

Reduced Bore Thread-end Ball Valves Series 33R Model C

1/2" – 2" (DN 15-50)

Installation, Maintenance and
Operating Instructions

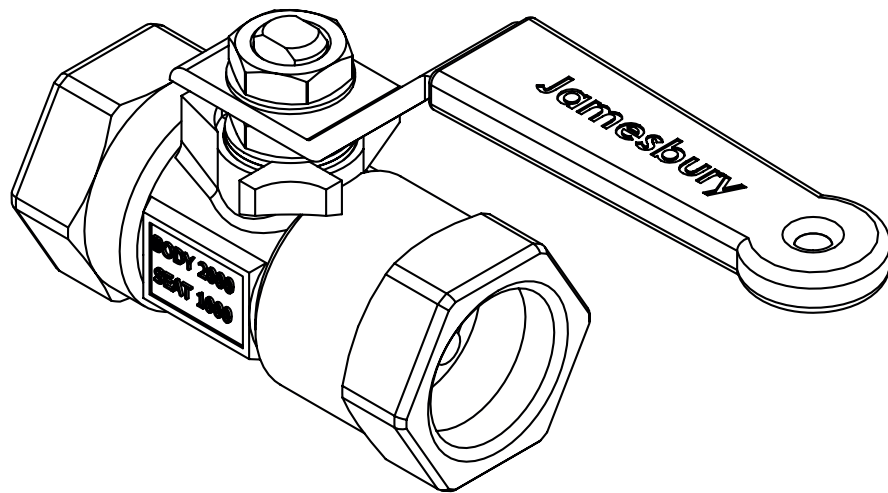


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READ THESE INSTRUCTIONS FIRST!

These instructions provide information about safe handling and operation of the valve.
If you require additional assistance, please contact the manufacturer or manufacturer's representative.
Addresses and phone numbers are printed on the back cover.
See also www.metso.com/products/valves/tank-car-valves/ for the latest documentation.

SAVE THESE INSTRUCTIONS!

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1. GENERAL

1.1 Scope of the Manual

This instruction manual contains important information regarding the installation, operation and maintenance of the Jamesbury® 1/2" -2" (DN 15-50) Reduced Bore; Series 33R Model C Thread-end Ball Valves. Please read these instructions carefully and save them for future reference.

WARNING:

AS THE USE OF THE VALVE IS APPLICATION SPECIFIC, A NUMBER OF FACTORS SHOULD BE TAKEN INTO ACCOUNT WHEN SELECTING A VALVE FOR A GIVEN APPLICATION. THEREFORE, SOME OF THE APPLICATIONS IN WHICH THE VALVES ARE USED ARE OUTSIDE THE SCOPE OF THIS MANUAL.

THE OWNER OF THE SYSTEM IN WHICH THE VALVE WILL BE INSTALLED HAS THE OVERALL RESPONSIBILITY FOR DETERMINING THE APPLICATION AND COMPATIBILITY OF THE VALVES COVERED BY THIS MANUAL.

IF YOU HAVE ANY QUESTIONS CONCERNING THE USE, APPLICATION OR COMPATIBILITY OF THE VALVE WITH THE INTENDED SERVICE, CONTACT METSO FOR MORE INFORMATION.

WARNING:

THE MAXIMUM SEAT AND BODY RATINGS DECREASE AT TEMPERATURES HIGHER THAN 100 DEGREES F (38 DEGREES C). AS THE TEMPERATURE INCREASES THE PRESSURE RATING DECREASES. MAKE SURE THE VALVE SELECTED IS APPROPRIATE FOR THE MAXIMUM PRESSURE AND TEMPERATURE OF THE APPLICATION. REFER TO THE PRODUCT BULLETIN R109-2, OR CONTACT METSO FOR MORE INFORMATION.

