

This instruction manual must be delivered to the end user.

For safekeeping

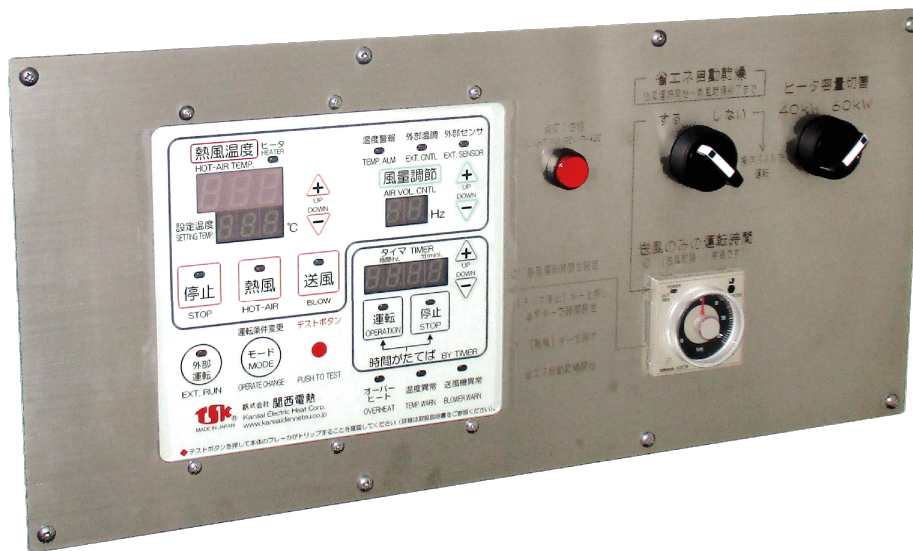
3-002 Created: April 2024

TSK Hot Air Generator

Mold Dryer X-5MS Instruction Manual Basic Operation Edition

● Be sure to read before use.

- ◆ Thank you for purchasing the TSK Hot Air Generator.
- ◆ Please verify that the model, part number, and voltage on the nameplate match your ordered product.
- ◆ This manual describes the basic operation of the hot air generator. For installation, piping, power supply, for details on fault detection and convenient functions, refer to the [General Operation Manual].



TSK Hot Air Generator
•Electric Hot Air Mold Dryer
X-5MS

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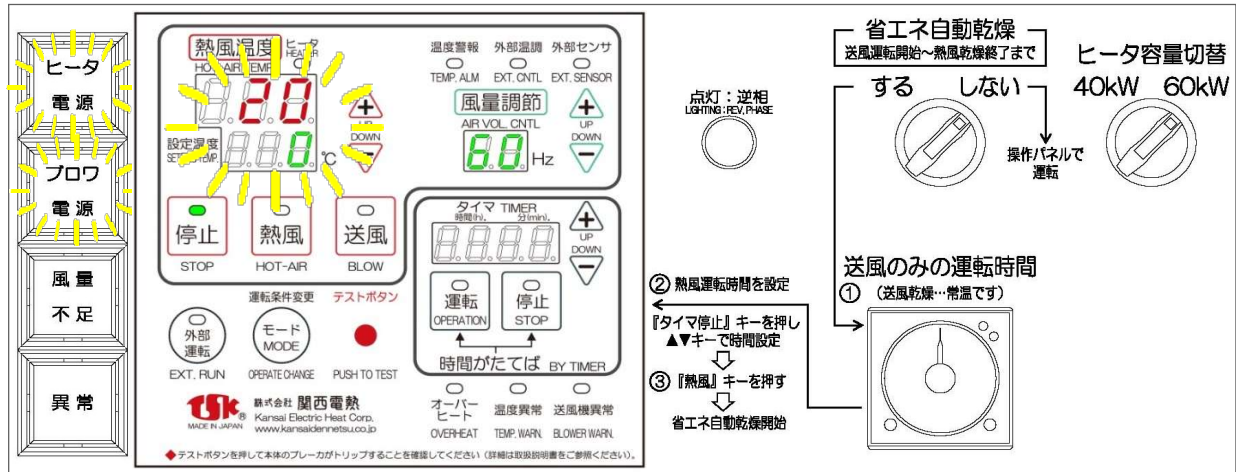


Kansai Electric Heat Corp.

