



DAYTONA
AIRSOFT

Daytona Gun Airsoft Guide:
LCT HK33/53 Installation Manual



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Basic Information

Introduction

When properly installed, your Daytona Airsoft Systems (DGA) recoil kit provides you the ability to experience heavy recoil with no cooldown, and without expensive, heavy gas magazines to keep serviced, or batteries to keep charged.

Please note that the DGA LCT HK33 kit has been designed to fit and function within the LCT HK33 and LCT HK53 series of rifles only. While it may be possible to modify the kit and/or the donor of a similar spec rifle from another brand, this is neither recommended nor supported and will likely require additional fitting and tuning beyond what this manual specifies. DGA offers neither support nor advice for installations into non-supported donor bodies.



For the User

This guide assumes some technical knowledge and ability on the part of the installer. If you are not familiar with how various airsoft systems operate, and if you have never disassembled/built an airsoft gun before, you should consider having your local gun tech do the install for you.

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What You Need

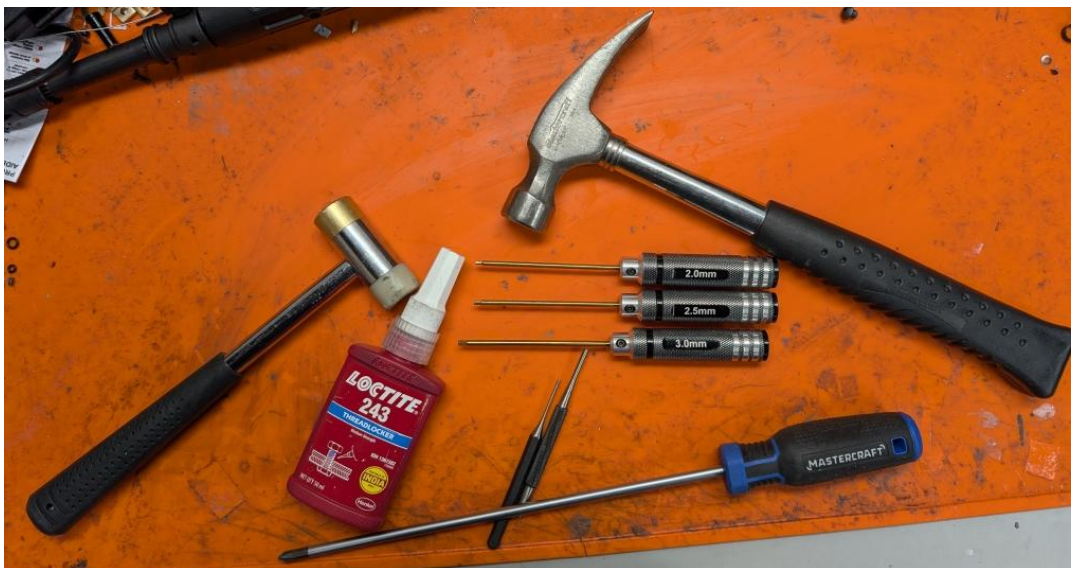
In order to install the DGA kit into your donor body, you will need the following tools:

Necessary:

- 2.5mm hex wrench
- 3mm hex wrench
- 2mm hex wrench
- Phillips screwdriver
- Small flathead screwdriver, such as for eyeglasses
- Narrow pin punch
- Wider pin punch
- Needle-nose pliers
- Hammer
- Semi-permanent thread lock, such as Loctite 243
- 4.5mm drill bit
- 10mm drill bit
- Power drill
- Vise or clamp

Helpful:

- Rubber mallet
- Drill press
- Deburring tools



Disassembling Your Donor Body

A Note Before Starting

If you have already taken apart your donor body, or if you are already familiar with disassembling an LCT HK33 or HK53 AEG, you can skip to the section of this manual dealing with installing the DGA kit.

Please note that this section uses an LCT HK33 as a donor exemplar. Steps for disassembly may differ slightly for different variants.

How to Disassemble Your Donor

Primary Disassembly

1. Punch out the three body pins retaining the stock, the lower receiver, and the handguard.
 - You can store two pins in the stock pin holders
2. Pull off the stock and handguard.
3. Remove the recoil guide rod and spring.
4. Slide the lower and upper receiver apart.



Upper Receiver Disassembly

1. Slide the hop up unit and inner barrel back out of the upper receiver.
2. Punch out the lower pin holding the outer barrel to the upper receiver.



