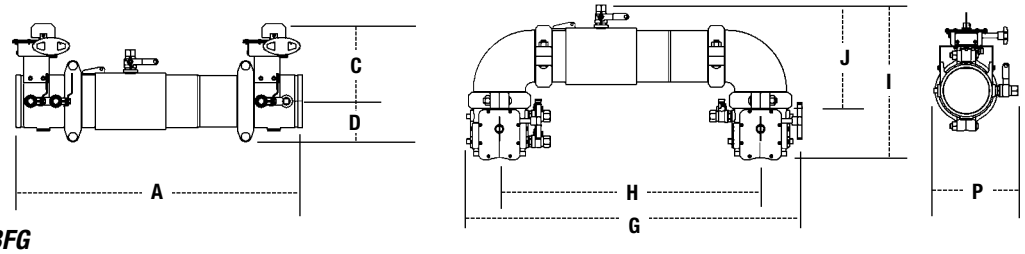
See Flow Charts on p. 79

Dimensions — Weights



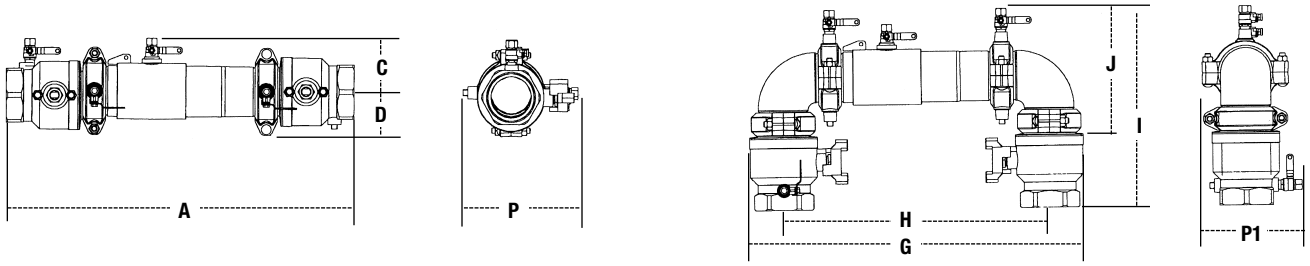
757, 757N

SIZE	DIMENSIONS																WEIGHT					
	A		C (OSY)		C (NRS)		D		G		H		I		J		P		757NRS		757OSY		757N NRS		757N OSY	
in.	*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	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	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	33½	851	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	44	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	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	57½	1461	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



757BFG, 757NBFG

SIZE	DIMENSIONS																		WEIGHT			
	A		C		D		G		H		I		J		P		757BFG			757N BFG		
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*		*lbs.*	*kgs.*	
2½	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	28½	724	8 5/16	211	3 11/16	94	30 1/16	779	22¾	578	15 7/16	392	9 3/16	233	9½	241	54	24		67	30	
4	29 3/16	741	8 15/16	227	3 11/16	94	31 5/16	811	24	610	16¼	412	9 15/16	252	10	254	61	28		84	38	
6	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	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	

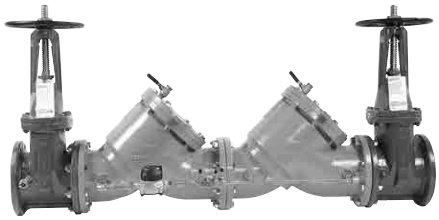


757QT

SIZE	DIMENSIONS														WEIGHT			
	A		C		D		G		H		I		J		P		P1		QT		QTN	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	27¼	692	4⅞	124	6⅞	175	30¼	768	24½	622	16 1/16	407	11⅜	289	11 5/16	287	11 5/16	287	40	18	50	23
3	28¼	718	4⅞	124	6⅞	175	30¼	768	24½	622	16 9/16	420	11⅜	289	11 5/16	287	11 5/16	287	50	23	60	27
4	31½	800	4⅞	124	6⅞	175	30¼	768	24½	622	18 5/16	465	11⅜	289	11 5/16	287	11 5/16	287	70	32	80	36

Series LF709
Double Check Valve Assemblies

Sizes: 2½" – 10" (65 – 250mm)



LF709

Features

- Replaceable stainless steel 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

Pressure-Temperature

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

LF709

LEAD FREE

Series LF709 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 LF709 features a modular check design concept to facilitate easy maintenance. Check with local jurisdictional authority as to installation requirements. The LF709 features Lead Free* construction to comply with Lead Free* installation requirements.

Materials

- Check Valve Bodies: Epoxy coated cast iron
- Seats: Stainless Steel

Models

Suffix:

NRS – non-rising stem resilient seated gate valves

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

S-FDA – FDA epoxy coated strainer

QT-FDA – FDA epoxy coated ball valve shutoffs

LF – without shutoff valves

Approvals

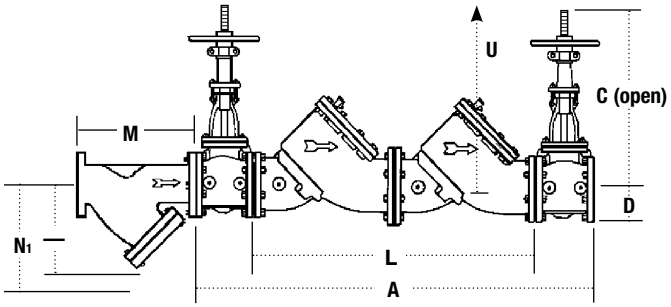
1015 B64.5

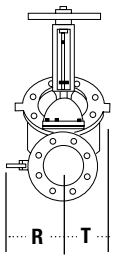
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. Sizes 4" – 10" approved horizontal and vertical "flow up".
Size 2½" and 3" approved horizontal only.
Factory Mutual approved 4" – 10" vertical "flow up" with OSY gate valves only.

Note: Model "S-FDA" not listed

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

Dimensions — Weights





LF709

SIZE	DIMENSIONS															
	A		C (OSY)		C (NRS)		D		L		U††		M		N	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*
2½	39⅜	1000	16⅜	416	9⅜	238	3½	89	24⅛	613	11	279	10	254	6½	165
3	40⅜	1025	18⅞	479	10¼	260	3¾	95	24⅛	613	14	356	10⅛	257	7	178
4	52⅜	1330	22¾	578	12³⁄₁₆	310	4½	114	34⅛	867	14	356	12⅛	308	8¼	210
6	62⅞	1597	30⅛	765	16	406	5½	140	41⅛	1057	16	406	18½	470	13½	343
8	75	1905	37¾	959	19¹⁵⁄₁₆	506	6½	165	52	1321	21	533	21⅝	549	15½	394
10	90	2286	45¾	1162	23¹³⁄₁₆	605	8	203	64	1626	25	635	26	660	18½	470

LF709

SIZE	DIMENSIONS								WEIGHT						STRAINER	
	N1†		R		R❖		T		NRS		OSY		QT		Weight	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	10	254	4	102	16	406	3	76	167	76	170	77	154	70	28	13
3	10	254	5	127	16	406	3	76	167	76	170	77	162	73	34	15
4	12	305	6	152	19¾	502	6	152	368	167	383	174	275	125	60	27
6	20	508	11	279	26	660	7½	191	627	284	707	321	611	277	122	55
8	22¾	578	11¼	286	11¼	286	9	229	1201	545	1307	593	1419	644	247	112
10	28	711	12½	318	12½	318	10¼	260	2003	909	2073	940	2466	1119	370	168

†Dimension required for screen removal. ❖Quarter-turn (QT) valve dimensions.
††Service clearance for check assembly from center.

Series LF007 / 007
Double Check Valve Assemblies

Sizes: ½" – 3" (15 – 80mm)

LF007M3QT

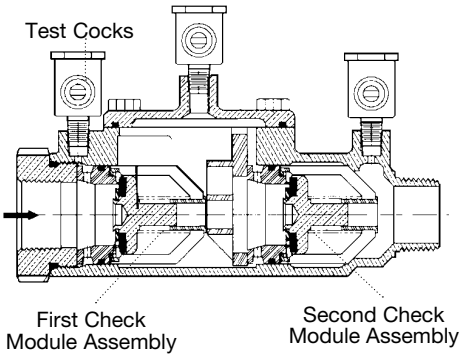
Features

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

Pressure-Temperature

½" – 2" (15 – 50mm)
Temperature Range: 33°F – 180°F (0.5°C – 82°C).
Maximum Working Pressure: 175psi (12.1 bar).

2½" – 3" (65 – 80mm)
Temperature Range: 33°F – 110°F (0.5°C – 43°C) continuous, 140°F (60°C) intermittent.
Maximum Working Pressure: 175psi (12.1 bar).



LF007

LEAD FREE

Series LF007 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. The LF007 features Lead Free* construction to comply with Lead Free* installation requirements.

Check with local authority having jurisdiction regarding vertical orientation, frequency of testing or other installation requirements.

The valve shall meet the requirements of ASSE Std. 1015 and AWWA Std. C510. Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.

Materials

Sizes: ½" – 2" (15 – 50mm)
- Lead Free* cast copper silicon alloy body construction
- Top mounted Lead Free* ball valve test cocks

Sizes: 2½" – 3" (65 – 80mm)
- Fused epoxy coated cast iron body

Models

Sizes: ½" – 2" (15 – 50mm)
Suffix:
S – copper silicon alloy strainer
LF – without shutoff valves
Prefix:
U – Union connections

Sizes: 2½" – 3" (65 – 80mm)
Suffix:
NRS – non-rising stem resilient seated gate valves
OSY – UL/FM outside stem and yoke resilient seated gate valves
LF – without shutoff valves
QT-FDA – FDA epoxy coated quarter-turn ball valves

Approvals

† ASSE, AWWA, IAPMO, CSA, UPC
▲ Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
• Models with suffix LF and S are not listed.
◆ UL Classified (without shutoff valves only) ¾" – 2" (except 007M3LF)
◆ UL Classified with OSY gate valves (2½" and 3" horizontal only.)
▼ ½" - 2" models Lead Free* with strainer
Horizontal and vertical "flow up" approval on all sizes

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

For additional information, request literature ES-LF007 and ES-007.
See Flow Charts on p. 73

007

For Use in Non-Potable Applications

Series 007 are designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as irrigation, fireline, or industrial processing.

Materials

- Cast bronze body construction – ½" – 2" (15 – 50mm)
- Top mounted ball valve test cocks

Models

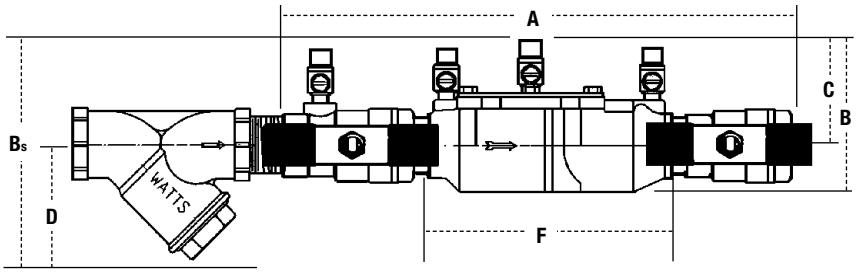
Sizes: ½" – 2" (15 – 50mm)
Suffix:
S – bronze strainer
LF – without shutoff valves
SH – stainless steel ball valve handles
HC – 2½" inlet/outlet fire hydrant fittings (2" valve)
Prefix:
U – Union connections

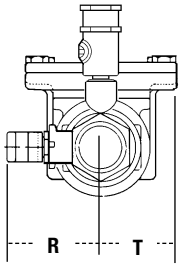
Sizes: 2½" – 3" (65 – 80mm)
Suffix:
NRS – non-rising stem resilient seated gate valves
OSY – UL/FM outside stem and yoke resilient seated gate valves
LF – without shutoff valves
QT-FDA – FDA epoxy coated quarter-turn ball valves

Approvals

† ASSE, AWWA, IAPMO, CSA, UPC
▲ Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
• Models LF and S are not listed.
◆ UL Classified (LF models only) ¾" – 2" (except 007M3LF)
◆ UL Classified with OSY gate valves (2½" and 3" horizontal only.) Horizontal and vertical "flow up" approval on all sizes

Dimensions – Weights





Subscript 'S' = strainer model

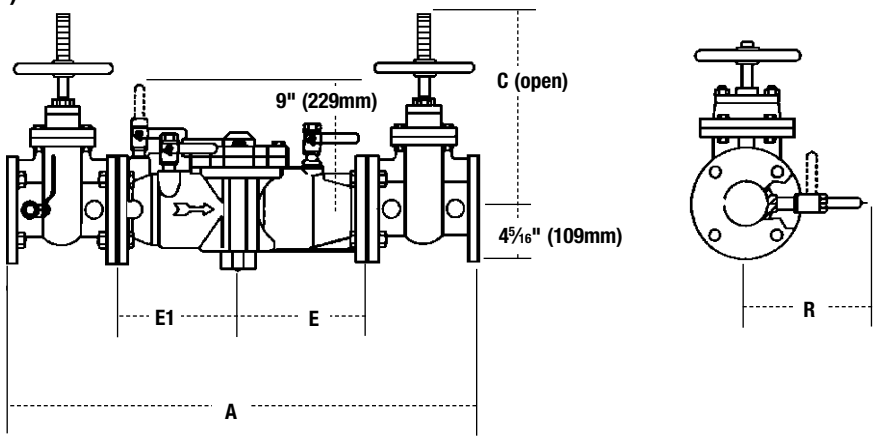
LF007 / 007 (½" – 2")

MODEL		SIZE	DIMENSIONS																WEIGHT	
			A		B		C		D		F		G		R		T			
		in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
†▲▼ LF007QT	†▲ 007QT	½	10	254	4⅝	117	2 7/16	62	—	—	5	127	3⅜	85	2 5/16	59	2 1/16	52	4.5	2
†▲▼ LF007M3QT	†▲ 007M3QT	¾	11⅛	282	4	102	3⅛	79	—	—	6 3/16	157	3 7/16	87	2⅛	54	1 15/16	33	5	2.3
†▲▼ LF007M1QT	†▲ 007M1QT	1	13¼	337	5⅛	130	4	102	—	—	7½	191	3⅜	85	1 11/16	43	1 11/16	43	12	5.4
†▲▼ LF007M2QT	†▲ 007M2QT	1¼	16⅜	416	5	127	3 5/16	84	—	—	9½	241	5	127	3	76	2	50	15	6.8
†▲▼ LF007M2QT	†▲ 007M2QT	1½	16¾	425	4⅞	124	3½	89	—	—	9¾	248	5 13/16	148	3⅛	79	2 1/16	68	15.9	7.2
†▲▼ LF007M1QT	†▲ 007M1QT	2	19½	495	6¼	159	4	102	—	—	13⅜	340	6⅛	156	3 7/16	87	2 1/16	68	25.7	11.7
•▼ LF007QT-S	• 007QT-S	½	13	330	6	152	2 7/16	62	3	76	5	127	3⅜	85	2 5/16	59	2 1/16	52	5.5	2.5
•▼ LF007M3QT-S	• 007M3QT-S	¾	14½	368	6⅛	156	3⅛	79	3	76	6 3/16	157	3 7/16	87	2⅛	54	15/16	33	6.7	3.1
•▼ LF007M1QT-S	• 007M1QT-S	1	17 15/16	157	7¾	197	4	102	3¼	83	7½	191	3⅜	85	1 11/16	43	1 11/16	43	14	6.4
•▼ LF007M2QT-S	• 007M2QT-S	1¼	21½	546	7 1/16	179	3 5/16	84	3½	83	9½	241	5	127	3	76	2	50	19	8.6
•▼ LF007M2QT-S	• 007M2QT-S	1½	25 1/16	637	7 1/16	179	3½	89	3¾	95	9¾	248	5 13/16	148	3⅛	79	2 1/16	68	19.6	8.9
•▼ LF007M1QT-S	• 007M1QT-S	2	27¼	692	8¾	222	4	102	4	102	13⅜	340	6⅛	156	3 7/16	87	2 1/16	68	33.5	15.2

cont.

Dimensions – Weights continued

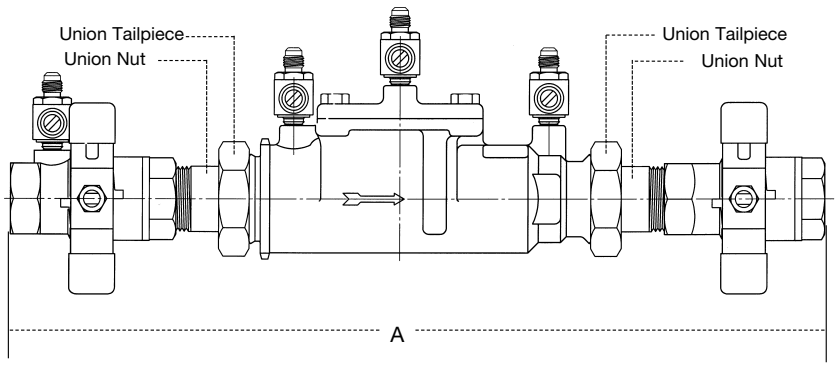
Sizes: 2½" – 3" (65 – 80mm)



LF007

MODEL		SIZE	DIMENSIONS								WEIGHT	
			A		B		E, E1		R			
		in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
LF007QT-FDA	007QT-FDA	2½	33⅛	841	6⅜	162	9¹⁄₁₆	230	8¾	222	155	70
▲ LF007-NRS	007-NRS	2½	33⅛	841	9⅜	238	9¹⁄₁₆	230	8¾	222	155	70
▲◆ LF007-OSY	007-OSY	2½	33⅛	841	16⅜	416	9¹⁄₁₆	230	8¾	222	158	72
LF007-QT-FDA	007-QT-FDA	3	33⅛	867	6⅜	162	9¹⁄₁₆	230	8¾	222	155	70
▲ LF007-NRS	007-NRS	3	33⅛	867	10¼	260	9¹⁄₁₆	230	8¾	222	185	84
▲◆ LF007-OSY	007-OSY	3	33⅛	867	18⅞	479	9¹⁄₁₆	230	8¾	222	185	84

Sizes: ½" – 2" (15 – 50mm)



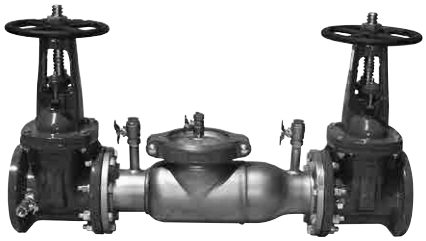
LFU007 / U007

MODEL		SIZE	DIMENSIONS	
			A	
		in.	*in.*	*mm*
LFU007QT	U007QT	½	12¹³⁄₁₆	326
LFU007M2QT	U007M2QT	¾	13¹³⁄₁₆	350
LFU007M2QT	U007M2QT	1	16⅝	422
LFU007M2QT	U007M2QT	1¼	20¾	527
LFU007M2QT	U007M2QT	1½	21½	546
LFU007M1QT	U007M1QT	2	24½	622

For additional information, request literature ES-LF007 and ES-007.
See Flow Charts on p. 73

Series 774
Double Check Valve Assemblies

Sizes: 2½" – 12" (65 – 300mm)



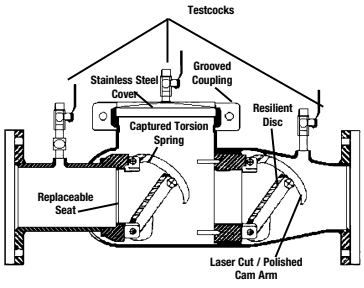
774 OSY

Features

- 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

Pressure-Temperature

Temperature Range: 33ºF – 110ºF (0.5ºC – 43ºC) continuous
Maximum Working Pressure: 175psi (12.1 bar)



774

LEAD FREE Series 774 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. Features short end-to-end dimensions, light weight stainless steel body, and the lowest head loss available.

Materials

- All internal metal parts: 300 Series stainless steel
- Main valve body: 300 Series stainless steel
- Check assembly: Noryl®
- Flange dimension in accordance with AWWA Class D

Models

Suffix:
NRS – non-rising stem resilient seated gate valves
OSY – UL/FM resilient seated outside stem & yoke 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

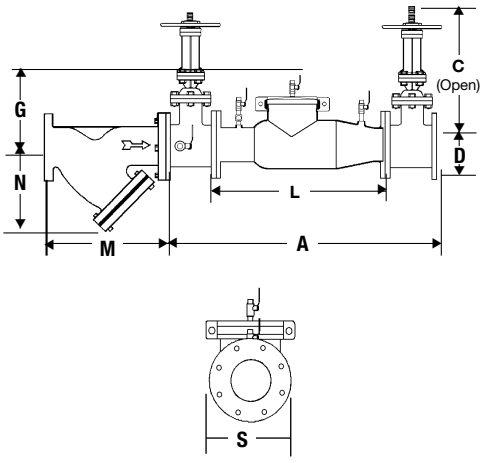
Available with grooved NRS gate valves - consult factory**
Post indicator plate and operating nut available - consult factory**
****Consult factory for dimensions**

Approvals

1015 | Approved (4" - 10" OSY only) | (OSY only)

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

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**



774

SIZE	DIMENSIONS																		WEIGHT			
	A		C (open) OSY		C (open) NRS		D		G		L		M		N Screen Removal		S		w/Gates		w/o Gates	
in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.
2½	38	965	16⅜	416	9⅜	238	3½	89	10	254	22	559	10	254	6½	165	7	178	140	64	53	24
3	38	965	18⅞	479	10¼	260	3¾	95	15	381	22	559	10⅛	257	7	178	7½	191	215	98	55	25
4	40	1016	22¾	578	12⅜₁₆	310	4½	114	10	254	22	559	12⅛	308	8¼	210	9	229	225	102	58	26
6	48½	1232	30⅛	765	16	406	5½	140	15	381	27½	699	18½	470	13½	343	11	279	375	170	105	48
8	52½	1334	37¾	959	19¹⁵⁄₁₆	506	6¾	171	15	381	29½	749	21⅝	549	15½	394	13½	343	561	254	169	77
10	55½	1410	45¾	1162	23¹³⁄₁₆	605	8	200	15	381	29½	749	26	660	18½	470	16	406	763	346	179	81
12	57½	1461	53⅛	1349	26¾	679	9½	241	15	381	29½	749	29⅞	759	21¾	552	19	483	1033	469	209	95

Series LF719 / 719
Double Check Valve Assemblies

Sizes: ½" – 2" (15 – 50mm)

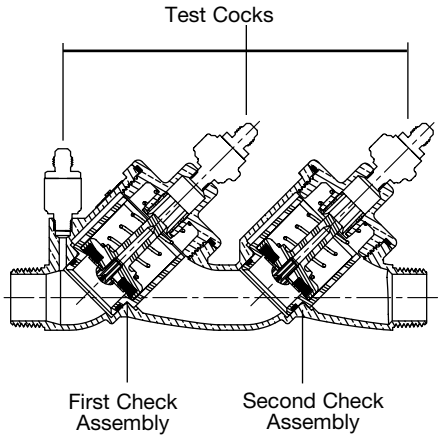
LF719QT/719QT

Features

- 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" have Tee handles
- No special tools required for servicing
- Plastic on plastic check guiding reduces potential binding due to mineral deposits

Pressure-Temperature

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



LF719

LEAD FREE

Series LF719 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. The LF719 features Lead Free* construction to comply with Lead Free* installation requirements. Series LF719 meets the requirements of ASSE Std. 1015 and AWWA Std. C510.

Materials

- Body: Lead Free* cast copper silicon alloy
- Elastomers: Chloramine resistant silicone and EPDM
- Check seats: PPO
- Disc Holder: PPO

Models

Suffix:
S – bronze strainer
QT – quarter-turn ball valves

Approvals

ASSE 1015 · UPC · CSA C US · NSF Certified to NSF/ANSI 61-G

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

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

719

For Use in Non-Potable Applications

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 for non-potable service applications such as irrigation, fireline, or industrial processing.

Materials

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

Models

Suffix:
S – bronze strainer
LF – without shutoff valves
SH – stainless steel ball valve handles
HC – 2½" inlet/outlet fire hydrant fittings (2" valve)
QT – quarter-turn ball valves

Approvals

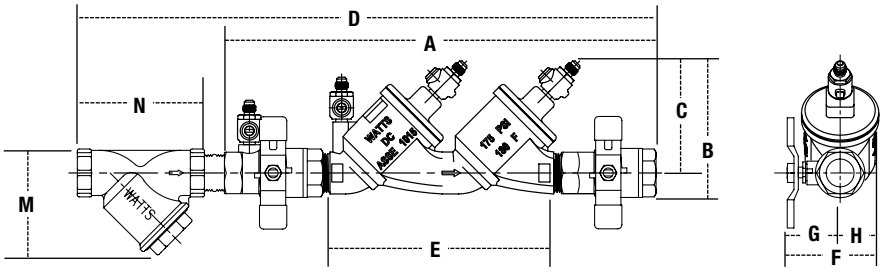
ASSE 1015 · UPC · CSA C US

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

C&T – testcock caps and tethers
AQT – street elbows with quarter-turn ball valves
Prefix:
U – union connections

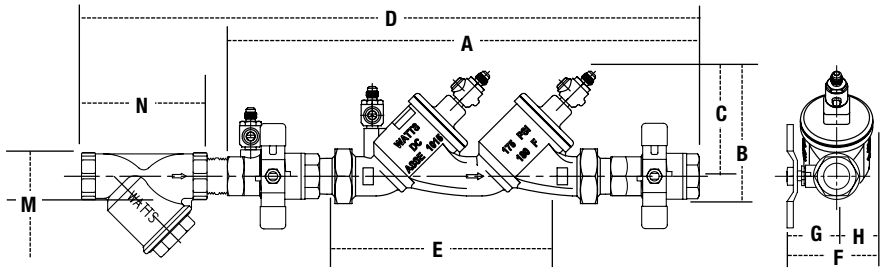
For additional information, request literature ES-LF719 and ES-719.
See Flow Charts on p. 78

Dimensions – Weights



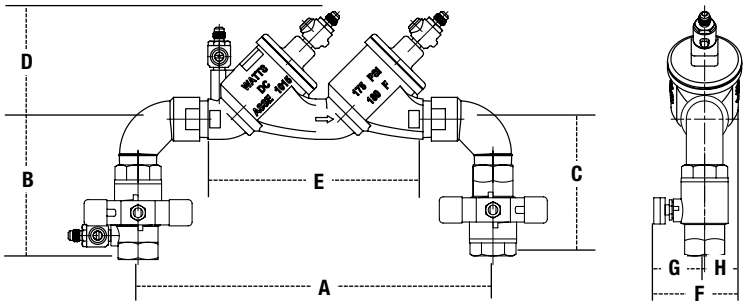
LF719QT, LF719QT-S / 719QT, 719QT-S

SIZE	DIMENSIONS																STRAINER				WEIGHT			
	A		B		C		D		E(LF)		F		G		H		M		N		719QT		719QT-S	
in.	*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	9 9/16	242	3 1/16	94	2 5/16	73	12 9/16	318	5 13/16	147	2 7/16	62	1 11/16	43	¾	19	1⅜	35	2¾	70	2.8	1.3	3.8	1.7
¾	12⅛	307	4¼	108	3½	88	15 7/16	393	7 11/16	195	3⅛	79	2 1/16	52	1 1/16	27	1⅝	41	3 3/16	81	4.7	2.1	6.4	2.9
1	14 13/16	376	4 9/16	116	3⅜	98	19½	495	9⅝	244	3¾	95	2 7/16	62	1 5/16	33	2⅛	54	3¾	95	7.4	3.4	9.4	4.3
1¼	18 15/16	480	6⅛	156	5⅛	129	24 1/16	610	11 11/16	297	4¼	108	2⅝	67	1⅝	41	2½	64	4 7/16	113	14.0	6.3	18.0	8.1
1½	18 15/16	480	6⅛	156	5⅛	129	25¼	640	11 11/16	297	4¾	121	3⅛	79	1⅝	41	3	76	4⅞	124	16.1	7.3	19.9	9.0
2	21 3/16	538	7 1/16	179	5⅝	142	28 15/16	735	13⅜	340	5⅜	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	DIMENSIONS																STRAINER DIMENSIONS				WEIGHT			
	A		B		C		D		E (LF)		F		G		H		M		N		U719QT		U719QT-S	
in.	*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 13/16	402	4 9/16	116	3⅞	98	18 13/16	478	11⅜	289	3	76	1 11/16	43	1 5/16	33	1⅜	35	2¾	70	7.4	3.4	8.4	3.8
¾	16¼	412	4 9/16	116	3⅞	98	19⅝	498	11 5/16	287	3⅜	86	2 1/16	52	1 5/16	33	1⅝	41	3 3/16	81	7.9	3.6	9.7	4.4
1	17 5/16	439	4 9/16	116	3⅞	98	22	558	11¾	297	3¾	95	2 7/16	62	1 5/16	33	2⅛	54	3¾	95	8.9	4.0	10.9	5.0
1¼	20⅞	530	6⅛	156	5⅛	129	26	660	15⅜	390	4¼	108	2⅝	67	1⅝	41	2½	64	4 7/16	113	17.6	8.0	21.6	9.8
1½	21 9/16	547	6⅛	156	5⅛	129	27⅞	708	15⅜	390	4¾	121	3⅛	79	1⅝	41	3	76	4⅞	124	19.8	9.0	23.5	10.7
2	24 7/16	621	7 1/16	179	5⅝	142	32 3/16	817	16¾	425	5⅜	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



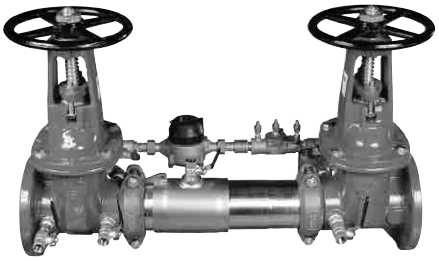
719AQT

SIZE	DIMENSIONS																WEIGHT	
	A		B		C		D		E (LF)		F		G		H			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
½	7⅞	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	13 7/16	340	4 13/16	121	4 9/16	116	3½	98	7 11/16	195	3⅛	79	2 1/16	52	1 1/16	27	5.7	2.6
1	12 11/16	322	5	127	4⅜	110	3⅞	98	9⅝	244	3¾	95	2 7/16	62	1 5/16	33	8.9	4.0
1¼	15 3/16	386	5 11/16	144	5 11/16	144	5⅛	129	11 11/16	297	4¼	108	2⅝	67	1⅝	41	15.7	7.1
1½	15 13/16	401	6 3/16	156	6 3/16	156	5⅛	129	11 11/16	297	4¾	121	3⅛	79	1⅝	41	18.4	8.3
2	17 3/8	441	6⅝	168	6 9/16	167	5⅝	142	13⅜	340	5⅜	137	3 7/16	87	1 15/16	49	29.0	13.1

Series LF757DCDA / 757DCDA / 757NDCDA/ LF757NDCDA

Double Check Detector Assemblies

Sizes: 2½" – 10" (65 – 250mm)



LF757DCDA

757NDCDAOSY

Features

- Extremely compact design
- 70% lighter than traditional designs
- 304 (Schedule 40) stainless steel housing & sleeve
- Groove fittings allow integral pipeline adjustment
- Unmatched ease of serviceability
- Available with grooved butterfly valve shutoffs
- May be used for horizontal, vertical or N pattern installations
- Replaceable check disc rubber

Pressure-Temperature

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

Models

Suffix:

OSY – UL/FM outside stem and yoke resilient seated gate valves
BFG – UL/FM grooved gear operated butterfly valves with tamper switch
****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

LF757DCDA / LFN757DCDA

LEAD FREE

Series LF757DCDA Double Check Detector Assemblies are used to prevent backflow of non-health hazard pollutants that are objectionable but not toxic, from entering the potable water supply system. The LF757DCDA may be installed under continuous pressure service and may be subjected to backpressure and backsiphonage. Series LF757DCDA is used primarily on fire line sprinkler systems when it is necessary to monitor unauthorized use of water.

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

Approvals

ASSE 1048 · CSA B64.5 · FM Approved · cULus Classified · NSF Certified to NSF/ANSI 372 (BFG & OSY only)

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

757DCDA/757NDCDA

For Use in Non-Potable Applications

Series 757DCDA, 757NDCDA Double Check Detector Assemblies are designed to prevent backflow on non-health hazard pollutants that are objectionable but not toxic to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as irrigation, fireline, or industrial processing.

Materials

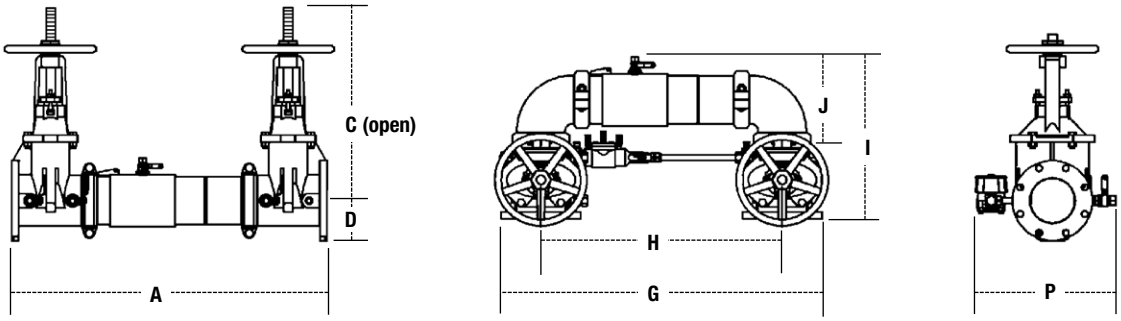
- Housing & Sleeve: 304 (Schedule 40) Stainless Steel
- Elastomers: EPDM, Silicone and Buna-N
- Tri-link Checks: Noryl®, Stainless Steel
- Check Discs: Reversible Silicone or EPDM
- Test Cocks: Bronze Body Nickel Plated
- Pins & Fasteners: 300 Series Stainless Steel
- Springs: Stainless Steel

Approvals

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

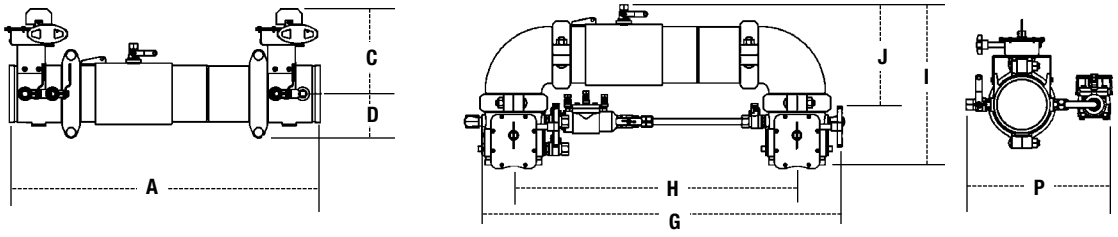
For additional information, request literature ES-LF757DCDA and ES-757DCDA.

See Flow Charts on p.80.



