INCH-POUND
A-A-52512
August 18 1995
SUPERSEDING
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COMMERCIAL ITEM DESCRIPTION

WINCH, DRUM POWER OPERATED, l-TON PULL, PNEUMATIC

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

1. SCOPE. This CID covers requirements for a single-drum 1 ton pneumatic winch to be used on port construction platforms in marine environments.

2. SALIENT CHARACTERISTICS.

2.1 Materials. The winch shall be constructed from compatible materials, inherently corrosion resistant or treated to provide protection against the various forms of corrosion and deterioration that may be encountered in any of the applicable operation and storage environments to which the winch may be exposed. Dissimilar metals shall not be used in intimate contact with each other unless protected against galvanic corrosion. The use of recovered material made in compliance with regulatory requirements is acceptable providing that all requirements of this CID are met (see 5.4).

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any other data which may improve this document should be sent by letter to: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E, Warren MI 48397-5000.

FSC 3950

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

2.2 Design and construction. The winch shall be designed and constructed as specified herein. The winch shall consist of an air-motor-driven, single drum assembled in a complete, compact unit on a mounting base. The winch shall be equipped with a cable and swivel-hook, with safety latch, and shall have a line pull of 2000 pounds in any direction through an omni directional fairlead at a speed of not less than 120 feet per minute (fpm). The air consumption at the rated load and speed shall be not more than 315 cubic feet per minute (cfm) (60 degrees Fahrenheit [°F] free air) at 80 pounds per square inch (psi) at the inlet. The winch shall be capable of lifting, lowering, and stopping loads within its rated capacity without jerks, jars or vibrations. The winch shall be equipped with a clutch capable of regulating line speed in and out under load, and a dead-man brake. There shall be no asbestos materials used in the manufacture of this winch. The overall dimensions shall not exceed the following:

Length - 40 inches
Width - 24-1/4 inches
Height -20 inches

The total weight of the assembled unit, less cable, shall be not more than 600 pounds.

2.2.1 Bearings. Bearings used on the winch shall be anti-friction type in accordance with the American Bearing Manufacturers Association (ABMA). The bearing mountings, accessories and method of bearing load rating shall be in accordance with ABMA standards. Any bearings that are not sealed or permanently lubricated, shall be lubricated through a fitting or by running in a liquid lubricant.

2.3 Safety. All exposed parts which are subject to high operating temperatures or which are energized electrically shall be insulated, enclosed, or guarded. All moving parts which are of such nature or so located as to be a hazard to operating or maintenance personnel shall be enclosed or guarded. Protective devices shall not impair the operating functions. All metallic members shall be so assembled and bonded as to provide a continuous electrical path for grounding purposes.

2.4 Performance. The winch shall conform to all of the performance requirements specified herein in any ambient temperatures between -25 and +125 °F, without malfunction, damage or permanent deformation under the following conditions:

a. With the winch mounting base anchored to an immovable object.
b. With the winch equipped with all attachments, accessories, and equipment when operated as specified herein.
c. With the winch completely serviced and adjusted as specified herein.

2.5 Motor. The air driven motor shall have high starting torque. The motor shall be reversible and shall be complete with combined throttle and reverse valve, lubricator, and governor. The motor shall be air-enclosed to exclude dust and dirt. The throttle valve shall be operated and controlled at the mounted lever. The throttle shall be labeled "THROTTLE" and "FAST" and "SLOW" at the respective control locations. Normal air pressure for operating the motor shall be 80 psi. The motor shall have a 1-inch pipe connection for inlet air supply.

2.6 C1utch. The clutch shall be designed to slip and hold any cable load up to 2,000 pounds or regulate the speed of the cable drum so that it will reel in or play out cable at any speed between 0 and 36 rpm under the load specified herein. When playing out cable under load with power removed born the winch, the clutch shall fiction as a brake and shall regulate the dragon the cable drum and the cable speed. This braking function shall also enable the operator to hold any load up to 2000 pounds without power to the winch. The clutch shall also incorporate a dead-man brake capable of holding any load up to 2000 pounds with or without power applied to the winch. The dead-man brake shall be so designed that when the clutch control lever is released by the operator, the brake shall be automatically actuated.

2.7 Clutch control. The single clutch-control lever shall be conveniently located on the winch in such a manner as to facilitate ease of operation. The force required to operate the clutch-control lever shall not exceed 20 pounds with any line load up to 2,000 pounds. The clutch control shall be so designed that when the winch operator releases the lever, the dead-man brake will be actuated. The clutch control shall be labeled "CLUTCH" above the lever with 0.25 inch minimum letter height. The clutch lever control positions shall be labeled "ON" and "RELEASE" adjacent to the appropriate control locations with 0.18 inch minimum letter height.

2.8 Brake. The brake shall be of the external contracting (band) type and shall be accessible for inspection and adjustment. The brake shall be operated by a lever located on the winch within reach of the operator. The brake shall stop and hold a 2,000-pound rated load in any position with the drum spooled to capacity with cable. In addition a positive locking pawl and ratchet arrangement shall be provided for holding loads. The brake lever control shall be labeled "brake" with 0.25 inch minimum letter height.

