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MILITARY SPECIFICATION

MOUNT, TELESCOPE AND QUADRANT: M172

This specification is approved for use by the U.S. Army Armament, Munitions and-chemical Command-and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers one type of telescope and quadrant mount which supports the Fire Control Quadrant: M18 and gives elevation compensation to correct for cant when the mount is leveled by a cross level movement. The mount also supports and aligns the mounting bracket for the Elbow Telescope: M138.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifiecations, standards and handbooks. The following specifications, standards and handbooks form a part of this specifications to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation. (See 6.2).

SPECIFICATIONS

MILITARY

MIL-F-13926	-Fire Control Materiel, Manufacture and Inspection, General Specification for
MIL-P-14232	-Parts, Equipment and tools for Ordinance Materiel, Packaging of

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document, should be addressed to: Commander U.S. Army ARDEC, ATTN: SMCAR-BAC-S, Picatinny Arsenal, New Jersey 07806-5000 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A
FSC 1240
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MIL-I-45607 -Inspection Equipment, Acquisition, Maintenance and Disposition of

STANDARDS

MILITARY

MIL-STD-109 -Quality Assurance Terms and Definitions

(Unless otherwise indicated, copies of federal and military specifications, standards and handbooks are avbailable from: Military Specifications and Standards, B1dg.4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents, drawings and publications The following other Government documents, drawings and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issue shall be those in effect on date of the solicitation.

DRAWINGS

U.S. Army Armament Research, Development and Engineering Center (ARDEC)

8658940	-Quadrant, Gunner's – Calibrated
10554823	-Mount, Telescope & Quadrant: M172
10558253	-Fixture
11738143	-Adapter, Torque
11738144	-Adapter, Torque
11747193	-Adapter, Shock, vibration
11747840	-Gage, Interchangeability, Maximum
11747844	-Gage, Interchangeability, Maximum
11747978	-Gage, Interchangeability, Maximum

PACKAGING DATA SHEET

10554823	-Packaging of Mount, Telescope and Quadrant: M172

(Copies of drawings, and packaging data sheets required by supliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer).

2.2 Order fo precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail speciflcati.ens, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

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3. REQUIREMENTS

3.1 First article. When specified, a sample shall be subjected to first article inspection (see 4.2 and 6.2).

3.2 Materiels. Materiels shall be in accordance with drawings, material specifications, and general specifications forming a part of this specification.

3.3 Fabrication. The mount shall be manufactured in accordance with Drawing 10554823 and drawings pertaining thereto.

3.4 General specifications. The contractor shall be responsible for the compliance with the requirements of specification MIL-F-13926.

3.5 Orientation. Whenever specified herein, the conditions listed below shall apply:

a. The mounting surface of the mount shall be vertical
b. The locating keyway of the mount shall be horizontal
c. The surface to mount the M18 Quadrant shall be vertical
d. The aligning surfaces of the direct fire telescope mounting bracket shall be perpendicular to the mounting surface of the mount
e. The four mounting bolts shall be torqued to 85-90 foot pounds.

3.6 Alignment of locating surfaces. These requirements shall be met with conditions of 3.5 established.

3.6.1 Quadrant mounting surfaces.

3.6.1.1 Surfaces for quadrant. The mounting surfae for the quadrant shall be parallel to the mounting surface of the mount within 1 minute of arc (0.3 mil).

3.6.1.2 Locating keys for M18 Quadrant. The locating keys for the quadrant shall be parallel to the locating keywary in the mount mounting surface within 2 minutes of arc (0.6 mil).

3.6.2 Mounting surfaces for gunner's quadrant. The mounting surfaces for the gunner’s quadrant shall be parallel to the keyway in the mount mounting surface within 45 seconds of arc (0.225 mil).

3.7 Temperature conditions. Except as specified in 3.7.1, 3.7.2, 3.8.1 and 3.8.2 the requirements of this specification shall be met at a temperature between +60° and +90° Fahrenheit (F) (+16° and +36° Centigrade (C)).

