

TSK Hot-air generator

Operation manual

● Please read this without fail before use.

- ◆ This time, thank you very much for purchasing the hot-air generator.
- ◆ Please confirm whether the model, type, voltage and the order article are not wrong by the name board of this machine.

Please read Operation manual (Basis operation) regarding the operation of the hot-air generator.



1. Attention on use

2. Installation

3. Piping

4. Power supply

5. Maintenance inspection

6. Name of every part

7. Service terminal

8. Abnormal detection

TSK Hot-air generator

- TSK-18
- TSK-23 • 33
- TSK-42 • 52 • 52HT
- TSK-56
- TSK-62 • 72
- TSK-82
- TSK-92 • 102
- TSK-121

Platinum catalytic oxidation type deodorization device

- HJ-1.5

TSK High pressure hot-air generator

- TSK-22H4
- TSK-32H5
- TSK-52H6
- TSK-53H7
- TSK-62H8
- TSK-72H9
- TSK-82H10



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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 attach the demi-filter or CR-filter without fail to the suction side of the hot-air generator.*

● *Please clean always the filter that is used or wire net of 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.*

● *Hot-air generator can not use in corrosiveness of combustibility gas, inflammability gas, plating, and atmosphere. Please consult us in the advance.*

● *Please turn ON the breaker (NFB) of the hot-air generator constantly. Please do not turn ON/OFF as the operation switch. Electron devices of the inside are damaged by serge voltage.*

● *Leakage of the hot-air is ocured 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.*

● *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.*

2. Installation

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

② Please fix it firmly as occasion demands.

③ Place where can not establish

- Upper part of generation thing
- Place where back is stuck to wall etc.
- Neighborhood of combustible
- Place where height is more than 1000m
- Place where air pressure is low
- Outdoor, and place where is exposed to the storm
- Place where ambients humidity is more than 85%R.H.
- Place where ambients temp. is more than 0 - +45°C.
- Place where acid and corrosiveness gas is floating
- Place where has vibration
- Place where has floating objects that pass electricity (Carbon fiber etc.)
- Room where is tightly sealed and case inside
- Places of there are many dust



3. Piping

① Please fix the piping to the outlet and inlet certainly.

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

4. Power supply

① Please ask the connection of the power supply and ground construction work to the electric repairing work technic

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 100mm²)

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.

⑤ 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.

Model	Rough standard of the sensitivity current of the electric leakage circuit
TSK-18・22・32	50mA
TSK-42・52・52HT・55, HJ-1.5	50mA
TSK-62・72・82	100mA
TSK-92・102・121	200mA

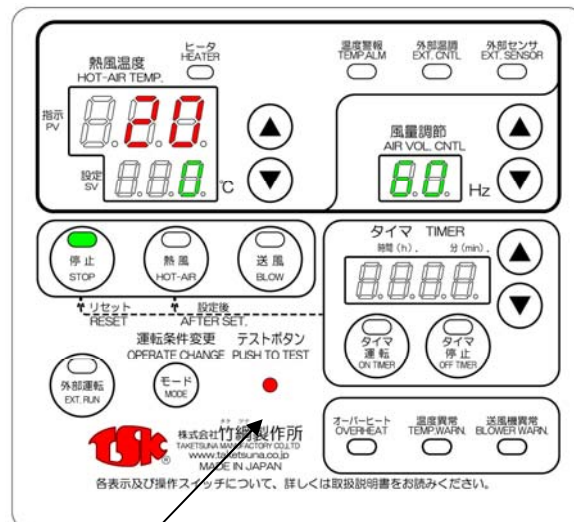
※About 10 times of the early period leakage current are general as the sensitivity current of the electric leakage circuit breaker.

