

REGISTERED



CRN: CSA-0A21661.56

Statutory Declaration Registration of Fittings

Registration Process administered by
 CSA Group per CSA B51

(a) Design Qualification

I, Joel Feldman
Vice President, Engineering
(Position eg, president, plant manager, chief eng.)

Of Swagelok Company
(name of company)

Located at Headquarters: 29500 Solon Road, Solon, Ohio 44139 USA (See Attachment A)
(plant address)

do solemnly declare that the fittings listed hereunder, which are subject to the Boilers & Pressure Vessels Act:

- comply with all the requirements of the ANSI/ASME codes as to their dimensions, material, identification & service for which are required:
- Or
- are not covered by the provisions of the ANSI/ASME codes, and are therefore constructed to comply with _____ code and standard, and are designed to the best current engineering practice, as shown by the supporting test data.



(b) Quality control of Manufacture

I further declare the manufacture of these fittings is controlled by a quality control program which complies with the requirements of ISO 9001:2015, and has been verified by the following authority or authorized agency BSI

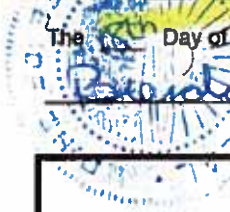
The fittings² covered by this declaration, for which I seek registration, are Category A. Fitting

In support of the application, the following information, calculations and/or test data are attached:
ISO 9001:2015 Certificate, Attachment A, Attachment B, Catalog Information and other Support Documents

Declared before me at Solon

In the of State of Ohio

The 10 Day of JULY AD 20 19



Brandon Hannel
 A (commissioner for oaths)

Joel C. Feldman
 Signature of Declarer³

For Official Use Only

The application is accepted for registration in Category A in accordance with the Boilers and Pressure Vessels Act and CSA Standard B51.

This registration must be revalidated after ten (10) years from the date of acceptance. Aug. 2. 2029

Registered Number CRN CSA-0A21661.56

For the Chief Inspector A. BANWATT
 Date Aug. 27. 2019

1 **Three completed copies of Statutory Declaration form together with three copies of Catalogs, drawings of Bulletins illustrating above fittings shall be submitted.**
 2 **All fittings are required to be registered in the name of the Manufacturer.**
 3 **This form shall be completed and signed by the president of highest official in the manufacturing plant where the fitting is produced.**



345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel. 416 734 3300
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Toll Free 1 877 682 8772

www.tssa.org

August 02, 2019

JONATHAN SEEWALD
SWAGELOK COMPANY
6565 DAVIS INDUSTRIAL PKWY
SOLOH OH 44139
US

Service Request Type: BPV-Fitting Registration
Service Request No.: 2653312
Your Reference No.: FM-HOSE-2019
Registered to: SWAGELOK

Dear JONATHAN SEEWALD,

Technical Standards and Safety Authority (TSSA) is pleased to inform you that your submission has been reviewed and registered as follows:

CRN No.: 0A21661.5

Main Design No.: SEE ATTACHED STAMPED SCOPE OF REGISTRATION
Expiry Date: 02-Aug-2029

Please be advised that a valid quality control system must be maintained for the fitting registration to remain valid until the expiry date.

The stamped copy of the approved registration and the invoice are mailed separately. Should you have any questions or require further assistance, please contact a Customer Service Advisor at 1.877.682.TSSA (8772) or e-mail customerservices@tssa.org. We will be happy to assist you. When contacting TSSA regarding this file, please refer to the Service Request number provided above.



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) 13400 Fortz Road Strongsville, Ohio 44119
Swagelok (China) Fluid System Technologies Ltd. Changshu Export Process Zone Changshu Economic Development Zone Changshu, Jiangshu 215513 China	Swagelok Company A.G. (European Technology Center) St. Gallenstraße 84 Lachen, Switzerland 8853
Swagelok Limited Ballafletcher Road Tromode IM4 4RA Isle of Man	<div style="border: 2px solid red; padding: 5px;"> <p style="text-align: right; margin-right: 20px;">2 OF 8</p> <p style="text-align: center;">CSA GROUP</p> <p>ATTACHMENT A</p> <p>C.R.N.: <u>CSA-ON-27507-16</u></p> <p>Signed: <u>[Signature]</u></p> <p>178 Rexdale Boulevard, Toronto, ON Canada M9W 1R3</p> </div>

THIS IS PART OF
GRN 0A21661.5
 Technical Standards & Safety Authority
 Bellers & Pressure Vessels
 Safety Program

Attachment B. Scope of Registration for Swagelok Carbon Steel Tube Fittings (Category A)

This document represents the scope of Swagelok Carbon Steel Tube Fittings covered by this submission for CRN approval. These Swagelok Tube Fittings have been evaluated in accordance with ASME B31.1-2016 for unlisted components and ASME B31.3-2016 for unlisted components.

