A-500 FIELD SERVICE MANUAL

BROWNING®

BROWNING FIELD SERVICE MANUAL
A-500

This manual is written to assist trained gunsmiths in the repair and servicing of Browning products. It should never be used by an untrained person to repair any firearm. Read the entire manual carefully and pay special attention to the portions dealing with safety.

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BROWNING FIELD SERVICE MANUAL

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.

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. Appropriate 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 Page 3, 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.
5. Read all the instructions and cautions on any step involving assembly or disassembly before proceeding with that step.

SECTION I

DESCRIPTION AND FUNCTIONAL OPERATION

The A-500 is a short recoil operated, semi-automatic shotgun. It is capable of shooting 1 oz. 2 3/4" to the heaviest of 3" factory loads, interchangeably, without any adjustment. The Magazine capacity with the Three Shot Adapter installed is TWO 2 3/4" or 3" shells. With the Three Shot Adapter removed, it is FOUR 2 3/4" or THREE 3" shells.

When in battery position, the Breechblock Assembly is locked to the Barrel by the Rotary Bolt's engagement in the Locking Lugs of the Barrel Extension. Upon firing, force exerted against the face of the Rotary Bolt causes it and the Barrel to start movement to the rear. These recoiling parts cause the Bolt Spring, located inside the Breechblock, to be compressed against the Breechblock and likewise causes it to recoil to the rear. Simultaneously during recoil, the Barrel Ring compresses the Barrel Spring. Rearward movement of the Barrel is stopped after approximately 1/2 inch of travel against the compressed Barrel Spring and Buffer Rings located inside the Forearm. The compressed Barrel Spring then causes the Barrel to return forward.

Inertia imparted to the Breechblock, with an assist from the compressed Bolt Spring, causes the Breechblock to continue its movement to the rear. In moving to the rear, the Bolt Cam Pin, located in the Breechblock, rotates and unlocks the Rotary Bolt from the Barrel Extension. Unlocked from the Barrel, the Breechblock Assembly continues its movement to the rear, extracting the empty case from the Barrel's chamber and compressing the Action Springs. The empty case is finally ejected from the Receiver off the Ejector located on the left side of the Barrel Extension.

In its movement to the rear, the Breechblock also cocks the Hammer and compresses the Carrier Spring through rotation of the Carrier Dog. An instant before the recoiling Breechblock Assembly reaches its full movement to the rear and is caught and retained by the Carrier Dog, a cutout at the forward, lower right hand corner of the Breechblock, causes the Carrier Latch to rotate under pressure from the Carrier Latch Spring. In rotating, the Carrier Latch causes the Cartridge Stop to release a shell being retained in the Magazine.

Under pressure from the Magazine Spring, the shell is ejected to the rear and strikes the rear end of the Carrier Latch causing the Carrier Latch to rotate in the opposite direction. In rotating, the Carrier Latch causes the Cartridge Stop to retain the next shell in the Magazine and at the same time releases the Carrier.

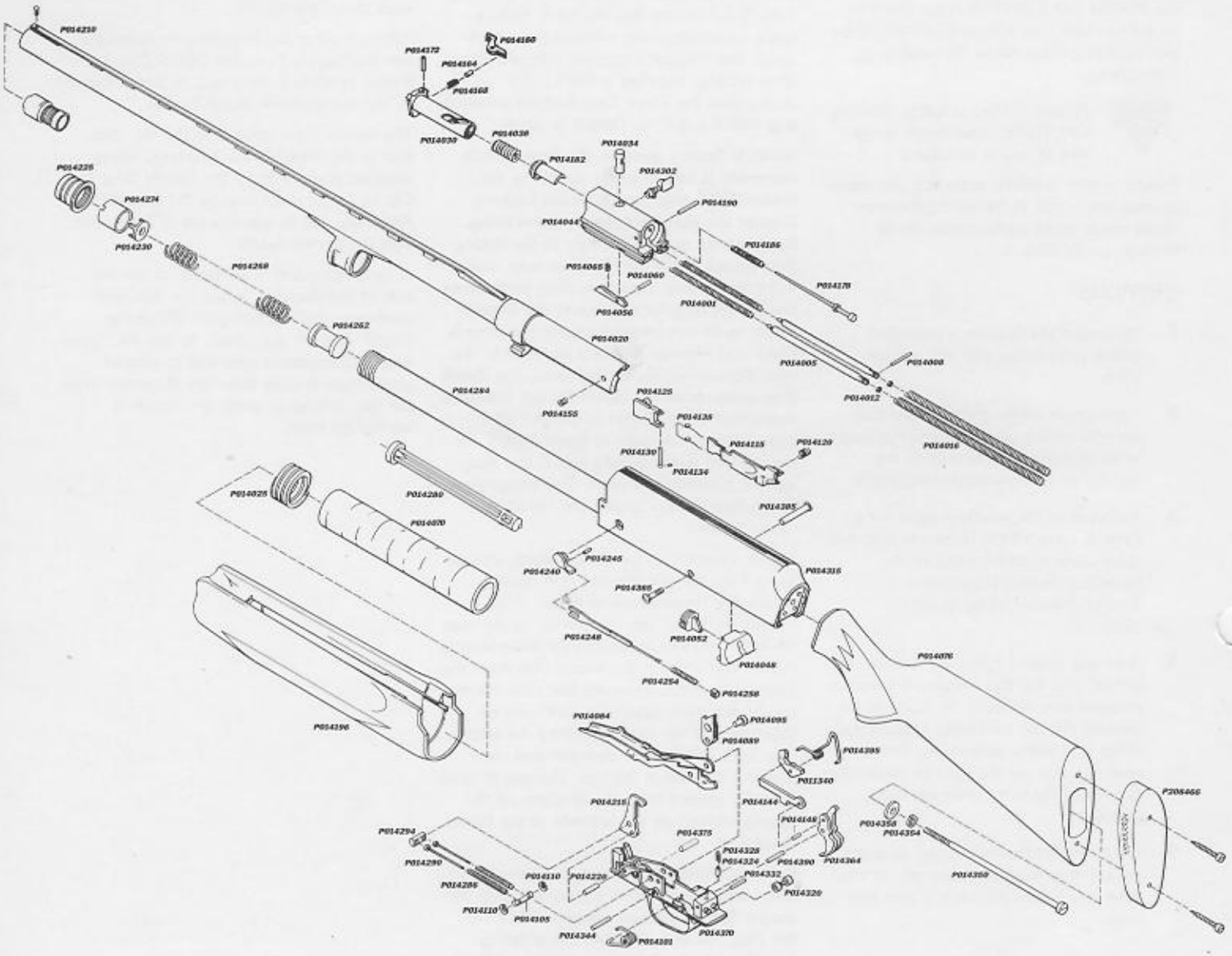
The Carrier, released from the Carrier Latch, is now free to rotate upward by forces applied through the Carrier Dog. In moving upward, the Carrier lifts the shell resting above it and releases the Breechbolt from the Carrier Dog. The compressed Action Springs now moves the Breechblock Assembly to the battery position, chambering the shell above the Carrier.

