



## **Sherco Ignition Timing Manual Supplement Late “03’s” and all “04’s” Equipped with the Leonelli Ignition**

**This Manual provides instructions on how to check and adjust the ignition timing on the “03” and “04” models equipped with the Leonelli Evolution 2 electronic ignition . This includes late “03’s” and all “04’s”.**

**The motorcycle shown in the pictures is a nearly new “04” 2.9. This manual applies to all of the late “03’s” and all of the “04’s” with the exception of the 50cc bike.**

**If you have any questions about the procedure, please call Ryan Young Products at 1-800-607-8742.**

**[For instructions on earlier models please go to:](http://www.rypusa.com/sherco/manual.htm)**

**<http://www.rypusa.com/sherco/manual.htm> or**

**[http://www.sherco-moto.com/wayne\\_corner.html](http://www.sherco-moto.com/wayne_corner.html)**

**and download the “Sherco Ignition Timing Guide”.**



## ***Ignition Timing Comments***

For general purpose use, we recommend maintaining the factory ignition timing setting and adjusting one's riding style to the performance of the bike. In the event that the factory setting does not meet your performance requirements due to altitude or riding style, this manual will define the steps required to modify the factory timing.

The factory timing setting is a compromise between achieving maximum RPM and smooth low end response plus ease of starting.

### **Why Advance the Timing Beyond the Factory Setting?**

Generally speaking, there is little advantage. However, quicker bottom end engine response will result, the idle speed will rise, but the motor may also kick back more when starting, or show some tendency to ping when hot under quick applications of throttle. Advancing beyond factory settings is beneficial to riding at high altitudes, as advancing will return some of the engine response lost from thin air.

## ***Ignition Timing Comments, continued***



### **Why Retard the Timing Beyond the Factory Setting?**

Retarding creates a softer low-end engine response for riders who rarely ride at maximum RPM. Other benefits include: easier starting and much smoother slow riding in first gear with no clutch, and preventing wheel spin in slippery terrain. Retarding will necessitate an increase in idle speed by turning in the carb idle screw.

To experiment with retarding, first fully retard the ignition as far as the slots will allow (rotate the stator plate counter clockwise). Note that adjusting the timing in small, precise increments will not provide enough appreciable performance difference. Increase the carburetor idle speed appropriately, then test ride the bike. Next, try a setting half way between factory and fully retarded. By testing the bike's performance at extreme timing settings, it becomes easier to choose a setting suitable for riding style or conditions.

### **Idle Considerations:**

The idle, regardless of timing setting, should be adjusted to prevent engine stalling. The idle speed is correctly adjusted when the bike can creep forward (with no throttle) in first gear by merely dragging the clutch. Perform this test on flat, smooth ground.

**Note: Use caution when moving the stator plate as damage to the wiring harness can occur.**



**This manual is divided into 4 sections.**

- **Preparation**
- **Disassembly**
- **Adjusting if necessary**
  - **Manual adjustment**
  - **Adjustment using a strobe timing light**
- **Reassembly**



## Preparation

- Wash the bike
- Place the bike on a suitable stand
- Remove the rear fender
- Remove the fuel tank
- Details of these steps are not shown in this manual as they are adequately covered in several others.



## **Disassembly**

- **Remove the gearshift lever fixing bolt**
- **Remove the flywheel cover**
- **Chisel mark the flywheel retaining nut**
- **Locate and highlight the timing marks on the flywheel and the engine case**
- **Check the timing using a strobe light**
- **To check the internal factory timing marks or to adjust the timing – Remove the flywheel**

## Disassembly



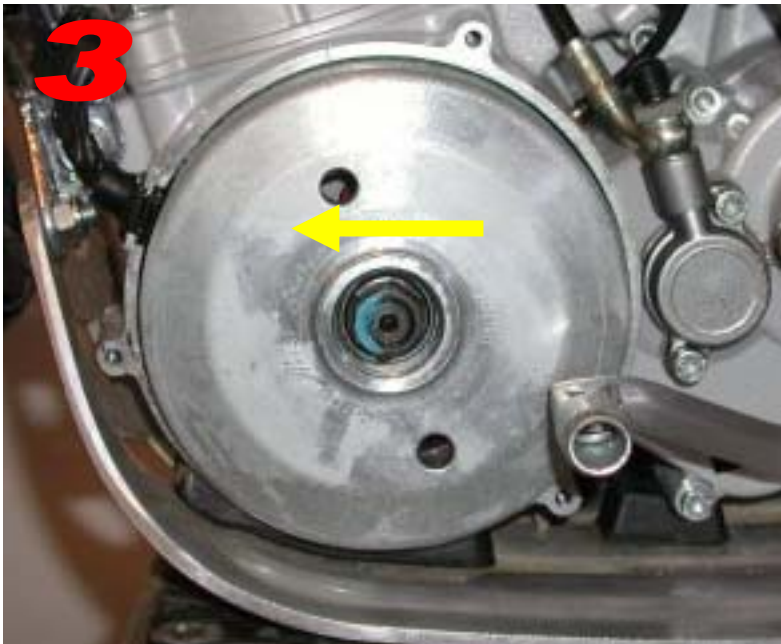
➔ Using a 5mm Allen wrench remove the gear shift lever fixing bolt.