LF757DCDA, LF757NDCDA / 757DCDA , 757NDCDA

SIZE	DIMENSIONS																WEIGHT			
	A		C (OSY)		D		G		H		I		J		P		757DCDA/ LF757DCDA		757NDCDA/ LF757DCDA	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	31	787	16⅜	416	3½	89	29 1/16	738	21½	546	15½	393	8 13/16	223	13 3/16	335	139	63	147	67
3	31 11/16	805	18⅞	479	3 11/16	94	30¼	768	22¼	565	17⅛	435	9 3/16	233	14½	368	159	72	172	78
4	33½	851	22¾	578	4	102	33	838	23½	597	18½	470	9 15/16	252	15 3/16	386	175	79	198	90
6	44	1118	30⅛	765	5½	140	44¾	1137	33¾	857	23 3/16	589	13 1/16	332	19	483	309	140	350	159
8	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	57½	1461	45¾	1162	8 3/16	208	66	1676	50	1270	32½	826	17 5/16	440	24	610	795	361	965	438



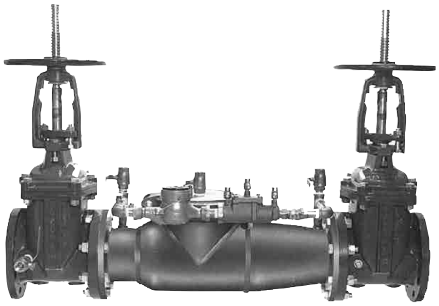
LF757DCDABFG , LF757NDCDABFG / 757DCDABFG , 757NDCDABFG

SIZE	DIMENSIONS																WEIGHT			
	A		C		D		G		H		I		J		P		757DCDABFG LF757DCDABFG		757NDCDA BFG LF757NDCDA BFG	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	27½	698	8	203	3½	89	29⅞	759	21½	546	14 15/16	379	8 13/16	223	13	330	70	32	78	35
3	28	711	8 5/16	211	3 11/16	94	30 11/16	779	22¼	565	15 7/16	392	9 3/16	233	13½	343	68	31	81	37
4	28¾	730	8 15/16	227	3 11/16	94	31 15/16	811	23½	597	16¼	412	9 15/16	252	14	356	75	34	98	44
6	37	940	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	43½	1105	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

Series 774DCDA

Double Check Detector Assemblies

Sizes: 2½" – 12" (65 – 300mm)



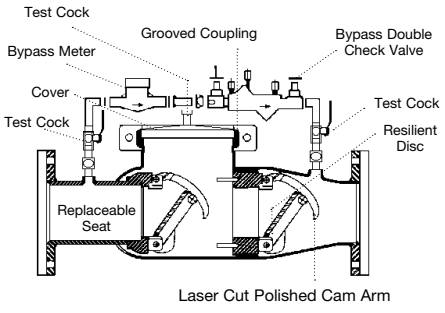
774DCDAOSY

Features

- 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" bronze meter (gpm or cfm)
- Detects underground leaks and unauthorized water use
- May be installed horizontal or vertical "flow up" position

Pressure-Temperature

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



774DCDA

Series 774DCDA Double Check Detector Assemblies are designed to protect drinking water supplies from non-health hazard dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as irrigation, fireline, or industrial processing.

Materials

- All internal metal parts: 300 Series stainless steel
- Main valve body: 300 Series stainless steel
- Check assembly: Noryl® Flange dimensions in accordance with AWWA Class D.

Models

Suffix:
LF – without shutoff 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
CFM – cubic feet per minute meter
GPM – gallons per minute meter

Available with grooved NRS gate valves - consult factory*
Post indicator plate and operating nut available - consult factory*
***Consult factory for dimensions**

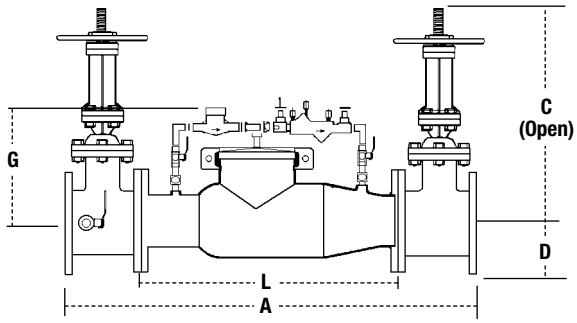
Approvals

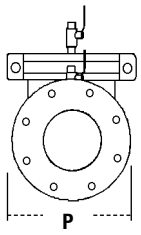
ASSE 1048
CLASSIFIED c UL us (OSY only)
FM Approved

(2½" - 10" only)

For additional information, request literature ES-774DCDA.
See Flow Charts on p.82.

Dimensions — Weights





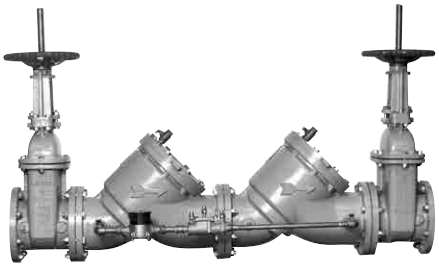
774DCDA

SIZE	DIMENSIONS														WEIGHT	
	A		C (OSY)		D		G		L		P		w/Gates		w/o Gates	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	38	965	16⅜	416	3½	89	10	250	22	559	12½	318	155	70	68	31
3	38	965	18⅞	479	3¾	95	10	250	22	559	13	330	230	104	70	32
4	40	1016	22¾	578	4½	114	10	250	22	559	14½	368	240	109	73	33
6	48½	1232	30⅛	765	5½	140	15	381	27½	699	15½	394	390	177	120	54
8	52½	1334	37¾	959	6¾	171	15	381	29½	749	18¼	464	572	259	180	82
10	55½	1410	45¾	1162	8	200	15	381	29½	749	19½	495	774	351	190	86
12	57½	1461	53⅛	1349	9½	241	15	381	29½	749	21	533	1044	474	220	100

Series 709DCDA

Double Check Detector Assemblies

Sizes: 3" – 10" (80 – 250mm)



709DCDAOSY

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" bronze meter
- No special tools required for servicing

Pressure-Temperature

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

709DCDA

Series 709DCDA Double Check Detector Assemblies are designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as irrigation, fireline, or industrial processing.

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.
- 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, ⅝" x ¾" meter and ball type test cocks.

Materials

- Body: Epoxy coated cast iron
- Seat: Bronze
- Disc Holder: Bronze
- Trim: Stainless steel
- Check Valve Discs: Rubber
- Test Cocks: Bronze

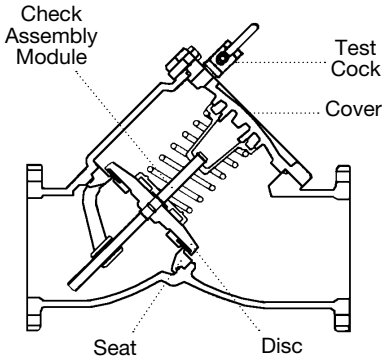
Models

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

Approvals

B.64 1048

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



For additional information, request literature ES-709DCDA.
See Flow Charts on p.77-78.

Series 007DCDA
Double Check Detector Assemblies

Sizes: 2½" – 3" (65 – 80mm)

007DCDA

Features

- Fused epoxy coated cast iron unibody 2½" – 3"
- Replaceable 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" meter

Pressure-Temperature

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

007DCDA

Series 007DCDA Double Check Detector Assemblies are designed exclusively for use in accordance with water utility authority on 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, ⅝" x ¾" meter.

Materials

- Body: Epoxy coated cast iron
- Seats: Bronze or Stainless steel
- Discs: Silicone
- Springs: Stainless steel
- Meter: Bronze

Models

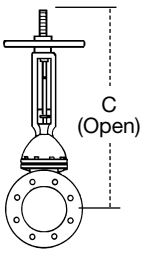
Suffix:
CFM - cubic feet per minute meter
GPM - gallons per minute meter

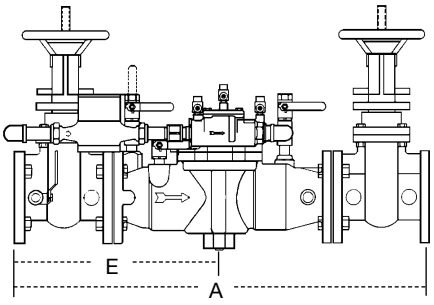
Approvals

ASSE 1048 (OSY only)

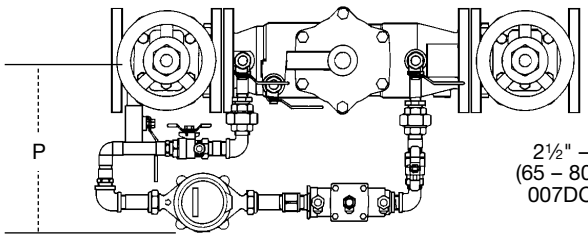
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. 2½" 007DCDA approved for horizontal and vertical upward flow position. 3" 007DCDA approved for horizontal only.

Dimensions — Weights





007DCDA

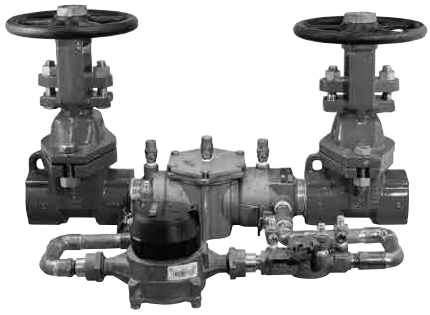


SIZE	DIMENSIONS								WEIGHT	
	A		C		E		P			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	33¼	845	16⅜	416	16⅜	416	12⁵⁄₁₆	313	164	74
3	34¼	870	18⅞	479	16⅝	422	12⁵⁄₁₆	313	196	89

Series 007M1DCDA

Residential Fire Sprinkler
Double Check Detector Backflow Prevention Assembly

Sizes: 2" (50mm)



007M1DCDA-OSY-GPM

Features

Main Valve

- Compact Design for Ease of Installation
- Inline Serviceable Assembly
- No Special Tools Required for Servicing
- Captured Modular Spring Loaded Checks
- Field Replaceable Seats & Discs
- Field Replaceable Auxiliary Bypass Line & Components

Auxiliary Bypass

- Compact Bypass Design; Remains within Main Valve Assembly Profile
- Inline Serviceable 1⁄2" Backflow Assembly
- No Special Tools Required for Servicing
- Captured Modular Spring Loaded Checks
- Field Replaceable Seats & Discs
- Detect Potential Underground Water Leaks
- Detect Unauthorized Water Usage

Pressure Specification

- Max. Working Pressure: 175psi
- Min. Working Pressure: 10psi
- Hydrostatic Test Pressure: 350psi
- Hydrostatic Safety Pressure Rating: 700psi

Temperature Specifications

- Continuous Operating Range: 33°F-110°F (0.5°C-43°C)
- Intermittent Operating Range up to 140°F (60°C)

Must not exceed 12 hour duration

007M1DCDA

The Model 007M1DCDA Double Check Detector Assembly is designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as irrigation, fireline, or industrial processing. Protects against backpressure and back siphonage (i.e. pollutants) in non-health hazard applications in accordance with local governing water utility code.

Materials

- Body: Cast Bronze ASTM B584
- Elastomers: Silicone
- O-Rings: EPDM
- Check Modules: Engineered Plastics

Configurable Options

(Prefix – Suffix)

Suffix

OSY – UL/FM Approved OS&Y Gate Valves (ANSI/AWWA C515 Compliant)

CFM – Cubic Feet per Minute ⅝"x¾" Water Meter (ANSI/AWWA C700 Compliant)

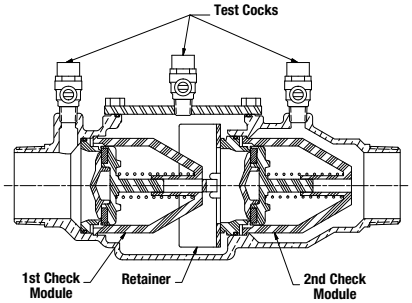
GPM – Gallon per Minute ⅝"x¾" Water Meter (ANSI/AWWA C700 Compliant)

LF – Less Shutoff valves; This is **NOT** an APPROVED ASSEMBLY

Approvals

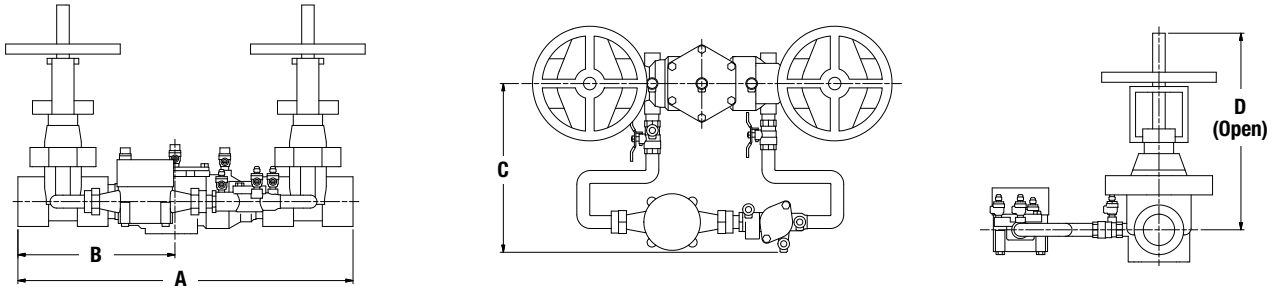
1048 (OSY only)

Approved by the Foundation for Cross-Connection Control and Hydraulic Research at The University of Southern California (FCCCHR-USC)
ASSE 1048 Listed
UL Classified (US & Canada)
FM Approved
IAPMO/cUPC
AWWA Standard C510 Compliant
NFPA 13, 14, 15, 16, 20, 22 & 24 Compliant
End Connections OS&Y Gate Valves – Compliant to ASME B16.1 Class 125 & AWWA Class D Flange



For additional information, request literature ES-007M1DCDA.
See Flow Charts on p. 73.

Dimensions — Weights



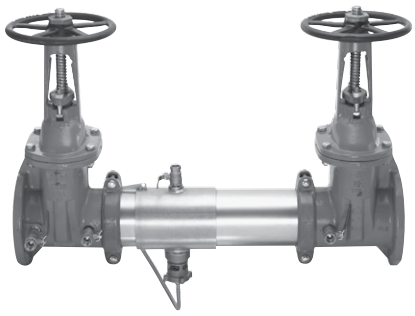
007M1DCDA

MODEL	SIZE	DIMENSIONS								WEIGHT	
		A		B		C		D			
	in..	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
007M1DCDA-0SY	2	22⅝	575	10⁹⁄₁₆	268	11¹³⁄₁₆	300	13½	343	85	38.6

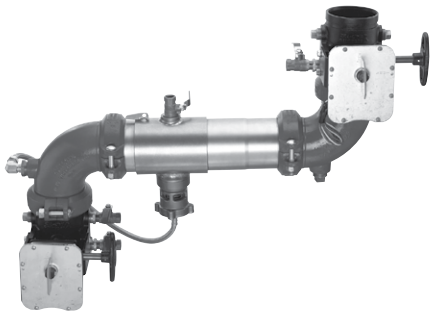
Series 957 / 957N / 957Z

Reduced Pressure Zone Assemblies

Sizes: 2½" – 10" (65 – 250mm)



957OSY



957ZBFG

Features

- 2½", 3" and 4" sizes available with quarter-turn ball valve shutoffs
- Replaceable check disc rubber
- Extremely compact design
- 70% Lighter than traditional designs
- 304 (Schedule 40) stainless steel housing & sleeve
- Groove fittings allow integral pipeline adjustment
- Patented torsion spring checks provide lowest pressure loss
- Unmatched ease of serviceability
- Bottom mounted cast stainless steel relief valve
- Available with grooved butterfly valve shutoffs

Pressure-Temperature

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

957 / 957N / 957Z

LEAD FREE 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.

Materials

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

Approvals

ASSE 1013 · CSA B64.4 · FM Approved (BFG & OSY only) · cULus Classified · NSF Certified to NSF/ANSI 61-G

Available Models

Suffix:

NRS – non-rising stem, resilient seated gate valves

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

BFG – UL/FM grooved gear operated butterfly valves with tamper switch

QT – 2½" - 4" (65 - 100mm) quarter-turn ball valves

****OSY FxG** – Flanged inlet gate connection and grooved outlet gate connection

****OSY GxF** – Grooved inlet gate connection and flanged outlet gate connection

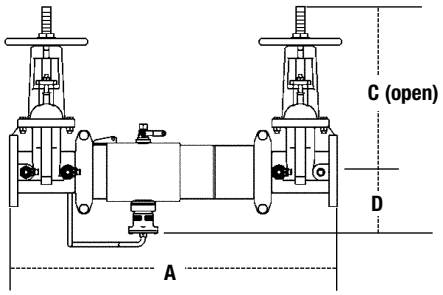
****OSY GxG** – Grooved inlet gate connection and grooved outlet gate connection

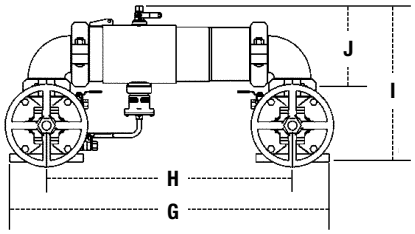
Available with grooved NRS gate valves - consult factory**
Post indicator plate and operating nut available - consult factory**
****Consult factory for dimensions**

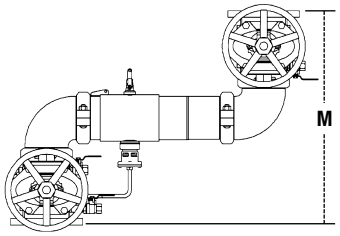
For additional information, request literature ES-957-957N-957Z.

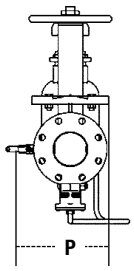
See Flow Charts on p.86.

Dimensions — Weights



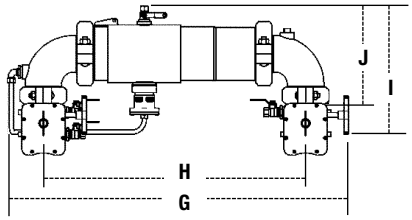


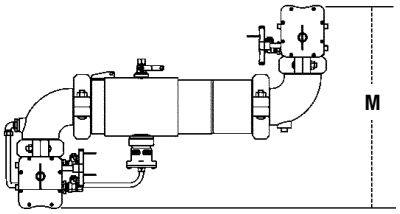


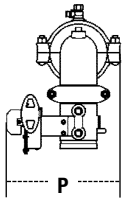


957

SIZE	DIMENSIONS																WEIGHT					
	A		C (OSY)		C (NRS)		D		G		H		I		J		M		P		957NRS		957OSY		957N NRS		957N OSY	
in.	*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	31	787	16⅜	416	9⅜	238	6½	165	29 1/16	738	21½	546	15½	393	8 13/16	223	21 9/16	548	9 3/16	234	118	54	128	58	126	57	136	62
3	31 11/16	805	18⅞	479	10¼	260	6 11/16	170	30¼	768	22¼	565	17⅛	435	9 3/16	233	23⅛	587	10½	267	134	61	148	67	147	67	161	73
4	33½	851	22¾	578	12 3/16	310	7	178	33	838	23½	597	18½	470	9 15/16	252	26½	673	11 3/16	284	164	74	164	74	187	85	187	85
6	44	1118	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	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	57½	1461	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

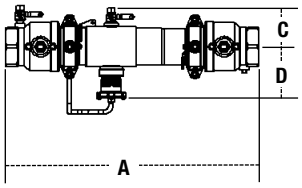


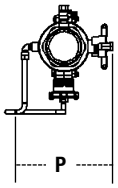


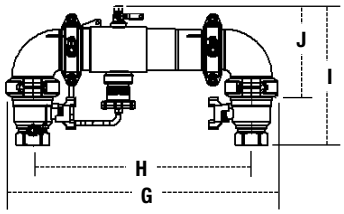


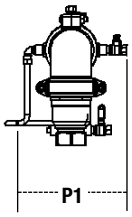
957BFG

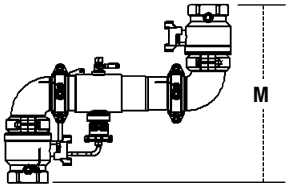
SIZE	DIMENSIONS												WEIGHT	
	G		H		I		J		M		P		957N/957Z	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	32½	826	21½	546	15½	394	9½	241	21 13/16	555	11 13/16	300	67	30
3	34	864	22¼	565	16 5/16	414	10 1/16	256	23⅛	587	12⅛	308	70	32
4	35⅝	905	23½	597	17 3/16	437	10 15/16	279	24 15/16	634	12⅝	321	87	39
6	46½	1181	33¾	857	20½	521	13½	343	28¼	718	15	382	160	73











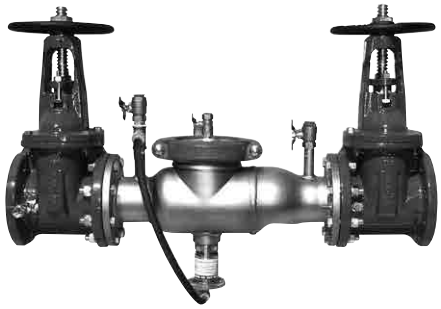
957QT

SIZE	DIMENSIONS																		WEIGHT			
	A		C		D		G		H		I		J		M		P		P1		QT		QTN	
in.	*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	27½	698	4⅞	124	6⅞	175	30¼	768	21½	546	16 1/16	407	11⅜	289	19⅞	505	11 5/16	287	11 5/16	287	46	21	57	26
3	28	711	4⅞	124	6⅞	175	30¼	768	22¼	565	16 9/16	420	11⅜	289	20⅞	531	11 5/16	287	11 5/16	287	56	25	67	30
4	28¾	730	4⅞	124	6⅞	175	30¼	768	23½	597	18 5/16	465	11⅜	289	24⅜	619	11 5/16	287	11 5/16	287	76	34	87	39

Series 994

Reduced Pressure Zone Assemblies

Sizes: 2½" – 10" (65 – 250mm)



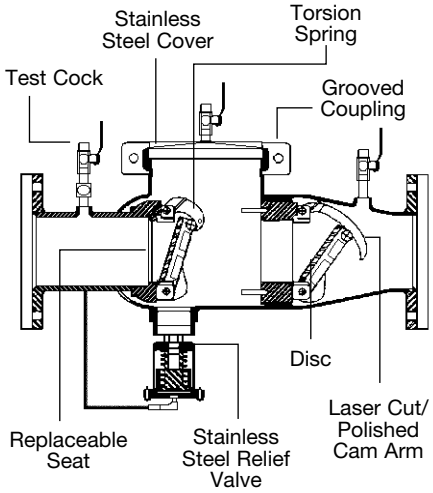
994OSY

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
- 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

Pressure-Temperature

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



994

LEAD FREE 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 a short lay length, lightweight stainless steel body, corrosion resistant stainless steel relief valve, and patented torsion spring check valves.

Materials

- All internal metal parts: 300 Series stainless steel
- Main valve body: 300 Series stainless steel
- Check assembly: Noryl®
- Flange dimension in accordance with AWWA Class D

Available 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

LF – without shutoff valves

S – cast iron strainer

Available with grooved NRS gate valves - consult factory**
Post indicator plate and operating nut available - consult factory**
****Consult factory for dimensions**

Note: The installation of a drain line is recommended. When installing a drain line, a 994AGK-P air gap is necessary. See ES-AG/EL/TC for additional information.

Approvals

1013 B64.5 (OSY only) (2½" – 10", OSY only)

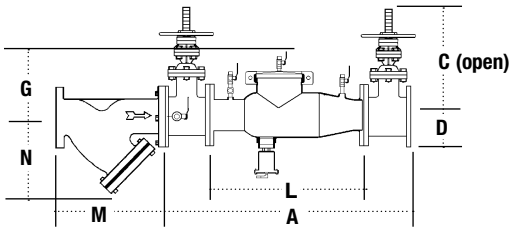
Approved by the Foundation for Cross Connection Control & Hydraulic Research at the University of Southern California Sizes 2½" – 6"

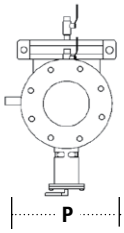
***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

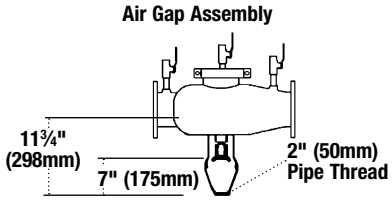
For additional information, request literature ES-994.

See Flow Charts on p. 87.

Dimensions — Weights







Horizontal Air Gap Fitting 2½" – 10"
Model 994 AGK-P

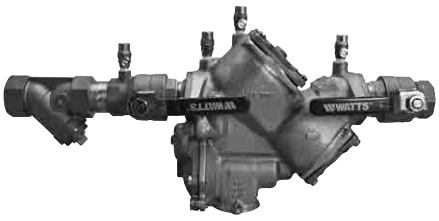
994

SIZE	DIMENSIONS																		WEIGHT	
	A		C (OSY)		C (NRS)		D		G		L		M		N		P		w/Gates	w/o Gates
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs. kgs.*	*lbs. kgs.*
2½	37	940	16⅜	416	9⅜	238	10½	267	10	254	22	559	10	254	6½	165	7	178	148 67	60 27
3	38	965	18⅞	479	10¼	260	10½	267	10	254	22	559	10⅛	257	7	178	7½	191	226 103	62 28
4	40	1016	22¾	578	12 3/16	310	10½	267	10	250	22	559	12⅛	308	8¼	210	9	229	235 107	65 30
6	48½	1232	30⅛	765	16	406	11½	292	15	381	27½	699	18½	470	13½	343	11	279	380 172	110 50
8	52½	1334	37¾	959	19 15/16	506	12½	318	15	381	29½	749	21⅝	549	15½	394	13½	343	571 259	179 81
10	55½	1410	45¾	1162	23 13/16	605	12½	318	15	381	29½	749	26	660	18½	470	16	406	773 351	189 86

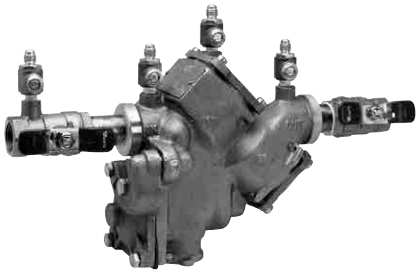
Series LF909

Reduced Pressure Zone Assemblies

LF909 Sizes: ¾", 1" (20, 22mm) / LF909M1 Sizes: 1¼", 1½", 2" (32, 40, 50mm)



LF909



LF909QT

Features

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

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)

Series LF909HW
Temperature Range: 33°F – 210°F
(0.5°C – 99°C)
Maximum Working Pressure: 175psi
(12.1 bar)

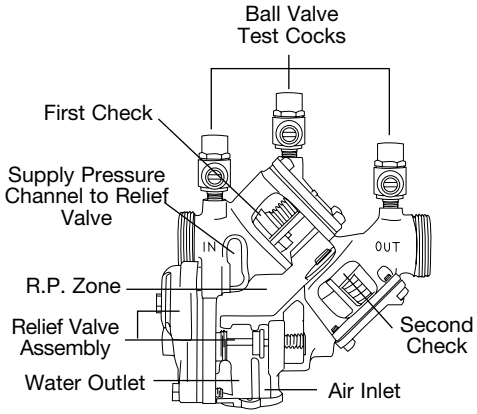
Approvals

Listed by IAPMO
Listed by SBCCI

1013 B64.4

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

Horizontal and vertical "flow-up" approval on ¾" and 1" sizes (model LF909QT)



LF909

LEAD FREE*

Series LF909 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. 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. The LF909 features Lead Free* construction to comply with Lead Free* installation requirements. Model LF909QT, standardly furnished with full port, resilient seated and Lead Free* cast copper silicon alloy ball valve shutoffs. Sizes ¾" and 1" shutoffs have tee handles.

Materials

- Body: Lead Free* Cast Copper Silicon Alloy
- Check Seats: 909 Celcon®
- Relief Valve Seats: Stainless Steel 909HW
- Test Cocks: Lead Free* Cast Copper Silicon Alloy

Models

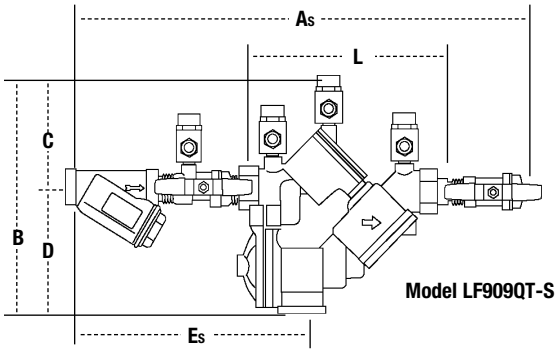
Suffix:
QT — Quarter-turn ball valves
S – Bronze strainer
HW –Stainless steel check modules for hot and harsh water conditions

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

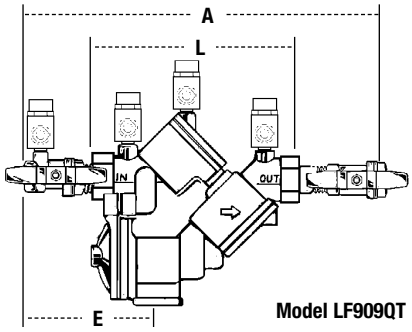
For additional information, request literature ES-LF909 and ES-909.

See Flow Charts on p. 84.

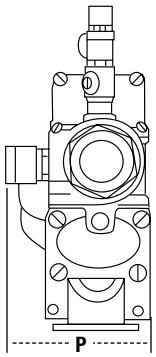
Dimensions — Weights



Model LF909QT-S



Model LF909QT



LF909QT, LF909QT-S

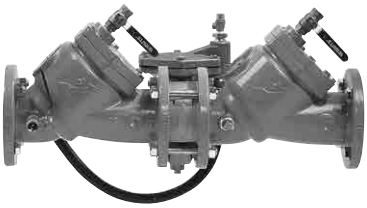
SIZE	DIMENSIONS																		WEIGHT	
	A		As		B		C		D		E		Es		L		P		QT	QT-S
	in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
¾"	14⅜	365	18 1/16	459	8¾	222	4	102	4¾	121	6¾	171	10 3/16	259	7 5/16	186	3⅞	98	14	6.4	15.6	7.1
1"	15⅜	391	19 5/8	498	8¾	222	4	102	4¾	121	7	178	11	279	7 5/16	186	3⅞	98	15	6.8	17.5	7.9
1¼"M1	18½	470	23 7/16	595	11⅝	295	5½	140	6½	165	7½	191	12 3/16	310	10⅜	264	5¼	133	40	18.1	42.8	19.4
1½"M1	19	483	24⅜	619	11⅝	295	5½	140	6½	165	7½	191	12⅝	321	10⅜	264	5¼	133	40	18.1	44.0	20.0
2"M1	19½	495	25 15/16	659	11⅝	295	5½	140	6½	165	7¾	197	13 15/16	354	10⅜	264	5¼	133	40	18.1	47.4	21.5

Subscript 'S' = strainer model

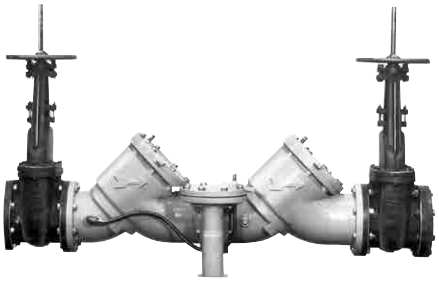
Series LF909

Reduced Pressure Zone Assemblies

Sizes: 2½" – 10" (65 – 250mm)



LF909



LF909OSY

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

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)

Approvals

ASSE 1013 · CSA B64.4 · FM Approved · cULus Classified · NSF

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

LF909

LEAD FREE*

Series LF909 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. With its exclusive relief valve design incorporating the "air-in/water-out" principle, it provides substantially improved relief valve discharge performance during the emergency conditions of combined backsiphonage and backpressure with both checks fouled. The LF909 features Lead Free* construction to comply with Lead Free* installation requirements.

Materials

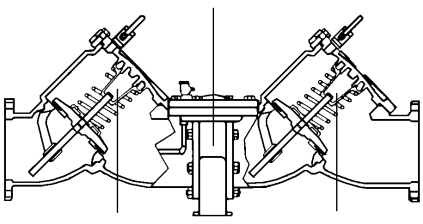
- Check Valve Bodies: FDA epoxy coated cast iron
- Seats: Stainless steel
- Trim: Stainless steel
- Relief Valve Body: 2½"-3" Lead Free* cast copper silicon alloy
  4"-10" FDA epoxy coated cast iron
- Test Cocks: Lead Free* copper silicon alloy

Models

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

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

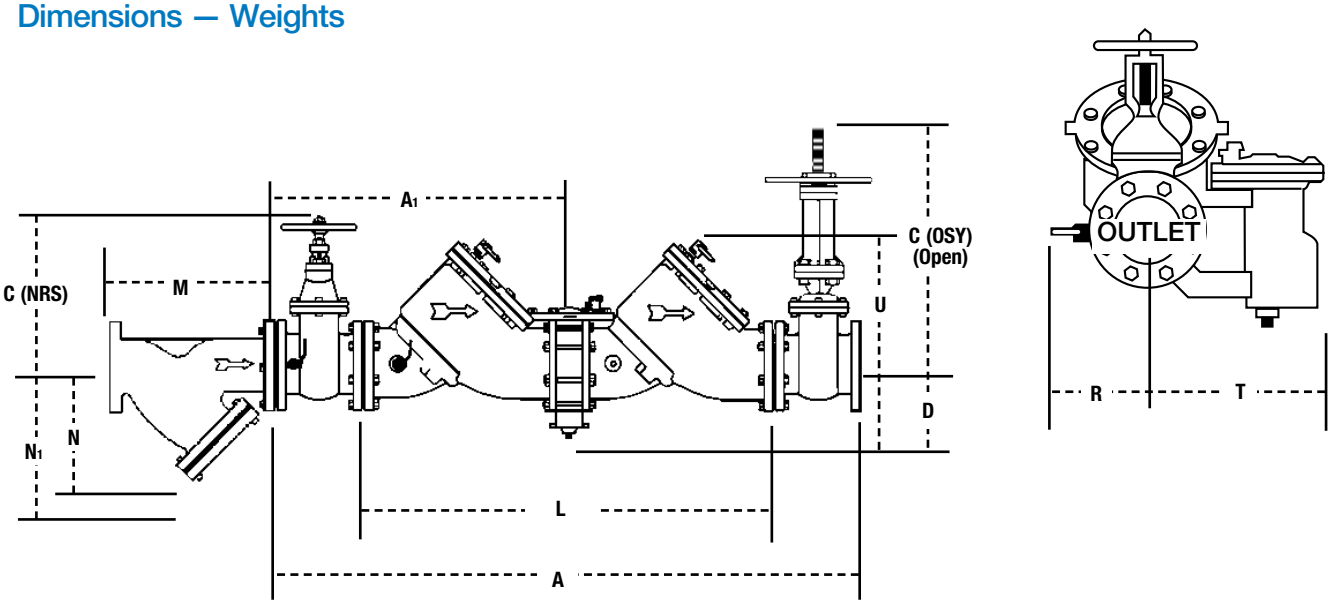
***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**



For additional information, request literature ES-LF909 and ES-909.

See Flow Charts on p. 84.

