TECHNICAL MANUAL for IBIS ROOFTOP AIRCONDITIONER

ERROR CODES & THEIR MEANING

Aircommand Australia Pty Ltd
954 Port Road
Albert Park
South Australia 5014
Email: reception@aircommand.com.au

TECHNICAL MANUAL for IBIS ROOFTOP CARAVAN AIRCONDITIONER

ERROR CODES & THEIR MEANING:

E1: Room sensor fault.	Usually a faulty connection (plug), damaged lead or a faulty sensor itself.
Action:	Check **White** plug is connected on main board. Check resistance of thermistor & cable by measuring with a multimeter. 10K ohm @25C. See fig 19 and table 1. If open circuit or out of calibration, replace.
E2: Inside coil sensor fault:	Usually a faulty connection (2 plugs) Damaged lead or faulty sensor.
Action:	Check **Yellow** plug is connected on the main board. And also plug in bundled wiring near the coil. Check resistance of thermistor & cable by measuring with a multimeter. 10K ohm @25C. See fig 19 and table 1. If open circuit or out of calibration, replace. When replacing this thermistor, install such that cable is downward from the copper pocket on the coil. See fig 18
E3: Outside coil sensor fault	Usually a faulty connection (2 plugs), damaged lead or faulty sensor.
Action:	Check **Red** plug on main board and extension plug in bundled wiring usually located near capillary tube coils. Check resistance of thermistor & cable by measuring with a multimeter. 10K ohm at 25C. See fig 19 and table 1. If open circuit or out of calibration, replace.

E4: Indicates lack of refrigerant, or the compressor is not running, or the thermistor is out of calibration.

Action:	Check that the compressor is running by listening. If it is apparent that the compressor is running, then check the temperature difference across the evaporator. i.e. Measure temperature of return air at inlet filters and measure temp. of discharge air at grilles. This temp diff. should be 14 to 18 C. with fan on hi speed. If temp diff. is less than this, suspect lack of refrigerant. Fit a suction gauge to access valve at rear of unit. See fig 12. On a 35C outside temp. then suction should be 380 to 450Kpa.

Action (continued)

If the temp. differential is 14C or more but unit goes out on E4 after approx. 30 minutes, please check the actual thermistor temperature by the following procedure.
With the inside fan running on Hi.
Press Temp down button followed by the mode button.
Hold them both in for approx 5 seconds. The amber Lock LED illuminates.
Now press the Temp down button and the Sleep button Together for about 1 second. The green Med speed will be Flashing. The display is now reading the temp of the outside coil. *Now press the Temp up button once. The Green Hi speed will be flashing.* The display is now reading the temp. of the inside coil.
This temp will usually be from 5 to 12 C. If it is above 24C. It is another indication of lack of refigerant. If on the other hand the air on /air off differential is 14C or greater then suspect the thermistor itself to be out of calibration. Check the thermistor as per an E1,E2 or E3 failure by measuring its resistance. See fig 19 and referring to table 1.

E5 indicates excessive temp. of the outside coil if on cooling, OR excessive temp of the inside coil in heat mode. On cooling, the E5 will appear if the outside coil temp exceeds 68C. This is an indication of condenser airflow reduced or non-existent. Using the procedure described above it is possible to watch the condenser coil temp using the *Temp down* button and *Medium fan speed* combination to display this temp. NB: if fans etc seem to be OK then measure thermistor resistance and refer to table 12. In case the problem is thermistor calibration.

Action:

If unit is in cooling mode, examine both condenser fans are running. If one is running then suspect a faulty motor. If both fans not running then on units up to serial No. IBSA 01175, investigate the fan speed control card located in enclosure on the LHS See fig 6.
If this checks OK then investigate main control card.
Fig 1, 2 or 3. Units with serial No's IBSA01176 and onward are multi speed tapped wound motors not requiring a speed control card. If both motors inoperative then suspect main control card.
Fig 1, 2 or 3.

If unit is in heating mode, examine the indoor fan that it is free to rotate. If fan is inoperative but free to rotate, then. Units up to S/N IBSA01175, examine speed control card. See Fig 1. If OK then examine fan motor & capacitor.
Winding resistance: Blue /Black approx 165 Ω
Blue / Brown approx 480 Ω
If after S/N IBSA01175, check winding resistance
Blue /Black 580Ω
Blue /Grey 630Ω
Blue /White 685Ω
Brown/Yellow 785Ω
If fan motor and capacitor check out OK then change the main control board.

NB: When in Heat mode, at outside temps above 18C, the outside fan motors may cycle on and off . This is the system-shedding load to avoid overheating the inside coil and is not a fault.

Error codes E6 & E7 are not utilised in this system. If either of these codes appear, then change the main control board.

When attempting to diagnose a fault over the phone, please ask the following questions. **Also it is usually possible to direct the customer to extract thermistor temp. data as described before. This can make fault finding more accurate.**

1: Is or have there been any error codes displayed?
2: Does the display board appear normal?
Are temperatures displayed from 16 to 30 C?
3: In heating or cooling modes, can the temperatures be altered via the up /down buttons from 16 to 30C?
4: Is the display showing "0"?
5: Is the display showing an unusual figure?
6: When the unit is set to "FAN" only, does the inside fan have 3 speeds?
Does the inside fan blow air?
7: Can the compressor be heard running?

Error codes are an important clue to diagnosing various problems.

Refer to pages 1 & 2 for information on error codes E1 to E7.

However if you have a blank display it may be due to either a faulty 12 volt power supply to the main board or a broken conductor in the control cable or a displaced plug. See pp: 6 para. 2 & 3.

The control cable has 4 conductors, Black, Red, White & Yellow.

If the Black or White conductors are broken, then **there will be no display**

If the Yellow or Red conductors are broken, then the display will read "0"

In addition, if one or the other Yellow or Red conductors are broken, then, if the unit is in "Auto change over" mode, then both the Green cooling LED and the Red heating LED will be flashing together. This will be conclusive proof of a break in the conductors.

(Auto changeover mode is established by pressing the mode button Cool - Dry - Heat - Fan - Cool. Either the Green LED is illuminated constantly and the Red LED is flashing. This indicated the unit is ready to cool. If the Red is constant and the Green is flashing, then the unit is ready to heat.)

If an unusual figure is displayed it may be attributed to an external switch mode power supply (SMPS) out of adjustment. Fig 4 & 5A shows an external SMPS.
Serial No's. IBSA 03280 to 034821.Serial no's IBSA03482 to 03504 were fitted with remote SMPS's (see fig 4 & 5A and 20). and IBSA 03505 onwards have the power supply integrated into the main control board see fig 3.

If the unit is being operated on a generator, a "0" or any other unusual display occurs, this indicates a problem with the sine wave ouput from the generator.

Assuming the unit is OK on mains power.

Typical faults or complaints

1: Any complaint accompanied with an error code, see earlier pages.

2: Unit will not work and no display is evident.

Check the following:
Main ECB breaker is set to ON
Mains power is OK at output from ECB
Is the 4 core control cable plugged into the receiver in the inside plenum? Fig 23
Faulty mains connection at the underside of unit. See Fig 11
A blown fuse on the main control board. See fig 1, 2 & 3.

A blown fuse may be caused by a faulty condenser or evaporator fan
Or a faulty fan speed control card (up to serial No 001176)

Poor connection on main board.
The power supply to the main control board is faulty. This condition can be diagnosed by checking at the breakaway plug between the control cable and the display in the plenum. See wiring diag. 1 & 1A. If the DC voltage is not attainable there then suspect a faulty power supply. See onward:

Earlier models had a transformer. See fig 1. Check output by measuring for 12V AC at the red plug. See fig 1 & 2. If no output replace transformer with an SMPS.
If unit is of later manufacture and has an external SMPS (fig 4 shows the SMPS mounted also fig 20) then measure the output at red plug. Should be 12V DC. If no output, change the SMPS. Some SMPS have an adjustment pot fig 20. Try adjusting either direction to see if it regains output.
Units from IBSA 03280 have an integrated SMPS on the main board fig 3.
Except for units IBSA 03482 to 03504 which had external SMPS's

3: Unit drops out the ECB breaker:

Use a 500V megger to check for ground leakage.
It is possible to unplug both condenser fans and the evaporator fan.
Unplug each until the megger shows at least 10MegΩ or greater to earth.
Likewise the compressor can be disconnected to isolate it from the system.
In this way any faulty components can be identified.

Other places to check: earlier models did not have heatshrink on breakaway plugs on the condenser fans.
Check also the mains connection on the underside of the unit within the 356mm square ceiling hole.

4: Compressor will not start:

Check that the control board is outputting to the compressor.(yellow wire from compressor relay). See fig 1, 2 & 3.
Check start and run capacitors. (LHS enclosure see Fig 6) Note: Not all units are fitted with start capacitors and relays.
Use a clamp ammeter to check for current to compressor. Continuous current above 6 Amps indicates a faulty compressor.
Check winding continuity:
If a Sanyo: C-RHN1005A or B
Main Wdg. 2.9 Ω @ 25C
Start Wdg. 6.6Ω @ 25C

If an Aisulu: QHR 19E
Main Wdg 2,2 Ω @ 25C
Start Wdg. 4.2 Ω @ 25C

Resistance to earth minimum 20 Meg Ω

5: On cooling mode, compressor and outside fans stop.

Unit ceases to cool but display temp. drops to a low figure. Maybe less than 10C.

This is typical of an inside coil icing up. The thermistor detects that the coil is at or below zero and turns off the compressor until temp. rises to 12C, Whereupon the compressor will restart.

This situation is usually associated with the unit running for a prolonged period on low fan speed particularly in high humidity conditions.

This problem is usually overcome by running the unit on a higher speed and not using 'Auto" fan.

Check also that the return air filters are clean.

In heating mode, the unit stops heating, inside fan stops, and the red heat LED blinks.

This condition indicates that the unit has entered the de-ice mode to rid itself of frost on the outside coils. The unit will restart automatically in 5 to 10 minutes.

It may be noted that the display temp drops to a low figure.

On resumption of heating, the blinking red light turns to a steady red, and the inside fan start will be delayed until the inside coil is warmed to 32C. When the inside fan does start there may be a momentary puff of vapour. This is normal.

7: In very cold conditions the compressor can be heard running but the inside fan does not start.

Be patient, in very cold conditions the unit needs time to warm sufficiently to start producing warm air.

8: Compressor transmits excessive vibration.

Check that the top washer of the four compressor studs are clear of the rubber Mount by 1 to 2 mm. Adjust if necessary. See fig 7

9: On heating, the unit cycles regularly, the temperature display indicates say 24 to 28C but the average temperature in the van is very much less.

Disassemble the facia from the inside plenum (4 screws) and examine carefully the extension duct for leaks, particularly where it joins the horizontal duct.

A leaking duct will short cycle warm air onto the return air sensor causing the compressor to close down prematurely.

Repair any leaks and reassemble. (see Fig 10 and 24)

10: On cooling, the unit cycles regularly, the temperature display indicates say 22 to 25C but the average temperature in the van is very much more.

Disassemble the facia from the inside plenum (4 screws) and examine carefully the extension duct for leaks, particularly where it joins the horizontal duct.

A leaking duct will short cycle cold air onto the return air sensor causing the compressor to close down prematurely.

Repair any leaks and reassemble. (see Fig 10 and 24)

11: Water drips from the inside plenum when the unit is in cooling mode.

Ingress of water on cooling mode may be due to either of four conditions.

1: The unit is installed more than 5°out of level, particularly nose down.

2: The drain holes in the evaporator area are blocked. See Fig 8

3: Condensation that has drained onto the roof, has re entered the installation hole either under the roof seal of the airconditioner or a roof seam near the unit is faulty. If case 3 appears likely, the unit should be reinstalled using a new sealing gasket and following the Aircommand instructions explicity.

If there is a roof seam involved, clean the seam area thoroughly and reseal

with silicone.
Please Note: If water "pools" around the airconditioner (ie. The roof has sagged around the airconditioner) then the caravan manufacturer should be consulted.

4: In high humidity areas, condensation may occur on the underside of the evaporator tray above the inside plenum. See fig 10 and 24.
This usually is associated with running the unit on low speed for a prolonged period. Under these conditions use the high or medium speeds and avoid "auto"
As it will cause the inside fan to drop to low speed as the set point temperature is approached.
Later production is fitted with more insulation on the underside to alleviate this problem.
Quote part No 8001056……..

12: Water drips from the inside plenum only when it rains.
Check condition 11 point 3 above.
Water ingress could also be due to rain entering the canopy/chassis joint and not being able to drain away to the outside. Check the limber holes in the nose of the chassis. Refer fig 9 and check that the two drain holes are clear in the evaporator area.

13:Unit does not turn on. No display lights on the flip down display.
Proceed to check the following in order.
1: Check circuit breaker is on and the van has power.
2: Unscrew the inside plenum (4 screws) and disconnect plenum from control cable via the 4 pin plug. With a multimeter, check power at inlet junction block. 240V AC. If OK, shift multimeter to 12V DC range.
Check voltage across the control cable conductors. See Diag 1 & 1A
If the correct voltages are detected as per Diag 1, then suspect a break between this plug and the display module. Inspect plug pins. Disassemble the display and check the plug to board is OK. (see fig 23) If the voltages can be detected right up to the display, replace display.
3: If the voltages cannot be detected at the breakaway plug, then suspect the problem to be in the main control board enclosure.
Remove the canopy from the unit. Isolate the power to the aircon.
Remove lid of the RHS enclosure to gain access to the control board.
See Fig 1, 2 & 3. Firstly check the fuse on the board. If this fuse is blown it **may** indicate a fan motor fault. If the fuse is ruptured, replace with a M205 S/Blow 5A 20 x 5. If the fuse blows again, start investigating for a faulty condenser, evaporator motor or R/V.
If the fuse is not an issue, and the serial no of the unit is <u>below IBSA02177.</u> Then one needs to investigate the power supply driving the main board. If the board is powered from a transformer see fig1, then power up the unit, remove the 2 pin white plug that connects the transformer to board and with a multimeter set to 12V AC, check output. If no output, suspect a faulty transformer. Replace with a SMPS Part No 8001039……..
For units below serial no IBSA 03280 and above 02177, these units will be fitted with an external switch mode power supply. See fig 2.
Here again remove the 2 pin white plug from the SMPS to board, set multimeter to 12V DC and check output. Earlier SMPS's had an adjustment pot see fig 20. It is worthwhile adjusting this pot if there is no output.
If the power supply is deemed faulty then replace part No 8001039……
If the power supply is outputting OK, then change the main board.
Units Serial no above IBSA 03280 will have a main control board with the power supply integrated on it. see fig 3
If there is no voltage output at the control cable with the integrated version, change the control board.

Recharging in the field:

If the unit has the following deficiencies in cooling mode:
Assuming outside temp. is close to 35C and inside 27C

1: The difference in temp. between the inside return air and the discharge air is less than 14C. (inside fan on Hi)
2: The inside coil temp (as measured with thermistor (see pp 1&2) is more than 14C
3: The suction pressure (measured at access valve see figs 12) is less than 400 Kpa, then it is indicative of a lack of refrigerant charge.

Firstly examine the hermetic system for possible leaks. Check both access valves with an electronic detector.
If any access valves are suspect, then renew the caps with models incorporating a seal. See fig 12d.
Any leak found in solder joints etc. will require the unit to have any remaining refrigerant recovered, the leak repaired and checked and the unit evacuated and recharged. (720 grams)
A unit that may have had a leak at an access valve and this has been rectified, can have refrigerant added. Add refrigerant until a good fit is made with the above parameters. I.e. Suction pressure above 400 Kpa, delta T greater than 14C and the inside coil below 14C.

The use of Independent generators or Inverters:

Failure to start the Aircon:

1: Check that the Generator or Inverter is rated at 2.8 KW or greater.
2: Check that no other accessories are making a demand on the power load.
To check on possible hidden loads, directly wire the aircon.
to the genset. If unit starts OK then advise the client to identify and isolate the extra electrical load.

The display panel has an unusual display of numerals. Unit is however OK
On mains power:

1: This is a sign of a poor waveform being generated.
Advise client to have generator repaired or replaced with
A better quality unit.

