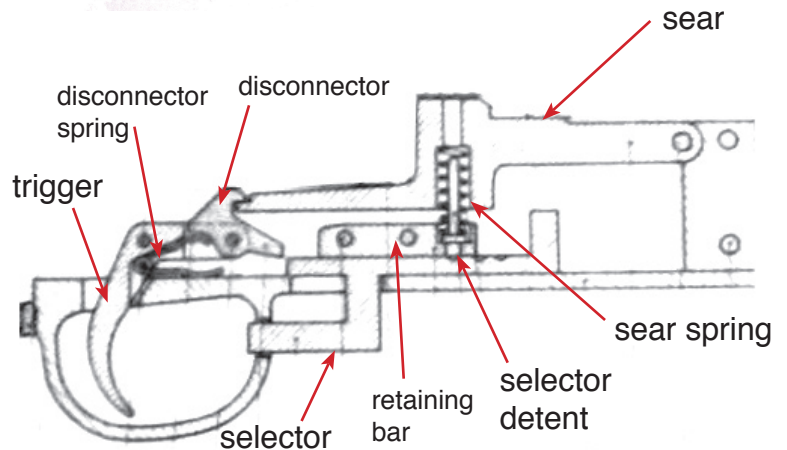
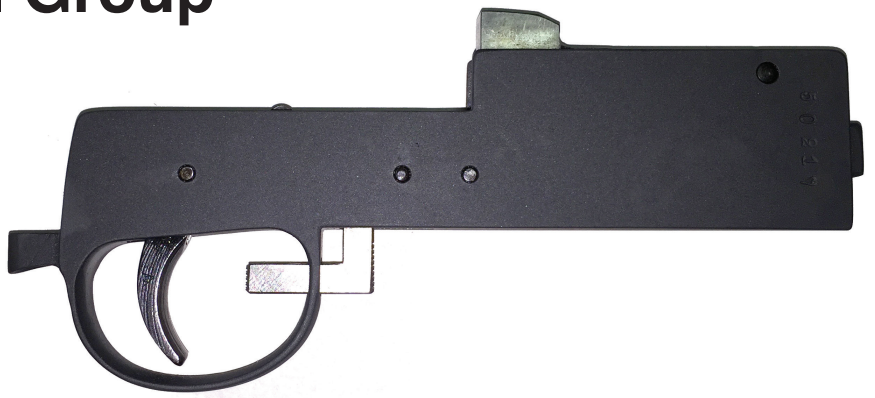
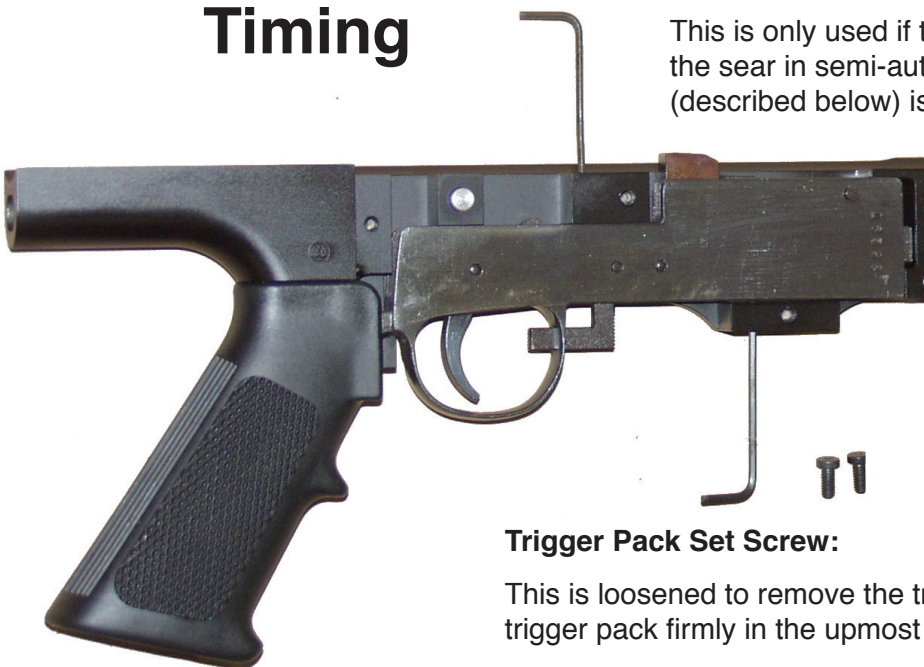


