Watts Irrigation System Products

WATTS®

www.watts.com

Table of Contents

It's Easy Being Green with Watts

Presenting Our Fully Cultivated Line of Irrigation Products

Next time you need irrigation system components, choose the name you can trust, Watts Regulator. Watts has developed an extensive line of products for the irrigation market that includes a wide range of backflow preventers, pressure regulators, strainers and shutoff valves. Watts has been a leader in the irrigation market with innovations such as our patented freeze protected pressure vacuum breakers, Black Guard irrigation automatic control valves, our through the wall irrigation shutoff valves and our natural looking WattsRock backflow enclosures. For literature on Watts irrigation products, call 1-800-617-3274 or visit our website at www.watts.com.

WATTS

General Information

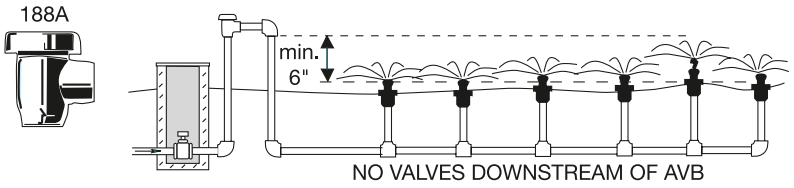
Watts has been manufacturing quality and dependable plumbing products since 1874. During this time, Watts has developed an extensive line of products for the irrigation market. Some of our innovations in this area include our patented freeze protected pressure vacuum breaker and hose connection vacuum breaker, as well as our through the wall irrigation shutoff valve. This product guide showcases our full line of products for irrigation applications.

Backflow Installation and Freeze Protection Guidelines

AVB . . . Atmospheric Vacuum Breaker

Watts Series 188A

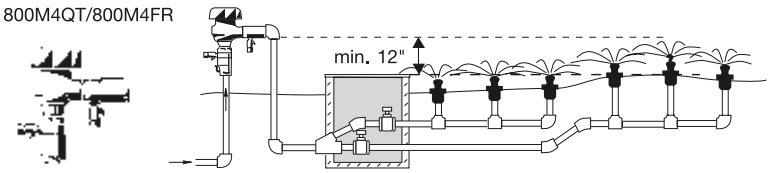
- One AVB required for each irrigation zone; no on/off valves allowed downstream of the AVB.
- Each AVB must be installed a minimum of 6" above the highest point of water in the zone it protects.
- No chemical or fertilizer can be introduced into an irrigation system protected with AVB's.
- No pumps or sources for backpressure on downstream side of an AVB.
- Anti-siphon, single zone.
- Can be only pressurized a maximum of a 12 hour period out of 24 hours.



PVB . . . Pressure Vacuum Breaker

Watts Series 800M4QT, 800M4FR

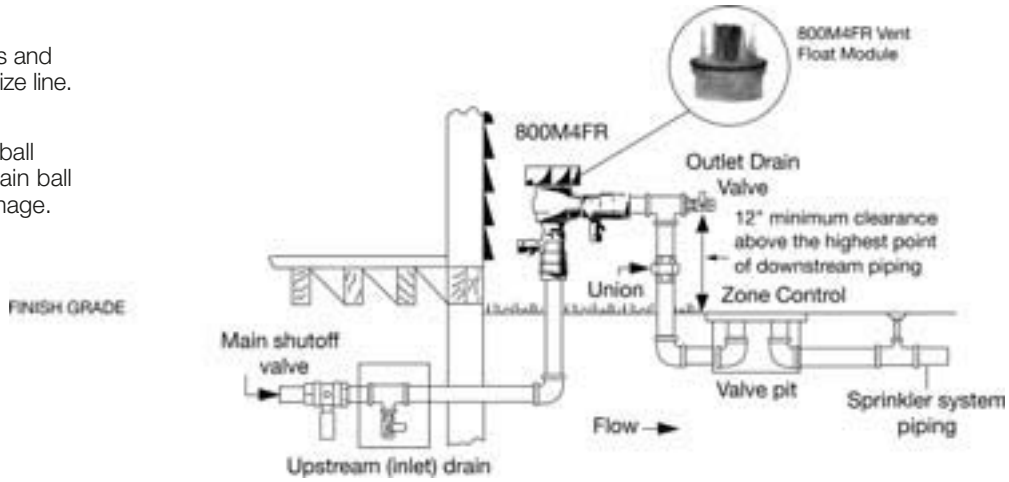
- One PVB required to protect the whole system; on/off valves can be located downstream of the PVB.
- PVB's must be installed a minimum of 12" above the highest point of water in the system.
- PVB's must be tested by a State-certified Backflow Assembly Tester* annually or when moved/repaired.
- No chemical or fertilizer can be introduced into an irrigation system protected with PVB's
- No pumps or source of backpressure on downstream side or after a PVB.
- Anti-siphon, multi-zone.
- Can be pressurized a full 24 hours.
- Freeze resistant with "FR" feature.



Freeze Protection Guidelines

Purging of a PVB Assembly with Pressurized Air

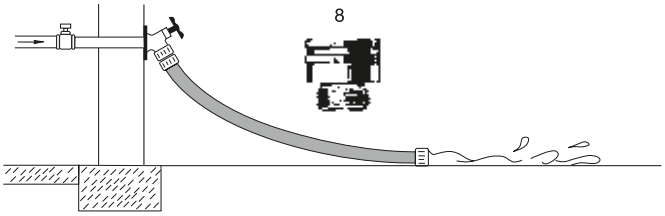
1. Close main shutoff valve.
2. Open upstream drain, test cocks and isolation ball valves to depressurize line.
3. Purge with pressurized air.
4. Leave test cocks and isolation ball valve handles in 45˚ angle to drain ball valves and prevent casting damage.



HBVB . . . Hose Bibb Vacuum Breaker

Watts Series 8

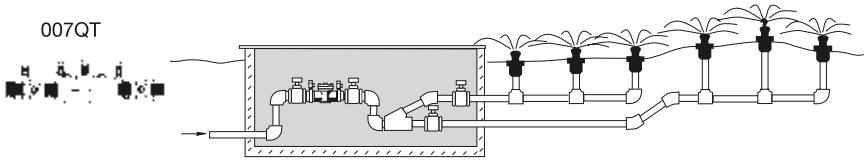
- Do not install HBVB on frost free hydrants.
- In cold climate, specify a Model NF8 to permit manual draining or model 8FR with built-in freeze protection.



DCVA . . Double Check Valve Assembly

Watts Series 007QT, 757, 775, 709

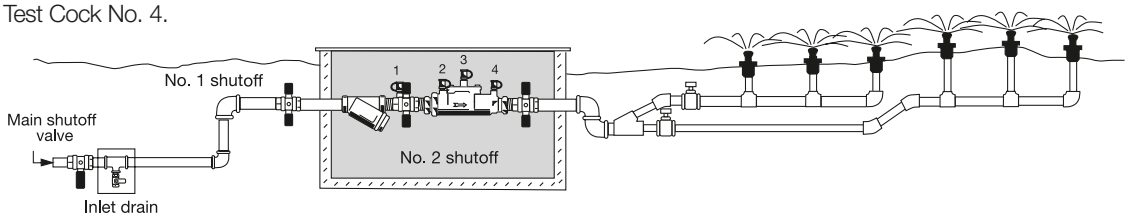
- One DCVA required to protect the whole system; on/off valves can be located downstream of the DCVA.
- Some water suppliers may allow the DCVA to be installed below ground; check for proper clearance on all sides of the assembly.
- DCVA must be tested by a State-certified Backflow Assembly Tester annually or when moved/repaired.
- DCVA are low hazard Backflow Assemblies subject to local code approval.
- No chemical or fertilizer can be introduced into an irrigation system protected with DCVA's.
- Anti-siphon, anti-backpressure, multi-zone.
- May be installed in hilly terrain.



Freeze Protection Guidelines

Purging of a DCVA Assembly with Pressurized Air

1. Close main shutoff valve.
2. With shutoff No. 1 and No. 2 open, depressurize line.
3. Open all Test Cocks.
4. Downstream line can be purged with pressurized air through Test Cock No. 4.
5. To purge upstream line, close No. 1 shutoff valve. Purging with air can now be done between Test Cock 1 and inlet drain.
6. When air purging is complete, open No. 1 shutoff to drain rest of DCVA device.
7. Leave Test Cocks open, turn shutoff handles to a 45˚ position.



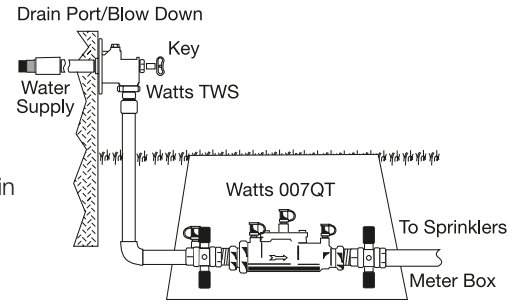
Freeze Protection Guidelines Using Watts TWS Hydrant

Watts Series TWS hydrant has been designed to provide a convenient means of shutting off the water supply when servicing or winterizing an irrigation system. When using the TWS Hydrant the irrigation controller should be located in the garage or other accessible location to aid in system servicing.

Purging of a DCVA Assembly with Pressurized air using the TWS Hydrant

To Purge the system using the drain or blow down port of the TWS Hydrant

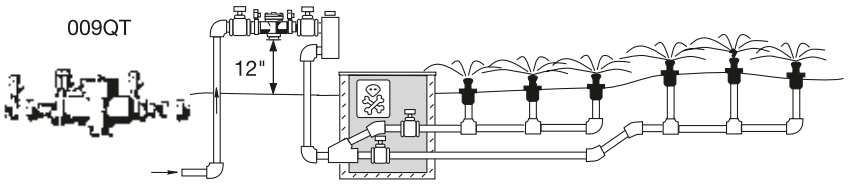
1. Using the hydrant "key", close the TWS Hydrant completely.
2. Turn hydrant "key" counter clockwise 2 full turns from the closed position.
3. Connect the air supply to hydrant drain connection and purge the system.
4. Leave test cocks and isolation ball valve handles at 45˚ angle to prevent freezing.



RPZ . . . Reduced Pressure Zone Assembly

Watts Series 009QT, 909QT, 957, 995

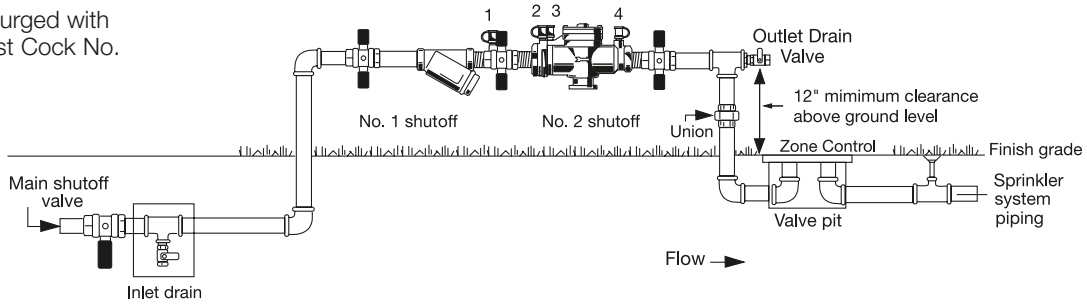
- One RPZ required to serve the whole system;on/off valves can be located downstream of the RPZ.
- RPZ's must be installed a minimum of 12" above ground level.
- RPZ's must be tested by a State-certified Backflow Assembly Tester annually or when moved/repaired.
- In an RPZ equipped system, fertilizer and other agricultural chemicals may be introduced downstream or after the RPZ.
- Anti-siphon, anti-backpressure, multi-zone.
- May be installed in hilly terrain.



Freeze Protection Guidelines

Purging of a RPZ Assembly with Pressurized Air

1. Close main shutoff valve.
2. With shutoff No. 1 and No. 2 open, depressurize line.
3. Open all Test Cocks (relief valve will vent).
4. Downstream line can be purged with pressurized air through Test Cock No. 4 or outlet drain valve.
5. To purge upstream line, close No. 1 shutoff valve. Purging with air can now be done between Test Cock 1 and inlet drain.
6. When air purging is complete, open No. 1 shutoff to drain rest of RPZ device.
7. Leave Test Cocks open, turn shutoff handles to a 45˚ position.



Freeze Protection Guidelines Using Watts TWS Hydrant

Watts Series TWS hydrant has been designed to provide a convenient means of shutting off the water supply when servicing or winterizing an irrigation system. When using the TWS Hydrant the irrigation controller should be located in the garage or other accessible location to aid in system servicing.

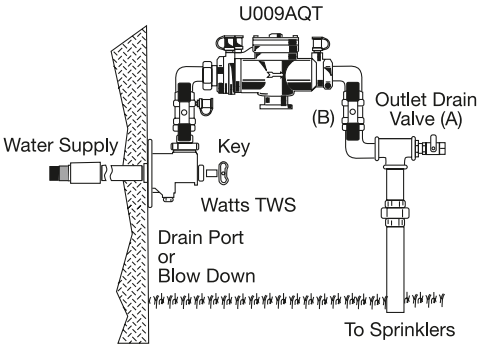
Purging of an RPZ Assembly with Pressurized Air using the TWS Hydrant

To purge the system using a drain valve downstream of the RPZ/TWS.

1. Using the hydrant "key", close the TWS Hydrant completely.
2. Open the TWS drain port and Backflow preventer test cocks (relief valve will vent).
3. Connect the air supply to the outlet drain valve (A) and close the outlet ball valve (B).
4. After the system has been purged, leave all test cocks and isolation ball valve handles in a 45˚ position.

To purge the system using the drain or blow down port of the TWS Hydrant

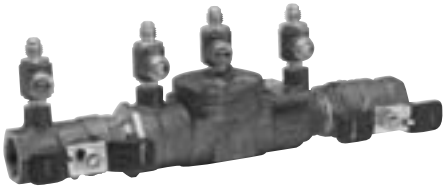
1. Using the hydrant "key", close the TWS hydrant completely.
2. Turn hydrant "key" counter clockwise 2 full turns from the closed position.
3. Connect the air supply to hydrant drain connection and purge the system.
4. Leave test cocks and isolation ball valve handles at 45˚ angle to prevent freezing.



Series 007

Double Check Valve Assemblies

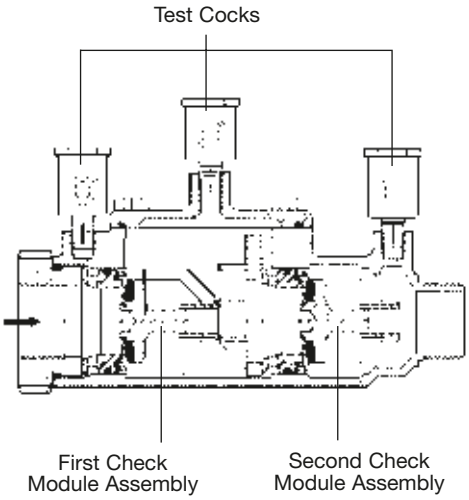
Sizes: ½" – 3" (15 – 80 mm)



¾" 007M3QT

2½" 007NRS

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



Features

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

Pressure – Temperature

Temperature Range:
½" – 2" (15 – 50mm)
33°F – 180°F (0.5°C – 82°C)
2½" – 3" (65 – 80mm)
33°F – 110°F (0.5°C – 43°C)
continuous; 140° (60°C)
intermittent
Maximum Working Pressure: 175psi (12.1 bar)

Models

½" – 2" (15 – 50mm)

add Suffix:
QT - quarter turn ball valves
LF - without shutoff valves
LH - locking handle ball valves (open position)
SH - stainless steel ball valve handles
S - bronze strainer
PC - internal polymer coating

add Prefix:
U - union connections

2½" and 3" (65 and 80mm)

add 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 - epoxy coated full port ball valves

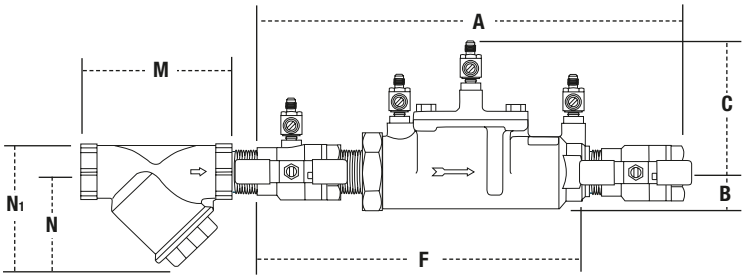
Approvals

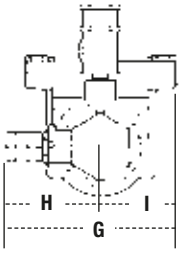
1015

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

For additional information, request literature ES-007.

Dimensions – Weights

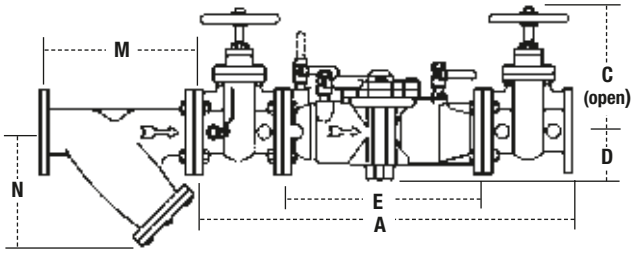


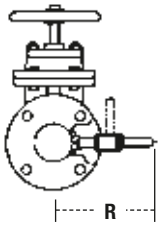


007QT

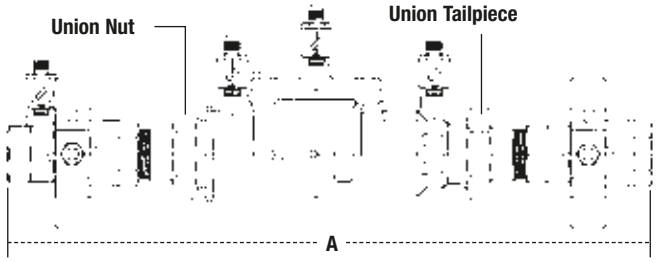
SIZE (DN)		DIMENSIONS (approx.)														STRAINER DIMENSIONS						WEIGHT	
		A		B		C		F		G		H		I		M		N		*N1			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
½	15	10	254	4 5/8	117	2 7/16	62	5	127	3 3/8	85	2 5/16	59	2 1/16	52	2 3/4	70	2 1/4	57	10	254	5	2
¾	20	11 1/8	282	4	102	3 1/8	79	6 3/16	157	3 7/16	87	2 1/8	54	1 5/16	33	3 3/16	81	2 3/4	70	10	254	5	2
1	25	13 1/4	337	5 1/8	130	4	102	7 1/2	191	3 3/8	85	1 11/16	43	1 11/16	43	3 3/4	95	3	76	12	305	12	5
1 1/4	32	16 3/8	416	5	127	3 5/16	84	9 1/2	241	5	127	3	76	2	50	4 7/16	113	3 1/2	89	20	508	15	7
1 1/2	40	16 3/4	425	4 7/8	124	3 1/2	89	9 3/4	248	5 13/16	148	3 1/8	79	2 11/16	68	4 7/8	124	4	103	22 3/4	578	16	7
2	50	19 1/2	495	6 1/4	159	4	102	13 3/8	340	6 1/8	156	3 7/16	87	2 11/16	68	5 5/16	151	5	127	28	711	26	12

*Dimensions required for screen removal.





MODEL	SIZE (DN)		DIMENSIONS (approx.)										STRAINER DIMENSIONS				WEIGHT	
			A		C		D		E		R		M		N			
	in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
007-NRS	2½	65	33 1/8	841	9 3/8	238	4 5/16	109	18 1/8	460	8 3/4	222	10	254	6½	165	155	70
007-OSY	2½	65	33 1/8	841	16 3/8	416	4 5/16	109	18 1/8	460	8 3/4	222	10	254	6½	165	158	72
007QT-FDA	2½	65	33 1/8	841	6 3/8	162	4 5/16	109	18 1/8	460	8 3/4	222	10	254	6½	165	155	70
007-OSY	3	80	34 1/8	867	18 7/8	479	4 5/16	109	18 1/8	460	8 3/4	222	10 1/8	267	7	178	185	84
007-NRS	3	80	34 1/8	867	10 1/4	260	4 5/16	109	18 1/8	460	8 3/4	222	10 1/8	267	7	178	185	84
007QT-FDA	3	80	34 1/8	867	6 3/8	162	4 5/16	109	18 1/8	460	8 3/4	222	10 1/8	267	7	178	155	70



U007QT

SIZE (DN)		A	
in.	*mm*	*in.*	*mm*
½	65	12 13/16	325
¾	65	13 13/16	351
1	65	16 5/8	422
1 1/4	80	20 3/4	527
1 1/2	80	21 1/2	546
2	80	24 1/2	622

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 719

Double Check Valve Assemblies

Sizes: ½" – 2" (15 – 50mm)

719QT

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

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

Features

- Manufactured from bronze alloy
- Separate access, top entry check valve design
- Reversible seat disc rubber, extends check valve life
- Chloramine resistant elastomers
- Replaceable seats and seat discs
- Compact design
- Top mounted screwdriver slotted ball valve test cocks
- Low pressure drop
- ½" – 1" (15 – 25mm) have Tee handles
- No special tools required for servicing
- Plastic on plastic check guiding reduces potential binding due to mineral deposits

Pressure-Temperature

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

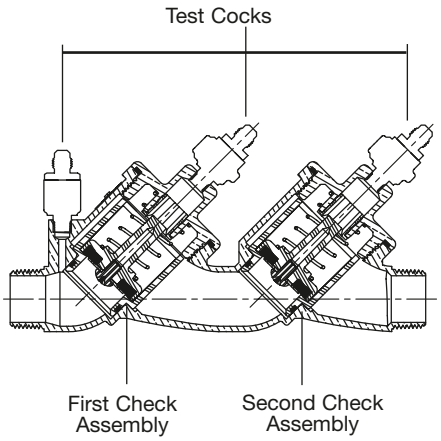
Materials

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

Approvals

1015

AWWA Std C510 compliant



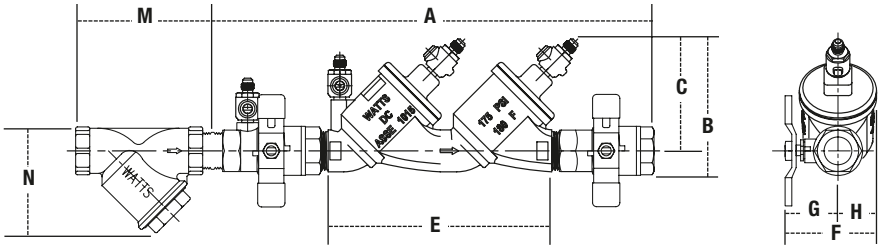
Models

add Suffix:
S – bronze strainer
LF – without shutoff valves
LH – locking handle ball valves
SH – stainless steel ball valve handles
HC – 2½" inlet/outlet fire hydrant fittings (2" valve)
QT – quarter-turn ball valves
C&T – testcock caps and tethers
AQT – street elbows with quarter-turn ball valves

add Prefix:
U – union connections

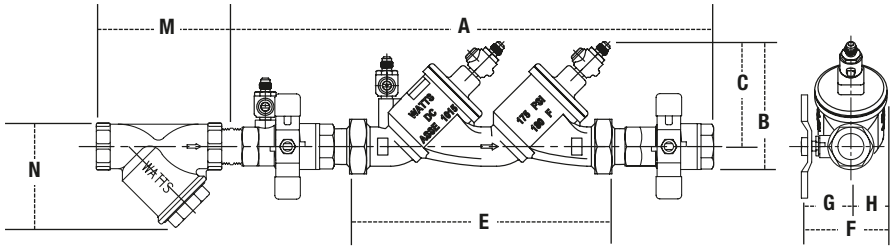
For additional information, request literature ES-719.