SPECIFICATIONS

Electrical rating:	240V 50Hz
Nom. Cooling capacity	3.2KW
Nom. Heating capacity	3.2KW
Max rated current cooling	5.4Amps
Max rated current heating	5.6Amps
L/R Amps	20Amps
Inside air delivery	140 l/s
Installed weight	49Kg
Overall height	220mm
Overall width	825mm
Overall length	1040mm
Inside plenum height	65mm
Inside plenum width	535mm
Inside plenum length	555mm.
Plenum weight	2.4kg

Refrigerant Charge 720grms R22 or 720grms R407C **if marked**

Compressor:

	Aisulu QHR 19E (early production)		
Or	Sanyo C-RH100H5B		Pt. No 0018290
	Run capacitor	30 µf x 440 VAC	4101072
	Start capacitor	(if used) 64 µf x 330 VAC	8001040
	Start relay	Omron AMVL-300A	8001042
Or	PTC relay	GYE101A	

Condenser and Evap fan motors (single speed to s/n 001177) 4402060
Fan Capacitor 1.5 µf

Condenser Fan (3 speed s/n 001178 upward) 8001052
Fan Capacitor 2 µf

Evaporator Fan (3 speed s/n 001178 upward) 8001051
Fan Capacitor 2 µf

Main electronic controller (outside unit) up to s/n 001177 5601050
Modified for single speed evap fan
Main electronic conroller (outside unit) with inbuilt SMPS 5601056

Speed control card (up to s/n 001178) 4402061

Inside electronic display 5601060

Thermistor temperature / resistance relationship

Table 1

Actual temperature °C	Resistance in K Ω
-10	45
-9	43
-8	41
-7	39
-6	37
-5	36
-4	34
-3	32
-2	31
-1	30
0	28
1	27
2	26
3	25
4	24
5	23
6	22
7	21
8	20
9	19
10	18
11	17.5
12	17
13	16
14	15.5
15	15
16	14.3
17	13.7
18	13
19	12.6
20	12.2
21	11.7
22	11.2
23	10.8
24	10.4
25	10
26	9.6
27	9.2
28	8.9
29	8.6
30	8.3
31	8
32	7.7
33	7.4
34	7.1

35	6.8
36	6.6
37	6.4
38	6.1
39	5.9
40	5.7
41	5.5
42	5.3
43	5.2
44	5
45	4.8
46	4.6
47	4.5
48	4.4
49	4.2
50	4.1
51	3.9
52	3.8
53	3.7
54	3.6
55	3.5
56	3.3
57	3.25
58	3.1
59	3
60	2.9
61	2.8
62	2.75
63	2.7
64	2.6
65	2.5
66	2.45
67	2.4
68	2.3

Example:

The thermistor sensor is in free air and the free air temp. is measured as 35C.
The resistance of the thermistor assy. is measured at 6.8KΩ
This indicates the thermistor assy is OK

The thermistor assy in free air is 20 C.
The resistance is measured as 6.6KΩ which relates to 36C
This indicates that the thermistor is defective and should be changed.

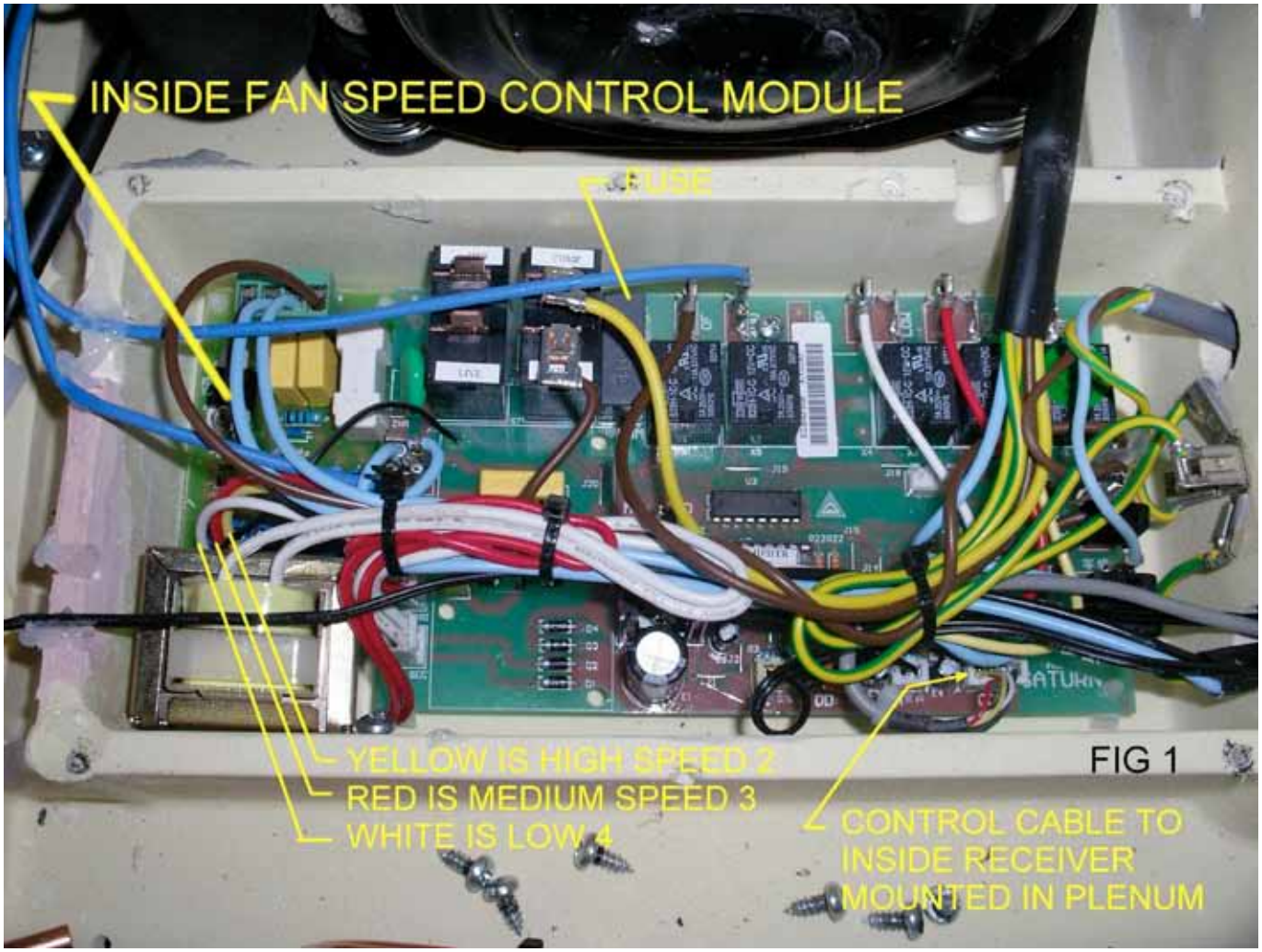

INSIDE FAN SPEED CONTROL MODULE
FUSE
YELLOW IS HIGH SPEED 2
RED IS MEDIUM SPEED 3
WHITE IS LOW 4
CONTROL CABLE TO
INSIDE RECEIVER
MOUNTED IN PLENUM

FIG 1

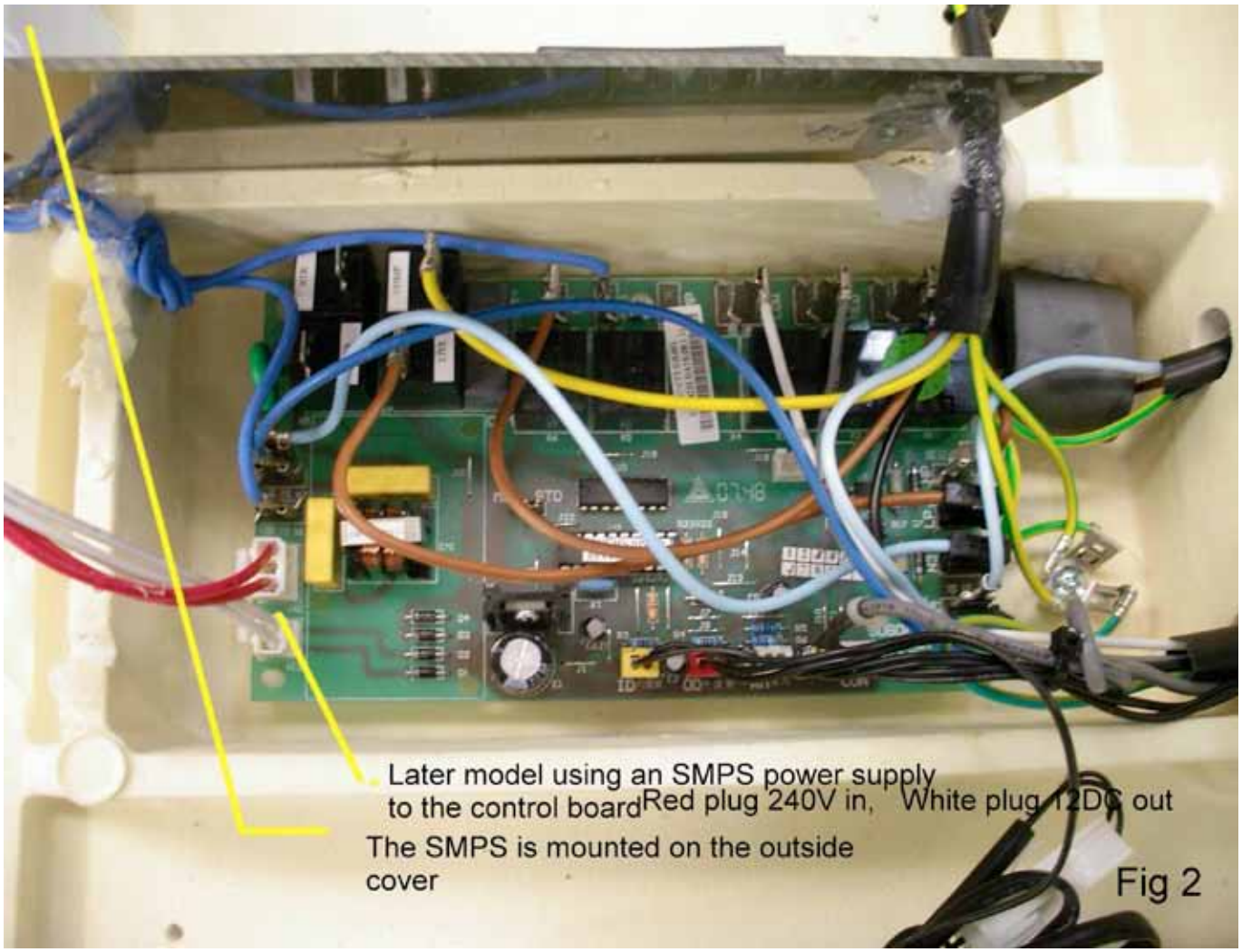

Later model using an SMPS power supply
to the control board
Red plug 240V in,
White plug 12DC out
The SMPS is mounted on the outside
cover

Fig 2

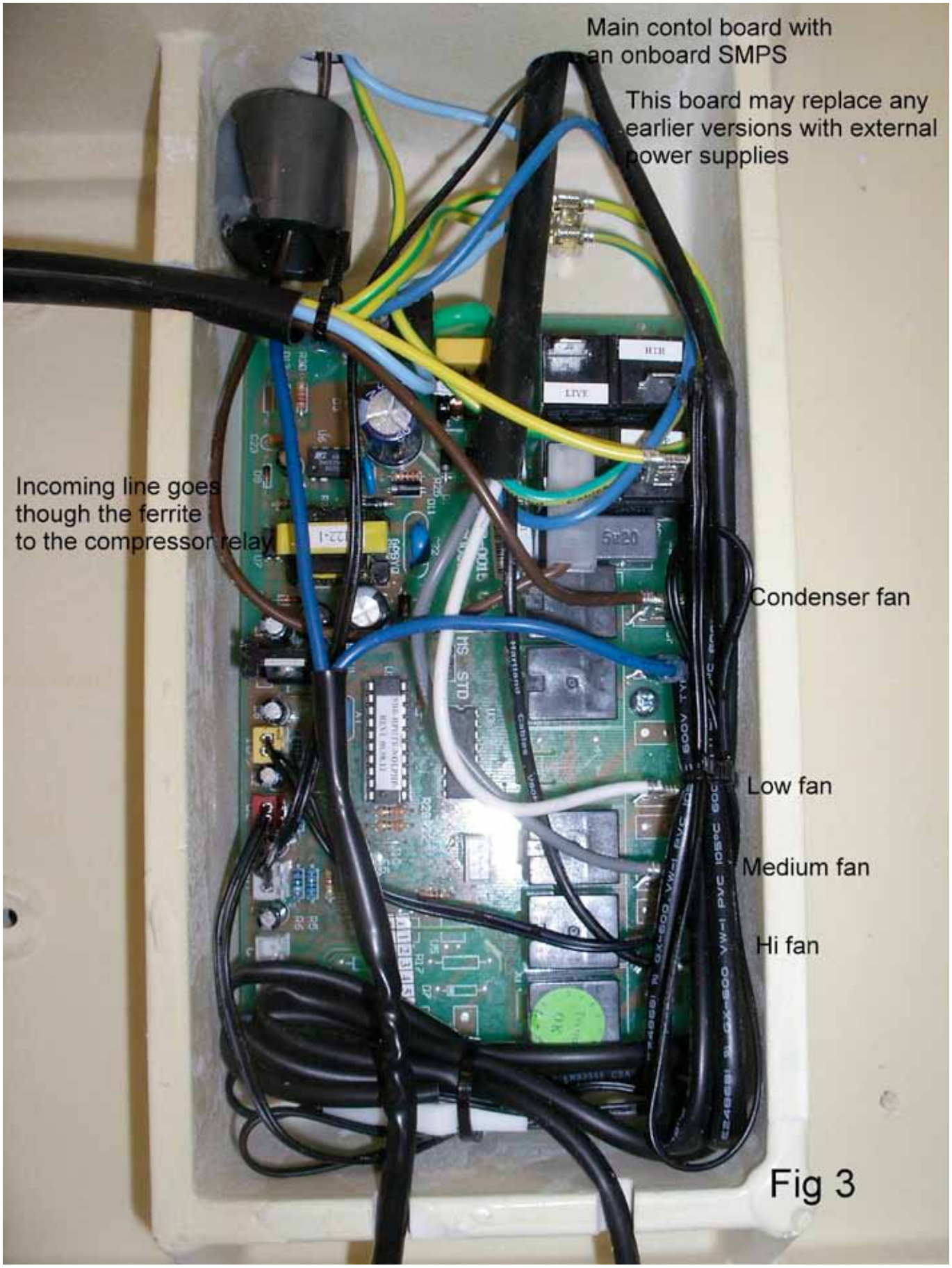

Main contol board with
an onboard SMPS
This board may replace any
earlier versions with external
power supplies
Incoming line goes
though the ferrite
to the compressor relay
Condenser fan
Low fan
Medium fan
Hi fan

