

Series 909 Reduced Pressure Zone Assemblies

Sizes: 3/4", 1" - 909

Sizes: 1 1/4", 1 1/2", 2" - 909-M1

Features

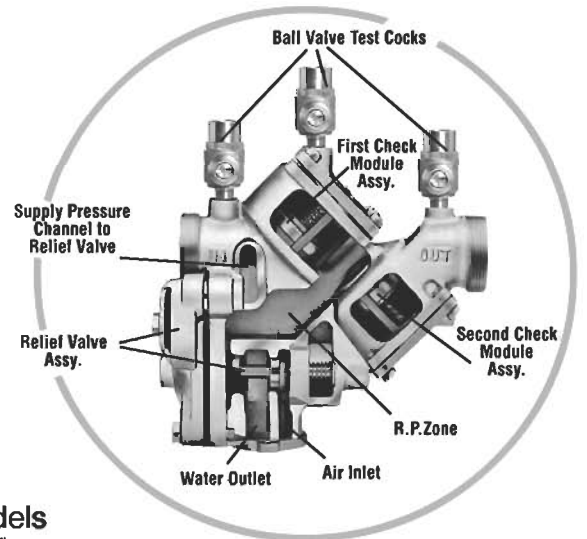
- Modular design
- Replaceable bronze seats
- Compact for installation ease
- Horizontal or vertical (up or down) installation
- No special tools required for servicing

Description

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 909-QT, standardly furnished with full port, resilient seated and bronze ball valve shutoffs. Sizes 3/4" and 1" shutoffs have tee handles.

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.



Models

Suffix

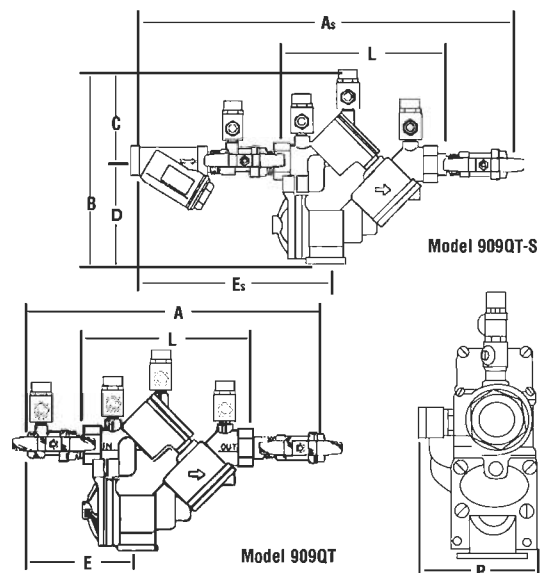
- QT - quarter-turn ball valves
 - S - bronze strainer
 - HW - stainless steel check modules for hot and harsh water conditions
 - LF - without shutoff valves
 - LH - locking ball valve handles (open position)
 - HC - inlet/outlet fire hydrant fitting (2" only)
- Prefix
- C - clean and check strainer - 3/4" and 1" only
 - U - union - 3/4" and 1" only
 - FAE - flanged adapter ends - 1 1/4", 1 1/2", 2" only

Dimensions - Weights

SIZE (DN)	DIMENSIONS										WEIGHT	
	A	A _c	B	C	D	E	E _c	L	P	QT	QT-S	
*909QT / 909QT-S Dimensions												
3/4"	14%	18 1/16	8 3/4	4	4 3/4	6 3/4	10 1/16	7 7/16	3 3/8	14	15.6	
1"	15%	19%	8 3/4	4	4 3/4	7	11	7 7/16	3 3/8	15	17.5	
1 1/4" M1	18%	23 3/16	11%	5 1/2	6 1/2	7 1/2	12 1/16	10%	5 1/4	40	42.8	
1 1/2" M1	19	24%	11%	5 1/2	6 1/2	7 1/2	12%	10%	5 1/4	40	44.0	
2" M1	19 1/2	25 3/16	11%	5 1/2	6 1/2	7 3/4	13 1/16	10%	5 1/4	40	47.4	
*U909QT Dimensions - with integral body unions (Prefix "U")												
3/4"	14%	19 1/16	8 3/4	4	4 3/4	6 3/4	10 1/16	7 7/16	3 3/8	14	15.6	
1"	15%	20 3/16	8 3/4	4	4 3/4	7	11	7 7/16	3 3/8	15	17.5	
*FAE909QT - Dimensions with flanged adapter ends (Prefix "FAE")												
1 1/4"	19	24 1/2	11%	5 1/2	6 1/2	7 1/2	12 1/16	10%	5 1/4	40	42.8	
1 1/2"	19 1/2	26%	11%	5 1/2	6 1/2	7 1/2	12%	10%	5 1/4	40	44.0	
2"	21	28%	11%	5 1/2	6 1/2	7 3/4	13 1/16	10%	5 1/4	40	47.4	

Subscript 'S' = strainer model

Suffix HC - Fire Hydrant Fittings dimension "A" = 23 3/4"



Materials

Body: bronze

Check Seats: 909 Celcon[®]

Relief Valve Seats: Stainless steel 909HW

Test Cocks: bronze

Celcon is a registered trademark of Cefanese, Limited

Connections

3/4", 1" 909-NPT Female threaded body connection.

