

Tuning The Weihrauch Rekord Trigger Unit

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This document is split into four sections and describes how to do the following on the Weihrauch Rekord Trigger Unit:

1. Adjust the trigger.
 2. Dismantle the trigger components.
 3. Re-assemble the trigger components.
 4. Polish the sears.
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!!! Warning !!!

Maintaining sear engagement and pressure until the user deliberately releases the trigger is essential for safety reasons, any person making adjustments to the trigger unit set-up must always bear this in mind. Any work carried out on triggers must be done in a safe environment, where injury to persons or property cannot occur.

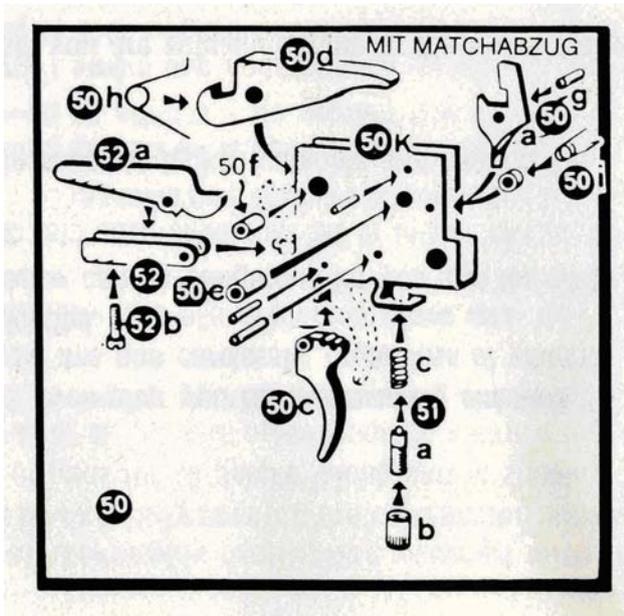
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Section 4 deals with polishing the sears to produce a smoother first stage travel; most users of Rekord triggers do not need this, it is only for those who desire perfection and are skilled in fine grinding techniques.

If in doubt, seek professional advice.

The Rekord trigger unit is shown in figure 1, complete with the parts list.

Tuning The Weihrauch Rekord Trigger Unit - Part 1



- 50a upper rear sear lock
- 50c trigger
- 50d piston sear lever
- 50e roller
- 50f retaining roller
- 50g retaining pin
- 50h front sear spring
- 50i rear sear spring
- 50k trigger housing
- 51a rear trigger adjustment screw
- 51c trigger spring
- 52 guide
- 52a tongue
- 52b front trigger adjustment screw

1.0 Adjusting the Trigger

The Rekord trigger is a two-stage trigger and is fine piece of engineering that was years ahead of its time. The following adjustments are possible:

- First stage travel
- First and second stage pressure
- Second stage movement (I also call this creep in this article)

Each of these adjustments is covered in the following sections.

1.1 First Stage Travel

Adjustment of the first stage travel is achieved by removing the action from the stock and moving the down-stand on the front underside of the trigger unit, see figure 2. The arrow shows the down-stand. To reduce first stage travel, the down-stand must be bent towards the rear of the trigger unit. I have done this by giving it a smart tap via a hammer and drift tool. Remember that this will reduce the setting position and sear engagement, so don't reduce it too much. It is essential to maintain sufficient sear engagement so that the gun is safe and can take the odd bump without firing itself, otherwise the rifle would be very dangerous. Moving the down-stand forward will increase sear engagement and first stage travel.



Figure 2

1.2 First & Second Stage Trigger Pressure

This section deliberately deals with the pressure required to pull the trigger through both first & second stages as they are linked to each other. In other words if you increase the first stage pressure, the second stage pressure will also increase. The reason for the for this is that only one spring is used (part 51c), and the difference between first and second stage pressure is achieved by the difference in effective leverage between the front and rear rollers crimped into the top of the trigger blade, relative to pivot pin of the tongue/guide (parts 52a/52).

The adjustment is fairly straightforward; you don't have to remove the action from the stock. All you have to do is turn the rear trigger adjustment screw (part 51a) clockwise to increase the trigger pressure, or anticlockwise to reduce it. If you reduce the trigger pressure too much, the trigger blade will not return if you release pressure on it during first stage travel. Also the second stage pressure can be too light making it unpredictable and dangerous.

The feel of the trigger as it breaks and releases the rifle piston is related to both the second stage pressure and creep. It is important to ensure that the trigger feels safe for you, even when you have cold fingers.

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1.3 Trigger Creep

Some second stage trigger movement is essential otherwise the trigger will fire the rifle at an unpredictable position during its first stage travel, which does nothing for accuracy and is unsafe. This adjustment is not recommended for persons inexperienced in trigger tuning, unless under the guidance of someone who has done it before.

To adjust the creep you have to remove the trigger guard, to get access to the front trigger adjusting screw (part 52b).

In order to safely cock the rifle to test the set-up, the action has to be fixed to the stock without the trigger guard in place. I achieve this with a modified metal bracket, shown in figure 3, using the rear stock retaining screw. In other words the bracket holds the action in place.



Figure 3

Extreme caution has to be exercised if cocking and loading the rifle without the trigger guard in place to test the creep, as it would be too easy to catch the trigger and fire the rifle in an unsafe direction, potentially causing serious injury. This must only be attempted in a very safe environment such as a workshop with a suitable backstop, and no persons in front of the rifle muzzle.

