Model 350, 350A (R), 350ADA (R) & 350DA

Double Check Valve Assembly (**8", 10" & 12"**) and
Double Check Valve Detector Assembly (**8", 10" & 12"**)

LEAD-FREE*

ZURN WILKINS

(Patent No. 8,997,772)

*This product contains a weighted average lead content less than 0.25% for wetted surfaces.

❑ Installation ❑ Testing ❑ Maintenance Instructions

INSTALLATION INSTRUCTIONS

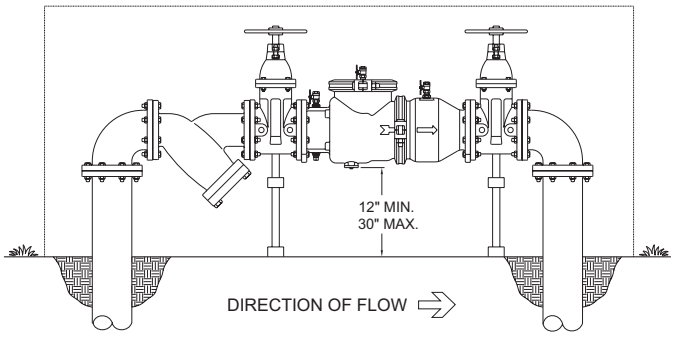
CAUTION: Installation of Backflow Preventers must be performed by qualified, licensed personnel. The installer should be sure the proper device has been selected for the particular installation. Faulty installation could result in an improperly functioning device.

ZURN WILKINS Model 350 Double Check Valve assemblies are for use on potable water lines where a health hazard does not exist in the event of a backflow situation.

Damage to the device could result wherever water hammer and/or water thermal expansion could create excessive line pressure. Where this could occur, shock arrestors, check valves and/or pressure relief valves should be installed downstream of the device.

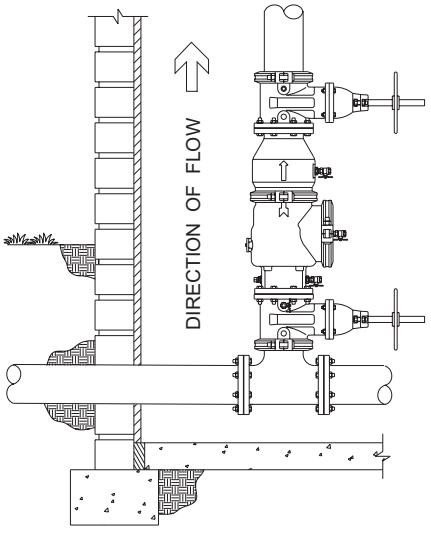
If installation is in a pit or vault, the Backflow Preventer must never be submerged in water because this could cause a cross-connection. Make sure that the pit or vault always remains dry by providing ample drainage.

1. Before installing a Model 350 Backflow Preventer, flush the line thoroughly to remove all debris, chips and other foreign matter. If required, a strainer should be placed upstream of the Backflow Preventer. CAUTION: Do not use a strainer in seldom used emergency waterlines such as fire lines.
2. Provide adequate space around the installed unit so that the test cocks will be accessible for testing and servicing.
3. Install valve at least 12 inches above surrounding flood level.
4. Always consult local codes for installation methods, approvals and guidance.
5. Resilient seated shutoff valves are required to be installed on both the inlet and outlet of the device to make field testing possible.



PLACING THE DEVICE IN SERVICE

1. Start with both shut-off valves closed. Slowly open the inlet shut-off valve until the backflow preventer is completely pressurized.
2. When the unit has been pressurized, vent any trapped air by slightly opening each of the four test cocks.
3. Slowly open the downstream shut-off valve. The Model 350 Double Check Valve assembly is now in service.
4. After the Model 350 has been properly installed, test the device (see "TEST PROCEDURES"). If the device fails the test, remove the first and second check valves and thoroughly flush the device. Clean rubber and seats of all debris and place unit back in service.



OUTDOOR INSTALLATION

The Model 350 Backflow Preventer may be installed outdoors only if the device is protected against freezing conditions. Exposure to freezing conditions will result in improper function or damage to the device. The installation location must be kept above 32°F. All the basic installation instructions apply.

INDOOR INSTALLATION

Indoor installation is preferred in areas that are subject to freezing conditions. All the basic installation instructions apply to such installations.

VERTICAL INSTALLATION

Vertical installation is acceptable in applications where inlet and outlet piping are flowing vertically upwards. All the basic installation instructions apply to such installations. Consult factory for approval status.

