

## For Health Hazard Applications

Job Name \_\_\_\_\_  
 Job Location \_\_\_\_\_  
 Engineer \_\_\_\_\_  
 Approval \_\_\_\_\_

Contractor \_\_\_\_\_  
 Approval \_\_\_\_\_  
 Contractor's P.O. No. \_\_\_\_\_  
 Representative \_\_\_\_\_

# Series 909

## Reduced Pressure Zone Assemblies

**909 Sizes:** ¾", 1" (20, 25mm)

**909M1 Sizes:** 1¼", 1½", 2" (32, 40, 50mm)

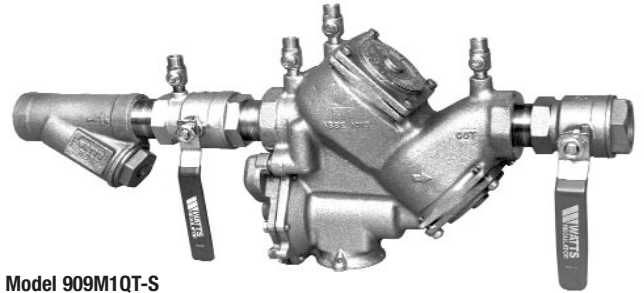
Series 909 Reduced Pressure Zone Assemblies are designed to provide superior cross-connection control protection of the potable water supply in accordance with national plumbing codes and containment control for water authority requirements. This series can be utilized in a variety of installations, including health hazard cross-connections in plumbing systems or for containment at the service line entrance. With its exclusive, 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. Model 909QT, standardly furnished with full port, resilient seated and bronze ball valve shutoffs. Sizes ¾" and 1" (20 and 25mm) shutoffs have tee handles.

### Features

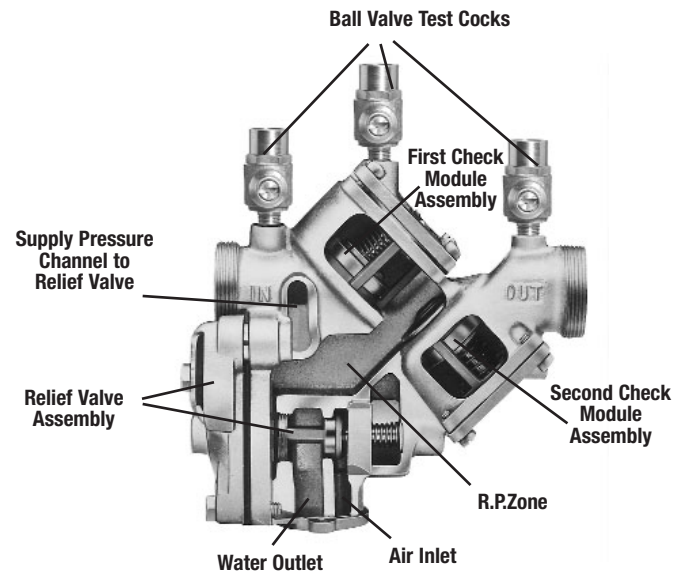
- Modular design
- Replaceable seats
- Compact for installation ease
- Horizontal or vertical (up or down) installation
- No special tools required for servicing

### Specifications

A Reduced Pressure Zone Assembly shall be installed at each cross-connection to prevent backsiphonage and backpressure of hazardous materials into the potable water supply. The assembly shall consist of a pressure differential relief valve located in a zone between two positive seating check valves. Backsiphonage protection shall include provision to admit air directly into the reduced pressure zone via a separate channel from the water discharge channel, or directly into the supply pipe via a separate vent. The assembly shall include two tightly closing shutoff valves before and after the assembly, test cocks and a protective strainer upstream of the No. 1 shutoff valve. The assembly (specify Model 909 for temperatures up to 140°F (60°C) or Model 909HW for temperatures up to 210°F (99°C)) shall meet the requirements of ASSE Std. 1013; AWWA Std. C-511-92 CSA B64.4; FCCCHR of USC Manual Section 10. Listed by IAPMO (UPC). SBCCI (Standard Plumbing code). The assembly shall be a Watts Regulator Company Series 909QTS or 909QTS HW.



