



# VAN AAKEN SMARTBOX-R™ FITTING INSTRUCTIONS

**Vehicle:** Dodge Ram  
**Engine:** Cummins 5.9l 24v  
**Year:** 1998.5 - 2002

Our Website [www.vanaaken.com](http://www.vanaaken.com) has further information on the **van Aaken SmartBox-R™** and our **NEW** products

Every effort has been made to ensure these fitting instructions are accurate and complete. If during installation of your van Aaken SmartBox-R™ you experience any difficulty please contact your supplier or contact van Aaken Developments directly stating where your van Aaken SmartBox-R™ was purchased. van Aaken Developments contact details are at the bottom of every page.

## van Aaken SmartBox-R™ Fitting - Quick Explanation

**Fitting the van Aaken SmartBox-R™ is a very simple task that should take less than 5 minutes.** Do not be put off by the length of the explanation on the following pages. The steps set out are to ensure ease of fitting and to help avoid accidental interference with other components.

To fit the van Aaken SmartBox-R™, all you need to do is unplug the electrical connection from the back of the Diesel injection pump and plug the van Aaken SmartBox-R™ in between the pump and the electrical connector. You will then have to stick the van Aaken SmartBox-R™ to the top of the fuse box using the supplied self-adhesive Velcro strips.

### 1 Before you Start

Additional items required - Wire cutters to tidy the supplied cable ties, scissors for the Velcro and cleaner suitable for removing dirt and oil from plastic.

- Switch off engine and ignition.
- Apply parking brake and select neutral or park. Remove ignition key from the ignition switch.

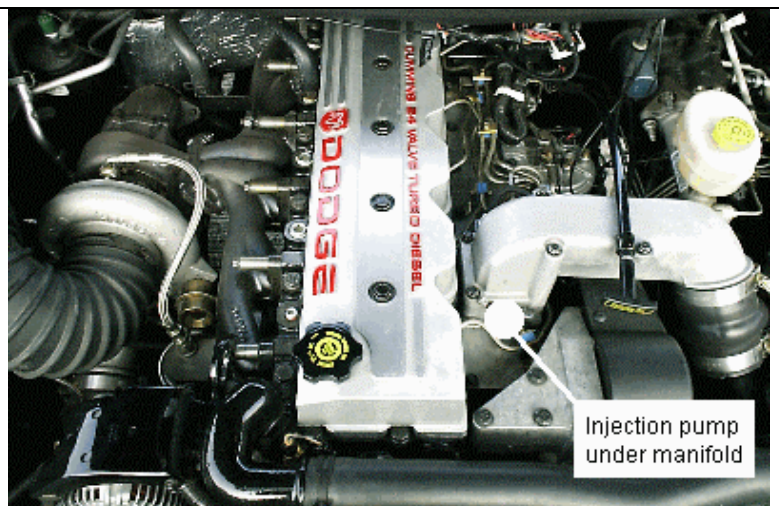
### 2 Diesel Injection Pump - Location

This picture shows the 24v Cummins engine as viewed from the front of the engine.

The Diesel Injection Pump is hidden from view. It is underneath the inlet manifold at the front of the engine.

The fuse box that the van Aaken SmartBox-R™ must be stuck to is just out of the picture to the right.

(All the following directions refer to the side of the vehicle as you sit in the drivers seat facing forward).

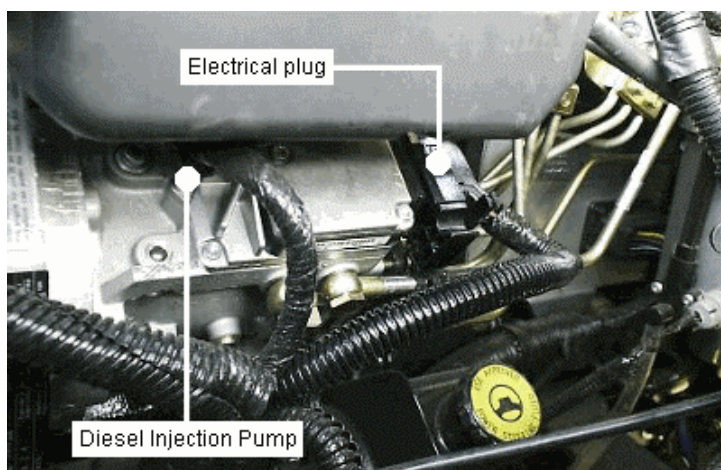


### 3 Electrical Plug on Pump - Location

*In this and the following 2 photos the air intake pipe has been removed for clarity - you do not need to do this.*

Locate the Diesel Injection Pump. It is situated at the front of the engine on the left-hand side, underneath the inlet manifold.

