



DAYTONA
AIRSOFT

Daytona Gun Airsoft Installation Manual: WE PDW



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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 WE PDW kit has been designed to fit and function within WE PDW GBB bodies 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.



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:

- 4mm hex wrench
- 1.5mm hex wrench
- 2.5mm hex wrench
- 2mm hex wrench
- 3mm drill bit
- 10.5mm drill bit
- Hammer
- Phillips-head driver
- Small pin punch
- Semi-permanent thread lock, such as Loctite 243
- Power drill
- Vise or clamp
- AEG inner barrel
- Cotton swabs
- Half-inch step drill bit

Helpful:

1. Rubber mallet
2. Drill press
3. Deburring tools
4. Center punch



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 a WE PDW GBBR, you can skip to the section of this manual dealing with installing the DGA kit.

How to Disassemble Your Donor

Primary Disassembly

1. Punch out the takedown and pivot pins using the pin punch.
2. Pull the upper receiver up and off of the lower receiver.



Disassembling the Lower Receiver

1. Remove the bolt holding the pistol grip to the receiver using the Phillips-head driver.
2. Pull the pistol grip slowly off the receiver, paying attention to not losing the selector detent spring on the right side of the receiver.
3. Remove the selector detent by pulling it out with some pliers or by gently shaking the receiver.



4. Unscrew and remove the bolt at the rear of the trigger box using the Phillips driver.
5. Remove the right-hand fire selector lever using the 1.5mm hex wrench.
6. Punch out the pin retaining the bolt catch and remove the bolt catch and its spring.
7. Pull the pin retention clip on the right side of the receiver backwards using a tool like a punch or small driver and remove it from the receiver.
8. Punch out the upper-most pin. The other two pins are dummies.



9. Cock the hammer, pull backwards on the full-auto sear, and pull the fire selector out of the receiver. Rotating the lever back and forth can help with this.

10. Pull the trigger box up and out of the lower receiver.



11. Punch out the pins on the trigger box retaining the hammer, full auto sear, and trigger.

12. Remove the trigger sear and springs from the trigger.

Disassembling the Upper Receiver

1. Pull the charging handle back and remove the bolt carrier.
2. Pull the charging handle up and out of the installation notches.



3. Unscrew and remove the two bolts on the underside of the handguard using the 4mm hex wrench.
4. Pull the entire barrel group forward out of the upper receiver and separate the hop up chamber and inner barrel from the outer barrel.



What to Keep and What to Set Aside

Now that you've disassembled your donor, you likely have several piles of parts. For the most part, you need only a few of the original internal components.

Keep the following:

- All body components (receiver, barrel, pistol grip, etc.)
- Outer barrel, gas block, and piston rods
- Selector assembly
- Selector detent and spring
- Pin retention clip
- Charging handle
- Bolt catch lever
- Trigger, brass trigger bushing, trigger pin
- Barrel group retention bolts