⚠ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov
⚠ **ADVERTENCIA:** Cáncer y daño reproductivo - www.P65Warnings.ca.gov
⚠ **AVERTISSEMENT:** Cancer et néfastes sur la reproduction - www.P65Warnings.ca.gov

Testing Procedures

MODEL 350 DOUBLE CHECK VALVE ASSEMBLY

Equipment Required: Differential pressure gauge test kit.

TEST NO. 1 - TIGHTNESS OF #1 CHECK VALVE

REQUIREMENT:

The static pressure drop across check valve #1 shall be at least 1.0 psid. If test cock #3 is not at the highest point of the check valve body, then a vertical tube must be installed on test cock #3 so that it rises to the top of the check valve body.

PROCEDURE:

1. Slowly open all 4 test cocks to remove any foreign material and attach fittings.
2. Attach hose from the high side of the test kit to the #2 test cock.
3. Open test cock #2 and bleed all air from the hose and gauge by opening the high side bleed needle valve. Close high side bleed needle valve. If a tube is attached to test cock #3, open test cock #3 to fill the tube. Close test cock #3. Close #2 shut-off valve then close the #1 shut-off valve.
4. Hold gauge at same level as test cock #3 or water level in tube. Slowly open test cock #3. Record the static pressure drop across check valve #1 after gauge reading stabilizes and water stops running out of test cock #3.
5. Close all test cocks, open shut-off valve #1 and remove test equipment.

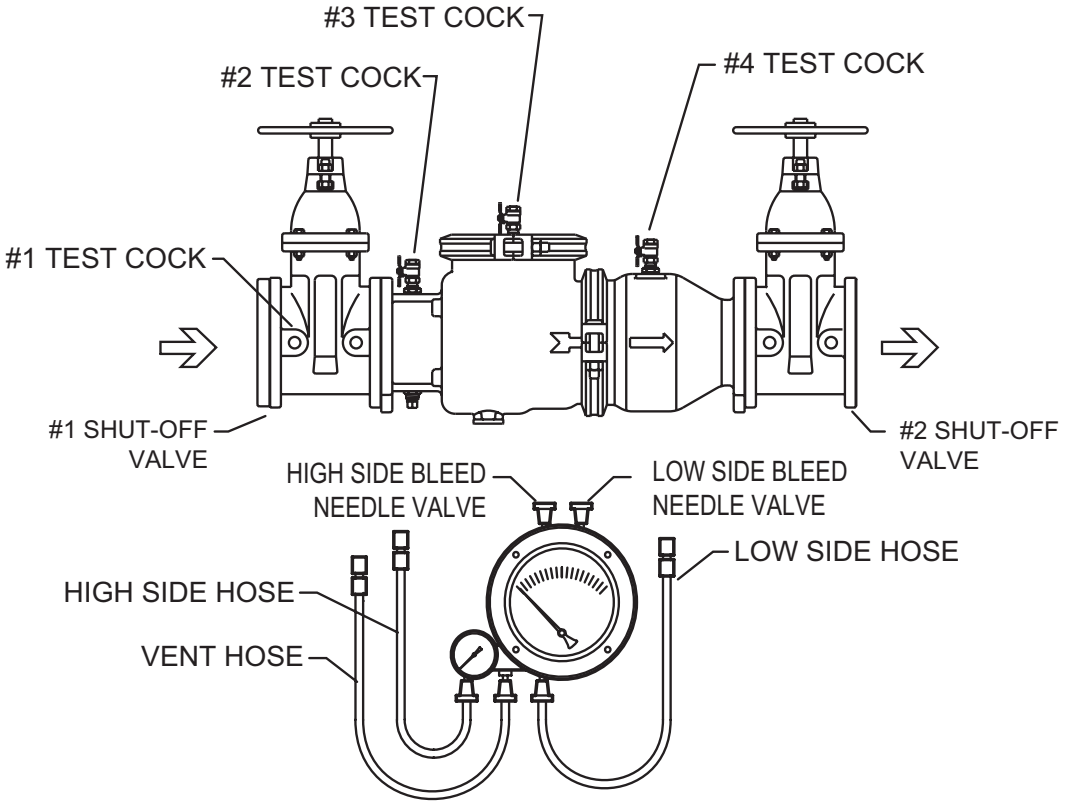
TEST NO. 2 - TIGHTNESS OF #2 CHECK VALVE

REQUIREMENT:

