SAF 2507™ Super Duplex Weld Fittings

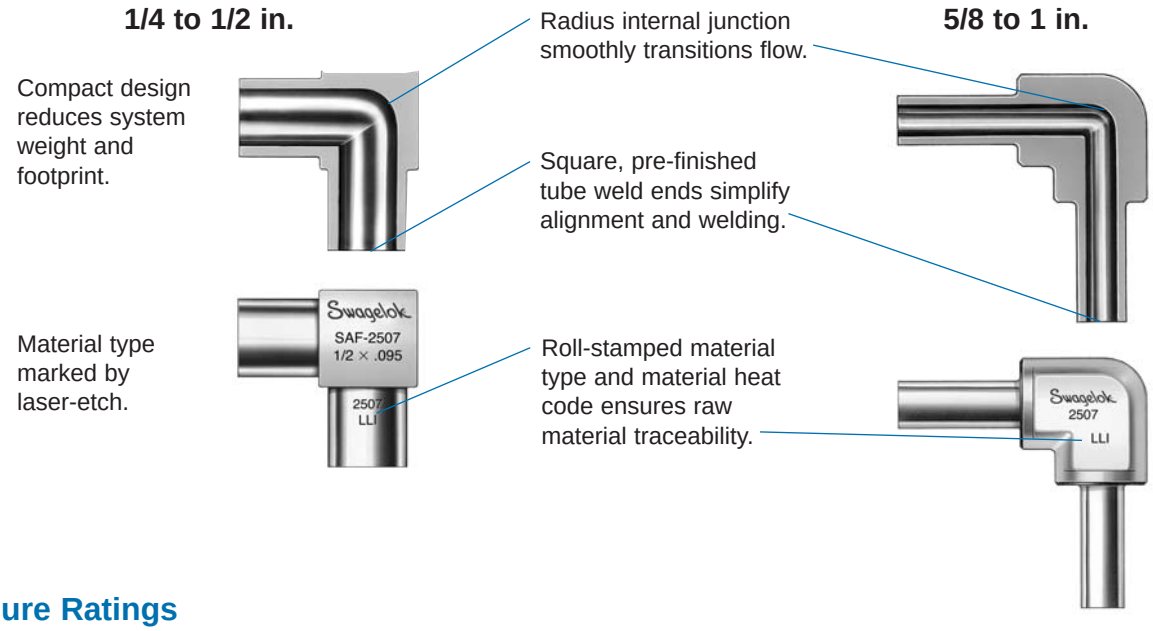
- Excellent corrosion resistance in chloride-containing environments
- Compact, high-flow SAF 2507 tube system connections
- Available in sizes from 1/4 to 1 in.

Swagelok®

Swagelok® Components for SAF 2507 Fluid Systems

A new line of Swagelok weld fittings, manufactured using Sandvik SAF 2507 super duplex, provide a compact solution for joining SAF 2507 tube systems. They can be joined to SAF 2507 components using the Swagelok welding system and flux in the autogenous SAF 2507 welding process—no filler material or special shielding gases are required.

Available in sizes from 1/4 to 1 in., Swagelok SAF 2507 weld fittings deliver flow and service ratings that are comparable to larger, heavier SAF 2507 weld fittings that require filler-type welding. All Swagelok SAF 2507 weld fittings are manufactured from a special grade of SAF 2507 material that has a minimum pitting resistance equivalent (PRE) value of 42.5 for maximum durability in chloride-containing environments.



Pressure Ratings

Pressure ratings for a fluid system are determined by the end connection or system component with the lowest pressure rating.

Tube Butt Weld Ends

Table 1—Pressure Ratings for Swagelok SAF 2507 Tube Butt Weld Ends used with SAF 2507 Tubing

Tube OD in.	Tube Wall Thickness, in.						
	0.035	0.049	0.065	0.083	0.095	0.109	0.120
	Pressure Rating, psig (bar)						
1/4	12 300 (850)	19 000 (1 310)①	26 200 (1 810)	—	—	—	—
3/8	—	12 400 (860)①	15 800 (1 090)	21 400 (1 480)	—	—	—
1/2	—	—	12 400 (860)①	16 200 (1 120)	19 400 (1 340)①	—	—
5/8	—	—	—	12 400 (860)①	15 000 (1 040)①	—	—
3/4	—	—	—	10 400 (720)①	12 400 (860)①	13 900 (960)	—
1	—	—	—	—	—	10 000 (690)	11 100 (770)

① Pressure ratings based on special wall thickness tolerance for Swagelok SAF 2507 tubing.

