DRS CHAINGUIDE INSTALLATION INSTRUCTIONS

READ THESE INSTRUCTIONS!!!!

Thank you for purchasing an e.thirteen DRS (**D**ual **R**ing **S**ecurity) dual ring chain retention device. This chainguide is unlike any other chainguide ever produced. Because of this, the mechanical engineers who developed your e.thirteen SECURITY chainguide recommend that you have a trained service technician at your local bike shop install and tune your new guide for optimal performance. You can find local bike shops listed in your yellow pages or online. If you are an experienced mechanic, please read the entire instruction packet before you begin installation.

-Some Helpful Information-

Your e.thirteen Chainguide is the best working, lightest and strongest dual-ring chain retention system that we have ever seen. It is also the first system of its kind ever made, first tested in the year 2000. The DRS is extremely free running (no-drag), sheds mud easily, and is easily serviceable. As you learn to use your chainguide, you will find that our bashguard, built from Makrolon, will allow you to mow through immovable objects at speed. You should inspect your cranks and drive spider frequently for straightness, as huge impacts can bend them (imagine what they would look like without the e.thirteen Supercharger bashguard!) Proper installation and frequent cleaning will keep your e.thirteen chainguide running smoothly, quietly and drag free.

Wide BMX or DH types chainrings are not recommended for use with your DRS. The guide is strong enough that these types of rings do not benefit you.

IMPORTANT!

-Your new guide is designed to use a flanged fixed cup type bottom bracket

-It was made to fit a wide variety of frames, but fit up on some frames that were not designed to accept a chainguide may require modification to your guide, frame, or both. Contact your frame manufacturer before any modification of your frame as it may void your warranty.

-Carefully cut the guide parts from the plastic part tree by using a hobby knife. Be sure that the entire tree is removed from the part. Use only a knife as wire cutters; scissors, etc may damage the parts.

-DO NOT OVERTIGHTEN BOLTS THROUGH PLASTIC PARTS! JUST SNUG THE BOLTS, OVERTIGHTENING WILL DESTROY YOUR PLASTIC PARTS. THE NYLOC NUTS WILL KEEP EVERYTHING TIGHT SO THERE IS NO NEED TO USE LOCTITE ON ANY OF THE BOLTS.

Parts List:

1 – Back plate
1 – Stealth Roller Parts Tree
1 – Outer Roller Guard Parts Tree
1 – Wearplate Parts Tree (4 inner sliders)
1 – Roller axle
1 – Polycarbonate Bashring (not shown)
2 – R4-2RS roller bearings
2 – m5 x 30mm Cap screws
2 – m5 x 35mm Cap screws
2 – m5 nylon insert locking nuts
4 – m3 x 8mm flathead screws
4 – m3 x 14mm flathead screws
1 – m6 washer (small washer)
4 or 5 – m8 washers (large washers)
4 or 5 – Ex. long chainring bolts
4 or 5 – Ex. long chainring nuts

INSTRUCTIONS

1)! Inspect all existing drivetrain components to determine straightness! Your new chainguide was designed to protect your drivetrain, but performance will be hindered by out of round spiders and chainrings, or bent bottom bracket spindles. For your own safety you should replace any damaged components on your bike before riding it. **Bent parts= bad performance!**

2) Remove both crank arms, chainrings, chain, and drive side bottom bracket cup. Also loosen the non-drive side bottom bracket cup 2-3 turns.

3) Remove the plastic parts from their parts trees. Carefully cut the guide parts from the plastic part tree by using a hobby knife. Be sure that the entire tree is removed from the part. Use only a knife as wire cutters; scissors, etc may damage the parts.

