DAIKIN

YEAR-ROUND COOLING KIT FOR NORTH AMERICA(-40°F/-40°C AMBIENT)

REMODELING MANUAL

MODELS: KEHC082A41, KEHC082A42

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For topics not addressed in this remodeling manual, see the main system's operation manual and installation manual.

1.Safety Considerations

Read these **SAFETY CONSIDERATIONS** carefully before installing the YEAR-ROUND COOLING KIT FOR NORTH AMERICA(-40°F/-40°C AMBIENT). After completing the installation, check if the unit operates properly during the start-up operation.
Meaning of **DANGER**, **WARNING** and **CAUTION** symbols

⚠**DANGER**	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠**WARNING**	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠**CAUTION**	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

- Inform customers that they should store this remodeling manual for future reference.
- After completing the installation, make sure that the unit operates properly during the startup operation.
- All phases of the field-installation, including, but not limited to, electrical, piping, and safety, must be done in accordance with manufacturer's instructions and must comply with national, state, provincial, and local codes.

⚠DANGER

- **Do not touch the heater unit without wearing gloves**

  The temperature of the heater unit will become high when the heater is turned on.
  Touching the heater unit with bare hands will result in burns or injury.

⚠WARNING

- **Request the dealer or an authorized technician to install the product.**

  Improper installation of the product could result in water leakage, an electrical shock, or fire.
- **The product must be installed according to the instructions given in this manual.**

  The incomplete installation of the product could result in water leakage, an electrical shock, or fire.
- **Use the supplied or specified installation parts.**

  Use of other parts could result in the unit becoming loose and falling, water leakage, electrical shocks, or fire.
- **Turn off the power supply at the time of installation.**

  Touching any electrical parts may with the power supply turned on could result in electrical shocks.
- **Use specified wires. Connect and fix the wires so that the wires will not put improper force on the terminal junctions.**

  Wires connected or fixed improperly could result in terminal overheating, an electrical shock, or fire.
- **When wiring and connecting the indoor and outdoor units, carefully arrange the wiring so that they will not put improper force on the structures.**

  Install covers over the wires. Incomplete cover installation could result in terminal overheating, an electrical shock, or fire.

⚠CAUTION

- **Wear protective gloves at the time of installation.**

  Touching the suction mouth or aluminum fin of the outdoor unit may result in injury.
- **Do not install the product in places where there is danger of exposure to inflammable gas leakage.**

  If the gas leaks and builds up around the unit, it may catch fire.
- **Do not grab the top plate of the outdoor unit carelessly when removing the top plate.**

  The sharp edge of the top plate may cause injury.
- **Do not install the outdoor unit in places where small animals may nest in the outdoor unit.**

  If small animals intrude and touch the internal parts of the outdoor unit, the outdoor unit may malfunction, generate smoke, or ignite.
  Advise the user to keep the place clean.
- **Do not touch the heater unit with bare hands.**

  The temperature of the heater unit will become high when the heater is turned on.
  Touching the heater unit with bare hands may result in burns or injury.

2. Important Requirements to Guarantee Proper System

2-1.Usage

⚠CAUTION

This kit is limited only for facilities (the target of air conditioning is equipment).

1. Do not place humidifiers or other items which might raise the humidity in rooms where facility settings are being used. A humidifier might cause dew jumping from the indoor unit outlet vent.
2. Use the indoor unit at the highest level of airflow rate.
3. While the product is operated at a low temperature, vibration and noise of the product may become louder than usual.

2-2.Installation limitations

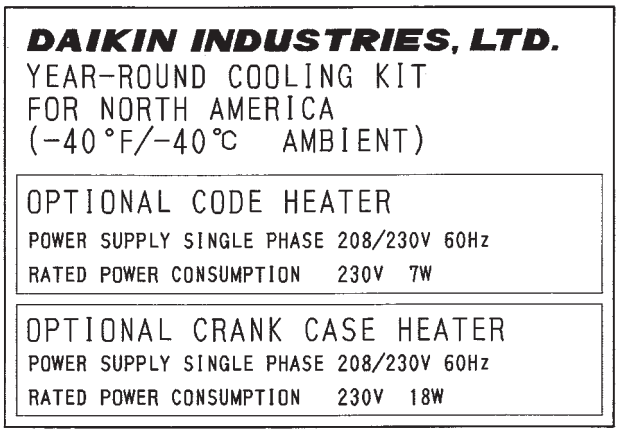
⚠CAUTION

The following installation limitations must be observed to guarantee proper system operation.

