

**INCH-POUND**

A-A-52535

November 7, 1995

SUPERSEDING

MIL-D-52121B

14 November 1974

**COMMERCIAL ITEM DESCRIPTION**

**DRILL, PNEUMATIC, SINKER, ROCK**

The General Services Administration has authorized the use of this commercial item description (CID) for all federal agencies.

1. SCOPE. This commercial item description (CID) applies to a single type of portable pneumatic drill in the 55 pound weight class. The drill is intended for drilling rock, brick and concrete in general construction and maintenance work.

2. SALIENT CHARACTERISTICS.

2.1 Description. The pneumatic rock drill shall use a hollow-centered drill rod having collared hexagon shanks. The drill shall be a dry-blower, self-rotating type, intended for use with hollow-centered drill rod having 1-inch across-the-flats hexagon shanks with 1.5 inch diameter collars. The drill shall operate on air pressures ranging from 70 to 100 pounds per square inch gage (psig). The drill shall be cushioned against vibration and shall consist of a backhead, cylinder, and fronthed.

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/BLUE, Warren, MI 48397-5000.

FSC 3820

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A-A-52535

2.2 Materials. The materials shall be high quality, heat treated as required, and properly selected for durability and long life under the severe operating conditions intended. Asbestos, cadmium, and radioactive material shall not be used in any form or part of this item. Radioactive material is defined by Title 10, Code of Federal Regulations, Part 40, and other radioactive material in which the radioactivity is greater than 0.002 microcuries per gram or 0.01 microcuries total activity for the item. The use of recovered material made in compliance with regulatory requirements is acceptable providing that all requirements of this CID are met (see 3.1).

2.3 Design and construction. The drill design and construction shall be representative of a standard commercial rock drill with a proven history of durability and performance, which also meets the requirements of this CID.

2.3.1 Weight. The drill shall weigh not less than 55 pounds or more than 65 pounds.

2.4 Performance. The drill shall be capable of achieving a minimum drilling rate of 14 inches a minute in Barre granite when using a 1.75-inch diameter, 4-point centerfold, tungsten-carbide-insert detachable drill bit. The compressed air supply used with the drill shall be capable of delivering air through a .75-inch rubber air hose at a minimum pressure of 125 pounds per square inch gage (psig) at a rate of 210 cubic feet per minute (cfm), and a pressure regulating valve shall be set to maintain 90 psi at the tool. Performance shall be unimpaired at any ambient temperature from 0 degrees Fahrenheit ("F") to 125°F.

2.4.1 Deep hole drilling performance. The drill shall be capable of drilling the full length of a 20 foot long drill rod into homogeneous rock (with an average specific gravity of not less than 2.6) using a bit of not less than 1.63 inch diameter.

2.5 Maintainability and reliability.

2.5.1 Maintenance support. Technical manuals, illustrating repair parts and recommended operation and scheduled maintenance, shall be furnished with each drill. All repair parts having the same part number shall be functionally and dimensionally interchangeable.

2.5.2 Reliability. The standard of quality of the drill construction shall be such that not more than five man-hours of maintenance are projected for each 100 hours of operation. The mean time between expected component failures shall be projected as not less than 50 hours. Documentation shall be provided substantiating the manufacturers projections for typical maintenance activity.

2.6 Construction characteristics. The following characteristics are required in the rock drill to promote safety, reliability, and service life.

A-A-52535

2.6.1 Safety. Means shall be provided to insure that the drill rod is retained in the drill under all operating conditions.

2.6.1.1 Noise limits. The drill shall be muffled to limit the perceived noise to 95 decibels (dB) at the operators ear when drilling at the performance levels of 2.4. If the noise level at the operator's ear is above 85 dB (A), a warning decal will be placed on the drill stating that hearing protection is required during operation.

2.6.2 Handles. Rubber-covered handles shall be incorporated to provide the operator with insulation against cold, heat, vibration and shock.

2.6.3 Drop-forged components. Highly stressed components such as the handles, backhead, cylinder and fronthead shall utilize drop forged, alloy steel construction to ensure long operating life and impact resistance.

2.6.4 Swivel hose connection. The air hose inlet connection shall utilize a swivel to avoid hose kinking.

2.6.5 Air-cushioned stroke. The drill design shall provide for automatic air cushioning at the top and bottom of the piston stroke.

2.6.5.1 Throttle valve. The throttle valve shall be conveniently located so as to be operable during drilling without the operator losing control of the drill. The throttle shall have not less than three positive, self-locking positions: off, hole collaring, and full throttle.

2.6.6 Blower valve. Blowing shall be accomplished by an automatic continuous blowing arrangement which functions while the drill is operating, supplemented by a manually positioned blower valve. The automatic continuous blowing arrangement shall function to keep the drill cuttings away from beneath the face of the bit. The blower valve shall function to direct air through the drill to the chuck and hollow drill rod.

2.6.7 Exhaust ports. The exhaust air shall vent away from the operator, through an orifice sufficiently large to prevent condensation and freezing.

2.6.8 Cushioned retainer. A spring-cushioned retainer shall be provided to absorb shock from the drill rod.

2.6.9 Replacable chuck bushing. The chuck bushing shall be easily replaceable and act as a "weak link" to protect the piston.

A-A-52535

2.6.10 Lubrication. The manufacturer's standard line oiler shall be furnished with each drill set to ensure complete lubrication during prolonged drilling operations.

2.6.11 Rotation. The drill rotation mechanism shall provide for positive drill stock rotation. Positive access to the rotation pawl springs and mechanism shall be provided.

2.6.12 Steel puller. Means shall be provided to easily disengage and remove the drill rod by hand.

2.6.13 Carrying case. The manufacturers standard carrying case or chest shall be provided. The case shall be capable of holding the drill, leader hose, maintenance tools, drills and repair parts. The wall strength and impact resistance of the case shall be comparable to that of 0.071 inch steel instruction. Means shall be provided to keep the lid in the fully open position when the drill is being removed.

2.6.14 Identification and marking. Identification and marking shall be permanent and legible and shall include as a minimum the manufacturer's identification code (CAGE), the manufacturer's part number, the part or identification number (PIN) AA52535-1, and the national stock number (NSN) (see 6.2).

2.6.15 Treatment and painting. The portion of the drill and the component normally painted shall be cleaned and painted for a one coat finish. The color shall be dark green (see 6.2).

### 3. REGULATORY REQUIREMENTS

3.1 Recovered material. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable in accordance with paragraph 23.402 of the Federal Acquisition Regulations (FAR).

### 4. QUALITY ASSURANCE PROVISIONS

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

4.2 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 maybe otherwise provided for under the provisions of the contract.

A-A-52535

## 5. PACKING

5.1 Preservation packing, and marking. Preservation, packaging, packing, labeling, and marking for the desired level shall be as specified in the contract (see 6.2).

## 6. NOTES

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

6.1 Address for obtaining copies of reference documents. Copies of federal regulation part 40 are available from the U.S. Government Printing Office, Washington, DC 20402.

6.2 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.
- c. PIN number and quantity required.
- d. Applicable level of preservation, packaging and marking.
- e. Type of painting and color required.

6.3 Cross reference data. Pneumatic rock drills conforming to this CID are interchangeable/ substitutable with drills of the same part number conforming to MIL-D-52121B.

### MILITARY INTERESTS:

#### Custodians:

Army - AT  
Navy - YD-1

#### Review activities:

Army - CE  
Navy - MC  
DSA - CS

### CIVIL AGENCY COORDINATING ACTIVITY: GSA-FSS

#### PREPARING ACTIVITY:

Army - AT

(Project 3820-0001)