

OWNERS MANUAL

...with installation instructions

Banks Big Head[®] Wastegate Actuator

**2001-2004 Chevrolet / GMC 6.6L Duramax
(LB7) Duramax Pickup Trucks**

THIS MANUAL IS FOR USE WITH KIT 24396

BANKS

Dear Customer,

If you have any questions concerning the installation of your Banks BigHead™ Actuator, please call our Technical Service Hotline. If you have any questions relating to shipping or billing, please contact our Customer Service Department.

Thank you.

General Installation Practices

1. For ease of installation of your Banks system, familiarize yourself with the procedure by reading the entire manual before starting work.
2. Throughout this manual, the left side of the vehicle refers to the driver's side, and the right side to the passenger's side.
3. Disconnect the ground cable from the battery (or batteries, if there are two) before beginning work.
4. Route and tie wires and hoses a minimum of 6" away from exhaust heat, moving parts and sharp edges. Clearance of 8" or more is recommended where possible.
5. When raising the vehicle, support it on properly weight-rated safety stands, ramps or a commercial hoist. Follow the manufacturer's safety precautions. Take care to balance the vehicle to prevent it from slipping or falling. When using ramps, be sure the front wheels are centered squarely on the topsides; put the transmission in park; set the hand brake; and place blocks behind the rear wheels. **Caution! Do not use floor jacks to support the vehicle while working under it. Do not raise the vehicle onto concrete blocks, masonry or any other item not intended specifically for this use.**
6. During installation, keep the work area clean. Do not allow anything to be dropped into intake, exhaust, or lubrication system components while performing the installation, as foreign objects will cause immediate turbocharger and/or engine damage upon start-up.

Tools Required:

- ¼" and ⅜" drive ratchets with standard and metric sockets and ¼" and ⅜" drive extensions
- #55 Torx wrench bit or driver
- Standard and metric combination or open-end wrenches
- Small standard screwdriver
- Standard or needlenose pliers

Highly recommended tools and supplies:

- Compressed air source and hose
- Air pressure regulator
- Inch-pound and foot-pound torque wrenches
- Penetrating oil or light lubricant spray

INSTALLATION INSTRUCTIONS

1. Allow the engine to cool so that coolant pressure is minimal. Remove the plastic engine cover from the top of the engine (see **Figure 1**). Remove the three (3) mounting bolts of the turbine heatshield and remove the heatshield to allow access to the actuator bracket bolts.

2. Remove the E-clip from the pin through the wastegate arm. Remove the top turbocharger coolant inlet hose with a #55 torx wrench (see **Figure 2**). Be sure to retain the gaskets and torx bolt for reinstallation, but the E-clip may be discarded as it will not be reused.

3. Remove the actuator air hose at the compressor outlet. Pressurize the inlet air hose with a regulated supply of air pressure to relieve tension on the actuator pin. Remove the pin from wastegate arm. Remove the two actuator bracket bolts from the compressor housing with a 12-mm socket and retain for reinstallation.

4. Remove the factory actuator, mounting bracket and actuator pressure hose from the engine. Discard the factory mounting nuts and actuator pressure hose, as they will not be reused.

5. Hold the Banks actuator bracket up against the compressor housing in the factory location. Turn the rod end link on the threaded shaft until the pin can be inserted into the wastegate arm with the wastegate in

