



**DOWNLOAD COLOUR
INSTALL MANUALS AT
www.bddiesel.com**



2018-2019 Ram 6.7L

Cummins



BD Electronic Exhaust Brake

(Uses factory exhaust brake switch & ECU control)

1027348	2018-2019 RAM 6.7	4" Exhaust
1027347	2018-2019 RAM 6.7	5" Exhaust

***** Please read this manual before starting installation. ***
OWNER'S MANUAL - LEAVE IN GLOVE BOX**

Kit Contents		
1127039	1304577	1304576
		
Valve Assembly Qty: 1	Brake Control Module Qty: 1	Wiring Harness Qty: 1

1100404	1300131
	
4" S/S Exhaust Clamp Qty: 2	6" Tie Wraps Qty: 12


Kit 1027348 Only (4" Pipe)		Kit 1027349 Only (5" Pipe)	
1100400	1100740	1100500	90368B
			
4" Pipe Adapter Qty: 2	4" Marmon Clamp Qty: 1	5" Pipe Adapter Qty: 2	5" Exhaust Clamp Qty: 1

Table of Contents

Kit Contents	2
Table of Contents.....	2
Introduction	3
Accessories	3
Tools Required for Installation	3
Installation.....	3
Brake Valve Installation	4
Electrical Connections	5
Operation.....	8
Wiring Diagram	8
Troubleshooting	9
Exhaust Back Pressure Testing	10
Off-Idle Pressure Test & Adjustment.....	10

Introduction


Thank you for purchasing a BD Exhaust Brake.

This exhaust brake kit allows you to keep the exhaust braking feature after the stock VGT turbocharger has been removed. The brake is controlled by the ECM just like the stock VGT turbocharger meaning it is controlled by the switch already in your dash. Your new BD exhaust brake keeps all of the features of the original brake including the cold weather warmup feature, cruise control compatibility, and the brake release on downshifts to reduce transmission wear. The control module comes with a wiring harness that plugs in where the stock turbocharger is connected and the StarCAN junction block, this means there is no splicing into stock wiring.

This exhaust brake has been designed to be used on vehicles with aftermarket upgraded turbochargers such as BDs single and twin turbo kits. It requires the vehicle have engine tuning to account for the turbocharger replacement and cannot be used in conjunction with the stock VGT turbocharger. The brake control module uses the demanded torque from the ECM to determine when the brake should shut. This module does not use VGT position to command the brake.

To use this kit your vehicle must have been equipped with the factory exhaust brake button on the dash or must have been upgraded to have this feature. If your vehicle was not equipped with a factory exhaust brake this product will not be compatible with your vehicle.

Accessories

Brake Pressure Testing Gauge Kit		1030050
Cool Down Timer (Turbo Timer)	2013-2019	1081160-D3

Tools Required for Installation

- Measuring tape or ruler
- Reciprocating saw or hacksaw
- Wire Cutters
- Socket Set
- Welder
- Heat gun or lighter

Installation

To prevent damage to electronic components, it is recommended that both battery negative terminals be disconnected while working on the vehicle.

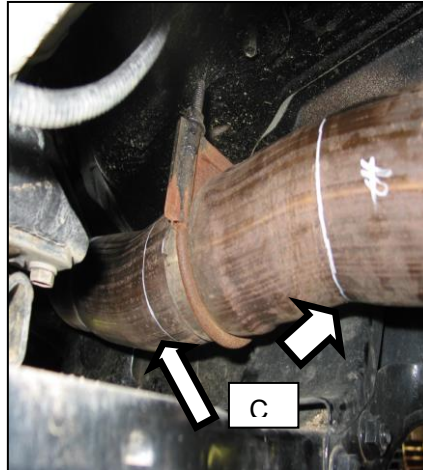
Please read this manual thoroughly before installing this exhaust brake.

Brake Valve Installation



Raise and support the vehicle with a vehicle hoist or with appropriate jack stands. Ensure vehicle is safely supported before proceeding to reduce possibility of damage or injury.

