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# HM69 Installation Manual

Hypermotard Large Fuel Tank

# HM69 Fuel Tank Installation Instructions



*This manual is provided for marketing and informational purposes only and is a guide to assist experienced motorcycle technicians with the installation of the HM69 fuel tank. This installation involves gasoline. Improper installation, adjustment, alteration, service or maintenance regarding the HM69 fuel tank can cause property damage, personal injury or death. At-home Do-It-Yourself mechanics should not install the HM69 fuel tank if you are uncertain of your ability to properly install it and refer the installation to an authorized Ducati service department.*

## REMOVING THE OEM FUEL TANK



### REMOVE THE SEAT

Remove the seat bolt at the rear of the seat with a 4mm hex key. To remove the seat, grasp both sides of the seat, lift the rear of the seat slightly, and pull the seat to the rear of the bike. The front of the seat engages onto bolts on either side of the fuel tank and can be stubborn.



### GO FOR A RIDE

The best way to remove fuel from your original fuel tank is to RIDE your bike. You should already be familiar with how low you can go and the less fuel that's in your tank before you start means the less mess you make when draining it.



### **REMOVE THE BODYWORK**

The tank cover is first. Remove the fuel filler cap and then the 4 screws you see: 2 near the front of the cover and the two aside the filler neck. Lift up on the forward portion of the cover and move the entire cover rearward so that the back of the cover is away from the retaining contour on the fuel tank.



### **SIDE PANELS**

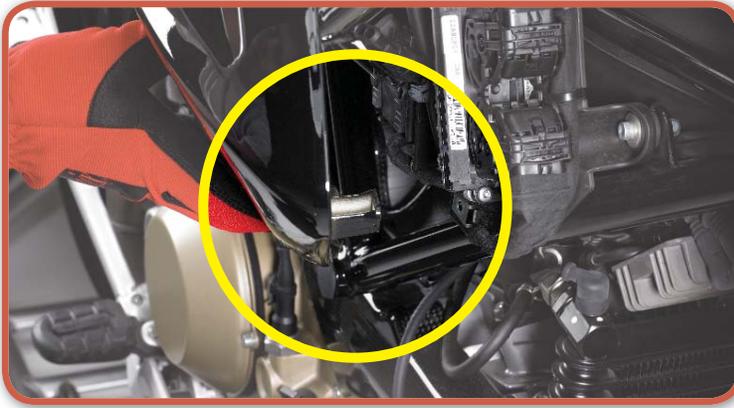
Remove the right side panel's inner cover using a large coin.

Both left and right side covers are retained by 3 screws with 4mm hex heads. Remove the 2 screws on the side of the tank (which were revealed with the removal of the seat).



While holding the side covers to support them, remove the bottom screw. The left side cover pulls away naturally – take care not to drop the cover as the tool kit is housed inside of it, adding unexpected weight.





### **SIDE PANELS (CONT.)**

The right cover, however, has a support post that passes through a loop of the wiring loom, requiring that the cover is pulled directly to the side of the motorcycle.



### **USING THE FUEL PUMP TO DRAIN THE TANK (Optional)**

Note: If you are not the adventurous type, you should leave this to the professionals. Some people, however, have to touch the electric fence just once to see what it's like. This is one of those kinds of situations.

The relay closest to the metal bracket is the fuel pump relay.

It is continuously supplied +12V from the battery. It does not turn off with the keyswitch! This is always "hot" and is part of the reason the first instruction you read in about everything vehicular is to disconnect the battery!

The way the fuel pump relay works is that when the ECU wants the fuel pump to run, it applies a connection to ground at the brown/black wire. Should someone jumper this connection directly to ground, the pump will engage, regardless of what else the motorcycle is doing.

A person could route a large hose from the OUT fitting on the fuel flange to a fuel container, and the pump will empty the stock tank in under a minute. You will hear when the tank is empty by the change in sound from fuel pump.

### **FREE THE TANK**

Remove the battery from the tank by first removing the (-) and (+) cables from their terminals and then the mounting strap (strap is held on by a nut at the bottom of that screw). Tighten the nut back onto the long screw when the strap is removed.

You can peel off the velcro from the bottom of the battery.





### **FREE THE TANK (CONT.)**

Use your 4mm hex driver to remove the 4 screws on the frame cross member bridging over the fuel tank.

Using pliers, move the hose clamp away from the vent tube on the fuel filler flange. This clamp and the hose itself can be quite stubborn, requiring a screwdriver to pry the hose away from the green housing. Once removed from the tank vent, pull the hose from underneath the fuel tank.



