Pro Heater
1105-XXX

or

Laava Heater
1105-XXX2

External
Switch
1601-36

Contactor
Box
CB 10-1 or
CB 10-3

Premium
Control
1601-33 or
1601-33-1

Trend Control
1601-31 or
1601-31-1

Pro 10.5, 12.0, & 14.4 (Model # 1105-105, 1105-120 & 1105-140)
Laava 10.5, 12.0, & 14.4 (Model # 1105-1052, 1105-1202 & 1105-1402)
with **Premium Control** (Type # 1601-33 and 1601-33-1)
And / Or **Trend Control** (Type # 1601-31 and 1601-31-1)
And / Or **External Switch** (Type # 1601-36).

Read all instructions carefully before installation. Please leave all instructions and warranty with the owner.

WARNING
Prolonged exposure to elevated temperatures is capable of inducing hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches several degrees above the normal body temperature of 98.6°F. The symptoms of hyperthermia include an increase in the normal temperature of the body, dizziness, lethargy, drowsiness, and fainting. The effects of the hyperthermia include failure to perceive heat, failure to recognize the need to exit the room, unawareness of impending hazard, fetal damage in pregnant women, physical inability to exit the room and unconsciousness.

WARNING
The use of alcohol, drugs, or medication is capable of greatly increasing the risk of fatal hyperthermia.

SECTION 1: GENERAL INFORMATION

These heaters are ETL approved by Intertek for permanent installations. All wiring must be performed in accordance with the NEC and local codes. See **Table 1** for wire and room size requirements.

These heaters are free standing, secured to the floor, with separate controls.

WARNING

*Do not take a sauna if using alcohol, drugs or medications.*

Pregnant women or persons with poor health should consult their physician before using any sauna.

Caution fire hazard: Do not use the sauna room for drying clothes, bathing suits, etc. Do not hang towels above heater or place any object other than the rocks supplied on the heater. If any darkening of the wall around the heater is noticed discontinue sauna use immediately.

Inspect sauna regularly for required maintenance to heater, control and benches. Replace wood surfaces which show any signs of deterioration.

The heater gets extremely hot during operation and should not be touched or burns may result.

Minors should be adequately supervised whenever near a hot or warming sauna.
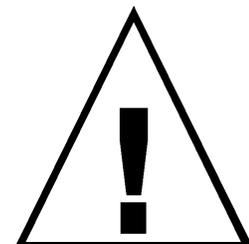
SECTION 2: MOUNTING OF SAUNA HEATER

Carefully locate the heater according to the dimensions shown in Diagram 1 and bolt it to the floor. (Bolts are not supplied with the heater.) Tighten to secure the heater in place.

SECTION 3: PLACING OF ROCKS

The rocks supplied with the heater have been chosen to provide the best heater performance. Use of any other type of rock may void the heaters warranty. Never operate the heater without rocks in place! Rinse the rocks with water before placing in the heater. Place the larger rocks at the bottom and the smallest at the top. Place the rocks loosely so that the air can circulate through the heater. Packing the rocks too tightly may cause the heater high limit switch to trip. The rocks must fully cover the heating elements. Attach the guard with the screws provided.

SECTION 4: ELECTRICAL HOOK-UP

Electrical installation must be made by a licensed electrician in accordance with the National Electrical Code and local regulations.

This heater is intended for use with Premium and Trend controls only. Use of any other control will void the warranty and safety listing. The control must be installed in a dry location outside the sauna room.

The model CB 10-3 contactor is required for use with 3 phase heaters, the model CB 10-1 contactor is required for use with single phase heaters. To determine the correct wire size, refer to Table 1. Use copper supply wire only, suitable for minimum 90 degrees C. The heater must be grounded! See the heater diagrams for proper connections. The location must be selected to allow installation of the thermostat's temperature sensor shown in Diagram 1. (9 foot sensor wire supplied, but may be extended with equivalent 2 conductor wire.)

Contactor Box can be surface mounted with 4 screws to a wall or in the stud wall cavity. Refer to Diagram 1 for details.

SECTION 5: TEMPERATURE SENSOR

Route the sensor wire from the contactor box to the sensor location. It may be necessary to drill holes to string the wire through the studs or ceiling joists. Route wire harness into contactor box and connect NTC port. ***Ensure low voltage wiring and high voltage wiring is separated by a minimum of 4"or an electrical barrier.*** With a flat tip screwdriver, unsnap sensor cover from sensor. Mount sensor horizontally to the finished wall directly above heater 3" inches down from ceiling. Refer to Diagrams 1, 2, & 3 for installation information.

SECTION 6: HEATER SCREEN (GUARD RAIL)

Install a wooden heater guard to prevent the sauna bather from accidentally touching the sauna heater. Install the heater guard rail with the height clearances and dimensions shown in Diagram 1.

DIAGRAM 1

**Pro Heater
Model # 1105-XXX**

3"

Sensor

49½"
min.

78"
min.

27"
max.

BOLTS

High Limit Control Reset

5"
min.

5"
min.

2½"
min.

2½"
min

1x1"
wooden
post

¾ x 4"
wooden
rail

⚠ **OBSERVING MINIMUM DISTANCES IS REQUIRED TO REDUCE THE RISK OF FIRE**

**Laava Heater
Model 1105-XXX2**

3"

Sensor

49½"
min.

78"
min.

27"
max.

BOLTS

High Limit Control Reset

4-1/2"
min.

2"
min.

1"
min.

1"
min.

1x1"
wooden
post

¾ x 4"
wooden
rail

DIAGRAM 1

Locate the sensor 3" from ceiling directly above the heater.

Room light outlet box 70" up from the floor.

Locate the control outside the sauna room.

Locate CB 10-1 or 10-3 contactor box outside the sauna room. (See Note 1)

Power input to contactor box.
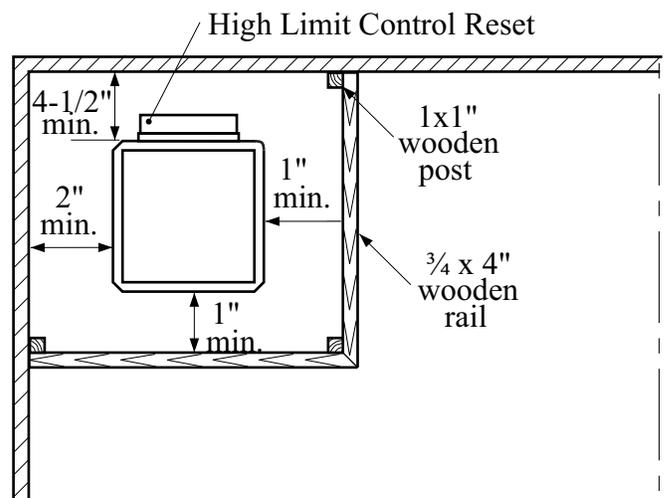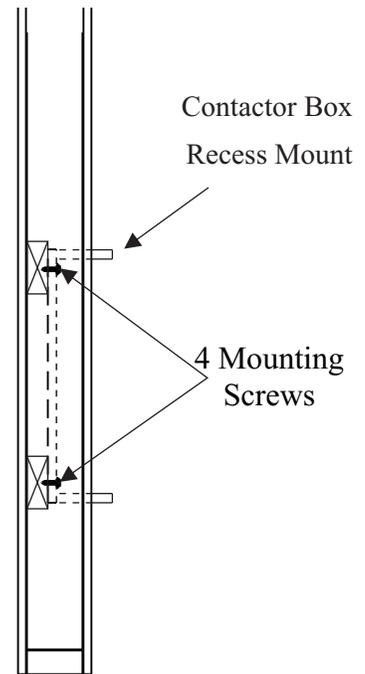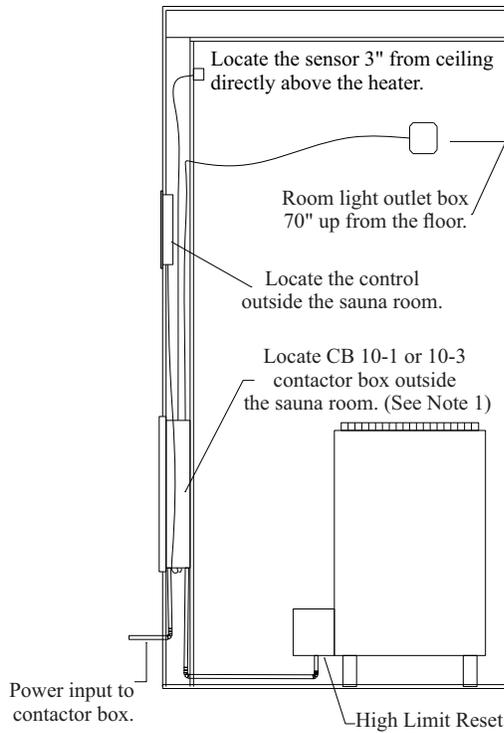
High Limit Reset

Contactor Box

Recess Mount

4 Mounting Screws

Note 1: The contactor box may be mounted anywhere outside the sauna room. A location should be selected so the front cover is accessible for service and the noise of the contactor pulling in will not be a nuisance.

