Introduction: Shooters who have recently bought one of the popular Beretta gas-operated shotguns often have questions about how to disassemble it for cleaning. I hope this will help.

I will not give instructions for detailed disassembly of every little part, but I will cover the things you need to do for cleaning and a few common repairs. The focus of this article is disassembly and reassembly, not cleaning and maintenance, although I make a few comments on those issues.

The illustrations and instructions in this article are based on the Beretta 391 Urika, but they are also valid for the other versions of the 391, including sporting models, Teknys, etc. Other models of Beretta gas-operated shotguns which have the recoil spring in the stock are very similar and the pictures and instructions here may be helpful, keeping in mind that there are some variations. This would include older models like the AL-1 through AL-3 and the 300 series (300-303), and current models 390 and 3901. This article does not apply at all to the Beretta gas-operated guns that have the recoil spring in the forearm (older Lark series and the current Xtrema) nor to Beretta's recoil-operated shotguns (ES100 Pintail or Victoria).

BTW, don't bother telling me my gun is dirty - I know it is not spotless, but it is as clean as it needs to be. I am also aware that I am a lousy photographer, but you and I will both just have to live with that!

Parts diagrams and owner's manuals: I will refer to the parts by Beretta's names for them (except where their names are counterintuitive) and will list the part numbers from Beretta's 391 parts diagram, which is available here:
http://www.berettaservices.com/Moduli/C ... eal391.pdf

The parts diagram for the 390 is also available, but I will not use the 390 part names or numbers.
http://www.berettaservices.com/Moduli/C ... eal390.pdf

Owner's manuals are available here:
http://www.berettaservices.com/index.aspx?m=53&did=652

Disclaimer: Beretta says some of the things discussed here should be done by a gunsmith, but I don't know anybody who pays attention to that. If you get your gun apart and lose some parts or can't get it back together, don't blame me. It ain't my fault, I just do what the voices tell me to.

Removing the barrel:

Cock the gun and leave the bolt open. Unscrew the forend nut (Beretta's name for it is forend cap part 55), pull the forearm off, and pull the barrel off. The piston (part 48) normally remains on the magazine cap shaft (part 45), but if the gun is dirty it may stick inside the gas cylinder on the barrel. To store the gun with the barrel off, put the forearm back on, insert the red plastic bushing that came with the gun, and screw the forend nut on. The plastic bushing is not used when the barrel is on, but it is needed to keep the forend nut from jamming when the barrel is off. **Caution:** do not let the bolt slam shut with the barrel off, as it may cause the piston to damage the forearm or stick inside the forearm. If you want to store the gun with the bolt closed, hold the cocking handle and ease it shut.

Caution: When you put the forearm on, make sure the U-shaped projection of wood at the base of the forearm goes into the recess on the front of the receiver. You should not see any gap between the forearm and the receiver. If you don't get that projection seated properly, you could damage the forearm.

Even if the gun is stored with the barrel on, the forend nut should be removed often, cleaned, and greased (I recommend Anti-seize, but any lubricant is better than none) to keep it from rusting and freezing in place.

Removing the bolt assembly: The bolt can be removed with the trigger group either in or out, but you might as well go on and take the trigger out (instructions below). It is a lot easier to get the bolt back in if the trigger group is out - with the trigger in, it can be hard to get the connecting rod into the recoil spring guide. If the trigger group is in, the hammer has to be cocked or the connecting rod won't come out or go back in. That is one of the reasons you should make sure the gun is cocked and put the safety on before you start to remove either the bolt or the trigger group. (The safety has been removed from the gun illustrated, because it is dedicated to clay shooting only).

Remove the forearm and barrel, and slide the piston off the magazine cap shaft. While holding on to either the cocking lever or the sleeve around the magazine (part of the operating rod part 47), press the bolt release button (Beretta calls it the cartridge latch part 35) and ease the bolt and operating rod forward. **Caution:** do not let the bolt slam forward when the barrel is off. Remove the cocking handle (part 72) by pulling it straight out. This may be hard to do on a new gun, but gets easier after it has been done a few times. If necessary, pull with pliers padded to prevent damage, or tie a strong cord to it and jerk. There is

nothing holding it in but a spring-loaded ball that fits in a shallow groove on the side of the lever. Pull the sleeve part of the operating rod forward, and the bolt will come out of the receiver. It will not come out if the hammer is in the "fired" position.

The bolt is in two parts: The chrome part is the breech bolt (part 63), while the black part is the breech bolt slide (part 57). **Caution:** when the two parts of the bolt are separated, the pin that holds the connecting rod (part 58) to the slide can fall out and get lost.

Caution: If you separate the connecting rod from the slide, make sure you turn it the right way when you put it back on. It should be turned so it is (as a mathematician would say) “concave up”: in other words, the cross-section of the rod should look like this _/, not like this /``\ .

To put the bolt back in, put the breech bolt and slide together, hold them in place in front of the receiver on top of the magazine tube, drop the connecting rod down in the receiver, and just barely start the end of the bolt into the receiver. Put the operating rod on the magazine tube and hook the end of the operating rod into the side of the slide. Now slide the whole works down into the receiver. Make sure the end of the connecting rod goes into the cup on the end of the recoil spring guide (part 12). You should now be able to work the bolt up and down, compressing the recoil spring, by holding onto the operating rod. Once the bolt is in, stick the cocking handle back in.

Sometimes the bolt will seem to go in OK but it won't slide back all the way. If that happens, make sure the end of the connecting rod is in the cup on the recoil spring guide. If it is, make sure the connecting rod isn't installed upside-down (see the "caution" paragraph above). If that is OK, the bolt probably went into the receiver cocked a little bit to one side. Take the bolt out and start over, making sure the bolt goes in straight. It might help to turn the bolt a little bit clockwise as seen from the front as it goes in.