Remove the tie straps from the wiring loom on the fuel tank with the 2.5mm hex key.





Cut the cable tie securing the fuel pump wiring to the relay pack and then unbolt the pack from the fuel tank.



Cut the cable tie securing the starter cable to the wiring loom.



Find and remove the large mounting screw on the underside of the tank, located at the rear of the tank near the exhaust system. This fastener requires a 5mm hex driver. Be sure tool is fully seated or will strip the bolt. Two P straps hold the fuel lines to the underside of the tank on the left side near the vertical cylinder head. Using the 2.5mm hex

Remove the starter cable from the starter solenoid and then unbolt the solenoid bracket from the fuel tank. The battery cables should be free to be pulled off to the left side of the bike. The wiring loom on the



key, remove the screws from these P straps. This can be quite tedious and is assisted by lifting the rear of the fuel tank a few inches.



Place a drip pan under the fuel flange. Remove the fuel pump cover's 3 screws, the cover, and remove the fuel lines from the flange.



The connectors are removed by pinching in the connector's ring. Notice the two supports holding the ring to the connector have hooks engaging the groove in the flange. Squeeze the rings opposite from the supports (in the open space where the raised nubs are), which pushes the supports away from the post on the fuel flange. Once the hooks are freed from the groove, pull the connector straight out from the post.

Some fuel will drain from the pump and from the hoses. Be aware of this as you move these parts.

After the tank is removed from the bike, you can move to a better work area to remove the fuel pump flange and drain the tank into a fuel can.



Remove the rubber pins that are the front tank mounts. Once the tank is removed, they can be reinstalled; the HM69 tank can be installed or removed with these pins in place.

Now remove the tank by lifting it up and forward slightly.

## REMOVING THE AIRBOX & BIKE PREP

### IGNITION COILS

While the rear coil is still attached to the airbox, pull off the plug wires and remove the clip-type connector. It may help to use a small screwdriver to lift the catch inside the connector. Remove the rear coil from the airbox and set aside the screws, they are not used with the HM69 tank.

Cut the cable tie securing the wiring loom above the frame near the coil. Relocate the wiring loom to just below that frame stub.

Removal of the front coil is similar to the rear coil, only be sure to cover



the oil cooler with a towel to protect it. If there is no towel and the coil drops, it will dent the oil cooler. Removing the wires from this coil is suggested to ease the front coil's reinstallation onto the HM69 tank.



### AIRBOX

Loosen the hose clamps securing the airbox rubber boots to the throttle bodies. The airbox is secured at the front by a screw (with 8mm head) to the frame on the airbox's underside. You will probably need to lower the oil cooler (don't forget to protect the oil cooler with a towel). Remove the airbox by pulling up on it, removing its pins from the rubber grommets in the frame. Remove the hoses from the airbox.





Pull the stepper motor hose off the airbox. Route the hose through the frame towards the right side of the vertical cylinder head and attach the smaller of the two supplied air filters.

Install the Cycleworks air filters onto the throttle bodies. The oval portion of the horizontal cylinder's filter is oriented to the right side of the bike (this is the filter on the right side of the bike). The vertical/rear cylinder's oval is oriented down.



under the front motor mount bolt on the engine's crankcase. Remove the cable ties and straps securing the battery's ground cable and then remove the original ground cable from the bike. It is not used with the HM69 tank.

### **BATTERY CABLES**

On US models, the EVAP cannister and bracket need to be unbolted from the engine cover to give access to the engine's grounding point. The (-) battery cable and the ECU are grounded at this location just



Remove the starter cable from the starter motor, remove it from the wire brackets / holders, and curl it around upward and then attach it to the engine's grounding point. Be sure to include the ECU ground! Note that the fitting threaded into the engine case may loosen. Pay attention that the fitting stays tight; if it moves, you need to retighten this fitting. From this point forward, the original "starter" cable is now referred to the ground cable.



Route the new starter cable supplied with the HM69 tank kit alongside the ground cable & attach the straight connector of the cable to the starter motor. The curved or bent connector is used at the starter solenoid under the seat. Note that both cables are routed between the fuel hoses at the frame near where the airbox was.



## PREPARING THE HM69 TANK

### NOTE ABOUT ROTOMOLDED PRODUCTS AND INSERTS

Rotomolding is an imprecise process with many factors affecting how the part is made. Even though the best practices and companies are used in the process, it is impossible to produce an ideally perfect part. Here is the recommended process for attaching accessories to the tank:

Set the fuel pump flange or filler flange onto the tank and visually see the threaded inserts. Thread in screws about 2 turns, leaving them very loose. If a screw is difficult, try every measure possible to convince the screw to thread in:



- » Lift the flange away from the tank and see if that makes the stubborn screw thread in easier.
- » Try the above, but with the flange raised up off of the plastic and the problem screw threaded in, try gently tightening the other screws.



