



# **RIVA RACING**

**PERFORMANCE PRODUCTS & ACCESSORIES**

## **Heavy-duty Supercharger Bearing**

**PART# - RY17040-HDSCB-6S5**

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.

**APPLICATION(S):** Yamaha FX-SHO, FZR & FZS

**Required Specialty Tools**

IN•LB Electronic Torque Wrench  
Snap Ring Pliers  
(Internal Type / .036" Straight Tip / Deep Jaw)

**Part#**

N/A  
N/A

**Recommended tools**

Service Manual

**Part#**

Please Call

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

**- INSTALLATION INSTRUCTIONS -**

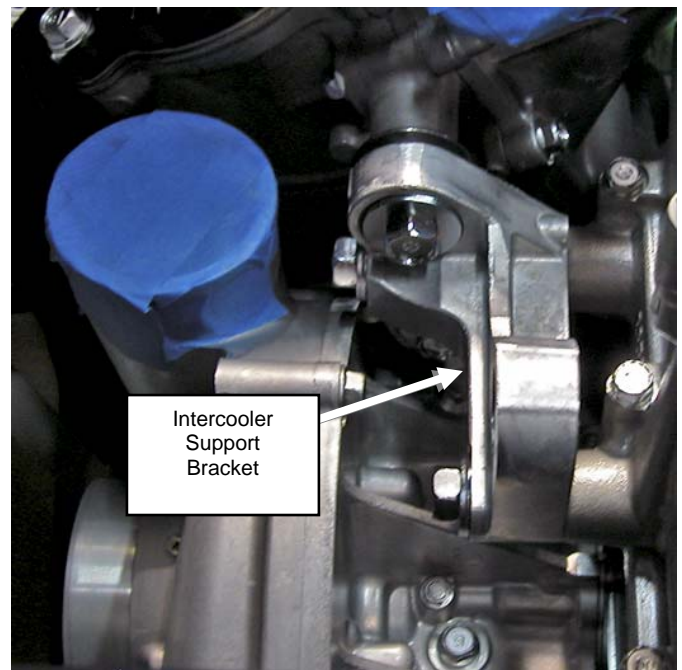
Remove plastic engine cover.

At front of engine remove hoses (2) between air box and supercharger and supercharger and intercooler.

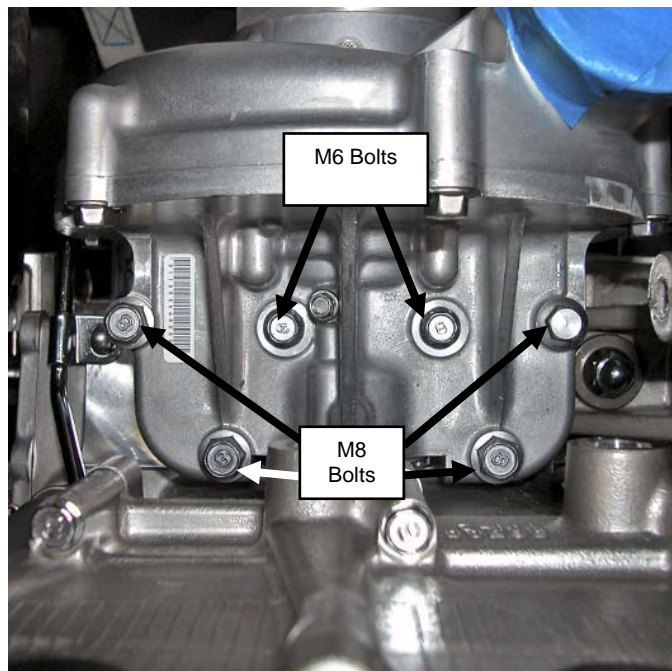


Cover supercharger air outlet and intercooler air inlet with masking tape to prevent debris from entering.

Remove intercooler support bracket. **Note:** Remove bolts securing intercooler to bracket first and bolts securing bracket to engine second.

