

# Portable dryer

# PD-12

## Operation manual

### ● Please read this without fail before use.

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



1. Installation
2. Piping
- 3 Power supply
4. Service terminal
5. Operation
6. Operation stop
7. During external operation
8. Each abnormal display
9. When used as a shoulder-type

### ◆ Please be sure to avoid the following actions, as they may lead to accidents or malfunctions.

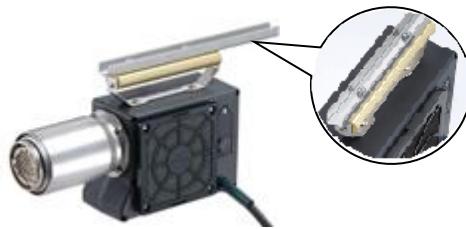
- Do not operate with wet hands
- When removing the power cap (plug) from the socket, please hold the power cap itself (plug).
- Never insert your fingers into the interior of the unit. As well as the inlet and outlet.
- Do not leave it near flammable materials such as paper while in use.
- Using it near water can cause electrical leakage accidents and is extremely dangerous.
- Never use in a sealed box. Also, do not block the inlet and outlet.
- Never use near gasoline, gas, or other flammable substances.
- Do not modify under any circumstances.
- When turning on this device, never touch the heating elements as there is a risk of electric shock.
- Keep out of reach of children.
- Long pipes and narrow pipes will reduce the airflow, resulting in abnormal overheating inside the heater. Long pipes cause significant heat loss and are inefficient.
- Do not use in areas where conductive suspended particles such as carbon fibers are present.
- Do not operate the unit with the inlet filter removed.



KANSAI ELECTRIC HEAT CORP.

# 1. Installation

① Hole (M6 2-places) for the fixation of the this machine is established to the handle. Please fix this machine firmly by using the handle as occasion demands. Please attach optionally by using the attachment holes (M4 Insert nut 4-places) for the fixation metal fittings of this machine side face in the case that the fixation metal fittings (Model : PDL) of the option are used.



② Establishment direction (Upward, Downward, Inclination of around and right and left) of this machine is not restricted. But, the continuation usable hot-air temp. becomes 450 °C from the normal temp. in the case that the discharge angle was established downward from horizontality. So, please use in this temp. range without fail. Please stop by the stop switch or external operation ON/OFF terminal of this machine to operate auto-cooling operation without fail because this machine receive the influence of remaining heat when operation is stopped by the condition of the attachment attitude. (Auto-cooling operation is not operated if the factory power supply was blocked.)

③ Place where can not establish

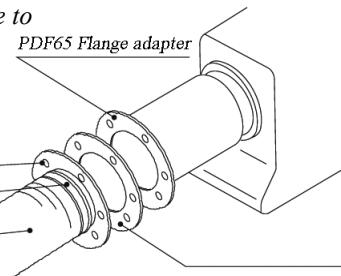
- Upper part of generation thing
- Place where filter is closed
- Neighborhood of combustible
- Place where has vibration
- Place where air pressure is low
- Place where height is more than 1000m
- Place where ambients humidity is more than 85%R.H.
- Places of there are many dust
- Outdoor, and place where is exposed to the storm
- Place where acid and corrosiveness gas is floating
- Place where ambients temp. is more than 0 - +40 °C.
- Room where is tightly sealed and case inside
- Place where infant may touch
- Place where has floating objects that pass electricity (Carbon fiber etc.)
- Place where receives the influence of noise of TV, PC, radio etc.

④ Please pay attention so as not to receive the influence of heat by the recoil of the hot-air that was discharged from this machine at the time of hot-air operation. (Suction cover to prevent malfunction by the heat is sucked is prepared as the option.)

Continuation usable hot-air temp. range becomes normal - 450 °C

# 2. Piping

① Please use the flange adapter PDF65 without fail at the piping. Please do not pipe to the hot-air outlet directly.



② Please fix the flange adapter PDF65 firmly by the band. .

③ Please pipe as short as possible. And, please do not squeeze extremely.

④ Please do not close the outlet and inlet. Please tighten the hose piping firmly by the band as the hot-air is not leaked.

# 3. Power supply

① Please prepare the same power supply as the power supply voltage of portable dryer.

② Please do not use the 100V-type with the power supply of the same outlet as other devices.

③ Please consider voltage depression when the extension cord is used.

④ Please do the ground construction (Less then 380V, Class D) work without fail about 200V-type (Overseas : 230V-type).

⑤ Please do not turn ON/OFF highly frequent by interlocking with other devices.

