

# Armorer's Course – 1911 Pistol

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## I. Introduction

### A. General

The United States Government adopted the .45 caliber Browning designed locked breech, recoil operated, auto loading Colt automatic pistol in 1911. All manufacture of this pistol was originally carried on at Colt, but Springfield Armory was tooled to produce the gun prior to 1914. During World War I, Remington Arms and Colt manufactured Model 1911 pistols. Approximately 450,000 pistols were made by Colt and Remington during World War I. During World War II, the Model 1911A1 was manufactured by Colt, Remington Rand, Union Switch & Signal Company and the Ithaca Gun Company. Approximately 1.8 million were made during World War II. The US Government has purchased over 2.4 million Model 1911's. In addition, hundreds of thousands have been made for commercial sale and export to foreign countries.

On June 15, 1926, the US Army adopted certain modifications to the original 1911 design, which caused a change in nomenclature to 1911A1. The changes consisted of the mainspring housing from flat and smooth to arched and serrated. The trigger was shortened and serrated, the area of the frame around the grip safety was extended to reduce hammer bite, the front sight was widened, finger clearance cuts immediately behind the trigger on the frame exist on the 1911A1 and are absent on the 1911, and the rifling and diameter were reduced and land height was increased.

Today the 1911 has undergone many changes. Colt factory offers the pistol in various calibers and frame sizes. There are at least ten major American gun companies that offer 1911 style pistols in a myriad of configurations that appeal to the military, police and target competitors. To say that the popularity of the 1911 has increased over the decades of production is a complement to John M. Browning's genius. Still with all the variations being offered today the basic operation of the gun is unchanged which lends credence to the statement that John M. Browning was "The greatest firearms inventor the world has ever known".

This manual contains maintenance and technical information for 1911 armorers. The knowledgeable use of the material within this manual provides the armorer with the information necessary to maintain 1911 style pistols in a condition that exceeds the requirements concerning reliability and ease of maintenance by today's law enforcement agencies or military.

## B. Technical Specifications

Action	Locked breech, short recoil
Trigger	Two-stage military style
Caliber	.357 Magnum; .357 SIG; 9mm; .38 super; .400 Corbon; 40 S&W; 10mm and .45 Auto
Length of Slide	7 1/2" Government, 6 3/4" Combat Commander, 6 1/8" Officers
Barrel Length	5" Government, 4 1/4" Combat Commander, 3 1/2" Officers
Height (including magazine)	5 3/8" Government and Combat Commander, 4 3/4" Officers
Width	1 1/4" single stack magazine guns; 1 3/8" double stack magazine guns
Sight Radius	6 1/4" Government; 5 1/2" Combat Commander; 5" Officers
Barrel Rifling	Left hand twist; 1:16
Magazine Capacity	14 rounds in double stack; 7 rounds in single stack Government and Commander; 6 rounds in Officers
Weight (with empty magazine)	40 oz. Government; 36 oz. Combat Commander; 34 oz. Officers
Trigger Pull Weight	Colt factory standard: 3½ - 4 lbs.
Number of Safeties	Two
Recoil Spring Weight	Government Model 16 lbs.; Commander Model 18 lbs.; Officers Model 22 lbs.
Mainspring Weight	23 lbs. all models except Gold Cup which is 20 lbs.

## II. Components

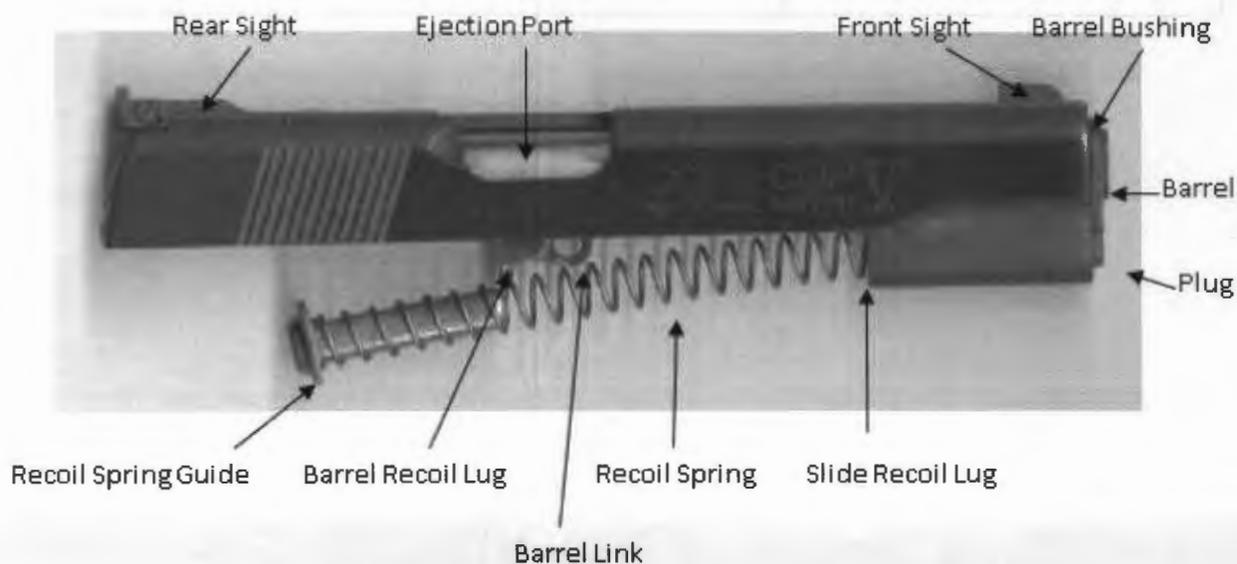
### A. General



Three main components of the 1911 pistol:

1. Slide
2. Frame
3. Magazine

### B. Slide



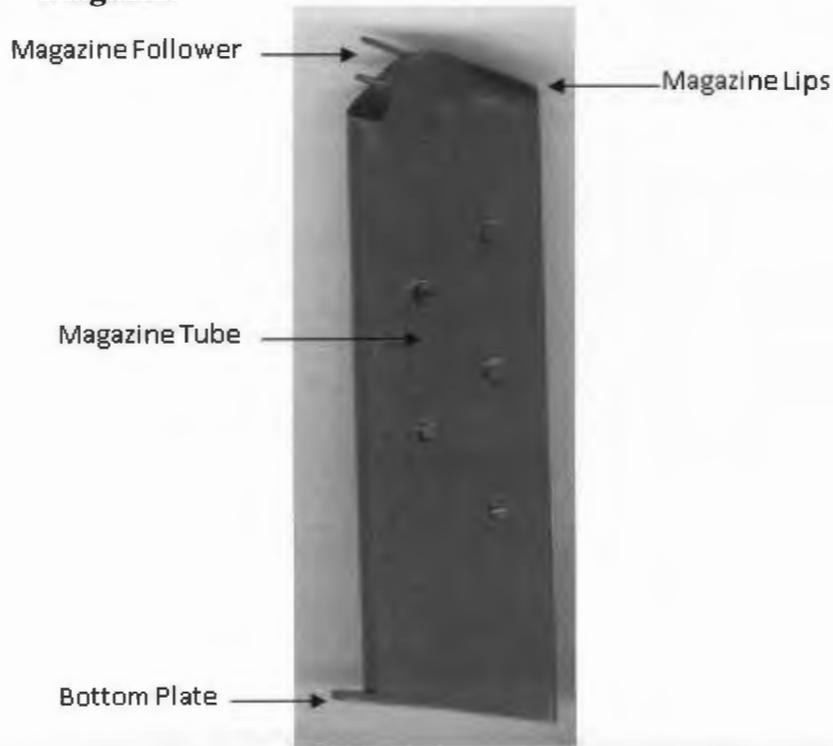
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**C. Frame**



**D. Magazine**



### III. Handling

**WARNING: BEFORE WORKING ON OR CLEANING YOUR WEAPON, ENSURE IT IS UNLOADED!**

#### A. Unloading

1. Check the chamber to ensure it is empty
2. Point the weapon in a safe direction (which should be at something that will stop a round)
3. Keep your trigger finger straight and off the trigger
4. Place your support hand underneath the frame with your thumb and four fingers on each side of the slide. At no time should any part of your hand be in front of the muzzle!
5. Disengage the thumb safety, drift your trigger finger away from the frame, and pull the slide back with the support hand just enough to see the chamber and NO BRASS
6. Seat the slide and re-engage the thumb safety
7. Check the magazine well to make sure it is empty and that no magazine is inserted
  - a. Place your support hand underneath the magazine well and use the tip of your firing side thumb to press the magazine release button
  - b. If nothing is ejected from the magazine well, run a finger up into the magazine well to ensure it is empty

#### **IV. Cycle of Operation**

In order to understand the sequence of events that occur when firing, you must be familiar with the cycle of operation.

- Feeding:** Placing the round in the path of the slide
- Chambering:** Moving the round from the magazine to the chamber
- Locking:** The precise mating between the barrel lugs and the slide lugs
- Firing:** Firing pin strikes the primer which ignites the propellant
- Unlocking:** Unlocking the slide from the barrel
- Disconnecting:** Disengaging sear from pressed trigger
- Extracting:** Pulling either a spent case or live round from the chamber
- Ejecting:** Pushing a case or a live round around the extractor and out of the ejection port
- Cocking:** Returning firing mechanism to the cocked position
- Reconnecting:** Reestablish the trigger to sear relationship

## V. General Disassembly and Assembly

**WARNING: BEFORE WORKING ON OR CLEANING YOUR WEAPON, ENSURE IT IS UNLOADED!**

### A. Disassembly Procedure

1. With your thumb, press inward on knurled end of plug, at the same time rotating barrel bushing a 1/4 turn clockwise to free plug and allow recoil spring to push plug out. *Be careful not to launch recoil spring and plug!*



2. Remove plug. If plug does not come free easily, rotate plug in a counter-clockwise direction to separate plug from recoil spring
3. Rotate barrel bushing counter-clockwise until its lug aligns with slot in slide and pull bushing forward
4. Pull slide to the rear until lug on the slide stop is opposite clearance notch (left side of the slide) and hold it there. Push in on rounded end of slide stop pin (protruding from the right side of frame) until slide stop is free of slide and pull slide stop out of frame to the left.