Dimensions – Weights



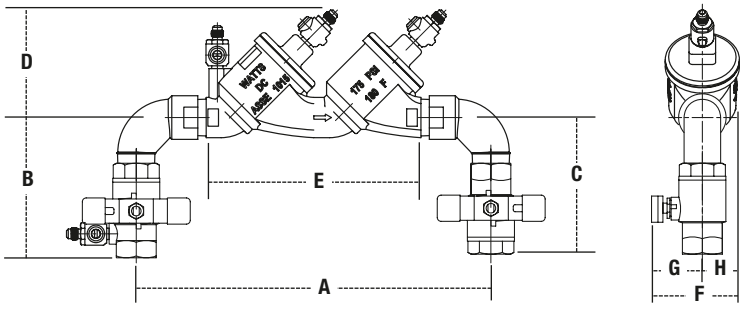
719QT, 719QT-S

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



U719QT, U719QT-S

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



719AQT

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

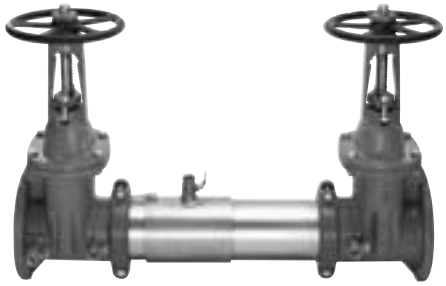
IMPORTANT: Inquire with governing authorities for local installation requirements

Series 757, 757N

Double Check Valve Assemblies

Sizes: 2½" – 10" (65 – 250mm)

757QT



757OSY

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

Features

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

Materials

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

Pressure – Temperature

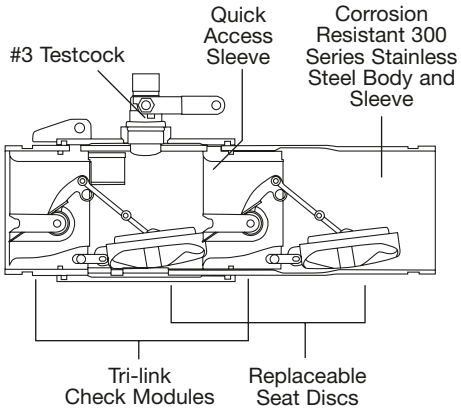
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C)
Maximum Working Pressure: 175psi (12.1 bar)

Models

add 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
QT - 2½" – 3" quarter-turn, ball valves
Available with grooved NRS gate valves - consult factory*
Post indicator plate and operating nut available - consult factory*
*Consult factory for dimensions

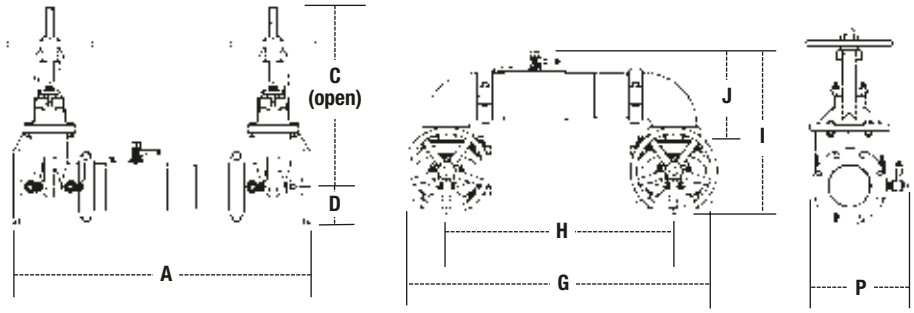
Approvals

1015 (OSY only) B64.5



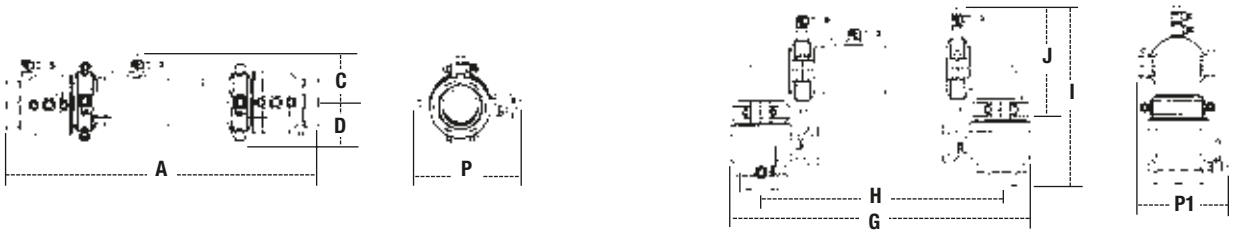
For additional information, request literature ES-757/757N.

Dimensions – Weights



757, 757N

SIZE (DN)		DIMENSIONS (approx.)																WEIGHT							
		A		C (OSY)		C (NRS)		D		G		H		I		J		P		757NRS		757OSY		757N NRS		757N OSY	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	65	31	787	16⅜	416	9⅜	238	3½	89	29 1/16	738	22	559	15½	393	8 13/16	223	9 3/16	234	115	52	125	57	123	56	133	60
3	80	31 11/16	805	18⅞	479	10¼	260	3 11/16	94	30¼	768	22¾	578	17⅛	435	9 3/16	233	10½	267	131	59	145	66	144	65	158	72
4	100	33 11/16	856	22¾	578	12 3/16	310	4	102	33	838	24	610	18½	470	9 15/16	252	11 3/16	284	161	73	161	73	184	83	184	83
6	150	43½	1105	30⅛	765	16	406	5½	140	44¾	1137	33¾	857	23 3/16	589	13 1/16	332	15	381	273	124	295	134	314	142	336	152
8	200	50	1270	37¾	959	19 15/16	506	6 11/16	170	54⅛	1375	40⅝	1032	27 7/16	697	15 11/16	399	17 3/16	437	438	199	480	218	513	233	555	252
10	250	57½	1460	45¾	1162	23 13/16	605	8 3/16	208	66	1676	50	1270	32½	826	17 5/16	440	20	508	721	327	781	354	891	404	951	431



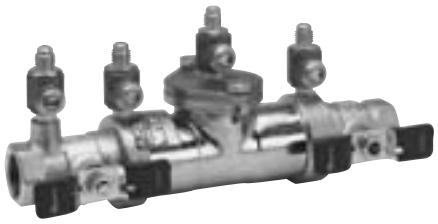
757QT

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

Series 775

Double Check Valve Assemblies

Sizes: ½" – 2" (15 – 50mm)



775QT Patent # 6,021,805

The Copperhead® Series 775 Double Check Valve Assemblies provide protection of the potable water supply. Only those cross-connections identified by local inspection authorities as non-health hazard shall be allowed the use of an approved double check valve assembly.

Features

- Tubular copper body creates smooth flow path and low head loss
- External/internal electroless nickel-plated body acts as an oxygen barrier for corrosion resistance
- Threaded-in check modules eliminate the use of check retainers for lower pressure loss
- Short lay length allows for the use of smaller meter boxes and enclosures
- Bolted on, top entry stainless steel single access cover for ease of maintenance in meter box installations
- Modular check construction featuring non-reversible checks with captured springs for simplified servicing
- Check valve seats are replaceable without the use of special tools
- Top mounted test cocks provide easy access for testing

Materials

- Body: Copper

Pressure – Temperature

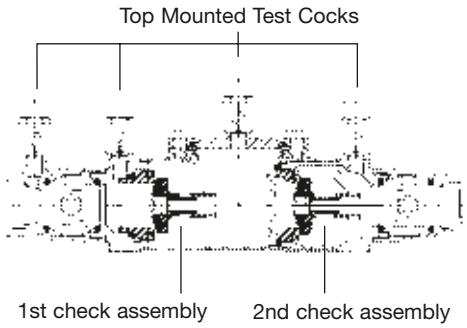
Temperature Range: 33˚F – 180˚F (0.5˚C – 82˚C) continuous
Maximum Working Pressure: 175psi (12.1 bar)

Models

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

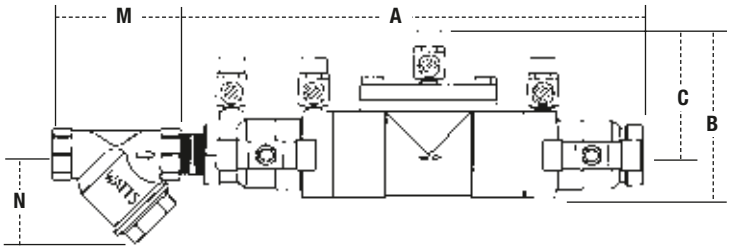
Approvals

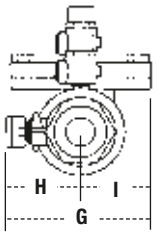
1015
AWWA
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.



Dimensions – Weights

775QT





SIZE (DN)		DIMENSIONS (approx.)												STRAINER DIMENSIONS				WEIGHT	
		A		B		C		G		H		I		M		N			
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg.
½	15	9	228	3⅝	92	2⅝	67	3 3/16	81	1⅝	41	1 9/16	40	3	76	3	76	4	2
¾	20	9	228	3⅝	92	2⅝	67	3 3/16	81	1⅝	41	1 9/16	40	3½	89	3	76	4	2
1	25	11¼	286	4½	114	3 5/16	84	3½	89	1⅞	47	1⅝	41	4¾	121	3¼	83	6	3
1¼	32	15⅜	390	6	152	4 7/16	113	6	152	3¼	82	2¾	69	4½	114	3½	89	17	8
1½	40	15⅜	390	6	152	4 7/16	113	6	152	3¼	82	2¾	69	4⅜	111	4	102	17	8
2	50	18½	460	6	152	4 7/16	113	6¾	171	3¼	82	2¾	69	5⅜	137	5	102	26	12

For additional information, request literature ES-775.

Series 709

Double Check Valve Assemblies

Sizes: 2½" – 10" (65 – 250mm)

709OSY

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

Features

- Replaceable bronze seats
- Maximum flow at low pressure drop
- Design simplicity for easy maintenance
- No special tools required for servicing
- Captured spring assemblies for safety
- Approved for vertical flow up installation

Materials

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

Pressure – Temperature

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

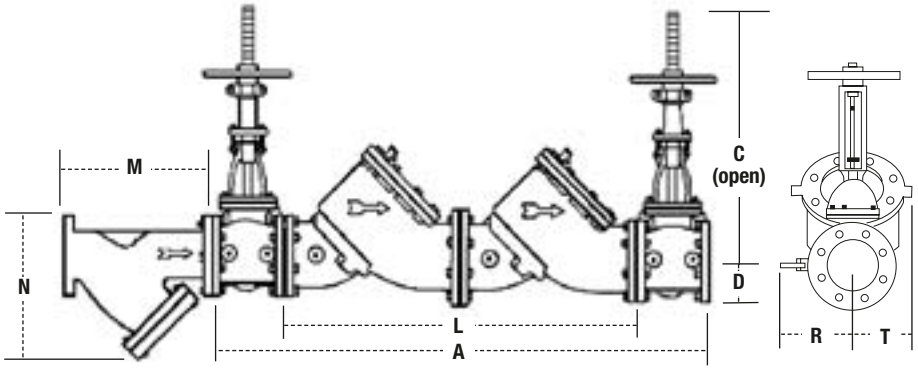
Models

add Suffix:
NRS - non-rising stem resilient seated gate valves
OSY - UL/FM outside stem and yoke resilient seated gate valves
LF - without shutoff valves
S-FDA - FDA epoxy coated strainer
BB - bronze body 2½" – 3" (64 – 76mm)
QT - quarter-turn ball valves
QT-FDA - FDA epoxy coated ball valves

Approvals

1015 (OSY only)

AWWA
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
Sizes 4" – 10" (100 – 250mm) approved horizontal and vertical "flow up".
Size 2½" and 3" (65 and 80mm) approved horizontal only.
Factory Mutual approved 4" – 10" (80 – 250mm) vertical "flow up"



Dimensions – Weights

709

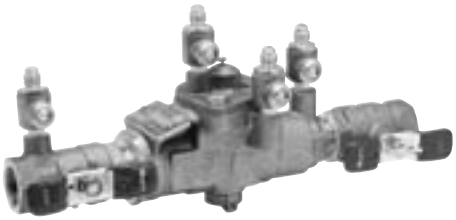
SIZE (DN)		DIMENSIONS (approx.)														STRAINER DIMENSIONS						WEIGHT			
		A		C(OSY)		C(NRS)		D		L		R		T		M		N		*N1		(OSY)		(NRS)	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	65	39	991	16⅜	416	9⅜	238	3½	89	24	610	4	102	3	76	10	254	6½	165	10	254	195	88	167	76
3	80	40	1016	18⅞	479	10¼	260	3¾	95	24	610	5	127	3	76	10¼	260	7	178	10	254	201	91	167	76
4	100	52	1321	22¾	578	12⅜₁₆	310	4½	114	34	864	6	152	6	152	12⅛	308	8¼	210	12	305	428	194	368	167
6	150	63¼	1607	30⅛	765	16	406	5½	140	42½	1089	11	279	7½	191	18½	470	13½	343	20	508	860	390	627	284
8	200	75	1905	37¾	959	19¹⁵⁄₁₆	506	6⅝	168	52	1321	11¼	286	9	229	21⅝	549	15½	394	22¾	578	1448	656	1201	545
10	250	90	2286	45¾	1162	23¹³⁄₁₆	605	8	203	64	1626	12½	318	10¼	260	26	660	18½	470	28	711	2373	1076	2003	908

*Dimensions needed for screen removal.
IMPORTANT: Inquire with governing authorities for local installation requirements

Series 009

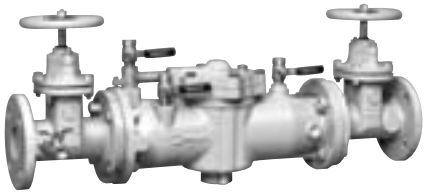
Reduced Pressure Zone Assemblies

Sizes: ¼" – 3" (8 – 80mm)



009QT

U009AQT



009NRS

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

The 009 Series features two in-line, independent check valves, captured springs and replaceable check seats with an intermediate relief valve. Its compact modular design facilitates easy maintenance and assembly access. Sizes ¼" – 1" (8 – 25mm) shutoffs have tee handles.

Features

- Single access cover and modular check construction for ease of maintenance
- Top entry - all internals immediately accessible
- Captured springs for safe maintenance
- Internal relief valve for reduced installation clearances
- Replaceable seats for economical repair
- Bronze body construction for durability - ¼" – 2" (8 – 50mm)
- Fused epoxy coated cast iron body - 2½" and 3" (65 and 80mm)
- Ball valve test cocks - screwdriver slotted - ¼" – 2" (8 – 50mm)
- Large body passages provide low pressure drop
- Compact, space saving design
- No special tools required for servicing

Materials

Sizes ¼" – 2" (8 – 50mm)

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

Sizes 2½" – 3" (65 – 80mm)

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

Pressure – Temperature

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

Models

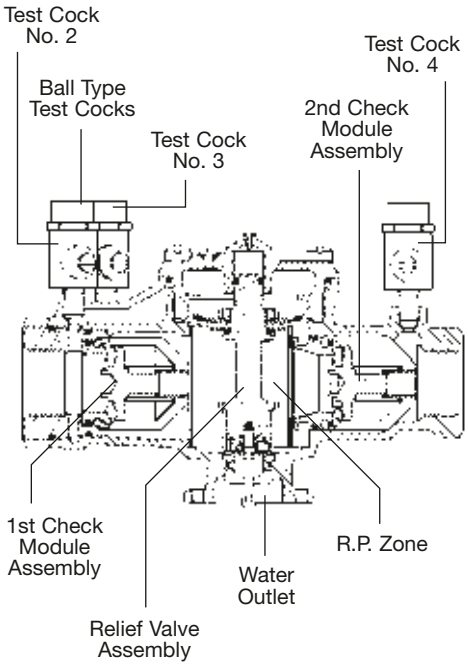
Sizes ¼" – 2"

add Suffix:
QT - quarter-turn ball valves
S - bronze strainer
LF - without shutoff valves
AQT - elbow fittings for 360° rotation (¾" – 2" only) (20 – 50mm only)
PC - internal polymer coating
LH - locking ball valve handles (open position)
SH - stainless steel ball valve handles

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

Sizes 2½" and 3"

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

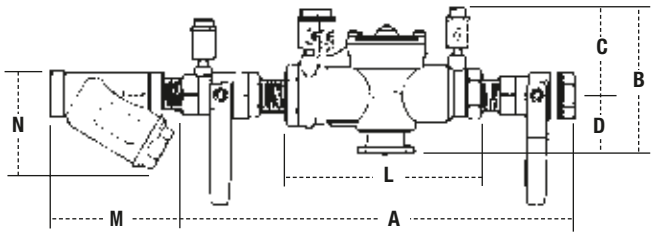


Approvals

1013 B64.4

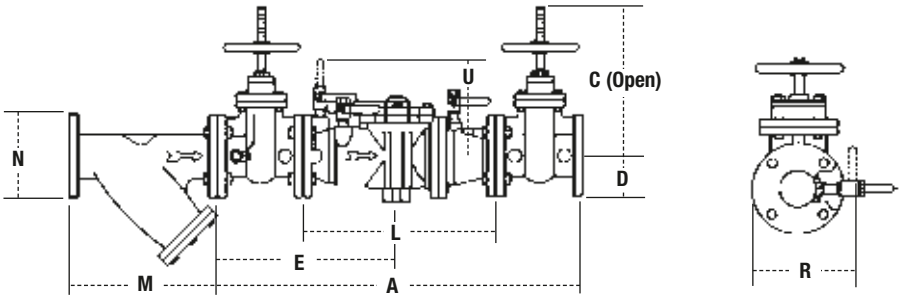
AWWA, IAPMO
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
Approval models QT, AQT, PC, U, NRS, OSY.
UL Classified ¾" – 2" (20 – 50mm) (LF models only), 2½" and 3" with OSY

For additional information, request literature ES-009.



009 ¼" – 2"

SIZE (DN)		DIMENSIONS (approx.)										STRAINER DIMENSIONS				WEIGHT	
		A		B		C		D		L		M		N			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*
¼	8	10	250	4⅝	117	3⅜	86	1¼	32	5½	140	2⅜	60	2½	64	5	2
⅜	10	10	250	4⅝	117	3⅜	86	1¼	32	5½	140	2⅜	60	2½	64	5	2
½	15	10	250	4⅝	117	3⅜	86	1¼	32	5½	140	2¾	70	2¼	57	5	2
¾	20	10¾	273	5	127	3½	89	1½	38	6¾	171	3¾₁₆	81	2¾	70	6	3
1	25	16¾	425	5½	140	3	76	2½	64	9½	241	3¾	95	3	76	12	5
1¼	32	17⅜	441	6	150	3½	89	2½	64	11⅜	289	4⁷⁄₁₆	113	3½	89	15	6
1½	40	17⅞	454	6	150	3½	89	2½	64	11⅛	283	4⅞	124	4	102	16	7
2	50	21⅜	543	7¾	197	4½	114	3¼	83	13½	343	5¹⁵⁄₁₆	151	5	127	30	13



009 2½" and 3"

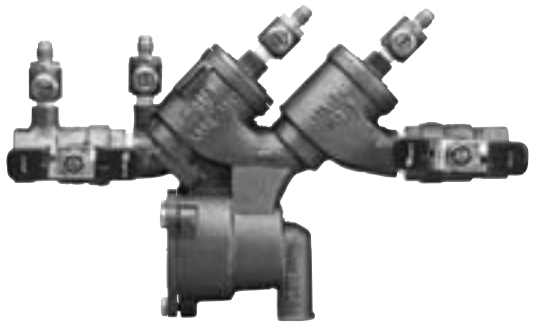
MODEL NO.	SIZE (DN)		DIMENSIONS (approx.)														STRAINER DIMENSIONS				WEIGHT	
			A		C		D		E		L		R		U		M		N			
	in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
009LF	2½	65	—	—	—	—	4½	114	—	—	18⅛	460	—	—	10⅝	270	10	254	6½	165	76	34
009OSY	2½	65	33¼	845	16⅜	416	4½	114	16⅜	416	18⅛	460	7¾	197	10⅝	270	10	254	6½	165	166	75
009NRS	2½	65	33¼	845	9⅜	238	4½	114	16⅜	416	18⅛	460	7¾	197	10⅝	270	10	254	6½	165	189	86
009QT	2½	65	33¼	845	6	152	4½	114	16⅜	416	18⅛	460	7¾	197	10⅝	270`	10	254	6½	165	150	68
009LF	3	80	—	—	—	—	4½	114	—	—	18⅛	460	—	—	10⅝	270	10⅛	257	7	178	76	34
009OSY	3	80	34¼	870	18⅞	479	4½	114	16⅝	422	18⅛	460	8¾	222	10⅝	270	10⅛	257	7	178	198	90
009NRS	3	80	34¼	870	10¼	260	4½	114	16⅝	422	18⅛	460	8¾	222	10⅝	270	10⅛	257	7	178	191	87
009QT	3	80	34¼	870	7	178	4½	114	16⅝	422	18⅛	460	8¾	222	10⅝	270	10⅛	257	7	178	158	71

Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 33.
IMPORTANT: Inquire with governing authorities for local installation requirements

Series 919

Reduced Pressure Zone Assemblies

Sizes: ¾" – 2" (20 – 50mm)



919QT

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

This series features two poppet style check valves, replaceable check seats, with an intermediate relief valve. Its compact modular design facilitates easy maintenance and assembly access. Sizes ¾" – 1" (20 – 25mm) shutoffs have tee handles.

