



# **PANTHERA MOTORSPORTS**

## **YZ250-YZ250X 90W stator and flywheel - Installation guide**

### List of Panthera parts you need

- 1- Lighting Stator
- 2- Panthera flywheel
- 3- Panthera flywheel cover with fill cap
- 4- Panthera cover gasket
- 5- Current regulator/rectifier

### List of tools you need

- 1- 3/8 drive Socket wrench
- 2- Socket wrench extension
- 3- 10mm socket
- 4- Phillips drive bit
- 5- Yamaha M27x1 flywheel puller
- 6- 6mm allen drive bit
- 7- 4mm allen drive bit
- 8- Torque wrench

### Security concerns

Engine assembly must always be accomplished by a qualified mechanic.

Use the proper tools for every operation and always wear the proper personal protective equipment (glass, gloves, etc.)

The parts sold by Panthera Motorsports are often machined parts and are at risk of having sharp edges. Always handle with care.



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### Original parts disassembly

In order to make the wiring installation, the motorcycle seat and fuel tank have to be removed.

#### Seat removal

With a 10mm socket, remove the two seat bolts on each side and remove the seat.

#### Fuel tank removal

Undo the rubber link between the chassis and the tank. With an extension and a 10mm socket, remove the two bolts holding the tank to the chassis as well as the two bolts between the tank side covers and the radiator guards.

Making sure the fuel valve is closed, slide off the collar and remove the fuel line, using a rag to collect the fuel drop.

#### Flywheel removal (for starter kit without charging system)



With a Philips drive bit, remove the 5 flywheel cover bolts and cover.

With a M27x1 flywheel puller, remove the original flywheel.

Clean the stator and stator case internal so that no dirt remains.



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Flywheel and stator removal (for starter kit with charging system)



With a philips drive bit, remove the 5 flywheel cover bolts and cover.

With a M27x1 flywheel puller, remove the original flywheel.

Unplug the stator connector located between the two radiators.

With a philips drive bit, remove the 3 stator bolts and the stator.

Clean the case internal so that no dirt remains.



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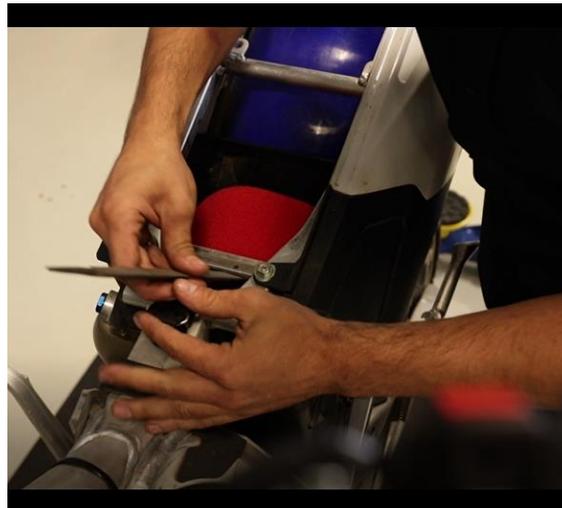
### Panthera system installation

#### Battery box and wiring installation



Install the battery box inside the airbox and bolt it to the subframe holes available. Use the 2 supplied M8 socket bolt and spacer and torque to 110 in-lb.

Run the wiring loom between the airbox and under the chassis shock tower. The plastic of the airbox is often very sharp, it is suggested to file the sharp edge of the plastic to ensure wires don't get cut over time.



Run the wires along the frame and secure with zip ties. The two power cables (black and red) are to follow down the clutch cable towards the starter cover.

Install the starter button to the handlebars with the supplied camp and connect to the harness.



