Please send to the customer who is used this operation manual without fail.

Preservation type

T.S.K Hot-air generator

H-type series

Operation manual Total edition

Please read without fail before use.

- *Thank you very much for purchasing Hot-air generator this time.*
- *Please confirm the model, type, and voltage by the name plate of this machine.*

TSK Hot-air generator

- *TSK-22H4*
- *TSK-32H5*
- *TSK-52H6*
- *TSK-53H7*
- *TSK-62H8 (Made-to-order)*
- *TSK-72H9 (Made-to-order)*

Kansai Electric Heat Corp.

1.Attention on use ※Please confirm without fail before use.

For the hot-air generator is used without malfunctioning

◆ *Important matters that demand special attention that became the cause of malfunction that occurred in the past is entered. Please inquire with the use method of your company.*

- ***Please clean always the high-performance filter at the hot-air generator inlet. (Standard equipment) Heater inside is overheated by the clogging of the filter and the hot-air generator may can not operate.***

- ***Hot-air generator malfunctions when these adhered to the controller inside of the hot-air generator in the case that dust, mine dust, floating objects that pass electricity of carbon fiber, oil, lampblack, oil mist, moisture, and vapor is included to the atmosphere of the setting place of the hot-air generator.***

- ***Please be sure to fix the piping to the discharge port of the hot-air generator securely using a membrane ferrule, UC clamp, and silicon O-ring. Because this machine is of high air pressure type, hot-air leakage will occur if the piping to the discharge port is not fixed securely. The leaked hot air flows back into the hot-air generator, causing damage to the electronic devices in the operation panel.***

- ***Input terminal A1-A10 and output terminal B8-B10 is malfunctioned by the voltage is applied. And, output terminal B1-B7 is malfunctioned by the voltage more than the rating is applied.***

- ***Please do not unite or wire that was adjoined the wiring of the service terminal with the power supply line, high tone wave line. Electron devices of the inside are damaged by noise.***

- ***Please do not stopped the hot-air generator with the electromagnet contact device that was established to the first side of the hot-air generator. Electron devices of the inside are damaged by serge voltage.***

- ***The thunder serge that occurred by falling of a thunderbolt becomes a cause to the wrong action, damage, and fire accident of the hot-air generator. Please attach the arrester without fail and please perform the falling of a thunderbolt measure in the case that the hot-air generator is used in the place where receives the influence of falling of a thunderbolt.***

- ***Please use the commercial power supply (50/60Hz) that has the sine wave-like to the power supply of the hot-air generator. Please do not use the power supply that has the distortion wave including a high tone wave from the frequency transformation device absolutely. Electron devices of the inside are damaged by high tone wave and noise.***

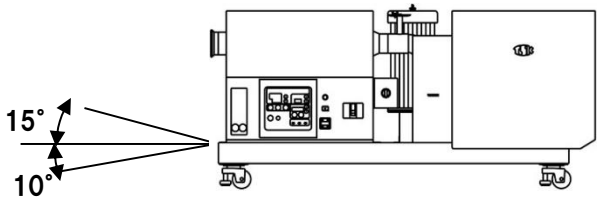
- ***Please do not bend and do not change the height the sensor for the temp. measuring that is equipped to the outlet of the hot-air generator. Short - circuit occurs if the sensor contacts to the heater.***

2. Installation

① *Please establish to the horizontal position.*
Please refer to the figure of the right about the around of inclination. And, please establish to the horizontal position about the right and left.

② *Please use the adjusters to fix them firmly in place.*

③ *Place where can not establish*



- *Place where back is stuck to wall etc.*
- *Place where height is more than 1000m*
- *Outdoor, and place where is exposed to the storm*
- *Places of there are many dust*
- *Upper part of generation thing*
- *Neighborhood of combustible*
- *Place where air pressure is low*
- *Room where is tightly sealed and case inside*
- *Place where ambient temp. is more than 0 - +40 ˚C.*
- *Place where ambient humidity is more than 85%R.H.*
- *Place where has floating objects that pass electricity (Carbon fiber etc.)*
- *Place where acid and corrosiveness gas is floating*
- *Place where has vibration*

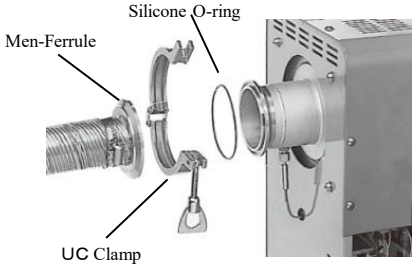
3. Piping

① *Piping to the discharge outlet must be securely fastened using a Men-Ferrule, UC clamp, and silicone O-ring.*
Leakage of the hot-air is occurred without fail on the characteristic of the flexible hose in the case of the piping by the flexible hose to the outlet and inlet of hot-air generator. Electron devices inside the operation panel are damaged by the hot-air of the high temp. that leaked flows backward to the hot-air generator inside. So, please execute the glass tape for the air leakage prevention that was enclosed to the outlet and inlet.

② *Please pipe as thickly, short, and gradual curve as possible.*

③ *Please insulate sufficiently without fail to piping.*

④ *Please do not hang the pulling load to the outlet flange in the condition that the hot-air generator with the outlet flange was fixed.*



Execution example of the glass tape for the air leakage prevention

⑤ *Please do not insert the piping is smaller than the bore of the outlet to the outlet. Outlet sensor is bent, and the sensor contacts to the heater.*

4. Power supply

① *Please ask the connection of the power supply and ground construction work to the electric repairing work technician.*

② *Please connect the power cord in accordance with R(Red), S(White), T(Black), and Ground(Green).*
Power cord is not belonged TSK-121. So, please prepare separately.(Recommendation cord : Cab tire cable 100mm ^{2})

③ *Please use the commercial power supply (50/60Hz) that has the sine wave-like to the power supply of the hot-air generator. Please do not use the power supply that has the distortion wave including a high tone wave from the frequency transformation device absolutely.*

④ *Please establish the exclusive use circuit. Please decide the capacity of the sensitivity current in accordance with the following table in the case that the electric leakage circuit breaker is attached.*

Model	*Rough standard of the sensitivity current of the electric leakage circuit*
TSK-22H4・32H5	*50mA*
TSK-52H6・53H7・62H8・72H9	*100mA*

** About 10 times of the early period leakage current are general as the sensitivity current of the electric leakage circuit breaker.*