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3.7.1 Storage temperature. The mount shall show no evidence of physical failure when thermally stabilized at ambient temperatures of +160°F (71°c) ±5°F (3°C) and -50°F (-46°C) ±5°F {3°C) for a period of 6 hour ±15 minutes at each temperature. Subsequent to return to room temperarure (see 3.7) the system shall not have been damaged and shall meet the requirements of 3.8 through 3.9.

3.7.2 Operating temperature. The mount shall meet the applicable requirements of 3.9 while exposed and thermally stabilized 3 hours ±15 minutes at an ambient temperature of +150°F (+65°C) ±5°F (+3°C) and exposed and thermally stabilized 3 hours ±15 minutes at ambient temperature of -50°F (-46°C) ±5°F (+3°C). Upon return to standard ambient temperature, +60°F to +90°F (16°C to 32°C), from each operating temperature, the mount shall meet the requirements of 3.8 thru 3.9.

3.7.3 Shock. The mount shall withstand a total of 18 shock impulses, three in each direction of three mutually perpendicular axix. Each shock impulse shall be a half-sine wave with a time duration of 3 ± 1 millisecond. The peak amplitude of each shock impulse shall be 100 g's. Subsequent to shock, the mount shall show no evidence of physical damage and shall meet the requirements of 3.8 thru 3.9.

3.7.4 Vibration.

3.7.4.1 Vibration "A". When required, the mount shall withstand a total of 270 minutes ±5 minutes of sweep-cycle vibration. The vibration shall be applied of 90 minutes ±2 minutes along each of the three mutually perpendicular major axes. A complete sweep-cycle shall consist of vibration from origin (5 hz at 1 inch double amplitude) to midpoint (5 g's ±0.5 g's at 500 hz) to origin, and shall have a duration of 15 minutes +1 minute. Double amplitude shall be constant at 1 inch between 5 hz and 10 hz, and varied with a frequency to maintain a constant 5 g's ±0.5 g's acceleration between 10 hz and 500 hz. Upon completion of vibration the mount shall exhibit no evidence of damage and shall meet the requirements of 3.8 thru 3.9.

3.7.4.2 Vibration "B". The mount shall be vibrated in a vertical plane at a constant frequency of 30 cycles per second with an amplitude of 1/16 inch (1/8 inch total excursion) for a period of five minutes plus or minus 15 seconds. Subsequent to vibration there shall be no evidence of physical failure and the mount shall meet the requirements of 3.8 thru 3.9.

3.8 Performance.

3.8.1 Cross level adjustment. The mount shall travel through an excursion of at least 34 degrees to the left and 34 degrees to the right from the position established in 3.5.

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3.8.2 Backlash {cross level). Backlash in the cross level mechanism (3.7.1) shall not exceed 1.5 mils at any setting between 34 degrees to the left and 34 degrees to the right.

3.8.3 Boresight adjustment. The elevation boresight adjustment shall move a line of sight a minimum of 18 mils above and 18 miles below horizontal utilizing the slot in bracket assembly 10554685 as a pivot point. This requirement shall be met with conditions of 3.5 established.

3.9 Operability torque.

3.9.1 Cross level knob. The running torque requiared to rotate the cross level knob shall be within the limits of 4 to 12 inch-lbs when checked at standard ambient temperature (+60° to +90°F). Starting torque shall not exceed 18 inch-lbs. When checked at the temperature conditions specified in 3.7.2, the running and starting torque shall not exceed 30 inch lbs.

3.9.2 Boresight adjustment elevation. The running and starting torque required to rotate the boresight adjustment screws at standard ambient temperature (+60° to +90°F) shall not exceed 11 inch-lbs. When checked at the temperature conditions specified in 3.7.2, the running and starting torque shall not exceed 27 inch-lbs.

3.10 Interchangeability.

3.10.1 Mounting surface for Quadrant, M18. Interchange-ability shall be verified by the insertion, seating, securing, and subsequent removal of maximum fit gage on the mounting surface for the M18 Quadrant.

3.10.2 Mounting surface of Mount, M172. Interchangeability shall be verified by the insertion, seating, securing, and subsequent removal of maximum fit gage on the mounting surface of the M172 Mount.

