



LEAD-FREE TEMPERATURE-CONTROLLED SOLDERING IRON

# PX-280

## OPERATION MANUAL

**Digital Display in 1°C Increments**

Set Temp. from 200°C to 500°C

**SLEEP/SHUTDOWN (PAT.P)**

Tip Life Greatly Improved

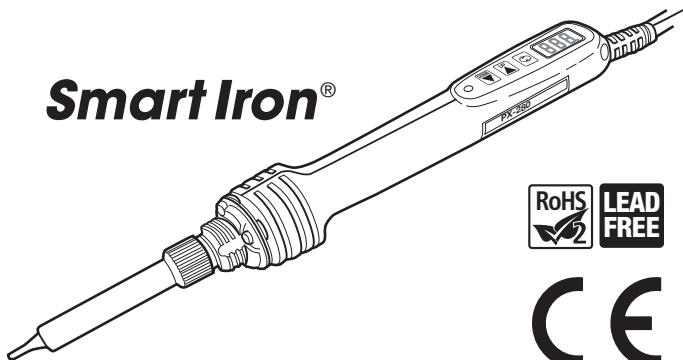
**KEY LOCK**

With Numerical Code

**Ergonomic Grip**

New Design for Easy Grip

# Smart Iron®



Heat-resistant Cap for quick storage after use (sold separately).

Thank you for buying this **goot** soldering iron. If you follow the instructions and safety precautions in this manual and use your soldering iron properly and only for what it is intended, you will enjoy years of safe, reliable service. Keep this manual for future reference.

TAIYO ELECTRIC IND.CO.,LTD.

# Safety Mark Definitions

Following the WARNINGS and CAUTIONS in this manual will allow for the safe and proper use of the soldering iron, and should protect the operator and others from injury, and property from damage. Please read the manual after you understand these WARNINGS and CAUTIONS.



## WARNING

Failure to obey a safety warning could result in serious injury or death to yourself or to others. Always follow the safety precautions to reduce the risk of electric shock, fire, or personal injury.



## CAUTION

Failure to obey a safety caution may result in a minor or moderate damage or injury to yourself or to others. Always follow the safety precautions to reduce the risk of electric shock, fire, or personal injury.

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## 1-1 Specifications

Model	PX-280
Voltage	220-240V AC 50/60Hz
Power Consumption	19W
Temperature Setting Range	200–500°C
Ripple Temperature	±5°C (unloaded)
Ground Resistance	2Ω or less
Leak Voltage	Less than 2 mV
Insulation Resistance	100 MΩ or more (500 V DC)
Heater	Ceramic heater
Power Cord Length/Plug	1.5 m (3 core cord with ground pin)
Length/Weight	219 mm /70 g
Accessories	Soldering Iron Tip (PX-28RT-S2C)

The length does not include the cord bushing. The weight does not include the cord.

## 1-2 Parameters

Term (display panel letters)	Display	Range	Unit	Default Setting
Set Temperature (PT)	<b>Set Temp.</b>	(SSt+50)–500 (SSt+50)–932	°C °F	350 662
Temperature Calibration (cAL)		-50–50 -90–90	°C °F	0
Sleep Set Temp (SSt)		100–(Pt -50) 212–(Pt -50)	°C °F	200 392
Sleep Timer (ct)		000–999	Minutes	5
Sleep Sensitivity (dIF)		1–10	—	3
Shutdown Start time (SUT)		0–999	Minutes	60
Temperature Scale		c/F	—	c
Calibration for low temp. (2PL)		-199–199	—	Set when shipped
Calibration for high temp. (2Ph)		-199–199	—	Set when shipped
Safety Mode (Pon)		On/oFF	—	oFF
Software Version (ver)		—	—	Depends on manufactured date

## 2 Rules for Safe Operation

### 2-1 Rules for Safe Operation

For safe operation, read and follow all rules below.



#### **WARNING**

Do not use this soldering iron until you have read and understood all instructions and safety precautions in this manual.



#### **WARNING**

This tool must be placed on its stand when not in use.

#### **1. DO NOT USE IN DANGEROUS ENVIRONMENTS.**

Do not use the soldering iron in damp or wet locations, or expose it to external environmental conditions, particularly rain. Never use it in an explosive atmosphere. The heat from the heater can ignite fumes. Be sure that the work area is well lit.

