

ESG145 Fitting

APPLICATIONS

KTM 400, 450, 520, 525, 560

Read these instructions thoroughly before starting

Note: Please do not skip any steps. Before you start the fitting, please check & double check your valve clearance; especially on the intakes.

Step 1. Clean the bike thoroughly; we don't want any contaminants to fall into the motor. Start by removing the skidplate; if equipped.

Step 2. Remove the seat & disconnect the battery.

Step 3. Remove the left side panel (00-03 models) or the one piece rear fender (04-05 models).

Step 4. On the 00-03 models, some trimming of the plastic side panel & airbox is required for clearance. The 04-05 models need no modifications. Trim a section about 100mm x 25mm (4" x 1") from the airbox as shown in Figure A.

Step 5. Trim a corresponding section out of the top inside ridge of the left number panel as shown in Figure B.

Step 6. Clean the sub-frame where the regulator is to be mounted so that the backing plate can seat flat against the frame. Mount the regulator with two 50mm bolts and the hardware in the following order: green wire grounding eyelet (top bolt only); regulator; backing plate; subframe of motorcycle; backing plate; 20mm washer; nylock nut. Mount the backing plates short side up, so that the frame is sandwiched between the two plates. Make sure that the plate does not touch the starter relay. Tighten the bolts up one half turn at a time, alternating between the two bolts. Try to make the plates as parallel as possible. After assembly but before tightening, rotate the assembly counter-clockwise to make both bolts touch the frame as shown in Figure C.

IMPORTANT: Failure to follow these steps will result in the plates not being seated flat against the frame (which is essential for heat conduction). Do NOT attempt to mount the regulator to the plastic airbox. Although it may be tempting to do so, this will overheat the regulator & void the warranty. The current position of the regulator allows it to use the aluminum subframe as a heat sink. This is essential. Tests were done with the regulator mounted this way & also mounted to the plastic airbox. The results were astonishing. With the regulator using the frame as a heat sink, a staggering 90°C reduction in regulator heat was attained! It went from being one of the hottest running regulators we've tested, to one of the coolest! Many hours of design, research, & testing went into the final location of the regulator; please do not attempt to relocate it.



Figure A

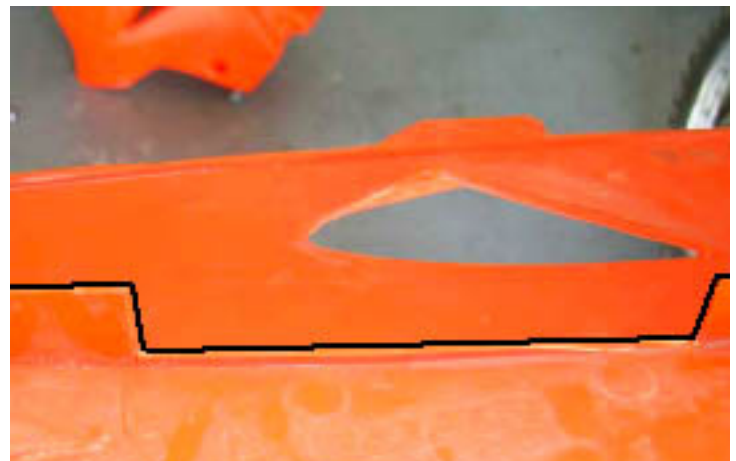


Figure B



Image and fitting shown for up to 04 models

Figure C

ESG145 Fitting

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Existing Stator Removal

Note: Please do not skip any steps.

Step 1. Remove the gas tank.

Step 2. Remove the old regulator from the bike.

Step 3. Drain the gas from the float bowl.

Step 4. Lay the bike over on it's right side and remove shift lever.

Step 5. Disconnect the stator leads (white & yellow wires) & the ignition source coil leads (red/white & black/red wires in blue modular plug) from the main wire loom & cut the zip-ties holding the stator loom in place; taking note of its routing.

Step 6. Remove the four 8mm bolts holding the stator cover on, noting the position of the long & short bolts. Remove the stator cover, taking care not to tear the gasket. If you do tear the gasket, do not attempt to repair it, get a new one (KTM part number 59030040000).

Step 7. Remove the screw and dismount the retaining plate. Remove the two bolts and remove the stock stator from the cover, noting the position of the ignition source coil. (The one coil that looks different than the rest.) The new stator's ignition source coil with go in the same position.

Stator Replacement

Step 1. Place the ElectroSport stator in the ignition cover, again making sure that ignition source coil is roughly opposite of where the wire loom exits the case. Make sure the stator sits flat against the housing. Replace the retaining plate & degrease the threads of all bolts & screw and apply Loctite 243. Torque to 8 Nm / 6 ft-lb. You may need to slide the D-grommet up or down the wire to make it fit properly. It should fit squarely into the recess without binding or pulling.