3.10.3 Mounting surface for Telescope, Elbow M138. Inter-changeability shall be verified by the insertion, seating, securing, and subsequent removal of maximum fit gage on the mounting surface for the M138 Telescope.

3.11 Reliability. The Mount shall be subjected to reliability assurance tests as follows:

a. The Mount shall meet the requirements of storage and operation temperatures of paragraphs 3.7.1 and 3.7.2.

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b. The Mount shall be shocked and conform to the requirements of paragraph 3.7.3.

c. The Mount shall withstand the Vibration "A" requirements as noted in paragraph 3.7.4.1.

3.12 Workmanship. The workmanship of MIL-F-13926 shall apply.

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 other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.1.2 General provisions. The conponent and subassembly inspection requirements of MIL-F-13926 form a part of the quality assurance provisions of this specification. Definitions of inspection terms shall be as listed in MIL-STD—109.

4.2 First article (initial production) approval. The requirement for first article approval and the responsibility (Government or contractor) for first article testing shall be as specified in the contract. The sample for first article approval tests shall consist of three (3) mounts plus three (3) each of all items covered by Quality Assurance Provisions (QAPs). The sample shall be manufactured in the same manner, using the same materials, equipment, processes, and procedures as used in regular production. All parts and materials, including packaging and packing, shall be obtained from the same source of supply as used

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in regular production. The three (3) mounts shall be tested in accordance with, and meet the requirements of, Tables I and II and paragraph 4.7.1.3.

4.2.1 Government testing. When the Government is responsible for conducting first article approval tests, the contractor, prior to submitting the sample to the Government, shall inspect the sample to insure that it conforms to all requirements of the contract and submit a record of this inspection, with the sample, including certificates of conformance for materials.

4.2.2 Contractor testing. When the contractor is responsible for conducting first article approval tests, the sample shall be inspected by the contractor for all the requirements of the contract. The sample and a record of this inspection, including certificates of conformance for materials, shall be submitted to the Government for approval. The Government reserves the right to witness the contractor's inspection.

4.3 Examination and tests.

4.3.1 Components and subassemblies. All components and subassemblies shall be inspected in accordance with the inspection provisions contained in QAPs listed in the Technical Data Package (TDP). In the absence of QAPs, the applicable Quality Assurance Provisions of MIL-F-13926 shall apply.

4.3.2 Final acceptance inspection. Subsequent to first article approval, examination and tests related to Section 3 herein shall be performed. The tabulated classification of defects in Tables I and II shall constitute the minimum inspection to be performed by the supplier after first article approval and prior to Government acceptance or rejection by item or lot.

4.3.3 Classification of characteristics. Quality conformance examinations and tests are specified in the following Classification of Characteristics paragraphs. The contractor's quality program or detailed inspection system shall provide assurance of compliance of all characteristics with the applicable drawing and specification requirements utilizing as a minimum the conformance criteria specified herein.

4.3.4 Alternative inspection provisions. Alternative inspection procedures, methods, or equipment, such as statistical process control, tool control, other types of sampling procedures, etc. , may be used by the contractor when they provide, as a minimum, the level of quality assurance required by the provisions specified herein. Prior to applying such alternative procedures, methods, or equipment, the contractor shall describe them in a

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written proposal submitted to the procuring contracting officer for evaluation and approval by the Government. When required, the contractor shall demonstrate that the effectiveness of the proposed alternative(s) is equal to or better than the specified quality assurance provisions herein. In cases of dispute as to whether the contractor's proposed alternative(s) provide equal assurance, the provision of this specification shall apply. All approved alternative inspection provisions shall be specifically incorporated into the contractor's quality program or detailed inspection system, as applicable.

TABLE I. Requirements and test procedures.

