AUTO-5 FIELD SERVICE MANUAL

BROWNING FIELD AUTO-5 SERVICE MANUAL

This manual is designed only for the gunsmith trade and for use by personnel associated with the authorized Browning Service Centers. Browning cannot accept the responsibility for injuries received during the disassembly or reassembly of this gun or from the results of incorrect fitting of replacement parts or adjustments.

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IMPORTANT SAFETY WARNINGS

Before performing any instructions given throughout this manual, be certain to read the **NOTES** and **CAUTION** notes given in regard to those instructions. Generally, these precautionary notes follow the related instructions.

SAFETY WARNING

Failure to obey a Safety Warning—**Caution**—may result in injuries to you or to others.

Failure to obey a **NOTE** regarding the repair process may result in incorrect procedure which could cause malfunctions and/or damage to the firearm.

CAUTIONS

1. Be certain the firearm is unloaded before proceeding with any service work.
2. Approved safety glasses should be worn by service personnel and bystanders when removing or reinstalling any springs or spring-loaded components.
3. As noted in the attached parts list on Pages 3 & 4, some of the Browning supplied spare parts must be fitted by the Browning Service Department in Arnold, Missouri or by qualified gunsmiths.
4. If for any reason it becomes necessary to load and fire this firearm, it is recommended that reference be made to the Owners Manual for proper loading, handling and safety procedures. These manuals may be obtained by contacting Browning, Route #1, Morgan, Utah 84050.

SECTION I

1. DESCRIPTION

The Browning A-5 is a 5-shot, semi-automatic recoil operated shotgun.

2. FUNCTIONAL OPERATION

When the cartridge in the chamber of the Barrel is fired, the expansion of the gases causes a pressure against the face of the Breech Block. The Breech Block is locked to the Barrel Extension by the Locking Block which is a part of the Breech Block Assembly. This pressure, created by the burning powder, supplies the power to drive the Barrel and Breech Block Assembly to the rear of the Receiver. The energy of the recoiling Barrel is stored by compression of the Recoil Spring, and Action Spring and is partially dissipated by the friction bronze piece rubbing on the Magazine Tube.

As the Breech Block Assembly starts to move to the rear, the rear end of the Link disengages the upper arm of the Safety Sear. The Safety Sear, under pressure from the Safety Sear Spring and Plunger, rotates the lower arm of the Safety Sear forward where it rests against the back edge of the Trigger until the Trigger is released. When the Trigger is released, the lower arm of the Safety Sear is rotated over the Trigger blocking it from being pulled again until the cycle of extraction, ejection and loading is complete. At that time, the Link is forward and back into position against the upper arm of the Safety Sear unblocking the Trigger and allowing it to be pulled for the second shot. If for any reason the Breech Bolt Assembly is not returned to battery position the Safety Sear will prevent the trigger from being pulled.

If the Trigger is held to the rear throughout the cycle of extraction, ejection and loading, the gun cannot fire automatically. This is due to the Hammer, as it reaches the cocked position, being caught by the rear notch of the Trigger. When the Trigger is finally released, the Hammer is released from the safety notch and is caught by the forward notch of the Trigger. The Hammer will not release from there until the Trigger is pulled again.

Simultaneously, as the Breech Block Assembly travels to the rear, the Carrier Dog is rotated rearward compressing the Carrier Dog Spring. When the Breech Block reaches its maximum movement to the rear, the Carrier Dog snaps up under the pressure of the Carrier Dog Spring into the area between the Operating Handle and the Breech Block. The Carrier Dog retains the Breech Block Assembly to the rear of the Receiver allowing the Barrel to move forward under the pressure of the Recoil Spring.

When the Barrel starts to move forward, the Locking Block rotates out of the aperture in the Barrel Extension and the right and left hand extractors hold the fired shell case. When the Barrel almost reaches battery position, the Ejector, located on the barrel extension, strikes the base of the fired shell, rotating and ejecting it out of the ejection port of the Receiver. Just before the Barrel is completely forward, the Cartridge Stop riding in the groove in the Barrel Extension is moved outward, allowing a live round of ammunition to move out of the Magazine Tube.

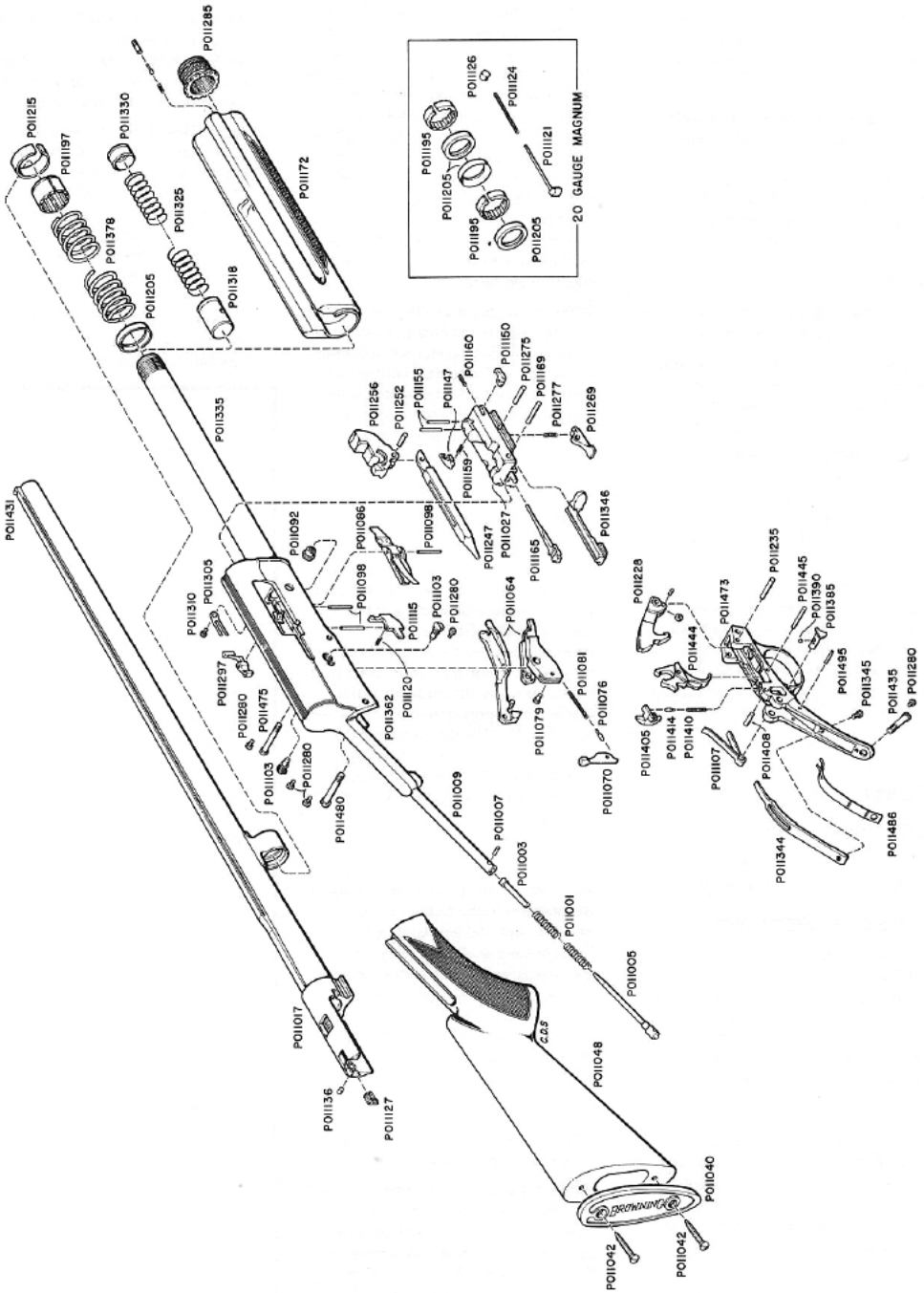
As the live round moves rearward from the Magazine Tube, it strikes the rear portion of the Carrier Latch and releases the Carrier Latch from the Carrier. As this happens, the front of the Carrier Latch locks the remaining rounds into the Magazine Tube.

When the Carrier is released from the Carrier Latch, the Carrier Dog, under pressure from the Carrier Dog Spring, causes the Carrier to rotate and lift the round just released from the Magazine Tube for chambering.

As the round is being lifted by the rotating Carrier, the Carrier Dog releases the Breech Block Assembly allowing it to move forward under pressure from the compressed Action Spring.

As the Breech Block Assembly approaches battery position chambering the new round, the forward end of the Link rotates and unlocks the Locking Block Latch from the Locking Block allowing the Locking Block to rotate in the Breech Block up into the aperture of the Barrel Extension. The Carrier Spring then returns the Carrier to its normal position. This completes the cycle of firing, cocking, extraction, ejection and loading.

