



Operation Manual

two-piece threaded end ball valve (K2.)

1. General Precautions

a. Operation:

Ball valve is a kind of isolating valve used in a pipe line system, which intended for use only in the closed or fully open position. In the open position, it allows the flow passes through.

b. Material Selection:

The possibility of material deterioration in service and the need for periodic inspections is depended on the contained fluid. Carbide phase conversions to graphite, oxidation of ferrite materials will decrease in ductility of carbon steels at low temperature are among those items. However information about corrosion data is provided together with this user manual, the user is requested to take attention or consideration to determine the suitability of material in their application.

c. Pressure-Temperature rating:

The Pressure-Temperature rating is considered for static pressure. Please refer to P & T rating section 3 for actual application. The allowable temperature is -10 °C to the max temperature decided by sealing materials (See actual service temperature on the name plate attached) . Do not exceed the temperature range to avoid danger.

d. Fluid thermal expansion:

It is possible, when the ball valve is in closed condition, the sealed cavity within the valve body to be filled with liquid. If this liquid is not released, by partially opening the valve or some other means, and it is subject to a temperature increase, excessive pressure sufficient to cause pressure boundary failure can be occurred. However our products have pressure self-relief seat to prevent pressure built up, user is recommended to prevent that the pressure in the valve will not exceed that allowed pressure, by means of piping design, installation, or operation procedure.

e. Liquids with high fluid velocity:

The ball valves might be operated frequently with very high velocity liquids, a check shall be made with the valve distributor or manufacturer for appropriate advice to minimize the possibility of seat deformation, especially when they are highly pressurized on high-temperature line.

f. Throttling service:

Ball valves are generally not recommended for throttling service, where both the fluid flow and the leading edge of the ball can damage or deform the resilient ball seats causing leakage. High fluid velocity or the presence of solid particles in suspension will further reduce seat life in throttling applications.

g. Do not open the bonnet or cap when bearing pressure. Valve is not equipped with pressure access device. User should check it by other method through its piping system.

h. Do not touch the surface of valve at high temperature condition.

i. Not allowed for unstable fluid, otherwise specified with PED category III in Declaration of conformity or/and in this user manual.

j. Lock design on the handle is only available upon request to avoid the valve by un-intended operated by un-authorized person.

3. Pressure-Temperature Ratings

The pressure-temperature rating of ball valves are determined, not only by valve shell materials, but also by sealing materials used for ball seats, stem packing, and body seal. Sealing materials may be high molecule, elasticity and hardness, however, the choice is limited by the characteristics of the service fluid, temperature, pressure, velocity of fluid, frequency of valves operation and sizes of ball valves etc. User shall notice the maximum temperature labeled on the name plate. Followings are the general rating charts for non-shock fluid service for floating ball valves by nominal pressure and by material.

4. Delivery Condition and Storage

Valves stay in the open condition during the transportation. Valves must store in an indoor warehouse to avoid dusts and other foreign object. Do not take off the dust cover except ready to install immediately.

5. Installation and Operation

5.1 Cleaning

Even the valves was transported under a clean environment, operator must check is there any foreign body or dusts inside the bore. If yes, clean it before installation. Operator clean the valves by water, compression air, or steam

5.2 Valve Installation

(Install to the pipeline system)

a. Direction

Ball valve does not restrict the flow direction. Just consider the natural sequence to do opening and close the valve.

b. Position

Ball valve can be installed in any position, but the operator shall consider the load of the pipe line system not to apply at the connection area. It will cause deformation and leakage.

c. Connecting to pipeline

Care should be taken not to thread-cut the pipes excessively. Care should be taken not to over-tighten the pipe connected to the valve. If the pipe is inadvertently screwed deep into the thread chamber of the valve, it may deform the body seat. Prior to pipe connection, remove all foreign material deposits, such as mud, rust, oil and swarf, from the thread-cut portion of the pipe.

Remove any swarf from the thread-cut portion of the pipe, then wrap with Teflon tap, or apply a thin coat of an appropriate liquid sealant (pipe compound), to that portion. The liquid sealant should be selected with due consideration to the kind and temperature of the fluid, and must be applied on the thread of the pipe.

Be sure to hold the pipe in the pipe vice and screw the valve onto it. In this case, always apply the wrench to the connected end of the valve.

5.3 Operation

- a. For manual operation, shift the handle in counter-clockwise direction for opening and clockwise for close.
- b. If the handle is in parallel position with the flow direction, the valve is open. If the handle is in right angle position with the flow direction, the valve is close.

6. Put into service

- a. After install to the pipeline, it is necessary to check the function of the product. Thus, operate the valve about 3 times to ensure the function.
- b. Systems hydrostatic test
Before delivery, valves are tested 1.5 times the allowable working pressure at ambient temperature in open position. After installation, the pipe line system may subject to system tests, as condition not to exceed the maximum working pressure.
- c. After pressure testing, user shall operate the valve again about 3 times to ensure the function.

7. Dangers of inappropriate use

- a. Never uses the product exceed its allowed condition, such as pressure, temperature and fluid. If the product has any inappropriate use, the product was damage however there are no signals occurs immediately. User shall change the product to avoid danger in the future.

8. Maintenance

- a. Periodically observe the valve to be sure of proper performance. More frequent observation is recommended under extreme usage.
- b. Routine maintenance consists of tightening the stem nut 1/4 turn periodically to compensate for the wear caused by the stem's turning against the resilient PTFE seal.
- c. Disassembly
Not recommended for demolition because

you must use a special mold

9. Corrosion Data

Corrosion Data of the metal parts, seals and packing material are provided in annex sheet of this user manual. The corrosion data is just for information only. If any doubt of the corrosion resistance, contact the original manufacturer or services center.