OPERATION AND MAINTENANCE MANUAL

SERIES 52-SC SWING CHECK VALVE

AMERICAN

FLOW CONTROL

THE RIGHT WAY

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SERIES 52-SC SWING CHECK VALVE

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WARNING: Special care should be taken in the installation, inspection and repair of pressure containing devices such as valves and hydrants. FAILURE TO FOLLOW PROPER PRACTICE AND GUIDELINES CAN RESULT IN SERIOUS INJURY OR DEATH. Do not make repairs while check valve is under pressure.

INSTALLATION

This information is provided as a recommendation to the customer for the proper use and installation of swing check valves.

1. When received, the valves should be unloaded carefully and in the case of Series 52-SC, stored with clapper braced in closed position. If provided, leave end protectors in place after initial examination. Protect stored valves from the elements and from undue damage in handling.

2. At the time of installation, remove any bracing from the swing check valve. Make sure the valve and flange gasket surfaces are clean and free of damage. Clean the inside of the valve to remove all debris and/or contaminants that may affect performance, or fluid quality. Check for free movement of clapper and inspect valve seal. Check the direction of flow in the pipeline and make sure the arrow cast on the side of the valve body agrees with the direction of flow through the valve.

3. Valves without lever and weight, or spring, are to be installed with the centerline of the valve port in a horizontal position and with the bonnet facing upward. Check valves will operate satisfactorily if not oriented more than 45° from the horizontal and with the flow upward.

4. To help prevent check valve slam, the valve can be supplied with an optional extended shaft configuration, equipped with either lever and weight, or lever and spring. The principle behind either of these options is to close the valve before the fluid establishes a reverse flow. The torque required to close the valve is unique to each system. The torque can be adjusted by changing the number and position of the spring and/or weight. In any service where the possibility of slamming exists, it is recommended that check valves be equipped with lever and spring, or lever and weight.

5. Check valves equipped with lever and spring can be used in a horizontal pipeline or in a vertical pipeline only when flow is upward. Check valves equipped with lever and weight can also be used in either a horizontal pipeline or a vertical pipeline. The lever must be positioned correctly to achieve valve closure. In the case of the Series 52-SC, the correct position of the lever and weight, when valve is installed in a horizontal line is 45° below the horizontal centerline of pipe, on the downstream side of the check valve disc. If the check valve is to be installed in a vertical line with upward flow, the lever should be moved 90° counterclockwise from this position. The Series 600 is equipped with two keyways: one for horizontal waterway and one for a vertical waterway.

6. **DO NOT INSTALL CHECK VALVES IN A VERTICAL LINE WITH DOWNWARD FLOW.**

7. At the time of installation, make sure piping is properly aligned and supported to avoid stress on the valve body. Under no circumstances should the installation of the valve be used to correct alignment errors.

TESTING

Check to see that all valve joints and pressure-containing bolts are tight. After testing, relieve excess pressure from the upstream side of the valve.

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OPERATION

1. On swing check valves without lever or weight, there are no special instructions regarding the operation since the valve is actuated by line flow.
2. If supplied with a lever or weight, the check valve can be adjusted to counteract slamming and/or surge. Adjustment may be accomplished by adjusting the tension on the spring, or the position, and/or amount, of weight on the valve.

