



RIVA RACING
PERFORMANCE PRODUCTS & ACCESSORIES

OEM Intercooler Upgrade Kit

PART# - RY17040-ICUK

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

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 point form and refer to illustrations. Please follow these step-by-step instructions and illustrations carefully.

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

- INSTALLATION INSTRUCTIONS -

1. Disconnect battery cables. **NOTE: Negative (black) first. Positive (red) second.**
2. Remove plastic engine cover.
3. While holding a heavy shop rag under fitting disconnect fuel supply hose from front of engine fuel supply rail. (see illustration #1) **NOTE: Fuel system is under pressure. Use care when disconnecting.**
4. Reach down alongside intake manifold to locate coupler connecting intercooler to 'J' pipe. (see illustration #2) Loosen clamp securing coupler to intercooler.
5. At front of engine remove hose connecting supercharger to intercooler. (see illustration #3)
6. Cover supercharger air outlet with masking tape to prevent debris from entering. (see illustration #4)
7. Remove intercooler support bracket. (see illustration #4) **Note:** Remove the two bolts securing intercooler to bracket first and the two bolts securing bracket to engine second.
8. At reverse lever reach up behind hood cowling and disconnect reverse cable from lever. (see illustration #5) Remove brass nuts (2) securing reverse cable bracket to hull. Pull cable down into engine compartment and lay over towards left side of craft.
9. At top of intercooler disconnect cooling outlet hose. (see illustration #6)
10. At bottom of intercooler remove cap nut securing intercooler to engine mount stud. (see illustration #7)
11. Lift intercooler up and lean forward. Remove cooling inlet hose from bottom of intercooler. (see illustration #8)
12. Remove intercooler from engine compartment.
13. Apply a generous amount of waterproof grease onto supplied o-rings (2). Place each o-ring into groove in supplied billet end cap spacers (2).
14. At top of intercooler loosen and remove bolts (4) securing end cap to intercooler. Install supplied billet spacer with only one threaded opening in side so that o-ring is facing intercooler and threaded opening is facing right of intercooler. (see illustration #9) **NOTE: Make sure end cap is facing proper direction.**
15. Secure using supplied bolts and washers (4 each). **NOTE: Apply blue Loc-tite to bolts. Do not over tighten bolts.**
16. At bottom of intercooler loosen and remove bolts (4) securing end cap to intercooler. Install supplied billet spacer with two threaded openings in sides so that o-ring is facing end cap and threaded openings are facing to the front and right side of intercooler. (see illustration #10)
17. Secure using supplied bolts and washers (4 each). **NOTE: Apply blue Loc-tite to bolts. Do not over tighten bolts.**
18. Apply pipe thread sealant to threads on supplied 3/8" barbed x 90-degree brass fittings (2). Install into threaded openings on right side of billet end cap spacers so they point downward. (see illustration #11) **NOTE: Do not over tighten fittings.**
19. Apply pipe thread sealant to threads of supplied anode. Install into threaded opening on front of billet end cap spacer at bottom of intercooler. (see illustration #11) **NOTE: Do not over tighten fitting.**

