



Engine Cooling Upgrade Kit PART# - RY10040-ECUK-I

We strongly recommend the use of a service manual to familiarize yourself with the various components and procedures involved with this installation. Please note that some of the original clamps, lines and hardware removed in the disassembly process will be used in the installation process. These instructions have been written in point form and refer to illustrations. Please follow these step-by-step instructions and illustrations carefully.

APPLICATION(S): Yamaha 2008~10 FX-SHO & 2009~10 FZ using RIVA OEM Intercooler Upgrade Kit (part# RY17040-ICUK)

***** ALLOW ENGINE TO COOL COMPLETELY BEFORE PERFORMING INSTALLATION *****

NOTE: Kit is designed to work with RIVA OEM Intercooler Upgrade Kit (RY17040-ICUK). For RIVA Power Cooler Kit you must use RY10040-ECUK-PC.

Remove lanyard and disconnect battery cables. **NOTE: Negative (black) first. Positive (red) second.**

Remove seats and rear storage bin.

Remove plastic engine cover (2 screws).

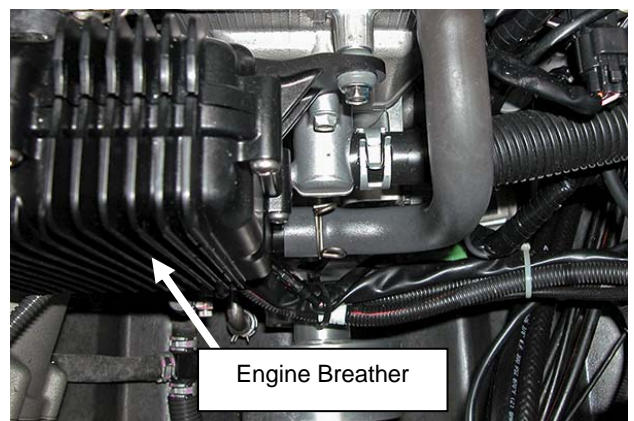
FZ models only: Remove rear grab handle assembly (5 bolts total).



Remove strap securing water box in place. Loosen coupler clamp and remove exhaust outlet tube.



Remove engine breather line(s) from engine breather box.

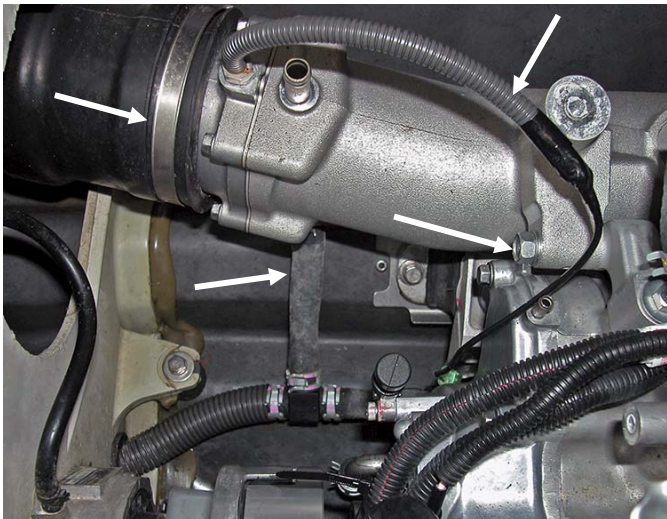


Remove engine breather box (3 bolts) and set aside.

Remove cooling lines (3) from rectifier regulator.
Remove bolts (2) securing rec/reg to engine and relocate rec/reg to left side of engine compartment.

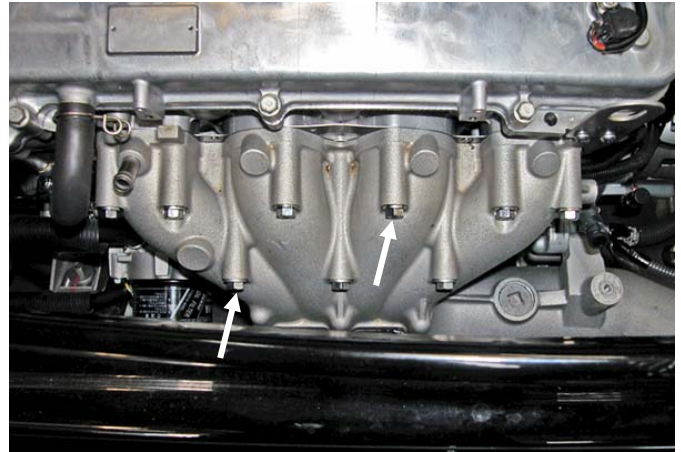


Remove bolt securing end of exhaust pipe to motor.
Disconnect exhaust pipe overheat sensor connector (green). Disconnect cooling line from underside of end of exhaust pipe. Loosen clamp securing coupler to end of exhaust pipe.



