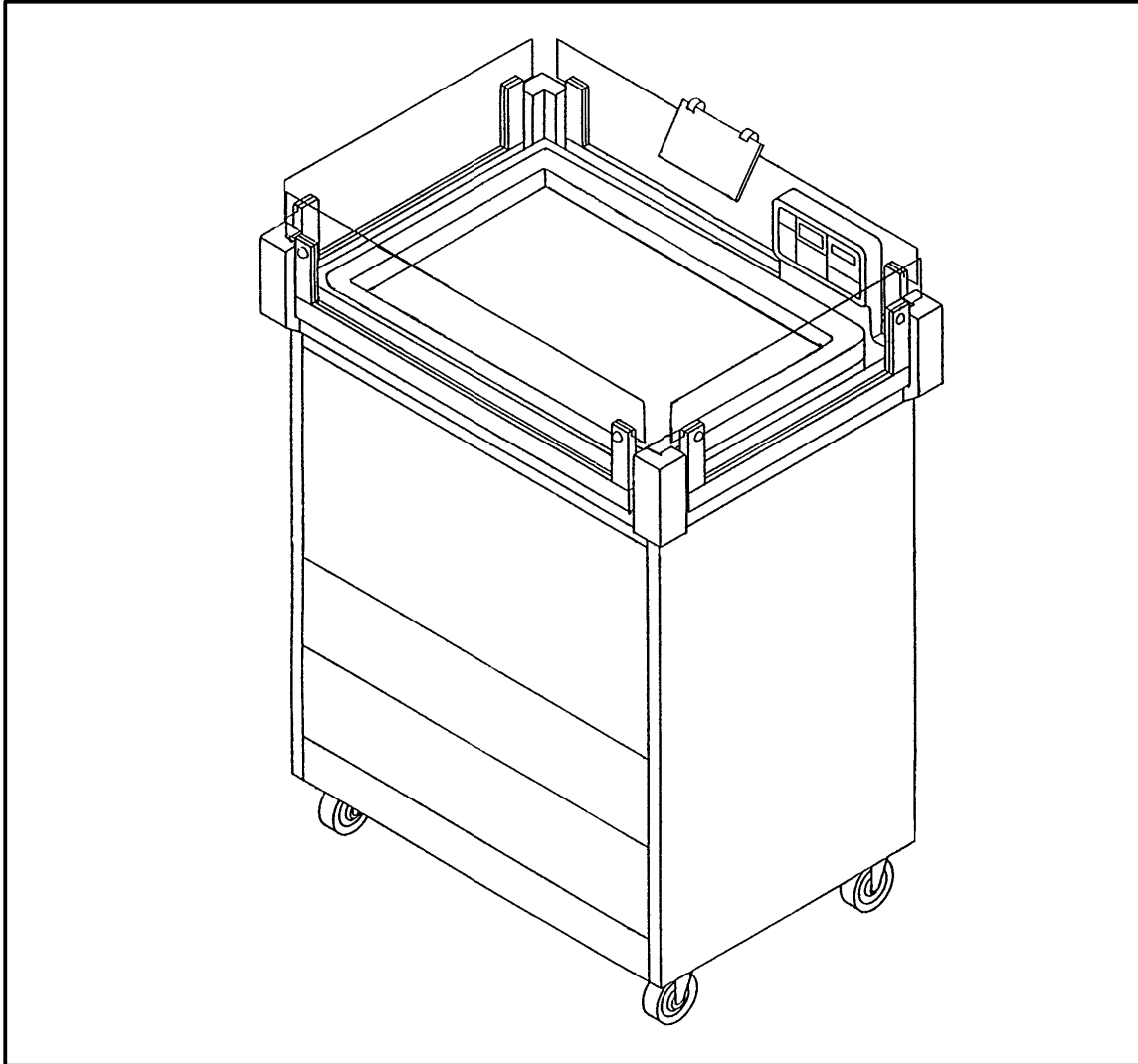


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File in your  
maintenance  
records

**stryker**<sup>®</sup>  
Medical



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# Infant Warmer

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## OPERATIONS AND MAINTENANCE MANUAL

For Parts or Technical Assistance  
1-800-327-0770

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# Introduction

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## INTRODUCTION

This manual is designed to assist you with the operation and maintenance of the Adel 986W Infant Warmer. Read it thoroughly before using the equipment or beginning any maintenance on it.

## SPECIFICATIONS

- 900 watt heater (main), 70 watt heater (blanket box)
- 12 watt fan (main), 4 watt fan (blanket box)
- 120 volt, 50/60 Hz, 12 ampere rating, 105–135 VAC operating ranges
- Current leakage less than 30 microamperes
- Hospital grade plug and 3 wire 14/3 AWG power cord
- 12 ampere resettable circuit breaker
- Compatible with non-flammable anesthetic agents and oxygen by nasal catheter or mask
- Ground Fault Interrupt (located inside back cover)
- Hardwood, hardwood laminate; 43" high X 31 1/2" wide X 22 1/2" deep (sides up)
- .177 thick polycarbonate side panels trimmed in solid hardwood
- Storage compartment with adjustable shelf
- Blanket warming compartment
- Two divided storage drawers
- Four casters, two locking
- Tray directs air to diffuser; catches fluids and provides Trendelenburg function
- Diffuser distributes air and holds pad
- Display panel monitors temperature system and times postnatal events

Stryker reserves the right to change specifications without notice.

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## WARNING

The Infant Warmer is equipped with a hospital grade plug for protection against shock hazard. It must be plugged directly into a properly grounded three-prong receptacle. Grounding reliability can be achieved only when a hospital grade receptacle is used.

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## WARNING / CAUTION / NOTE DEFINITION

The words WARNING, CAUTION and NOTE carry special meanings and should be carefully reviewed.

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## WARNING

The personal safety of the patient or user may be involved. Disregarding this information could result in injury to the patient or user.

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## CAUTION

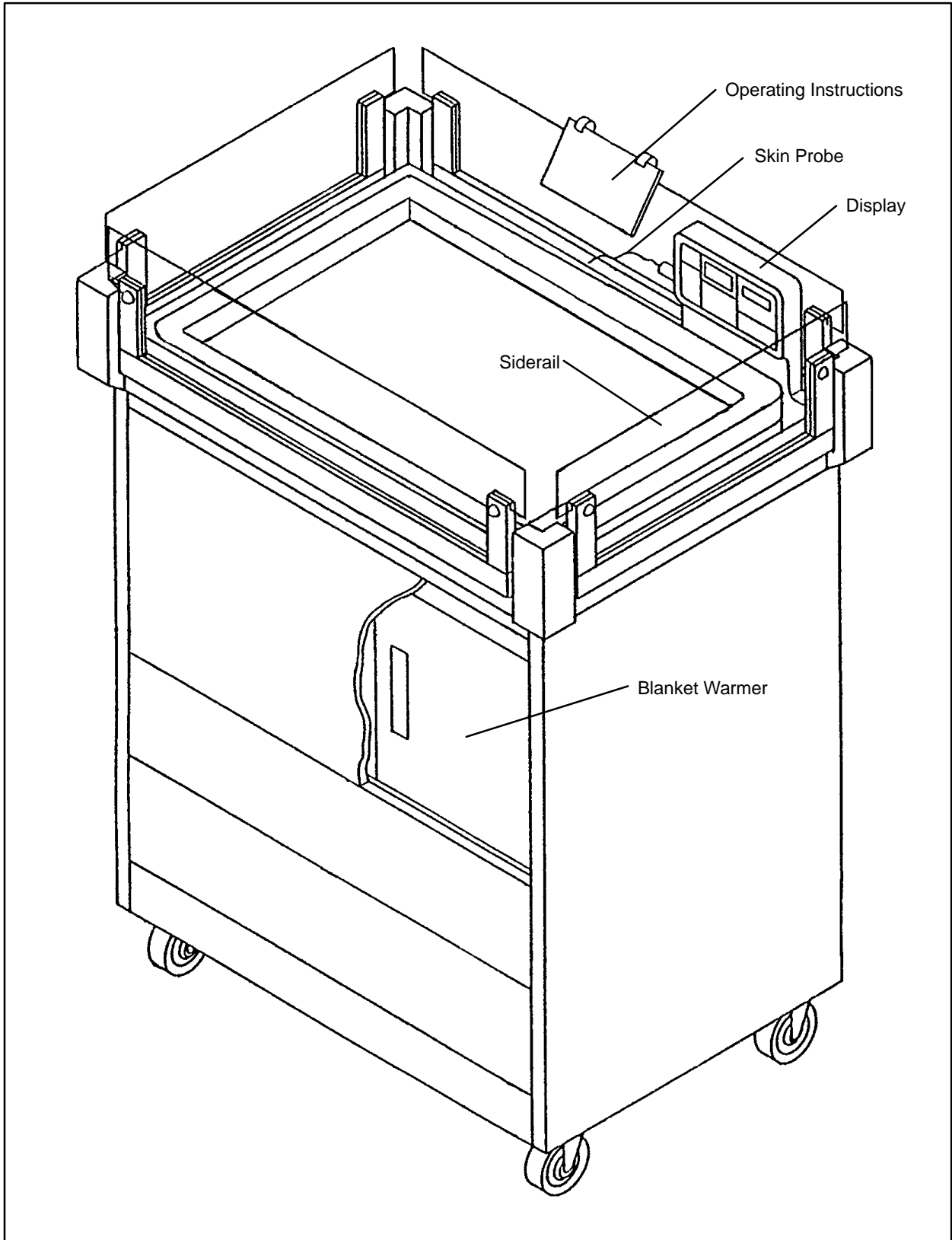
These instructions point out special procedures or precautions that must be followed to avoid damaging the equipment.

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## NOTE

This provides special information to make maintenance easier or important instructions clearer.

# Infant Warmer Illustration



# Operation Guide

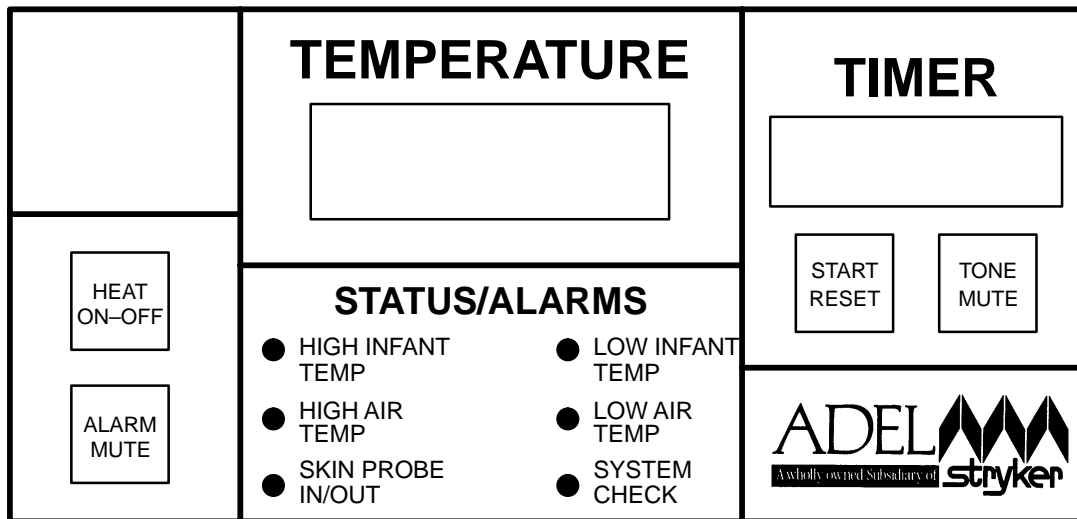
## INFANT WARMER OPERATION

The Model 986W Infant Warmer is designed to provide a neutral thermal environment for the well baby – to minimize the heat loss normally encountered at birth. Once the infant is placed on the Infant Warmer and the skin probe is attached, the warmer servo monitors the infant's skin temperature and increases or decreases the thermal environment accordingly.

The Infant Warmer has an air warming system similar to an incubator. An incubator is a closed system, recirculating air within its walls. The Infant Warmer is an open system, providing a constant flow of warm air around the infant. This constant flow keeps the cool room air away, simulating a warm envelope around the infant.

### NOTE

Infant Warmer operating instructions are also on cards attached to the siderail (see p. 3).



### BEFORE PUTTING THE INFANT ON THE WARMER:

1. Plug the Infant Warmer into a properly grounded, hospital grade wall receptacle. Note all the lights on the control console will flash ON with an audible beep. The colon ( : ) LED's of the timer will remain ON (as a power on indicator), and the blanket warmer operates automatically while the unit is plugged in.
2. To start the Warmer, press the HEAT ON/OFF button. Start the Warmer 15–30 minutes before the birth to warm the system housings and pad. Blankets should be placed in the blanket warmer (see p. 3) when preparing the unit for each use. *DO NOT place sheets or blankets on the pad under the infant at any time.* There are no audio alarms during the first three minutes of the warm-up cycle unless there is a system failure. Status lights function to indicate air temperature and skin probe status. Do not plug skin probe into display during warm-up, otherwise, alarm may sound.
3. Start the timer at the moment of birth by pressing START RESET. As a reminder for APGAR scoring, the timer will sound a tone marking times of one minute, five minutes, ten minutes, 20, 30, 40, 50 and 60 minutes. It may also be used for other timed procedures. To use the timer without the tones, press TONE MUTE. The timer turns off after 60 minutes or when START RESET is pressed.

