



UL 2586A

STANDARD FOR SAFETY

Hose Nozzle Valves for Gasoline and Gasoline/
Ethanol Blends with Nominal Ethanol
Concentrations up to 85 Percent (E0 – E85)



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UL Standard for Safety for Hose Nozzle Valves for Gasoline and Gasoline/Ethanol Blends with Nominal Ethanol Concentrations up to 85 Percent (E0 – E85), UL 2586A

First Edition, Dated February 20, 2015

Summary of Topics

This first edition of the Standard for Hose Nozzle Valves for Gasoline and Gasoline/Ethanol Blends with Nominal Ethanol Concentrations up to 85 Percent (E0 – E85), ANSI/UL 2586A, covers hose nozzle valves that are intended to be used for the control of motor fuels. They are of the type used in motor fuel dispensing equipment.

The requirements are substantially in accordance with Proposal(s) on this subject dated October 17, 2014.

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The requirements in this Standard are now in effect, except for those paragraphs, sections, tables, figures, and/or other elements of the Standard having future effective dates as indicated in the note following the affected item. The prior text for requirements that have been revised and that have a future effective date are located after the Standard, and are preceded by a “SUPERSEDED REQUIREMENTS” notice.

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February 20, 2015

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ANSI/UL 2586A-2015

UL 2586A

Standard for Hose Nozzle Valves for Gasoline and Gasoline/Ethanol

Blends with Nominal Ethanol Concentrations up to 85 Percent (E0 – E85)

Prior to the first edition, the requirements for the products covered by this standard were included in the Outline of Investigation for Hose Nozzle Valves for Gasoline and Gasoline/Ethanol Blends with Nominal Ethanol Concentrations up to 85 Percent (E0 – E85), UL 2586A.

First Edition

February 20, 2015

This ANSI/UL Standard for Safety consists of the First Edition.

The most recent designation of ANSI/UL 2586A as an American National Standard (ANSI) occurred on February 20, 2015. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, or effective date information.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <http://csds.ul.com>.

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INTRODUCTION

1 Scope

1.1 These requirements cover hose nozzle valves that are intended to be used for the control of motor fuels as indicated in 1.2. They are of the type used in motor fuel dispensing equipment. Hose nozzle valves covered by this standard are for use with motor fuels which are handled at temperatures within the range of minus 29°C (minus 20°F) to 52°C (125°F) and an operating pressure of minimum 50 psi (350 kPa).

1.2 Hose nozzle valves covered by these requirements are intended for use with one or more of the following as applicable:

- a) Gasoline formulated in accordance with the Standard Specification for Automotive Spark-Ignition Fuel, ASTM D4814;
- b) Gasoline/ethanol blends with nominal ethanol concentrations up to 25 percent ethanol (E25), consisting of gasoline formulated in accordance with the Standard Specification for Automotive Spark-Ignition Fuel, ASTM D4814, when blended with denatured fuel ethanol formulated to be consistent with the Standard Specification for Denatured Fuel Ethanol for Blending With Gasolines For Use as Automotive Spark-Ignition Engine Fuel, ASTM D4806; or
- c) Gasoline/ethanol blends with nominal ethanol concentrations above 25 percent formulated in accordance with the Standard Specification in item (b) or formulated in accordance with the Standard Specification for Ethanol Fuel Blends for Flexible-Fuel Automotive Spark-Ignition Engines, ASTM D5798.

1.3 These requirements cover hose nozzle valves of the manually operated and automatic pressure operated type.

When they form a part of an assembly which provides for additional functions or service, the requirements are outside the scope of these requirements.

1.4 These requirements do not cover the following:

- a) Hose nozzle valves for handling liquids under cryogenic conditions.
- b) Hose nozzle valves for general refinery service, offshore and pipe line terminals, natural gas processing plants, gas distribution systems, petrochemical processing facilities, or the like.
- c) Hose nozzle valves operated wholly or partially by electricity or battery.

1.5 This standard does not cover hose nozzle valves for use with diesel, biodiesel, diesel/biodiesel blends, kerosene or fuel oil, which are covered under the Standard for Hose Nozzle Valves for Diesel Fuel, Biodiesel Fuel, Diesel/Biodiesel Blends with Nominal Biodiesel Concentrations up to 20 Percent (B20), Kerosene, and Fuel Oil, UL 2586B.

1.6 This standard does not cover hose nozzle valves for use with liquefied petroleum gas (LP-Gas), which are covered under the Standard for Flow Control Valves for Anhydrous Ammonia and LP-Gas, UL 125.

1.7 Requirements for the installation and use of these dispensing devices are included in the Code for Motor Fuel Dispensing Facilities and Repair Garages, NFPA 30A.

2 General

2.1 Components

2.1.1 Except as indicated in 2.1.2, a component of a product covered by this standard shall comply with the requirements for that component.

