



USA MADE AK-47 TRIGGER GROUP

Red Star Arms
1-573-489-1292
www.RedStarArms.com

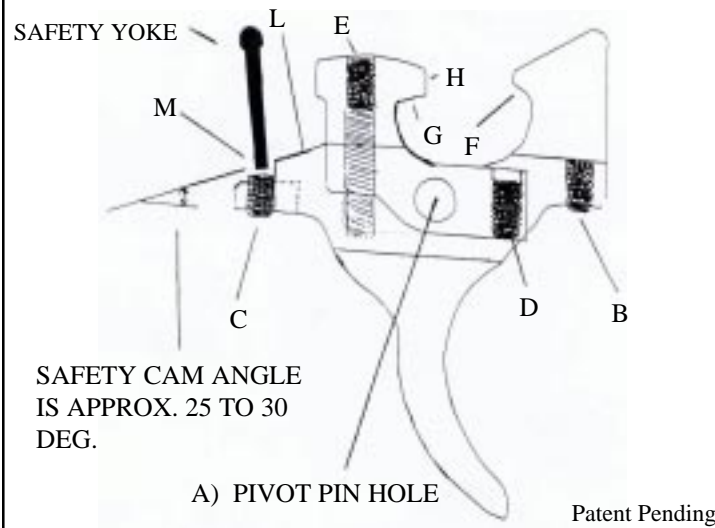
Power Custom
1-573-372-5684
www.PowerCustom.com



Description:

Adjustable trigger/hammer/disconnector assembly manufactured in the USA by EDM and CNC process. Machined from solid steel and bar stock. Heat treated black oxide finish with hand polished hammer and sear engagement areas to allow for a smooth trigger pull. Will qualify as three American parts per US law. Preadjusted for a two-stage approximately 4.0 pound pull.

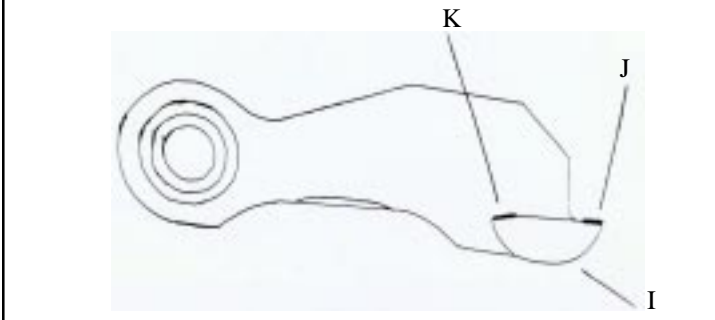
FIGURE 1:
TRIGGER ASSEMBLY FROM RIGHT SIDE



Both the trigger and disconnector pivot on the same pin (pivot point A) as shown when assembled together in Figure 1. These are shipped with an assembly/retainer pin that may be discarded after final assembly. Adjustable for either a single stage or two stage combat trigger pull. All adjustments are made by using 1/16th allen wrench.

- Set screw B -** Overtravel stop screw. When the trigger is pulled this adjustment determines how much back-lash or free travel the trigger has when area (F) disengages from the hammer at area (K). Preset is 1 thread showing through bottom of hole.
- Set screw C -** Determines engagement of the surface areas (F) and (K). This adjusts the amount of travel the trigger has on the first part of the pull of a two stage trigger. Preset is 1 thread showing through bottom of hole.
- Set screw D -** Disconnector engagement adjustment. Determines single versus two stage pulls. Preset is flush to bottom of disconnector.
- Set screw E -** Determines the tension of the disconnector spring. This spring determines the weight of the second stage of a two stage trigger pull. Preset is flush to top of disconnector.

FIGURE 2:
HAMMER VIEW FROM LEFT SIDE



Fire Control Group Operation:

It is important to understand how the trigger and hammer assembly functions when firing or when the action is operated. Start with the trigger pulled back and the hammer forward against the firing pin in a fired position. Hold the trigger to the rear with the trigger finger. As the action (bolt) moves to the rear, the hammer is rotated back past the cocked position by the bolt carrier assembly. The top of the hammer (Area I) contacts the disconnector (at Area H) pushing the disconnector to the rear against the compression of the disconnector spring. The tip of the hammer (Area I) slides down the face of the disconnector (Area H) when the hammer is rotated far enough (over cocked). The disconnector (Area G) latches over the hammer (Area J). When the action goes forward (closed). The trigger/disconnector assembly pivots on the trigger pivot pin (Point A). The disconnector rotates to the rear allowing the disengagement of surfaces (Area G and Area J). The rear

surface of the trigger (Area F) rotates to the rear. When the trigger is allowed to go forward (released) the disconnector releases the hammer, the hammer (Engagement Area K) is caught by the trigger hook (sear surface area F). The trigger is now in the ready fire position.