Pressure ratings calculated from *S* values (53 300 psi [367 MPa]), according to ASME B31.3 Chapter IX. Pressure ratings for metal temperatures from –20 to 100°F (–28 to 37°C). SAF 2507 tubing, fully annealed, meets ASTM A789 or equivalent.

Contact your independent Swagelok sales and service representative for available tubing sizes.

Medium-Pressure End Connections

Medium-pressure end connections listed in this catalog are manufactured to API-6A "Specification for Wellhead and Christmas Tree Equipment" tolerances, Autoclave Engineers and Butech Pressure Systems catalog dimensions, and are rated to 20 000 psig (1380 bar) for 1/4, 3/8 and 9/16 in. sizes and 10 000 psig (690 bar) for 3/4 and 1 in. sizes.

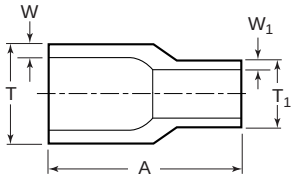
Elevated Temperature Factors

Table 2—Swagelok 2507 Weld Fitting Pressure Ratings Factors

ASME B31.3, Chapter IX Factors		
°F	°C	Factor
200	93	0.87
300	148	0.81
400	204	0.76
500	260	0.73
600	315	0.71

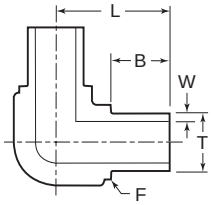
Ordering Information

Reducing Union (Butt Weld to Butt Weld)



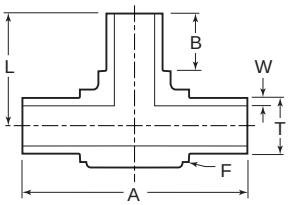
T Tube OD in.	W Wall Thickness in.	T_1 Tube OD in.	W_1 Wall Thickness in.	Ordering Number	A in. (mm)
3/8	0.049	1/4	0.035	2507-6MW-6-4-10K	0.75 (19.0)
	0.083		0.065	2507-6MW-6-4-20K	
1/2	0.065		0.035	2507-8MW-6-4-10K	
	0.095		0.065	2507-8MW-6-4-20K	
1/2	0.065	3/8	0.049	2507-8MW-6-6-10K	
	0.095		0.083	2507-8MW-6-6-20K	
5/8	0.083	1/2	0.065	2507-10TB-6-8-10K	1.60 (40.6)
3/4		1/4	0.035	2507-12TB-6-4-10K	
		3/8	0.049	2507-12TB-6-6-10K	
		1/2	0.065	2507-12TB-6-8-10K	
1	0.109			2507-16TB-6-8-10K	
		3/4	0.083	2507-16TB-6-12-10K	

Elbow



T Tube OD in.	W Wall Thickness in.	Ordering Number	Dimensions, in. (mm)		
			B	F Body Cube	L
1/4	0.035	2507-4MW-9-035	0.25 (6.4)	5/16	0.41 (10.4)
	0.065	2507-4MW-9-065			
3/8	0.049	2507-6MW-9-049		7/16	0.47 (11.9)
	0.083	2507-6MW-9-083			
1/2	0.065	2507-8MW-9-065		9/16	0.53 (13.5)
	0.095	2507-8MW-9-095			
5/8	0.083	2507-10TB-9-083	0.80 (20.3)	13/16	1.42 (36.1)
3/4		2507-12TB-9-083			1.41 (35.8)
1	0.109	2507-16TB-9-083		1 1/16	1.49 (37.8)

