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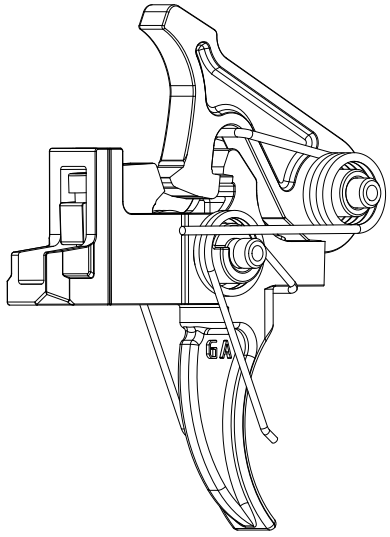
AUTOMATICS

We Manufacture Confidence®



HI-SPEED NATIONAL MATCH RIFLE TRIGGER

U.S. Patents: 8,443,536; 8,074,393; 8,069,602; 7,331,136; D661,769

Installation Instructions

READ THIS FIRST

Firearm safety is **YOUR** responsibility. You must memorize and put into practice the 4 Rules of Firearm Safety:

1. **ASSUME EVERY WEAPON IS LOADED.**
2. **KEEP YOUR FINGER OFF THE TRIGGER UNTIL YOU ARE READY TO SHOOT.**
3. **DO NOT LET THE MUZZLE POINT AT ANYTHING YOU ARE NOT WILLING TO DESTROY.**
4. **KNOW YOUR TARGET AND WHAT IS BEYOND.**

The Geissele Hi-Speed trigger is sold with three possble configurations in one package: ***The Service Trigger, The National Match Trigger,*** and ***Designated Marksman Rifle Trigger***. These adjustable triggers are specially designed for competition, hunting, tactical, and military use, where both accuracy and robustness are critical. As an adjustable trigger, the first and second stage weight distribution, as well as total pull weight, over-travel, and sear engagement are all to be tuned to the shooter's preference.

Our Hi-Speed Trigger will lighten the trigger pull relative to a standard trigger. This lightened trigger pull will make the weapon easier to discharge. You must recognize and accept this fact before installing this trigger. If you do not want a lighter than standard trigger pull or are not willing to accept responsibility for your weapon's safety, the safety of yourself and the safety of those around you, do not install this trigger.

Geissele Automatics recommends installation by a talented gunsmith only.

DISASSEMBLY AND INSPECTION OF LOWER RECEIVER

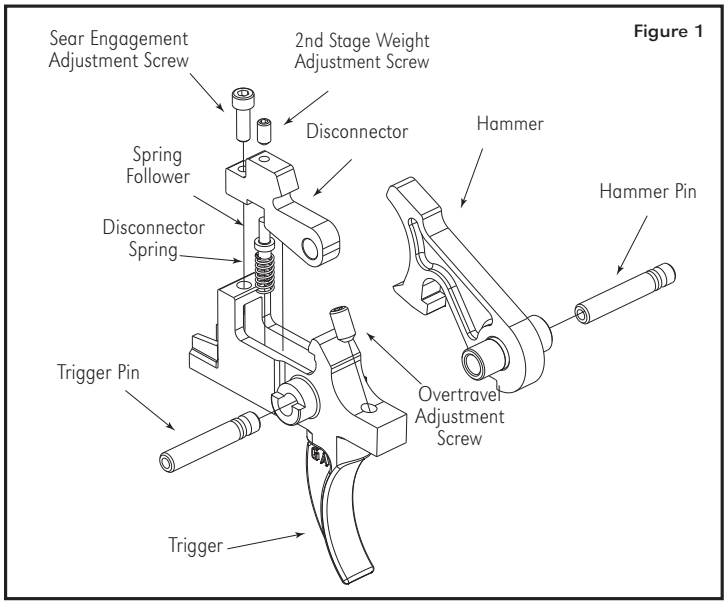
Unload weapon and make safe. Remove the upper receiver assembly. Due to the adjustable design of the Geissele Hi-Speed line removing the safety is also necessary.