Summary Table

Product Description or Series	Body Material (Standard)	Port Connections and Sizes	Maximum Allowable Working Pressure		Design Code of Construction	
			Up to 100°F	At maximum temperature 375°F (190°C)		
Gaugeable Tube Fittings and Adapter Fittings	Straight fittings: 11L37 Carbon Steel (ASTM A108) or 12L14 Carbon Steel (ASTM A108) Shaped fittings: 1137 Carbon Steel Forging (ASTM A181) or 1035 Carbon Steel Forging (ASTM A105)	Swagelok End Connection 1/8 - 2 inch (Fractional) 6mm - 38mm (Metric)			ASME B31.3 (Unlisted Components) ASME B31.1 (Unlisted Components)	
		NPT Male 1/16 - 2 inch	ASME B31.3	11000 - 3900 psig	9570 - 3390 psig	Based on ASME B1.20.1 listed in Table 326.1 of B31.3 and Table 126.1 of B31.1
			ASME B31.1	8250 - 2920 psig	7180 - 2540 psig	
		NPT Female 1/16 - 2 inch	ASME B31.3	6700 - 3900 psig	5830 - 3390 psig	
			ASME B31.1	5020 - 2920 psig	4370 - 2540 psig	
		ISO/BSP (parallel) PR Male 1/8 - 1 inch		4568 - 2320 psig*	4568 - 2320 psig @150° (65°C)	ASME B31.3 (Unlisted Components)
		ISO/BSP (parallel) RS Male 1/8-1 inch		5800-4700 psig with FKM bonded gasket*	5800-4700 psig with FKM bonded gasket*	
		ISO/BSP (parallel) RG Female 1/4 - 1/2 inch		4036 psig with copper gasket*	4036 psig with copper gasket*	
		ISO-7 (tapered)(RT) Male 1/8 - 2 inch	ASME B31.3	11000 - 3900 psig	9570 - 3390 psig	ASME B31.1 (Unlisted Components)
			ASME B31.1	8250 - 2920 psig	7180 - 2540 psig	
		ISO-7 (tapered)(RT) Female 1/8-2 inch	ASME B31.3	6700 - 3900 psig	5830 - 3390 psig	ASME B31.1 (Unlisted Components)
			ASME B31.1	5020 - 2920 psig	4370 - 2540 psig	
		UN / UNF(SAE) Stud (ST) 1/8 - 2 inch		4568 - 1815 psig	4568 - 1815 psig	ASME B31.3 (Unlisted Components)
		UN / UNF (SAE) Pos. (ST) Male 1/4 - 2 inch		4568 - 1450 psig*	4568 - 1450 psig	
		Unified (UNJ) (AN) Male Straight 1/8 - 1 inch		5000 - 3000 psig	5000 - 3000 psig	
Unified (UNJ) (AN) Male Shape 1/8 - 1 inch		5000 - 3000 psig	5000 - 3000 psig	ASME B31.3 (Unlisted Components)		
Unified (UNJ) (AN) Female w/ Swivel Nut 1/4 - 1 inch		4500 - 2500 psig	3900 - 2200 psig			


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*Pressure rating is gasket-dependent.