3. Remove the three Phillips-head screws that retain the outer barrel bushing.



4. Punch out the handguard retention bushing located behind the front sight.



5. Pull the barrel assembly forward out of the upper receiver.



6. Unscrew the outer barrel from the barrel base.



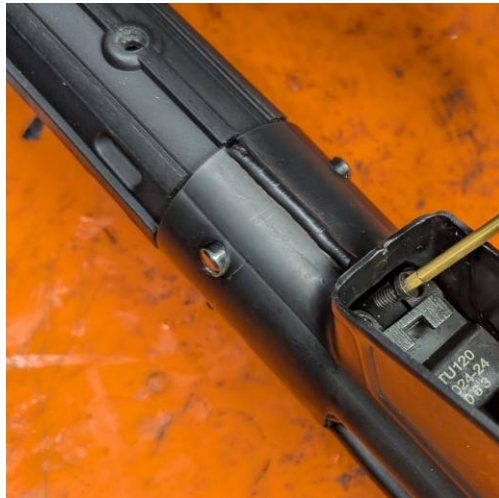
7. Punch the pin retaining the mock recoil assembly from the rear of the upper receiver.



8. Slide the recoil spring and mock bolt out of the back of the upper receiver.



9. Remove the two socket head machine screws holding the magazine well spacer in place with the 2.5mm hex driver.



10. Remove the magazine well spacer plate.

Lower Receiver Disassembly

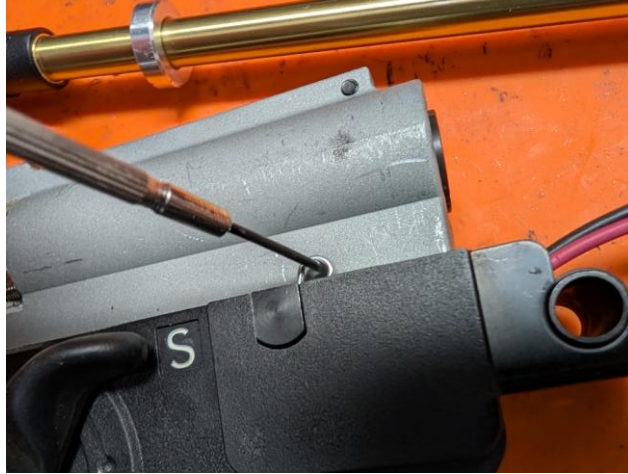
1. Remove the pistol grip base plate by unscrewing the two screws using the Phillips driver.
2. Pull the positive and negative spade connectors off the terminals on the motor.
3. Pull the motor out of the pistol grip.



4. Unscrew the two motor grip screws inside the pistol grip using the Phillips driver.
5. Punch the gearbox pin out from the left side of the receiver.



6. Pull the cotter pin out from the right side of the lower receiver using the flathead driver and needle-nose pliers.



7. Punch the gearbox pin formerly held by the cotter pin out of the lower receiver



8. Pull the gearbox up and out of the lower receiver.



What to Keep and What to Set Aside

With you donor disassembled, you will have many parts. You only need to keep the items on the following list. Everything else can be safely removed.

Keep:

- Upper & lower receivers
- Outer barrel
- Handguard
- Stock, receiver, and handguard pins
- Pistol grip base plate and base plate screws
- Original inner barrel if you are not upgrading to a better one (you will need to disassemble your donor's hop up unit for this)
- Magazine well hook and its two socket head machine screws

Installing the Daytona Kit

Inside the Box

If you haven't already, open the box containing the kit. Remove the packing materials and lay everything out.

Your kit should contain the following items:

- Complete trigger chassis and selector assembly
- Complete bolt carrier assembly
- Recoil rod support assembly
- Recoil rod and recoil spring
- Hop up chamber and feed tube assembly
- 12.9mm barrel ring and C-clip assembly and DGA standard hop up bucking
- Trigger, trigger block assembly, trigger block pin (trigger not pictured)
- Magazine well hook adapter plate (not pictured)
- Cocking tube adapter
- Air valve and airline with fitting and DGA QD
- Outer barrel adapter assembly
- Three (3) short socket head machine screws
- Two (2) long socket head machine screws
- One (1) medium socket head machine screw
- One (1) pan head machine screw

Compare the contents of your package with the above list and the image below. If you believe you are missing any parts, please contact DGA for assistance.



Assembling the Inner Barrel Group

Remember that you will need an AEG-spec inner barrel. This is not supplied with the kit. You **can** use the original barrel from your donor gun's body, but DGA recommends upgrading to a high-quality aftermarket stainless steel inner barrel. Remember, the DGA hop up rubber, barrel ring, and c-clip are designed for use with AEG inner barrels **only**.