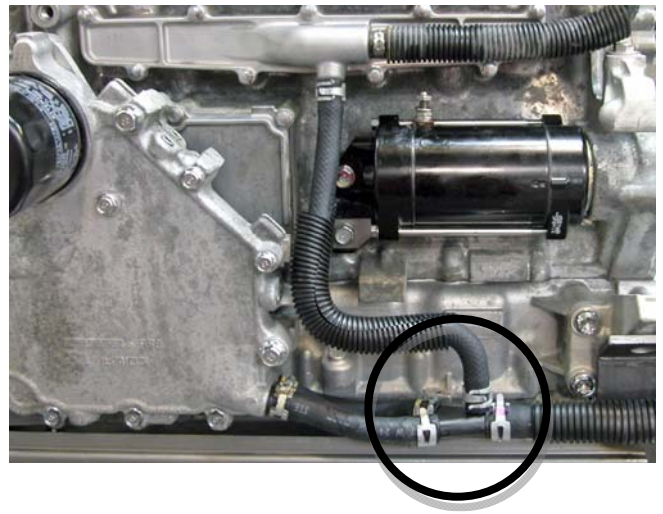
Slide waterbox towards rear of craft as far as it will go.

Remove bolts (11 total) securing exhaust pipe assembly to motor.

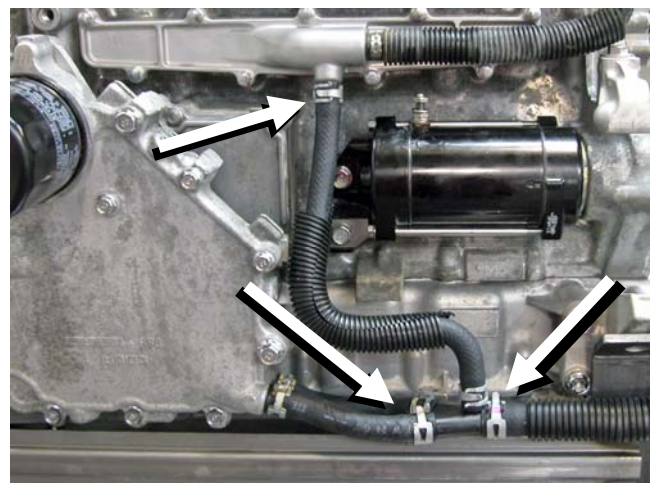


Remove exhaust pipe assembly by rotating towards hull, lifting up at front and then forward while lifting.

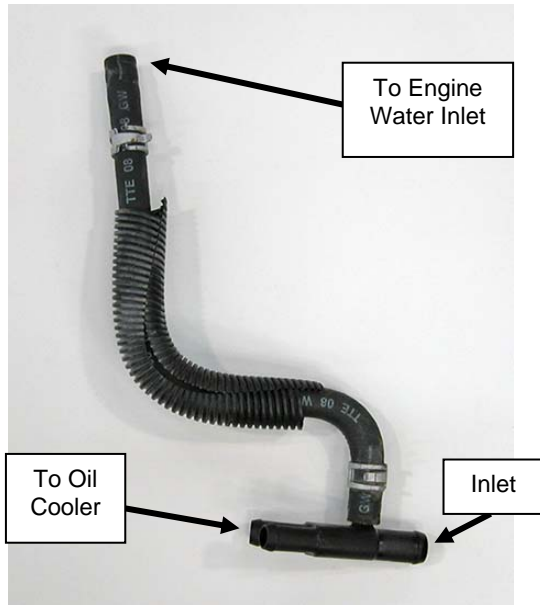
On exhaust side of engine locate 'Y' fitting with cooling lines that feed the oil cooler and exhaust manifold.



