WOODWARD

Product Manual 26372
(Revision B)
Original Instructions

16” Globe Valves
20X26” Steam Conditioning Valves

GE Tag Numbers PCV4537, PCV2410
Supplement to Manuals 26369 & 26370

Hydro Test and Blow-down Procedure

General Precautions

Read this entire manual and all other publications pertaining to the work to be performed before installing, operating, or servicing this equipment.

Practice all plant and safety instructions and precautions.

Failure to follow instructions can cause personal injury and/or property damage.

Revisions

This publication may have been revised or updated since this copy was produced. To verify that you have the latest revision, check manual *26311* , *Revision Status & Distribution Restrictions of Woodward Technical Publications*, on the *publications page* of the Woodward website:

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Proper Use

Any unauthorized modifications to or use of this equipment outside its specified mechanical, electrical, or other operating limits may cause personal injury and/or property damage, including damage to the equipment. Any such unauthorized modifications: (i) constitute "misuse" and/or "negligence" within the meaning of the product warranty thereby excluding warranty coverage for any resulting damage, and (ii) invalidate product certifications or listings.

Translated Publications

If the cover of this publication states "Translation of the Original Instructions" please note:

The original source of this publication may have been updated since this translation was made. Be sure to check manual *26311* , *Revision Status & Distribution Restrictions of Woodward Technical Publications*, to verify whether this translation is up to date. Out-of-date translations are marked with ⚠. Always compare with the original for technical specifications and for proper and safe installation and operation procedures.

Revisions—Changes in this publication since the last revision are indicated by a black line alongside the text.

Contents

Illustrations and Tables

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Important Definitions

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

- **DANGER**—Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING**—Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION**—Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE**—Indicates a hazard that could result in property damage only (including damage to the control).
- **IMPORTANT**—Designates an operating tip or maintenance suggestion.

⚠WARNING

Overspeed / Overtemperature / Overpressure

The engine, turbine, or other type of prime mover should be equipped with an overspeed shutdown device to protect against runaway or damage to the prime mover with possible personal injury, loss of life, or property damage.

The overspeed shutdown device must be totally independent of the prime mover control system. An overtemperature or overpressure shutdown device may also be needed for safety, as appropriate.

⚠WARNING

Personal Protective Equipment

The products described in this publication may present risks that could lead to personal injury, loss of life, or property damage. Always wear the appropriate personal protective equipment (PPE) for the job at hand. Equipment that should be considered includes but is not limited to:

- **Eye Protection**
- **Hearing Protection**
- **Hard Hat**
- **Gloves**
- **Safety Boots**
- **Respirator**

Always read the proper Material Safety Data Sheet (MSDS) for any working fluid(s) and comply with recommended safety equipment.

⚠WARNING

Start-up

Be prepared to make an emergency shutdown when starting the engine, turbine, or other type of prime mover, to protect against runaway or overspeed with possible personal injury, loss of life, or property damage.

⚠WARNING

Automotive Applications

On- and off-highway Mobile Applications: Unless Woodward's control functions as the supervisory control, customer should install a system totally independent of the prime mover control system that monitors for supervisory control of engine (and takes appropriate action if supervisory control is lost) to protect against loss of engine control with possible personal injury, loss of life, or property damage.

NOTICE

Battery Charging Device

To prevent damage to a control system that uses an alternator or battery-charging device, make sure the charging device is turned off before disconnecting the battery from the system.

Electrostatic Discharge Awareness

NOTICE

Electrostatic Precautions

Electronic controls contain static-sensitive parts. Observe the following precautions to prevent damage to these parts:

- **Discharge body static before handling the control (with power to the control turned off, contact a grounded surface and maintain contact while handling the control).**
- **Avoid all plastic, vinyl, and Styrofoam (except antistatic versions) around printed circuit boards.**
- **Do not touch the components or conductors on a printed circuit board with your hands or with conductive devices.**

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual *82715*, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules*.

Follow these precautions when working with or near the control.

