



RIVA RACING
PERFORMANCE PRODUCTS & ACCESSORIES

RIVA YAMAHA SVHO 'R3' AND 'R4' SUPERCHARGER IMPELLERS

RY17080-SCI-R3, RY17080-SCI-R4



GET THE LATEST UPDATES!

Prior to installation, go to the RIVA Racing online Instruction Library to download the latest version of these instructions:

<https://rivaracing.com/instructions>

Your kit was inspected and verified before being carefully packaged by our staff. Please check package contents before beginning assembly. If you have a question about missing or damaged items please contact RIVA Technical Support directly at (954) 247-0705 or by e-mail at tech_support@rivaracing.com.

Applications: Yamaha 1.8L SVHO

Approximate Installation Time: 1.5 Hr

Recommended Specialty Tools:

RIVA Supercharger Shaft Gear Holder

Inch•lb. Electronic Torque Wrench

Required Materials:

RIVA Supercharger Shaft Upgrade Kit

Part #

RY17040-ISH

N/A

Part #

RY17040-UK-6S5-4

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 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 *****

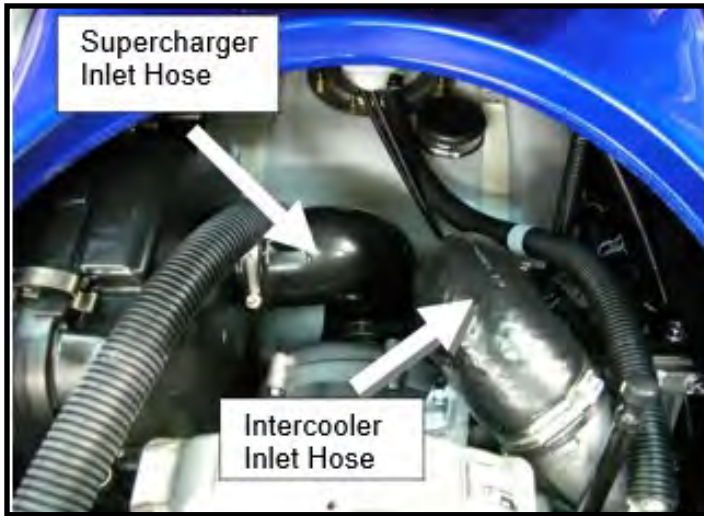
***** NO SMOKING *** NO SMOKING *** NO SMOKING *****

Caution: Whenever using electric or battery operated tools inside the hull be sure it is well ventilated and no fumes are present. Failure to do so could result in a fire, or explosion and serious personal injury or death.

This kit is not intended for use on pollution controlled vehicles. Installation on pollution controlled vehicles may constitute a violation of state or local statutes.

- INSTALLATION INSTRUCTIONS -

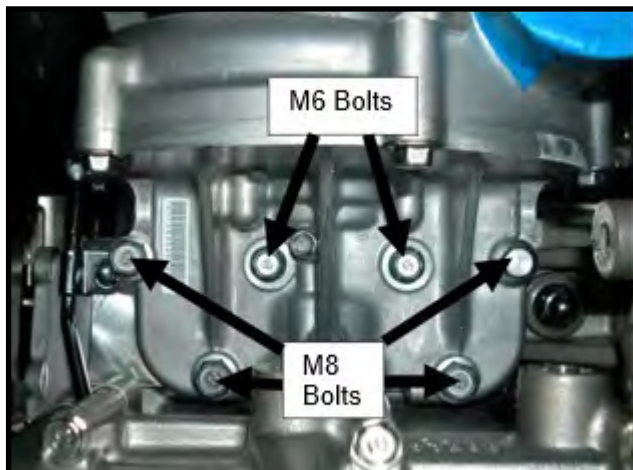
Disconnect battery cables from battery. Negative cable first (black). Positive cable second (red).
Remove plastic engine cover.
At front of engine remove supercharger inlet hose and intercooler inlet hose.



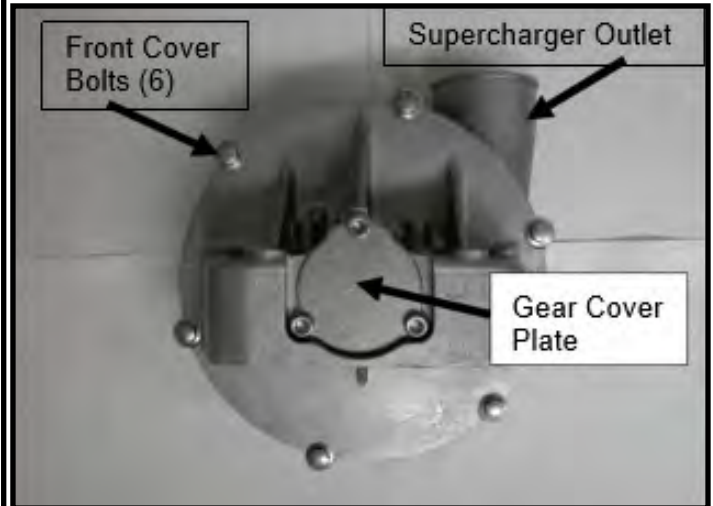
Cover supercharger air outlet and intercooler air inlet with masking tape to prevent debris from entering.
Remove intercooler support bracket. **Note:** Remove bolts securing intercooler to bracket first and bolts securing bracket to engine second.