After the returning Breechblock Assembly has disengaged from the Carrier Dog, the Carrier is rotated downward by forces exerted by the compressed Carrier Spring.

The Action stays open after the last shot due to the Breechblock Assembly being retained to the rear by the Carrier Dog. The Carrier Dog cannot release the Breechblock Assembly due to interference of the Carrier with the Carrier Latch.

A cartridge cutoff is provided on the left side of the Receiver. It has two detented positions, "MC" standing for "Magazine Cutoff" and "R" for repeat. In the "MC" position, interference is provided to prevent shells from feeding from the Magazine when the gun is fired or when the Action is worked by hand.

BROWNING A-500



Schematic is provided for parts identification only and should not be used as a guide to assemble guns.

CAUTION: Browning parts are made exclusively for Browning guns and are not recommended for use in other guns even though models may be similar. Inadequately fitted parts may be dangerous.

SECTION II
Browning A-500 Semi-Automatic Shotgun

PART NO.	PART NAME
PO14001	Action Spring Front (2)
PO14005	Action Spring Guide (2)
PO14008	Action Spring Guide Pin
PO14012	Action Spring Guide Washer (2)
PO14016	Action Spring Rear (2)
* PO14020	Barrel Extension
PO14025	Barrel Spring
* PO14030	Bolt
PO14034	Bolt Cam Pin
PO14038	Bolt Spring
* PO14044	Breechblock
* PO14048	Breechblock Buffer
* PO14052	Breechblock Buffer Core
* PO14056	Breechblock Lever
PO14060	Breechblock Lever Pin
PO14065	Breechblock Lever Spring
PO14070	Buffer Rings (9)
* PO14076	Butt Stock
* PO14084	Carrier
* PO14089	Carrier Dog
PO14095	Carrier Dog Pin
* PO14101	Carrier & Carrier Dog Spring
PO14105	Carrier Pin
PO14110	Carrier Pin Circlip (2)
* PO14115	Carrier Latch
PO14120	Carrier Latch Spring
* PO14125	Cartridge Stop (Breechblock Release Button)
PO14130	Cartridge Stop & Carrier Latch Pin
PO14134	Cartridge Stop & Carrier Latch Pin Clip
PO14138	Cartridge Stop Spring
* PO14144	Disconnector
PO14148	Disconnector Pin
PO14155	Ejector
PO14160	Extractor
PO14164	Extractor Inner Spring
PO14168	Extractor Outer Spring
PO14172	Extractor Pin
PO14178	Firing Pin
PO14182	Firing Pin Cover
PO14186	Firing Pin Spring

PART NO.	PART NAME
PO14190	Firing Pin Stop Pin
* PO14196	Forearm
PO14204	Front Ring
PO14210	Front Sight
* PO14215	Hammer
PO14220	Hammer Pin
PO14225	Magazine Cap
PO14230	Magazine Cap Retainer
PO14234	Magazine Cap with Eyelet
PO14240	Magazine Cutoff
PO14245	Magazine Cutoff Pin
PO14248	Magazine Cutoff Plunger
PO14254	Magazine Cutoff Plunger Spring
PO14258	Magazine Cutoff Plunger Spring Retainer
PO14262	Magazine Follower
PO14268	Magazine Spring
PO14274	Magazine Spring Retainer
PO14280	Magazine Three Shot Adaptor
PO14286	Mainspring
PO14290	Mainspring Guide
PO14294	Mainspring Guide Pin Hammer
PO14302	Operating Handle
PO14308	Rear Ring
†* PO14315	Receiver with Tube
* PO14320	Safety
* PO14324	Safety Plunger
PO14328	Safety Plunger Spring
PO14332	Safety Spring Stop Pin
* PO11340	Sear
PO14344	Sear Pin
PO14350	Stock Screw
PO14354	Stock Screw Lock Washer
PO14358	Stock Screw Washer
* PO14364	Trigger
PO14370	Trigger Guard
PO14375	Trigger Guard Pin Sleeve
PO14380	Trigger Guard Retaining Nut
PO14385	Trigger Guard Retaining Screw
PO14390	Trigger Pin
PO14395	Trigger Spring

** Indicates part must be fitted by Browning Service Department or qualified gunsmith.*
† Part may be purchased only by holders of current valid Federal Firearms License.*
***NOTE:** Unless otherwise indicated, part is interchangeable between gauges/calibers.*

SECTION III

INSPECTION AND DISASSEMBLY INTO SUB-ASSEMBLIES

SAFETY WARNING

CAUTION: Make certain the gun is unloaded before inspection or disassembly operations are performed.

1. PRE-DISASSEMBLY INSPECTION

A. With the Action cocked and the Safety in the "OFF SAFE" position, check the Trigger pull to a let-off force of 5 to 6 lbs.

B. With the Action cocked and the Safety in the "OFF SAFE" position, only partially disengage the searing surfaces by slightly pulling the Trigger. Slowly release the Trigger and feel the searing surfaces regain to full engagement.

C. With the Action cocked and the Safety in the "ON SAFE" position, pull the Trigger with the index finger of both hands simultaneously as hard as possible and make sure the Hammer does not fall.

D. Make sure that the Hammer is not caused to fall by pushing the safety to the "OFF SAFE" position.

E. Work the Safety to the "ON SAFE" and "OFF SAFE" positions. It should work freely and detent positively into those positions.