MAINTENANCE

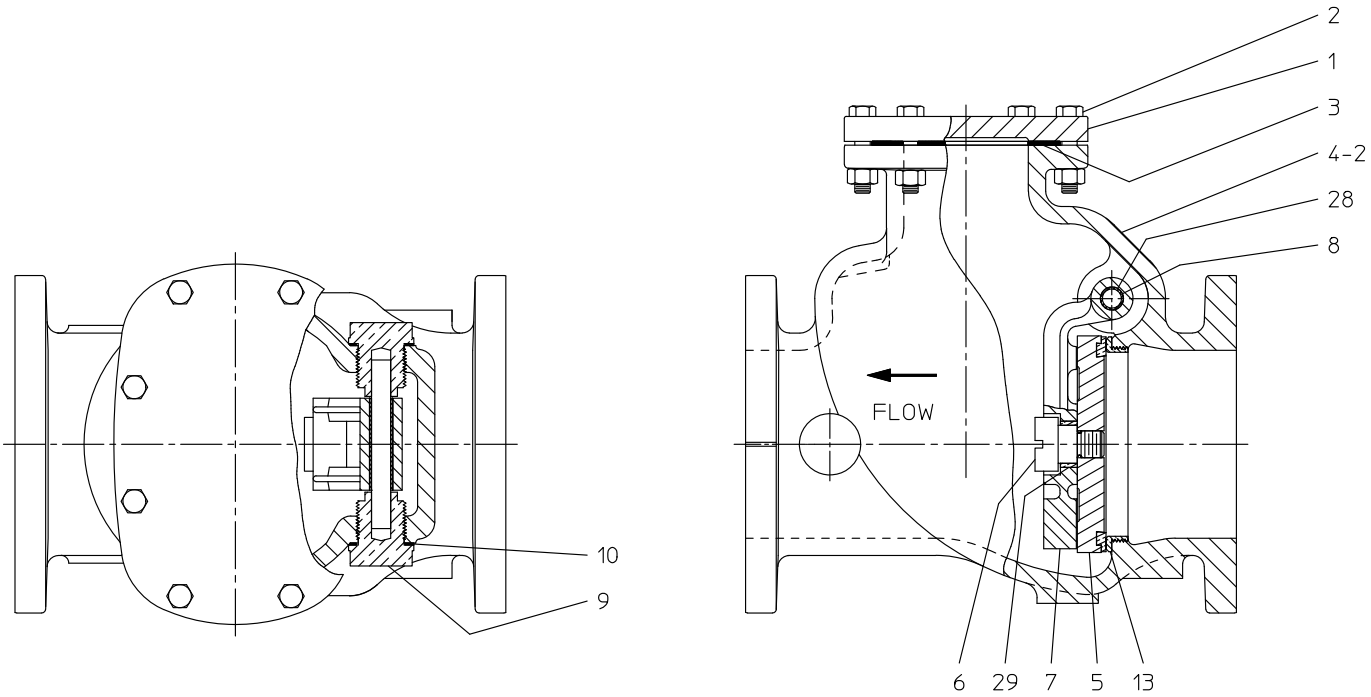
1. Normally there is very little maintenance on a check valve. On standard check valves it is suggested the valve be disassembled once a year. Depressurize the valve for inspection. Check for wear at all oscillating locations.
2. On the Series 52-SC Check Valves with extended shaft valves, every six months add an AMERICAN Flow Control recommended grease between O-rings until resistance to flow is felt on the grease gun lever. If leakage occurs due to oscillation, replace O-rings by removing retainer plug. Be sure to pressurize space between o-rings with grease after reassembly. Look for excessive wear on extended shaft and bearing bore that would prevent O-ring sealing.

SPARE PARTS

Under most conditions the only spare parts needed for swing check valves would be bonnet gasket, and any applicable retaining plug gaskets and O-rings, if valve is equipped with extended shaft.

Under conditions where very frequent oscillation of a clapper is experienced, and/or sever, service conditions, other parts may be kept in stock.

