General Suppliers

**Cast Iron double door check Valve Wafer Type**
**PN16** **MV30 - 221**

**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 wafer 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:

EPDM elastomeric seat - 16 bar from -10˚C to 120˚C
Nitrile electrometric seat - 16 bar from -10˚C to 90˚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 can be installed in horizontal pipe work and with the flow in the upwards direction in vertical pipe work.
Wafer 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.

For horizontal pipe work the valves must be installed with the disc pin vertical indicated by the retaining plug being uppermost to the pipe work. For vertical pipe work the disc pin can be in any position.

Larger valves should be lifted using a lifting eye bolt or 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 pipe flanges and centralize the valve and gaskets within the flange bolting.

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, this is a particularly problem with wafer check valves located within the flange bolting.

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.

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## OPERATION

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

## MAINTENANCE

These wafer check valves are maintenance free.

**Suit420, 145 Chadwick Court, North Vancouver,**
**BC V7M 3 K 1, Canada**
**Phone: +1 778 945 3014**
**Cell: +1 604 339 6761**
**Info@maplefvalves.ca**
**www.maplefvalves.ca**