HOMECRAFT MANUFACTURING CORPORATION

DIGITAL CONTROL OPERATING INSTRUCTIONS

MODELS TKE-24-D & TKE-24-D-1

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1. ***CAUTIONS & WARNINGS***

1.1. ELECTRICAL PERMIT

It is unlawful to install this unit without first obtaining a permit from the local electrical inspection authority
Il est illégal d’installer cet appareil sans permis préalable des autorités locales d’inspection en électricité

1.2. ELECTRICAL WIRING ROUTING

All wiring to the sauna heater and accessories must be routed away from any direct radiation from the sauna heater

1.3. WATER SPRAY

Never subject the sauna heater or control components to direct water spray

1.4. SHOWER HEAD

Never install a shower head above the sauna heater

1.5. FREQUENT HIGH LIMIT SWITCH FAULTS

If the manually resettable temperature-limiting control trips frequently, a qualified serviceman should be contacted

1.6. FIRE PREVENTION

CAUTION: AVOID A FIRE, DO NOT PLACE COMBUSTIBLE MATERIAL ON SAUNA HEATER
ATTENTION : ÉVITEZ LES INCENDIES, NE PLACEZ AUCUNE MATIÈRE COMBUSTIBLE SUR LE

1.7. APPROVED CONTACTORS

CAUTION: USE ONLY A CONTACTOR APPROVED FOR 250 000 ENDURANCE CYCLES
ATTENTION : UTILISER UNIQUEMENT UN CONTACTEUR APPROUVÉ POUR 250 000 CYCLES DE

1.8. MAINTENANCE PROGRAM

The owner must implement a maintenance program for the sauna heater and inspect the sauna heater at the end of each day to ensure the sauna heater is turned off

2. GENERAL SPECIFICATIONS

IT IS UNLAWFUL TO INSTALL THIS UNIT WITHOUT FIRST OBTAINING A PERMIT FROM YOUR LOCAL ELECTRICAL INSPECTION AUTHORITY. Electrical wiring and hook-up should only be done by a certified electrician. Electrical connection by a non-certified person voids the warranty. Never install electrical wiring such that it could be directly exposed to heat radiating from the sauna heater. The control box must be installed on the outside of the sauna room. Do not install any electrical receptacles inside the sauna room.

DIGITAL CONTROL PANEL

HOMECRAFT has supplied an Electronic Digital Wall-Mount Control Panel for your sauna heater. This electronic control is precise and offers more features than any other sauna control currently on the market. The wall control is a Class II 24 volt circuit and should not require a GFI breaker. Be sure to check with your local inspection authority.

All sauna controls and room light switches must be operated from outside the sauna.
All wiring to the sauna heater and accessories must be routed away from any direct heat radiating from the sauna heater. **Install the control box on the outside of the sauna room in a location that is readily accessible for maintenance. Do not install any electrical receptacles inside the sauna room.**

Note: This Digital Control incorporates two separate devices working in conjunction with one another to control the sauna heater function. The proper functioning of the sauna heater requires that both of these control devices are programed correctly following the instructions below. This control consists of one enclosed electrical control box containing the following components:

- **A.** One (or two, depending on the control model) magnetic contactor that is prewired.
- **B.** A digital Touch Pad Control which is used to power on/ off the control and set the temperature
- **C.** A digital Time Clock which is used to set the days/ hours of operation for the sauna heater
- **D.** A printed circuit board with transformer and relay
- **E.** A package containing wire, temperature sensor, temperature sensor cover, and electrical connectors (Marrettes)

3. DIGITAL CONTROL BOX

Please refer to the enclose wiring schematic which clearly shows the path of the wiring for each control model

- **A.** This box must be mounted in a location that you can be easily accessed for programming and maintenance.
  Caution: Use only a contactor approved for 250,000 cycles
  Attention: Utiliser uniquement un contacteur approuvé pour cycles ce fonctionnement

4. TEMPERATURE SENSOR

Attach the temperature sensor with the supplied Marrette connectors to the length of 18/ 2 wire which is supplied with the control. If you require a longer distance between the sensor and wall control panel, buy a new continuous length of 18/2 wire and attach the sensor to the new wire. **DO NOT** splice onto the supplied length of 18/ 2 wire.

