

ORION
HIGH PERFORMANCE CAR AUDIO

*subwoofer
owner's manual*

HCCA 10.2 10.4

12.2 12.4

Cone

15.2 15.4

**Replacement
Kit**

POWERED BY HARDCORE ATTITUDE

TABLE OF CONTENTS

What's Included	1
Introduction	1
Re-cone Kit	2
Re-cone Steps	2
Alternate step 7—for 10" Woofers	6
HCCA Woofer Re-cone Assembly	8

WHAT'S INCLUDED

- 1 ea re-cone assembly
- 1 ea 5mm ball tip right angle Allen wrench
- 2 ea 5mm x 10 Allen head screw for clamping ring (spare)
- 2 ea 5mm x 20 Allen head screw for spider ring (spare)
- 8 ea steel alignment needles for voice coil alignment

INTRODUCTION

Before you start:

1. Inspect the cone replacement parts. If any parts are damaged, the kit needs to be returned for replacement.
2. Have all components of the re-cone kit ready for installation before disassembling the woofer - do not leave the speaker gap (disassembled) and exposed for any length of time. This could result in foreign contamination which will affect woofer life and performance. Be careful not to drop or damage the re-cone kit in any way or your project will not function correctly.
3. These woofers are heavy. To prevent injury to yourself, have another person available when moving the woofer and for help in positioning during the re-coning process.
4. We recommend that you have BLUE (removable) thread locker for best results. Do **not** use RED (permanent) thread locker.
5. It is **very** important to perform re-coning in a clean environment free of contamination and most importantly free of metal particles. Do **not** attempt re-coning in an garage or other area where metal is cut or filed. The incredibly strong magnet on the woofers will attract metal particles to the gap area from a few feet away. Metal particles in the gap will permanently damage the speaker.

RE-CONE KIT

A re-cone kit is available for these speakers and can be obtained from your dealer. The part number for each model is listed below.

Model	Description	Re-cone Kit p/n
HCCA10.2CK	ORION HCCA 10" 2 OHM Re-Cone Kit	27902
HCCA10.4CK	ORION HCCA 10" 4 OHM Re-Cone Kit	27904
HCCA12.2CK	ORION HCCA 12" 2 OHM Re-Cone Kit	27907
HCCA12.4CK	ORION HCCA 12" 4 OHM Re-Cone Kit	27909
HCCA15.2CK	ORION HCCA 15" 2 OHM Re-Cone Kit	27912
HCCA15.4CK	ORION HCCA 15" 4 OHM Re-Cone Kit	27914

RE-CONE STEPS

Note: Step seven in the re-cone process must be altered when re-coning the 10" Woofers. See section *Alternate step 7—for 10" Woofers* at the end of this manual.

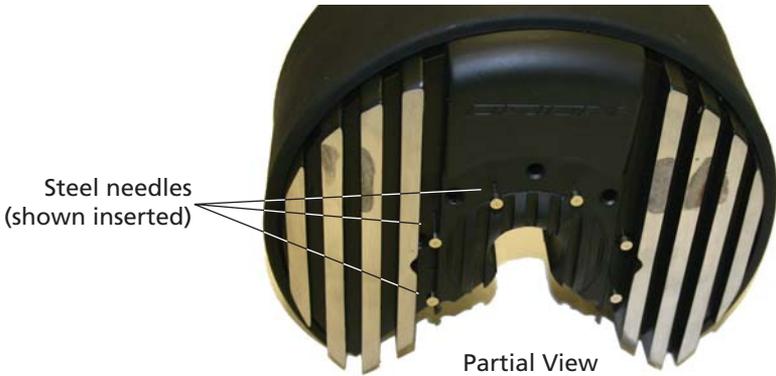
Refer to the exploded view at the end of this manual while using the following procedure.

Note: Before beginning, record the positions of terminals and logos so the new re-cone assembly can be installed the same way.