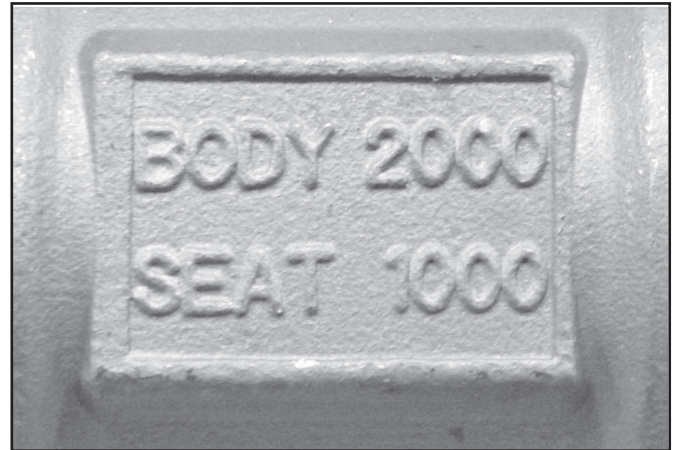


Figure 2 Body/Seat Rating

1.2 Valve Markings

The valve has an identification marking stamped on bottom of valve. (See **Figure 1**)

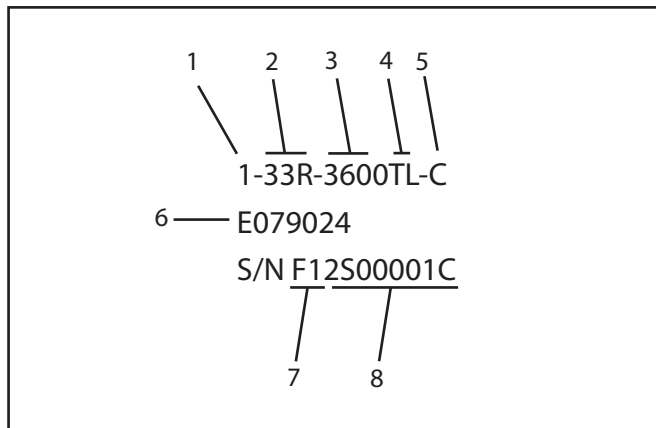


Figure 1 Valve ID

Identification markings:

- 1 Size
- 2 Valve Series
- 3 Body/Trim Material
- 4 Seat/Seal Material
- 5 Model
- 6 AAR number
- 7 Assembly date
- 8 Serial number

The valve also has marking cast into the sides of the valve. On one side is cast the body and seat maximum rated pressure in psi, at 100 degrees F (38 degrees C). (See **Figure 2**)

On the opposite side of the valve is the cast in size and body material. (See **Figure 3**)



Figure 3 Size/Material

1.3 Safety Precautions

WARNING:

DOUBLE-SEATED BALL VALVE DESIGNS, LIKE THE SERIES 33R, CAN UNDER CERTAIN CONDITIONS TRAP FLUID IN THE BALL CAVITY. RAISING THE TEMPERATURE OF THE TRAPPED FLUID CAUSES THE INTERNAL VALVE PRESSURE TO RISE. EXTREME TEMPERATURE RISE CAN BUILD UP EXCESSIVE PRESSURE WHICH COULD LEAD TO UNCONTROLLED PRESSURE RELEASE. DAMAGE OR PERSONAL INJURY MAY RESULT!

WARNING:**DO NOT EXCEED THE VALVE PERFORMANCE LIMITATIONS!**

EXCEEDING THE PRESSURE OR TEMPERATURE LIMITATIONS MARKED ON THE VALVE IDENTIFICATION PLATE, OR BODY, MAY CAUSE DAMAGE AND LEAD TO UNCONTROLLED PRESSURE RELEASE. DAMAGE OR PERSONAL INJURY MAY RESULT!

WARNING:**SEAT AND BODY RATINGS!**

THE PRACTICAL AND SAFE USE OF THIS PRODUCT IS DETERMINED BY BOTH THE SEAT AND BODY RATINGS: CAREFULLY CHECK BOTH RATINGS. (SEE **FIGURE 2**) THIS PRODUCT IS AVAILABLE WITH A VARIETY OF SEAT MATERIALS. SOME OF THE SEAT MATERIALS HAVE PRESSURE RATINGS THAT ARE LESS THAN THE BODY RATINGS. ALL OF THE BODY AND SEAT RATINGS ARE DEPENDENT ON VALVE SIZE, MATERIALS, AND TEMPERATURE. DO NOT EXCEED THESE RATINGS!