4) Press one the R4-2RS bearings into either side of the flip-flop roller. Make sure that the bearing is pressed in straight. The outer face of the bearing should be flush with the outer face of the roller. Do not attempt to press the bearing deeper than the outer face of the roller. **Do not use a hammer to install the bearing, as crooked installation can destroy the roller.**

5) Insert the roller axle into the bearing that you just pressed into the flip-flop roller. The roller axle should be inside the roller. It will eventually space out and support the bearings inside your roller. ***See figure 1 for illustration of correct installation.***

figure 1

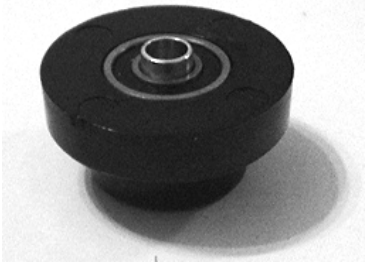
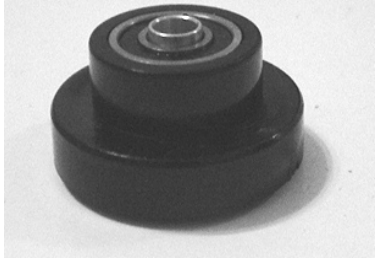


figure 2



6) Press the second R4-2RS bearing into the other side of the flip-flop roller. Take your time on this step. This will encapsulate the roller axle inside the roller, between the two bearings. See **figure 2** for illustration of correct final installation.

IMPORTANT STEP!!! READ CAREFULLY!

7) This step is important to get correct. Your DRS Chainguide is adjustable to accommodate different chainlines. Longer bottom bracket spindles have a wider chainline than shorter spindles. The inner guide plates can be stacked up to accommodate for wide chainlines, and washers are used to space out the roller and outer slider. The wider your chainline, the more inner guide plates you will have to stack up to accommodate. Follow the chart below to determine the number of inner plates to stack up for each chainline. For extra clearance, different length bolts have been provided for attaching the outer guide, as well as the inner guide. The correct sizes to use for each Bottom Bracket Spindle length are listed in the chart below. It's a really simple process once you look at the parts in your hand. Just like your favorite magazine, read the chart from left to right!

CHART 1 - DRS SPACING SETUP <<<<LOOK AT THIS!!>>>>

Bottom Bracket Spindle Length	# of inner plates	M3 screw length used to attach inner plate	M5 bolt length used to attach inner plate and roller	# of small washers behind roller
112-113	1	M3X8 flat head (short)	M5X30 (short)	1
118	2	M3X8 flat head (short)	M5X30 (short)	1
122.5	3	M3X14 flat head (long)	M5X35 (long)	1
127	4	M3X14 flat head (long)	M5X35 (long)	1

7a) Attach the appropriate number of inner guide plates (as determined in the chart above) to the back plate (the aluminum part) using the 4 M3x8 -OR- M3x14 flat head screws as shown in ***figure 3***. Use an M2 Allen wrench to torque the screws to 3.5 in-lbs. (about as much force as you can generate by holding the SHORT end of an "L-Shaped" 3mm Allen Wrench). **IMPORTANT!** If you look at the four inner plated that came with

your DRS guide, you will see that one is different than the other three. This different plate has a slot for a washer and countersinks for the M3 screws which hold the plates to the Inner guide plate. THIS PLATE ALWAYS GOES ON THE OUTSIDE AND IS SHOWN IN **figure 3**.

figure 3

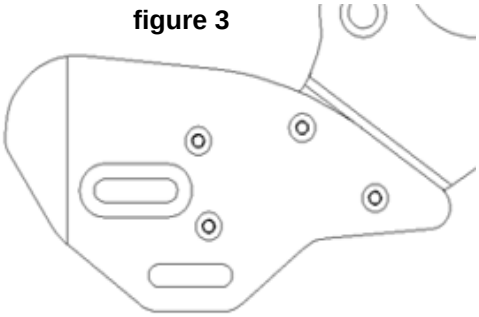


figure 4

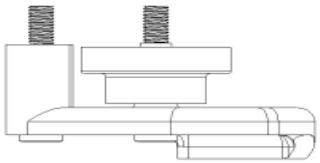
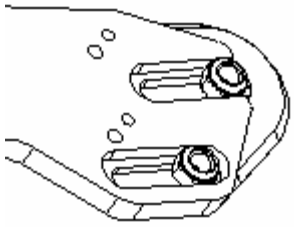
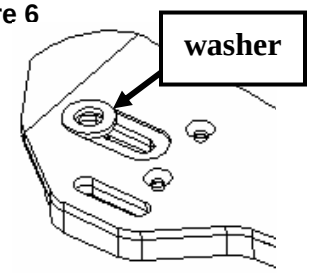


