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Crooked Cluster Instructions

The crooked cluster is a drop-in replacement for the instrument cluster on your vanagon.

Included in the kit:

- Pre-assembled cluster
- Cluster mount tabs
- GPS speedometer antenna
- Oil Pressure sender and wiring
- Water Temperature sender and wiring
- instructions

Not included:

- Electrical connectors and crimps
- Threaded fittings and adaptors

Installation

The instrument cluster is plug and play for a vanagon, however, you will need to install the provided senders on your engine and modify the wiring in the engine bay slightly to run the cluster. If you have an early van (80-84) some modification of the wiring at the dash is required. Professional installation is recommended.

I. Install the cluster in your dash:

The cluster is provided with a 14 pin connector that plugs into the stock instrument cluster plug on a vanagon. To install the cluster do the following:

1. Remove the instrument cluster shroud
2. Remove 4 phillips head screws holding the existing cluster down
3. Remove speedometer cable from rear of cluster
4. Remove all electrical connector from cluster
5. Remove cluster from van
6. ***If you have an early van, see steps below for repinning your cluster harness plug***
7. Place crooked cluster in dash, connect 14 pin connector
8. Thread GPS antenna on to the rear of the cluster and place antenna on the dash for best reception.
9. Reconnect all switches and plugs
10. Place provided tab-menders on both cluster feet
11. Reattach 4 phillips head screws to hold cluster down
12. Reinstall instrument cluster shroud

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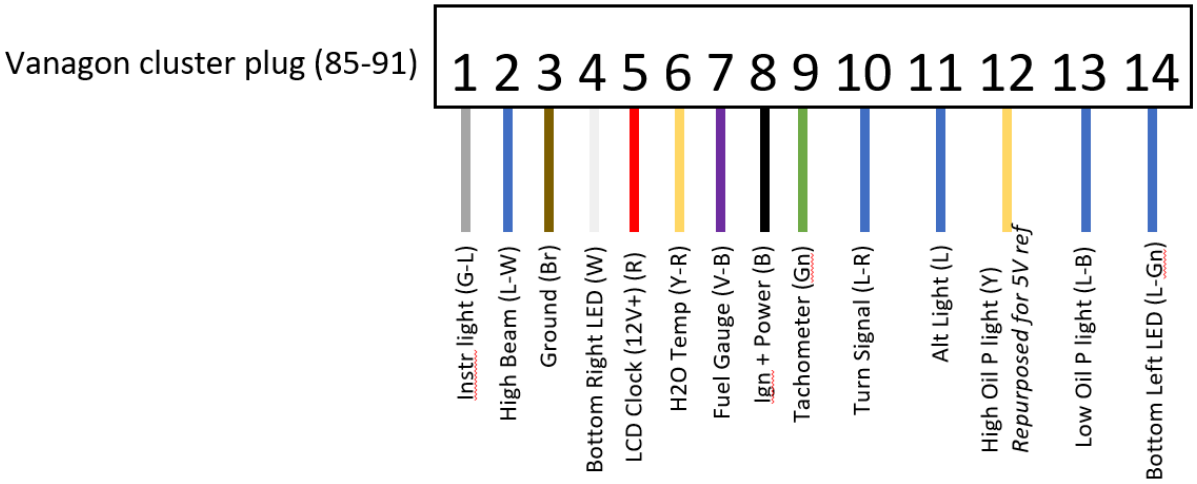
II. 14 pin connector:

The crooked cluster 14 pin connector is designed to match directly to a late model (85+) van plug. If you have an earlier van, you will need to repin the connector to a late model pinout.

To repin the connector, pry up the safety latch on the connector with a small flat head screw driver and the pins can be moved around. Be careful to keep track of all pins so they are placed back in the correct location!

