



Product Information and Instructions Fig 450 Ball Valves

CE MARKING AND THE PRESSURE EQUIPMENT DIRECTIVE 2014/68/EU, UKCA MARKING AND THE PRESSURE EQUIPMENT REGULATIONS SI2016 No. 1105 AS AMENDED BY SI2019 No. 696

The regulations apply to all valves that are not designed specifically for pipelines. Valves with a maximum allowable pressure not exceeding 0.5 barg are outside the scope of the directive. Valves are categorised in relation to the intended fluid contents, the maximum working pressure and the nominal size. Fluids are classified as Group 1, dangerous substances, Group 2, all other fluids including steam. Categories are SEP (sound engineering practise) and for ascending levels of hazard, I, II, III or IV. Valves designated as SEP do not bear the CE or UKCA mark and do not require a Declaration of Conformity.

Valves classified as category I, II, III or IV carry the CE or UKCA 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 upon its installation and application. The valve should be protected from the adverse effects of mechanical shock, loading and excess weight and corrosion. This includes forces either applied to it or via the installation process or pipework that the valve is attached to; also consideration should be given to various loadings, which can occur at the same time. The valve on no account should be tampered with or modified in any way.

If for any reason work is to be carried out on the valve it is wholly the responsibility of the user to ensure the valve is depressurised and rendered safe prior to any fasteners / fixings being loosened.

To ensure correct installation of the valve it is essential that the personnel carrying out the installation have correct training and skills.

TYPE

Reduced bore soft seated ductile iron ball valve with block and bleed facilities.

- Energised seats for positive sealing at all pressures.
- Unique design, resilient seatings compensate for wear.
- Compact design occupies minimum space.
- Quarter turn operation with self-indicating handle.
- Blow-out proof stem.
- Full floating ball on PTFE seats ensure easy operation after long periods in fully open or closed position.
- Round port giving smooth straight through flow with low pressure drop characteristics.

LIMITS OF USE

The valve is very versatile in application, being suitable for a wide range of fluids including air, Natural Gas and miscellaneous gases, oil, steam, and non-corrosive fluids.

The valves are designed for 'end of line' service. Therefore the valve can be mounted at the end of a pipeline without the need of a blanking flange or plug. It is recommended to fit a flange or plug to prevent discharge to atmosphere in the event the valve being operated.

They are not suitable for fatigue loading, creep conditions, wind and earthquake loading, fire testing, fire hazard environment, corrosive or erosive service, transporting fluids with abrasive solids. It is the responsibility of the end user/installer to ensure the integrity of the valve is not adversely affected by the surrounding environment. If there is any doubt the user/installer must implement checks to monitor the product integrity.

The flanged valves referred to in this document have been categorised in accordance with the Pressure Equipment Directive, Pressure Equipment (Safety) Regulations.

Maximum Allowable Pressure PS (barg)	Nominal Size DN	Category
7	50 – 100	1
	150	2

Categories I, II, and III require CE or UKCA mark.

OPERATING PRESSURES AND TEMPERATURES

Maximum Cold Working Pressure: 7 barg (102 psig)

Temperature Range: -10°C to +60°C (MK2 Version)
-10°C to +200°C (MK1 Version)
(MOP reduces to 6bar at 200°C)

PRESSURE/TEMPERATURE RATING

Valves must only be installed in a piping system whose 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 production test pressure for the valve.

The maximum allowable pressure as specified 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.

STORAGE

The valve should be handled and stored in such a way as to always protect the valve from becoming damaged both internally and externally, either mechanically or by chemical/substance corrosion and to ensure the protective coating supplied remains intact.

If outdoor storage is unavoidable, valves should be supported off the ground and protected by a weatherproof cover.

Rubber components in valves, or provided as spares, should not be exposed to heat or direct sunlight where this can be avoided, as this accelerates the ageing of the rubber.

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.

Heavy valves may need independent support or anchorage.

The valves are delivered corrosion protected for normal transportation and storage conditions only. It is the users/installers responsibility to further adequately protect the valve from corrosion in relation to the installed environment.

The valves may be installed in any orientation.

In the interests of safety, it is highly recommended that valves installed on end-of-line services should be fitted with a locking device on the operating mechanism or a blanking flange on the downstream flange of the valve to prevent unauthorised discharge to atmosphere.

INSTALLATION

Prior to installation, a check of the valve labelling and marking must be made to ensure that the correct valve is being installed.

Record the valve serial number and its location to help with traceability.

The valve should be fully opened and closed to ensure it is operating satisfactorily.

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.

Excessive forces during installation and operation must be avoided.

All special packaging materials must be removed.

When valves are provided with lifting lugs or eye nuts, these should be used to lift the valve. These lugs are designed to take the weight of the valve only and not any attached pipe work etc. Valves should not be lifted using the handwheel or stem. During lifting all applicable Health & Safety requirements should be observed.

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

Valve end protectors should only be permanently removed immediately before installation. The valve interior should be inspected through the end ports to determine whether it is clean and free from foreign matter.

The mating flanges (both valve and pipework flanges) should be checked for correct gasket contact face, surface finish and condition. If a condition is found which might cause leakage, no attempt to assemble should be made until the condition has been corrected.

The gasket should be suitable for operation conditions or maximum pressure/temperature ratings and should be checked to ensure freedom from defects or damage.

If fitted, valve end protectors should not be removed unless necessary to do so for inspection or installation.

Care should be taken to provide correct alignment of the flanges being assembled. It is important when installing any valve that pipeline stresses are kept to a minimum and no undue external forces are placed on the valve connections. During assembly the bolts must be tightened sequentially to make the initial contact of flange and gasket flat and parallel followed by gradual and uniform tightening to the specified torque for the gasket being used in an opposite bolting sequence to avoid bending one flange relative to the other, particularly on flanges with raised faces.

Parallel alignment of flanges is especially important in the case of the assembly of a valve into an existing system.

The bolting used for the flange connection must be checked for correct size, length, material and that all connection flange bolt holes are utilised.

CORROSION PROTECTION: It is the users/installers responsibility that valves intended for underground usage or valves to be installed in an area with risk of corrosion are to be provided with adequate corrosion protection, e.g. appropriately wrapped. The corrosion protection should be of a sufficient quality and execution to ensure protection of the valves and their components against the environment in which they are installed throughout their expected lifetime.

OPERATING

Clockwise closing.

The following options are available

- A false cap can be fitted instead of the lever to make the valve suitable for buried service.

MAINTENANCE

The valve is designed to give long trouble free service without the need of routine maintenance.

If internal or external leakage is suspected, it is recommended that the Donkin Valve Division be contacted to suggest suitable remedial action.