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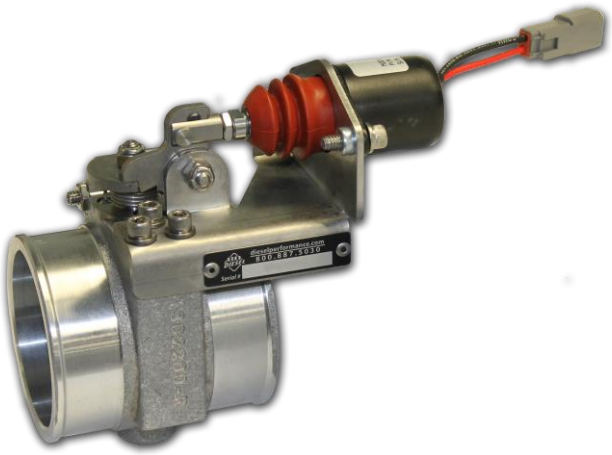


2001-2004 GM 6.6L LB7 Duramax Positive Air Shutoff

P/N#	1036710
P/N#	1036710-M

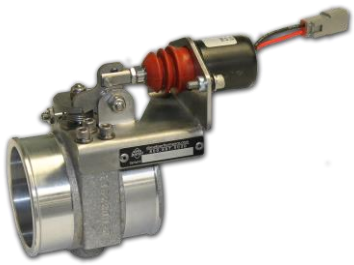
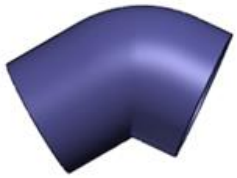
PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION

An Information decal has been provided in this kit. This may allow safety personal and inspector's to quickly identify that your vehicle is equipped with a BD Positive Air Shut Down unit. Install this decal in a visible location on the inside glass of the vehicle.

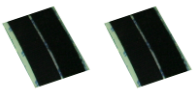
BD Engine Brake Inc.
Plant Address: 33541 MacLure Rd. Abbotsford, BC, Canada V2S 7W2
U.S. Shipping Address: 1124 Fir Avenue, Blaine, WA 98230 U.S. Mailing Address: P.O. Box 231, Sumas, WA 98295
Phone: 604-853-6096 | Fax: 604-853-8749 | Internet: www.bddiesel.com

K I T C O N T E N T S :

Please check to make sure that you have all the parts listed in this kit ***before*** you start the disassembly of your truck.

1036710 Kit Contents			
1302300-A	**1302271**	**1302242-A**	**1405404**
			
Air Shutoff Valve	*3-3 ¼" Silicone Boot*	*Wiring Harness*	*3"-3 ¼" Silicone Boot*
Qty: 1	**Qty: 1**	**Qty: 1**	**Qty: 1**

1302280	**1302282**	**1405211**	**1407030**
			
3" PAS Bead Ring	*PAS Drill Template*	*0325 Clamps*	*0350 Clamps*
Qty: 2	**Qty: 2**	**Qty: 2**	**Qty: 2**

FT-10910-03116	**1301381**	**1306710**	**1302285**
			
Velcro strips	*Heat Shrink*	*Duramax Electronic Module*	*Solder*
Qty: 2 pcs	**Qty: 3"**	**Qty: 1**	**Qty: 5"**

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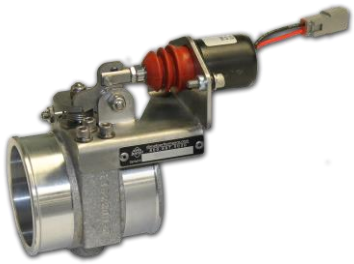
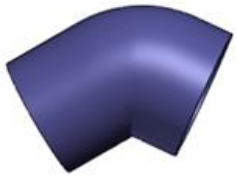
Phone: 604-853-6096 | Fax: 604-853-8749 | Internet: www.bddiesel.com

1036710-M Kit Contents			
1302300-A	**1302271**	**1302249-A**	**1405404**
			
Air Shutoff Valve	*3-3 ¼" Silicone Boot*	*Wiring Harness*	*3"-3 ¼" Silicone Boot*
Qty: 1	**Qty: 1**	**Qty: 1**	**Qty: 1**

1302280	**1302282**	**1405211**	**1407030**
			
3" PAS Bead Ring	*PAS Drill Template*	*0325 Clamps*	*0350 Clamps*
Qty: 2	**Qty: 2**	**Qty: 2**	**Qty: 2**

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WELCOME

Thank you for purchasing a BD positive air shutoff. This manual is divided into different areas to assist you with your installation and operation of your positive air shutoff.

This product is a safety product and should be tested often.

Installation should occur on a vehicle properly secured to prevent rolling.

TABLE OF CONTENTS

REQUIRED TOOLS

- Frequency/Voltmeter (Suggested)
- Drill
- 1/8”, 11/32” Drill Bit
- 1/2” Unibit
- Electrical Tape
- Soldering Iron
- Air or Manual Ratchet
- 7/16”, 1/2” Sockets
- Wire Strippers
- Heat Gun
- Band Saw or reciprocating saw or cutoff wheel.

MAINTENANCE

The only maintenance required is to test the valve operation at regular intervals. Please see the testing section later in the manual for the correct procedure.

INSTALLATION with OVER SPEED ELECTRONICS (1036710)

VEHCILE SHOULD BE SAFELY SECURED BEFORE INSTALLATION.

1. Block the wheels of the vehicle to prevent the vehicle from rolling.

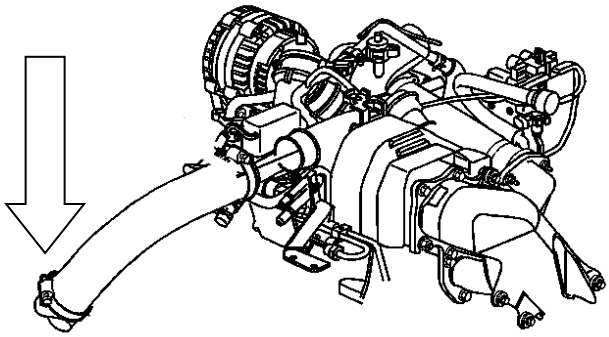
   Open the hood.

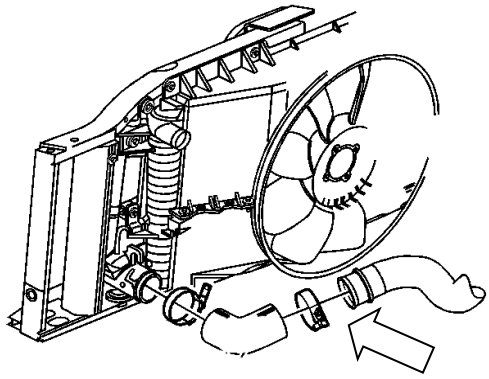
2. You will need to remove the driver's side Charge Air Cooler (CAC) tube.

   Remove the driver's side upper silicone boot at the Charge Air cooler tube connection.

   Then remove the lower boot to tube connection.

   It is highly suggested that you remove the driver's side front inner fender liner. It will allow you easier access to the tube and the connections.





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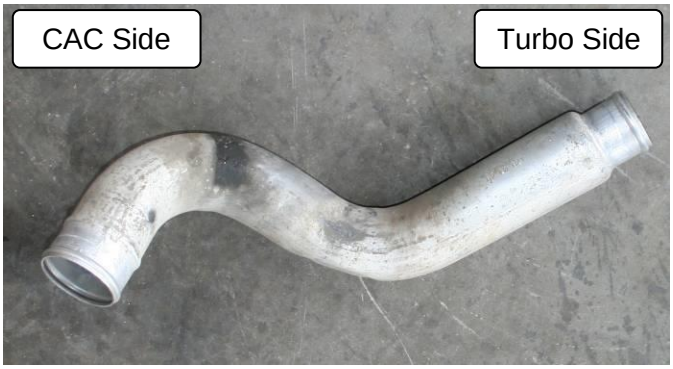
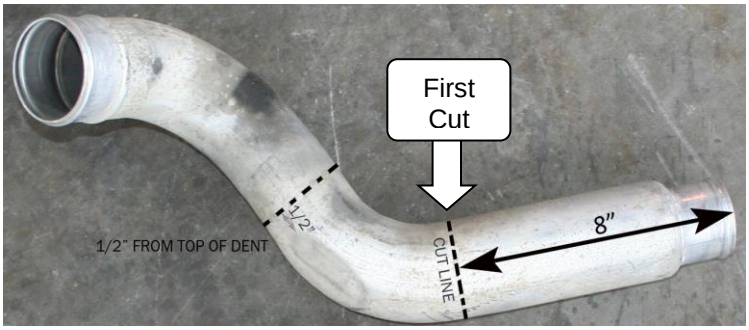
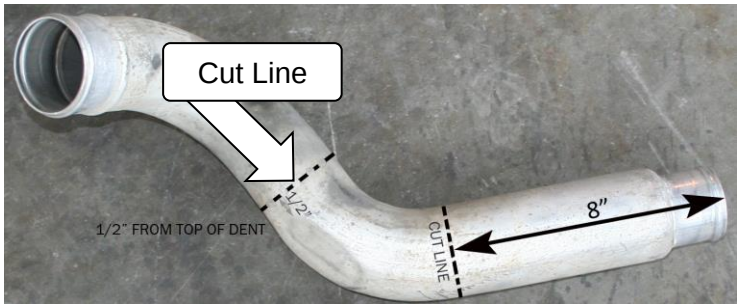
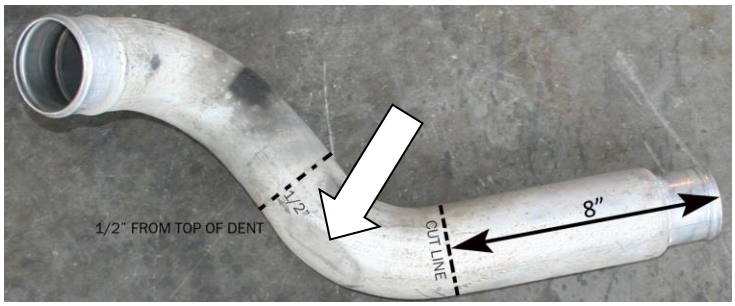
3. With the driver's side CAC tube removed, lay it flat on a work bench. First identify the turbo inlet and the CAC outlet side of the tube.	
4. You will need to make two cuts to this tube. The first cut is relatively easy. Measure 8" from the 2.5" swedge edge section into the tube length.	

5. The second cut is far more difficult. First locate the dent on the bend of the tube. Move ½" towards the CAC end of the tube; this is your cut line. Make sure the cut is square or perpendicular to the tube.



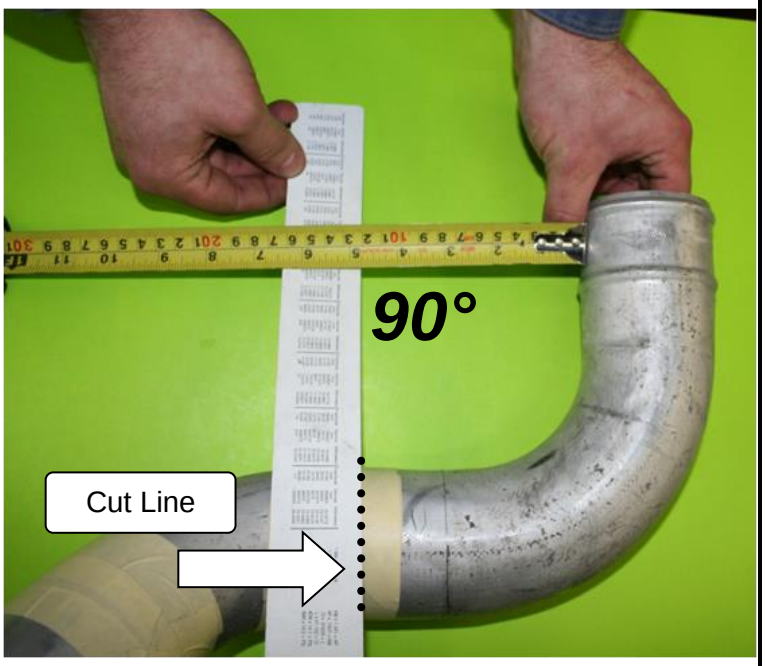


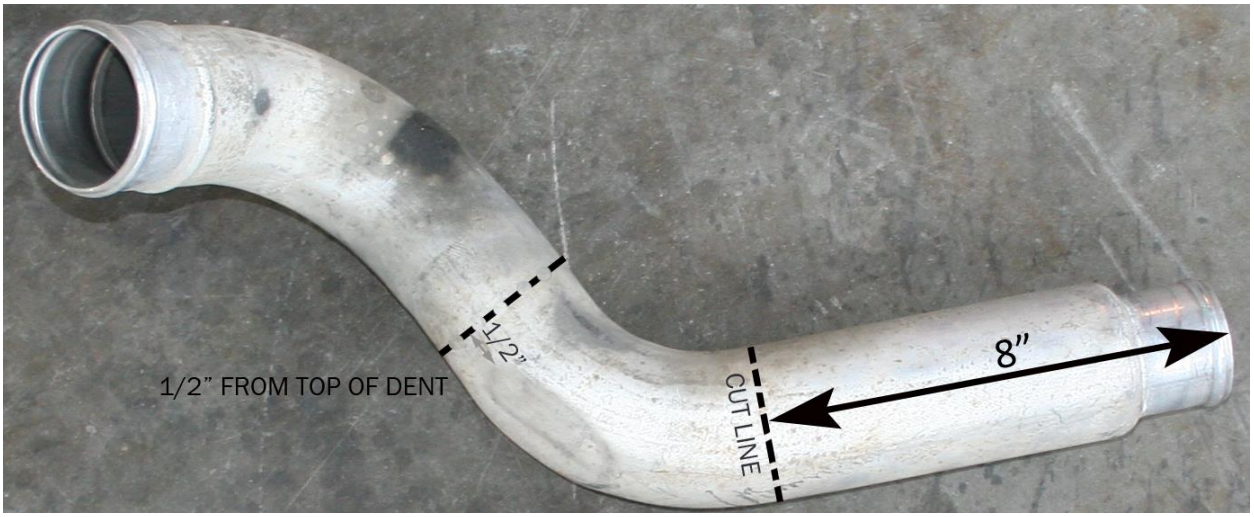
Another method to determine the cut line is to use a ruler and a tape measure.

Lay the tube flat on the table/ground; ensure that the bend in question is flat to the table/ground.

Use a ruler to come off square/perpendicular the CAC tube outlet. Then with the ruler, create a 90° angle at the 4.75" dimension.

The ruler will cross the pipe at the correct cut line.





6. With the pipe cut, you will now need to drill a couple of holes to secure the boot bead on both ends of the pipe.

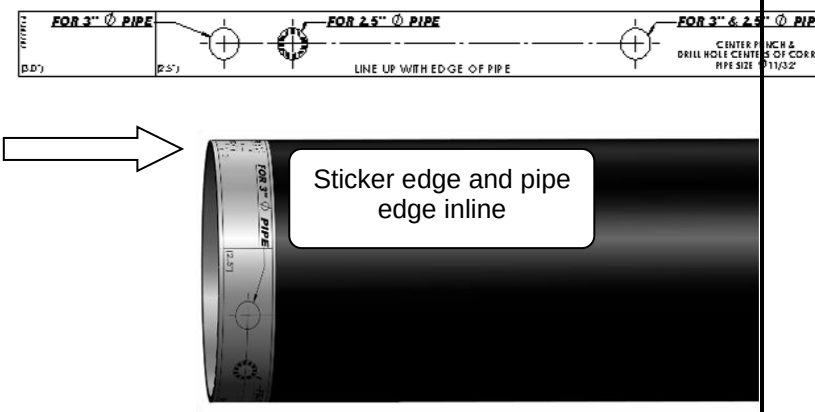
7. Firstly, remove the backing from drill template sticker and wrap around pipe. The edge of the sticker should line up with the edge of the pipe.