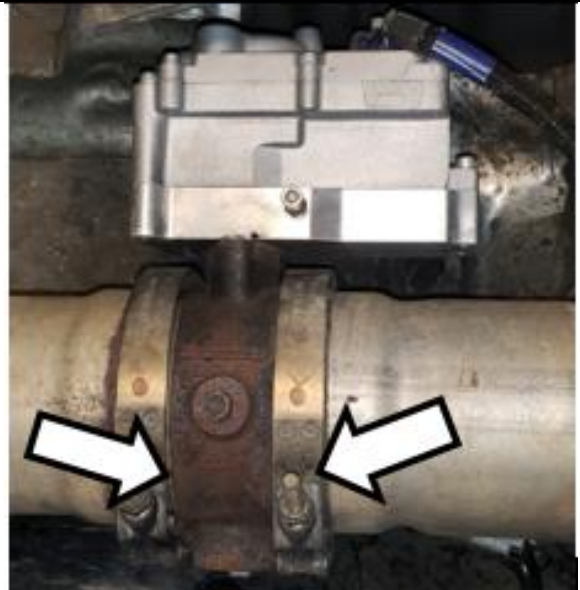
Beneath the vehicle, locate the exhaust downpipe and front exhaust pipe beside the transmission. Choose a section of pipe that is as straight as possible. Mock up the brake valve in this area to ensure it will fit before cutting the pipe. Mark a 7-1/4" section for removal.



Cut out the marked pipe section using a reciprocating saw or cutting disk. Remove any burrs left on the edge of the pipe using a file or similar tool, then slide the pipe adapters onto the two cut ends of the pipe.

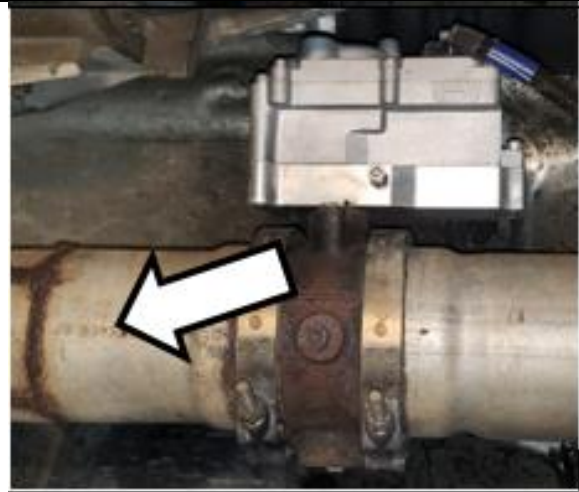


Install the brake valve between the two exhaust pipe adapters using the two supplied V-band clamps. Ensure the exhaust pipe adapters are in line with the brake valve to prevent possible leakage.



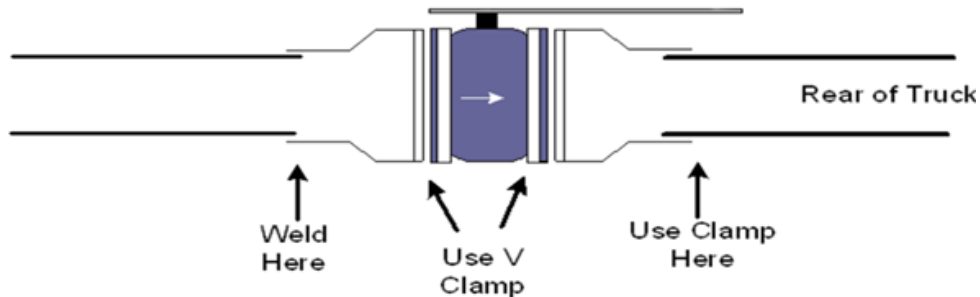
Weld the front adapter to the exhaust pipe. This weld must completely seal the exhaust system as it must retain pressure.

Note It is recommended that the weld be spray painted to slow down corrosion along the weld bead.



IMPORTANT The front exhaust connection **MUST** be welded. Using a band clamp or conventional exhaust clamp on this joint will cause leaks and will not retain full exhaust brake pressures.

Install the supplied stainless-steel band clamp on the rear exhaust pipe adapter. Tighten bolts until the band fully conforms to both pipes creating a seal.

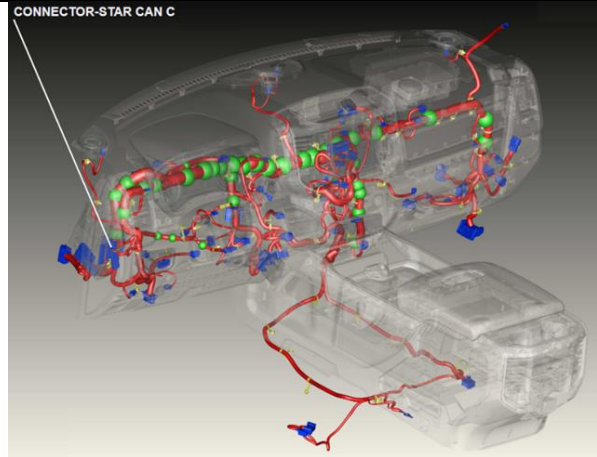


Electrical Connections

Drill a hole in the plastic firewall block-off. Route the end of the harness with the 2-pin white connector through the hole.