#### **2. KEEP CHILDREN AND BYSTANDERS AWAY FROM THE SOLDERING IRON.**

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children unless they are aged from 8 years and above and supervised. Keep the appliance and its cord out of reach of children aged less than 8 years.

#### **3. PROPERLY STORE THE SOLDERING IRON WHEN IT IS NOT IN USE.**

When it is not in use, store the soldering iron in a high or locked-up place.

#### **4. USE FOR THE RIGHT JOB.**

Your soldering iron is an electrical tool used to solder electric parts, small connectors etc. Do not use the soldering iron for any other purpose.

#### **5. WEAR PROPER APPAREL.**

Tie up long hair. Clothing or hair can burn on contact with the tip or surrounding heated parts.

#### **6. DO NOT ABUSE THE POWER CORD. INSPECT IT PERIODICALLY.**

Never carry your soldering iron by its power cord, or yank the power cord to disconnect it from the receptacle. Keep the power cord away from heat, oil and sharp edges.

If power cord is damaged, stop at once; unplug to prevent fire or electrical shock. Ask the distributor for replacement.

#### **7. USE A STAND FOR CERAMIC HEATER SOLDERING IRONS.**

We recommend the goot ST-27 soldering iron stand (sold separately). If you use another stand, heat could damage your soldering iron.

#### **8. LET YOUR SOLDERING IRON COOL DOWN AFTER USE**

Allow the tip to cool naturally after unplugging the iron. Never use any other method (e.g. water on the tip) to cool it down.

## 2-2 Features of PX-280

This soldering iron is small and light, and has excellent heat-recovery. Sleep/Shutdown functions extend soldering tip life, and avoid troubles by unplugging the iron.

### • Excellent Heat Recovery

With a high-power heater and sensor, there is almost no temperature fluctuation during heavy-duty continuous operation.

### • Ergonomic Grip

Comfortable grip, and a shorter distance from the handpiece to the tip.

### • Fastest in Its Class

Reaches 350 °C in just 30 seconds with a standard tip.

### • Calibration

Digitally calibrates the difference between the set temperature and

the tip temperature measured by tip thermometer.

### • Sleep

When iron is not used during preset time, it automatically lowers tip temperature to avoid tip-burn. Time and temperature when not-in-use can be set. This function can be used with the shutdown function (see 3-4) together. You can exit Sleep mode by moving the grip.

### • Shutdown

When the iron is not used during the preset time, it automatically shuts down.

## 2-3 Names of Parts

### Display

Shows the temperature and parameter value. When the power is turned ON or when Sleep mode is exited, it shows the tip temperature rising to the set temperature. Then it shows the set temperature.

### HEAT lamp

Lights up when heating. Flashes when near set temperature.

### DOWN key

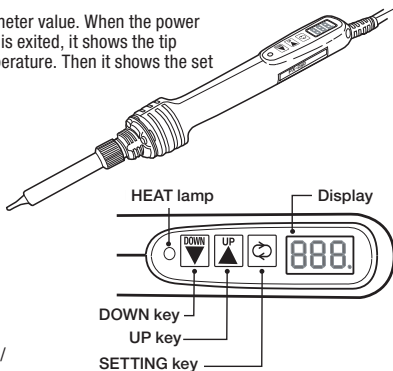
Reduces the set temperature or parameter value.

### UP key

Increases the set temperature or parameter value.

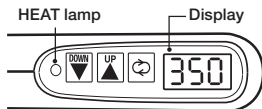
### SETTING key

Starts/completes the temperature/parameter setting process.



### 3 Operation Instructions

When iron is plugged in, HEAT lamp lights and iron heats up (default setting is 350°C). HEAT lamp flashes when near set temperatures.



Temperature may be set from 200°C to 500°C








**NOTE**

You can choose the Safety mode. In Safety mode, please press any key to power on after you plug in. To choose the mode, see P17 “3-10 Setting the Safety Mode”.

#### 3-1 Changing the Set Temperature

E.g. Changing the temperature from 350 °C to 400 °C.

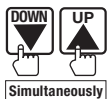
	Key Operation	Display
1	 Press the SETTING key.	
2	 Press and hold the UP key until the display shows 400.	 Flashes
3	 Press the SETTING key. <b>Setting completed</b>	Returns to the set temperature display.

The set temperature should be set 50°C higher than the sleep temperature (see 3-3 “Sleep Function”).

