

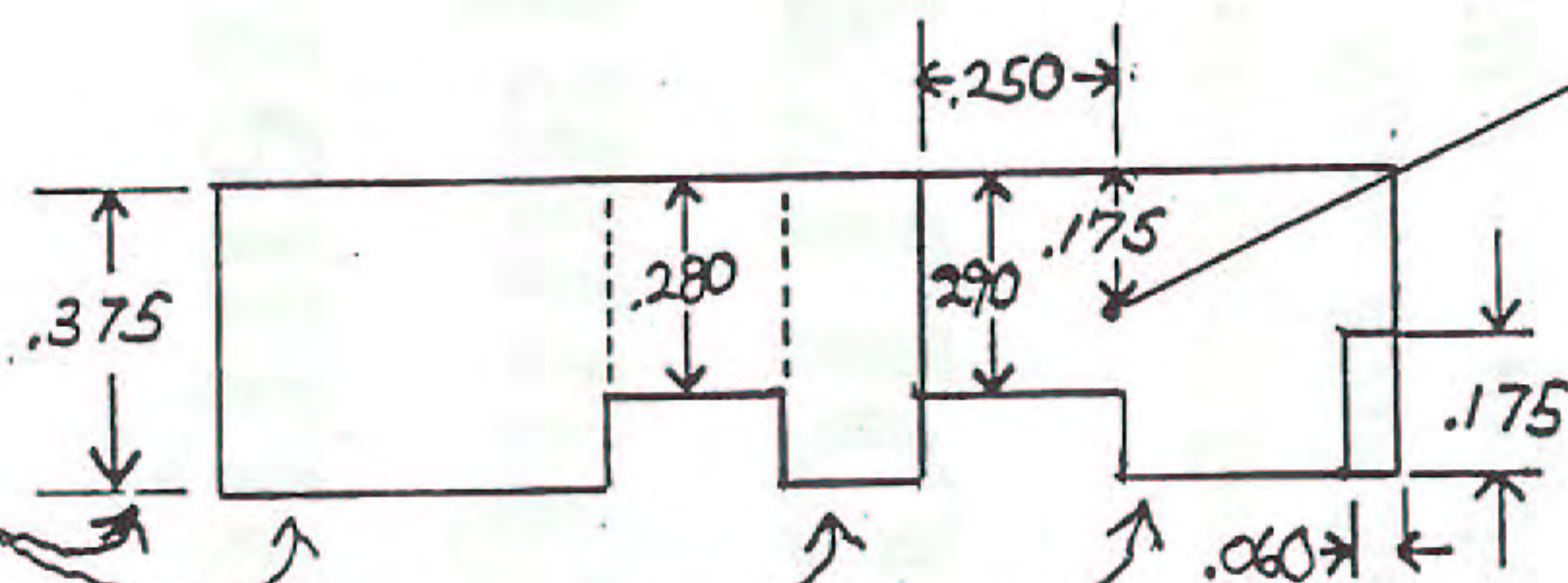
Attention Class 2 Manufacturers: AK-47 "LIGHTNING LINK"

*"A Full-Auto Bolt In and Removaable Full-Auto
Sear For Semi-Auto AK's"*

*The sear will be a registerable machine gun rather
than having to ruin a valuable semi-automatic
gun"*

What you will need to make this is air hardening steel for the sear trip, cold rolled bar stock for the Teel Link and two 6-32 pan-head screws and one 8-32 Allen head screw. The tools you will need include a Veneer caliper, access to a drill press, vice, files, propane torch with MAPP gas or acetylene torch and the skill to tap three holes. Please do not unwrap package until you have purchased it.

