Maintenance and Repair Manual
Carrier Split Type Air Conditioning Units

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MAINTENANCE AND REPAIR MANUAL
CARRIER SPLIT TYPE AIRCONDITIONING UNITS

Summary

The process of servicing and carrying out minor repairs to the airconditioning units located on Nauru is a relatively simple process easily performed by a person not experienced with airconditioning and with a minimal number of simple tools. The processes listed below have been formatted in a simple but concise manner, with an emphasis on step by step processes.

It is intended that this manual be used in conjunction with verbal and written instructions from a qualified airconditioning technician. Specific testing can be performed, with the results forwarded to this office for evaluation. Part A details should be completed and forwarded to the AE Smith office via Monty Apple or Rex Pearson in an attempt to ascertain the nature of the fault.

Identifying Faults

This process is to be used in the event that the airconditioning unit fails to start or does not operate in a manner satisfactory for the application.

PART A

Process	Comments
• What is wrong with the unit?	
• If there is a problem, does it happen at any particular time of the day?	
• Identify power is available to the unit. The simplest method to determine this is to remove the power plug from the PowerPoint and plug in another item. If this item operates, reconnect the airconditioning unit.	
• Is the indoor unit fan running and are the air vents open?	
• Is the fan on the outdoor section of the unit working?	
• Is the compressor inside the outdoor section of the unit working? This can be found by listening for the compressor noise, and feeling a slight vibration at the unit.	

Refer to Figure 1
• If the compressor is running, feel the two pipes at the side of the outdoor unit. Is the temperature of the large pipe!
  • Cold
  • Warm
  • No noticeable temperature
• Is the temperature of the small pipe!
  • Warm
  • Hot
  • No noticeable temperature	

Refer to figure 3
• If the fan on the indoor unit, the fan on the outdoor unit, and the compressor are all running, what are the following temperatures?
  • Room temperature 1 metre from AC Unit.
  • Temperature at point A
  • Temperature at point B	

• Is there anything on the unit you see that looks different or out of place?	

PART B

Changing Outdoor Unit

This process can be performed by a non technical person, however it should be noted that an electrician will be required to disconnect the electrical power.

Process	Comments & Checklist
• On the indoor section of the unit, remove the power plug from the power point.	
CAUTION MAKE SURE POWER PLUG IS UNPLUGGED • Arrange for an electrician to come to site. On the side of the unit near the top, there are some wires going into a small panel held in place by 1 screw. Have the electrician disconnect the 3 wires, making note of where they were attached to the unit.	
Refer to Figure 4 • Open the "caps" as shown on figure 4. Once removed, you will see a type of screw that takes an Alan key type tool. Using this tool, turn these screws "clockwise" about 8 to 10 turns or until they cannot be turned anymore.	
Refer to Figure 5 **USE CAUTION. ESCAPING GAS** • With a suitable spanner, SLOWLY undo the two flare nuts until a small amount of escaping gas can be heard. Half of a turn should be enough.	
USE CAUTION. ESCAPING GAS • Wait for all gas to escape.	
Refer to Figure 5 • Continue to undo the flare nuts until they are free from the threads. Slide the flarenuts a small way up the pipe and secure with tape.	

• Undo the bolts on the 4 feet of the unit so the unit can be lifted off.	
• Lift the old unit down from the mounting brackets.	
• Unpack the new unit and lift onto the mounting brackets. All bolt locations will be the same as the unit just removed.	
Refer to Figure 4 • Open the "caps" as shown on figure 4. Once removed, you will see a type of screw that takes an Alan key type tool. Using this tool, make sure the screws are turned fully clockwise and tight. They should be in this position.	
Refer to Figure 5 **USE CAUTION. ESCAPING GAS** • With a suitable spanner, SLOWLY undo the two flare nuts until a small amount of escaping gas can be heard. This escaping gas should only last for 1 to 2 seconds. If it continues, retighten the flarenuts and consult AE Smith.	
• Undo the flarenuts completely and place in storage. These 2 flarenuts will not be needed.	
Refer to Figure 5 • Align the large and small pipes with the threads on the new units. Tension the small flare-nut by turning clockwise until very tight. Caution Do not over tighten.	
• Using fingers turn the large flare nut until it can not be turned further. Undo it half a turn.	
Refer to Figure 4 **USE CAUTION. ESCAPING GAS** With the Alan Key tool on the small pipe, turn the screw anti clockwise 1 quarter of a turn or until a small amount of gas can be heard coming from the large flare-nut.	