When Pulling the Trigger:

The complete trigger and disconnector assembly pivoting on the trigger pin (Point A) allows trigger/sear surface (Area F) to start to disengage from the hammer engagement (Area K). This is the first stage of the trigger pull. The weight of the trigger pull of the first stage is determined by the angles of the engagement surfaces and the power of the hammer/trigger spring. The trigger can only be pulled in the first stage until the hammer surface (Area I) contacts the disconnector face (Area H). At this point, the second stage of the trigger pull begins. The additional weight of the second stage of the trigger pull is determined by not only the engagement surface angles (Areas F and K), but the power of the disconnector spring. When the trigger is pulled through the second stage, the trigger/sear (Area F) is disengaged from the hammer hook surface (Area K) allowing the hammer to go forward.

Safety:

To prevent the trigger from being pulled, the safety lever is raised to the on position. By raising the safety lever, the safety blocks the rear movement of the operating handle and the internal yoke of the safety cams against the rear angle of the trigger (Area L) preventing movement of the trigger. These custom parts are drop in, except for adjusting and minor altering of the trigger so the safety will work correctly, on most AK-47 models without modification to the sear and hammer hook engagement areas. There are many versions of AKs with a large variation of dimensions in all areas. When designing these parts, models AK-47 SAR-1 Cal.7.62x39, SLR-95 Cal.7.62x39, and AK-74 SAR-2 cal 5.45x39 were used. We are not positive that these parts will drop in all AK's.

Removing Factory Parts: (Be sure that the gun is unloaded)

- (A) With gun pointed in a safe direction, remove magazine.
- (B) Clear chamber by racking the bolt several times, and visually ensure that chamber is empty by looking in chamber with bolt back.

Before removing factory parts, observe and remember the orientation of the trigger pin retaining wire and the hammer spring. Do not use excessive hammering when removing pins or stamped receiver models can be damaged.

- (D) Remove Dust cover.
- (E) Remove spring, spring guide, and bolt.
- (F) Remove safety from receiver.
- (G) Remove trigger pin retaining wire (crook) by pushing it forward toward the magazine well.
- (H) With Pliers or screwdriver, move hammer spring tails from the back of the trigger to space at side of trigger.
- (I) Using a punch, push the trigger pin out of the receiver.
- (J) Remove disconnecter, disconnecter spring, and trigger from receiver.
- (K) Using a punch, push hammer pin out of receiver.
- (L) Remove hammer and hammer spring from receiver. (take note of hammer orientation in spring)

Installation of Milled Adjustable Fire Control Group:

- (M) Insert hammer into hammer spring in correct orientation.
- (N) Place hammer and hammer spring into receiver.
- (O) Install hammer pin.
- (P) Place trigger/disconnector/disconnector spring into receiver as one unit with retaining pin.
- (Q) Install trigger pin by pushing it through the hole in the receiver, pushing the retaining pin out the other side.
- (R) Trigger must move free after pivot pin is installed. It may be necessary to file the round corners in the trigger window area of the receiver for the trigger to move freely.
- (S) Move hammer spring tails onto the back of the trigger.
- (T) Evaluate operation and trigger pull.
- (U) If basic trigger function appears functional, install trigger pin retaining wire.
- (V) Make desired adjustments and test fire weapon. See detailed instructions below.
- (W) After final adjustments have been made and you are satisfied with all aspects of the pull, reinstall safety.
- (X) Fit back of trigger to safety if necessary per instructions below.

Adjustment Instructions:

Remove all factory trigger parts and the safety. Do not replace safety until all trigger adjustments are made and the gun has been test fired. Replace the factory parts with the custom parts. All set screws are set in medium loctite. Before adjusting set screws, be sure the allen wrench is all the way in the set screw socket to ensure that the socket will not stripped while adjusting it. If set screws will not move, apply heat on the screw with a electric solder gun or butane lighter. To minimize adjusting, it is best to make all adjustments in the following order: Starting with the cover, carrier, operating spring and guide removed and the custom parts installed in the receiver.

