

Features, Flare-O™ Braze Fittings For Tubing

The fittings described in this section provide a variety of braze on end connections for tube assembly/fabrication requirements. Fitting styles are available with 37 degree Flare-O™ tube and bulkhead ends.

Standard braze joint designs provide a slip fit to nominal O.D. inch size tubing and are intended for silver brazing. Press fit counterbores and other special designs are available on request.

Performance

Where applicable, fittings are designed and qualified to the requirements of SAE J514.

The rated working pressures for braze fittings are based on the standard pressure rating of the separable fitting end. For proper performance, the design of any hydraulic system should take into consideration the rated working pressures for each of the components of the system, including standard ratings for hose and tubing components. For brazed tube assemblies, these factors include the tubing material specifications, fabrication techniques and braze processes.

Construction

Unless otherwise specified, fittings are machined from carbon steel. Braze fittings are furnished unplated.

Threads

Straight Threads: External straight threads conform to the Unified National Class 2A Series.

Assembly Information

For silver brazing and fitting assembly instructions, refer to the Technical Data Section for the appropriate fitting end. Also, refer to the Technical Data Section for recommendations regarding tubing pressure ratings, tube flares and hose/tube routing information.

Note: Tubing for single flare tube ends should be either seamless or welded and drawn, fully annealed tubing per SAE J524 or J525. For double flaring, tubing per SAE J356, J524, J525 or J526 may be used.

For proper sealing with 37 degree flared fittings, flares for tubing should conform to the requirements of SAE J533. For heavy wall tubing, the optional tube preparation and single flare configuration specified in SAE J533 is also recommended. This optional configuration provides extended sealing surface contact area versus conventional flares.

In the design and fabrication of tubing or hose runs for any hydraulic system, precautions should be taken to allow for sufficient adjustment of the hose or tubing so that proper alignment can be attained at the fitting connections. Improper fit-up or misalignment should be corrected before final connections are made. Location of fitting connections should be planned to maximize accessibility. Whenever possible, use a torque wrench to tighten connections to the recommended torque.

Ordering Information

Size of fittings is indicated by dash number relating to sixteenths of an inch for the nominal O.D. of the tube size used. Example: 1/2 inch tube = 8/16 or (-8) size.

Order standard fittings from appropriate chart indicating required dash numbers. For example, F500-8-8 is a 90 degree braze elbow with 1/2" nominal braze counterbore and 1/2" Flare-O™ tube end (3/4-16 thread). Jump size F500-10-8 is a 90 degree braze elbow with 5/8" nominal braze counterbore and 1/2" Flare-O™ tube end (3/4-16 thread). Pictorial views for each fitting style indicate the correct numbering sequence for fitting ends.

If information is needed for jump sizes not shown, please contact customer service for engineering assistance.

Table FB1. Pressure Ratings for 37 Deg. Flare-O™ Tube Ends and Bulkheads				
Nominal Tube Size		Thread Size ¹	Working Pressures	
Nom SAE Dash Size	Nom Inch Tube O.D.	37 Deg. Flare-O™ Tube Ends and Bulkheads	37 Deg. Flared-O™ Tube Ends and Bulkheads	
			MPa	psi
-2	1/8	5/16-24 UNF	34.5	5,000
-3	3/16	3/8-24 UNF	34.5	5,000
-4	1/4	7/16-20 UNF	34.5	5,000
-5	5/16	1/2-20 UNF	34.5	5,000
-6	3/8	9/16-18 UNF	34.5	5,000
-8	1/2	3/4-16 UNF	31	4,500
-10	5/8	7/8-14 UNF	24	3,500
-12	3/4	1-1/16-12 UN	24	3,500
-14	7/8	1-3/16-12 UN	21	3,000
-16	1	1-5/16-12 UN	21	3,000
-20	1 1/4	1-5/8-12 UN	17	2,500
-24	1 1/2	1-7/8-12 UN	14	2,000
-32	2	2-1/2-12 UN	10.5	1,500

1) Threads per SAE J475 Class 2A ext. (Ref. ISO-263/ISO-R725)