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

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】

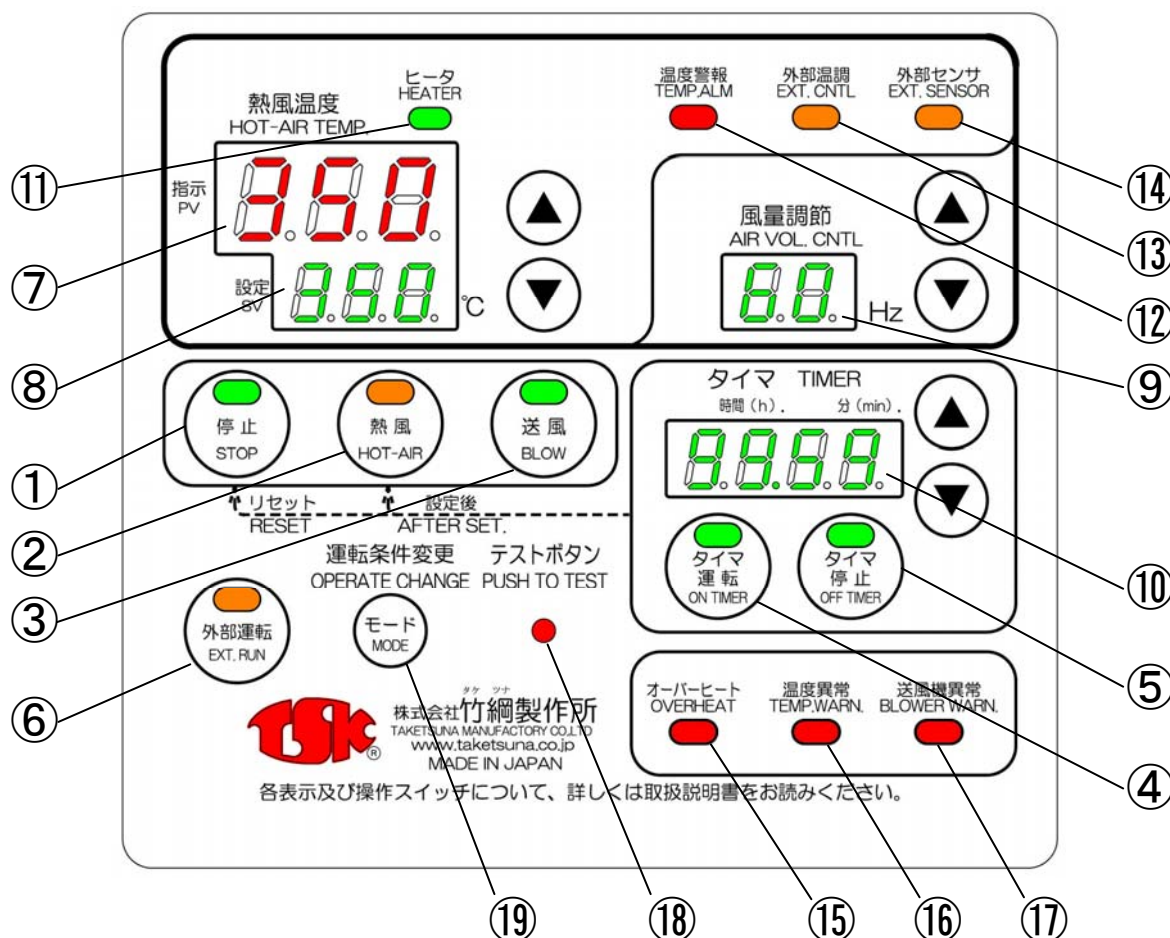
• Measurement of the insulation resistance value • Measurement of the heater current value • Increase bundle inspection of each terminal unit • Foreign substance mixing inspection and cleaning inside the controller • Foreign substance mixing inspection and cleaning inside this machine and inlet • Action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

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.

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 ON TIMER switch

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

⑤ OFF 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 PV display

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

⑧ SV 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 CNTL display

Setting value of the air volume control (Frequency setting) is displayed. (Only the inverter installation machine type)

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 exte

⑭ EXT. SENSOR lamp

This is lighted when the operation condition was changed to the exte

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.

