

Iver Johnson Trailsman TM22PB Manual Disassembly/Reassembly Instructions

And some Mods too!

By Ron Bearden © 2018



Introduction

A good friend asked me to repair his Iver Johnson Trailsman 22 LR pistol. I did... and then he decided to just give it to me (Thanks!). I then improved it even more with some of my own mods. That is the beginnings of this document.

When the gun first came into my hands, I began to search the Internet for information. In the end, I discovered precious little specific and helpful information about this gun. I gained a tidbit here and there and then filled in the info with experience. So since I found so little info, I wrote this in the hope that it would help others. I'm not a gunsmith nor an expert, so use any of this info at your own risk. This document may be passed on free of charge for educational purposes, but I would appreciate no modifications to it. At the time of this writing, I can be reached at: thebigheap@gmail.com

In short, the Trailsman is usually called a "Colt Woodsman clone"- but in some ways it's not- though the design similarities are there. In reality, there IS something of a Colt Woodsman clone- and that is the Chinese Norinco M93 Sportsman.



Colt Woodsman



Norinco M93 Sportsman



An Early version Iver Johnson Trailsman- note the button by the rear sight

The Trailsman TM22PB was made by Iver Johnson from about 1984-1993. As with most firearms, there were some variations through the years. These variations allow us to identify three overall versions of the Trailsman as follows (these are my opinion as a non-expert, others may come to different conclusions). Throughout, I will use Iver Johnson parts terminology.

Early Version: a takedown button is present on top of the slide just in front of the rear sight. Also, there is no visible extractor on the right side of the slide.



The Recoil Spring Retainer (above left) is internal and sits just under the roof of the slide. The button (above right – this one is upside down) shows through on top of the slide. The shaped tip of the button fits into the long slot of the Recoil Spring Retainer. When the button is pressed, the tip of the retainer goes down and blocks the recoil spring guide pin keeping the spring compressed- allowing the slide to be removed.



I know this slide is an early slide because of the large hole in front of the rear sight slot. That hole is for the takedown button.

Early versions use an extractor that is one milled piece and is completely internal.



The serial number is located above the trigger on the right side. The earliest production units have a horizontal serial number. The later Early versions moved to a diagonal serial number- and that's the way all the rest remained. In this photo, also note the pin above the serial number. This pin holds the barrel in place.



Early versions also have a movable rear sight (windage only) with a screw to hold it in place. Mine has a hex screw, but I have seen slotted screws.



On early versions, internally, the trigger spring had two bends in it at the ends (later versions had one bend).

The early trigger bar has a slot in it at the trigger end (seen on left here).



Lastly, I believe all of the early versions I've seen came with black plastic grips. Shown right is an early version with 6 1/2 inch barrel, black plastic grips and a diagonal serial number- which means it is a later early version.



Also note that the barrel has a bit of a rough finish to it- a characteristic of early versions.



Mid Version Trailsman with 4 1/2" barrel and wood grips- note the barrel is highly polished- like the rest of the gun.

Mid Version:

My Trailsman fell into this group with a serial number FG087xx. Iver Johnson eliminated the takedown button leaving only a small hole which has been moved forward on the slide from the previous position (see photo right). The extractor is the same as the early version as well as the trigger bar and the rear sight.



The trigger spring now only has one bend in it (seen left). The bent end goes near the frame, the straight end touches the trigger bar.

Lastly, mine came with wooden grips.



Late Version:

The takedown button is still gone. The other external feature is that a new extractor can be seen with a corresponding notch at the front edge of the right side of the slide (as seen above).

Instead of one long milled extractor, the extractor is now short and stamped with a corresponding rod and spring (the earlier extractor has no spring).



Internally, the trigger bar now has no slot and is simply flat on one side at the trigger end (right side of this photo).



Also, the rear sight is now press-fit into place and is not easily adjustable.

In my reading on the Internet, the Trailsman has a mediocre reputation. Most people follow the “you get what you pay for” attitude- with most encouraging people to “pay the extra money” and get a Colt instead. But I have found that if a few potential problems are identified and corrected and/or avoided, the Trailsman is a wonderful and reliable pistol.

In the next few pages, I’ll offer my opinion on issues I’ve seen with the gun- as well as solutions. I also include full disassembly and re-assembly instructions.

First- Design Issue Problems

Given the Early, Mid, and Late delineations I made above, we can guess at the problems people were encountering and Iver Johnson’s solutions.

Since the earliest version had a takedown button (like Colt) and the button was dropped on later models, I wonder if problems might have occurred with the recoil spring retainer (internally). When you push the takedown button, it moves the recoil spring retainer and keeps the spring compressed for disassembly. Obviously if you are shooting, you want the recoil spring retainer out of the way snug up in the inner roof of the slide. If not, a jam will occur. Iver Johnson simply removed it and moved the hole forward for takedown.

While I’m uncertain about why the takedown button was removed, the trigger is a bit easier to understand. If you’ve ever disassembled a Trailsman for a complete cleaning, then you know that re-installing the trigger can be tricky- and on Early and Mid versions, the trigger can lock up and malfunction (though simple to fix). The culprit is the precise placement of the trigger spring. The earliest version of the trigger spring has each of the tips bent. My guess is that these two bends can potentially create an obstruction and prevent the trigger from working. Iver Johnson concluded that the bend that touches the trigger bar was not needed- and cut that bend off in later versions.

The other issue is the trigger bar. Early and Mid versions had a trigger bar with a notch. When re-assembling the trigger group after a deep cleaning, the user had to be certain to get the trigger spring in just the right spot in that notch or the trigger would not work. Iver Johnson’s final solution was to do away with the triggerbar notch altogether. My Mid version has the notch and I only encounter a problem when assembling the trigger group after a deep cleaning. And then the solution is just a 10 second adjustment to get the spring in the correct spot. Otherwise, I’ve never had a problem when shooting.

Second- Magazine Problem

My Trailsman had all kinds of feed and ejection problems when I got it. I found the problem was in two areas- with the first not appearing to be Iver Johnson's fault.

I discovered through research that the magazine in my gun did not appear to me to be original but aftermarket.

There were two differences in the magazines. First and most obvious, an original magazine had slots on BOTH sides in the center-- thus you can see through it (photo right).



The after market magazines only have one side open. They are not "see through" as shown in the example on the left. The mag in mine was like this one.

Second, the bottom of the original magazine is slightly curved and has the words "CAL. 22 LR" printed on it. The aftermarket magazines were flat with no writing.

The bottom line is that my aftermarket magazine was **terrible** and I retired it.

I have not bought an original magazine yet (they tend to go for big bucks online) but I found a wonderful alternative. The magazine for a Beretta NEOS is designed almost perfectly for the Iver Johnson Trailsman. The only exceptions are- it has no notch for locking in place and the follower button on the side (for depressing for loading bullets) is too thick. So I took a Beretta magazine and made those two changes.

To cut a slot, the NEOS magazine must be disassembled so the spring won't be damaged. Use a small screwdriver and push into the hole at the bottom. This disengages the locking pin and the plastic bottom of the mag can be slid off – but watch out for the compressed spring when you get to the end! Remove the spring and pin.



I then slide the follower all the way up and use a permanent marker to make a line just a little lower than the top of the backside of the follower button. As a reference, my line in this photo might be just a tiny bit high here (right is the top of the slide in this photo).



I then use a motor tool (like Dremel brand) with a cut off wheel and cut a slot at my lines. Of course a lot of de-burring must be done. Also, it is a slow “cut and see” process. After cleaning, I insert the mag into the gun to see if the magazine catch engages the slot. If not, I try again and make the slot a little wider – always going DOWN (left in this shot). When the mag catch engages properly, I do a final de-burr and smoothing.



Flipping the mag over, the follower button which engages the slide stop is too fat and hits the inside of the grip. So I use the motor tool take off about a millimeter or so. You must go slow so as not to get everything so hot as to melt the plastic follower. The edges need to be rounded slightly- you don't want it to cut you while loading bullets! When the mag will easily go into the gun clearing the slot in the grips, then I give it a final cleaning.



I highly recommend this for your Trailsman- especially if you don't have a factory mag. My feed issues have all but disappeared when shooting the Trailsman with the adapted Beretta magazines.

So if you have feed problems, check the magazine!

In all fairness, it's not perfect. If you slap a loaded mag in place a bit hard (like many do), the plastic bottom of the mag may break off (ask me how I know). I now insert the mag gently.

Third- Wear Problem

Changing the magazine solved almost all my feed issues, but I would still have some ejection issues. Iver Johnson must have seen this too, because as described above they redesigned the ejector. My well-used Trailsman is a Mid production unit and has the long milled extractor. I discovered two wear issues. When these were corrected, almost all ejection problems vanished.