Be sure to run the 18/2 wire inside the insulated stud space in the sauna wall. Be sure to leave a little slack in the wire in the stud wall. Strip about 6” from the outer casing of the 18/2 pair, leaving the protective casing on the individual leads. This will make it easier to attach the 18/2 wires to the sensor

leads, and gives more flexibility when pushing any excess back into the wall. The sensor wire should come out of the wall into the sauna room through an 5/8" diameter hole so the sensor is positioned vertically in line with the side of the heater and 64 mm (2-1/2") below the ceiling. See heater installation instructions for proper positioning of the sensor.
Do not hide or bury the sensor behind a cover other than the one supplied with this control. Incorrect installation of the sensor will negatively impact the heater operation causing nuisance tripping of the High Limit Switch, and will compromise personal and fire safety

4.1. TEMPERATURE SENSOR COVER

Using the supplied #6 wood screw, fasten the temperature sensor to the sauna wall over the sauna heater in the prescribed position 64 mm (2-1/2") below the ceiling. Be sure to remove the plastic protective film from the stainless steel sensor cover. Next, fasten the sensor cover (Figure 4) to the wall using the quantity of 4 supplied #6 wood screws, covering the sensor and taking care not to nick or cut the wires leading to the sensor. The sensor cover is designed to allow for adequate airflow around the sensor and protect the sensor from tampering.

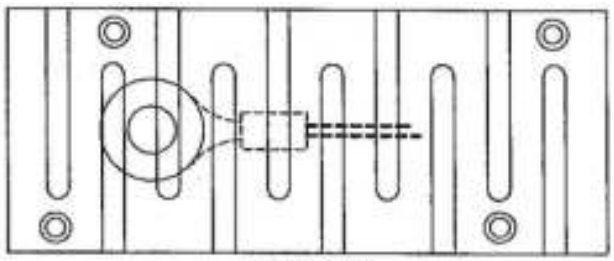


Figure 4

5. DIGITAL TIME CLOCK OPERATING INSTRUCTIONS

This time clock provides flexible timing for daily and/or weekly programming. Setting the Digital Time Clock is simple and fast by means of push buttons and display prompts. This timer combines 24 hour/ 7 day timing. Up to 8 on/off operations are allowed for each day. The minimum time setting is 1 minute. A lithium battery provides 5 years of backup operation.

Note - to save time you can set up each on/off cycle:

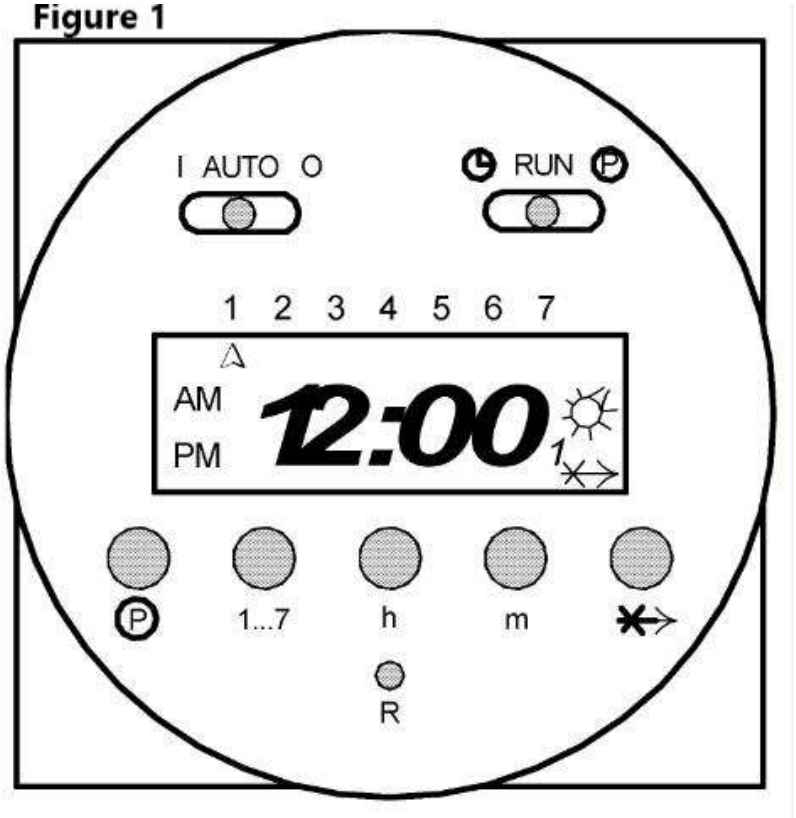
A) – to be unique for each individual day, or
B) – for Monday to Friday (days 1 to 5), or
C) – for weekends only (days 6 & 7), or
D) – for all days except Sundays (days 1 to 6), or
E) – The entire week at one time. This can save a lot of time when programming the "on" and "off" cycles

Example:

- Slide the "RUN" switch to "P"
- Press the "1…7" button seven times and notice a single arrow will move in steps below the 1-7 numbers on the display, indicating the individual days of the week.
- The next time you press the "1…7" button you will see days 1 to 5 highlighted with arrows (Monday to Friday)
- The next time you press the "1…7" button you will see arrows highlighting 6 and 7 (Saturday and Sunday)
- The next time you press the "1…7" button you will see arrows highlighting all days except 7 (Sunday)
- The next time you press the "1…7" button you will see arrows highlighting every day of the week

- Now slide the switch back to “RUN” to begin programing the clock

Figure 1



5.1. SETTING CURRENT TIME & DAY

- Slide the “RUN” switch left toward the symbol of the clock face
- Press the “1…7” button until the arrow points to the current day (1=Monday, 2=Tuesday, etc.)
- Press “h” then “m” buttons to set the current time. The “PM” indicator on the LCD shows noon till 11:59 p.m.
- Slide the switch back to the “RUN” position. The colon wil blink between the hours and minutes

5.2. SETTING FIRST CYCLE TO “ON”

- Slide the “RUN” switch to “P”. You should see a “1” indicating this is the first switch cycle (***HINT – odd numbers indicate a “switch-on” cycle***). A “light bulb” icon on the LCD reminds you that you are programming a “switch-on” condition (circuit closes).
- Press the “1…7” button until the arrows point to the selected day(s) you want this ON cycle to occur (see note at beginning of STEP 2 on how to choose days of the week)
- Press “h” and “m” buttons to show the desired switch on time noting the “PM” indicator on the LCD
- When you are finished programming this “ON” cycle, simply slide the top right switch back to the “RUN” position

5.3. SETTING THE FIRST CYCLE TO “OFF”

- Slide the “RUN” switch to “P”. Now press the “P” button at the bottom left of the control. Notice the switch cycle number changes to “2” (***Hint – even numbers indicate a “switch-off” cycle). The “light bulb” on the LCD blinks, indicating a “switch-off” condition (circuit opens).
- Press the “1…7” button until arrows point to the selected day(s) you want this off cycle to occur.
- Press the “h” and “m” buttons to select the “switch-off” time desired

- Remember you can repeat the above steps to program multiple on/off events for each day of the week as described in the **Example** above. By pressing the lower "P" button you can advance to the desired on/off cycle.
- Slide the "RUN" switch to the "RUN" position
- The clock colon will blink between the hours and minutes

5.4. SETTING THE AUTORUN MODE

- After you've set the time and days for the desired switching cycles you can enable the Autorun Mode
- Slide the "RUN" switch to the "RUN" position, then slide the "mode" switch to the "AUTO" position. Switching will begin with the next "switch-on" set time

5.5. SWITCHING TO OVERRIDE "ON"

- Slide the "mode" switch from "AUTO" to the "I" position. This will switch on (circuit closed) the sauna indefinitely regardless of what has been programmed.