Fig 3

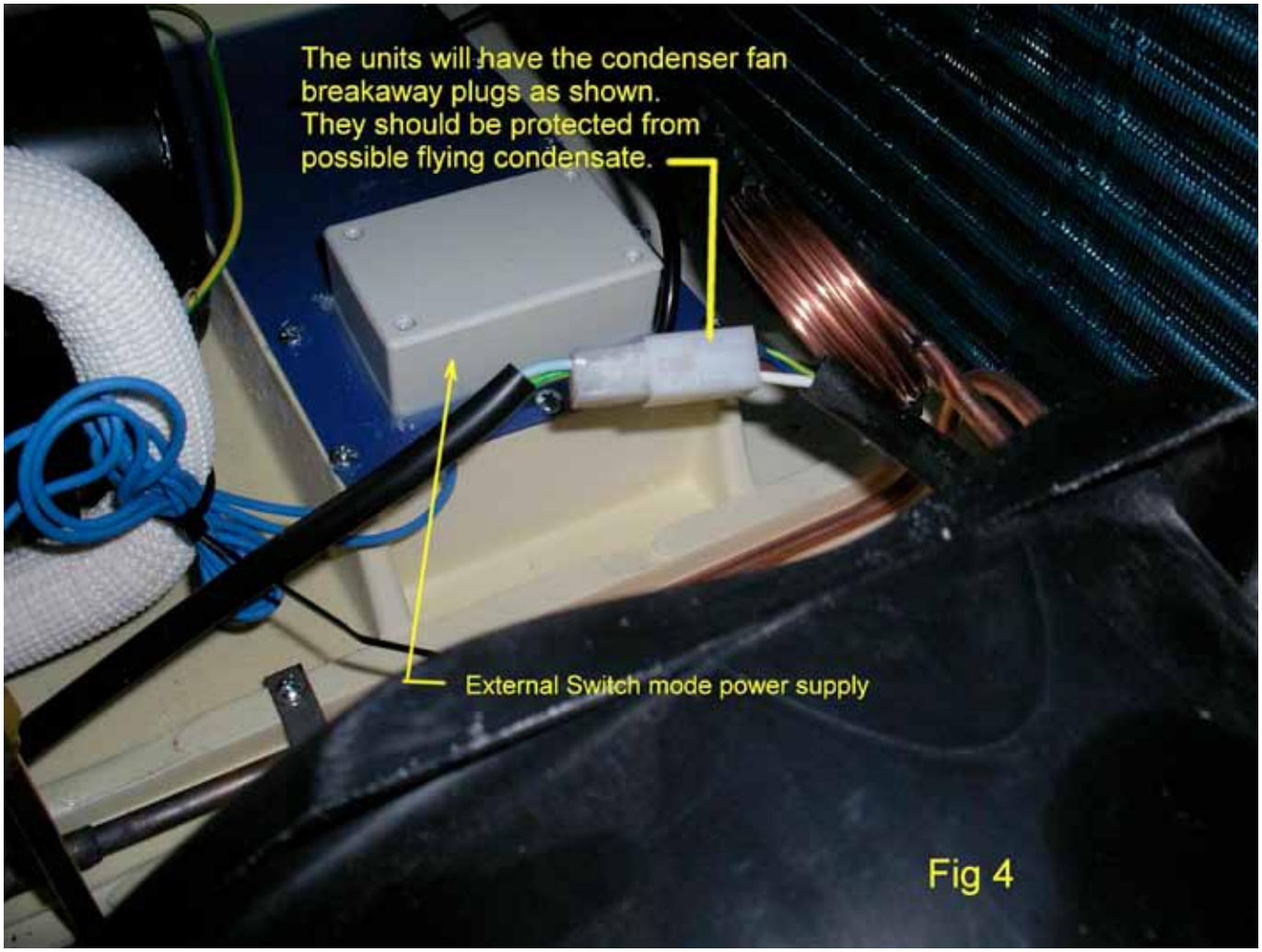

The units will have the condenser fan breakaway plugs as shown. They should be protected from possible flying condensate.
External Switch mode power supply

Fig 4

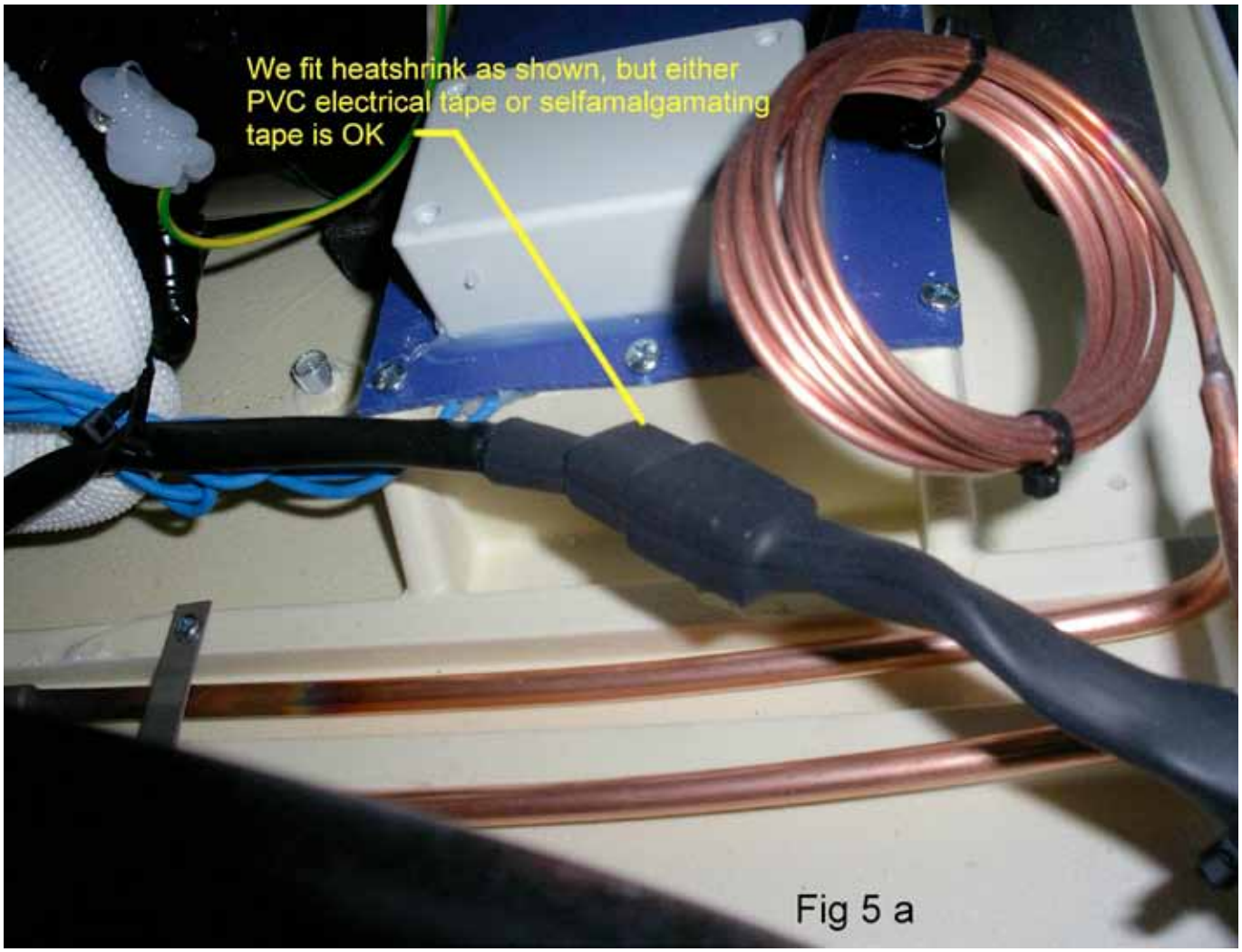

We fit heatshrink as shown, but either PVC electrical tape or selfamalgamating tape is OK

Fig 5 a

Fig 5 b

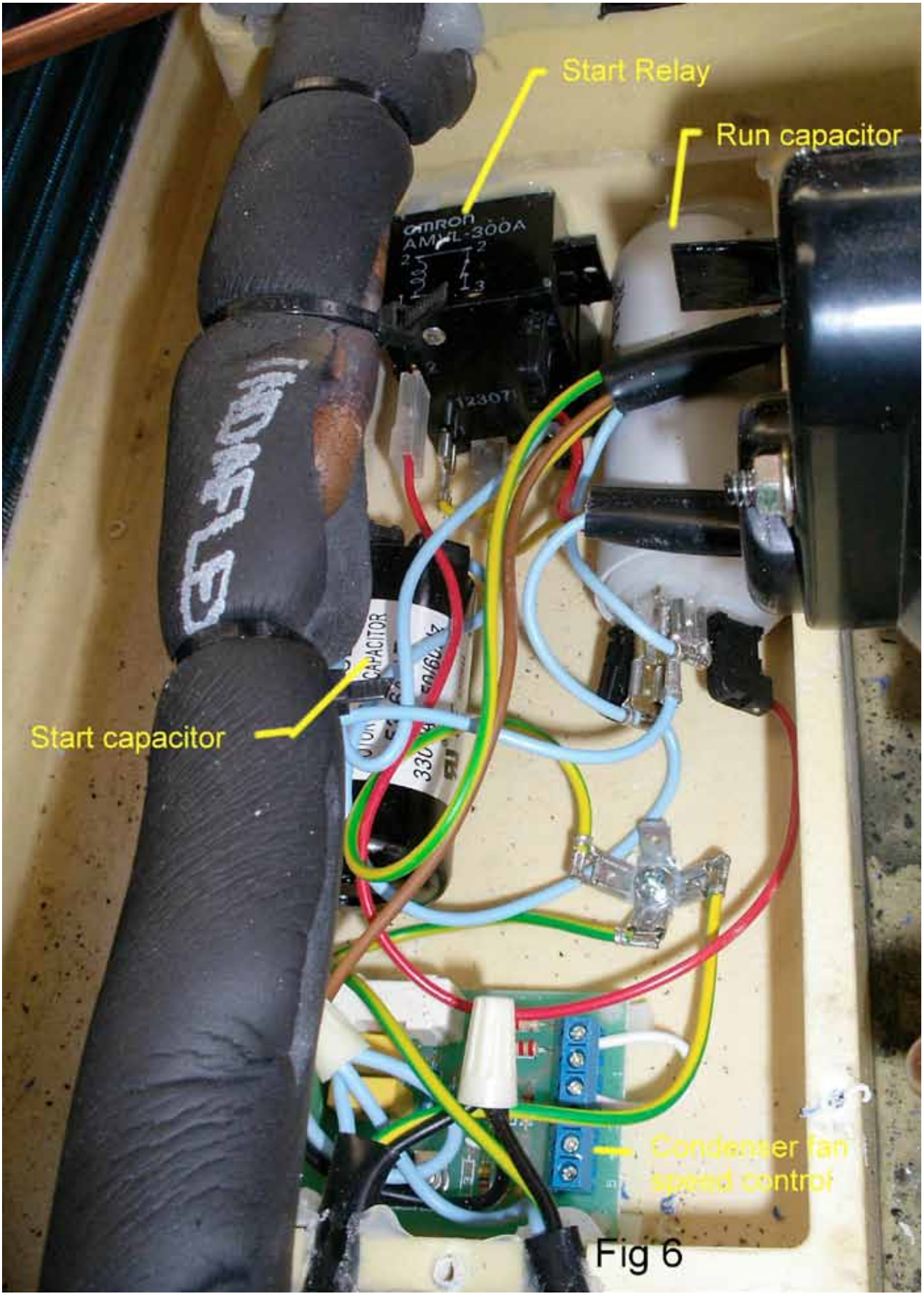
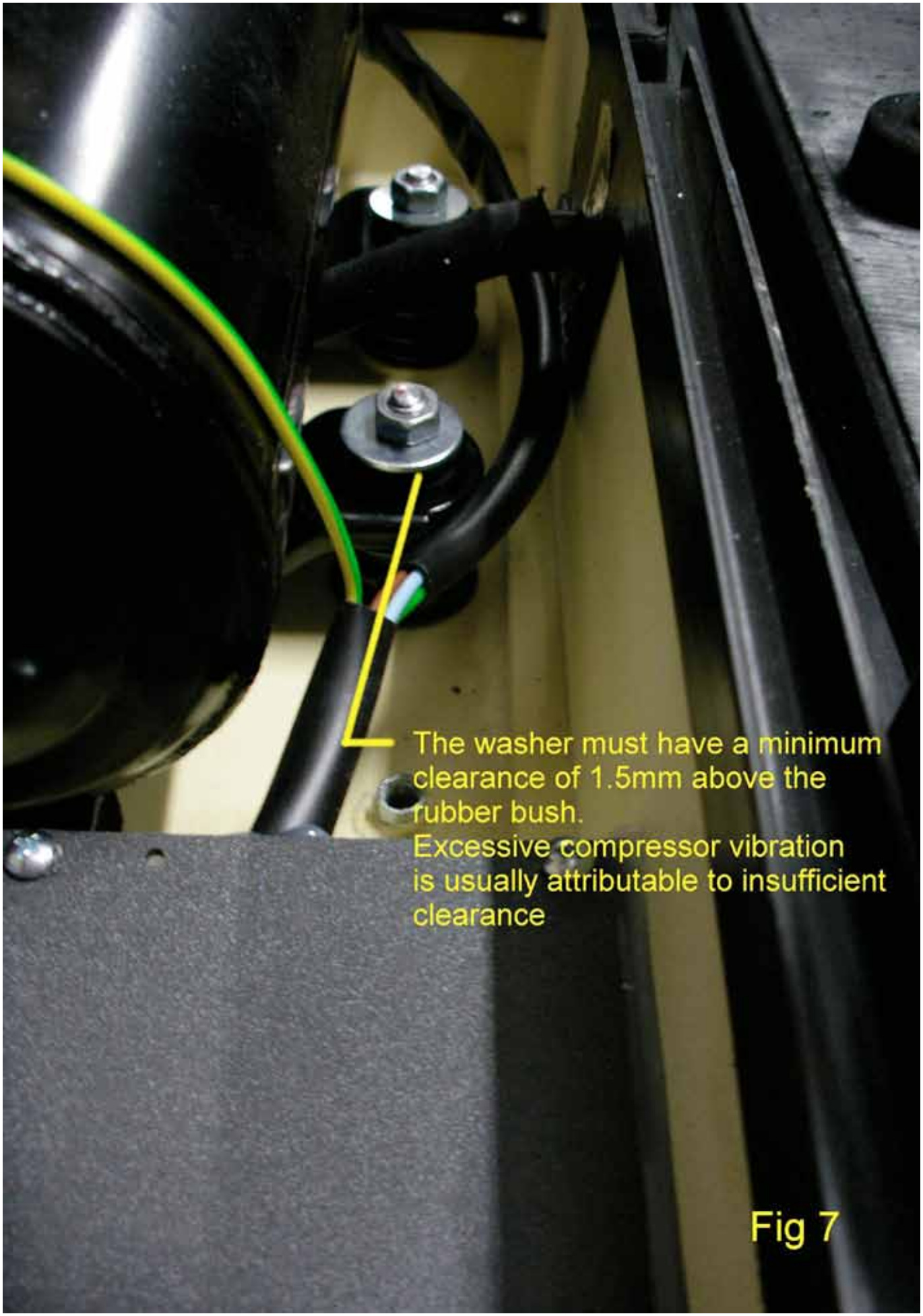

Start Relay
Run capacitor
Start capacitor
Condenser fan
speed control

Fig 6


The washer must have a minimum clearance of 1.5mm above the rubber bush.
Excessive compressor vibration is usually attributable to insufficient clearance
Fig 7

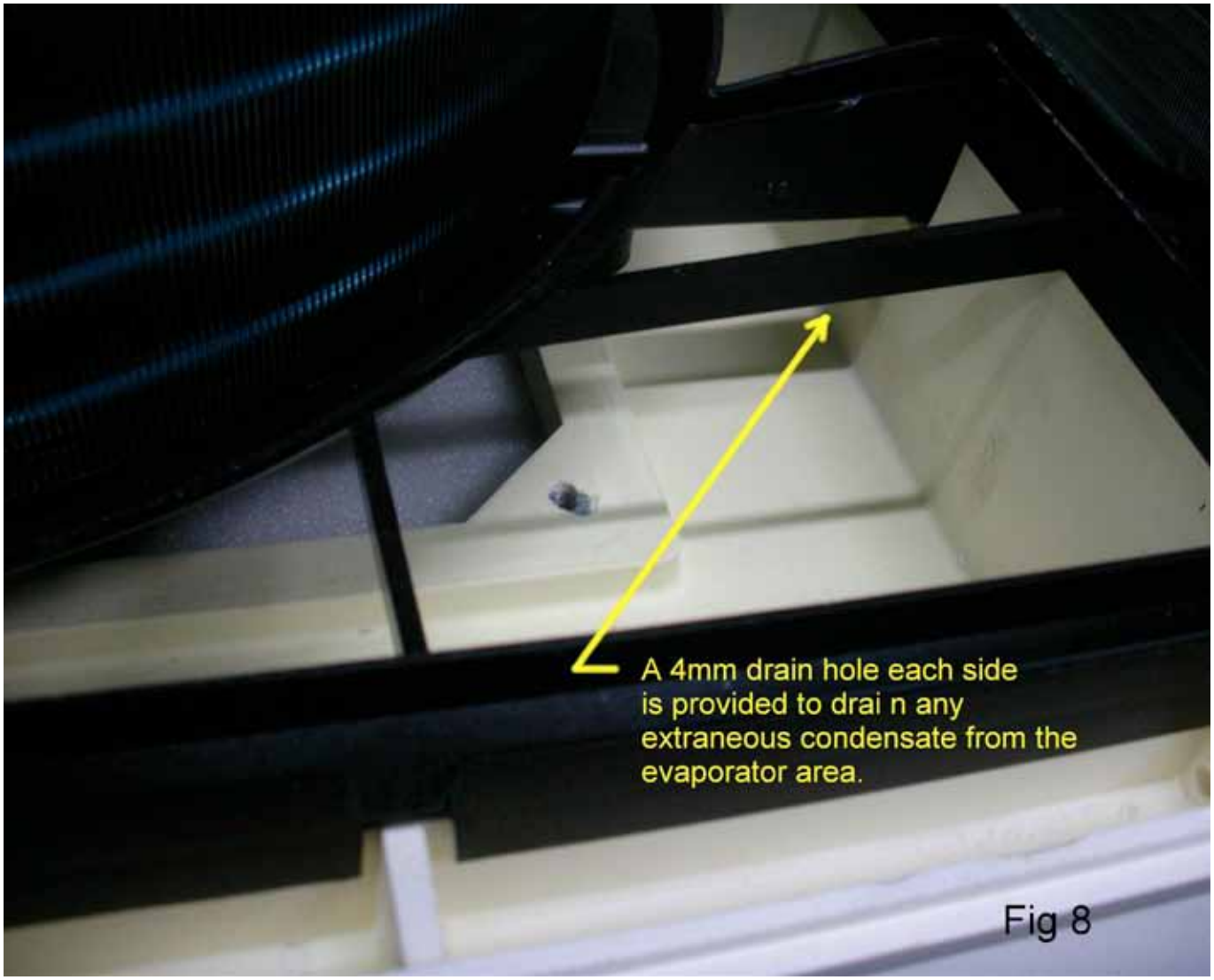

A 4mm drain hole each side
is provided to drai n any
extraneous condensate from the
evaporator area.