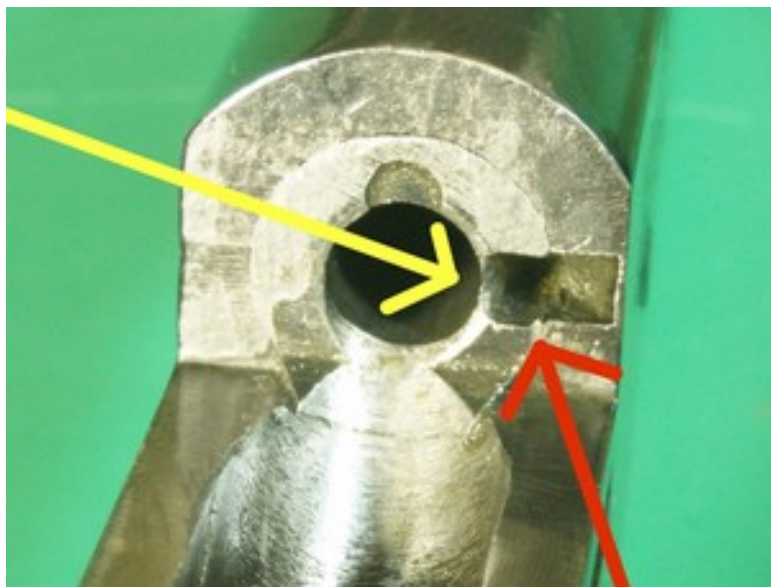
The two wear problems both involve burrs.

First, the extractor projects forward from the slide into the breach area (photo right). There is a corresponding notch in the barrel (photo below with arrows). The first problem is that the metal is VERY thin next to the chamber for the round. My gun had incurred a burr where that metal was very thin in the notch of the barrel. I removed the burr with small files (with the gun disassembled of course).



Since clearance is tight, if a burr occurs in that spot, the burr will obstruct the extractor tip and possibly damage it. So I took the extractor and I gently filed the little nicks in the tip.

In the photo right, you can see how thin this metal is (yellow arrow). I cleaned that up some time ago, but now I see a small burr I missed (red arrow). I'll clean that up too with mini-files.



This photo also shows that I polished the feed ramp- as I do on most of my guns. This shot also shows how the barrel slides into the frame. You can just see the lines. The barrel is pinned in place on the side.

Cleaning all this up, along with the Beretta magazine replacement, solved all of my shooting issues. I recently shot about 200 rounds with only 1 Failure to Feed issue- and that was when the gun was getting dirty. Not bad for a 22 which shoots cheap and inherently dirty ammo.

So with all of these issues fixed and/or adjusted, I find my Trailsman to be a wonderfully reliable gun.

Fourth- Potential Ergonomic Problem

I hate to mention this, because it has no bearing on the function of the gun and is quite likely only a problem with certain people's hands. When I first took the Trailsman out to shoot, it did not take many rounds to see that the safety chafes the webbing of my hand above my thumb.



Iver Johnson created the safety with a squared off edge. Above is a photo of the stock safety.

Since I received a free gun as a gift, I threw caution to the wind and filed the outside edge of the safety down as shown in the photo right. I also rounded it a bit. The Trailsman fits much more comfortably now. One day I'll re-blue the spot I filed.

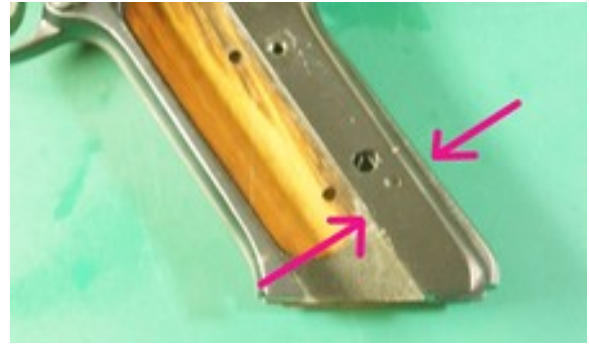


Fifth- Reassembly Problem

The last frustration-causing issue with the Iver Johnson Trailsman has to do with the design of the mainspring housing and the backstrap spring. People say that the Trailsman is a Colt clone- but this is one area where it is NOT a clone (the Colt and the Norinco are designed much better in this area). Iver Johnson's locking and spring system is similar, but very different. And while disassembly for field stripping is no problem, reassembly is almost a nightmare.

The problem is that you must be a Hercules to press the parts into position.

Searching the Internet, I found lots of requests for info on disassembly but little helpful answers- beyond “it’s like a Colt.” I did find one video which was a little helpful, but actually, it was funny. This guy showed how to field strip the gun. He then said how hard getting it back together was. The main spring housing and the frame need to snap together (photo right). And the video showed him straining and trying to push the final parts into place for many seconds- all in vain. Suddenly the video jumped- and the gun was assembled! Meaning, he edited out all the nightmare that it took to get the gun part snapped into place!



I attempted the final step of pushing the main spring housing into place and simply could not do it with my bare hands.

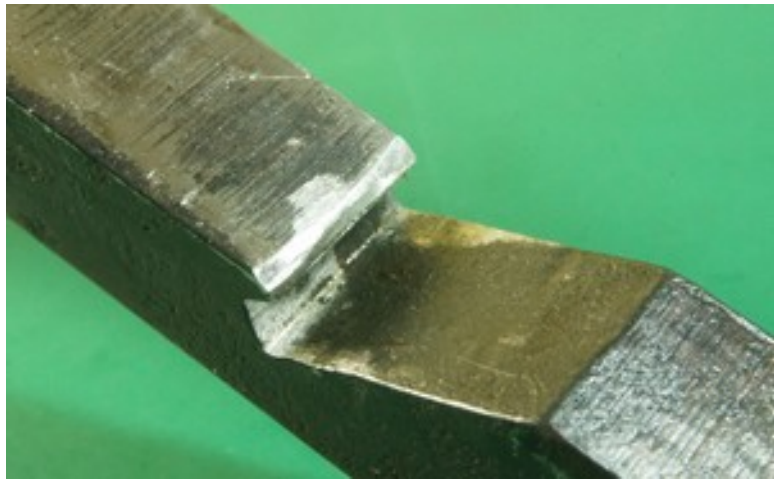
My first radical (and admittedly awful) solution was to borrow a pot holder from the kitchen to protect the gun finish. Wrapping the frame, I then used a pair of pliers (one jaw inside the mag slot and one on the outside) to press the main spring housing into place (photo right). Even with pliers, it took a lot of force.



I then decided I couldn't do this forever (and risk marring the gun every time I did it). So I decided to modify the main spring housing. What makes the task difficult, is that you are pushing against two strong springs: the main spring (for the hammer strut- yellow arrow) and the back strap spring (which interfaces at the blue arrow). You have to compress both of these so that you can get the latch (purple arrow) over a bar on the frame in the grip area.



So I took out a file and very carefully worked on the lip of the latch on the main spring housing. I rounded the outside angle so that the bar on the frame would slide on this area better. I also rounded the corners a bit. The bar goes deep into that slot, so tapering all this at the edge is not going to let the bar come out. But it WILL make getting the gun back together easier.



By rounding the latch, I still cannot get the main spring housing in place with my bare hands. However, I can now hit the piece with something plastic or rubber and it will snap into place. MUCH easier!



So with the gun overview finished, let's go to complete disassembly and re-assembly instructions.

I found on the Internet a copy of Iver Johnson's instructions for field stripping. I've included them in this document- but to be honest, they are not helpful. Ignore them- mine are a million times better.

What IS helpful, is Iver Johnson's schematic and parts lists. I've included two of them: one for an early version and one for a mid version. Sorry I don't have one for the Late version. Feel free to send me one if you have it.

Disassembly

You need some kind of takedown pin. Early versions of the Trailsman have a takedown button. But Mid and Late versions have no button. So if you have a mid or late version, you need a takedown pin of your own and have it ready. I'm not sure if Iver Johnson provided one- my old used gun had none.

If the button is present- you can't miss it. It sticks up at the rear of the slide, on top near the rear sight, and slightly on the left side.

If you have a Mid or Late version, you just have a small hole- and you'll need to make a takedown pin if you have none.



I first used a modeling screwdriver as a take down pin. Since the screwdriver is steel, a brass punch might be better (though the takedown button on the early version is steel also). The hole on my gun

measured a diameter of: 5/64ths", or 2mm, or .0770". Obviously, the pin should closely match the hole. If not, the pin will flop around. The pin should extend about 10mm in depth.

So I took my screwdriver with a 2mm shaft and cut off the excess so that the pin was 10mm long. The photo above shows a before and after shot.

So with the takedown parts now in hand, you are ready.

1. Remove magazine and check that there are no bullets in the mag. Sure that it is empty, fully re-insert the magazine.
2. Pull slide back until it stops-locked by the slide stop engaged by the magazine.
3. Check breach to make sure no bullet is present and confirm gun is unloaded.
4. With the slide back, hold gun in left hand, thumb under trigger guard, index finger base in the breach (photo right).



5. Insert take down pin. Use index finger in breach to nudge the slide further back and gently press down on the takedown pin. When the slide is far enough back, you will find the “sweet spot” where the take down pin easily goes all the way in. Release finger from breach.



6. Remove the magazine.

7. Depress the slide stop if needed and move the slide forward to its closed position toward the barrel. Sometimes mine hangs up a bit, but a little work will get it easily forward. Insert mag and dry fire (it's safe)- releasing tension on main spring.

