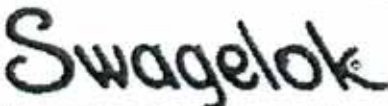


FORM FOR THE REGISTRATION OF FITTING DESIGNS

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

MANUFACTURERS NAME: <u>Swagelok Company</u>	
MANUFACTURERS ADDRESS: <u>29500 Solon Road, Solon, Ohio 44139 USA</u>	
PLANT LOCATIONS: <u>Headquarters: 29500 Solon Road, Solon, Ohio 44139 USA (See Attachment A)</u>	
CATEGORY OF FITTINGS TO BE REGISTERED. CIRCLE ONE CATEGORY ONLY	
(A) Pipe fittings, including couplings, tees, elbows, Ys, plugs, unions, pipe caps, or reducers B Flanges: all flanges C Valves: all line valves D Expansion joints, flexible connections, and hose assemblies: all types 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 N Nuclear components: Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> , (Meeting AECB or ASME requirements)	TITLE OF THE STANDARD OF CONSTRUCTION ASME B31.1 for unlisted components, ASME B31.3 for unlisted components
SHOW MANUFACTURERS NAME, TRADEMARK, OR LOGO AS IT WILL APPEAR ON THE PRODUCT	
	
TYPE OF CONSTRUCTION FORGED <input type="checkbox"/> WELDED <input type="checkbox"/> WROUGHT <input type="checkbox"/> CAST <input type="checkbox"/> OTHER <input checked="" type="checkbox"/> DESCRIBE OTHER: Fittings made from bar and forgings	
LIST OF SUPPORTING DOCUMENTATION AND IDENTIFICATION OF THE ACTUAL ITEMS TO BE REGISTERED: ISO 9001:2015 Certificate, Attachment A, Attachment B, Catalog Information and other Support Documents	

DECLARATION:
 I, Joel Feldman, Vice President, Engineering (see note 2), 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] 4/2/2021 | 8:11 AM EDT

Declared before me at Unable to get a notary
 This _____ day of _____ AD signature or seal due to
 Commissioner of Oaths or Notary Public: (sign) COVID-19 situation
 (Affix Official seal to the right)

USE THIS SPACE FOR THE OFFICIAL SEAL

This space for Regulatory Authority use This registration must be revalidated after ten (10) years from the date of acceptance	
CRN: <u>OA23291.5</u> FID#: <u>1214</u>	Newfoundland Labrador Service NL Registered <u>OA23291.50</u> Date <u>21/06/11</u> Engineering and Inspection Services Registered by <u>[Signature]</u>
Notes: 1. All fittings shall be registered in the name of the Manufacturer. 2. Each category shall be supported with two Statutory Declaration forms and one copy of supporting documentation. 3. The declaration shall be made by the person having full authority and responsibility for the quality of the end product. 4. Quality control programs shall be resubmitted for validation at a maximum interval of five (5) years.	UNDER THE AUTHORITY OF THE PUBLIC SAFETY ACT AND THE BOILER, PRESSURE VESSEL AND COMPRESSED GAS REGULATIONS



Attachment B. Scope of Registration for Swagelok Alloy 825 (ASTM B425 UNS N08825) Tube Fittings (Category A)

This document presents the scope of Swagelok Nickel-Chromium Alloy 825 Tube Fittings covered by this submission for CRN approval. These fittings have been evaluated in accordance with ASME B31.1-2020 and ASME B31.3-2018 for unlisted components.

The fittings rating is based on the lower rating between the type of end connections.

Summary Table

Product Description or Series	Material (Standard)	Port Connections and Sizes	Maximum Allowable Working Pressure			Design Code of Construction
			Up to 100°F (psig)	At maximum temperature per ASME B31.3 (psig)	At maximum temperature per ASME B31.1 (psig)	
Gaugeable Tube Fittings and Adapter Fittings	Alloy 825, UNS N08825 (ASTM B425) For straight fittings, hardware	Tube Fitting 1/4 - 1/2 inch, 6 - 12mm	See Table below	See Table below	See Table below	Unlisted Component in ASME B31.1 & B31.1
	Alloy 825, UNS N08825 (ASTM B564) For shaped fittings	NPT, Male 1/16 - 1 inch	11 600 - 6100	11 449 – 6021* at 800°F (426°C)	8468 - 4453* at 800°F (426°C)	ASME B1.20.1 is listed in ASME B31.1 & B31.3
		NPT, Female 1/16 - 1 inch	7800 - 5100	7699 - 5034* at 800°F (426°C)	5694 - 3723* at 800°F (426°C)	