Provide a service loop into the sauna room to the proposed heater location.
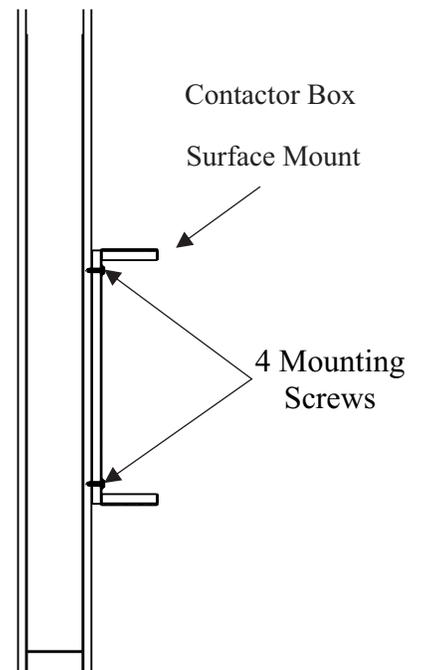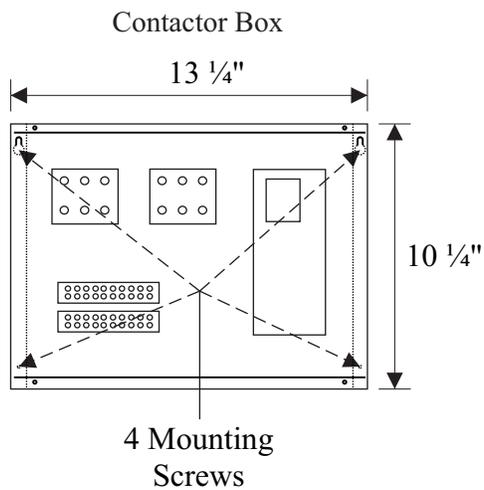
Contactor Box

13 ¼"

10 ¼"

4 Mounting Screws

Contactor Box

Surface Mount

4 Mounting Screws

TABLE 1

Heater Model / Product Number	KW	Minimum Room			Maximum Room		Phase	VAC	* Amps	Contactor Model	Copper Wire Size 90° C					
		Floor Area	Wall Height	Volume Cu.Ft.	Wall Height	Volume Cu.Ft.					** Breaker # and Size	Power Supply to Contactor	Contactor to Heater	Contactor to Heater High Limit	Contactor to Control	Light Circuit or Fan Circuit
Pro 10.5 (1105-105) or Laava 10.5 1105-1052	10.5	48 sq. ft.	78"	390	96"	600	1	208	50.5	CB 10-1 1201-10-1	2 x 40 Amps	4 #8AWG +N+GR	4 #8AWG +GR	2 #14AWG	(Factory Supplied)	1 #14AWG +N+GR
							1	240	43.8		2 x 30 Amps	4 #8AWG +N+GR	4 #10AWG +GR	2 #14AWG	(Factory Supplied)	1 #14AWG +N+GR
							3	208	29.1	CB 10-3 1201-10-3	1 x 40 Amps	3 #8AWG +N+GR	3 #8AWG +GR	2 #14AWG	(Factory Supplied)	1 #14AWG +N+GR
							3	240	25.3		1 x 40 Amps	3 #8AWG +N+GR	3 #8AWG +GR	2 #14AWG	(Factory Supplied)	1 #14AWG +N+GR
Pro 12.0 (1105-120) or Laava 12.0 1105-1202	12.0	63 sq. ft.	78"	510	96"	740	1	208	57.7	CB 10-1 1201-10-1	2 x 40 Amps	4 #8AWG +N+GR	4 #8AWG +GR	2 #14AWG	(Factory Supplied)	1 #14AWG +N+GR
							1	240	50.0		2 x 30 Amps	4 #10AWG +N+GR	4 #10AWG +GR	2 #14AWG	(Factory Supplied)	1 #14AWG +N+GR
							3	208	33.3	CB 10-3 1201-10-3	1 x 40 Amps	3 #8AWG +N+GR	3 #8AWG +GR	2 #14AWG	(Factory Supplied)	1 #14AWG +N+GR
							3	240	28.9		1 x 40 Amps	3 #8AWG +N+GR	3 #8AWG +GR	2 #14AWG	(Factory Supplied)	1 #14AWG +N+GR
Pro 14.0 (1105-140) or Laava 14.0 1105-1402	14.4	78 sq. ft.	78"	630	96"	950	1	208	69.2	CB 10-1 1201-10-1	2 x 40 Amps	4 #8AWG +N+GR	4 #8AWG +GR	2 #14AWG	(Factory Supplied)	1 #14AWG +N+GR
							1	240	60.0		2 x 40 Amps	4 #8AWG +N+GR	4 #8AWG +GR	2 #14AWG	(Factory Supplied)	1 #14AWG +N+GR
							3	208	40.0	CB 10-3 1201-10-3	1 x 50 Amps	3 #6AWG +N+GR	3 #6AWG +GR	2 #14AWG	(Factory Supplied)	1 #14AWG +N+GR
							3	240	34.6		1 x 50 Amps	3 #6AWG +N+GR	3 #6AWG +GR	2 #14AWG	(Factory Supplied)	1 #14AWG +N+GR

* Total amp draw of combined circuits and accessory circuits.
** Single phase heaters are supplied power from two circuits which must be grouped and marked per NEC.
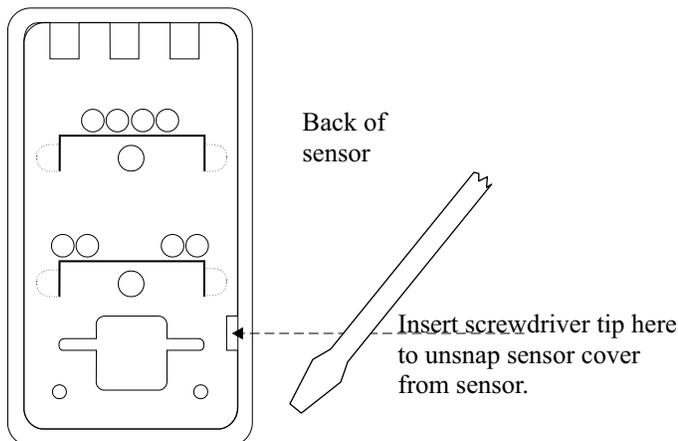
DIAGRAM 2

