



Operation and Maintenance Manual for the
SODRTEK®
ST 45 Soldering System
P/N 5050-0531



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General Information

Introduction

Thank you for purchasing the PACE SODRTEK model ST 45 Digital Soldering System. This manual will provide you with the information necessary to properly set up, operate, and maintain the ST 45. The ST 45 system is available in either 115 VAC or 230 VAC versions, which incorporates a highly responsive SensaTemp (closed loop) control system providing up to 80 Watts of total power to a single output channel. The 230 VAC version system bears the CE Conformity Marking, which assures the user that it conforms to EMC 89/336/EEC.

The 115 VAC version systems conform to FCC Emission Control Standard, Title 47, Subpart B, Class A. This standard is designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

Specifications

System Power Source Power Requirements

ST 45	Operates on 97-127 VAC, 50/60Hz, 90 Watts maximum at 115 VAC, 60Hz
ST 45E	Operates on 197-253 VAC 50/60Hz, 80 Watts maximum at 230 VAC, 50Hz

Temperature Specifications

Handpieces Tip Temperature Range: 204 to 455°C (400 to 850°F) nominal.
Temperature Stability: $\pm 1.1^{\circ}\text{C}$ ($\pm 2^{\circ}\text{F}$) at idle from set tip temp.

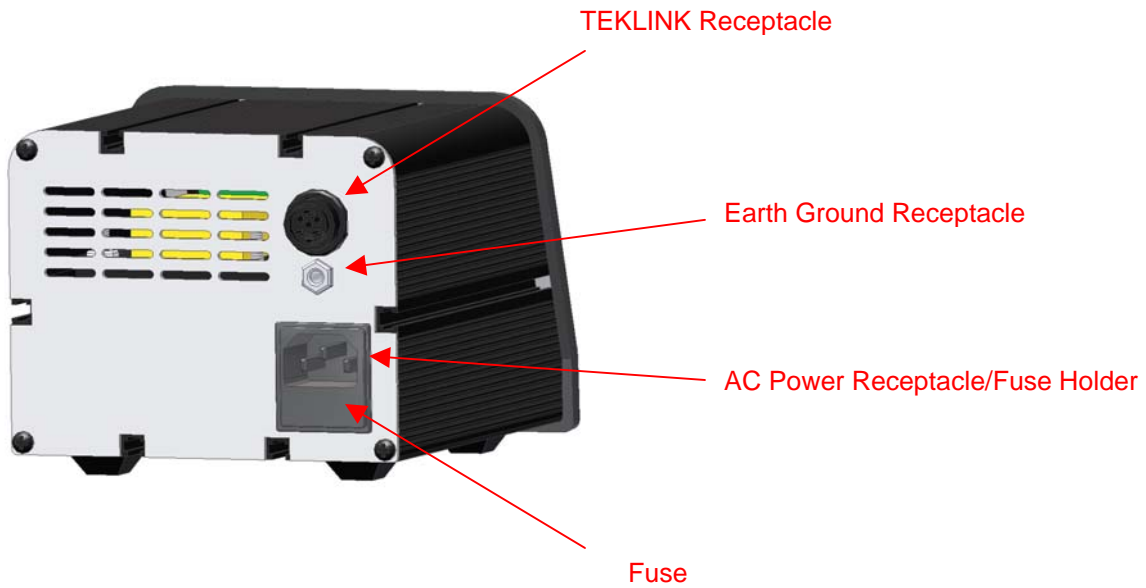
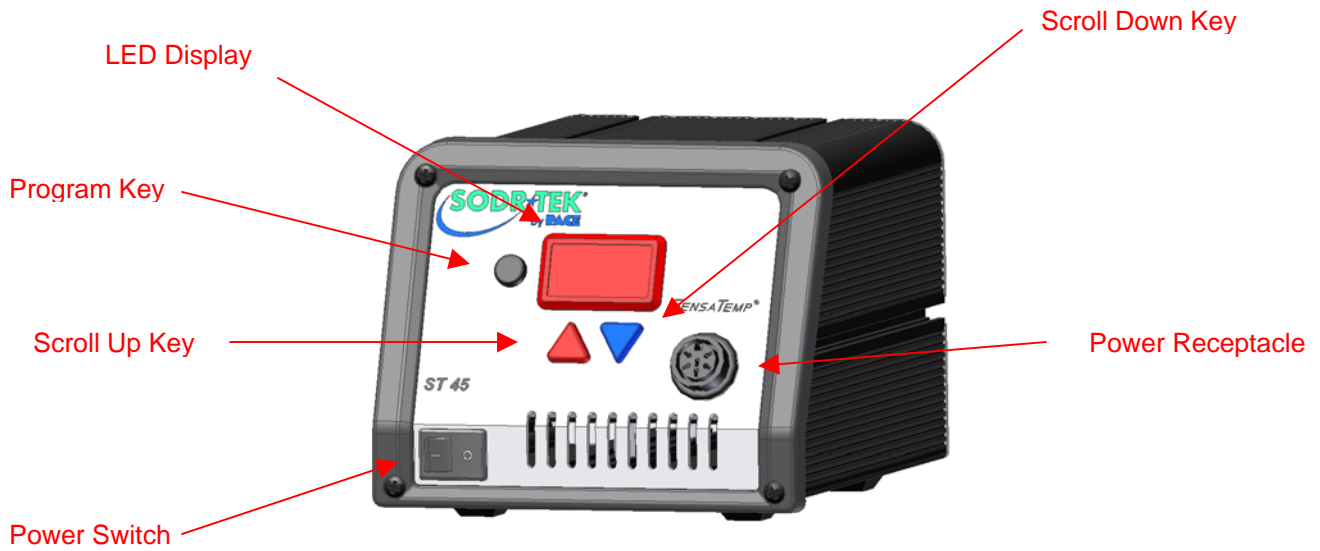
NOTE: Actual minimum and maximum Operating Tip Temperatures may vary depending on Handpiece, Tip Selection and application.

