

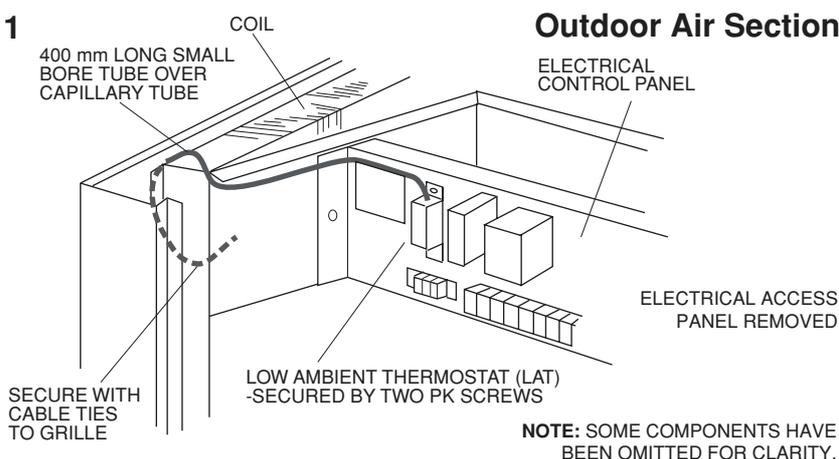
OPA 101, 150, 180

Electric Heat Kit

Ducted Packaged Air Conditioners

Installation Instructions

Fig. 1



GENERAL

This OPA electric heat kit is designed specifically for the OPA 101–180 packaged rooftop air conditioners.

For a complete installation the installer requires:

1. OPA 101 : 3.0 kW Electric Heat Kit, or OPA 150, 180 : 4.5 kW Electric Heat Kit
2. Outdoor Unit Low Limit t/stat.

All wiring must be carried out by a qualified electrician. The kit must be installed in accordance with all national and local safety codes. Installed correctly, this kit will permit the OPA unit to conform to AS/NZS 3350.2.40 1977.

OUTDOOR AIR SECTION

Components:

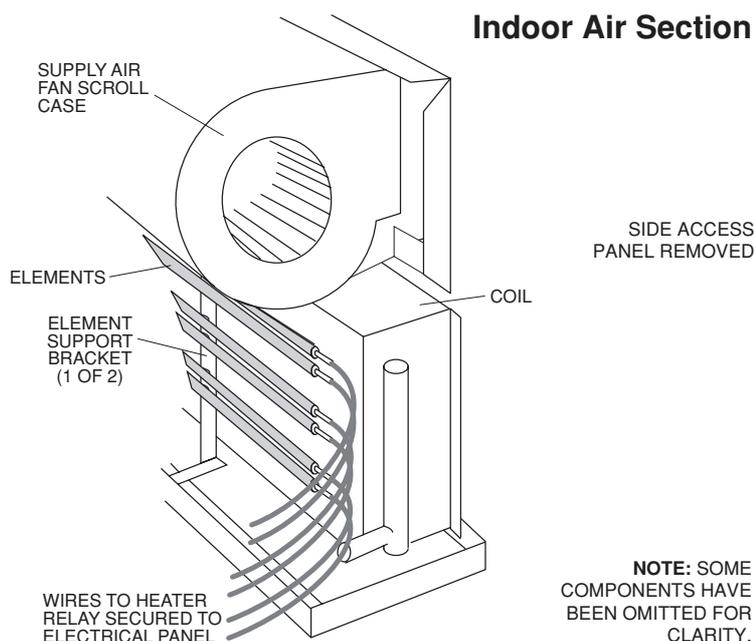
1. Low ambient thermostat A22
2. 400 mm small bore tube.
3. Two M4 x 10 lg screws.
4. Two cable ties.
5. No.6 x 15 long screw.
6. Two SNU 2811 spire nuts.
7. Contactor mounting bracket (not used with these models)

Check that all the above items are supplied and no damage has occurred in transit.

Procedure

1. Remove the electrical access panel from the OPA unit to expose the electrical controls.
2. Adjust the low ambient thermostat as shown in Figure 3.
3. Thread the plastic tube over the capillary tube until it touches the thermostat body.
4. Neatly thread the capillary between the top of the bulkhead and the lid.
5. Screw the thermostat in the position as shown in Figure 1 with the screws provided.
6. Tie the capillary to the grille face with the cable ties after carefully coiling the capillary.

Fig. 2



INDOOR AIR SECTION

Components:

1. Three elements
 - 1.0 kW ea. for OPA 101
 - 1.5 kW ea. for OPA 150, 180
2. Two contactors
3. Auto reset high temp. t/stat with bracket
4. Manual reset high temp. t/stat with bracket
5. Wiring loom
6. Air safety switch (preset)
7. Plastic tube 8 mm dia. 300 lg.
8. Plastic tube fitting.
9. Cable tie.
10. Twelve No.6 PK x 16 long screws.

Fig. 3

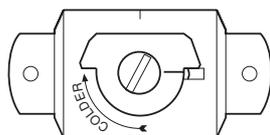
Low Ambient Thermostat

Note: All temperatures are $\pm 1.5^{\circ}\text{C}$

Use switch terminals 1 & 2 which are marked on underside of t/stat.

COLDEST SETTING

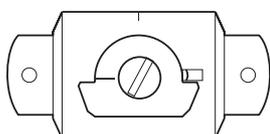
Cut in : 0.6°C
Cut out : 6.2°C



Set to coldest setting as shown above.

WARMEST SETTING

Cut in : 6.1°C
Cut out : 11.7°C



If heating is required at a warmer ambient temperature, then adjust the dial anti-clockwise towards the warmest setting, as shown above.

11. Plastic grommet 25 dia.
12. Three way joiner

Check that all the above items are supplied and no damage has occurred in transit.