F. Open the Action fully so that it locks to the rear. Hold on to the Operating Handle with one hand and depress the Breechblock Release Button with the other. Let the Breechblock travel approximately 1" forward until the Carrier has raised to its upmost position as shown in Figure #1.

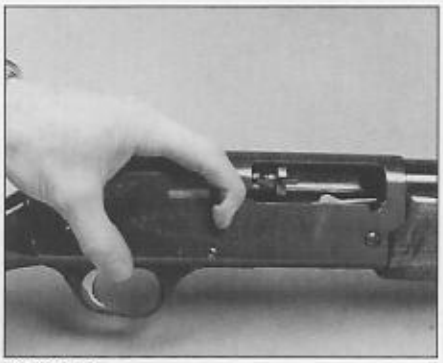


FIGURE #1

Measure the distance from the top of the Barrel Extension to the top of the tab on the right side of the Carrier as shown in Figure #2.

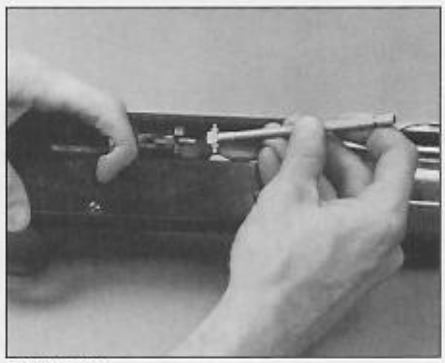


FIGURE #2

This measurement should be .661" to .701". If this dimension is greater or less than specified, repair details are given in Section IV paragraph 2, Inspection Adjustment and Reassembly of the Trigger Guard Assembly.

G. Seldom is it ever necessary to remove the Cartridge Stop and Carrier Latch Assemblies. It is not required, even in rebluing of the Receiver. However, if it is found the removal of these assemblies will be necessary, it is recommended the gun be returned to the Arnold Service Center for repair due to difficulty and special tools required to reinstall these assemblies properly.

NOTE: If the Receiver is reblued without removal of the Cartridge Stop and Carrier Latch Assemblies, make certain to thoroughly rinse out all bluing salts that may be retained in those assemblies.

2. DISASSEMBLY INTO SUB-ASSEMBLIES

A. FOREARM, BARREL, BARREL SPRING AND BUFFER RINGS

Cock and close the Action, place the Safety to the "ON SAFE" position and remove the Magazine Cap.

While gripping the Barrel and Forearm together in one hand and the Receiver in the other, pull the Barrel, Forearm, Barrel Ring and Buffer Rings out of the Receiver as shown in Figure #3.

B. TRIGGER GUARD ASSEMBLY

With the Breechblock Assembly in the forward position, remove the Trigger Guard Retaining Nut and Screw with two screwdrivers as shown in Figure #4.

NOTE: Use care not to mar the Receiver with the two screwdrivers.

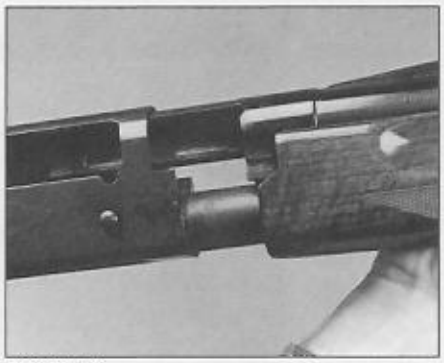


FIGURE #3

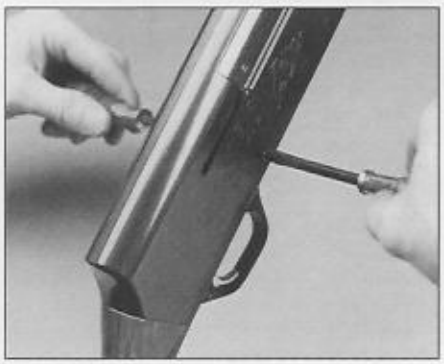


FIGURE #4

With the Trigger Guard Retaining Nut and Screw removed, remove the Trigger Guard Assembly by pulling it outward and moving it forward as shown in Figure #5.

FIGURE #5

SAFETY WARNING

CAUTION: A recall of all A-500 shotguns was initiated by Browning in August 1988. During extensive shooting tests under laboratory conditions, Browning encountered a parts breakage in the Trigger Assembly on the A-500. This failure could cause an unsafe condition if it were to occur. Guns containing this updated Hammer will have an "H" stamped on the bottom of the Trigger Guard as shown in Figure #6.

FIGURE # 6

If you have in your possession an A-500 without this marking, return the Trigger Guard Assembly immediately to the Browning Arnold Service Center, 3005 Arnold Tenbrook Road, Arnold, MO 63010, along with the serial number of the gun from which it was removed for replacement with an updated one. If the Trigger Guard Assembly is returned, you should retain your Trigger Guard Screw and Retaining Nut. Or, if you so elect, you may return the entire gun for modification.

CAUTION: Do not fire the gun until this modification is performed.

CAUTION: Do not return the gun to the owner without this modification performed.

C. OPERATING HANDLE AND BREECHBLOCK ASSEMBLY

Push the Breechblock Assembly back into the Receiver approximately 1/4" aligning the Operating Handle with the notch in the Receiver as shown in Figure # 7.

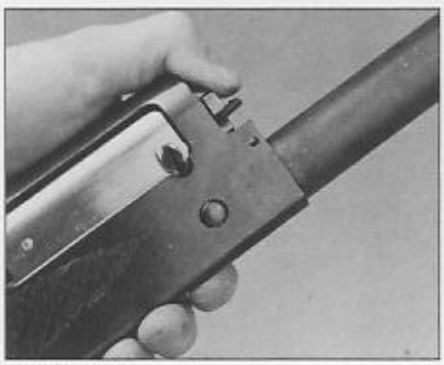


FIGURE # 7

With the Operating Handle aligned with the notch in the Receiver, pull the Operating Handle straight out of the Breechblock as shown in Figure # 8.

FIGURE # 8

Invert the Receiver, depress the Breechblock Lever as shown in Figure # 9 and remove the Breechblock Assembly from the forward end of the Receiver.

FIGURE # 9

D. STOCK

Using a Phillips screwdriver remove the Butt Stock Pad.