Take Down Notch

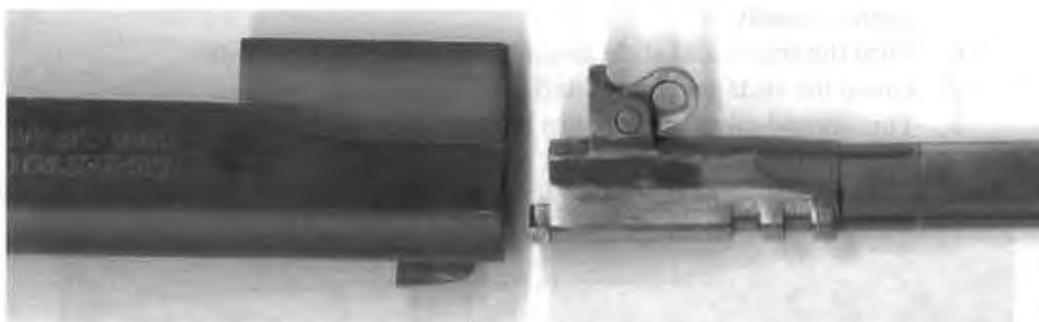


5. Remove recoil spring and guide
6. Rotate barrel link forward and pull barrel (with link) out the front of the slide



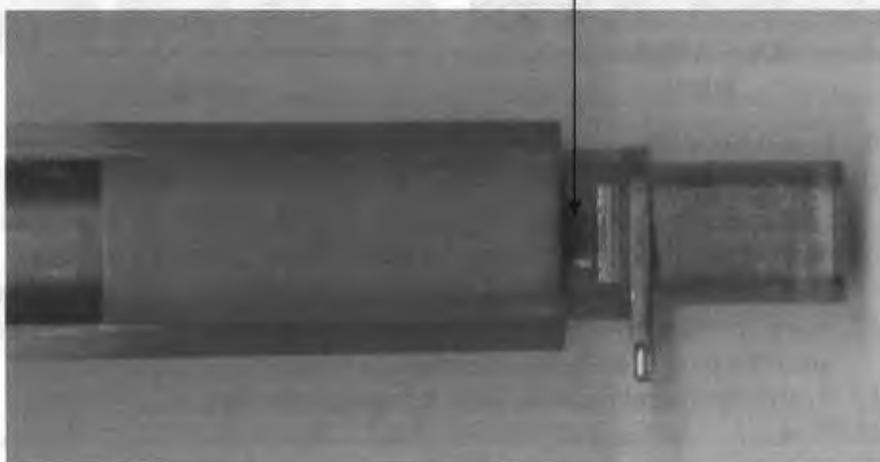
## **B. Assembly Procedure**

1. Place slide on its sights and insert barrel into the front of the slide



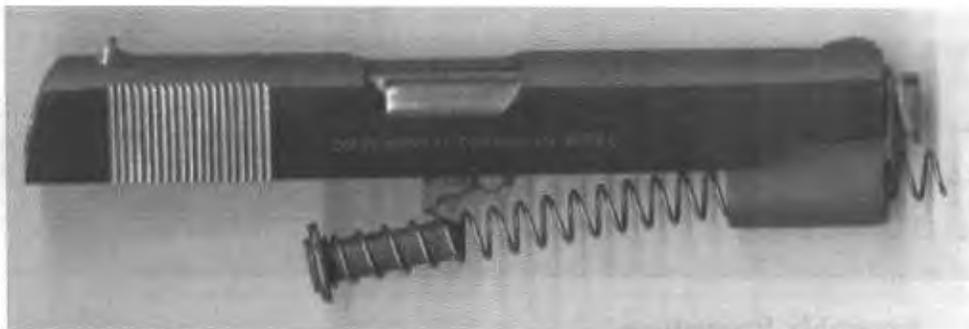
2. Align lug of the barrel bushing with the slot in the frame and slide the barrel bushing over the barrel and into the slide

Lug on Barrel Bushing



3. Rotate the barrel bushing clockwise so its lug will engage the slot in the slide

4. Insert the recoil spring and guide, spring first, into the recoil lug of the slide



5. Align the slide rails with the frame rails and push the frame onto the slide approximately 1/2"
6. Turn the frame and slide assembly to an upright position
7. Grasp the slide and barrel and push fully to the rear
8. This should align the link pin hole with the slide stop hole in the frame



Right



Wrong

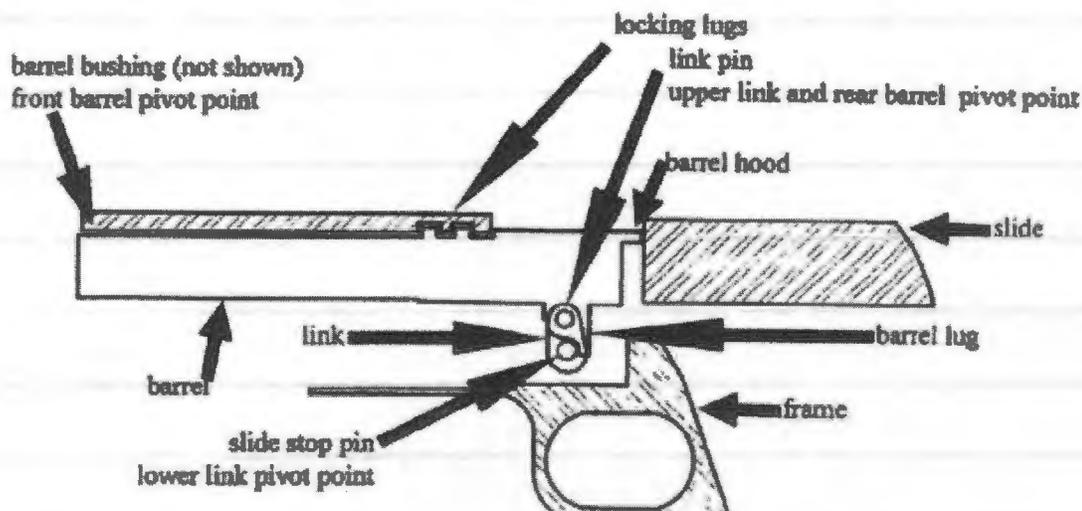
9. Install the slide stop from the left side of the frame
10. Push the slide forward until the take down notch in the slide aligns with the flange on the slide stop and push the slide stop fully in. It may be necessary to depress the slide stop plunger to aid in pushing the slide stop in.
11. Push the slide fully forward and the thumb safety to the Safe position
12. Insert the plug over the recoil spring and carefully compress the recoil spring until the plug is fully into the slide
13. Rotate the barrel bushing until it engages the plug
14. Perform a mechanical function check – See Section VIII – B Function Check



## VI. Functions

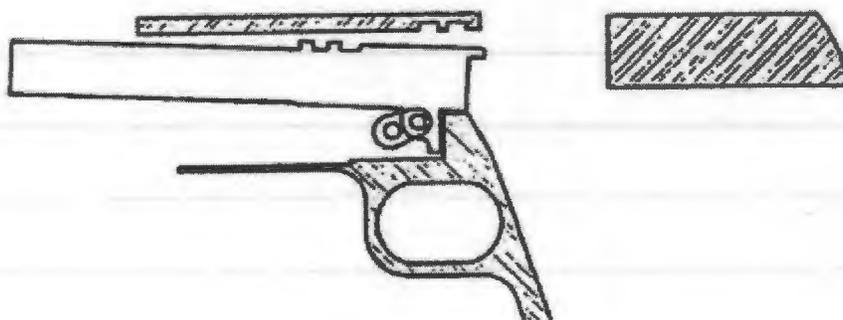
### A. Locking

Lockup is achieved by a rotating barrel link. As the decompressing recoil spring forces the slide forward, the slide will contact the barrel's hood which pushes the barrel forward. As the barrel is pushed forward, the link is forced to rotate forward which pushes the barrel up. This forward and upward thrust aligns and engages the lugs on the barrel to the lugs on the slide. As the barrel moves forward, pivoting around the link, its lower lug will contact the slide stop and prevent any further forward movement of the barrel or the slide.



### B. Unlocking

Under recoil, the barrel and slide start rearward together. As they move back, the link is rotated down which pulls the barrel down, disengaging the lugs between the barrel and slide. The barrel's recoil lug will now contact the frame and stop the barrel's rearward movement. The slide will continue rearward until the recoil lug on the slide contacts the recoil spring guide.

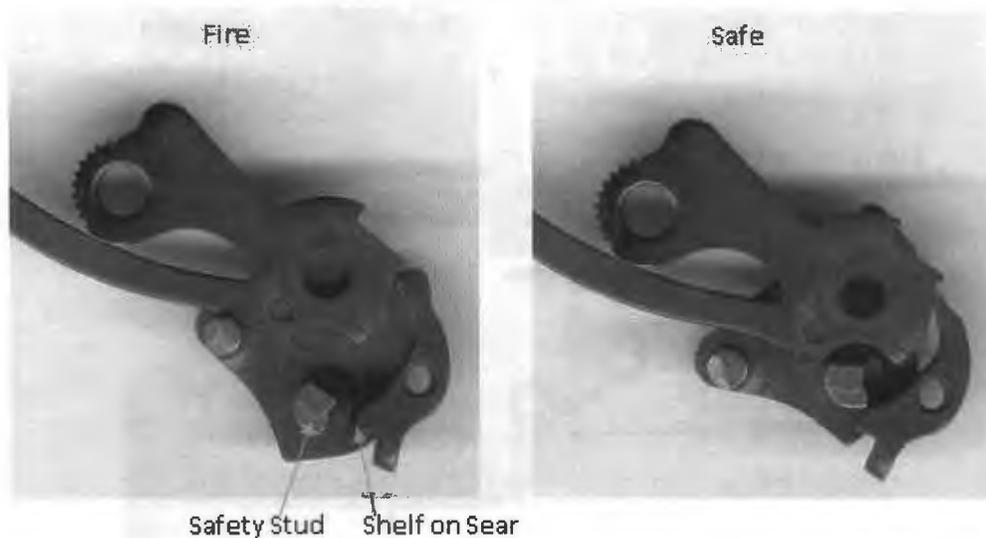


Unlocked

## C. Safeties

### 1. Thumb Safety

The Thumb Safety is a pivoting lever that has a stud on it which, when engaged, will interface with the rear facing shelf on the sear keeping the sear from rotating. When the Safety is deactivated (taken off 'Safe') the stud on the Safety will move down and away from the sear, allowing the sear to rotate and release the hammer.



### 2. Grip Safety

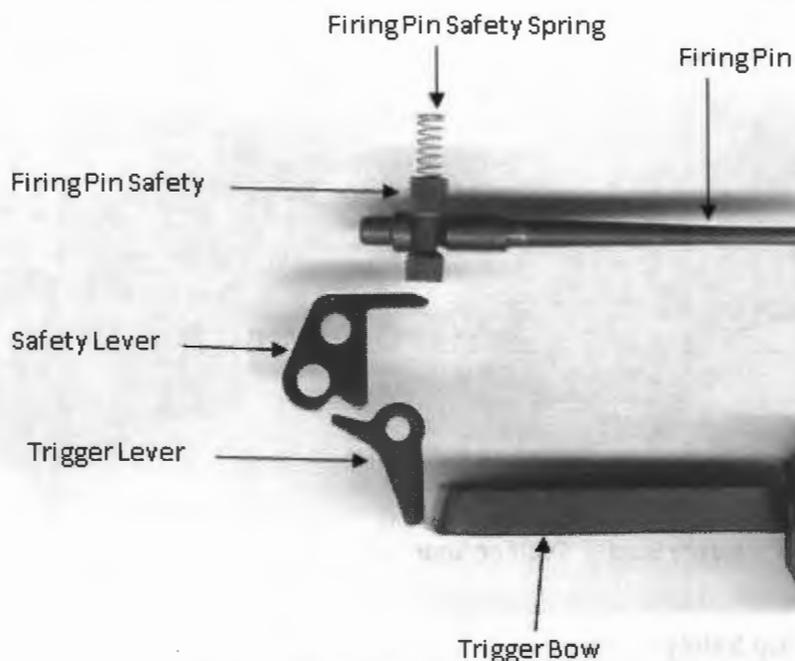
The grip safety has an arm that will interface with the trigger bow's rearward surface, keeping the disconnector from contacting the sear legs. As the shooter establishes a firing grip on the gun, the arm on the grip safety is pivoted upward and clear of the trigger bow allowing the disconnector to be pushed into the sear's legs.



