

Installation Manual

Banks SpeedBrake

For use with Banks iDash

**2004-2005 Chevy/GMC 6.6L (LLY)
Turbo-Diesel Pickup**

THIS MANUAL IS FOR USE WITH KITS 55437, 55440

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

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**.

Under no circumstance shall the **SELLER** be liable for any labor charged or travel time incurred in diagnosis for defects, removal, or reinstallation of this product, or any other contingent expense.

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.

Table of Contents

General Installation Practices	4
Section 1	5
Installation of Banks SpeedBrake Wire Harness	
Section 2	11
Mounting and Connecting The Banks iDash	
Section 3	16
Updating Banks iDash & Banks SpeedBrake Software	
Section 4	17
Troubleshooting	
Section 5	20
Placement of the Banks Power Decal	

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.

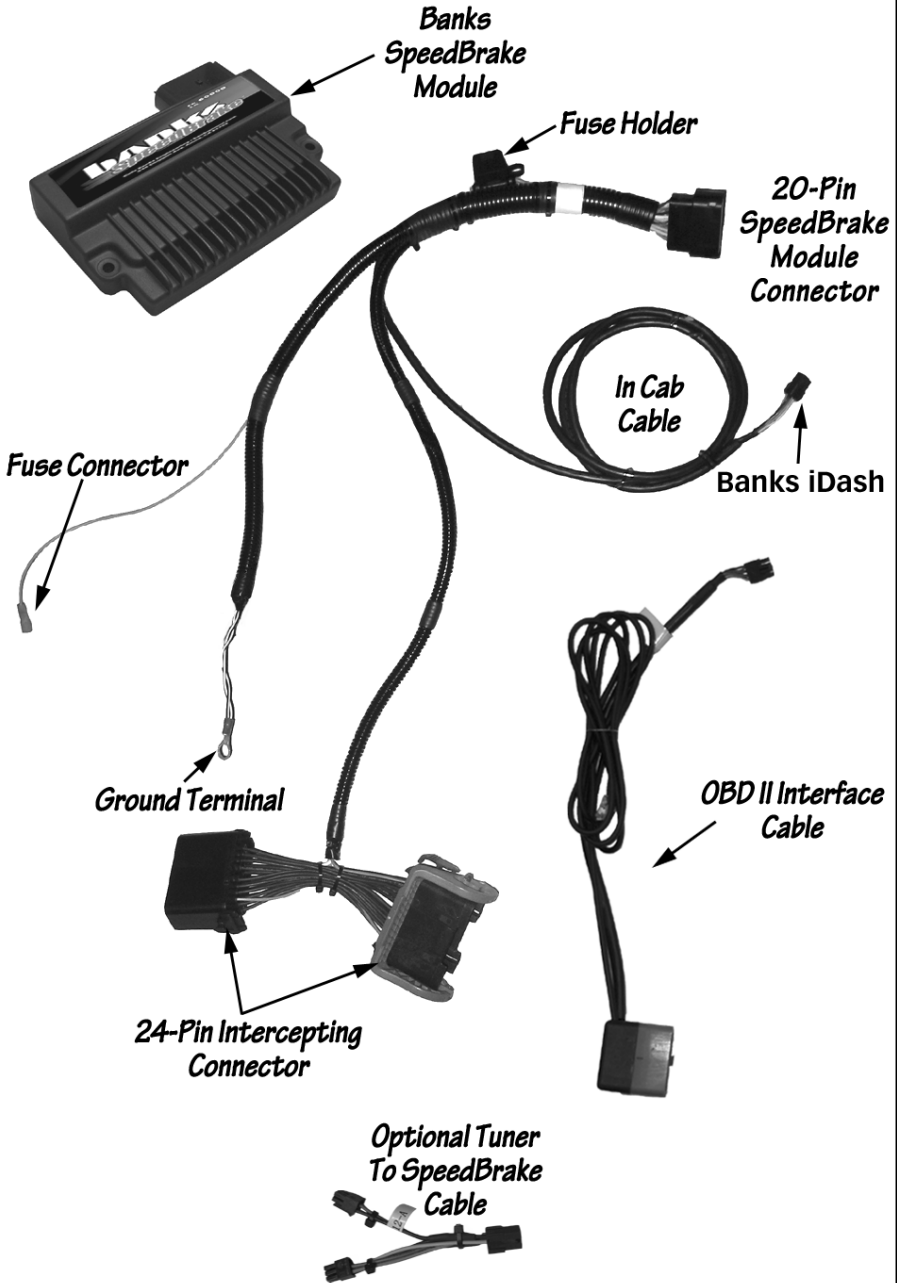
TOOLS REQUIRED:

- 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.

