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UL 1362

OUTLINE OF INVESTIGATION
FOR
GAS BOOSTERS

Issue Number: 1

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Summary of Topics

This first issue of the Outline of Investigation for Gas Boosters, UL 1362, covers requirements for gas boosters, rated 600 V or less, intended for use in natural or manufactured gas piping systems to increase the gas line pressure to that indicated on the device.

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INTRODUCTION

1 Scope

1.1 These requirements cover gas boosters, rated 600 V or less, intended for use in natural or manufactured gas piping systems to increase the gas line pressure to that indicated on the device.

1.2 Devices and equipment covered by these requirements are intended for use indoors and are intended to be installed in systems covered by the National Fuel Gas Code, NFPA 54, or the National Electrical Code, NFPA 70.

1.3 These requirements do not cover devices intended to be installed on a vehicle.

1.4 These requirements do not cover devices intended to be used:

- a) With liquids or gases other than as indicated above, or
- b) With liquids under cryogenic temperatures less than minus 60°C (minus 76°F).

1.5 These requirements do not cover gas booster compressor equipment which is covered by the Standard for Household and Similar Electrical Appliances, Part 2: Particular Requirements for Motor-Compressors, UL 60335-2-34.

2 General

2.1 Components

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

2.1.2 A component need not comply with a specific requirement that:

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- b) Is superseded by a requirement in this outline.

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.

2.2 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 Outline of Investigation, the term "device" refers to gas boosters covered by the scope of this document. In addition, the following definitions apply.

3.2 GAS – Includes natural gas and manufactured gas.

3.3 GAS BOOSTER – A device that will increase the gas line pressure to a specified value.

3.4 HERMETICALLY SEALED – A method to prevent the entrance of an external atmosphere and in which the seal is made by fusion, such as soldering, brazing, welding, or the fusion of glass to metal.

3.5 MANUFACTURED GAS – Synthetically produced mixture of methane and other gases, such as carbon monoxide, produced by chemically treating coal.

3.6 NATURAL GAS – A naturally occurring hydrocarbon gas mixture consisting primarily of methane, along with other hydrocarbons, carbon dioxide, nitrogen, and hydrogen sulfide.

4 Pressure, Temperature and Gas Service Ratings

4.1 The pressure rating of a device shall include the inlet pressure and differential pressure (or outlet pressure) and shall be marked on the product. See 23.1.

4.2 Devices covered by these requirements are intended for use at ambient temperatures within the range of minus 40 to plus 130°F (minus 40 to plus 55°C).

CONSTRUCTION

5 General

5.1 A gas booster shall include all of the components necessary for its intended function and installation, and shall be furnished as a single unit or assembly.

5.2 For devices intended for use in a classified area, or devices rated for use in a classified area, electrical components, including the motor, when incorporated into the assembly of a gas booster, including the means provided in the assembly for electrical connections, shall comply with the requirements for equipment for use in hazardous locations, Class I, Group D, Division 1 or 2, (or Zone 1 or 2, respectively), as appropriate, in the National Electrical Code, NFPA 70, Articles 500 and 501 (Article 505 for Zone Classification), depending upon the installation in accordance with National Fuel Gas Code, NFPA 54.

5.3 With reference to 5.2, such electrical components shall comply with the applicable standard for the protection technique employed; for example explosion proof equipment shall comply with the Standard for Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations, UL 1203.

6 Electrical Connections

6.1 Devices shall be connected by permanent wiring. No cord connection is allowed.

6.2 Wiring connections shall be made within a junction box or explosion proof junction box as needed. The junction box shall be formed of metallic materials.

7 Accessibility

7.1 To reduce the likelihood of unintentional contact that may involve a risk of electric shock from an uninsulated live part or film-coated wire, or injury to persons from a moving part, an opening in an enclosure shall comply with either of the following:

- a) For an opening that has a minor dimension (see 7.5) less than 1 inch (25.4 mm), such a part or wire shall not be contacted by the probe illustrated in Figure 7.1.
- b) For an opening that has a minor dimension of 1 inch or more, such a part or wire shall be spaced from the opening as specified in Table 7.1.

Exception: A motor need not comply with these requirements if it complies with the requirements in 7.2.

Table 7.1
Minimum acceptable distance from an opening to a part that may involve a risk of electric shock or injury to persons

Minor dimension ^a of opening,		Minimum distance from opening to part,	
inches ^b	(millimeters) ^b	inches ^b	(millimeters) ^b
3/4 ^c	19.1	4-1/2	114.0
1 ^c	25.4	6-1/2	165.0
1-1/4	31.8	7-1/2	190.0
1-1/2	38.1	12-1/2	318.0
1-7/8	47.6	15-1/2	394.0
2-1/2	54.0	17-1/2	444.0
d		30	762.0

^a See 7.5.
^b Between 3/4 inch and 2-1/2 inches, interpolation is to be used to determine a value between values specified in the table.
^c Any dimension less than 1 inch applies to a motor only.
^d More than 2-1/2 inches, but not more than 6 inches (152 mm).

7.2 With respect to a part or wire as mentioned in 7.1, in an integral enclosure of a motor as mentioned in the exception to 7.1:

- a) An opening that has a minor dimension (see 7.5) less than 3/4 inch (19.1 mm) is acceptable if:
- 1) A moving part cannot be contacted by the probe illustrated in Figure 7.2;
 - 2) Film-coated wire cannot be contacted by the probe illustrated in Figure 7.3;
 - 3) In a directly accessible motor (see 7.6), an uninsulated live part cannot be contacted by the probe illustrated in Figure 7.4; and
 - 4) In an indirectly accessible motor (see 7.6), an uninsulated live part cannot be contacted by the probe illustrated in Figure 7.2.
- b) An opening that has a minor dimension of 3/4 inch or more is acceptable if a part or wire is spaced from the opening as specified in Table 7.1.