### 3. Firing Pin Safety

Located in the slide is a cylindrical piece of steel at right angles to the firing pin. At rest, the firing pin safety is being pushed down by its spring thus blocking any forward movement of the firing pin. In order to deactivate this safety, the shooter

must press the trigger. As the trigger bow moves rearward, the bow will contact the trigger lever which pivots rearward. Located on the top rear of the trigger lever an arm will move up and contact the safety lever. As the safety lever is pivoted up an arm on the safety lever will contact the firing pin safety and push the safety up freeing the firing pin for reliable ignition.



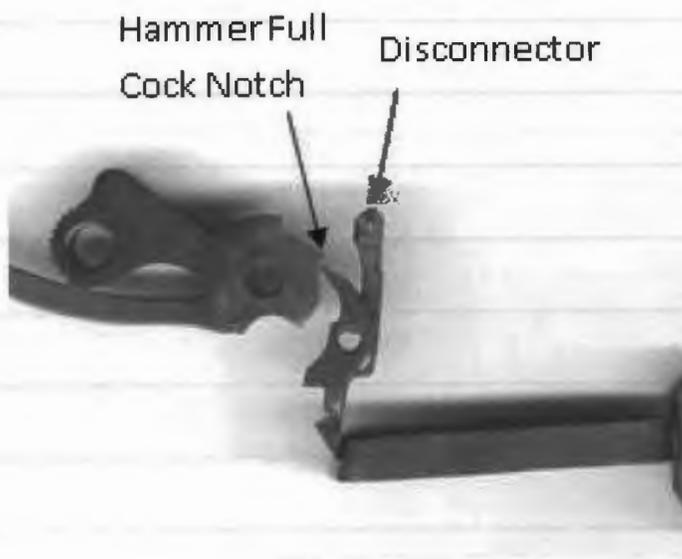
#### D. Trigger

Starting with the gun cocked and thumb safety activated, the shooter establishes a firing grip on the gun. This grip will push in the grip safety, pivoting its arm upward and clear of the trigger bow. With the gun pointed downrange at a target, the shooter will push down on the thumb Safety, which moves the stud on the Safety down and clear of the sear. As the trigger is pressed to the rear, the rear of the trigger bow pushes the disconnecter rearward. As the disconnecter moves rearward it will contact the sear's lower front legs. This is the end of the first stage trigger press. As soon as the disconnecter contacts the sear legs, the upper sear edge is pivoted forward and out of the notch in the hammer. The addition of the sear spring weight to the first stage press gives the shooter the second stage trigger press. The hammer is now free to fall and contact the firing pin, sending it into the primer on the chambered round, causing ignition. Upon ignition of the cartridge, the slide starts to move to the rear. Located on the slide's feed rail at the rear is a notch which has allowed the disconnecter to be high enough to contact the front lower edge of the sear legs. As the slide moves 1/8" to 1/4" rearward the slide feed rail will push the disconnecter down which will disengage the disconnecter from the sear. The sear, under tension from the left leg of the sear spring, will be pushed forward pivoting its upper surface rearward ready to reengage the hammer. As the slide returns forward, the hammer will pivot

forward until its cocking notch comes into contact with the tip of the sear. With the slide fully forward, the disconnecter is resting underneath the sear legs. As the shooter releases the trigger, the disconnecter and trigger are pushed forward by the middle leg of the sear spring. Because the slide is fully forward, the notch in the feed rail is above the disconnecter. As the trigger is released further, the disconnecter will pivot further forward and pop up in front of the sear legs, reconnecting the trigger to the sear via the disconnecter, resetting the trigger and allowing the shooter to fire the next shot.



Connected



Disconnected



## VII. Care and Cleaning

**WARNING: BEFORE WORKING ON OR CLEANING YOUR WEAPON, ENSURE IT IS UNLOADED!**

### A. General

Normal cleaning can be performed when the pistol is field stripped. Use a high quality solvent and follow manufacturer directions. Wipe all surfaces dry and use a good quality lubricant such as Break-Free. The use of a bronze or nylon bore brush of the correct caliber is recommended. Never use a stainless steel bore brush on any barrel. Use a solid bronze jag of correct caliber and clean barrel until a dry patch comes out clean.

If pistols are to be stored for a long period of time or if the pistols are used in a highly corrosive environment the armorer needs to determine if specific areas of concern, such as the magazine tube, require additional lubrication. The armorer then needs to be aware of the pistols use to determine how often to perform specific maintenance. If corrosion is to be avoided it may be necessary to inspect and clean these pistols more frequently.

It is mandatory that a mechanical function check be performed after cleaning. Refer to Section VIII – B.

### B. Procedure

**WARNING: BEFORE WORKING ON OR CLEANING YOUR WEAPON, ENSURE IT IS UNLOADED!**

1. Check again to ensure the chamber and magazine well are empty and the weapon is UNLOADED
2. Field strip pistol and disassemble magazine(s)
3. Clean all areas with a lightly treated cloth of a high quality solvent

**Caution: Do NOT allow excess oil or solvent to enter the firing pin channel, trigger group, or hammer and grip safety assemblies**

4. Cleaning the barrel
  - a. Scrub the barrel using a saturated bronze or nylon bore brush inserted from the breech end
  - b. Repeat at least 10 times, re-soaking the bore brush once or twice
  - c. Use a jag and clean patches until a dry patch comes out clean
5. Wipe away any traces of solvent with a clean soft cloth
6. Apply a light coat of lubricant over every exposed area of every part. A light coat of lubricant is such that after lubrication you can rub your finger over the part and your finger might be damp with oil, but not dripping.



## VIII. Inspections

### A. General

A function check is to be carried out after any work is done to the pistol. A parts inspection is to be carried out whenever the pistol is disassembled. A static inspection of subassemblies is to be performed to aid in malfunction diagnosis and to ensure the gun is within specifications.

### B. Function Check (Mechanical)

The pistol is fully assembled

**WARNING: BEFORE WORKING ON OR CLEANING YOUR WEAPON, ENSURE IT IS UNLOADED!**

1. Insert an **EMPTY** magazine into the magazine well and ensure the magazine catch has engaged with the magazine
2. Disengage the thumb safety and retract slide fully to the rear to ensure the slide stop lever moves into the slide stop notch and locks the slide to the rear
3. Verify that the slide stop is pushed up fully into the slide stop notch by the magazine follower
4. Remove the empty magazine
5. Retract the slide slightly to the rear and seat the slide fully forward
6. Perform an additional chamber check
7. Dry press the trigger – *the hammer must fall fully forward*
8. Keep the trigger trapped to the rear and rack the slide – *hammer must remain cocked*
9. Slowly relax your trigger finger until the trigger resets (feel or hear the click), and re-press the trigger – *hammer must fall fully forward*
10. Release the trigger and rack the slide – *hammer must remain cocked*
11. Engage the thumb safety and press the trigger – *hammer must remain cocked*
12. Disengage the thumb safety – *hammer must remain cocked*
13. Without depressing the grip safety, press the trigger – *hammer must remain cocked*
14. Establish a firing grip and retract the slide about ½” rearward and hold
15. Press the trigger – *hammer must remain cocked*
16. Insert **EMPTY** magazine into magazine well and ensure the magazine catch has engaged with the magazine
17. Ensure magazine drops free as magazine catch is depressed
18. Fill the magazine with **DUMMY** (inert) rounds
19. Insert the magazine filled with **DUMMY** (inert) rounds into the magazine well and ensure the magazine catch engages the magazine
20. Ensure the magazine drops free as the magazine catch is depressed
21. Reinsert the magazine containing the **DUMMY** (inert) rounds
22. Rack the slide
23. Slide should close forcefully and fully (do NOT ride the slide forward!)
24. Rack the slide

25. **DUMMY** round should fly out of ejection port and the next **DUMMY** round in the magazine should go freely into the chamber
26. Continue racking the slide until the magazine is empty and the slide locks back on an empty magazine
27. Repeat this process (with **DUMMY** rounds) for each magazine used with this pistol
28. If the gun is equipped with a firing pin safety (Colt Series 80 or later types), to verify the safety is functioning correctly, lock the slide back and use a punch to push the rear of the firing pin fully forward. Look through the ejection port at the breech face to ensure the firing pin does not protrude.
29. **Finally, test fire the weapon**

### C. **Parts Inspection**

This inspection is to be performed with the gun completely disassembled and cleaned.

**WARNING: BEFORE WORKING ON OR CLEANING YOUR WEAPON, ENSURE IT IS UNLOADED!**

Very carefully examine all parts for cracks, deformities, or any unusual wear. All parts need to be inspected for proper function and condition.

Areas of Inspection:

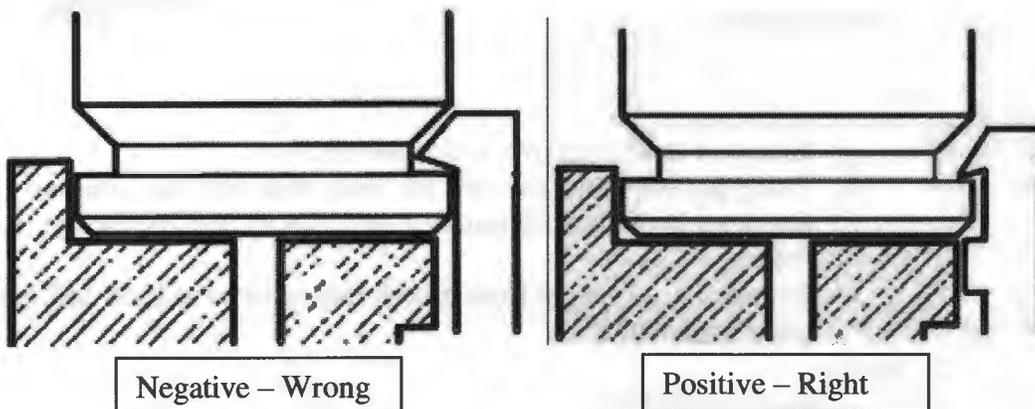
1. Slide Assembly
  - a. Barrel – bore and chamber, feed ramp, locking and unlocking lugs, crown, link and link pin
  - b. Recoil spring, recoil spring guide and plug
  - c. Slide – loose, damaged or missing sights, rails, locking lugs, breech face, extractor, ejection port, slide recoil lug, slide stop notch, firing pin stop, firing pin and spring; (firing pin safety and safety spring if so equipped)
2. Frame Assembly
  - a. Frame – rails, pin holes, stock screw bushings, ejector, and plunger tube housing
  - b. Parts – stocks, stock screws, mainspring housing pin, mainspring housing, mainspring cap and pin, mainspring, mainspring housing pin retainer, sear spring, grip safety, hammer assembly, disconnecter, sear, trigger, slide stop plunger, plunger spring, safety plunger, slide stop, magazine catch, magazine catch spring, magazine catch lock; (trigger lever and safety lever if so equipped)
3. Magazine Assembly
  - a. Magazine – tube, follower, and spring

## D. Static Inspection

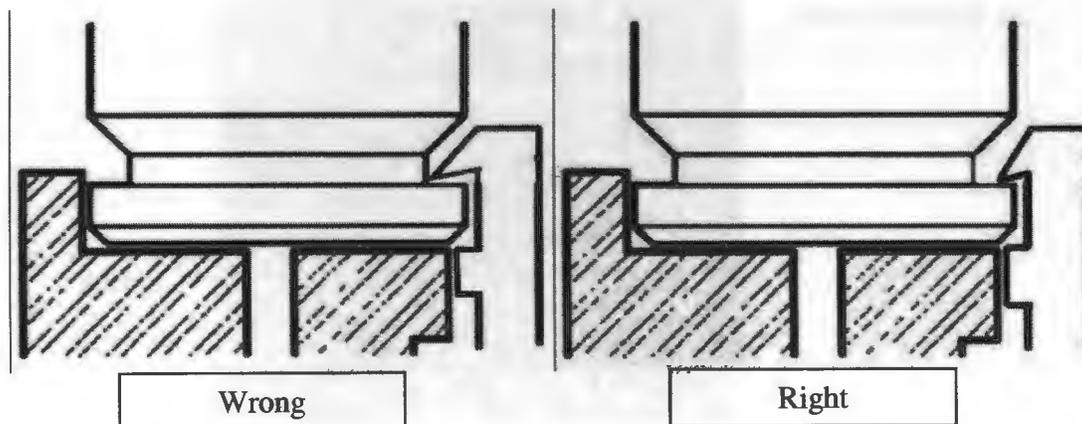
To aid in malfunction diagnosis and to ensure the pistol is within specifications, a static inspection should be carried out.