Using a screwdriver as shown in Figure # 10, remove the Stock Screw, Washer and Lock Washer.

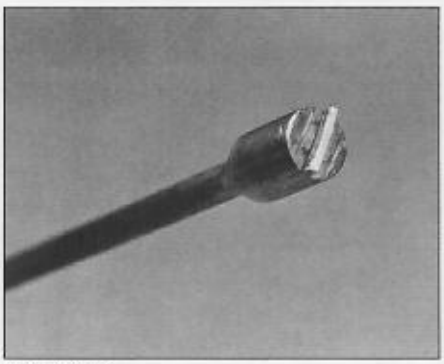


FIGURE # 10

NOTE: Do not use a regular screwdriver to remove the Butt Stock as it may position itself along side the Stock Screw and burst out the side of the Stock when turned.

SECTION IV

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

1. DISASSEMBLY OF THE TRIGGER GUARD ASSEMBLY (Figure # 11)

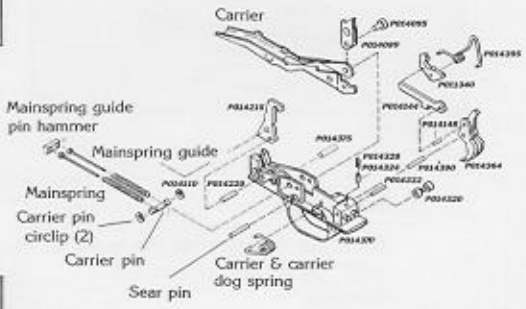


FIGURE # 11

A. MAINSPRINGS AND MAINSPRING GUIDES

Place the Safety to the "OFF SAFE" position and lower the Hammer to the fired position.

Remove the two Mainsprings and Mainspring Guides by compressing the Mainsprings with a pair of needle nose pliers as shown in Figure # 12.

NOTE: Early production guns contained two washers on the Mainspring Guides to increase Hammer energy. These washers are not listed in the parts breakdown. Do not lose them and make certain they are reinstalled at the end of the Mainspring Guide containing the hat section.

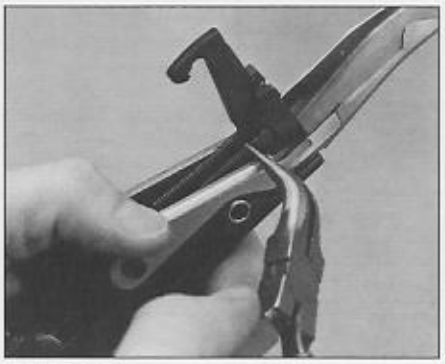


FIGURE # 12

B. CARRIER AND CARRIER DOG

Remove one Carrier Pin Circlip and remove the Carrier Pin, Carrier with the Carrier Dog, Carrier Dog Spring

and the Mainspring Guide Pin. (Figure # 13)

FIGURE # 13

C. HAMMER

Drive out the Hammer Pin using a 3/32" punch and remove the Hammer.

D. SEAR

Drive out the Sear Pin using a 3/32" punch and remove the Sear and Sear Spring.

E. TRIGGER

Drive out the Trigger Pin using a 3/32" punch and remove the Trigger and Disconnector Assembly.

F. SAFETY

Drive out the Safety Spring Stop Pin using a 1/8" punch and remove the Safety, Safety Plunger Spring and Safety Plunger.

2. INSPECTION AND ADJUSTMENT OF THE TRIGGER GUARD ASSEMBLY COMPONENTS

With all components removed from the Trigger Guard Housing, inspect the housing and components for any signs of damage, alteration or unusual wear. Replace any components as necessary to restore the complete Trigger Guard Assembly to original specifications.

SAFETY WARNING

CAUTION: If the gun failed the inspection sequence given in Section III, paragraph F, the Carrier Dog must be replaced with one of different length.

Each Carrier Dog is numbered in a location as shown in Figure # 14. This number refers to the length of the Carrier Dog and there are eight different sizes.

As discussed in Section III, paragraph F, with the Carrier in the maximum raised position, the dimension between the top of the Barrel Extension and the tab on the right side of the Carrier should be .661" to .701". If less than specified, install a longer Carrier Dog, and if

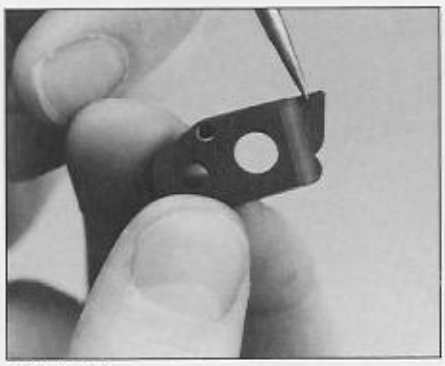


FIGURE # 14

greater, install a shorter Carrier Dog.

SAFETY WARNING

CAUTION: Do not attempt to alter a Carrier Dog in order to obtain the proper Carrier height when in the raised position.

NOTE: It may be necessary to increase or decrease the number on the number Carrier Dog by more than one size in order to obtain the desired Carrier height. Use the information given in Figure # 15 for correlation of Carrier Dog numbers to length of Carrier Dog.

Carrier Dog No.	Dimension
1	.713"
2	.719"
3	.724"
4	.707"
5	.701"
6	.697"
7	.695"
8	.689"

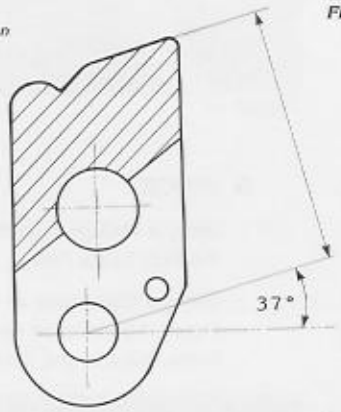


FIGURE # 15

NOTE: Replacement Carrier Dogs are available from the Parts Dept. of the Browning Arnold Service Center, 3005 Arnold Tenbrook Road, Arnold, MO 63010.

3. REASSEMBLY OF THE TRIGGER GUARD ASSEMBLY COMPONENTS

A. SAFETY

SAFETY WARNING

CAUTION: The Safety can be reassembled for either a right or left hand shooter. For a right hand shooter the red band must be installed on the left side of the Trigger Guard Housing as it is installed in the gun. The opposite is true for a left hand shooter.