1. Avoid the build-up of static electricity on your body by not wearing clothing made of synthetic materials. Wear cotton or cotton-blend materials as much as possible because these do not store static electric charges as much as synthetics.
2. Do not remove the printed circuit board (PCB) from the control cabinet unless absolutely necessary. If you must remove the PCB from the control cabinet, follow these precautions:
   - Do not touch any part of the PCB except the edges.
   - Do not touch the electrical conductors, the connectors, or the components with conductive devices or with your hands.
   - When replacing a PCB, keep the new PCB in the plastic antistatic protective bag it comes in until you are ready to install it. Immediately after removing the old PCB from the control cabinet, place it in the antistatic protective bag.

Hydro Test Procedure

Hydro-Test Procedures only apply to (9H) PCV4537 valves. The procedures apply to both the 7H and 9H PCV2410 valves.

1. Disassemble the valve per appropriate instruction manual, removing all parts except the bonnet flange studs.
2. Install O-ring no. 35252 onto blank seat ring no. 232529.
3. Install blank seat ring no. 232529 into the body and push down until it rests on the seat gasket surface.
4. Install O-ring no. 186314 onto blind bonnet flange no. 229999.
5. Install blind bonnet flange no. 229999 into the body and push down until it rests on the bonnet gasket surface.
6. Install nut no. 5074 on each stud and tighten in an alternating star pattern to the torque value specified in the appropriate instruction manual.
7. Plug the blind bonnet flange bleed hole once the valve is filled with water and proceed to system hydro test.

