

Installation Manual

Banks SpeedBrake

For use with Banks iDash

2006-2007 Chevy/GMC 6.6L (LLY-LBZ) Turbo-Diesel Pickup

THIS MANUAL IS FOR USE WITH KITS 55443 & 55445

For iDash 1.8 instructions, see iDash 1.8 manual 97654 & 97674

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Do not use this product until you have carefully read the following agreement.

This sets forth the terms and conditions for the use of this product. The installation of this product indicates that the BUYER has read and understands this agreement and accepts its terms and conditions.

Disclaimer of Liability

Gale Banks Engineering Inc., and its distributors, employees, and dealers (hereafter "**SELLER**") shall in no way be responsible for the product's proper use and service. The BUYER hereby waives all liability claims.

The **BUYER** acknowledges that he/she is not relying on the **SELLER's** skill or judgement to select or furnish goods suitable for any particular purpose and that there are no liabilities which extended beyond the description on the face hereof and the **BUYER** hereby waives all remedies or liabilities, expressed or implied, arising by law or otherwise, (including without any obligations of the **SELLER** with respect to fitness, merchantability, and consequential damages) whether or not occasioned by the **SELLER's** negligence.

The **BUYER** is responsible to fully understand the capability and limitations of his/her vehicle according to manufacturer specifications and agrees to hold the **SELLER** harmless from any damage resulting from the failure to adhere to such specifications. The **SELLER** disclaims any warranty and expressly disclaims any liability for personal injury or damages. The **BUYER** acknowledges and agrees that the disclaimer of any liability for personal injury is a material term for this agreement and the **BUYER** agrees to indemnify the **SELLER** and to hold the **SELLER** harmless from any claim related to the item of the equipment purchased. Under no circumstances will the **SELLER** be liable for any damages or expenses by reason of the use or sale of any such equipment. The **BUYER** is responsible to obey all applicable federal, state, and local laws, statutes, and ordinances when operating his/her vehicle, and the **BUYER** agrees to hold the **SELLER** harmless from any violation thereof. The **SELLER** assumes no liability regarding the improper installation or misapplication of its products. It is the installer's responsibility to check for proper installation and if in doubt, contact the manufacturer. The **BUYER** is solely responsible for all warranty issues from the automotive manufacturer.

Limitation of Warranty

Gale Banks Engineering Inc. (hereafter "**SELLER**"), gives Limited Warranty as to description, quality, merchantability, fitness for any particular purpose, productiveness, or any other matter of **SELLER's** product sold herewith. The **SELLER** shall be in no way responsible for the product's open use and service and the **BUYER** hereby waives all rights except those expressly written herein. This Warranty shall not be extended or varied except by written instrument signed by **SELLER** and **BUYER**.

Please see enclosed warranty information card, or go to www.bankspower.com/warranty, for warranty information regarding your product. Parts or devices outside the products kit, are not covered under Gale Banks Engineering warranty. All products that are in question of Warranty must be returned shipping prepaid to the **SELLER** and must be accompanied by a dated proof of purchase receipt. All Warranty claims are subject to approval by Gale Banks Engineering Inc.

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Under no circumstances will the **SELLER** be liable for any damage or expenses incurred by reason of the use or sale of any such equipment.

In the event that the buyer does not agree with this agreement:

The buyer may promptly return this product, in a new and unused condition, with a dated proof-of-purchase, to the place-of-purchase within thirty (30) days from date-of-purchase for a full refund, less shipping and/or restocking fee.

The installation of this product indicates that the buyer has read and understands this agreement and accepts its terms and conditions.

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General Installation Practices

Dear Customer,

Your new Banks SpeedBrake is a uniquely designed braking system with electronic controls, designed to achieve the optimum level of braking from your vehicle's engine.

If you have any questions concerning the installation of your Banks SpeedBrake System, please call our Technical Service Hotline at (888) 839-2700 between 7:00am and 5:00pm (PST). If you have any questions relating to shipping or billing, please contact our Customer Service Department at (888) 839-5600.

Thank you.

- 1.** Before starting work, familiarize yourself with the installation procedure by reading all of the instructions.
- 2.** The exploded views provide only general guidance. Refer to each step and section diagram in this manual for proper instruction.
- 3.** Throughout this manual, the left side of the vehicle refers to the driver side, and the right side to the passenger side.
- 4.** Disconnect the negative (ground) cable from the battery (or batteries, if there are two) before beginning work.
- 5.** 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.
- 6.** 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. When raising the front of the vehicle, put the transmission in park (automatic) or reverse (manual), set the parking brake, and block the rear wheels. When raising the back of the vehicle, be sure the vehicle is on level ground and the front wheels are blocked securely.

