

INCH-POUND

MIL-G-71047 (AR)  
13 April 1993

## MILITARY SPECIFICATION

## MACHINE, GUN, CALIBER .50, AIRCRAFT, XM296

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 the requirements, examinations and tests for an automatic, recoil operated, air-cooled, caliber .50 machine gun (see 6.1).

## 2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are 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).

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 1005

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## SPECIFICATIONS

## MILITARY

- MIL-W-13855 - Weapons: Small Arms and Aircraft Armament Subsystems, General Specification for
- MIL-P-14232 - Parts, Equipment and Tools for Army Materiel, Packaging and Packing of
- MIL-I-45607 - Inspection Equipment, Acquisition, Maintenance and Disposition of
- MIL-W-63150 - Weapons and Support Material, Standard Quality Assurance Provisions for

## STANDARDS

## MILITARY

- MIL-STD-109 - Quality Assurance Terms and Definitions
- MIL-STD-130 - Identification Marking of US Military Property
- MIL-STD-1949 - Inspection, Magnetic Particle

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 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 document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

## DRAWINGS (see 6.4)

U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER (ARDEC)

## PRODUCT AND PACKAGING DRAWINGS

- 12949648 - Machine Gun, Cal. 50, XM296
- PS 12949648 - Packaging Data Sheet, Machine Gun, Cal .50, XM296

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## INSPECTION EQUIPMENT DRAWINGS

5520627	-	Copper Compression Cylinder Holding Fixture
6047008	-	Indicator Gage Assembly
7270150 or		
6511053	-	Weighing Gage
8440920	-	Cylinder, Pressure Gage
8440929	-	Fixture, Function Firing
11838715	-	Boresight Kit
12003958 or		
5351211	-	Gage, Headspace
12003959 or		
5351213 and		
5351214	-	Gage, Timing
12011845	-	Diagram, Targeting and Accuracy

## PUBLICATIONS

## TECHNICAL MANUAL

TM 9-1090-214-23T - Armament Subsystem Helicopter, XM149, .50 Caliber Machine Gun XM296 (12.7mm) 2.75 Inch (70mm) Rocket System with Missile System Integration

(Copies of other Government documents, drawings, and publications required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

## 3. REQUIREMENTS

3.1 First article. When specified in the contract or purchase order (see 6.2), a sample shall be subjected to first article inspection in accordance with the technical provisions herein (see 4.3). Unless otherwise specified (see 6.2), the first article shall include the Pilot Pack (see 5.1).

3.2 Materials, construction and design. The machine gun components and assemblies shall conform to the material construction and design requirements specified herein, on Drawing 12949648 and the applicable part and assembly drawings, and in MIL-W-13855.

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3.2.1 Sear engagement. The cocking lever, when operated by hand, shall retract the firing pin exchange assembly sufficiently to insure engagement of the hook of the extension to the hook of the sear.

3.2.2 Firing pin protrusion. The firing pin protrusion shall not be less than 0.072 inch and not be more than 0.079 inch when measured from the breech face.

3.2.3 Headspace. Each machine gun shall be capable of being adjusted for proper headspace. With the bolt retracted until the barrel extension and the trunnion block are separated approximately 1/16 inch, the distance between the rear face of the barrel and the face of the bolt shall not be more than 0.206 inch and not be less than 0.202 inch.

NOTE: This adjustment is essential for proper weapon function and must be maintained during all firing schedules.

3.2.4 Timing. After having been adjusted for headspace, each machine gun must then be timed. The firing pin shall not release upon actuation of the triggering mechanism when the gap between the barrel extension and the trunnion block exceeds 0.116 inch. However, at some point in the interval when the gap between the barrel extension and the trunnion block is not more than 0.116 inch and not less than 0.020 inch, the firing pin shall release upon actuation of the triggering mechanism.

NOTE: This setting must also be maintained during subsequent firing schedules.