AUTO-5 Automatic-5 Shotgun Standard, Light and Magnum Models—12, 16 and 20 Gauge



PART NO.	PART NAME
PO11001	Action Spring 12M-12-16-20-20M
PO11003	Action Spring Follower 12M-12-16-20-20M
PO11005	Action Spring Plug 12M-12-16-20-20M
PO11007	Action Spring Plug Pin 12M-12-16-20-20M
PO11009	Action Spring Tube 12M-12-16-20-20M
*PO11015	Barrel Extension Assembly Magnum 12 Gauge
*PO11017	Barrel Extension Assembly 12
*PO11022	Barrel Extension Assembly 16
*PO11024	Barrel Extension Assembly 20
*PO11025	Barrel Extension Assembly Magnum 20 Gauge
PO11027	Breech Block 12M-12
PO11032	Breech Block 16
PO11035	Breech Block Magnum 20 Gauge
PO11036	Breech Block 20
*PO11040	Butt Plate 12-16-20-20M
PO11042	Butt Plate Screws 12-16-20-20M
*PO11046	Butt Stock Magnum With Recoil Pad 1⅜" x 2½" x 14" 12M
*PO11048	Butt Stock Field 1⅜" x 2½" x 14¼" 12
*PO11051	Butt Stock Trap 1⅜" x 1¾" x 14⅜" 12
*PO11056	Butt Stock Field 1⅜" x 2½" x 14¼" 16-20-20M
PO11057	Butt Stock Swivel Eyelet 12M-12-16-20-20M
*PO11062	Carrier Assembly (Magnum) 12 Gauge
*PO11064	Carrier Assembly 2 Piece 12
*PO11066	Carrier Assembly 2 Piece 16
*PO11068	Carrier Assembly 2 Piece 20-20M
*PO11070	Carrier Dog 12M-12
*PO11071	Carrier Dog 16-20-20M
PO11076	Carrier Dog Follower 12M-12
PO11077	Carrier Dog Follower 16-20-20M
PO11079	Carrier Dog Pin 12M-12
PO11080	Carrier Dog Pin 16-20-20M
PO11081	Carrier Dog Spring 12M-12
PO11083	Carrier Dog Spring 16-20-20M
PO11085	Carrier Latch Assembly (Magnum) 12 Gauge
PO11086	Carrier Latch Assembly 12
PO11089	Carrier Latch Assembly 16
PO11090	Carrier Latch Assembly 20-20M
PO11092	Carrier Latch Button 12
PO11093	Carrier Latch Button 12M-16
PO11094	Carrier Latch Button 20-20M
PO11098	Cartridge Stop Pin 12M-12-16-20-20M
PO11103	Carrier Screw 12M-16-20-20M
PO11107	Carrier Spring Trigger Plate Type 12M-12
PO11111	Carrier Spring-Trigger Plate Type 16-20-20M
PO11115	Cartridge Stop 12M-12
PO11117	Cartridge Stop 16-20-20M
PO11120	Cartridge Stop Spring 12M-12-16-20-20M
PO11121	Ejector & Ejector Rod Magnum 20 Gauge
PO11123	Ejector Spring Magnum 12 Gauge
PO11124	Ejector Spring Magnum 20 Gauge
*PO11125	Ejector Magnum 12 Gauge
PO11126	Ejector Spring Retainer Magnum 20 Gauge
*PO11127	Ejector 12 & Prewar 16
*PO11134	Ejector 16 & 20
*PO11136	Ejector Rivet 12
*PO11142	Ejector Rivet 12M-16-20
PO11147	Extractor Left 12M-12-16-20
PO11148	Extractor Spring Follower Magnum 20 Gauge
PO11149	Extractor Magnum 20 Gauge
PO11150	Extractor Right 12M-12-16-20
PO11155	Extractor Pin Left & Right 12M-12-16-20-20M
PO11159	Extractor Spring Left 12M-12-16-20
PO11160	Extractor Spring Right Hand 12M-12
PO11162	Extractor Spring Right Hand 16-20
PO11163	Extractor Spring Magnum 20 Gauge
PO11164	Extractor Spring Follower Right Hand 16-20
PO11165	Firing Pin 12M-12
PO11167	Firing Pin 16-20-20M
PO11168	Firing Pin Stop Pin 12M-12
PO11169	Firing Pin Stop Pin 16-20-20M
*PO11170	Forearm 5-Shot Magnum 12 Gauge
*PO11172	Forearm 5-Shot 12
*PO11183	Forearm 5-Shot 16
*PO11191	Forearm 5-Shot 20
*PO11192	Forearm Magnum 20 Gauge
PO11195	Friction Piece Bronze Magnum 12 Gauge
PO11197	Friction Piece Bronze 12
PO11198	Friction Piece Bronze Magnum 20 Gauge
PO11199	Friction Piece Bronze 16-20
PO11205	Friction Ring 12M-12
PO11207	Friction Ring 16-20-20M
PO11215	Friction Spring 12
PO11216	Friction Spring 16-20
*PO11225	Hammer Assembly—Magnum 12 Gauge
*PO11228	Hammer Assembly—Lightweight 12
*PO11232	Hammer Assembly—Lightweight 16-20-20M
*PO11235	Hammer Pin 12M-16-20-20M
*PO11243	Link (Magnum) 20 Gauge
*PO11245	Link (Magnum) 12 Gauge
*PO11247	Link 12
*PO11251	Link 16-20
*PO11252	Link Pin 12M-12
*PO11254	Link Pin 16-20-20M
PO11256	Locking Block 12M-12
PO11261	Locking Block 16-20-20M
PO11264	Locking Block Latch Magnum 20 Gauge
PO11265	Locking Block Latch Magnum 12 Gauge
*PO11269	Locking Block Latch 2-Piece Carrier 12
*PO11272	Locking Block Latch 2-Piece Carrier 16-20
PO11275	Locking Block Latch Pin 12M-12-16-20-20M
PO11277	Locking Block Latch Spring 12M-12
PO11279	Locking Block Latch Spring 16-20-20M
PO11280	Lock Screw 12M-12-16-20-20M
PO11285	Mag. Cap—W/O Swivel Eyelet 12M-12
PO11287	Mag. Cap—W/O Swivel Eyelet 16-20-20M
PO11292	Mag. Cap—With Swivel Eyelet 12M-12
PO11294	Mag. Cap—With Swivel Eyelet 16-20-20M

Indicates part must be fitted by Browning Service Department or qualified gunsmiths.

**Part may be purchased only by holders of current valid Federal Firearms Licenses.*

NOTE: Unless otherwise indicated, part is interchangeable between gauges/calibers.

PART NO.	PART NAME
PO11295	Magazine Cutoff—Magnum 12 Gauge
PO11297	Magazine Cutoff 12
PO11298	Magazine Cutoff 16
PO11299	Magazine Cutoff 20-20M
PO11098	Magazine Cutoff Pin 12M-12-16-20-20M
PO11305	Magazine Cutoff Spring 12M-12-16-20-20M
PO11310	Magazine Cutoff Spring Screw 12M-12-16-20-20M
PO11315	Magazine Follower—Magnum 12 Gauge
PO11318	Magazine Follower 12
PO11319	Magazine Follower 16
PO11321	Magazine Follower 20-20M
PO11325	Magazine Spring 12M-12
PO11329	Magazine Spring 16-20-20M
PO11330	Magazine Spring Retainer 12M-12
PO11333	Magazine Spring Retainer 16-20-20M
PO11335	Magazine Tube 5-Shot 12M-12
PO11339	Magazine Tube 5-Shot 16
PO11342	Magazine Tube 5-Shot 20M
PO11343	Magazine Tube 5-Shot 20
*PO11344	Mainspring 12M-12-16-20-20M
PO11345	Mainspring Screw 12M-12-16-20-20M
PO11346	Operating Handle 12M-12
PO11347	Operating Handle 16-20-20M
**PO11355	Receiver—Magnum 12 Gauge
**PO11357	Receiver—Magnum 20 Gauge
**PO11359	Receiver—Standard 12
**PO11362	Receiver—Lightweight 12
**PO11366	Receiver—Standard 16
**PO11368	Receiver—Sweet 16
**PO11372	Receiver—Lightweight 20
PO11375	Recoil Spring—Magnum 12M
PO11378	Recoil Spring 12
PO11381	Recoil Spring 16-20
PO11382	Recoil Spring Magnum 20 Gauge
*PO11385	Safety Crossbolt, Right 12M-12-16-20-20M
*PO11386	Safety Crossbolt, Left 12M-12-16-20-20M
PO11390	Safety Ball 12M-12-16-20-20M
PO11395	Sight Base—Rear—Buck Special 12M-12
PO11397	Sight Base—Rear—Buck Special 16
PO11398	Sight Base—Rear—Buck Special 20-20M
PO11399	Sight Body—Rear—Buck Special 12M-12-16-20-20M
PO11400	Sight Aperture—Rear—Buck Special 12M-12-16-20-20M
PO11401	Sight Adjusting Screw—Windage—Buck Special 12M-12-16-20-20M
PO11403	Sight Adjusting Screw—Elevation—Buck Special 12M-12-16-20-20M
PO11404	Sight Roll Pin—Buck Special 12M-12-16-20-20M
*PO11405	Safety Sear 12M-12
*PO11406	Safety Sear 16-20-20M
PO11408	Safety Sear Pin 12M-12-16-20-20M
PO11410	Safety Sear Spring 12M-12-16-20-20M
PO11414	Safety Sear Spring Follower 12M-12-16-20-20M
PO11421	Sight Ramp—Front—Buck Special 12M-12-16
PO11422	Sight Ramp—Front—Buck Special 20-20M
PO11423	Sight—Gold Bead—Front—Buck Special 12M-12-16-20-20M
PO11425	Sight Bead Plain & Vent—Magnum 12M
PO11431	Sight Bead Plain & Vent—12-16-20-20M

PART NO.	PART NAME
PO11435	Tang Screw for Pistol Grip Stock 12M-12-16-20-20M
*PO11444	Trigger for Crossbolt Safety—Gold Plated—Lightweight 12-16-20-20M
PO11445	Trigger Pin 12M-12-16-20-20M
*PO11466	Trigger Plate for Crossbolt Safety—12
*PO11473	Trigger Plate for Crossbolt Safety—Lightweight 16-20-20M
PO11475	Trigger Plate Screw—Front 12M-12
PO11477	Trigger Plate Screw—Front 16-20-20M
PO11480	Trigger Plate Screw—Rear 12M-12
PO11481	Trigger Plate Screw—Rear 16-20-20M
*PO11486	Trigger Spring—Pin Retainer 12M-12-16-20-20M
PO11495	Trigger Spring Retaining Pin 12M-12-16-20-20M
PO11499	Adapter, Magazine, 3-Shot 12M

**Indicates part must be fitted by Browning Service Department or qualified gunsmiths.*

***Part may be purchased only by holders of current valid Federal Firearms Licenses.*

NOTE: Unless otherwise indicated, part is interchangeable between gauges/calibers.

SECTION III—DISASSEMBLY

1. HAND DISASSEMBLY WITHOUT TOOLS

With the gun completely assembled, pull the Operating Handle back to its locked open position. Position the Butt Stock on a solid object such as a workbench to avoid the stock from slipping and falling from an insecure surface. Grasp the Barrel above the Magazine Cap and pull downward to relieve the pressure of the Recoil Assembly and remove the Magazine Cap, Forearm, Barrel and the Recoil Assembly parts.

Occasionally you may find a Magazine Cap that is too tight to remove by hand. In this case, place the Magazine Cap in a pair of leather or cork padded jaws used in your vise and apply only enough pressure to remove the cap.

2. DISASSEMBLY WITH HAND TOOLS INTO SUB-ASSEMBLIES

NOTE: The screwdrivers to be used should be ground to fit the slots of the screws to prevent marring.

A. BUTT STOCK

Place the gun in an inverted position and grip in the area of the pistol grip with back corner of Receiver resting against solid surface like a workbench. Remove the Tang Screw and its Lock Screw as shown in Figure #1.

NOTE: Do not remove the Mainspring Screw at this time.

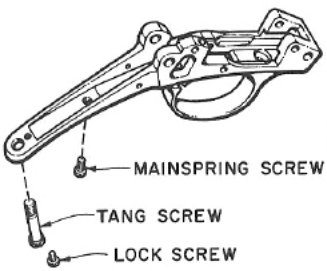


FIGURE #1

Remove the Butt Stock by holding the Butt Stock with one hand and the Receiver with the other as shown in Figure #2.

Place a soft cloth, etc. on the edge of your bench and forceably strike the rear portion of the Receiver with a downward motion while pulling down on the stock.

FIGURE #2

B. TRIGGER PLATE ASSEMBLY

Depress the Carrier Latch Button and slowly let the Breech Block Assembly go forward.

NOTE: Never let the action slam forward unrestricted without the Barrel on the Receiver as the forward edge of the Ejection Port will become marred.

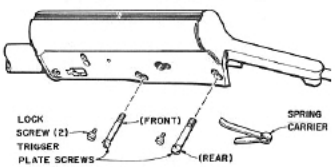


FIGURE #3

Remove the Trigger Plate Screws and their Lock Screws as shown in Figure #3.

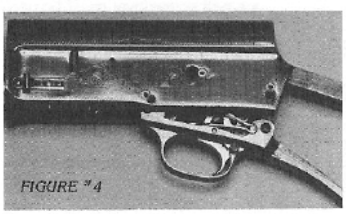


FIGURE #4

This will allow removal of the Trigger Plate Assembly as shown in Figure #4.

On older models with the Carrier Spring in the Receiver, remove it next. This can be accomplished by using a thin blade screwdriver and lightly forcing the Carrier Spring from under the post in front.