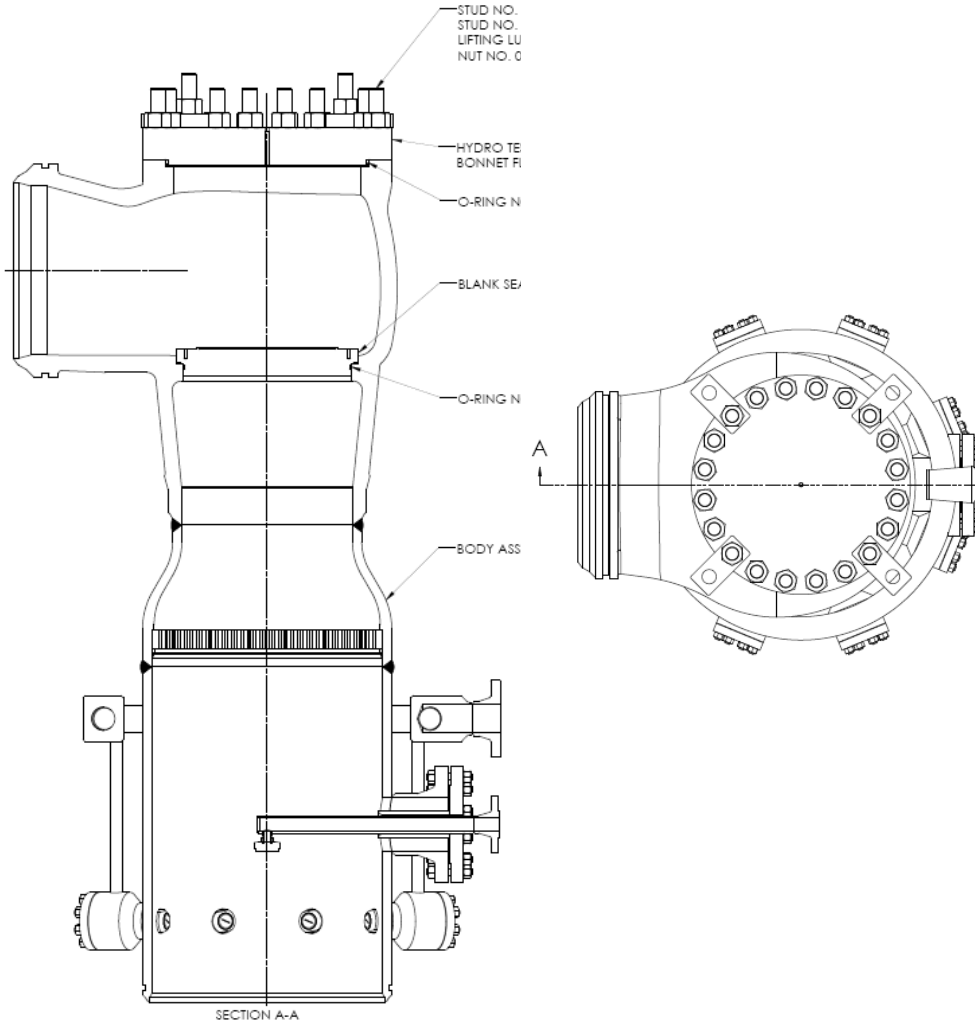

Figure 1. Hydro-Trim Callouts for PCV2410

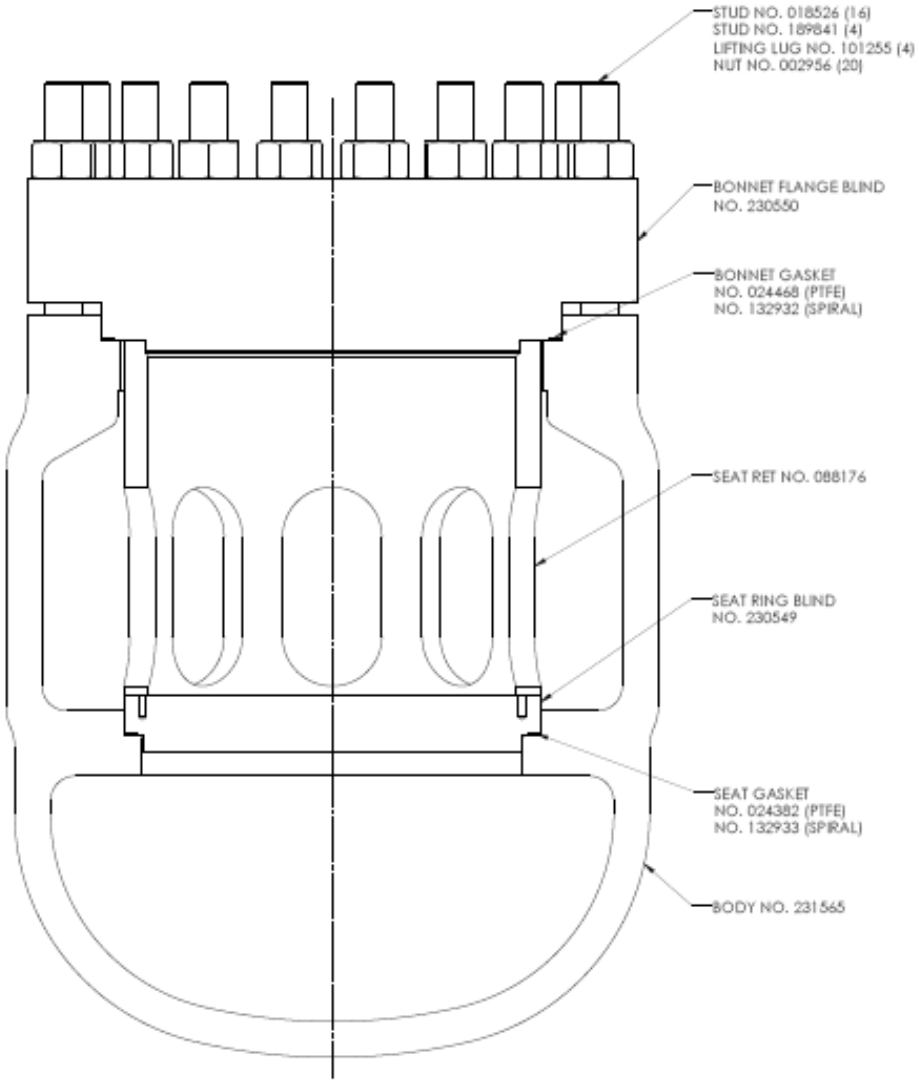

Figure 2. Hydro-Trim Callouts for PCV4537
[Note that the procedure on page 1 applies. Part numbers will be as called out in Figure 2.]