### AFTER PUTTING THE INFANT ON THE WARMER:

1. When the infant is placed on the Warmer for an extended period of time, attach the skin probe (see p. 3) to the infant axillary with an adhesive patch and tape, then plug the probe into the left side of the console. The SKIN PROBE IN-OUT status light will go from flashing red to continuous green and the display will indicate the actual skin temperature. The nominal servo reference temperature is 36.5° C (97.2° F). No adjustments are necessary for additional heating or cooling. Skin probe readings of less than 33° C cause the display to go blank and the Warmer to revert back to a cooler operating mode. For maximum warmth output, be sure the skin probe is securely affixed to the infant.

# Operation Guide

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## AFTER PUTTING THE INFANT ON THE WARMER (CONTINUED):

### NOTE

Attempts to use the skin probe while drying or assessing the infant may not be successful because it is difficult to get the patch and/or tape to stick on top of the vernix or to withstand excessive handling. To avoid false alarms, do not use the skin probe until good skin contact can be maintained.

2. Once the infant's temperature has stabilized (1–4 hours after birth), the Infant Warmer may be turned off by pressing HEAT ON/OFF, and the Warmer can be used as a bassinet for the remainder of the infant's stay in LDRP. Since the Warmer provides a neutral thermal environment whether the infant is clothed or not, the unit may be left on **as long as the infant skin probe is attached and plugged in.**

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### WARNING

DO NOT LEAVE AN INFANT UNATTENDED.

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3. The infant temperature alarm system becomes armed once the temperature reaches the control band. Subsequently, infant temperatures exceeding the 35.5–37.5° C range are indicated by the status lights (flashing red) and the alarm (1Hz). The alarm may be silenced for three minutes by pressing ALARM MUTE. Should another alarm condition be detected during the mute period, the new alarm will activate the audible alarm and its respective indicator light will flash red.
4. To attain a Trendelenberg position, firmly push down on the foot or head end of the diffuser/pad holder. The Trendelenberg position will be maintained by a self-locking feature. Push down on the opposite end to level the surface or continue pushing to achieve the reverse Trendelenberg position. To intubate, push the head end down and open the head end window by lifting up and swinging down the siderail (see p. 3).
5. The Infant Warmer pad surface is compatible with direct contact to the infant and is impervious to body fluids, vernix, medications and cleaning solutions. Sponge bathing and sponge rinsing can also be performed on the pad. Excess fluids and waste products are easily removed from the lower diffuser tray upon the conclusion of the infant's stay in the Warmer.

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### WARNING

The Infant Warmer should not be exposed to more than 200ml of fluid.

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### SYSTEM CHECK

System check fault results in a continuous alarm tone which can only be silenced by unplugging the unit from the wall. Plug the unit back in to reset. A system check fault lists a code number in the timer display (see troubleshooting guide p. 8). If the system check alarm cannot be reset, remove the unit from service.

### NURSE CALL

The unit is pre-wired to provide a signal to the nurse's station that an alarm condition exists. The signal (switch actuation) can either open or close the circuit as defined in the existing nurse call communications system. The nurse call signal clears only when the alarm condition clears, not when an alarm condition is muted on the unit.

### TEMPERATURE DISPLAY SETTINGS

The temperature display can be provided in either centigrade or Fahrenheit scales. The unit can also be factory set to operate at 50Hz for international use.

# Preventative Maintenance

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## PREVENTATIVE MAINTENANCE PROGRAM

Observation of the following scheduled maintenance and inspection program will help assure continuous trouble-free operation of your 986W Infant Warmer.

ACTIVITY	MONTHLY INTERVAL	SUPPLIES REQUIRED
Inspect touch panel for switch function, clarity of displays and edge seal integrity.	12	N/A
Inspect power cord and plug for damage.	12	N/A
Inspect diffuser and tray for cracks.	12	N/A
Inspect wood for scratches or loss of surface finish. Clean and spray a light coat of Varathane over the area(s). Apply a second coat in approximately six hours.	N/A	Satin Varathane #91

## CLEANING

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### WARNING

Unplug the power cord from the wall socket before beginning any cleaning procedures.

---

- Discard the pad after use (or, it may be sent home with the patient). The pad may be disposed of by incineration with no toxic byproducts.

### NOTE

Infant Warmer pads are designed for single patient use to reduce the risk of cross contamination to infants. The pads may be wiped clean during the single patient use cycle but should be discarded and replaced with a new pad for the next infant's use.

- Lift off the top diffuser tray to clean and wipe dry both top and bottom surfaces.
- Wipe the lower collection tray clean of residual fluids or waste that may have sifted through the pad and the diffuser.
- Remove the lower tray by lifting straight up. Replace by snapping down over pivot pins.
- Clean the external surface of the skin probe with a mild detergent-type cleaning solution. General duty sanitizers and disinfectants may be used on all Warmer components, but avoid excessive moisture or abrasive cleaners on hardwood areas.

# Troubleshooting

## TROUBLESHOOTING GUIDE

The following chart is intended to assist qualified service personnel with identifying and correcting problems associated with the electrical operations. The schematic diagrams on the following pages should be used for reference. A volt-ohm meter will be required. Whenever corrective action is being taken, the infant should be removed from the Warmer.

PROBLEM/SYMPTOM	POSSIBLE CAUSE	RECOMMENDED ACTION
Heater and/or fan doesn't come on when HEAT ON switch is pushed.	Defective membrane switch.  Signal to microprocessor blocked.  Defective heater.  Defective fan.	With unit unplugged, check for resistance change between pins 1 and 2 (labeled Hot Line and Fan) on the control circuit board. Replace membrane, if defective (see p. 14). Unplug Warmer from wall receptacle and plug back in. With unit unplugged, check continuity of heater between 5 and 6 (labeled Heater) on the control circuit board. Resistance should be approx. 16 ohms. Replace (see p. 16) if open or less than 14 ohms. With unit unplugged, check continuity of fan. Resistance between 7 and 2 (labeled Fan) on the control circuit board should be approx. 1100 ohms. Assure impeller turns freely. Replace if frozen or an open circuit (see p. 15).
Colon does not light when Warmer is plugged into receptacle.	No wall power. Circuit breaker open.  GFI open.  Defective wall receptacle.  Loose connector(s) (display circuit board to control circuit board).	Restore power. Reset by pushing extended button back to flush (normal) position. Remove back cover of warmer and inspect the GFI reset button. If reset is open, look for leakage source (i.e., blanket box heater, moisture in lower plenum area, etc.). Eliminate leakage source before resetting GFI. Check receptacle for power, polarity and ground integrity. Check resistances between pins – reattach connectors, if necessary.
No temperature display when plugging in the skin probe.	Defective receptacle.	With unit unplugged, check continuity at cable interface on circuit board. Resistance between 5 and 6 (labeled Patient) on the control circuit board, should be approximately 10,000 ohms with probe, 4,000 ohms without probe. Replace probe jack, if necessary.



# Troubleshooting

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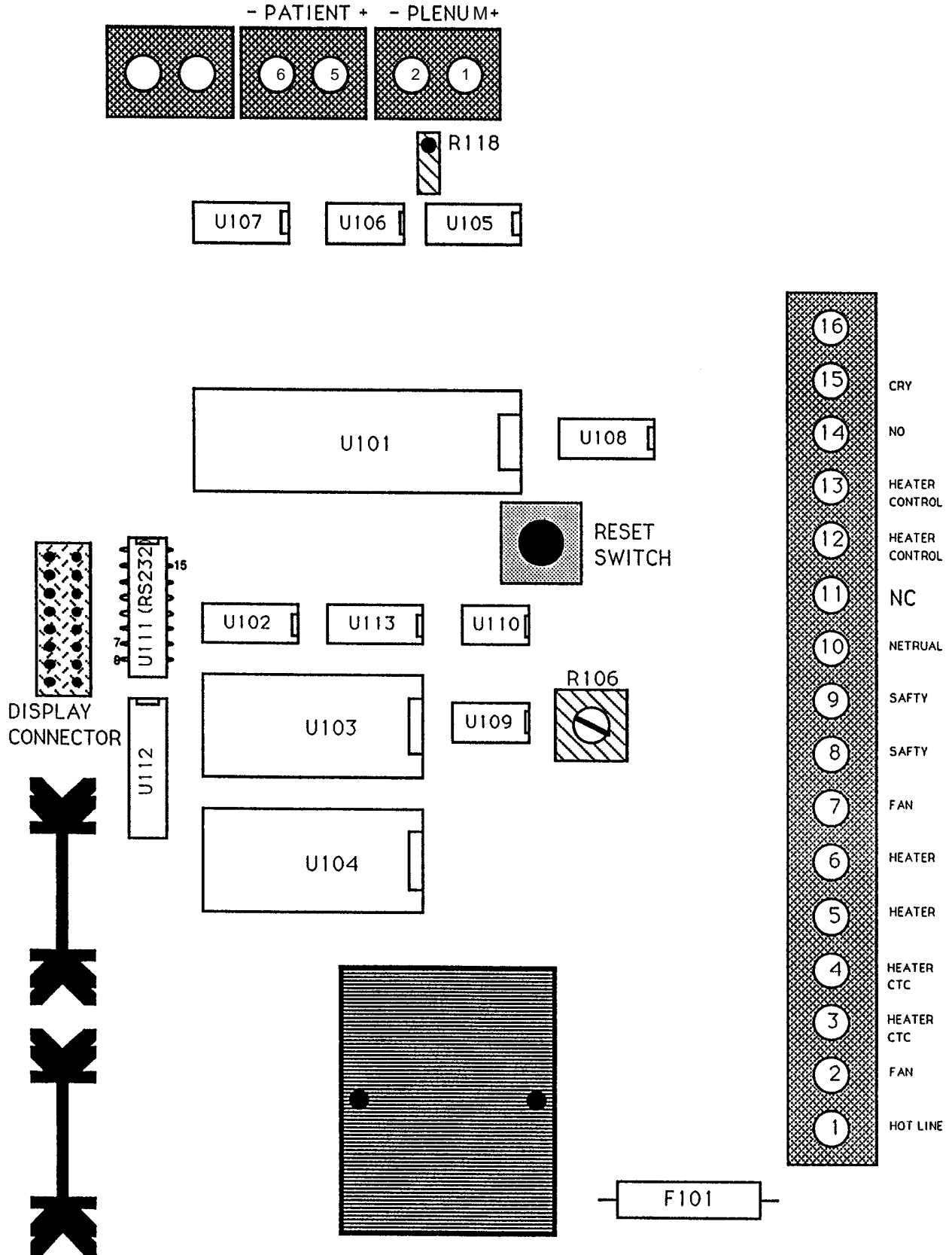
## SYSTEM CHECK ALARM CODES

CODE	POSSIBLE CAUSE	RECOMMENDED ACTION
Code 1	Control thermistor open.	With unit unplugged, check for continuity across 1 and 2 (labeled Plenum) on the control circuit board. If no continuity, replace plenum thermistor.
Code 2	Control thermistor shorted.	Replace plenum thermistor.
Code 3	Skin thermistor open.	Replace skin probe thermistor.
Code 4	Skin thermistor shorted.	Replace skin probe thermistor.
Code 5	Hi Temp Limit thermostat open.	Let cool, then restart.
Code 7	Does not recognize heater is turned off.	Check capability of control circuit board at the relay with a Voltmeter. With the red lead on (–) DC connector and black lead to ground, turn unit on to heat. The pwm (pulse train) should be visible. If not, replace circuit board (see p. 15)