EOS/ESD Specifications

The specifications shown below apply except on "Soft Ground Systems" which have a 1meg ohm current limiting resistance and a label placed on the power source front panel referring to EN 100015-1.

Tip-To-Ground Resistance: Less than 2 ohms.
AC Leakage: Less than 2 Millivolts RMS from 50Hz to 10MHz.
Transient Level: Less than 500mV peak, out to 100MHz.

Parts Identification



Safety

Safety Guidelines

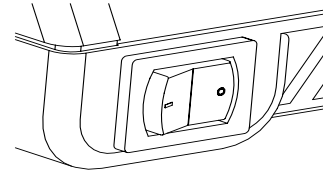
The following are safety precautions that personnel must understand and follow when using or servicing this product.

1. **POTENTIAL SHOCK HAZARD** - Repair procedures on PACE products should be performed by Qualified Service Personnel only. Line voltage parts may be exposed when the equipment is disassembled. Service personnel must avoid contact with these parts when troubleshooting the product.
2. To prevent personnel injury, adhere to safety guidelines in accordance with OSHA and other applicable safety standards.
3. SensaTemp handpiece heaters and installed tips are hot when the handpiece is powered on and for a period of time after power off. **DO NOT** touch either the heater or the tip. Severe burns may result.
4. PACE Tip & Tool Stands and handpiece cubbies are designed specifically for use with the associated handpiece and houses it in a manner that protects the user from accidental burns. Always store the handpiece in its holder. Be sure to place the handpiece in its holder after use and allow for cooling before storing.
5. Always use PACE systems in a well ventilated area. A fume extraction system such as those available from PACE are highly recommended to help protect personnel from solder flux fumes.
6. Exercise proper precautions when using chemicals (e.g., solder paste). Refer to the Material Safety Data Sheet (MSDS) supplied with each chemical and adhere to all safety precautions recommended by the manufacturer.