1. Normal Operation

① Turn ON the factory power supply (primary side power supply). Then turn ON the unit breaker (ELB).

● The Stop Lamp (green), Heater Power Lamp, and Blower Power Lamp will illuminate. The Indicator PV Section will display the current temperature, the set temperature in the set SV section, and '60' (frequency) in the airflow adjustment section. (During initial operation)



※Nothing is displayed when only the factory power (primary side power) is ON.

※The reverse phase lamp illuminates when the power line connection is reversed or a phase is missing.

When the reverse phase lamp is lit, refer to the Instruction Manual: **General Edition**.

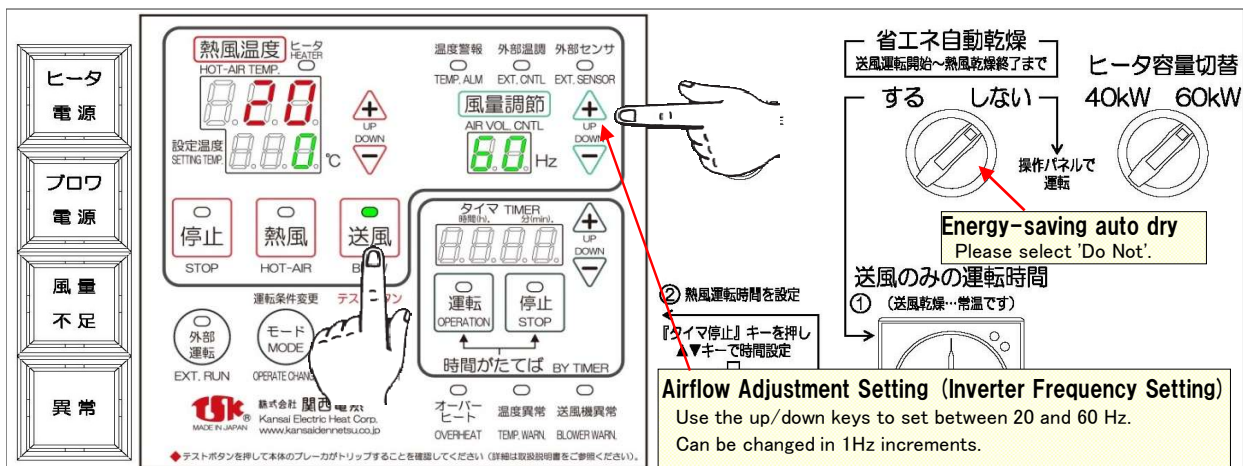
※If the heater power lamp or blower power lamp does not light up, and the indicator PV section, setting SV section, and stop lamp do not light up, refer to the Instruction Manual: **General Edition**.

※When turning the main breaker (ELB) ON for the second time or later, the previous setting values will be displayed on the SV setting and airflow adjustment sections.

② Pressing the power switch lights the blower lamp (green) and starts blower operation.

● In this case, select [Do Not Use] for [Energy-Saving Auto Dry].

● Adjust air volume using the [Air Volume Adjustment Up/Down Keys (Inverter Frequency Setting)].



※Even if the airflow is set to the minimum airflow adjustment setting value of 20Hz, the mold dryer will not reach the maximum temperature if it is in a near-no-load state.