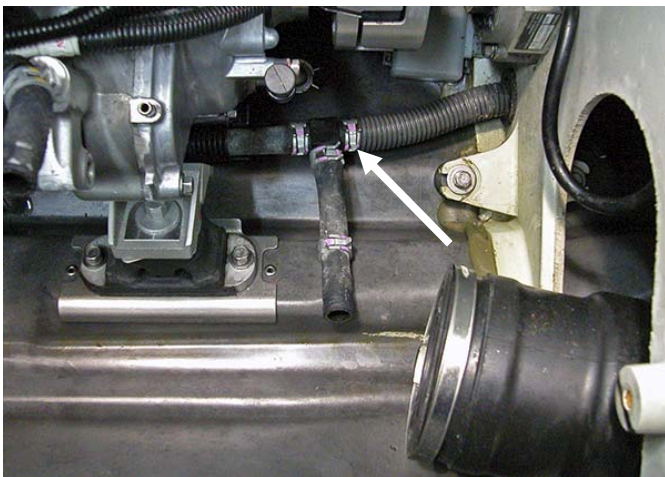
Disconnect lines attached to both ends of 'Y' fitting (1 incoming / 2 out to oil cooler). Disconnect cooling line attached to engine water inlet fitting.



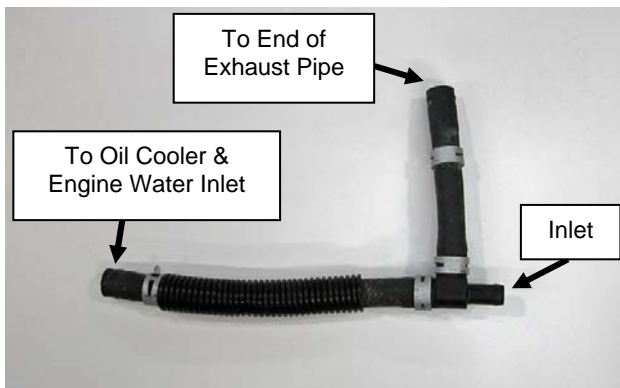
Remove 'Y' fitting with line for engine water inlet and discard.



At rear of same side of engine disconnect the line feeding plastic 'T' fitting.



Remove 'T' fitting with lines (2) attached.



Remove cooling line for end of exhaust pipe from plastic 'T' and install onto supplied billet 'T' fitting in same configuration. Secure with stock spring clamp. Install supplied 3/8" cooling line onto 3/8" barb of 'T' fitting and secure with supplied 3/4" hose clamp.

RIVA OEM Intercooler Upgrade Kit Update:

Inside your craft (area closest to the pump) locate the incoming cooling line previously installed to feed additional water your RIVA Intercooler Upgrade Kit. Disconnect water line from Billet Thru-hull Fitting

At the pump remove the 3/8" waterline between the Billet Pump Strainer and Billet Thru-hull Fitting.

Remove 3/8" Billet Thru-hull Fitting and replace with supplied 1/2" Billet Thru-hull Fitting. **NOTE: Apply below water line silicone sealant to fitting. Allow to dry for 24 hours.**

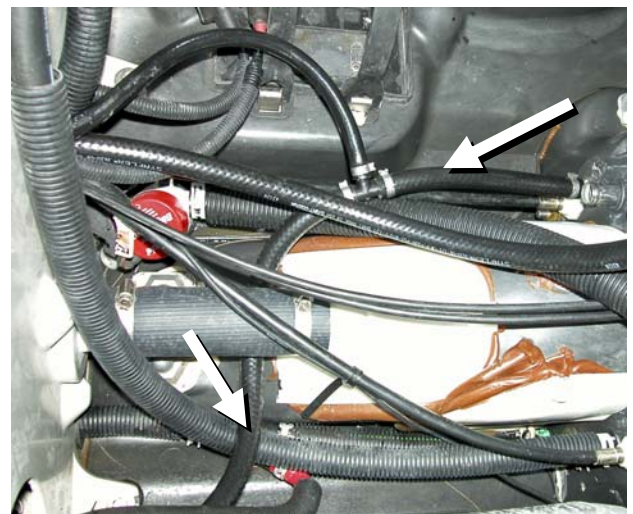
At Billet Pump Strainer remove 3/8" 90-degree fitting and replace with supplied 1/2" 90-degree fitting. **NOTE: Apply pipe thread sealant to threads. Do not over tighten fitting.**

Install 24" long piece of supplied 1/2" water line between Billet Pump Strainer and Billet Thru-hull Fitting. Secure using supplied 3/4" hose clamps. **NOTE: Do not over tighten clamps.**

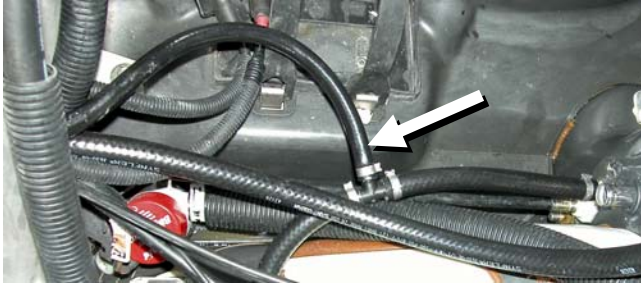
Inside craft install an 8" long piece of supplied 1/2" waterline onto Billet Thru-hull Fitting. Secure using supplied 3/4" hose clamp.