Dimensions — Weights



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

LF909

SIZE	DIMENSIONS																		WEIGHT					
	A		A1		C clearance for check (OSY)*		C clearance for check (NRS)		D		L		U		R		R (QT)		T		NRS		OSY		QT	
in.	*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	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	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	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	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	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	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	DIMENSIONS						WEIGHT	
	M		N1†		N			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	10	254	10	254	6½	165	28	12.7
3	10⅛	257	10	254	7	178	34	15.4
4	12⅛	308	12	305	8¼	210	60	27
6	18½	470	20	508	13½	343	133	60
8	21⅝	549	22¾	578	15½	394	247	112
10	26	660	28	711	18½	470	370	168

† – Dimension required for screen removal

Series LF009 / 009

Reduced Pressure Zone Assemblies

Sizes: ¼" – 3" (8 – 80mm)

LF009QT

009M2QT

Features

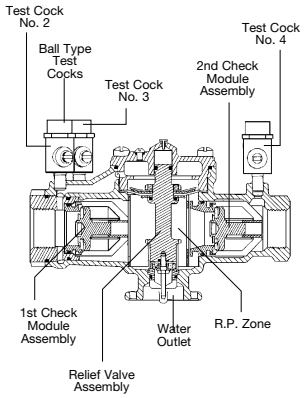
- Single access cover and modular check construction for ease of maintenance
- Top entry - all internals immediately accessible
- Captured springs for safe maintenance
- Internal relief valve for reduced installation clearances
- Replaceable seats for economical repair
- Lead Free* cast copper silicon alloy body construction for durability ¼" – 2"
- Fused epoxy coated cast iron body 2½" and 3"
- Ball valve test cocks — screwdriver slotted ¼" – 2"
- Large body passages provides low pressure drop
- Compact, space saving design
- No special tools required for servicing

Pressure-Temperature

Series LF009: ¼" - 2" (8 – 50mm)
Suitable for supply pressure up to 175psi (12 bar). Water temperature: 33°F – 180°F (0.5° – 75°C).

Series 009: ¼" - 2" (8 – 50mm)
Suitable for supply pressure up to 175psi (12 bar). Water temperature: 33°F – 180°F (0.5° – 75°C).

Sizes: 2½" and 3" (65 – 80mm)
are suitable for supply pressures up to 175psi (12.1 bar) and water temperature at 110°F (43°C) continuous, 140°F (60°C) intermittent.



LF009

LEAD FREE

Series LF009 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 LF009 features Lead Free* construction to comply with Lead Free* installation requirements.

This 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" shutoffs have tee handles.

Materials

¼" – 2" (8 – 50mm)

- Lead Free* cast copper silicon alloy body construction, silicone rubber disc material in the first and second check plus the relief valve. Replaceable polymer check seats for first and second checks. Removable stainless steel relief valve seat. Stainless steel cover bolts.
- Standardly furnished with NPT body connections.
  Model LF009QT furnished with quarter-turn, full port, resilient seated, Lead Free* cast copper silicon alloy body ball valve shutoffs.

2½" and 3" (65 – 80mm)

- FDA approved) Epoxy coated cast iron unibody with plastic seats
- Relief valve with stainless steel seat and trim
- Lead Free cast copper silicon alloy body ball valve test cocks

Approvals

ASSE, AWWA, CSA, IAPMO
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
Approval models QT, PC, NRS, OSY.
UL Classified
2½" and 3" with OSY gate valves.
¾" - 2" without shutoff valves (-LF) (except LF009M3LF)

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

Models

Sizes: ¼" – 2" (8 – 50mm)
Suffix:
QT – quarter-turn ball valves
S – strainer
LF – without shutoff valves
PC – internal polymer coating
Prefix:
U – union connections

Sizes: 2½" – 3" (65 – 80mm)
Suffix:
NRS – non-rising stem resilient seated gate valves
OSY – UL/FM outside stem and yoke resilient seated gate valves
S-FDA – FDA epoxy coated strainer
QT-FDA – FDA epoxy coated quarter-turn ball valves
LF – without shutoff valves

For additional information, request literature ES-LF009 and ES-009.

See Flow Charts on p. 75.

009

For Use in Non-Potable Applications

Series 009 Reduced Pressure Zone Assemblies are designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as irrigation, fireline, or industrial processing.

This 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" shutoffs have tee handles.

Materials

Size: ¼" – 2" (8 – 50mm)

- Bronze body construction, silicone rubber disc material in the first and second check plus the relief valve. Replaceable polymer check seats for first and second checks. Removable stainless steel relief valve seat. Stainless steel cover bolts.
- Standardly furnished with NPT body connections. For optional bronze union inlet and outlet connections, specify prefix U (½" – 2"). Series 009QT furnished with quarter turn, full port, resilient seated, bronze ball valve shutoffs

Approvals

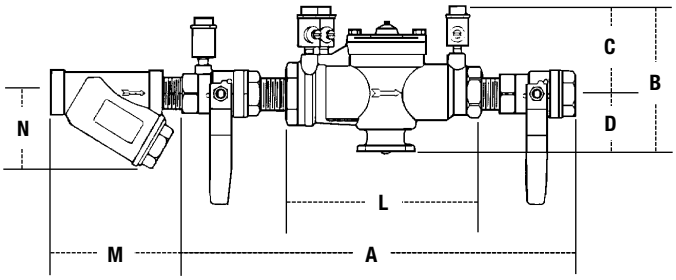
ASSE, AWWA, CSA, IAPMO
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
UL Classified ¾" – 2"
(LF models only except 009M3LF)

Models

Size: 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
PC – internal Polymer Coating
SH – stainless steel ball valve handles
HC – 2½" inlet/outlet fire hydrant fitting
(2" valve)

Prefix:
C – clean and check strainer ¾" – 1" only
U – union connections

Dimensions and Weights



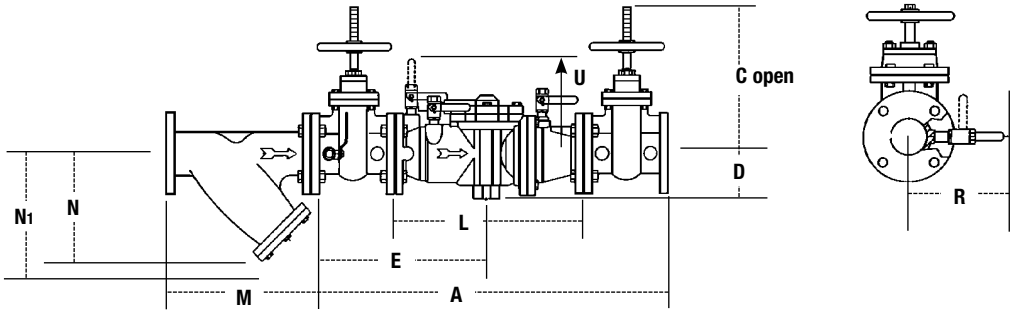
LF009 / 009 ¼" – 2" (8 – 50mm)

SIZE	DIMENSIONS (APPROX.)														WEIGHT	
	A		B		C		D		L		M		N			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in*	*mm*	*in*	*mm*	*lbs.*	*kgs.*
¼	10	250	4⅝	117	3⅜	86	1¼	32	5½	140	2⅜	60	2½	64	5	2
⅜	10	250	4⅝	117	3⅜	86	1¼	32	5½	140	2⅜	60	2½	64	5	2
½	10	250	4⅝	117	3⅜	86	1¼	32	5½	140	2¾	70	2¼	57	5	2
¾	10¾	273	5	127	3½	89	1½	38	6¾	171	3³⁄₁₆	81	2¾	70	6	3
1	16¾	425	5½	140	3	76	2½	64	9½	241	3¾	95	3	76	12	5
1¼	17⅜	441	6	150	3½	89	2½	64	11⅜	289	4⁷⁄₁₆	113	3½	89	15	6
1½	17⅞	454	6	150	3½	89	2½	64	11⅛	283	4⅞	124	4	102	16	7
2	21⅜	543	7¾	197	4½	114	3¼	83	13½	343	5¹⁵⁄₁₆	151	5	127	30	13

cont.

Series LF009 / 009
Reduced Pressure Zone Assemblies

Dimensions and Weight cont.



STRAINER SIZE		DIMENSIONS (APPROX.)						WEIGHT	
		M		N		N1†			
in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
2½	65	10	254	6½	165	9¾	248	28	12.7
3	80	10⅛	257	7	178	10	254	34	15.4

†Clearance for servicing

LF009 2½" and 3" (65 – 80mm)

MODEL	SIZE	DIMENSIONS (APPROX.)														WEIGHT	
		A		C		D		E		L		R		U			
	in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
LF009LF	2½	—	—	—	—	4½	114	—	—	18⅛	460	—	—	10⅝	270	76	34.5
LF009OSY	2½	33¼	845	15⅞	403	4½	114	16⅜	416	18⅛	460	7¾	197	10⅝	270	166	75.3
LF009NRS	2½	33¼	845	11⅜	289	4½	114	16⅜	416	18⅛	460	7¾	197	10⅝	270	161	73.0
LF009QTFDA	2½	33¼	845	6	152	4½	114	16⅜	416	18⅛	460	7¾	197	10⅝	270	150	68.0
LF009LF	3	—	—	—	—	4½	114	—	—	18⅛	460	—	—	10⅝	270	76	34.5
LF009OSY	3	34¼	870	18½	470	4½	114	16⅝	422	18⅛	460	8¾	222	10⅝	270	198	89.8
LF009NRS	3	34¼	870	12¾	324	4½	114	16⅝	422	18⅛	460	8¾	222	10⅝	270	191	86.6
LF009QTFDA	3	34¼	870	7	178	4½	114	16⅝	422	18⅛	460	8¾	222	10⅝	270	158	71.7

LFU009QT / U009QT

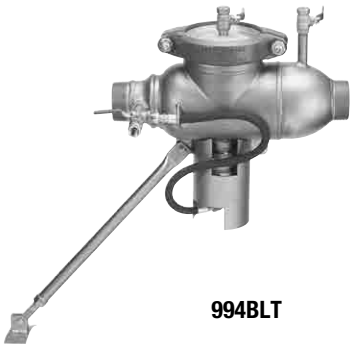
MODEL	SIZE	DIMENSIONS						WEIGHT	
		A		B		C			
	in.	in.	mm	in.	mm	in.	mm	lbs.	kgs.
LFU009QT	½	12 13⁄16	326	4⅝	117	3 7⁄16	87	5.5	2.5
LFU009M2QT	¾	13¾	349	5	127	3¾	95	6	2.7
LFU009M2QT	1	17⅜	441	5½	140	3⅛	79	12.75	5.8
LFU009M2QT	1¼	24½	622	7¾	197	4	100	26.5	12.0
LFU009M2QT	1½	25½	648	7¾	197	4¼	108	28.75	13.0
LFU009M2QT	2	27⅜	695	7¾	197	4¼	108	32.75	14.9
U009QT	½	12 13⁄16	326	4⅝	117	3 7⁄16	87	5.5	2.5
U009M2QT	¾	13¾	349	5	127	3¾	95	6	2.7
U009M2QT	1	17⅜	441	5½	140	3⅛	79	12.75	5.8
U009M2QT	1¼	24½	622	7¾	197	4	100	26.5	12.0
U009M2QT	1½	25½	648	7¾	197	4¼	108	28.75	13.0
U009M2QT	2	27⅜	695	7¾	197	4¼	108	32.75	14.9

For additional information, request literature ES-LF009 and ES-009.

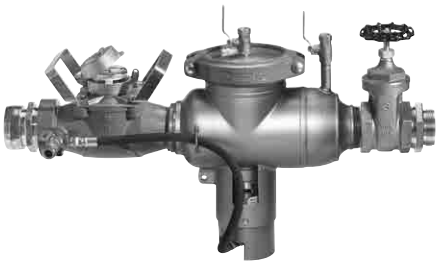
Series 994BLT, 994HMB

Hydrant Meter Backflow Preventers

Sizes: 994BLT 2½" FNPT x 3" MNPT / 994HMB 2½" – 7NST x 3"



994BLT



994HMB

Features

- Built-in support leg is adjustable in the field, no matter the installation. Eliminates assembly from sitting directly in field or from being stacked on wood bracing.
- Dual thread connections, inside 2½" FNPT and outside 3" MNPT threaded on each inlet and outlet, allows the user a variety of connection alternatives.
- Large flow capacity-rated at over 500 gpm with less than 14psi (96.5Kpa) loss per ASSE, USC and AWWA standards for Reduced Pressure Zone Assemblies.
- No field assembly required, eliminates leaks, fouls, and improper assembly.
- Factory assembled and tested.
- Variety of end connection accessories are available to fit on-site requirements.
- Corrosion resistant 304 stainless steel body for long life field dependability.

Portable-lightweight design makes device easily transportable between job sites.

Pressure-Temperature

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

994BLT, 994HMB

Model 994BLT, 994HMB Portable Hydrant Backflow Preventers are designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as irrigation, fireline, or industrial processing.

For use in protection of water from a fire hydrant or other nonpermanent installation where flow is in one direction only and the possibility of a cross-connection exists. This model can be used where approved by the local authority having jurisdiction on health hazard cross-connections.

Ideal for use with client's existing hydrant meter hookup.

Materials

- Body and Cover: Stainless Steel
- Check Assemblies: Engineered Plastic and Stainless Steel
- Relief Valve Assembly: Engineered Plastic and Stainless Steel
- Lid Coupler: DI/CI

Options

Inlet modules
- 3" female hydrant thread
- 3" male hydrant thread
- 2½" female hydrant thread
- 2½" male hydrant thread
- 2½" male NPT thread
- Customer specified

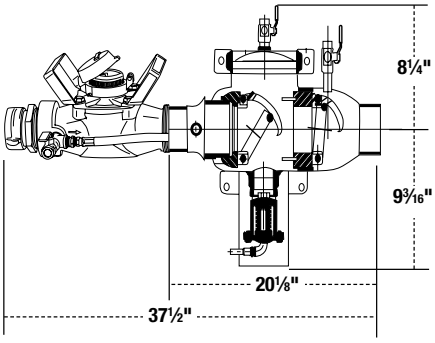
Outlet modules
- 3" gate w/female hose thread
- 3" gate w/male hose thread
- 2½" gate w/female hose thread
- 2½" gate w/male hose thread
- 3" gate valve only, 3" INPT thread
- 2½" gate valve only, 2½" FNPT thread
- Customer specified

Foot modules
- Uneven surface saddle (supplied STD with unit)
- Flat surface adapter
- Customer Specified

Approvals

Models 994BLT, 994HMB Portable Hydrant Backflow Preventers meet the design requirements of most national standards. Due to the portability of the unit, there are no national approvals available. Contact the factory for specific approvals on the reduced pressure backflow preventer.

Dimensions — Weights

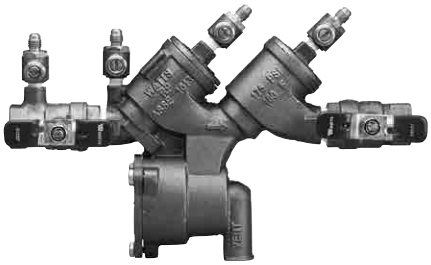


MODEL	WEIGHT	
	lbs.	*kgs.*
994BLT	62	28
994HMB-GPM	66	30
994HMB-CFM	66	30

Series LF919 / 919

Reduced Pressure Zone Assemblies

LF919 Sizes: ¾" – 2" (20 – 50mm) / 919 Sizes: ¼" – 2" (8 – 50mm)



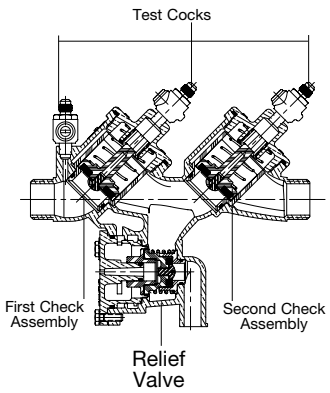
LF919QT

Features

- Separate access covers for the check valves and relief valve for ease of maintenance
- Top entry-all check internals easily accessible
- Chloramine resistant rubber elastomers
- 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

Pressure-Temperature

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



LF919

LEAD FREE Series LF919 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" (5 – 25mm) shutoffs have tee handles. The LF919 features Lead Free* construction to comply with Lead Free* installation requirements.

Materials

- Body: Lead Free* Cast Copper Silicon Alloy
- Discs: Silicone rubber
- Check Seats: Replaceable polymer
- Cover Bolts: Stainless steel

Models

Suffix:
QT – quarter-turn ball valves
S – bronze strainer

Approvals

1013

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

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

919

For Use in Non-Potable Applications

Series 919 Reduced Pressure Zone Backflow Assemblies are designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirments for non-potable service applications such as irrigation, fireline, or industrial processing. Sizes ¼" – 1" shutoffs have tee handles.

Materials

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

Models

Suffix:
QT – quarter-turn ball valves
S – bronze strainer
LF – without shutoff valves
AQT – elbow fitting for 360° rotation
ZQT – inlet & outlet flow up

Approvals

1013 ¾"-2" LF

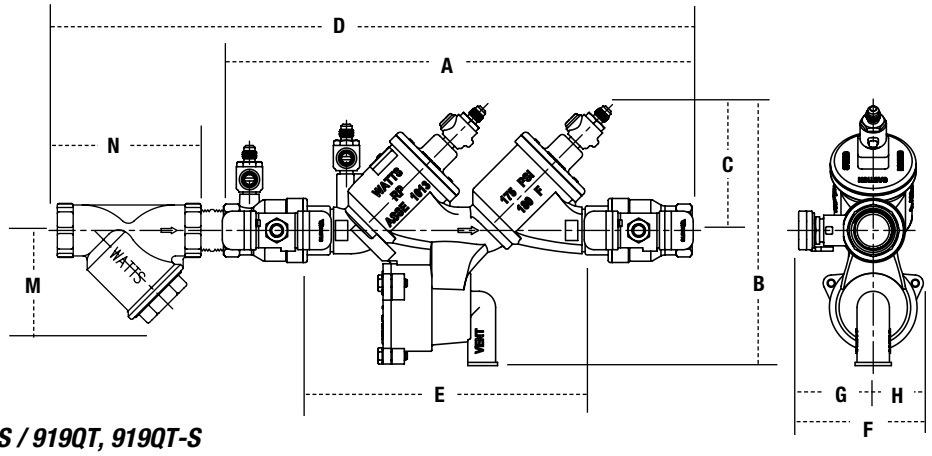
Approved by the Foundation for Cross-Connection Control and Research at The University of Southern California (for sizes ¾" -2")

Prefix:
U – union connections

For additional information, request literature ES-LF919 and ES-919.

See Flow Charts on p. 85.

Dimensions and Weights

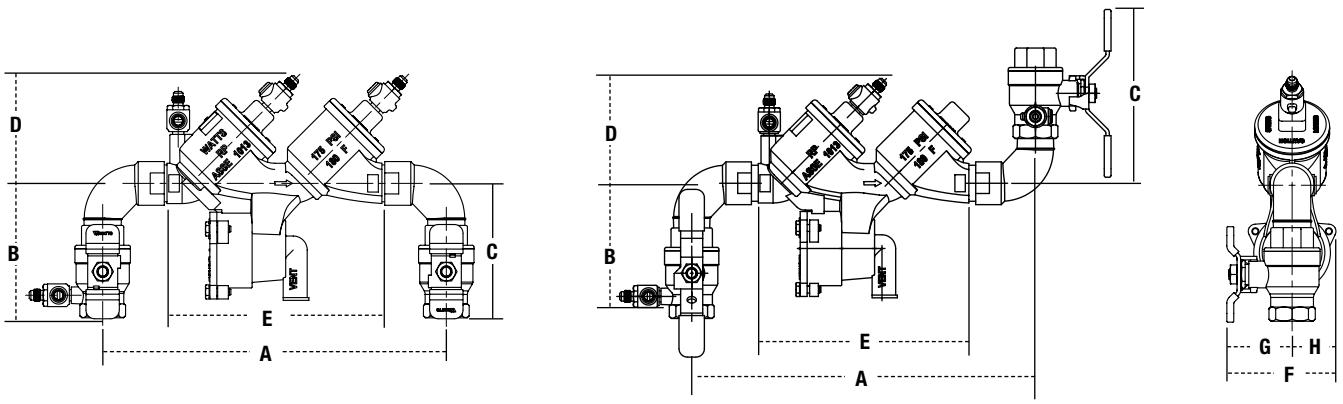


LF919QT, LF919QT-S / 919QT, 919QT-S

SIZE	DIMENSIONS																STRAINER DIMENSIONS				WEIGHT			
	A		B		C		D		E (LF)		F		G		H		M		N		919QT		919QT-S	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
¼	9½	241	6⅞	175	2⅞	73	12⅜	314	5¾	146	3	75	1⅜	35	1⁹⁄₁₆	40	2⅜	60	2½	64	5.8	2.6	6.3	2.9
⅜	9½	241	6⅞	175	2⅞	73	12⅜	314	5¾	146	3⅓	84	1¾	44	1⁹⁄₁₆	40	2⅜	60	2½	64	5.8	2.6	6.3	2.9
½	9½	241	6⅞	175	2⅞	73	12¾	324	5¾	146	3⅜	86	1⅞	48	1⁹⁄₁₆	40	2¾	70	2¼	57	5.8	2.6	6.3	2.9
¾	12⅛	307	7⁷⁄₁₆	188	3½	88	15½	393	7¹¹⁄₁₆	195	3⅝	92	2¹⁄₁₆	52	1⁹⁄₁₆	40	1⅝	41	3³⁄₁₆	81	8.3	3.7	10.0	4.5
1	14½	368	8	202	3⅞	98	19³⁄₁₆	487	9³⁄₁₆	233	4	102	2⁷⁄₁₆	62	1⁹⁄₁₆	40	2⅛	54	3¾	95	11.8	5.4	13.8	6.3
1¼	18⅛	461	11⁷⁄₁₆	290	5⅛	129	23¼	591	11¹¹⁄₁₆	297	5⅛	130	2⅝	67	2½	64	2½	64	4⁷⁄₁₆	113	22.3	10.1	26.3	11.9
1½	18¾	476	11⁷⁄₁₆	290	5⅛	129	25¹⁄₁₆	637	11¹¹⁄₁₆	297	5⅝	143	3⅛	79	2½	64	3	76	4⅞	124	28.3	12.8	32.0	14.5
2	21¹⁄₁₆	535	12¹⁄₁₆	307	5⅝	142	28¹³⁄₁₆	732	13⅜	340	5¹⁵⁄₁₆	151	3⁷⁄₁₆	87	2½	64	3⁹⁄₁₆	90	5¹⁵⁄₁₆	151	37.3	16.9	45.0	20.4

U919QT, U919QT-S

SIZE	DIMENSIONS																STRAINER DIMENSIONS				WEIGHT			
	A		B		C		D		E (LF)		F		G		H		M		N		U919QT		U919QT-S	
in.	*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	16¹⁵⁄₁₆	430	8¹⁄₁₆	204	3⅞	98	20⁵⁄₁₆	515	11½	292	3⅝	92	2¹⁄₁₆	52	1⁹⁄₁₆	40	1⅝	41	3³⁄₁₆	81	13.4	6.1	15.1	6.9
1	17⅛	435	8¹⁄₁₆	204	3⅞	98	21¹³⁄₁₆	554	11¾	297	4	102	2⁷⁄₁₆	62	1⁹⁄₁₆	40	2⅛	54	3¾	95	13.3	6.0	15.3	6.9
1¼	20¹⁵⁄₁₆	532	11⁷⁄₁₆	290	5⅛	129	26¹⁄₁₆	662	15⅜	390	5⅛	130	2⅝	67	2½	64	2½	64	4⁷⁄₁₆	113	25.9	11.8	29.9	13.6
1½	21⁹⁄₁₆	547	11⁷⁄₁₆	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	24¹⁵⁄₁₆	633	12¹⁄₁₆	307	5⅝	142	32¹¹⁄₁₆	830	16¾	425	5¹⁵⁄₁₆	151	3⁷⁄₁₆	87	2½	64	3⁹⁄₁₆	90	5¹⁵⁄₁₆	151	41.6	18.9	49.3	22.4



919AQT,919ZQT

SIZE	DIMENSIONS																WEIGHT	
	A		B		C		D		E (LF)		F		G		H			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
¾	10⅜	263	3¹⁵⁄₁₆	100	3¹⁵⁄₁₆	100	3½	88	7¹¹⁄₁₆	195	3⅝	92	2¹⁄₁₆	52	1⁹⁄₁₆	40	9.3	4.2
1	12¼	311	4¹³⁄₁₆	122	4¹³⁄₁₆	122	3⅞	98	9³⁄₁₆	233	4	102	2⁷⁄₁₆	62	1⁹⁄₁₆	40	13.3	6.0
1¼	16¹⁄₁₆	407	5⅞	149	5⅞	149	5⅛	129	11¹¹⁄₁₆	297	5⅛	130	2⅝	67	2½	64	24.0	10.9
1½	16⅝	421	6½	164	6½	164	5⅛	129	11¹¹⁄₁₆	297	5⅝	143	3⅛	79	2½	64	30.5	13.8
2	17⁵⁄₁₆	440	6⅝	168	6⁹⁄₁₆	166	5⅛	142	13⅜	340	5¹⁵⁄₁₆	151	3⁷⁄₁₆	87	2½	64	40.6	18.4

Series LF957RPDA, LF957NRPDA, LF957ZRPDA / 957RPDA, 957NRPDA, 957ZRPDA

Reduced Pressure Detector Assemblies

Sizes: 2½" – 10" (65 – 250mm)

LF957NRPDAOSY

Features

- Extremely compact design
- 70% lighter than traditional designs
- 304 (Schedule 40) stainless steel housing & sleeve
- Groove fittings allow integral pipeline adjustment
- Patented torsion spring check provides lowest pressure loss
- Unmatched ease of serviceability
- Replaceable check disc rubber
- Available with grooved butterfly valve shutoffs
- Bottom mounted cast stainless steel relief valve
- Metered bypass to detect leakage or theft of water from the fire sprinkler system

Pressure-Temperature

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

Models

Suffix:

OSY – UL/FM outside stem and yoke, resilient seated gate valves
BFG – UL/FM grooved gear operated butterfly valves with tamper switch
***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**

LF957RPDA, LF957NRPDA, LF957ZRPDA

LEAD FREE

Series LF957RPDA, LF957NRPDA, 9LF57ZRPDA Reduced Pressure Detector Assemblies provide protection to the potable water system from contamination in accordance with national plumbing codes. The LF957RPDA, LF957NRPDA, LF957ZRPDA are normally used in health hazard applications to protect against back-siphonage and backpressure. The Watts LF957RPDA, LF957NRPDA, LF957ZRPDA are used to monitor unauthorized use of water from the fire protection system. They feature Lead Free* construction to comply with Lead Free* installation requirements.

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
- Bypass: Lead Free* materials

Approvals

1047 B64.4 (BFG & OSY only)

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

957RPDA, 957NRPDA, 957ZRPDA

For Use in Non-Potable Applications

Series 957RPDA, 957NRPDA, 957ZRPDA Reduced Pressure Detector Assemblies are designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as irrigation, fireline, or industrial processing. The 957RPDA, 957NRPDA, 957ZRPDA are normally used in health hazard applications to protect against back-siphonage and backpressure. The Watts 957RPDA, 957NRPDA, 957ZRPDA are used to monitor unauthorized use of water from the fire protection system.

Materials

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

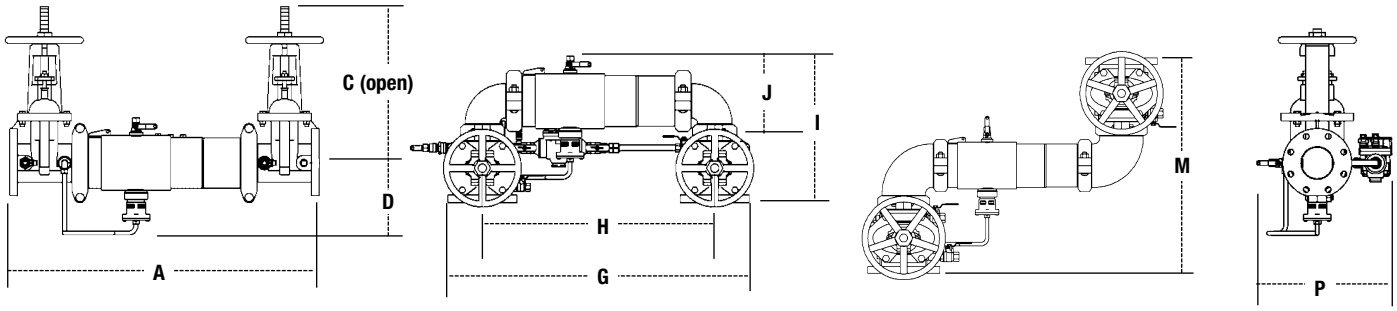
Approvals

1047 B64.4 (BFG & OSY only)

For additional information, request literature ES-957RPDA_957NRPDA_957ZRPDA.

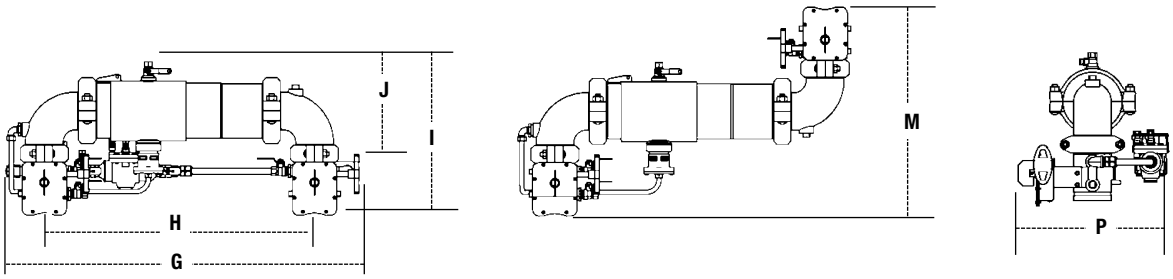
See Flow Charts on p. 86.

Dimensions and Weights



LF957RPDAOSY / 957RPDAOSY

SIZE	DIMENSIONS																		WEIGHT			
	A		C (OSY)		D		G		H		I		J		M		P		957RPDA		957NRPDA	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	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	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	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	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	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	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



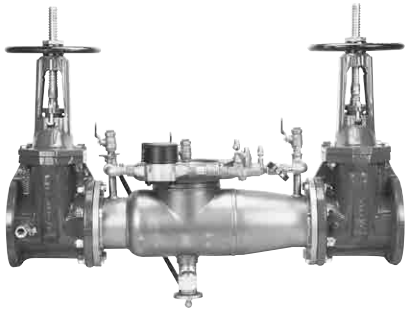
LF957RPDABFG / 957RPDABFG

SIZE	DIMENSIONS												WEIGHT	
	G		H		I		J		M		P		957RPDABFG	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	32½	826	23½	597	15½	394	9½	241	21 13/16	555	15 13/16	402	81	37
3	34	864	24½	622	16 5/16	414	10 1/16	256	23⅛	587	16⅛	410	84	38
4	35⅝	905	26	660	17 3/16	437	10 15/16	279	24 15/16	634	16⅝	422	101	46
6	46½	1181	35 13/16	908	20½	521	13½	343	28¼	718	19	483	174	79

Series 994RPDA

Reduced Pressure Detector Assemblies

Sizes: 2½" – 6" (65 – 150mm)



994RPDAOSY

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
- 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
- Detects underground leaks and unauthorized water use.
- GPM or CFM meter available

Pressure-Temperature

Temperature Range: 33°F – 110°F (0.5°C – 43°C)

Maximum Working Pressure: 175psi (12.1 bar)

Materials

- All internal metal parts: 300 Series stainless steel
- Main valve body: 300 Series stainless steel
- Check assembly: Noryl®
- Flange dimension in accordance with AWWA Class D

994RPDA

Series 994RPDA Reduced Pressure Detector Assemblies are designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as irrigation, fireline, or industrial processing. This series is usually used in health hazard applications in accordance with local governing water utility code.

Models

Suffix:

LF – without shutoff 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

CFM – cubic feet per minute meter

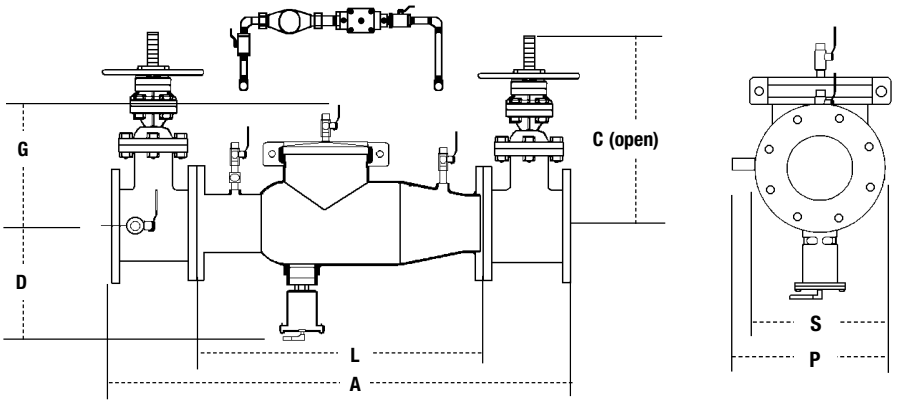
GPM – gallons per minute meter

Approvals

1047 B64.5

Available with grooved NRS gate valves - consult factory*
Post indicator plate and operating nut available - consult factory*
***Consult factory for dimensions**

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



SIZE	DIMENSIONS														WEIGHTS			
	A		C		D		G		L		P		S		with Gates		without Gates	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	37	940	16⅜	416	10½	267	10	254	22	559	12½	318	7	178	170	77	61	28
3	38	965	18⅞	479	10½	267	10	254	22	559	13	330	7½	191	205	93	65	29
4	40	1016	22¾	578	10½	267	10	254	22	559	14½	368	9	229	270	122	67	30
6	48½	1232	30⅛	765	11½	292	11½	292	27½	699	15½	394	11	279	405	184	105	48

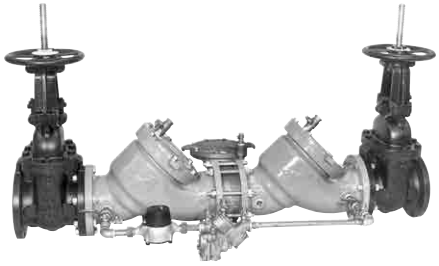
For additional information, request literature ES-994RPDA.

See Flow Charts on p. 87.

Series 909RPDA

Reduced Pressure Detector Assemblies

Sizes: 2½" – 10" (65 – 250mm)



909RPDAOSY

Features

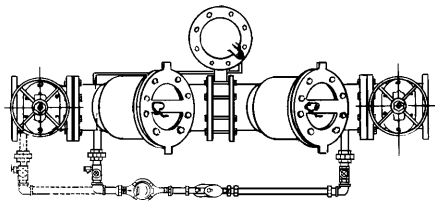
- Body construction fused epoxy coated cast iron
- Replaceable bronze seats
- Maximum flow at low pressure drop
- Compact for economy combined with performance
- Design simplicity for easy maintenance
- Furnished with ⅝" x ¾" (16 x 19mm) meter
- Air-in/Water-out relief valve design provides maximum capacity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

Pressure-Temperature

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

Materials

- Discs: Rubber
- Body: Epoxy coated cast iron
- Seat and Disc Holder: Bronze
- Trim: Stainless steel
- Test Cocks: Bronze



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

909RPDA

Series 909RPDA Reduced Pressure Detector Assemblies are designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as irrigation, fireline, or industrial processing. This series is used in health hazard applications in accordance with local governing water utility code.