⑤ *Please supply the power supply that the rating frequency that has the sine wave wave-like without fail was secured when the generator is used to the power supply of the hot-air generator. Temp. is not controlled normally and the operation may not produced if the power supply that rating frequency is not secured is supplied.*

⑥ *Please execute the ground construction work to prevent electric shock accident prevention. (Less than 300V : D-class ground Less than 600V : C-class ground)*

Attention *The voltage depression is occurred by too long wiring. So, please pay attention.*

Attention *Please block the power supply without fail at the time of wiring and inspection. Please block the factory power supply without fail because electricity is flowing to the control circuit even if the breaker (NFB) of the hot-air generator is turned OFF. You receive an electric shock when work is conducted in the condition that the power supply is turned ON.*

Attention *Please secure sufficient capacity in the case that the socket was established for connection. Socket may cause contact defectiveness, absence phase, generation, and malfunction by passing year change. So, please refrain from the use of the socket.*

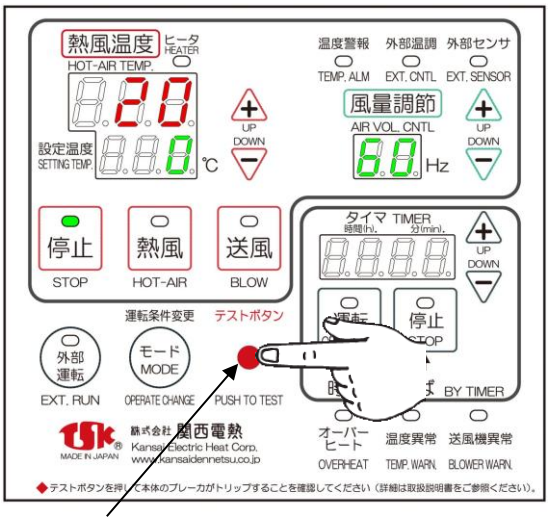
Attention *Hot-air generator is the device that is used in industry environment mainly. Radio wave obstacle may occur if this is used in residence environment. User of this product must take the appropriate means for obstacle reduction.*

5. Maintenance inspection

Test button

This is such a test button that confirms whether the breaker (NFB) of this machine operates normally at the time of overheat. One time in a month, please continue to push the button for several seconds in operation stoppage condition (Electricity is flowing). And, please confirm the illumination of the OVERHEAT lamp, operation display of overheat P.9), and trip action of the breaker (NFB) of this machine.

After confirmation, please turn OFF the source power supply (factory power supply) and breaker (NFB) of this machine at first. And please turn ON once again.



Test button

Inspection of the inlet wire net and filter

The wire net is equipped to the inlet of the hot-air generator. (Demi-filter is standard equipped to a part of hot-air generator.) Please inspect the wire net and filter of the inlet always, and please clean periodically. Heater case inside becomes the abnormal high temp. and overheat or temp. warning is occured if the wire net and filter are clogged.

Storage

Please pay attention to the condensation sufficiently in the case that the hot-air generator is stored long time. Condensation occurs by the temp. of storage atmosphere drops in the winter season. Hot-air generator becomes freezing condition if this machine is stored in the condition that the condensation occurred, and it becomes the cause of the malfunction of an electricity part.

Individual inspection

I recommend that is carried out the individual inspection in the case that the use period exceeded 10 years to have this machine used more safely.

【Item of the individual inspection】

- *Measurement of the insulation resistance value*
- *Measurement of the heater current value*
- *Increase bundle inspection of each terminal unit*
- *Other inspection by eyes*
- *Foreign substance mixing inspection and cleaning inside the controller*
- *Foreign substance mixing inspection and cleaning inside this machine and inlet*
- *Action of the electricity part and generation inspection*

Please ask to the adjacent electricity businessman about the individual inspection.

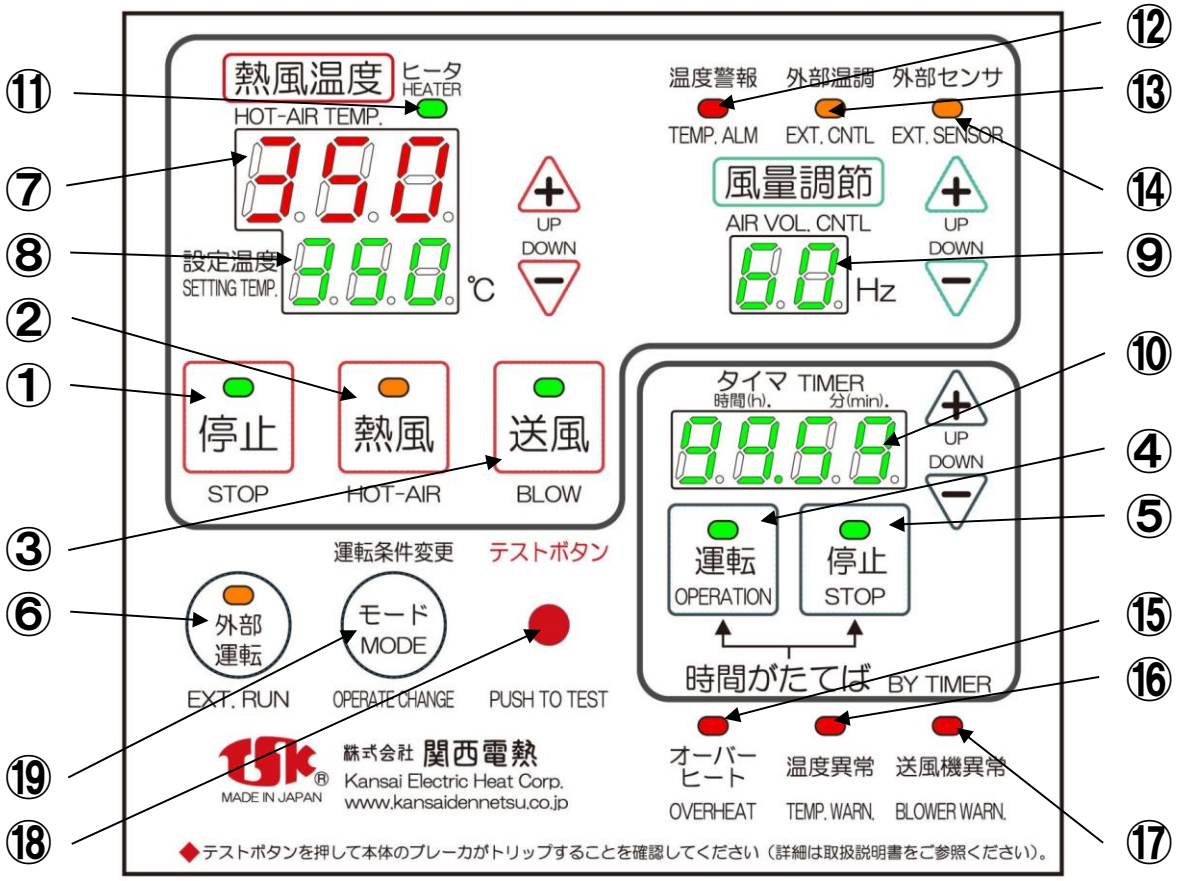
Attention Please do not carry out the insulation resistance voltage test of this machine. (It gets finished enforcement at the time of shipment.) It becomes the cause of malfunction.

