



RIVA RACING
PERFORMANCE PRODUCTS & ACCESSORIES

Free Flow Exhaust Kit
PART# RK16090

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: These installation instructions are broken up into 3 sections.

Section 1 is for **STX-12F and STX-15F** applications (normally aspirated models) and begins on page 2. The supplied waterline, bypass fitting, hose barbed splicer and hose clamps **WILL** be used for this application.

Section 2 is for **Ultra 250X** applications (supercharged model) and begins on page 11. The supplied waterline, bypass fitting, hose barbed splicer and hose clamps **WILL NOT** be used for this application.

Section 3 is for **Ultra LX** applications (normally aspirated model) and begins on page 15. The supplied waterline, bypass fitting, hose barbed splicer and hose clamps **WILL** be used for this application.

'08~04 Kawasaki STX-12F/15F Installation instructions

Required Specialty Tools

Small bottle jack
Large cutting wheel/tool
Welder

Part#

N/A
N/A
N/A

Recommended Specialty Tools

1-3/4" hole saw bit

Part#

N/A

Read through the installation instructions entirely before beginning. As part of the installation of this kit you are required to cut and weld aluminum.

1. Remove lanyard. Disconnect battery cables and remove battery.
 2. Inside hull under rear grab handle remove air inlet tubes and disconnect hoses for stock bilge pick-ups from breather fittings. (see illustration #1)
 3. Remove exhaust hose connecting primary muffler (left water box) to secondary muffler (right water box). Disconnect remaining hoses from breather fittings. Remove exhaust hose connecting secondary muffler to exhaust outlet. (see illustration #2) **NOTE:** Retain hose clamps.
 4. Remove section of foam between top deck and pump area inside hull and discard.
 5. At rear of hull remove and discard plastic exhaust outlet nozzle. Remove exhaust outlet from hull. Cut exhaust outlet 5-3/4" from flange. (see illustration #3) **NOTE: Sand or file rough edge after modifying.**
 6. Install one supplied silicone coupler onto modified exhaust outlet and secure using OE hose clamp. (see illustration #4) Install exhaust outlet into hull and secure using stock hardware. (see illustration #5) **NOTE: Be sure rubber gasket is in place between flange and hull. Do not apply sealant to gasket. Apply blue Loc-tite to bolts. Do not over tighten bolts.**
- ** NOTE: To achieve optimum performance with this Free Flow Exhaust Kit we recommend the modification outlined on pages 5 & 6 and illustrated on pages 7~10 be performed at this point. Return to this point after performing muffler modification.**
7. Thoroughly clean primary muffler outlet using a non-residual cleaner. Install second supplied silicone coupler completely onto curved end of exhaust tube. (see illustration #6) Loosely install two OE clamps onto primary muffler outlet and one onto coupler on exhaust outlet. **TIP:** Spray a generous amount of glass cleaner into couplers prior to installing.
 8. Install straight end of exhaust tube into coupler on exhaust outlet. Align curved end of exhaust tube with primary muffler outlet and slide coupler onto outlet completely. (see illustration #7) Secure hose clamps. **TIP:** Use recommended specialty tools to reach clamp at exhaust outlet coupler. **NOTE: Do not over tighten clamp. NOTE: Do not over tighten clamps.**
 9. Install hoses to stock bilge pick-ups onto breather fittings. **NOTE: Route hose for rear pick-up (left side) through Free Flow Exhaust Tube. (see illustration #7)**
 10. Replace remaining stock bilge hoses and air inlet tubes.
 11. Installation is now complete. Thoroughly inspect engine compartment and bilge for tools, rags, parts, etc. Run craft on stand using flush kit. After engine cools check all hoses and clamps to make sure they are secure. **NOTE: Do not over tighten clamps.**

