



RIVA RACING

PERFORMANCE PRODUCTS & ACCESSORIES

GEN-3 Super-duty Supercharger Shaft Kit

PART# - RY17040-UK-6S5-3

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. We suggest reading through the instructions entirely before performing installation. Please follow these step-by-step instructions and illustrations carefully.

APPLICATION(S): Yamaha 1.8L Supercharged Engines

Required tools

IN•LB Electronic Torque Wrench
T-30 Torx Bit Socket
3mm Allen Wrench
Snap Ring Pliers (Internal Type - .036" tips)

Part#

N/A
N/A
N/A
N/A

Recommended tools

Service Manual Please Call

Part#

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

- INSTALLATION INSTRUCTIONS -

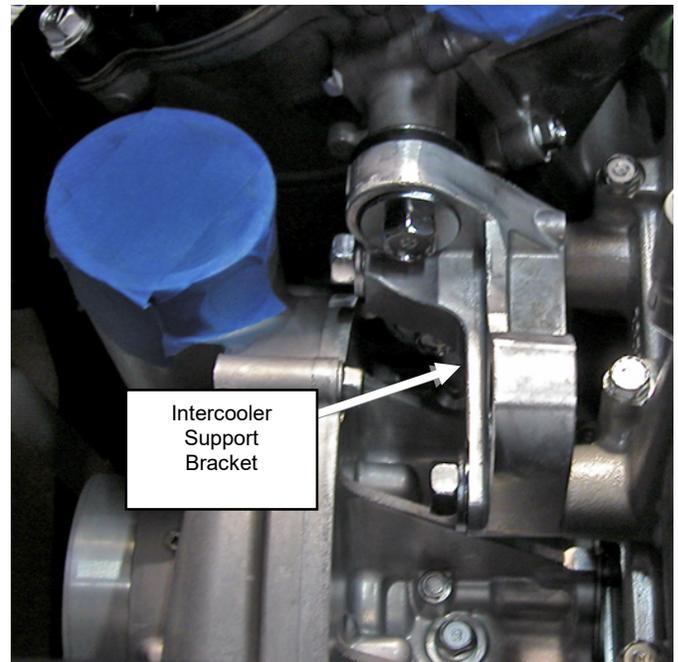
Remove plastic engine cover.

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

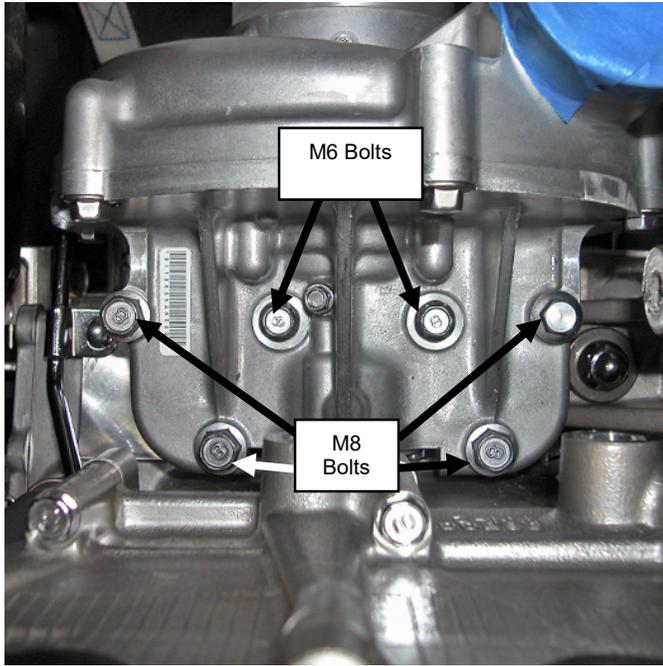


Cover supercharger air outlet and intercooler air inlet with masking tape to prevent debris from entering.