Install the Safety, Safety Plunger, Spring and Safety Spring Stop Pin.

Work the Safety back and forth and see that it detents positively into the "ON SAFE" and "OFF SAFE" positions.

B. TRIGGER

Install the Trigger and Disconnector Assembly and Trigger Pin.

C. SEAR AND SEAR SPRING

Lift the Disconnector and install the Sear, Sear Spring and Sear Pin. The Sear and Sear Spring must be oriented as shown in Figure # 16 with the Sear Spring on the right hand side of the Sear.

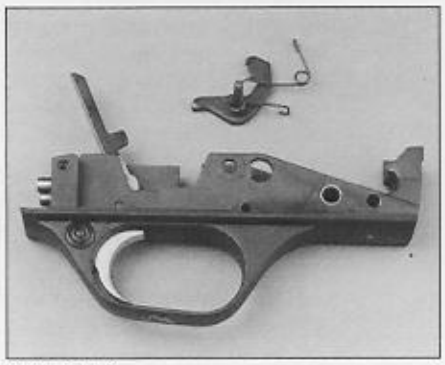


FIGURE # 16

NOTE: The Sear Pin must pass through the lower loop of the spring as it is positioned in Figure # 16.

Position the forward hooked end of the Sear Spring around the forward end of the Sear. The rear hooked end of the Sear Spring must be positioned beneath the Disconnector and forward of the tab on the bottom of the Disconnector as shown in Figure # 17.

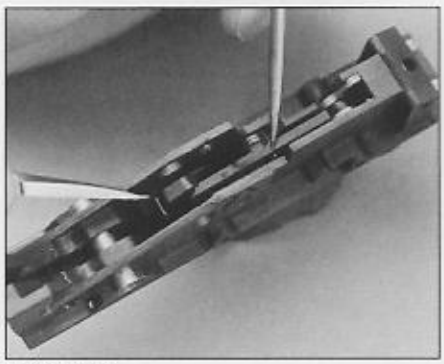


FIGURE # 17

With the Sear Spring positioned as described above, push forward on the front end of the Sear to rotate it slightly and push downward on the Disconnector. Let the end of the Disconnector come to rest beneath

the Sear Notch. Place the Safety in the "ON SAFE" position.

D. HAMMER

Install the Hammer and Hammer Pin.

NOTE:

1. If the gun being serviced is experiencing misfires and it has been determined not to be ammunition related, it is generally caused by one of two, or both, factors. The Firing Pin is striking the Primer off center or weak Firing Pin hits due to the Hammer's interference with the Action Springs and/or the slot in the back of the Breechblock. If the gun being serviced is experiencing misfires, it is recommended the Hammer be replaced with a configuration that contains a .550" cutout on its right side. These Hammers are available from the Parts Dept. of the Browning Arnold Service Center and meet the A-500 recall requirements.

   These Hammers will not prevent the Firing Pin from striking the Primers off center. They do, however, generally deliver more energy to the Firing Pin to assure positive ignition even though the Primers are not struck in the center.

2. Another cause of misfire is the possibility of the Hammer Mainspring Guide Pin (PO14294) bottoming out against its stop on the Trigger Guard prematurely. If this be the case, these two stops should be relieved to allow the Hammer to fall and strike the Firing Pin fully, to impart more energy to the Firing Pin.

SAFETY WARNING

CAUTION: Do not attempt to alter the existing Hammer in any way.

SAFETY WARNING

CAUTION: If it was necessary for some reason to replace the Hammer, Sear, Disconnector or Trigger Guard Housing with new parts, perform the following inspection procedure:

While pulling upward on the Hammer so that the Hammer and Sear Notches engage, inspect for a .010" - .014" gap between the forward end of the Disconnector and Sear. Inspection for this gap can be made through the hole in the side of the Trigger Housing as shown in Figure # 18.

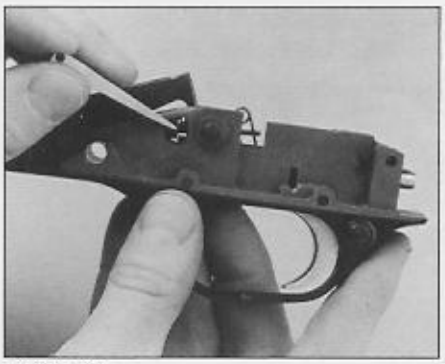


FIGURE # 18

If necessary, dress back the forward end of the Disconnector to obtain the required gap.

E. CARRIER AND CARRIER DOG

Position the Carrier Dog on the Carrier and install the Carrier Dog Pin from right to left.

Position the Carrier Dog Spring with the hooked end engaged in the slot of the Trigger Guard Housing and the "L" end installed in the 1/16" hole of the Carrier Dog as shown in Figure # 19.

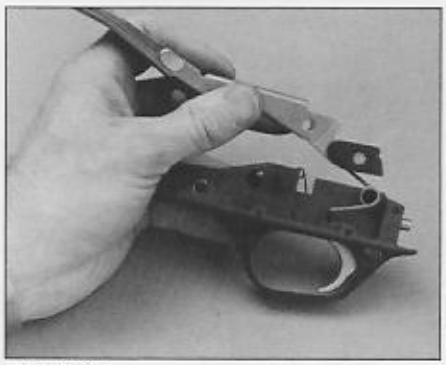


FIGURE # 19

With the Carrier Dog Spring retained in the position shown, align the Carrier Pin holes in the Carrier and the Trigger Guard Housing and install the Carrier Pin. Locate the "flat" of the Carrier Pin forward to receive the Mainspring Guides and install the Carrier Pin Circlip.

F. MAINSPRINGS

Install two Mainsprings and Mainspring Guides with the Hammer in the fired position.