On newer models the Carrier Spring is installed on the Trigger Plate Assembly.

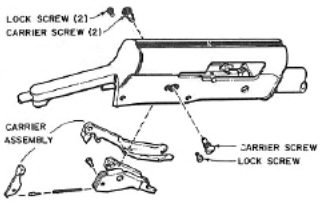


FIGURE #5

C. CARRIER ASSEMBLY

Remove the Carrier Screws and their Lock Screws on each side of the Receiver and remove the Carrier Assembly as shown in Figure #5.

NOTE: During reassembly, the Carrier Screws must be re-installed in their respective sides of the Receiver for alignment of Lock Screws. You may want to mark them. On older models the right screw has a small mark on its end.

NOTE: Disassembly of the Carrier Assembly into component parts is normally not necessary and is not recommended.

D. ACTION SPRING ASSEMBLY

With a 3/32" punch remove the Action Spring Plug Pin while retaining the Action Spring Plug with the other hand. See Figure #6.

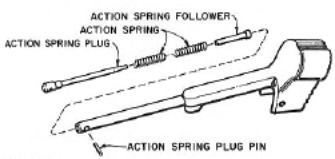


FIGURE #6

Carefully remove the Action Spring, Follower and Plug.

CAUTION: Be careful when removing the pin to seize the spring and plug as they will fly out.

E. BREECH BLOCK ASSEMBLY

Rotate the action so the right side of the Receiver is up. Using the Link extended from the bottom of the Receiver, position the Breech Block in the Receiver so the Locking Block Latch Pin aligns with the half hole at the bottom edge of the Ejection Port.

Maintaining the Breech Block in this position, rotate the Receiver 180°. With a 3/32" punch, drive out the Locking Block Latch Pin through the hole in the left side of the Receiver. See Figure #7.

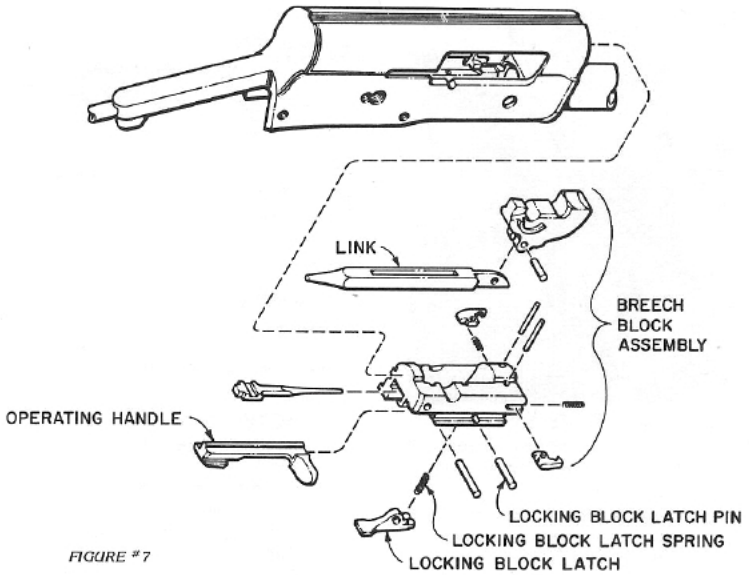


FIGURE # 7

NOTE: When the punch is retracted from the hole the Locking Block Latch and Spring may be expelled from the Receiver. If not, remove them at this time.

Rotate the action so the right side of Receiver is up. Pull the Operating Handle to the rear while simultaneously pushing the Link protruding from the bottom of the Receiver forward to remove the Operating Handle and the Breech Block Assembly from the forward end of the Receiver.

F. MAGAZINE SPRING, FOLLOWER AND RETAINER

Pry out the Magazine Spring Retainer or use a hook ended tool gripped in a vise as shown in Figure # 8 and remove the Retainer and Spring.

NOTE: If the Magazine Tube is excessively beveled at the end, the Follower will not be easily removed. Unless required, removal is not recommended.

CAUTION: Be careful to captivate the Magazine Spring when removing the Retainer as the Spring will fly out.

Next, remove the Magazine Follower by inverting the Receiver and allowing it to drop out.

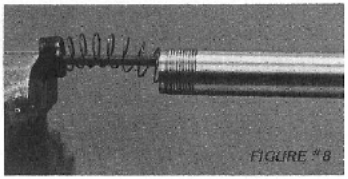


FIGURE # 8

G. CARTRIDGE STOP

Place the Receiver Assembly in the inverted position. With a 3/32" punch drive out the Cartridge Stop Pin and remove the Cartridge Stop, Pin and Spring. See Figure # 9.

NOTE: Use caution that the punch aligns with the hole past the Cartridge Stop and that you do not damage the Receiver rails.

NOTE: On older models the Cartridge Stop is retained with a screw instead of a roll pin and a small screwdriver must be used instead of a punch.

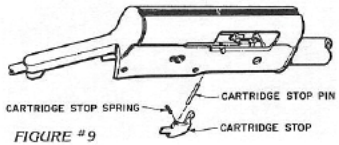


FIGURE # 9

H. CARRIER LATCH ASSEMBLY

Remove the Carrier Latch in the same fashion as the Cartridge Stop. After removal of the Carrier Latch the Carrier Latch Button is released for removal. See Figure # 10.

NOTE: On older models the Carrier Latch is retained with a screw instead of a roll pin and a small screwdriver must be used instead of a punch.

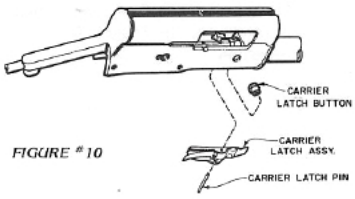


FIGURE # 10

I. MAGAZINE CUTOFF ASSEMBLY AND MAGAZINE TUBE

Remove the Magazine Cutoff Screw and Spring. See Figure # 11.

Next, remove the Magazine Cutoff in the same fashion as the Carrier Latch and Cartridge Stop.

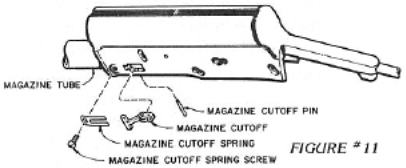


FIGURE # 11

J. MAGAZINE TUBE (Optional)

Properly supported with a special clamping device, the Magazine Tube can now be unscrewed out of the Receiver if required. Do not remove unless necessary.

NOTE: The Magazine Cutoff Spring Screw must always be removed in order to unscrew the Magazine Tube.

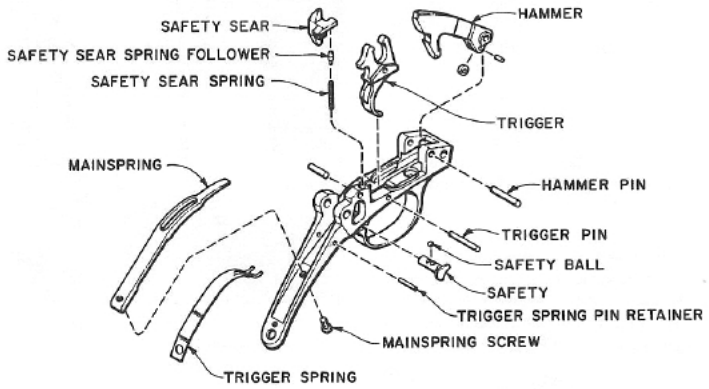


FIGURE # 12

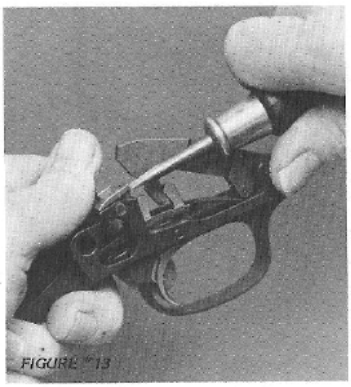


FIGURE # 13

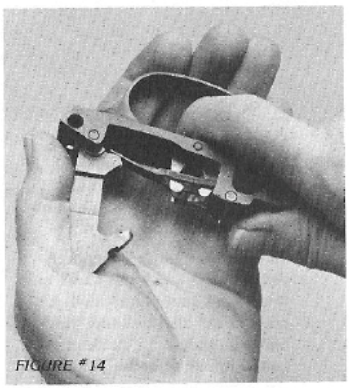


FIGURE # 14

SECTION IV

DISASSEMBLY OF SUB-ASSEMBLIES INTO COMPONENT PARTS, INSPECTION, ADJUSTMENT AND REASSEMBLY OF SUB-ASSEMBLIES

1. DISASSEMBLY OF THE TRIGGER PLATE ASSEMBLY

(Figure # 12)

Place the Hammer to the cocked position and the Safety to the "ON SAFE" position. Using a small thin blade screwdriver depress the Safety Sear Spring Follower and slide the Safety Sear off its pin as shown in Figure # 13.

CAUTION: Use caution not to let the Safety Sear Spring and Follower fly out.

Remove the Safety Sear Spring and Follower.

Place the Safety to the "OFF SAFE" position. Holding the Hammer as shown in Figure # 14, pull the Trigger and carefully lower the Hammer fully.

Remove the Hammer and Hammer Pin with a 1/8" punch.

Remove the Mainspring Screw from the Tang and remove the Mainspring.

On older models, the Trigger Spring is retained in the Trigger Plate by grooves on the inside of the Tang. To remove, insert a punch in the hole at the rear and pull the Spring out at the rear of the Tang.

On newer models, the Trigger Spring is retained in the Trigger Plate by a small Cross Pin. Drive out the Cross Pin (Trigger Spring Retaining Pin) with a small punch and remove the Spring.

NOTE: Removal of the Trigger Spring will release the Safety Ball which is easily lost.

Invert the Trigger Plate Assembly and allow the Safety Ball to drop out.

Using a 3/32" punch drive out the Trigger Pin and remove the Trigger and Safety.

2. INSPECTION, ADJUSTMENT AND REASSEMBLY OF THE TRIGGER PLATE ASSEMBLY

With all components removed from the Trigger Plate Assembly with exception of the Safety Sear Pin, inspect the Trigger Guard for burrs and/or deformation. Sometimes burrs will develop in the portion of the Trigger Guard that retains the Safety. These burrs should be removed. If the gun has been dropped or mishandled and the Trigger Guard becomes bent, it is necessary that the Trigger Guard be reformed to its original shape.

Inspect the Safety Sear Pin for play. If it is loose, you may notice a slight stake mark on the Trigger Plate just above the Safety Sear Pin. Use a center punch and re-stake the Sear Pin to make it tight.

Place the Safety in the Trigger Plate and see that it slides from side to side freely. If you find that it sticks in any particular spot, remove any high spots or burrs to make it move freely.

With the Safety positioned in the Trigger Plate, install the Trigger and Trigger Pin and see that the Trigger rotates freely on the pin. When installing the Trigger make sure it does not interfere with the forward end of its cut-out in the Trigger Guard when the Trigger is pulled.

With the aid of needle nosed pliers, install the Safety Ball and position the Trigger Plate in a vise.

On newer style, position the Trigger Spring on the Trigger Plate and while depressing the Spring install the Trigger Spring Retaining Pin as shown in Figure # 15.

