

FORM FOR THE REGISTRATION OF FITTING DESIGNS

NEW BRUNSWICK NOVA SCOTIA PRINCE EDWARD ISLAND NEWFOUNDLAND AND LABRADOR  
 NUNAVUT YUKON NORTHWEST TERRITORIES

MANUFACTURERS NAME: Swagelok Company	
MANUFACTURERS ADDRESS: 29500 Solon Road, Solon, Ohio 44139 USA	
PLANT LOCATIONS: Headquarters: 29500 Solon Road, Solon, Ohio 44139 USA (See Attachment A)	
<p><b>CATEGORY OF FITTINGS TO BE REGISTERED. CIRCLE ONE CATEGORY ONLY</b></p> <p>A Pipe fittings, including couplings, tees, elbows, Ys, plugs, unions, pipe caps, or reducers                  B Flanges: all flanges                  C Valves: all line valves  <b>D Expansion joints, flexible connections, and hose assemblies: all types</b>                  E Strainers, filters, separators, and steam traps                  F Measuring devices, including pressure gauges, level gauges, sight glasses, levels, or pressure transmitters                  G Certified capacity-rated pressure relief devices acceptable as primary over pressure protection on boilers, pressure vessels, piping and fusible plugs                  H Pressure retaining components that do not fall into one of the above categories                  I Nuclear components: Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> (Meeting AECB or ASME requirements)</p>	<p><b>TITLE OF THE STANDARD OF CONSTRUCTION</b></p> <p>Rubber Products                  Manufacturers (ARPM)                  Hose Handbook</p>
<p><b>SHOW MANUFACTURERS NAME, TRADEMARK, OR LOGO AS IT WILL APPEAR ON THE PRODUCT</b></p> <p style="font-size: 2em; text-align: center;">Swagelok</p>	<p><b>TYPE OF CONSTRUCTION</b></p> <p>FORGED <input type="checkbox"/> WELDED <input type="checkbox"/> WROUGHT <input type="checkbox"/>                  CAST <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>                  DESCRIBE OTHER: PTFE Core</p>
<p><b>LIST OF SUPPORTING DOCUMENTATION AND IDENTIFICATION OF THE ACTUAL ITEMS TO BE REGISTERED:</b></p> <p>ISD 9001:2015 Certificate, Attachment A, Attachment B, Catalog Information and other Support Documents</p>	


**DECLARATION:**

I, Joel Feldman, Vice President, Engineering (see note 3) employed by Swagelok Company and being the person having full authority and responsibility for the quality of the end product do solemnly declare that the information contained in this form is true and to the best of my knowledge represents the product for which registration is sought. The dimensions, materials of construction, pressure temperature ratings, and identification markings are in accordance with the herein named standards. I further declare that the manufacture of these fittings is regulated by a Quality Control Program which extends to each plant where fabrication occurs in whole or in part and has been verified by BSI as being suitable for that purpose and I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath.

Signature of Declarer: [Signature] 10/20/2020 | 7:50 AM EDT

Declared before me at Unable to get a notary signature THIS SPACE FOR THE  
 This \_\_\_\_\_ day of seal due to COVID-19 situation OFFICIAL SEAL  
 Commissioner of Oaths  
 or Notary Public: (sign) \_\_\_\_\_

(Affix Official seal to the right)

<p>This registration must be revalidated after ten (10) years from the date of issuance.</p> <p>CRN: <u>0D22419.5 Add1</u></p> <p>FID#: <u>1214</u></p> <p>Addition of Swaged T series PTFE hose assemblies.</p> <p>Notes:</p> <ol style="list-style-type: none"> <li>All fittings shall be registered in the name of the Manufacturer.</li> <li>Each category shall be supported with two Statutory Declaration forms and one copy of supporting documentation.</li> <li>The declaration shall be made by the person having full authority and responsibility for the quality of the end product.</li> <li>Quality control programs shall be resubmitted for validation at a maximum interval of five (5) years.</li> </ol> <p>CRN expires May 14th, 2030 - DG</p>	<p style="text-align: right;">16300</p>  <p>Northwest Territories</p> <p>REGISTERED                  UNDER THE AUTHORITY OF                  THE BOILER AND PRESSURE                  VESSEL ACT.</p> <p>C.R.N. <u>0D22419.5T 10/20</u>                  SIGNED <u>[Signature]</u>                  DATE <u>10/20 2020</u></p>
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## Attachment B: Scope of Registration for Crimped and Swaged Swagelok T-Series PTFE Hose Assemblies (Category D)

This document represents the scope of the Swagelok PTFE (TH and TC) hose and crimped/swaged assemblies covered by this submission for CRN approval. These products have been evaluated in accordance with the Association for Rubber Products Manufacturers (ARPM) Hose Handbook.