1. When performing cooling operation at or below -23°F /-5°C, the outdoor unit may be cooled excessively by cold, outside air, causing its cooling capacity to decrease. Install a snow-break hood on the inlet side or install the unit in a location where it will not be directly exposed to snow and wind.
2. While the product is stopped at a low outdoor temperature, it may be heated by running the compressor motor and an additional heater in order to protect it from damage. (Total power consumption will be about 200 W.) When operating the unit at or below -4°F /-20°C, be sure to turn on the power (by switching on the circuit breaker) at least 4 hours before operation at a temperature of at least -4°F /-20°C. (Avoid having the unit resume operation after a power outage when the temperature is -4°F /-20°C or below.)
3. When operating the product continuously on a permanent basis in a facility cooling application, it will operate for longer periods of time than a standard air conditioner would in a similar application, accelerating the timing of part replacement. In such applications, take steps such as maintaining a different circuit for backup use or keeping major spare parts on hand.
4. Do not keep the unit at or below -4°F /-20°C without turning on the power.
   Do not keep spare parts at or below of -4°F /-20°C .
   It may cause breakage of parts and accelerating the timing of part replacement.

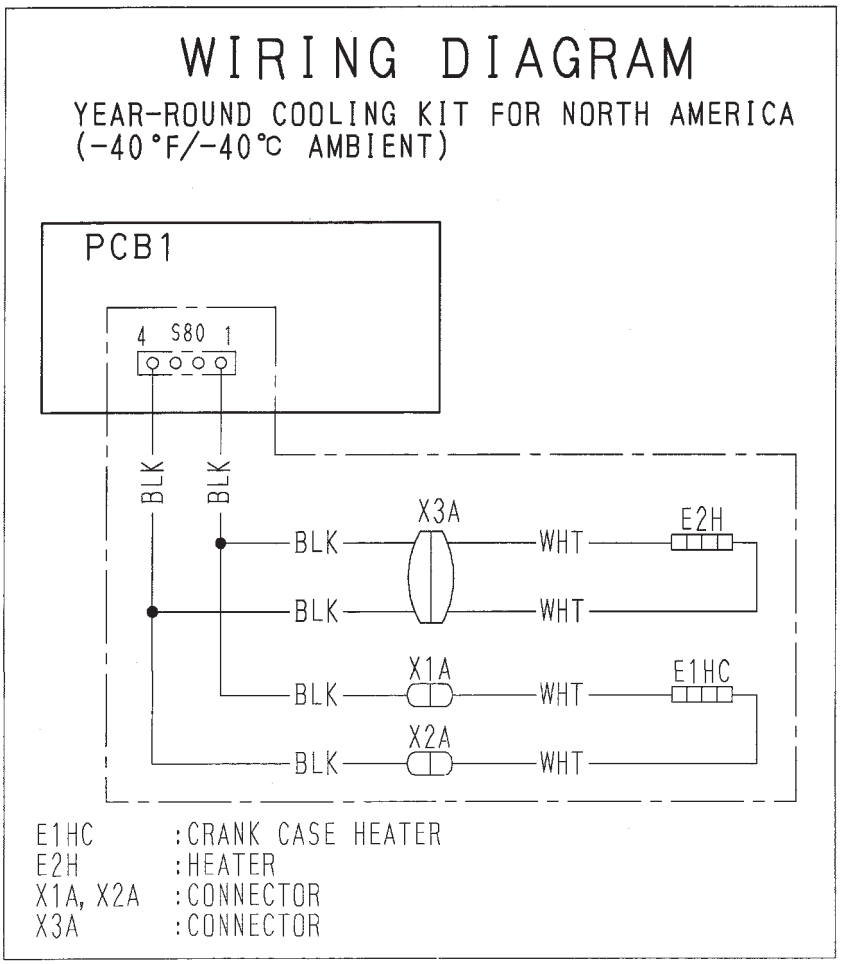
3. Identification Label

If an identification label is required, copy this figure, affix it to adhesive paper, and affix to the product. (See the bottom of page 3 for information about where to affix the label.)