NOTE: On old style, slide the Trigger Spring in grooves on Trigger Plate until attaching screw holes are aligned.

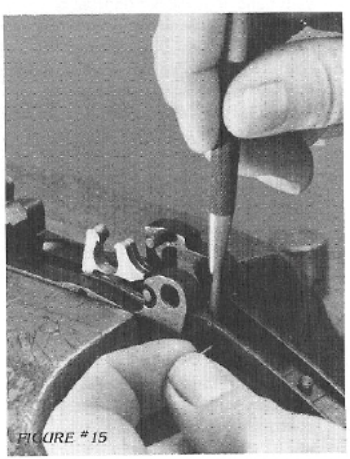


FIGURE # 15

See that there is enough friction on the Safety after the Trigger Spring has been installed. If the Safety moves too freely, remove the Trigger Spring and bend the center prong that applies pressure to the Safety Ball so that it will increase the friction of the Safety. If the Safety works too hard, bend the center prong of the Trigger Spring away from the Safety Ball. The recommended operating force for the Auto-5 Safety is 4 to 5 lbs.

Install the Mainspring and Mainspring Screw. Make sure the Mainspring is oriented as shown in Figure #16.

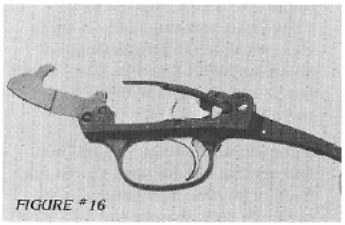


FIGURE #16

Before installing the Hammer, place the Hammer Pin through the Hammer Pin hole and see that the Hammer will operate smoothly back and forth in the elongated hole. Install the Hammer and Hammer Pin in the Trigger Plate.

Cock the Hammer and rotate it fully to the rear and retain it there with the thumb. With the Safety in the "OFF SAFE" position, pull the Trigger and while holding the Trigger fully to the rear release the Hammer. Observe that the rear Trigger Sear notch is engaged in the rear Hammer Sear notch and holds the Hammer in over-cocked position as long as the Trigger is held to the rear.

Release the Trigger and observe that the front Trigger Sear notch engages in the front Hammer Sear notch and holds the Hammer in the cocked position. At this point, holding Hammer with your hand so it will not hit front of Trigger Plate, check the Trigger pull which should be 4-5 lbs. normal. Also partially pull Trigger and visually check for Sear regain, i.e. as soon as the Trigger is released the Sears should return to full engagement after being partially disengaged.

If when checking the above Trigger functions the Sear notches do not release or have a tendency to hang, the mating surfaces may be improperly shaped, have burrs, or the Trigger Spring may be weak. The problem or problems must be isolated and corrected. If problems are determined to be related to the Sear surfaces on the Trigger or Hammer, the specific part or parts should be replaced and not altered in any way.

If when releasing the Trigger, the front notch of the Hammer does not strike squarely in the front notch of the Trigger, the "U" shaped portion of the Trigger is spread too wide apart and the Trigger should be replaced.

With the hammer in the cocked position, install the Safety Sear, Spring and Plunger. After installation, observe the lower portion of the Safety Sear has rotated into position to block movement of the Trigger when the Trigger is pulled.

If the Safety Sear cannot rotate into position to block the Trigger, the lower shank of the Safety Sear is too long and a small amount of metal should be ground off. See Figure #17.

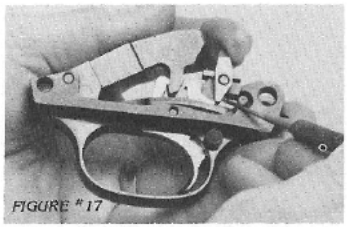


FIGURE #17

SAFETY WARNING **CAUTION:** Use care to maintain the original angle at the bottom of the Sear and that too much metal is not ground off so as to render the Safety Sear ineffective.

NOTE: After the gun has been assembled and is ready to fire and the Trigger cannot be pulled, it is possible the top portion of the Safety Sear that strikes the inside of the Link is too short or that the Link itself is bent. In the event this is found, it will be necessary to replace the Safety Sear or reshape and straighten the Link.

With the mechanism cocked and the Safety Sear disengaged with the thumb, push the Safety to the "ON SAFE" position and test the Trigger. The Hammer must not fall when the Trigger is pulled as hard as possible with the index finger of both hands.

If the Hammer falls, the Safety is worn or the rear tab of the Trigger that contacts the Safety is too short. If the Safety is worn, fit a new one. If the tab is too short, fit a new Trigger.

3. INSPECTION OF THE CARRIER ASSEMBLY

NOTE: Disassembly of the Carrier Assembly is normally not necessary.

The Carrier will on occasion lose its original shape. The two legs which extend to the rear may become misaligned. To check, place a steel scale on the outside of the Carrier legs as shown in Figure #18 and see that the legs are parallel with the lifting portion of the Carrier. If the legs do not align with the lifting portion, place the front of the Carrier in a vise and use a small rawhide mallet to tap the legs back into shape.

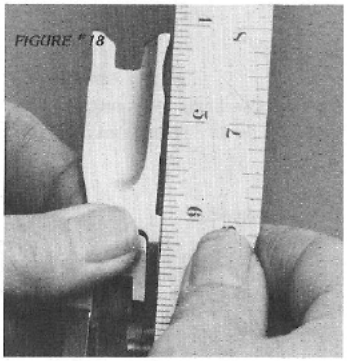


FIGURE #18

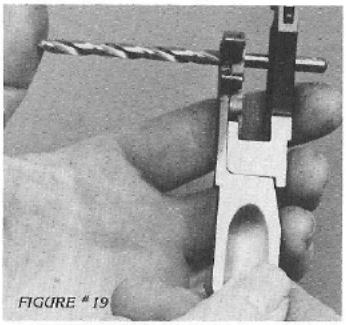


FIGURE #19

The Carrier screw holes must be in perfect alignment. To check alignment of these holes, use the shank portion of a #13 drill bit and push the bit through the holes of the Carrier as shown in Figure #19.

Do not use force when checking the alignment of these holes. The bit should slide through freely from one hole to the other.

If the holes do not align, you may have to twist one of the legs of the Carrier or bend it so the holes do align. This can be accomplished with a rawhide mallet or a pair of parallel jawed pliers while the front of the Carrier is retained in a vise.

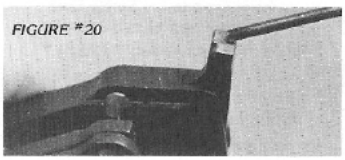


FIGURE #20

It is important the holding surface (Figure #20) of the Carrier Dog be maintained as it comes from the factory.

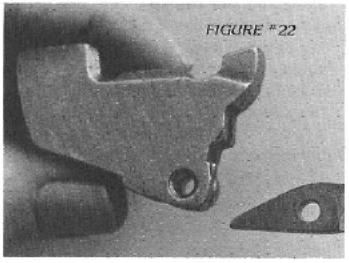
This surface should not be altered in any fashion. If it has been altered the Carrier Dog may not release from the Operating Handle holding the Breech Block Assembly. In operation, if it does not release, either too much metal has been worn away or removed at that point, or the contacting surface of the Carrier where the Carrier Dog rests has been worn and allows the Carrier to rotate too far forward. If the Carrier Dog has been altered and metal removed, or the Carrier is worn, it is best to replace these parts.

4. DISASSEMBLY OF THE BREECH BLOCK ASSEMBLY (Figure #21)

With a 1/8" punch, drive out the Firing Pin Stop Pin from the left side of the Breech Block to the right and withdraw the Firing Pin.

Rotate the Locking Block and Link up and out of the Breech Block.

NOTE: Disassembly of Locking Block and Link is normally not necessary. However, if disassembly is required, remove the Link Pin from right to left and separate the Link and Locking Block. Newer models come with flattened Link Pin but older models have the Link Pin staked on left side to prevent the Pin from protruding on right side during cycling which could jam and possibly damage the Action. See Figure #22.



Both the left and right Extractors and Springs may be removed by driving out their Retaining Pins from the bottom of the Breech Block to the top with a 3/32" punch.

5. INSPECTION, ADJUSTMENT AND REASSEMBLY OF THE BREECH BLOCK ASSEMBLY

Inspect all parts for cracks, burrs, unusual wear and make replacement as necessary. Make sure the front portion of the Link that lifts the Locking Block Latch is not worn or burred and that the Link is straight in all respects.

Re-install both Extractors, Springs and Pins. Take the Breech Block in hand and inspect adjustment of the Extractors in the following manner: Using a dummy cartridge, place the base of the

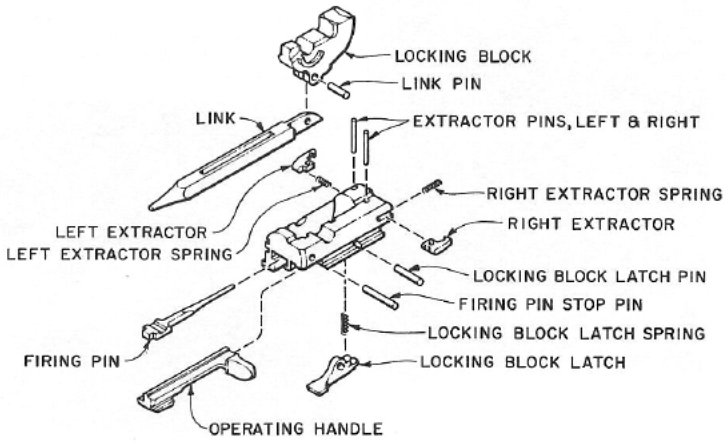
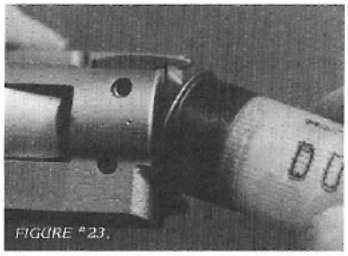


FIGURE #21

cartridge between the right and left hand Extractors. Apply pressure to the base of the shell and force the right hand Extractor outward by sliding the shell flat on the face of the Breech Block until the right hand Extractor has reached its maximum movement. Tilt the shell so it will show a space in clearing the left hand Extractor as shown in Figure #23.



The correct distance between the rim of the shell and the left hand Extractor is approximately 1/32" to 1/64". If the gap is wider than 1/32", you will find the shell will occasionally drop off the Extractors or give sluggish ejection. To correct this adjustment, it is necessary to tap the hook end of the left hand Extractor inward.

After this adjustment has been made, reposition the dummy cartridge between the Extractors and merely tilt the shell in the same fashion without applying outward pressure to the right Extractor. The rim of the shell should be retained by the hook end of the left Extractor but release with only moderate tilting pressure of the cartridge. If it does not release, the left Extractor is too sharp at its hooked end or has too much hook. For correction use a fine file and remove the sharp corner of the hook end.

In addition, if the left hand Extractor does not move outward by pressure on the hook end, there is a possibility the Extractor is out of shape or the last coil on the Extractor Spring is lodged between the Extractor and the Breech Block. Correction for this is to "turn in" the last coil of the left hand Extractor Spring or to replace the left hand Extractor.

Reassemble the Link and Locking Block with the orientation as shown in Figure #22 if previously disassembled.