8. Unscrew BOTH grip screws about 1 1/2 turns. Don't completely remove the grips because the sear retaining pin may fall out. The reason for doing this is that the screws obstruct the backstrap spring on my gun- no doubt because the wood in the grips has been compressed over the years.

9. Now the hard part (which is not that hard- but does require a bit of effort). Place the **barrel** of the gun on a hard but soft surface like wood. Obviously you don't want to damage the business end of the gun.

10. Push down with your thumbs on the mainspring housing in the curve. It will pop loose at the bottom.



11. Pull the mainspring housing out. Remove the magazine.

12. Take the safety off and pull the slide off- be careful not to mess with or move the take down pin!

At this point, removing the slide is all you need to do basic cleaning of the gun. You can now run a brush through the barrel without hitting the slide.

13. Clean and/or further disassemble as needed.

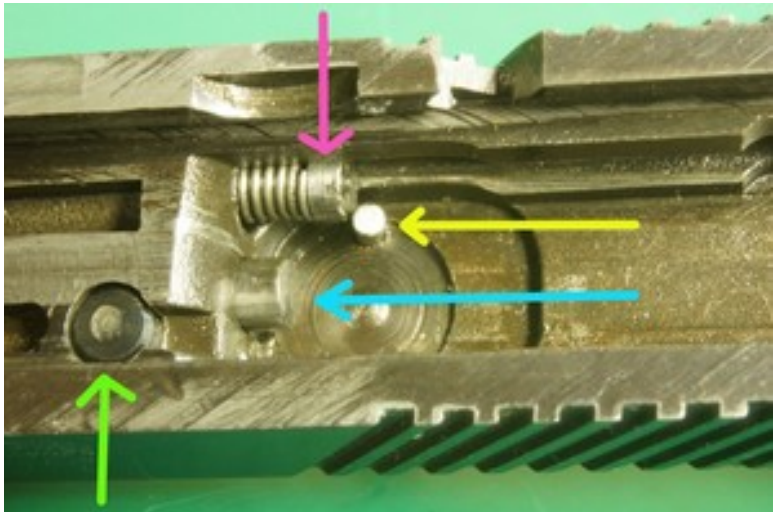


Slide Disassembly

Simply removing the slide is sufficient for basic cleaning (make sure you try not to bump the takedown pin).



Here is a view of the underside of the slide. Parts visible are: my takedown pin (yellow) which is retaining the recoil spring and recoil spring guide pin (purple), the striker (blue), and the striker/extractor retainer pin (green).



If the breakdown pin comes loose, the spring will have to be compressed by hand in order to get the pin back in.

Once in a while, you will want to totally disassemble the slide for a deep cleaning.

Here's how to do it.

1. Use a screwdriver (or really strong fingers) to push on the recoil spring guide pin (purple arrow above) down a bit to take pressure off the take down pin. I think this is better than simply pulling out the takedown pin and letting the recoil spring guide pin slam rearward to the back of the slide. With pressure off, remove the takedown pin and let the spring ease off.

If you have an early version, I'm assuming if you compress the recoil spring a bit then the recoil spring retainer and the takedown button will automatically pop up and the recoil spring guide pin can be gently extended.

Lift the recoil spring guide pin with spring past the rear of the slide (you might need a screwdriver or tool to lift it (don't let the pin go flying when free!).



2. Remove the recoil spring guide pin with the recoil spring. The fat portion of the guide pin sometimes gets nicks. I sometimes gently smooth these down with a file.



3. The striker and the extractor are retained by a fat pin (green arrow in the reference photo on prev page). This pin is easily removed by pushing a takedown pin or small screwdriver in the forward right hole from the top of the slide (orange arrow). When the pin is free, you'll hear a little snap as the striker pops free. When you roll the slide over, you'll see them laying there.



4..The extractor can be removed from the front. Notice that I've done two things. I polished the "barrel" of the extractor (on the left side) with 1000 grit sandpaper. We want it to move about freely. I also smoothed any nicks or rough places from the hooked end as described several pages back. If you have a later version, there will be multiple parts to the extractor system (sorry no photos).



5. If the striker spring does not come out, then gently use the hook of the extractor to reach into the hole and pull it out (as shown right).



Here's a close up view of the striker and the spring. Notice that the cut end of the spring goes toward the barrel of the gun and the flat portion lays against the striker. You can also see that I slightly polished the barrel of the striker with 1000 grit paper.

Except for the rear sight, the slide is completely disassembled for deep cleaning.

Slide Reassembly

Reassembling the slide is simply the reverse of the above. I would use light gun grease on the striker and the extractor- a light coating all over those parts.

1. Place the slide upside down and place the spring on the striker. The flat closed end of the spring goes on first.
2. Insert the striker with spring into its hole inside the slide. The notch goes toward the retaining pin hole. A pair of larger tweezers can be helpful for this.
3. Insert the extractor (fat part first) into it's hole from the front. There is also a notch which must be oriented to match the hole for the retaining pin.

(late version will be a little different since there are more extractor parts).

At this point, the extractor is exactly where it needs to go with the notch lined up with the retaining pin hole. The striker notch is not lined up because it is spring loaded- but the notch is facing the correct direction.

4. Insert the retaining pin- it should go part of the way down and already lock the extractor. If not, then wiggle the extractor until the pin goes part of the way down.

5. Now, with one finger press down gently on the retaining pin, and then use the other hand or a tool to press the striker pin forward a bit. When in the right spot, the retaining pin should now fall in place. Press the pin all the way down.

6. Place the recoil spring onto its guide pin. Give it a light coat of grease. Then insert into it's hole in the slide.

Now comes the only hard part for me- compressing the recoil spring.

I use a tool. A large screwdriver is possible. I have a stainless steel tweezer/clamp that is just right. The width of this tool should fit down into the depths of the slide. The tool in this photo is perfect because it is the right width and also all the edges are rounded which prevents damage to the inside of the slide.



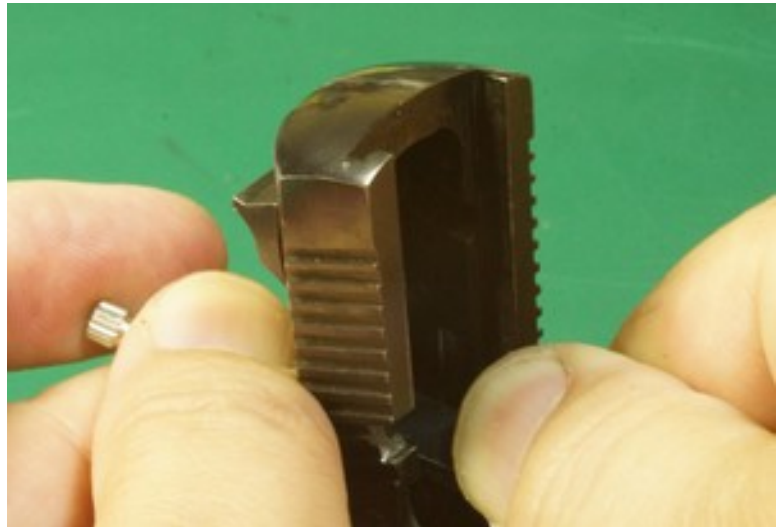
I then position the recoil spring guide pin so that the lip is only catching on the slide (as shown here). This gives me something to press my tool against.



I place the takedown pin partially in the hole and hold it and the slide with my left hand (I'm right handed). With my right hand, I then get my tool into the slide channel on top of the guide pin.



Now comes the hard part. I depress the guide pin with my tool until I can get the takedown pin inserted all the way from the top of the slide.



This view shows that I was successful. Now I can carefully pull my tool out, and the takedown pin will retain the recoil spring and guide pin.

The slide is now reassembled, ready to place back on the frame



Disassembly, Cleaning and Re-assembly of the Main Spring Housing.

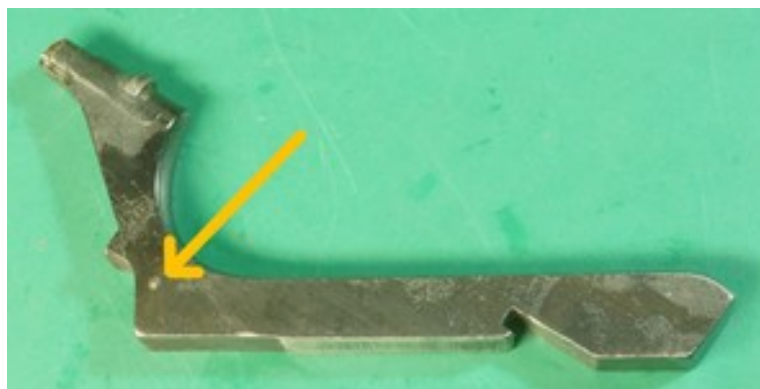
Every once in a while, the mainspring housing should be disassembled and cleaned- especially if the gun has not been well maintained. Few people think to spray something like Rem Oil into the Mainspring Housing spring channel. And over time, rust and corrosion will form in there. If the rust gets too bad, the force of the spring on the hammer may be reduced- or in the worst case- the spring will lock up.