KP 31 Fire Control Group

The Finnish KP 31 trigger pack is one of the best SMG fire control mechanisms ever made. It is durable, reliable, and has a smooth trigger pull that rivals most high precision rifles. Designed in 1930 by AJ Lahti, it features SAFE-SEMI-FULL AUTO selector at the front of the trigger guard. Fully forward is FULL AUTO, one click rearward is SEMI, and fully rearward is SAFE. The components are precisely machined from the high quality steel Finland is known for. Later SMG designs during and after WW2 used less expensive methods better suited for mass production. The design and manufacturing paradigm when this was invented in 1930 was: *'How good can we make this?'* By the late 1930's, the paradigm shifted to: *'How fast can we make this?'* While the KP31 trigger pack quality and performance were battle proven during the Winter War, less expensive designs were better suited for their quantity needs.



Timing



Sear Timing Set Screw:

This is only used if the disconnecter fails to reengage the sear in semi-auto when the Trigger Pack Set Screw (described below) is already tight. In most lower housings this 8-32 set screw is not necessary or present.

Tighten this set screw 1/2 turn at a time to push the sear down until the disconnecter easily reconnects with sear after each trigger pull in semi auto. After reassembly, check for proper bolt sear function before using.

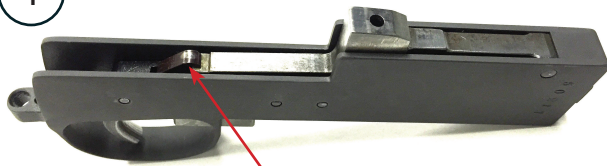
Trigger Pack Set Screw:

This is loosened to remove the trigger pack and tightened to keep the trigger pack firmly in the upmost position when assembled.

VERY IMPORTANT: This must be tight to prevent runaway and to ensure disconnecter / trigger / sear reset in semi auto mode.

KP 31 Fire Control Group Disassembly

1



Pull the disconnecter back and gently pivot the sear upward. **Maintain hold of the sear as it is under pressure of the sear spring.**