- » Try the opposite: snug up all of the screws other than the problem screw, back them out ½ turn, and then try to get the problem screw to work.
- » The fuel pump flange's outer most screw might be angled outward. This is ok. Tighten this screw first and then slowly and evenly tighten the opposing screws. You will find that all of the screws conveniently line up.



The M5 inserts used for the flanges are hexagonal and will absolutely not pull out or spin, so they will tolerate a surprising amount of abuse.



## TRANSFER PARTS FROM THE ORIGINAL TANK

### FUEL FILLER FLANGE

Remove the flange and screws from the original tank and set the flange on top of the HM69 tank. Thread in the screws from the back to the front approximately 2 turns. If no amount of convincing can get the very front screw started, it is ok to thread in the other 6 screws until seated and then back off 1 turn. Now you can forcibly thread in the forward screw while trying to keep the screw aligned as it threads in.



### FUEL PUMP FLANGE

When fitting the fuel pump flange, the end with the wires goes close to the side of the tank, not to the middle. There is also a sticker on the flange with an arrow indicating the forward direction. Note that only 3 screws would normally thread in below the cover. These are the 3 short screws. You can also look at the flange cover to see which positions get the short and long screws.

Loosely thread in all 6 screws and once the flange's position is chosen, fully tighten the 3 short screws. Then remove the 3 long screws to be refastened once the fuel lines are connected.



### AFFIX SEAT POSTS TO TANK

Affix the seat post screws to the sides of the tank.

### **REAR IGNITION COIL**

Use the M5x35mm screws and 15mm spacers provided with the kit to mount the rear coil to the tank with the towers for the plug wires pointed to the rear of the bike. You may need to nearly tighten one screw then pivot the coil around to align the other screw. The typical method of starting with both screws in the coil may not work.

*Do not install the front coil; the tank will not pivot into position. The front coil is installed later in the procedure.*

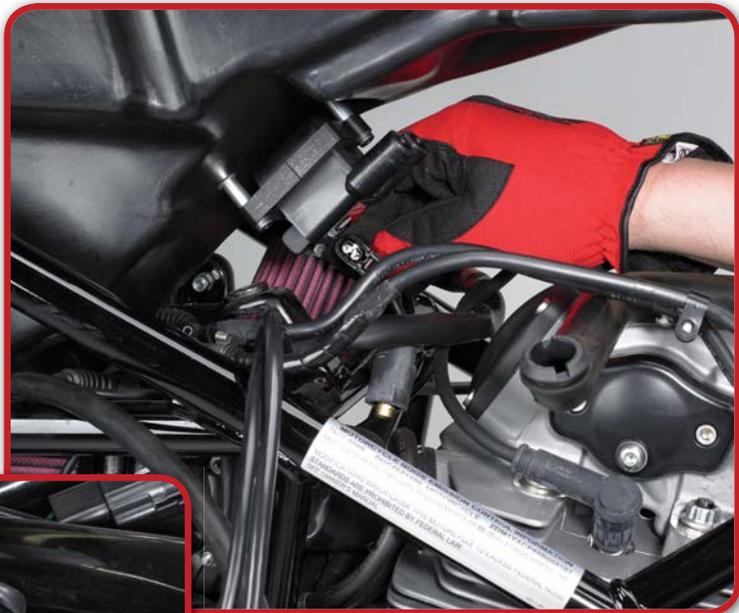


## **INSTALLING THE HM69 TANK**

The HM69 tank was designed to install with the forward rubber mounts in place. Engage the forward mounts and slowly lower the rear of the tank.

While holding up the rear of the tank, locate and connect the wires to the rear coil in the center of the bike. Now bolt up the 2 P-straps which attach the fuel lines to the fuel tank.

Before lowering the tank into place, check that the wiring loom on the right of the bike is not interfering with the tank. On the left side of the bike, hold the fuel hoses away from the tank and assist them



to engage the cutout on the side of the HM69 tank and not get trapped under the tank.

Mount the forward coil in similar fashion as the rear. Thread in the left side screw, leaving it loose enough to pivot the coil into position to thread in the other screw then tighten both screws. The position of the coil changed slightly, so the spark plug cables may need some tweaking to route to the coil.





Lay the right side wiring loom on the tank, guiding the wires along the channel on the side of the tank. As the channel ends, the wires shift to the top of the tank.