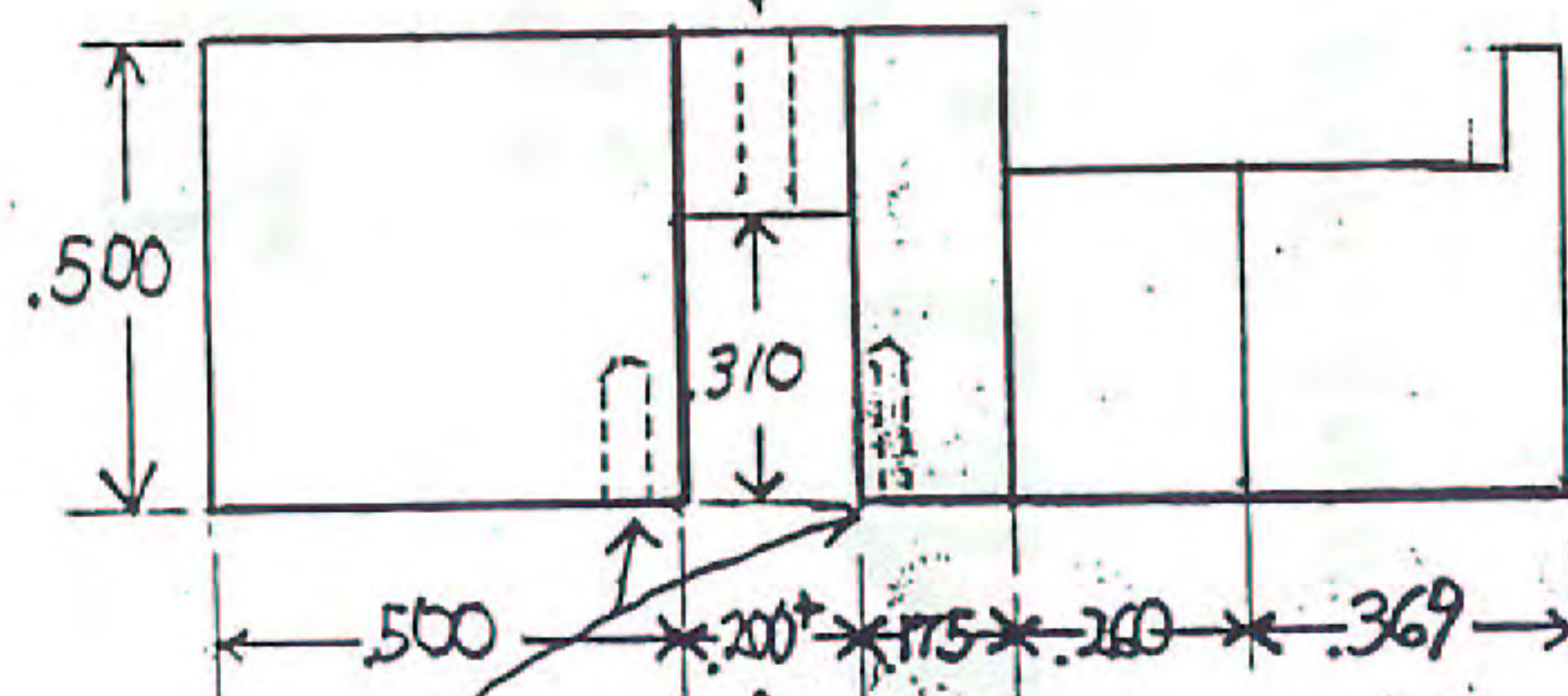
If you tap two 6-32 holes in bottom of Teel Link the .375 dimension will have to be shortened on the right hand side until the safety and Teel Link can be rotated all the way up and over the edge of AK action to put the screws in to hold safety to Teel Link.



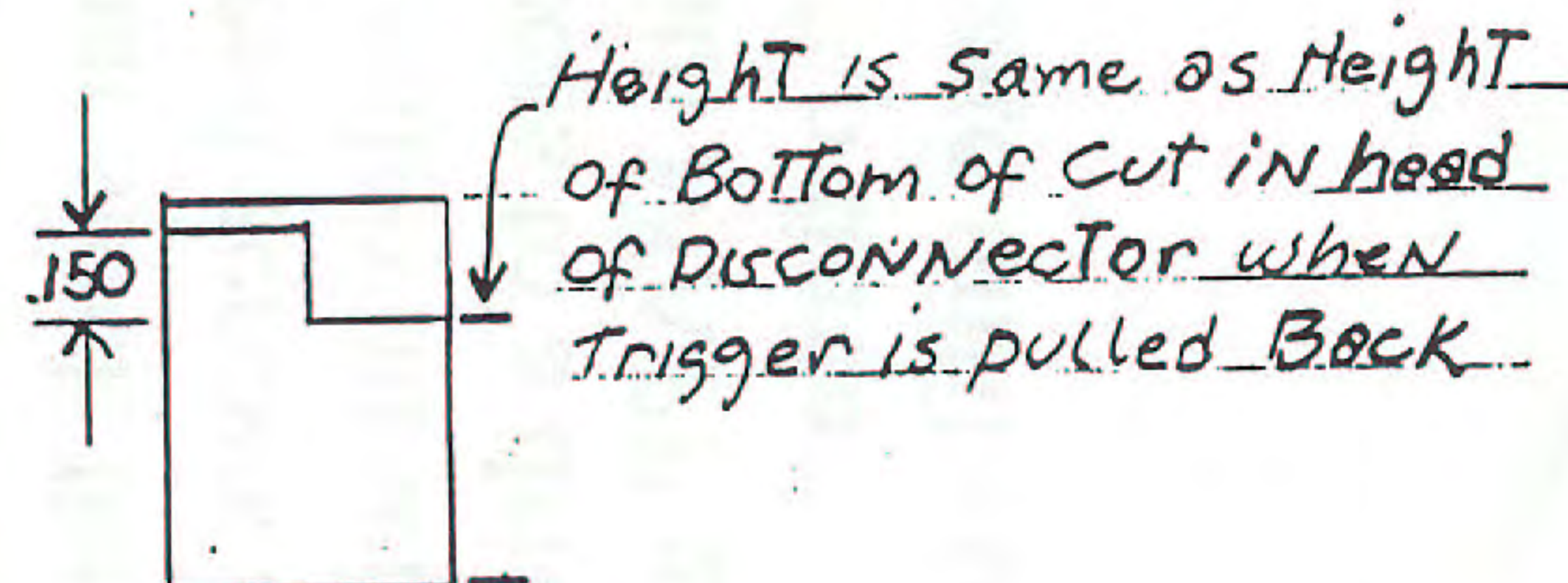
center of Tapped hole 8-32. Do NOT Drill or Tap Through Port - must Be BLIND hole

Or better yet, you will find it easier to tap two 6-32 holes in the bottom of Teel Link on either side of the slot which will hold Teel Link to safety.

Drill hole through center of slot after fitting it To Safety. Tap size hole will Be used as a pilot To Drill into Safety - Then hole in slot will Be redrilled To Take 8-32 or 6-32 PAN head Allen screw That will screw into Safety and hold AK Teel Link To Safety. Hole NOT Shown in Top or end view.



