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## MODELS:

1994 - 1998 (BR/BE) Ram Truck

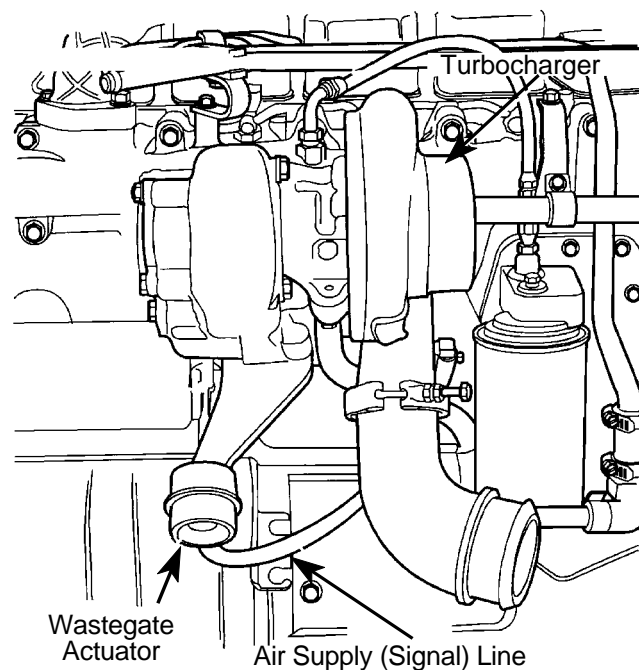
**NOTE: THIS INFORMATION APPLIES TO VEHICLES EQUIPPED WITH A 5.9L DIESEL ENGINE.**

## DISCUSSION:

A new kit has been released that will allow technicians to repair turbochargers with failed wastegate actuators. Wastegate actuators that have failed can cause low power complaints or noise complaints from air escaping out of the actuator.

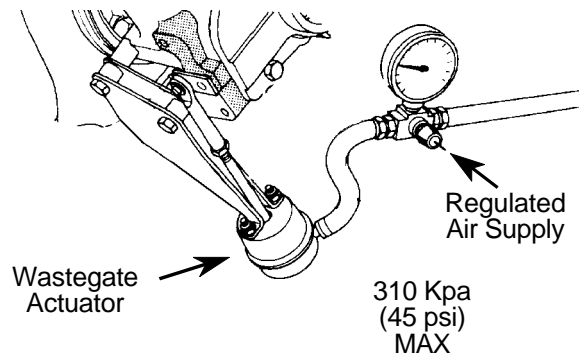
## DIAGNOSIS:

1. Remove the air supply (signal) line from the wastegate actuator (Figure 1).



**FIGURE 1**

2. Install a regulated air supply to the actuator (Figure 2).



**FIGURE 2**

3. Spray the actuator assembly with a soap solution and apply regulated shop air not exceeding 310 KPa (45 psi) to the actuator.

**NOTE: DO NOT EXCEED 310 KPA (45 PSI).**

4. If an air leak can be heard or bubbles are seen exiting from the actuator, perform the Repair Procedure.
5. If an air leak is not detected and the actuator rod does not move, remove the e-clip at the end of the actuator rod. Carefully disconnect the rod from the crank arm and check the crank arm for free movement. If the crank arm is seized or does not move easily, replace the turbocharger assembly.

**PARTS REQUIRED:**

1	05013666AA	Kit, Actuator 1996/1998 12 Valve Diesel (California Emissions Automatic/Manual)
1	05013667AA	Kit, Actuator <u>1995 (See Note)</u> - 1996/1998 12 Valve Diesel (Federal Emissions Automatic)
1	05013668AA	Kit, Actuator 1996/1998 12 Valve Diesel (Federal Emissions Manual)
1	05013669AA	Kit, Actuator 1994 (All) - <u>1995 (See Note)</u>
1	05013670AA	Kit, Actuator 1998 24 Valve Diesel (All)

**NOTE: TO DETERMINE CORRECT KIT USAGE FOR 1995 MODELS, VERIFY IF THE WASTEGATE ACTUATOR HAS A SHORT (APPROX 1 FT) TURBO-MOUNTED AIR SUPPLY (SIGNAL) LINE, OR IF IT HAS THE LONGER (APPROX 3 FT) ENGINE-MOUNTED AIR SUPPLY LINE.**

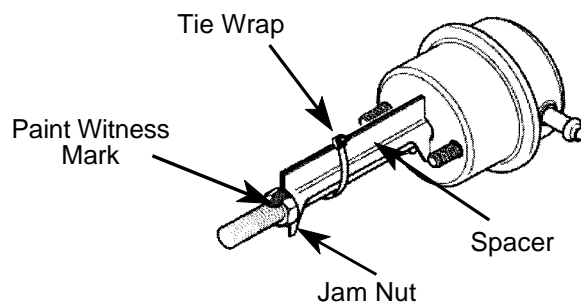
**USE P/N 05013667AA FOR SHORT, TURBO-MOUNTED CONFIGURATIONS.**

**USE P/N 05013669AA FOR LONG, ENGINE-MOUNTED CONFIGURATIONS.**

**REPAIR PROCEDURE:**

This bulletin involves removing the failed wastegate actuator and replacing it with a new part.