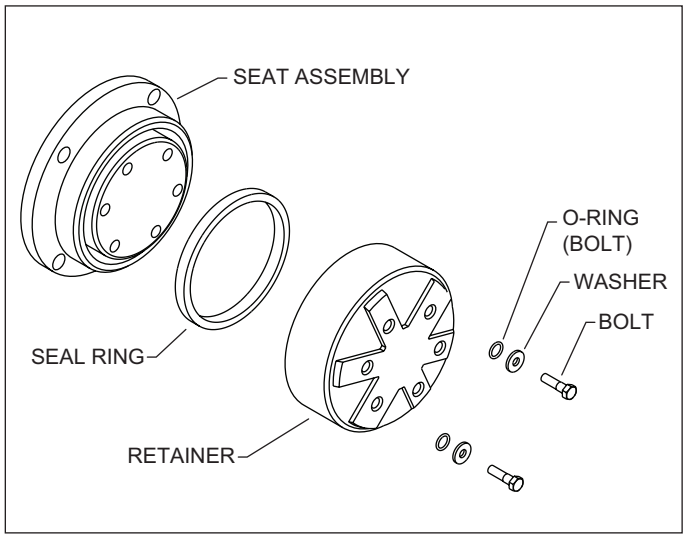
The static pressure drop across check valve #2 shall be at least 1.0 psid. If test cock #4 is not at the highest point of the check valve body, then a vertical tube must be installed on test cock #4 so that it rises to the top of the check valve body.

PROCEDURE:

1. Attach hose from the high side of the test kit to the #3 test cock.
2. Open test cock #3 and bleed all air from the hose and gauge by opening the high side bleed needle valve. Close high side bleed needle valve. If a tube is attached to test cock #4, open test cock #4 to fill the tube. Close test cock #4. Close #1 shut-off valve.
3. Hold gauge at same level as test cock #4 or water level in tube. Slowly open test cock #4. Record the static pressure drop across check valve #2 after gauge reading stabilizes and water stops running out of test cock #4.
4. Close all test cocks, slowly open shut-off valve #1 & #2 and remove test equipment.



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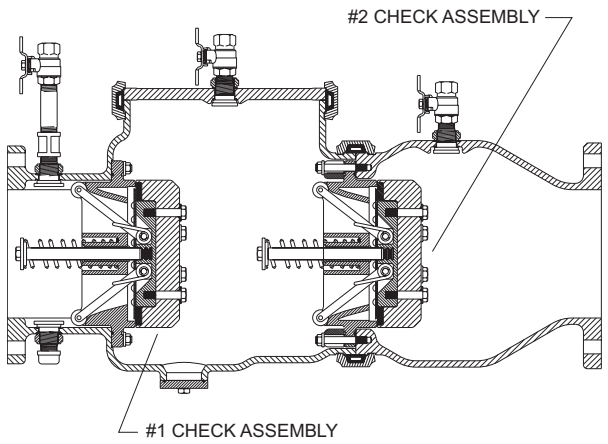


CHECK ASSEMBLY

All Model 350 Double Check Valve Backflow Preventers must be inspected and maintained by licensed personnel at least once a year or more frequently as specified by local codes. Replacement of worn or damaged parts must only be made with genuine "ZURN WILKINS" parts.

GENERAL MAINTENANCE

1. Clean all parts thoroughly with water after disassembly.
2. Carefully inspect rubber seal rings and o-rings for damage.
3. Test unit after reassembly for proper operation (refer to "TESTING PROCEDURES").



SERVICING CHECK VALVES

A ratchet wrench, 11/16" deep socket, and a 4" long extension are recommended for removing check assemblies.

1. Close inlet and outlet shut-off valves.
2. Open No. 2, No. 3 and No. 4 test cocks to release pressure from valve.
3. Loosen & remove the grooved coupling around the access cover. Remove cover.
4. To service only the #1 check assembly, remove the 6 bolts, washers and o-rings from the back of the #1 check assembly. Separate the retainer and the seal ring from the check assembly and proceed to step #8.
5. To service both checks or the #2 check, the #1 check assembly must first be removed. Remove the 4 nuts and washers retaining the #1 check assembly. Remove the #1 check assembly from the body.
6. To remove the #2 check assembly, remove the 7 nuts, washers and the #2 check retaining ring. Grasp the check assembly by the stem and remove from valve.
7. Remove all 6 bolts, washers and o-rings from the check assembly (See "Check Assembly" illustration). Separate retainer from check assembly to expose seal ring for inspection.
8. Inspect the rubber seal ring for cuts or embedded debris. If the reverse side of the seal ring is unused, it is possible to invert the seal ring. This would be considered a temporary solution to fixing a fouled check and should be replaced with a new seal ring as soon as possible.
9. Inspect valve cavity and seating areas. Remove any debris.
10. Reverse the above procedures to reinstall check assemblies. Lubricate seat o-rings to hold them in place while reinstalling seat. Place washers on studs and tighten retaining nuts evenly.
11. Reinstall access cover and grooved coupling.