◆ ***About the electricity fire***

Operation condition of the front where stops automatically is started by the input of the primary power supply in one second after the hot-air generator stopped instantaneously by power failure etc. We recommend the establishment of the device that blocks the primary power supply to electricity fire prevention at the time of the disaster of earthquake etc.

6. Name of every part

Control panel (All machine type community)



① *STOP switch*

This is the stop switch of blow operation and hot-air operation, and for the cancellation of timer operation.

② *HOT-AIR switch*

Hot-air operation is started when the switch was pushed.

③ *BLOW switch*

Blow operation is started when the switch was pushed.

④ *OPERATION BY TIMER switch*

Time that the operation is started is set up when the switch was pushed. Please push HOT-AIR switch after setting.

⑤ *STOP BY TIMER switch*

Time that the operation is stopped is set up when the switch was pushed. Please push HOT-AIR switch after setting.

⑥ *EXT. RUN switch*

Hot-air generator is operated with the external operation signal and external heater ON/OFF signal by the switch is continued to push (about 2 seconds).

⑦ *HOT-AIR TEMP. display*

Outlet temp. is displayed. Temp. of the external sensor is displayed by the operation condition is changed to the external sensor.

⑧ *SETTING TEMP. display*

Setting temp. of the outlet is displayed. Setting temp. of the external sensor is displayed by the operation condition is changed to the external sensor.

⑨ *AIR VOL. COTL display*

Setting value of the air volume control (Frequency setting) is displayed.

⑩ *TIMER display*

Setting time of the timer is displayed. Time is reduced by time counting.

⑪ *HEATER lamp*

ON/OFF of the heater is displayed by illumination and flickering.

⑫ *TEMP. ALM lamp*

This is lighted within the range of the temp. alarm setting value in the case that temp. alarm setting is input.

⑬ *EXT. CNTL lamp*

This is lighted when the operation condition was changed to the external control.

⑭ *EXT. SENSOR lamp*

This is lighted when the operation condition was changed to the external sensor.

⑮ *OVERHEAT lamp*

This is lighted and the breaker (NFB) is become trip in the case that the heater case inside became a abnormal high temp.

⑯ *TEMP. WARN. Lamp*

Breaker (NFB) is become trip or bloe operation is become in the case that discharge temp. became a high temp. or suction temp. became over the permission temp. of the blower.

⑰ *BLOWER WARN. Lamp*

This is lighted when the blower became the overload and operation stops.

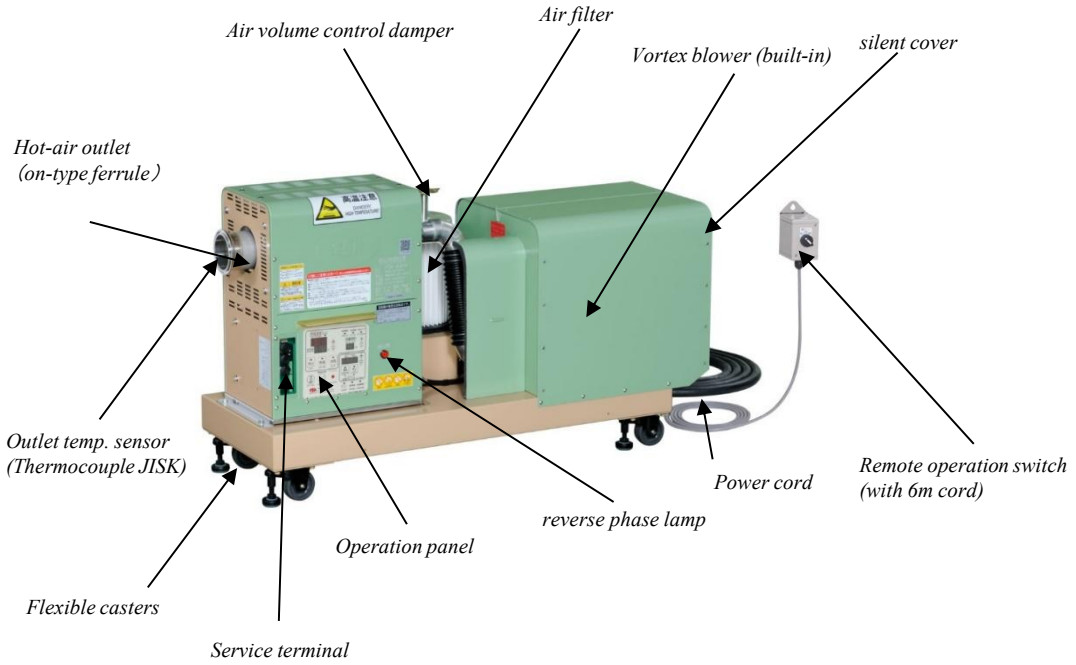
⑱ *PUSH TO TEST*

Breaker (NFB) is become trip by the button is pushed.

⑲ *MODE switch*

This is used in the case that the operation condition is changed.

