



RIVA RACING
PERFORMANCE PRODUCTS & ACCESSORIES

Supercharger Shaft Upgrade Kit

PART# - RY17040-UK-6S5-2

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

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

Part#

Please Call

***** NOTE: Allow craft's engine to cool thoroughly before performing installation. *****

- INSTALLATION INSTRUCTIONS -

1. Remove plastic engine cover.
2. At front of engine remove hoses (2) between air box and supercharger and supercharger and intercooler. (see illustration #1)
3. Cover supercharger air outlet and intercooler air inlet with masking tape to prevent debris from entering.
4. Remove intercooler support bracket. (see illustration #2) **Note:** Remove bolts securing intercooler to bracket first and bolts securing bracket to engine second.
5. Remove supercharger unit. (see illustration #3)
6. Cover opening on front of engine left when supercharger was removed to prevent debris from entering.
7. On back of supercharger remove bolts securing supercharger gear cover plate (3 bolts) and front cover (6 bolts). (see illustration #4)
8. 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.

9. **Reference illustration image #5.** 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.
10. **Reference illustration image #5.** Apply a **small** amount of heat to supercharger impeller nut. 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.
11. Remove OE supercharger impeller by lifting up while twisting back and forth. **Note: Impeller blades are sharp. Wear gloves or use a shop rag.**
12. Clean impeller shaft thoroughly. Remove any leftover thread lock on impeller shaft threads. Remove impeller shaft by sliding out at gear side of supercharger.
13. Clean outer edge of supercharger and supercharger cover (gasket mating surfaces) where they meet.
14. On impeller side of supercharger remove the 4 Torx bolts securing outer cover plate. (see illustration #6) Remove outer cover plate. **TIP:** Use a small wooden dowel to push through from back side of supercharger.
15. Remove the 4 allen bolts securing inner cover plate. (see illustration #7) Remove inner cover plate and place on a clean surface. **TIP:** Use a small wooden dowel to push through from back side of supercharger.

16. Remove impeller shaft bearing by holding supercharger upside down. **TIP:** Use a small wooden dowel to remove.
17. Locate the internal snap ring on gear side of supercharger holding impeller shaft bearing in place. (see illustration #9) Remove using 'internal snap ring pliers' and discard.
18. Remove impeller shaft bearings by holding supercharger upside down. **TIP:** Use a small wooden dowel to remove.
19. Lubricate supplied impeller shaft bearing with Yamalube 4W. Install in place of OE impeller shaft bearings. 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.**
20. 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 LOC-TITE 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. (see illustration #10) DO NOT USE A CLICK-TYPE or A 3/8" DRIVE TORQUE WRENCH.**
21. 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. (see illustration #11) **NOTE: Apply blue Loc-tite to bolts. Torque in sequence to 79 in•lb.**
22. Apply Yamalube 4W to entire length of supplied supercharger impeller shaft. Install into supercharger from gear side. Thoroughly clean impeller shaft mating surface using a non-residual cleaner.
23. Warm supercharger impeller with a heat gun. While applying pressure to gear side of impeller shaft install supercharger impeller onto shaft completely.
24. Apply red Loc-tite to threads inside supplied impeller nut only and install. **NOTE: Threads are left-handed.**
25. **Reference illustration image #12.** 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.
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.
26. **Reference illustration image #12.** 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.**
27. Spin supercharger impeller to check for smooth operation.
28. 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. (see illustration #4)
29. Secure supercharger cover using stock bolts. **NOTE: Apply blue Loc-tite to bolts. Torque bolts in a criss-crossing pattern to 14 ft•lb.** Clean excess sealant from edge of supercharger.
30. Replace supercharger gear cover plate making sure gasket is in place and matched to cover plate. Secure using stock bolts. **NOTE: Apply blue Loc-tite to bolts. Torque bolts to 6 ft•lb.**
31. On top of supercharger gear housing remove the small bolt and gasket (washer). (see illustration #13) While rotating supercharger impeller add Yamalube 4M engine oil to pre-lubricate impeller shaft.
32. 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 Loc-tite. Torque bolt to 3 ft•lb.**
33. 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.
34. Install supercharger unit onto engine. (see illustration #14) **NOTE: Make sure locator pins (2) are in place between supercharger and motor.** Secure using stock hardware. **NOTE: Apply blue Loc-tite to bolts. Torque the four M8 bolts to 14.8 ft•lb and the two M6 bolts to 7.4 ft•lb.**
35. Replace intercooler support bracket. Torque bolts securing bracket to engine first and bolts securing intercooler to bracket second. **NOTE: Apply blue Loc-tite to bolts. Torque bolts to 31 ft • lb.**
36. Thoroughly clean supercharger outlet and intercooler inlet as well as inside of stock connector hoses with a non-residual cleaner.
37. Replace hoses and secure using stock clamps. **Note: Do not over tighten clamps.**
38. Replace plastic engine cover.
39. 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 Supercharger Impeller Shaft 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.

