Harley Davidson Ultra Fairing Install on a 2003 RoadStar
by
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There is probably a dozen different ways to go about mounting this fairing on the bike. This is just the way that I did it. I'm sure there are things that I have forgotten or overlooked, so I'll apologize up front for that. This is not a mod that you should be in a hurry with. You will be doing a lot of trimming on the inner fairing and it's better to go slowly and trim a little at a time than to cut too much and not be able to fix it. I probably spent at least 20 hours or so getting everything done over a few days. It was actually a lot of fun, but I was nervous about how it would turn out. If you take your time, you will be proud of it after you finish.

Parts Needed:

-1996 or later HD inner and outer fairing
-Non-Silverado Yamaha windshield brackets (the front mounting tab needs to be straight not bent like the Silverado)
-Inner mounting brackets (I used a set made by A69Cougar on the RSR Forum)
-Radio mounting kit (AutoZone Model# AW-509FD) (You can use a piece of extra plastic to make a hole cover for the indicator lamp above the radio)
-16 gauge steel plate for making radio mounting plate (Home Depot 6"x18")
-12 volt relay (Auto Zone)
-AM/FM CD player with iPod input on front (Marine version preferred) (eBay)
-4" Marine grade speakers (2) I used Polk Audio (eBay)
-5 ¼" Marine Grade Speakers (2) I used Polk Audio (eBay)
-Radio antenna (I used a tune Trapper from www.ecshylites.citymax.com/page/page/761353.htm)
-1/4 yard of black speaker cloth (Fabric Store)
-Speaker wire
-16 gauge wire (red & black for running poser to the relay)
-Crimp terminals for the relay and speakers (spade type and size depends on what speakers you buy)
-2" HD Fairing hole plugs (4) if you don't plan on putting in gauges
-Windshield (I bought mine at www.customflhtwindshields.net along with their Sport Shields with thumb-screws)
-1" stand offs for outer fairing (HD dealer)
-Chrome windshield trim w/mounting screws (HD Dealer) This is optional, but you will need windshield screws if you don't buy the kit. You can get those at the dealer also.
-Inner fairing mounting screws (4) 2 for mounting the internal bracket and 2 for attaching the inner fairing to the outer fairing (HD Dealer)
-Something to hide the wires since you won't have the headlight bucket under the fairing. I used a piece of a cordura bank bag that I cut out and wrapped it around the wires and the headlight bucket mount. I used a couple of Velcro strips to hold it in place.
-Piece of 1" aluminum or steel flat bar to make the radio support (18" will be enough)
-1 small box of Marine Tex
-1 Spray Can of flat black paint (I used high temp since I already had a can of it)
-4 Stainless Steel 2" long Phillips/slotted button head bolts with nylock nuts (#8)
-4 black plastic screw cap covers to fit the bolts
-4 nylock nuts to fit windshield bracket bolts

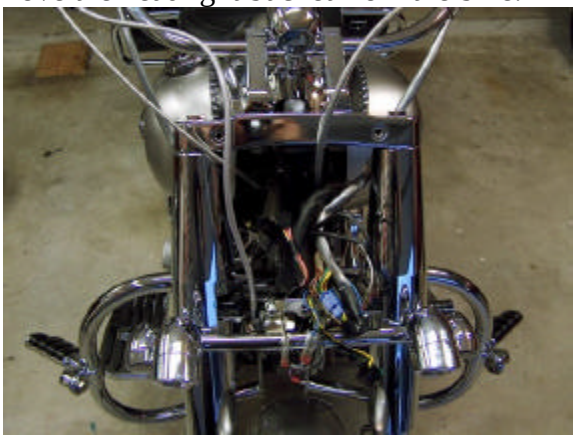
-4 large washers to fit windshield brackets bolts to be used as a spacer for the top bolt on each side
-Thin weather stripping if the outer fairing doesn't have it already
-Ribbed plastic wire cover (used to cover all of the wiring to the speakers)
-2 1" stainless pan head screws for mounting into the headlight tab. (same thread as the stock screws)
-2 stainless or chrome washers to fit headlight screws
-8 small black pan head screws or bolts/nuts used for mounting 4" speakers
-Inline fuse holder (spade type) w/20 Amp fuse

Tools Needed:

