Cast Steel Swing Check Valves

CRANE

Typical Swing Check Valve Features

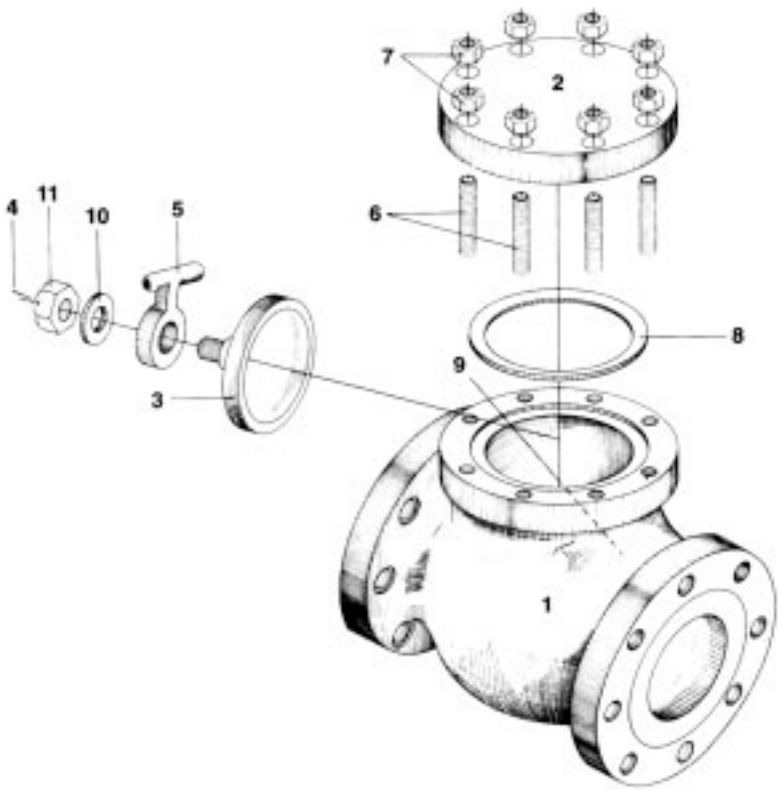
Check valves are automatically actuated. They are opened and sustained in the open position by the force of velocity pressure, and closed by the force of gravity. Seating load and resultant tightness is dependent upon back pressure. The disc and associated moving parts may be in a constant state of movement if the velocity pressure is not sufficient to hold the valve in a wide open and stable position. Premature wear and noisy operation or vibration of the moving parts can be avoided by selecting the size of check valve on the basis of flow conditions. The minimum velocity required to hold a swing check valve in the wide open and stable position has been developed by analysis of extensive test data and is expressed by the formula:

$$v = 60\sqrt{\overline{v}}$$

The value for v is equal to flow in feet per second and $\overline{v}$ is the specific volume of fluid in cubic feet per pound. Sizing swing check valves on this basis may often result in the use of valves that are smaller than the pipe in which they are used, necessitating the use of reducers for installation. The pressure drop will be no greater than that of the larger valve that is only partially open, and valve life will be greatly extended. The added bonus, of course, is the lower cost of the smaller valve.

There is no tendancy for the seating surfaces of swing check valves to gall or score, because the disc meets the flat seat squarley without rubbing contact upon closing. The regularly furnished “XU” trim is therefore suitable for all services that require U trim at temperatures to 1100°F.

Swing check valves are used to prevent reversal of flow in horizontal or vertical pipe lines. In vertical lines, or for any angle from horizontal to vertical, they can be used for upward flow only.



1. **Body:** Strong construction assures maximum safety over the recommended pressure and temperature range.
2. **Cap:** permits access to hinge and disc without removing valve from line.
3. **Disc:** is designed to close on its own weight to stop backflow from gaining sufficient velocity to create damaging shock.
4. **Disc Nut Pin**
5. **Hinge**
6. **Hinge Pin Plug**
7. **Cap Stud**
8. **Cap Stud Nuts**
9. **Cap Gasket**
10. **Body Seat Ring** (welded in)
11. **Disc Washer**
12. **Hinge Pin**
13. **Disc nut**