General Suppliers

Stainless Steel Metering Station **PN25**

MV60 - 355

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 metering stations 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 Joint 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 metering station.

General Suppliers

Stainless Steel Metering Station **PN25**

MV60 - 355

Installation & Maintenance Instructions

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.

Fig	P.Rating	DN50 to DN200	DN250 & DN300	DN300 to DN600
MV60 – 355	PN25	SEP	SEP	Category I

Operating pressures and temperatures

Maximum non shock pressure and temperature range:

25 bar from -10˚C to 120˚C

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 metering stations 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.

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

Metering Stations should be located to give access for connection of the manometer probes to the test points and if part of a commissioning set for regulating the double regulating valve.

General Suppliers

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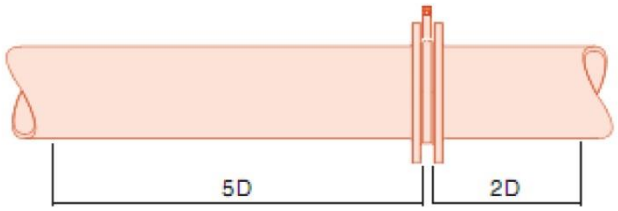
MV60 - 355

Installation & Maintenance Instructions

Metering stations can be installed in horizontal or vertical pipelines.
The preferred orientation in a horizontal pipe is with test points at 45˚ to the vertical.

STRAIGHT PIPE

Metering stations are a flow measurement devise and must be installed with a minimum of 5 diameters of straight pipe upstream, having the same nominal diameter and not including any reducers or intrusions into the bore. A minimum of 2 diameters of straight pipe are required downstream.



INSTALLATION

Prior to installation, a check of the body marking must be made to ensure that the correct metering station is being installed.

Metering stations are precision manufactured items and should not be subjected to misuse such as careless handling, which may damage the edge of the orifice.

All special packaging material must be removed.

Test points and extensions are supplied loose and should be fitted prior to installation.

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

It is important that the internal pipe bore of adjacent pipe is free from internal burrs, weld spatter or other defects which may disrupt the flow entering or leaving the metering station and create an inaccurate flow measurement signal.

Larger stations should be lifted using a lifting eye bolt or the correct sling.

Care should be taken to align the pipe flanges and centralize the metering station and gaskets within the flange bolting.

During assembly bolts should initially be hand tightened sequentially to make the initial contact and that the pipe flanges are parallel. Gaskets should be suitable for the operating conditions including

General Suppliers

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MV60 - 355

Installation & Maintenance Instructions

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 metering stations located within the flange bolting.

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

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

Immediately prior to installation, the pipe work to which the metering station is to be fastened should be checked for cleanliness and freedom from debris.

Where pipe work runs close to a wall or other obstruction ensure there is a minimum of 100mm clearance to allow a manometer probe to be connected to the test point.

OPERATION

Metering stations are used to commission and balance the system.

All entrained air MUST be expelled from the system before accurate measurements of differential pressure (the signal) can be taken.

Each test point is fitted with a cap retained by a colored strap:
Red - the high pressure upstream test point
Blue - the low pressure downstream test point

For safety reasons insertion and withdrawal of the probe during commissioning must be with system cold.

Measurements are taken by inserting the test probe into the test point, silicone oil or grease should be lightly smeared onto the probe prior to insertion.

Refer to the relevant Maplef flow chart to relate measured signal to actual flow rate.

MAINTENANCE

Metering stations are maintenance free.

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