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
- 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 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.

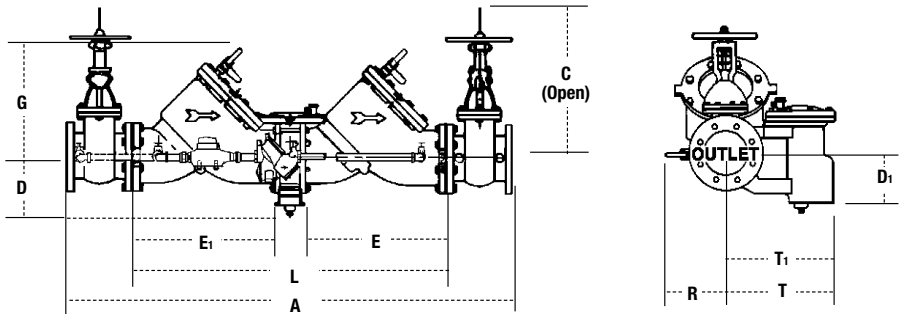
Models

Suffix:
OSY – UL/FM outside stem and yoke resilient seated gate valves
CFM – cubic feet per minute meter
GPM – gallons per minute meter
LF – less shutoff valves

Approvals

ASSE 1047 · cULus CLASSIFIED · FM Approved

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



SIZE	DIMENSIONS																				WEIGHT	
	A		C		D		D1		E, E1		G		L		R		T		T1			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	42⅛	1070	16⅜	416	5¼	133	4¼	114	12	305	7	178	26⅛	664	14	356	9	229	7⅝	194	230	104
3	42⅛	1070	18⅞	479	5¼	133	4¼	114	12	305	7	178	26⅛	664	14	356	9	229	7⅝	194	230	104
4	55⅛	1400	22¾	578	6	152	5⅞	149	17	432	9½	241	37	940	15	381	13⅝	346	11¾	299	470	213
6	66	1664	30⅛	765	6	152	6	152	20¾	527	14½	368	45	1130	16	406	13⅝	346	11¾	299	798	362
8	78½	1994	37¾	959	9¾	248	8⅝	219	26	660	18½	470	55¼	1403	17	432	18½	470	16⅜	416	1456	660
10	93⅝	2378	45¾	1162	9¾	248	8⅝	219	32	813	21½	546	67½	1715	18	457	18½	470	16⅜	416	2230	1012

Series LFN9
Dual Check Vacuum Breakers

Sizes: ¼" – ⅜" (6 – 10mm)

LFN9C

Features

- Exclusive "Non-removable" design eliminates the need for break-away set screw
- Center-guided check valves for repeatable seating
- In-line field testable - no special gauges required
- Manually drainable for freeze protection
- Durable brass body with stainless steel checks for corrosion resistance
- Streamlined design for low pressure drop
- Can be installed vertically or horizontally
- Positive backsiphonage protection

Pressure-Temperature

Temperature Range: 33°F – 180°F (0.5°C – 82°C)
Maximum Working Pressure: 150psi (8.6 bar)

LFN9

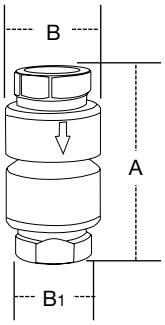
LEAD FREE* Series LFN9 Dual Check Vacuum Breakers for In-Line Applications are used for continuous pressure, non-health hazard, applications. These valves have NPT female inlet and outlet connection and Lead Free* brass body construction. The LFN9 features Lead Free* construction to comply with Lead Free* installation requirements.

Models

LFN9C – chrome body

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

Dimensions and Weights



MODEL	SIZE	DIMENSIONS						WEIGHT	
		A		B		B1			
	in.	in.	mm	in.	mm	in.	mm	lbs.	kgs.
LFN9C	¼	2⅜	60	1¼	32	1	25	.38	.17
LFN9C	⅜	2⅜	60	1¼	32	1	25	.38	.17
LFN9	¼	2⅜	60	1¼	32	1	25	.38	.17
LFN9	⅜	2⅜	60	1¼	32	1	25	.38	.17

For additional information, request literature ES-LF9.

See Flow Charts on p. 76.

Series 9BD

Backflow Preventer for Vending Machine Water Supply Lines

Sizes: ¼" – ⅜" (6 – 10mm)

9BD

Features

- Available in Flare or NPTM end connections
- Stainless steel body and parts
- Instant check valve response
- Minimum pressure drop
- Triple check protection of the water supply

Pressure-Temperature

Temperature Range: 33°F – 140°F
(0.5°C – 60°C)
Maximum Working Pressure: 150psi
(10.34 bar)
All stainless steel body and heavy duty rubber parts assure the longest and most dependable operating life. All rubber compounds comply with FDA food additive regulations.

9BD

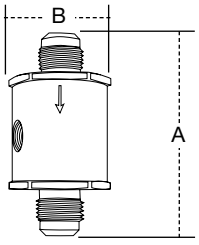
LEAD FREE* Model 9BD backflow preventer for vending machine water supply lines prevents backflow of carbon dioxide gas and carbonated water into the water supply system to vending machines, thus eliminating the hazardous reaction of carbon dioxide with copper tubing.

Approvals

Approved by independent testing, completing over 2,000,000 successful pump cycles with positive backflow protection and trouble-free performance.
All rubber compounds comply with FDA food additive regulations.

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

Dimensions and Weights



SIZE	DIMENSIONS				WEIGHT	
	A		B			
in.	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
¼	2¾	70	1⅜	35	.38	.17
⅜	2¾	70	1⅜	35	.38	.17

Series LFN9-CD
Dual Check Vacuum Breakers

Sizes: ¾" (20mm)

LFN9CD

Features

- Exclusive "Non-removable" design eliminates the need for break-away set screw
- Center-guided check valves for repeatable seating
- In-line field testable - no special gauges required
- Manually drainable for freeze protection
- Durable brass body with stainless steel checks for corrosion resistance
- Streamlined design for low pressure drop
- Can be installed vertically or horizontally
- Positive backsiphonage protection

Pressure-Temperature

Maximum Pressure: 125psi (8.6 bars)
Maximum Temperature: 180°F (82°C)

LFN9-CD

LEAD FREE The LFN9-CD is designed to prevent high hazard backsiphonage backflow and low-head backpressure (10ft. or less) from contaminating the potable water supply. The LFN9-CD is ideally suited to prevent backflow associated with hose connections and may be screwed directly to the sill cock, yard hydrant or wall hydrant. Typical installations include service sinks, chemical dispensers, sill cocks and frost proof hydrants.

Watts LFN9-CD features include two independently operating rubber and stainless steel check valves with an atmospheric vent located between the check valves. In the event of fouling of the downstream check valve, leakage would be vented to atmosphere, thereby, providing a visual indication of failure. The integrity of the check valves can also be verified by performing the field test procedure included with the LFN9-CD. The LFN9-CD features Lead Free* construction to comply with the Lead Free installation requirements.

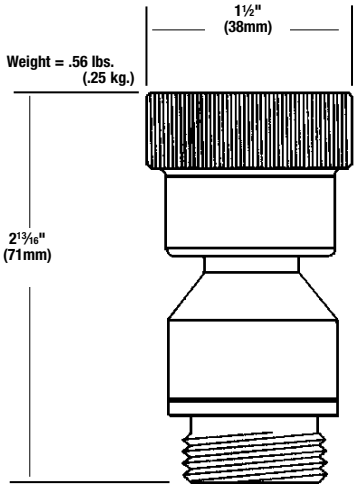
Models

Inlet Connection: ¾" (20mm) standard female hose thread
Outlet Connection: ¾" (20mm) standard male hose thread

Approvals

CSA ASSE NSF Certified to NSF/ANSI 372

Dimensions and Weights



For additional information, request literature ES-LFN9-CD.
See Flow Charts on p. 76.

Series 9D

Dual Check Valve with Intermediate Atmospheric Vent

Sizes: ½" M3 (15mm), ¾" M2 (20mm)

9DM2

9DM3

Features

- True line-sized construction allows the check modules to open further allowing dirt and debris to pass more freely reducing check fouling
- Stainless steel internal parts
- 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

Pressure-Temperature

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

9D

Series 9D is designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications for smaller supply lines such as laboratory equipment, processing tanks, sterilizers, and dairy equipment. It is ideally suited for boiler feed lines to prevent backflow when supply pressure falls below system pressure.

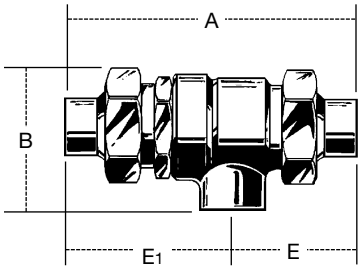
Series 9D is suitable for use on hot or cold water and can be used under continuous pressure. It features a primary check valve utilizing a rubber disc seating against a mating rubber part to ensure tight closing. A secondary check valve utilizes a rubber disc-to-metal seating. In the event of fouling of the downstream check valve, leakage would be vented to atmosphere through the vent port thereby safeguarding the potable water system. Construction is brass body with stainless steel working parts, integral strainer and durable rubber discs. Female union inlet and outlet connections. Sizes ½" (15mm) and ¾" (20mm). Drain is ½" (15mm) thread connection.

Materials

- Forged brass body construction
- Stainless steel internal parts
- Durable, tight seating rubber check valve assemblies

Options

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



Approvals

39769

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.

IMPORTANT

This valve should only be used and properly installed so that spillage of water could not cause damage. To avoid water damage due to valve operation, a drain pipe must be installed. It should terminate approximate 12" (305mm) above a floor drain or through an air gap piped to a floor drain, or other suitable place of disposal. Under no circumstances, should the vent opening or drain line be plugged.

9D

MODEL	SIZE	DIMENSIONS								WEIGHT	
		A		B		E		E1			
	in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*
9DM3	½	4 15/16	125	2 9/16	65	1 15/16	49	2 9/16	65	1½	.68
9DM3-S	½	4 3/8	111	2 9/16	65	1 15/16	49	2 9/16	65	1½	.68
9DM2	¾	4½	114	2 9/16	65	1 15/16	49	2 9/16	65	1¾	.79
9DM2	¾	4 13/16	122	2 9/16	65	2 1/16	52	2¾	70	1¾	.79

Series 912HP

High Pressure Hose Drop Backflow Preventers

Sizes: ¾", 1" (20, 25mm)

912HP

Features

- All bronze ball valve and brass backflow preventer
- Designed for maximum working pressure of 400psi (28 bars)
- Female national pipe thread inlet connection and male national pipe thread outlet connection
- Ball valve design includes reinforced/enhanced PTFE seats and electroless nickel plated brass ball, blow-out proof pressure retaining stem, and low profile oval handle.
- In the event of fouling of the downstream check valve, leakage would be vented to atmosphere thereby providing a visual indication of failure of the check assembly.
- Can be installed vertically (flow up or flow down) or horizontally.
- Integral stainless steel screen protects the check assemblies from fouling due to dirt and debris.

Pressure-Temperature

Suitable for supply pressures up to 400psi (27.5 bars) and temperatures up to 180°F (82°C).
May also be used at temperatures up to 200°F (93°C) and water supply pressures up to 250psi (17 bars).

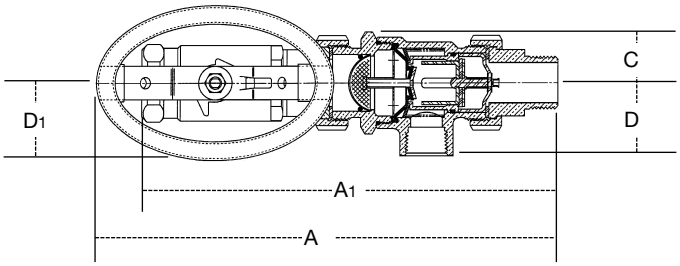
912HP

Series 912HP High Pressure Hose Drop Backflow Preventers are specifically made for isolation protection on high pressure plumbing supply lines, such as high pressure hose drops which are used for the washdown of equipment and facilities. Ideally suited for food processing plants. Series 912HP are designed to protect drinking water supplies from dangerous cross-connections in accordance with National plumbing codes and water authority requirements for non-potable service applications.

Materials

- Body: Brass
- Internal Metal Parts: Stainless Steel

Dimensions and Weights



912HP

SIZE	DIMENSIONS										WEIGHT	
	A		A_1		C		D		D_1			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
¾	9 3/16	233	8 5/16	211	1	25	1 7/16	37	1 ½	38	3	1.4
1	10	254	9 5/16	236	1	25	1 7/16	37	1 ½	38	4	1.8

For additional information, request literature ES-912HP.

See Flow Charts on p. 76.

Series SD2 / SD3

Dual Check Valves

Sizes: ¼" , ⅜" (6 and 10mm)

SD2

SD3

Features

- Certified to ANSI/NSF Standard 18, Manual Food and Beverage Dispensing Equipment
- ASSE 1032 Approved Dual Check Valve
- 316 stainless steel body for corrosion resistance
- All rubber compounds comply with FDA food additive regulations
- 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 cycle
- Shock tested for more than 100,000 pumping cycle

Pressure-Temperature

SD2
Maximum Working Pressure: 200psi (13.8 bar)
Maximum Required Temp.: 110°F (43°C)

SD3
Maximum Working Pressure: 150psi (10 bar)
Maximum Required Temp.: 130°F (54°C)

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

SD2

LEAD FREE*

The Watts SD2 is a dual check 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 the acidic water comes in contact with copper tubing or copper pipe, it will cause the leaching of copper salts into the water supply. The dissolved copper if ingested can cause nausea, abdominal pain, and in some cases vomiting. The SD-2 prevents 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. The Watts SD-2 is recommended for use on Post-Mix Carbonated Beverage Equipment and dispensing equipment for tea and coffee.

Models

¼" SD2-MN: Male NPT
⅜" SD2-MN: Male NPT
¼" SD2-FN: Female NPT
⅜" SD2-FN: Female NPT
¼" SD2-MF: SAE Male Flare
⅜" SD2-MF: SAE Male Flare
¼" SD2-FF: SAE Female Flare
⅜" SD2-FF: SAE Female Flare

Approvals

NSF 18 ASSE 1032

SD3

LEAD FREE*

Series SD3 is a dual check with atmospheric port 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 the acidic water comes in contact with copper tubing or copper pipe, it will cause the leaching of copper salts into the water supply. The dissolved copper if ingested can cause nausea, abdominal pain, and in some cases vomiting. The SD3 prevents 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. The SD3 atmospheric vent provides a visual indication of failure in the event that the downstream check fails and system backpressure exceeds the supply pressure.

The Watts SD3 is recommended for use on Post-Mix Carbonated Beverage Equipment and dispensing equipment for tea and coffee.

Materials

- Wye pattern strainer model for water supply installations

Approvals

NSF 18 ASSE 1022

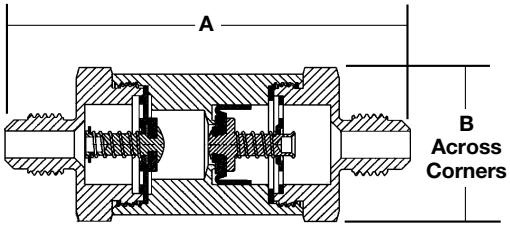
Models

¼" SD3-MN: Male NPT
⅜" SD3-MN: Male NPT
¼" SD3-FN: Female NPT
⅜" SD3-FN: Female NPT
¼" SD3-MF: SAE Male Flare
⅜" SD3-MF: SAE Male Flare
⅜" SD3-MF-LS: SAE Male Flare, less strainer

Note: The above connections are available as outlet connections only. Strainer inlet connection is always Female NPT.

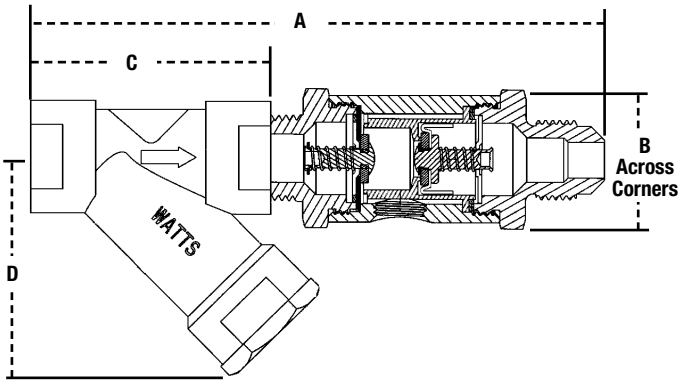
cont.

Dimensions and Weights



SD2

Valve Size	Assembly		Dimensions			
			A		B	
in	*Part #*	*Order#*	*in.*	*mm*	*in*	*mm*
¼"	SD2-MN	0061650	3	76	11⁄16	27
¼"	SD2-MF	0061651	2 13⁄16	71	11⁄16	27
⅜"	SD2-MN	0061654	3	76	11⁄16	27
⅜"	SD2-MF	0061655	3	76	11⁄16	27
¼"	SD2-FN	0061662	3	76	11⁄16	27
¼"	SD2-FF	0061660	2 13⁄16	71	11⁄16	27
⅜"	SD2-FN	0061663	3	76	11⁄16	27
⅜"	SD2-FF	0061661	3	76	11⁄16	27



SD3

SIZE	PART # ASSEMBLY	ORDER CODE	DIMENSIONS							
			A		B		C		D	
in			*in.*	*mm*	*in*	*mm*	*in*	*mm*	*in*	*mm*
¼"	SD3-MN	0061652	4½	114	1 1⁄16	27	1 7⁄8	48	11 1⁄16	43
¼"	SD3-MF	0061653	4⅜	111	1 1⁄16	27	1 7⁄8	48	11 1⁄16	43
⅜"	SD3-MN	0061656	4½	114	1 1⁄16	27	1 7⁄8	48	11 1⁄16	43
⅜"	SD3-MF	0061657	4½	114	1 1⁄16	27	1 7⁄8	48	11 1⁄16	43
¼"	SD3-FN	0061666	4½	114	1 1⁄16	27	1 7⁄8	48	11 1⁄16	43
⅜"	SD3-FN	0061667	4½	114	1 1⁄16	27	1 7⁄8	48	11 1⁄16	43
†⅜"	SD3-MF-LS	0061671	2 5⁄8	67	1 1⁄16	27	—	—	—	—

†For use on post pumping installations only.

For additional information, request literature ES-SD2 and ES-SD3.
See Flow Charts on p. 88.

Series LF7
Dual Check Valves

Sizes: ⅜", 1¼" (10, 32mm)

LF7

Features

- Can be installed vertically or horizontally
- Available with 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

Pressure-Temperature

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

LF7

LEAD FREE* Series LF7 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 LF7 uses two compact replaceable check modules and is installed immediately downstream of the residential water meter. The LF7 features Lead Free* construction to comply with Lead Free* installation requirements.

Materials

- Body: LF7 Lead Free* cast copper silicon alloy
  LF7C chrome-nickel plated Lead Free* cast copper silicon alloy
- Check Modules: Durable plastic
- Discs: Silicone
- Seals: Buna-N
- Springs: Stainless steel

Approvals

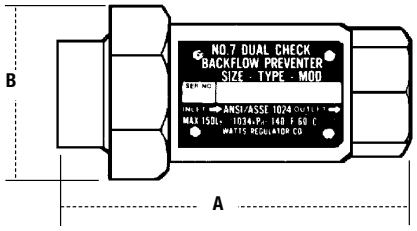
ASSE 1024 · CSA B64.6 · NSF Certified to NSF/ANSI 372

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

Series 7: Inlet/Outlet Connections – Types available, ordering code, sizes available.

CONNECTION TYPE	CONNECTION CODE	SIZES AVAILABLE	
		in.	*mm*
National Pipe Thread Female	2	⅜, 1¼	10, 32
National Pipe Thread Male	3	1¼	32
Meter Thread Female*	4	1¼	32
Female Meter Thread (Swivel)	10	1¼	32

Dimensions and Weights



LF7

MODEL	SIZE	DIMENSIONS				WEIGHT	
		A		B			
	in.	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
LF7	⅜	2⅞	73	1¼	32	.69	0.31
LF7C	⅜	2⅞	73	1¼	32	.69	0.31
LF7 10-U2	1¼	4⁹⁄₁₆	116	2¼	57	1.80	0.82
LF7 10-U3	1¼	5¼	136	2¼	57	1.80	0.82
LF7 4-U2	1¼	4⁵⁄₁₆	110	2¼	57	1.50	0.68

Series LF7R
Dual Check Valves

Sizes: ½" – 1" (15 – 25mm)

LF7R

Features

- Can be installed vertically or horizontally
- Available with combination of inlet/outlet sizes, types or thread and end connection

Pressure-Temperature

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

LF7R

LEAD FREE Series LF7R 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 LF7R uses two compact replaceable check modules and is installed immediately downstream of the residential water meter. The LF7R features Lead Free* construction to comply with Lead Free* installation requirements.

Materials

- Body: Lead Free* copper silicon alloy
- Check Modules: Engineered plastic
- Discs: Santoprene
- Seals: EPDM
- Springs: Stainless steel

Approvals

ASSE 1024 · UPC · NSF

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

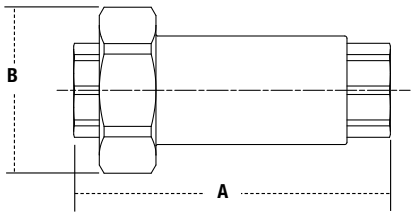
Series LF7R: Inlet/Outlet Connections – Types available, ordering code, sizes available.

CONNECTION TYPE	CONNECTION CODE	SIZES AVAILABLE	
		in.	*mm*
National Pipe Thread Female	2	½, ¾, 1	15, 20, 25
National Pipe Thread Male	3	½, ¾, 1	15, 20, 25
Female Meter Thread (Swivel)	10	¾, 1	20, 25

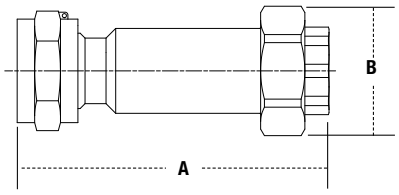
Union (U) Connections available on all inlet/outlet types and sizes.

Dimensions and Weights

LF7RU2-U2



LF7RU10-U2



LF7R

MODEL	SIZE	DIMENSIONS				WEIGHT	
		A		B			
	in.	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
LF7RU2-2	½	3 5/8	92	1 7/8	48	.7	.32
	¾	3 5/8	92	1 7/8	48	.7	.32
	1	3 7/8	99	1 7/8	48	.8	.36
LF7RU2-U2	¾	3 11/16	93	1 7/8	48	.9	.41
LF7RU10-U2	1	4 1/2	114	1 7/8	48	1.7	.77
LF7RU10-U3	1	4 13/16	122	1 7/8	48	1.7	.77

For additional information, request literature ES-LF7R.

See Flow Charts on p. 75.

Series LF07S
Dual Check Valves

Sizes: 1" – 2" (25 – 50mm)

1" LF07SU2-2

2" LF07SU2-2

Pressure-Temperature

1½" & 2"
Max. Working Pressure: 175psi (12.1 bar)
160psi (11.03 bar)
1" & 1¼"
Min. Working Pressure: 10psi (0.69 bar)
Hydrostatic Test Press: 700psi (48.3 bar)
1" & 1¼"
Temperature Range: 33°F to 140°F
(0.5°C to 60°C)
1½" & 2"
33°F to 180°F
(0.5°C to 82°C)

LF07S

LEAD FREE* The Watts Model LF07S Residential Fire Sprinkler Dual Check Backflow Preventer is designed for non-health hazard [i.e., pollutant] application on potable fire sprinkler service connections to protect against possible backsiphonage conditions that could inadvertently drain the fire sprinkler system.

Materials

- Body: Lead Free* Brass
- Elastomers: Silicone
- O-Rings: EPDM or Buna N
- Check Modules: Engineered Plastics
- Springs: Stainless Steel

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

Approvals

Please consult Local Governing Code for proper installation and agency code requirements,

B64.6 — Sizes Applicable: 1" Only

Sizes Applicable: 1", 1½" & 2" Only

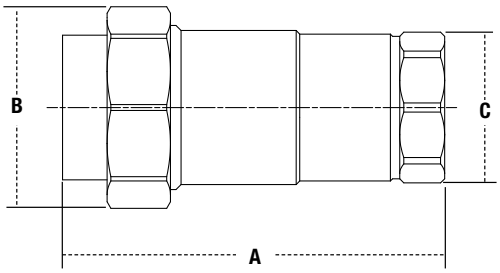
All Sizes Applicable

1024

ANSI/NFPA 13, 14, 15, 20, 22, and 24 Compliant -
All Sizes Applicable

End Connections – National Pipe Thread Taper ANSI B1.20.1

Dimensions and Weights



LF07S

SIZE	DIMENSIONS						WEIGHT	
	A		B		C			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
1	6¾	171	2 13/16	71	2	50	3.0	1.36
1¼	6¾	171	2 13/16	71	2	50	3.0	1.36
1½	6¾	171	3 11/16	93	2 13/16	71	3.9	1.77
2	6 15/16	176	3 11/16	93	2 13/16	71	4.4	2.0

Series LF8 / 8

Hose Connection Vacuum Breakers

Sizes: ¾"

LF8A
Non-Removable Model

LFNF8
Permits Manual Drain

LF8

8

8B

8FR

Features

- Brass body (all models except 8P)
- Stainless steel working parts for longevity
- Durable rubber diaphragm and disc for consistent positive seating

Pressure-Temperature

Maximum Working Pressure: 125psi (8.6 bar)
Maximum Temperature: 180°F (82°C)

LF8

LEAD FREE* Series LF8 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 sill cocks. The Series LF8 features Lead Free* construction to comply with Lead Free* installation requirements.

Series LF8 can be used on 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

- Copper silicon alloy body (all models except 8P, which is plastic)

Models

LF8A – Furnished with exclusive "Non-Removable" feature and standardly equipped to allow sill cock to be drained.
Note: Device should only be installed on approved sill cocks containing at least four full threads. Non-removable once installed.
LF8 – Similar to the 8A except it is furnished without the "Non-Removable" or draining feature. Secured with Allen head set screw.
LF8B – Furnished with break-away set screw to provide a tamper-resistant installation. Standardly equipped to allow sill cock to be drained.
LFNF8 – Especially made for wall and yard hydrants. Permits manual draining for freezing conditions.
8P – Furnished with exclusive patented "Non-Removable" feature. Standardly equipped to allow sill cock to be drained. Constructed of durable, corrosion-resistant, reinforced thermoplastic. Tamper-proof feature.
LF8AC, LF8C, or LF8C – Same as above but furnished with chrome finish.
LF8FR – With freeze relief feature.

Approvals

1011 B64.2

Series LF8, LF8A, LF8B, 8P, LF8FR and LFNF8 are listed by IAPMO.

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

8

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.

For Use in Non-Potable Applications

Series 8 is designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as service sinks, swimming pools, photo developing tanks, laundry tubs, wash racks, dairy barns, marinas and general outside gardening uses.

Models

8A – Furnished with exclusive "Non-Removable" feature and standardly equipped to allow sill cock to be drained.

Note: Device should only be installed on approved sill cocks containing at least four full threads. Non-removable once installed.

8 – Similar to the 8A except it is furnished without the "Non-Removable" or draining feature. Secured with Allen head set screw.

8B – Furnished with break-away set screw to provide a tamper-resistant installation. Standardly equipped to allow sill cock to be drained.

NF8 – Especially made for wall and yard hydrants. Permits manual draining for freezing conditions.

8AC, 8C, 8BC or NF8C – Same as above but furnished with chrome finish.

8FR – With freeze relief feature. Protects the 8FR from freeze damage.

Approvals

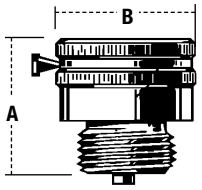
1011 B64.2

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

Dimensions and Weights

LF8 / 8

MODEL		SIZE	DIMENSIONS				WEIGHT	
			A		B			
		in.	*in.*	*mm*	*in.*	*mm*	*oz.*	*gm.*
LF8, LF8C, LF8B, LF8BC	8, 8C, 8B, 8BC	¾ HT	1½	38	1⅜	35	4.0	113.4
LF8A, LF8AC	8A, 8AC	¾ HT	1½	38	1½	38	4.0	113.4
LFNF8	NF8, NF8C	¾ HT	2	51	1½	38	5.3	151.2
8P		¾ HT	1¾	38	1⅜	35	1.5	42.5
LF8FR	8FR	¾ HT	1¾	38	1¾	38	7.0	200.0



Series LF800M4QT / 800M4QT

Pressure Vacuum Breakers

Sizes: ½" – 2" (15 – 50mm)

½" - ¾" LF800M4QT

1" - 2" LF800M4QT

Features

- Replaceable plastic seat
- Easy maintenance of internal parts
- Acetal bonnet acts as "freeze plug" to prevent body damage
- O-ring bonnet seal for less possibility of fouling
- Silicone seat disc for durability
- Test cocks positioned for easy testing and winterization
- Compact space saving design
- Standardly equipped with tee handle quarter turn ball valve shutoffs ½" – 1". The 1¼" - 2" feature lever handles.
- No special tools required for servicing

Pressure-Temperature

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

LF800M4QT

LEAD FREE* Series LF800M4QT is designed to prevent backsiphonage of contaminated water into a potable water supply. The valve is ideally suitable for irrigation systems, industrial process water systems and other continuous pressure piping system applications where the water enters the equipment at or below its flood rim. The disc float and check valve are suitable for temperatures up to 140°F. The resilient sealing float O-ring and seal check disc are silicone rubber which is resistant to heat, shock and chemical attack. The LF800M4QT features Lead Free* construction to comply with Lead Free* installation requirements.

Materials

- Springs: Stainless Steel
- Bonnet: Celcon®
- Vent Disc: Silicone Rubber
- Disc Holder Float: Polypropylene
- Check Valve Disc: Silicone Rubber
- Check Valve Seat: Noryl® Plastic
- Body: Lead Free* Cast Copper Silicon Alloy

Approvals

1020 C US

Approved by the foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California, Manual Section 10. (½" – 2" LF800M4QT only)
CSA (½" – 2" LF800M4QT only)

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

800M4QT

For Use in Non-Potable Applications

Series 800M4QT are designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirments for non-potable service applications such as irrigation, fireline, or industrial processing. The disc float and check valve are suitable for temperatures up to 140°F. The resilient sealing float o-ring and seal check disc are silicone rubber which is resistant to heat, shock and chemical attack.

Materials

- Springs: Stainless Steel
- Bonnet: Celcon®
- Vent Disc: Silicone Rubber
- Disc Holder Float: Polypropylene
- Check Valve Disc: Silicone Rubber
- Check Valve Seat: Noryl® Plastic
- Body: Bronze

Approvals

1020 C US

Approved by the foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. (½" – 2" 800M4QT only)
CSA (½" – 2" 800M4QT only)

Models

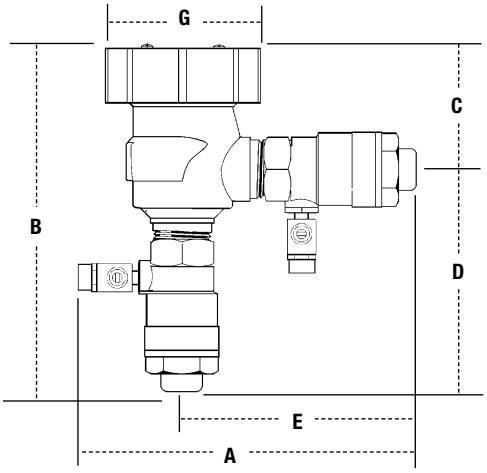
Prefix
U – union connections (¾" - 1" only)

Suffix
QC – Quick-Connect Adapters
SH – Stainless Steel Ball Valve Handles

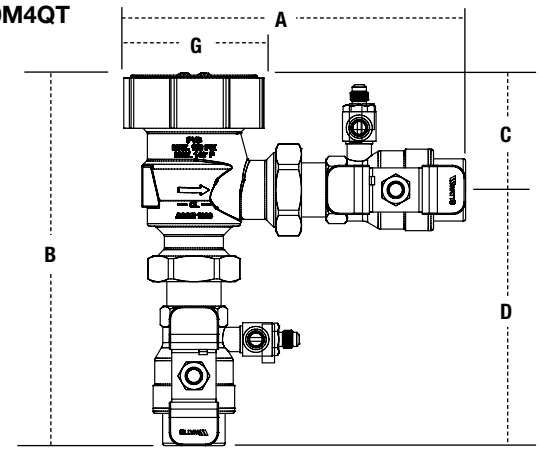
For additional information, request literature ES-LF800M4QT and ES-800M4QT.

See Flow Charts on p. 83.

Dimensions and Weights



U800M4QT



LF800M4QT / 800M4QT / 800M4QT

MODEL	SIZE	DIMENSIONS												WEIGHT	
		A		B		C		D		E		G			
	in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*
LF800M4QT / 800M4QT	½	6 1/8	156	6 1/4	159	2 9/16	65	3 11/16	94	3 7/8	98	2 1/4	57	4	1.8
LF800M4QT / 800M4QT	¾	6 1/2	165	6 1/2	165	2 9/16	65	3 15/16	100	4 1/8	105	2 1/4	57	4	1.8
LF800M4QT / 800M4QT	1	7 1/2	191	7 1/2	191	2 3/4	70	4 3/4	121	4 7/8	124	3 7/16	87	6	2.7
LF800M4QT / 800M4QT	1 1/4	8 7/8	225	9	229	3 1/4	83	5 3/4	146	6 1/8	156	5	127	11	5.0
LF800M4QT / 800M4QT	1 1/2	9 1/4	235	9 1/2	241	3 1/4	83	6 1/4	159	6 3/8	162	5	127	14	6.3
LF800M4QT / 800M4QT	2	10 5/8	270	9 5/8	245	3 1/4	83	6 3/8	162	7	178	5	127	19	8.6
U800M4QT	¾	6 3/8	163	7 9/16	192	2 1/8	55	5 7/16	138	–	–	2 1/4	57	4	1.8
U800M4QT	1	8 5/16	211	9	229	2 13/16	71	6 3/16	158	–	–	3 7/16	87	6	2.7
**800M4QT-QC	½	7 7/8	200	8	203	2 13/16	71	5 7/16	138	5 5/8	144	3 7/16	87	4.5	2.0
**800M4QT-QC	¾	8 1/2	216	8 1/2	216	2 13/16	71	5 11/16	144	6 1/8	156	3 7/16	87	4.7	2.1
**800M4QT-QC	1	9 1/2	241	9 1/2	241	2 13/16	71	6 3/4	171	6 7/8	175	3 7/16	87	6.6	3.0

**QC models have quick-connect adapters which attach separately to the approved 800M4QT.

Series LF800M4FR / 800M4FR

Freeze-Resistant Pressure Vacuum Breakers

Sizes: ½" – 2" (15 – 50mm)

LF800M4FR

LF800M4FR

Features

- Unique built-in relief valve relieves pressure caused by ice formation
- Replaceable plastic seat
- Easy maintenance of internal parts
- O-ring bonnet seal for less possibility of fouling
- Silicone seat disc for durability
- Test cocks positioned for easy testing and winterization
- Compact space saving design
- Standardly equipped with tee handle quarter turn ball valveshutoffs ½" – 1". The 1¼" - 2" features lever handles
- No special tools required for servicing

Pressure-Temperature

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

LF800M4FR

LEAD FREE* Series LF800M4FR is designed to prevent backsiphonage of contaminated water under continuous pressure into the potable water supply. Its superior design protects the valve body and internal components during sudden freeze conditions. Water inside the PVB freezes from the outside-inward.