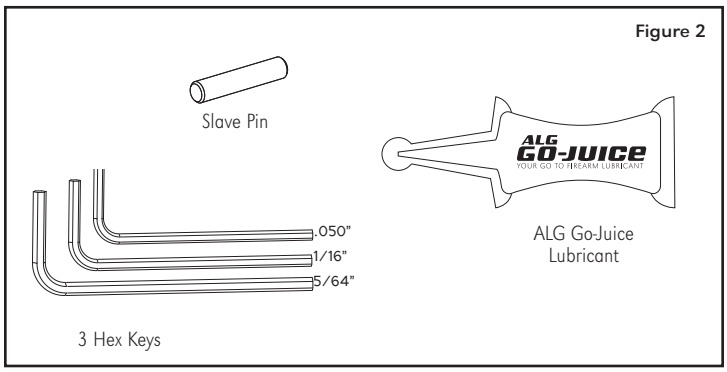
Your Geissele Hi-Speed Trigger will come assembled with the DMR springs installed on the trigger (Black trigger spring and Gray disconnect spring). Please confirm it also includes the following components:

See Figure 1: Trigger Assembly

- Trigger/Disconnector assembly *(referred to as "trigger")*
- Hammer assembly (referred to as "hammer")
- Service Rifle Trigger Spring *(Black Heavy '5 coil')*
- Match Rifle Spring Set
  (Gold trigger spring and Silver disconnect spring).
- Ancillaries - ***See Figure 2:***
  - Sample of ALG Go-Juice Lubricant
  - Slave Pin (0.640" long)
  - Three Hex Keys (0.050", 1/16" and 5/64")

NOTE: The Service Rifle package shares the disconnect spring with the DMR package.





CHECK TRIGGER FIT

The Geissele Hi-Speed Line differs slightly from the Mil-Spec Pattern due to its adjustability. The first thing the gunsmith should check is fitment in the lower receiver and with the firearm safety. To check fit, install the trigger without the trigger spring or disconnect. Now, check for possible interference.

See Figure 3: Possible Locations for Trigger Interference.

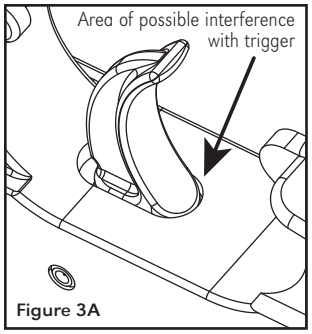


Figure 3A

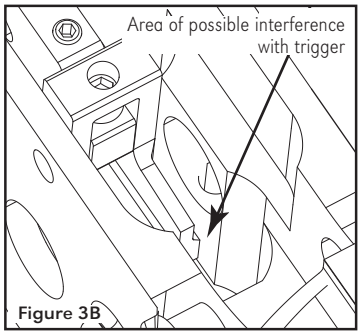


Figure 3B

Interference can also be felt in the trigger itself as rubbing or friction. If interference occurs, add clearance to the receiver, not the trigger. With clearance to the receiver achieved; the safety should be installed complete with detent and detent spring. Again, check for interference on the trigger width as shown in ***Figure 4: Safety***. If the trigger drags it is recommended to remove metal from the sides of the safety slot with a one sided file. **DO NOT** remove metal from the bottom of the safety slot where the trigger stops on the safety. With fitment confirmed, remove the trigger from the lower.