- INSTALLATION IMAGES -

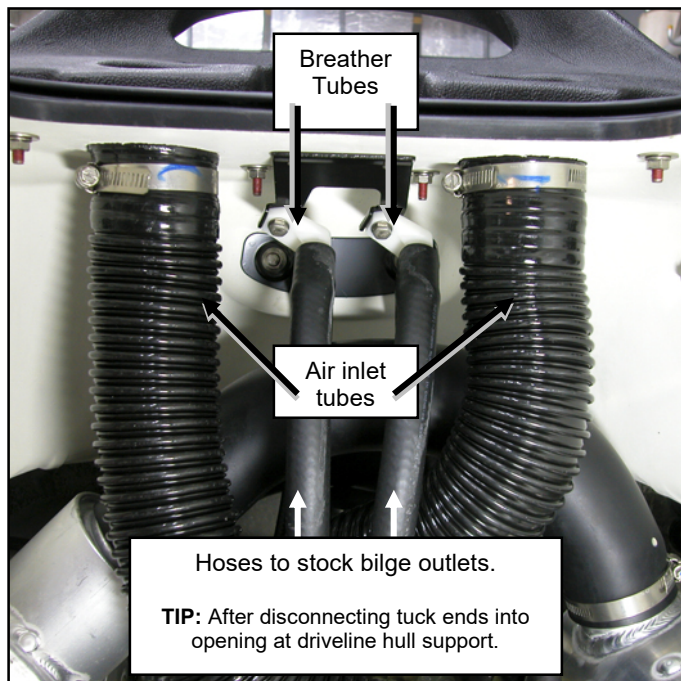


Illustration 1

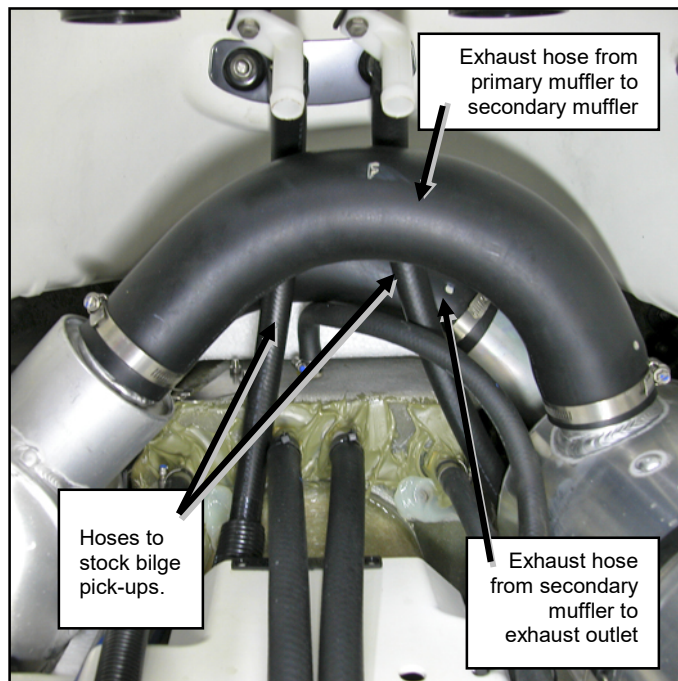


Illustration 2

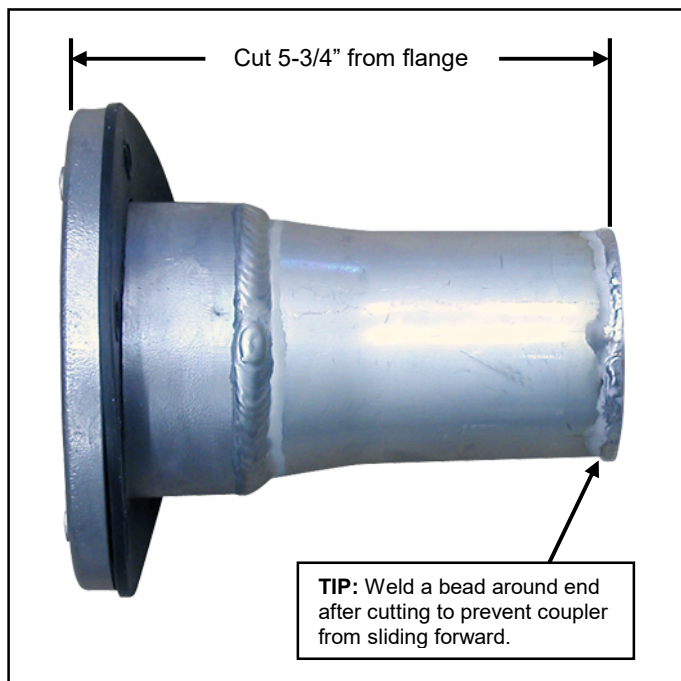


Illustration 3

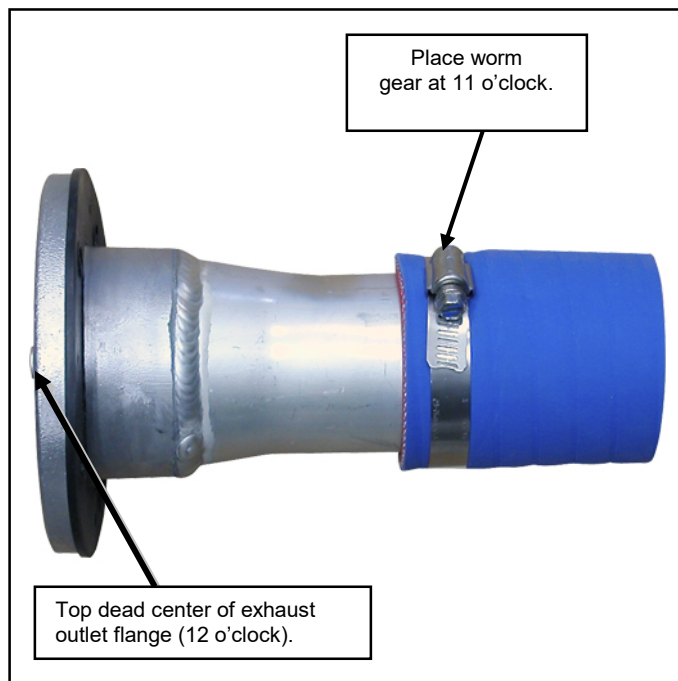


Illustration 4



Illustration 5

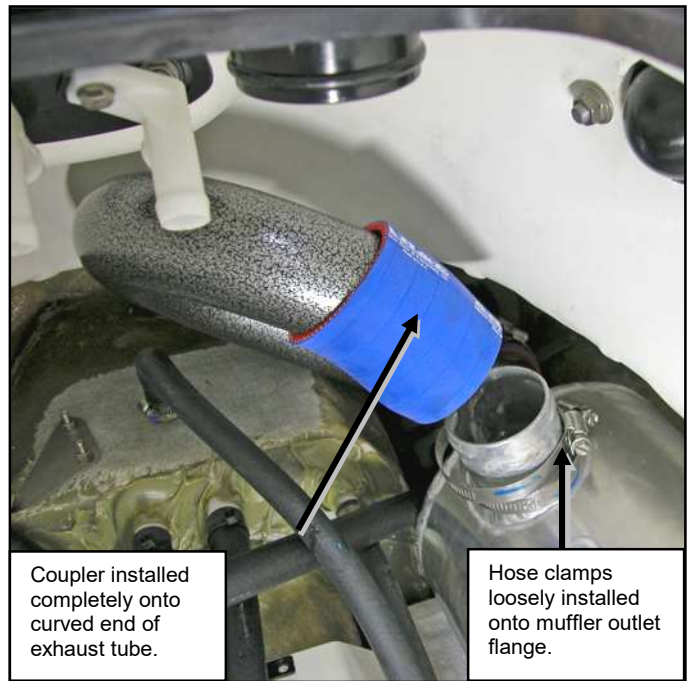


Illustration 6



Illustration 7

PRIMARY MUFFLER MODIFICATION PROCEDURE:

1. At top of oil separator tank disconnect and completely remove hose connecting top of tank to front of air box. At center of tank disconnect hose from fitting on rear of cylinder head. At bottom of tank disconnect hose from fitting on tank. (see illustration #7A, page 7) **NOTE: Leave hose connected to engine.** Remove oil separator tank from hull.
2. At throttle body loosen hose clamp securing air inlet tube to throttle body. (see illustration #8) At top of hull cross-section loosen the two M8 bolts securing air box to hull. Remove air box through forward engine compartment opening by rotating 90-degrees. **NOTE: Cover throttle body inlet to prevent foreign objects from entering.**
3. Remove the three Phillips® head screws securing mounting plate for electrical components to hull. Carefully lay assembly in bottom of hull under footwell. (see illustration #9)
4. Inside hull label and then remove waterlines secured to fittings at inlet of primary muffler (left water box). **TIP:** It will be easier to remove waterline from lower fitting during step 6.
5. Loosen clamps securing coupler at muffler inlet/exhaust pipe joint. Slide coupler forward onto exhaust pipe joint completely. **TIP:** Using a small screwdriver lift edge of coupler on exhaust pipe joint and apply glass cleaner. Move screwdriver side to side to distribute fluid.
6. Remove muffler from hull through rear engine compartment opening. (see illustration #10) **NOTE: It is necessary to rotate muffler to ease removal through opening. Take care not to damage seal on hull. Applying a generous amount of glass cleaner to outside of muffler and to rubber seal will ease removal.**
7. Inside hull remove foam padding under front of secondary muffler (right water box). Remove rubber padding between muffler and hull (3 pieces total). Lift muffler up onto battery tray ledge. (see illustration #11)
8. At battery tray just in front of muffler place bottle jack approximately 1" from end of muffler. (see illustrations 12 & 13) Expand jack until it is suspended between top deck and battery tray. **NOTE: Position of bottle jack base is critical. Take care not to crush electrical wires, battery strap clips and steering cable.**
9. Slowly expand bottle jack to create room for muffler to move forward and up onto upper ledge of battery tray. Once muffler is able to rest on upper ledge of battery tray retract bottle jack so that top deck rests on top of muffler. (see illustration #14) Move bottle jack forward approximately 2-3/4" and expand until it is suspended between top deck and battery tray. (see illustration #14) **NOTE: Position of bottle jack base is critical. Take care not to crush electrical wires, battery strap clips and steering cable.**
10. Slowly expand bottle jack until muffler moves. Continue expanding bottle jack slowly while pulling on muffler until you are able to remove completely. Once muffler is clear retract bottle jack completely and remove from hull.
11. Remove muffler from hull through rear engine compartment opening and discard. **NOTE: It is necessary to rotate muffler so as to ease removal. Take care not to damage seal on hull. Applying a generous amount of glass cleaner to outside of muffler and rubber seal will ease removal.**
12. Inside hull remove strap for secondary muffler by carefully cutting or grinding down head of rivet securing it to hull. **NOTE: Apply silicone sealant to rivet area after removing.**
13. Remove end cap of primary muffler by cutting at weld. (see illustration #15) Inside muffler remove inner ring at edge. (see illustration #16) Inside muffler drill out baffle cap using a 1-3/4" hole saw bit. (see illustrations 17 & 18) **NOTE: Sand all edges thoroughly.**
14. Replace muffler end cap. Add bead around modified end of exhaust outlet. (see illustration #3) **NOTE: An experienced welder should perform this step.**
15. Replace primary muffler in reverse order of steps 5~6. **NOTE: It is necessary to rotate muffler so as to ease installation. Take care not to damage seal on hull. Applying a generous amount of glass cleaner to outside of muffler and rubber seal will ease installation.**
16. Place primary muffler into cradle on left side of craft and secure strap. Slide coupler on exhaust pipe joint onto muffler inlet flange completely. Secure hose clamps. **NOTE: Do not over tighten clamps.**
17. Replace brass fitting at top of muffler inlet tube with supplied brass fitting. Attach waterline from exhaust side of cylinder to newly installed fitting and secure. Attach waterline from outlet at top of pump area to fitting at bottom of muffler inlet and secure. (see illustration #19) **NOTE: Apply pipe thread sealant to fitting. Do not over tighten fitting. NOTE: Do not over tighten clamps.**
18. Install supplied 1/2" brass splicer into waterline from intake side of cylinder and secure. Attach supplied 1/2" waterline to splicer and secure using supplied hose clamp. (see illustration #20) **NOTE: Do not over tighten clamps.**
19. Install supplied bypass fitting in a location that will allow water to be expelled so as not to come in contact with rider(s). **TIP:** Choose a flat area at rear of craft. (see illustration #21) **NOTE: Apply silicone sealant to flange and threads of bypass fitting.**

1. Attach open end of supplied 1/2" waterline to newly installed bypass fitting and secure using supplied hose clamp.
NOTE: Do not over tighten clamp. TIP: Secure spliced waterline to hull. Attach a small piece of the rubber padding previously removed to hull support to prevent chafing. (see illustration #20)

Return to Step 7, Page 2 of instructions.

