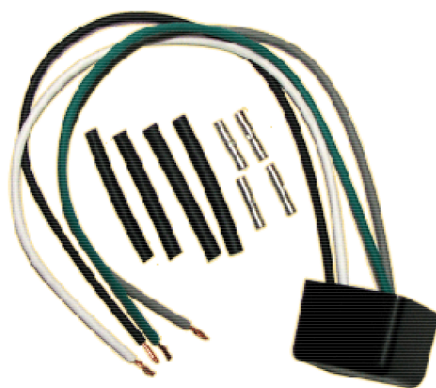


ATS UPGrades

Installation Manual v2.4 Dodge Valve Body Assistant (VBA) 1996-2007 Dodge 5.9L



Please read all instructions before installation.

NOTE: For 2003.5-2007 year models, use pages 1-3. For early 2003 year models, use pages 4-5. For 1996-2002 year models, use pages 6-7.

2003½-2007 Dodge Ram 5.9L 24V Tape or heat shrink all solder joints.

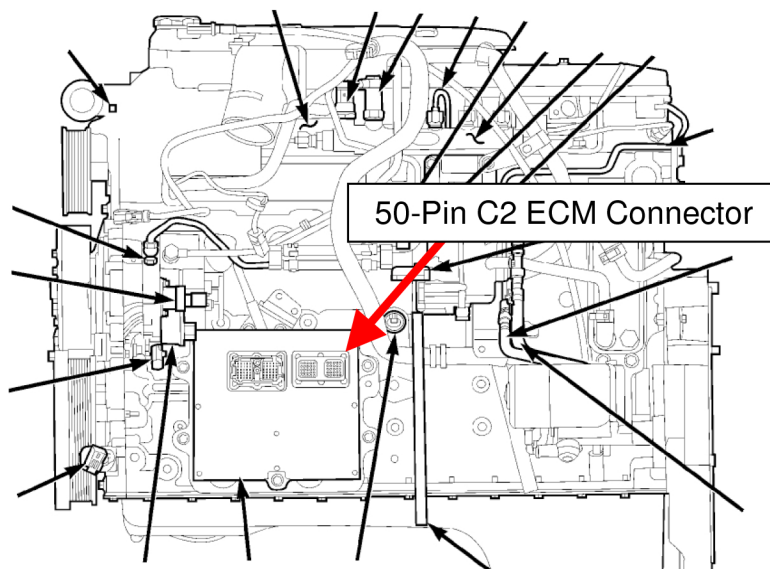


Figure 1 – '03.5-'07 ECM Connector Locations

- 1) Remove the battery cables from the negative terminals on both batteries. Locate the ECM (Engine Control Module) on the driver's side of the engine block towards the front.
- 2) There are two ECM connectors, one 60-pin (front, C1) and one 50-pin (rear, C2). Unplug the rear connector so you can access the wires (remove the size 4 metric allen screw that holds the rear connector). Also remove the bolt above the connector that retains the wire loom.
- 3) You will need to tap into two wires that run to the rear connector and cut another. ATS recommends performing these wire connections approximately 10" from the connector. If necessary, carefully cut the wire loom wrapping to access the wires.
- 4) Find the yellow w/ brown stripe wire that goes to pin 18 (2006-07 pin 17) of the rear connector and cut it about 10" from the ECM plug.
 - A. Solder the white wire from the VBA to the cut end of the yellow w/ brown stripe wire that runs to the ECM plug.
 - B. Solder the green wire from the VBA to the cut end of the yellow w/ brown wire that runs into the wire loom, away from the ECM plug.
- 5) Find the yellow w/ pink stripe wire that goes to pin 23 of the rear connector and strip back about 1/2" of the insulation, approximately 10" from the plug. Do not cut this wire.
- 6) Solder the grey wire from the VBA to the stripped section of yellow w/ pink stripe wire in the wire loom.
- 7) Find the black wire that goes to pin 50 of the rear connector and strip back about 1/2" of insulation, approximately 10" from the plug. Do not cut this wire.
- 8) Solder the black wire from the VBA to the stripped section of black wire in the wire loom.