Install the Locking Block and Link in the Breech Block Assembly. The tolerance between the Breech Block and the Locking Block is very important to protect the track on the Locking Block. With the Locking Block protruding approximately 1/4" above the top surface of the Breech Block, compress the two components as shown in Figure #24. Check to see that contact is made between the forward surface of the Locking Block and the Breech Block with this pressure applied. If contact is not found to exist, replace components as necessary to correct this condition.

Replacement of parts will also be necessary if the Locking Block and Breech Block rub excessively hard together. This condition will cause the Action to jam.

NOTE: On guns manufactured prior to 1958, it is necessary to replace both the Breech Block and Locking Block when one or the other is replaced. This is due to a dimensional change in the Breech Block track. Additional parts needed are the left hand Extractor and Spring.

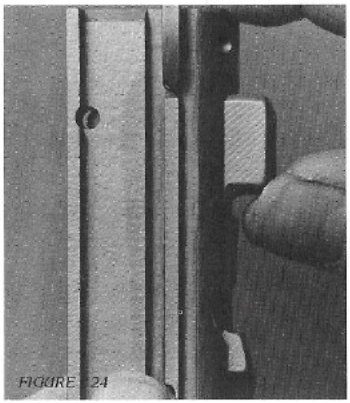


FIGURE #24

Install the Firing Pin and Firing Pin Stop Pin from right to left.

NOTE: Make sure the rounded polished end of the Firing Pin Stop Pin is oriented on the right side of the Breech Block.

Apply pressure to the rear of the Firing Pin with the Locking Block in the down position. As the Locking Block is rotated upward, the Firing Pin will release after the Locking Block has risen to about its maximum height. You will note that by rotating the Locking Block downward it will retract the Firing Pin and lock it in the rear position. This prevents the gun from firing by inertia of the Firing Pin as the Breech Block Assembly comes forward and locks with the Barrel Assembly. Cartridges may display slight firing pin impressions in the process of loading and unloading. This is normal and poses no problem as there is not enough firing pin inertia for primer ignition.

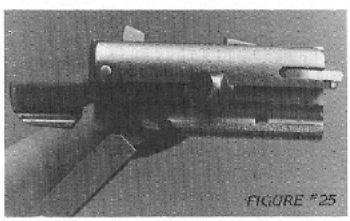


FIGURE #25

Install the Operating Handle on the Breech Block as shown in Figure #25.

The proper amount of play for the Operating Handle between the Locking Block and Link is important and should be approximately 0.010". To check, hold the assembly horizontally with bottom of Breech Block Assembly up as shown in Figure #26. With the Locking Lug depressed in the Breech Block, work the Operating Handle back and forth and make sure there is clearance between these parts. Also lift the Link to make sure it is free to rotate. If these parts are fitted too tightly,it will cause the gun to be sluggish in the action and fail to lock and fire. To properly adjust this space, if the parts are too tight, use a mill file and remove metal from the front end of the Link where it contacts the Operating Handle.

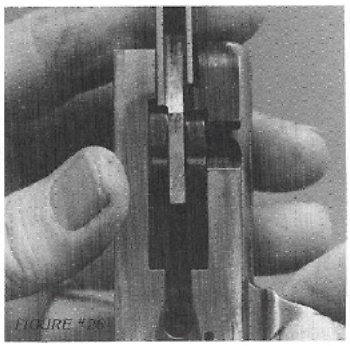


FIGURE #26

If too much play exists you will notice two lines at the inside top of the Receiver as though something had been scraped down the middle of the Receiver. Also, after the gun is fired and the Barrel has recoiled to the rear, the Locking Block will remain partially locked in the aperture of the Barrel Extension causing sluggish operation, if too much play exists. To correct for excessive play replace the Link.

Remove the Operating Handle from the Breech Block.

In the inspection of the Locking Block Latch Spring, it is important that the last coil of this spring be turned in as shown in Figure #27 to prevent the Locking Block Latch from being jammed in an open position and causing damage to the Carrier Assembly.

LOCKING BLOCK LATCH SPRING
FIGURE #27

Also inspect the Locking Block Latch Spring hole in the Breech Block for burrs. If burrs develop in this hole it may hold the spring in a depressed position and cause the Locking Block Latch to remain open and damage the Carrier Assembly. Remove any burrs found.

NOTE: The Operating Handle and the Locking Block Latch Spring will not be installed until Breech Block Assembly is installed in the Receiver.

6. INSPECTION OF THE DISASSEMBLED RECEIVER

During the inspection of the Receiver itself, the main things to look for are cracks and burrs. At the front of the Ejection Port where the Operating Handle rests when the Barrel is not assembled, check both inside and outside for burrs. If large burrs or an indentation is found at this point, the cause may be due to closing action without barrel installed or by compressed wood in the forearm where the Barrel Guide Ring comes to rest at the front of the forearm making forearm too long. To check forearm length reassemble the Barrel and Forearm into Receiver. If the Forearm is correct length the Barrel Extension on the Barrel will be flush with or slightly recessed inside the Receiver. If Forearm is found to be too short it should be replaced.

An imprint of the Breech Block in the rear of the Receiver indicates a weak Action Spring, a broken Action Spring Tube, a weak Recoil Spring or improper setting of the Recoil Mechanism. If a weak Recoil or Action Spring are found, it is best to replace these parts. If the Recoil Mechanism is found to be improperly set, advise the owner of the gun as to the proper procedure for setting the Recoil Mechanism for high and low velocity loads. (See Section VII.)

If the Action Spring Tube is either cracked or broken, replace it. If the Action Spring Tube and upper Tang have been bent, they may be straightened out. Generally, this can be accomplished by gripping the upper Tang and Action Spring Tube in a vise and springing them back into position. After straightening, check to see the Action Tube Spring Follower passes through the tube freely. If not, ream the tube with a 0.413" reamer. Or, replace the tube. If the tube is replaced, it is still advisable to ream the tube with the reamer.

Check inside top surface of Receiver for rub lines. If rub lines exist the Link should be replaced as previously noted on Pages 35 & 36.

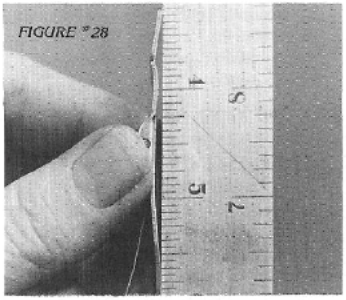


FIGURE #28

7. INSPECTION AND ADJUSTMENT OF THE CARRIER LATCH

To inspect the Carrier Latch, place a 6" scale against it as shown in Figure #28.

The gap between the steel scale and the Carrier Latch at the hump (4" mark on the scale) should measure approximately 1/16". The surface at the rear of the Carrier Latch that locks the Carrier should be maintained at all times as it comes from the factory. The angle should not be changed and the edges should not be rounded. If the edges are rounded by wear, a slight amount of metal may be removed from the Carrier Latch at that point to "square" it up. Take as little off as possible to keep the clearance between the Carrier Latch and the Carrier as small as possible.

IMPORTANT: Excessive clearance between the Carrier Latch and the Carrier will cause feeding malfunctions.

8. INSPECTION OF THE STOCK

If the stock was found to be loose on the action, check the Tang Screw hole for elongation. If elongated, drill the hole out with a 3/8" bit and plug it with, preferably, a maple dowl pin. Then, refit the Tang Screw in the stock.

9. INSPECTION OF THE FOREARM

If the forearm is found to have minor cracks at the Receiver end, the gun can be fired in this condition. However, if cracks appear in the forearm where the Barrel Guide Ring strikes, it is advisable to replace it. For temporary fix, epoxy if wood has not been oil soaked.

SECTION V

REASSEMBLY OF THE A-5

1. MAGAZINE CUTOFF ASSEMBLY INSTALLATION

NOTE: If a new Magazine Tube has been installed in the Receiver to replace a broken one, drill through the Magazine Cutoff Spring Screw hole with a #38 bit before proceeding.

Position the Receiver in a cork padded vise in the inverted position. Install the Magazine Cutoff and its Retaining Pin or Screw.

NOTE: Use Caution not to drive the pin in too far so as to allow it to interfere with the Barrel Extension or the Breech Block rails.

Install the Magazine Cutoff Spring and Screw and check assembly function.

2. CARTRIDGE STOP ASSEMBLY INSTALLATION AND ADJUSTMENT

Position the Cartridge Stop and Spring in the Receiver and install its Roll Pin or Screw. Check it for unrestricted movement.

NOTE: Use Caution not to drive the pin in too far so as to allow it to interfere with the Barrel Extension or the Breech Block rails.

Remove the Receiver Assembly from the vise and position the Barrel in the Receiver pushing it to the rear approximately 2" past battery position. While observing in the bottom of the Receiver, slowly slide the Barrel forward and observe when the Barrel is approximately 1/4 inch from battery position, the forward end of the Cartridge Stop that retains the shell starts to rotate inward into Receiver. Just before the Barrel reaches battery position the forward end of the Cartridge Stop is flush with the inside of the Receiver. If it is not flush and protrudes above the Receiver, remove the Cartridge Stop and bend the shank portion of the Cartridge Stop that contacts the Barrel Extension inward for adjustment. If it is not flush and is below the Receiver's surface, bend the shank portion outward.

After adjustment, remove the Barrel from the Receiver Assembly and check for approximately .050" protrusion of the forward end of the Cartridge Stop.

3. CARRIER LATCH ASSEMBLY INSTALLATION

Reposition the Receiver Assembly in the cork padded vise in the inverted position.

Install the Carrier Latch Assembly, Carrier Latch Button and Retaining Pin or Screw.

NOTE: Use Caution in installing the Retaining Pin to align both holes of the Carrier Latch with those of the Receiver. Use Caution not to drive the pin in too far so as to make it interfere with the Breech Block rails.

After the Carrier Latch has been installed, inspect it for unrestricted movement. Depress the Carrier Latch Button fully. If the button remains in the depressed position or retracts only partially, the Carrier Latch Spring is weak and should be replaced or the Carrier Latch Assembly removed and the spring flexed outward to give it more power. Or, the assembly should be inspected for burrs and improper assembly.

4. MAGAZINE ASSEMBLY INSTALLATION

Inspect the Magazine Follower for burrs and excessive wear and install it along with the Spring, Three Shot Adapter and Spring Retainer in that order.

Again, depress the Carrier Latch Button and observe that the forward end of the Carrier Latch does not interfere with the Magazine Follower. If it does, the Magazine Tube or Follower has excessive wear and replacement should be made or a small amount of material may be removed from the forward end of the Carrier Latch.

5. BREECH BLOCK ASSEMBLY INSTALLATION AND LOCKING BLOCK LATCH INSPECTION PROCEDURE

Place the Receiver in the upright position and insert the Operating Handle in the Receiver and position it to the rear of its operating slot.

Insert the Breech Block Assembly and Link from the front of the Receiver positioning the Breech Block in its operating rails of the Receiver.

Pull the Breech Block to the rear of the Receiver by the Link and engage the Operating Handle into position in the Breech Block.

Push the Breech Block together with the Operating Handle forward by the Link and position the Locking Block Latch Pin hole in the Breech Block at the half hole in the bottom edge of the Ejection Port.

