

XX-P-746E  
May 25, 1978  
SUPERSEDING  
Fed. Spec. XX-P-746D  
April 16, 1975

FEDERAL SPECIFICATION

PUMP, INFLATING, MANUAL (FOR RUBBER TIRES)

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE

1.1 Scope. This specification covers a manually operated air pump designed to inflate rubber tires.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issues in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

Federal Specification:

PPP-B-636 - Boxes, Shipping Fiberboard.

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Philadelphia, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Houston, Denver, San Francisco, Los Angeles, and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Military Standard:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply.

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National Motor Freight Traffic Association, Inc., Agent:

National Motor Freight Classification.

(Application for copies should be addressed to the American Trucking Associations, Inc., Traffic Department, 1616 P Street, N.W., Washington, DC 20036.)

Uniform Classification Committee, Agent:

Uniform Freight Classification.

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

3. REQUIREMENTS

3.1 Components.

3.1.1 Pump cylinder. The pump cylinder shall be made of steel tubing. The cylinder shall be straight and free from burrs and internal surface irregularities. The pump cylinder or the top cylinder cap shall have an oil hole suitable for applying a lubricant to the pump plunger, unless the plunger is made out of urethane or another material not requiring lubrication.

3.1.2 Cylinder base. The cylinder base shall have an extension on one or both sides of the base suitable to hold the pump on a plane surface by foot pressure. The extension(s) shall be either an integral part of the base or a fold up stirrup. Each extension shall not be less than 2 1/2 inches long, measured from the cylinder wall, and not less than 1 3/4 inches wide.

3.1.3 Cylinder caps. The cylinder caps shall be made of metal, reinforced plastic or other suitable material. The caps shall remain tight on the cylinder under service conditions to prevent accidental disassembly of the pump.

3.1.4 Handle. The handle shall be made of either wood, metal or plastic. The handgrips on each side of the plunger rod shall not be less than 3 1/4 inches long as measured from the center line of the plunger-rod. The handle shall be tested as specified in 4.6.2 without visual evidence of damage.

3.1.5 Rubber hose. The rubber hose shall be at least 24 inches long. It shall be made of natural or synthetic rubber or a combination of both. The hose shall be able to withstand a hydrostatic burst test pressure of 100 p.s.i.g. (see 4.6.3). The hose shall be secured to the pump and to the tire connector by means of external permanent collars or hose clamps.

3.1.6 Tire connector. Unless otherwise specified (see 6.2), the tire connector shall be a quick release thumb lock type. The connector shall be made of metal, reinforced plastic or other suitable material. The hose end of the connector shall have one or more exterior stepped corrugations arranged to tightly grip the inside wall of the hose. The connector shall be designed to interface with standard O.302-32 externally threaded tire valves with a leak proof seal (see 3.3.2).

3.2 Finish. The exterior surface of the cylinder, cylinder base and cap, handle and the handle ring, as applicable, shall be coated with either enamel or paint. A metallic coating or plating suitable for protecting the metal against corrosion will be acceptable. A wood handle shall be smooth and shall have a durable lacquer, enamel or paint coating. Check valves and tire connectors, if made of steel, shall have a metallic coating or plating suitable for protecting interior and exterior surfaces against corrosion. All burrs and sharp edges which might cause injury to the operator shall be removed.

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**3.3 Performance testing.**

3.3.1 Drop test. The pump shall be dropped as specified in 4.6.1. The pump shall not show any damage or breakage.

3.3.2 Capacity and leakage. The pump shall be capable of conforming to the tests as specified in 4.6.4. The pressure shall not fall below 25 p.s.i.g.

**4. QUALITY ASSURANCE PROVISIONS**

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government.

4.1.1 Component certification. In lieu of using his own facilities, the contractor may submit a report of analysis and performance of component materials from a laboratory acceptable to the Government, whether an independent testing facility or the laboratory of the component material supplier, as evidence of compliance with the specification requirements. The report shall include, in addition to the actual data, the manufacturer's name, name and address of the testing laboratory, and date of test.

4.2 Inspection lot. For inspection purposes, a lot shall consist of all pumps of the same style to be supplied on a contract or order.

**4.3 Sampling.**

4.3.1 Visual and dimensional examination. Sampling for these characteristics shall be in accordance with inspection level S-3 in MIL-STD-105.

4.3.2 Tests. Sampling for tests shall be in accordance with level S-2 in MIL-STD-105.

**4.4 Inspection.**

4.4.1 Pumps shall be examined for defects listed in table I. The Acceptable Quality Levels (AQL's) shall be 2.5 percent defective for major defects and 6.5 percent defective for minor defects.