System Set-Up

Set up the ST 45 system using the following steps and associated drawings.

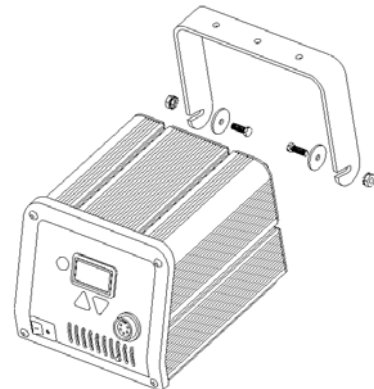
1. Store the shipping container in a convenient location. Reuse of these containers will prevent damage if you store or ship your system.
2. Place the Power Switch in the "OFF" or "0" position.



Mounting Options

The ST 45 can be placed directly on a workbench or it also can also be mounted under a workbench or shelf to conserve space (**optional mounting bracket sold separately**). To mount the system in this way:

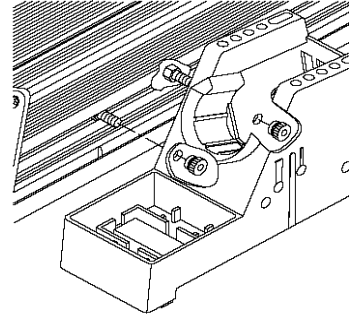
1. Mount the bracket in the desired location (fasteners not supplied).
2. Insert the 2 Mounting Screws (head first) into the power source mounting slots.
3. Place the washers over the screws.
4. Fit the power source between the bracket's support arms and place the screws into the slots on the support arms.
5. Place the nut on the screw and tighten by hand.
6. Angle the power source so the operator can see the display easily and tighten the nuts with a wrench or pliers.



Tip & Tool Stand

The Tip & Tool Stand can be mounted to the power source. If the system will be placed on the workbench, this is recommended. If the ST 45 is to be mounted under the workbench or shelf, the Tip & Tool Stand should not be mounted to the power source.

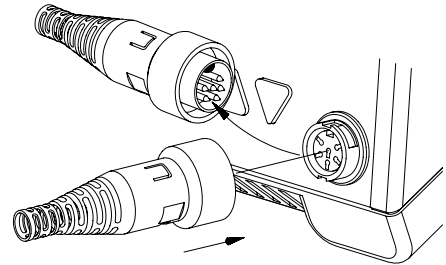
1. To attach the stand to the power source:
 - a) Insert the 2 large hex head Mounting Screws (head first) into the lower "T" slot on the side of the power source case as shown.
 - b) Place the Tip & Tool Stand beside the power source. Insert ends of the 2 Mounting Screws into the 2 Tip & Tool Stand mounting holes as shown.
 - c) Install a Thumb Nut onto the end of each Mounting Screw and tighten Thumb Nuts.
2. Place the handpiece into its Tip & Tool Stand.



Handpiece Connection

Connect the handpiece connector plug into the Power Receptacle in the following manner.

1. Align guide on connector with slot on power receptacle.
2. Insert connector into power receptacle.
3. Turn the connector housing clockwise to lock in place.



System Power Up

1. Insert the female end of the power cord into the AC Power Receptacle on the rear panel of the power source.
2. Plug the prong end (male end) of the power cord into an appropriate 3 wire grounded AC supply receptacle.

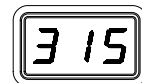
CAUTION: To insure operator and ESD/EOS safety, the AC power supply receptacle must be checked for proper grounding before initial operation.

NOTE: Ensure that the system is placed in a well-ventilated area. Smoke will be generated during the burn in cycle and while soldering. Fume extraction equipment is recommended

Heater Burn In Procedure

Use the following instructions to perform the Heater Burn In procedure.

