

ORDER OF DATA

AVA Documents
Document Sharing Hub



Underwriters Laboratories Inc.®

A not-for-profit organization dedicated to public safety
and committed to quality service

April 8, 1996

Revision pages for

Standard for

Electrically Operated Pumps for Nonflammable Liquids, Marine

UL 1113, Second Edition

Attached to this transmittal notice is a revision of the Second edition of UL 1113.

A CHANGE ON A PAGE DATED APRIL 8, 1996 IS INDICATED BY A SMALL PRINT NOTE FOLLOWING THE AFFECTED ITEM, PRECEDED AND FOLLOWED BY AN ASTERISK.

THIS REVISION IS CONSIDERED NON-SUBSTANTIVE AND IS BEING ISSUED TO ELIMINATE THE OXYGEN BOMB TEST. THE OXYGEN BOMB TEST IS NO LONGER APPROPRIATE IN MOST CASES DUE TO THE ADDITION OF ANTIOXIDANTS TO RUBBER AND POLYMERIC COMPOUNDS. THEREFORE, UL IS ELIMINATING THE OXYGEN BOMB TEST AND REPLACING IT WITH AN AIR OVEN AGING TEST WHICH IS USED FOR THERMOPLASTIC COMPOUNDS. THE REQUIREMENTS ARE NOW IN EFFECT.

Attention is directed to the note on the title page of this standard outlining the procedure to be followed to retain the approved text of ANSI/UL 1113-1986.

Revised and/or additional pages may be issued from time to time.

With the inclusion of the accompanying material, the standard consists of pages dated as shown in the following checklist:

Page	Date
1	October 20, 1986(Reprinted April 8, 1996)
2	—
3 — 5	October 20, 1986
6	April 8, 1996
7 — 16	October 20, 1986

OCTOBER 20, 1986
(Reprinted: April 8, 1996)



1

UL 1113

Standard for

**Electrically Operated Pumps for Nonflammable
Liquids, Marine**

First Edition — August, 1977

Second Edition

October 20, 1986

Approval as an American National Standard (ANSI) covers the numbered paragraphs on pages dated October 20, 1986. These pages should not be discarded when revised or additional pages are issued if it is desired to retain the ANSI approved text.

Approved as ANSI/UL 1113 — 1986, May 15, 1986

COPYRIGHT © 1977, 1996 UNDERWRITERS LABORATORIES INC.



Documents
Document Sharing Hub

GENERAL

1. Scope

1.1 These requirements cover electrically operated pumps rated less than 50 volts direct current (dc), and intended for use on vessels to pump nonflammable liquids, such as bilge water, potable water, and the like.

1.2 The pumps covered by these requirements are intended to be installed in accordance with the Standard for Fire Protection of Pleasure and Commercial Motor Craft, NFPA 302; the standards and recommended practices of the American Boat and Yacht Council, Inc.; and the applicable regulations of the United States Coast Guard.

1.3 These requirements do not cover pumps intended for use in hazardous locations aboard United States Coast Guard inspected vessels.

1.4 These requirements cover ignition-protected pumps that may be required on boats under 65 feet (19.8 m) in length.

1.5 These requirements cover pumps intended for continuous duty.

1.6 Combination pump/blowers are covered by these requirements and by the requirements for marine blowers, UL 1128.

2. Glossary

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

2.2 **AUTOMATIC PUMP** — A pump that automatically begins pumping when the liquid level attains a predetermined depth and stops when the liquid reaches a predetermined low level.

2.3 **CONTINUOUS OPERATION PUMP** — A pump capable of continuous operation at a voltage of 120 percent of rated normal voltage.

2.4 **DESIGN VOLTAGE** — A voltage of 113.3 percent of the nominal voltage.

2.5 **IGNITION-PROTECTED** — A device or component constructed so that it will not ignite a mixture of propane and air surrounding the device under operating conditions. An ignition-protected device is not necessarily "explosion proof," as that term is applied to commercial vessels. An "ignition-protected" device may have exposed input and output wiring as permitted by the Standard for Fire Protection of Pleasure and Commercial Motor Craft, NFPA 302, the standards of the American Boat and Yacht Council, and the applicable Regulations of the United States Coast Guard for uninspected vessels.

