

DOWNLOAD COLOUR INSTALL MANUALS AT www.bddiesel.com



2.5-3" GENERIC POSITIVE AIR SHUTOFF

P/N#	1036730	P/N#	1036730-M
P/N#	1036731	P/N#	1036731-M

PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION PAS FOR 12 VOLT SYSTEMS ONLY



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.

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

1036731 (2.5") KIT CONTENTS						
1302300-A		1302248-A			1302272	
Air S	Shutoff Valve		Wiring H		2.5-3.25	5" Silicone Boot
	Qty: 1		Qty	: 1		Qty: 2
1306	740	14	07030 1405209		1302285	
CONTRACTOR IN THE REPORT OF TH			CITA		CHINES .	\bigcirc
PAS M	lodule	0350) Clamps 0300 Clar		lamps	Solder
Qty	:1	Q	ty: 2	y: 2 Qty: 2		Qty: 5″
FT-10910- 03116	13022	81	1302282			1301381
Velcro strips	2.5" PAS Be		PAS	Drill Temp	late	Heat Shrink
Qty: 2 pcs Qty: 2		Qty: 2		Qty: 3″		

1036731-M (2.5") KIT CONTENTS						
13023	00-A	1302249-A			1302272	
TJUZJUU-A						
Air Shuto	ff Valve	Wirin	Wiring Harness 2.		5-3.25" Silicone Boot	
Qty	: 1	Qty: 1			Qty: 2	
1302281	13022	82	1407030		1405209	
2.5" PAS Bead Ring	PAS Drill Template		0350 Clam	ps	0300 Clamps	
Qty: 2	Qty:	2	Qty: 2		Qty: 2	

1036730 (3") KIT CONTENTS						
1302300-A		1302248-A 14		405404		
Air S	Shutoff Valve		Wiring F	larness	3-3.25'	' Silicone Boot
	Qty: 1		Qty	: 1		Qty: 2
1306	740	14	05211	14070	30	1302285
POSITIVE AIR SHUTDOWN DOSITIVE AIR SHUTDOWN			NULLER B	C	ALLER S	\bigcirc
Electronic	: Module	0325	5 Clamps 0350 Clamps		amps	Solder
Qty	:1	Q	ty: 2	Qty:	2	Qty: 5"
1800060	13022	80		1302282		1301381
			FOR 1 ° 0. PPE		FOR 3" & LAS" & DIEK min Settlements former settlement of Vices	
Velcro strips	3" PAS Bea	ad Ring	PAS	Drill Temp	late	Heat Shrink
Qty: 2 x 4"	Qty:	2	Qty: 2		Qty: 3"	

1036730-М (3") KIT CONTENTS						
1302300-A		1302249-A			1405404	
Air Shuto	off Valve	Wirin	g Harness	3-3.	3-3.25" Silicone Boot	
Qty: 1		Qty: 1 Qty: 2			Qty: 2	
1302280	13022	82	1405211		1407030	
	POR 5 - C. PIPE port					
3" PAS Bead Ring	PAS Drill Template		0378 Clam	ps	0350 Clamps	
Qty: 2	Qty:	2	Qty: 2		Qty: 2	

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

	0
1036731 (2.5") KIT CONTENTS	
1036731-M (2.5") KIT CONTENTS	3
1036730 (3") KIT CONTENTS	
1036730-M (3") KIT CONTENTS	
REQUIRED TOOLS	
MAINTENANCE	
INSTALLATION with OVER SPEED ELECTRONICS (1036730 & 1036731)	7
INSTALLATION without OVER SPEED ELECTRONICS (1036730-M & 1036731-	M)18
WIRING DIAGRAM with OVER SPEED ELECTRONICS (1036730 & 1036731)	
WIRING DIAGRAM without OVER SPEED ELECTRONICS (1036730-M & 103	6731-M)
` 	
RESETTING THE VALVE	31
SETUP, TESTING AND VERIFICATION with OVER SPEED ELECTRONICS	32
Manual Mode (User Configured RPM)	
TESTING FLOW CHART with OVER SPEED ELECTRONICS (1036730 & 731)	
TESTING FLOW CHART without OVER SPEED ELECTRONICS (1036730-M	
LED OPERATIONError! Bookmark not	••••••

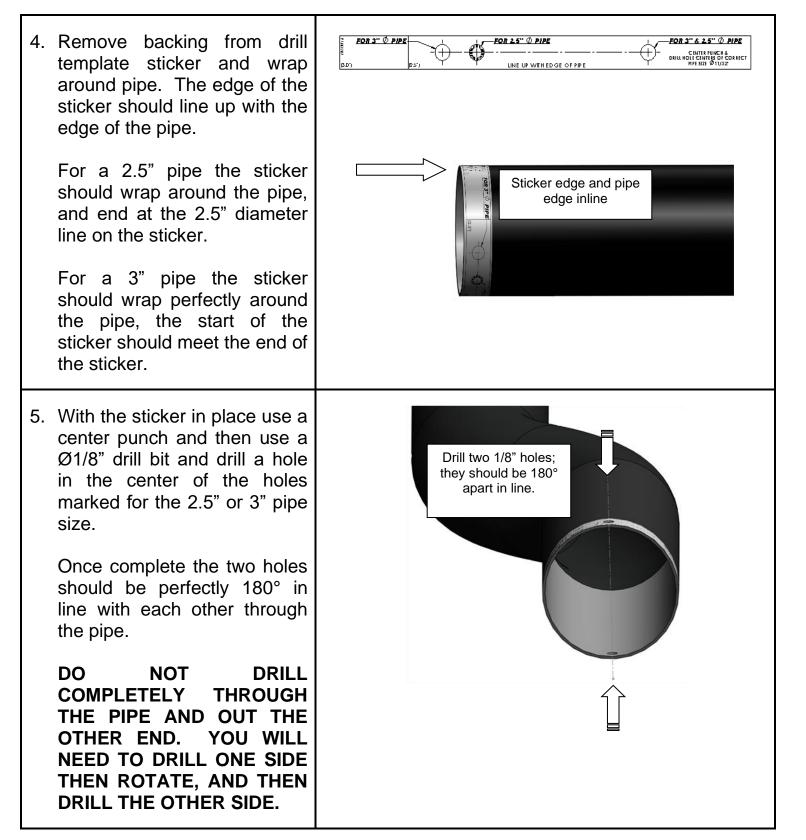
REQUIRED TOOLS

- Frequency/Voltmeter (Optional)
- 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/Cutters
- Wire Crimpers
- Heat Gun
- Rubbing Alcohol



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 (1036730 & 1036731) VEHCILE SHOULD SAFELY SECURED BE BEFORE **INSTALLATION.** 1. Block the wheels of the vehicle to prevent the vehicle from rolling. Open the hood. **AIR FLOW** OUTLET INLET 2. Remove the charge air cooler pipe from the outlet side of the cooler. **INTAKE** 3. You may need to cut down your CAC outlet pipe before installing the bead ring to allow for the installation of the BOOT positive air shutoff valve. PAS VALVE CAC PIPE



Now drill the pilot

holes using 11/32

drill bit.