.200+ DIM. will Be 150+ on some AKs



Scale $\frac{1}{2}$ in = 1 in.

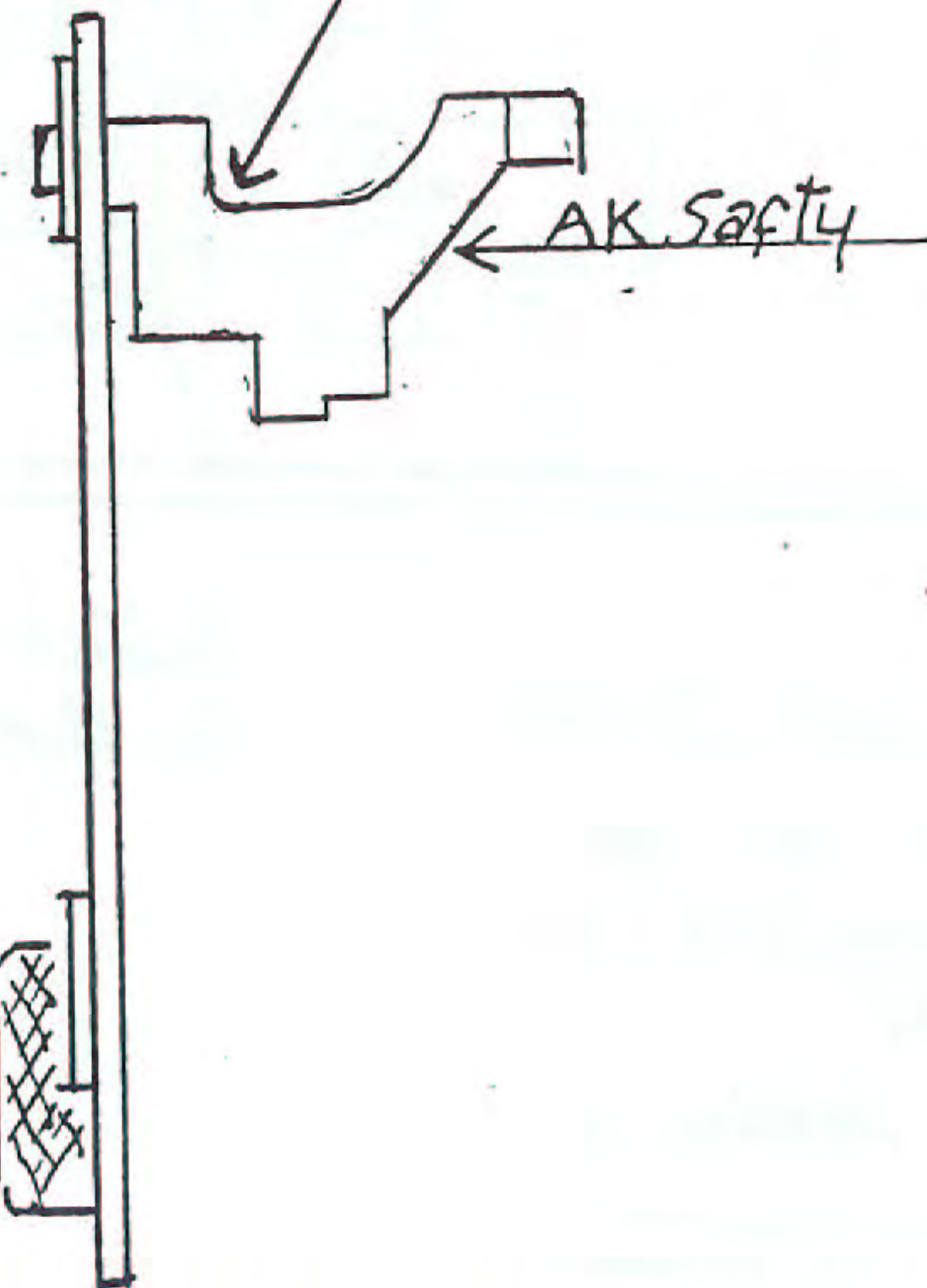
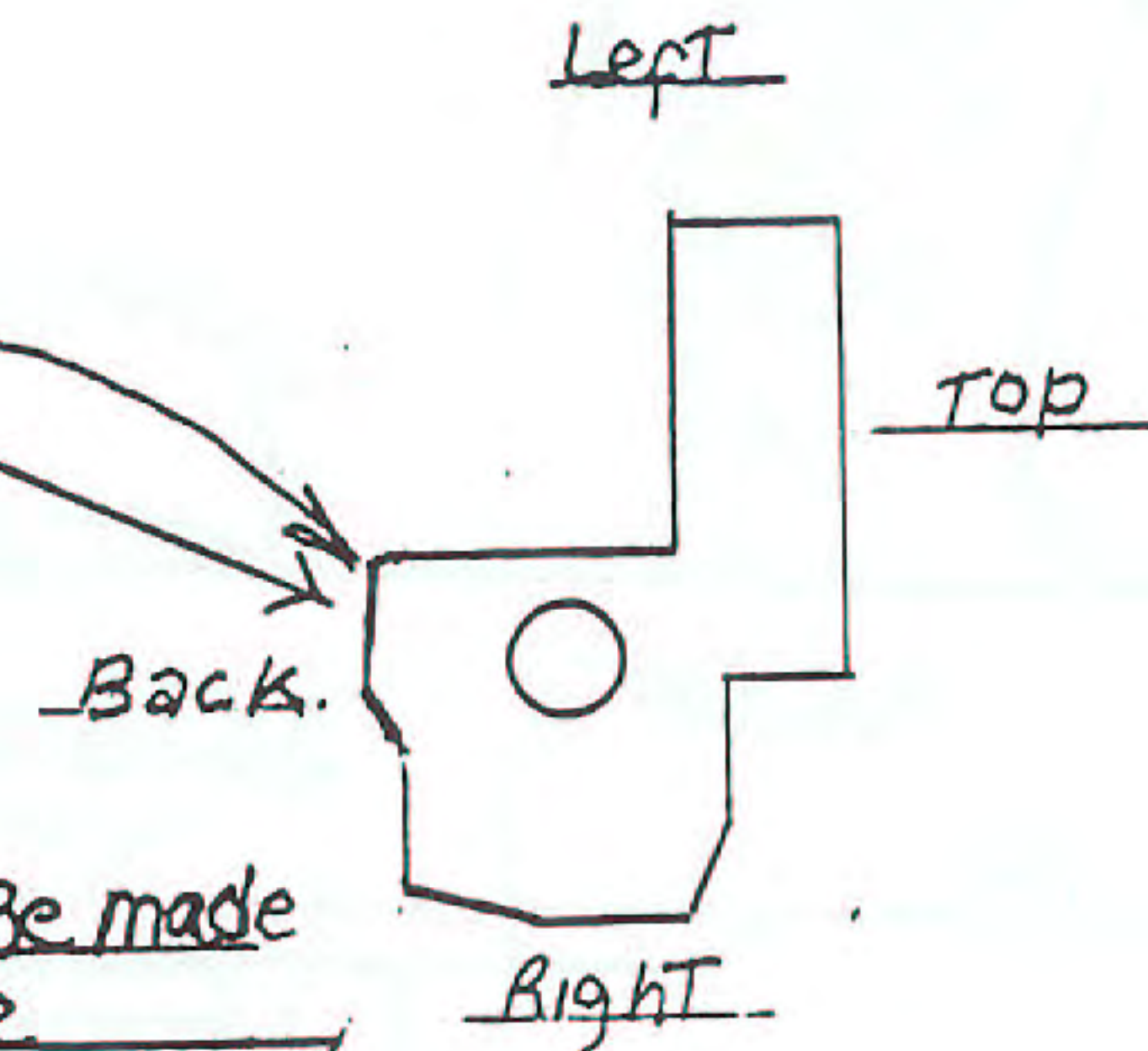
