Ridge Rider Class 3 Upgrade Kit - Installation Instructions

Compatibility

- New RR 1x10 -> Class 3 Upgrade Kit (Item # 22118)
- Used RR 1x10 —> Class 3 Upgrade Kit (Item # 22118) + New Chain 116 Links (Item # 33110)
- Used RR 2x10 —> Class 3 Upgrade Kit (Item # 22118) + New Chain 116 Links (Item # 33110)
 - Note: RR 2x10 does not require a new torque sensor, the spindle length is the same.



Required Tools

- 15 mm pedal wrench
- 2.5mm, 3mm, 8 mm hex wrench
- Square taper crank puller (Park Tool CCP-22)
- Hooked pick
- 3/8" ratchet
- 3/8" torque wrench (Park Tool TW-6.2) + 8 mm hex bit (Park Tool SBS-1.2) + 15 mm crow foot (Park Tool TWB-15)
- Bottom bracket tool (Park Tool BBT-22)
- Master link pliers (Park Tool MLP-1.2 or KMC Missing Link Pliers)

Required Supplies

- Microfiber cloth
- Degreaser
- Grease (Park Tool PPL-2)
- Medium strength threadlocker (Loctite 242 or 243 Blue)



Torque Specifications

- Pedal spindle = 35 Nm
- Crank arm fixing bolt = 35 Nm
- Bottom bracket
 - Alloy cup (drive side) = 35 Nm
 - Plastic cup (non-drive side) = 30 Nm MAX
- Controller cover screw = 1 Nm MAX

Installation Procedure

- 1. Make sure the battery pack is powered off and remove it from bicycle frame with a suitable key.
- 2. Press the power button on the display to discharge any residual energy in the controller.
- 3. Mount the bicycle in a repair stand with the seat tube perpendicular to the ground.
- 4. Remove the pedals with a 15 mm pedal wrench.
 - Note: The right pedal unthreads counter-clockwise and the left pedal unthreads clockwise.
- 5. Unlock the chain master link with master link pliers and remove the chain.
- 6. Remove the crankset with a 8 mm hex wrench and crank puller.
 - Note: Make sure the threaded coupler is fully seated into the crank arm before removing.
- 7. Disassemble and remove the upper portion of the chain guide with a 3 mm hex wrench.
- 8. Remove the 4 controller cover screws with a 2.5 mm hex wrench.
- 9. Remove the controller cover and carefully pull out the controller.
- 10. Unplug all of the controller connectors and set the controller aside.
 - Note: Make sure to pull apart the connectors without pulling on the cable.
- 11. Rotate the bicycle 90 degrees in the repair stand so that the rear wheel is above the front wheel.
- 12. Using a hooked pick, pull the torque sensor cable out of the controller compartment bottom access hole, then remove the rubber plug.
- 13. Remove the non-drive side bottom bracket cup with a ratchet and bottom bracket tool by turning it counter clockwise.
- 14. Carefully pull the bottom bracket spindle out the non-drive side of the bottom bracket shell while feeding the cable through.
 - Note: Take care not to damage the cable or sensing surface.
- 15. Check that the chain guide bracket is inline with the seat tube. If it is not, loosen the drive side bottom bracket cup and adjust the angle chain guide bracket angle.
 - Note: The drive side bottom bracket cup loosens clockwise and tightens counter-clockwise.
- 16. With a torque wrench, tighten the drive side bottom bracket cup to 35 Nm.
 - Note: Verify that the chain guide bracket is still inline with the seat tube.
- 17. Remove any debris from the bottom bracket shell with a microfiber cloth and degreaser.
- 18. Lightly grease the inner surface of the bottom bracket shell and cups.
- 19. While holding the torque sensor with the sensing surface facing the rear of the bike, carefully feed the torque sensor cable through the access hole in the bottom bracket shell. Now slide the bottom bracket all the way through the bottom bracket shell and into the drive side cup taking care not to pinch the cable.
 - Note: The white marks on the bottom bracket are vertical and horizontal orientation marks, the single horizontal mark should point toward the rear axle.
 - Note: There is a small indent on the bottom bracket shell; the horizontal mark should be right above this indent.
- 20. Thread the non-drive side bottom bracket cup clockwise and torque to 30 Nm MAX.
- 21. Replace the rubber plug for the torque sensor cable and feed the cable into the controller compartment.
- 22. Slide the drive side rubber cover over the bottom bracket spindle all the way into splined portion of the drive side cup.
- 23. Rotate the bike in the repair stand so that the seat tube is perpendicular to the ground.
- 24. Install the extended upper chain guide with a 3 mm hex wrench using the screws provided.
 - Note: Apply blue medium strength thread locker to the threads.
- 25. Carefully plug in all of the wiring harness connectors to the new controller and slide it into the controller compartment.
- 26. Install the 4 controller cover screws and tighten with a 2.5mm hex wrench to 1 Nm MAX.
- 27. Slide both crank arms onto the bottom bracket spindle and torque the fixing bolts to 35 Nm.
 - Note: No grease is needed between the crank arms and bottom bracket spindle.
 - Note: Apply blue medium strength thread locker to the fixing bolt threads.
- 28. If the chain is new, add the included 5 links + master link to the existing chain and install on the bicycle.
 - Note: If the chain is used, install a new chain with a total of 122 links.
- 29. Clean the pedal spindle threads with a microfiber cloth, reapply grease and install the pedals.
 - Note: The right pedal threads on clockwise and the left pedal threads on counter-clockwise.
 - Note: Torque the pedals to 35 Nm with a torque wrench & 15 mm crow foot.
- 30. Install the battery pack and power on the electrical system.
- 31. Test the motor in the stand in cadence mode with "SET 7 = OFF" to make sure all assist modes are functioning correctly.
 - Note: Cadence Mode (SET 7 = OFF)
 - Assist Level 0 = Human Power Only
 - Assist Level 1 = up to 12 MPH (Top Speed)
 - Assist Level 2 = up to 16 MPH (Top Speed)
 - Assist Level 3 = up to 20 MPH (Top Speed)
 - Assist Level 4 = up to 24 MPH (Top Speed)
 - Assist Level 5 = up to 28 MPH (Top Speed)
 - Assist Level 6 = Throttle Only 20 MPH MAX
- 32. Remove the bicycle from the repair stand and find a safe area to take a test ride.