NOTE: There is another black wire that runs to pin 49 of the rear connector, it can be used in place of the one that lies in pin 50 if necessary.
- 9) Reassemble the wiring harness with black electrical tape. Attach the VBA to the harness loom oriented such that the adjustment screw is accessible.

NOTE: If your valve body has been modified prior to the installation of the VBA, go back to the rear connector; inspect the yellow w/ pink stripe wire for the presence of heat shrink and/or a resistor. If a resistor is present, it must be removed and the yellow w/ pink strip wire soldered back together.
- 10) Reconnect the negative terminals on both batteries.

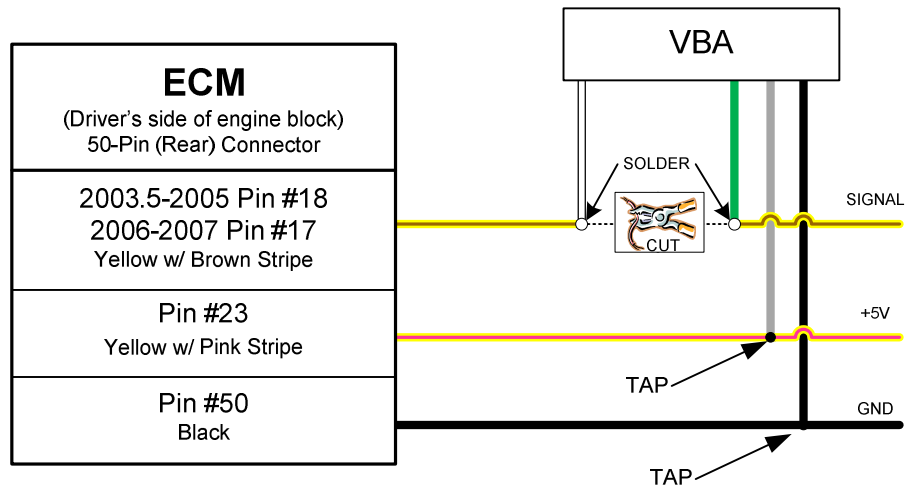
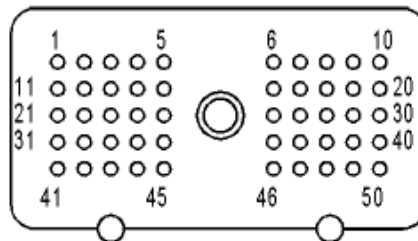


Figure 2 – '03.5-'07 Wiring Diagram



ENGINE CONTROL
MODULE C2

Figure 3 - '03.5-'07 C2 Connector

2003 Dodge

Tape or heat shrink all solder joints.

