

SPECIALIZED USER MANUAL

S-WORKS CARBON ROAD CRANKS



THIS BRIEF USER MANUAL CONTAINS IMPORTANT INFORMATION. PLEASE READ CAREFULLY AND STORE IN A SAFE PLACE.

This user manual is specific to your Specialized S-Works Carbon Road cranks. It contains important safety, performance and technical information, which you should read before your first ride and keep for reference. You should also read the entire Specialized Bicycle Owner's Manual ("Owner's Manual"), because it has additional important general information and instructions which you should follow. If you do not have a copy of the Owner's Manual, you can download it at no cost at www.specialized.com, or obtain it from your nearest Authorized Specialized Retailer or Specialized Rider Care.

When reading this manual, you will note various important symbols and warnings, which are explained below:

	WARNING! The combination of this symbol and word indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death. Many of the Warnings say "you may lose control and fall." Because any fall can result in serious injury or even death, we do not always repeat the warning of possible injury or death.
	CAUTION: The combination of the safety alert symbol and the word CAUTION indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury, or is an alert against unsafe practices. The word CAUTION used without the safety alert symbol indicates a situation which, if not avoided, could result in serious damage to the bicycle or the voiding of your warranty.
	INFO: This symbol alerts the reader to information which is particularly important.
	TECH TIP: Tech Tips are useful tips and tricks regarding installation and use.
	GREASE: This symbol means that high quality grease should be applied as illustrated.
	TORQUE: This symbol highlights the correct torque value for a specific bolt. In order to achieve the specified torque value, a quality torque wrench must be used.

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, chainring, chainring 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:

<ul style="list-style-type: none"> ■ 1.5mm, 4mm, 6mm and 12mm Allen key (socket) ■ T25, T30, T45 Torx key (socket) 	<ul style="list-style-type: none"> ■ Torque wrench (3/8" socket) ■ Ratchet wrench (3/8" socket) 	<ul style="list-style-type: none"> ■ High quality grease ■ Spider locking tool
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BOLT SIZE / TORQUE SPECS

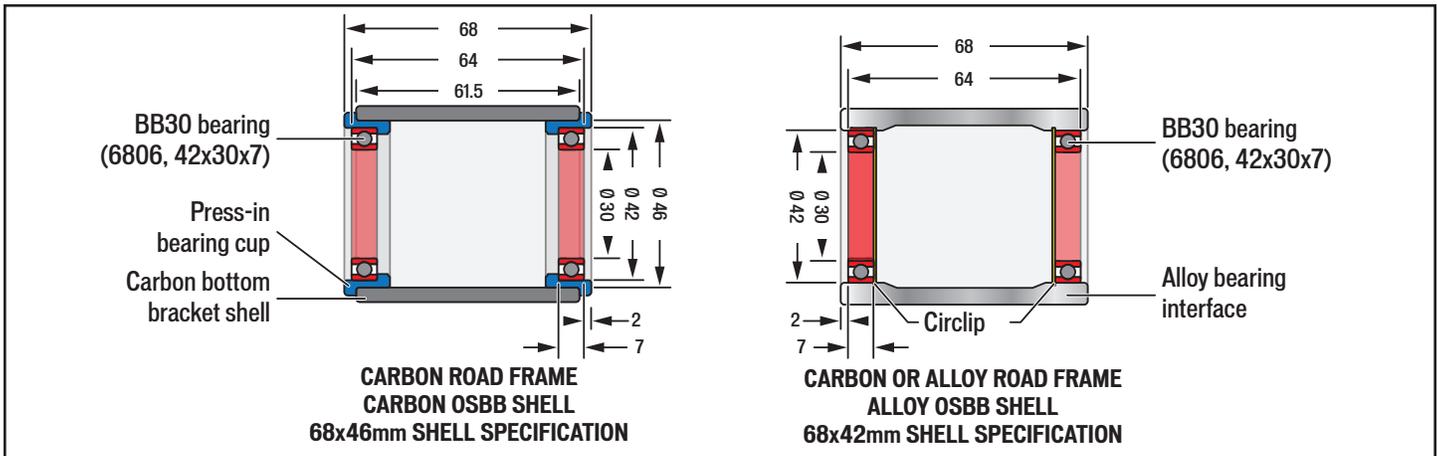
WARNING! Correct tightening force on fasteners (nuts, bolts, screws) on your crank is important for your safety. If too little force is applied, the fastener may not hold securely. If too much force is applied, the fastener can strip threads, stretch, deform or break. Either way, incorrect tightening 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:

TORQUE SPECS:

PIVOT LOCATION	IN-LBF	Nm	PIVOT LOCATION	IN-LBF	Nm	PIVOT LOCATION	IN-LBF	Nm
CRANK SPINDLE BOLT	300	33.9	CHAINRING BOLTS (STANDARD ALLOY)	87	9.8	SPIDER LOCKRING	250	28.2

BOTTOM BRACKET INSTALLATION / COMPATIBILITY



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.

i 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.