NOTE: Reinstall the two washers if contained in the assembly. (See Section IV, para. 3D)

4. DISASSEMBLY OF THE BREECHBLOCK ASSEMBLY

(Figure # 20)

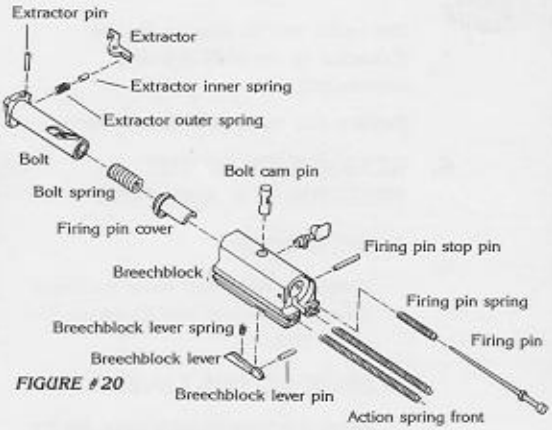


FIGURE # 20

A. FRONT ACTION SPRINGS

Remove the two Front Action Springs by pulling them straight out of the Breechblock.

B. FIRING PIN AND BOLT CAM PIN

Remove the Firing Pin Stop Pin from left to right using a 3/32" punch.

SAFETY WARNING

CAUTION: Use care upon withdrawal of the punch as the Firing Pin is spring loaded.

Remove the Firing Pin and Firing Pin Spring.

Invert the Breechblock and jar loose and remove the Bolt Cam Pin.

C. BOLT, BOLT SPRING, AND FIRING PIN COVER

Remove the Bolt and Bolt Spring from the front of the Breechblock.

Remove the Firing Pin Cover from the front of the Breechblock by letting it fall out.

D. BREECHBLOCK LEVER

Tap the left side of the Breechblock on a work surface to dislodge and remove the Breechblock Lever Pin.

After removal of the Breechblock Lever Pin, remove the Breechblock Lever and Breechblock Lever Spring.

E. EXTRACTOR

The Extractor and Extractor Springs may be removed by driving out the Extractor Pin with a 1/16" punch from right to left.

5. INSPECTION OF THE BREECHBLOCK ASSEMBLY COMPONENTS

Inspect all components for abnormal wear, breakage or alteration.

Inspect the Extractor's hook for an angle to assure a positive bite into the shells' rim. Inspect also for a rounded corner of the Extractors' hook to allow

the shells' rim to slide under the Extractor as the shell is being chambered.

Replace any parts deemed necessary.

6. REASSEMBLY OF THE BREECHBLOCK ASSEMBLY

A. EXTRACTOR

Install the inner and outer Extractor Springs, Extractor and Extractor Pin in the Bolt.

B. BREECHBLOCK LEVER

Install the Breechblock Lever Spring, large end first, in the bottom of the Breechblock.

Align the holes of the Breechblock Lever with that of the Breechblock and install the Breechblock Lever Pin. This can best be accomplished with the use of a magnetized 3/32" punch.

C. FRONT ACTION SPRINGS

Install the two front Action Springs in the Breechblock. The left one will retain the Breechblock Lever Pin in proper position.

NOTE: The large ends of the Action Springs are installed inside the Breechblock.

D. FIRING PIN COVER

Insert the Firing Pin Cover, small end first, in the forward end of the Breechblock.

E. BOLT AND BOLT SPRING

Insert the Bolt Spring in the rear of the Bolt and insert this assembly into the Breechblock locating the Extractor on the right hand side of the Breechblock.

Align the camming slot in the Bolt with the hole in the top of the Breechblock and install the Bolt Cam Pin.

NOTE: Make sure the "flats" of the Bolt Cam Pin are located forward and to the rear.

F. FIRING PIN AND FIRING PIN SPRING

With the Firing Pin Spring installed on the front of the Firing Pin, carefully install this assembly in the Breechblock while guiding the Firing Pin through the hole in the Cam Pin. Push the Firing Pin into the Breechblock, rotate the Firing Pin cover so as not to interfere and install the Firing Pin Stop Pin from right to left.

7. DISASSEMBLY OF THE RECEIVER ASSEMBLY (Figure #21)

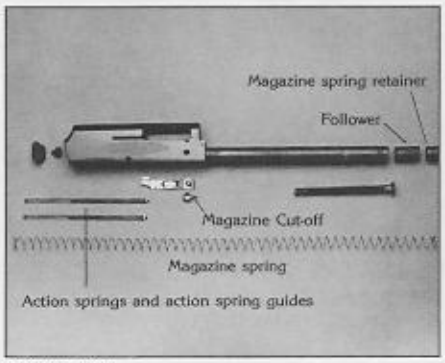


FIGURE #21

A. MAGAZINE SPRING AND FOLLOWER

To remove the Magazine Spring and Follower, screw the Magazine Cap onto the Magazine Tube two full turns only.

SAFETY WARNING

CAUTION: Make sure the Magazine Cap is screwed on at least 1 1/2 to 2 full turns or else the components of the Magazine will fly out under spring pressure.

Completely fill the Magazine Tube with dummy shells plus one more than capacity.

NOTE: While loading the Magazine with dummy shells, keep the Breechblock Release Button depressed with the thumb of one hand.

With the last shell, push to dislodge the Magazine Spring Retainer as shown in Figure #22.

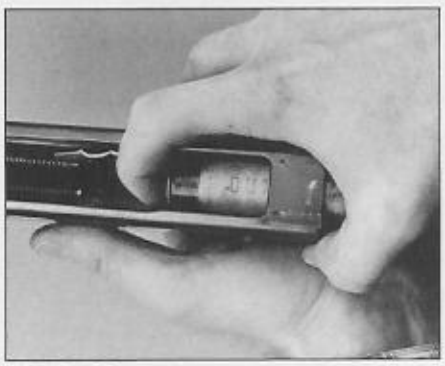


FIGURE #22

When the Magazine Spring Retainer is felt to give way, carefully remove the Magazine Cap with one hand while being prepared with the other to retain the Magazine Spring Retainer, Magazine Spring and Three Shot Adapter.

SAFETY WARNING

CAUTION: Use extreme care not to let the components of the Magazine Tube fly out and cause injury.

B. REAR ACTION SPRINGS

Reach inside to compress the rear Action Springs by pushing on their guides to the rear and remove the Action Spring Guide Pin.

Remove the Action Springs, guides and washers from the Receiver.

SAFETY WARNING

CAUTION: Use extreme care not to let the Action Springs and guides fly out of the Receiver and cause injury.

C. MAGAZINE CUTOFF

To remove the Magazine Cutoff, lay the Receiver on its left side on a work surface with the top of the Receiver away from you.

