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BD BrakeLoc EBP Valve Control Ford Powerstroke (Manual Transmissions)

Part# 1030755

Please read this instruction manual before starting installation

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BD Engine Brake Inc.

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Welcome

Thank you for purchasing the BD **BrakeLoc** Kit. This manual is to aid you with your installation and operation of the unit. We strongly suggest that you retain this manual for any future reference.

The BD BrakeLoc Advantage

Though not as efficient as a **BD Exhaust Brake**, the **BrakeLoc** offers a cost effective solution of engine retarding for towing with the Ford PowerStroke by utilizing the OEM **Exhaust Back Pressure (EBP)** valve.

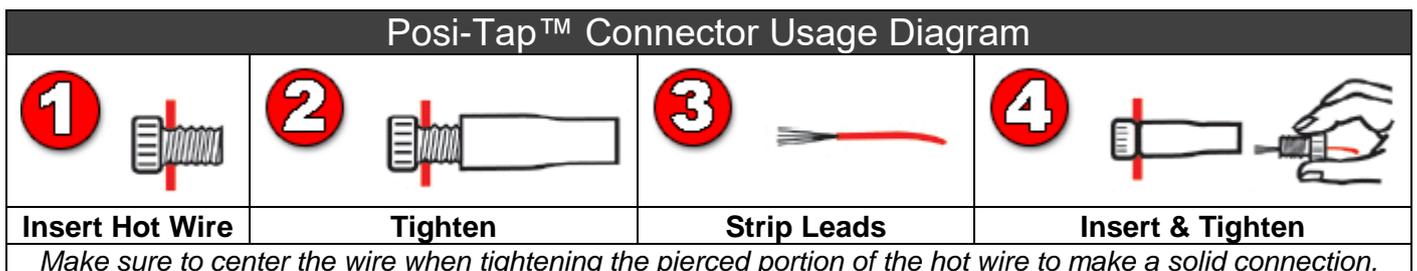
The **BD BrakeLoc** commands the **EBP valve** to activate. This allows the use of the Ford OEM stock **Exhaust Back Pressure Valve** to act as an engine brake.

Notes on Connectors

The kit includes a number of Posi-Tap™ connectors (Gray/Black/Green) to tap onto OEM wiring. It is important to select the correct color of connector so that it matches the gauge of the OEM wire that it is being installed on. Using the incorrect connector could cause an inadequate connection and/or the OEM wire could be severed.

OEM Wire	Posi-Tap™ Color
18-22ga	Gray
12-18ga	Black
10-12ga	Green

Though these connectors offer a quicker installation, the best option would be to solder the wires and isolate the joints with heat shrink or liquid electrical tape. Proper soldering techniques should be used to ensure adequate connections.



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Operating the BD BrakeLoc

The **BrakeLoc** is controlled by a manual toggle switch and works off of the power signal from the throttle position sensor to activate the **EBP Valve** circuit allowing it to close, and, will only operate when the toggle switch is on AND the throttle pedal is at idle.

Once the toggle switch for the **1030755 BD BrakeLoc** is turned on, the kit monitors the accelerator pedal position for the signal that it is at the “idle” position. When this occurs, the kit will begin to activate the **EBP** valve, which after an approximately 3 second delay, you will feel and hear the **EBP Valve** apply.

When the accelerator pedal is applied or the toggle switch is turned off, the kit will disengage the **EBP** valve, allowing the EBP Valve to continue stock OEM operation.

DFIV Wiring

CAUTION: *Before installing any wiring modifications or equipment ensure to disconnect the battery Ground (Negative) terminals on all vehicle batteries as damage to the vehicle’s ECU and/or installed component may result.*

When possible, check for continuity through all Posi-Tap connectors after you have installed them. We suggest soldering and shrink tubing all connections but provide Posi-Taps for your convenience.

Remove knee bolster, under the steering column, and mount the DFIV module to the cross member under the steering column.

GROUND Locate the supplied **black** wire with ring terminal. Install the ring terminal under a clean bolt under the dash that has a good ground connection. Trim this wire to length and strip the end, install in the DFIV module “Ground” terminal.

