

## Adjusting the Self-Vent



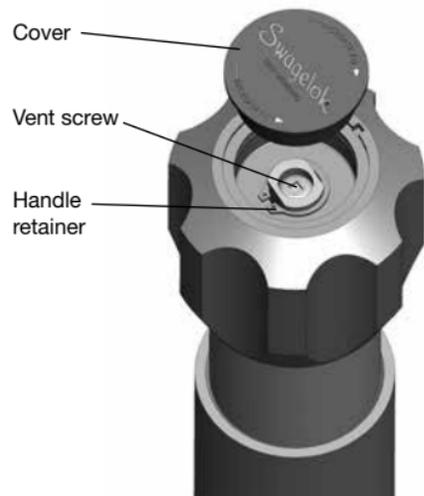
### Caution

Turning the vent screw too far clockwise may cause the vent to remain open and allow downstream pressure to escape.



### Caution

Turning the vent screw too far counterclockwise may cause the vent to remain closed and not allow downstream pressure to escape.



1. Pressurize the regulator and adjust the outlet pressure to its normal system setting.  
Note: It is recommended to do this under no flow conditions.
2. Remove the cover from the handle.
3. If the vent is leaking, use a 3 mm hex key to turn the vent screw counterclockwise until the leak stops.  
Note: If the vent continues to leak the self-vent seat or regulator seat is damaged and must be replaced.
4. Slowly turn the vent screw clockwise until the outlet pressure starts to drop or the vent leaks.
5. Turn the vent screw 1/2-turn counterclockwise.
6. Replace the cover on the handle when done adjusting the self-vent.

Complete regulator maintenance instructions are available on [www.swagelok.com](http://www.swagelok.com).

*KHB Series Regulators Maintenance Instructions, MS-CRD-0135*

*KHP Series Regulators Maintenance Instructions, MS-CRD-0140*

*KHR Series Regulators Maintenance Instructions, MS-CRD-0141*



### WARNING

Do not mix/interchange Swagelok products or components not governed by industrial design standards, including Swagelok tube fitting end connections, with those of other manufacturers.

# Swagelok

## High Pressure Regulators

### User's Guide

This user guide applies to Swagelok® KHB series, KHP series, and KHR series regulators.



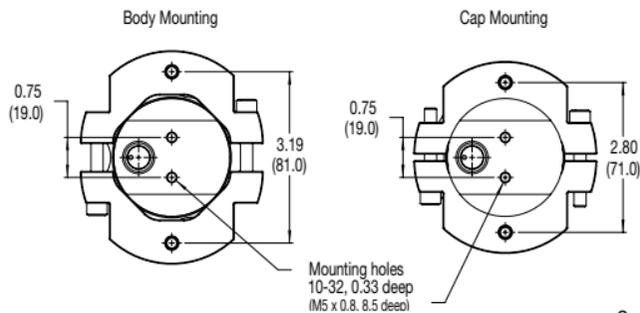
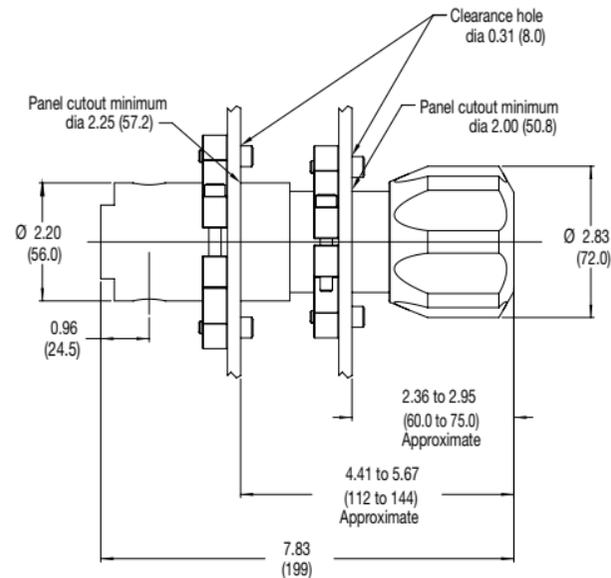
### Warning

Self-venting and captured-venting regulators can release system fluid to atmosphere. Position the self-vent hole or the captured vent connection away from operating personnel.



### Caution

Swagelok regulators are not "Safety Accessories" as defined in the Pressure Equipment Directive 2014/68/EU: Do not use the regulator as a shutoff device.



## Installation

### ■ Bottom Mounting

Mount the regulator using the two M5 (10-32) mounting holes located on the regulator base.

### ■ Panel-mount Assembly

1. Remove the cover from the handle. Refer to the drawing on page 6.



#### Caution

**Do not adjust or move the vent screw located in the stem.**

2. Remove the handle retainer.
3. Remove the handle.

Note: The handle is a tight fit on the stem.

4. Panel mount the regulator to either the body or the cap. Refer to the drawing on page 2 for dimension information.

5. Replace the handle, handle retainer, and cover.

### ■ Connections to System

Note: All handle directions are when viewed from above.

- Flush the system before installing the regulator.
- An auxiliary upstream filter is recommended for use in all but the cleanest of media.
- Before connecting to the system, verify the regulator is closed by turning the handle:
  - Back-pressure regulators, clockwise until it stops.
  - Pressure-reducing regulators, counterclockwise until it stops.

- Installation of a downstream pressure relief is recommended for regulator and system protection.

- All connections should be checked for leakage. Isolate the downstream (LP for pressure reducing, HP for back-pressure regulators) side of the regulator and turn the handle clockwise enough to pressurize the regulator outlet. Then pressurize the regulator with an inert gas to the pressure marked on the unit and applying a liquid leak detector around the connections and any plugs.



#### Caution

**Verify that the inlet (marked 'HP' for pressure reducing, 'inlet' for back pressure regulators) and outlet (marked 'LP' for pressure reducing, 'outlet' for back pressure regulators) are in the proper orientation.**



#### Caution

**Regulators with a self-captured vent: Do not block the vent. Connect the vent to atmospheric pressure. Failure to do so may affect the operation and pressure setting of the regulator.**



#### Caution

**For system pressures greater than 6 000 psig (413 bar) an initial self-vent adjustment is required. Refer to page 6 for the proper procedure.**

## Operation

Note: All handle directions are when viewed from above.

- Back-pressure regulators: Turning the handle clockwise will increase the upstream pressure, counterclockwise will allow upstream pressure to vent through the regulator.
- Pressure-reducing regulators: Outlet and control pressure settings are obtained by adjusting the handle.
  - To increase the outlet or control pressure, rotate the handle *clockwise*.
  - To decrease the outlet or control pressure, rotate the handle *counterclockwise*.
- Once fluid is flowing through the system, fine tuning may be required.
- Always make the final setting in the direction of increasing pressure to
  - obtain the most accurate set point
  - ensure the self vent functions properly.
- Icing of the regulator at high flow rates or high pressure drops may occur if the gaseous media contains moisture.
- When using a liquid media, the inlet port filter may cause a pressure drop and flow reduction. Removal of the port filter and the use of a dedicated upstream filter may be necessary.