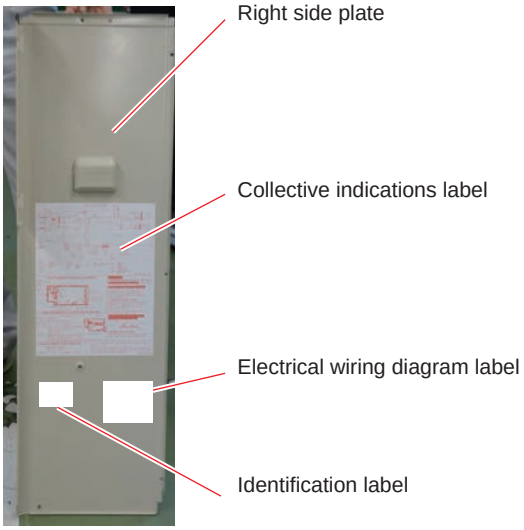
4. Electrical Wiring Diagram Label

Copy the electrical wiring diagram label from this figure, affix it to adhesive paper, and affix to the product. (See the bottom of this page for information about where to affix the diagram.)



The following figure illustrates where to affix the identification label and electrical wiring diagram label:

Affix the label so that it will not peel off or become detached.



5. Equipment needed

5-1 Kit contents

[A] Code heater	[D] Wire harness
[B] Crank case heater	[E] Vinyl tube
[C] Printed circuit board	[F] Binding band

5-2 Field supply

[1] Silicon

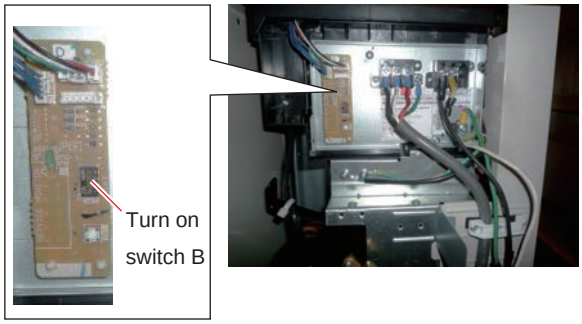
Referring to page 391 of the service manual (SiUS091133), obtain the specified silicon.

6. Installation Procedure

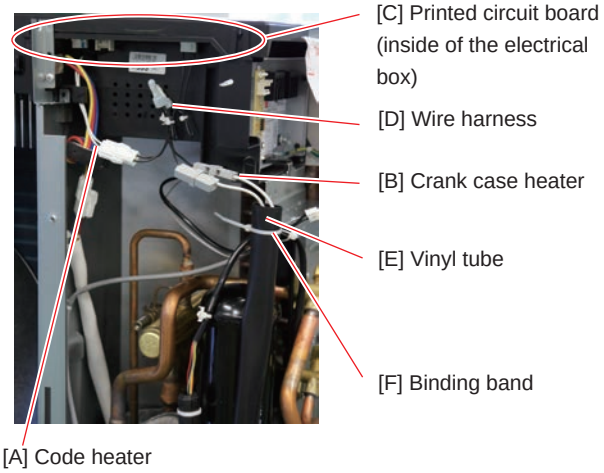
For procedure not addressed in this manual, see the service manual (SiUS091133).

1. Turning on the facility setting switch

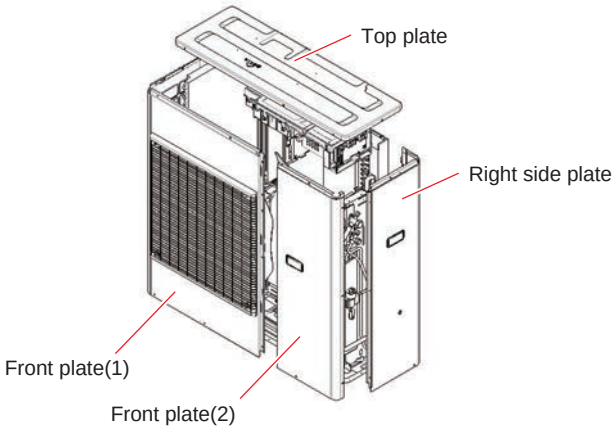
You can expand the operation range to -40°F /-40°C by turning on switch B (SW4) on the printed circuit board.



2. The following photograph depicts the system once installation of the unit is complete:

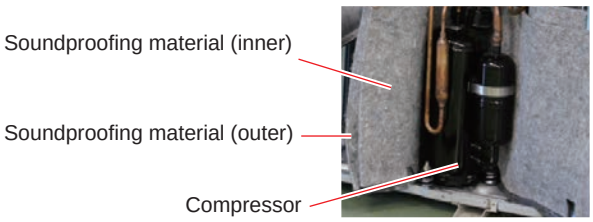


3. Remove the top plate, right side plate, and front plates (1) and (2)



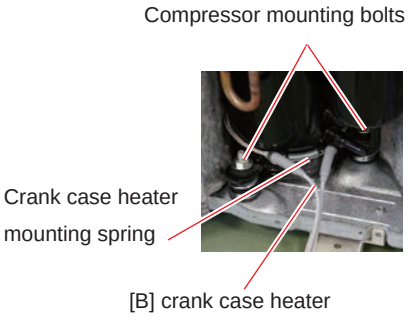
4. Attach the [B] crank case heater to the compressor

1) Open up the soundproofing material (inner and outer).