Installing the Daytona Kit

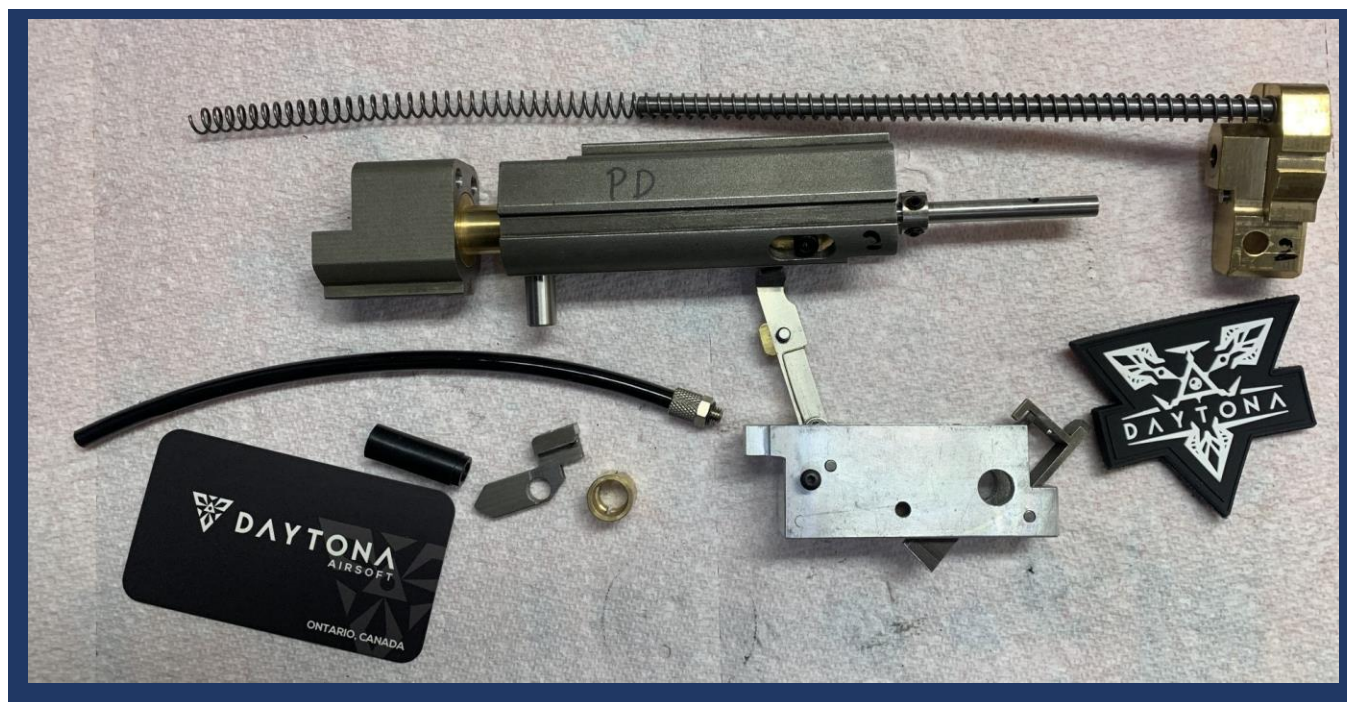
Inside the Box

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 integrated recoil assembly and air valve with air line
- Hop up chamber with feed tube
- Outer barrel and hop up chamber adapter
- Barrel friction ring
- DGA Standard hop up rubber
- Trigger chassis
- Complete bolt carrier assembly
- Trigger sear

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 cannot use the GBB-spec stock inner barrel from the donor body; the DGA hop up rubber, barrel ring, and c-clip are designed for use with AEG inner barrels only.

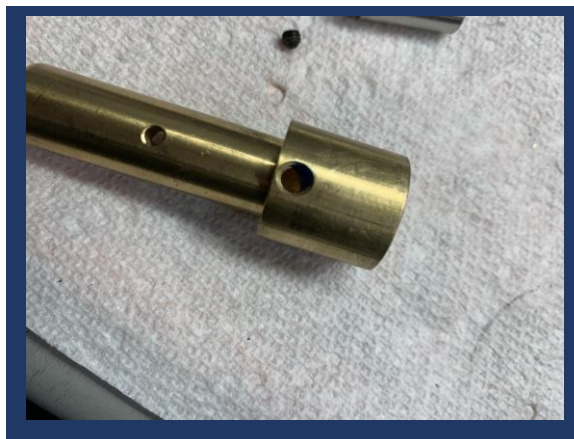
Inner Barrel Assembly:

1. Slide the Daytona hop up bucking onto the correct end of the inner barrel.
2. Slide the barrel friction ring onto the barrel from the muzzle end of the inner barrel.
3. 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. This issue is most common on aftermarket barrels, which often have a slightly larger outer diameter than a stock brass barrel.



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.
12. Unscrew the feed tube from the chamber.