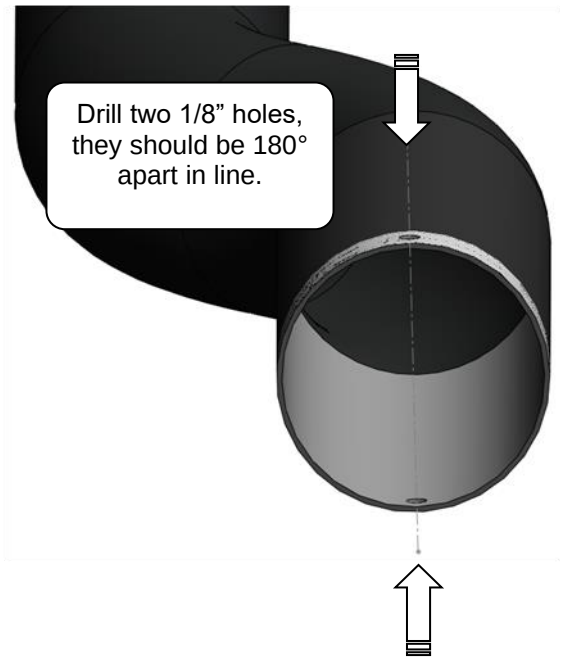
   For the 3" pipe the sticker should wrap perfectly around the pipe, the start of the sticker should meet the end of the sticker.

8. With the sticker in place use a center punch and then use a **Ø1/8"** drill bit and drill a hole in the center of the holes marked **"For 3Ø".**

   There will be two holes and they should be perfectly 180° inline with each other through the pipe.

DO NOT DRILL COMPLETELY THROUGH THE PIPE AND OUT THE OTHER END. YOU WILL NEED TO DRILL ONE SIDE THEN ROTATE, AND THEN DRILL THE OTHER SIDE.





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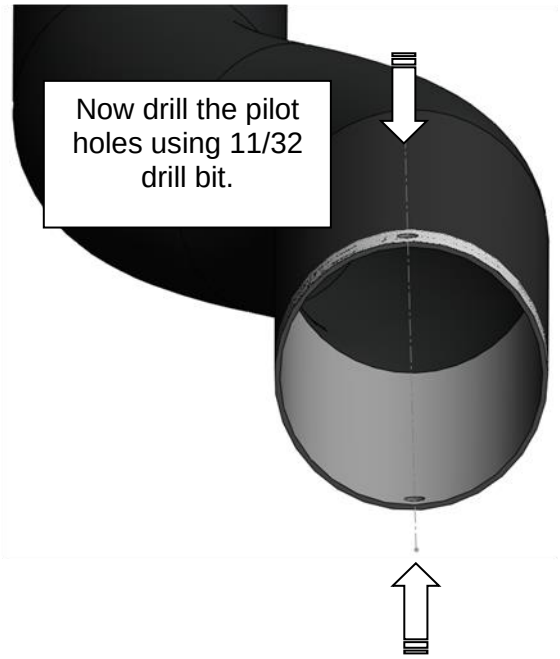
9. Once the pilot holes are drilled you will need to drill an **Ø11/32”** hole through the pilot holes.

   You can now remove the sticker.

   You must deburr the inside of the drilled holes.



10. Once the holes are drilled, install the ring bead around the pipe. Lock each end of the ring bead into each hole.

    You can use needle nose pliers to tweak or adjust the ring fit slightly.

    Be careful not to bend the ring bead too much as you will weaken it.

    Note the ring bead does not have to be perfectly tight or snug around the pipe, as we will be installing a silicone boot over top of it.

    With the ring bead in place, you should not be able to pull the ring bead off axially from the tube.

11. With the holes and bead rings installed in both pipes you can now install the silicone boots and then the positive air shutoff valve.

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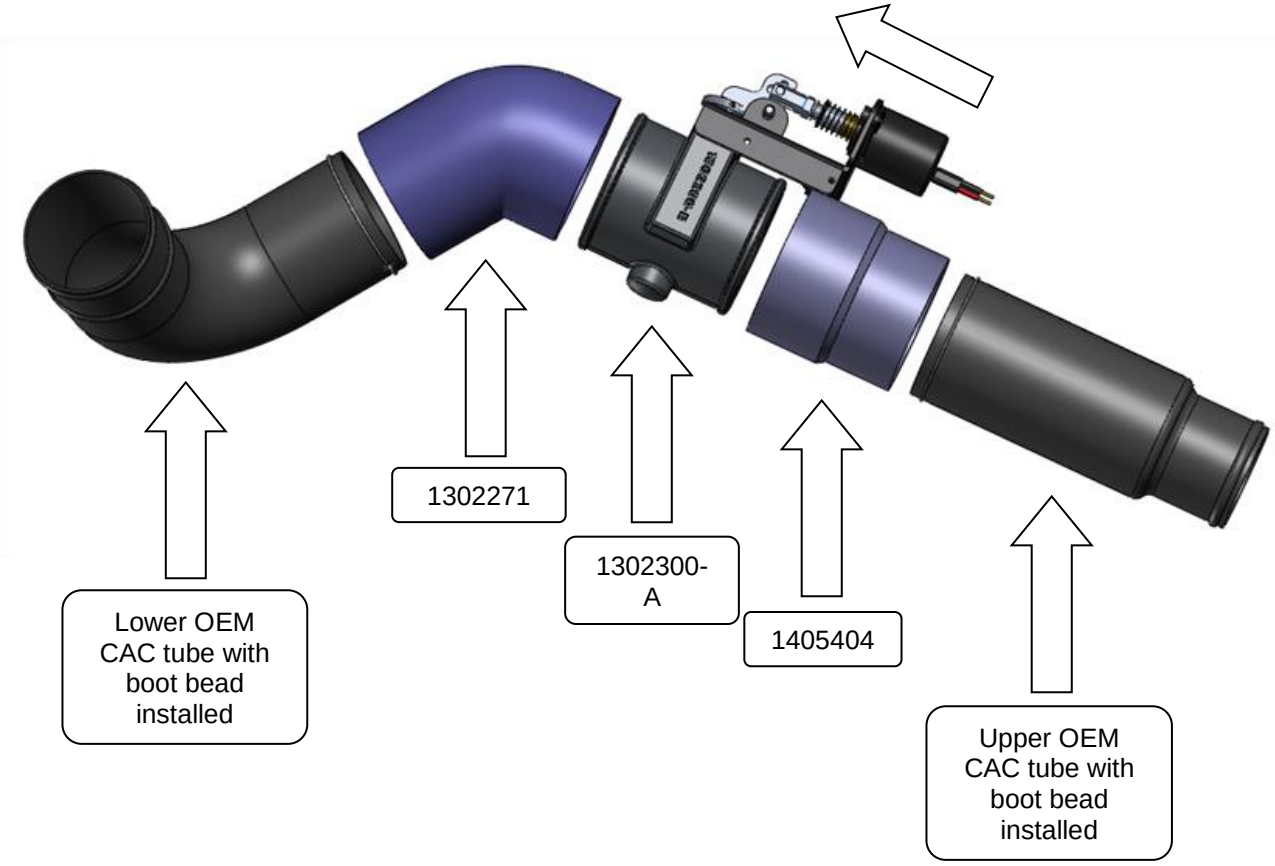
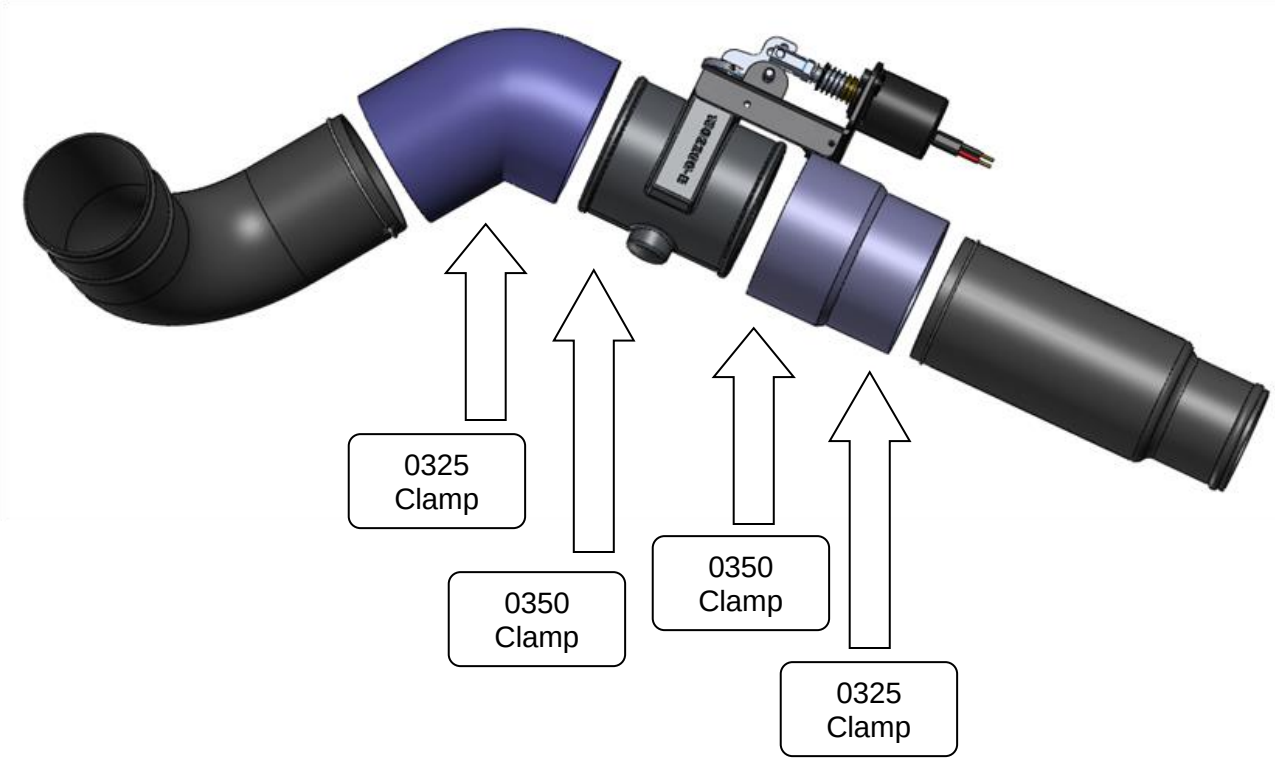
Please note the flow orientation.





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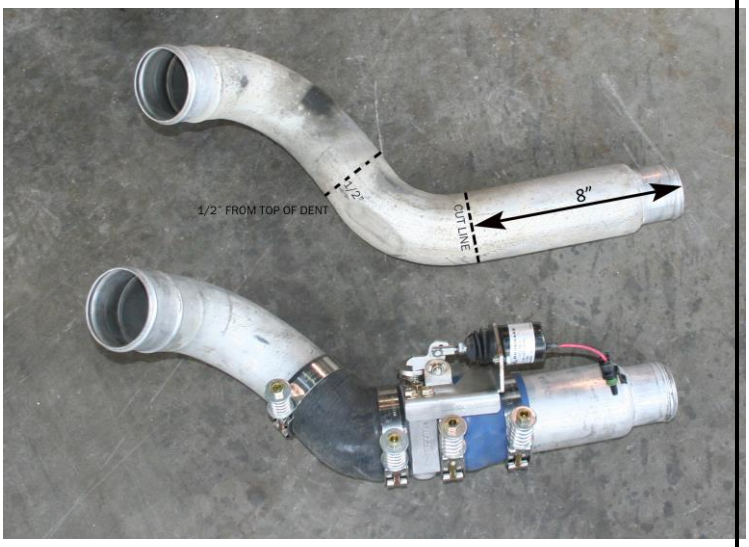
12. Install the 3-3.25” 45° (#1302271) boot on to the outlet of the PAS valve. Please note the flow arrow orientation. Loosely secure this connection with the 0350 spring clamp (#1407030).

13. Install the 3-3.25” straight (#1405404) boot on to the inlet of the PAS valve. Please note the flow arrow orientation. Loosely secure this connection with the 0350 spring clamp (#1407030).

14. Now connect the OE Duramax CAC side tube to the 45° boot. Loosely install the 0325 clamp (#1405211).



15. Finally connect the turbo outlet section of OE CAC tube to inlet side of the 3-3.5 boot/PAS assembly. Loosely secure the 0325 spring clamp (#1405211).

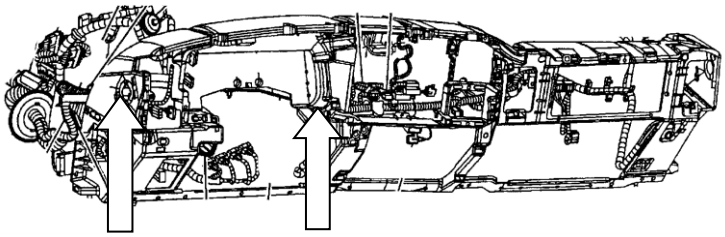
16. You can now install the PAS/tube assembly back into the truck.

17. With the spring clamps loose you should be able to rotate all the joints to ensure a perfect fit. Once the rotation and angle is correct tighten all clamps. Also ensure there is enough room for clearance around any moving or hot parts.

Tighten all spring clamps until spring bound.

18. Reinstall wheel well/fender liner.

19. Lay out supplied wiring harness over top of the engine.

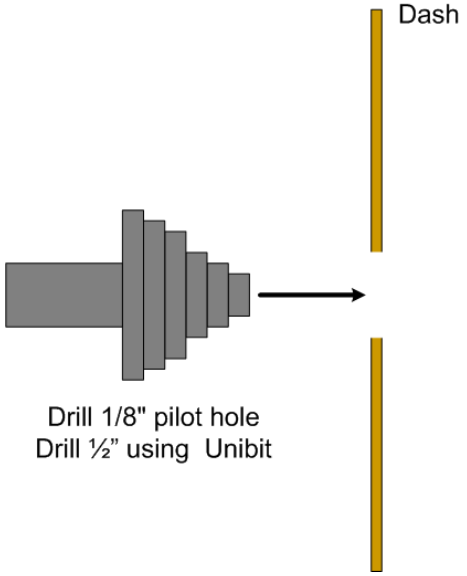


20. You will then need to route the switch through the firewall on the driver's side (note you will need to remove the switch from the harness to accomplish this). See wiring diagram on page 33

    Choose a highly visible location for the switch and mount it to the dash.

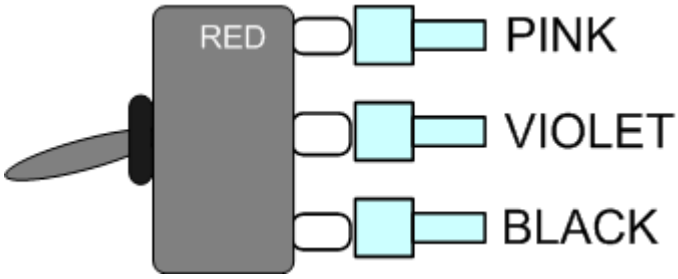
21. Using a 1/8" drill, drill a pilot hole in the location you have selected for the switch to be mounted.

