

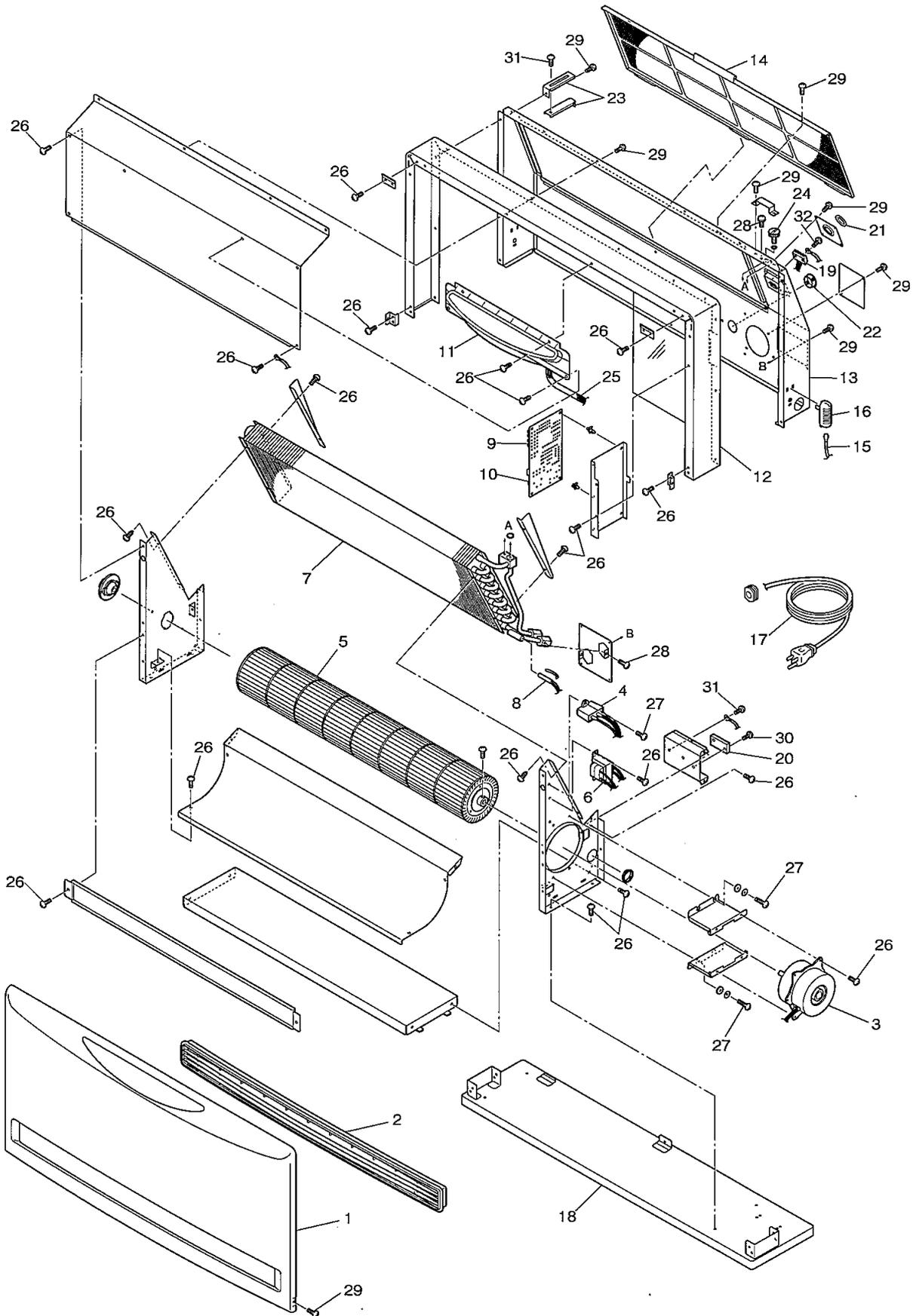
TROUBLE SHOOTING (ERROR CODES)

| ERROR | | CONDITION | CHECK CONTENTS | | REASON | SOLUTION |
|-------|--|---|---|--|--|---|
| E-03 | Short-circuit of the Water thermistor | The water thermistor detected under 3 kΩ of resistance value. | Check the resistance value of the thermistor. | Under 3kΩ of resistance value is NG. | • The water thermistor failure | • Exchange the water thermistor. |
| E-08 | Power frequency error | The power frequency is under 45Hz or over 65Hz when the unit starts operating. | Check the frequency of the power. | Under 45Hz or over 65Hz is NG. | • Power frequency malfunction | • Correction of the power. |
| E-13 | Water thermistor is disconnected | The water thermistor detected over 864kΩ of resistance value. | Check the resistance value of the thermistor. | Over 864kΩ of resistance value is NG. | • The water thermistor failure | • Exchange the water thermistor. |
| E-40 | Water temperature is too low. | <ul style="list-style-type: none"> • The temperature of circulating water is not 100 °F (38°C) after 30 mins from operating start. Or • Once the temperature of circulation water was detected over 90 °F (32°C) after operating start, but the temperature keeps under 90 °F (32°C) after that. | Can you see whether water is circulating or not? | Not circulate the water. | • Circulation pump malfunction | • Check circulation pump and water circulating line. |
| | | | | | • Air lock in the water pipe | • Check the water circulation line. |
| | | | | | • The valve is closed. | • Check the water circulating line. |
| | | | Is the temperature of circulating water high? | Circulate the water but water temp. is too low. | • Does the heat source equipment such as water heater start operating? | • Check the heat source equipment. |
| | | | | • The setting temperature of heat source equipment is low. | • To set the proper temperature of heat source equipment. | |
| F-0 | "POWER" switch has been pressed when the power was restored. | • The power is coming to operation switch when the power distribution starts. | Check the power distribution of operation switch. | It is NG if there is always a conduction. | • Operation switch malfunction | • Exchange the operation switch (Lamp circuit board). |