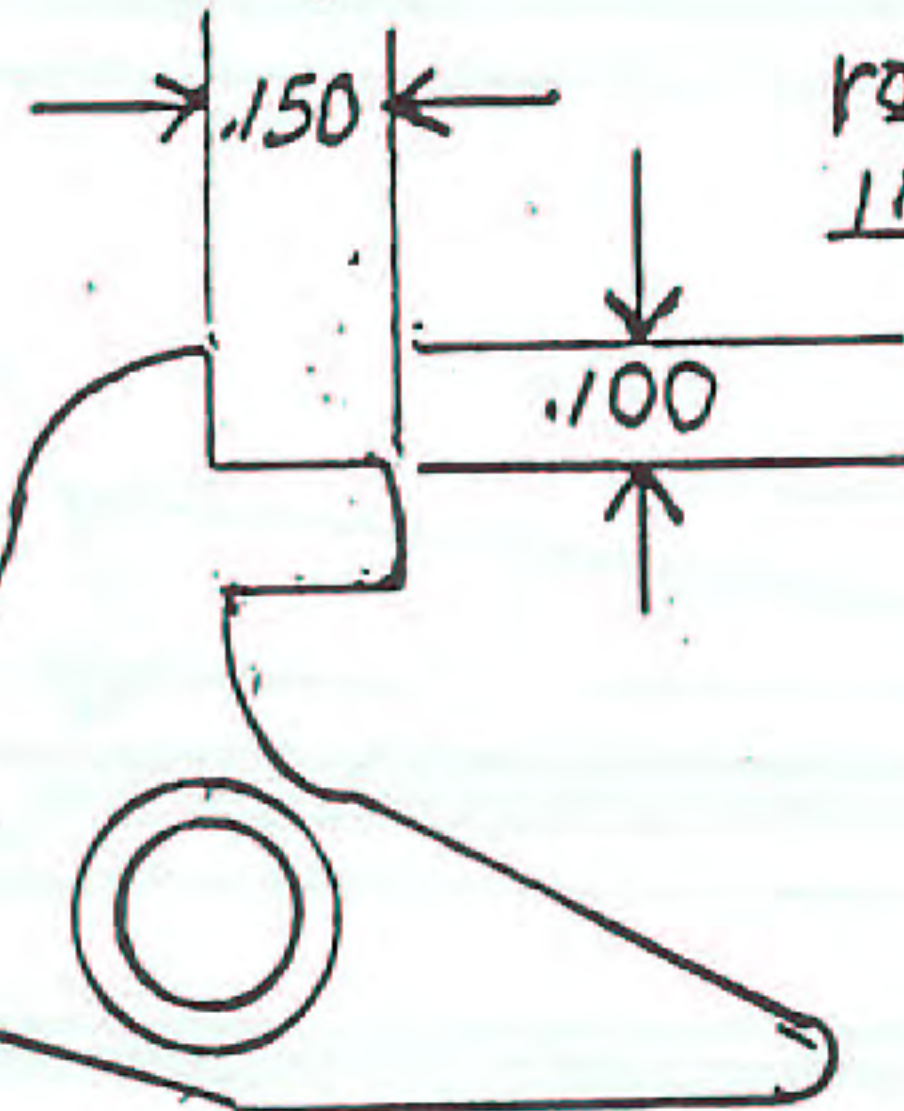
AK Teel Link Body - Read everything Before Starting

sear Trip-NO Dim. MUST Be Ground To fit scale $\frac{1}{2}$ = 1 IN
.090 air hardening STEEL STOCK