22. **Finally using a ½" UNIBIT drill bit, drill an exact ½" round hole.**



23. Once you have the mounting hole drilled, insert the switch from the backside.

    Reinstall the correct wires to the correct switch terminals.



24. Mount the switch so that the groove on the thread boss is facing down.

    Adjust the HEX washer/nut so that the switch threads do not protrude an unsightly amount.

Switch install with decal

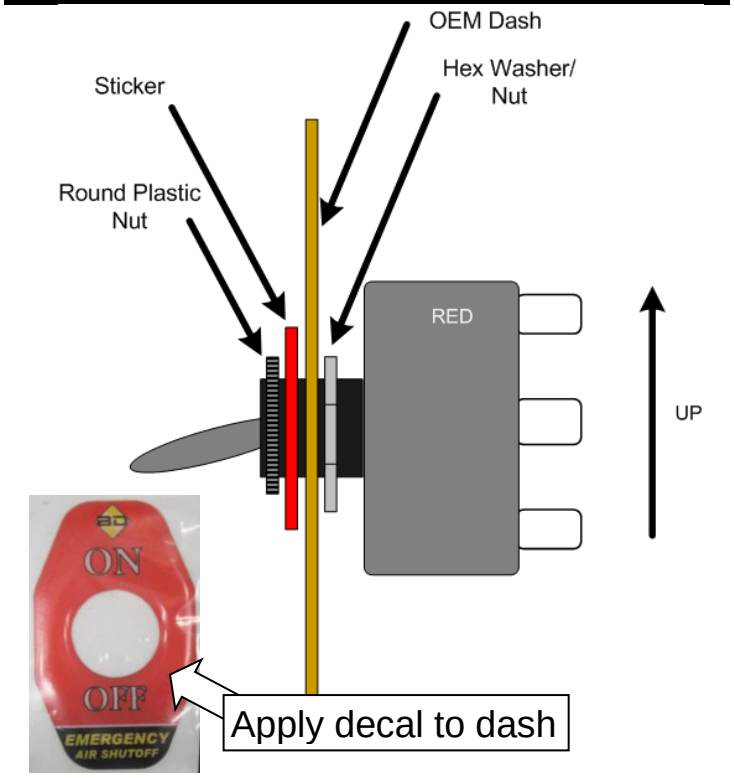
Apply the supplied decal to the dash and tighten the round plastic nut.

Switch install with Guard

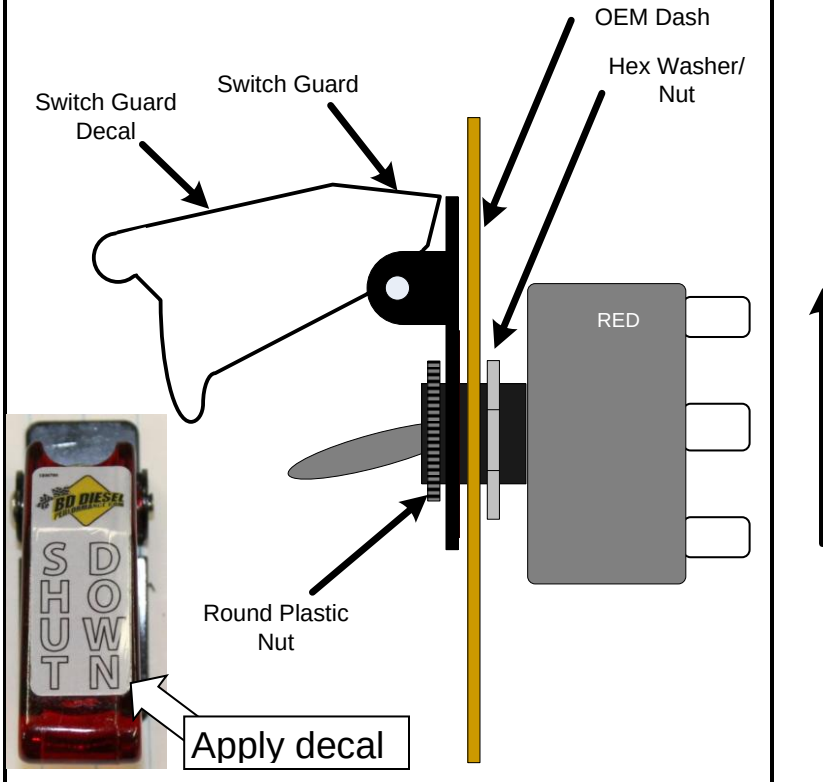
Install the switch guard onto the switch by aligning the tab with the groove on the thread boss.

Then tighten on the round plastic nut and apply the decal to the switch guard.

Switch install with Decal



Switch Install with Guard



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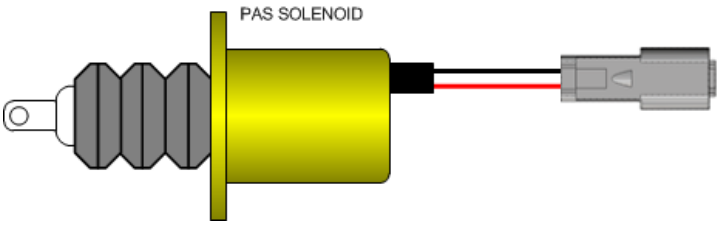
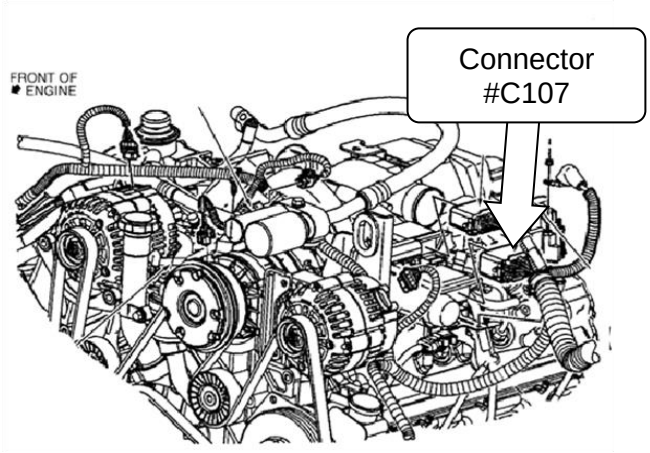
25. Now underneath the hood locate and connect the weather pack connector on the wiring harness to the solenoid on the PAS valve. See page 33 for more info.



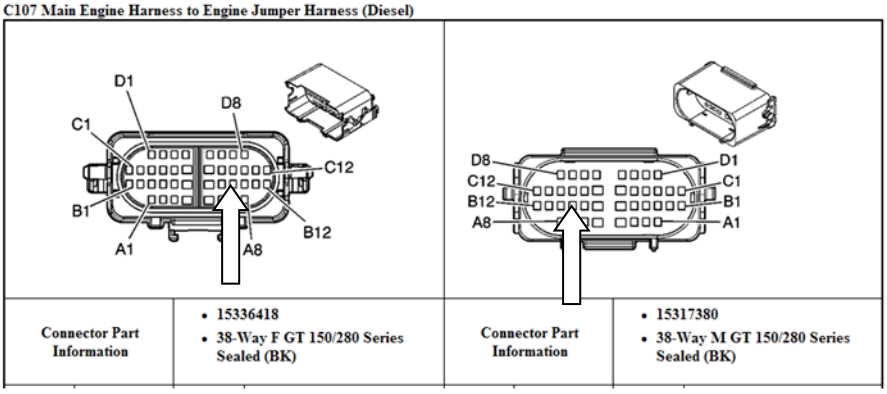
26. You will now need to locate the CRANKSHAFT SENSOR Wire. This wire location is in connector c107, which is on top of the engine driver 'side.

27. You will need to remove the upper connector to gain access to the lower C107 connector. C107 has 38 pins.

28. Locate pin B9, DARK BLUE W/WHITE.



C107 Main Engine Harness to Engine Jumper Harness (Diesel)



Connector Part Information	• 15336418 • 38-Way F GT 150/280 Series Sealed (BK)	Connector Part Information	• 15317380 • 38-Way M GT 150/280 Series Sealed (BK)

B4	BN/WH	633	CMP Sensor Signal	B4	BN/WH	633	CMP Sensor Signal
B5	PK/BK	632	Low Reference	B5	PK/BK	632	Low Reference
B6-B7	-	-	Not Used	B6-B7	-	-	Not Used
B8	YE/BK	1868	Low Reference	B8	YE/BK	1868	Low Reference
B9	D-BU/WH	1869	CKP Sensor Signal	B9	D-BU/WH	1869	CKP Sensor Signal
B10	L-GN	1867	12-Volt Reference	B10	L-GN	1867	12-Volt Reference
B11	YE /BK	846	Fuel Injector 6 Control	B11	YE /BK	846	Fuel Injector 6 Control
B12	PK/BK	1746	Fuel Injector 3 Control	B12	PK/BK	1746	Fuel Injector 3 Control
C1	BK	1744	Fuel Injector 1 Control	C1	BK	1744	Fuel Injector 1 Control
C2	BK/WH	845	Fuel Injector 5 Control	C2	BK/WH	845	Fuel Injector 5 Control
C3	TN	2917	5-Volt Reference	C3	TN	2917	5-Volt Reference
C4	OG/BK	2919	Low Reference	C4	OG/BK	2919	Low Reference
C5	YE	2918	FRP Sensor Signal	C5	YE	2918	FRP Sensor Signal
C6	PK	239	Ignition 1 Voltage	C6	PK	239	Ignition 1 Voltage
C7	-	-	Not Used	C7	-	-	Not Used
C8	L-BU	2832	Engine Speed Signal	C8	L-BU	2832	Engine Speed Signal

29. Being that the RPM signal is critical you will need to solder the connection.

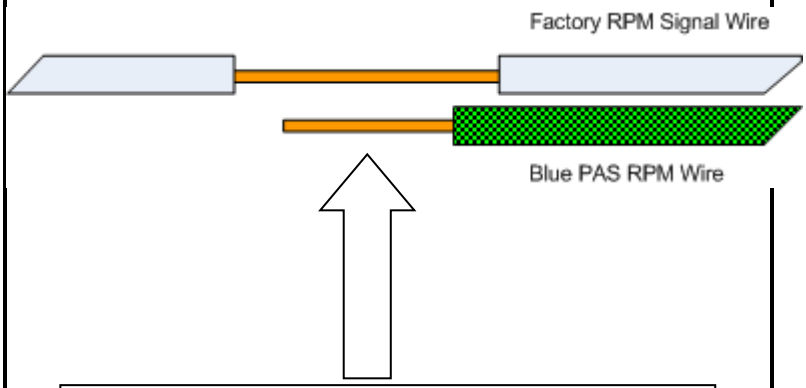
    Using wire strippers create a 1” window/gap in insulation of the wire.

    Then strip about 1” of insulation of the RPM signal wire of the BLUE wire from the PAS wiring harness.

    Wrap the copper wire around the factory RPM signal wire and solder this connection.

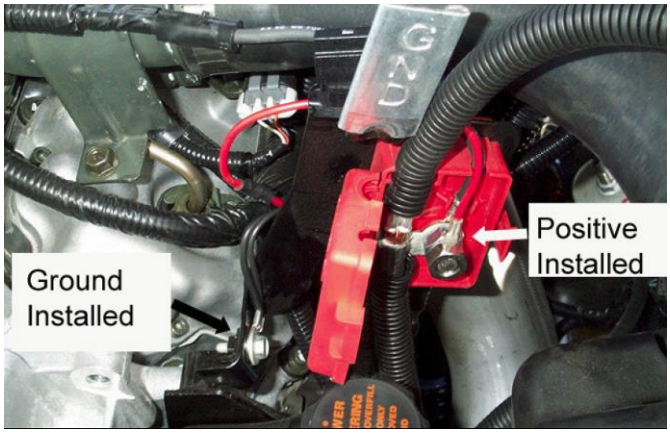
    Then use electrical tape to wrap this connection so that it is water tight.

    You can also cut the factory crank signal wire and use heat shrink tubing if you would like.



Solder the connection and then wrap and seal with electrical tape

30. Next on the PAS wiring harness connection the BLACK and RED wires to the respective power and ground connections. This connection should be made on the auxiliary power connection on the driver’s side of the motor.



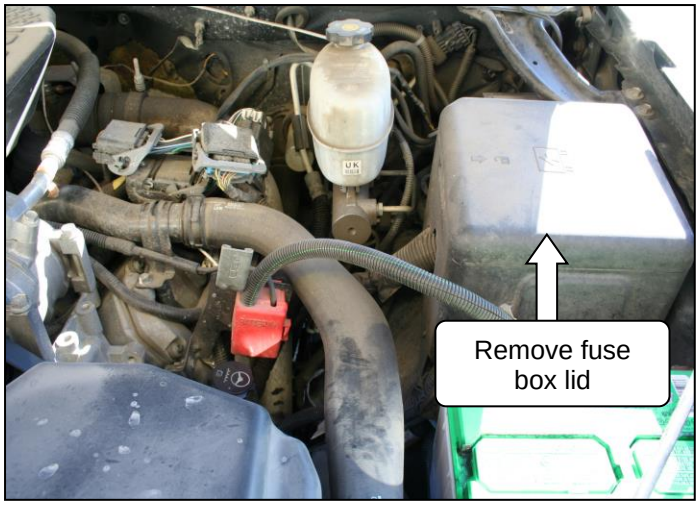
31. For the last connection you will need to locate ignition power. This will power the automatic over speed control box LED switch. Note that they unit can still be activated manually with the switch at any time.

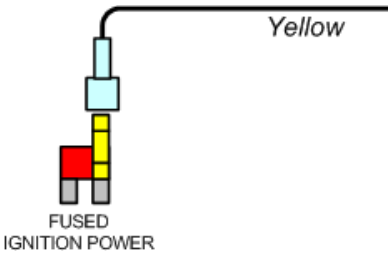
    Locate the battery junction box at the driver's side rear of the engine compartment.

    You will need to remove the vacuum pump that is mounted to the top of the junction box.

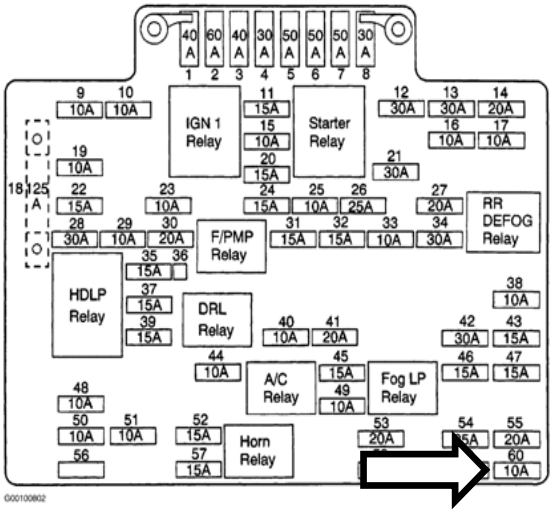
    Open the junction box and locate the correct ignition powered fuse.