Inner Barrel Assembly:

1. Slide the Daytona hop up bucking onto the correct end of the inner barrel.
2. Push the barrel ring down so that the opening on the bucking end slides over the lip of the hop up bucking.
 - Sometimes you may find it difficult to slide the barrel ring down the barrel, over the bucking, or both. Careful removal of some of the inner material of the barrel ring with a file and/or drill can be done to correct the spacing.
3. Push the c-clip down into the slot of the barrel ring. Hammer it gently into place with a mallet if necessary.

Hop Up Chamber Assembly

1. Remove all set screws from the hop up chamber using the 2mm and 2.5mm hex wrenches.
2. Place a drop or two of thread lock onto the threads for the hop up adjustment screw.
3. Screw the hop up adjustment screw back into place using the 2.5mm hex wrench. Look into the inside of the chamber and keep turning the screw until you see it protrude into the chamber.
4. Absorb the excess thread lock on the bottom of the adjustment screw with a cotton swab.
5. Back the adjustment screw up so that it no longer protrudes into the chamber.
6. Clean any excess thread lock on top of the screw as well as in and on the chamber with cotton swabs or paper towels.
7. Push the inner barrel group into the chamber, leading with the bucking. Make certain that the window of the inner barrel faces upwards.
 - Do not shove or force the inner barrel group into the chamber. Too much force can deform the bucking, leading to jams, feeding issues, and poor accuracy.
8. Apply some hop up using the 2.5mm hex wrench while looking down the barrel. Apply enough so that you can clearly see the protrusion of the mound into the chamber.
9. Rotate the barrel clockwise or counterclockwise until the mound is dead center within the chamber.
10. Apply thread lock to the two set screw holes on either side of the chamber.
11. Insert and tighten the set screws using the 2mm hex wrench to lock the inner barrel group in place within the hop up chamber.



Barrel Adapter Assembly

1. Unscrew and remove the feed tube from the hop up chamber.
2. Slide the chamber assembly into the aluminum sleeve on the adapter.
3. Ensure that all three components are properly aligned.
4. Install and tighten the four set screws using the 2mm wrench. Remember thread lock.



Assembling and Modifying the Air Valve

The air valve comes out of the box with a valve stem return spring installed. This can be left installed for a stiffer trigger pull. DGA recommends removing the return spring to soften the trigger pull.

1. Remove the air line and fitting from the air valve. This needs to be removed in order to test fit the valve in the receiver.
2. Unscrew the cover on the back of the air valve using the flat head screwdriver.
3. Dump the small internal spring out of the valve.
4. Screw the cover back into place. Tighten it down. Do not apply thread lock, as the o-ring provides an adequate seal as well as locking force.



5. Install and tighten the air line in the air valve. Apply a small amount of thread lock. Do not overtighten.



The airline fitting should be FINGER TIGHT only. Overtightening may break the fitting. DGA Is not responsible for fittings broken through overtightening!

Modifying and Assembling the Upper Receiver

Completing the Outer Barrel and Making the Hop Up Adjustment Hole

1. Slide the outer barrel over the inner barrel and screw them together. Ensure that the front sight and flat portion of the DGA barrel adaptor are aligned.



2. Slide the barrel assembly into the upper receiver. Do not install the retaining bolts.
3. Check the alignment of the hop up hole on the hop up chamber with the receiver and make a mark on top of the receiver for drilling the hop up adjustment hole.



4. Remove the barrel assembly.
5. Clamp the upper receiver in a vise or mill.
6. Use a punch to make a mark on the upper receiver to guide the bit.

7. Drill the adjustment hole. We recommend using a bit at least 4.5mm in diameter.



8. Remove the upper receiver from the clamp and clean any debris.

Completing the Upper Receiver

1. Pull back the cocking handle.
2. Push the cocking handle adaptor into the cocking handle tube.



3. Push the cocking handle forward.
4. Slide the outer barrel into the upper receiver.
5. Install and tighten the three retaining bolts with the 2.5mm wrench.



6. Install the barrel locking pin.



7. Apply some thread lock to the feed tube and screw it into the hop up chamber.



8. Place the magazine well hook adapter plate into the magazine well.



9. Reinstall the magazine well hook using the original machine screws and 2.5mm driver.



10. Reinstall the handguard and its pin.
11. Slide the DGA bolt carrier into the upper receiver.



Modifying and Assembling the Lower Receiver

Assembling the Trigger Chassis

1. Screw the trigger and trigger adaptor together using the 2.5mm hex wrench and the thin hex bolt.
 - Remember to use thread lock



2. Insert the completed trigger up into the bottom of the trigger chassis and insert the trigger pin to hold it in place.