2.6 **NOMINAL VOLTAGES** — Commonly available storage battery voltages (6, 12, 24 and 32 volts dc).

2.7 **NONSPARKING PUMP** — A pump that will not, under operating conditions, produce sparks of sufficient energy to ignite a flammable hydrocarbon mixture.

2.8 **NONSUBMERSIBLE PUMP** — A pump intended to be operated with the pump motor not less than 18 inches (457 mm) above an anticipated water level.

2.9 **NORMAL HAND TOOLS** — Any standard American or metric wrench or screwdriver (straight or cross-point), and standard hexagonal wrenches.

2.10 **SUBMERSIBLE PUMP** — A pump intended to be operated while totally immersed in water.

3. Components

3.1 A component of a product covered by this standard shall comply with the requirements for that component, and shall be used in accordance with its recognized rating and other limitations of use. 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 standard, or

B. Is superseded by a requirement in this standard.

4. Units of Measurement

4.1 If a value for measurement is followed by a value in other units in parentheses, the second value may be only approximate. The first stated value is the requirement.

CONSTRUCTION

5. General

5.1 All external edges, projections, and corners shall be smooth, rounded, and not sufficiently sharp to cause a laceration injury in intended use and maintenance of the product.

5.2 The mounting brackets, or other means provided to secure the pump to the boat, shall be of a type and so located that proper installation can be made with normal hand tools. The securing means shall be designed so that the pump will maintain a fixed relationship to the boat when subjected to the vibration and shock loads of marine service. See Vibration Test, Section 18 and Shock Test, Section 19.

5.3 The materials used for the impeller and the housing of the pump shall be nonsparking.

5.4 Pumps having the following characteristics are considered to be nonsparking:

- A. Impeller or housing formed of nonmetallic materials,
- B. Impeller and housing formed of nonferrous metals,
- C. Impeller and housing formed of noncorrosive stainless steel,
- D. Ferrous impellers and housing with not less than 1/2 inch (12.7 mm) tip clearance, or
- E. Blades formed of aluminum or magnesium alloy and a ferrous housing with a nonferrous insert ring at the periphery of the impeller.

5.5 Any combination of components formed when a ferrous component is used with either an aluminum alloy or a magnesium alloy is considered to be sparking regardless of the material used as the fixed or rotating components.

6. Enclosures and Guards

6.1 The enclosure shall be so formed and assembled that it will have the strength and rigidity necessary to resist the abuses to which it is liable to be subjected without total or partial collapse, loosening or displacement of parts, or other serious defects that might impair intended operation of the pump.

6.2 The impeller shall be so enclosed or guarded as to prevent accidental contact during intended operation.

6.3 The degree of protection required of an enclosure by paragraph 6.2 depends upon the general design and the intended use of the pump.

7. Materials

7.1 Nonmetallic materials and finished coatings exposed to bilge water shall be resistant to deterioration by gasoline, oil, kerosene, and salt water. See Exposure to Solvents Test, Section 22.

7.2 A synthetic rubber part shall comply with the requirements of the Exposure to Solvents Test, Section 22.

7.3 A synthetic rubber part which is able to be affected by aging, the deterioration of which impairs intended operation of the pump, shall not crack nor show visible evidence of deterioration such as discoloration, shrinking, swelling, melting, or warping following exposure in an air oven for 70 hours at $100^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ($212^{\circ}\text{F} \pm 3.6^{\circ}\text{F}$).

Paragraph 7.3 revised April 8, 1996

7.4 All materials used shall withstand the temperature range of minus 30 (-22°F) to plus 85°C (185°F). See also Temperature Tests, Section 20.