Install supplied 1/2"x3/8"x1/2" plastic 'T' fitting into open end of 1/2" water line. Secure using supplied 3/4" hose clamp.

Install remaining supplied 1/2" waterline onto 'T'-fitting, route under driveline tube, thru bulkhead at water box and up towards exhaust. Secure using supplied 3/4" hose clamp.



Attach 3/8" water line that supplies Intercooler Upgrade Kit to 'T' fitting. Secure using supplied 1/2" hose clamp.



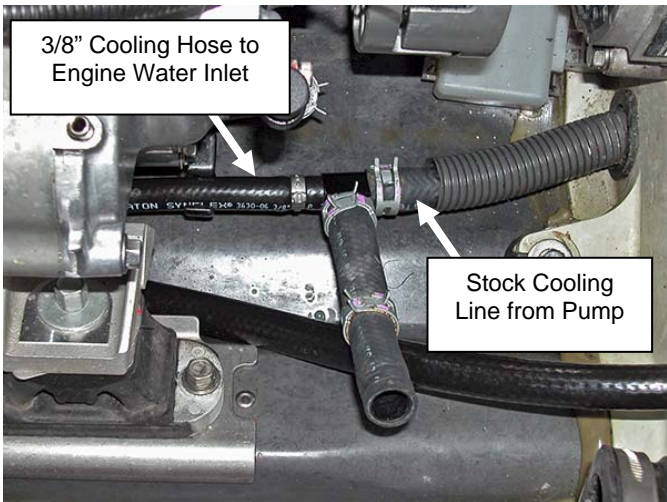
Install supplied billet 'Y' fitting into open end of 1/2" waterline under exhaust. Secure using supplied 3/4" hose clamp. Route under motor towards oil cooler along inside of motor mount.

Attach oil cooler lines (2) to open ends of billet 'Y' fitting. Secure using stock spring clamps.

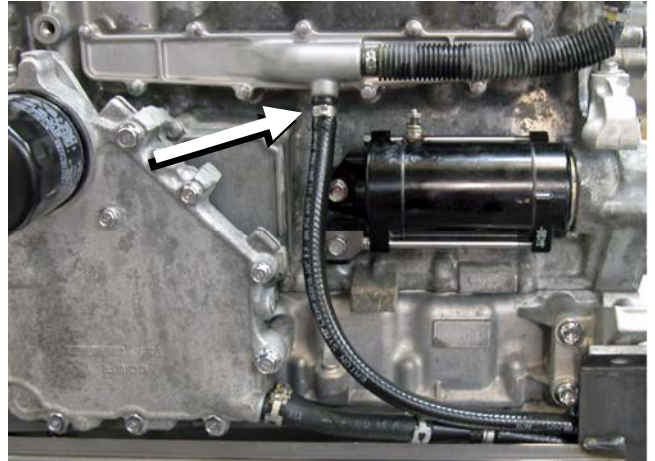


Install supplied billet 'T' fitting into stock cooling line from pump and secure with stock spring clamp.

Install supplied 3/8" line onto T-fitting. Secure with supplied 1/2" hose clamp.

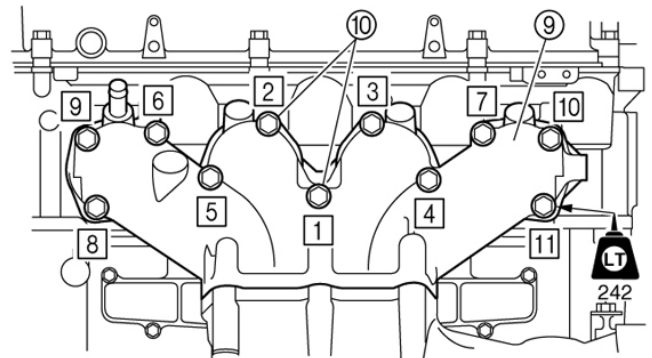


Route 3/8" line forward under engine and up towards exhaust manifold. Attach open end to fitting on engine water inlet. Secure using supplied 1/2" hose clamp.