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.

Modifying and Assembling the Upper Receiver

This section of the manual provides instructions on the cuts required to the upper receiver, as well as creating the hop up adjustment hole.

Drilling the Hop Up Adjustment Hole

1. Use the outer barrel adapter to determine the location of the hop up hole. This will be just in front of the ejection port, just behind one of the raised picatinny segments.
2. Make a mark for the hole using a tool or marker.



3. Clamp the upper receiver in a vise or similar.
4. Use a center punch to make a pilot hole or divot in the mark made in step 2.
5. Drill out the hop up hole using a ½ inch step drill, or a drill bit at least 3mm wide.



6. Clean up any burrs around the hole.

Removing the Rear Brace

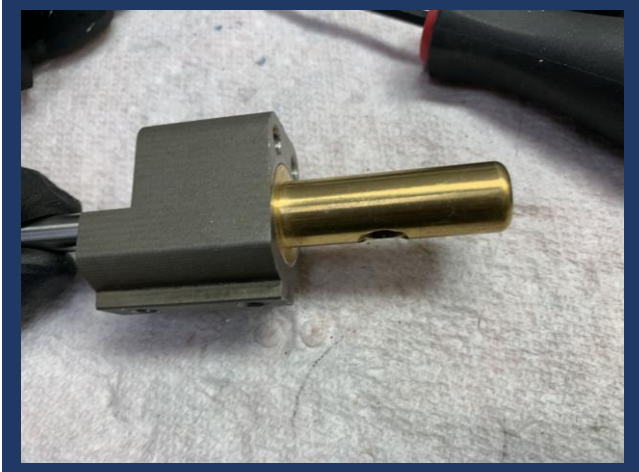
1. Turn the upper receiver so that the bottom of the receiver faces upwards in the clamp or vise.
2. Cut the rear brace off of the receiver using a rotary tool or similar.



3. Clean any burrs or sharp edges.

Assembling the Barrel Group and Upper Receiver

1. Slide the inner barrel group into the outer barrel adapter.
2. Insert the set screw into the hole in front of the hop up adjustment hole and tighten it using the 2mm hex wrench. Ensure that the hop up adjustment screw is centered.



3. Slide the completed inner barrel assembly down the front of the handguard.
4. Install and tighten the retaining bolts on the bottom of the handguard using the 4mm wrench.



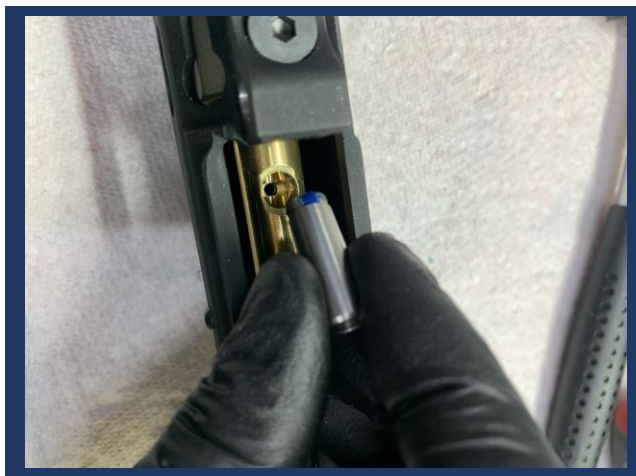
5. Install the mock piston rods into the gas block on the outer barrel.
6. Slide the outer barrel assembly down the front of the handguard.



7. Install and tighten the forward retaining bolts on the bottom of the upper receiver.



8. Install and tighten the feed tube. Remember to use some thread lock.



9. Slide the bolt carrier and charging handle into the rear of the upper receiver.



Modifying the Lower Receiver

Drilling the Air Line Hole

1. Place the lower receiver in a vise or mill.
2. Mark the spot for the air line hole. This should be just behind the takedown pin hole. Use the pictures below and your air valve for reference.
3. Drill the air line hole all the way through the lower receiver using a bit at least 9mm wide.