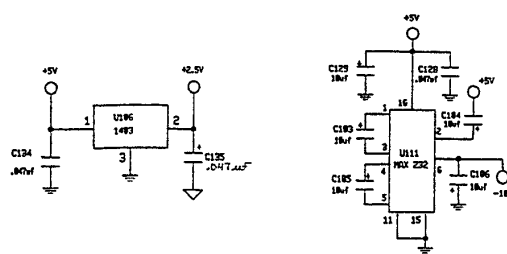
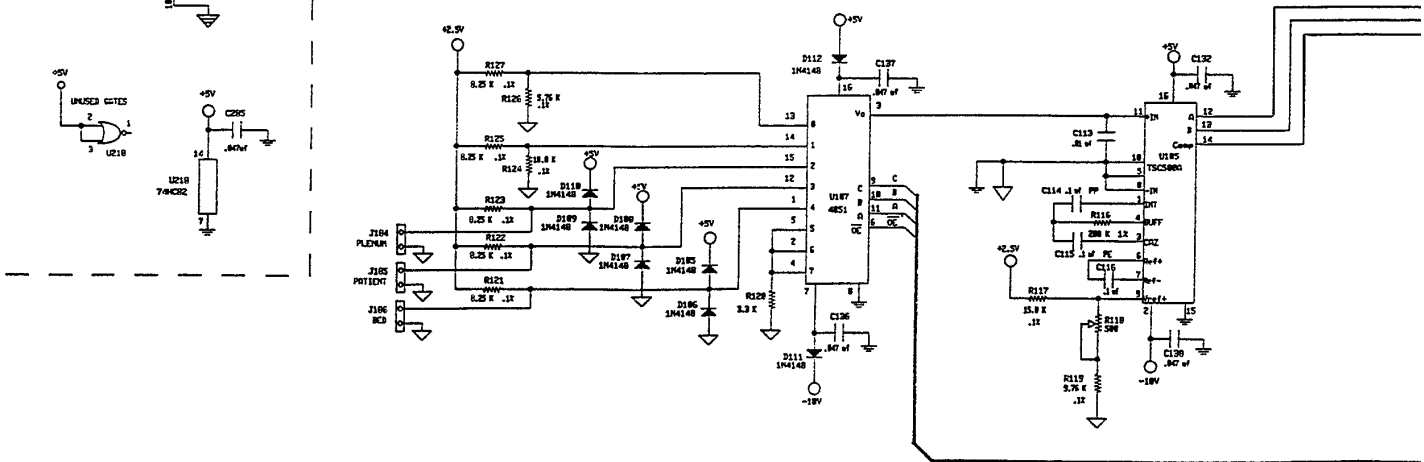
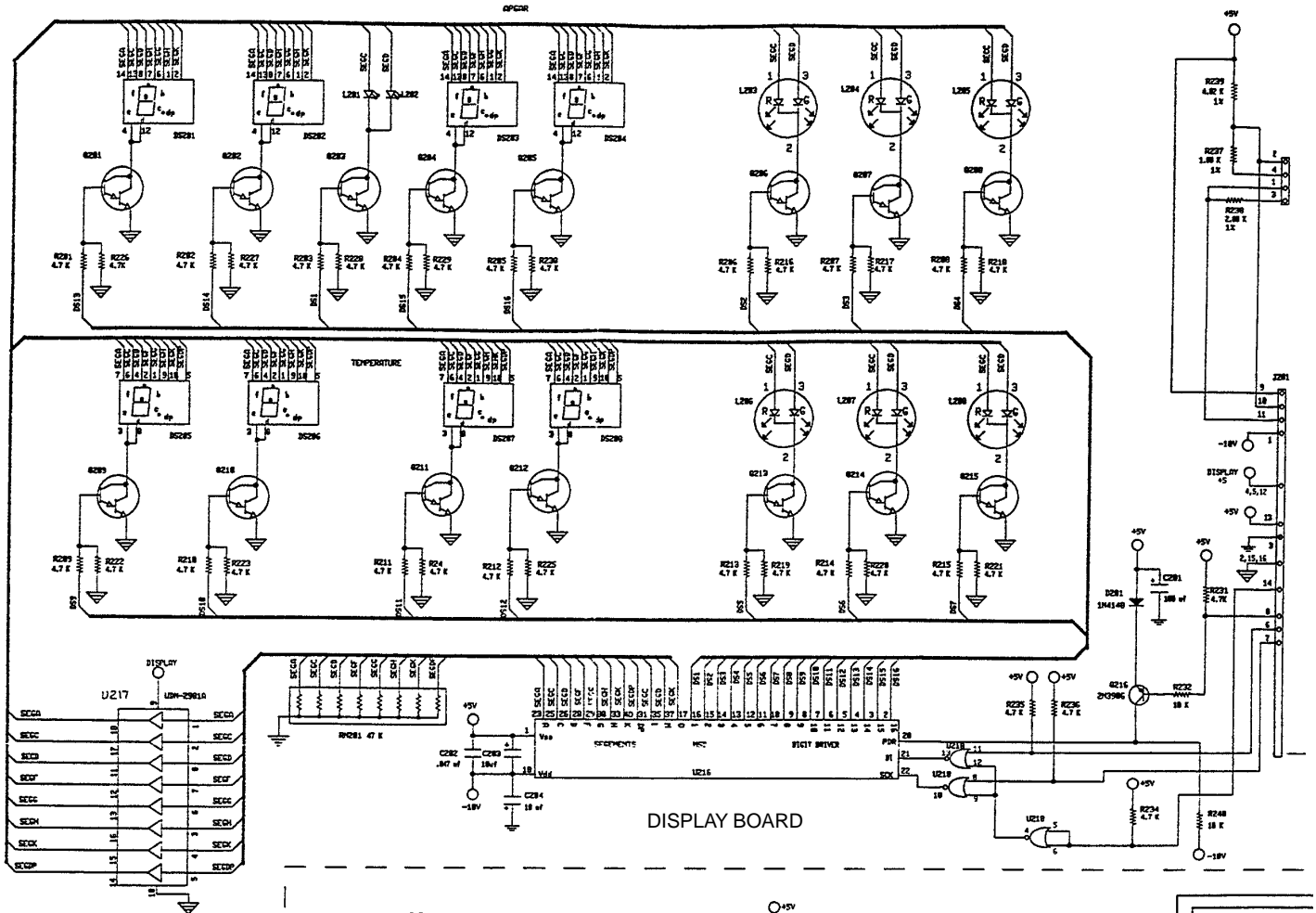
### NOTE

To clear all system alarms, unplug Warmer from wall receptacle and plug back in.

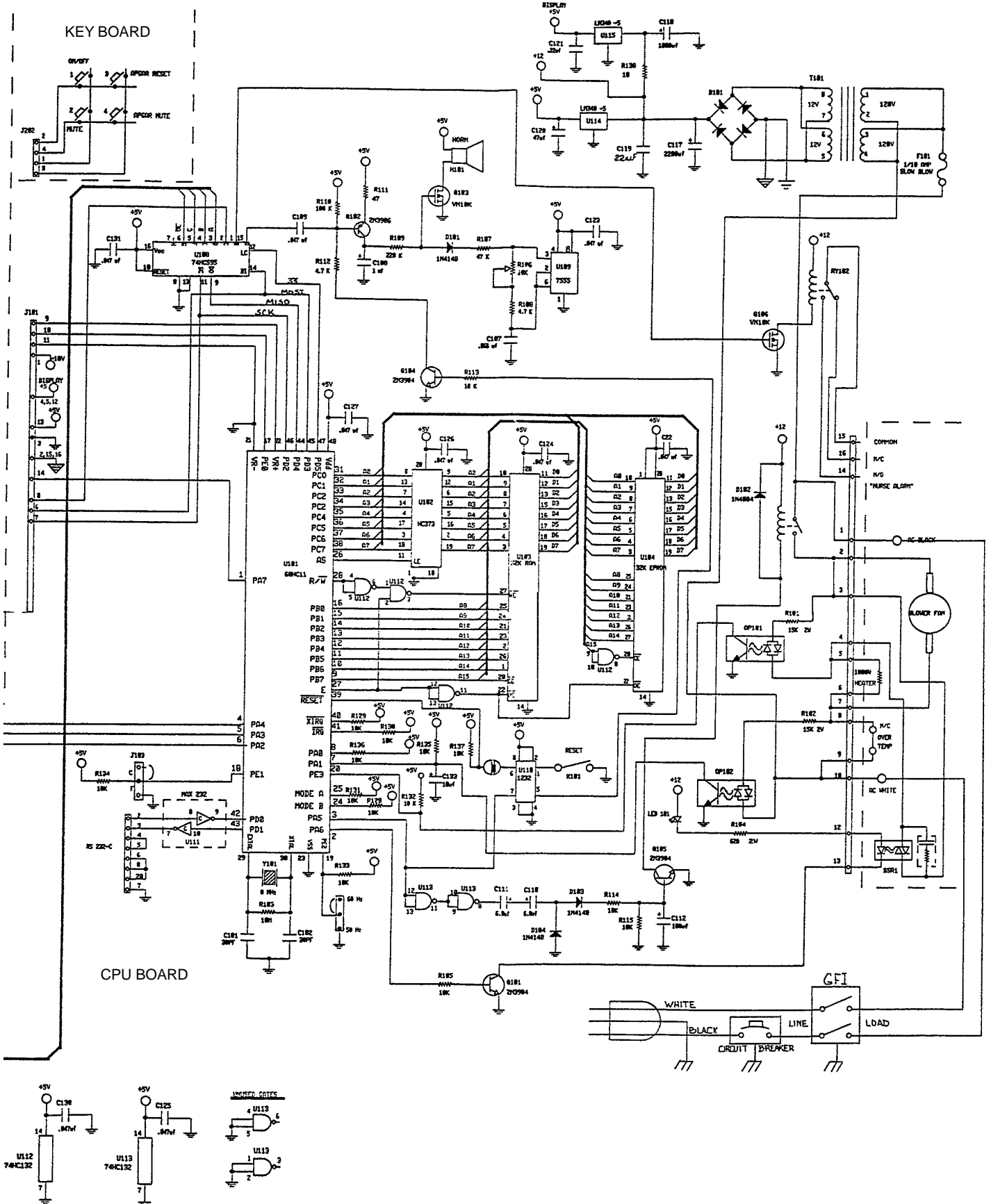
# Schematic Diagrams



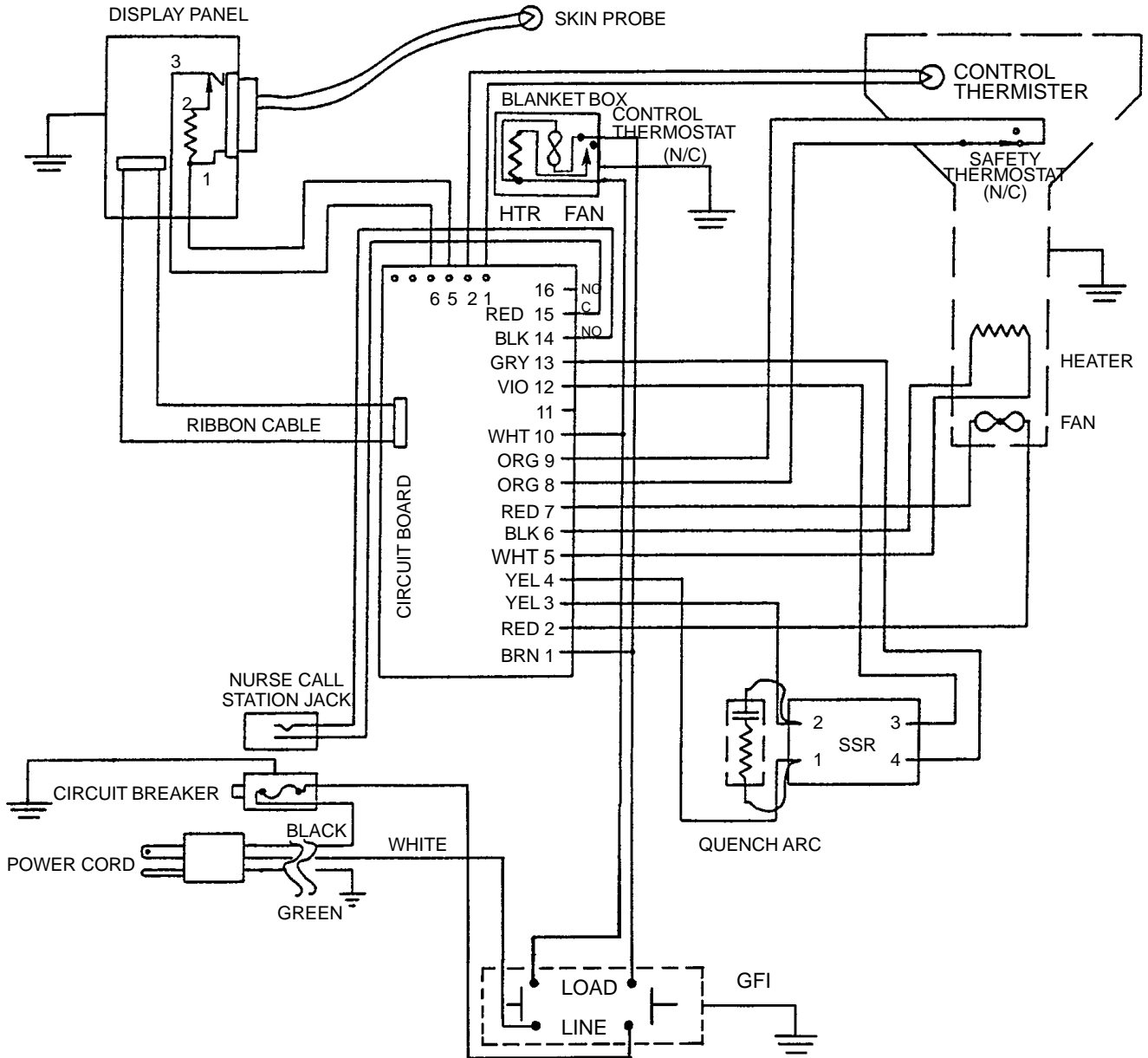
# Schematic Diagrams



# Schematic Diagrams



# Schematic Diagrams



# Service Information

## VERIFYING ACCURACY OF TEMPERATURE READINGS

To verify the accuracy of the unit's temperature function, attach a resistor, valued at any of the numbers listed below, onto a probe that can be plugged into the skin probe jack on the display panel. Run the unit as if the probe was attached to a baby. The temperature on the display should match the listed value(s) below.