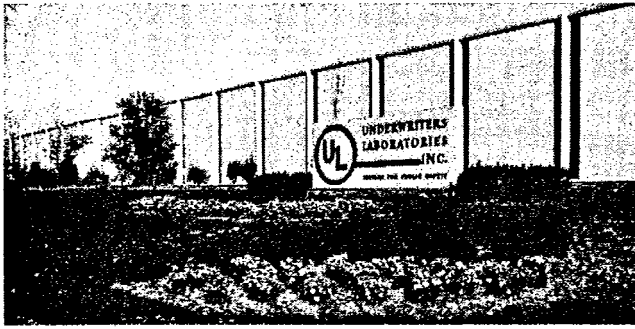
UL 1113

STANDARD *for* SAFETY

**ELECTRICALLY
OPERATED PUMPS FOR
NONFLAMMABLE
LIQUIDS, MARINE**



**UNDERWRITERS
LABORATORIES
INC.®**



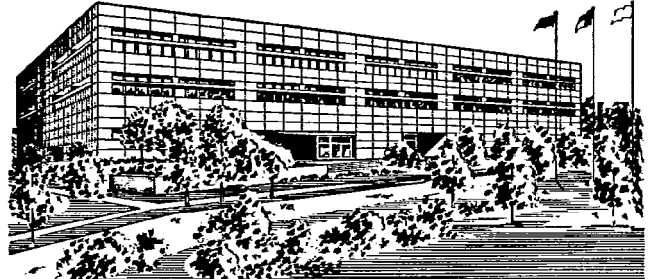
Northbrook, Illinois



Melville, New York



Santa Clara, California



Research Triangle Park, North Carolina

UNDERWRITERS LABORATORIES INC.

AN INDEPENDENT NOT-FOR-PROFIT ORGANIZATION

TESTING FOR PUBLIC SAFETY

Underwriters Laboratories Inc., founded in 1894, is chartered as a not-for-profit organization without capital stock, under the laws of the State of Delaware, to establish, maintain, and operate laboratories for the examination and testing of devices, systems and materials to determine their relation to hazards to life and property.

A complete description of the organization, purposes, and methods of Underwriters Laboratories Inc. is given in a separate pamphlet entitled "TESTING FOR PUBLIC SAFETY."

The names of companies that have demonstrated an ability to produce products meeting UL requirements are published annually in the following Product Directories.

Automotive, Burglary Protection, and
Mechanical Equipment
Building Materials
Electrical Appliance and Utilization Equipment
Electrical Construction Materials
Fire Protection Equipment

Fire Resistance
Gas and Oil Equipment
Hazardous Location Equipment
Marine Products
Recognized Component
Supplements to Directories

The price list for these publications and ordering information may be obtained upon request from UL, Publication Stock, 333 Pfingsten Road, Northbrook, Illinois 60062.

A Catalog of UL Standards for Safety with costs and ordering information is also available from this office.

**UNDERWRITERS LABORATORIES INC.***an independent, not-for-profit organization testing for public safety*

12 Laboratory Drive, Research Triangle Park, NC 27709
1285 Walt Whitman Road, Melville, L.I., NY 11747
1655 Scott Boulevard, Santa Clara, CA 95050
333 Pfingsten Road, Northbrook, IL 60062

October 20, 1986

**STANDARD FOR
ELECTRICALLY OPERATED PUMPS FOR NONFLAMMABLE LIQUIDS, MARINE
UL 1113, SECOND EDITION**

Accompanying this transmittal notice is a copy of the second edition of UL 1113.

THIS EDITION OF THE STANDARD IS NOW IN EFFECT.

As indicated on the title page, this standard is an American National Standard.

This edition of the standard is intended to update the format and paragraph number system to be consistent with other UL standards.

Revised and/or additional pages may be issued from time to time. Subscribers to UL's services in the area covered by this standard will receive these revised and/or additional pages automatically. Others may receive such pages by subscribing to UL's subscription service for revisions. See UL's Catalog of Standards for Safety for a description of the revision subscription service, the cost of the service for this Standard, and ordering information.

A **PRODUCT INDEX** of UL Standards for Safety is also available. The index provides examples of the more than 3,000 individual products that fall within the scope of the more than 500 generic product categories covered by UL's Services and Standards for Safety. The index also includes an alphabetical listing of keywords of each title and Standard. The price of the index is \$8.00.

To obtain a free copy of UL's Catalog or to order the Product Index contact any of UL's Offices. Telephone order for UL's publications may be charged to your Visa or MasterCard account.