No.	Characteristic	Requirement	Test Procedure
Critical: None			
Major: 100% Inspection			
101.	Orientation	3.5	4.8.1
102.	Surface for Quadrant	3.6.1.1	4.8.2.1
103.	Locating keys for M18 Quadrant	3.6.1.2	4.8.2.2
104.	Mounting surfaces for Gunner's Quadrant	3.6.2	4.8.2.3
105.	Interchangeability-Surface for Quadrant M18	3.10.1	4.12.1
106.	Interchangeability-Surface of Mount, M172	3.10.2	4.12.2
107.	Interchangeability-Surface for Telescope, Elbow, M138	3.10.3	4.12.3
108.	Vibration "B"	3.7.4.2	4.7.1.5
109.	Cross level adjustment	3.8.1	4.9.1
110.	Backlash (cross level)	3.8.2	4.9.2
111.	Elevation adjustment	3.8.3	4.10.1
112.	Azimuth adjustment	3.8.4	4.10.2
113.	Fabrication	3.3	10554823
114.	Workmanship	3.12	Visual & MIL-F-13926
115.	Packaging	5.1	4.13
Minor: None			

4.4 Special sampling.

4.4.1 General. Subsequent to meeting the requirements of Table I, three quadrants shall be selected at random by a

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Government representative as a special sample from each 50 produced or from each month's production, whichever occurs first. The samples shall meet the requirements and tests in Table II and shall meet the requirements and tests in Table I, except characteristic 108, after being subjected to Table II testing.

TABLE II. Requirements and test procedures.

No.	Characteristic	Requirement	Test Procedure
301.	Storage temperature	3.7.1	4.7.1.2
302.	Operating temperature	3.7.2	4.7.1.2
303.	Cross level knob (torque)	3.9.1	4.11.1
304.	Boresight adjustment (elevation torque)	3.9.2	4.11.2

4.4.2 Failure of sample. Should any one item of a special sampling fail to meet the specified test requirements, acceptance of the represented inspection lot will be suspended by the Government until necessary corrections have been made by the contractor and the resubmitted sampling have been approved.

4.5 Test equipment.

4.5.1 Inspection equipment. Except as otherwise provided for by the contract, the contractor shall supply and maintain inspection equipment in accordance with the applicable requirements of MIL—I—45607.

4.5.2 Government furnished inspection equipment. Where the contract provides for Government furnished test equipment, supply and maintenance of test equipment shall be in accordance with the applicable requirements specified in MIL-I-45607.

4.5.3 Contractor furnished inspection equipment.

4.5.3.1 Government design. Unless otherwise stated in the contract, all inspection equipment specified by drawing number in specifications or QAP forming a part of the contract shall be supplied by the contractor in accordance with technical data listed in the List of Inspection Documents when provided with the (TDP).

4.5.3.2 Contractor design. The contractor shall design and supply inspection equipment compatible with the requirements of MIL-F-13926. Since tolerance of test equipment is normally considered to be within 10% of the product tolerance of which it is intended, this inherent error in the test equipment design must be considered as part of the prescribed product tolerance limit.

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Thus, concept, construction, materials, dimensions, and tolerances used in the design of test equipment shall be so selected and controlled as to insure that the test equipment will reliably indicate acceptability of a product which does not exceed 90% of the prescribed tolerance limit, and permit positive rejection when non-conforming. Construction shall be such as to facilitate routine calibration of test equipment (see 6.3).

4.5.3.3 Test equipment. In conjunction with 4.5.3.2, the following standard test equipment shall be utilized in the performance of the applicable test as specified in 4.11.

	Nomenclature	Description
1.	Hot and cold chamber	Standard type conforming to the accuracies outlined under in MIL-F-13926.
2.	Torque wrench	Standard shop type accurate to 10% of the drawing tolerance.

4.6 Reliability assurance sample. Unless otherwise specified in the contract, the Government shall be responsible for reliability assurance testing. The reliability assurance test sample shall consist of one mount selected at random by the Government from any accepted regular production lot prior to delivery of the first 25% of the basic contract quantity. All mounts previously selected for First Article Test or Special Sampling shall be excluded from the lot for purposes of selecting the reliability assurance test sample.

