



**RIVA RACING**  
PERFORMANCE PRODUCTS & ACCESSORIES

## **SVHO Stage 1 Engine Cooling Upgrade Kit**

**PART# - RY10080-ECUK-I**



**APPLICATION(S):** 2014+ Yamaha FX-SVHO & FZ-SVHO with RIVA Racing Stage 1 Performance Package. **Note:** This cooling upgrade is not intended to be used with an aftermarket or ECU re-flashed above RIVA Stage 1 Plus.

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, hoses and hardware removed in the disassembly process will be used in the installation process. These instructions have been written in step-by-step format and refer to illustrations. Read through instructions entirely before performing installation. Please follow these step-by-step instructions and illustrations carefully.

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

### **Required Specialty Tools**

Oetiker Clamp Pincher Tool

### **Part#**

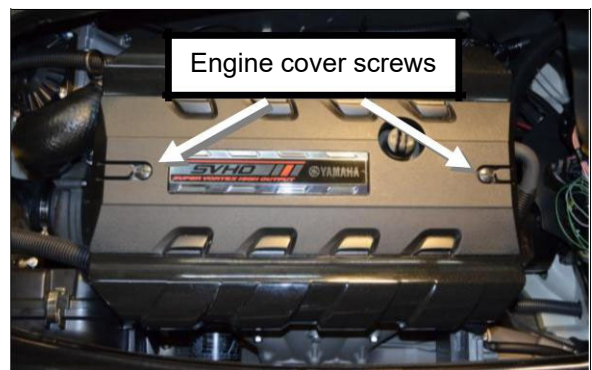
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### **- INSTALLATION INSTRUCTIONS -**

Remove seats & rear storage bin.

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

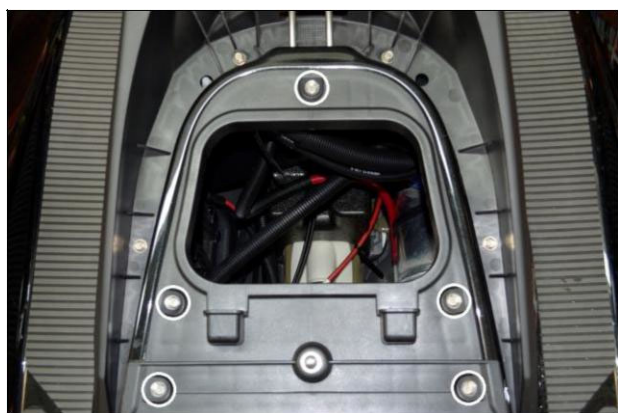
Remove the 2 engine cover screws. Pull straight up on engine cover & remove.



Remove bolts circled in illustration below & remove grab handle and deck beam.

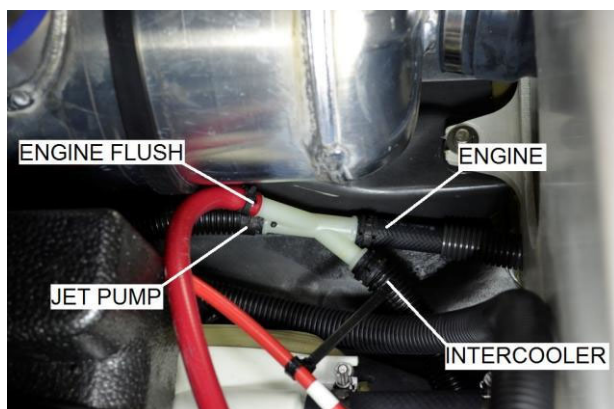


FZR/FZS



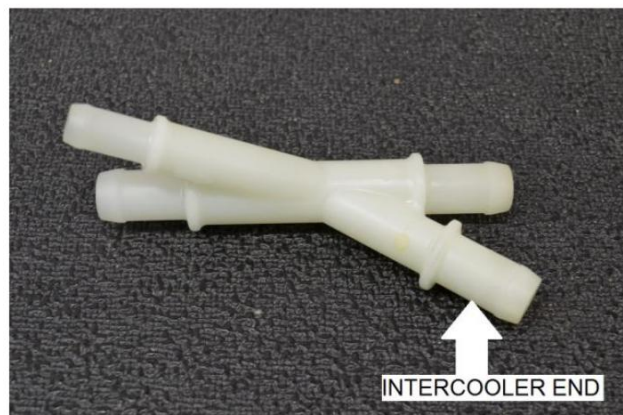
FX

Locate 4 way water joint inside the hull, at the rear, near the waterbox. Note location of hoses on water joint.