figure 5



7b) Insert the correct length M5 bolts into the holes in the outer slider, then Install the flip-flop roller onto the M5 bolt as shown in ***figure 4***. The correct length M5 bolt to use can be determined by reading the above set-up chart [CHART 1]. **There should NEVER be washers in between the flip-flop roller and the outer slider**.

figure 6



7d) Place the 5mm nyloc nuts in the slots on the frame side of the back plate as shown in ***figure 5***. Place one small washer between the roller and inner plate as shown in **figure 6**. Place the lower slider/ flip-flop roller assembly on the crank side of the back plate. Thread the two m5 bolts into the nyloc nuts. Use a 4mm Allen wrench to torque to **8 in-lbs.** (just a couple of turns past finger tight: the nyloc nut will hold it tight).

A picture of the guide as correctly set up for a 113 spindle is shown in ***figure 7.***

A picture of the guide as correctly set up for a 118 spindle is shown in ***figure 8.***

figure 7

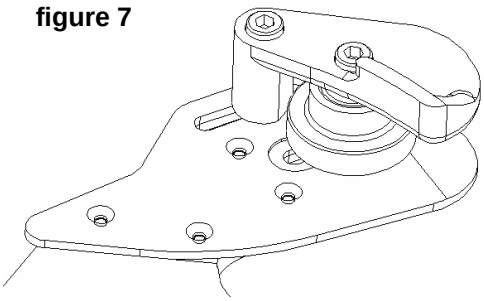
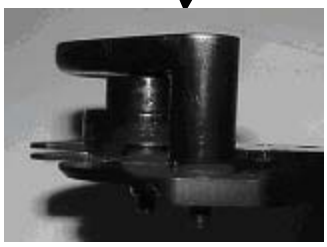


figure 8



8) Mount the chainguide assembly to the bicycle: For a normal installation, the counter bored area cups over the bottom bracket. **IMPORTANT!** *Grease only the threads inside the BB shell of the frame.* (Grease on the threads of the BB cup will pile up as the bottom bracket is inserted and get between the clamped surfaces).Use your flanged fixed cup type bottom bracket to sandwich the back plate against the flat face of the bottom bracket shell. Snug your flange type bottom bracket into the threads in the BB shell per normal BB installation. Follow the torque specification recommended by your frame manufacturer. The slider/ flip-flop roller assembly is correctly positioned at the point that the roller is just below the Bottom Bracket shell when the bike is on flat ground. Some frames require the roller to be set up lower. That is OK. See ***figure 9*** for correct orientation.

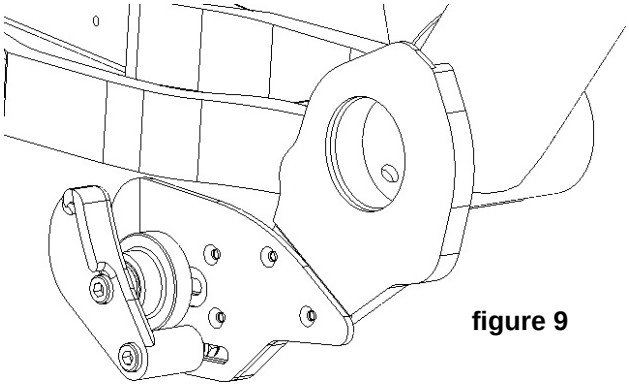


figure 9

9) Front derailleur: Your DRS Chainguide works with most standard front derailleur. Mount your front derailleur per the instructions provided with it. You will want to adjust your derailleur so that its travel is limited to just the granny and middle rings.