NOTE: If any portion of the seat assembly is damaged or missing or if the seat sealing rib is damaged in any way, do not attempt to field repair it. Contact your local ZURN WILKINS representative for assistance.

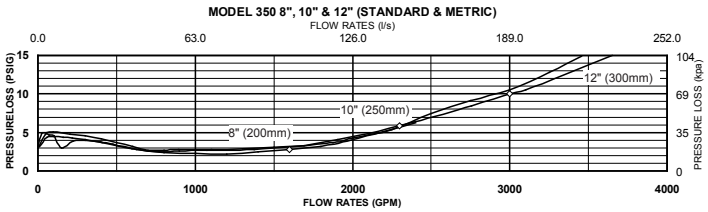
Troubleshooting

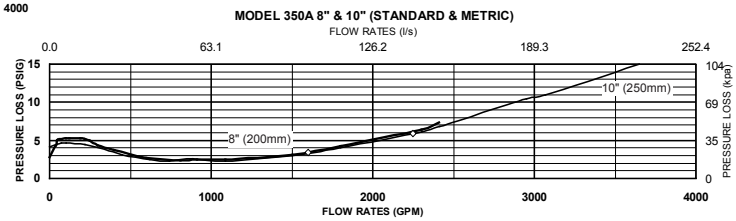
PROBLEM	POSSIBLE CAUSES	CORRECTIVE ACTION
1. LEAKING CHECK VALVES	1. Debris on seat or seal ring.	1. Clean seat area
	2. Damaged seat area	2. Replace check assembly
	3. Damaged seat o-ring	3. Replace seat o-ring
	4. Damaged bolt o-ring(s) on check retainer	4. Replace o-ring(s)
2. LOW OR NO FLOW	1. Device installed backwards	1. Verify flow direction arrow
	2. Gate valves not fully open	2. Turn handles counterclockwise
	3. Low supply pressure	3. Attach pressure gauge to test cock #1 and verify pressure

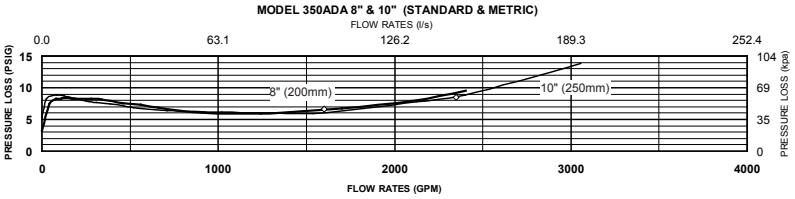
Repair Kits

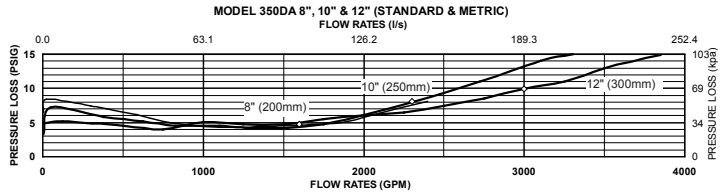
SIZE	MODEL 350 CHECKS ONLY
8"	RK8-350
10"	RK8-350

Performance Characteristics









◇ Rated Flow (Established by approval agencies)

Capacity thru Schedule 40 Pipe				
Pipe size	5 ft/sec	7.5 ft/sec	10 ft/sec	15 ft/sec
2 1/2"	75	112	149	224
3"	115	173	230	346
4"	198	298	397	595
6"	450	675	900	1351
8"	780	1169	1559	2339
10"	1229	1843	2458	3687
12"	1763	2644	3525	5288

SPECIFICATIONS
Maximum working water pressure: 175 PSI
Maximum working water temperature: 140°F
Hydrostatic test pressure: 350 PSI
End connections: Flanged ANSI B16.1 Class 125

Proper performance is dependent upon licensed, qualified personnel performing regular, periodic testing according to ZURN WILKINS' specifications and prevailing governmental & industry standards and codes and upon following these installation instructions. Failure to do so releases ZURN WILKINS of any liability that it might otherwise have with respect to that device. Such failure could also result in an improperly functioning device.