1 1/4" -2" 909-M1-NPT Male threaded body connection.

Standards

ASSE 1013, AWWA C-511-92

CSA B64.4, FCCCHR of USC Manual Section 10

IAPMO (UPC), SBCCI (Standard Plumbing code)

Approvals

ASSE, AWWA, CSA.

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 3/4" and 1" sizes (models 909QT, 909PCQT, and U909QT).

MODEL 909

Pressure - Temperature

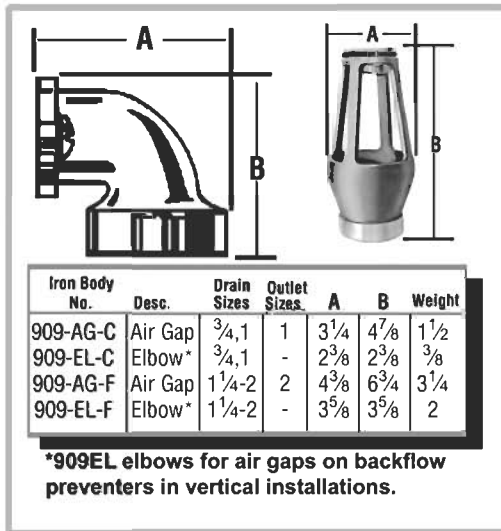
Temperature Range: 33°F-140°F continuous, 180°F intermittent

Maximum Working Pressure: 175psi

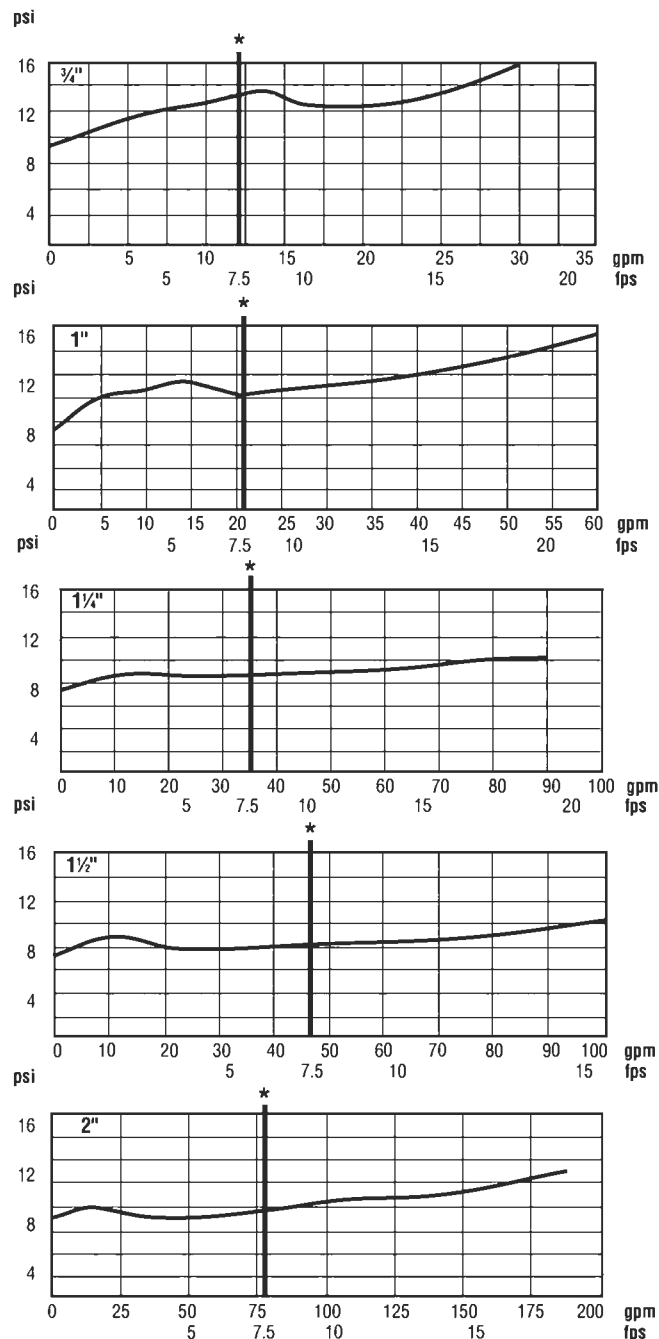
Series 909HW:

Temperature Range: 33°F-210°F

Maximum Working Pressure: 175psi

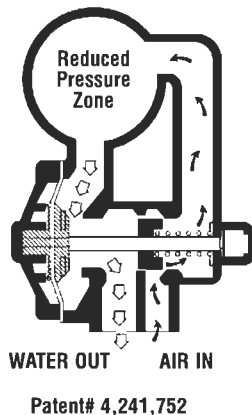


Flow Curves



How it Operates

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



American Backflow Specialties

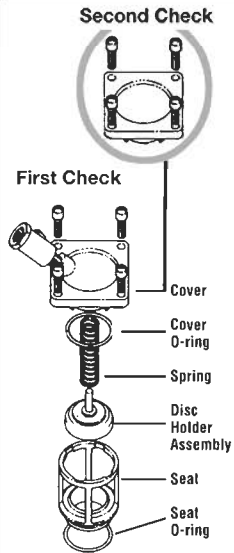
www.americanbackflow.com

(800) 66-BKFLO

(619) 527-2525

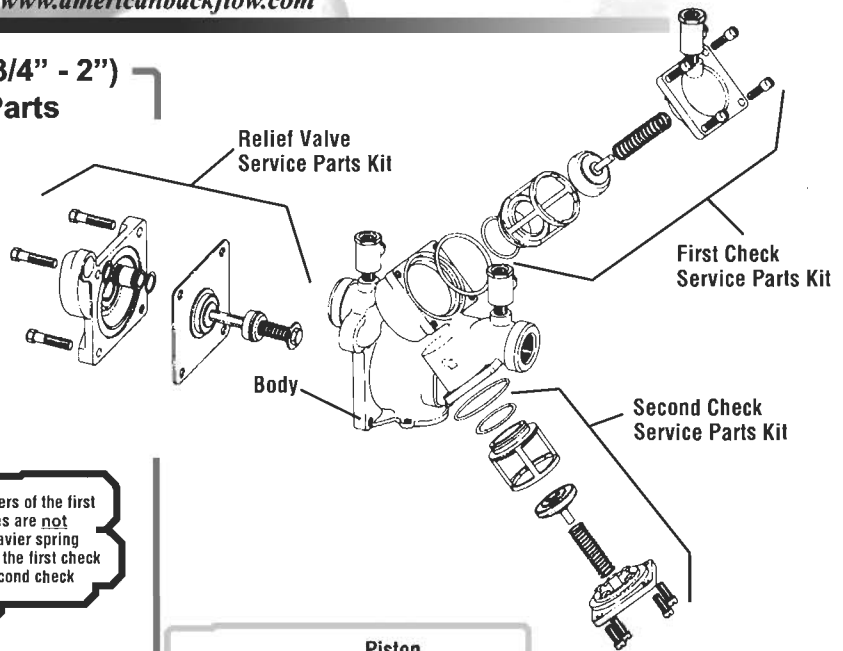
Fax: (619) 527-2527

Series 909 (3/4" - 2") Repair Parts



Note:
No special tools
required to service
Series 909

Note: The springs and covers of the first and second check valves are **not** interchangeable. The heavier spring loaded module should be in the first check and the lighter in the second check module.



First Check Kits

Order No.	Kit No.	Sizes
0887120	RK 909 CK1	3/4" - 1"
0887133	RK 909 CK1	1 1/4" - 2"
0887122	RK 909 CK1SS*	3/4" - 1"
0887135	RK 909 CK1SS*	1 1/4" - 2"

Kit includes: Disc assembly, Spring, Seat, Seat o-ring, Cover o-ring and lubricant. *Stainless Steel Seat.

Second Check Kits

0887121	RK 909 CK2	3/4" - 1"
0887134	RK 909 CK2	1 1/4" - 2"
0887123	RK 909 CK2SS*	3/4" - 1"
0887136	RK 909 CK2SS*	1 1/4" - 2"

Kit includes: Disc assembly, Spring, Seat, Seat o-ring, Cover o-ring and lubricant. *Stainless Steel Seat.

Rubber Parts for Both Checks

0887129	RK 909 RC3	3/4" - 1"
0887142	RK 909 RC3	1 1/4" - 2"
0887310	RK 909 RC3 HW	3/4" - 1"
0887311	RK 909 RC3 HW	1 1/4" - 2"

Kit includes: Check discs, Seat o-rings, Cover o-rings and lubricant. HW model has bronze disc. †Note: 1 1/4" - 2" 909/909M1 share a common kit.

Complete Rubber Parts

Order No.	Kit No.	Size
0887130	RK 909 RT	3/4" - 1"
0887144	RK 909 RT	1 1/4" - 2"

Kit includes: Check discs, Seat o-rings, RV diaphragm, RV o-rings, Piston o-rings, Cover o-rings and lubricant.

Seat Kits for One Check

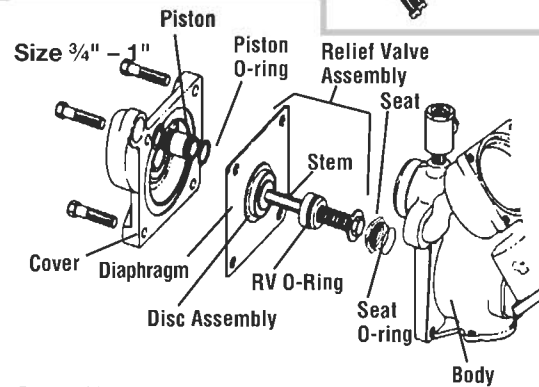
0887124	RK 909 S	3/4" - 1"
0887139	RK 909 S	1 1/4" - 2"
0887125	RK 909 S-SS*	3/4" - 1"
0887140	RK 909 S-SS*	1 1/4" - 2"

Kit includes: Seat, Seat o-ring and lubricant. *Stainless Steel Seat.

