

Installation, Operation & Maintenance Manual

Waters Equipment HiDP II Control Valve Pressure Conditioning

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sentry-equip.com

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 COMPANY WITH
 QUALITY SYSTEM
 CERTIFIED BY DNV GL
 = ISO 9001 =


Standard Warranty

Sentry Equipment Corp ("Seller") warrants products manufactured by it and supplied hereunder ("Products") to be free from defects in workmanship and, to the extent materials are selected by Seller, to be free from defects in materials, in each case for a period as defined in the table below:

Brand	Product Line	Warranty Period
Sentry®	<ul style="list-style-type: none"> ▪ Steam & Water Sampling Products and Systems ▪ Solid & Powder Sampling Products and Systems ▪ Gas Sampling Products and Systems ▪ Liquid & Slurry Sampling Products and Systems ▪ Pipeline Integrity Products 	Eighteen months from date of shipment or twelve months from startup (whichever occurs first)
Waters Equipment	Steam & Water Sampling Products and Systems	Twelve months from date of shipment

To view the full warranty, go to www.sentry-equip.com/warranty.



Do not install, maintain, or operate this equipment without reading, understanding, and following the appropriate Sentry Equipment Corp instructions. Otherwise, injury, damage, or both may result.

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Note

The information contained in this document is subject to change without notice.

Safety Information

Please read the entire manual before attempting to unpack, set up, or operate this product. Pay careful attention to all Warnings, Cautions, and Notes. Failure to do so could result in serious personal injury and/or equipment damage.

Use of Hazard Information

If multiple hazards exist, the signal word corresponding to the greatest hazard shall be used.

Definitions

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

🔄 NOTE

Information that requires special emphasis.

🔄 TIP

Alternate techniques or clarifying information.

SHALL: This word is understood to be mandatory.

SHOULD: This word is understood to be advisory.

General Safety Precautions

Product Selection, Installation, and Use

⚠ WARNING

Improper selection, installation, or use can cause personal injury or property damage. It is solely the responsibility of users, through their own analysis and testing, to select products suitable for their specific application requirements, ensure they are properly maintained, and limit their use to their intended purpose.

Follow proper local, state, and federal regulations for proper installation and operational requirements.

Always use caution and common sense when working with any chemical. Read the product label and Material Safety Data Sheets (MSDS) carefully and follow the instructions exactly.

Potential Equipment Hazards

⚠ WARNING

Hot surfaces! This equipment may have very hot surfaces. If an operator contacts a hot surface, injury may occur. Use protective clothing to prevent injury. If other equipment comes in contact with a hot surface, damage to the equipment may occur. Ensure the area around this equipment is kept clear to prevent this damage from occurring.

High pressures! This equipment may contain fluids at very high pressures. Prior to installing, removing, or maintaining this equipment, ensure that the equipment is isolated from all connecting piping, the equipment is depressurized, the contents have been drained, and the equipment is cool.

General Description

The Sentry® Waters Equipment HiDP II Control Valve is a rod-in-tube pressure reducing device. It is capable of reducing sample pressures from 5000 psi to less than 100 psi at typical sample flow rates (1200 ccm or less) under laminar flow conditions.

Installation

The valve includes 1/4" tube compression fittings for use with 1/4" OD SS tubing. It may be panel mounted using a cutout as shown below. The valve must be disassembled before mounting in a panel by unthreading the body nut and withdrawing the knob/packing nut/body nut/drive rod assembly as one complete unit.

Mount the valve through the back of the panel and reassemble in reverse order. The body nut must be tightened sufficiently to seal the body: use a wrench on the rear of the valve to hold the body of the valve. Do not rely on the locator pin to hold the valve in place when tightening or removing the body nut or damage may result to the locator pin, the panel or both. Hydro test the valve afterwards to ensure that the seal is tight.

Operation

NOTE

The HiDP II control valve is not a shutoff valve, even with the rods fully inserted. An upstream shutoff valve is required to shut off flow and to allow access for maintenance.

Turn the knob fully clockwise to insert the rods fully into the valve. (Do not force the valve past the point at which the rods bottom out.)

This will ensure that the valve is set to the lowest possible flow. Now, open the upstream valve to provide pressure to the valve. (Some flow will pass through the valve even when fully closed.) At this time, the valve may be opened by turning the knob counterclockwise until the desired flow is achieved.

Valve Plugging

When particulates are present in the sample stream, the valve may gradually plug due to the extremely tight tolerance between the rods and the tube. This situation will be noticeable by a gradual reduction in sample flow rates over time. The HiDP II control valve may be unplugged simply by retracting the rods fully and blowing sample through the valve. It is possible to withdraw the rods "on-line" to blow out the valve, but be careful that the sample pressure and temperature do not exceed the design limits of downstream components.