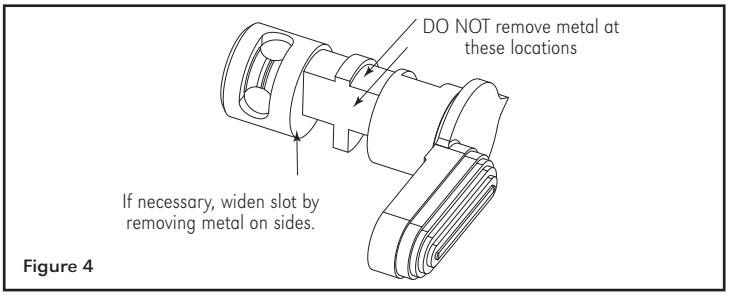


Figure 4

INSTALLING TRIGGER AND WEIGHT ADJUSTMENT

	1ST STAGE	*2ND STAGE*	*TOTAL WEIGHT*
SERVICE RIFLE	3.2 - 5 lbs.	0.5 - 1.5 lbs.	***4.5 - 6.5 lbs.***
DMR RIFLE	2.5 - 3.6 lbs.	0.5 - 1.5 lbs.	***3.0 - 5.1 lbs.***
MATCH RIFLE	1.5 - 2.5 lbs.	6.0 - 14 oz.	***1.9 - 3.4 lbs.***

The Hi-Speed Trigger ships with 3 sets of trigger and disconnect springs: Match, DMR, and Service. The Match spring will produce a 2.2 lb first stage, the DMR will produce a 3.0 lb first stage, and the Service will produce a 4.0 lb first stage. It is up to the user to determine which of these to use. It is recommended the user install the disconnect spring supplied with trigger spring it is paired with. ***See Figure 5: Detailed Disconnector Assembly***

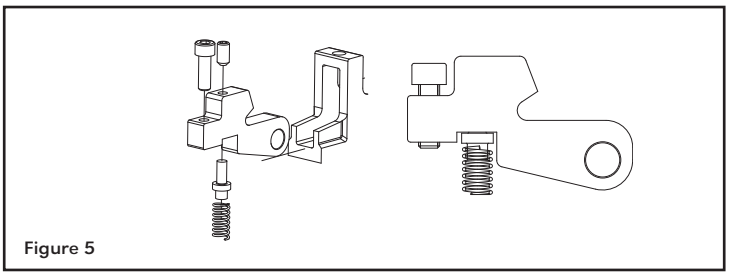


Figure 5

To install, first lubricate the trigger and disconnect pin bores with the supplied ALG Go-Juice. Pre-assemble the disconnect and trigger using the slave pin. Insert the trigger assembly into the lower receiver while making sure the trigger spring legs rest against the bottom of the receiver well and extend forward from the trigger.
See Figure 6: Trigger/Hammer Assembly

With the receiver bore and trigger bore lined up, press the trigger pin in from the right side of the receiver. It should go through the lower, trigger, and disconnector and capture the trigger assembly in the lower receiver. The assembly is now ready to test trigger pull weight.

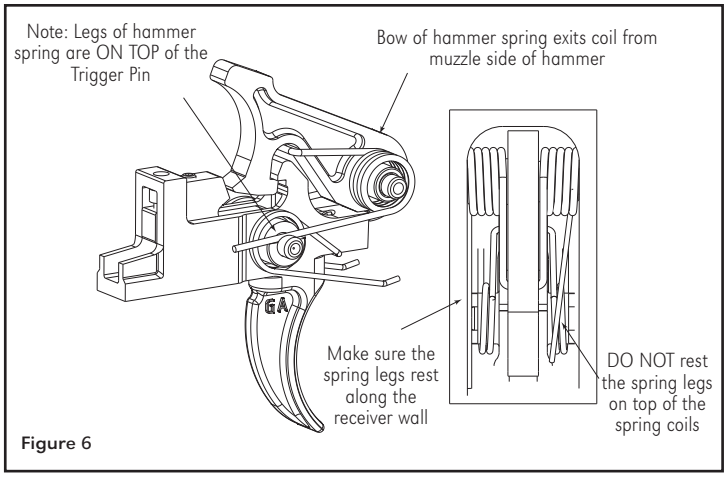


Figure 6

Using a quality trigger pull gage, test the trigger weight. Since the hammer is not installed, add about 0.2 lb (3.2 oz) to the weight tested. For instance, if the pull weight is tested at 3.8 lb without a hammer, the pull weight would be about 4.0 lb with a hammer. If minor adjustments are necessary, remove the trigger assembly and bend the legs of the trigger spring either up or down with a pair of pliers. The legs should be bent at a point just before the legs enter the coils that fit around the trigger pivot bosses. Bending the spring leg away from the coil will increase pull weight while bending it closer to the coil will decrease pull weight.