**Model 909M1QT-S**  
1½" (40mm)



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**WattsBox Insulated Enclosures.**

For more information, send for literature ES-WB.

## Models

### Suffix

C&T	Cap and tether test cocks
PC	Internal polymer coating
QT	Quarter-turn ball valves
S	Bronze strainer
HW	Stainless steel check modules for hot and harsh water conditions
LF	Without shutoff valves
LH	Locking ball valve handles (open position)
HC	Inlet/outlet fire hydrant fitting (2" only)

### Prefix

C	Clean and check strainer - ¾" and 1" (20 and 25mm) only
U	Union - ¾" and 1" (20 and 25mm) only
FAE	Flanged adapter ends - 1¼", 1½", 2" (32, 40, 50mm) only

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

## Materials

Body:	Bronze
Check Seats:	909 Celcon®
Relief Valve Seats:	Stainless steel 909HW
Test Cocks:	Bronze

Celcon® is a registered trademark of Celanese, Limited

## Connections

¾" – 1" (19 – 25mm) 909-NPT Female threaded body connection

1¼" – 2" (32 – 50mm) 909-M1-NPT Male threaded body connection

## Standards

AWWA C-511-92

FCCCHR of USC Manual Section 10

IAPMO (UPC), SBCCI (Standard Plumbing code)

## Approvals

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" (20mm) and 1" (25mm) sizes (models 909QT, 909PCQT, and U909QT).

## Pressure – Temperature

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

Maximum Working Pressure: 175psi (12.1 bar)

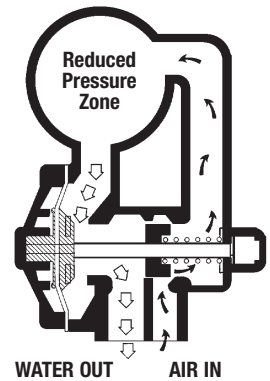
### Series 909HW:

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

Maximum Working Pressure: 175psi (12.1 bar)

## How it Operates

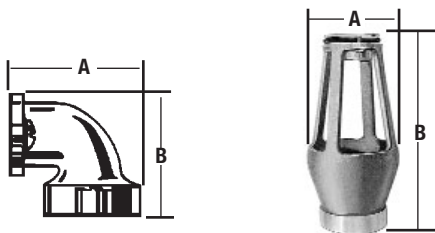
The unique relief valve construction incorporates two channels: one for air, one for water. When the relief valve opens, as in the accompanying air-in/water-out diagram, the right-hand channel admits air to the top of the reduced pressure zone, relieving the zone vacuum. The channel on the left then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



Patent# 4,241,752

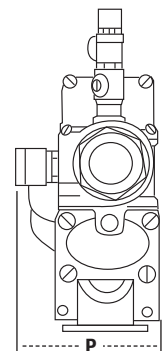
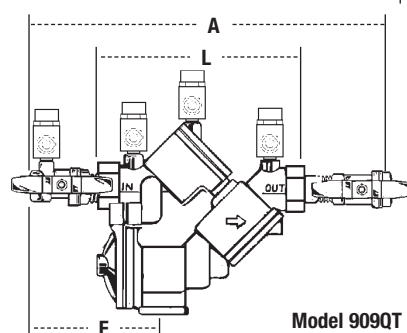
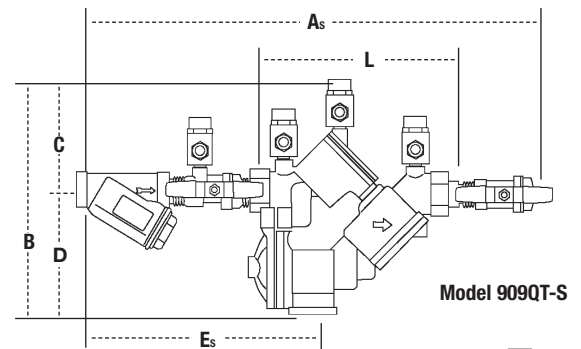
## Dimensions – Weights

When installing a drain line use 909AG series Air Gaps on Series 909 backflow preventers. \*909EL series elbows are for air gaps on backflow preventers in vertical installations.



