Banks SpeedBrake

For use with Banks iQ

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

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WARNING: Below 32°F (0°C) or above 140°F (60°C), the Banks iQ may be susceptible to damage as a result of extended exposure to sunlight, heat or extreme cold. It is highly recommended that the Banks iQ be removed from its mounting location if the vehicle will be subjected to high concentrations of sunlight, heat or cold for an extended period of time. Gale Banks Engineering is not responsible for damage to Banks iQ resulting from exposure conditions.

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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

- Banks SpeedBrake Module
- Fuse Holder
- 20-Pin SpeedBrake Module Connector
- In Cab Cable
- Banks iQ
- OBD II Interface Cable
- Optional Tuner To SpeedBrake Cable
- 24-Pin Intercepting Connector
- Fuse Connector
- Ground Terminal
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 firewall. 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.

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 Alcohol.

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 -
Section 2
MOUNTING AND CONNECTING THE BANKS iQ

WARNING: Below 32°F (0°C) or above 140°F (60°C), the Banks iQ may be susceptible to damage as a result of extended exposure to sunlight, heat or extreme cold. It is highly recommended that the Banks iQ be removed from its mounting location if the vehicle will be subjected to high concentrations of sunlight, heat or cold for an extended period of time. Gale Banks Engineering is not responsible for damage to Banks iQ resulting from exposure conditions.

CAUTION: Do not use force when working on plastic parts. Permanent damage to the part might result.

1. Locate the Window Mount Assembly in your kit.
2. Assemble the Banks iQ docking station to the Universal mount by inserting and sliding the Universal mount tab into the docking station groove. Hand tighten the nut behind the docking station to hold the docking station in place.

3. Attach the window mount to your Banks iQ. See Figure 9. Align and place the two (2) lower tabs on the window mount to the corresponding slots on the bottom of Banks iQ first then snap the top of Banks iQ into place.

NOTE: Due to the snug fit, use caution when installing the Banks iQ into the window mount.

4. Find a suitable place on the windshield for ease of access and viewing of Banks iQ. Use location shown in Figure 10 as a reference for mounting Banks iQ in your vehicle. Loosen the knob and move the swivel suction plate to achieve desired viewing angle of the Banks iQ screen. Do a test fit and note the angle necessary to achieve the correct viewing angle.

Figure 9 Attaching Banks iQ to window mount
5. Make sure the suction cup and the mounting area on the windshield are clean and dry. With the suction lever in the up position, ensure the suction cup is flat against the windshield, and then push the suction lever down to secure in place.

6. Next, remove and set the fuse access panel aside. See Figure 11.

7. Locate the Banks OBD II Interface Cable in your kit. This cable has three connection points. Connect the RED OBD II connector on the Banks interface cable to the vehicle OBD II connector. Use a cable tie as shown in Figure 12 to secure the Banks interface cable to the vehicle OBD II connector.

8. Next, connect the 6-pin connector on the Banks OBD II interface cable to the 6-pin connector on the Six-Gun Tuner harness.

NOTE: If your vehicle is equipped with a Banks Diesel Tuner, Optional Tuner-to-SpeedBrake cable will be needed (P/N 55411). See Figure 13. Disconnect the 6-pin terminal connections between Banks OBD II Interface Cable and Banks Diesel Tuner. Connect the OBD II 6-pin male connector to the optional Tuner-to-SpeedBrake 6-pin female connector. Connect the three (3) wire 6-pin male connector to the Diesel Tuner female 6-pin connector and connect the five (5) wire 6-pin male connector to the SpeedBrake female 6-pin connector.

9. Locate the RJ12 Cable (similar to telephone connector) on your Banks OBDII interface cable. See Figure 14.

10. Locate Banks iQ Bridge Module and connect the RJ12 connector into the Bridge Module. See Figure 15.

**Figure 10** Mounting location for Banks iQ, Chevy LMM Shown.
Figure 13  Optional Tuner-to-SpeedBrake Cable

Figure 14  Banks iQ System
11. Route the Banks iQ USB interface cable from the Banks iQ Bridge Module under the dash and out through the fuse access panel opening. The cable can be slid under the door frame’s seal and run up to the top of the dash. Pull enough cable to reach the Banks iQ and connect it to the USB receptacle on the left side of Banks iQ. See Figure 10. Snap the fuse access panel back in place making sure not to pinch the wire.