MODEL ： TSK-22H4

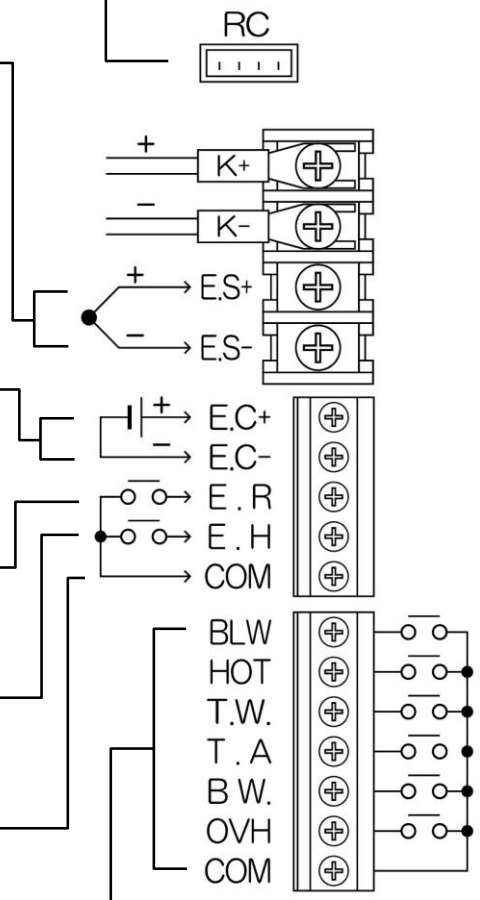


MODEL ：TSK-53H7

7. Service terminal

● *Service terminal of the input and output is equipped to all types. Please use as occasion demands.*

【 *Type that is used* 】 TSK-22H4・32H5



RC : *Connector for connection of Remote controller*
This is the connector for connection of remote cable in the case that the remote controller of the option is used.

E. S+
E. S− : *External sensor input terminal*

Please connect the terminal of the external sensor K350A. (K+ → E. S+, K- → E. S- Tightening torque : 0.5N・m)

《Input terminal
Mini terminal (Application electric wire Shield wire AWG24 - 16 Peel length 7 - 9mm) Tightening torque : 0.4N・m
Necessary tool : No.1 Plus driver or 3mm Minus driver

E. C+
E. C− : *External temp. control input terminal*

This is used in the case that temp. is controlled by other temp. controllers. Please input SSR drive reverse action output (DC12 - 24V). At this time, please use the temp. controller of this machine as outlet temp. upper limiter.

E. R : *External operation input terminal*
This is used in the case that the hot-air generator is operated by the outside signal. Input is for the contact output. (Terminal voltage is less than DC12V 3.6mA.)

E. H : *External heater input terminal*
This is used in the case that the heater is turned ON/OFF by the outside signal. Input is for the contact output. (Terminal voltage is less than DC12V 3.6mA.)

COM : *Input common terminal*
This is common for the external operation input terminal E.R and external heater input terminal E.H.

* *Terminal voltage of the external operation input terminal E.R and external heater input terminal E.H is less than DC12V 3.6mA. Please prepare the relay that has the contact capacity that can open and close this voltage.*

* *Please change the external operation mode by pushing the EXT. RUN switch of this machine in the case that the external operation input and external heater input is used.*

《Output terminal》 Contact capacity is more than DC5V 10mA, less than DC30V 1A, Output common terminal total is less than 3A. (Unvoltage point of contact signal output)
Mini terminal (Application electric wire Shield wire AWG24 - 16 Peel length 7 - 9mm) Tightening torque :
Necessary tool : No.1 Plus driver or 3mm Minus driver

BLW : *Blow output terminal* — *This terminal becomes ON when the blower is operating.*
HOT : *Hot-air output terminal* — *This terminal becomes ON when the hot-air is operating.*
T. W. : *Temp. warning output* — *This terminal becomes ON at the time of the temp. warning.*
T. A : *Temp. alarm output* — *This terminal becomes ON when the temp. alarm was output.*
BW : *Blower warning output* — *This terminal becomes ON at the time of the blower warning.*
OVH : *Overheat output terminal* — *This terminal becomes ON at the time of overheat.*
COM : *Output common terminal*

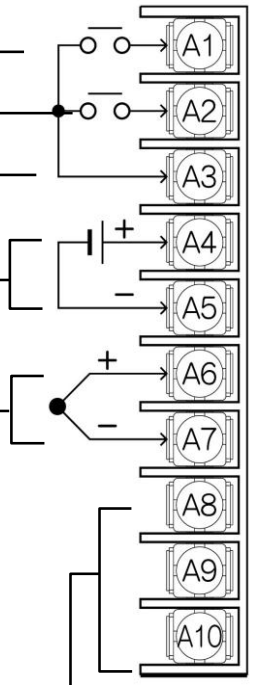
* *Protection circuit is not installed to unvoltage contact output. So, please do not connect the induction load (solenoid valve and conductor etc.).*

Attention *Please wire after the power supply is blocked without fail in the case that the service terminal is used. You receive an electric shock if you wired in the condition which electricity is flowing. And, please attach a terminal cover without fail after wiring.*

Attention *Please do not unite or wire that was adjoined the wiring of the service terminal with the power*

【 Type that is used 】 TSK-52H6・53H7・62H8・72H9

《Input terminal》 M3 20P The upper row of the terminal Tightening torque : 0.5N・m



A1 : *External operation ON/OFF terminal*

This is used in the case that the hot-air generator is operated by the outside signal. Input is for the contact output. (Terminal voltage is less than DC24V 7mA.)

A2 : *External heater ON/OFF terminal*

This is used in the case that the heater is turned ON/OFF by the outside signal. Input is for the contact output. (Terminal voltage is less than DC24V 7mA.)

A3 : *Input common terminal*

This is common for the external operation ON/OFF terminal A1 and external heater ON/OFF terminal A2.