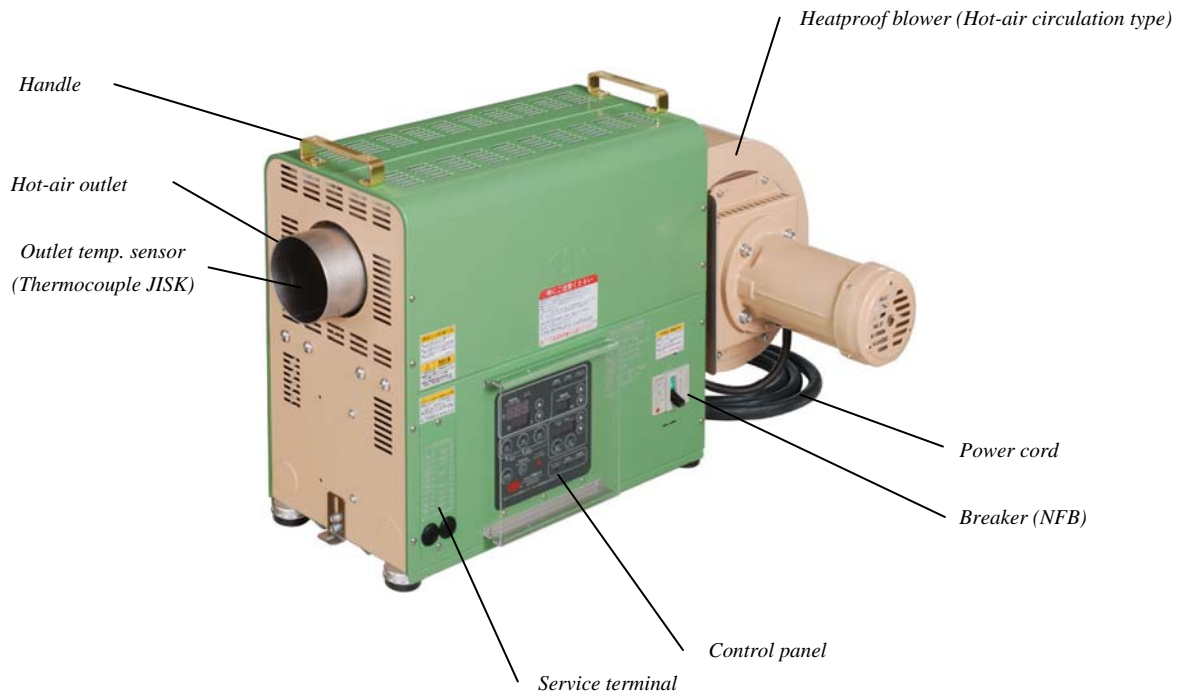
⑱ PUSH TO TEST button

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

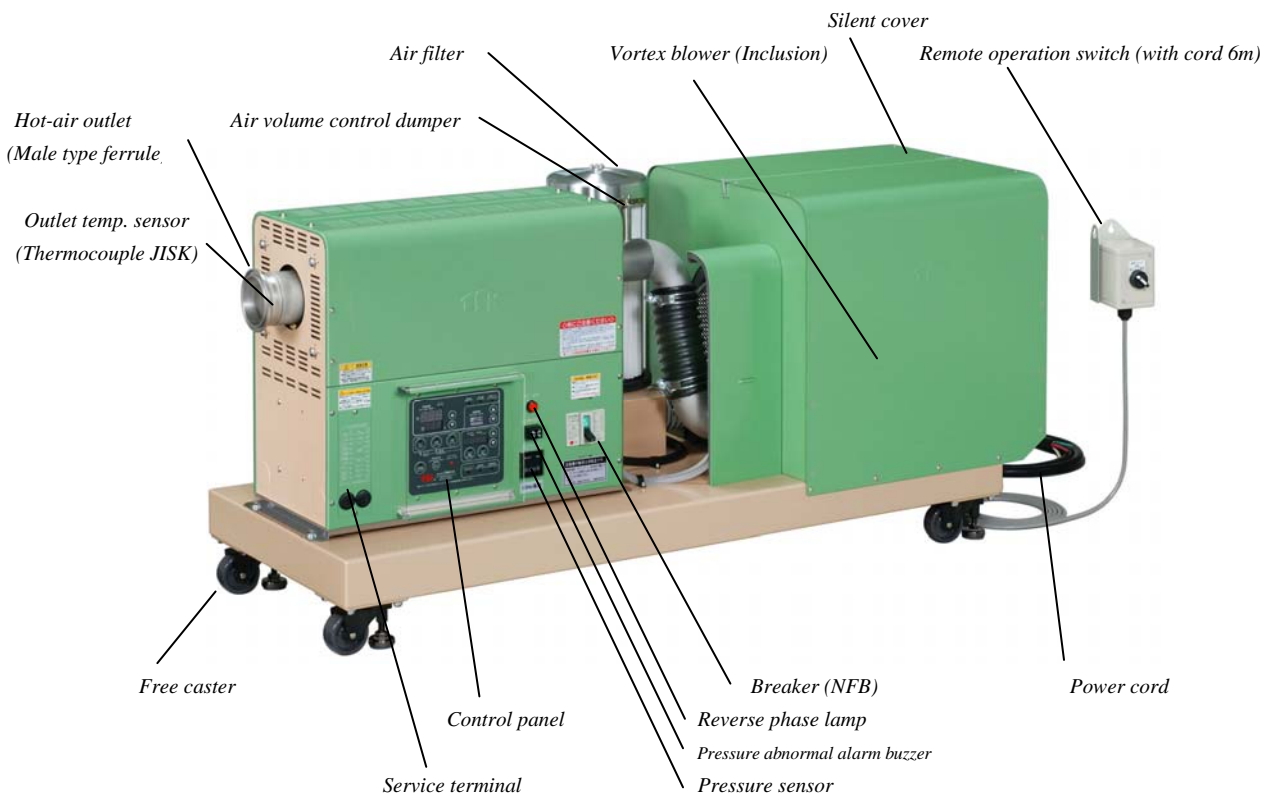
⑲ MODE switch

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

MODEL : TSK-52



MODEL : TSK-52H6



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-18·23·33, 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.
(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 (DC11 - 24V). At this time, please use the temp. controller of this machine as outlet temp. upper limiter.

