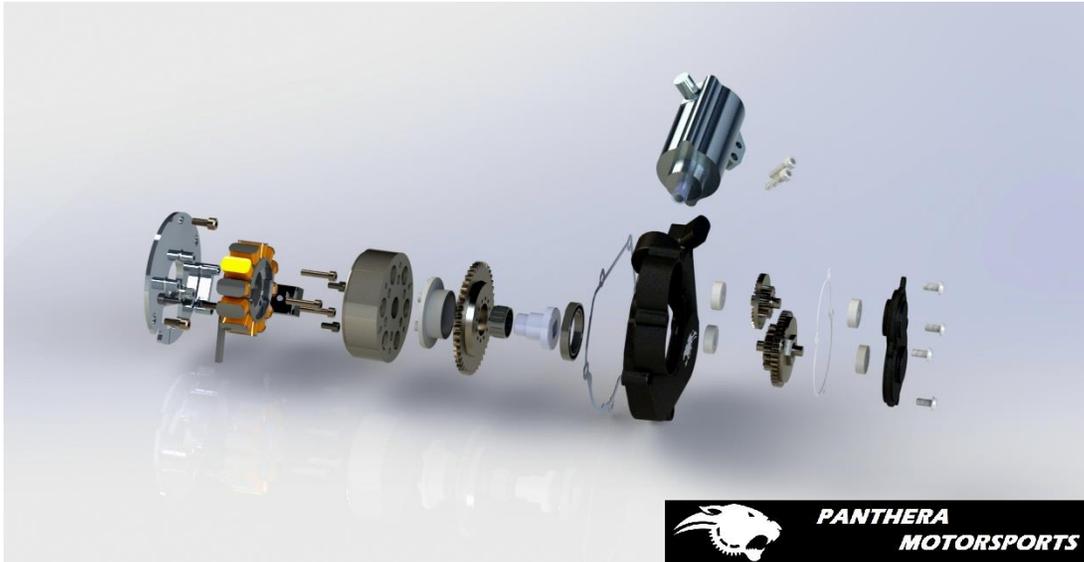




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CR500 Electric starter gen02- Installation guide

List of Panthera parts you need



- 1- Panthera starter electric motor
- 2- Panthera 110W Stator
- 3- Panthera flywheel for CR500
- 4- Flywheel starter flange
- 5- One way clutch – Main Gear
- 6- Needle bearing
- 7- Bolting nut and bearing holder
- 8- Panthera starter cover and cap
- 9- Sealed ball bearing
- 10- Crown starter gear
- 11- Intermediate gear
- 12- Wiring harness*
- 13- 24V Panthera Battery pack*

*Optional



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Installation

Stator

The starter unit will require to run oil in the flywheel compartment. To do so, you will have to block the CR500 flywheel vent hole. Use silicone or any other sealing compound that has oil sealing capability.

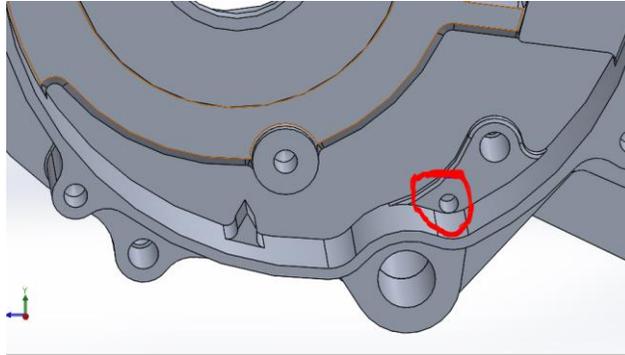


Figure 1 Vent sealing

As you receive your unit, the new stator will be already bolted, loctited and torque to its backplate.

Bolt the new stator unit to the cases with two button heap cap screw. The stator plate as angle goes from +3 to -3 deg, zero being in the middle position.



Figure 2 Stator installation



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Place the rubber boot into its proper location in the case opening. Place the cable back to ensure they won't touch the flywheel. Zip tie the pick up cable and the stator cable together and place them as deep as possible. When the flywheel is in place, make sure the trigger bump to pick up gap is between 0.25-0.50 mm. Bend the pick up tab to reach required gap if needed.

The flywheel trigger bump will tend to touch the rubber boot. You will have to shave the rubber slightly with a blade.



Figure 3 Rubber boot shaving

Flywheel

Align the flywheel with the key way and slide it in place. You will have to fight the magnets to place it straight and all the way down.

Once you will have the flywheel bolted, spin the flywheel (and engine) by hand to make sure you don't feel any rubbing between the flywheel and the stator. This can happen if the stator back plate is not properly sitting, or sometime with after market crank that have a taper out of spec.