### Series 909AG Air Gaps

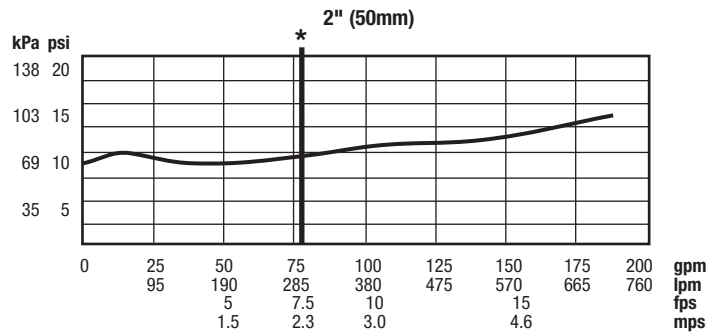
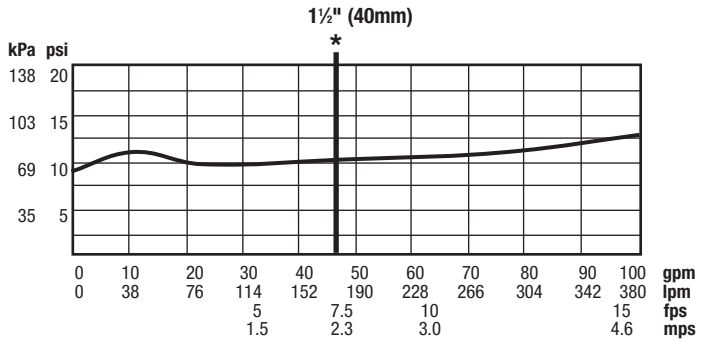
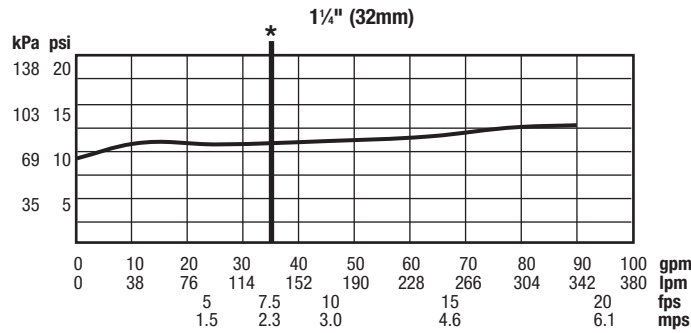
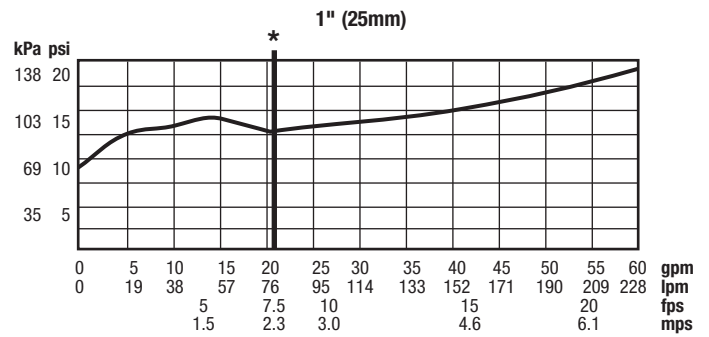
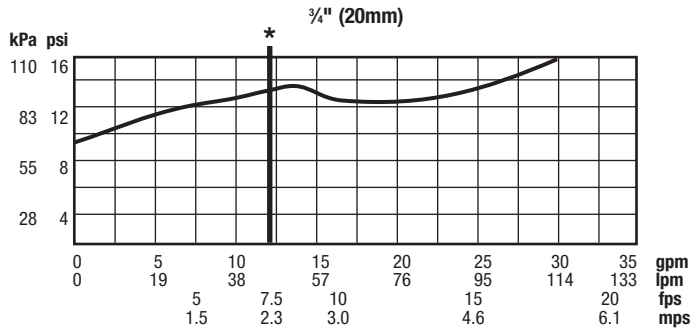
Iron Body No.	Desc.	909 DRAIN		OUTLET		DIMENSIONS				WEIGHTS	
		Sizes		Sizes		A		B		lbs.	kg.
		in.	mm	in.	mm	in.	mm	in.	mm		
909-AG-C	Air Gap	¾, 1	19, 25	1	25	3¼	83	4⅞	124	1½	.7
909-EL-C	Elbow*	¾, 1	19, 25	–	–	2⅝	60	2⅝	60	¾	.2
909-AG-F	Air Gap	1¼-2	32-50	2	50	4⅜	111	6¾	171	3¼	1.5
909-EL-F	Elbow*	1¼-2	32-50	–	–	3⅝	92	3⅝	92	2	.9