### Areas of Inspection:

1. Extractor – When checking the extractor, you must position the case on the extractor in the working position, i.e., you must place the case on the breech face with the barrel in the highest unlocked position. All extractor inspections are performed in this position.
  - a. Place a DUMMY (inert) round under the extractor hook and hold the slide horizontally. The extractor must hold the round in place.
  - b. There must be between .010" and .025" extractor cam-out
  - c. The extractor hook needs to be positive



- d. An extractor spring force of one to three pounds is required
- e. Extractor hook must not contact the case web; the area immediately behind the hook must contact the case rim

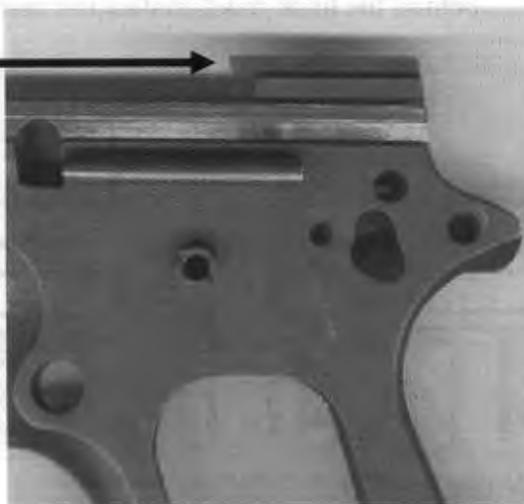


- f. Area of extractor behind hook that contacts the rim of the round must have  $2^{\circ}$  to  $5^{\circ}$  rake from the bottom bevel top to top of extractor



- g. Extractor must snap over a chambered round  
 h. Firing pin stop must fit extractor notch with minimal clearance  
 i. Extractor hook must be rounded on its lower front surface to facilitate feeding  
 j. Extractor hook height from breech face must be at least  $.062''$ , but not greater than  $.075''$
2. Ejector
- a. Must not be loose  
 b. Working surface on the ejector, (the actual surface that contacts the case rim during ejection), needs to be slightly positive

Positive  
Ejector Angle



- c. Ejector needs to be as long as possible so as to eject the case before the next round in the magazine gives the ejected case an upward thrust



Short – Negative

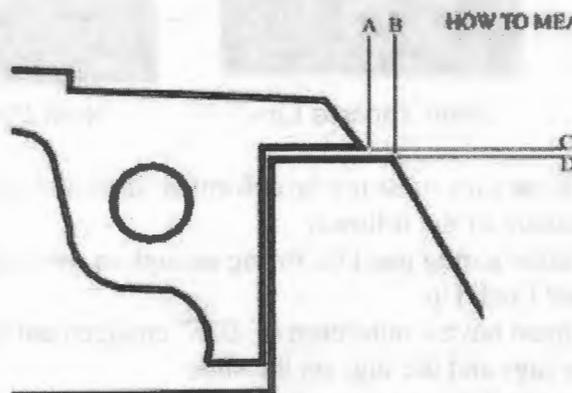


Long – Positive

- d. Ejector must be as high as possible, but not rub on the bottom of the ejector cut-out in the slide

### 3. Feeding

- a. If the pistol feed ramp is a two piece configuration, you must have a 1.5 to 1 jump

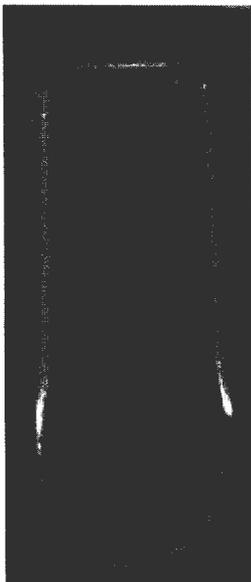


A & B is 1.5 larger  
than C & D

- b. Both two piece ramps and one piece ramps must be highly polished and not faceted
- c. Chamber mouth at 6 o'clock must be slightly chamfered
- d. Chamber needs to be polished
- e. Slide face needs to be smoothed of all rough edges. It does not need to be perfect; it just cannot be rough
- f. Upper portion of firing pin hole in the slide face needs to be slightly chamfered
- g. Magazine lips need to be of equal height
- h. Magazine lips need to hold the round high enough for the feed rail on the slide to engage the rear of the case rim at a minimum of 1/16"
- i. Magazine catch must have positive engagement with the magazine catch notch on the magazine; magazine should move up slightly as you depress the magazine catch

- j. Magazine catch must not protrude through the magazine tube and should not interfere with the follower, spring, or ammunition
- k. Magazine lip configuration needs to be of the new style

Old Style:



Long Tapered Lips

Intermediate Style:



Short Tapered Lips

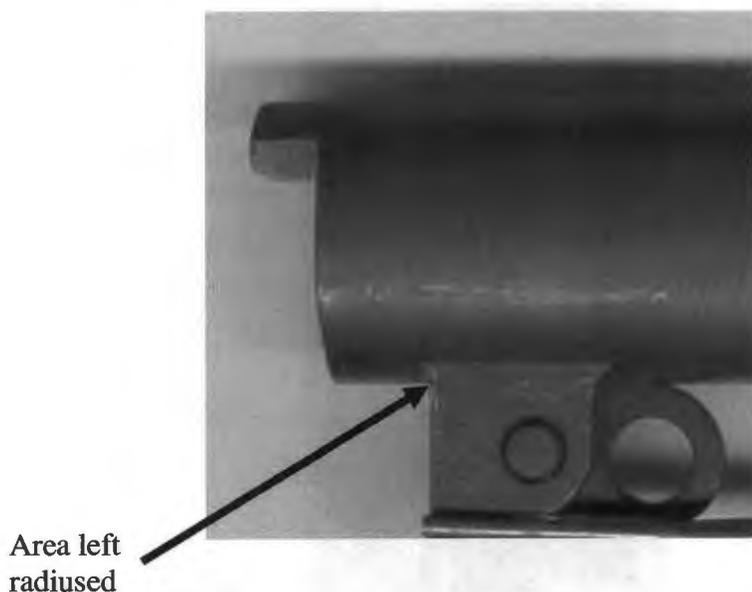
New Style:



Short Parallel Lips

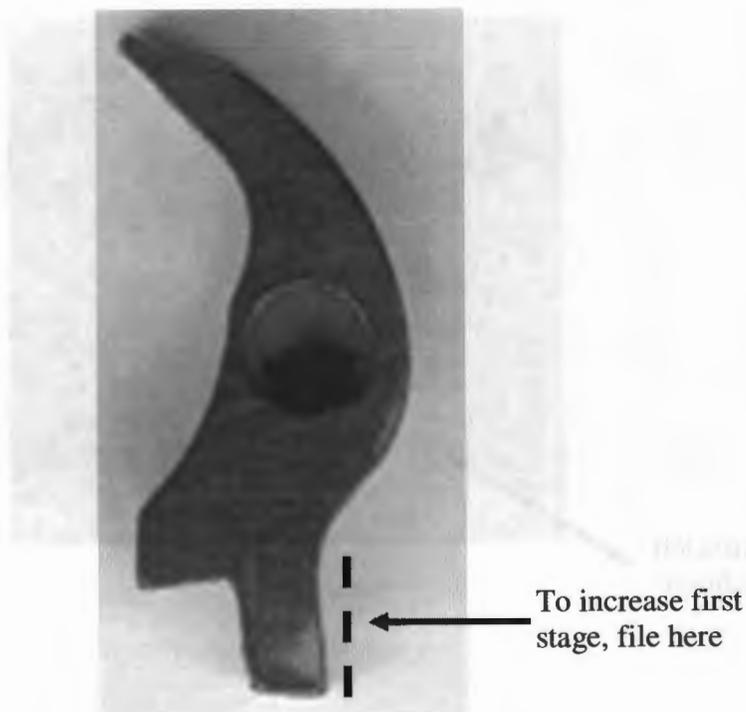
- l. Magazine tube must not be deformed; it should not interfere with movement of the follower
- m. Magazine spring must be strong enough to overcome surge
- 4. Breeching and Lock Up
  - a. You must have a minimum of .025" engagement between the barrel's upper lugs and the lugs on the slide
  - b. Barrel hood should be perfectly mated to breech face, sides and rear
  - c. Loose breech needs to be .000"
  - d. Link needs to be long enough so the gun will pass the hang test
    - i. Open the slide up about 1" and grasp the visible part of the barrel with your fingers
    - ii. Allow the weapon to hang from your fingers
    - iii. As you release finger tension the gun must 'squirt' your fingers off of the barrel and go into full battery
  - e. Link needs to be long enough to allow the barrel's recoil lug to contact the frame
    - i. This is the cause of broken links and bent slide stops
  - f. The saddle of the frame must allow the barrel to go low enough so the barrel's recoil lug contacts the recoil area on the frame
    - i. To test, disengage the slide stop from the slide stop plunger and leave the slide stop in place

- ii. Push the muzzle hard into a hard surface – the slide stop must be free
- iii. If the slide stop is bound up then you have the saddle of the frame keeping the barrel's lug from contacting the frame, or the inside radius of the slide is keeping the barrel from going low enough, or your link is too short
- g. The pencil test ensures that the weapon is unlocking correctly
  - i. Hammer must be cocked
  - ii. Insert a brand new pencil into the barrel, eraser end first
  - iii. Place the eraser over the firing pin hole
  - iv. Push pencil rearward until the slide unlocks and begins to open
  - v. Next place the eraser at 12 o'clock against the breech face, (which means the other end of the pencil will be at 6 o'clock at the muzzle)
  - vi. Push the pencil rearward as before and note if there is any hesitation in unlocking
  - vii. If there is hesitation this means that your barrel is not going low enough to clear the lugs on the slide
    - 1. You will need to very carefully file, a thousandth at a time, from the rear surface of the barrel's recoil lug until it passes the pencil test
    - 2. Note – leave the area between the vertical surface of the barrel's recoil lug and the horizontal bottom surface of the barrel slightly radiused, not square