Tools needed: a block of wood with a hole drilled 1/4" in it, brass hammer, a 1/2 to 3/4 inch long 3/64" brass rod- trim as needed for your fingers (hobby stores and craft stores often sell it), and the gun's own safety.

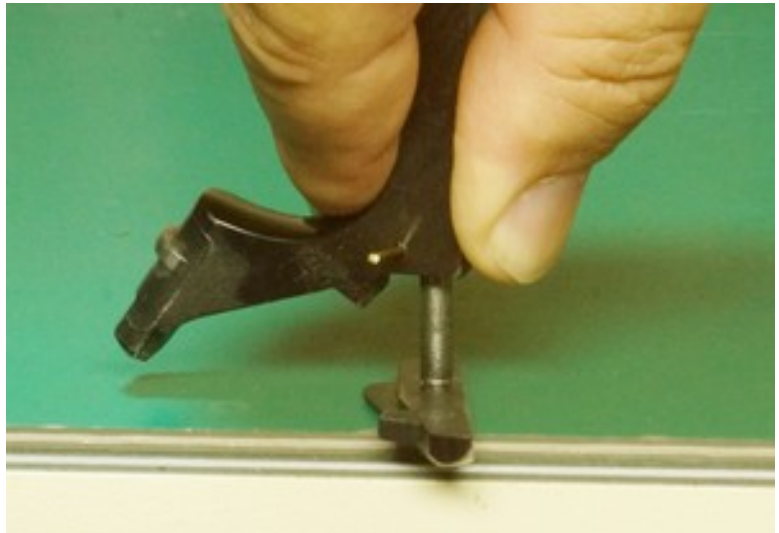
Remove the safety of the gun as described in the frame disassembly section. Have it ready.

Use a punch or a 3/64" rod to tap on the retaining pin on the mainspring housing (orange above). For reference- the pin is 1/16". If it is rusted, it might be in there pretty tight. The goal at this point is to break it free and get it moving.

Use the brass rod piece to tap the pin all the way out. This is where the block of wood comes in. The hole in the wood allows the pin to have a place to fall. At this point, the pin is removed and the spring is now retained by the brass rod (as shown above).



Place the gun's safety on the edge of a table or piece of wood. The raised thumb ridges are off the table and the flat portion on the table. The large post will be up.



Now place the mainspring housing over the safety post and push down. This will compress the spring and the brass rod may be removed.

Ease up on the mainspring housing and the spring and plunger can be pulled out.

All the parts can now be cleaned up. As you can see- mine was a bit rusty.



A .22 cal brush is a good size for cleaning the hole.

Reassembly is easy. I place a good coating of grease on the plunger and the spring before placing them into the mainspring housing.

Tap the stock Iver Johnson pin slightly into the hole with a brass hammer to get the pin started (after the rust broke free, my pin could be pushed in by hand).

Turn housing upside down onto the safety post as before and compress the spring. While still holding down, use the brass hammer to tap on the pin to drive it most of the way in. The housing can now be laid on its side and the pin tapped the rest of the way in.

Do one last check by using the safety post to compress the spring a few times to make sure there are no obstructions and all is smooth. Finished.

Disassembly of the Frame.

Occasionally, you will want to disassemble the frame for deep cleaning. Here's how.

1. At this point in the photo right, all I have done is removed the Mainspring housing, the slide, and the left grip.



2. Remove the backstrap spring if it did not fall out when the mainspring housing was removed.



3. Rotate the safety to clockwise (off position) and lift out. It's a little tricky because there is a narrow window to work with. The lip of the safety (yellow) must clear the slide stop (blue) which should be lifted slightly and the latch on the trigger plate and safety spring (orange). Once clear, the safety just lifts out.



By the way, note the position of the sear pin (green) for step 5.

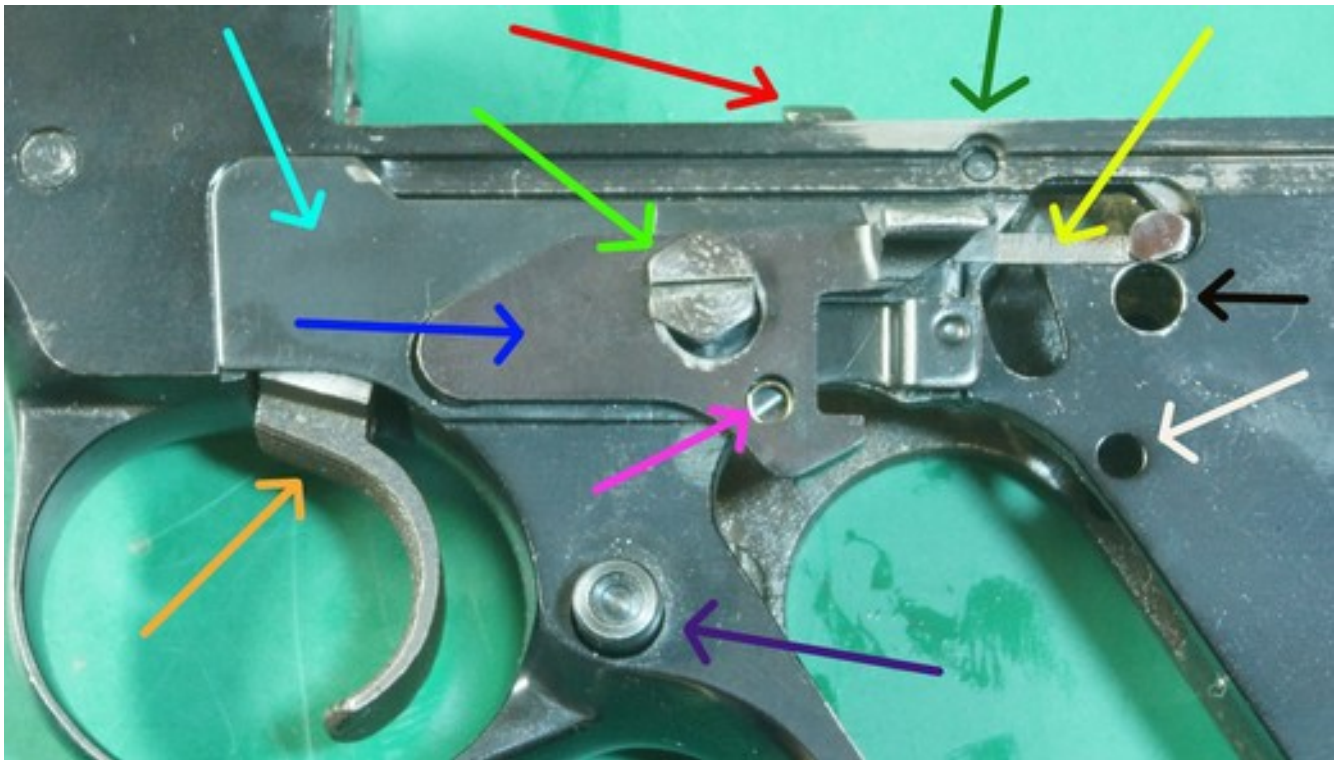
4. Since the safety also provides the pin for the hammer, the hammer may now be removed.



5. Remove the right grip with screw. The sear pin will probably fall out. It's very loose.

6. Remove the sear. Set the pin and the sear aside together.

At this point, let's review all the parts in this photo below. Refer to this photo for many of the next steps.



Slide Stop- **dark blue**

Trigger plate and safety spring screw- **light green**

Trigger plate and safety spring- **light blue**

Trigger bar- **yellow**

Ejector and magazine safety- **red**

Ejector guide pin- **dark green**

Magazine release button- **dark purple**

Slide stop spring- **light purple**

Sear pin hole- **gray**

Safety hole- **black**

Trigger- **orange**

7. Remove the Trigger plate and safety spring screw.

8. Lift up slide lock and remove. Don't lose the spring in the hole!!!

Here is a photo of the back side of the slide lock with the spring.



9. Remove the trigger plate and safety spring (the tweezers are holding the "spring" which is that little bent extension of metal on the right side- the lip of the safety goes under this).



10. The trigger lifts up along with trigger bar and spring. Go slowly and carefully, not forcing anything.

In this photo, I'm pushing up on the trigger with my fingers from the below. The trigger slides on its pin in the frame. I'm using my thumb to control the movement and using my other hand to control the trigger bar.



Be sure the rear of the trigger bar does not catch on the frame.



As you get to the end, be careful for the trigger spring. Don't lose it. In this photo, if I go any further, the spring will go flying.