2 November 2023

 Once the pilot holes are drilled you will need to drill a Ø11/32" hole through the pilot holes.

You can now remove the sticker.

You must deburr the inside of the drilled holes.

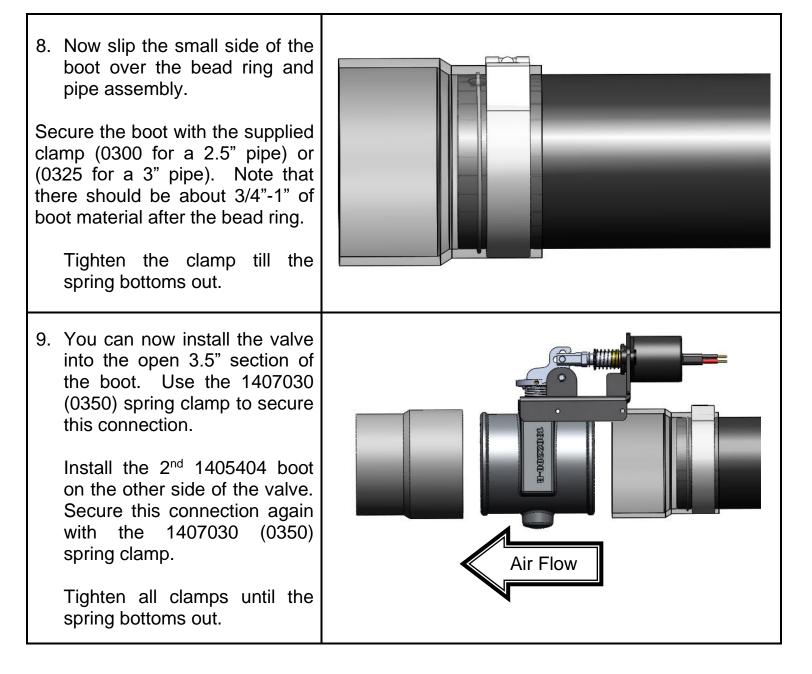
 Once the holes are drilled, install the ring bead around the pipe. Lock each end of the ring bead into each hole.

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

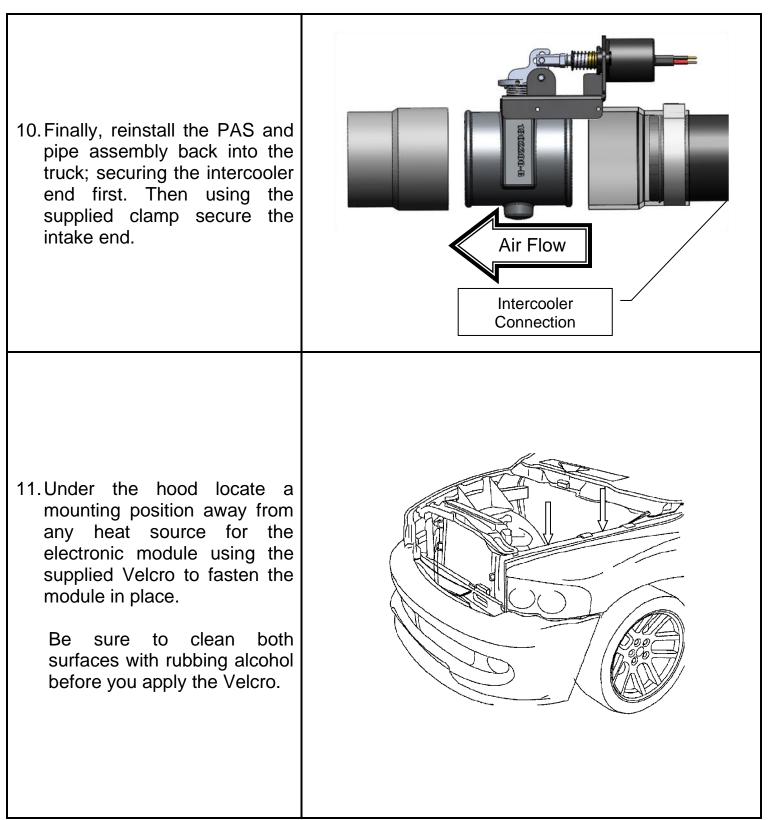
Be careful not to bend the ring bead too much as you will weaken it.

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.

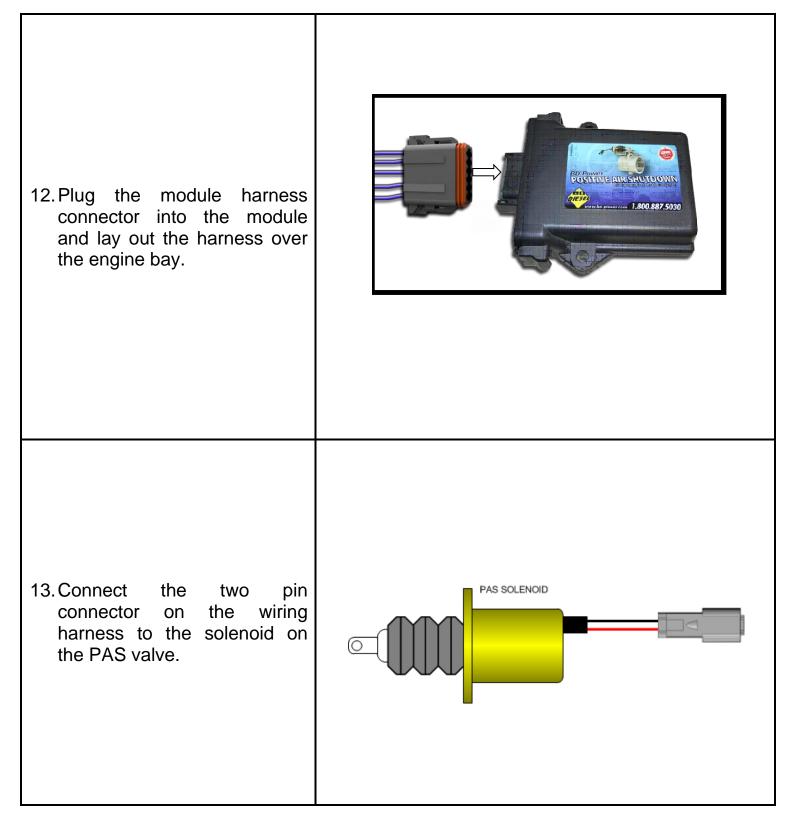
With the ring bead in place, you should not be able to pull the ring bead off axially from the tube.