A4, A5 : *External temp. control input terminal *1*

This is used in the case that temp. is controlled by other temp. controllers. Please input SSR drive reverse action output (DC11 - 24V). At this time, please use the temp. controller of this machine as outlet temp. upper limiter. (A4 → +, A5 → -)

A6, A7 : *External sensor input terminal*

Please connect the terminal of the external sensor. (K+ → A6, K- → A7)

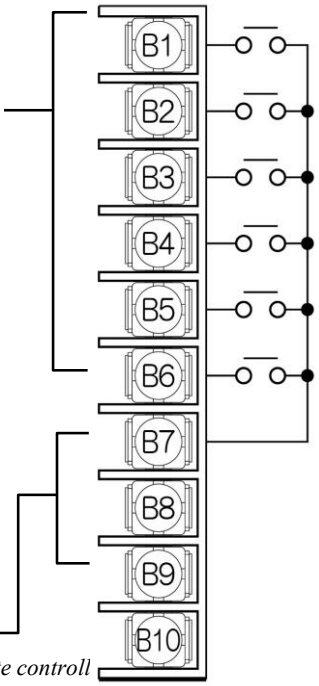
* *Terminal voltage of the external operation ON/OFF terminal A1 and external heater ON/OFF terminal A2 is less than DC24V 7mA. Please prepare the relay that has the contact capacity that can open and close this voltage.*

* *Please change the external operation mode by pushing the EXT. RUN switch of this machine in the case that the external operation ON/OFF and external heater ON/OFF is used.*

A8,A9,A10 : *Terminal for connection of Remote controller*

This is the terminal for connection of remote cable in the case that the remote controller of the option is used. (For communication of the remote controller)

《Output terminal》 *M3 20P The Lower berth of the terminal Tightening torque : 0.5N・m*



Contact capacity is more than DC5V 10mA, less than DC30V 1A, Output common terminal total is less than 3A. (Unvoltage point of contact signal output)

B1 : *Blow output terminal*

This terminal becomes ON when the blower is operating.

B2 : *Hot-air output terminal*

This terminal becomes ON when the hot-air is operating.

B3 : *Temp. warning output terminal*

This terminal becomes ON at the time of the temp. warning.

B4 : *Temp. alarm output terminal*

This terminal becomes ON when the temp. alarm was output.

B5 : *Blower warning output terminal*

This terminal becomes ON at the time of the blower warning.

B6 : *Overheat output terminal*

This terminal becomes ON at the time of overheat.

B7 : *Output common terminal*

B8,B9,B10 : *Terminal for connection of Remote controller*

This is the terminal for connection of remote cable in the case that the remote controll (For power supply of the remote controller)

* *Voltage DC24V has occurred to the remote controller power supply terminal B9-B10. Please never short-circuit. Hot-air generator malfunctions without fail if short-circuits.*

Attention *Please wire after the power supply is blocked without fail in the case that the service terminal is used. You receive an electric shock if you wired in the condition which electricity is flowing. And, please attach a terminal cover without fail after wiring.*

Attention *Please do not unite or wire that was adjoined the wiring of the service terminal with the power*

Output situation of each output terminal

TSK-22H4・32H5

Action of the hot-air generator	*Blow output terminal* **BLW**	*Hot-air output terminal* **HOT**	*Temp. warning output terminal* **T. W.**	*Temp. alarm output terminal* **T. A**	*Blower warning output terminal* **BW.**	*Overheat output terminal* **OVH**
Usually stop	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*
Blow operation	*ON*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*
Hot-air operation	*ON*	*ON*	*OFF*	*OFF*	*OFF*	*OFF*
Cooling operation	*ON*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*
Temp. alarm output	*ON*	*ON*	*OFF*	*ON*	*OFF*	*OFF*
Overheat	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*ON*
Overheat sensor burnout	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*ON*
In the case that the suction temp. upper limit is exceeded	*OFF*	*OFF*	*ON*	*OFF*	*OFF*	*OFF*
In the case that the suction temp. upper limit is exceeded	*ON*	*OFF*	*ON*	*OFF*	*OFF*	*OFF*
Outlet sensor burnout	*OFF*	*OFF*	*ON*	*OFF*	*OFF*	*OFF*
Inlet sensor burnout	*OFF*	*OFF*	*OFF*	*OFF*	*ON*	*OFF*
Inside temp. warning of the hot-air generator	*ON*	*OFF*	*ON*	*OFF*	*OFF*	*OFF*
Blower warning	*OFF*	*OFF*	*OFF*	*OFF*	*ON*	*OFF*
External sensor burnout	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*
Reverse connection of each temp. sensor/Minus temp. detection	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*
antiphase anomaly	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*

TSK-52H6・53H7・62H8・72H9

Action of the hot-air generator	*Blow output terminal* **B1**	*Hot-air output terminal* **B2**	*Temp. warning output terminal* **B3**	*Temp. alarm output terminal* **B4**	*Blower warning output terminal* **B5**	*Overheat output terminal* **B6**
Usually stop	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*
Blow operation	*ON*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*
Hot-air operation	*ON*	*ON*	*OFF*	*OFF*	*OFF*	*OFF*
Cooling operation	*ON*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*
Temp. alarm output	*ON*	*ON*	*OFF*	*ON*	*OFF*	*OFF*
Overheat	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*ON*
Overheat sensor burnout	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*ON*
In the case that the suction temp. upper limit is exceeded	*OFF*	*OFF*	*ON*	*OFF*	*OFF*	*OFF*
In the case that the suction temp. upper limit is exceeded	*ON*	*OFF*	*ON*	*OFF*	*OFF*	*OFF*
Outlet sensor burnout	*OFF*	*OFF*	*ON*	*OFF*	*OFF*	*OFF*
Inlet sensor burnout	*OFF*	*OFF*	*OFF*	*OFF*	*ON*	*OFF*
Inside temp. warning of the hot-air generator	*ON*	*OFF*	*ON*	*OFF*	*OFF*	*OFF*
Blower warning	*OFF*	*OFF*	*OFF*	*OFF*	*ON*	*OFF*
Pressure abnormality	*OFF*	*OFF*	*OFF*	*OAFFF*	*ON*	*OFF*
External sensor burnout	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*
Reverse connection of each temp. sensor/Minus temp. detection	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*
antiphase anomaly	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*	*OFF*

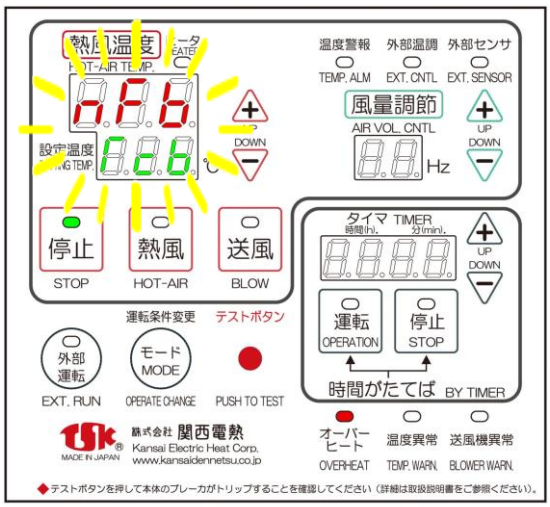
8. Warning detection

◆*Buzzer sounds at the same time as the warning detection about TSK-52HT, 62 - 132. Even buzzer sound stops when warning was canceled by the return method of each warning.*

8-1 Overheat

Overheat is detected in the case that the inside of the heater case became an abnormal high temp. Or, burnout is detected in the case that the overheat sensor for the temp. control inside the heater case snapped. And, the breaker (NFB) of this machine does trip and all the operation stop.

