

IV. MAINTENANCE INSTRUCTIONS - 2-1/2" - 6"

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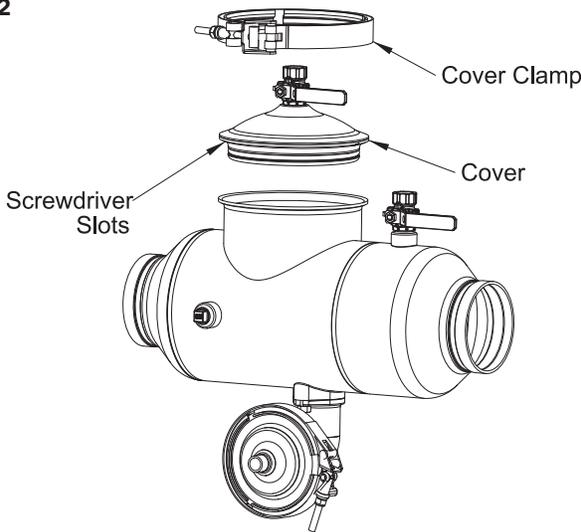
Open test cocks #2, #3, and #4 to relieve pressure from the device. Both shut-off valves must be closed.

A. CHECK REMOVAL

Note: If the first check disc needs only to be cleaned, it is not necessary to remove the entire check module from the valve body. See the next section, "Check Maintenance", for seat disc cleaning instructions.

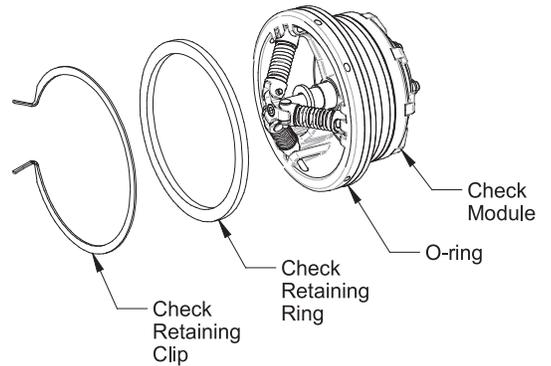
1. Remove the cover clamp by backing off the reusable locknut until the latch can be disengaged from the T-bolt. Pull the clamp apart and slide away from the valve. (See Figure 2)
2. Lift off the cover. A flat screwdriver will aid in lifting the cover out of the body. Screwdriver slots are provided on the perimeter of the cover. The first check must be removed first and then the second check may be removed.
3. Remove the check-retaining clip by pinching the clip ears together. This will disengage the clip from its groove. Remove clip and check-retaining ring. Pull check module straight out of body. The check module is sealed in place with an o-ring. (See Figure 3)

FIGURE 2



(SENSING HOSE NOT SHOWN)

FIGURE 3

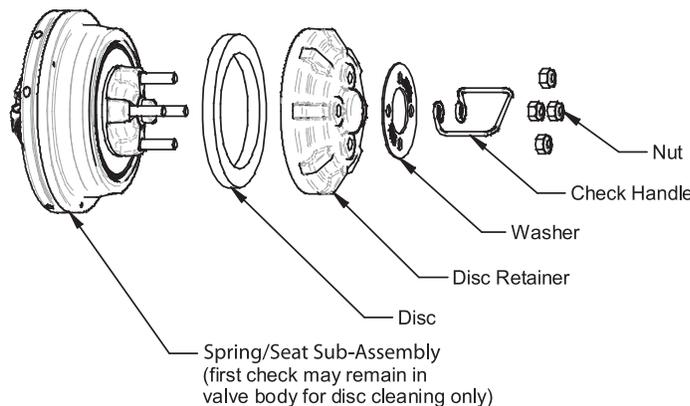


B. CHECK MAINTENANCE

If only cleaning of the first check is necessary, simply remove the three (3) reusable locknuts for 2-1/2" & 3" valves / four (4) nuts for 4" & 6" valves on the black plastic disc retainer (See Figure 4). SUGGESTION: Place a rag over the relief valve opening inside the valve body to prevent the locknuts from falling into the relief valve. Remove the check handle and washer and lift the disc retainer and disc out of the body. Rinse the disc with clean water or replace if necessary. The disc may be flipped over for a temporary repair, but should be replaced if damaged. Replace the disc, disc retainer, washer, handle, and nuts. Do not over tighten locknuts.

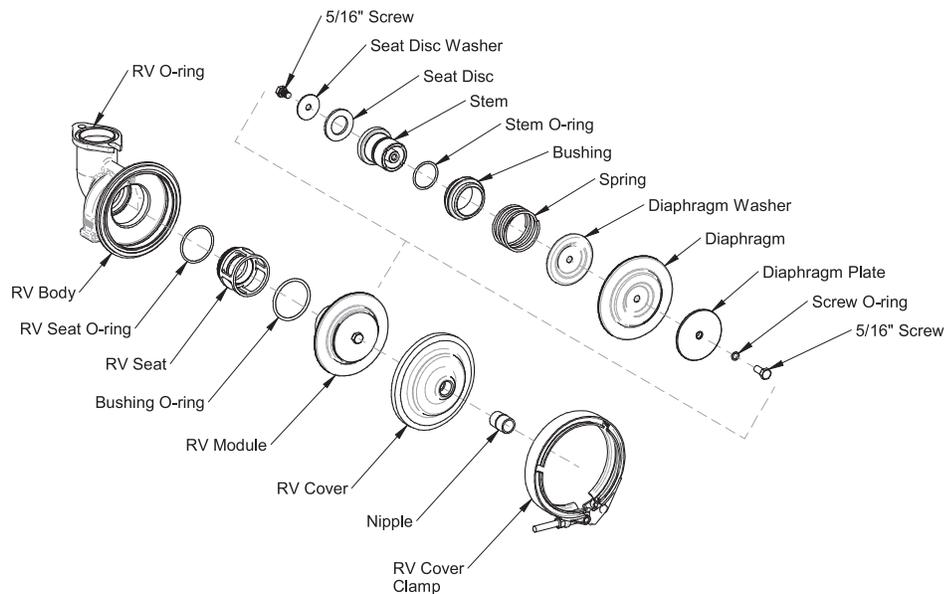
NOTE: The springs are factory installed and should not be removed or adjusted. Serious injury could occur if springs are disassembled.