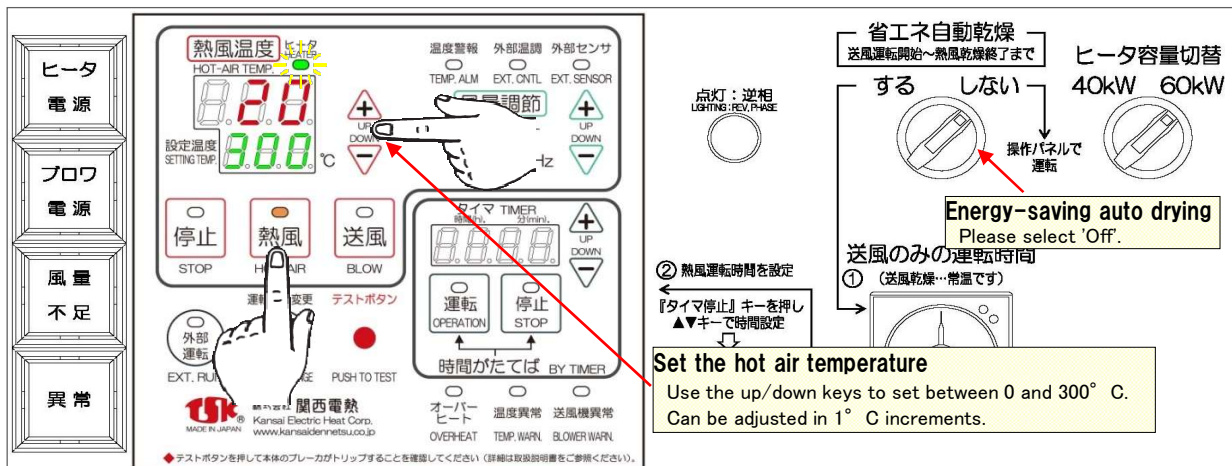
...This is because the lower limit of the motor rotation speed is set to account for the cooling effect of the blower motor.

If the hot air temperature does not rise to the set temperature even when the airflow adjustment setting is set to [20Hz], this is because the lower limit of the motor rotation speed is set to ensure the cooling effect of the air blower motor.

...Please reduce the airflow. ...Normally, adjust the airflow using only the airflow adjustment setting (inverter frequency setting).

1. Normal Operation...Page 1

③ Pressing the Hot Air Switch illuminates the Hot Air Lamp (orange) and starts hot air operation.



● To stop operation, press the stop switch (cooling operation is not required).

※ The heater lamp (green) indicates the heater ON/OFF status by lighting or flashing.

※ Heater capacity can be changed using the [Heater Capacity Switch]. However, for safety, the power wiring, etc., is designed assuming a heater capacity of 60kW.

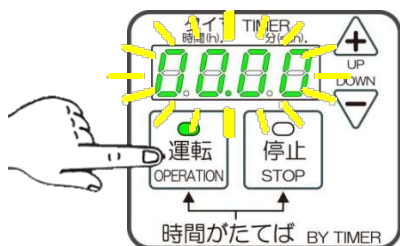
2. Timer Operation/Timer Stop (During Normal Operation)

- Before starting or stopping timer operation, set the hot air temperature and airflow volume as desired.
- Perform timer settings while the unit is stopped (timer settings cannot be made during fan operation or hot air operation).

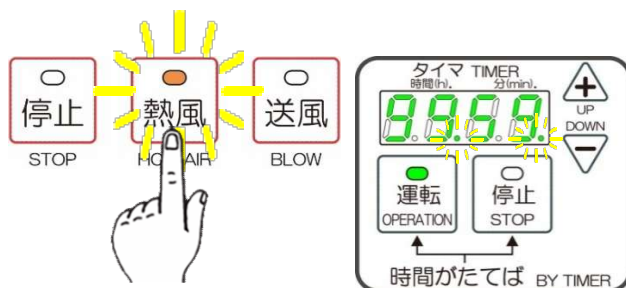
● Timer Operation (Starts after time elapses)

Press the timer operation switch.

The timer operation lamp (green) illuminates, and the timer display shows '00.00.' flashes, or the previously set time will be displayed.



③ Press the Hot Air Operation Switch.

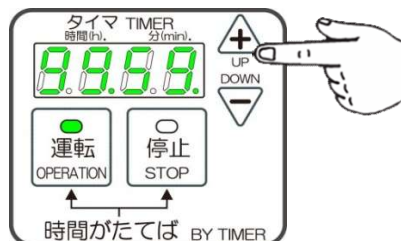


Use the up/down keys to set the desired time.

Can be set in 1-minute increments up to a maximum of 99 hours 59 minutes.

After setting is complete, release the up/down keys. After 2 seconds,

The Timer Stop Lamp (green) will light up, and the Timer Display will show the set value.



The time countdown (subtracting from the set timer time) begins (the dot display flashes), and when the time count reaches '00.00.', hot air operation starts. Also, during the time countdown, the hot air lamp (orange) flashes, and after hot air operation starts, it switches to a steady light.