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.

7. 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 engine damage upon start-up.

8. Save this Installation Manual as a reference for system maintenance and service.

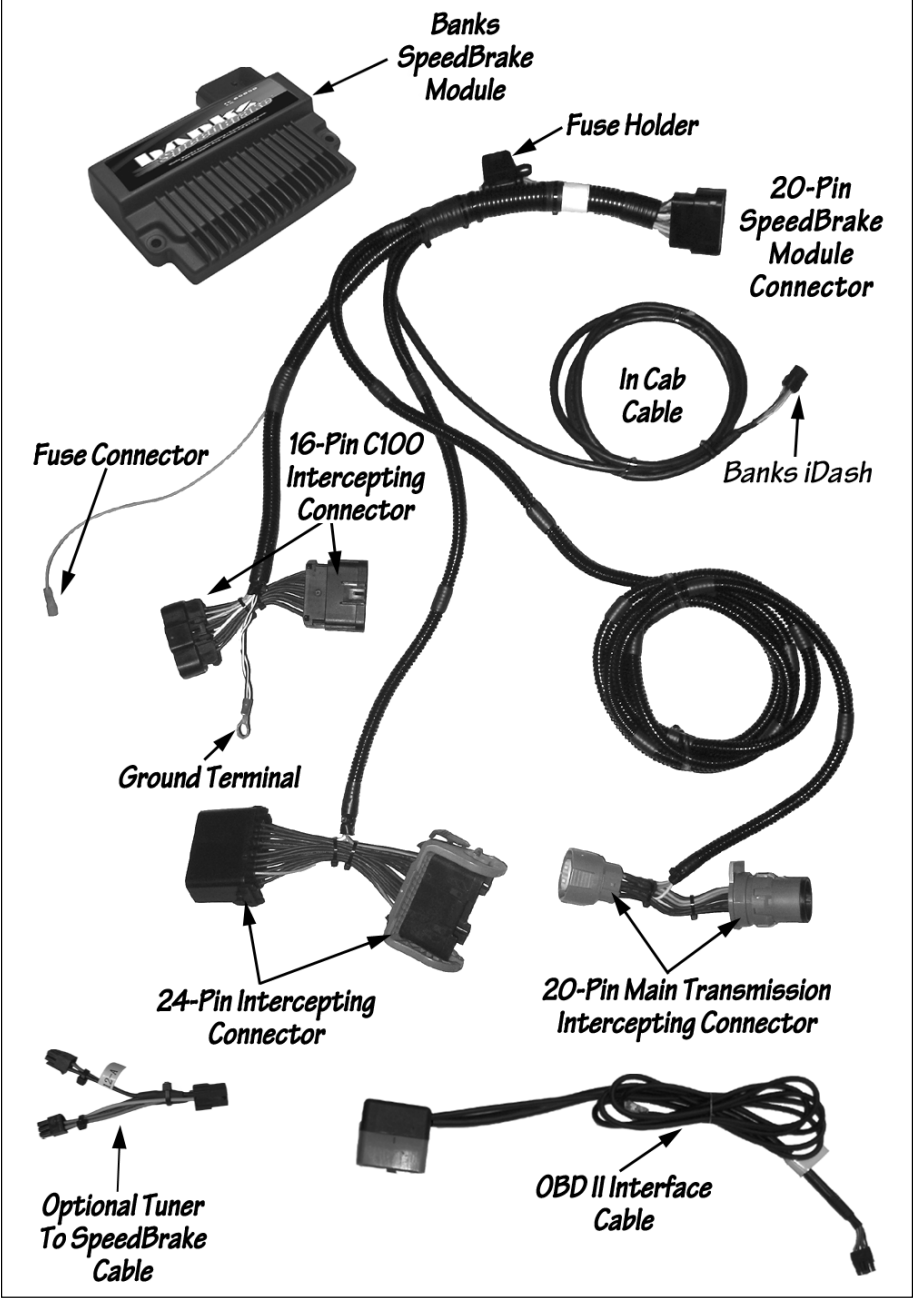
TOOLS REQUIRED:

- 1/2" and 3/8" drive ratchets with inch and metric sockets and 1/2" and 3/8" drive extension
- Inch and metric combination or open-end wrenches
- Standard & Phillips screwdriver
- Clean shop towels or rags
- Pliers
- Needle nose pliers
- Utility knife
- Inch-pound and foot-pound torque ratchets

Section 1

INSTALLATION OF BANKS SPEEDBRAKE WIRE HARNESS

Figure 1 Banks SpeedBrake and supplied wiring harness



1. Disconnect the negative (ground) cable from the battery (or batteries, if there are two) before beginning work. Secure the cables so that they do not come in contact with the battery posts during the installation.