**FIGURE 4
2-1/2" - 6" SIZES**



IV. MAINTENANCE INSTRUCTIONS - 2-1/2" - 6"

FIGURE 5
2-1/2" - 6" SIZES



C. RELIEF VALVE MAINTENANCE

1. Unscrew the sensing hose from the nipple (sensing hose is not shown). (See Figure 5)
2. The RV can be serviced while still attached to the valve or it can be removed (rarely needed).
3. Remove the clamp by backing off the nut until the latch can be disengaged from the T-bolt. Pull the clamp apart and slide away from the RV.
4. Remove the RV cover.
5. Remove the RV module by grasping the diaphragm plate and pulling straight out.
6. Inspect the RV seat disc for debris or damage. To clean or replace the RV seat disc, remove the 5/16" screw on the seat disc washer. The RV disc may be flipped over for a temporary repair, but should be replaced if damaged. Replace the seat disc, seat disc washer, and 5/16" screw.
7. Lubricate the bushing o-ring with Apollo® supplied lubricant, Dow 111 or equal, and insert the RV module into the valve body.
8. The RV diaphragm has a rubber bead that fits into a groove in the RV body. Ensure the diaphragm bead is seated properly in the RV body before installing the RV cover.

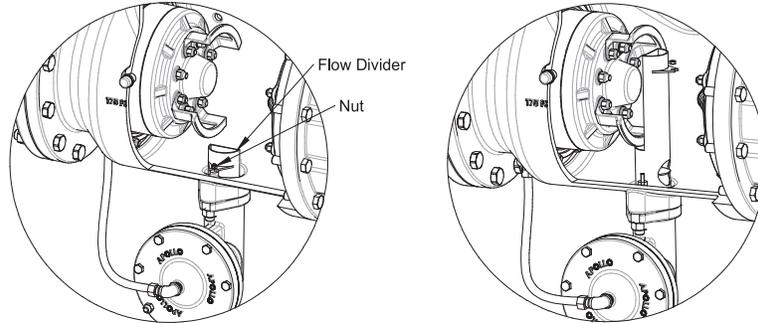
If it is necessary to disassemble the RV module and/or remove the RV seat:

1. Remove the RV module as described above.
2. Remove the 5/16" screw on the diaphragm plate. Use caution as this will disengage the spring.
3. Remove the 5/16" screw on the seat disc washer.
4. Inspect all components for damage, paying particular attention to the diaphragm, seat disc, o-rings, and stem. If any of these components are worn or damaged, they should be replaced.
5. Lubricate the stem, stem o-ring, and RV seat o-ring with Apollo® supplied lubricant, Dow 111 or equal.
6. Reassemble RV module.
7. Remove the RV seat by grasping the cage and pulling straight out. A flat screwdriver may aid in removal.
8. Inspect the seat and seat o-ring for damage. If damaged, they should be replaced.
9. Insert the seat into the RV body. Ensure that it is fully seated.
10. Lubricate the bushing o-ring with Apollo® supplied lubricant, Dow 111 or equal and insert the assembled RV module into the valve body. Ensure the diaphragm bead is seated properly before installing the RV cover.
11. Replace the cover and clamp.
12. Inspect the sensing hose and replace if damaged.
13. Reinstall the sensing hose to the nipple.

IV. MAINTENANCE INSTRUCTIONS

8" - 12" SIZES

Open test cocks #2, #3, and #4 to relieve pressure from the device. Both shut-off valves must be closed.



NOTE: On 10" & 12" models, the flow divider (FD) must be removed before the checks are removed. To remove the FD, remove the 1/4" nut holding it in place. Then rotate the FD 90° and lift up and out of the valve body. Pay attention to which side of the body the FD is attached. The FD's tab should be oriented on the same side as the cover of the relief valve body. If the relief valve needs to be turned 180°, the FD must also be rotated 180°.

A. CHECK REMOVAL

Note: If the first check disc needs only to be cleaned, it is not necessary to remove the entire check module from the valve body. See the next section, "Check Maintenance", for disc cleaning instructions.

1. Take off the cover coupling by removing the two bolts and nuts.
2. Lift off the cover. The gasket may remain on the valve body. See Figure 6. Note: The 10" & 12" valves are equipped with lifting tabs for cover lifting only. This tab should not be used to lift the entire valve.
3. Remove the six (6) reusable locknuts for 8" valves / eight (8) nuts for 10" & 12" valves on the check seat with a 3/4" socket and ratchet.

SUGGESTION: Place a rag over the relief valve opening inside the valve body to prevent the locknuts from falling into the relief valve.

