

VM3COP40.20 R-33VAN-2 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		Farnell	1301656	1
Cable	97300500	VDC	211-311-000	1m
Terminal pin - Multicomp E0508	97300503	Farnell	9972218	2
Viton 'O' ring (Large)	97300501	Spen Bearings	BS0140-15	1
Viton 'O' ring (Small)		Spen Bearings	VIT-0130:10-274	
Sensor top cap		Vandagraph		1
Grommet	9730015			1
Cable grip				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.



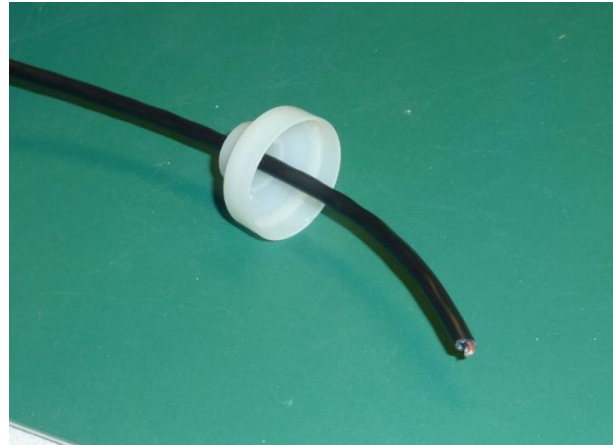
- 2) De-solder the red and black wires.
- 3) Remove the label from the sensor. Note the serial number. When the sensor is relabelled, the same serial number will need to be applied.



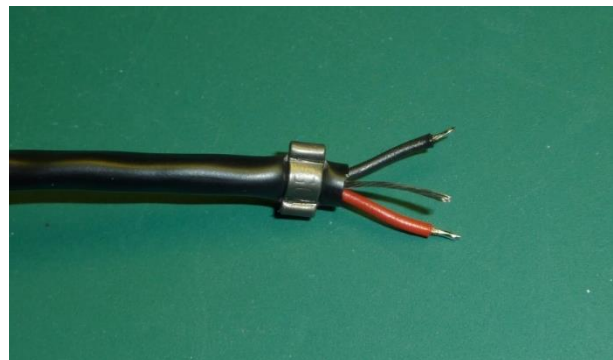
- 4) Insert a grommet into the hole in top cap.



- 5) Feed the cable through the grommet.



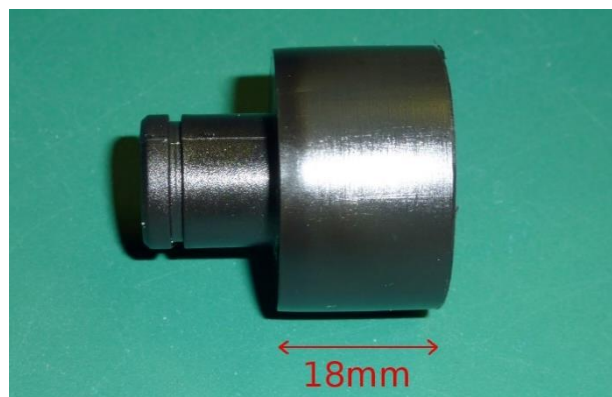
- 6) Strip 12mm from the outer cable sheath.
- 7) Cut the shield away.
- 8) Affix a cable grip 2mm from the cable end.



- 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.



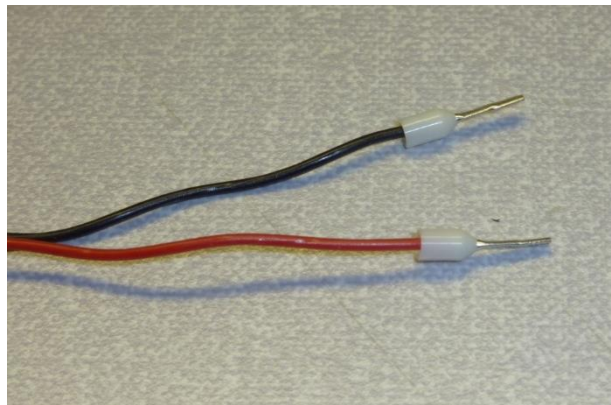
- 15) Affix the serial number label.



- 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 thought. 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.