MODEL 350DA

Double Check Detector Assembly – Backflow Preventers 4" to 12"

Repair Kit Components		4"								4" and 6"	6"								8"	8" and 10"		8" - 12"				10"	12"		
Size Range		RK4-350	RK4-350DA	RK4-350CK1	RK4-350CK2	RK4-350-SEAT2-ASSY	BRK4-LBF-SEAT1RTNR	BRK4-LBF-SEAT2RTNR	4-BK	RK212-350-COVERPLATE	RK6-350	RK6-350DA	RK6-350CK1	RK6-350CK2	RK6-350-SEAT2-ASSY	BRK6-LBF-SEAT1RTNR	BRK6-LBF-SEAT2RTNR	6-BK	8-BK	RK8-350CK1	RK8-350DACK2	RK8-350	RK8-350DA	RK8-350-SEAT1-ASSY	RK8-350-COVERPLATE	10-BK	12-BK	RK12IN-350DACK1	RK12IN-350DACK2
4"		•	•	•	•	•	•	•	•	•																			
6"										•	•	•	•	•	•	•	•	•											
8"																			•	•	•	•	•	•	•				
10"																				•	•	•	•	•	•	•			
12"																						•	•	•	•	•	•	•	•
Item #	Item Description																												
1	Bolt, Flange								•(x16)									•(x16)	•(x16)							•(x24)	•(x24)		
2	Nut, Flange								•(x16)									•(x16)	•(x16)							•(x24)	•(x24)		
3	Gasket, Flange								•(x2)									•(x2)	•(x2)							•(x2)	•(x2)		
4	O-Ring, Cover Plate									•															•				
5	Cover Plate									•															•				
6	Bolt, Cover Plate									•(x2)															•(x2)				
7	Seat Retainer #1			•			•(x6)						•			•(x6)				•(x4)	•(x7)						•(x4)	•(x7)
8	Seat Retainer #2				•			•(x12)						•(x2)			•(x12)												
9	O-Ring, Check	•(x2)	•(x2)	•	•						•(x2)	•(x2)	•	•								•(x2)	•(x2)						
10	Bolt, Poppet Retainer			•(x4)	•(x4)								•(x4)	•(x4)						•(x6)	•(x6)							•(x6)	•(x6)
11	Handle, #1 Poppet Assembly			•									•																
12	Washer, Poppet Bolt			•(x4)	•(x4)								•(x4)	•(x4)						•(x6)	•(x6)							•(x6)	•(x6)
13	O-Ring, Poppet Bolt	•(x8)	•(x8)	•(x4)	•(x4)						•(x8)	•(x8)	•(x4)	•(x4)						•(x6)	•(x6)	•(x12)	•(x12)					•(x6)	•(x6)
14	Poppet Retainer			•	•								•	•						•	•							•	•
15	Seal Ring	•(x2)	•(x2)	•	•						•(x2)	•(x2)	•	•						•	•	•(x2)	•(x2)					•	•
16	Seat Assembly, #1 Poppet			•									•							•				•				•	
17	Seat Assembly, #2 Poppet				•	•								•	•						•									•
18	Washer, Seat Retainer																			•(x4)	•(x7)							•(x4)	•(x7)
	Bypass Rubber Repair Kit		•									•											•						

Whole Goods (Available for individual sale)						
Item #	Item Description	4"	6"	8"	10"	12"
19	Gate Valve, OS&Y (FxF)	4-48OSY	6-48OSY	8-48OSY	10-48OSY	12-48OSY
	Gate Valve, OS&Y (GxF)	4-48OSYGXF	6-48OSYGXF	8-48OSYGXF	10-48OSYGXF	12-48OSYGXF
	Gate Valve, Post Indicator (FxF)	4-48PIV	6-48PIV	8-48PIV	10-48PIV	12-48PIV
	Gate Valve, Post Indicator (FxG)	4-48PIVGXF	6-48PIVGXF	8-48PIVGXF	10-48PIVGXF	12-48PIVGXF
	Butterfly Valve (GxF)	4-48GXF	6-48GXF	8-48GXF	10-48GXF	12-GXF
20	Ball Valve, FxF	12-850XL	34-850XL			
21	Ball Valve, MxF	12-850MXL	34-850MXL			
22	Cover Retainer Assembly	6-23		8-23	12-23	
23	Grooved Coupling	4-23	6-23	8-23	10-23	12-23
24	Bulkhead Fittings	BHF1CXL-100				
25	Sensing Line Bulkhead Fittings	BHF1BXL-100				
26	Cover	RK4-LBF-VALVE-COVER	RK6-LBF-VALVE-COVER	RK8-LBF-VALVE-COVER		
27	Water Meter	557-54XL				
28	Bypass Valve	34-975XLD				
29	Bypass Assembly	RK4-350DA-BP-LM	RK6-350DA-BP-LM	RK8-350DA-BP-LM		RK12IN-350DA-BP-LM
	Bypass Rubber Repair Kit	RK34-950XLR				