### 3.3 Physical characteristics.

3.3.1 Weight. The machine gun without any type of flash or blast suppressor attachment on the barrel shall not weigh more than 65 lbs.

3.3.2 Dimension. The machine gun without any type of flash or blast suppressor attachment on the barrel shall not exceed 57.00 inches in length, 4.00 inches in width, and 6.75 inches in height.

### 3.4 Performance characteristics.

3.4.1 Firing pin release. The firing pin shall be released by a load not exceeding 38 pounds applied to the sear slide and by a load not exceeding 26 pounds applied to the sear. Testing shall be as specified in 4.5.5.

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3.4.2 Firing pin indent. The firing pin indent shall be within the range of 0.017 to 0.023 inch and shall not be off center more than one-half the diameter of the indent. Testing shall be as specified in 4.5.6.

3.4.3 High pressure resistance. The machine gun shall be capable of withstanding the firing of one round of Government standard .50 caliber, M1 high pressure test cartridge. Parts shall be free of cracks, seams or other injurious defects after proof firing. The barrel assembly, barrel extension assembly, bolt subassembly and receiver assembly, of machine guns, after satisfactorily meeting this requirement, shall be proof marked as specified on the appropriate drawings. Testing shall be as specified in 4.5.7.

3.4.4 Functioning. The machine gun shall function without malfunctions attributable to the weapon, and without evidence of unserviceable parts. Testing shall be as specified in 4.5.8.

3.4.5 Belt pull. The machine gun shall be capable of functioning while a 20 pound free hanging weight is attached to the ammunition belt. Testing shall be as specified in 4.5.9.

3.4.6 Cyclic rate of fire. The machine guns shall maintain an average rate of fire of 700 to 800 shots per minute. Testing shall be as specified in 4.5.10.

3.4.7 Targeting and accuracy. With the boresight reticle aligned with the center of the target of Drawing 12011845, the center of impact of each 50 round burst shall be within an 8.0 inch diameter circle as shown on the drawing and 80% of the shots shall group within or cut the edge of that 8.0 inch diameter circle at range of 1,000 inches. Testing shall be as specified in 4.5.11.

3.4.8 Endurance. The machine gun shall be capable of firing an endurance schedule of 10,000 rounds of M33 ball cartridges, using M9 links, without substitution of any components and without malfunctions in excess of the limits shown in Table I. Testing shall be as specified in 4.5.12.

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TABLE I. Malfunctions and unserviceable components (see Notes).

Malfunctions (attributable to gun) <sup>1</sup>	Number permitted in the 10,000 round endurance test
Extruder primer	1
Failure to eject	1
Failure to extract (cartridge case from chamber)	1
Failure to extract (cartridge from feed belt)	1
Failure to feed (bullet striking face of barrel)	2
Failure to feed (insufficient recoil)	1
Hangfire (noticeable) (See 4.5.3.12)	0
Misfire caused by light blow (See 4.5.3.12)	2
Pierced primer	1
Uncontrolled fire	0
All other malfunctions:	
If correctable by recharging	3
If not correctable by recharging	1

**NOTE:** <sup>1</sup> When malfunctions (within the allowances of Table I) are traceable to particular components, it is permissible to replace such components and record them as unserviceable, subject to limitations of Table I. When it is definitely established by the inspector that previously recorded malfunctions are attributable to an unserviceable component, such malfunctions shall not be counted against the machine gun being tested, provided that they occurred not more than 200 rounds prior to replacement of the unserviceable component. However, such malfunctions shall remain recorded and properly identified.

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TABLE I. Malfunctions and unserviceable components (see Notes).