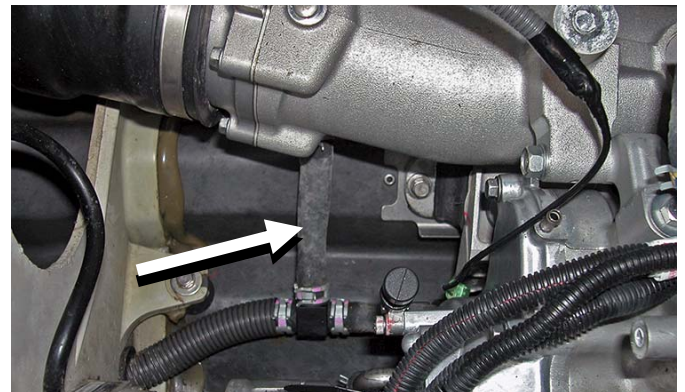
Secure cooling lines together using supplied zip tie.

Replace exhaust assembly. **NOTE: If exhaust gasket is damaged, warped or corroded do not reuse. Apply blue Loc-tite to bolts. Torque bolts in sequence:**



First: 14 lbf•in / 20 N•m Second: 25 lbf•in / 35 N•m

Replace cooling line at underside of end of exhaust pipe. Secure using stock spring clamp.



Replace bolt securing end of exhaust pipe to motor.
NOTE: Apply blue Loc-tite to bolt. Torque First to 16 lbf•in / 22 N•m and then 31 lbf•in / 42 N•m.

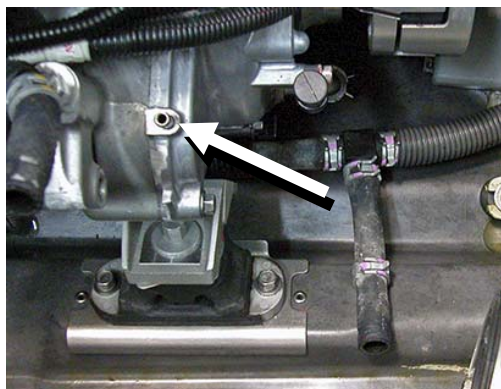
Reconnect exhaust pipe overheat sensor connector (green).

Replace rectifier regulator. **NOTE: Make sure rubber grommets and metal collars are in place. Apply blue Loc-tite to bolts. Torque to 19 lbf•in / 26 N•m.**

Reconnect rectifier regulator cooling lines. Secure using stock spring clamps.

Replace engine breather box. **NOTE: Make sure rubber grommets and metal collars are in place. Apply blue Loc-tite to bolts. Torque to 6 lbf•in / 8 N•m.**

Reconnect breather line(s) making sure small drain line at bottom is connected and secure to fitting on engine case.



Reconnect exhaust outlet tube to waterbox outlet coupler. Once aligned tighten coupler clamps (inlet and outlet). **NOTE: Do not over tighten clamps.**

Replace rubber strap securing waterbox in place.

Replace grab handle assembly. **NOTE: Apply blue Loc-tite to bolts. Do not over tighten bolts.**

Reconnect battery cables. **NOTE: Positive (red) first. Negative (black) second.**

Check bilge for tools, rags, etc. Run craft on a flush kit to check for proper operation.

***Remember, the water belongs to everyone.
Please ride responsibly and respect the environment!***

Technical Support

For answers to questions regarding installation or trouble shooting RIVA Performance Products contact: RIVA Technical Support directly at (954) 247-0705 or by e-mail at tech_support@rivamotorsports.com.

Limited Warranty

RIVA Engine Cooling Upgrade Kits carry a 90-day limited warranty to the original purchaser. They are warranted to be free of defects in materials and workmanship under normal use and service. Customer modified components will be void of warranty. This warranty is limited to defects in the primary components only. Finish and/or wear marks in or on primary components are not covered under this warranty.

RIVA Racing's liability is expressly limited to the repair or replacement of the components contained within or associated with this kit. RIVA Racing agrees to repair or at RIVA's option, replace any defective unit without charge, if product is returned to RIVA Racing freight prepaid within the warranty period. Any equipment returned which, in RIVA's opinion, has been subjected to misuse, abuse, overheating or accident shall not be covered by this warranty.

RIVA Racing shall have no liability for special, incidental or consequential damages or injury to persons or property from any cause arising from the sale, installation or use of this product.

No other warranty, express or implied, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose, applies. Various states do not allow for the limitation of incidental or consequential damages and therefore the above exclusion or limitation may not apply to you.

Warranty does not include the expenses related to freight or transportation of parts or compensation for any inconvenience or loss of use while being repaired. A copy of the original invoice and a Return Authorization Number (RA#) must accompany all warranty claims.

Warranted replacement parts will be returned freight collect.

RIVA Engine Cooling Upgrade Kit Water Map

RY10040-ECUK-I / Yamaha FX-SHO & FZ (up to 2010)