NOTE: *It is not recommended to set the first stage pull weight below 1.5 lb. Doing so could decrease the reliability of the weapon.*

With the pull weight set to the user's preference, push the slave pin out by tapping the supplied trigger pin in from the left side of the firearm. As the slave pin slides out, it will keep the trigger and disconnector aligned properly.

SPECIAL INSTRUCTIONS FOR THE SERVICE RIFLE

In some CMP sanctioned competitions there is a minimum trigger pull weight of 4.5 lb. When setting up the pull weight on a rifle built for Service Rifle competitions, it is important to set the pull weight to a sufficient poundage so the shooter does not experience issues when the pull is checked on Match Day. Generally, a weight of 4.8-5.1 lb. will always meet the minimum weight regardless of individual inspector techniques. This will also allow some leeway as the sear surfaces become polished. The recommended procedure is to set the first stage as close to 4 lb as possible and then dial in a 1 lb second stage to bring the total pull weight to 5 lb. Because of the differential in pull weights going from the first stage to the second stage it is not recommended to set the second stage pull weight below 0.8 lb. Doing so could result in 'pull-through' where the shooter does not feel the second stage and prematurely fires a round.

Bottom Line: The Hi-Speed trigger's 2-stage concept is designed to place most of the pull weight on the first stage; this allows for a light 2nd stage pull with a crisp break that does not disturb the shooter's sight picture. The gunsmith should set the second stage at 1.0-1.2 lb to start and if the shooter feels he wants something lighter it can be adjusted as described later in this manual.

HAMMER INSTALLATION

If the hammer has not been installed yet, now is the time to do it. Make sure the safety is in the 'fire' position. Apply a small amount of lube to the hammer pin bore and install the hammer so the hole aligns with the lower and insert the hammer pin. Review ***Figure 6*** and confirm the hammer spring legs are sitting on top of the trigger pin as shown. The grooves of the hammer pin should be on the left side of the receiver. This will allow the internal circlip within the hammer to retain the hammer pin in place. After installation is complete, add a small amount of lubricant to all the sear surfaces.
See Figure 7: Hammer Pin

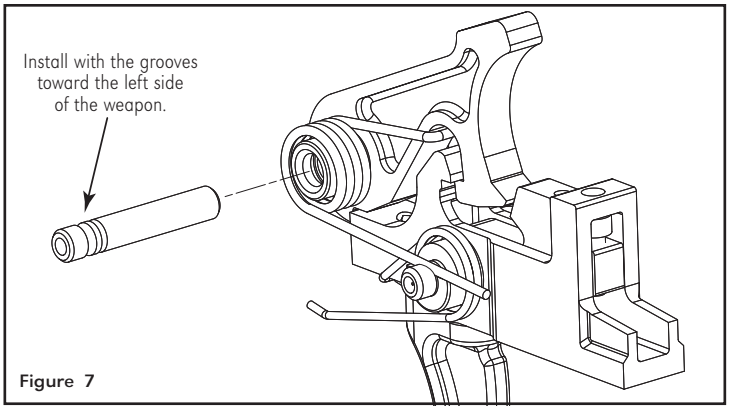


Figure 7

SEAR ADJUSTMENT

Every Geissele Hi-Speed trigger is factory pre-set for sear engagement in a precision fixture designed to simulate an AR15 receiver. This does not mean that the trigger adjustment procedure can be skipped. Factory pre-setting the sear is only intended to assist the gunsmith by making the adjustment process easier. The advantage of an adjustable trigger is that small receiver dimensional variations from nominal can be accounted for so that each trigger can be individually tuned to each unique receiver.

During the adjustment procedure you will notice the adjustment screws are difficult to turn. The screw threads are coated with a polymer compound which produces a prevailing torque that will keep the adjustment screws from loosening.

First, confirm the 2nd Stage Weight Adjustment Screw is between 1/2 and 3/4 turn below flush with the top of the disconnector (this is where it will be set from the factory). This places tension on the disconnect spring and is necessary for accurate sear adjustment.