2. Locate the Banks SpeedBrake wire harness in your kit. Start By placing the wire harness near the under hood fuse box. Run the Main transmission intercepting connector wire harness on the SpeedBrake wire harness down to the transmission following the factory transmission main connector harness from the transmission control module.

3. On the right side of the transmission locate the transmission main connector. See **Figure 2**.

Disconnect the connector by applying pressure on both sides and pull out.

4. Insert the female connector on the SpeedBrake wire harness into the transmission connector. Insert the factory main transmission connector to the male connector on the SpeedBrake wire harness.

NOTE: When installing the male connector to the transmission orient the arrow on the connector up.

5. Secure the wire harness using some of the supplied cable ties along the factory wire harness up the left side of the engine to the Fuse box.

6. Remove the Driver side Cowl support Brace and retain hardware for reuse. See **Figure 3**.

Figure 2 Factory Main Transmission Connector Location

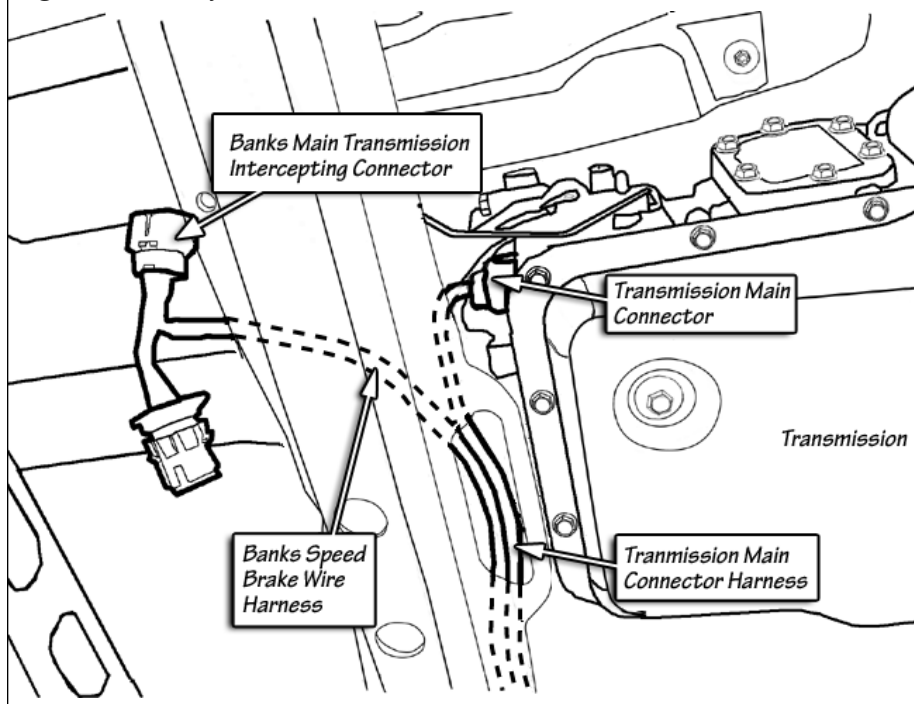


Figure 3 Remove of Driver Side Cowl Support Brace

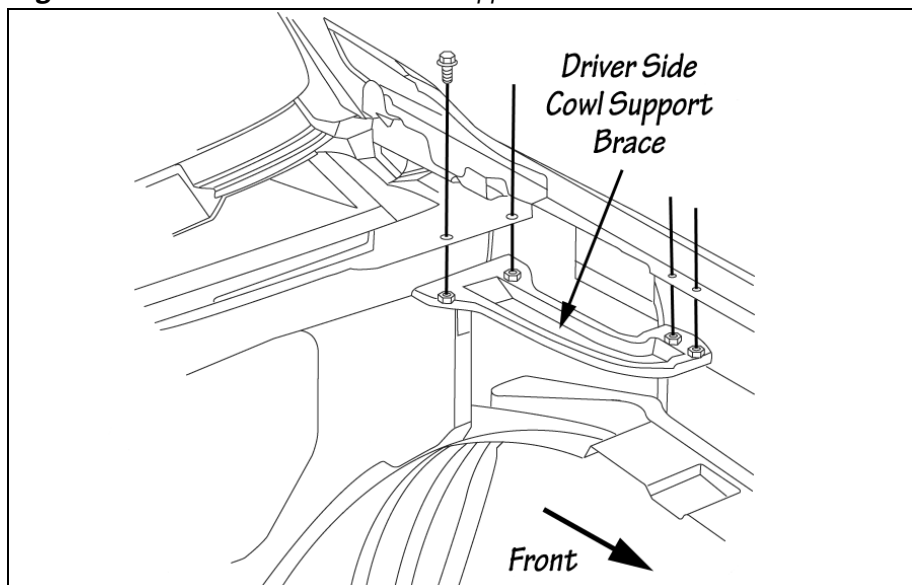


Figure 4

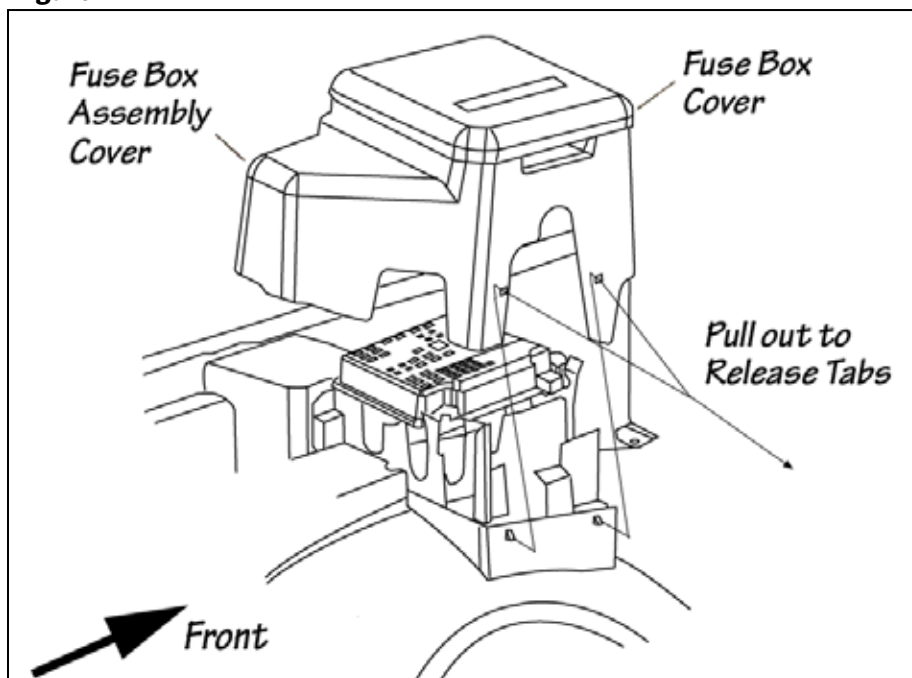


Figure 5



7. Remove the fuse box cover to access the fuses on the electrical center and set aside.

8. Remove the fuse box assembly cover by expanding the fuse box out towards the engine side and lifting up, exposing the fuse electrical center. See **Figure 4**.