⑥ Please do not use Japan inside type 100V, 200V-type) in the overseas.

⑦ Auto-cooling operation function that corresponded to inside temp. is equipped at the time of that operation is stopped. So, please do not cross the circuit that operation is stopped by blocking the factory power supply because this function does not operate when the factory power supply was blocked.

Auto-cooling operation function does not operate in the case that this machine was stopped by blocking the factory power supply. So, it becomes the cause of malfunction by remaining heat.

## 4. Service terminal

※Please read [Service terminal (Wiring example)] without fail about the wiring of the service terminal.

●Service terminal (Connector type) of the external input and external output is equipped to Portable dryer.

Please use as occasion demands.

◆ Please use the lead wire and conclusion parts for the service terminal of the belonging without fail when the service terminal is wired.

### 『Accessories』

- Lead wire for the service terminal 144mm 1 set
- Contraction tubeφ6 100mm 1 pc.
- Contraction tubeφ4 100mm 1 pc.
- Insulok 2 pcs.
- Taimount 1 pc.
- Screw 1 pc.



### 【Explanation of the service terminal】

#### • External operation ON/OFF terminal

Please use at the operation and stop by the external signal. Input is the contact output (Terminal voltage DC12V Less than 3.6mA).



Brown

Brown

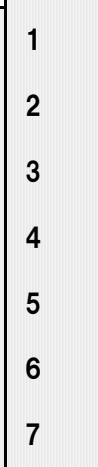
Orange

Orange

Red

White

Black



#### • External heater ON/OFF terminal

Please use at the heater ON/OFF by the external signal. Input is the contact output (Terminal voltage DC12V Less than 3.6mA).



#### • Output terminal B-contact

This becomes open at abnormal.



#### • Output terminal A-contact

This becomes close at abnormal.



#### • Output terminal Common

This is common terminal of the output terminal.



※Contact capacity of the output terminal is DC5V more than 10mA, DC30V less than 1A. (Unvoltage contact signal)

Lead wire for the service terminal (Accessories)  
Size AWG22 Length 144mm 7 pcs.  
(JST Mfg. Co., Ltd XAP-07V-19)

Connector type  
Service terminal

### 【Connection method】

① Please remove the cover of the service terminal.

② Please remove the connector of the service terminal.

③ Please put in the contraction tube of φ6 or φ8 to the lead wire in accordance to this use number.

Please remove the mark tube at this time. But, number needs not to remember because the signal wire is decided by wiring color.

④ Please put in the lead wire for the service terminal to the grommet of the service terminal cover.

Please process the hole by the cutter to the grommet.

⑤ Please plug the connector of the lead wire for the service terminal firmly to the connector type service terminal.

⑥ Please attach the service terminal cover with taimount by the screw.

⑦ Please conclude the lead wire for the service terminal to the taimount firmly by the insulok.

Connector comes off and damages when the lead wire was pulled if the lead wire is not concluded.

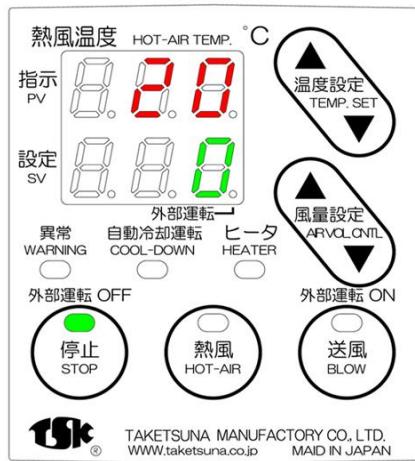
⑧ Please wire by the blockade insulation terminal to each wire.



Completion photograph

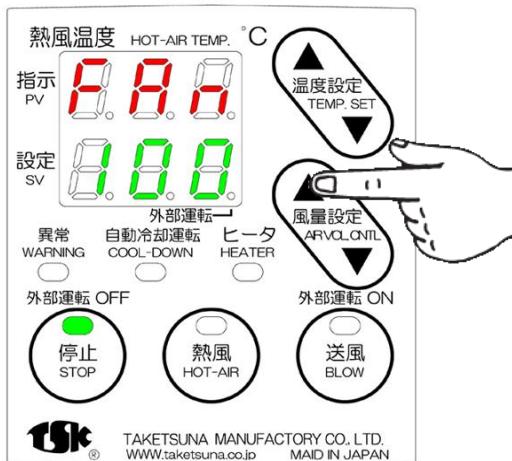
## 5. Operation

① Please turn ON the factory power supply.  
STOP lamp (Green) is lighted and present temp. is displayed to PV dept. 0 is displayed SV dept.