• After approximately 30 seconds tighten the large flare-nut until very tight. Caution Do not over tighten	
Refer to Figure 4 • With the Alan Key tool on both pipes, turn both screws anti clockwise approximately 8 turns or until they cannot be turned further.	
Refer to Figure 6 • Look for leaks by putting a solution of soapy water on the flarenuts and pipes. If bubbles are detected, tension the large and small flarenuts further. If the bubbles cannot be stopped, consult AE Smith.	
Refer to Figure 4 • Refit the caps to the large and small pipes and tighten firmly.	
CAUTION MAKE SURE POWER PLUG IS UNPLUGGED • Arrange for an electrician to come to site. Have the electrician reconnect the wires in the same place he removed them from them from on the original unit.	
• Plug the indoor unit power plug into the power point, and using the existing remote control, push the power button so the unit starts.	
Refer to figure 3 • After 30 minutes operation, take temperatures at point A and point B.	

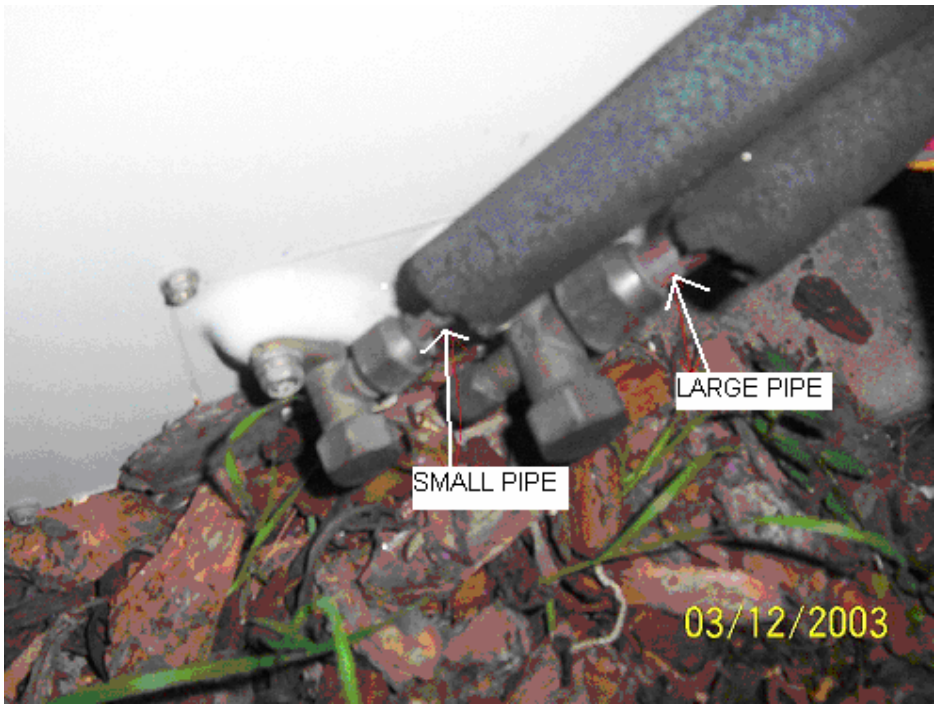

Figure 1

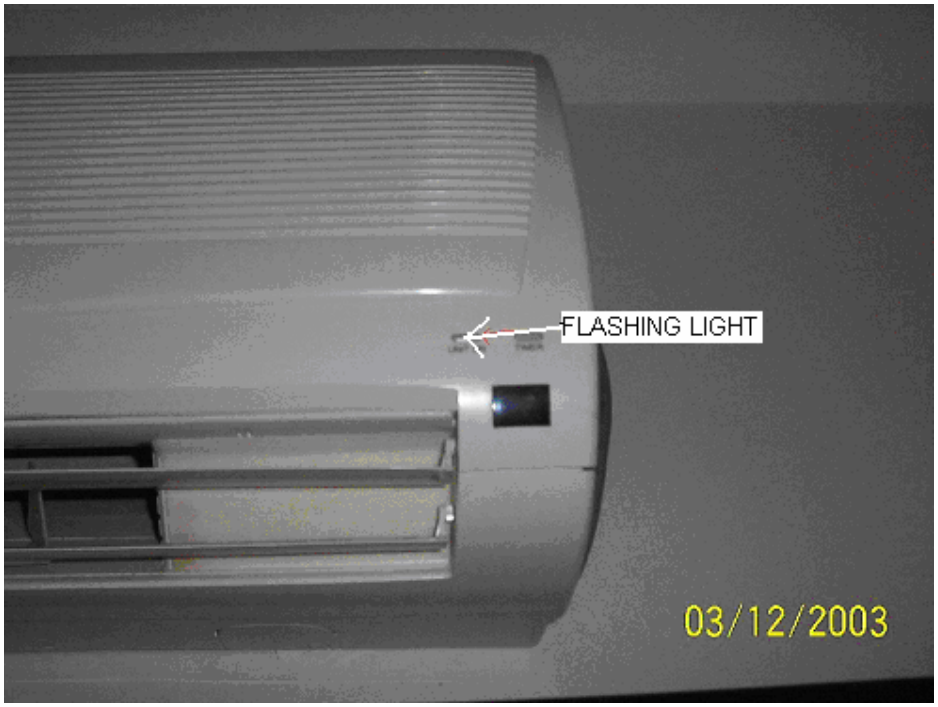

Figure 2

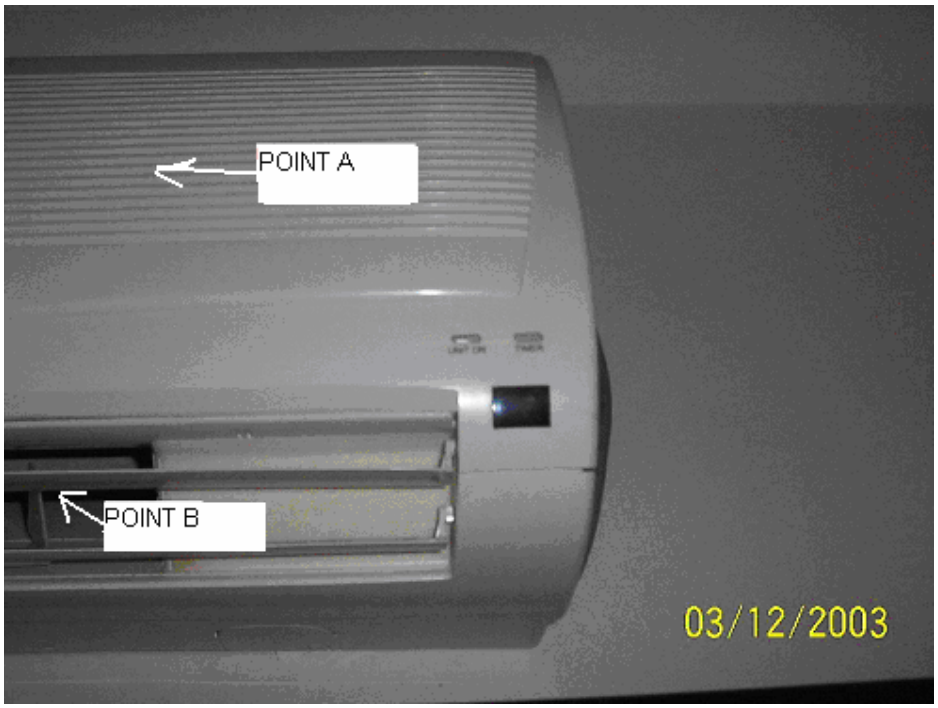

Figure 3

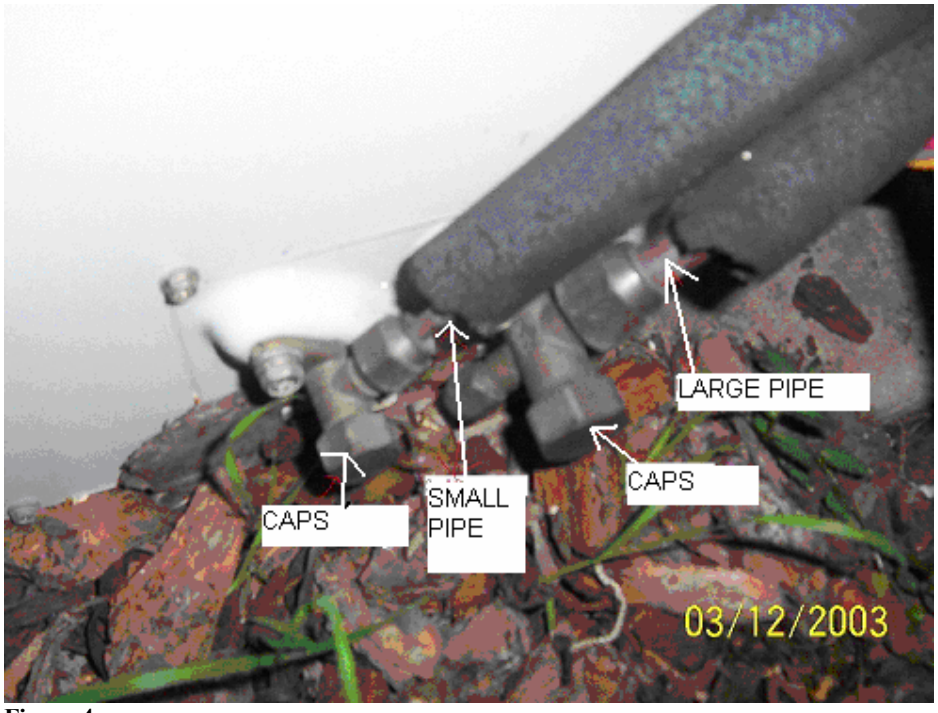

Figure 4

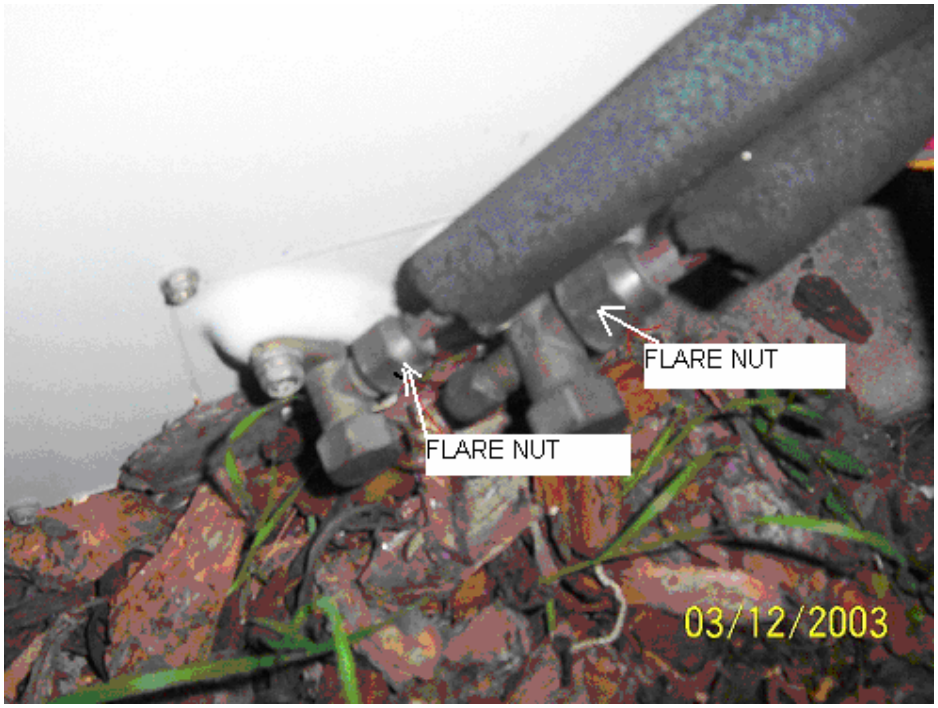

Figure 5