Carbon Steel Swagelok Tube Fitting Pressure Rating Table

Swagelok End Connection Size	Maximum Allowable Working Pressure per ASTM B31.3		Maximum Allowable Working Pressure per ASTM B31.1 (1)	
	Up to 100°F	At maximum temperature 375°F (190°C)	Up to 100°F	At maximum temperature 375°F (190°C)
1/8 inch	10 200 psig	8 874 psig	8 670 psig	7 543 psig
3/16 inch	5 100 psig	4 437 psig	4 335 psig	3 771 psig
1/4 inch	4 800 psig	4 176 psig	4 090 psig	3 550 psig
5/16 inch	5 500 psig	4 785 psig	4 675 psig	4 067 psig
3/8 inch	4 500 psig	3 915 psig	3 825 psig	3 328 psig
1/2 inch	5 900 psig	5 133 psig	5 015 psig	4 363 psig
5/8 inch	5 300 psig	4 611 psig	4 505 psig	3 919 psig
3/4 inch	4 300 psig	3 741 psig	3 655 psig	3 180 psig
7/8 inch	3 700 psig	3 219 psig	3 145 psig	2 736 psig
1 inch	2 700 psig	2 349 psig	2 295 psig	1 997 psig
1 1/4 inch	3 200 psig	2 784 psig	2 720 psig	2 366 psig
1 1/2 inch	3 300 psig	2 871 psig	2 805 psig	2 440 psig
2 inch	3 000 psig	2 610 psig	2 550 psig	2 218 psig
6 mm	370 bar	322 bar	315 bar	274 bar
8 mm	330 bar	287 bar	281 bar	244 bar
10 mm	330 bar	287 bar	281 bar	244 bar
12 mm	420 bar	365 bar	357 bar	311 bar
14 mm	350 bar	305 bar	298 bar	259 bar
15 mm	330 bar	287 bar	281 bar	244 bar
16 mm	350 bar	305 bar	298 bar	259 bar
18 mm	270 bar	235 bar	230 bar	200 bar
20 mm	270 bar	235 bar	230 bar	200 bar
22 mm	240 bar	209 bar	204 bar	178 bar
25 mm	180 bar	157 bar	153 bar	133 bar
28 mm	160 bar	139 bar	136 bar	118 bar
30 mm	150 bar	130 bar	127 bar	110 bar
32 mm	160 bar	139 bar	136 bar	118 bar
38 mm	160 bar	139 bar	136 bar	118 bar

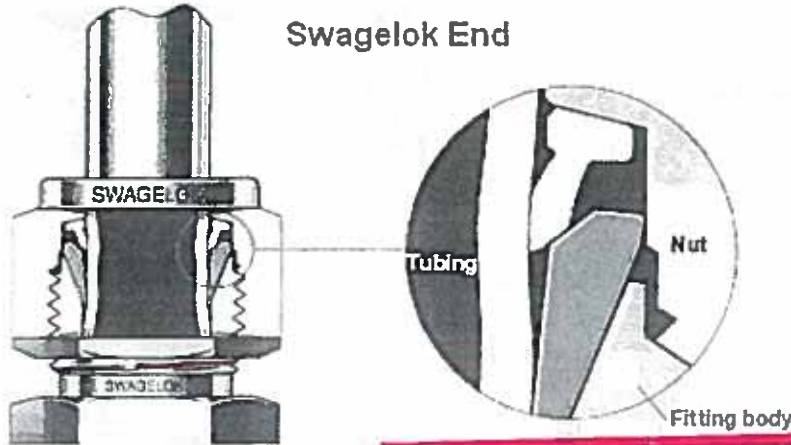

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Note (1): Working pressures for ASME B31.1 are reduced by a factor of 0.85 per the Swagelok Tubing Data publication MS-01-107.

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Product Description

Swagelok Fittings are furnished in a variety of configurations and shapes (straight, elbow, tee or cross). 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.



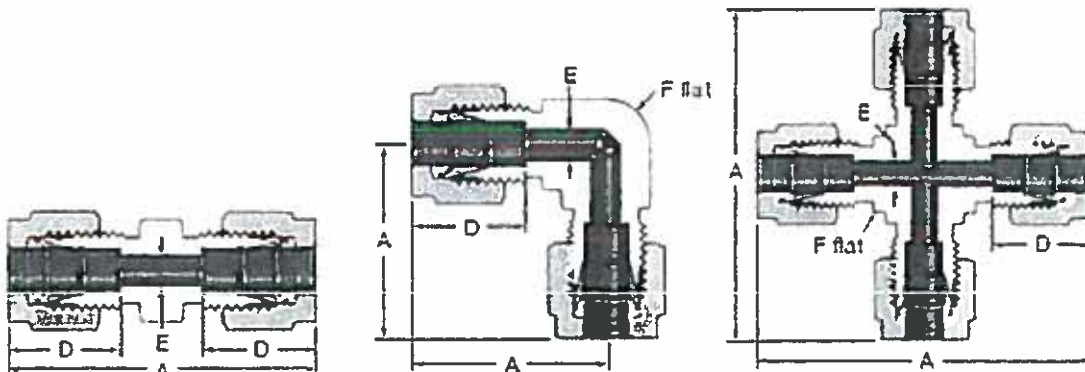
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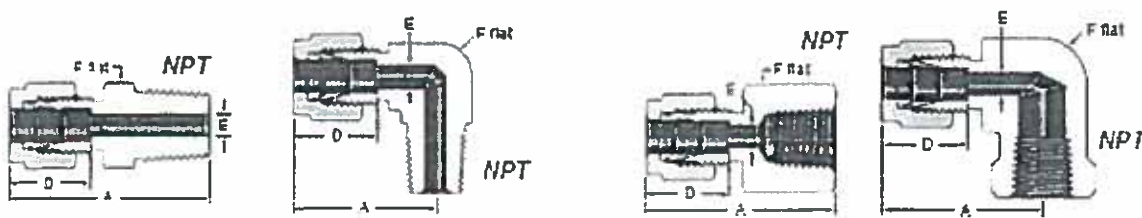
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Configurations