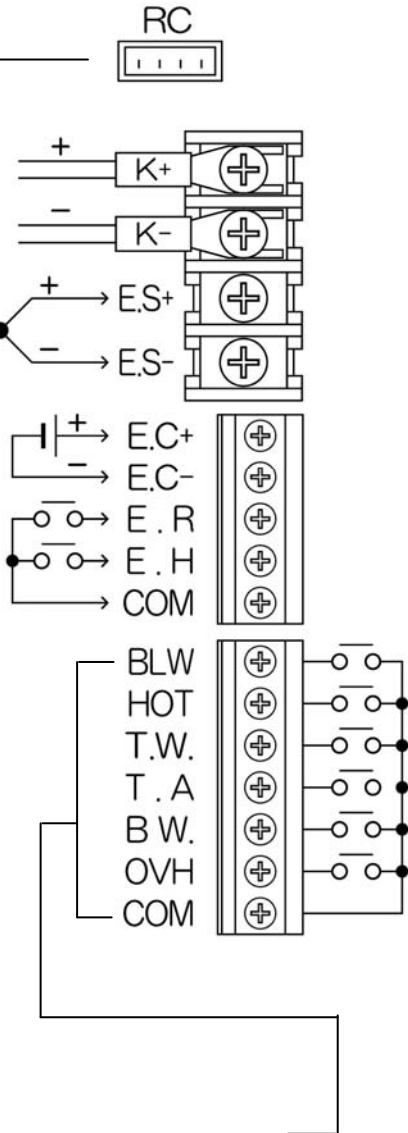
E.R : External operation input terminal
This is used in the case that the hot-air generator is operated by the outside signal. Input is for the contact output. (Terminal voltage is less than DC15V 3.5mA.)

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 DC15V 3.5mA.)

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 DC15V 3.5mA. 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 less than DC30V 80mA. (Unvoltage point of contact signal output)

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

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 terminal	This terminal becomes ON at the time of the temp. warning.
T.A : Temp. alarm output terminal	This terminal becomes ON when the temp. alarm was output.
B.W. : Blower warning output terminal	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.).

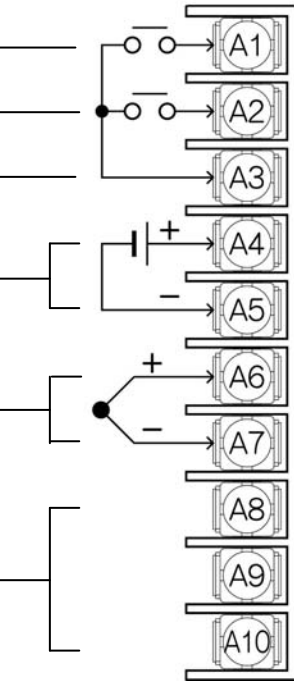
Attention : Please wire after the power supply is blocked without fail in the case that the service terminal is used. You receive an electric shock if you wired in the condition which electricity is flowing. And, please attach a terminal cover without fail after wiring.

Attention : Please do not unite or wire that was adjoined the wiring of the service terminal with the power supply line, high tone wave line.

**【Type that is used】TSK-42·52·52HT·56·62·72·82·92·102·121 HJ-1.5
TSK-52H6·53H7·62H8·72H9·82H10**

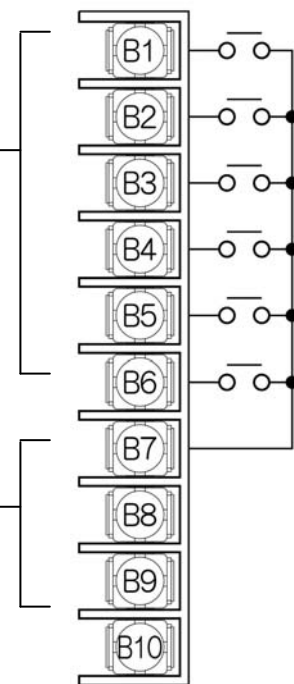
《Input terminal》 M3 20P The upper row of the terminal Tightening torque : 0.5N · m

- 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)
- 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
This is used in the case that temp. is controlled by other temp. controllers. Please input SSR drive reverse action (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 less than DC30V 80mA. (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 controller of the option is used. (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 supply line, high tone wave line.

Output situation of each output terminal

TSK-18·23·33, TSK-22H4·32H5

Action of the hot-air generator	Output terminal					
	Blow output terminal BLW	Heater 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 barnout	OFF	OFF	OFF	OFF	OFF	ON
In the case that the discharge 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 barnout	OFF	OFF	ON	OFF	OFF	OFF
Inlet sensor barnout ※1	OFF	OFF	ON	OFF	OFF	OFF
Inlet sensor barnout ※2	OFF	OFF	OFF	OFF	ON	OFF
Inside temp. warning of the hot-air generator	ON	OFF	ON	OFF	OFF	OFF
Inside SSC temp. warning of the hot-air generator	ON	OFF	ON	OFF	OFF	OFF
Blower warning	OFF	OFF	OFF	OFF	ON	OFF
External sensor barnout	OFF	OFF	OFF	OFF	OFF	OFF
Reverse connection of each temp. sensor/Minus temp. detection	OFF	OFF	OFF	OFF	OFF	OFF
Opposite phase warning (Only H-type)	OFF	OFF	OFF	OFF	OFF	OFF

※1 C type : At the time of the inlet sensor barnout of TSK-18 - 33.