4. Slide the entire check module off the body studs and remove from body (See Figure 7).

Either check may be removed without disturbing the other (8" - 12" valves only).

IV. MAINTENANCE INSTRUCTIONS - 1/2" - 6"

FIGURE 6

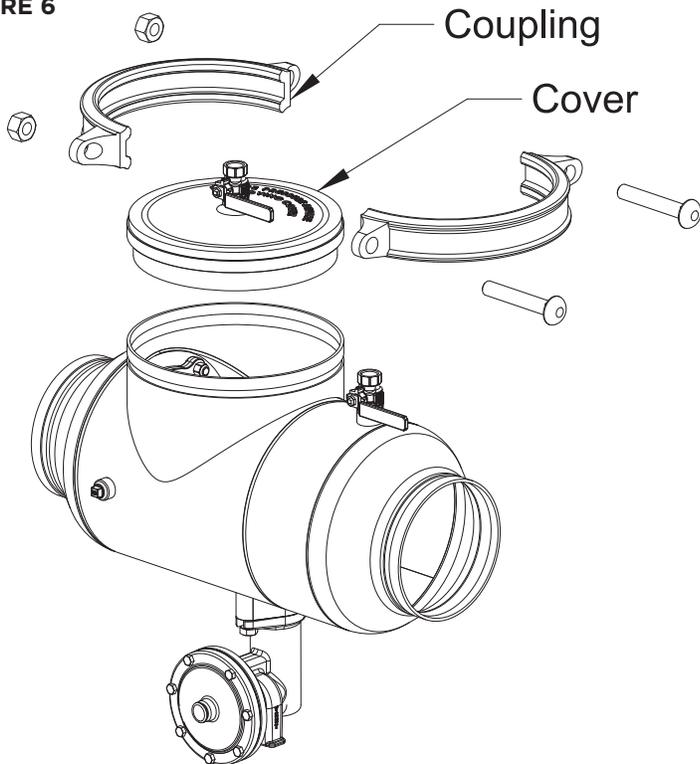
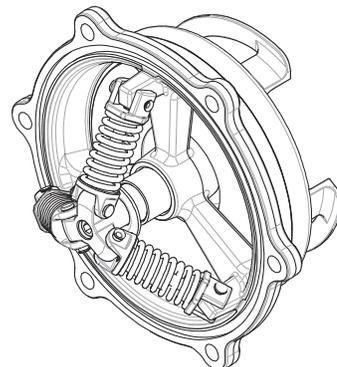


FIGURE 7

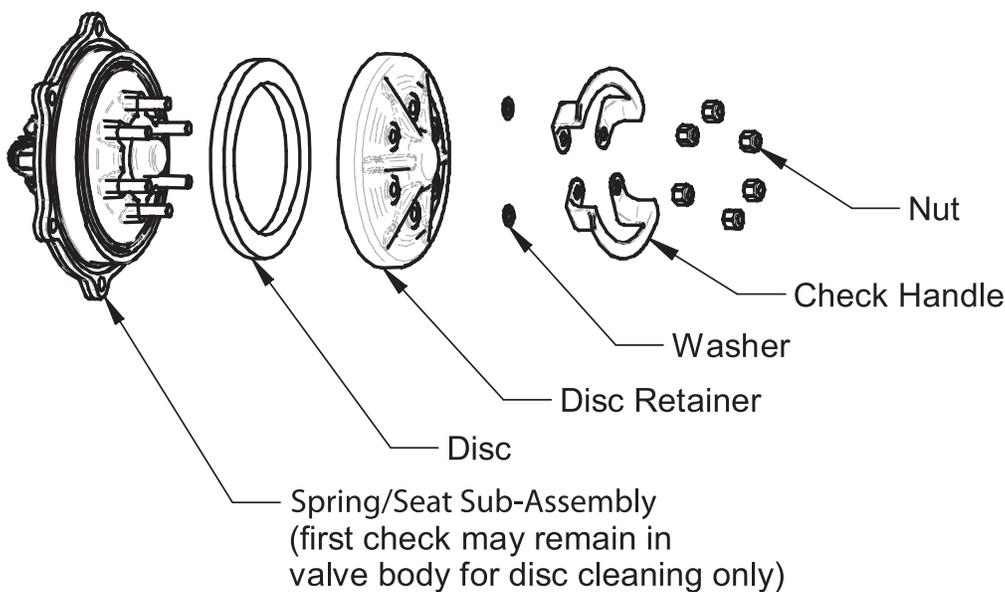


B. CHECK MAINTENANCE (CAN BE ACHIEVED WITHOUT REMOVING ENTIRE CHECK.)

If only cleaning of the first check is necessary, simply remove the six (6) reusable locknuts for 8" valves / eight (8) nuts for 10" & 12" valves on the black plastic disc retainer (See Figure 8). Remove the check handles and washers and lift the disc retainer and disc out of the body. Rinse the disc with clean water or replace if necessary. The disc may be flipped over for a temporary repair, but should be replaced if damaged. Replace the disc, disc retainer, washer, handle, and nuts. **Do not over tighten locknuts.**

NOTE: The springs are factory installed and should not be removed or adjusted. Serious injury could occur if springs are disassembled.

