

MAINTENANCE

The Hattersley Ball valve is maintenance free and will have a long service life.

The valve 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 programme should therefore include checks on the development of unforeseen conditions, which could lead to failure.



Fig 108C Service Ball Valves

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.)

Fig. 108C



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



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LIMITS OF USE

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

These products are categorised for Group 1 liquids, but are not necessarily suitable for all fluids in this group. Codes of practice, specifications and regulations should be referred to for specific guidance regarding valve selection on hazardous service. These valves may also be used on Group 2 gases and Group 2 liquids.

Fig 108C copper alloy ball valves in PN16 (compression) pressure ratings and in sizes 15mm and 22mm are categorised as SEP and do not require the CE mark.

OPERATING PRESSURES AND TEMPERATURES

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

TEMPERATURE °C	-10 to 30	65	110	120
PRESSURE bar	16	10	6	5

PRESSURE/TEMPERATURE RATING

These valves are suitable for PN16 compression pressure ratings. They 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.

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.

The following publications provide details of correct spans and installation details:

- BS3974, Specification for Pipe Supports (Available from BSI)
- DOI Directorate of M & E Engineering Services, M & E No. 3 (Available from HMSO)

The Fig 108C valves are bi-directional and can be installed in any flow direction.

In the interests of safety, it is not recommended that valves are used for end of line service.

INSTALLATION

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 lever 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.

COMPRESSION END VALVES

These valves are fitted with compression ends to BS EN 1254 Part 2, which are suitable for installation onto BS EN 1057 R250 (half hard) copper tube and are provided with olives and compression nuts.

Compression nuts must be tightened hand tight and then further tightened as per the following recommendation: A light oil may be used on threads to ease tightening but no lubricant should be used on the pipe or olive.

	15mm	22mm	28mm	35mm	42mm	54mm
FURTHER TIGHTENING	BETWEEN $\frac{3}{4}$ AND $1\frac{1}{4}$ TURNS					

After installation, the valve may be opened and closed fully to confirm satisfactory operation.

OPERATION

Ball valves have a quarter turn operation (clockwise to close) providing quick and positive isolation.

Note: Rapid closure of a quarter turn valve on liquid services may cause system water hammer. Ball valves have PTFE body seats and should only be used in the full open or closed positions.

Note: If valves are used in the partially open position for regulation their ability to isolate may be impaired and they may become difficult to operate.

- To close the valve, the handle is rotated clockwise to a positive stop.
- To open the valve, the handle is rotated anti-clockwise to a positive stop.
- The handle can be removed for screwdriver operation.

Note: The operator should use suitable hand protection at extreme temperature conditions.