※2 H type : At the time of the inlet sensor barnout of TSK-22H4 - 32H5.

TSK-42·52·52HT·56·62·72·82·92·102·121 HJ-1.5

TSK-52H6·53H7·62H8·72H9·82H10

Action of the hot-air generator	Output terminal					
	Blow output terminal B1	Heater 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 barnout	OFF	OFF	OFF	OFF	OFF	ON
In the case that the discharge 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 barnout	OFF	OFF	ON	OFF	OFF	OFF
Inlet sensor barnout ※1	OFF	OFF	ON	OFF	OFF	OFF
Inlet sensor barnout ※2	OFF	OFF	OFF	OFF	ON	OFF
Inside temp. warning of the hot-air generator	ON	OFF	ON	OFF	OFF	OFF
Inside SSC temp. warning of the hot-air generator	ON	OFF	ON	OFF	OFF	OFF
Blower warning	OFF	OFF	OFF	OFF	ON	OFF
Pressure warning	OFF	OFF	OFF	OFF	ON	OFF
External sensor barnout	OFF	OFF	OFF	OFF	OFF	OFF
Reverse connection of each temp. sensor/Minus temp. detection	OFF	OFF	OFF	OFF	OFF	OFF
Opposite phase warning (Only H-type)	OFF	OFF	OFF	OFF	OFF	OFF

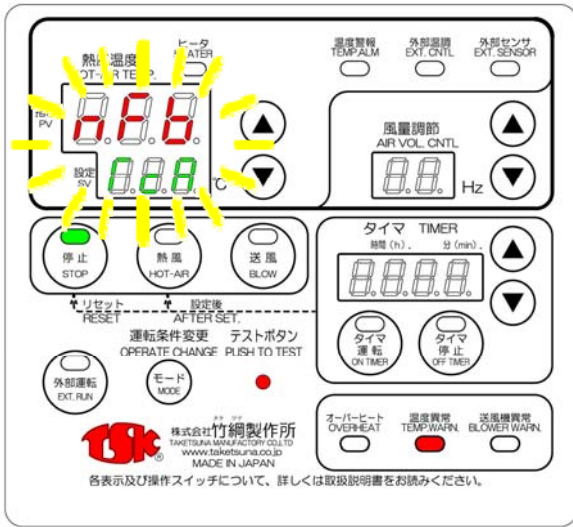
※1 C type : At the time of the inlet sensor barnout of TSK-42 - 121, HJ-1.5.

※2 H type : At the time of the inlet sensor barnout of TSK-52H6 - 82H10.

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 barnout 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 PV dept. TCA to SV dept. And, the breaker (NFB) of this machine does trip and all the operation

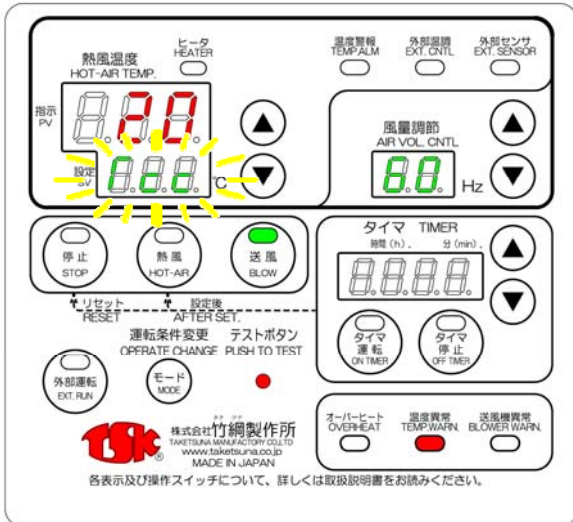
《Main cause》

- 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 outlet temp. upper limit. And, source power supply and the reaker of this machine are turned OFF at first and are turnd 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 PV dept. TCC is flickered to SV dept. And, It becomes blow operation condition.