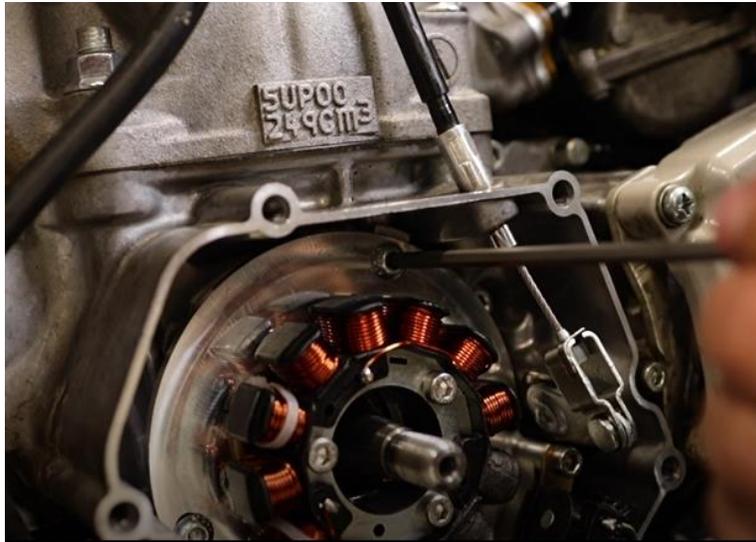
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### Panthera stator installation

Place the new stator inside the casing and ensure that the rubber boot is properly sliding in its location. Proper seat of the rubber is important as the starter housing will contain oil.

Bolt the stator in place with the 3 supplied button head screws using an allen 4mm drive bit. Make sure the timing mark is aligned and torque to 80 in-lb.

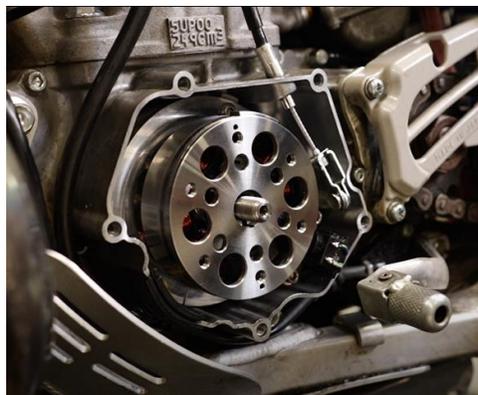


Connect the stator 6 pins connector to the bike harness.

Connect the charging coil 2 pins connector to the charging harness. Long yellow wires are supplied so you can locate the regulator near the battery, at the battery box.

### Flywheel and main gear installation

Slide the Panthera flywheel on the crankshaft and assure the keyway aligns with the woodruff key on the crank. Verify that the pick up coil to trigger bump distance is between 0.25-0.40mm. Bend the pick up coil bracket if needed to reach that value.





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It is a good practice to right away make sure you have a spark while kicking. If not, check for bad connection. Torque the flywheel nut to 40ft-lb.

### Stator cover

Stator cover with a oil fill cap is supplied as the high power generates heat that could impact the reliability of the system. Like in the 4 strokes engines, oil is needed to keep the stator cold.

To ensure a proper sealing of the starter housing, put silicones on the stator rubber boot area.

Install the cover on the engine with the proper gasket and ensure the housing central bearing is sliding on the flywheel bolting unit. Hold the cover in place and bolt it with the 5 stator cover original bolts. Torque the cover housing to 90 in-lb.

### **Pour 400ml of ATF oil inside the starter housing.**

The housing is equipped with a pressure vent to run a hose to a high point on the motorcycle, at least one feet higher than the housing. Place the hose so that its end points down and no water enters in it.

### Stator battery connection

Install the battery in the battery box, making sure the + and – are properly located. Secure the battery with the supplied rubber band. The 4 cells box supplied is designed for an **Antigravity** SC-1.



Connect the harness to the battery, always connect the positive (red) first.

Once wires placed properly, tight the two nuts on the relay with at 10mm socket.



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### Tank and seat re-install

Re-install the fuel tank on and make sure none of the connectors are interfering. Bolt the tank back in place.

Chassis bolt torque is 86 in-lb and guard bolts torque is 51 in-lb.

Re-install the chassis to tank rubber band.

Reconnect the fuel line and slide the collar back on.

There is a plastic fin underneath the seat that will then to cut the rubber strap that holds the battery. We have supplied you with a u-shaped rubber to glue on the fin and project the strap.