Some people are heavier handed than others, and also if shooting in cold conditions, with cold fingers, it is best to have a small amount of creep, otherwise the trigger release can feel unpredictable, and can lead to premature firing of the rifle, which is unsafe.

To adjust the trigger creep, a Torx TX8 tool is needed to turn the front trigger adjusting screw (part 52b). Turning the screw clockwise will reduce creep, and anticlockwise will increase it. If the screw is turned too far clockwise, then the trigger will have no second stage pressure and it will release unpredictably during the first stage travel. This is very dangerous, and if this occurs, then the front trigger adjusting screw must be turned anticlockwise at least half a turn, or until the trigger is safe again.

2.0 Dismantling the Trigger Components

2.1 Preparation

Before starting, ensure that you have a clean work surface and all necessary tools to hand. I also use a white sheet of A4 paper to lay out all dismantled parts, roughly like the diagram in figure 1. This makes it easier to know which part is which.

2.2 Dismantling

Remove the whole trigger unit from the trigger block by drifting out the two retaining pins, taking care to capture the safety catch and spring when pulling the trigger unit from the block. Also take care not to lose the small hexagonal nut that sits in the rear of the trigger housing for the rear trigger guard screw on most models. You can avoid losing this in future by using some insulating tape around the back of the housing to make it captive.

Remove the rear trigger adjusting screw and spring

Remove the trigger pivot pin and the trigger

Drift out the pivot pin for the guide and tongue, and remove parts 52 & 52a. The trigger unit now looks like figure 4, with both the piston sear & the upper sear lock rotated out by their springs.

Tap out the retaining roller part 50f, and remove parts 50d & 50h (carefully noting which way the spring goes for re-assembly).

Tuning The Weihrauch Rekord Trigger Unit - Part 3



Figure 4

Now comes the tricky bit (especially for re-assembly!). Take a good look at the back of the parts making up the upper rear sear lock assembly (parts 50a, & 50i and also the spacer which is not shown in Weihrauch's diagram).

When viewed from the back of the trigger unit, the rear sear spring (part 50i) is on the left and the spacer is on the right. If you look carefully inside the trigger housing, you will see that the rear sear spring is kept tensioned by a pin roughly in the middle of the trigger housing. Tap this pin partially out so it projects from the right side of the housing when viewed from the back. This will release the spring tension, and allow the rear sear to rotate freely.

Figure 5 shows the spring leg released and the pin partially out.

Now tap out the pin holding the rear sear, and thus remove the rear sear, spring and spacer. The trigger is now dismantled for our purposes.



Figure 5

3.0 Cleaning and Re-Assembling the Trigger Components

Clean all components, removing all oil and grease. In my experience, oil and grease, make a trigger sticky, and it loses feel.

Re-assembly of the components is the reverse of the dismantling section. The trickiest bit for me is replacing the rear sear spring and spacer, and getting the rear sear spring tensioned. Once the rear sear assembly is in place, I use an old screw driver shown in figure 6, which I modified to have a small 90 degree bend, and a groove sawn in the end of the blade. The groove will hold the long leg of the sear spring and the right angle will allow you to rotate the leg clockwise, and get it past the partially protruding tensioning pin, then the pin can be pushed back in to trap the spring leg in the tensioned position.



Figure 6

The rest of the re-assembling is plain sailing after that. Just follow the instructions in the dismantling section in reverse.

After the trigger is fully re-assembled, ensure you adjust the trigger and check it thoroughly as noted in section 1.0 above.

Tuning The Weihrauch Rekord Trigger Unit - Part 4

4.0 Polish the Trigger Sear

Polishing the trigger sears is a serious business, and must be done very carefully, making sure that the original angles are not altered in any way.

Figure 7 shows the sear components with arrows showing their direction of movement when you pull the trigger.

It can be seen that the tongue (part 52a, which is really a lower sear in my view) moves downwards in the direction of the straight arrow shown in figure 7.

This downwards movement is caused by first stage travel, and if you find this a bit gritty, then the places to polish are the contact faces of the tongue and the upper rear sear lock. I polish using either a very fine oilstone, or 1200 wet & dry paper. In order to achieve an ultra smooth trigger you should polish sears in the direction of movement, i.e. in this case in the direction of the straight arrow shown in figure 7.

Repeated gentle polishing will remove any machining marks that run across the direction of movement like peaks and troughs. Under no circumstances must you round the sharp edges where the sears finally break, or alter the existing curves/angles.



Figure 7

The other place I polish if necessary is the underside of the guide (part 52). I only do this, if the two trigger contact points have worn grooves here.

One of my triggers, actually the one in figure 7, had plate metal on the two rollers crimped into the top of the trigger. The plate had partially peeled off both rollers, and this could in my view affect the smoothness of the first stage travel. So I tapped out the rollers and carefully removed the remaining plate with 1200 wet & dry paper ensuring they were smooth. I then replaced the rollers and re-crimped them back into position.

I have in the past also polished the surfaces where the upper sear lock and piston sear lever mate. I am not sure this does a lot of good though as the forces are large here, and movement is likely to be very fast. You won't feel this in the trigger pull, so unless it looks very rough (unlikely for the Rekord build quality) I wouldn't bother with this.

Finally, follow section 3 above to re-assemble your tuned trigger. Once re-assembled, working in a safe environment, adjust the trigger as noted above bearing safety in mind at all times.