Product Test Report

PTR-3256

Swagelok Company
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TITLE

Environmental Seal Testing of Swagelok® Jacketed Tube Connector (JTC)

PRODUCT TESTED

(10) Stainless steel, 1/4 in. JTC seal cartridges, SS-4JTC-NFSET
(10) Stainless steel, 3/8 in. JTC seal cartridges, SS-6JTC-NFSET
(10) Stainless steel, 1/2 in. JTC seal cartridges, SS-8JTC-NFSET

PURPOSE

This fitting was tested under laboratory conditions to observe the environmental seal performance of Swagelok JTC after a long-term exposure to elevated temperatures.

TEST CONDITIONS

Original test date: October 2012

System fluid: water
Temperature: ambient temperature 60 to 80°F (15 to 26°C), 180°F (82°C)

TEST METHOD

1. Jacketed tubing was cut into 6 in. pieces with the jacket removed ¼ in. from each end. Highly absorbent paper was wrapped around the exposed ends of the tubing. See Figure 1. The JTC seal cartridges were placed on each end of the jacketed tubing. There were 5 tube assemblies for each size for a total of 15 jacketed tube assemblies.
2. The ferrule sets of the JTC seal cartridges were replaced with modified port connectors to allow easy removal of the jacketed tubing after testing. Swagelok caps were then used to seal the Swagelok end of each JTC seal cartridge.
3. The assemblies were exposed to a 180°F (82°C) environment for 18 hours and then allowed to cool to ambient.
4. The assemblies were placed in a water spray chamber and subjected to water spray through a 5.25 mm nozzle at 18.9 L/min for 3 minutes. The water used was dyed blue to enhance its visibility if it were absorbed into the test paper. See Figure 2.
5. After the test, the JTC seal nuts were loosened and the JTC seal cartridges were removed from the ends. The papers were observed for any signs of water.

Figure 1: Jacketed Tube End Wrapped With Test Paper

Figure 2: JTC Assemblies Under Test

TEST RESULTS

All of the samples tested passed the environmental seal test without any signs of water absorbed into the test paper.

This test was performed to consider a specific set of conditions and should not be considered valid outside those conditions. Swagelok Company makes no representation or warranties regarding these selected conditions or the results attained. Laboratory tests cannot duplicate the variety of actual operating conditions. Test results are not offered as statistically significant. See the product catalog for technical data.

SAFE PRODUCT SELECTION

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.