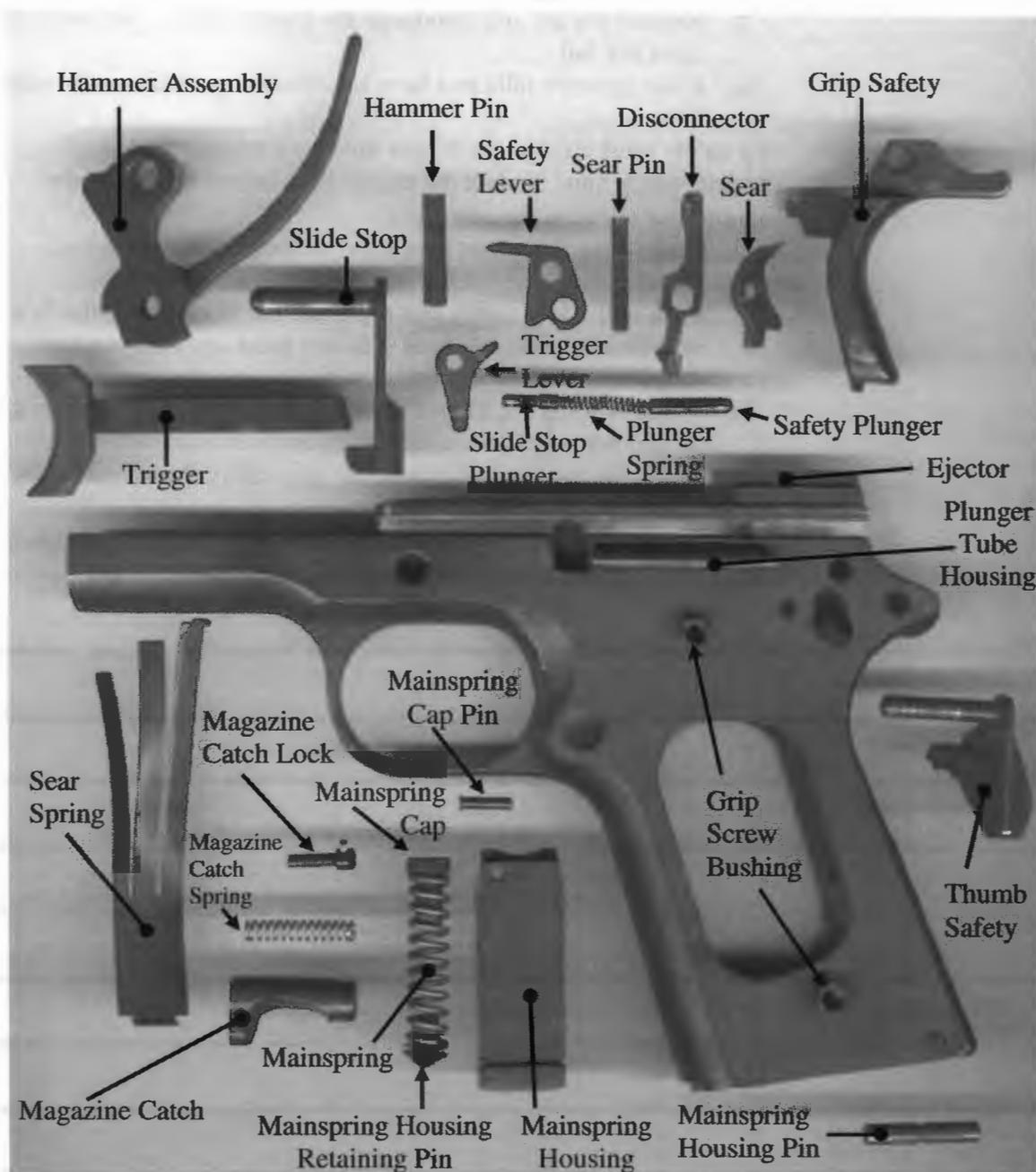
## 5. Trigger

- a. Sear and hammer interface must be positive
  - i. Hammer must cam back slightly as sear disengages
- b. Disconnecter must engage sear legs a minimum of .020"
- c. Disconnecter must be pushed down far enough when you open the slide to clear the sear legs by a minimum of .020"
- d. Hammer must never follow down when you violently rack the slide
- e. If the hammer should follow down, there are two causes, assuming the weapon is correctly assembled and all parts are in working order
  - i. If the hammer follows down with the trigger held back you have an incorrect sear to hammer engagement angle
  - ii. If the hammer follows down only when you rack the slide without holding the trigger rearward, you have surge follow down
    1. Surge follow down occurs because the mass of the trigger is so great that as the weapon recoils, the shooter releases the trigger slightly – just enough for the disconnecter to reconnect to the sear and as the slide violently closes, through inertia the trigger will contact the disconnecter and have enough momentum to release the hammer
    2. To repair, you either install a lighter trigger (mass) or give the gun a longer first stage pull by carefully filing the front of the sear legs





## IX. Disassembly and Assembly of the Frame



### A. Disassembly of the Frame

**WARNING: BEFORE WORKING ON OR CLEANING YOUR WEAPON, ENSURE IT IS UNLOADED!**

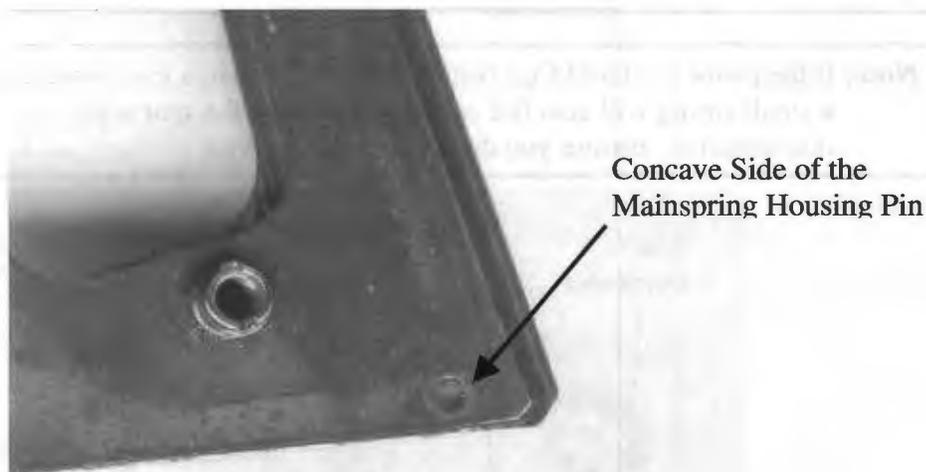
1. With the hammer in the cocked position, rotate the thumb safety almost to the 'ON' (up) position and pull the thumb safety to the left out of the frame

**Caution:** *The safety plunger, plunger spring, and slide lock plunger may fly out as the thumb safety is lifted out; keep your hand cupped over the plunger tube housing and thumb safety as you lift the safety out*

2. Grip the frame so as to depress the grip safety and capture the hammer so you can ease it down as you press the trigger. Never let the hammer snap against the frame as you may damage the frame.
3. Remove stock screws (there are four of them) and remove the stocks

**Caution:** *Stock screw bushings may not be correctly staked and may rotate out with the stock screws. This may crack the stocks. To avoid damaging the stocks, unscrew the stock screws evenly. If the stocks will not fall off freely, do not use a knife to pry them off. Use a screwdriver inserted through the bottom of the magazine well to press one stock off. Then use the screwdriver through hole in the frame to push out the opposite stock.*

4. Push out the mainspring housing pin. The mainspring housing pin has a concave and a convex end on it. Always push out the housing pin from the concave end. Make a note as to which side of the frame the concave side is on (usually the left side) so when you reassemble the pistol you install the pin in the same position.



5. Cock the hammer, which will push the mainspring housing down, then finish removing the mainspring housing
6. Using a small punch, push the mainspring cap pin from the rear to the front of the mainspring housing

**Caution:** *The mainspring is under tension – take care to push the cap pin fully out of the mainspring housing and then capture the mainspring cap as you remove the punch*



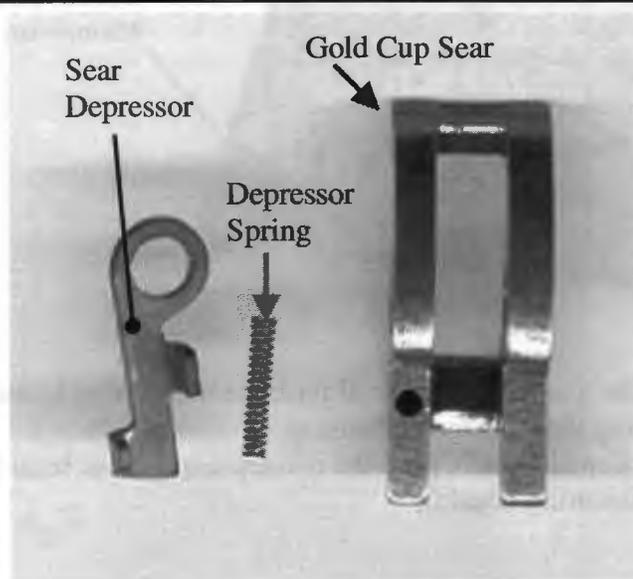
7. Remove the mainspring cap, mainspring, and mainspring housing pin retainer from the top of the mainspring housing
8. Remove the grip safety by sliding it rearwards out of the frame
9. Remove the sear spring from the rear of the frame
10. Push the hammer pin from right to left and remove the hammer assembly

**Note:** If the pistol is a Series 80 or later model, the safety lever will fall out as the hammer is removed

11. Push the sear pin from right to left and shake the frame and the sear and disconnector will fall out the back

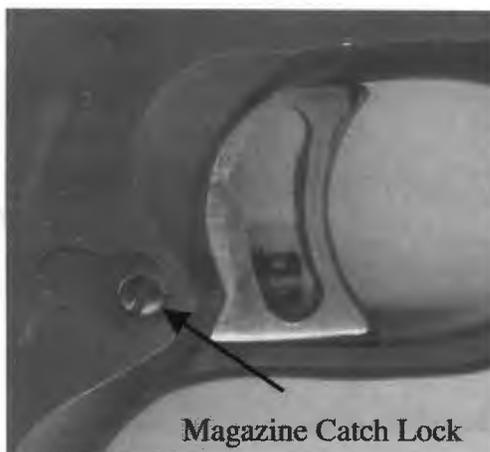
**Note:** If the pistol is a Series 80 or later model, the safety lever will fall out as the hammer is removed

**Note:** If the pistol is a Gold Cup National Match Model, a sear depressor and a small spring will also fall out as you remove the sear and disconnector. Ensure you do not lose these parts!