PRIMARY MUFFLER MODIFICATION PROCEDURE ILLUSTRATIONS:

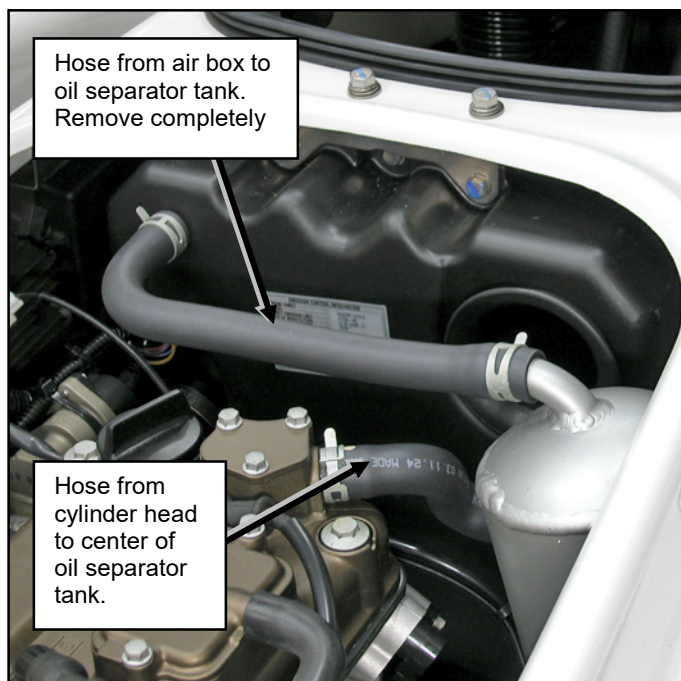


Illustration 7A

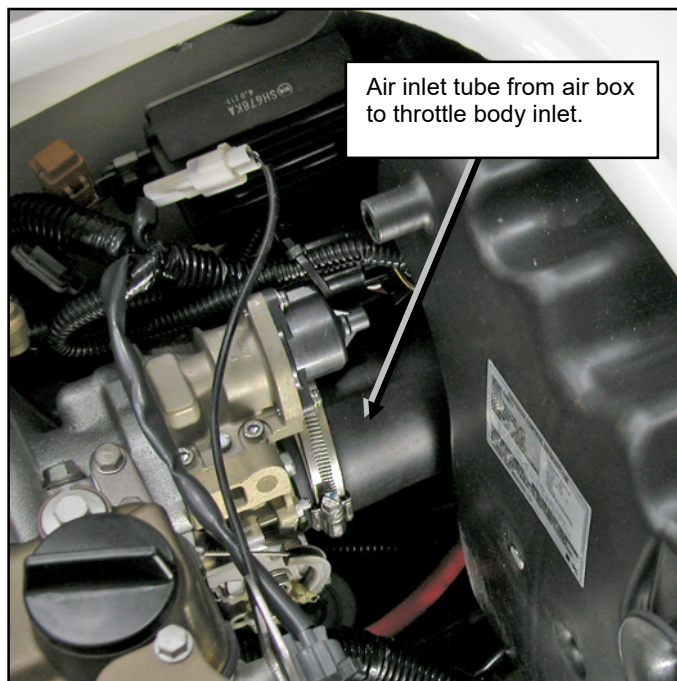


Illustration 8

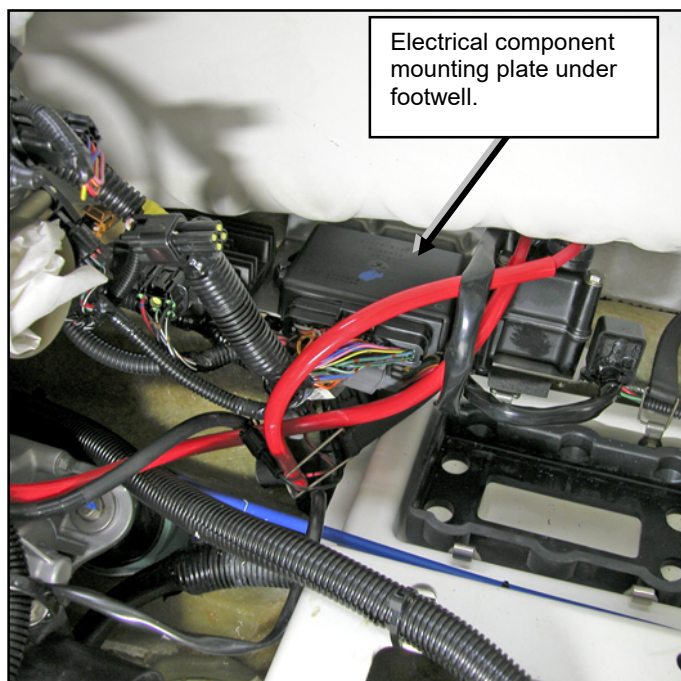


Illustration 9

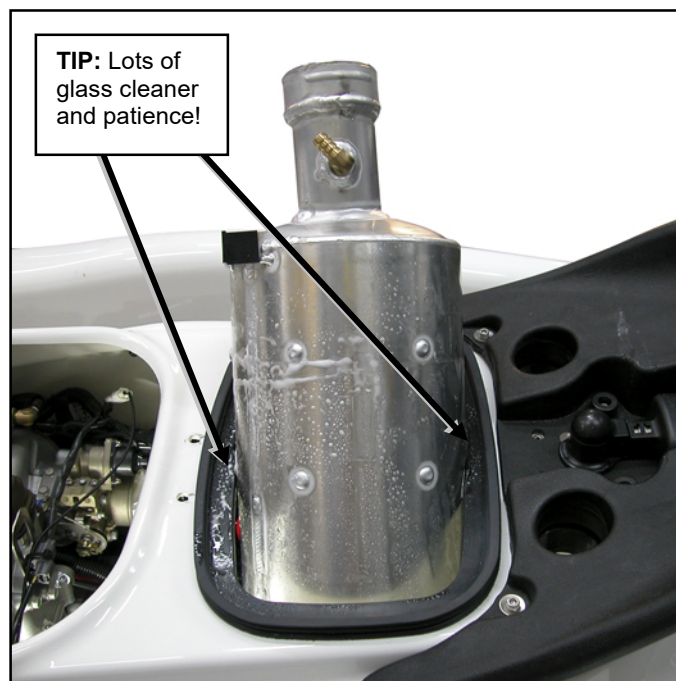


Illustration 10

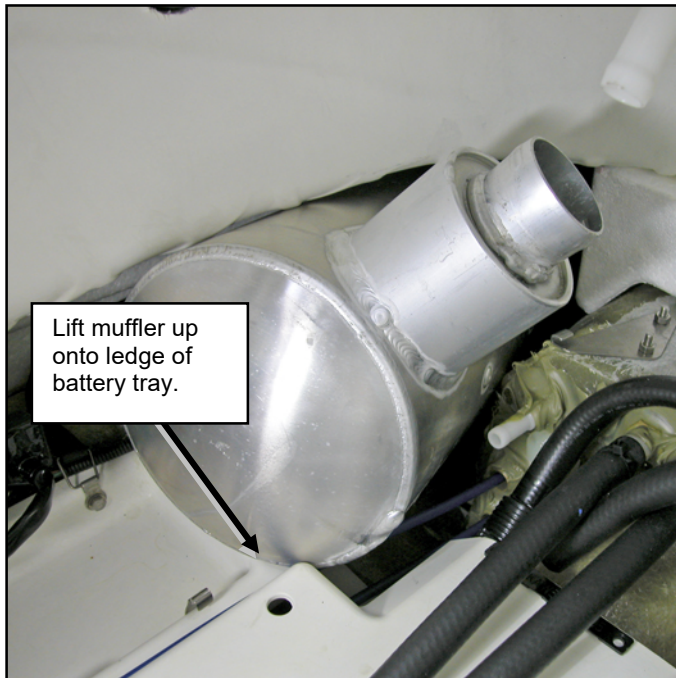


Illustration 11

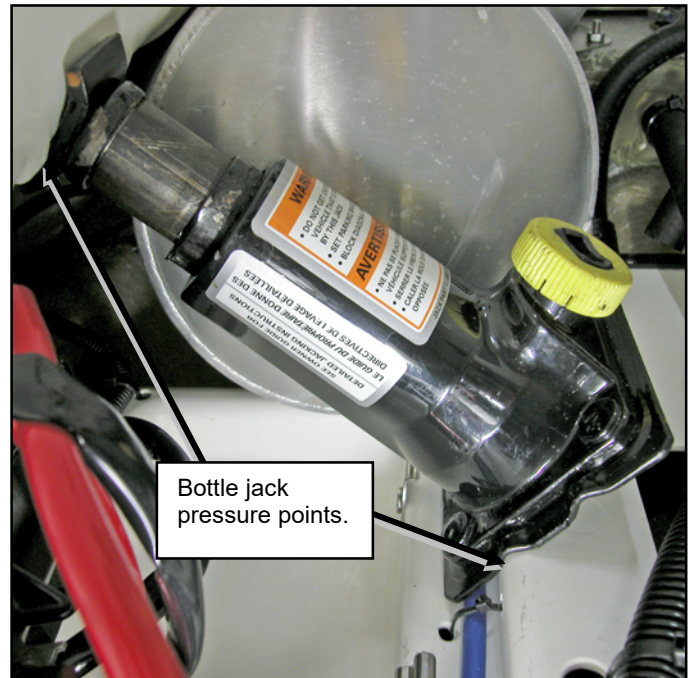


Illustration 12



Illustration 13

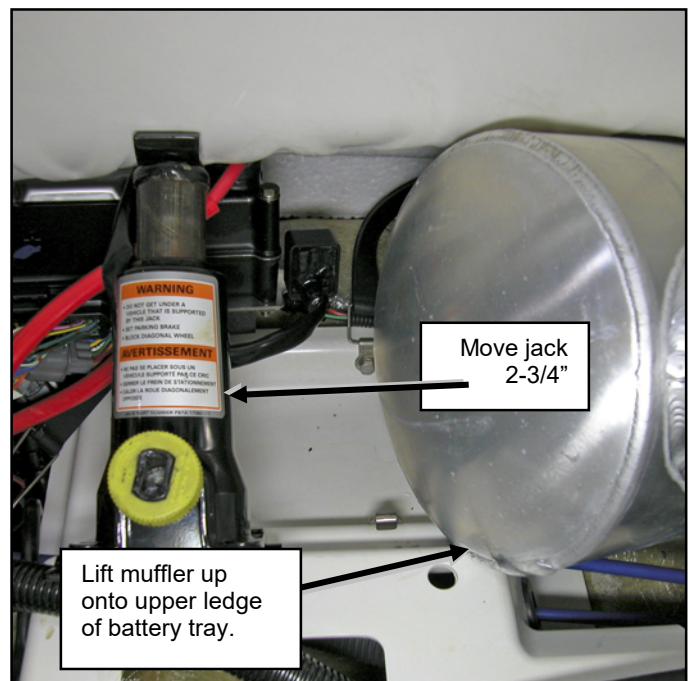


Illustration 14

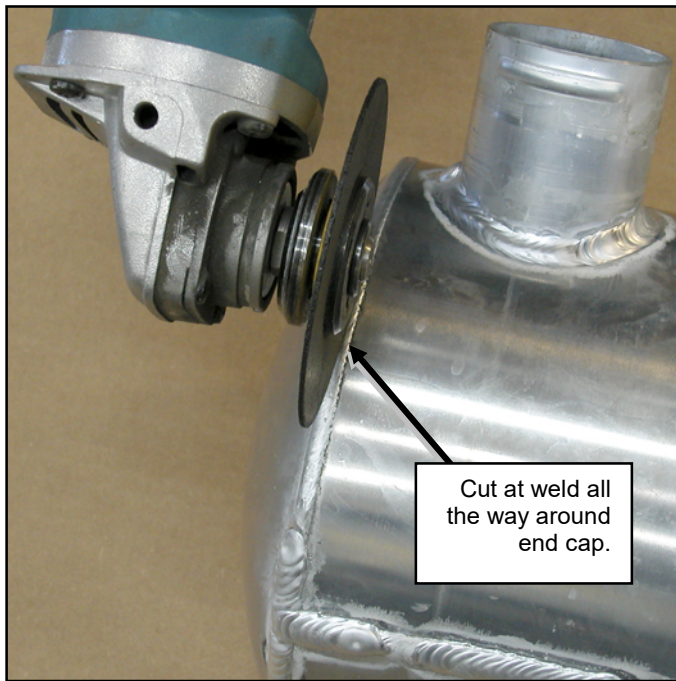


Illustration 15

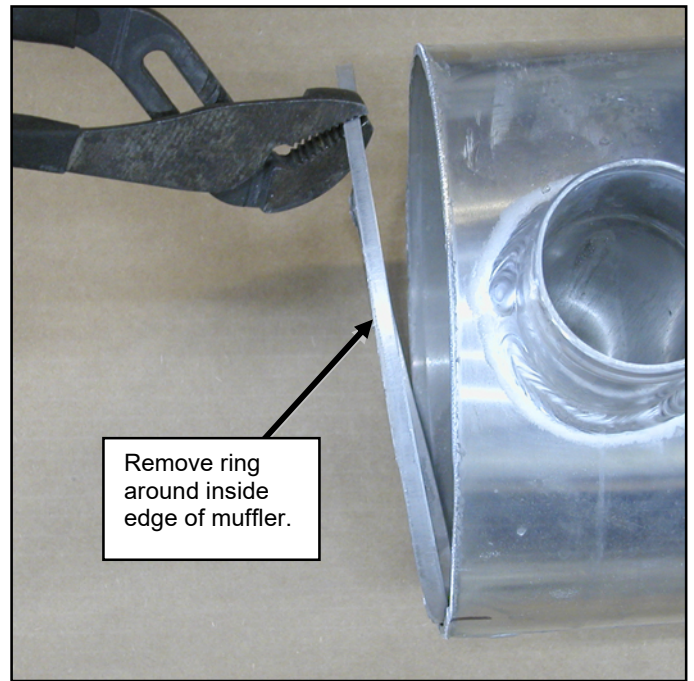


Illustration 16

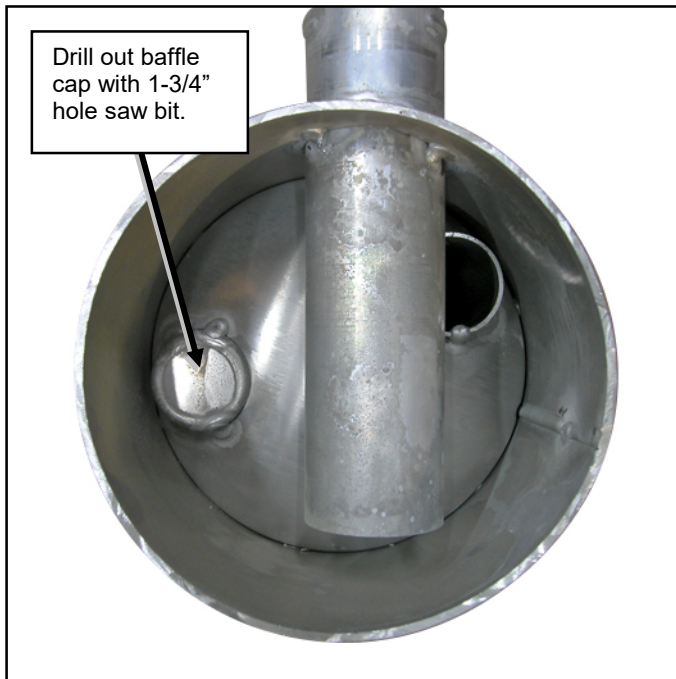


Illustration 17



Illustration 18

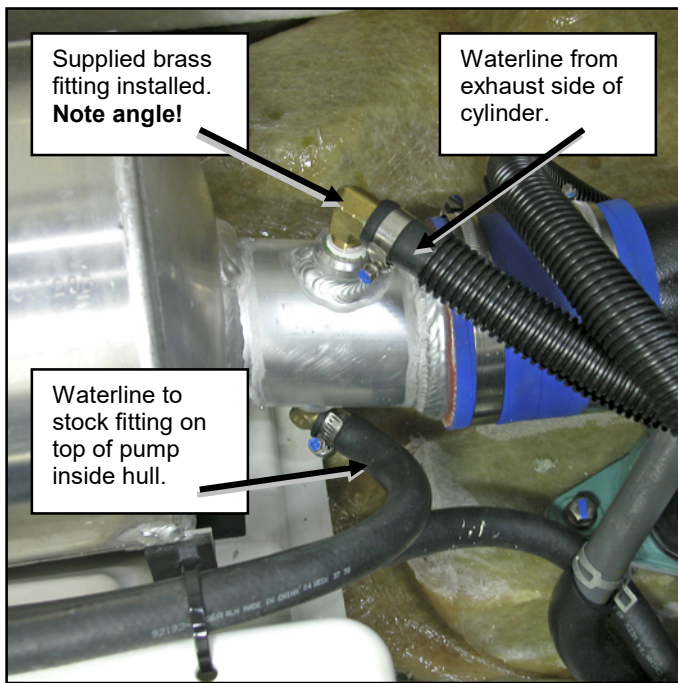


Illustration 19

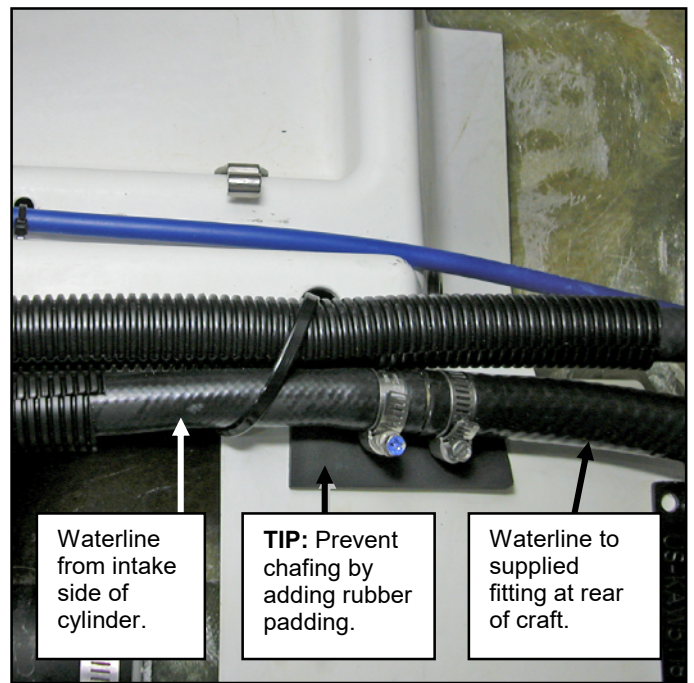


Illustration 20

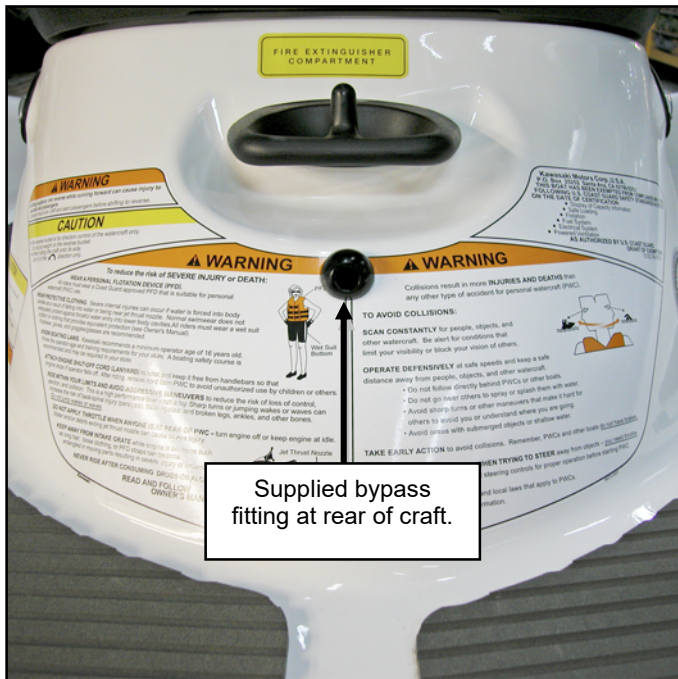


Illustration 21

– KAWASAKI ULTRA 250X INSTALLATION INSTRUCTIONS –

Required Specialty Tools

Welder

Part#

N/A

***** Remove wrist lanyard. Allow engine compartment components to cool completely before performing installation. *****

1. Remove rear storage tray. (see illustration #22) **Note:** We recommend covering the four studs for storage tray with several pieces of duct tape to prevent injury while performing installation.
2. Remove bolts securing oil catch can to intercooler. (see illustration #23) Remove hoses attached to catch can and remove catch can from engine compartment.
