Goryunov semi auto kit installation guide

General overview

As far as difficulty is concerned; the Goryunov weapon system is an advanced level build, mostly due to the thickness of the receiver. The receiver tends to warp, twist and shrink considerably when welding. Therefore, it is advised that anyone attempting this build should have competent skills and experience with welding and its effects on the base metal.

This document package, in combination with the included components, is intended to provide the competent builder with the parts and information necessary to build a semi automatic SG-43, KGKT or SGMT from a demilitarized, original parts kit. The scope of this guide only covers the procedures necessary for installing the included components. Critical aspects such as receiver construction, denial features, fitting a barrel lock and checking headspace will not be covered. Information pertaining to these details and more can be found on the weaponsguild.com builders forum.

In this guide, we will walk through each step of the process, using the drawings provided as a reference. Each drawing has a [USED ON] column where you will find the model(s) of the Goryunov to which that drawing applies. If you need clarification on a particular step of the process; you can reference the video provided on the product page of our website. Additional assistance can also be found on weaponsguild.com, or by contacting us directly at freedommachineworks.com.

Step 1: Modify the bolt and carrier for semi auto only functionality.

This step must be carried out first in order to verify that the bolt and carrier do not bind in the receiver and also that proper headspace has been achieved. Follow the provided drawings (BOLT MODS) and (BOLT CARRIER MODS). Once complete, follow the “tilt test” procedure outlined in the next paragraph to ensure that your bolt and carrier slide free inside the receiver. If your receiver does not pass the tilt test STOP. You must locate and correct the issue before proceeding.

Tilt test: Remove the belt advancing paw so that it will not create resistance on the carrier. Remove the barrel. If the top cover is installed, remove the belt cartridge stripper so that it will not create resistance on the bolt. Slide the bolt and carrier into the receiver; lift the receiver with one hand placed over each end. Tilting the receiver nose down; the bolt and carrier must slide forward, locking the bolt into the locking shoulder. Tilting the receiver nose up; the carrier must unlock the bolt and both must freely slide to the back of the receiver, stopping against your hand.

Helpful tips: When setting up to drill the bolt; run an indicator up and down the top and side surfaces of the bolt to insure that you are set up parallel to the existing hole. Do not reference the bottom surface of the bolt, it has complex geometry and often is not straight. These bolts are easily work hardened. Therefore, a carbide tipped drill is recommended but not absolutely required. They can often be found on ebay for a reasonable price.

Step 1.5: *KGKT ONLY* (See KGKT page at the end of this guide before proceeding to step 2)

Step 2: Cut slot for the Horseshoe retainer.

The purpose of the horseshoe retainer is to provide the recoil spring with something to compress against when the action cycles. Follow the drawing (HORSESHOE RETAINER DETAIL) for the dimensions of this slot and 8-32 threaded hole for the set screw that locks the retainer in place.

Note: On the SG-43 and KGKT; the front mounting lug is very close to the slot location. The front of the mounting lug can be milled back some to provide additional clearance if necessary.

Important: On all models of the Goryunov; the horseshoe retainer will interfere slightly with the charging handle at the end of its travel. Trim the end of the charging handle where it contacts the horseshoe retainer. This is necessary to ensure that the charging handle will lock into the forward position as originally designed. If the charging handle does not go all the way forward, it will prevent the carrier from locking the bolt into battery, which in turn, opens the possibility of a dangerous OOB (out of battery) discharge. Ensure the charging handle rides free in its track and functions as intended.

Step 3: Trim the gas tube for clearance around the horseshoe retainer.
Follow the drawing (GAS TUBE MODIFICATION) dimensions are not given because they are not critical. Simply remove material until the gas tube and its retaining cross pin can be installed.

STEP 3.5: *KGKT ONLY* (See KGKT page at the end of this guide before proceeding to step 4)

Step 4: Install the gas piston assembly, horseshoe retainer and charging handle. Cycle the action to insure that everything moves free, smooth and nothing binds. Now install the belt advancing pawl, top cover and cartridge stripper; repeat the test again. If everything operates as expected, continue to step 5.

Step 5: Modify the grip frame for use with the new semi auto only fire control group.

Follow the drawing applicable to the model that you are building. This will be either (SG-43 SPADE GRIP MODS pg1-4) or (SGMT GRIP FRAME MODS).

* SGMT: Once the features shown on the drawing have been cut to allow clearance for the fcg cartridge; clamp the fcg cartridge into the grip frame with a C-clamp. By hand, drill the (2) 5mm holes through the fcg cartridge that were used to hold the original fire control solenoid in place. Drill half way from either side, through the grip frame and into the fcg cartridge using a 3/16” drill bit. Next, run a #9 (0.196”) drill bit through the holes, drilling from one side only in order to open them up to the final size. These holes were not drilled straight, or in a precise and repeating location from the factory when the guns were originally built. Therefore, they must be drilled by hand to match the original hole locations on each gun to ensure a proper fit.

Step 6: Thumb trigger modifications.

SG-43 & KGKT: weld the link anchor to the backside of the thumb trigger, approx 1/32” - 1/16” below the bent safety tab. This small gap will provide a little extra space for the safety bar to engage the tab. (see SG-43 spade grip section view and SG-43 trigger pic for more details)
SGMT: Follow the drawing (THUMB TRIGGER MODS)

Step 7: FCG assembly.

SG-43 / KGKT; assemble the fire control group into the spade grip housing, including the guide rod.
SGMT; assemble the fire control group into the FCG cartridge, including the guide rod.

Refer to the attached exploded views and section views for your respective model.

Step 8: Fitting and timing the fire control group.

The end of the sear that engages with the disconnector is intentionally left approx. 0.015” oversize. This is done to provide the builder with a margin of safety for tolerance when milling and drilling the various features from the previous steps.
In this step; we will file back the extra material, removing a small amount in multiple rounds and checking the trigger function between each round of filing. Before we begin, you will want to assemble the gun completely so that a function check can be preformed.

[SGMT: The grip frame will need to be installed before inserting the fcg cartridge. The grip frame will remain attached to the receiver throughout this step. The cartridge assembly will be installed and removed between rounds of filing on the sear. The cartridge assembly needs to be fully pinned in place with both pins each time the trigger function is tested.]

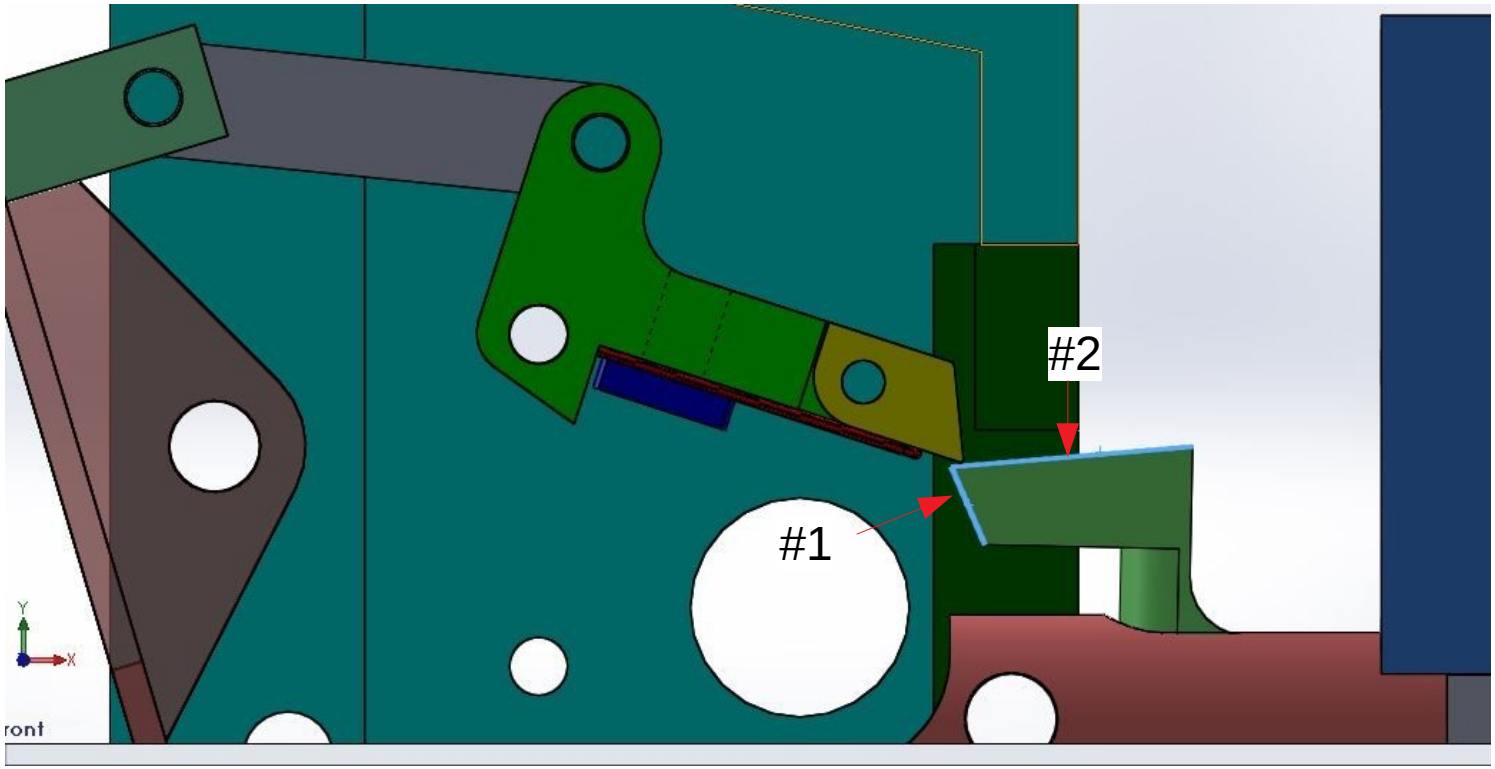
We will approach this step in 3 different stages;
1.) Confirm that the disconnector and sear function without binding, sticking or dragging.
2.) Confirm that the sear releases the striker.
3.) Filing the end of the sear until the disconnector releases it to reset at the proper time.