DISCONNECTOR - NOTCH cut with carbide
IN mill or with HAND GRINDER

The bottom left
hand side of sear
trip must be hand fit to
edge of Teel Link so that
when trip arm pulls sear trip
forward the back side will directly
bear on the Teel Link. File it ONLY until
sear trip will just release disconnector but cannot move any
further back than that. That way you eliminate the need for a
spring and sear trip will never over ride top of disconnector.

rounded corner must Be made
into a sharp 90° angle

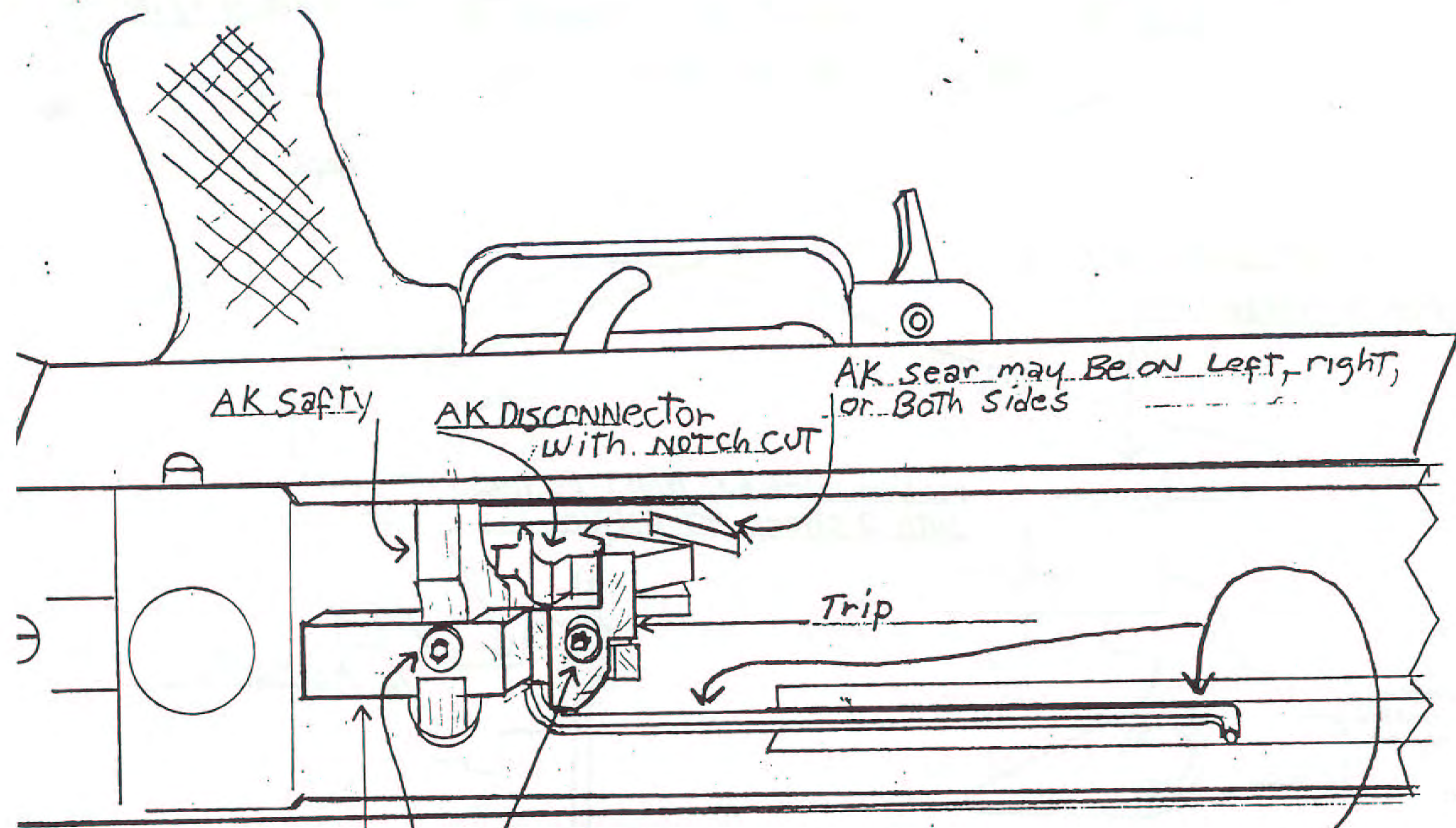


Short Arm

Long arm

$\frac{1}{8}$ IN or $\frac{9}{64}$ IN for AK 74

Trip arm NO Dim. Each MUST Be measured, Bent & Ground To fit.
Scale 1 IN = 1 IN



AK Safety

AK Disconnect
with NOTCH CUT

AK sear may Be on Left, right,
or Both Sides

Trip

8-32 allen Bolt holding Trip
To Body

AK Teel Link Body

8-32 allen pan Head

Bolt holding Body To

AK Safety

See Addendum

Trip arm will Lay in Bottom of right Bolt Body channel.
Bolt Body will ride over it and front of Bolt Body
channel guide will pull Trip when Bolt Body closes
causing DISCONNECT To Be pulled Back and releasing
hammer To fire AK as Long as Trigger is held
Back