3. Disconnect waterline secured to top of intercooler. (see illustration #23)
4. Disconnect intercooler air inlet hose. (see illustration #23)
5. Disconnect primary bypass valve and over-boost bypass valve from intercooler. (see illustration #24) Disconnect intercooler inlet temperature sensor connector located near bypass valves.
6. Disconnect intercooler air outlet hose. (see illustration #24)
7. Disconnect waterline secured to bottom center section of intercooler. (see illustration #25) Remove the two bolts securing intercooler to hull.
8. Carefully slide intercooler towards exhaust until tab at rear on opposite side clears securing bracket. (see illustration #26) Remove second waterline secured to bottom of intercooler (under intercooler air outlet).
9. Remove intercooler by rotating air outlet upward while lifting.
10. Inside hull at rear remove air inlet tube(s) as needed. (see illustration #27) Remove exhaust hoses between primary muffler (left water box) and secondary muffler (right water box). **NOTE: Retain hose clamps.**
11. Remove secondary muffler (right water box) and discard. (see illustration #27)
12. Outside hull at rear of craft remove and discard plastic exhaust outlet nozzle. Remove exhaust outlet from hull.
13. Measure and cut exhaust outlet tube 7-1/2" from outlet flange. (see illustration #28) **NOTE: Sand or file rough edge after modifying. Thoroughly clean outlet tube using a non-residual cleaner.**
14. Install one supplied silicone coupler onto modified exhaust outlet tube and secure using OE hose clamp. (see illustration #29)