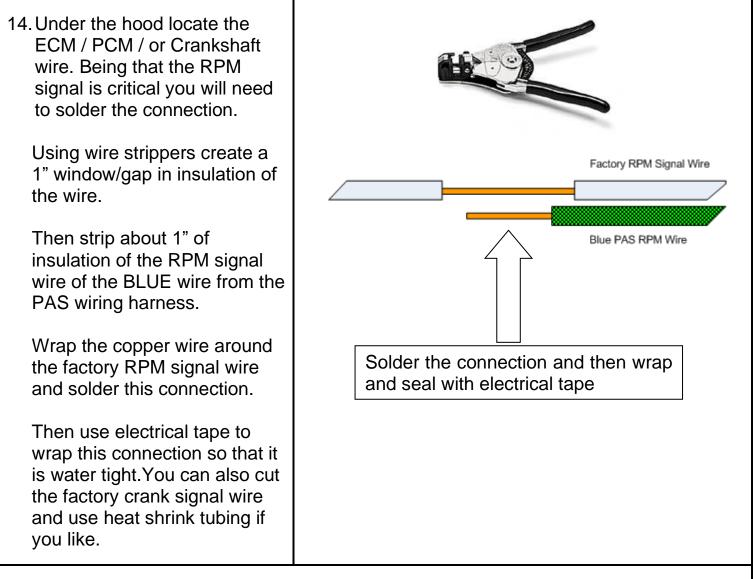


2 November 2023

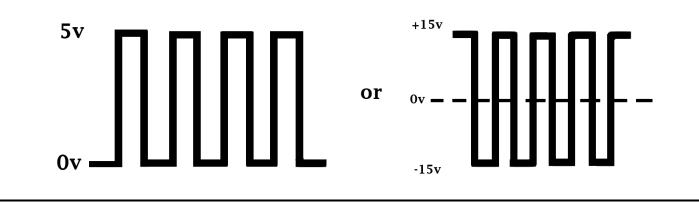


2 November 2023





If you do not know which wire to tap for the crank signal you may check the wires at the crank sensor to determine the signal wire. The sensor will put out an alternating signal as shown below. The signal frequency will increase and decrease according to RPM. A multi meter which is capable of measuring AC hertz (frequency) will be required to measure the signal frequency.



2 November 2023

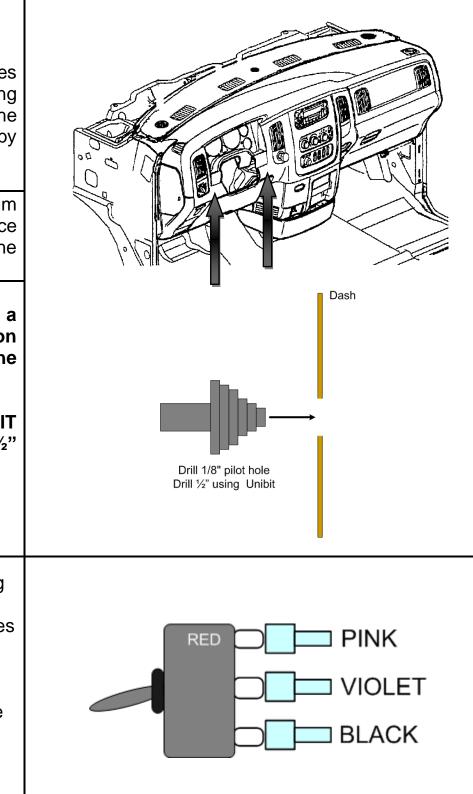
15. Next route the switch wires through the firewall, choosing a highly visible location so the switch is easily accessible by the driver.

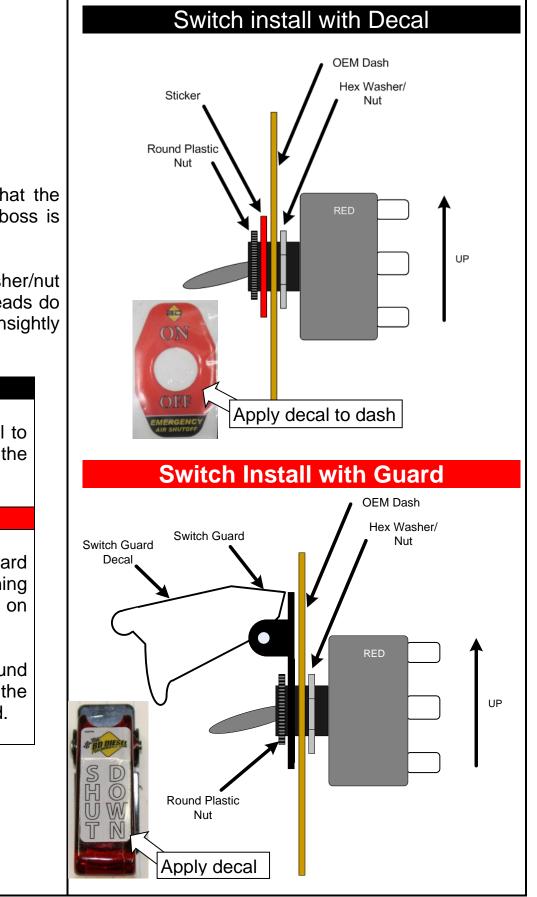
<u>NOTE</u>: you may need to trim the switch wires to length once you have located where the switch is to be mounted.

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

Finally using a $\frac{1}{2}$ " UNIBIT drill bit, drill an exact $\frac{1}{2}$ " round hole.

16. 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.





17. 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

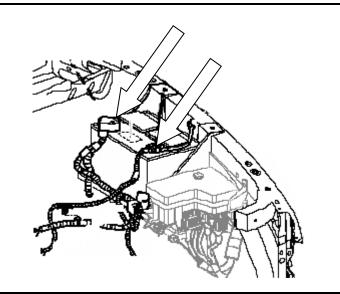
Apply the supplied decal to the dash and tighten the round plastic nut.

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.

18. Next locate the black wire from the module and the red wire from the solenoid then trim the wires to length and crimp the ring terminals to the BLACK and RED wires to connect to the respective battery connections.