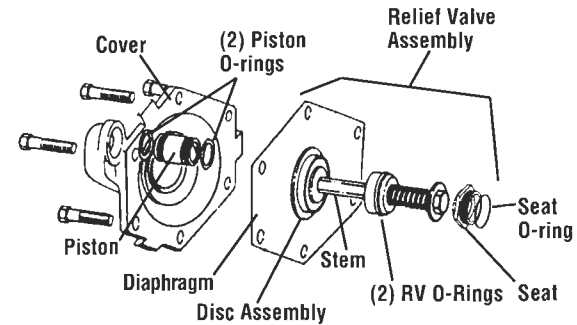
Cover Kits

0887127	RK 909 C1	3/4" - 1"
0887128	RK 909 C2	3/4" - 1"
0887132	RK 909 VC	3/4" - 1"
0887137	RK 909 C4	1 1/4" - 2"
0887143	RK 909 VC	1 1/4" - 2"

Kit includes: Cover, Cover o-ring and lubricant.



Size 1 1/4" - 2"



Relief Valve Kits

Order Code No.	Kit No.	Size
0887126	RK 909 VT	3/4" - 1"
0887138	RK 909 VT	1 1/4" - 2"

Kit includes: Relief valve assembly, Seat, Seat o-ring, Cover o-ring and lubricant.

Rubber Parts for Relief Valve

0887131	RK 909 RV	3/4" - 1"
0887141	RK 909 RV	1 1/4" - 2"

Kit includes: Diaphragm, Disc assembly, Seat o-ring, RV o-ring, Piston o-rings, Cover o-ring and lubricant.

Seat Kits for Relief Valve

0887372	RK 909 SV	3/4" - 1"
0887371	RK 909 SV	1 1/4" - 2"

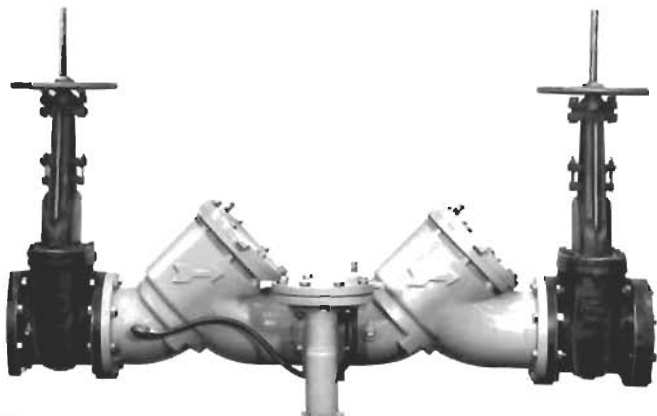
Kit includes: Seat, Seat o-ring, Piston o-ring and lubricant. †Note: 1 1/4" - 2" 909/909M1 share a common kit.



Series 909

Reduced Pressure Zone Assemblies

Sizes: 2½" – 10"



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

Description

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. With its exclusive patented relief valve design incorporating the "air-in/water-out" principle, it provides substantially improved relief valve discharge performance during the emergency conditions of combined backsiphonage and backpressure with both checks fouled.

Specifications

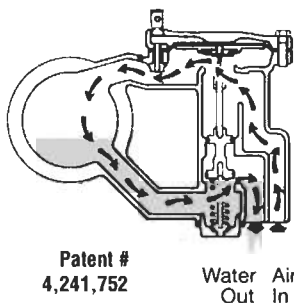
A Reduced Pressure Zone Assembly shall be installed at each cross-connection to prevent backsiphonage and backpressure backflow of hazardous materials into the potable water supply. The assembly shall consist of a pressure differential relief valve located in a zone between two positive seating check valves and captured springs. Backsiphonage protection shall include provision to admit air directly into the reduced pressure zone via a separate channel from the water discharge channel.

Materials

- Body: FDA epoxy coated cast iron
- Seals: bronze
- Trim: stainless steel
- Relief Valve: 2½"-3" bronze
- 4"-10" FDA epoxy coated cast iron
- Test Cocks: bronze body

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 develops, the relief valve uses the air-in/water-out principle to stop potential backflow.

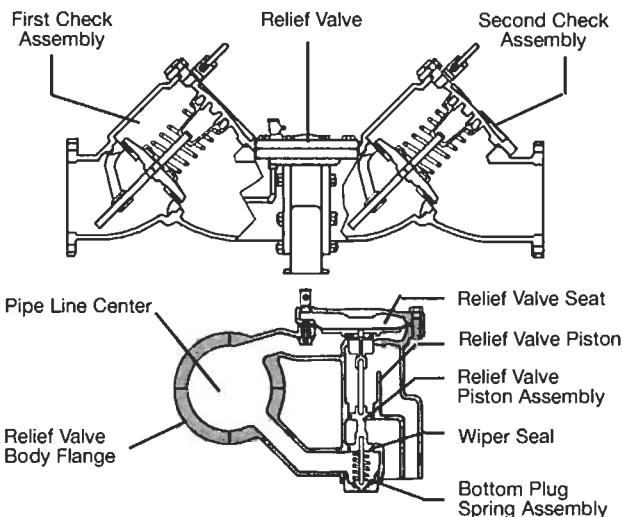


Models

Suffix:

- BB – bronze body (2½", 3" only)
- 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

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



Pressure — Temperature

Temperature Range: 33°F-110°F continuous,
140°F intermittent
Maximum Working Pressure: 175psi

Standards

- ASSE No. 1013, AWWA C511-92, CSA B64.5
- UL Classified File No. EX3185
- IAPMO PS 31, SBCCI (Standard Plumbing Code)
- USC manual for Cross-Connection Control