With a pointed scribe, move the Magazine Cutoff Plunger Spring Retainer forward and then toward the top of the Receiver and out of the left hand Cartridge Guide that is welded to the Receiver. The Magazine Cutoff Plunger Spring Retainer, Magazine Cutoff Plunger and Magazine Cutoff Plunger Spring will be removed as an assembly. The Magazine Cutoff will now just fall out of the Receiver.

D. BREECHBLOCK BUFFER

The Breechblock Buffer is in two parts. Using the point of a narrow screwdriver pry out the center piece (Breechblock Buffer core) by moving it forward.

Next pry out the other part by prying on one side of the piece to collapse its sides toward the longitudinal cut in its center.

NOTE: If the Receiver is to be reblued, all the parts so far removed from the Receiver must be removed to prevent damage to them from the bluing salts. The Cartridge Stop and Carrier Latch assemblies need not be removed. In fact, it is recommended they not be removed due to their difficulty in reinstallation.

A special tool is necessary in order to reinstall the Cartridge Stop and Carrier Latch Assemblies. It is recommended the gun be returned to the Browning Arnold Service Center for repair, as suggested in Section III, paragraph G, if removal of these assemblies become

necessary. If the Receiver is reblued without removal of the Cartridge Stop and Carrier Latch Assemblies, make sure all bluing salts are thoroughly rinsed out of the Receiver.

8. INSPECTION AND ADJUSTMENT OF THE RECEIVER ASSEMBLY COMPONENTS

A. RECEIVER

Inspect the Receiver to determine if there is a dent at the forward end of the Ejection Port. This area can be damaged by the Operating Handle when the Action is allowed to slam close with the Barrel removed.

If repair to such Receiver is desired, peen the displaced metal back into shape and polish it out. Using a small pointed flame from an acetylene torch, locally heat the areas susceptible to damage (area about the size of a dime) to a cherry red and immediately quench in water. The Receiver must then be reblued.

NOTE: The Cartridge Stop and Carrier Latch Assemblies need not be removed for this operation as long as a large torch and excessive heat is not applied.

Once the Receiver is repaired in this manner, letting the Action slam closed with the Barrel removed will not damage the Receiver. However, care should still be taken not to let this condition occur.

B. MAGAZINE TUBE

The Magazine Tube in guns serial numbered before 40001 were soldered in the Receiver with the exception of guns 31776 through 31805. Inspect the tube to see that it is tight in the Receiver and check the solder points. If it is found to be loose, remove and clean both solder points. Tin the Receiver and Magazine Tube with a 50-50 soft solder and apply additional flux.

Grip the Receiver vertically in a vise, insert the Magazine Tube in the Receiver and install the Barrel. The Barrel will hold the Magazine Tube in proper position.

Apply heat up the Magazine Tube from the bottom of the Receiver with a soft flame from an acetylene torch. Sweat in the Magazine Tube with 50-50 wire solder as shown in Figure #23.

NOTE: It is not necessary to remove the Cartridge Stop and Carrier Latch Assemblies for this operation as long as excessive heat is not applied.

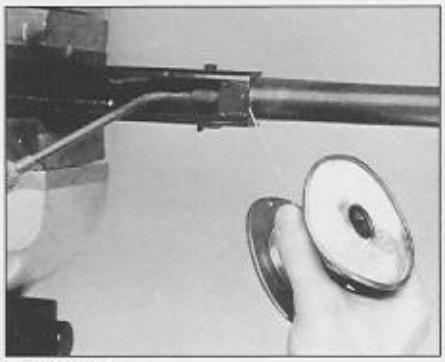


FIGURE #23

NOTE: Later A-500 production contain Magazine Tubes that screw into the Receiver. If desired, theses tubes need not be removed from the Receiver when the Receiver is reblued. However, after rebluing, the tubes should be removed and both the threads of the Receiver and tube cleaned and refastened with Loctite 648.

C. BUFFER, FRONT AND REAR RINGS (Figure #24)

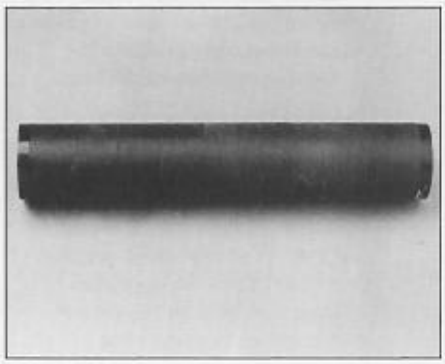


FIGURE #24

Measure the overall length of the Buffer Assembly as shown in Figure #24 for a dimension of 7.48"±.004", (190±1mm). If found longer, grind down either one of the aluminum rings at the front or rear of the column to obtain the desired dimension. If found shorter, order a new ring, and grind down to obtain the desired dimension.

NOTE: The Buffer Column can be ground down to the minimum specification dimension and enhance functioning with extra light loads if necessary. However, do not adjust the length of the Buffer Column to shorter than specified.

D. STOCK

In later production, stock bedding was added between the Receiver and the Stock at 4 points as shown in Figure #25.

FIGURE #25

If the gun being serviced does not contain this bedding, it is recommended this operation be performed. In so doing, additional bearing surface is provided for the Receiver to prevent premature Stock splitting in some guns. The procedure follows:

Apply a release agent (a floor paste wax will do) to the back Receiver Plate.

For the bedding compound, an epoxy steel/aluminum filler works fine which should be available from your local hardware store.

Mix a small amount of the epoxy filler and apply a very small amount around the Stockscrew hole.

NOTE: Do not use any excessive amount or it may run into the Receiver.

Install the Stock on the Receiver and let stand for the recommended cure time.

9. REASSEMBLY OF THE RECEIVER ASSEMBLY COMPONENTS

It is assumed the Cartridge Stop and Carrier Latch Assemblies have not been removed from the Receiver as previously discussed.

A. BREECHBLOCK BUFFER

Install the Breechblock Buffer in the rear of the Receiver with the back contour of the Buffer matching the back contour of the Receiver.

Next, snap in the Breechblock Buffer Core.