Temp. C	Resistance Nominal ohm	Resistance Minimum ohm	Resistance Maximum ohm	Tolerance ± ‰
35.00	6,530	6,503	6,557	0.41
35.20	6,477	6,450	6,503	0.41
35.40	6,423	6,397	6,450	0.41
35.60	6,370	6,344	6,397	0.41
35.80	6,318	6,292	6,344	0.41
36.00	6,266	6,241	6,292	0.41
36.20	6,215	6,189	6,241	0.41
36.40	6,164	6,139	6,189	0.41
36.60	6,114	6,089	6,139	0.41
36.80	6,064	6,039	6,089	0.41
37.00	6,014	5,990	6,039	0.41
37.20	5,965	5,941	5,990	0.41
37.40	5,917	5,893	5,941	0.41
37.60	5,869	5,845	5,893	0.41
37.80	5,821	5,797	5,845	0.41
38.00	5,774	5,750	5,797	0.41
38.20	5,727	5,704	5,750	0.41
38.40	5,681	5,658	5,704	0.41
38.60	5,635	5,612	5,658	0.41
38.80	5,589	5,567	5,612	0.41
39.00	5,544	5,522	5,567	0.41
39.20	5,500	5,477	5,522	0.41
39.40	5,455	5,433	5,477	0.40
39.60	5,412	5,390	5,433	0.40
39.80	5,368	5,347	5,390	0.40
40.00	5,325	5,304	5,347	0.40
40.20	5,282	5,261	5,304	0.40
40.40	5,240	5,219	5,261	0.40
40.60	5,198	5,177	5,219	0.40
40.80	5,157	5,136	5,177	0.40
41.00	5,116	5,095	5,136	0.40
41.20	5,075	5,055	5,095	0.40
41.40	5,035	5,014	5,055	0.40
41.60	4,995	4,975	5,014	0.40
41.80	4,955	4,935	4,975	0.40
42.00	4,916	4,896	4,935	0.40
42.20	4,877	4,857	4,896	0.40
42.40	4,838	4,819	4,857	0.40
42.60	4,800	4,781	4,819	0.40
42.80	4,762	4,743	4,781	0.40
43.00	4,724	4,706	4,743	0.40
43.20	4,687	4,669	4,706	0.40
43.40	4,650	4,632	4,669	0.40
43.60	4,614	4,596	4,632	0.40
43.80	4,578	4,560	4,596	0.39
44.00	4,542	4,524	4,560	0.39
44.20	4,506	4,489	4,524	0.39
44.40	4,471	4,453	4,489	0.39
44.60	4,436	4,419	4,453	0.39
44.80	4,401	4,384	4,419	0.39
45.00	4,367	4,350	4,384	0.39

# Service Information

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## MEMBRANE SWITCH REPLACEMENT

MEMBRANE SWITCH KIT #88-1132-22-00

### Required Tools:

Phillips Screwdriver

3/8 End Wrench

### Replacement Procedure:

1. Unplug the power cord from the wall receptacle.
2. Remove the eight screws holding the display housing to the back cover.
3. Tilt the circuit board toward you until you can unplug the membrane switch connector and ribbon cable. Remove the display circuit board from the housing.
4. Remove the mounting nut on the skin probe receptacle.

---

### CAUTION

Membrane switches are fragile. Never depress a membrane dome unless the switch is lying on a flat, firm surface. Doing otherwise will cause the switch to fail eventually. When applying a new membrane switch, lay it down evenly; do not roll it down. Once a membrane switch has been peeled back, it cannot be reused.

5. Install skin probe receptacle into replacement housing and tighten the mounting nut.
6. Plug the ribbon cable and membrane switch connectors into the display circuit board.
7. Realign the housing with the back panel and replace the eight screws to hold the housing in place. Be sure the cables are not pinched.
8. Plug the power cord into a properly grounded hospital grade wall receptacle and test all functions a minimum of three times. Check electrical safety in conformance with specified hospital requirements (leakage current, ground continuity, etc.) before returning Warmer to service.

## DISPLAY CIRCUIT BOARD REPLACEMENT

DISPLAY CIRCUIT BOARD #88-1131-20-00

### Required Tools:

Phillips Screwdriver

3/8 End Wrench

### Replacement Procedure:

1. Unplug the power cord from the wall receptacle.
2. Remove the eight screws holding the display housing to the back cover.
3. Tilt the circuit board toward you until you can unplug the membrane switch connector and ribbon cable. Remove the defective display circuit board from the housing.
4. Install replacement circuit board and plug the ribbon cable and membrane switch connectors into the circuit board.
5. Realign the housing with the back panel and replace the eight screws to hold the housing in place. Be sure the cables are not pinched.
6. Plug the power cord into a properly grounded hospital grade wall receptacle and test all functions a minimum of three times. Check electrical safety in conformance with specified hospital requirements (leakage current, ground continuity, etc.) before returning Warmer to service.

# Service Information

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## CONTROL CIRCUIT BOARD REPLACEMENT

CONTROL CIRCUIT BOARD #88-1131-21-00

### Required Tools:

Phillips Screwdriver

5/16 Nut Driver

Standard Screwdriver

### Replacement Procedure:

To remove the defective control circuit board:

1. Unplug the power cord from the wall receptacle and remove the Warmer back panel.

---

### CAUTION

Use of a static wrist band is required.

2. Loosen all the screws on the terminal strip and remove all wires and the quench arc (on older models).
3. Unplug the display panel ribbon cable and disconnect the patient and plenum thermistor leads.
4. Remove the four 6-32 hex nuts and remove the circuit board.
5. Place replacement circuit board over pem studs and secure with the four 6-32 hex nuts.
6. Reconnect the plenum and patient thermistor leads and plug in the display panel ribbon cable.
7. Reconnect wires and quench arc to the terminal strip (see schematic p. 9 for proper sequence). Tighten all the screws securely.
8. Ensure all cables and electrical connections are secure and replace the back panel.
9. Plug the power cord into a properly grounded hospital grade wall receptacle and test all functions a minimum of three times. Check electrical safety in conformance with specified hospital requirements (leakage current, ground continuity, etc.) before returning Warmer to service.

## FAN REPLACEMENT

FAN #88-1131-17-00

### Required Tools:

Phillips Screwdriver

Standard Screwdriver

### Replacement Procedure:

1. Unplug the power cord from the wall receptacle, remove the Warmer back panel and the shield around the plenum.
2. Disconnect the lead wires of the fan.
3. Remove the cover on the right side of the plenum and slide the fan assembly out.
4. Slide the replacement fan on the track until it is even with the edge of the plenum. Replace the right side cover.
5. Reattach the fan leads and replace the shield around the plenum.
6. Ensure all cables and electrical connections are secure and all shields are replaced. Replace the back panel.
7. Plug the power cord into a properly grounded hospital grade wall receptacle and cycle at least three times (Heat On). Check electrical safety in conformance with specified hospital requirements (leakage current, ground continuity, etc.) before returning Warmer to service.



# Service Information

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## HEATER REPLACEMENT

HEATER #88-1131-18-00

### Required Tools:

Phillips Screwdriver  
Needle Nose Pliers

Standard Screwdriver

### Replacement Procedure:

1. Unplug the power cord from the wall receptacle, remove the Warmer back panel and the shields around the plenum.
2. Disconnect the lead wires of the fan.
3. Remove the cover on the right side of the plenum.
4. Counting from the bottom of the terminal strip, loosen screws #5 and #6 (white and black wires) on the terminal strip and remove heater lead wires (cut tie wrap as needed).
5. Remove wire strain relief bushing.
6. Remove the defective heater from the plenum.
7. Install replacement heater, feed wires through strain relief plenum hole and reinstall strain relief bushing.
8. Reattach the heater leads to the terminal strip and tighten the screws. Reinstall tie wrap as needed. Reattach the fan leads.
9. Ensure all electrical connections are secure and the plenum cover and shields are replaced. Replace the back panel.
10. Plug the power cord into a properly grounded hospital grade wall receptacle and cycle a minimum of three times (Heat On). Check electrical safety in conformance with specified hospital requirements (leakage current, ground continuity, etc.) before returning Warmer to service.

## THERMOSTAT SWITCH REPLACEMENT

HEATER #88-1131-18-00

### Required Tools:

Phillips Screwdriver

Standard Screwdriver

### Replacement Procedure:

1. Unplug the power cord from the wall receptacle and remove the Warmer back panel.
2. The thermostat is located on the upper right slope of the plenum. Pull off the flag connectors and remove the two screws and the defective thermostat.
3. Attach the replacement thermostat with the two screws and attach the flag connectors.
4. Reattach the back panel and plug the power cord into a properly grounded hospital grade wall receptacle. Cycle a minimum of three times (Heat On). Check electrical safety in conformance with specified hospital requirements (leakage current, ground continuity, etc.) before returning Warmer to service.

# Service Information

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## BLANKET WARMER HEATER/FAN REPLACEMENT

BLANKET WARMER HEATER #88-1131-88-00

BLANKET WARMER FAN KIT #88-1131-86-00

### Required Tools:

Phillips Screwdriver

3/8 Nut Driver

Blade Screwdriver

Drill with 1/8" Drill Bit

11/32 Nut Driver

Wire Cutters

### Replacement Procedure:

1. Unplug the power cord from the wall receptacle.
2. Open the door of the blanket warmer, lift up the bottom tray and remove the three wood screws.
3. Disconnect the brown and blue heater wires from the circuit board and ground wires on counterweight terminal.
4. Cut wire ties holding wires together and disconnect wire restraint clip.
5. Remove the blanket box from the cabinet and drill out the four pop rivets on the rear panel. Remove the rear panel.
6. Remove the four screws in the perforated screen.
7. Remove the four screws holding the heater panel. Fold down the panel and remove the wire terminal nuts.
8. Remove the two mounting screws holding the heater to the panel. If replacing the fan, remove the mounting screws.
9. Attach replacement heater/fan to panel with the two mounting screws.
10. Attach the wire leads and replace the panel into the blanket warmer.
11. Replace the perforated screen.
12. Plug the power cord into a properly grounded hospital grade wall receptacle. Wait 5-10 minutes and check for warmth in the blanket compartment.
13. Check electrical safety in conformance with specified hospital requirements (leakage current, ground continuity, etc.) before returning Warmer to service.

## BLANKET WARMER THERMOSTAT SWITCH REPLACEMENT

BLANKET WARMER THERMOSTAT SWITCH #88-1131-87-00

### Required Tools:

Phillips Screwdriver

3/8 Nut Driver

Blade Screwdriver

Drill with 1/8" Drill Bit

11/32 Nut Driver

Wire Cutters

### Replacement Procedure:

Follow the same procedure as above except:

1. Replace step 7 with:  
Remove the two screws holding the thermostat switch and pull off the flag connectors.
2. Delete step 8 and step 9.
3. Replace step 10 with:  
Attach the flag terminals to the switch and install with the two screws.

# Service Information

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## GROUND FAULT INTERRUPT REPLACEMENT

GFI KIT #88-1131-80-00

### Required Tools:

Phillips Screwdriver

### Replacement Procedure:

1. Unplug the power cord from the wall receptacle.
2. Remove Warmer back panel. Remove leads from both "line" and "load" sides of the GFI.
3. Remove the defective GFI.
4. Secure line connections (power cord) to replacement GFI, noting polarity of hook-up.
5. Secure the load side wires to the PC board.
6. Install the replacement GFI.
7. Plug the power cord into a properly grounded hospital grade wall receptacle. Press test button on GFI. If switch trips, press reset button.
8. Reinstall Warmer back panel and return Warmer to service.

## TEMPERATURE DISPLAY SELECTION

### Required Tools:

Phillips Screwdriver

Tweezers or Needle-Nosed Pliers

### Procedure:

1. Unplug the power cord from the wall receptacle.
2. Remove Warmer back panel.
3. The temperature selector plug is located directly above the largest integrated circuit chip on the upper middle section of the circuit board
4. To change from centigrade to Fahrenheit, slide the cap off the center and *right* pins and relocate it on the center and *left* pins. Do not change Hertz jumper.
5. Reinstall Warmer back panel and return Warmer to service.

### NOTE

This same procedure is used to change the frequency selector from 60 to 50 HZ for international use. The frequency 50/60 Hz plug/cap is to the right of the temperature C/F plug/cap.

# Service Information

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## TEMPERATURE CONVERSION GUIDE

<u>C</u>	<u>F</u>	<u>C</u>	<u>F</u>
35.0	95.0	37.1	98.8
35.1	95.2	37.2	99.0
35.2	95.4	37.3	99.1
35.3	95.5	37.4	99.3
35.4	95.7	37.5	99.5
35.5	95.9	37.6	99.7
35.6	96.1	37.7	99.9
35.7	96.3	37.8	100.0
35.8	96.4	37.9	100.2
35.9	96.6	38.0	100.4
36.0	96.8	38.1	100.6
36.1	97.0	38.2	100.8
36.2	97.2	38.3	100.9
36.3	97.3	38.4	101.1
36.4	97.5	38.5	101.3
36.5	97.7	38.6	101.5
36.6	97.9	38.7	101.7
36.7	98.1	38.8	101.8
36.8	98.2	38.9	102.0
36.9	98.4	39.0	102.2
37.0	98.6	40.0	104.0

# Service Information

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## SYSTEM CHECK

Notice the LOW AIR TEMPERATURE light turns red when the unit is started and remains red while the unit warms up.

Ensure the Warmer is plugged in and the blanket box has been allowed to pre-warm for a minimum of one hour prior to testing. This will allow the blanket box temperature to stabilize.

1. Using a calibrated temperature meter, insert the probe end into the blanket box and close the door. Allow the temperature reading to stabilize (no more than 1° C rise or fall in one minute). Notice the temperature is between 45° C and 49° C.

The SYSTEM CHECK light will remain green until the unit encounters one of the listed codes. When the unit has recognized a code, the light will change from green to flashing red. Verify the light flashes red for each code.

To check the NURSE CALL outlet, install the nurse call tester and observe the nurse call test light illuminates on each code and on each alarm.

2. To perform the Code 1 test, unscrew one of the connectors on the plenum thermistor wire located on the top of the main circuit board. Verify the display indicates Code 1, the alarm sounds and the nurse call light illuminates.
3. To perform the Code 5 test, disconnect the plenum thermistor, install an external thermistor wire and allow the unit to run at maximum output until it is shut off by the plenum thermostat. Use a calibrated temperature device to measure and record the maximum temperature at the plenum thermistor and the time it occurs. Observe the temperature is 70° C maximum and the time between 5 and 8 minutes. Verify the display indicates Code 5, the alarm sounds and the nurse call light illuminates.
4. Allow the unit to cool for approximately 5 minutes. Reinstall the original plenum thermistor wire. Start the unit and the timer and activate the tone mute. Notice the tone does not sound at one minute. Install a calibration resistor into the probe jack and verify the temperature reading on the display is 35.8° C – 36.0° C.