(continued)

Unserviceable components	Number permitted in the 10,000 round endurance test <sup>2</sup>
Accelerator	0
Back plate	0
Barrel extension	0
Barrel support	0
Belt feed pawl	0
Belt feed slide	0
Bolt	0
Breech lock cam	0
Cocking lever	0
Cover pin	0
Driving springs (inner and outer)	0
Ejector	1
Extractor	0
Extractor cam	0
Firing pin	1
Firing pin spring	0
Sear	1
Set back of recoil plate in face of bolt (in excess of .0002 inch)	0
Side, top, or bottom plates (receiver assembly)	0
All other unserviceable components (different)	2

NOTE: <sup>2</sup> No unserviceable components shall be allowed within the first 5,000 rounds.



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3.4.8.1 Barrel erosion. The barrel assembly shall be capable of firing a 10,000 round endurance schedule without experiencing a muzzle velocity drop of more than 200 feet per second. Testing shall be as specified in 4.5.13.

3.5 Interchangeability. Unless otherwise specified on the drawings, all parts shall be interchangeable. (In manual assembly operations, there shall be no objections to preferential assembly of part provided that all parts are dimensionally acceptable.) Testing shall be as specified in 4.5.14.

3.6 Marking. Each machine gun and each component thereof for which markings are prescribed, shall be clearly marked in accordance with the drawings and MIL-STD-130. Each machine gun shall be identified by a serial number assigned by the procuring activity (see 6.1).

3.7 Workmanship. Workmanship shall be in accordance with MIL-W-13855.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own 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 this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall 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 ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.



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4.1.2 General provisions. Unless otherwise specified herein, the provisions of MIL-W-63150 apply and form a part of this specification. Reference shall be made to MIL-STD-109 to define quality assurance terms used herein.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.3).
- b. Quality conformance inspection (see 4.4).

4.3 First article inspection.

4.3.1 Submission. The contractor shall submit a first article sample as designated by the Contracting Officer for evaluation in accordance with provisions of 4.3.2. The first article sample shall consist of the assemblies, components and test specimens listed below in the quantities indicated.

<u>Name</u>	<u>Drawing</u>	<u>Quantity</u>
Machine Gun, Cal .50	12949648	15

4.3.2 Inspections to be performed. As determined by the Government, the first article assemblies, components and test specimens may be subjected to any or all of the examinations and tests specified in Table II and be inspected for compliance with any or all requirements of the applicable drawings.

4.3.3 Rejection. If any assembly, component or test specimen fails to comply with any of the applicable requirements, the first article sample shall be rejected. The Government reserves the right to terminate inspection upon any failure of an assembly, component or test specimen to comply with any of the requirements.

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TABLE II. Examinations and tests.

(100% Inspection unless otherwise specified)

Defect	Characteristic	Sample Size	Requirement	Test Method/ Paragraph
Critical	None defined.			
Major				
101	Sear engagement	100%	3.2.1	4.5.1
102	Firing pin protrusion	100%	3.2.2	4.5.2
103	Headspace	100%	3.2.3	4.5.3
104	Timing	100%	3.2.4	4.5.4
105	Weight	100%	3.3.1	SMTE
106	Dimension	100%	3.3.2	SMTE
107	Firing pin release	Note a	3.4.1	4.5.5
108	Firing pin indent	Note b	3.4.2	4.5.6
109	High pressure resistance	100%	3.4.3	4.5.7
110	Functioning	100%	3.4.4	4.5.8
111	Belt pull	100%	3.4.5	4.5.9
112	Cyclic rate of fire	100%	3.4.6	4.5.10
113	Targeting and accuracy test	100%	3.4.7	4.5.11
114	Endurance	Note c	3.4.8	4.5.12
115	Barrel erosion	Note c	3.4.8.1	4.5.13
116	Interchangeability	Note b	3.5	4.5.14
117	Packaging	100%	5.1-5.3	4.5.15
Minor				
201	Marking	100%	3.6	4.5.16
202	Workmanship	100%	3.7	4.5.17

- NOTES: a. Ten bolt assemblies per lot. Accept on zero defect. Reject on one defect.
- b. Ten machine guns per lot. Accept on zero defect. Reject on one defect.
- c. One machine gun per lot. Accept on zero defects. Reject on one defect.