WARNING: THE CHARGING CABLE CONNECTED TO THE BANKS iQ IS DESIGNED TO SUPPLY A CONSTANT LOW-VOLTAGE POWER SOURCE (+5VDC) TO THE BANKS iQ AND IS “LIVE” AS LONG AS THE SYSTEM’S OBD II INTERFACE CABLE OR BANKS WIRING HARNESS IS COMPLETELY INSTALLED AND THE USB CABLE CONNECTOR IS PLUGGED INTO BANKS iQ. ALTHOUGH THIS CHARGING CABLE IS SHORT AND ITS CIRCUITRY IS FUSE-PROTECTED, THE USER IS EXPECTED TO TAKE APPROPRIATE MEASURES TO PREVENT SMALL CHILDREN AND/OR PETS FROM CONTACT WITH ANY PART OF THIS SYSTEM.

12. Secure Banks iQ Bridge Module under the dash to any dash frame support using the supplied cable ties. Use the cable tie support loops on the side of the Bridge Module to securely fasten it under the dash.

13. Route all wiring away from any pedals or other moving components. Using the cable ties supplied, secure the wiring under the dash.

14. Reinstall the lower knee panel back in place with the factory hardware. Tuck any excess cable behind it for a clean appearance.

- END, SECTION 2 -
Section 3
UPDATING BANKS iQ & BANKS SPEEDBRAKE SOFTWARE

System Info
To view your System Information, press the ‘System Info’ button in the ‘Adjustments’ menu. See Figure 16. Use this info to verify that you are downloading the correct update/upgrade version for your Banks iQ. Press the ‘Return’ icon to go back to the ‘Adjustment’ menu.

To update SpeedBrake
1. Go to www.bankspower.com/downloads and check for the Banks Power Tuner or SpeedBrake updates.
2. Download them onto your Micro-SD card (sold separately) and insert it into the port on your Banks iQ.
3. Press the ‘Update SpeedBrake’ button in the ‘Adjustment’ menu.
4. Press the ‘Check For Updates’ button and available SpeedBrake updates will appear in the window. See Figure 17.

NOTE: A warning message will appear if the chosen file is the same or older than the file currently in use.

To update Banks iQ Software
1. Plug Banks iQ into your PC using the supplied USB cable.
2. Go to www.bankspower.com/downloads and click on ‘Check for Updates’.
3. Follow the on-screen directions on your PC to update your Bank iQ with the latest software updates.

Figure 16
Section 4
TROUBLESHOOTING

Check the Banks iQ’s Status indicator for the “OK” icon on the upper left corner of the iQ Environment screen. Any SpeedBrake fault will be indicated by the “SpeedBrake Caution” icon (see Figure 18) and its cause can be investigated by running a ‘SpeedBrake Diagnostic’ from the Diagnostic menu.

1. In the Environment select menu press on the ‘Diagnostics’ button. See Figure 19.

2. In the Diagnostics menu press on the ‘SpeedBrake Diagnostics’ button to run a tuner diagnostics. See Figure 20.

3. The ‘Self Diagnostic’ screen displays a log of diagnostic events related to the Tuner. The ‘Logged Events’ list takes a moment to update each time this screen is opened. Once the list is updated, the most current event will appear at the bottom of the list. Each event has an associated timestamp and description, which will be displayed below the list when that event is highlighted. Each key cycle of the vehicle produces a minimum of two logged events. See Figure 21.

Table 1 lists the common diagnostic codes and the suggested Course of Action for each.

4. Use the arrow buttons to scroll through the recorded events.

5. Touch the iQ icon on the lower left of the screen to return to the environment screen or the return icon to return to the Diagnostics menu.

6. A pop-up “Log-File” screen will appear asking you if you want to erase the contents of the log. Press ‘No’ to keep the contents on Log-file or ‘Yes’, to erase the Log-files.

-END, SECTION 4-
### Table 1 - (For 04-05 model years)

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

If problem persists, call Gale Banks Engineering Tech Support.
Section 5
PLACEMENT OF THE BANKS POWER DECALS

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