



RIVA RACING
PERFORMANCE PRODUCTS & ACCESSORIES

Fuel Pressure Regulator Kit **PART# - RY12040-RRFPR-6S5**

APPLICATION(S): 2011~08 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. **Read through instructions entirely before performing installation.** Please follow these step-by-step instructions and illustrations carefully.

Note: These instructions are broken up into 2 sections.

Section 1 is for overall installation of the fuel pressure regulator kit and configuring the kit for **Static Fuel Pressure**. The supplied vacuum line, straight barbed fittings and vacuum line "T" fitting **WILL NOT** be used for static fuel pressure applications.

Section 2 outlines how to configure this kit for **Rising Rate Fuel Pressure** applications. The supplied vacuum line, straight barbed fittings and vacuum line "T" fitting **WILL** be used for this application.

For ***non-rising rate*** (Static) fuel pressure, install supplied vent fitting into side of regulator.



For ***rising rate*** fuel pressure, install supplied 'barbed fitting' into side of regulator.



NOTE: Static pressure must be set before operating craft. Engine must be running and warmed up when setting and verifying static pressure. See page 9 for setting procedure.

For RIVA Racing Performance Package fuel pressure settings & configurations, please visit the RIVA Racing ECU Manager site <http://www.rivaecu.com> . Fuel pressure settings will be noted on your base map.

- SECTION 1 INSTALLATION INSTRUCTIONS - **(STATIC FUEL PRESSURE MODIFICATION PROCEDURE)**

*** * * NO SMOKING. ALLOW ENGINE TO COOL COMPLETELY * * ***

1. Drain fuel tank completely.
2. While holding a heavy shop rag under fitting disconnect fuel supply hose from front of engine fuel supply rail. (see illustration #1-1) **NOTE: Fuel system is under pressure. Use care when disconnecting.**
3. At top of fuel tank disconnect electrical connectors (2). (see illustration #1-2)
4. Remove the nine brass nuts securing fuel pump to fuel tank. (see illustration #1-3) Remove stainless retainer ring.
5. Note front of fuel pump in relation to bow of craft. Fuel pump must be tilted toward its front as you lift upward so as not to damage fuel gauge float. (see illustration #1-3) **TIP:** Twist fuel pump clockwise and tilt towards the right to remove. **NOTE: BE PATIENT!!! This process requires careful maneuvering to remove fuel pump.**
6. Drain fuel from fuel pump by tipping upside down. Inspect bottom of fuel pump. There should be three rubber caps (one per post). (see illustration #1-3) If any are missing they must be removed from fuel tank and replaced.
7. Place fuel pump on a clean working surface so that fuel gauge arm is facing upward. (see illustration #1-4)
8. Disconnect the white electrical connector from underside of fuel pump top. (see illustration #1-4)
9. Carefully squeeze stopper hooks together that secure fuel gauge arm unit to fuel pump. (see illustration #1-5) Push upward on top of stopper to remove.
10. While depressing tabs on each side of fuel sender push upward on unit to remove from side of fuel pump. (see illustration #1-5)
11. Look through the opening that was behind the fuel gauge arm and locate the black plastic clip securing OE fuel pressure regulator to fuel pump. (see illustration #1-6) Using small opening just below pry clip off. (see illustration #1-7)
12. Remove OE fuel pressure regulator from its cradle. Transfer o-ring from OE fuel pressure regulator to supplied billet block-off. Install block-off into cradle and secure with plastic clip. **TIP:** Apply a thin coat of engine oil to o-ring.
13. Route OE fuel pressure regulator up alongside fuel pump hose and secure together using supplied zip tie. (see illustration #1-8)
14. Replace fuel gauge arm unit and reconnect white electrical connector. **NOTE:** Make sure rubber seal is in place at top of fuel pump. (see illustration #1-4)
15. Install fuel pump into fuel tank. Note front of fuel pump in relation to bow of craft. Fuel pump must be tilted toward its front as you install it so as not to damage fuel gauge float. **TIP:** Tilt towards the right to install. **NOTE: BE PATIENT!!! This process requires careful maneuvering to install fuel pump.**
16. With fuel pump facing proper direction install stainless retainer ring and only 6 of the brass nuts securing fuel pump to tank. (see illustration #1-9) **NOTE: Do not over tighten nuts.** Reconnect electrical connectors (2).
17. Remove rubber cap on top of tank. (see illustration #1-9) Retain hose clamp.
18. Install supplied fuel pressure regulator assembly onto fuel tank. (see illustration #1-10) Place one supplied washer on each bare stud and secure using stock brass nuts. Secure fuel return cap using stock hose clamp. **NOTE: Do not over tighten nuts or clamp.**
19. Disconnect hose with green clip from regulator connect to fuel pump fitting. (see illustration #1-10) Install OE fuel supply hose between fuel pressure regulator and fuel supply rail. **TIP:** Apply a thin coat of engine oil onto fittings. **NOTE: Make sure connectors are installed onto fittings completely and locking clips are secure.**
20. Check bilge for tools, rags, etc. If you wish to convert the static configuration to rising rate proceed to page 6. Otherwise add fuel and run craft on the flush kit to set/verify fuel pressure for proper operation. See page 9 for fuel pressure setting instructions.

