



DAYTONA
AIRSOFT

Daytona Airsoft Systems Installation Manual: G&P M4



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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.

Please note that the DGA G&P kit has been designed to fit and function within G&P gas blowback 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.



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:

- Narrow pin punch
- Flathead and Phillips head screwdrivers
- Hammer
- Calipers or other accurate measuring tool
- 4mm hex wrench
- 3mm hex wrench
- 2.5mm hex wrench
- 2mm hex wrench
- 1.5mm hex wrench
- Armorer's wrench/AR wrench
- Thread lock (Loctite blue recommended)
- Rotary tool with metal cutoff wheel
- Hand drill with bits equivalent to 2.5mm-3mm metric, and a half-inch step drill bit
- Cotton swabs
- Bench vise
- AEG-spec inner barrel of your preferred length. High-quality stainless steel like PDI recommended

Helpful:

- Center punch
- Rubber mallet
- Drill press



Disassembling Your Donor Body

A Note Before Starting

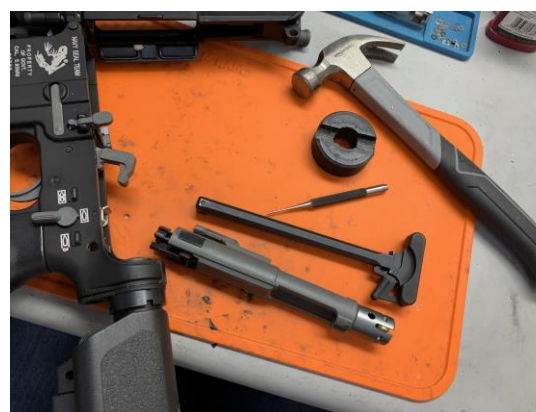
If you have already taken apart your donor body, or if you are already familiar with disassembling a G&P M4 GBBR, you can skip to the section of this manual dealing with installing the DGA kit.

Please note that the example donor used in this manual is the G&P WOC Skull Frog with Daniel Defense-style rail. Certain steps will have minor differences for other body types. These are noted where possible. If something is not clear, please email DGA support.

How to Disassemble Your Donor

Primary Disassembly

1. Push the takedown pin out from the left side of the gun. Use a pin punch if the pin is stiff.
2. Swing the upper receiver away from the lower receiver.
3. Pull the charging handle backwards and remove the bolt carrier.
4. Remove the charging handle.
5. Push the pivot pin out from the left side of the gun. Use a pin punch if the pin is stiff.
6. Separate the upper and lower receivers.



Lower Receiver Disassembly

1. Place your thumb in front of the buffer and push down on the buffer lock pin. This is best done with a small tool like a punch or screwdriver. The buffer will shoot out of the buffer tube. Pull it and the buffer spring out of the gun.



2. Punch out the hammer pin, the trigger pin, and the auto sear pin.
 - It is best to make sure the hammer is not cocked for this step. If it is cocked, take the receiver off safe and pull the trigger to release the hammer



- The hammer will likely pop up out of the receiver, as may the full auto sear
3. Remove all loose components from the lower receiver.
 - These should include the hammer, hammer spring, full auto sear, full auto sear spring, trigger sear, and trigger sear spring.
 4. Push the magazine release button in as far as possible. Grab the lever arm of the release on the other side of the receiver and unscrew it. It loosens when turned counter-clockwise. Remove the button, spring, and lever from the gun.



5. Pull the combination bolt catch and valve knocker assembly up out of the receiver.
 - If this assembly is tight, you can use a small flathead to lever it up gently.



6. Unscrew the bolt in the pistol grip using a 4mm hex wrench. Remove the pistol grip from the receiver.
7. Unscrew the Phillips-head bolt revealed on the bottom of the receiver after removing the pistol grip.



8. Pull the fire selector from the receiver.
9. Pull the trigger from the receiver and remove the original trigger spring.
10. Pull the buffer and selector detent assembly up out of the receiver.
 - Keep your fingers over the right side of the detent assembly when pulling it up. The selector detent and spring are housed within, and they could fly away if you do not keep them in place
11. Loosen the castle nut on the buffer tube using an armorer's wrench
 - Castle nuts on gas rifles are often torqued down. You can clamp the buffer tube (NOT the lower receiver) in a bench vise in order to apply more force to the castle nut.



12. Unscrew the buffer tube and remove it from the lower receiver.
13. Remove the small set screw from the back of the lower receiver using a 1.5mm hex wrench.