AK Top view with cover, spring, & Bolt Body removed (hammer Not Shown)

Teel Link

The AK Link is a reasonable alternative to irreversibly modifying a very valuable semi-automatic AK variant by drilling and slotting the frame; thereby making the whole firearm a registerable machine gun and lowering the value. The drop in sear I call the "Link" becomes the "machine gun" and is a registerable part while your AK continues to be a semi-automatic sellable gun.

Be forewarned: This information is for Class II manufacturers and police use. If you are not either, you may still possess this information, but you may not build this part as the Federal Government considers this part a machine gun. Even if you don't own an AK but you build or possess the part, they will send you to a very unpleasant Federal prison for 10 years, you will be on probation for the rest of your life, they will bankrupt you in the process and you will never again own guns. Don't Be Stupid!

Class II's that own a machine shop and have machining expertise will build the Teel Link in a few hours. However, those of you Class II's that normally contract out your work can still try this project as the minimum tools required are:

- * Venier Caliper
- * Access to a drill press
- * Vice
- * Files
- * Dremel or other hand-grinder
- * Propane torch & a bottle of MAPP® gas

Time required to complete this project for those without a machine shop will be more like *Two Days* or more to build.

So far, I have built the Link on numerous Chinese guns, many Egyptian AK's, a few Valmets and some Romanian guns. On all, the Link needs to be custom fit by hand. Most AK's use similar size parts and you can get most parts to fit (with the exception of bolt heads which you must not switch), but you will still need hand-fitting to get the Link to work properly. The Link could be made to operate semi-auto, but would require a new notch to be cut in the receiver between "safe" and "fire" in order for it to work reliably all the time. This would violate the BATF rule that you cannot modify the receiver and the AK would then have to be registered itself. Most Class II's want to "rock 'n roll" and will just take out the trip-arm if they want semi-auto fire. This is a five second job.

I recommend that you read all the information many times to understand everything and then proceed step-by-step.

Begin by taking your AK apart, push in the square button on the back of the receiver top cover. Pull the top cover off of the receiver. Grab the square button with thumb and forefinger and push it and spring straight forward, then up to disengage from back of bolt carrier. Pull the bolt carrier straight back and up to remove from receiver. Most AK's have a form of spring-steel wire that holds the combination disconnecter, sear pin and hammer pin from coming out. You will see the wire on the bottom of the left-hand side of the action going under the sear pin.

Most AK's have a wire loop that can be used to pull it forward towards the muzzle in order to release the sear pin. Watch how the wire works and be careful not to bend or break the wire.

Push the sear pin out slowly from right to left. When pin is removed from the disconnecter, the disconnecter will "jump out" because it is under spring pressure. You do not need to remove the pin completely from the sear. Swing the safety up and over, then pull out of the right side. You will observe that only a short portion of the safety body is parallel before it tapers to a blunt point. True up this flat section to within 5/1000th of an inch or less with a file so that the

Link body will fit very tightly. As per diagram, file rounded corner in body of safety until it is a sharp 90° angle. Remember, the right hand slot in Link should fit very tightly on the safety on both the side and bottom of the slot. Measure the flat section of the safety and cut bottom and side of Link to that same dimension so that it is a hand-pressed fit. This is the one step that must be done absolutely correctly. The depth of the slot can be between .300 to .320 thousands/inch. Right side cut can be .270 - .290 thousands/inch to still work depending on your firearm.

Now turn the part over. Punch center point in exact center of slot. Drill with tap drill. The tap drill for an 8-32 hole is a #29 (.136) drill bit. The drill size for a 6-32 hole is a #36 (.106) drill bit. (These can be bought in any hardware store.) Debur part and place over safety and put safety in vice. Drill into safety no deeper than .150 thousands/inch. Tap safety with an 8-32 or 6-32 tap, depending upon whether you have a .200+ or a .150+ safety body. Use a regular then a bottoming tap. Keep removing chips and have a very light hand so you will not break the tap. Be sure to use real tap oil. Then, re-drill Teel Link body to accept the pan head bolt.

* See addendum for a better way to hold Link to safety
Spray Dykem blue, or in a pinch use magic marker, on bottom of Link and move the safety up and down until mark appears where twisted sear spring rubs against bottom of link. Remove approximately .050 thousands/inch of metal until safety is all the way down in the fire position without bottom of part rubbing on spring or anything else. Use bandsaw or hacksaw to remove stock. A very thin chainsaw or round file could be used as a touch-up.