➔ Using a 4mm Allen wrench remove the 3 bolts that retain the ignition cover.

➔ To remove the ignition cover, you may have to jiggle the gear shift lever in order to remove the cover.

## Disassembly



➔ This photo shows how the Leonelli Ignition flywheel looks with the ignition cover removed. Note that there is no hole in the flywheel for the ignition timing pin. The holes shown can be used with a holding tool to install and remove the retaining nut. Flywheel rotation is counterclockwise.



➔ Using a sharp chisel, mark the crankshaft and the retaining nut so that the nut can be retightened to the factory location.





## Disassembly



➔ Locate the factory timing mark on the engine case.



➔ Locate the factory timing marks on the flywheel. It looks like a series of dots as shown above



➔ Highlight these marks for future reference.

**NOTE: If you are going to check the timing using an automotive strobe light go to that section now! Page 13.**

## Disassembly



➔ Using an impact tool equipped with a 19mm socket, remove the flywheel retaining nut.



➔ Using the [Ryan Young Products Flywheel Removal Tool](#) remove the flywheel. You may have to jiggle the gear shift lever in order to remove the flywheel.

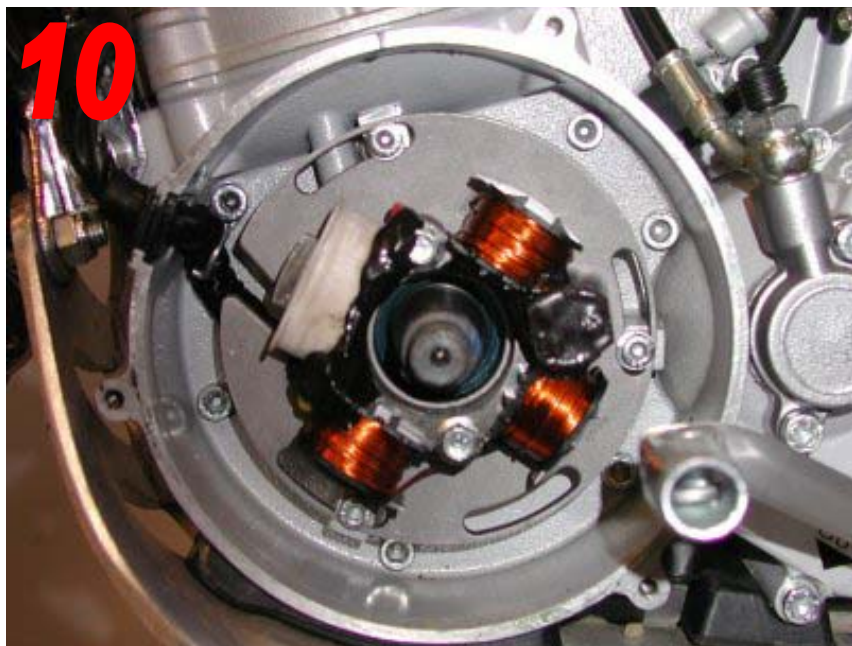


## Manual Adjustment

- Check to make sure that the factory timing marks are aligned
- If they are not, loosen the fixing bolts and rotate the stator plate to align the marks
- The timing can be retarded or advanced by rotating the stator plate. To advance the timing, rotate the stator plate clockwise. To retard the timing rotate the stator plate counterclockwise.

**Note: Use caution when moving the stator plate as damage to the wiring harness can occur.**

## Adjustment



➔ View showing the flywheel removed with the stator assembly exposed. Notice that it is retained with three bolts, and that the backing plate is slotted.

**Note:** Spraying the inside of the case, the stator plate, and the flywheel with clear lacquer will help prevent corrosion.



➔ Carefully examine the top mounting bolt and boss. There should be a factory mark on the stator backing plate and a factory mark on the mounting boss. These marks should align. If they do not, loosen the 3 fixing bolts with a 4mm Allen wrench and align the marks.



## **Adjustment using an Automotive Strobe Timing Light**

- **Complete steps 1 - 7**
- **Attach a strobe timing light to the spark plug and to the spark plug lead.**
- **Start the bike and point the timing light at the mark you made on the engine case, the mark that you made on the flywheel should show up in the light. If the marks are in alignment the timing is correct per the factory.**
- **If the timing is advanced or retarded then go to page 10 and follow the instructions for manual adjustment.**
- **Reinstall the flywheel, restart the engine and check the timing again. You may have to do this several times before you get the timing exactly on the factory marks.**



➔ This photo shows the strobe light in position ready to check the timing.



➔ This photo shows what you should see when the timing marks are in alignment. This is the factory setting.



➔ This photo shows the ignition advanced.



➔ This photo shows the ignition retarded.



## Reassembly

- Install the flywheel, aligning the keyway in the flywheel with the key in the crankshaft.
- Apply a liberal coat of “blue” loctite to the flywheel retaining nut and install it using a small impact tool fitted with a 19mm socket.
- Tighten the flywheel retaining nut so that it is approx. 5 degrees (about 2mm) beyond the chisel marks applied earlier. The factory torque is 73.2 ft lbs.
- Reassemble the rest of the bike in the reverse order of the disassembly. It is recommended that you apply anti-seize to all of the bolts when they are reinstalled.