

INCH-POUND

A-A-52315A

08-Dec-2015

SUPERSEDING

A-A-52315

27-Sep-1994

COMMERCIAL ITEM DESCRIPTION

PUMPS, RECIPROCATING, POWER-DRIVEN: DIAPHRAGM, DIESEL-ENGINE-DRIVEN, WHEEL-MOUNTED

The General Services Administration has authorized the use of this commercial item description as a replacement for MIL-P-509 which is canceled.

1. **SCOPE.** This item description covers wheel-mounted diesel-engine-driven diaphragm pumps (hereinafter called "pump units"). The pump unit is intended for use in dewatering applications where the water bears sand, gravel, or any other solids.
2. **CLASSIFICATION.** The pump unit shall be of the following sizes:
 - Size A - 50 gallons per minute (gpm) capacity.
 - Size B - 100 gpm capacity.

3. SALIENT CHARACTERISTICS

3.1 General. When specific requirements are not stated herein, all items listed as standard equipment in the manufacturers' published specifications, brochures, and catalogs which are normally furnished to the commercial customer as standard equipment shall be furnished. In addition, the pumps shall be equipped with optional equipment and accessories as required to comply with the performance requirements specified herein. Optional equipment for the purpose of this item description may be defined as equipment not standard and not normally furnished with the pumps but-which is available to the commercial customer on an optional basis. Any additional equipment or accessories needed to satisfy military requirements shall be specified in

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AMSC N/A

FSC 4320

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the contract or order. The additional equipment shall be constructed, assembled, and equipped with all components (whether or not specified herein) necessary to enable the unit to function reliably and efficiently in sustained operation. The pumps shall conform to all Federal laws and regulations applicable for this type equipment which are in effect on date of award of contract.

3.2 Materials. The pump units shall be fabricated from compatible materials, inherently corrosion resistant or treated to provide protection against the various forms of corrosion and deterioration that may be encountered. Dissimilar metals shall not be used in intimate contact with each other unless protected against galvanic corrosion.

3.3 Design and Performance. The pump units shall consist of a diaphragm pumps, speed reduction systems, diesel engines, and all necessary accessories and connections. The pump units shall be wheel mounted. At a speed of not more than 60 strokes per minute, the pumps shall deliver the capacities specified herein for each size of pump unit. Each pump unit shall pump against a total discharge head of 35 feet with a static suction lift of 25 feet when pumping water at standard conditions. Standard conditions are defined as an atmospheric pressure of 29.92 inches of mercury and a water temperature of not less than 68 °F. The pumps shall not leak when subjected to a hydrostatic pressure of not less than 50 pounds per square inch (psi).

3.3.1 Pump. The pumps shall be diaphragm lift-and-force type, shall be self-priming and shall pump water containing solids. The pumps shall be equipped with a suction passageway, suction valve with replaceable valve seat, suction-valve chamber, diaphragm chamber, flexible diaphragm, discharge valve with replaceable valve seat, discharge-valve chamber and discharge passageway. Valves shall be integral flapper or ball type. Means shall be provided (without uncoupling the suction or discharge hoses) for removing obstructions that might prevent the valves from seating properly. The pump case shall be either an iron or aluminum casting or fabricated of steel.

3.3.1.1 Size A pump unit. The suction and discharge ports shall be internally threaded with 3-inch NPT threads. Each port shall be provided with an externally threaded 3-inch NPT to 3-inch NH pipe-to-hose adapter made of brass or zinc-plated steel per ASTM B 633, SC IV, type II or III or galvanized to 0.9 oz/sqft. At a speed of not more than 60 strokes per minute, the pump shall deliver not less than 50 gpm at a static suction lift equivalent to 10 feet and 33 gpm at a static suction lift equivalent to 20 feet.

3.3.1.2 Size B pump unit. The suction and discharge ports shall be internally threaded with 4-inch NPT threads. Each port shall be provided with a zinc-coated per ASTM B 633, SC IV, type II or III or galvanized to 0.9 oz/sqft wrought-iron or steel 4-inch pipe nipple which is 6 inches long with 4-inch NPT threads. At a speed of not more than 60 strokes per minute, the pump shall deliver not less than 100 gpm at a static suction lift equivalent to 10 feet and 66 gpm at a static suction lift equivalent to 20 feet. When specified in the contract or order, the size B pump unit shall be provided with 4 lengths of suction hose 4 inches in diameter and 10 feet in length and shall be equipped with 4-inch NPT threaded couplings to allow the hoses to be mated and attached to the suction port.

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3.3.2 Engine. The diesel engine shall be a heavy-duty commercial type with a recoil-type manual starter and a replaceable dry-type air filter. The engine shall be provided with a fuel tank which has a capacity of not less than one gallon. A fuel line shutoff valve attached directly to the tank shall be provided.