Step 2. Replace stator cover making sure D-grommet fits smoothly into recess.

Step 3. Replace shift lever.

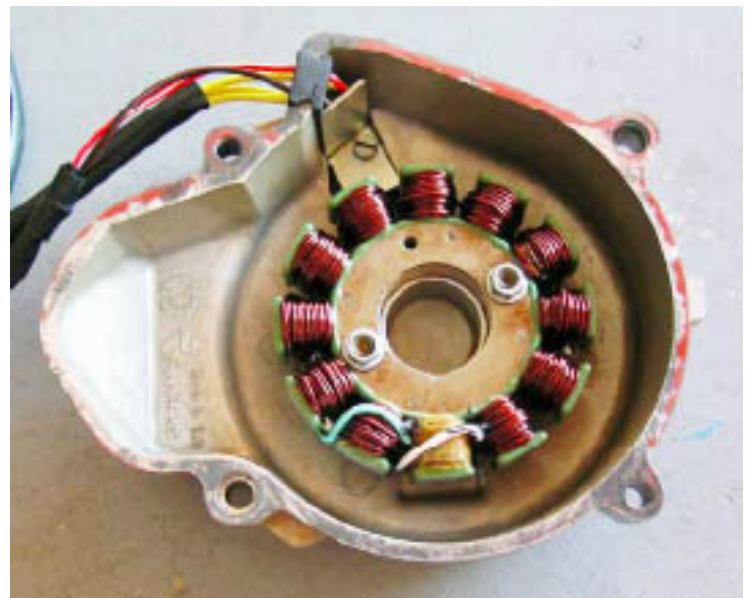
Step 4. Stand the bike back up.

Step 5. Secure stator wire loom to motor using the same routing as stock.

Step 6. Plug ignition source coil lead into main wire loom.



Stock KTM Stator



ElectroSport ESG145 Stator

DC Lighting Conversion

Note: This next step is what converts your lights to DC. Do not skip this step! Do not attempt to splice into the AC output of the stator. The unregulated output of the stator will burn out bulbs in seconds.

Step 1. Fit the twin lead yellow wire with a male spade connector (that you just unplugged from the old stator lead) into the yellow/red lead of the former stock regulator plug. Do the same for the white male lead, plugging it into the white lead of the regulator plug. Pay attention to the colors, this step must be done correctly; it could cause a fire if it is plugged into the wrong color wire!

ATTENTION! Some 05 models have a pig tail plug coming off of the stock regulator. You will need to cut the pig tail off at the regulator (do not cut the main wiring loom) and connect the red wire to the yellow wire with a butt type crimp connector. Then insulate — with shrink wrap or electrical tape — the twin lead yellow wire with a male spade connector (that you just unplugged from the old stator lead). Finally, insulate the white wire with a male spade connector.

Step 2. Install supplied wire loom starting from the battery/stator area — following the same routing as the stock wire looms — ending up under the tank. Secure to the frame with zip-ties.

Step 3. Attach the leads to the battery; RED to positive, BLACK to negative. Insert modular plug into ElectroSport regulator. Finally, plug the 3 yellow leads from the stator into the supplied loom. Make sure that the insulators completely cover the connectors; wrapping with electrical tape wouldn't hurt.

Step 4. Reconnect battery.

Step 5. Re-install the tank, number panel, fender, & seat.



Troubleshooting:

The battery should be fully charged before attempting this install. If you have the 04 4Ah battery, it is recommended that you replace it with a Yuasa YTZ7S. You will need the battery box from a 05 EXC (KTM part # 59011055100). If the motor cranks & cranks & cranks, without starting, try kick starting it; it should fire up right away. If it does, please check & double check your valve clearance; especially on the intakes. We have found that even slightly tight valves will cause the bike to be very hard to start with the electric starter, but it will start with a good strong kick. So adjust the valves! KTMs are famous for having their intake valves tighten up to the point where the valve is being held open. If — after adjusting the valves — it is still hard to start, ride it for a couple of hours; the electric starter will then be able to start the bike.

The reason is thus:

There is an adaptive algorithm built into the voltage regulator circuit of the CDI. It is there to protect the CDI source coil from burning up. It seems only to affect the ignition at cranking speeds (~800rpm). Once the CDI circuit adjusts to the new source coil output, the symptom goes away; and starting returns to normal. We have seen this phenomenon on about half the bikes that have the 3-phase stator installed. Rest assured it is no cause for alarm, and it will cure itself.