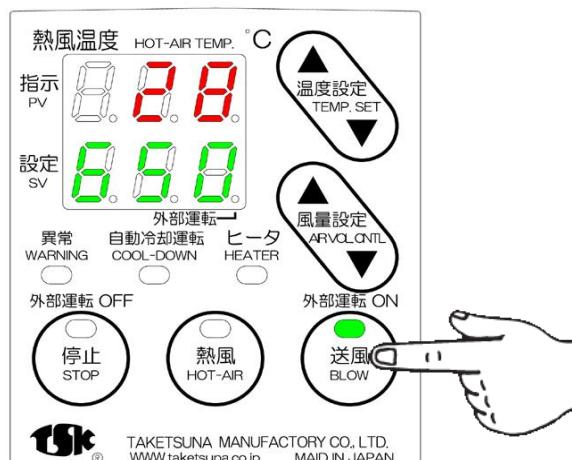


③ Please push AIRVOL. COTL UP-DOWN key one time.

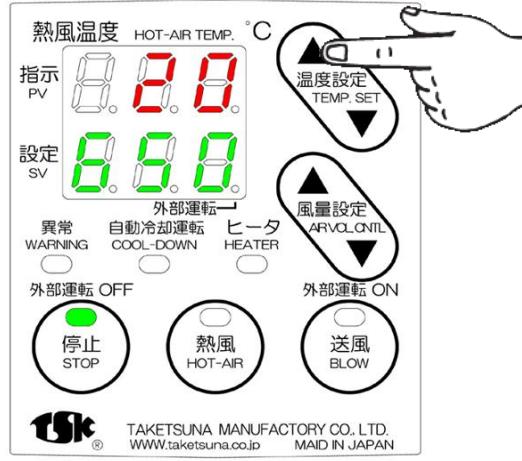
FAN is displayed to PV dept. 100 is displayed SV dept.



⑤ BLOW lamp (Green) is lighted by pushing BLOW switch, and blow operation is started.



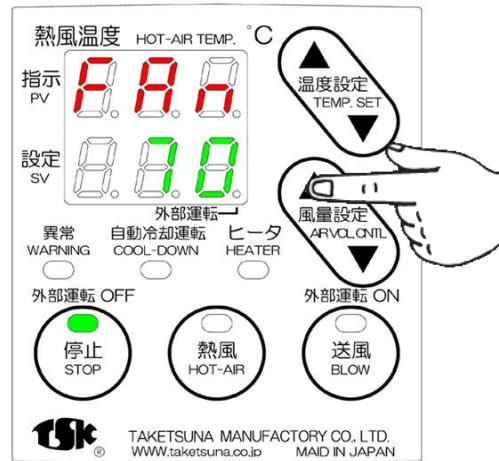
② Please set optional outlet temp. by TEMP. SET UP-DOWN key.



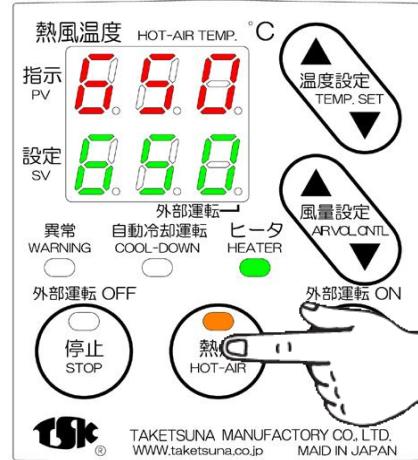
Please not set more than 450 °C in the case that the outlet angle is downward from horizontality.

④ Please set optional air volume in range of 70% - 100% by AIRVOL. COTL UP-DOWN key.

Please return to the usual temp. display by STOP switch after setting. (It changes automatically after 5 seconds.)



⑥ HOT-AIR lamp (Orange) is lighted by pushing HOT-AIR switch, and hot-air operation is started.