9. Push out on the tab closest to the fender and the two locking tabs on the side of the electrical center and lift up to gain access to the C100 Connector. Disconnect the C100 Connector. See **Figure 5**.

10. Install the ground ring terminal on the SpeedBrake wire harness onto the bolt on the bottom of the electrical

center closest to the fire wall. See **Figure 5**.

11. Insert the male C100 connector on the SpeedBrake wire harness to the female C100 factory connector. Insert the female C100 connector on the SpeedBrake wire harness to the male C100 factory connector.

12. Position the electrical center back in place until the tabs snap into place.

*NOTE: adjust the C100 connection under the electrical center to have sufficient room to lock the electrical center back in place. Run the wire harness out to the firewall side of the fuse brace. See **Figure 6**.*

Figure 6



13. Locate mini-fuse for the Body Control Module (TBC IGN1) and remove it. See **Figure 7**.

14. Install the mini-blade fuse tap onto the removed mini fuse as shown in **Figure 8**. Re-install the mini fuse with the attached blade tap into the fuse box.

*NOTE: install the fuse tap in the Body Control Module (TBC IGN1) spot closest to the firewall. This is the "hot" side of the circuit. See **Figure 7**.*

15. Locate the fuse connector wire on the SpeedBrake wiring harness and connect it to the mini-blade fuse tap. Replace the fuse box assembly cover

and make sure not to pinch the fuse connector wire.

16. Replace the fuse box cover.

17. Locate the black wire harness locking connectors between the brake fluid reservoir and the air conditioning compressor. Lift the gray connector locks and disconnect the 24-pin connector pair. See **Figure 9**.