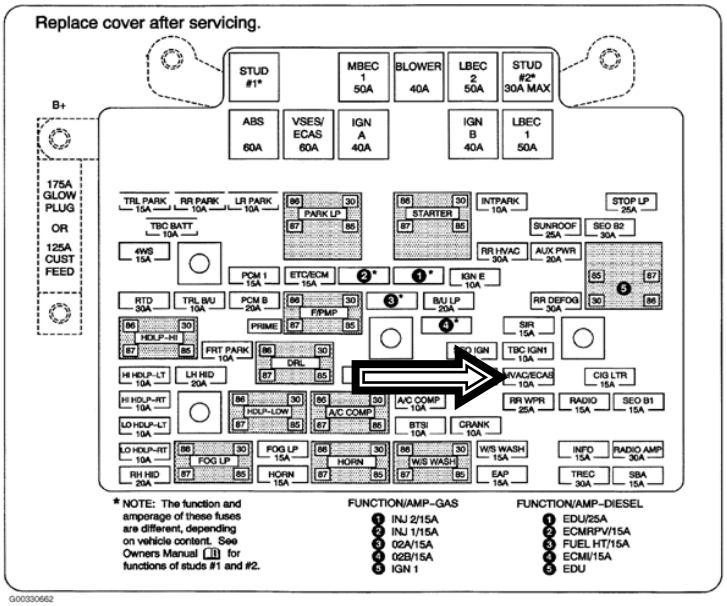
    Locate appropriate fused ignition power circuit (see table below). Install fuse tapper on to fuse, reinstall fuse. Connect yellow lead wire with flag connector to this new connection. Route wire out of the box and close lid and kick panel. Re-attached vacuum pump.





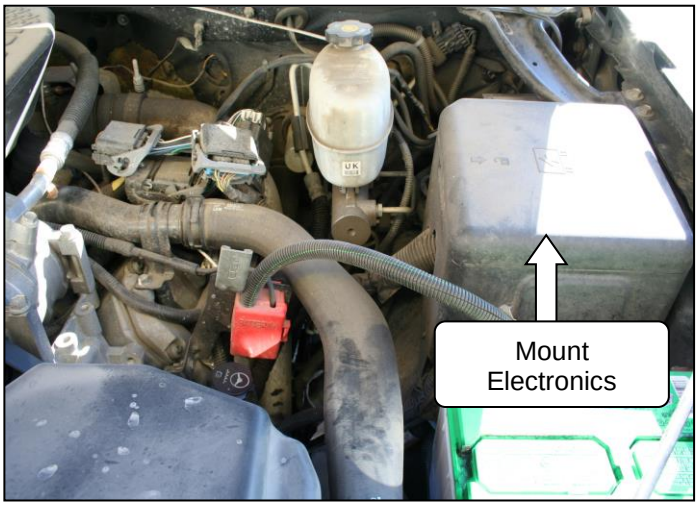
2001-02 Vehicles	2003-04 Vehicles
TBC Fuse #60 (10AMP)	HVAC (10AMP)





Mount the electronic control unit on top of the junction/fuse box. Be sure to clean the mounting surface with alcohol before applying Velcro.

Connect the wiring harness to the electronic control unit.



Double check all wiring connections and ensure wires are routed away from any heat sources and moving parts. And continue to the Setup, Testing and Verification with Over Speed Electronics section in this manual.

INSTALLATION without OVER SPEED ELECTRONICS (1036710-M)

1. Block the wheels of the vehicle to prevent the vehicle from rolling.

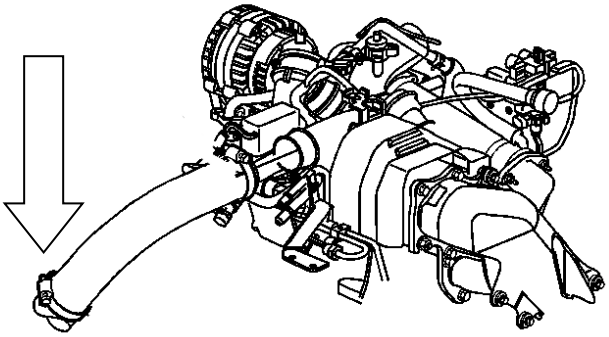
   Open the hood.

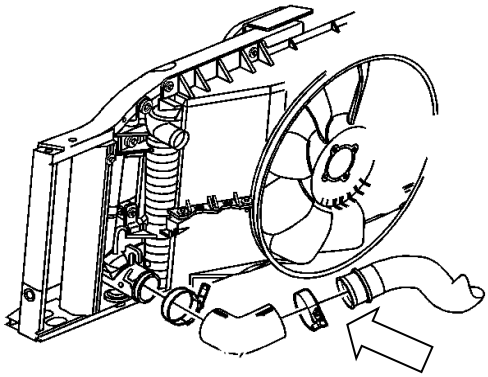
2. You will need to remove the driver's side Charge Air Cooler (CAC) tube.

   Remove the driver's side upper silicone boot at the Charge Air cooler tube connection.

   Then remove the lower boot to tube connection.

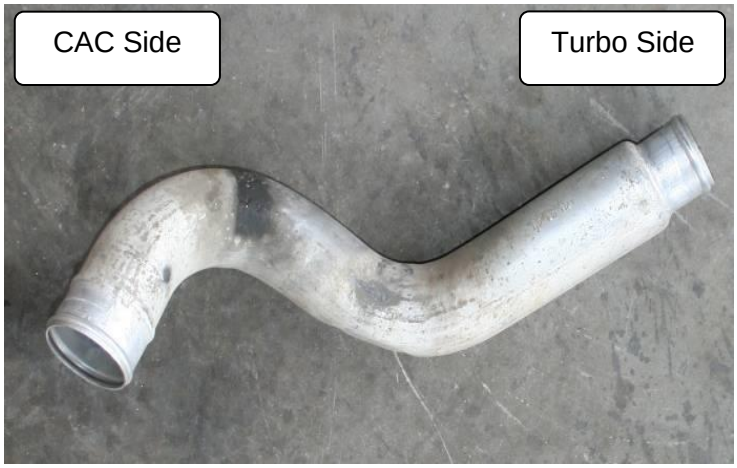
   It is highly suggested that you remove the driver's side front inner fender liner. It will allow you easier access to the tube and the connections.





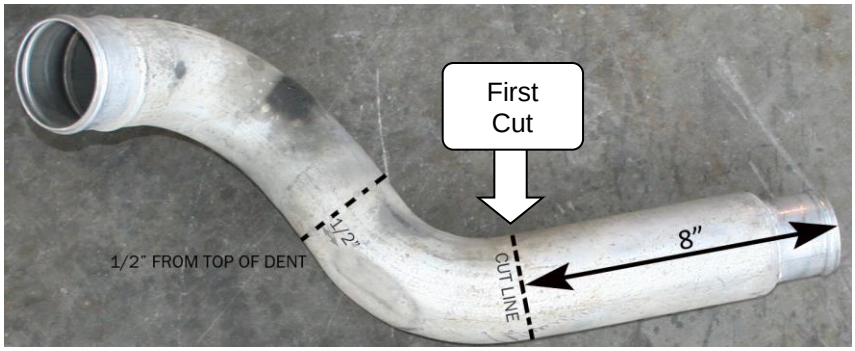
3. With the driver's side CAC tube removed, lay it flat on a work bench.

   First identify the turbo inlet and the CAC outlet side of the tube.

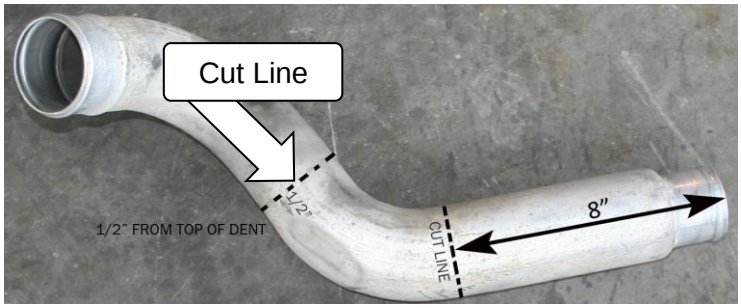


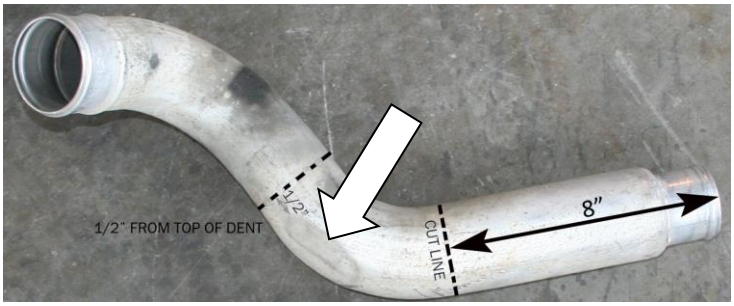
4. You will need to make two cuts to this tube. The first cut is relatively easy.

   Measure 6" from the 2.5" wedge edge section into the tube length.



5. The second cut is far more difficult. First locate the dent on the bend of the tube. Move ½" towards the CAC end of the tube; this is your cut line. Make sure the cut is square or perpendicular to the tube.



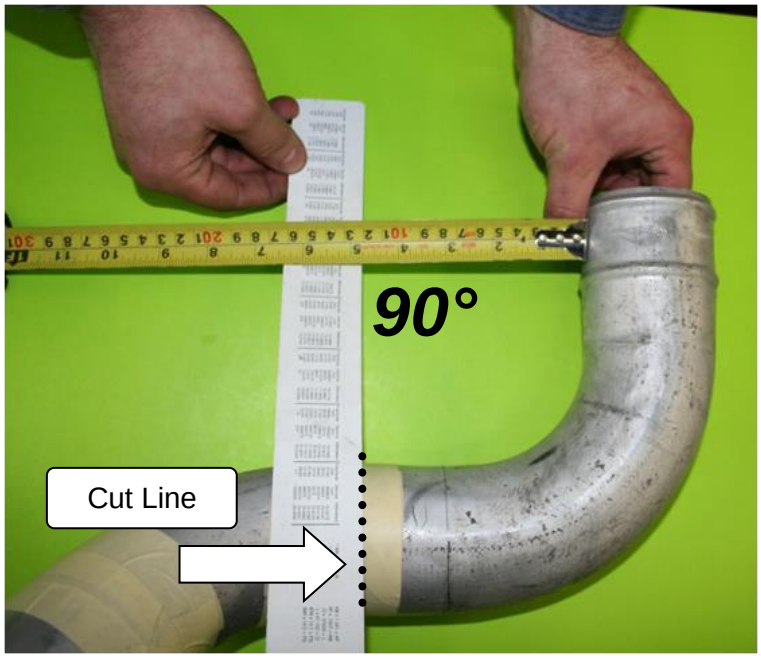


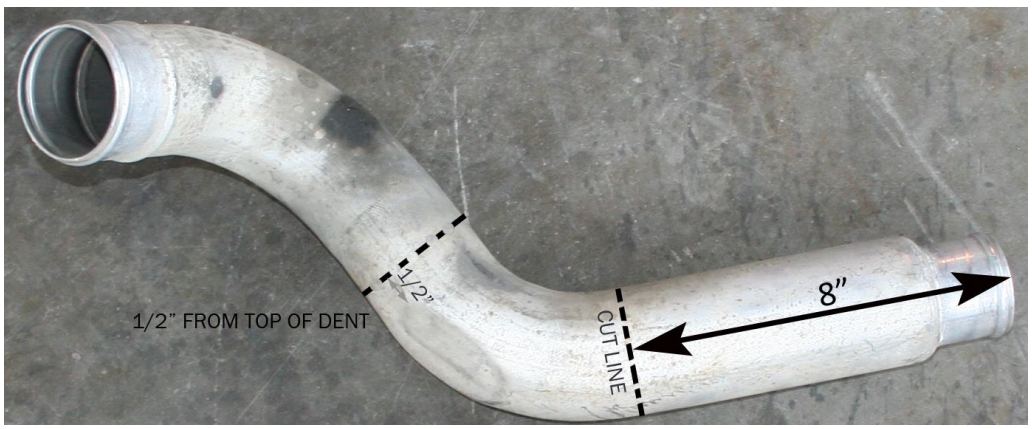
Another method to determine the cut line is to use a ruler and a tape measure.

Lay the tube flat on the table/ground; ensure that the bend in question is flat to the table/ground.

Use a ruler to come off square/perpendicular the CAC tube outlet. Then with the ruler, create a 90° angle at the 4.75" dimension.

The ruler will cross the pipe at the correct cut line.





6. With the pipe cut, you will now need to drill a couple of holes to secure the boot bead on both ends of the pipe.

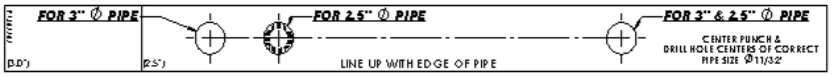
7. Firstly, remove the backing from drill template sticker and wrap around pipe. The edge of the sticker should line up with the edge of the pipe.

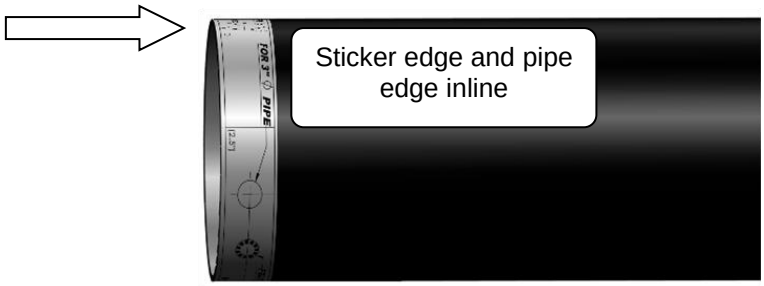
   For the 3” pipe the sticker should wrap perfectly around the pipe, the start of the sticker should meet the end of the sticker.

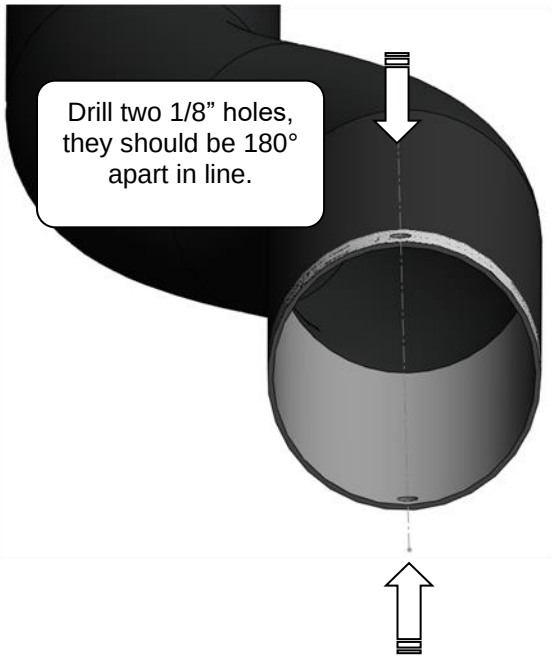
8. With the sticker in place use a center punch and then use a **Ø1/8”** drill bit and drill a hole in the center of the holes marked **“For 3Ø”.**

   There will be two holes and they should be perfectly 180° inline with each other through the pipe.

   DO NOT DRILL COMPLETELY THROUGH THE PIPE AND OUT THE OTHER END. YOU WILL NEED TO DRILL ONE SIDE THEN ROTATE, AND THEN DRILL THE OTHER SIDE.