***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 Fuel Pressure Regulator Kits carry a 6 month 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 -

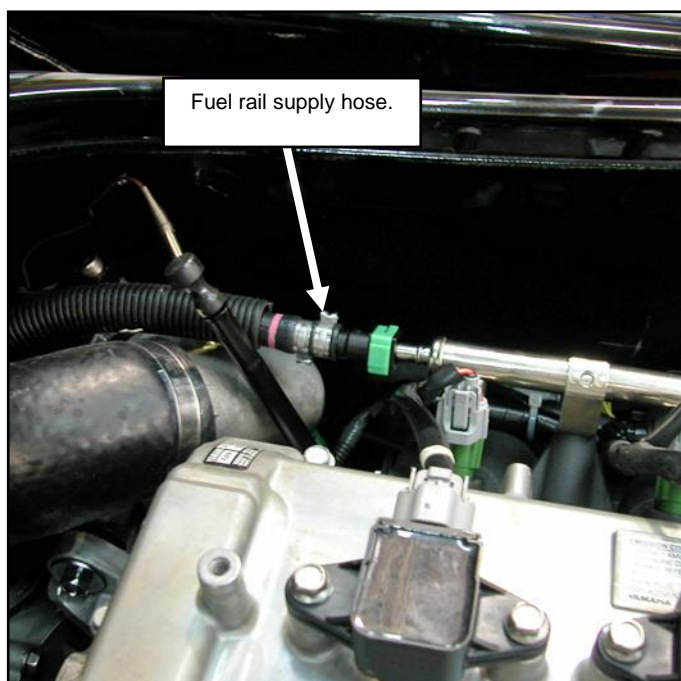


Illustration #1-1

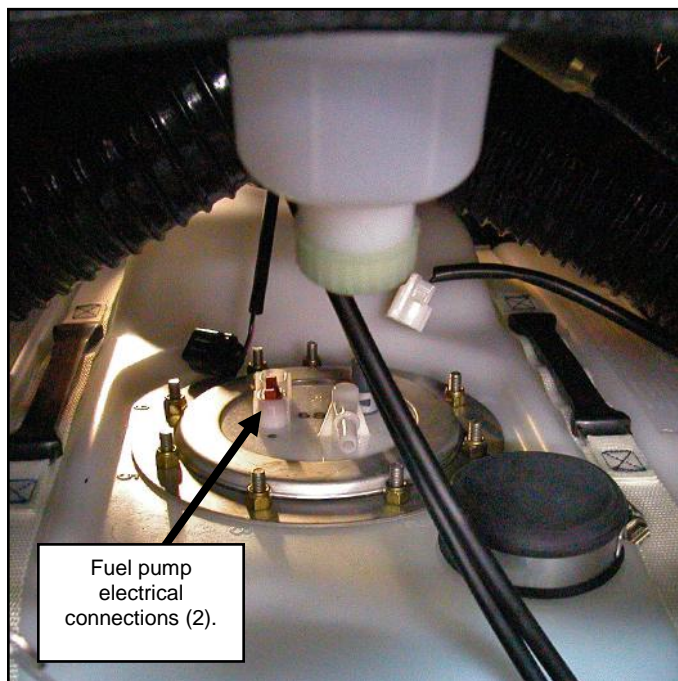


Illustration #1-2

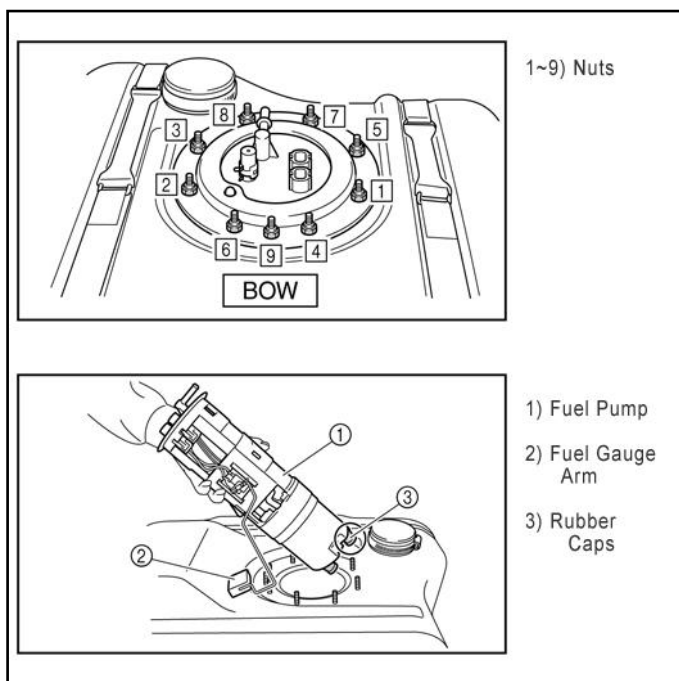


Illustration #1-3

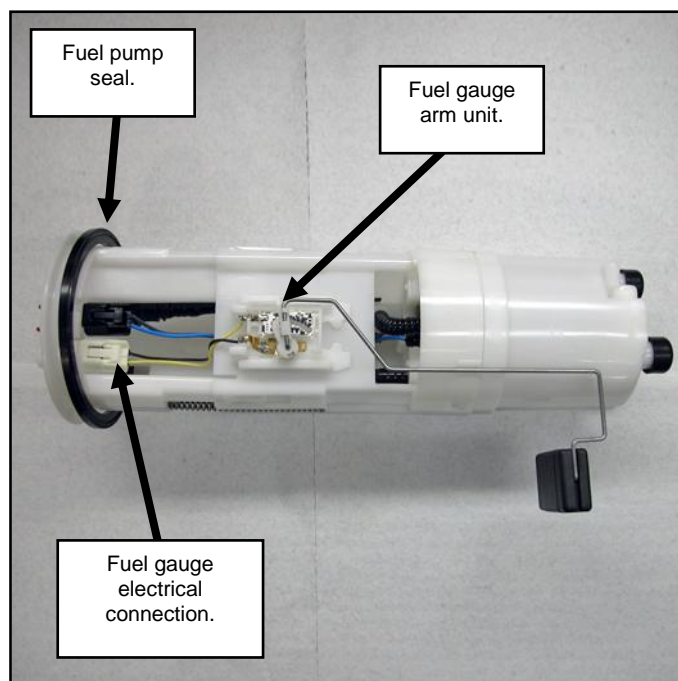


Illustration #1-4

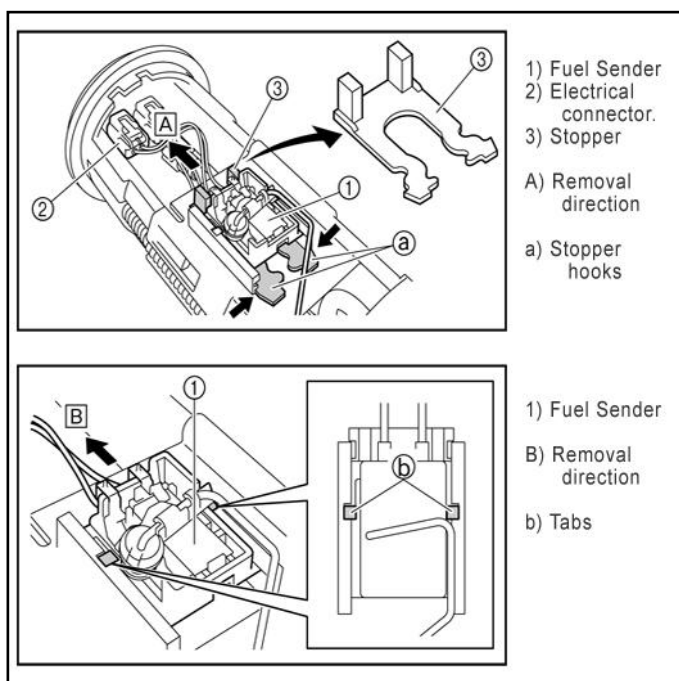


Illustration #1-5



Illustration #1-6

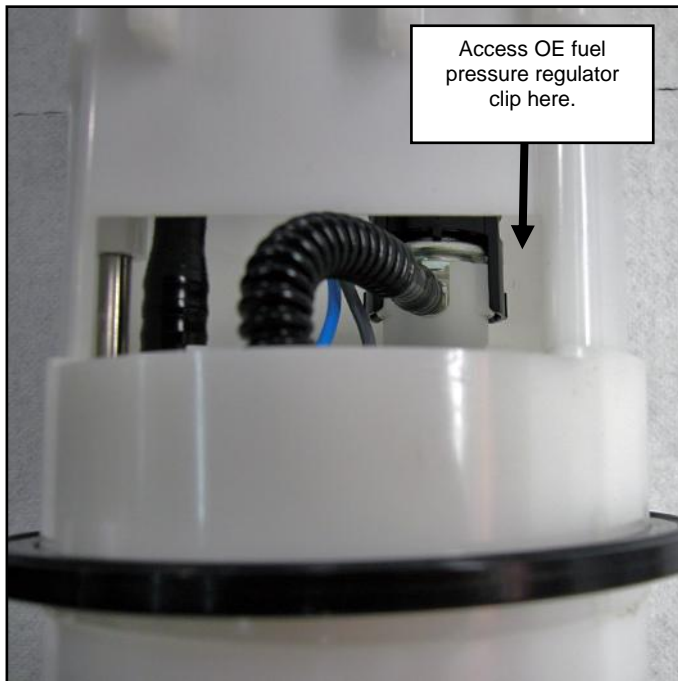


Illustration #1-7

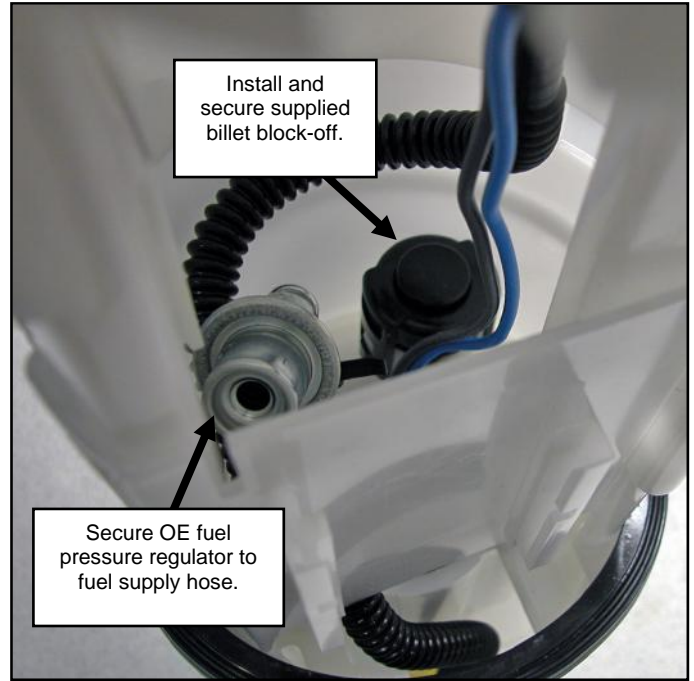


Illustration #1-8

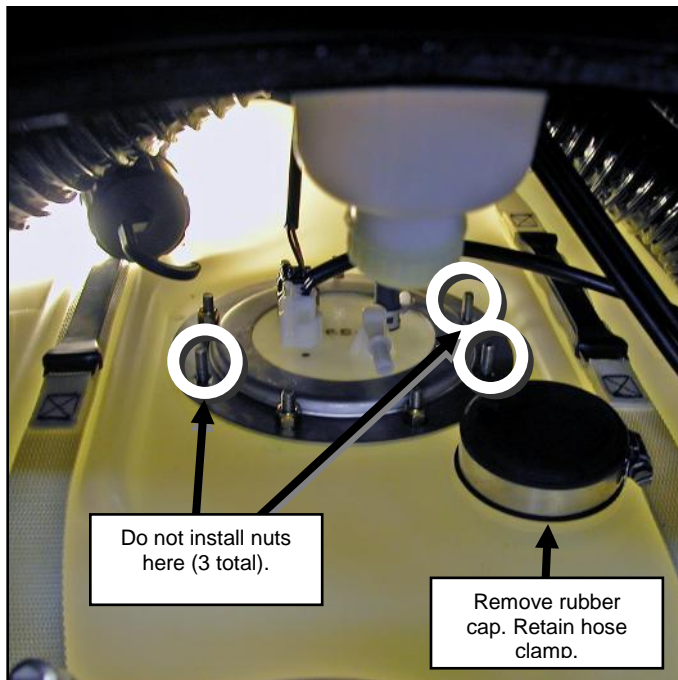


Illustration #1-9

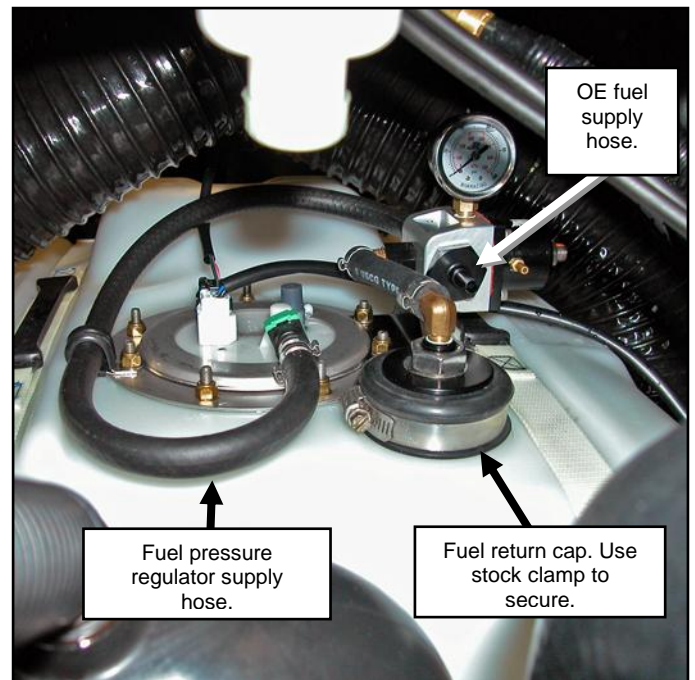


Illustration #1-10

- SECTION 2 INSTALLATION INSTRUCTIONS - **(RISING RATE FUEL PRESSURE MODIFICATION PROCEDURE)**

Required tools

1/8" NPT Tap
21/64" Drill Bit

Part#

N/A
N/A

Recommended tools

Service Manual

Part#

CALL

*** * * DO NOT 'T' INTO MAP SENSOR HOSE * * ***

1. Remove plastic cover on top of engine.
2. Disconnect and remove fuel rail supply hose. **Note:** Be careful not to spill fuel.