● *At the time of overheat*



Overheat lamp (Red) are lighted, and "nFb" is flickered to HOT-AIR TEMP, "Tcb" to SETTING

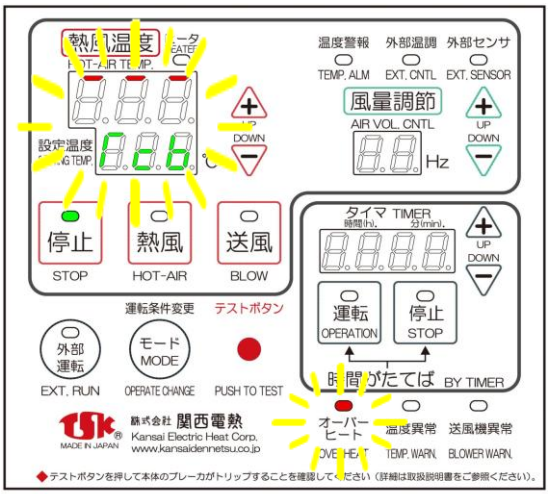
《Main cause》

- *Clogging of the inlet wire net and filter*
- *Lock of the blower motor by the mixing of the foreign substance*
- *Exhaust outlet of furnace etc. is not secured sufficiently*
- *Resistance (pressure loss) of the outlet is big by the adjacency of object work*

《Return method》

Please remove the cause of overheat. And , source power supply and the breaker of this machine are turned OFF at first and are turned ON again after cooling sufficiently.

● *At the time of overheat sensor burnout*



Overheat lamp (Red) are flickered, and "---" is flickered to HOT-AIR TEMP.. "Tcb" to SETTING

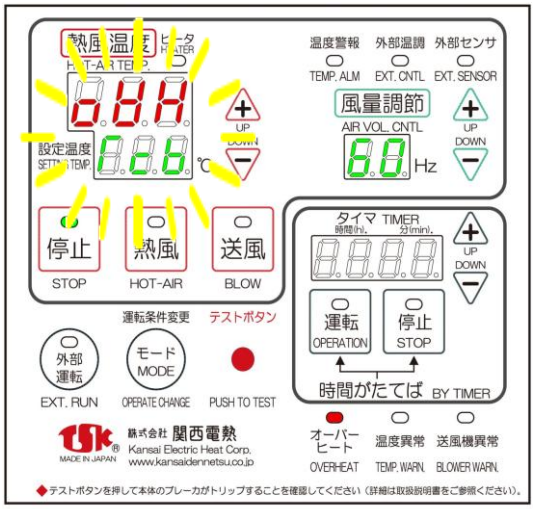
《Main cause》

- *Snapping of a wire of the overheat sensor*
- *Snapping of a wire of overheat sensor wiring*
- *Miss of the overheat sensor wiring connector*

《Return method》

Please turn OFF the first power supply and please order the repair.

● *At the time of air volume insufficient overheat prevention (Only TSK-52H6~72H9)*



Overheat lamp (Red) are lighted, and "oVH" is flickered to HOT-AIR TEMP., "Tcb" to SETTING

This operates when air volume decreased by some causes and the heater inside temp. is exceeded the setting hot-air temp. There is the exchangeability to the above overheat. But, which operates by use situation.

《Main cause》

- *The same cause as the above overheat*

《Return method》

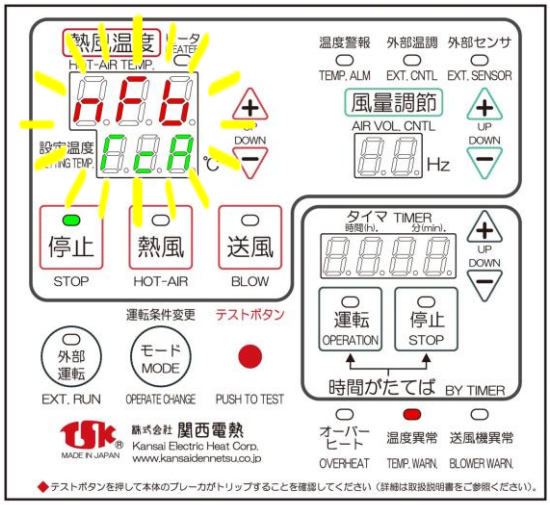
Please remove the cause of overheat. And , source power supply and the breaker of this machine are turned OFF at first and are turned ON again after cooling sufficiently.

Please do not operate again until the cause is removed when the overheat is operated.

8-2 Temp. warning

Hot-air generator is stopped or become blow operation when outlet and inlet temp. exceeded the upper limit, each sensor becomes the burnout by snapping of a wire etc., or the inside temp. of the hot-air generator became warning too.

● *When the outlet temp. exceeded the upper limit*



TEMP. WARN. lamp (Red) is lighted and "nFb" is flickered to HOT-AIR TEMP., "TcA" to SETTING TEMP. And, the breaker (NFB) of this machine does trip and all the operation stop.

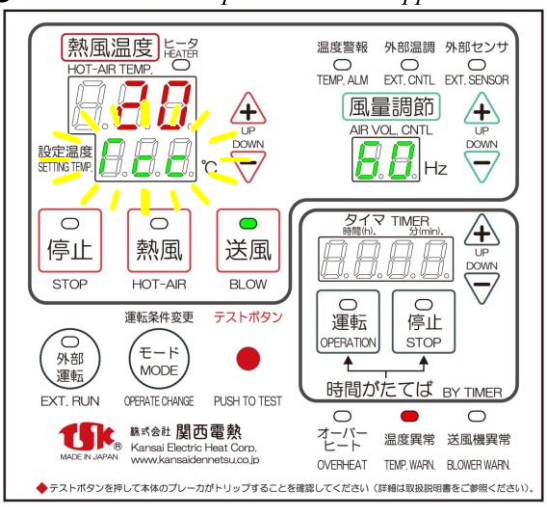
《Main cause》

- *Outlet temp. exceeded the upper limit at the time of using the external sensor*
- *Decrease of the air volume by the excessive pressure loss*
- *Decrease of the air volume by the clogging of the inlet filter*

《Return method》

Please remove the cause of the outlet temp. upper limit over. And , source power supply and the breaker of this machine are turned OFF at first and are turned ON again after cooling sufficiently.

