INSTALLATION AND OPERATION MANUAL

Threaded Connection Valve

Fire Protection Products
BBG-300 | BBT-300 | BGV | BAV | BGVT | BGL | BHVFF | BHVGF | BHVFM | BHVGM

Mechanical Services & HVAC Products
F2B16 | F2Z16 | F2G20 | F2G32R | F2S16 | F2M16 | F3G20R | F3S20R | F3M20R | F4B25 | F4G25 | F4S16O | F4M16O | F4S16D | F4M16D | F4S40D | F4M40D | F4S16T | F4M16T | F4S40T | F4M40T | F5B16L | F5B16S | F5G20S | F5S16S | F5M16S | F5316L | F5M16L | F6G25 | F7B16 | F7Z16 | F7G20 | F7S16 | F7M16 | F9B10

This manual is also available online.

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SAFETY PRECAUTIONS

Caution

Read and understand carefully this document prior attempting to install Fivalco® products. Failure to follow these instructions could cause severe injury, product and/or property damage.

Installation, maintenance and replacement of Fivalco® products must be implemented by an experienced, well trained installer. Wear safety glasses, helmet, hand and foot protection during installation.

The owner is responsible for maintaining the system in proper operation condition.

Fivalco shall not be held responsible for any incidents arising from improper installation, operation and maintenance work. The responsibility for this must rest with the installer and user.

Disclaimer

This manual serves as a general guideline and reference to the installers and users. Every effort has been made to ensure the information contained in this manual is accurate at the time of publication. Fivalco Limited assumes no responsibility or liability for any errors and/or misinterpretation of the information. Contact your local vendor, distributor or Fivalco Limited for detail technical data and specification of each model, and if any additional information is required. We reserve the right to alter this manual without notice.

"THE QUALITY GOES IN BEFORE OUR NAME GOES ON"

fivalco®

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Threaded Connection Valve

THREADED CONNECTION VALVE

1 GENERAL

Fivalco threaded or screwed connection valves ranging for pipe size diameter of 10mm up to 100mm. Fivalco threaded connection valves made up of brass, DZR brass, bronze and stainless-steel material.

In general, valves available in BSPT or NPT thread standard.

2 UNLOADING & TRANSPORTATION

A vital consideration in handling valves should be avoid damaging or scratching the valve surface and internal parts.

All valves should be unloaded carefully. Each valve should be carefully lowered from the truck to the ground; it should not be dropped. Failure to carefully follow these recommendations is likely to result in damage to the valve.

3 STORAGE

Valves should be stored indoors under dry, cool conditions, away from direct sunlight and corrosive or otherwise chemically active atmosphere. If outside storage is required, means should be provided to protect the operating mechanism from weather elements. During outside storage, valves should be protected from the weather, sunlight, ozone, and foreign materials. In colder climates where valves may be subject to freezing temperatures, it is absolutely essential to remove the water from the valve interior before storage. Failure to do so many results in a cracked valve casting.

4 INSPECTION PRIOR TO INSTALLATION

Valves should be inspected at the time of receipt for damage in shipment. The initial inspection should be to verify compliance with specifications (type, size, material, pressure and temperature ratings), direction of opening, and type of end connections. A visual inspection of the seating surfaces should be performed to detect any damage in shipment or scoring of the seating surfaces. Inspection personnel should look for bent stems, broken handwheels, cracked parts, loose part, missing parts and accessories, and any other evidence of mishandling during shipment.

In the case of gate valve, globe valve, butterfly valve, hose valve and ball valve, each valve should be operated through one complete opening-and-closing cycle in the position in which it is to be installed. Contact your vendor or local representative immediately if any disorder is found.

5 INSTALLATION

At the jobsite prior to installation, each valve should be visually inspected and any foreign material in the interior of the valve should be removed.

Before being installed, the valves need to be cleaned so as to eliminate the dust caused during the transportation and storage. Confirm the type of connection and standard before starting the installation work.

Valves can be installed at horizontal or vertical pipe line depending on its application. When being installed, the medium flow direction should be the same as the flowing direction on the valves, if any.

Provide sufficient space for valves for easy installation, operation, maintenance, inspection and replacement. Ensure that both upstream and downstream pipes are aligned to eliminate unnecessary stress on the valve body. The distortions in the pipelines will affect the tightness of the connection and damage the valve.

During installation, it is essential to ensure to use the wrench or spanner at the hexagon part of the threads to tighten the valve so that the stress would not be acting on the valve body (See figure 1). Sealing material such as sealing tape or PTFE tape to be applied on the male threaded part of the pipe or valve for tight sealing and prevent leakage.