Replacing the firing pin or its spring:

To remove the firing pin and spring, the “firing pin retaining pin” (part 67) must be driven out from the bottom - it cannot be driven from the top. Note that the retaining pin is staked in place - that means the top of the bolt beside the retaining pin hole has been struck with a punch to deform the metal and lock the pin in place. I’ve only removed one retaining pin, and I was able to drive it out with no trouble, but if it is staked very securely you might need to use a Dremel tool to clear off the deformed metal. I think it would be best not to remove that burr if you don’t have to - in my case, I was able to get the retaining pin out and back in (twice) and there is still enough of a burr to help hold it in place.

With the retaining pin out, the firing pin and spring just slide right out.

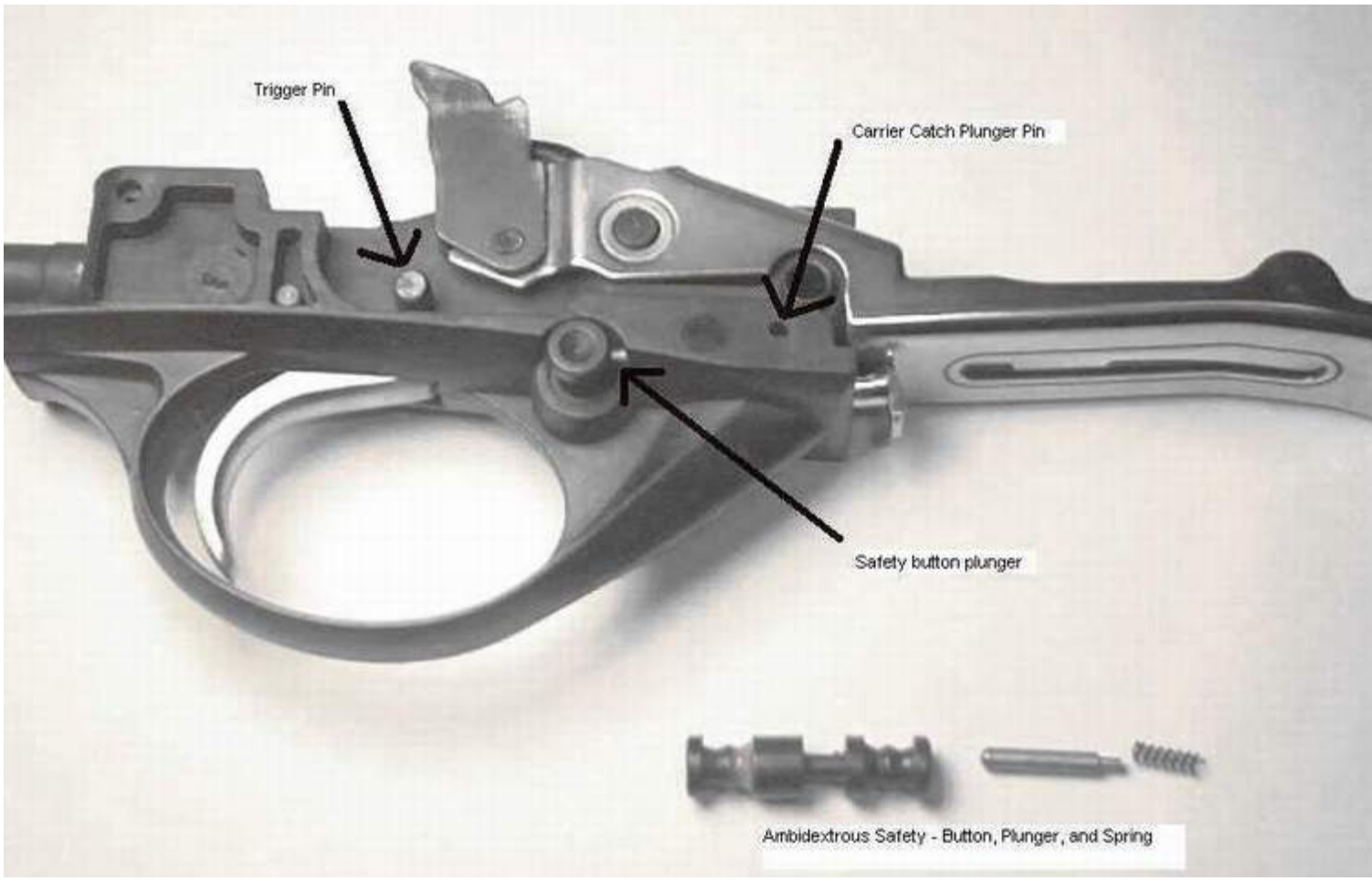
Removing the trigger group: This is hard to do the first time, but gets a lot easier after it has been done a few times.

You can remove the trigger group with the bolt in or out, but it is easier to get the bolt back in if the trigger group is already out.

Put the safety on. Drive out the “trigger plate retaining pin” (part 30). This is the pin that goes through both sides of the receiver, above the front end of the trigger guard. Pull the trigger group forward a fraction of an inch - you will see a small gap open up between the back end of the “trigger plate” (part 73) and the bottom of the receiver. When new, you might have to hit it with the heel of your palm to get it to move. From this point with a new gun, it will help to get someone to hold the gun down while you pull the trigger group out. Press the bolt release button while pulling the trigger group forward and down. Putting the trigger group back in is just the reverse - remember to press the bolt release button while you put it in. After it has been out a few times, the trigger group will loosen up and it will go in and out easily.

Caution: The hammer should remain cocked while the trigger group is out of the gun. There are two pins that get loose and can fall out while the hammer is in the "fired" position. These are the trigger pin (part 84) and the carrier catch plunger pin (part 96).

