

**S. A. E.
LIBRARY**

Hydraulic Pipe Fittings — SAE J926b

**SAE STANDARD
LAST REVISED AUGUST 1974**

SOCIETY OF AUTOMOTIVE ENGINEERS, INC.
400 COMMONWEALTH DRIVE, WARRENDALE, PA. 15096



Report of Parts and Fittings Committee approved February 1948 and last revised by Tube, Pipe, Hose and Lubrication Fittings Committee August 1974.

GENERAL SPECIFICATIONS

SCOPE—This SAE Standard includes general and dimensional specifications for those types of pipe fittings intended for use in conjunction with hydraulic tube fittings in piping systems involving relatively high pressures.

SIZE DESIGNATION—Fitting sizes are designated by the corresponding standard nominal pipe size.

DIMENSIONS AND TOLERANCES—Except for nominal sizes and thread specifications, dimensions and tolerances are given in both U.S. customary and SI units as designated.

Tabulated dimensions shall apply to the finished fittings, plated, or otherwise processed as specified by the purchaser. Unless otherwise specified, maximum and minimum across flats dimensions shall be within the commercial tolerance of bar or extruded stock from which the fittings are produced. The minimum across corner dimensions of external hexagons shall be 1.092 times the nominal width across flats, but shall not result in a side flat width less than 0.43 times the nominal width across flats. The minimum across corner dimensions of external squares shall be 1.25 times the nominal width across flats, but shall not result in a side flat width less than 0.75 times the nominal width across flats.

Tolerance on all dimensions not otherwise limited shall be ± 0.016 in (± 0.4 mm).

Angular tolerance on ends of elbows and tees shall be ± 2.50 deg for sizes $1/8$ through $3/8$, ± 1.50 deg for $1/2$ size, and ± 0.25 deg for sizes $3/4$ through 2.

Unless otherwise specified, tolerance on hole diameters designated drill in the dimensional tables shall be as tabulated below.

Drill Size Range		Tolerance			
In	mm	Plus		Minus	
		In	mm	In	mm
0.0135 thru 0.246	0.35- 6.25	0.003	0.08	0.003	0.08
1/4 to 1/2, incl	6.35-12.70	0.004	0.10	0.004	0.10
3/4 to 1, incl	13.10-19.05	0.005	0.13	0.005	0.13
1-1/4 to 1-1/2, incl	19.40-25.40	0.007	0.18	0.005	0.13
1-1/2 to 2, incl	25.80-38.10	0.008	0.20	0.005	0.13
2-1/2 to 3, incl	38.50-76.20	0.010	0.25	0.005	0.13

Where so illustrated and not otherwise specified, hexagon corners shall be chamfered 15-20 deg to a diameter equal to the nominal width across flats, with a minus tolerance of 0.016 in (0.4 mm); or, where design permits, corners may be chamfered to the diameter of the abutting surface providing the length of chamfer does not exceed that produced by the 20 deg chamfer previously described.

PASSAGES—Where passages in straight fittings are machined from opposite ends, the offset at the meeting point shall not exceed 0.016 in (0.4 mm). The cross-sectional area at the junction of passages in angle fittings shall not be less than that of the smallest passage.

WALL THICKNESS—Unless otherwise designated, the wall thickness at any point on fittings shall not be less than the

thickness established by the specified dimensions, tolerances, and eccentricities for inner and outer surfaces.

DIMENSIONS AND TOLERANCES—Except for nominal sizes and thread specifications, dimensions and tolerances are given in both U.S. customary and SI units as designated.

CONTOUR—Details of contour shall be optional with manufacturer provided the tabulated dimensions are maintained and serviceability of the fittings is not impaired.

PIPE THREADS—Pipe threads, unless there is specific authorization to the contrary, shall conform to the Dryseal American Standard Taper Pipe Thread (NPTF). Specifications are given in detail in SAE J476.

The length of full form external thread shall not be shorter than L_2 plus one pitch (thread).

Where external pipe threads are produced by roll threading, the diameter of the unthreaded shank adjacent to shoulder may be reduced to the E_2 pitch diameter for brass fittings and to the root diameter on steel fittings.

External pipe threads shall be chamfered from the diameters tabulated below to produce the specified length of chamfer or partial thread. Internal pipe threads shall be counter-sunk 90 deg included angle, to the diameters tabulated below:

Nominal Pipe Thread Size	External Thread								Internal Thread			
	Chamfer Diameter				Length of Chamfer or Partial Thread				Countersink Diameter			
	Max		Min		Min		Max		Min		Max	
	In	mm	In	mm	In	mm	In	mm	In	mm	In	mm
1/8	0.32	8.1	0.30	7.6	0.037	0.94	0.055	1.40	0.42	10.7	0.44	11.2
1/4	0.42	10.7	0.40	10.2	0.056	1.42	0.084	2.13	0.55	14.0	0.57	14.5
3/8	0.55	14.0	0.53	13.5	0.056	1.42	0.084	2.13	0.69	17.5	0.71	18.0
1/2	0.63	17.3	0.66	16.8	0.071	1.80	0.107	2.72	0.85	21.6	0.87	22.1
3/4	0.89	22.6	0.87	22.1	0.071	1.80	0.107	2.72	1.06	26.9	1.08	27.4
1	1.12	28.4	1.09	27.7	0.087	2.21	0.130	3.30	1.34	34.0	1.37	34.8
1-1/4	1.46	37.1	1.43	36.3	0.087	2.21	0.130	3.30	1.68	42.7	1.71	43.4
1-1/2	1.70	43.2	1.67	42.4	0.087	2.21	0.130	3.30	1.92	48.8	1.95	49.5
2	2.17	55.1	2.14	54.4	0.087	2.21	0.130	3.30	2.39	60.7	2.42	61.5

Tabulated diameters conform with Appendix A of SAE J476.

MATERIAL—Unless otherwise specified, hydraulic pipe fittings shall be made from carbon steel.

Stainless steel fittings shall be made from AISI Type 300 Series stainless steel of good quality.¹ Unless otherwise specified by the purchaser, stainless steel fittings shall not be passivated.

Carbon steel and stainless steel fittings fabricated from multiple components must be bonded together with materials having a melting point of not less than 1900°F (1038°C).

Brass fittings shall be made from CA360 one-half hard barstock or extruded shapes, or CA377 forgings.

FINISH—Unless otherwise specified, carbon steel fittings shall be furnished cadmium or zinc plated to a thickness of 0.0002 in (0.005 mm) minimum, followed by a chromate treatment, or with a phosphate coating (all finished). These parts must meet the requirements of 32 hour salt spray test in