14. Remove the takedown pin detent and spring. Remove the takedown pin.



Upper Receiver Disassembly

Please note that many of these instructions are specific to Daniel Defense-style rail systems. If your donor uses a different handguard style, you will need to find alternate instructions for removing it. You can also reach out to DGA support, as they may have experience with whatever rail type you are using.

1. Unscrew the top two bolts at the rear of the rail using a 4mm hex wrench. You can also likely remove the middle bolt on the left side of the receiver as well.



2. Unscrew the rearmost two bolts on both sides of the rail using either a flathead or a 3mm hex wrench.



3. Pull the lower portion of the rail away.
4. Unscrew the two lower bolts at the rear of the handguard using a 4mm hex wrench.
5. Rotate the handguard slightly counterclockwise and remove the final middle bolt on the right side of the receiver with a 4mm hex wrench.
 - Waiting until you can rotate the handguard slightly allows you clearance for the final bolt in avoid scratching your receiver while unscrewing this final fitting.
6. Pull up on the upper portion of the handguard to remove it.
7. Unscrew the two set screws on the bottom of the gas block using a 2.5mm hex wrench.
8. Unscrew the muzzle device.
 - If this is on tight, you can put the barrel in a bench vise and use your armorer's wrench to remove the muzzle device.
 - G&P uses clockwise thread on most of their models. This means you will have to rotate the device counterclockwise to loosen and remove it. This is opposite of most other airsoft manufacturers.



9. Slide the gas block and gas tube forward off the outer barrel.
10. Loosen the barrel nut with an armorer's wrench. You may need to put the upper receiver in a vise for this step.
11. Remove the outer barrel from the upper receiver.
12. Remove the barrel nut and handguard retention nut from the outer barrel. Remove the inner barrel group from the outer barrel.



Bolt Catch and Valve Kocker Unit Disassembly

1. Punch the small pin out of the unit and remove the bolt catch lever.
 - This is spring-loaded. Retain the spring that comes out.
2. Unscrew the screw on the right side of the unit using a 1.5mm hex wrench.
3. Split the halves of the unit and remove the valve knocker and its spring.
4. Reassemble the two halves of the unit. Do not reinstall the valve knocker, bolt catch, or their springs.



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 internals:

- The trigger
- Either the trigger or hammer pin
- Selector lever and selector detent and spring
- Takedown pin detent, spring, and set screw
- Bolt catch and valve knocker unit, with bolt catch spring

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 buffer spring assembly
- Hop up chamber with feed tube
- Barrel ring and c-clip
- DGA Standard hop up rubber
- Air valve with air line
- Trigger chassis with two screws
- Complete bolt carrier assembly
- Trigger sear
- Bolt catch lever

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:

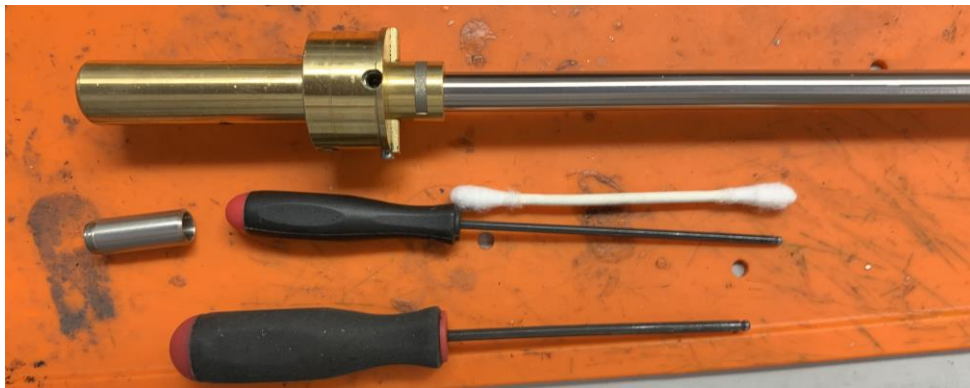
1. Slide the Daytona hop up bucking onto the correct end of the inner barrel.
2. Slide the barrel ring onto the barrel from the muzzle end of the inner barrel. Make certain that the slot for the c-clip faces the muzzle end.
3. Push the barrel ring down so that the opening on the bucking end slides over 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 LCT barrel.
4. Align the notches on the inner barrel with the opening of the barrel ring.
5. Place the c-clip into the c-clip slot on the barrel ring and tap it down. This is best done with a rubber mallet.



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.

Prepping the Trigger Chassis

- Unscrew the two panhead screws on either side of the trigger box using a 2mm hex wrench.



