

# Piston Valve Installation and Operation Manual

IOM-670b



# Table of Contents

- General Safety Information . . . . . .3**
- Product Information . . . . . .3**
- Product Installation . . . . . .4**
- Maintenance Requirements . . . . . .5**
- Troubleshooting . . . . . .6**
- Repair Parts . . . . . .7**
- Limited Warranty and Remedy. . . . . .7**

# General Safety Information

This bulletin should be used by experienced personnel as a guide to the installation of the Armstrong Piston valve. Selection or installation of equipment should always be accompanied by competent technical assistance. You are encouraged to contact Armstrong International, Inc. or its local sales representative for additional information.

# Product Information

The Armstrong Piston Valves can be widely applied in water, steam (Saturated & Superheated) and other likewise non-corrosive systems. In the temperature range of -22°F (-30°C) to 800°F (427°C).

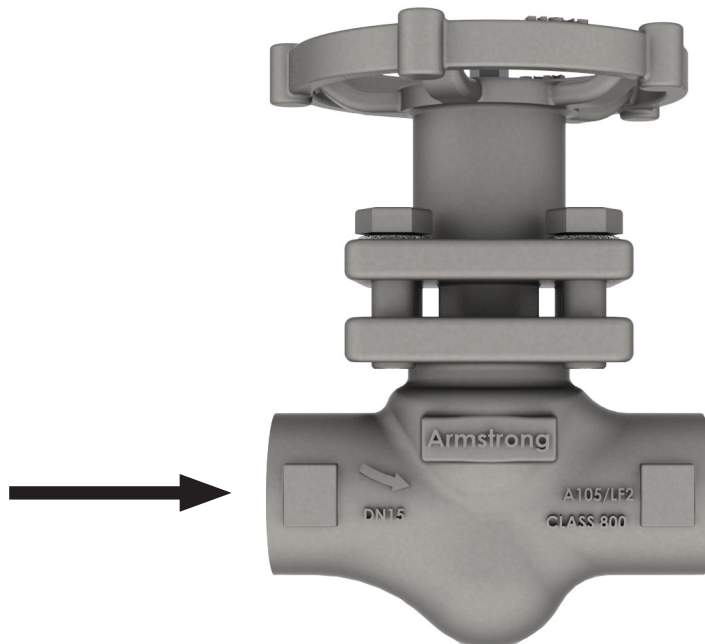
The Armstrong Forged Piston valves adhere to Class 800 pressure ratings for sizes from DN15 to DN40.

Type	Body MOC	Class	Size	Connection
Forged Steel	A105/LF2	800	DN15, DN20, DN25, DN40	Screwed & Socketweld ends*

\*Flanged connection available on request.

## Pressure Temperature Ratings:

Temperature		Class 800	
Fahrenheit	Celsius	PSIG	BARG
-20 to 100	-29 to 38	1,920	132.4
200	93.5	1,600	110.3
300	149.0	1,440	99.3
400	204.5	1,325	91.4
500	260.0	1,240	85.5
600	315.5	1,165	80.3
650	343.5	1,145	78.9
700	371.0	1,135	78.3
750	399.0	1,102	76.2
800	426.5	1,075	74.1



# Product Installation

## Before Installation

Check the nameplate and read through the installation and maintenance instructions before installation. **Do not handle the valves by the steering wheel, the valve stem or actuator.** Ensure that devices do not suffer shock.

## Pre-installation Cleaning

Remove the protective caps from the valve ends at the last moment before mounting on the pipe. The pipes must be cleaned before use and operation of equipment to eliminate the risk of crossing metal or abrasive particles such as weld spatter, grinding residues, burrs, chips etc that may damage the sealing surface.

## Connecting the Piping

In case of welding, the welder must be a Qualified Welder and work in accordance to an agreed procedure. Welding, heat treatment and eventual checks are carried out under the sole responsibility of the installer. It's the installer responsibility to take the necessary steps to not affect the base metal so as not to generate deformations of the body of the device that could impair its safe operation or cause it to lose its sealing inline or to outside. In no case shall valves be used to neither correct a misalignment of the pipe nor support any load other than its own weight. The pipe on which the valve is installed must be designed so that the valves are not subjected to excessive stress related to water hammer, vibrations, dilations, instability or a lack of supports.

## Installation

Mounting of the device must be as per the directive arrow marks. We recommend binding the valve flange with a sling to avoid any damages to the valve during assembly. The manual control unit must be installed with Spindle-Stem in Vertical positions. Any other position must be subject to acceptance by the manufacturer. The devices will be installed-Fully closed condition for flange connection and half-open position for welded joints. In service crossed tightening of screws can be necessary to insure the tightness of the stem

# Maintenance Requirements

**Important:** The use of extension cords or Valve key for Operating is strictly prohibited. Please do regular periodic maintenances.

**The following points need verification and eventually interventions:** Lubricate with suitable grease, except oxygen service.