4.6.1 Reliability assurance testing. After random selection of the sample, the contractor shall provide to the Government the inspection records, including certificates of conformance, for the sample. The contractor shall also provide a list of all changes, deviations, and waivers under the contract. The sample shall be tested for reliability as represented by the requirements of 3.7.1 through 3.7.4.1. Testing shall be performed in accordance with the procedures specified in 4.7.1.2 through 4.7.1.4.

4.6.2 Defects. Defects resulting from reliability assurance testing may be assessed as sufficient evidence that the contractor's production processes and quality control procedures do not provide adequate assurance against product reliability degradation. Upon identification by the Government to the Contractor, of the specific quality defect(s) found, the contractor shall determine and apply effective corrective action to improve his production processes and quality control procedures as necessary to eliminate the defect(s) from mounts not yet delivered under the contract.

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4.6.3 Retest. Whenever reliability assurance test results require corrective action by the contractor, a retest sample shall be selected in accordance with 4.6 except that the sample shall be selected from the first 10 mounts produced subsequent to implementation of the corrective action. The retest sample shall be subjected only to the reliability test(s) which revealed the defect(s).

4.6.3.1 Inspection after retest. Inspection of the sample after retest shall be conducted by the Government and shall be in accordance with 4.3.2.2, "Final Acceptance Inspection", except characteristics 108 of Table I, 301 thru 304 of Table II. Reappearance of the previous defect(s), 4.6.2, may be cause for the Government to prescribe mandatory process corrective action by the contractor at no additional cost to the Government.

4.7 Methods of inspection.

4.7.1 Environmental.

4.7.1.2 Storage and operating temperatures. The mount shall be subjected to one cycle of temperature variations in accordance with Table III. Upon completion of Sequence 1 and 4 soak periods (Storage), the mount shall be visually and actually examined to insure conformance with requirements of 3.7.1. Upon completion of Sequence 2 and 4 soak periods (Operating), the mount shall be visually and tactually examined to assure conformance with requirements of 3.9. Following completion os Sequence 3 and 5 soak periods (Room Temp.) the mount shall meet all the requirements of 3.8 through 3.9.

TABLE III. Temperature cycle.

Sequence	Storage Temperature	Soak	Operating Temperature	Soak	Room Temp.	Soak
1	+160°F (71°C)	6 Hrs.				
2			+150°F (65°C)	3 Hrs.		
3					+60°F to +90°F (+16°C to +32°C)	6 Hrs.
4	-50°F (-46°C)	6 Hrs.	-50°F (-46°C)	3 Hrs.*		
5					+60°F to +90°F (+16°C to +32°C)	6 Hrs.'

* Same 6 Hrs. as Storage Soak

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4.7.1.3 Shock. This test is applicable to the First Article Samples and the Reliability Assurance Samples only. The mount shall be positioned on Fixture 11747193 and secured to the shock tester. The mount shall be subjected to a shock test in accordance with 3.7.3. Upon completion of the shock, the mount shall be examined and inspected to the requirements specified in 3.8 thru 3.9.

4.7.1.4 Vibration "A". This test is applicable to the Reliability Assurance Sample only. The mount shall be positioned on Fixture 11747193 and secured to the vibration tester. The mount shall be subjected to a vibration test in accordance with 3.7.4.1. Upon completion of the vibration test, the mount shall be examined and inspected to the requirements of 3.8 thru 3.9.

4.7.1.5 Vibration "B". The mount shall be positioned on Fixture 11747193 and vibrated in accordance with the frequency and duration as specified in 3.7.4.2. At the conclusion of the test, the mount shall be subjected to a visual and tactile examination and shall meet the requirements of 3.8 thru 3.9.

4.8 Mount alignment & test methods.

4.8.1 Orientation. Test fixture 10558253 shall be used for the inspection of Mount M172. Position the test fixture on a vibration free surface in accordance with the set-up instructions outlined on Drawing 10558253. Wall target 10558253-13 shall be positioned and fixed in a suitable area. Follow all set-up and operating instructions prior to securinq the mount to the fixture. The mount shall be orientated-as specified in paragraph 3.5 of this specification.