!!! IMPORTANT !!!

First start up should always be done by foot, without the e-start installed. Firing a new ignition system should always be tried without e-start first. Wrong wiring can end up with backfiring and risk damaging the starter gears.

Temporarily bolt the flywheel on and make sure the bike starts properly.

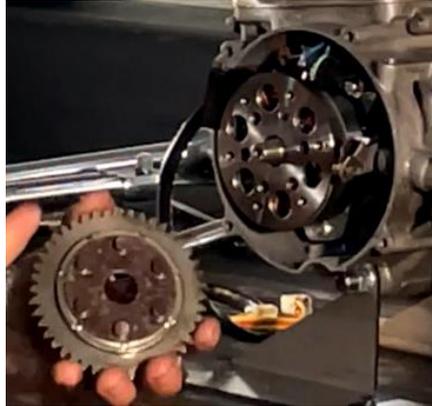


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One way clutch and ring gear

If you have taken off the one way clutch/ ring gear from the starter flange, you can easily put it back on by pushing it on with a clockwise rotation. Please the 6 location tabs of the starter flange in the matching 6 holes on the flywheel.



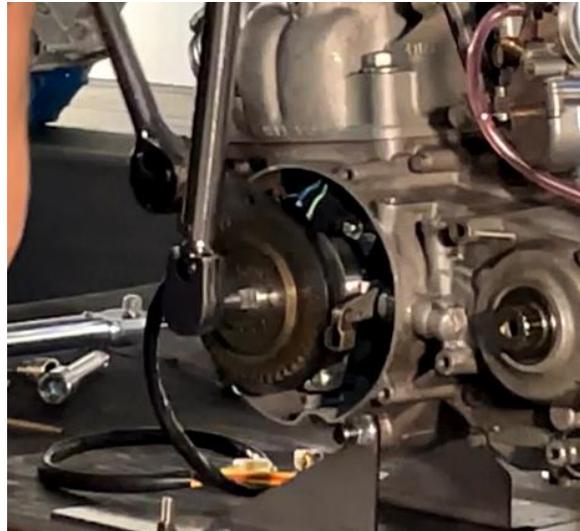
Bolting the flywheel

Bolt the flywheel in place with the specially designed element. You will simply need a 1/2in extension on your torque wrench or even use the torque wrench itself. Use the gear holder tool supplied to prevent the engine from turning.

!! Do not forget the needle bearing before putting the bolting unit !!

!!! The flywheel has to be torque at **70 ft-lb**. Not doing so will have the key way sheared by the starter!!!

Hold the assembly in place with the supplied gear holder tool.





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Starter cover



To install the cover, remove the two small gears from behind the gears cap. Leaving the gears will make it hard to put the cover on and align the gear at the same time, you will risk damaging the gears.

Do not forget to put the gasket on the cover.

Align the starter cover so that the flywheel bolting unit slides in the bearing inside the cover. This bearing ensure that the main ring gear is at the exact right distance to the secondary gear.

Bolt the cover in place with standard honda flywheel cover bolts or the supplied M6 socket cap bolt supplied. Torque the cover housing to 90 in-lb.

!!! Before putting the gears back in, putt 400ml of ATF oil in the cover, or until the oil level is at least passed the center line of the crank. The more oil in, the more your one way bearing will be lubricated and your stator cooled down.

But back the gears in place, bottom gear first.

Then put back the gear cap in place with its gasket, and torque back all the bolts to 84 in-lb.

The housing is equipped with a pressure vent at the back made 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.



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Electrical connection

The new Panthera stator is supplied with an adaptor made to connect directly to the OEM CDI box of the CR500.

The remaining two yellow wires of the stator are to be connected to a voltage regulator/rectifier to recharge the battery. If you have purchased the Panthera wiring harness, simply connect them to the matching connector on the harness.

Battery

The battery is to be put in the airbox under the seat.

This system has been designed to run on 24V to the electric motor. Panthera has designed a specific battery unit made to deliver 24V to the starter and recharge fully on 12V from the stator.

You can also create your own 24V set up by putting 2x 12V battery in series, but you will have to recharge them between rides.

If you have purchased the Panthera wiring harness, connect the big red wire (electric motor power cable) to the yellow terminal on the battery.

The two smaller red wire must be connected to the red terminal of the battery, same as any other accessories you would like to be supplied with 12V.

Electric motor

Connect the red power cable to the positive terminal of the electric motor and the black power cable to one of the mounting bolt of the electric motor.