Again, put safety and Link back in the AK and remove stock from front of Link until hammer can swing all the way down and not touch front of body. Cut head of disconnecter as per diagram. Easy way is to use a carbide end mill in a milling machine. Hard way is with a hand grinder or Dremel tool. Debur and place disconnecter back in AK. Grind end of pan head screw shank until you have almost full thread in safety and body is held tightly to safety. Before you screw body to safety, coat left side of Link with Dykem blue or magic marker and with safety all the way in down position, pull the trigger all the way back. (You will note that the head of disconnecter rises as well as moving forward when trigger is pulled all the way back). Using a thin sharp instrument (I used a thin sharp wood chisel), move along the bottom of the cut you have made in the disconnecter scratching the left side of Link to tell how much stock you must remove. You can also use a depth-rod on a dial Vernier caliper to find the amount of metal you must remove from top of Link so that top of Link and cut in disconnecter are the same height when the trigger is pulled all the way back. After you have removed stock from top of Link, measure and center punch for a hole you will tap which is 8-32. This will be A Allen head bolt

Drill tap-size hole until drill just begins to dimple bottom of Link, but NOT all the way through. You must have a blind-tapped hole that provides a

solid bottom for the Allen bolt to stop against. Be sure to use bottoming tap after the regular tap. Keep removing chips and use real tap oil.

Take square stock and drill with a #19 bit (.166) a hole in it. This hole should be in center of stock and begin to fit it to top face of Link. Grind or file right side and bottom side of square until you can put Allen bolt through the square stock and screw it slightly into Link without binding. Now grind or file the notch in the top right side of square stock so it will sit all the way down on the face of the Link below the .175/.060 raised portion of front of Link. Remember that the side of notch must butt up against the raised .060 of Link so trip cannot move too far forward.

You can now cut slot for trip arm inside of Link. Grind bottom of threads of 8-32 Allen bolt until there is .010 thousandth/inch clearance between the base of the head of the Allen bolt and the trip when bolt is firmly tightened on trip. Now grind or file front of face of trip until hammer will just clear front face of trip as you push trip forward.

Take bolt carrier and look at the right side. Most will not have the full auto trip hanging below and in back of bolt body channel guide, but some early Chinese, all Egyptian Maadis, some Galils and Valmets will have it. If yours does, it must be ground or milled off, or alternatively, get a Chinese bolt carrier or other inexpensive carrier instead of grinding yours. This is what I do with valuable guns. The bolt body channel guide will ride on top of the trip arm. The thickness of the channel guide will vary. Most will accept 1/8th inch Allen wrench beneath it. But you may need to grind or mill with carbide the bottom of the channel guide on bolt carrier if it is too thick. You must be able to slip an 1/8th inch Allen wrench between bottom of channel guide and bottom of AK channel. I use a short 1/8th inch Allen wrench to check this. The trip arm is made from an 1/8th inch Ace Hardware long Allen wrench. Grind off the handle of the Allen wrench until long arm is similar to diagram. Place long arm of Allen wrench in back of trip after you have ground or filed a notch for it in the back of trip, between side wall of AK and Teel Link. Now attempt to put bolt carrier and bolt in AK. Use Dykem blue or felt tip pen on Allen wrench and take off the high spots that remain on left side of Allen wrench until bolt carrier and bolt will smoothly slide back and forth all the way.

With a pencil, mark the bolt carrier side in the exact spot where the front end of the bolt carrier channel guide is. Place bolt carrier and bolt all the way in AK till it locks up and mark near the top edge of frame 1/16th inch back from your mark you made on the bolt body. Set Allen wrench back in AK behind the trip and mark Allen wrench in the exact spot as the mark you made on the frame. This is where you bend your Allen wrench so it will pull trip when bolt carrier goes all the way forward. This releases the hammer from disconnect and fires weapon as long as trigger is held back. Place Allen wrench in vice so pencil mark is just immediately above the jaws of vice. Using a small tip on an acetylene torch, heat small spot right next to vice jaws bright red. Quickly bend over Allen wrench and tap quickly with small hammer to form a sharp 90° angle. Keep Allen wrench in vice and hold hammer over hot spot until it is cool enough to handle. The part will not need heat treatment if done right. If you must use a propane torch, use a bottle of MAPP gas. I would give the bent end a shot of W-D 40 as it begins to cool to help it become harder again. Remember, W-D 40 will flame up when sprayed on hot metal, so use caution. Last, even a soft arm will last for 10,000 rounds or more. Now grind small end of Allen wrench until it just fits all the way into channel without binding

and again put bolt carrier and bolt back in AK and check that it still works smoothly. Now grind right side of trip and bottom left of trip until left side of trip has 1/16th inch movement backwards; but, right side of trip stops backward movement by butting up against AK receiver sidewall and left bottom of trip butts up against the Teel Link body. Pull trigger all the way back and grind the left rear trip where it meets the cut in disconnecter until it allows disconnecter to ride forward enough to allow hammer to be firmly caught by disconnecter when you push hammer all the way back. Reassemble trip rod, bolt carrier and bolt. Work back and forth while holding trigger all the way back. Continue to remove stock from left back side of trip where it touches cut in disconnecter until hammer drops free of disconnecter and is not caught by sear, but drops all the way forward to hit firing pin without catching on sear when bolt is slammed forward.

Put spring back in bolt carrier and pull back bolt and let it fly forward. Keep removing stock from right bottom of trip until nothing binds and trip will just release disconnecter but will not push bottom left side of trip much further than that and will not go back far enough to pull arm of trip back over the cut in disconnecter. This would jam the AK. Now, heat trip to bright yellow red. Remove heat at once and let it cool. It will now be hard. Don't quench it in oil or water.