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4.4 Quality conformance inspection.

4.4.1 Inspection lot formation. The term "inspection lot" is defined as a homogeneous collection of units of product from which a representative sample is drawn or which is inspected 100 percent to determine conformance with applicable requirements. Units of product selected for inspection shall represent only the inspection lot from which they are drawn and shall not be construed to represent any prior or subsequent quantities presented for inspection. Homogeneity shall be considered to exist provided the inspection lot has been produced by one manufacturer, in one unchanged process, using the same materials and methods, in accordance with the same drawings, same drawing revisions, same specifications and same specification revisions. All material submitted for inspection in accordance with this specification shall comply with the homogeneity criteria specified herein, regardless of the type of inspection procedure which is being applied to determine conformance with requirements.

4.4.2 Examinations and tests.

4.4.2.1 Classification of characteristics. Quality conformance examinations and tests are specified in Table II. 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.

4.4.2.2 Failure data. Unless otherwise specified herein, all tests shall be conducted on a complete machine gun. If test requirements cited herein are not met, acceptance of the machine gun shall be deferred and the contractor shall accomplish, as applicable, the following actions:

a. Conduct a failure analysis study performing a dimensional, physical and visual examination of the components which are suspected to be the cause of failure or malfunction.

b. Evaluate and correct the applicable production processes and procedures to prevent recurrence of the same defect(s) in future production.

c. Examine machine guns, partially assembled machine guns, and components (including components and subassemblies at in-process or final assembly) to insure that material containing the same defect is purged from the inventory and not presented to the Government for acceptance.

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d. Submit the results of the failure analysis and the corrective actions taken to the Government for review and approval prior to submitting a reconditioned lot or reconditioned subassembly for retest.

4.4.2.3 Hangfires and misfires. If hangfires and misfires occur during any of the tests, the machine gun shall be subjected to the firing pin indent test (see 4.5.6); and in the event that the firing pin indent is not within the specified limits, the machine gun shall be rejected.

4.4.2.4 Malfunctions. Malfunctions in any test assignable to improper linking of ammunition, improper feeding of ammunition to the weapon, or defective ammunition, links or testing equipment, shall not count against the machine gun being tested.

4.4.3 Inspection equipment. Unless otherwise specified (see 6.2), responsibility for acquisition, calibration, maintenance and disposition of acceptance inspection and test equipment required by applicable specifications, shall be in accordance with MIL-I-45607.

#### 4.5 Methods of inspection.

4.5.1 Sear engagement. Each machine gun shall be tested for sear engagement. Manually retract the firing pin of each machine gun by moving the cocking lever rearward. The firing pin shall engage the sear (see 3.2.1). Failure to meet the requirements shall be cause for rejection of that machine gun.

4.5.2 Firing pin protrusion. Each machine gun shall be tested for firing pin protrusion. With the firing pin in the fired position, using gage Drawing 6047008, measure the firing pin protrusion (see 3.2.2) of each machine gun. Failure to meet the requirements shall be cause for rejection of that machine gun.

4.5.3 Headspace. Each machine gun shall be tested for headspace. Using the procedure provided in TM 9-1090-214-23T, and the headspace gage, 12003958 or 5351211, adjust the headspace of each machine gun. Failure to meet the requirements of 3.2.3 shall be cause for rejection of that machine gun.

4.5.4 Timing. Each machine gun shall be tested for timing. Using the procedure provided in TM 9-1090-214-23T and timing gage, 12003959, or 5351213 and 5351214, adjust the timing of each machine gun. Failure to meet the requirements of 3.2.4 shall be cause for rejection of that machine gun.

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4.5.5 Firing pin release testing. Ten bolt assemblies taken at random from each lot of machine guns shall be tested for firing pin release (see 3.4.1). Failure to meet the requirements shall be cause for rejection of the lot of machine guns. .