CHAINRING INSTALLATION / COMPATIBILITY

- Ensure the chainrings are compatible with each other and the crank for proper clocking and chainline, and are installed and torqued according to the manufacturer's instructions.
- Ensure the chain is not bent, that chain tension/length is correct according to the manufacturer's instructions, and is compatible with the chainrings.
- If the chain keeps coming off the chainrings during use, have your Authorized Specialized Retailer replace the chainrings and the chain.
- After your first ride, and consistently thereafter, recheck the tightness of each chainring bolt to ensure secure attachment of the chainrings.
- For additional information, please refer to the chainring and chain manufacturer's instructions or ask your Authorized Specialized Retailer.

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 if you notice any of the following:

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

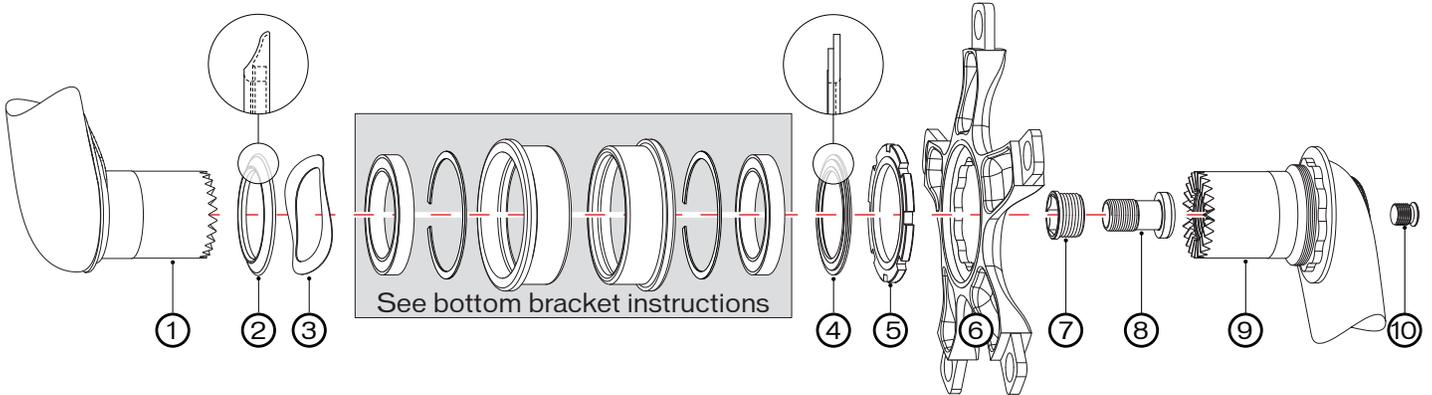
WARNING! Failure to follow the instructions in this section may result in damage to the components on your bicycle and will void your warranty, but, most importantly, may result in serious personal injury or death. If your crank exhibits any signs of damage, do not use it and immediately bring it to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

CRANK SPECIFICATIONS

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

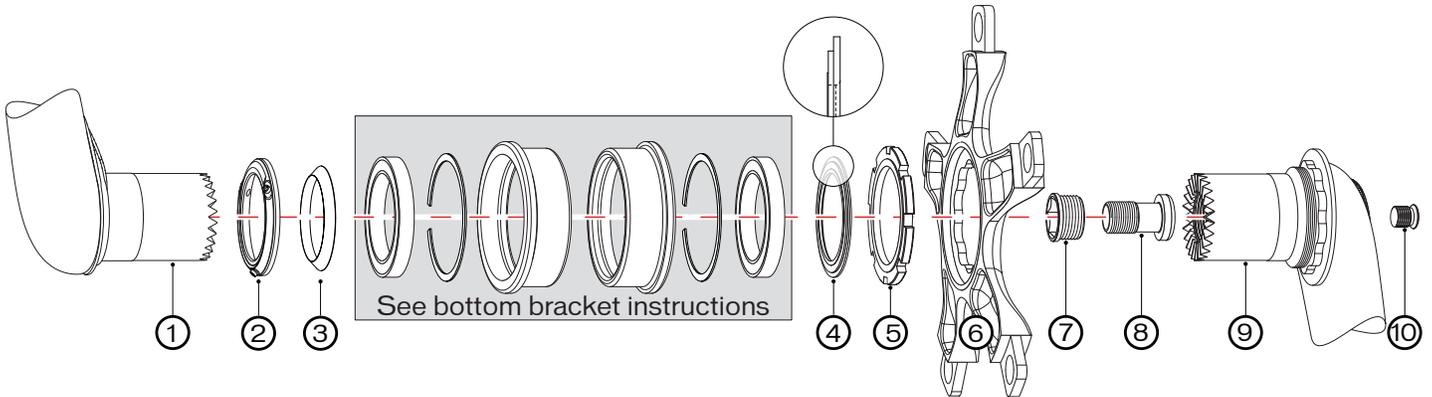
i For information about bottom bracket specifications and installation, as well as the different available configurations, refer to the OSBB Bottom Bracket Instruction Guide.