Tee

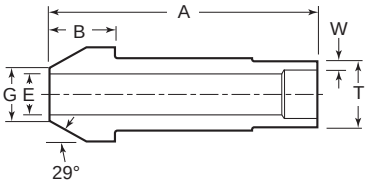


T Tube OD in.	W Wall Thickness in.	Ordering Number	Dimensions, in. (mm)			
			A	B	F Body Cube	L
1/4	0.035	2507-4MW-3-035	0.82 (20.8)	0.25 (6.4)	5/16	0.41 (10.4)
	0.065	2507-4MW-3-065				
3/8	0.049	2507-6MW-3-049	0.94 (23.9)		7/16	0.47 (11.9)
	0.083	2507-6MW-3-083				
1/2	0.065	2507-8MW-3-065	1.06 (26.9)		9/16	0.53 (13.5)
	0.095	2507-8MW-3-095				
5/8	0.083	2507-10TB-3-083	2.84 (72.1)	0.80 (20.3)	13/16	1.42 (36.1)
3/4		2507-12TB-3-083	2.82 (71.6)			1.41 (35.8)
1	0.109	2507-16TB-3-109	2.98 (75.7)		1 1/16	1.49 (37.8)

Dimensions, in inches (millimeters), are for reference only and are subject to change.

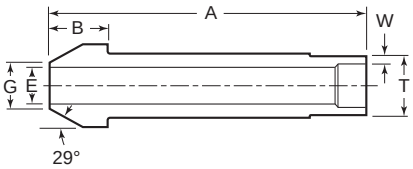
Swagelok

Tube Butt Weld to Medium-Pressure Male Adapter



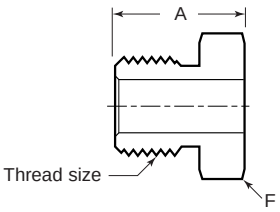
Medium-Pressure Tube Size in.	T Tube OD in.	W Wall Thickness in.	Ordering Number	Dimensions, in. (mm)			
				A	B	E	G
1/4	0.25 (6.4)	0.035	2507-4-MP-3-4TB-035	1.85 (47.0)	0.34 (8.6)	0.11 (2.8)	0.14 (3.6)
		0.065	2507-4-MP-3-4TB-065				
3/8	0.37 (9.4)	0.049	2507-6-MP-3-6TB-049	2.00 (50.8)	0.44 (11.2)	0.21 (5.3)	0.25 (6.4)
		0.083	2507-6-MP-3-6TB-083				
9/16	0.50 (12.7)	0.065	2507-9-MP-3-8TB-065	2.25 (57.2)	0.50 (12.7)	0.31 (7.9)	0.41 (10.4)
		0.095	2507-9-MP-3-8TB-095				
3/4	0.62 (15.7)	0.083	2507-12-MP-3-10TB-083	2.70 (68.6)	0.62 (15.7)	0.45 (11.4)	0.56 (14.2)
3/4	0.74 (18.8)	0.083	2507-12-MP-3-12TB-083	2.70 (68.6)	0.62 (15.7)	0.45 (11.4)	0.56 (14.2)
1	0.99 (25.1)	0.109	2507-16-MP-3-16TB-109	3.20 (86.3)	0.78 (19.8)	0.56 (14.2)	0.72 (18.3)

Long Tube Butt Weld to Medium-Pressure Male Adapter



Medium-Pressure Tube Size in.	T Tube OD in.	W Wall Thickness in.	Ordering Number	Dimensions, in. (mm)			
				A	B	E	G
1/4	0.25 (6.4)	0.035	2507-4-MP-3L-4TB-035	2.65 (67.3)	0.34 (8.6)	0.11 (2.8)	0.14 (3.6)
		0.065	2507-4-MP-3L-4TB-065				
3/8	0.37 (9.4)	0.049	2507-6-MP-3L-6TB-049	2.85 (72.4)	0.44 (11.2)	0.21 (5.3)	0.25 (6.4)
		0.083	2507-6-MP-3L-6TB-083				
9/16	0.50 (12.7)	0.065	2507-9-MP-3L-8TB-065	3.10 (78.7)	0.50 (12.7)	0.31 (7.9)	0.41 (10.4)
		0.095	2507-9-MP-3L-8TB-095				
3/4	0.62 (15.7)	0.083	2507-12-MP-3L-10TB-083	3.65 (92.7)	0.62 (15.7)	0.45 (11.4)	0.56 (14.2)
3/4	0.74 (18.8)	0.083	2507-12-MP-3L-12TB-083	3.65 (92.7)	0.62 (15.7)	0.45 (11.4)	0.56 (14.2)
1	0.99 (25.1)	0.109	2507-16-MP-3L-16TB-109	4.15 (105)	0.78 (19.8)	0.56 (14.2)	0.72 (18.3)