3.3.3 Speed-reduction system. Power from the engine may be transmitted to the pump, either through a gear train, a roller-chain drive or a flexible spline drive. All drive reductions shall be enclosed in an oil-tight case. The rotating motion may be changed to a reciprocating motion at the diaphragm by means of an eccentric crank, cam, or walking beam. The speed-reduction system shall drive the pump plunger and diaphragm at a normal operating rate of not less than 60 strokes per minute. Bearings used in the speed-reduction system shall be either ball or roller type.

3.3.4 Base frame and wheel mounting. The base frame and wheel mounting shall consist of a structural steel base or a base integral with a diaphragm-retainer casting, an axle, two wheels, a removable handlebar, and a support to hold the unit in a horizontal position when stationary. The frame shall be welded, per American Welding Society (AWS) structural welding code D1.1 or D1.2 for the applicable materials, into a rigid support for the engine, the pump and the speed-reduction system. The pump unit shall be mounted in a balanced position over the axle and shall be bolted to the base. The wheels shall be mounted on antifriction bearings and furnished with pneumatic tires, size 12.00 x 3 x 2 ply.

3.3.5 Safety. All exposed parts that are subject to high operating temperatures shall be insulated, fully enclosed, or guarded. All moving parts that are hazardous to operating or maintenance personnel shall be fully enclosed or guarded. Protective devices shall not impair the operating functions.

3.3.6 Noise limits. Noise levels of the pump units should not exceed 85 dB(A) at the operator's position while pumps are operating under full load. Should noise level exceed 85 dB(A), the distance from the pump unit at which a limit of 85 dB(A) is met shall be shown on hazard signs mounted on all four sides of each production unit stating: "CAUTION, HEARING PROTECTION REQUIRED WITHIN _____ FEET WHEN PUMP UNIT IS OPERATING".

4. REGULATORY REQUIREMENTS. In accordance with Federal Acquisition Regulation, section 23.403, the Government's policy is to acquire items composed of the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing the supplier's employees to undue hazards from the recovered materials.

5. PRODUCT CONFORMANCE PROVISIONS

5.1 Certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of this Commercial Item Description, and that the product conforms to the producer's own drawings, specifications, standards, and quality assurance practices. The Government reserves the right to require proof of such conformance

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prior to first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

5.2 Quality assurance. Each pump unit shall be examined for the following defects. Presence of one or more defects shall be cause for rejection.

- a. Optional/additional equipment or accessories not as specified in the contract or order.
- b. Materials not resistant to corrosion or deterioration.
- c. Dissimilar metals not protected against galvanic corrosion.
- d. Pump unit design not as specified.
- e. Pump unit performance not as specified.
- f. Engine not as specified.
- g. Speed-reduction system not as specified.
- h. Base frame and wheel mounting not as specified.
- i. Level of preservation, packing, and marking not as specified in the contract or order.

5.3 Metric products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they fall within specified tolerances using conversion tables contained in the latest revision of FED-STD-376, and all other requirements of this Commercial Item Description are met.

If a product is manufactured to metric dimensions and those dimensions exceed the tolerances specified in the inch/pound units, a request should be made to the contracting officer to determine if the product is acceptable.

The contracting officer has the option of accepting or rejecting the product.

6. PACKAGING

6.1 Preservation, packaging, labeling, and marking. The preservation, packing, labeling, and marking shall be as specified in the contract or order.

7. NOTES

7.1 The procuring agency should specify the preferred options permitted herein and include the following information in procurement documents:

1. Title, number, and date of this item description.
2. Size of pump unit required.
3. What optional/additional equipment or accessories are needed to satisfy military requirements.
4. Whether size B pump units shall be provided with suction hoses.
5. When this commercial item description is used for procurement, the certification clause must appear in the solicitation.
6. Level of preservation, packaging, and packing required.

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7. Any special marking.

7.2 The following are suggested sources of supply (competition is not limited to these sources):

CH & E Manufacturing Company, 3849 N. Palmer, Milwaukee, WI 53212-1226, CAGE 10190, Phone: (414)964-3400 or at www.chepumps.com.

Prosser/Enpo Industries, Inc., 420 E. Third Street, Piqua, OH 45356-3918, CAGE 96046, Phone: (937) 615-3553 or at www.cranepumps.com.

Gorman - Rupp Company, 600 S. Airport Road, Mansfield, OH 44903-1689, CAGE 25567, Phone: (419) 755-1376 or at www.gormanrupp.com.

7.3 Copies of FED-STD-376 are available from: Document Automation and Production Service, Bldg 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, or at <http://quicksearch.dla.mil/>.

7.4 Copies of ASTM B 633 are available from: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or at www.astm.org.

7.5 Copies of AWS D1.1 and D1.2 are available from: American Welding Society, 8669 NW 36th Street #130, Miami, FL 33166 or at www.aws.org.

7.6 The preparing activity for this item description is: US Army Tank-Automotive Research, Development, & Engineering Center, 6501 E. Eleven Mile Rd, ATTN RDTA-EN/STND/TRANS, MS 268, Warren, MI 48397-5000.

Custodians:
Army - AT
Navy - YD

Preparing activity:
Army - AT
(Project 4320-2016-001)

Review activities:
Navy - MC

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