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

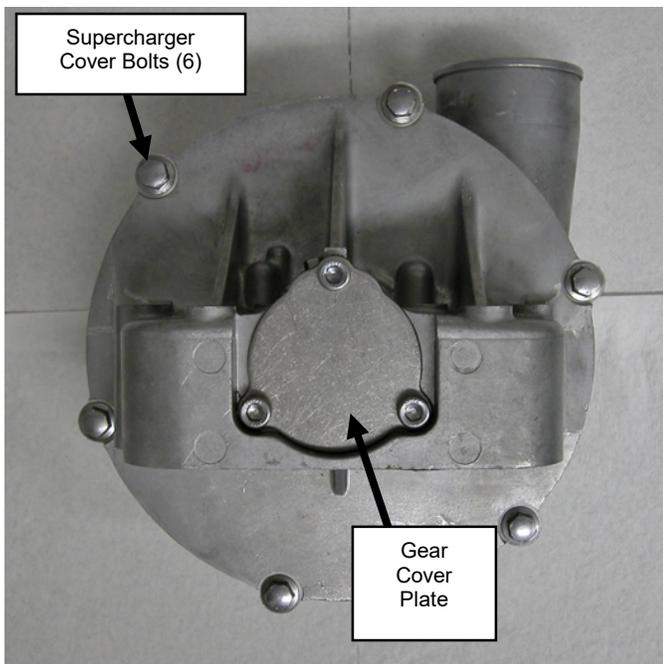


Remove supercharger unit.



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).

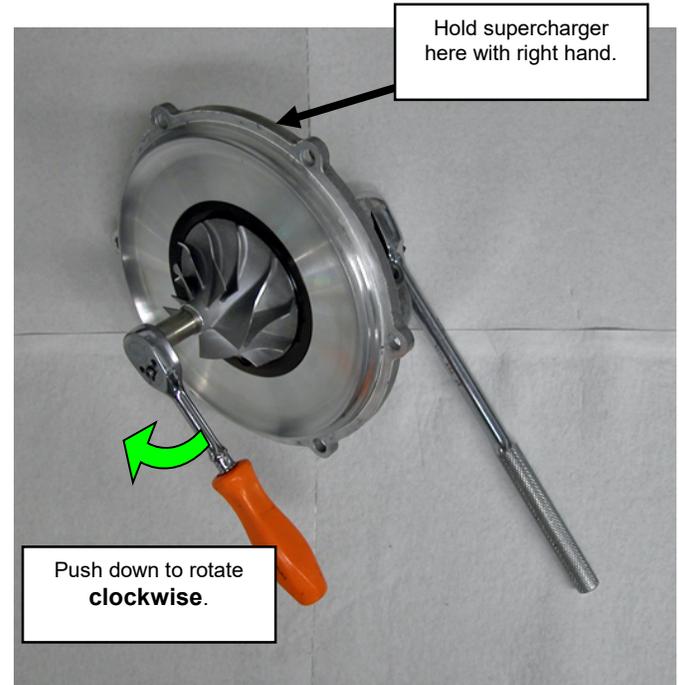


Remove supercharger gear cover plate and gasket. Remove supercharger front cover. **Note:** It may be necessary to lightly tap outlet on supercharger cover to free it from supercharger. **Take care not to damage supercharger cover.**

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.

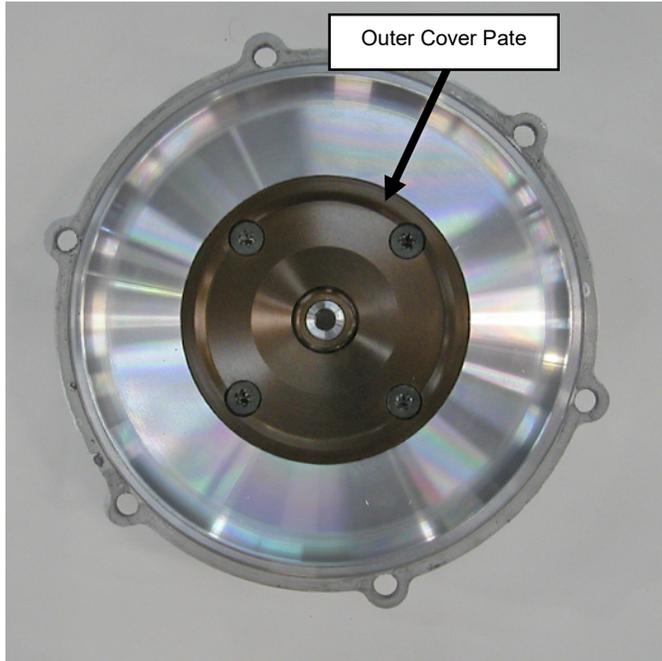


Remove OE supercharger impeller by lifting up while twisting back and forth. **Note: Impeller blades are sharp. Wear gloves or use a shop rag.**

Clean impeller shaft thoroughly. Remove any leftover thread lock on impeller shaft threads. Remove impeller shaft by sliding out at gear side of supercharger.