● *When the inlet temp. exceeded the upper limit*



TEMP. WARN. lamp (Red) is lighted and present temp. is lighted to HOT-AIR TEMP., "Tcc" is flickered to SETTING TEMP. And, It becomes blow operation condition.

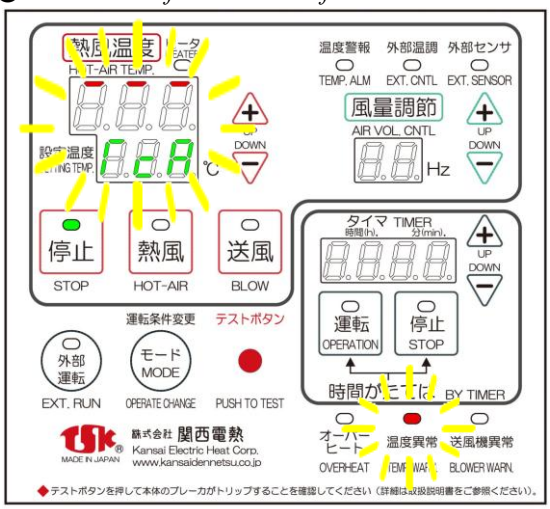
《Main cause》

- *When hot-air circulation temp. exceeded the upper limit of the suction gas temp. of the hot-air generator*

《Return method》

Please disarm by pushing STOP switch after the temp. of the inlet dropped.

● *At the time of the burnout of the outlet sensor*



TEMP. WARN. lamp (Red) is lighted and "---" is flickered to HOT-AIR TEMP., "TcA" to SETTING TEMP.. And, the breaker (NFB) of this machine does trip and all the operation stop.

《Main cause》

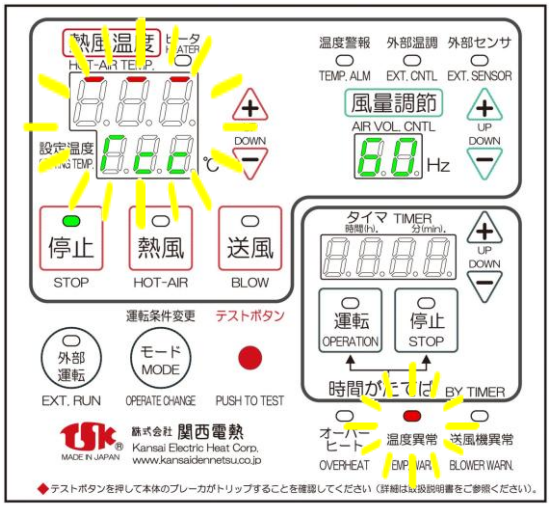
- *Snapping of a wire of the outlet sensor*
- *Snapping of a wire of the outlet sensor wiring*
- *Miss of the outlet sensor wiring connector*

《Return method》

Please order the repair after turning OFF the first power supply.

Attention : Please block the source power supply (factory power supply) without fail when the wiring is confirmed and readjusted at the time of abnormal.

● *At the time of the burnout of the inlet sensor*



TEMP. WARN. lamp (Red) is lighted and "---" is flickered to HOT-AIR TEMP., "Tcc" to SETTING TEMP. And, all the operation stop.

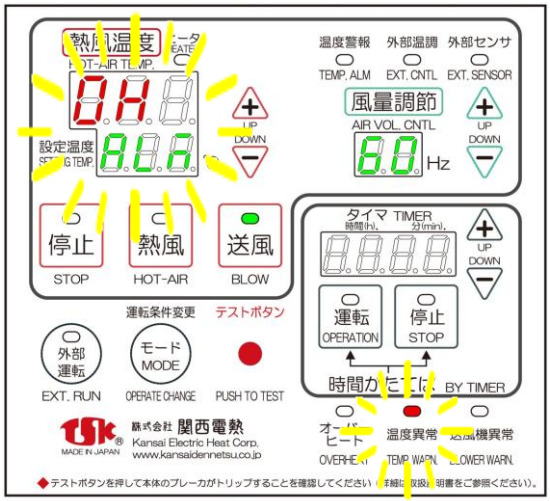
《Main cause》

- *Snapping of a wire of the inlet sensor*
- *Snapping of a wire of the inlet sensor wiring*
- *Miss of the inlet sensor wiring connector*

《Return method》

Please order the repair after turning OFF the breaker (NFB) of the this machine.

● *At the time of the inside temp. warning of the hot-air generator*



TEMP. WARN. lamp (Red) is flickered and "OH" is flickered to HOT-AIR TEMP., "ALM to SETTING TEMP. And, It becomes blow operation condition.

《Main cause》

- *Establishment atmosphere temp. of the hot-air generator is high.*
- *Hot-air that leaked from the outlet flowed backward to the control panel inside.*
- *Influence of the furnace radiation temp. at the time of the furnace upper part establishment.*

《Return method》

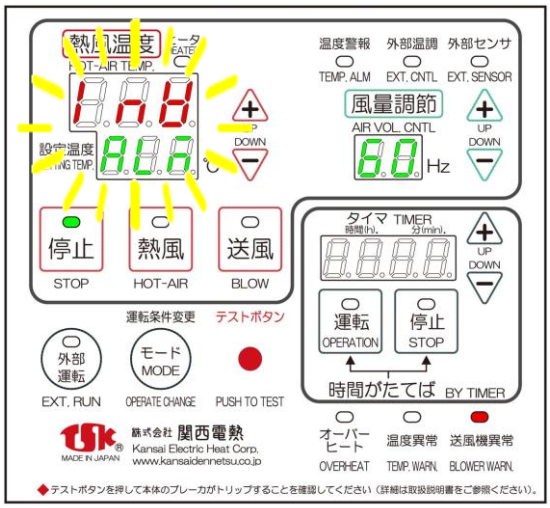
Please stop operation by pushing STOP switch. And, please disarm by turning OFF the breaker (NFB) of this machine after inside temp. of the hot-air generator dropped.