12. Use a small screwdriver that will fit into the magazine catch lock located on

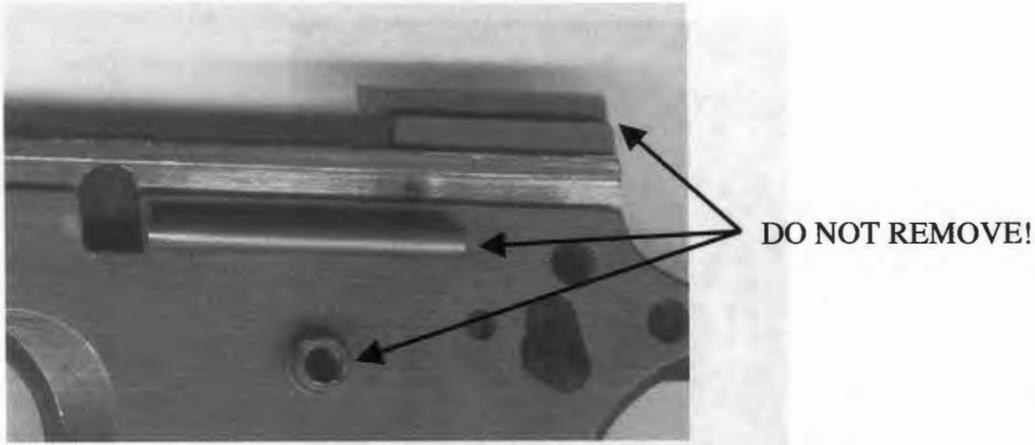
the right side of the frame in the magazine catch. Depress the magazine catch on the left side of the pistol while applying counter-clockwise rotation on the magazine catch lock (approximately  $\frac{1}{4}$  turn) and push out the magazine catch assembly from left to right.



13. Grasp the magazine catch assembly and using the screwdriver rotate the magazine catch lock  $\frac{1}{4}$  turn clockwise. Remove the magazine catch lock and magazine catch spring from the magazine catch.
14. Point the frame up and shake the trigger out of the rear of the frame
15. Using a small punch at the front end of the plunger tube housing, push the slide stop plunger, plunger spring, and safety plunger out the rear of the plunger tube



**Note:** Do NOT remove the ejector, plunger tube housing, or stock screw bushings



## B. Assembly of the Frame

1. Pre-assemble the magazine catch assembly by inserting the magazine catch spring and magazine catch lock into the magazine catch. Using a screwdriver, push in the magazine catch lock until the flange on the lock aligns with the slot in the magazine catch and rotate the magazine catch lock  $\frac{1}{4}$  turn counter-clockwise.

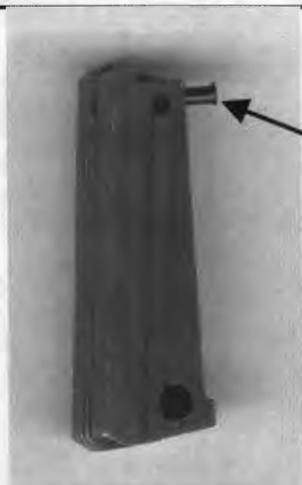


2. Pre-assemble the mainspring housing by inserting the mainspring housing pin retainer, mainspring and mainspring cap into the top of the mainspring housing



- Carefully depress the mainspring cap and insert, from the front, the mainspring cap pin and push in until flush with the mainspring housing

**Note:** The mainspring cap pin has a shoulder on it; the shoulder end of the pin must be pushed flush with the front surface of the mainspring housing



Insert Shouldered Pin  
from the front

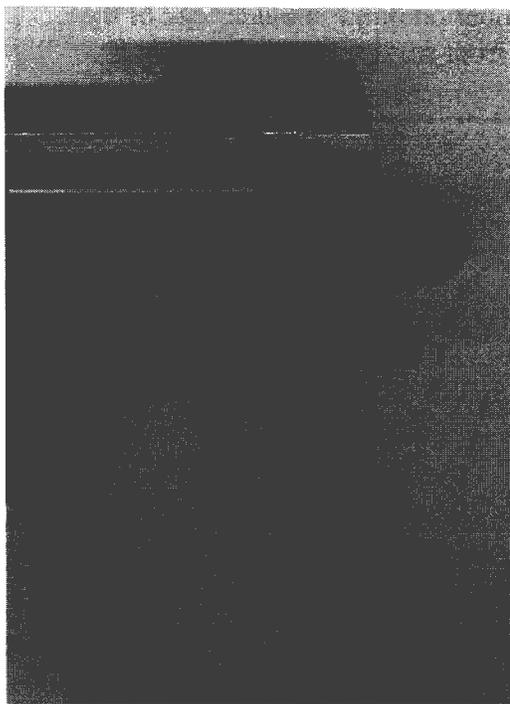
- If the pistol is a Gold Cup National Match model, you need to pre-assemble the sear depressor and spring to the sear and disconnector with the aid of an assembly pin



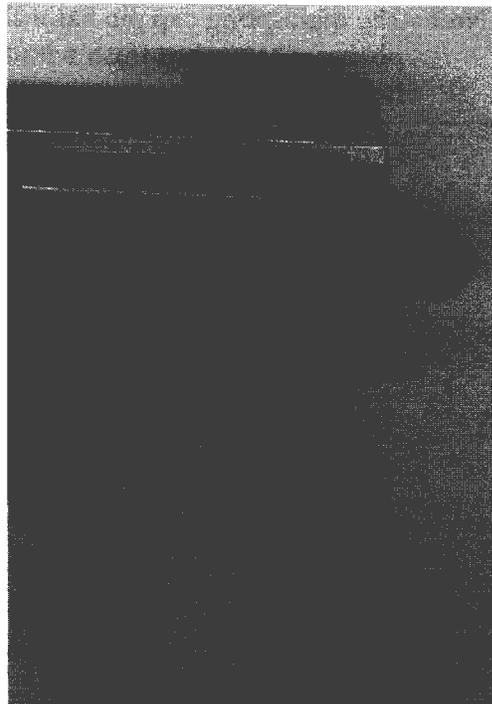
Pre-assembled Gold Cup  
Sear and Disconnector  
with Depressor and  
spring

Assembly Pin

5. Align trigger with slots in frame and push trigger from the rear of the frame until it is fully forward



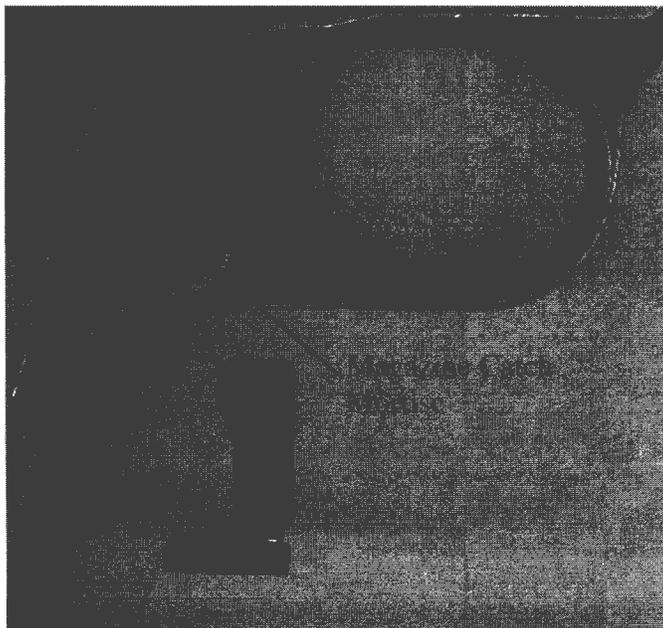
Wrong



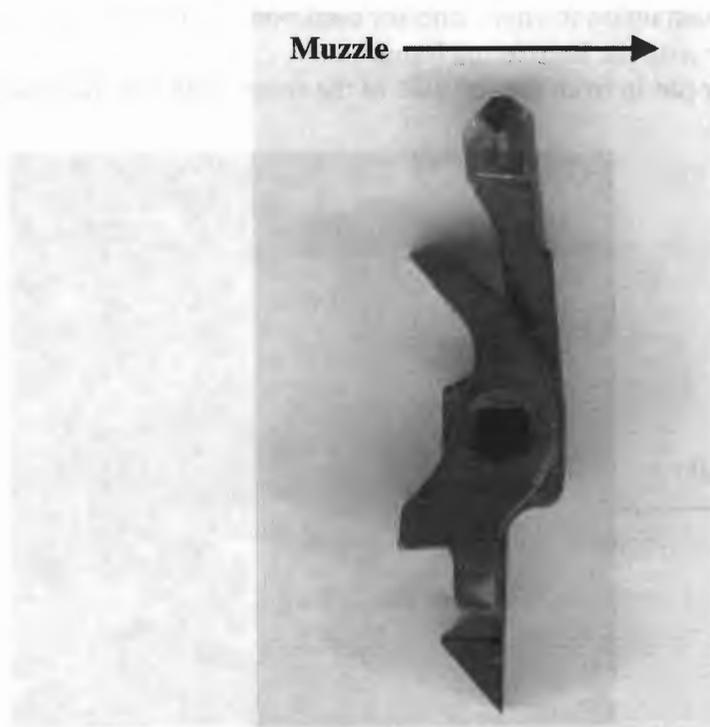
Right

**Note:** The angle of the trigger bow will match the angle on the stock frame when correct

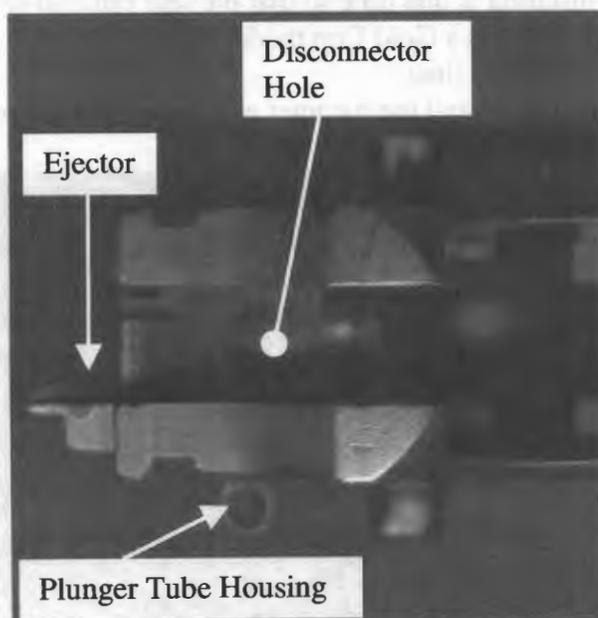
6. From the right side of the frame, insert the magazine catch assembly into its hole in the frame



7. Using a small screwdriver inserted into the magazine catch lock and pushing the magazine catch to the right apply gentle pressure in a clockwise direction on the magazine catch lock until the lock engages with the cut out in the frame; at that point the magazine catch will spring out to the left
8. Orient sear and disconnector correctly