E.g. If the set temperature is 200°C, the sleep temperature must be 150°C or under.



**NOTE**



If you need to return to the temperature display during setting, press UP and DOWN keys simultaneously. Setting cannot be canceled after SETTING key is pressed. When any key is not pressed within 30 seconds before pressing the SETTING key, the value is not set and returns to the set temperature display.




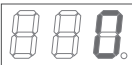



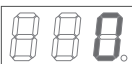



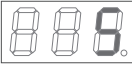

## 3-2 Calibration

Generally speaking, when measuring the tip temperature of the PX-280 with a tip thermometer, the measured temperature will usually be lower than the temperature displayed on the PX-280.




This could be because once the tip thermometer comes into contact with the PX-280 soldering tip, the metallic parts in the thermometer conduct heat away from the PX-280 tip.

For this reason, please use the calibration function only if you use the tip thermometer as the standard calibration tool for your soldering iron.

**How to Calibrate the Temperature** E.g. Where the set temperature is 300°C, the tip thermometer value is 295°C, and the calibration value to be input is 5°C.

Key Operation	Display
<b>1</b>  Press and hold the SETTING key for over 3 seconds.	 Displays alternately  
<b>2</b>  Press the SETTING key to select <b>CAL</b> display.	 Displays alternately  
<b>3</b>  Press the UP key until the display says 5.	 Displays alternately  
<b>4</b>  Press and hold the SETTING key for over 3 seconds. <b>Setting completed</b>	Returns to the set temperature display.

Please set 0 if calibration is not needed. (Calibration value is set to 0 before shipping.)

 <b>NOTE</b>	  Simultaneously	If you need to return to the temperature display during setting, press UP and DOWN keys simultaneously. Setting cannot be canceled after SETTING key is pressed. When any key is not pressed within 30 seconds before pressing the SETTING key, the value is not set and returns to the set temperature display.
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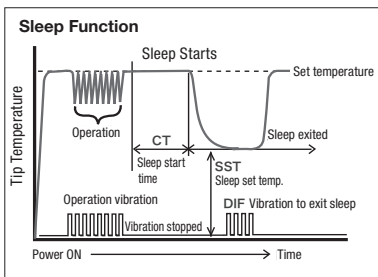
### 3-3 Setting the Sleep Function

When your iron is not used during the preset time, it automatically lowers tip temperature and goes to Sleep. This reduces power consumption and extends soldering tip life. This sleep function can be used with the shutdown function (see 3-4) together.

CT : Sleep start time (Unit: min.)

SST : Sleep setting temp. (Unit: °C)

DIF : Sensitivity (1-10)



#### Setting the Sleep Temperature

E.g. Changing the sleep temperature from 200°C to 150°C.

Key Operation		Display	
1	Press and hold the SETTING key for over 3 seconds.	Displays alternately	
2	Press the SETTING key to select Sst display.	Displays alternately	
3	Press the DOWN key until the display says 150.	Displays alternately	
4	Press and hold the SETTING key for over 3 seconds. <b>Setting completed</b>	Returns to the set temperature display.	

Activate Sleep function: Press and hold the DOWN key ▼ for one second continuously to use Sleep Function manually during the operation.

The sleep temperature should be set 50°C lower than the set temperature.



If you need to return to the temperature display during setting, press UP and DOWN keys simultaneously. Setting cannot be canceled after SETTING key is pressed. When any key is not pressed within 30 seconds before pressing the SETTING key, the value is not set and returns to the set temperature display.



## How to exit Sleep mode








Sleep mode can be exited by moving the iron.

To set the sleep sensitivity, see P10 "Setting the Sleep Sensitivity".

### Setting the Sleep start time (ct)

E.g. Changing the Sleep start time from 5 to 30 mins.








Unit: mins.

Key Operation	Display
<b>1</b>  Press and hold the SETTING key for over 3 seconds.	 Displays alternately
<b>2</b>  Press the SETTING key to select ct display.	 Displays alternately
<b>3</b>  Press the UP key until the display says 30.	 Displays alternately
<b>4</b>  Press and hold the SETTING key for over 3 seconds. <b>Setting completed</b>	Returns to the set temperature display.

When **ct** value is set to 0, Sleep function is OFF.