Modifying the Upper Receiver for Assembly

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

Removing the Rear Takedown Pin Hole

DGA kits installed in the G&P body require the rear hole on the upper receiver be removed in order to create space for the air valve. Because of this, the gun will come apart and go together more like an AEG M4, with the receivers sliding against each other rather than pivoting into position.



1. Place the upper receiver upside-down into a bench vise.
 - A riser rail or similar attached to the upper receiver can be the vise point here, eliminating the possibility of cosmetic damage to your upper.
2. Cut through all of the material on one side of the takedown pin hole using a rotary tool and cutoff wheel.



3. Rotate the receiver in the vise for the best angle and cut through the material on the other side of the pin hole.
 - You can use a file or other tool to soften the edges created by the cut.
4. Test fit the air valve to make certain it can now fit in the open space. Remove more material if it cannot. Remove the upper from the vise.



Creating the Hop Up Adjustment Hole

1. Measure the distance between the center of the adjustment screw on your DGA hop up unit and the forward edge of the unit.
 - On the build example, the distance is 13mm. While this should be the same for yours, you should always double-check.



2. Use the number found above to find where the center of the hole will be on your upper receiver.
 - This should work out so that half the hole is through the first rail segment on the top of the receiver, but double-check this as well.



3. Reinstall the handguard retainer nut, barrel nut, and the upper portion of your handguard.
 - You do not need to install the outer barrel or DGA hop up unit for this step.
 - This step should be the same no matter the handguard you are using, with the exception of old style M4/CAR-15 handguards or anything else that uses a delta ring.
4. Mark the spot on the top rail for the drilling point. This should work out to be half on the first rail segment of the upper, and half on the nearest segment of the handguard.



5. Drill the adjustment hole through all components of the upper and handguard using a bit approximately the size of the adjustment hole on the chamber, or slightly wider. When you see the bit appear in the hole where the chamber would sit, you are through everything.
 - A drill press or mill is the best tool for this step. If you don't have either of those, you can use a bench vise and power drill.

- Some cutting fluid applied here can help with the process.
- You can clamp the receiver on the pivot pin hole. Alternately, you can install the bottom of the handguard and clamp it there using the same riser as from the upper receiver, if you followed that tip.



6. Remove the upper receiver group from the vise and remove the handguard, retainer nut, and barrel nut.
7. Clean away any debris and any cutting fluid used. Deburr the holes created in the various components.
8. Install the inner barrel group to check for hole alignment. Enlarge the hole if necessary.



Mock Gas Tube Modification

If you wish to continue using the mock gas tube, you will need to cut a small portion off the end to allow for hop adjustment.



1. Place the other barrel into position over the inner barrel group, which should still be installed in the upper receiver.
2. Slide the retainer ring down into position.
3. Install the mock gas tube. Do not reinstall the set screws for it.
4. Mark the position on the muzzle-end of the gas tube where it enters the retainer ring.
5. Slide the gas tube and block off the outer barrel.
6. Make another mark closer to the receiver end of the gas tube past the first mark for where it entered the retainer ring.
 - Making another mark allows for a small amount of the tube to enter the retainer ring so that the tube cannot shift to either side during final assembly. This also aids in alignment of the gas block and tube.
7. Cut off a small amount of the end of the gas tube at the second mark you made in order to shorten the tube.
8. Reinstall the gas block and tube to make sure that the hop up adjustment hole is not blocked by the gas tube anymore.
9. Uninstall all components from the upper receiver.

Modifying the Lower Receiver for Assembly

The lower receiver of the G&P donor body requires fewer modifications than other GBBR brands for fitment with the DGA kit. You need to create two holes: one for the feed tube to slide through during assembly and takedown, and one at the rear of the receiver for the air line.



Creating the Feed Tube Slot

1. Install the inner barrel group into the upper receiver and screw the feed tube into the bottom of the hop up unit.
 - Because the upper receiver is complete
2. Push the pivot pin out of the lower receiver. It does not have to be removed entirely from the receiver.

3. Clamp the lower receiver in a bench vise, a mill, or a drill press.
 - You can clamp the receiver safely on the pistol grip fin located behind the trigger guard.



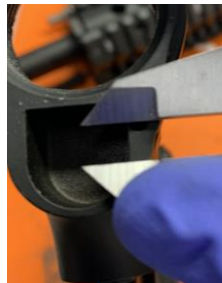
4. Mill or cut a slot in the lower both wide and deep enough to allow the feed tube to pass without making contact with the lower.
 - Remember to deburr the cut.