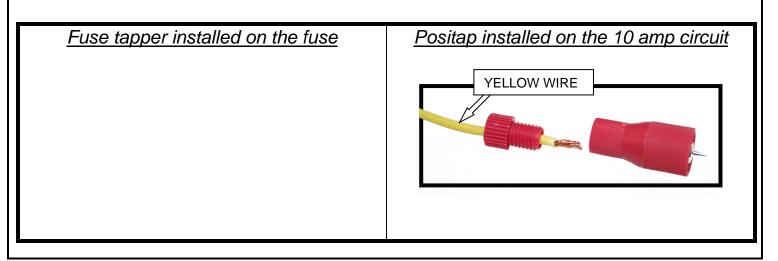


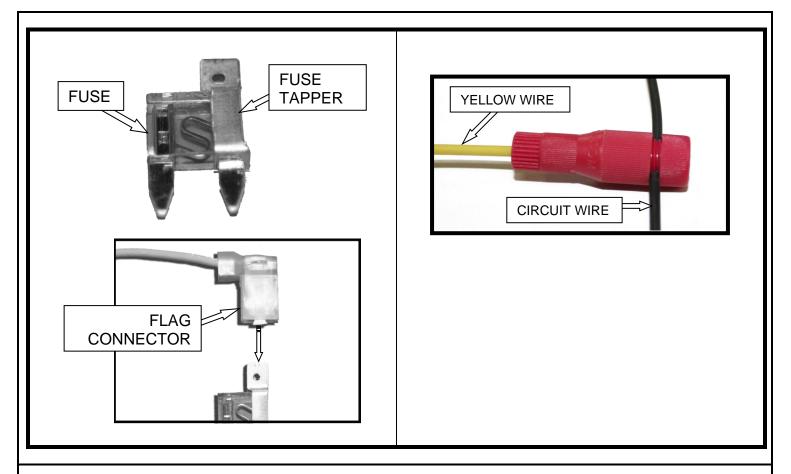
19. For the last connection you will need to locate the vehicles ignition power. This will power the automatic over speed control box LED switch. Note that the unit can still be activated manually with the switch at any time.

Locate the fuse panel. Remove the cover.

Locate the appropriate 10 amp fused ignition power circuit, and install the fuse tapper on to the 10 amp fuse, and reinstall fuse (*Important* : Ensure the tapper is installed on the hot side of the circuit). Trim the yellow wire to length and crimp the flag connector to the wire and connect the yellow lead wire with flag connector to this new connection. Route wire out of fuse box and close lid.

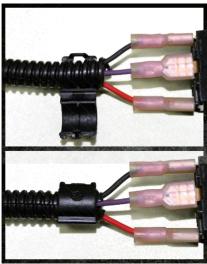
If you are unable to access the desired fuse use the supplied positap in place of the fuse tapper. Trim the yellow wire to length then strip the end to connect to the small side of the positap then with the large side tap into the desired 10 amp circuit. **Important** the positap is <u>not</u> water proof.

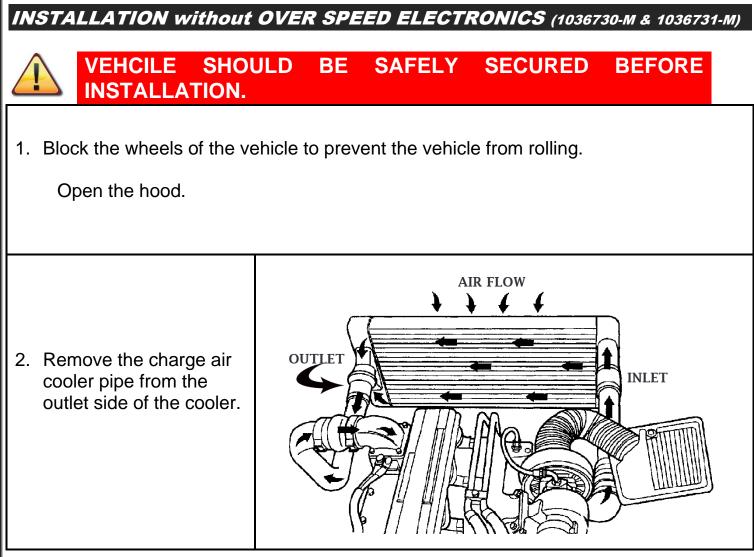


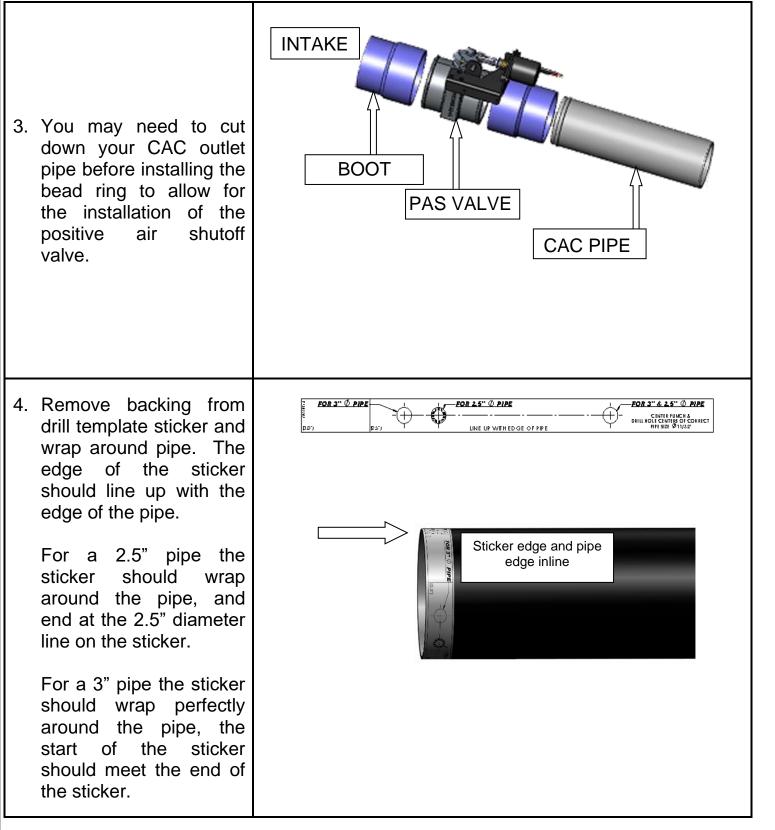


20. Double check all wiring connections and ensure wires are routed away from any heat sources and moving parts. Then install the loom with the supplied tee connector and clips for the loom ends and continue to the Setup, Testing and Verification with Over Speed Electronics section in this manual.

