

MIL-G-45500/1

30 July 1974  
SUPERSEDING  
MIL-G-45500C  
13 July 1972

## MILITARY SPECIFICATION SHEET

GUN, AUTOMATIC, 20MM: M61 and M61A1

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 document and the issue in effect of specification MIL-  
G-45500.

## 1. SCOPE

1.1 This specification sheet covers two types of six-barrel, elec-  
trically fired, 20 millimeter (MM) automatic guns M61 and M61A1. The  
gun utilizes an ammunition feeder and is power driven through its cycle  
of operation by either an electric or hydraulic drive, or ram air tur-  
bine for installation in an aircraft armament pod system.

## 2. APPLICABLE DOCUMENTS

## SPECIFICATIONS

Military

MIL-G-45500 - Gun, Automatic, 20MM: General Specifica-  
tion For

## DRAWINGS

US. Army Weapons Command

F7268702 - Gun, Automatic, 20MM: M61  
F7791641 - Gun, Automatic, 20MM M61A1

## PUBLICATIONS

U.S. Army Weapons Command

IEL1101348 - Index of Inspection Equipment Lists  
for M61A1.  
IEL7314365 - Index of Inspection Equipment Lists  
for M61.

FSC 1005

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3.1.1 Clearing solenoid (M61A1 only). The clearing solenoid shall be fastened securely to the housing and the electrical receptacle connector shall be securely fastened to the connector bracket as specified on the applicable drawing.

3.1.2 Chute case assembly (M61 only). The chute case assembly shall be fastened securely to the housing assembly.

### 3.2 Performance characteristics.

3.2.1 Functioning. Functioning requirements of guns shall be in accordance with Table I.

TABLE I

#### Performance Requirements

<u>Gun Torque (Max)</u>	<u>Acceleration Time (Max)</u>	<u>Steady State Rate of Fire</u>	<u>Stopping Time ( M a x )</u>
1,200 pound-inches at minimum steady state rate of fire (M61).	0.4 seconds (from start of gun rota- tion to mini- mum steady state rate of fire).	6,000 to 7,200 rounds per minute.	0.4 seconds (from minimum steady state rate of fire to complete stop).
800 pound-inches at a minimum steady state rate of fire (M61A1)			

3.2.3 Targeting and accuracy. At a range of 1,000 inch, 80 percent of a 100 round burst shall be completely within an 8.0 inch diameter circle for accuracy; and the center of the 80 percent group shall be within 2.5 inches elevation or depression, and 4.75 inches azimuth right or left of the true boresight point for targeting.

3.2.3 Endurance. Gun shall fire 30,000 rounds for endurance. A series is 1000 rounds using five(5) bursts of 200 round each.

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TABLE II

Schedule of replacement parts.

<u>Part Nomenclature</u>	<u>Part No.</u>	<u>Gun Rounds ± 1,000 Rounds</u>
Pin, spring (for block, locking)	11698266	15*000
Shaft, assembly, bolt	77090708	15,000
Insulator, pin, cam, firing	33010160	15,000
Insulator assembly, firing pin	11010159	15,000
Pin, cam, firing	7268304	15,000
Pin, firing	7268303	15,000
Spuring, firing pin	11698237	15,000
Stop, contact assembly	7268730	15,000

## 4. QUALITY ASSURANCE PROVISIONS

4.1 Quality conformance inspection.

4.1.1 Examination. Guns shall be visually and manually examined in accordance with the following:

TABLE III

<u>Part or assembly</u>	<u>Ref. Para.</u>
Clearing solenoid (M61A1 only)	3.1.1
Chute case assembly (M61 only)	3.1.2

4.1.2 Inspection equipment. The measuring and testing equipment shall be as specified on the Index of Inspection Equipment Lists. IEL 7314365 (M61); IEL 11013148 (M61A1).

4.2 Test methods.

4.2.1 Function firing test Procedure. The gun shall be function fired at a cyclic rate of 6,000 to 6,400 rounds per minute using a feeding power supply with control equipment, and calibrated drive in accordance with MIL-G-45500. To calculate 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 stop-ping time. The calculated rate of fire shall be 6,000 to 6,400 rounds per minute.