20. Replace intercooler in reverse order of steps 6~11. Torque bolts securing intercooler bracket to engine first, bolts securing intercooler to mounting stud second and bolts securing intercooler to mounting bracket last. **NOTE: Apply blue Loc-tite to bolts. Torque bolts (4) and stud nut (1) to 31 ft•lbs.**
21. Thoroughly clean air inlet and outlet flanges on supercharger and intercooler with a non-residual cleaner.
22. Install connecting hose between supercharger and intercooler. (see illustration #3) Secure using stock clamps. **NOTE: Do not over tighten clamps.**
23. Install 'J' pipe coupler onto intercooler outlet flange and secure using stock clamp. (see illustration #2) **NOTE: Do not over tighten clamp.**
24. In jet pump area locate and remove the two rubber flaps around jet pump unit.
25. Remove bolts (4) securing speedo sensor to ride plate.
26. Remove bolts (4) securing ride plate to hull. Remove ride plate.
27. Disconnect steering, reverse and Q.S.T.S. cables.
28. Disconnect visibility spout hose from top of reduction nozzle and stock bilge siphon hose from left side of reduction nozzle. (see illustration #12)
29. Remove the M10 bolts (4) securing reduction nozzle to pump. (see illustration #12)
30. Remove reduction nozzle assembly.
31. Remove jet pump assembly. **NOTE: Take care not to damage splines at end of drive shaft.**
32. On left side of pump remove the bolts (4) securing water strainer assembly to pump. (see illustration #13) Remove cover and strainer.
33. Transfer o-rings from stock strainer and cover to supplied billet strainer and cover. (see illustration #14) Apply waterproof grease onto o-rings.
34. Insert billet strainer into pump. **NOTE: Make sure opening for water passage is facing forward.**
35. Install billet strainer cover and secure using supplied bolts and washers. (see illustration #15) **NOTE: Apply blue Loc-tite to bolts. Torque bolts to 7 Nm (5 ft•lbs).**
36. Install supplied 3/8" barbed x 90-degree brass fitting into billet strainer cover (pointing upward). (see illustration #16) **NOTE: Apply pipe thread sealant to fitting. Do not over tighten fitting.**
37. Before replacing pump drill a 1/2" hole to right of jet pump. Install supplied 3/8" thru-hull fitting from pump side. (see illustration #17) **NOTE: Apply below waterline silicone sealant to fitting (including threads). Install nut from inside and secure.**
38. Clean and inspect splines at end of drive shaft. Apply waterproof grease to splines. Apply below waterline silicone sealant to gasket mating surface on impeller wear ring and install pump.
39. Cut a 24-inch length from the supplied 3/8" waterline. Install onto thru-hull fitting and secure using supplied hose clamp. (see illustration #18) **NOTE: Do not over tighten clamp.**
40. Route hose up and over pump to billet water strainer. Install onto 90-degree brass fitting and secure using supplied hose clamp. (see illustration #18) **NOTE: Do not over tighten clamp.**
41. Apply below waterline silicone sealant to gasket mating surface on jet pump. Install reduction nozzle assembly onto pump and secure using stock hardware. **NOTE: Apply blue Loc-tite to bolts. Torque bolts to 40 N•m (30 ft•lbs).**
42. Reconnect stock visibility spout hose and stock bilge siphon hose to reduction nozzle.
43. Reconnect reverse, steering and Q.S.T.S. cables.
44. Replace ride plate and secure using stock bolts. **NOTE: Apply blue Loc-tite to bolts. Torque bolts to 17 N•m (12.5 lbf•ft).**
45. Replace speedo sensor and secure using stock bolts. **NOTE: Apply blue Loc-tite to bolts. NOTE: Do not over tighten bolts.**
46. At rear of craft on upper deck install supplied 3/8" water bypass opposite of stock bypass fitting. (see illustration #19) **NOTE: Apply below waterline silicone sealant to fitting (including threads). Install nut from inside and secure.**
47. Using remaining 3/8" waterline cut one 54-inch length. The remainder will equal 78-inches.
48. Attach 52-inch length to thru-hull fitting inside hull at pump. Secure using supplied hose clamp. (see illustration #20) **NOTE: Do not over tighten clamp.**

49. Attach 76-inch length to 3/8" bypass in upper deck. Secure using supplied hose clamp. (see illustration #20) **NOTE: Do not over tighten clamp.** Route waterline behind exhaust hoses .
50. Route both sections of waterline forward under intake manifold via opening in bulkhead occupied by steering cable. (see illustration #20)
51. Install cooling lines onto fittings in intercooler end cap spacers. Cooling inlet waterline (52-inch length) attaches to lower fitting. Cooling outlet waterline (76-inch length) attaches to upper fitting. Secure using supplied clamps. **NOTE: Do not over tighten clamps. Check waterline and clamp alignment using a mirror.**
52. Replace reverse cable. **NOTE: Make sure cable end is secured onto lever properly. Do not over tighten nuts.**
53. Reconnect fuel supply hose to fuel supply rail. **TIP:** Apply a thin coat of engine oil onto fittings. **NOTE: Make sure connector is installed onto fitting completely and locking clip is secure.**
54. Replace plastic engine cover.
55. Reconnect battery cables. **NOTE: Positive (red) first. Negative (black) second.**
56. Check bilge for tools, rags, etc. Start craft and run using flush kit to check for proper operation.

IMPORTANT MAINTENANCE TIP: To assure optimal performance with this kit extra care must be used with flushing the cooling system after riding. When flushing the craft we strongly recommend the use of a salt /deposit remover such as Salt-Away® which can be purchased through RIVA Racing's parts department. When flushing with a salt/deposit remover do not flush with fresh water afterwards. Allow salt/deposit remover to remain in cooling system. This will prevent build up of salt and/or mineral deposits from water left in cooling system that could clog intercooler core.