Indoor Air Section

1. Remove the right-hand access panel on the drain side of the unit.
2. Fit the three electric elements into the OPA unit's built-in support brackets which reside behind the coil face.
3. Thread the elements' wires through the hole supplied in the divider wall, after first puncturing the insulation and fitting the grommet supplied (refer Fig.4).
4. Connect the elements' orange wires to the heater contactors. Join the ends of the elements' black wires using the three way joiner supplied.
5. On the electrical box side of the divider panel screw the contactor, air safety switch and high temp. t/stats into position with the screws provided, as indicated in figure 4. Some pre-wiring of components is advisable.
6. Thread the auto high temp. safety capillary through the divider panel and insulation, then coil as shown in figure 4.
7. Screw the plastic hose fitting to the divider wall making sure the copper tube penetrates the insulation.
8. Connect the plastic tube supplied between 'L' of the air safety switch and the plastic hose fitting.
9. Check the tube airway is clear of obstructions.
10. Thread the manual high temp. safety capillary through the divider panel and insulation, then coil as shown in figure 4.

WIRING

Wire the components together as per the wiring schematic supplied on the OPA unit. Use the wiring loom supplied with reference to Table 1.

Use cable tie supplied to secure element wires together.

TESTING

Test that the auto high temperature overload (preset to 90°C) will operate by operating the electric heater without the fan and compressor running. This can be achieved by supplying power to the high temperature (HST) overload and heater relay.

Test the air safety switch will operate by removing power to the indoor fan when the elements are heating. Note: Elements will not start heating unless the indoor fan is first operating.

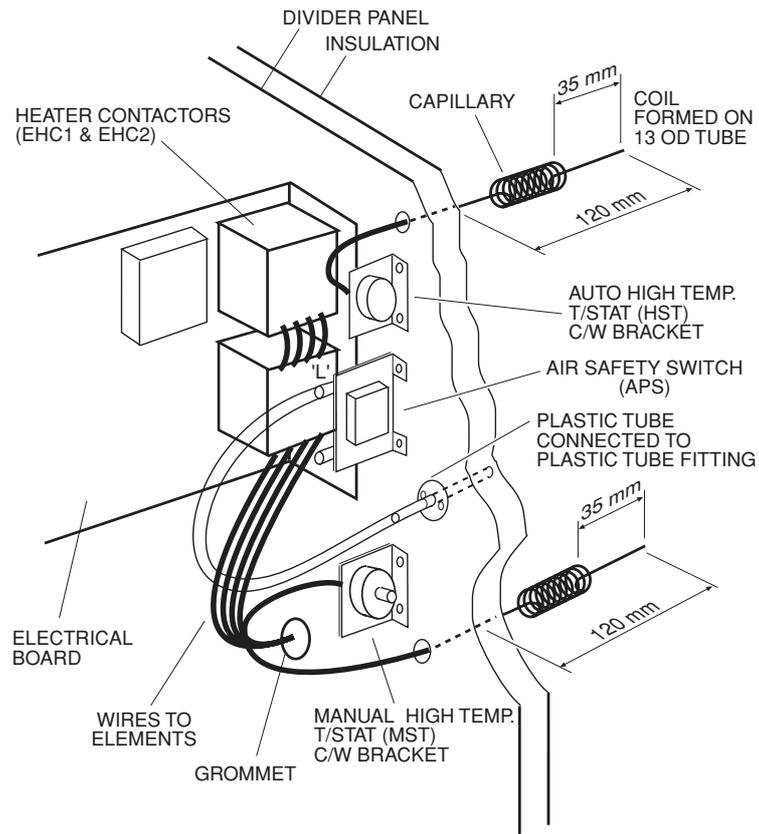
When testing is complete, check that all wiring is placed back to normal.

Replace access panels.

OPERATION

This electric heat kit includes both auto (90°C) and manual (120°C) high temp. safety thermostats. If the manual high temp. safety t/stat requires resetting and the auto high temp. safety t/stat does not reset, then the latter needs to be replaced.

Fig. 4



Indoor Air Section

Table 1. Wiring Loom

OPA *R - Reverse Cycle Systems

Item	Length (mm)	Colour	From	To
1	550	RED	L1	EHC1 terminal1
2	550	YELLOW	L2	EHC1 terminal 3
3	550	BLUE	L3	EHC1 terminal 5
4	400	BLACK	1	HCC1 terminal A2
5	310	ORANGE	HEAT	LAT terminal 1
6	500	ORANGE	LAT terminal 2	HST
7	210	ORANGE	APS terminal NO	MST terminal 21
8	200	ORANGE	APS terminal C	HST
9	300	ORANGE	MST terminal 22	EHCC1 terminal A1
10	900	GREEN	E	Element Earth tag
11	230	GREEN	Element Earth tag	Element Earth tag
12	230	GREEN	Element Earth tag	Element Earth tag
13	120	WHITE	EHCC1 term'l A1	EHCC2 terminalA1
14	120	BLACK	EHCC1 term'l A2	EHCC2 terminal A2
15	55	RED	EHC1 terminal 2	EHC2 terminal 1
16	55	YELLOW	EHC1 terminal 4	EHC2 terminal 3
17	55	BLUE	EHC1 terminal 6	EHC2 terminal 5

OPA *C - Cooling Only Systems

As for Reverse Cycle systems above, with these exceptions:

Item	Length (mm)	Colour	From	To
4	400	BLACK	N	EHCC1 terminal A2
5	Not required			
6	530	ORANGE	HEAT	HST

Note: The manufacturer reserves the right to change specifications without notice or obligation.

This pamphlet replaces the previous issue no. 1660 dated 03/99. AS/NZS 3350.2.40 compliance.