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4.2.2 Interchangeability tests. The following groups of non-mating parts shall be utilized in the interchangeability test:

#### GROUPS OF NON-MATING PARTS

##### GROUP I

Adapter, recoil assembly (7268312)  
 Barrel (7790801)  
 Block, locking (7269955)  
 Gear, rotor (7268664)  
 Housing Assembly, rear (7790712 M61)  
 (11010476 M61A1)  
 Insulator, pin, cam, firing (11010160)  
 Pin, firing (7268303)  
 Stop, contact assembly (7268730)  
 Track, rotor center (7268703)  
 Track, rotor front (7268711)  
 Track, rotor removable (7268552)

##### GROUP II

Bar, guide (7269918 M61)  
 (11010130 M61A1)  
 Cam, unlocking, front (11698265)  
 Clamp, center-barrel, assembly  
 (7790177 M61 only)  
 Clamp, mid-barrel, quick  
 disconnect (7791616 M61A1 only)  
 Insulator assembly, firing pin  
 (11010159)  
 Pin, Cam, firing (7268304)  
 Pin, cover lock (11010132)  
 Plate, end (7269889 M61)  
 (11698281 M61A1)  
 Retainer assembly (7269886)  
 Shaft assembly, bolt (7790708)  
 Spacer, removable track (7268715)  
 Spring, firing pin (11698237)  
 Spring, helical, torsion (7791606)

##### GROUP III

Body, breech bolt (11010158)  
 Cam, lock (11691677)  
 Cam, unlocking, rear (11698264)  
 Chute, case, assembly (7768769 M61 only)  
 Clamp assembly, muzzle (7790341 M61) (11010336 M61A1)  
 Clamp, coupling (7269760)  
 Contact assembly, firing (11010399 M61) (11010186 M61A1)  
 Cover, housing assembly (7268556)  
 Pin assembly, indexing (7790768)  
 Rotor assembly (remaining parts )  
 Sector, clearing cam assembly (7268791 M61) (11010219 M61A1)

#### 5. PREPARATION FOR DELIVERY

Packaging Data Sheets P7268702 (M61) or P7791641 (M61A1) apply as applicable.

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## 6. NOTES

### Custodians:

Army - WC  
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### Review activities:

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### User activity:

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MIL-G-45500/1  
AMENDMENT 2  
3 OCTOBER 1988  
SUPERSEDING  
AMENDMENT 1  
5 OCTOBER 1977

MILITARY SPECIFICATION

GUN, Automatic 20MM: M61 AND M61A1

This amendment forms a part of Military Specification Sheet MIL-G-45500/1, dated 30 July 1974 and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 3

Delete "TABLE II" in its entirety and substitute:

Add:

"TABLE II"

"SCHEDULE FOR REPLACEMENT PARTS (NOT APPLICABLE)"

PAGE 4

4.2.2. Group I:

Delete "11010160" and substitute "11691415"

Delete "7268303" and substitute "11691420"

Delete "Stop, Contact Assembly (7268730)" and substitute "Plug (11691414)"

Group II

Delete "11010159" and substitute "11691420"

Delete "7268304" and substitute "11691415"

Delete "7790708" and substitute "11691419"

Group III

Delete "11010158" and substitute "11691423"

Para 4.2.2, Group I -

Delete "7269955" and substitute "11691480"

AMSC N/A

1 of 2

FSC1005

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AMENDMENT 2

Delete "11010476" and substitute "12007363"

Delete "Insulator, Pin, Cam, Firing" and substitute  
"Insulator, Vertical"

Delete "11691420" and substitute "11691418"

Group II -

Delete "Insulator Assembly, Firing Pin" and substitute  
"Insulator Assembly, Horizontal"

Delete "Pin, Cam, Firing (11691415}" and substitute "Pin,  
Cam (11691417)"

Delete "11698281" and substitute "11698286"

Delete "7790708" and substitute "11691421."

The margins of this amendment are marked with an asterisk or vertical lines to indicate where changes (additional modification, corrections, deletions) from the previous corrections amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

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