3. Install the ground ring terminal on the SpeedBrake wire harness onto the bolt on the fire wall. See **Figure 2**.

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

5. Locate mini-fuse for the Body Control Module (TBC IGN1) and remove it. See **Figure 3**.

6. Install the mini-blade fuse tap onto the removed mini fuse as shown in **Figure 4**. 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 3**.*

7. Locate the fuse connector wire on the SpeedBrake wiring harness and connect it to the mini-blade fuse tap.

8. Replace the fuse box cover and make sure not to pinch the fuse connector wire.

9. 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 2**.

10. 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 2 Grounding location & 24-Pin Intercepting Connectors

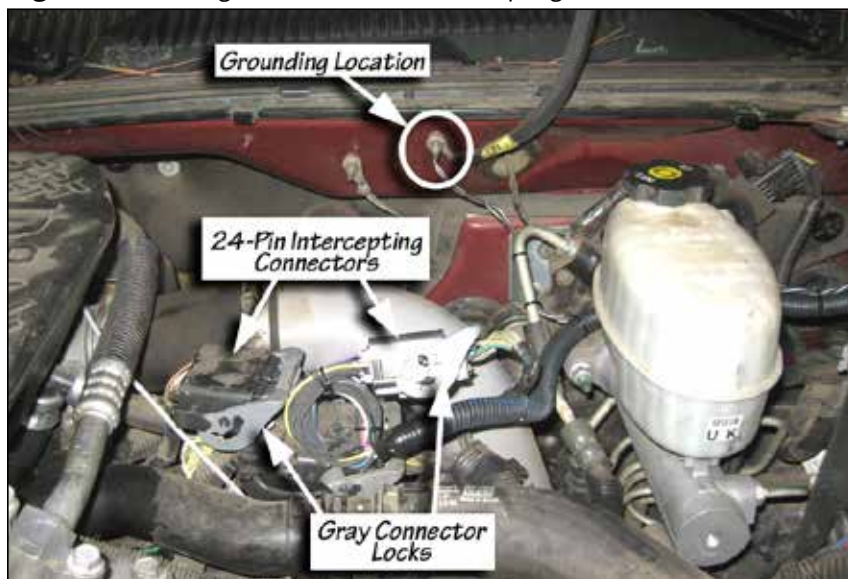