TROUBLE SHOOTING (NO ERROR CODES)

| ERROR | | CAUSE | CHECK | SOLUTION |
|-------|---|---|--|---|
| 1 | Does not operate (Non-indication) | •Power outage. | Check the power voltage. | Correct the power voltage. |
| | | •Power supply code is disconnected. | Check whether the power plug is connecting to wall socket or not. | Connect the power plug. |
| | | •Breaking of electric current fuse wire (Control) | Check the electric fuse conduction. | Exchange the fuse wire if there is no electric continuity. |
| | | •Output voltage malfunction of the transformer | Check the output of the transformer. | Exchange the transformer if the output is malfunction. |
| | | •Breaking of the FFC cable | Check the conduction. | Exchange the cable if it is malfunction. |
| | | •Malfunction of the FFC cable connection | Check whether two sides of the wire are opposite or not. | Connect the wire correctly. |
| 2 | Warm air does not blow (The temperature indication shows as usual) | •Room temperature is higher than set temperature when unit is in "AUTO Fan Mode" | Check whether the set temperature is proper temperature or not. | Change the set temperature. |
| | | •Water temperature is too low at the time of start of operation. The temperature of the circulation water is less than 100° F (38° C). | Check whether the water is circulate or not. | Check the water circulation line. |
| | | Malfunction of the circulation equipment (Only the case that the pump is controlled by external output from this unit.) | Check whether the temperature of circulating water is high or not. | Check the set temperature of the heat unit. |
| | | | Output the connecting output to the external output terminal. | Check the water circulation line. |
| 3 | Warm air does not blow and the displayed room temperature is much different from actual temp. | •Unit is exposed to direct sunlight. | The room thermistor may get the direct rays of the sun. | Cut off the direct rays of the sun. |
| | | •Room thermistor is exposed a heat source. | The room thermistor detects the heat. | Move the room thermistor further away from the heat. |
| 4 | The unit operates, but indicator is malfunction. | •Malfunction of the FFC cable connection | Check the FFC cable. | Exchange the wires if they are malfunctioned. |
| 5 | Any of buttons do not work. | •Child Lock is on. | Check the child lock mark. | Keep pushing the child lock button for more than 3 sec. and cancel the child lock mode. |
| 6 | Heating performance has declined. | •Clogged or dirty Air Filter. | Check the dirt on the filter. | Clean the filter. |
| | | •The fins of the heat exchanger are flogged with dust or something. | Check the fin of the heat exchanger. | Clean the heat exchanger. |
| | | •Water pipe flow has been restricted. | Check whether the quantity of circulation water drop or not. | Check the pump and pipe. |
| | | •Be clogged with something inside the pipe of heat exchanger. | Check inside the pipe. | Check the circulation water. |
| 7 | "Ticking" noise. | •Noise of relay, valve and/or fan motor. Normal. | | Not malfunction |
| 8 | Cannot be operated, beeping noise, and "OFF" is shown on digital display. | • "POWER" switch has been turned off while Child Lock is turned on. | Can you see the "child lock mark" and "OFF" on the indicator? | Keep pushing the child lock button for more than 3 sec. and cancel the child lock mode. |
| 9 | Water running noise. | •Hot water is flowing into the unit. Normal | | Not malfunction |
| 10 | Air flow is poor. | •When the temperature of the circulation water is between 100° F and 110° F (38° C and 43° C), the unit will operate at the low fan speed only. | Has the temperature of circulation water been 100° F ~110° F (38° C ~43° C)? | Change the water temperature set. |
| | | •The Air Filter is clogging. | Check the dirt on the filter. | Clean the filter. |
| 11 | Power lamp blinks. | •Indicating that the power failure occurred. To stop the blinking power lamp, press any button once. | Was there any temporary voltage interruption such as power failure? | To solve the flashing lamp, push the any buttons. |

PARTS DESCRIPTION



HC-20

REF # PART # PART NAME

| | | |
|----|----------|-------------------------------|
| 1 | 20477046 | Front panel |
| 2 | 20477032 | Louver assembly |
| 3 | 20477069 | Fan motor assembly/ Capacitor |
| 4 | 20477003 | Fan capacitor |
| 5 | 20477004 | Fan cross assembly |
| 6 | 20477017 | Transformer |
| 7 | 20477044 | Heat exchanger assembly |
| 8 | 20477074 | Water temp. thermistor |
| 9 | 20477012 | Main circuit board |
| 10 | 20478379 | Fuse 2 (5A) |
| 11 | 20477076 | Lamp circuit board |
| 12 | 20477020 | Top / Side panel |
| 13 | 20477066 | Rear panel |
| 14 | 20477040 | Filter |
| 15 | 20477073 | Room temp. thermistor |
| 16 | 20477075 | Room thermistor cover |
| 17 | 20477035 | Power supply cord |
| 18 | 20477029 | Base assembly |
| 19 | 20477014 | Switch terminal block |
| 20 | 20477015 | Power terminal block |
| 21 | 20477039 | Rubber bushing |
| 22 | 20455850 | Hole plug |
| 23 | 20477062 | Wall bracket |
| 24 | 20477051 | Bleeder screw |
| 25 | 20477052 | FFC ribbon cable |
| 26 | 20474050 | Screw C |
| 27 | 20474051 | Screw D |
| 28 | 20476459 | Screw B7 |
| 29 | 20455862 | Screw S2 |
| 30 | 20477084 | Screw F5 |
| 31 | 20476454 | Screw B4 |
| 32 | 20477086 | Screw D4 |
| 33 | 20477095 | Instruction manual |
| 34 | 20477099 | Carton |