

INCH-POUND

MIL-L-45935A  
 AMENDMENT 3  
 29 March 1991  
 SUPERSEDING  
 AMENDMENT 2  
 29 June 1987

## MILITARY SPECIFICATION

## LAUNCHER, GRENADE, 40MM: DETACHABLE M203

This Amendment forms a part of Military Specification MIL-L-45935A, dated 5 September 1974, and is approved for use by all Departments and Agencies of the Department of Defense.

## PAGE 1

1.1, Change "the M16 and M16A1, 5.56mm Rifle to "the M16 and M16A1 or M16A2, 5.56mm Rifle".

\* 2.1, Under Standards Add:

"MIL-STD-1189

-Standard Department of Defense  
 Bar Code Symbology"

## PAGE 2

\* Delete 3.2.2.1 and Substitute:

"3.2.2.1 Pump actuation. The barrel assembly shall be capable of pump actuation when the barrel latch is depressed. The barrel assembly shall be capable of forward and rearward movement over its full range of travel. The maximum force required to move the unloaded barrel assembly from the unlocked position to the maximum forward open position and returned to the close locked position shall not exceed 14 pounds. Under loaded conditions using the 40mm (functional test) plug, P/N 12937951, the maximum forces shall not exceed 28 pounds. Testing shall be as specified in 4.5.3.2."

## PAGE 3

\* Delete 3.2.2.4 and Substitute:

"3.2.2.4 Cartridge retainer. The cartridge retainer clips shall be capable of deflection through their full range of travel without binding or permanent deformation. The cartridge retainer shall be capable of holding a fully inserted 40mm plug, P/N 12937951, within the barrel chamber, when the launcher is held in the vertical position with the muzzle upward and the barrel opened to the full open position."

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\* Delete 3.2.3.1 and Substitute:

"3.2.3.1 Extractor. The extractor shall function through it's full range of travel under spring action without binding. Upon locking the barrel into the battery position with the chambered 40mm plug, P/N 12937951, the extractor shall cam downward upon contact with the plug and allow the barrel with plug to be locked in the battery position. The extractor hook shall engage the plug's rim and retain the plug within the receiver to allow clearing of the barrel chamber as the barrel assembly is moved to the open forward position."

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3.2.3.2 Change "2.75 pounds minimum to 6.75 pounds maximum" to "0.65 pounds minimum to 1.62 pounds maximum".

3.2.3.4 Add: "testing shall be as specified in 4.5.3.10."

Delete 3.2.3.5 and substitute:

"3.2.3.5 Breech insert. The breech insert shall be securely seated and torqued to 50 pounds-inches  $\pm$  5 pounds-inches so that the breech insert face is flush to 0.007 inch below the breech surface of the receiver. After the breech insert has been securely seated and torqued, the sealing compound shall be allowed to cure for not less than 24 hours. The loosening torque of the breech insert from the receiver shall not be less than 130 pounds-inches -10 pounds-inches. The firing pin hole shall be free of residue that would affect firing pin movement or freedom of other moving parts. Testing shall be as specified in 4.5.3.8."

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\* Delete 3.3.1 and Substitute:

"3.3.1 Pressure resistance and functioning. Launchers shall withstand the firing of one (1) government standard 40 mm M781 practice round for pressure resistance and functioning. The launcher shall function without malfunction or unserviceable parts. There shall be no evidence of blown primer or primer puncture during firing. Testing shall be as specified in 4.5.3.4."

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\* Delete 3.3.2 and Substitute:

"3.3.2 Endurance. Launchers shall withstand the firing of 1000 rounds using the 40mm, M781 Practice Round or equivalent, without malfunction or unserviceable parts. Launchers shall be cleaned and oiled with lubricant conforming to MIL-L-46000 after each 250 rounds fired and at the close of day's firing. Testing shall be as specified in 4.5.3.6."

3.3.3 Change "an M16 or M16A1 rifle" to "an M16 or M16A1 or M16A2 rifle".

\* Delete 3.3.3 and Substitute:

"3.3.3 Targeting and Accuracy. The launcher shall be assembled to an M16, M16A1 or M16A2 rifle and fired at a 200 meter range distance for targeting and accuracy, using government standard 40mm M781 practice rounds or equivalent. The top edge of the front sight post flange of the rifle shall be set flush with or not more than .030 inches below the bottom surface of the front sight slot, and the leaf sight shall be unfolded to the sighting position. No adjustment of the leaf sight shall be made after it has been set in the leaf sight alignment. Testing shall be as specified in 4.5.3.7."

3.3.3.2 Change "an M16 or M16A1 rifle" to "an M16 or M16A1 or M16A2 Rifle".

Add 3.5.1 as shown below:

"3.5.1 Definition of reliability failure.

3.5.1.1 The occurrence of a malfunction which cannot be cleared in 10 seconds. A malfunction is any cessation of any ability of the system or any of its components to perform its intended function. A system is the item or combination of items which are under test.

3.5.1.2 The occurrence of a launcher condition which causes an unwarranted safety hazard to personnel.

3.5.1.3 The occurrence of broken or unserviceable part which renders the launcher inoperable or unsafe if firing is continued.

3.5.1.4 Failures which are attributable to ammunition shall not be charged against the launcher; they will however, be recorded."