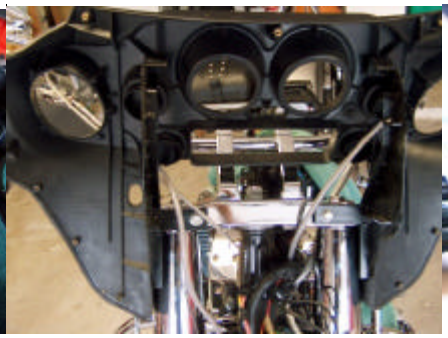
-Dremel tool with cut off wheels
-Jig Saw with metal cutting blade
-Hack Saw
-metal file
-Screwdrivers
-T27 Torx Driver
-Metric Wrenches and Socket set
-Metric Allen wrenches
-Propane hand torch
-Drill w/metal bits
-Clamps

The first order of business is to really see what the inner will look like when it's sitting on the forks. If you have braided cables, be careful not to nick the cover on those cables with test fitting the fairing. I ended up putting several in my clutch cable. I ended up trimming off the bad places and using heat shrin tubing to cover it. I also ran the clutch cable through the fairing which seemed like the best option for m So:

1. Remove the windshield
    a. Loosen the four mounting bolts for the windshield and remove it
2. Remove the headlight & bucket
    a. Remove the two Phillips head screws from each side of the headlight
    b. Remove the headlight trim ring and unplug the headlight
    c. Remove the three internal mounting bolts for the headlight bucket
    d. Make a note of how the electrical is hooked up to the turn signals and driving lights, then unplug them and remove the headlight bucket from the bike.



3. Remove the Windshield brackets
    a. Remove the two top mounting bolts securing the top of the bracket to the triple tree
    b. Remove the two bottom mounting bolts securing the bottom of the bracket to the lower tre
4. Remove the nuts on the back of windshield brackets
    a. Using a dremel too on high speed, cut the tack weld on each point on the nuts. Be sure to wear safety glasses.
5. Take the inner fairing and slide it over the forks to get a visual on how high/low you want it mounted and how much you will need to trim off of the lower mounting tabs. You can get a bette look by temporarily re-installing the windshield brackets and Cougar's brackets.
6. Instead of getting out a tape measure to check how level it was, I just eyeballed it using the handlebar risers and the bottom lip of the radio opening. I left enough room between them so I could get in and clean the triple tree and risers afterward, so mine is mounted a little bit higher tha others that I have seen pictures of. It's your choice on where you want it. Move it around and see where it looks best to you. There is no right or wrong way with this step, it's all personal preference. Once it's where you want it, make your marks, take it off and trim.
7. At a very minimum, the inner fairing mounting tabs at the bottom will be trimmed to make it shorter and also the front will need to be trimmed so it doesn't wrap around the front of the forks. You can use a pencil or a white grease pencil to make marks on the black plastic. This isn't an exact science, so I made several cuts to get it close to where it needed to be, then made the final cuts after I mounted the brackets and got it level. I used the hacksaw and the dremel tool on a slo speed to trim the inner. You can then clean up the cuts with a file.
8. Once you are finished trimming, mount the inner back on the bike, check to make sure everything is level. I used a spring clamp to squeeze the windshield bracket and Cougar's mounting bracket together on each side, pinching the inner fairing mounting tabs in between. After I checked again to make sure it was level, I marked the fairing to trim the front off even with the back side of the windshield brackets and also marked the 4 holes on each side. The top holes on each side will only be drilled into Cougar's bracket and the bottom holes go through both the inner fairing mounting tab and Cougar's bracket. You'll see what I mean when you look at it. You will use two big washers on each top screw that are about the same thickness as the fairing before you bol it together. I drilled the bottom hole on each side far enough to get through the inner fairing mounting tab and make a mark on Cougar's brackets. Then I took the fairing off of the bike and drilled the holes that were marked in Cougar's bracket. I didn't want to risk doing this on the bik and marking up the fork tin. After drilling the holes, install the top bolts with the washers to see i you need to trim the fairing tab so it won't interfere when remounting it.
9. After you drill the mounting holes and make your final trimming to the inner fairing, remount it o the bike. Install the two top bolts on each side with the two large washers on the inside part of the windshield bracket along with the nylock nuts. It's a tight squeeze using the stock windshield mounting bolts, but it will work. Tighten each side up enough to be able to install the bottom bol with the nylock nuts. You may have to loosen the windshield bracket mounting bolts in the upper and lower tree to get enough wiggle room to get everything level. Just take your time and it will work. A lot of patience was needed with this step. Check to make sure everything is square and level, then tighten up all bolts a little at a time to maintain the position. Once that is finished, the hard work is over.

