

VM3COP40.20 R-33VAN-3 Production Procedure

Parts list:

Description	Part Number	Supplier	Supplier part number	Quantity
R-33S Sensor	0110226	Teledyne	R-33S	1
Black housing – R-33VAN	9720200	Vandagraph		1
TDK ferrite - 2035-0930	9730502	Farnell	1301656	1
Cable	9730500	VDC	211-311-000	1.3m
Terminal pin - Multicomp E0508	9730503	Farnell	9972218	2
Viton 'O' ring (Large)	9730501	Spenn Bearings	BS0140-15	1
Viton 'O' ring (Small)	9730201	Spenn Bearings	VIT-0130:10-274	1
Sensor top cap		Vandagraph		1
Grommet	9730015	RS	543-197	1
Cable grip	0030500	Viamed	0030500	1

Tool list:

Soldering iron
Wire cutters
Wire stripper
Stanley knife
Heat gun
Crimp tool
Scissors

- 1) Remove the R-33S Oxygen sensor from the packaging.



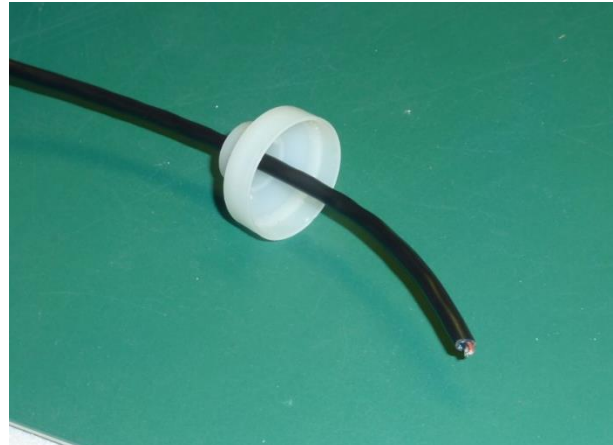
- 2) De-solder the red and black wires.
- 3) Remove the label from the sensor. Note the serial number. When the sensor is relabelled, the same serial number will need to be applied.



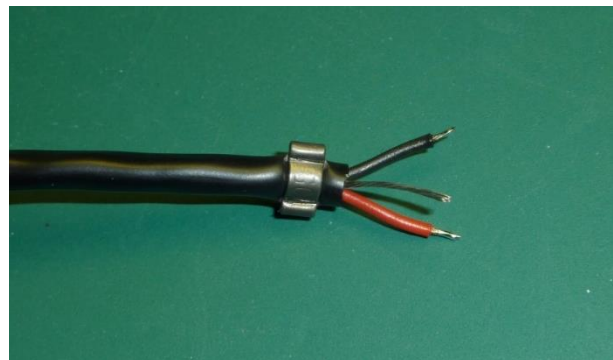
- 4) Insert a grommet into the hole in top cap.



- 5) Feed the cable through the grommet.



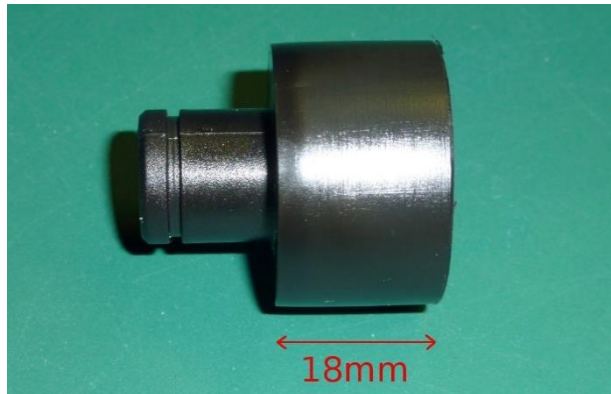
- 6) Strip 12mm from the outer cable sheath.
- 7) Cut the shield away.
- 8) Affix a cable grip 2mm from the cable end.



- 9) Place 10mm of 6mm heat shrink over the cable grip. Using a heat gun, shrink into place.



- 10) Trim the sensor housing to leave 18mm on the wider part.



- 11) Apply clear adhesive silicone to the inside face of the sensor housing.



- 12) Place the sensor inside the sensor housing and firmly press down.



- 13) Solder the red and black wires to the corresponding contacts on the PCB.



- 14) Apply a modest amount of super glue to the inside of the sensor cap. Firmly press and hold the sensor cap in place. Wipe away any excess.



- 15) Affix the serial number label.



16) Place the large 'O' ring over gas inlet port.

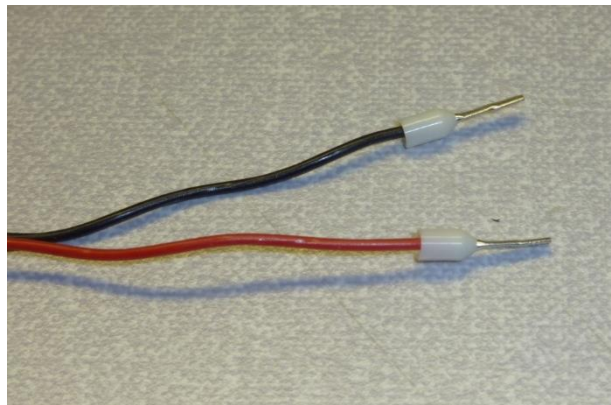
17) Place the small 'O' ring in the recess on the length of the gas inlet port.



18) Strip 70mm from the outer sheath of the cable and cut away the shield.

19) Strip and tin 7mm from each wire

20) Using a crimp tool, affix a terminal pin to each wire.



21) Cut 20mm of 6mm heat-shrink.
Using a heat gun, shrink into place.



22) Affix a ferrite by looping once through. Leave 60mm of sheathed cable protruding from the ferrite.



Q.A.

- 23) Using a digital volt meter, test the output of the sensor. The output must be $25\text{mV} \pm 2\text{mV}$.
- 24) Note the output and record the results on the Intrastats system.

**Packing**

- 25) Place the sensor in a gas barrier bag.
- 26) Using a strip heat sealer, seal the sensor within the bag.
- 27) Affix the corresponding serial number label to the outside of the bag.