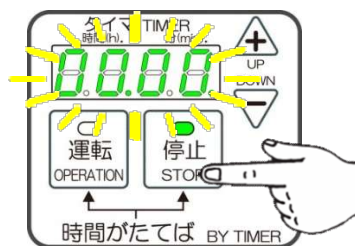
※After the countdown ends, the timer display will show '00.00.'

※Pressing the stop switch will stop timer operation and timer counting will stop.

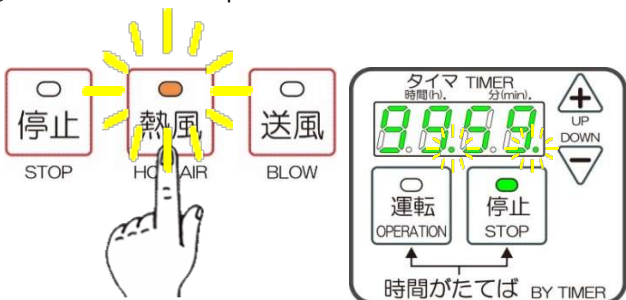
● Timer Stop (Stops after time elapses)

Press the timer stop switch.

The timer stop lamp (green) will light up, and the timer display will show '00.00.' will flash, or the previously set time will be displayed.



③ Press the Hot Air Operation Switch.

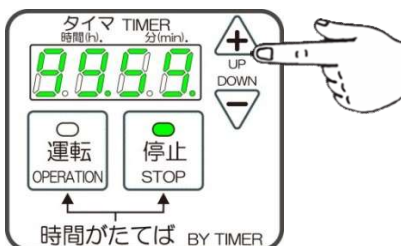


Use the up/down keys to set the desired time.

Can be set in 1-minute increments up to a maximum of 99 hours 59 minutes.

After setting is complete, release the up/down keys. After 2 seconds,

The Timer Stop Lamp (green) will light up, and the Timer Display will show the set value.



The timer countdown (subtracting from the set time) begins (dot display flashes), and hot air operation starts. When the timer countdown reaches '00.00.', hot air operation stops. During hot air operation, the hot air lamp (orange) stays lit. After hot air operation ends, it switches to flashing.

※After the timer count ends, the timer display will show '00.00.'

※Pressing the stop switch will halt timer operation and timer counting will stop.

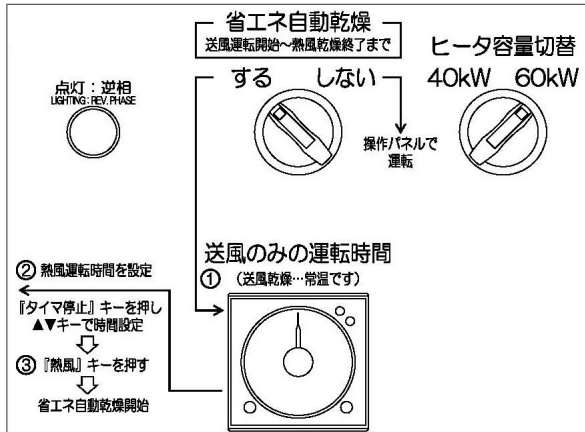
3. Energy-Saving Automatic Drying

◇About Energy-Saving Auto Drying

Energy-saving automatic drying start (Mold Drying Start)	Air Circulation Operation (Operation via blower timer)	Hot Air Operation	Energy-saving automatic drying completion (Mold Drying Complete)
	Night Time	(Operation via Hot Air Timer)	

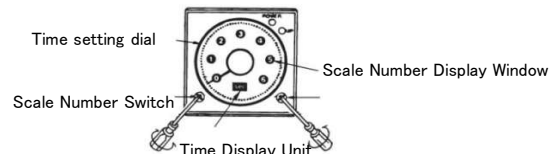
For several hours after mold drying begins (such as overnight), the surface sand is dried using only the air-blowing function. Once the timer-controlled air-blowing cycle ends, hot-air drying of the mold begins immediately and continues until the timer-controlled hot-air cycle ends.

① In the stopped state, select [Enable] for Energy-Saving Auto Drying, then set the timer for [Fan-Only Operation Time].