***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 Yamaha Intercooler Upgrade Kits carry a 1-year 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 -

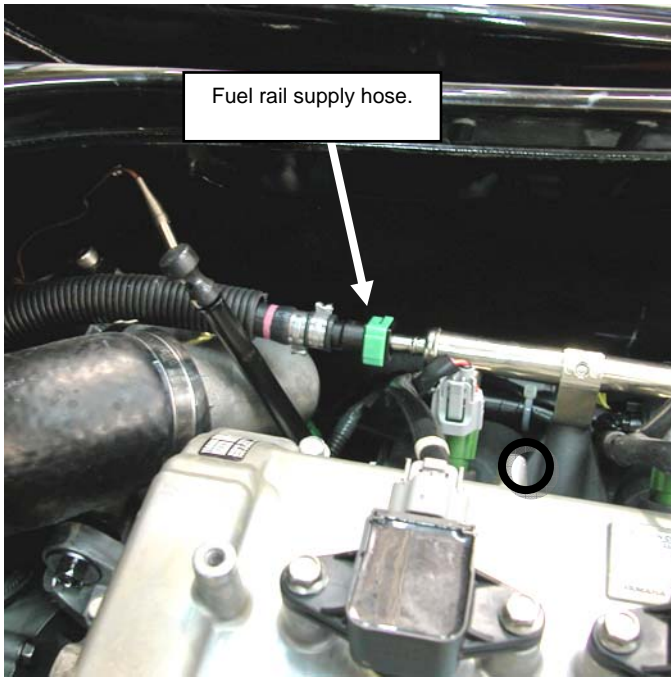


Illustration #1

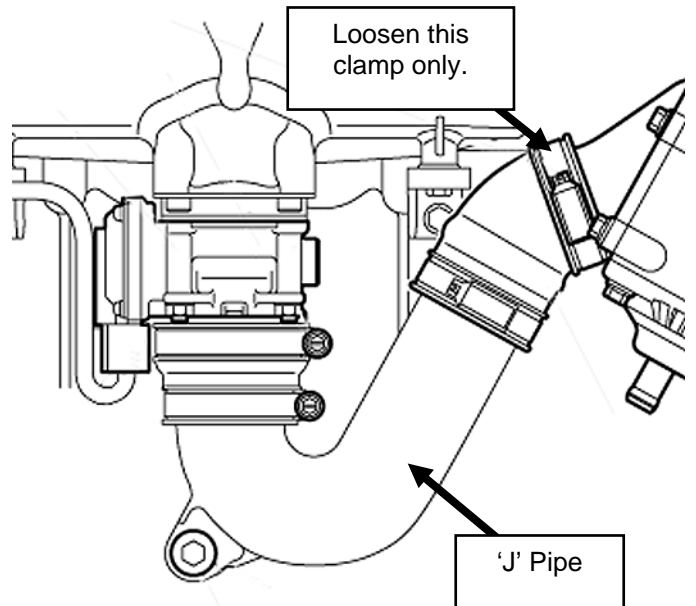


Illustration #2