Cutting the Rear of the Receiver

The rear of the lower receiver needs to be cut and drilled in order to allow clearance for the air shaft.

1. Fold the stock to the side of the lower receiver.
2. Measure the distance between the top of your air valve and the middle of the airshaft hole in it. This should be 20.25mm.
3. Measure that same distance down the outside rear of the lower receiver and make a mark in the center.



4. Place the lower receiver in a clamp or vise with the rear of the receiver accessible.
5. Use a center punch to make a pilot divot in the mark made in step 3.
6. Drill a hole in the marked spot using a bit at least 7mm wide.



7. Grind a divot into the stock as marked in the reference picture.

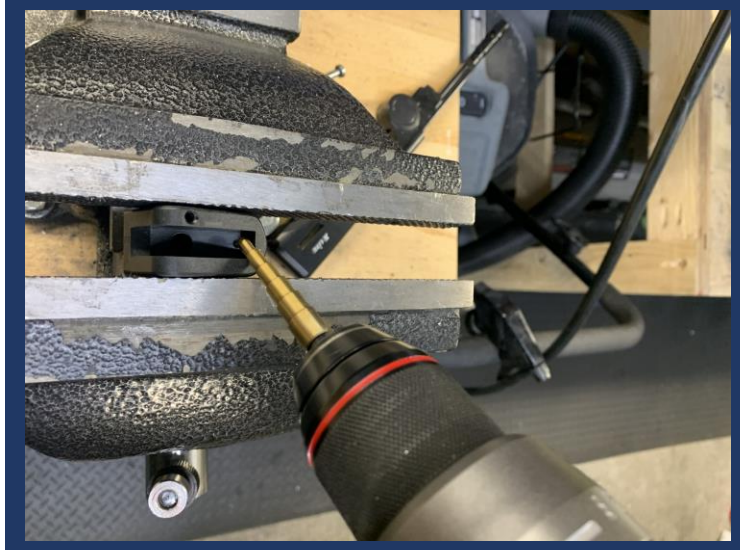


8. Remove the receiver from the vise.
9. Drill or cut a hole in the recoil buffer pad that matches the position of the hole in the receiver.



Drilling the Pistol Grip

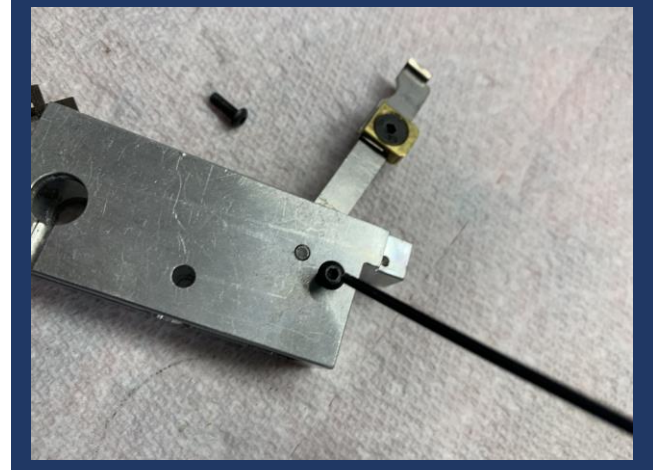
1. Place the pistol grip in a clamp or vise facing upwards.
2. Use a center punch to make a divot at the rear of the grip to match the location of the air line hole in the lower receiver.
3. Drill out the pistol grip using a ½ inch step drill bit until it the hole is wide enough to accept the air line.



Assembling the Lower Receiver

Assembling the Trigger Chassis

1. Remove the two panhead machine screws from the sides of the trigger chassis with the 2mm hex wrench.



2. Drop the DGA trigger sear into the slot on the top of the trigger.
3. Insert the brass bushing through the trigger and trigger sear.