CAUTION

Blowing down, either on-line or off-line, can result in excessively high sample temperatures which can result in damage to valves and instruments and which can create a hazardous condition. Always blow down with care, ensuring that the temperatures do not become excessive.

Off-line blowdown requires a 3-way diverting valve downstream of the W6501 pressure valve so that the blowdown will be diverted to a drain or sink, thus protecting downstream components from high temperature and/or pressure.

Figure 1. Panel Cutout

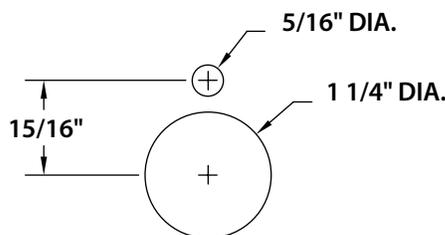
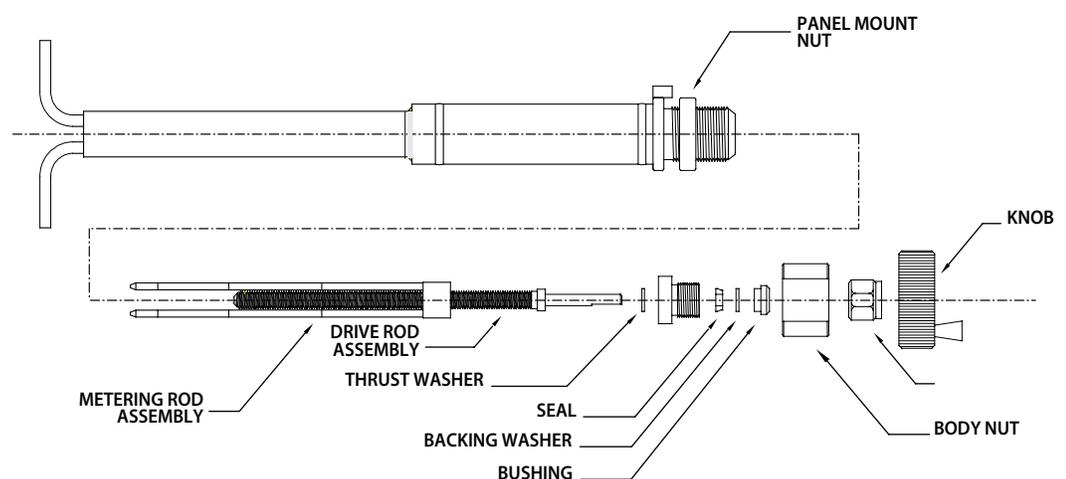


Figure 2. HiDP II Assembly



Maintenance

The HiDP II control valve requires minimal maintenance. The valve seal and washers should be replaced at least once per year, or whenever leakage is present around the seal shaft (see Seal Kit, below).

If there is evidence of higher turning torque or rough operation, disassemble the valve and inspect the threaded rod for wear or corrosion. If the threaded rod is worn or corroded, replace immediately.

CAUTION

Before disassembling the valve, close the upstream shutoff valve fully and verify that sample flow is shut off.

Replacement Parts

The following components are available as replacement items:

Item	Part #
Seal Kit Includes (1) backing washer, (1) thrust washer and (1) seal	W65SL
Metering Rod Assembly	WC070164
Drive Rod Assembly	WA070153
Replacement Knob	WA171416
Bushing	WA070150

Customer Support

With proven sampling expertise since 1924, Sentry products and services provide business operations the critical insights to optimize process control and product quality. We deliver true representative sampling and analysis techniques to customers around the globe, empowering them to accurately monitor and measure processes for improved production efficiency, output, and safety. Standing behind our commitments, we are determined to tackle any application, anywhere.

We know that running an efficient operation isn't easy. It requires thorough, careful analysis of controlled, real-time data achieved through reliable, accurate, and repeatable process monitoring and measuring. By effectively conditioning, sampling, and measuring gas, liquid, slurry, powder, solids, steam, or water within their production environments, our customers obtain the critical insights they need to control and optimize their processes.

Yet, controlling your processes also means reliable customer support throughout the life cycle of your equipment.

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- Installation Service—For systems that require specialized expertise upon installation.
- Technical Support—Troubleshooting, training, and technical manuals.
- Field Service & Retrofits—When a problem needs immediate attention.
- Replacements Parts & Consumables—Order your replacement parts and consumables.
- Sentry ProShield Services—Select from four ProShield Guardian service plans providing different levels of support to protect your large system investments with regularly scheduled maintenance.

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