15. Install exhaust outlet into hull and secure using stock hardware. (see illustration #30) **NOTE: Be sure rubber gasket is in place between flange and hull. Do not apply sealant to gasket. Apply blue Loc-tite to bolts. Do not over tighten bolts.**
16. Inside hull near primary muffler (right water box) cut and remove zip tie securing bilge siphon hose to hull. (see illustration #'s 31 & 32) Thoroughly clean primary muffler outlet using a non-residual cleaner.
17. Loosely install two OE clamps onto primary muffler outlet and one onto coupler on exhaust outlet. (see illustration #31)
18. Install second supplied silicone coupler completely onto curved end of Free Flow tube. Install straight end of Free Flow tube into coupler on exhaust outlet tube. Align curved end of Free Flow tube with primary muffler outlet and slide coupler onto outlet. (see illustration #32) Secure all hose clamps. **NOTE: Do not over tighten clamps. TIP: Spray a generous amount of glass cleaner into couplers prior to installing.**
19. Replace items removed in steps 1~10 in reverse order. **NOTE: Use blue Loc-tite on bolts securing intercooler to hull. Do not over tighten bolts.**
20. Installation is now complete. Thoroughly inspect engine compartment and bilge for tools, rags, parts, etc. Run craft on stand using flush kit. After engine cools check all hoses and clamps to make sure they are secure. **NOTE: Do not over tighten clamps.**

