

FED. SUPPLY CLASS

5120

1. SCOPE

- 1.1 This specification determines requirements for hand and power drivers for installing and removing screws and bolts having a cruciform recess per NAS7100. Any lot which does not conform to the requirements specified herein may be rejected by the procuring agency.
- 1.2 Recommendations for improvements or corrections of this specification should be directed to a NASC representative of a using aerospace company.
- 1.3 Specifications are listed herein, of the issue in effect on date of price inquiry, are a part of this specification to the extent specified herein. In case of conflict, this specification shall take precedence.
- 1.4 Drivers covered by this specification shall conform to NAS8500 thru NAS8506.

2. APPLICABLE DOCUMENTS

- 2.1 Federal Specifications
~~QQ-T-570~~ Tool Steel, Alloy

- 2.2 Military Standards and Specifications
PPP-P-40 Hand Tools, Packaging and Packing of

Copies can be obtained from the Department of Defense Single Stock Point (DODSSP). <http://dodssp.daps.dla.mil>

- 2.3 Industry Standards and Specifications

ASTM International
ASTM A681 Standard Specification for Tool Steels Alloy

Copies can be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. www.astm.org

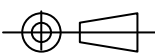
Aerospace Industries Association
NAS7100 Recess, Cruciform, Dimensions of Recess and Gages
NAS8500-NAS8506 Bit, Screwdriver, Cruciform Recess

Copies can be obtained from the Aerospace Industries Association, 1000 Wilson Blvd., Suite 1700, Arlington, VA 22209. www.aia-aerospace.org

American Society for Quality
ANSI/ASQ Z1.4 Sampling Procedures and Tables for Inspection by Attributes

Copies can be obtained from the American Society for Quality, 600 North Plankinton Ave., Milwaukee, WI 53203. www.asq.org

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THIRD ANGLE PROJECTION 	CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE	REVISION 3
PROCUREMENT SPECIFICATION NONE	TITLE BIT, SCREWDRIVER, CRUCIFORM, SPECIFICATION FOR ③	CLASSIFICATION SPECIFICATION NAS7101 SHEET 1 OF 7

3. REQUIREMENTS

- 3.1 Material. Materials used in manufacturing the drivers shall be rolled, drawn, or forged steel with chemical compositions, strength, and impact resistance equal to or exceeding ASTM A681.
- 3.2 Hardness. The drivers shall be hardened throughout to 56-60 HRC for Sizes #0 thru #3 and 52-58 HRC for Sizes #4 thru #6. Hardness tests shall be performed in accordance with 4.5.4.
- 3.3 Finish. Finish shall be in accordance with good commercial practice with no presence of burrs or cracks. Surfaces shall be sufficiently smooth to adequately determine all dimensions as specified herein and in NAS8500 thru 8506.
- 3.4 Coating. A rust preventative coating adequate for interim storage shall be applied.
- 3.5 Identification of Product. Drivers shall be identified in accordance with NAS8500 thru 8506.
- 3.6 Dimensions. Drivers shall conform to the dimensions of NAS8500 thru 8506. Driver tip dimensions shall be inspected in accordance with Paragraph 4.5.1.
- 3.7 Performance. The drivers, when tested as specified in 4.5.2, shall conform to 50 percent of the torque load requirements of Table III for the specified driver size.
- 3.7.1 Toughness. The drivers shall be subjected to a toughness test to determine whether or not the material is able to absorb energy up to its rupture point. The test shall be conducted as specified in 4.5.3.

4. QUALITY ASSURANCE PROVISIONS

- 4.1 Responsibility for Inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the procuring agency. The procuring agency reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to assure that the supplies and services conform to the prescribed requirements.
- 4.2 Classification of Tests. The inspection and testing of the drivers shall be classified as acceptance tests.
- 4.3 Test Conditions. The test conditions are described under the individual tests to which they apply.
- 4.4 Sampling Procedures. Sampling procedures shall be in accordance with ANSI/ASQ Z1.4. Data for sampling shall be stated in Table IV.
- 4.5 Test Methods
- 4.5.1 Visual and Dimensional Examination. Each driver selected in accordance with Table IV shall be visually examined for conformance with the applicable and referenced specifications. Dimensional examination shall be in accordance with NAS8500 thru 8506. Driver tip dimensions, as specified in Table I, shall be inspected with gage specified in Table II. In case of controversy, individual tip dimensions, per Table I, may be measured. Examination shall be in accordance with the classification of defects in Table V.
- 4.5.2 Proof Load Torque Test
- 4.5.2.1 Test Fixtures. The drivers shall be tested in a fixture having in its center the correct size and form of the cruciform recess per Table III. The fixture shall be heat treated to a hardness of 60 HRC minimum.

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- 4.5.2.2 Application of Test Loads. The loads specified in Paragraph 3.7 shall be applied with calibrated torque wrenches, or suitable dead weight loading, or torque testing machines using 25 pounds maximum axial load, holding longitudinal alignment of the driver axis with the recess axis within 3 degrees. Drivers must withstand fifty (50) alternating applications in the clockwise and the counterclockwise directions. Failure of the drivers to do so shall be cause for rejection. If the fixture fails, repeat the test with a new driver and a new fixture.
- 4.5.3 Toughness Test. Drivers that have successfully completed the requirements of Paragraph 4.5.2 shall be torqued to failure utilizing test fixtures of Paragraph 4.5.2.1. Test loads shall be applied in accordance with Paragraph 4.5.2.2. Torque shall be applied until a fracture or definite bend of the driver occurs. At least one driver shall have torque applied in the counterclockwise direction. If fracture occurs, the pieces shall be refitted and the driver shall show that a definite, noticeable permanent set occurred prior to failure. If fracture or permanent set occurs prior to the application of torques listed in Table III, the driver shall be considered as not having passed the test. If a fracture occurs after the torque values listed in Table I have been exceeded but with no permanent set of the fractured driver (brittle failure), the driver shall be considered as not having passed the test.
- 4.5.4 Hardness Test. Drivers shall be tested on a Rockwell tester, using a diamond penetrator and employing a 150 kilogram major load. Surfaces shall be suitably ground for the tests. Coating, decarburization, and hardness cases shall be removed before testing. Correction for diameters will be applied as required. The hardness test of the driver shall be taken as near the tip as practical. The hardness of the driver shall conform to the requirements specified in Paragraph 3.2.
- 5. PREPARATION FOR DELIVERY**
- 5.1 Preservation, Packaging, and Packing. The drivers shall be cleaned, preserved, packaged, packed and marked for shipment in accordance with the provisions of PPP-P-40. Levels of preservation, packaging and packing shall be as specified in the contract or order.
- 5.2 Inspection of Preparation for Delivery. The preservation, packaging, packing and marking shall be examined to determine conformance with the requirements of Paragraph 5.1 of this specification as required by references specifications.

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