SERIES 52-SC STANDARD PARTS LIST

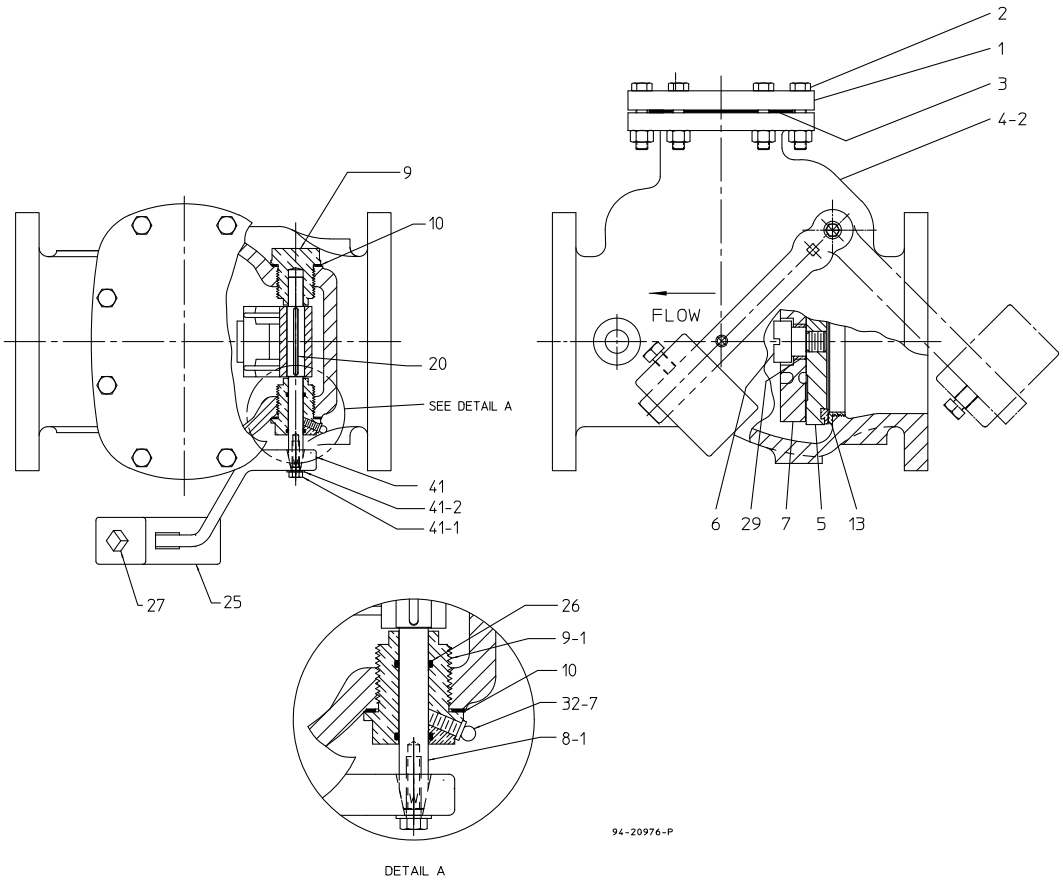


94-18581-P

Ref. No.	Description	Material	Quantity
1	Bonnet	Gray Iron (See Note 4)	1
2	Bonnet Bolt & Nut	Plated Steel	Varies
3	Bonnet Gasket	Composition Rubber	1
4-2	Flanged End Case	Gray Iron (See Note 4)	1
5	Disc	See Note 5	1
6	Disc Stud	Bronze	1
7	Clapper Arm	Ductile Iron	1
8	Clapper Arm Shaft	Stainless Steel	1
9	Retainer Plug	Bronze	2
10	Retainer Plug Gasket	Composition Rubber	2
13	Seat Ring	Bronze	1
28	Shaft Bushing	Bronze (See Note 6)	1
29	Disc Stud Bushing	Bronze	1

NOTES:
1. Construction, materials and testing comply with ANSI/AWWA C508.
2. Bolt patterns of Class 125 flanged ends are in accordance with ANSI/AWWA C110/A21.10 (ASME B16.1 Class 125).
3. Valves have manufacturer's name, pressure class and year of manufacture cast on side of case.
4. All gray iron is ASTM A126 Class B.
5. Discs on 3 in. are bronze, 4 in. and above are gray iron with bronze face disc that has lug on O.D. to prevent rotation.
6. Shaft bushings for valves 3 in.–10 in. are bronze, 12 in.–16 in. are nylon with molybdenum disulphide uniformly dispersed.

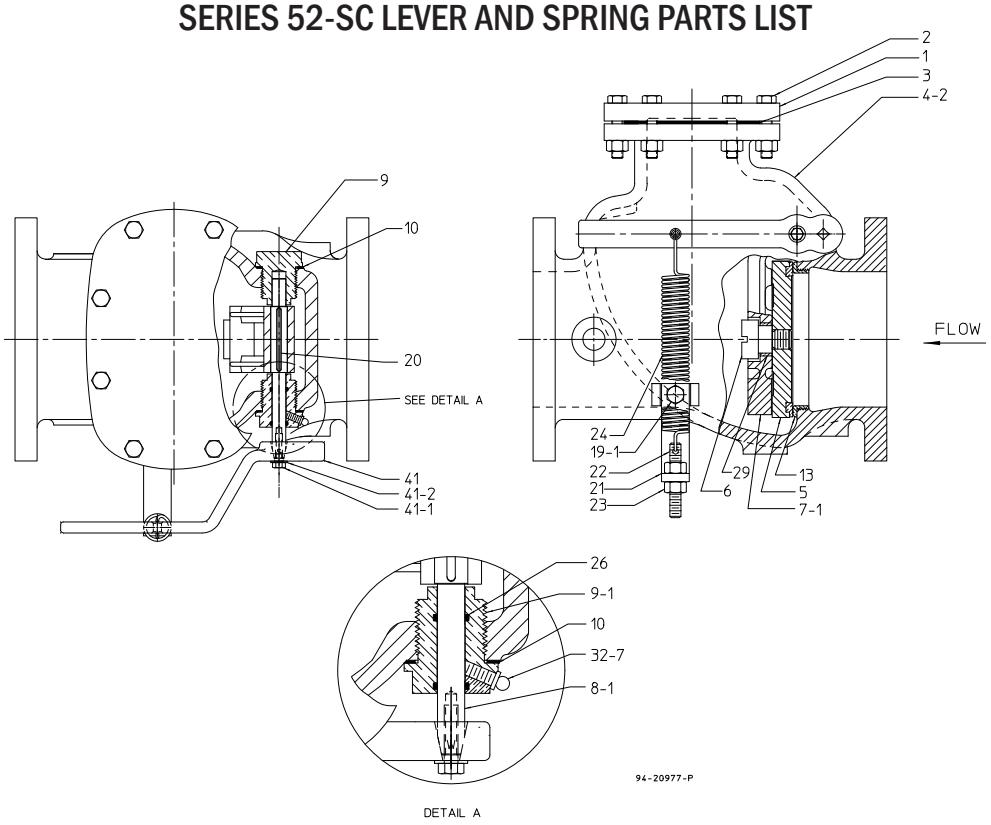
SERIES 52-SC LEVER AND WEIGHT PARTS LIST



