EMERSON

ANDERSON GREENWOOD

Before installation these instructions must be fully read and understood

Foreword

In accordance with the requirements of the European Equipment Directive Ref: 97/23/EC Article 3 Section 3 Sound Engineering Practice, this document provides Installation, Operation and Maintenance Instructions.

Anderson Greenwood Instrumentation products covered by this document include:

- Hand Valves, gauge valves, manifolds (and accessories) with multi-turn-rising stem
- Ball valve products with bore sizes of 25mm (1") or less.

SAFETY WARNING

It is important to take the following precautions before you start work on the valve:

1. Personnel installing or making any adjustments to the valves must be competent and utilise approved equipment and clothing normally used to work with the process media where the valve is installed.
2. The process line must be depressurised, drained and vented before installing the valve.
3. Handling of all valves must be carried out by personnel trained in all aspects of manual and mechanical handling techniques.
4. Ensure the valve pressure/temperature limitations marked on the product are equal to or better than the service conditions.

Storage / Protection / Selection / Spare parts

Storage

When Anderson Greenwood valves are to be stored prior to being installed, storage should be in the original delivery crates with any waterproof lining and/or desiccant remaining in place. Storage should be off the ground in a clean, dry, indoor area.

Protection

Anderson Greenwood valves are delivered with protection according to customer's specification, or in accordance with the Quality Assurance Manual.

Selection

Ensure the valve's materials of construction and pressure/temperature limits shown on the identification plate or valve body marking are suitable for the process fluid and conditions. If in doubt contact Anderson Greenwood.

Spare parts

Anderson Greenwood valves are identified by a model number, which is marked on the identification plate or valve body. This reference should be quoted in respect of any after sales queries, spare parts or repair enquiries/orders.

Installation

1. Flow Direction

Check valve nameplate for schematic arrangement, if so equipped, and note which connections are for process, instrument or vent.

1.1 Multi turn rising stem valves are bi-directional unless marked with a flow direction arrow. If a directional arrow is shown then the valve must be installed with the arrow pointing in the direction of flow.

1.2 Ball valves are both uni-directional or bi-directional and the inlet connection is marked on the valve body accordingly.

2. Connections

2.1 Threaded connections should be checked on both the valve and the mating component for thread form and cleanliness. Taper threaded pipe joints depend on an intimate fit between the male and female threads usually with the use of a thread tape or sealant. Parallel threads usually depend on additional seals or gaskets. Do not use substantial wrenching force on a tapered pipe joint until it is apparent that threads are properly engaged. Tapered pipe threads are inherently a loose fit at entry.

2.2 Flanged connections and gaskets should be clean and undamaged. Ensure pipe mating flanges are aligned correctly, bolting should be easily inserted through mating flange holes. Tighten the flange bolts in a diagonal pattern.

2.3 Welded connections should be in accordance with the Code or jurisdictional regulations applicable to the piping system construction and with complete and approved welding procedures. Ensure that the weld profile is clean and in a suitable condition for welding. All multi turn rising stem valves must be in a mid open position prior to welding. All ball valves must be in either the fully open or fully closed position prior to welding.

3. Cleaning and Fitting

Should there be any possibility of abrasive particles (weld slag, sand, chemical clean residue etc.) within the piping system, this could damage valve seating. The system needs to be thoroughly flushed clean prior to operation. Fit the valve into pipe work ensuring easy access of the operating mechanism (Handle / Handwheel / Tee bar).

Contact details

Please consult Anderson Greenwood for any additional information not covered by this document.

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Installation, Operation & Maintenance Instructions

Operation

The handle of the valve has been designed to provide an adequate operating force to seal the valve against the maximum pressure of the valve without the use of additional mechanical advantage. Do not use additional mechanical advantage to operate the valve as this can cause valve damage. Valves with a differential pressure across the seat require a torque to overcome the pressure. The higher the pressure the greater the force to operate the valve.

1 Multi-Turn-Rising Stem Valves

All valves have rising stems with right hand thread. Rotate the handle counter-clockwise to open and clockwise to close.

