INTENDED USE

The Specialized S-Works Carbon Road cranks are intended and tested for road biking (condition 1) and cyclocross (condition 2) use only. This product is not intended for mountain bike use, or use on rougher terrain. For more information on intended use, please refer to the Owner’s Manual.

WARNING! The Specialized S-Works Carbon Road cranks have a maximum structural weight limit of 109 kg / 240 lb. This means do not use these cranks if your weight including riding gear (e.g. helmet, hydration pack, shoes, clothing, etc) exceeds this weight limit.

WARRANTY

Warranty information is available from your Authorized Specialized Retailer. It is also available for download at www.specialized.com.

GENERAL NOTES ABOUT ASSEMBLY

This manual is not intended as a comprehensive use, service, repair or maintenance guide. Please see your Authorized Specialized Retailer for all service, repairs or maintenance. Your Authorized Specialized Retailer may also be able to refer you to classes, clinics or books on bicycle use, service, repair, and maintenance.

WARNING! Due to the high degree of complexity of the Specialized S-Works Carbon Road cranks, proper assembly requires a high degree of mechanical expertise, skill, training and specialty tools. Therefore, it is essential for your safety that the assembly, maintenance and troubleshooting of the Specialized Carbon Road crank and any related parts (such as the bottom bracket, chaining, chaining bolts, pedals) be performed by an Authorized Specialized Retailer.

WARNING! Do not sand, drill, file or remove parts from your cranks. Do not install incompatible components or hardware.

WARNING! Do not install pedal washers between the pedal axles and crank arms. The use of pedal washers can create stress risers, which can result in premature failure of the crank and/or pedal.

TOOLS REQUIRED:

- 1.5mm, 4mm, 6mm and 12mm Allen key (socket)
- T25, T30, T45 Torx key (socket)
- Torque wrench (3/8" socket)
- Ratchet wrench (3/8" socket)
- High quality grease
- Spider locking tool

BOLT SIZE / TORQUE SPECS

WARNING! Correct tightening force on fasteners (nuts, bolts, screws) on your crank is important for your safety. If too little force is applied, the fastener may not hold securely. If too much force is applied, the fastener can strip threads, stretch, deform or break. Either way, incorrect tightening force can result in component failure, which can cause you to lose control and fall.

Where indicated, ensure that each bolt is torqued to specification. After your first ride, and consistently thereafter, recheck the tightness of each bolt to ensure secure attachment of the components. The following is a summary of torque specifications in this manual:

<table>
<thead>
<tr>
<th>PIVOT LOCATION</th>
<th>IN-LBF</th>
<th>Nm</th>
<th>PIVOT LOCATION</th>
<th>IN-LBF</th>
<th>Nm</th>
<th>PIVOT LOCATION</th>
<th>IN-LBF</th>
<th>Nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRANK SPINDLE BOLT</td>
<td>300</td>
<td>33.9</td>
<td>CHAINRING BOLTS (STANDARD ALLOY)</td>
<td>87</td>
<td>9.8</td>
<td>SPIDER LOCKRING</td>
<td>250</td>
<td>28.2</td>
</tr>
</tbody>
</table>
The S-Works carbon Road cranks are compatible with frames using the following BB30 / OSBB bottom bracket specifications:

- Carbon road frames with a carbon 68x46mm bottom bracket shell interface with pressed or bonded in cups (to reduce the bearing interface to 42mm).
- Carbon road frames with an alloy 68x42mm bottom bracket shell interface and circlip bearing retainers.
- Alloy road frames with an alloy 68x42mm bottom bracket shell interface and circlip bearing retainers.

If the bottom bracket shell is not parallel to the frame, shifting performance will be affected. Please refer to the Owner’s Manual for additional information on shifting gears.

### General Notes About Maintenance

The Specialized S-Works Carbon Road cranks are a high performance component system. All regular maintenance, troubleshooting, repair and parts replacement be performed by an Authorized Specialized Retailer. For general information regarding maintenance of your bicycle, please refer to the Owner’s Manual. In addition, routinely perform a mechanical safety check before each ride, as described in the Owner’s Manual.

- 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.

- While riding, listen for any creaks, as a creak can be a sign of a problem with one or more components. Periodically examine all surfaces in bright sunlight to check for any small hairline cracks or fatigue at stress points, such as welds, seams, holes, and points of contact with other parts. If you hear any creaks, see signs of excessive wear, discover any cracks, no matter how small, or any damage to components, immediately stop riding the part and have it inspected by your Authorized Specialized Retailer.

- Lifespan and the type and frequency of maintenance depends on many factors, such as frequency and type of use, rider weight, riding conditions and/or impacts. Exposure to harsh elements, especially salty air (such as riding near the ocean or in the winter), can result in galvanic corrosion of the components such as the crank spindle and bolts, which can accelerate wear and shorten the lifespan. Dirt can also accelerate wear of surfaces and bearings. The surfaces of the cranks should be cleaned before each ride. The cranks should also be maintained regularly by an Authorized Specialized Retailer, which means they should be removed from the bicycle, cleaned, inspected for signs of corrosion and/or cracks and lubricated. If you notice any signs of corrosion or cracking, the cranks must be replaced.