With the hammer cocked, pull the trigger and check for the presence of a second stage. Since the Hi-Speed trigger is factory pre-set for sear engagement you should feel a distinct stop as the end of the hammer tail contacts the disconnector. Additional pressure to the trigger will cause the disconnector to rotate slightly, thereby letting the primary sear edges disengage and cause the hammer to fall.

Using the supplied 5/64" hex key (the largest hex key supplied with the trigger), reach through the hole in the trigger tower and rotate the sear adjustment screw counterclockwise (as in loosening the screw) in 1/8 turn increments while alternately cocking the hammer and pulling the trigger. Do this until the second stage is lost. ***See Figure 8: Sear Adjustment***.

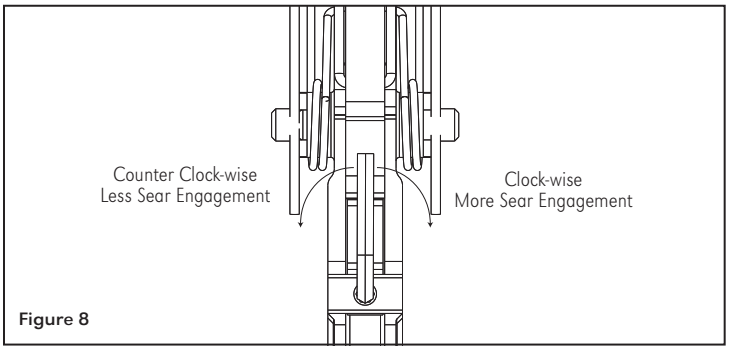


Figure 8

WARNING: *Do not let the hammer strike the lower receiver during the setup process. Keep your hand on top of the hammer or place a wadded up rag between the hammer and lower receiver wall to cushion the blow. If you choose to stop the hammer with your hand, be careful as there is enough force from the hammer spring to bruise or seriously injure a hand.*

Now, begin turning the screw clockwise in very small increments (1/32 of a turn or 10 degrees) while alternately cocking the hammer, pulling the trigger, and making adjustments to the sear screw until the second stage is regained. Once the second stage is regained, the sear adjustment screw is turned an additional 110 degrees (slightly more than 1/4 turn) to achieve the sear set point.

A properly adjusted trigger should pivot smoothly through the First Stage and come to a solid stop at the Second Stage. If the trigger is "notchy" or feels like it is falling into a detent as it approaches the Second Stage, there is not enough sear engagement. Turn the sear adjustment screw clockwise in 5-10 degree increments until any notchy feeling is eliminated.

NOTE: It is important to recognize that sear adjustment is not a game in trying to adjust in as little sear engagement as possible. Insufficient sear engagement is the biggest cause of inconsistent trigger operation, Second Stage pull through, and premature wear of sear ledges.

WEIGHT ADJUSTMENT OF SECOND STAGE

After the sear is adjusted properly, the Second Stage weight can be set. The adjustment screw is located in the 'head' of the disconnector and uses an .050" hex key (the smallest hex key supplied with the trigger) ***See Figure 9: Trigger Assembly***.

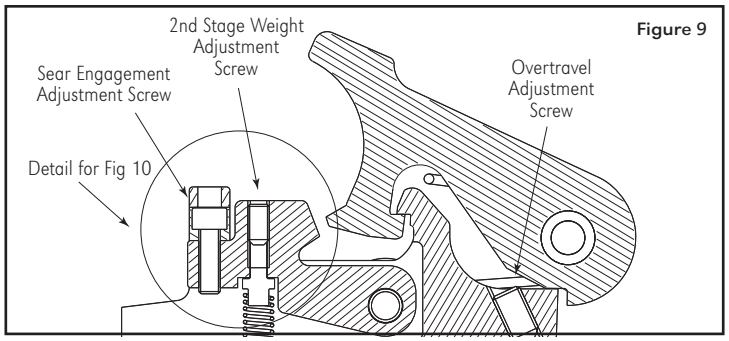


Figure 9

The screw is turned clockwise to increase the Second Stage weight or counter-clockwise to reduce it. The minimum weight is found when the top of the set screw is about 1/2 turn above the top of the disconnector. The maximum weight is about 2 full turns in. Any further will cause the disconnector spring to bind during disconnector operation. To check for coil bind; hold the trigger back and cock the hammer while watching the hammer tail snap over the disconnector. The disconnector should snap over the hammer tail smoothly. If coil bind is present the disconnector will push against the trigger and be felt by the shooter's finger.