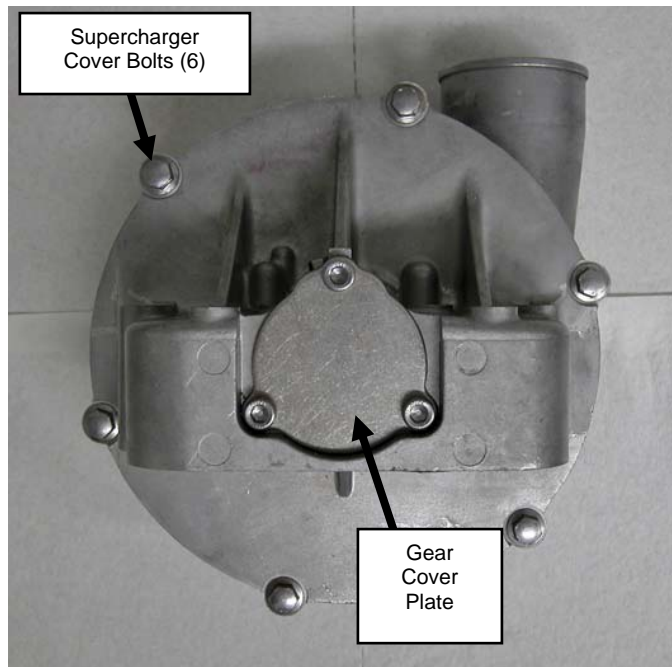


Remove supercharger unit.



Cover opening on front of engine after supercharger is removed to prevent debris from entering.

On back of supercharger remove bolts securing supercharger gear cover plate (3 bolts) and front cover (6 bolts).

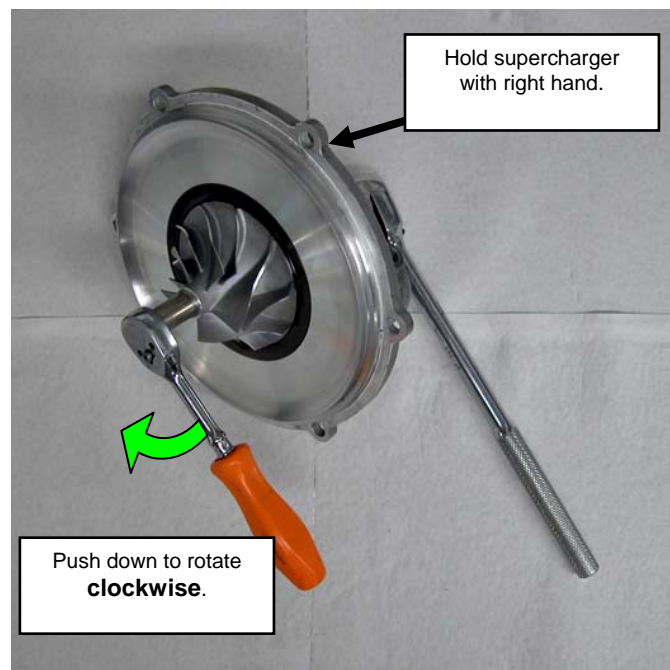


Remove supercharger gear cover plate and gasket. Remove supercharger front cover. **Note:** It may be necessary to lightly tap outlet on supercharger cover to free it from supercharger. **Take care not to damage supercharger cover.**

**NOTE:** 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.

Apply a **small** amount of heat to supercharger impeller nut.

Using a 3/8" ratchet and 6-point, 17mm socket hold nut at gear end of drive shaft. Allow supercharger to lean back so ratchet is supported by workbench. Using a 1/4" ratchet and 6-point, 10mm 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.