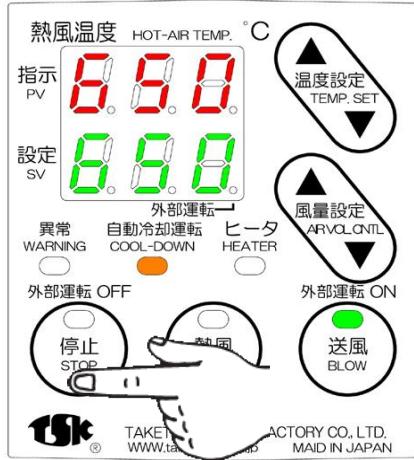
※HEATER lamp is flickered with the same timing as the heater control

## 6. Operation stop

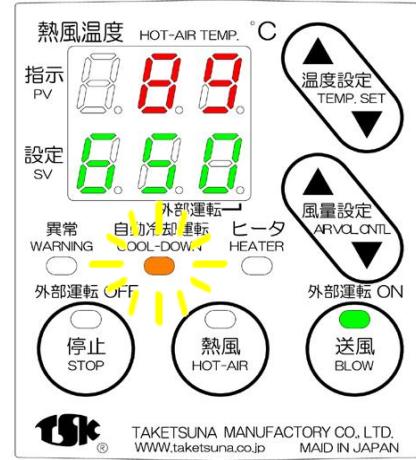
- Function that the operation is stopped automatically is equipped to Portable dryer after auto-cooling operation was operated according to inside temp.

- Please push STOP switch.

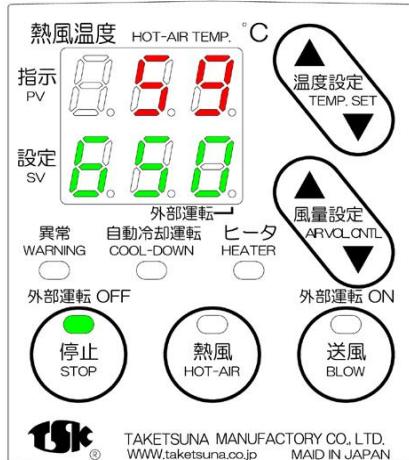
①HOT-AIR lamp (Red) is turned off, and BLOW lamp (Green) and COOL-DOWN lamp (Orange) is lighted, and blow operation is started by the air volume that was set up when the outlet temp. is more than 90 °C.



②COOL-DOWN lamp (Orange) is flickered, and operation changes blow operation of minimum air volume (70%) when the outlet temp. became less than 90 °C. And, this action is started as soon as STOP switch is pushed when the outlet temp. is less than 90 °C.



③All operation is stopped when the outlet temp. became less than 60 °C. And, all operation is stopped as soon as STOP switch is pushed when the used temp is less than 60 °C.



※Level of the cooling operation is changed by the heater inside temp. is controlled as soon as the outlet temp. is controlled. So, the auto-cooling operation of ① and ② may be operated in the case that the heater inside temp. is high temp. even if the outlet temp. is less than 90 °C or 60 °C.

And, the auto-cooling operation of ② or stop of ③ may not change until the heater inside temp. drops to regular temp. in the case that the heater inside temp. is high temp. even if the outlet temp. reach to change temp. of the auto-cooling operation.

※Auto-cooling operation is cancelled, and usually hot-air operation or blow operation becomes if HOT-AIR switch or BLOW switch is pushed again during auto-cooling operation.

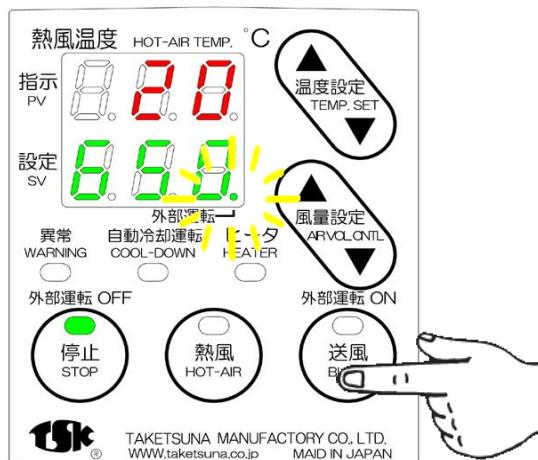
- The above auto-cooling operation is operated even when operation was stopped by the outside signal external operation that the external operationON/OFF terminal is used.

Auto-cooling operation is not operated in the case that operation is stopped by the power cord is drawn out or source power supply is blocked. So, Portable dryer is malfunctioned by remaining heat of the attachment attitude.

## 7. In the case that external operation is used

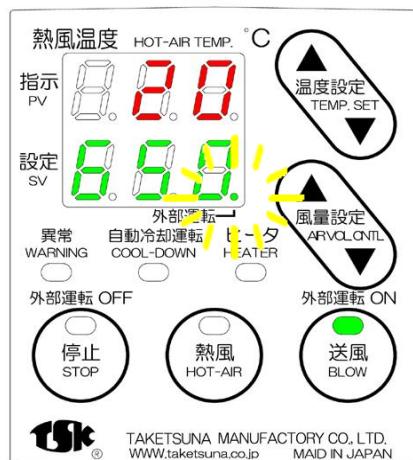
● Portable dryer can operate and the heater can turn ON/OFF by the outside signal.