Figure 3 Electrical Center Fuse Tap Location

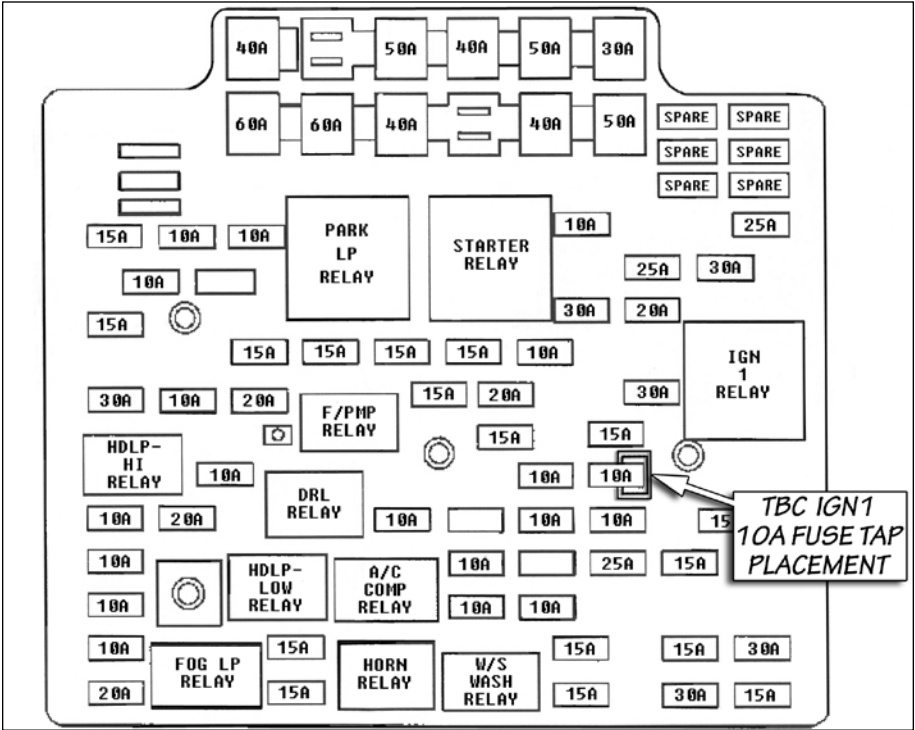
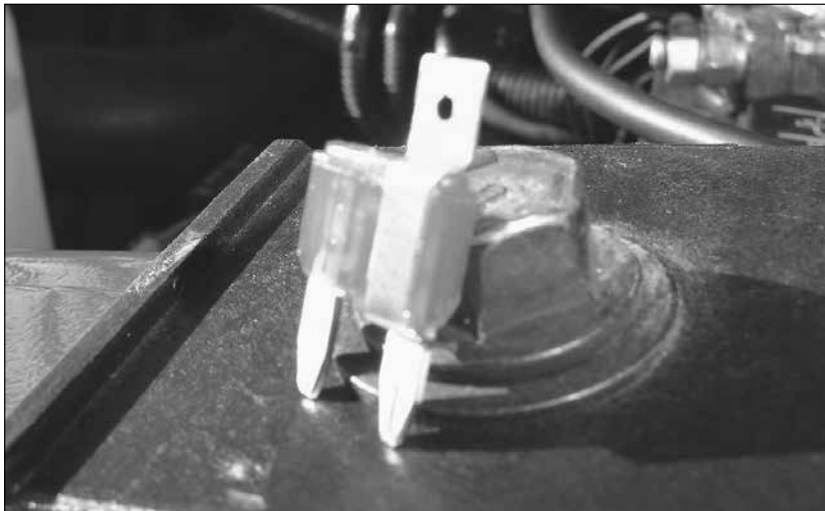


Figure 4 Fuse Tap Installation



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 12.

11. 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 5**. Now from inside the cab locate the grommet on the firewall and make

another 1" x 1" cross-shaped incision on the grommet.

12. 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.

13. 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.

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

Figure 5 Driver Side Firewall, Rubber Grommet



Figure 6 Placement of Banks Tuner on top of the Fuse Box.

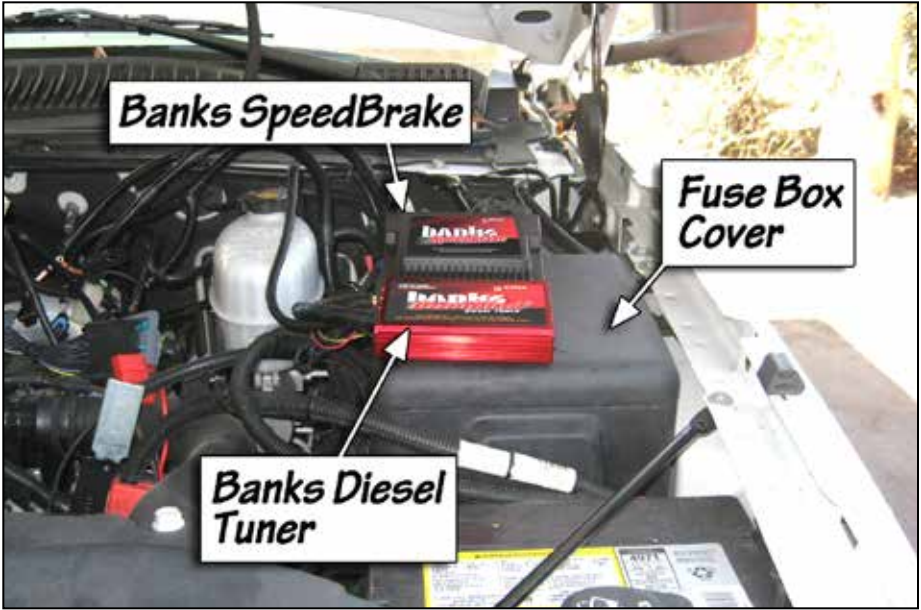


Figure 7 Placement of Banks Tuner on side of the Fuse Box.