Features

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

Models

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

add Prefix:
U – union connections

Materials

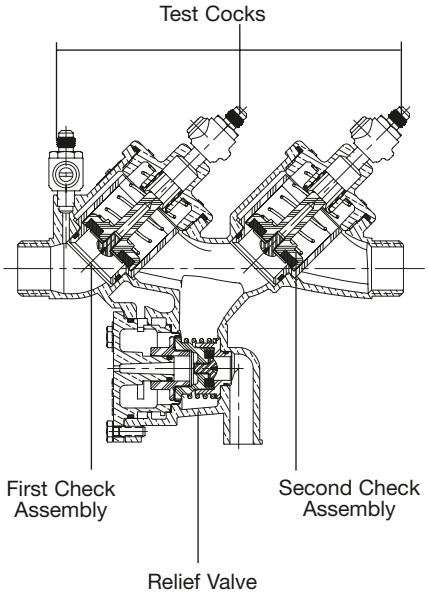
- Body: Bronze
- Discs: Silicone rubber
- Check Seats: Replaceable polymer
- Cover Bolts: Stainless steel

Pressure — Temperature

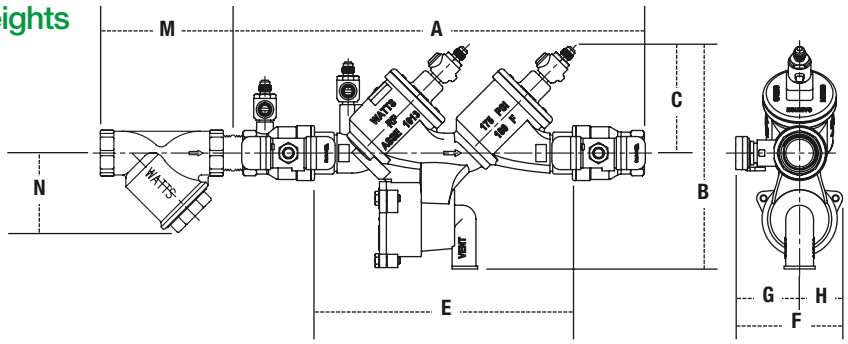
Temperature Range: 33°F – 180°F (0.5°C – 82°C)
Maximum Working Pressure: 175psi (12.1 bar)

Approvals

1013

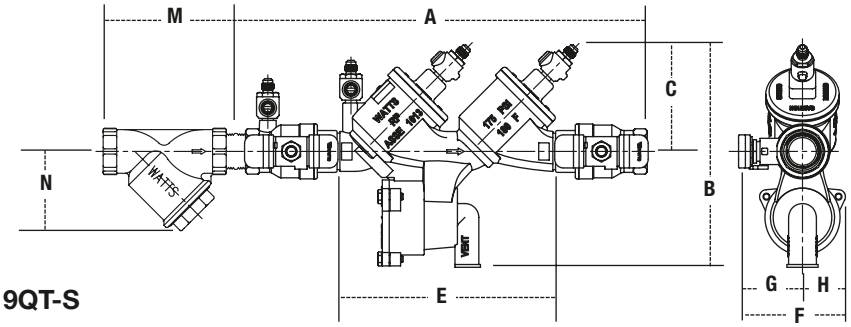


Dimensions – Weights



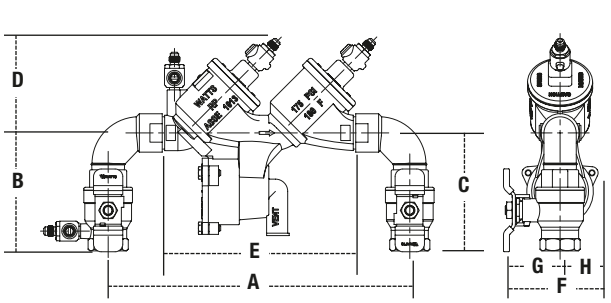
919QT, 919QT-S

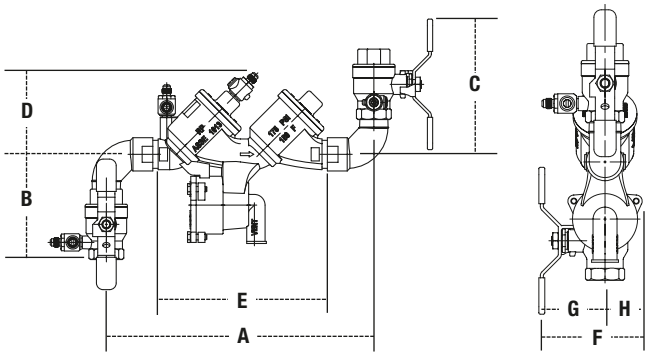
SIZE (DN)		DIMENSIONS																STRAINER DIMENSIONS				WEIGHT			
		A		B		C		D		E (LF)		F		G		H		M		N		919QT		919QT-S	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
3/4	20	12 1/8	307	7 7/16	188	3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



U919QT, U919QT-S

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





919AQT,919ZQT

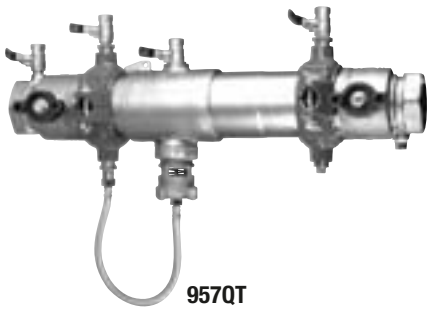
SIZE (DN)		DIMENSIONS																WEIGHT	
		A		B		C		D		E (LF)		F		G		H			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
3/4	20	10 3/8	263	3 15/16	100	3 15/16	100	3 1/2	88	7 11/16	195	3 5/8	92	2 1/16	52	1 9/16	40	9.3	4.2
1	25	12 1/4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

Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 33.
IMPORTANT: Inquire with governing authorities for local installation requirements

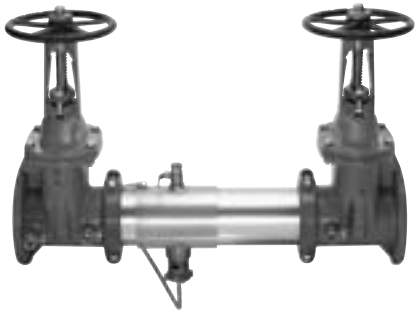
Series 957, 957N, 957Z

Reduced Pressure Zone Assemblies

Sizes: 2½" – 10" (65 – 250mm)



957QT



957OSY

957N OSY

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

Features

- Extremely compact design
- 70% lighter than traditional designs
- Groove fittings allow integral pipeline adjustment
- Patented torsion spring checks provide lowest pressure loss
- Unmatched ease of serviceability
- Replaceable check disc rubber
- Bottom mounted cast stainless steel relief valve
- 2½" – 4" sizes available with quarter-turn ball valve shutoffs

Materials

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

Pressure-Temperature

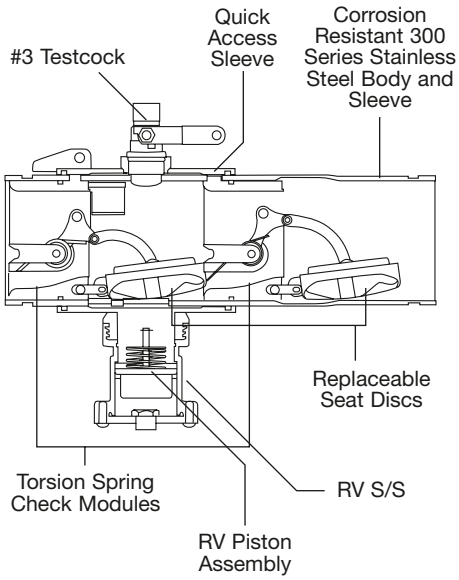
Temperature Range: 33˚F – 110˚F (0.5˚C – 43˚C)
Maximum Working Pressure:175psi (12.1 bar)

Models

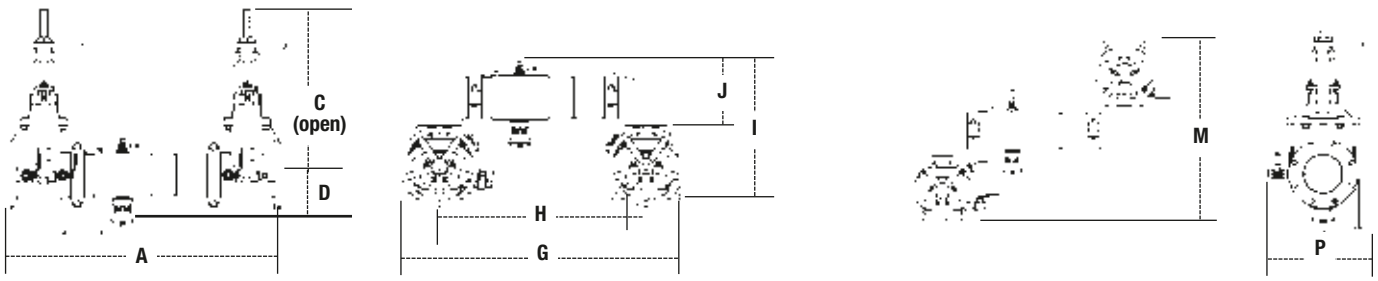
add Suffix:
NRS - non-rising stem resilient seated gate valves
OSY - UL/FM outside stem and yoke resilient seated gate valves
***OSY FxG** - flanged inlet gate connection and grooved outlet gate connection
***OSY GxF** - grooved inlet gate connection and flanged outlet gate connection
***OSY GxG** - grooved inlet gate connection and grooved outlet gate connection
QT - 2½" – 3" quarter turn ball valves
Available with grooved NRS gate valves - consult factory*
Post indicator plate and operating nut available - consult factory*
*Consult factory for dimensions

Approvals

1013 (OSY only) B64.4

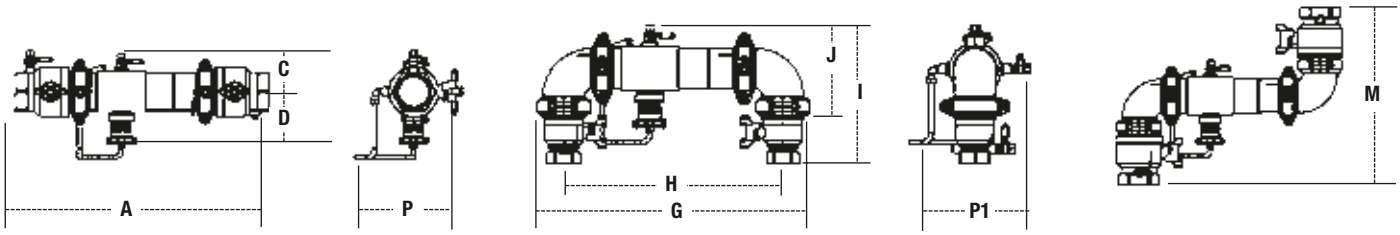


For additional information, request literature ES-957/957N/957Z.



957

SIZE (DN)		DIMENSIONS (approx.)																				WEIGHT							
		A		C (OSY)		C (NRS)		D		G		H		I		J		M		P		957NRS		957OSY		957N NRS		957N OSY	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	65	31	787	16⅜	416	9⅜	238	6½	165	29 1/16	738	22	559	15½	393	8 13/16	223	21 9/16	548	9 3/16	234	118	54	128	58	126	57	136	62
3	80	31 11/16	805	18⅞	479	10¼	260	6 11/16	170	30¼	768	22¾	578	17⅛	435	9 3/16	233	23⅛	587	10½	267	134	61	148	67	147	67	151	68
4	100	33 11/16	856	22¾	578	12 3/16	310	7	178	33	838	24	610	18½	470	9 15/16	252	26½	673	11 3/16	284	164	74	164	74	187	85	187	85
6	150	43½	1105	30⅛	765	16	406	8½	216	44¾	1137	33¾	857	23 3/16	589	13 1/16	332	32¾	832	15	381	276	125	298	135	317	144	339	154
8	200	50	1270	37¾	959	19 15/16	506	9 11/16	246	54⅛	1375	40⅝	1032	27 7/16	697	15 11/16	399	37⅛	943	17 3/16	437	441	200	483	219	516	234	558	253
10	250	57½	1460	45¾	1162	23 13/16	605	11 3/16	285	66	1676	50	1270	32½	826	17 5/16	440	46⅜	1178	20	508	723	328	783	355	893	405	950	431



957QT

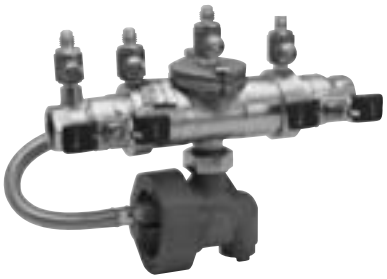
SIZE (DN)		DIMENSIONS (approx.)																		WEIGHT	
		A		C		D		G		H		I		J		M		P		P1			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	65	28 15/16	735	4⅞	124	6⅞	174	30¼	768	24½	622	16 9/16	421	11⅜	289	20 15/16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

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 995

Reduced Pressure Zone Assemblies

Sizes: ½" – 1½" (15 – 40mm)



995QT Patent # 6,021,805

The Copperhead® Series 995 Reduced Pressure Zone Assemblies are designed to protect the potable water supply in accordance with national plumbing codes and water authority requirements. Series 995 can be used in a variety of installations, including health hazard cross-connections in internal piping systems and for containment at the service line entrance.

The 995 Series features two in-line, independently operating modular check valves, a bottom mounted hydraulically operated differential relief valve, two ball valve shutoffs, four test cocks, and is serviceable without the use of special tools.

Features

- Tubular lead free copper body creates smooth flow path and low head loss
- External/internal electroless nickel-plated body acts as an oxygen barrier for corrosion resistance
- Threaded-in check modules eliminate the use of check retainers for lower pressure loss
- Bottom mounted relief valve reduces end-to-end dimensions allowing smaller enclosures and space requirements
- Separate relief valve access cover allows the check modules to be serviced independently of the relief valve
- Unique relief valve cover nut design eliminates use of cover bolts and simplifies alignment
- Flexible stainless steel braided hose, senses supply pressure at the mid-point of the body to reduce fouling
- Check relief valve seats are replaceable without the use of special tools
- Modular check valves feature captured springs and replaceable disc rubber
- Bolted on, top entry stainless steel check valve cover features an O-ring seal to limit torque requirements
- Crush seal check module O-ring for positive seating

Materials

- Body: copper

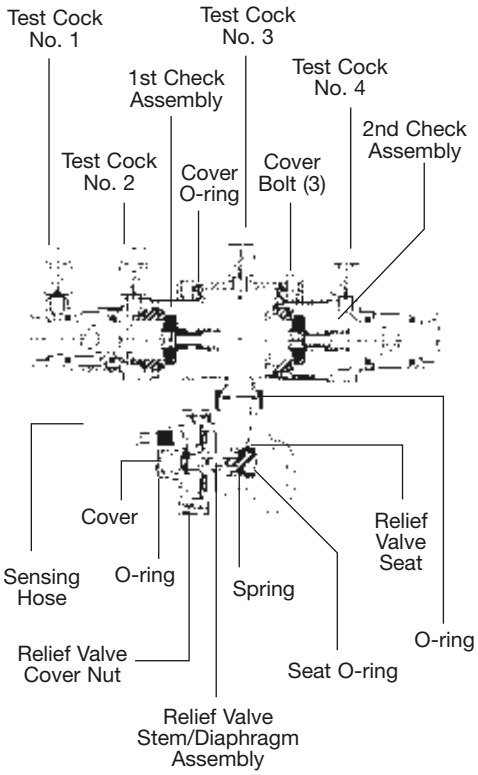
Pressure – Temperature

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

Approvals

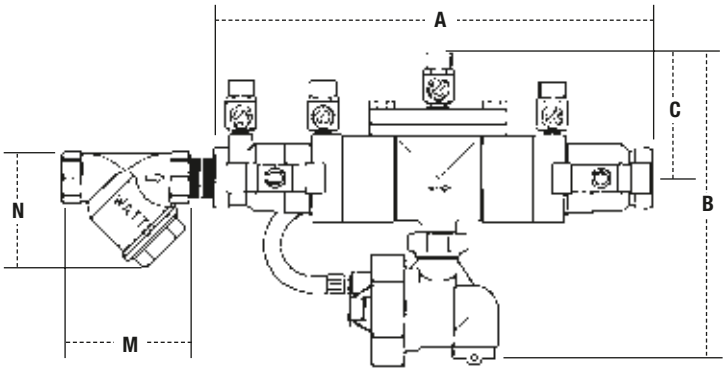
1013

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



For additional information, request literature ES-995.

Dimensions – Weights



995QT

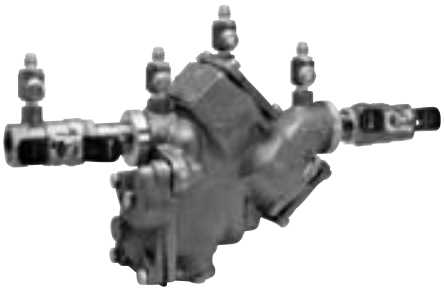
SIZE (DN)		DIMENSIONS (approx.)												STRAINER DIMENSIONS				WEIGHT	
		A		B		C		G		H		I		M		N			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*
½	15	9	228	7¼	184	2⅝	67	3⅝	92	1⅝	41	2	51	3	76	3	76	5	2
¾	20	9	228	7¼	184	2⅝	67	3⅝	92	1⅝	41	2	51	3½	89	3	76	5	2
1	25	11½	292	8 1/16	205	3 5/16	84	4⅛	105	2	51	2⅛	54	4¾	121	3¼	83	7	3
1¼	32	15⅜	390	11	279	4 7/16	113	6	152	3¼	82	2¾	69	4½	114	3½	89	18	8
1½	40	15⅜	390	11	279	4 7/16	113	6	152	3¼	82	2¾	69	4⅞	124	4	102	18	8

Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 33.
IMPORTANT: Inquire with governing authorities for local installation requirements

Series 909

Reduced Pressure Zone Assemblies

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



909QT

Series 909 Reduced Pressure Zone Assemblies are designed to provide superior cross-connection control protection of the potable water supply in accordance with national plumbing codes and containment control for water authority requirements. Series 909 can be utilized in a variety of installations, including health hazard cross-connections in plumbing systems or for containment at the service line entrance. With its exclusive, design incorporating the patented "air-in/water-out" principle, it provides maximum relief valve discharge during the emergency conditions of combined backsiphonage and backpressure with both checks fouled. Series 909-QT is furnished with full port, resilient seated and bronze ball valve shutoffs. Sizes ¾" and 1" (20 and 25mm) shutoffs have tee handles.

Features

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

Materials

- Body: Bronze
- Seats: Celcon®
- Test Cocks: Bronze

Model 909HW

- Check Seats: Stainless steel
- Relief Valve Seats: Stainless steel
- Check and Relief Valve Assemblies: Durable tight seating, rubber

Pressure – Temperature

Maximum Operating Pressure: 175psi (12.1 bar)

909
Temperature Range: 33˚F – 140˚F (0.5˚C to 60˚C) continuous, 180˚F (82˚C) intermittent

909HW

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

Models

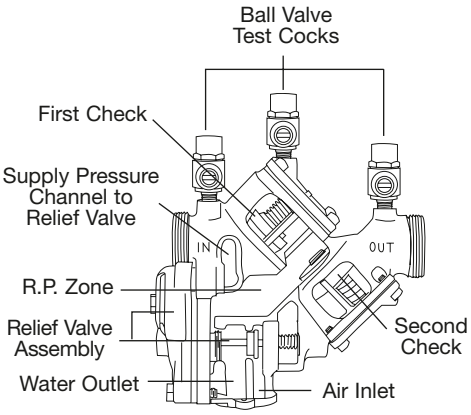
add Suffix:
QT - quarter turn ball valves
S - bronze strainer
HW - stainless steel check modules for hot and harsh water conditions up to 210˚F (99˚C)
LF - without shutoff valves
LH - lockable ball valve handles (open position)
PC - internal polymer coating

add Prefix:
C - clean and check strainer - ¾" and 1" only (20 and 25mm)
U - union connections - ¾" and 1" only (20 and 25mm)
FAE - flanged adapter ends - 1¼", 1½", 2" only (32, 40, 50mm)

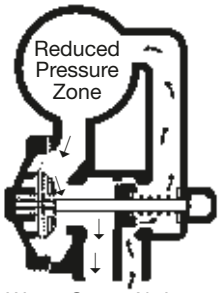
Approvals

1013

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

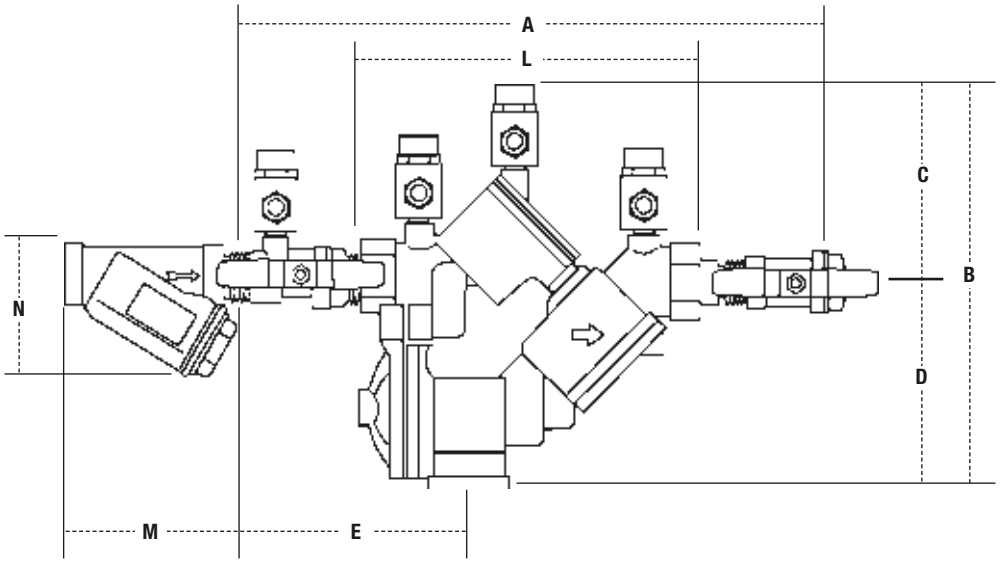


How it Operates
The unique relief valve construction incorporates two channels: one for air, one for water. When the relief valve opens, as in the accompanying air-in/water-out diagram, the right-hand channel admits air to the top of the reduced pressure zone, relieving the zone vacuum. The channel on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



For additional information, request literature ES-909S.

Dimensions – Weights



909QT

SIZE (DN)		DIMENSIONS (approx.)														STRAINER DIMENSIONS				WEIGHT	
		A		B		C		D		E		L		P		M		N			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*
¾	20	14⅜	365	8¾	222	4	102	4¾	121	6¾	171	7 5/16	186	3⅞	98	3 3/16	81	2¾	70	14	6
1	25	15⅜	391	8¾	222	4	102	4¾	121	7	178	7 5/16	186	3⅞	98	3¾	95	3	76	15	7
1¼	32	18½	470	11⅝	295	5½	140	6½	165	7½	191	10⅜	264	5¼	133	4 7/16	113	3½	89	40	18
1½	40	19	483	11⅝	295	5½	140	6½	165	7½	191	10⅜	264	5¼	133	4⅞	124	4	102	40	18
2	50	19½	495	11⅝	295	5½	140	6½	165	7¾	197	10⅜	264	5¼	133	5 15/16	151	5	127	40	18
*U909QT Dimensions - with integral body unions (Prefix "U")																					
¾	20	14⅝	371	8¾	222	4	102	4¾	121	6¾	171	7 5/16	186	3⅞	98	3 3/16	81	2¾	70	14	6.4
1	25	15⅝	397	8¾	222	4	102	4¾	121	7	178	7 5/16	186	3⅞	98	3¾	95	3	76	15	6.8
*FAE909QT Dimensions - with flanged adapter ends (Prefix "FAE")																					
1¼	32	19	483	11⅝	295	5½	140	6½	165	7½	191	10⅜	264	5¼	133	4 7/16	113	3½	89	40	18.1
1½	40	19¾	502	11⅝	295	5½	140	6½	165	7½	191	10⅜	264	5¼	133	4⅞	124	4	102	40	18.1
2	50	21	533	11⅝	295	5½	140	6½	165	7¾	197	10⅜	264	5¼	133	5 15/16	151	5	127	40	18.1

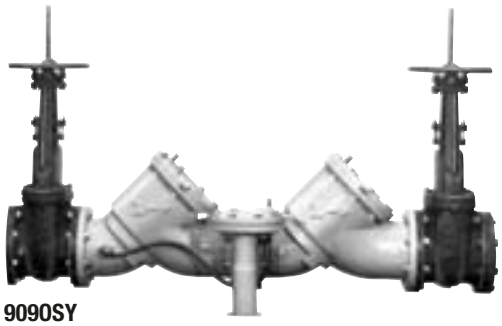
Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 33.

IMPORTANT: Inquire with governing authorities for local installation requirements

Series 909

Reduced Pressure Zone Assemblies

Sizes: 2½" – 10" (65 – 250mm)



909OSY

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

Features

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

Materials

- Check Valve Bodies: FDA epoxy coated cast iron or bronze
- Seats: Bronze
- Trim: Stainless steel
- Relief Valve Body:

  2½" – 3" (60–80mm) bronze
  4" – 10" (100–250mm) FDA epoxy coated cast iron
- Test Cocks: Bronze body ball valve

Pressure – Temperature

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

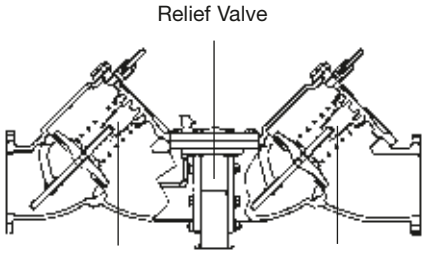
Approvals

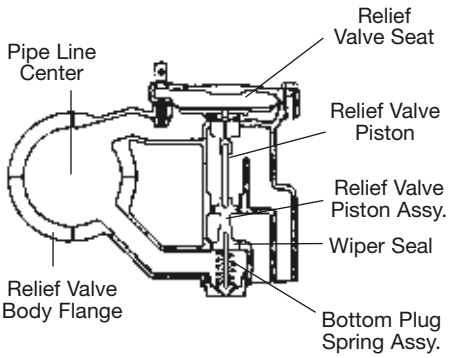
1013 B64.5

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

Models

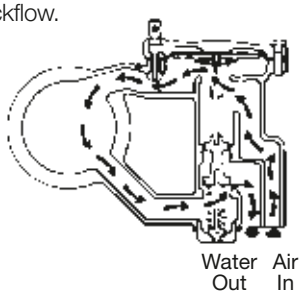
add Suffix:
BB – bronze body (2½", 3" only) (64, 76mm)
LF – without shutoff valves
NRS – non-rising stem resilient seated gate valves
OSY – UL/FM outside stem & yoke resilient seated gate valves
QT-FDA – FDA epoxy coated quarter-turn ball valves
S – cast iron strainer
S-FDA – FDA epoxy coated strainer





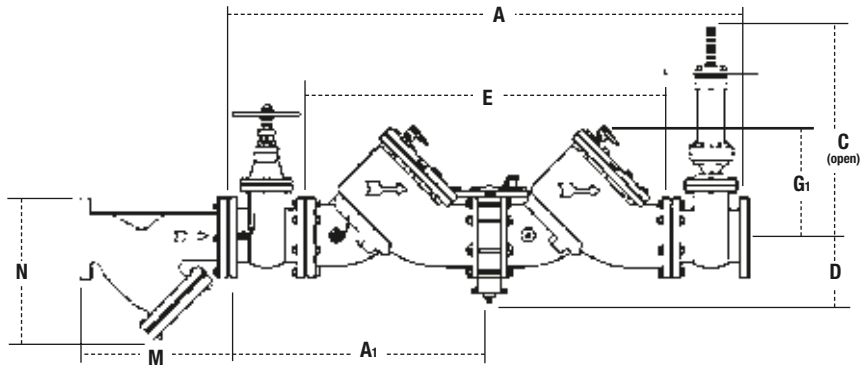
How it Operates

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



For additional information, request literature ES-909L.