Fig 8

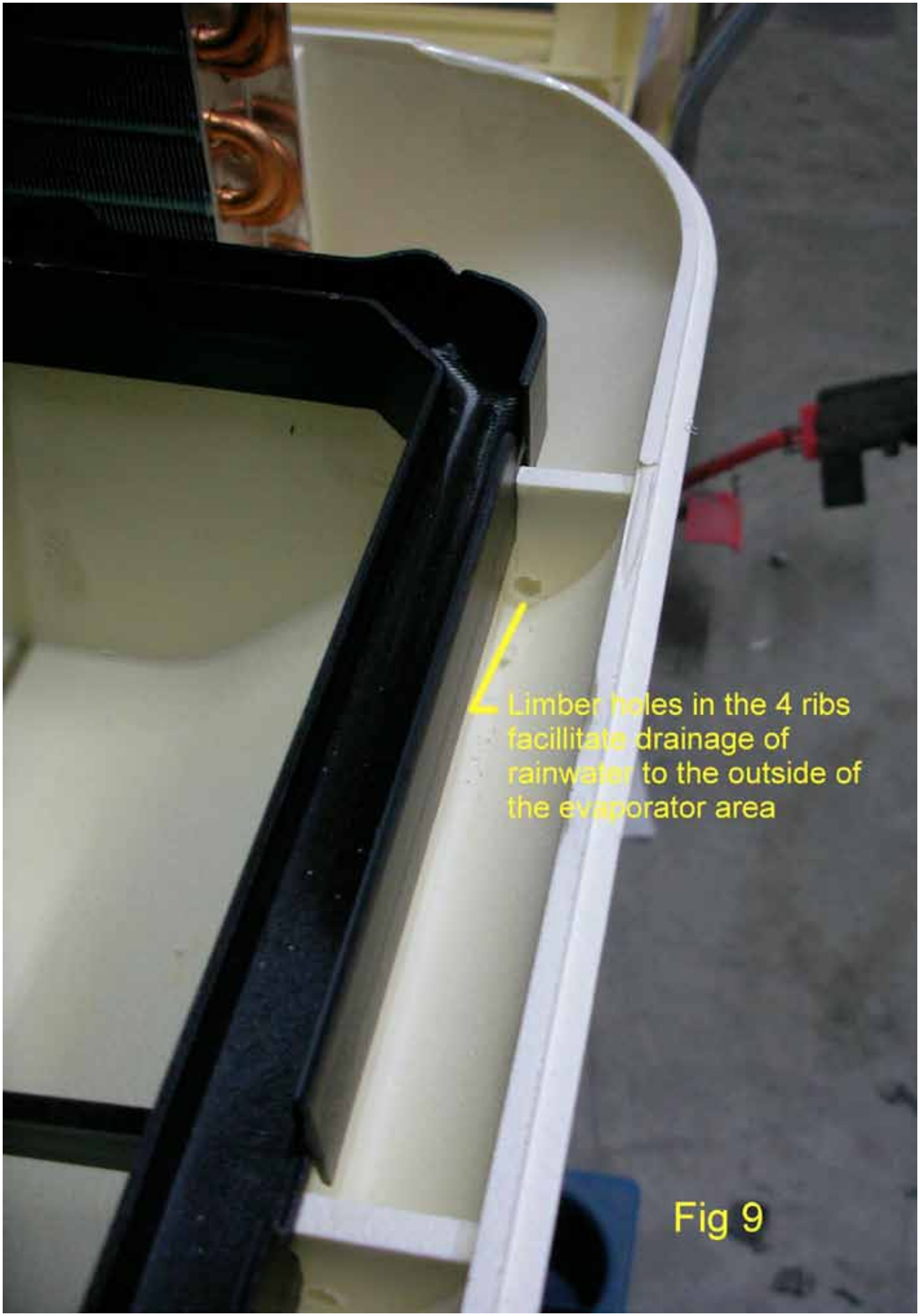
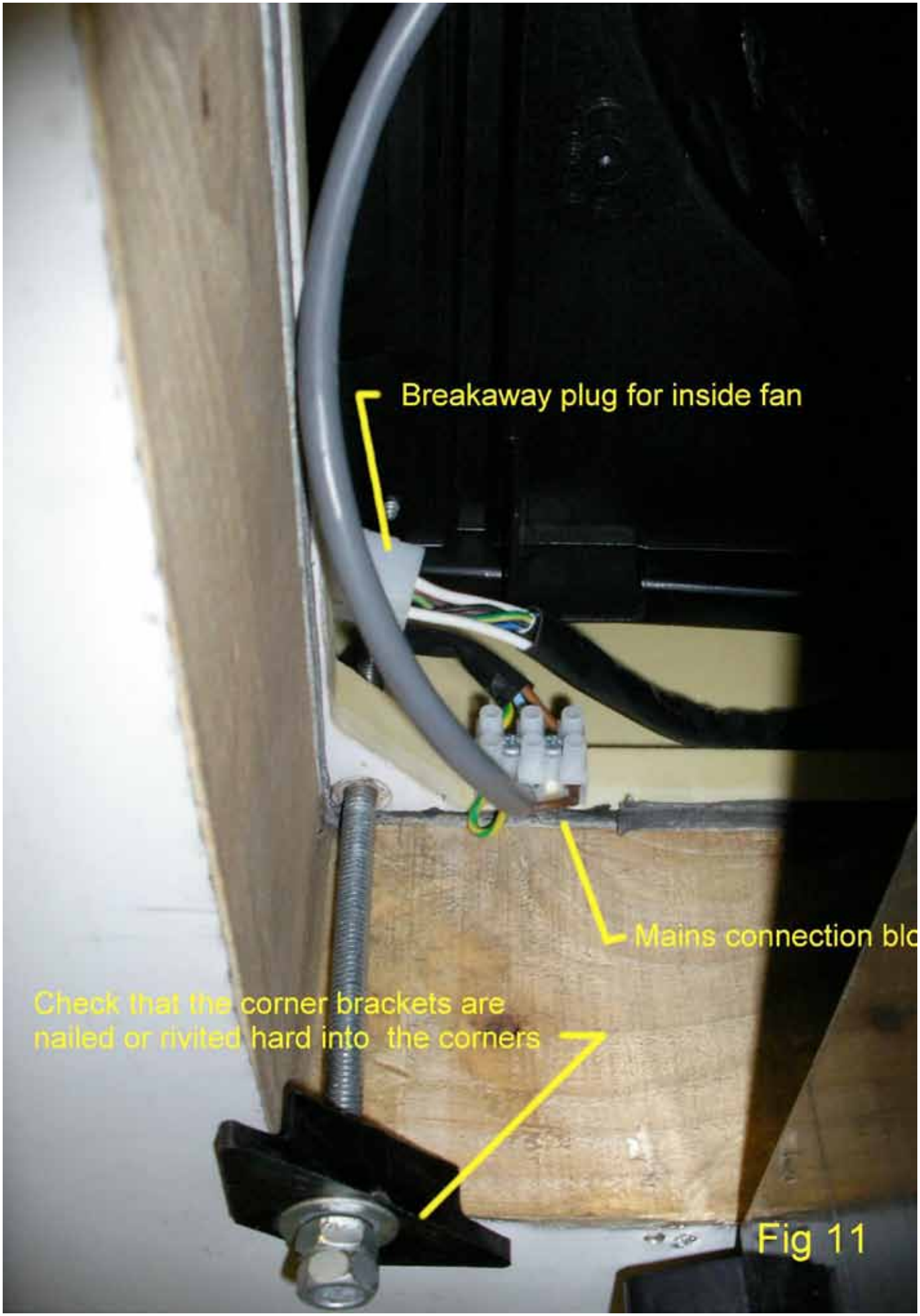

Limber holes in the 4 ribs facillitate drainage of rainwater to the outside of the evaporator area

Fig 9


Check that the duct is securely screwed into the boxing surrounding the 356 x 356 hole
Check that the extension duct is fitted snuggly onto the spigot of the duct
Fig 10


Breakaway plug for inside fan
Mains connection blo
Check that the corner brackets are
nailed or rivited hard into the corners
Fig 11

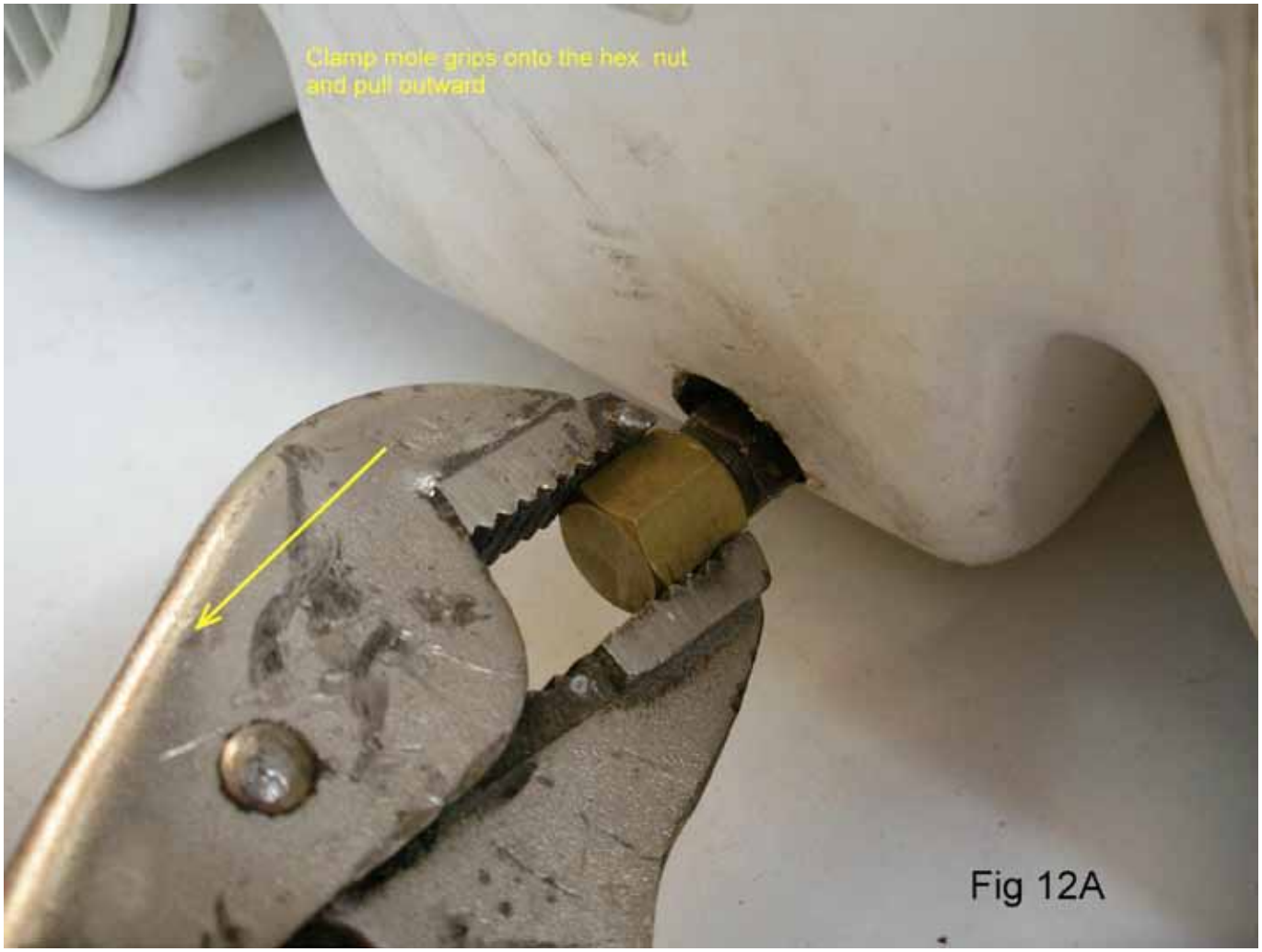


Fig 12A

Fig 12B

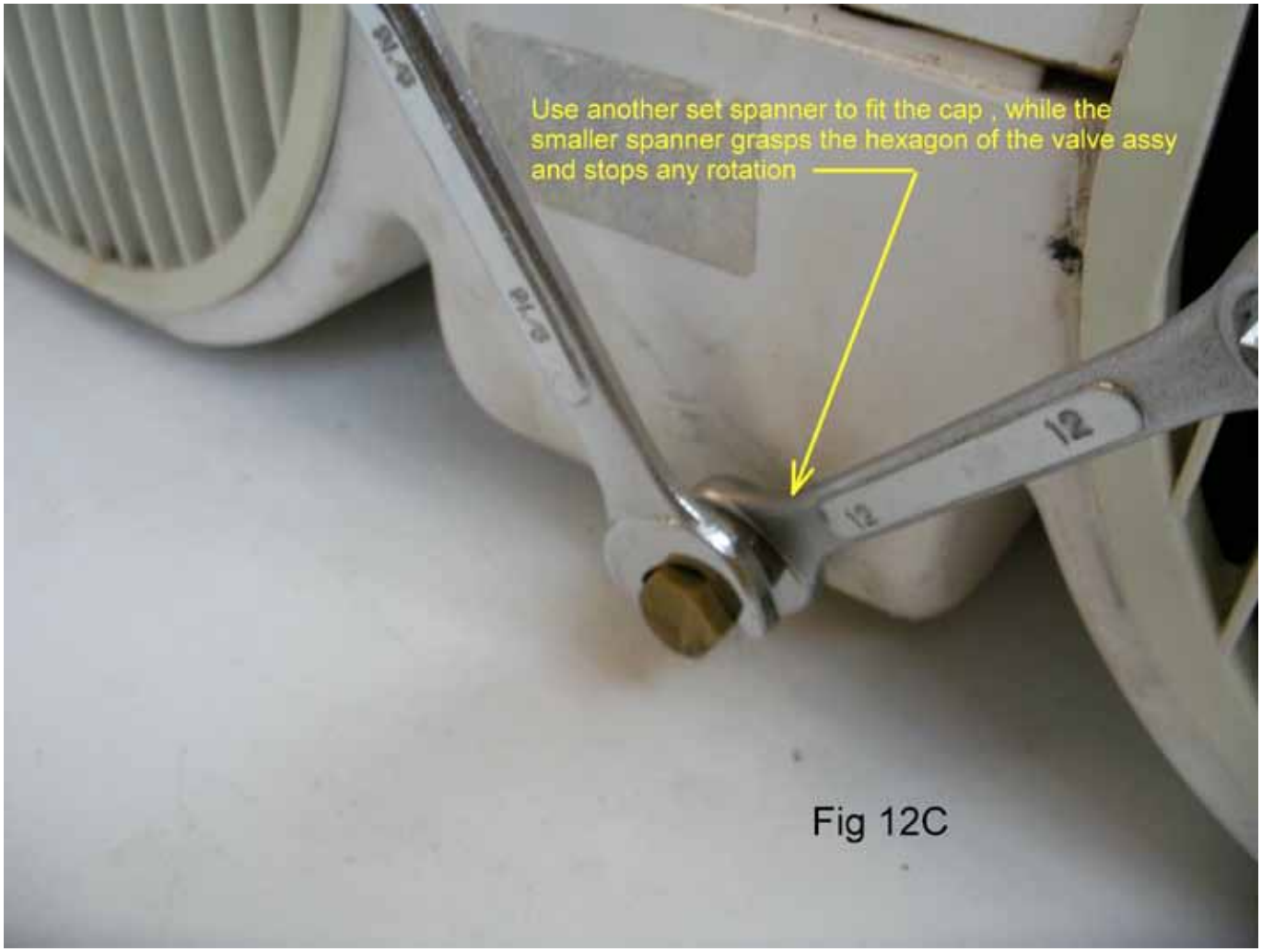


Fig 12C

Fig 12D


This is the correct way up.
Note the joint line is closer to the bottom than the top

