
Modified instructions for the Wolf Underseat Exhaust System for the 1998-on Honda VFR800FI

Here's how this will work: The original instructions will be in regular type. My additions/clarifications will be in italics. Links to pictures will be obvious.

To repeat the essential disclaimer, **you follow these instructions at your own risk. I am not responsible for any damage to your bike, to the kit, injury to yourself, any mechanical or structural failure following the installation, or any other mishap, damage or injury that may occur as the result of your following these instructions. Your ultimate source for technical support on this product is Wolf Racing.**

TOOLS:

Who cares? Get the tools you need. You don't need a list to decide this. If you do, you shouldn't be doing the installation! BUT, three tools that you will probably need that are not listed are a hacksaw, a Dremel tool and a pipe expander.

PARTS LIST:

You will also need all the parts supplied in the [Wolf kit](#). You should check now that you have all the parts before you start.

1. Two mufflers
2. A Y shaped pipe
3. A smaller L shaped pipe (*not smaller; about 12-14" long!*)
4. A new battery box
5. A new under tray (*flat piece with multiple bends*)
6. [A number plate](#) (license plate) bracket (*in my kit, this was carbon fiber*)
7. A small right angles hanger bracket (*this also is not small; probably 8" wide*)
8. Two springs (*wrong again, all of us only got one, and it was useless. See below*)
9. A bolt pack (*gets you started, See below*).

SUPPLEMENTAL PARTS LIST:

The following are parts that I either had to have or chose to get. I'll try to advise which are optional as opposed to critical.

1. 2 6mm or SAE equivalent fender washers
2. 2 springs for the L-Y joint. *You are best off to measure this distance, take a break, and go to your local hardware.*
3. 5mm bolt/screw to mount rear brake reservoir (*the one in the kit is too big*)
4. 5mm star washer to keep reservoir from rotating on the battery box.
5. 6mm nylock nuts to use with Honda bolts (2)
6. 8mmX20mm SS socket head bolts (2)
7. 14" wire tie (*get a couple; they are a little hard to find*)
8. 26 6mm stainless washers
9. Exhaust sealing compound (*any parts store*)
10. Flat metal strips (2); *I used Fiamm horn mounting pieces:*
11. Honda exhaust gasket. **WARNING:** *This is an item that most dealers do not stock. Get it in advance. (about \$18.00)*
12. Old heavy duty inner tube (*to pad between the EFI unit and the subframe*)
13. Rubber caps for the metal strips
14. Several medium sized wire ties.

OPTIONAL PARTS LIST:

The following are parts that I needed in order to do the license plate/hanger the way I wanted to.

- Kawasaki ZX-6 tag bracket (pre '00)*
2 6mmX20mm SS bolts
4 Rubber washers (fender washer size)
2 5/16" (I think) fender washers
Design Engineering "Lite 'N Boltz"
2 5/16" SS Nylock nuts
4 5/16" SS washers
Two lengths of 20-22ga wire in contrasting colors
Heat-shrink tubing
20-25ga insulated crimp-on bullet connectors; the red ones. (I got a package of 5 male-female sets and used what I needed)

To begin the installation you will need to strip the original Honda parts from the bike.

Remove the seat and cowlings, remove the brake and signal bulbs from the taillight (*don't worry about which bulb is which; they're all the same*), and then unbolt the stock painted plastics and remove these from the bike.

Remove the stock silencer-this is held in place by one bolt on the pillion foot peg hanger and a clamp at the lower end of the pipe where it meets the collector box. *Okay, there's no collector box. Apparently he means the header. Wolf will tell you that you can save the Honda exhaust gasket to use again. If you are lucky enough for the gasket to stay on the header (male piece) instead of inside the muffler inlet (female), then you'll be okay. AFAIK, you'd have to be a surgeon to get it out of the inlet intact.*

Disconnect the battery from the bike and remove it. *The battery is a sealed unit, but you're still better off to not tip it.* Then disconnect or unclip the [various fuse boxes, relays and so forth](#) that sit on (*are attached to*) the battery box. *I would suggest that you make a drawing of where these go.*