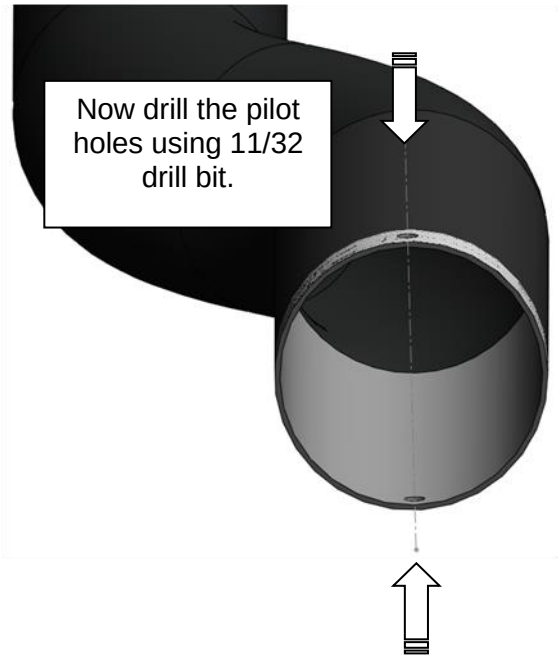




9. Once the pilot holes are drilled you will need to drill an **Ø11/32”** hole through the pilot holes.

   You can now remove the sticker.

   You must deburr the inside of the drilled holes.



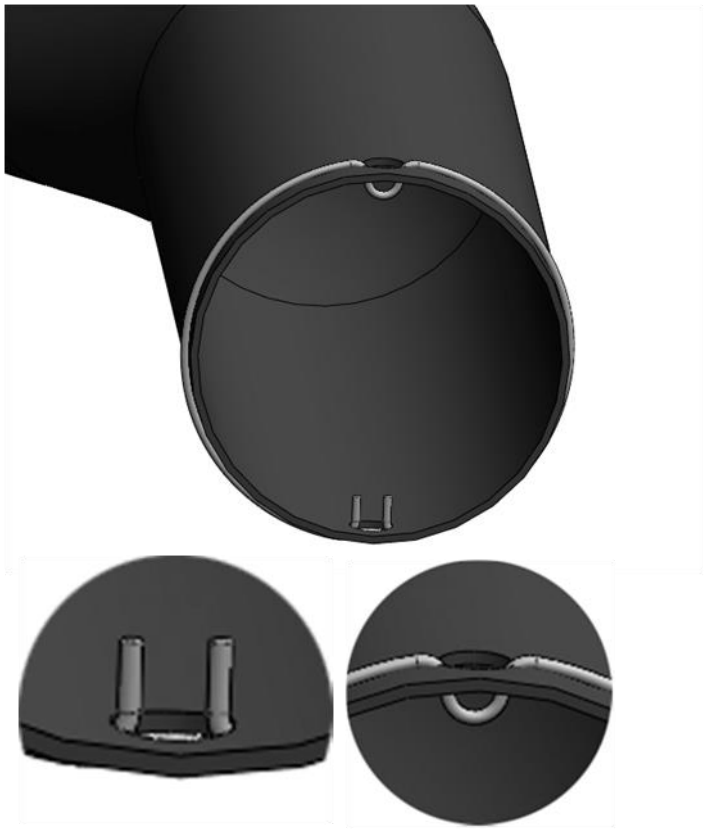
10. Once the holes are drilled, install the ring bead around the pipe. Lock each end of the ring bead into each hole.

    You can use needle nose pliers to tweak or adjust the ring fit slightly.

    Be careful not to bend the ring bead to much as you will weaken it.

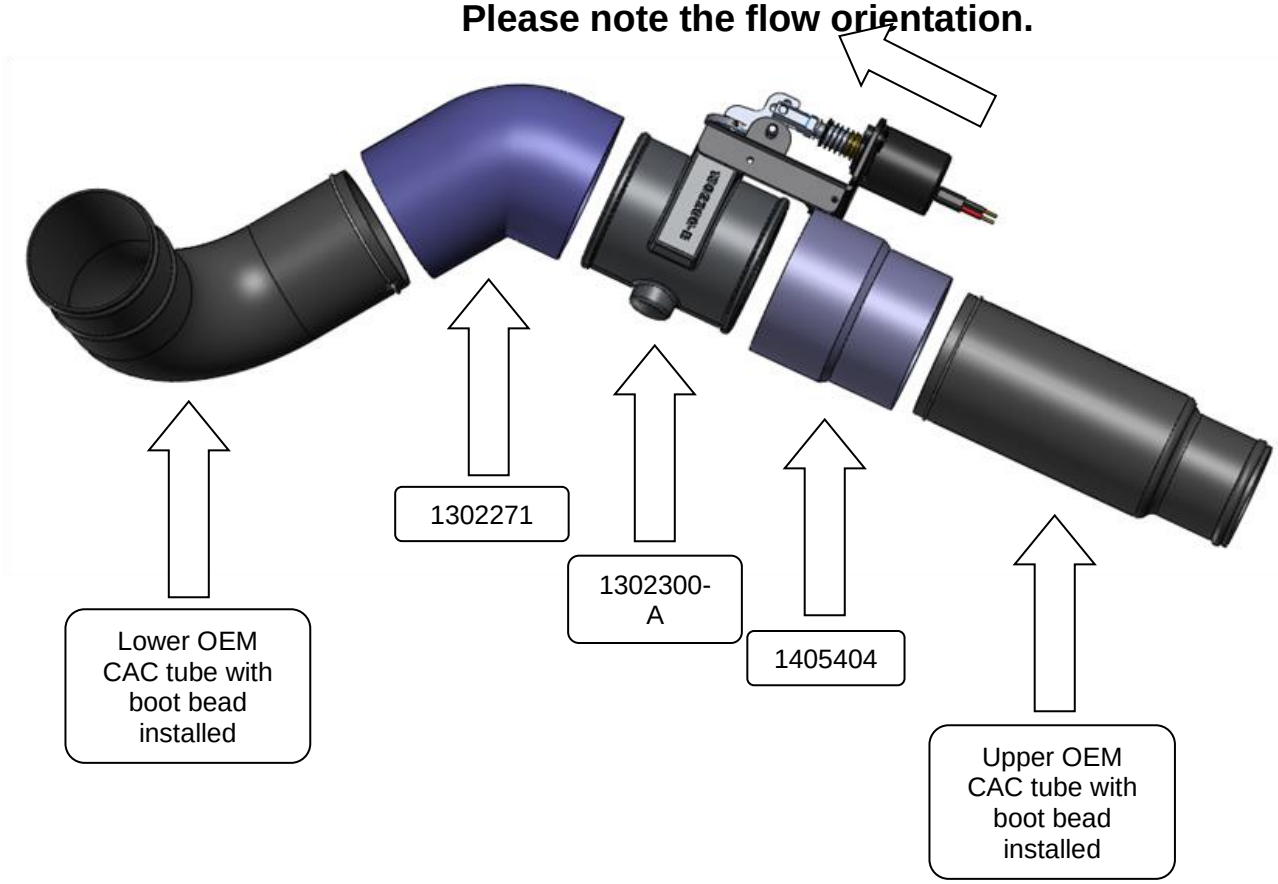
    Note the ring bead does not have to be perfectly tight or snug around the pipe, as we will be installing a silicone boot over top of it.

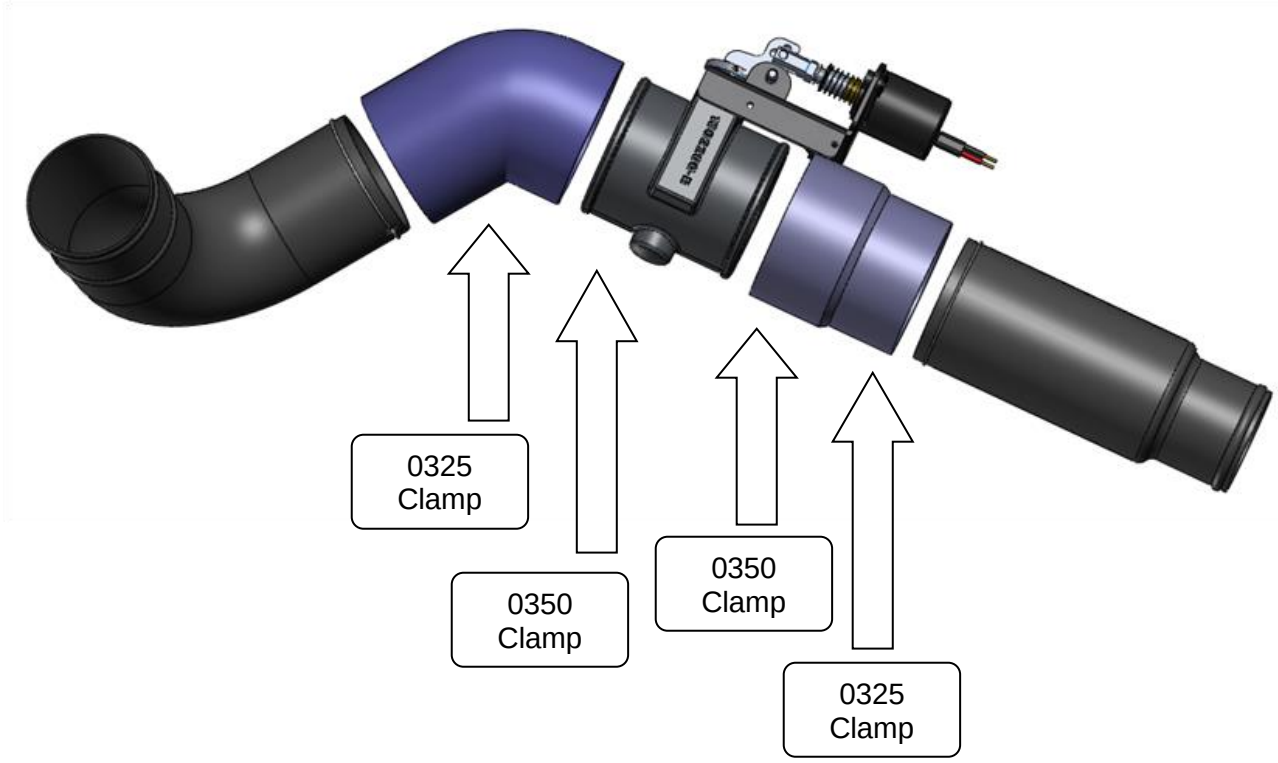
    With the ring bead in place, you should not be able to pull the ring bead off axially from the tube.



11. With the holes and bead rings installed in both pipes you can now install the silicone boots and then the positive air shutoff valve.

Please note the flow orientation.

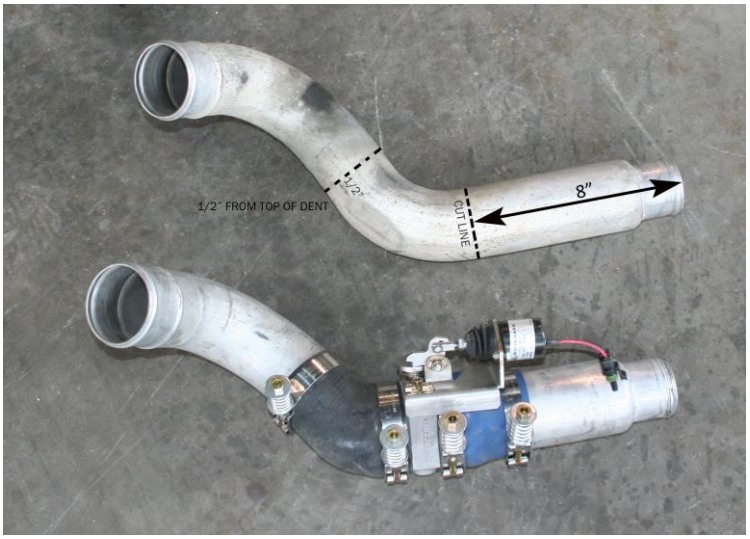




12. Install the 3-3.25” 45° (#1302271) boot on to the outlet of the PAS valve. Please note the flow arrow orientation. Loosely secure this connection with the 0350 spring clamp (#1407030).

13. Install the 3-3.25” straight (#1405404) boot on to the inlet of the PAS valve. Please note the flow arrow orientation. Loosely secure this connection with the 0350 spring clamp (#1407030).

14. Now connect the OE Duramax CAC side tube to the 45° boot. Loosely install the 0325 clamp (#1405211).



15. Finally connect the turbo outlet section of OE CAC tube to inlet side of the 3-3.5 boot/PAS assembly. Loosely secure the 0325 spring clamp (#1405211).

16. You can now install the PAS/tube assembly back into the truck.

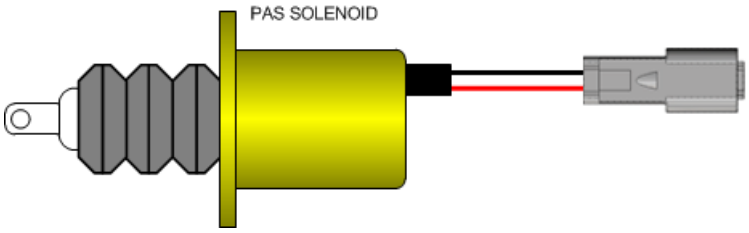
17. With the spring clamps loose you should be able to rotate all the joints to ensure a perfect fit. Once the rotation and angle is correct tighten all clamps. Also ensure there is enough room for clearance around any moving or hot parts.

Tighten all spring clamps until spring bound.

18. Reinstall wheel well/fender liner.

19. Lay out supplied wiring harness over top of the engine.

    Locate and connect the weather pack connector on the wiring harness to the solenoid on the PAS valve.
    See page 33 for more info.



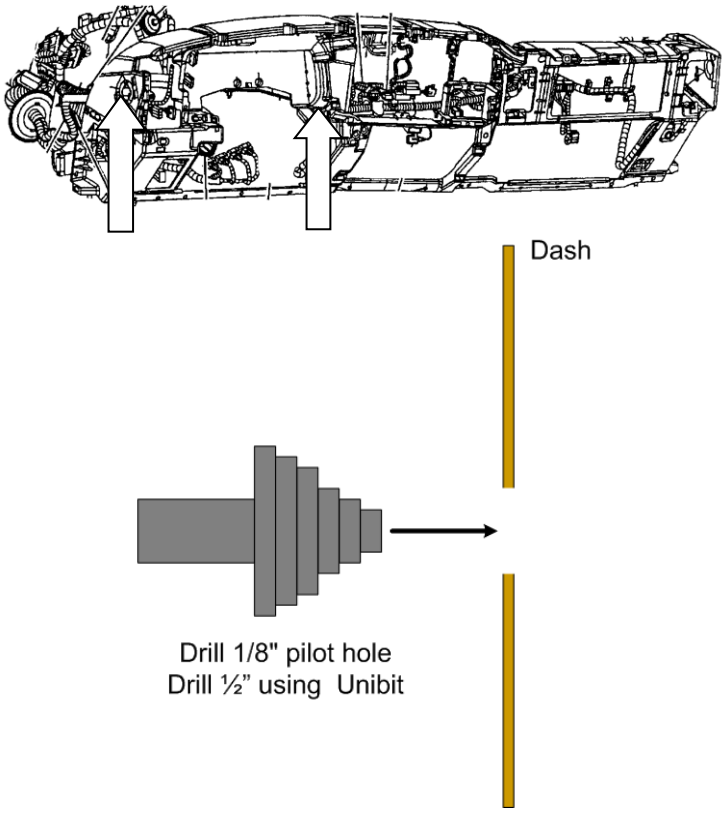
20. You will then need to route the switch through the firewall on the driver's side. See wiring diagram on page 34.