Ambidextrous safety:

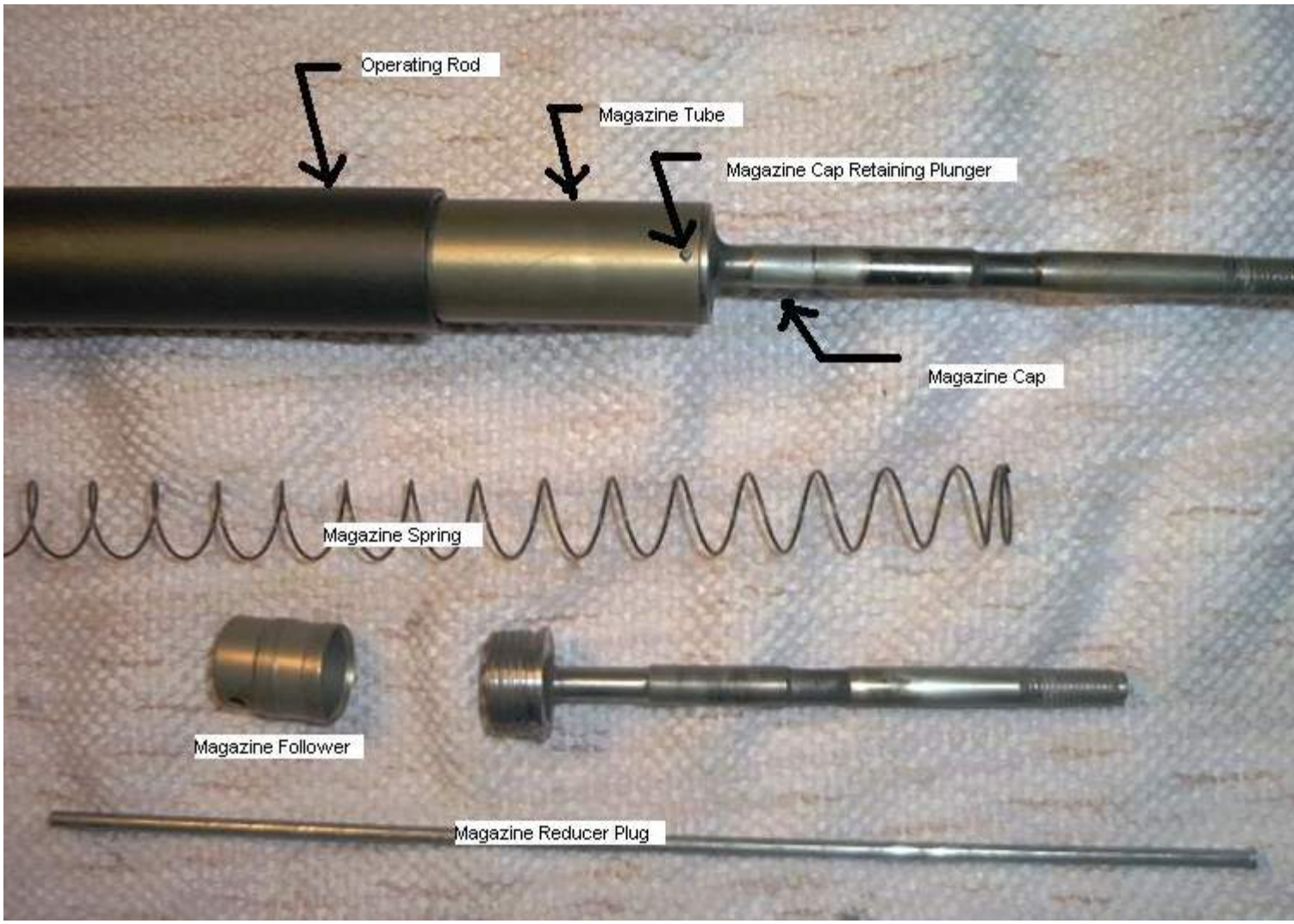


The safety comes from the factory set for a right-handed shooter, but it can easily be changed for a left-handed shooter, or removed completely.

The safety button is held in place by a plunger and spring on the right side. To remove it, use a thin blade or similar tool to press the plunger in and push the button out to the left side of the trigger group. Be careful not to let the plunger and spring fly out and get lost (although the plunger often hangs up and has to be pried out if the safety is not going to be put back in.) To reverse the safety for a left-hander, just turn the button end-for-end and put it back in.

It is common for clay shooters to remove the safeties from guns that are dedicated to clay shooting only. I do that, but I do not recommend it for a gun that will be used for any purpose other than clay shooting.

Magazine Parts and Plug:



The magazine tube cap (Part 45, including the shaft that the piston and forend nut fit on) screws into the end of the magazine tube (part 44). There is a tiny plunger through the side of the tube to keep the cap from coming loose. Depress that plunger with a point of some kind, and unscrew the cap. If necessary, a screwdriver can be used in the end of the cap shaft. **Caution:** If you are not careful the magazine spring (part 42) will fly out when the cap comes off. With the spring out, you can turn the gun up and let the follower (part 41) fall out.

The magazine plug (part 43) is an aluminum rod with a head like a nail, which extends through the shaft of the magazine cap and into the magazine. It is held in place by a spring clip (magazine reducer plug retaining washer, part 46). To remove or replace the plug, pull the clip off and throw it away. Yes, I said throw it away. I didn't make that up, one of the FAQ's on the Beretta USA web site says throw it away - it serves no useful purpose. I guess the clip is on there to keep a new owner from thinking he got a broken gun if he turns the gun down with the forend nut off, and the plug falls out. With the clip off, just remove

the forend nut to remove or replace the plug. All 391's sold in the US (as far as I know) come with a plug installed to limit shell capacity to 1 in the chamber and 2 in the magazine, with a longer plug in the box to limit capacity to 1 and 1. With no plug, capacity is 1 and 3.

