



SURFACE VEHICLE RECOMMENDED PRACTICE

J1241™

APR2024

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Superseding J1241 NOV1999

(R) Fuel and Lubricant Tanks for Motorcycles

RATIONALE

SAE J1241 has been reaffirmed to comply with the SAE Five-Year Review policy.

1. Scope—This SAE Recommended Practice is applicable to two- or three-wheel motorcycles intended for highway use. Unless noted, requirements apply to both metallic and nonmetallic tanks. Accessory or aftermarket tanks as well as original equipment tanks are covered.

1.1 Purpose—This document establishes test procedures and performance criteria for the integrity of tanks, associated fittings, filler caps, and plumbing separate from the engine and transmission, used to supply fuel or engine lubricant to a motorcycle.

2. References

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

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

SAE J30—Fuel and Oil Hoses

SAE J826—Devices for Use in Defining and Measuring Vehicle Seating Accommodation

2.1.2 ASTM PUBLICATION—Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM D 1435-75—Outdoor Weathering of Plastics

ASTM E 437—Standard Specification for Industrial Wire Cloth and Screens

2.1.3 ISO PUBLICATION—Available from ANSI, 11 West 42nd Street, New York, NY 10036-8002.

ISO 4639-1—Rubber tubing and hoses for fuel circuits for internal combustion engines—Part 1: Conventional liquid fuels

2.2 Related Publications—The following publications are provided for information purposes only and are not a required part of this document.

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

SAE J905—Fuel Filter Test Methods

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2.2.2 DOT PUBLICATION—Available from the NHTSA, web site: www.nhtsa.dot.gov.

Motorcycle Safety Improvement, Volume II-Technical Report, July 1976, DOT-HS-5-01181, National Highway Safety Administration

3. Definitions

3.1 Rated Fuel Capacity—The volumetric capacity of the tank after subtracting the expansion and venting volumes. A fill tube installed in the fuel tank filler opening is a typical method by which rated capacity fuel level is indicated (Figure 1). The rated fuel capacity is the volume of fuel required to bring the fluid level to the lower edge of the fill tube, when filling from an initially empty tank with the motorcycle in a level unladen condition.

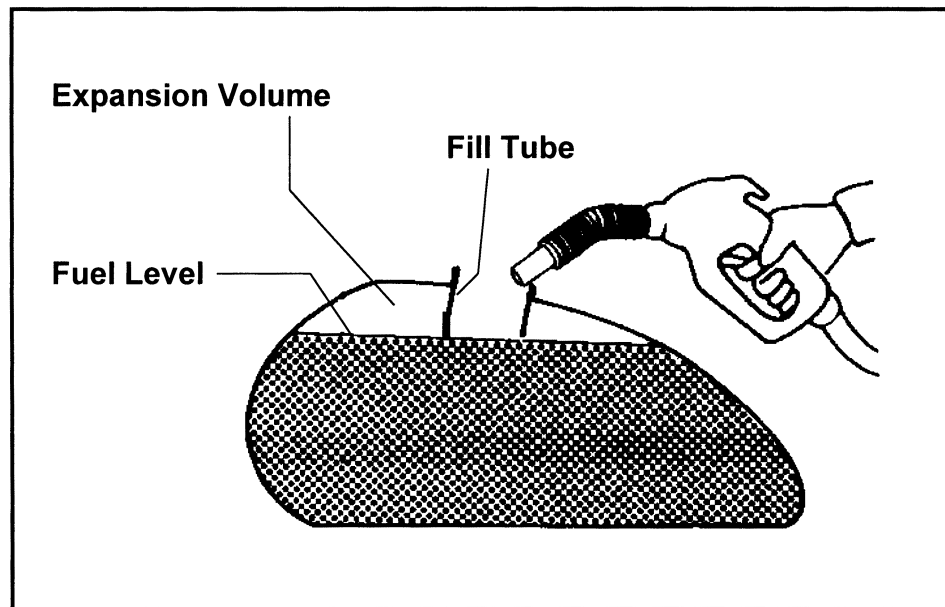


FIGURE 1—TYPICAL FUEL TANK FILL TUBE INSTALLATION

3.2 Pressure Relief Set Point—The pressure at which the pressure relief vent first opens.

3.3 Automatic Fuel Shutoff Valve—A device that prevents fuel flow from the fuel tank to the fuel delivery system, except when the motorcycle engine is running.

