

[INCH-POUND]
A-A-3153
April 15, 1998

COMMERCIAL ITEM DESCRIPTION

BIT, SCREWDRIVER, MALE SHANK, HEXAGONAL TIP

The General Services Administration has authorized the use of this commercial item description as a replacement for Type II, Class 5 screwdriver bits of Federal Specification GGG-B-001222 for all federal agencies.

1. SCOPE

This Commercial Item Description covers hand driven male hexagonal point screwdriver insert bits.

2. CLASSIFICATION

2.1 Type 1 - Hexagonal tip insert bit with male hexagonal shank.

3. SALIENT CHARACTERISTICS

Unless otherwise specified, all bits shall meet the requirements of ASME/ANSI B18.3 Socket Cap, Shoulder, and Set Screws (Inch Series) and ANSI B18.3.2M Metric Series Hexagon Keys and Bits as applicable.

3.1 Illustration. Type 1 screwdriver bits shall be similar to Figure I in construction. The illustration shown is for identification and not intended to preclude the purchase of screwdriver bits which are otherwise in accordance with the requirements of this specification.

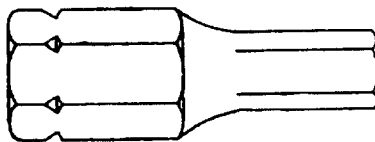


Figure I. Screwdriver bit, hexagonal shank, hexagonal tip.

3.2 Material.

3.2.1 Inch Series. The material shall be in accordance with ASME/ANSI B18.3, Table 8, Note 3.

3.2.2 Metric Series. The material shall be in accordance with ANSI B18.3.2M, paragraph 3.1 Material and Heat Treatment.

Comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: General Services Administration, Federal Supply Service, Tools and Appliances Center (6FET), Building 6, 1500 E. Bannister Road, Kansas City, MO 64131.

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3.3 Construction.

3.3.1 Screwdriver Bits, Male Hexagonal. The screwdriver bits shall be hardened and tempered to comply with the specified physical and mechanical requirements. The cross-sectional shape of the blade shall be hexagonal. The bits shall be free from visible defects such as scale, seams, laps, and cracks.

3.3.1.1 Male Hexagonal Tip. The bit tip shall be of the type known commercially as a hex bit and be manufactured to install and remove hexagon head cap screws in accordance with ASME/ANSI B18.3.

3.3.1.2 Male Hexagonal Shank. The shank shall be hexagonal in shape with a retaining groove. Shape of the retaining groove is optional.

3.3.1.3 Shank With O-Ring. When specified, an O-ring retainer placed in a grove of like size, and a protruding positive stop, to accommodate a ratcheting box wrench will be provided.

3.3.1.4 Shank With Knurled or Serrated Spinner. When specified, bits shall be provided with a knurled or serrated spinner on the opposite end for use in a ratcheting box wrench. Bits shall be firmly and securely retained by a mechanical means incorporated in the hexagonal bit body. The overall length of bit and spinner shall not exceed 1-5/8 inches.

3.4 Dimensions.

3.4.1 Male Hexagonal Tip. The hexagon width across flats, hexagon width across corners, and chamfer dimension of the male hexagonal tip of the bit shall be in accordance with ASME/ANSI B18.3 Table 8 dimensions of Hexagonal Keys and Bits (Inch) or ANSI B18.3.2M Table 1 Dimensions of Metric Hexagonal Keys and Bits.

3.4.2 Bit length. The overall bit length shall conform to the dimensions in Table 1, or the overall bit length shall be as specified by the purchaser.

SHANK SIZE (INCHES)	NOMINAL BIT LENGTH (INCHES)
1/4	1-1/8 \pm 3/16
5/16	1-1/4 \pm 3/16
7/16	1-3/8 \pm 1/4

Table 1. Nominal Bit Length.

3.5 Coating Requirements. The bits shall be coated with black oxide, black phosphate, or plain lightly oiled or coated with a rust preventative unless otherwise specified by the purchaser.

3.6 Bit Hardness. The bits shall be through hardened 50 to 64 HRC scale taken 1/4 inch from the tip end unless otherwise specified by the purchaser. When tested in accordance with ASTM E-18, the hardness will be measured as close to the tip as possible and shall be as specified.

3.7 Bit Torsional Requirements.

3.7.1 Type 1 Screwdriver Bit Torsional Requirements.

3.7.1.1 Inch Series. Type 1 inch series bits shall be in accordance with Table 2 Torsional Loads, Inch Series. When the shank size is smaller than the tip size, the bit shall meet the torsional requirements of the shank dimension. When torsional testing is done, torsional testing shall be in accordance with ANSI B18.3.2M paragraphs 3.3.2 Torsional Strength, 3.3.2.1 Torsional Strength Test, and 3.3.2.2 Torsional Shear Test.

NOMINAL KEY SIZE (INCHES)	TORSIONAL LOAD (INCH-POUNDS)
0.028	0.94
0.035	1.80
0.050	5.25
1/16	10.25
5/64	20.0
3/32	35.0
7/64	55.0
1/8	82.0
9/64	118.0
5/32	160.0
3/16	278.0
7/32	440.0
1/4	665.0
5/16	1275.0
3/8	2200.0
7/16	3500.0
1/2	5200.0
9/16	6500.0
5/8	9000.0
3/4	15500.0
7/8	24600.0
1	28800.0

Table 2. Torsional Loads, Inch

3.7.1.2 Metric Series. Type 1 metric series bits shall be in accordance with ANSI B18.3.2 Table 2 Torsional Moments for Torsional Strength Test requirements. When the shank size is smaller than the tip size, the bit shall meet the torsional requirements of the shank dimension. When torsional testing is done, torsional testing shall be in accordance with ANSI B18.3.2M paragraphs 3.3.2 Torsional Strength, 3.3.2.1 Torsional Strength Test, and 3.3.2.2 Torsional Shear Test.