Removing the stock, and using stock shims:

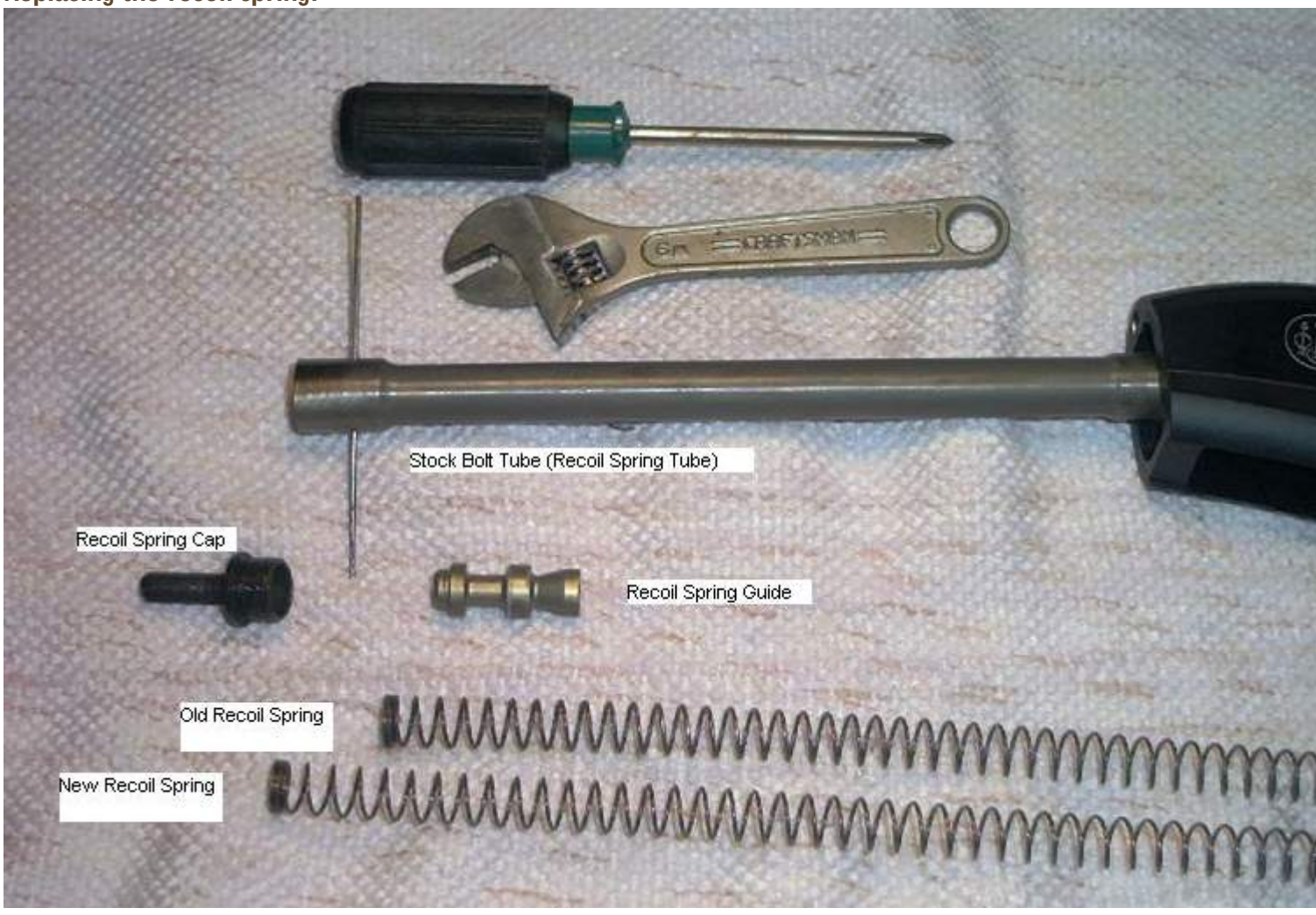
First remove the recoil pad. Depending on what kind of recoil pad you have, there might be a quick-release device or two Phillips-head wood screws. If you can't see the screw heads, look for two tiny holes in the rubber, oil the point of the screwdriver and press it into the holes, expanding them. If there are no holes, there may be two circles about 1/4" diameter - these are rubber plugs which can be pulled out with thin-nosed pliers.

The nut which holds the stock in place takes a 13mm socket, but I have been told that a 1/2" socket is close enough to work OK. (Some older models of Beretta's gas-operated guns might take a 19mm socket.) Getting the stock off is self-evident, but it can be tricky to get it back on. I have found that a magnet shaped like a pencil helps a lot in putting the rear plate and lock washer in place while the gun is held vertical, butt up. Then put the nut in the socket and turn the gun partly over on its side so you can get the

socket inside without the nut falling out.

What we commonly call “stock shims” consist of a front spacer (part 10) and a plate (part 15) which come in matched pairs. They can be turned different ways to produce cast off (marked DX) or cast on (marked SX) and any of several amounts of drop (marked in millimeters). **Caution:** It is very important that both be turned the same way. For example, if the spacer is placed on the rear of the receiver so the figures “C-60-DX” (60mm drop, cast off) are showing before the stock goes on , then the plate must be installed with the same figures showing. Mixing them can cause the stock to split due to uneven stress.