18. Insert the male 24 pin connector on the SpeedBrake harness into the female 24-pin connector on the factory harness. Insert the female 24-pin connector on the SpeedBrake harness onto the male 24-pin connector of the factory harness.

Figure 7 Electrical Center Fuse Tap Location

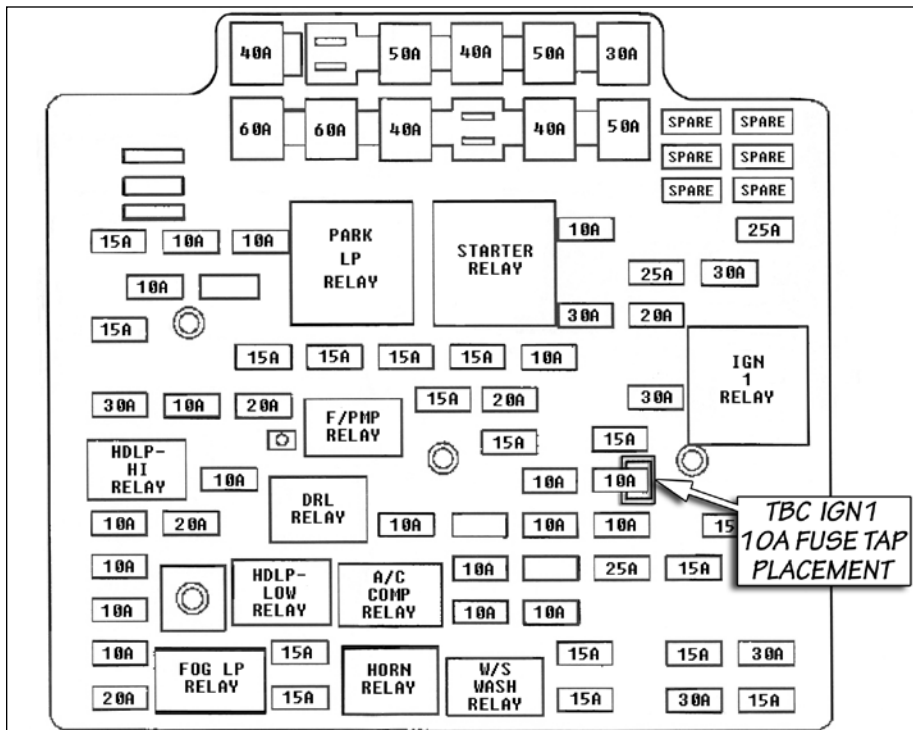


Figure 8 Fuse Tap Installation

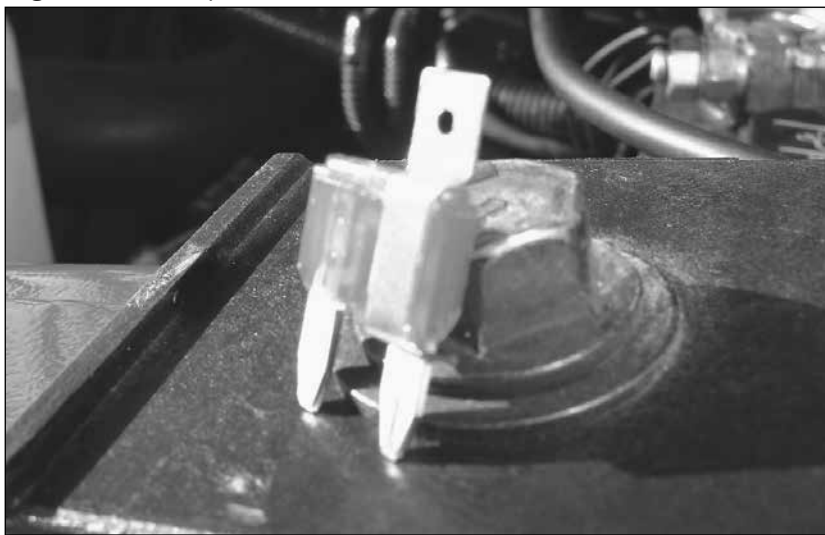
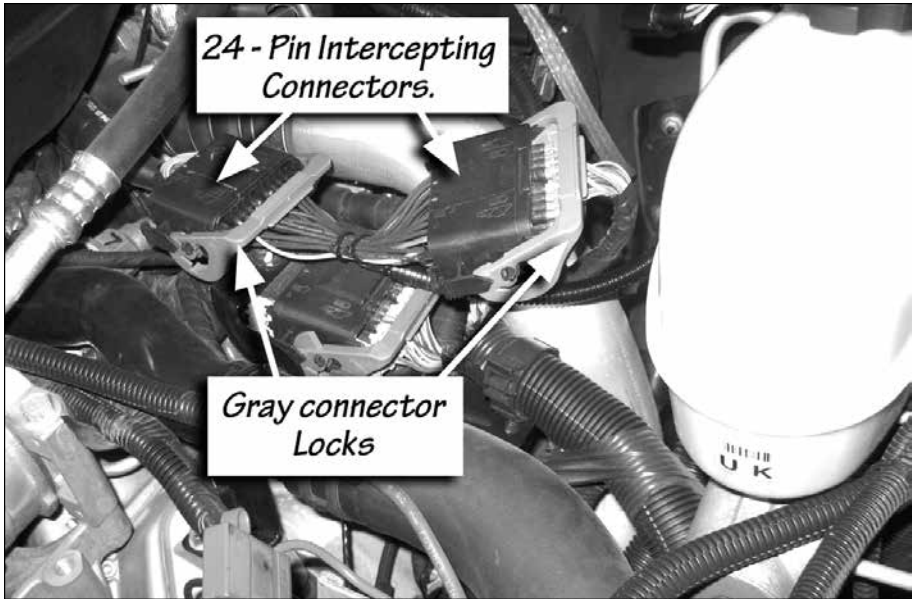