4. Drop the trigger down into the trigger chassis. It can be helped to push the semi and auto sears so that the spring-loaded trigger bar gets pushed out of the way.
5. Insert the trigger pin through the chassis and trigger.



Installing the Trigger Chassis

1. Drop the completed trigger chassis into the lower receiver.
2. Tap the chassis backwards into its proper position with a punch or mallet if it is a tight fit.



3. Reinstall the pin retention clip, but do not push the clip forward to lock onto the pins yet.



4. Install one of the machine screws removed earlier into the empty hole on the side of the receiver but do not tighten it all the way.
5. Push the pin retention clip forward so that it locks on the pins.



6. Tighten the machine screw down on the clip with the 2mm wrench.
7. Install and tighten the machine screw on the opposite side with the 2mm wrench.



Modifying and Installing the Selector

You must first modify the original WE PDW internal selector for proper semi-auto function of your DGA PDW.

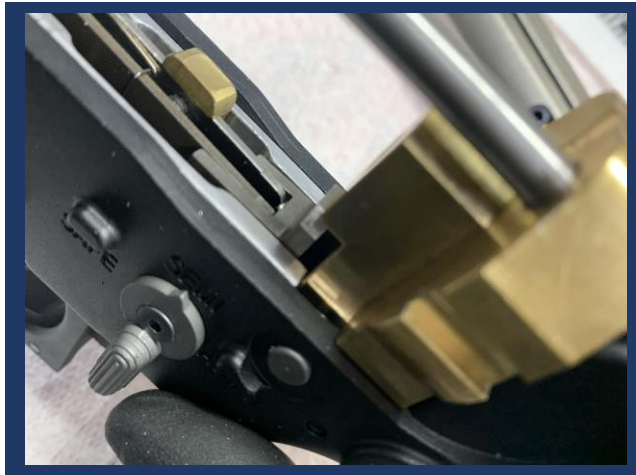
1. Install the left-side selector lever on the internal selector.
2. Push the selector assembly into the lower from the left side of the receiver. Lift up the full auto sear so that it doesn't get in the way.



3. Drop the semi- and full-auto sears down into position.
4. Push down on the full auto sear while rotating the selector lever repeatedly from safe to semi.
5. Pull the sears up and remove the selector from the lower receiver.
6. Grind, file, or cut the internal selector where you made the mark in step 4. It doesn't need to be more than a few millimeters deep and wide.



7. Test fit the selector in the receiver. Drop the sears back down and check to see that the auto sear cannot contact the valve knocker with the selector in the semi position. It may help to install the air valve for this step.



8. Install the right-side selector lever with the 2mm hex wrench.

Installing the Pistol Grip and Selector Detent

1. Place the selector detent in the detent hole in the lower receiver.



2. Place the detent spring in the spring hole on the pistol grip.



3. Slide the pistol grip onto the lower receiver, ensuring that the selector detent seats on the detent spring.
4. Reinstall the pistol grip bolt.



Modifying and Installing the Bolt Catch Lever

1. Place the bolt catch in a clamp or vise.
2. Cut the portion behind the pin hole off with a saw or rotary tool.



3. Place the spring in the spring hole on the lower receiver.
4. Place the bolt catch lever into its slot and push the pin through to lock it into place.



Installing the Air Valve

1. Install the air line into the air valve. Put a small amount of thread lock on the threads. **The air line only needs to be installed finger-tight – any more may break the fitting.**



2. Drop the valve assembly into the lower receiver, threading the air line through the hole and down into the pistol grip.
3. Push the takedown pin back in to lock the air valve in place.



Final Assembly

1. Slide the recoil spring onto the recoil spring guide rod.



2. Push the pivot pin out.
3. Slide the upper receiver onto the lower receiver, ensuring that the recoil spring guide rod enters



the back of the bolt carrier.

4. Push the pivot pin back into place.





Congratulations, you have completed all major installation steps for the DGA WE PDW 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.