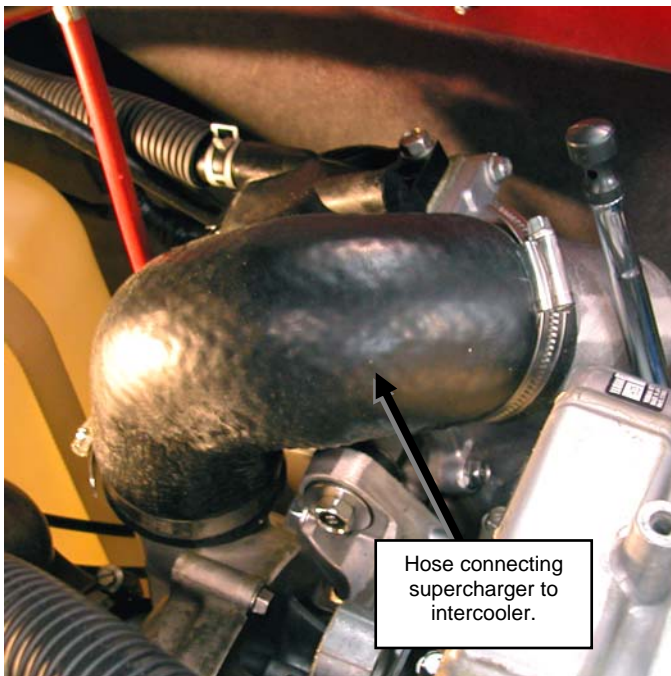


Illustration #3

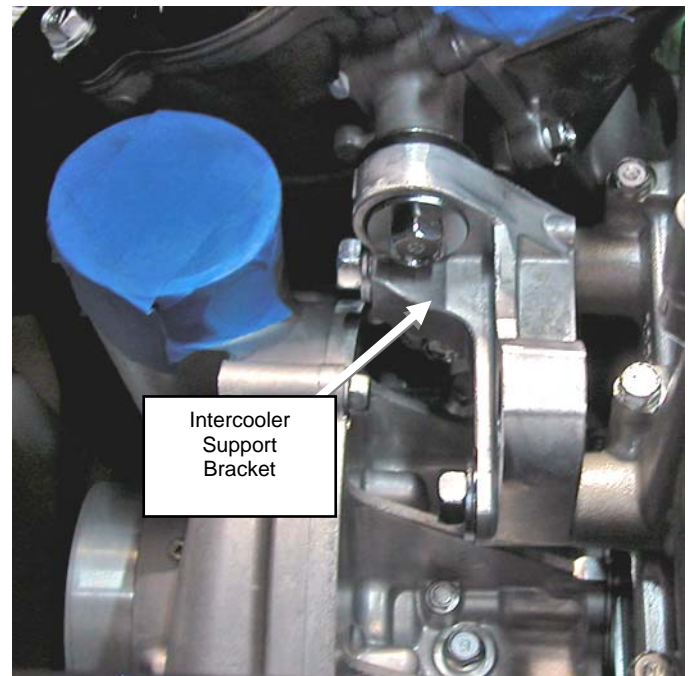


Illustration #4

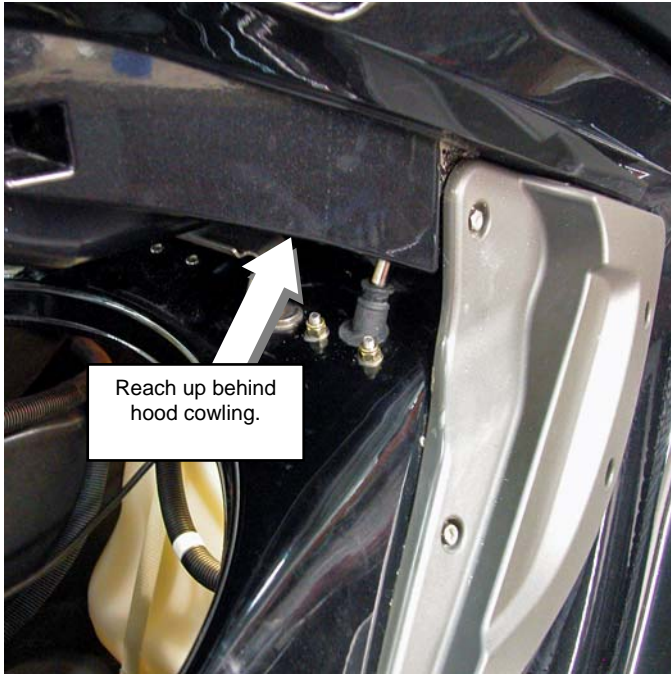


Illustration #5

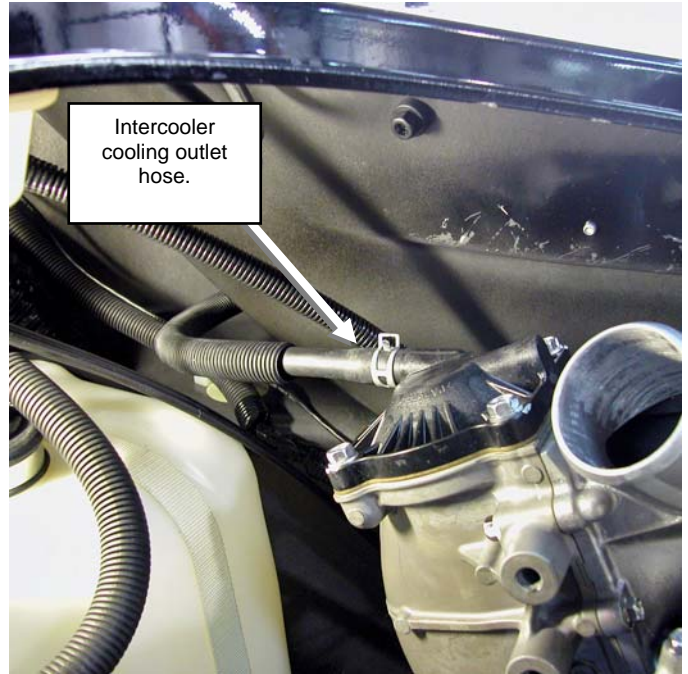


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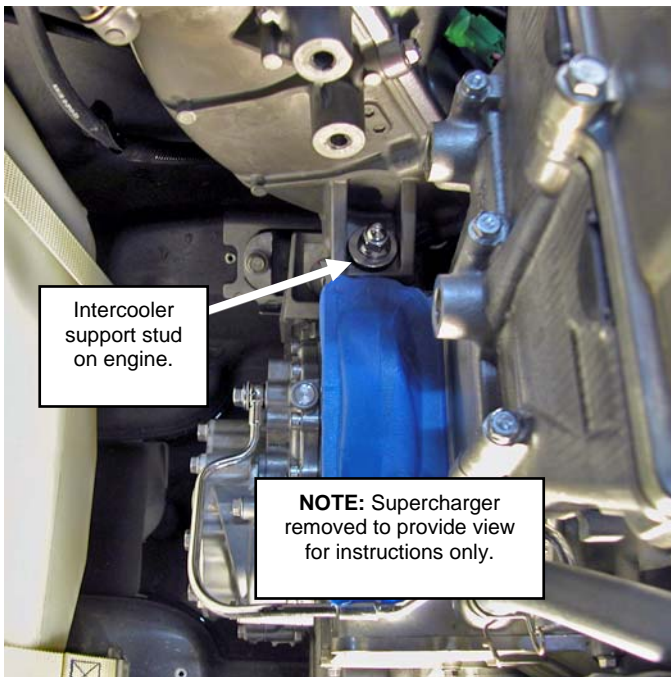