The firing pin release test shall be performed using an approved fixture (see Drawing 6511053 or 7270150). The appropriate load per 3.4.1 shall be applied slowly and uniformly at the following points until the firing pin is released: First to the sear slide on one side; second, with the sear slide reversed, to the sear slide on the other side; and third, directly to the sear from the top. The load shall be applied five times at each of the three points.

4.5.6 Firing pin indent testing. Ten machine guns from each lot shall be tested for firing pin indent (see 3.4.2). Failure to meet the requirements shall be cause for rejection of the lot of machine guns.

The indent, when taken in Government Standard copper compression cylinders (Drawing 8440920) inserted into a holding fixture (Drawing 5520627), shall be computed by measuring the distance from the original surface (before indentation) of the cylinder to the bottom of the impression.

4.5.7 High pressure resistance testing. Each machine gun shall be tested for high pressure resistance (see 3.4.3). Failure to meet the requirements shall be cause for rejection of that machine gun.

Machine guns shall be mounted in a firing fixture with safety cover conforming to Drawing 8440929 or approved equivalent and tested by firing one high pressure test cartridge. After proof firing, the high pressure cartridge case shall be visually examined for bulges, splits, rings, and other defects caused by defective barrels; the gun shall be examined for cracks, deformations, or other visible damage; and the barrel assembly, barrel extension assembly, and bolt subassembly shall be magnetic particle inspected in accordance with MIL-STD-1949 and the applicable drawings.

4.5.8 Functioning testing. Each machine gun shall be tested for functioning (see 3.4.4). Failure to meet the requirements shall be cause for rejection of that machine gun.

The machine guns shall be tested for functioning as follows: Each machine gun shall be fired 50 rounds right side feed using a test fixture (Drawing 8440929). Each 50 round segment shall be fired 25 rounds spasmodic and 25 rounds continuous burst.

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4.5.9 Belt pull testing. Each machine gun shall be tested for belt pull (see 3.4.5). Machine Guns which fail to meet these requirements can be retested subject to the provisions of paragraph 4.4.2.2. They may then be mechanically gymnasticated for a period not longer than ten minutes, and then retested. Failure of the retest to meet the requirements shall be cause for rejection of that machine gun.

The machine gun shall be tested for belt pull using the applicable pieces of the belt pull test fixture (Drawing 8440929). Each machine gun shall be fired a ten round burst right side feed for belt pull test. The ten round metallic linked belts shall be loaded with ten rounds of live and two rounds of dummy ammunition. The live ammunition shall feed into the machine gun first. The turn-buckle part 15 of the fixture shall be adjusted to feed the rounds horizontally or with not over a 5 degree rise from the pulley to the feedway of the weapon.

4.5.10 Cyclic rate of fire testing. Each machine gun shall be tested for cyclic rate of fire (see 3.4.6). This test may be performed concurrently with 4.5.8. Failure to meet the requirement shall be cause for rejection of that machine gun.

Each machine gun shall be fired, using test fixture (Drawing 8440929), 25 rounds continuous fire and the cyclic rate of fire recorded.

4.5.11 Targeting and accuracy testing. Each machine gun shall be tested for targeting and accuracy (3.4.7). Failure to meet the requirements shall be cause for rejection of that machine gun.

The machine gun shall be mounted in a firing fixture conforming to drawing 8440929 or an approved equivalent. Boresight Kit, Cal. 50, 11838715, shall be used to sight the weapon on the sighting image of the targeting and accuracy diagram, 12011845, and a 50 round continuous burst fired.

4.5.12 Endurance testing. One machine gun from each lot shall be tested for endurance (see 3.4.8), after having been found to be satisfactory in all previous tests. Failure to meet the requirements shall be cause for rejection of the lot of machine guns.

The machine gun shall be mounted in a firing fixture conforming to Drawing 8440929 or an approved equivalent. The firing schedule shall be 50 rounds in interrupted bursts followed by 50 rounds in a continuous burst. The barrel shall be aircooled to ambient temperature after each 100 rounds fired.