S-WORKS / PRO CARBON CRANKS - 1ST GENERATION



DESCRIPTION	OD	ID	WIDTH	DESCRIPTION	OD	ID	WIDTH	TOOL
1. Non-drive-side crank arm				6. Spider				
2. Non-drive-side alloy bearing cover	41.6	30.2	2.9	7. Internal steel retainer nut	17.3	12.2	9.3	12mm
3. Wave washer	38.7	30.4	0.6	8. Internal M12 steel center bolt	12	7	23	T45
4. Drive-side alloy bearing spacer	41.4	30.2	2.0	9. Drive-side crank arm				
5. Spider locking	47	34	3.5	10. Drive-side crank arm cover screw	9.8		9	6mm

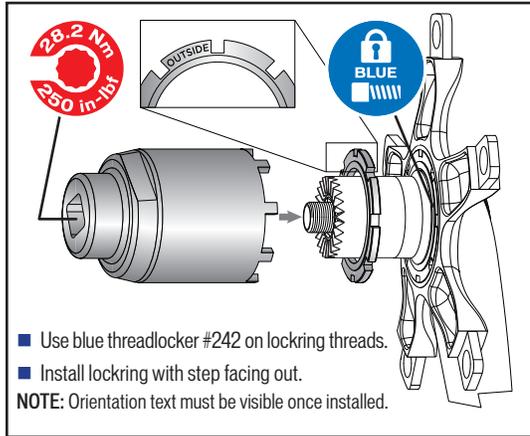
S-WORKS / PRO CARBON CRANKS - 2ND GENERATION



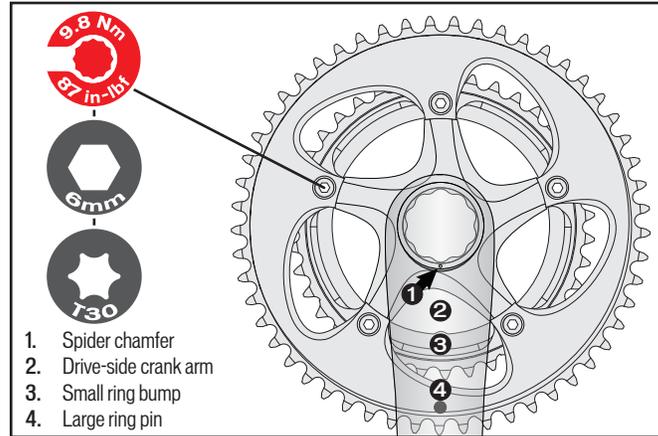
DESCRIPTION	OD	ID	WIDTH	DESCRIPTION	OD	ID	WIDTH	TOOL
1. Non-drive-side crank arm				6. Spider				
2. Non-drive-side adjustable cover	41.0	30.2	4.0	7. Internal steel retainer nut	17.3	12.2	9.3	12mm
3. Non-drive-side conical spacer	36.8	30.2	3.5	8. Internal M12 steel center bolt	12	7	23	T45
4. Drive-side alloy bearing spacer	41.4	30.2	2.0	9. Drive-side crank arm				
5. Spider locking	47	34	3.5	10. Drive-side crank arm cover screw	9.8		9	6mm