Disconnect the waterlines from the 4 way joint & remove the water joint. Save spring clamps on hoses for reinstallation.

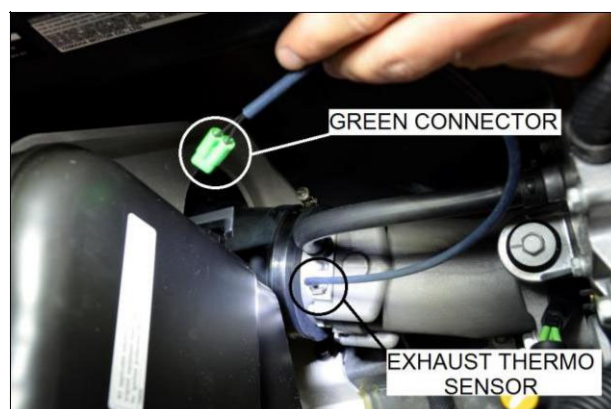
Locate the intercooler end on the 4-way water joint.



Using supplied drill bit marked with red paint, drill out intercooler end opening. **Note: Use care not to drill too deep. This may result in damaging the fitting.** Clean any plastic shavings / debris that may be inside the fitting.

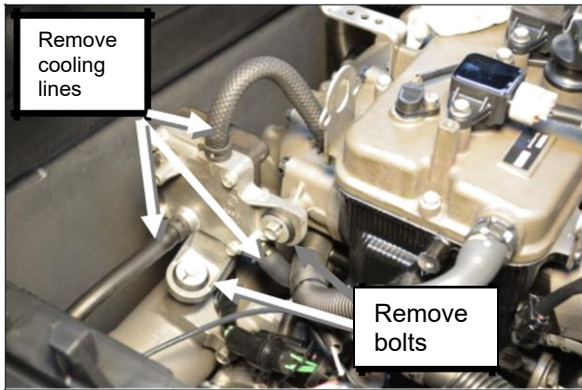
Reinstall 4-way fitting. Reconnect waterlines with existing spring clamps. Make sure waterlines are reinstalled in the correct location.

Locate exhaust thermo sensor on exhaust tail pipe. Follow sensor wire & disconnect. (green connector)

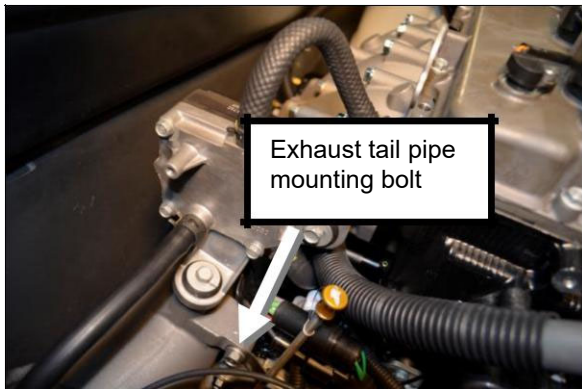


Loosen hose clamp on water box coupler hose at exhaust tail pipe.

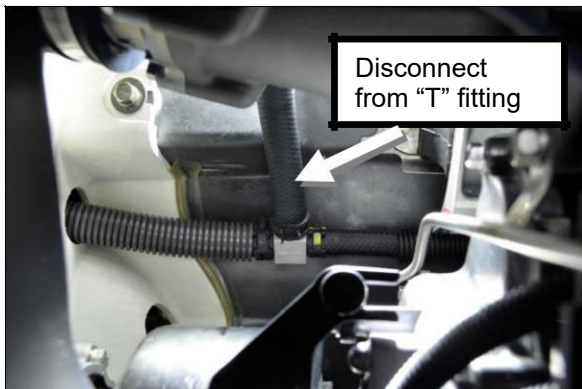
Remove the three cooling lines from rectifier regulator. Remove two bolts securing rec/reg to engine and move rec/reg aside.



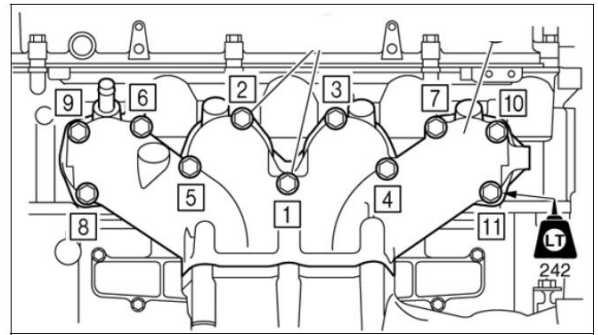
Remove exhaust tail pipe mounting bolt.