Approvals

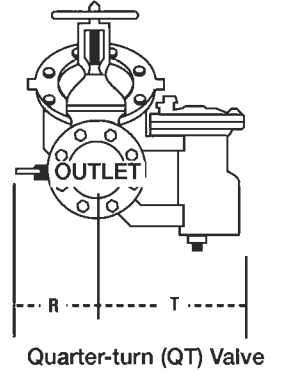
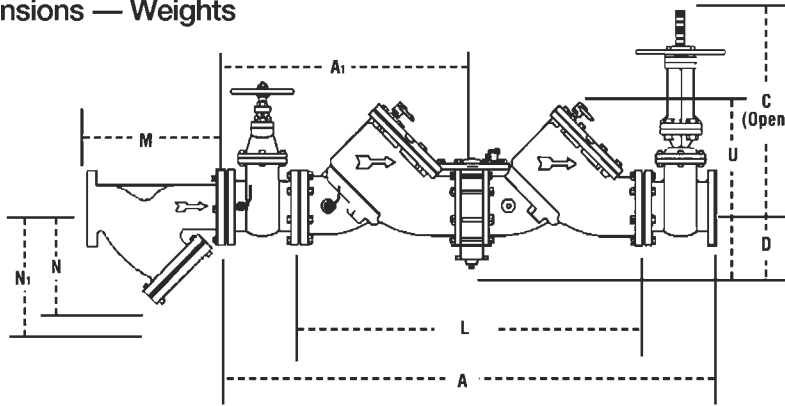
- ASSE, AWWA, CSA, IAPMO
- UL Classified
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.

American Backflow Specialties

(800) 66-BKFLO - (619) 527-2525 Fax: (619) 527-2527
www.americanbackflow.com

Dimensions — Weights

MODEL 909



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

SIZE (DN)	DIMENSIONS													WEIGHT			
	A	A1	C (OSY)* (NRS)		D	L	U	R	R (QT)	T	NRS	OSY	QT	M	N1†	N	WT
2½	41¼	20¾	16¾	9¾	5¼	26¾	11	4	16	9¼	195	198	182	10	10	6½	28
3	42¼	21¼	18¾	10¼	5¼	26¾	11	5	16	9¼	225	230	190	10	10	7	34
4	55½	27¾	22¾	12¾	6	37	14	6	19¾	14¾	455	470	352	12	12	8¼	60
6	65½	32¾	30¾	16	6	44½	16	11	26	14¾	718	798	762	15½	15½	10	247
8	78½	39¾	37¾	19½	9¼	55¼	21	11¼	31	19¼	1350	1456	2286	18½	18½	12	370
10	93¾	46¾	45¾	23½	9¼	67¾	21	12½	31	21	2160	2230	3716	20	20	14	500

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

Strainer

SIZE (DN)	DIMENSIONS			WT
	M	N1†	N	
2½	10	10	6½	28
3	10½	10	7	34
4	12½	12	8¼	60
6	18½	20	13½	133
8	21½	22¾	15½	247
10	26	28	18½	370

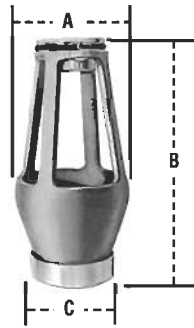
† - Dimension required for screen removal

Air Gap Dimensions

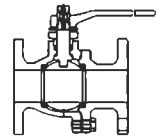
When installing a drain line on Series 909 backflow preventers that are installed horizontally, use 909 AG series air gaps.

Iron Body Model No.	Ordering Code	Series/Sizes	DIMENSIONS			WEIGHT
			A	B	C	lbs
909AG-F	0881378	1¼" - 3" 009/909 1¼" - 2" 009 M1 2" 009 M2	4¾	6¾	2	3.25
909AG-K	0881385	4" - 6" 909 8" - 10" 909 M1	6¾	9¾	3	6.25
909AG-M	0881387	8" - 10" 909	7¾	11¼	4	15.50

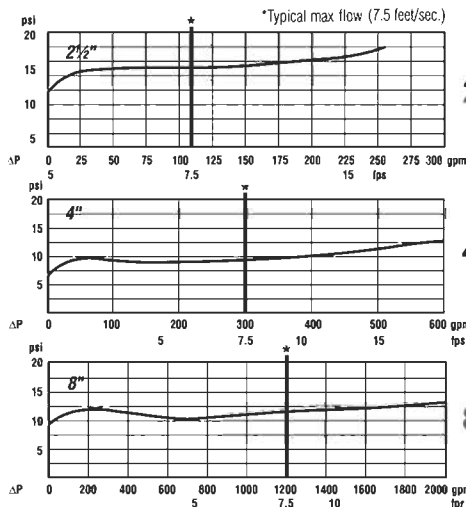
For flange size backflow preventers installed vertically (flow down), a fabricated air gap is recommended.