Remove the M8 bolts (4), and M6 bolts (2) from supercharger unit. Remove supercharger unit from engine.



Cover opening on front of engine left where supercharger was removed to prevent debris from entering.
On back of supercharger remove bolts securing supercharger gear cover plate (3 bolts) and front cover (6 bolts).



Remove supercharger gear cover plate and gasket. Remove supercharger cover. **Notes:** It may be necessary to lightly tap outlet on supercharger cover to free it from supercharger. Take care not to damage supercharger cover. It is extremely important that the area utilized to work on the supercharger unit is very clean. Any foreign debris introduced into the supercharger unit will cause damage. It is equally important that care is taken when performing the following steps so as not to damage the impeller or working parts of the supercharger unit. Even a small mark on the impeller would ruin the dynamic balance causing severe damage.

Use RIVA part # RY17040-ISH supercharger shaft gear holding tool to hold shaft in place while loosening the impeller nut.



Apply a **small** amount of heat to supercharger impeller nut. Using a 1/4" ratchet and 6-point, 12mm socket loosen nut securing supercharger impeller to shaft by **ROTATING CLOCKWISE**. **NOTE: Threads are left-handed.** If nut is not easily loosened apply a **small** amount of heat and repeat.

- INSTALLATION INSTRUCTIONS -

Remove OE impeller by lifting up while twisting back and forth. It may be necessary to apply a small amount of heat to loosen impeller from shaft. **Note: Impeller blades are sharp (and hot if heat was used). Wear gloves or use a shop rag.**

NOTE: Installation of this impeller requires that the OEM impeller shaft be replaced with the RIVA Supercharger Shaft Upgrade Kit RY17040-UK-6S5-4. Do not install this impeller on the OEM impeller shaft.

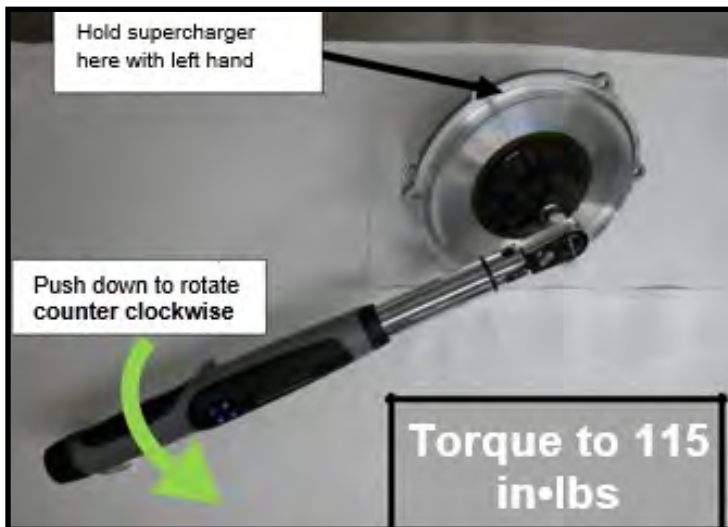
Clean impeller shaft thoroughly. Remove any leftover thread lock from impeller shaft threads. Clean outer edge of supercharger and supercharger cover (gasket mating surfaces) where they meet.

Warm RIVA supercharger impeller with a heat gun. With gear holding tool in place, while applying pressure to gear side of impeller shaft, install supercharger impeller onto shaft completely.

Apply red Loctite to impeller shaft threads and install impeller nut. **NOTE: Threads are left-handed.**

NOTE: The following step requires a 24~240 INCH·LB electronic torque wrench. A 1/4" drive is recommended, but a 3/8" drive will work. If an INCH·LB torque wrench is not available, DO NOT PROCEED until you locate one. DO NOT USE A CLICK-TYPE OR FOOT·LB TORQUE WRENCH.

Using an **INCH·LB** torque wrench and 6-point, 12mm socket tighten nut securing supercharger impeller to shaft by **ROTATING COUNTER CLOCKWISE**. **NOTE: Threads are left-handed. Torque nut to 115 INCH·LB by ROTATING COUNTER CLOCKWISE. Threads are left-handed.**