- KAWASAKI ULTRA 250X INSTALLATION IMAGES -



Illustration #22

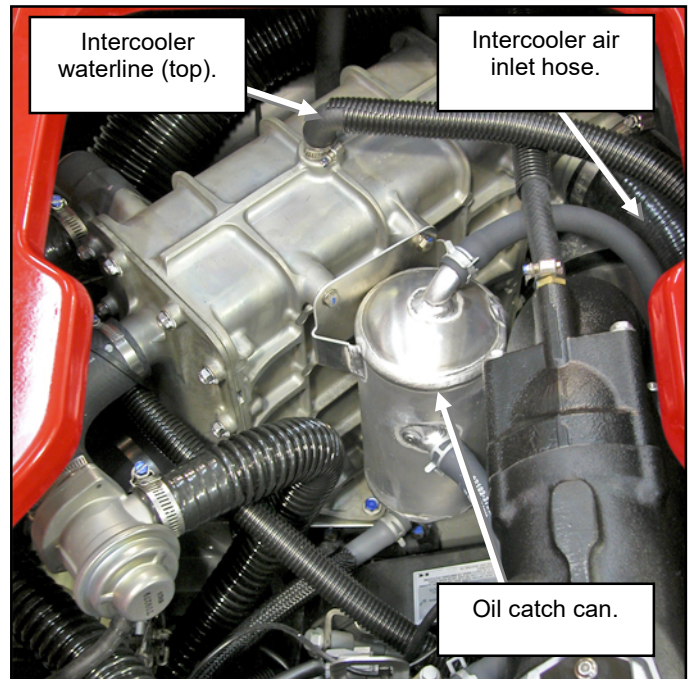


Illustration #23

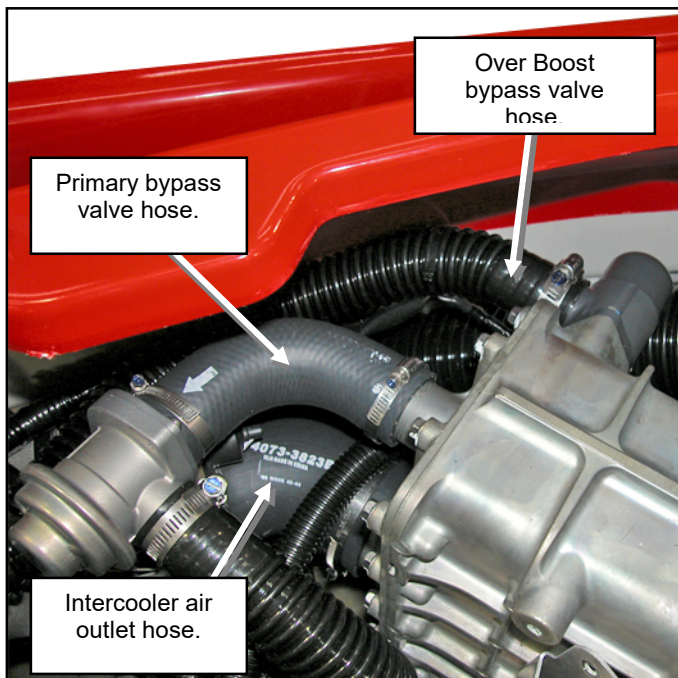


Illustration #24

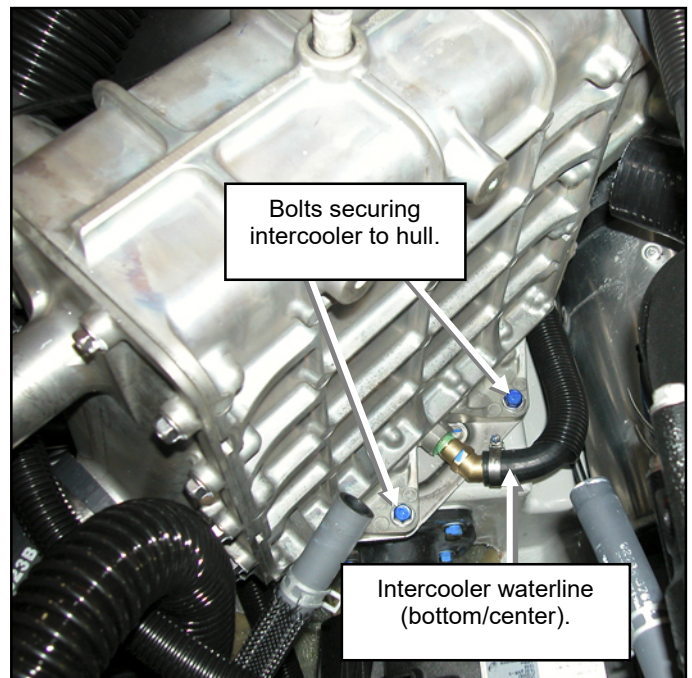


Illustration #25

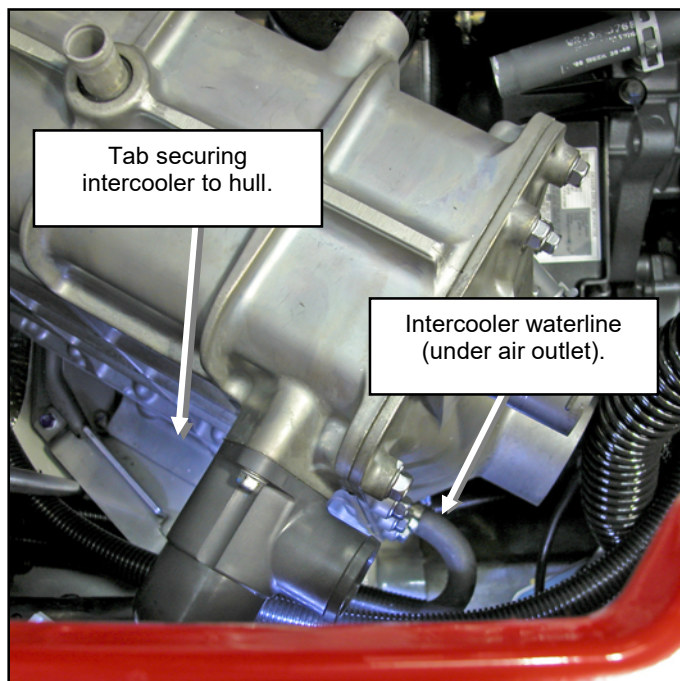


Illustration #26

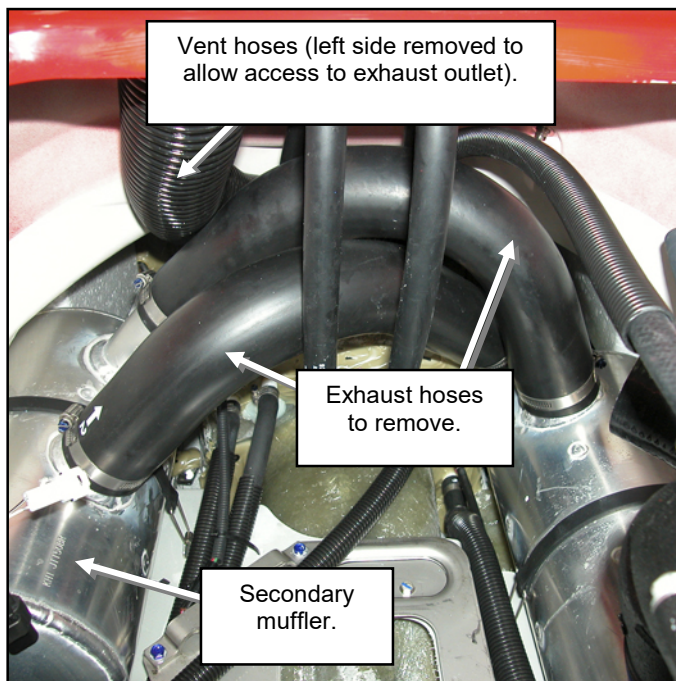


Illustration #27

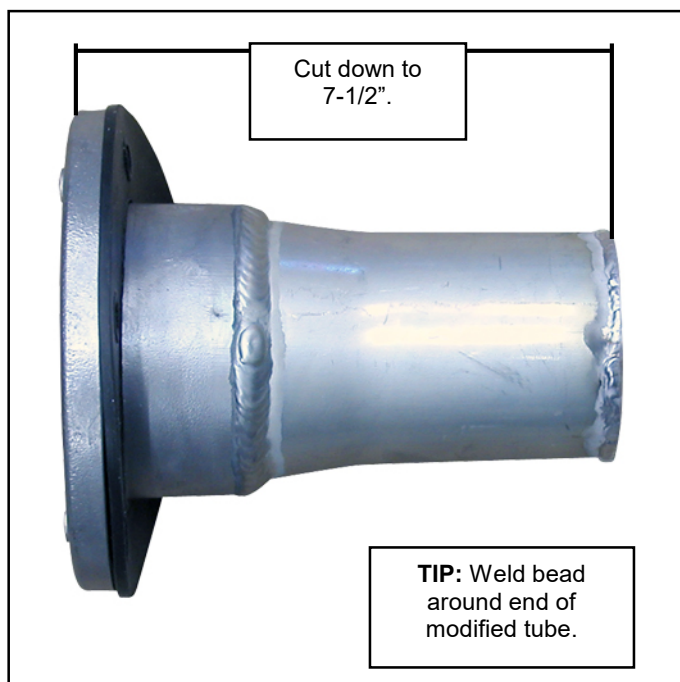


Illustration #28



Illustration #29

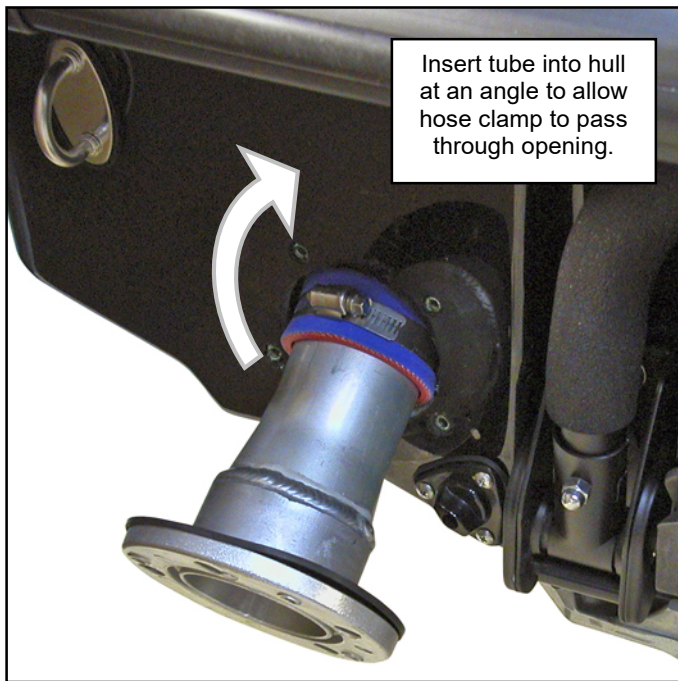


Illustration #30



Illustration #31

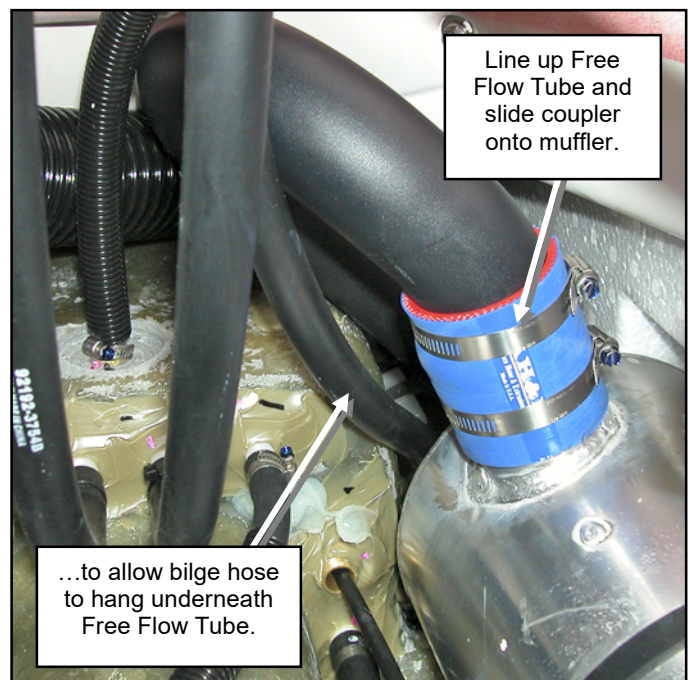


Illustration #32

– KAWASAKI ULTRA LX INSTALLATION INSTRUCTIONS –

Required Specialty Tools

Large cutting wheel/tool
Welder

Part#

N/A
N/A

Recommended Specialty Tools

1-3/4" hole saw bit

Part#

N/A

*** Remove wrist lanyard. Allow engine compartment components to cool completely before performing installation. ***

1. Remove rear storage tray. (see illustration #34) Note: We recommend covering the four studs for storage tray with several pieces of duct tape to prevent injury while performing installation.
2. Disconnect gray vent hose from front of OE air box that leads to top of catch can. (see illustration #35) Disconnect black vent hose from front of OE air box that leads to 'T' fitting at valve cover. (see illustration #36)
3. Loosen clamp securing hose to throttle body air inlet. (see illustration #35) Remove OE air box.
4. Inside hull at rear remove air inlet tube(s) as needed. (see illustration #37) Remove exhaust hoses between primary muffler (left water box) and secondary muffler (right water box). **NOTE: Retain hose clamps.**
5. Remove secondary muffler (right water box) and discard. (see illustration #37)
6. Outside hull at rear of craft remove and discard plastic exhaust outlet nozzle. Remove exhaust outlet from hull.
