

## CPS-40M Operation

November 2019

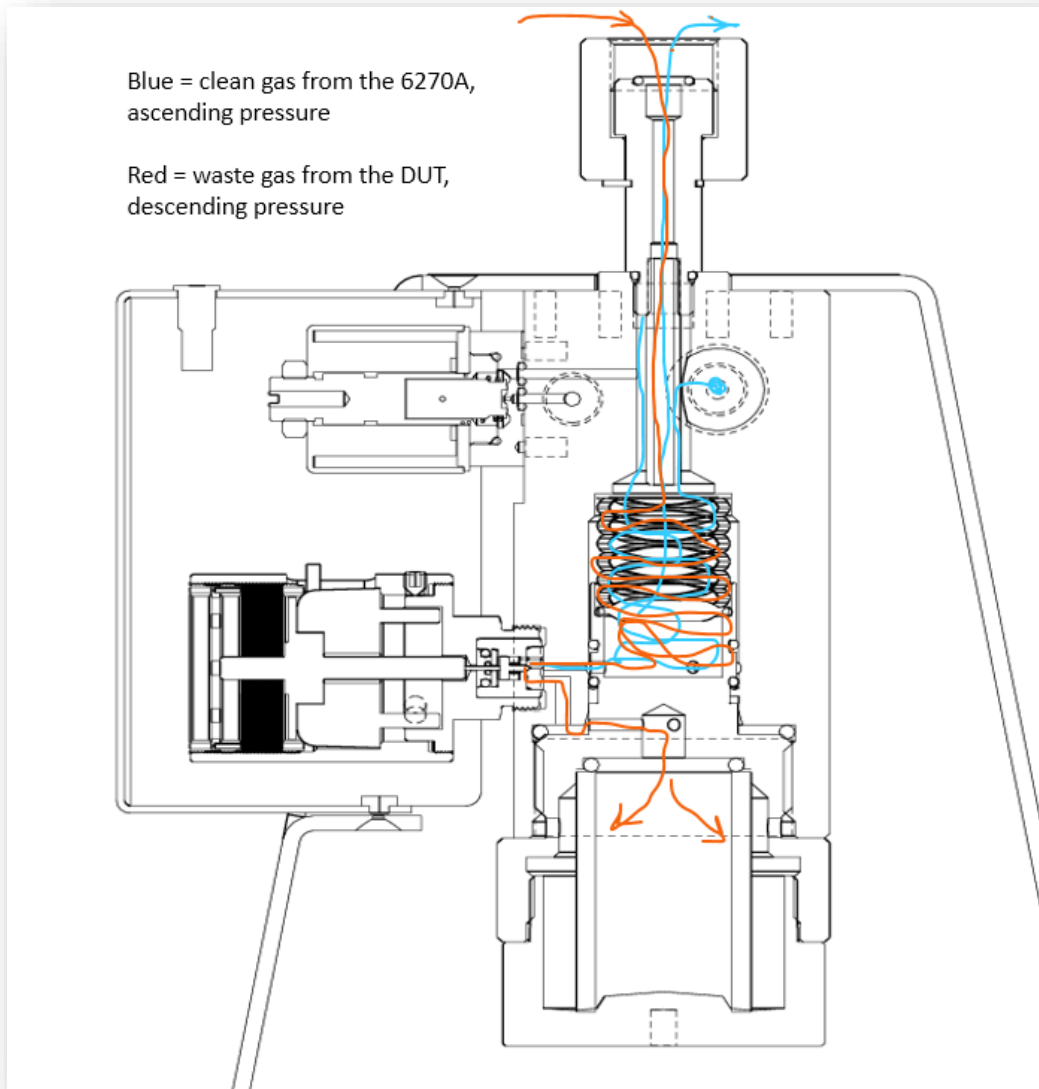
M. Daniels

Starting a Pressure excursion from vent, Ascending:

1. Clean gas comes from 6270A to the CPS [inlet] Controller port, flows through the excess flow check valve to let gas into the CPS volume.
  - a. The gas pressure fills the internal volume, through the mesh screen, to the inlet of the main high P valve.
  - b. The gas [swirls around] and directly goes into and up the inner tube bore to the DUT.