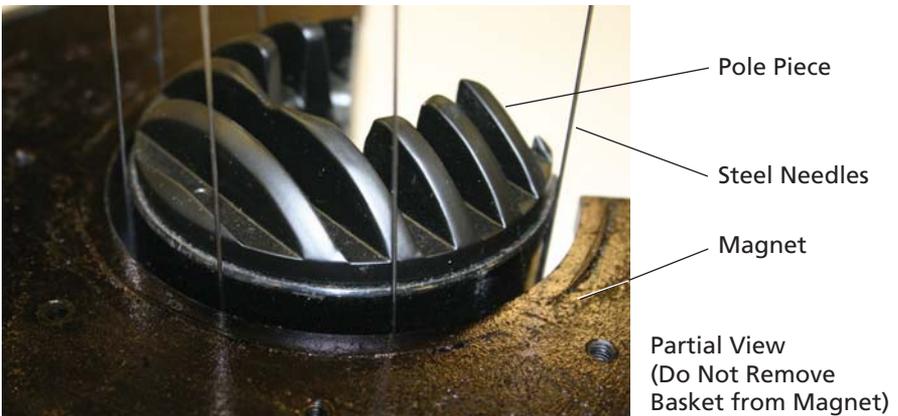
1. Remove Spider Ring bolts (eight), from the bottom side of the basket. Bolts can be removed with included Allen wrench. To get access the basket may need to be turned on its side.
2. Place the speaker facing up and remove the Edge Clamping Ring. There are 8 Allen head bolts on the 10 & 12" models and 12 on the 15" model that clamp the surround edge to the basket. These are removed using the included Allen wrench.
3. The Moving Parts Assembly (cone/spider) can now be removed from the basket. Note that the edge has a small amount of PVA adhesive attaching it to the basket. Lifting one section of the edge will break this bond and facilitate lifting the edge free. Be sure to remove any residual residue before installing the new assembly. Alcohol and a Q tip or soft lint-free rag can be used to clean the surface.
4. Make note of any obvious problems, (voice coil burnt, mechanical marks on the coil, etc.) Discard the old Moving Parts Assembly. Contact Technical Support for advice regarding observed abnormal conditions. Be sure to remove all remnants of the old voice coil assembly before trying to install the new re-cone kit. If there is any residue present in the gap, it can be cleaned with alcohol and a Q tip.

Note: Do not bend needles during this procedure.

5. Turn the speaker on its side and insert one steel needle (centering pin) into each alignment hole in the backplate of the woofer (total of 8—these are the small diameter holes, **not** the larger holes—see figure below), Ensure that the pins are inserted completely.



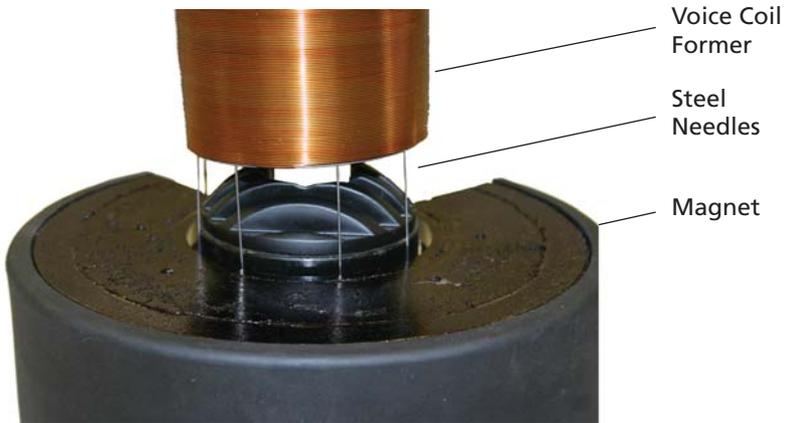
6. Turn the speaker on its magnet with the cone facing up and align the pins so that they are all touching the pole piece (toward the center not the outside edge) and symmetrically arranged.



Note: If re-coning a 10" woofer see the alternate step 7 at the end of this section.