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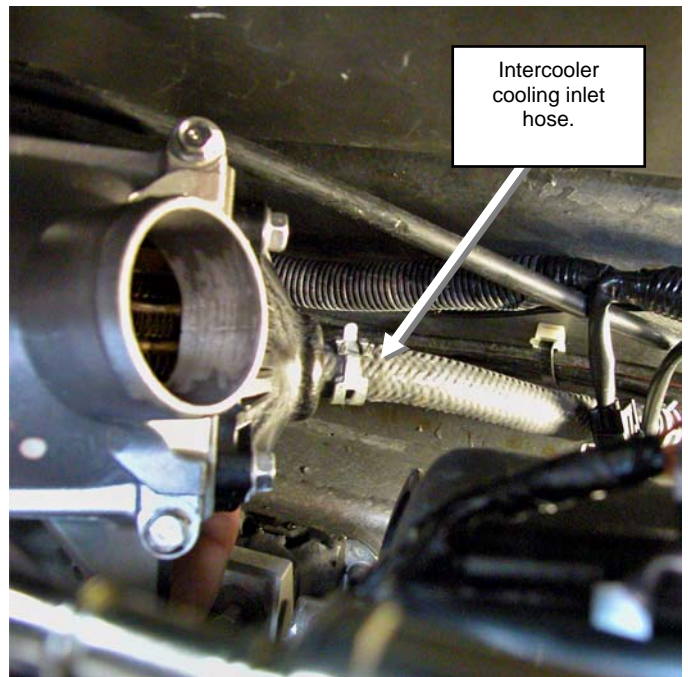


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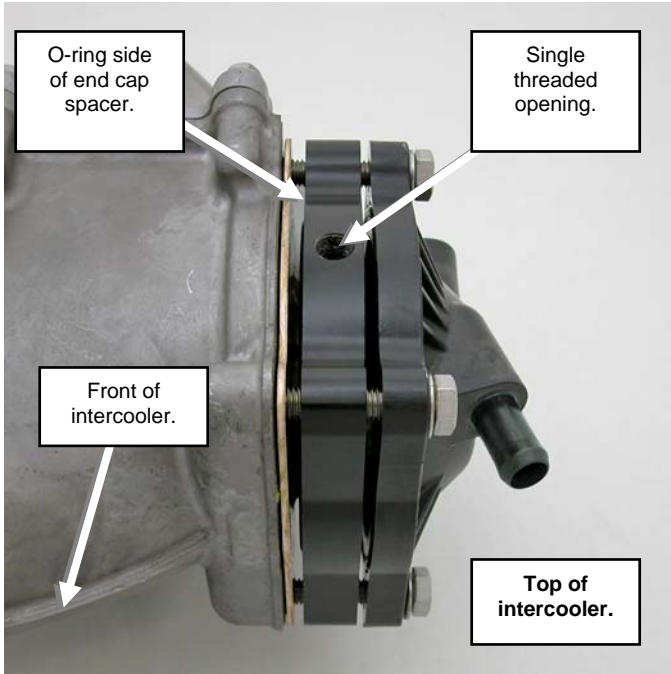


