



Product Test Report

PTR-3255

Swagelok Company
29500 Solon Road
Solon, Ohio 44139 U.S.A.

Ver 02
November 2022
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TITLE

Jacket Seal Range Testing of Swagelok® Jacketed Tube Connector (JTC)

PRODUCT TESTED

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

PURPOSE

This fitting was tested under laboratory conditions to observe the jacket seal performance of Swagelok JTC at the minimum and maximum jacket diameters by performing a water ingress test.

TEST CONDITIONS

Original test date: October 2012

System fluid: water

Temperature: ambient

External pressure: 20 to 25 psig (1.3 to 1.7 bar)

TEST METHOD

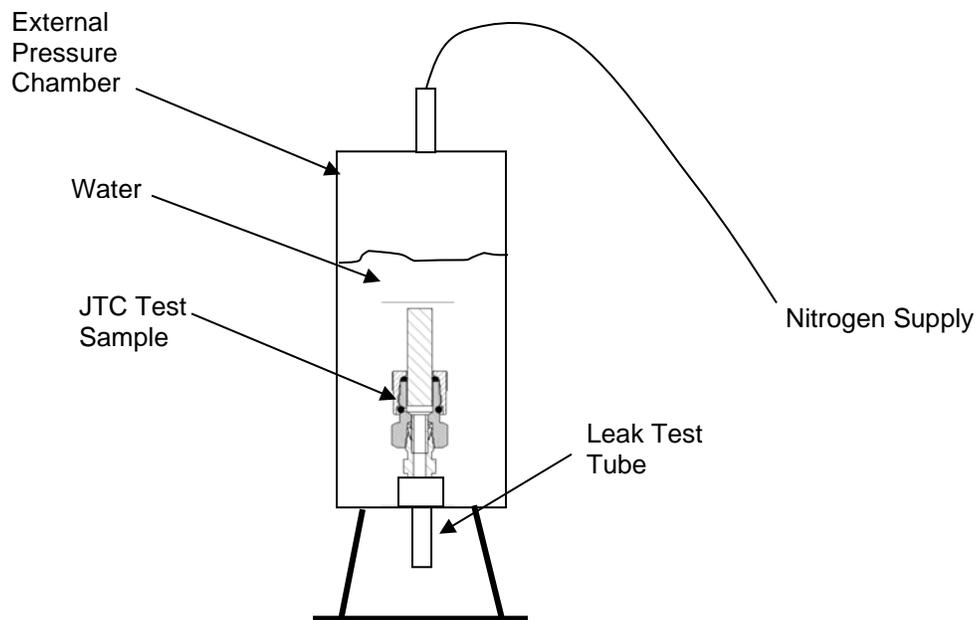
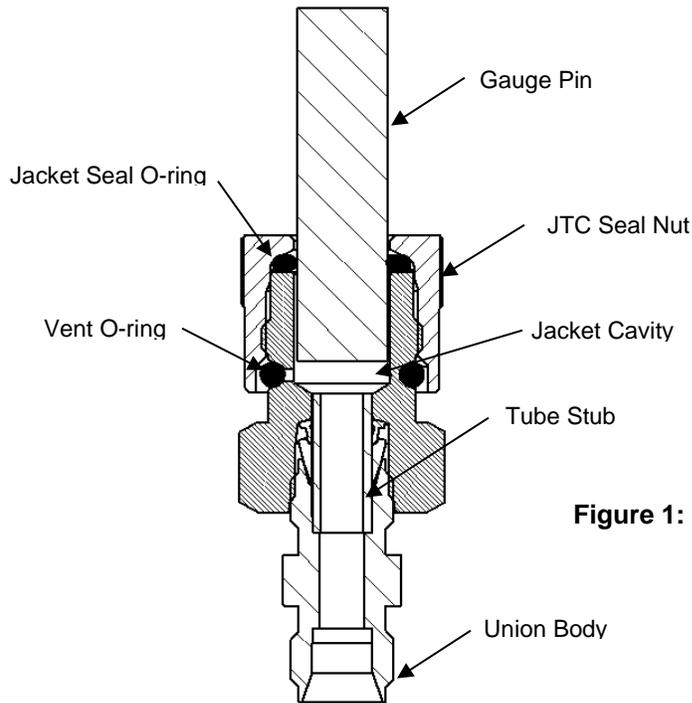
1. A JTC seal cartridge was preswaged onto a short tube stub using the Manual Gaugeable Preswage Tool. The jacket seal cartridge was then assembled to a union body.
2. A gauge pin was inserted into the jacket cavity to simulate the minimum jacket diameter and the jacket seal nut was tightened hand-tight. See Figure 1.
3. The JTC assembly was then placed inside an external pressure chamber, and the free end of the union body was secured to the leak test tube. See Figure 2.
4. The pressure chamber was filled with water and sealed. The water was pressurized using 20 to 25 psig (1.3 to 1.7 bar) of nitrogen for one minute.
5. During the test, the leak test tube was observed for any signs of water from leakage. After the test was stopped, the JTC test sample was removed from the pressure chamber, the jacket seal nut was loosened, and the gauge pin was removed. Any evidence of water in the jacket cavity or the leak test tube constituted a failure; otherwise, the sample received a passing mark.
6. Steps 2 through 5 were repeated with the same JTC sample, but the gauge pin was replaced with one to simulate the maximum jacket diameter.
7. The test was repeated for all of the remaining samples and sizes.

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TEST RESULTS

Ordering Number	Sample Number	Minimum Jacket Diameter in. (mm)	Maximum Jacket Diameter in. (mm)	Water Ingress Test Result
SS-4JTC-NFSET	1	0.300 (7.62)	0.409 (10.39)	Pass
	2	0.300 (7.62)	0.409 (10.39)	Pass
SS-6JTC-NFSET	1	0.400 (10.16)	0.534 (13.56)	Pass
	2	0.400 (10.16)	0.534 (13.56)	Pass
SS-8JTC-NFSET	1	0.550 (13.97)	0.621 (15.77)	Pass
	2	0.550 (13.97)	0.621 (15.77)	Pass

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.

Swagelok—TM Swagelok Company