《Main cause》

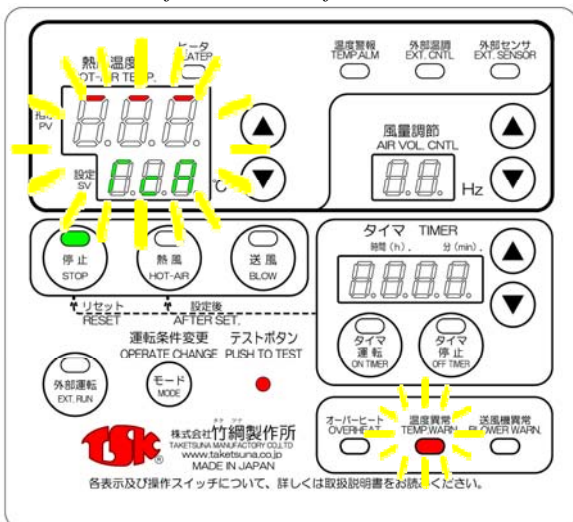
- When hot-air circulation temp. exceeded the upper limit of the suction gas temp. of the hot-air generator

《Return method》

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

※Blower warning occurs when suction temp. exceeded about the high pressure hot-air generator H type. (Please refer to Blower warning of P.12 8-3.)

●At the time of the barnout of the outlet sensor



TEMP. WARN. lamp (Red) is lighted and --- is flickered to PV dept. TCA to SV dept. And, the breaker (NFB) of this machine does trip and all the operation stop.

《Main cause》

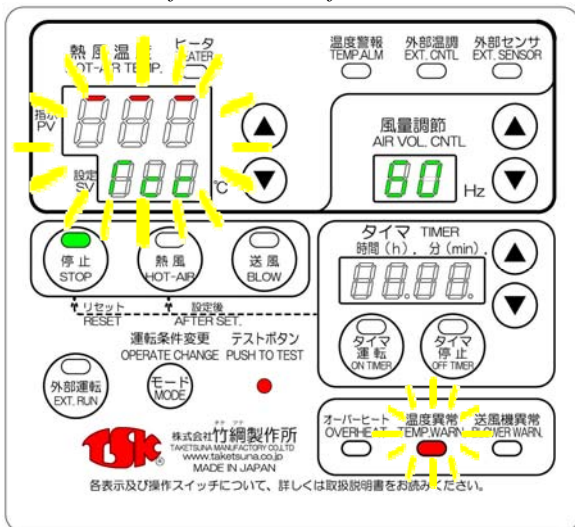
- Snapping of a wire of the outlet sensor
- Snapping of a wire of the outlet sensor wiring
- Miss of the outlet sensor wiring connector

《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 barnout of the inlet sensor



TEMP. WARN. lamp (Red) is lighted and --- is flickered to PV dept. TCC to SV dept. And, all the operation stop.

《Main cause》

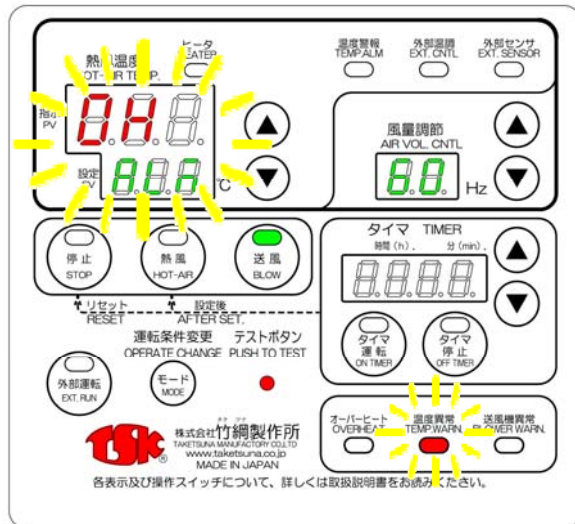
- Snapping of a wire of the inlet sensor
- Snapping of a wire of the inlet sensor wiring
- Miss of the inlet sensor wiring connector

《Return method》

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

※BLOWER WARN. lamp is lighted when inlet sensor became the barnout about the high pressure hot-air generator H type.

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



TEMP. WARN. lamp (Red) is flickered and OH is flickered to PV dept. ALM to SV dept. And, It becomes blow operation condition.

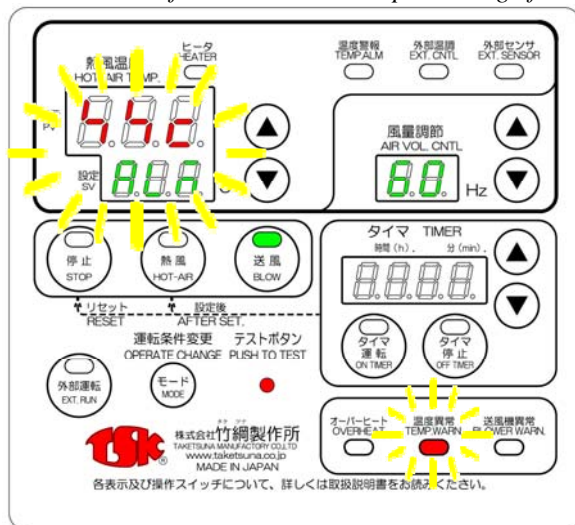
《Main cause》

- Establishment atmosphere temp. of the hot-air generator is high.
- Hot-air that leaked from the outlet flowed backward to the contrlo 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