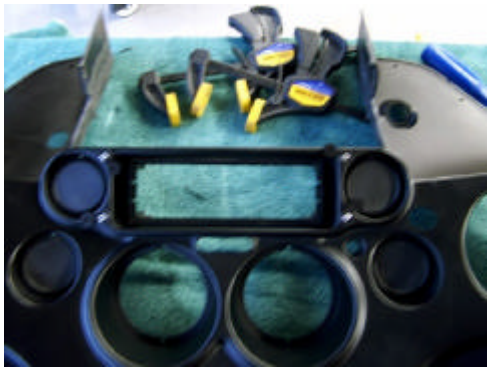

The next part of the process is making the bracket for the radio.

1. Measure the radio opening in the fairing. I actually allowed an extra ½" vertically and ran the horizontal piece into the area covered by the hole plugs. Make sure that the piece is long enough to go past the area on each corner of the fairing radio opening far enough so you can drill holes fo the mounting screws. You can see from the picture below that each side extended into the gauge hole enough that I had to trim it out to fit around the hole plug. Transfer your measurements to th piece of 16 gauge sheet steel.
2. Find the piece in the Radio Install Kit that look like it has 4 rails on a faceplate.

3. Use that piece as a template to mark the cutout on the inside of the area that you marked in step 1.
4. Use a drill bit in each corner to drill a starting hole for cutting out the inside.
5. Use the jig saw with a metal blade to cut everything out.
6. Use a file to smooth the edges.
7. Install the mount into the plate. Make sure it is centered, then apply the Marine Tex to the back side to lock the two pieces together.
8. Then tape off the plastic insert and spray paint the metal plate. I sprayed about three coats.


Now, to mount the radio bracket in the fairing.

1. You can do this step with the fairing inner mounted on the bike or take it off, either way would work.
2. Drill the 4 mounting holes into the fairing in each corner between the radio opening and the 2" gauge holes. I didn't measure to center each hole, I just eyeballed it. Here's what it looks like after you drill it and install the plate.

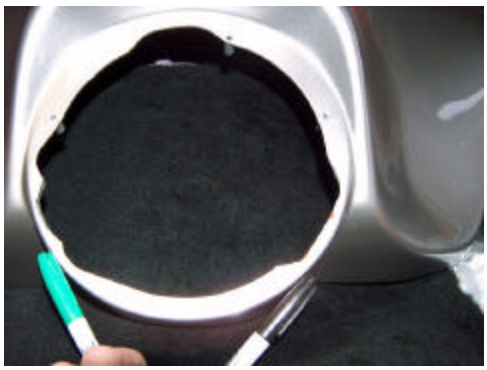



3. Using a couple of clamps, clamp the radio mounting plate to the back of the radio opening and center it side to side and top to bottom. Then insert the drill through the holes in the fairing, keeping the drill level, and drill a little bit into the plate on each of the four holes to mark it.
4. Remove the clamps and drill the holes that you just marked.
5. Install the screw cap covers on the bolts and mount the plate to the fairing using the nylock nuts.

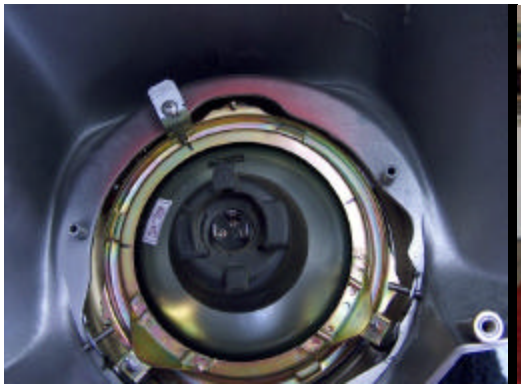
The suspense was really killing me at this point since I had the inner fairing mounted, so I installed the outer fairing with a couple of screws just to get a look at how it was sitting and how it would look.

Next, prepare the outer fairing and mount the Roadie headlight:

1. With the outer fairing laying face up on a flat surface, you need to mark where you will need to notch out for the mounting tabs on the lower portion of each tab. I actually held it up and marked a slightly larger area than I needed so I would have enough room to rotate it a bit to get it square. Here's a picture after I cut out the tabs areas with the dremel tool on slow speed.



2. Then install the headlight, move it around to make sure that it is centered in the headlight cavity and that it is straight up and down to the fairing.
3. Here's the tricky part. You have to hold everything together and flip the fairing out over so you can mark the holes to be drilled for the tab mounting screws. It doesn't have to exact, but needs t be real close. It took me a few minutes to figure out that I could turn it over, upside down, and look under the front of it to line it up. Once I lined it up, I made a couple of marks on the fairing and the headlight ring so it would be easier to line up next time.
4. Then take something line a thin pencil or ice pick and mark the fairing for the tab holes.
5. Then drill the holes slightly large than the mounting screws and mount the headlight.
6. I used a thin piece of spring steel to make a small bracket to as a mount for the top inside of the headlight. Some guys have just drilled a hole through the top of the headlight ring and ran a screv through there, but I didn't want to drill a hole in the headlight trim ruing, so I did something a litt different.
7. Get everything lined up and tighten up the screws.



