J&S Valve Swing Check Valve Specification

1. Scope
1.1 This specification covers the design, manufacture, and testing of 2 inch (50mm) through 24 inch (600mm) Swing Check Valves suitable for cold working pressures of 250 psig, 150 psig for 30 inch (800mm) and larger in water and wastewater service.
1.2 The check valve shall be of the full flow body type, with a domed access cover and vent port.
1.3 The check valve shall be capable of accepting lever and weight, air and or oil cushion or lever and spring.

2. Standards, Approvals, and Verification
2.1 The valves shall be designed, manufactured, and tested in accordance with American Water Works Association Standard ANSI/AWWA C508

3. Connections
3.1 The valves shall be provided with flanges in accordance with ANSI B16.1, Class 125 iron flanges or ANSI B16.42, Class 150 for ductile iron flanges

4. Design
4.1 The valve body shall be full flow equal to nominal pipe diameter at all points through the valve. The body seat shall be O-ring sealed and field replaceable without removing the valve from the line. The end flanges shall contain integrally cast mounting pads on sizes 3 inch (80mm) and larger.
4.2 The top access port shall be full size, allowing removal of the disc without removing the valve from the line. The access cover shall be domed in shape to provide flushing action over the disc for operating in lines containing high solids content.
4.3 The disc shall be of one piece construction and connected to the shaft with a disc arm and two pivot pins to provide pivot action to allow for self-adjusting seating at all pressures. 14 inch and larger discs shall be convex shape for lift stabilization and strength.
4.4 The disc seat shall be resilient with integral O-ring type sealing surface for drop tight shut-off at high and low pressures and for easy replacement in the field without removing the valve from the line.
4.5 The shaft seals shall consist of v-type packing in a fixed gland with an adjustable follower designed to prevent over compression of the packing and to meet design parameters of the packing manufacturer. Removable, slotted shims shall be provided under the follower flanges to provide for adjustment and prevent over loading of the packing.
4.6 When specified, the valve shall be factory equipped with a lever and weight assembly. The lever shall be equipped with three holes for adjusting the bolted weight assembly. When the valve is closed, the lever and weight shall be located 30 degrees below horizontal.
4.7 When specified the valve shall be factory equipped with a lever and air and or/oil cushion assembly mounted between the weight assembly. The air cushion assembly shall consist of a clevis mounted tie rod type closed cylinder with the exhaust port piped to a brass flow control valve and the inlet port piped to a breather/filter. The Swing Check Valve can have an oil cushion cylinder can easily be added to the air cushion cylinder in the field to achieve complete control over the full stoke of the valve. The first 90% of the stroke is controlled by the air cushion and the last 10% of the stroke is controlled by the oil cushion.

4.8 When specified, the valve shall be factory equipped with a lever and spring assembly. The spring shall be mounted to a bracket on the side of the valve body with a bolt assembly to adjust the spring tension.

5. Materials
5.1 The valve body, cover and disc shall be constructed of ASTM A536 Grade 65-45-12 ductile iron (sizes 2 inch. (50mm) through 24 inch (600mm) and ASTM A126 class B, gray iron (sizes 30 inch (800mm) through 48 inch (1200mm)). Optional body materials include ASTM A536 Grade 65-45-12 ductile iron (sizes 30 inch (800mm) through 48 inch (1200mm)).

5.2 The exterior and interior of the valve shall be coated with an NSF/ANSI 61 approved fusion bonded epoxy coating.

5.3 The removable body seat shall be constructed of ASTM A276, Type 304 stainless steel.

5.4 The resilient seat shall be precision molded BUNA-N (NBR), ASTM D2000-BG. When specified, optional seat material includes EPDM.

5.5 The disc arm and external levers shall be ASTM A536 Grade 65-45-12 ductile iron.

6. Options
6.1 A pre-wired limit switch will be provided (when specified) to indicate open/closed position to a remote location. The mechanical type limit switch shall be activated by the external arm and rated for NEMA 4, 6, or 6P and shall have U.L. rated 5 amps, 125 or 250 VAC contacts.

7. Manufacture
7.1 All valves shall be hydrostatically and seat tested per AWWA C508 to demonstrate zero leakage and structural integrity. When requested, the manufacturer shall provide test certificates, dimensional drawings, parts list drawings, and operation and maintenance manuals.

7.2 Swing Check Valves shall be J&S Series 9100LW (lever and weight), 9100LS (lever and spring) 9100AC (air cushion and weight) or 9100AOC (air/oil cushion combination and weight) as manufactured by J&S Valve, Inc. Huffman, TX USA or approved equal.