**FIGURE 8
8" - 12" SIZES**



IV. MAINTENANCE INSTRUCTIONS - 2-1/2" - 6"

FIGURE 9
8"

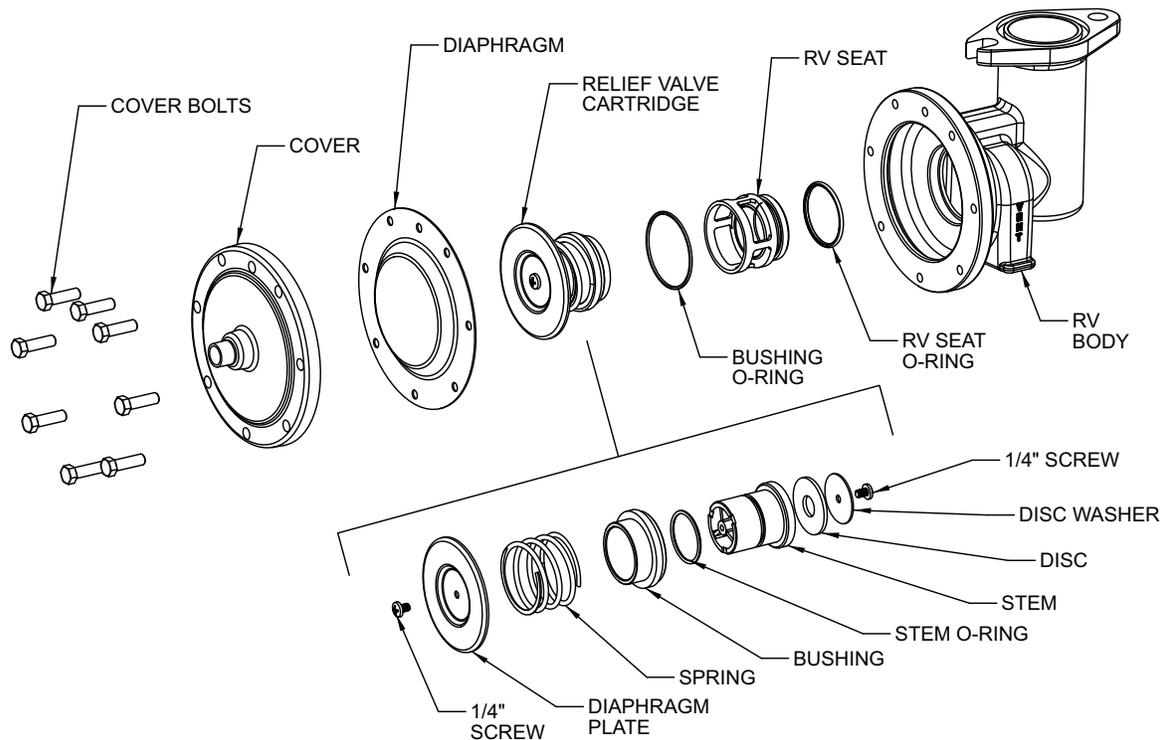
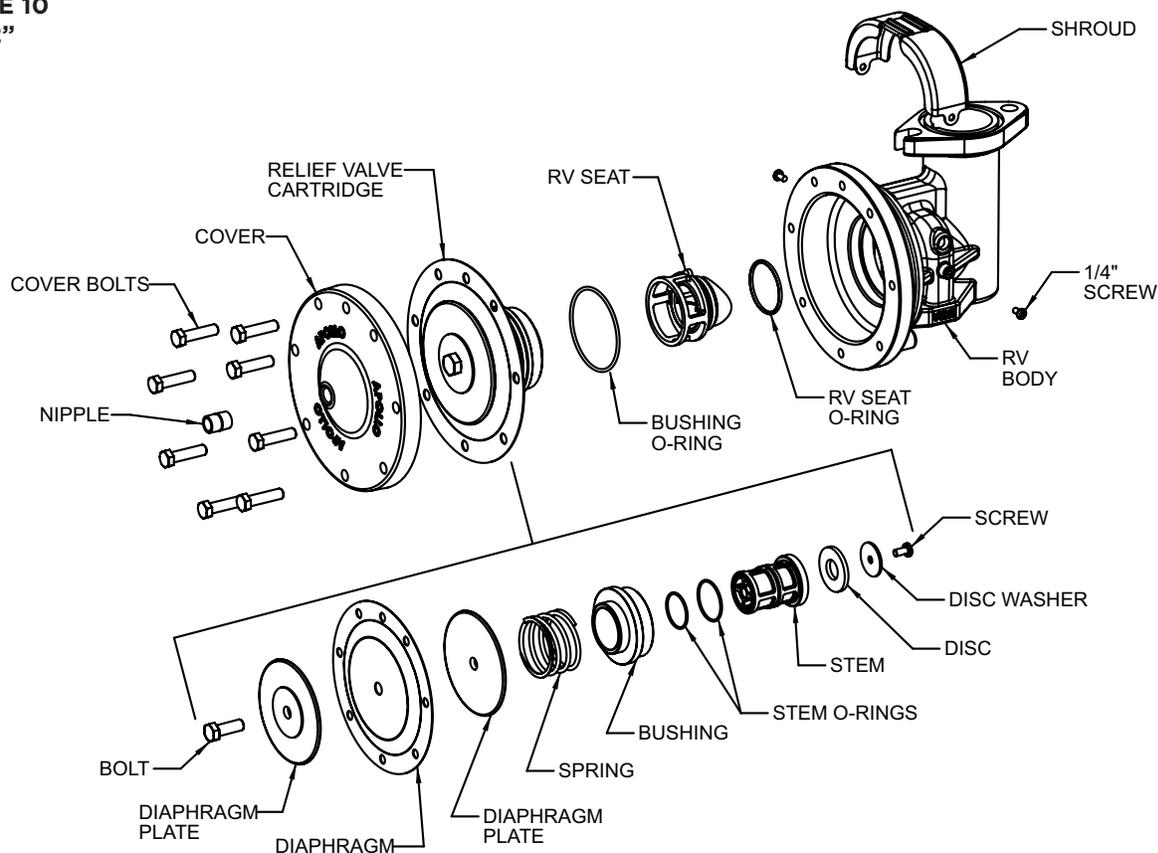
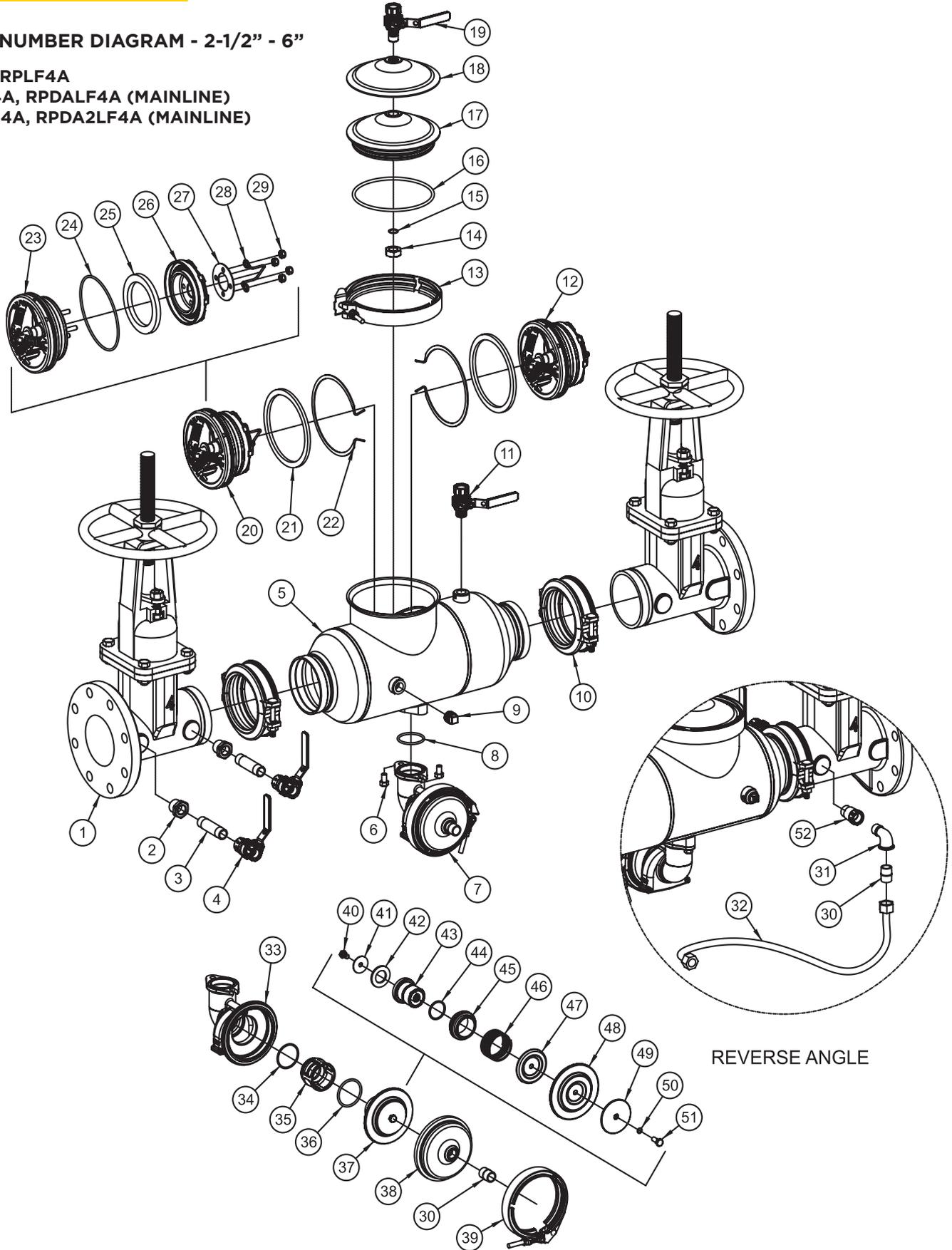


