

UNITED STATES ARMY
MARKSMANSHIP UNIT

M-14 RIFLE ACCURIZATION

(ALSO APPLICABLE TO M1A RIFLES)

*GUIDE TO NATIONAL MATCH ACCURIZING
AS PERFORMED BY U.S. ARMY
SHOOTING TEAM GUNSMITHS*



ACCURIZED NATIONAL MATCH
M-14 RIFLE "M-14 (MTU-NM)"

FOREWORD

Because of the many requests for technical information on accurizing the M-14 Rifle from individual rifle accuracy specialists and organizations within and outside the military services, the United States Army Marksmanship Unit offers this brief coverage of the procedures we believe necessary to achieve greater accuracy with this weapon.

Constructive comments are invited. Please address your correspondence to: Commander, United States Army Marksmanship Unit, Fort Benning, Georgia 31905.



STANLEY J. ARMENTIER
Colonel, Infantry
Commanding

THE UNITED STATES ARMY MARKSMANSHIP TRAINING UNIT
STANDARDS AND PROCEDURES
FOR
REBUILD OF RIFLE 7.62 MM M-14 NATIONAL MATCH
TO MEET
USA - MTU SPECIFICATIONS

1. COVERAGE

1.1 The requirements for accuracy and stability of a rifle used at this level are much more refined than that used by the average soldier. The following rebuild specifications, testing procedures and grouping characteristics must be demanded for each individual rifle.

2. REQUIREMENTS

2.1 The procedures or characteristics specified here are in addition to those of Army Weapons Command for the National Match Rifle and supercede them when requirements are more specific or exacting.

3. TESTING

3.1 The rifle will be held in a recoiling type test cradle and must be tested in a completely assembled condition.

3.2 Test ammunition shall be cal 7.62 mm NATO M-118 Match.

3.3 Average extreme spread for three consecutive ten shot groups shall not exceed six (6) inches at a range of 300 meters.

(The above criteria is based upon ammunition with an extreme spread capability of 3.5 inches at 300 M). If the ammunition shows an extreme spread larger than 3.5 inch, the weapon will be allowed 2.5 inch greater than the capability of the ammunition.

4. SPECIFICATIONS

4.1 Barrel. Must meet NM specifications with these additional requirements:

4.1.1 Bore diameter shall be 0.3004 plus or minus 0.0002, but shall not have over 0.0001 variation in any one specific barrel and in no case be larger at the muzzle end than at the breech.

4.1.2 Groove diameter shall be 0.3083 plus or minus 0.0002, but shall not have over 0.0001 variation in any one specific barrel and in no case be larger at the muzzle end than at the breech.

4.1.3 Shall be knurled on the exterior in that area designated to position the operating rod guide. Knurling to be straight in configuration and to increase the diameter at this point to 0.808 plus or minus 0.0002. Knurling will be done in such a manner as to alleviate any possibility of an internal constriction in the barrel. The purpose of this knurl is to provide a tight, non-rotating fit for the operating rod guide when in its assembled position on the barrel. See illustration "A".

4.1.4 Headspace will be held to the following dimensions:

"GO" gage..... 1.631"
"NO-GO" gage..... 1.635"

4.2 GAS CYLINDER AND LOWER BAND ASSEMBLY

4.2.1 The gas cylinder and lower band will be permanently assembled to each other as shown in illustration "B".

4.2.2 The spindle valve must be annealed prior to drilling and tapping. The characteristics of this steel are such that it will require a temperature of 1200° initially and this temperature must be lowered slowly over a period of several hours before the metal is soft enough to drill. The lower band should be annealed prior to reaming and drilling. It should be reamed .020 (refer to Figure B.1) so that it will not contact the outside of barrel or lower part of cylinder.

4.2.3 The drilling operation is done as follows: The spindle valve, gas cylinder and lower band are assembled on fixture #1 as illustrated in "C", and an extended #31 drill is used, drilling through all three components, but stopping prior to breaking through the forward portion of the gas cylinder.

4.2.4 The holes in the spindle valve are then tapped with a 6-32 thread.

4.2.5 An 82° countersink is used on the rear face of the lower band, in each hole, to a depth where an Allen 6-32 "NYCOK" flat head cap screw will be flush with the surface.

4.2.6 The #31 drill holes in the gas cylinder must be enlarged to a clearance diameter, with the use of a #27 drill. An 82° countersink is used to provide clearance for the forward edge of the screw head due to the thinness of the material in the lower band.

4.2.7 Assembly: The components are assembled in their proper position, epoxy cement placed on the screws and all parts firmly pulled together. Upon the hardening and curing of the epoxy, the unit is to all effects a single piece.

4.2.8 Note that the spindle valve is now permanently locked in the open position.

4.2.9 The inside of the gas cylinder is now polished with "Wet or Dry" abrasive paper mounted on a mandrel; first with 320 grit, and then finally with 400 grit. This is to reduce carbon buildup while firing.