Drilling the Selector Hole in the Lower Receiver

1. Place the lower receiver in a vise or clamp with the righthand side facing upwards.
2. Drill out the entirety of the raised fake selector surface.
 - This should be just slightly wider than the DGA selector assembly, which can be used as a reference.



3. Remove the lower receiver from the clamp or vise and clean up the hole.

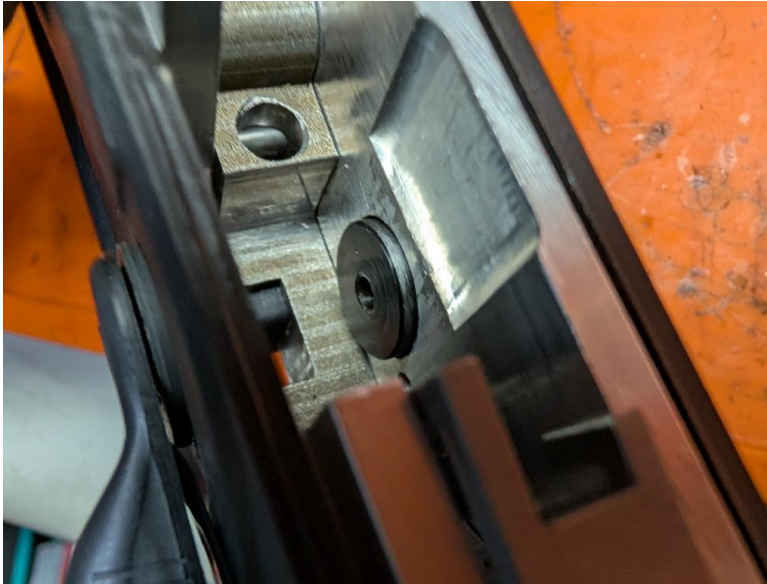
Installing the Trigger Chassis

1. Remove the panhead machine screw from the right side of the trigger chassis with the 2mm hex driver.
2. Remove the selector assembly from the trigger chassis.
3. Drop the trigger chassis down into the lower receiver, ensuring that the trigger enters the trigger guard.



Installing the Selector Assembly

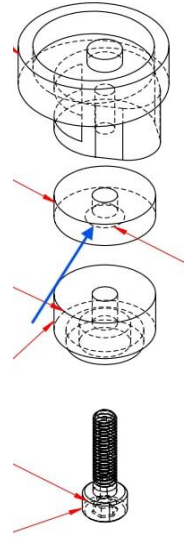
1. Remove the bolt from the DGA selector using the 2.5mm wrench and separate it into its 3 components.
2. Drop the right-side receiver adaptor piece down into the trigger chassis.



3. Drop the cammed selector adapter down over top of the internal portion of the selector.



- Slide the selector spacer down between the cam adaptor and receiver adaptor.



- Install and tighten the selector bolt through the right side of the receiver using the 2.5mm wrench.



- Install the pan head machine screw removed the previous sections Step 1 with the 2.5mm hex driver.



Installing the Air Valve and Recoil Rod Assembly

1. Drop the air valve assembly down into its slot at the rear of the trigger chassis.
 - You may need to widen one or more of the holes in the pistol grip area of the lower receiver to allow this.



2. Place the recoil rod support assembly over top of the air valve and install the two long socket head machine screws with the 2.5mm hex driver.



3. Insert the recoil spring guide rod into the hole in the front of the recoil rod support assembly. The rod should enter with the flat portion facing upwards.
4. Install and tighten the short pan head machine screw with the 2.5mm hex driver to retain the rod.



Completing the Lower Receiver

1. Remove the motor height adjustment screw from the pistol grip base plate.
2. Place the base plate in a vise or clamp.
3. Drill out the adjustment screw hole so that it can easily accommodate the air line.
4. Slide the base plate up the air line and reinstall its two Phillips head screws.



5. Install the QD connector onto the air line.

Final Assembly

1. Slide the DGA recoil spring over the recoil spring guide rod.



2. Pull the charging handle back and push it up into the safety notch.



3. Slide the lower receiver into the upper receiver.
4. Release the charging handle when the two receivers are together.
5. Install the body pin.
6. Slide the stock into place.
7. Install the stock pin.



Congratulations, you have completed all major installation steps for the DGA LCT HK33/53 kit.

If you haven't already, you should lubricate the moving parts of the engine. DGA recommends *GetSome* brand lubricant, available from our website.

If you encountered any issues during your install, or your gun is not working correctly, please reach out to DGA Support.

Please check the website for more guides on troubleshooting and maintenance.

We also invite you to join the Daytona Airsoft Systems Group on Facebook to speak directly with other DGA enthusiasts as well as DGA employees.