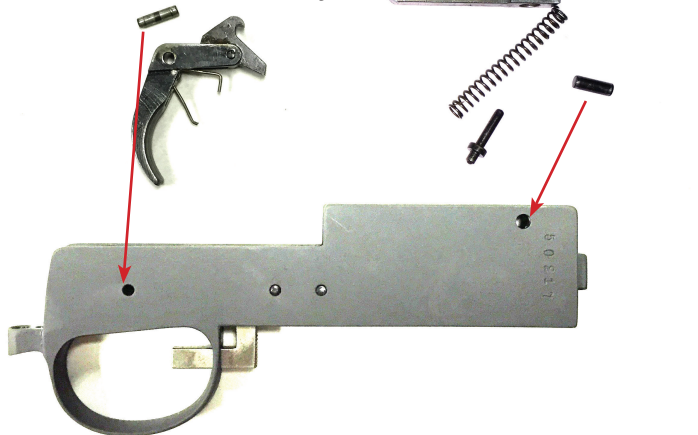


2

Drive out the sear pin and remove the sear, sear spring, and selector detent

3

Drive out the trigger pin and remove the trigger/disconnector assembly



4

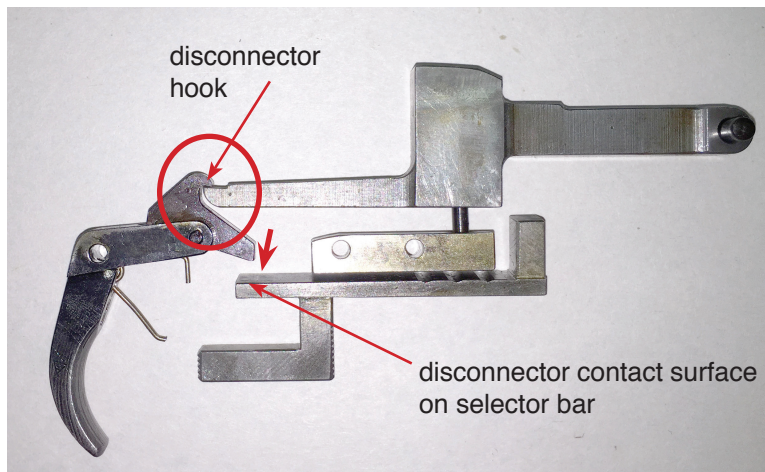
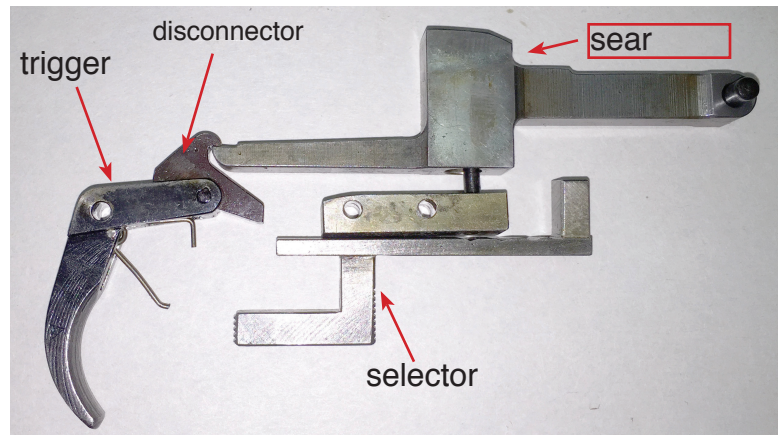
Drive out the retaining bar pins and remove the retaining bar and selector



KP 31 Fire Control Group Operation

Full Auto (Slave Sear)

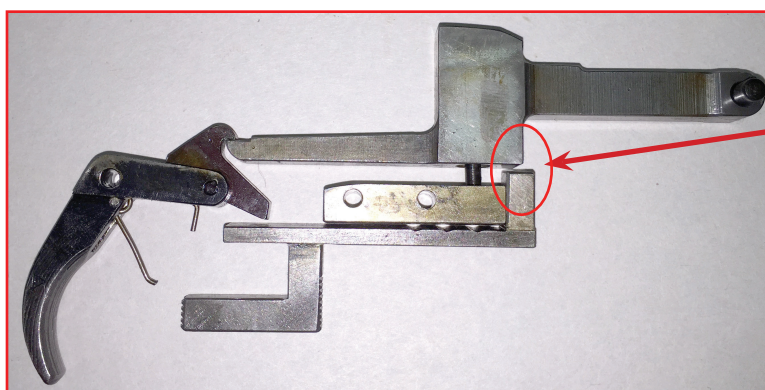
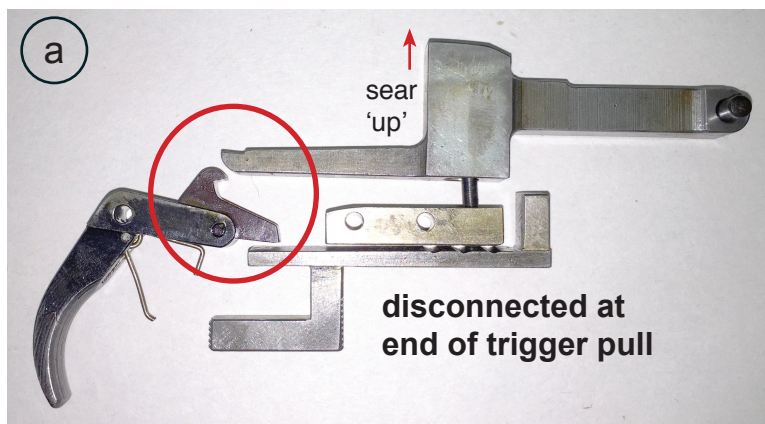
In the FULL AUTO setting with the selector fully forward, the trigger and disconnector remain connected to the sear. Pulling the trigger depresses the sear and allows the bolt to lunge forward under power of the mainspring. Releasing the trigger raises the sear and catches the bolt to stop the system from cycling. The sear, trigger, and disconnector remain joined/slaved together.