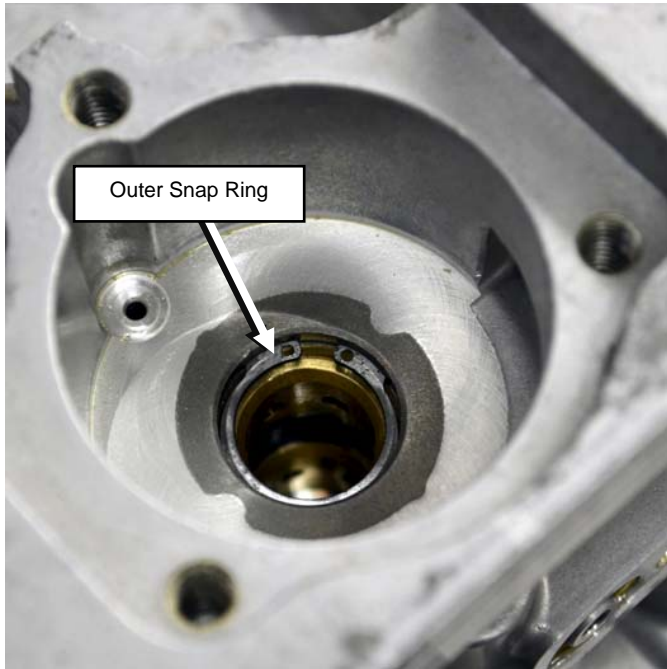
Remove supercharger impeller by lifting up while twisting back and forth. **Note: Impeller blades are sharp. Wear gloves or use a shop rag. It may be necessary to apply heat. DO NOT OVER HEAT.**

Clean impeller shaft thoroughly. Remove thread lock on impeller shaft threads.

Remove impeller shaft by sliding out at gear side of supercharger.

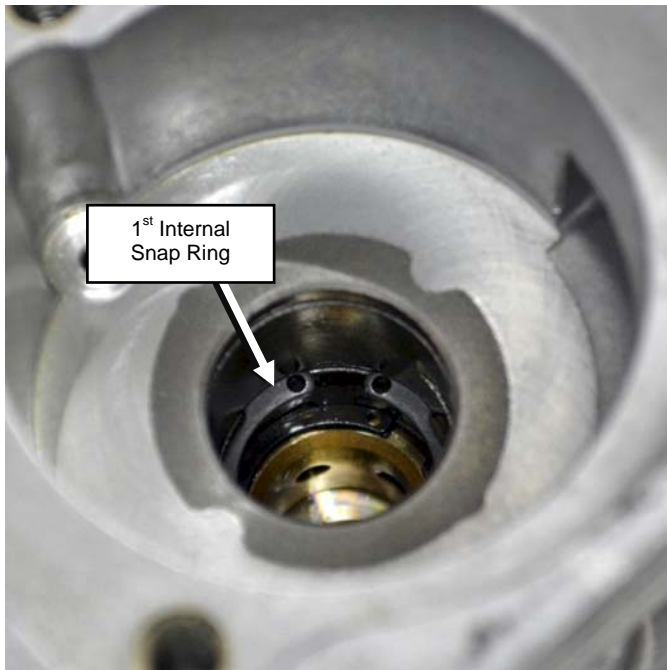


On impeller shaft gear side of supercharger locate internal snap ring securing supercharger bearing. Remove using snap ring pliers and set aside.

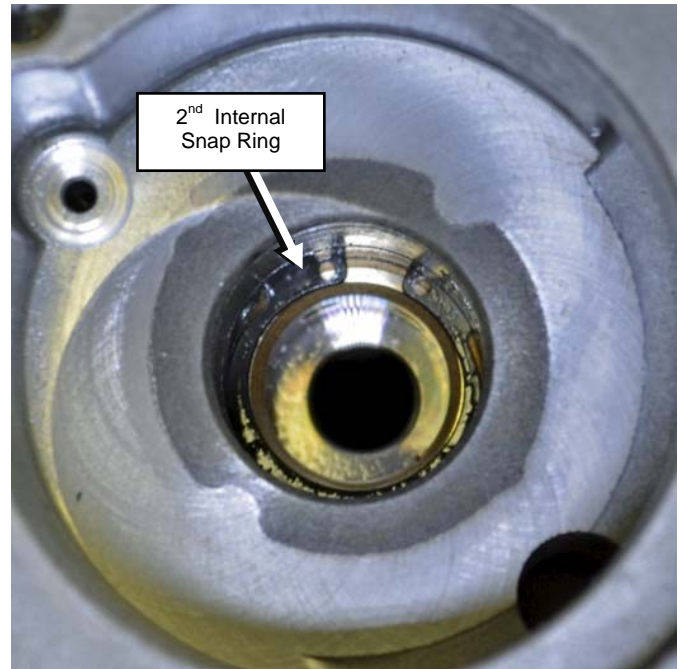


Remove impeller shaft bearing. **TIP:** Use a small wooden dowel.