1. Adjust the length of travel (trigger take up) for the first stage of trigger pull. Adjust set screw (C). Cock the hammer and see how much the hammer engagement (Area K) engages with trigger/sear surface (area F). This should be minimum of 0.040 inch. To decrease this area, turn the set screw (C) clock wise.
2. Adjust for minimum trigger overtravel. Adjust set screw (B). Rotating set screw clock wise decreases overtravel. This should be adjusted so the rear movement of the trigger stops just as the hammer (Area K) is disengaged from the sear (Area F). There should be a minimum of 0.004 inch clearance at these points.
3. Adjust the amount of disconnecter engagement and the length of the second stage of the trigger engagement travel. Rotating the set screw (D) clock wise decrease second stage engagement. When pulling the trigger threw the first stage travel length, the top of the hammer (Area I) should contact the disconnecter face (area H) when there is a minimum of 0.020 inch engagement at sear (Area F) and hammer hook (Area K). If the minimum disconnecter engagement is not met, the gun may malfunction, with the hammer following the bolt which may result in accidental discharges.
4. Adjust the weight the second stage of trigger pull. Adjust set screw. (E). Clock wise will increase disconnecter spring pressure. NOTE! When trigger kits are shipped, set screw (E) is set with minimum pressure on the disconnecter spring. In general, this is the lightest the trigger pull will be. All set screws are installed so minimum adjustment is needed when fine tuning the trigger pull. Pending the power of the hammer/trigger return spring, the trigger pull can usually be adjusted from a minimum of 3.5 LBS up to as much or more then 8 LBS.

Single Stage Trigger Pull:

Adjust set screw (C) so area (F) and area (K) have only 0.030 inch engagement. Then adjust set screw (D) so the face of disconnecter (H) clears the rear edge of the hammer at area (I) when the trigger is pulled. By adjusting the disconnecter angle such that it does not contact the hammer when the trigger is pulled, the second stage is lost. The weight of the single action pull is dependent of the existing hammer-trigger main spring.

Adjusting For Proper Safety Engagement:

Do not fit the safety until all adjustments are made and the firearm has been test fired. Be sure that no other adjustments are needed.

5. Safety Adjustment. After all of the trigger adjustments are made and the trigger functions correctly, it is necessary to be sure the safety works correctly. Cock the hammer. The safety may not go on far enough for the safety lever to block the rear movement of the operating handle. The inside yoke area of the safety contacts the rear angle of the trigger (Area L) preventing proper safety engagement. This can be corrected by one of two ways:

- 1) Remove metal from the trigger.
- 2) Remove metal from the safety.

NOTE: In order to evaluate safety fit, it is best to install the safety so that it is behind/below the back of the trigger such that you are attempting to raise it into a safe position when determining if material should be removed. Achieve this position by following the instructions below.

Adjusting Safety Engagement By Fitting the Trigger:

Metal has to be removed from the rear angle of the trigger (Area L). This angle is approximately 25 or 30 degree angle at the point where the safety yoke hits the rear angle of the trigger. See figure 1. (Area L). Remove only a minimum amount of metal from this area. Care should be taken not to not remove too much material. We suggest using a file or stone rather than a power tool, and to go slowly, testing after each pass. When the safety lever is put on, it cams the trigger forward. There should not be any movement of the trigger.

Adjusting Safety Engagement By Fitting the Safety:

- (A) After the trigger is installed, adjusted, and test fired, reinstall safety. Safety can be rotated into the fire position either by pushing the yoke down toward the trigger or by rotating it back and up toward the buttstock. If the safety cannot be rotated down into the fire position because it will not clear the disconnecter or trigger, remove the trigger group, install the safety, and then reinstall the trigger group with the safety in the down fire position. Rotating the safety backward (up and passed the safe position) and around to the fire position can be helpful in determining the safety fit.
- (B) Attempt to rotate the safety up into the safe/off position.
- (C) If the tab of the safety yoke engages the trigger too soon, preventing the safety from being raised to a full safe position, carefully remove metal from the tab of the safety yoke with a sharp file or stone. Do this very slowly, testing after each pass, and paying careful attention to the angle at which the safety should engage the trigger (Area M). Power tools should be avoided for this job since they will remove material too quickly.
- (D) Repeat as necessary until the safety fully but tightly rotates into a full safe position.
- (E) No or very minimum trigger movement should be possible if the safety is fitted correctly. Additionally, if the angle of the safety yoke has been filed incorrectly (Area L), the trigger will be able to be pulled off a safe position. If this is the case, the safety will need to be replaced.
- (F) If more than a minimum movement of the trigger is possible with the safety engaged or if the trigger is able to be pulled such that it forces the safety down into a fire position, the safety should be replaced because the tab on the safety yoke is either too short or at the incorrect angle. AK fire selectors/safeties are generally interchangeable (though there are several models) and are widely available. Contact Red Star Arms or Power Custom if you need a new safety and cannot locate one.

Notes for safety fit for certain selectors:

There are many different types of selector yokes for the AK. The European type selector is most compatible with our custom trigger. However, nearly any selector will work with minor modifications. Figure 3 shows a rear view of an AK safety/selector. The darkened area is present on some selectors but not others. This material is not needed on the custom trigger, and should be removed if it prevents proper function by interfering with the trigger's movement after all adjustments have been made and the rifle test fired. The tab of the safety yoke should only contact the trigger on the right ramp (Area L). The trigger must move freely when the safety is in a down/fire position in order for proper function. Set screw C should be adjusted prior to removing any material from the safety.

Adjustment Screw Maintenance:

All adjustment screws are set in blue loctite prior to being packaged. If the loctite set is broken in order to make adjustments, or the gun is exposed to excessive solvents, the loctite should be re-applied. Use blue loctite if you wish to be able to adjust your trigger in the future, or use red loctite for a nearly permanent set. It is important for the screws to be secure for the trigger group to function properly. As part of your routine maintenance, please check that the screws are secure. Alternatively, the adjustment screws can be staked. Please consult a gunsmith for staking instructions.

Frequently Asked Questions:

- 1) The safety does not seem to fit with the installation of the new trigger, what should I do?** Please read the sections on fitting the trigger/safety engagement. The PC/RSA trigger has been designed to allow for tighter safety engagement. A loose safety engagement is an unsafe condition when combined with a short/light trigger pull.
- 2) I have installed the trigger/disconnector assembly, but the trigger does not rotate freely, what should I do?** We have found that a large number of stamped AK receivers are untrue in the area of the trigger window of the receiver. Most commonly, the rounded front right corner of the trigger window on a single hook receiver may rub on the trigger. This can be easily corrected with a few passes of a file on the corner of the trigger window. For certain non-typical AK variants (Yugo M90, Valmet) the point of the trigger will contact the trigger guard, and requires shortening to clear. This can be done with a grinding wheel, or you can contact us for custom trigger work.
- 3) I cannot get my pin through my trigger or hammer, what should I do?** When the trigger/hammer pins are heat treated, they can sometimes swell. Occasionally trigger/hammer pins will not fit through the hole in the new trigger or hammer. This can be corrected by sanding/polishing the pins. Typically the pins are too large toward the end, and removal of a tiny amount of material is sufficient for them to pass through the new part.
- 4) I have successfully installed and adjusted my trigger. My gun is now double tapping, or the hammer is following the bolt on live fire, what should I do?** When adjusting the disconnector adjustment screw, it is important to allow for sufficient engagement of the hammer. Adjusting so that the hammer will not be engaged by the disconnector will NOT result in full auto fire. Rather, it will result in a dangerous condition where the hammer follows the bolt and occasionally sets off a second round. Most commonly hammer follow will only dimple the primer and force you to recharge the bolt. Proper disconnector engagement of the hammer is critical for proper function of your trigger group.

Disclaimer Warranty:

Triggers adjusted improperly and lighter than 3.5 lbs. pull are unsafe and are considered dangerous. Seller makes no warranty of any kind expressed or implied, except that the firearms accessories sold hereunder shall be of the highest standards of manufacture. Buyer by acceptance and installation of this product assumes all risk and liability from the use of these products whether used singly or in combination with other items. Seller neither assumes nor authorizes any person to assume for seller any other liability in connection with the sale or use of these items and there are no agreements or warranties collateral to or affecting this agreement.