Rotate the Receiver Assembly to bottom-up position and insert the Locking Block Latch Spring in its hole in the Breech Block and position the Locking Block Latch, wide section aft, on the Spring.

Depress the Locking Block Latch slightly with the thumb to align all holes, insert the Locking Block Latch Pin (insert end opposite the flattened end) in its hole and seat it gently with a 1/8" punch.

Push the Breech Block Assembly forward in the Receiver and install the Action Spring Follower, Spring, Plug and its Retaining Pin.

NOTE: Be certain the rear end of the Link is properly seated in the Action Spring Follower.

Work the Breech Block Assembly back and forth for unrestricted movement. Remove any burrs that may be inhibiting free movement.

NOTE: Do not let the Breech Block Assembly slam forward in the Receiver as damage will result.

6. LOCKING BLOCK LATCH INSPECTION PROCEDURE

With the Barrel Assembly installed in the Receiver, grasp the Receiver by one hand, the Barrel in the other and push the Barrel back against the Breech Block approximately two inches past battery position. Captivate this position of the Barrel by grasping the Barrel and the Magazine Tube together with


FIGURE #29

one hand as shown in Figure #29. With the other hand slowly pull the Operating Handle to the rear and notice the Locking Block Latch engages the Locking Block and locks it in the down position as shown in Figure #30. If the Locking Block Latch is too long it will not function in this manner and must be adjusted by removing material from the engaging surface. Be sure to maintain the same degree of bevel on the end to be adjusted.

Holding the Barrel and Breech Block Assembly with Locking Block Latch engaged in the retracted (rear) position, slowly let the Assembly move forward by the Action Spring and observe the Locking Block Latch becomes disengaged from the Locking Block when the forward end of the Breech Block is approximately 3/4" from the forward end of the Ejection Port.

If release of the Locking Block occurs appreciably before this, the lock will drag on the Barrel Extension prior to actual locking up causing sluggish operation.

Premature release of the Locking Block is generally caused by a worn or incorrectly fitted (too short) Locking Block Latch. In either case the Latch should be replaced. Actual release of the Locking Block Latch is caused by rotation of the front end of the Link as it moves forward.

7. CARRIER INSTALLATION AND CARRIER LATCH INSPECTION PROCEDURE

Remove the Barrel Assembly and position the Receiver in the inverted position. Install the Carrier Assembly and the Carrier Screws in their respective sides of the Receiver.

NOTE: A final inspection of the Carrier Latch should be made at this time using the following procedure:

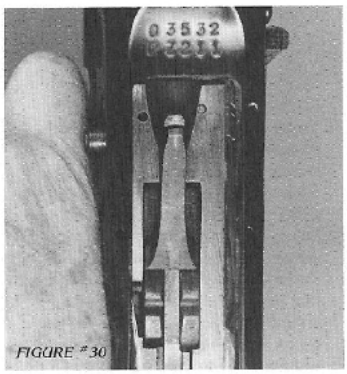


FIGURE #30

8. CARRIER LATCH INSPECTION AND ADJUSTMENT PROCEDURE

The Carrier Latch should hit approximately in the center of the protrusion from rear section of Carrier Assembly. If the latch rests too closely to the edge of the Carrier, it may slip off the edge during operation causing malfunction. If adjustment to the Carrier Latch is necessary, remove the latch and proceed as follows:

NOTE: If the Carrier Latch is installed with a screw as on older models, it may be removed directly without additional disassembly. If it is installed with a pin, as on newer models, you must remove the Action Spring and Breech Block Assembly before removing the Carrier Latch Retaining Pin with a 3/32" punch.

Place the Carrier Latch in a vise as shown in Figure #31.

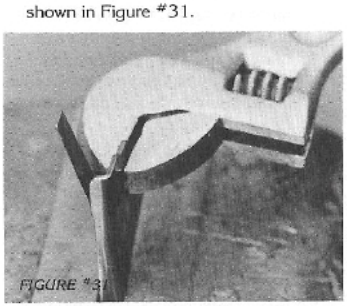


FIGURE #31

Using a crescent wrench put a slight twist in the latch so as to move its engaging edge inward or outward so it contacts the protrusion on aft section of Carrier Assembly approximately in the center.

Re-install the Carrier Latch, Button and Retaining Pin or Screw and recheck for proper installation and engagement with the Carrier.

9. TRIGGER PLATE ASSEMBLY INSTALLATION

A. OLDER MODELS

On older models the Carrier Spring must be installed in the Receiver on two pins before installation of the Trigger Plate Assembly. This installation is shown in Figure #32.

B. NEWER MODELS

On newer models the Carrier Spring is installed on the Trigger Plate Assembly and the orientation of the spring is as shown in Figure #33.

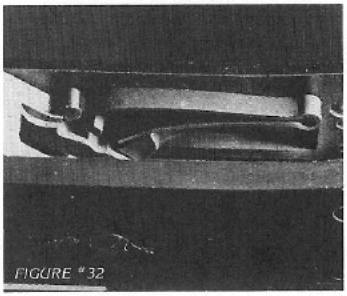


FIGURE #32

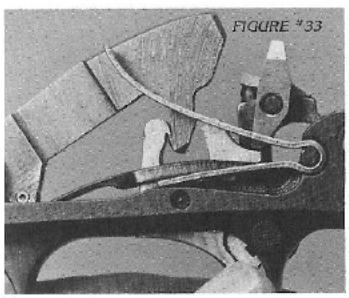


FIGURE #33

With the Hammer cocked and the Safety placed in the "ON SAFE" position, lower the Trigger Plate Assembly into the Receiver making sure the Carrier Spring, on the newer models, engages the end of the left leg of the Carrier.

Install the forward Trigger Plate Screw first. While depressing the rear of the Trigger Plate Assembly, retract the Operating Handle slightly and the Trigger Plate should drop down into position. Install the rear Trigger Plate Screw.

10. FINAL ASSEMBLY AND INSPECTION

A. Open the action of the gun to the locked open position. Press the Carrier Latch Button and allow the Breech Block Assembly to move forward very slowly. When the Breech Block Assembly is back in battery position, observe that the Carrier comes back to its locked position under the Carrier Latch.

If the Carrier remains in a depressed position, it means the Carrier Spring is too short at the front end which rides on the left leg of the Carrier, or that it does not have enough

hook at the front end to draw the Carrier back into position. If the Carrier Spring is too long at the front end that rides on the left leg of the Carrier, it will cause the gun to hang on the Carrier Dog too long and the action will work sluggishly. If the Carrier Spring is too long, remove and place the spring in a vise and remove a small amount of metal with a mill file. Retry the spring in the gun to determine the proper length. If the Carrier Spring is too short, it will have to be replaced.

B. With the action closed, depress the forward end of the Carrier with the index finger and observe that the Carrier clears the Carrier Latch. The Carrier Latch at the same time should contact the protrusion on rear portion of the Carrier approximately in center.

C. Depress the rear portion of the Carrier with your finger until the Carrier bottoms out of the Carrier Latch. The gap between the rear portion of the Carrier and the Trigger Plate should measure approximately .020 inch. If an excessive gap exists here, the Carrier Latch or Carrier should be adjusted or replaced.

D. Replace the Recoil Assembly, Barrel, Forearm and Cap.

E. With the action cocked and closed, push the Safety to the "OFF SAFE" position, pull the Trigger to see if the Hammer falls. Re-cock the Action and check the clearance between the Safety Sear and Link. To check, close Action and press forward on the upper arm of the Safety Sear through opening in back of Receiver with long punch and see that 1/16 to 1/8" of play exists. If no play exists, the Link is trying to override the Safety Sear and breakage may result. Remove the Link and relieve the surface contacting the Safety Sear with a fine cut pillar file.

If the Hammer does not fall use a long punch through opening in back of Receiver and push forward on the top arm of the Safety Sear that engages the Link. While pushing forward on the Safety Sear pull the Trigger. If the Hammer falls, the Link is too short and is not disengaging the Safety Sear from the Trigger. If this condition exists the Link must be replaced.

F. Replace the Butt Stock and install the Tang Screw.

G. Feed a dummy cartridge into the Magazine and see that it is retained by the forward most surface of the Locking Block Latch. If it is not, the Locking Block Latch must be removed and the hole through the Locking Block Latch elongated to allow the latch to protrude sufficiently to retain the dummy cartridge properly.

H. Depress the Carrier to see the Carrier clears the base of the dummy cartridge being retained by the Locking Block Latch. If not, relieve the forward end of the Carrier.

I. Cycle the dummy cartridge out of the gun.

J. With the gun cocked and in battery position, place the Safety to the "ON SAFE" position and see that the gun will not fire by pulling the Trigger as hard as you can with the index finger of both hands.