Replacing the recoil spring:



The recoil spring needs to be replaced periodically, because it weakens with use. Some people advise replacing it every 5,000 shots, some say 10,000. A weak spring will allow the bolt to come back too fast when the shot is fired, which over along time period can result in damage to the bolt and the receiver. The old spring will be shorter than the new one - sometimes there is a bigger difference than shown in the

illustration. Replacing the recoil spring may not be as important if you only use light target ammo as it would be with heavy field loads, but it is cheap insurance anyway. The 12 gauge 391 (but not the 20 gauge) has an additional recoil absorber (part 120) in the rear of the receiver to act as a buffer.

The spring and its tube may need cleaning once in a while if you are using very dirty ammo that leaves a lot of ash.

The recoil spring cap (part 14) screws into the rear of the stock bolt tube (part 11) and there are flats on the sides for a wrench. The cap is usually fastened in place at the factory by use of a thread locker (Loctite or equivalent). That is not always true, as I had one that came from the factory with no thread locker, but most of them are locked. The cap must be heated to release the thread locker. Most people use a small propane torch, but if you don't have one you can do it by sticking the cap through the cracked-open door of a kitchen oven preheated to around 450-500 deg. Try the wrench every 30 seconds to a minute, and the cap will come out in just a few minutes.

Caution: the recoil spring is compressed and will fly out violently if not restrained. Before you get the cap completely off, stick a stiff wire or a thin nail through the holes in both sides of the tube, to hold the spring in. With the cap off, hold a rag over the end of the spring, pull the nail out, and let the spring come out gently. The spring will probably be dirty and greasy. The recoil spring guide (part 12) will slide out, but you might need to start it by pressing with a fingertip from inside the receiver. Some of the guides are longer than the one illustrated - a design change, apparently. Clean and lightly lubricate the tube.

The easiest way I have found to compress the new spring enough to get it in is to put the guide and spring in the tube, stick a thin Phillips screwdriver in the spring and push down as far as possible, then stick the nail in to hold the spring until the cap is screwed in. Both the screwdriver and the nail must be thin so the screwdriver won't keep the nail from going in.

So, do you put Loctite on the cap when you put it back in? As far as I'm concerned, that is an open question. I don't, and I don't think most shooters do, but I had a cap come loose one time, letting the stock get loose. I probably just didn't tighten it enough. I still don't use Loctite but I pay more attention to tightening the cap. If I were shooting a very important tournament or going on the hunt of a lifetime with no backup gun, I would use Loctite, but since I switched from an O/U to an automatic I have learned from experience to carry a backup in those situations.

Forend nut:

The 391 forend nut (Beretta calls it fore-end cap, part 55) is the most ridiculously over-engineered mechanism I have ever seen. It consists of 7 parts, only 6 of which show on Beretta's parts diagram. The parts in the illustration will go back into the nut in clockwise order: the plastic bushing first, then the washer, etc, and finishing with the lock ring (snap ring). The thin ring in the 4 o'clock position in the illustration is the part that does not show on the parts diagram.

Older forend nuts do not have the mysterious ring, confirming that it was part of a design change, and that is why it does not show up on the parts diagram. The moving part, which I call the "plunger" for lack of another name, is bigger in diameter so it fits close in the nut without a ring. I prefer that design, because the metal washer and plastic buffer are easier to get out for cleaning. I would guess that Beretta added the ring because the outer part of the nut rusts, which could cause the plunger to bind. The ring looks like stainless. I still think the old design is better, provided you don't neglect the nut until it rusts. So why didn't Beretta switch to a rust-resistant steel for the outer part of the nut and leave the ring out? That would have solved several problems. Beretta works in mysterious ways.....

The most important part of the nut to clean is the threads. If they are not kept clean and lubricated, they will rust and freeze onto the magazine tube cap. Removing a badly rusted nut is a major project, and preventing that is worth some effort. Fortunately, that can be done without disassembling the nut. Just remove it from the magazine cap often, flush the threads out with a solvent (Gunscrubber, brake parts cleaner, Breakfree CLP, etc) and lubricate it. I generally use a few drops of Breakfree CLP or RemOil inside the threads, but to be extra careful I apply Permatex Anti-Seize or Rig Universal grease to the threads on the magazine cap.

Disassembly of the nut for a detailed cleaning is something that does not need to be done real often. In fact, if you only use your gun for hunting, and you use fairly clean-burning shells, you might get away with never disassembling it. However, if you shoot a lot and use dirty shells it will fill up with crud and stop working eventually if you don't clean it.

To see if the nut is still working properly, place it on a hard surface like a table top, with the spring-loaded part (I will call it the plunger for lack of a better name) down, and press on the top of the nut with the heel of your hand. You should be able to feel the plunger moving on its spring. If not, you've got trouble, and you should have cleaned it long ago!

The first step in disassembly is removing the snap ring, and to do this you need a pair of snap ring pliers. You need to squeeze the nut to depress the plunger and take the pressure off the snap ring to make it easier to get the ring out. I have used a small vise, and a friend of mine uses a drill press, but I generally use a small pair of tongue and groove pliers (commonly called Channellocks).

Once you get the snap ring out, the plunger and spring come right out. You could just stop there and clean what you can see: in fact, some people may not even realize that the other parts are in there. To take everything out, you first have to remove the mysterious "phantom" ring that does not appear on the diagrams. Use a dentist's pick or something similar to hook under the bottom edge of the ring, pull up a little, and work your way around pulling up just a tiny bit each time. Once you work the ring part way up, you can grab it with thin-nosed pliers and pull it on out. With the ring out, the metal washer and plastic bushing will come out if you turn the nut face down and bang it on the workbench. However, if you let the nut get real dirty before you try to clean it you may never be able to get the ring, metal washer and plastic bushing out. No matter, you can clean it pretty well with those parts still in.