Locate the StarCAN connector on the driver's side of the dashboard behind the headlight controls.



2018: This can be located by looking up from the pedals towards the instrument cluster.



2019: Use a pry tool to release the headlight control cluster to reveal the StarCAN connector as shown.



The white connector can be plugged into any open port of the StarCAN C junction (green connectors with black housing) as shown.

*****DO NOT CONNECT TO THE JUNCTION WITH THE WHITE HOUSING*****

Locate the factory turbocharger actuator electrical connector. This is a 4 pin black connector that used to be connected to the VGT. Connect the black connector of the harness for power and ground.



Route the electrical harness grey 12 pin connector up to the top rear of the passenger side battery.

Connect the wiring harness to the module and secure the harness with wire ties to keep it well clear of the turbocharger(s).

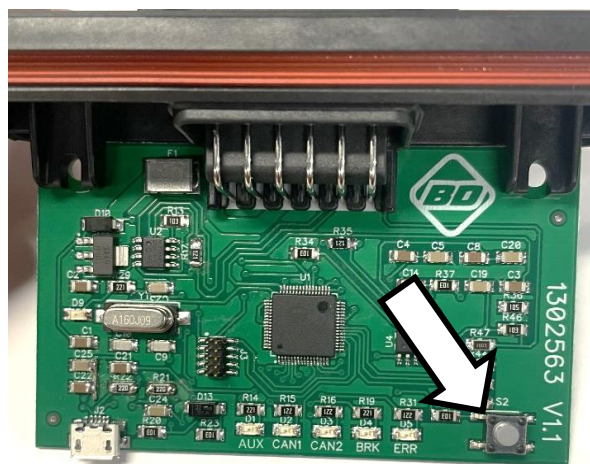


Finally, route the harness with the black 4-pin connector down the firewall, along the frame rail to the exhaust brake actuator. Connect to the actuator and secure the harness along the frame.



This is a perfect opportunity to test the exhaust brake function.

To turn the brake on for testing, remove the cover from the control module and press the "TEST" button inside. Pressing this button will activate the brake actuator.

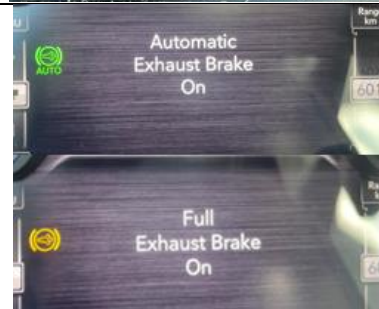


Operation

Once the wiring is all complete use the factory switch in the cab to turn on the Exhaust brake.



The exhaust brake functions just like the factory exhaust brake. Pressing the Exhaust brake button cycles between Full and Automatic modes. The Full mode will apply the brake when the driver lifts off the accelerator.