**NOTE: THE NEW WASTEGATE ACTUATOR WILL BE PRESET WITH A SPACER AND JAM NUT (FIGURE 3). INSPECT THE JAM NUT PAINT WITNESS MARK TO MAKE SURE THE SETTING HAS NOT CHANGED. IF THE SETTING HAS CHANGED, RETURN THE KIT FOR A NEW ONE.**



**FIGURE 3**

1. Following service manual procedures, remove the turbocharger from the vehicle.
2. Remove the air supply hose from the actuator and connect regulated shop air to the actuator (Figure 2).

**NOTE: DO NOT APPLY MORE THAN 310 KPA (45 PSI) INTO THE ACTUATOR.**

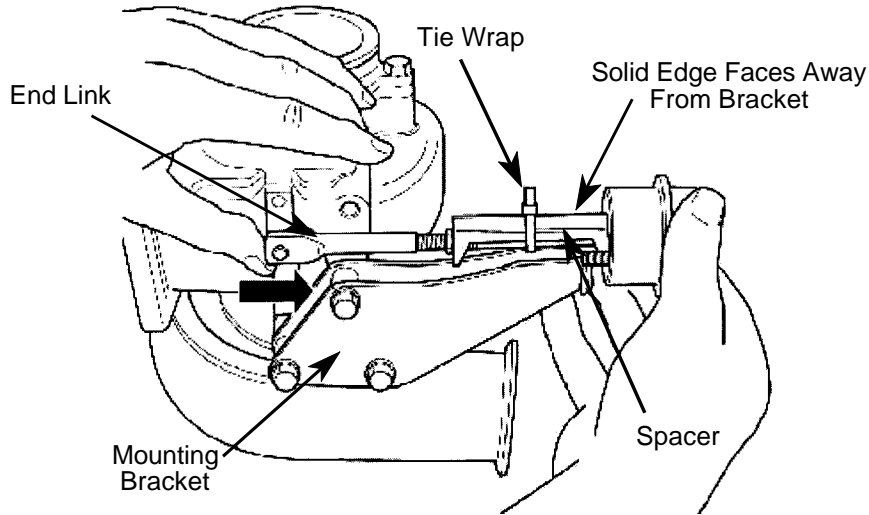
3. Remove the e-clip that attaches the wastegate actuator end link to the turbocharger crank arm.
4. The end link can now be easily removed from the crank arm.

**CAUTION: THE ACTUATOR ROD MAY RETRACT WITH FORCE INTO THE ACTUATOR IF SHOP AIR DOES NOT RELIEVE THE TENSION. KEEP HANDS AND FINGERS CLEAR WHEN PRYING THE END LINK FROM THE CRANK ARM.**

5. Remove shop air from the actuator and remove the actuator from the turbocharger.
6. Thread the new end link (from kit) 4 or 5 turns onto the new actuator.
7. Fit the end link over the crank arm with the solid edge of the spacer facing away

from the actuator mounting bracket. Push the crank arm toward the actuator (Figure 4).

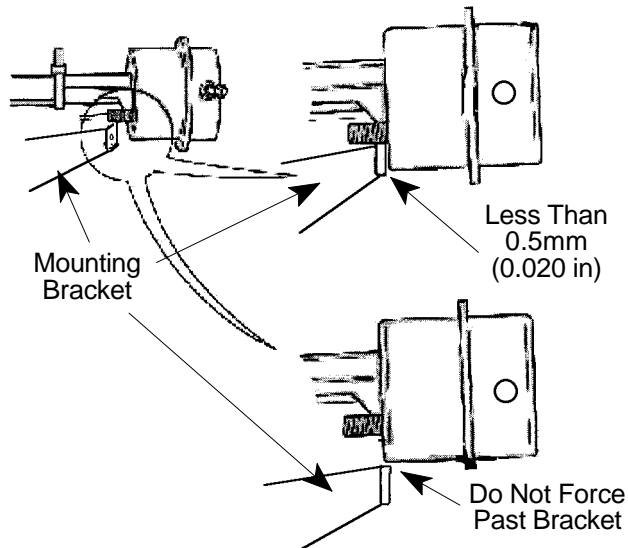
**NOTE: DO NOT FIT THE ACTUATOR STUDS INTO THEIR MOUNTING HOLES AT THIS TIME.**



**FIGURE 4**

- Adjust the end link by rotating it on the actuator shaft until the body of the actuator just clears the bracket with less than 0.5 mm (0.020 in) clearance (Figure 5).

**NOTE: THE ACTUATOR BODY MUST NOT BE FORCED TO CLEAR THE MOUNTING BRACKET.**



**FIGURE 5**

- While holding the end link from rotating, remove the end link from the crank arm.

- 10. Install the actuator studs through the mounting holes of the bracket and install the end link to the crank arm.
- 11. Attach the end link to the crank arm with the new e-clip (from kit) and install the new actuator mounting nuts (from kit) onto the actuator studs. Torque the nuts to 8.5 Nm (75 in lbs.).
- 12. Loosen the jam nut that holds the spacer in place. Cut the tie strap, remove and discard the spacer.
- 13. Tighten the jam nut against the end link. Torque the nut to 8.5 Nm (75 in lbs.).
- 14. Connect the air supply line onto the actuator and secure it with a new hose clamp (from kit).
- 15. Following service manual procedures, reinstall the turbocharger assembly to the engine using the new gaskets (from kit).

**POLICY:** Reimbursable within the provisions of the warranty.

**TIME ALLOWANCE:**

Labor Operation No: 09-44-05-90 ..... 0.8 Hrs.

**FAILURE CODE:** P8 - New Part