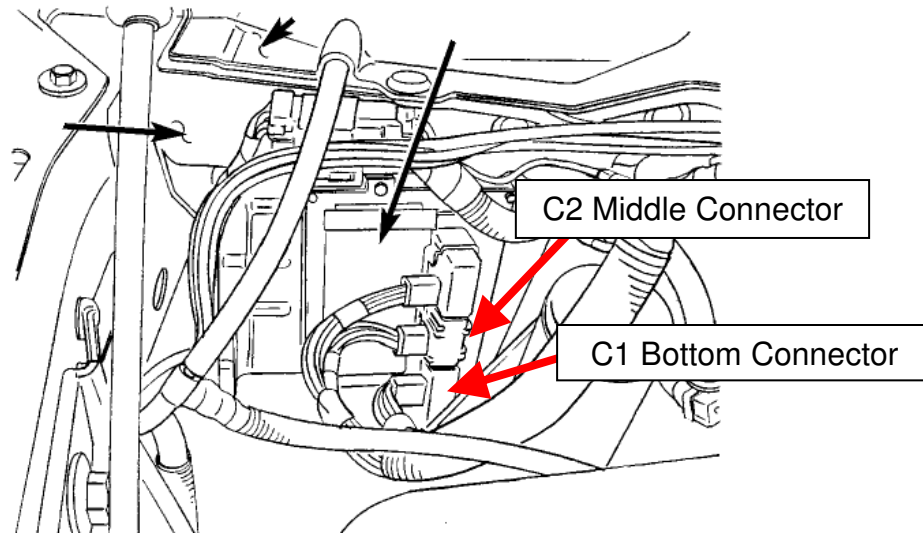


Figure 4 – '03 PCM Connector Locations

- 1) Remove the battery cables from the negative terminals on both batteries. Locate the Powertrain Control Module (PCM). It is on the passenger side of the firewall, behind the air box.
- 2) There are three (3) PCM connectors. You will need to tap a wire and cut a wire that runs to the middle (C2) connector and tap one that runs to the bottom (C1) connector. Unplug the connectors one at a time so that you can access these wires.
- 3) ATS recommends performing these wire connections approximately 10" from their connectors. If necessary, carefully cut the wire loom wrapping to access the wires.
- 4) Find the light green w/ red stripe wire that goes to pin 29 of the middle (C2) connector and cut it about 10" from the plug.
 - A. Solder the white wire from the VBA to the cut end of the light green wire w/ red stripe that runs to the PCM plug
 - B. Solder the green wire from the VBA to the cut end of the light green w/ red stripe wire that runs into the wire loom, away from the PCM plug.
- 5) Find the violet w/ white stripe wire that goes to pin 31 of the middle (C2) connector and strip back about ½" of the insulation, approximately 10" from the plug. Do not cut this wire.
- 6) Solder the grey wire from the VBA to the stripped section of violet w/ white stripe wire in the wire loom.

- 7) Find the black w/ tan stripe wire that goes to pin 32 of the bottom (C1) connector and strip back about a 1/2" inch of the insulation, approximately 10" from the plug. Do not cut this wire.

NOTE: If you are not able to connect to the wire in pin 32, you can connect to the wire in pin 31 as a substitute.

- 8) Solder the black wire from the VBA to the black w/ tan stripe wire in the wire loom that you just stripped.

- 9) Reassemble the wiring harness with black electrical tape. Attach the VBA to the harness loom such that the adjustment screw is accessible.

NOTE: If your valve body has been modified prior to the installation of the VBA, go back to the middle connector; inspect the violet w/ white stripe wire for the presence of heat shrink and/or a resistor. If a resistor is present, it must be removed and the violet w/ white stripe wire soldered back together.

- 10) Reconnect the negative terminals on both batteries.