As the ice forms and expands, causing a buildup of pressure, the LF800M4FR relieves the pressure through a unique relief valve built into the plastic float.

Test cocks are positioned at the lowest point of the valve for winterization draining. The LF800M4FR is reusable with the relief valve designed to automatically re-seat. It will not discharge through the relief valve during normal operation. (The built-in relief valve is not designed to provide freeze protection for the entire irrigation system.) The LF800M4FR features Lead Free* construction to comply with Lead Free* installation requirements.

Materials

- Springs: Stainless Steel
- Bonnet: Celcon®
- Vent Disc: Silicone Rubber
- Disc Holder Float: Polypropylene
- Check Valve Disc: Silicone Rubber
- Check Valve Seat: Noryl® Plastic
- Body: Lead Free* Cast Copper Silicon Alloy

Approvals

1020 B64.12

IAMPO

Approved by the foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California, Manual Section 10.

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

800M4FR

For Use in Non-Potable Applications

Series 800M4FR is designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirments for non-potable service applications such as irrigation, fireline, or industrial processing. Its superior design protects the valve body and internal components during sudden freeze conditions. Water inside the PVB freezes from the outside-inward.

Materials

- Springs: Stainless Steel
- Bonnet: Celcon®
- Vent Disc: Silicone Rubber
- Disc Holder Float: Polypropylene
- Check Valve Disc: Silicone Rubber
- Check Valve Seat: Noryl® Plastic
- Body: Bronze

Approvals

1020 B64.12

IAMPO

Approved by the foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California, Manual Section 10. QC models are not ASSE 1020 approved.

Models

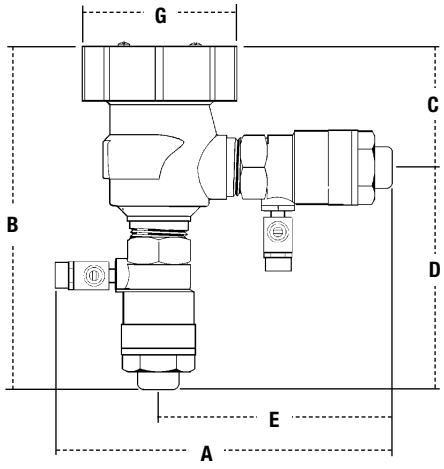
Prefix
U – union connections (¾" - 1" only)

Suffix
QC – Quick-Connect Adapters
SH – Stainless Steel Ball Valve Handles

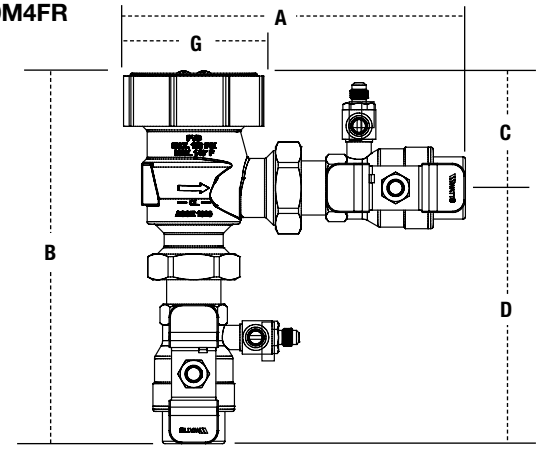
For additional information, request literature ES-LF800M4FR and ES-800M4FR.

See Flow Charts on p. 83.

Dimensions and Weights



U800M4FR



LF800M4FR / 800M4FR / U800M4FRQC

MODEL	SIZE	DIMENSIONS												WEIGHT	
		A		B		C		D		E		G			
	in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*
LF800M4FR / 800M4FR	½	6⅛	156	6¼	159	2⁹⁄₁₆	65	3¹¹⁄₁₆	94	3⅞	98	2¼	57	4	1.8
LF800M4FR / 800M4FR	¾	6½	165	6½	165	2⁹⁄₁₆	65	3¹⁵⁄₁₆	100	4⅛	105	2¼	57	4	1.8
LF800M4FR / 800M4FR	1	7½	191	7½	191	2¾	70	4¾	121	4⅞	124	3⁷⁄₁₆	87	6	2.7
LF800M4FR / 800M4FR	1¼	8⅞	225	9	229	3¼	83	5¾	146	6⅛	156	5	127	11	5.0
LF800M4FR / 800M4FR	1½	9¼	235	9½	241	3¼	83	6¼	159	6⅜	162	5	127	14	6.3
LF800M4FR / 800M4FR	2	10⅝	270	9⅝	245	3¼	83	6⅜	162	7	178	5	127	19	8.6
U800M4FR	¾	6⅜	163	7⁹⁄₁₆	192	2⅛	55	5⁷⁄₁₆	138	–	–	2¼	57	4	1.8
U800M4FR	1	8⁵⁄₁₆	211	9	229	2¹³⁄₁₆	71	6³⁄₁₆	158	–	–	3⁷⁄₁₆	87	6	2.7
800M4FRQC	½	7⅞	199	8	203	2¹³⁄₁₆	71	5⁷⁄₁₆	138	5⅝	144	3⁷⁄₁₆	87	4.5	2.0
800M4FRQC	¾	8½	216	8½	216	2¹³⁄₁₆	71	5¹¹⁄₁₆	144	6⅛	156	3⁷⁄₁₆	87	4.7	2.1
800M4FRQC	1	9½	241	9½	241	2¹³⁄₁₆	71	6¾	171	6⅞	175	3⁷⁄₁₆	87	6.6	3.0

Series LF008PCQT

Health Hazard, Anti-Siphon, Spill-Resistant Backflow Preventer

Sizes: ⅜" — 1" (10 – 25mm)

LF008PCQT

Features

- Standardly supplied with internal polymer coating
- Standardly supplied with Tee handles
- Available less Tee handle with stem wrench flats. For use where space is limited
- Available in left-handed or right-handed outlet
- Spill-resistant design for indoor use
- Affordable design
- Modular cartridge for ease of service
- Vent uses an O-ring for reliable operation
- Compact space saving design
- Satin chrome finish available

Pressure-Temperature

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

LF008PCQT

LEAD FREE* Series LF008PCQT is designed for indoor point-of-use 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. The LF008PCQT features Lead Free* construction to comply with Lead Free* installation requirements.

Materials

- Springs: Stainless steel
- Bonnet: PPO
- Vent Disc: EPDM
- Disc Holder: PPO
- Check Disc: Silicone rubber
- Body: Lead Free* cast copper silicon alloy

Approvals

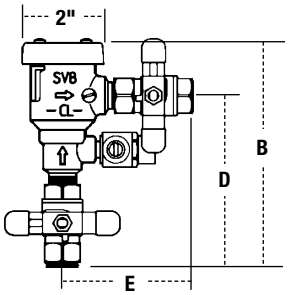
ASSE 1056 · c SP us B64.1.2 · NSF Certified to NSF/ANSI 372

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

For additional information, request literature ES-LF008PCQT.

See Flow Charts on p. 74.

Dimensions and Weights



LF008PCQT

SIZE	DIMENSIONS						WEIGHT	
	B		D		E			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
⅜	5½	140	3 15/16	100	3⅛	79	1.6	.73
½	5¾	146	4 3/16	106	3⅜	86	1.7	.77
¾	7	178	4⅝	117	4½	114	3.8	1.72
1	7½	191	5⅛	130	4⅞	124	4.8	2.18

Series LF288A, LF289, LFN388 and 188A

Anti-Siphon Vacuum Breakers

Sizes: ¼" – 3" (6 – 80mm)

LF289

LFN388

188A

Features

- Spring loaded vent for continuous pressure use
- Patented design
- Spill-resistant diaphragm design for indoor use
- Affordable design
- Modular cartridge for ease of service
- Vent uses an O-ring for reliable operation
- Compact space saving design
- Meets ASSE 1001 (⅜" and ½" only)
- Optional satin chrome finish
- Full size orifice for maximum flow
- Lightweight disc assembly prevents spilling under all rates of flow

Pressure-Temperature

LF288A
Temperature Range: 180°F (82°C)
Maximum Working Pressure: 125psi (8.6 bar)

LF289
Temperature Range: 33°F - 180°F (0.5°C - 82°C)
Maximum Pressure: 150psi (10.3 bar)

LFN388 and 188A
Maximum Temperature: 180°F (82°C)
Maximum Working Pressure: 125psi (8.6 bar)

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

LF288A, LF289, and LFN388

LEAD FREE Series LF288A, LF289, and LFN388 represent a complete line of vacuum breakers designed to prevent backsiphonage of contaminated water into a potable water supply.

They feature a lightweight, durable “disc float" suitable for temperatures up to 180°F (82°C) which closes the atmospheric vent to prevent spilling under all rates of flow. Therefore, they are ideally recommended for low flow installations such as laboratory equipment which use such a small amount of water. They also contain a durable silicone disc which has high heat and water hammer shock resistance and assures tight seating with the lightest of seating contact. The LF288A, LF289, and LFN388 feature Lead Free* construction to comply with Lead Free* installation requirements.

188A

For Use in Non-Potable Applications

Series 188A is designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirments for non-potable service applications such as irrigation, fireline, or industrial processing. Features a lightweight, durable “disc float” suitable for temperatures up to 180°F (82°C) which closes the atmospheric vent to prevent spilling under all rates of flow.

Materials

LF288A ¼" - 3" (6 – 80mm)
- Body: Lead Free* cast silicon copper alloy
- Disc: Silicone

LF289 ⅜" - ¾" (10 – 20mm)
- Springs: Stainless Steel
- Bonnet: PPO
- Vent Disc: EPDM
- Disc Holder: PPO
- Check Disc: Silicone Rubber
- Body: Lead Free* Bronze cast silicon copper alloy
- Diaphragm: EPDM

LFN388 ¼" - ⅜" (6 – 10mm)
- Body: Lead Free* cast copper silicon alloy
- Disc: Silicone

188A ¾" - 2" (20 – 50mm)
- Body: Brass
- Internal Trim: Bronze
- Seat Disc: Silicone
- Disc Float: Plastic

Models

LF288A-C – Lead Free* brass body and polished chrome finish
LFN388-SC – Satin Chrome
LFN388-C – Polished Chrome
LFN388-DM – Deck Mount

Approvals

Model LF288A
ASSE 1001 · CSA B64.1.1 · UPC · NSF Certified to NSF/ANSI 372
Certified thru 1" CSA

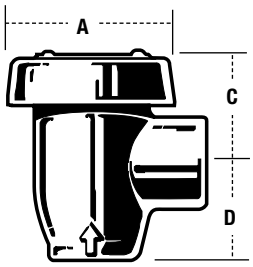
Model LF289
ASSE 1001 · NSF Certified to NSF/ANSI 372
⅜" and ½" only

Model LFN388
CSA · UPC · NSF Certified to NSF/ANSI 372

Model 188A
ASSE 1001 · CSA B64.1.1 · UPC
Approved by the city of Los Angeles

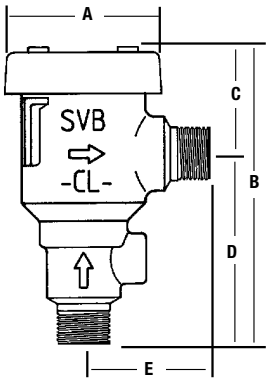
For additional information, request literature ES-LF288A, LF289, LFN388 and 188A. See Flow Charts on p.76-77.

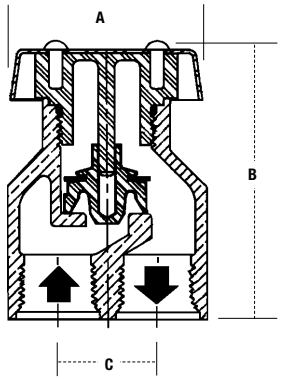
Dimensions and Weights



LF288A

SIZE	DIMENSIONS								WEIGHT	
	A		B		C		D			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*oz.*	*gm.*
¼	1¾	44	2¼	57	1¼	32	1	25	6	170
⅜	1¾	44	2¼	57	1¼	32	1	25	6	170
½	2	50	2¾	70	1½	38	1¼	32	8	227
¾	2¼	57	3	76	1½	38	1½	38	18	510
1	2⅞	73	3⅝	92	1⅞	48	1¾	44	28	794
1¼	2⅞	73	3¾	95	1⅞	48	1⅞	48	34	964
1½	3⅝	92	4½	114	2¼	57	2¼	57	54	1531
2	4	100	5⅛	130	2⅝	67	2½	64	84	2381
2½	6½	165	7½	191	4½	114	3	76	256	7258
3	6½	165	8	200	4⅝	117	3⅜	86	274	7768





LF289

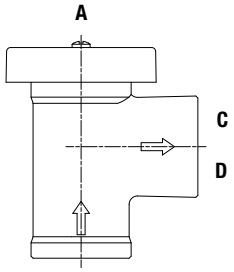
SIZE	DIMENSIONS										WEIGHT	
	A		B		C		D		E			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*
⅜	2	50	3¾	95	1⅜	35	2⅜	60	1½	38	.9	.4
½	2	50	3¾	95	1⅜	35	2⅜	60	1½	38	1	.4
¾	3¾	95	5	127	2½	64	2½	64	2⅜	60	3	1.4

LFN388

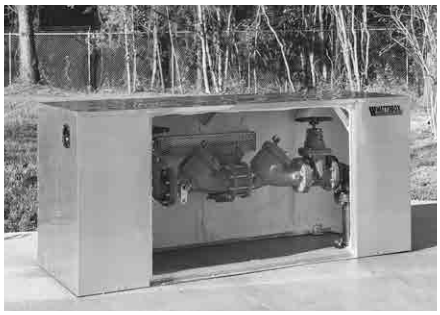
SIZE	DIMENSIONS						WEIGHT	
	A		B		C			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*
¼	1¾	44	2⁵⁄₁₆	59	¾	19	.50	.2
⅜	1¾	44	2⅜	60	⅞	22	.75	.3

188A

SIZE	DIMENSIONS						WEIGHT	
	A		C		D			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
¾	2¼	57	1⅞	48	1½	38	1.13	.51
1	2⅞	73	2⅛	54	1¹¹⁄₁₆	43	1.75	.79
1¼	2⅞	73	2⅛	54	1¹³⁄₁₆	46	2.13	.96
1½	3⅝	92	2⁷⁄₁₆	62	2³⁄₁₆	56	3.63	1.64
2	4⅛	105	2⅞	73	2½	64	5.25	2.38



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.
- Is 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 installations.
- 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.
- Contains no structural wood or particle board for long life.
- Easy installation aluminum enclosures feature interlocking panels which eliminate 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.
- ASSE 1060 Certified (Consult factory for approved models)

Backflow prevention assemblies subjected to potential freezing conditions shall be protected with the WattsBox enclosure as shown.

The enclosure shall be of reinforced aluminum construction, providing access through doors for testing/certification purposes. It must also be totally removable for maintenance purposes. The enclosure shall be structurally lined with a unicellular, non-wicking insulation consisting of a sandwich laminate or applied by spray. It shall contain a thermostatically controlled heat source mounted to the interior wall or on the backflow preventer to provide protection to -30°F. No wood or “particle board” shall be allowed in assembly. Insulation mounted with glue will be cause for rejection. Power source will be protected with a ground fault circuit interrupting receptacle, UL Standard 943, NEMA 3R, installed by others, inside the box.

The enclosure shall contain drain openings sized to accommodate the maximum discharge of the reduced pressure zone assembly. Drain openings shall open to discharge under the most severe conditions. These openings are protected against intrusion of either wind, debris or animal. The enclosure is provided with means of permanent anchor and “lockable” access doors and/or lid to prohibit theft or vandalism.

All “wet” portions of the backflow prevention assembly shall be protected within the enclosure. Fire department hose connections and OSY indicating valve handles shall be maintained outside the enclosure.

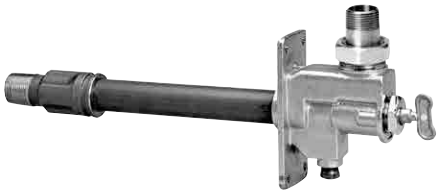
The enclosure shall be factory assembled and delivered to the site ready to install with no drilling, screwing or riveting of enclosure required on site. The enclosure and the backflow preventer shall be covered by a single warranty policy. Enclosure shall be a Watts Series WattsBox.

For additional information, request literature ES-WB.

Series TWS

Key Operated Wall Hydrants for irrigation system winterization

Sizes: ¾" – 1" (20 – 25mm)



TWS

Features

- Eliminates delays and multiple visits to gain interior access to irrigation equipment
- Standardizes location of supply shutoff valve and drain connection
- Access available anytime for winterizing
- Durable bronze valve body and shaft
- One piece valve plunger
- Tamper resistant key operated hydrant
- Exterior chrome finish
- Resilient seated shutoff
- Union connection for ease of installation of backflow preventer
- Manual drain port

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)

TWS

Series TWS Key Operated Wall Hydrants have been specifically designed to provide outside access to a building water supply for start-up, winterizing, and servicing of irrigation sprinkler systems (non-potable service applications). The TWS is located outside of the home reducing the time spent on service calls. There is no need to locate the inside shutoff valve or the drain connection. Deploying the TWS wall hydrant enables the irrigation contractor to winterize an irrigation system at anytime thereby protecting the contractors' warranty and the homeowners' investment.

Materials

- Chrome plated bronze valve head.
- Brass shaft with threaded end.
- Resilient seated shutoff.

Dimensions and Weights

TWS

MODEL	DISTANCE (DM)		PIPE LENGTH		STEM LENGTH	
	in.	*mm*	*in.*	*mm*	*in.*	*mm*
TWS-8	8	200	9	229	12 5/16	313
TWS-10	10	250	11	279	14 5/16	364
TWS-12	12	300	13	330	16 5/16	389

Series SS07F

Stainless Steel Single Detector Check Valves

Sizes: 4" – 10" (100 – 250mm)

SS07F 4", 6"

SS07F 8", 10"

Features

- Lightest weight in the industry – reduces shipping and handling costs
- Non-corrosive stainless steel construction – eliminates pin holes and voids associated with epoxy coated valves
- Can be installed in horizontal/vertical positions
- Optional meter bypass assembly (specify GPM or CFM). Required to detect leakage or theft of water
- Optional sized bypass tappings available

Pressure-Temperature

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

SS07F

For Use in Non-Potable Applications

Series SS07F Stainless Steel Single Detector Check Valves are designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-potable service applications such as irrigation, fireline, or industrial processing. They are designed to detect 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.

Materials

- Body: 300 Series stainless steel
- Linkage Parts: stainless steel

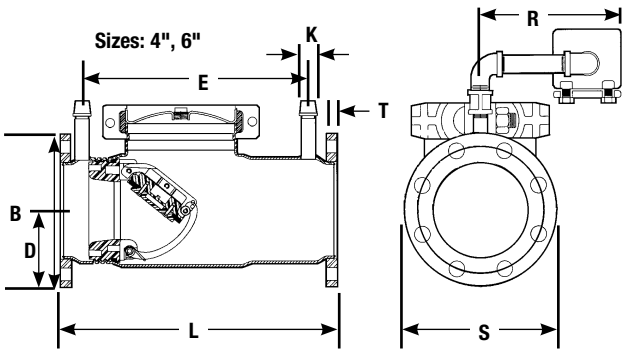
Approvals

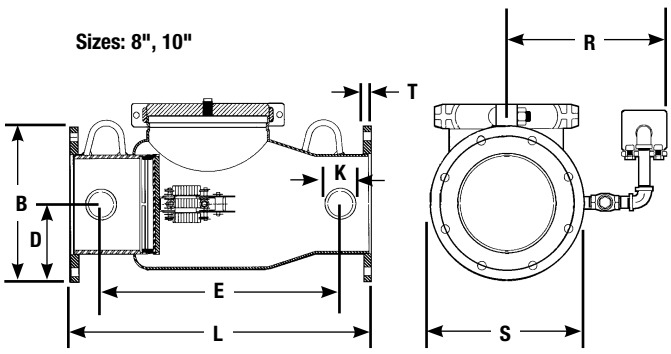
UL LISTED FM Approved

(8" & 10" sizes only)

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.

Dimensions and Weights





SS07F

SIZE	DIMENSIONS																WEIGHTS			
	B		D		E		K (NPT)		L		R		S		T		less Bypass		with Bypass	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lb.*	*kg.*	*lb.*	*kg.*
4	11½	292	4½	114	12⅞	327	½	13	16½	419	8	203	9	229	⅝	16	30	13.6	35	15.9
6	13½	343	5½	140	17	432	¾	19	22½	572	10½	267	11	279	11/16	17	65	29.5	70	31.8
8	15½	394	6¾	171	21¼	540	2	51	26½	673	12¼	311	13½	343	11/16	17	143	64.9	153	69.3
10	17½	445	8	203	28¼	718	2	51	36	914	14½	368	16	406	11/16	17	163	73.9	173	78.5

For additional information, request literature ES-SS07F.

See Flow Charts on p. 88.

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, LF709, 007 and LF007.

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-TK99D 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-TK99E 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

Test Cocks

LFTC

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

Features

- Full port ball valve design
- Screwdriver slot to open and close
- Available ⅛" M x ¼" F or ¼" M x ¼" F

LFSAE-TC

Features

- Full port ball valve design
- Screwdriver slot operation
- Available ⅛" M x SAE

SAE-TC Adapter

Features

- ¼" female SAE x 7/16" FPT
- Adapts to SAE-TC for use with pressure gauge and/or site tube

SilverEagle LFTC

Features

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

SilverEagle No. 3 LFTC with O-Ring

Features

- for 2½" – 4" (65 – 100mm) series 757 and 957
- for 6" – 10" (150 – 250mm) series 757 and 957

Cap & Tether

Plastic Cap & Tether

(four required per backflow preventer)

- Fits ¼" Female test cocks
- Plastic dust cap and rubber tether

SAE-TC Brass Cap

- Protects SAE-TC from dirt and debris

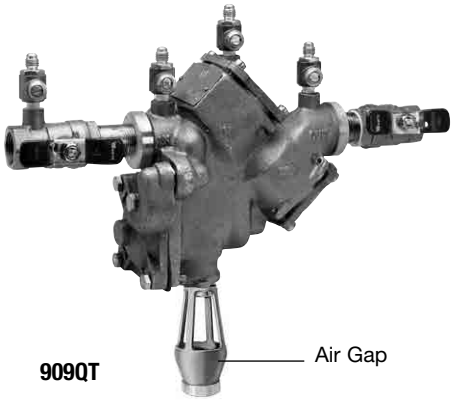
Brass Cap & PlasticTether

(four required per backflow preventer)

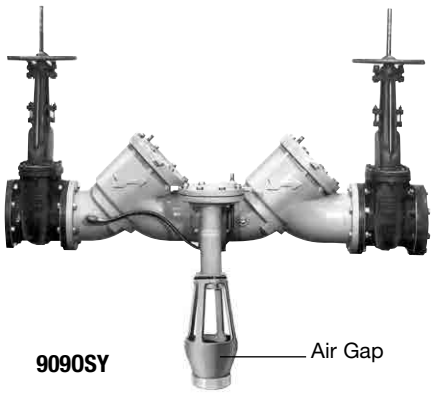
- Fits ⅛" M x SAE test cocks
- Brass dust cap with O-ring seal and rubber tether

Air Gaps and Elbows
for Reduced Pressure Zone Assemblies

Sizes: ¼" – 10" (6 — 250mm)



909QT



909OSY

Features

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

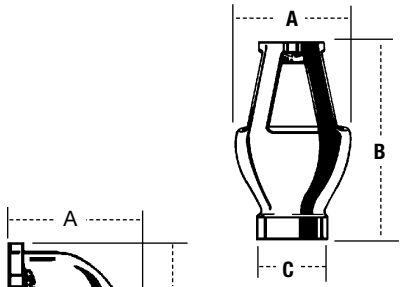
Vertical Air Gaps
- Detach the sensing line from the inlet ball valve and the elbow on the relief valve.
- Remove the elbows from the relief valve base.
- Hang the Air Gap Drain on the body of the relief valve
- Reinstall the elbow into the base of the relief valve to hold the Air Gap drain in place.
- 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.

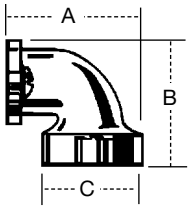
Air Gaps

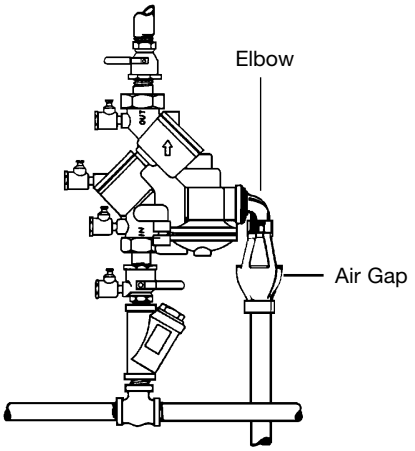
An air gap provides the unobstructed, physical separation between the discharge end of a potable water supply line and an open receiving vessel. The installation of an air gap and drain line are recommended.

Vent Elbows

Used with Watts air gaps for vertical installation of Reduced Pressure Zone Assemblies.







MODEL	ORDERING CODE	SERIES/ SIZES	DIMENSIONS						WEIGHT	
			A		B		C (NPT)			
			in.	mm	in.	mm	in.	mm	lbs	kgs
909AGA	0881399	½" – ½" 009/LF009, ¾" 009/LF009M2/M3, ½" – 1" 995	2⅜	60	3⅛	79	½	13	.63	.28
909AGC	0881376	¾" – 1" 009/LF009, 909/LF909, 1" – 1½" 009/LF009M2, 1¼" – 2" 995	3¼	83	4⅞	124	1	25	1.50	.68
909AGF	0881378	1¼" – 3" 009/LF009, 909/LF909, 1¼" – 2" 009/LF009M1, 2" 009/LF009M2	4⅜	111	6¾	171	2	51	3.25	1.47
909AGK	0881385	4" – 6" 909/LF909, 4" – 10" 909RPDA, 8" – 10" 909/LF909M1	6⅜	162	9⅝	244	3	76	6.25	2.83
909AGM	0881387	8" – 10" 909/LF909	7⅜	187	11¼	286	4	102	15.50	7.03
919 AGC	0881576	¾"-1" 919/LF919	2⅜	60	3 ⅛	79	½	13	0.63	0.28
919 AGF	0881577	1¼"-2" 919/LF919	4⅜	111	8 ½	216	2	51	3.5	1.6
957AG	0111764	2½" – 10" 957	7½	190	10 3⁄16	258	2	51	1.50	.68
Splash Guard										
994AGK-P	0881397	2½" – 10" 994	8	203	11¼	286	2	51	1.50	0.68
995-AG	0439190	3" – 6" 995	5	127	8	203	2	51	–	–
957AG	0111815	2½" – 10" 957	4¾	119	2½	62	–	–	.4	0.18

MODEL.	MATERIAL	ORDERING CODE	SERIES/ SIZES	DIMENSIONS						WEIGHT	
				A		B		C			
				in.	mm	in.	mm	in.	mm	lbs	kgs
909EL-A	Bronze	0881370	¼"–½" 009/LF009, ¾" 009/LF009M2/M3, ½"–1" 995	—	—	—	—	—	—	—	—
909EL-C	Iron	0881380	¾"–1" 009/LF009, 909/LF909, 1"–1½" 009/LF009M2, 1¼"–2" 995	2⅜	60	2⅜	60	—	—	.38	.17
909EL-F	Gray Cast Iron with Zinc	0881382	1¼"–2" 009/LF009M1, 1¼"–2" 009/LF009, 909/LF909, 2" 009M2	3⅝	92	3⅝	92	—	—	2	.91
909EL-H	Phosphate Primer	0881384	2½"–3" 009/LF009, 909/LF909	—	—	—	—	2	51	—	—
919 EL-C	Bronze	0881578	¾"–1" 919/LF919	2¼	57	2 ⅝	67	—	—	0.63	0.28
919 EL-F	Cast Iron	0881579	1¼"–2" 919/LF919	5¼	133	4	102	—	—	2	0.9
994EL-F	Steel Epoxy Coated	0881396	2½"–10" 994	4⅞	124	9	229	2	51	4	1.8

vertical

Spools and Flanges
for Retrofitting Backflow Preventers

Sizes: 2½" – 10" (65 – 250mm)

Spools

LEAD FREE Watts offers 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.

Spools

Flanges

LEAD FREE Watts offers 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

The W-SPL and W-FLG feature Lead Free* construction to comply with Lead Free* installation requirements.

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

7

Miscellaneous Backflow Products

Series WVS
Valve Setters – Used with Watts Silver Eagle™ N-Shape Assemblies

Sizes: 3" – 10" (80 – 250mm)

FLxFL

Features

- Corrosion resistant fusion epoxy coated.
- Eliminates the need for thrust blocks or other restraints at the point of installation.
- Flanges: ANSI B16.1 Class 125 (Standard)
  ANSI AWWA C153 A21.53-88

Pressure-Temperature

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

WVS

LEAD FREE The Watts Series WVS valve setters are designed to augment the installation of the "N" series backflow prevention valves. The Series WVS are available in three connection options, Flange by Flange, Mechanical Joint by Flange, and Mechanical Joint by Mechanical Joint. They are constructed of fusion epoxy coated ductile iron. Integral ductile iron support between elbows transfers thrust downstream, thus eliminating thrust block requirements between elbows. Mechanical joint restraint devices may be used at the pipe connections, depending on local conditions.

Materials

- Body: Ductile iron A536 GR 65-45-12
- Coating: Fusion epoxy coated internal and external AWWA C550
- Bolts & Nuts: Stainless steel

Note: Mechanical joint accessories, flange bolts and gaskets are not included (except for center joints).

Models

FLxFL - Flange by Flange
MJxFL - Mechanical Joint by Flange
MJxMJ - Mechanical Joint by Mechanical Joint

***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

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

Series TR
Transition Risers
Sizes: 4" – 10" (100-250mm)

TR

Features

- Cost savings
- Corrosion resistant stainless steel construction, type 304
- Ease of installation and lightweight allow one person to position and handle the riser
- Minimal site preparation; joint restraint one-piece construction reduces time and labor; no missing parts, no leaks; easily identifiable for approvals
- Includes Test Cap and Coupler
- UL and FM approved
- Sizes: available in 4" – 10" (100-250mm) with various lengths to meet all local requirements
- Designed to meet NFPA 24-2007 Section 10.6.5
- AWWA C900 Inlet/DIP
- AWWA C606 Outlet

TR

LEAD FREE

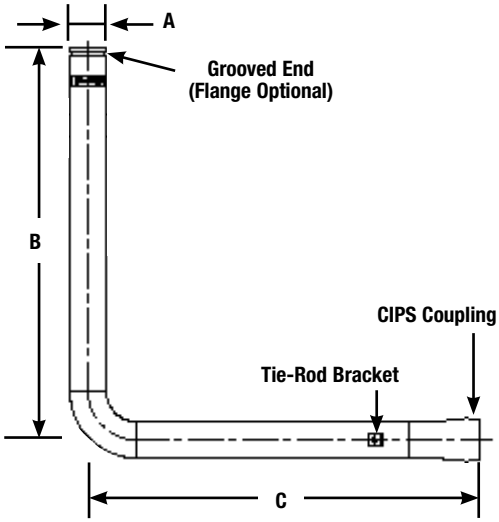
Series TR Transition Risers are used to connect the main fire supply to the building overhead fire system. The fitting passes under the foundation without joints and extends up through the floor. Provided with installation tabs, the unit has a CIPS (Cast Iron Pipe Size) coupler for easy connection to the underground supply (AWWA C900 PVC and Ductile Iron Pipe) and industry standard grooved-end connection (AWWA C606) on the building side for easy connection to the overhead fire sprinkler system.

Approvals

Fittings UL HKQA (4"-10")

FM Approved

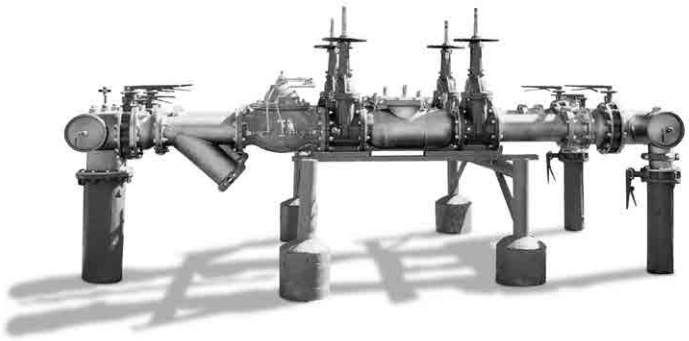
Dimensions and Weights



SIZE							WEIGHT	
	A (OD)		B		C			
in.	*in.*	*mm*	*ft.*	*cm*	*ft.*	*cm*	*lbs.*	*kg*
4	4½	114	6	183	6	183	71	32
6	6⅝	168	6	183	6	183	98	44
8	8⅝	219	6	183	6	183	129	59
10	10¾	273	6	183	6	183	202	92

Consult factory for custom leg dimensions.

Series PVS-1000
Pre-engineered Valve Stations



PVS1000

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)

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.

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

For additional information, request literature PG-ValveStations.

Series BIC-1000
Backflow Irrigation Control Stations

BIC-1000

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.

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”.

System Attributes

- All components are above ground level on a stainless steel station
- Combines the Master Valve, Regulator Valve, and Backflow Assembly in one easily located component

Series FR 500

Thermostatic Freeze Relief Kits

Sizes: ⅛", ¼", ½" and ¾" (3 – 20mm)

⅛" and ¼"

½" and ¾"

Features

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

Pressure-Temperature

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

FR 500

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).

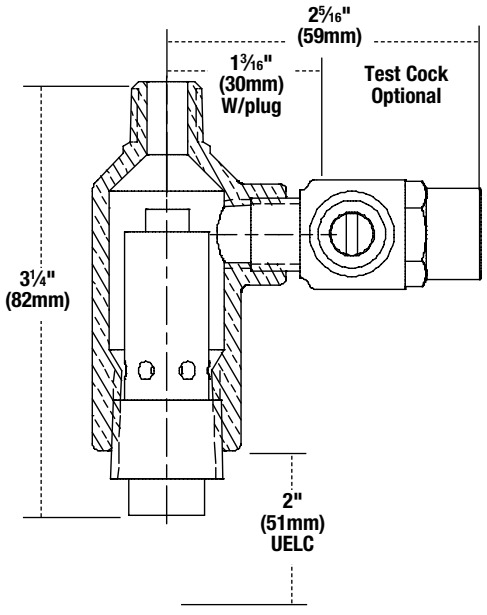
Materials

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

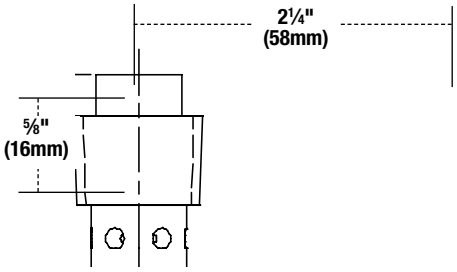
Approvals

IAMPO

Dimensions



Sizes: ⅛" and ¼" (3 and 8mm)



Sizes: ½" and ¾" (15 and 20mm)

For additional information, request literature ES-FR500.