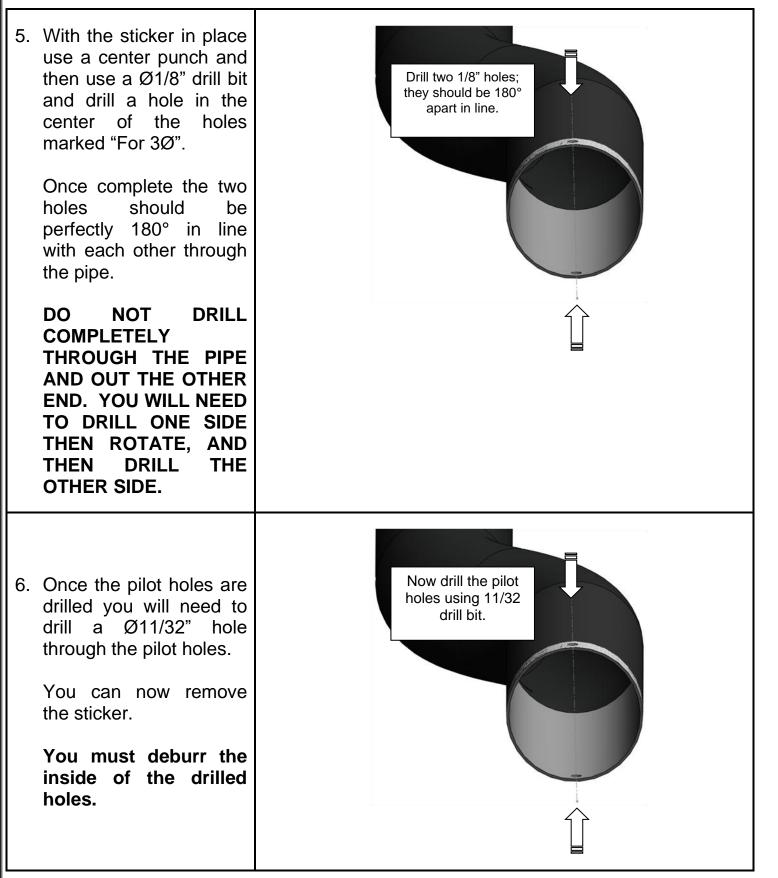












7. Once

ring

hole.

adjust

will

it.

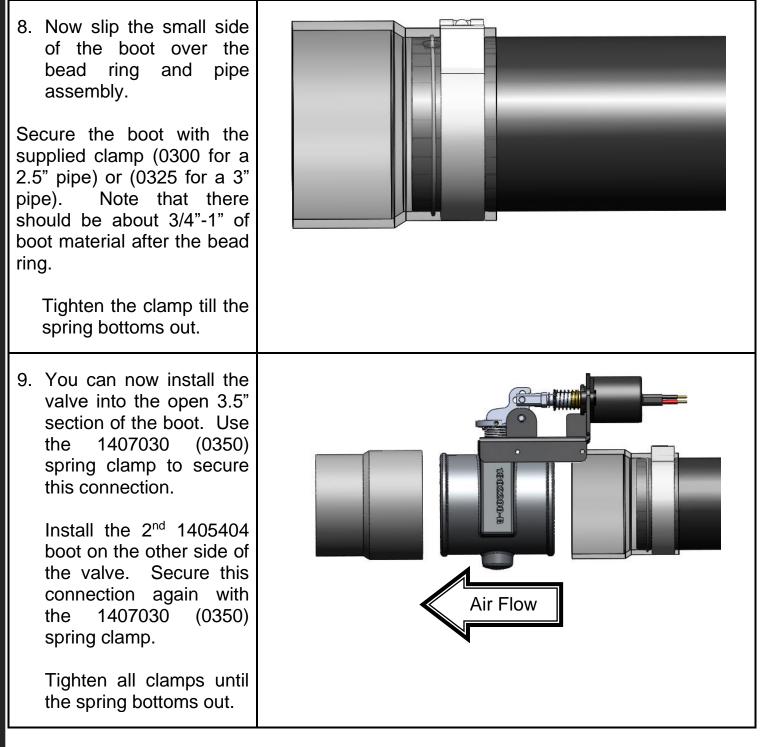
tube.

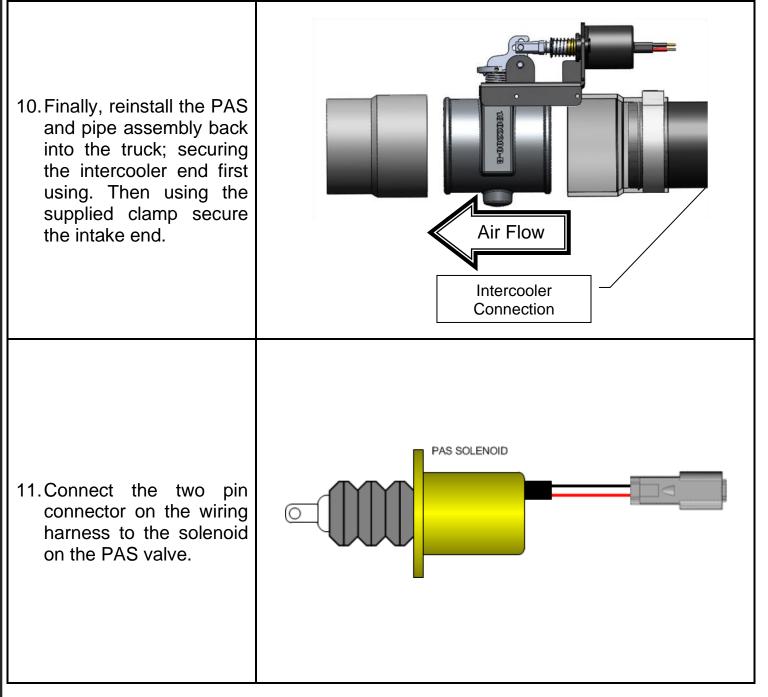
be

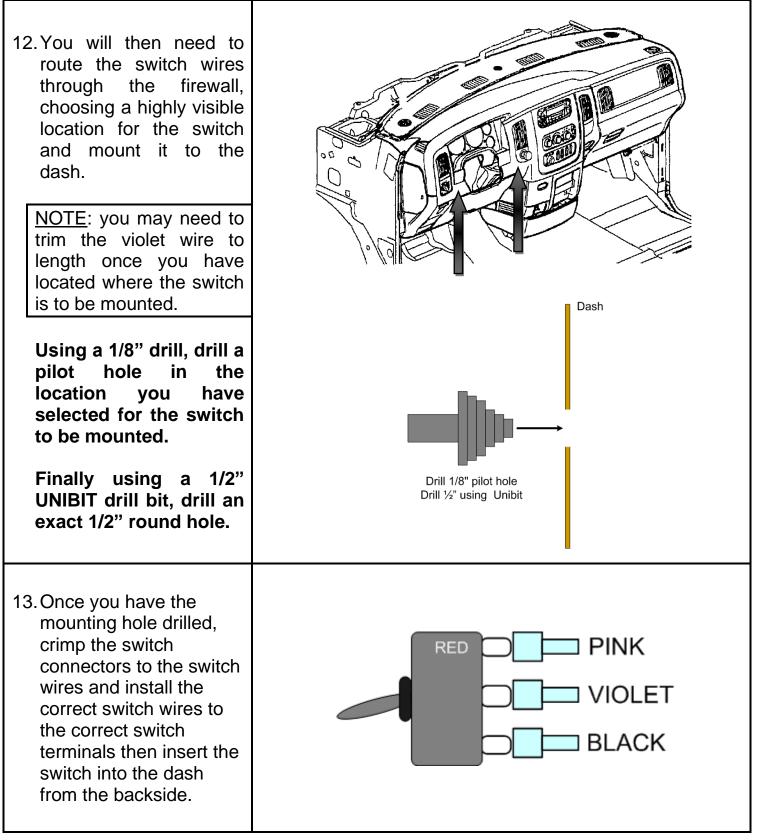
slightly.