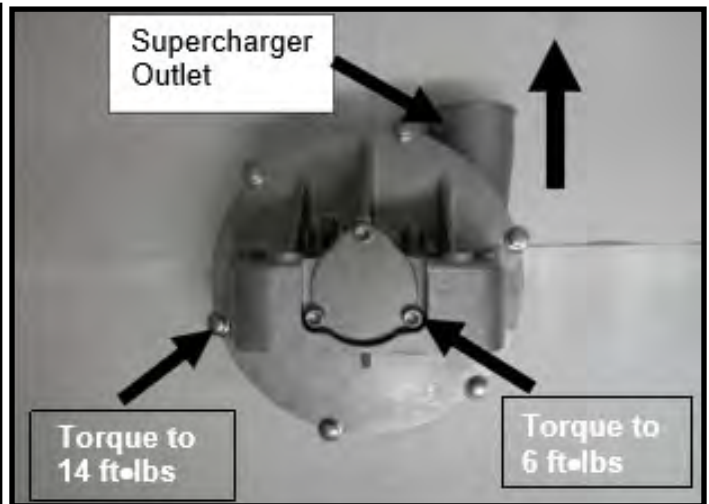


Remove gear holding tool. Spin supercharger impeller to check for smooth operation.

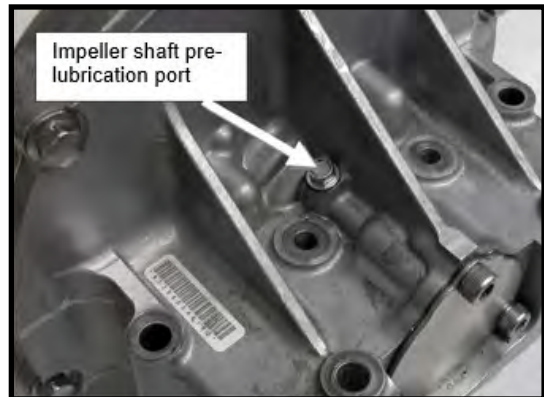
Apply a thin layer of high temperature sealant (Three Bond 1211 or equivalent) to gasket mating surface on supercharger cover. Install onto supercharger making sure outlet is pointing upward.

Secure supercharger cover using stock bolts. **NOTE: Apply blue Loctite to bolts. Torque bolts to 14 ft·lb.**

Clean excess sealant from edge of supercharger. Replace supercharger gear cover plate making sure gasket is in place and matched to cover plate. Secure using stock bolts. **NOTE: Apply blue Loctite to bolts. Torque bolts to 6 ft·lb.**

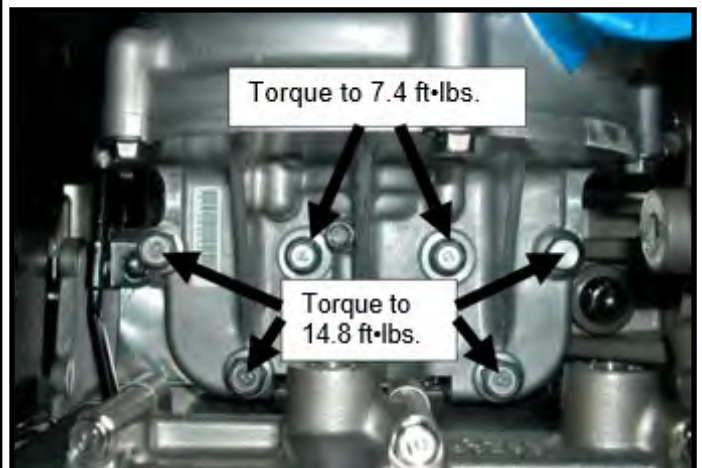


On top of supercharger gear housing remove the small bolt and gasket (washer). While rotating supercharger impeller add Yamalube 4M engine oil to pre-lubricate impeller shaft.



Inspect gasket (washer). If deformed or severely crushed replace with new gasket (washer). Order part# [6S5-14199-00-00](#). Install bolt and gasket (washer).

Note: Do not apply Loctite. Torque bolt to 3 ft·lb. Inspect underside of supercharger gear housing. Make sure o-ring is in o-ring groove and there are no foreign objects present. Apply a thin layer of grease onto o-ring. Install supercharger unit onto engine. **NOTE: Make sure locator pins (2) are in place. Secure using stock hardware. NOTE: Apply blue Loctite to bolts. Torque the four M8 bolts to 14.8 ft·lb and the two M6 bolts to 7.4 ft·lb.**



- INSTALLATION INSTRUCTIONS -

Replace intercooler support bracket. Torque bolts securing bracket to engine first and bolts securing intercooler to bracket second. **Note: Apply blue Loctite to bolts. Torque bolts to 31 ft·lb.**

NOTE: If a RIVA Performance Blow-off Valve Kit (part# RY17040-BV) will be installed continue with installation instructions supplied with blow-off valve. Otherwise proceed to next step.

Thoroughly clean supercharger outlet and intercooler outlet as well as inside of stock connector hoses with a non-residual cleaner.

Replace hoses and secure using stock clamps. **Note:**

Do not over tighten clamps.

Replace plastic engine cover.

Reconnect battery cables. Positive cable (red) first. Negative cable (black) second. Check bilge for rags, tools etc.

Run craft on a flush hose 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.

Limited Warranty

RIVA Supercharger Impellers 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.