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

On impeller side of supercharger remove the 4 Torx bolts securing outer cover plate. Remove outer cover plate. **TIP:** Use a small wooden dowel to push through from back side of supercharger.

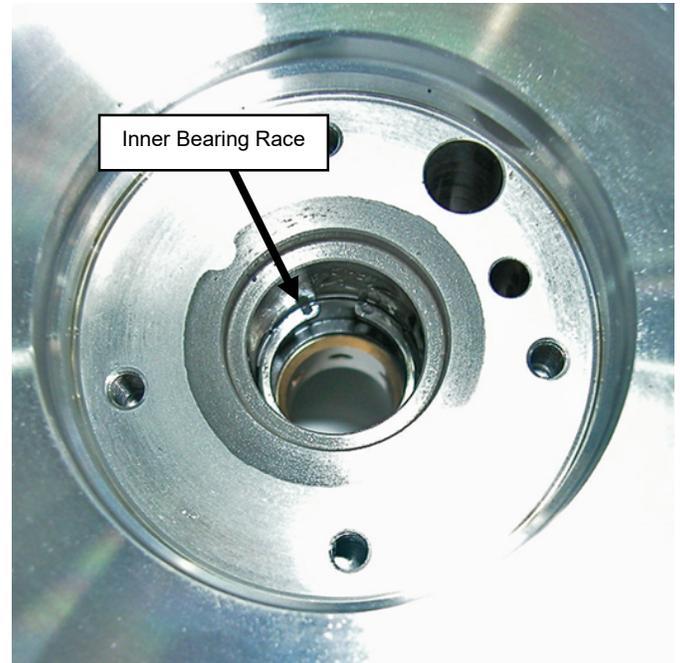


Remove the 4 allen bolts securing inner cover plate. Remove inner cover plate and place on a clean surface. **TIP:** Use a small wooden dowel to push through from back side of supercharger.



Remove impeller shaft bearing by holding supercharger upside down. **TIP:** Use a small wooden dowel to remove.

Locate the internal snap ring. Remove using 'internal snap ring pliers' and discard.



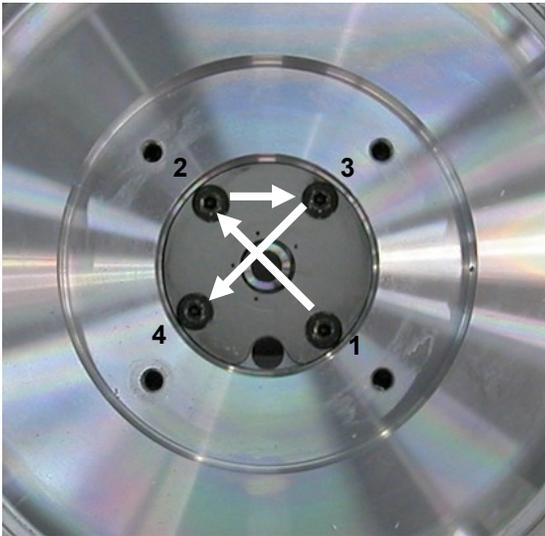
Remove impeller shaft bearings. **TIP:** Use a small wooden dowel to remove.

IMPORTANT:

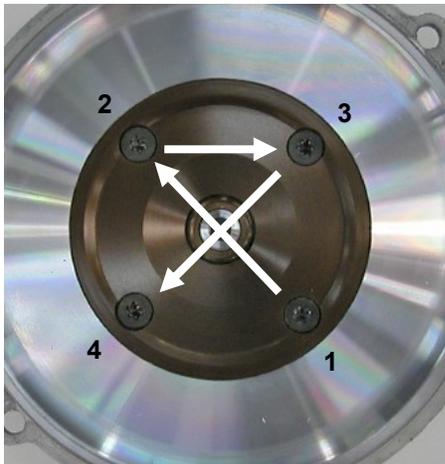
You must use new bearing supplied with new 'Super-duty Supercharger Shaft Kit'.