TOGGLE SWITCH Locate the supplied toggle switch wire assembly. The **red** wire with fuse holder will be connected to switched 12v from the truck. Using a Posi-Tap™ connector, attach the fused wire from the toggle switch to either one of the two Red w/Black tracer wires (ignition switched power) under the steering column. Mount Toggle Switch in a convenient spot on the dash. The remaining **red** wire from the toggle switch will connect to the DFIV “SWITCH” terminal. The **black** wire from the toggle switch will connect to the DFIV “GROUND” terminal along with the other wire already installed.

TPS/APPS Locate the Throttle Position Sensor (TPS) at the throttle pedal and, using a Posi-Tap connector, attach the **yellow** wire attached to the “TPS/APPS” terminal on the DFIV module to the **grey w/white** tracer wire on the trucks TPS.

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FORD Connect the **blue** wire to the “Ford” terminal of the DFIV module. Leave the other end of the wire for now.

COM Connect the **green** wire to the “Com” terminal of the DFIV module. Leave the other end of the wire for now.

BRAKE Connect the **pink** wire from the “Brake” terminal of the DFIV module. Leave the other end of the wire for now.

Run the other end of the pink, blue and green wires through a grommet on the firewall making sure all wires are secure and away from moving objects and heat sources. Reinstall the lower dash cover.

Cruise Control Disconnect Wiring

Consult the schematic on page 7 for proper connections and assistance in connecting wires.

Locate the Brake Applied Switch on the front of the master cylinder.

Expose the wiring approximately 3-6” from the switch. Cut the black w/yellow tracer wire, then strip both ends and attach a blue Posi-Lock connector to each side.

Run the **blue** and **green** wires that were brought through the firewall and connect them to the connectors just attached to the Black wire w/Yellow tracer. The order is not important.

EBP Valve Wiring

For 1994-1997 Powerstrokes, a direct plug in wiring harness is supplied to connect to the EBP valve. Disconnect the EBP valve wiring harness connection (see page 8) and plug in the small harness supplied with this kit (1300742).

The **red** wire from the supplied EBP valve harness will be connected to the **pink** wire run from the DFIV **BRAKE** terminal.

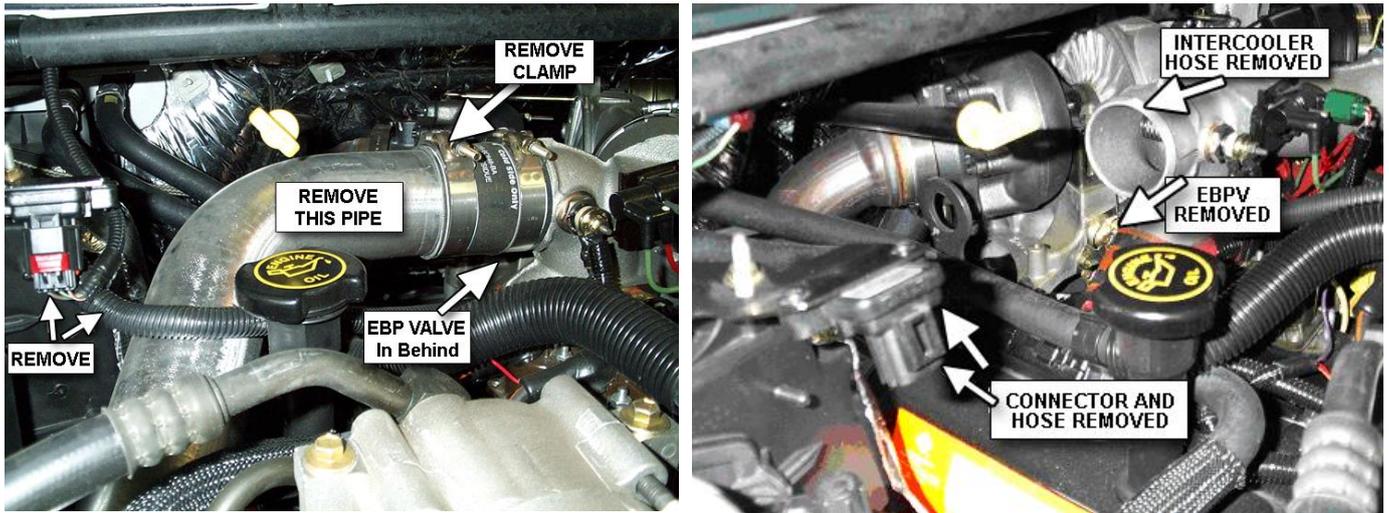
Use a blue Posi-Lock connector supplied the end of the pink wire to the red wire.