    Choose a highly visible location for the switch and mount it to the dash.

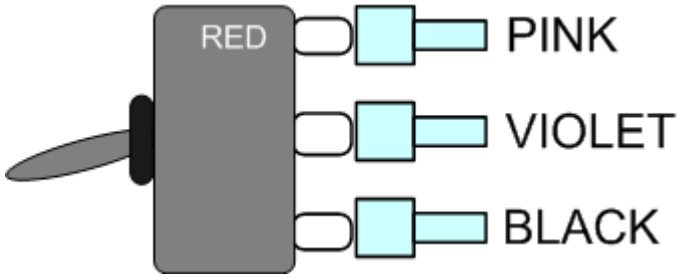
    NOTE: You may need to trim the switch wires to length once you have located where the switch is to be mounted.

    Using a 1/8" drill, drill a pilot hole in the location you have selected for the switch to be mounted.

    Finally using a 1/2" UNIBIT drill bit, drill an exact 1/2" round hole.



21. Once you have the mounting hole drilled, crimp the switch connectors to the switch wires and install the correct switch wires to the correct switch terminals, then insert the switch into the dash from the backside.



22. Mount the switch so that the groove on the thread boss is facing down.

    Adjust the HEX washer/nut so that the switch threads do not protrude an unsightly amount.

Switch install with decal

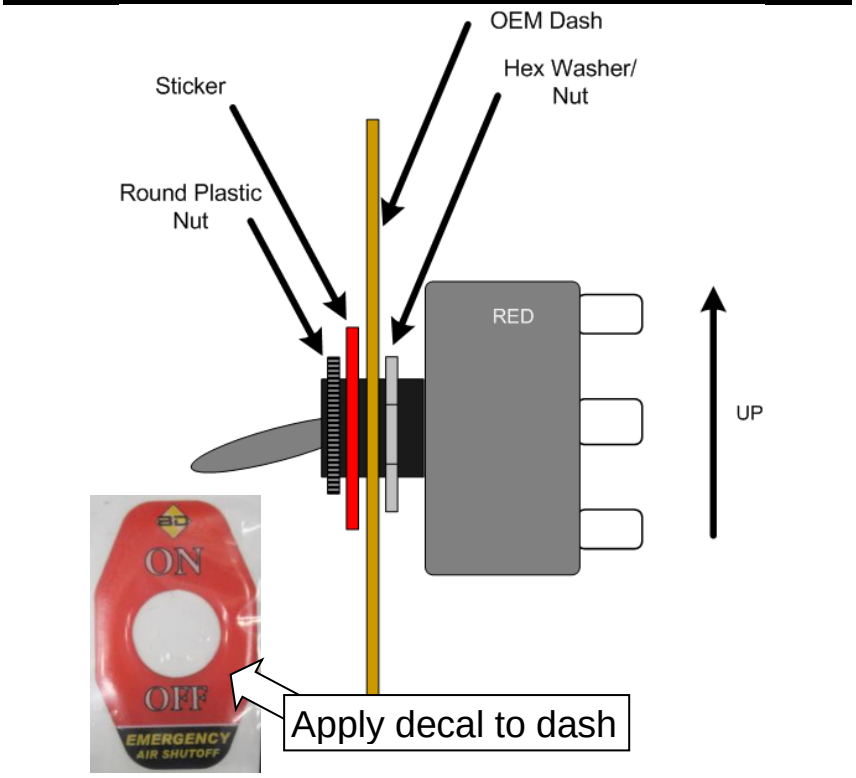
Apply the supplied decal to the dash and tighten the round plastic nut.

Switch install with Guard

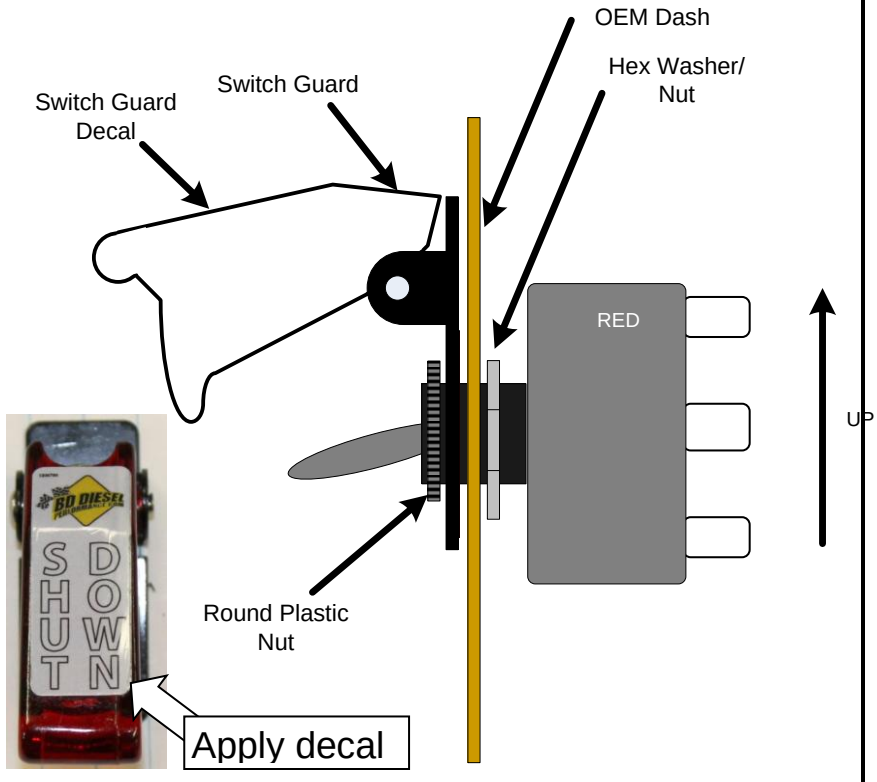
Install the switch guard onto the switch by aligning the tab with the groove on the thread boss.

Then tighten on the round plastic nut and apply the decal to the switch guard.

Switch install with Decal

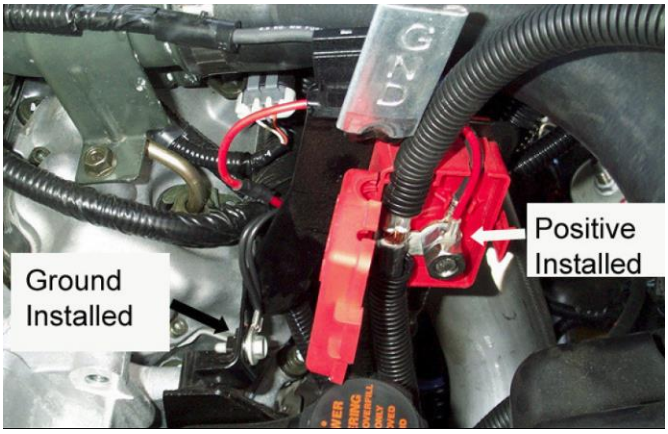


Switch Install with Guard



BD Engine Brake Inc.
Plant Address: 33541 MacLure Rd. Abbotsford, BC, Canada V2S 7W2
U.S. Shipping Address: 1124 Fir Avenue, Blaine, WA 98230 U.S. Mailing Address: P.O. Box 231, Sumas, WA 98295
Phone: 604-853-6096 | Fax: 604-853-8749 | Internet: www.bddiesel.com

23. Next locate the auxiliary power connection on the driver's side of the motor then trim and crimp the ring terminals and connect to the respective power and ground connections.



24. For the last connection you will need to locate the ignition power.

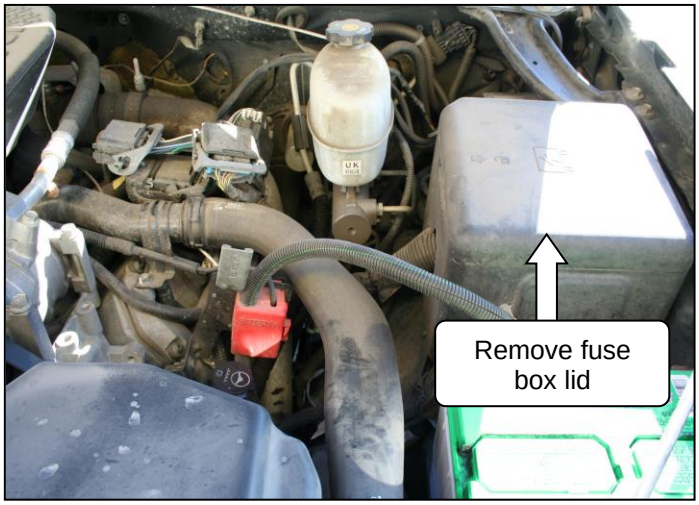
    Locate the battery junction box at the driver's side rear of the engine compartment.

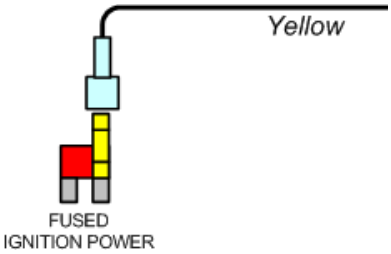
    You will need to remove the vacuum pump that is mounted to the top of the junction box.

    Open the junction box and locate the correct ignition powered fuse.

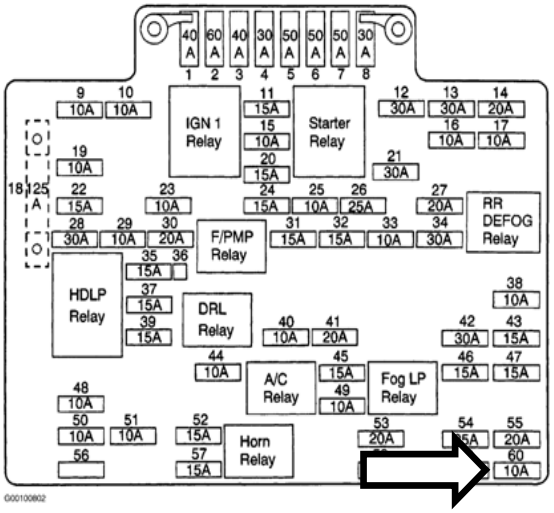
    Locate appropriate fused ignition power circuit (see table below). Install fuse tapper on to fuse, reinstall fuse. Trim the pink wire to length and crimp the flag connector to the wire, and connect the pink lead wire with flag connector to this new connection.

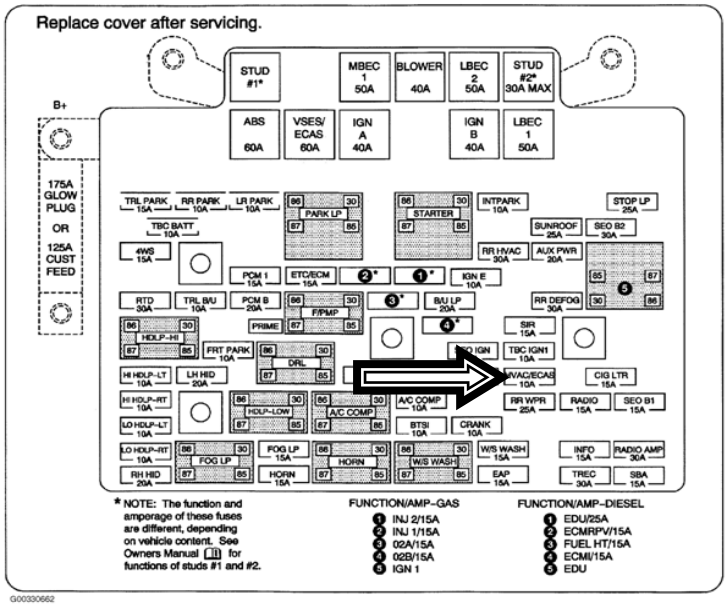
    Route wire out of the box and close lid and kick panel. Re-attach the vacuum pump.



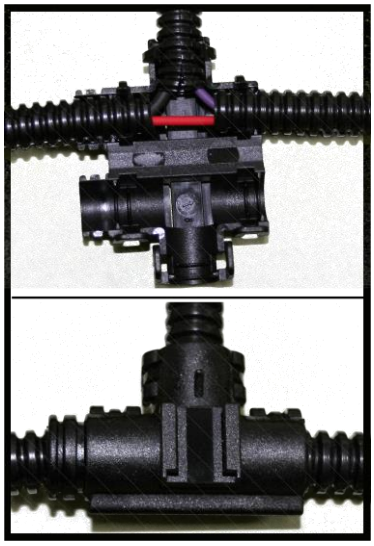


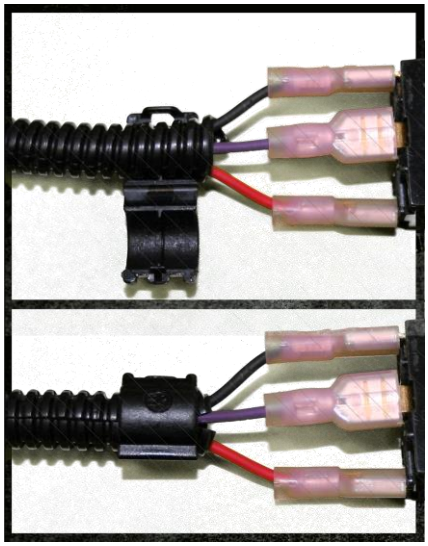
2001-02 Vehicles	2003-04 Vehicles
TBC Fuse #60 (10AMP)	HVAC (10AMP)



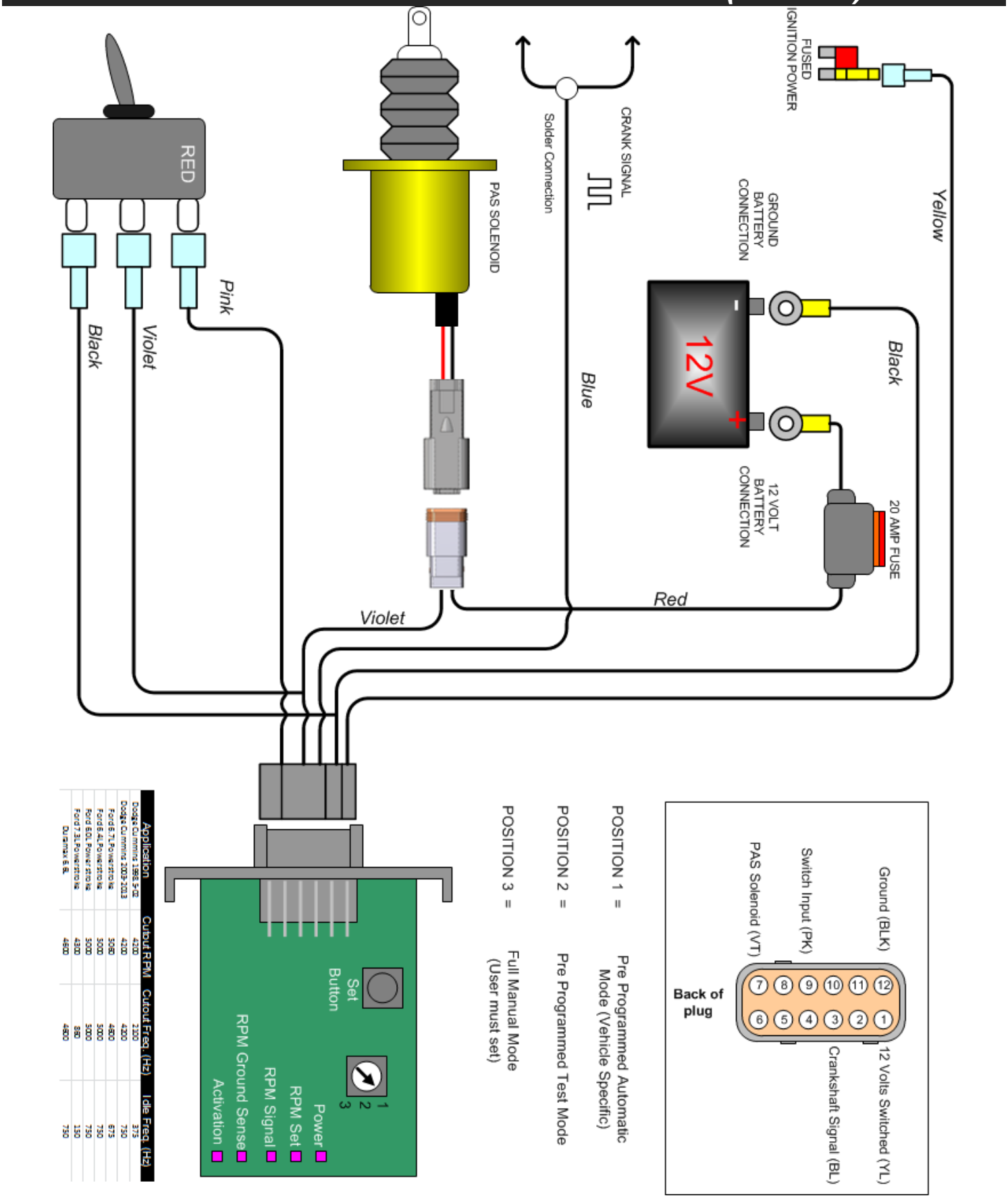


25. Double check all wiring connections and ensure wires are routed away from any heat sources and moving parts. Then install the loom with the supplied tee connector and clips for the loom ends and continue to the testing flow chart without over speed electronics in this manual.