1.) With the entire gun assembled; press the thumb trigger and release it a few times, running it through its entire range of travel. It should feel smooth with an equal amount of resistance throughout its full range. The trigger should also snap back to the resting position when released. At this point, you should **not** hear any *click* from the disconnector releasing the sear – although if you do, it is not necessarily a concern.

2.) Next, cycle the charging handle to cock the striker and press the trigger again – the sear should release the striker. If the striker is not released; file a small radius on the corners of the sear tab that holds the striker back – 3/32” to 1/16” radius on each corner should be plenty. Cycle the charging handle, press the trigger and confirm that it does release the sear.

3.) Remove the fcg with guide rod attached and file the surface labeled #1 on the sear. Our goal here is to move back the edge between surface #1 and #2 until the disconnector releases the sear near the end of the trigger's travel. Remove enough material to move the edge back about 0.003". Reassemble and press the trigger. If the trigger bottoms out and you do not hear a click from the disconnector releasing the sear; repeat this process until it does. See the video referenced on page 1 for more details.

Next, cycle the action to cock the striker and you should observe this series of events: press the trigger slowly > striker releases > continue pressing trigger, approaching the end of travel > disconnector releases the sear > continue pressing trigger > trigger bottoms out > release trigger slowly > disconnector resets above the sear > continue releasing > trigger rests against the stop pin ready to cycle again.



Corrective actions allowable for step 8:
1.) If too much material is removed; the disconnector may release the sear before the striker is released. If this happens, as long as the timing of these two events is close together: you can file a small amount from the top of the sear tab that catches the striker, thus releasing the striker earlier in the trigger's travel.

2.) If entirely too much material is removed from the end of the sear so that the disconnector cannot reach the sear to depress it; a small amount of weld can be deposited on the end of the sear to build it back up before filing again.

Step 9: Safety bar relocation *Applicable to SG43 and KGKT only*
The safety bar will need to be moved up in order to engage the thumb trigger without causing interference with the new trigger link. The safety bar will also need to be modified by removing material behind the pivot pin hole and grinding a radius on it to provide clearance. The images on the next page show the new location of the safety bar as well as the modified safety bar itself.

New safety bar mounting location

Modified safety bar installed

Modified safety bar

Step 10: Preparation for test firing and helpful tips.

1.) Insure that the gas block on the barrel is set to the number 1 setting.
Anything higher than setting #1 will – at minimum - cause damage to the locking surface on the back of the bolt.

2.)Lubricate everything liberally; I use CLP in a can and spray everything down until it is dripping out of the bottom of the receiver. It will not always need that much oil, but it is helpful for the break-in process.

3.) Avoid commercial ammo. With some commercial ammo; these guns tend to strip cartridges from the belt hard enough to pull the bullet out of the case and spill powder down inside the receiver. This might be improved by loosening up the belt but I have not tried it to confirm this.

4.) Leave the locking shoulder dust cover off for the first few outings. This will give you a quick and easy reference that you can look at to be 100% sure the bolt is locked up after charging the weapon.

5.) If you get case separations, it is almost always because headspace is too large. (per the Russian SGM armorer's manual)

6.) After 10 rounds; disassemble and inspect the components for wear – particularly the bolt locking surface. Check for gulling or mushroomed edges.

The armorers manuals for the SG-43 and SGM are available for download through various sources online. I will eventually add a downloads tab on our site and list them there as well. These manuals are quite useful but somewhat difficult to translate. The best, and most accurate method I have found is through an android app called Yandex. You can take screenshots of the page and Yandex will translate the text on the photo. DeepL is another decent translation app. It often helps to translate the text through multiple apps and compare the translations.

This concludes the installation guide for the Goryunov semi auto system.

KGKT specific information

Studying the single KGKT parts kit we have available; There is evidence to indicate that the KGKT guns were actually built from a random variety of original SG-43 components, modified by the Hungarians in order to streamline the assembly process. The KGKT ‘quick release’ barrel pin is not merely to facilitate easier barrel changes; it was actually part of a solution to eliminate a considerable amount of time in hand fitting components for each and every gun.

One aspect of European military arms that all collectors know to look for is matching serial numbers. These numbers are on nearly every piece of a Goryunov, either stamped or scribed with an electro-pencil. This was due, at least in part, to the fact that nearly every piece had to be hand fitted to each gun. The Russian armors manuals contain a procedure for replacing all of the major components; almost all of which must be filed, stoned, sanded, or otherwise hand worked by an experienced armorer before the weapon can be sent back into service. Out of all of these components, the bolt and barrel lock are the most critical and time consuming.

If the Hungarians were in fact ‘gifted’ a considerable amount of surplus SG-43 parts from “the motherland” as I suspect; they indeed came up with a clever, simple and very efficient way to build to guns out of them, completely eliminating the need to fit barrel locks or bolts to each gun.

Based on measurements taken from SG-43, KGKT and SGMT components, this is what we found;
1.) The KGKT has a 1/8” deep step cut into the front of the receiver, allowing the barrel to sit further back into the receiver.
2.) The SG-43 barrel has a small step, roughly 1/16” deep, cut around the breach face to provide clearance for the bolt when it tilts into the locking sholder. This step was removed from KGKT barrels. Instead, the Hungarian's did what any rational team of engineers would have done… they cut the bolt face at an angle so that it becomes parallel to the breach face when the bolt is locked in battery.
3.) The KGKT bolt is 1/16” shorter in the back than an SG-43 or SGMT bolt.
4.) The KGKT gas piston is 1/8” shorter than that of a SG-43 or SGMT, to accommodate the barrel being set back 1/8”.

By implementing these changes, they were able to remove a considerable number of man hours from the build process; moving all of the “hand fitting” to the barrel pin, a single feature that could be easily cut in a jig by even the most inexperienced operator. On the next page, we will cover what this means to you.

KGKT specific information cont.

Step 1.5: Since the KGKT bolt is shorter in the back than an SG-43 bolt; the tail of the firing pin will need to be cut down so that it protrudes 0.065”-0.085” out from the back of the bolt when the firing pin is fully retracted.

Step 3.5: Since the KGKT piston is shorter in the front than an SG-43; The top of the piston will need to be cut down to match the over all length of the original KGKT piston from your parts kit. This can be done on either a mill or a lathe. The piston can be held without disassembly by compressing the recoil spring to get it out of the way and clamping on the piston body directly.

If the piston must be disassembled; the piston end can be removed by placing the shank of a 1/4” drill bit into the slot of the piston end and closing a crescent wrench against the drill and piston end body to keep the drill in place. Using vise-grips to hold back the recoil spring; heat the piston body near the end to soften the red loctite securing the threads of the piston end. With one hand on the crescent wrench and the other on the drill bit, rotate counter clockwise to unscrew the piston end. Reapply red loctite and reassemble in reverse order after modification has been completed.

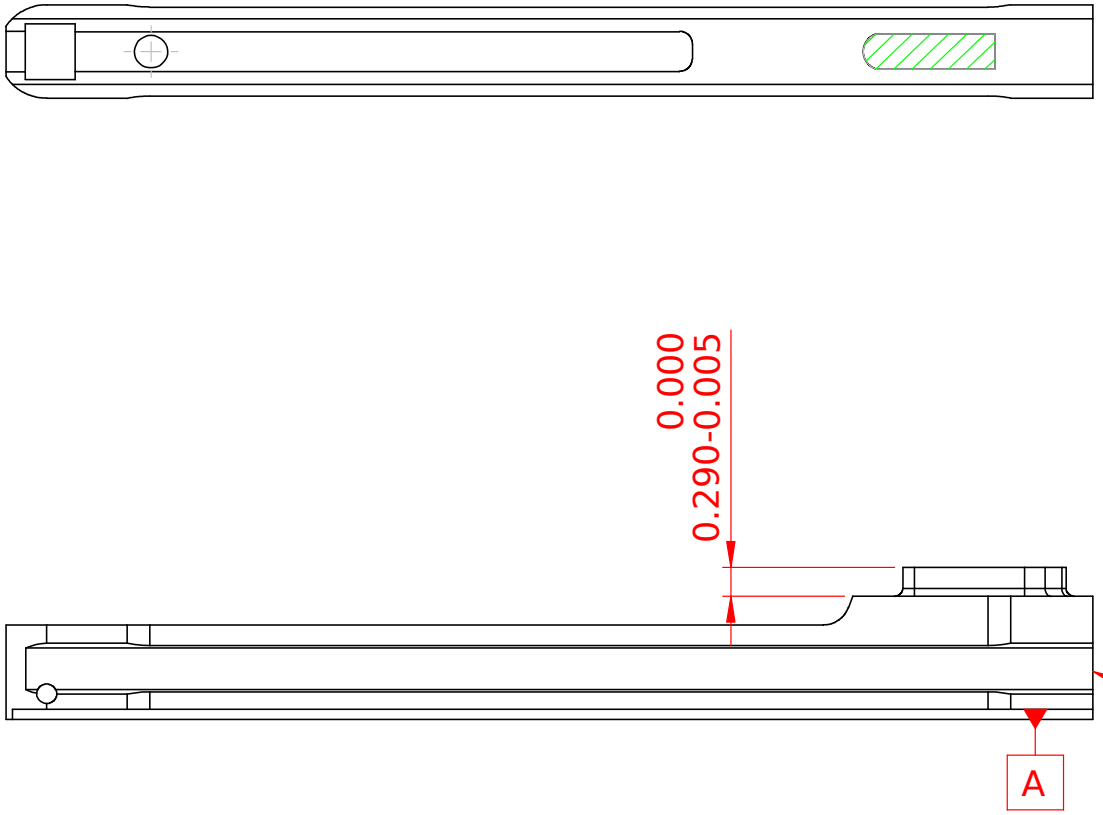
Additional information: Since the KGKT is a coaxial gun, not intended to be fired from anything other than its vehicle mount, it does not have spade grips or a thumb trigger and safety bar like the SG-43. However, the solenoid adapter - held into the receiver by the takedown pin – is nearly identical to the SG-43 and therefore, our fire control group will fit and function exactly the same. Building a KGKT using this semi auto parts set will require the builder to purchase or make the following parts:

1.) SG-43 Thumb trigger
2.) SG-43 Safety bar
3.) Spade grips to bolt or weld onto the KGKT solenoid adapter.

