



Designation: F888 – 06 (Reapproved 2024)

Standard Test Method for Measuring Maximum Function Volume of the Primary Dirt Receptacle in a Vacuum Cleaner¹

This standard is issued under the fixed designation F888; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers household types of upright, canister, and combination vacuum cleaners.

1.2 This test method provides a measurement in dry quarts or litres of the maximum functional volume of the primary dirt receptacle when installed in the vacuum cleaner.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* For specific hazards statements see 7.2 and 8.5.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 SAE Standard:²

SAE J726b Air Cleaner Test Code

3. Significance and Use

3.1 This test method covers a procedure to determine the maximum functional volume of the primary dirt receptacle when installed in the vacuum cleaner.

3.2 This test method provides the maximum amount of test media that the primary dirt receptacle will hold and may be more than the volume obtained when filled to the manufacturer's recommended fill line.

4. Apparatus

4.1 *Voltmeter*, to measure input voltage to the cleaner, to provide measurements accurate to within $\pm 1\%$.

4.2 *Voltage Regulator System*, to control the input voltage to the vacuum cleaner. The regulator system shall be capable of maintaining the vacuum cleaners rated voltage of $\pm 1\%$ and rated frequency ± 1 Hz having a wave form that is essentially sinusoidal with 3 % maximum harmonic distortion for the duration of the test.

4.3 *Temperature Measuring Equipment*, to provide measurements accurate to within $\pm 1^\circ\text{F}$ (0.5°C).

4.4 *Humidity Measuring Equipment*, to provide measurements accurate to within $\pm 2\%$ relative humidity.

4.5 *Adapter*, to be attached to the cleaning nozzle of upright cleaners for use in directing granulated cork into the nozzle. See Fig. 1.

4.6 *Volume Measuring Container*, to measure volume of granulated cork. This shall have a capacity of one dry quart. See Fig. 2. The container shall be made of transparent material to ensure no voids when filled with granulated cork. As an option, a 1-L container can be used.

4.7 *Weighing Scale*—The scale shall be accurate to 0.035 oz (1 g) and have a weighing capacity of at least 15 lb (6.82 kg).

5. Materials

5.1 *New Granulated Cork*—Premium Grade 2 mm to 4 mm size.³

5.2 *Coarse-Grade Air Cleaner Test Dust*, see Table 1. As an option, talc may be used. See Table 2.

6. Sampling

6.1 *Determination of Sample Size*—A sample of sufficient size of each model shall be tested until a 90 % confidence level is established within $\pm 5\%$ of the mean value. A minimum of three samples shall be tested. All samples shall be selected at random in accordance with good statistical practices.

¹ This test method is under the jurisdiction of ASTM Committee F11 on Vacuum Cleaners and is the direct responsibility of Subcommittee F11.23 on Filtration.

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² Available from SAE International (SAE), 400 Commonwealth Dr., Warrendale, PA 15096, <http://www.sae.org>.

³ The sole source of supply of the test material known to the committee at this time is Jelinek Cork Corp., 4500 Witmer Industrial Estates, PMB 167, Niagara Falls, NY 14305–1386. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,¹ which you may attend.