Blow-down Procedure

This Blow Down Test Procedure only applies to PCV2410 for both the 7H and 9H turbines. Note that PCV2410 is only set up for an inlet blow (i.e., blow through the inlet of the valve out the bonnet).

1. Disassemble the valve per the appropriate instruction manual, removing all parts except the bonnet flange studs.
2. Install PTFE seat gasket no. 52297 (for water) or graphite spiral gasket no. 29137 (for steam) into the body seat bore.
3. Install blank seat ring no. 232529 into the body.
4. Install seat retainer 232530 into the body, ensuring it indexes properly with the blank seat ring, and align a retainer window with the inlet port as shown.
5. Install bonnet flange 232531 onto the body.
6. Install nut no. 5074 on each stud and tighten in an alternating star pattern to the torque value specified in the appropriate instruction manual.
7. Proceed to system inlet blown down procedure.

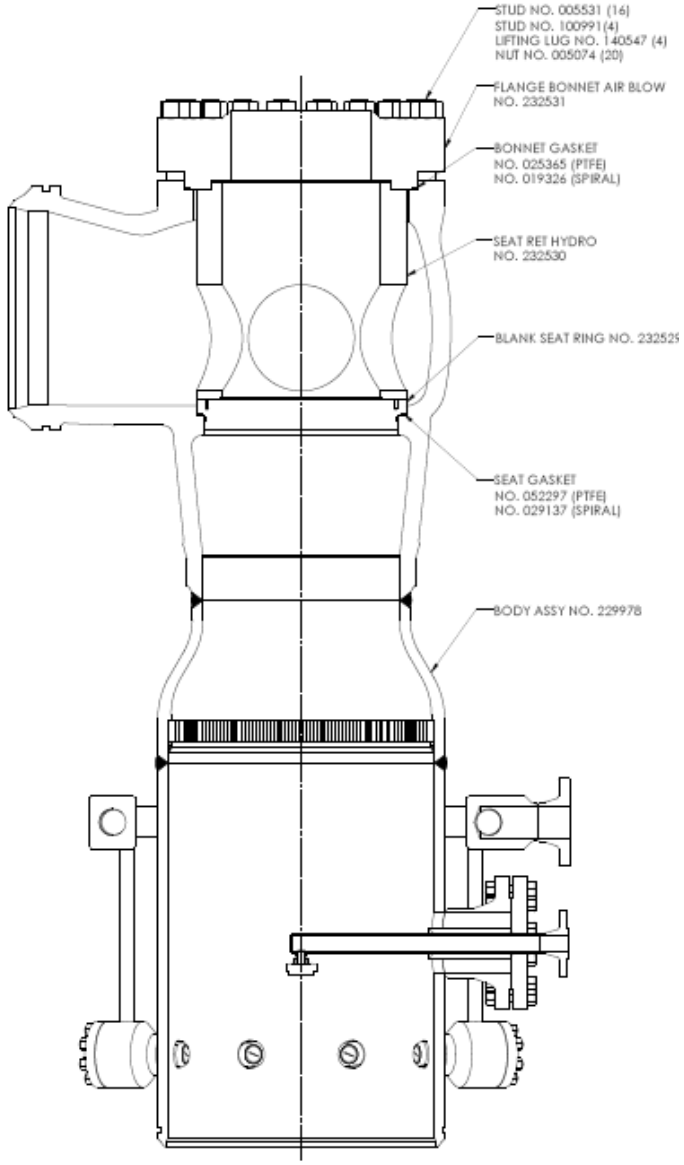

Figure 3. Blow Down Callouts for PCV2410

This Blow Down Procedure applies to (9H) PCV4537 valves. Note that PCV4537 is set up out for outlet blow (i.e., blow into the outlet side of the valve, exiting the bonnet).