1. Place the Power Switch in the "OFF" (0) position.
2. Ensure that the handpiece is connected to the power source. If a plastic cap is present on the heater assembly, remove it and discard. The cap is used for shipping purposes only.
3. Press and hold the Program (Ⓢ) and Scroll Up (▲) keys together.
4. Place Power Switch in "ON" (I) position.
5. The display will read "brn" when the Program (Ⓢ) and Scroll Up (▲) keys are released.
6. Press the Scroll Up (▲) Key to initiate the Burn In Mode. The handpiece heater will begin to heat. The temperature of the heater will stabilize at 315°C (600 °F) for 10 minutes.



7. At the conclusion of the 10-minute period, the heater temperature will increase to 427°C (800°F) for 15 minutes.
8. At the conclusion of the 15-minute time period, the heater is turned off and the Display will read "End". Press and release the Scroll Up Key (▲) to exit Heater Burn In and return the to normal operation.



CAUTION: The heater will be hot at the conclusion of the Burn In procedure.

The microprocessor circuitry within the unit monitors the system and if any abnormalities are encountered, the Burn In cycle will be interrupted and an error message displayed. Should this occur, turn the system off and perform the procedure again. If the cycle is interrupted a second time, refer to the Corrective Maintenance section of this manual.

This procedure should be performed whenever a new handpiece or heater is connected to the system.

Definitions

Please read and become familiar with the definitions of each of the following terms that are used repeatedly in the following operational procedures.

Auto-Off: Safety feature that turns power off (10-90 minutes, settable in 10 minute increments) after the system has entered Temperature Setback.

Normal Operation: Normal operating mode of the system in which the Operating Tip Temperature is displayed.

Set Tip Temperature: The operator selected idle tip temperature entered into the system memory.

Set-Up Mode: Mode of operation in which the operator can quickly and easily adjust the system parameters (e.g., temperature limits, password, setback time).

Temperature Adjust Mode: Mode of operation where the Set Tip Temperature may be adjusted.

Temperature Display Impedance (TDI) Mode: Stabilizes the tip temperature shown on the LED Display by ignoring minor temperature fluctuations. Displayed changes in temperature are delayed (impeded) for two seconds when a load is applied to the tip. Two seconds after the load is removed, the displayed temperature will begin rising to set temperature. Particularly useful in a production environment for monitoring of set temperatures, since under most production circumstances the temperature will not deviate.

Temperature Setback: System feature that will independently set back the Set Tip Temperature to 177°C (350°F) after a user selected period of handpiece inactivity (10 to 90 minutes, settable in 10 minute increments). This feature is enabled (or disabled) in the Set-Up Mode.

Tip Offset Constant: Specific value for a given handpiece/tip combination upon which the system automatically calculates the correct Tip Temperature Offset at any entered Set Tip Temperature. This value is the temperature loss (Tip Temperature Offset) at 371°C (700°F) and is set in the Set-Up Mode. A value of 0-115°C (0-240°F) may be entered in the Set-Up Mode.

Password: The Password feature of the ST 45 system will prevent unauthorized alteration of stored system temperature parameters and feature settings (refer to Table I, "Factory Settings"). If a Password has been installed, the LED Display will display an instruction to enter the Password (a 5 key sequence of the keys on the system front panel) when a setting change is attempted.

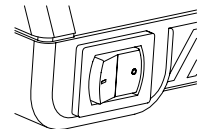
Tip Temperature Compensation: Differences between the temperature settings and true tip temperatures are negligible when using Thru-Hole, single point soldering tips. With any heating system however, True Tip Temperatures can differ greatly from temperature settings when using larger SMT soldering tips. This difference is called Tip Temperature Offset. The ST 45 Auto Tip Temperature Compensation feature lets you set and display true tip temperatures regardless of size and type of tip or handpiece. PACE recommends the use of the Tip & Temperature Selection System booklet (PACE P/N 5050-0251) as a guide to accurately set and maintain a true tip temperature for any size and type of SMT tip. The booklet contains a listing of PACE tip information including the Tip Offset Constant (for each tip), which must be stored in system memory to ensure tip temperature accuracy. Refer to the "Set-Up Mode" section of this manual for instructions on using this feature.