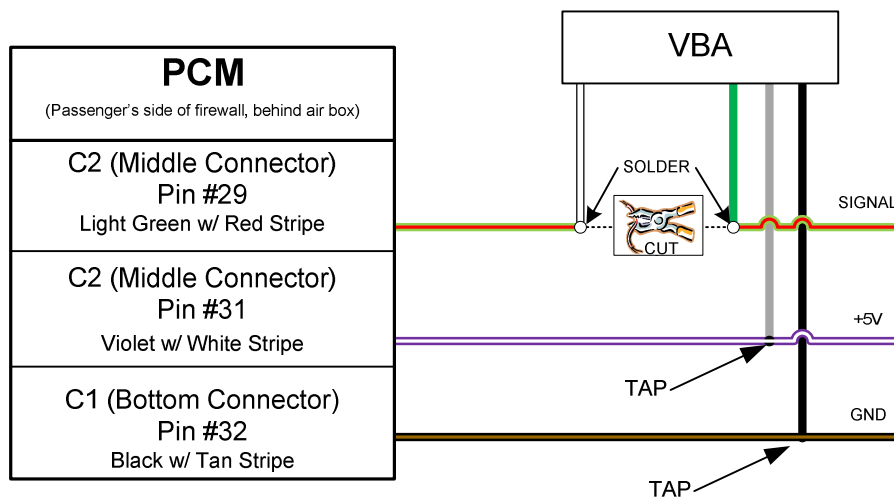


Figure 5 – '03 Wiring Diagram

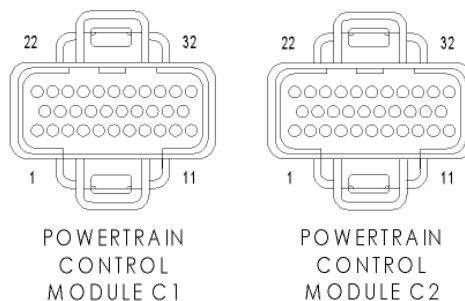


Figure 6 – '03 Dodge C1 and C2 Connector Pin Layouts

1996-2002 Dodge

Tape or heat shrink all solder joints.

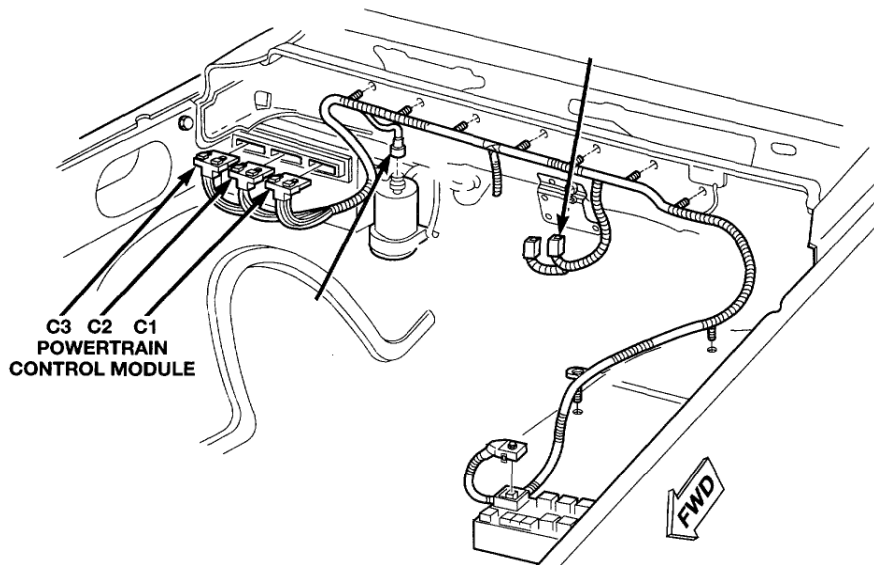


Figure 7 – '96-'02 PCM Connector Locations

- 1) Remove the battery cables from the negative terminals on both batteries. Locate the Powertrain Control Module (PCM). It is on the firewall, passenger side, behind the air box.
- 2) There are three (3) PCM connectors. You will need to tap a wire and cut another that runs to the middle (C2) connector. You will also need to tap a wire that runs to the inside (C1) connector. Unplug these connectors one at a time so that you can access these wires more easily.
- 3) ATS recommends performing these wire connections approximately 10" from the connector. If necessary, carefully cut the wire loom wrapping to access the wires.
- 4) Find the light green w/ white stripe wire that goes to pin 29 of the middle (C2) connector and cut it about 10" from the plug.
 - A. Solder the white wire from the VBA to the cut end of the light green w/ white stripe that runs to the PCM connector.
 - B. Solder the green wire from the VBA to the cut end of the light green w/ white stripe wire that runs into wire loom, away from the PCM connector.
- 5) Find the orange wire that goes to pin 31 of the middle (C2) connector and strip back about 1/2" of the insulation, approximately 10" from the plug. Do not cut this wire.
- 6) Solder the grey wire from the VBA to the stripped section of orange wire in the wire loom.

- 7) Find the black w/ tan stripe wire that goes to pin 32 of the inside (C1) connector and strip back about a 1/2" inch of the insulation, approximately 10" from the plug. Do not cut this wire.
- 8) Solder the black wire from the VBA to the stripped section of black w/ tan stripe wire in the wire loom.
- 9) Reassemble wiring harness with black electrical tape. Attach the VBA to the harness loom such that the adjustment screw is accessible.