Late model pinout:



Early model pinout:

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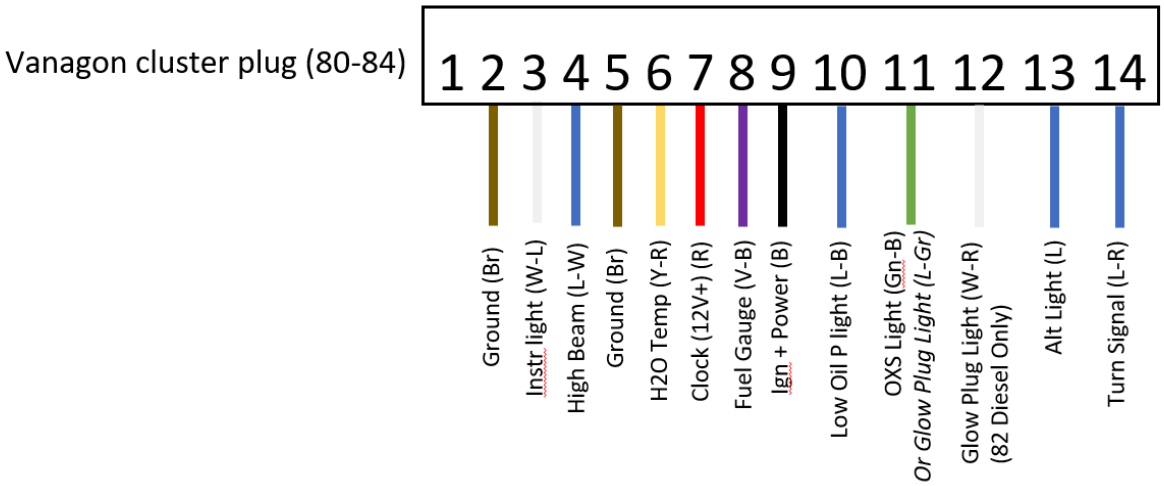

Move pins as necessary. Note: it may be necessary to cut wires and splice to repurpose unused pins.

III. Run New wires (Early van only)

If you have an early model van, you will be missing a few wires running front to back on the van and will need to add these. Typically it is necessary to add 2 additional wires: one for tachometer, and one for oil pressure background reference*. Run these wires from the black junction box in the engine bay up to the 14 pin connector under the dash. Make sure to choose a safe route under your van that stays away from heat sources (exhaust) and moving parts (shift linkage, driveshaft, etc).

*Note: the oil pressure sender used for the speedhut gauges in the crooked cluster uses 3 wires: signal, ground, and 5V reference. In late model vans we utilize the high pressure oil warning wire for the 5V reference.

IV. Install senders

Your gauges run off a dedicated sender for coolant temperature and one for oil pressure. Both of these will need to be added to your engine and wired to your stock vanagon wiring. Both senders are provided with your kit and are ⅛ NPT threads. Determine an appropriate location on your motor to read both.

For coolant temperature it is recommended that it be placed such that it reads the hottest coolant temperature so should be as close to the engine block as possible and not downstream of the thermostat.

V. Run/connect wires in engine bay

After installing the senders, locate the wiring harnesses provided for both. Attach the plugs and route the wires back to the black junction box in the engine bay. You may choose to cut the harness down to length for cleanliness.

Coolant temperature sender:
The coolant sender harness has two wires in it: white and black. The white is the signal wire that should connect to PIn 6 at the cluster. The black wire should be grounded.

- Ground the black wire to your engine block or the van body.
- Connect the white wire to the Yellow/Red wire in the black box - this will provide connection up to the gauge.
- Delete the stock temperature sender wire from the black box to the sender.

Oil Pressure sender:
The oil pressure sender harness has three wires in it: white, red, and black. The white is the signal wire that should connect to pin 13 at the cluster. The red wire is a 5v reference signal that needs to be connected to pin 12 at the cluster. The black wire should be grounded.

- Ground the black wire to your engine block or the van body.
- Connect the white wire to the Blue/Black wire in the black box - this will provide connection up to the gauge.
- Connect the red wire to the Yellow wire in the black box (85+ vans) or the new wire you ran earlier (early model vans).
- Delete the stock oil pressure sender wire(s) from the black box to the sender(s).

Tachometer
The tachometer uses one wire. This wire goes to pin 9 at the cluster. The tachometer signal will come from either an ECU or an ignition coil and will depend on the engine that is installed in the van.

- Connect the tachometer wire going to pin 9 to your tachometer signal wire.
- Slide the switch on the back of your instrument cluster to either “Coil” or “ECU” based on your signal type.

VI. Use your gauges!

Please note that the fuel gauge has been pre-programmed to operate with a reserve capacity of approximately 2 gallons in the tank.

If you need to reprogram gauges, please refer to the included speedhut instructions.

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