2.9 Winch drum and wire rope. The winch drum flanges, and braking surfaces shall be accurately machined to provide for intended performance and cable protection. The winch drum shall have a capacity of not less than 350 feet of ½-inch wire rope. A 350-foot length of ½ inch, uncoated, regular lay, preformed wire rope rated at 14500 pound minimum breaking strength, shall be furnished wound on the drum. A forged steel swivel-hook with a minimum clear opening of ½ inch shall be furnished fastened to the free end of the wire rope by means of a steel thimble and four wire-rope clamps. The swivel-hook shall be accurately machined at the swivel-hook bearing surface to permit smooth operation.

2.10 Gears. All gears and pinions shall be of one-piece steel construction with cut teeth conforming to AGMA Standards. Gears shall be tightly fitted and keyed or splined to their respective shafts.

2.11 Frame or housing. The frame or housing shall provide the strength and rigidity required in winching operations. The frame or housing shall have a flat mounting base in which not less than four holes are drilled, adequately spaced and sized for bolting the winch to a foundation. The frame or housing shall contain the other components of the in-one compact unit which shall meet the dimensional and weight requirements specified in 2.2.

2.12 Lubrication. The winch shall use lubricants which comply to table #1 of SAE J754A. The manufacturer/supplier must minimize the number of lubricant products required to service this equipment.

2.12.1 Lubrication fittings. Labels shall be provided to identify location of fittings which are not readily apparent. Accessibility to fittings shall be provided without removing or adjusting accessories or parts. Plates equipped with hand-operable, quick disconnect fasteners maybe removed if required for access. All lubrication fittings shall be in accordance with SAE J534.

2.12.2 Pressure-release device. Where the use of 1,000 psi and higher pressure-lubricating equipment will damage grease seals or other parts, a suitable pressure-release device shall be provided.

2.12.3 Enclosures with internal reservoir of lubricant. Enclosures such as gear cases which contain a reservoir of lubricants for the lubrication of the parts enclosed shall be equipped with dipsticks, fingerholes, or sightholes to determine the adequacy of the level of lubricant. Dipstick marking shall be in accordance with SAE J614B. Each enclosure shall be equipped with a drain plug and means for filling the enclosure with lubricant. The drain plug shall be located so that removal of the plug will result in complete drainage of the lubricant from the enclosure. Drainage shall be into a collecting vessel when the equipment is in its normal position. Integral tubes or troughs may be used to convey the lubricant from the drain into collecting vessel. Accessibility to the drain plug, the filling means, and the lubricant level checking device shall be provided without removing or adjusting accessories or parts. Access cover to lubrication checking, filling, or draining provisions shall be provided with hand operable, quick disconnect fasteners and shall be labeled to indicate the items or service accessed.

2.12.4 Initial lubrication service. Initial lubrication service shall be provided on the winch before delivery to the Government. After lubrication service, each item of equipment shall be tagged in a conspicuous place to indicate the temperature range and grades of oils and grease used.

2.13 Human engineering. The winch shall be operable and maintainable by 5th percentile female through 95th percentile male personnel, in accordance with SAE J833, while wearing bulky clothing and gloves. Minimum service access dimensions shall be in accordance with SAE J925.

2.14 Noise limits. The noise levels produced by the winch shall not exceed 85 dB(A) when measured with an ANSI S1.4, Type I meter with the microphone located 6 inches from the operators right ear and when measured with the equipment operating at maximum load. If and only if the 85 dB(A) limit is documented as being clearly beyond the state-of-the-art, selection of another noise limit shall be made by the contracting officer on the basis of system and cost requirements.

2.15 Resistance to saline atmosphere. When resistance to saline atmosphere is specified (see 5.2), all components shall be designed and installed to withstand the corrosive effective of a 48 hour duration salt fog exposure followed by 48 hours drying. The saline solution used for the test shall be 5 parts by weight of salt and 95 parts by weight of water, sprayed sufficiently to produce a finely divided, wet, dense fog. The solution temperature shall be maintained at 35 ± 6°C. Following the test, the winch shall not exhibit any loss of performance not sustain any harmfull corrosion.

2.16 Welders. Before assigning any welder or welding operator to manual welding covered by this CID, the contractor shall obtain certification that the welder or welding operator has passed qualification tests prescribed by the American Welding Society (AWS) regarding any of the materials to be welded in the manufacture of this winch.

2.17 Bolted connections. Boltholes shall be accurately punched or drilled and shall have burrs removed. Washers or lockwashers shall be provided. Self-locking nuts are acceptable in lieu of standard nuts and lockwashers. All capscrews, bolts, and nuts shall be tight and correctly torqued. Critical load carrying bolted connections shall, in addition, be as specified herein. Boltholes shall be reamed as required. All critical junctures and joints shall be fastened with high strength bolts with washers and nuts, hex or 12-point type. Bolts shall be not less than SAE J429, grade 5, and shall be of higher grade as necessary. Integral or separate washers shall be of the flat hardened steel type, sized to spread the clamping loads such that brinnelling or embedding in the component members shall be prevented. Mating nuts shall be of the self-locking type in accordance with IFI Standards 100 and 101. Fasteners shall be lubricated prior to wrenching, and installation tools shall be proofed at set intervals to insure constant and correct torque performance.