NOTE: If your valve body has been modified prior to the installation of the VBA, go back to the middle connector; inspect the orange wire for the presence of heat shrink and/or a resistor. If a resistor is present, it must be removed and the orange wire soldered back together.

- 10) Reconnect the negative terminals on both batteries.

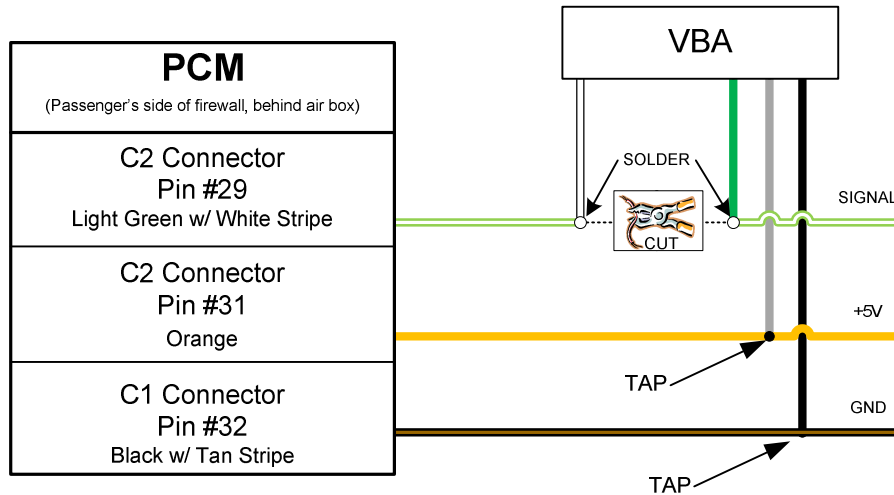


Figure 8 – '96-'02 Wiring Diagram

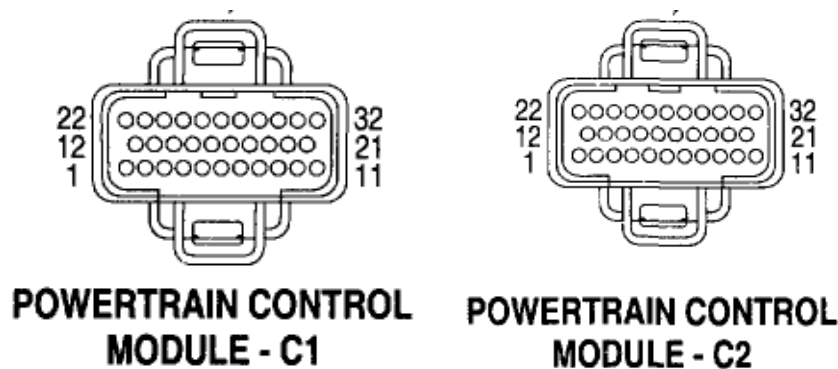


Figure 9 – '98-'02 PCM Connector Pin Layouts

Have Any Questions?

Thank you for purchasing the ATS Valve Body Assistant. Please check our website at <http://www.atsdiesel.com> for technical support and other performance products such as the Five Star torque converter, ATS High Performance Valve Body and ATS High Performance Transmission along with our full line of power enhancers. Please call or e-mail our Technical Service Department, 8:00am to 5:30pm Mountain Standard Time, Monday through Friday.

Contact Information

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We strive to make our instructions as clear and complete as possible. To achieve this, our instructions are under constant construction. We encourage you to visit our website to check for the most up-to-date manuals and diagrams as well as other information. If you have any suggestions as to how we can improve this installation manual, let us know at <mailto:Suggestions@ATSDiesel.com>.

Bill of Materials

1. Adjustable Valve Body Assistant 601-006-1000
2. (4) 22-18 Butt Connector
3. (4) 1.5" Section of 1/8" Heat Shrink
4. Adjustable Boost Footer Instructions 303-906-2188-INST