【Fan-Only Operation Timer Setting Method】

- ① Use a screwdriver to turn the time unit selector switch and the scale number selector switch to set the desired range.
- ② Set the desired time using the time setting dial.



※ Do not set in seconds.

※ The pointer on the time-setting dial remains at the set time even as time passes.

② Set the hot air operation timer.

Press ① Timer Stop.
The timer stop lamp (green) will light up, and the timer display will show '00.00.'
The timer display will flash, or the previously set time will be lit.

② Use the up/down keys to set the desired time.
You can set the time in 1-minute increments up to a maximum of 99 hours and 59 minutes. After setting is complete After releasing the up/down keys, the display switches from flashing to steady after 2 seconds. The set value will be registered.

③ Set the hot air temperature and press the hot air switch to start energy-saving auto drying, begins as fan operation.

① Use the up/down keys to set the hot air temperature during hot air operation. Set the temperature.

② Press the hot air switch.
Energy-saving automatic drying will start immediately and enter fan operation.
*The ventilation lamp will illuminate.

送風のみの運転時間
① (送風乾燥～常温です)

② 熱風運転時間を設定
『タイマ停止』キーを押し
▲▼キーで時間設定

※ When fan operation (controlled by the fan timer) ends and hot air operation (controlled by the hot air timer) begins, the hot air lamp (orange) illuminates.

※ The heater lamp (green) indicates the heater's ON/OFF status by lighting or flashing.

4. When using the cooling operation function (During normal operation and energy-saving auto drying)

● The cooling operation function is only available when selecting operation stop via the timer. After performing hot air operation via the timer, period of fan operation before stopping. (Also usable during energy-saving auto drying.)

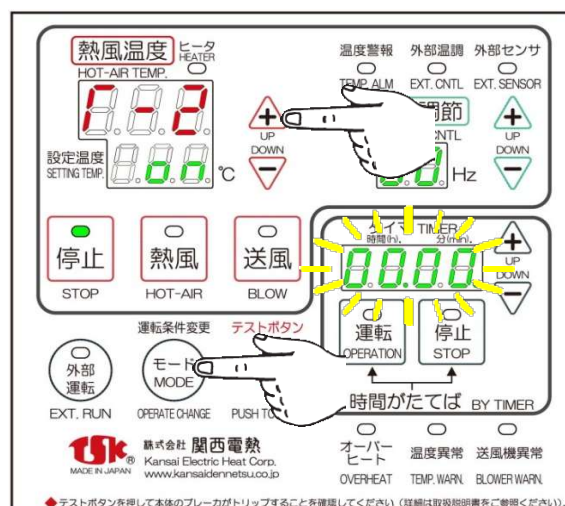
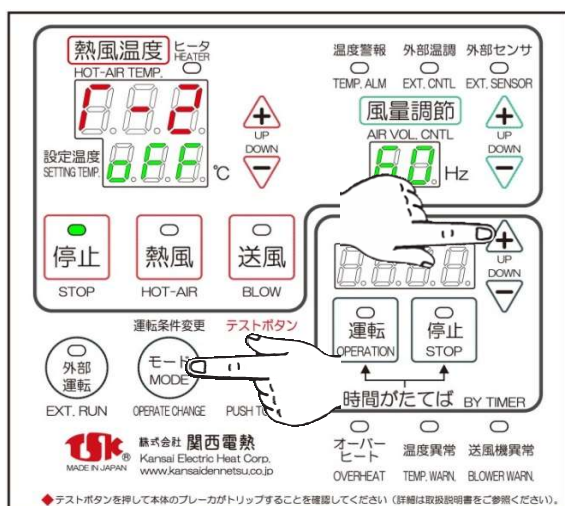
※Our hot air generators are designed with a low wattage density, eliminating the need for cooling operation to prevent heater breakage, use this cooling operation function for preventing burns on piping, etc., after stopping operation, or for cooling after handling dried heated products.

①While in stop state, press and hold the mode switch while pressing and holding the timer up key. Press and hold the Up key on.

"T-2" will be displayed in the instruction PV section, and "OFF" will be displayed in the setting SV section.