The ST 45 system is very easy to adjust and operate. The following instructions detail system features and operation of the system. Also included is a "Quick Start" procedure. Information regarding changing of system options (e.g., Temperature Setback time, Auto Off) is contained in the "Customizing Your System" portion of this manual.

Quick Start Procedure

As received from the factory, the system can be quickly set up for use in standard soldering operations. Simply perform the following Quick Start Procedure to begin using the system. The systems can be stacked on each other for convenience and to preserve bench top space.

1. Ensure that the Set-Up procedure has been performed; including the Heater Burn In procedure. Check for the following:
 - a) Handpiece connection to the power source.
 - b) Proper tip installed in handpiece.
 - c) Power cord connection between an appropriate AC supply receptacle and the power source.
2. Turn the Power Switch "On" ("I").
3. Press the Scroll Up (▲) Key to enter the Temperature Adjust Mode.
4. Press the Scroll Up (▲) Key to increase the desired Tip Temperature. Press the Scroll Down (▼) Key to decrease the desired Tip Temperature.
5. Press the Program Key (Ⓞ↻). The system will now return to normal operation.
6. Observe the Digital Readout as the temperature reaches and stabilizes at the Set Tip Temperature



NOTE: Read the "Operation" and "Customizing Your System" sections of this manual to utilize the full capabilities of the system. This is especially important when using large soldering tips or other SensaTemp handpieces.

IMPORTANT: PACE recommends that you not read the "Customizing Your System" section until after you feel comfortable with system operation. Please read the following "Operation" section thoroughly before changing the system settings.

Operation

1. Ensure that the Set-Up procedure has been performed; including the Heater Burn In procedure. Check for the following:
 - a) Handpiece connection to the power source.
 - b) Proper tip installed in handpiece.
 - c) Power cord connection between an appropriate AC supply and the power source.
2. Turn the Power Switch On ("I").
3. Press the Scroll Up(▲)Key. The Set Temperature is now displayed, immediately perform step 4. If a Password has been previously programmed into the system, "EPO" will be appear on the LED Display at this point. When this message appears, the operator must enter the correct Password before adjusting the temperature.
4. Adjust the temperature by pressing and holding Scroll Up(▲)Key or Scroll Down(▼)key. Observe the display as the Set Temperature increases first in increments of 1° and then in increments of 10°. When the desired temperature is reached, release the key. **NOTE:** The Set Temperature can only be within the set temperature limits. If the lower limit is reached, the display will read off. If the upper limit has been reached, the display will read "HiL". Temperature limits can be adjusted in the Set-Up Mode
5. Press the Program Key (Ⓞ) and the system will return to normal operation.
6. Observe the Digital Readout as the temperature reaches and stabilizes at the Set Tip Temperature
7. Manually force the system into Temperature Setback by pressing and holding the Scroll Down(▼)Key and the Scroll Up(▲)Key.
8. When the display begins to blink, the system is in Temperature Setback mode and will reduce the set temperature to 177°C (350°F). **NOTE:** If Auto Off has been enabled in the Set-Up Mode, the system will enter Auto Off (temperature Off and LED Display flashing "Off") after the preset time of handpiece inactivity. Auto Off can be exited by pressing any key.
9. To exit Temperature Setback mode, perform any one of the following:
 - a) Press and release a Key (any of the 3 keys). This is the preferred method.
 - b) Wipe the hot handpiece tip on a wet sponge to lower the tip temperature.
 - c) Turn the Power Switch Off ("O") and then back on ("I").
10. The system is now in normal operation. Observe the LED Display as the tip temperature reaches and stabilizes at the Set Temperature. Allow time for the temperature to stabilize at the Set Temperature before using.