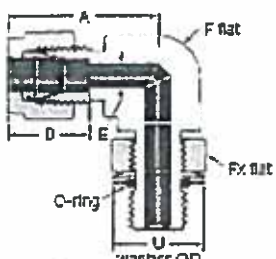
1. Unions.



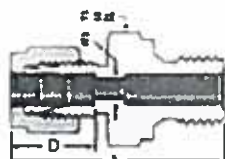
2. Male and Female connectors / adapters.



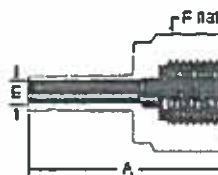
NPT Male Connectors



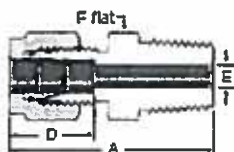
Positionable, ISO/BSP Parallel Thread (PR)



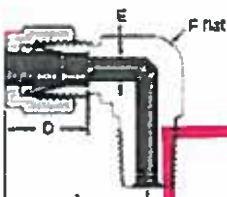
ISO/BSP Parallel Thread (RS)



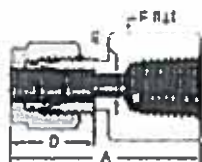
ISO/BSP Parallel Thread (RG, Gauge)



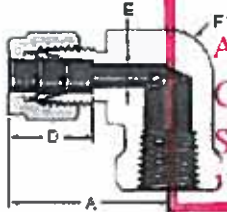
ISO/BSP Tapered Thread (RT)



ISO/BSP Tapered Thread (RT)



ISO/BSP Tapered Female Thread (RT)



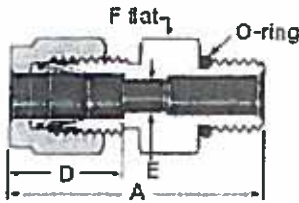
ISO/BSP Tapered Female Thread (RT)

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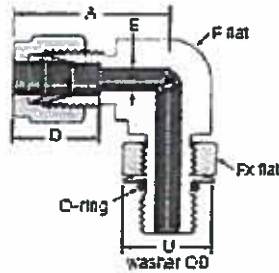
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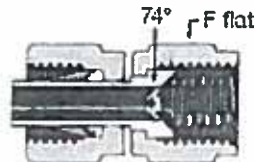
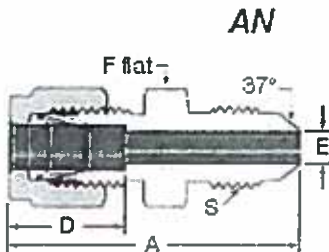
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SAE/MS Straight Thread Stud (ST)

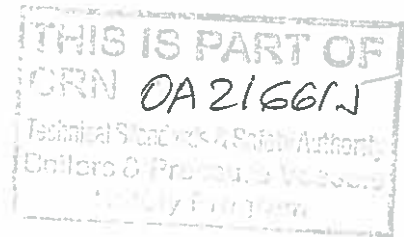


Positionable SAE/MS Straight Thread (ST)



AN Female

(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 those shown in the table.

1. Swagelok Bored-Trough Fittings.
2. RS gaskets:
 - a. Bonded metal-and-elastomer
 - b. Non-bonded stainless steel
 - c. Copper
3. RG gaskets:
 - a. Copper
 - b. Nickel
 - c. PTFE
4. The tapered pipe threads (NPT and ISO 7) sealants.
 - a. Curable resin with PTFE
 - b. PTFE tape

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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

Other options, not shown above, with pressure/temperature ratings equal to or less than shown in the Summary Table or do not affect pressure/temperature ratings, 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 Y
- Swagelok Tubing Data Sheet MS-01-107, Rev N

OA 21661.5

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