



AEROSPACE STANDARD

AS5017™

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Air Filling Valves

RATIONALE

AS5017 has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE:

This SAE Aerospace Standard (AS) describes the characteristics of an air filling valve used in reusable shipping and storage containers.

2. REFERENCES:

There are no referenced publications specified herein.

3. CLASSIFICATION:

This description covers air filling valves as follows:

- a. Style A: Aluminum alloy housing (anodized finish)
- b. Style B: Brass housing

4. SALIENT CHARACTERISTICS:

The air filling valve when installed shall be capable of maintaining the container environmental seal between 172 kPa (25 psig) pressure and 34 kPa (5 psig) vacuum. Tolerances on all parts shall be the same as those identified by the industry for that product as best commercial practice. The air filling valve assembly shall have an expected life of 20 years with numerous operations. The air filling valve shall be capable of functioning properly between -54 and +71 °C (-65 and +160 °F).

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4.1 Interface Requirements:

The air filling valve with grommet installed shall be designed such that it will fit through a 15.7 mm (0.62 in) diameter hole. The wall of a reusable shipping and storage container should not exceed 9.6 mm (0.38 in) thick. The surface in the container wall should be flat. Figure 1 shows one configuration of an acceptable air filling valve. Other designs are acceptable provided they meet the basic dimensional and pressure requirements of 4 and 5. The air filling valve cap shall be capable of being removed by hand (requiring no tools to open or close). The air filling valve shall interface with standard air hose fittings used to inflate (pressurize) automobile tires.

4.2 Valve Housing:

The overall length of the valve housing with cap installed shall not exceed 50.8 mm (2.00 in). The valve housing outside the container including the cap and flange shall not exceed 25.4 mm (1.00 in). The valve housing, which fits through the wall of the container, shall have a length of 15.7 mm (0.62 in) minimum and 25.4 mm (1.00 in) maximum.

4.3 Valve Core:

The valve core shall fit inside the valve housing. The valve core shall be capable of maintaining the pressure and vacuum specified herein. The valve core shall function the same as the valve core used to inflate and deflate automobile tires.

4.4 Valve Cap:

The valve cap complete with sealing washer shall prevent intrusion of contaminants (i.e., dust, dirt) into the valve housing and valve core. The valve cap shall be of the same material as the valve housing.

4.5 Grommet:

The grommet shall prevent air leakage when placed on the valve housing and inserted through the container wall for sealing. The grommet material must be silicone or Ethylene Propylene Diene (EPDM) material.

4.6 Washer:

The washer acts as a buffer between the surface of the container wall and the nut used to secure the air filling valve housing. The washer shall be of the same material as the valve housing.

4.7 Nut:

The nut shall secure the air filling valve housing through the container wall so that there is no loosening during container testing or loss of environmental seal. The nut shall be of the same material as the valve housing. The nut shall be torqued to 2.3 Nm (20 in-lb) or in accordance with manufacturers' instructions.