

VANDAGRAPH SENSOR TECHNOLOGIES

COMPANY OPERATING PROCEDURE

Oxygen Sensor manufacture

Modification of R-22DEM Sensors

VM3/COP/40.14

Date: 28 Jun 2007

Revision Date: 25-Apr-13

Issue 1

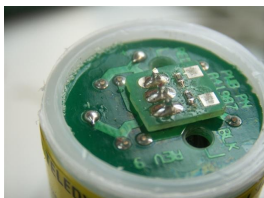
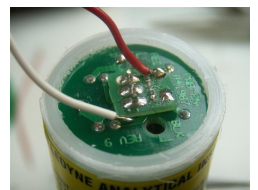
Only to be carried out by trained personel

Parts Required

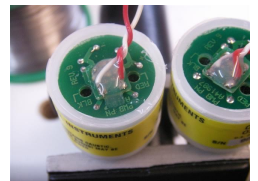
Quantity	Description	Part No.	
1	R-22D Sensor (any version will work R-22D is preferred R-22A is lowest cost and has a grid)		
	Serial number Labels		
2	Serial number Label for Outer bag		
1	Polythene Bag (outer)		
1	PCB Blank or	9012004	
	PCB pre-wired with resistors	9015005	
2	4K7 ohm surface mounted resistors or		
2	5K ohm surface mounted resistors		
1	Cable Red/White wires + low profile 2 way Molex or	9070120	
1	Crimp housing low profile	9081047	
1	Crimp pins Low profile	9071046	
1+1	Red & White/Black wires		



1. Open the packaging and remove the R-22D Sensor from the Gas barrier bag
2. Check the O₂ sensor for damage and signs of leaking electrolyte.
3. Remove the O₂ sensor specification leaflet and discard.
4. Remove excess outer case unto level of PCB. VM3COP40.11
5. Using a Flow diverter hold the sensor in a vice
6. Remove the Molex carefully. The PCB is non conformal coated so the seal must be broken on the sensor carefully



1. Where possible use Pt number 9015005 pre-wired PCB with 4K7 or 5K6 resistors and molex connected
The pads should be cleaned with a PCB rubber
If not PCB needs to be loaded see page 2
7. Test for output 4.0 mV- 6.5mV.
8. Wire so that the leads lie naturally across the PCB



9. Cut the three pins as close to the solder joint as possible.
10. Remove the existing label and add R-22DEM label to sensor
11. Ensure the O₂ sensor is booked out in the stock books.
12. Put the sensor into a gas barrier bag
13. Seal as near to the edge as possible
14. Add label

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15. Add the instruction leaflet, and place the whole into the polythene bag,

Notes for PCB construction

16. The PCB should be cleaned with a PCB rubber to remove oxidation.
17. The Red & White or Red & Black wires should be cut to 5 cms and stripped with the tool. Insert the wire until the end touches the Red stop. Close the tool and the cable will be stripped. If not rotate the wire and repeat.
18. Tin the bare ends.
19. Inserts should be crimped onto the wires using the special tool
20. The 4K7 or 5K6 resistors should be soldered onto the PCB using the Microscope set up. Only to be carried out by trained SMT engineer. Use two resistors of the same value on the same PCB