3.8 Tip Toughness Test. When a tip toughness test is performed, the torsional load will be increased until inch series bits with 1/4 inch tip and smaller fail or metric series bits 8 MM or smaller fail. The failure shall occur as a clean and relatively square, shear fracture. Any splintering or brittle type failures shall be cause for rejection.

3.9 Sets. The components of sets shall conform to the specified requirements for the individual items.

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3.10 Identification marking. The hexagonal screwdriver bits shall be marked with the manufacturer's name or identifying symbol, and the state or country of manufacture, unless otherwise specified. All identification markings shall be engraved, etched, molded, or indented directly on the item's surface in such a manner that it remains clearly legible throughout the life of the item.

3.11 Workmanship. Details of workmanship shall be in accordance with the best commercial practice. Coatings and finishes shall be smooth, adherent, continuous, and not stained or discolored. External surfaces shall be free from tool and gouge marks, nicks, or other surface imperfections. The item shall be free from manufacturing workmanship defects (e.g., sharp or rough external edges, corners, or surfaces) and material workmanship defects (e.g., pits, rips, fins, burrs, tears, nodules, cracks, blisters) which may adversely impact the item's serviceability, durability, safety or appearance.

4. REGULATORY REQUIREMENTS

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

5. QUALITY ASSURANCE PROVISIONS

5.1 Product Conformance. The products provided shall meet the salient characteristics of this commercial item description, conform to the producer's own drawing, 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 Inspection responsibility. Unless otherwise specified, the contractor is responsible for the performance of all inspection requirements and may use any commercial facilities (including the contractor's own facilities) suitable for performance of the inspection requirements, unless disapproved by the Government. The Government reserves the right to perform any inspections deemed necessary to assure the item conforms to the specified requirements.

6. PACKAGING

6.1 Packaging. Requirements for preservation, packing, packaging, and marking of containers shall be as specified in the contract or order.

7. NOTES

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

7.1 Address for obtaining copies of referenced documents.

Federal Acquisition Regulation (FAR): Government Printing Office. Superintendent of Documents, Washington, DC 20402-9371.

ASTM: American Society for Testing Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASME/ANSI B18.3 - 1986: American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, NY 10017.

ANSI B18.3.2 - 1979: American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, NY 10017.

Federal Specifications: Federal Supply Service Bureau, Specification Section, Suite 8100, 470 L'Enfant Plaza, SW, Washington, DC 20407.

7.2 Ordering data. Purchasers should select the preferred options permitted herein and shall include the following information in procurement documents.

- (a) Title, number, and date of this Commercial Item Description.
- (b) The appropriate NSN, or
- (c) The type, shank size, and point size of each screwdriver bit.
- (d) Nominal bit length (optional).
- (e) Retention groove shape (optional).
- (f) Bit hardness on the HRc scale (optional).
- (g) Retainer "O" ring shank design (optional).
- (h) Bit with Knurled or serrated spinner on shank end (optional).
- (i) If bid samples are required and the number of samples required.
- (j) If first article samples are required the number of samples required.
- (k) If lot inspection and the applicable lot sampling requirements.
- (l) Specify level of preservation, packaging, and packing.

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7.3 National Stock Numbers (NSN's). The following list of NSN's corresponds to the types, classes, and sizes specified in this CID. This list may not be indicative of all possible NSN's associated with this CID. Refer to Item Purchase Description for specific optional requirements.

NOMINAL SHANK ACROSS FLATS (INCHES)	NOMINAL BIT ACROSS FLATS (INCHES)	TYPE 1 STANDARD SHANK NSN
1/4	.050	
1/4	1/16	5120-00-289-9454 5120-00-957-3642
1/4	5/64	5120-00-289-9453 5120-01-065-6781
1/4	3/32	5120-00-640-6725
1/4	7/64	5120-00-921-0574
1/4	1/8	5120-00-640-6733
1/4	9/64	5120-00-177-6832 5120-00-132-1397
1/4	5/32	5120-00-640-6732
1/4	3/16	5120-00-640-6731
1/4	7/32	5120-00-640-6730
1/4	1/4	5120-00-640-6729
1/4	5/16	5120-00-247-1281
1/4	3/8	
5/16	9/64	
5/16	5/32	
5/16	3/16	
5/16	7/32	
5/16	1/4	
5/16	5/16	5120-00-640-6728
5/16	3/8	5120-00-204-0985
7/16	3/16	5120-00-678-5046
7/16	7/32	5120-00-678-5047
7/16	1/4	5120-00-678-5048
7/16	5/16	5120-00-678-5049
7/16	3/8	5120-00-678-5050
7/16	7/16	5120-00-678-5051
7/16	1/2	5120-00-678-5052
7/16	9/16	5120-00-678-5053
7/16	5/8	5120-00-678-5054

Table 3 - Hexagonal Bits, Fractional Sizes.

MILITARY INTERESTS:

Preparing Activity

NOTE: DOD has no registered interest in revisions or notices to this Commercial Item Description until further notice.

GSA-FSS