WARNING:**BEWARE OF NOISE EMISSIONS!**

THE VALVE MAY PRODUCE NOISE IN THE PIPELINE. THE NOISE LEVEL DEPENDS ON THE APPLICATION. OBSERVE THE RELEVANT WORK ENVIRONMENT REGULATIONS ON NOISE EMISSION.

2. TRANSPORTATION AND STORAGE

Check the valve for any damage that may have occurred during transport.

Store the valve carefully. Storage indoors in a dry place is recommended.

Do not remove the protective packaging or flow port protectors until installing the valve.

Move the valve to its intended location just before installation.

The valve is usually delivered in the open position.

3. INSTALLATION

3.1 General

Remove the protective packaging and flow port protectors and check that the valve is clean inside. Clean valve if necessary.

Flush the pipeline carefully before installing the valve.

Foreign objects, such as sand or pieces of welding electrodes, will damage the ball and seats.

Read and follow all **WARNINGS!**

Refer to the Section 4, **MAINTENANCE** for stem seal adjustment. If there is weepage past the stem seals upon installation, it means the valve may have been subject to wide temperature variations in shipment. Leak-tight performance will be restored by a simple stem seal adjustment described in the **MAINTENANCE** section.

Thread-end valves like the Series 33R have NPT threads. To insure a leak tight joint, liberal use of a compatible pipe joint compound is necessary.

WARNING:

ANY COMPOUND OR LUBRICANT USED ON THREADS SHALL BE SUITABLE FOR THE SERVICE CONDITIONS AND SHALL NOT REACT UNFAVORABLY WITH EITHER THE SERVICE FLUID OR THE PIPING MATERIAL.

Flow through the *Jamesbury* Series 33R valve can be in either direction, but the preferred method to install the valve is with the insert end upstream.

The *Jamesbury* Series 33R is an end entry design with an internal insert. The insert contains a hex, slot or pin drive which can be identified by looking into the end of the valve before installation. Although the Series 33R valve may be disassembled it is not considered repairable.

3.2 Handles

If the Series 33R valve handle (15) has to be removed for any reason, the handles must be remounted with the handle stop tang as shown in **Figure 4**.

WARNING:

FAILURE TO PROPERLY MOUNT THE HANDLE MAY RESULT IN IMPROPER VALVE OPERATION, DAMAGE OR PERSONAL INJURY MAY RESULT.

3.3 Commissioning

Ensure that there is no dirt or foreign objects left inside the valve or pipeline. Flush the pipeline carefully. Make sure that the valve is fully open when flushing.

WARNING:

GOOD PRACTICE DICTATES THAT ONCE INSTALLED, BUT PRIOR TO FIRST USE, THE VALVE IS LEAK TESTED IN PLACE TO ASSURE LEAK-TIGHTNESS HAS NOT BEEN COMPROMISED BY THE INSTALLATION PROCESS. INSTALLATION ACTIONS THAT CAN CAUSE LEAKAGE INCLUDE, BUT ARE NOT LIMITED TO; WRENCHING, SOLDERING, WELDING AND/OR HOISTING.

4. MAINTENANCE

4.1 General

Good operating procedure requires periodic observation to ensure that the valve is functioning well. The frequency of observation will depend on the application. Routine maintenance consists of tightening the lower stem nut (16) periodically to compensate for wear caused by the stem turning against the seal. Loosen the upper stem nut (16) on top of the handle (15) before tightening the lower stem nut. Retighten the upper stem nut after tightening the lower stem nut. (See **Figure 4 and Table 1**)

Table 1	
Stem Nut Torque	
Size	Torque
1/4" – 1/2"	100 in-lb
3/4"	120 in-lb
1"	150 in-lb
1-1/2"	300 in-lb
2"	400 in-lb

WARNING:

FOR YOUR SAFETY, IT IS IMPORTANT THE FOLLOWING PRECAUTIONS BE TAKEN PRIOR TO REMOVAL OF THE VALVE FROM THE PIPELINE OR BEFORE ANY DISASSEMBLY:

1. BE SURE YOU KNOW WHAT FLUID IS IN THE PIPELINE. IF THERE IS ANY DOUBT, DOUBLE-CHECK WITH THE PROPER SUPERVISOR.
2. WEAR ANY PPE (PROTECTIVE CLOTHING OR EQUIPMENT) NORMALLY REQUIRED WHEN WORKING WITH THE FLUID INVOLVED.
3. DEPRESSURIZE THE PIPELINE AND CYCLE THE VALVE AS FOLLOWS:
 - A. PLACE THE VALVE IN THE OPEN POSITION AND DRAIN THE PIPELINE.
 - B. CYCLE THE VALVE TO RELIEVE RESIDUAL PRESSURE IN THE BODY CAVITY BEFORE REMOVAL FROM THE PIPELINE.
 - C. AFTER REMOVAL, AND BEFORE DISASSEMBLY, CYCLE THE VALVE AGAIN SEVERAL TIMES.