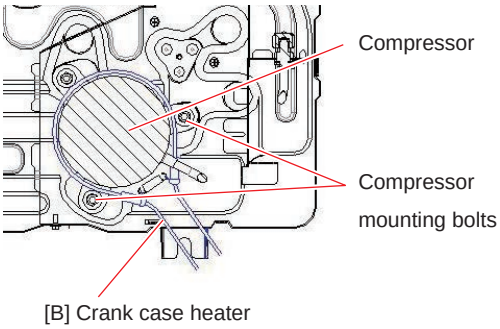


2) Wrap the [B] crank case heater around the compressor.

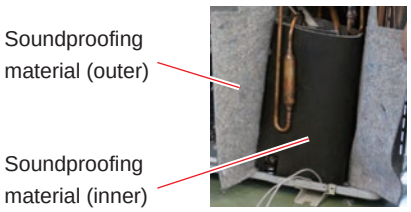
- Secure the crank case heater mounting spring so that it sits between the two compressor mounting bolts.



- Wrap the [B] crank case heater once around the compressor.

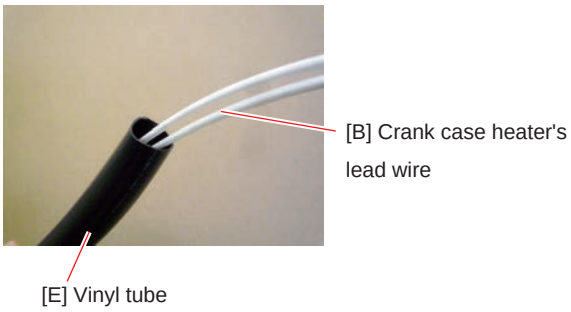


3) Close the soundproofing material (inner).

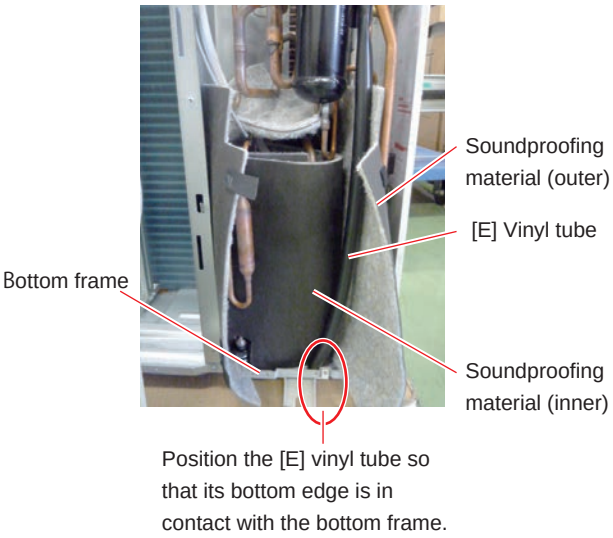


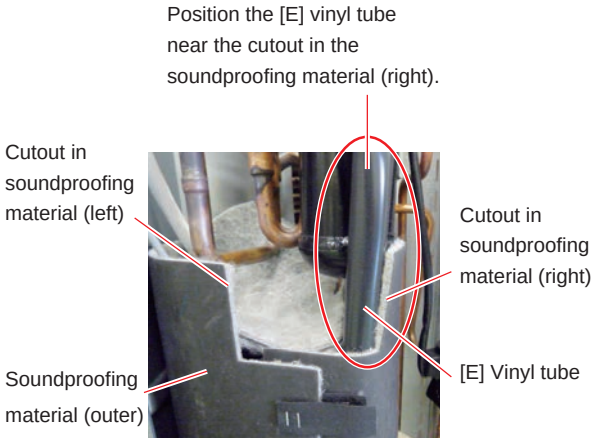
5. Attach the [E] vinyl tube to the [B] crank case heater

1) Run the [B] crank case heater's lead wire through the [E] vinyl tube

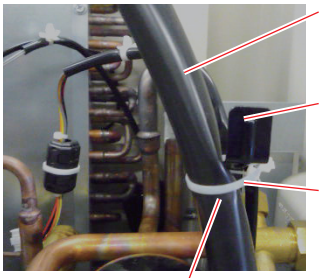


2) Position the [E] vinyl tube as shown in the figure and close the soundproofing material (outer), returning it to its original state.