Watts G-4000 Series Ball Valves
Send for F-G4000



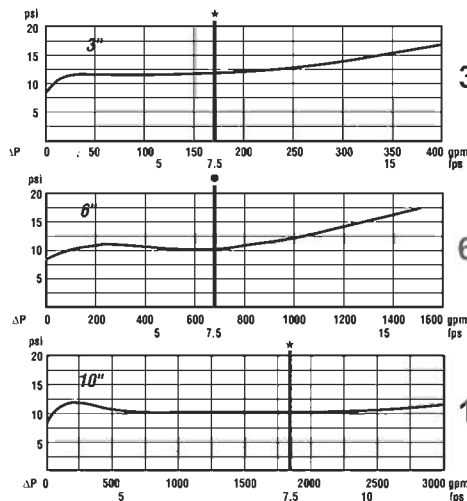
Flow Curves



2-1/2"

4"

8"



3"

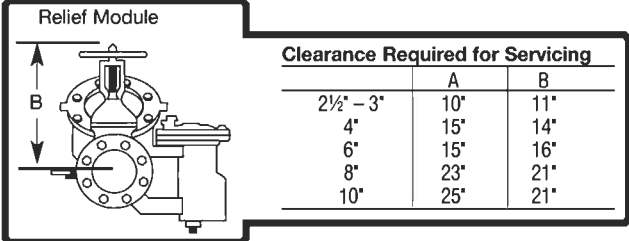
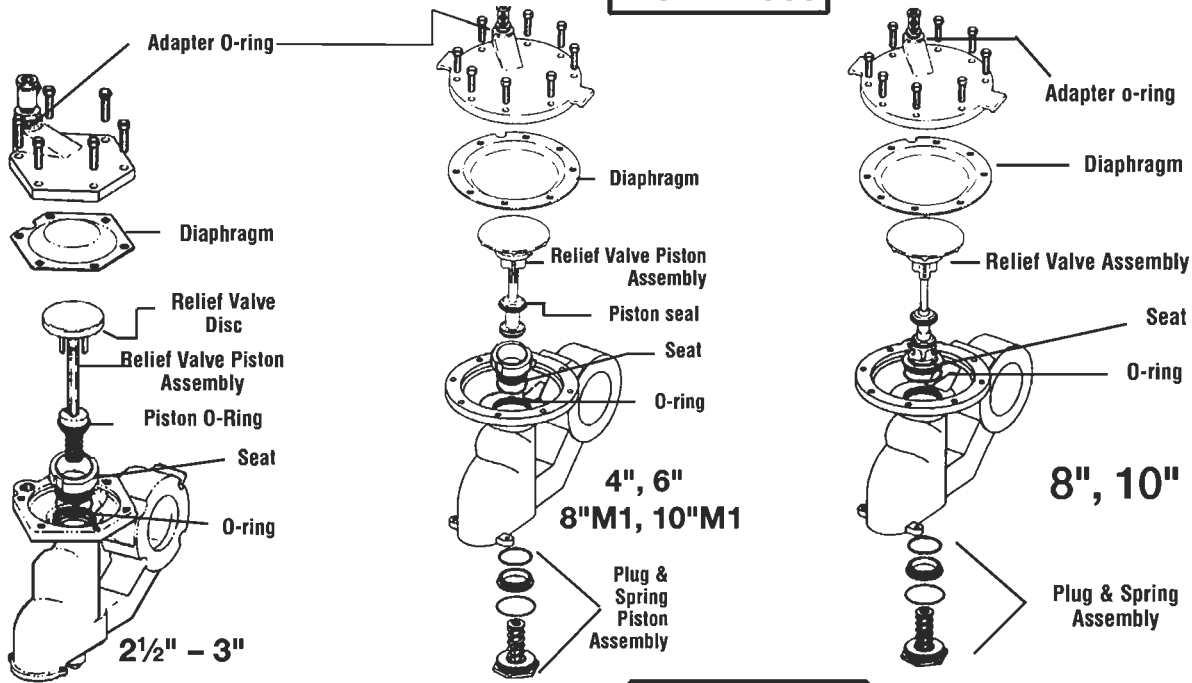
6"

10"

14
Watts
Rainbird

REPAIR PARTS

MODEL 909



CHECK KITS

(1st & 2nd checks not interchangeable)

ORDERING CODE	KIT NO.	SIZE
First Check Kits:		
0887210	RK 909 CK1	2 1/2" - 3"
0887212	RK 909 CK1	4"
0887213	RK 909 CK1	6"
0887214	RK 909 CK1	8"
0887215	RK 909 CK1	10"

ORDERING CODE	KIT NO.	SIZE
Second Check Kits:		
0887211	RK 909 CK2	2 1/2" - 3"
0887216	RK 909 CK2	4"
0887217	RK 909 CK2	6"
0887218	RK 909 CK2	8"
0887219	RK 909 CK2	10"

Kits include: Disc & Spring assembly, Cover O-ring and lubricant.

ORDERING CODE	KIT NO.	SIZE
First Check Rubber Parts Kits:		
0887220	RK 909 RC1	2 1/2" - 3"
0887221	RK 909 RC1	4"
0887223	RK 909 RC1	6"
0887224	RK 909 RC1	8"
0887225	RK 909 RC1	10"

ORDERING CODE	KIT NO.	SIZE
Second Check Rubber Parts Kits:		
0887226	RK 909 RC2	2 1/2" - 3"
0887227	RK 909 RC2	4"
0887228	RK 909 RC2	6"
0887229	RK 909 RC2	8"
0887230	RK 909 RC2	10"

Kits include: Lower Stem O-ring (6" only), Check disc, Cover O-ring, and lubricant.