4.8.2 Alignment of locating surfaces.

4.8.2.1 Surface for M18 Quadrant. Insert quadrant adapter 10558253-11 on the quadrant mounting surface of the mount. Place calibrated gunners quadrant 8658940 on the adapter surface perpendicular to the quadrant mounting surface and the mounting keys of the mount. The surface of quadrant must be vertical and parallel to the mounting surface within the requirement of 2.6.1.1 as measured with the gunner's quadrant.

4.8.2.2 Locating keys for M18 Quadrant. With adapter 10558253-11 positioned on the quadrant mounting surface of the mount, place a calibrated gunners quadrant 8658940 on the adapter surface parallel to the quadrant mounting surface and the mounting keys of the mount. The locating keys for the quadrant shall be parallel to the mounting surface of the mount within the requirement of 3.6.1.2 as measured with the gunner's quadrant.

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4 .8.2.3 Mounting Surfaces for Gunner's Quadrant. Place a calibrated gunner's quadrant 8658940 on the mounting surface's for the gunner's quadrant. The mounting surfaces for the gunner's quadrant shall be parallel within the requirement- of 3.6.2 as mess-urea with the gunner's quadrant.

4.9 Performance.

4.9.1 Cross level adjustment. With adapter 10558253-11 positioned on the quadrant mounting surface, place calibrated gunner's quadrant 8658940 on the adapter, surface, perpendicular to the mounting keys. The cross level adjustment must be in the center of travel as established in 4.8.2.1 before checking cross level travel. Rotate the cross level knob until roation reaches a positive stop. Adjust gunner's quadrant to level elevation and center level vial bubble. Cross level travel shall be as specified in paragraph 3.8.1. Rotate cross level knob to position previously established in 4.8.2.1. Repeat the above procedure in the opposite direction. This test can be performed in conjunction with 4.9.2.

4.9.2 Bashlash (cross level). The test for backlash in the cross level adjustment may be accomplished in conjunction with the preceding test using the calibrated gunner's quadrant. Scribe an index line on the mounting casting nearest to the cross level knob. Place an index pointer on the cross level knob directly opposite the scribed index line. The index pointer may be held in place mechanically or by the use of commercial putty. Rotate the cross level knob one turn and place the pointer in coincidence with the scribed index line. Place the gunner's quadrant on adapter 10558253-11 and center the level vial bubble. Rotate the cross level knob one half turn and return to the position originally established by the indices. The reading on the gunner's quadrant is required to be within the limits specified in 3.8.2 for backlash. This procedure shall be repeated at zero cant and in three places in each direction from stop to stop.

4.10 Boresight adjustment.

4.10.1 Elevation adjustment. Position the mount as specified in 3.4. Position sighting device 10558253-1 (simulates elbow telescope) in the appropriate mounting surface of mount. Observe coincidence between the reticle of the sighting device and the vertical & horizontal lines of the wall target. Turn slotted shaft 10554687 of the elevation adjustment located in bracket assembly 10554685 to its full extent of travel. This rotation will activate the cam to the lowest and highest positions. The elevation adjustment shall move the line of sight above and below the horizontal line of the wall target to the limits specified in 3.8.3.

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4.10.2 Azimuth adjustment. Follow the above procedure for alignment and reticle coincidence. Azimuth adjustment shall be inspected by adjusting the opposing screws located in the mounting bracket assembly 10554687. Azimuth movement is activated by backing off one of the screws and turning in the opposing screw. Rotation of screw will be performed until azimuth movement has reached the limits and or stops. This procedure will be repeated once to right and then left until the line of sight has traveled to the limits specified in 3.8.3.2.

4.11 Operability.

4.11.1 Cross level knob torque. Use a standard torque measuring device with adapter 11738144 to test starting and running torque as specified in 3.9.1.

4.11.2 Boresight adjustment torque elevation. Use a standard torque measuring device with adapter 11738143 to test starting and running torque as specified in 3.9.2

4.12 Interchangeability.

4.12.1 Mounting surface for Quadrant M18. Each mount shall be inspected for maximum fit conditions in accordance with 3.10.1, using the interchangeability gage 11747844. Any mount which does not accept the interchangeability gage shall be rejected.