Alcohol or Lacquer Thinner. Read and follow the manufactures operation instruction for non-oil based solvent cleanser.

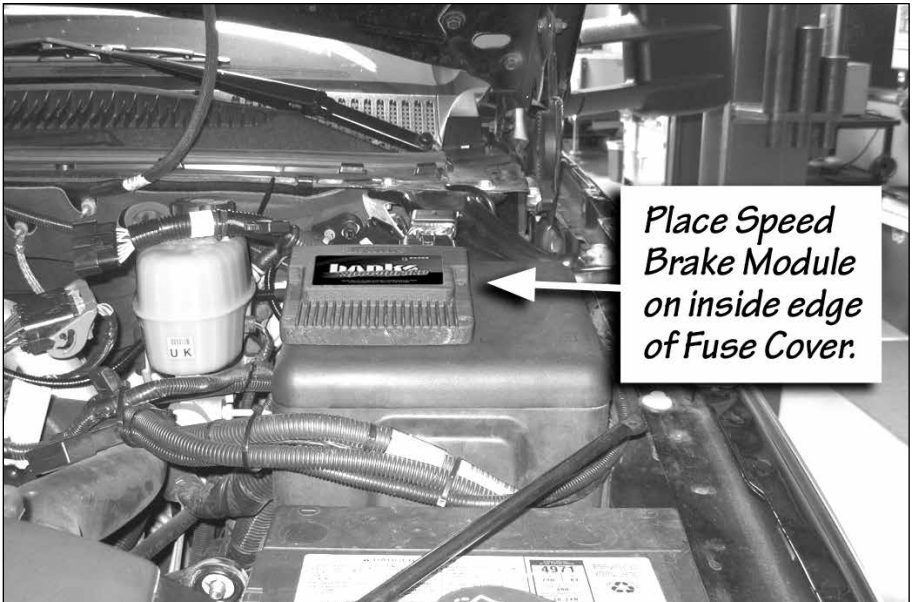
If vehicle is equipped with a Banks Tuner, detach the Tuner from the top of the fuse box cover and reattach on the fuse box side or on top of the fuse box along with the SpeedBrake. See **Figure 6 & 7**. If placing the Tuner on top of the fuse box along with the SpeedBrake module there may be some over 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 8** 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.

14. Insert the SpeedBrake 20-pin Module Connector on the wire harness to 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.

