



Fig. KSSM16 & Fig. KSSM25 Stainless Steel Metering Station Installation & Maintenance Instructions

PRODUCT LIFE CYCLE

The life of the metering station is dependent on its application 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.

OPERATING PRESSURES AND TEMPERATURES

Maximum non shock pressure and temperature range:

KSSM16 - 16 bar from -10°C to 120°C

KSSM25 - 25 bar at 120°C and 24.2 bar at 180°C

Not suitable for fatigue loading, creep conditions, fire testing, fire hazard environment, corrosive service or transporting abrasive solids.

Movement of the pipework should be confirmed as the wrong selection may result in failure of the joint.

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 metering station 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.

Metering stations can be installed in horizontal or vertical pipelines.

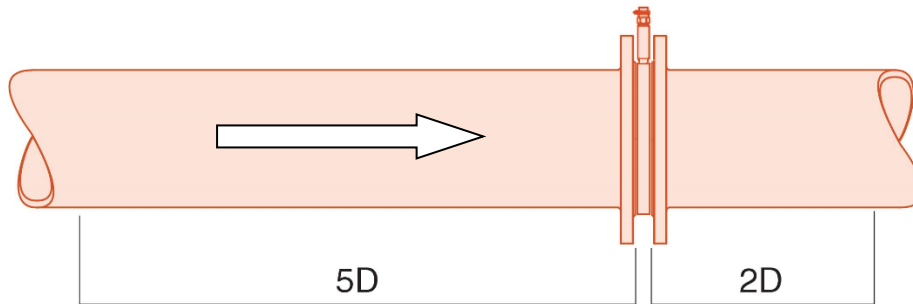
The preferred orientation in a horizontal pipe is with test points at 45° to the vertical.

STRAIGHT PIPE

Metering stations are a flow measurement device 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.

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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 the maximum temperature and pressure and compressed to achieve a seal.

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 exist flanges.

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

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



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Where pipework 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 coloured 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.

OPERATION

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

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

MAINTENANCE

Metering stations are maintenance free.