Slide the seat on and secure with the 2 bolts. Torque to 13 ft-lb.

### Flywheel puller

The supplier gear holder to torque the flywheel also acts like a flywheel puller

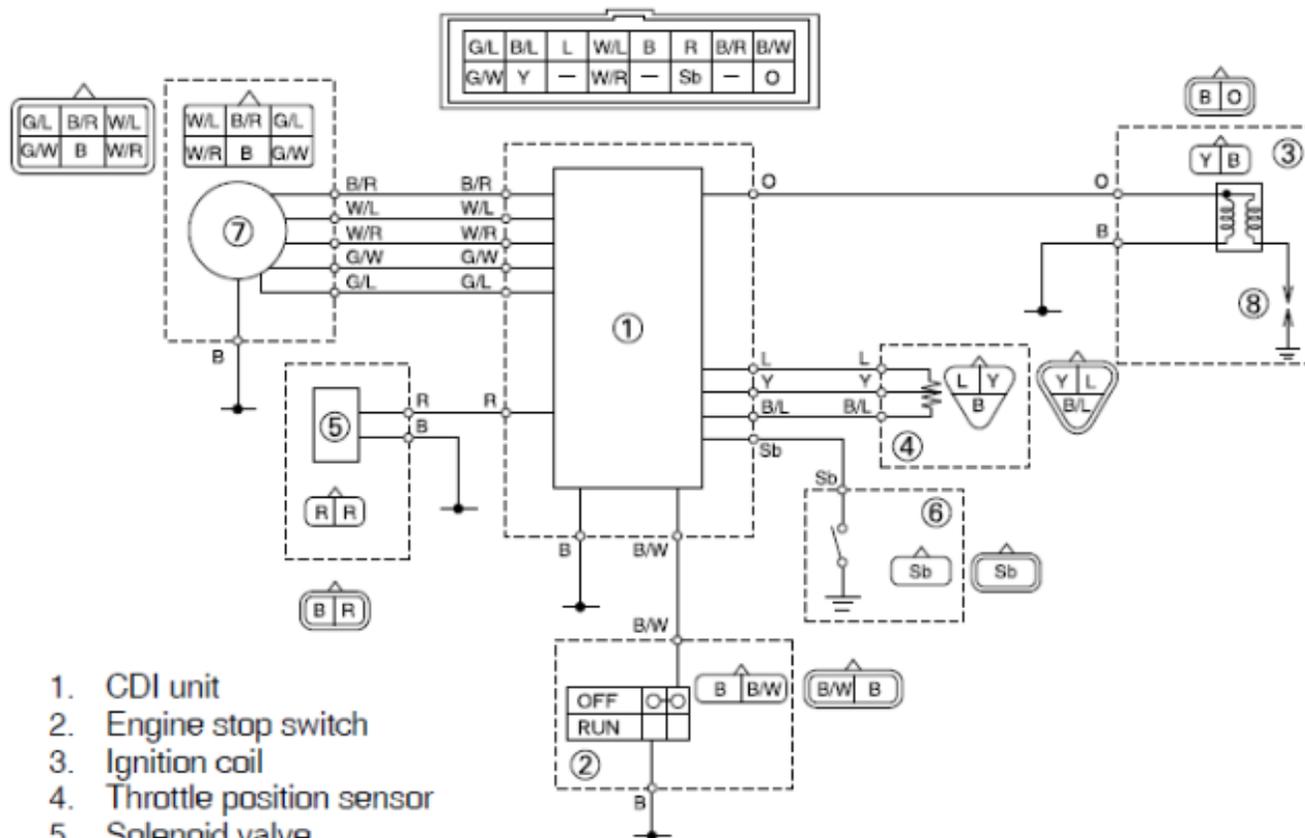




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### Annexe 1 YZ250 Wiring diagram



