

INCH-POUND

MIL-PRF-12647D
26 February 1996
SUPERSEDING
MIL-P-12647C
3 July 1980

PERFORMANCE SPECIFICATION

PUMPS, INFLATING-DEFLATING, HAND-OPERATED, AIR, SINGLE-CYLINDER PLUNGER

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

1. SCOPE

1.1 **Scope.** This specification covers hand-operated, air inflation-deflation pumps with a single-cylinder plunger.

1.2 **Classification.** The pumps should be of the following types and sizes, as specified (see 6.2 and 6.3).

Type I - Foot Model (see Drawing TA13211E9597).

Type II - Hand Model.

Size 1 - 6-3/4 inch cylinder length (see Drawing TA13211E9598).

Size 2 - 10 inch cylinder length (see Drawing TA13211E9599).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/BLUE, Warren, MI 48397-5000, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document, or by letter.

AMSC N/A

FSC 4320

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 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 documents cited in sections 3 and 4 of this specification, whether or not they are listed.

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 are those cited in the solicitation.

DRAWINGS

ME

- | | |
|--------------|--|
| TA13211E9597 | - Pump, Inflating-Deflating, Hand Operated: Foot Model (Cap and Base, Aluminum). |
| TA13211E9598 | - Pump, Inflating-Deflating, Hand Operated: Hand Model Size 1. |
| TA13211E9599 | - Pump, Inflating-Deflating, Hand Operated: Hand Model, Size 2. |

(Copies of these drawings are available from the U.S. Army CECOM RDE Center, Belvoir Division Pipe, 10315 Gridley Road, STE. 220, ATTN: AMSEL-LC-ED-BC, Fort Belvoir, VA 22060-5849.)

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 the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- | | |
|----------------|--|
| ANSI/ASQC Z1.4 | - Sampling Procedures and Tables for Inspection by Attributes (DoD Adopted). |
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(Application for copies should be addressed to American National Standard Institute, 11 West 42nd Street, New York, NY 10036.)

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SOCIETY OF AUTOMOTIVE ENGINEERS, INC. (SAE)

ANSI/SAE AS478 - Identification Marking Methods (DoD Adopted).

(Application for copies should be addressed to Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.)

2.4 Order of precedence. 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 Materials. Materials shall be in accordance with top assembly Drawing TA13211E9597 for the type I foot model pump; top assembly Drawing TA13211E9598 for the type II, size 1 hand model pump; and top assembly Drawing TA13211E9599 for the type II, size 2 hand model pump; and as specified herein. For materials not specified herein the contractor shall select the materials, but the materials shall be capable of meeting all of the operational and environmental requirements specified herein. Recovered materials shall be used to the maximum extent possible (see 4.4.1).

3.2.1 Lubrication. Components of the pump shall be lubricated as specified on the drawings.

3.2.1.1 Type I, foot model pump. The type I, foot model pump shall conform to TA13211E9597. The pump shall be furnished with 2 hose assemblies as shown on the applicable drawings. the overall length of the hoses shall be 48 inches (in.) or 84 in., as specified (see 6.2); with each hose assembly furnished with a hose adapter as shown on the drawings.

3.2.1.2 Type II, hand mode pump.

3.2.1.2.1 Size 1, pump. The size 1 hand model pump shall conform to TA13211E9598, and shall be furnished with a hose assembly, 10.31 in. overall length, and 2 hose adapters, as shown on the drawings.

3.2.1.2.2 Size 2, pump. The size 2 hand model pump shall conform to TA13211E9599, and shall be furnished with a hose assembly, 10.31 in. overall length, and 2 hose adapters, as shown on the drawings.

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3.3 Design.

3.3.1 Drawings. All three designs shall conform to the drawings specified in 3.2. These drawings are end product drawings. No deviation from the prescribed dimensions or tolerances is permissible without prior approval of the contracting officer. Where tolerances could cumulatively result in incorrect fits, the contractor shall provide tolerances within those prescribed on the drawings to insure correct fit, assembly, and operation of the pumps. Any data (shop drawings, layouts, flow sheets, processing procedures, etc.) prepared by the contractor or obtained from a vendor to support fabrication and manufacture of the production item shall be made available, upon request, for inspection by the contracting officer or his designated representative. No deviation from the prescribed dimensions or tolerances is permissible without prior approval of the contracting officer (see 4.4.2).