Extend the wiring with the relays bracket past the end of the fuel tank, near the battery.

Route the fuel pump wiring connector so that it has the most direct path to the wires coming from the fuel pump and then attach the connector.

Connect the fuel lines to the fuel pump flange and then install its plastic cover.

Place the battery on the tank with the termi-

nals oriented up and inward. The (+) terminal will be the forward terminal.

Route the battery cables along the channel on the left side of the tank and up in front of the battery. Leave the (-) terminal disconnected until the final step before putting the seat on.

Attach the curved end of the starter cable to the post on the solenoid. Twist and bend the solenoid to (+) battery cable until it matches with the new location for the battery's (+) terminal and connect the cable to the battery.



The solenoid bracket mounts on the top surface of the tank opposite of the battery.



The relay pack bolts to the rear face of the tank.

Use the supplied M5x10 screw to attach the battery bracket. It holds the back top corner of the battery in place.

Re-install the frame brace – you may need to hold the battery cables in place for the best appearance. Start by turning in the bottom screw on one side 2 turns and then press down and inward on the opposite side to aid threading in the other bottom screw.

## **INSTALL THE BODYWORK**

The body panel screws have a shoulder on them: while affixing them to your bike, ensure that the shoulder engages in the slot in the bodywork. Revisit the first picture on page 3 to ensure that the right side panel's post goes through the wiring loop. Put in all 3 fairing screws, but do not fully tighten them. Repeat for the other side.

Hook the tank cover into the notch and lay it over the filler neck. Press down on the front of the tank cover while pushing the side panels inward. The tank cover should fit in the top of the side cover and then align to the mounting hole on top of the fuel tank. Thread in one of the top cover screws (they are smaller than the side panels) but don't yet tighten it. Repeat this press-shove process on the other side of the bike.

Once both the front screws are in place, align the 2 tiny screws by the filler neck and tighten them. Then tighten the forward tank cover screws. Then tighten the 3 screws on each of the side panels. It is normal that the tank cover will appear to not be perfectly centered. This is how the HM1100 was created. Two modifications were required to the mold to locate the forward tank cover screws.

Peel the foam block from the seat's underside. If desired, weatherstrip can be used to prevent plastic on plastic rubbing. Additionally, if the battery shifts in its tray, some velcro or weatherstrip can be added under the battery.

Ensure no parts interfere with the exhaust valve servo motor behind the tank and fasten the ground cable to the (-) battery terminal. Install the seat by sliding it forward while pressing inward at the front edges of the seat to engage onto the posts. Look through the seat mount hole to align it with the frame's threaded insert and then tightening the seat screw.

Add 2 or less gallons of fuel to your new tank to verify that the seal around the fuel pump is working (no gas leak).

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## **FINAL ADJUSTMENTS**

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You may need to move the seat forward or back due to the new fuel tank. Loosen the 4 screws at the seat bolt's bracket on the bike, then you can fit the seat with the bolt loose; set the position of the seat, remove the bolt and seat, and then tighten the 4 screws on the bracket. After battery removal, the gauges will reset to factory defaults (EU km, etc)

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*Thank you for your understanding.*



# Take the long road home

Over 200 miles per fill up, the HM69 Large Fuel Tank has the capacity to get you there.



[www.ca-cycleworks.com/hm69](http://www.ca-cycleworks.com/hm69)



Finally, you don't have to fear filling up around every corner.

The HM69 Large Fuel Tank from California Cycleworks is the world's first replacement fuel tank for the Ducati Hypermotard line of motorcycles. Increasing the fuel capacity to a sizable 6.4 gallons, the HM69 allows riders the total freedom to travel over 200 miles on a single fill up. Requiring no modifications to the factory configuration, the HM69 brings more fuel capacity, lighter weight construction and the highest level of quality to Ducati owners around the world. Located in San Diego, California Cycleworks has been selling high performance aftermarket parts for Ducati motorcycles for over 10 years.

- » **6.4 gallon** (22.2 liter) capacity
- » **200 mile** (400 km) range\*
- » **Lifetime** fuel cell **warranty**
- » **NHSTA** and **DOT compliant**
- » **25% thicker** than the OEM fuel cell
- » Constructed with **cross-linked polyethylene** (PEX)
- » PEX is a uniformly compounded material that ensures consistent cross-linking
- » **Leak tested & inspected** upon manufacture
- » Available in **Black**, other colors subject to availability
- » Custom **POD filters included** (does not effect tuning)
- » Tested with Stock, Performance ECU & Slip-on bike configurations

\* Distance claims are an approximate average as reported by actual customers and California Cycleworks testing.