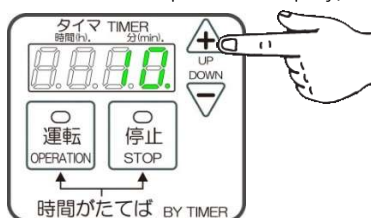
②Press the Up key to change the set SV display to 'ON', once.

The timer display will flash '00.00.'



③Use the up/down keys to set the desired cooling time.

After setting, press the mode switch once to return to the normal operation display.

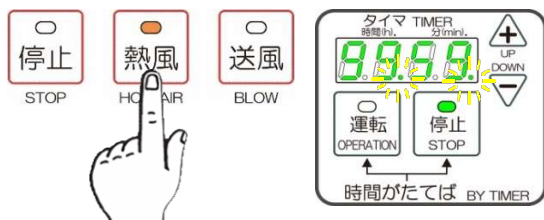


④Press the timer stop switch to set the hot air operation time..

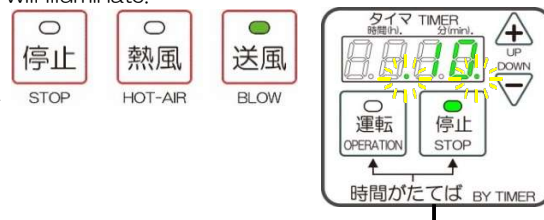


Press the hot air operation switch.

The time count (dot display flashes) begins, and hot air operation. During hot air operation, the hot air lamp (orange) illuminated.



After the timer-controlled hot air operation ends, the timer-controlled cooling operation (fan operation) will start. Also, during cooling operation, the fan lamp (green) will illuminate.



When the time count reaches '00.00', the cooling operation will stop and the fan lamp will flash.



※Pressing the stop switch halts timer operation (the timer setting reverts to the default value).

Precautions for Use ※Be sure to check before use.

To ensure trouble-free operation of the mold dryer

◆ This section lists important precautions that have caused failures in the past.

- Always clean the mold dryer's intake filter (standard equipment). Clogging of the filter may cause abnormal overheating inside the heater, potentially preventing operation.
- The X-5MS is equipped with a control panel filter; clean it regularly. If clogging becomes severe, dust adhering to the filter may enter the control panel interior and cause the mold dryer to malfunction.
- If the atmosphere at the mold dryer installation site contains conductive suspended particles such as dust, powder, carbon fibers, oil, oil fumes, oil mist, moisture, or water vapor. If these substances adhere to or enter the mold dryer's may adhere to or enter the internal operating components of the mold dryer, leading to malfunction.
- Cannot be used in environments with combustible gases, flammable gases, plating, or corrosive atmospheres. Please consult us beforehand.
- Keep the mold dryer's circuit breaker (ELB) ON at all times. Do not use the ON/OFF switch as an operating switch. Surge voltage may damage internal electronic components.
- Flexible hose piping to the mold dryer's outlet or inlet will inevitably leak hot air due to the characteristics of flexible hoses will inevitably cause hot air leakage. Leaked high-temperature hot air may flow back into the mold dryer, damage the electronic components in the control panel. Therefore, use the enclosed air leak prevention glass tape provided to install the flexible hose piping to the outlet or inlet.
- Applying voltage to input terminals A1 to A10 and output terminals B8 to B10 will cause failure. Additionally, applying voltage exceeding the rated value to output terminals B1 to B7 will cause failure. (When using a remote controller... optional)
- Do not route service terminals adjacent to or bundle them with AC power lines, power lines, or harmonic lines. Do not bundle or route service terminals adjacent to AC power lines, power lines, or harmonic lines. Noise may damage internal electronic components. (When using a remote controller... optional)
- Do not stop the hot air generator using the electromagnetic contactor installed on the primary side of the mold dryer. This may cause damage to internal electronic components due to surge voltage.
- Induced lightning surges caused by lightning strikes can lead to damage, malfunction, or fire in mold dryers. If you use a mold dryer in an area susceptible to lightning strikes, be sure to implement lightning protection measures such as installing arresters (lightning arresters).
- Always use commercial power with a sine wave (50/60 Hz) for the mold dryer's power supply. Never use power from frequency converters or other sources that produce distorted waveforms containing harmonics. Harmonics and noise may damage internal electronic components.

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