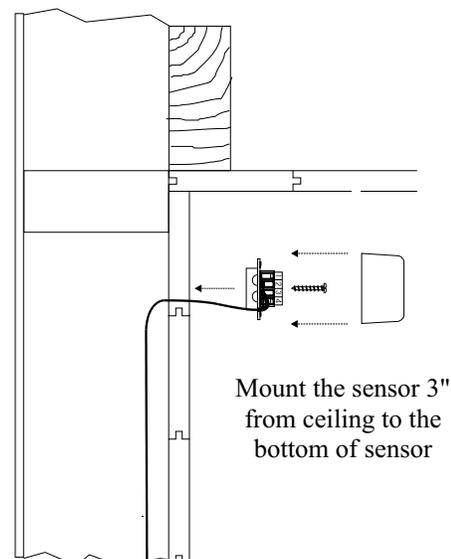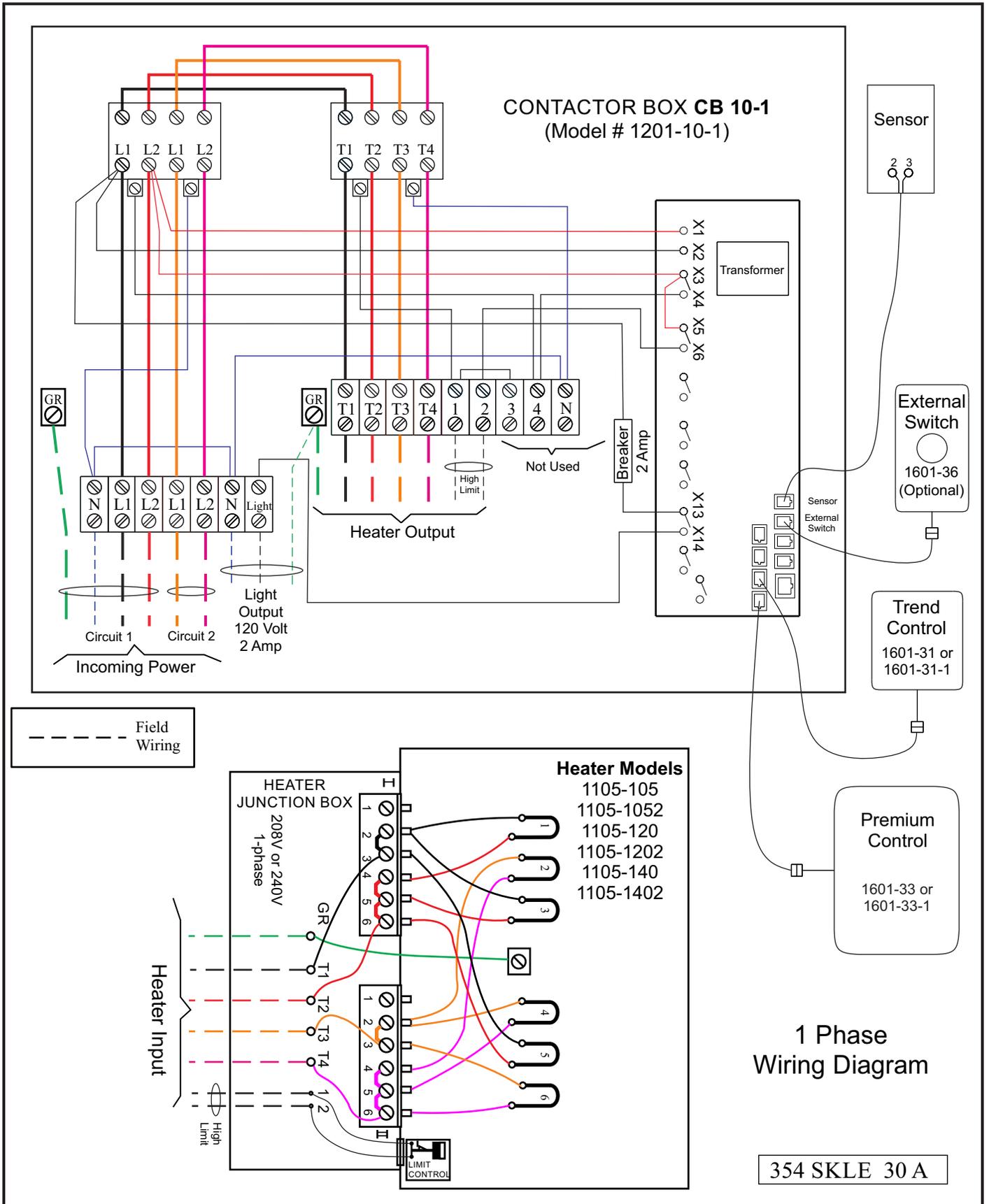Back of sensor

Insert screwdriver tip here to unsnap sensor cover from sensor.

DIAGRAM 3

Mount the sensor 3" from ceiling to the bottom of sensor

DIAGRAM 4

CONTACTOR BOX **CB 10-1**
(Model # 1201-10-1)

L1 L2 L1 L2

T1 T2 T3 T4

Sensor
2 3

Transformer

X1
X2
X3
X4
X5
X6

GR

GR T1 T2 T3 T4   1   2   3   4   N

Breaker
2 Amp

High
Limit

Not Used

External
Switch

1601-36
(Optional)

Sensor

External
Switch

N L1 L2 L1 L2 N Light

Heater Output

X13
X14

Light
Output
120 Volt
2 Amp

Circuit 1   Circuit 2

Incoming Power

Trend
Control

1601-31 or
1601-31-1

Field
Wiring

HEATER
JUNCTION BOX

Heater Models
1105-105
1105-1052
1105-120
1105-1202
1105-140
1105-1402

208V or 240V
1-phase

1   2   3

GR

T1

T2

T3

T4

4   5   6

Heater Input

High
Limit

1   2   3   4   5   6

1   2

LIMIT
CONTROL

Premium
Control

1601-33 or
1601-33-1

1 Phase
Wiring Diagram

354 SKLE 30 A

DIAGRAM 4, Continued

CONTACTOR BOX **CB 10-3**
(Model # 1201-10-3)

Sensor

L1 L2 L3   T1 T2 T3

X1 X2 X3 X4 X5 X6

Transformer

GR

GR   T1 T2 T3   1   2   3   4   N

High Limit   Not Used

Breaker 2 Amp

N   L1   L2   L3   N   Light

Heater Output

X13 X14

Light Output 120 Volt 2 Amp

Sensor
External Switch

External Switch

(Optional)
(1601-36)

Circuit 1

Incoming Power

Trend Control

1601-31 or
1601-31-1

Field
Wiring

HEATER
JUNCTION BOX

208V or 240V
3-phase

Heater Models
1105-105
1105-1052
1105-120
1105-1202
1105-140
1105-1402

GR

Premium Control

1601-33 or
1601-33-1

Heater Input

T1
T2

T3

High Limit

3 Phase
Wiring Diagram

LIMIT CONTROL

354 SKLE 31 A

DIAGRAM 4, Continued

1 Phase Block Wiring Diagram

Heater Models
1105-105 / 1105-1052
1105-120 / 1105-1202
1105-140 / 1105-1402

HEATER JUNCTION BOX

208V or 240V
1-Phase

LIMIT CONTROL

High Limit

Not Used

| T1 | T2 | T3 | T4 | 1 | 2 | 3 | 4 | N |

| N | L1 | L2 | L1 | L2 | N | Light |

Circuit 1   Circuit 2

Incoming Power

Light Output

Sensor

External Switch

Control

GR

Field Wiring

DIAGRAM 4, Continued

Heater Models
1105-105 / 1105-1052
1105-120 / 1105-1202
1105-140 / 1105-1402

3 Phase Block
Wiring Diagram

GR

LIMIT CONTROL

HEATER JUNCTION BOX

GR   T1   T2   T3   1   2

208V or 240V
3-Phase

High Limit

Not Used

T1   T2   T3   1   2   3   4   N

GR   GR

N   L1   L2   L3   N   Light

Light Output

Circuit 1

Incoming Power

Sensor

External Switch

Control

Field Wiring

SECTION 7: OPERATION

CONTROL OPTIONS: This heater has two different control options. A Premium Control (1601-33 or 1601-33-1) or Trend Control (1601-31 or 1601-31-1) can be connected to the heater. This heater can support both at the same time as another option.

INSTALLATION ROUGH IN: Place the control inside or outside the sauna room. If the control is installed inside a sauna room, the top of the unit cannot be higher than 48 inches above floor. Maximum control cable length is 100 feet.