INSTALLING THE SPIDER AND LOCKRING

SPIDER LOCKRING ASSEMBLY

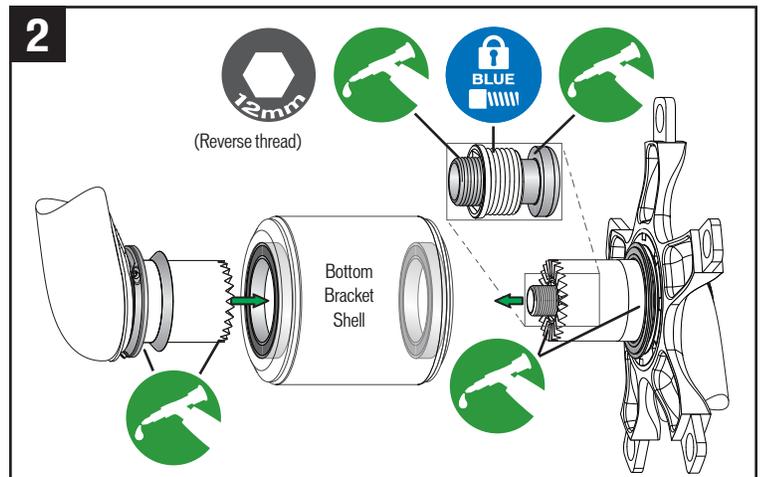
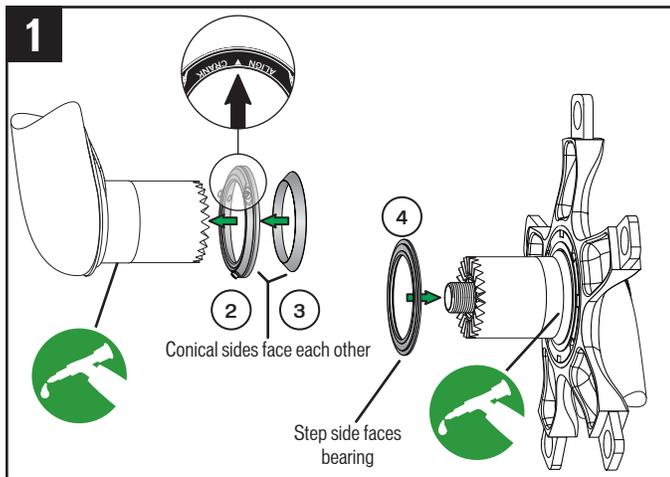


SPIDER & CHAINRING ALIGNMENT

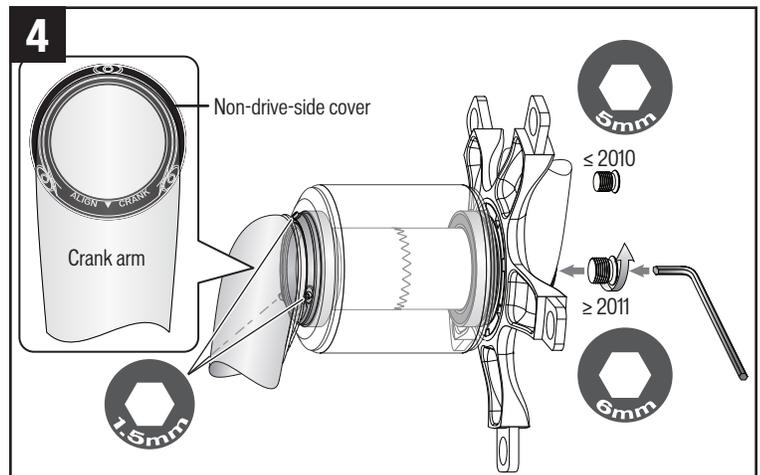
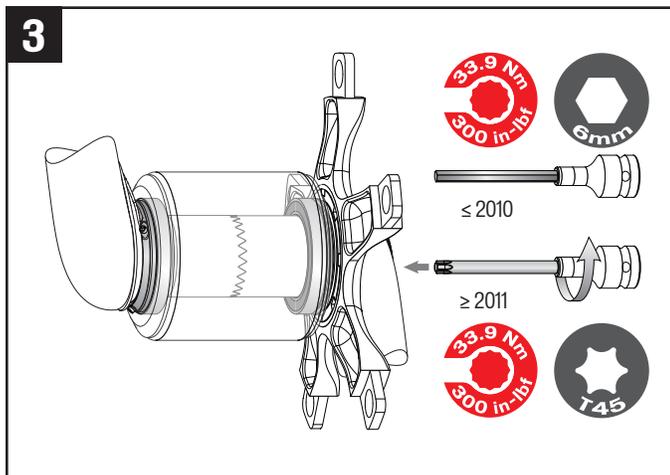


- Use blue threadlocker #242 on locking threads.
- Install locking with step facing out. "OUTSIDE" text must be visible once installed.

INSTALLING THE CRANKSET



- 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.
- Install the bearing spacer (6) on the drive-side 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 torque wrench and a T45 Torx key or 6mm Socket Allen Key.
- Install the bolt hole cover screw. Hand tighten lightly.
- 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.