For 1999-2003 Powerstrokes (and any retrofitted early models), we do not supply a plug in harness. Instead, run the **pink** wire that was brought through the firewall and tap it into the EBP valve wiring harness using a black (14-18ga) or grey (18-22ga) Posi-Tap. The wire to tap into is the **GRAY/RED**, not the BLACK ground wire.

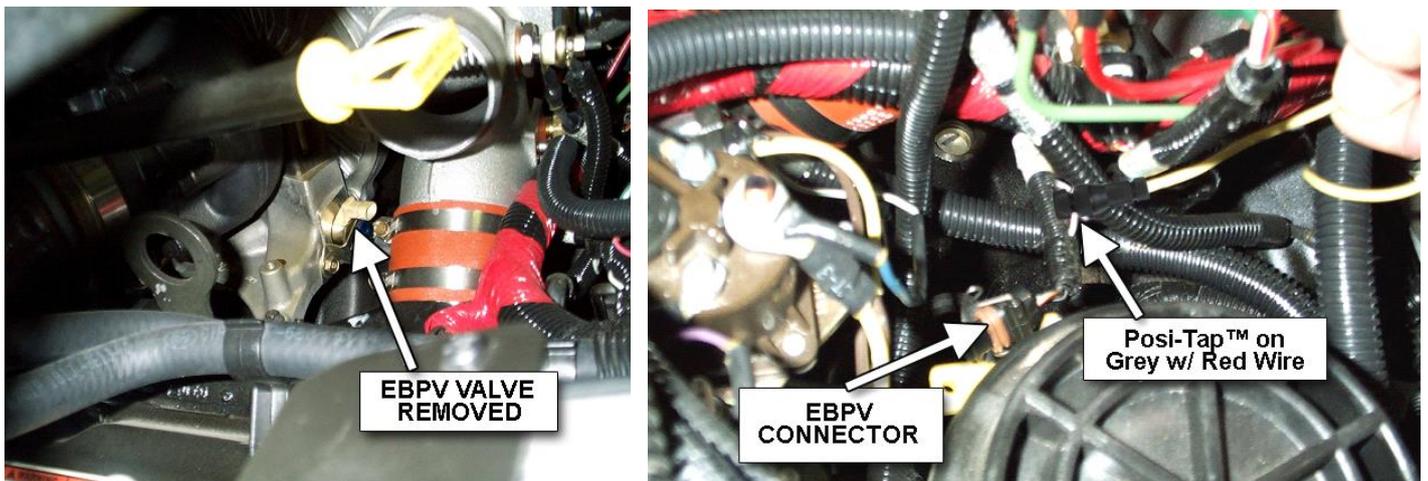
Early (left) vs late (right)
EBP solenoids for
reference.



To gain access to the EBP Valve and wiring, remove the top intercooler hose and then remove the sensor hose and wire connector from the MAP sensor.