String the provided low voltage control cable through 1" holes in the wall studs or ceiling joists from the control location to the heater. Do not use staples to secure the low voltage cable, it may damage the cable!

Plug the control cable into the control and TEST the control BEFORE mounting!!

Premium Control can be SURFACE MOUNTED or RECESSED MOUNTED.

SURFACE MOUNTING CONTROL: After testing is complete, CLEAN the mounting surface to ensure it is free from dust. Remove the adhesive tape from the back of the control, push any excess cable into wall cavity and press the control to the mounting surface. (Do not use the Mounting Box or Trim Ring for this installation.)

RECESS MOUNTING: See page 23 for information.
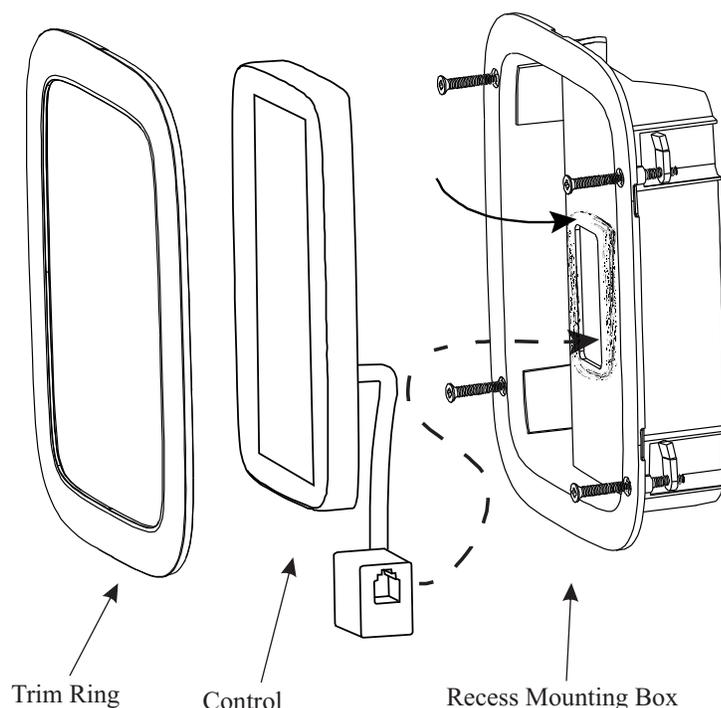
WARNING

Do not locate benches over heater. Refer to Diagram 1 for minimum clearance of ceiling above heater is required.

Minimum clearance from heater to wooden surfaces (benches, side walls, heater fence etc.) is required. Refer to Diagram 1 for specific information.

Use only copper wire of the size and type indicated in the Heater Specification Chart and the temperature rating indicated on the heater junction box.

All heaters and controls must be grounded per NEC to prevent electrical shock in case of unit failure.

Electrical outlets or receptacle must not be installed in a sauna room.

A guardrail or fence is required around the heater to prevent burns from accidental contact.

Trim Ring   Control   Recess Mounting Box

SECTION 7: PREMIUM CONTROL (1601-33 or 1601-33-1) OPERATION

Home Screen
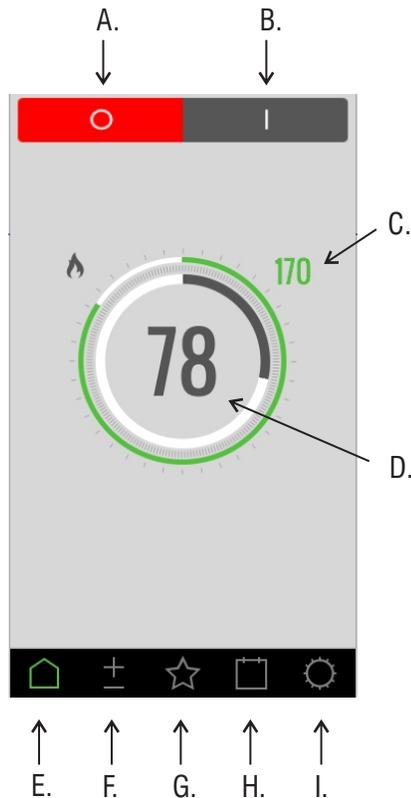
A. - Off Button
B. - On Button
C. - Set Point Room Temperature
D. - Current Room Temperature
E. - Home Button
F. - Temperature Button
G. - Favorites Button
H. - Calendar Button
 I. - Settings Button

To Start Immediately
1. Press the ▭ icon in the upper right corner
2. Icon will change color ▯
3. System has started

Note: The sauna room set point temperature is D.
        The sauna room current temperature is E.

The **Home** button: touch this to return to the main screen. Here you will see the current temperature in the sauna room, the bath temperature setting, the remaining bath time (if any) and the time of day.

The **Settings** button: touch this to display the Settings screen. Here you can adjust the temperature and duration for the current bath. You can also manually turn on the installed options when the bath is on (and turn on some options, such as Lights, when the bath is off). You can also save your settings as a favorite so you can always have them available for your sauna without having to change settings after someone else has a steam bath.

The **Favorites** button: Here you can select a sauna with your favorite settings, once you've saved it.

The **Calendar** button: Here you schedule a sauna to start and run at a later time. You can select by the day of the week or using a calendar month and select for one time bath or recurring.

The **Tool** button: here you make the many selections for what functions and options are available to be used, set a PIN to limit who can change settings, and much more.

The **Change Menu** arrows are used to move between related menu screens. Press < to return to the previous screen or > to continue to the next one.
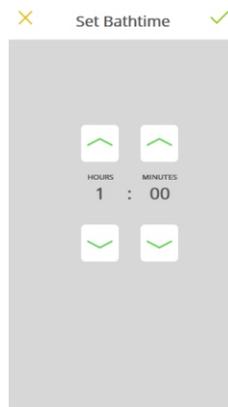
SECTION 7: PREMIUM CONTROL (1601-33 or 1601-33-1) OPERATION, Continued

Temperature Screen Options
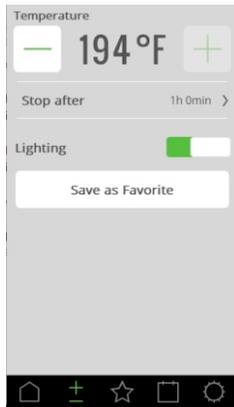
Temperature and Room Light

Change temperature by pressing + or - to desired temperature.
Press the Lighting icon to turn On or Off the room light.
Press ⬜ Screen
Press 🟩 button in upper right corner to start sauna.

Sauna Duration

Change sauna length by pressing the Stop After button
Change to desired length (normal setting is 1 hour)
Press the ✓ to accept the change

Creating Favorites

Ensure temperature and sauna length are correct.
Press Save as Favorite
Type in Name and press ✓
Press the ✓ to accept information.

Favorites Screen Options
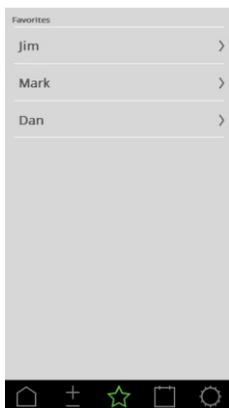
Favorites

Select the Favorite to edit or start program

Favorite's Settings

Click on Title to change name
Change temperature by pressing + or - to desired temperature.
Change to desired length (normal setting is 1 hour)
Press 🟧 to activate program.

Home Screen

Home Screen will appear and the sauna heater will be started. The temperature setting is the favorite just chosen.