Unclip the EFI control box from the under tray and hold this out of the way to one side. You can simply hang it [over the edge](#) of the sub frame for now. Hang the wires that fitted to the indicators over the side too, just to keep them out of the way. *The EFI unit is under a cover in the back of the original tray/fender. You open this by removing four connectors like the ones that hold the main fairing together; push in the center and gently lift out. If you have never done this, consult the Honda owner's manual under fairing removal for the correct technique. Note the routing of the large bundled wire that leads to the EFI unit and the indicator lights. The large modular connectors do come loose from the EFI unit. I suggest that you unsnap these connectors and remove the unit from the wiring harness so that you can put the unit away in a safe place. After you remove it, cut a piece of the inner tube (or other suitable padding) to size/shape of the EFI unit to use later.*

Remove the entire black plastic under tray in one piece from the bike and store it safely. You will need to unclip the rear brake hoses from their mounting on this tray (near the shock under the tray). *Okay, here's what you really do: The tray is attached at the back by two bolts. Remove these and set them aside to be used later. In the bottom of the battery box, there is a socket head screw that goes into a clip holding the brake lines. Remove it. Finally, remove the screw that mounts the rear brake reservoir to the tray. You will not need this screw, as it is too big for the threads in the new box. NOW you can remove the tray. I put the socket head screw back into the brake line clip (so I could lose it at a later date...). [Allgone](#).*

You now have a clean slate to start fitting the Wolf under seat system.

BIG suggestion (with thanks to Peter Swenson, even though I didn't listen too well the first time): As you assemble the system, don't tighten anything down until you have everything where you want it and need it to be. I'll explain more later.

Firstly fit the new battery box in place. This box sits where the old one did but you will note on the back of the box (facing the rear of the bike) there are two clips that are bolted on. These allow the box to bolt securely in place. Undo the two screws that hold each of these clips in place and open them up (*remove them*). Now place the battery box against the round cross member and close (bolt) the clips around this cross member. Bolt the clips back together and the battery box will be securely held in place. *You will need to place three 6mm SS washers between each bolt and the back side of the "clips." NOT between the clips and the box. Without these washers, the bolts screw far enough into the battery box to hit the battery. Also, the "nuts" that are pressed into the battery box may come loose. Mine did, but this may have been due to my use of Locktite blue on the initial assembly. When I had to back the bolts out, two of the "nuts" came loose from the battery box, but tightened up fine when I reassembled things.*

Fit the relay boxes and so forth onto the new battery box as they were on the old box. The black relay (?) can simply be placed against the front of the battery box and will stay in place as it is too short a wire to move. The brake fluid reservoir fits to the pillar mounting on the right side of the battery box. *Truth is, there is only a provision for one of these to reattach to the replacement battery box. The rest just sort of sit there. Not a perfect solution, but they are all on short leads, and they really have nowhere to go. After everything is in place you can zip tie them to something else to stabilize them, but don't do it now. Put the 5mm star washer between the mounting boss on the reservoir and the "pillar," and loosely mount the reservoir. Don't tighten it up yet. Be sure that you have the negative battery lead routed properly.*

Next fit the L shaped lower pipe to the stock headers just as the original pipe was fitted. Use the stock Honda clamp to hold it tightly in place. Be sure to reuse the stock gasket or use exhaust compound (*forget compound on this joint; the gap is way too big*) on this joint to ensure a gas tight seal.

*I wish it was this simple. Unless Wolf has modified the inside diameter of the L-pipe on your system, there is no way that it will fit over the gasket and onto the header. Here is what I had to do: **(Understand that this is a modification of the parts that may void your ability to return the system, but IMO not your warranty)** You will have to cut two .5-.75" slots in the header end of the L-pipe with the hacksaw. I would not try this with a Dremel tool, as the pipe is stainless steel and too hard. Wear eye protection. Look at the way that the L-pipe will mount. Now, choose a location for the slots such that they will be out of sight once mounted. Clean up the flash from the slots with the soft wire brush on Dremel tool.*

You now have to spread the slotted end of the pipe with a pipe expander. These are available at good auto parts stores. My local Auto Zone sells it to you for \$20-something, fully expecting you to return it. You could probably go to a muffler shop and get them to do it for you. The reason to do it this way is that the pipe remains round. The pipe is big enough when you can insert the gasket and still withdraw it. Don't get it stuck!