K. Check for proper tightness of all screws and install all lock screws.

L. Place the Safety to the "OFF SAFE" position and check for a trigger pull of 4 to 5 lbs.

M. Before firing the gun check headspace with "GO—NO-GO" headspace gauges made to SAAMI specifications.

SECTION VI

TROUBLE SHOOTING / POSSIBLE CAUSES & CORRECTIONS

1. TRIGGER WILL NOT RELEASE HAMMER

A. Improperly altered Hammer or Sear notches which will not release.

B. Loose Mainspring Screw.

C. Broken Mainspring.

D. Link bent so it doesn't release the Safety Sear.

E. Altered Safety Sear not engaging the Link properly.

2. GUN MISFIRES

A. Broken Firing Pin.

B. Excessive headspace and/or Firing Pin too short.

C. Loose Mainspring Screw.

3. GUN TRIES TO FEED TWO SHELLS INTO THE CHAMBER AT ONCE OR JAMMING

A. Improperly adjusted or worn Carrier Latch.

B. Too much clearance between the Carrier Latch and Carrier.

4. ACTION WILL NOT STAY OPEN ON LAST SHOT USING HEAVY LOADS

A. Improperly adjusted Friction Rings.

B. Weak Recoil Spring.

C. Carrier Latch out of adjustment.

D. Operating Handle slipping off the Carrier Dog.

5. FAILS TO EXTRACT FIRED SHELLS FROM THE CHAMBER

A. Worn, broken or improperly adjusted Extractors.

B. Weak Extractor Springs.

C. Bulge in the chamber.

6. JAMMING AND FAILS TO EJECT

A. Dry or burred Magazine Tube.

B. Bent Magazine Tube.

C. Tight Forearm interfering with Barrel.

D. Extractors broken or out of adjustment.

E. Carrier Latch out of adjustment.

F. Broken Ejector.

G. Bent Carrier.

H. Weak Extractor Springs.

I. Worn Carrier Dog.

J. Weak Recoil Spring.

K. Reduction of recoil due to choking devices which have a tendency to dissipate recoil.

L. Extra soft recoil pads.

M. Not holding the gun tightly to the shoulder when firing.

N. Barrel Extension rubbing in Receiver. Remove Recoil Spring and check for free movement of Barrel.

7. BARREL WON'T FIT ON RECEIVER

A. Burrs in Receiver.

B. Bent Magazine Tube.

C. Fit and alignment of the Barrel Extension improper.

8. FAILS TO CHAMBER 2ND ROUND

A. Improperly adjusted or worn Carrier Latch.

B. Improper clearance between Carrier Latch and Carrier.

9. TRIGGER FAILS TO ENGAGE WITH HAMMER

A. Burrs in Hammer and Trigger sear notches.

B. Loose Mainspring Screw.

C. Broken Mainspring.

D. Polish Mainspring and Hammer where Hammer contacts the Mainspring. (old style without Hammer Roller)

E. "U" portion of Trigger bent.

F. Broken Hammer.

10. BOLT FAILS TO LOCK IN REARWARD POSITION WHEN LAST SHELL IS FIRED

A. Worn or broken Carrier Dog.

B. Broken, weak, or missing Carrier Latch Spring.

C. Improperly functioning Carrier Latch.

D. Weak Recoil Spring.

E. Improper setting of Friction Rings.

F. Carrier Latch worn and sliding off the engaging surface of the Carrier.

11. BOLT FAILS TO RETURN TO BATTERY POSITION

A. Weak or broken Action Spring.

B. Burrs in Action Spring Tube binding the Action Spring Follower.

C. Improperly seated Link in the Action Spring Follower.

D. Jammed or broken Carrier or Carrier Latch.

E. Broken Locking Block Latch.

F. Broken Locking Block.

G. Carrier Spring too long.

12. CARRIER DOES NOT RETURN TO LOWER POSITION

A. Long, worn, broken or improperly assembled Carrier Spring.

B. Improperly assembled Carrier Latch causing interference with the Carrier.

13. SHELLS FAIL TO COME OUT OF MAGAZINE WHEN RELEASED

A. Broken, kinked, dented or bent Magazine Tube.

B. Heavy grease in Magazine Tube.

C. Carrier Latch out of adjustment or broken.

D. Improper adjustment of Cartridge Stop.

14. SAFETY SEAR FAILS TO RELEASE TRIGGER WHEN BOLT IS LOCKED

A. Damaged or altered Sear.

B. Broken or bent Link.

C. Forearm may not be allowing the Barrel to come far enough forward to allow the Link to release the Safety Sear.

15. HAMMER DOES NOT RELEASE FROM SAFETY NOTCH

A. Burrs in the safety notches on Hammer or Trigger.

B. Weak or broken Trigger Spring.

C. Hammer and Trigger out of adjustment.

D. Rusty Mainspring and Hammer. (old models without the Hammer Roller)

E. Mainspring Screw loose.

16. SAFETY DOES NOT OPERATE PROPERLY

A. Burrs in web of Trigger or in Trigger Plate.

B. Broken or worn Safety.

C. Broken or weak Trigger Spring.

17. BARREL DOES NOT UNLOCK FROM BREECH BOLT ASSEMBLY

A. Improper clearance between Locking Block and Barrel Extension.

B. Burrs on Link where Operating Handle comes into contact with the Link.

18. GUN DROPS SHELLS OUT OF LOADING PORT WHEN FIRED

A. Improperly adjusted Carrier Latch.

B. Broken or worn Carrier Latch.

C. Worn or broken Carrier.

19. SHELLS OVERRIDE TOP OF LOCKING BLOCK LATCH AND JAMS BETWEEN THE CARRIER AND BREECH BOLT

A. Battered Forearm where the Barrel Guide Ring rests allowing the Barrel to move too far forward out of the Receiver.

B. Improperly adjusted Carrier Latch.

C. Relation of Carrier to Carrier Latch improper.

20. SHELLS JAMMING IN THE ACTION WHILE ENTERING THE CHAMBER OF THE BARREL

A. Sharp edge or burrs at the headspace seat of the chamber.

B. Burrs in the extractor slots.

C. Extractor Springs too strong.

D. Extractors not shaped properly or incorrectly adjusted.

E. Carrier Latch scissoring off the Carrier.

F. Improperly adjusted Carrier Latch.

21. GUN DOUBLES OR FIRES FULL AUTOMATIC

A. Trigger pull too light.

B. "U" gap in Trigger too wide and Sears not engaging properly.

C. Safety Sear notches on Hammer and Trigger insufficiently engaged.

D. Loose Mainspring Screw.

NOTE: In addition to the malfunctions listed, other malfunctions can occur due to lack of lubrication. While repairing the firearm be sure to check all parts for wear, burrs, deformities, and small cracks. If you are not certain as to the amount of metal that has been worn away or the original shape of a part, it is well to compare it with a new factory part.

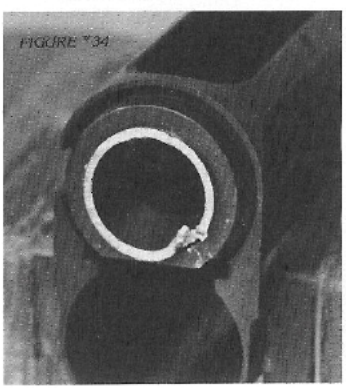
22. BROKEN MAGAZINE TUBE

NOTE: The Magazine Cutoff Spring Screw must always be removed in order to unscrew the Magazine Tube.

Occasionally, a Magazine Tube is broken off flush with the Receiver when attempting to align the Barrel Guide Ring or Barrel Extension. The broken section may be removed from the Receiver by scoring the inside of the Magazine Tube in a straight line with a sharp chisel and hammer. Caution must be taken so as not to make the score line too deep and damage the threads of the Receiver. Next, the section of the Magazine Tube can be broken at the score line with a coal chisel by lifting at one side of the score line as shown in Figure #34 and working backward.

The broken section can then be worked out and replacement made.

NOTE: If replacement is made to the Magazine Tube and the new tube has been completely screwed into the Receiver, drill through the Magazine Cutoff Spring Screw hole with a #38 bit. Make certain no burrs are left inside the Magazine Tube as they will interfere with the passage of shells. The Magazine Cutoff Screw acts as a set screw into the Magazine Tube. Perform this requirement before proceeding.



SECTION VII

ADJUSTMENT OF FRICTION RINGS & LUBRICATION OF THE MAGAZINE TUBE

1. SHOCK ABSORBER SYSTEM

This mechanism is extremely simple, yet it must be given some attention. Proper maintenance and adjustment will reduce recoil to a minimum. This will not only contribute to pleasant shooting but protect the mechanism against excessive shock and wear and prolong the life of the gun.

The A-5 is recoil operated, which means the operations of ejection and loading are automatically carried out by utilizing the forces delivered to the gun when the shell is fired. The shock absorber system regulates these forces.

For instance, the A-5 may fail to eject if you fire a light load with the shock absorber set for heavy loads. On the other hand, if you fire a heavy load with the friction rings set for light loads the gun may kick unnecessarily hard and the mechanism of the gun receives excessive shock.

It should be noted, however, that the weight of the shooter and the manner in which he holds the gun may require some variance from the recommended procedure of adjustment. For example, a lightweight individual, or a person that holds the gun loosely, may find that his gun will function better for him if adjusted for light loads while shooting a heavy load such as 3¼ D.E. x 1¼ oz., 12 gauge shell. It is desirable to utilize the setting for heavy loads as long as the mechanism functions properly.

WARNING: Never under any circumstances remove the bronze friction piece from its position rearward of the barrel guide ring and fire the gun or damage to the gun will result.

2. LUBRICATION OF THE MAGAZINE TUBE

Whether the friction ring is set for heavy loads or light loads, the amount and kind of oil on the magazine tube will, by varying the amount of friction, have an effect upon the amount of recoil. In general, the more oil that is put on the magazine tube (or bronze friction piece), the easier this friction piece will slide on the tube; hence, a greater degree of recoil will be obtained.

If you are firing a light load and the gun fails to eject, the addition of oil to the magazine tube in the region of the bronze friction piece will sufficiently increase recoil to a point satisfactory for good ejection.

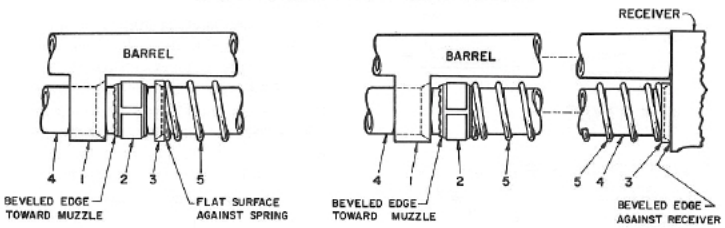
Oil which congeals in cold weather or deposits gummy residue may reduce recoil to the point where the gun will fail to eject. Use a high quality lubricant. Occasionally clean the magazine tube and relubricate. If temperatures of ten to thirty degrees below freezing are likely to be encountered, it is best to utilize an oil which maintains its fluidity in such temperatures. Browning Gun Oil is particularly well suited for this purpose.

At all times there should be a film of oil on the magazine tube except when 12 gauge, 2¾" Magnum loads are being used. With this load it is desirable to wipe the magazine tube practically dry. Function will not be affected and you will find these heavy loads much more comfortable to shoot.

3. ADJUSTMENT OF FRICTION RINGS

The following diagrams depict the recommended arrangements of the friction rings for the 12 and 20 gauge guns (Light and Magnum) for light and heavy loads.

LIGHT 12 AND 20 GAUGE GUNS



HEAVY LOADS
12 & 20 Ga. Guns

	Powder Drams Equiv.	Ounces Shot
12 Gauge 2¾"	3¼	1¼
	3¾	1¼
	3¾	⅞ Slug
	3¾	Buck Shot
	3¾ (Mag)	1½
20 Gauge 2¾"	2¾	1
	2¾	⅝ Slug
	2¾	Buck Shot
	2¾ (Mag)	1⅛

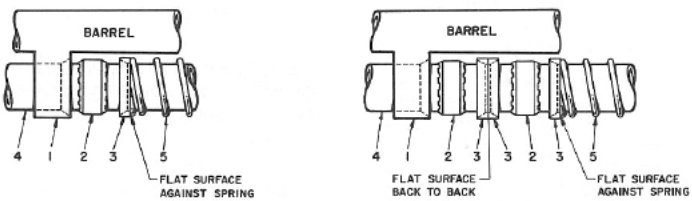
1. Barrel Guide Ring
2. Bronze Friction Piece
3. Friction Ring
4. Magazine Tube
5. Recoil Spring

LIGHT LOADS
12 & 20 Ga. Guns

	Powder Drams Equiv.	Ounces Shot
12 Gauge 2¾"	2¾	1⅛
	3	1⅛
	3¼	1⅛
	3¼	1
20 Gauge 2¾"	2½	⅞
	2½	1

1. Barrel Guide Ring
2. Bronze Friction Piece
3. Friction Ring
4. Magazine Tube
5. Recoil Spring

3" MAGNUM 12 AND 20 GAUGE GUNS



2¾" HIGH VELOCITY AND STEEL SHOT LOADS (12 & 20 Ga.)

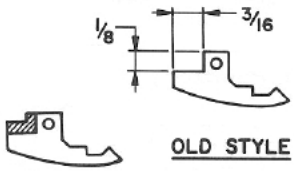
3" MAGNUM LOADS (12 & 20 Ga.)

SECTION VIII

SPECIAL INSTRUCTIONS

1. PROCEDURE FOR CONVERSION OF NEW STYLE EXTRACTORS TO THE OLD STYLE (LEFT HAND)

The current new style extractor can be modified to work in older guns by removing material from the shaded area as shown in drawings below.



