

[INCH-POUND]
A-A-50561
May 22, 1996
SUPERSEDING
MIL-P-17608D (YD)
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COMMERCIAL ITEM DESCRIPTION

PUMPS, ROTARY, POWER-DRIVEN, VISCOUS LIQUIDS

The General Services Administration has authorized the use of this Commercial Item Description (CID), for all federal agencies.

1. **SCOPE.** This document covers horizontal and vertical, electric-motor and steam-turbine-driven, positive displacement, rotary pumps with capacities up to 3,000 gallons per minute (gpm) or 189 liters/second (l/s) and 125 pounds per square inch gage (psig) or 861.9 kilopascals gauge (kPag) pressure for handling fuel oils, lubricating oils, and other viscous liquids. Pumps covered by this document are intended primarily for use in stationary power plants, or similar permanent installations handling viscous liquids.

2. **CLASSIFICATION.** Pumps are of the following types and styles, as specified (see 7.2)

- Type I - Electric-motor-driven
- Type II - Steam-turbine-driven

- Style A - Pump shaft in vertical plane
- Style B - Pump shaft in horizontal plane

3. SALIENT CHARACTERISTICS.

3.1 Description. The pump unit shall include a positive displacement rotary pump and driver mounted on a common bedplate. The rotary pump shall consist of a fixed casing containing gears, cams, screws, vanes, or similar elements actuated by rotation of the drive shaft.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may be improve this document should be sent to: Commanding Officer (Code 156), Naval Construction Battalion Center, 1000 23rd Avenue, Port Hueneme, CA 93043-4301.

AMSC N/A

FSC 4320

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3.2 Standard commercial product. The unit shall, as a minimum, be in accordance with the requirements of this CID and shall be the manufacturer's standard commercial product. Additional or better features which are not specifically prohibited by this CID, but which are a part of the manufacturer's standard commercial product, may be included in the unit being furnished. A standard commercial product is a product which has been sold or is being currently offered for sale on the commercial market through advertisements of manufacturer's catalogs, or brochures, and represents the latest production model.

3.3 Pump design and performance. Pumps shall be designed for the specified capacity, total dynamic head, type of fluid and viscosity of the fluid to be handled (see 7.2). The pumps shall be capable of continuously delivering its rated capacity at a pump efficiency of not less than 50 percent. The size of the pump and the operating speed shall be as recommended by the manufacturer for the specified operating conditions and viscosity. When specified (see 7.2), the pump casing or the stuffing box, or both shall be jacketed to permit transfer of heat from hot oil, hot water, or steam to the pumped fluid. Unless otherwise specified (see 7.2), the jacket shall be designed to withstand a saturated steam pressure of 125 psig (861.9 kPag) at 350 degrees Fahrenheit (°F) (177 degrees Celcius (°C)).

3.4 Pump driver. The pump driver shall be either an electric motor or a steam turbine.

3.4.1 Electric motor. Unless otherwise specified (see 7.2), electric motors shall be designed to operate on 208 volt, 3 phase, 60 Hertz alternating current. Electric motors shall conform to NEMA MG 1, and shall be rated for continuous duty with starting torque and speed rating suitable for the application.

3.4.1.1 Motor controller. Unless otherwise specified (see 7.2), a motor controller in accordance with NEMA ICS 2, general purpose, class A, with a type I enclosure shall be furnished. The controller shall be equipped with a manually operated on-off control and thermal overload protection. The controller characteristics shall be based on the intended application and shall be of the type normally provided by the manufacturer for the required service.

3.4.2 Steam turbines. Steam turbines shall conform to NEMA SM 23. Design pressure and temperature at turbine inlet and design pressure at turbine outlet nozzle shall be as specified (see 7.2.)

3.5 Pump and driver coupling. The connection between the pump and driver or reduction gear shall be of a closed-couple model or flexible coupling style.

3.6 Bedplate. Each pump and driver, and reduction gears when furnished, shall be bolted to a common bedplate of heavy cast iron or fabricated steel designed to withstand strains and to maintain pump, gears, and driver in alignment. The bedplate shall have a minimum of four bolt holes and a sufficient number of grouting holes for installation on a concrete foundation. There shall be a continuous drip channel around the four sides and a tapped drain connection. When pump sizes exceed 500 gpm, provisions shall be made for doweling both pump and driver after installation.