Valves with rising stems are provided with a backseat. This is a shoulder on the stem or other part of the stem-disk assembly that engages a corresponding seat shoulder on the inner side of the bonnet. It has become generally recognised that use of the stem back seat for stem sealing may mask unsatisfactory condition of the stem packing. For this reason the use of the backseat for normal operational stem sealing is not recommended. Backseats in rising stem valves should be considered basically as stops to prevent overtravel when opening valves. Normal practice should be to unseat the backseat slightly. If it is necessary to use the backseat for stem sealing it should be recognised that backseats are usually smaller than the main seat and care should be exercised to avoid applying excessive stem force in backseating.

2 Ball Valves

Soft seated ball valves are a simple open and close device, they should not be used as a throttling device (i.e. valve should not be used with ball in mid position). Even when in storage soft seated ball valves should ALWAYS be left in either the fully open or fully closed position.

2.1 Valve handles with 90° operation indicate the flow path through the valve, i.e. with a handle parallel to the flow line indicates that the valve is in the open position. While a handle perpendicular to the flow line indicates that the valve is in the closed position.

2.2 Valve handles with 180° opeation (F64,F68,P64 vent function only) indicates the flow path through the vent port when the handle is pointing towards the port and is closed when the handle is pointing away from the port.

Maintenance

1 Multi-Turn, Rising Stem Valves

Valves which remain in one position for long periods of time may be subject to some degree of inoperability due to the loss of effective lubricants in threads, ageing of packing, surface corrosion of moving parts or accumulation of harmful solids. In some applications it may be desirable to schedule periodic partial or full cycle exercising of these valves.

Stem seal leakage usually results from seal wear, and can usually be corrected by tightening the bonnet bushing. Overtightening can cause high stem friction, accelerated wear and shortened stem seal life.

1.1 H7/H1-2, HD7, A-Series types

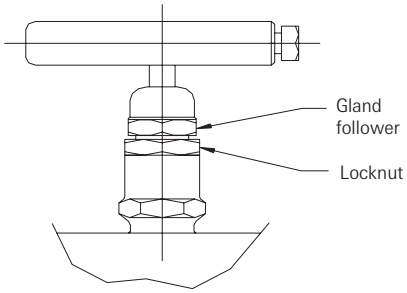
With the valve in a mid open position, loosen the Locknut, and tighten the Gland Follower using a wrench until a slight resistance to stem movement is felt. This should be tightened snugly but not over tightened. Check the stem tightness by turning the handle. If it feels too loose you may tighten the Gland Follower more. If it feels too tight, the stem seal must be replaced and the Gland Follower re-tightened.

The Gland Follower tightness is a matter of both judgement and experience. The basic considerations are:

Too loose - the bonnet will leak

Too tight - the handle will be hard to turn and the stem seal may be over compressed and damaged

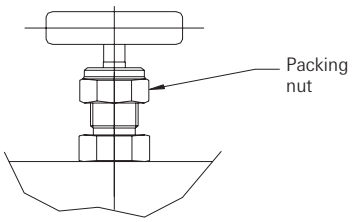
Once the Gland Follower is properly adjusted, tighten the Locknut to lock the bushing in place.



H7/H1-2, H7, A-Series Types

1.2 H1-3/8" & 5/8" Orifice, H5 - P.T.F.E. & Graphite packing types.

With the valve in a mid open position, tighten the packing nut. If, when re-pressurised, the packing nut should be further tightened to stop stem leakage. When leakage stops the packing nut should not be tightened any further.



H1-3/8" & 5/8" Orifice, H5
PTFE & Graphite Packing Types

2 Ball Valve Maintenance (1/4 turn, soft seat)

Ball valves are normally sealed for life but valves which remain in one position for long periods of time may be subject to some degree of inoperability due to the loss of effective lubricants in threads, ageing of seats and seals, surface corrosion of moving parts or accumulation of harmful solids. In some applications it may be desirable to schedule periodic partial or full cycle exercising of these valves. Additional maintenance should be carried out by Anderson Greenwood.

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