The Honda clamp has a tab that locates it on the stock muffler. You must bend this tab out flat in order for the clamp to fit on the L-pipe properly. This may sound stupid, but: 1) Place the gasket on the header pipe. Don't put it into the L-pipe, as there is too great a chance of damaging the gasket as you work it onto the header. 2) Place the clamp in place on the L-pipe. 3) Gently work the L-pipe onto the gasketed header. Mild lubrication may be necessary/helpful. In my case, the header bottomed out inside the L-pipe before the L-pipe reached the flange on the header. Not important. Don't tighten the clamp yet. You can go ahead and attach the rubber bumper from the stock muffler to the L-pipe if you like. The little nubs make the centerstand ride a little lower, but I haven't found that to be a problem, YMMV.

Find the small right angled [hanger bracket](#) and bolt this in place. It fits at the back of the sub frame into the two bolt holes that originally secured the under tray. It must be fitted so that the widest part is parallel with the ground and the two Honda bolts go from the top, through the bracket and bolt it in place.

Translation: The hanger bracket is the one that will hold the canisters at the back. It goes with the small holes pointing backwards and the big (1") holes/vents pointing up. You will mount it under the two little "ears" attached to the subframe rails. I used two round head SS screws instead of the Honda bolts. Either way, the tray will hit these when you install it, so I went with the smallest thing I had. Use appropriate washers on the bottom and two nylock nuts if you use the Honda bolts. Leave it a little loose for now. [MY PIC](#)

This will leave the narrow part of the bracket pointing at the ground-like a miniature version of the license plate hanger that was there before.

Okay, I didn't mount the cans and plumbing in the order that Wolf describes below. Read their instructions for this step, and then mine.

The two silencers are drilled near the spout in the end plates with 8mm holes and 6mm holes. The two 8mm holes will line up with the two 8mm holes in the hanger bracket. Bolt these cans in place with the 8mm bolts supplied. The two angled spouts on the mufflers should point inwards toward each other.

You can now bolt the number plate hanger to the end plates of the mufflers using the 6mm bolts supplied.

Take the Y piece of pipe and fit it into the two silencers at the double end and the L shaped piece of pipe at the single end. Use the two [springs](#) supplied (*actually the two that you go and buy*) to join the two pipes securely.

I tried it in this order, but couldn't figure out how to get the Y-pipe in between the other two components. Anyway, first you need to use exhaust compound on each of the joints. Put it inside the female part of the joints so that any excess doesn't get squeezed out. The muffler end of the Y-pipe is double walled; you'll have to be inventive with getting the compound in the right place. IIRC, I put it on the inside of the muffler inlets.

I mounted the cans to the bracket, and then took the cans-hanger assembly off, mounted the Y-pipe to the L-pipe and then slid the cans to the Y-pipe and then reconnected the canister hanger to the subframe. The cans don't push all the way into the Y-pipe. Once I had it all together, I loosened the canister bolts back up. [MOUNTED](#)

If you got the carbon fiber [tag bracket](#), you'll have to remove it to prepare it to mount a tag, but it is helpful in terms of alignment to mount it loosely for now.

Check that the two silencers are properly aligned and level and that the joints with the pipe work are gas tight. Make any adjustments now and then tighten the bolts. My advice is don't tighten anything right now.

Place the [EFI box](#) to the left hand outside of the sub frame at the rear and cable tie it in place so that it will sit under the bulge in the side of [the] seat cowl and be protected from the elements. My advise is to gently withdraw the EFI/indicator wires through the gap in the subframe to get them out of the way of installing the new underseat tray. I mounted the EFI unit just about last.

Place the under tray in place between the sub frame rails and bolt it up to the hanger bracket at the back and the battery box in the front.

THIS IS THE UNDERSTATEMENT OF THE @#\$\$! CENTURY

Getting the tray in place and clear of the canisters was the hardest part of the installation for me. FIRST: Put a towel, or other cloth over the canisters and plumbing to protect them before you start this or you will certainly damage things. Leave the padding there until you are through, other than to check clearances. Also, remove the seat latch assembly from underneath the flat crossmember at the very back of the subframe. It will be helpful to have this out of the way for now. The tray threads under the round subframe crossmember, above the Y-pipe, then down to the back of the battery box. You may need to unbolt the canister bracket from the subframe and drop the system down toward the rear tire to get clearance for this; I didn't, but it took two extra hands to "spring" the tray to get it in place.