3) Secure the [E] vinyl tube to the hook on the stop valve board with the [F] binding band at the position shown in the figure.

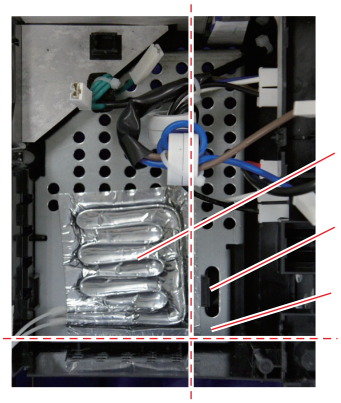


Secure the [E] vinyl tube to the hook on the stop valve board with the [F] binding band.

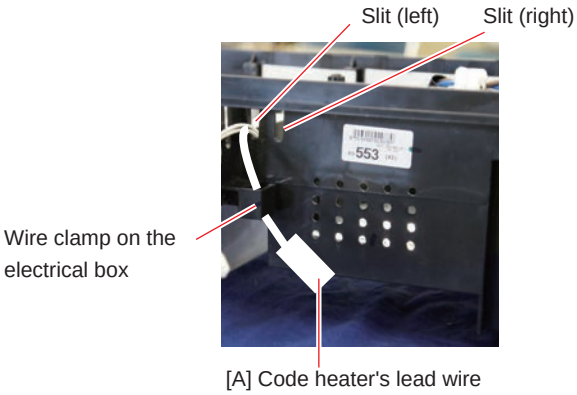
6. To replace the [C] printed circuit board and attach the [A] code heater, remove the electrical box and printed circuit board.

7. Attach the [A] code heater

1) Attach the [A] code heater.
   - Attach the [A] code heater to the baffle plate, using the edge of the hook on the electrical box and the edge of the baffle plate as guides.
   - Feed the heater's lead wire through the slit (left) in the electrical box and secure it with the wire clamp on the electrical box.



Attachment position guide
(hook on the electrical box)

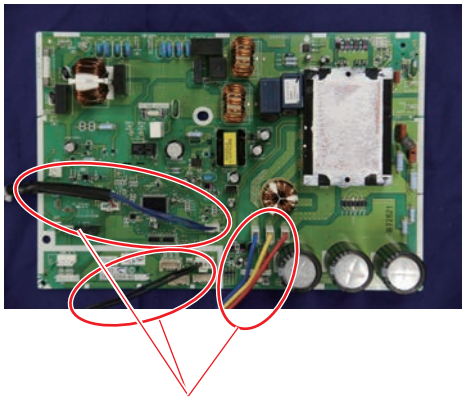


⚠CAUTION

- Exercise care so that the [A] code heater does not peel off.
- Route the [A] code heater's lead wire so that it will not be severed or its insulation damaged.

8. Replace the [C] printed circuit board

1) Disconnect the 3 part harnesses from the old printed circuit board and connect them to the [C] printed circuit board

