

Engineering Data Sheet

Document No:- 004BR1832D799 rev 3

Installation, Operation & Maintenance Instructions for
Fig 1832 Motorised Fixed Orifice Double Regulating Valve

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Date 13th February 2006

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 categorised 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.)

PRODUCT LIFE CYCLE

The life of the valve is dependent on its application, frequency of use and freedom from misuse. Compatibility with the system into which it is installed must be considered. The properties of the fluid being transported such as pressure, temperature and the nature of the fluid must be taken into account to minimise or avoid premature failure or non-operability. A well-designed system will take into consideration all the factors considered in the valve design, but additionally electrolytic interaction between dissimilar metals in the valve and the system must be examined. 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.

LIMITS OF USE

The valves to which these installation, operation and maintenance instructions apply have been categorised in accordance with the Pressure Equipment Directive.

The fluid to be transported is limited to Group 2 liquids i.e. non-hazardous and on no account must these valves be used on any Group 2 gases, Group 1 liquids or Group 1 Gases.

The Fig 1832 with PN16 pressure rating, for sizes 1/2 and 3/4 inch are categorised as SEP and do not require the CE mark

Operating pressures and temperatures

PN	Non-shock pressure at temperature range	Non-shock pressure at max. temperature
16 Compression 16 Threaded	16 bar from 2°C to 30°C 16 bar from -10°C to 100°C	5 bar to 120°C 13.5 bar at 120°C

Maximum differential pressure 1.2 bar

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

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PRESSURE/TEMPERATURE RATING

These valves must be installed in a piping system whose normal pressure and temperature do not exceed these 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 open.

The maximum allowable pressure in valves as specified in the standards is for non-shock conditions. Water hammer and impact for example, should be avoided.

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 to give access for operation, adjustment, maintenance and repair.

Valves must be provided with adequate support. Adjoining pipework must be supported to avoid the imposition of pipeline strains on the valve body, which would impair its performance.

The Fig 1832 is a motorised fixed orifice flow measurement double regulating valve and is normally installed in the return pipe.

Conventionally, valves and commissioning sets are installed in horizontal pipework. This is however not a constraint and they may be mounted in vertical or inclined pipework, inverted or rotated to clear walls, ceilings and other restrictions. When installed with an Actuator, further restrictions may apply as specified in the Actuator manufacturer's instructions.

In the interests of safety, valves should not be installed for end-of-line service

INSTALLATION

Prior to installation, a check of the body markings must be made to ensure that the correct valve is being installed. Valves are marked on the bonnet to represent the following:-

L	1832L	preferred flow rates between	0.01l/s to 0.03l/s
M	1832M	-----"	0.029l/s to 0.06l/s
S	1832	-----"	0.054l/s to 0.24l/s 1/2" and 3/4" 0.116l/s to 0.27l/s

Valves are precision manufactured items and as such, should not be subjected to misuse such as careless handling, allowing dirt to enter the valve through the end ports, lack of cleaning both valve and system before operation and excessive force during pipe tightening and drive sleeve operation.

All special packaging material must be removed.

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

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Confirm that the pipe threading length is correct to avoid excessive penetration of the pipe into the valve, which may otherwise cause damage.

Thread sealing compounds appropriate to the application must be used but excessive use should be avoided, since this increases thread interference and may cause overstressing of the body ends.

Ensure the threads are properly engaged and proceed to tighten the valve onto the pipe. The wrench must only be located on the valve end into which the pipe is being threaded to avoid distortion of the valve.

When installing the Fig 1832 care should be taken regarding the orientation of the test points to give sufficient room for manometer probe connection. There must be a minimum of 5 diameters of straight pipe upstream and 2 diameters downstream of the same nominal diameter, excluding any reducers or any other intrusions into the bore.

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

Care is needed during installation to provide free access to enable the valve to be fully operated and regulated in the required position.

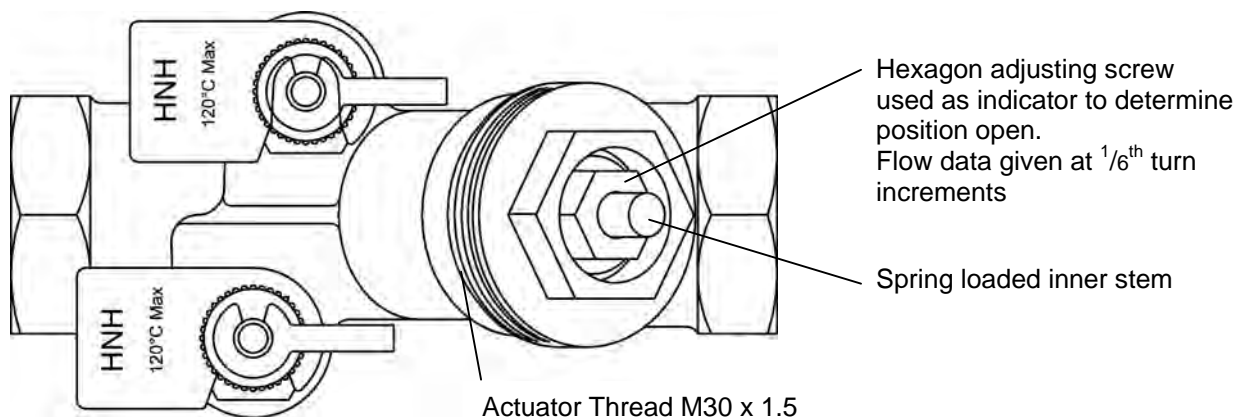
OPERATING

The valve can be isolated using the spring loaded inner stem (used by the white protective cap and electric actuator) and the hexagonal nut operated regulating device.

The white protective cap can be used to operate the valve during the construction period ie when no actuator is available. But the cap must not be used for permanent shut-off of the valve against system pressure.

Flow regulation is achieved by adjusting the drive sleeve with an M10 socket until the required flowrate is obtained, as derived from the 'signal' measured across the orifice plate using the pressure test points.

Flow data is available to correlate the measured signal against flow through the valve.



The valve does not have an indicator for determining the partially open position, this must be done using 1/6th of a turn increment as indicated by the hexagonal nut and wrench, rotating from the closed position.

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Regulating Device	Max Turns	2
	Max Lift	3 mm
Normal Actuator Travel		2.5 mm
Max position open for isolation by actuator		1 ⁴ / ₆ turn
Maximum position open for initialising actuator		1 ³ / ₄ turn

The double regulating feature is now set which enables the valve to be fully closed for isolation and re-opened to the previously set correct position.

To close the valve, the white protective cap can be rotated clockwise or the actuator can be activated.

Note: If the valve is isolated using this hexagon-regulating feature the setting will be lost.

Suitable for use with all manufacturers actuators meeting the following specification:

- M30 x 1.5 connecting thread
- Suitable for use with either 24v/230v on/off OR 24v/230v modulating actuator
- Actuators need a force of 90 Newton's against a differential pressure of 1.2 bar to close the valve.
- Nominal closing dimension of 11.5mm

MAINTENANCE

The Fig 1832 does not require any routine maintenance.

The valves should be at zero pressure and ambient temperature prior to any inspection.

Maintenance Engineers & Operators are reminded to use correct fitting tools and equipment.
A full risk assessment and methodology statement must be compiled prior to any maintenance.

The risk assessment must take into account the possibility of the limits of use being exceeded whereby a potential hazard could result.

A maintenance program should therefore include checks on the development of unforeseen conditions, which could lead to failure.

For the supply of genuine Hattersley spares, technical assistance or Hattersley ValveServe contact:

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