NOTES:
1.) CUT A PIECE OF STEEL TO MATCH THE GREEN CROSS HATCHED AREA AND WELD IN PLACE. MILL OR GRIND FLUSH TO FINISH.

2.) MILL THE BOLT GUIDE BOSS AS SHOWN TO ALLOW CLEARANCE FOR THE FIRING PIN.

3.) THE BACK OF THE BOLT CARRIER NEEDS TO BE PERPENDICULAR TO THE SURFACES THAT RIDES ON THE RECEIVER RAILS. MILL THE BACK OF THE CARRIER, REMOVING JUST ENOUGH MATERIAL TO OBTAIN FULL CLEAN UP.



	SG-43	UNLESS OTHERWISE SPECIFIED:		NAME	DATE
	KGKT	DIMENSIONS ARE IN INCHES TOLERANCES: TWO PLACE DECIMAL ±0.01 THREE PLACE DECIMAL±0.005	DRAWN	J.E.	4-12-24
	SGMT		CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

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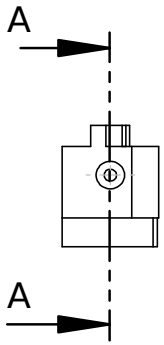
TITLE:

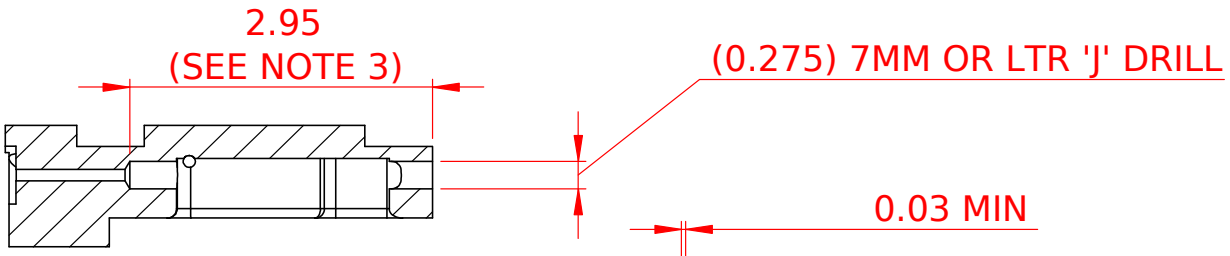
BOLT CARRIER MODS

SIZE	DWG. NO.	REV
A		

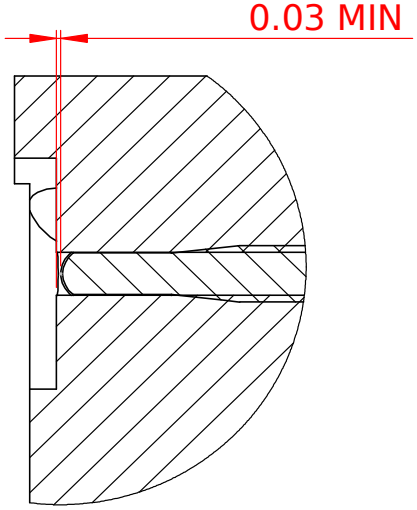
SCALE: 2:1 | WEIGHT: | SHEET 1 OF 1

5 4 3 2 1

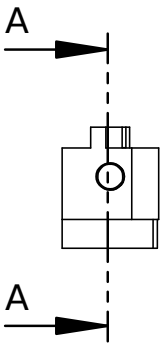


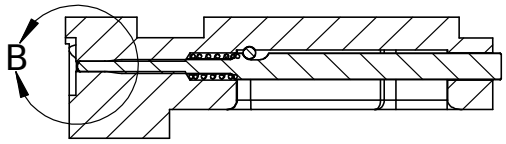


SECTION A-A



DETAIL B
SCALE 2 : 1



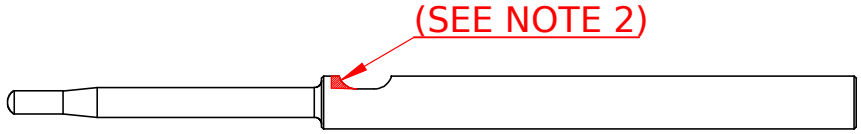


SECTION A-A
(FIRING PIN INSTALLED)

NOTES:
1.) WHEN FULLY RETRACTED, THE FIRING PIN TIP MUST BE RECESSESSED BELOW THE FACE OF THE CARTRIDGE POCKET A MINIMUM OF 0.030".

2.) IF FIRING PIN IS NOT RECESSED A MIN OF 0.03"; FILE EDGE OF THE SLOT SHOWN IN RED. THIS WILL ALLOW THE FIRING PIN TO SIT BACK FURTHER WHEN RESTING AGAINST THE CROSS PIN.

3.) WHEN DRILLING A KGKT BOLT, THIS DIMENSION IS 2.89" SEE KGKT PAGE IN THE INSTRUCTION GUIDE FOR MORE INFO.



	SG-43	UNLESS OTHERWISE SPECIFIED:		NAME	DATE
	KGKT	DIMENSIONS ARE IN INCHES TOLERANCES: TWO PLACE DECIMAL ±0.01 THREE PLACE DECIMAL±0.005	DRAWN	J.E.	05/24/24
	SGMT		CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

FREEDOM MACHINE WORKS LLC

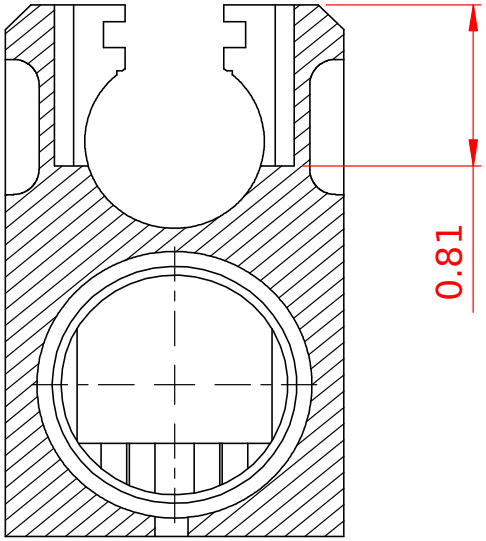
TITLE:

BOLT MODS

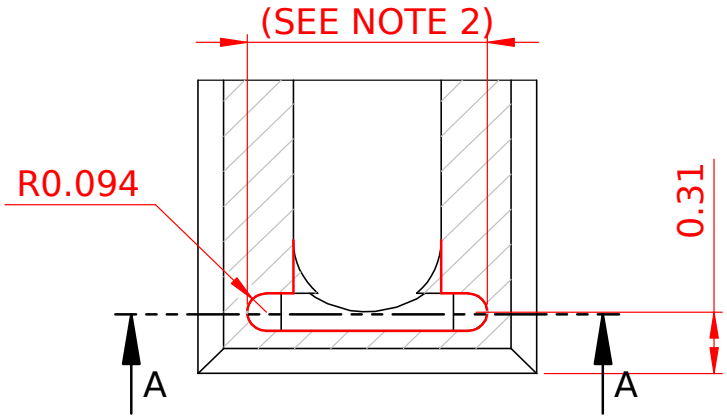
SIZE	DWG. NO.	REV
A		-

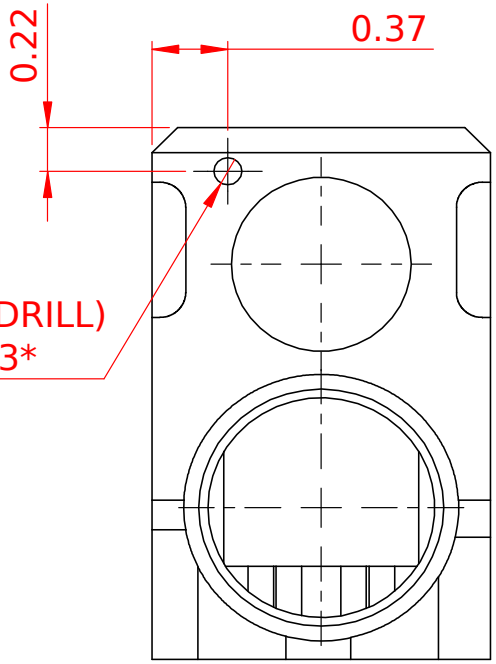
SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1

5 4 3 2 1



SECTION A-A





NOTES:
1.) CUT THE SLOT USING A 3/16" 4 FLUTE END MILL WITH A 3/4" LENGTH OF CUT. WHEN THE SLOT REACHES .75" DEEP; REMOVE THE END MILL AND CAREFULLY CLEARANCE A PORTION OF THE SHANK DIRECTLY ABOVE THE CUTTING FLUTES AND APPROX 1/16" IN LENGTH. THIS WILL ALLOW THE TOOL TO CUT DEEPER WITHOUT RUBBING.