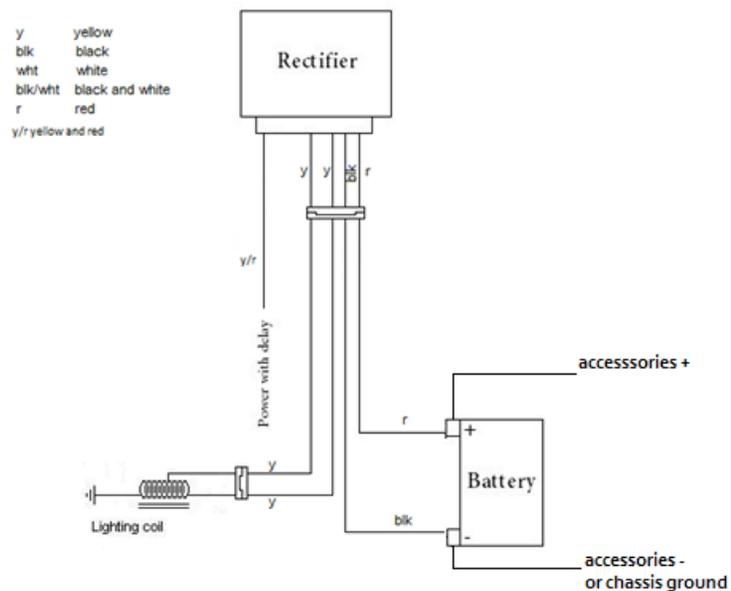
1. CDI unit
2. Engine stop switch
3. Ignition coil
4. Throttle position sensor
5. Solenoid valve
6. Neutral switch
7. CDI magneto
8. Spark plug



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### Annexe 2 Charging system wiring diagram



\*Power with delay (yellow-red wire) is a 12V current source that only charges few seconds after the engine is started



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### Returns and Exchanges

#### General:

All returns must be postmarked no later than 10 days from the original customer shipment date. Returns and exchanges must be in new condition and must include all instructions and original packing material. Customer pays all return shipping charges. Include a copy of your packing list and authorization number with all returns.

Original shipping and handling charges are not refundable. Returns must be preauthorized by us and are subject to a 20% re-stocking fee. These amounts will be deducted from the original amount billed and the remaining balance will be credited to the original credit card or paypal account.

#### Incorrect Item:

If you received an incorrect item, we must be notified within 10 days of receipt of the shipment so that no extra charges will be incurred. We will replace incorrect items and pay the additional shipping charge. No returns of items will be accepted beyond 21 days of the original shipment date.

#### Return Shipping Instructions:

Return via prepaid mail only. Insure shipment for full value of purchase. Use original packaging. We are not responsible for packages lost during return shipping.

#### Return/Exchange Instructions:

Enclose a copy of your packing list along with detailed return/exchange instructions.

All returns require prior authorization by e-mailing us at [info@pantheramotorsports.com](mailto:info@pantheramotorsports.com) . All return shipping charges will be the responsibility of the customer. No returns on items under \$30.00 will be approved. Items must be returned within 90 days of the original order date in the original packaging with the labels intact.



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### Warranty Items:

All merchandise manufactured by Panthera Motorsports has a warranty against manufacturing defects for a period of one (1) year from the date of original shipping. Warranty is limited to the repair or replacement of defective products. There is no warranty for normal wear and tear, any type of crash. Panthera Motorsports reserves the right to repair, replace or issue a Panthera credit for defective product at its discretion. Credits are valid for a period of one (1) year from issuance. No credit will be issued for labor or other costs incurred beyond the value of the original product. Product returned as a warranty after having been used, if found to be defective, is not valued at the full purchase price. A depreciated value will be estimated for used product. Warranty excludes product that has been modified or where the product was improperly installed, abnormally used or misused. This limited warranty is in lieu of all other guarantees or warranties implied or expressed. This includes, without limitation, any warranties or merchantability and fitment for a particular purpose. We make no warranty as to products distributed by Panthera Motorsports, expressed or implied. We will, however, pass on all warranties made by the manufacturer, who has sole responsibility for performing such warranties. A return authorization number must be issued by Panthera Motorsports before product is returned. Returns must be sent back to Panthera Motorsports freight prepaid. Proof of purchase, such as a copy of the original invoice, must accompany all warranty claims. Warranties will be honored to the direct purchaser only.