Fig 13

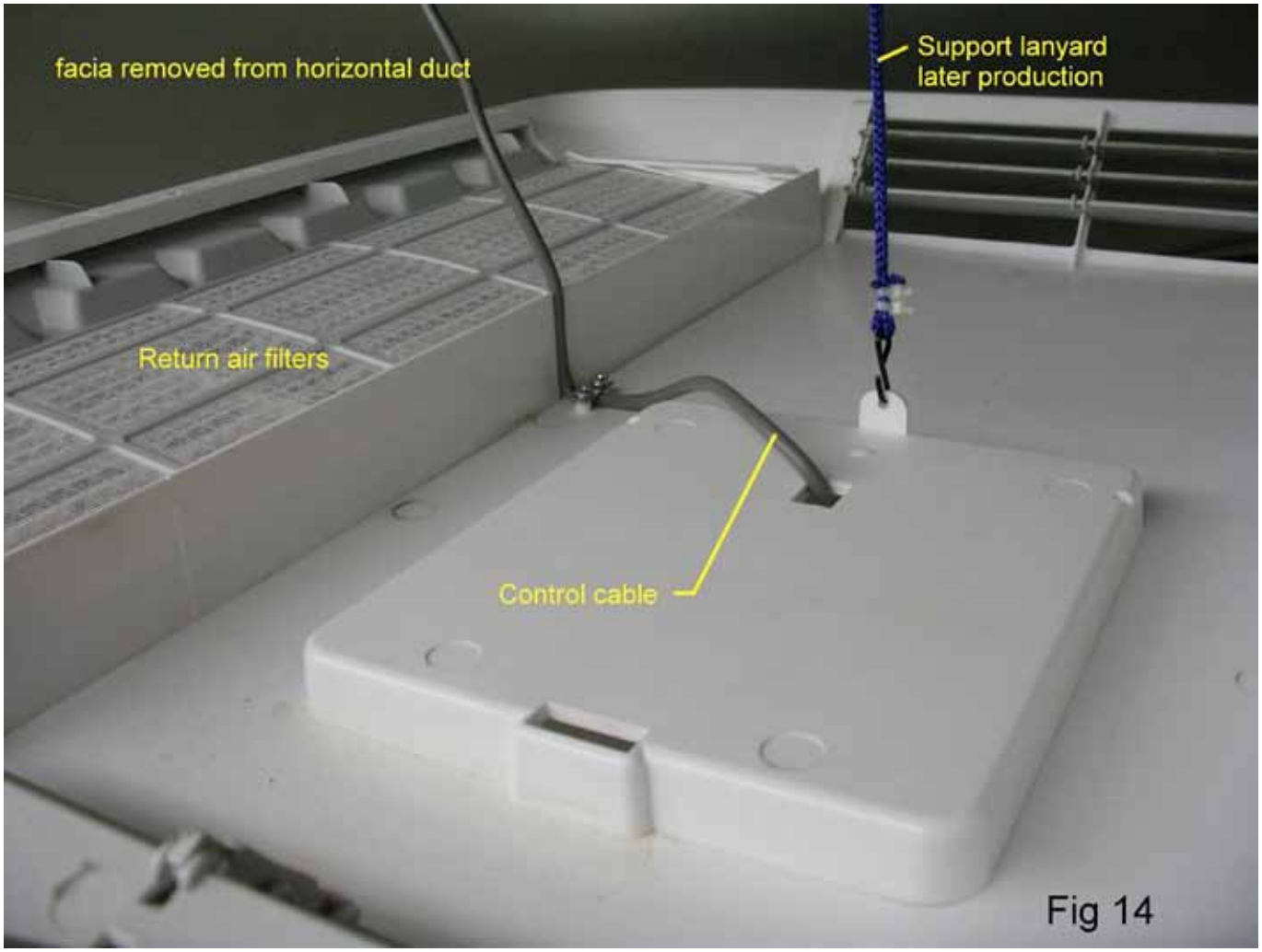
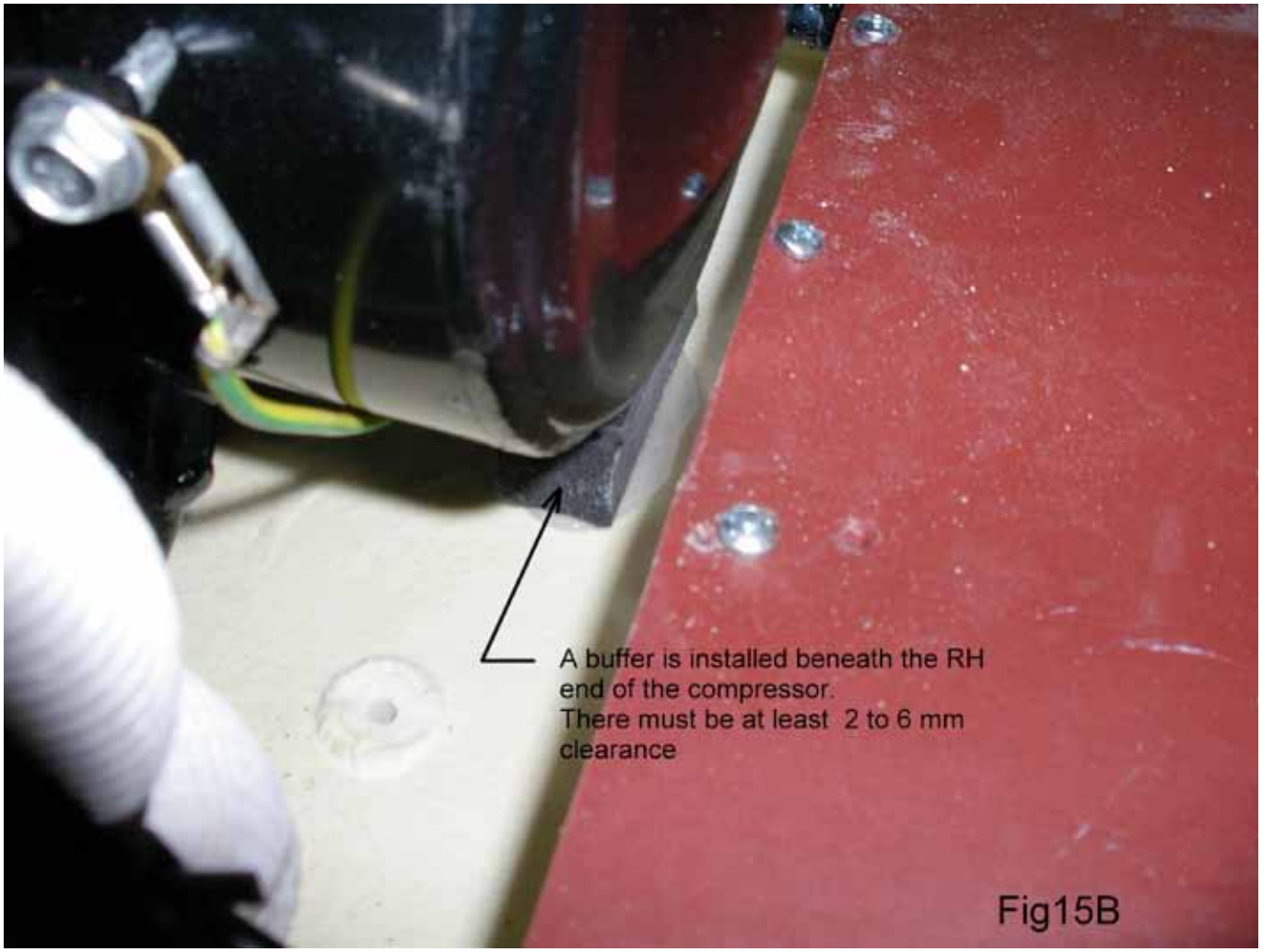
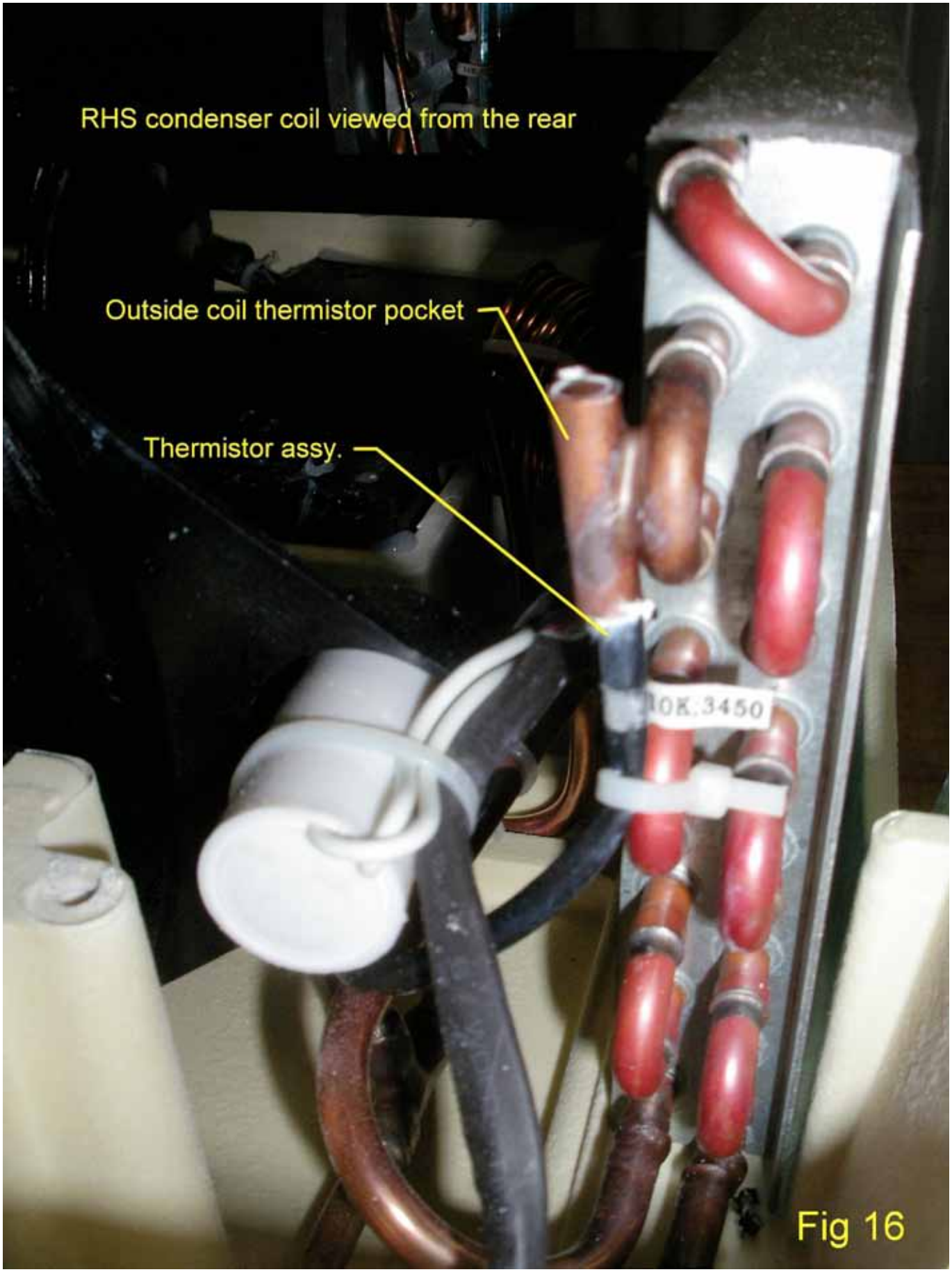


Fig 14

Fig 15A


A buffer is installed beneath the RH
end of the compressor.
There must be at least 2 to 6 mm
clearance
Fig15B


RHS condenser coil viewed from the rear
Outside coil thermistor pocket
Thermistor assy.
Fig 16


Later production units incorporating a radiused entry to duct
Retracting control cable
Support lanyard

Fig 17

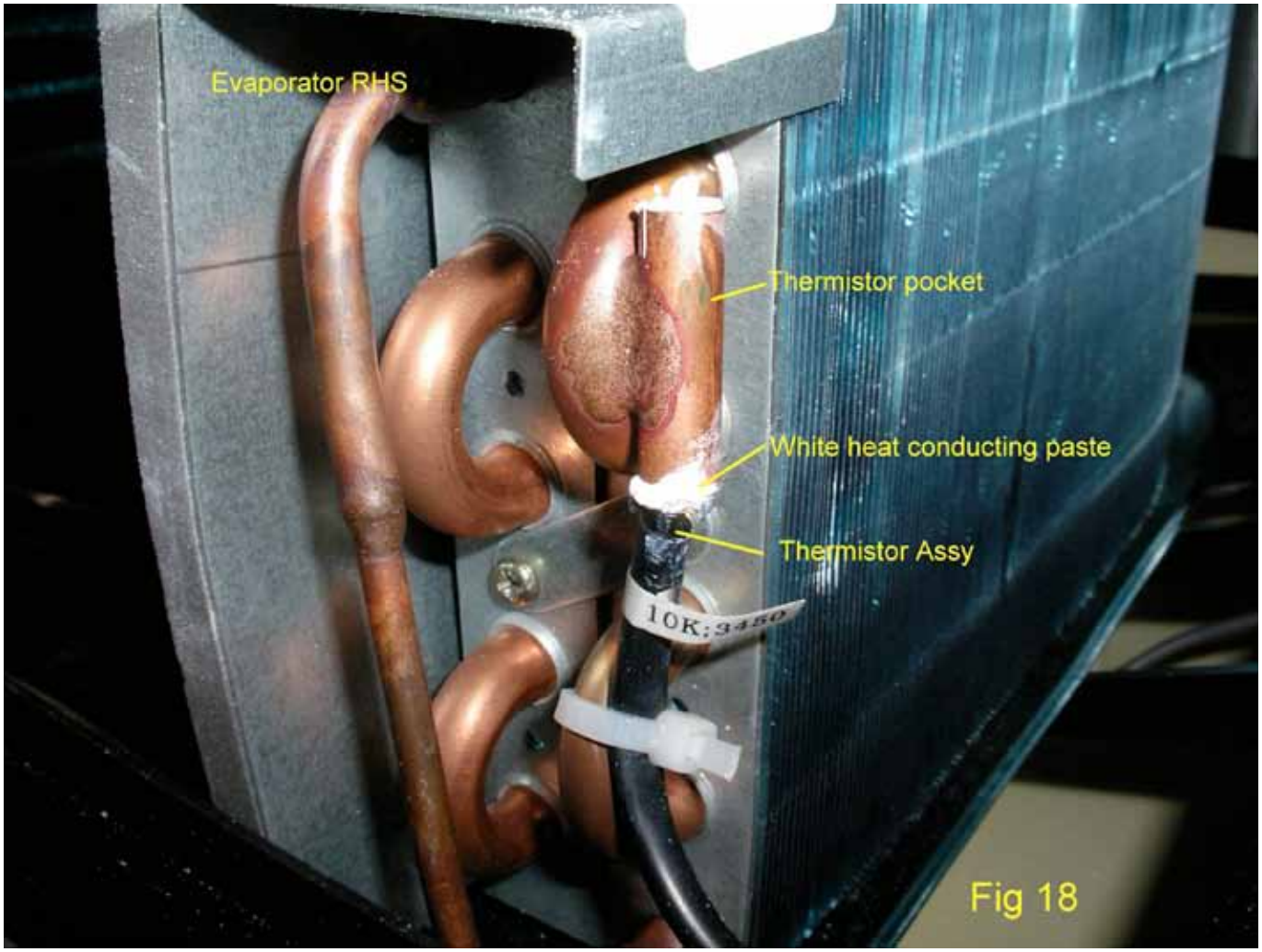

Evaporator RHS
Thermistor pocket
White heat conducting paste
Thermistor Assy
10K;3450

