Congratulations! The Specialized frame you have chosen featuring the S-Works Carbon crankset is among the finest of advanced composite products available in cycling. Carbon fiber is a very special material that requires particular care during assembly, storage and riding. This instruction guide contains instructions and warnings, plus torque specifications, to be used in conjunction with the owner’s manuals and instruction guides supplied with your bicycle.

**WARNING!** Failure to follow these instructions may result in a catastrophic failure of the frame and/or its components while riding, which may result in serious personal injury or death.

**WARNING!** Bicycle assembly is a complicated task which requires training and experience. Do not attempt installation of any component if you do not have experience and training as a bicycle mechanic. Failure to follow this warning may result in serious personal injury or death. Reference should also be made to Barnett’s or some other comprehensive bicycle manual.

**WARNING!** Failure to follow the torque specifications in this instruction guide will void your warranty, but most importantly may result in damage to the crank which may not be visible. If the crank is damaged, this can result in loss of structural integrity, which may result in serious personal injury or death. To ensure the best assembly possible and to prevent any damage to the crank components, follow all torque specifications.

**TOOLS REQUIRED:**

- 4mm Allen key
- 6mm Socket Allen Key (included in kit #9899-3075)
- 12mm Allen key
- T30 Torx Wrench
- 20mm wrench
- 17mm wrench
- Torque wrench (3/8” socket)
- Ratchet wrench (3/8” socket)
- Specialized Carbon Crank Tool Kit (#9899-3075) (Includes OSBB and crank bearing pullers, locking tool, 6mm Allen key, 6mm-to-3/8” socket adapter)
- Specialized MindSet Headset Bearing Press (#9895-3045)
- High quality grease
- Blue threadlocker (Loctite 242)

**FRAME PREPARATION**

**CAUTION:** Do not face or ream bottom bracket shell! This can possibly prevent proper installation of the crank. Your Specialized frame does not require any Bottom Bracket shell pre-installation preparation, all surfaces have been precisely machined to specific tolerances at the factory for proper interface with the S-Works Carbon crankset.

**CHAINRING INSTALLATION**

To achieve optimal shifting, it’s very important to ensure proper pairing and orientation of the chainrings. Chainrings and spiders are offered in several different configurations:

<table>
<thead>
<tr>
<th>53/39t (Standard 130mm)</th>
<th>50/34t (Compact 110mm)</th>
<th>48/34t (Compact 110mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-Works SL Chainring Set</td>
<td>S-Works SL Chainring Set</td>
<td>N/A</td>
</tr>
<tr>
<td>S-Works III Chainring Set</td>
<td>S-Works III Chainring Set</td>
<td>S-Works III Chainring Set</td>
</tr>
<tr>
<td>S-Works Carbon Spider</td>
<td>S-Works Carbon Spider</td>
<td>S-Works Carbon Spider</td>
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<tr>
<td>S-Works Alloy Spider</td>
<td>S-Works Alloy Spider</td>
<td>S-Works Alloy Spider</td>
</tr>
<tr>
<td>SRM kit (crank and rings sold separately through SRM)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Specialized chainrings are paired specifically to ensure that the clocking of the teeth match properly between the large and small ring. Mixing and matching chainrings can result in poor shifting performance.

- To achieve optimal shifting performance, ensure that the counter-sunk surfaces of the bolt holes are facing away from each other.
- The large chainring pin and the small/medium chainring “bumps” must line up with the crank arm (see “Installing the spider and lockring”, fig.2).
- The S-Works carbon spider bolt holes require proprietary Specialized chainring bolts (# S091600017).
- **Standard chainring bolts:** Use T30 Torx and 6mm Allen keys to tighten or loosen the bolts.
- **Proprietary chainring bolts (for S-Works Carbon spider):** Apply blue threadlocker, use T30 Torx and flat head screwdriver.
- **Recommended torque for chainring bolts:** 87 in-lbf (9.8 N*m).

**WARNING!** Great care should be taken to not damage carbon fiber or composite material. Any damage may result in a loss of structural integrity, which may result in a catastrophic failure. This damage may or may not be visible in inspection. Before each ride, and after any crash, you should carefully inspect your crank for any fraying, gouging, scratches through the paint, chipping, bending, or any other signs of damage. Do not ride if your crank shows any of these signs. After any crash, and before you ride any further, take your bicycle to an authorized Specialized retailer for a complete inspection.

**WARRANTY**

For the complete warranty provisions, please refer to www.specialized.com/tech.

Please note all instructions are subject to change for improvement without notice. Please visit www.specialized.com/tech for periodic tech updates.

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1. Grease the outer diameter of the OSBB Bearings, then press the bearings into the Delrin BB cups by hand. Be sure to press the bearings in straight, use the Mindset Headset Bearing Press tools if necessary to guide the bearings in straight. Do not force the bearing into the cup.

2. Grease the outer diameter of the Delrin cup, then place the Mindset Headset Bearing Press tools (9895-3045) against the bearings. Either use a Park Headset Press Tool or a bench-mounted vice to press the Delrin cups into the frame. To avoid damage to the Delrin cups, be sure to press the cups evenly into the frame.

3. Once the flanges of the Delrin cups bottom out against the frame, do not apply any more pressure. Too much force applied to the cups once bottomed out can cause damage to the cups and can cause the bearings to spin roughly.

**NOTE:** To remove the Delrin cups from the frame, first pull the bearings out as shown on page 4, then lightly tap the backside of the cups in a circular motion with a large flat surface. Do not use a screwdriver, it may damage the Delrin cups.

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**INSTALLING THE SPIDER AND LOCKRING**

**SPIDER LOCKRING ASSEMBLY**

- Use blue threadlock on lockring threads.
- Install lockring with step facing out.
- **NOTE:** Orientation text must be visible once installed.

**SPIDER & CHAINRING ALIGNMENT**

1. Spider chamfer
2. Drive side crank arm
3. Small ring bump
4. Large ring pin
5. Spider artwork
Install the bearing cover (2) and wave washer (3) on the left spindle. Install the bearing spacer (8) on the right spindle.

Liberally grease the spacers, bolt threads and spline surfaces before installation. To increase torque accuracy, ensure that the bolt head surface is greased.

Tighten using a 6mm Socket Allen Key with Torque Wrench.

Install the bolt hole cover screw. Hand tighten lightly.

Crank arm removal: reverse steps 3 & 4.
NOTE: Removal of the crank arms can result in the bearings remaining in the BB shell or on the spindle. Choose the according tool for the job.

1. Open the two halves and place over the axle shaft and bearing.
2. Close the two halves over the bearing.
3. Tighten the two pinch bolts to lock the tool around the bearing.
4. Turn the center bolt clockwise until it contacts the crank axle.
5. Angle the expander tip into the bearing, then pull back until the lip of the expander seats against the bearing.
6. Install the bearing receptor sleeve over the expander assembly.
7. Thread the expander bolt into the expander tip.
8. Do not overtighten the expander bolt.
9. Thread the nut onto the expander assembly with a 17mm wrench, while holding the expander assembly with a 20mm wrench.

Removing the bearings from the crank spindle

Removing the bearings from the bottom bracket shell