OVERTRAVEL ADJUSTMENT

Overtravel may be adjusted with the screw on the nose of the trigger. ***See Figure 9***. If minimal overtravel is desired, pull the trigger fully back and partially rotate the hammer down while watching the clearance between the hammer sear edge and the trigger sear edge. Turn the overtravel adjustment screw clockwise with a 1/16" hex key until the trigger is about 0.010" away from the hammer sear. Allowing some overtravel in the trigger will prevent disruption of the rifle while the bullet is traveling through the rifle barrel. Minimal overtravel is only necessary for rapid fire. ***See Figure 10: Approximate Factory Settings***

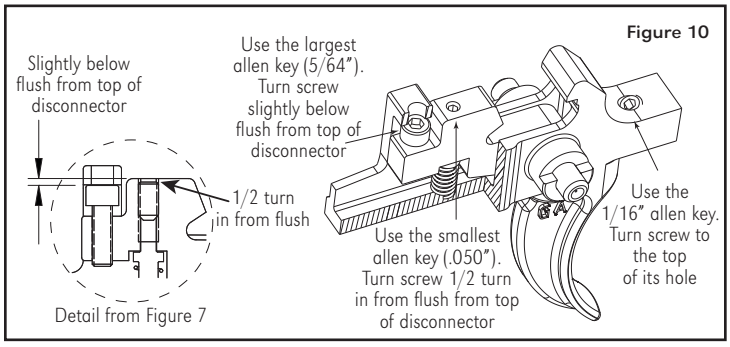


Figure 10

FINAL ADJUSTMENTS

Apply the proper lubricant to all sear surfaces and assemble the upper onto the lower. Double check the gun is empty and no ammunition is present. Cycle the weapon and dry-fire the

trigger about 50 times. Re-check that the pull weight and sear adjustment is acceptable.

SAFETY AND FUNCTION CHECK

With all adjustments completed there are a couple safety checks that should be completed. Assemble the upper and lower receivers. With the hammer cocked and the safety lever in the **SAFE** position, pulling the trigger hard should not allow the hammer to fall. Now, check the ability of the bolt carrier to re-cock the hammer. Pull the trigger and keep the trigger pressed back. Cycle the operating handle and let the bolt carrier snap forward. Release the trigger; the bolt carrier should have re-cocked the hammer and the hammer should not follow the bolt forward.

PERIODIC LUBRICATION, CLEANING, AND MAINTENANCE

Keep the sear surface well lubricated for the first 200-300 rounds. It is recommended to always keep a small amount of fresh ALG Go-Juice lubricant or 0000 Very Fine Grease on the sear surfaces, especially on the match rifle trigger. However, after break in it is permissible to operate the trigger without lubricant.

Every 500 rounds place a drop of ALG Go-Juice lubricant or 0000 Very Fine Grease on the sides of the disconnector where the pin slides through and on the very ends of the hammer pivot next to the receiver walls.

When the lower receiver and receiver well become very dirty it is not always necessary to remove the trigger group for cleaning. Spray down the trigger group with an electrical contact cleaner to remove residual oil and dirt. Next, use compressed air to blow off the trigger group and then flush liberally with a light lubricating oil such as CLIP or CR 3-36. Blow off excess oil with compressed air and re-apply ALG Go-Juice as above.

The trigger spring will last the life of the trigger and will not lose weight over time. The disconnector spring should be replaced every 50,000 rounds. The hammer spring should be replaced every 10,000 rounds as the spring will break between 12,000 and 25,000 cycles.

Thank You For Your Purchase.
Contact Geissele Automatics with any questions.

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