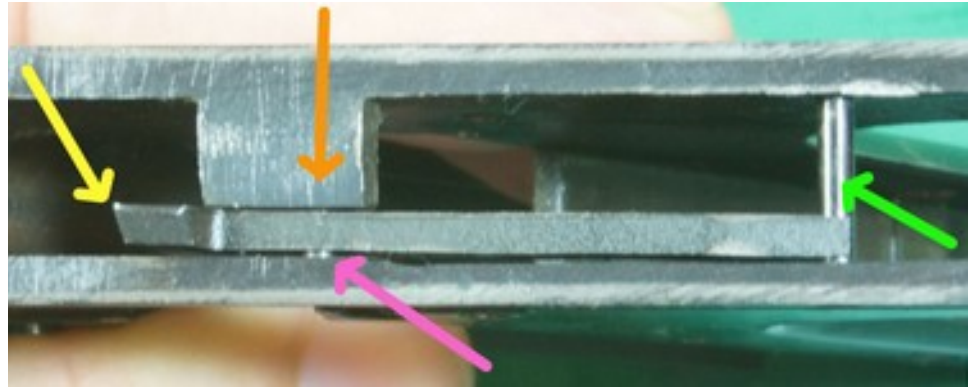
Catching the spring with my fingers, the trigger and the trigger bar may now be lifted out.

The trigger bar lifts easily out of the trigger.

In this shot, notice the orientation of the spring. The flat side goes toward the trigger bar, and the curved side goes to the gun frame.



11. The ejector (yellow) also serves as a magazine safety (the gun will not fire without the magazine inserted).



There are two retaining pins (pink and green) that are only pressed in and which hold the extractor. We only need to press out the forward pin (pink). The pin only goes in one direction (orange). The pin is pushed on the right side of the gun and removed on the left.

The extractor will fall out before pin comes all the way out.

12. Extractor has a little rod and spring on one end. Pull the rod and spring for cleaning. Since the extractor slides back and forth every time the magazine is inserted or removed and when the gun is fired, I polished the rough surfaces.



13. The magazine release button is simply screwed on to the magazine catch.

This would rarely need to be removed.

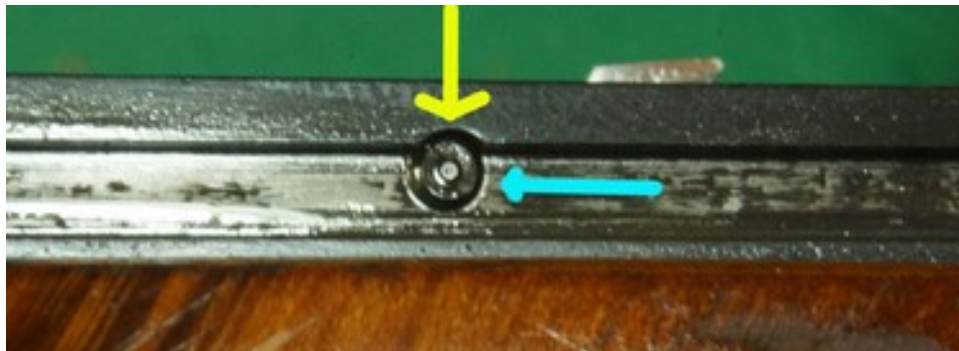


Frame Reassembly.

Reassembling the frame parts is reverse of the disassembly but there are a few tricks and things to watch for.

1. Install the little pin and spring into rear of extractor.
2. Install the extractor with its retaining pin. The fork goes over the rear frame pin. You must compress the spring just a bit by pushing the extractor to the rear- but it doesn't take much.

Remember, the retaining pin (yellow) must be inserted into the left side.



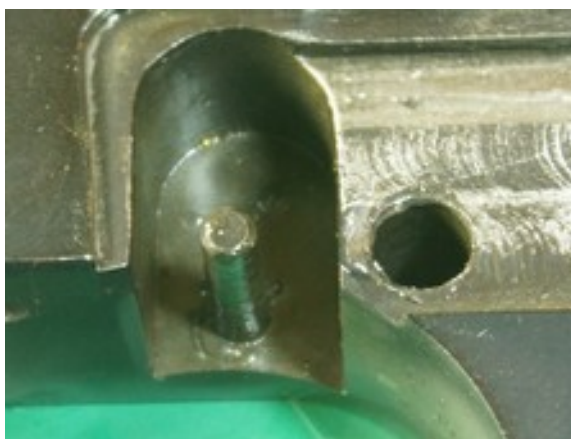
The gun frame will not allow the pin to come out the right side. However, the pin CAN be pushed in too far. The pin (yellow) pushes out into the channel for the slide (blue) as you can see in this photo above. So I push the pin back in just a bit.

3. Install the trigger group- the trigger, the spring and the trigger bar.

Make sure the area of the trigger is clean of all dirt and grit.

Grease the trigger pin.

Getting the spring in place is a bit tricky.



Take the sear pin (yellow) temporarily and use it as a tool (it's the perfect size). Insert the trigger spring (red) into the trigger. Hold it in place with the sear pin. If you have a mid or late version, make sure the flat part of the spring is toward the trigger bar hole and the bent part is down.

The early version uses a spring with two bends. If you have problems with your spring you might buy another, and/or trim one bend off of yours.

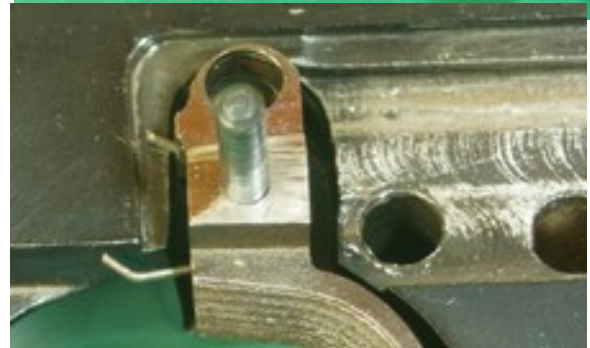
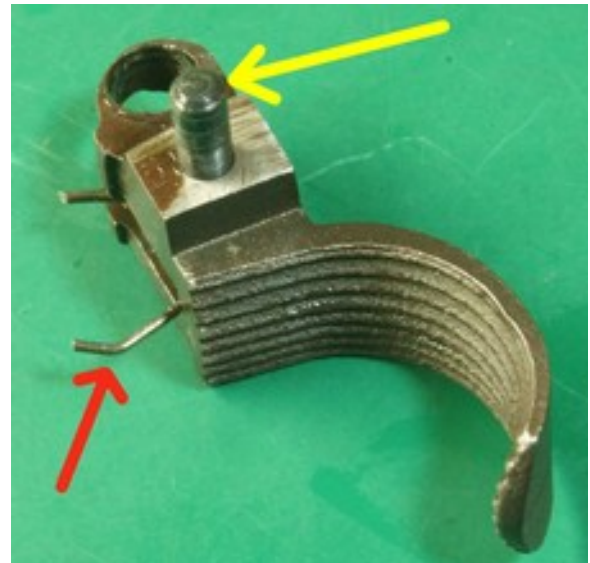
Now place the trigger partially on its post on the frame.

Make sure the spring is oriented as shown- rotated counter-clockwise. This keeps the trigger bar hole unobstructed.

Insert the trigger bar into its hole in the trigger. The other end goes in the opening in the frame.

Rotate the spring clockwise to engage the trigger bar

Now, a little tricky. Press the trigger gently down onto its post. To do this, you need to compress the trigger spring with a small screwdriver. I do it in stages. First I get the spring into the cut out for the cover plate- as shown right.



Almost finished.
Get the end of the spring down between the trigger and the frame and press down the trigger on its post a bit.



You can now remove the sear pin. That's what the photo above shows. Be sure and constantly check the right side of the trigger bar since it can get hung up on the frame. It must go in that slot on the right.

From this point, press everything carefully all the way down until the trigger is seated and the trigger bar is not in a bind on the right.

Unfortunately, the trigger will not now work- as described in the discussion section of this doc. As shown here, the trigger is seated, but the spring is twisted upward a bit. When you try to pull the trigger, it jams because the spring obstructs the trigger bar.



The solution is to get a small screwdriver and push the bend of the spring downward a millimeter or two (as shown here). When it is low enough, the trigger works fine- assuming the trigger bar is not getting hung up in the rear.



4. Install the cover plate. It simply lays in position. I add a little grease on the top side and underside of the plate. On top, the slide lock pivots. On the underside, the plate covers the moving trigger.

5. Take the slide lock and make sure the screw retaining spring is in place properly.

When it comes off the gun, the spring will be out of its slot- as shown here – if not out of place altogether.



Compress the spring slightly and fit it into its slot (yellow).

Since these are all moving parts, I add a little grease on the surfaces and the pin.



6. Insert slide stop into its hole. Make sure the TIP of the spring does not go down into the screw hole of the trigger plate below it. If it does, the spring may pop out of place and you will need to re-seat it as in step 5.



7. Press the slide stop and cover plate down firmly (to hold the spring in place) and insert the screw. Still holding the slide stop down, snug the screw down. Don't force through a bind. The trigger plate will need to move a bit for precise alignment.

Once the screw is gently snug, test the movement of the slide stop lever. I usually unscrew the screw a little less than about 1/4 turn for perfect smoothness.

8. Since we are at all bare metal at this point and we are about to put everything back together, some people like to spray the gun down with Rem Oil at this point and then wipe off the excess for good protection all around.