Illustration #9

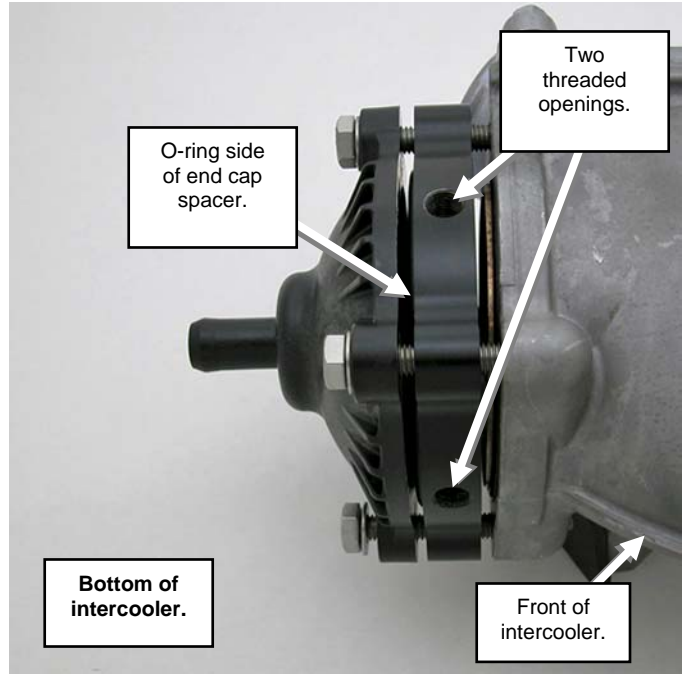


Illustration #10

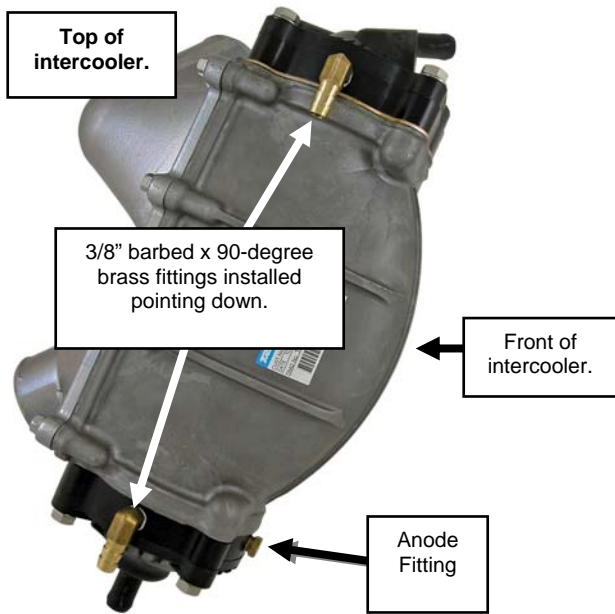


Illustration #11

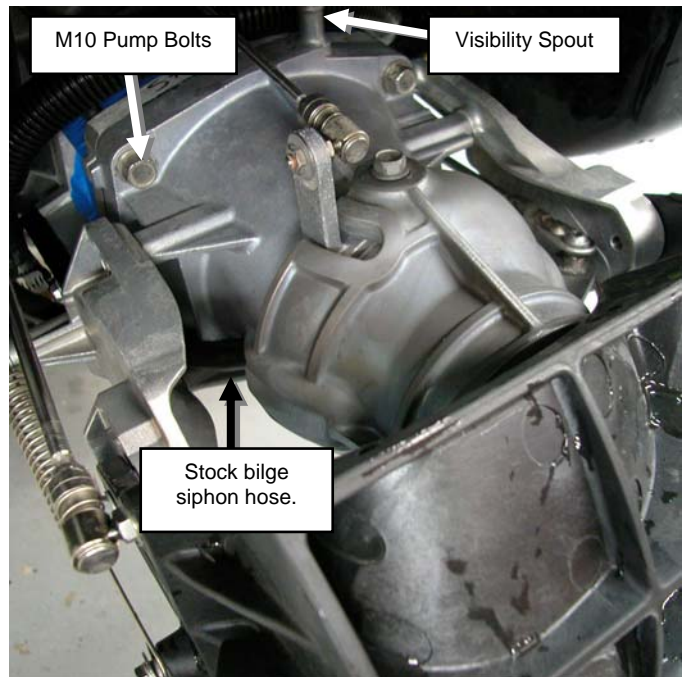


Illustration #12

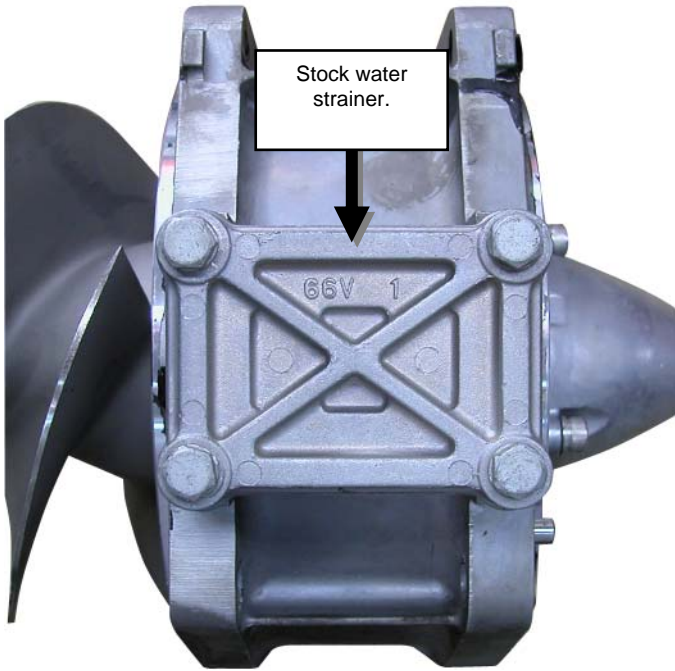


Illustration #13