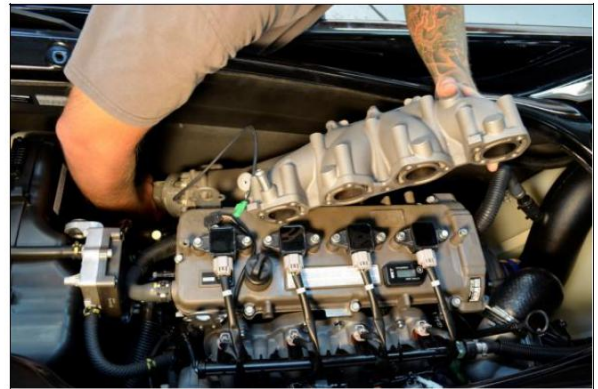
Disconnect exhaust tail pipe waterline from "T" fitting.



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

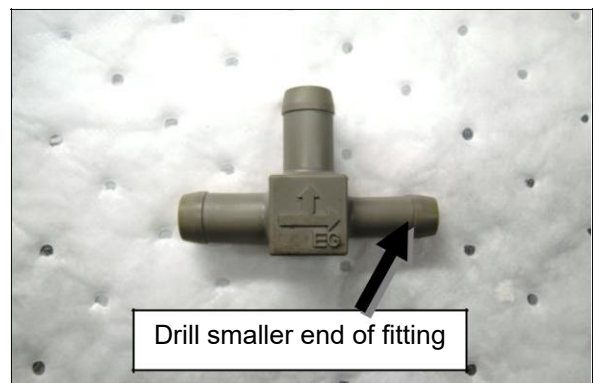


Remove exhaust pipe assembly by rotating away from engine towards hull. While lifting up at front pull forward to remove tail pipe from water box inlet.



Disconnect waterlines from gray "T" fitting and remove the fitting. Save the spring clamps for reinstallation.

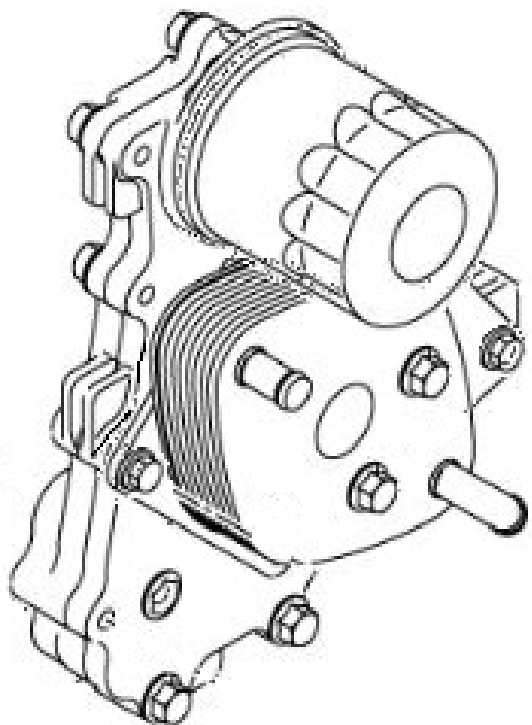
Using the supplied drill bit marked with white paint, drill out the hole on the smaller 3/8" side of the fitting. Clean any plastic shavings / debris that may be inside the fitting.



Reinstall "T" fitting. Connect waterlines reusing the spring clamps.

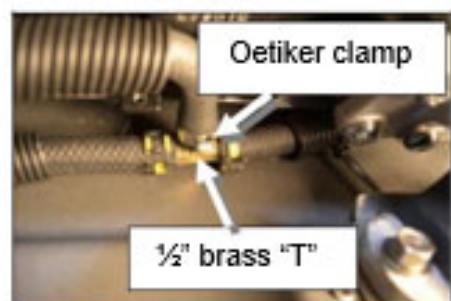
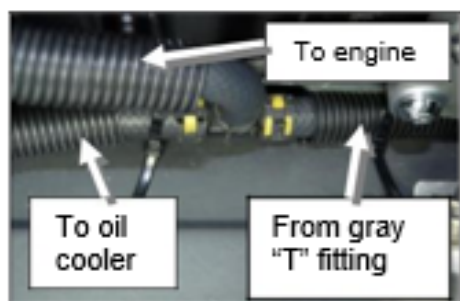


Yamaha SVHO engines may have either of two different oil coolers. If your oil cooler looks like the one below follow the instructions in this box.