9. Install the right grip. Otherwise, the sear retaining pin may fall out.

10. Insert sear (I usually grease the sides and hole first). The “finger” goes up as shown right. The overall rounded side of the sear goes toward the front of gun. A pair of long tweezers helps.



When properly in place, insert the sear retaining pin in its hole (purple arrow) and through the sear.

When the sear is in place properly, the curved side should face the magazine well (as shown right).



11. Put the hammer into position. The strut goes to rear. Move the hammer to line up the holes.

12. Insert the safety into its hole through the hammer. You may have to wiggle the hammer a bit to get everything lined up and seated. The front blade of the safety has a narrow spot to go into above the cover plate finger sticking out and below the slide lock. Be patient.

The frame reassembly is finished.

Final Reassembly

At this point, the slide (with the takedown pin in place) and the frame are assembled.

It's now time to put them together.

As mentioned in the discussion section, you either need to be Hercules, or have a back-up plan to get the mainspring housing to snap into place.

At first, I used a pair of channel lock pliers and a protective strong potholder. Later, I filed on the mainspring housing latch as previously described.

1. Remove the **left** grip for better seeing of the parts. Retained by the one screw in the middle of the grip. Leave the right grip in place- if not, the sear retaining pin may fall out.
2. Loosen the screw for the **right** grip 1 1/2 turns. You don't have to remove it.



The photo at right clearly shows why getting the mainspring housing back in place can be almost impossible. These grip screws are seated. I assume the wood has compressed and now the screws are extending inside and causing an obstruction.

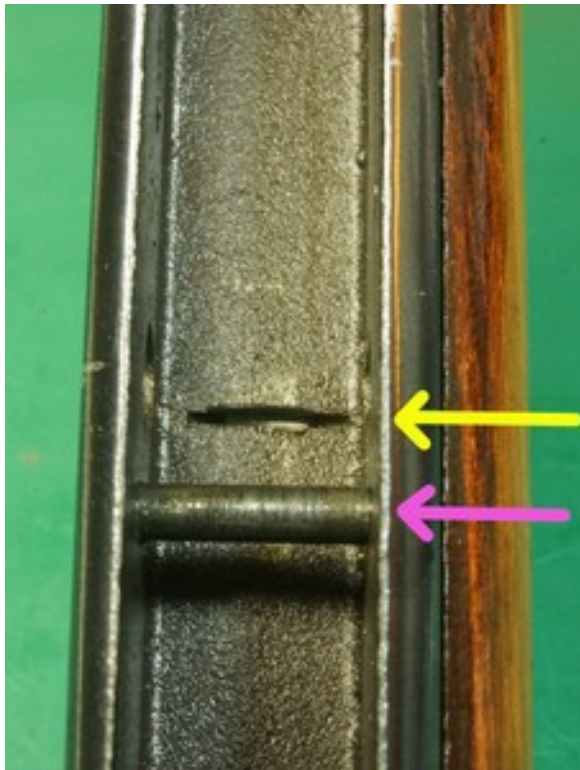
Back them off! Until you can no longer see them inside the frame.

3. On the slide, make sure the take down pin is still retaining the recoil spring guide.
4. With the takedown pin holding the recoil spring on the slide, slip the slide onto the frame (hammer down). Do NOT engage the safety at this time.
5. With slide in place, move the hammer forward toward the barrel. You may have to manipulate the sear to get the hammer all the way forward. The more forward it is, the less pressure is required for reassembly.

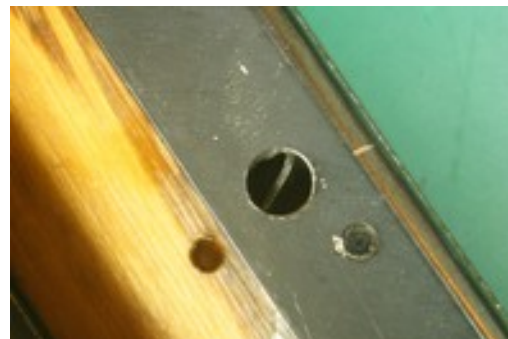
6. Now put the backstrap spring in place. The skinny top side goes UNDER the hammer strut and on TOP of the sear. The lower wider end has a blade that goes into a matching notch in the frame (yellow below) toward the bottom of the grip area.



In the left photo, the mainspring housing latch must latch onto the cross pin in the frame (purple). The right photo shows the backstrap spring in place under the hammer strut and on top of the sear at the top, and into the slot at the bottom.



If the left grip has been removed, there is a locator hole designed so that you can see that the backstrap spring is in the correct position. When correct, the spring appears centered in the hole.



7. Insert the mainspring housing. Insert at angle (top side in first). Goes up into the back part of the slide. A little tricky to get the hammer strut to get into the spot where the spring is in the mainspring housing. You also have to make sure the backstrap spring doesn't move out of place.



This can be done with the grip present or removed – as long as the grip screw is backed off and not obstructing the backstrap spring. Also, inserting the magazine and dry firing (it's safe) will ease tension on the spring.

8. If you are Hercules, then press in the curve of the mainspring housing, pushing it into the gun. When it goes in far enough, it will pop into place. You can now skip to step 11. But almost **no one** can do this feat. Mere mortals should go to step 9.



9. I know this sounds crazy, but it works. I press the mainspring housing into the gun a bit to compress the backstrap spring. It compresses to a point and then stops. So it is "in place" – not the final spot where it needs to go, but almost. Then take a good thick potholder and place it inside the grip area and around the outside to protect the gun for the next and hardest step.



10. Now use the channel lock pliers to squeeze the mainspring housing into the grip frame. It will POP into place with a loud snap. Hopefully you didn't scratch the gun!

As stated in the discussion, I tired of this and felt it was too risky. So I filed on the mainspring housing latch to round it.

Now, I still can't pop the mainspring housing into place with my hands.

But..... I can rap the housing with something firm but soft (like the rubber handle of this screwdriver) and it pops into place wonderfully.



11. Insert the magazine.

12. Hold the gun upside-down and pull the slide back all the way. The takedown pin should fall out (for mid and late versions). On early versions, the takedown pin should automatically pop up into place releasing the recoil spring. With the magazine in place, the slide should remain locked back.

13. Depress the slide stop- the slide should slam forward.

14. Rack the slide a few times to make sure all is working properly.

15. Replace the left grip and screw. Tighten the right grip screw.

You're finished.

Parts sources:

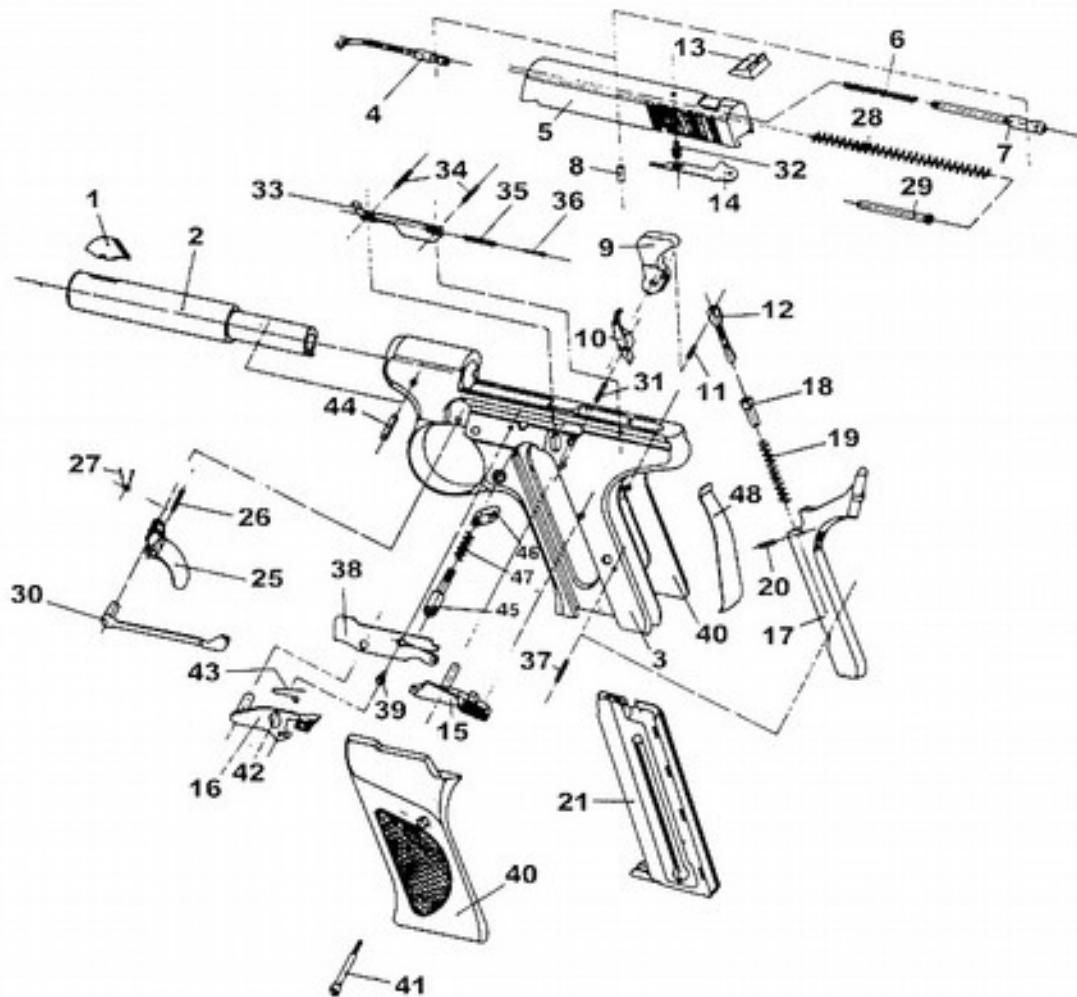
ebay

<https://www.gunpartscorp.com/gun-manufacturer/iver-johnson/auto-pistols-ij/trailsman-tm22pb>