Figure 9



NOTE: If vehicle is equipped with a Banks Tuner, disconnect the 24-pin connection between the factory 24-pin connectors and the Banks Tuner 24-pin connectors. It is not important if the intercepting connection is made before the Banks Tuner connection or after. This will not affect the performance of the Banks Tuner or SpeedBrake. Insert the male 24 pin connector on the SpeedBrake harness into the female 24-pin connector on the factory harness or Banks Tuner's harness. Insert the female 24-pin connector on the SpeedBrake harness onto the male 24-pin connector of the factory harness or Banks Tuner's harness.

If a Banks Diesel Tuner has been previously installed, skip step 20.

19. Locate the rubber grommet on the driver's side of the vehicle firewall. The grommet is about 3" in diameter. Make a 1" x 1" cross-shaped incision

in the grommet. See **Figure 10**. Now from inside the cab locate the grommet on the firewall and make another 1" x 1" cross-shaped incision on the grommet.

20. Locate the In Cab Cable on Banks SpeedBrake wire harness and feed the single connector cable through the incision made in the firewall grommet and into the cab.

21. With the SpeedBrake Module positioned on top of the fuse box, peel the protective backing from the hook and loop interlocking fasteners and attached to the SpeedBrake Module. Position the SpeedBrake module to the edge closest to the engine of the fuse cover then press the adhesive onto the outside of the fuse box cover. Apply light pressure to the SpeedBrake Module by hand for 60-seconds to create a strong bond between the fuse box and hook & loop interlocking fasteners.

Figure 10 Driver Side Firewall, Rubber Grommet



Figure 11

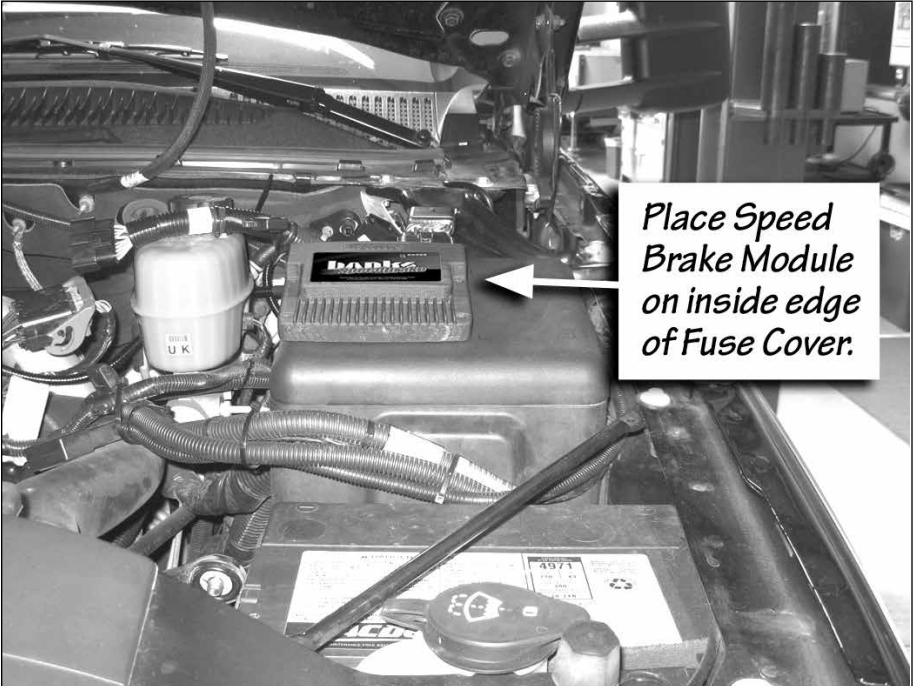


Figure 12 Placement of Banks Tuner on top of the Fuse Box.