Dimensions – Weights



909

SIZE (DN)		DIMENSIONS (approx.)																SERVICE CLEARANCE FOR CHECK	
										SERVICE CLEARANCE FOR GATE									
		A		A1		NRS		OSY*		OSY C		NRS C		D		E		G1	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*
2½	65	41¼	1048	20⅝	524	11⅜	289	15⅞	403	16⅜	416	9⅜	238	5¼	133	26⅛	663	11	279
3	80	42¼	1073	21¼	540	12¾	324	18½	470	18⅞	479	10¼	260	5¼	133	26⅛	663	11	279
4	100	55⅛	1400	27⅝	702	15⅜	603	23¾	603	22¾	578	12$^{3}/_{16}$	310	6	152	37	940	14	356
6	150	65½	1664	32¾	832	19¾	825	32½	825	30⅛	765	16	406	6	152	44½	1130	16	406
8	200	78½	2000	39⅜	1000	24½	622	39¼	997	37¾	959	19$^{15}/_{16}$	506	9¾	248	55¼	1403	21	533
10	250	93⅝	2378	46⅞	1190	29¼	743	48	1220	45¾	1162	23$^{13}/_{16}$	605	9¾	248	67[c]	1711	21	533

SIZE (DN)		DIMENSIONS (approx.)						STRAINER DIMENSIONS				WEIGHT			
		R		T		T1		M		N		NRS		OSY	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	65	4	102	19$^{1}/_{16}$	230	7⅝	194	10	254	6½	165	195	88	198	90
3	80	5	127	9$^{1}/_{16}$	230	7⅝	194	10⅛	257	7	178	225	102	230	104
4	100	6	152	14⅜	365	12½	318	12⅛	308	8¼	210	455	206	470	213
6	150	11	279	14⅜	365	12½	318	18½	470	13½	343	718	326	798	362
8	200	11¼	286	19¼	489	17⅜	441	21⅝	549	15½	394	1350	612	1456	660
10	250	12½	318	21	533	19⅛	486	26	660	18½	470	2160	980	2230	1011

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

Note: Relief valve section is reversible, therefore, can be on either side and is furnished standardly as shown
Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary. See page 33.
IMPORTANT: Inquire with governing authorities for local installation requirements

Series 800M4QT, 800M4FR

Pressure Vacuum Breakers

Sizes: ½" – 2" (15 – 40mm)

Series 800M4QT and 800M4FR Pressure Vacuum Breakers are designed to prevent backsiphonage of contaminated water into the potable water supply and are for health hazard cross-connections subject to continuous pressure. These valves must be installed 12" (305mm) above the highest downstream point of water.

800M4FR

Features

- Sizes ½" – 1" (15 – 25mm) come standard with tee handle quarter-turn shutoffs
- Sizes 1¼" – 2" (32 – 50mm) come standard with lever handles

Temperature-Pressure

Maximum Pressure: 150psi (10.3 bar)
Maximum Temperature: 140˚F (60˚C)

Approvals

1020

Models

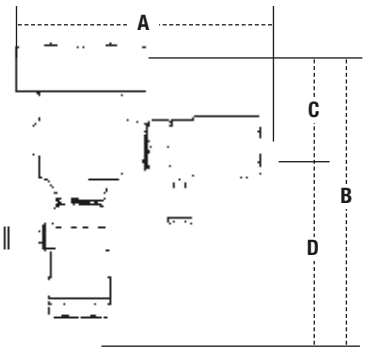
800M4FR - with relief valve for freeze protection. Patent #5,551,473.

U800M4QT - with union connections. Available in sizes ¾" and 1" (20 and 25mm).

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

Dimensions –Weights

MODEL	SIZE (DN)		DIMENSIONS (approx.)								WEIGHT	
			A		B		C		D			
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
800M4QT/FR	½	15	5	127	6¼	159	2 9/16	65	3 11/16	94	3.5	1.6
800M4QT/FR	¾	20	5⅜	137	6½	165	2 9/16	65	3 15/16	100	3.5	1.6
800M4QT/FR	1	25	5½	139	7½	191	2¾	70	4¾	121	6	2.7
800M4QT/FR	1¼	32	8⅝	219	9	229	3¼	83	5¾	146	11	4.9
800M4QT/FR	1½	40	9	229	9½	241	3¼	83	6¼	159	13.5	6.1
800M4QT/FR	2	50	9½	241	9⅝	245	3¼	83	6⅜	162	18.5	8.4
U800M4QT	¾	20	6⅜	163	7 9/16	192	2 1/8	55	5 7/16	138	4	1.8
U800M4QT	1	25	8 5/16	211	9	229	2 13/16	71	6 3/16	158	6	2.7
800MQT	½	15	4⅞	124	5⅜	137	2½	64	2⅞	73	4	1.8
800MQT	¾	20	4⅞	124	5⅜	137	2½	64	2⅞	73	3	1.4



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

Series 188A

Anti-Siphon Vacuum Breakers

Sizes: ¾" – 2" (20 – 50mm)

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

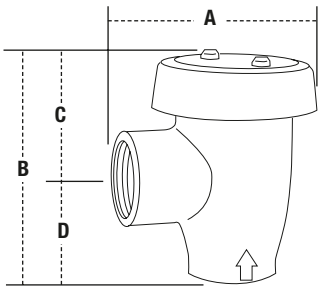
188A

Approvals

1001 B64.1

Dimensions - Weights

SIZE (DN)		DIMENSIONS (approx.)						WEIGHT	
		A		C		D			
in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.
¾	20	2¼	57	1⅞	48	1½	38	1.13	.51
1	25	2⅞	73	2⅛	54	1 11/16	43	1.75	.79
1¼	32	2⅞	73	2⅛	54	1 13/16	46	2.13	.96
1½	40	3⅝	92	2 7/16	62	2 3/16	56	3.5	1.64
2	50	4⅛	105	2⅞	73	2½	64	5.25	2.38



IMPORTANT: Inquire with governing authorities for local installation requirements

For additional information, request literature ES-188A.

Series 8

Hose Connection Vacuum Breakers

Sizes: ⅜" – ¾" (10 – 20mm)

8

8B

8FR

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

Materials

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

Models

8* - brass body, removable, non-draining

8A* - patented “non-removable” feature, drainable, interlocking spring prevents removal once installed

8B* - brass body, with breakaway set screw to prevent removal, drainable

8C, 8BC and 8AC - same as above in chrome finish

NF8 - specifically designed for wall and yard hydrants, permits manual draining for freezing conditions

NF8C - same as above with chrome finish

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

8FR - with freeze relief features. Protects the valve from freeze damage (Patent Pending)

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

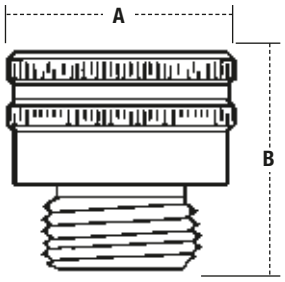
Approvals

1011 B64.2

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

Dimensions – Weights

MODEL	SIZE (DN)		DIMENSIONS (approx.)				WEIGHT	
			A		B			
	in.	*mm*	*in.*	*mm*	*in.*	*mm*	*oz.*	*gm.*
8	¾HT	20	1⅜	35	1½	38	4	113.4
8A	¾HT	20	1½	38	1½	38	4	113.4
8AC	¾HT	20	1½	38	1½	38	4	113.4
8B	¾HT	20	1½	38	1⅜	35	4	113.4
8BC	¾HT	20	1⅜	35	1½	38	4	113.4
8C	¾HT	20	1⅜	35	1½	38	4	113.4
NF8	¾HT	20	1½	38	2	50	5.3	151.2
NF8C	¾HT	20	1½	38	2	50	5.3	151.2
8P	¾HT	20	1¾	44	1⅜	35	2	56.7
S8	½F**	15	1¼	32	1½	38	1.5	42.5
S8C	½F**	15	1¼	32	1½	38	4	113.4
S8C	⅜F**	10	1¼	32	1½	38	4	113.4
8FR	¾HT	20	1¾	44	1¾	44	7.0	200



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

Important: Inquire with governing authorities for local installation requirements

Series 7

Dual Check Valves

7 Sizes: ½" – 1¼" (12 – 32mm)
7C Sizes: ⅜" (10mm)

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

7

Features

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

Pressure – Temperature

Maximum Pressure: 150psi (10 bar)
Minimum Pressure: 10psi (69 kPa)
Working Temperature: 33˚F – 180˚F (0.5˚C to 82˚C)

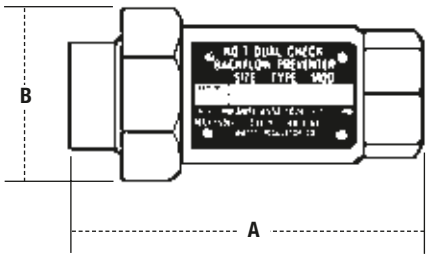
Approvals

1024 B64.6

Materials

- Body: Bronze (7C chrome-nickel plated)
- Check Modules: Plastic
- Discs: Silicone
- Seals: Buna-N
- Springs: Stainless steel

Dimensions – Weights



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

For additional information, request literature F-7.

Series Cu7

Copper-Body Dual Check Valves

Sizes: ½" – 1" (13 – 25mm)

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

Cu7

Features

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

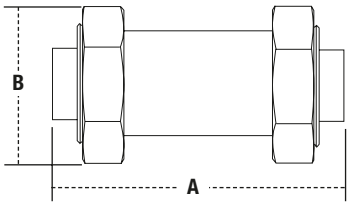
Pressure-Temperature

Maximum Pressure: 175psi (12.1 bar)
Minimum Pressure: 10psi (69 kPa)
Working Temperature: 33˚F – 180˚F (0.5˚C – 82˚C)

Approvals

1024

Dimensions – Weights



CU7

SIZE (DN)		DIMENSIONS				WEIGHT	
		A		B			
in.	mm	in.	mm	in.	mm	lbs.	kgs.
½	15	4 7/16	113	2⅜	60	1.7	0.8
¾	20	4 7/16	113	2⅜	60	1.7	0.8
1	25	4 11/16	119	2⅜	60	2	0.9

IMPORTANT: Inquire with governing authorities for local installation requirements

For additional information, request literature F-7.

Series WB
WattsBox Insulated Enclosures

Watts Box Insulated Enclosure

WattsRock Enclosure

Features

- Designed to eliminate valve vault entry requirements of OSHA confined space ruling 29CFR 1910.146
- Single source Watts Regulator warranty of the enclosure, the backflow preventer, and the heat source
- Allows for the installation of the backflow preventer "at the service connection" in accordance with AWWA Standards
- Specifically designed to meet NFPA guidelines. The enclosure provides freeze protection to maintain the water supply to the property's fire protection system (NFPA 3-3.1.8 and 3.6.1.3.2)
- Strategically placed doors provide access to the backflow prevention assembly for testing and repair without removal of the entire unit
- An economical alternative to expensive retrofit installation
- Eliminates potential drainage constraints in existing equipment rooms
- Saves valuable floor space
- Standardly furnished with thermostatically controlled heat source for freeze protection down to -30°F
- Contains no structural wood or particle board for long life
- Easy installation aluminum enclosures features interlocking panel which eliminates the use of screws during assembly
- Can be temporarily removed for replacement of the backflow preventer without the need for replacement of freeze protection services
- Flip top fiberglass enclosures standardly furnished with locking pin to lock the lid in the open position
- ASSE 1060 certified
- WattsRock available in slate grey and earthtone brown

Dimensions – Weights

FIBERGLASS			
FITS WATTS VALVES	*WATTS MODEL*	*DIMENSIONS 12" CLEARANCE Length x Width x Height*	*MOUNTING PAD SIZE*
Thru ¾" 007, 009, 909, 719, 919	WB-75	19" x 11" x 22"	28" x 20"
Thru 1" 007, 009, 909, 719, 919	WB-1	27" x 13" x 23"	36" x 22"
Thru 1½" 007, 009, 909, 719, 919	WB-1.5	33" x 21" x 25"	44" x 32"
Thru - 2" 007, 009, 909, 719, 919	WB-2	39" x 13" x 28"	50" x 24"
¾" - 1" 800, 008, 288, 289	WB-PVB1	18" x 9" x 18"	19" x 27"
(Increases height by 6")	WB-PVB T1	18" x 9" x 24"	19" x 27"
1¼" - 2" 800, 288	WB-PVB2	26" x 12" x 20"	21" x 35"
(Increases height by 8")	WB-PVB T2	26" x 12" x 28"	21" x 35"
2½" - 3" all 007, 009, 009, 909 4" 774 NRS / OSY / DCDA 4" 994NRS, 3" 775NRS / OSY / DCDA, 3" 995NRS, 4" 775NRS, 4" 994NRS, 2½" - 3" 757DCDA, 2½" - 3" 957QT, 2½" - 3" 957RPDA	WB-N3	70" x 26" x 45"	82" x 38"
4" 9940SY / RPDA, 4" 7750SY / DCDA, 3" 9950SY / RPDA	WB-E3	70" x 26" x 55"	82" x 38"
2½" - 3" 957N NRS / OSY / BFG / QT, 4" 957N NRS / BFG / QT	WB 3000	45" x 35" x 35"	57" x 47"
4" 957N OSY, 4" 757DCDA	WB 4000	53" x 44" x 44"	65" x 56"
ALUMINUM			
4" 709NRS / OSY / DCDA, 4" 909NRS / OSY / RPDA, 6" 774NRS / OSY / DCDA, 6" 994NRS, 6" 775NRS, 6" 995NRS, 8" 775NRS, 4" 757NRS / OSY, 6" 757NRS / OSY / BFG, 8" 757NRS / BFG, 4" 757DCDA, 6" 757DCDA, 4" 9570SY, 6" 957NRS, 8" 957NRS	WB-N4	90" x 32" x 50.5"	102" x 44"
6" 9570SY, 6" 957RPDA	WB-E4	90" x 32" x 57.5"	102" x 44"
6" 709NRS / OSY / DCDA, 6" 909NRS / OSY / RPDA, 8" 774, 994NRS, 10" 774 NRS, 10" 957NRS	WB-N6	105" x 36" x 53"	117" x 48"
6" 994 OSY / RPDA, 8" 774 OSY / DCDA, 10" 994 NRS, 6" 7750SY / DCDA, 8" 7750SY / DCDA, 6" 9950SY / RPDA, 8" 7570SY, 10" 757NRS, 8" 757DCDA, 8" 9570SY, 8" 957RPDA	WB-E6	105" x 36" x 64"	117" x 48"
8" 709, 909 NRS	WB-N8	118" x 40" x 58"	130" x 52"
8" 7090SY / DCDA, 8" 909, 9940SY / RPDA, 10" 7740SY / DCDA, 8" 7570SY / DCDA, 8" 9570SY / RPDA, 10" 757NRS, 10" 957NRS	WB-E8	118" x 40" x 74"	130" x 52"
10" 709, 909NRS	WB-N10	142" x 42" x 65"	154" x 54"

continued on next page…

Series WB
WattsBox Insulated Enclosures

Watts Box Insulated Enclosure

WattsRock Enclosure

Dimensions (cont.)

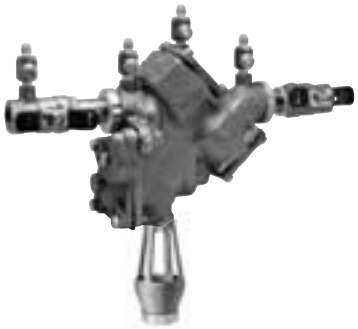
FITS WATTS VALVES	WATTS MODEL	DIMENSIONS 12" CLEARANCE Length x Width x Height	MOUNTING PAD SIZE
ALUMINUM (CONT.)			
10" 709OSY / DCDA, 10" 909, 994OSY / RPDA, 10" 757OSY / DCDA, 10" 957OSY / RPDA	WB-E10	142" x 42" x 85"	154" x 54"
2½" - 3" 757N OSY, 4" 757N NRS / BFG, 6" 757N NRS, BFG, 6" 957N BFG	WB 4000AN	53" x 33" x 44"	65" x 45"
4" 757N OSY, 3" 757N DCDA, 6" 957N NRS, 8" 957N NRS, 2½" - 3" 957N RPDA, 4" 957N RPDA	WB 4000AE	53" x 44" x 44"	65" x 56"
8" 757N NRS, 4" 957 QT	WB 6000AN	62" x 39" x 46"	74" x 51"
6" 757N OSY, 6" 757N DCDA, 6" 957N OSY, 8" 957N NRS, 6" 957N RPDA	WB 6000AE	62" x 53" x 46"	74" x 65"
STUCCO ALUMINUM			
2½" - 3" 757N NRS / BFG / QT	WB 2000A	39" x 24" x 32"	42" x 34"
2½" - 3" 757NRS, QT, BFG, 4" 757BFG	WB 2.5	60" x 22" x 30"	63" x 32"
2½" - 3" 757OSY, 2½" - 3" 957NRS / OSY, 4" 957NRS	WB 2.75	60" x 22" x 42"	63" x 44"
10" 757OSY, 10" 757DCDA, 10" 957OSY, 10" 957RPDA	WB 6 ET	105" x 36" x 80"	108" x 82"
10" 757N NRS	WB 8000ANT	73" x 45" x 60"	75" x 62"
8" 757N OSY, 8" 757N DCDA, 10" 757N OSY, 10" 757N DCDA, 8" 957N OSY, 10" 957N NRS, 10" 957N OSY, 8" 957N RPDA,10" 957N DCDA	WB 8000AET	73" x 67" x 60"	76" x 62"
WATTSROCK - SLATE GREY OR EARTHTONE BROWN			
¾" - 1" 007, 009, 719, 775, 909, 919, 995	WPLRN-1 (shell)	28" x 12" x 23"	40" x 24"
¾" - 1" 007, 009, 719, 775, 909, 919, 995	WPLR-1 (less heat)	26" x 10" x 22"	40" x 24"
¾" - 1" 007, 009, 719, 775, 909, 919, 995	WPHR-1 (w/heat)	26" x 10" x 22"	40" x 24"
1¼" - 2" 007, 009, 719, 775, 909, 919, 995	WPLRN-2 (shell)	45" x 14" x 28"	56" x 22"
1¼" - 2" 007, 009, 719, 775, 909, 919, 995	WPLR-2 (less heat)	43" x 12" x 27"	56" x 22"
1¼" - 2" 007, 009, 719, 775, 909, 919, 995	WPHR-2 (w/heat)	43" x 12" x 27"	56" x 22"
STRAINER MODELS			
¼" - 2"	WB-2S	47" x 13" x 28"	58" x 24"
2½" - 3" NRS	WB-N3S	83" x 26" x 45"	95" x 38"
2½" - 3" OSY	WB-E3S	83" x 26" x 55	95" x 38"
4" NRS	WB-N4S	102" x 32" x 50.5"	114" x 44"
4" OSY	WB-E4S	102" x 32" x 57.5"	114" x 44"
6" NRS	WB-N6S	125" x 36" x 53"	137" x 48"
6" OSY	WB-E6S	125" x 36" x 64"	137" x 48"
8" NRS	WB-N8S	142" x 40" x 58"	154" x 52"
8" OSY	WB-E8S	142" x 40" x 74"	154" x 52"
10" NRS	WB-N10S	172" x 42" x 65"	184" x 54"
10" OSY	WB-E10S	172" x 42" x 85"	184" x 54"

For additional information, request literature ES-WB.

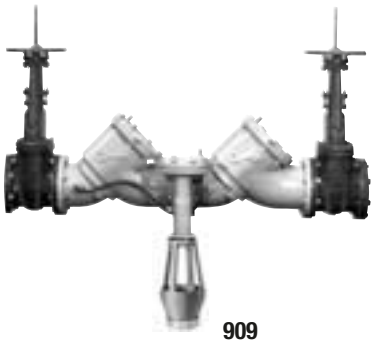
Air Gaps and Elbows

for Reduced Pressure Zone Assemblies

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



909



909

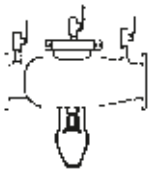
994AG

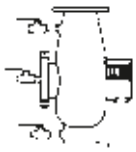
Air Gaps

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.

957AG

Model 994 and 994RPDA Sizes: 2½" – 10"



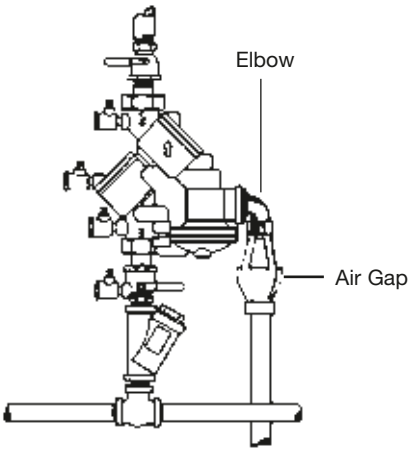


Horizontal Air Gaps

1. Remove two of the relief valve cap-screws 180° apart.
2. Remove the relief valve hose from fitting below inlet ball valve.
3. From the top of the air gap, thread the relief valve hose down and out the slot.
4. Use ¼" - 20 UNC x 1" long stainless steel screws.
5. Reconnect relief valve hose to the fitting below the inlet ball valve.

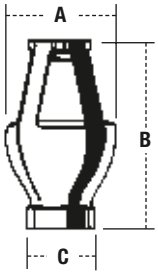
Vertical Air Gaps

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



Air Gaps

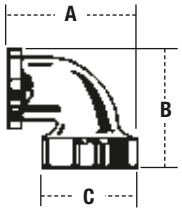
MODEL	SERIES/SIZES	DIMENSIONS (approx.)						WEIGHT	
		A		B		C			
		in.	mm	in.	mm	in.	mm	lbs	kgs
909AG-A	¼" – ½" 009, ¾" 009M2/M3, ½" – 1" 995	2⅜	60	3⅛	79	½	13	.63	.28
909AG-C	¾" – 1" 009/909, 1 – 1½" 009M2, 1¼" – 2" 995	3¼	83	4⅞	124	1	25	1.50	.68
909AG-F	1¼" – 3" 009/909, 1¼" – 2" 009M1, 2" 009M2	4⅜	111	6¾	171	2	51	3.25	1.47
909AG-K	4" – 6" 909, 8" – 10" 909M1	6⅜	162	9⅝	244	3	76	6.25	2.83
909AG-M	8" – 10" 909	7⅜	187	11¼	286	4	102	15.50	7.03
919AGC	¾" & 1" 919	2⅜	60	3⅛	79	½	13	.63	.28
919AGF	1¼" - 2" 919	4⅜	111	8 7/16	214	3	76	4.26	1.93
957AG	2½" – 10" 957	7½	190	10 3/16	258	–	–	–	–
994AGK-P	2½" – 10" 994	8	203	11¼	286	2	51	1.50	0.68
995-AG	3" – 6" 995	5	127	8	203	2⅜	60	—	—



Vent Elbows

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

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



*Epoxy coated

Test Kits

Model TK-7

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

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

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

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

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

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 printout unit and a rugged case

MODEL	WEIGHT	
	lbs.	*kgs.*
TK-DL	15	6.8

For additional information, request literature PG-TK.

