



ETON America, LLC



Service Bulletin

Bulletin No:	0036
Date:	01/06/06

RX4-90R Not shifting properly, shift motor making noise, or indicator lights blinking.

There is an engineering change affecting the 2006 Viper 90R 4 cycle ATV with Engine Numbers below JIExxxxxxxxx751. The Shift Push block has been reengineered to reduce friction, allowing the shifting motor to complete the shift process. Units with out this upgrade may display some or all of the following symptoms:

1. Incomplete shifting causing blinking indicator lights
2. Grinding noise from shift motor
3. Engine stalling during shifting
4. Starter motor reduction gear failure

Part required for engineering change:

Qty	Part No.	Description
1	811674	Shift Push Assembly



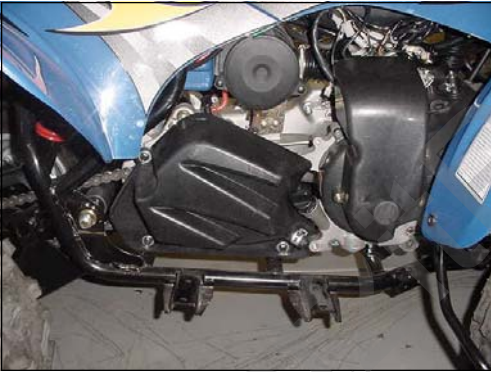
Labor Codes	
713	Shift Motor
714	Shift Push assembly

Step 1



Remove the plastic floorboard.

Step 2



Remove the metal floorboard.



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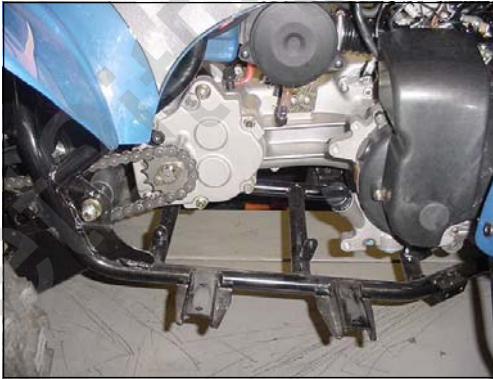


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Step 3



Remove the exhaust pipe and chain guard.

Step 4



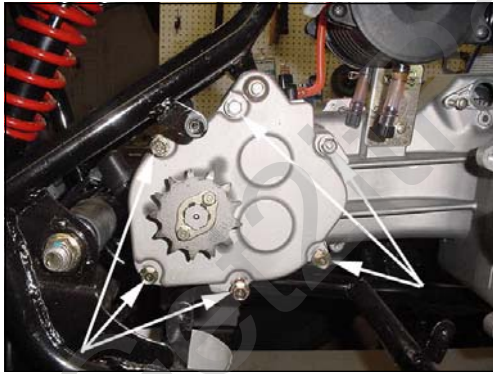
Disconnect the battery and the CDI box. Also remove the rear fender and the drive chain.

Step 5



Drain the gear oil from the transmission as shown in picture

Step 6



Remove the six bolts from the transmission cover. Remove the engine hanger nut.



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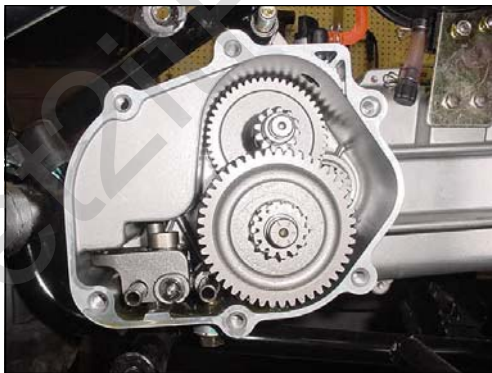
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Step 7



Remove the transmission cover and the gasket.

Step 8



Next remove the two Phillips head screws from the shift motor cover. This will expose the shift motor.

Step 9



Remove the shift motor as shown in picture.

Step 10



Now remove the 3 screws from the top of the shift motor. Inspect the reduction gears for damage; replace as needed



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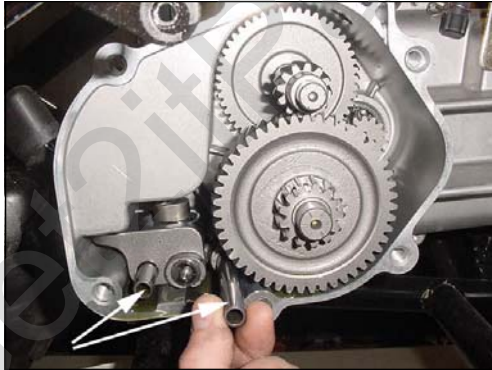


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Step 11



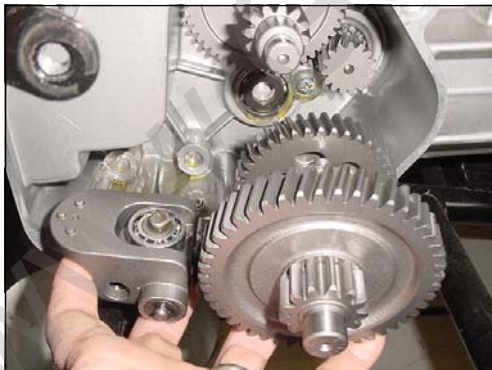
Remove the 2 pins from the shift push and the shift fork.

