

Installation, Operation & Maintenance Manual

Sentry ABPR Adjustable Back Pressure Regulator 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®	1. Automatic Sampling 2. Corrosion Monitoring 3. Manual Sampling 4. Sample Conditioning 5. Sampling & Analysis Systems 6. Replacement Parts (without expiration dates)	Eighteen months from date of shipment or twelve months from startup, whichever occurs first
Waters Equipment	1. Sampling & Analysis Systems 2. Replacement Parts (without expiration dates)	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.

⚠ CAUTION

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

⚠ WARNING

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

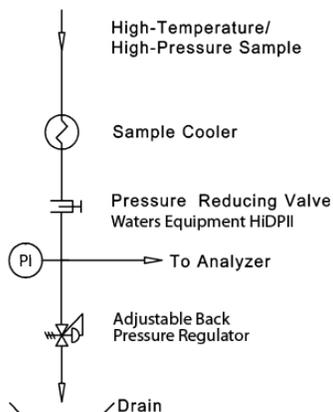
High pressures! This equipment may contain fluids at very high pressures. Prior to installing, removing, or maintaining this equipment, ensure that the equipment is isolated from all connecting piping, the equipment is depressurized, the contents have been drained, and the equipment is cool.

General Description

The Sentry® Adjustable Back Pressure Regulator (ABPR) is designed to provide a constant pressure as set between 5–60 psig (0.34–4.14 bar). This set pressure is maintained independent of source pressure fluctuations or the sample flow rate changes. If inlet pressure rises, the regulator opens to let excess flow pass through to the drain or sink area. This flow can be used for the grab sample. This unit also acts a relief valve in the event of an over-pressure condition. The regulator can be adjusted for a higher pressure if there is a significant pressure drop later in the system. The regulator can be adjusted for a lower pressure on liquid lines that have a low incoming pressure and require a higher grab sample flow rate.

Installation

- The Sentry ABPR should be installed as shown in the figure (right).
- The ABPR can be manually adjusted via the hex screw in the top of the assembly.
 - Turn the hex screw clockwise to adjust the pressure up to a maximum of 60 psi (4.14 bar).
 - Turn the hex screw counter clockwise to adjust the pressure down to a minimum of 5 psi (0.34 bar).
- The sample line pressure can be verified via the pressure indicator (PI) on the system. This allows very precise pressure control, minimizes plugging, and ensures reliability.
- Connections on the ABPR are 1/4" FNPT.
- Wetted materials are 316 SS and Viton®.



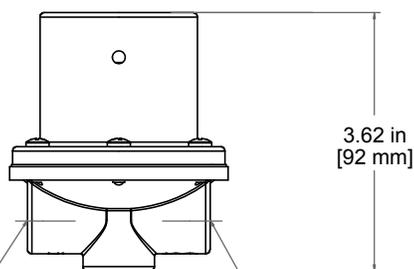
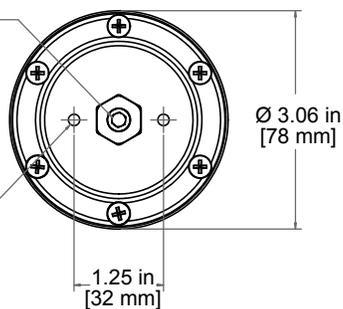
Maintenance

Maintaining the ABPR consists of cleaning and/or replacement of the diaphragm. Use the following directions to disassemble and reassemble the ABPR for maintenance purposes.

1. Remove pressure on the internal spring by loosening the adjustment hex screw completely (counter-clockwise).

3/16 in Adjustment Hex

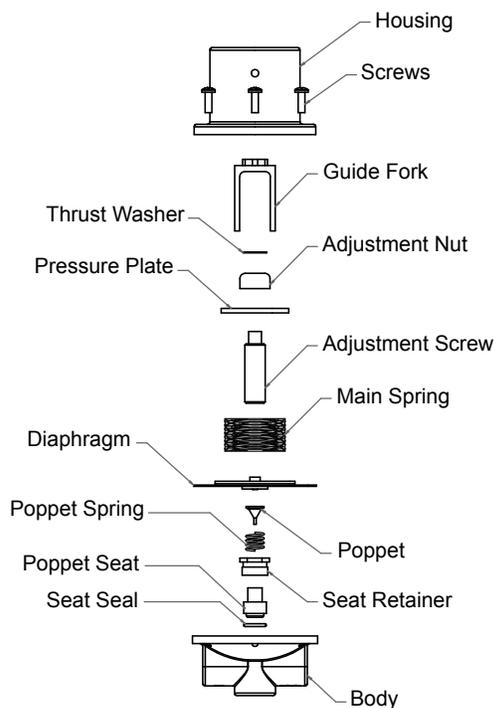
2X 10-32 UNF Mounting Holes



Inlet
1/4 in FNPT

Outlet
1/4 in FNPT

2. Remove the six (6) 1/2" long screws and then remove the housing.
3. Clean and/or replace parts as needed.
4. To reassemble, reverse the above procedure.
5. Check the tightness of all six (6) screws with a torque wrench. Alternate from one side to the other until all are tightened to 16 in-lb (1.8 Nm).



Replacement Parts

Description	Part Number
Adjustable Back Pressure Regulator	7-04990A
<ul style="list-style-type: none"> ▪ 5-60 psig (0.34–4.14 bar) set point ▪ Preset at ~20 psig (1.38 bar) 	
ABPR Diaphragm Replacement Kit	6-04084A

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.

- Customer Service—General information, warranty claims, order management.
- 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.

To learn more, go to www.sentry-equip.com/support.