3.3.2 Corrosion. The pumps shall be fabricated from compatible materials that are inherently corrosion-resistant and not subject to high-metallic/galvanic electrolysis (see 4.4.1 and 4.4.2).

3.4 Performance.

3.4.1 Overall performance. The pumps shall show no evidence of damage or malfunction when subjected to the tests specified in 4.5 at ambient temperatures.

3.4.2 Environmental.

3.4.2.1 Storage. The pumps shall meet the overall performance requirements specified in 3.4.1 after being stored for 72 hours (hr) at -30 degrees Fahrenheit (°F) and after being stored for 8 hr at 130°F.

3.4.2.2 Humidity. The pumps shall meet the overall performance requirements specified in 3.4.1 after being subjected to a relative humidity of 96 percent (%) with air ambient temperature variation of +85°F for 20 hr followed by 4 h of 200 % relative humidity with condensation at +85°F.

3.4.2.3 Low temperature. The pumps shall meet the overall performance requirements specified in 3.4.2 after being conditioned for 72 hr at -20°F.

3.4.2.4 High temperature. The pumps shall meet the overall performance requirements specified in 3.4.1 after being conditioned for 8 hr at 115°F.

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3.5 Workmanship. Workmanship shall be of a quality which will assure a product free of cracked, broken, or rusted parts or components; and shall be clean and free from dirt, burrs and scale; or other defects which may affect appearance or performance (see 4.4.2).

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 as specified (see 3.1). This inspection shall include the examination of 4.4 and the tests of 4.5.

4.2.1 First article inspection failure. Any deficiency found during, or as a result of, first article inspection shall be cause for rejection of the first article sample until evidence has been provided by the contractor that corrective action has been taken to eliminate the deficiency. Any deficiency found during, or as a result of, first article inspection shall be evidence that all items already produced prior to completion of the first article inspection are similarly deficient unless contrary evidence satisfactory to the contracting officer is furnished by the contractor. Such deficiencies on all items shall be corrected by the contractor. The Government will not accept products until first article inspection is completed to the satisfaction of the Government.

4.3 Conformance inspection. Conformance inspection shall include the examination of 4.4 and the tests of 4.5.

4.3.1 Sampling for examination. Samples for conformance examination shall be selected in accordance with ANSI/ASQCZ1.4.

4.3.2 Failure. Failure of any pump to pass any of the specified conformance tests shall be cause for the Government to refuse acceptance of the production quantity represented, until action taken by the contractor to correct defects and prevent recurrence has been approved by the Government.

4.4 Method of inspection.

4.4.1 Materials and construction. Conformance to 3.2 and 3.3.2, shall be determined by inspection of contractor records providing proof or certification that design, construction, processing, and materials conform to requirements. Applicable records shall include drawings,

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specifications, design data, receiving inspection records, processing and quality control standards, vendor catalogs and certification, industry standards, test reports, and rating data.

4.4.2 **Examination.** Conformance to 3.3.1, 3.3.2, and 3.5, shall be determined by examination for the defects listed in table I. Examination shall be visual or by measurement with SIE.

4.5 **Air leakage test.** The pumps shall be tested for air leakage by applying a load to the handle of the pump and recording the time required for the piston to traverse a compression stroke with the inlet and outlet sealed. The loads to be applied and the minimum time intervals permissible shall be as follows:

| Pump | Load (lbs) | Minimum time Interval (minutes) |
|---------|------------|------------------------------------|
| Type I | 20 | 2 |
| Type II | | |
| Size 1 | 15 | 1-1/4 |
| Size 2 | 15 | 2 |

Piston travel time less than the minimum time specified shall constitute failure (see 3.4.1).

TABLE I. Classification of defects.

| Category | Defect | Method of inspection |
|----------|---|----------------------|
| Critical | None | |
| Major: | | |
| 101 | Dimensions out of tolerance and not as specified (see 3.3.1). | SIE 1/ |
| 102 | Parts not corrosion resistant as specified (see 3.3.2). | Visual |
| 103 | Workmanship not as specified (see 3.5) | Visual |

1/ SIE = Standard Inspection Equipment.