7. CAREFULLY lower the new Re-Cone Assembly (moving parts) into the basket making sure that all of the pins are inside the voice coil, the illustration below of the interior components of the woofer shows the correct positioning of the steel needles inside the voice coil former. Align terminals, logo, and screw holes before pushing the re-cone assembly in place. Minimize the amount of rotation required to center the screw holes once in place. The assembly should slide smoothly into place with just a small bit of friction between the pins and the voice coil. Do not push down any further than is needed for the surround and

spider ring to touch their mounting locations. Do Not Force. If the fit is tight, start over and make sure there is no foreign object in the gap or alignment pin out of place.



Partial View
(Do Not Remove Basket from Magnet)

8. Return the speaker to its back and thread the Spider Ring bolts through the basket and into the Spider Ring. Make sure to use a small amount of thread locker (BLUE) on the threads. Do not tighten completely. The spider ring should be able to move freely (about 1mm in all directions).
9. OPTIONAL STEP—Put a small amount of white glue on the basket where the surround edge will seat. You will need to lift the edge slightly. It may be easier to use a brush for this application. Only a thin layer is needed. Move quickly to step 10 before the glue can start to dry.
10. Make sure the surround edge is seated in the groove in the basket. (It should do this naturally.) Place the edge clamp over the edge and thread each bolt into place. (Make sure to add a small amount of thread locker to each thread. When each bolt is seated against the clamping ring make sure that the clamping ring is parallel to the basket. Turn each bolt 1 turn and then proceed to the opposite bolt on the basket similar to tightening lug nuts on a tire. Continue tightening until all bolts are snug. If they are all seated correctly the gap between the clamp ring and basket should be even on all 4 sides. The gap should be between 0 and .5 mm.
11. Once the re-cone assembly is over the pins and the surround is clamped down, the spider ring will be centered. Tighten the bolts on the basket following the same procedure as in step 10 (edge clamping ring) until snug. Do not over tighten as this will mechanically distort the basket.
12. Turn the speaker on its side and remove the centering pins.
13. CAREFULLY move the speaker cone in and out and check for any obvious rubs.

Note: It is easy to put too much pressure on one side of the cone and cause a rub, so be careful to apply even and centered pressure on the cone. If there is an obvious rub, then remove the re-cone assembly carefully and following the above procedure re-install. If everything seems OK, then proceed to next step.

14. Install your speaker back in its enclosure. Connect the speaker to your system and adjust your system so you are listening to the subwoofer only. Start at a very low volume and listen for any mechanical rubbing sounds. Continue to increase volume until you reach the maximum power for your system. If you do not hear mechanical noise, i.e. voice coil rubbing, congratulations! you are done.
15. If you do hear coil rubbing, turn the system off immediately and start the entire procedure again from the beginning. Inspect the gap carefully for metal particles. If you see any, clean them out with masking tape. (The adhesive will hold the metal and allow you to remove it. If you can't remove all of the particles or if you can not successfully complete the re-cone, contact Customer Service at 1-800-753-0800, or email your question(s) to audiotechs@directed.com.

ALTERNATE STEP 7—FOR 10" WOOFERS

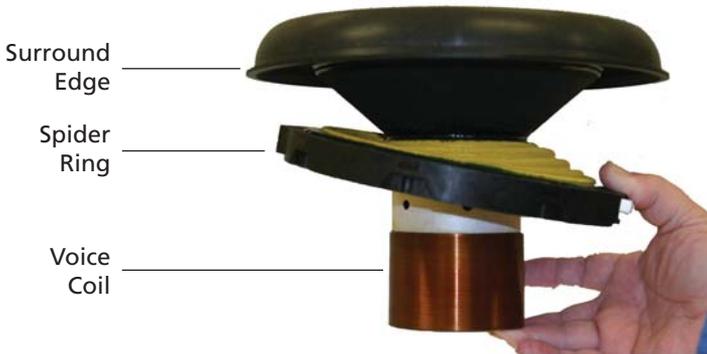
Note: Only the step for the 10" Woofers is given.