FIGURE 10
10" -12"



PART NUMBER DIAGRAM - 2-1/2" - 6"

RP4A, RPLF4A
 RPDA4A, RPDALF4A (MAINLINE)
 RPDA24A, RPDALF4A (MAINLINE)



REPAIR KITS (MAINLINE) 2-1/2" - 6"

CHECK RUBBER ONLY KIT (ONE KIT REPAIRS ONE CHECK)		SIZE		
		2-1/2" & 3"	4"	6"
ITEM #	REPAIR KIT MODEL NUMBER	RK4A3CMR	RK4A4CMR	RK4A6CMR
	ORDERING NUMBER	4A-000-01	4A-00A-01	4A-00C-01
not shown	Lubricant	I-9016-00		
25	Disc	D-4958-00	D-4862-00	D-4890-00
24	Check Seat O-ring	D-5171-00	D-4869-00	D-5000-00
8	Relief Valve Port O-ring	D-4866-00		
16	Cover O-ring	D-4976-00	D-4870-00	D-5001-00
15	Test Cock O-ring	D-4892-00		D-3904-00

RP FIRST CHECK COMPLETE KIT (ONE KIT REPAIRS ONE CHECK)		SIZE		
		2-1/2" & 3"	4"	6"
ITEM #	REPAIR KIT MODEL NUMBER	RK4A3RPCMC	RK4A4RPCMC	RK4A6RPCMC
	ORDERING NUMBER	4A-000-03	4A-00A-03	4A-00C-03
not shown	Lubricant	I-9016-00		
20	1st Check Module S-Assy	W-9855-05	W-9666-05	W-9670-05
24	Check O-ring	D-5171-00	D-4869-00	D-5000-00
16	Cover O-ring	D-4976-00	D-4870-00	D-5001-00

RP SECOND CHECK COMPLETE KIT (ONE KIT REPAIRS ONE CHECK)		SIZE		
		2-1/2" & 3"	4"	6"
ITEM #	REPAIR KIT MODEL NUMBER	RK4A3DCRP2CMC	RK4A4DCRP2CMC	RK4A6DCRP2CMC
	ORDERING NUMBER	4A-000-14	4A-00A-14	4A-00C-14
not shown	Lubricant	I-9016-00		
12	2nd Check Module S-Assy	W-9857-05	W-9667-05	W-9671-05
24	Check O-ring	D-5171-00	D-4869-00	D-5000-00
16	Cover O-ring	D-4976-00	D-4870-00	D-5001-00

RP RELIEF VALVE RUBBER KIT		
ITEM #	REPAIR KIT MODEL NUMBER	RK4A6RVR
	ORDERING NUMBER	4A-00C-04
not shown	Lubricant	I-9016-00
34	RV Seat O-ring	D-4867-00
36	Bushing O-ring	D-4883-00
42	RV Seat Disc	D-4863-00
44	Stem O-ring	D-4744-00
48	Diaphragm	D-4861-00
50	Diaphragm Plate O-ring	D-4865-00
8	Relief Valve Port O-ring	D-4866-00

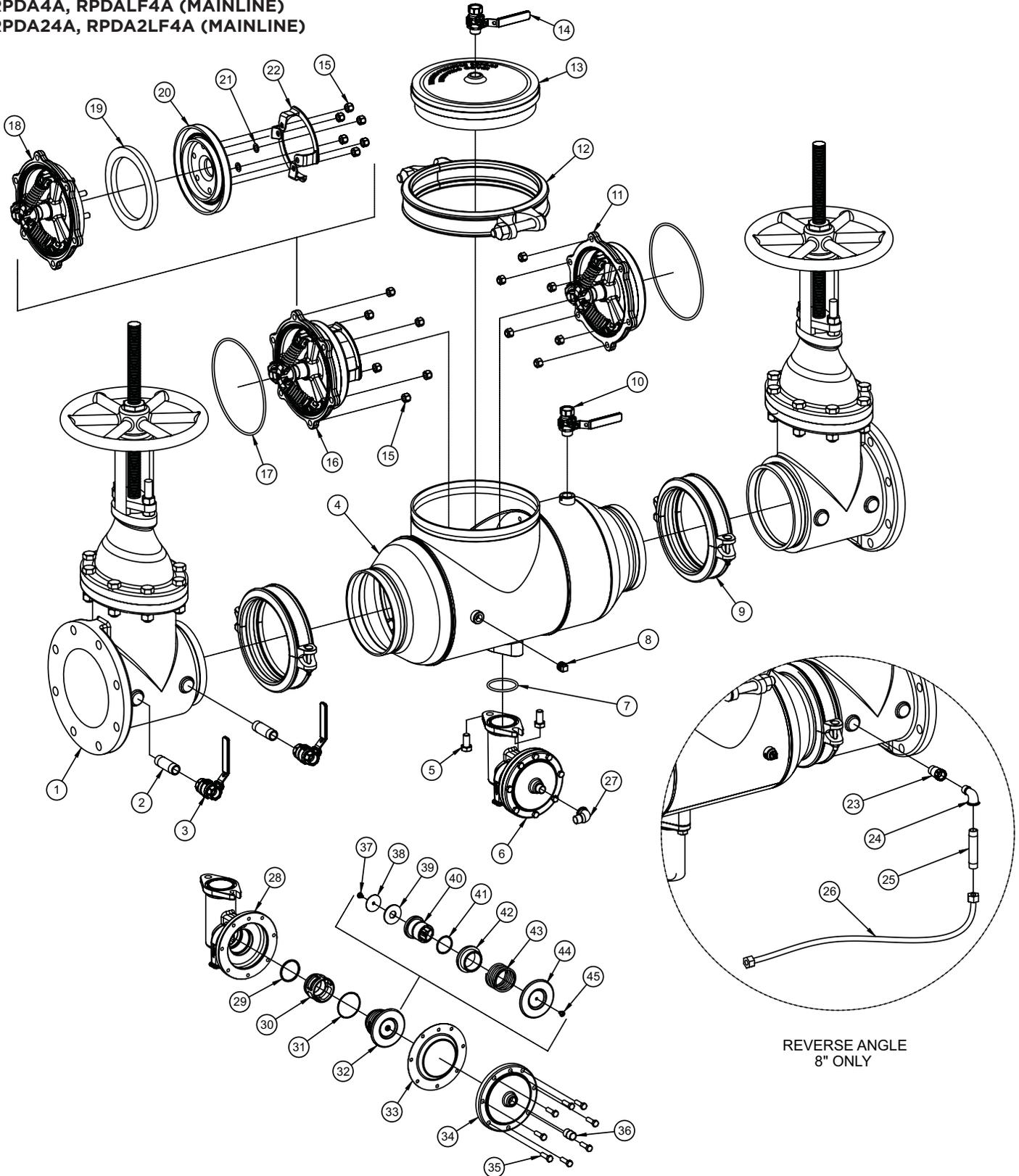
RP RELIEF VALVE COMPLETE KIT		
ITEM #	REPAIR KIT MODEL NUMBER	RK4A6RVC
	ORDERING NUMBER	4A-00C-05
not shown	Lubricant	I-9016-00
34	RV Seat O-ring	D-4867-00
35	Seat Cage	L-7995-00
36	Bushing O-ring	D-4883-00
37	RV Module	W-9677-05
8	Relief Valve Port O-ring	D-4866-00

