

**INCH-POUND**  
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SUPERSEDING  
OO-G-686C  
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## COMMERCIAL ITEM DESCRIPTION

### GRINDING MACHINES, VALVE FACE

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

1. **SCOPE.** This (CID) covers grinding machines used for reconditioning intake and exhaust valves of internal combustion engines by wet grinding.

2. **CLASSIFICATION.**

2.1 **Styles.** The grinding machines shall be of the following styles:

Style A - For bench mounting.

Style B - For cabinet mounting. Cabinet available as an optional accessory.

3. **SALIENT CHARACTERISTICS.**

3.1 **Design.** The grinding machine shall be designed specifically for regrinding the faces of intake and exhaust valves of internal combustion engines. Additionally, accessories for the related operations of valve butt and push rod grinding (flat face only), rocker arm grinding and the grinding of tappets (flat face only), and adjustable screw faces must be available for each grinding machine.

3.2 **Capacities and accuracies.** The grinding machine must be capable of grinding valves to the following specifications;

Stem and head diameter (inches)	Angular capacity (degrees)	Accuracy (degrees)
Stem - 9/32 to 11/16, Head - 1 to 4	15° to 45°	To within one degree less than the indicated angle and within one-half degree per setting

3.3 **Chuck(s).** The chuck(s) or collets shall be of the self-centering, quick-opening, quick-closing type and shall provide the accuracy and capacity as specified above. The gripping or releasing action shall be controlled by a handwheel, lever, or air.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any other data that may improve this document should be sent to: Defense Supply Center Columbus (Attn: DSCC-VAI), 3990 East Broad Street, Columbus, Ohio 43213-5000.

3.4 Coolant system. Each grinding machine shall be provided with a coolant system, which shall be an integral part of the machine. The coolant system shall consist of a storage tank that permits the settling out of grinding residue, a pump, piping, nozzles, valves, and channels necessary to deliver and adjust the flow of coolant to the points of contact between the work and the grinding wheel(s) and return the coolant to the storage tank. The storage tank must be removable for cleaning.

3.5 Grinding wheel(s). The grinding machine shall be provided with, or be available for purchase with, two types of grinding wheels: one for the grinding of the stellite valve faces and one for the chamfering and squaring of the valve stem ends. Wheel hoods or guards shall be provided.

3.6 Grinding wheel dresser. The grinding machine shall be equipped with a grinding wheel dressing fixture and a diamond dressing stone designed to perform all necessary truing and dressing operations.

3.7 Rocker-arm grinding attachment. The rocker-arm grinding attachment shall be provided or be available for purchase as an optional item or accessory with each grinding machine. This attachment shall be designed to facilitate refinishing the radii of the rocker arms of engines having valves within the capacity of the grinding machine.

3.8 Valve stem grinding attachment. A valve stem grinding attachment shall be provided or be available for purchase as an optional item or accessory with each grinding machine. This attachment shall enable the grinding of valve butts, flat-faced push rods, flat-faced tappets, and adjustable screw faces.

3.9 Light fixture(s). The grinding machine shall be equipped with a shaded work light(s). The work light(s) position shall be adjustable to the extent necessary to provide illumination for all grinding operations.

3.10 Motors. All motors shall be continuous duty type. The grinding wheel drive motor shall have ball bearings. Splash guards or other means shall be provided to preclude entry of coolant into the motor.

3.10.1 Available voltages. Grinding machines shall be capable of operating on at least one of the following voltages:

- 115 - 120 volt, 60 Hz, single phase
- 220 - 240 volt, 60 Hz, single phase
- 220 - 240 volt, 60 Hz, three phase.
- 220 - 240 volt, 50 Hz, single phase.

3.11 Mounting. Grinding machines shall be capable of being mounted and used on either a work bench or an optional mounting cabinet (see 2.1).

3.12 Operating manual(s). Each machine shall include a manual(s) that depicts the operation of the grinding machine. It shall be in sufficient detail for typical maintenance technicians to safely and efficiently operate the equipment.

3.13 Maintainability. Design and assembly of the grinding machine and the placement of adjusting features shall ensure that the operational maintenance capability will be reduced to the simplest form of procedures requiring a minimum of skills and common tools. Instructions for the disassembly, repair, assembly, and adjustment shall be clear, concise and definitive in a manual(s) supplied with each grinding machine. Parts shall be clearly identified in an illustration that depicts part number, description, and quantity per assembly and reflects the relationship of an individual part to the complete assembly.

3.14 Safety devices. Each grinding machine shall be equipped with the necessary safety devices found on like commercial items.

3.15 Material. Materials shall be of a quality commensurate with commercial practice within the producing industry and shall be suitable for the intended purpose and use. Materials shall be free from defects that would adversely affect the performance or maintainability of the grinding machine. When dissimilar metals are used in contact with each other, suitable protection against galvanic corrosion shall be applied in accordance with existing commercial practices.

3.16 Workmanship. The grinding machines shall be fabricated and finished using commercially acceptable workmanship standards.

4. REGULATORY REQUIREMENTS. 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. PRODUCT CONFORMANCE.

5.1 Product Conformance. The valve grinding machines provided shall meet the salient characteristics of this CID; conform to the producer's own drawings, specifications, standards and quality assurance practices; and be the same product offered for sale in the commercial market. The government reserves the right to require proof of such conformance.

5.2 Market Acceptability. The grinding machines offered must have been sold to the government or commercial market for a minimum of one year.

6. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or order.

7. NOTES.

7.1 Intended use. The grinding machines covered by the CID are intended for use in reconditioning intake and exhaust valves and other valve train components; e.g. rocker arms, push rods, tappets and adjustable screw faces of internal combustion engines.

7.2 Source of Documents.

7.2.1 The Federal Acquisition Regulation (FAR) may be obtained from the Superintendent of Documents, US Government Print Office, Washington, D.C. 20402.

7.3 Part or Identification Number (PIN). The following part or identification numbering procedure is for government purposes and does not constitute a requirement for the contractor.

AA59552 - A 1 A 1

A = Bench Mount  
B = Cabinet Mount

1 = 110 Volts AC  
2 = 220 Volts AC

A = 60 Hz  
B = 50 Hz

1 = Single Phase  
2 = Three Phase

7.4 Ordering data. Acquisition documents must specify the following:

- a. Number, title and date of this CID.
- b. Style required (A or B) (see 2.1 and 7.3).
- c. Operating voltage required (see 3.10.1 and 7.3).
- d. Available accessories and options required.
- e. Quantity ordered.
- f. Preservation, packing, and marking requirements (see 6.1).

7.4 Key words.

Valve  
Reface  
Grinding  
Intake  
Exhaust  
Rocker arm

MILITARY INTERESTS:

Custodians:

Army – AR  
Air Force – 99  
DLA – CC

Review activities:

Army – AT  
Air Force - 82

CIVIL AGENCY COORDINATING ACTIVITY:

GSA – FSS

Preparing activity:

DLA – CC

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