WARNING:

THE SERIES 33R VALVES ARE SUITABLE FOR A WIDE VARIETY OF FLUIDS AND GASES. BE CERTAIN THAT THE VALVE MATERIALS SELECTED ARE SUITABLE FOR THE APPLICATION.

5. EXPLODED VIEW & PARTS LIST

VALVE PARTS LIST

ITEM	PART NAME	QTY
1	Body	1
2	Insert	1
3	Ball	1
4	Stem	1
5	Seat	2
7	Stem Seal	1
8	Stem Bearing	2
9	Shakeproof Washer	1
15	Handle	1
16	Stem Nut	2
17	Stem Washer (Upper)	1
24	Stem Washer (Lower)	1

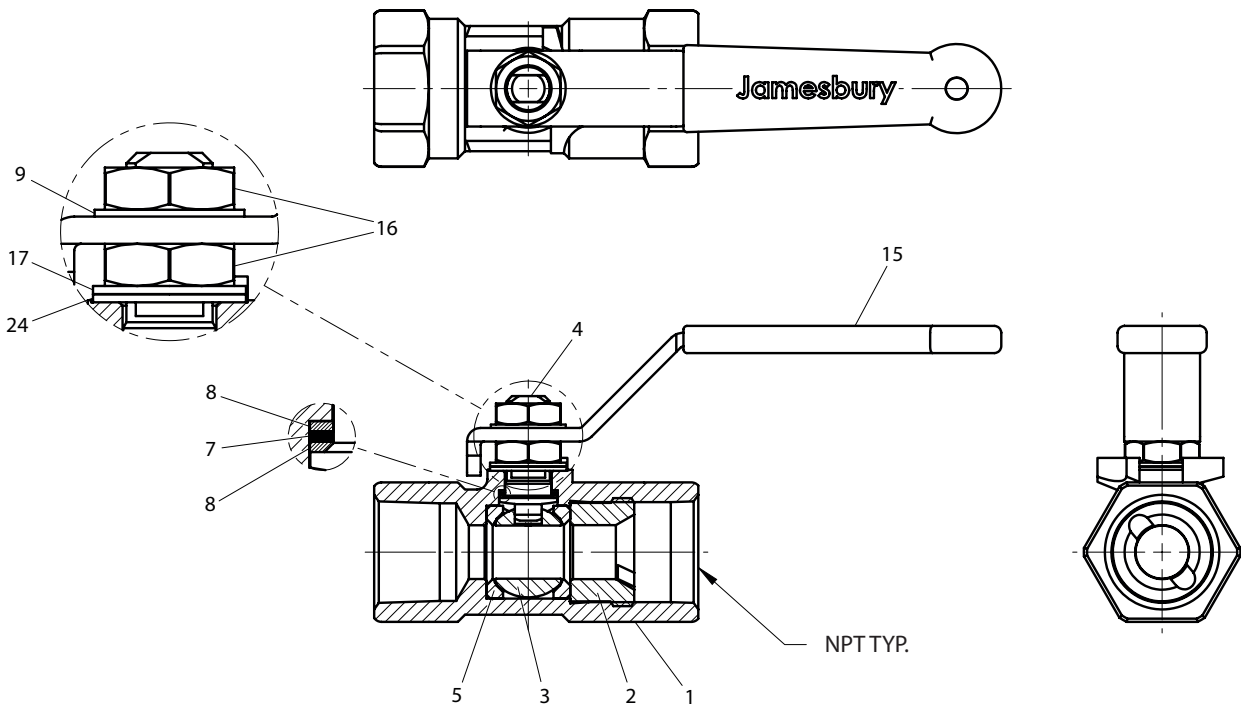


Figure 4

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