



SURFACE VEHICLE RECOMMENDED PRACTICE

J3144™

APR2025

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Fuel Tank Filler, Capless Closure

RATIONALE

Five-Year Review, and updated document to latest SAE formatting guidelines. Also updated 4.1 for clarity.

1. SCOPE

This SAE Recommended Practice was developed primarily for passenger car and truck applications, but it may be used in marine, industrial, and similar applications.

1.1 Purpose

The purpose of this document is to provide key interface dimensions for capless filler pipe interfaces (pressure/vacuum and non-vented or vacuum only) and the refueling spouts. The use of these dimensions allows for proper interface zones in conjunction with the various styles of dispenser nozzles.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J285 Dispenser Nozzle Spouts for Liquid Fuels Intended for Use with Spark Ignition and Compression Ignition Engines

SAE J1140 Filler Pipes and Openings of Motor Vehicle Fuel Tanks

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https://www.sae.org/standards/content/J3144_202504/

2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 ISO Publications

Copies of these documents are available online at <https://webstore.ansi.org/>.

ISO 13331 Road Vehicles - Filler Pipes and Openings of Motor Vehicle Fuel Tanks - Vapor Recovery Systems

3. DEFINITIONS

3.1 GASKET SEALING SURFACE

Sealing surface for cap seal/gasket, as well as for boot-style Stage 2/EVR nozzles, as called out in SAE J285. The surface requires a relatively flat surface between 46.3 and 57.9 mm, within 0.25 mm TIR.

3.2 NOZZLE LATCHING LIP

Nozzle latching lip, also known as anchor lip (or locking lip), is the location where the nozzle anchor interfaces the filler pipe for retention during a refueling event.

4. REQUIREMENTS

4.1 Nozzle Latching Lip

Primary nozzle latching lip must be orientated in the filler pipe to be within 4.0 to 11.0 mm from the gasket sealing surface. The nozzle latching lip shall be at least 100 degrees of the inside circumference of the filler pipe. The latching lip shall be orientated such that it extends at least 35 degrees to either side of the reference plane in Figure 1.

4.2 External Clearance to the Fuel Nozzle

Refer to SAE J1140 for filler pipe clearance and acceptance criteria.

4.3 Allowable Interface Leakage during Refueling with Vapor Recovery Systems

Refer to SAE J1140 for procedure and acceptance criteria.

4.4 It is recommended to provide 2.0 mm minimum clearance from the lower surfaces of the pipe/capless to the nozzle spout aspirator/shutoff port between 50 to 100 mm from the gasket seal surface. This improves performance for nozzle shutoff.