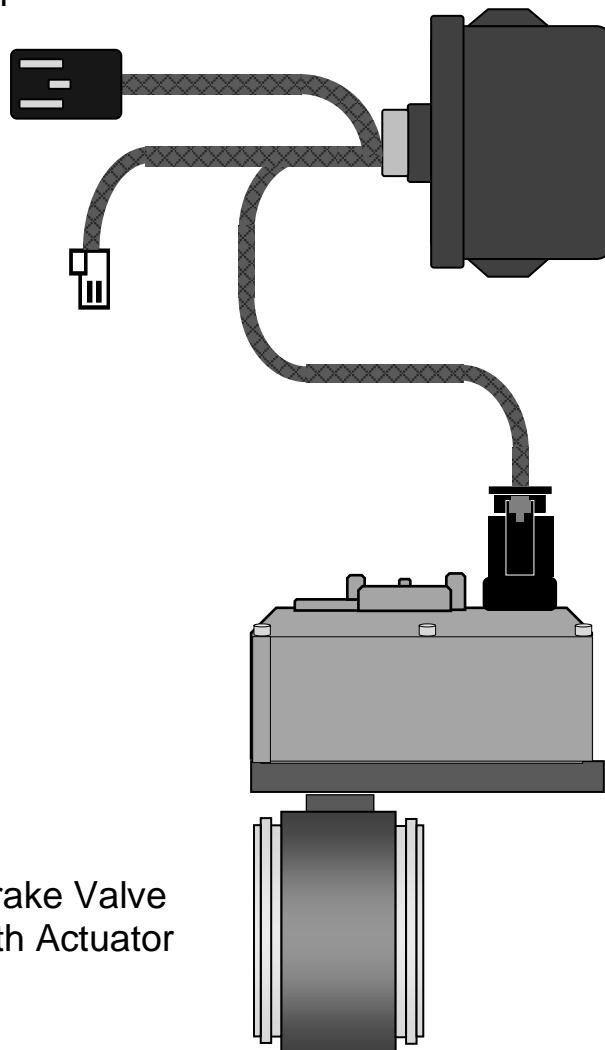


The automatic mode will apply the brake only if the driver taps on the brake pedal.

Wiring Diagram

OE VGT Connection
(Ignition power)

StarCAN Junction
(Data)



Control Module

Brake Valve with Actuator

Troubleshooting

This guide assumes that your exhaust brake system is using a “Dodge 6.7L Brake Control Module” rather than a DFIV or micro-switch on the throttle. For other systems see the appropriate instruction manual.

Brake does not engage	No	Yes
Is the control module powered?	Check fuse box for blown fuse: <ul style="list-style-type: none"> • 2018 MY Fuse 78 – 10A • 2019 MY Fuse F22 – 25A Check wiring harness for connection or for damage.	Test brake function using the test button on the module.
Does the brake activate when the test button is pushed?	Indicates a mechanical or electronic issue with the brake. Open module and observe the ERR, CAN1 and CAN2 LEDs.	CAN 1 LED Flashing: Module communicating with the PCM CAN 2 LED Flashing: Module communicating with the actuator. ERR LED solid: unresolved error. ERR LED Flashing: temporary error. Refer to LED Flashing Patterns section.
Are the CAN lights on the module PCB flashing consistently?	Check wiring harness for shorts or exposed wires.	Indicates module is communicating with the vehicle and the brake actuator.
The brake comes on but there’s little or no holdback	No	Yes
Check off idle brake pressure. (See back pressure chart) Are you getting maximum allowable back pressure at full RPM?	Check for exhaust leaks. A small leak can result in a significant decrease in back pressure. If no leaks are found try adjusting air regulator. Check for air leaks in brake system.	Try down-shifting more aggressively. More RPM will give more holdback.
Is the Error LED flashing	No	Yes
Is the Error LED on and flashing?	If the error LED is on then there is a connection error between the module and the ECM/actuator. Use the test button to see if the actuator opens and closes.	If the error LED is on and flashing then there was a temporary loss in communication between the ECM/actuator and the module. Cycle the power and check if the problem persists.

LED Flashing Patterns



CAN1 and CAN2 LEDs are flashing	The Module is communicating with the vehicle and the brake actuator
BRK LED is on	The brake shut signal is sent to the brake actuator
ERR LED is solid	There is currently an unresolved error. <ul style="list-style-type: none"> • Communication with the vehicle or the actuator has been lost • The actuator is not able to open or close fully
ERR LED is flashing (1 time/s)	There was an error which has been resolved. eg: the actuator stopped communicating with the module but resumed communication. Turning the vehicle off and on again will clear the error.
Only CAN1 is flashing	The module has no communication with the brake actuator
Only CAN2 is flashing	The module has no communication with the vehicle

Exhaust Back Pressure Testing

To test exhaust brake system pressure, a minimum 0-100psi pressure gauge is required.

We recommend purchase of a BD brake pressure gauge kit #1030050.