- INSTALLATION IMAGES -

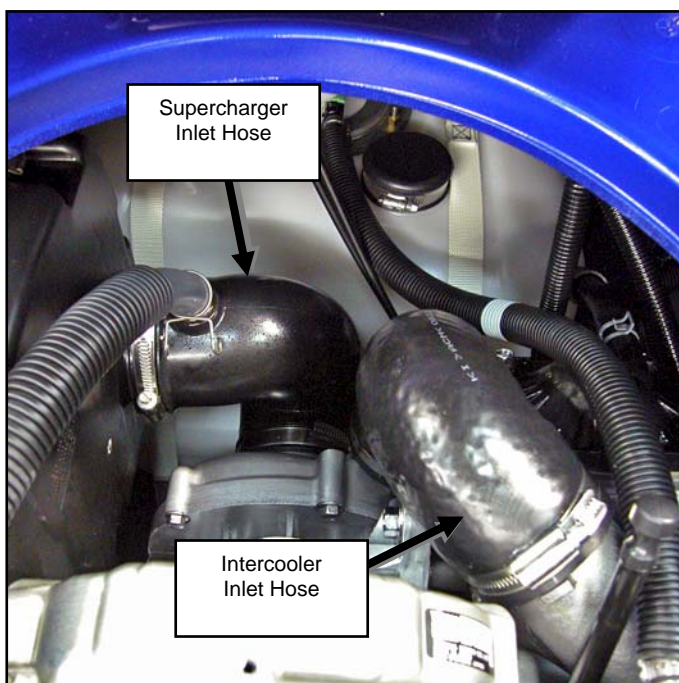


Illustration #1

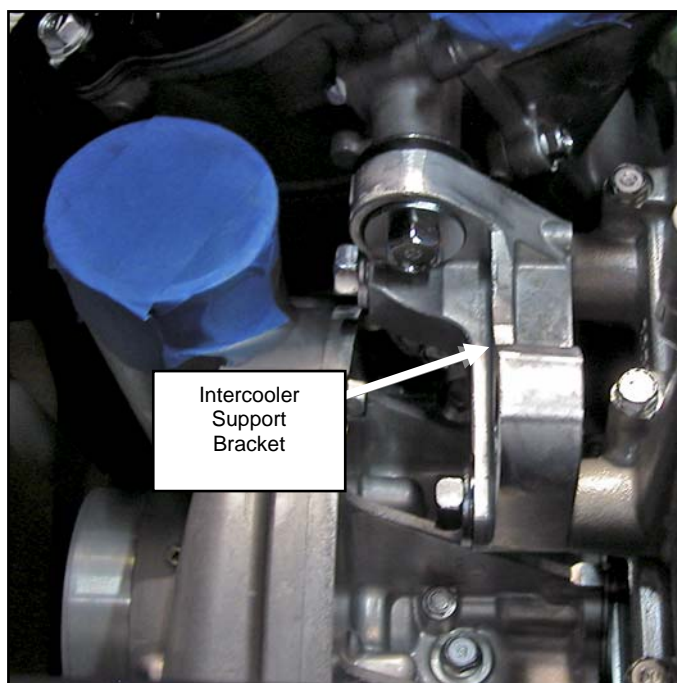


Illustration #2

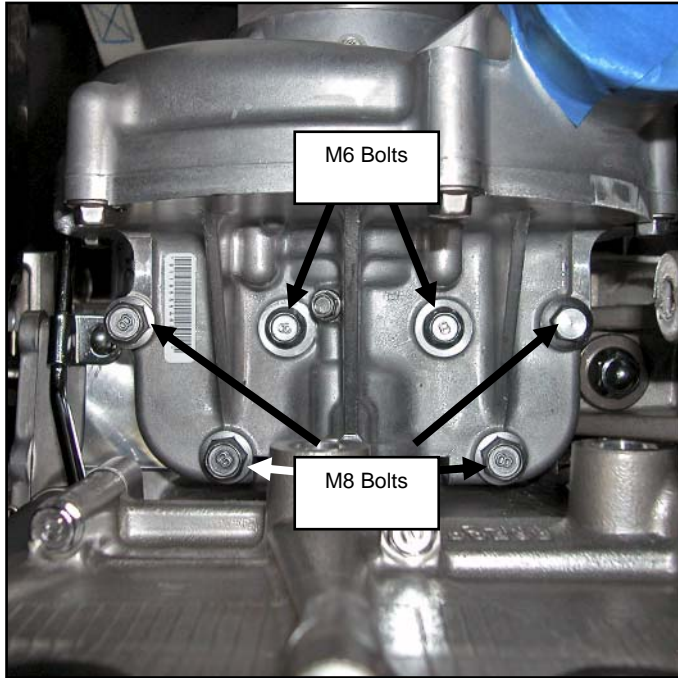