5. PACKAGING

5.1 **Packaging.** For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. 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.

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6. NOTES

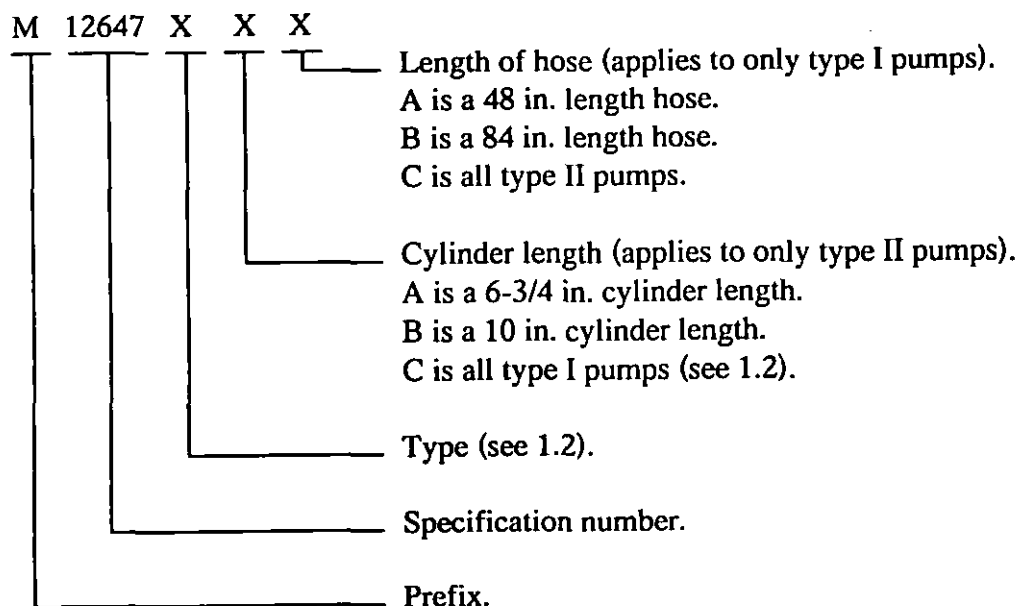
(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

6.1 Intended use. The inflation-deflation pumps are intended for inflating and deflating low-pressure pneumatic equipment.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Type or size required (see 1.2 and 6.3).
- c. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.3).
- d. The time frame required for submission of the first article and number of samples required (see 3.1).
- e. Packing requirements (see 5.1).

6.3 Part number. For items without a previously assigned part number, the part number should be constructed as follows:



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6.4 Supersession data. This specification supersedes MIL-P-12647C, dated 3 July 1980.

6.5 Subject term (key word) listing.

Fordable
Leakage
Raft

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

Custodians:

Army - AT

Navy - MC

Review Activity:

DLA - CS

Preparing Activity:

Army - AT

(Project 4320-0012)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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|---|--|--|-------------------------------------|
| I RECOMMEND A CHANGE | | 1. DOCUMENT NUMBER MIL-PRF-12647D | 2. DOCUMENT DATE (YYMMDD) 960226 |
| 3. DOCUMENT TITLE Pumps, Inflating-Deflating, Hand-Operated, Air, Single-Cylinder Plunger | | | |
| 4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.) | | | |
| 5. REASON FOR RECOMMENDATION | | | |
| 6. SUBMITTER | | | |
| a. NAME (Last, First, Middle Initial) | | b. ORGANIZATION | |
| c. ADDRESS (Include Zip Code) | | d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (If applicable) | 7. DATE SUBMITTED (YYMMDD) |
| 8. PREPARING ACTIVITY | | | |
| a. NAME | | b. TELEPHONE (Include Area Code) (1) Commercial (810) 574-8745 (2) AUTOVON 786-8745 | |
| c. ADDRESS (Include Zip Code) Commander U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/BUE Warren, MI 48397-5000 | | IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340 | |