Lubricate supplied impeller shaft bearing with Yamalube 4W and install. Replace gear side snap ring. **NOTE: Internal snap ring is no longer utilized. It is extremely important that you verify outer snap ring is properly seated in snap ring groove. Verify bearing rotates freely.**

Thoroughly clean underside of inner cover plate (side with channels) Apply Yamalube 4W to both sides. Install and secure using OE hardware. **NOTE: DO NOT APPLY LOCTITE TO BOLTS. Apply Yamalube 4M to threads. Torque in sequence to 31 in•lb using a 24~240 in•lb 1/4" drive electronic torque wrench. DO NOT USE A CLICK-TYPE or A 3/8" DRIVE TORQUE WRENCH.**



Inspect underside of outer cover plate making sure it is free of debris and o-ring is in place. Install o-ring side down and secure using OE hardware. **NOTE: Apply blue Loctite to bolts. Torque in sequence to 79 in•lb.**



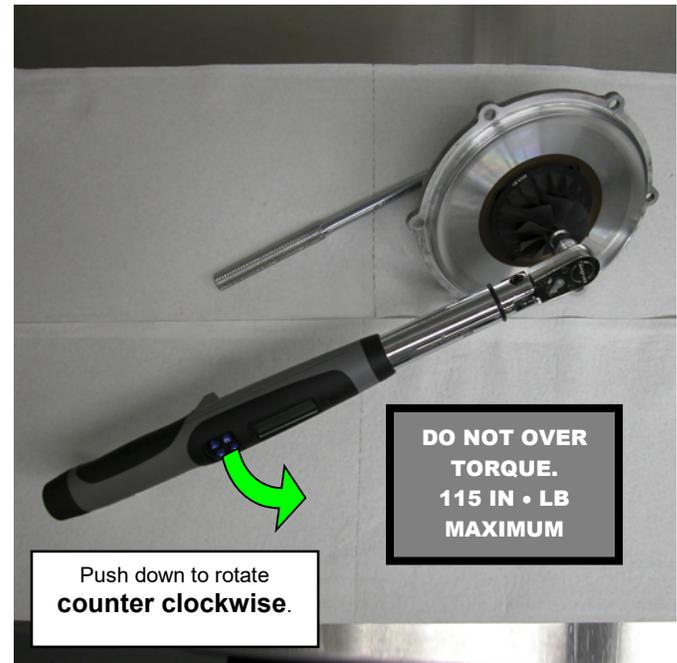
Thoroughly clean inside and outside of supplied supercharger impeller shaft using a non-residual cleaner. Coat impeller shaft bearing surface with Yamalube 4W. Install into supercharger from gear side.

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 supplied 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 by **ROTATING COUNTER CLOCKWISE.**

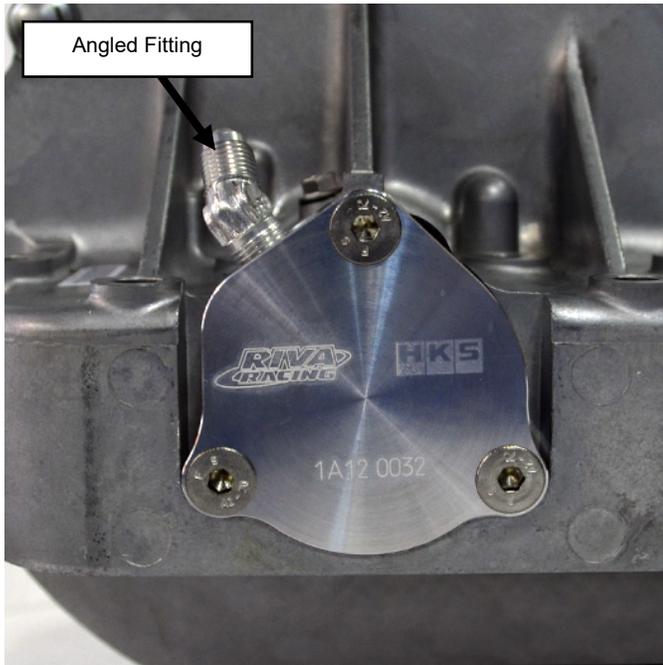
NOTE: Threads are left-handed. Torque nut to 115 in•lb by ROTATING COUNTER CLOCKWISE. Threads are left-handed.