Item No.	Repair Kit Description
4"	
RK4-350	Standard Repair Kit, 4" 350DA
RK4-350DA	Main & Bypass Rubber Repair Kit 4" 350DA
RK4-350CK1	#1 Check Assembly Repair Kit, 4" 350DA
RK4-350CK2	#2 Check Assembly Repair Kit, 4" 350DA
RK4-350-SEAT2-ASSY	#1 and #2 Seat Assembly Repair Kit, 4" 350DA
BRK4-LBF-SEAT1RTNR	Bulk #1 Seat Retainer Repair Kit, 4" 350DA
BRK4-LBF-SEAT2RTNR	Bulk #2 Seat Retainer Repair Kit, 4" 350DA
4-BK	Flanged Kit, 4"
4" and 6"	
RK212-350-COVERPLATE	Cover Plate Repair Kit, 2-1/2" - 6" 350DA

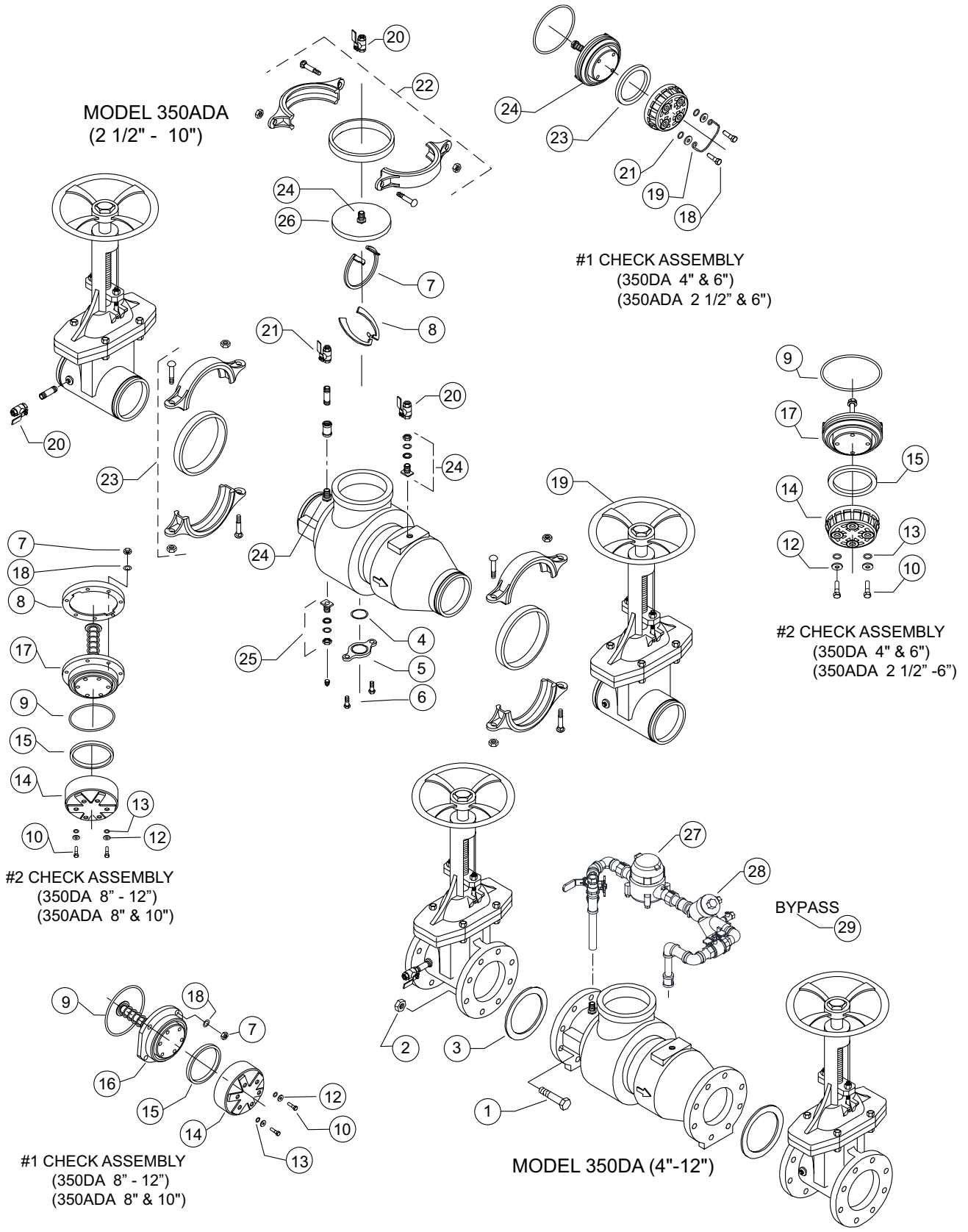
Item No.	Repair Kit Description
6"	
RK6-350	Standard Repair Kit, 6" 350DA
RK6-350DA	Main & Bypass Rubber Repair Kit 6" 350DA
RK6-350CK1	#1 Check Assembly Repair Kit, 6" 350DA
RK6-350CK2	#2 Check Assembly Repair Kit, 6" 350DA
RK6-350-SEAT2-ASSY	#1 and #2 Seat Assembly Repair Kit, 6" 350DA
BRK6-LBF-SEAT1RTNR	Bulk #1 Seat Retainer Repair Kit, 6" 350DA
BRK6-LBF-SEAT2RTNR	Bulk #2 Seat Retainer Repair Kit, 6" 350DA
6-BK	Flanged Kit, 6"
8"	
8-BK	Flanged Kit, 8"
8" and 10"	
RK8-350CK1	#1 Check Assembly Repair Kit, 8" and 10" 350DA
RK8-350DACK2	#2 Check Assembly Repair Kit, 8" and 10" 350DA