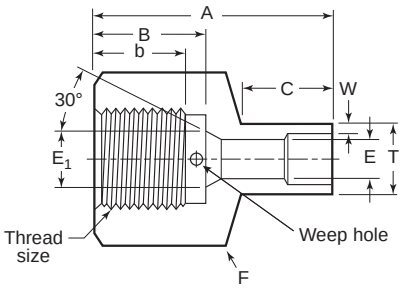
Medium-Pressure Male Nut



Medium-Pressure Tube Size in.	Ordering Number	Thread Size	Dimensions, in. (mm)	
			A	F Flat
1/4	2507-4-MP-4	7/16-20 UNF-2	0.58 (14.7)	9/16
3/8	2507-6-MP-4	9/16-18 UNF-2	0.72 (18.3)	5/8
9/16	2507-9-MP-4	13/16-16 UN-2	0.80 (20.3)	7/8
3/4	2507-12-MP-4	3/4-14 NPSM	0.94 (23.9)	1 1/8
1	2507-16-MP-4	1 3/8-12 UNF	1.35 (34.3)	1 3/8

Dimensions, in inches (millimeters), are for reference only and are subject to change.

Tube Butt Weld to Medium-Pressure Female Connector



Medium-Pressure Tube Size in.	T Tube OD in.	W Wall Thickness in.	Ordering Number	Thread Size	Dimensions, in. (mm)						
					A	B	b	C	E_1	E	F Flat
1/4	1/4	0.035	2507-4-MP-3A-4TB-035	7/16-20 UNF-2	1.47 (37.3)	0.50 (12.7)	0.35 (8.9)	0.80 (20.3)	0.20 (5.1)	0.11 (2.8)	11/16
		0.065	2507-4-MP-3A-4TB-065								
3/8	3/8	0.049	2507-6-MP-3A-6TB-049	9/16-18 UNF-2	1.57 (39.9)	0.62 (15.7)	0.39 (9.9)	0.76 (19.3)	0.32 (8.1)	0.21 (5.3)	7/8
		0.083	2507-6-MP-3A-6TB-083								
9/16	1/2	0.065	2507-9-MP-3A-8TB-065	13/16-16 UN-2	2.05 (52.1)	0.75 (19.0)	0.49 (12.4)	1.00 (25.4)	0.51 (13.0)	0.38 (9.7)	1 1/16
		0.095	2507-9-MP-3A-8TB-095							0.31 (7.9)	

Tools for Use with SAF 2507 Weld Fittings

Swagelok Welding System

The Swagelok welding system is a powerful (100 A) gas-tungsten arc orbital welding system. Compared to manual or filler-based welding methods for SAF 2507 material, this autogenous orbital welding system can reduce weld cycle time, improve weld consistency and quality, and help manage the total welding process. The Swagelok welding system is supported by a comprehensive package of equipment, training, accessories, and technical service.

Features

- Microprocessor control
- Easy programming and program sharing
- Real-time data logging
- Lightweight, portable design

Swagelok Welding System Flux

Swagelok welding flux (SWS-FLUX-1) is required in the autogenous SAF 2507 welding process developed for use with the Swagelok welding system. The flux helps to ensure that proper austenite/ferrite phase balance, nitrogen content, and weld penetration are achieved in welded SAF 2507 connections.

Swagelok Welding System Tube Facing Tool

The Swagelok tube facing tool (SWS-232EP) machines the smooth, square, burr-free tube ends needed for maximum reliability and performance in orbitally welded and mechanical fitting connections. The tube facing tool can be used on a wide range of tubing materials, including SAF 2507. A heavy-duty motor, adjustable speed control, and the unique cutting insert design and holding arrangement make it ideal for facing heavier walls and harder materials.

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.

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