

## **M/710 - 10 Gun Test Procedures**

(10/30/00)

### **System Operation/Bench Check** Done by DD,DD,MK,SF

Follow the steps listed below to verify that the rifle is fully functional and will operate as intended.

- Check gun for live ammo
- Make sure ISS system is unlocked (red dot visible)
- Make sure safety is in the "On" position
- Push bolt forward and then rotate to the closed or locked-up position
- Pull the trigger: The rifle should not fire
- With finger off the trigger, push the safety to the "Off" position – The rifle should not fire
- Pull trigger – The rifle should fire (i.e. The firing pin should fall)
- Open the bolt and put safety back to the "On" position
- Using the ISS tool verify that the ISS tumbler can be rotated to the locked position (no red dot visible)
- Unlock the ISS using the ISS tool (red dot visible)
- Remove the Magazine box
- Re-insert magazine box in rifle and verify that the magazine latch fully engages.
- Try removing the bolt from the gun without operating the bolt stop – Bolt should not slide out of the receiver.
- Open the bolt stop and try removing the bolt – The bolt should now slide out.
- Re-insert bolt and rotate the bolt stop back into position.

#### **Data Required:**

- Rifle Serial number
- Record any abnormal operation for each step above

### **Measure Trigger Pull Force.**

#### **Method:**

- Trigger pull is to be performed to the SAAMI standard; horizontal pull at the center of the finger radius of the trigger using the Test Lab apparatus designed for taking this measurement.
- Use the 1-10 lb. Chatillon Force digital force gauge.
- Force is measured parallel to the bore with the stock assembled to the action.
- Three pulls are to be taken on each sample rifle and the results averaged.
- The average force for the three trials must be between 4.0 lb. and 5.0 lb.

#### **Data Required:**

- Rifle Serial number
- All three data points for each trial rifle

- The average of the three measurements for each sample rifle.

#### **Measure Bolt Lift and Bolt Closing Forces:**

The force required opening the bolt and closing the bolt will be measured for each sample. Both of these forces will be taken with the chamber empty and then repeated, this time with a new dummy round in the chamber. Bolt opening forces will also be checked with the firing pin cocked and uncocked as well. There is not a specification for these forces and the readings will be taken for information only.

#### **Method:**

- After locating the rifle in the trigger pull fixture and securely locking in place, (it may be necessary to clamp the fixture to the bench if not already securely fixed in place), locate the hook of the force gauge at the point on the bolt handle just behind the ball.
- With the chamber empty and using the Chatillon gauge, pull the gauge straight up and perpendicular to the bore, measure the force required to open the bolt with the firing pin cocked.
- Lock the firearm in a horizontal position, using the trigger pull holding fixture, (i.e. shooting position) before taking the measurements.
- Take three readings for each gun in the sample.
- Record all readings.
- Repeat procedure, only this time open bolt with the firing pin in the fired or fully forward position.
- Repeat the procedure again only this time push the bolt closed.
- Note that it may be necessary to start the bolt closed by hand so the firing pin head is depressed sufficiently out of the notch and can start up the cam surface of the bolt as the firing pin is cocked. Record the amount of forward force needed in order to start rotating the bolt.
- Repeat all the above procedures only this time with a new, unused dummy round in the chamber.

#### **Data Required:**

- Rifle serial number
- Each of the three readings taken for each of the 6 states for each test sample
- 1 Bolt opening force with empty chamber, firing pin cocked.

2. Bolt opening force with empty chamber, firing pin uncocked (fired)
  3. Bolt closing force with empty chamber.
  4. Bolt opening force with dummy round in chamber, firing pin cocked.
  5. Bolt opening force with dummy round in chamber, firing pin uncocked (fired)
  6. Bolt closing force with dummy round in chamber.
- The average of each set of three measurements per state

#### **Bolt Stop Function Check Do Not Do this Test**

The Bolt Stop will be checked for proper function. The bolt stop must prevent the bolt from being unintentionally withdrawn from the receiver when in the “locked” position and must permit the bolt to be withdrawn when in the “un-locked” position. Measure the amount of force required to move the bolt stop from the locked position to the un-locked position and record. Determine if the bolt stop can be operated by a bare hand and then a gloved hand without the aid of a tool.

#### **Confirm proper fit between stock and receiver (no shims)**

- Look at fit between the Stock, Receiver and Barrel. Does receiver appear to be fully seated in Stock? Are gaps uniform and not excessive? Stock to Receiver? Stock to Barrel?
- Remove the barreled action from the stock and verify that no shims are present between the receiver and stock.

#### **Confirm permanent attachment of recoil lug to stock**

- Verify that the Recoil lug is permanently glued to the stock.

#### **Headspace, Proof, Headspace**

- Verify that each gun has been proofed and magnafluxed by looking for the appropriate stamp on the right side of the barrel just forward of the receiver.
  1. If both stamps are visible check headspace only. Follow DAT criteria for acceptable Headspace before continuing with any live fire testing.
  2. If stamps are not visible perform the Headspace/Proof/Headspace procedure as written in the DAT test plan.

#### **200 Round Jack Function Test (all 10 guns)**

- Shoot all ten guns a total of 200 Rounds each using a mix of available Remington .30-06 Cal. ammunition. Record all malfunctions, part breakage's

or any other event that may occur. Note: Shoot the first 10 rounds through each gun using a lanyard as if proofing the gun. Inspect the gun and 10 spent cases before continuing with the endurance. Follow standard endurance procedures for the remaining 190 Rounds.

**500 round jack function test (1 gun) Do Not Do this Test**

- Continue 1 gun to 500 total rounds using a mix of Remington and competitive ammunition. Record all malfunctions, part breakage's or any other event that may occur. Follow standard endurance procedures.

**ISS Abuse Test(8 guns)**

- This test should be performed on 4 samples each of the two proposed bolt plug designs.
- The test should be performed with **no live ammo or primed cases**. The gun should be empty.
- Make sure the safety is in the "On" safe position.
- Lock the ISS system with the tool (No red dot visible)
- Check the gun for live ammo.
- Attempt to close the gun using excessive force if needed.
- Open the bolt and remove it from the gun.
- Disassemble the firing pin assembly from the bolt body and inspect the bolt plug for damage, cracks etc. Use the stereoscope in the Metallurgical lab.
- Record results.