Start the unit and the timer and allow the unit to run for a minimum of 5 minutes. Notice the tone sounds at 1 minute and at 5 minutes.

5. To perform the Code 2 test, short across the two connectors securing the plenum thermistor wire on top of the main circuit board (J184). Verify the display indicates Code 2, the alarm sounds and the nurse call light illuminates.
6. To perform the Code 3 test, unscrew one of the connectors on the patient thermistor wire on top of the main circuit board (J185). Verify the display indicates Code 3, the alarm sounds and the nurse call light illuminates.
7. To perform the Code 4 test, short across the two connectors securing the patient thermistor wire on top of the main circuit board (J185). Verify the display indicates Code 4, the alarm sounds and the nurse call light illuminates.
8. To perform the Code 7 test, disconnect the white wire (#5) at the circuit board to the heating element for the plenum. Push the START button and then push it a second time. Verify the display indicates Code 7, the alarm sounds and the nurse call light illuminates.

Using the syntho baby test box, insert the plug into the skin probe jack. Set the selector switch at the 34° C – 38° C range. Use the variable rheostat to simulate the high and low temperatures for testing.

9. Allow the unit to run for at least 5 minutes. Adjust the rheostat so the high temperature alarm sounds. The alarm will sound when the temperature on the display rises above 37.5° C. Notice the nurse call light illuminates.

# Service Information

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## SYSTEM CHECK (CONTINUED)

The HIGH INFANT TEMPERATURE light will remain green until the syntho baby rheostat is adjusted to raise the display temperature above 37.5° C. The light must then begin flashing red. The alarm will stop when the temperature drops below 37.6° C. Repeat to verify the alarm mute button will silence the alarm.

10. Adjust the rheostat so the low temperature alarm sounds. The alarm will sound when the temperature on the display drops below 35.5° C. Notice the nurse call light illuminates.

The LOW INFANT TEMPERATURE light will remain green until the syntho baby rheostat is adjusted to lower the display temperature below 35.5° C. The light must then begin flashing red. The alarm will stop when the temperature rises above 35.4° C. Repeat to verify the alarm mute button will silence the alarm.

11. To check the PROBE OUT light, unplug the syntho baby which will cause the light to change from green to red. Verify it functions properly.
12. To check the skin probe, install it in the receptacle, insert the sensor end in a thin plastic bag with a calibrated thermocouple and immerse the bag in a warm cup of water. To verify the temperature, compare the temperature display on the thermocouple to the temperature display on the unit. The difference should be no more than .10° C.

# Field Replacement Parts

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<b><u>PART NAME</u></b>	<b><u>PART NUMBER</u></b>
Tray .....	88-1132-23-00
Diffuser .....	88-1131-07-00
Membrane Switch Kit (includes housing) .....	88-1132-22-00
Skin Probe .....	88-1131-19-00
Fan .....	88-1131-17-00
Infant Warmer Heater .....	88-1131-18-00
Blanket Warmer Heater .....	88-1131-88-00
Blanket Warmer Fan Kit .....	88-1132-86-00
Infant Warmer Thermostat Switch .....	88-1131-39-00
Blanket Warmer Thermostat Switch .....	88-1131-87-00
Display Circuit Board .....	88-1131-20-00
Control Circuit Board .....	88-1131-21-00
Package of 25 Pads .....	88-1131-58-00
Swivel Casters .....	88-0004-23-00
Brake Casters .....	88-0004-24-00
Side Panel Kit .....	88-1133-16-00
Drilled Side Panel Kit .....	88-1133-23-00
End Panel Kit .....	88-1133-22-00
Ground Fault Interrupt Kit .....	88-1132-80-00
Power Cord .....	88-1132-81-00
Plenum Thermistor Kit .....	88-1132-96-00
Probe Jack .....	88-1131-69-00

To order a replacement part or obtain factory assistance for service problems, contact Stryker Customer Service at 1-800-327-0770 or your Stryker representative.

Include the following information with your request:

1. Serial and model number of the unit.
2. Date purchased, if available.
3. Part number and description of the replacement part you need.
4. Shipping and billing instructions including complete address.

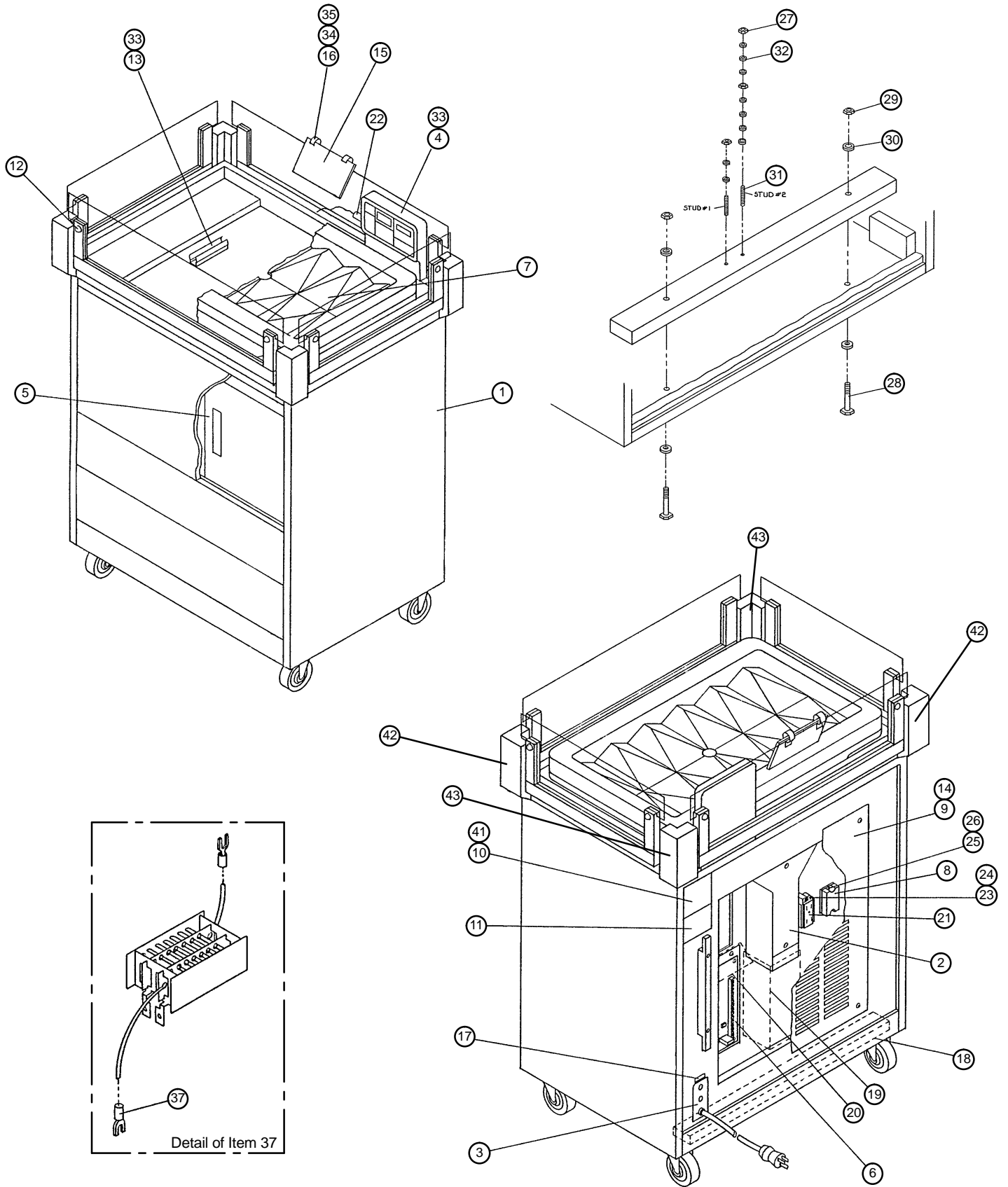
Please contact the customer service department for return authorization and shipping information prior to returning any parts for exchange or repair.

# Notes

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# 1131-01-00 Infant Warmer Assembly

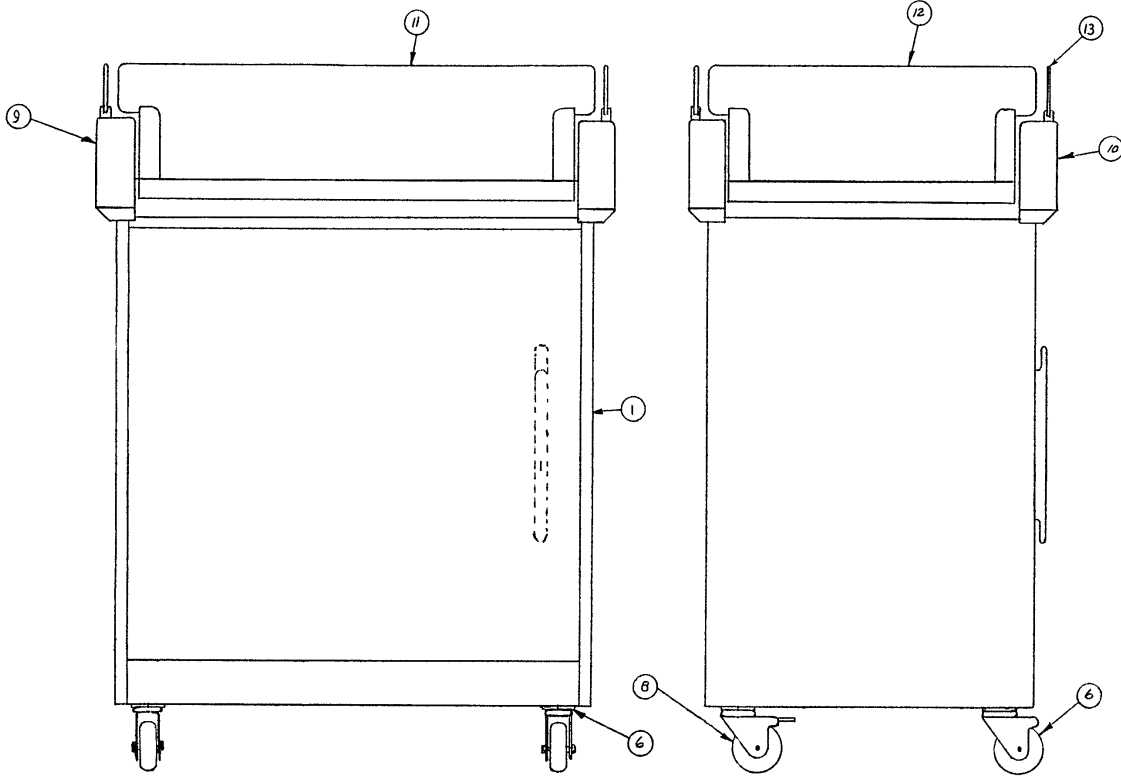
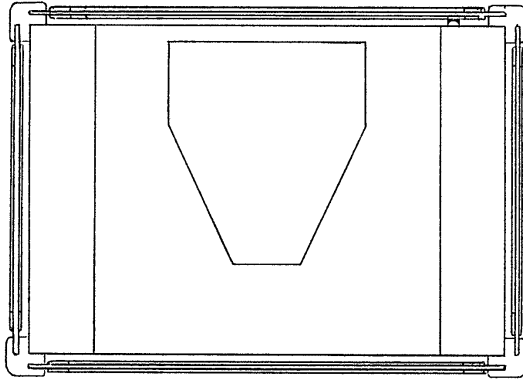