B. MAGAZINE CUTOFF

Position the Magazine Cutoff in the Receiver with the lever pointed to

the rear. While retaining it in this position, insert the Magazine Cutoff Plunger Assembly, as removed during the disassembly procedure, in the top rear corner of the left hand Cartridge Guide. Compress the assemblies' spring by pushing on the Magazine Cutoff Plunger Spring Retainer with a pointed scribe locating the Retainer in its square cutout at the rear of the left hand Cartridge Guide.

Operate the Magazine Cutoff to "R" and "MC" to see that it detents positively into those positions.

C. REAR ACTION SPRINGS, GUIDES AND WASHERS

Grip the Receiver in a padded vise in a horizontal, inverted position.

Compress the Action Springs on the Action Spring Guides and grip the guide with a pair of needle nose pliers as shown in Figure #26. Position the guides and springs in the Receiver and install the Action Spring Guide Pin.

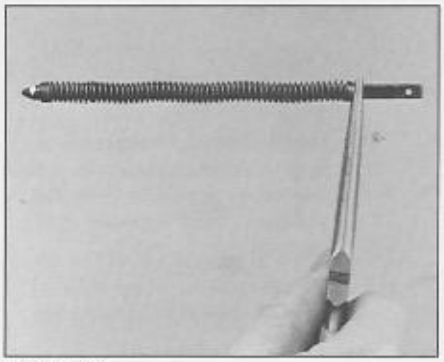


FIGURE #26

SAFETY WARNING

CAUTION: Use extreme care in compressing the springs not to let the guides fly out and cause injury.

D. BREECHBLOCK ASSEMBLY

Guide the Breechblock Assembly into the Receiver being careful to align the rails of the two.

While moving the Breechblock Assembly to the rear, direct the back end of the front Action Springs onto the rear Action Spring Guides as shown in Figure #27.

Press in on the Breechblock Release Button, move the Breechblock to the rear to align the Operating Handle hole with the cutout in the Receiver and install the Operating Handle.

E. TRIGGER GUARD ASSEMBLY

Cock the Hammer and place the Safety in the "ON SAFE" position.

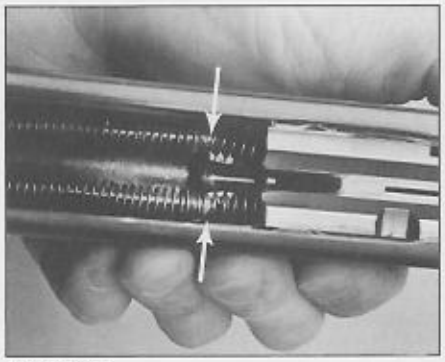


FIGURE #27

Position the Trigger Guard Assembly into the Receiver and install the Trigger Guard Retaining Screw and nut.

Tighten the screw and nut and check the Trigger Guard Assembly to see if it is loose in the Receiver. If it is loose, the Retaining Nut is too long.

With the Retaining Nut and screw tightened, pull the Action to the rear to see if it binds in the Receiver. If it binds, the Retaining Nut is too short and is collapsing the sides of the Receiver.

NOTE: If the Retaining Nut is not of proper length, ones of different lengths are available from the Browning Arnold Parts Department, Arnold, Missouri.

F. MAGAZINE FOLLOWER, SPRING AND RETAINER ASSEMBLY

Install the Magazine Follower, spring and retainer in that order. Installation of the Three Shot Adapter is optional but must be installed in certain instances to be legal.

SAFETY WARNING

CAUTION: During installation be careful not to let the components fly out of the Magazine Tube and cause injury.

G. STOCK

Install the Stock, Stock Screw, Washer, Lock Washer and Butt Pad.

SECTION V

TROUBLESHOOTING/POSSIBLE CAUSES AND SOLUTIONS

1. LOOSE MAGAZINE TUBE

A. Poor solder joint of the tube to the Receiver. See repair procedure Section IV, paragraph 8.B.

2. LOOSE TRIGGER GUARD ASSEMBLY IN THE RECEIVER

A. Trigger Guard Retaining Nut and screw is loose or the nut is too long. See repair procedure Section IV, paragraph 9.E.

3. MISFIRES

A. Interference of the Hammer with the Action Springs and/or off center Firing Pin hits. See repair procedure Section IV, paragraph 3.D.

B. Action not completely closed. See following paragraph 4.C.

C. Hammer Mainspring Guide Pin bottoming out prematurely. See Section IV, para. 3.D.

4. FEEDING MALFUNCTIONS

A. Improper Carrier Dog. See repair procedure Section IV, paragraphs 2.0 and 3.E.

B. Customer not loading the last shell in the Magazine past the Cartridge Stop so that the shell rests above the Carrier.

C. Premature release of the Cartridge by the Cartridge Stop due to jar while shooting. This condition may cause the Action not to close completely from the Breechblock Assembly interfering with the shell resting above the Carrier. This can be caused by insufficient engagement of the Cartridge Stop with the shell in the Magazine.

To increase engagement, remove the Trigger Guard Assembly and bend the rear end of the Carrier Latch slightly toward the center of the Receiver. This can be accomplished with a strong pair of needle nose pliers with the Carrier Latch installed in the Receiver.

D. Sharp corner on the Extractor preventing the rim of the shell to feed smoothly up the face of the Bolt.

5. WEAK EJECTION

A. Buffer assembly too long. See repair procedure Section IV, paragraph 8.C.

B. The Extractor Claw not providing a positive bite into the rim of the shell.

6. ERRATIC EJECTION AND/OR TRAPPED CASES

A. Improper installation of the Ejector. The ejecting surface of the Ejector must be exactly perpendicular with

the longitudinal axis of the bore. This can be determined by holding the Barrel horizontally with its right side up and placing a 12 ga. dummy shell on the Barrel Extension with its base contacting the Ejector. Their surfaces should be square with each other. If not, apply heat to the Ejector to loosen its Loctite and reposition it with a screwdriver.

7. ACTION STAYS OPEN WITH A ROUND RESTING ABOVE THE CARRIER

A. Weak Magazine Spring.

B. Binding Magazine Follower.

8. ACTION BINDS IN THE RECEIVER

A. Trigger Guard Retaining Nut is too short. See repair procedure Section IV, paragraph 9.E.

9. ACTION WILL NOT RELEASE FROM THE CARRIER DOG

A. Improper Carrier Dog. See repair procedure Section IV, paragraphs 2.0 and 3.E.