5.6. SWITCHING TO OVERRIDE "OFF"

- Slide the "mode" switch to the "O" position. The sauna will remain off indefinitely (circuit open) regardless of what has been programmed.

5.7. SKIP CYCLE

- In automatic run mode, press the "~~X~~→" button, the next calendar day is skipped

5.8. SETTING ERROR

- If "EEE" appears, a setting error exists. The switch cycle number in error is also shown.
- Slide the "RUN" switch to the "P" position and press the "P" button until the cycle that was previously indicated to be in error is shown.
- Review this setting and then following the setting instructions to correct the error.
- Slide the "RUN" switch to the "RUN" position

5.9. CLEARING SETTINGS

- Slide the "RUN" switch to the "P" position
- Press the lower "P" button repeatedly until you see the "ON" cycle you wish to clear.
- Press and hold the "~~X~~→" button then press the "P" on the lower left of the control face
- Release both buttons. The time on the LCD should revert to "00:00". Repeat this procedure for the corresponding "OFF" cycle. This on/off cycle is now inactive

5.10. CLEAR ALL SETTINGS

- To erase all settings, using a pencil press the "R" button. Caution this will reset the control to factory settings and all settings including the current time/ day will be erased.

6. DIGITAL TOUCHPAD OPERATING INSTRUCTIONS

In order for the sauna heater to operate, the Digital Touchpad must be turned on. The sauna room temperature must also be set using the Digital Touchpad in order for the sauna room to operate at the desired temperature. The sauna heater will then cycle on and off according to the settings you've selected for the Digital Time Clock in Section 5 above.

***Important** – If a power outage occurs, the Digital Time clock will retain it's settings due to the fact it has a Lithium Backup Battery**, HOWEVER the Digital Touchpad MUST BE TURNED ON again and the temperature must be set again.**

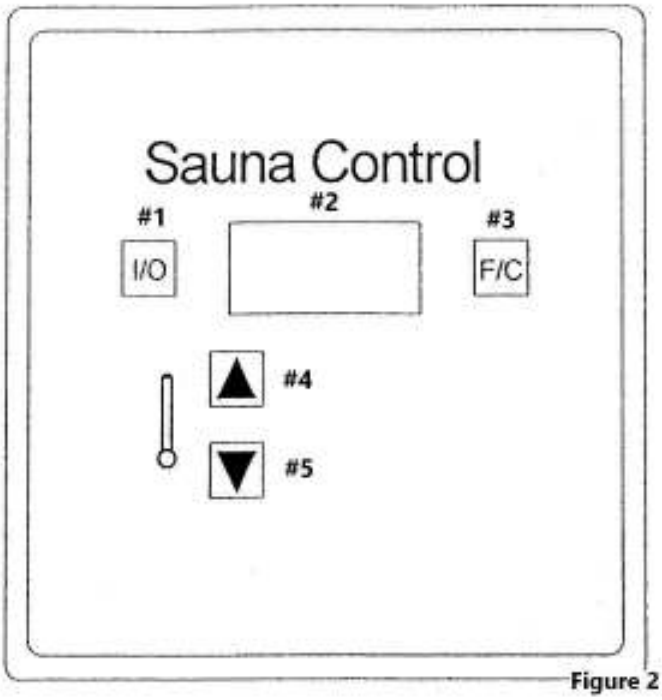


Figure 2

6.1. "OFF" DISPLAY

When the sauna is turned off the LCD display (#2) will show "OFF".

6.2. TURN ON THE SAUNA

Press the I/O switch (#1) on the Digital Touchpad to turn on the sauna.