Test Cocks

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

TC

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

SAE-TC

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

SAE-TC Adapter

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

SilverEagle TC

- ½" TC for 2½" – 4" series 757 and 957
- ¾" TC for 6" – 10" series 757 and 957
- Full port ball valve design

No. 3 TC with O-Ring

- for 2½" – 4" series 757 and 957
- for 6" – 10" series 757 and 957

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

Caps & Tethers

Plastic Cap and tether (four required per backflow preventer)

- Fits ¼" Female test cocks
- Plastic dust cap and rubber tether
- Model RK-TC-P ⅛ - ¼

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

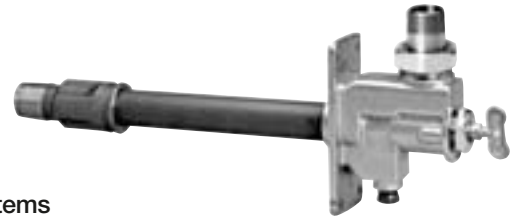
- Fits ⅛" M x SAE test cocks
- Brass dust cap with O-ring seal and rubber tether
- Model RK-SAE-TC-B

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

Series TWS

Key Operated Wall Hydrants for Irrigation System Winterization

Sizes: ¾", 1" (20, 25mm)



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

Pressure-Temperature

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

Models

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

Dimensions

MODEL	SIZE	
	in.	*mm.*
TWS-8	¾	20
TWS-10	¾	20
TWS-12	¾	20
TWS-8	1	25
TWS-10	1	25
TWS-12	1	25

For additional information, request literature ES-TWS.

Series FR 500

Thermostatic Freeze Relief Kits

Sizes: ⅛", ¼", ½ "and ¾"
(3, 8, 15 and 20mm)

1/8" and 1/4"

1/2" and 3/4"

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

Features

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

Materials

Body: Bronze
Springs: Stainless Steel
Internals: DZR Brass

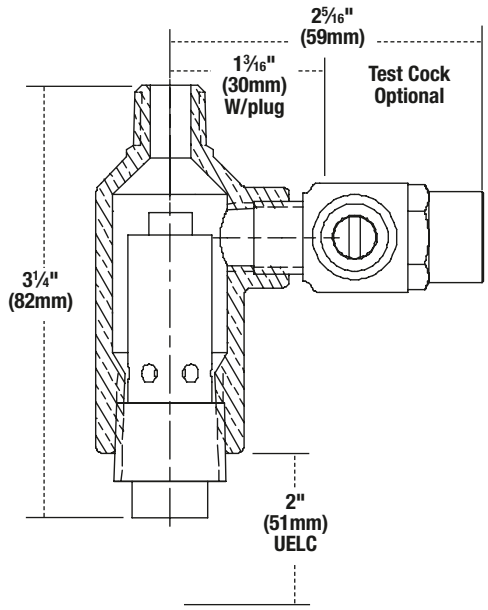
Pressure – Temperature

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

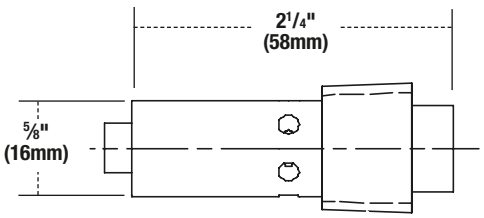
Approvals

IAPMO

Dimensions



Sizes: ⅛" and ¼" (3 and 5mm)



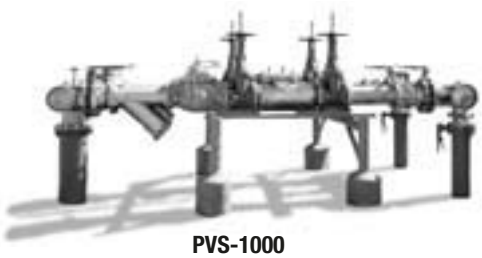
Sizes: ½" and ¾" (15 and 20mm)

For additional information, request literature ES-FR500.

Series PVS-1000

Pre-engineered Valve Stations

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



PVS-1000

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, shut-off valves, and instrumentation as needed to suit specific applications
- UL/FM, ASSE, IAPMO, USC certified or listed components as required for service
- Single point of connection for fire protection, potable water and irrigation services (where approved by local codes)
- Standard vault, vertical, and horizontal mounting configurations
- Integral slip and alignment flanges correct for site variations and relieve pipe stress
- Field proven in over 100 installations and years of history
- Expansion capability
- Built-in protection for system upsets (i.e. seismic shocks)

Benefits

Watts pre-engineered valve stations provide the following benefits:

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

Applications

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

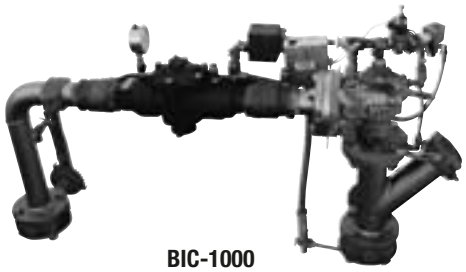
- Hospitals
- Schools
- Multi-Family Dwellings
- Restaurants
- Industrial Facilities
- Other similar buildings

For additional information, request literature PG-ValveStations.

Series BIC-1000

Backflow Irrigation Control Stations

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".



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.

System Attributes

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

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

Series 813

Irrigation Automatic Control Valves

Sizes: 1¼" – 6" (32 – 150mm)

Series 813 Irrigation Automatic Control Valves are competitively priced for a variety of irrigation applications. These valves feature a compact assembly and are ideal for use in parks and recreation sprinkler systems, turf irrigation, golf course irrigation and agriculture irrigation systems.

813

Features

- Competitively priced
- Sizes 1¼" through 6"
- EC Series – Blue NSF approved epoxy coated; BG Series – Black urethane epoxy coated - both 100% in/out.
- Line Serviceable
- Compact assembly
- Full range of options
- Anticorrosive pilot systems
- Proven pilots, functions & design
- Top & bottom guided stem for better control
- Stainless steel braided flexible tubing is available
- Non-edge seat design eliminates wire drawn on low flows
- Quick delivery through your local Watts distribution network
- Worldwide service from the largest valve manufacturer - Watts

Series A

Automatic Control Valves

Sizes: 1¼" – 24" (32 – 600mm)

Series A Automatic Control Valves are diaphragm actuated, pilot controlled, hydraulically operated control valves for a variety of fluid applications.

ACV

Features

- Exclusive “Quad Seal”
- Non-edged seat
- 100% fusion epoxy in/out, stainless steel seats through 8"; bronze seats 10” and larger
- FDA approved diaphragm
- Sizes: 1¼" – 24" (32 – 600 mm), globe pattern
- Sizes: 1¼" – 12" (32 – 300 mm), angle pattern
- End connections: threaded, grooved or flanged
- Main valve materials are available in ductile iron, steel, aluminum, bronze, aluminum bronze and stainless steel (“S” series)

For additional information, request literature C-CACV.

Series U5-Z3

High Performance Water Pressure Reducing Valves

Sizes: ½" – 2" (15 – 50mm)

U5-Z3

Series U5-Z3 High Performance Water Pressure Reducing Valves provide pressure control solutions for a variety of applications. This series comes standard with threaded female union inlet connection and NPT threaded female outlet connection. Series U5-Z3 incorporates time tested and proven design and construction features and have the highest capacity of any valve in their class. This assures durability and years of continuous operation. When maintenance is required, these valves are specially designed for quick and easy cleaning and replacement of worn parts without dismantling or removing from the line.

Features

- Integral stainless steel strainer
- Replaceable seat module
- Bronze body construction
- Serviceable in line
- Bypass feature controls thermal expansion pressure (U5B)**
- High temperature resistant reinforced diaphragm for hot water

Pressure – Temperature

- Temperature Range: 33°F – 160°F (0.5°C – 71°C)
- Maximum Working Pressure: 300psi (21 bar)
- Adjustable Reduced Pressure Range: 25 – 75psi (172 – 517kPa)
- Standard Reduced Pressure Setting: 50psi (345kPa)

**Bypass will not work if inlet pressure is above 150psi (10.3 bar)

Approvals

Meets requirements of ASSE Standard 1003, (ANSI A112.26.2), CSA Standard B356, Southern Standard Plumbing Code and listed by IAPMO.

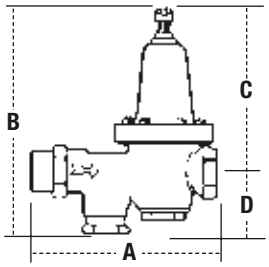
Options

add Suffix:
G - Gauge tapping
GG - Gauge tapping and 160psi (11 bar) gauge
HP - High pressure range 75 – 125psi (5.3 – 8.6 bar)
LP - Low pressure range 10 – 35psi (69 – 241 kPa)

add Prefix:
LF - Lead Free* construction

Models

U5-Z3 - NPT threaded female union inlet x NPT female outlet, ½" – 1" (15 – 25mm).
U5-S-Z3 - Solder union inlet x NPT female outlet, ½" – 1" (15 – 25mm).
U5B-Z3 - NPT threaded female union inlet x NPT female outlet w/built in thermal expansion bypass.
U5B-S-Z3 - Solder union inlet x NPT female outlet w/built in thermal expansion bypass.
5M3-Z6 - Water meter threaded connections and 7½" (190mm) lay length for new or existing meter box installations. For ⅝" (16mm), ⅝" x ¾" (16 x 20mm) or ¾" (20mm) meter setters or resetters.
U5-Z9 - ¾" (20mm) NPT threaded male union inlet and ¾" (20mm) NPT threaded female outlet connection.



Dimensions – Weights

MODEL †	SIZE (DN)		DIMENSIONS (APPROX.)								WEIGHT	
			A		B		C		D			
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg.
U5-Z3/U5B-Z3	½	15	5⅝	143	5⅞	149	4¼	108	1⅝	41	4	1.8
U5-Z3/U5B-Z3	¾	20	6 3/16	157	6⅞	175	5	127	1⅞	48	5	2.3
U5-Z3/U5B-Z3	1	25	6⅝	168	7⅜	187	5⅜	137	2	50	6	2.7
U5B-Z3	1¼	32	7 15/16	191	8⅜	213	6⅛	155	2¼	57	9	4.0
U5B-Z3	1½	40	9 7/16	240	9⅜	238	6½	165	2⅞	73	14	6.3
U5B-Z3	2	50	10⅞	276	12¼	311	9	229	3¼	83	23	10.4

† Dimensions for all models are shown on literature ES-U5.

***The combined metal components of this product contacted by potable water contain less than one half of one percent (0.5%) of lead by weight.**

Series 25AUB-Z3

Water Pressure Reducing Valves

Sizes: ½" – 2" (15 – 50mm)

Series 25AUB-Z3 Water Pressure Reducing Valves come standard with a bronze body, union threaded female inlet and female threaded outlet connection, stainless steel strainer and a replaceable engineered polymer seat. All parts are easily and quickly serviceable without removing the valve from the line.

25AUB-Z3

Features

- Standard construction includes sealed spring cage and corrosion resistant adjusting screws suitable for outdoor or waterworks pit installations
- Union inlet connection
- Integral stainless steel strainer
- Replaceable seat module
- Bronze body construction
- Serviceable in line
- Bypass feature controls thermal expansion pressure**
- High temperature resistant reinforced diaphragm for hot water

Pressure – Temperature

- Temperature Range: 33°F - 160°F (0.5°C - 71°C)
- Maximum Working Pressure: 300psi (21 bar)
- Adjustable Reduced Pressure Range: 25-75psi (172 - 517kPa)
- Standard Reduced Pressure Setting: 50psi (345kPa)

**Bypass will not work if inlet pressure is above 150psi (10.3 bar)

Approvals

Meets requirements of ASSE Standard 1003 (ANSI A112.26.2), CSA Standard B356, Southern Standard Plumbing Code and Listed by IAPMO.

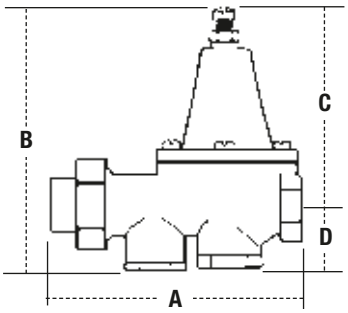
Options

add Suffix:
G - Gauge tapping
GG - Gauge tapping and 160psi (11 bar) gauge
HP - High pressure range 75-125psi (5.3 – 8.6 bar)
LP - Low pressure range 10-35psi (69 – 241 kPa)
Z7 - 400psi (28 bar) initial pressure, ½" (20mm) models only

add Prefix:
LF - Lead Free* construction

Models

25AUB-Z3 -NPT threaded female union inlet x NPT female outlet
25AUB-S-Z3 - Solder union inlet x NPT female outlet
25AUBDU-Z3 - Double Union – NPT threaded union female inlet and outlet
25AUB-S-DU-Z3 - Double Union – Solder union inlet and outlet
25AUB-DU-THDxPEX-Z3 - Double Union – NPT threaded female inlet and PEX union outlet
25AUBDU-CPVC-Z3 - Double Union – CPVC union inlet and outlet
25AUBDU-LF-Z3 - Double union body less union fittings



Dimensions – Weights

SIZE (DN)		DIMENSIONS (APPROX.)†								WEIGHT	
		A		B		C		D			
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg.
½	15	5⅜	137	7	178	5½	140	1½	38	3.5	1.6
¾	20	5 5/16	135	7	178	5½	140	1½	38	3.5	1.6
1	25	6	152	8	203	6¼	159	1¾	44	6.5	2.9
1¼	32	8¾	222	9	229	6⅞	175	2⅛	54	10.0	4.5
1½	40	8¾	222	9½	241	7⅛	181	2⅜	60	10.0	4.5
2	50	9¾	235	11¼	286	8	203	3¼	83	15.0	6.8

† Dimensions for all models are shown on literature ES-25AUB.

***The combined metal components of this product contacted by potable water contain less than one half of one percent (0.5%) of lead by weight.**

For additional information, request literature ES-25AUB.

Series N45B-M1

Water Pressure Reducing Valves

Sizes: ½" – 1" (15 – 25mm)

N45BDU-M1

Series N45B-M1 Water Pressure Reducing Valves are designed to reduce incoming water pressure to a sensible level to protect plumbing system components and reduce water consumption. This series is suitable for water supply pressures up to 400psi (27.6 bar) and may be adjusted from 25 – 75psi (172 – 517 kPa). The standard setting is 50psi (345 kPa). All parts are quickly and easily serviceable without removing the valve from the line. The standard bypass feature permits the flow of water back through the valve into the main when pressures, due to thermal expansion on the outlet side of the valve, exceed the pressure in the main.

Features

- Double union inlet & outlet connections (option DU)
- Integral stainless steel strainer
- Thermoplastic seat & cage
- Bronze body construction
- Serviceable in line
- Bypass feature controls thermal expansion pressure**
- Sealed spring cage on all models for waterworks pit installations

Pressure – Temperature

- Temperature Range: 33˚F – 180˚F (0.5˚C – 82˚C)
- Maximum Working Pressure: 400psi (27.6 bar)
- Adjustable Reduced Pressure Range: 25 – 75psi (172 – 517 kpa)
- Standard Reduced Pressure Setting: 50psi (345 kpa)

** Bypass will not work if inlet pressure is above 150psi (10.3 bar)

Approvals

(LF N45B-M1 models only)

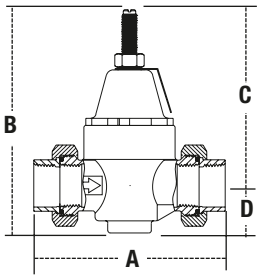
Meets requirements of ASSE Standard 1003; (ANSI A112.26.2) and CSA Standard B356. Certified by NSF to ANSI/NSF Standard 61-8, cold water (LF N45B-M1 models only). Listed by IAPMO and City of Los Angeles.

Options

add Suffix:
G - Gauge tapping
GG - Gauge tapping and 160psi (11 bar) gauge
add Prefix:
LF - Lead Free* construction

Models

N45B-M1 - NPT threaded female inlet x NPT female outlet
N45BU-M1 - NPT threaded union inlet x NPT female outlet
N45BU-S-M1 - Solder union inlet x NPT female outlet
N45BDU-M1 -Double Union – NPT threaded union female inlet and outlet
N45BDU-S-M1 - Double Union – Solder union inlet and outlet
N45BDU-PEX-M1- Double Union – PEX union inlet and outlet
N45BDU-CPVC-M1 - Double Union – CPVC union inlet and outlet



MODEL	SIZE (DN)		DIMENSIONS (APPROX.)								WEIGHT	
			A		B		C		D			
	in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*
N45BDU-M1	½	15	4 11/16	119	6¼	159	4 9/16	116	1 13/16	43	2.5	1.1
N45BDU-M1	¾	20	4 11/16	119	6¼	159	4 9/16	116	1 13/16	43	2.5	1.1
N45BDU-M1	1	25	5⅝	143	6¼	159	4 9/16	116	1 13/16	43	3	1.4

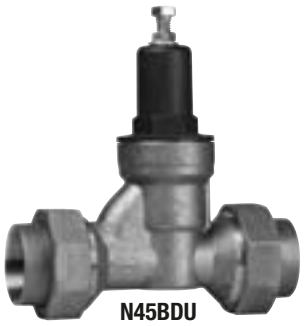
† Dimensions for all models are shown on literature ES-N45B.

***The combined metal components of this product contacted by potable water contain less than one half of one percent (0.5%) of lead by weight.**

Series N45B

Water Pressure Reducing Valves

Sizes: (1¼" – 2")


N45BDU

Series N45B Water Pressure Reducing Valves are designed to reduce incoming water pressure to a sensible level to protect plumbing system components and reduce water consumption. This series is suitable for water supply pressures up to 300psi (21 bar) and may be adjusted from 25 – 75psi (172 – 517 kPa). The standard setting is 50psi (345 kPa). All parts are quickly and easily serviceable without removing the valve from the line. The standard bypass feature permits the flow of water back through the valve into the main when pressures, due to thermal expansion on the outlet side of the valve, exceed the pressure in the main.

Features

- Bronze body construction
- Ideal for residential and commercial applications
- Sealed spring cage on all models for waterworks pit installations
- Water savings up to 30%
- Double union inlet & outlet connections
- Integral stainless steel strainer
- Thermoplastic seat & cage
- Bronze body construction
- Serviceable in line
- Bypass feature controls thermal expansion pressure**

Pressure – Temperature

- Temperature Range: 33˚F – 180˚F (0.5˚C – 82˚C)
- Maximum Working Pressure: 300psi (21 bar)
- Adjustable Reduced Pressure Range: 25 – 75psi (172 – 517kPa)
- Standard Reduced Pressure Setting: 50psi (345kPa)

**Bypass will not work if inlet pressure is above 150psi (10.3 bar)

Approvals

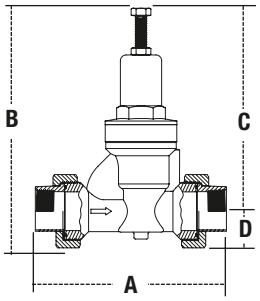
Meets requirements of ASSE Standard 1003; (ANSI A112.26.2); CSA Standard B356; and listed by IAPMO. City of Los Angeles.

Options

add Suffix:
G – Gauge tapping
GG – Gauge tapping and 160psi (11 bar) gauge

Models

N45BDU - Double Union – NPT threaded union female inlet and outlet
N45BDU-S - Double Union – Solder union inlet and outlet



Dimensions – Weights

MODEL	SIZE (DN)		DIMENSIONS (APPROX.)								WEIGHT	
			A		B		C		D			
	in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*
N45BDU	1¼	32	8⅜	213	10⁵⁄₁₆	262	8⅞	225	1⁷⁄₁₆	36	6.5	2.9
N45BDU	1½	40	8⅜	213	10½	267	8⅞	225	1⅝	41	8	3.6
N45BDU	2	50	9	228	12⁹⁄₁₆	319	8⅞	225	1⅞	47	9	4.1
N45BDU-S	1¼	32	7¹⁵⁄₁₆	201	10⁵⁄₁₆	262	8⅞	225	1⁷⁄₁₆	36	6.5	2.9
N45BDU-S	1½	40	8³⁄₁₆	207	10½	267	8⅞	225	1⅝	41	8	3.6
N45BDU-S	2	50	9¼	235	12⁹⁄₁₆	319	8⅞	225	1⅞	47	9	4.1

For additional information, request literature ES-45B.

Series N55B-M1

Water Pressure Reducing Valves

Sizes: ½" – 1" (15 – 25mm)

N55BU-M1

Series N55B Water Pressure Reducing Valves are designed to reduce incoming water pressure to a sensible level to protect plumbing system components and reduce water consumption. This series is suitable for water supply pressures up to 300psi (21 bar) and may be adjusted from 25 – 75psi (172 – 517 kPa). The standard setting is 50psi (345 kPa). All parts are quickly and easily serviceable without removing the valve from the line. The standard bypass feature permits the flow of water back through the valve into the main when pressures, due to thermal expansion on the outlet side of the valve, exceed the pressure in the main.

Features

- Double union inlet & outlet connections (option DU)
- Integral stainless steel strainer
- Thermoplastic seat
- Bronze body construction
- Serviceable in line
- Bypass feature controls thermal expansion pressure**
- Sealed spring cage on all models for waterworks pit installations

Pressure – Temperature

- Temperature Range: 33˚F – 180˚F (0.5˚C – 82˚C)
- Maximum Working Pressure: 400psi (27.6 bar)
- Adjustable Reduced Pressure Range: 25 – 75psi (172 – 517 kPa)
- Standard Reduced Pressure Setting: 50psi (345 kPa)

**Bypass will not work if inlet pressure is above 150psi (10.3 bar)

Approvals

(LF N55B-M1 models only)

Meets requirements of ASSE Standard 1003 (ANSI A112.26.2) and CSA Standard B356. Certified by NSF to ANSI/NSF Standard 61-8, cold water (LF N55B-M1 models only). Listed by IAPMO and City of Los Angeles.

Options

add Suffix:

G - Gauge tapping

GG - Gauge tapping and 160psi (11 bar) gauge

LP - Low pressure range 10-35psi (69-241 kPa)

add Prefix:

LF - Lead Free* construction

Models

N55B-M1– NPT threaded female inlet x NPT female outlet

N55BU-M1– NPT threaded union inlet x NPT female outlet

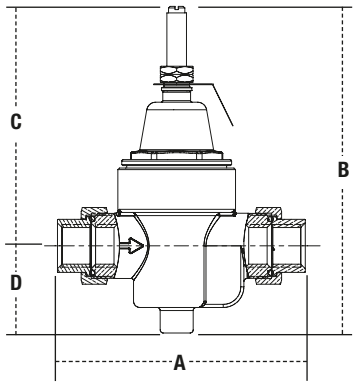
N55BU-S-M1–Solder union inlet x NPT female outlet

N55BDU-M1– Double Union – NPT threaded union female inlet and outlet

N55BDU-S-M1– Double Union – Solder union inlet and outlet

N55BDU-PEX-M1– Double Union – PEX union inlet and outlet

N55BDU-CPVC-M1– Double Union – CPVC union inlet and outlet



Dimensions – Weights

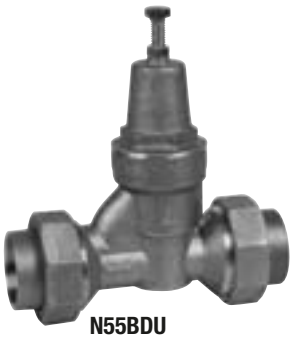
SIZE (DN)		DIMENSIONS (APPROX.)								WEIGHT	
		A		B		C		D			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs*	*kg*
½	15	4 1/16	103	6 1/4	159	4 9/16	116	1 11/16	43	1.5	.68
¾	20	4 1/16	103	6 1/4	159	4 9/16	116	1 11/16	43	1.5	.68
1	25	4 7/8	124	6 1/4	159	4 9/16	116	1 11/16	43	1.75	.79

***The combined metal components of this product contacted by potable water contain less than one half of one percent (0.5%) of lead by weight.**

Series N55B

Water Pressure Reducing Valve

Sizes: 1¼" – 2" (32 – 50mm)



N55BDU

Series N55B Water Pressure Reducing Valves are designed to reduce incoming water pressure to a sensible level to protect plumbing system components and reduce water consumption. This series is suitable for water supply pressures up to 300psi (21 bar) and may be adjusted from 25 – 75psi (172 – 517 kPa). The standard setting is 50psi (345 kPa). All parts are quickly and easily serviceable without removing the valve from the line. The standard bypass feature permits the flow of water back through the valve into the main when pressures, due to thermal expansion on the outlet side of the valve, exceed the pressure in the main.