Remove first of two internal snap rings and discard. **NOTE: Take care not to damage inner wall of supercharger.**



Remove second of two internal snap rings and discard. **NOTE: Take care not to damage inner wall of supercharger.**



Remove impeller shaft bearing. **TIP:** Use a small wooden dowel.

Clean outer edge of supercharger and supercharger cover (gasket mating surfaces) where they meet.

Inspect inside of supercharger to ensure bearing surface is clean.

Lubricate supplied supercharger bearing with Yamalube 4W and install into supercharger.

Thoroughly clean and replace outer snap ring. **NOTE: Internal snap rings (2) are no longer utilized. It is extremely important that you verify outer snap ring is properly seated in snap ring groove.**

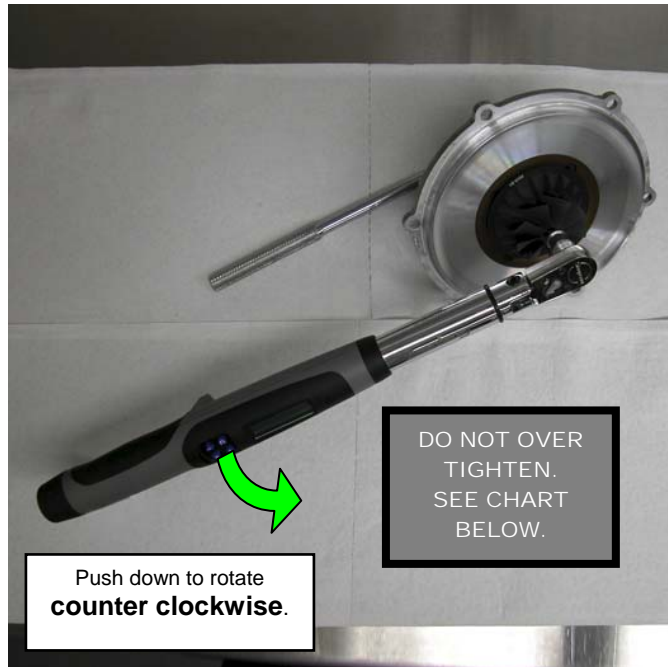
Thoroughly clean impeller shaft. Apply light coat of Yamalube 4W to bearing surface only. Install impeller shaft into supercharger from gear side.

Warm supercharger impeller with a heat gun. While applying pressure to gear side of impeller shaft install supercharger impeller onto shaft completely.

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

Using a 3/8" ratchet and 6-point, Deep 17mm socket hold nut at gear end of drive shaft. **NOTE: Take care not to allow socket to touch end of shaft.**

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



Using an electronic in•lb torque wrench and 6-point, 12mm socket tighten nut securing supercharger impeller to shaft.

**Stock Impeller Shaft:** Torque nut to **70in•lb** by rotating counter clockwise. **Threads are left-handed.**

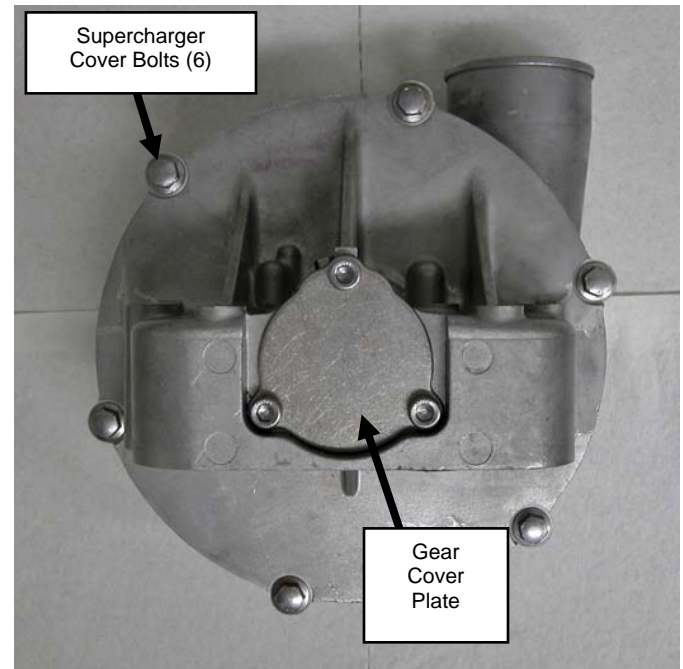
**RIVA Supercharger Shaft Kits:** Torque nut to **115in•lb** by rotating counter clockwise. **Threads are left-handed.**

Spin supercharger impeller to check for smooth operation.