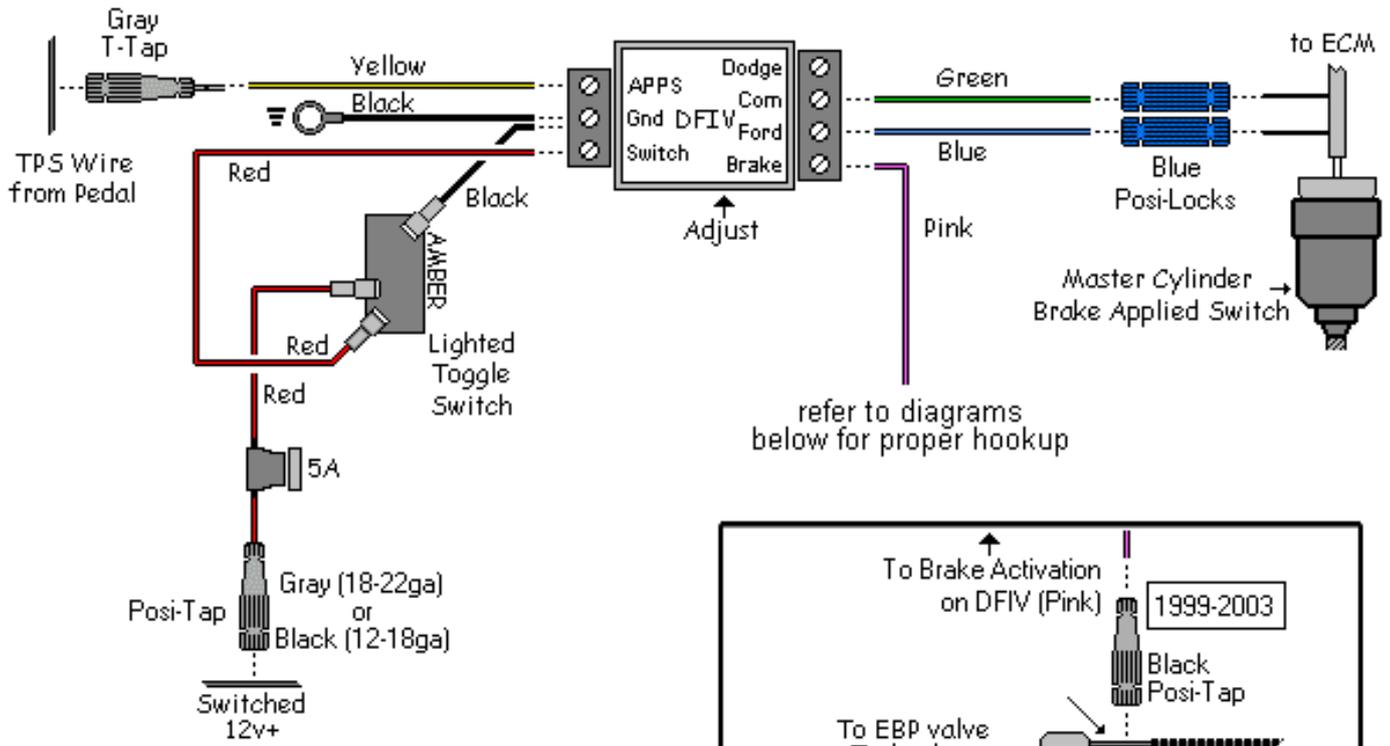
For ease of access and hook up, remove the connector from the EBP Valve and pull the wiring through and underneath to the front of the intake Y-plenum. This will allow access to install a Posi-Tap™ or Connector harness.



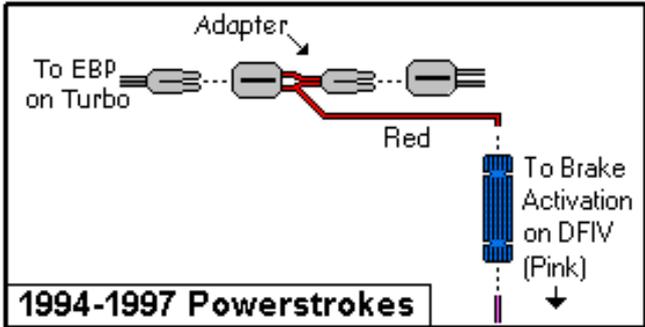
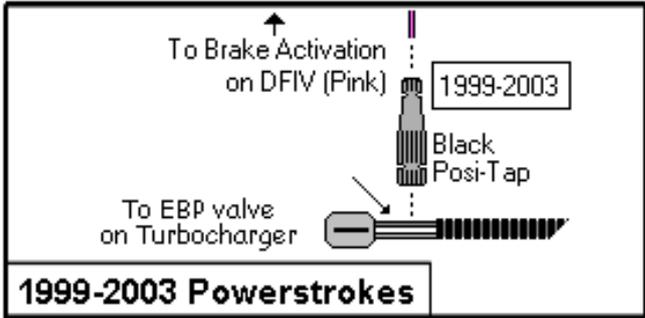
NOTE: After installation, ensure to replace the intercooler hose and clamps. Reattach the MAP sensor hose and wiring connector. Check all connections for security and tightness and secure all wiring to ensure they are out of the way of moving and heated items.