9. Hold the frame 'muzzle down' and locate the disconnector hole in the frame



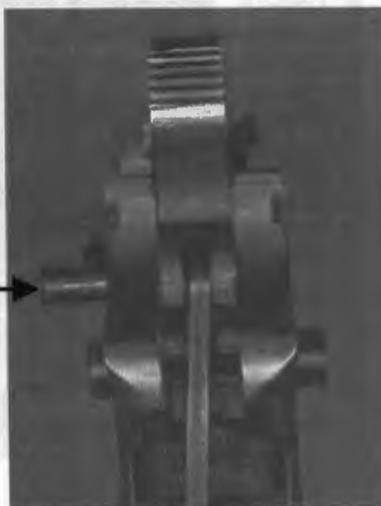
10. Grasp sear and disconnecter at the very bottom and insert the top of the disconnecter into the disconnecter hole and release the sear and disconnecter
11. Carefully rotate the frame to lay on its right side, with the 'muzzle end' to your left
12. Very carefully simultaneously press the trigger with one hand and with the other hand push up on the disconnecter until you can line up the sear and disconnecter with the hole in the frame
13. Push the sear pin in from the left side of the frame with the shoulder of the pin to the left

Sear Pin Shoulder  
to the left



- a. If the pistol is a Series 80 or later model, the trigger lever will be installed at this time so that the sear pin also retains the trigger lever
  - b. If pistol is a Gold Cup model, the sear pin will push out the assembly pin at this time
14. From the rear, install the hammer and insert the hammer pin from the left with the shoulder on the pin to the left

Hammer Pin Shoulder  
to the left



15. If the pistol is a Series 80 or later model, the safety lever can be dropped in from the top and on the right of the hammer with the hammer pin then pushed through the lever



16. From the rear, insert the slide stop plunger, plunger spring and safety plunger into the plunger tube housing



17. Raise the hammer strut and insert the sear spring into the rear of the frame

**Note:** The left leg of the sear spring has to be over the rear of the left sear leg and the bottom of the sear spring must be in the slot in the bottom of the frame



18. Slide the mainspring housing in place from the bottom of the frame, aligning the slots in the frame with the rails on the mainspring housing assembly until the mainspring housing is approximately 2/3 of the way up



19. Lower the hammer strut and insert the grip safety from the rear
20. Align the grip safety to the hole in the frame and insert the shaft on the thumb safety from the left
21. Cock the hammer
22. Orient the thumb safety with the take down cut out in frame and push the safety flush with the left side of the frame. The takedown cut-out in the frame is between the Fire and Safe positions

**Note:** On some pistols it may be necessary to depress the thumb safety plunger with a small tool to facilitate pushing the safety fully to the

23. Rotate the safety to the Fire position, push in the grip safety, press the trigger and ride the hammer fully forward
24. Slide the mainspring housing up until the mainspring housing pin hole aligns with the hole in the frame and through the mainspring housing. Ensure the bottom of the grip safety is in front of the top of the mainspring housing



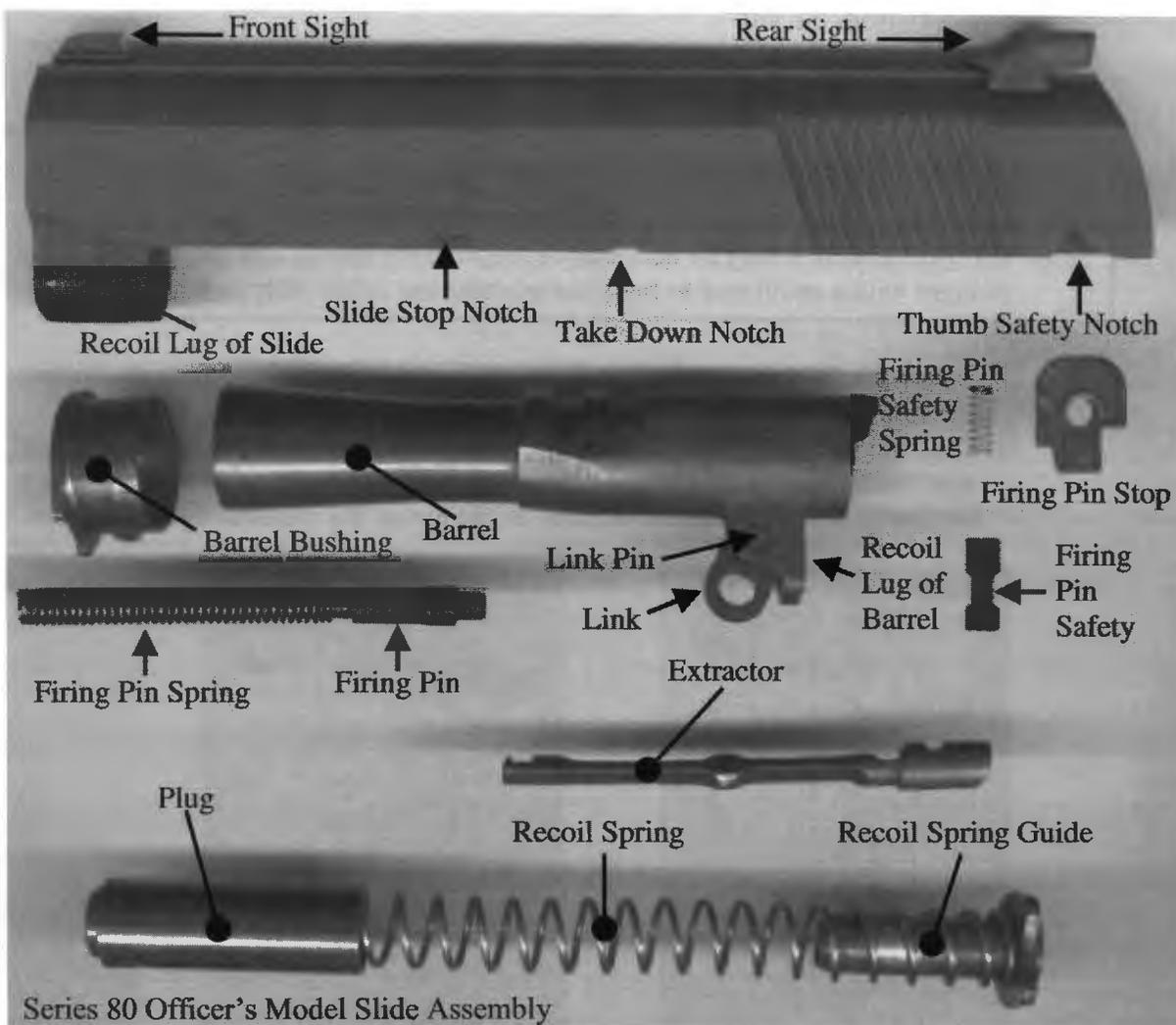
Wrong



Right

25. Install stocks

## X. Disassembly and Assembly of the Slide



### A. Disassembly of the Slide

**WARNING: BEFORE WORKING ON OR CLEANING YOUR WEAPON, ENSURE IT IS UNLOADED!**

1. Place slide on its sights with the muzzle end towards your left
2. Use a punch and depress the firing pin enough to where you can use the punch to lift up on the firing pin stop and remove

**Caution:** *The firing pin is under spring tension! As you lift up on the firing pin stop, the firing pin will attempt to eject out the rear of the slide, so cup your hand and catch the firing pin and spring as they leave the slide.*



3. If the pistol is a Series 80 or later model, you will need to push down on the firing pin safety, then with another punch, push firing pin fully forward and hold. Release the safety and remove the punch from the firing pin. The safety will hold the firing pin fully forward. Rake up the firing pin stop and remove. Cup your hand over the rear of the slide and depress the safety and the firing pin and spring will be ejected out the rear of the slide.
4. Use a small screwdriver or similar tool and nudge the extractor rearward and out of the slide
5. If the pistol is a Series 80 or later model, nudge the extractor rearward a little bit until the safety and spring can be pulled out. Then continue to pull extractor out the back of the slide.

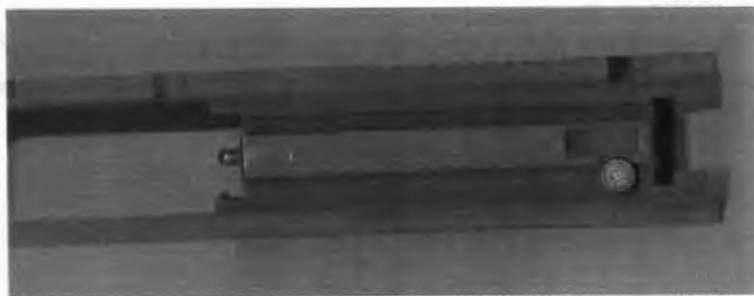


## **B. Assembly of the Slide**

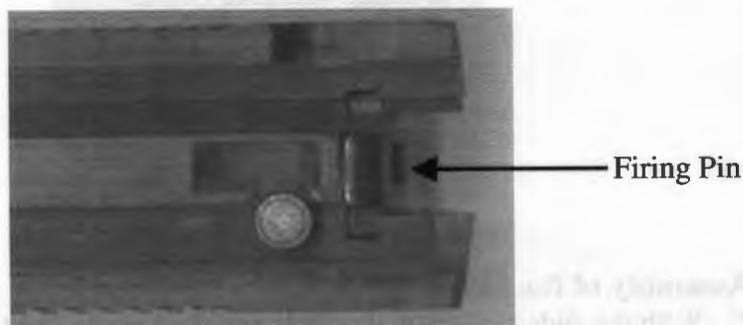
1. With the slide resting on its sights and the muzzle end to your left, orient the extractor and insert into the extractor channel in the slide



2. Push the extractor forward until its notch aligns with the firing pin stop slot in the slide
3. If the pistol is a Series 80 or later model, orient the slide as above and insert the extractor nearly all the way forward. Insert the safety and spring, spring first, into the safety hole in the slide and push the safety down all the way and finish pushing the extractor forward and then release the safety.
4. Insert the firing pin and firing pin spring, spring first, into the firing pin channel
  - a. If the pistol is a Series 80 or later model, you will need to push down on the firing pin safety and then insert the firing pin and spring into the firing pin channel, pushing the firing pin fully forward with a punch and hold. Release the firing pin safety, then the firing pin. The firing pin safety will hold the firing pin assembly fully forward.