Semi Auto

In the SEMI setting with the selector one click rearward, the trigger and disconnector remain connected to the sear for only 90% of the total trigger pull. At this point (90% of the length of pull) the sear is depressed far enough to allow the bolt to lunge forward under power of the mainspring. By pulling the trigger fully rearward ^(a), the lower portion of the disconnector contacts the selector bar and pivots the disconnector hook off of the sear. The sear then pops upward under force of the sear spring and rests on the sear/disconnector reset surface in the lower housing. With the sear in the 'up' position the system is stopped from cycling.

Releasing the trigger raises the disconnector and the disconnector hook pivots forward under pressure of the disconnector spring to reengage the sear. A properly functioning setup in semi auto will make a clicking sound as the disconnector releases the sear then reconnects when the trigger is let forward.



Safety

With the selector fully rearward, the bar at the front of the selector blocks sear movement and lock the sear in the 'up' position.

SAFETY WARNING

Fully Pull and Fully Release The Trigger

Do not bounce, float, or feather the trigger. Always pull through the firing and complete the pull. With this type of machine gun, think of the sear & bolt relationship as 'on' or 'off,' engaged or disengaged. For trigger control, there is no 'break' and 'reset' like most semi auto pistol shooters focus on. As an open bolt system, pulling the trigger simply depresses the sear that's holding the bolt rearward in the 'open' position. At approximately 90% of the trigger length-of-pull, the sear disengages from the bolt allowing the bolt to lunge forward under power of the mainspring. The bolt then strips the cartridge from the drum, chambers with significant force that the extractor snaps over the cartridge rim, the firing pin then contacts the primer to fire the cartridge, the pressure from the fired cartridge 'blows back' the bolt rearward, the spent case contacts the ejector and ejects through the ejection port, the bolt further retracts to the buffer and returns forward to repeat the cycle. This cycle continues until the drum is empty or the trigger is released in FULL AUTO mode or disconnected in SEMI AUTO mode thereby elevating the sear to catch/engage the bolt in the rear/'open' position.

If during this cycle process the trigger is partially pulled or 'floated' between sear engaged and sear disengaged, the bolt will have interrupted movement over the sear, or worse, may unsafely catch the bolt in the rear position with only sight sear/bolt engagement. In addition to a choppy cycle, repeated partial sear engagements will cause damage to the sear and sear catch surface on the bolt over time. In SEMI AUTO mode, 'floating' the trigger at 90% of the length-of-pull will allow multiple shots until the trigger is pulled fully rearward to disconnect the sear from the trigger/disconnector assembly and stop the system. In SEMI AUTO mode, it is very important to fully pull the trigger with every shot to ensure proper disconnection, and fully release the trigger to ensure proper reset. In FULL AUTO mode it is very important to fully pull the trigger to ensure that the sear is clear of the fast moving bolt during long full auto bursts, and fully release the trigger to ensure that the sear has maximum engagement on the bolt when held in the open position between full auto bursts.