2.) MEASURE THE LENGTH OF YOUR RETAINER AND CUT THIS DIMENSION TO A CLEARANCE FIT OF [RETAINER LENGTH +0.015"]

3.) AFTER DRILLING HOLE, AND PRIOR TO TAPPING; INSTALL HORSESHOE RETAINER AND DRILL A DIMPLE INTO IT THRU THE PREVIOUSLY ESTABLISHED HOLE USING THE SAME #29 DRILL. THIS WILL ALLOW THE SET SCREW TO LOCK THE RETAINER IN PLACE.

	SG43	UNLESS OTHERWISE SPECIFIED:		NAME	DATE
	KGKT	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/32 TWO PLACE DECIMAL ±0.010 THREE PLACE DECIMAL±0.005	DRAWN	J.E.	12/06/23
	SGMT		CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

FREEDOM MACHINE WORKS LLC

TITLE:

HORSESHOE RETAINER DETAIL

SIZE	DWG. NO.	REV
A		-

SCALE: 1:1 | WEIGHT: | SHEET 1 OF 1

5 4 3 2 1

NOTES:
1.) MILL A NOTCH IN THE GAS TUBE AS SHOWN IN RED TO PROVIDE CLEARANCE FOR THE HORSESHOE RETAINER.

	SG-43	UNLESS OTHERWISE SPECIFIED:		NAME	DATE
	KGKT		DRAWN	J.E.	05/24/24
	SGMT		CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

FREEDOM MACHINE WORKS LLC

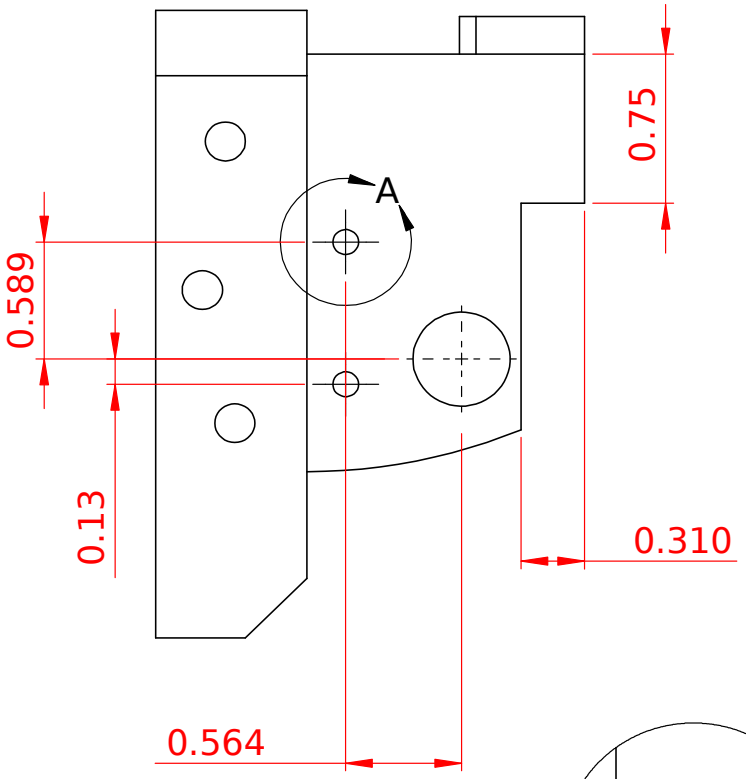
TITLE:

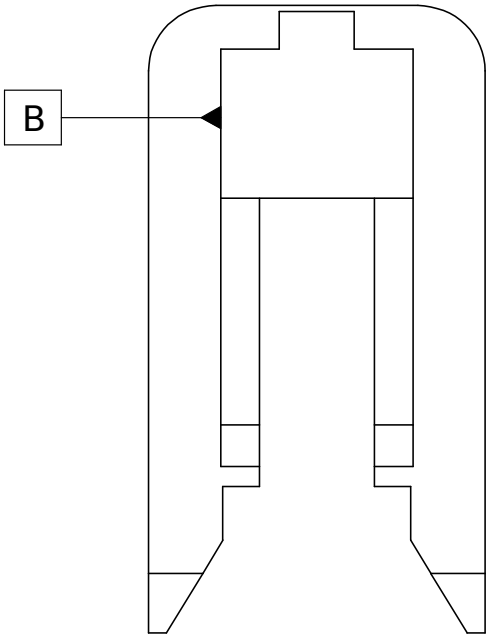
GAS TUBE MODIFICATION

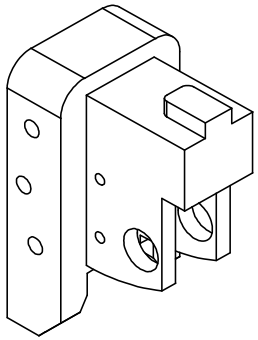
SIZE	DWG. NO.	REV
A		-

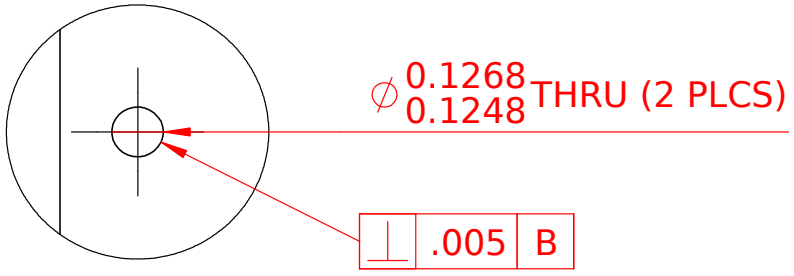
SCALE: 1:1 | WEIGHT: | SHEET 1 OF 1

5 4 3 2 1









DETAIL A
SCALE 2 : 1

	SG-43	UNLESS OTHERWISE SPECIFIED:		NAME	DATE
	KGKT	DIMENSIONS ARE IN INCHES TOLERANCES: TWO PLACE DECIMAL ±0.01 THREE PLACE DECIMAL±0.005	DRAWN	J.E.	05/29/21
			CHECKED	S.S.	06/03/21
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5	Q.A.		
		MATERIAL	COMMENTS: CHANGED HOLE LOCATIONS TO ACCOMADATE OTHER REVISED COMPONENTS. J.E. 02/06/2024		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

FREEDOM MACHINE WORKS LLC

TITLE:

SG-43
SPADE GRIP MODS

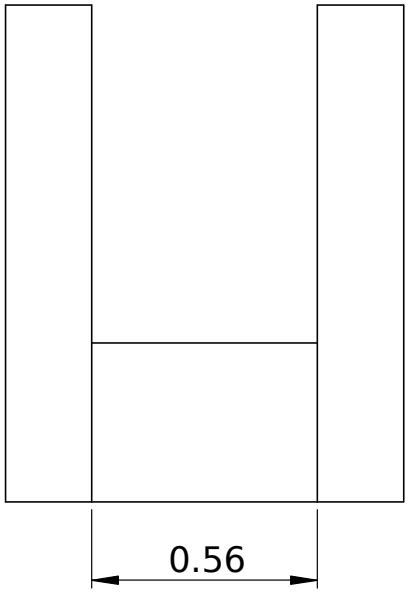
SIZE	DWG. NO.	REV
A	SG-400	4

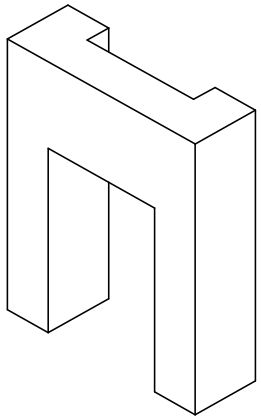
SCALE: 1:2	WEIGHT:	SHEET 1 OF 5

5 4 3 2 1

NOTES:
1.) MILL A STEP INTO ONE SIDE OF THE WELD TAB TO ALLOW CLEARANCE FOR THE DISCONNECTOR.

2.) REMOVE LASER SCALE FROM THE EDGES OF THE TAB BEFORE WELDING OR DRILLING THE NEW GUIDE ROD HOLE LOCATION.





	SG-43	UNLESS OTHERWISE SPECIFIED:		NAME	DATE
	KGKT	DIMENSIONS ARE IN INCHES TOLERANCES: TWO PLACE DECIMAL ±0.015 THREE PLACE DECIMAL±0.005	DRAWN	J.E.	05/24/24
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL HRS	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

FREEDOM MACHINE WORKS LLC

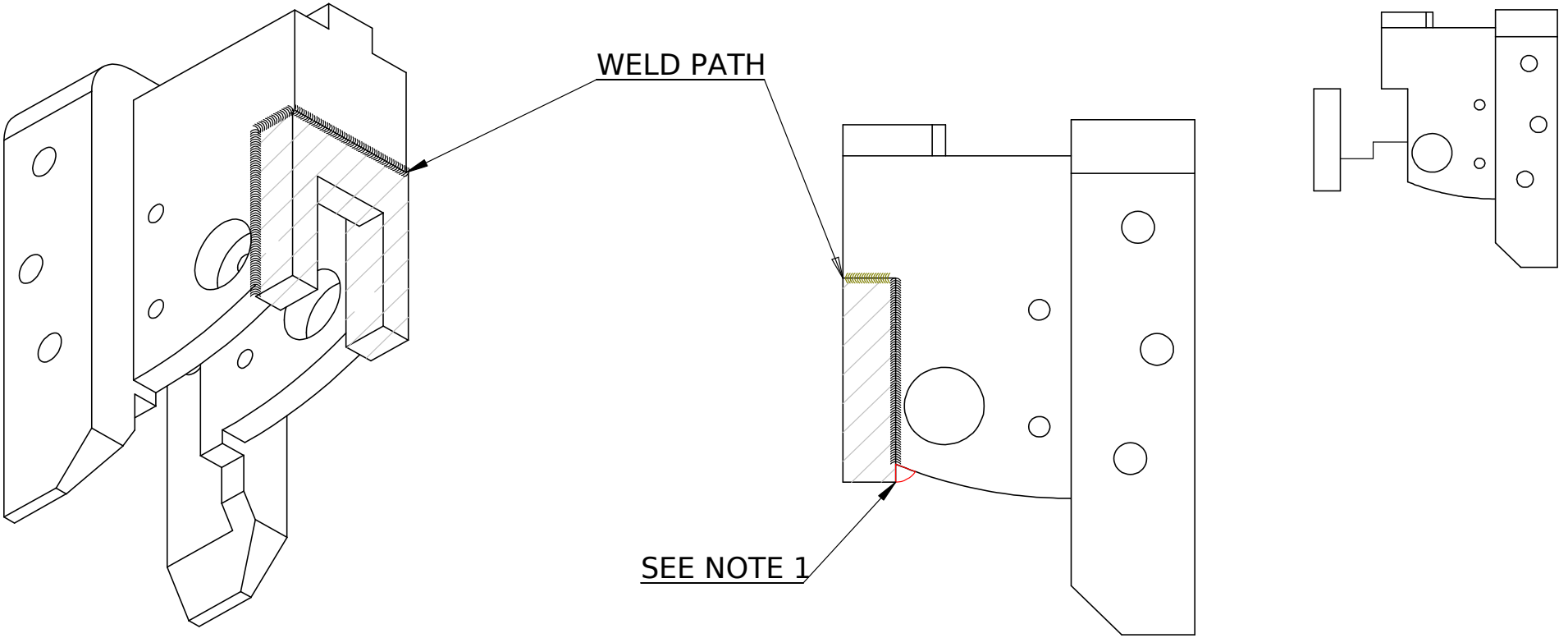
TITLE:

SG-43
SPADE GRIP MODS

SIZE	DWG. NO.	REV
A	SG-400	4

SCALE: 1:2 | WEIGHT: | SHEET 2 OF 5

5 4 3 2 1



NOTES:
1.)ADD ADDITIONAL WELD AS SHOWN IN RED AND FILE/GRIND TO BLEND THIS AREA AFTER DRILLING HOLE (SEE SHEET 3)
2.)NOTCH CUT INTO THE WELD TAB FACES IN, TOWARD THE DISCONNECTOR.
3.) GRIND THE EDGES OF THE WELD TAB TO REMOVE LASER CUT SCALE BEFORE WELDING.
4.) TO AVOID DISTORTION, DO NOT WELD AREA DIRECTLY INFRONT OF TAKEDOWN PIN HOLE.
5.) FILE/GRIND TO BLEND ALL WELDS UNLESS OTHERWISE SPECIFIED.

	SG-43	UNLESS OTHERWISE SPECIFIED:		NAME	DATE
	KGKT	DIMENSIONS ARE IN INCHES TOLERANCES: TWO PLACE DECIMAL ±0.01 THREE PLACE DECIMAL ±0.005	DRAWN	J.E.	4/9/24
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

FREEDOM MACHINE WORKS LLC

TITLE:

SG-43
SPADE GRIP MODS

SIZE	DWG. NO.	REV
A	SG-400	4

SCALE: 1:1 | WEIGHT: | SHEET 3 OF 5

5 4 3 2 1

HOLE LOCATIONS:
RED: 1/8" X 1-5/8"DOWEL PIN. TRIM TO LENGTH, FLUSH WITH SIDES OF SPADE GRIP HOUSING. DISCONNECTOR PIVOT PIN

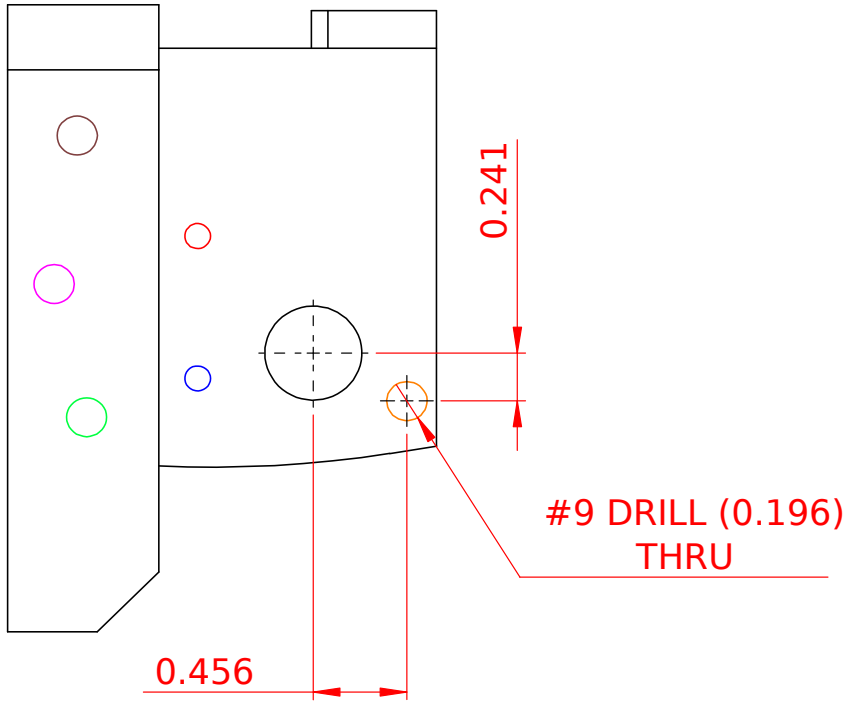
BLUE: 1/8" X 1"SPRING PIN. TRIM TO LENGTH, FLUSH WITH SIDES OF SPADE GRIP HOUSING. ACTS AS A STOP FOR THE LEGS OF THE TRIGGER RETURN SPRING (AR15 HAMMER SPRING)

GREEN: PIN THAT THE THUMB TRIGGER STOPS AGAINST.

PURPLE: PIVOT PIN FOR THE THUMB TRIGGER.

BROWN: ORIGINAL HOLE LOCATION FOR THE SAFETY. (NOT USED)

ORANGE: 5MM SPRING PIN. TRIM TO LENGTH, FLUSH WITH SIDES OF SPADE GRIP HOUSING. GUIDE ROD MOUNTING PIN.



	SG-43
	KGKT
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
TWO PLACE DECIMAL ±0.01
THREE PLACE DECIMAL ±0.005
INTERPRET GEOMETRIC TOLERANCING PER:
MATERIAL
FINISH
DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	J.E.	4/9/24
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

FREEDOM MACHINE WORKS LLC

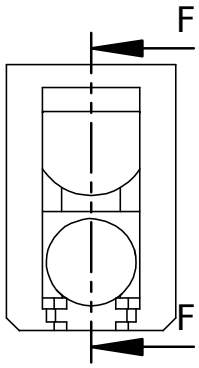
TITLE:

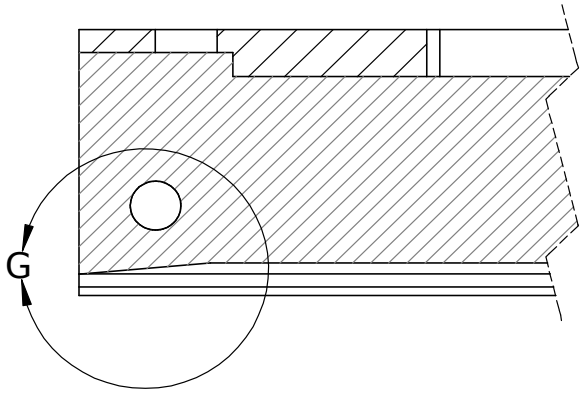
SG-43
SPADE GRIP MODS

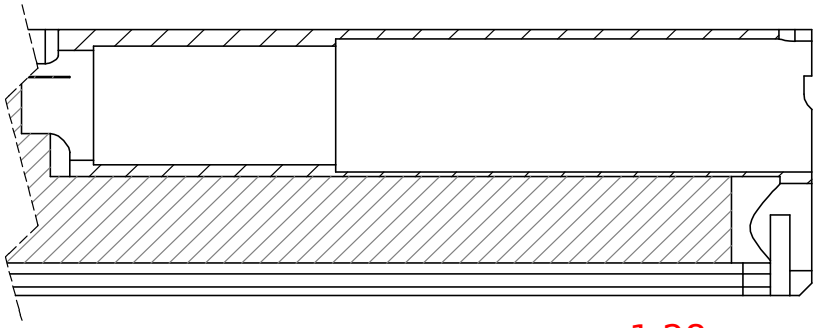
SIZE	DWG. NO.	REV
A	SG-400	4

SCALE: 1:1 | WEIGHT: | SHEET 4 OF 5

5 4 3 2 1

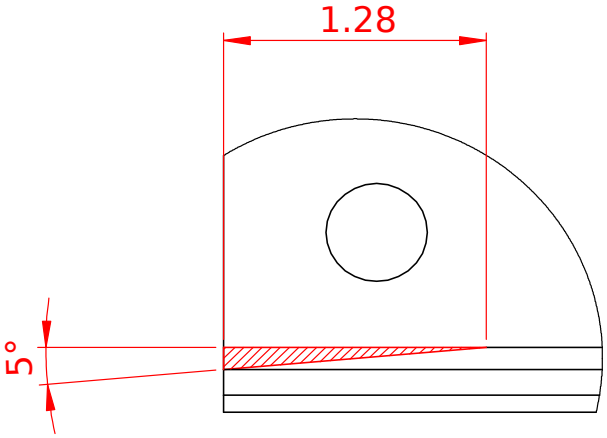






SECTION F-F

NOTES:
1.) AFTER MODIFYING THE GRIP FRAME, TRIM THE PORTION OF THE RECEIVER RAILS SHOWN IN RED. THIS IS REQUIRED SO THAT THE MODIFIED GRIP FRAME WILL CLEAR THE RAILS WHEN ROCKING INTO POSITION, FOR INSTALLATION OF THE TAKE DOWN PIN.
2.) THIS WORK CAN BE COMPLETED WITH A FILE, SMALL ROTARY GRINDER, OR ON A MILLING MACHINE USING A KEY SEAT CUTTER.
3.) DIMENSIONS SHOWN ARE APPROXIMATE.