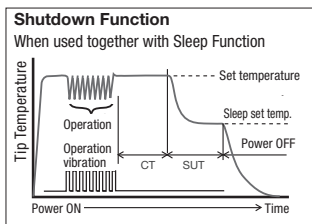
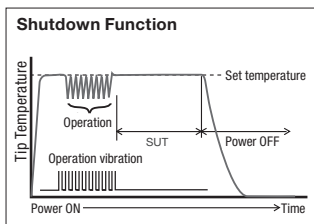
The display will alternate between SLP and tip temperature when iron is in Sleep mode.



**Setting the Sleep Sensitivity (dIF)** E.g. Changing the Sleep Sensitivity value from 1 to 10. Small values are more sensitive to exit from Sleep mode.

Key Operation	Display
<b>1</b>  Press and hold the SETTING key for over 3 seconds.	 Displays alternately
<b>2</b>  Press the SETTING key to select dIF display.	 Displays alternately
<b>3</b>  Press the UP key until the display says 10.	 Displays alternately
<b>4</b>  Press and hold the SETTING key for over 3 seconds. <b>Setting completed</b>	<p>Returns to the set temperature display.</p>

### 3-4 Setting the Shutdown Function




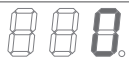









When the iron is not used during the preset time, it automatically shuts down.



When SUT value is set to 0, the shutdown function is OFF. The display will alternate between Sdn and the tip temperature when the iron is in the shutdown mode. The display will alternate between  and  when the temperature falls under 50°C.

## Setting the Shutdown start time (SUT)

E.g. Changing the Shutdown start time from 60 to 30 mins. Unit: mins.

Key Operation	Display
1  Press and hold the SETTING key for over 3 seconds.	 Displays alternately  
2  Press the SETTING key to select SUT display.	 Displays alternately  
3  Press the DOWN key until the display says 30.	 Displays alternately  
4  Press and hold the SETTING key for over 3 seconds. <b>Setting completed</b>	<b>Returns to the set temperature display.</b>

To use the iron again after shutting down, press any key to power on again.



**NOTE**






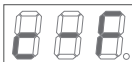

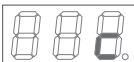


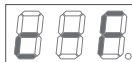

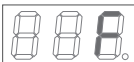


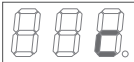



**Simultaneously**

If you need to return to the temperature display during setting, press UP and DOWN keys simultaneously. Setting cannot be canceled after SETTING key is pressed. When any key is not pressed within 30 seconds before pressing the SETTING key, the value is not set and returns to the set temperature display.

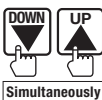
## 3-5 Setting the Temperature Scale

The temperature can be viewed in Celsius or in Fahrenheit.

Key Operation	Display
<p>1  Press and hold the SETTING key for over 3 seconds.</p>	<p> Displays alternately  </p>
<p>2  Press the SETTING key to select c-F display.</p>	<p> Displays alternately  </p>
<p>3  Press the UP key to choose °F, or press the DOWN key to choose °C.</p> <p></p>	<p> Displays alternately  </p> <p> Displays alternately  </p>
<p>4  Press and hold the SETTING key for over 3 seconds.</p> <p><b>Setting completed</b></p>	<p><b>Returns to the set temperature display.</b></p>



**NOTE**



If you need to return to the temperature display during setting, press UP and DOWN keys simultaneously. Setting cannot be canceled after SETTING key is pressed. When any key is not pressed within 30 seconds before pressing the SETTING key, the value is not set and returns to the set temperature display.

## 3-6 Calibration of the Tip Temperature when heater is replaced

If you have a tip thermometer, calibrate the tip temperature when the heater is replaced.




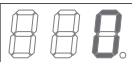





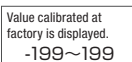





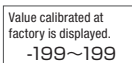



**NOTE**

Calibrate with fixed-temperature in this procedure.