Descending:

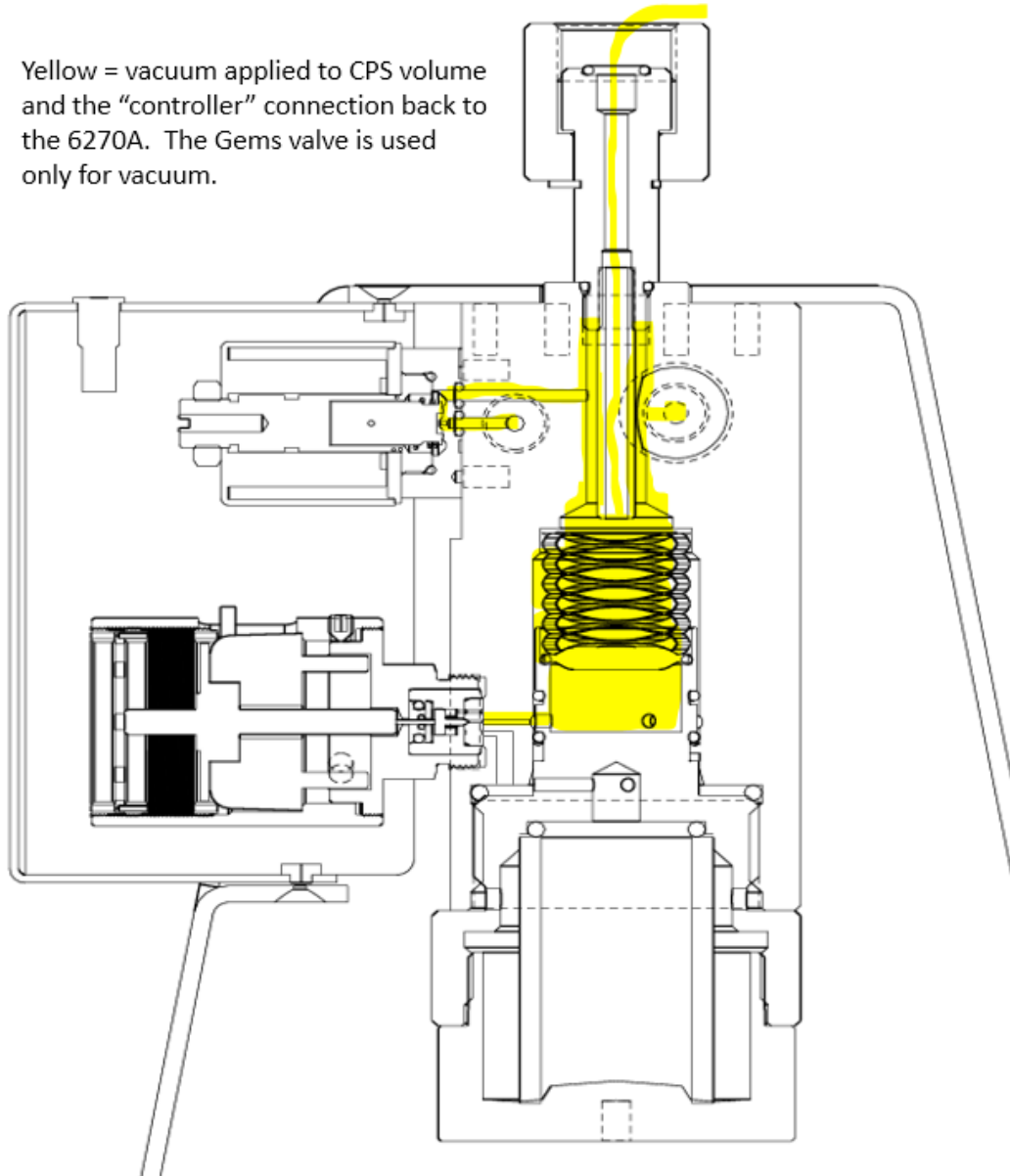
2. The main Hi P Exhaust valve on CPS pulses open.
3. Dirty gas and liquids flow down from the DUT through the inner tube bore,
4. Dump onto the wire mesh screen, momentarily pool up (if large flow) and exit out the three holes at the bottom, following a groove around the inner bore of the CPS body. This bore feeds to the Hi P valve inlet.
5. When the hi P valve is opened the flow path exits the valve back into the lower CPS volume on the inside of the fiber filter. The purpose of the fiber coalescing filter is to knock down spray and mist as the dirty gas solution vents to atmosphere.
  - a. The bulk of the exhaust gas exits at the machined gap between the metal knurled section meets the CPS body. The liquids are directed out the waste line.



Vacuum Operation:

6. The Gems valve is used only for vacuum control. The high P valve is not used.
7. It rapid fire quick pulses to lower the pressure inside the CPS.
8. The 6270A Release valve provides the fine pressure (vacuum) adjustment.

Yellow = vacuum applied to CPS volume and the “controller” connection back to the 6270A. The Gems valve is used only for vacuum.



The “Controller” port has a check valve which is integrated into the backside of the AN4 pressure fitting assembly to prevent dirty gas flow back towards the 6270A. This allows flow from the 6270A to enter the CPS but prevents dirty contaminated gas from flowing out of CPS back towards the 6270A. The design is not a traditional check valve, but instead it’s a flow-limiting check valve. It will block higher flow rates but will open to allow small, “diffusion” gas flow to pass – such as when the 6270A is performing fine control.

