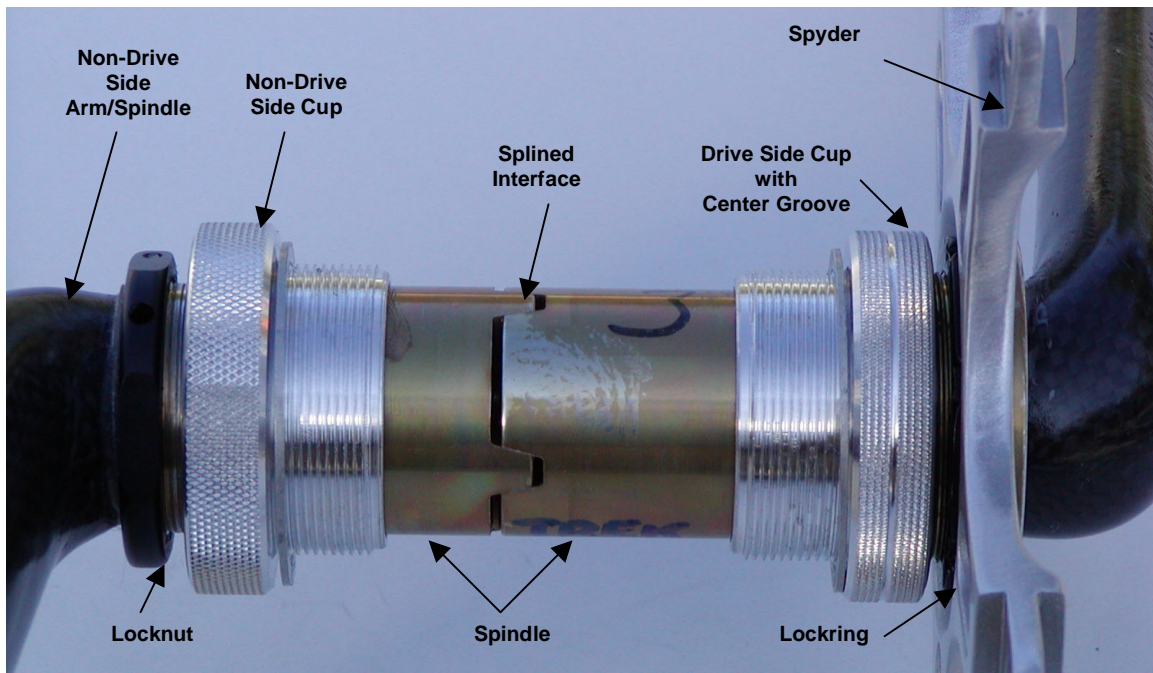




Lightning Carbon Cranks/BB Installation Procedure

Thank you for selecting the highest performance carbon crank/BB assembly on the planet! To maximize your enjoyment and operation of your Lightning carbon crank/BB please thoroughly read the installation procedure shown below. A non-compliant installation omitting these important procedures will void your warranty.

- 1) Component Familiarity: Familiarize yourself with all the components and their nomenclature



- 2) Shipping Disassembly: The crank/BB is packaged completely assembled. Perform the following operations to disassemble the unit: Insert the included "T" Allen wrench in the drive side crank hole until it engages the head of the binder bolt. Tap on the wrench to ensure that it is completely seated into the binder bolt head hex interface. If the wrench is not fully engage the binder bolt head hex interface could strip. Fully loosen the binder bolt by rotating counterclockwise (~15 turns). Once the two halves are separated then pull the cups off each spindle half with your hand.
- 3) Drive-Side Cup: Locate the drive-side cup (the cup with the center groove). **The drive-side cup has Left Handed Threads and cannot be screwed into the non-drive side of your bottom bracket shell or else**



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the threads on the cup and the shell will be destroyed. For 68-mm wide shells use one shim (washer) for each cup, for larger shells do not use the supplied shims. Apply grease on threads. Gently screw by hand the drive-side cup (68-mm wide shells use only one shim) into the shell by rotating counterclockwise. Tighten the cup by hand and make sure it seats completely against the shell surface. The cup should easily thread into the shell by hand. Insert the supplied rubber sheet between your hand and the cup and torque the cup against the shell as much as possible (do not use any wrenches for this operation, the rubber sheet will allow you to apply high torque - if not then a strap wrench may be used). Again, ensure that the cup is firmly seated against the shell surface.