Low temperature: 250°C (482°F)

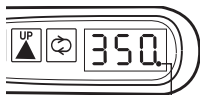
High temperature: 450°C (842°F)

Key Operation	Display
<p><b>1</b>  Press and hold the SETTING key for over 3 seconds.</p>	<p> Displays alternately  </p>
<p><b>2 For low-temp. calibration</b></p> <p> Press the SETTING key to select <b>2PL</b> display.</p> <p> </p>	<p> Displays alternately  </p> <p>Value calibrated at factory is displayed. -199~199</p> <p>Put the tip onto the tip thermometer. Enter the calibration value with UP/DOWN key so that the measured value becomes 250°C.</p>
<p><b>3 For high-temp. calibration</b></p> <p> Press the SETTING key to select <b>2Ph</b> display.</p> <p> </p>	<p> Displays alternately  </p> <p>Value calibrated at factory is displayed. -199~199</p> <p>Put the tip onto the tip thermometer. Enter the calibration value with UP/DOWN key so that the measured value becomes 450°C.</p>
<p><b>4</b>  Press and hold the SETTING key for over 3 seconds.</p> <p><b>Setting completed</b></p>	<p>Returns to the set temperature display.</p>

## 3-7 Setting Key Lock





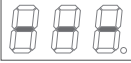






The Key Lock function locks the temperature and other settings. Temperature and other settings cannot be changed by unauthorized personnel. To release the Key Lock, enter the correct Code Number or restore all settings (see P16 "Resetting the Code Number"). The code number is not set before shipping. The code number can be set using any three-digit number from 001 to 999.

When the code number is set correctly, the number flashes 5 times. If an incorrect code number is input, the display will show 'NG', and return to the temperature display. The dot lights during Key Lock.





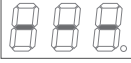








Lights when Key-Locked

### Setting the Code Number

Key Operation	Display
<b>1</b>   Press the DOWN and SETTING keys simultaneously.	  <span>Displays alternately</span> 
<b>2</b>   Press the UP/DOWN key to show the desired Code Number.	
<b>3</b>   Press the DOWN and SETTING keys simultaneously.	 <span>Flashes 5 times</span> ↓ Returns to the set temperature display.
<b>Setting completed</b>	




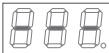
















### Releasing the Key Lock

Key Operation	Display
<b>1</b>   Press the DOWN and SETTING keys simultaneously.	  <span>Displays alternately</span> 

Key Operation	Display
<b>2</b>   Press the UP/DOWN key to show the Code Number.	
<b>3</b>   Press the DOWN and SETTING keys simultaneously. <b>Releasing completed</b>	 Flashes 5 times ↓ <b>Returns to the set temperature display.</b>
















### Changing the Code Number

E.g. Change the code number from 123 to 234.

Key Operation	Display
<b>1</b>   Press the DOWN and SETTING keys simultaneously.	 Displays alternately 
<b>2</b>   Press and hold the DOWN and SETTING keys for over 3 seconds.	 Displays alternately 
<b>3</b>   Press the UP/DOWN key to show the old Code Number.	
<b>4</b>   Press the DOWN and SETTING keys simultaneously.	 Displays alternately 
<b>5</b>   Press the UP/DOWN key to show the new Code Number.	
<b>6</b>   Press the DOWN and SETTING keys simultaneously. <b>Setting completed</b>	Flashes 5 times ↓ <b>Returns to the set temperature display.</b>

## 3-8 Resetting the Code Number





Follow the procedure below to delete the code number and reset the key lock.

Key Operation	Display
<p><b>1</b>  </p> <p>Press the DOWN and SETTING keys simultaneously.</p>	  Displays alternately 
<p><b>2</b>  </p> <p>Press and hold the UP and SETTING keys for over 3 seconds.</p>	 Displays alternately 
<p><b>3</b>  </p> <p>Press the UP/DOWN key to show "471".</p>	
<p><b>4</b>  </p> <p>Press the DOWN and SETTING keys simultaneously.</p> <p><b>Resetting completed.</b></p>	 Flashes 5 times ↓ Returns to the set temperature display.

## 3-9 Restore Default Settings

The below procedure will restore all parameters to the default settings. The key-lock function is also unlocked using this procedure. This can allow a third party to alter the settings on the iron. Authorized personnel should restore default settings properly.










### How to Restore Default Settings

Key Operation	Display
<p><b>1</b>   </p> <p>Press and hold all keys for over 5 seconds when temperature is displayed.</p>	 Flashes 5 times
<p><b>2</b> All settings are reset.</p> <p><b>Restoring completed</b></p>	Returns to the set temperature display.



## 3-10 Setting the Safety Mode

When Safety Mode is OFF, your iron will start heating when it is plugged in. When Safety Mode is ON, it will not start heating until you press a key.