Guide to Options

Hydrant Connections – HC

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

Available on series: 2" 007, 009

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, LF008, 009

Elbow Fittings for 360° Rotation – AQT

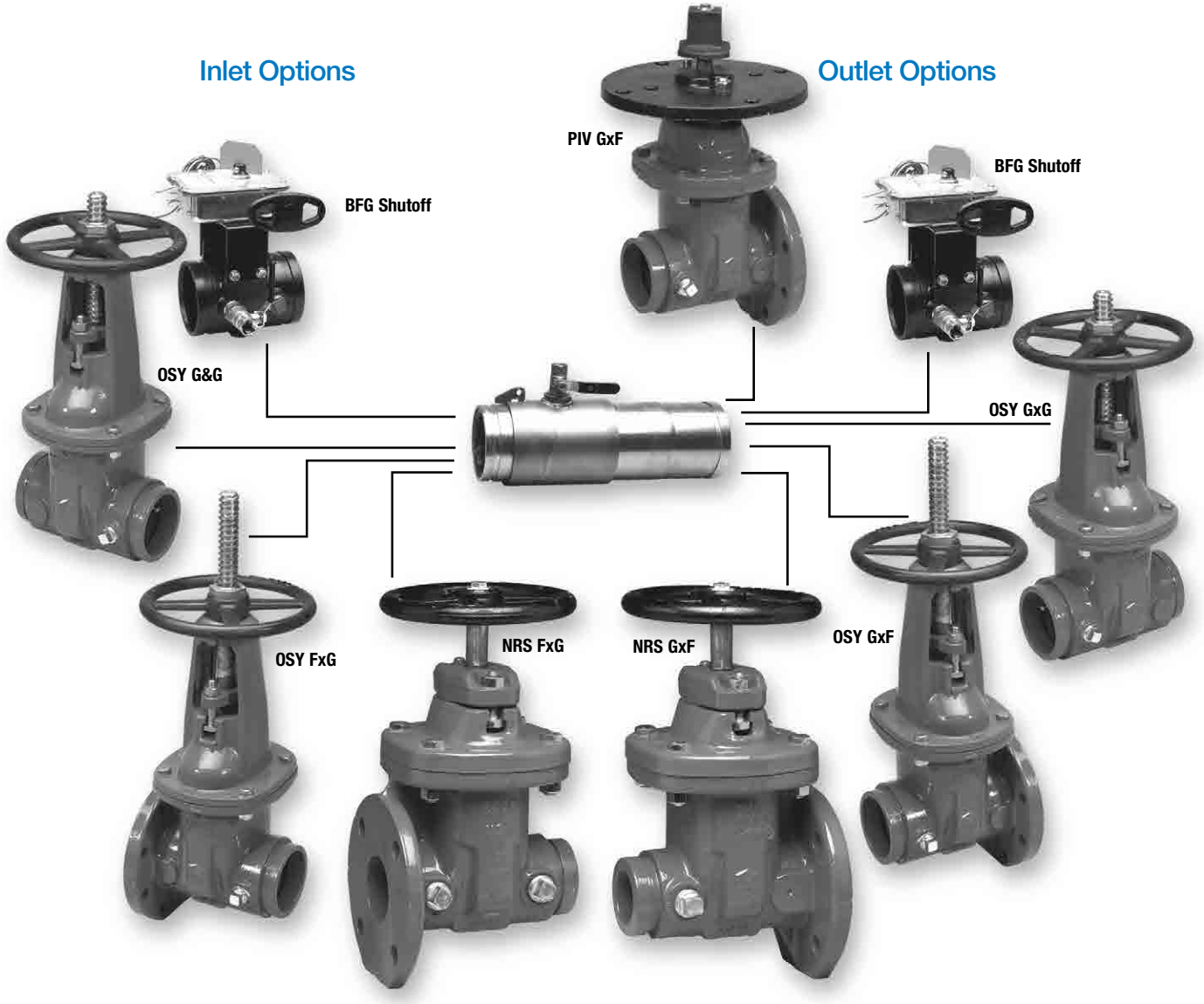
The AQT elbow fittings for 360° rotation option allows the installer to pivot the valve's inlet and outlet in the direction of the piping since often times they do not align exactly. This option provides great flexibility to the installer and saves space, time, materials and money.

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" operating nut and post indicator plate and grooved butterfly valves.

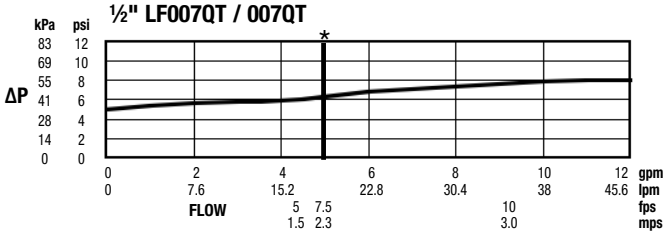
Available on series: 757, 774, 774X, LF757DCDA, 757DCDA, 774DCDA, 774XDCDA, 957, 994, LF957RPDA, 957RPDA, 994RPDA



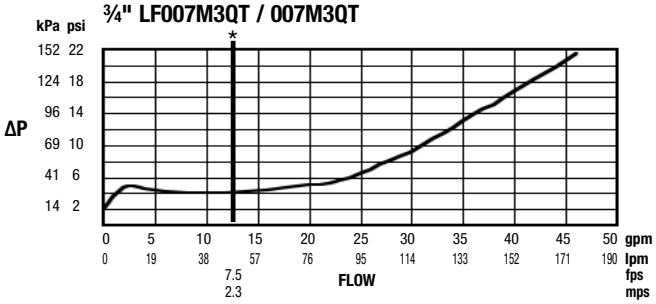
For additional information, request literature S-SilverEagleshutoffs.

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

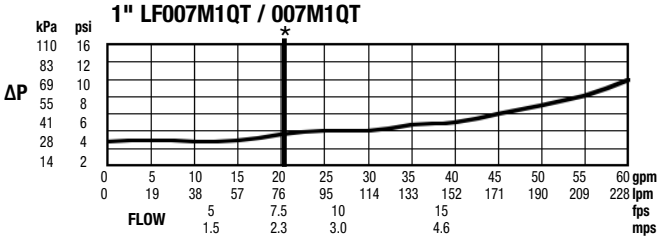
½" LF007QT / 007QT



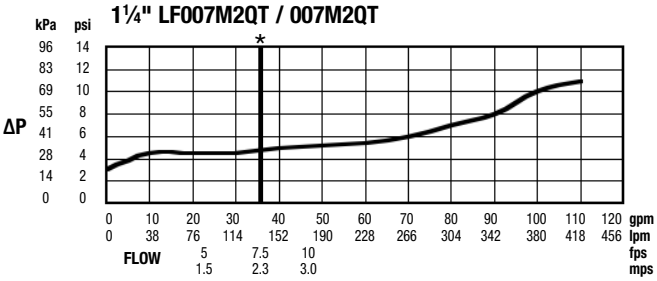
¾" LF007M3QT / 007M3QT



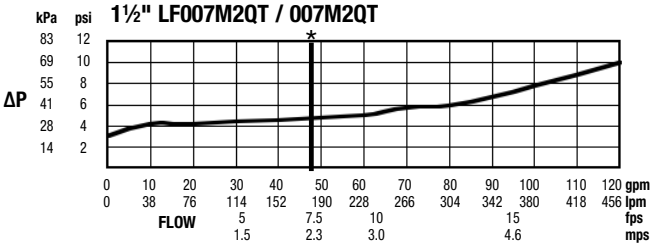
1" LF007M1QT / 007M1QT



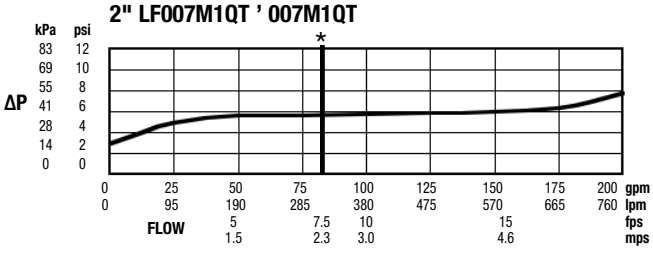
1¼" LF007M2QT / 007M2QT



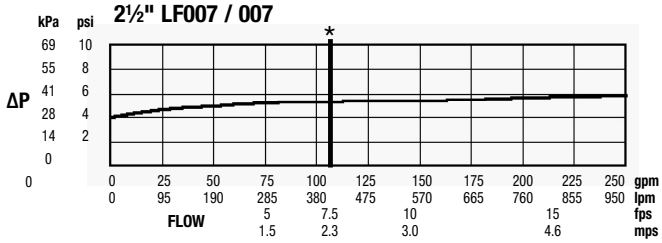
1½" LF007M2QT / 007M2QT



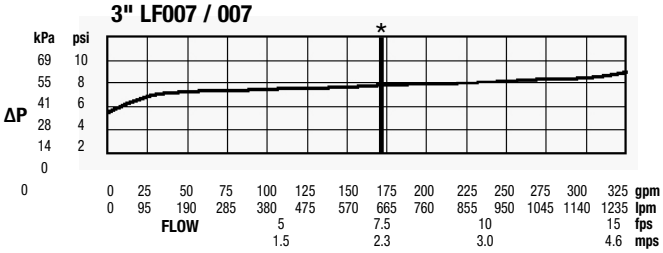
2" LF007M1QT ' 007M1QT



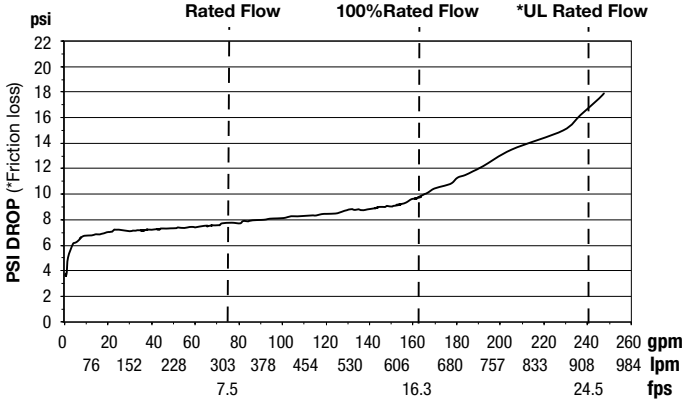
2½" LF007 / 007



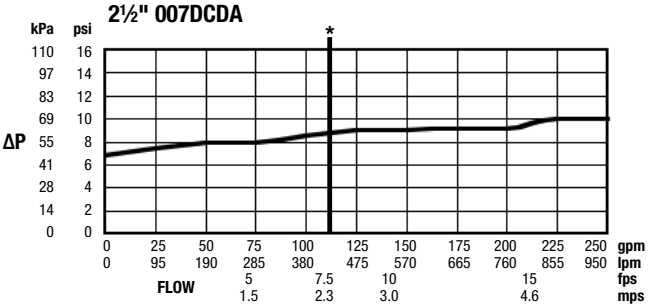
3" LF007 / 007



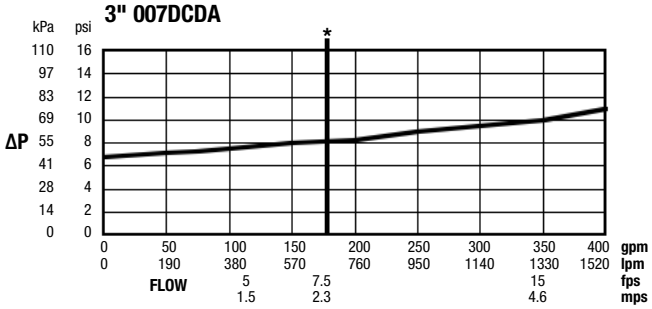
2" 007M1DCDA



2½" 007DCDA

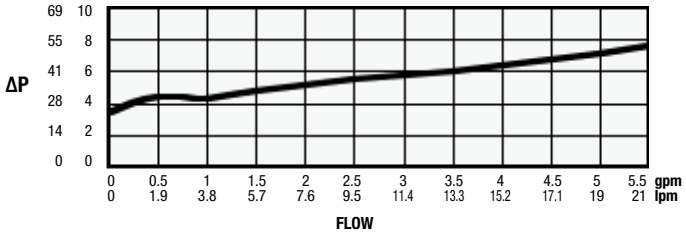


3" 007DCDA

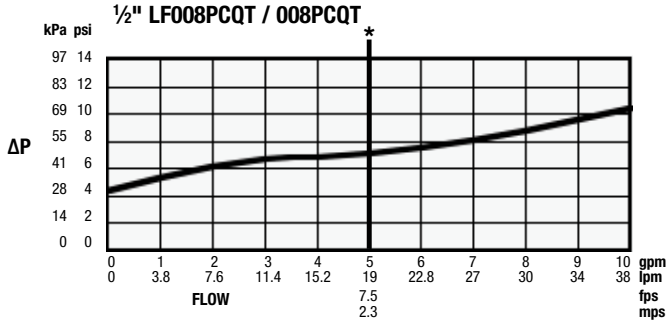


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*

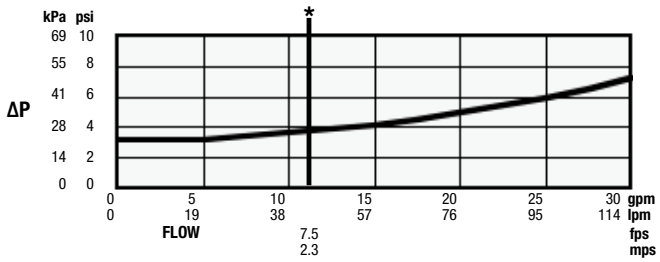
⅜" LF008PCQT / 008PCQT



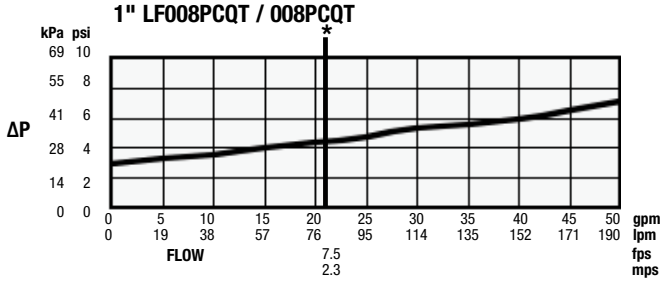
½" LF008PCQT / 008PCQT



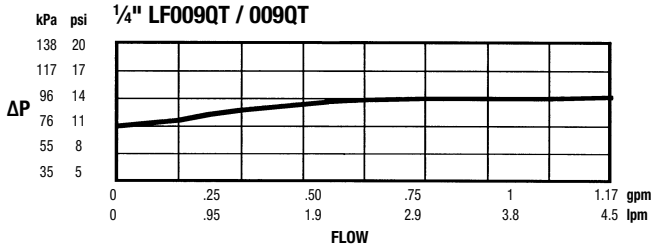
¾" LF008PCQT / 008PCQT



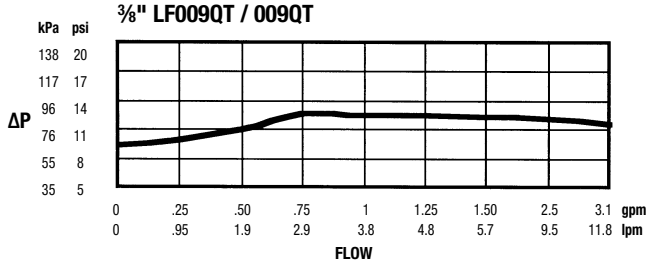
1" LF008PCQT / 008PCQT



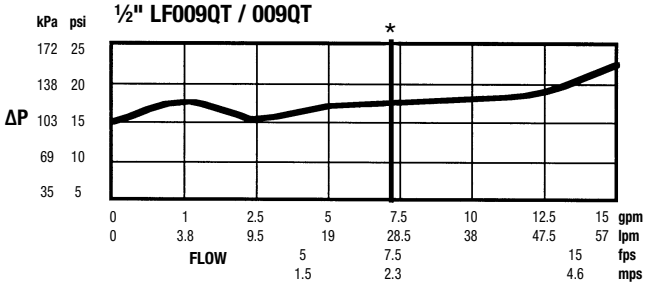
¼" LF009QT / 009QT



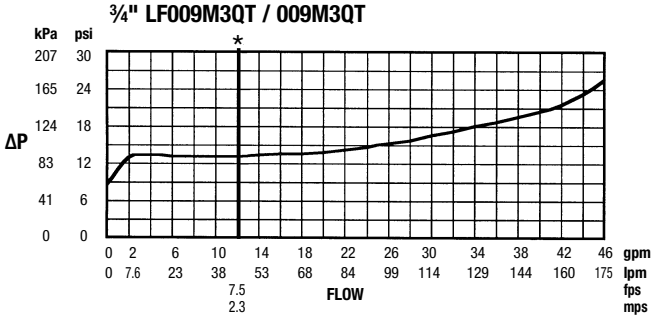
⅜" LF009QT / 009QT



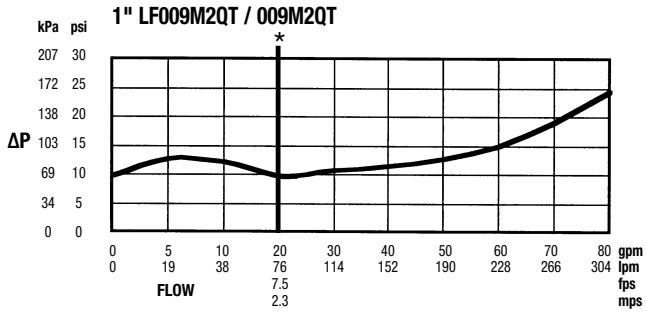
½" LF009QT / 009QT



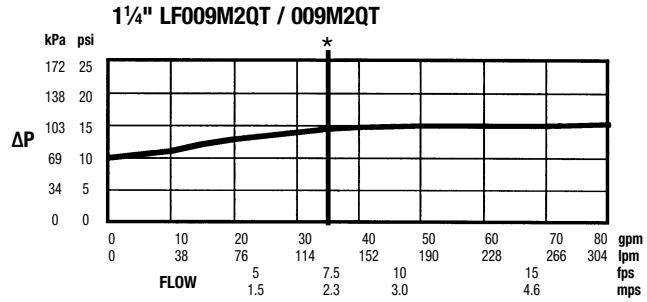
¾" LF009M3QT / 009M3QT



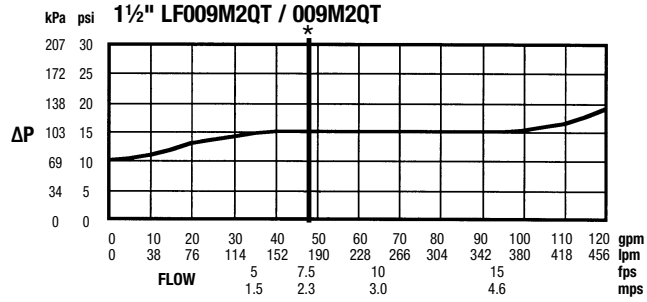
1" LF009M2QT / 009M2QT



1¼" LF009M2QT / 009M2QT

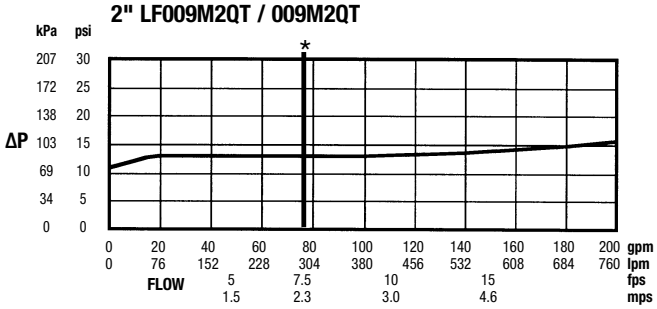


1½" LF009M2QT / 009M2QT

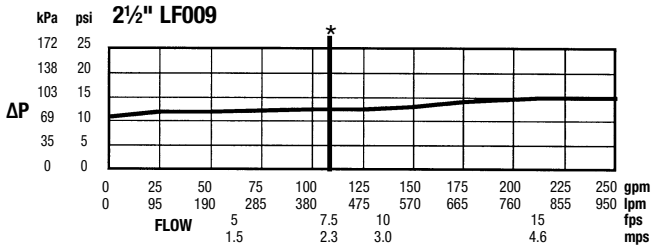


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)