Item No.	Repair Kit Description
8" - 12"	
RK8-350	Standard Repair Kit, 8" - 12" 350DA
RK8-350DA	Main & Bypass Rubber Repair Kit 8" - 12" 350DA
RK8-350-SEAT1-ASSY	#1 Seat Assembly Repair Kit, 8" - 12" 350DA
RK8-350-COVERPLATE	Cover Plate Repair Kit, 8" - 12" 350DA
10"	
10-BK	Flanged Kit, 10"
12"	
12-BK	Flanged Kit, 12"
RK12IN-350DACK1	#1 Check Assembly Repair Kit, 12" 350DA
RK12IN-350DACK2	#2 Check Assembly Repair Kit, 12" 350DA

MODEL 350DA

Double Check Detector Assembly – Backflow Preventers 4″ to 12″

Parts Drawing



GENERAL TERMS AND CONDITIONS

PRICE AND TERMS OF PAYMENT

Terms are net, payable 30 days from date of invoice. All pricing in U.S. currency. The Buyer shall pay all sales, consumers, or other applicable taxes. A 1-1/2% monthly (18% annual) service charge will be added to the outstanding balance of all past due invoices.

Minimum invoice $250.00. Zurn Industries, LLC ("Zurn") reserves the right to apply a minimum order charge in order to meet the $250.00 minimum invoice requirement. All orders are subject to credit approval by the Zurn Credit Department prior to the acceptance of an order. Orders may be refused, delivery may be withheld, or shipment stopped in transit without any liability on Zurn's part at Zurn's sole discretion based upon Buyer's credit worthiness as determined by Zurn.

FREIGHT

All sales are F.O.B. seller's location. Zurn will allow full freight allowance when any of the following conditions are met: 1) Plumbing fixture only orders totaling $10,000 or more; 2) Zurn One System orders of $7,500 or more; 3) Any combination of Specification Drainage, Commercial Drainage, Finish Plumbing, Zurn Wilkins, Linear Drainage and Chemical Drainage orders of $5,000 or more; 4) Commercial Drainage only orders totaling $3,500 or more; or 5) PEX only orders totaling $3,000 or more. This full freight allowance applies when the shipment is within the continental United States and has a single destination of a Buyer's standard address or job location. Routing of shipment shall be determined at the sole direction of Zurn. Shipping dates are estimates and time of delivery shall not be of the essence of this sale contract. Under no circumstances will the Seller have any responsibility on account of any delays in manufacture, transportation, or otherwise. Terms of Export Shipment on application.

NOTE: Shipments in excess of 90" long or 3,000 lbs may be subject to additional charges, and shall be defined as an oversized and/or overweight product and Zurn's standard FFA terms may not apply. Please contact our Customer Service Department for guidance on potential additional shipping charges. This new policy supersedes any existing agreements.

These charges and restrictions apply in addition to Zurn standard terms and conditions for sale unless otherwise agreed upon by the parties.