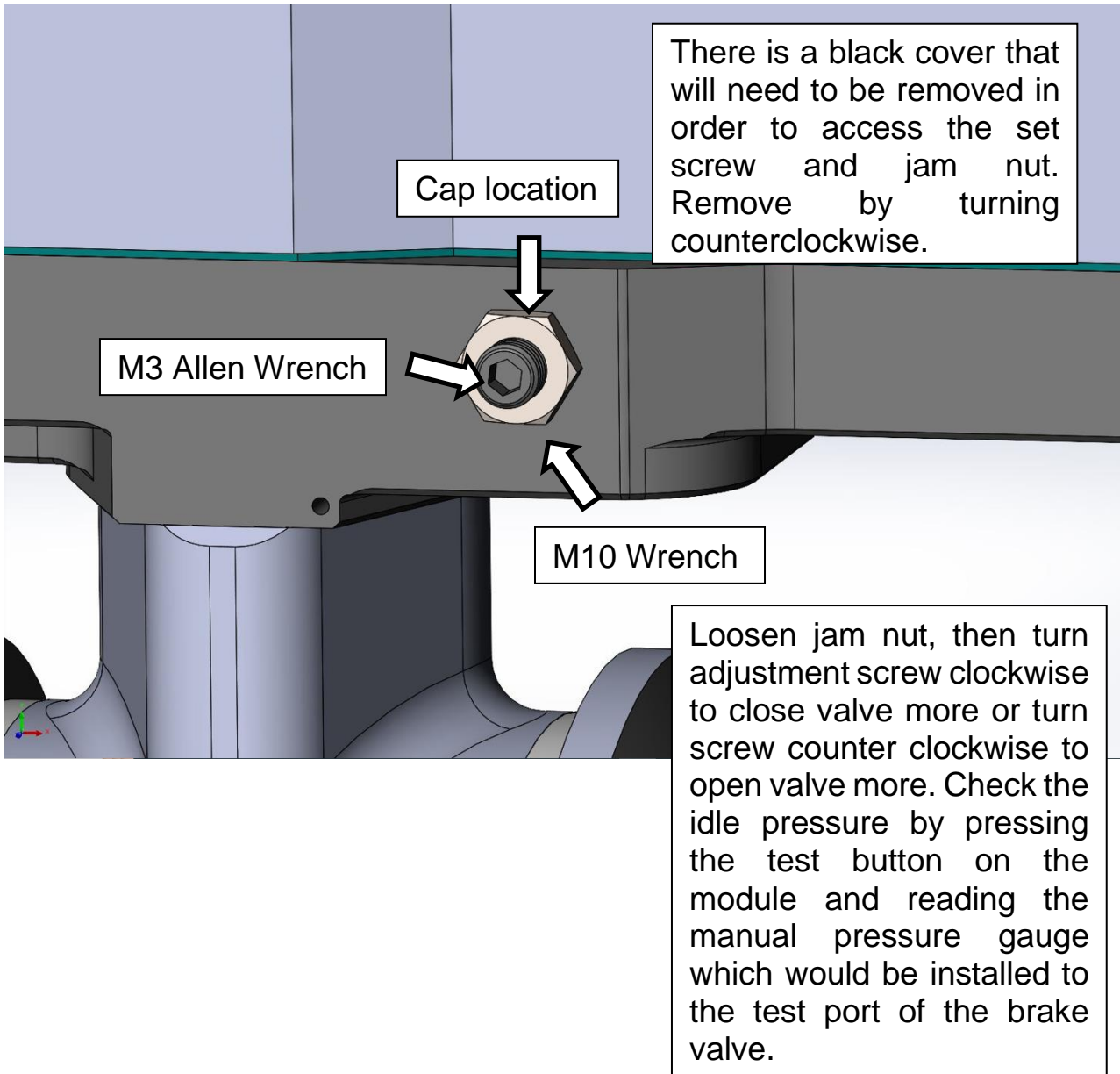
Off-Idle Pressure Test & Adjustment

Get the truck up to speed (a downhill grade or a load in the truck is helpful) and activate the exhaust brake. Note the maximum backpressure achieved. You should get peak backpressure at higher RPM (try 3000 RPM in Drive). If you cannot reach the desired backpressure you can begin troubleshooting, the first step is to look for exhaust leaks either from the clamps, exhaust manifolds, or feed pipes. Also, look for leaks at the clamps located at the back of the turbo and also at the downpipe.

NOTE: Over the next two weeks, the backpressure at idle may rise due to initial carbon buildup on the inside of the brake housing and on the butterfly. The stop bolt may need to be adjusted again to compensate.

Application	Maximum Back Pressure
Dodge Cummins 2018+	65 psi

The brake assembly is calibrated to the factory specifications for a 6.7 Ram. We generally do not recommend adjusting the stop bolt, please consult BD before doing this as it may void your warranty.



Serial # _____

Date Purchased _____

Purchased from _____

Installed by _____