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The ammunition may be linked in 50 round belts or in 100 round belts with a dummy inert round separating each 50 rounds. During the interrupted burst firing, the bolt latch release shall be released at least twice to stop the firing and the trigger shall be released at least three times to stop firing. The average cyclic rate of fire for 25 rounds shall be measured and recorded during the first 50 round continuous burst of each 1000 rounds. The average muzzle velocity of 10 consecutive rounds shall be determined during the first 50 rounds fired, during, 4900-5100 round fired and during 9900-10,000 rounds fixed. Ten rounds may be fired for warm-up before the velocity is measured.

4.5.12.1 Maintenance. The machine gun shall be cleaned, oiled and inspected after each 1000 rounds and at the close of each day's firing. No component shall be altered or replaced, except those components which are broken or worn to the extent that they are unserviceable shall be replaced.

4.5.12.2 Records. Complete, accurate records shall be kept for each endurance test, showing each malfunction and part replacement including the round number when each occurred.

4.5.12.3 Endurance retest. If the machine gun representing any lot fails to meet the specified requirements in the endurance test, a retest shall be made subject to provisions of 4.4.2.2.

In case a retest is made, the Government representative shall select another machine gun for the retest from the lot under consideration. If a retest is not made or the machine gun selected fails in the retest, the lot shall be rejected.

4.5.13 Barrel erosion testing. Each endurance test barrel shall also be tested concurrently for barrel erosion (see 3.4.8.1). Failure to meet the requirements shall be cause for rejection of the lot of machine guns.

#### 4.5.14 Interchangeability testing.

##### 4.5.14.1 In plant.

4.5.14.1.1 Machine guns. The contractor shall test a sample of 10 machine guns, selected by the Government representative from each inspection lot, for interchangeability (see 3.5). Machine guns taken for interchangeability testing shall have been found satisfactory in all other examinations and tests. Test frequency may be reduced, on approval of the procuring agency, to not less than one test of 10 machine guns each month when a record of consistently satisfactory results has been established. The 10 machine guns shall be inspected for and shall comply with the requirements for firing pin protrusion,



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headspace, timing and firing pin release before and after interchange of parts using the inspection methods specified in 4.5.2, 4.5.3, 4.5.4 and 4.5.5, respectively. In addition, the machine guns shall be tested for functioning, targeting, and accuracy requirements after interchange of parts using the test methods specified in 4.5.8 and 4.5.11, respectively. Failure to meet the interchangeability test shall cause rejection of the represented lot.

Machine guns shall be tested for interchangeability by disassembling and then reassembling parts using the parts and prearranged system specified below. Interchange of parts shall be accomplished by dividing the parts of each machine gun into 10 groups of nonmating parts as shown below and distributing the groups into 10 different trays until each tray contains parts for a complete machine gun. Groups of parts from the first machine gun shall be taken in order and placed in trays 1 through 10; groups of parts from the second machine gun shall be taken in order and placed in trays 2 through 10 to 1; groups of parts from the third machine gun shall be taken in order and placed in trays 3 through 10 to 2; etc. Commercial parts such as screws, spring pins, etc., shall be placed in the same tray as their mating or associate part. Any commercial part rendered unserviceable by disassembly shall be replaced without penalty to the interchangeability test. The machine guns shall be reassembled using only those parts which are in the same tray.