Note: All bronze components listed are lead-free*

*LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with CA AB1953, VT Act 193, MD HB372, LA HB471, and Federal Public Law 111-380.

PART NUMBER DIAGRAM - 8" - 12"

RP4A, RPLF4A
RPDA4A, RPDALF4A (MAINLINE)
RPDA24A, RPDALF4A (MAINLINE)



REPAIR KITS (MAINLINE) 8" - 12"

CHECK RUBBER ONLY KIT (ONE KIT REPAIRS ONE CHECK)		SIZE	
		8"	10" & 12"
ITEM #	REPAIR KIT MODEL NUMBER	RK4A8CMR	RK4A12INCMR
	ORDERING NUMBER	4A-00E-01	4A-00H-01
not shown	Lubricant	I-9016-00	
19	Disc	D-4934-00	D-4960-00
17	Check O-ring	D-4935-00	D-4997-00
7	Relief Valve Port O-ring	D-4963-00	D-2304-00

RP FIRST CHECK COMPLETE KIT (ONE KIT REPAIRS ONE CHECK)		SIZE	
		8"	10" & 12"
ITEM #	REPAIR KIT MODEL NUMBER	RK4A8PCM	RK4A12INPCM
	ORDERING NUMBER	4A-00E-03	4A-00H-03
not Shown	Lubricant	I-9016-00	
16	1st Check Module S-Assy	W-9674-05	W-9863-05
17	Check O-ring	D-4935-00	D-4997-00

RP SECOND CHECK COMPLETE KIT (ONE KIT REPAIRS ONE CHECK)		SIZE	
		8"	10" & 12"
ITEM #	REPAIR KIT MODEL NUMBER	RK4A8DCRP2CMC	RK4A12INDCRP2CMC
	ORDERING NUMBER	4A-00E-14	4A-00H-14
not shown	Lubricant	I-9016-00	
11	2nd Check Module S-Assy	W-9673-05	W-9862-05
17	Check O-ring	D-4935-00	D-4997-00

RP RELIEF VALVE RUBBER KIT		SIZE	
		8"	10" & 12"
ITEM #	REPAIR KIT MODEL NUMBER	RK4A8RVR	RK4A12INRVR
	ORDERING NUMBER	4A-00E-04	4A-00H-04
not shown	Lubricant	I-9016-00	
29	RV Seat O-ring	D-4883-00	D-3506-00
31	Bushing O-ring	D-2565-00	D-4858-00
33	Diaphragm	D-2564-00	D-2591-00
39	RV Seat Disc	D-2563-00	D-2595-00
41	Stem O-ring	D-2562-00	D-2594-00
not shown	Dia. Plate O-ring	N/A	D-2512-00
7	Relief Valve Port O-ring	D-4963-00	D-2304-00

RP RELIEF VALVE COMPLETE KIT		SIZE	
		8"	10" & 12"
ITEM #	REPAIR KIT MODEL NUMBER	RK4A8RVC	RK4A12INRVC
	ORDERING NUMBER	4A-00E-05	4A-00H-05
not shown	Lubricant	I-9016-00	
33	Diaphragm	D-2564-00	D-2591-00
29	RV Seat O-ring	D-4883-00	D-3506-00
30	RV Seat Cage	L-8047-00	L-8169-00
31	Bushing O-ring	D-2565-00	D-4858-00
32	RV Module	W-9675-00	W-2330-05
7	Relief Valve Port O-ring	D-4963-00	D-2304-00