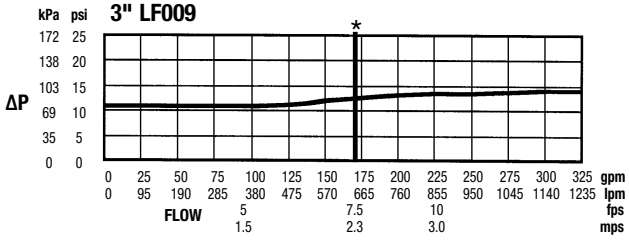
2" LF009M2QT / 009M2QT



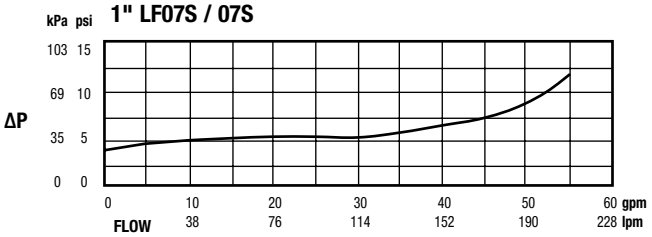
2½" LF009



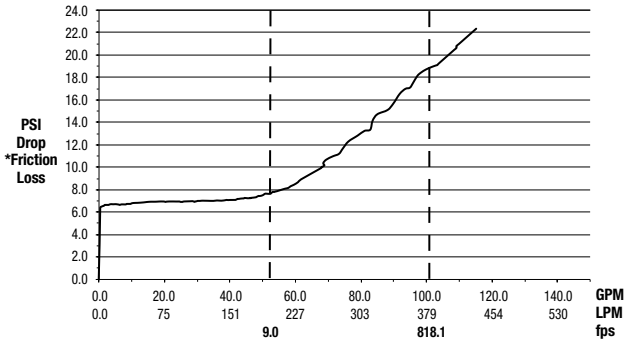
3" LF009



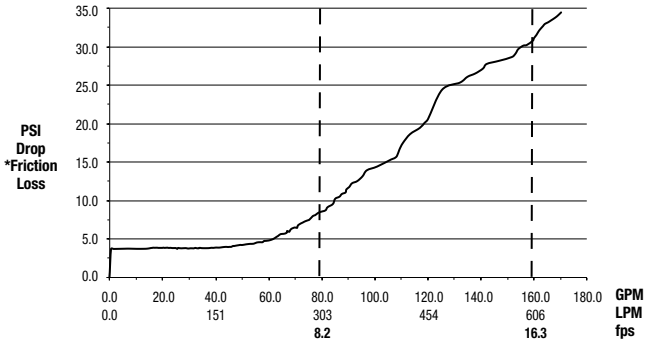
1" LF07S / 07S



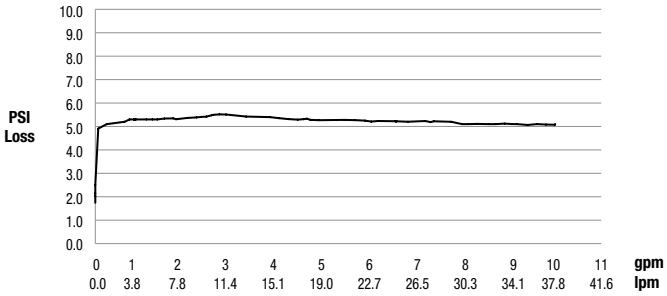
1½" LF07S Rated Flow *UL Rated Flow



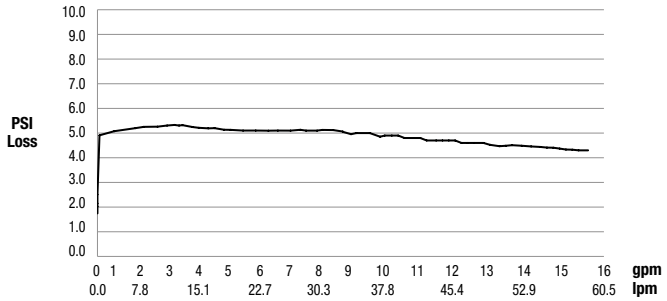
2" LF07S Rated Flow *UL Rated Flow



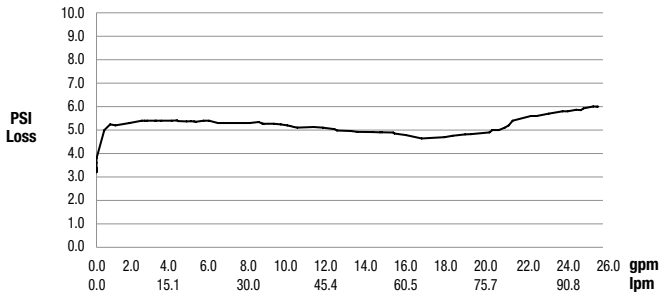
½" LF7R



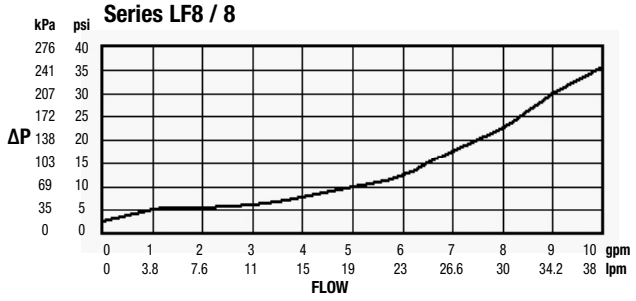
¾" LF7R



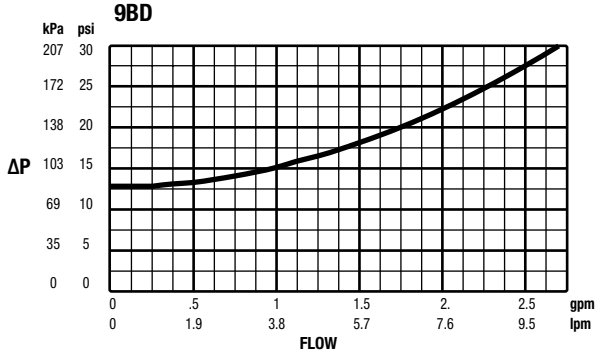
1" LF7R



Series LF8 / 8

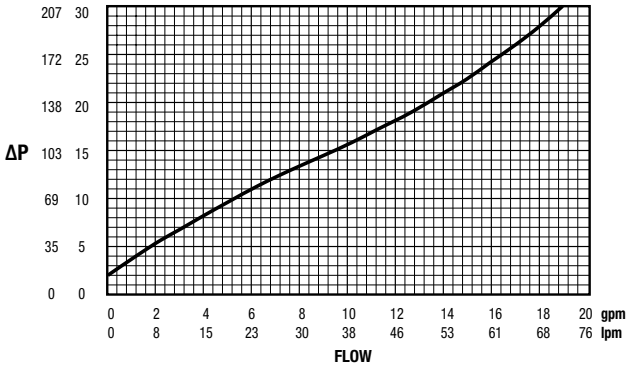


9BD

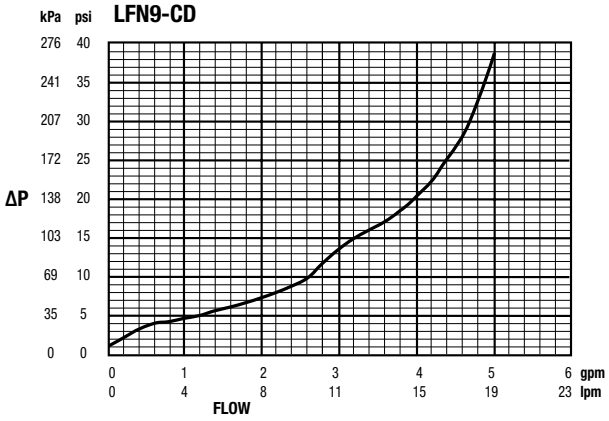


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*

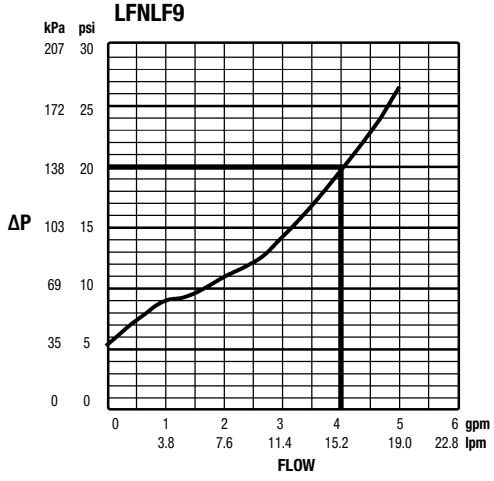
9DM2/M3



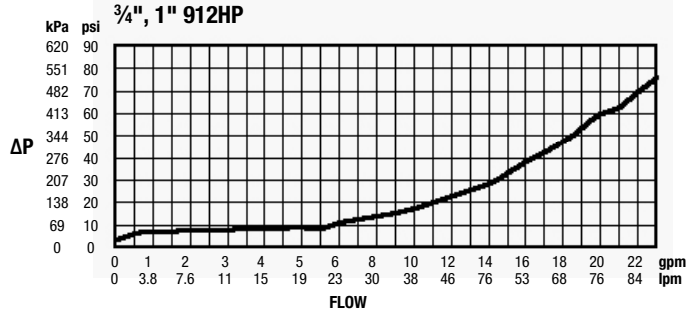
LFN9-CD



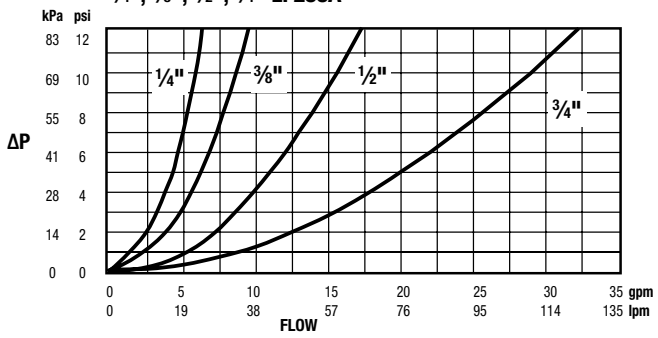
LFNLF9



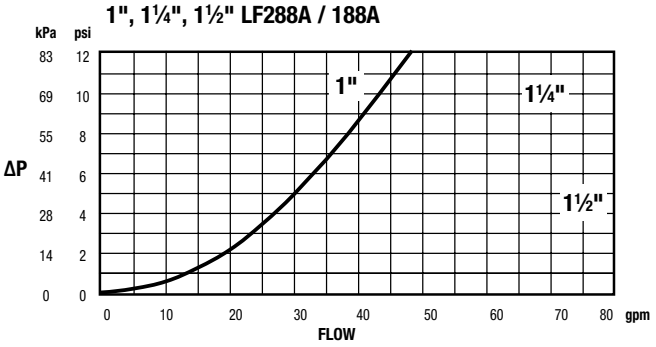
¾", 1" 912HP



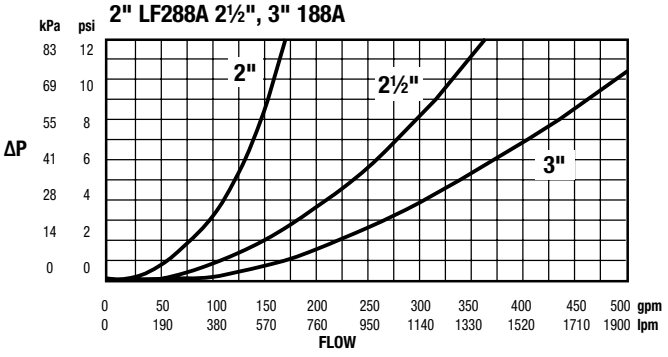
¾" 188A
¼", ⅜", ½", ¾" LF288A



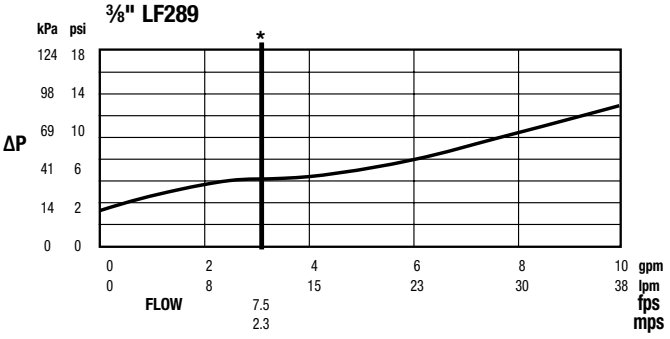
1", 1¼", 1½" LF288A / 188A



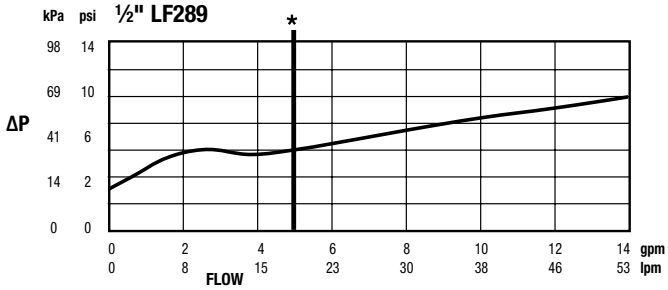
2" LF288A 2½", 3" 188A



⅜" LF289

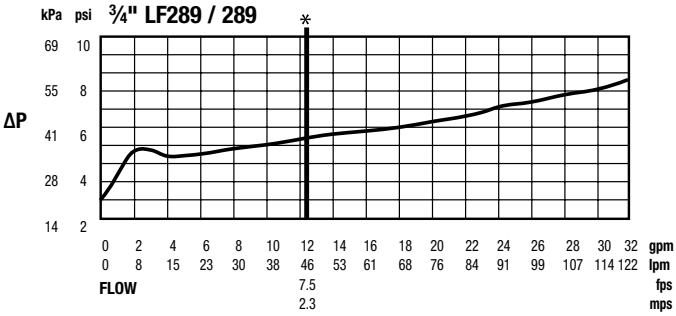


½" LF289

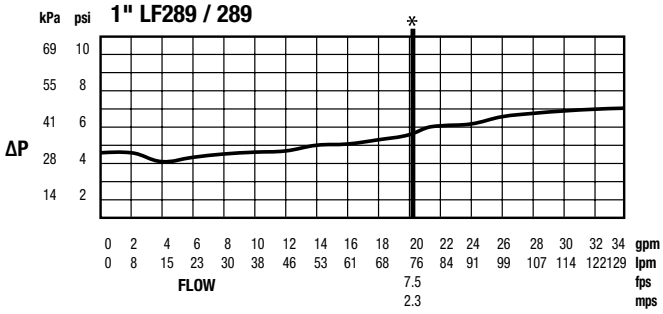


Flow Charts **Typical maximum system flow rate (7.5 feet/sec.)*

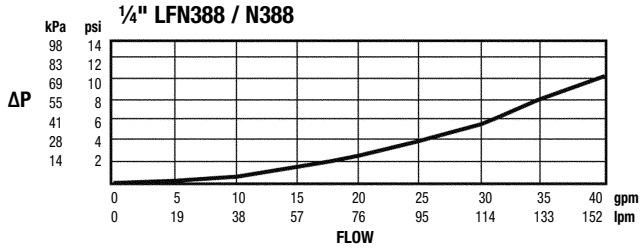
¾" LF289 / 289



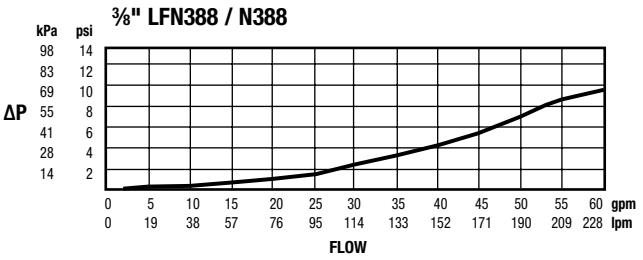
1" LF289 / 289



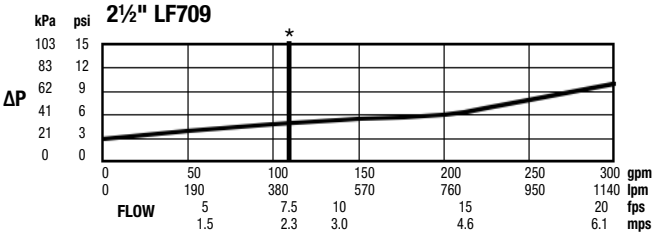
¼" LFN388 / N388



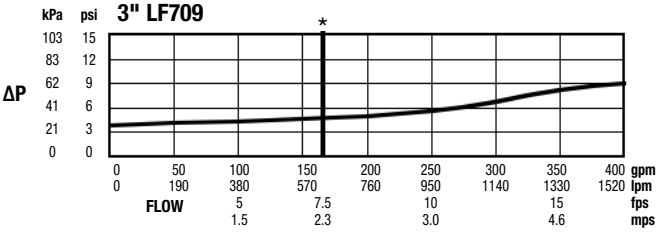
⅜" LFN388 / N388



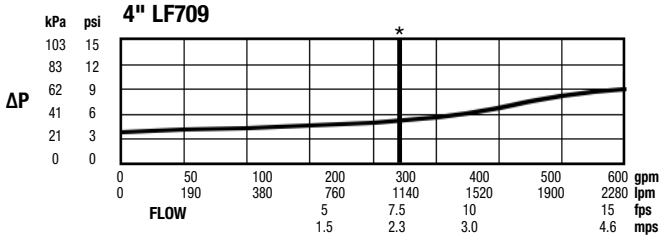
2½" LF709



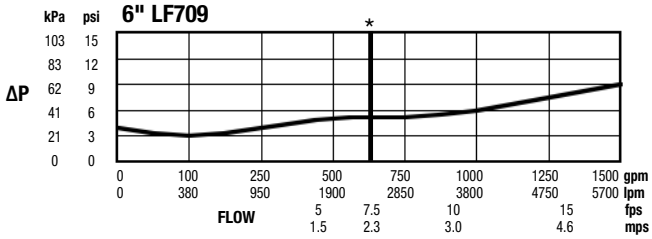
3" LF709



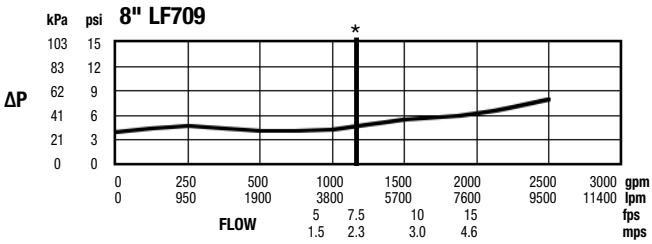
4" LF709



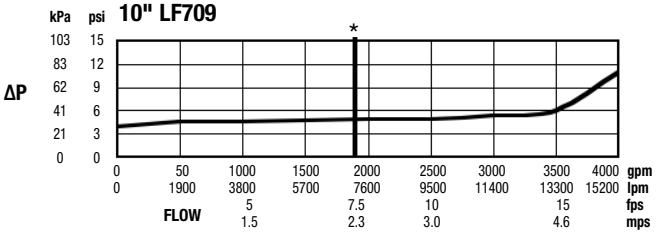
6" LF709



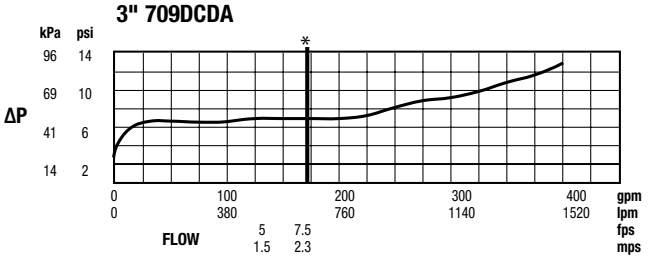
8" LF709



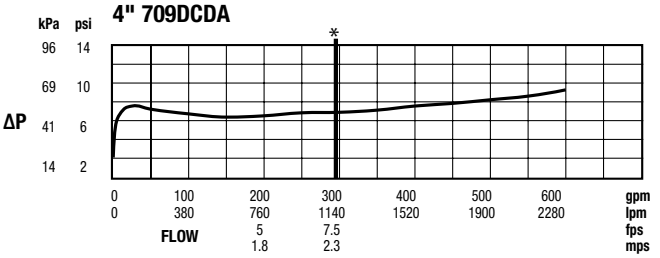
10" LF709



3" 709DCDA

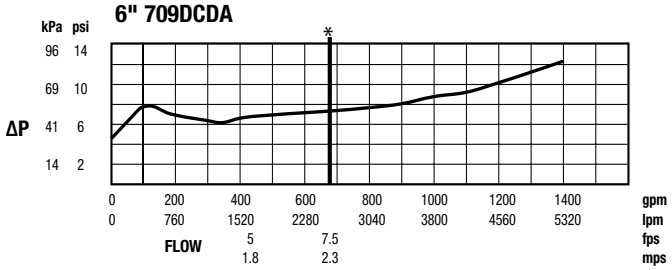


4" 709DCDA

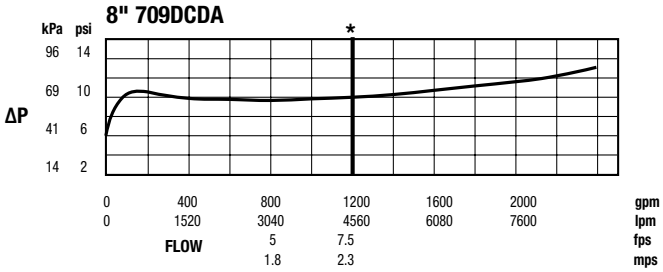


Flow Charts **Typical maximum system flow rate (7.5 feet/sec.)*

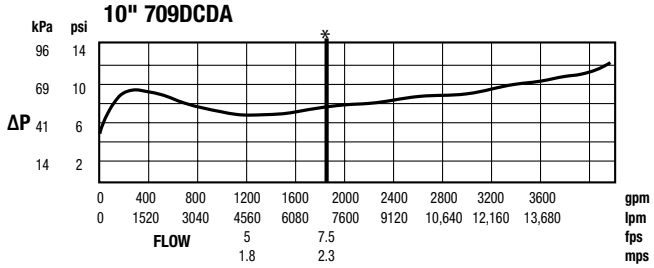
6" 709DCDA



8" 709DCDA

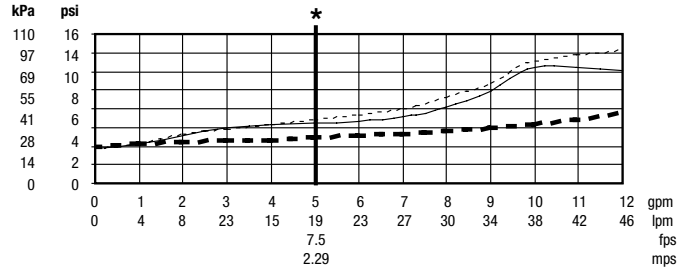


10" 709DCDA

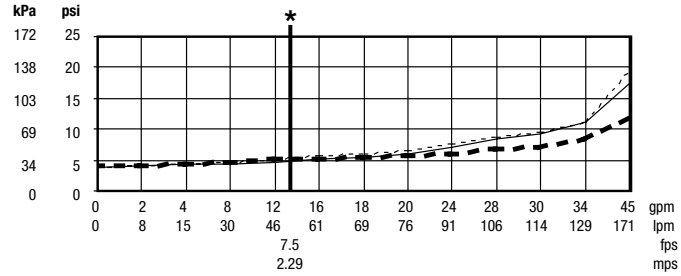


QT AQT UQT

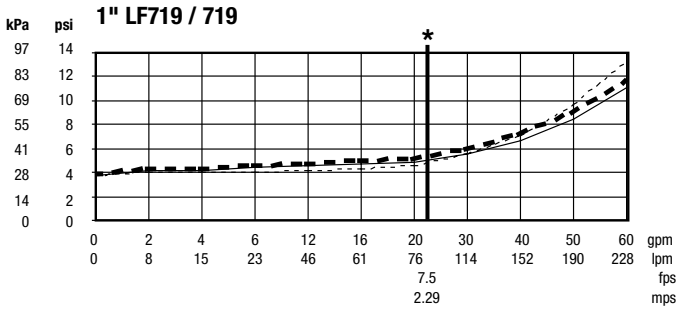
½" LF719 / 719



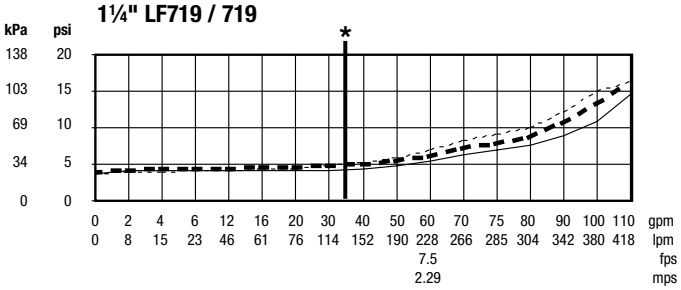
¾" LF719 / 719



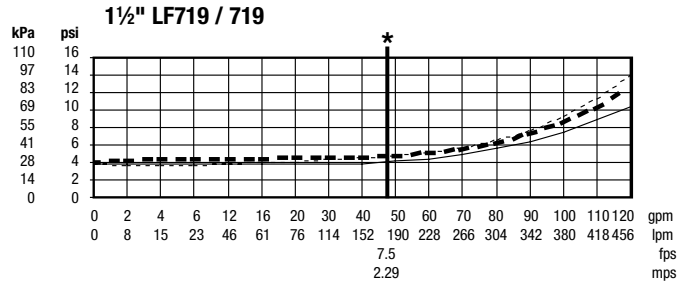
1" LF719 / 719



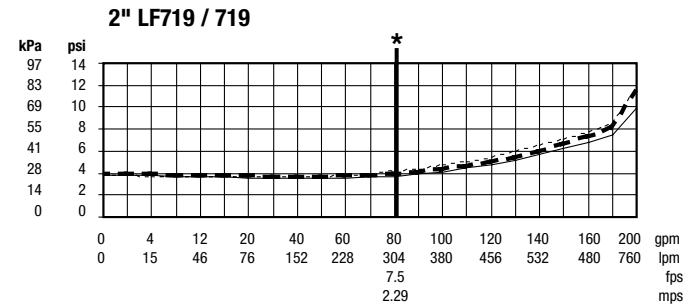
1¼" LF719 / 719



1½" LF719 / 719



2" LF719 / 719

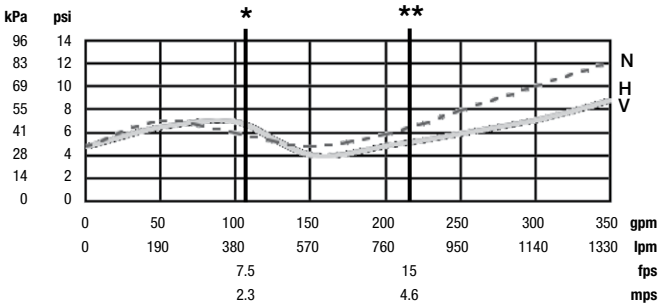


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*

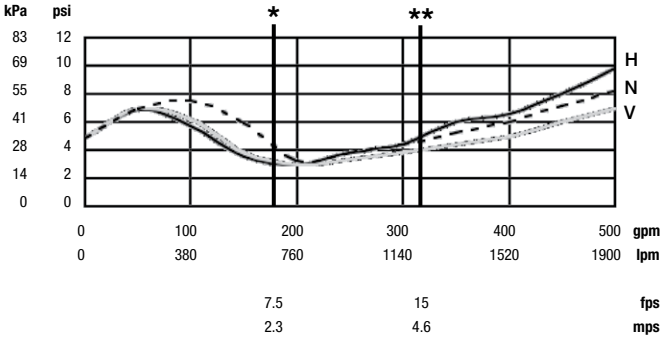
H V N

* = Rated flow ** = UL Rated flow

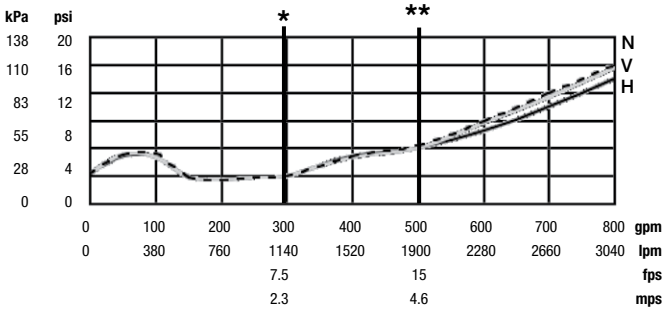
2½" 757/757N



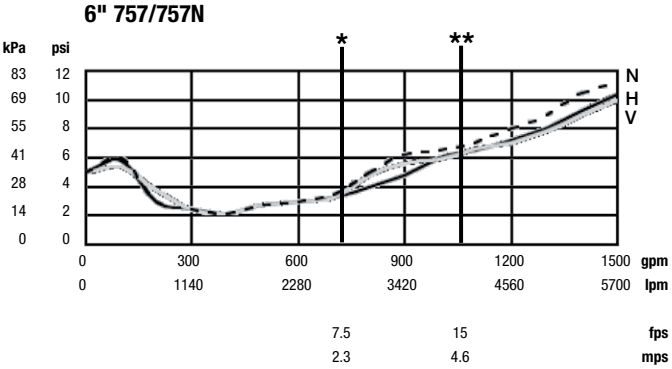
3" 757/757N



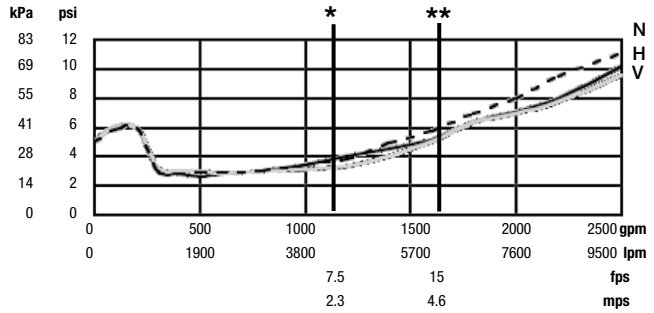
4" 757/757N



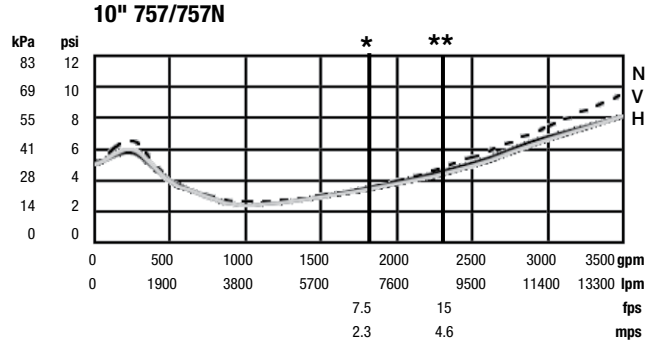
6" 757/757N



8" 757/757N

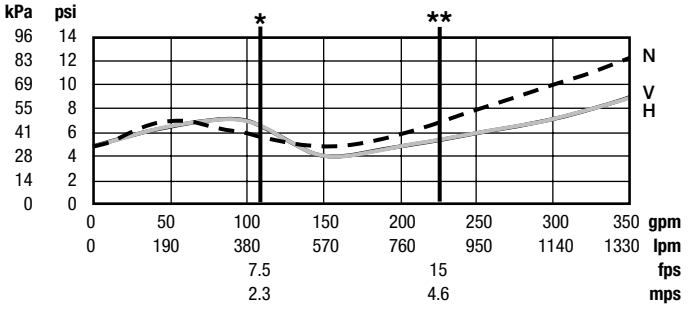


10" 757/757N

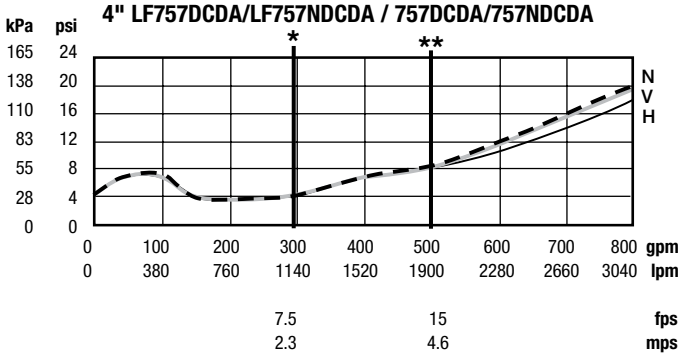


Flow Charts **Typical maximum system flow rate (7.5 feet/sec.)*

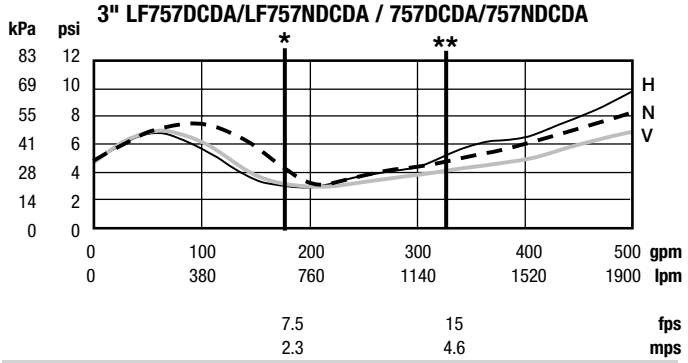
2½" LF757DCDA/LF757NDCDA / 757DCDA/757NDCDA



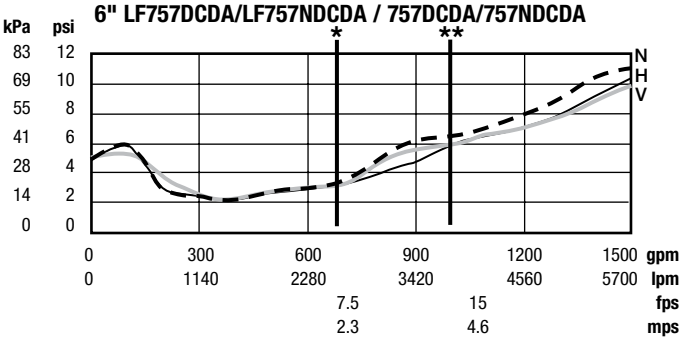
4" LF757DCDA/LF757NDCDA / 757DCDA/757NDCDA



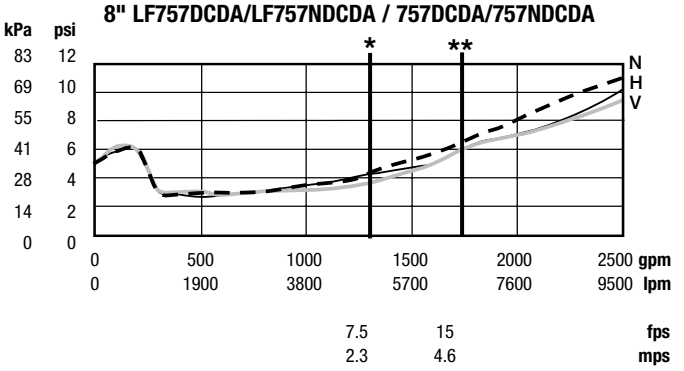
3" LF757DCDA/LF757NDCDA / 757DCDA/757NDCDA



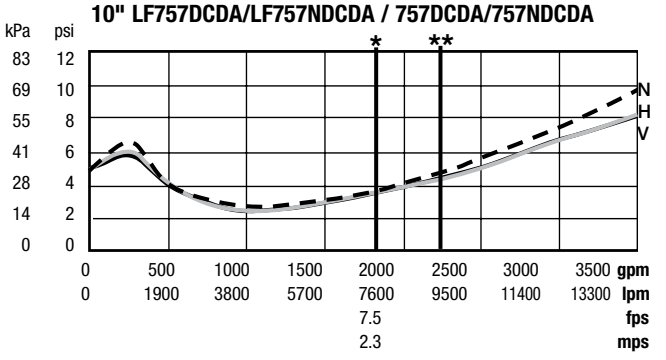
6" LF757DCDA/LF757NDCDA / 757DCDA/757NDCDA



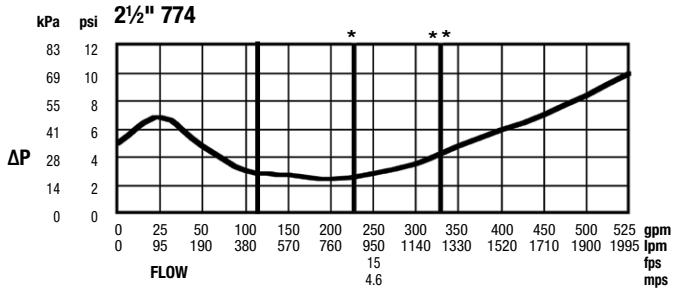
8" LF757DCDA/LF757NDCDA / 757DCDA/757NDCDA

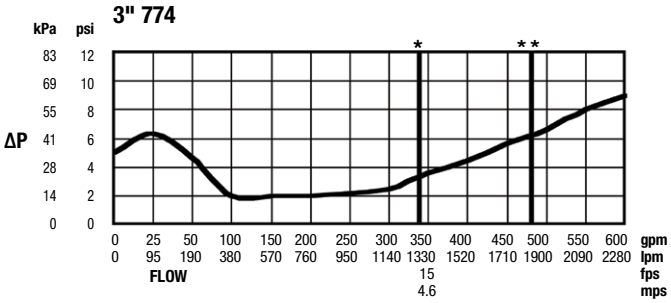


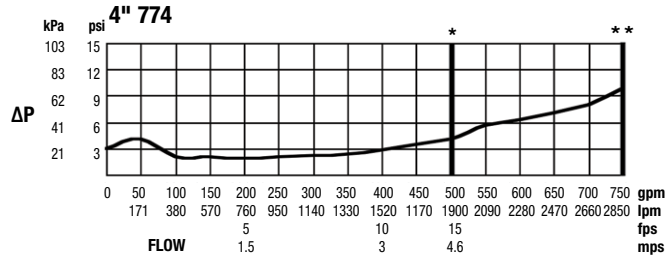
10" LF757DCDA/LF757NDCDA / 757DCDA/757NDCDA

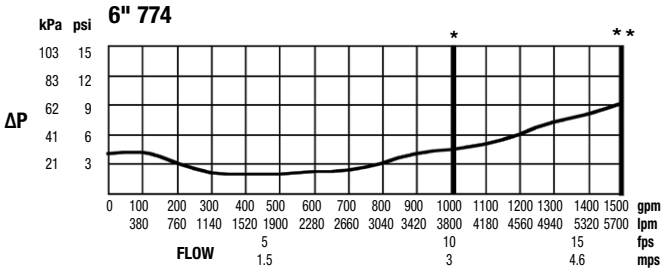


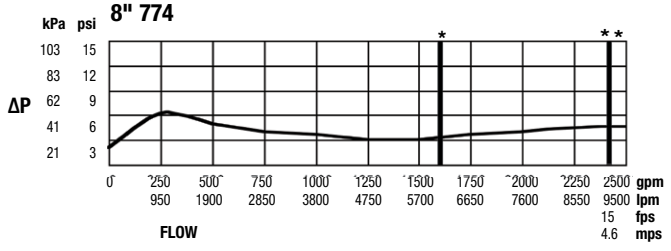
Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)





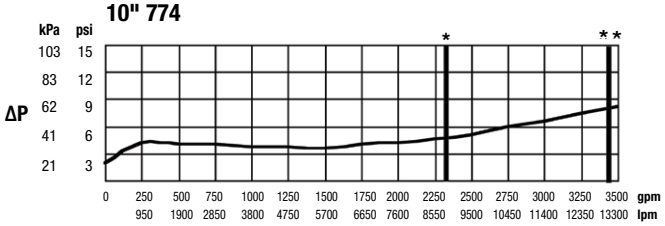




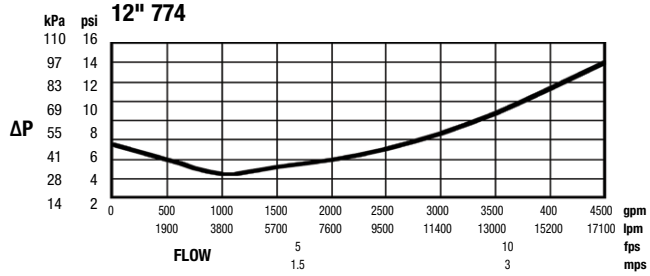


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*

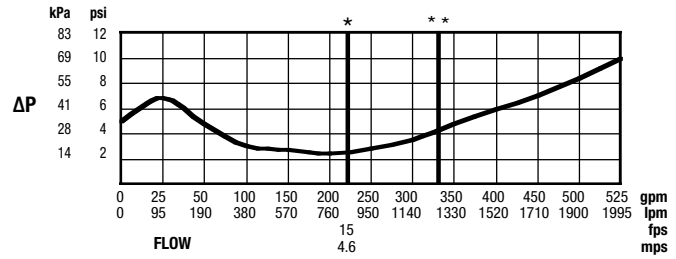
10" 774



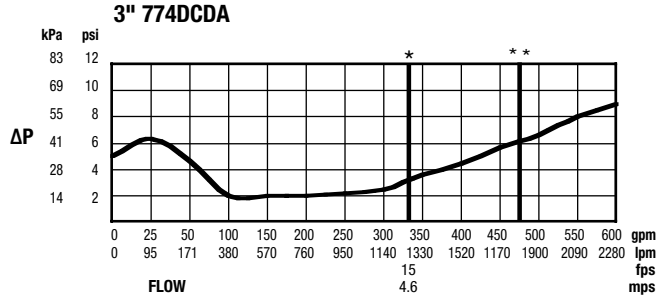
12" 774



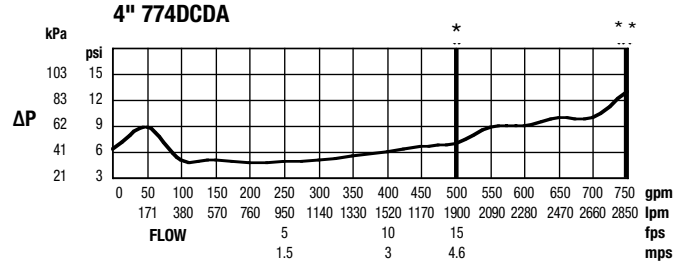
2½" 774DCDA



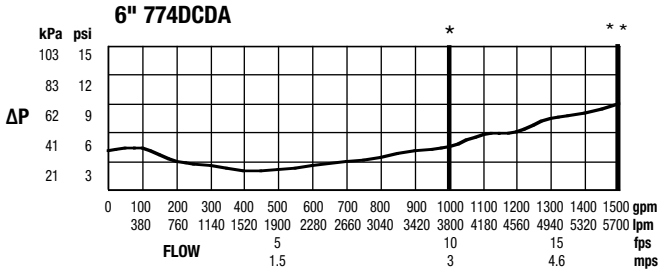
3" 774DCDA



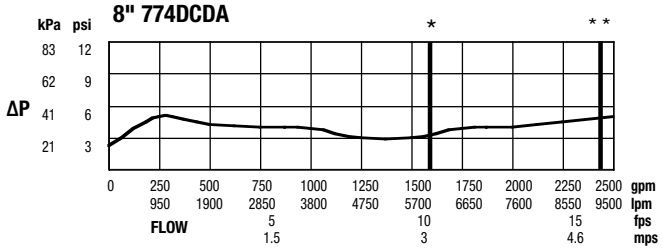
4" 774DCDA



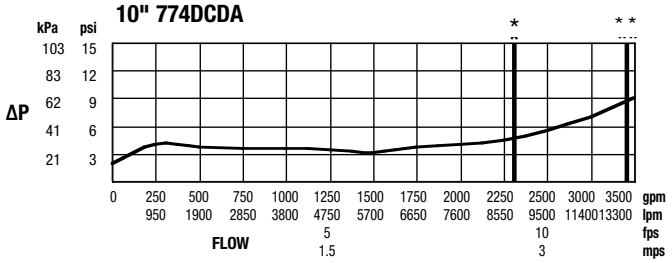
6" 774DCDA



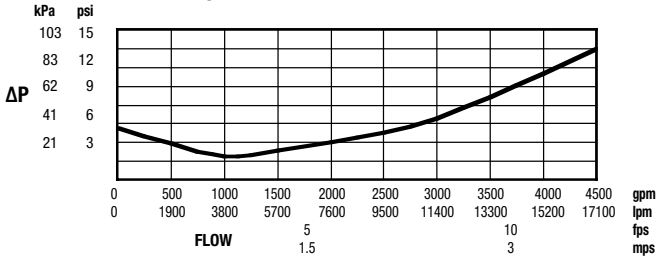
8" 774DCDA



10" 774DCDA

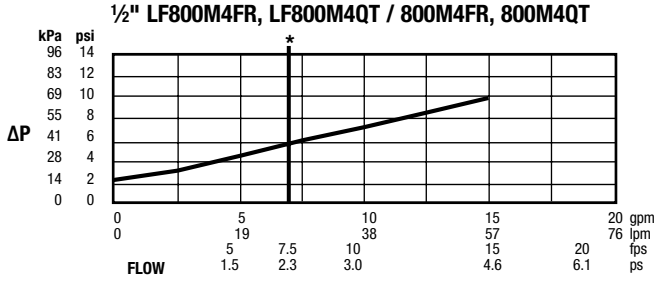


12" 774DCDA

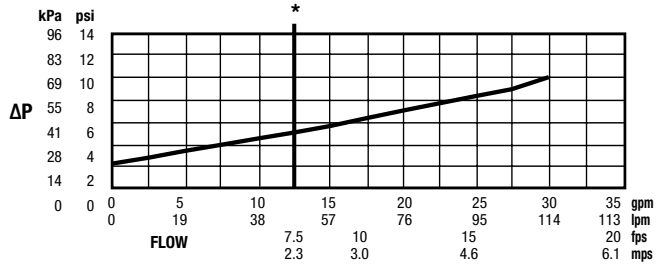


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)

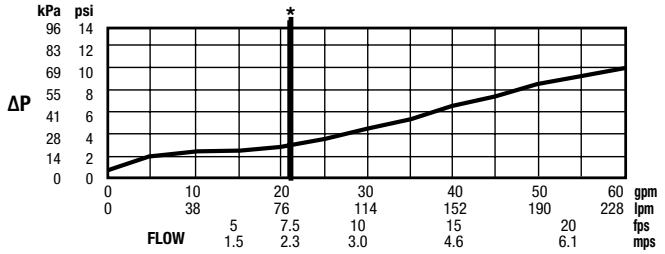
½" LF800M4FR, LF800M4QT / 800M4FR, 800M4QT



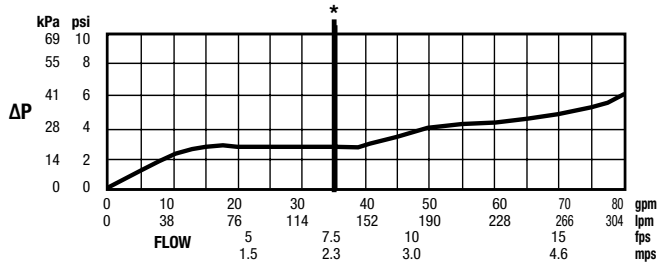
¾" LF800M4FR, LF800M4QT / 800M4FR, 800M4QT



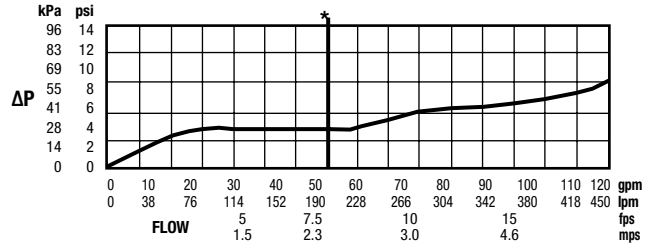
1" LF800M4FR, LF800M4QT / 800M4FR, 800M4QT



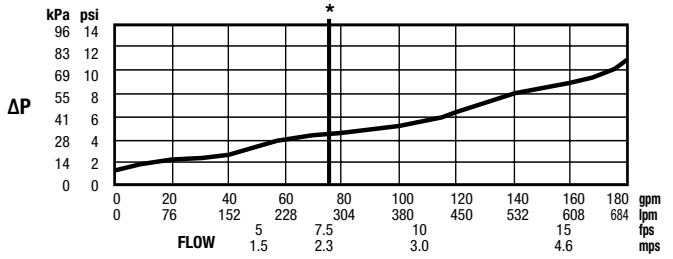
1¼" LF800M4FR, LF800M4QT / 800M4FR, 800M4QT



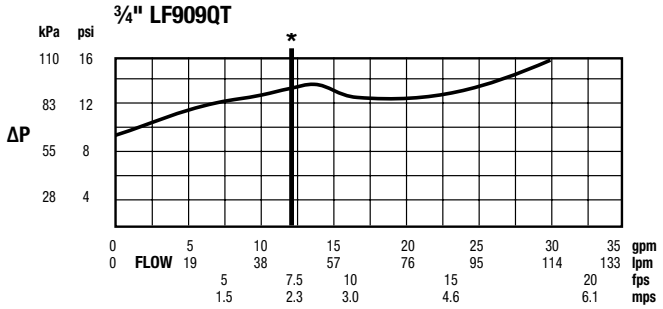
1½" LF800M4FR, LF800M4QT / 800M4FR, 800M4QT