Key Operation	Display
<b>1</b>  Press and hold the SETTING key for over 3 seconds.	 Displays alternately
<b>2</b>  Press the SETTING key to select Pon display.	 Displays alternately
<b>3</b>  Press the UP key to select On.   Press the DOWN key to select off.	 Displays alternately   Displays alternately
<b>4</b>  Press and hold the SETTING key for over 3 seconds.  <div style="border: 1px solid black; border-radius: 10px; padding: 2px 10px; display: inline-block;"><b>Setting completed</b></div>	<p style="text-align: center;">Returns to the set temperature display.</p>

Safety Mode	After plugged in:
ON	Starts heating by pressing any key.
OFF (Default setting)	Starts heating immediately.

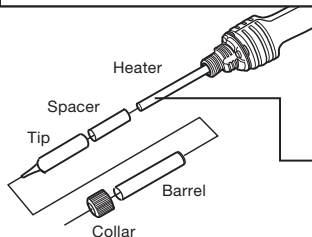
## 4 Maintenance

### 4-1 Changing the Tip



**CAUTION**

Before changing the tip, unplug the soldering iron, and wait until the tip and surrounding parts have cooled down.

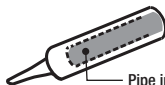


Unscrew the Collar to remove Barrel, Tip, and Spacer (in this order). Assemble in the reverse order.



**CAUTION**

When replacing the soldering tip, make sure that the pipe inside has not come loose and stuck to the heater surface. If the pipe is stuck, remove it. A stuck pipe may cause the heater to short-circuit and break down.

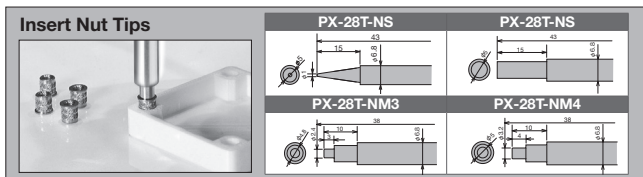
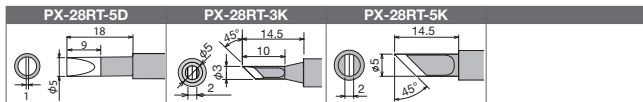


### 4-2 Optional Tips/Replacement Parts/Optional Parts

For replacement/optional parts, contact a goot distributor. Use genuine goot parts to avoid troubles.

\*Standard Tip

<p><b>*PX-28RT-S2C</b></p>	<p><b>PX-28RT-S2CF</b></p>	<p><b>PX-28RT-B</b></p>	<p><b>PX-28RT-SB</b></p>
<p><b>PX-28RT-1C</b></p>	<p><b>PX-28RT-1CF</b></p>	<p><b>PX-28RT-1BC</b></p>	<p><b>PX-28RT-2.3BC</b></p>
<p><b>PX-28RT-3BC</b></p>	<p><b>PX-28RT-3BCF</b></p>	<p><b>PX-28RT-4BC</b></p>	<p><b>PX-28RT-4BCF</b></p>
<p><b>PX-28RT-5C</b></p>	<p><b>PX-28RT-1.6D</b></p>	<p><b>PX-28RT-2.4D</b></p>	<p><b>PX-28RT-3.2D</b></p>



## Replacement/Optional Parts

PX-280 Heater	PX-280 Barrel	Cap	 TQ-CAP  ST-27
PX-28H	PX-60HP	TQ-CAP	
PX-280 Spacer	PX-280 Collar	Recommended Stand	
PX-28SS	TQ-77NUT	ST-27	

## 4-3 Troubleshooting

Error message	Cause	Countermeasure
	<b>Sensor is damaged.</b>	Sensor is disconnected. Replace the sensor with a new one.
	<b>Memory error.</b>	You can use the iron after setting again. If this error occurs frequently, contact your nearest distributor for repair.
	<b>Sensor error, heater error.</b>	The sensor or heater may be damaged. Replace the heater with a new one.
	<b>Sensor error.</b>	The sensor has a problem. Replace the heater with a new one.
	<b>Sensitivity sensor error.</b>	<p>The sensitivity sensor has a problem. If this error occurs frequently, contact your nearest distributor for repair.</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>You can temporarily use the iron with Sleep/Shutdown functions stopped until the iron is unplugged.</b></p> <p>   Press the DOWN/UP key to change Ign to SLc. </p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">   Ign </div> <div style="text-align: center;">   SLc </div> </div> </div>



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