LIMITED WARRANTY

Zurn goods sold hereunder are warranted to be free from defects in material and factory workmanship for the period of time from the date of purchase: AquaVantage® Flush Valves, AquaFlush® Flush Valves, Commercial Fixtures, Faucets, Showers, and Tubular Brass: three years; Chemical Drainage, Linear Drainage, Commercial Drainage, Specification Drainage, Zurn Wilkins, and Flush Valve, Faucets, and Tubular Brass decorative finishes: one year; PHIX® Cartridge: ten years; FOG-ceptor®: Lifetime. Where permitted by law, **THE IMPLIED WARRANTY OF MERCHANTABILITY IS LIMITED TO THE ABOVE IDENTIFIED PERIOD OF TIME AND SHALL BE LIMITED SOLELY TO THE REPLACEMENT OF THE DEFECTIVE GOODS.** A damaged/broken test cock or ball valve is not considered defective. Please contact Zurn Customer Care for assistance.

Zurn will replace goods at no cost that prove defective provided Zurn is notified in writing of such defect and the goods are returned prepaid at the specified Zurn location with evidence that they have been properly maintained and used in accordance with instructions. **ZURN SHALL NOT BE RESPONSIBLE FOR ANY LABOR CHARGES OR ANY LOSS, INJURY, OR DAMAGES WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES.** The sole and exclusive remedy shall be limited to the replacement of the defective goods. Before installation and use, the purchaser shall determine the suitability of the product for his intended use and the purchaser assumes all risk and liability whatever in the connection therewith. All weights stated in Zurn catalogs and lists are approximate and are not guaranteed.

RETURNED GOODS

Standard cataloged material may be returned only with written permission of Zurn. Returned goods are subject to a 25% restocking charge of total saleable material returned, plus cost of reconditioning, if necessary, to make material sellable. Transportation charges are the responsibility of the Buyer. Credit allowance will be in the form of merchandise credit only – not cash credit. The value of the return must total at least $100.00 to qualify for credit allowance. No credit will be allowed for parts unless originally ordered and invoiced as parts. No credit will be allowed for discontinued or made-toorder items. Items that have been specially made are not subject to return or cancellation except by special negotiation. Material must be returned within one year of invoice date for credit to be issued for Chemical Drainage, Linear Drainage, and Commercial Drainage. Material must be returned within two years of invoice date for credit to be issued for Commercial Fixtures, Flush Valve Products, Specification Drainage, Tubular Brass, and Zurn Wilkins. No credit is allowed for Linear Drainage products that have been cut and Specification Drainage product with auxiliary tappings. Flush Valve material over two years old will be subject to a 50% handling charge. Flush Valve material over five years old will not be accepted. Commercial Drainage and Specification Drainage galvanized material will be credited at value of Dura-Coated cast iron, and chrome plated at value of bronze. Zurn Wilkins damaged/broken test cocks or ball valves are not considered defective.

ILLUSTRATIONS OF TYPICAL INSTALLATIONS

The typical installations for various products found in each product section are intended to illustrate the products and potential options for the use of these products. Under no circumstances are they to be construed as recommended installation procedures. Consult local codes and project specifications for proper installation instructions.

SHORTAGE/DAMAGE CLAIMS

Notification of material shortages or incorrect filling of orders must be made to Zurn within 10 days of receipt. No claims over three months old will be honored. Buyer agrees to make all complaints for damage in transit or "short count" directly to the carrier; before the contents are unloaded have the carrier agent's acknowledgment of such damage noted on the bill of lading and to present to the carrier its agent's acknowledgment of such damaged material with formal claim covering said damage.

GENERAL

Zurn reserves the right to make changes in design or equipment of any item or product without incurring any obligation on previously sold items, and to discontinue items at any time, without notice. Possession of this Catalog or other sales literature is not to be construed as an offer to sell. All orders are subject to acceptance by Zurn. Catalog printed in U.S.A.

Zurn flush valves are designed to comply with Army Corp of Engineers and Naval guide specifications, Military Specification MIL.V.29193 and Federal Specification WWP541.

Zurn flush valves comply with the following standards: ASME A112.18.1/CSA B125.1, A112.19.5, A112.19.2, A112.19.6, ASSE 1037 and 101 are listed by the following agencies: Canadian Standards, IAPMO/UPC/CUPC, and CSA 125.3. Zurn flush valves are manufactured from dezincification resistant alloys. For additional compliances, contact Zurn Industries, LLC, Finish Plumbing Operation, or 1-800-997-3876.

Zurn is not responsible for typographical errors. The contents of this guide are subject to revision without notice.

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