Once you have it behind the battery box, pull the back edge up and back. It inserts under the crossmember where the latch was, and on top of the canister bracket. Problem 1: There is a "web" at the front of the crossmember that interferes with this positioning. Problem 2: The last bend of the tray is at a funny angle with the hanger. You didn't do anything wrong, that's just the way it is. Problem 3: The back edge of the tray will hit the mounting bolts for the canister hanger. This is why I used screws with smaller heads.

Mount the tray to the battery box with the bolts supplied, but put 4 6mm SS washers on each one to space them out so they won't hit the battery. Leave them loose for now. You will notice that the holes in the back of the tray are small and round, while the ones in the hanger bracket are oval. Mount the tray to the hanger with the remaining 6mm button head screws and nylock nuts from the kit. Use 6mm SS washers on top, and 6mm fender washers on the bottom. Unless you have very small hands, you will probably need to loosen &/or drop each canister down in order to access the bottom of this assembly.

You will now need to adjust each component of the system to proper position in order to insure clearance between the top/front edge of the canisters and the bottom of the tray. First, tighten the canisters to the hanger bracket. Then place something on top of the canisters to lift the tray clear at the front. I found it necessary to establish this clearance, and then tighten things down so that the clearance remains. The mounting of the tray is such that it "springs down" against the canisters. This is the order that I finished tightening things:

- 1) Canisters to hanger bracket
- 2) Hanger bracket to subframe
- 3) Rear of tray to hanger bracket
- 4) Battery box to subframe member (take each bolt down in equal steps so that you don't distort the box.

I found that it was necessary to rotate the battery box backward in order to "bow up" the tray to get the clearance. It may be helpful to have someone assist with this while you tighten things down and check your clearance.

- 5) Tray to top of battery box
- 6) Clamp at L-pipe/header junction
- 7) Tag hanger to canisters (If you are not doing the modification described later)

Remove your spacer and padding and check your clearance as you do these steps. If the tray is still in contact, loosen things up and try again.

Mount the [EFI unit](#) behind the voltage regulator. Place the rubber pad (that you cut from the inner tube) between the unit and the subframe, and secure the unit (not completely tight) with the 14" zip-tie. The wires will attach from the top. [Route the wires](#) for the EFI next to but outside the upper subframe rail, above the voltage regulator and plug them into the unit. Test fit the bodywork so that the wires clear; adjust the position of the unit, then cinch up the zip-tie, and trim to length. Zip-tie the cable to the frame both in front and in back of the round crossmember. Position the wires across the subframe such that the seat support doesn't mash anything. If you plan to leave the passenger pegs in place, reinstall the seat latch, and reattach the latch cable.

Following a suggestion from Keith Mitchell, I made [supports for the rear cowling](#). I used flat metal strips that appear to be spring steel. These were unused Fiamm horn brackets that I had on hand. I mounted these to the rear mounting hole for the grab handles. I used 6X20mm stainless socket head bolts that I bought rather than the stock bolts, which would work fine. I angled the metal pieces backwards to fit under the cowling. I then taped vinyl caps on the ends to protect the inside of the plastic. These support the bodywork without changing the position at all.

You may now put the seat plastics back in place and reconnect the battery. Reconnect the battery first; it will be easier with the plastics off. Be careful when reattaching the screws to the nuts that are rubber mounted in the sides of the frame rails up near the back of the tank. It is relatively easy to push them into the frame rail, and getting them out and reinstalled is no fun. DAMHIK. Route the wires to the tail light and turn signals, reinstall the bulbs, determine which turn signal is right and which is left and reinstall them. Fit the seats again and test ride the bike. Don't put the seat on yet if you're going to install the license tag bracket as described below.

PASSENGER PEGS

As you can tell from the photos, I removed the passenger pegs. My wife rides on her own, so I had no need for passenger space, and I planned to use the cowling all the time. The right side peg is no problem. The left peg/bracket assembly includes the seat lock. I thought about amputating the peg, and leaving the lock, but decided against it. You have to have the cable to release the seat, (unless you leave the latch off and just let the cowl hold the seat in place) so I just tucked it up inside the left hand side bodywork. Seems to stay in place OK. You could always tape it in place.