7. Measure and cut exhaust outlet tube 7-1/2" from outlet flange. (see illustration #28 page 13) **NOTE: Sand or file rough edge after modifying. Thoroughly clean outlet tube using a non-residual cleaner.**
8. Install one supplied silicone coupler onto modified exhaust outlet tube and secure using OE hose clamp. (see illustration #29 page 13)
9. Install exhaust outlet into hull and secure using stock hardware. (see illustration #30 page 14) **NOTE: Be sure rubber gasket is in place between flange and hull. Do not apply sealant to gasket. Apply blue Loc-tite to bolts. Do not over tighten bolts.**

**** NOTE: To achieve optimum performance with this Free Flow Exhaust Kit we recommend the modification outlined on page 17 and illustrated on pages 7~10 be performed at this point. Return to this point after performing muffler modification.**

10. Inside hull near primary muffler (right water box) cut and remove zip tie securing bilge siphon hose to hull. (see illustration # 31 page 14) Thoroughly clean primary muffler outlet using a non-residual cleaner.
11. Loosely install two OE clamps onto primary muffler outlet and one onto coupler on exhaust outlet. (see illustration #31 page 14)
12. Install second supplied silicone coupler completely onto curved end of Free Flow tube. Install straight end of Free Flow tube into coupler on exhaust outlet tube. Align curved end of Free Flow tube with primary muffler outlet and slide coupler onto outlet. (see illustration #32 page 14) Secure all hose clamps. **NOTE: Do not over tighten clamps. TIP: Spray a generous amount of glass cleaner into couplers prior to installing.**
13. Replace items removed in steps 1~4 in reverse order. **NOTE: Do not over tighten clamps.**
14. Installation is now complete. Thoroughly inspect engine compartment and bilge for tools, rags, parts, etc. Run craft on stand using flush kit. After engine cools check all hoses and clamps to make sure they are secure. **NOTE: Do not over tighten clamps.**