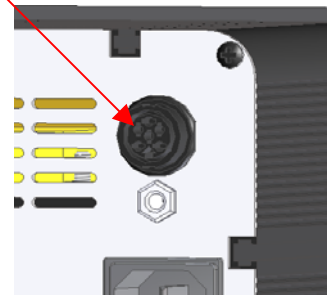
NOTE: Read the "Customize Your System" sections of this manual to utilize the full capabilities of the system.

TEKLINK

The TEKLINK receptacle located on the back panel of the power supply allows you to interface your ST 25/45 with the **AUTO SNAP-VAC** and **PRESSURE** features of the SodrTek ST 125/145 system. This feature gives you the freedom to operate air-controlled handpieces (SX-70/80, TP-65, or TJ-80) from your ST 25/45 system through the **AUTO-SNAP-VAC** and **PRESSURE** ports of the ST 125/145. To link your ST 25 system to the ST 125/145 system, perform the following procedure.

1. Place your ST 25/45 system adjacent to (side by side) or stacked on top of the ST 125/145 system.
2. Use the TEKLINK cable (sold separately) to connect the systems together. The TEKLINK Receptacle is located on the back panel of each power supply.
3. Ensure the VisiFilter assembly is connected to either the ST 125/145 **AUTO SNAP-VAC** Port.
4. Connect the air hose of the handpiece being used, to either the VisiFilter assembly or the controllable **PRESSURE** port.

TEKLINK Receptacle







The TEKLINK Remote Box (sold separately) allows the connection of up to three ST 25/45 systems in any combination.

NOTE: Systems connected together through the TEKLINK system must be used and controlled by a single operator. Any attempt to operate by more than one individual can create a hazard condition and will cause deterioration in performance.

CAUTION: Ensure that only one air hose is connected to the **AUTO SNAP-VAC** or controllable **PRESSURE** port at one time. Attachment to both ports simultaneously will cause deterioration in performance.





LED Display, Normal Operation

The LED Display provides a 3-digit display of temperature information. The LED Display will show:

1. A display of "888" on initial power up to ensure that all LEDs on the display are working. 
2. A display of the software version of the installed microprocessor (e.g., "1-2") for 2 seconds on initial power up after the "888" is displayed.
3. Actual tip temperature of the connected handpiece during normal operation.
4. The tip temperature displayed will flash when the system is in Temperature Setback. 
5. The displayed temperature will decrease and stabilize at 177°C (350°F) when the system is in Temperature Setback.
6. "OFF" when the Set Tip Temperature has been set to Off (below minimum set tip temperature). Refer to the "Set-Up Mode" portion of this manual. 
7. "OFF" plus the LED Display will be flashing when the unit has entered Auto Off. Refer to the "Set-Up Mode" portion of this manual.
8. Error messages ("OSE", "SSE" or "OCE") if a system fault is detected. Refer to the "Corrective Maintenance" portion of this manual. 

LED Display, Temperature Adjust Mode

The LED Display will show the following when adjusting the desired Set Tip Temperature.

1. The Set Tip Temperature.
2. "HiL" (High Temperature Limit) when adjusting the set tip temperature and the maximum allowable temperature is exceeded. Refer to the "Set-Up Mode" portion of this manual. 
3. "OFF" (Low Temperature Limit) when adjusting the set tip temperature and the minimum allowable temperature is exceeded. Refer to the "Set-Up Mode" portion of this manual. 
3. "EPO" will be displayed if a Set Tip Temperature adjustment is attempted and a Password has been stored in system memory. As the Password is entered, the zero will increase by one as each key entry is made. Upon entry of the fifth password key, the display will change to the Set Tip Temperature if the entered Password matches the stored Password. 
5. "no" will be displayed if the entered password does not match the stored Password. 

Temperature Setback Mode

To preserve tip life and save energy, the ST 45 system can be programmed to automatically set back its Tip Temperature to 177°C (350°F) after a selected period of handpiece inactivity (adjustable 10-90 minutes in Set-Up Mode). As received from the factory, this feature is enabled. Refer to the "Set-Up Mode" section of this manual to disable or adjust the time-out period of this feature. The operator can also force the system into Temperature Setback.

