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INCH-POUND

MIL-DTL-45500/5A
18 December 1996
SUPERSEDING
MIL-G-45500/5
30 July 1974

DETAIL SPECIFICATION SHEET

GUN, AUTOMATIC, 20MM: THREE-BARREL, HIGH RATE, M197 AND M197E1

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The complete requirements for procuring the gun described herein shall consist of this specification sheet and the issue of MIL-DTL-45500E.

1. SCOPE

1.1 Scope. This specification sheet covers the requirements for one type of three-barrel, electrically fired, 20 millimeter (mm) automatic gun. The gun utilizes an ammunition feeder, recoil adapters and is either electric or hydraulic power driven.

2. APPLICABLE DOCUMENTS

SPECIFICATIONS

DEPARTMENT OF DEFENSE

MIL-DTL-45500 - Gun, Automatic, 20mm: General Specification For

DRAWINGS

U.S. ARMY WEAPONS COMMAND

F11691450 - Gun, Automatic, 20mm: M197E1
F11838579 - Gun, Automatic, 20mm: M197
A12011591 - Gun, 20mm Auto: Three Barrel. High Rate M197 w/o Barrels

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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PUBLICATIONS

U.S. ARMY WEAPONS COMMAND

IEL11691450 - Index of Inspection Equipment List
IEL11838579 - Index of Inspection Equipment List
P11691450 - Packaging Data Sheet for gun, Automatic 20mm: M197E1
P11838579 - Packaging Data Sheet for Gun, Automatic 20mm: M197

3. REQUIREMENTS.

3.1 Material, construction and design. Guns and parts shall conform to the material, construction and design requirements specified on Drawing F11838579 (M197) or A12011591 (M197 w/o Barrels) and F11691450 (M197E1).

3.1.1 Functioning.

TABLE I. Performance Requirements.

Gun Torque (Max.)	Acceleration Time (Max.)	Cyclic Rate of Fire	Stopping Time (Max.)
400 inch - pounds at 1,350 rounds per minute.	0.3 seconds (from start of gun rotation to 1,350 rounds per minute).	1,350 to 1,650 rounds per minute. (1500 rpm ± 10%.	0.3 seconds (from minimum cyclic rate of fire to complete stop).

3.1.2 Targeting and accuracy. The gun shall place 80 percent of the rounds fired (in a single burst of 100 ±5 rounds), in an eight (8) inch diameter circle at a range of 1,000 inches at any single cyclic rate from 400 to 1,500 rounds per minute for accuracy, and the center of the 80 percent group shall be within six (6) inches elevation, three (3) inches depression, and three (3) inches left and five (5) inches right azimuth of the true boresight point targeting.

3.1.3 Endurance. Guns shall fire 25,000 rounds, minimum, for endurance. A series is 500 rounds using five (5) bursts of 100 ±5 rounds each.

TABLE II

Schedule of Replacement Parts (Not applicable)

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4. VERIFICATION

4.1 Conformance inspection.

4.1.1 Inspection equipment. The measuring and testing equipment shall be as specified on the Index of Inspection Equipment List IEL11838579 (M197) and IEL11691450 (M197E1) or shall be contractor supplied and Government-approved.

4.2 Test methods.

4.2.1 Function firing test procedure. The gun shall be function fired at a cyclic rate of fire of 1350 and 1650 rpm using a feeder, recoil adapters, power supply with control equipment and calibrated drive specified in MIL-DTL-45500. To calculate the gun torque at minimum cyclic rate of fire, the steady state rate of fire, and the mean differential pressure across the drive shall be calculated using the last 50 percent of the burst excluding stopping time. The calculated rate of fire shall be 1350 to 1650 rpm.

4.2.2 Interchangeability test. The following groups of nonmating parts shall be utilized in the interchangeability test:

GROUPS OF NONMATING PARTS	
GROUP I	GROUP II
Barrel (7790801) Block, Locking (11691480) Bolt, Machine (11838675) Gear, Rotor (11838553) Housing, Subassembly, Matched (11691402) Insulator, Vertical (11691415) Pin, Firing (11691418) Plug (11691414) Track, Rotor Center (11838552) Track, Rotor, Front (RH 11838549) Track, Rotor, Front (LH 11838550) Track, Rotor, Removable 11838547)	Bar, Guide (11691401) Cam, Unlocking, Front (11698265) Clamp, Mid-barrel, Quick-disconnect (11838584) Insulator Assembly, Horizontal (11691420) Nut, Self-Locking, Plate (11838651) Pin, Cam (11691417) Plate Assy., End (12007566)(M197) Plate, End (11691451) Shaft Assembly, Bolt (11691421) Spacer, Removable Track (7268715) Spring, Helical Compression (11691419)

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GROUPS OF NONMATING PARTS
GROUP III
Body, Breech Bolt (11691423) Bolt, Machine (11838575) Cam, Lock (11691677) Cam, Unlocking, Rear (11698264) Plate, Clamp, Muzzle (11838640) Clamp, Coupling (12011779) Contact Assembly, firing (11010186) Pin Assembly, Indexing (7790768) Rotor Assembly, (remaining parts)(11838574)

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or purchase order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

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

6.1 Supersession data. This specification sheet includes the requirements of U.S. Army Weapons Command Purchase Description USAWECOM PD-36 dated 13 July 1972 for the M197, 20mm Automatic Gun.

6.2 Packaging data sheet. Packaging Data Sheet P11838579 (M197) and Packaging Data Sheet P11691450 (M197E1) applies, as applicable.

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

Custodians:
Army - AR
Navy - NW
Air Force - 84

Preparing activity:
Army - AR

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INSTRUCTIONS

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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 MIL-DTL-45500/5A	2. DOCUMENT DATE (YYMMDD) 18 December 1996

3. DOCUMENT TITLE

Gun, Automatic, 20MM: Three-Barrel, High-Rate, M197 and M197E1.

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	
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 **U. S. Army ARDEC**	b. TELEPHONE (*Include Area Code)* (1) Commercial: **(201) 724-6671 DSN 880-6671**
c. ADDRESS (*Include Zip Code)* **ATTN: AMSTA-AR-EDE-S, B-12** **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 DSN 289-2340

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