Figure 1

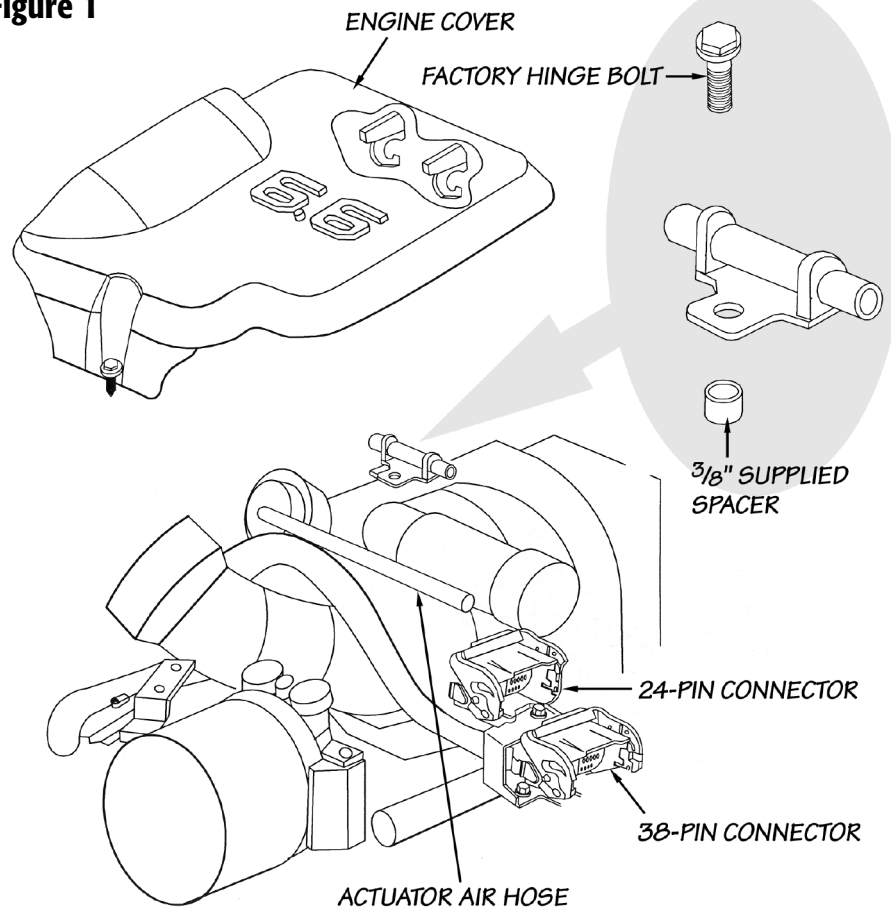
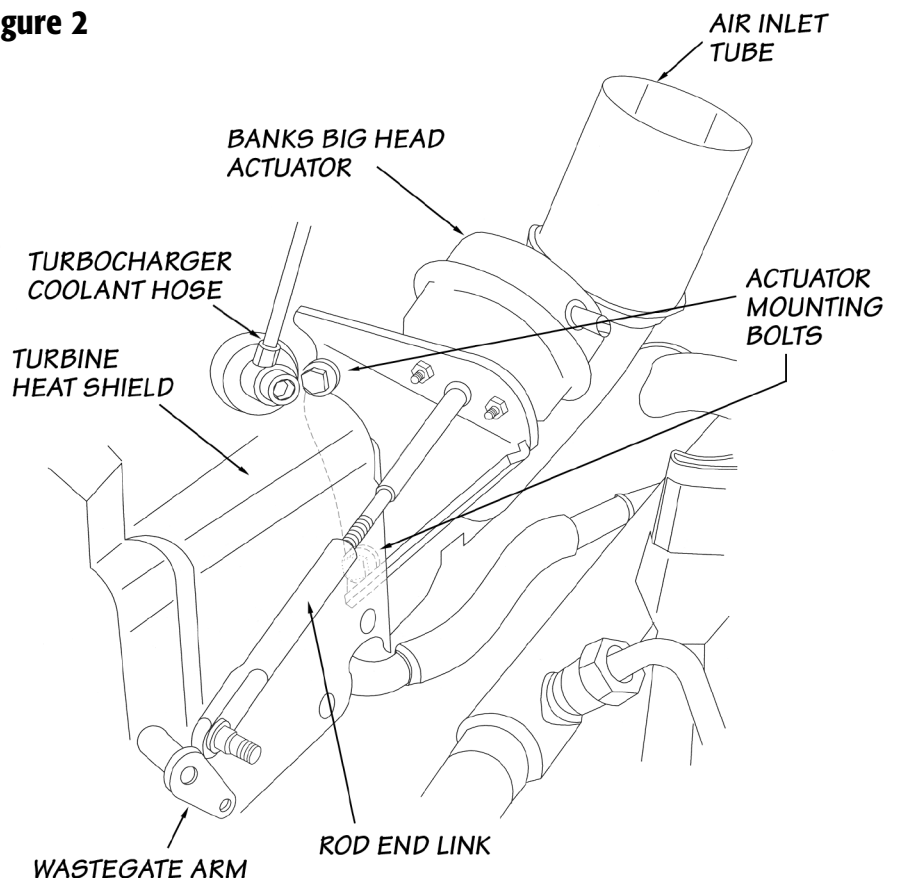


Figure 2



the closed position and the actuator bracket flush against the back of the compressor housing. Remove the pin and turn the rod end link five (5) full turns in to shorten the rod.

WARNING: Be certain the end link is adjusted correctly. If the end link is adjusted more than five (5) turns, overspeeding of the turbocharger can result.

6. Insert the rod end link pin into the wastegate arm. Install a ¼" AN washer and the locknut onto the pin and tighten to 25 **in-lb** (not ft-lb). Be careful not to over-tighten and damage the pin.

7. Install the lower actuator bracket mounting bolt and engage the first three (3) threads.

8. Apply a regulated supply of air pressure to the nipple of the actuator (a standard Schraeder valve filler attachment can be used) until the actuator rod extends enough to allow proper positioning of the actuator mounting bracket.

9. Install the second mounting bolt and tighten both bolts, being careful not to over-tighten them. Remove the air pressure source from the actuator once both mounting bolts are tightened.

10. Install the supplied ¼" actuator pressure hose onto the wastegate actuator nipple and compressor outlet fitting, being careful to route it safely away from close contact with heat, moving objects and sharp surfaces. Secure it using the two (2) supplied 7/16" spring clamps.

11. Reinstall the turbine heatshield using the three (3) factory bolts.

12. 2001 vehicles only: Remove the rear hinge for the engine cover. Install the supplied 3/8" spacer under the hinge and re-install the hinge bolt. Re-install the engine cover (see **Figure 1**).

13. Start the engine and allow it to warm up. Drive the vehicle, checking for proper engine operation. Check and adjust any clamps and mounting hardware as needed.