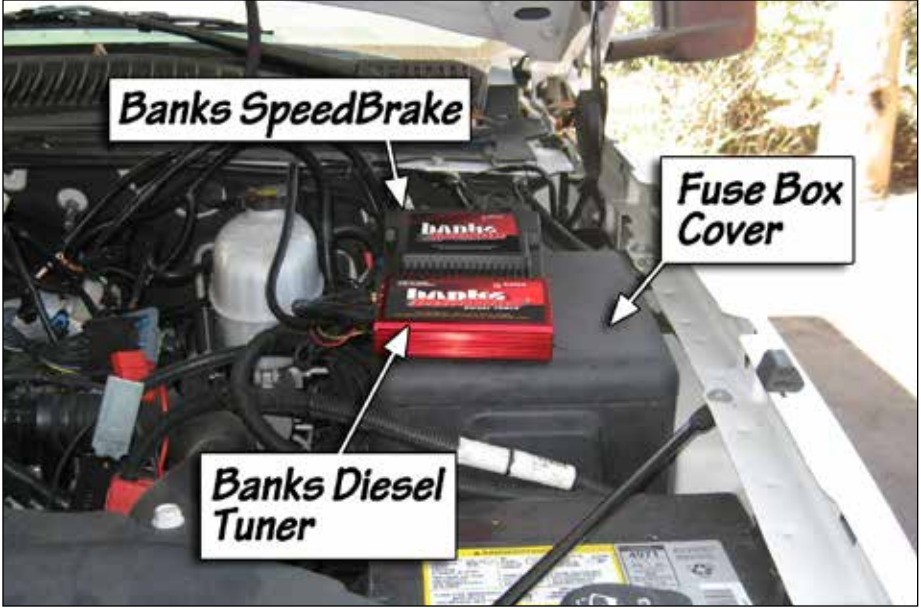


Figure 13 Placement of Banks Tuner on side of the Fuse Box.



NOTE: make sure the fuse box cover is clean and free of any oil residue and contaminates. Clean fuse box cover with a non-oil based solvent such as Acetone, Mineral Spirits, Denatured Alcohol or Lacquer Thinner. Read and follow the manufactures operation instruction for non-oil based solvent cleanser.

*If vehicle is equipped with a Banks Tuner, detach the Tuner from the top of the fuse box cover and reattach on the fuse box side or on top of the fuse box along with the SpeedBrake. See **Figure 12 & 13**. If placing the Tuner on top of the fuse box along with the SpeedBrake module there may be some over hang from the tuner. Secure the tuner so that it stays in place. Use the supplied hook & loop interlocking fasteners to make the necessary adjustment to attach the SpeedBrake to the top of the fuse box cover and Banks Tuner to the fuse box side or top.*

WARNING: Make sure to place the SpeedBrake Module as shown in Figure 11 to avoid a clearance issue when closing the hood. Mount the SpeedBrake Module as close to the inside edge of the fuse cover as possible.

22. Insert the SpeedBrake 20-pin female Connector on the wire harness to the 20-pin male connector on the SpeedBrake Module. Using the supplied cable ties, secure the wire harness away from any heat sources (i.e. Driver side exhaust manifold) or moving components.