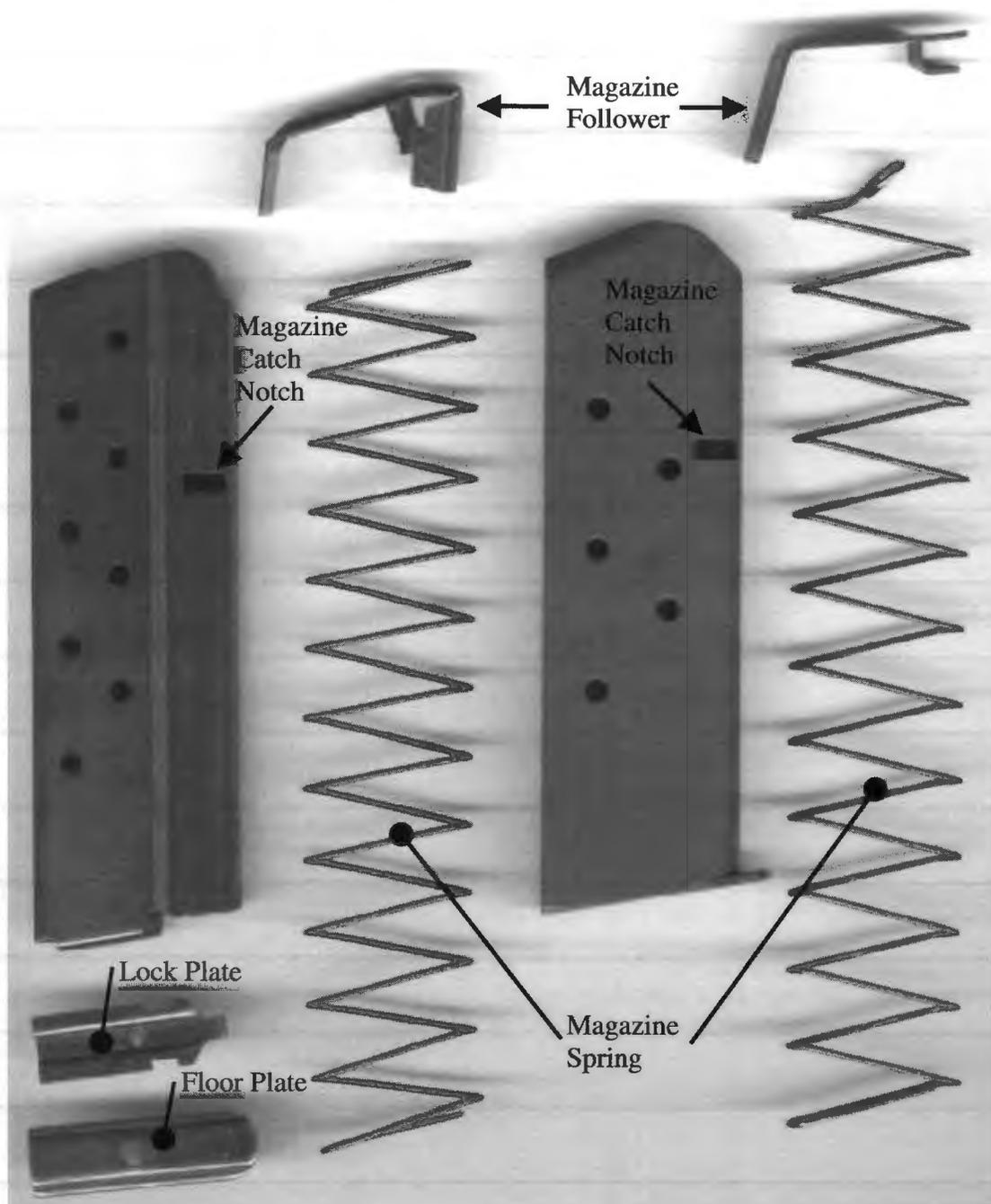
5. Orient the firing pin stop and align with the channels in the slide. Push the firing pin forward using a punch and fully seat the firing pin stop into place, removing the punch as you do so. The firing pin should protrude through the hole in the firing pin stop if it is assembled correctly.



6. If the pistol is a Series 80 or later model, simply align the firing pin stop with the channels in the slide and push down. Then depress the firing pin safety and the firing pin will spring back into the hold in the firing pin stop



## XI. Disassembly and Assembly of Magazine



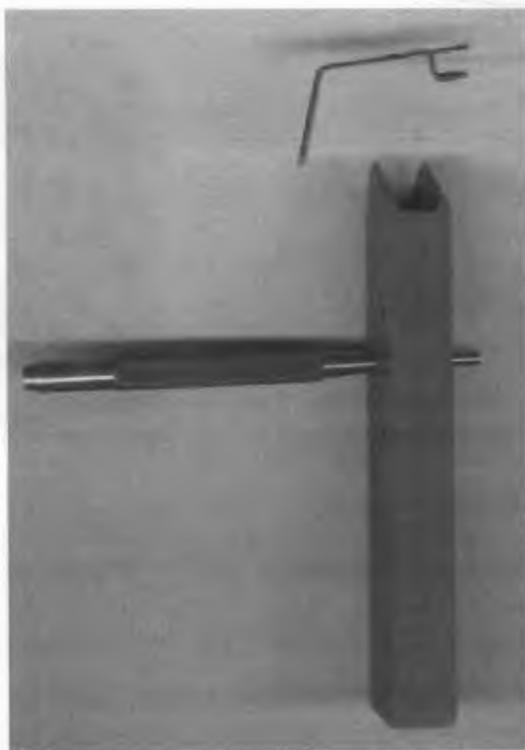
Magazine with a detachable floor plate

Magazine with a fixed floor plate

**A. Disassembly of Magazines without a Detachable Floor Plate**

1. Using a pencil with eraser or similar tool, depress the magazine follower about halfway down the magazine tube
2. Use a punch and insert it through one of the holes in the magazine tube

**Note:** Insert the punch *below* the magazine follower



3. Holding the magazine upside down, tap the magazine in the palm of your other hand; catch and remove the magazine follower from the magazine tube
4. Place your hand over the top of the magazine and remove the punch holding the magazine spring in place
5. Pull the magazine spring out of the top of the magazine tube

**B. Assembly of Magazines without a Detachable Floor Plate**

1. Correctly orient the magazine spring and insert the spring into the top of the magazine tube
2. Compress the magazine spring using the eraser end of a pencil until you can insert a punch through the top hole in the magazine over the top of the spring to hold it in place
3. Orient the follower and place the follower over the spring
4. Put slight finger pressure on the magazine follower and pull out the punch that was holding the spring in place



**C. Disassembly of Magazines with a Detachable Floor Plate**

1. Use a punch and depress the lock plate on the bottom of the magazine
2. With punch in place, slide the magazine floor plate forward off of the magazine tube





## XII. Troubleshooting

### A. General

In a properly maintained firearm, malfunctions rarely occur. However, malfunction diagnosis can be a problem to the armorer. As a rule, most malfunctions are related to one or more parts failing. Part failure can be divided into two categories – breakage and improper fit. The following is a guide for the armorer in malfunction diagnosis. In some cases the correction may include more than the stated remedies.

### B. Stoppages, Possible Causes, and Remedy

Stoppage	Possible Cause	Remedy
Failure to fire – Slide in battery	Broken firing pin	Replace firing pin
	Hammer follow down	Determine if engagement angles or surge is the cause; see Section VIII-D5
	Firing pin safety lever	Ensure safety lever raises the firing pin safety soon enough
	Disconnecter	Replace disconnecter
	Broken middle leg of sear spring	Replace the sear spring
Failure to extract	Grip safety	Ensure the grip safety allows free trigger movement
	Extractor broken	Replace and refit extractor
	Rough Chamber	Polish chamber
	Excessive dirt around extractor	Clean
	Extractor not fit correctly	Refit extractor; see Section VIII-D1
	Blown case	Verify chamber supports case

### B. Stoppages, Possible Causes, and Remedy (Continued)

Stoppage	Possible Cause	Remedy
Failure to eject	Short cycle	Verify ammo will lock slide back when one round is fired. Replace ammunition
	Short Link	Verify gun passes hang test; See Section VIII-D2
	Long Link	Verify gun passes pencil test; see Section VIII-D4
	Broken ejector	Replace and refit
	Poorly fit extractor	Fit extractor
Slide locks back with ammunition in the magazine	Ogive of bullet contacting slide stop	Fit slide stop
	Incorrect angle between slide stop and slide stop plunger	Ensure 5° - 10° angle on end of slide stop that is acted upon by the slide stop plunger
	Loose plunger tube	Re-stake the plunger tube
Failure of slide to lock back when magazine is empty	Damaged slide stop	Replace
	Magazine	Verify magazine follower and slide stop have adequate interface
	Slide stop notch in slide	Verify slide stop notch and slide stop interface with positive engagement
	Loose plunger tube housing	Re-stake plunger tube

## B. Stoppages, Possible Causes, and Remedy (Continued)

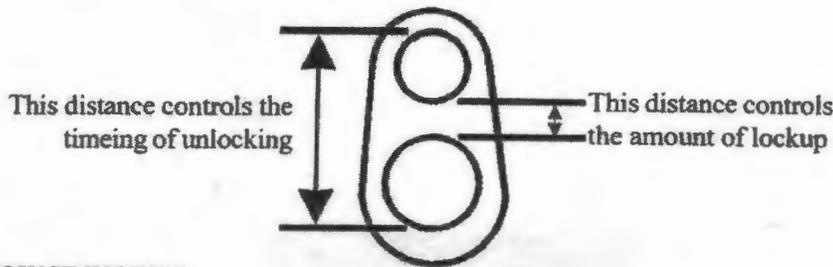
Stoppage	Possible Cause	Remedy
Failure to feed	Magazine not seated	Reinsert magazine
	Magazine	Use a known good magazine; if the problem goes away, repair or replace magazine
	Feed ramp	Verify jump, ramp shape, polish and chamfer
	Magazine catch	Verify magazine catch is positively engaged to the magazine; see Section VIII-D3
	Short cycle	Verify ammunition has enough power to lock slide back when one round is fired
	Short link	Install and fit a longer link
	Sharp edges on breech face	Break all sharp corners on either side of breech face
	Slide stop striking ogive of bullet	Ensure top round in magazine is not being interfered with
	Magazine too low	Verify magazine will hold top round in magazine at least 1/16" in front of the slide feed rail
	Extractor tension	Verify extractor has 1 to 3 pounds of pressure
Tight barrel bushing	Verify barrel has enough room to lock and unlock. Bright, shiny marks at 6 and 12 o'clock on muzzle indicates too tight a bushing	



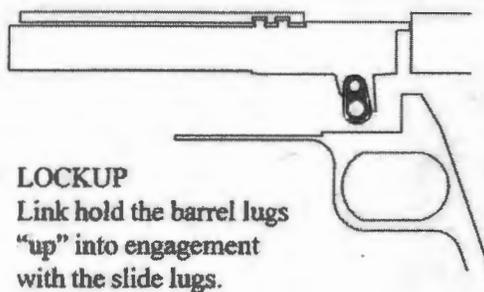


## XIV. Miscellaneous

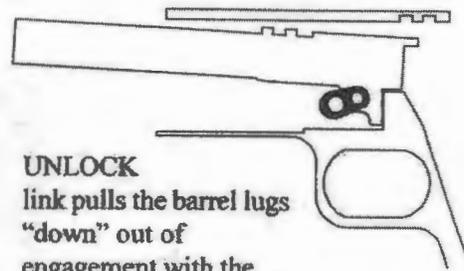
### A. Link Page



HOW IT WORKS:



**LOCKUP**  
Link hold the barrel lugs  
"up" into engagement  
with the slide lugs.



**UNLOCK**  
link pulls the barrel lugs  
"down" out of  
engagement with the  
slide lugs.

The link is not supposed to stop the rearward movement of the barrel.

A link with too much play; will cause the point of impact to vary the same amount of the play.

#### LONGER LINK:

Will increase the amount of lug engagement (lockup).

More reliable closing.

More constant point of impact, because the barrel is jammed against the slide, upon closing, so it returns to the same place after each cycle.

Will allow the barrel to go back and down farther.

After installing a longer link; the barrel is higher in relationship to the slide, so the firing pin hole might be too low for reliable ignition.

#### SHORTER LINK:

Will decrease the amount of lug engagement (lockup).

Will increase chafing on the locking system.

Will raise the point of impact in relation to the sight; but the point of impact will be inconsistent because the barrel/slide relationship can change after each cycle.