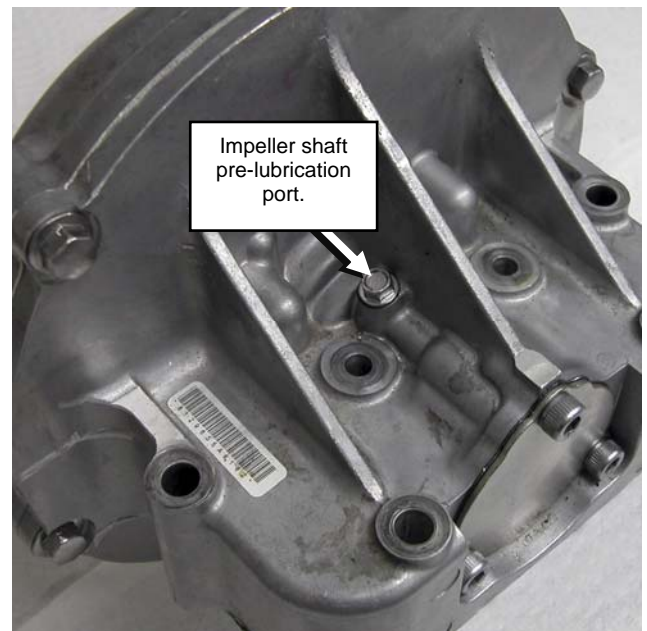
Apply a thin layer of high temperature sealant (Three Bond 1211 or equivalent) to gasket mating surface on supercharger cover. Install onto supercharger making sure outlet is pointing up.

Secure supercharger cover using stock bolts. **NOTE: Apply blue Loctite to bolts. Torque bolts in a criss-crossing pattern to 14 ft•lb.** Remove excess sealant from edge of supercharger housing.

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).



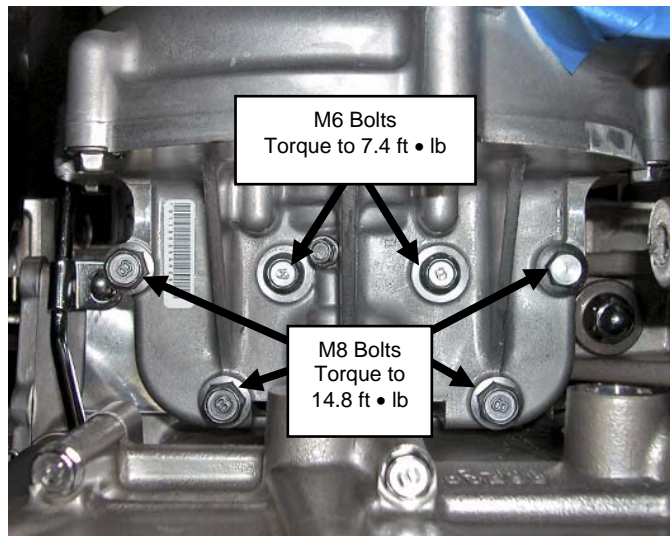
While rotating supercharger impeller slowly add Yamalube 4M engine oil to pre-lubricate impeller shaft.

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 between supercharger and motor.**

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.**



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.**

Thoroughly clean supercharger inlet and outlet, intercooler inlet and inside of hoses or couplers with a non-residual cleaner.

Replace hoses or couplers and secure using stock clamps. **Note: Do not over tighten clamps.**

Replace plastic engine cover.

Check bilge for tools, rags, etc. Run craft on flush kit to check for air leaks and to ensure smooth operation of supercharger

***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](mailto:tech_support@rivamotorsports.com).

#### **Limited Warranty**

RIVA Heavy-duty Supercharger Bearings carry a 30-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.