Illustration #14

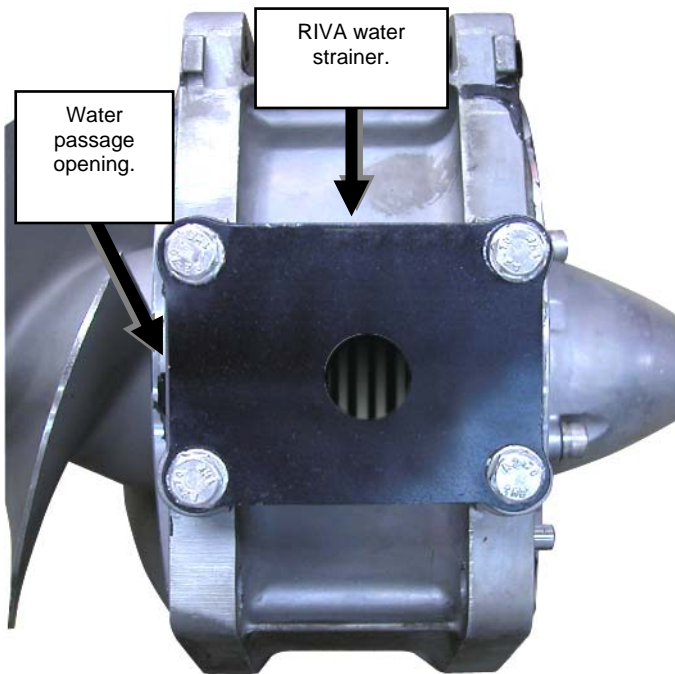


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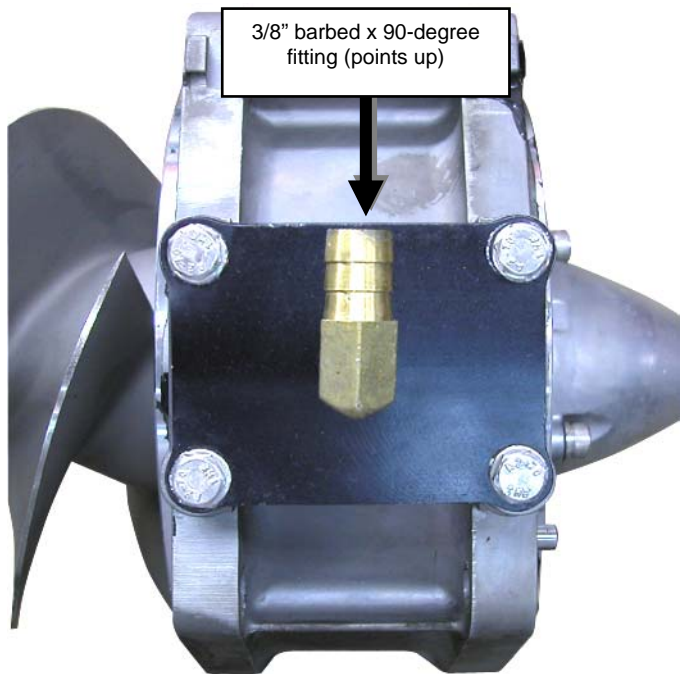


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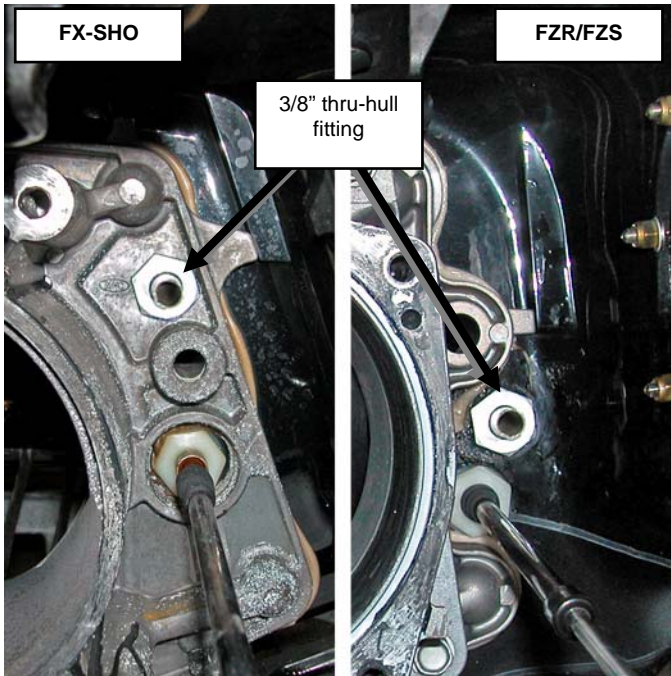