Illustration #3

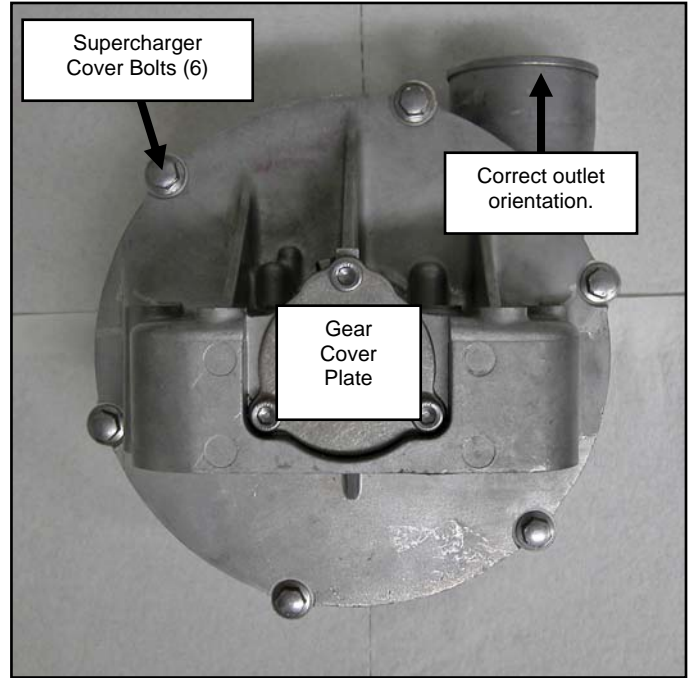


Illustration #4

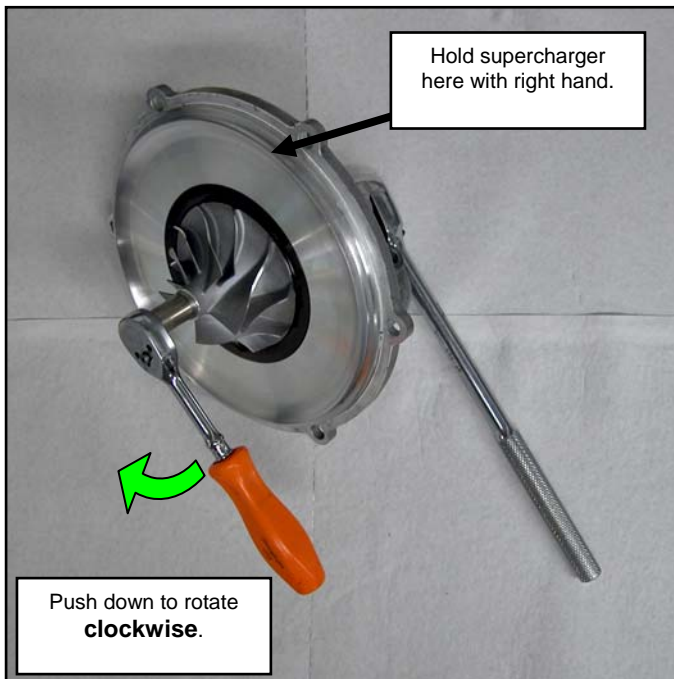


Illustration #5

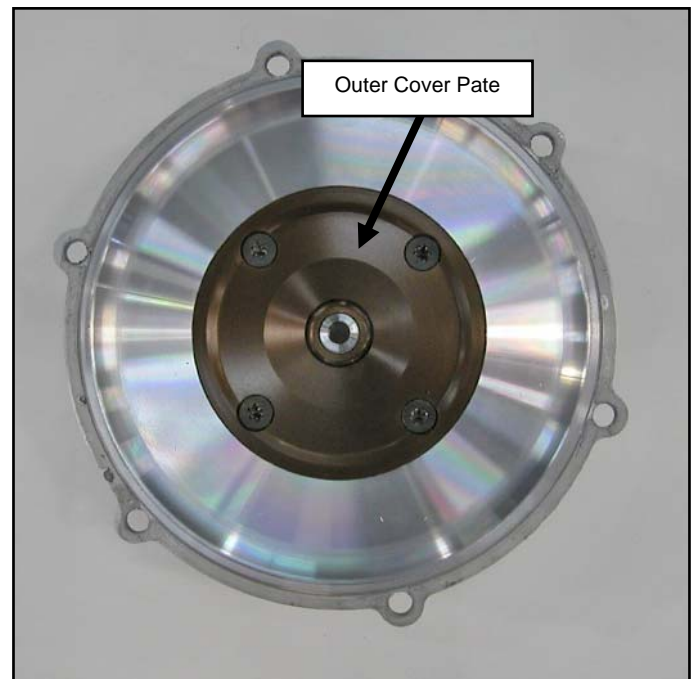