Time to mount the Radio, Speakers and Relay:

1. Slide the radio into the mount that you made earlier in the process.
2. Bend the tabs on the radio cover to secure it into the mount.
3. Take a piece of that aluminum flat bar and make an l-shaped bracket to secure the back of the radio, see picture below. Be sure to heat the metal before bending it.
4. Use the speaker cloth to cover each speaker. Start on one side and use quick drying fabric glue, pull it kind of tight and attach the other side, then rotate and do the other two sides. Cut off the excess.
5. Bend the tabs on the 4" speakers at an even 90 degrees so they will fold over the back of the 4" gauge holes.
6. Hold one of the 4" speakers up to one of the holes, center it and mark the holes to be drilled.
7. Drill the holes and mount the speaker.
8. Repeat the process for the other 4" speaker.
9. Mount the 5 ¼" speakers in the provided mounting holes.

10. I mounted the relay on the left inner mounting bracket since I ran the power wires down the left side of the backbone to the battery. (sorry for the picture quality)

Wiring the radio, speakers, relay and power from the battery:

1. Remove the seat and tank so you can run the wires to the battery.

2. Follow the wiring instructions for the radio to wire the power, ground and speaker connections. There will probably be two power wires, one for the radio and the other for the memory backup. ran them both to the relay, so all power is off when I turn the key off. The only draw back to that is that you lose your setting every time you power off the bike. But since I still have the stock stator, I decided that was OK. If you have a high output stator, you could just wire the memory lead from the radio directly to the red wire coming from the battery.
3. The wiring diagram for the relay is on the back of the package. The relay has one input for 12V, one for ground, one for a trigger and two 12v outputs. I ran a 16 gauge red wire back to the batter and installed an in line spade type fuse holder (20A). I ran another black 16 gauge wire back to th negative post on the battery for ground. I used the blue wire in the headlight wiring bundle to connect to the trigger lead on the relay, so when the headlight comes on, the relay will power up but not put any extra electrical stress on the headlight circuit.
4. After everything was connected, I soldered the connections on the radio and used heat shrink tubing to cover them. All of the connections to the relay and speakers used crimp spade terminals The connections to the battery used crimp lug connectors. I used dielectric grease on all of the connections that weren't soldered, just as a precaution.
5. Then I installed the plastic wire cover/protector on everything and secured some of them with tie wraps so they wouldn't bounce around.
6. There is a half inch diameter hole on the left side that I couldn't find a hole plug for in black, so I siliconed in a chrome piece of that diameter off of a light fixture. I also made a cover for the long opening just above the radio mount out of a piece of ABS plastic. I siliconed it in place and then stuck a Star Motorcycles logo pin to it with silicone.

Installing the antenna:

1. This part is easy. The Tune Trapper is slightly bendable, so I mounted it with a couple of tie wrap just below the windshield bolts as in the picture below. I drilled a coupe of small holes in the fairing brace to run the tie wrap through. Be sure and get the model for motorcycles. I got the on for a car by mistake, so I had 6' of cord that I had to deal with. The motorcycle version has a 2'cord which would have been about right.


Test the radio before going any further. If everything works, keep on truckin'!!

Wiring Clean Up:

1. Before mounting the outer shell, I wanted to clean up the look of the wiring harness since there wasn't a headlight bucket to hide it all in any more. I used a piece of a cordura back bag that I cu a strip out of to wrap around the wiring harness and secured it with a couple of black Velcro strap That way you don't see a bunch of wires when looking at the fairing from the back. You may come up with a different solution, but this is what I had handy.

Outer Fairing install:

1. Install the 2 standoffs in the outer fairing if they aren't already there. The outer fairing only attaches with the three windshield bolts and a bolt into the standoffs on each side. Get someone t help you line it up, install the headlight plug on the back of the headlight then guide it into place and put in the mounting screw on each side, but don't tighten it up until you have the windshield installed.
2. Install the windshield then the three windshield mounting bolts or the chrome trim piece with the mounting bolts. I tightened things down a little at a time until I had things lined up the way that I wanted, then I snugged everything up good.
3. Install the tank and the seat.
4. Clean the fingerprints of everything and then ***go show it off***!!