6.3. SELECT FAHRENHEIT OR CELSIUS

Press the "F/C" switch (#3) on the Digital Touchpad to select either Fahrenheit or Celsius.

6.4. DEFAULT SETTING

The default temperature setting when the sauna is first turned on is 80° C (176°F).

6.5. CHANGE THE TEMPERATURE

To change the temperature, press and hold for 3 seconds ether the up/ increase switch (#4) or the down/ decrease switch (#5), and then release. This will then allow you to scroll to the desired temperature using either of these switches again. The temperature setting limits are 25°C to 90°C.

6.6. DEFAULT DISPLAY

When sauna is turned on and the temperature and timer are not being adjusted, the LED display returns to the default display which shows the actual room temperature.

6.7. DISPLAY THE SET TEMPERATURE

To display the currently "set" temperature, momentarily press and release ether temperature setting switch (#4 or #5). The "set" temperature will display for 3 seconds and then the LED display will default back to the current room temperature.

7. ****NOTE ON INSTALLATION IN A PUBLIC SAUNA***

Some facilities have experienced vandalism of the control sensor. The **HOMECRAFT** Sensor Cover is designed to give maximum security against vandalism. If the sensor needs to be replaced, it may be necessary to "fish" the 18/2 wire back through the hole. This is why we suggest leaving at least 15

cm (6") of lead wire on the 18/2 wire. Be sure when mounting the 18/2 wire in the sauna wall that the cable will not fall down and away from the hole and that there is enough slack to pull the leads through. In the event the sensor is vandalized, the safety feature of the control will disable the heater from operation.
CAUTION: In a public sauna, the sensor should be visually inspected every day to ensure that there are no obstructions and that air flows freely around the sensor.

8. HOMECRAFT HEATER GUARANTEE

Every HOMECRAFT sauna heater has been carefully inspected and packaged prior to shipping and we guarantee to correct or replace, at our discretion, any defect caused by faulty material or workmanship.

This guarantee applies as follows:

RESIDENTIAL INSTALLATIONS:
Sauna Heaters: LIFETIME limited warranty against manufacturers' defects
Controls: warranted for one year from date of purchase.
Note: heating elements and high-limit switch are regarded as "consumable" items and are excluded from this warranty.

COMMERCIAL INSTALLATIONS:
Sauna heater and controls: one year from the date of purchase.
Note: heating elements and high-limit switch are regarded as "consumable" items and are excluded from this warranty.

SAUNA ACCESSORIES:
Accessories manufactured by HOMECRAFT are covered for 1 year from the date of purchase.

This guarantee does not cover faults or defects caused by misuse, negligence, improper installation, installation in high corrosion areas, alterations, careless handling, damage in shipping, acts of God, or other circumstances beyond the control of HOMECRAFT Manufacturing Corporation or its authorized agents.

No reimbursement by HOMECRAFT will be allowed for costs incurred to diagnose, remedy, or replace parts without prior written agreement.

Electrical wiring and hook-up should only be done by a certified electrician. All equipment must be installed according to our heater installation instructions observing the required clearances of the sauna heater and the proper position of the temperature sensor probe. Our electrical connection instructions are a guide only and local electrical codes will supersede our instructions. Electrical connection by a non-certified person voids the sauna heater and control guarantee. We reserve the right to decline responsibility where repairs or replacements have been attempted by others.