5. Slide the upper into place over the lower to test-fit. Enlarge the slot if necessary.
6. Remove the receiver from the vise.

Creating the Airline Hole

1. Measure the distance from the middle of the takedown pin hole in the air valve to the middle of the air hole in the rear of the valve.
 - On the example build, this distance is 6mm. It should be the same on yours, but you should double-check.
2. Use the center of the takedown detent hole in the rear of the lower receiver to find the new center for the air hole. Use the number you found above.



3. Mark the center of the new hole with a marker or center punch.
4. Clamp the lower receiver in a bench vise so that the rear points upwards.
5. Drill the airline hole using a half-inch step drill, or with a series of smaller drill bits.



6. Deburr the hole and check that the airline fitting can pass through the hole.
 - The fitting itself rests in this hole, not just the air line. You need to make the hole large enough for the fitting, not the line.



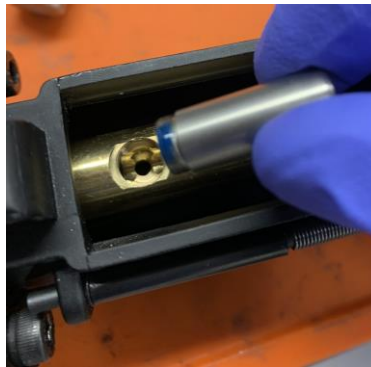
7. Drill another hole in the receiver end plate. Place the plate on the receiver to make sure that the holes lines up. Remember to deburr this hole as well.
 - This hole only has to be wide enough to accept the line.



8. Remove the lower receiver from the vise.

Assembling the Upper Receiver

1. Install the inner barrel group into the upper receiver if you have not done so already.
2. Reinstall your outer barrel, handguard retainer nut, barrel nut, mock gas block and tube, handguard, and muzzle device.
 - Tighten down the barrel nut with your armorer's wrench before installing all the other pieces over it.
 - You may need to hold the handguard retainer nut in place to keep the alignment just right for the hop up adjustment hole.
 - You may also want to use thread lock on the various bolts of the front end.
3. Apply a small amount of thread lock to the feed tube and screw it into the bottom of the hop up unit.



4. File or cut enough material from the charging handle so that the lip does not catch on the outer face of the bolt tank.
 - Try not to remove more material than is necessary, since removing too much could make the charging handle skip over the bolt carrier entirely.
5. Check that the set screws on the shaft collar on the rear of the airshaft are tight. Add thread lock if necessary.



6. Apply a small amount of lubricant to the inner surface of the upper receiver.
7. Install the bolt carrier and charging handle into the upper receiver.



Assembling the Lower Receiver

Installing the Trigger and Trigger Chassis

1. Locate the trigger sear, trigger, and trigger pin.



2. Back the set screw in the trigger sear out so that most of the threads are exposed. Apply a small amount of thread lock and then screw the set screw back down so that a small amount protrudes from the front of the trigger sear.



3. Place the trigger sear in the groove on top of the trigger and place both down into the lower receiver.

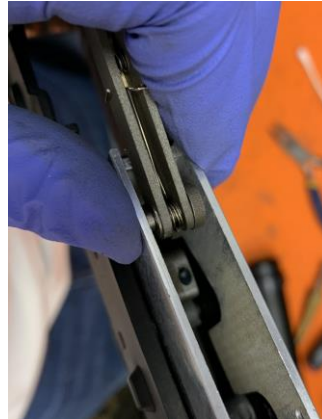


4. Push the trigger pin through the trigger pin hole in the receiver to lock everything in place.
 - You can try and squeeze the trigger. If the trigger is difficult to pull, you can remove the pin and widen the hole slightly in the trigger sear to get rid of any binding.



5. Install the fire selector through the fire selector hole.
6. Push the trigger chassis down into place. You should pull both levers up out of the trigger chassis first. Push the levers towards the back of the receiver to allow them to clear the trigger sear.

- Do not install any screws at this point.



7. Push the auto lever down hard onto the fire selector. Rotate the selector from safe to semi repeatedly to make a mark on the selector.



8. Pull the fire selector out.
9. Create a notch on the fire selector where the mark is. The notch does not need to be deeper than two or three millimeters. You can also widen that notch towards the selector itself.