Fig 18

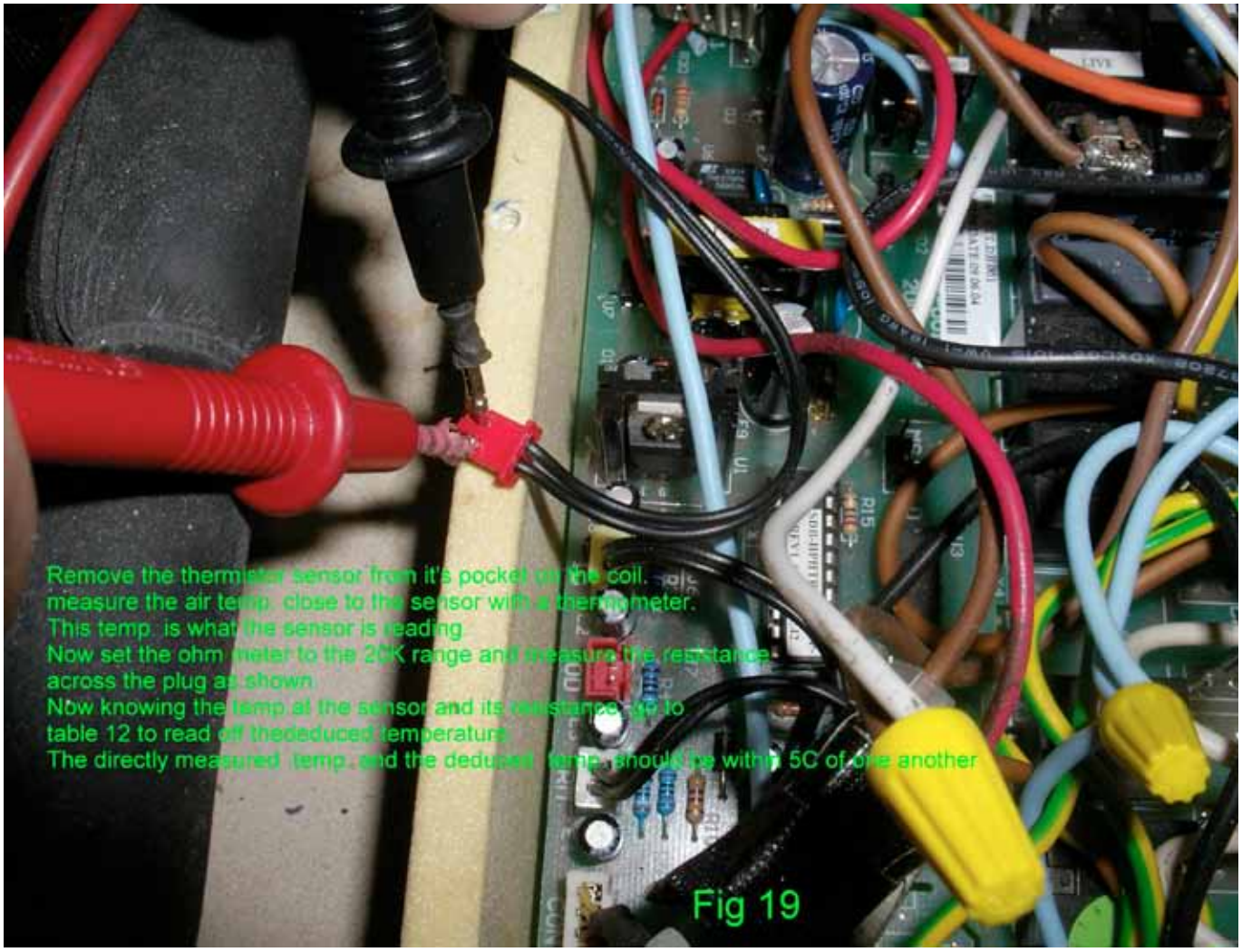

Remove the thermistor sensor from it's pocket on the coil.
measure the air temp. close to the sensor with a thermometer.
This temp. is what the sensor is reading.
Now set the ohm meter to the 20K range and measure the resistance
across the plug as shown.
Now knowing the temp at the sensor and its resistance, go to
table 12 to read off thededuced temperature.
The directly measured temp. and the deduced temp. should be within 5C of one another.

Fig 19

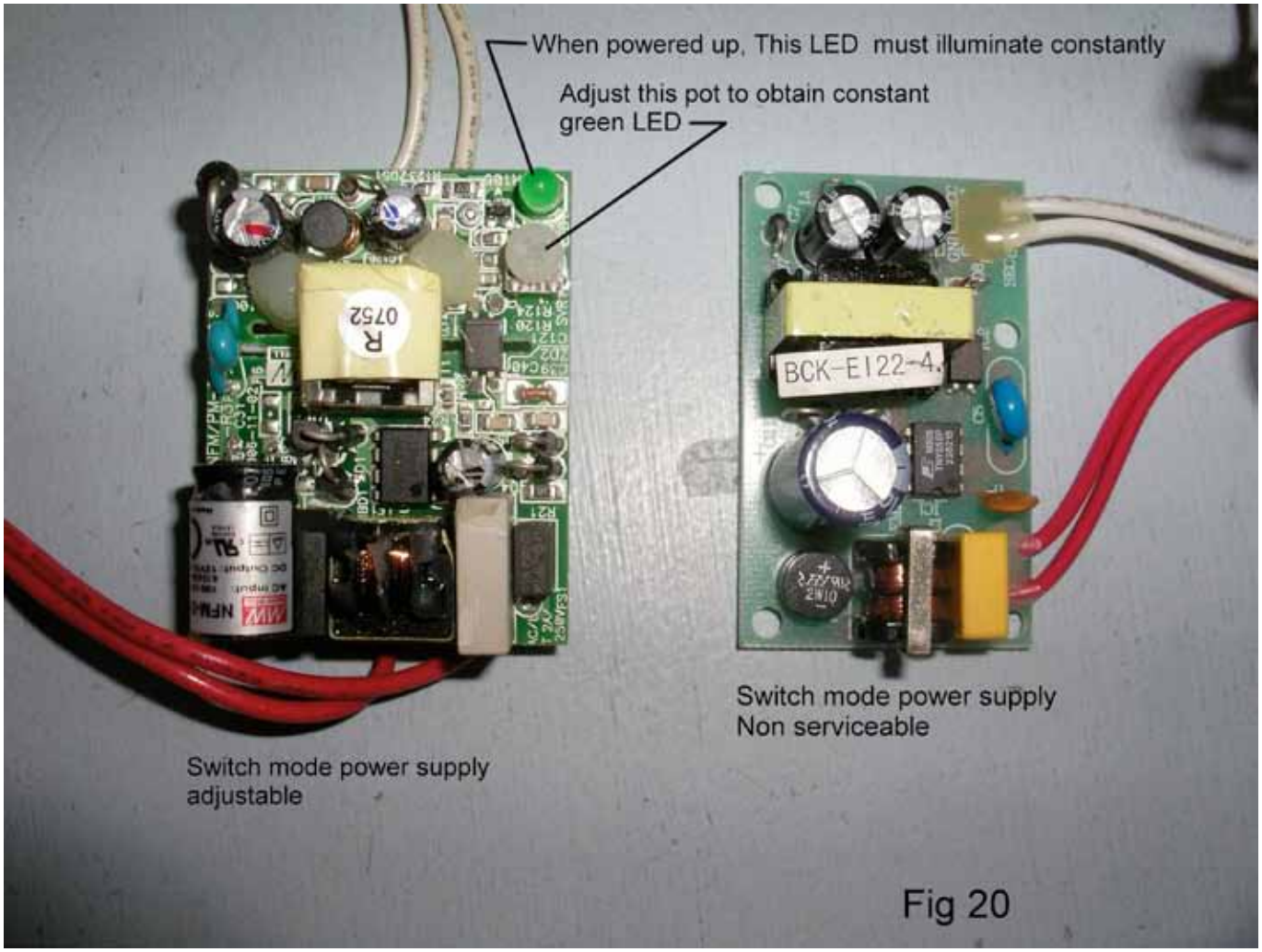

When powered up, This LED must illuminate constantly
Adjust this pot to obtain constant green LED
BCK-E122-4.
Switch mode power supply Non serviceable
Switch mode power supply adjustable

Fig 20

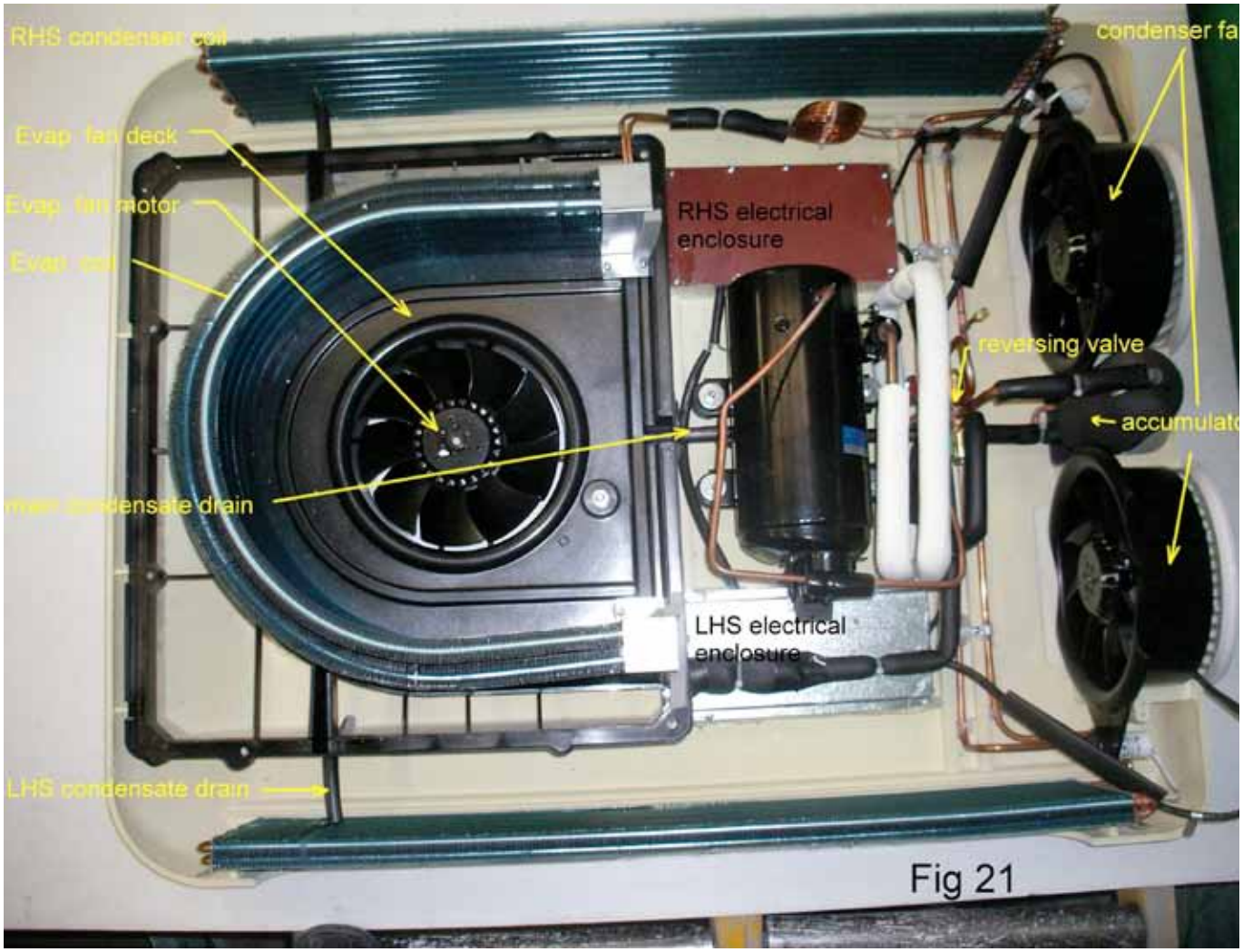

RHS condenser coil
condenser fa
Evap fan deck
Evap fan motor
Evap coil
RHS electrical enclosure
reversing valve
accumulat
main condensate drain
LHS electrical enclosure
LHS condensate drain

Fig 21

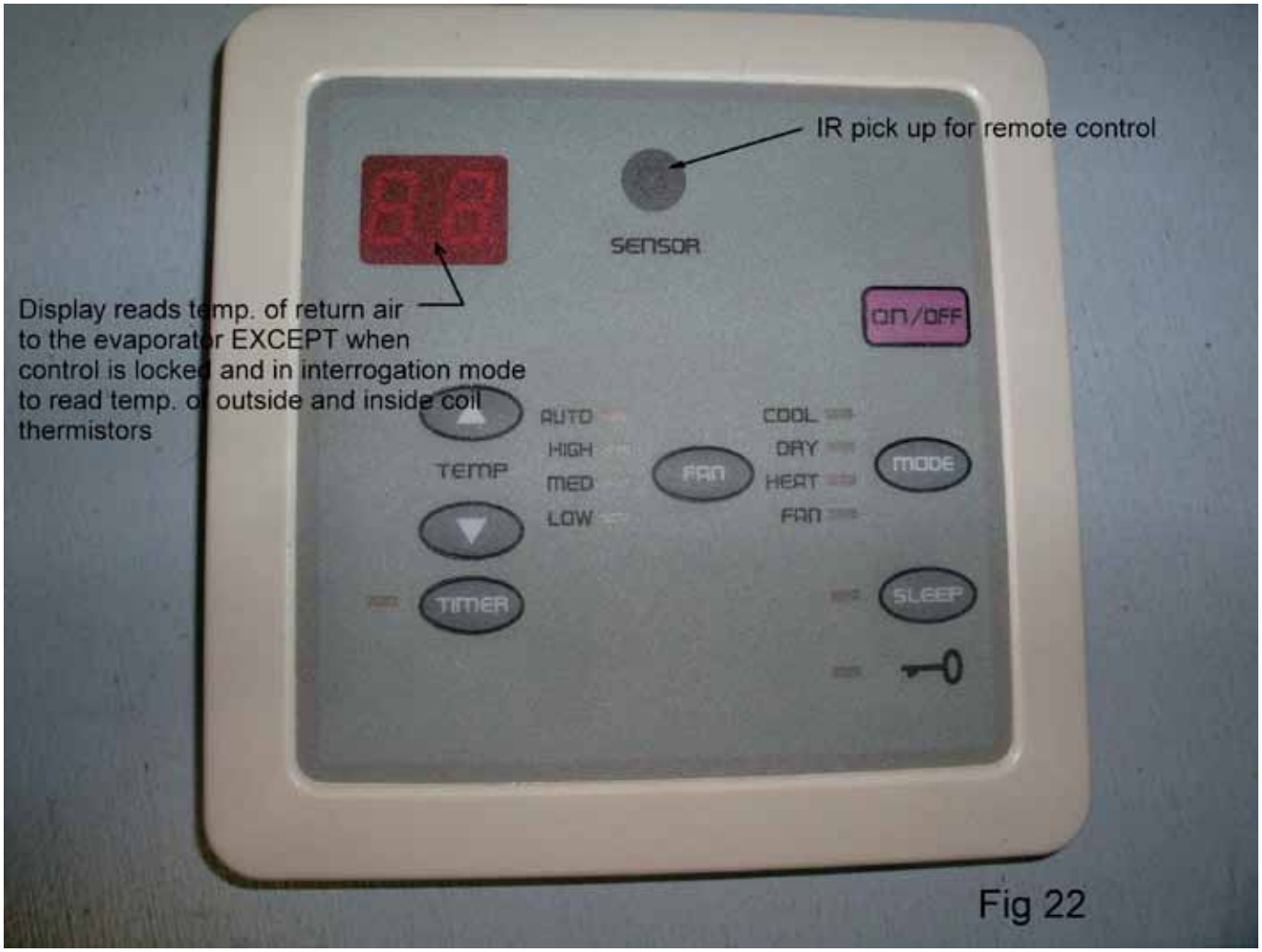

IR pick up for remote control
SENSOR
Display reads temp. of return air to the evaporator EXCEPT when control is locked and in interrogation mode to read temp. of outside and inside coil thermistors
ON/OFF
AUTO
HIGH
MED
LOW
FAN
COOL
DRY
HEAT
FAN
MODE
TEMP
TIMER
SLEEP