Attention : Please block the source power supply (factory power supply) without fail when the wiring is confirmed and readjusted at the time of abnormal.

8-3 Blower warning

All the operation of hot-air generator is stopped when the blower became overload, overcurrent, and lock.

● *At the time of the blower warning*



BLOWER WARN. lamp (Red) is lighted and "InV" is flickered to HOT-AIR TEMP., "ALM" to SETTING TEMP.

《Main cause》

- *Wear of the bearing*
- *Abnormal voltage (Voltage more than the rating)*
- *Piping of many pressure loss*
- *Opening the use of an extremely narrow nozzle*

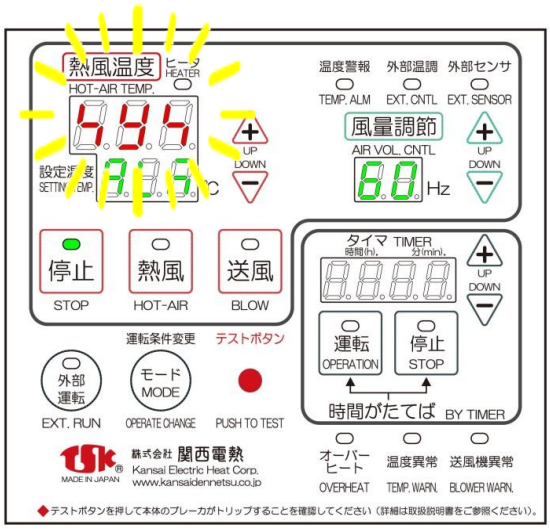
《Return method》

*Abnormality is displayed to the inverter panel *[1] that was established inside. Please turn off the breaker of this machine after the display contents are confirmed. And, please communicate the display contents.*

Attention : Please block the source power supply (factory power supply) without fail when the wiring is confirmed and readjusted at the time of abnormal.

8-4 Other warning

● *Frequency warning (Only TSK-52H6~72H9)*



"SYS" is flickered to HOT-AIR TEMP., "ALM" to SETTING TEMP. in the case that the frequency that is supplied from the primary power supply exceeded ± 3Hz of the ratings. And, all the operation stop.

《Main cause》

- *Unsupply of rating frequency by the generator etc. is used to the primary power supply.*

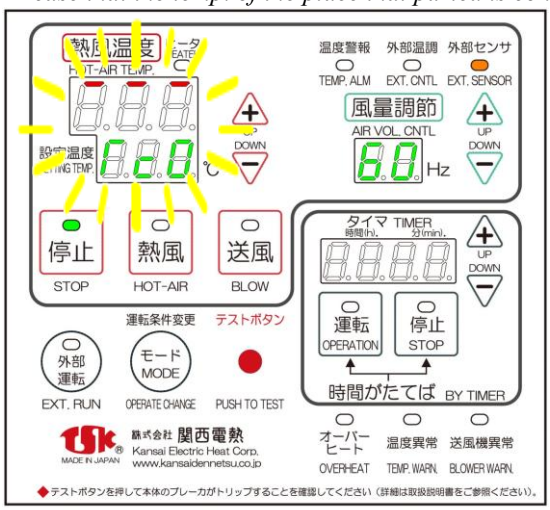
《Return method》

Please confirm the rating frequency. And , source power supply and the breaker of this machine are turned OFF at first and are turned ON again.

Attention : Please block the source power supply (factory power supply) without fail when the wiring is confirmed and readjusted at the time of abnormal.

● *At the time of the burnout of the external sensor*

Hot-air generator is stopped when the external sensor became the burnout of snapping of a wire etc. in the case that the temp. of the place that parted is controlled by using the external sensor of the option.



"---" is flickered to HOT-AIR TEMP., "TC0" to SETTING TEMP. (EXT. SENSOR lamp is being lighted.)

《Main cause》

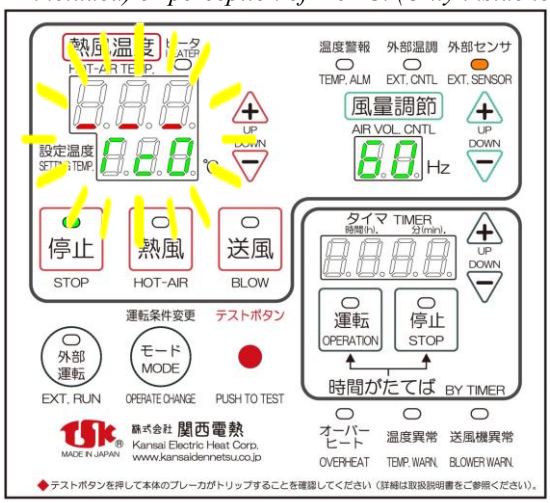
- *Snapping of a wire of the external sensor*
- *Snapping of a wire of the external sensor compensating wire*
- *Miss of the inlet sensor wiring terminal*

《Return method》

Please disarm by pushing STOP switch after the confirmation of the external sensor.

● *Reverse connection by each sensor or detection of minus temp.*

Hot-air generator is stopped at the time of the reverse connection of each temp. sensor (External sensor is included) or perception of -15 ˚C. (Only inside temp. sensor is -10 ˚C.)



"---" is flickered to HOT-AIR TEMP, display of each sensor to SETTING TEMP

External sensor : Tc0 *Outlet sensor : TcA*

Overheat sensor : TcM *Inlet sensor : Tcc*

Inside temp. sensor : Tcb

《Main cause》

- *Reverse connection of the external sensor*
- *Reverse connection by the wiring readjustment of each sensor*
- *Atmosphere temp. or suction temp. of minus*

《Return method》

Please disarm by pushing STOP switch after the confirmation of the external sensor or the improvement of the minus condition. Please order the repair about except for reverse connection of the external sensor.

● *Anti-phase anomaly*

The hot air generator becomes inoperable when the power supply wires are connected in the opposite phase.

Each display will have the same display contents as when the breaker (NFB) of the main unit is turned ON, and separately, the reverse phase lamp (red) will blink.

《Main cause》

- *Reverse connection of power lines*

《Return method》

- *Replace any two of the power supply connection wires.*

Attention : Please block the source power supply (factory power supply) without fail when the wiring is confirmed and readjusted at the time of abnormal.

HOT AIR GENERATOR

Manufact
urer

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