SECTION 7: PREMIUM CONTROL (1601-33 or 1601-33-1) OPERATION, Continued

Calendar Screen Options

Adding One Time Event

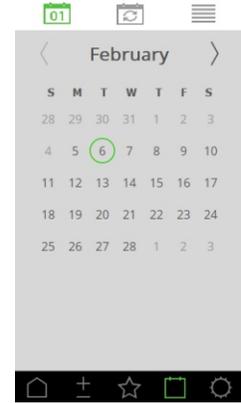Click the date for the event.
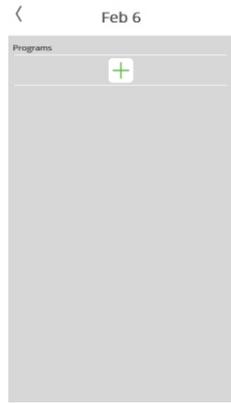
Adding One Time Event

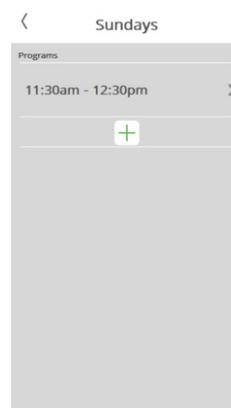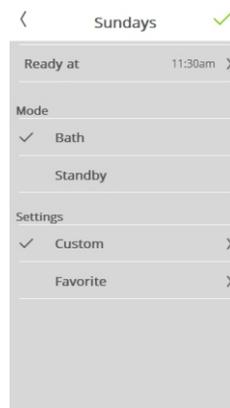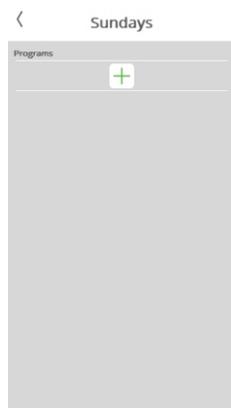Click the + to add event.
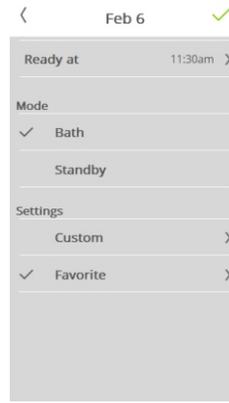
Adding One Time Event

Select the sauna duration and temperatures.

Press the ✓ to accept information.

Calendar Showing Event Scheduled

The ⑥ indicated a program is scheduled on the date.

Adding Recurring Event

Select the 🗓 button at the top of screen to chose Recurring Event

Click the day of the week for the event.
Select the + to add event.

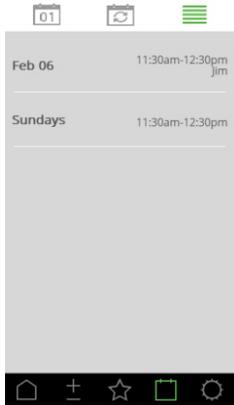Select the sauna duration and temperatures.

Press the ✓ to accept information.

Next screen will show 1 event created for the day of the week.

Repeat the process to create multiple events.

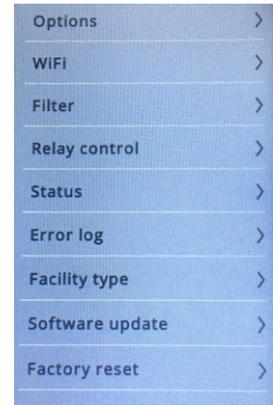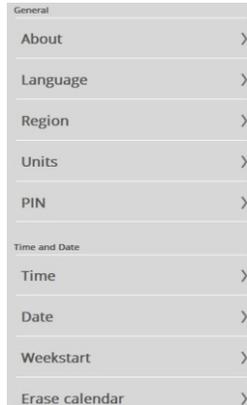## SECTION 7: PREMIUM CONTROL (1601-33 or 1601-33-1) OPERATION, Continued

| Calendar Screen Options | Setting Screen Options |

Viewing Scheduled Events

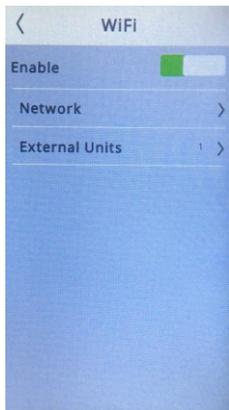Click the ≡ in the upper right corner to see events.

Setting Options

Select the ▣ icon in the lower right corner of the control to access settings.

| WiFi Setup Screen |

Connect Control to WiFi Network

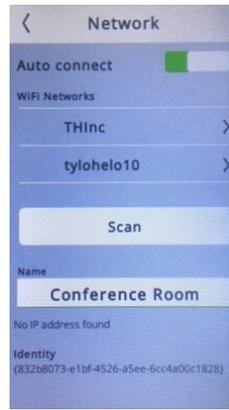Select the WiFi option from Setting Screen

Select Network

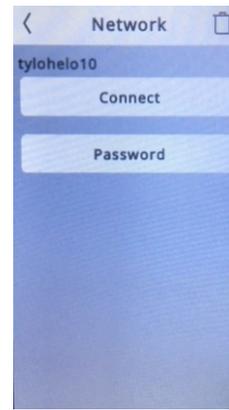**Select Name**

Select Name and name the Control

Enter Name and select ✓ to accept.

Choose WiFi Network

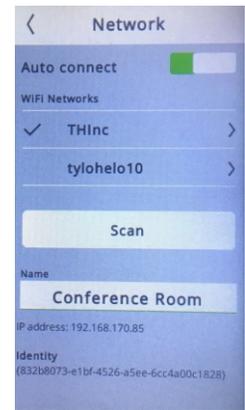Select Scan to see all Wifi Networks

Select network to connect

Connect Control to WiFi Network

Select Password

Enter password and select ✓ to accept

WiFi Network

Check mark indicates control is connected to network

Networking: This control can connect to a Local WiFi Network to be operated by a Phone Application or PC Application. Download the application from the Google Playstore or Apple Store. Search for sauna brand name and download the free application.

SECTION 7: PREMIUM CONTROL (1601-33 or 1601-33-1) OPERATION, Continued

Phone Application Setup Screen
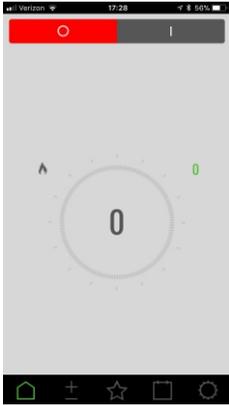
Application Home Screen

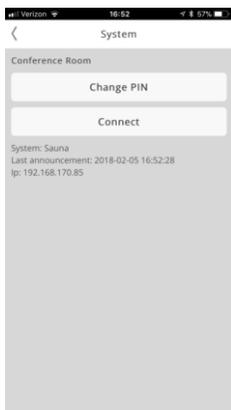Select the Settings ⚙ icon.

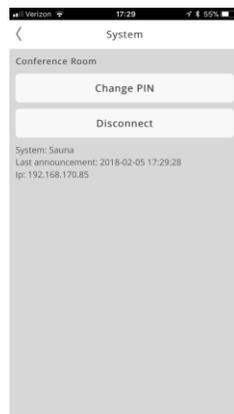**Network**

Select network
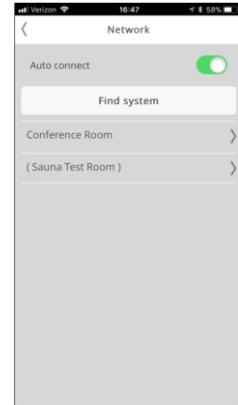
Choose Sauna Control

Phone must be connected to the same network as Sauna Control
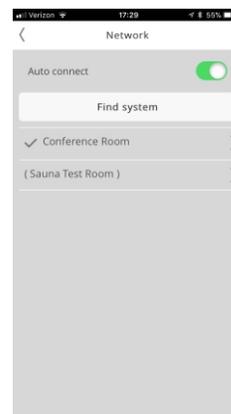
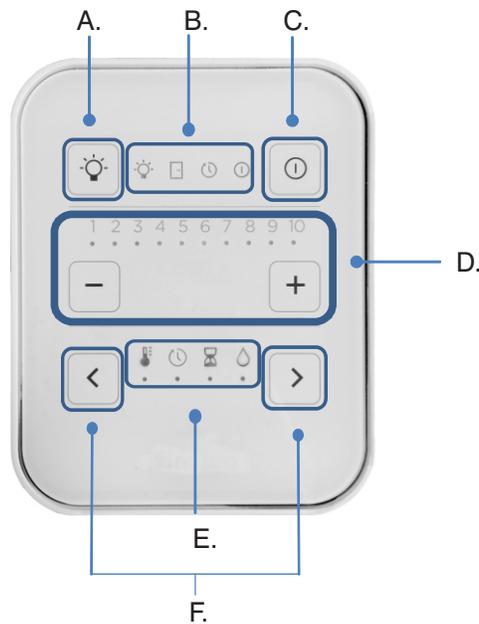Press Find System

Choose Control

Connect to Control

Select connect

Network Screen to Home Screen

Select the < in upper left corner to go back one screen to Network Screen

Select the < in upper left corner to go back one screen Home Screen.