the holes are drilled, install the ring bead around the pipe. Lock each end of the bead into each You can use needle nose pliers to tweak or ring the fit 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 installing а silicone boot over top of With the ring bead in place, you should not be able to pull the ring bead off axially from the

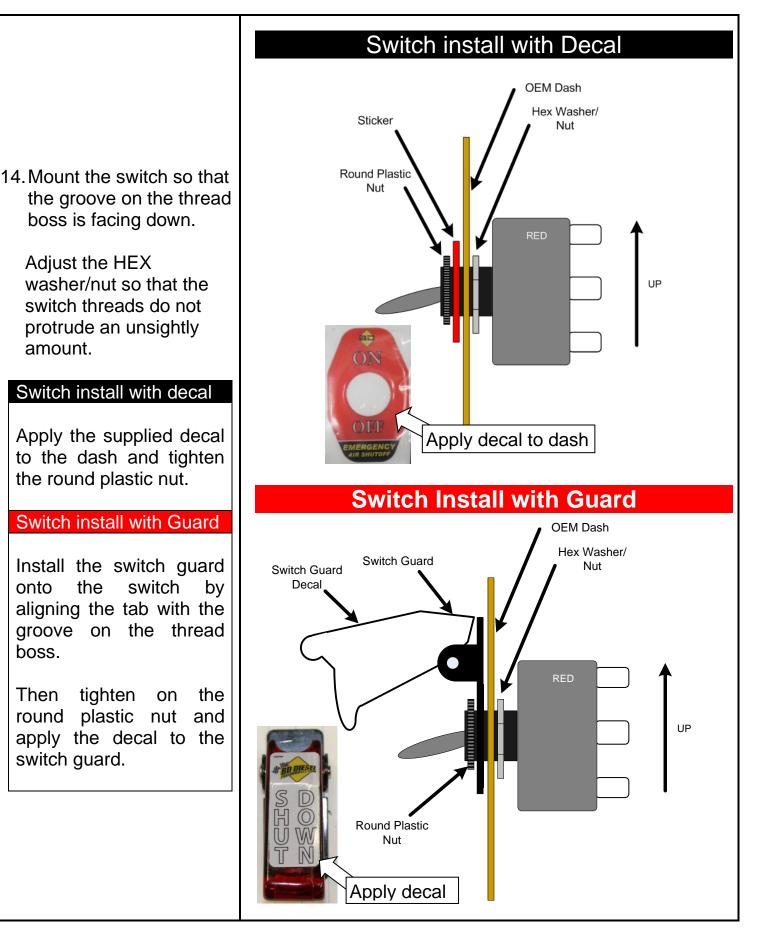
BD Engine Brake Inc. 1-800-887-5030 | https://www.bddiesel.com



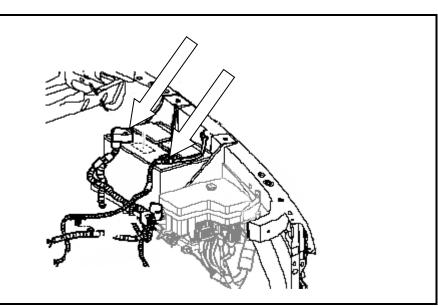




2 November 2023



15. Next locate the black wire from the switch and the red wire from the solenoid then trim the wires to length and crimp the ring terminals to the BLACK and RED wires to connect to the respective battery connections.

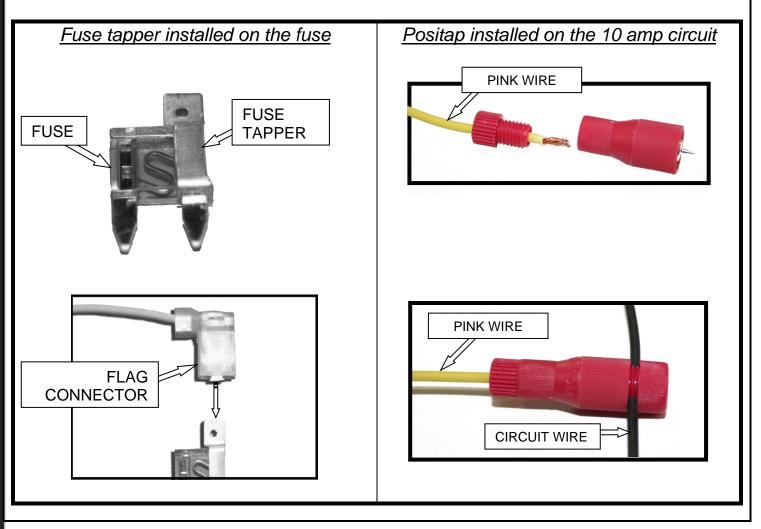


16. For the last connection you will need to locate the vehicles ignition power.

Locate the fuse panel. Remove the cover.

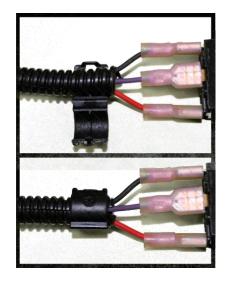
Locate the appropriate 10 amp fused ignition power circuit, and install the fuse tapper on to the 10 amp fuse, and reinstall fuse (*Important* : Ensure the tapper is installed on the hot side of the circuit). Trim the pink wire to length and crimp the flag connector to the wire and connect the pink lead wire with flag connector to this new connection. Route wire out of fuse box and close lid.

If you are unable to access the desired fuse use the supplied positap in place of the fuse tapper. Trim the pink wire to length then strip the end to connect to the small side of the positap then with the large side tap into the desired 10 amp circuit. **Important** the positap is <u>not</u> water proof.