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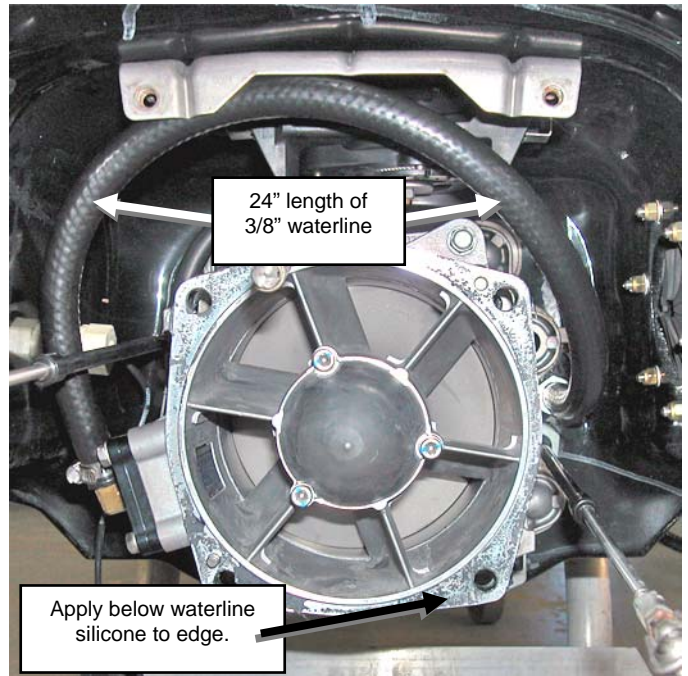


Illustration #18

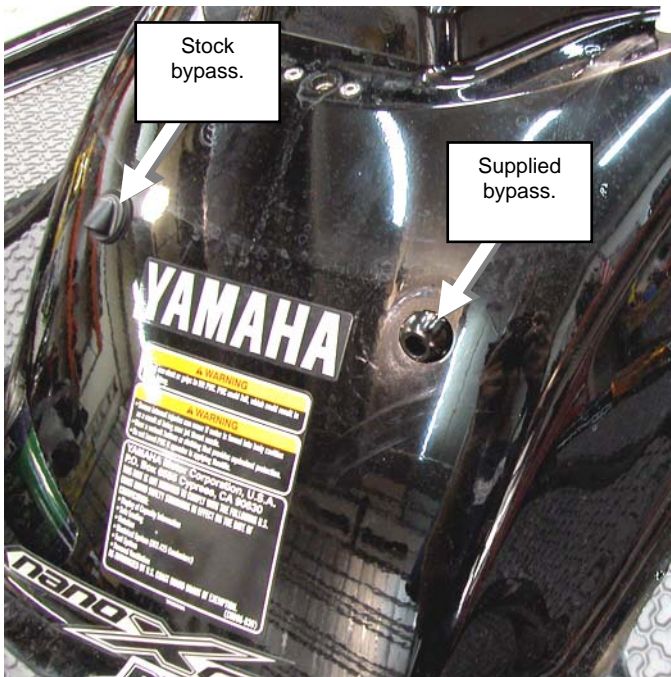


Illustration #19

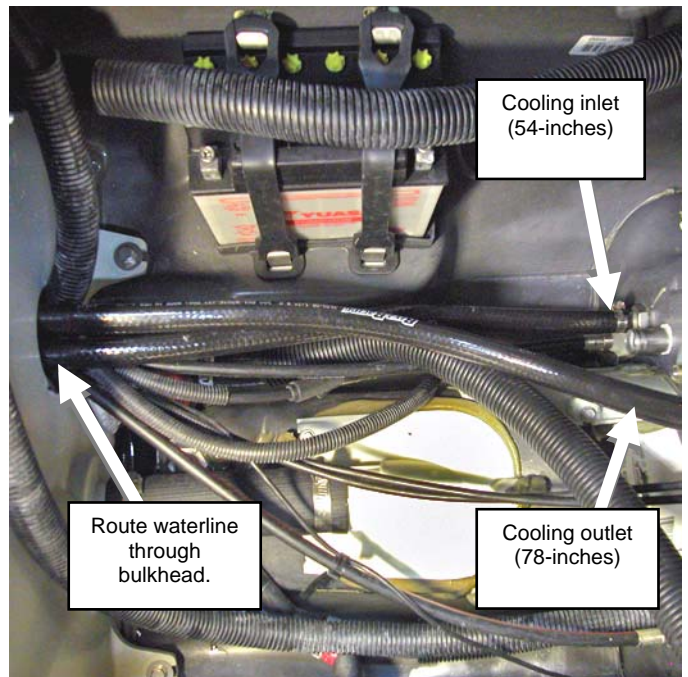


Illustration #20