Heat in oven on highest Heat 4 to 6 Hrs. To heat treat

I had one Romanian .222 Russian caliber that would occasionally flip trip over the disconnecter and the only way I was able to solve the problem was by finally welding a .100 thousands/inch tab of steel on top of the cut in disconnecter. Crude, but it has worked since. Work action by slamming bolt forward repeatedly many times in both full auto and "semi-auto" mode where you release the trigger, slam bolt home and then pull trigger. This helps work out all the bugs before you shoot it. Also make sure it doesn't bind when you put the safety on.

** See Addendum*

I have found that some AK's will tend to push the selector from the fire position in repeated long bursts of auto fire which will cause AK to fire semi-auto or slip trip over disconnecter jamming AK. The first solution is to slightly bend the safety selector arm so that it presses tighter against the receiver. The second much easier solution is to just hold the selector with either the thumb or forefinger, depending upon which-handed you are, when you fire.

The Link is the result of five years of experimental devices to make a drop-in auto sear for semi-auto AK's.

To reiterate, this is written for Class II manufacturers who have the knowledge and expertise to safely operate and shoot full auto weapons. If you are not a Class II or police that can legally build this device and you attempt to manufacture it anyway, you not only make yourself a criminal, but also a fool as automatic fire by the uninitiated is inherently dangerous and you can hurt or kill yourself or someone else. Don't do it.

For those of you who want to keep valuable AK parts all original, you can buy safeties, disconnectors and bolt carriers from suppliers in Shotgun News and Gun List. So far, I have found only Romanian AK 74 .222 Russian bolt carriers are different, but maybe all AK 74 carriers will prove to not interchange with .30 cal and .223 NATO carriers.

you will Need

- * 3 blueprints
- * Written step-by-step narrative
- * 3+ inch by 1/2 inch by 3/8th inch square stock
- * A square of stock to be manufactured into a trip (Air Hardening Steel) Allen Pan Head Bolts
- * 2 6-32
- * One 8-32 Allen bolt
- *
- * Allen wrench that is long and made by Ace Hardware

SAFETY PRECAUTIONS

All safety precautions must be taken when working with tools. This includes eye and hear protection, no jewelry, ring or watches; all of which might catch when using machinery. All long hair should be tied back. Don't wear long sleeves or loose clothing which might catch in machinery or catch fire.

All safety precautions must be taken when using a torch to prevent fire. You must protect your eyes from the intense light which can cause damage. If you are unsure of any safety procedures necessary before doing the tasks necessary to build a Link, find an expert and ask their advice before starting. Remember that even simple hand tools can cause permanent injury and machine tools, welding & propane torches can, and will, kill or permanently injure you if you use them without proper knowledge before hand.

Addendum To Link Instructions
IMPORTANT
READ THIS FIRST BEFORE STARTING WORK

I have found that people have a great deal of difficulty drilling through a Link and into safety and then tapping the same. It is even worse on thin safeties, like the Romanian. The solution is to drill and tap 2 6-32 holes on either side of the bottom of the slot you cut in the Teel Link that fits over the safety. Drill them in such a way that part of each screw head will bear directly on the bottom of the safety holding it into the slot or if you drill too far from slot, you can also anneal a piece of bandsaw blade. Drill two holes for the screws and fit it to the bridge the slot in the Link to hold Link to safety. This way you don't have to modify the safety on an expensive firearm. What you must do to do it this way is to file or grind the right side of Teel Link until you can rotate the safety and Link all the way up and over the top of the AK so you can now put the screws in the bottom of the Link that will hold it on to the safety.

On AK-74's, at least the Romanian ones, you would need a little larger size Allen wrench, 9/64ths inch rather than the 1/8th inch one used on the AK-47 sear trip. I have found that the 74 bolt carrier does not support the back end of the Allen wrench op rod as the bolt begins to open and the rod will pivot outward and tend to jam against the bolt head causing stoppages. The solution is to weld a 1/8th inch piece of Allen wrench or a round rod on the bolt carrier body on the left hand side as the bolt carrier is turned upside down with the back end towards your body. It will go on the bottom of the rail slot next to the bolt carrier body. You could also drill and tap a 1/8th inch pin as a post in the middle of the bottom of rail slot next to bolt body. The object is to somehow support the back end of the op rod until the bolt head rides over it thereafter holding op rod from flopping around. I have also found that it is easier to use a bandsaw or a good hacksaw to cut slots in the Link instead of using a milling machine to cut the slot. The easy way to cut slots is to coat the Link with Dykon blue or magic marker and using a Veneer calipers to accurately mark where the cuts are to be made. Then I use my \$175 Chinese bandsaw to carefully cut within 10 - 15/ths of the scribed lines and remove metal from the middle of the slot with repeated cuts. Using a file I can hand fit a Teel Link to safety in 15 - 20 minutes. Much quicker than it takes to cut the slot with a Bridgeport, but I am good with a file!

I have also found the secret to not having the sear trip ride over the top of the disconnecter is to fit the bottom left hand corner very tightly to the Link. File it so it will only release the sear, but will not be able to go any further as the Link body will provide a stop for the bottom left hand side of the sear trip. This way you eliminate the need for the sear trip spring entirely and it will also function flawlessly all the time.

You can get long-handled Allen wrenches at Ace Hardware stores along with Allen panhead and Allen head screws. If you can't locate them where you are, there is a wonderful company called: MSC Industrial Supply. You can reach them at 1-800-645-7270. You can also buy air hardening stock from them for the sear.