Step 12



Unscrew the bolt on the bottom of the transmission. This will release the spring and ball bearing. This bolt is located just in front of the drain bolt.

Step 13



Disassemble the transmission. First, remove the knock block, then remove the shift push and shift shaft as one piece as shown in picture.

Step 14



Once the shift push is out of the transmission, remove the c-clip and washer, and the pin and springs will slide out from the shift fork as shown.



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Step 15



The new shift push has a black insulator piece installed. Also, the length of the cam area is increased. This will allow less stress on the shift motor reduction gears.

Step 16



Now, install the new shift push with the shift fork. Insert the pin and springs. Depress the fork until the c-clip can be installed. We recommend using a press, but it is not necessary for this installation.

Step 17



Now, reassemble the shift fork with the gear shift shaft, making sure that the washer is on the front side of this shaft as shown in picture.

Step 18



Make sure the cam is in this position as shown in picture when installing. This will make it easier to install the knock block once the assembly is in the transmission.



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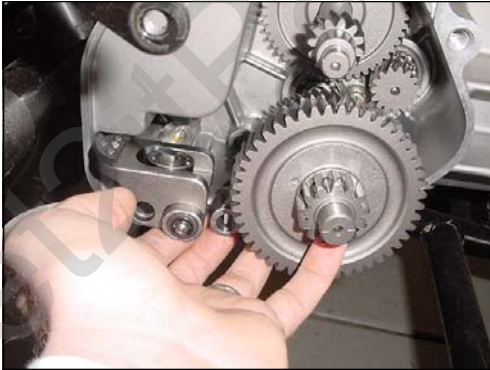


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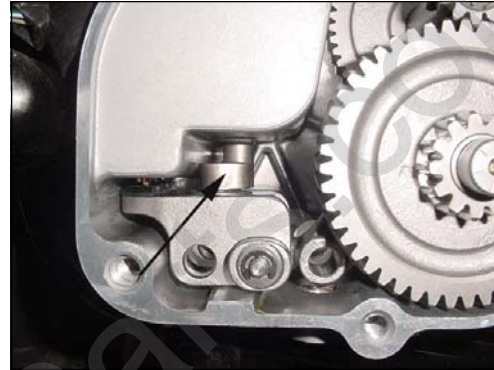
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Step 19



Install the shift push and the gear shift shaft as one assembly as shown. The cam needs to be aligned into the indicator hole in the case. This will lock the shift push in place. Also, reinstall the pins as shown in step 11.

Step 20



Once the gears are installed, the knock block can be installed with a pair of needle nose pliers. Align it as shown in picture.

Step 21



Install the gasket and the shift motor. The motor has a "D" shaped keyway that is keyed to the knock block. Make sure this is aligned.

Step 22



Connect the wires to the shift motor. The red wire connection has a red dot to ensure correct polarity. Now, install the shift motor cap in reverse order as shown in step 8.



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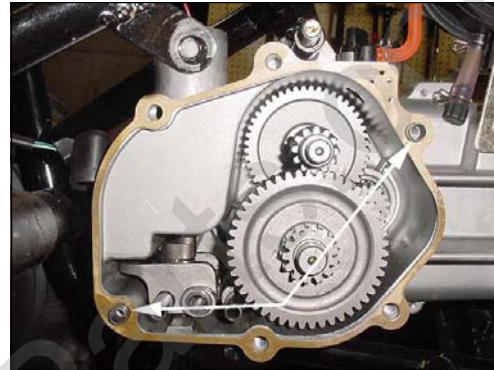
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Step 23



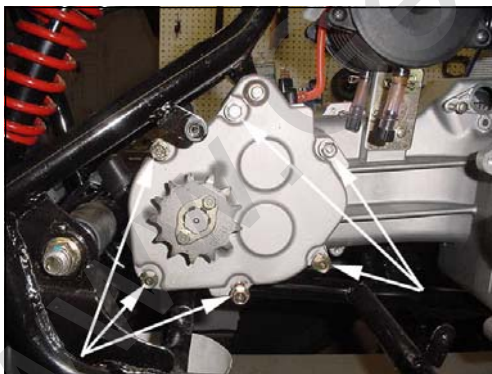
Reinstall the ball bearing the spring and the bolt in reverse order from step 12. Also, reinstall the drain bolt as shown in step 5.

Step 24



Clean the transmission gasket surface. Install the two indicator pins as shown in picture. Now, reinstall the gasket and the transmission cover.

Step 25



Tighten the six cover bolts and the engine hanger bolt and nut as shown. Torque to 15-18ft lbs.

Step 26



Remove the filler plug and fill the transmission with 10.2oz of 80-90weight gear oil.



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Step 27



Now reinstall the following parts in reverse order of their removal. Start with the drive chain, the chain guard and the exhaust pipe. Install the rear fender and the RH footrest.

Step 28



Reinstall the battery, the CDI box, and the shift motor. Test the operation of the shift motor to make sure it is engaging in each gear.