



Pressure Testing

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MPF Products, Inc. designs and manufactures ceramic-to-metal components for the harsh environment of Ultra High Vacuum applications. We offer pressure testing as a value-added service to complement and support our customers critical application. MPF Products, Inc. has the ability to test various designs, but we do not have the ability to certify to an ASTM or Boiler System specification.

Procedure:

We DESIGN the component at (4) times the Operating Pressure using Solid Works within the guidelines of the FEA simulation feature of Solid Works.

We TEST the design at 150% of the Operating Pressure at normal atmosphere temperature.

Equipment:

Pneumatic Tester max to 1,500 PSI backfilled with Nitrogen.

Hydrostatic Tester max to 30,000 PSI backfilled with water. Special Note: We do not use a "gas" (i.e.: hydrogen, nitrogen, etc..) due to the explosive expansion potential of using "gas" -so we use the medium of water.

Test:

We design and manufacture a specialty Stainless Steel pressure fixture. We place the unit in the unique fixture and attach to the system.

We bring the unit up to 150% of the Operating Pressure of the design; hold for 20 minutes and then bring down to atmosphere pressure.

We then bake-out the unit at 350°C and re-leak test using our standard helium leak testers.

We consider the unit having PASSED if there is no change in our analog measurement; less than 2% change in size; and passes leak testing (1×10^{-9} cc/sec He).

We do not pressure test until a CATASTROPHIC failure as a standard procedure. We have this ability, but this needs to be discussed in the engineering review portion of our dialogue.

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