Vent Valve Seat Replacement

For: PPCH and PPCH-G
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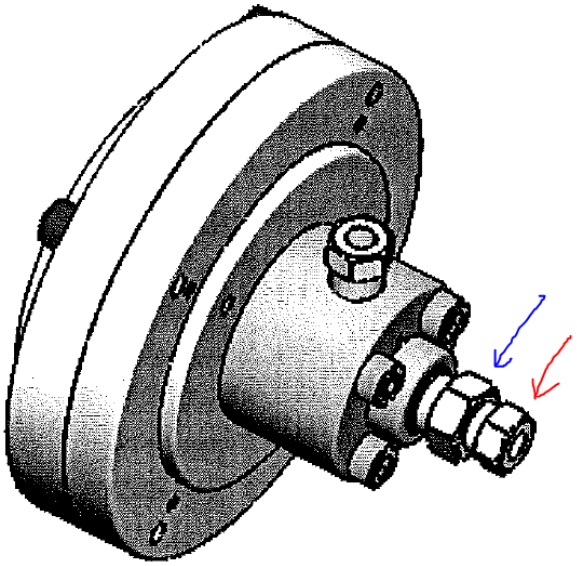
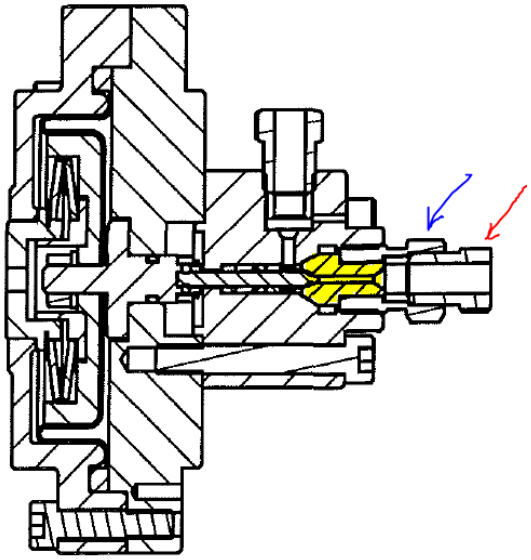
A common failure mode is for debris to be drawn back into the PPCH and become lodged on the vent valve seat. This prevents the valve from fully closing and creates a leak path. Typically when this happens, the valve seat must be replaced. Replacement of the valve seat is considered as an advanced but moderate repair action.

All models of the PPCH and PPCH-G use the same vent valve seat:

Item Description: 122671,SEAT,200MPA,INLET,58 DEG
p/n: 3146645

Overview: The valve seat is located on the bottom side of the valve body, highlighted. It is retained by a 5/8" HEX gland (blue arrow) and the pressure connection is made with a ½" HEX gland (red arrow). The pressure connection is first removed, and then the retaining the gland. The valve seat is then free to drop down and away from the valve body.

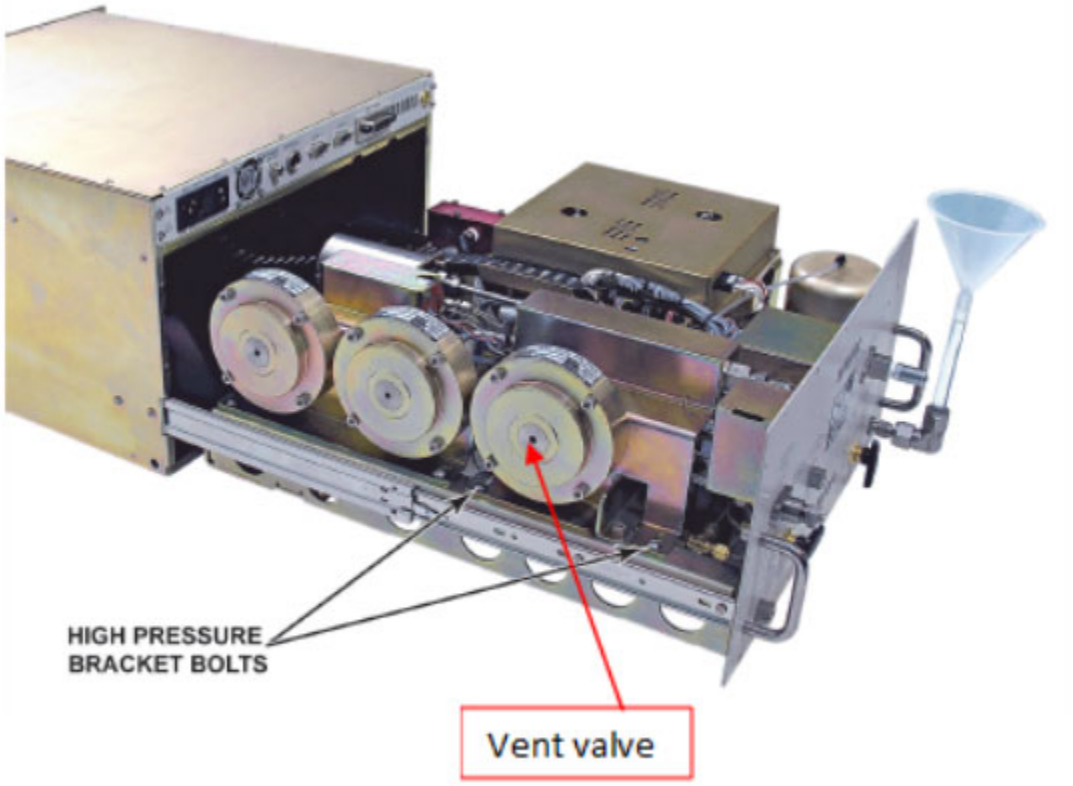




Process: The PPCH user manual provides instructions for accessing the PPCH mechanical module – an inner assembly which slides out from the chassis on rails. The vent valve resides in the mechanical module.

Electrical power should be removed from the PPCH, but the pneumatic drive air is required to be applied for this operation. Use caution when sliding out the mechanical module so as not to pinch or damage the drive air connection coming into the PPCH.

Locate the VENT valve: the valve can be removed from the mechanical module, or the entire PPCH + module tray can be rotated onto its side to give access to the underside of the mechanical module.



a. Remove the stainless steel tube connection between the bottom of the vent valve and the thermal pressure control volume.
b. Remove the 5/8” retaining gland.
c. Allow the valve seat to drop out of the valve body.

Install the new valve seat:

a. Make sure that the pneumatic drive pressure is applied to the PPCH. This is necessary to push the valve’s needle away from the seat.
b. Insert the new seat, reinstall the 5/8” gland, tighten until snug
c. Reinstall the tube between the valve and the thermal pressure control volume.

Leak Test: With a plug in the rear test port, and electrical power applied, perform a leak test to evaluate the effectiveness of the repair.

a. From the front panel, set the control mode to STATIC → [SETUP],control, mode, Static.
b. Set a target of 15,000 psi.
c. Once near the target, press the escape key [ESC] to abort control
d. Wait 3 minutes for the thermal effects to settle.
e. Press the [LEAK CK] button and run the leak check for 30 seconds.
f. A passing leak rate is one where the average rate of change is -0.15 psi/s or smaller.