NOTE: Your DRS Chainguide can be used with an e-type derailleur, but requires the use of an "E-Type DRS Backplate". This backplate does not come with the guide kit and must be purchased separately. If you are using an e-type derailleur, follow the mounting instructions supplied with your derailleur, but bolt the derailleur directly to the DRS back plate. You will want to bolt the derailleur on in the highest position.

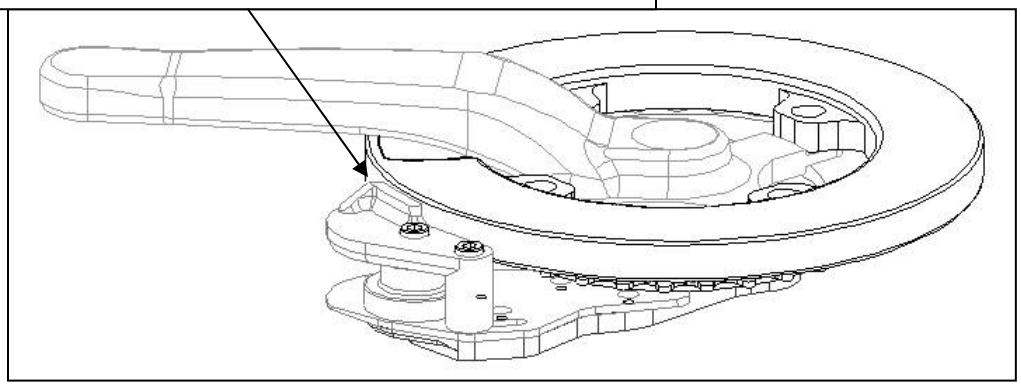
10) Mount your sprockets in the GRANNY and MIDDLE RING positions on your spider. Using the included extra long steel chainring nuts, mount the polycarbonate bashring to the OUTER RING position. The nuts should pass through the middle ring from the backside, then through the spider, and into the bash guard. Line up the relief in the outside of the bash guard with the crank arm. The crank relief should be facing outwards, away from the frame. **Use one of the included big washers under the head of each chainring bolt and tighten the chainring bolts to 43 in-lbs.** (about as much force as you can generate by holding the short end of an "L-Shaped" 5mm Allen Wrench). **Over tightening will crack the bashguard. Do not use Loctite on the chainring nuts and bolts as it has the potential to contact the bashguard and weaken the bolt tabs.**

11) Final Assembly: Re-mount the chain onto the middle or granny ring, and fit your cranks to the bottom bracket spindle. Tighten the crank bolts all the way down. **The inside surface of the lower outer slider should be parallel to and at the same level as the inside surface of the bash guard.** If it is not, check to make sure you have the correct number plates for your spindle length. Consult the setup chart for a starting point, and add or subtract plates as necessary.

12) Adjust the lower slider so that is about 3 mm (1/8 inch) from the bashguard. Snug the bolts, but do not over tighten! Over tightening of the bolts can destroy the plastic parts. Your roller should spin freely. Binding in the roller is a sign of over tightening. Use a 4mm Allen wrench to torque to **8 in-lbs.** (just a couple of turns past finger tight: the nyloc nut will hold it tight).

NOTE: Our e.thirteen chainguides feature an exclusive alignment feature to aid setup. The alignment ridge protrudes from the outer surface of the lower outer slider. Space your chainguide out using plates so that the outside of the alignment ridge is flush with the outside of the bashguard. By doing this, your alignment will be perfect every time.

Alignment ridge, line up with outside surface of bashguard.



NOTE: Updated and printable instructions and pictures of guides on different frames are available at http://www.e13components.com. Guide performance is directly related to setup. Check your guide to make sure it is in adjustment after every run to minimize the possibility of failure. If you have a problem with or question about your e.thirteen SECURITY chainguide, contact e.thirteen via e-mail at support@e13components.com . e.thirteen components – 207-772-3132