# 1131-01-00 Infant Warmer Assembly

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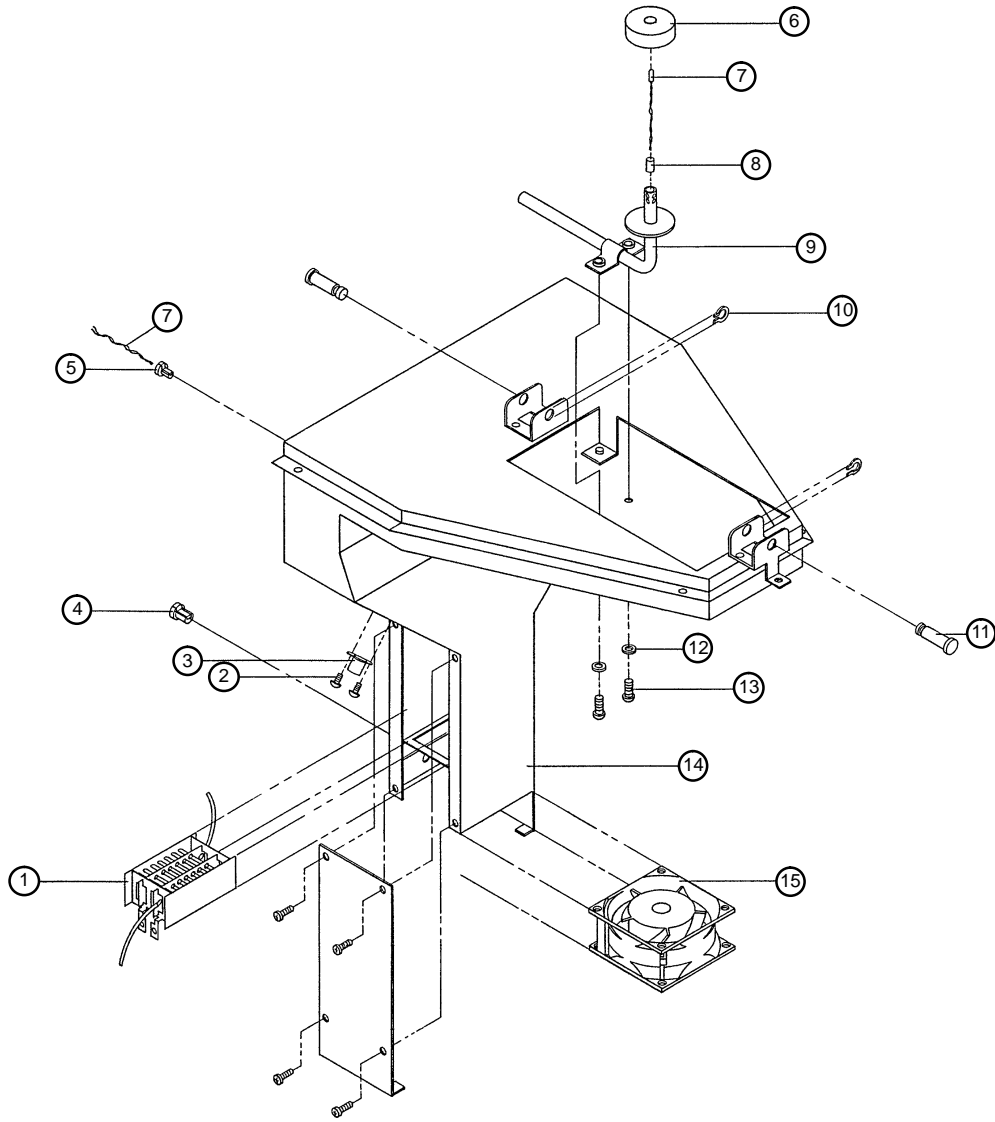
Item	Part No.	Part Name	Qty.
1	(page 24)	Cabinet Assembly	1
2	(page 25)	Plenum Assembly	1
3	(page 26)	Power Panel Assembly	1
4	(page 27)	Display Assembly	1
5	(page 28)	Blanket Box Assembly	1
6	(page 30)	Electrical Assembly	1
7	(page 31)	Tilt Tray Assembly	1
8	(page 32)	Power Relay Assembly	1
9	1131-16-00	Grille	1
10	1131-27-00	Serial No. Label	1
11	1131-28-00	Caution Label	1
12	0188-00-00	Bumper	8
13	0573-02-00	I.V. Pole Clip	2
14	1131-33-00	Schematic	1
15	1132-02-00	Operation Instruction Cards	1
16	0306-51-00	Cable Clamp	2
17	1132-31-00	Nurse Call Decal	1
18	1131-38-00	Counterweight	1
19	1132-76-00	Plenum Shroud	1
20	1132-77-00	Control Board Shroud	1
21	1132-85-00	Ground Fault Interrupt	1
22	1131-19-00	Thermistor	1
23	0032-60-00	Screw	2
24	1132-84-00	Spacer	2
25	1113-11-00	Phillips Pan Hd. Screw	2
26	3979-28-00	Spacer	2
27	0306-68-00	Hex Nut	3
28	0301-60-00	Hex Hd. Screw	2
29	0024-01-00	Hex Lock Nut	2
30	0025-05-00	Flat Washer	4
31	1131-75-00	Set Screw	2
32	1500-56-00	Int. Tooth Lock Washer	9
33	0023-32-00	Wood Screw	8
34	1132-26-00	Pan Hd. Screw	2
35	1132-27-00	Thumb Nut	2
36	0087-02-00	Wood Screw	21
37	1131-82-00	Electrical Terminal	2
38	1132-82-00	Wire Harness	1
39	1131-76-00	Cable Mount	4
40	1502-56-00	Cable Tie	4
41	0084-07-00	Numerical Label	1
42	1118-03-00	Left Corner Block	2
43	1118-04-00	Right Corner Block	2

# 1131-05-00 Cabinet Assembly



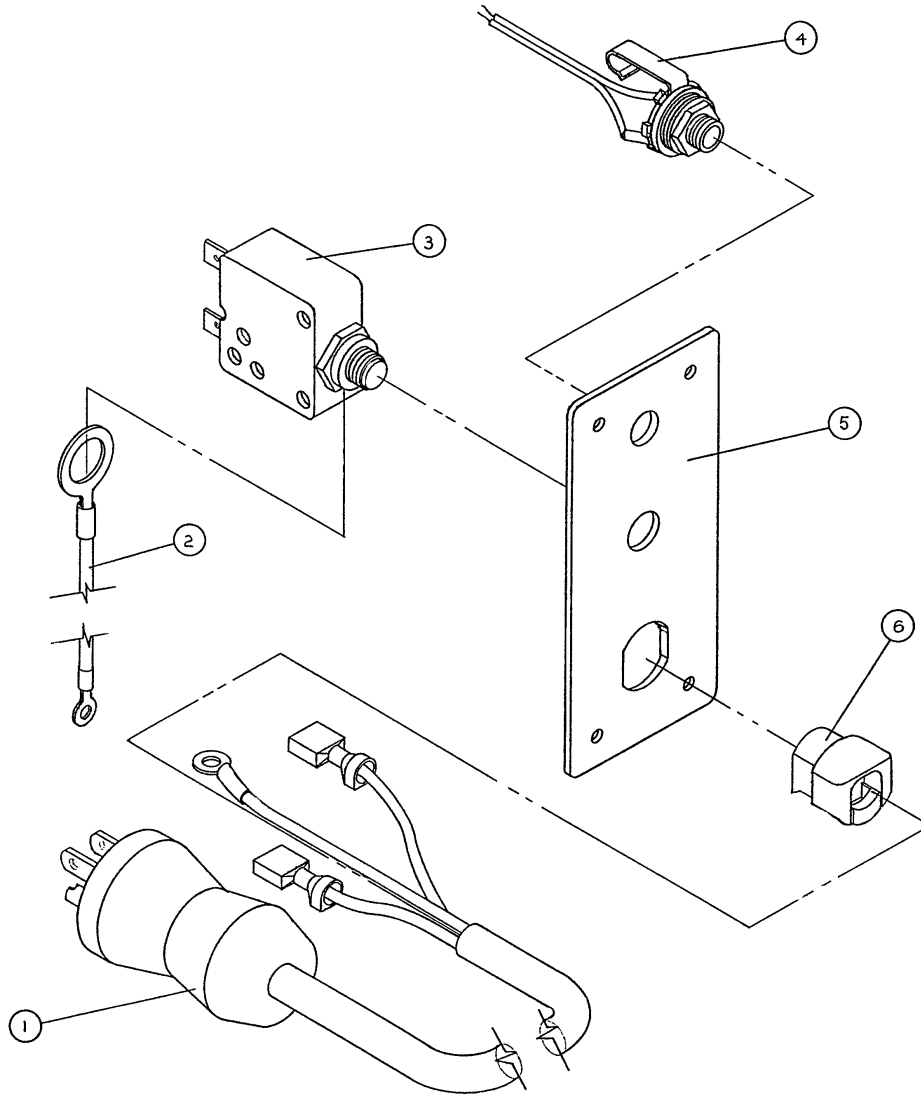
Item	Part No.	Part Name	Qty.
1	1131-31-00	Base Cabinet	1
6	0004-23-00	Swivel Caster	2
8	0004-24-00	Brake Caster	2
9	1118-03-00	Corner Block, Left	2
10	1118-04-00	Corner Block, Right	2
11	1118-02-00	Side Panel Assembly	1
12	0450-12-00	End Panel Assembly	2
13	1132-25-00	Drilled Panel	1

# 1131-90-00 Plenum Assembly



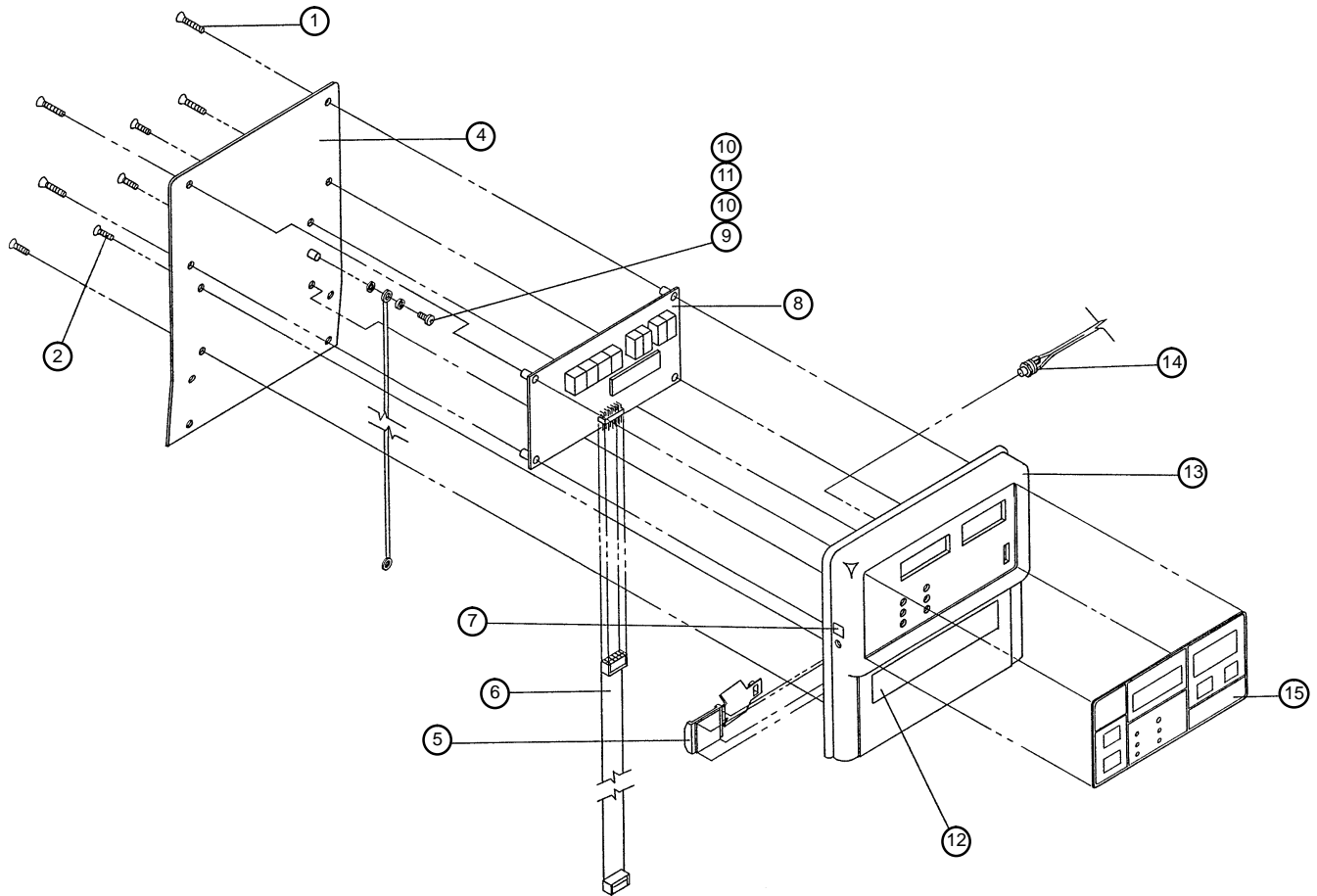
Item	Part No.	Part Name	Qty.
1	1131-18-00	Heater	1
2	0306-02-00	Phillips Hd. Screw	2
3	1131-39-00	Thermostat	1
4	1132-28-00	Strain Relief	1
5	1131-83-00	Strain Relief	1
6	1132-44-00	Foam Seal	1
7	1131-23-00	Plenum Thermistor	1
8	1132-45-00	Insert	1
9	1132-49-00	Plenum Tube	1
10	0301-41-00	Retaining Ring	2
11	1131-71-00	Pivot Pin	2
12	25-2	Int. Tooth Lock Washer	2
13	0831-18-00	Truss Hd. Screw	2
14	1131-57-00	Plenum	1
15	1131-17-00	Fan	1