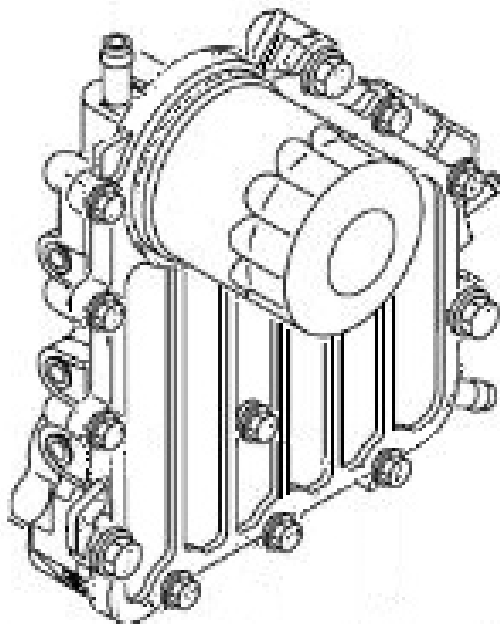
Locate the second black "T" fitting just under the starter motor. Disconnect waterlines & remove "T" fitting. Save two spring clamps for reinstallation.

Replace the black plastic "T" fitting with the supplied  $\frac{1}{2}$ " brass "T" fitting. Reuse the two spring clips on the larger diameter size waterline. Use the supplied Oetiker clamp to install the smaller diameter top waterline. **TIP:** Apply glass cleaner inside smaller diameter hose to ease installation on fitting.



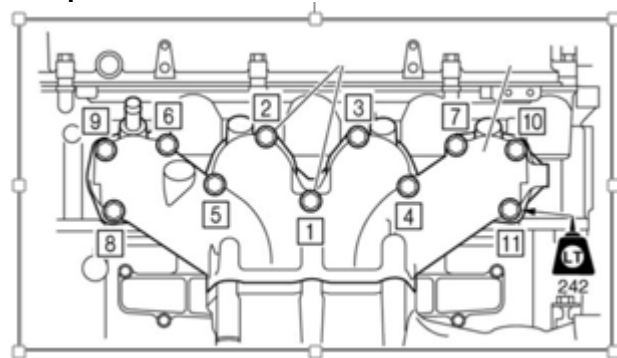
**Do not attempt to install brass "T" fitting if your oil cooler looks like the one at the top right of this page.**

If your oil cooler looks like the one below your ski will not need the brass "T" fitting supplied in this kit.



Reinstall exhaust assembly. **NOTE: Make sure the "6ET" marking on the exhaust gasket is facing out. If exhaust gasket is damaged, warped or corroded do not reuse.**

Apply blue Loctite to bolts. Torque bolts in sequence:



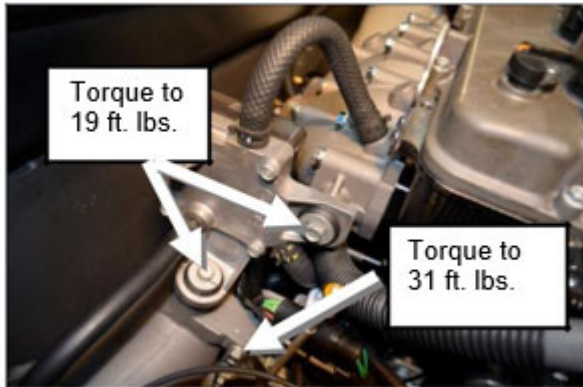
**TORQUE SEQUENCE:**  
First: 14 lbf•in / 20 N•m  
Second: 25 lbf•in / 35 N•m

Tighten hose clamp on exhaust outlet hose at tail pipe.

Connect cooling line at underside of exhaust tail section to top of gray "T" fitting. Secure using stock spring clamp.

Reinstall exhaust tail pipe mounting bolt. **Apply blue Loctite to bolt. Torque to 31 lbf•in / 42 N•m.**

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



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

Reconnect exhaust thermo sensor on exhaust tail pipe. (green connector).

Reinstall engine cover.

Installation is now complete. Thoroughly inspect engine compartment and bilge for tools, rags, parts, etc. Run craft on stand using 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@rivaracing.com](mailto:tech_support@rivaracing.com).

#### **Limited Warranty**

RIVA Racing Engine Cooling 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.