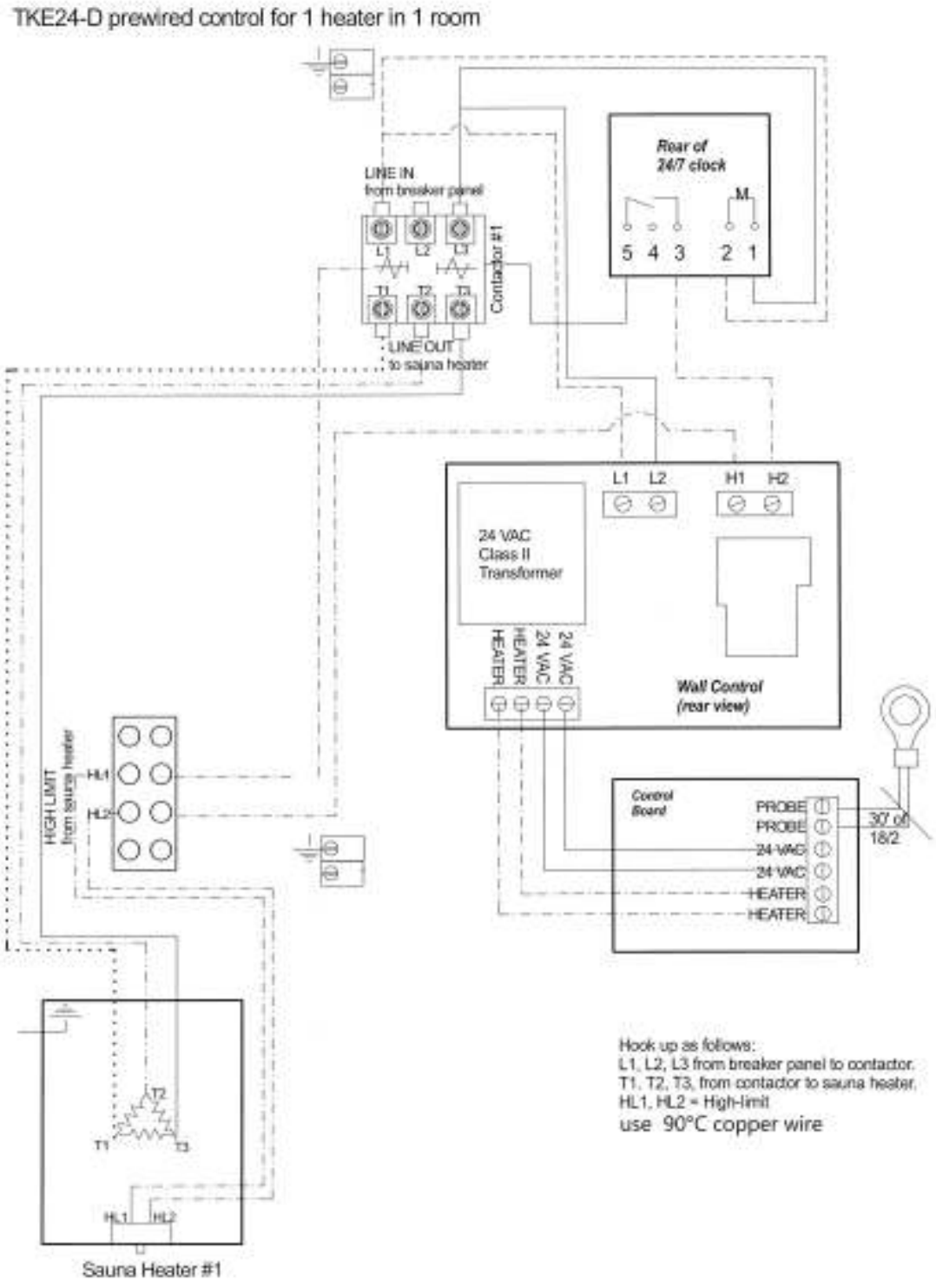
The complete sauna unit must be returned to one of our Factory Service branches or to our factory with transportation charges prepaid. A return authorization must be obtained from HOMECRAFT Manufacturing before returning any product.

(Please call us before returning any product, we can often trouble-shoot difficulties over the phone.)

No other verbal or written guarantee is applicable to our products.

End of Instructions

9. TKE-24-D SAUNA CONTROL WIRING DIAGRAM



10. TKE-24-D-1 SAUNA CONTROL WIRING DIAGRAM