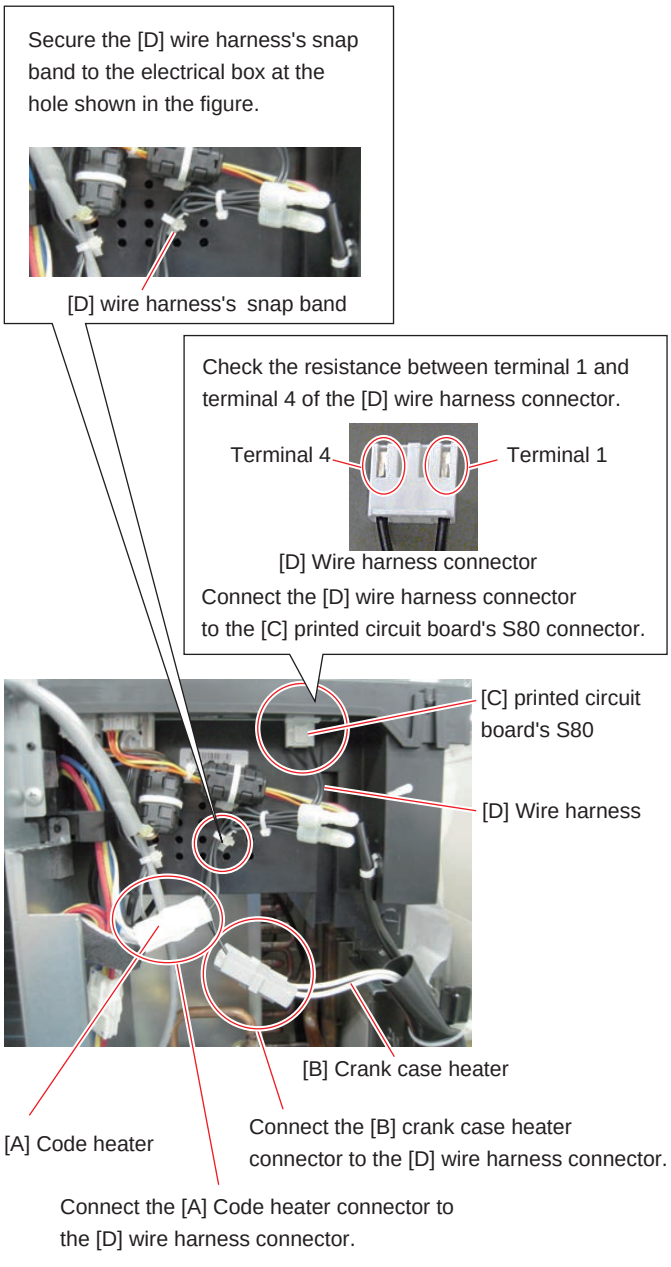


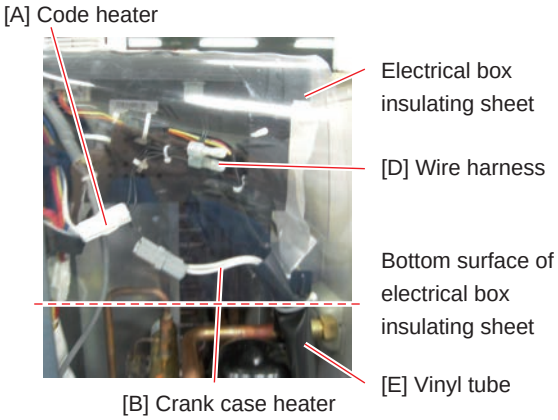
Use the 3 part harnesses in the figure.

2) Apply the [1] silicon to the printed circuit board.
3) Place the printed circuit board into the electrical box, reattach the cover, and reinstall inside the outdoor unit, returning it to its original state.
4) Reattach the disconnected harnesses as they were.

9. Connect the [D] wire harness to each heater's harness

1) Connect the [A] code heater and [B] crank case heater to the [D] wire harness.
2) Secure the [D] wire harness's snap band to the electrical box.
3) Check whether the [D] wire harness and each heater are properly connected.
   - Check the resistance between terminal 1 and terminal 4 of the [D] wire harness connector, which will be connected to the printed circuit board.
   - If the resistance is not 1.8kΩ-2.4kΩ, it has a possibility of breaking of wire or insufficient connection.
4) Connect the [D] wire harness to S80 on the [C] printed circuit board.





- Be sure that the [A] code heater harness, [B] crank case heater harness (portion outside the [E] vinyl tube), and [D] wire harness are all positioned above the bottom surface of the electrical box insulating sheet.

10. Following the instructions on page 3, affix the identification label and electrical wiring diagram label to the right side plate.

11. Reattach the top plate, right side plate, and front plates (1) and (2) as they were.

12. Check whether the units operate properly by conducting the forced cooling operation.

7. Reference: Capacity Table

FTXS30LVJU + RKS30LVJU (With YEAR-ROUND COOLING KIT)

<WALL MOUNTED TYPE AIR CONDITIONER>
INVERTER TYPE

CAPACITY TABLE

COOLING 60Hz 208 – 230 V

AFR	20.0
BF	0.23

Temp:Celsius / TC、SHC、PI:kW

INDOOR		OUTDOOR																	
EWB	EDB	20			25			30			32			35			40		
℃	℃	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20.0	6.92	4.97	0.72	6.92	4.97	1.61	6.92	4.97	1.88	6.92	4.97	2.00	6.92	4.97	2.20	6.92	4.97	2.46
16.0	22.0	8.63	5.59	0.99	8.63	5.59	2.18	8.60	5.58	2.57	8.44	5.49	2.66	8.19	5.37	2.78	7.78	5.16	2.81
18.0	25.0	10.47	6.52	1.08	9.42	5.99	2.38	9.01	5.78	2.59	8.84	5.70	2.67	8.60	5.59	2.79	8.19	5.39	2.82
19.4	26.7	11.44	7.14	1.07	9.62	6.23	2.39	9.21	6.04	2.59	9.05	5.96	2.68	8.80	5.84	2.80	8.39	5.66	2.83
22.0	30.0	14.63	8.07	1.36	10.23	5.99	2.40	9.82	5.82	2.61	9.65	5.75	2.69	9.41	5.65	2.82	9.00	5.48	2.84
24.0	32.0	15.96	8.16	2.42	10.63	5.81	2.42	10.22	5.65	2.62	10.06	5.59	2.71	9.81	5.49	2.83	9.40	5.34	2.86