-END, SECTION 1-

Figure 8



Section 2

MOUNTING AND CONNECTING THE BANKS iDASH



FOR IDASH 1.8 INSTRUCTIONS, SEE IDASH MANUAL 97654 & 97674

Section 3

UPDATING BANKS iDASH & BANKS SPEEDBRAKE SOFTWARE



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

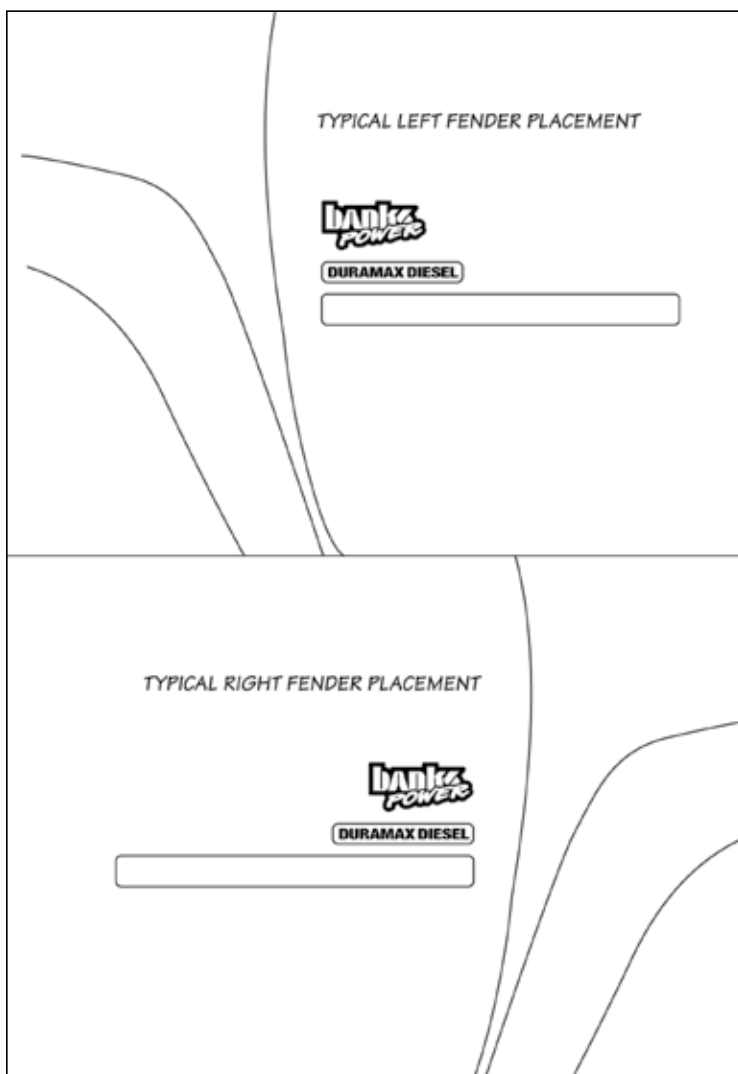
Table 1 - (For 04-05 model years)

Flash Code	PDA Error Message	Corrective Action- LLY
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.
3.4	Code 34: CAN communication input error.	Turn ignition OFF and check the 24-Pin connector. Turn ignition back ON and re-check for presence of code.
4.2	Code 42: Torque Converter Clutch slippage detected.	Turn ignition OFF. 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



Owner's Manual with Installation Instructions

iDash[®] 1.8 for Banks Bus 1 Quick Start Guide

**Banks Six-Gun, Economind Tuner
and SpeedBrake vehicles.**

THIS MANUAL IS FOR USE WITH SYSTEM 61401, 61402, 61403, & 61404



**For more information:
Bankspower.com/iDash**



For iDash 4.3/5.0 replacement only:

1. Uninstall the Banks IQ, Banks Bridge Module, and the OBD-II cable (for the Banks IQ Bridge Interface).

See Figure 1 & 2.

For all installations:

2. Connect the OBD-II Cable for the iDash 1.8" (see Figure 2) to your vehicle's OBD-II port.

NOTE: For Motorhomes, skip step 2

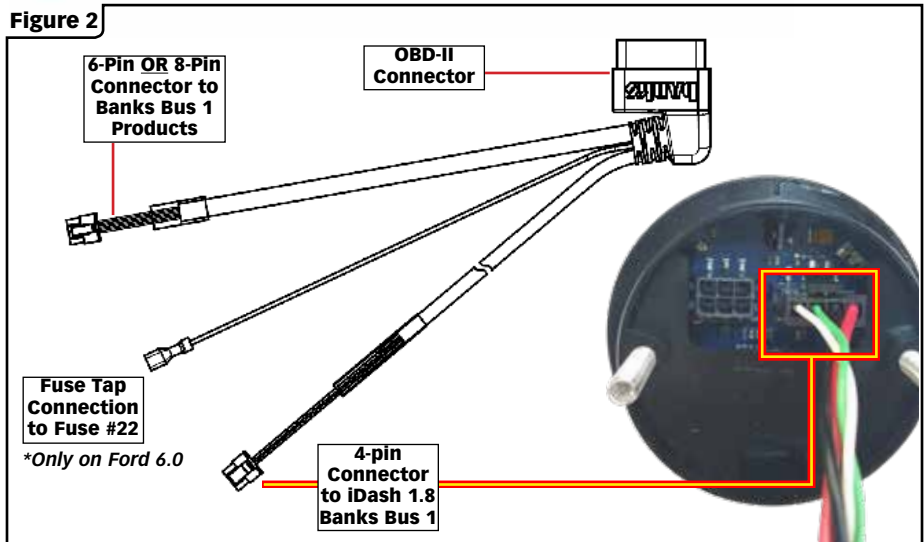
3. Connect the 6-Pin/8-Pin (Application Dependant) of the OBD-II Cable to the Power Tuner/ SpeedBrake.