### Summary Table

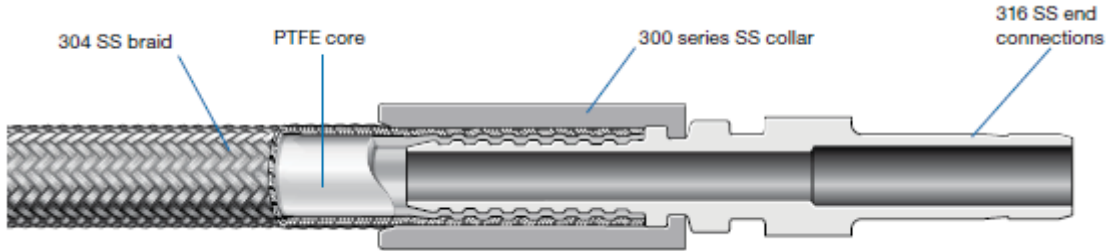
TH and TC Series Hose Size	Maximum Pressure (psig)			Pressure Retaining Material	End Connections and Sizes	Design Code of Construction
	At Minimum Temp. (-65°F)	At 65 to 100°F	At Maximum Temp. (450°F)			
1/4"	2250	3000	2250	<b>Core</b> Smooth Bore Virgin PTFE [TH]	Swagelok Tube Fitting [SL SM TA TM] 1/8" – 1" (6-25mm)	Association for Rubber Products Manufacturers (ARPM) Hose Handbook
3/8"	2250	2500	1875	OR Smooth Bore Carbon-Lined PTFE [TC]	Male and Female NPT Tapered Pipe Fitting [PM PF] 1/4" – 1"	
1/2"	2000	2000	1500	<b>Braid</b> 304 SS Braid Reinforcement	Male 37° JIC and Female 37° JIC with female swivel nut [AN AS] 1/4" – 1/2"	
3/4"	1500	1500	1125	<b>End Connections</b> 316 SS	Male and Female ISO/BSP Tapered (ISO 7) Pipe Threads [MT FT] 1/8" – 1"	
1"	1000	1000	750	<b>Swage Collar</b> 304 SS <b>Crimp on Collar</b> 316 SS	Male and Female VCR Metal Gasket Face Seal Fitting [VF VM] 1/4" – 1"	

### Product Description

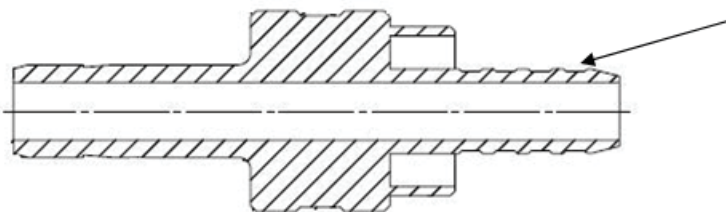
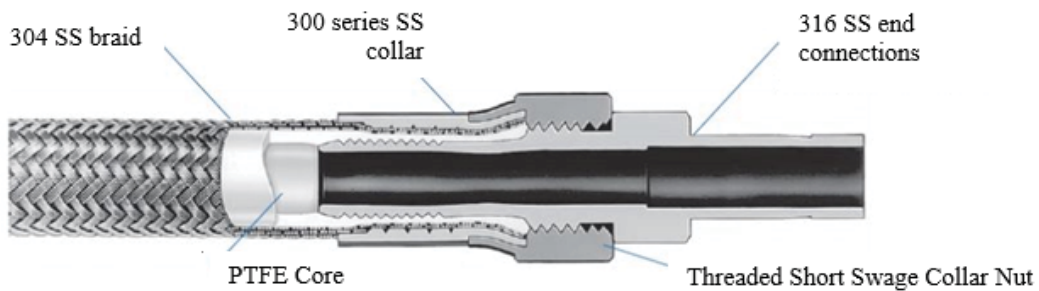
Swagelok's TH series hose is virgin PTFE-lined, 304 Stainless Steel braided hose. The TC series hose is carbon black filled PTFE-lined, 304 stainless steel braided hose. All TH and TC series hoses undergo production testing in accordance with ASTM D380 "Test Methods for Rubber Hose" (version current to hose production date).