Illustration #6



Illustration #7

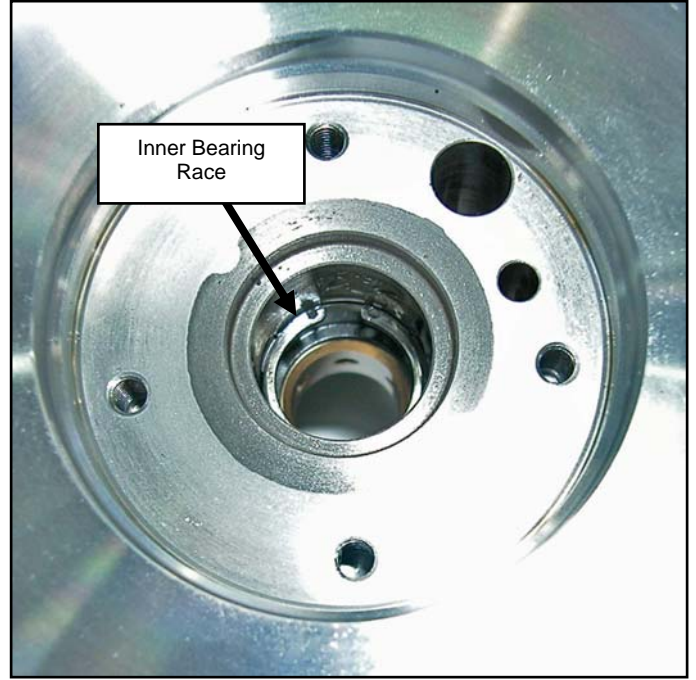


Illustration #8



Illustration #9



Illustration #10

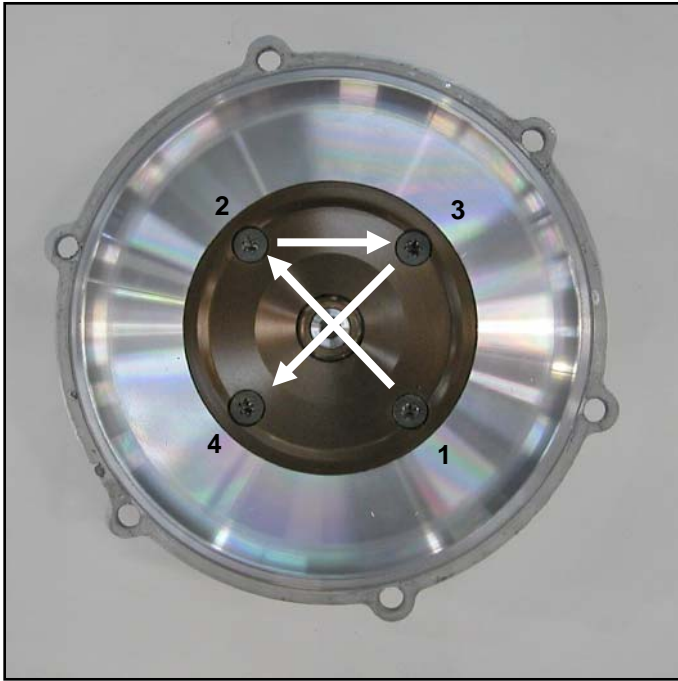