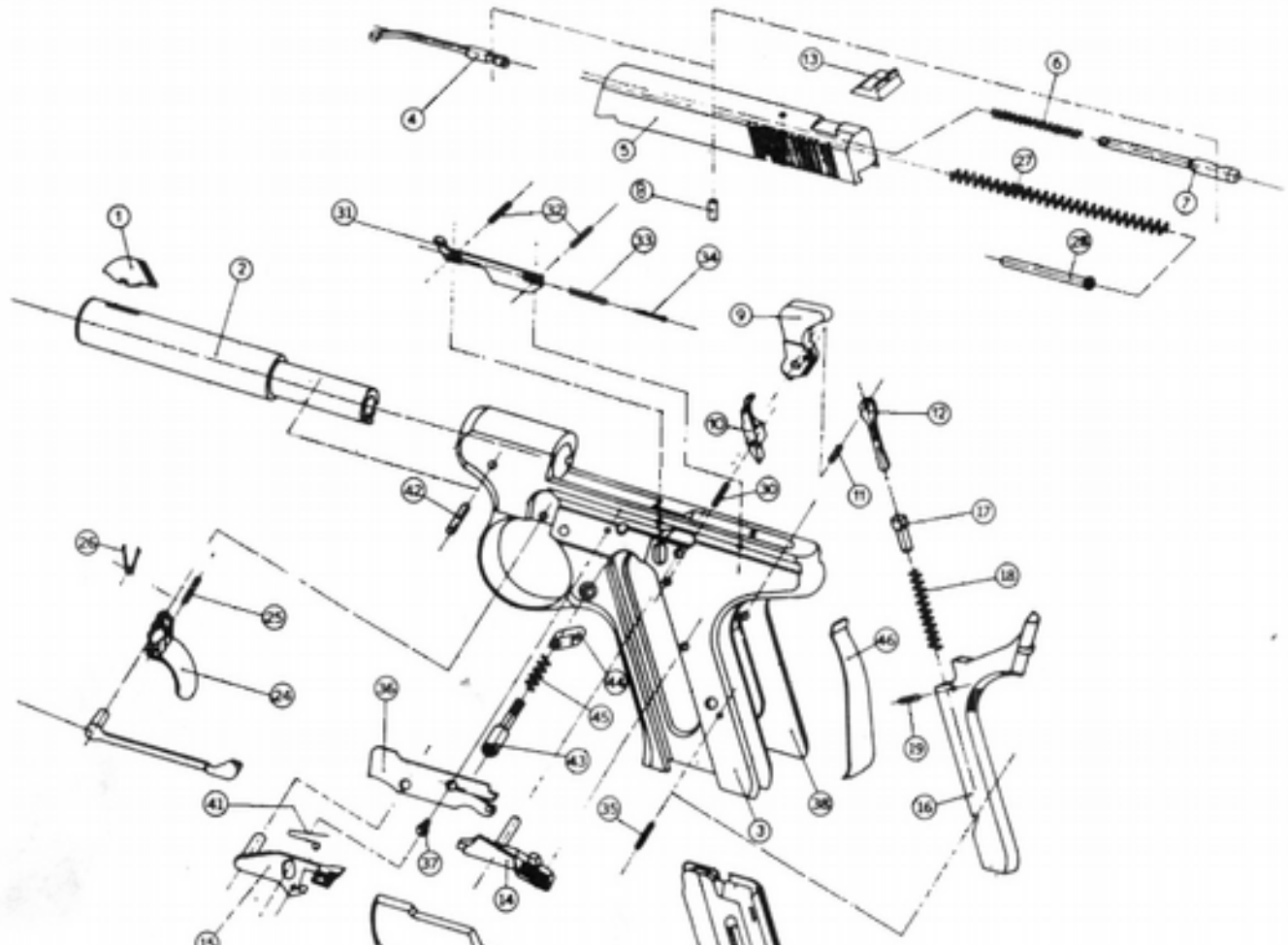
Early Version Parts Diagram

No key provided- but most parts are same as mid version (though numbered differently).

The key early version parts are the Takedown button #32 and the Recoil Spring Retainer #14.



Mid Version Parts Diagram (with key)



Item No. Name

1. Front sight
2. Gun barrel
3. Frame
4. Cartridge case extractor
5. Slide
6. Striker spring
7. Striker
8. Striker/extractor retainer pin
9. Hammer
10. Hammer sear
11. Hammer strut pin
12. Hammer strut
13. Rear sight
14. Safety
15. Slide stop
16. Mainspring housing
17. Propeller pin (hammer spring plunger)
18. Hammer Spring
19. Magazine guide retaining pin
20. Magazine spring
21. Magazine tube
22. Follower button
23. Follower
24. Trigger
25. Trigger pin

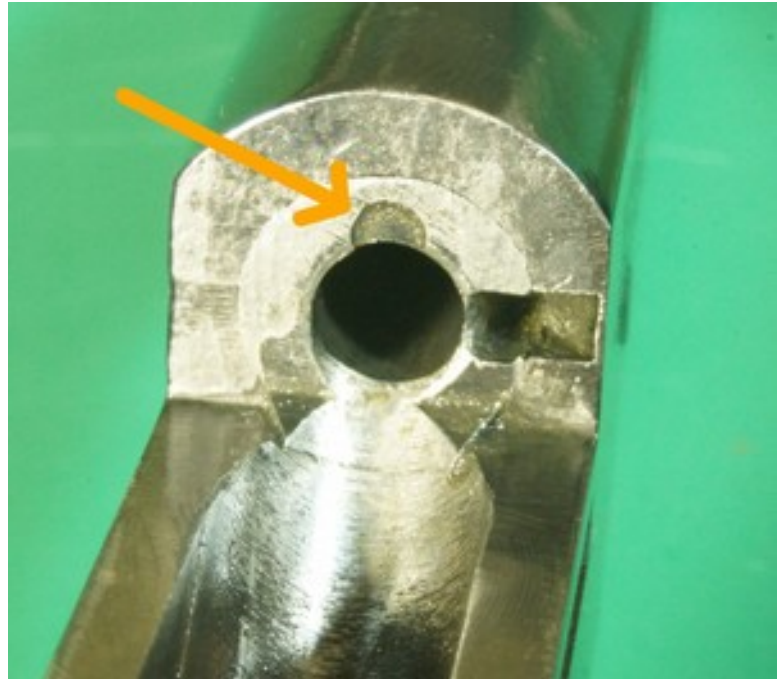
Item No. Name

26. Trigger spring
27. Recoil spring
28. Recoil spring guide pin
29. Trigger bar
30. Sear pin
31. Ejector and magazine safety
32. Ejector guide pin
33. Ejector spring
34. Ejector spring guide
35. Mainspring housing retainer pin
36. Trigger plate and safety spring
37. Trigger plate and safety spring screw
38. Grips
39. Stock screw (grips screw)
40. Slide stop screw
41. Slide stop spring
42. Barrel retaining pin
43. Mag. release button
44. Magazine catch
45. Magazine catch spring
46. Back strap spring

A word about dry firing.

Normally, dry firing a rimfire gun is dangerous in that it may cause damage to the firing pin since the pin will hit the frame of the gun in the breach.

But the Trailsman is well designed. First (with the slide removed), if you depress the striker pin all the way, you will notice the striker pin extends no further than the slide itself. Furthermore, if you inspect the breach (photo right), there is an indentation for the striker pin. So the Trailsman striker pin will **not** hit metal when dry fired.



(of course, for Heaven's sake, NEVER "dry fire" any gun without making sure it is unloaded! I taught my kids that lots of people are shot with unloaded guns-- at least they always say.... "I THOUGHT it was unloaded!")

Original Doc

I'm also including an entire instruction manual provided by Iver Johnson as supplied with a Mid Version Trailsman.

While the instructions could have been better, the doc is provided here in its entirety.

