

INCH-POUND

MIL-DTL-22576A

22 October 2013

SUPERSEDING

MIL-T-22576(SHIPS)

21 November 1960

DETAIL SPECIFICATION

TERMINALS, AIR, DIFFUSING, CIRCULAR, FOR SHIPBOARD USE

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers air supply terminals of the diffusing type for use in ventilating and air conditioning systems on naval ships.

1.2 Classification. Diffusing terminals are of the following sizes (diameters) (see 6.2):

- a. 3½-inch
- b. 4-inch
- c. 5-inch
- d. 6-inch
- e. 7-inch
- f. 8-inch
- g. 9-inch
- h. 10-inch
- i. 12-inch

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-S-901 - Shock Tests, H.I. (High-Impact) Shipboard Machinery, Equipment, and Systems, Requirements for

(Copies of this document are available online at <http://quicksearch.dla.mil/> or <https://assist.dla.mil/>.)

Comments, suggestions, or questions on this document should be addressed to: Commander, Naval Sea Systems Command, ATTN: SEA 05S, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160 or emailed to CommandStandards@navy.mil, with the subject line "Document Comment". Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.dla.mil>.

MIL-DTL-22576A

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

NAVAL SEA SYSTEMS COMMAND (NAVSEA) DRAWINGS

804-690702 - Circular Diffusing Terminal for Air Conditioning Systems

(Copies of this document are available from the applicable repositories listed in S0005-AE-PRO-010/EDM online at <https://nll.ahf.nmci.navy.mil> or from the Naval Ships Engineering Drawing Repository (NSED) online at <https://199.208.213.105/webjedmics/index.jsp>. To request an NSED account for drawing access, send an email to NNSY_JEDMICS_NSED_HELP_DESK@navy.mil.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

AMERICAN NATIONAL STANDARDS INSTITUTE/AMERICAN SOCIETY FOR QUALITY (ANSI/ASQ)

ANSI/ASQ Z1.4 - Sample Procedures and Tables for Inspection by Attributes

(Copies of this document are available from the American National Standards Institute, 25 W. 43rd Street, 4th Floor, New York, NY 10036 or online at <http://webstore.ansi.org/>.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.2.

3.2 Design. The terminals furnished shall have contours, dimensions, and tolerances in accordance with 804-690702 for sizes specified (see 6.2).

3.2.1 Terminal sizes. Sizes of the terminals shall be limited to those shown on 804-690702 and in 1.2.

3.3 Materials.

3.3.1 Terminal material. Terminals shall be constructed of 5052 or 3003 aluminum. The hardest temper that will withstand the forming processes shall be used.

3.3.2 Fasteners.

3.3.2.1 Screws. Corrosion-resisting steel screw fasteners shall be used to secure bellmouth to throat.

3.3.2.2 Rivets. Rivets shall be of 2014, 2017, 2024, 2117, or 5056 aluminum, or of corrosion-resistant steel.

3.3.3 Gasket material. Gasket material shall be of neoprene or rubber.

3.3.4 Recycled, recovered, environmentally preferable, or biobased materials. Recycled, recovered, environmentally preferable, or biobased materials should be used to the maximum extent possible, provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.4 Construction.

3.4.1 Loose parts. Terminals shall be free of loose parts which will produce rattle or noise under conditions of vibration.

MIL-DTL-22576A

3.4.2 Perforations. The bellmouth and bottom plate of each terminal shall be perforated with 0.068-inch diameter holes on 1/4-inch centers. The total opening of the holes shall be approximately 6.5 percent of area of the sheet.

3.4.3 Burrs and irregularities. The edges of vanes, rings, collars, and other parts shall be free of burrs, tears, or irregularities, which will tend to increase noise or turbulence in the air stream. In spinning or forming the bellmouth and bottom plate some distortion of the holes in the perforated sheets is unavoidable.