# 1131-91-00 Power Panel Assembly



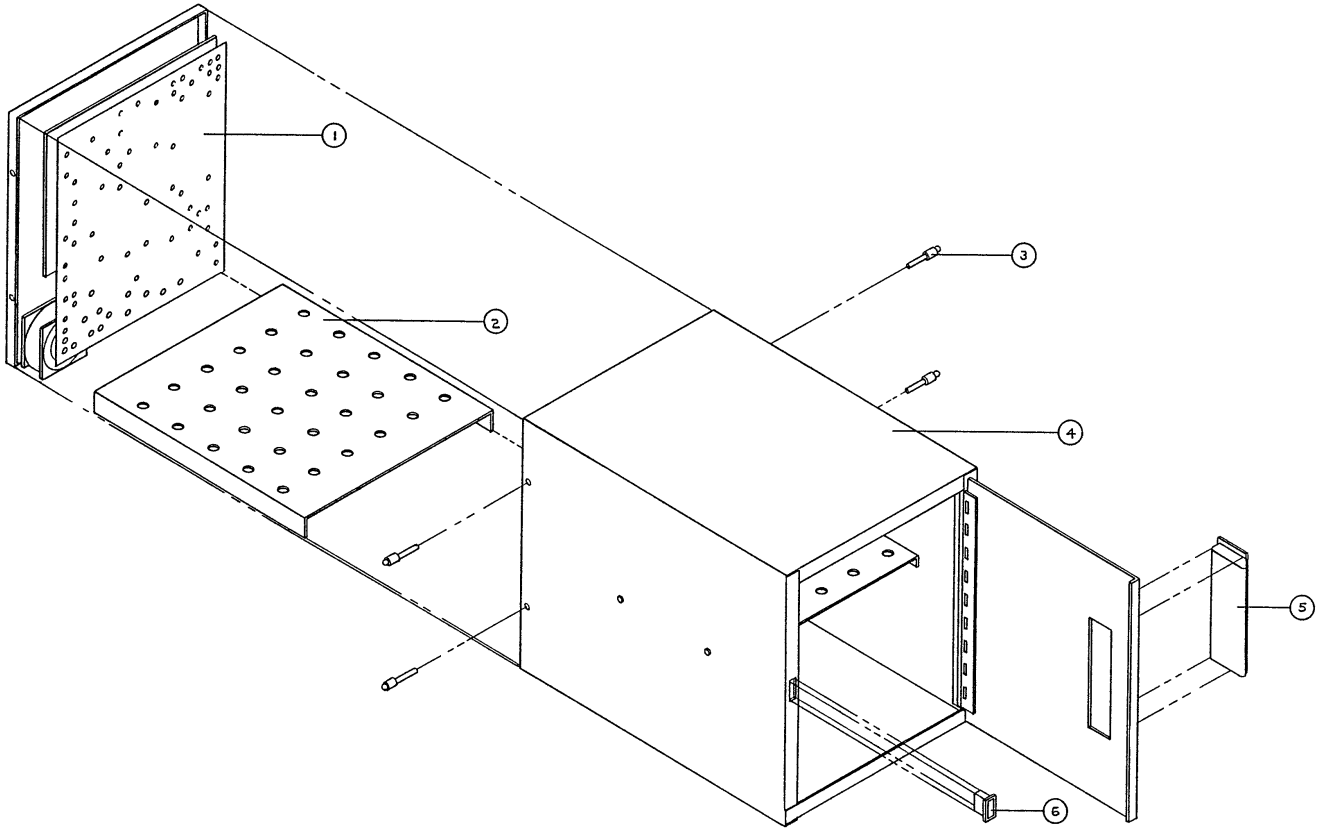
Item	Part No.	Part Name	Qty.
1	1131-81-00	Power Cord	1
2	1131-65-00	Ground Cable	1
3	1131-49-00	Circuit Breaker	1
4	1132-15-00	Phone Jack Assembly	1
5	1131-25-00	Strain Relief Plate	1
6	1500-14-00	Strain Relief	1

# 1131-93-00 Display Assembly



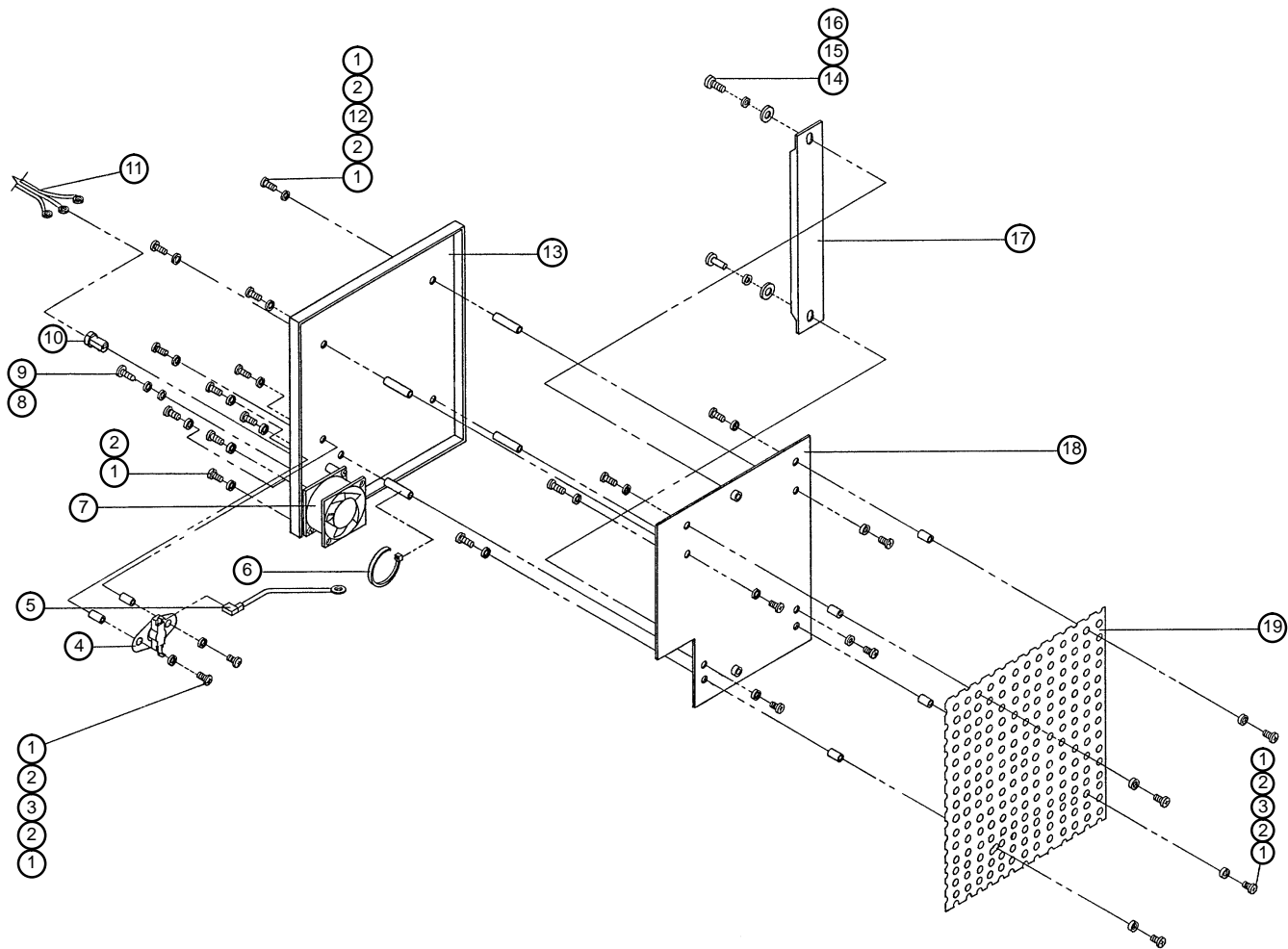
Item	Part No.	Part Name	Qty.
1	1131-78-00	Phillips Flat Hd. Screw	4
2	0023-32-00	Phillips Flat Hd. Screw	4
4	1131-14-00	Housing Back	1
5	1131-76-00	Cable Mount	1
6	1131-68-00	Ribbon Cable	1
7	1131-29-00	Label	1
8	1131-20-00	Display Circuit Board	1
9	1501-43-00	Pan Hd. Screw	1
10	3978-42-00	Ext. Star Lock Washer	2
11	1131-66-00	Disp. Hsg. Ground Cable	1
12	1132-51-00	Warning Label	1
13	1131-10-00	Display Housing	1
14	1131-69-00	Phone Jack Assembly	1
15	1131-11-00	Membrane Switch	1

# 1132-65-00 Blanket Box Assembly



Item	Part No.	Part Name	Qty.
1	(page 29)	Fan/Heater Assembly	1
2	1132-64-00	Lower Tray	1
3	0173-00-00	Pop Rivet	4
4	1132-62-00	Blanket Box	1
5	1132-67-00	Drawer Pull	1
6	1132-66-00	Magnetic Catch	1

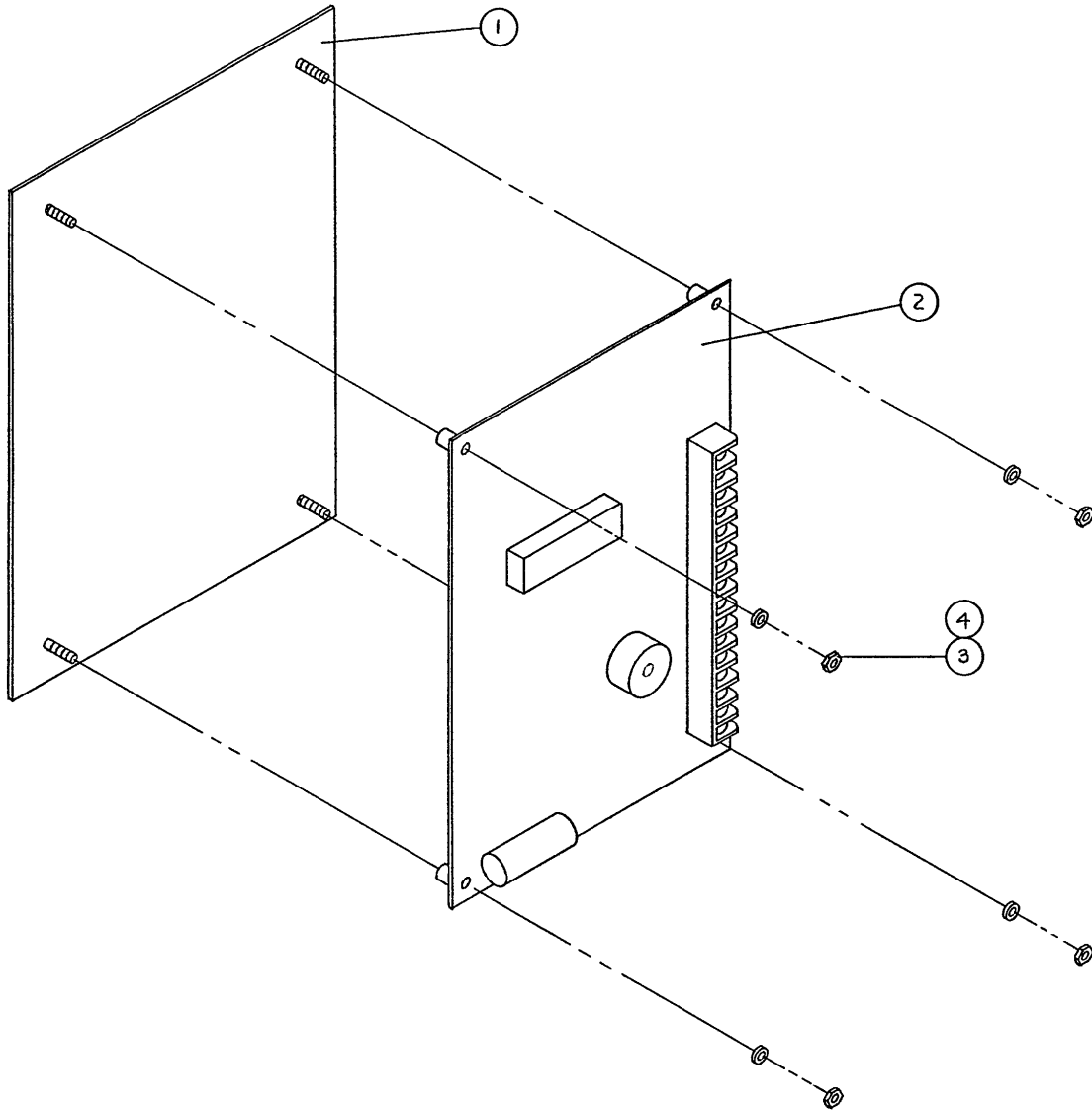
# 1132-69-00 Fan/Heater Assembly



Item	Part No.	Part Name	Qty.
1	1500-70-00	Round Hd. Screw	24
2	1500-55-00	Int. Tooth Lock Washer	24
3	1132-16-00	Standoff	6
4	1131-87-00	Thermostat	1
5	1132-14-00	Heater Cable	1
6	1502-56-00	Cable Tie	1
7	1132-37-00	Fan Assembly	1
8	0087-02-00	Wood Screw	1
9	1500-56-00	Int. Tooth Lock Washer	2
10	1132-28-00	Strain Relief	1
11	1132-83-00	Blanket Box Wire Harness	1
12	1132-17-00	Standoff	4
13	1132-68-00	Blanket Box Rear Plate	1
14	0022-21-00	Pan Hd. Screw	2
15	0025-07-00	Int. Tooth Lock Washer	2
16	0601-24-00	Washer	2
17	1131-88-00	Heater Strip	1
18	1131-98-00	Back Plate	1
19	1132-36-00	Heater Plate	1