ORDERING CODE	KIT NO.	SIZE
Seat Kits for Checks:		
0887730	RK 909 S	2 1/2" - 3"
0887731	RK 909 S	4"
0887732	RK 909 S	6"
0887733	RK 909 S	8"
0887734	RK 909 S	10"

Kits include: Seat, Seat O-ring, Cover O-ring, Retainer wire and lubricant.

ORDERING CODE	KIT NO.	SIZE
Total Rubber Parts Kits:		
0887750	RK 909 RT	2 1/2" - 3"
0887751	RK 909 RT	4"
0887752	RK 909 RT	6"
0887753	RK 909 RT	8"
0887754	RK 909 RT	10"
0887761	RK 909M1 RT	8"
0887762	RK 909M1 RT	10"

Kits include: Lower Stem O-ring (6" only), Check disc, Cover O-ring, Sleeve O-ring, Piston O-ring, RV disc assembly, Diaphragm, Piston seal and Lubricant.
When ordering specify EDP number, Kit Number and Valve Size.

RELIEF KITS

ORDERING CODE	KIT NO.	SIZE
Relief Valve Rubber Parts		
0887231	RK 909 RV	2 1/2" - 3"
0887232	RK 909 RV	4" - 6"
0887233	RK 909 RV	8" - 10"
0887234	*RK 909M1 RV	4" - 10"

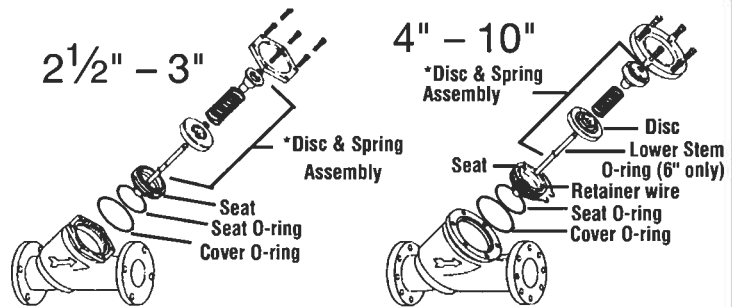
Kits include: Sleeve o-ring, Seat o-ring, Piston o-ring, Stem o-ring, RV disc assembly, Diaphragm, Piston seal, Bottom plug o-ring and lubricant

ORDERING CODE	KIT NO.	SIZE
Relief Valve Total		
0887235	RK 909 VT	2 1/2" - 3"
0887236	RK 909 VT	4" - 6"
0887237	RK 909 VT	8" - 10"
0887238	*RK 909M1 VT	4" - 10"

Kits include: Adapter o-ring, Diaphragm, Disc & piston assembly, Seat, Seat o-ring and lubricant. (4" - 10" M1 includes bottom plug & spring assembly.)

ORDERING CODE	KIT NO.	SIZE
Cover Kits		
0887740	RK 909 C	2 1/2" - 3"
0887741	RK 909 C	4"
0887742	RK 909 C	6"
0887743	RK 909 C	8"
0887744	RK 909 C	10"

Kits include: Cover, Cover o-ring and lubricant.

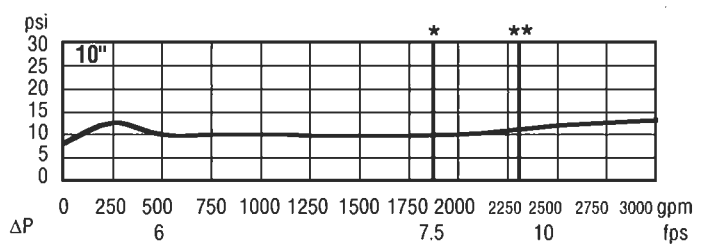
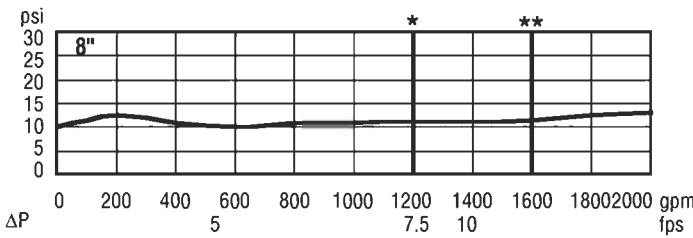
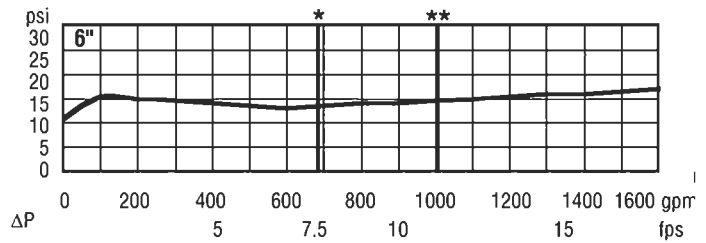
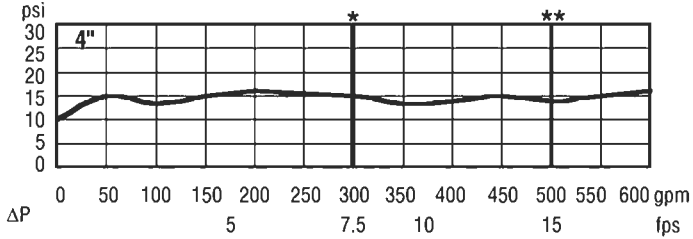
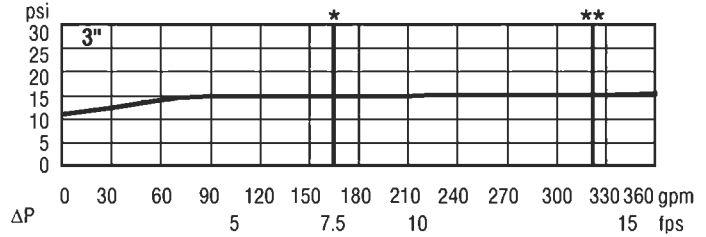
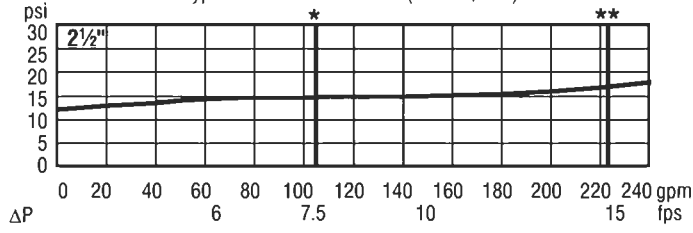