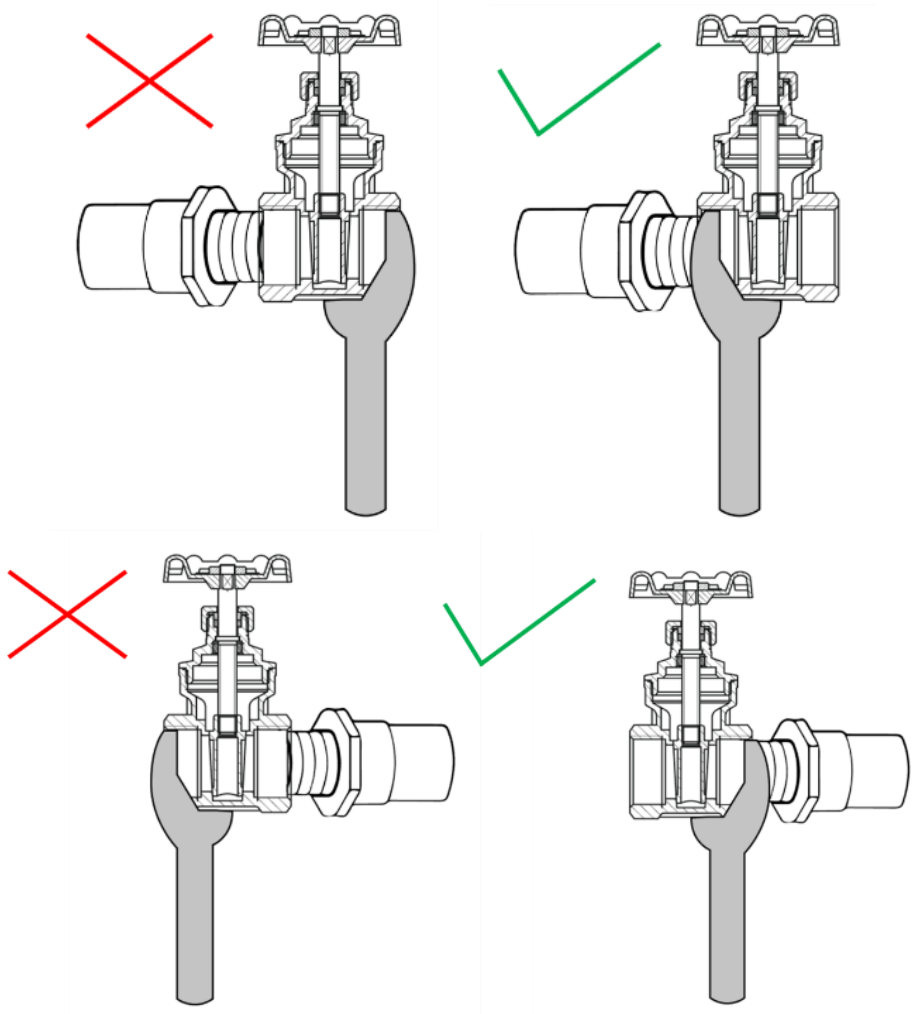

Figure 1: Proper use of wrench or spanner during installation of threaded valves.

Do not apply excessive torque to the thread pipe end into the valve. Pipe end must not over-tighten and in contact with the partition to the wedge, disc or internal mechanism of the valve in order to prevent the valve from deformed. Valves must be tightening within the maximum tightening forces (see table 1).

Nominal	Size	Max. Tightening Torque
mm	Inches	N.m.
15	½"	28
20	¾"	47
25	1"	56
32	1 ¼"	65
40	1 ½"	74
50	2"	84
65	2 ½"	106
80	3"	123
100	4"	140

Table 1: Threaded valves recommended tightening forces.

After installation and before pressurization of the valve, all pressure-containing section (bonnet, seal plate, packing gland, and end connections) should be inspected for adequate tightness to prevent leakage. In addition, an inspection should be made for adequate tightness of all tapped and plugged connections to the valve interior. Proper inspection at this time will minimize the possibility of leaks after pressurization of the piping system.

In order to prevent time lost searching for leaks, it is recommended that the valve excavations are not backfilled until after pressure tests have been made. After installation, it is desirable to test newly installed piping sections, including valves, at some pressure above the system design pressure. The valve should not be operated in either the opening or closing direction at different pressures above the rated working pressure. It is also recognized that wear or foreign material may damage valve seating surfaces and may cause leakage.