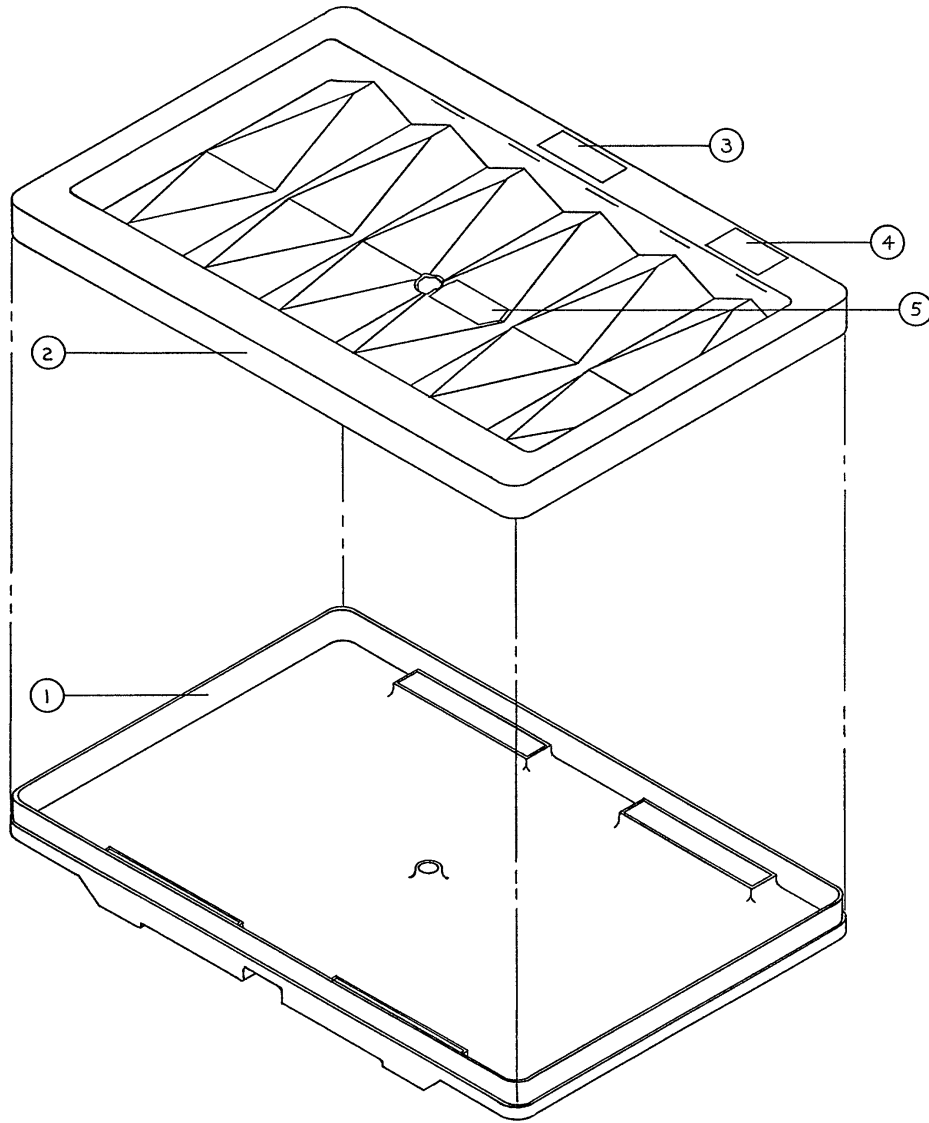


# 1131-95-00 Electrical Assembly



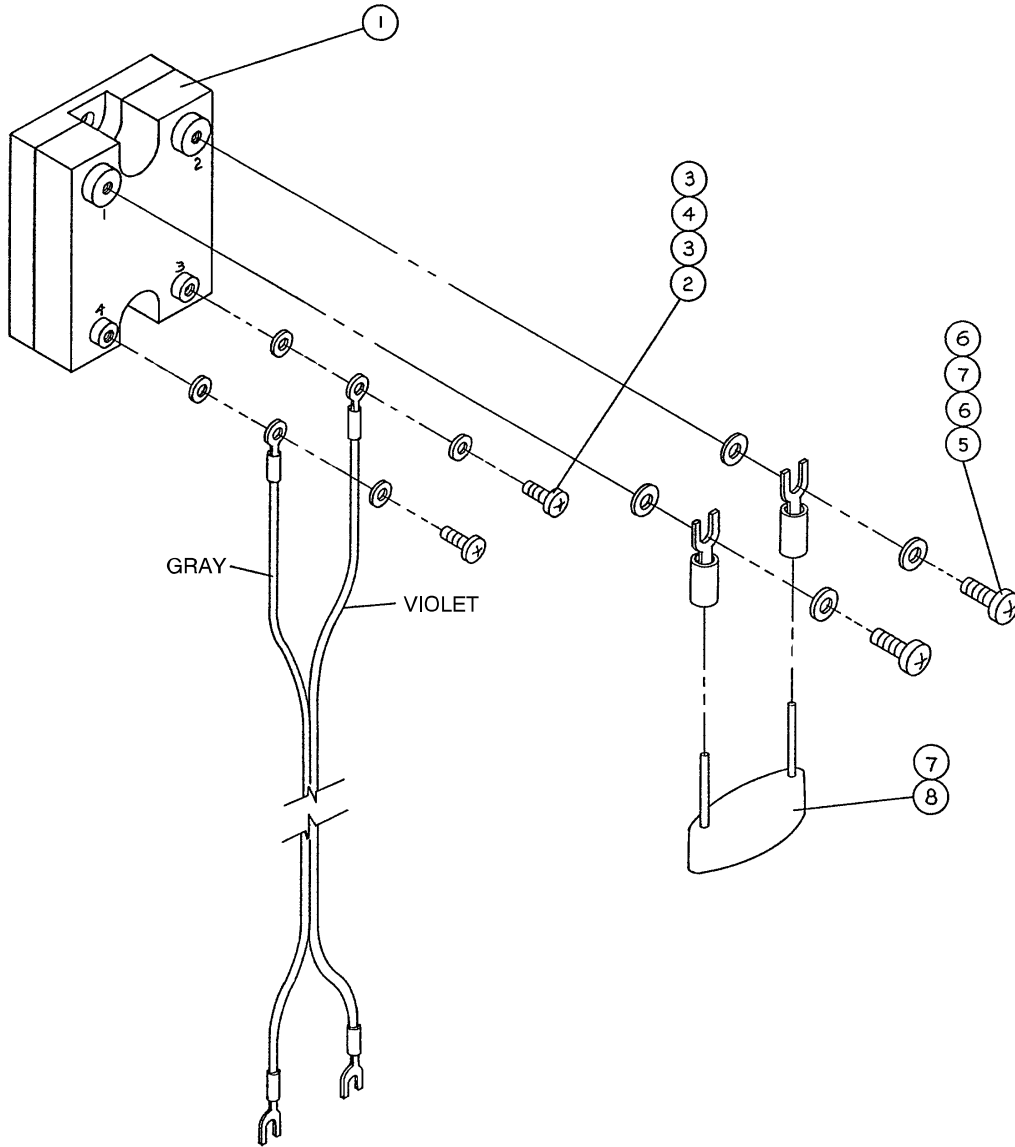
Item	Part No.	Part Name	Qty.
1	1132-12-00	Shield	1
2	1131-21-00	Control Circuit Board	1
3	1500-39-00	Hex Nut	4
4	3978-42-00	Ext. Star Lock Washer	4

# 1131-96-00 Tilt Tray Assembly



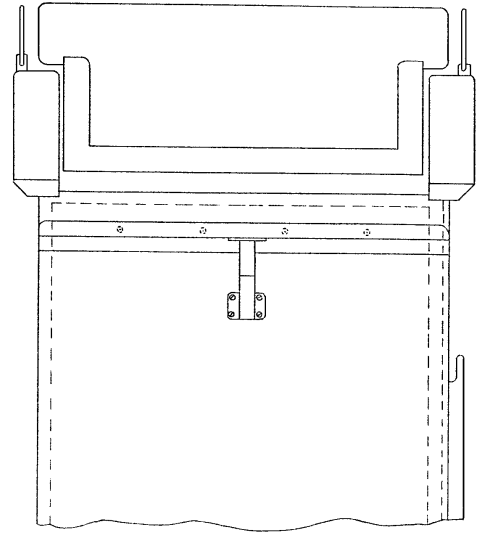
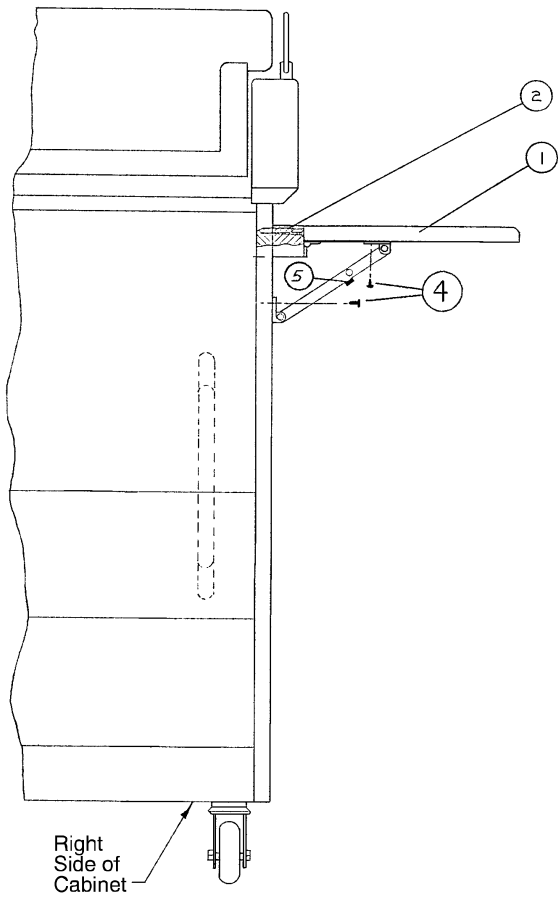
Item	Part No.	Part Name	Qty.
1	1132-23-00	Tilt Tray	1
2	1131-07-00	Diffuser	1
3	1132-79-00	Pad Label	1
4	1132-78-00	Cleaning Caution Label	1
5	1132-54-00	Sensor Label	1

# 1131-97-00 Power Relay Assembly



Item	Part No.	Part Name	Qty.
1	1131-50-00	Power Relay	1
2	1500-70-00	Round Hd. Screw	2
3	3978-42-00	Ext. Star Lock Washer	4
4	1131-67-00	Relay Cable Assembly	1
5	1501-27-00	Pan Hd. Screw	2
6	1500-56-00	Lock Washer	4
7	1133-00-00	Spade Terminal	2
8	1131-53-00	Arc Suppressor	1

# Shelf Assembly



Item	Part No.	Part Name	Qty.
1	1132-01-00	Folding Shelf	1
2	0032-60-00	Screw	4
3	0599-74-00	Shelf Label	1*
4	1132-59-00	Phillips Hd. Tapping Screw	4
5	0038-00-00	Neoprene Sponge	1

\* Item 3 is not shown. It is applied to the outer left corner of the shelf.

# Warranty

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## **Limited Warranty:**

Stryker Medical Division warrants to the original purchaser that its products should be free from defects in material and workmanship for a period of one (1) year after date of delivery. Stryker's obligation under this warranty is expressly limited to supplying replacement parts and labor for, or replacing, at its option, any product which is, in the sole discretion of Stryker, found to be defective. Stryker warrants to the original purchaser that the frame and welds on its beds will be free from structural defects for as long as the original purchaser owns the bed. If requested by Stryker, products or parts for which a warranty claim is made shall be returned prepaid to Stryker factory. Any improper use or any alteration or repair by others in such manner as in Stryker's judgement affects the product materially and adversely shall void this warranty. No employee or representative of Stryker is authorized to change this warranty in any way.

This statement constitutes Stryker's entire warranty with respect to the aforesaid equipment. STRYKER MAKES NO OTHER WARRANTY OR REPRESENTATION, EITHER EXPRESSED OR IMPLIED, EXCEPT AS SET FORTH HEREIN. THERE IS NO WARRANTY OF MERCHANTABILITY AND THERE ARE NO WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE. IN NO EVENT SHALL STRYKER BE LIABLE HEREUNDER FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM OR IN ANY MANNER RELATED TO SALES OR USE OF ANY SUCH EQUIPMENT.

## **To Obtain Parts and Service:**

Stryker products are supported by a nationwide network of dedicated Stryker Field Service Representatives. These representatives are factory trained, available locally, and carry a substantial spare parts inventory to minimize repair time. Simply call your local representative, or call Stryker Customer Service at (800) 327-0770.

## **Supplemental Warranty Coverage:**

Stryker has developed a comprehensive program of extended warranty options designed to keep your equipment operating at peak performance at the same time it eliminates unexpected costs. We recommend that these programs be activated *before* the expiration of the new product warranty to eliminate the potential of additional equipment upgrade charges. Stryker offers the following Supplemental Warranties:

### **Extended (Parts and Labor)**

- All replacement parts (excluding mattresses and consumable items)
- Labor and travel for *all* scheduled and unscheduled calls
- Annual Preventive Maintenance Inspections and repairs
- JCAHO paperwork for preventive maintenance
- Priority Emergency Service

### **Standard (Labor Only):**

- Labor and travel for *all* scheduled and unscheduled calls
- Annual Preventive Maintenance Inspections and repairs
- JCAHO paperwork for preventive maintenance
- Priority Emergency Service

### **Basic (Parts Only):**

- All replacement parts (excluding mattresses and consumable items)
- Priority Emergency Service

**Please call your local representative, or call (800) 327-0770 for further information**

# Warranty

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## **Return Authorization:**

Merchandise cannot be returned without approval from the Stryker Customer Service Department. An authorization number will be provided which must be printed on the returned merchandise. Stryker reserves the right to charge shipping and restocking fees on returned items.

SPECIAL, MODIFIED, OR DISCONTINUED ITEMS NOT SUBJECT TO RETURN.

## **Damaged Merchandise:**

ICC Regulations require that claims for damaged merchandise must be made with the carrier within fifteen (15) days of receipt of merchandise. **DO NOT ACCEPT DAMAGED SHIPMENTS UNLESS SUCH DAMAGE IS NOTED ON THE DELIVERY RECEIPT AT THE TIME OF RECEIPT.** Upon prompt notification, Stryker will file a freight claim with the appropriate carrier for damages incurred. Claim will be limited in amount to the actual replacement cost. In the event that this information is not received by Stryker within the fifteen (15) day period following the delivery of the merchandise, or the damage was not noted on the delivery receipt at the time of receipt, the customer will be responsible for payment of the original invoice in full.

Claims for any short shipment must be made within thirty (30) days of invoice.

## **International Warranty Clause:**

This warranty reflects U.S. domestic policy. Warranty outside the U.S. may vary by country. Please contact your local Stryker representative for additional information.



## European Representative

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BP 50040-95946 Roissy Ch. de Gaulle  
Cedex-France

Phone: 33148632290  
Fax: 33148632175

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