3. Remove brackets (2) on right side of valve cover for plastic engine cover. (see illustration #2-1)
4. Disconnect spark plug coil and fuel injector electrical connectors.
5. Remove bolts (3) securing fuel rail to intake manifold. Remove bolt (1) securing oil level gauge tube to front of intake manifold.
6. Lift up on fuel rail to remove fuel injectors from intake manifold. Raise front of fuel rail up and move towards back of engine. You will need to disconnect several electrical connectors during this step. Store fuel rail assembly vertically in engine compartment to right of electrical box. **Use care not to spill fuel.**
7. Reach down alongside intake manifold to locate coupler connecting throttle body to 'J' pipe. (see illustration #2-2) Loosen lower of two hose clamps securing coupler to 'J' pipe. SVHO Models: Loosen clamp connecting J pipe to throttle body inlet. (SVHO models is equipped with one piece "J" pipe.)
8. Remove bolts and cap nuts securing intake manifold to engine. (see illustration #2-3) Disconnect map sensor electrical connector at rear of intake manifold.
9. Lift intake manifold up and away to remove from motor. Cover 'J' pipe and cylinder head intake openings.
10. Remove zip tie clip from boss at rear of intake manifold. (see illustration #2-4) Carefully drill a hole into center of boss and into intake manifold using a 21/64" drill bit. **NOTE: It is important you use the proper size drill bit.**
11. Tap newly made hole using a 1/8" NPT Tap. **NOTE: Thoroughly clean intake manifold inside and out.**
12. Install supplied brass vacuum fitting. (see illustration #2-5) **NOTE: Apply pipe thread sealant to threads. Do not over tighten fitting.**

If you plan to one day upgrade your stock intercooler to a RIVA Power Cooler Kit we recommend you completely remove the zip tie boss at front of intake manifold prior to reinstalling intake manifold. (see illustration #2-4)

13. Install intake manifold. **TIP:** SHO models: Apply generous amount of glass cleaner to outside of 'J' pipe. Secure intake manifold and oil level gauge tube using stock hardware. **NOTE: Apply blue Loc-tite to bolts. Torque the 8 manifold bolts and 2 cap nuts to 10 N•m (7.4 lbf•ft) first and then 20 N•m (14.8 lbf•ft). Torque the 2 intake manifold support bolts to 22 N•m (16.2 lbf•ft) first and then 42 N•m (31 lbf•ft).**
14. Secure stock clamp at throttle body to 'J' pipe coupler. **NOTE: Do not over tighten clamp.**
15. Reconnect map sensor. Replace fuel rail making sure fuel injectors are installed completely into intake manifold. **NOTE: Apply blue Loc-tite to bolts. Do not over tighten bolts.**
16. Reconnect all electrical connections disconnected during steps 4~6.
17. On fuel pressure regulator body remove the vent filter and replace with supplied straight barbed fitting. (see illustration #2-6)
18. Install supplied vacuum hose between brass fitting on intake manifold and fuel pressure regulator. (see illustration #'s 2-6 & 2-7) Route vacuum hose under fuel rail. Secure using supplied zip ties. If using a blow-off valve, use supplied "T" fitting to "T" into vacuum line for blow-off valve vacuum line.
19. Replace engine cover brackets. **NOTE: Apply blue Loc-tite to bolts. Do not over tighten bolts.**
20. Replace plastic engine cover.
21. Check bilge for tools, rags, etc. Add fuel and run craft on flush kit to set/verify fuel pressure and to check for proper operation. See page 9 for fuel pressure setting instructions.