2. PROCEDURE FOR CONVERSION OF BROWNING 2⅝" 16 GAUGE BELGIUM SHOTGUNS TO PERMIT USE OF 2¾" SHELLS

Conversion of old pre-war 2⅝" 16 gauge Browning Automatic Shotguns to permit use of 2¾" cartridges is possible. However, it is recommended that this conversion be accomplished only by Browning's authorized service facility in Arnold, Missouri.

3. PROCEDURE FOR THE INSTALLATION OF A LEFT HAND SAFETY

A. Remove the Lock Screw, Tang Screw and Butt Stock.

B. Remove the Lock Screws and the front and rear Trigger Plate Screws.

C. Remove the Trigger Plate Assembly.

D. Remove the Mainspring.

E. Remove the Trigger Spring. NOTE: Use care not to lose the Safety Ball.

F. Slide out the Cross Bolt Safety.

G. Install the Left-Hand Safety and reassemble by reversing the Disassembly Procedure.

H. Cock the gun and with the action closed place the Safety to the "ON SAFE" position. Check to see the gun will not fire by pulling the Trigger as hard as you can with the index finger of both hands. Actuating force of the Safety should be 4 to 5 lbs.

4. PROCEDURE FOR CONVERSION TO THE TWO PIECE CARRIER

Parts required for conversion for all gauges are: (2) piece Carrier, Locking Block Latch, Locking Block Latch Spring and Carrier Spring (new style).

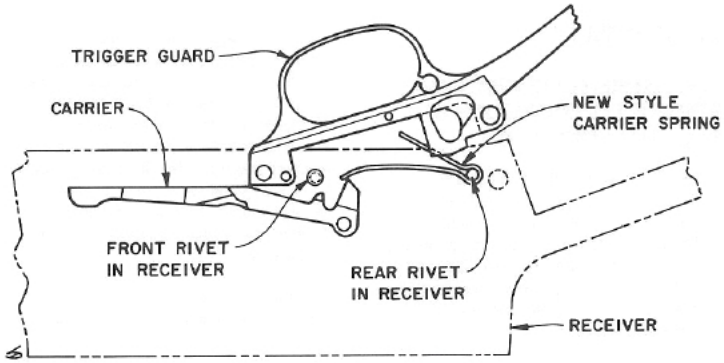


FIGURE 5-A

Remove the following from the gun to be converted in the order given: Butt Stock, Trigger Plate Assembly, Carrier Spring, Carrier, Action Spring Follower, Spring, Plug and Pin and last of all the Breech Block Assembly. While the gun is disassembled, it is recommended it be cleaned and all parts inspected for wear and adjustments made to the Extractors if required. (See Section V, Inspection, Adjustment and Reassembly of the Breech Block Assembly.)

Reassemble in the following order: Breech Block Assembly with the new Locking Block Latch and Locking Block Latch Spring, Locking Block Latch Pin, Action Spring Follower, Spring, Plug and Pin. Next, make any required adjustment to the Locking Block Latch. (See Locking Block Latch Inspection Procedure—Section V.)

Install the new two piece Carrier. At this point try the old Carrier Spring. (Ref. to Section V—"Trigger Plate Assembly Installation" and "Final Assembly and Inspection", para. 1.) If it is determined the Carrier Spring must be replaced, new "old style" Carrier Springs are no longer available and replacement must be made with the "new style", Trigger Plate Assembly mounted type. If this be the case, refer to the "Procedure For Installation of New Style Carrier Spring in Older Style Automatic-5 Shotgun" page 70.

5. PROCEDURE FOR INSTALLATION OF NEW STYLE CARRIER SPRING IN OLDER STYLE AUTOMATIC-5 SHOTGUN

A. Assemble the action in a normal manner up to the installation of the Carrier Spring.

B. Place the Carrier Spring over the rear Carrier Spring Rivet as with the older model Carrier Spring. The short end should be left free as in Figure 5-A.

C. Place the Trigger Plate Assembly in the action and insert the front Trigger Plate Screw.

D. Press down on the Trigger Plate at the tang screw hole. The Trigger Plate will compress the free end of the Carrier Spring.

E. Retract the Breech Block slightly and press the Trigger Plate Assembly into position in the Receiver. Insert the rear Trigger Plate Screw.

F. Adjust the length of the Carrier Spring as with the older style for proper carrier action.

6. PROCEDURE FOR INSTALLATION OF THE CURRENT TRIGGER SPRING IN OLDER AUTO-5 SHOTGUNS

A. 12 GAUGE—Locate the center line of the retaining pin hole "A" 1.130 inch from the center line of hole "B", (Mainspring Screw hole). The retaining pin hole should be located approximately .080" from bottom edge of trigger plate "C".

B. 16 & 20 GAUGE—Locate the center line of the retaining pin hole "A" 1.210 inch from the center line of hole "B", (Mainspring Screw hole). The retaining pin hole should be located .100 inch from bottom edge of trigger plate "C".

Use a #53 bit to drill the retaining pin hole "A".

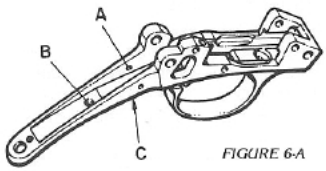


FIGURE 6-A

7. INSTALLATION OF BARREL EXTENSIONS ON BROWNING AUTOMATIC-5 SHOTGUN BARRELS

If for any reason a Barrel Extension needs to be replaced it is recommended that the complete gun be sent to Browning's authorized service facility in Arnold, Missouri.

8. FITTING AN EXTRA AUTO-5 BARREL

Check the original Barrel first for alignment and free movement in the Receiver. If, when checking the original Barrel, you find it pointing to the right or left you can correct this by placing the Magazine Tube in a Magazine Tube support block in your vise, approximately ¾" from the Receiver and spring the tube in the direction the Barrel should go for alignment. On downward alignment, if found to be slight and the Barrel still works free in the action, we make no adjustment because it is felt the shooter is accustomed to shooting with this sight picture.

With the original Barrel checked for alignment and any necessary corrections made, install the new extra Barrel for alignment. If any misalignment exists on new Barrel it should be returned to Browning Arms Company for replacement.

9. FITTING STANDARD TRAP, FIELD STOCKS & FOREARM ON THE AUTO-5

A. Fitting Butt Stock—Select the Stock according to color and grain so that the Stock and Forearm match. Check for a loose or broken Action Spring Tube, stripped threads in the Tang Screw hole and the shape of the top and bottom tangs. Measure the depth of the Action Spring Tube hole in the Stock. Compare this measurement with the overall length of the top tang and Action Spring Tube. There should be about ¼" space at the rear of the Action Spring Tube hole after the Stock has been fitted to the Action.

The Stock is now ready to be fitted. Remove all over spray of lacquer and filler that overlaps the edges into the fitting area. Apply fitting compound to the Receiver sparingly where the Stock is to be fitted, using a small bristle brush. Place the Stock on the action and drive the butt end of the Stock against a protected surface so that the butt plate does not split or mar.

DO NOT ATTEMPT TO DRIVE THE STOCK COMPLETELY INTO POSITION without removing it several times to check for spots where the Stock is bearing hard on the Receiver. These places should be scraped with a flat chisel or stock scraper to relieve pressure at those points. No wood should be removed from the front of the Stock to one inch back where the top and bottom tang rests. Care should be taken to relieve pressure in areas where wood has been shaven and rolls up to create pressure points. These areas are especially found in corners at radiused areas. Excessive wood in these areas will cause the Stock to split. After the Stock has been scraped in and driven tight against the action, ream the tang screw hole in the Stock and install the tang screw. If the tang screw hole is too far forward, drill and plug the hole with ⅜" maple dowel and relocate the hole. If wood excessively overlaps the Receiver, remove the excess and refinish where necessary.

B. Fitting Forearm—Install the Barrel, Forearm and Forearm Cap. Check along the sides of the Barrel and Forearm for hard bearing spots. If the Forearm bears against the Barrel, apply fitting compound to the Barrel to determine the points of bearing. File away these bearing points using a 10" half round file. Repeat this procedure until the Barrel and Forearm just touch each other. With the gun completely assembled, check the Barrel position in the Receiver. The front of the Barrel Extension should come flush with the front end of the Receiver. If front of the Barrel Extension is to the rear, remove a small amount of wood from the inside of the Forearm where the Barrel Guide Ring rests. This can be done with a chisel or a special end mill. If the front of the Barrel Extension is forward, remove a small amount of wood from the Forearm where it fits against the Receiver. This may be done with a chisel or special cutter. Check the Forearm fit thoroughly for looseness, binding, cracks, etc. It is recommended that the wood be resealed in areas where stock finish has been removed.

SECTION IX

SPECIFICATIONS

1. RECOMMENDED POINTS OF LUBRICATION DURING REASSEMBLY

—Excessive oil is not recommended as it helps to accumulate dirt and unburned powder. The most important place for lubrication is a light oil film on the Magazine Tube. Browning Gun Oil is recommended.

A. Drop or two on each side of Receiver track.

B. Drop or two on each side of Breech Bolt Assembly.

C. Several drops on Action Spring and work back and forth before assembling the Carrier.

D. Drop in the Carrier Dog Spring recess.

E. Drop in the Safety Sear Spring hole.

F. Drop where the Hammer rides on the Mainspring.

G. With the rings and Recoil Spring removed, place a light film of oil on the Magazine Tube.

2. AUTO-5 SCREW PITCH & GAUGE SIZE

—Following is a list of the pitch and gauge sizes of screws found in the Auto-5. It will be useful in obtaining taps when the re-tapping of a hole is necessary or, when necessary, in screw substitution. All screws are metric and sizes are in millimeters with the exception of the Tang Screw and Rear Trigger Plate Screw.

Carrier Latch Screw	2.8 x .50
Carrier Screw	7.9 x .65
Cartridge Stop Screw	2.8 x .50
Lock Screw	3.1 x .60
Magazine Cutoff Screw	2.8 x .50
Magazine Cutoff Spring Screw	3.5 x .60
Mainspring Screw	4.4 x .65
Tang Screw	¼ x 40
Trigger Plate Screw (Front)	5.0 x .65
Trigger Plate Screw (Rear)	¼ x 40

3. SPRING REPLACEMENT AND FREE LENGTHS

—Many times springs are replaced in the Auto-5 unnecessarily. There is no rule to use other than common sense and an analysis of the malfunction being considered. However, given below are the new, free lengths of the various springs used in the Auto-5. They will be helpful in determining the amount of set a particular spring has taken. Bear in mind that most any spring will take a certain amount of set, depending upon design and application, with only moderate usage.

P/N	SPRING NOMENCLATURE	FREE LENGTH (INCHES)
PO11001	ACTION (ALL)	13.25
PO11081	CARRIER DOG 12, 12M	1.30
PO11083	CARRIER DOG 16, 20, 20M	1.45
PO11159	L/H EXTRACTOR 12, 12M, 16, 20, 20M	.25
PO11160	R/H EXTRACTOR 12, 12M	.70
PO11162	R/H EXTRACTOR 16, 20	1.05
PO11163	R/H EXTRACTOR 20M	1.05
PO11375	RECOIL 12M	10.50
PO11378	RECOIL 12	9.25
PO11381	RECOIL 16, 20	8.60
PO11382	RECOIL 20M	9.10