2.1.2 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or
- b) Is superseded by a requirement in this standard.

2.1.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.1.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

2.1.5 A hose nozzle valve with an integral swivel shall be additionally evaluated to the Electrical-Continuity and Operation Tests in the Standard for Emergency Breakaway Fittings, Swivel Connectors and Pipe-Connection Fittings for Gasoline and Gasoline/Ethanol Blends with Nominal Ethanol Concentrations up to 85 Percent (E0 – E85), UL 567A. The force is to be applied at the point on the swivel farthest from the joint. When necessitated by the swivel construction, this test is to be conducted on additional samples of the swivel with the load applied on the opposite side of the plane of rotation. See UL 567A, Figures 16.1 – 16.3 for examples.

2.2 Units of measurement

2.2.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

2.3 Undated references

2.3.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

3 Glossary

3.1 For the purpose of this standard, the following definitions apply.

3.2 **BLENDING OPTION** – Dispensing devices may be provided with an option that blends two specific fuels into one fuel to be dispensed. This blending occurs at the dispenser level and can be in two forms:

a) **Fixed blending** – Blending at the dispenser level that blends two specific fuels into one fuel to be dispensed, and that fuel to be dispensed is fixed. For example, fixed blending includes blend options where gasoline and denatured fuel ethanol can be blended to achieve E85, which is the actual dispensed fuel.

b) **Variable blending** – Blending at the dispenser level that blends two specific fuels into the fuel to be dispensed, but the fuel to be dispensed can be any of a number of previously set points. For example, variable blending includes blend options where gasoline and E85 can be blended to achieve E40, E60, and E85 as the actual dispensed fuel.

3.3 **GASOLINE/ETHANOL BLENDS** – Blended fuels composed of a gasoline component and an ethanol component. The numerical value corresponding to the ethanol component determines the blend rating (such as E85 for 85% ethanol, 15% gasoline).

3.4 **HOSE NOZZLE VALVE, AUTOMATIC** – A hose nozzle valve which is held open during the entire filling operation. It may be held open by manual force or by an integral hold-open or latching device. It incorporates a mechanism that shuts off the flow of liquid during refueling operations to prevent overflow from the fill opening when liquid reaches a predetermined point on the spout.

3.5 **HOSE NOZZLE VALVES** – A self-closing device designed to control the flow of flammable and combustible liquids at an operating pressure of minimum 50 psi (345 kPa). It is intended for use at the outlet end of a hose for dispensing flammable liquids.

3.6 **HOSE NOZZLE VALVE, MANUALLY OPERATED** – A hose nozzle valve that is manually held open during the entire filling operation and closes only upon release of the manual force.

3.7 **HOSE NOZZLE VALVE, VAPOR RECOVERY** – A system constructed to capture vapors displaced during filling operations. The vapors are not processed during the course of this activity.

a) **Assist Nozzle** – A vacuum or pump is used to draw the vapors back to tank.

b) **Balance Nozzle** – Displacement of vapors from tank being fill forces the vapor back into the storage tank.

3.8 SEALS, DYNAMIC – A seal that is subject to mechanical movement or other applied forces that result in movement or flexing of the seal under normal use conditions.

3.9 SEALS, STATIC – A seal that is not subject to mechanical movement or other applied forces other than compressing forces that are applied during installation, after which, the seal is held in place during normal use conditions.

CONSTRUCTION

4 Assembly

4.1 General

4.1.1 A hose nozzle valve shall include all of the components required for its intended function and installation.

4.1.2 A seat disc shall be attached to its poppet or holder or otherwise assembled so as to prevent it from becoming dislocated under service conditions as determined by the Hose Nozzle Endurance Test, Section 18. The means to secure the disc shall not rely upon cement or adhesive.

4.1.3 A brazing material used for joining liquid confining parts of a valve shall have a melting point (solidus temperature) of minimum 538°C (1000°F).

4.2 Hose nozzle valves

4.2.1 A hose nozzle valve shall be of the manually-operated or of the automatic type. A manually-operated valve requires the valve to be manually held open during the entire filling operation without the aid of hold-open devices or latches, but is capable of closing automatically. An automatic valve requires the valve to:

- a) Be manually opened, but is capable of being held open during the filling operation by a latch or other device; and
- b) Is provided with automatic closing features.

Exception: A hose nozzle valve for use in salt water or boat yard environments shall be of the automatic closing type without a latch-open device.

4.2.2 Automatic hose nozzle valves equipped with an integral hold open or latching device shall be so designed that, if left in the latched position after the flow has been stopped by means other than the automatic feature of the hose nozzle, it shall automatically unlatch when it is returned to the dispenser, See Automatic hose nozzle valve, 15.1.2.

NOTE: This includes hose nozzle valves that close with a no pressure/no flow mechanism, as well as interlock hose nozzles valves that unlatch when removed from car fill pipe or when hung on the dispenser.