Don't forget to tighten the screw that mounts the rear brake reservoir, leveling the reservoir as you do. If you are not using my tag mounting scheme, **YOU'RE DONE!** Check all of your connections for proper tightness, check the system for clearance from the tire, and go for a ride. **Suggestion: No matter what you had the preload on before, set it up at least one notch.**

LICENSE TAG BRACKET

This is entirely my modification. I thought that it would work simpler and cleaner this way. There are two issues: Mounting the tag itself, and illuminating it so as to pass safety inspection. The carbon fiber tag bracket is a nice piece, but is narrower than a standard US tag. I considered two options: 1) Notching the hanger so that bolts would clear the edges, and then bolting to a strap that I would run behind the hanger, or 2) Getting a tag bracket from another MC, and mounting that to the CF hanger.

I went with #2. The bracket I used came from a Kawasaki ZX-6E. You can order this or equivalent from your local dealer. BUT, a lot of riders cut off or eliminate their rear fenders. So with a little snooping you should be able to locate a bracket that someone isn't using. This is what I did, and it cost \$4 (list \$8).

First, you may choose to not illuminate the tag. Obviously I would discourage this. You can use a Dremel tool to cut the bottom of the tail light out and then glue in clear plastic to allow light from the tail light to shine onto the tag. You can also try to get the Euro tail light assembly, but the cost is >\$200. Keith steered me toward "[Light 'n Boltz](#)." These are stainless button head bolts with small [light bulbs](#) built in. I thought they were a pretty clever solution. You can polish, brush, or leave them alone. Available through [Martel Brothers](#).

BRACKET

I mounted the bracket so that the angle of the tag was less perpendicular to the ground. Your choice. Measure and mark the position on the CF hanger. Mark your holes, and drill for the 6mm mounting bolts. I mounted the bracket with a fender washer then rubber washer on the back, then a rubber washer between the bracket and the hanger.

LIGHT 'N BOLTZ

The shank of these are 5/16". Enlarge the holes in your tag to this size. You will need to enlarge the slot in the Kawasaki bracket also. The Boltz come with nylon nuts, which I didn't think would hold, so I got 5/16" SS nylock nuts and four SS washers. Use washers on the back and on the tag side; this is necessary because the size of the Boltz will not let them seat squarely on the tag. Angle the light slot so that the tag will be illuminated.

I enclosed the wires from the Boltz in heat-shrink tubing for two reasons: They are small, and they are white (ugly). Cut to length before you wrap them-they look single strand but are multi-strand. Connect one wire from each Bolt into a 22-25ga weather-tight bullet connector. Polarity does not matter. Cut two lengths of 20-22ga wire to reach from the wiring in the tail piece down to the tag. You will need two male bullet connectors to connect to the stock wiring; crimp those on. I [routed the wires](#) down between the two canisters! **This will probably not work if you have the titanium rather than carbon canisters. The titanium will probably get much hotter.** Shrink wrap the wires, put the connectors on the tag end, plug everything up, mount it up, and you should be done!

Again, check the tightness of all of your connectors before riding the bike.

CAVEAT EMPTOR:

CLEARANCE between the canisters and the rear tire has been a problem for all five members of the **WOLFPACK**. I don't know whether we're just "mass enhanced" or what. In any case, potholes, "whoops" and such have produced unfortunate contact. Wolf Racing sent each of us (cept Peter) a replacement shock link that appears to be shorter than stock (**This should now be included in the kit. If you order, be sure to ask**). This increases clearance, as well as raising rear ride height. To date, none of us has installed the link. It appears to require removal and replacement of needle bearings, bushings, and dust covers. Speaking strictly for myself, I don't feel that adventuresome. Keith has shimmed the upper shock mount with washers to some success and no adverse affect on handling. I'm working on a shim fix that I hope won't require as much disassembly. If/when I get this done, I'll update the page, so check back.

Well, that's my attempt at technical advice. **Wolf Racing is the ultimate authority on this installation.** If you have any questions, updates, or corrections for this procedure, feel free to [drop me a note](#). Same goes if you know how I can post a link that will let you download a text or MS Word file.