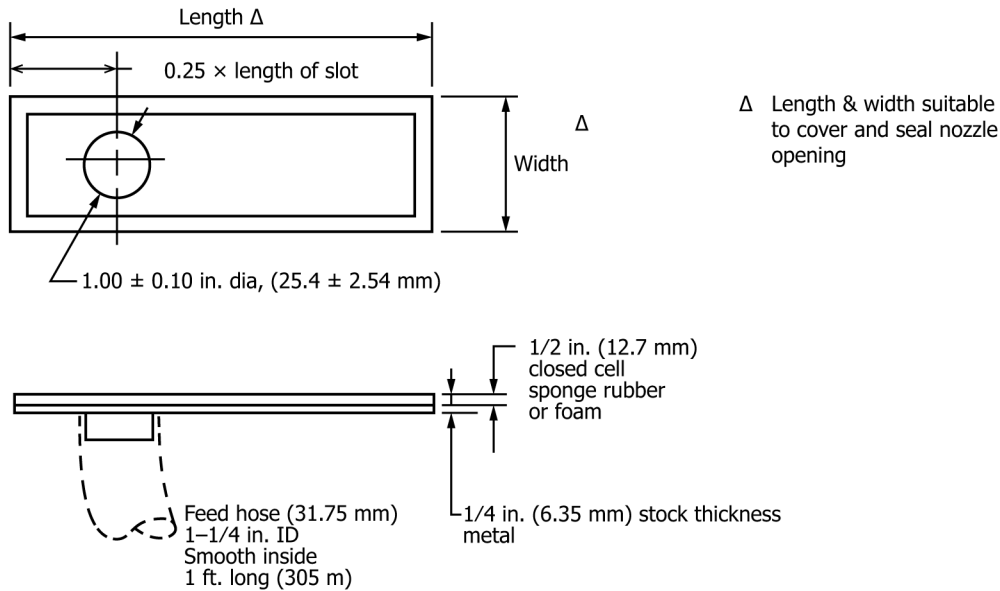


FIG. 1 Adapter Plate for Uprights

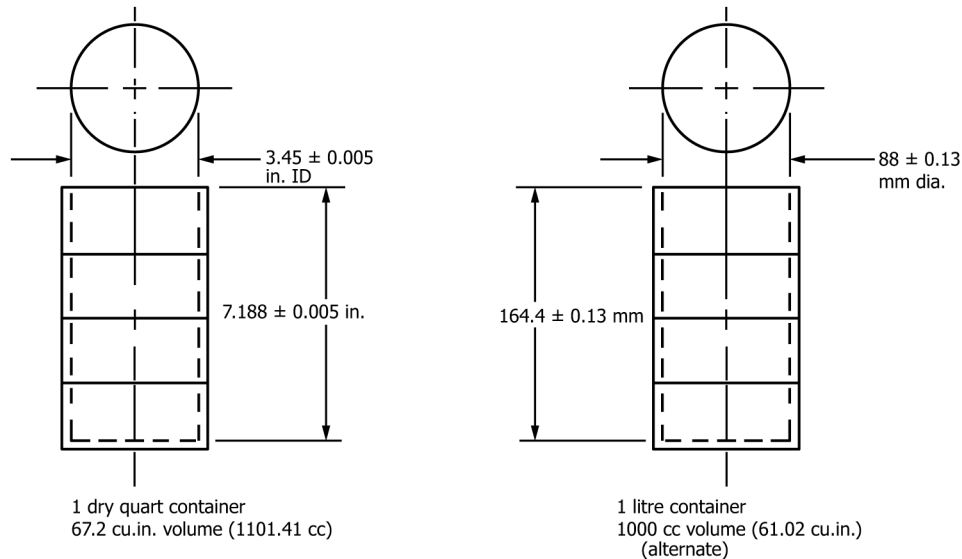


FIG. 2 Volume Measuring Container

TABLE 1 Analysis of Coarse Grade Air Cleaner F11 Test Dust^A

Particle Size Distribution by Volume		
Size, μm	Coarse Grade (% less than)	
5.5	13 ± 3	
11	24 ± 3	
22	37 ± 3	
44	56 ± 3	
88	84 ± 3	
176	100	

^A The information in Table 1 is contained in "Air Cleaner Test Code," SAE Technical Report J726b.

TABLE 2 Analysis of Unscented Commercial Grade Talcum

Particle Size Distribution by Weight, %		
0.5 %	44 μ	
12.5 %	20–43.9 μ	
27.0 %	10–19.9 μ	
23.0 %	5–9.9 μ	
20.0 %	2–4.9 μ	
8.0 %	1–1.9 μ	
9.0 %	0.9 μ	

7. Conditioning

7.1 Maintain the test room at 70 °F ± 5 °F (21 °C ± 3 °C) and 45 to 55 % relative humidity.

7.2 Expose all components involved in the test to the controlled environment for at least 16 h prior to the start of the

6.2 *Determination of Maximum Functional Volume for Each Unit*—The maximum functional volume for each unit shall be an average of three runs with a spread meeting the repeatability statement in 9.2. (See [Appendix X1](#) for example.)