Spin supercharger impeller to check for smooth operation.

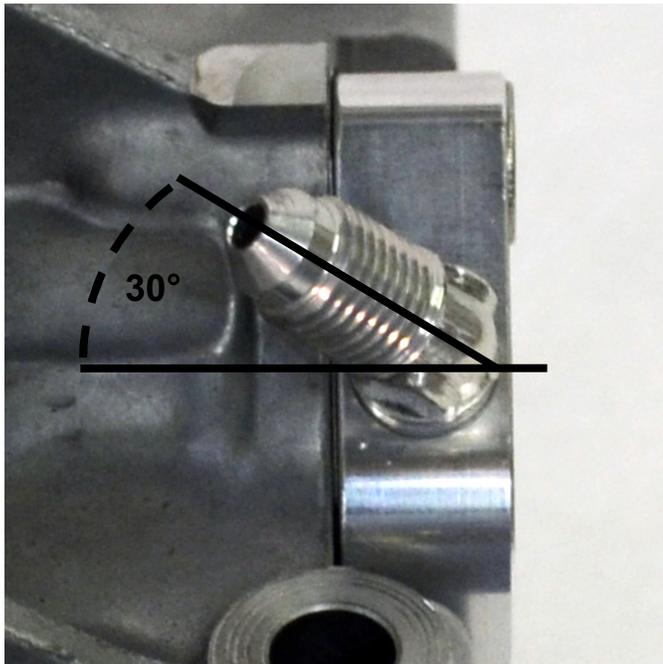
Apply a thin layer of high temperature sealant (Three Bond 1211 or equivalent) to gasket mating surface on supercharger cover. Install onto supercharger making sure outlet is pointing upward.

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.

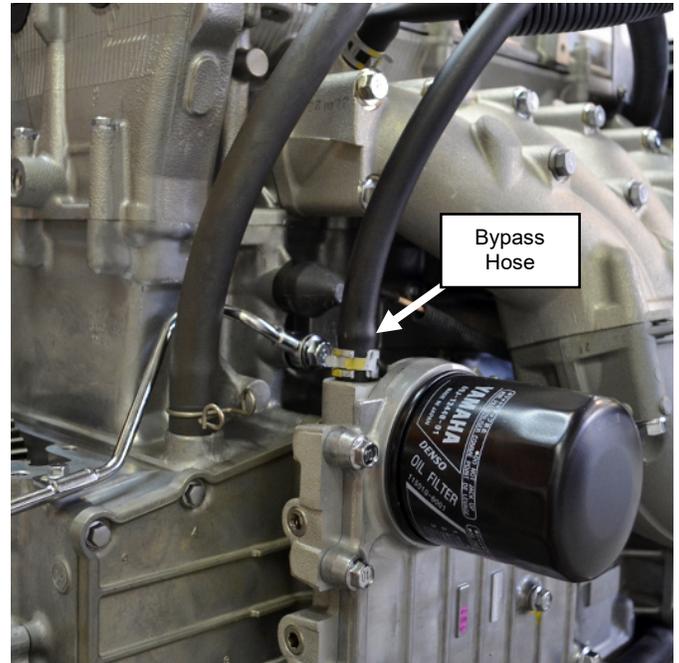
Install supplied billet supercharger gear lubrication plate making sure gasket is in place and matched to cover plate. Secure using stock bolts. **NOTE: Apply blue Loctite to bolts. Torque bolts to 6 ft•lb.**