## Capacity

As compiled from documented Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California lab tests.

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



### Suffix HC - Fire Hydrant Fittings dimension "A" = 23¼" (603mm)

SIZE (DN)	DIMENSIONS										WEIGHT											
	A		As		B		C		D		E		Es		L		P		QT		QT-S	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.

#### \*909QT, 909QT-S Dimensions

¾"	14⅝	365	18⅞	459	8¾	222	4	102	4¾	121	6¾	171	10⅞	259	7⅞	186	3⅞	98	14	6.4	15.6	7.1
1"	15⅝	391	19⅞	498	8¾	222	4	102	4¾	121	7	178	11	279	7⅞	186	3⅞	98	15	6.8	17.5	7.9
1¼"M1	18½	470	23⅞	595	11⅞	295	5½	140	6½	165	7½	191	12⅞	310	10⅞	264	5¼	133	40	18.1	42.8	19.4
1½"M1	19	483	24⅞	619	11⅞	295	5½	140	6½	165	7½	191	12⅞	321	10⅞	264	5¼	133	40	18.1	44.0	20.0
2"M1	19½	495	25⅞	659	11⅞	295	5½	140	6½	165	7¾	197	13⅞	354	10⅞	264	5¼	133	40	18.1	47.4	21.5

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

¾"	14⅜	371	19⅞ <sub>16</sub>	484	8¾	222	4	102	4¾	121	6¾	171	10⅞ <sub>16</sub>	259	7⅞ <sub>16</sub>	186	3⅞	98	14	6.4	15.6	7.1
1"	15⅝	397	20⅞ <sub>16</sub>	532	8¾	222	4	102	4¾	121	7	178	11	279	7⅞ <sub>16</sub>	186	3⅞	98	15	6.8	17.5	7.9

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

1¼"	19	483	24½	622	11⅞	295	5½	140	6½	165	7½	191	12⅜	310	10⅞	264	5¼	133	40	18.1	42.8	19.4
1½"	19¼	502	26⅞	664	11⅞	295	5½	140	6½	165	7½	191	12⅝	321	10⅞	264	5¼	133	40	18.1	44.0	20.0
2"	21	533	28⅞	721	11⅞	295	5½	140	6½	165	7¾	197	13⅛	354	10⅞	264	5¼	133	40	18.1	47.4	21.5

Subscript 'S' = strainer model

For additional information, visit our web site at: [www.watts.com](http://www.watts.com)



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