●At the time of the inside SSC temp. warning of the hot-air generator (Only TSK-121 200V)



TEMP. WARN. lamp (Red) is flickered and SSC is flickered to PV dept. ALM to SV dept. 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 contrlo panel inside.
- Influence of the furnace radiation temp. at the time of the furnace upper part establishment

《Return method》

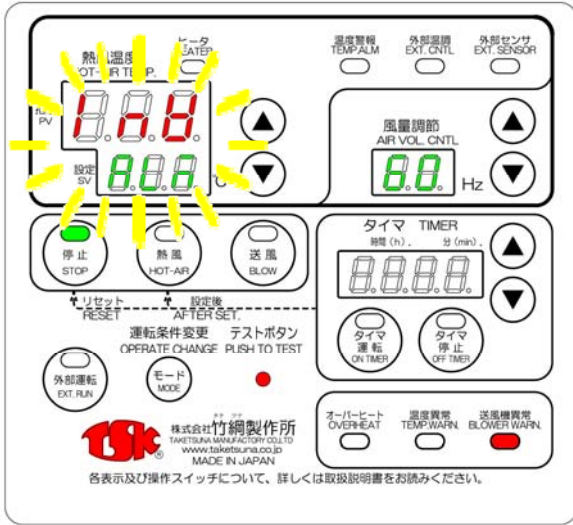
Please disarm by pushing STOP switch after inside temp. of the hot-air generator dropped.

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. It is detected with barnout when inlet sensor of high pressure hot-air generator snapped, and all the operation is stopped.

●At the time of the blower warning (C type : TSK-18 - 121, H type : TSK-22H4 - 72H9 with inverter, TSK-82H10)



BLOWER WARN. lamp (Red) is lighted and INV is flickered to PV dept. ALM to SV dept.

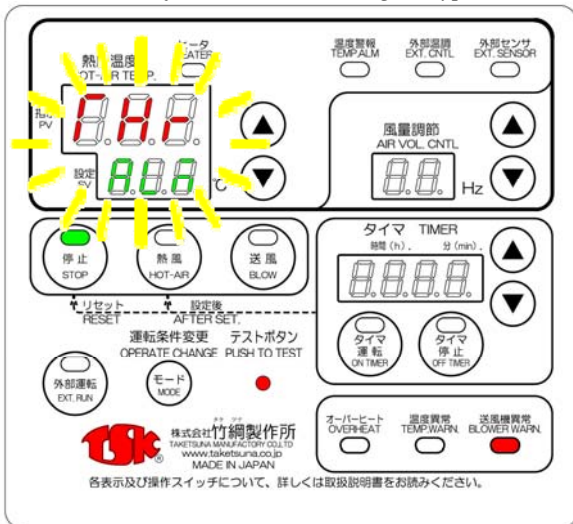
《Main cause》

- 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 that was established inside. Please turn off the breaker of this machine after the display contents are confirmed. And, please communicate the display contents.

●At the time of the blower warning (H type : TSK-22H4 - 72H9)



BLOWER WARN. lamp (Red) is lighted and THR is flickered to PV dept. ALM to SV dept.

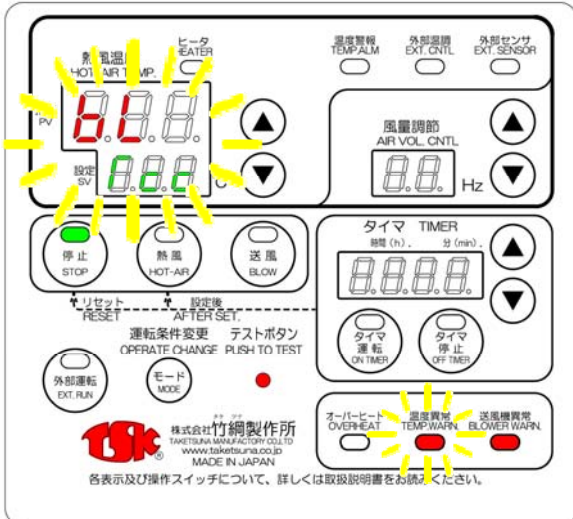
《Main cause》

- 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》

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

●At the time of the barnout of the outlet sensor (H type : TSK-22H4 - 82H10)



BLOWER WARN. lamp (Red) is lighted ,TEMP. WARN lamp (Red) is flickered and BL is flickered to PV dept. TCC to SV dept.

