



General Suppliers

Ductile Iron Swing Check Valve PN16 MV30 - 311D

Installation & Maintenance Instructions

CE MARKING AND THE PRESSURE EQUIPMENT DIRECTIVE 97/23/EC

This has been implemented in United Kingdom law by the Pressure Equipment Regulations 1999 (SI 1999/2001).

The regulations apply to all valves with a maximum allowable pressure greater than 0.5 bar.

Valves with a maximum allowable pressure not exceeding 0.5 bar are outside the scope of the Directive.

Valves are categorized in accordance with the maximum working pressure, size and ascending level of hazard, which is dependent on the fluid being transported.

Fluids are classified as Group 1, dangerous fluids or Group 2, all other fluids including steam. Categories are SEP (sound engineering practice) and for ascending levels of hazard, I, II, III or IV. All valves designated as SEP do not bear the CE mark nor require a Declaration of Conformity.

Categories I, II, III or IV carry the CE mark and require a Declaration of Conformity

(Note- all valves up to and including 25mm (1") having a maximum allowable pressure greater than 0.5 bar are designated SEP regardless of fluid group).

THE ATEX Directive 94/9/EC

These swing check valves are excluded from the ATEX Directive since they have no source of ignition, should not be installed in potentially explosive atmospheres and should only transport Group 2 non-hazardous liquids.

PRODUCT LIFE CYCLE

The life of the valve is dependent on its application, frequency of use and freedom from misuse.

The properties of the fluid being transported such as pressure and temperature must be taken into account to avoid premature failure.

Other factors to be considered are the electrolytic interaction between dissimilar metal used in the system, dezincification and stress corrosion cracking occurring on chilled water service.

Before commissioning a system, it should be flushed to eliminate debris and chemically cleaned as appropriate to eliminate contamination, all of which will prolong the life of the valve.



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LIMITS OF USE

These products are categorized as SEP for Group 2 Liquid, but are not necessarily suitable for all fluids in this group.

These valves shall not use on Group 2 Gases and Group 1 Liquids.

Operating pressures and temperatures

Maximum non shock pressure and temperature range:

16 bar from -10°C to 120°C

11.8 bar at 230°C

Water hammer and other shock conditions should be avoided. Not suitable for fatigue loading, creep conditions, fire testing, fire hazard environment, corrosive service or transporting abrasive solids.

Warning: The maximum surface temperatures are given above. Care should be taken when operating the valve at these temperatures, to avoid severe burns to the skin.

PRESSURE / TEMPERATURE RATING

These valves must be installed in a piping system where the normal pressure and temperature do not exceed the above ratings.

If system testing will subject the valve to pressures in excess of the working pressure rating, this should be within the test pressure for the body with the valve in the open position.

If the limits of use specified in these instructions are exceeded or if the valve is used on applications for which it was not designed, a potential hazard could result.

LAYOUT AND SITING

It should be considered at the design stage where valves will be located.

The valve must be installed with the cover upper most in horizontal pipe work and with the flow in the upwards direction in vertical pipe work..

Swing check valves having 6 diameters of straight pipe upstream and 3 diameters downstream are suitable for flow velocities up to 3 m/s.

If the valve is situated such that turbulent flow enters the valve or is situated close to a reciprocating pump then the velocity should not exceed 2 m/s.



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INSTALLATION

Prior to installation, a check of the identification plate and body marking must be made to ensure that the correct valve is being installed.

Valves are precision manufactured items and as such, should not be subjected to misuse such as careless handling or allowing dirt to enter the valve through the end ports.

Valves and adjoining pipe work must be provided with adequate support to avoid inducing bending stresses into the valve body, which will impair its performance.

Immediately prior to valve installation, the pipe work to which the valve is to be fastened should be checked for cleanliness and freedom from debris. Valve end protectors should be removed immediately prior to installation.

The direction arrow cast on the body must be coincident with the direction of flow in the pipeline.

Valves should be lifted using the correct slings.

The surface finish and condition of the gasket contact face on both the valve and pipe work should be checked. Incorrect surface finish or damage can cause leakage and no attempt to assemble should be made until it has been rectified.

Gaskets should be suitable for the operating conditions including the maximum temperature and pressure

Care should be taken to align the flanges being assembled.

During assembly bolts should initially be hand tightened sequentially to make the initial contact ensuring gaskets are concentric with the valve ports and that the flanges are parallel.

Finally tighten the bolts gradually and uniformly in an opposing sequence to prevent bending one flange relative to the other, particularly on flanges with raised faces.

Parallel alignment of flanges is especially important when assembling between exist flanges.

Flanged joints depend on compressive deformation of the gasket material to achieve a seal.

OPERATION

Swing check valves are self-acting and therefore require no manual operation.



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MAINTENANCE

The valve should be at ambient pressure and temperature prior to any maintenance.

A full risk assessment and method statement must be compiled prior to any maintenance. Use only correct fitting tools and equipment.

The valve should be included in a planned maintenance programme to identify any leakage at an early stage and rectified before it becomes serious

These swing check valves should not normally require any maintenance, apart from periodic inspection for leakage from the cover and hinge pin plug joints.

The valve must be isolated from the system and drained when replacing the following:

Replacing the Cover Gasket

Unscrew the bolts, and remove the cover by inserting a screw driver or wedge between the cover and body then tap with a mallet to release adhesion.

Remove old gasket, ensure the gasket surfaces on the body and cover are clean.

Fit new gasket, ensuring correctly positioned, refit the cover and tighten bolts.

Replacing the Hinge Pin Plug Gasket (if fitted)

Slacken the hinge pin plug, unscrew and remove.

Remove old gasket, ensure the gasket surfaces on the body and plug are clean.

Fit new gasket onto the plug, refit the plug and tighten to achieve a seal. Fit genuine Maplef gaskets.

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