GROUPS OF NONMATING PARTSGROUP I

Bar, Trigger	6257592
Barrel Assy	8448123
Extension Assy,	
Firing Pin	6008976
Extractor Assy	6008959
Pin, Cocking	
Lever	7312078
Spring, Cover	
Latch	6008931
Cam, Lock,	
Breech	6147583
Spring, Switch	6008493

GROUP II

Bolt Subassembly	6147463
Rod Assy, Oil Buffer	
Piston	6008763
Pin, Locking	7312970
Spring, Cover	
Extractor	6009741
Pawl, Cover Detent	7313069
Pin Assy, Breech	
Lock	6008784
Pin Assy, Trigger	
Bar	7313106

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GROUPS OF NONMATING PARTS (continued)GROUP III

Slide, Sear	5351220
Switch, Bolt	5504062
Pin Assy, Belt	
Feed Pawl	6008962
Spring, Helical	
Compression	5013516
Plunger, Adjusting	
Screw	5152839
Stop Assy, Adjust-	
able, Trigger Bar	7265212

GROUP IV

Lever, Cocking	6009718
Sear	5504067
Stop, Accelerator	7161301
Spring, Helical	
Compression	6009832
Plunger, Belt Feed	
Lever	5013515

GROUP V

Lock, Accelerator	
Stop	7161300
Spring, Helical	
Compression	5009524
Guide Assy, Buffer	
Spring	6008782
Shaft Assy, Cover	
Latch	7312723
Spring, Helical	
Compression	5009351
Pawl Assy, Belt	
Holding	7313083
Rod Assy, Driving	
Spring	5564305
Stop, Rear,	
Cartridge	5013540

GROUP VI

Accelerator, Oil	
Buffer	5508141
Slide Assy, Felt Feed	6261110
Nut, Slotted, Hexagon	5152939
Screw, Externally	
Relieved Body	7312028
Stripper, Link	5013541
Plate Assy, Back	12012004

GROUP VII

Arm, Belt Feed Pawl	6008914
Lock, Back Plate	
Latch	11010453
Plate, Buffer	5152869
Screw, Adjusting	5152834
Switch, Extractor	6147461
Stop Assy, Cartridge	
Rear RH	5577409

GROUP VIII

Pin Assy, Accelerator	6008790
Disk, Buffer, Fiber	5152835
Latch, Back Plate	6008949
Pin, Locking	7312517
Spring, Helical	
Compression	7160628
Spring, Helical	
Compression	5009300

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GROUPS OF NONMATING PARTS (continued)GROUP IX

Lever, Belt Feed	5564278
Lock, Breech	7161302
Pin, Straight,	
Headed	5013581
Pin, Belt Holding	
Pawl	7313329
Spring, Back Plate	
Latch Lock	6243607
Spring, Helical	
Compression	7313068
Pin, Firing	7310080

GROUP X

Pawl Assy, Belt Feed	6008961
Extension Assy,	
Barrel	5504082
Nut Slotted, Hexagon	5013556
Pin, Straight,	
Headless	5009275
Spring, Helical	
Compression	5009356
Pin, Straight, Headed	5009271
Screw, Machine,	
Flat Csk Head	5153191

4.5.14.1.2 Concurrent repair parts. The contractor shall subject at least two parts from each inspection lot of concurrent repair parts to the interchangeability test. Failure of any part to meet the requirements shall be cause for rejection of the represented lot of parts subject to reconditioning and further test as a reconditioned lot per 4.4.2.2. A sample of double the number of parts used in the original test shall be tested from each reconditioned lot.

Concurrent repair parts shall be tested for interchangeability by disassembling two machine guns, previously tested in 4.5.14.1.1, as necessary, and then reassembling them using the concurrent repair parts. No hand refinements of parts will be allowed, and the machine guns shall operate and function properly. This test may be performed independently of the machine gun interchangeability test specified in 4.5.14.1.1 and at more frequent intervals using accepted machine guns taken from current production.

4.5.14.2 Interplant. When machine guns are manufactured concurrently by more than one contractor, each contractor shall forward monthly six machine guns for the interplant interchangeability test. The contractor will be informed of the results of the test which indicates failure of the machine guns to meet prescribed requirements.