DETAIL G
SCALE 1 : 1

	SG-43	UNLESS OTHERWISE SPECIFIED:		NAME	DATE
	KGKT	DIMENSIONS ARE IN INCHES	DRAWN	J.E.	05/24/24
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

FREEDOM MACHINE WORKS LLC

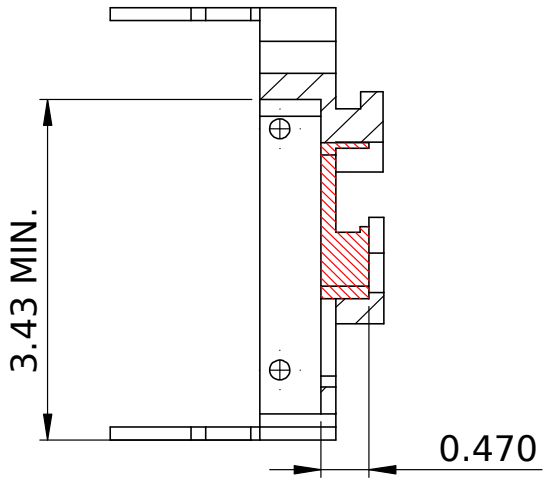
TITLE:

SG-43
SPADE GRIP MODS

SIZE	DWG. NO.	REV
A	SG-400	4

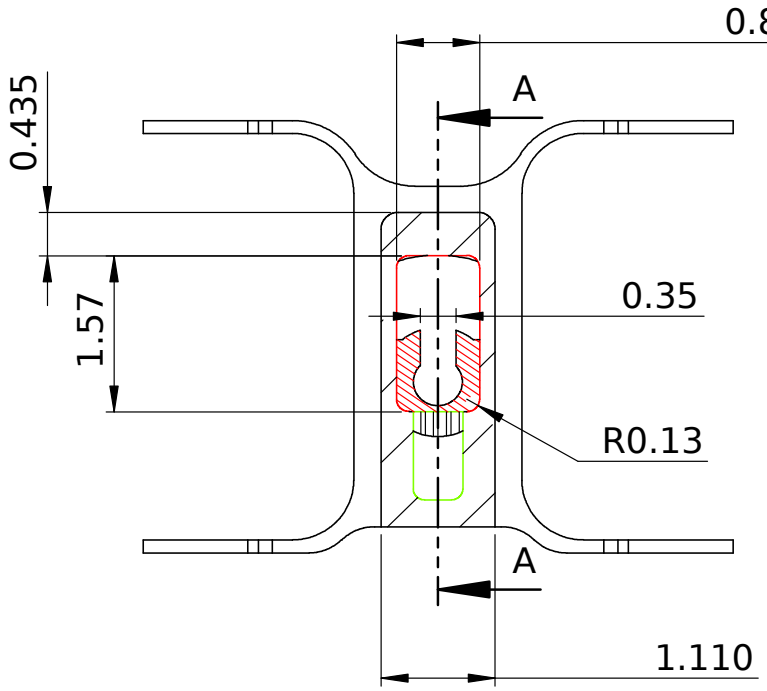
SCALE: 1:2 | WEIGHT: | SHEET 5 OF 5

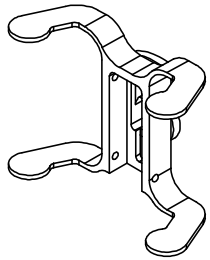
5 4 3 2 1



SECTION A-A

SCALE 1 : 2





NOTES:
1.) CUT A PIECE OF MATERIAL TO FILL IN THE AREA OUTLINED IN GREEN. WELD IN PLACE AND CUT FLUSH WITH BOTTOM OF POCKET.

2.)ALL MILLING TO BE DONE USING A 1/4"X 1" 4 FLT END MILL.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/32 TWO PLACE DECIMAL ±0.010 THREE PLACE DECIMAL±0.005	DRAWN	J.E.	12/06/23
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

FREEDOM MACHINE WORKS LLC

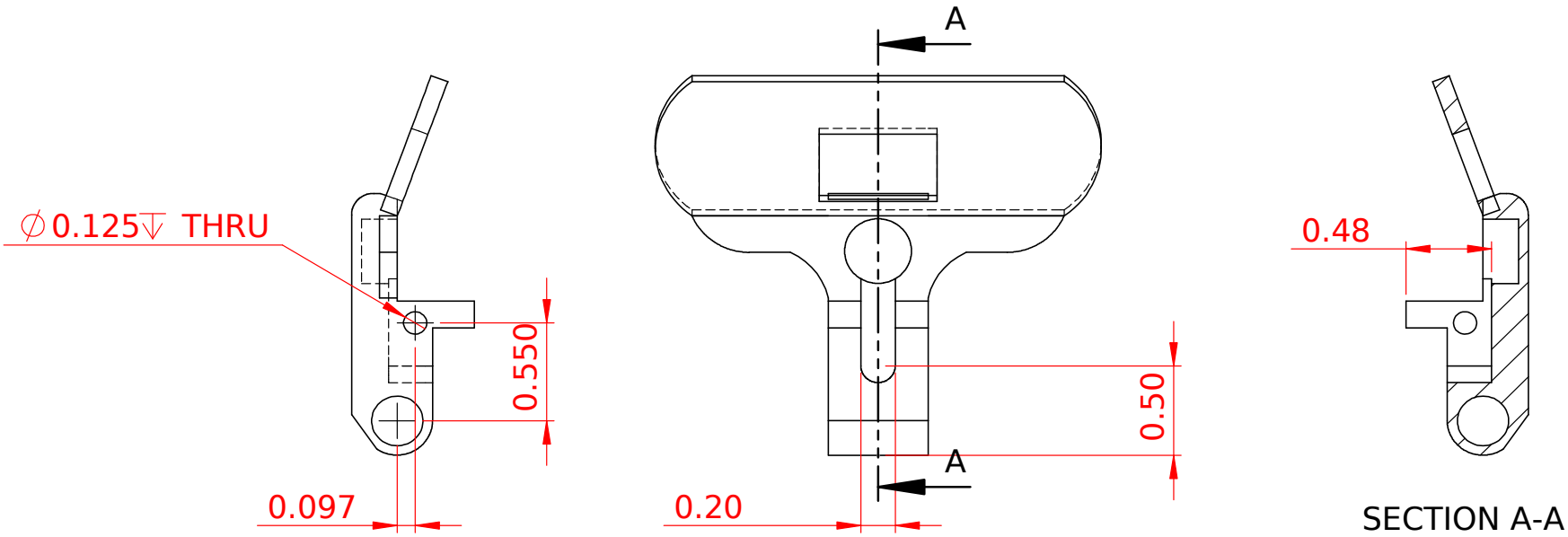
TITLE:

SGMT GRIP FRAME MODS

SIZE	DWG. NO.	REV
A		-

SCALE: 1:2 | WEIGHT: | SHEET 1 OF 1

5 4 3 2 1



	SGMT	UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: TWO PLACE DECIMAL ±0.01 THREE PLACE DECIMAL±0.005	DRAWN	J.E.	05/24/24
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

FREEDOM MACHINE WORKS LLC

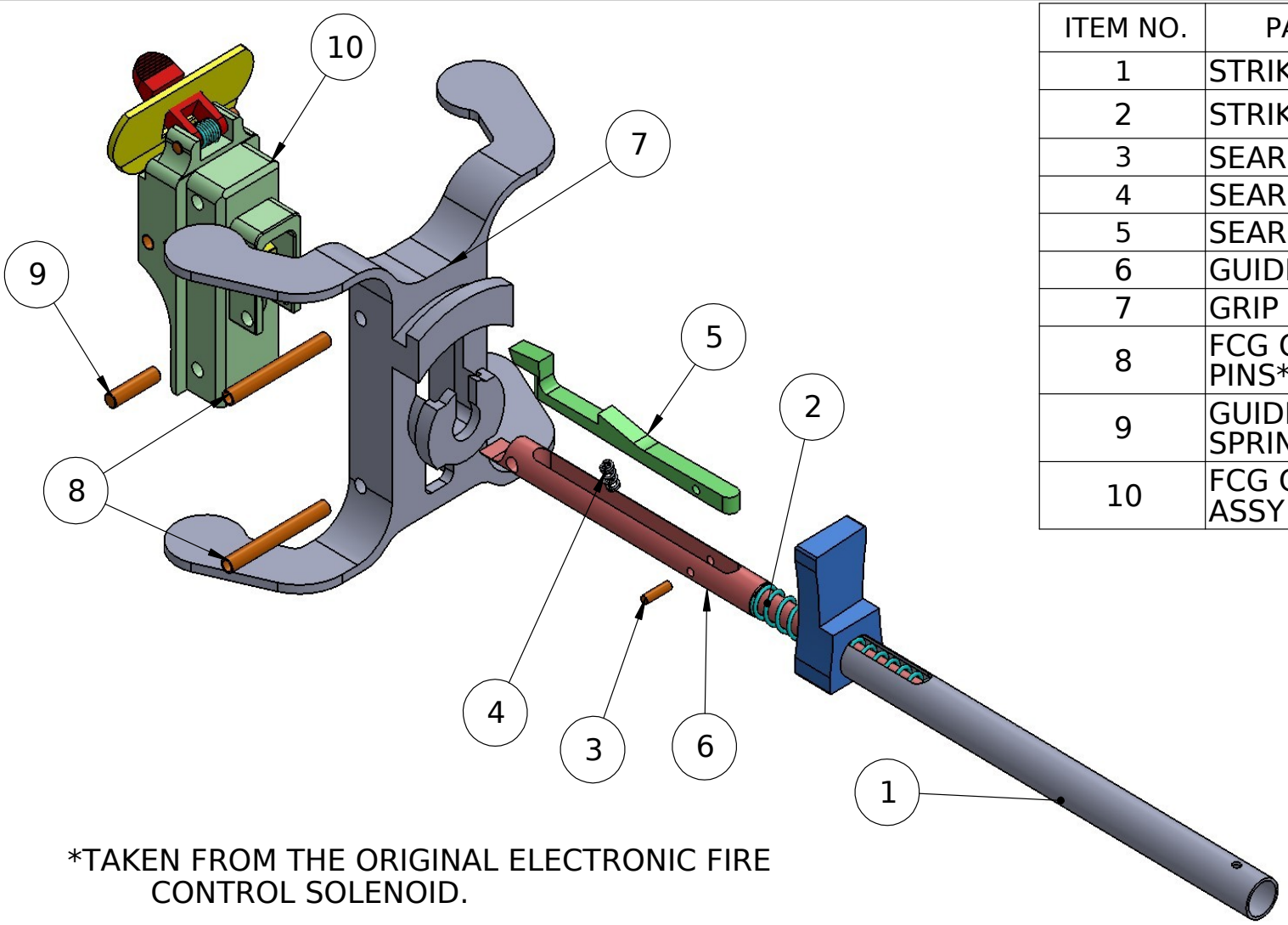
TITLE:

THUMB TRIGGER MODS

SIZE	DWG. NO.	REV
A		-

SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

5 4 3 2 1

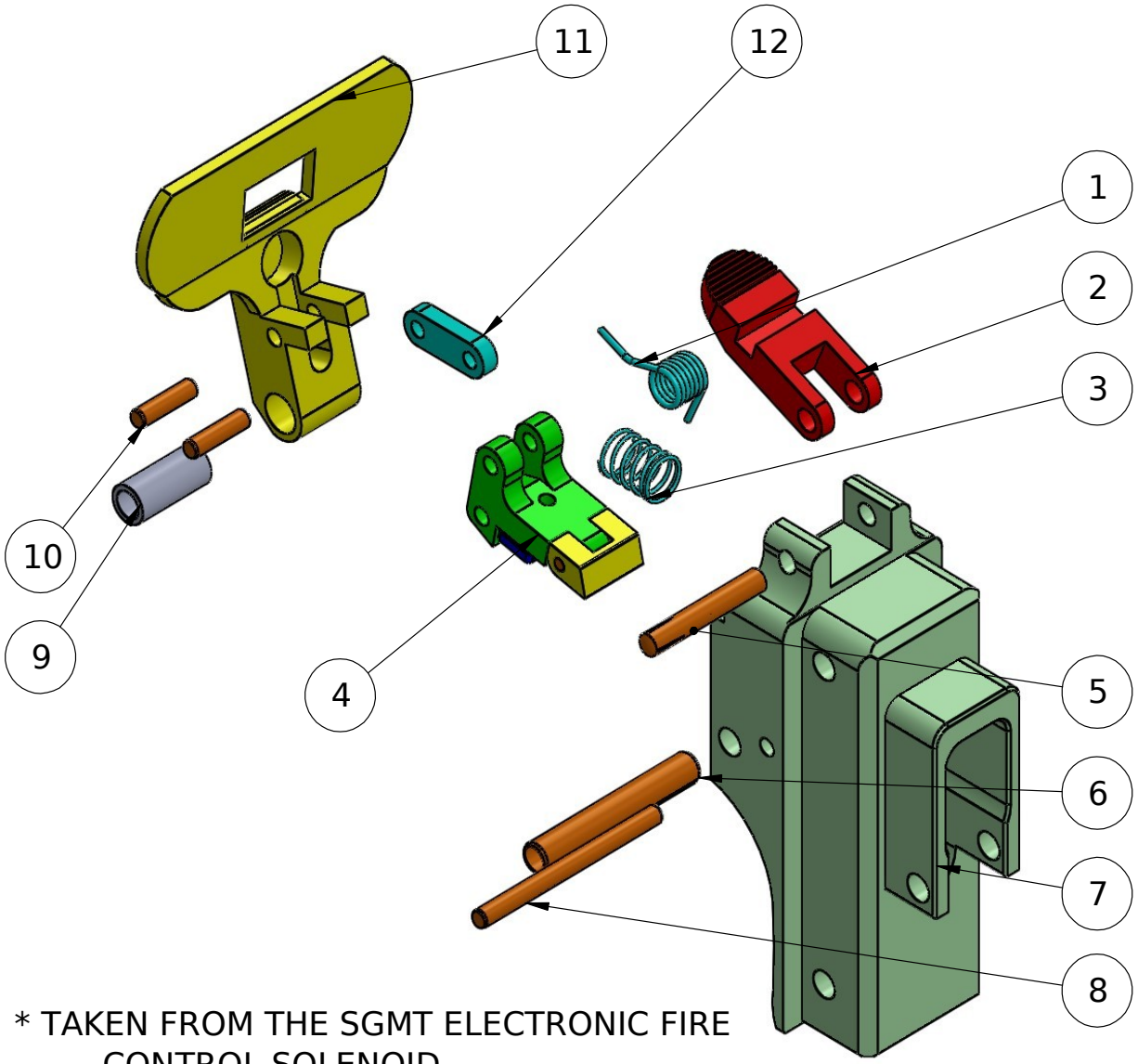


ITEM NO.	PART NUMBER	QTY.
1	STRIKER	1
2	STRIKER SPRING	1
3	SEAR PIN	1
4	SEAR SPRING	1
5	SEAR	1
6	GUIDE ROD	1
7	GRIP FRAME	1
8	FCG CARTRIDGE PINS*	2
9	GUIDE ROD 5MM SPRING PIN**	1
10	FCG CARTRIDGE ASSY	1

*TAKEN FROM THE ORIGINAL ELECTRONIC FIRE CONTROL SOLENOID.

**CUT ENDS FLUSH WITH MATING COMPONENT.

SGMT FIRE CONTROL COMPONENTS

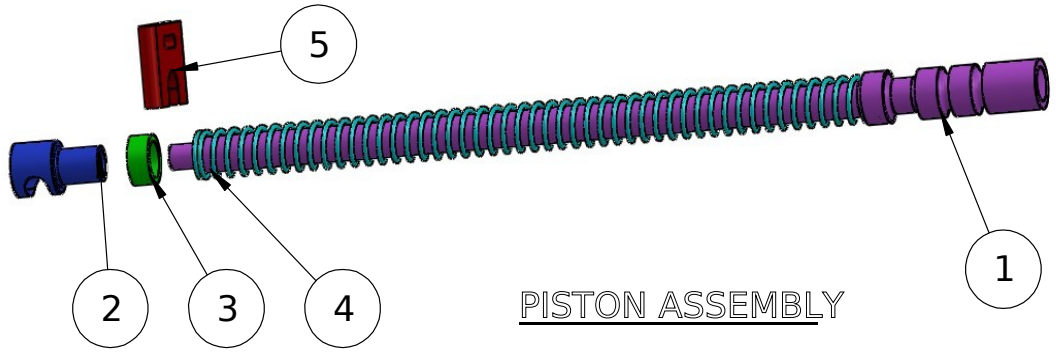


ITEM NO.	PART NUMBER	QTY.
1	SGMT SAFETY SPRING*	1
2	SAFETY LEVER*	1
3	TRIG RETURN SPRING*	1
4	DISCONNECTOR ASSY	1
5	.156 X 1 QTR GROOVE DOWEL	1
6	5MM X 36MM SPRING PIN	1
7	FCG CARTRIDGE	1
8	.125 X 1.625 DOWEL PIN**	1
9	TRIG PIVOT BUSHING**	1
10	.125 X .50 DOWEL PIN	2
11	THUMB TRIGGER*	1
12	TRIGGER LINK	1

* TAKEN FROM THE SGMT ELECTRONIC FIRE CONTROL SOLENOID.

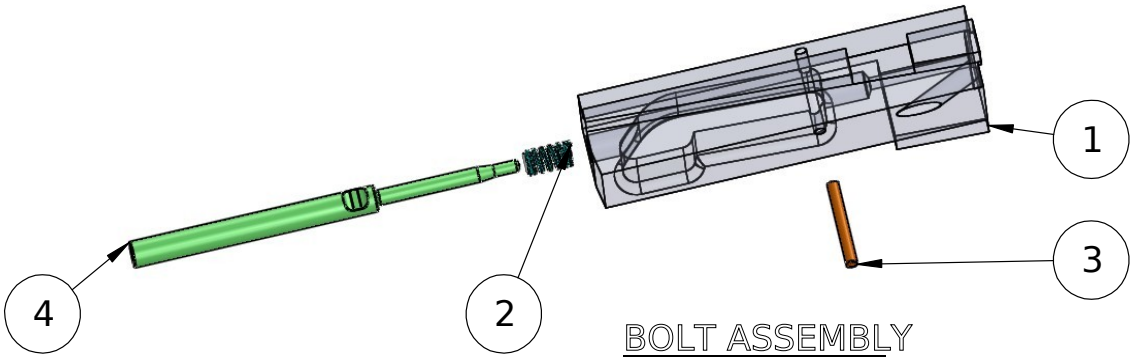
**CUT FLUSH WITH MATING COMPONENTS.