4.4.2 The pumps shall be tested in accordance to 4.6. The Acceptable Quality Levels (AQL) shall be 6.5 percent defective.

TABLE I. Classification of defects, end item

Defects	Major	Minor
Material not as specified.	X	
Dimensions not as specified.	X	
Pump cylinder not straight or free from burrs or surface irregularities.	X	
Nonremovable cylinder cap.	X	
No lubrication hole (when required).	X	
Extension missing.	X	
Connections not tight.	X	
Tire connector not as specified.	X	
Any burrs or sharp edges.	X	
Damage or defects affecting function or serviceability.	X	
Damage or defects not affecting function or serviceability.		X

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**4.5 Examination of preparation for delivery.** An examination shall be made to determine compliance with the requirements of Section 5. The sample unit shall be one shipping container fully prepared for delivery. Sampling shall be in accordance with MIL-STD-105. The inspection level shall be S-2 with an AQL of 4.0 expressed in terms of percent defective.

**4.6 Tests.** Before any of the following tests are done, the pump shall be operated for 10,000 strokes under a no back pressure condition.

**4.6.1 Drop test.** The pump shall be dropped two times for a height of three feet onto a hard concrete surface so as to strike (1) a corner of the cylinder base, (2) on the handle. Results shall be evaluated for conformance to the requirement in 3.3.1.

**4.6.2 Handle loading test.** Locate a point on each end of the handle measured 2/3 of the distance from the center line of the plunger rod to the end of the handle. Load at each point 150 pounds. Maintain the load for one minute. Results shall be evaluated for conformance to the requirement in 3.1.4.

**4.6.3 Hydrostatic burst test.** The rubber hose shall be subjected to a hydrostatic burst test of 100 psig. Results shall be evaluated for conformance to the requirement in 3.1.5.

**4.6.4 Capacity and leakage test.** Connect the pump to a 9:15 x 15 inch automobile tire. The pump shall inflate a deflated tire to 30 psig. At 30 psig, the pump will be static tested for one minute. Results shall be evaluated for conformance to the requirements in 3.3.2. Connect a pressure gauge to the pump and the pump shall be capable of obtaining 45 psig.

## 5. PREPARATION FOR DELIVERY

**5.1 Packaging.** Packaging shall be level A or commercial, as specified (see 6.2).

**5.1.1 Level A.** Each pump shall be packaged in a close-fitting box conforming to PPP-B-636, class weather resistant, style optional. Closure and waterproof sealing of the boxes shall be in accordance with the appendix to PPP-B-636.

**5.1.2 Commercial.** Each pump shall be packaged in accordance with normal commercial practice. The complete package shall be designed to protect the pump against damage during shipment, handling and storage.

**5.2 Packing.** Packing shall be level A or commercial, as specified (see 6.2).

**5.2.1 Level A.** Twelve pumps packaged as specified in 5.1.1 shall be packed in a close-fitting box conforming to PPP-B-636, class weather resistant, style RSC or FOL. Closure and waterproof sealing of the boxes shall be in accordance with the appendix to PPP-B-636. Alternatively, cleated plywood, wire bound or nailed wood boxes shall be acceptable shipping containers when lined with a barrier material. The edges of the barrier material shall be sealed with waterproof tape or adhesive.

**5.2.2 Commercial.** The pumps packaged as specified in 5.1.2 shall be packed in fiberboard boxes to insure delivery at destination, to provide for redistribution by the initial receiving activity, and shall be acceptable by common carrier under National Motor Freight Classification and Uniform Freight Classification.

**5.3 Unitization.** When shipments to Government depots are full car or truckload, the shipping containers shall be unitized to facilitate handling in accordance with normal commercial practice. The unitized load shall not exceed 2,500 pounds in weight, 63 inches in height, 56 inches in length, and 45 inches in width.

**5.4 Marking.** Packages, shipping containers and unitized loads (when applicable) shall be marked as specified in the contract or order.

## 6. NOTES

**6.1 Intended use.** The pumps are to be used to inflate bicycle and automobile tires and pressurize other devices which have a standard bicycle tire connector.

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6.2 Ordering data. Purchasers should select the preferred options permitted herein, and include the following information in procurement documents:

- (a) Title, number and date of this specification.
- (b) Tire connector other than specified (see 3.1.6).
- (c) Level of packaging and packing required (see 5.1 and 5.2).

CUSTODIANS:

Army - ME

Review Activities:

Army - AT  
DLA - CS

User Activities:

Navy - HC

MILITARY COORDINATING ACTIVITY:

Army - ME

Preparing Activity

GSA - PSS

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Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See Section 2 of this specification to obtain extra copies and other documents referenced herein. Price 60 cents each.