23. Reinstall the driver side cowl support brace. Tighten the factory hardware to 80 in-lbs.

-END, SECTION 1-

Section 2

MOUNTING AND CONNECTING THE BANKS iDash



FOR IDASH 1.8 INSTRUCTIONS, SEE IDASH 1.8 MANUAL 97654 & 97674

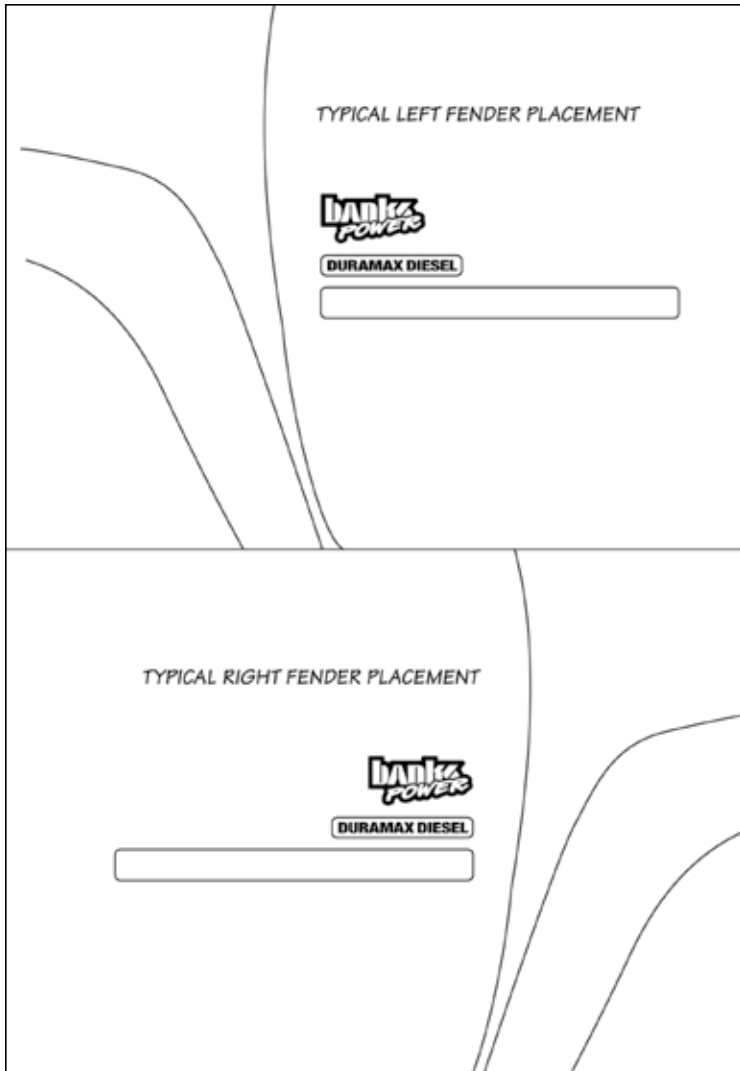
Table 1 - (For 06-08 model years)

Flash Code	PDA Error Message	Corrective Action- LBZ/ LMM
1.1	Code 11: VGT control input out of range	Turn ignition OFF and check the 24-Pin connector. Turn ignition back ON and re-check for presence of code.
1.2	Code 12: Vane Position Sensor input out of range.	Turn ignition OFF and check the 24-Pin connector. Turn ignition back ON and re-check for presence of code.
1.3	Code 13: Rear wheels slipping	None required. When traction is regained, error will clear after 30 seconds.
1.4	Code 14: Low power voltage detected.	Turn ignition OFF and check the Fuse Tap and the Ground O-ring. Turn ignition back ON and re-check for presence of code.
2.1	Code 21: VGT control output malfunction.	Turn ignition OFF and check the 24-Pin connector. Turn ignition back ON and re-check for presence of code.
2.2	Code 22: VGT control output overcurrent.	Turn ignition OFF and check the 24-Pin connector. Turn ignition back ON and re-check for presence of code.
2.3	Code 23: Low relay voltage detected.	Turn ignition OFF. Turn ignition back ON and re-check for presence of code.
2.4	Code 24: Vane Position Sensor voltage output malfunction.	Turn ignition OFF and check the 24-Pin connector. Turn ignition back ON and re-check for presence of code.
3.1	Code 31: OBD communication error.	Turn ignition off and check the OBD connector and cable. Turn ignition back ON and re-check for presence of code.
3.2	Code 32: Internal module malfunction or intermittent power.	Turn ignition OFF. Turn ignition back ON and re-check for presence of code.
3.3	Code 33: OBDII CAN communication output error.	Turn ignition OFF and check the 16-Pin C100 Intercepting connector. Turn ignition back ON and re-check for presence of code.
3.4	Code 34: OBDII CAN communication input error.	Turn ignition OFF and check the 16-Pin C100 Intercepting connector. Turn ignition back ON and re-check for presence of code.
4.2	Code 42: Torque Converter Clutch slippage detected.	Turn ignition OFF and check the 16-Pin C100 Intercepting connector. Turn ignition back ON and re-check for presence of code.
4.3	Code 43: Shift control malfunction.	Turn ignition OFF and check the 16-Pin C100 Intercepting and 20-Pin connectors. Turn ignition back ON and re-check for presence of code.
4.4	Code 44: Internal memory malfunction.	Turn ignition OFF. Turn ignition back ON and re-check for presence of code.

If problem persists, call Gale Banks Engineering Tech Support.

Section 5

PLACEMENT OF THE BANKS POWER DECALS



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