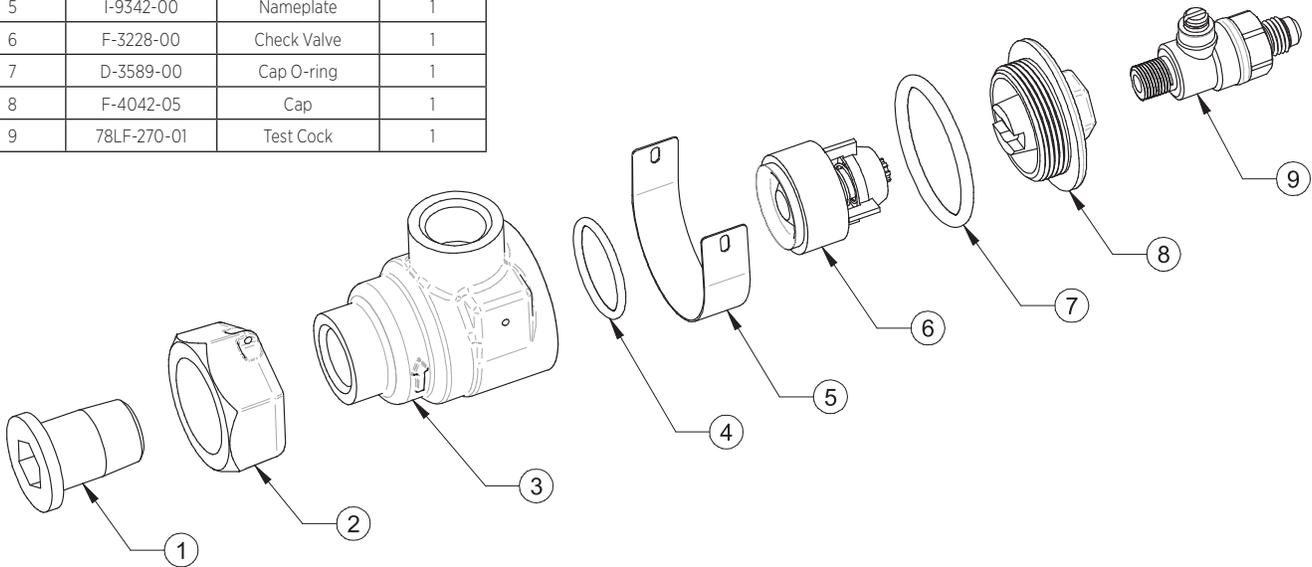
Note: All bronze components listed are lead-free*

*LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with CA AB1953, VT Act 193, MD HB372, LA HB471, and Federal Public Law 111-380.

PART LIST - BYPASS SINGLE CHECK (TYPE 2)
W977005 SINGLE CHECK VALVE (LEAD FREE*)

ITEM	PART #	DESCRIPTION	QTY
1	K-4587-06	Tailpiece	1
2	C-1844-05	Union Nut	1
3	Q-7281-05	Body	1
4	D-3885-00	Check O-ring	1
5	I-9342-00	Nameplate	1
6	F-3228-00	Check Valve	1
7	D-3589-00	Cap O-ring	1
8	F-4042-05	Cap	1
9	78LF-270-01	Test Cock	1

FIGURE 13



Individual parts are only available for bulk sales.
 Please refer to the appropriate repair kits below.

BYPASS SINGLE CHECK REPAIR KITS

4A-003-12:

Check Repair Kit: Includes items 4, 6, and 7 (1 ea.)

4A-003-13:

Check Complete Kit: Includes items 1-9 (1 ea.)

*Note: All bronze components listed are lead-free**

** LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with CA AB1953, VT Act 193, MD HB372, LA HB471, and Federal Public Law 111-380.*

VIII. MAINTENANCE INSTRUCTIONS - BYPASS SINGLE CHECK (TYPE 2)

A. DISASSEMBLY - CHECK VALVE MODULE

1. Close #2 bypass line shut-off valve, then close #1 bypass line shut-off valve.
2. Bleed pressure from the assembly by opening the upstream test cock (located on the bypass line #1 shut-off valve) and the downstream test cock (located on the check valve cap).
3. Unscrew cap using hex head provided.
4. Pull check module straight out of body. Needle-nose pliers will aid in removing check valve. Check o-ring may remain in valve body

NOTE: Check valve modules are not user serviceable. In the event of check failure, replacement modules are sold individually. However, debris caught in the check may be rinsed out.

B. ASSEMBLY - CHECK VALVE MODULE

1. Install new or cleaned check valve module into body (ensure check o-ring is in place).
2. Apply a thin coat of Apollo® supplied lubricant, DOW 111 or equal, on cap o-ring.
3. Install cap.

BYPASS LINE KITS

SIZE	METER OPTION	TYPE 1 BYPASS KIT PART NO.	TYPE 2 BYPASS KIT PART NO.
2-1/2"	GALLONS PER MIN	4ALF-600-BPE	4ALF-620-BPE
	CUBIC FT PER MIN	4ALF-600-BPC	4ALF-620-BPC
	NO METER	4ALF-600-BPG	4ALF-620-BPG
3"	GALLONS PER MIN	4ALF-600-BPE	4ALF-620-BPE
	CUBIC FT PER MIN	4ALF-600-BPC	4ALF-620-BPC
	NO METER	4ALF-600-BPG	4ALF-620-BPG
4"	GALLONS PER MIN	4ALF-60A-BPE	4ALF-62A-BPE
	CUBIC FT PER MIN	4ALF-60A-BPC	4ALF-62A-BPC
	NO METER	4ALF-60A-BPG	4ALF-62A-BPG
6"	GALLONS PER MIN	4ALF-60C-BPE	4ALF-62C-BPE
	CUBIC FT PER MIN	4ALF-60C-BPC	4ALF-62C-BPC
	NO METER	4ALF-60C-BPG	4ALF-62C-BPG
8"	GALLONS PER MIN	4ALF-60E-BPE	4ALF-62E-BPE
	CUBIC FT PER MIN	4ALF-60E-BPC	4ALF-62E-BPC
	NO METER	4ALF-60E-BPG	4ALF-62E-BPG
10"	GALLONS PER MIN	4ALF-60G-BPE	4ALF-62G-BPE
	CUBIC FT PER MIN	4ALF-60G-BPC	4ALF-62G-BPC
	NO METER	4ALF-60G-BPG	4ALF-62G-BPG
12"	GALLONS PER MIN	4ALF-60H-BPE	4ALF-62H-BPE
	CUBIC FT PER MIN	4ALF-60H-BPC	4ALF-62H-BPC
	NO METER	4ALF-60H-BPG	4ALF-62H-BPG