7. CAREFULLY lower the new re-cone assembly (moving parts) into the basket by tilting the voice coil (shown below) while making sure that all of the pins are inside the voice coil former (refer to the illustration at step 7 previously shown). Pressure can be put on the spider ring assembly to angle the spider, but be careful not to bend the cone as this will cause permanent damage.

Note: Ensure that the cone is not damaged during this process.

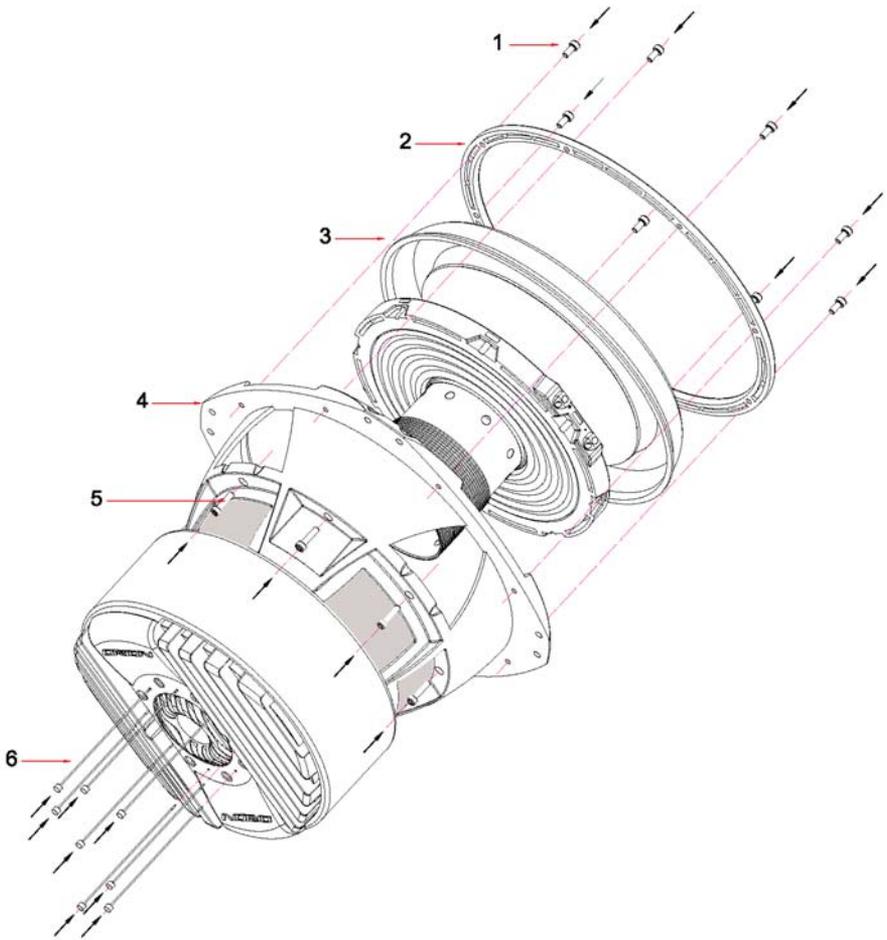
Align terminals, logo, and screw holes before pushing the re-cone assembly in place into the basket. The terminal block tilted down should end up near the top of one of the basket openings as shown in the second illustration. A closer view of the position of this terminal block is shown in the third illustration. This will allow the clearance for the opposite terminal block to drop down into the basket.

The re-cone assembly can now be released to a horizontal position. Refer to the fourth illustration. The assembly should slide smoothly into place with just a small bit for friction between the pins and the voice coil. Do not push down any further than is needed for the surround and spider ring to touch their mounting locations. Do Not Force. If the fit is tight, start over and make sure there is no foreign object in the gap or alignment pin out of place.





HCCA WOOFER RE-CONE ASSEMBLY



Part	Description	Quantity
1	Allen head screw	8 pieces (12 pieces on 15" woofers)
2	Edge Clamping Ring	1 piece
3	Re-cone assembly	1 set
4	Motor & Basket Assembly	1 set
5	Allen head screw	8 pieces
6	Steel needle	8 pieces

NO WARRANTY

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