From the rear of the pump, six metal pipes lead off to the top of the engine. Above these pipes there is an electrical plug with a sliding section. This plug is exactly the same as the female plug on the van Aaken SmartBox-R™ harness.



### 4 Electrical Plug on Pump - Unplugging

The electrical plug must be uncoupled from the pump. To do this you pull the sliding section of the plug towards the left of the vehicle (arrowed 1) and then pull the plug towards the rear of the vehicle (arrowed 2).

If in any doubt as to how the plug works please examine the female van Aaken SmartBox-R™ plug with the sliding section - it is identical.

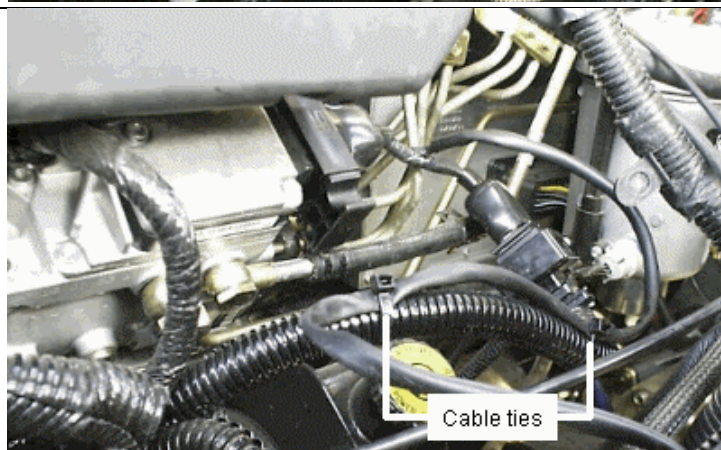


### 5 Connecting the van Aaken SmartBox-R™ Harness

The van Aaken SmartBox-R™ will now plug in between the pump and the electrical plug.

Secure the van Aaken SmartBox-R™ harness to the original pump harness using the cable-ties supplied.

Clip off the excess length from the cable-ties for a neat finish.



### 6 Connecting the MAP Sensor

There are three different types of connector used by the vehicle manufacturer for the MAP sensor connection. The sensor is located at the rear of the engine on the offside (drivers side) and will either be a flat (oval) black 3 pin connector, a round black 3 pin connector or a larger grey three pin connector. You will need to select the correct adapter to match your vehicle plug, so compare the plugs supplied with the van Aaken SmartBox-R™ harness with the sensor plug on the engine to determine which type this should be.

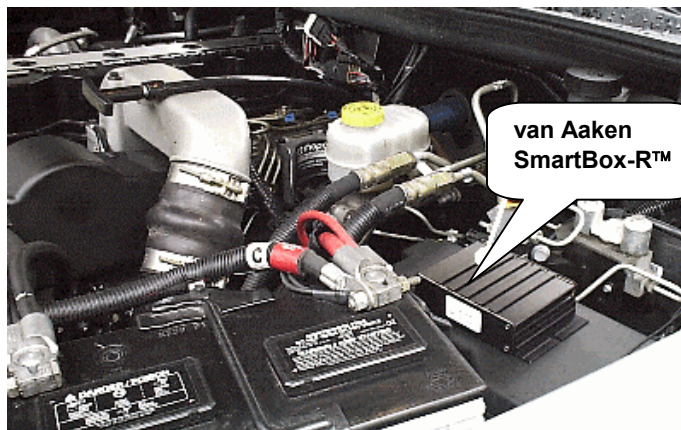
Disconnect the plug from the vehicle sensor and connect the van Aaken SmartBox-R™ harness between the sensor and disconnected plug using the appropriate adapter. Ensure that all connections are firmly clicked into place.

## 7 Mounting the van Aaken SmartBox-R™

The van Aaken SmartBox-R™ should be attached to the fuse box cover using the supplied self-adhesive Velcro strips. The area on the vehicle where the unit is to be stuck should be thoroughly cleaned with a suitable cleaner to remove all traces of oil, engine lacquer or dirt.