Illustration #11



Illustration #12

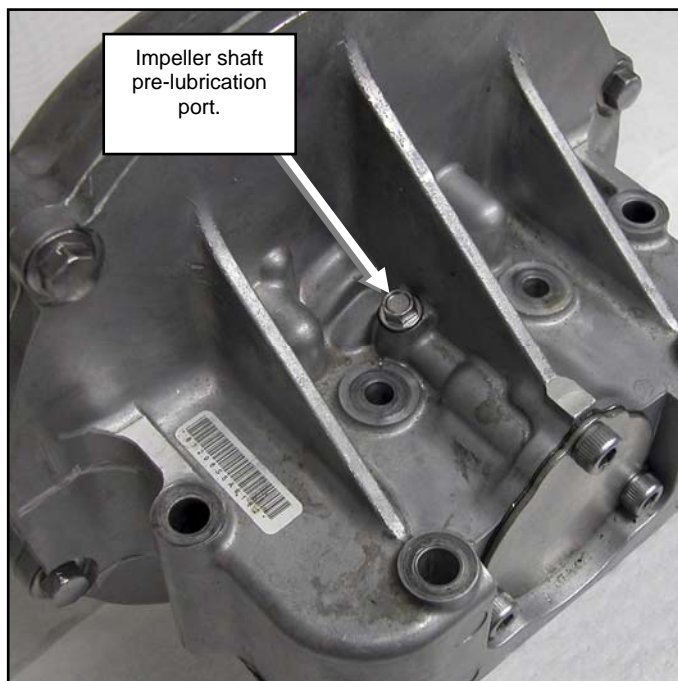


Illustration #13

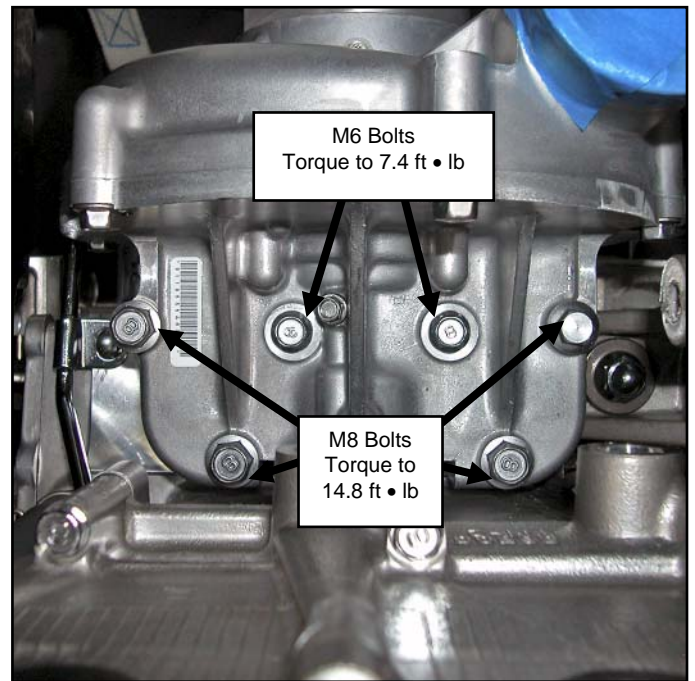


Illustration #14