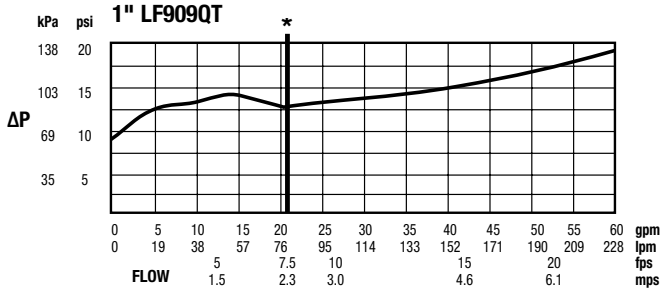
2" LF800M4FR, LF800M4QT / 800M4FR, 800M4QT



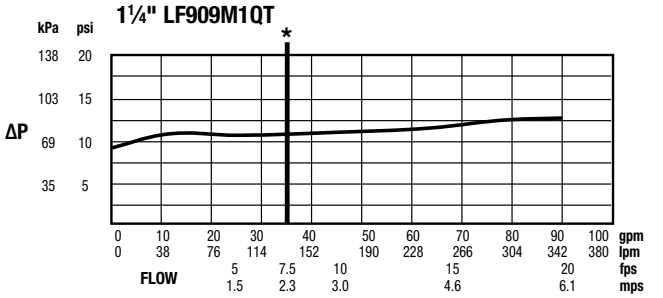
¾" LF909QT



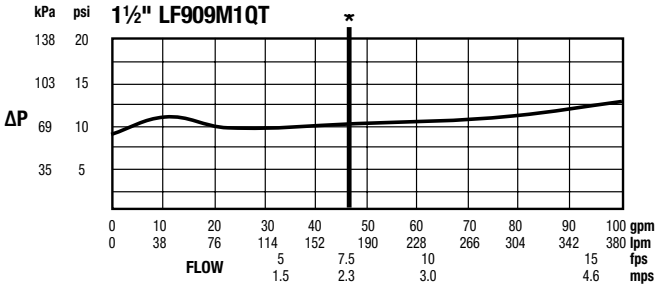
1" LF909QT



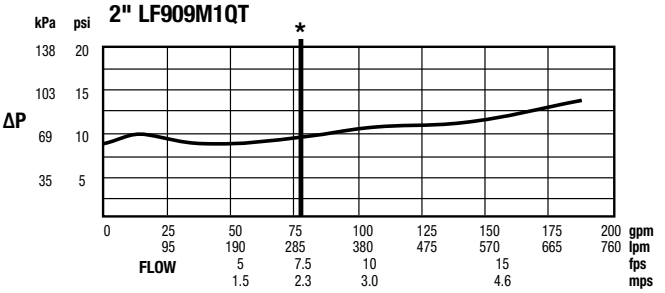
1¼" LF909M1QT



1½" LF909M1QT

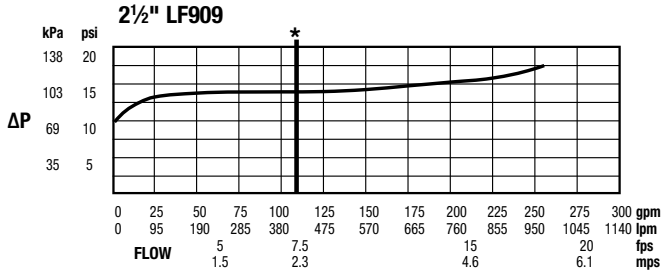


2" LF909M1QT

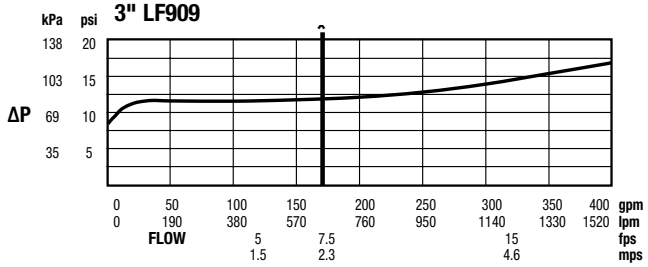


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*

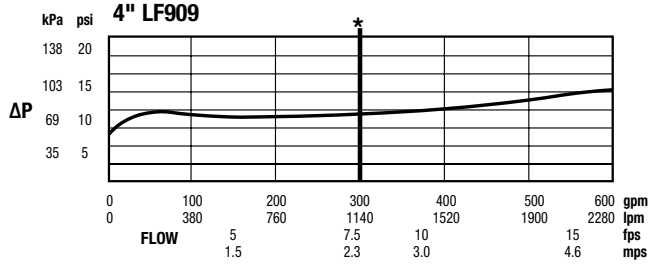
2½" LF909



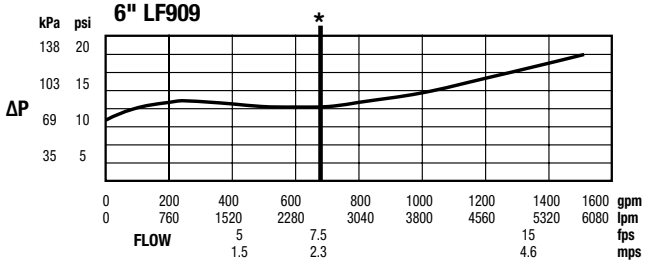
3" LF909



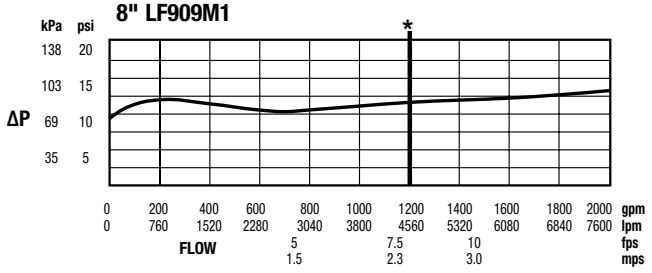
4" LF909



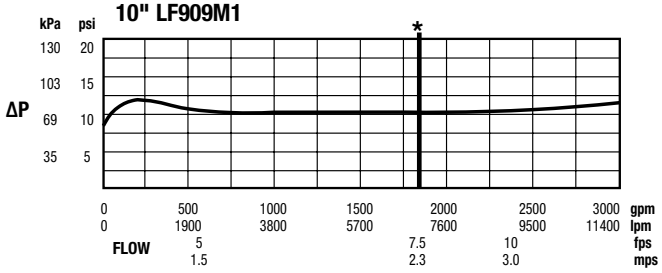
6" LF909



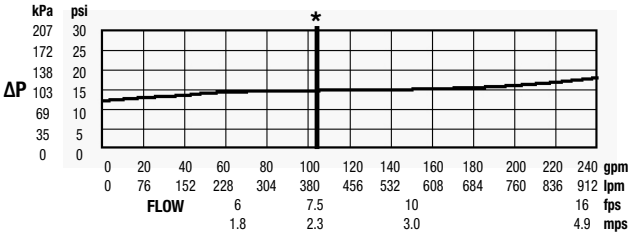
8" LF909M1



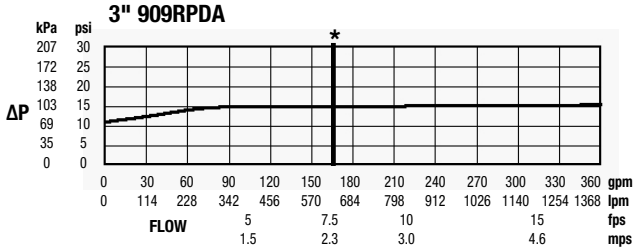
10" LF909M1



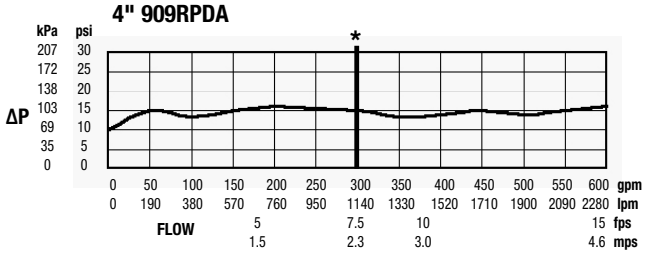
2½" 909RPDA



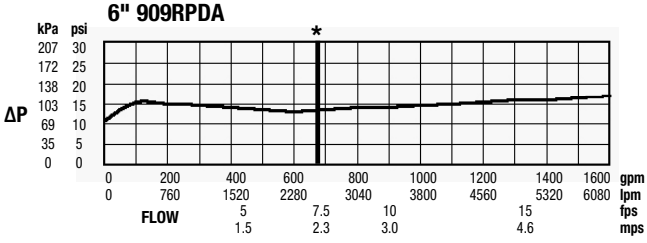
3" 909RPDA



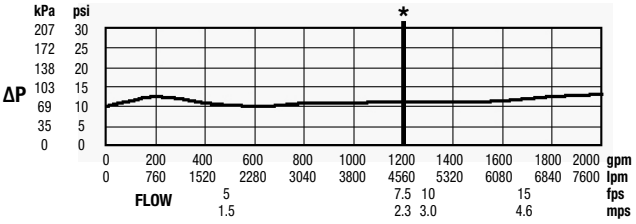
4" 909RPDA



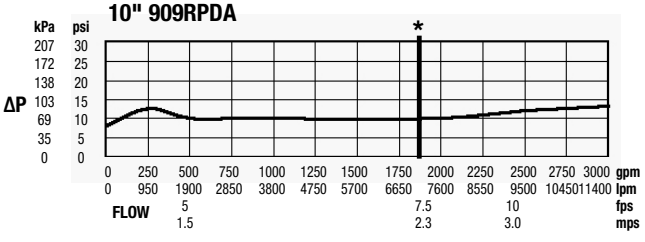
6" 909RPDA



8" 909RPDA



10" 909RPDA



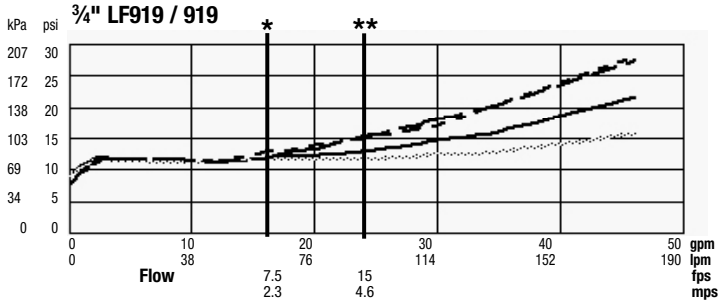
Flow Charts **Typical maximum system flow rate (7.5 feet/sec.)*

LF919QT/919QT — U919QT ----- 919AQT – – – 919ZQT

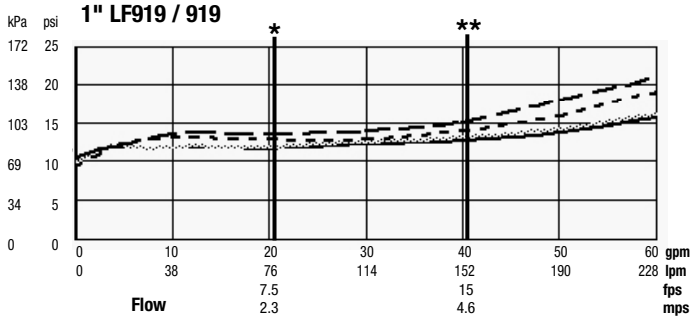
H — V ----- Z

* = Rated flow ** = UL Rated flow

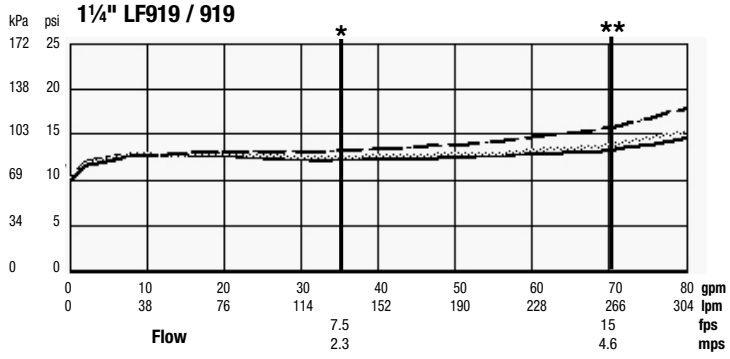
¾" LF919 / 919



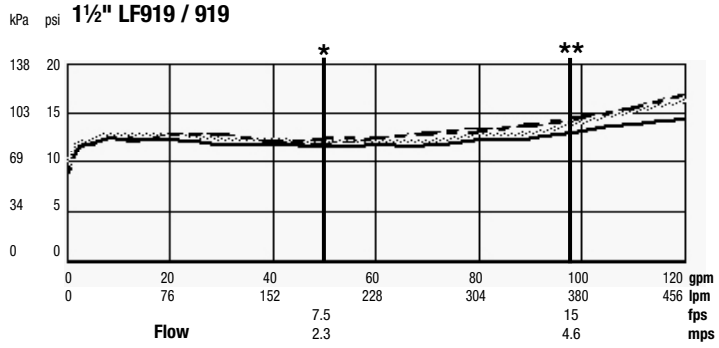
1" LF919 / 919



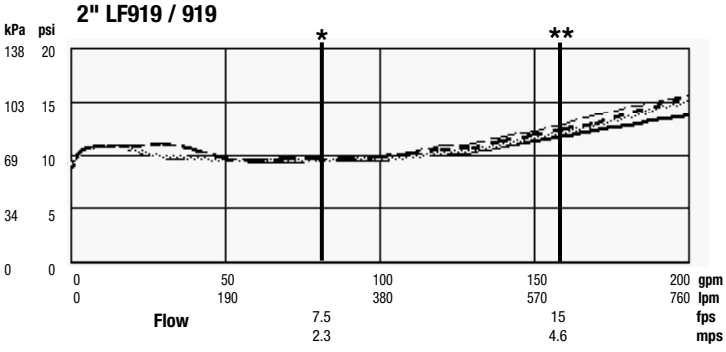
1¼" LF919 / 919



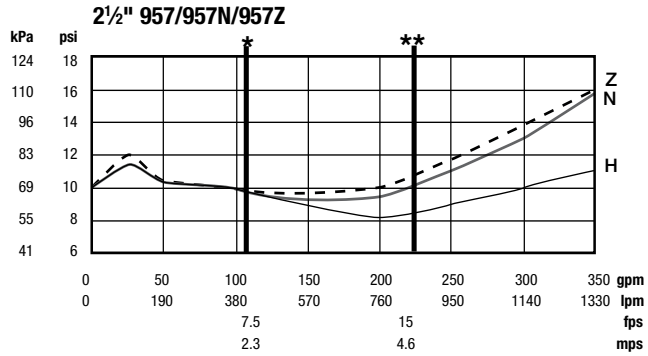
1½" LF919 / 919



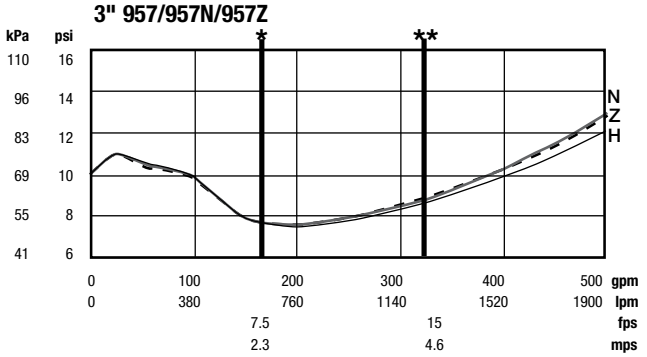
2" LF919 / 919



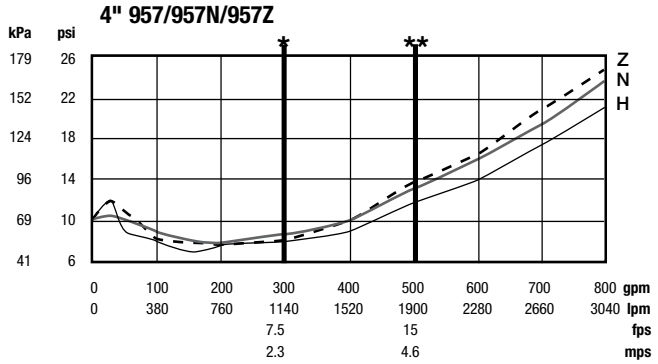
2½" 957/957N/957Z



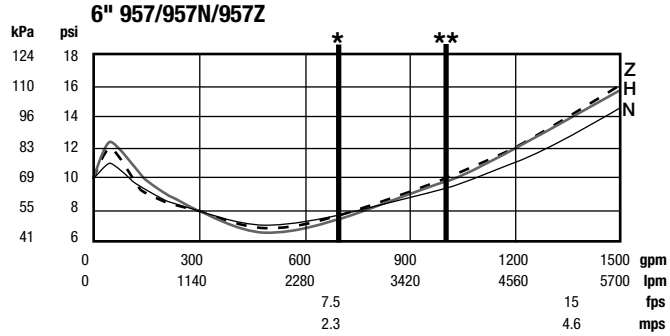
3" 957/957N/957Z



4" 957/957N/957Z

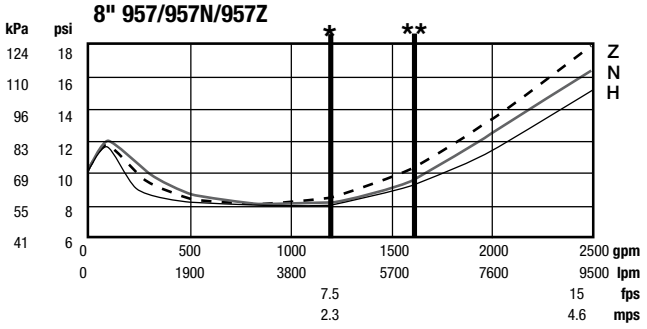


6" 957/957N/957Z

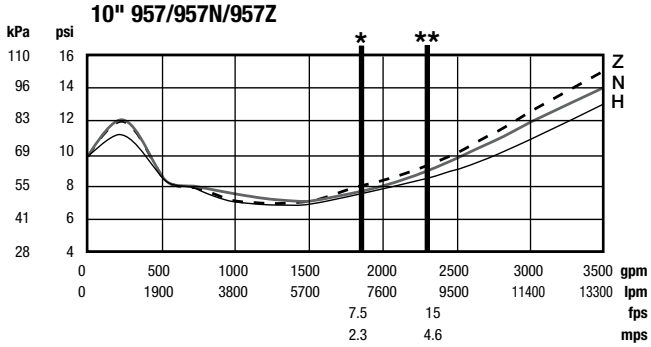


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*

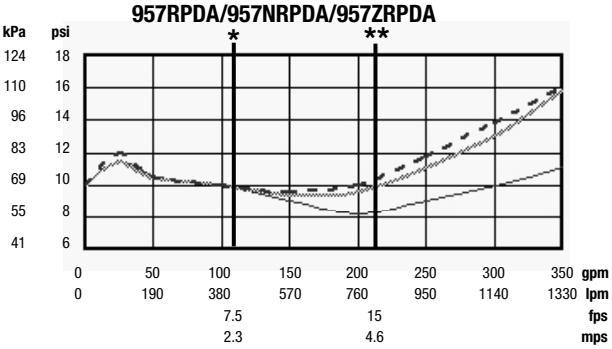
8" 957/957N/957Z



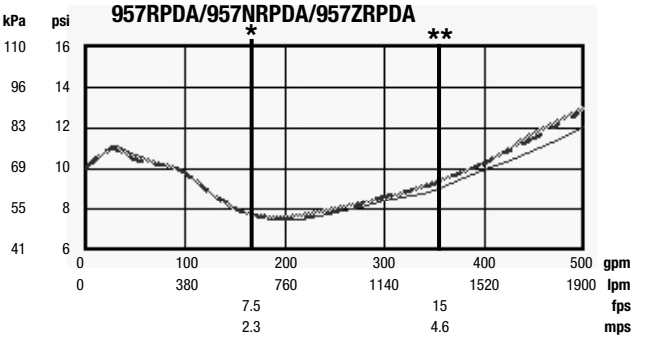
10" 957/957N/957Z



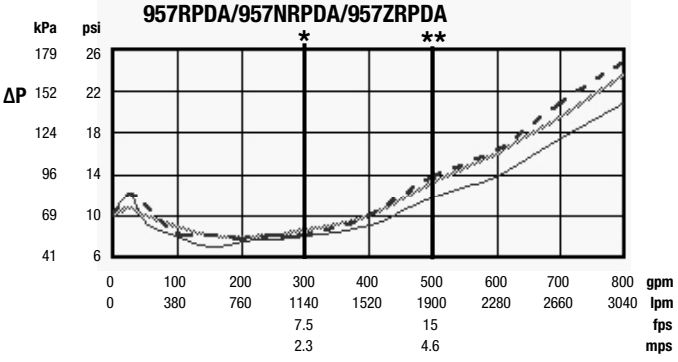
2½" LF957RPDA/LF957NRPDA/LF957ZRPDA 957RPDA/957NRPDA/957ZRPDA



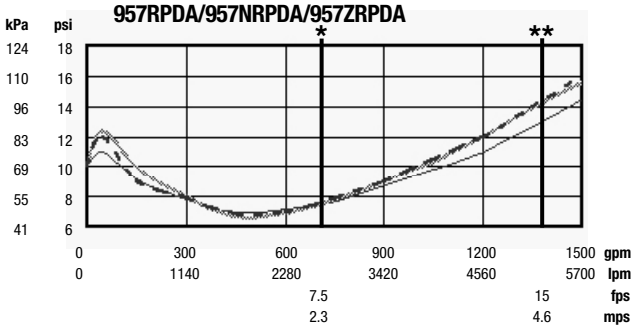
3" LF957RPDA/LF957NRPDA/LF957ZRPDA / 957RPDA/957NRPDA/957ZRPDA



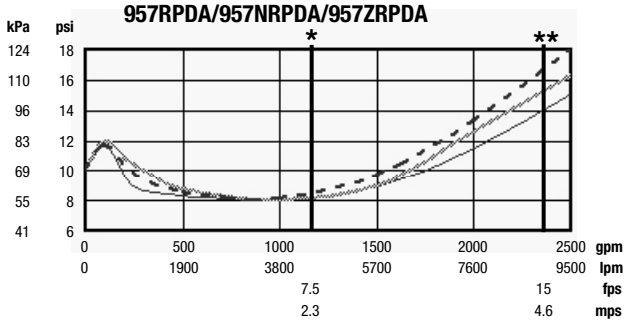
4" 957RPDA/957NRPDA/957ZRPDA / 957RPDA/957NRPDA/957ZRPDA



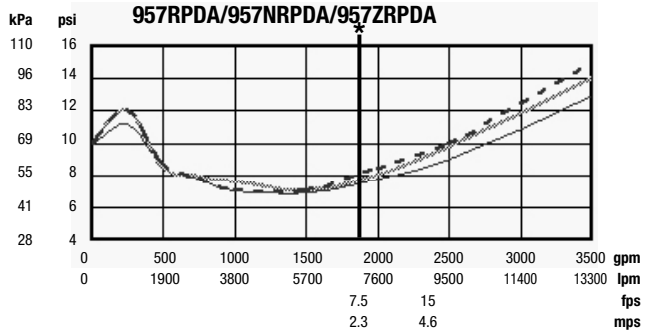
6" LF957RPDA/LF957NRPDA/LF957ZRPDA / 957RPDA/957NRPDA/957ZRPDA



8" LF957RPDA/LF957NRPDA/LF957ZRPDA / 957RPDA/957NRPDA/957ZRPDA

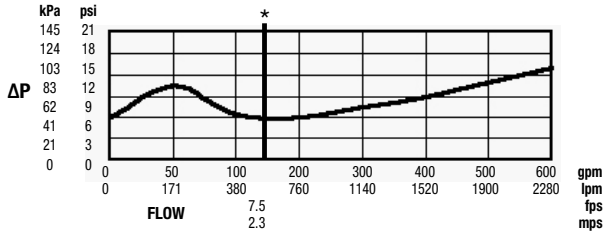


10" LF957RPDA/LF957NRPDA/LF957ZRPDA / 957RPDA/957NRPDA/957ZRPDA

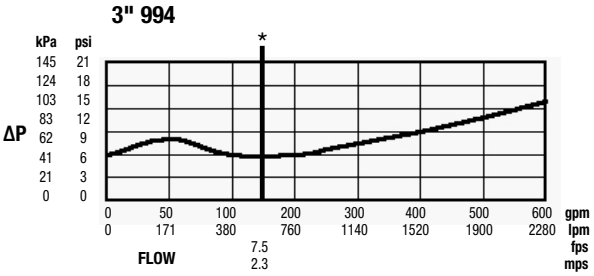


Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)

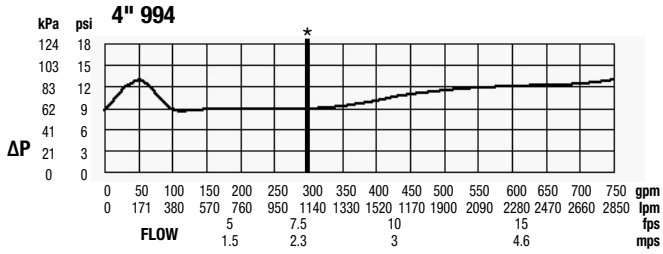
2½" 994



3" 994



4" 994



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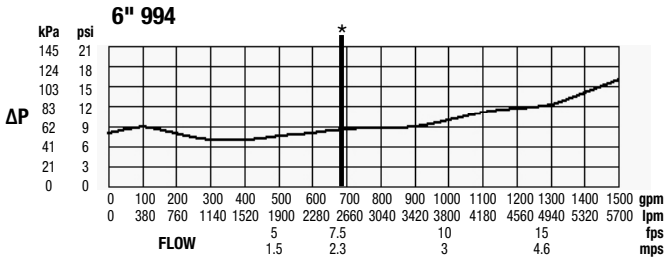

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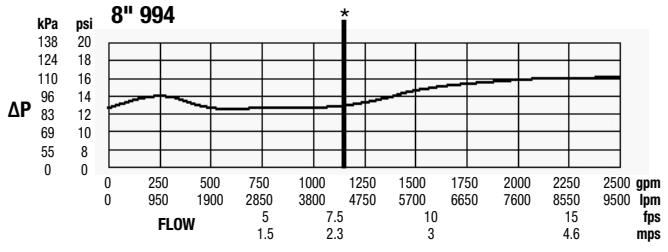

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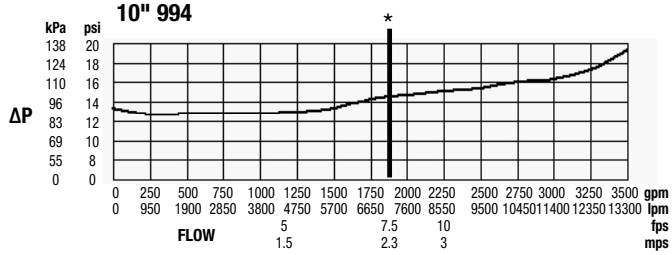

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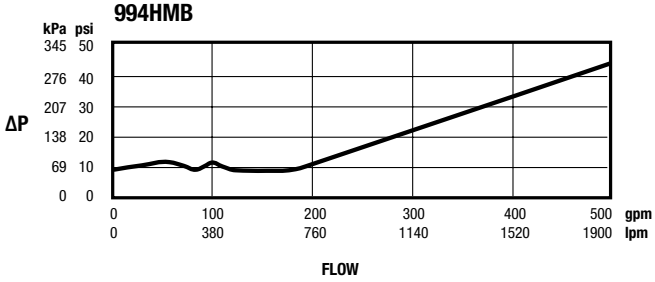

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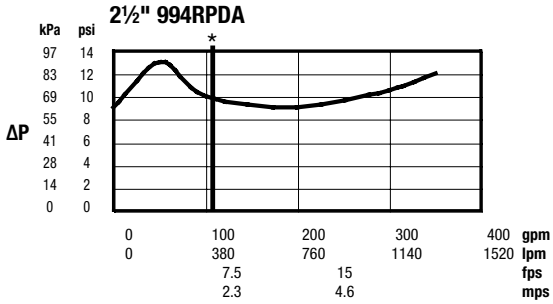

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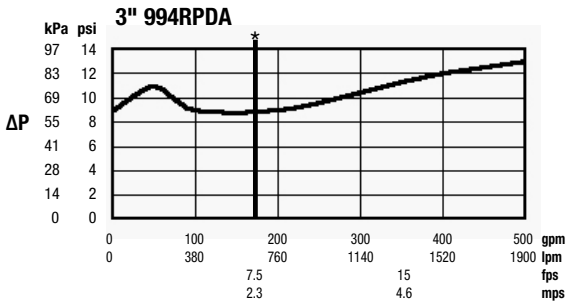

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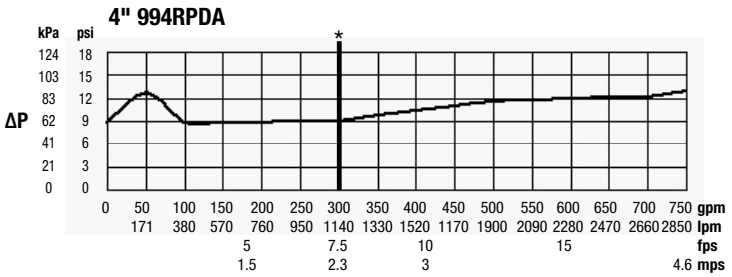

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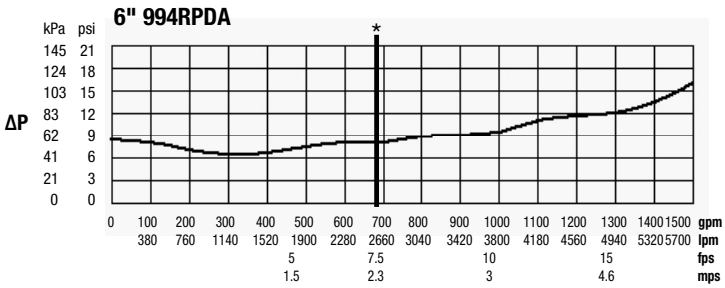
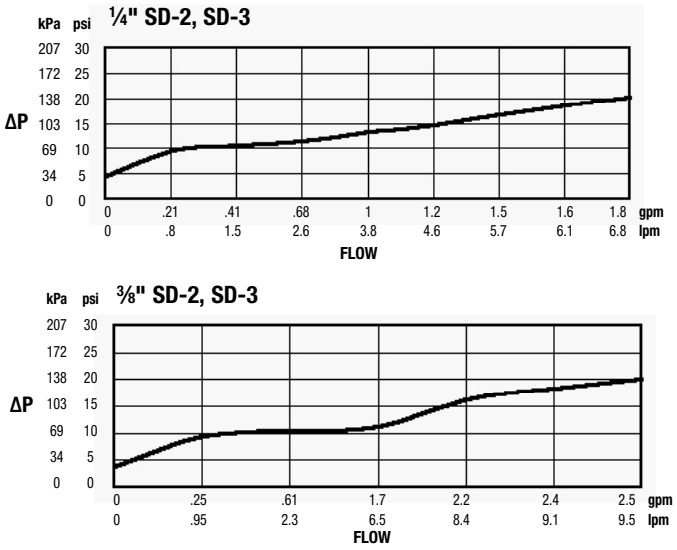
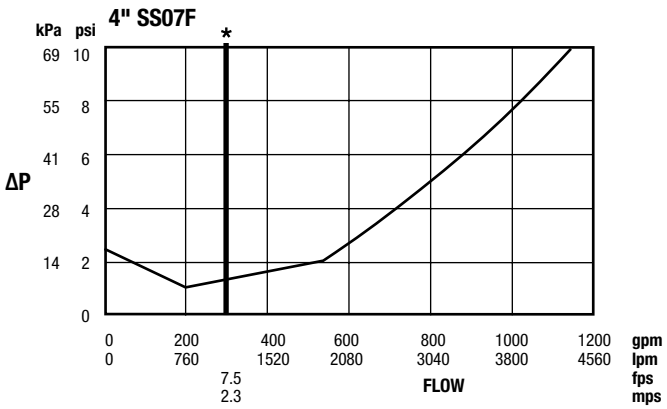
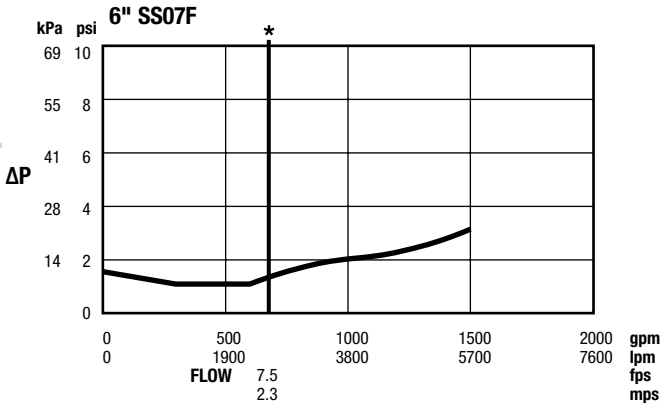
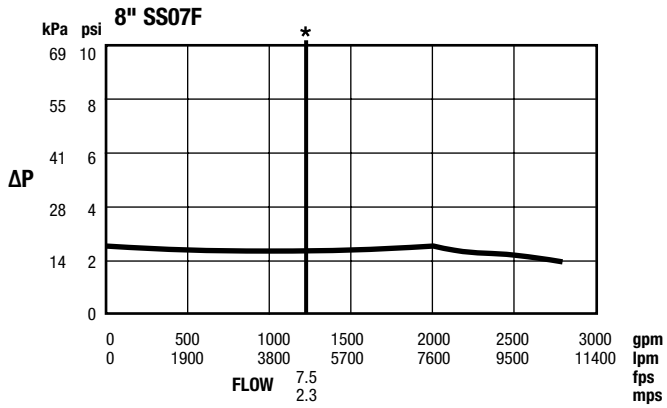


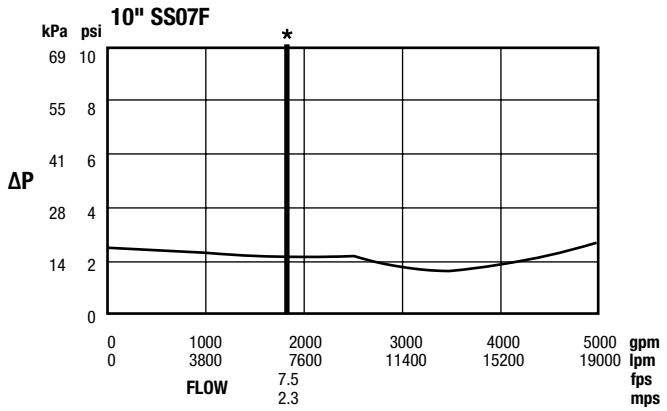
Flow Charts *Typical maximum system flow rate (7.5 feet/sec.)*











Notes

For Technical and Ordering Assistance, please call us at 978-688-1811.

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