Features

- Bronze cage
- Double union inlet & outlet connections (option DU)
- Integral stainless steel strainer
- Thermoplastic seat
- Bronze body construction
- Serviceable in line
- Bypass feature controls thermal expansion pressure**
- Sealed spring cage on all models for waterworks pit installations

Pressure – Temperature

- Temperature Range: 33˚F – 180˚F (0.5˚C – 82˚C)
- Maximum Working Pressure: 300psi (21 bar)
- Adjustable Reduced Pressure Range: 25 – 75psi (172 – 517 kPa)
- Standard Reduced Pressure Setting: 50psi (345 kPa)

**Bypass will not work if inlet pressure is above 150psi (10.3 bar)

Approvals

Meets requirements of ASSE Standard 1003 (ANSI A112.26.2); CSA Standard B356; and listed by IAPMO.

Options

add Suffix:

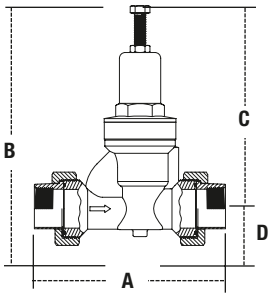
G - Gauge tapping

GG - Gauge tapping and 160psi (11 bar) gauge

Models

N55BDU - Double Union – NPT threaded union female inlet and outlet

N55BDU-S -Double Union – Solder union inlet and outlet



Dimensions – Weights

MODEL	SIZE (DN)		DIMENSIONS (APPROX.)								WEIGHT	
			A		B		C		D			
	in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*
N55BDU	1¼	32	8⅜	213	10⁵⁄₁₆	262	8⅞	225	1⁷⁄₁₆	36	2.5	1.1
N55BDU	1½	40	8⅜	213	10½	267	8⅞	225	1⅝	41	2.5	1.1
N55BDU	2	50	9	228	12⁹⁄₁₆	319	8⅞	225	1⅞	47	3	1.4
N55BDU-S	1¼	32	7¹⁵⁄₁₆	201	10⁵⁄₁₆	262	8⅞	225	1⁷⁄₁₆	36	2.5	1.1
N55BDU-S	1½	40	8³⁄₁₆	207	10½	267	8⅞	225	1⅝	41	2.5	1.1
N55BDU-S	2	50	9¼	235	12⁹⁄₁₆	319	8⅞	225	1⅞	47	3	1.4

For additional information, request literature ES-N55B.

Series 223, 223S

High Capacity Water Pressure Reducing Valves

Sizes: ½" – 2½" (15 – 65mm)

Series 223 Super Capacity Water Pressure Reducing Valves feature an enlarged diaphragm, spring cage and seat orifice for super capacity performance. This series comes standard with threaded female connections and sealed cage. Strainer is optional for longer service life.

223

Features

- Enlarged diaphragm, spring cage and seat orifice for super capacity performance
- Bronze body construction (except 2½" which is iron)
- Serviceable in line
- Series 223S furnished with separate strainer
- Optional bypass feature controls thermal expansion pressure
- Sealed spring cage on all models for waterworks pit installations

Pressure – Temperature

- Temperature Range: 33°F – 160°F (0.5°C – 71°C)
- Maximum Working Pressure: 300psi (21 bar)
- Adjustable Reduced Pressure Range: 25-75psi (172 – 517kPa)
- Standard Reduced Pressure Setting: 50psi (345kPa)
- Size ½" – 2" (15 – 50mm) have bronze body construction.
- Size 2½" (65mm) has iron body construction.

Approvals

½" – 2" (15 – 50mm) Meets requirements of ASSE Standard 1003 (ANSI A112.26); CSA Standard B356; Southern Standard Plumbing Code, Military Standard MIL-V-18146B and listed by IAPMO.

Options

add Suffix:

B - Built-in bypass feature

LP - Low pressure range 10-35psi (5.3 – 8.8 bar)

HP - High pressure range ½", ¾", 1" (15, 20, 25mm) 50 – 145psi (3.4 – 10 bar); 1¼" (32mm) 50 – 120psi (3.4 – 8.3 bar); 1½" – 2½" (40 – 65mm) 50 – 95psi (344.8 – 654.6 kPa).

Models

223 - NPT threaded female inlet x NPT threaded female outlet

223-S - NPT threaded female inlet x NPT threaded female outlet with strainer

Dimensions – Weights

SIZE (DN)		BODY	DIMENSIONS (APPROX.)										WEIGHT			
			A (223)		As (223S)		C		D (223)		N (223S)		223		223S	
in.	mm		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg.	lbs.	kg.
½	15	Bronze	4¼	108	9	229	6¼	159	2	50	2½	64	4.5	2.0	6.0	2.7
¾	20	Bronze	4¼	108	9	229	6¼	159	2	50	2½	64	5.0	2.3	6.5	2.9
1	25	Bronze	4¾	121	10 15/16	262	6½	165	2⅛	54	2 15/16	75	7.0	3.2	9.5	4.3
1¼	32	Bronze	5	127	11 15/16	287	6¾	172	2¾	70	3	76	9.0	4.1	12.0	5.4
1½	40	Bronze	6¾	171	14¾	375	9⅞	251	2¾	70	3 3/16	87	19.5	8.8	23.5	6.8
2	50	Bronze	8	203	16¾	425	10¾	273	3⅜	86	4	102	30.0	13.6	37.5	17.0
2½	65	Iron	9	229	20⅛	511	10¾	273	3⅜	86	5	127	32.5	14.8	59.0	26.8

† - For flanged connections with iron body, specify series N223F.

Series N223B, N223BS

Super Capacity Water Pressure Reducing Valves

Size: 2½" – 3" (65 – 80mm)

N223B

Features

- Enlarged diaphragm, spring cage and seat orifice for super capacity performance
- Bronze body construction
- Serviceable in line
- Standard bypass feature controls thermal expansion pressure
- Sealed spring cage on all models for waterworks pit installations

Pressure – Temperature

- Temperature Range: 33°F – 160°F (0.5°C – 71°C)
- Maximum Working Pressure: 300psi (21 bar)
- Adjustable Reduced Pressure Range: 25 – 75psi (172 – 517kPa)
- Standard Reduced Pressure Setting: 50psi (345kPa)

Models

N223B – NPT threaded female inlet x NPT female threaded outlet
N223B-S - NPT threaded female inlet x NPT female threaded outlet with strainer

For additional information, request literature ES-N223B.

Series N223F, N223FS

Super Capacity Water Pressure Regulators

Size: 3" (80mm)

N223F

Features

- Flanged connections
- For commercial or industrial applications
- Iron body construction
- Triple coated with special corrosion preventative materials superior to hot dip galvanizing

Pressure – Temperature

- Size: 3" (80mm), flanged connections Class 125psi (8.6 bar) WSP.
- Temperature Range: 33°F – 160°F (0.5°C – 71°C).
- Maximum Working Pressure: 175psi (12.1 bar).
- Adjustable Reduced Pressure Range 25 – 75psi (172.4 – 517.1 kPa).
- Standard Reduced Pressure Setting: 50psi (344.8 kPa)
- Model N223FS includes strainer.

For additional information, request literature ES-N223F.

Series 26A, 263A

Small Pressure Regulators

Sizes: ⅛" – ½" (3 – 15mm)

Series 26A, 263A Small Water Pressure Regulators come standard with brass or stainless steel body, suitable for a variety of water applications. Series 263A feature an extra ¼" low pressure gauge port and are available with all stainless steel construction, specify Model SS-263AP.

SS263AP

Features

- Sizes: ⅛" – ½" (3 – 15mm) NPT threaded female inlet and outlet connections

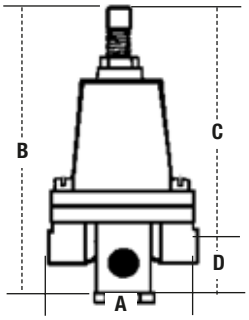
Pressure – Temperature

- Initial pressures up to 300psi (20.7 bar)
- Maximum temperature: 140°F (60°C)
- Available with Viton® trim
- Specify suffix letter for reduced pressure range required

Reduced pressure ranges	Std. psi set at
Suffix A for 1 – 25psi	10
Suffix B for 3 – 50psi	15
Suffix C for 10 – 125psi	25
Suffix D for 50 – 175psi	50

Dimensions – Weights

MODEL	SIZE (DN)		DIMENSIONS (approx.)								WEIGHT	
			A		B		C		D			
	in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*oz.*	*gm.*
26A	⅛	3	2⅛	54	3⅞	98	3	76	⅞	22	16	454
26A	¼	8	2⅛	54	3⅞	98	3	76	⅞	22	16	454
26A	⅜	10	2⅛	54	3⅞	98	3	76	⅞	22	16	454
26A	½	15	2⅛	54	4	100	3⅛	79	⅞	22	16	454
263A	¼	8	2⅛	54	4⅞	124	4	100	⅞	22	16	454
263A	⅜	10	2⅛	54	4⅞	124	4	100	⅞	22	16	454
263A	½	15	2⅛	54	4	100	3⅛	79	⅞	22	16	454



For additional information, request literature ES-26A/263A.

Series 560
Mini Water Pressure Regulators

Sizes: ⅛", ¾" (3, 19mm)

Features

- General purpose brass body regulators for a variety of flow control applications. Consult factory for special requirements.

Pressure – Temperature

- **Model 560** has female threaded ⅛" and ¼" (3, 8mm) inlet and outlet connections. Female ⅛" (3mm) side tapping (plugged) for gauge. Initial pressures up to 300psi (20.7 bar). Maximum temperature: 140°F (60°C).
- **Model H560** - Water regulation for grid systems. ¾" (20mm) female inlet and male outlet hose connections. Maximum pressure: 150psi (10.3 bar), adjustable from 10 – 60psi (68.9 – 413.7 kPa). Standard set at 40psi (276 kPa). Delivery capacity up to 250 gallons per hour (946 lph). Also used for recreational vehicles. Listed by IAPMO.

560

H560

For additional information, request literature ES-560/H560.

Series IR-56
Bronze Water Pressure Regulators

Sizes: ¾" (19mm)

Features

- Dependable, low cost regulator for flow control applications
- Hose connection, male inlet x male outlet
- ¾" (20mm) hose connection female inlet x male outlet
- ⅛" (3mm) NPT female side tapping for gauge

Pressure – Temperature

- Maximum water supply pressure up to 150psi (10.3 bar), adjustable 10 – 60psi (68.9 – 413.7 kPa)
- Standard set 40psi (275.8 kPa)
- Delivery up to 250 gph (946 lph)

IR-56

For additional information, request literature IS-IR-56/H560G.

Series P50, P60
Plastic Water Pressure Regulators

Sizes: ¼" (6mm)

Features

- Compact, superior corrosion resistant regulators
- For general purpose, OEM and irrigation applications
- Can be used with deionized water
- ¼" (8mm) NPT female connections

Pressure – Temperature

- Maximum supply pressure: 300psi (20.7 bar). Maximum temperature: 150°F (65.6°C)

Reduced pressure ranges

Suffix A for 0 – 25psi
Suffix B for 0 – 60psi
Suffix C for 0 – 125psi

P50

For additional information, request literature ES-P50/P60.

Series 215

Precision Regulator for Low Pressures

Sizes: ¼", ⅜" (6, 10mm)

215

Features

- Forged brass body, for water and No. 2 fuel oil

Pressure – Temperature

- NPT threaded female inlet and outlet connections
- Initial pressure up to 300psi (20.7 bar)
- Maximum temperature: 120°F (48.9°C)

Reduced pressure ranges	Std.psi set at
Suffix A for 0 – 8psi	4
Suffix B for 0 – 20psi	10
Suffix C for 0 – 50psi	15

For additional information, request literature ES-215.

Model 276H300

Water Pressure Test Gauge

Size: ¾" (19mm)

276H300

Features

- For testing water supply pressure within a distribution system
- ¾" (20mm) hose thread connection; 0 – 300psi (0 – 20.7 bar)

For additional information, request literature ES-276H300.

Model IWTG

Water Pressure Test Gauge

Size: ¾" (19mm)

IWTG

Features

- For testing water supply pressure within a distribution system
- ¾" (20mm) hose thread connection; 0 – 200psi (0 – 138 bar)

For additional information, request literature F-Gauges.

Model DPG1

Bottom Entry Pressure Gauge

Size: 2", 2½", 3", 4" (50, 65, 80, 100mm)

DPG1

Features

- Available in dial sizes 2", 2½", 3", 4"
- ¼" (8mm) NPT connection
- Working temperature: -4°F to 176°F (-20°C to 80°C)

For additional information, request literature F-Gauges.

Series 530C

Calibrated Pressure Relief Valves

Sizes: ½" – ¾" (15 – 20mm)

Features

- Adjustable pressure relief range: 50 – 175psi (3.4 – 12.1 bar)
- Designed for use as protection against excessive pressure build-up in systems containing water, oil and air
- Nominal sizes: ½" or ¾" (15 or 20mm), NPT male inlet x ½" (15mm) NPT female (drain) outlet

Pressure – Temperature

- Maximum pressure: 300psi (20.7 bar)
- Maximum temperature: 180°F (82°C)

530C

For additional information, request literature ES-530C.

Model 5300A

Poppet-Type, Compact By-Pass Relief Valve

Sizes: ½" (15mm)

Features

- Bronze body construction
- "T" handle facilitates pressure adjustment
- Nominal size: ½" (15mm), NPT male inlet x female outlet

Pressure – Temperature

- Pressure range: 0 – 250psi (0 – 17.2 bar)

5300A

For additional information, request literature ES-530C.

Series BP30

By-Pass Control Relief Valves

Sizes: ½" (15mm)

Features

- Controls liquid pressure as supplied by a positive pressure pump
- Protects equipment by operating at the desired pressure setting and allows excess volume to be bypassed back to the source
- Size: ½" (15mm), NPT male inlet x female outlet
- Bronze body, sensitive rubber diaphragm and special Teflon® disc

Pressure – Temperature

- Pressure range: 10 – 175psi (.07 – 12.1 bar)
- **BP30A** - adjustable 10 – 50psi (68.9 – 344.8 kPa)
- **BP30B** - 45 – 100psi (310.3 – 689.5 kPa)
- **BP30C** - 75 – 175psi (5.2 – 12.1 bar)
- Maximum temperature: 180°F (82°C)

BP30

Series B6080, B6081

2-Piece, Full Port, Bronze Ball Valves

Sizes: ½" – 2" (15 – 50mm)

The B6080, B6081 2-Piece, Full Port, Bronze Ball Valves are ideal for critical flow applications; or where specifications require a full port orifice. These valves feature virgin PTFE seats and seals, blow-out proof stem and adjustable packing nut threaded to body.

B6080

Features

- Two-piece construction
- For residential, commercial and industrial applications
- Virgin PTFE seats and seals
- **B6080** - Sizes: ½" – 2" (15 – 50mm), NPT female connections
- **B6081** - Sizes: ½" – 2" (15 – 50mm), solder connections

Pressure – Temperature

- Pressure rated at 600psi (41.34 bar) WOG (non-shock) and 150psi (10.3 bar) WSP
- Suitable for temperatures from 0° – 350°F (-18° – 177°C) at 50psi (345 kPa)
- Complies with MSS-SP-110

For additional information, request literature ES-B6080.

Series B6300, B6301

2-Piece, Full Port, Bronze Ball & Waste Ball Valves

Sizes: ½" – 1" (15 – 25mm)

B6301

Features

- For draining or venting of downstream line when valve is in the closed position
- **B6300** - Sizes: ½" – 1" (15 – 25mm), NPT threaded connections
- **B6301** - Sizes: ½" – 1" (15 – 25mm), solder connections

Pressure – Temperature

- Pressure rated at 400psi (27.6 bar) WOG (non-shock); and temperatures from 0° – 350°F (-18° – 177°C) at 50psi (345 kPa)

For additional information, request literature ES-B6300.

Series B6780, B6781

2-Piece, Full Port, Bronze Diverter Ball Valves

B6780 Sizes: ¼" – 2" (8 – 50mm)
B6781 Sizes: ½" – 1" (15 – 25mm)

B6780

Features

- Two-piece construction
- Three-way diverter valve
- For residential, commercial and industrial applications
- **B6780-M1** - Sizes: ¼" – 2" (8 – 50mm), NPT female connections
- **B6781** - Sizes: ½" – 1" (15 – 25mm), solder connections

Pressure – Temperature

- Pressure rated at 400psi (27.6 bar) WOG (non-shock) and 125psi (8.6 bar) WSP
- Suitable for temperatures from 0° – 350°F (-18° – 177°C) at 50psi (345 kPa)

For additional information, request literature ES-B6780.

Series FBV, FBVS

2-Piece, Full Port, Bronze Ball Valves

Sizes: ½" – 2" (15 – 50mm)

FBV

Features

- Excellent for throttling and balancing applications
- For non-abrasive liquids or gases
- Two-piece construction
- PTFE seats
- **FBV** - NPT female connections
- **FBVS** - solder connections

Pressure – Temperature

- Pressure rated at 600psi (41.3 bar) WOG (non-shock), and 125psi (8.6 bar) WSP
- Temperatures from 0° – 350°F (-18° – 177°C) at 50psi (3.4 bar)

For additional information, request literature ES-FBV.

Series FBV-3, FBVS-3

2-Piece, Full Port, Brass Ball Valves

Sizes: ¼" – 3" (8 – 80mm)

FBVS-3

Features

- **FBV-3** - Sizes: ¼" – 3" (8 – 80mm), NPT female connections
- **FBVS-3** - Sizes: ½" – 3" (15 – 80mm), solder connections
- Handle Options - available with 2" stem extension, memory stop, oval and Tee handles

Pressure – Temperature

- Sizes ¼" – 2" - 600psi (41.3 bar) WOG (non-shock), and 150psi (10.3 bar) WSP
- Sizes 2½" and 3" FBV-3 - pressure rated at 600psi (41 bar) WOG non-shock and 125psi (8.6 bar) WSP
- Sizes 2½" and 3" FBVS-3 - pressure rated at 400psi (27.5 bar) WOG non-shock and 125psi (8.6 bar) WSP

Approvals

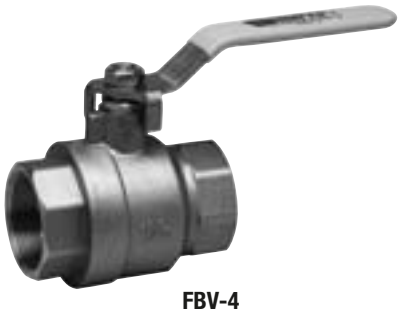
Approved MSS-SP-110 Sizes: ¼" – 3" (8 – 80mm) only
Approved CSA, UL, and FM

For additional information, request literature ES-FBV-3.

Series FBV-4, FBVS-4

2-Piece, Full Port, Brass Ball Valves

Sizes: ¼" – 3" (8 – 80mm)



FBV-4

Features

- Complies with MSS-SP-110
- **FBV-4** - Sizes: ¼" – 3" (8 – 80mm), threaded end connections
- **FBVS-4** - Sizes: ½" – 3" (15 – 80mm), solder connections

Pressure – Temperature

Temperature Range: -40°F to 400°F (-40°C to 204°C)

- Sizes ¼" – 2" - 600psi (41 bar) WOG (non-shock), and 150psi (10.3 bar) WSP
- Sizes 2½" and 3" - pressure rated at 400psi (28 bar) WOG non-shock and 125psi (8.6 bar) WSP

For additional information, request literature ES-FBV-4.

Series IT6300, IS6301

2-Piece, Full Port, Ball and Waste Brass Ball Valves

Sizes: ½" – 1" (15 – 25mm)

IT6300

Features

- Drain cock allows draining of down-stream line when valve is in closed position
- **IT6300** - Sizes ½" – 1" (15 – 25mm), NPT threaded connections
- **IS6301** - Sizes ½" – 1" (15 – 25mm), solder connections

Pressure – Temperature

- Pressure rated at 600psi (41 bar) WOG (non-shock)

For additional information, request literature ES-IT-6300.

Series PBV

Grey PVC Plastic Ball Valves, Full Port

Sizes: ½" – 2" (15 – 50mm)

PBV

Features

- Excellent corrosion and chemical resistance
- Designed for Schedule 80 applications
- Socket and threaded connections
- Bi-directional
- PTFE seats and O-ring seal
- NSF approved
- Will fit in Schedule 40 pipe

Models

Compact PVC Plastic Ball Valves

Sizes: ½" – 2" (15 – 50mm),
PBV-S - socket connections
PBV-T - threaded connections

True Union Plastic Ball Valves (TPBV)

Sizes: ½" – 2" (15 – 50mm) have 2 union socket weld connectors and 2 union threaded connectors to allow a choice of end connections.

For additional information, request literature ES-PBV.

Series G4000M1

2-Piece, Full Port, Flanged Cast Iron Ball Valves (Flanged gate valve alternative)

Sizes: 2" – 6" (50 – 150mm)

G4000M1

Features

- Quarter-turn operation
- 304 Stainless steel ball and stem
- Same end-to-end dimensions (ANSI B16.10) and flange dimensions (ANSI B16.1) as an ANSI Class 125 cast iron, flanged gate valve
- 200psi (13.8 bar) CWP (non-shock) at 140°F (60°C)
- **G4000M1** - Sizes 2" – 6" (50 – 150mm) flanged ball valves with 125psi (8.6 bar) steam rating
- **G4000M** - Sizes 8", 10" (200, 250mm), with manual gear operator
- **G4000-FDA** - Sizes: 2" – 6" (50 – 150mm) interior and exterior fused epoxy coating, FDA approved, with lever handle
- **G4000M-FDA** - Sizes 8" – 10" (200 – 250mm), FDA approved fused epoxy coating, with manual gear operator
- **G4000M1-GO** - Sizes 2" – 6" (50 – 150mm), flanged ball valves with 125psi (8.6 bar) steam rating and manual gear operator

For additional information, request literature F-CG4000A.

Series B6000, B6001

2-Piece, Standard Port, Bronze Ball Valves

Sizes: ¼" – 4" (8 – 100mm)

The B6000, B6001 2-Piece, Standard Port, Bronze Ball Valves are offered in a complete size range, standard Durafill® (¼" – ½" and 1¼" – 4") or Uniseal® (¾" – 1") seats and chrome plated brass ball provide highest possible operating pressure/temperature limits.