WIRING DIAGRAM with OVER SPEED ELECTRONICS (1036710)



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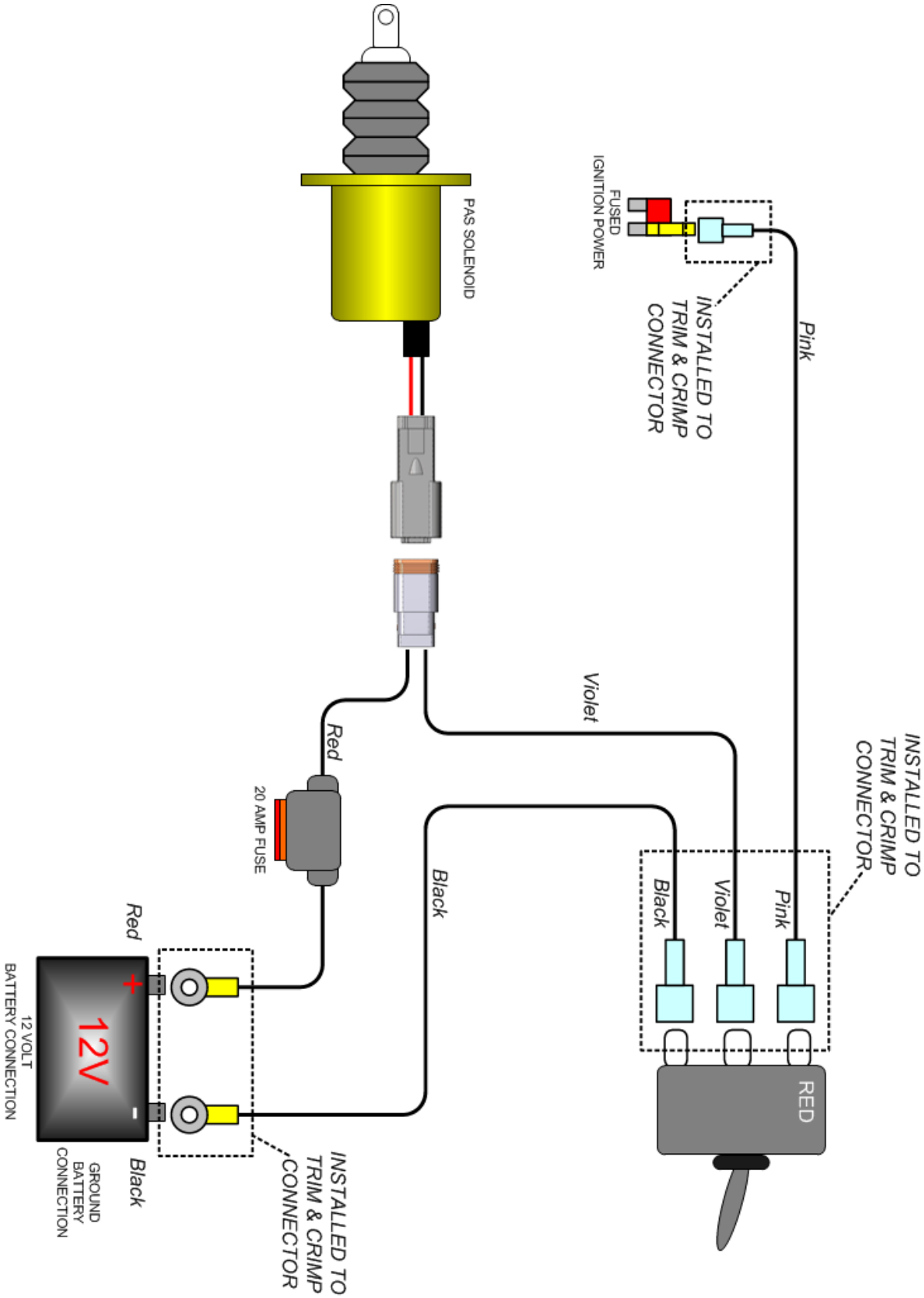
U.S. Shipping Address: 1124 Fir Avenue, Blaine, WA 98230 U.S. Mailing Address: P.O. Box 231, Sumas, WA 98295
Phone: 604-853-6096 | Fax: 604-853-8749 | Internet: www.bddiesel.com

WIRING DIAGRAM without OVERSPEED ELECTRONICS (1036710-M)



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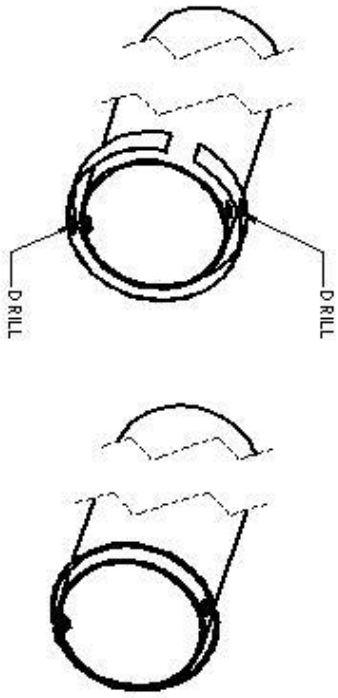
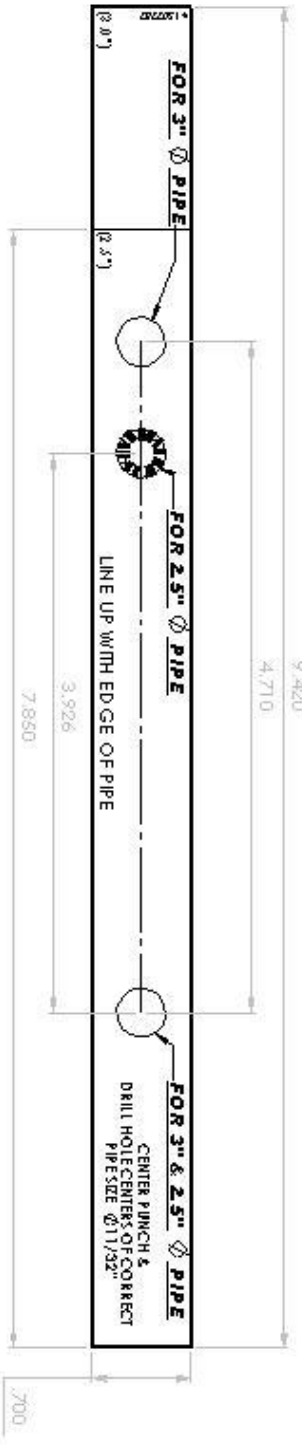
Phone: 604-853-6096 | Fax: 604-853-8749 | Internet: www.bddiesel.com

BEAD RING AND DRILL JIG INSTALLATION

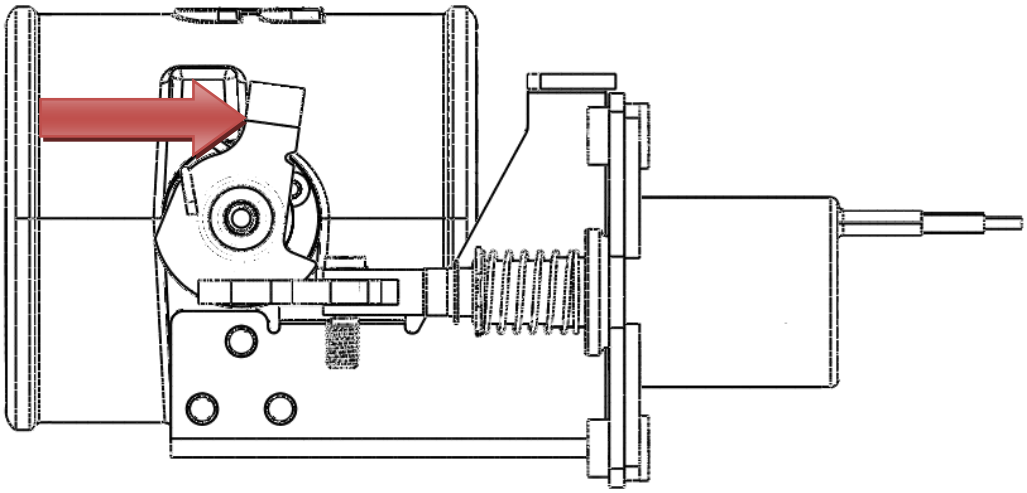
- WRAP CORRECT STICKER AROUND PIPE. LINE UP STICKED GE WITH ED GE OF PIPE. MAKE SURE STICKER IS SQUARE AROUND PIPE AND BOTH ENDS CONNECT
- CENTER PUNCH CENTER OF MARKED HOLES
- USE CORRECT SIZE DRILL BIT AND DRILL THROUGH PIPE. ROTATE PIPE AND DRILL THROUGH SECOND MARKED HOLE. THE HOLES SHOULD BE PERFECTLY STRAIGHT
- REMOVE STICKER AND DEBURR INSIDE AND OUTSIDE OF PIPE
- THEN WRAP WIRE BEAD AROUND TUBE. YOU MAY NEED TO FORM IT SLIGHTLY. IF DONE CORRECTLY THE BEAD WILL NOT PULL OFF OF TUBE INSTALL SLICONE BOOT AND CLAMP AS YOU WOULD NORMALLY



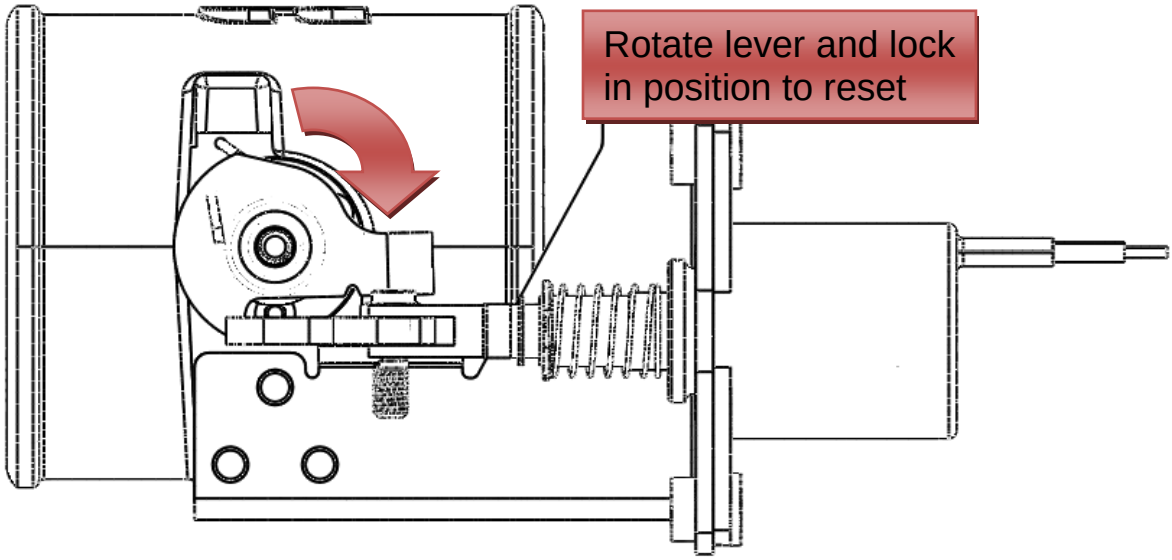


RESETTING THE VALVE

Valve Activated (Closed)



Valve Reset (Open)



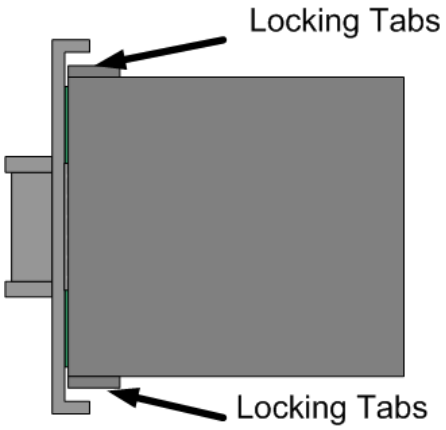
SETUP, TESTING AND VERIFICATION with OVER SPEED ELECTRONICS

Each unit is specifically configured for each model of truck. As in the case of different model years and makes the engine RPM frequency is different.	Engine Idle Speed Frequency 2001-2010
	600-800 Hz (1:1) ratio

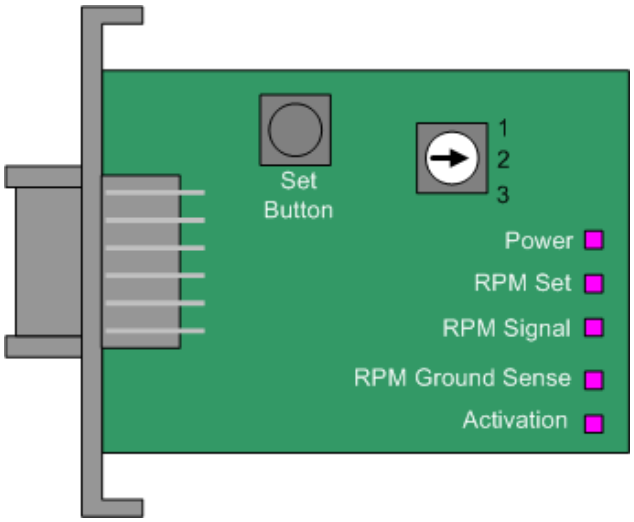
2001-2004 Duramax	Activation RPM	Activation Freq. (Hz)
PAS Switch Position #1 (Automatic Mode)	4600	4600
PAS Switch Position #2 (Test Mode)	1200	1200
PAS Switch Position #3 (Manual Mode)	User Configured	User Configured

Automatic Mode (Pre Configured RPM)	
Action	Failure/Fix/Notes
1. Turn the ignition key to the on position. You should see the RED light illuminate on the toggle switch.	If the LED does not illuminate, check the wiring to the back of the switch first. Then check entire circuit.
2. Next, start the engine. 3. With the engine idling, activate the toggle switch. You should hear the solenoid activate and the valve close. The engine should die. Once the engine dies the switch should flicker ON and OFF indicating a trip condition.	If the engine does not die, check to make sure the valve actuated. If the valve did not actuate check switch and ground wiring. If valve did actuate but the engine is still running, ensure nothing has contacted the valve mechanism
4. You can now reset the valve, by rotating the upper lever and engaging the solenoid stop.	