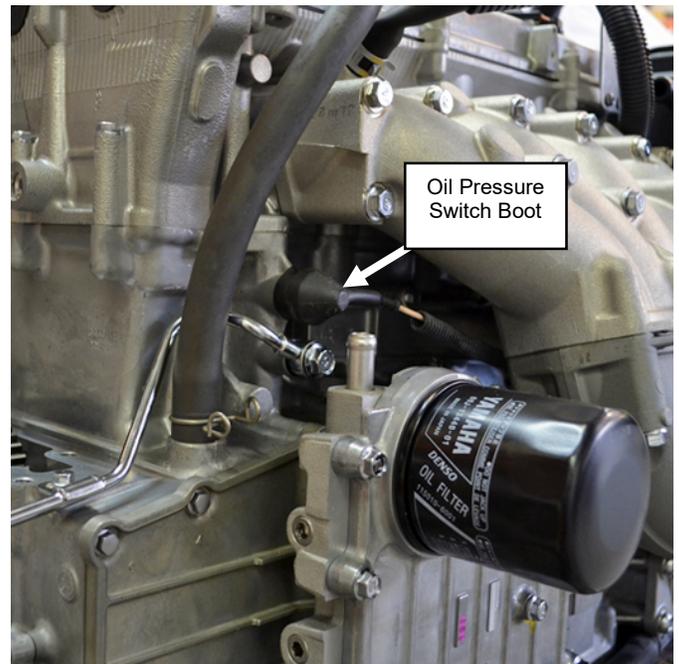
Apply pipe thread sealant to 'male pipe threads' on supplied angled oil line fitting. Install into billet lubrication cover plate. Tighten until fitting is parallel with supercharger impeller shaft. Tighten another 30-degrees.



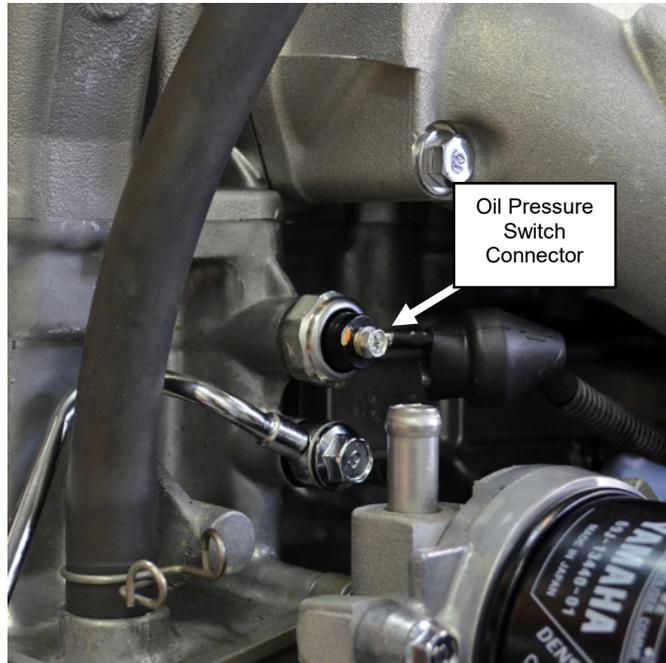
On exhaust side of engine crankcase remove bypass hose from fitting at top of oil cooler.



Remove rubber boot protecting oil pressure switch connection.

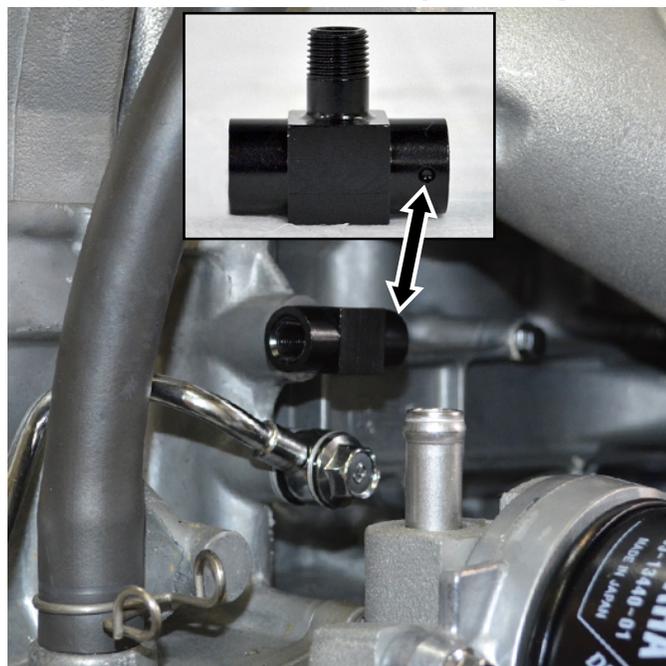


Remove bolt securing oil pressure switch wire to oil pressure switch.