3.4 Normally Installed Position—The attitude of the fuel tank when installed on a motorcycle which is loaded with a $75 \text{ kg} \pm 5 \text{ kg}$ ($165 \text{ lb} \pm 10 \text{ lb}$) rider. Suspension components shall be set to the manufacturer's recommended settings for the stated load. If no recommendations for suspension adjustment are provided by the manufacturer, the suspension shall be set at the midpoint, or if adjustment increments do not include a midpoint, at the next lower spring preload setting.

3.5 Conventionally Located Fuel Tank—Conventionally located fuel tanks (Figure 2), satisfy all of the following conditions:

- The tank is mounted between the seat and the steering head.
- The major portion of the tank is not enclosed by the structure of the motorcycle.
- The tank is positioned such that the operator's knee is located within the region formed by projecting the tank outline in a horizontal direction perpendicular to the motorcycle's vertical plane of symmetry.

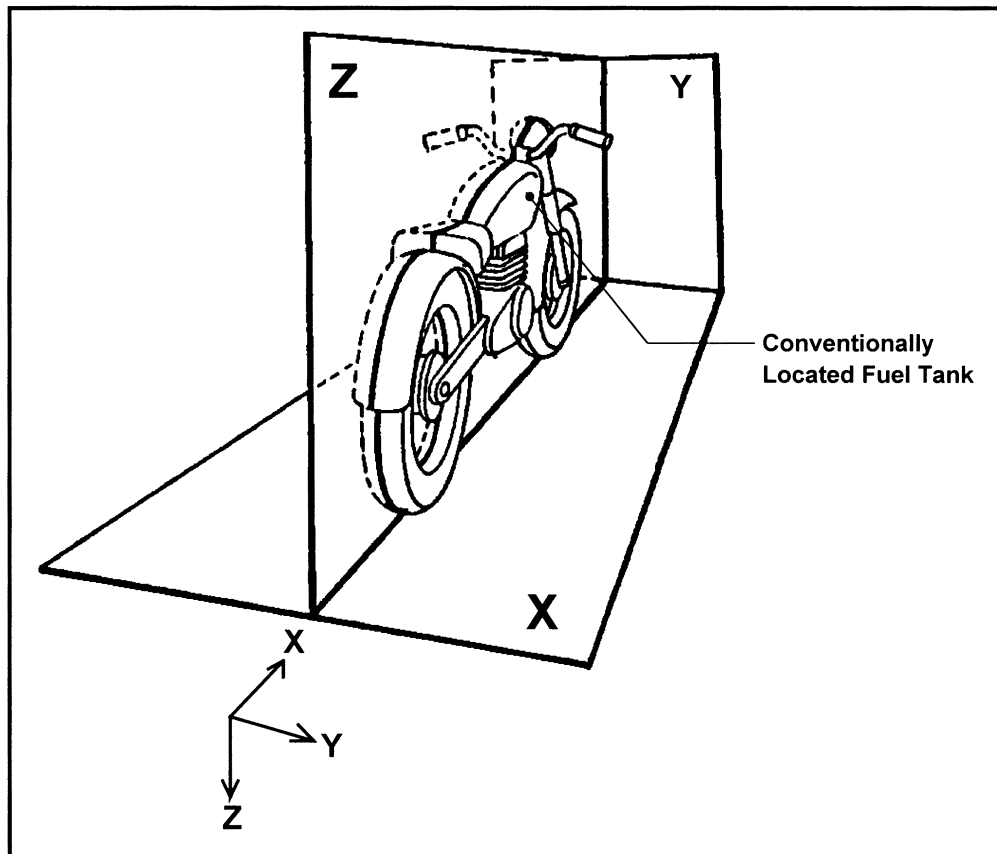


FIGURE 2—REFERENCE AXES

4. Design and Construction

4.1 General

- 4.1.1 Tanks shall pass the tests specified in Section 5. Any failure encountered during operational testing must be considered significant.
- 4.1.2 Fuel tanks should be sized such that actual volume exceeds rated volume (rated fuel capacity) by an amount calculated to provide for:
 - a. Expansion of the contents due to a temperature increase appropriate for the intended use
 - b. The inclusion of venting above the liquid level
- 4.1.3 All fuel valves, caps, tank badge attachments, hoses, fuel quantity sending units, evaporative control system components (excluding remotely located evaporative canisters, pipes, and valves not directly mounted to the tank), and any other component attached directly to or installed within the tank shall be considered part of the tank. However, failure of a purely cosmetic tank component, e.g., a tank badge, shall not constitute failure of any test. Fuel delivery system components (carburetors, fuel injection systems, etc.) and associated fittings, external to the fuel tank, are excluded from this document.