B6001

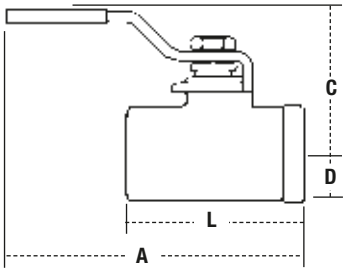
Features

- Sizes: ¼" – 3" (8 – 80mm) have reinforced/enhanced PTFE seats
- 4" (100mm) has virgin PTFE seats
- Electroless nickel plated brass ball
- Adjustable stem packing gland
- Blow out proof, pressure retaining stem
- **B6000** - Sizes: ¼" – 4" (8 – 100mm), NPT female connections
- **B6001** - Sizes: ⅜" – 3" (10 – 80mm), solder connections
- Meets Federal Specification WW-V-35C, and complies with MSS-SP-110

Pressure – Temperature

- Sizes ¼" – 2" (8 – 50mm) are pressure rated at 600psi (41 bar) WOG (non-shock), 150psi (10 bar) WSP
- Sizes 2½" – 4" (65 – 100mm), 400psi (27.5 bar) WOG (non-shock) and 125psi (8.6 bar) saturated steam. Over 150psi (10 bar) requires SS trim
- Temperatures from 0° – 450°F (-18° – 232°C) at 50psi (345 kPa) for reinforced/enhanced PTFE seats. 0° – 350°F (-18° – 177°C) at 50psi (345 kPa) for Virgin PTFE seats

Dimensions – Weights



B6000

SIZE (DN)		BALL ORIFICE		DIMENSIONS (approx.)								WEIGHT	
				A		C		D		L			
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg.
¼	8	⅜	9.5	5	127	1¾	45	⅝	16	2 1/16	52	0.6	0.3
⅜	10	⅜	9.5	5	127	1¾	45	⅝	16	2 1/16	52	0.6	0.3
½	15	½	13	5	127	1¾	45	⅝	16	2¼	58	0.6	0.3
¾	20	11/16	17	5 5/16	135	2	51	¾	19	2 13/16	72	1.0	0.5
1	25	⅞	22	5½	140	2¼	57	⅞	22	3 7/16	87	1.6	0.7
1¼	32	1	25	7	178	2½	64	1⅛	29	3⅞	99	2.2	1.0
1½	40	1¼	32	7	178	3	76	1 5/16	33	4¼	108	3.2	1.5
2	50	1½	38	11	279	3 5/16	84	1½	38	4 13/16	122	4.9	2.2
2½	65	2	51	11 9/16	294	4	102	2 3/16	56	6½	165	13.2	5.9
3	80	2½	64	11⅝	295	4¼	108	2⅜	60	6 13/16	173	17.5	7.9
4	100	3	76	15⅛	384	4 13/16	122	2 15/16	75	7 11/16	195	29.3	13.3

B6001

⅜	10	⅜	9.5	5 1/16	129	1½	38	⅝	16	2 5/16	50	0.5	0.2
½	15	½	13	5 3/16	132	1¾	44	⅝	16	2⅜	60	0.6	0.3
¾	20	11/16	17	5¾	146	2	51	¾	19	3 5/16	84	1.1	0.5
1	25	⅞	22	6	150	2¼	57	⅞	22	3¾	95	1.4	0.6
1¼	32	1	25	8	203	2½	64	1⅛	29	4½	114	2.0	0.9
1½	40	1¼	32	8⅛	206	3	76	1 5/16	33	5	127	3.3	1.5
2	50	1½	38	11 7/16	290	3 5/16	84	1½	38	6¼	159	5.2	2.4
2½	65	2	51	12⅛	307	4	102	2 3/16	56	7⅝	194	13.2	6.0
3	80	2½	64	12 5/16	312	4¼	108	2⅜	60	8 3/16	208	15.6	7.1

Series WBV-3, WBVS-3

2-Piece, Standard Port, Brass Ball Valves

Sizes: ⅛" – 4" (3 – 100mm)

WBVS-3

Features

- Suitable for full range of liquids
- Virgin PTFE stem packing seal
- Adjustable stem packing gland
- Vinyl insulator on heavy duty Zinc plated carbon steel handles
- ¼-turn open or close operation
- Low operating torque
- **WBV-3** - Sizes: ⅛" – 4" (3 – 100mm), NPT threaded connections
- **WBVS-3** - Sizes: ⅜" – 3" (10 – 80mm), solder connections

Pressure – Temperature

- Pressure rated at 400psi (27.6 bar) WOG (non-shock)

Options

Handle Options
add Suffix:
XH - 2" Stem extension
OV - Oval handle
TH - Tee handle

For additional information, request literature ES-WBV-3.

Series EMVII-6400SS

Electric Motor Valves

Sizes: ¼" – 3" (8 – 80mm)

EMVII-6400SS

Features

- Combination quarter-turn shutoff ball valve and electric actuator
- Compact and completely assembled
- 24VAC and 115VAC models

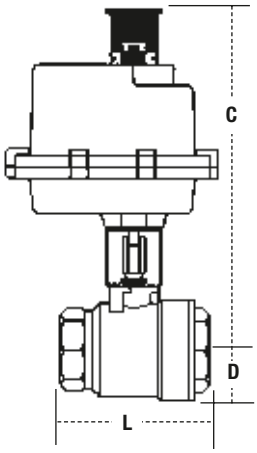
Pressure – Temperature

- Steam working pressure: 100psi (7 bar)
- Sizes: ¼" – 2" (8 – 50mm) are 600psi (41 bar) WOG (non-shock); sizes 2½" – 3" (65 – 80mm), 400psi (27.6 bar) WOG (nonshock)
- Maximum operating temperature: 150°F (66°C)

Dimensions – Weights

MODEL	SIZE (DN)		DIMENSIONS (approx.)						WEIGHT	
			C		D		L			
	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg.
† EMVII-6400SS-115-8	¼	8	7⅞	200	⅝	16	2¼	57	8.75	3.9
† EMVII-6400SS-115-8	⅜	10	7⅞	200	⅝	16	2¼	57	8.75	3.9
† EMVII-6400SS-115-8	½	15	7⅞	200	⅝	16	2¼	57	8.75	3.9
† EMVII-6400SS-115-35	¾	20	8	200	¾	19	2⅞	73	9.25	4.2
† EMVII-6400SS-24-40	1	25	8⅛	206	1	25	3⅜	86	10.25	4.6
† EMVII-6400SS-115-35	1¼	32	8⅞	225	1⅛	29	4	100	10.75	4.9
† EMVII-6400SS-24-40	1½	40	9⅛	232	1⅜	35	4⅜	111	11.75	5.3
† EMVII-6400SS-24-40	2	50	9½	241	1⅝	41	4⅞	124	14.25	6.5
†† EMVII-6400SS-115-25	2½	65	14	356	–	–	6½	165	23.00	10.4
†† EMVII-6400SS-115-25	3	80	14½	368	–	–	6⅞	175	27.50	12.5

† Sizes ¼" – 2" (8 – 50mm) are available 115-8, 115-35 and 24-40.
†† Sizes 2½" – 3" (65 – 80mm) also available 24-25.



For additional information, request literature ES-EMVII-6400SS.

Series 403RT-RW

Ring-Tite Gate Valves

Sizes: 2" – 8" (50 – 200mm)

Series 403RT-RW Ring Tite Gate Valves have an epoxy coated cast iron body. They are operated by a handwheel or an operating nut and valve key. The resilient wedge disc design offers both positive seating and resistance against high differential pressure. Series 403RT-RW is best suited for service in either the full open or closed position. It is also suitable for use as a throttle valve.

403RT-RW

Features

- For irrigation and water shutoff distribution service
- ASTM A126 Class B Cast Iron
- Bubble-tight shut-off
- Full port flow - low head loss
- Epoxy coated - internal and external
- Vulcanized encapsulated resilient wedge
- Stainless steel stem

Pressure – Temperature

- Pressure: 200psi (13.8 bar) CWP
- Maximum temperature: 140°F (60°C)

Models

403RT-RW - Sizes 2" – 8" (50 – 200mm), ring tite connections. ASTM A126 Class B cast iron. Epoxy coated internally and externally.

For additional information, request literature ES-403RT-RW.

Series B3000, B3001

Class 125, Bronze Gate Valves

Sizes: ½" – 2" (15 – 50mm)

Features

- Threaded bonnet
- Non-rising stem
- Solid wedge disc

Pressure – Temperature

- 125psi WSP to 353˚F (178˚C)
- 200psi WOG non-shock

Models

B3000 - Sizes ½" – 2" (15 – 50mm), ANSI/ASME B1.20.1 threaded end connections

B3001 - Sizes ½" – 2" (15 – 50mm), ANSI/ASME B16.18 solder end connections

Approvals

Complies with MSS-SP-80 Type 1

B3000

For additional information, request literature ES-B3000 or ES-B3001.

Series B3100, B3101

Class 125, Bronze Gate Valves

Sizes: ½" – 2" (15 – 50mm)

Features

- Threaded bonnet
- Non-rising stem
- Solid wedge disc

Pressure – Temperature

- 125psi WSP to 353˚F (178˚C)
- 200psi WOG non-shock

Models

B3100 - Sizes ½" – 2" (15 – 50mm), ANSI/ASME B1.20.1 threaded end connections

B3101 - Sizes ½" – 2" (15 – 50mm), ANSI/ASME B16.18 solder end connections

Approvals

Complies with MSS-SP-80 Type 1

B3101

For additional information, request literature ES-B3101.

Series GV, GLV

Bronze Shutoff Valves

Sizes: ¼" – 4" (8 – 100mm)

Features

- For shutoff service on water, steam, oil or compressed gas
- Threaded bonnet
- Non-rising stem
- Bronze body

Pressure – Temperature

- Pressure: 125psi (8.6 bar) WSP/200psi (13.8 bar) WOG to 353°F (178°C)

Models

GV gate valves - Sizes: ¼" – 4" (8 – 100mm), NPT female threaded connections, non-rising stem.
GVS gate valves -Sizes: ⅜" – 3" (10 – 80mm), solder connections, non-rising stem.
GLV globe valves -Sizes: ¼" – 2" (8 – 50mm), NPT female threaded connections, swivel type disc.

GV

For additional information, request literature ES-GV, or ES-GLV.

Series WGV, WGVS

Brass Gate Valves

Sizes: ½" – 4" (15 – 100mm)

Features

- For shutoff service
- Non-rising stem

Pressure – Temperature

- Pressure: 200psi (13.8 bar) WOG
- Maximum temperature: 180°F (82°C)

Models

WGV (round handle) -Sizes: ½" – 4" (15 – 100mm), NPT female threaded connections.

WGVS (round handle) - Sizes: ½" – 2" (15 – 50mm), solder connections.

WGV-X (cross handle) - Sizes: ⅜" – 3" (10 – 80mm), NPT female threaded connections.

WGV-X

For additional information, request literature ES-WGV, ES-WGVS or ES-WGV-X.

Series WGV-1, WGVS-1, WGVC

Brass Gate Valves

Sizes: ½" – 4" (15 – 100mm)

Features

- For general shutoff applications
- Non-rising stem

Pressure – Temperature

- Pressure: 200psi (13.8 bar) WOG
- Maximum temperature: 180°F (82°C)

Models

WGV-1 - Sizes: ½" – 4" (15 – 100mm), NPT threaded connections.

WGVS-1 - Sizes: ½" – 3" (15-80mm), solder connections.

WGVC - Sizes: ½", ¾" (15, 20mm), compression ends.

WGV-1

For additional information, request literature ES-WGV-1, ES-WGVS-1 or ES-WGVC.

Series 405, 406

NRS Flanged Gate Valves

Sizes: 2" – 12" (50 – 300mm)

406E

Features

- Epoxy coated
- ANSI B16.1 flanged connections

Pressure – Temperature

- Pressure: 200psi (13.8 bar) CWP
- Maximum temperature: 140°F (60°C)

Models

405RW - Sizes 2" – 12" (50 – 300mm), flanged connections. Non-rising stem, resilient wedge design. For irrigation and water distribution service.

406-NRS-RW - Sizes 2" – 12" (50 – 300mm), flanged connections. AWWA C509 specifications. Resilient wedge design. Non-rising stem. For potable water, water distribution service, sewage disposal facilities.

406E - Sizes 2" – 12" (50 – 300mm), flanged connections. MSS-SP70. IBBM style, non-rising stem.

Approvals

ASTM A-126 Class B cast iron shutoff valves for water service.
Complies with MSS-SP-70.

For additional information, request literature ES-405NRSRW, ES-406NRSRW or ES-406E.

Series WCV, WCVS

Brass Swing Check Valves

Sizes: ½" – 4" (15 – 50mm)

WCV

Features

- For one-way flow of water and steam applications

Models

WCV - Sizes: ½" – 4" (15 – 100mm), NPT threaded female connections.Pressure rating 125psi (8.6 bar) WSP/200psi (13.8 bar) WOG. Maximum temperature 353°F (178°C).

WCVS - Sizes: ½" – 2" (15 – 50mm), solder connections. Pressure rating 125psi (8.6 bar) WSP/200psi (13.8 bar) WOG. Maximum temperature 353°F (178°C).

WCV-2 - Sizes ½" – 2" (15 – 50mm), NPT threaded female connections. Rubber seat material is NBR. Pressure rating 200psi (13.8 bar) WOG. Maximum temperature 140°F (60°C).

For additional information, request literature ES-WCV, ES-WCVS or ES-WCV-2.

Series CV, CVY

Bronze Swing Check Valves

Sizes: ⅜" – 4" (10 – 100mm)

CVY

Features

- For one way flow on water lines
- Used to prevent reverse fluid flow

Pressure – Temperature

- Pressure rating: 125psi (8.6 bar) WSP and 200psi (13.8 bar) WOG

Models

CV - 90° straight pattern - Sizes: ⅜" – 4"(10 – 100mm), NPT threaded female connections.
CVS - 90° straight pattern - Sizes: ½" – 3" (15 – 80mm), solder connections.

CVY - Wye pattern - Sizes: ⅜" – 2" (10 – 50mm), NPT female connections.
CVYS - Wye pattern - Sizes: ½" – 2" (15 – 50mm), solder connections.

For additional information, request literature ES-CV, ES-CVS, ES-CVY or ES-CVYS.

Series 6

Brass Midi Check Valves

Sizes: ¼" – 1" (8 – 25mm)

6

Features

- NPT threaded female connections
- Install in a horizontal or vertical position
- Positive back stop
- Silent operation

Pressure – Temperature

- Pressure up to 200psi (13.8 bar).
- Maximum temperature: 180°F (82°C).

For additional information, request literature ES-6/P6.

Series 600, 601S

Bronze Silent Check Valves

Sizes: ¼" – 2" (8 – 50mm)

600

Features

- Teflon® seat and brass disc
- Install in a horizontal or vertical position
- Stainless steel guide rod and spring
- Silent check operation
- Prevents water hammer

Models

600 - Sizes ¼" – 2" (8 – 50mm), NPT threaded female connections; 15psi (1 bar) steam, and 400psi (27.6 bar) WOG.

601S - Sizes ½" - 1" (15-25mm), solder connections; 400psi (27.6 bar) WOG. Max. temp. 180°F (82°C).

- Similar to Model 600 but especially designed for well pump service and other applications requiring tight seating.
- Bronze seat with Viton® disc.

600-Z3 - Sizes ¾", 1½" (20, 40mm), NPT female connection; 150psi (10.3 bar) steam. Heavy duty construction; stainless steel disc, spring and guide rod.

For additional information, request literature ES-600 or ES-600-Z3.

Series ICV-125

"Super Check" Wafer Silent Check Valve

Sizes: 2" – 24" (50 – 600mm)

ICV-125

Features

- Designed for HVAC and general service applications
- A Buna-N seat, bonded to the valve body, provides leaktight sealing from 40°F – +250°F (-40°C – 121°C)
- Lightweight, compact design, easy installation
- PTFE bearings and 316 stainless steel springs
- Silent check valve eliminates water hammer effect

Pressure – Temperature

- Sizes 2" – 24" (50 – 600mm) - 200psi (13.8 bar) CWP (non-shock)

Approvals

- Designed and tested according to API 594 for use between ANSI Class 125 or 150 flanges.
- Standard ASTM A216 cast iron body with aluminum-bronze disc plates.

For additional information, request literature ES-ICV-125.

Series F-511

Class 125, Cast Iron Check Valves

Sizes: 2" – 10" (50 – 250mm)

F-511

Features

- Bolted cover
- Bronze mounted
- Swing type disc

Pressure – Temperature

- 125psi WSP to 353°F (178°C)
- 200psi WOG non-shock

Models

F-511 - Sizes 2" – 10" (50 – 250mm), ANSI B16.1 flanged end connections

Approvals

Complies with MSS-SP-71 Type 1

For additional information, request literature ES-F-511.

Series 411

Class 125, Cast Iron Swing Check Valves

Sizes: 2" – 12" (50 – 300mm)

411

Features

- For water service on municipal and private fire mains and sprinkler systems

Pressure – Temperature

- Pressure: 200psi (13.8 bar) WOG
- Maximum temperature: 180°F (82°C)

Models

411 - Sizes 2" – 12" (50 – 300mm), cast iron body and disc, with Buna-N disc seat, ANSI B16.1 flange connections, epoxy coated internally and externally.

Approvals

UL Listed FM Approved

UL/FM Listed, except 2" and 12" (50 – 300mm).
ASTM A-126 Class B cast iron body.
MSS-SP-71.

For additional information, request literature ES-411.

Series 17

Bronze In-Line Single Union End Strainers

Sizes: ¾" – 1" (20 – 25mm)

17

Features

- For quick removal of equipment for cleaning, or where feed line separation is required

Models

17 - Sizes: ¾", 1" (20, 25mm), union end, NPT threaded female connections, #40 mesh strainer screen standard.

Pressure – Temperature

- WOG 250psi (17.2 bar) @ 180°F (82°C)

For additional information, request literature F-C77.

Series 27

Bronze Compact "V"-Pattern Water Strainers

Sizes: ⅛" – ½" (3 – 15mm)

27

Models

27 - Sizes: ⅛" – ½" (3 – 15mm), NPT female threaded connections. Strainer screen is 24 mesh for sizes ⅜", ½" (10, 15mm), size ¼" (8mm) has 30 mesh, and ⅛" (3mm) has 40 mesh screen. Maximum pressure 250psi WWP (17.2 bar).

For additional information, request literature F-C77.

Series 745

45° Wye-Pattern Bronze Strainers

Sizes: ¾" (20mm)

745

Features

- For applications where scheduled cleaning of the strainer screen makes a hand removable knurled retainer cap desirable

Models

745 - Size: ¾" (20mm), NPT female connections, 80 mesh strainer screen. 250psi WOG (17.2 bar) @ 210°F (99°C), and 50psi WSP (345 kPa) @ 280°F (138°C).

For additional information, request literature F-C77.

Series P777-100

Plastic Body Wye Strainers

Sizes: ¼", ⅜" (8, 10mm)

P777-100

Features

- 45° acetal plastic wye strainers for OEM applications requiring an inexpensive corrosion resistant material

Models

P777-100 - Sizes ¼", ⅜" (8,10mm) has 100 mesh screen, NPT female connections.

Pressure – Temperature

- Pressure rated at 300psi CWP

Approvals

NSF approved acetal plastic.

For additional information, request literature F-C77.

Series 777

Bronze Wye-Type Strainers

Sizes: ¼" – 4" (8 – 102mm)

777

Features

- For liquid service to protect valves or similar controls from foreign matter
- Sizes: ¼" – 2½" (8 – 65mm) have a 20 mesh strainer screen. Size 3" (80mm) has 3⁄64" (1mm) perforated screen, and 4" (100mm) has ⅛" (3mm) perforated screen

Models

777 - solid retainer cap for strainer screen. Sizes: ¼" – 4" (8 – 100mm) NPT female threaded inlet/outlet connections.

777S - retainer cap tapped for closure plug (plug not furnished). Sizes: ½" – 4" (15 – 100mm), NPT female threaded connections.

S777S - solid retainer cap. Sizes: ½" – 2" (15 – 50mm), solder end connections.

S777S - retainer cap tapped for closure plug (plug not furnished). Sizes: ½" – 2" (15 – 50mm), solder end connections.

Maximum pressures: 400psi WOG (27.6 bar) and 125psi WSP (8.6 bar). 4" 777S 300psi (20.7 bar) WOG, 125psi (8.6 bar) WSP

† - Maximum pressure rating for solder models is 400psi (27.6 bar) @ 150°F (66°C) and requires 95-5 solder. (Ref. ANSI B16.18) They are steam rated @ 15psi (1 bar) maximum.

For additional information, request literature F-C77.

Series 777C-M1

Bronze Combination Strainer and Check Valve

Sizes: ¾" x 1" (20 x 25mm)

777C-M1

Features

- Used with backflow preventers to protect check assemblies from fouling due to dirt and debris
- Especially well suited for use on RPZ assemblies on dead end service

Pressure – Temperature

- Maximum pressure: 200psi (13.8 bar)
- Maximum temperature: 210°F (99°C)

Models

777C-M1 - Size: ¾" x 1" (20 x 25mm) female inlet x male outlet connection.

For additional information, request literature ES-777C-M1.

Series 77F-DI-125, 77F-DI-FDA-125

Flanged, Wye Pattern, Cast Iron Strainers

Sizes: 2" – 12" (50 – 300mm)

77F-DI-125

Features

- Flanges conform to American Cast Iron Flange Standard, Class 125 (ANSI B16.1) and MIL-S 16293 Type II
- Cast iron body
- 304 Stainless steel perforated screens
- Cast iron flanged retainer cap with gasket tapped for closure plug
- Drain/Blow-off connection furnished with closure plug
- 77F-DI-FDA-125 model comes with heat fused FDA approved epoxy coating (interior and exterior)

Models

77F-DI-125 — 2" – 12" (50 – 300mm) with flanged connections for water and steam service
77F-DI-FDA-125 — 2" – 12" (50 – 300mm) with flanged connections and double coated, heat fused FDA approved epoxy coating (interior and exterior) for water service only

Pressure – Temperature

Maximum Operating Pressure:
200psi (13.8 bar) WOG, non-shock, @ 210° F (99° C)
125psi (8.6 bar) WSP @ 353°F (178°C)

For additional information, request literature ES-77F-DI-125.

Series 77F-DI-250

Flanged, Wye Pattern, Ductile Iron Strainers

Sizes: 2” – 12” (50 – 300mm)

77F-DI-250

Features

- Flanges conform to American Cast Iron Flange Standard, Class 250 (ANSI B16.1)
- Body meets ASME standards
- One-piece cast body
- Equipped with bolted cover flange that utilizes a flat gasket seal
- Upper and lower machined seats
- 304 Stainless steel perforated screens
- Drain/Blow-off connection furnished with plug
- Generous screen area and properly proportioned straining chamber to minimize initial pressure drop while maximizing time between cleanings

Pressure – Temperature

Temperature Range: -20°F (-28.9°C) - 406°F (208°C)
Maximum Operating Pressure:
500psi (34.47 bar) WOG, non-shock, @ 150°F (66°C)
250psi (17.2 bar) WSP @ 406°F (208°C)

For additional information, request literature ES-77F-DI-250.

Series 77F-SS, 77G-SS

Stainless Steel Wye-Pattern Strainers

Sizes: 2½" – 12" (64 – 305mm)

77F-SS

Features

- Light weight, 304SS corrosion resistant alternative to cast iron strainers
- For liquid service
- Complies with NSF 61 and FDA standards
- Blow off outlet tapped NPT female
- 77F comes with flanged ends, 77G comes with grooved ends

Pressure – Temperature

- Pressure rating nonshock: 200psi (13.8 bar) WOG at 150°F (66°C)
- ANSI B16.1 Class 125 flange dimensions and drilling.

For additional information, request literature ES-77F-SS/77G-SS.

Series SC
Sill Cock Faucets

Sizes: ½", ¾" (15, 20mm)

SC-6

Features

- Hose bibb type faucets with tee handle or handwheel

Models

Tee Handle Sillcock

SC-1 - Size ½" (15mm), no kink hose faucet dual inlet connection (male IPS or solder).

SC-2 - Size ½" or ¾" (15 or 20mm), no kink hose faucet dual connection (solder inlet connection).

Lawn Faucet Sillcock with Cast Iron Handwheel

SC-3 - Size ½" or ¾" (15 or 20mm), dual connection (solder inlet connection).