Reconnect and secure all battery connections removed at the beginning of this installation.

Wiring Diagram



refer to diagrams below for proper hookup



DFIV Adjustment & Testing

Ensure the connections of the corresponding wires to the DFIV Control Module are correct as shown in the wiring diagram.

To achieve the correct setting for the activation of the exhaust brake in relation to the throttle pedal the DFIV Module must be calibrated for your vehicle.

Connect a test light to the 'BRAKE' terminal of the DFIV module.

With the throttle at idle, start the engine and turn on brake switch. Then, using a small flat bladed screwdriver, turn the small adjusting screw in the DFIV Module counterclockwise or clockwise until the test light JUST turns on.



With the throttle at idle, start the engine and turn on brake switch. Then, using a small flat bladed screwdriver, turn the small adjusting screw in the DFIV Module counterclockwise or clockwise until the test light JUST turns on.

CAUTION: THE ADJUSTING SCREW IS A MICRO-SWITCH WHICH IS VERY DELICATE, SO TURN USING SMALL ADJUSTMENTS.

Test by revving up the engine to approximately 1200 RPM and releasing the throttle. As the accelerator pedal is applied the test light should turn off just before the engine starts to rev, indicating proper calibration of the DFIV Module with the APPS.

Then the test light should activate again when the throttle pedal returned to idle. If not, readjust the DFIV Module so that it does.

Check for any exhaust leaks and recheck all connections and hoses for security and interference from moving or heated items. After about 100 miles (160 km), re-torque the flange bolts.

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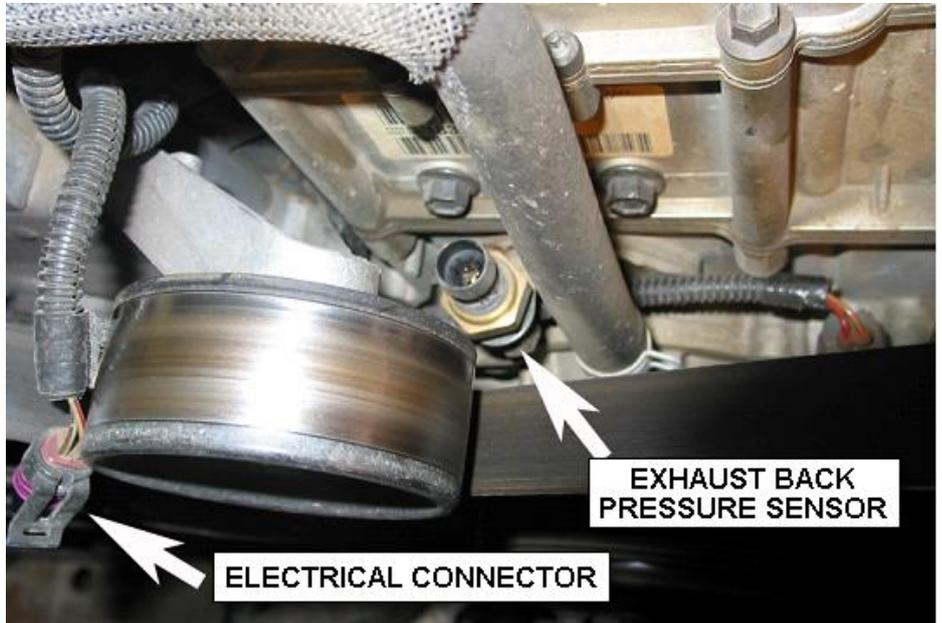
Ford Exhaust Brake Retrofit Kit (California Trucks)

BD Part number 1057020

The purpose of this kit is to cure the problematic Ford P-Code in regards to exhaust back pressure being too high. This code is normally set with California Powerstrokes when using an exhaust brake. This kit should only be used on California trucks that exhibit the problem.

To install, locate the Exhaust Back Pressure sensor at the front of the engine, just behind the idler pulley and to the left of the water pump outlet hose.

Install the supplied Posi-Tap™ connector on to the Violet with Light Blue wire (2000 – 03) or the Pink with Light Blue wire (1999).



Connect the end of the black wire with ring terminal to a nearby engine fastener to provide a ground.

Do not cut or shorten the supplied wire. There is a diode located inside of it.