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\* 3.7 Add:

"Bar code label shall be affixed to the receiver and IAW MIL-STD-1189".

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4.5.2.2.1 Delete "F1183800" and add "F11838246".

Change "the M16 or M16A1 rifle" to "the M16 or M16A1 or M16A2 Rifle".

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4.5.3.4 Delete in its entirety and substitute:

"4.5.3.4 Trigger pull, safety actuating torque, pressure resistance and functioning and breech insert loosening torque. Each launcher shall be tested for trigger pull (see 3.2.3.9), safety actuation torque (see 3.2.3.11.2), pressure resistance and functioning (see 3.3.1) and breech insert loosening torque (see 3.2.3.5) using the test methods specified in 4.7.2.4, 4.7.2.5, 5.7.4 and 4.7.7.1.1.1 respectively. Failure of the launcher to pass any of these tests shall be cause for rejection."

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4.5.3.8.1.1.1 Delete in its entirety and substitute the following:

"4.5.3.10 Trigger sear and secondary sear testing. A sample of 50 launchers shall be randomly selected from each inspection lot for trigger sear and secondary sear requirements of 3.2.3.4 using the test method specified in 4.7.2.6. Failure of the launcher to pass the above test shall be cause for rejection of the represented lot. Reconditioned launchers or reconditioned lots shall be tested using the procedures and test methods specified above."

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4.6 Change "on a rifle, 5.56mm, M16 or M16A1" to "on an "M16, M16A1 or M16A2 Rifle".

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Add paragraph 4.7.2.6 as shown below:

"4.7.2.6 Trigger sear and secondary sear test. Launchers shall be tested for trigger sear and secondary sear requirements (see 3.2.3.4) utilizing inspection equipment in accordance with drawing F11836899 and Cartridge, 40MM, XM387B2 (Dummy, Completely Inert). With the launcher mounted to the fixture, the barrel latch shall be depressed and the launcher barrel exercised to cock the launcher with the left hand. Partial trigger pull shall be evenly applied to the trigger by the index finger of the right hand until movement of the trigger occurs without releasing the firing pin. The trigger shall then be released. The trigger shall return to the original position under spring action after partial trigger pull. The trigger will then be pulled to cause the firing pin to fall. The launcher shall then be opened in the manner previously cited and a fired cartridge case inserted into the breech of the barrel. The hook of the fixture will be placed over the trigger and 20 lb. pressure applied to depress the trigger. The barrel will then be moved to the closed position, left hand on the hand guard at a speed to simulate actual loading and firing of 5 to 10 rounds per 2 minutes. When the barrel is closed, the firing pin shall be retained by the secondary sear until the trigger is released and allowed to return to its forward position. When the trigger is pulled with the index finger of the right hand, the firing pin shall fall."

\* Delete 4.7.2.6 and Substitute:

"4.7.2.6 Trigger sear and secondary sear test. Launchers shall be tested for trigger sear and secondary sear requirements (see 3.2.3.4) using inspection equipment in accordance with drawing F11836899 and 40mm functional test plug, P/N 12937951. With the launcher mounted to the fixture, the barrel latch shall be depressed and the launcher barrel exercised to cock the launcher with the left hand. Partial trigger pull shall be evenly applied to the trigger by the index finger of the right hand until movement of the trigger occurs without releasing the firing pin. The trigger shall then be released. The trigger shall return to the original position under spring action after partial trigger pull. The trigger will then be pulled to cause the firing pin to fall. The launcher shall be opened in a manner previously cited and the 40mm functional test plug inserted into the breech of the barrel. The hook of the fixture will be placed over the trigger and 20 lb. pressure applied to depress the trigger. The barrel will then be moved to the

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closed position, left hand on the hand guard at a speed to simulate actual loading and firing of 5 to 10 rounds per 2 minutes. When the barrel is closed, the firing pin shall be retained by the secondary sear until the trigger is released and allowed to return to its forward position. When the trigger is pulled with the index finger of the right hand, the firing pin shall fall."

4.7.5.1 Change "to and M16 or M16A1 rifle" to "to an M16, M16A1 or M16A2 Rifle".

4.7.7.1.1.1 Delete in its entirety and substitute:

"4.7.7.1.1.1 The launcher receiver, prior to reassembly, shall be securely held, and using a torque wrench, shall withstand a torque of 130-10 pound-inches applied to the breech insert without movement or loosening of the breech insert."

PAGE 16

Table titled: GROUPS OF NONMATING PARTS. Group V Change "Spring, Ejector (8448307)" to "Spring, Ejector (12006355)".

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4.7.8.1 Change "to an M16 or M16A1 rifle" to "to an M16, M16A1 or M16A2 Rifle".

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\* 5.2.1 Add:

"5.2.1 Bar code shall be attached to the receiver IAW the drawing and shall agree with the serial number."

\* 6.1 Add:

"m. Bar code marking requirements."

6.1.1 Delete "4.7.11.7" and substitute: "4.7.8.7".

6.2 Change "and interchangeability and breech insert removal, etc.)" to "and interchangeability)".

The margins of this amendment are marked with an asterisk or vertical lines to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were made. This was done as a convenience only and the

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