5. With the valve reset, remove the outer enclosure from the control module. There are two locking tabs on the sides of the enclosure.



6. Change the position selection switch to position #2 (Auto Test). Slide enclosure cover over circuit board.



7. Start the vehicle, with the vehicle in park step on the throttle increasing the engine RPM. At 1200RPM the PAS should engage itself automatically, and the engine should stall. Like with all activations the

If the engine did not stall, check to make sure the valve actuated.
If the valve did not actuated, double check the engine RPM electrical connection.
Check the RPM Signal LED on the circuit

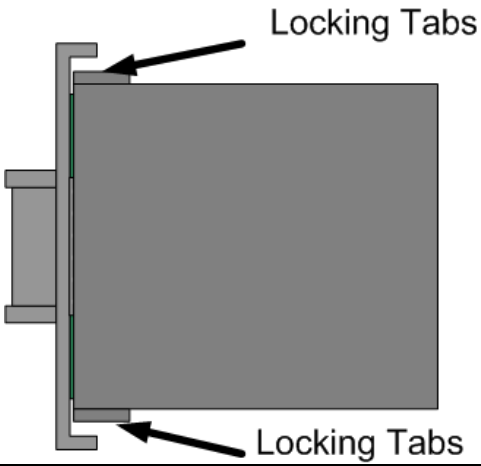
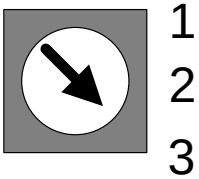
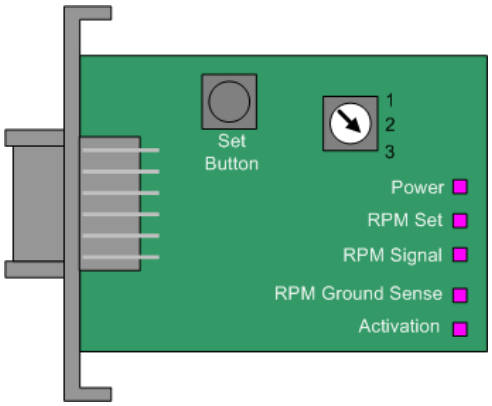
toggle switch should flash.	board, it should flash proportionally to the engine RPM.
8. Reset the valve and reset the mode position switch to position #1	
You are now complete and the unit should function correctly. This test cycle should be completed once a year.	

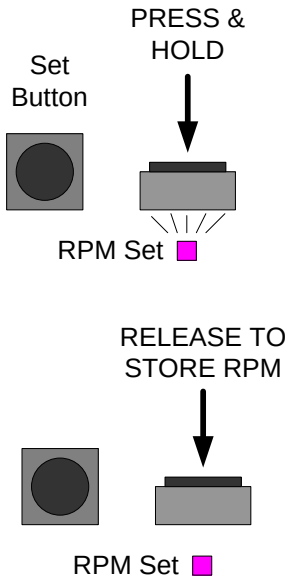
Manual Mode (User Configured RPM)

Setup

With the control unit, the user/installer has the ability to set their own activation RPM. It is necessary that you chose a low activation RPM first to test that the units is operating correctly. Once it is, you will need to set the high limit RPM activation.

Note: When you press the Set button the module will add 25% to the set speed.

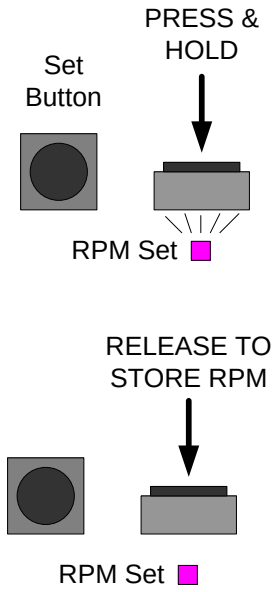
1. Open electronic enclosure, by releasing the two locking tabs on the side of the unit.	
2. Adjust the position switch to position #3. 	

3. Start the engine. 4. Press and hold the RPM SET button. When you push the SET RPM button will see the “RPM Set” LED illuminate. 5. With another person helping you, have them step on the accelerator with the vehicle in park. Raise the engine RPM to 1200 RPM. 6. Release the SET RPM button. Upon releasing the button the unit will store the RPM + 25%. So for this example the unit has stored 1200RPM + 25% = 1500RPM.	 You should see the RPM signal flash proportionally to engine RPM.
7. Now increase the RPM of the engine to test the activation circuit is working correctly. As in this example the valve should activate at 1500RPM.	You should see the ACTIVATION LED flash ON/OFF on activation. If the valve does not activate check the wiring. If the valve activates but the engine does not stall, ensure nothing has contacted the valve linkage.
8. With the valve activated the engine should die. Reset the valve and restart the engine.	
9. Press and hold the RPM SET button. When you push the SET RPM button will see the “RPM Set” LED illuminate. 10. With another person helping you, have	

them step on the accelerator with the vehicle in park. Raise the engine RPM to MAXIMUM engine RPM.

11. Release the SET RPM button.

Upon releasing the button the unit will store the RPM + 25%. So for this example the unit has stored MAXIMUM engine RPM + 25%.



12. You can now put the electronic enclosure back together and secure it to the fuse box.

13. With the engine running you will need to test to make sure the manual activation switch is functioning correctly.

14. With the engine running, lift the activation switch and the engine should die.

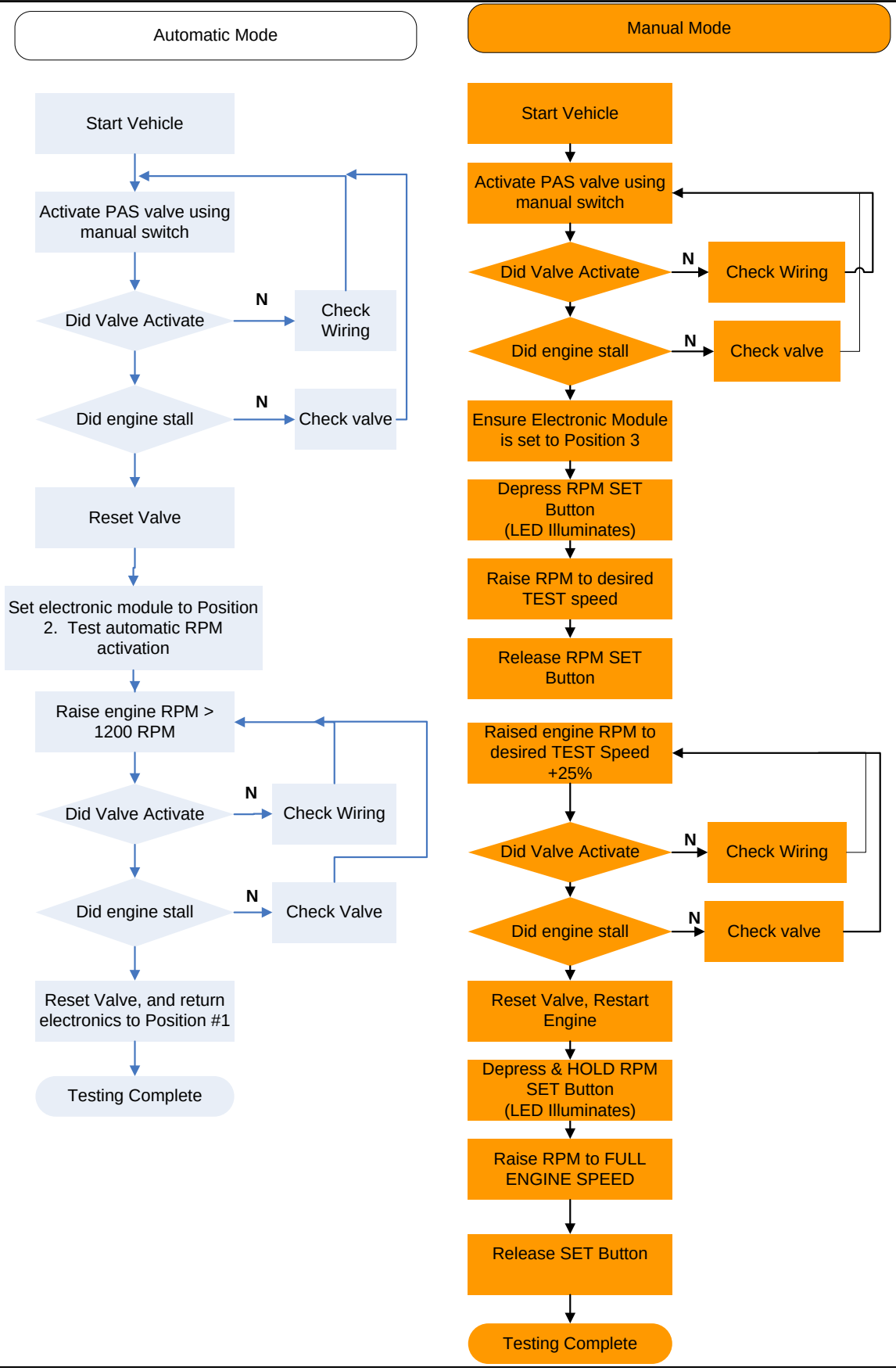
15. Reset the valve and you are now complete.

If valve does not activate check the wiring.

If the valve activates and the engine does not die ensure nothing has contacted the linkage.

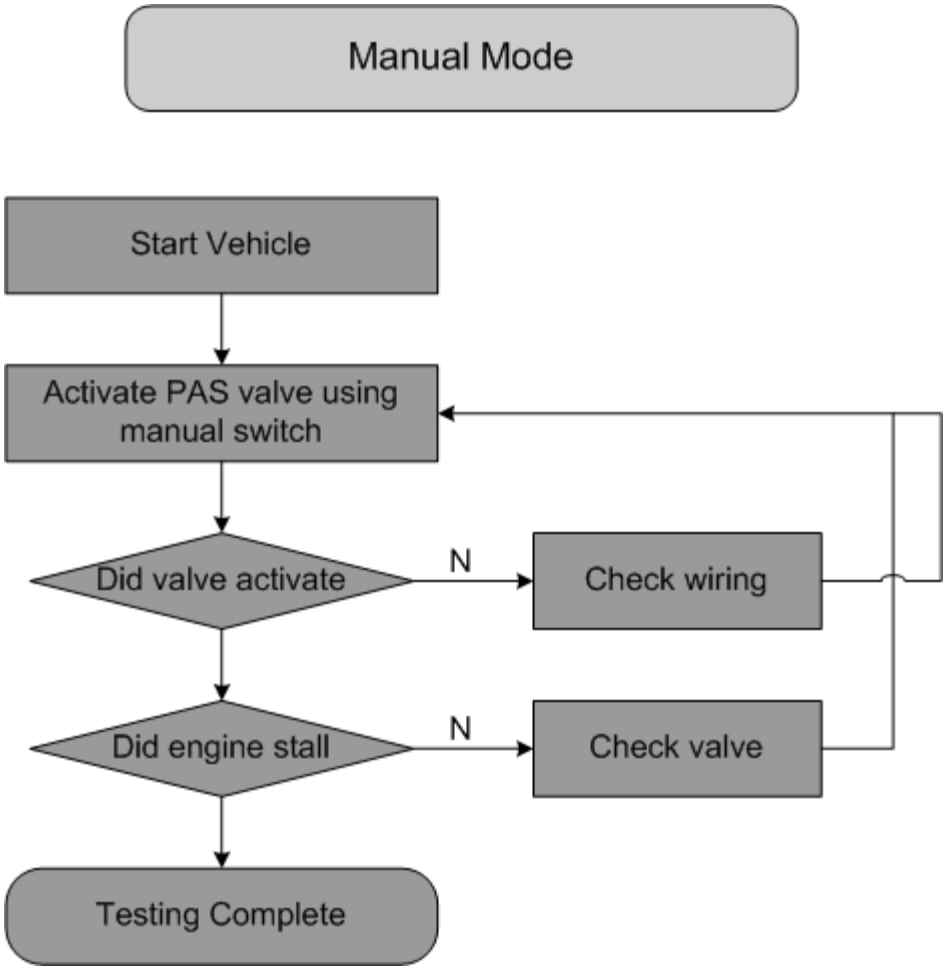
You have now completed the installation, please be sure to complete the test once a year to make sure the unit is functioning correctly.

TESTING FLOW CHART with OVER SPEED ELECTRONICS

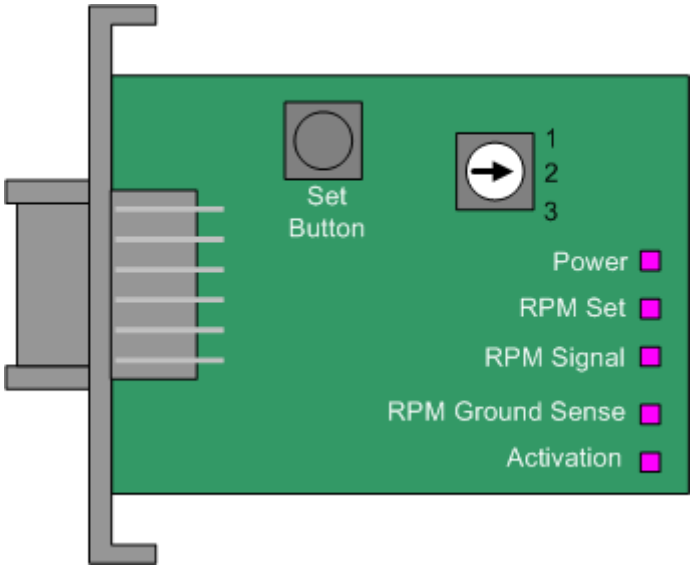


BD Engine Brake Inc.
Plant Address: 33541 MacLure Rd. Abbotsford, BC, Canada V2S 7W2
U.S. Shipping Address: 1124 Fir Avenue, Blaine, WA 98230 U.S. Mailing Address: P.O. Box 231, Sumas, WA 98295
Phone: 604-853-6096 | Fax: 604-853-8749 | Internet: www.bddiesel.com

TESTING FLOW CHART without OVER SPEED ELECTRONICS



LED OPERATION



LED	Description
POWER	Illuminates when unit is POWERED
RPM SET	Illuminates when SET Button is Pressed
RPM Signal	Flashes proportional to Engine RPM
Ground Sense	Illuminates when a GROUND signal is sensed on the activation line
Activation	Flashes when a valve activation is commanded manually (switch) or automatically
Toggle Switch LED	The LED will flash indicating either a problem with the system (Loss of RPM or Power) or activated valve activation.

If you have any technical difficulties, concerns, comments, or complaints, please phone our Technical Support hotline at (800) 887-5030 between 8:30am-5:00pm PST (Pacific Standard Time) Monday to Friday.