



Product Test Report

PTR-5001

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

Ver 02
June 2022
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TITLE

Hydrostatic Pressure Test of 1 1/2 Inch 316 Stainless Steel Swagelok® IPT Series Medium-Pressure Cone and Thread Fittings

PRODUCT TESTED

The following 316 stainless steel Swagelok IPT series medium-pressure cone and thread fitting components were tested.

Ordering Number	Part Type	Size in.	Material
CN24MF15	Coupling	1 1/2	316 strain-hardened stainless steel
GL24M	Gland		
CL24M	Collar		
PL24M	Plug		
N24M15	Coned and threaded tube nipple	1 1/2 OD x 15/16 ID	

PURPOSE

The components were assembled and tested under laboratory conditions to observe the performance of 1 1/2 inch 316 stainless steel Swagelok IPT series medium-pressure cone and thread fittings during a hydraulic pressure test.

TEST CONDITIONS

Original test date: September 2015

- Each sample consisted of a coupling body with a collar, gland, and coned and threaded tube nipple installed into one port, and a gland and plug installed into the opposing port.
- The male threads of the gland and tip of the plug and nipple cone were lightly coated with Silver Goop™ lubricant prior to assembly. The collar was installed on the tube nipple's threads until 1 to 2 full threads were exposed. The gland was tightened to 200 ft·lb (271 N·m) for both the nipple and plug end connections.
- Testing was conducted at ambient room temperature: 72°F (22°C).

TEST METHOD

1. Each sample was attached to a hydraulic test stand.
2. Pressure was gradually increased within the test sample.
3. Pressure was held for 1 minute at 1.5 times working pressure, and the connections were monitored for leakage.
4. Pressure was gradually increased within the test sample.



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5. Pressure was held for 1 minute at 41 538 psig (2863 bar), which is the equivalent of 2 times working pressure plus a material factor, and the connections were monitored for leakage. If necessary, pressure was relieved, the connection was tightened slightly, repressurized to 41 538 psig (2863 bar) and retested.
6. Pressure was gradually increased within the test sample.
7. The pressure was recorded when leakage prevented an increase in pressure. If necessary, pressure was relieved, the connection was tightened slightly, repressurized and retested to achieve a minimum pressure value of 3 times working pressure.

TEST RESULTS

Connection Type	Samples Tested	Working Pressure (WP) psig (bar)	Samples Obtaining 1.5 × WP	Samples Obtaining 2 × WP and Material Factor	Samples Obtaining 3 × WP
Tube Nipple	22	15 000 (1034)	22 / 22 Pass	22 ^① / 22 Pass	22 ^② / 22 Pass
Plug	11	15 000 (1034)	11 / 11 Pass	11 / 11 Pass	11 / 11 Pass

- ① Six tube connections required slight tightening.
② Four tube connections required slight tightening.

This test was conducted beyond the product's recommended operating parameters and does not modify the published product ratings.

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. 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, Goop—TM Swagelok Company