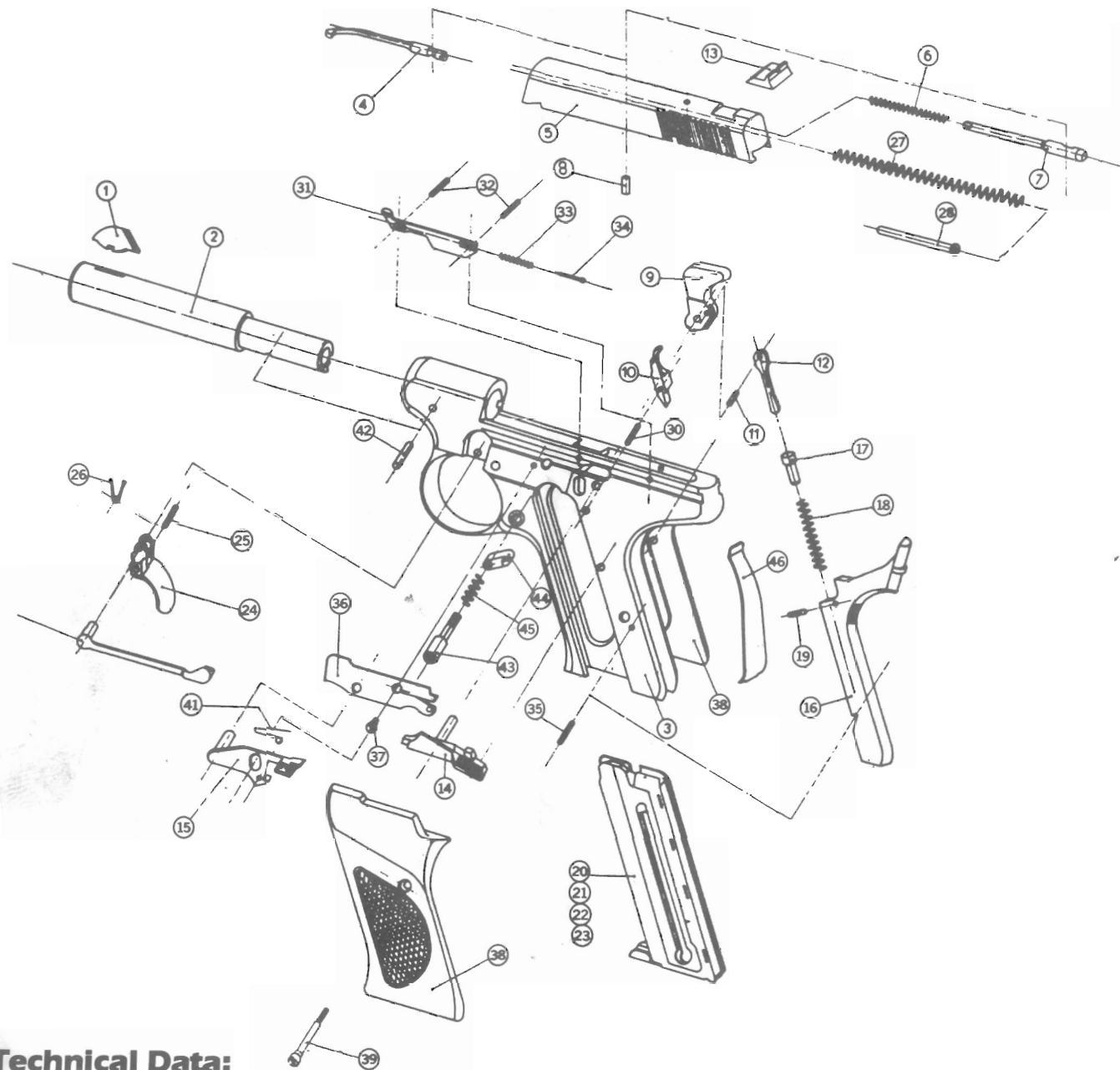
Rear Sight

I wish my Trailsman had fully adjustable rear sight. If anyone knows a rear sight that will fit, please contact me at: thebigheap@gmail.com
I'll include the info in a future edition.

TRAILSMAN
MODEL: TM22
Caliber .22
Long Rifle Auto. Pistol



2202 Redmond Rd.
Jacksonville, AR 72076
(501) 982-9491



Item No.	Name	Item No.	Name
1.	Front sight	26.	Trigger spring
2.	Gun barrel	27.	Recoil spring
3.	Frame	28.	Recoil spring guide pin
4.	Cartridge case extractor	29.	Trigger bar
5.	Slide	30.	Sear pin
6.	Striker spring	31.	Ejector and magazine safety
7.	Striker	32.	Ejector guide pin
8.	Striker/extractor retainer pin	33.	Ejector spring
9.	Hammer	34.	Ejector spring guide
10.	Hammer sear	35.	Mainspring housing retainer pin
11.	Hammer strut pin	36.	Trigger plate and safety spring
12.	Hammer strut	37.	Trigger plate and safety spring screw
13.	Rear sight	38.	Grips
14.	Safety	39.	Stock screw (grips screw)
15.	Slide stop	40.	Slide stop screw
16.	Mainspring housing	41.	Slide stop spring
17.	Propeller pin (hämmer spring plunger)	42.	Barrel retaining pin
18.	Hammer Spring	43.	Mag. release button
19.	Magazine guide retaining pin	44.	Magazine catch
20.	Magazine spring	45.	Magazine catch spring
21.	Magazine tube	46.	Back strap spring
22.	Follower button		
23.	Follower		
24.	Trigger		
25.	Trigger pin		

OPERATING INSTRUCTIONS

SAFETY. It is your responsibility to handle this firearm in a safe manner. Improper handling could result in injury, death or property damage. In order to be safe, it is your responsibility to read and to understand the operating instructions provided by Iver Johnson.

NOTE: This firearm is equipped with a safety device. The safety should always be **ON** when the pistol is not in use. This applies whether or not the firearm is loaded. This firearm should always be carried with the safety **ON**. Review these instructions and understand the operation of the safety before attempting to use this firearm.

OPERATION—UNLOADING—Step

One: Open the action by pulling the slide to the rear. Lock the slide in the open position by engaging the slide stop on the left side of the receiver.

Step Two: Remove magazine by depressing the magazine catch.

Technical Data:

Caliber:	.22 long rifle*
Overall length:	4¾" barrel 9 inches 6" barrel 10¼ inches
Height:	4½ inches
Width:	1¼ inches
Weight:	4¾" barrel 30 oz. 6" barrel 36 oz.
Magazine Capacity:	10 shot

Always state the item nos. when ordering spare parts.

*.22 long rifle full metal jacket functions best and gives more reliable feeding.

Step Three: Inspect the chamber for a cartridge which may have remained.

OPERATION—LOADING — Step One:

Load magazine by depressing the magazine follower with the proper round of ammunition. The round should be placed forward of feed lips on the magazine, pressed down and to the rear under the feed lips. Each successive round should be inserted in the same manner until the proper capacity is reached. Ease of loading can be gained by drawing the magazine follower button downward to relieve pressure on the follower.

Step Two: Insert the loaded magazine into the magazine well (**keep the muzzle pointed in a safe direction**). Push the magazine in until the catch snaps into place. Test the catch by pulling on the magazine. If the catch is not engaged, inspect the well for dirt, debris or any other substances which may prevent the magazine from catching.

Step Three: (With the muzzle of the pistol pointed in a safe direction), Depress the slide stop and allow the slide to close using its own spring power.

Step Four: Place the pistol in safe condition by raising the safety lock to its uppermost position.

SAFETY WARNING: Due to necessity of indexing the safety in the firing position to load or unload this firearm, you must exercise caution in handling to prevent accidental discharge. **Keep the muzzle pointed in a safe direction.**

Do not load the pistol until you are ready to use it. Unload the pistol immediately after use. Never leave a loaded firearm unattended.

TAKE DOWN AND ASSEMBLY:

1. With the muzzle pointed in a safe direction, remove the magazine and pull the slide to the rear to ensure that the chamber is empty.
2. Ensure that the magazine is empty and then reinsert the magazine into the gun.
3. Pull slide back until slide stop engages. Insert take down pin in small hole nearest to

- rear sight. Release slide stop.
4. Release the thumb and forefinger grip. Leaving the pin in place, gently push the slide forward.
5. Placing the muzzle on a hard but padded surface (such as a seat cushion), place your thumb on the deep, uppermost curve of the backstrap and depress. The backstrap will pop free.
6. Remove the backstrap and pull the slide from the frame while leaving the take-down pin in place.

PROCEDURE TO ASSEMBLE TM.22

1. Place the slide on the receiver, push to the closed position and leave the take-down pin in place.
2. Pull the trigger to make sure the hammer is fully forward (the uncocked position).
3. Insert the sear spring/backstrap spring in position with the lug of the spring in the slot by the crossover pin in the handgrip frame and the top resting on the sear and under the hammer strut.
4. Ensure that the hammer strut (small pointed pin) is in a position to engage the circular indentation in the backstrap.
5. Place the muzzle of the gun on a hard, padded surface and insert the main spring/backstrap housing into position (adhering to steps 2 and 3 requirements). Push inward and downward until the notch in the backstrap engages the crossover pin.
6. Pull the slide completely to the rear (this will remove the tension to the slide spring) and remove the take-down pin. The slide should automatically spring forward to the closed position.