Getting the snap ring out and back in can be a problem. If you clean your nut often you might consider replacing the snap ring with one that does not fit quite so tight. I went to a well-stocked hardware store and asked for a snap ring to match the original, and what I got looked like the same size, but turned out to be a tad bit smaller. I suspect the original is a metric size and the replacement is an SAE size. It goes in and out a lot easier, and it holds everything in just fine. When the nut is on the gun, there is no pressure on the ring anyway, it only serves its purpose when the nut is off.

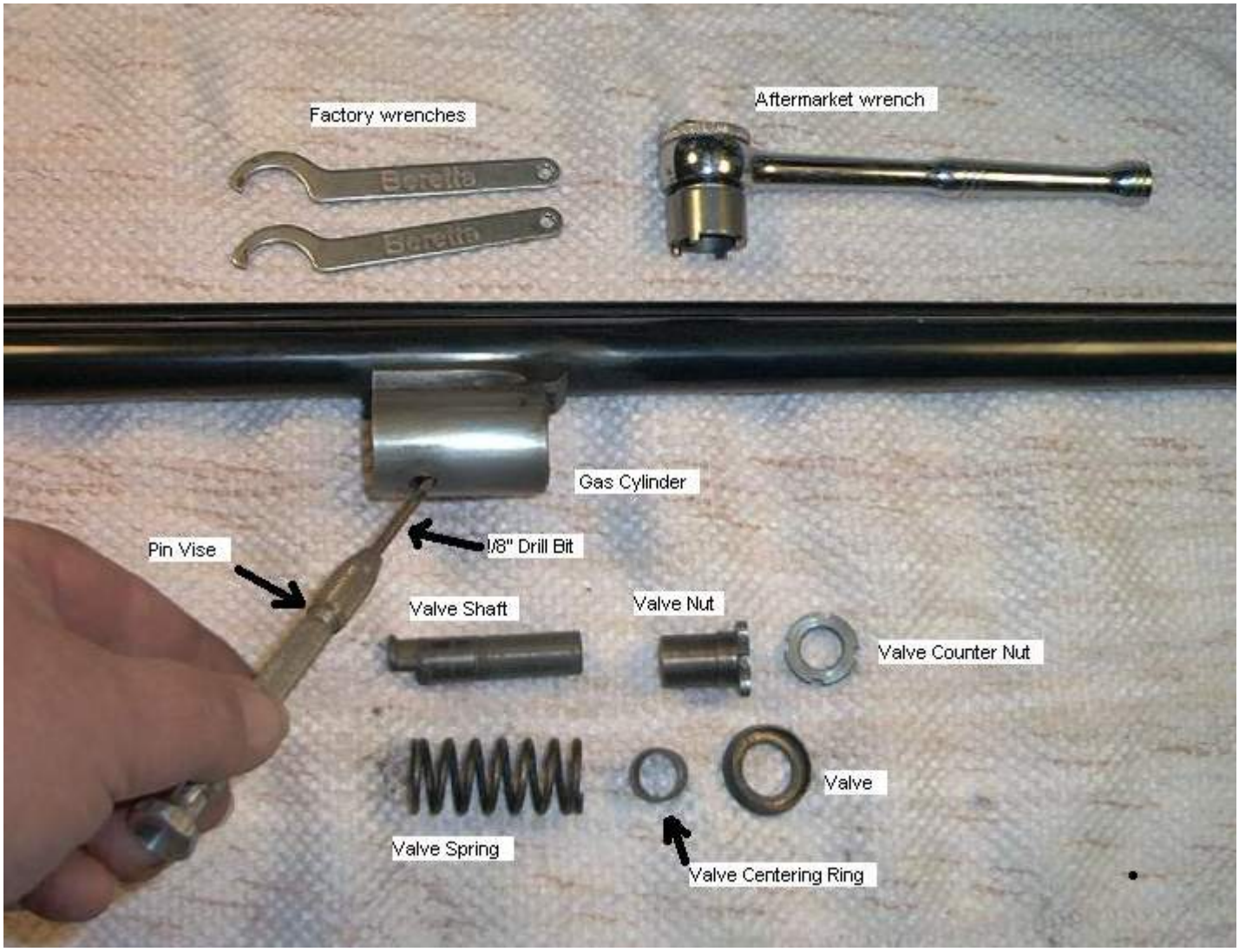
This over-engineered forend nut can be simplified and made easier to clean by removing all the internal parts and replacing them with a single spring, so the nut functions very much like the one on a Beretta 390. For more information, see: viewtopic.php?t=79775 .

Cleaning the gas ports: The gas ports are two holes in the bottom of the barrel that feed gas from inside the barrel into the gas cylinder which is welded to the bottom of the barrel. If the ports get clogged, the

gun will not cycle properly. The first sign of clogged ports is weak ejection - the empty hulls will land closer to the shooter's feet, and eventually will fail to get all the way out of the receiver. How often they need cleaning depends on how clean-burning your ammo is. They will go at least 10 times as long between cleanings with clean ammo like Rio than with dirty ammo like Federal Top Gun. Some people say they never have to clean the ports, but I had trouble when I didn't, so it is just something you have to learn from experience.

To clean the ports, one must first disassemble the gas valve. New 391's come with a pair of "valve hook wrenches" (part 118) to loosen the valve counter nut (part 116) and remove the valve nut (part 115). They are hard to use because the counter nut is put on very tight at the factory, and the valve nut has a long threaded portion, requiring that it be turned a lot with the wrench. Several after-market suppliers make socket wrenches that are easier to use. Beretta advises against using the after-market wrenches, because they work too well. Beretta apparently is afraid you are going to tighten the nuts so tight you damage something. I understand their point, but I have a higher regard for your intelligence than Beretta does.

Use the two hook wrenches together as illustrated to break the counter nut loose. It will be easier after the first time, because you probably won't get it back on as tight as the factory did. Next remove the valve nut and the valve, valve centering ring, and valve spring (parts 113, 114, and 117 respectively). The valve shaft (part 112) will then come out of the other end of the gas cylinder.