SECTION 7: TREND CONTROL (1601-31 or 1601-31-1) OPERATION, Continued

A. - On/Off Light Switch

B. - Indicators - lighting, door switch (n/a), timer and the heater

C. - On/Off Sauna Switch and fault alarms

D. - Sets the desired value

E. - Functions - Temperature, Delay Timer, Sauna Length and Humidity (n/a)

F. - Function Select Buttons

CONTROL OPERATION:
TURN ON LIGHT: Press the "light bulb" icon once to turn on the light and press again to turn off. (Usage of light control is optional)

SAUNA LENGTH: (Control 1601-31) Select the sauna length function by pressing the buttons < > (F). Set the desired usage time (0–60 minutes) using the – and + buttons. (Setting 10 equals 60 minutes)

(Control 1601-31-1) Usage time is 0 - 24 hours operation
    (Setting 1 = 2 hours, setting 10 = 24 hours)

	LED									
Version	1	2	3	4	5	6	7	8	9	10
1 hour	6 min	12 min	18 min	24 min	30 min	36 min	42 min	48 min	54 min	60 min
24 hour	2 hr	4 hr	6 hr	8 hr	10 hr	12 hr	14 hr	16 hr	18 hr	24 hr

SET TEMPERATURE: Press function button (F). Then you can choose the desired temperature 1–10 using buttons – and +. (Setting 10 equals highest set point.)

When the desired temperature has been set and the heater is switched on, the set temperature indicator light will remain on and the current temperature indicator LED will flash. When the current temperature reaches the set value the indicator light will stop flashing.

START HEAT IMMEDIATELY:
Start the heater by pressing the On/Off button. The latest temperature and usage time settings will remain preset. A green indicator light will come on in area (B) to indicate that the device has been switched on.

You may switch the system off before the usage time ends by pressing the same button again. The indicator light will go out.

TIME DELAY START TIME: The control may be set to delay start mode to activate the heater after a preset amount of time. Select the clock symbol using the function button (F). Use the – and + (D) buttons to select the amount of hours (1–10 hours) after which the device will switch on. Activate a later start by pressing the Start button (C).

The timer symbol light will come on (in field B) and the selected time-lapse indicator light will start flashing. The flashing indicator measures and indicates the time leading up to the device being switched on. When the heater starts, the control panel will automatically show the set temperature.

SECTION 7: EXTERNAL SWITCH CONTROL (1601-36) OPERATION

External Switch

This momentary, illuminated switch provides simple ON/OFF function to your Trend or Premium Sauna Control. In a commercial environment, it is recommended that the main Sauna Control be located either in a utility closet or at the Attendant's desk so the sauna time and temperature functions can be secured from the general public. This optional external switch will provide the sauna bather with the ability to turn the sauna ON or OFF only.

When the momentary switch is activated, the power icon will illuminate in blue and activate the sauna session that has been programmed into the main control (Trend or Premium).

Activating this button will also turn the interior sauna light on, if the light has been wired to the light output on the sauna heater's PCA board. Pressing the switch when it is illuminated will remove power to the sauna heater and end the bathing session.

This switch cannot function as a control. It has to be connected to the system with another control.

SECTION 8: LIMIT CONTROL (RESET BUTTON)

The sauna heater has a built-in High Limit control, which automatically turns off the heater if the temperature inside in the sauna room rises to an abnormally high level.

To restart the heater, let the heater cool and the timer run down to zero (off), then push the reset button on the bottom of the heater, See Diagram 1. If the High Limit continually shuts off the heater, refer to Section 14 for Troubleshooting.

SECTION 9: HOW TO TAKE A SAUNA

• When taking a sauna, allow time to relax completely.
• Remove clothing and jewelry...if required, wear a towel loosely.
• After 10 minutes or when perspiration begins, leave sauna and relax in dressing area...follow with a cool shower.
• Cooling time should equal time spent in sauna. Enter sauna room again and stay 5 or 10 minutes.
• Repeat the cycle 2 or 3 times; end with a brisk shower...rinse in cool water.
• Dress when completely dry and perspiration has stopped.
• Some sauna bathers enjoy the soothing effect of steam by splashing water on the heated sauna rocks. Use only one dipper full (approx. ½ cup) at a time and take care to keep clear of the steam as it rises off the rocks.
• Do not smoke, exercise or drink alcoholic beverages in the sauna room.
• Do not pour chlorinated pool or spa water on the heater or corrosion damage may result.

SECTION 10: WARNING PLACARDS

Two metal placards are included in the Installation Instruction Envelope packaged with every Sauna Heater. The CAUTION placard must be attached to the interior wall of the sauna room directly above the heater where it is visible to the bather. The WARNING placard must be attached to the door of the sauna room.

SECTION 11: ROOM CONSTRUCTION

For safety and reliability, the following rules must be addressed.
• No permanent locking or latch system is to be used on the sauna door.
• Acceptable door fittings are: magnetic catches, friction catches, spring or gravity loaded closures. The door must always open outwards.
• No shower may be installed in a sauna room.
• No electrical receptacle shall be installed inside the sauna room.
• The enclosed WARNING: Reduce the risk of overheating … warning plate must be mounted on or alongside the door outside the sauna room at about eye level.
• The enclosed CAUTION: Reduce the risk of fire … caution plate must be mounted on the interior wall above the heater.
• The heater should not be operated without its container properly filled with rocks and the rock guard in place.
• If an audio speaker is installed, it should be away from the heater and as close to the floor as possible.
• If a room light is installed, it should be a surface mounted bracket type. Wall mounted lights should be about 70" above the floor. Ceiling mounted lights should be of an approved type with a junction box that is remote to the fixture itself. Use only a fixture that uses A.F. or fixture type internal wiring. A 60 watt bulb should provide sufficient lighting.
• Fire sprinkler systems installed inside any sauna room should be properly rated for sauna room temperatures.
• Always mount the heater according to these installation instructions.
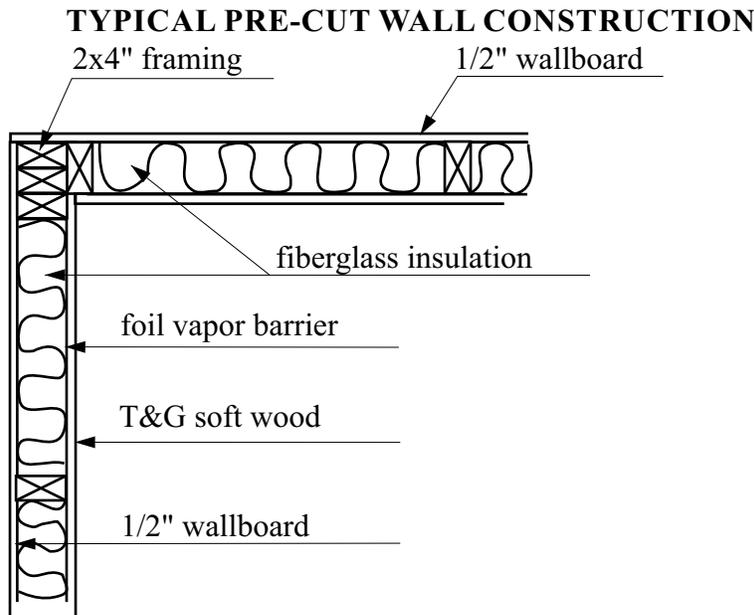
Shower

Sauna (10 - 15 min.)