① Please continue to push BLOW switch for about 3 seconds at stop condition after temp. and air volume setting.  
Dot of ones place of SV dept. flickers.



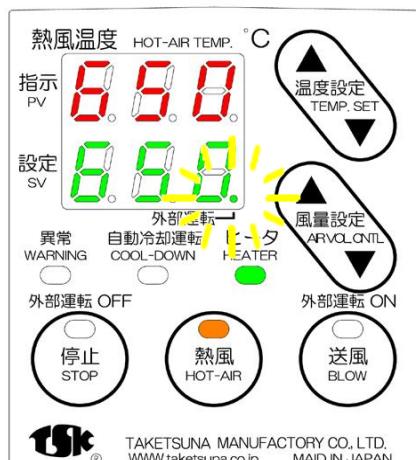
② Please close the external operation ON/OFF terminal (1-2) of the service terminal.

BLOW lamp (Green) is lighted and blow operation is started in the condition that the dot of ones place of SV dept. flickers.



③ Please close the external heater ON/OFF terminal (3-4) of the service terminal.

HOT-AIR lamp (Red) is lighted and hot-air operation is started in the condition that the dot of ones place of SV dept. flickers.



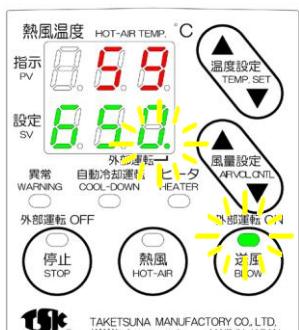
※Please open and close the external operation ON/OFF terminal in condition that the external heater ON/OFF terminal is closed in the case that the hot-air operation turns ON/OFF by the outside signal. And, the hot-air operation can not operate when the heater ON/OFF terminal is opened and closed in condition that the external operation ON/OFF terminal is opened.

※Please refer to P.2 about the service terminal wiring.

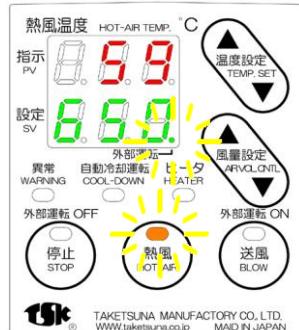
※Terminal voltage of the external operation ON/OFF terminal is less than DC5V 3.6mA. So, please prepare the relay that has the contact that can open and close this voltage.

Attention: Portable dryer can not operate for 20 seconds once again when the operation is stopped by the external operation ON/OFF terminal. Portable drye becomes the following operation condition in the case that external operation ON/OFF terminal is closed within 20 seconds once again, and the operation is started after 20 seconds once again. (Auto-cooling operation is cancelled when the external operation ON/OFF terminal is closed once again, and the operation becomes the blow or hot-air condition because the operation is started once again in condition of the auto-cooling operation.)

【Operation waiting condition when the external heater ON/OFF terminal is open】 【Operation waiting condition when the external heater ON/OFF terminal is closed】



Dot of ones place of SV dept. and BLOW lamp flicker.



Dot of ones place of SV dept. and HOT-AIR lamp flicker.

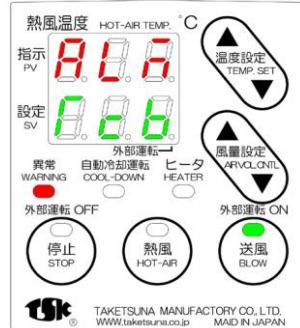
## 8. Each abnormal display

● Buzzer sounds and each abnormal content are displayed when Portable dryer is abnormality. And, the operation is stopped or becomes blow condition. Please remove abnormal contents, and please cool sufficiently. After that, please operation once again by each return method.

### ① Overheat

(For perception of the heater inside temp.)

WARNING lamp (Red) is lighted, and ALM to PV dept. and TCB to SV dept. are flickered when the heater inside became the abnormal high temp. And, operation becomes blow operation.



#### 《Main cause》

Clogging of the inlet filter, Air volume insufficient by the excessive resistance of the outlet side, Rebound of the discharge hot-air

#### 《Return method》

Please push STOP switch. And, please turn OFF the source power supply and please turn ON once again after auto-cooling operation is operated.