- KAWASAKI ULTRA LX INSTALLATION IMAGES -

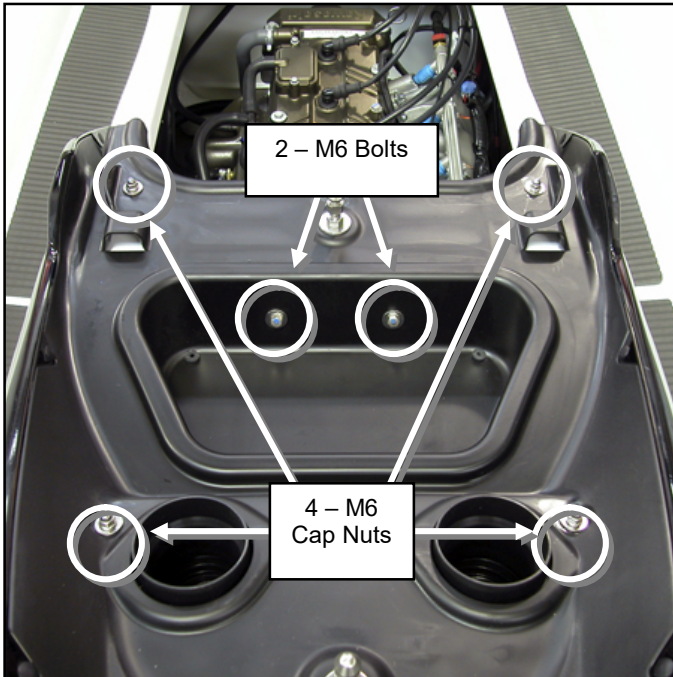


Illustration #34

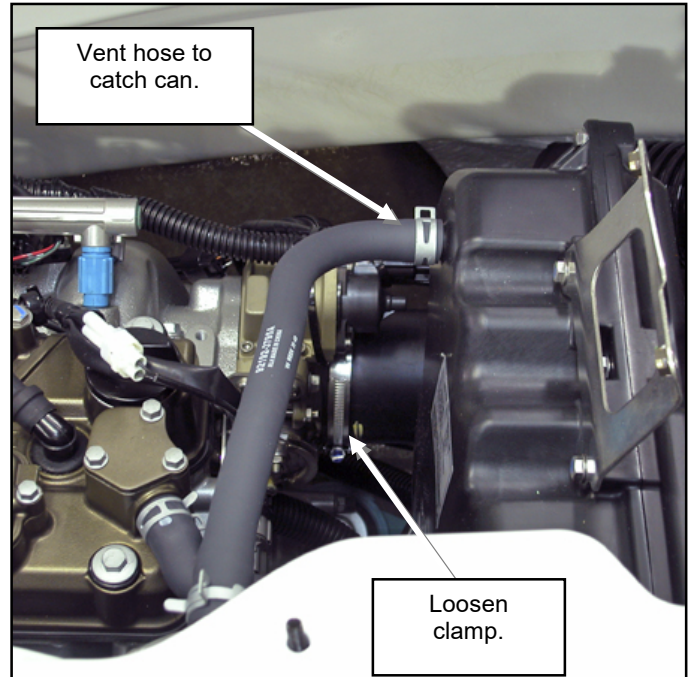


Illustration #35

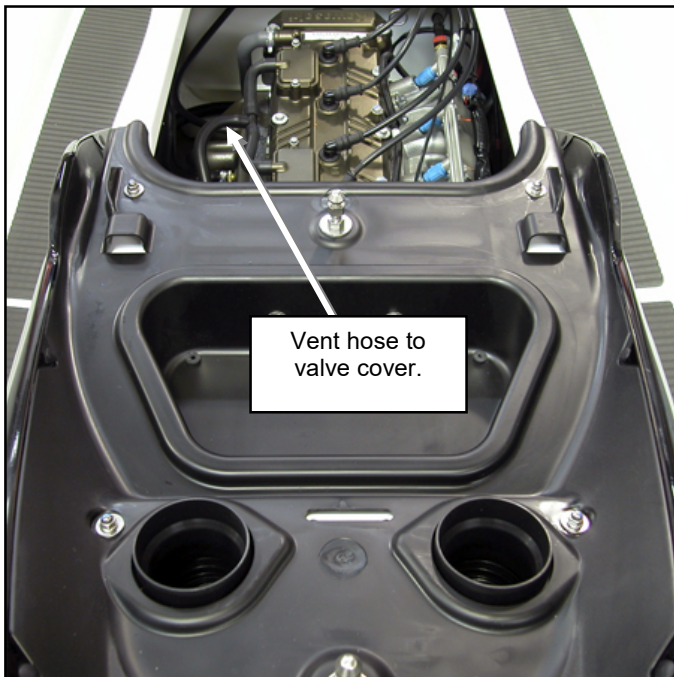


Illustration #36

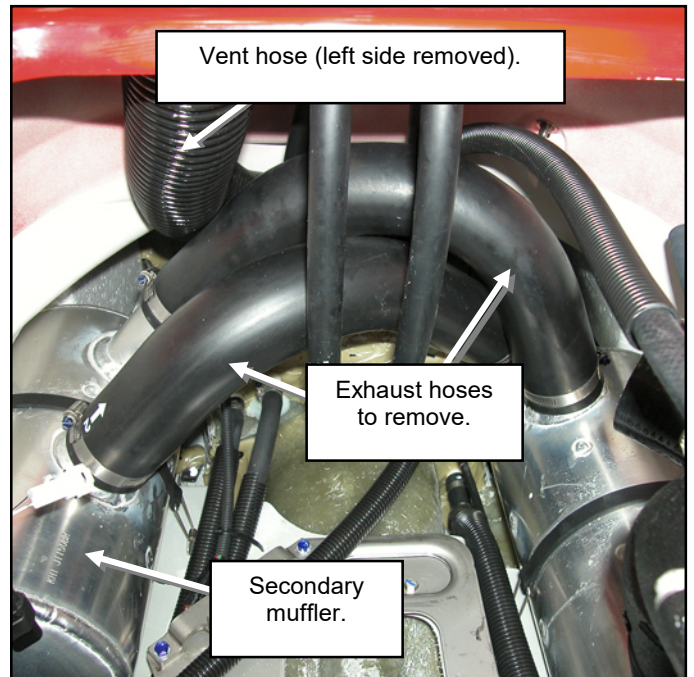


Illustration #37

ULTRA LX PRIMARY MUFFLER MODIFICATION PROCEDURE:

2. Inside hull, label and then remove waterlines secured to fittings at inlet of primary muffler (left water box). **TIP:** It will be easier to remove waterline from lower fitting during step 2.
3. Loosen clamps securing coupler at muffler inlet/exhaust pipe joint. Slide coupler forward onto exhaust pipe joint completely. **TIP:** Using a small screwdriver lift edge of coupler on exhaust pipe joint and apply glass cleaner.
4. Remove primary muffler from hull. Drain any excess water.
5. Remove end cap of primary muffler by cutting at weld. (see illustration #15 page 9)
6. Inside muffler remove inner ring at edge. (see illustration #16 page 9)
7. Inside muffler drill out baffle cap using a 1-3/4" hole saw bit. (see illustrations 17 & 18 page 9) **NOTE: Sand all edges thoroughly.**
8. Replace muffler end cap. **NOTE: An experienced welder should perform this procedure.**
9. Place primary muffler into cradle on left side of craft and secure strap. Slide coupler on exhaust pipe joint onto muffler inlet flange completely. Secure hose clamps. **NOTE: Do not over tighten clamps.**
10. Replace brass fitting at top of muffler inlet tube with supplied brass fitting. Attach waterline from exhaust side of cylinder to newly installed fitting and secure. Attach waterline from outlet at top of pump area to fitting at bottom of muffler inlet and secure. (see illustration #19 page 10) **NOTE: Apply pipe thread sealant to fitting. Do not over tighten fitting. Do not over tighten clamps.**
11. Install supplied 1/2" brass splicer into waterline from intake side of cylinder and secure. Attach supplied 1/2" waterline to splicer and secure using supplied hose clamp. (see illustration #20 page 10) **NOTE: Do not over tighten clamps.**
12. Install supplied bypass fitting in a location that will allow water to be expelled so as not to come in contact with rider(s). **TIP:** Choose a flat area at rear of craft. (see illustration #21 page 10) **NOTE: Apply silicone sealant to flange and threads of bypass fitting.**
13. Attach open end of supplied 1/2" waterline to newly installed bypass fitting and secure using supplied hose clamp. **NOTE: Do not over tighten clamp. TIP:** Secure spliced waterline to hull. Attach a small piece of padding to prevent chafing. (see illustration #20 page 10)

Return to Step 10, page 15 of instructions.

Remember, the water belongs to everyone. Please ride responsibly!

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 Free Flow Exhaust 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 must accompany all warranty claims.

Warranted replacement parts will be returned freight collect.