The gas ports can then be cleaned by sticking any suitable probe through the hole in the underside of the gas cylinder, going all the way through the cylinder and into the ports in the barrel. If the deposits are soft, a pipe cleaner may be enough, but I have seen some deposits that were much harder - it depends on the ammo you use. It may also depend on whether you keep the area "wet" with a solvent like Breakfree CLP. I like to clean the ports of a 12 gauge gun with a 1/8" drill bit held by hand, or in a small pair of vise grip pliers, or in a pin vise. A 1/8" bit is smaller than the ports (so it won't cut the metal), but close enough to keep the port diameter from narrowing down much due to deposits. When I did the cleaning with a thinner wire I had trouble with failures to eject, because the ports were open to some extent, but too narrow. **Caution: The suggestion of a 1/8" drill bit for cleaning the ports is only for a 12 gauge gun. That might be too big for a 20 gauge gun.**

There are also 4 ports on the front of the gas cylinder, covered up by the valve when it is assembled. For

lack of a better name, I'll call them valve ports. These may also plug up when you use dirty ammo, and they need to be open for the valve to function properly. The valve is what makes the whole system self-adjusting (within limits) for light and heavy loads.

When the valve is reassembled, the valve shaft should be turned the way it is in the illustration - with the longer side toward the barrel where it will protect the magazine cap shaft from the hot gas coming through the ports. The gun seems to work just fine with the valve shaft turned the wrong direction, but I suspect the shaft on the magazine cap will get dirtier faster that way.

The valve does not need any adjustment - just tighten the valve nut all the way down, then tighten the counter nut.

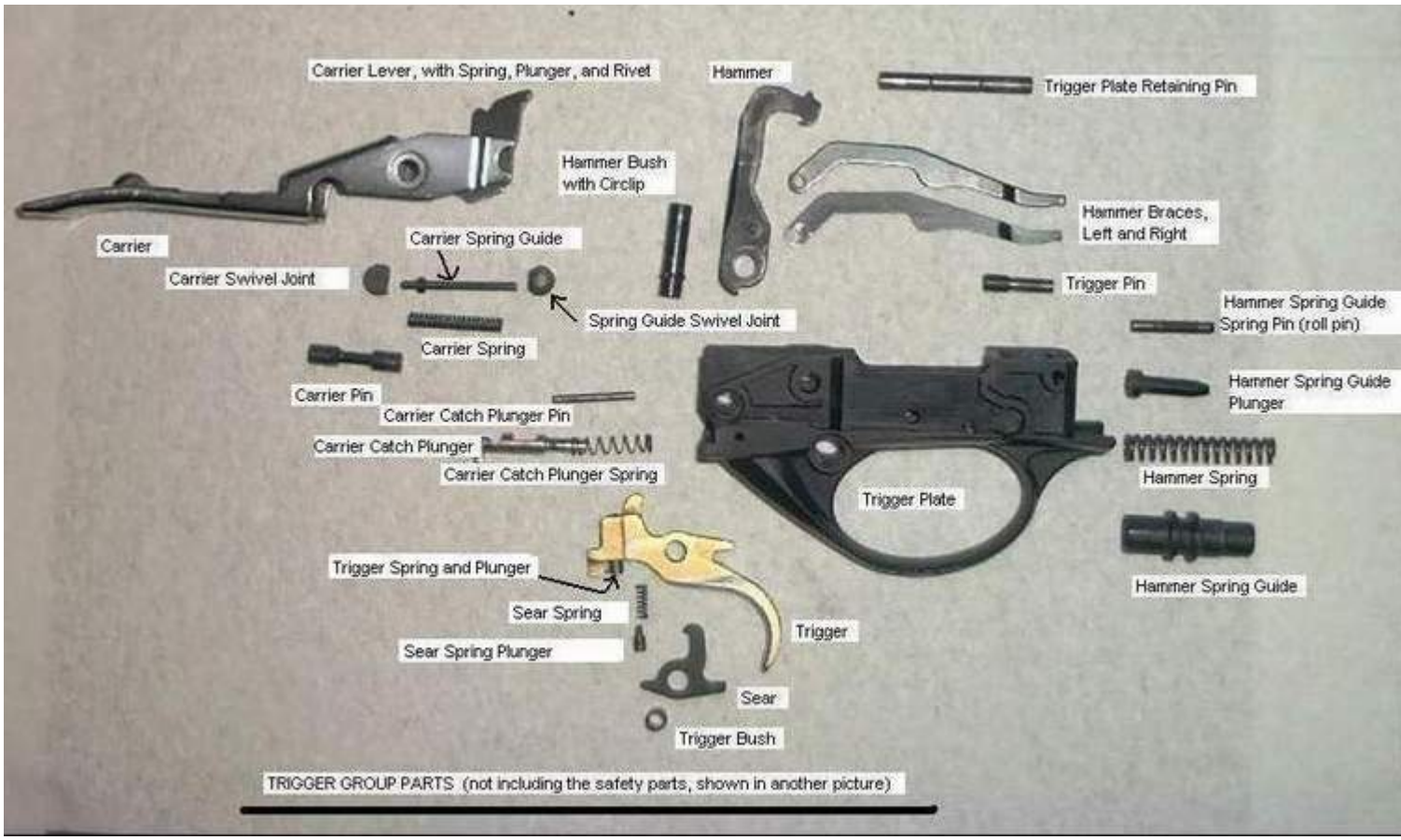
Replacing the Carrier: Some 391 owners have had to replace their carriers, because the factory turns out one every now and then that is twisted, and causes a characteristic type of failure to feed (FTF). The front end of the second shell will hang up on the right edge of the chamber, and not enter the chamber at all.

