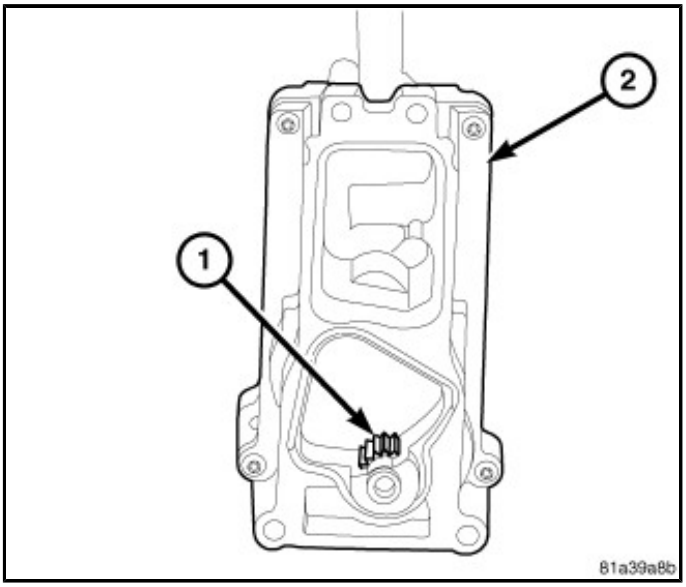
INSTALLATION



1. Clean turbocharger actuator housing (2) and turbocharger mounting surfaces.

CAUTION: The electronic turbocharger actuator (2) must be removed from the turbocharger to perform this function. Turbocharger failure could result if the electronic turbocharger actuator (2) is not removed from the turbocharger.

2. Position turbocharger actuator (2) in engine compartment so the actuator gear (1) will be free to rotate.

3. Connect turbocharger actuator electrical connector.

4. Connect negative battery cable.

5. Turn key on, **do not start engine.**

6. Using a scan tool function “Misc functions” under ECU, perform VG Turbo Actuator Pre-Align/Self Calibrate.

NOTE: This is a two step process, the tool will perform the Pre-align portion first followed by the Self Calibration portion.

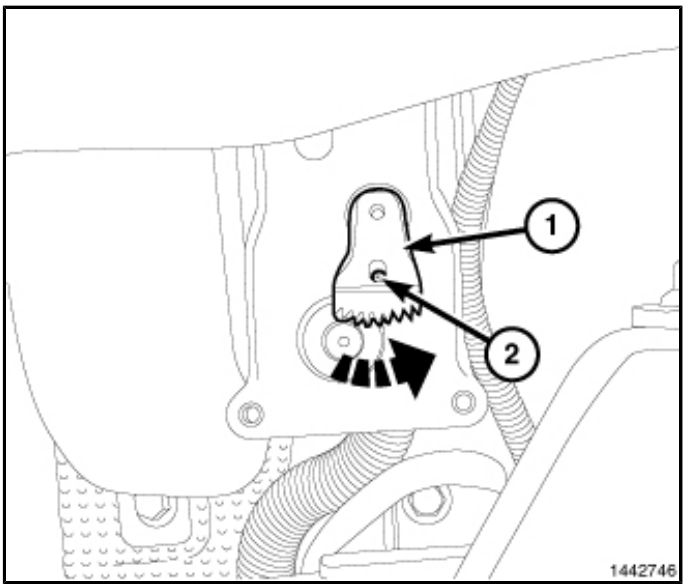
NOTE: Do not turn key off or disconnect the tool after performing the turbo actuator pre-align portion of the routine.

CAUTION: Use only turbocharger actuator grease supplied in the service kit. Use of any other type of grease or too much grease may result in damage to turbocharger. Use the full amount of grease supplied with the service kit.

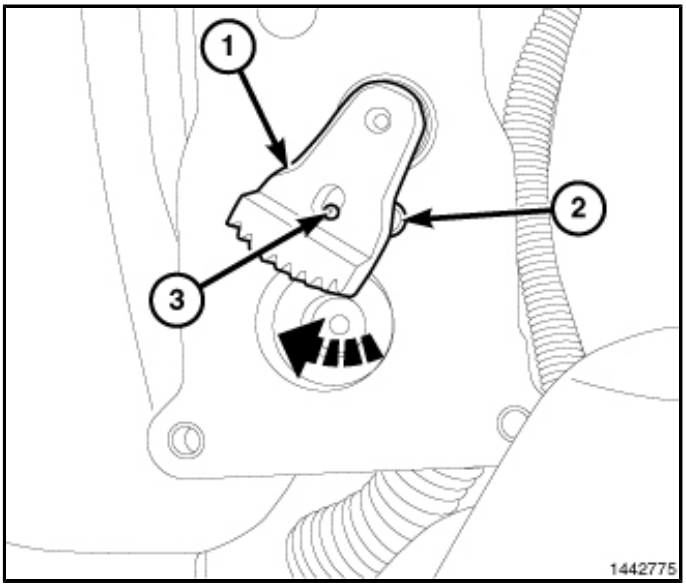
7. Apply grease to turbocharger actuator sector gear in a line across center of all teeth.

8. Install O-ring on turbocharger actuator.

9. Rotate turbocharger sector gear (1) counterclockwise (forward). Insert large end of alignment pin (or a 0.187 in. pin or a 3/16 in. drill) through sector gear alignment hole (2) until it engages hole in turbocharger bearing housing and sector gear will not rotate. Remove alignment pin from turbocharger actuator sector gear.



10. Rotate the sector gear (1) clockwise (rearward) and insert small end of alignment tool (or 0.125 in. pin or a 1/8 in drill.) through the sector gear alignment hole (3) until it engages the alignment hole in turbocharger bearing housing (2) and sector gear will not rotate. If alignment pin does not engage hole in turbocharger bearing housing (2) , variable geometry mechanism is not opening completely, refer to (Refer to 09 - Engine/ Turbocharger System/TURBOCHARGER - Diagnosis and Testing).



11. Install guide pins on turbocharger.

12. Remove alignment pin from turbocharger actuator sector gear. **Do not move the sector gear at this point.**

13. Position turbocharger actuator on guide pins and install.

14. Install two mounting screws. Hand tighten only.

15. Remove guide pins. Install remaining two mounting screws. Tighten mounting screws in a cross pattern to 11 N·m (96 in. lbs.).

CAUTION: The electronic turbocharger actuator must be installed on the turbocharger before performing this step. Incomplete installation of the electronic turbocharger actuator will result in failure of the calibration procedure.

16. Using the scan tool, perform the Self Calibrate portion of the "VG Turbo Actuator Pre-Align/Self Calibrate" routine.

NOTE: If the TURBO ACTUATOR SELF CALIBRATE procedure fails, remove actuator and repeat installation one additional time. If this fails to clear error, replace turbocharger.

17. Place ignition in the OFF position.

18. Install air filter housing (Refer to 09 - Engine/Air Intake System/BODY, Air Cleaner - Installation).

19. Fill cooling system (Refer to 07 - Cooling - Standard Procedure).