SC-4 - Size ½" or ¾" (15 or 20mm), female IPS connection.

Hose Bibb Hex Shoulder Sillcock with Tee Handle

SC-5 - Size ½" (15mm), male IPS connection.

SC-6 - Size ¾" (20mm), male IPS connection. Maximum Pressure 125psi (8.6 bar) CWP.

For additional information, request literature ES-SC.

Series BD
Brass Boiler Drain Shutoffs for Water Service

Sizes: ½" x ¾", ¾" x ¾" (13 x 20, 20 x 20mm)

BD-1

Features

- ¾" (20mm) Hose thread connection on outlet
- Dual solder or IP connection models
- Angle and Straight pattern models

Pressure – Temperature

- Maximum pressure: 200psi (13.8 bar) WOG
- Maximum temperature: 180°F (82°C)

Models

BD1 - Size ½" (15mm) dual connection, solder or male IPS x ¾" (20mm) hose thread connection, angle pattern.

BD2 - Size ¾" (20mm) male IPS x ¾" (20mm) hose thread connection, angle pattern.

BD2C - Size ¾" (20mm) solder x ¾" (20mm) hose thread connection, angle pattern.

BD3F - Size ½" (15mm) female IPS x ¾" (20mm) hose thread connection, angle pattern.

BD4F - Size ¾" (20mm) female IPS x ¾" (20mm) hose thread connection, angle pattern.

BD5 - Size ½" (15mm) straight pattern, solder or male IPS x ¾" (20mm) hose thread connection.

BD6 - Size ¾" (20mm) straight pattern, male IPS x ¾" (20mm) hose thread connection.

BD-QT - Quarter-Turn, Size ½" (15mm) dual pattern, MIP or solder with ¾" hose connection.

¾" MIP or ¾" hose connection.

SxS ¾" solder x ¾" hose connection.

BD-QT

Series DBF & BF

Butterfly Valves

****DBF: Sizes: 2" – 12" (50 – 300mm)**
BF: Sizes: 2" – 48" (50 – 1200mm)

Series DBF and BF Butterfly Valves feature positive shutoff to meet the needs of a variety of irrigation applications. These valves are available in both lugged and wafer styles and feature mounting pads to accommodate a handle, gear operator or an electric or pneumatic actuator.

DBF

Features

- Full lug and wafer styles
- Mounting pad for 10-position lever, gear operator, or actuator
- Extended neck for 2" (50mm) of insulation
- Pinned disc
- Dead-end service rated (lug models)

Models

DBF - Sizes: 2" – 12" (50 – 300mm), pressure 200psi (13.8 bar) WOG.

BF - Sizes: 2" – 48" (50 – 1219mm), pressure 200psi (13.8 bar) WOG for 2" – 12" and 150psi (10.3 bar) for 14" – 48".

Approvals

For use with ANSI Class 125 or 150 flanges. Complies with API 609 and MSS-SP-67.

Butterfly Valve Options

Sample Ordering Number: 10 - DBF - 03 - 121 - 1G

Size
Origin
DBF - for sizes: 2" – 12" (50 – 300mm)
BF - for sizes: 2" – 48" (50 – 1200mm)

Style
03 - Full lug
04 - Wafer

Body
1 - Cast Iron (ASTM-A126 Class B)
2 - Ductile Iron (ASTM-A536)
30" – 48" (800 – 1200mm) only

Disc
1 - Ductile Iron (ASTM-A126)
2 - Aluminum Bronze (ASTM-A296)
3 - 316 Stainless Steel (ASTM-A351)

Shaft
1 - 416 Stainless Steel
(316SS shaft on 316SS disc models)

Seat
1 - EPDM Temperature: 15°F – 275°F (-26°C – 135°C) **Note:** Do not use EPDM when hydrocarbons are present.
2 - Buna-N Temperature: 15°F – 180°F (-26°C – 82°C)
3 - Viton GF® (consult factory) flouroelastomer. Temperature: 10°F – 325°F (-23°C – 163°C). Sizes: 2" – 12" (50 – 300mm) only.

Operator
0 - Bare shaft
G** - Gear operator
5 - Standard handle (10-position), Sizes: 2" – 12" only (50 – 300mm)
P** - Positioning/locking kit with handle, Sizes: 2" – 12" only (50 – 300mm)

Optional electric and pneumatic actuators are available. Please consult factory.

Note:**Kits for suffix (G) gear operator & (P) positioning/locking service with handle are available.

** DBF Series Butterfly Valves use domestic and foreign components that have been assembled and tested in the U.S.A.

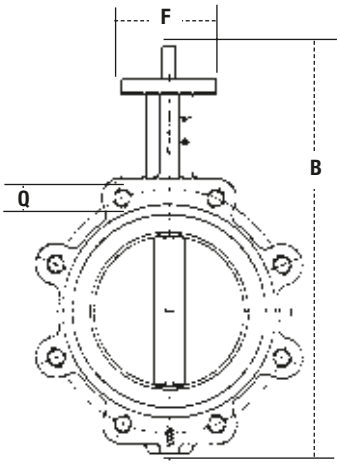
For additional information, request literature F-CDBF.

Dimensions — Weights

SIZE (DN)		DIMENSIONS (approx.)				TAPPED LUG DATA		†WEIGHT			
		B		F		Bolt Q		(03) Full Lug		(04) Wafer	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kg.*	*lbs.*	*kg.*
2	50	10¾	273	3 1/16	77	⅝-11UNCx1¼	16x32	8	4	5	3
2½	65	11⅝	295	3 1/16	77	⅝-11UNCx1⅜	16x35	10	5	7	4
3	80	12⅛	308	3 1/16	77	⅝-11UNCx1⅜	16x35	10	5	7	4
4	100	13⅝	346	3⅝	92	⅝-11UNCx1½	16x38	17	8	11	5
5	125	14⅝	371	3⅝	92	¾-11UNCx1¾	19x44	23	11	16	8
6	150	15⅝	397	3⅝	92	¾-11UNCx1¾	19x44	29	14	19	9
8	200	18⅞	479	4½	115	¾-11UNCx2⅛	19x54	39	18	30	14
10	250	21¼	540	4½	115	⅞-11UNCx2¼	22x57	61	28	45	21
12	300	24⅝	625	5½	140	⅞11UNCx2¼	22x57	113	52	73	34
14	350	26¾	679	5½	140	1-8UNCx2¼	25x57	154	70	97	44
16	400	30	762	7¾	197	1-8UNCx3⅜	25x86	200	91	138	63
18	450	31½	800	7¾	197	1⅛-7UNCx4	29x102	272	124	182	83
20	500	35⅝	905	7¾	197	1⅛-7UNCx5	29x127	396	180	260	118
24	600	43	1092	10⅞	276	1¼-7UNCx5¾	32x146	610	277	465	211

† Weights are for valves with stainless steel discs.

Weights for 2" – 12" have 10- position lever handles; 14" – 24" with bare stem.



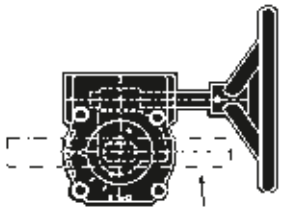
SIZE (DN)		GEAR OPERATOR	POSITIONING/LOCKING	CHAINWHEELS	CHAIN	2" SQ. NUT
in.	*mm*	*Kit No.*	*Kit No.*	*Kit No.*	*Kit No.*	*Kit No.*
2	50	GA-1-M3	#1 POS-LOCK-M2	#2 BCWK	#2 BCWC	OPN-BFG
2½	65	GA-1-M3	#1 POS-LOCK-M2	#2 BCWK	#2 BCWC	OPN-BFG
3	80	GA-1-M3	#1 POS-LOCK-M2	#2 BCWK	#2 BCWC	OPN-BFG
4	100	GA-2-M3	#2 POS-LOCK-M2	#2 BCWK	#2 BCWC	OPN-BFG
5	125	GA-3-M3	#3 POS-LOCK-M2	#2 BCWK	#2 BCWC	OPN-BFG
6	150	GA-3-M3	#3 POS-LOCK-M2	#2 BCWK	#2 BCWC	OPN-BFG
8	200	GA-4-M3	#4 POS-LOCK-M2	#3 BCWK	#3 BCWC	OPN-BFG
10	250	GA-5-M3	#5 POS-LOCK-M2	#3 BCWK	#3 BCWC	OPN-BFG
12	300	GA-6-M3	#6 POS-LOCK-M2	#3 BCWK	#3 BCWC	OPN-BFG
14	350	GA-6-M3	N/A	#3 BCWK	#3 BCWC	OPN-BFG
16	400	GA-7-M3	N/A	#4 BCWK	#3 BCWC	-----
18	450	GA-8-M3	N/A	#4 BCWK	#3 BCWC	-----
20	500	GA-9-M3	N/A	#4 BCWK	#3 BCWC	-----
24	600	GA-10-M3	N/A	#5 BCWK	#5 BCWC	-----

Chain Wheel Kits attach to gear actuator handwheel.

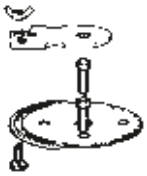
2" nuts are installed on gear operator shafts.

To operate Watts' butterfly valves with 2" square nut, a gear operator must be used by removing gear handwheel and installing 2" nut on gear shaft.

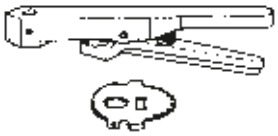
Valve should be installed in line such that gear shaft is vertical for 2" nut operation.



Gear Operator



Positioning/Locking Kit



Standard Handle/Latch Plate

Series 3000
Dielectric Unions/Fittings

Sizes: ½" – 4" (15 – 100mm)

Series 3000 Dielectric Unions/Fittings protect against the destructive effects of galvanic and stray current corrosion.


3001


3002


3003


3004


3005


3006

Features

- Meets federal specifications for both tensile strength and thread end connections
- All dielectric unions individually factory certified to withstand a minimum of 600 volts on a dry line with no flashover
- Watts dielectric fittings/unions are designed and manufactured to the highest quality standards

Pressure - Temperature

- Supplied with GA gaskets suitable for water, air, oil, natural gas, gasoline, propane, kerosene, mineral oil and alkalies. For other applications, consult factory.
- Dielectric Unions are rated to 180°F (82°C) at 250psi (17.2 bar) conforming to ANSI B16.39. Pipe threads are in accordance with ANSI B2.1.
- Dielectric Flange Fittings are rated at 175psi (12.1 bar) conforming to B16.42 (iron), B16.24 (bronze).

Approvals

Unions meet the requirements of ANSI B16.39, including hydrostatic strength, tensile strength and air pressure testing.
Flange fittings conform to B16.42 (iron), B16.24 (bronze).
All pipe threads are in accordance with ANSI B2.1 and solder joints meet national plumbing standards.

Gray Iron	ASTM A-48-25
Malleable Iron Parts	ASTM A-197
Steel Parts	ASTM A-107
Brass Parts	ASTM B-16
Bronze Parts	ASTM 844
Cadmium Parts	ASTM A-165
Insulators	Watts #1425
Standard Gasket A	Buna

Options

add Suffix:
GB - for use in steam or hot water applications to 300°F (149°C) at 50psi (344.8 kPa).

Models

3001A - Sizes ½" – 2" (15 – 50mm), female iron pipe thread to solder connection.

3002 - Sizes ½" x ⅜", ¾" x ½", 1" x ¾" (15x10mm, 20x15, 25x20mm), female iron pipe thread to reduced solder connection.

3003 - Sizes ½" – 2" (15 – 50mm), female iron pipe thread to female brass pipe.

3004 - Sizes ½" – 2" (15 – 50mm), female iron pipe thread to female iron pipe thread (galvanized).

3005A - Sizes ½" – ¾" (15 – 20mm), male iron pipe thread to solder connection.

3006 - Sizes ½" – 2" (15 – 50mm), female iron pipe thread to female iron pipe thread (black).

3007 - Sizes ½" x ⅜" – ¾" x ½" (15x10mm – 20x15mm), male iron pipe thread to female solder connection.

3008 - Sizes ½" – 1" (15 – 25mm), female brass pipe thread to female solder connection.

Flanged Fittings

3100 - Sizes 2" – 4" (50 – 100mm), iron pipe thread to copper solder joint.

3110 - Sizes 2½" – 4" (65 – 100mm), solder copper fitting, bronze (Class 125 flange).

3200 - Sizes 2" – 4" (50 – 100mm), iron pipe thread to iron pipe thread.


3100, 3200


3110

Dimensions — Weights

BOLT INSULATORS - FOR INSULATING FLANGE BOLTS			
Bolt Size		Weight	
inches	*mm*	*lbs.*	*kg.*
½	15	1.75	.8
⅝	16	1.75	.8
¾	20	2	.9
⅞	22	2	.9

MODEL	SIZE (DN)		DIMENSIONS (approx.)				WEIGHT	
			A		B			
	in.	*mm*	*in.*	*mm*	*in.*	*mm*	*oz.*	*gm.*
3001A	½	15	1½	32	1⅞	48	6	170
3001A	¾	20	1⅝	41	2⅛	54	6.7	190
3001A	1	25	1⅞	48	2½	64	9.3	264
3001A	1¼	32	2¼	57	3	76	13.3	377
3001A	1½	40	2¾	70	3	76	13.3	377
3001A	2	50	3½	89	3	76	34.7	984
3002	½ x ⅜	15x10	1½	38	1⅞	48	6.7	190
3002	¾ x ½	20x15	1⅝	41	1⅞	48	6.7	190
3002	1x ¾	25x20	1⅞	48	2½	64	10.7	303
3003	½	15	1⅝	41	2¼	57	6.7	190
3003	¾	20	1⅞	48	2¼	57	20	567
3003	1	25	2¼	57	2½	64	14.7	417
3003	1¼	32	2¾	70	2¾	70	26.7	757
3003	1½	40	3½	89	2¾	70	48	136
3003	2	50	4⅛	105	3⅛	79	69.3	1965
3004	½	15	1⅝	41	2¼	57	6.7	190
3004	¾	20	1⅞	48	2¼	57	20	567
3004	1	25	2¼	57	2½	64	14.7	417
3004	1¼	32	2¾	70	2¾	70	26.7	757
3004	1½	40	3½	89	2¾	70	45	1276
3004	2	50	4⅛	105	3⅛	79	8.7	247
3005A	½	15	1½	38	2⅝	67	13.3	377
3005A	¾	20	1⅝	41	3	76	8.6	244
3006	½	15	1⅝	41	2¼	57	6.7	190
3006	¾	20	1⅞	48	2¼	57	20	567
3006	1	25	2¼	58	2½	64	14.7	417
3006	1¼	32	2¾	70	2¾	70	26.7	757
3006	1½	40	3½	89	2¾	70	45.3	1284
3006	2	50	4⅛	105	3⅛	79	64	1814
3007	½ x ⅜	15x10	1½	38	2⅝	67	6.7	190
3007	¾ x ½	20x15	1⅝	41	3	76	6.7	190
3008	½	15	1½	38	1⅞	48	6.7	190
3008	¾	20	1⅝	41	2⅛	54	10.7	303
3008	1	25	1⅞	48	2½	64	14.7	417
FLANGED FITTINGS								
3100	2	50	5⅛	130	3¼	83	128	3629
3100	2½	65	5⅞	149	3½	89	192	5443
3100	3	80	6¾	171	3¾	95	224	6350
3100	4	100	9⅛	232	4⅜	111	480	13608
3110	2½	65	5⅞	149	3½	89	192	5443
3110	3	80	6¾	171	3¾	95	240	6804
3110	4	100	9⅛	232	4⅜	111	288	8165
3110LF	2½	65	5⅞	149	3½	89	96	44
3110LF	3	80	6¾	171	3½	89	120	54
3110LF	4	100	9⅛	232	4⅜	111	144	65
3200	2	50	5⅛	130	2⅛	54	128	3629
3200	2½	65	5⅞	149	2¾	70	192	5443
3200	3	80	6¾	171	2¾	70	240	6804
3200	4	100	9⅛	232	3	76	496	14062

For Technical Assistance Call Your Authorized Watts Agent.

			Telephone #	Fax #
	HEADQUARTERS: Watts Regulator Company	815 Chestnut St., North Andover, MA 01845-6098 U.S.A.	978 688-1811	978 794-1848
North East	Edwards, Platt & Deely, Inc.	271 Royal Ave., Hawthorne, NJ 07506	973 427-2898	973 427-4246
	Edwards, Platt & Deely, Inc.	368 Wyandanch Ave., North Babylon, NY 11703	631 253-0600	631 253-0303
	W. P. Haney Co., Inc.	51 Norfolk Ave., South Easton, MA 02375	508 238-2030	508 238-8353
Mid Atlantic	J. B. O'Connor Company, Inc.	P.O. Box 12927, Pittsburgh, PA 15241	724 745-5300	724 745-7420
	RMI	Glenfield Bus. Ctr., 2535 Mechanicsville Tpk., Richmond, VA 23223	804 643-7355	804 643-7380
	The Joyce Agency, Inc.	8442 Alban Rd., Springfield, VA 22150	703 866-3111	703 866-2332
	Vernon Bitzer Associates, Inc.	980 Thomas Drive, Warminster, PA 18974	215 443-7500	215 443-7573
	WMS Sales, Inc. (Main office)	9580 County Rd., Clarence Center, NY 14032	716 741-9575	716 741-4810
South East	Billingsley & Associates, Inc.	2728 Crestview Ave., Kenner, LA 70062-4829	504 602-8100	504 602-8106
	Billingsley & Associates, Inc.	478 Cheyenne Lane, Madison, MS 39110	601 856-7565	601 856-8390
	Francisco J. Ortiz & Co., Inc.	Charlyn Industrial Pk., Road 190 KM1.9 - Lot #8, Carolina, Puerto Rico 00983	787 769-0085	787 750-5120
	Mid-America Marketing, Inc.	203 Industrial Drive, Birmingham, AL 35211	205 879-3469	205 870-5027
	Mid-America Marketing, Inc.	1364 Foster Avenue, Nashville, TN 37210	615 259-9944	615 259-5111
	Mid-America Marketing, Inc.	5466 Old Hwy. 78, Memphis, TN 38118	901 795-0045	901 795-0394
	Smith & Stevenson Co., Inc.	4935 Chastain Ave., Charlotte, NC 28217	704 525-3388	704 525-6749
	Harry Warren, Inc.	1400 North Orange Blossom Trail, Orlando, FL 32804	407 841-9237	407 841-9246
	Watts Georgia	2861-B Bankers Industrial Drive, Atlanta, GA 30360	770 209-3310	770 447-4583
North Central	Aspinall Associates, Inc.	6840 Hillsdale Court, Indianapolis, IN 46250	317 849-5757	317 845-7967
	Dave Watson Associates	1325 West Beecher, Adrian, MI 49221	517 263-8988	517 263-2328
	Disney McLane & Associates	428 McGregor Ave., Cincinnati, OH 45206	800 542-1682	877 476-1682
	BWA Company	17610 S. Waterloo Rd., Cleveland, OH 44119	216 486-1010	216 486-2860
	Mid-Continent Marketing Services Ltd.	1724 Armitage Ct., Addison, IL 60101	630 953-1211	630 953-1067
	Soderholm & Associates, Inc.	7150 143rd Ave. N.W., Anoka, MN 55303	763 427-9635	763 427-5665
	Stickler & Associates	333 North 121 St., Milwaukee, WI 53226	414 771-0400	414 771-3607
South Central	Hugh M. Cunningham, Inc.	13755 Benchmark, Dallas, TX 75234	972 888-3808	972 888-3838
	HMC Sandia Group	13755 Benchmark, Dallas, TX 75234	505 222-3134	800 339-0191
	Mack McClain & Associates	4407 Meramec Bottom, Suite G, St. Louis, MO 63129	314 894-8188	314 894-8388
	Mack McClain & Associates, Inc.	1450 NE 69th Place, Ste. 56 Ankeny, IA 50021	515 288-0184	515 288-5049
	Mack McClain & Associates, Inc.	15090 West 116th St., Olathe, KS 66062	913 339-6677	913 339-9518
	OK! Sales, Inc.	214-A NE 12th., Moore, OK 73160	405 794-5200	405 794-5250
Western	Delco Sales, Inc.	1930 Raymer Ave., Fullerton, CA 92833	714 888-2444	714 888-2448
	Delco Sales, Inc.	111 Sand Island Access Rd., Unit I-10, Honolulu, HI 96819	808 842-7900	808 842-9625
	Fanning & Associates, Inc.	6765 Franklin St., Denver, CO 80229-7111	303 289-4191	303 286-9069
	Hollabaugh Brothers & Associates	6915 South 194th St., Kent, WA 98032	253 867-5040	253 867-5055
	Hollabaugh Brothers & Associates	3028 S.E. 17th Ave., Portland, OR 97202	503 238-0313	503 235-2824
	P I R Sales, Inc.	3050 North San Marcos Place, Chandler, AZ 85225	480 892-6000	480 892-6096
	Preferred Sales	31177 Wiegman Road, Hayward, CA 94544	510 487-9755	510 476-1595
	R. E. Fitzpatrick Sales, Inc.	4109 West Nike Dr. (8250 South), West Jordan, UT 84088	801 282-0700	801 282-0600
Canada	Watts Industries (Canada) Inc. (Watts Regulator Co. Division)	5435 North Service Road, Burlington, Ontario L7L 5H7	905 332-4090	905 332-7068
	Con-Cur West Marketing, Inc.	71B Clipper Street, Coquitlam, British Columbia V3K 6X2	604 540-5088	604 540-5084
	D.C. Sales Ltd.	#10-6130 4th St. S.E., Calgary, Alberta T2H 2B6	403 253-6808	403 259-8331
	D.C. Sales Ltd.	16726 111 Ave, Edmonton, Alberta T5M 2S6	780 496-9495	780 496-9621
	GTA Sales Team.	Greater Toronto Area	888 208-8927	888 479-2887
	Hydro-Mechanical Sales, Ltd.	3700 Joseph Howe Drive, Suite 1, Halifax, Nova Scotia B3L 4H7	902 443-2274	902 443-2275
	Hydro-Mechanical Sales, Ltd.	P.O. Box 1445 (Mailing), 297 Collishaw St., Suite 7 (shipping) Moncton, New Brunswick E1C 9R2	506 859-1107	506 859-2424
	J.D.S. Sales Ltd.	4 Lancaster Street, St. John's, Newfoundland A1A 5P7	709 579-5771	709 579-1558
	Les Ent. Roland Lajoie	6221 Marivaux, St-Leonard, QC H1P 3H6	514 328-6645	514 328-6131
	Les Ent. Roland Lajoie	23 du Buisson, Pont Rouge, QC G3H 1X9	418 873-2500	418 873-2505
	Mar-Win Agencies, Ltd.	1333 Clifton St., Winnipeg, Manitoba R3E 2V1	204 775-8194	204 786-8016
	Northern Mechanical Sales	P.O. Box 280 (mailing) 163 Pine St. (shipping), Garson, Ontario P3L 1S6	705 693-2715	705 693-4394
	Palser Enterprises, Ltd.	P.O. Box 28136 (mailing), 1885 Blue Heron Dr., #4, London, Ontario N6H 5L9	519 471-9382	519 471-1049
	RAM Mechanical Marketing Inc.	1401 St. John Street, Regina, Saskatchewan S4R 1S5	306 525-1986	306 525-0809
	RAM Mechanical Marketing Inc.	510 Ave M South, Saskatoon, Saskatchewan S7M 2K9	306 244-6622	306 244-0807
	Walmar Mechanical Sales	24 Gurdwara Rd., Nepean, Ontario K2E 8B5	613 225-9774	613 225-0673
0703	**EXPORT Hdqtrs.:** Watts Regulator Co.	815 Chestnut St., North Andover, MA 01845-6098 U.S.A.	978 688-1811	978 794-1848

WATTS®

Water Safety & Flow Control Products

ISO 9001 CERTIFIED

USA: 815 Chestnut St., No. Andover, MA 01845-6098; www.watts.com

Canada: 5435 North Service Rd., Burlington, ONT. L7L 5H7; www.wattscanada.ca