Machine guns to be subjected to the interplant interchangeability test shall be given preliminary hand functioning to assure proper operation before parts are disassembled. In addition, the machine guns shall be inspected for firing pin protrusion, headspace, timing, firing pin release, functioning and accuracy before and after interchange of parts using the

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inspection methods specified in 4.5.2, 4.5.3, 4.5.4, 4.5.5, 4.5.8 and 4.5.11, respectively. Machine guns shall be interchanged in a manner similar to the detailed plan specified in 4.5.14 except that parts shall be divided into six groups and when disassembling, every other machine gun used shall be one produced by a different manufacturer. Before machine guns are returned to the contractors, the original parts shall be reassembled to their respective machine guns, and the machine guns shall be hand functioned to assure proper operation.

4.5.15 Inspection of packaging. Unless otherwise specified (see 6.2), inspection to determine compliance with preservation, packing and marking requirements of the applicable packaging documentation, for the level designated in the contract, shall be as specified in MIL-P-14232.

4.5.16 Marking. Visually examine each machine gun for all marking to assure that they are correct and legible (see 3.6).

4.5.17 Workmanship. Visually and manually examine each machine gun to determine conformance with the applicable requirements. Each step in the examination shall include a visual examination for proper cleaning, the presence of the specified protective coating, and to determine general quality, completeness of manufacture, assembly and workmanship (see 3.7).

## 5. PACKAGING

5.1 Pilot pack. A pilot pack shall consist of a complete machine gun preserved in accordance with the Packaging Data Sheet for the level of protection specified in the contract (see 6.1), packed Level B and forwarded as specified in 3.1.

5.2 Levels A and B. Preservation, packing and marking shall be in accordance with Special Packaging Instruction PS 12949648 for the level of protection shall be as specified in the contract (see 6.1).

5.3 Repair parts. Repair parts shall be preserved, packed, and marked in accordance with the Packaging Data Sheet or other packaging requirements, as specified in the contract (see 6.1).

## 6. NOTES

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

6.1 Intended use. This machine gun is for use in the Armament Subsystem Helicopter XM149 POD.

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6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number and date of this specification
- b. Issue of DODISS to be cited in the solicitation, and, if required, the specific issue of individual documents referenced (see 2.1.1).
- c. Requirements for submission of first article sample.
- d. List of drawings, specifications and publications pertinent to the machine gun, showing applicable dates of revision.
- e. Shipping instructions for first article, and pilot pack (see 3.1, 4.3 and 5.1).
- f. When the Government will provide barrel assemblies for endurance testing (see 3.4.8).
- g. Block of serial numbers for quantity of machine guns or order (see 3.6).
- h. Inspection lot size, if other than specified (see 4.4.1).
- i. Quantity, shipping instructions and test procedures for machine guns required for interplant interchangeability test (see 4.4.2.18.2).
- j. Packaging inspection, if different (see 4.4.4).
- k. Selection of Level A or B packaging (see 5.1 and 5.2).
- l. Packaging instructions for repair parts (see 5.3).

6.3 Submission of contractor inspection equipment designs for approval. Submit copies of designs as required to: Commander, U.S. Army ARDEC, ATTN: SMCAR-QAF-I, Picatinny Arsenal, NJ 07806-5000. This address will be specified on the Contract Data Requirements List, DD Form 1423 in the contract.

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

6.5 Subject term (key word) listing.

Belt pull test  
Targeting and accuracy test  
Endurance test

Custodian:  
Army-AR

Preparing activity:  
Army-AR

(Project 1005-A758)

# 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.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

<b>RECOMMEND A CHANGE</b>		1. DOCUMENT NUMBER	2. DOCUMENT DATE (YYMMDD)
3. DOCUMENT TITLE			
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets if needed.)			
5. REASON FOR RECOMMENDATION			
6. SUBMITTER			
a. NAME (Last, First, Middle Initial)		b. ORGANIZATION	
c. ADDRESS (Include Zip Code)		d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (If applicable)	7. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY			
a. NAME		b. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON	
c. ADDRESS (Include Zip Code)		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	