

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE



cc: C. B. Workman
J. W. Brooks
F. S. Martin
J. P. Linde
File

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"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"

Ilion, New York
February 9, 1978

TO: A. A. HUGICK
FROM: J. H. HENNINGS
SUBJECT: M/700 CLASSIC PILOT LINE TEST

Date Started: - 12/22/77
Date Completed: - 1/4/78
Work Order: - 85-382

INTRODUCTION:

Received a request from Design to select eight (8) Model 700 22-250 Cal. classic bolt action rifles from a sample lot of 40 rifles and conduct a pilot line test of this 1978 addition to the Model 700 rifle.

TEST OBJECTIVE:

To conduct a pilot line test on the 1978 version M/700 classic rifle.

TEST OBSERVATIONS:

A. Visual Appearance

1. Overall appearance of the rifles tested is acceptable.
2. The vinyl satin finish applied to the stocks produces a rifle very pleasing to the owner.

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TEST OBSERVATIONS: (Cont'd)

A. Visual Appearance (Cont'd)

- 3. The stock inletting process requires attention in the following areas: (Photos attached)
 - a. Fit of trigger guard assembly to stock.
 - b. Relief for barrel guide ring at top of stock uneven left/right sides.
 - c. Barrel inletting not proportional side to side.
 - d. Borders on checkering deep causing wood "flash".

B. Measurements:

- 1. Headspace, trigger pull and firing pin indent measurements taken on all 8 rifles remained within Remington Standards for this rifle.
- 2. The average gun weight of the eight (8) rifles tested was 7 lbs. 5 oz.
- 3. Stock dimension measurements taken on all eight rifles revealed the following:
 - a. The drop measurements at the comb and heel are .200" below standards.
 - b. All other stock dimensions were within plant standards.
- 4. Lock time was taken on three (3) rifles with the following results: (Avg. of 10)
 - Gun No. 2 - 3.4 m/sec.
 - Gun No. 5 - 3.0 m/sec.
 - Gun No. 7 - 3.2 m/sec.
- 5. The average gun length of all eight (8) rifles is 43-3/4".
- 6. Sear lift and engagement measurements were conducted on two rifles with the following results:

GUN	LIFT	ENGAGEMENT
3	.0095"	.0219"
7	.0083"	.0218"

C. Testing:

- 1. Four (4) rifles were selected for 100 yd. accuracy in the plant accuracy device. Three (3) rifles exceeded the plant standard of 2.20" for group size with averages of 2.30", 2.27" and 2.30".

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TEST OBSERVATIONS: (Cont'd)

C. Testing: (Cont'd)

2. The four (4) remaining rifles were accuracy tested at the R&D 100 yd. range using a Rem. 20x scope and firing all rifles from the bench rest. All four rifles were within the Remington standards of 2.20" for group size with averages of 1.55" to 2.19".
3. Visual inspection of the bedding pad in the stock revealed uneven contact between the barrel and the pad. This condition was evident in 75% of the rifles used in this test.
4. The two (2) poorest grouping rifles were retested using match book covers placed on either side of the barrel at the bedding pad area. Both rifles averaged within plant standards during retest.
5. All eight (8) rifles were jack function tested 60 rds. each of mixed ammo with no malfunctions occurring.

TEST PROCEDURE:

A. Visual Inspection:

1. Conducted by Test Lab personnel.

B. Measurements:

1. Basic measurements conducted by Test Lab. All figures are avg. of 5 samples unless stated otherwise.
2. Lock time conducted by Meas. Lab Personnel. Average of 10 samples on each rifle.
3. Sear lift and engagement figures obtained on optical comparator in model shop using reflective mode. Bolt handle fully closed during measurement. Average of 10 samples.

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TEST PROCEDURE: (Cont'd)

C. Testing:

1. Accuracy.

- a. Gallery test conducted in plant accuracy device firing 3x5 shot groups per rifle cooling gun after second group. Plant ammo was used for this test. All groups measured center to center.
- b. R&D 100 yd. range test conducted using bench rest and 20x Rem. Scope. Tester fired 3x5 shot groups per rifle cooling gun after second group. Ammo used - Rem. 55 gr. H.P. Power-Lokt factory ammo. All groups measured center to center.

2. Jack Function Test:

- a. Shooting conducted in Test Lab shooting jacks.
- b. Slow, medium, fast, and alternating feed rates were used. 5 rds. per rate per gun.
- c. The following ammo was used per gun:
20 rds. - Rem. 55 gr. P.S.P.
20 rds. - Rem. 55 gr. H.P.
20 rds. - Win. 55 gr. P.S.P.

D. Future Work:

1. A meeting was held Dec. 30, 1977 with Process Engineering, Design, and the Test & Measurement Lab to discuss results of this test.
2. Design is reviewing the stock dimension tolerances of this rifle.
3. Process Engineering is investigating the stock inletting process for the M/700 Classic rifle.
4. The Test & Measurement Lab will not conduct an individual pilot line test on every caliber classic rifle as they are produced. In April or May the Lab will select a sample of every caliber classic rifle and conduct a Research Quality Audit Test at that time.

JHHennings/bd
Ilion Research Division
Attached