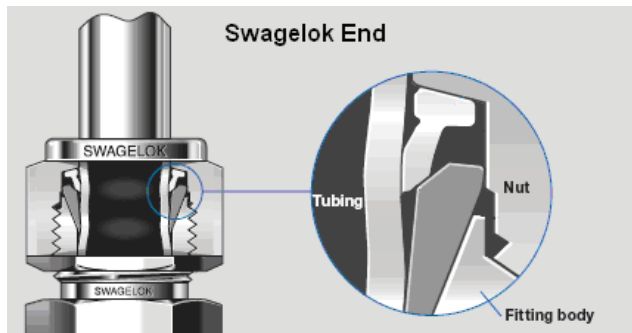
***Rating for fitting material (may be limited by thread sealant)*

Alloy 825 Swagelok Tube Fitting Pressure Rating Tables

Swagelok End Connection Size	Maximum Allowable Working Pressure		
	Up to 100°F	At maximum temp. 800°F (426°C) per ASME B31.3	At maximum temp. 800°F (426°C) per ASME B31.1
1/4 inch	11600 psig	11 449 psig	8468 psig
3/8 inch	8200 psig	8093 psig	5986 psig
1/2 inch	5900 psig	5823 psig	4307 psig
6 mm	660 bar	651 bar	482 bar
10 mm	480 bar	474 bar	350 bar
12 mm	480 bar	474 bar	350 bar

Product Description

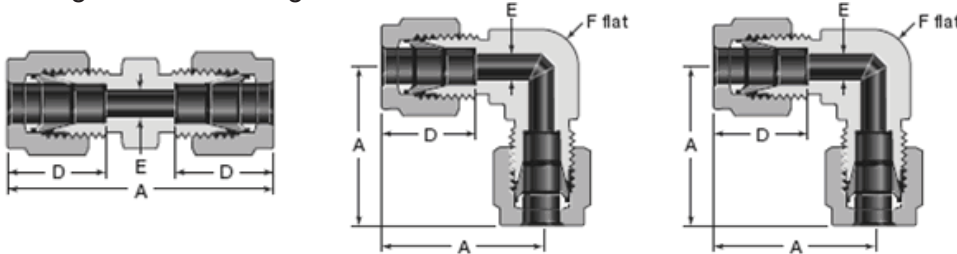
Swagelok Fittings are furnished in a variety of configurations and shapes (straight, elbow, or tee). Swagelok Fittings consist of at least one Swagelok End – a two-ferrule mechanical-grip design. The Swagelok end is a proprietary design, and the assembly consists of Swagelok body, nut, front and back ferrule (see detail). The table above, as well as the “Configurations” section, covers a variety of other end connections.



Configurations

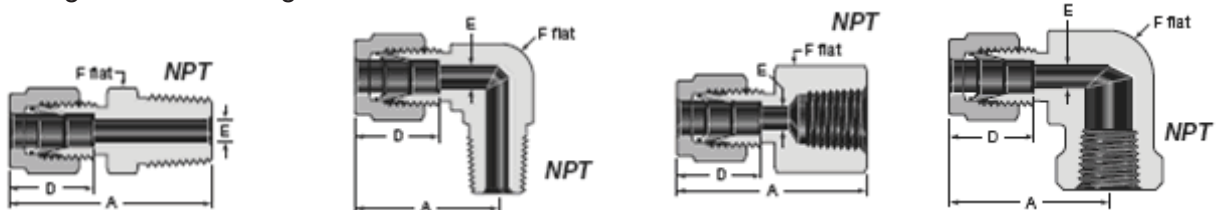
1. Unions (Straight, Elbow, Tee)

Swagelok Tube Fitting End Connections



2. Male and Female Connectors / Adapters (Straight, Elbow, Tee)

Swagelok Tube Fitting End Connection to an NPT End Connection



Swagelok to NPT Male Connectors

Swagelok to NPT Female Connectors

(For dimensions see catalog.)



Product Options:

The product options listed below affect pressure and/or temperature ratings shown in the above Summary Table, but in all cases the ratings are less than, or equal to, those shown in the table.

1. Bored-Through Fittings.
2. Sealant for tapered pipe threads (NPT):
 - a. Curable resin with PTFE
 - b. PTFE tape

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

1. Special marking
2. Special cleaning
3. Wire drills
4. Bulkhead Configurations
5. Snubbers/frits and orifice plates
6. Equivalent metric or fractional hex sizes

All the above options, those that affect pressure and/or temperature ratings and those that do not, are within the scope of this approval.

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.

- Gaugeable Tube Fittings and Adapter Fittings MS-01-140, Rev AE
- Swagelok Tubing Data Sheet MS-01-107, Rev T

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