Temp:Fahrenheit / TC、SHC :kBtu/h / PI:kW

INDOOR		OUTDOOR																	
EWB	EDB	68			77			86			90			95			104		
° F	° F	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
57.2	68.0	23.61	16.97	0.72	23.61	16.97	1.61	23.61	16.97	1.88	23.61	16.97	2.00	23.61	16.97	2.20	23.61	16.97	2.46
60.8	71.6	29.44	19.09	0.99	29.44	19.09	2.18	29.35	19.04	2.57	28.79	18.75	2.66	27.95	18.31	2.78	26.55	17.61	2.81
64.4	77.0	35.72	22.25	1.08	32.13	20.43	2.38	30.73	19.74	2.59	30.17	19.47	2.67	29.33	19.06	2.79	27.94	18.40	2.82
67.0	80.0	39.03	24.36	1.07	32.82	21.26	2.39	31.42	20.59	2.59	30.86	20.33	2.68	30.00	19.94	2.80	28.63	19.30	2.83
71.6	86.0	49.92	27.53	1.36	34.90	20.43	2.40	33.50	19.84	2.61	32.94	19.61	2.69	32.10	19.26	2.82	30.70	18.69	2.84
75.2	89.6	54.46	27.85	2.42	36.28	19.82	2.42	34.88	19.28	2.62	34.32	19.06	2.71	33.48	18.74	2.83	32.09	18.22	2.86

Symbols
AFR : Air flow rate (m3/min.)
BF : Bypass factor
EWB : Entering wet bulb temp. (℃) / (° F)
EDB : Entering dry bulb temp. (℃) / (° F)
TC : Total capacity (kW) / (kBtu/h)
SHC : Sensible heat capacity (kW) / (kBtu/h)
PI : Power input (kW)

NOTES:
1. ☐ shows nominal(rated) capacities and power input.
2.TC,PI and SHC must be calculated by interpolation using the figures in the above tables. (Figures out of the tables should not be used for calculation.)
3.Capacities are based on the following conditions.
Corresponding refrigerant piping length : 25 ft
Level difference : 0 ft
4.Cooling capacity at Low outdoor temperature

Temp:Celsius / TC、SHC、PI:kW
60Hz 208 – 230 V

INDOOR		OUTDOOR		
EWB	EDB	−15 (℃DB)		
℃	℃	TC	SHC	PI
14.0	20.0	5.49	4.28	0.49

Temp:Fahrenheit / TC、SHC :kBtu/h / PI:kW
60Hz 208 – 230 V

INDOOR		OUTDOOR		
EWB	EDB	5 (° FDB)		
° F	° F	TC	SHC	PI
57.2	68.0	18.73	14.59	0.49

INDOOR		OUTDOOR		
EWB	EDB	−20 (℃DB)		
℃	℃	TC	SHC	PI
14.0	20.0	5.66	4.41	0.47

INDOOR		OUTDOOR		
EWB	EDB	−4 (° FDB)		
° F	° F	TC	SHC	PI
57.2	68.0	19.31	15.06	0.47

INDOOR		OUTDOOR		
EWB	EDB	−40 (℃DB)		
℃	℃	TC	SHC	PI
14.0	20.0	6.36	4.96	0.46

INDOOR		OUTDOOR		
EWB	EDB	−40 (° FDB)		
° F	° F	TC	SHC	PI
57.2	68.0	21.70	16.92	0.46

FTXS36LVJU + RKS36LVJU (With YEAR-ROUND COOLING KIT)