Some people say their carriers are twisted so badly you can easily see it, but mine had such a little twist in it that I still can't see anything wrong with it. However, I did find a way to detect the twist. I lay the carrier on a smooth table top, hold it down with a fingertip, and wiggle it side-to-side. My original twisted one wobbles like a table with one leg shorter than the other 3 legs. Most replacement carriers do not wobble at all - all 4 "legs" contact the table top together, although I have seen one good carrier that would wobble just a tiny bit. If you are having failures to feed, you might be able to use this technique to test your carrier to see if it is twisted. But of course, all the wobbling in the world won't matter if you don't have failures to feed. The image below illustrates the technique:

The carrier lever (with its spring and plunger) is riveted to the carrier. If you have to buy a new carrier, you might want to get one with the lever already attached. Or, if you feel comfortable about removing and re-installing the rivet, just get a new rivet with the carrier and do it yourself.

To remove the carrier, just drive out the carrier pin, and make sure the small parts (two round swivel joints, spring and spring guide) don't get lost when it all comes apart.

For instructions on how to reinstall the carrier, see section F below in "Reassembly of the trigger group".



Disassembly of the trigger group: It is never necessary to disassemble the trigger group for cleaning: just flush it out with a solvent and spray it with oil or CLP. Once in a while it becomes necessary to take the trigger group apart to replace a part (usually a hammer brace or hammer bush). The group looks complicated, but it really isn't difficult to get it apart and back together. If you want to do a complete disassembly, I would suggest doing it in the following order:

Step1: Remove the carrier catch plunger with its pin and spring. The only reason for doing this first is it will probably fall out anyway, so you might as well get it over with. The pin is held in position by spring pressure as long as the button is out, but it will get loose if:
a: you press the button in and let the carrier drop down, holding the button in, or
b: you pull the trigger and let the hammer go up to its "fired" position.
Do either of those things, let the pin fall out or push it out with a punch, and the plunger and spring will come out.

Be careful not let the pin fall out and get lost while cleaning the trigger group. (I was lucky, and found mine on the floor.)

Step 2: Remove the carrier. Just drive out the carrier pin, and make sure the small parts (two round swivel joints, spring and spring guide) don't get lost when it all comes apart.

Step 3: Remove the hammer spring. (If you ever have to replace the hammer spring, you can do it without going through steps 1 and 2 first.) While holding the hammer down, pull the trigger then let the hammer rise to the "fired" position to relieve pressure on the hammer spring. At this point, the trigger pin is likely to fall out, but that is OK, just don't let it get lost. Drive out the roll pin (Beretta calls it "hammer spring guide spring pin"), and the Hammer Spring Guide, Spring, and Plunger will come right out. Driving the pin out and putting it back in will be easier if you press in on the guide to take spring pressure off the pin.

Step 4: Drive out the hammer bush (note - it must come out on the left side, it cannot come out to the right). Once the hammer bush is out, the hammer, hammer braces, and trigger come right out.

One note about the hammer bush and its "hammer bush retaining spring ring" as Beretta calls it - most people call it a "circlip". It is a tiny piece of spring wire bent into a circle, and it goes around the hammer bush, clipping into a slot in the bush to hold it in place. The function of the circlip is to hold the trigger group pin (trigger plate retaining pin) in place by clipping into one of the two grooves in the pin (the pin actually goes through the bush). Once in a while the bush will break at the slot, allowing the circlip to come off. The pin will then fall out, and the trigger group will move, resulting in malfunctions.

Note that the hammer braces are not alike - they are a mirror-image pair, left and right. They come together at the rear (smaller) end, and stand apart at the front end, one on each side of the hammer. The holes on the front ends of the braces fit over studs on the sides of the hammer.

Step 5. Remove small parts from the trigger. I have never removed the Trigger Spring and its Guide Plunger, because as far as I can tell the end of the plunger needs to be swaged like a rivet, and if you ever have to take it out you probably should put a new one in. To remove the sear, just drive out the trigger

bush, and be careful not to lose the sear plunger and spring as the sear comes out.

Reassembly of the trigger group: You may have your favorite way of putting the trigger group back together, but this sequence works for me:

A. Put the Sear Spring and Plunger in their hole in the trigger, put the Sear in place so it holds the Sear Spring Plunger in place, and insert the Trigger Bush.

B. Put the trigger and trigger pin in the Trigger Plate. The Trigger Pin will probably be a little loose, so you have to hold it to keep it from falling out.

C. Put the holes in the hammer braces over the studs on the sides of the hammer, and hold it all together while you put the small ends of the braces (they should be together) into the hole where the hammer spring guide plunger will go later.

D. Put the base of the hammer near its final position at the front end of the trigger plate and move the other end down to the sear, so the hammer is in the cocked position. Put the hammer bush in place (from the left).

E. Pull the trigger and lift the hammer to the "fired" position, put the hammer spring guide plunger, spring, and guide into the hole in the rear end of the trigger plate. Press the guide in to compress the spring while gently tapping the roll pin in to keep everything in place. Cock the hammer after you get the spring installed to put spring pressure on the trigger pin to keep it from falling back out.

F. Put the carrier on. There may be several ways to do it, but the way that works for me is to put the carrier close to its final position on the trigger plate, then get the swivel joints, spring, and spring guide in place before I insert the pin. Handling all those little pieces might be awkward at first, but be patient and it will all go together eventually. You can't get the swivel joints backwards, because only one of them will go in the carrier. Make sure you put the short end of the spring guide in the carrier swivel joint, because if you put the guide in backward the carrier won't work right. Don't ask me how I know that, just take my word for it.

G. Install the carrier catch plunger spring, plunger, and pin, leaving the plunger out when you finish so the pin won't fall out.