PRESS THE BUTTON AND GO HAVE FUN !!

User note: We often get asked if the whining sound at the engine shut off is normal. It is. When the engine comes to a stop, the compression pushes it backward of a quarter turn and that makes the electric motor spin back a few turns. The gear sound is perfectly normal.



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Maintenance

It is recommended to flush the oil after the first ride to eliminate particles generated by the gears first meshing and break in. Taking cover off to remove all particles is recommended versus only using the drain plug.

On a normal basis, change the oil at the same time as transmission oil.

Flywheel puller

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



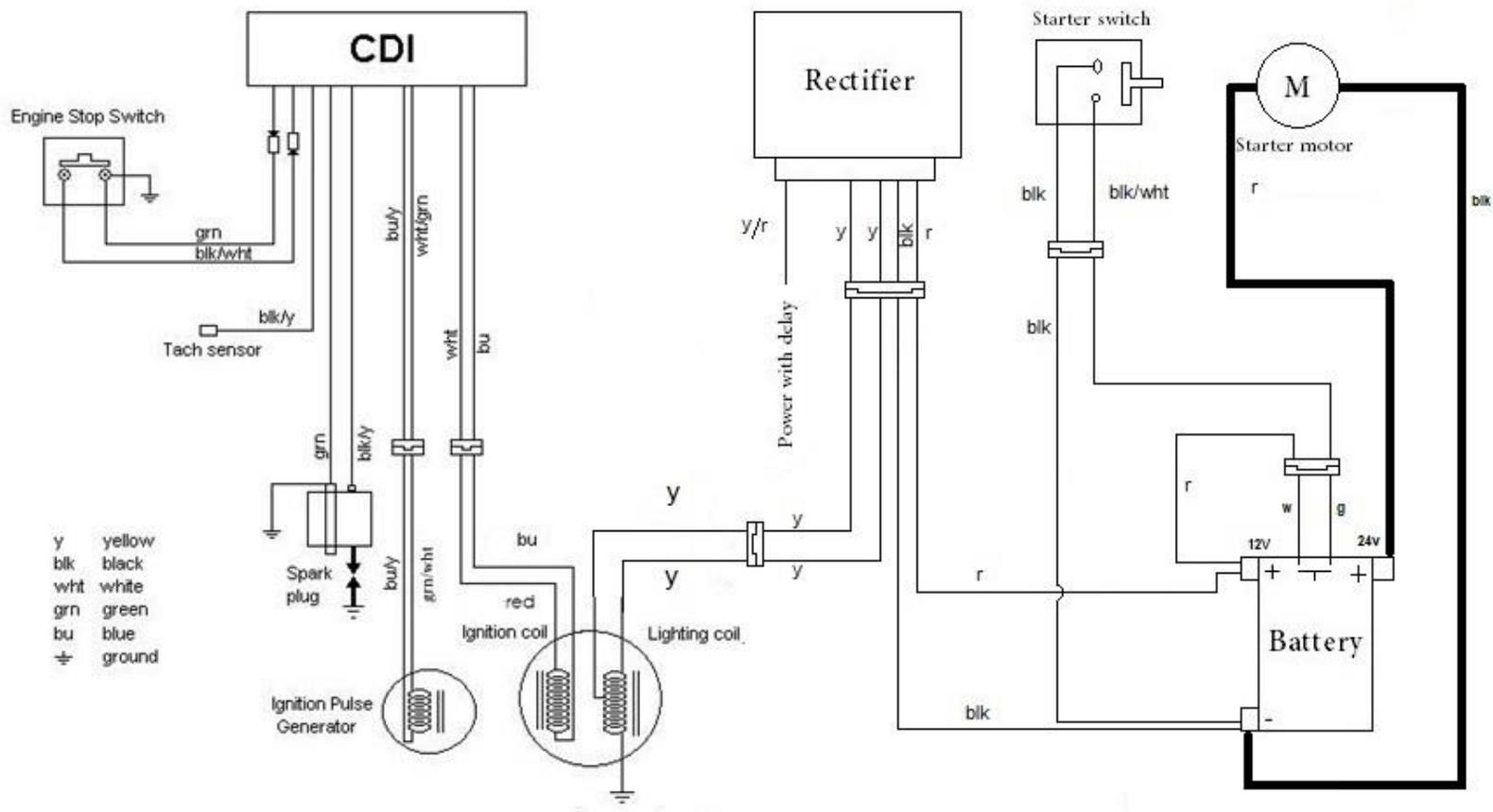


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Wiring diagram

CR500 WITH PANTHERA ELECTRIC STARTER KIT





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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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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 sebastien.m@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.