<WALL MOUNTED TYPE AIR CONDITIONER>
INVERTER TYPE

CAPACITY TABLE

COOLING 60Hz 208 – 230 V

AFR	21.8
BF	0.27

Temp:Celsius / TC、SHC、PI:kW

INDOOR		OUTDOOR																	
EWB	EDB	20			25			30			32			35			40		
℃	℃	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20.0	7.15	5.14	1.53	7.15	5.14	1.77	7.15	5.14	2.05	7.15	5.14	2.17	7.15	5.14	2.38	7.15	5.14	2.67
16.0	22.0	8.92	5.78	2.07	8.92	5.78	2.43	8.92	5.78	2.86	8.92	5.78	3.07	8.92	5.78	3.42	8.66	5.65	3.83
18.0	25.0	10.82	6.74	2.78	10.82	6.74	3.33	10.44	6.54	3.70	10.25	6.45	3.81	9.97	6.30	3.99	9.10	5.88	3.83
19.4	26.7	11.62	7.28	3.11	11.15	7.03	3.41	10.67	6.80	3.70	10.48	6.70	3.82	10.20	6.56	4.00	9.32	6.14	3.83
22.0	30.0	12.33	6.97	3.14	11.85	6.75	3.44	11.38	6.54	3.73	11.19	6.46	3.85	10.90	6.33	4.03	9.98	5.94	3.83
24.0	32.0	12.80	6.74	3.16	12.32	6.54	3.45	11.85	6.35	3.75	11.66	6.27	3.87	11.37	6.15	4.04	10.41	5.78	3.83

Temp:Fahrenheit / TC、SHC :kBtu/h / PI:kW

INDOOR		OUTDOOR																	
EWB	EDB	68			77			86			90			95			104		
° F	° F	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
57.2	68.0	24.39	17.54	1.53	24.39	17.54	1.77	24.39	17.54	2.05	24.39	17.54	2.17	24.39	17.54	2.38	24.39	17.54	2.67
60.8	71.6	30.43	19.72	2.07	30.43	19.72	2.43	30.43	19.72	2.86	30.43	19.72	3.07	30.43	19.72	3.42	29.55	19.27	3.83
64.4	77.0	36.91	23.00	2.78	36.91	23.00	3.33	35.62	22.33	3.70	34.97	22.00	3.81	34.00	21.51	3.99	31.05	20.05	3.83
67.0	80.0	39.66	24.83	3.11	38.04	24.00	3.41	36.42	23.19	3.70	35.77	22.87	3.82	35.00	22.39	4.00	31.79	20.96	3.83
71.6	86.0	42.07	23.78	3.14	40.45	23.04	3.44	38.83	22.32	3.73	38.18	22.03	3.85	37.21	21.61	4.03	34.04	20.26	3.83
75.2	89.6	43.67	23.00	3.16	42.05	22.32	3.45	40.43	21.65	3.75	39.78	21.39	3.87	38.81	21.00	4.04	35.53	19.72	3.83

Symbols
AFR : Air flow rate (m3/min.)
BF : Bypass factor
EWB : Entering wet bulb temp. (℃) / (° F)
EDB : Entering dry bulb temp. (℃) / (° F)
TC : Total capacity (kW) / (kBtu/h)
SHC : Sensible heat capacity (kW) / (kBtu/h)
PI : Power input (kW)

NOTES:
1. ☐ shows nominal(rated) capacities and power input.
2.TC,PI and SHC must be calculated by interpolation using the figures in the above tables. (Figures out of the tables should not be used for calculation.)
3.Capacities are based on the following conditions.
Corresponding refrigerant piping length : 25 ft
Level difference : 0 ft
4.Cooling capacity at Low outdoor temperature

Temp:Celsius / TC、SHC、PI:kW
60Hz 208 – 230 V

INDOOR		OUTDOOR		
EWB	EDB	−15 (℃DB)		
℃	℃	TC	SHC	PI
14.0	20.0	5.67	4.42	0.54

Temp:Fahrenheit / TC、SHC :kBtu/h / PI:kW
60Hz 208 – 230 V

INDOOR		OUTDOOR		
EWB	EDB	5 (° FDB)		
° F	° F	TC	SHC	PI
57.2	68.0	19.35	15.08	0.54

INDOOR		OUTDOOR		
EWB	EDB	−20 (℃DB)		
℃	℃	TC	SHC	PI
14.0	20.0	5.85	4.56	0.52

INDOOR		OUTDOOR		
EWB	EDB	−4 (° FDB)		
° F	° F	TC	SHC	PI
57.2	68.0	19.94	15.55	0.52

INDOOR		OUTDOOR		
EWB	EDB	−40 (℃DB)		
℃	℃	TC	SHC	PI
14.0	20.0	6.57	5.12	0.50

INDOOR		OUTDOOR		
EWB	EDB	−40 (° FDB)		
° F	° F	TC	SHC	PI
57.2	68.0	22.41	17.47	0.50