



VIPAC ENGINEERS & SCIENTISTS

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TEST CERTIFICATE

CLIENT: WESTAFLEX / UNIFLEX (AUST) **REF NO.:** 30V-08-0190-TRP-427810-1
PTY LTD **REPORT NO.:** 427810-1
140-160 BAMFIELD ROAD **DATE:** 27 Nov 2008
Heidelberg West
VIC 3081
CONTACT: MICHAEL STERLING

TEST TYPE: DUST INGRESS TESTING

PART DESCRIPTION: FAN AND MOTOR ASSEMBLIES

SERIAL NO: SAMPLE 1 (R2E 220-AA52-72)
SAMPLE 2 (R2E 220-BD92-09)

TEST SPECIFICATION: AS 60529 – Degrees of protection provided by enclosures (IP Code) – IP5X, clause 13.4, category 2

RESULTS:

Engineer:	Chris Johnson	
Title:	Project Engineer – Automotive	
Operation of test sample:	Non-powered	
Type of dust	Talcum powder	
Quantity of dust circulated in dust chamber	2Kg	
Duration of test	2 hours (continuous)	
Sample 1 Test Date:	26/11/08	
Sample 2 Test Date	21/11/08	
Volume of fan motor	0.4 litre	
Flow meter setting to draw through 80 volumes during test	0.27 litres per minute	
Pressure drop through motors	0.26 kPa	
Ambient Environmental Conditions:	Sample 1	Sample 2
Ambient Temperature (°C):	20.6	19.7
Relative Humidity (%):	32	47
Barometric Pressure (kPa):	102.3	101.2

Table 1 – Dust Ingress Test Information

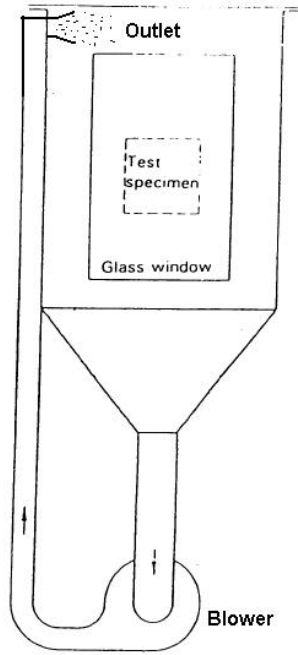


Figure 1 – Dust Chamber Diagram



Figure 2 – Vipac Dust Chamber and controller



Figure 3 – Test setup showing manometer and flow meter



Figure 4 – Test part in chamber (tested one at a time)



Figure 5 – Exposed screw hole sealed with aluminium tape before test

RESULTS:

f



Figure 5 – Dust collection around sample 2 (typical for sample 1 also)

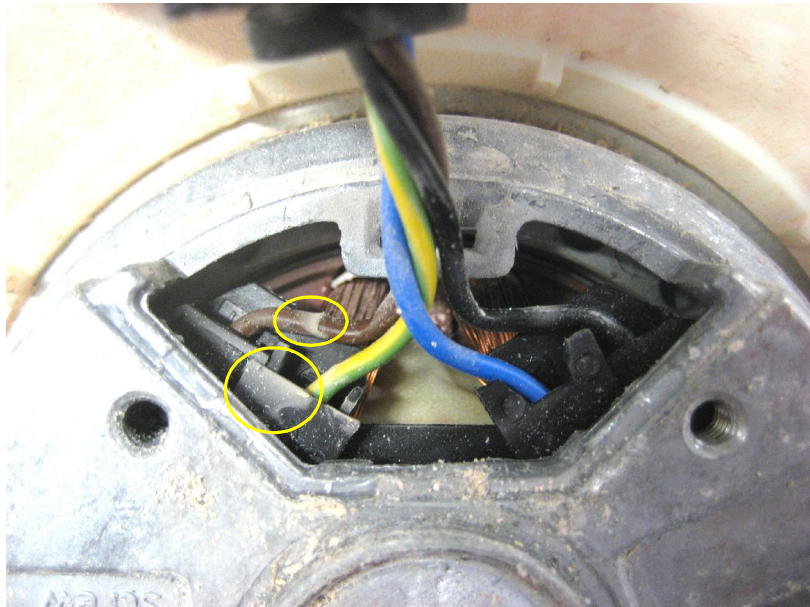


Figure 6 – Sample 1, minor coating of dust inside enclosure which did not appear to affect operation

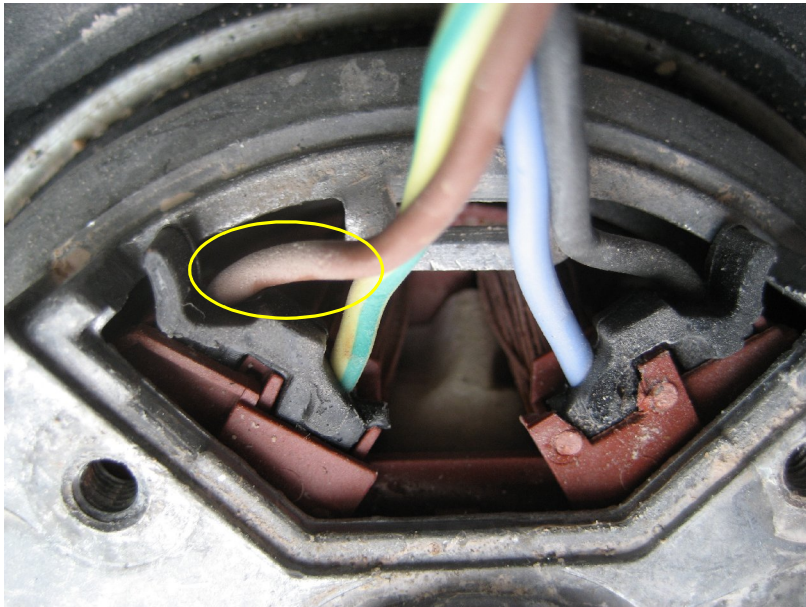


Figure 7 – Sample 2, minor coating of dust inside enclosure which does not seem to effect operation

Note: Both samples were powered up (240 volts) pre-test and post test. Each sample function was the same

Comment: Samples returned to Westaflex / Uniflex for inspection

AUTHOR:

Christopher Johnson
PROJECT ENGINEER

Date

APPROVED:

Maurizio Demontis
TEAM LEADER - AUTOMOTIVE

Date