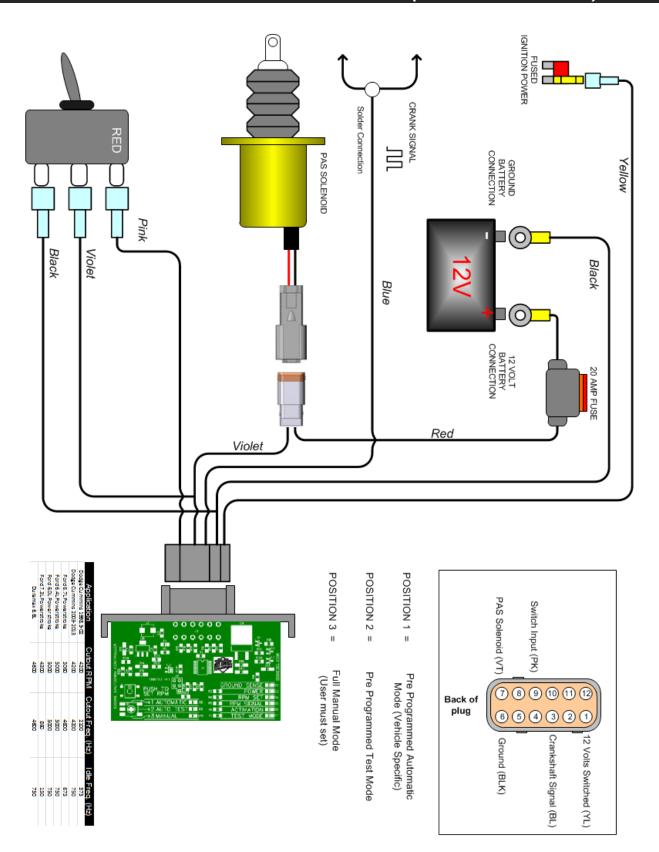


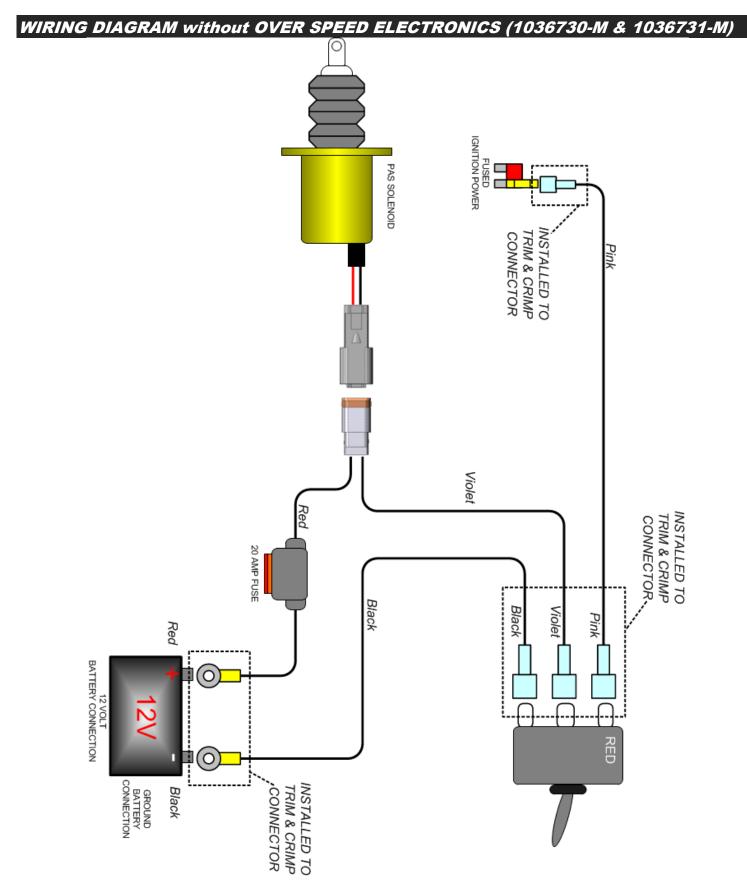
17. Double check all wiring connections and ensure wires are routed away from any heat sources and moving parts. Then install the loom with the supplied tee connector and clips for the loom ends and continue to the testing flow chart without over speed electronics in this manual.



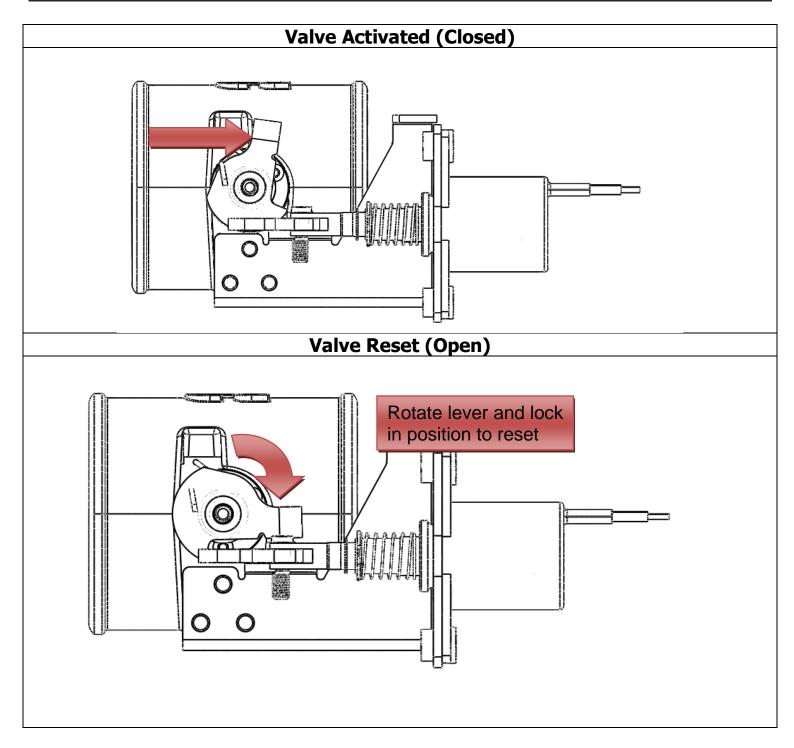


WIRING DIAGRAM with OVER SPEED ELECTRONICS (1036730 & 1036731)





RESETTING THE VALVE



SETUP, TESTING AND VERIFICATION with OVER SPEED ELECTRONICS

Each unit will need to be specifically configured for each model of vehicle. As in the case of different model years and makes the engine RPM frequency is different.

You must be in position 3

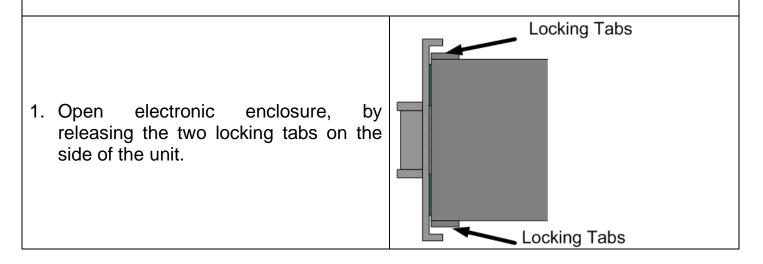
Generic 2.5" - 3"	Activation RPM	Activation Freq. (Hz)
PAS Switch Position #1 (Automatic Mode)	Do Not Use	Do Not Use
PAS Switch Position #2 (Test Mode)	Do Not Use	Do Not Use
PAS Switch Position #3 (Manual Mode)	User Configured	User Configured

Manual Mode (User Configured RPM)