### ② Overheat

(For perception of the heater case temp.)

WARNING lamp (Red) is lighted, and ALM to PV dept. and TCA to SV dept. are flickered when the heater case became the abnormal high temp. And, all operation is stopped.



#### 《Main cause》

Clogging of the inlet filter, Excessive resistance of the outlet side, Supply stoppage of the air volume by lock of the blower, Block of the source power supply at the time of using by downward

#### 《Return method》

Temp. fuse melts and cut. Please return for repair.

### ③ Outlet temp. abnormal

WARNING lamp (Red) is lighted, and ALM to PV dept. and TCA to SV dept. are flickered when the outlet temp. exceeded the upper limit. And, operation becomes blow operation.



#### 《Main cause》

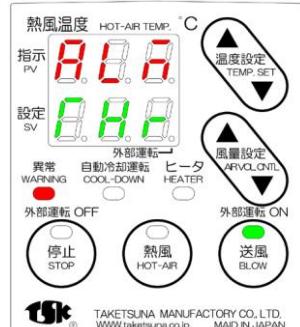
Clogging of the inlet filter, Excessive resistance of the outlet side, Supply stoppage of the air volume by lock of the blower, Rebound of the discharge hot-air

#### 《Return method》

Please push STOP switch. And, please turn OFF the source power supply and please turn ON once again after auto-cooling operation is operated.

### ④ Suction temp. abnormal

WARNING lamp (Red) is lighted, and ALM to PV dept. and THR to SV dept. are flickered when the suction temp. exceeded the upper limit. And, operation becomes blow operation.



#### 《Main cause》

Suction by rebound of the discharge hot-air, Influence of another heat source near the inlet

#### 《Return method》

Please push STOP switch. And, please turn OFF the source power supply and please turn ON once again after auto-cooling operation is operated.

### ⑤ Inside temp abnormal

WARNING lamp (Red) is lighted, and ALM to PV dept. and OH to SV dept. are flickered when the inside temp. of Potable dryer exceeded 65 °C. And, operation becomes blow operation.



#### 《Main cause》

Establishment atmosphere temp. is high, Suction by rebound of the discharge hot-air, Influence of radiation by this is establishment to the upper part of the oven

#### 《Return method》

Please push STOP switch. And, please turn OFF the source power supply and please turn ON once again after auto-cooling operation is operated.

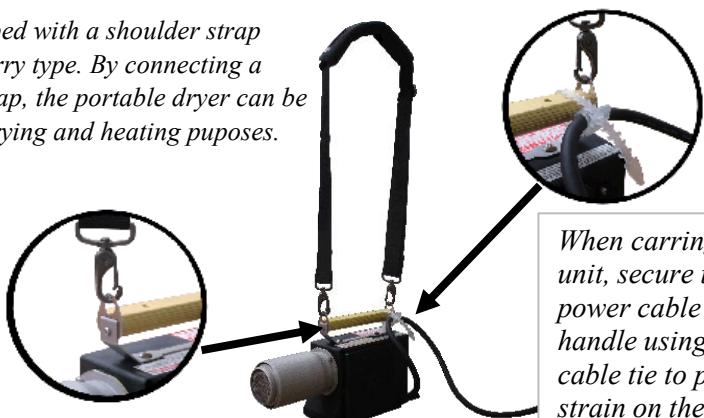
※ Abnormal contents are displayed and the dot of ones place of SV dept. when each abnormal occurred during external operation.

※ Abnormal contents are displayed at stoppage condition when each abnormal occurred during operation stop.

Attention : Please carry out after the power supply is blocked without fail if the wiring confirmation and readjustment at the abnormal time is conducted.

## 9. When used as a shoulder-type

- The Portable Dryer PD-12 is equipped with a shoulder strap attachment for use as a shoulder-carry type. By connecting a commercially available shoulder strap, the portable dryer can be carried over the shoulder for spot drying and heating purposes.



Connect a commercially available shoulder strap to the hook on the portable dryer handle.

※Please select a shoulder strap with a load capacity of approximately 3 kg.

When carrying this unit, secure the power cable to the handle using a cable tie to prevent strain on the power cable.



HOT AIR GENERATOR

Manufacturer



KANSAI ELECTRIC HEAT CORP

5-CHOME 4-18, TAKAIDANISHI

HIGASHIOSAKA CITY OSAKA 577-8566

JAPAN

PHONE (06) 6785-6001 FAX (06) 6785-6002

<https://kansaidennetsu.co.jp/>