On completion of the installation, valve location, size, make, type, date of installation, number of turns to open, direction of opening, and other information deemed pertinent should be entered on permanent records.

6 OPERATION OF VALVES

Gate Valves / Globe Valves

Gate valves shall not be used as a throttling function or to control the flow. It must be fully opened or closed at all time.

Please ensure to turn the gate valves or globe valves according to the direction of opening and closing which usually indicated on the hand wheel. To prevent damage or deform of the gate valves or globe valves, it must be operated within the allowable and maximum operating torque by using hands only, and not any other tools. Once the gate valve or globe valves has reached the fully opened position, turn the valve slightly towards the closing position so that any stress of the threaded stem may be released.

Strainers
During normal use of a strainer, the screen will become clogged with foreign matter, causing the differential pressure to increase. It is advised to schedule clean or replace the screen on a regular basis.

Check Valves
A check valve requires a minimum upstream pressure (pressure differential between inlet and outlet) to open the valve and allow flow through it. This minimum upstream pressure at which the valve opening occurs is called the check valve 'cracking pressure'. The specific cracking pressure changes based on the valve design and size, so ensure that your system can generate this cracking pressure and that it is suitable for the application.

Please be aware of the pressure fluctuation of the medium and avoid water hammer within the pipeline as it can damage the internal parts of the check valve.

Ball Valves
Ball valves are designed to be opened by rotating the lever handle in a counterclockwise direction, and closing in a clockwise direction. The handle indicates the ball port direction. Please note that under certain conditions, throttling flow in the near-closed position can destroy the valve seats. To prevent damage or deform of the ball valves, it must be operated within the allowable and maximum operating torque by using hands only, and not any other tools.

Double Regulating Valves / Balancing Valves
Double regulating valves or balancing valves operate by means of the handwheel with position indicator or with recordable set position. Design flow is achieved by pre-setting valve's opening position, which could be read from scales at the handwheel. Contact your local distributor for information on electronic commissioning meter. To lock or unlock the pre-setting of the valve, remove the cap at the top of the handwheel. Tighten or untighten the screw using a hexagon wrench and reassemble the cap.

Automatic Air Vent
Automatic air vent opening and closing is determined by the float movement (up-down). The float moves up with the rising water, shutting off the air outlet vent by a float arm. If air enters the air vent, the water level drops with the float, the outlet vent is unblocked to discharge the air. Always ensure that the water is clean to prevent foreign materials entering the air vent which will dampen the operations of the air vent.

7 MAINTENANCE

If the valve is installed according to our standard procedures, it is maintenance free.
However, for every 4-5 years, we recommend that you carry out a routine check of the valve for leaks around the stem and the connection. All seals will in the course of time be influenced by air and sunshine, frequent and careful checks can reveal leaks.

When the valves being used for some time, the leaking may be happened in the filling area because of the friction caused by the stem moving, you can tighten the connection nut of the filling flange and adjust; it is dangerous to change filling with the pipes full of pressure, so we do not suggest you change the filling when the valves are working. If it is dangerous because of the temperature, high pressure and chemical elements, the filling must not be changed under the pressure situation.

8 WARNINGS

The working pressure, temperature, suitable media of valves must be accord with the regulation of the illumination, or that maybe dangerous.

Prior to any maintenance work that requires disassembly make sure that the pressurized line involved is isolated, depressurized and drained before starting any dissembled. Failure to do so may result in sudden pressure release and subsequent severe injury or death. If the pressure exceed regulation, the valve maybe leak and the body maybe explode of craze.

If the temperature is too high, the material maybe invalidation and the valve may be broken. If the media does not accord with the regulation of the illumination, it may rot the body, seat or break the sealing, the body may corrode and craze, the media may be leaked.

WARRANTY STATEMENT

Fivalco's products are designed, engineered and manufactured within its specification of intended use, under the highest quality control possible. Commitment on quality and performance is always at the top of our agenda.

Fivalco warrants that for a period of thirty-six (36) months following delivery, the Fivalco products will perform in accordance with published specifications, and will be free from defects in material or workmanship provided that the products are stored and installed in accordance with recommendations in our catalogues.

Fivalco's obligation shall be to replace any product found to be defective in design, material or workmanship during the warranty period. Fivalco shall not be obligated to refund the purchase price and other liabilities on monetary compensation, nor shall it be obligated to pay for any labor or costs associated with the removal of the defective products or the reinstallation of those products. No warranty coverage will be provided for products that have been altered and / or used for a purpose other than that for which they were designed or installed contrary to Fivalco's guidelines.