Remove oil pressure switch.

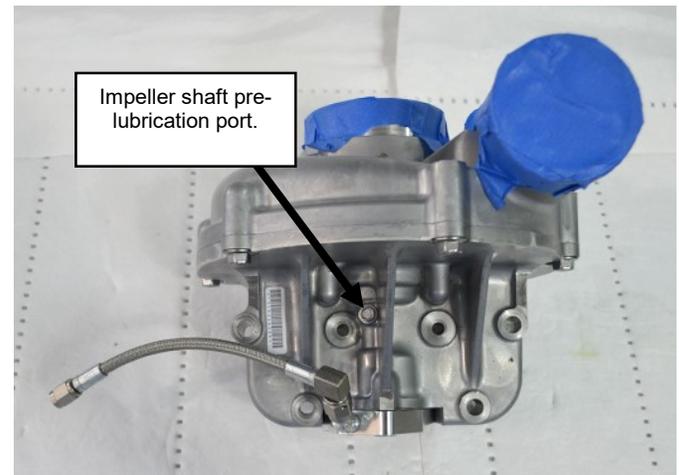
Install supplied billet 'T' fitting into engine crankcase. Tighten until side of fitting with machined dot faces rear of engine/craft. **NOTE: Apply pipe thread sealant to male pipe threads. Do not over tighten fitting.**



Install supplied straight oil line fitting and oil pressure switch into billet 'T' fitting. **NOTE: Apply pipe thread sealant to male pipe threads. Do not over tighten fittings.**

Reconnect oil pressure switch electrical wire and replace rubber boot.

Apply Yamalube 4M engine oil to JIC threads of fitting installed on supercharger. Install 90-degree JIC fitting of supplied braided oil line onto supercharger fitting. Align braided line and tighten fitting.



NOTE: Secure fitting on supercharger before applying final torque to braided line fitting.

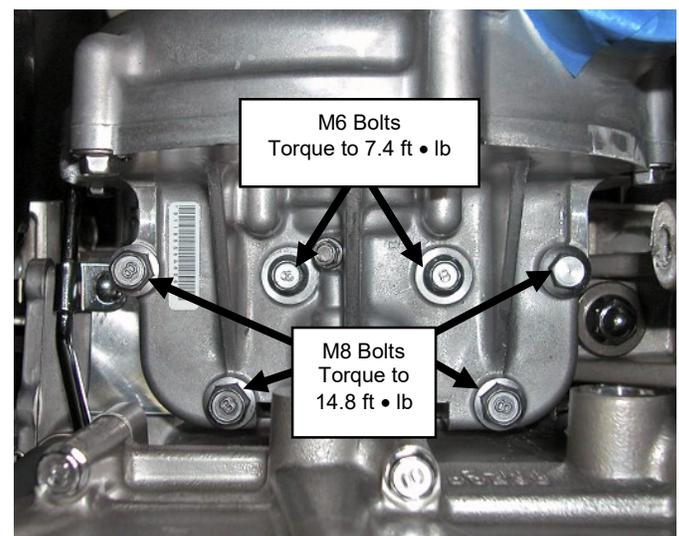
On top of supercharger gear housing remove the small bolt and gasket (washer). While rotating supercharger impeller slowly add Yamalube 4M engine oil to pre-lubricate impeller shaft.

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.**

Apply Yamalube 4M engine oil to JIC threads of fitting installed in billet 'T' fitting in crankcase. Secure loose end of braided oil line to JIC fitting. Align braided line and tighten fitting.



NOTE: Secure JIC fitting in billet 'T' fitting before applying final torque to braided line fitting.

Replace oil cooler bypass hose and secure with stock clamp.

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.

Limited Warranty

RIVA Super-duty Supercharger Shaft 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.