

Jamesbury™ ball valves for high vacuum service valve series: A-STYLE, ELIMINATOR™, 2000, 4000, 5000, 6000, 7000 & 9000

Installation, maintenance and
operating instructions

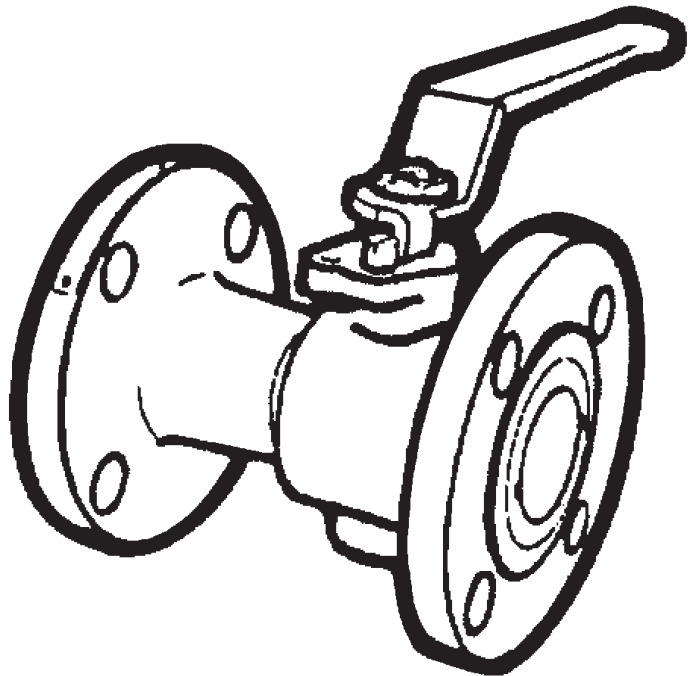


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READ THESE INSTRUCTIONS FIRST!

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.

SAVE THESE INSTRUCTIONS!

Addresses and phone numbers are printed on the back cover.

1. GENERAL

This instruction manual contains important information regarding the installation, operation and troubleshooting of the Jamesbury™ Ball Valves for High Vacuum Service. Valve Types: A-Style, *Eliminator*, Series 2000, 4000, 5000, 6000, 7000 & 9000. 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 SITUATIONS IN WHICH THE VALVES ARE USED ARE OUTSIDE THE SCOPE OF THIS MANUAL. IF YOU HAVE ANY QUESTIONS CONCERNING THE USE, APPLICATION OR COMPATIBILITY OF THE VALVE WITH THE INTENDED SERVICE, CONTACT VALMET FOR MORE INFORMATION.

1.1 SAFETY PRECAUTIONS

WARNING:

DO NOT EXCEED THE VALVE PERFORMANCE LIMITATIONS!

EXCEEDING THE PRESSURE OR TEMPERATURE LIMITATIONS MARKED ON THE VALVE IDENTIFICATION PLATE 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. READ THE IDENTIFICATION PLATE AND CHECK BOTH RATINGS. 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 TYPE AND SIZE, SEAT MATERIAL, AND TEMPERATURE. DO NOT EXCEED THESE RATINGS!

WARNING:

BEWARE OF BALL MOVEMENT!

KEEP HANDS, OTHER PARTS OF THE BODY, TOOLS AND OTHER OBJECTS OUT OF THE OPEN FLOW PORT. LEAVE NO FOREIGN OBJECTS INSIDE THE PIPELINE. WHEN THE VALVE IS ACTUATED, THE BALL FUNCTIONS AS A CUTTING DEVICE. DISCONNECT ANY PNEUMATIC SUPPLY LINES, ANY ELECTRICAL POWER SOURCES AND MAKE SURE SPRINGS IN SPRINGRETURN ACTUATORS ARE IN THE FULL EXTENDED/ RELAXED STATE BEFORE PERFORMING ANY VALVE MAINTENANCE. FAILURE TO DO THIS MAY RESULT IN DAMAGE OR PERSONAL INJURY.

WARNING:

WHEN HANDLING THE VALVE OR VALVE/ACTUATOR ASSEMBLY, TAKE ITS WEIGHT INTO ACCOUNT! REFERENCE THE APPLICABLE TECHNICAL BULLETIN FOR VALVE WEIGHTS.

NEVER LIFT THE VALVE OR VALVE/ACTUATOR ASSEMBLY BY THE ACTUATOR, POSITIONER, LIMIT SWITCH OR THEIR PIPING. PLACE LIFTING DEVICES SECURELY AROUND THE VALVE BODY. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN DAMAGE OR PERSONAL INJURY FROM FALLING PARTS.