Shower or swim

Rest (10 - 15 min.)

Relax with juice or water

You liked it?
Do it once again and
you will feel great.

DIAGRAM 5

TYPICAL PRE-CUT WALL CONSTRUCTION

2x4" framing   1/2" wallboard

fiberglass insulation

foil vapor barrier

T&G soft wood

1/2" wallboard

SECTION 12: VENTILATION

VENTILATION Ventilation shall be provided in a sauna, the air should be changed about 6 times an hour. This can be achieved by making a vent opening (fresh air inlet) in the sauna wall directly below the heater. The air outlet must be lower than the upper benches, as far as possible from the heater and about two feet higher than the fresh air inlet vent, See Diagram 6.

The minimum opening should be determined using one of the following formulas:

      For $R < 31,$ $V \geq 9.4$
      For $R \geq 31,$ $V \geq 0.3R$

R = the floor area of the room in square feet
V = the minimum vent size in square inches
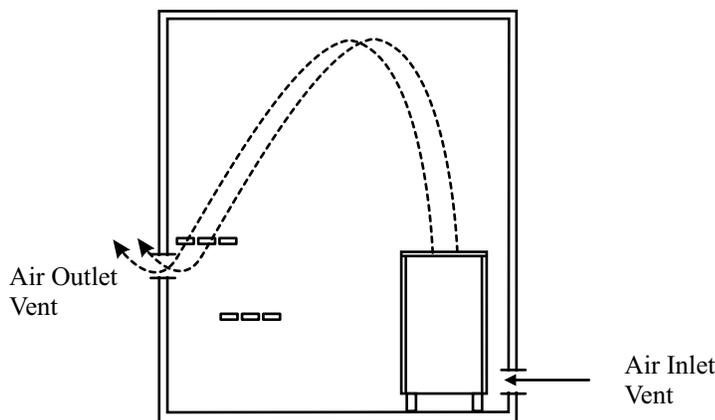
The "CAUTION" and "WARNING" placards must be mounted in accordance with Section 10.

> ⚠ WARNING
> REDUCE THE RISK OF OVERHEATING
>
> * Exit immediately if uncomfortable, dizzy, or sleepy. Staying too long in a sauna is capable of causing overheating.
> * Supervise children at all times.
> * Check with a doctor before use if pregnant, in poor health, or under medical care.
> * Breathing heated air in conjunction with consumption of alcohol, drugs, or medication is capable of causing unconsciousness.

> ⚠ CAUTION
> REDUCE THE RISK OF FIRE
> Do Not Place Combustible Material On The Heater At Any Time.

For safety purpose sauna door must open out and not lock.

Never use a wood stain, seal or preservative on the inside of your sauna room.

Light fixtures get very hot during operation. Locate light fixture where it will not be a burn hazard.

DIAGRAM 6

Air Outlet Vent

Air Inlet Vent

SECTION 13: MAINTENANCE

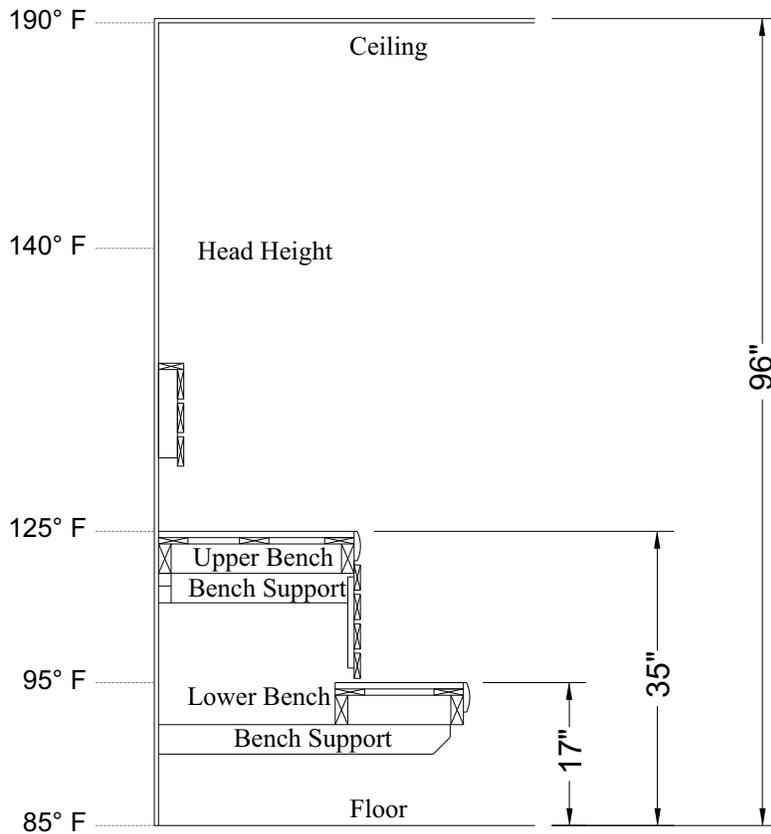The sauna, like a bathroom, should be kept clean and odor free.

Towels or mats should always be used on benches and floor as perspiration otherwise penetrates the soft wood.

Air out the sauna often by keeping the door and vents open when the sauna is not in use. Saunas that are in daily use should be washed down at least once a week to keep them clean and the air fresh. Duckboard should be removed from the sauna, the sauna floor mopped and dried in a conventional manner, and the duckboard thoroughly scrubbed and dried before returning to the sauna room. The sauna heater should be wiped down occasionally with a damp cloth to remove lint and dust. The rocks should be removed once a year for cleaning and small or crumbled rocks replaced.

To clean and remove perspiration stains, use soap or detergent in warm water, best applied with a scrub brush. Badly soiled surfaces may require sanding. Sand paper wrapped around a wooden block works well.

Benches and supporting structure must be inspected annually for potential deterioration due to age, dry rot or abuse. Any boards with signs of deterioration should be replaced immediately to avoid possible injury.

DIAGRAM 7: ROOM TEMPERATURES

190° F — Ceiling

Non-Typical Ceiling Height

140° F — Head Height

96"

125° F — Upper Bench / Bench Support

95° F — Lower Bench / Bench Support
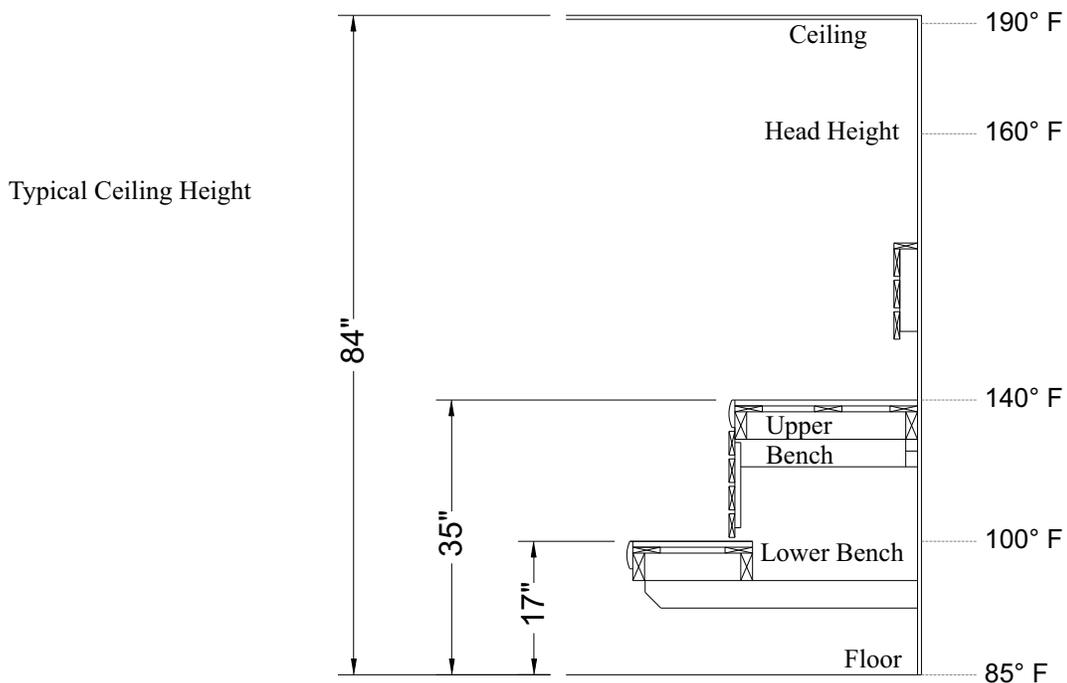
35"

17"

85° F — Floor

Notes:
Temperatures vary in a sauna room by height and distance from heater.