Fig 22

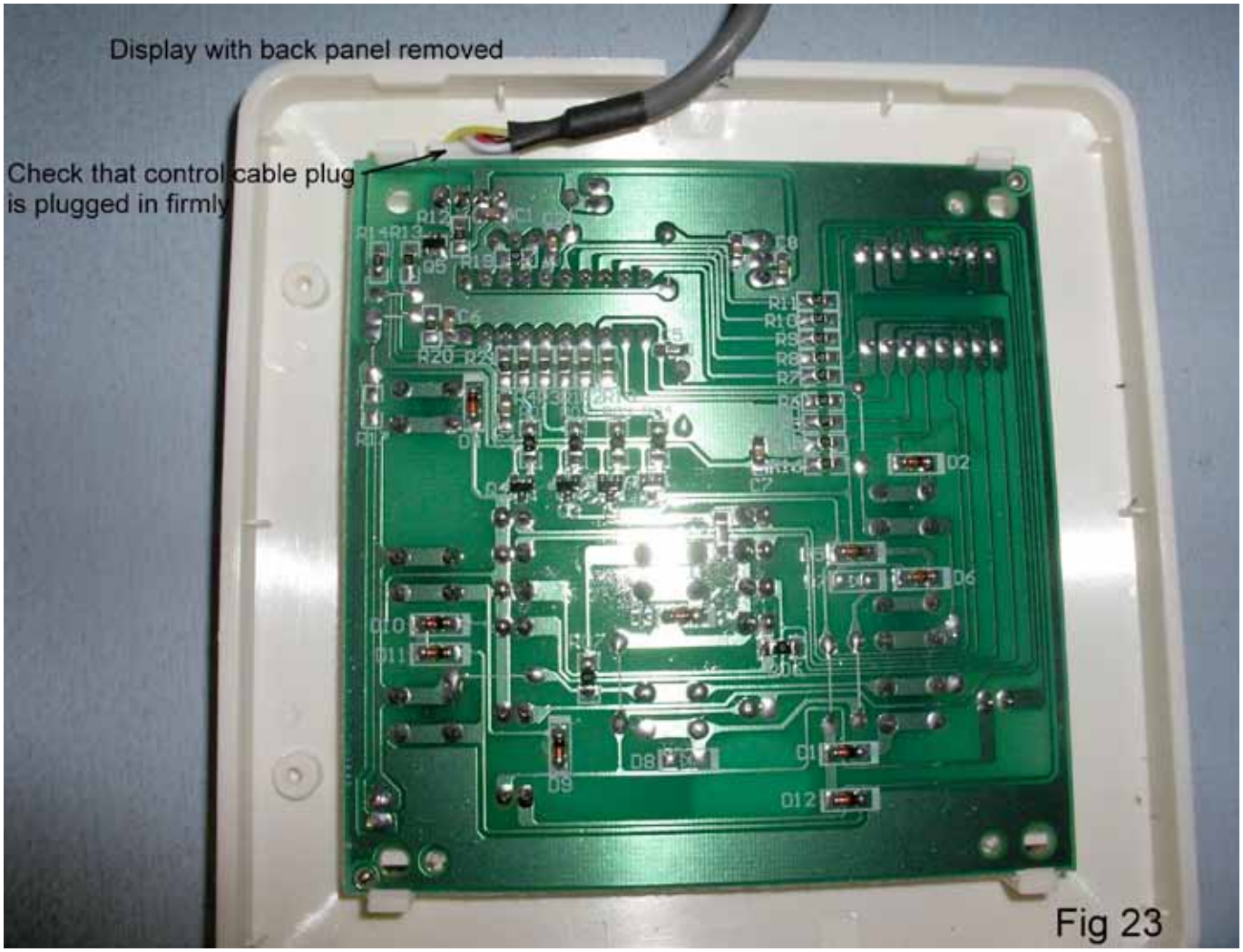
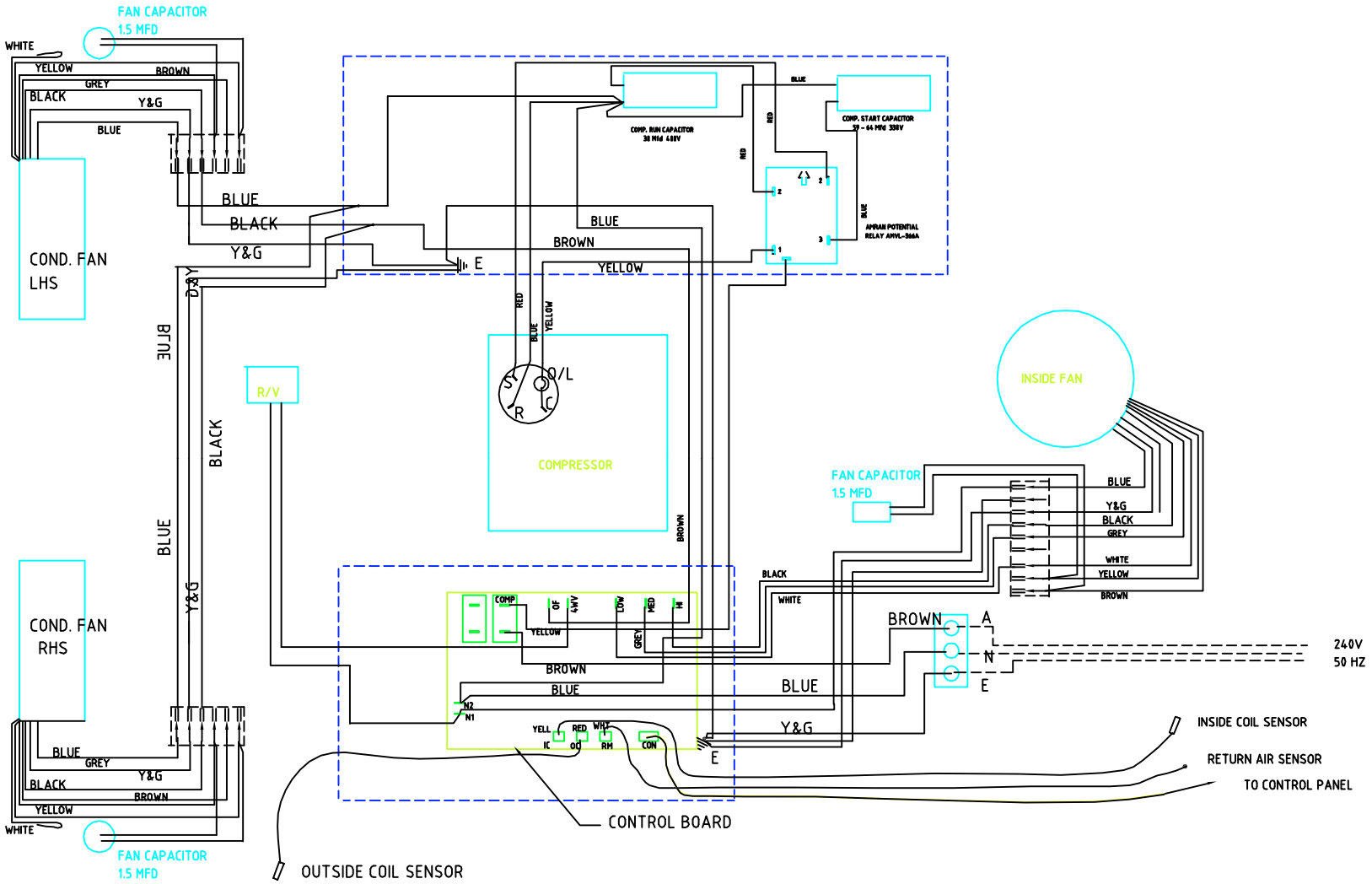

Display with back panel removed
Check that control cable plug is plugged in firmly

Fig 23


The evaporator fan deck assyshowing the fitting of insulation to the underside to prevent sweating in humid conditions
Duct should overlap min. 30mm
Slot to accomodate the motor cable
The extension duct should be well sealed to the horizontal duct
Fig 24