4. Connect the 4-Pin connector of the OBD-II Cable to the iDash 1.8" (See Figure 2).

Ford 6.0 Power Stroke Applications

For any OBD-II Cable for the Ford 6.0L (See Figure 4), a connection has to be made to the fuse panel (Fuse #22) using a fuse tap.

- Remove the Panel to reveal the fuse panel below the steering wheel and remove **Fuse #22**. See Figure 3.
- Apply the provided fuse tap before reinstalling. See Figure 4
- Route the female terminator connector to the fuse tap. See Figure 4



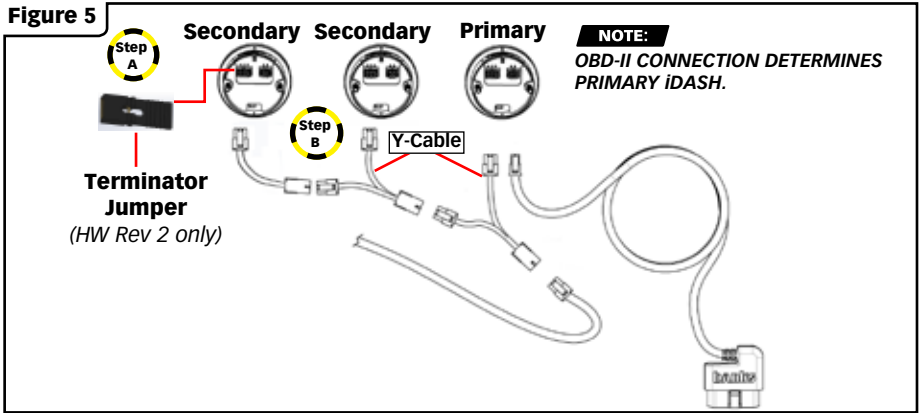
If installing multiple iDash 1.8".

A. Remove any extra terminators. Only one is needed for all iDash 1.8" connected. **See Figure 5, Step A.**

B. Use Y- Cable(s) to connect all the iDash 1.8". **See Figure 5, Step B.**

Refer to the iDash 1.8" Installation manual for more detailed instructions on iDash 1.8" install.

Figure 5



iDash Button Function

UP button

Hold to... :
- Rapid scroll
(Value Selection)

SELECT button

Hold to... :
- Save and return
to Gauge Screen



DOWN button

Hold to... :
- Rapid scroll
(Value Selection)
- Start/Stop
(Datalog Mode)

BACK button

Press to... :
- Create Laps/
Markers
(Data Log Mode)
Hold to... :
- Return to Gauge
Screen

SixGun and EconoMind Setup

To load the Tuner layout navigate to:

- **Menu -> Gauge Layout -> Tuner -> *Select***

To change power level:

- Press the **up** or **down** arrow.

PRESS to increase power level.



PRESS to decrease power level.

SpeedBrake Setup

- To load the SpeedBrake layout navigate to:

Menu -> Gauge Layout -> SpeedBrake -> *Select*

- To switch between SpeedBrake modes press and hold the **up** button for 2 seconds.

SpeedBrake Manual Mode:

- Press the **up** and **down** button to switch between low, medium and high settings.
- To enable/disable the "Foot Brake" navigate to:

Menu -> Banks Modules-> SpeedBrake -> FootBrake: -> *Select*

HOLD to change SpeedBrake Mode
PRESS to change SpeedBrake Strength



PRESS to change SpeedBrake Strength

SpeedBrake Auto Mode:

- Press the **up** and **down** button to adjust the speed set point in increments of 5 mph (from 25-75)

HOLD to change SpeedBrake Mode
PRESS to change Speed Setting



PRESS to change Speed Settings

Tuner / SpeedBrake Auto Switch:

- The "Tuner Auto Switch" feature allows you to have the "Tuner" layout and "SpeedBrake" layout switch automatically while driving.

See section 12 of iDash 1.8 Owner's Manual **97654** for more details.

Trouble Shooting Note:

- If you do not have any communication with the Tuner or SpeedBrake (RPM is always "--") go to:

Menu-> Settings-> Vehicle Selection-> Banks Bus 1 Application -> *Select*