《Main cause》

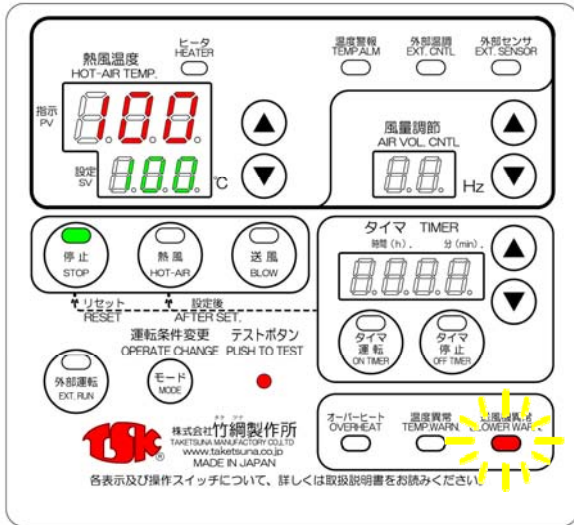
- Closing condition of discharge side piping
- Piping of very many pressure loss

《Return method》

Please disarm by pushing STOP switch after removing the cause.

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 pressure abnormality (Only type that the digital pressure sensor was installed : TSK-52H6 - 82H10)
Output 1 display lamp of the digital pressure sensor is lighted and warning sound sounds in the case that the air pressure on the side of the discharge exceeded the continuous usable discharge pressure.



BLOWER WARN. lamp (Red) is flickered and all operation is stopped when the condition that the air pressure on the side of the discharge exceeded the continuous usable discharge max. pressure continued for 10 minutes. Discharge and setting temp. in the time are displayed to PV and SV dept.

《Main cause》

- Piping of many pressure loss
- Opening the use of an extremely narrow nozzle
- Over squeezing of the air volume by the valve

《Return method》

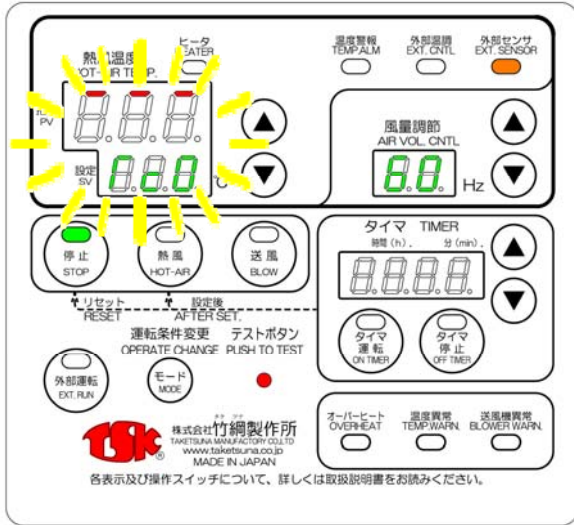
Please disarm by pushing STOP switch if it can be operated under the continuous usable max. pressure after the cause is removed.

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

●At the time of the barnout of the external sensor

Hot-air generator is stopped when the external sensor became the barnout 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 PV dept. TCO to SV dept. (EXT. SENSOR lamp is being lighted.)

《Main cause》

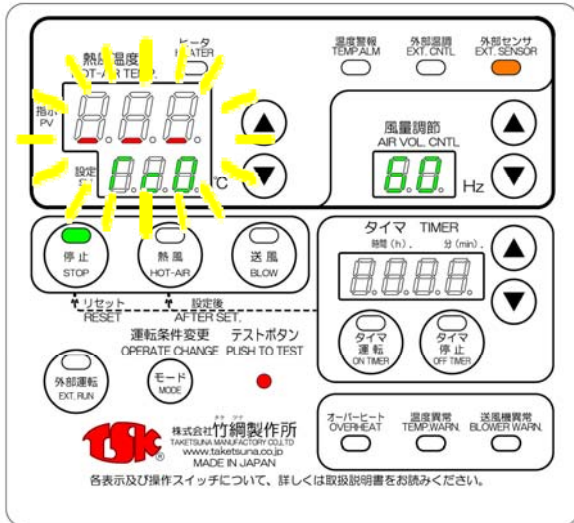
- Snapping of a wire of the external sensor
- Snapping of a wire of the external sensor compensating wire
- Miss of the inlet sensor wiring terminal

《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. (Onle inside temp. sensor is -5 °C.)



--- R34 is flickered to PV dept. display of each sensor to SV dept.

External sensor	:TCO	Outlet sensor	:TCA
Overheat sensor	:TCB	Inlet sensor	:TCC
Inside temp. sensor	:TCM		

《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.

●At the time of opposite phase abnormality (H type : Only TSK-22H4 -82H10)

Hot-air generator can not be operated when the connection of the power supply wire became a reverse phase about the high pressure hot-air generator TSK-H type.



Each display becomes to the display of turning ON the breaker (NFB) of this machine. And Reverse phase lamp (Red) is lighted.

《Main cause》

- Reverse phase connection of the power supply

《Return method》

Please replace any wire of the connection wire of the 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.