Ventilation will help reduce it but will not eliminate temperature variations.

The hottest part of the room is always at the ceiling directly above the sauna heater and should not exceed 194°F (90°C).

Air temperature will be 15°F to 25°F lower on the opposite side of the room from the heater close to the ceiling.

The temperatures in the elevated view are general numbers. Each sauna room is different due to construction variations and ventilation.

Typical Ceiling Height

Ceiling — 190° F

Head Height — 160° F

84"

140° F — Upper Bench

35"

100° F — Lower Bench

17"

Floor — 85° F

SECTION 14: TROUBLESHOOTING

Control will Run but No Heat - Press the (reset) high limit switch on the back left side of heater as you are standing in front of the heater.

Slow Heat Time or High Limit Tripping - Check rock placement, they will break down over time and reduce the air flow in the heater. Discard all rock pieces under the size of 2" pieces. Call the number below to order more rocks if needed.

In the event of a fault occurring in the heater system (control panel, temperature sensor, etc.), the LED On/Off indicator will flash red on the control panel.

The fault error code will be displayed with a constant LED light or a flashing LED light under numbers 1-10. See the list below for fault codes.

Constant LED Fault Code (ones marked with "n/a" are not in use):

1   Temperature sensor not connected or it is faulty
2   n/a
3   Heater circuit board overheated
4   One or more relay defective
5   n/a
6   n/a
7   Temperature sensor
8   n/a
9   Clock disconnected
10 Power supply to clock disconnected

Flashing LED Fault Code
1   n/a
2   n/a
3   n/a
4   Temperature sensor faulty
5   Problem with device connection
6   n/a
7   n/a
8   Too many temperature sensors connected
9   n/a
10 n/a

LED Flashes Red during a fault

1 - 10 Indicates the fault code

For troubleshooting or service questions call 1-888-780-4427 and ask to speak with service. Prior to calling, please have the Model and Type number available. You may also email us at

techsupport@tyloheloinc.com

SECTION 15: INSTALLATION PREMIUM CONTROL (1601-33 or 1601-33-1) OPERATION

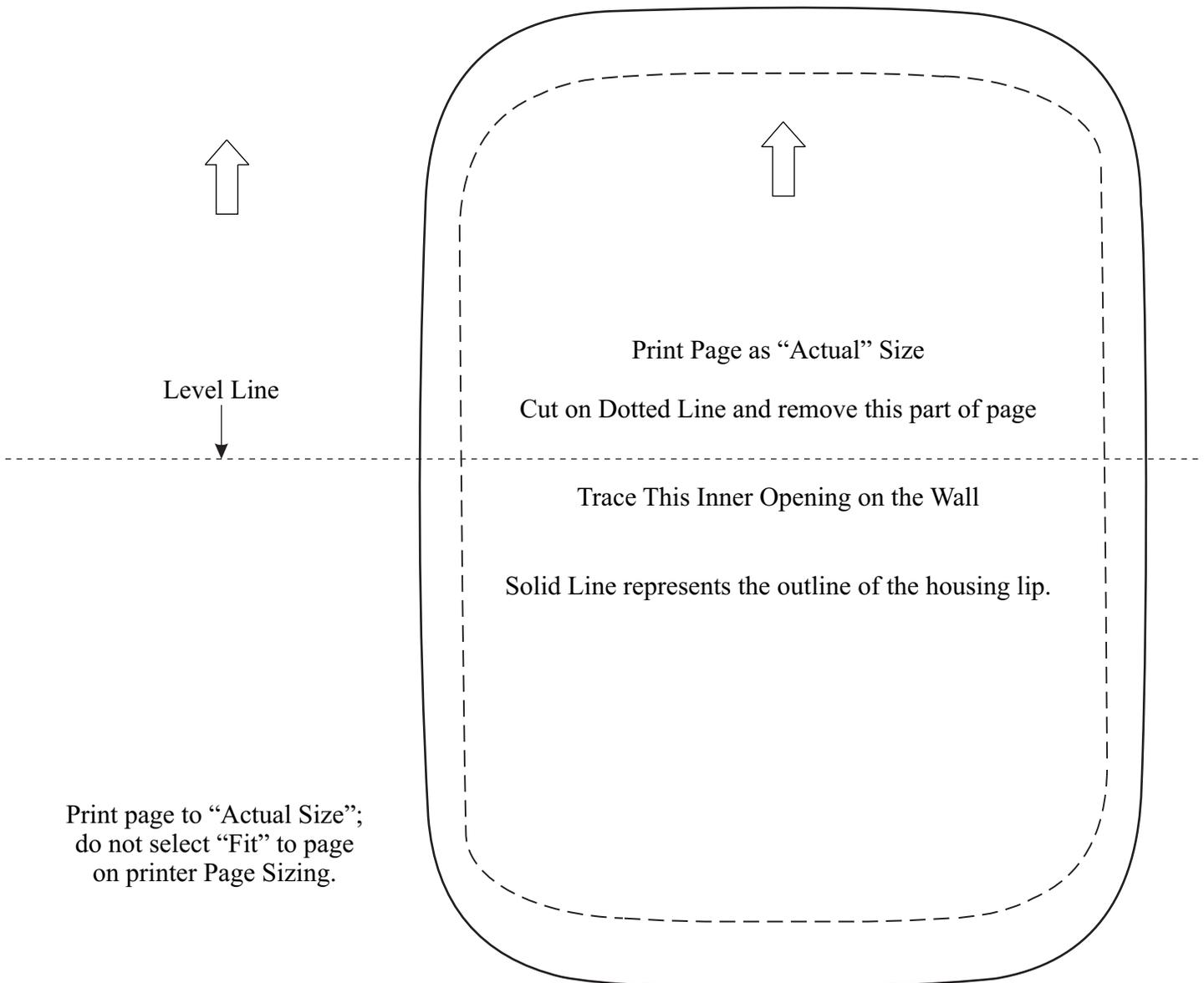Recessed Mounting For the Premium Control

The recessed mounting box allows the control to mount with its surface almost even to the wall surface. Print this page to "Actual" Size on Printer Options. (This will ensure the size of the opening is correct). Cut out the middle of this page on the dotted lines. The hole will be the size of the mounting box. Insert the mounting box in the hole of this page to ensure it is the correct size.

Trace the paper cut out on the wall. Cut a hole in the wall to match the inner dotted line for the mounting box. Run the control cable out of the wall through the hole in the mounting box. Ensure the hole is just big enough to mount the box. Push the mounting box into the hole and turn the mounting screws to pull the tab tight against the inside of the wall. Ensure the box is level and the correct end is UP (there is an arrow on the wall side of the box pointing up).

Connect the Control coupler to the control cable then feed the cables and connector through the hole in the box and into the wall. Test the Control before mounting it into the wall! Once mounted, the Control will be hard to remove! When ready, apply a small amount silicone to the back of the control, carefully push the control into the box, and hold in place.

Note: Do not use the adhesive tape between control and mounting box. It will be too think and will cause issues with snapping on the Trim Ring.

Press the trim ring on to the front of the box and control. Snap it in, place top and bottom and along both sides.

Level Line

Print Page as "Actual" Size

Cut on Dotted Line and remove this part of page

Trace This Inner Opening on the Wall

Solid Line represents the outline of the housing lip.

Print page to "Actual Size";
do not select "Fit" to page
on printer Page Sizing.

SECTION 16: INSTALLATION PREMIUM CONTROL (1601-33 or 1601-33-1) OPERATION

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