- 4) **Non-Drive Side Cup:** Locate the non-drive side cup (the cup without the center groove). **The non-drive side cup has conventional Right Handed Threads and cannot be screwed into the drive side of your bottom bracket shell or else the threads on the cup and the shell will be destroyed.** For 68-mm wide shells use one shim for each cup, for larger shells do not use the supplied shims. Apply grease on threads. Gently screw by hand the non-drive side cup (68-mm wide shells use only one shim) into the shell by rotating clockwise. Tighten the cup by hand and make sure it seats completely against the shell surface. The cup should easily thread into the shell by hand. Insert the supplied rubber sheet between your hand and the cup and torque the cup against the shell as much as possible (do not use any wrenches for this operation, the rubber sheet will allow you to apply high torque - if not then a strap wrench may be used). Again, ensure that the cup is firmly seated against the shell surface.
- 5) **Inspection of Splined Surfaces of Crank/Spindle Assemblies:** A small amount of lubricant has been applied at the factory to the mating splined surfaces of the crank/spindle assemblies. **Prior to installation, inspect the mating surfaces to ensure they are free from foreign debris and that a thin coating of lubricant is applied.** If installation is made with foreign debris on any part of the mating surfaces it will damage the splines and void any warranty.
- 6) **Drive-Side Crank/Spindle Assembly:** Install your chainwheels and properly secure the spyder/chainwheel attachment bolts. Insert the drive-side crank/spindle assembly into the installed drive side cup and press by hand to seat the spindle onto the sealed bearing. This interface is a snug fit but should easily be achieved with a small amount of hand pressure.
- 7) **Non-Drive Side Crank/Spindle Assembly:** Loosen the Allen screw on the lock nut and rotate the lock nut towards the carbon fiber arm as much as possible, this will provide ample axial clearance for the following operations. Insert the "T" Allen wrench into the drive side crank/spindle assembly hole and engage the binder bolt. Insert the non-drive side crank/spindle assembly into the installed non-drive side cup until it contacts the binder bolt front surface. With both crank/spindle assemblies 180-degrees opposed, tighten the binder bolt by rotating the "T" Allen wrench clockwise, the assemblies will begin coming together. **It is extremely important that both crank/spindle assemblies are 180-degrees opposed while the binder bolt is being tightened,** failure to do so will damage the high tolerance mating spline surfaces and void your warranty. Ensure that the Allen wrench is completely engaged with the binder bolt head hex interface. Torque the binder bolt to 14-15ft-lbs with a calibrated torque wrench. Sufficient engagement is usually accomplished by applying torque as tight as possible with the supplied "T" Allen wrench.
- 8) **Lock Nut:** Rotate the lock nut clockwise until it seats against the inside bearing sleeve. Tighten by hand as much as possible (you may need to back off approximately 1/8 turn to prevent excessive drag). **Tighten the locknut Allen screw securely with an Allen wrench so that it is locked in place and cannot rotate.** Spin the installed crank/BB assembly to ensure that it spins freely and that there is no noticeable parasitic torque. Rotation should be smooth with no free play (axial or radial directions), and the arms should freely rotate many revolutions before coming to a stop.
- 9) **Pedals:** Apply grease to pedal threads. Gently **thread your pedals by hand** into the crank arms until they are seated against the arm surfaces. Ensure that the right hand threaded pedal is installed on the drive side and the left hand threaded pedal is installed on the non-drive side. Failure to install the pedals to their correct sides will destroy the crank threads and will void your warranty.

Installation of your new Lightning Carbon Composite Crank/BB Assembly is now complete.

Spyder Replacement: The Spyder is pre-installed and the lock-ring is preloaded at the factory. The Spyder/crank interface is Lightning specific. Any replacement of the Spyder requires a Lightning specific Spyder removal tool. All parts are available through Lightning.

Bearing Replacement: The bearing system used is a high performance sealed cartridge-bearing set that should last a very long time. In the event that your bearings need to be replaced they must be replaced with a Lightning specific bearing set. Replacement bearings are available from Lightning.