1. Disassemble the valve per the appropriate instruction manual, removing all parts except the bonnet flange studs.
2. Install PTFE gasket no. 024382 into the body seat bore.
3. Install O-ring no. 023786 into groove on seat ring no. 236898 using Dow Corning 55 O-ring lubricant or equivalent.
4. Install seat ring no. 236898 into the body.
5. Install seat retainer no. 236899 into the body.
6. Install PTFE gasket no. 024468 into the bonnet bore of body.
7. Install O-ring no. 023786 in groove on bonnet flange 236900 using Dow Corning 55 O-ring lubricant or equivalent.
8. Install bonnet flange no. 236900 onto the body.
9. Install nut no. 002956 onto each stud and tighten in an alternating star pattern to the torque value specified in the appropriate instruction manual.
10. Proceed to system outlet blow down procedure.

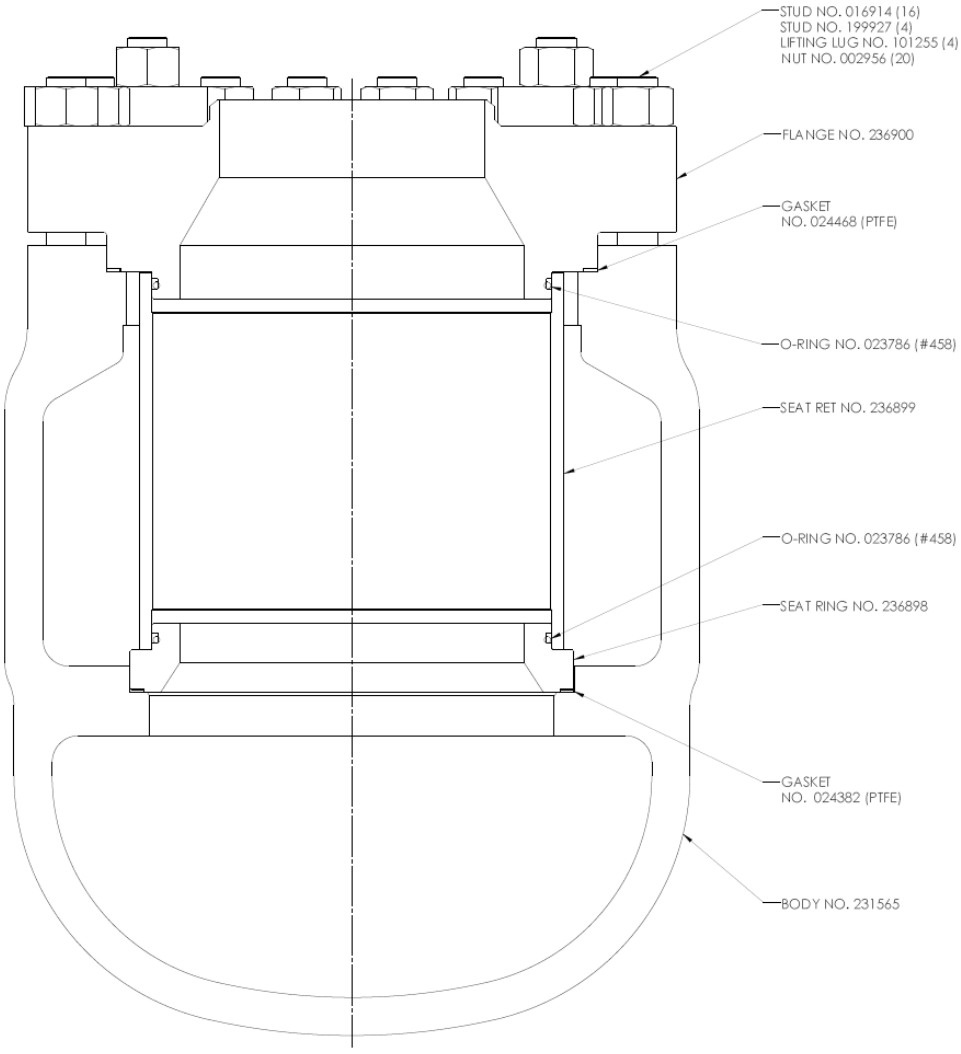

Figure 4. Blow Down Callouts for PCV4537

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Send comments to: icinfo@woodward.com

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