SGMT FCG CARTRIDGE ASSEMBLY



PISTON ASSEMBLY

ITEM NO.	PART NUMBER	QTY.
1	PISTON	1
2	PISTON END	1
3	RECOIL SPACER	1
4	RECOIL SPRING	1
5	HORSESHOE RETAINER	1

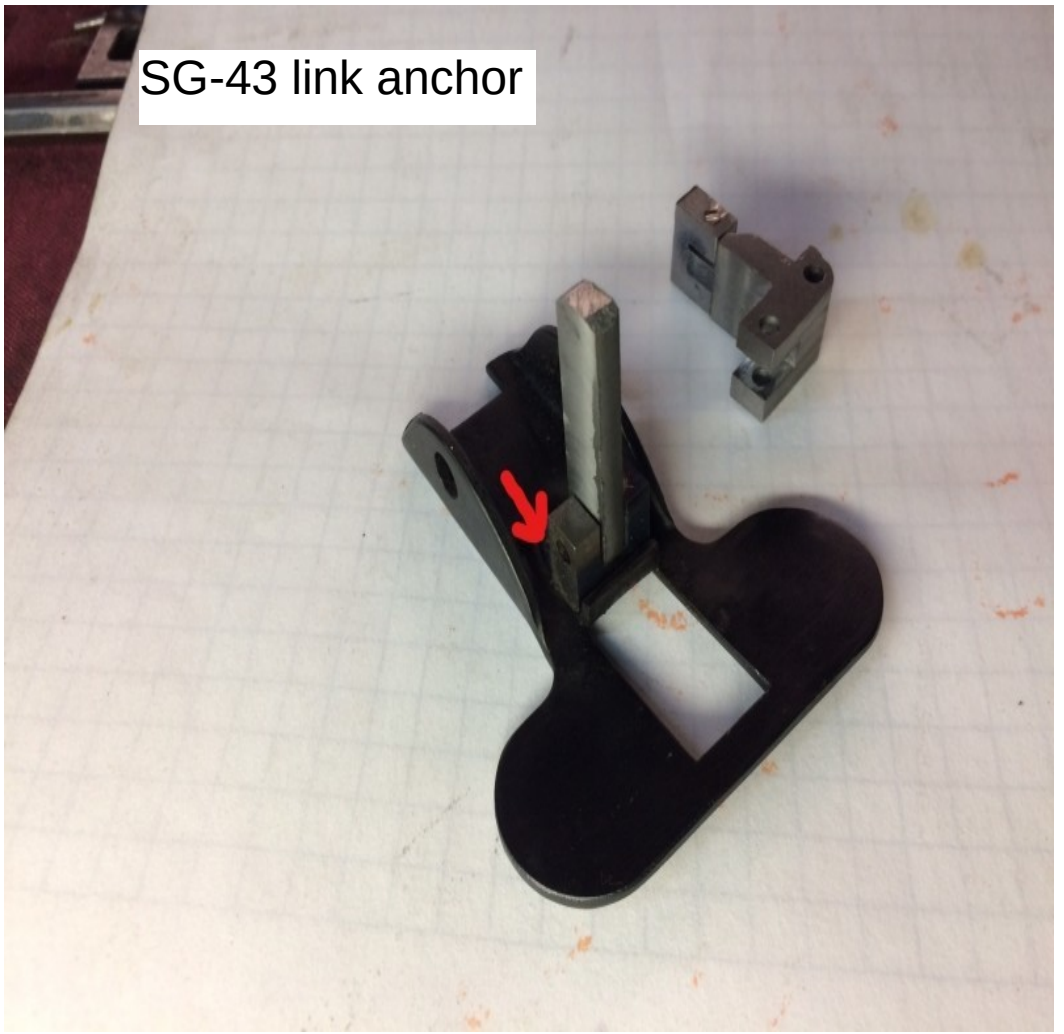


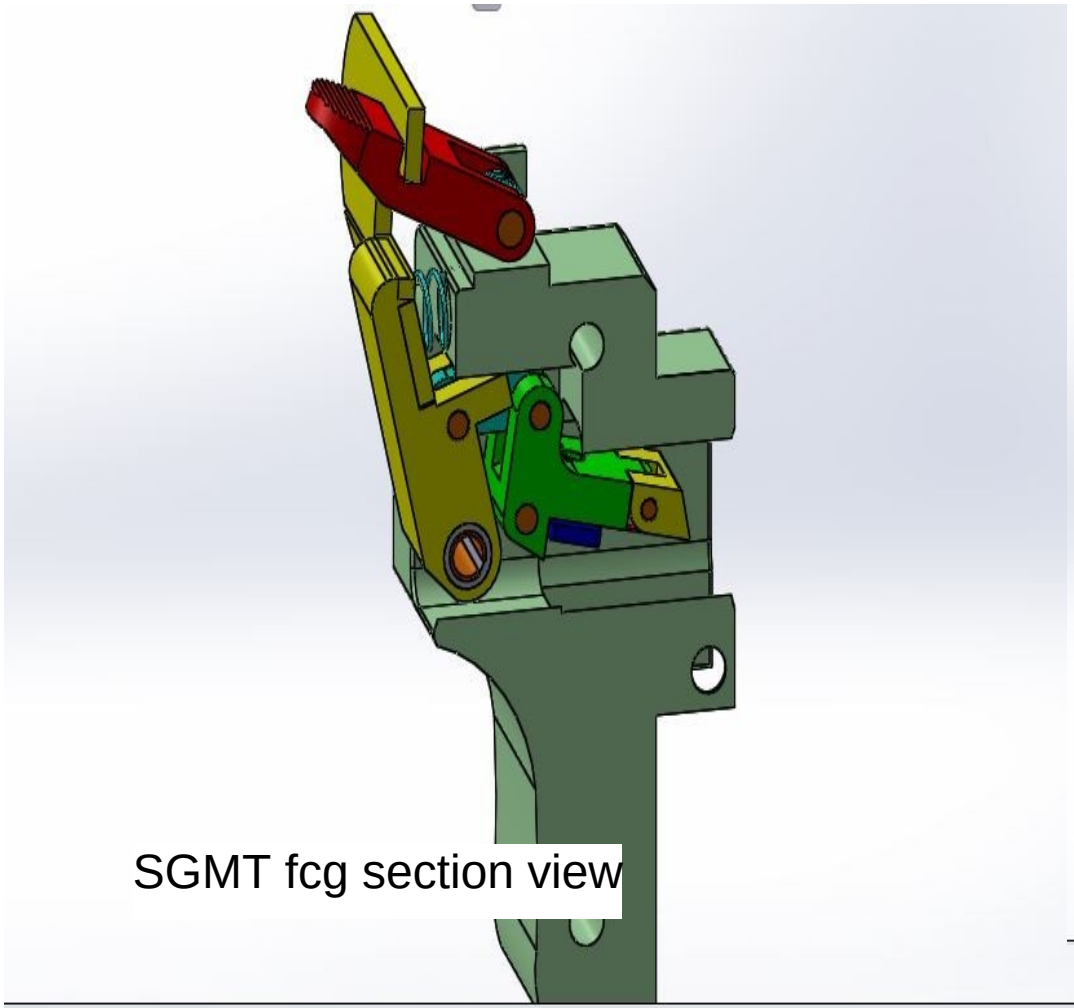
BOLT ASSEMBLY

ITEM NO.	PART NUMBER	QTY.
1	BOLT	1
2	FIRING PIN SPRING	1
3	FIRING PIN RETAINING PIN	1
4	FIRING PIN	1

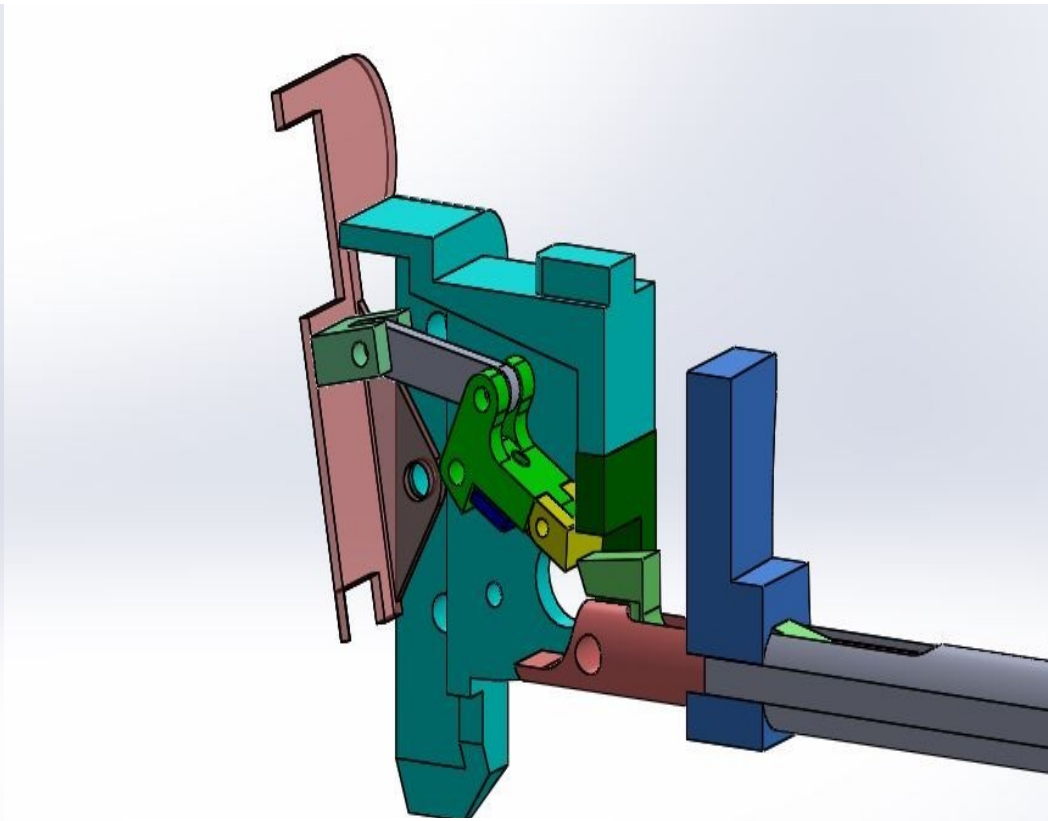
APPLIES TO SG-43, KGKT AND SGMT


SG-43 trigger return spring


SG-43 link anchor



SGMT fcg section view



SG-43 fcg section view