3.4.4 Tears. There shall be no tears or split material between holes.

3.4.5 Cleaning. All brazed and welded joints shall be cleaned of flux and residue.

3.5 Label plates. Each terminal shall carry an identifying label. The label information may be pressed into the throat piece, or a plate or a permanent corrosion-resistant label secured with adhesive may be attached to the throat piece. The following information shall be shown by the label:

- a. Circular diffusing terminal
- b. Size
- c. Stock number
- d. Contract number or order number
- e. Manufacturer's name and Commercial and Government Entity (CAGE) code

3.6 Drawings. Drawings shall be as specified (see 6.2).

3.7 Shock. Unless otherwise specified (see 6.2), the terminal shall pass the high-impact shock tests specified in MIL-S-901 for Grade A, Class I equipment.

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.2).
- b. Conformance inspection (see 4.3).

4.2 First article inspection. First article inspection shall be performed on each size when a first article sample is required (see 3.1). This inspection shall include the examination of 4.4 and the tests of 4.5 (see [table I](#)).

TABLE I. Test agenda.

Applicability of test to circular diffusing terminal				
Tests	Requirement	Test	First article	Conformance
Shock	3.7	4.5.1	All	
Shake	3.4.1	4.5.2	All	All

4.3 Conformance inspection. Conformance inspection shall include the examination of 4.4 and the tests of [table I](#).

4.4 Examination. Each of the sample diffusing terminals selected in accordance with 4.4.1 and 4.4.2 shall be examined and measured to verify compliance with this specification. Examination shall be conducted as specified in [table II](#). Any diffusing terminal in the sample containing one or more defects shall be rejected.

4.4.1 Inspection lot. All diffusing terminals of the same size offered for delivery at one time shall be considered a lot for purposes of sampling and inspection.

4.4.2 Sampling for examination. Sample diffusing terminals shall be selected at random from each lot in accordance with ANSI/ASQ Z1.4 at Inspection Level II for the examination specified in 4.4.

MIL-DTL-22576A

TABLE II. Classification of defects.

Categories	Defects
Critical:	None defined.
Major:	
101	Circular diffusing terminal incomplete; component parts missing.
102	Not in accordance with approved drawing.
103	Evidence of unauthorized material used.
104	Material thickness. (Vanes, mounting ring, bellmouth, and throat not within specified tolerance.)
105	Number and location of vanes nonconforming.
106	Vane configuration and size nonconforming.
107	Drilling, mounting holes, bolt circles, and fasteners nonconforming; rivets loose.
108	Diffusing terminal diameter and overall height not as specified.
109	Not free of cracks, splits, and deformation.
110	Surfaces not smooth; evidence of sharp edges or burrs.
111	Vane assembly not inclined at the specified angle.
112	Bottom plate not formed to the specified contour (radius nonconforming).
113	Throat diameter nonconforming.
114	Evidence of rattle.
115	Ring spacing not as specified.
116	Throat piece flange nonconforming; warpage exceeds specified tolerance.
117	Brazed and welded joints are not clean.
Minor:	
201	Marking, label plate missing, data on label plate missing, not legible, or not permanent.
202	Area of holes in bellmouth not as specified.

4.5 Tests.

4.5.1 Shock test. Diffusing terminals shall be shock tested on the light weight machine as prescribed for Grade A shock of MIL-S-901.

4.5.2 Shake test. Diffusing terminal shall be shaken by hand; any audible noise shall be accepted as an indication of loose parts.

MIL-DTL-22576A

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The terminal is intended to be used in air conditioning ductwork to distribute air in ships' compartments.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Sizes required (see 1.2 and 3.2).
- c. Whether first article inspection is required (see 3.1 and 6.3).
- d. Drawing requirements (see 3.6).
- e. Shock requirements (see 3.7).
- f. Packaging requirements (see 5.1).

6.3 Waiving of requirement for first article testing. Invitations for bids should provide that the Government reserves the right to waive the requirement for first article testing to those bidders offering a product that has been previously approved to MIL-DTL-22576 or MIL-T-22576.

6.4 Subject term (key word) listing.

Air conditioning

Ductwork

Ventilating

6.5 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:

Navy – SH

DLA – IS

Preparing activity:

Navy – SH

(Project 4130-2013-004)

Review activity:

DLA – GS

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.