- Regularly clean and lubricate the drivetrain according to the drivetrain manufacturer’s instructions.

- Do not use a high pressure water spray directly on the crank arms or bearings. Even water from a garden hose can penetrate bearing seals and crank interfaces, which can result in increased bearing and crank wear, which can affect the normal function of the cranks. Use a clean, damp cloth and bicycle cleaning agents for cleaning.

- Do not expose the cranks to prolonged direct sunlight or excessive heat, such as inside a car parked in the sun or near a heat source such as a radiator.

Before each ride, inspect the cranks and see your Authorized Specialized Retailer of you notice any of the following:

- Creaks coming from the bottom bracket or chaining bolts.
- Lateral play between the crank arms and bottom bracket.
- Cracks or damage to the crank arms.
- Chaining tooth wear or damage that could impact normal drivetrain function.
- Loose or damaged chaining bolts.

**WARNING!** Failure to follow the instructions in this section may result in damage to the components on your bicycle and will void your warranty, but, most importantly, may result in serious personal injury or death. If your crank exhibits any signs of damage, do not use it and immediately bring it to your Authorized Specialized Retailer for inspection.
CRANK SPECIFICATIONS

1st generation cranks are equipped with a bearing cover and wave washer. 2nd generation cranks are equipped with an adjustable cover and conical spacer (x#2 and #3). The adjustable cover and conical spacer are available separately to replace the cap and wave washer.

For information about bottom bracket specifications and installation, as well as the different available configurations, refer to the OSBB Bottom Bracket Instruction Guide.

### S-WORKS / PRO CARBON CRANKS - 1ST GENERATION

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
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<th>DESCRIPTION</th>
<th>OD</th>
<th>ID</th>
<th>WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Non-drive-side crank arm</td>
<td>41.6</td>
<td>30.2</td>
<td>2.9</td>
<td>6. Spider</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2. Non-drive-side alloy bearing cover</td>
<td>41.4</td>
<td>30.2</td>
<td>2.0</td>
<td>7. Internal steel retainer nut</td>
<td>17.3</td>
<td>12.2</td>
<td>9.3</td>
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<tr>
<td>3. Wave washer</td>
<td>38.7</td>
<td>30.4</td>
<td>0.6</td>
<td>8. Internal M12 steel center bolt</td>
<td>12</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>4. Drive-side alloy bearing spacer</td>
<td>47</td>
<td>34</td>
<td>3.5</td>
<td>9. Drive-side crank arm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Spider lockring</td>
<td>47</td>
<td>34</td>
<td>3.5</td>
<td>10. Drive-side crank arm cover screw</td>
<td>9.8</td>
<td>9</td>
<td>6mm</td>
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</table>

### S-WORKS / PRO CARBON CRANKS - 2ND GENERATION

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
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<th>TOOL</th>
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</thead>
<tbody>
<tr>
<td>1. Non-drive-side crank arm</td>
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<td>30.2</td>
<td>4.0</td>
<td>6. Spider</td>
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<tr>
<td>2. Non-drive-side adjustable cover</td>
<td>41.4</td>
<td>30.2</td>
<td>2.0</td>
<td>7. Internal steel retainer nut</td>
<td>17.3</td>
<td>12.2</td>
<td>9.3</td>
<td>12mm</td>
</tr>
<tr>
<td>3. Non-drive-side conical spacer</td>
<td>36.8</td>
<td>30.2</td>
<td>3.5</td>
<td>8. Internal M12 steel center bolt</td>
<td>12</td>
<td>7</td>
<td>23</td>
<td>T45</td>
</tr>
<tr>
<td>4. Drive-side alloy bearing spacer</td>
<td>47</td>
<td>34</td>
<td>3.5</td>
<td>9. Drive-side crank arm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Spider lockring</td>
<td>47</td>
<td>34</td>
<td>3.5</td>
<td>10. Drive-side crank arm cover screw</td>
<td>9.8</td>
<td>9</td>
<td>6mm</td>
<td></td>
</tr>
</tbody>
</table>
INSTALLED THE SPIDER AND LOCKRING

**SPIDER LOCKRING ASSEMBLY**

- Use blue threadlocker #242 on lockring threads.
- Install lockring with step facing out.

**NOTE:** Orientation text must be visible once installed.

1. Use blue threadlocker #242 on lockring threads.
2. Install lockring with step facing out. “OUTSIDE” text must be visible once installed.

**INSTALLING THE CRANKSET**

1. Install the non-drive-side cover (2) and conical spacer (3) on the non-drive-side spindle, with the “ALIGN CRANK” text hidden by the crank arm.
2. Install the bearing spacer (6) on the drive-side spindle.
3. Liberally grease the spacers, bolt threads and spline surfaces before installation.
4. To increase torque accuracy, ensure that the bolt head surface is greased.

5. Tighten using torque wrench and a T45 Torx key or 6mm Socket Allen Key.
6. Install the bolt hole cover screw. Hand tighten lightly.
7. Adjust the preload on the non-drive-side cover by tightening the three 1.5mm Allen screws in an even, alternating pattern, until there is no lateral movement in the crank, and the bearings still spin freely. Do not overtighten.