General Notes

All Dimensions in mm unless otherwise noted

Aircommand Australia Pty Ltd
954-956 Port Road
Albert Park
SA 5034

Phone: 61 8 84452877
Fax: 61 8 82430628

ACN 007 592 234

REVISION

Change	Was	Date

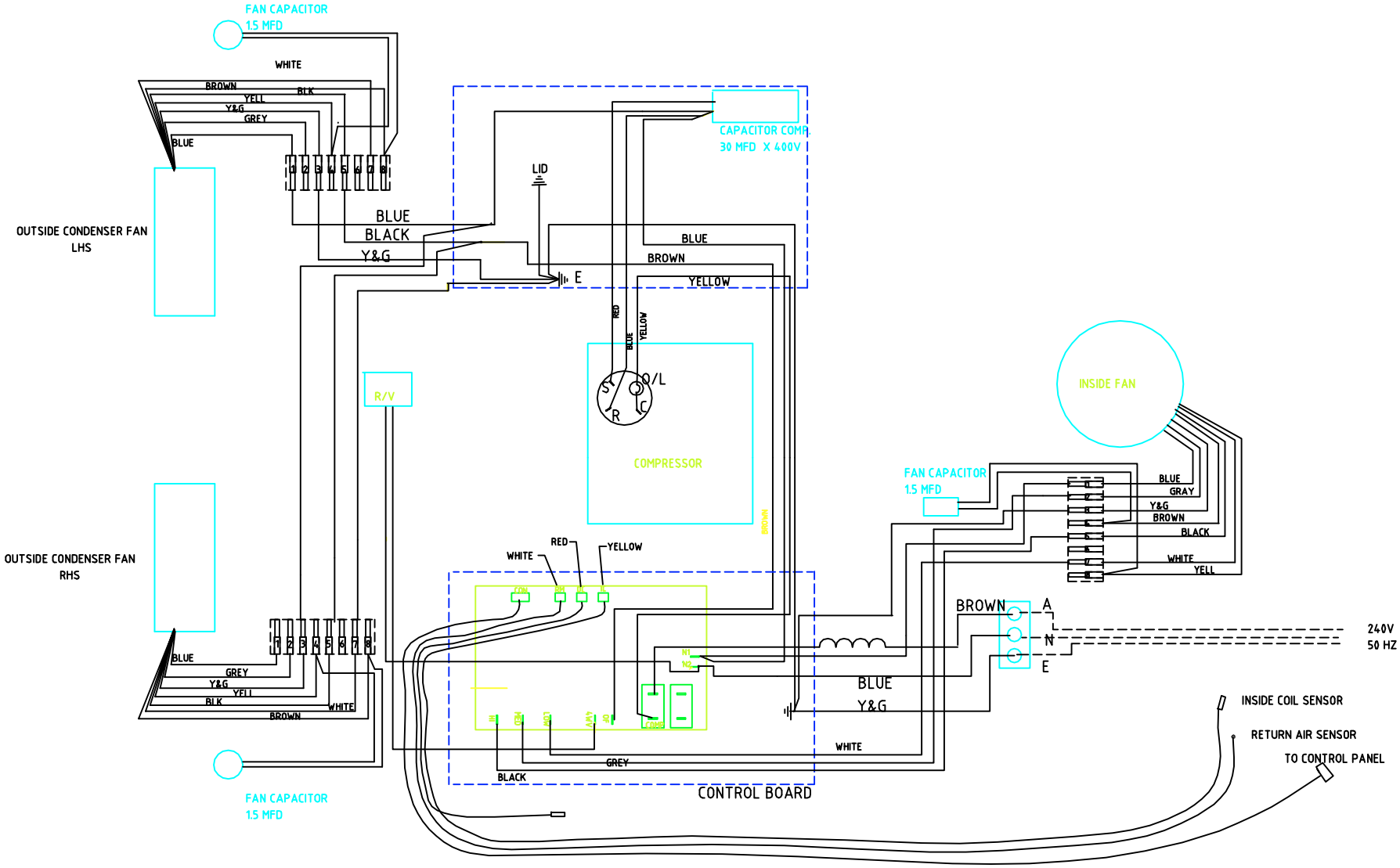
Tolerances

XX ± 1.0
XX.X ± 0.2
XX.XX ±0.02

ANGLES ± 1°

Description: IBIS WIRING DIAGRAM
3 SPEED TAPPED WOUND FAN MOTORS
ONBOARD SMPS
FROM S/N IBSA3280

Date		
24/02/07		
Drawn By	Checked By	Scale
DWH		



General Notes

All Dimensions in mm unless otherwise noted

Aircommand Australia Pty Ltd
954-956 Port Road
Albert Park
SA 5034

Phone: 61 8 84452877
Fax: 61 8 82430628

ACN 007 592 234

REVISION		
Change	Was	Date

Tolerances
XX ± 1.0
XX.X ± 0.2
XX.XX ±0.02
ANGLES ± 1°

Description WIRING DIAGRAM IBIS
INBUILT SMPS ON CONTROL BOARD

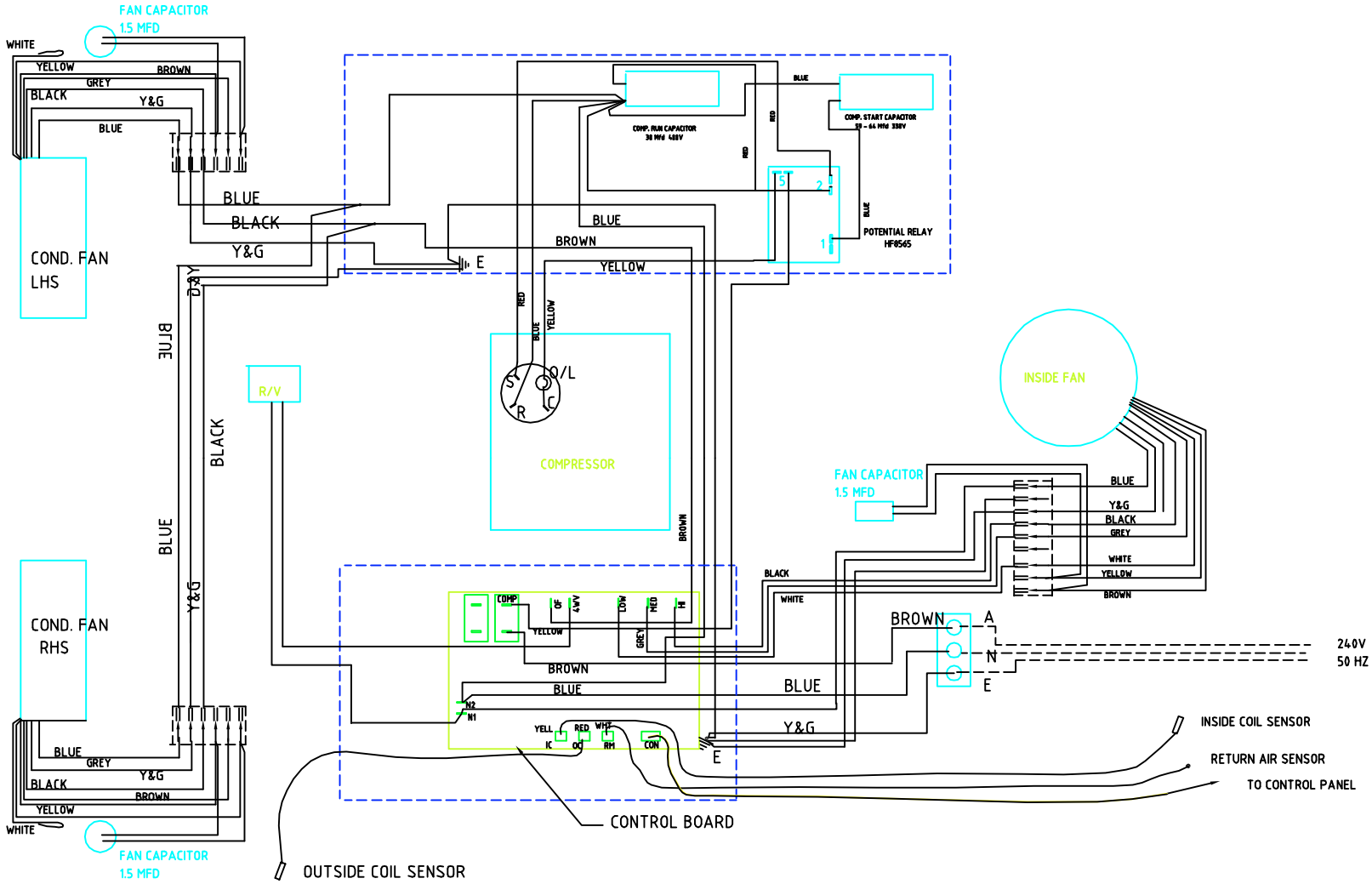
Date 24/02/07

8001029

Drawn By DWH

Checked By

Scale



General Notes

All Dimensions in mm unless otherwise noted

Aircommand Australia Pty Ltd
954-956 Port Road
Albert Park
SA 5034

Phone: 61 8 84452877
Fax: 61 8 82430628

ACN 007 592 234

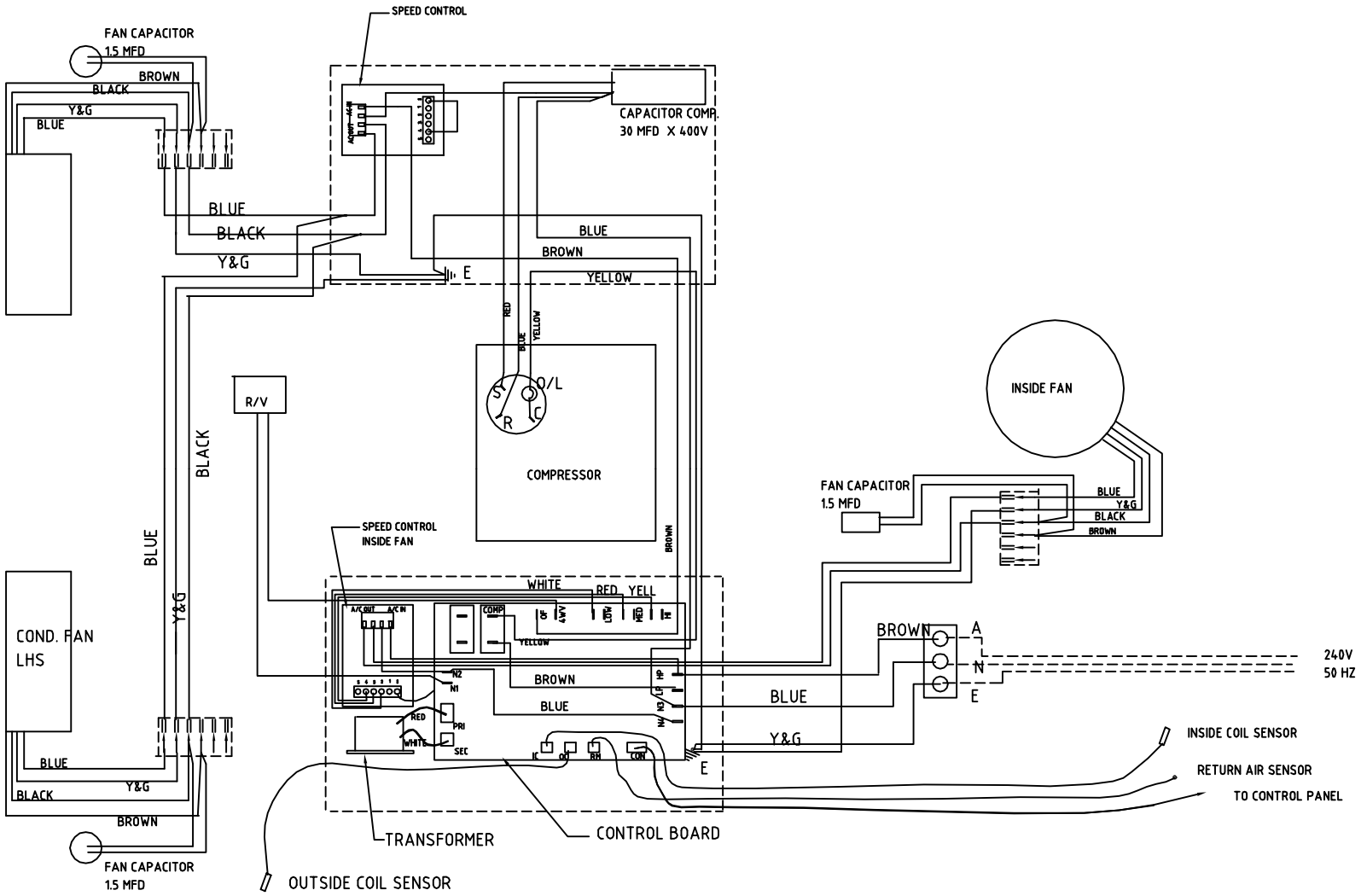
REVISION

Change	Was	Date

Tolerances
XX ± 1.0
XX.X ± 0.2
XX.XX ±0.02
ANGLES ± 1°

Description: IBIS WIRING DIAGRAM
3 SPEED TAPPED WOUND FAN MOTORS
ONBOARD SWPS
FROM S/N IBSA3280

Date: 24/02/07
Drawn By: DWH
Checked By:
Scale:



General Notes

All Dimensions in mm unless otherwise noted

Aircommand Australia Pty Ltd
954-956 Port Road
Albert Park
SA 5034

Phone: 61 8 84452877
Fax: 61 8 82430628

ACN 007 592 234

REVISION		
Change	Was	Date

Tolerances
XX ± 1.0
XX.X ± 0.2
XX.XX ±0.02
ANGLES ± 1°

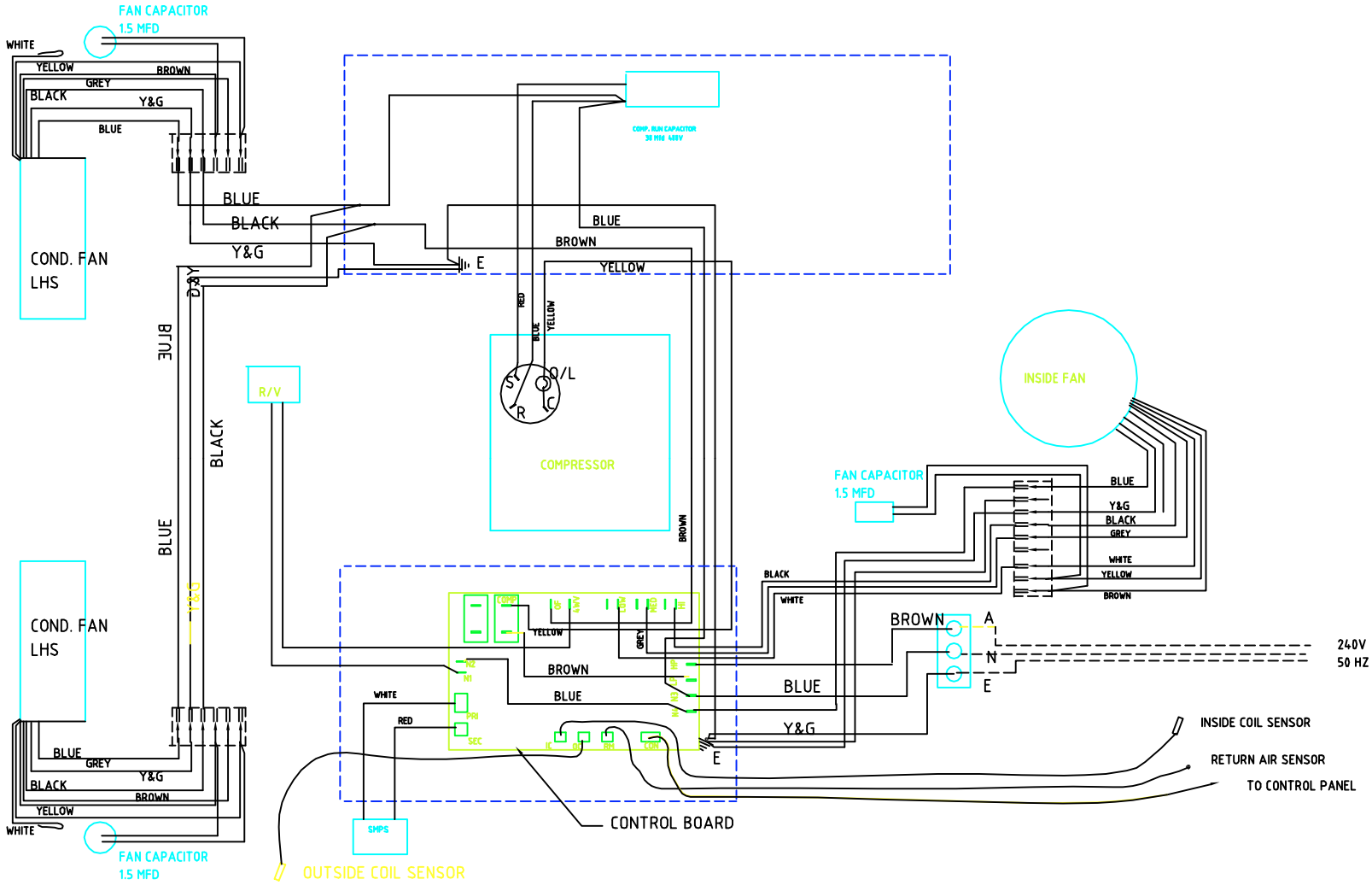
Description
WIRING DIAGRAM
IBIS

Date
24/02/07

Drawn By
DWH

Checked By

Scale



General Notes

All Dimensions in mm unless otherwise noted

Aircommand Australia Pty Ltd
954-956 Port Road
Albert Park
SA 5034

Phone: 61 8 84452877
Fax: 61 8 82430628

ACN 007 592 234

REVISION

Change	Was	Date

Tolerances
XX ± 1.0
XX.X ± 0.2
XX.XX ±0.02
ANGLES ± 1°

Description
IBIS WITING DIAGRAM
3 SPEED TAPPED WOUND FAN MOTORS

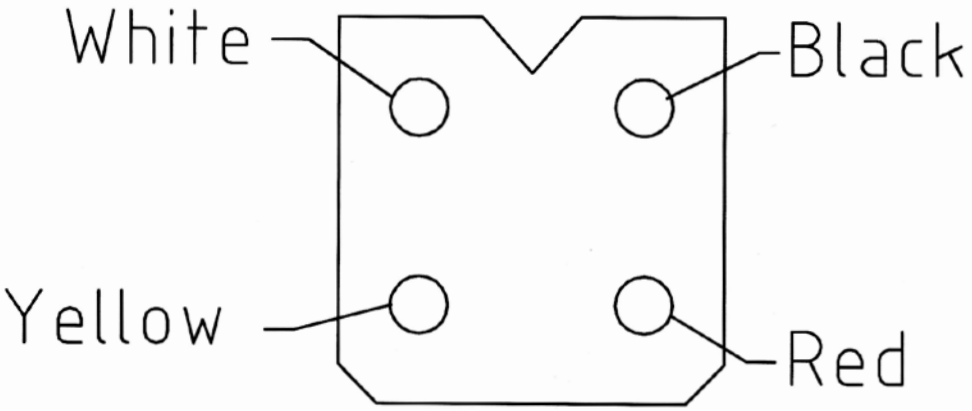
Date 24/02/07

Drawn By DWH

Checked By

Scale

Male plug control cable



Check DC voltage at the male plug

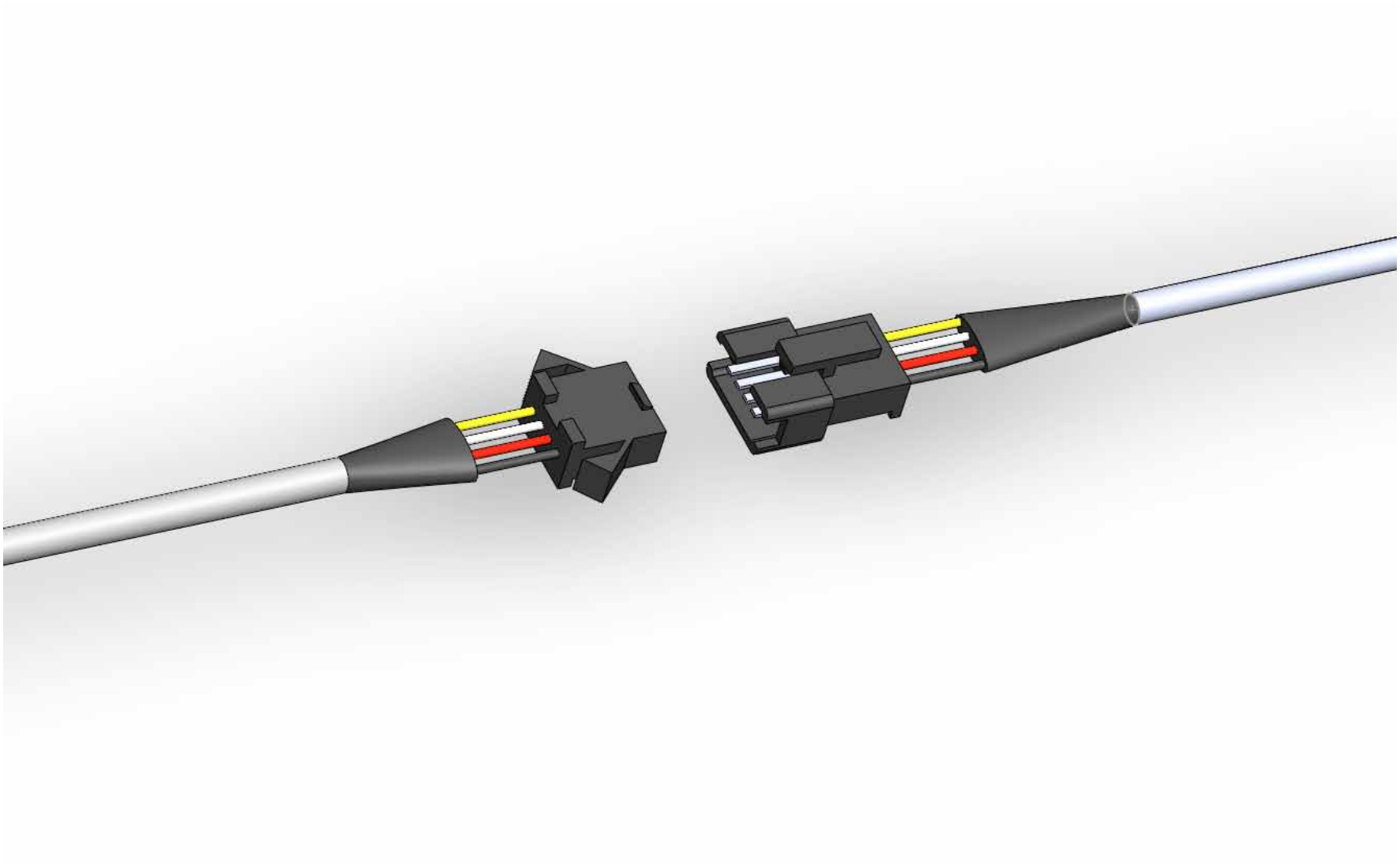
Black - Red = 5V DC

Black - Yellow = 5V DC

Black - White = 0V

Diag 1

CONTROL CABLE PLUG
S/N 03854 UPWARD



Diag 1 A

INDEX