## Configurations

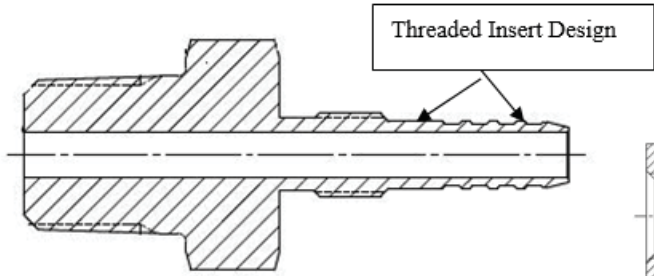
Crimped assembly method:



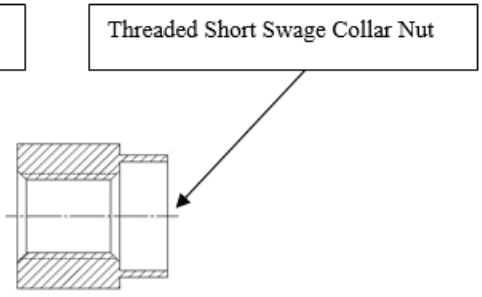
Swaged assembly method – There are two ways the hose end connections are supplied: Threaded end connection insert or non-threaded end connection insert:



Non-Threaded Insert Design, This design combined the thin swage collar section of the threaded short swage collar nut machined integral to the insert without the threads



Threaded Insert Design



Threaded Short Swage Collar Nut



### **Product Options:**

Additional options that do not affect pressure and/or temperature ratings may be made available and are within the scope of this approval. Examples of these would include, but not limited to, the following:

- Polyolefin Cover over Spring-guard
- PVC tubing cover
- Silicone covered Fiber Glass Fire Jacket cover with SS clamps
- Spring guard under Silicone covered Fiber Glass Fire Jacket cover with SS clamps
- SS Tag, TFE Coated SS Lanyard, Aluminum Retaining clamp
- Stainless Steel Tag with TFE coated lanyard
- SS Tag, TFE Coated SS Lanyard, Aluminum Retaining clamp, and possibly pre-swaged
- Customer requested information listed on hose end connection non-critical surfaces
- Applicable material trace numbers marked on end connections.
- Pipe Threaded ends
- O-rings for VCO ends
- Proof Pressure Testing

### **Quality System**

The Swagelok Company quality system complies with the requirements of ISO 9001:2015. The Swagelok Company maintains BSI Certificate of Registration Number FM 01729, which applies to all locations listed on the Certificate.

### **References**

The product catalog does not represent the full scope of the registration but rather details some of the most common options. Hose Assemblies, Bulk Hose, and End Connections Product Catalog MS-01-180.

## Attachment A. Swagelok Manufacturing Locations

This document lists the Swagelok locations where end item or component level manufacturing activities take place.

Swagelok Company 29500 Solon Road Solon, Ohio 44139 USA	Swagelok Company (Falon 1) 348 Bishop Road Highland Heights, Ohio 44143 USA
Swagelok Company (Highland) 318 Bishop Road Highland Heights, Ohio 44143 USA	Swagelok Company (Falon 2) 358 Bishop Road Highland Heights, Ohio 44143 USA
Swagelok Company (OFC) 29495 F.A. Lennon Drive Solon, Ohio 44139 USA	Swagelok Company (HPF) 6050 Cochran Road Solon, Ohio 44139 USA
Swagelok Company (Atlantic) 26651 Curtiss Wright Parkway Willoughby Hills, Ohio 44092 USA	Swagelok Company (Snow Metal) 6060 Cochran Road Solon, Ohio 44139 USA
Swagelok Company (Micro) 26653 Curtiss Wright Parkway Willoughby Hills, Ohio 44092 USA	Swagelok Company (Alfred) 29500 Ambina Drive Solon, Ohio 44139
Swagelok Hose Services Company (SHSC) 29900 Solon Industrial Parkway Solon, Ohio 44139	Swagelok Company (Strongsville) 15400 Foltz Road Strongsville, Ohio 44119
Swagelok (China) Fluid System Technologies Ltd. Changshu Export Process Zone Changshu Economic Development Zone Changshu, Jiangshu 215513 China	Swagelok Limited Ballafletcher Road Tromode IM4 4RA Isle of Man