Activating Temperature Setback: There are two ways to activate the Temperature Setback feature.

1. **AUTOMATIC ACTIVATION:** The system can be programmed so that this feature will automatically activate after a pre-selected period (10-90 minutes) of handpiece inactivity. See the "Customizing your System" section for details on programming this feature.
2. **MANUAL ACTIVATION:** The operator can manually force the system to place the system in Temperature Setback by performing the following procedure.
 - a) Press and hold the Scroll Down (▼) Key.
 - b) Press the Scroll Up (▲) Key.
 - c) Release both keys.

Exiting Temperature Setback: Listed below are 3 ways to exit Temperature Setback.

1. Press and release either Scroll Key (▲) or (▼). This is the preferred method.
2. Wipe the hot handpiece tip on a wet sponge to lower the tip temperature.
3. Method "1" is preferred but you can turn the Power Switch "OFF" (0) and then back "ON" (1).

Set Tip Temperature and Tip Offset Constant values will be simultaneously restored. For optimum performance, do not attempt to use the attached handpiece until the Set Tip Temperature is achieved.

Auto Off Safety System Mode

When enabled, the Auto Off safety system of the ST 45 system turns off the power to the handpiece 10-90 minutes after entering Temperature Setback. When the system has entered Temperature Setback, an Auto Off timer within the system circuitry will start running (if Auto Off is turned on in Set-Up Mode):

1. If any key is pressed during the selected time out period, the Auto Off timer is reset. The system will return to normal operation.
2. At the end of the time out period, the system will enter Auto Off. Power is turned off to the heater and the LED Display will show a flashing "OFF".

Exiting Auto Off: Auto Off can be exited; returning to normal operation by:

1. Pressing and releasing a Key (either of the 3 keys), or
2. By turning the Power Switch OFF ("0") and then back ON ("1").

Customizing Your System

Introduction

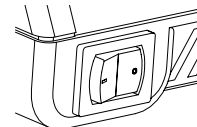
The menu driven LED Display of the ST 45 system allows you to easily customize your system. In Set-Up Mode, you can:

- Enter, remove or change a Password.
- Set the Default Temperature scale to °F or °C as desired.
- Change the Upper and Lower Temperature limits.
- Enter a Temperature Offset Constant (Auto Tip Temperature Compensation).
- Enable or disable the Temperature Setback feature and adjust the time-out period (if enabled).
- Enable or disable the Auto Off feature and adjust the time-out period (if enabled).
- Enable or disable the Temperature Display Impedance (TDI) mode.

The following instructions should be performed to familiarize the operator with the system.

Entering Set-Up Mode

1. Place Power Switch in the "OFF" ("0") position.



2. Press and hold the Program Key (Ⓞ) while turning on the Power Switch ("I" position).

Password

3. The LED Display will display the version of the microprocessor and change to read "P--" or "EP0".
4. If the display reads "EP0", a Password has been stored in system memory. Enter the 5 key sequence Password (the 5 key sequence is made up from the up, down, and program keys). If the Password entered is incorrect, "no" appears on the display and the system then returns to normal operation. If this occurs, repeat steps 1 through 5 and enter the correct Password.
5. The LED Display reads "P--". Choose one of the following options:
 - a) Press the Program Key (Ⓞ) to keep the currently stored Password (including no Password).
 - a) Press and release the Scroll Up(▲) Key to enter a new Password.
 - b) Press and release the Scroll Down(▼) Key if you wish to remove a stored password or do not wish to store a Password.
6. If the LED Display now reads "EP0", select and enter a 5 key password sequence. Make a note of the entered Password. As the Password is entered, the last digit of the display will count up with each key entry. After the fifth key entry, proceed to step 8.