2. DESCRIPTION

Jamesbury high vacuum valves carrying the additional letter designation "V" are guaranteed to have a leakage rate not to exceed 1x10⁻⁵ std. cc/sec of helium. The letters "VC" are added to the designation when certification of positive shut-off is provided with helium leak detection by a mass spectrometer.

Body and trim materials are available in a variety of combinations to suit various system requirements.

High vacuum valves have been specially designed, cleaned and lubricated to minimize outgassing from impurities. All high vacuum valves are specially tagged to indicate proper cleaning and assembly.

3. INSTALLATION

Before installation of any valve into a pipeline, factory attached tags should be checked against the purchase order to assure that the valve is identified as having been processed for high vacuum service and that the valve type and material conform to requirements of the service intended.

Flow through a *Jamesbury* valve can be in either direction. It is recommended, however, that a screwed end valve be installed with the body cap facing in the direction of higher pressure, and a flange valve with the body insert also facing in the direction of higher pressure.

Standard piping practices should be followed. Screwed end valves should be tightened by wrenching at the hex flats nearest the pipe being attached. Flanged valve bolts must be tightened to recommendations given by the manufacturer of the particular type of gaskets being used.

3.1 DISASSEMBLY, ASSEMBLY & MAINTENANCE

Basic disassembly, assembly, maintenance procedures and precautions are the same as those given in the standard Installation, Maintenance, and Operating Instructions (IMOs) for the particular size and style of valve ordered. Valve IMOs are available from your nearest Valmet stocking distributor.

WARNING

FOR YOUR SAFETY IT IS IMPORTANT THAT PRECAUTIONS BE TAKEN PRIOR TO REMOVAL OF THE VALVE FROM THE LINE OR BEFORE ANY DISASSEMBLY.

1. WEAR ANY PROTECTIVE EQUIPMENT NORMALLY REQUIRED WHEN WORKING WITH OXYGEN DURING REMOVAL AND DISASSEMBLY TO PROTECT AGAINST ANY RAPID EMISSION OF TRAPPED OXYGEN.
2. DEPRESSURIZE THE LINE AND VALVE AS FOLLOWS:
 - A. SHUT OFF THE VALVE AND BLEED THE LINE.
 - B. CYCLE THE VALVE TO RELIEVE RESIDUAL PRESSURE IN THE BALL CAVITY BEFORE REMOVAL FROM THE LINE.
 - C. AFTER REMOVAL REPEAT CYCLING.

4. SPECIAL REQUIREMENTS

Prior to reassembly, all components should be cleaned with a suitable solvent to remove all dirt and oil. Valves must be assembled in a clean area using lubricants suitable for use with vacuum systems. Lubrication should be used sparingly and only to aid assembly of parts. Very light applications of the lubricant may be applied to the stem and body seals and to threaded or breechlock mating parts. Among those lubricants considered acceptable are the following:

THREADS:

1. Bakerseal Thread Lubricating Compound
2. Molykote Lubricant Types G and G-30
3. Halocarbon 25-10M Grease

SEALS:

1. Halocarbon 700 oil

Effort must be made to keep valves intended for vacuum service dirt and oil free. The tendency of these impurities to emit gasses may prevent certain systems from attaining the degree of vacuum that they are actually capable of producing.

It is important to remember the adverse effects of such impurities if considering some type of hydrostatic leakage testing before reinstalling repaired valves in line. Test fixtures must not be a source of contamination.

Subject to change without prior notice.

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5. REPAIR KITS/SPARE PARTS

We recommend that valves be directed to out service centers for maintenance. The service centers are equipped to provide rapid turn-around at a reasonable cost and offer new valve warranty with all reconditioned valves.

NOTE: When sending goods to the service center for repair, do not disassemble the valve. Clean the valve carefully and flush the valve internals. Include the material safety datasheet(s) (MSDS) for all media flowing through the valve. Valves sent to the service center without MSDS datasheet(s) will not be accepted. Send valves to the service center in the half open position.

For further information on spare parts and service or assistance visit our web-site at www.valmet.com/valves.

NOTE: When ordering spare parts, always include the following information:

- a. Valve catalog code from identification plate
- b. If the valve is serialized - the serial number (from identification plate)
- c. From exploded view, the ballooned part number, part name and quantity required