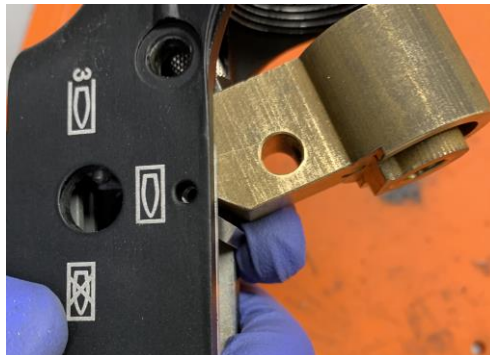
10. Reinsert the fire selector into the receiver. You will likely need to pull the auto lever out of the way.
11. Drop the auto lever back down. Place the gun on semi. Check to see that the auto arm does not contact the valve knocked. If it does, you will need to make the notch slightly deeper.



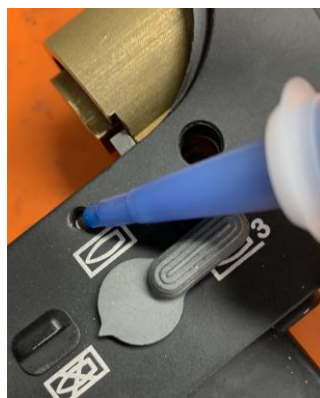
- You can pull the valve knocker back into a neutral, straight position for this test. You can also first hook it onto the semi lever if you find that more helpful.
- Remove the first selector from the receiver. Remove the trigger chassis from the receiver.
 - Place the selector detent and spring into the groove on the side of the trigger chassis.



- Install the trigger chassis.
- Pull the valve knocker forward and install the air valve, slipping the airline through the hole in the back of the receiver.

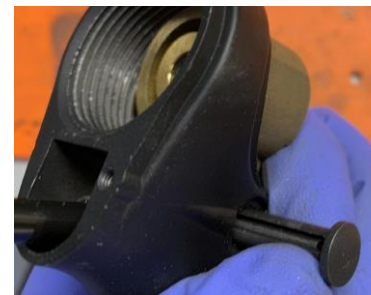


- Install the fire selector. You may have to push the detent back manually to get the lever into place.
- Rotate through the fire selections to make sure that everything works smoothly.
- Install the two panhead screws into the auto sear pin holes. Remember to apply thread lock.



Installing the Takedown Pin

1. Insert the takedown pin into the takedown hole.
2. Wiggle the air valve to make certain it has a small amount of play. If it does not have any play, remove the pin and the air valve and use a file to slightly widen the takedown pin hole in the valve. Reinstall everything and check the fitment.
3. Place the takedown detent into the hole in the back of the receiver. Place the detent spring in after that. Reinstall the set screw so that it is flush with the back of the receiver.



Installing the Pistol Grip

- Place the pistol grip back on the grip fin behind the trigger guard and install the pistol grip bolt.

Modifying and Installing the Bolt Catch and Valve Knocker Unit

1. Place the bolt catch unit without the DGA bolt catch into the receiver and mark the portions that stick up above the side of the receiver.
2. Remove the unit from the receiver and cut or files those portions shorter. They don't have to be entirely removed, just enough that they do not interfere with the travel of the bolt carrier.
3. Place the bolt catch spring into the hole on the side of the unit.
4. Place the DGA bolt catch onto the unit. Push the original bolt catch pin through the hole to secure it.



Be sure to remove enough material on the muzzle side of the bolt catch housing so that the bolt catch arm can move freely and doesn't bind.

If, after installing in the receiver, the paddle is difficult to move or still binding, remove more material.

5. Place the assembled unit into the receiver.
6. Reinstall the magazine catch.

Installing the Buffer Tube

1. Place the DGA buffer into the buffer tube with the long end pointing outwards through the open hole.



- Place the receiver end plate onto the rear receiver, making sure the airline passes through the hole cut into the plate.



- Screw the buffer tube into position. It should be screwed in deep enough so that the DGA buffer just touches the back of the air valve.



- Tighten the case nut with the armorer's wrench.
 - You can again put the buffer tube into a vise to hold it steady.
 - You may need to hold the end plate in the correct alignment position while tightening the castle nut.

Final Assembly

- Apply a small amount of lubricant to the rear outer portion of the bolt carrier.
- Slide the upper receiver onto the lower receiver, like when installing an upper onto a standard AEG M4.



3. Push the pivot pin back into place. Tap it with a rubber mallet if it is difficult to push by hand.
4. Install the QD fitting on the end of the airline if you have one. This is not included with the DGA kit.
5. Install the stock onto the buffer tube.



Congratulations, you have completed all major installation steps for the DGA G&P M4 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.