

Cartridge Cavity

1. Scope—This SAE Standard covers complete general and dimensional data for the manufacture of, T6061-T6 Aluminum cavities designed to receive Push To Connect threadless fittings known as “cartridges”, for air brake applications. This document is not intended to specify or recommend any style or manufacture of such cartridges but to establish uniform cavity dimensions for interchangeability purposes.

2. References

2.1 Applicable Publications—The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest version of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale PA 15096-0001

SAE J844—Nonmetallic Air Brake Tubing

SAE J1131—Performance Requirements for SAE J844 Nonmetallic Tubing and Fitting Assemblies used in Automotive Air Brake Systems

SAE J2494-3—Performance Requirements for SAE J844 Nonmetallic Air Brake Tubing and Push to Connect Fitting Assemblies used in Vehicular Air Brake Systems

2.2 Related Publication—The following publication is for information purposes only and is not a required part of this document.

2.2.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale PA 15096-0001

SAE J451—Aluminum Alloys

3. General Requirements

3.1 Test Cavity material is to be T6061-T6 Aluminum

3.2 All dimensions unless specified differently are ± 0.05 mm (± 0.002 in).

3.3 All testing of subsequent assemblies must be performed with SAE J844 Air Brake Tubing

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4. General Specifications

4.1 See Table 1 for cavity dimensions.

TABLE 1—CAVITY DIMENSIONS

Nominal Tubing OD	D1 mm	D1 in	K mm	K in	L1 (min) mm	L1 (min) in	R1 mm	R1 in
5/32	8.8	0.346	0.5	0.02	11.4	0.45	0.5	0.02
3/16	9.7	0.382	0.5	0.02	12.1	0.48	0.5	0.02
1/4	12.8	0.504	0.5	0.02	12.7	0.50	0.5	0.02
5/16	14.3	0.563	0.5	0.02	15.2	0.60	0.5	0.02
3/8	16.5	0.650	0.5	0.02	16.5	0.65	0.5	0.02
1/2	19.7	0.775	0.5	0.02	19.8	0.78	0.5	0.02
5/8	23.5	0.925	0.8	0.03	22.4	0.88	0.8	0.03
3/4	27.1	1.067	0.8	0.03	23.9	0.94	0.8	0.03

NOTE—Cavities made from materials other than T6061-T6 SHALL be adjusted dimensionally so that when installed; the tube/cartridge/cavity assembly will pass the applicable tests in SAE J1131 and SAE J2494-3.

4.2 **Recommended Wall Thickness**—Unless otherwise designated, the wall thickness at any point on a cartridge body, which may be subjected to internal pressure, is recommended to not be less than the thickness established by the specified dimensions and tolerances for inner and outer surfaces.

4.3 See Figure 1 for cavity detail and Table 2 for minimum wall thickness

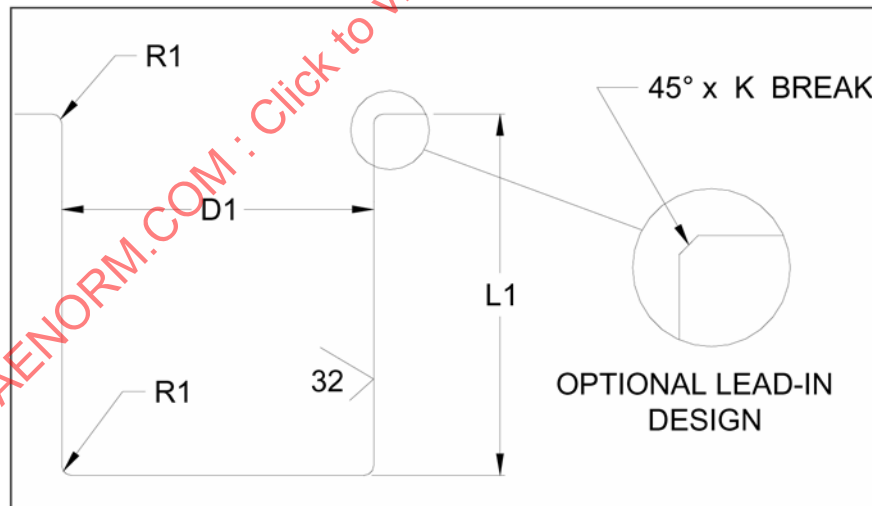


FIGURE 1—CAVITY DETAIL

TABLE 2—MINIMUM WALL THICKNESS

Nominal Tubing OD	Minimum Wall Thickness mm	Minimum Wall Thickness in
5/32	1.0	0.04
3/16	1.0	0.04
1/4	1.0	0.04
5/16	1.3	0.05
3/8	1.3	0.05
1/2	1.5	0.06
5/8	2.0	0.08
3/4	2.0	0.08

- 4.4 Workmanship**—Workmanship shall conform to the best commercial practice to produce high quality cavities. Cavities shall be free from all machining fluids, chips, burrs, scale and slivers which either dislodge in usage or sever the external o-ring affecting serviceability.

PREPARED BY SAE AIR BRAKE TUBING AND TUBE FITTINGS SUBCOMMITTEE OF
THE SAE FLUID CONDUCTORS AND CONNECTORS TECHNICAL COMMITTEE