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3.7 Suction and Discharge Ports. All suction and discharge connections above 2 inches (50mm) nominal pipe size shall be integral with the casing and shall be flanged, faced and drilled in accordance with ASME B 16.1, class 125 cast iron flanges. Suction and discharge connections 2 inches (50mm) and less nominal pipe size shall be threaded with ASME B 1.2 taper pipe threads. Any reducers required to complete connections shall be in accordance with ASME B 16.5 with sizes as specified (see 7.2).

3.8 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 version of FED-STD-376, and all other requirements of this CID are met. If a product is manufactured to metric dimensions and these dimensions exceed the tolerances specified in the inch-pound units, a request should be made to CID preparing activity for changes to this document.

4. REGULATORY REQUIREMENTS

4.1 Recovered Materials. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

5. QUALITY ASSURANCE PROVISIONS.

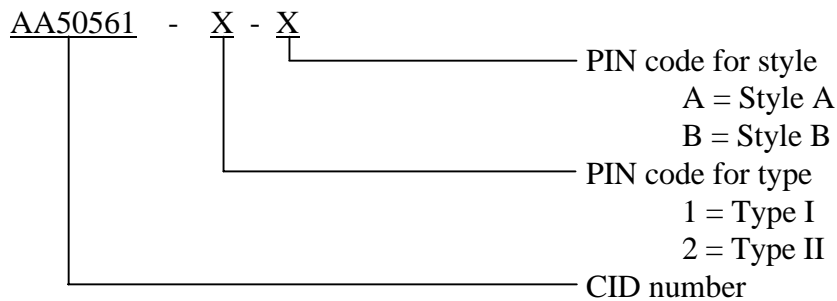
5.1 Contractor certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of the CID, and that the product conforms to the producer's own drawings, specifications, standards, and quality assurance practices, and is the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance prior to first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

6. **PACKAGING**. Preservation, packing, and marking shall be as specified in the contract or order (see 7.2).

7. NOTES.

7.1 Part Identification Number (PIN). The following part identification numbering procedure is for government purposes and does not constitute a requirement for the contractor. The PIN used for units acquired to this description will be assigned as follows:

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7.2 Ordering data. Acquisition documents should specify the following:

- Title, number, and date of the CID.
- Type and size required (see 2).
- Capacity, total dynamic head, type and viscosity of fluid to be pumped (see 3.3).
- When jacketing is required; when jacket is to be designed for other than 125 psig (861 kPag) steam pressure at 350°F (177°C) (see 3.3).
- When electrical characteristics for motors is to be other than as specified (see 3.4.1).
- When a motor controller is not required or when controller characteristics are to be different (see 3.4.1.1).
- Steam temperature and pressure at turbine inlet and outlet (see 3.4.2).
- Size and type of port configuration (see 3.7).
- Level of preservation, packing and marking required (see 6).

7.3 Source of documents.

7.3.1 Copies of specifications and standards required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.

7.3.2 NEMA Standards are available from the National Electrical Manufacturers Association (NEMA), 2101 L Street, N.W. suite 300, Washington D.C. 20037.

7.3.3 The Federal Acquisition Regulation (FAR) may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC, 20402.

7.4 Selection factors.

a. Jacketed pumps provide for heating viscous fluids as they pass through the pump and facilitate resumption of pumping after fluid temperatures have dropped during system shutdowns. In lieu of jacketed pumps, consideration might be given to pump cases traced by steam lines and to electric resistance heating tape.

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b. Fungus resistant varnish should be used to coat electrical components and circuit elements, including terminal and circuit connections, when the unit is to be installed in humid conditions. Components and elements inherently inert to fungi or in hermetically sealed enclosures, or current-carrying contact surfaces, should not be coated.

7.5 National Stock Numbers (NSNs). The following is a list of NSNs assigned which correspond to this CID. The list may not be indicative of all possible NSNs associated with the CID.

none

7.6 Subject term (key word) listing.

Electric-motor-driven
Steam-turbine-driven
Fuel oil handling

MILITARY INTEREST:

Custodians

Navy - YD1

Army - AT

Review Activity

Navy - SH

DLA - CS

CIVIL AGENCY COORDINATING ACTIVITY:

GSA-FSS

Preparing Activity

Navy - YD1

(Project 4320-0008)