Ref. No.	Description	Material	Qty.
1	Bonnet	Gray Iron	1
2	Bonnet Bolt & Nut	Plated Steel	Varies
3	Bonnet Gasket	Composition Rubber	1
4-2	Flanged Ends Case	Gray Iron	1
5	Disc	(See Note 6)	1
6	Disc Stud	Bronze	1
7-1	Clapper Arm for Lever	Ductile Iron	1
8-1	Clapper Arm Shaft Assembly	Stainless Steel (See Note 5)	1
9	Retainer Plug	Bronze	1
9-1	Retainer Plug for Lever	Bronze	1
10	Retainer Plug Gasket	Composition Rubber	2
13	Seat Ring	Bronze	1
20	Shaft Key	Stainless Steel	1
25	Weight for Lever	Gray Iron	1
26	O-ring	Rubber	2
27	Weight Set Screw	Steel	1
29	Disc Stud Bushing	Bronze	1
32-7	Grease Fitting	Steel	1
41	Lever	Ductile Iron	1
41-1	Lever Bolt	Stainless Steel	1
41-2	Lever Washer	Stainless Steel	1

1. Construction, materials and testing comply with ANSI/AWWA C508.
2. Bolt patterns of Class 125 flanged ends are in accordance with ANSI/AWWA C110/A21.10 (ASME B16.1 Class 125).
3. Valves have manufacturer's name, pres-sure class and year of manufacture cast on side of case.
4. All gray iron is ASTM A126 Class B.
5. Clapper Arm shaft is stainless steel. As-sembly includes lever, bolt, washer and key.
6. Disc on 3 in. is bronze. 4 in. and above are gray iron with bronze face. Disc has lug on O.D. to prevent rotation.
7. Lever is furnished on side and position shown unless otherwise specified. Lever shown by dot and dash lines is the position furnished when valve is to be installed in a vertical line with upward flow for lever and weight.

SERIES 52-SC LEVER AND SPRING PARTS LIST



Ref. No.	Description	Material	Qty.
1	Bonnet	Gray Iron	1
2	Bonnet Bolt & Nut	Plated Steel	Varies
3	Bonnet Gasket	Composition Rubber	1
4-2	Flanged Ends Case	Gray Iron	1
5	Disc	(See Note 6)	1
6	Disc Stud	Bronze	1
7-1	Clapper Arm for Lever	Ductile Iron	1
8-1	Clapper Arm Shaft Assembly	Stainless Steel (See Note 5)	1
9	Retainer Plug	Bronze	1
9-1	Retainer Plug for Lever	Bronze	1
10	Retainer Plug Gasket	Composition Rubber	2
13	Seat Ring	Bronze	1
19-1	Bracket Cap Screw	Steel	1
20	Shaft Key	Stainless Steel	1
21	Spring Bracket	Steel	1
22	Spring Link	Plated Steel	1
23	Link Nut	Plated Steel	2
24	Spring for Lever	Steel	1
26	O-ring	Rubber	2
29	Disc Stud Bushing	Bronze	1
32-7	Grease Fitting	Steel	1
41	Lever	Ductile Iron	1
41-1	Lever Bolt	Stainless Steel	1
41-2	Lever Washer	Stainless Steel	1

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6. Disc on 3 in. is bronze. 4 in. and above are gray iron with bronze face. Disc has lug on O.D. to prevent rotation.
7. Lever is furnished on side and position shown unless otherwise specified.

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