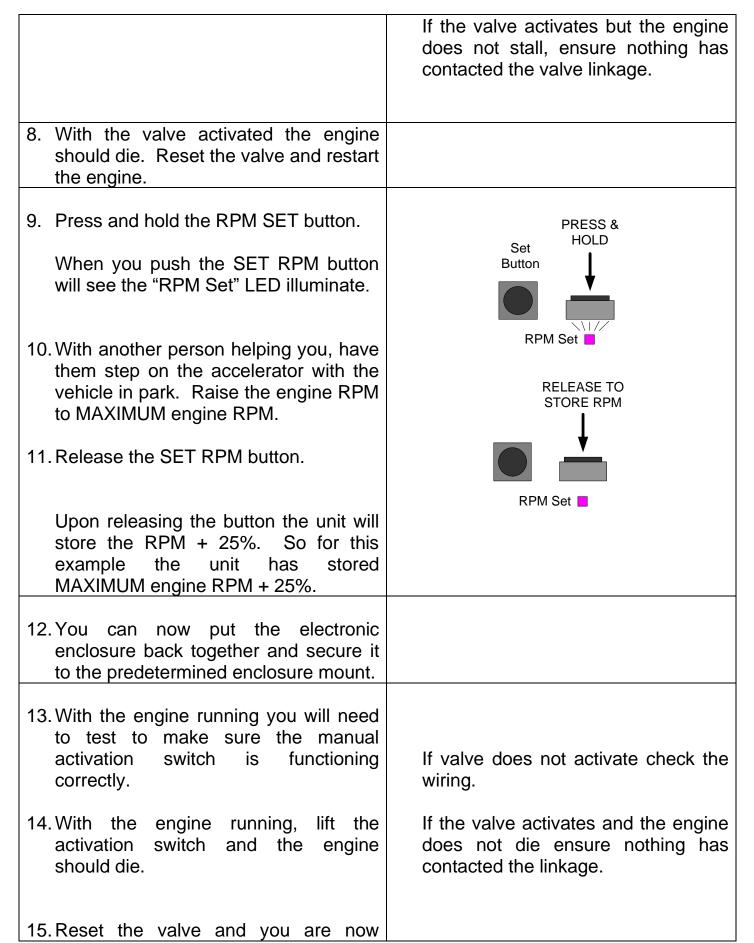
Setup

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

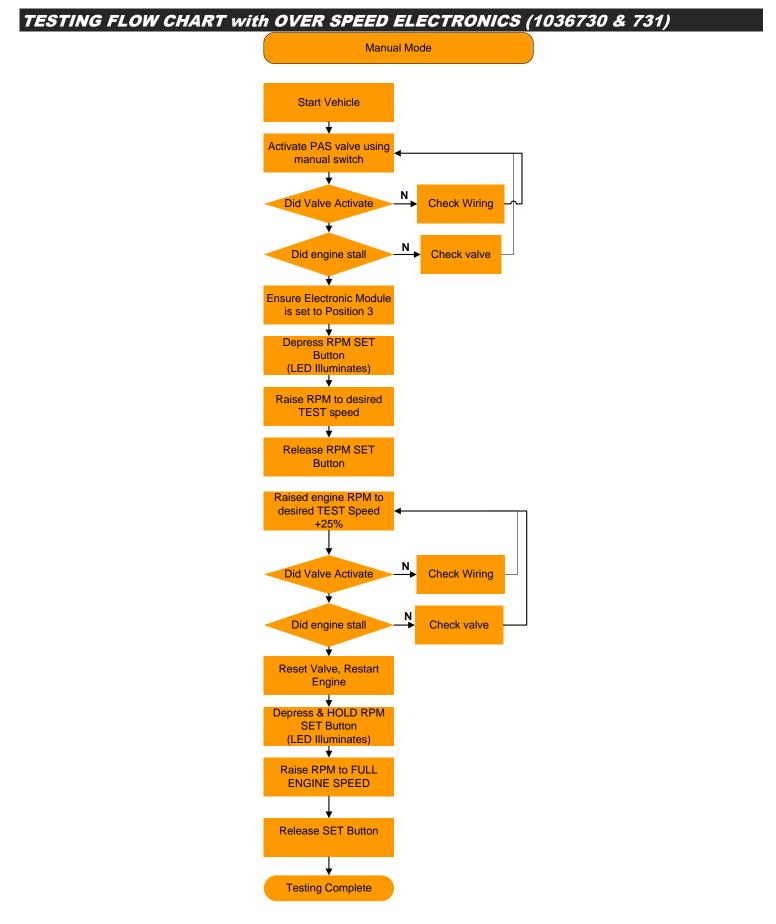
Note: When you press the Set button the module will add 25% to the set speed.



2.	Adjust the position switch to position #3.	$ \begin{array}{c} \hline & \rightarrow 1 \text{ AUTOMATIC} \\ \hline & \rightarrow 2 \text{ AUTO TEST} \\ \hline & \rightarrow 3 \text{ MANUAL} \end{array} $
3.	Start the engine.	PRESS & HOLD Set
4.	Press and hold the RPM SET button.	Button
	When you push the SET RPM button will see the "RPM Set" LED illuminate.	RPM Set
5.	With another person helping you, have them step on the accelerator with the vehicle in park. Raise the engine RPM to 1200 RPM.	RELEASE TO STORE RPM
6.	Release the SET RPM button.	RPM Set
	Upon releasing the button the unit will store the RPM + 25%. So for this example the unit has stored 1200RPM + $25\% = 1500$ RPM.	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.

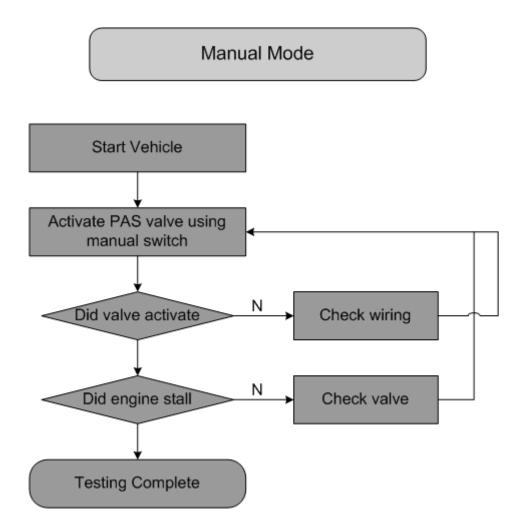


complete.	
You have now completed the ins	tallation, please be sure to complete the
test once a year to make sure the	unit is functioning correctly.

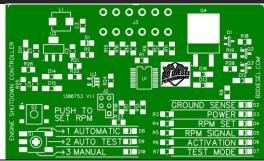


BD Engine Brake Inc. 1-800-887-5030 | https://www.bddiesel.com

TESTING FLOW CHART without OVER SPEED ELECTRONICS (1036730-M &731-M)



PCB LED Operation



GROUND SENSE	Illuminates when PAS solenoid ground wire is grounded				
	(activated). Normally off. Will light when shutdown switch				
	triggered or module triggers the solenoid.				
POWER	Illuminated when the module is powered (switched ignition).				
RPM SET	Lights up while the SET RPM button is held down.				
RPM SIGNAL	Flashes proportional to engine RPM signal.				
ACTIVATION	Flashes when the PAS solenoid has been activated.				
1 AUTOMATIC	These LEDs simply confirm the switch position.				
2 AUTO TEST					
3 MANUAL					

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.