- INSTALLATION IMAGES -

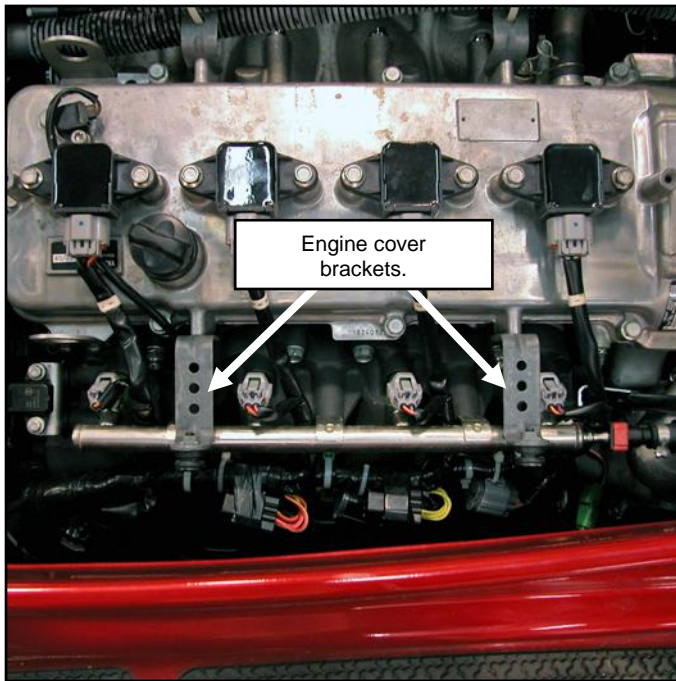


Illustration #2-1

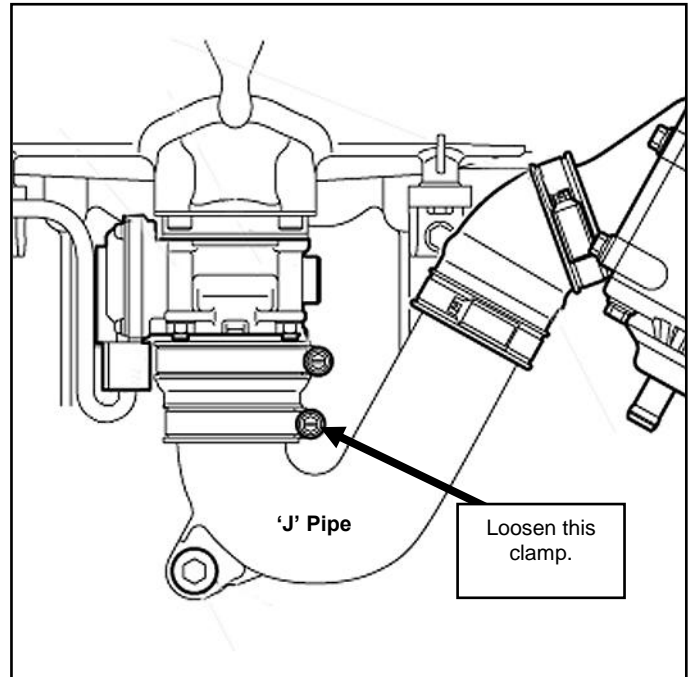


Illustration #2-2

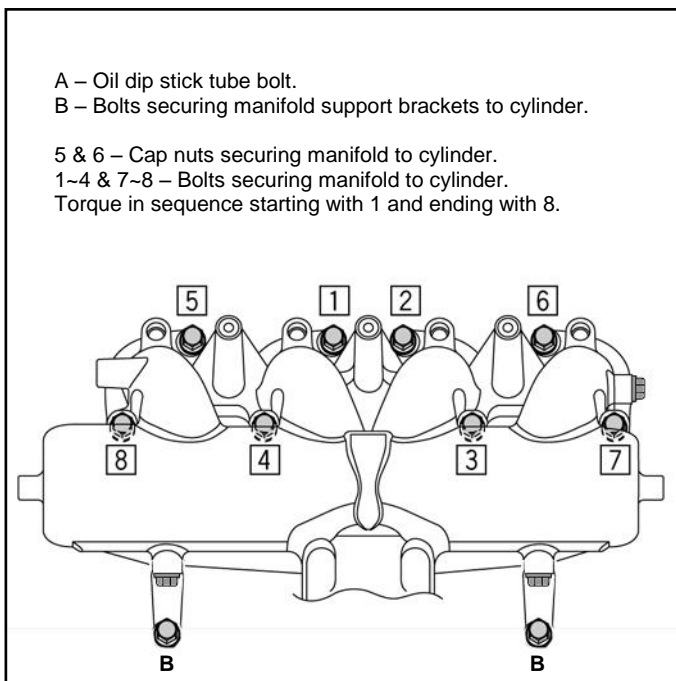


Illustration #2-3

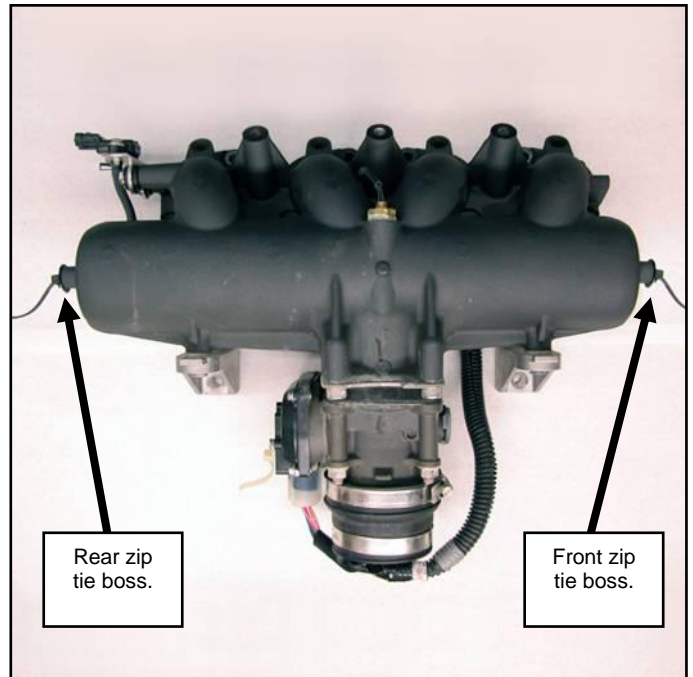


Illustration #2-4

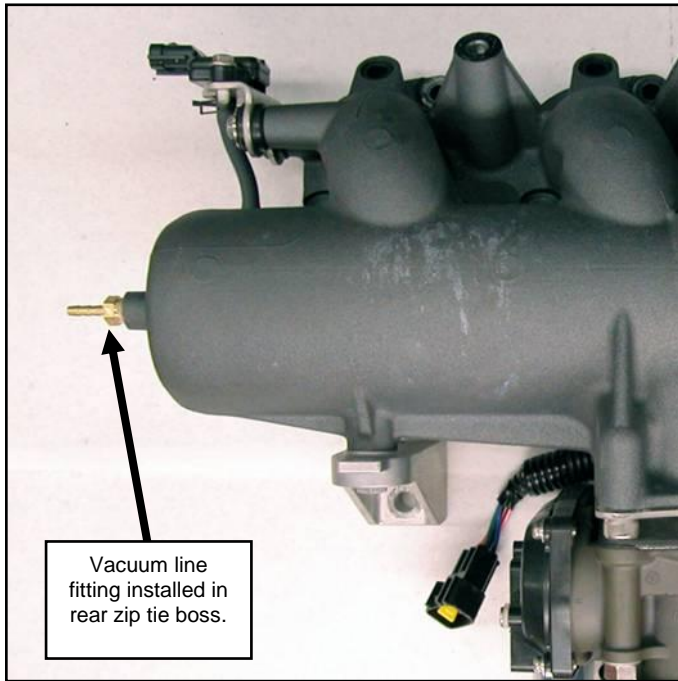


Illustration #2-5

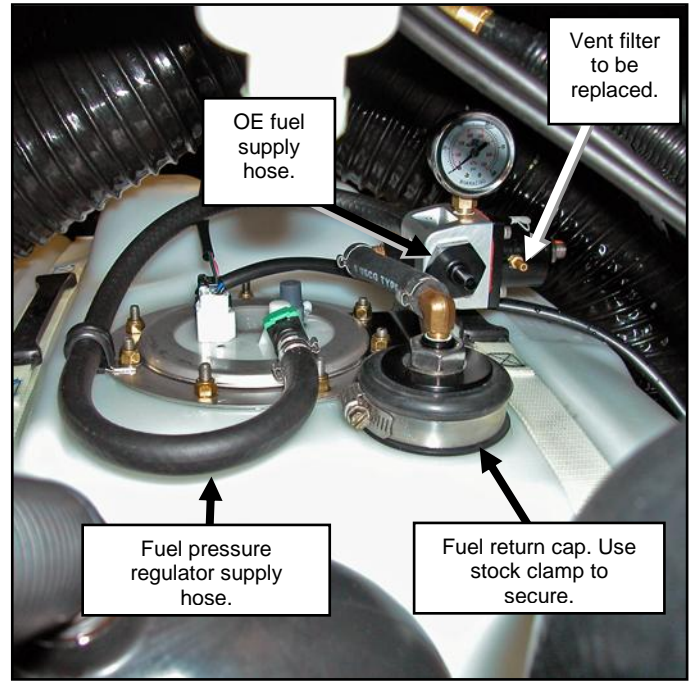


Illustration #2-6

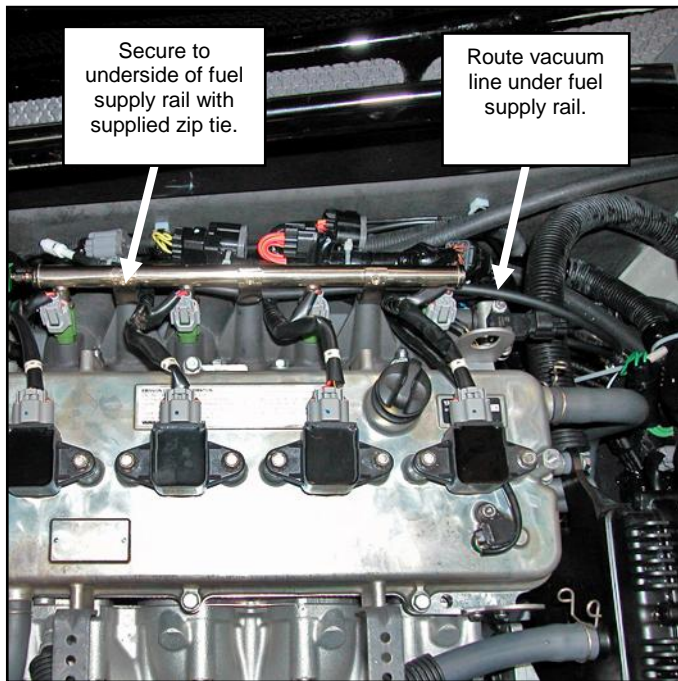


Illustration #2-7



Illustration #2-8

- Fuel Pressure Setting Instructions & Guide -

***** NO SMOKING *** NO SMOKING *** NO SMOKING *****

Due to variances in weather and altitude you must verify pressure while craft is running and warmed up.