**When positioning the van Aaken SmartBox-R, ensure that the unit wiring harness is not pulled taught. The engine is attached to the chassis using flexible mounts and so it is normal for the engine to move during operation. Sufficient slack must be left in the van Aaken SmartBox-R™ wiring to allow for this movement.**

**Ensure that the van Aaken SmartBox-R™ wiring is secure and will not contact any moving parts, sharp edges or hot surfaces. Use the supplied cable ties where necessary to secure the wiring.**



## 8 Recheck all your work

- Check that the van Aaken SmartBox-R™ is firmly plugged to the back of the pump. Push the sliding section to make sure it has reached its stop.
- Check that the van Aaken SmartBox-R™ is firmly connected to the vehicle wiring harness (the part that was unplugged from the pump). Push the sliding section to make sure it has reached its stop.
- Make sure that the van Aaken SmartBox-R™ unit is firmly fixed to the fuse box.
- Ensure that the van Aaken SmartBox-R™ harness is secure (with enough slack to allow for engine movement) and is clear of all moving parts.
- Make sure any tools have been removed from the engine bay.

## **van Aaken SmartBox-R™ INSTALLATION IS COMPLETE**

Start the vehicle in the normal manner - you are now ready to experience van Aaken SmartBox-R™ power!

### IN THE UNLIKELY EVENT THAT THE VEHICLE WILL NOT START

- Check both of the plug-in connections to make sure they are pushed all the way home.
- Ensure that the van Aaken SmartBox-R™ wiring harness has not been damaged.
- Make sure you have not disturbed any other connections in the engine bay.

*If you can find nothing wrong and the vehicle will still not start, contact your supplier or contact van Aaken Developments directly stating where your van Aaken SmartBox-R™ was purchased.*

## !!! Extra Features of the van Aaken SmartBox-R™ !!!

**The van Aaken SmartBox-R™ (the New CPC)** has two additional features over the last CPC: 1 A built-in Boost Delimiter (BDL); 2 A switch capability so that the unit can be switched on and off. **To use the BDL Feature** simply plug the additional loom spur in between the MAP sensor and the vehicle loom at the MAP sensor as described above. This will allow you to increase boost pressure above standard levels without the Cummins ECU reducing fuel delivery. Use with caution. **To use the Switch Feature**, you need to connect a switch (not supplied) across the two wires on the short spur which only has two wires.

**Note:** The van Aaken SmartBox-R™ is “on” (increasing power output) when no switch is connected or when the contacts of the switch are open. The van Aaken SmartBox-R™ is “off” (standard power output) when the switch contacts are closed. The BDL function is active the entire time the van Aaken SmartBox-R™ is fitted to the vehicle even when the van Aaken SmartBox-R™ is switched off.

# Warranty Statement

## van Aaken Developments Ltd 12 Month Warranty Statement

van Aaken Developments Ltd (vAD) warrants to the original purchaser that any parts purchased shall be free from defects in material and workmanship. A defect is defined as a condition that would render the product inoperable. This warranty does not cover deterioration of plating, paint or any other coating. vAD liability is limited to the repair or replacement, at vAD's option, of any warrantable product returned prepaid with a complete service history and proof of purchase to the factory. A valid proof of purchase is a dated bill of sale. Repaired or replaced product will be returned to the customer freight collect. Accepted warranty units which have been replaced become the sole property of vAD.

**Product returned for warranty determination must be accompanied by a complete service history, including details of the circumstances under which the defect occurred, and a Return Material Authorisation (RMA) number obtained in advance from a vAD customer services representative. vAD will be the final authority on all warranty decisions.**

This warranty shall not apply to any unit which has been improperly stored or installed; subjected to misapplication, improper operating conditions, accidents, or neglect; or which has been improperly repaired or altered or otherwise mistreated by the owner or his agent.

**This warranty shall terminate at the end of 12 months in service with the original user. Labor cost incurred by the removal and replacement of a vAD product, while performing warranty work, will be the responsibility of the vehicle owner, in no case does the obligation of van Aaken Developments Ltd exceed the original purchase price of the product as indicated on the original bill of sale.**

Except as set forth in this warranty, vAD disclaims any implied warranty, including implied warranties of merchantability and fitness for a particular purpose. **vAD also disclaims any liability for incidental or consequential damages including but not limited to, repair labor, rental vehicles, hotel costs or any other inconvenience costs.** This warranty is in view of all warranties or guarantees, either expressed or implied and shall not extend to any customer or to any person other than the original purchaser residing within the boundaries of the continental U.S or Canada.