2.18 Riveted connections Riveted connections shall be in accordance with SAE J492. Rivet holes shall be accurately punched or drilled and shall have the burrs removed Rivets shall completely fill the holes Rivet heads shall be full, neatly made, concentric with the rivet holes, and in full contact with the surface of the member.

2.19 Instruction plates. Each winch shall be equipped with instruction plates or diagrams, including warnings and cautions, describing any special or important procedures to be followed in assembling, operating, or servicing the winch. Letters shall be capitols and numbers shall be Arabic or alternate Gothic no. 2 or equivalent type face, unless otherwise specified (see 5.2). Ownership designation and the words “SHIPPING DATA FOR”, “CAUTION” and “WARNING” shall be not less than 24-point type and all other letters shall be not less than 6 points unless otherwise specified (see 5.2). Layout of plates shall be as specified in the contract or order (see 5.2). Plates shall be attached by screws, bolts, or rivets in a location that is readable from the typical operating position.

2.20 Identification and markings. Identification and markings shall be permanent and legible and shall include as a minimum, the manufacturer’s identification code (CAGE), the part or identification number (PIN) A52512-1, the national stock number (NSN), and the winch capacity.

2.21 Finish treatment. The portions of the winch normally painted shall be cleaned, treated and painted to provide protection against rust corrosion and deterioration. If Chemical Agent Resistant Coating (CARC) is required, it shall be specified in the contractor order (see 5.2). The color of the paint final coat shall be as specified in the contractor order (see 5.2).

2.22 Interchangeability. All parts having the same part number shall be functionally and dimensionally interchangeable. Interchangeable parts are defined as two or more parts possessing such fictional and physical characteristics to be equivalent in performance and durability and capable of being exchanged one for the other without alteration of the parts themselves or of adjoining parts except for adjustments and without selection for fit or performance.

3. QUALITY ASSURANCE PROVISIONS.

3.1 Responsibility for inspection. The contractor is responsible for the performance of all inspections (examinations and tests).

3.2 Contractor certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of this CID and that the product conforms to the producer's own drawings, specifications, workmanship standards, and quality assurance practices. Items with known defects shall not be submitted for Government acceptance. The Government reserves the right to require proof of such conformance prior to the first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

4. PRESERVATION. PACKAGING. PACKING. LABELING. AND MARKING.

Preservation, packaging, packing, labeling, and marking for the desired level shall be as specified in the contractor order (see 5.2).

5. NOTES.

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

5.1. Addresses for obtaining copies of referenced documents.

5.1.1 Non-Government publications. Copies of AGMA Standards are available from the American Gear Manufacturers Association, 1500 King Street Suite 201, Alexandria VA 22314. Copies of ABMA Standards Sections are available from the American Bearing Manufacturers Association, 1200 19th Street, N.W., Suite 300, Washington DC 20036-2401. Copies of ANSI S1.4 "Specifications for Sound Level Meters" are available from the American National Standards Institute, 11 W. 42nd Street, New York NY 10036. Copies of IFI Standards 100 and 101 are available from the Industrial Fasteners Institute, 1719 E. 9th Street, Suite 1105, Cleveland, OH 44114. Copies of SAE J429 "Mechanical and Material Requirements for Mechanical Fasteners, Standard"; SAE J534 "Lubrication Fittings"; SAE J614B "Engine and Transmission Dipstick Marking"; SAE J754A "Lubrication Types - Construction and Industrial Equipment"; SAE J833 "USA Human Physical Dimensions"; and SAE J925 'Minimum Service Access Dimensions for Off-Road Machines" are available from the American Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096-0001. Information concerning welding qualification tests is available from the American Welding Society, Inc., 550 N.W. LeJeune Road, Miami, FL 33126.

5.2 Ordering data. Acquisition documents must specify the following:

a. Title, number, and date of this CID.
b. Issue of Department of Defense Index of Specifications and Standards (DODISS) to be cited in the solicitation and the specific issue of individual documents referenced.
c. When resistance to saline atmosphere is required.
d. Type of font and size of type for instruction plates if other than as specified.
e. Layout of instruction plates.

f. PIN and quantity of winches required.
g. If CARC finish is required.
h. Color of paint final coat.
i. Selection of applicable level and packaging requirements.

5.3 Cross reference data. The winch conforming to this CID is interchangeable/substitutable with the winch conforming to MIL-W-3783C.

5.4 Regulatory requirements. The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580 to the maximum extent practicable.

MILITARY INTERESTS:

Custodians:
Army - AT
Air Force - 99

Review activities:
Navy - SA
DLA - CS

CIVIL AGENCY COORDINATING ACTIVITY:
GSA - FSS

PREPARING ACTIVITY:
Army - AT

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