In the **Rising Rate** configuration pressure is raised at a ratio of 1:1. Fuel pressure increases 1 pound for every 1 pound of boost. **You must disconnect vacuum hose from fuel pressure regulator when setting base pressure.**

1. Disconnect vacuum hose from fuel pressure regulator fitting if configured for rising rate. Block off or pinch vacuum hose to prevent high idle.
2. Using a 3/16" allen wrench secure adjustment screw. (see illustration #1)
3. Using a 9/16" combo wrench, loosen the jam nut securing the adjustment screw. (see illustration #1)
4. Hook craft up to flush kit.
5. Start craft's engine and allow to idle.
6. Start water flowing to flush kit.
7. To increase fuel pressure, slowly rotate adjustment screw clockwise. To reduce, slowly rotate counter clockwise. (see illustration #2)
8. Tighten jam nut.
9. Rev engine up 2~3 times and allow to return to idle. Verify gauge is reading desired pressure.
10. Turn water off.
11. Turn engine off.
12. Reconnect vacuum hose to fuel pressure regulator fitting and secure with a zip tie if set for rising rate configuration.

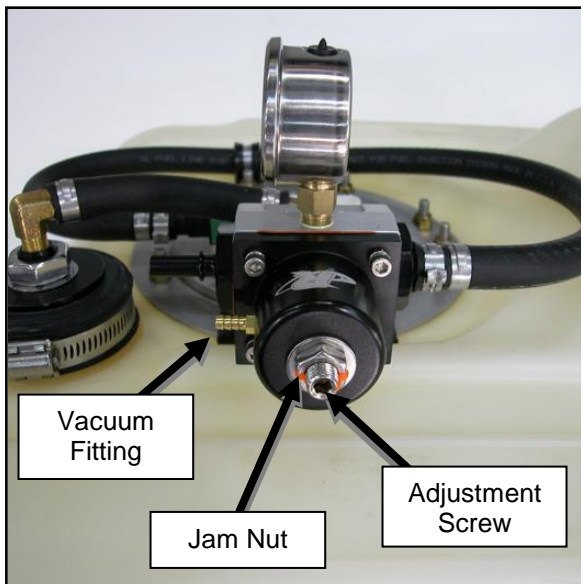


Illustration #1

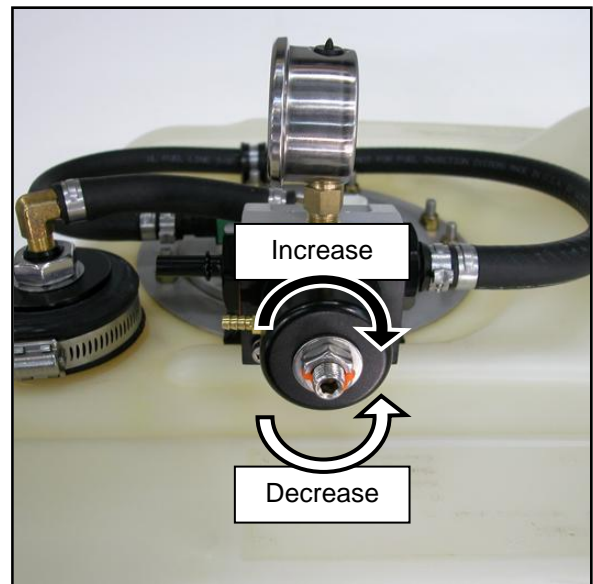


Illustration #2

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.