*Warning: Spring assembly is factory assembled. DO NOT DISASSEMBLE

Flow Curves

MODEL 909

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



**Exploded views and parts similar to Series 909.
For diagrams, see Series 909 Product Pages.**

Repair Kits & Individual Parts

ORDERING CODE	KIT NO.	SIZE
First Check Kits:		
0887239	RK 909RPDA CK1	2½" - 3"
0887240	RK 909RPDA CK1	4"
0887241	RK 909RPDA CK1	6"
0887242	RK 909RPDA CK1	8"
0887243	RK 909RPDA CK1	10"
Second Check Kits:		
0887244	RK 909RPDA CK2	2½" - 3"
0887245	RK 909RPDA CK2	4"
0887246	RK 909RPDA CK2	6"
0887247	RK 909RPDA CK2	8"
0887248	RK 909RPDA CK2	10"
Kits include: Disc & Spring assembly, Cover O-ring and lubricant.		
First Check Rubber Parts Kits:		
0887249	RK 909RPDA RC1	2½" - 3"
0887250	RK 909RPDA RC1	4"
0887251	RK 909RPDA RC1	6"
0887252	RK 909RPDA RC1	8"
0887253	RK 909RPDA RC1	10"
Second Check Rubber Parts Kits:		
0887254	RK 909RPDA RC2	2½" - 3"
0887255	RK 909RPDA RC2	4"
0887256	RK 909RPDA RC2	6"
0887257	RK 909RPDA RC2	8"
0887258	RK 909RPDA RC2	10"
Kits include: Lower Stem O-ring (6" only), Check disc, Cover O-ring, and lubricant.		
Seat Kits for Checks:		
0887735	RK 909RPDA S	2½" - 3"
0887736	RK 909RPDA S	4"
0887737	RK 909RPDA S	6"
0887738	RK 909RPDA S	8"
0887739	RK 909RPDA S	10"
Kits include: Seat, Seat O-ring, Cover O-ring, Retainer wire and lubricant.		

ORDERING CODE	KIT NO.	SIZE
Total Rubber Parts Kits:		
0887756	RK 909RPDA RT	2½" - 3"
0887757	RK 909RPDA RT	4"
0887758	RK 909RPDA RT	6"
0887759	RK 909RPDA RT	8"
0887760	RK 909RPDA RT	10"
0887764	RK 909RPDAM1 RT	8"
0887765	RK 909RPDAM1 RT	10"
Kits include: Lower Stem O-ring (6" only), Check disc, Cover O-ring, Sleeve O-ring, Piston O-ring, RV disc assembly, Diaphragm, Piston seal and Lubricant.		
Relief Valve Rubber Parts		
0887263	RK 909RPDA RV	2½" - 3"
0887264	RK 909RPDA RV	4" - 6"
0887265	RK 909RPDA RV	8" - 10"
0887266	*RK 909RPDAM1 RV	4" - 10"
Kits include: Sleeve o-ring, Seat o-ring, Piston o-ring, Stem o-ring, RV disc assembly, Diaphragm, Piston seal, Bottom plug o-ring and lubricant		
Relief Valve Total		
0887259	RK 909RPDA VT	2½" - 3"
0887260	RK 909RPDA VT	4" - 6"
0887261	RK 909RPDA VT	8" - 10"
0887262	*RK 909RPDAM1 VT	4" - 10"
Kits include: Adapter o-ring, Diaphragm, Disc & piston assembly, Seat, Seat o-ring and lubricant. (4" - 10"M1 includes bottom plug & spring assembly.)		
Cover Kits		
0887745	RK 909RPDA C	2½" - 3"
0887746	RK 909RPDA C	4"
0887747	RK 909RPDA C	6"
0887748	RK 909RPDA C	8"
0887749	RK 909RPDA C	10"
Kits include: Cover, Cover o-ring and lubricant.		
*M1 = Cast iron relief valve.		