**15 to 40 NB** - Apply Molykote 321 Dry fi lm lubrication at the Spindle and Bonnet threads when valve is open for repairs, else lubricate by Molykote M30 oil.

## Replacement procedure of Valve rings

Remove the Bonnet & exiting Valve rings.

Apply Molykote 111 in the Valve bore. Use brush for uniform application.

Place bottom Valve ring without damage by using suitable inserting tool (refer yellow line in the valve ring for its top side).

Place the spacer.

Place the remaining valve rings similarly.

Spray Molykote 321 on Spindle and threads in bonnet.

Assemble the Piston and Spindle sub assembly

Place the Spindle-Piston sub assembly into Bonnet to full closed position

Put the Bonnet on the top sealing ring guiding the piston

Place Belleville washers on Bolts and assemble it on Body-Bonnet

Take piston down to close position by rotating Hand wheel till it touches the bonnet.

Coat the treads of the bonnet bolts with “never seize”, insert bolts through bonnet and Hand tight the Bolts to the assembly.

Open and Close the Valve completely for free movement.

**Caution:** Do not rotate the valve piston. The stainless sheets in the grafoil valve rings will score the piston and cause leakage and/or shorten the valve’s life.

# Troubleshooting

Problem	Causes	Solution
Leakage	Valve ring damaged	Replace it

## Repair Parts

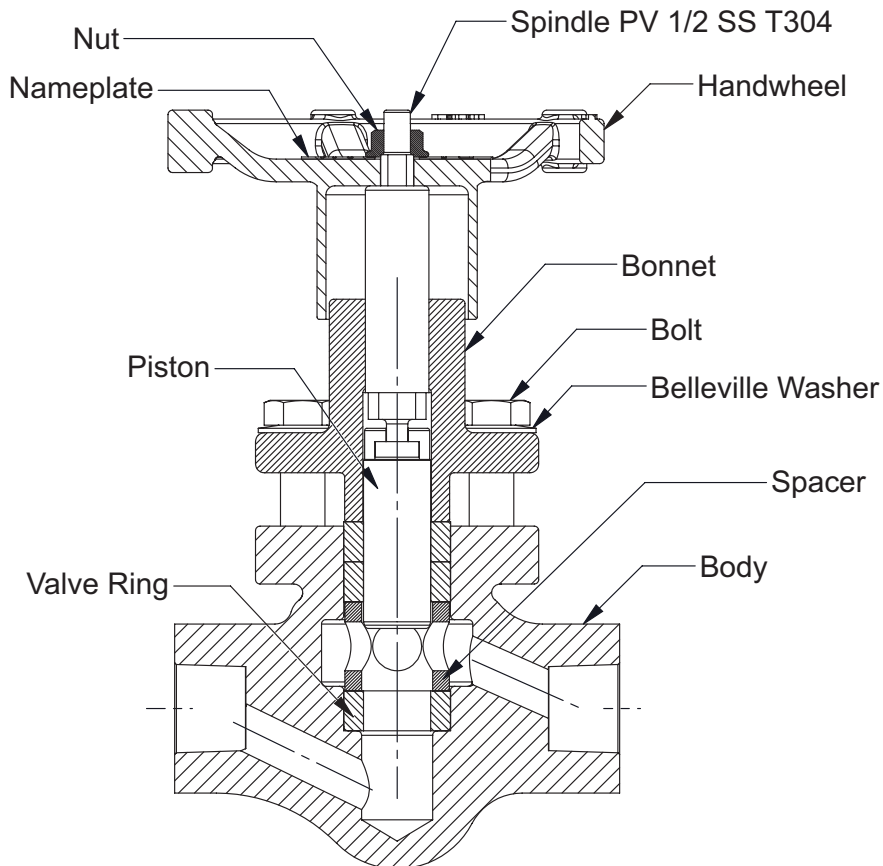
To order replacement parts, contact your Armstrong Representative if further assistance is required.

The pipes must be properly purged and degassed before opening the valve.

### Standard Replacement Components

Description	Part Number x Quantity				
	15NB	20NB	25NB	40NB	50NB
Valve Ring*	D27309 x 3	D28504 x 3	D28515 x 3	D28526 x 3	D33259 x 2

\*Apply Molykote oil while replacing valve ring.



# Limited Warranty and Remedy

Armstrong International, Inc. or the Armstrong division that sold the product (“Armstrong”) warrants to the original user of those products supplied by it and used in the service and in the manner for which they are intended, that such products shall be free from defects in material and workmanship for a period of one (1) year from the date of installation, but not longer than 15 months from the date of shipment from the factory, [unless a Special Warranty Period applies, as listed below]. This warranty does not extend to any product that has been subject to misuse, neglect or alteration after shipment from the Armstrong factory. Except as may be expressly provided in a written agreement between Armstrong and the user, which is signed by both parties, Armstrong **DOES NOT MAKE ANY OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.**

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