4.12.2 Mounting surface of Mount M172. Each mount shall be inspected for maximum fit conditions in accordance with 3.10.3 using the interchangeability gage 11747840. Any mount which does not accept the interchangeability gage shall be rejected.

4.12.3 Mounting surface for Telescope, Elbow M18. Each mount shall be inspected for maximum fit conditions in accordance with 3.10.3, using the interchangeability gage 11747978. Any mount which does not accept the interchangeability gage shall be rejected.

4.13 Packaging inspection. The preservation, packing, and marking shall be inspected to verify conformance to the requirements of 5.1.

5. PACKAGING

5.1 Packaging, packing and marking. Packaging, packing, and marking shall be in accordance with MIL-P-14232 and Packaging Data Sheet 10554823. The level of protection shall be as specified in the procurement document.

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6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not manditory.)

6.1 Intended use. The Mount, Telescope, and Quadrant: M172 is used to support and employ a fire control quadrant for laying the artillery weapon in elevation for indirect fire and direct fire. It also supports an elbow telescope intended for laying the artillery weapon in elevation for direct fire.

6.2 Acquisition requirements. Procurement data should specify the following:

a. Title, number and date of this specification.

b. Selection of an applicable level of preservation, packaging, and packing.

c. Applicable packaging data sheet number (See 5.1).

d. Applicable stock number.

e. Provisions for First Article Testing.

f. Reliability Assurance Sample.

g. Contract data requirements for submission of inspection equipment designs conforming to Data Item Description DI-R-1714. (See 6.3.1.)

h. Prospective bidders should be made aware that a Nuclear Regulatory License is required for the manufacture of this item.

i. Level of preservation and packaging. (See 5.1).

6.3 Inspection equipment design.

6.3.1 Submission of designs for approval. Contractor designs for final acceptance inspection shall be approved by the Government prior to fabrication or procuring the equipment. The contractor is referred to MIL-HDBK-204 for guidance. Submission of design concept on inspection equipment is permissible for tentative approval. The completion date for design review will be based on the data of the final submission of designs and the required delivery schedule as stipulated in the contract. Submit designs as required to: Commander, U.S. Army Armament Research, Development and Engineering Center, ATTN: AMSMC-QAF-I(D), Picatinny Arsenal, NJ 07806-5000. This address will be specified on the Contract Data Requirements List DD Form 1423 in the contract. Unless otherwise specified, data item DI-R-1714 will

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apply. When the contractor submits inspection equipment designs to the Government for approval, he shall give the following information in his letter of transmittal:

a. The contract number.

b. The contract item (name, model number, etc.).

c. The designs remaining to be submitted and the expected date of submittal.

6.4 Drawings. Drawings listed in Section 2 of this specification under the heading US Army Armament, Research Development and Engineering Center (ARDEC) may also include drawings prepared by, and identified as Edgewood Arsenal , Frankford Arsenal, Rock Island Arsenal, or Picatinny Arsenal drawings. Technical data originally prepared by these activities is now under the cognizance of ARDEC.

6.5 Subject term (key word) listing.

Fire control
Mount

6.6 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodian:
Army-AR

Preparing activityL
Army-AR

(Project No. 1240-A590

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
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I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER	2. DOCUMENT DATE (YYMMDD)
	MIL-M-48559A (AR)	30 March 1990

3. DOCUMENT TITLE
MOUNT, TELESCOPE AND QUADRANT: M172

4. NATURE OF CHANGE (*Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.*)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (*Last, First, Middle Initial*)	b. ORGANIZATION	
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8. PREPARING ACTIVITY

a. NAME	b. TELEPHONE (*Include Area Code*)	
US Army ARDEC Specifications & Standardization Office	(1) Commercial (201) 724-6674	(2) AUTOVON 880-6674
c. ADDRESS (*Include Zip Code*) ATTN: SMCAR-BAC-S, Bldg 6 Picatinny Arsenal, NJ 07806-5000	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	