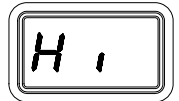
Temperature Scale

7. The LED Display now shows the stored default Temperature Scale (°C or °F temperature shown on LED Display). Choose one of the following:
 - a) Press the Program Key (Ⓞ) to keep the stored default Temperature Scale.
 - b) Press and release the Scroll Up(▲) Key to change the default Temperature Scale. Press and release the Program Key.



Temperature Limits

8. The LED Display now shows the stored default High ("Hi") Temperature Limit with the display alternating to show "Hi" and the stored limit. Choose one of the following:
 - a) Press and release the Program Key (Ⓞ) to keep the stored High Temperature Limit.
 - b) Press and release the Scroll Up(▲) Key to increase the stored High Temperature Limit (up to 454°C, 850°F). Press and release the Program Key to proceed to the next step.
 - c) Press and release the Scroll Down(▼) Key to decrease the stored High Temperature Limit. Press and release the Program Key to proceed to the next step.
9. The LED Display now shows the stored default Low ("Lo") Temperature Limit with the display alternating to show "Lo" and the stored limit. Choose one of the following:
 - a) Press and release the Program Key (Ⓞ) to keep the stored Low Temperature Limit (204°C, 400°F).
 - b) Press and release the Scroll Up(▲) Key to increase the stored Low Temperature Limit. Press and release the Program Key to proceed to the next step.
 - c) Press and release the Scroll Down(▼) Key to decrease the stored Low Temperature Limit. Press and release the Program Key to proceed to the next step.



Offset Constant

10. The LED Display now shows the stored Offset Constant with the display alternating to show "OF" and the stored Offset Constant. Choose one of the following:

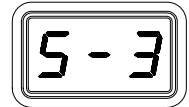


- Press and release the Program Key (Ⓞ) to keep the currently stored Offset Constant.
- Press and release the Scroll Up (▲) Key to increase the stored Offset Constant. An Offset Constant of 0-133°C (0-240°F) can be stored. Press and release the Program Key to proceed to the next step.
- Press and release the Scroll Down (▼) Key to decrease the stored Offset Constant. Press and release the Program Key to proceed to the next step.

NOTE: If the attached handpiece is disconnected when the system is powered up, any stored Offset Constant is reset to zero. The Offset Constant must be entered again in the Set-Up Mode.

Temperature Setback

11. The LED Display now shows the stored Temperature Setback time as "S-X" (x=0 thru 9). Time is shown as tens of minutes (e.g., "S-3" equals 30 minutes). A display of "S- 0" indicates that Setback is disabled. Choose one of the following:



- Press and release the Program Key (Ⓞ) to keep the currently stored Temperature Setback time.
- Press and release the Scroll Up (▲) Key to enable and/or increase the stored Temperature Setback time. Press and release the Program Key to proceed to the next step.
- Press and release the Scroll Down (▼) Key to decrease or disable the stored Temperature Setback time. Press and release the Program Key to proceed to the next step.

Auto Off

12. The LED Display now shows the stored Auto Off time as "AOx" (x=0 thru 9). Time is shown as tens of minutes (e.g., "AO3" equals 30 minutes). A display of "AO0" indicates that Auto Off is disabled. Choose one of the following:



- Press and release the Program Key (Ⓞ) to keep the currently stored Auto Off time.
- Press and release the Scroll Up (▲) Key to enable and/or increase the Auto Off. Press and release the Program Key to proceed to the next step.
- Press and release the Scroll Down (▼) Key to decrease or disable the stored Auto Off time. Press and release the Program Key to proceed to the next step.

Temperature Display Impedance

13. The LED Display now shows the Temperature Display Impedance mode as Enabled or Disabled ("AC0" = Disabled and "AC1" = Enabled). Choose one of the following:



- Press and release the Program Key (Ⓞ) to keep the currently stored setting (Disabled or Enabled).
- Press and release the Scroll Up (▲) Key to change the stored setting (Disabled or Enabled). Press and release the Program Key to proceed to the next step.

Exiting Set-Up Mode

14. The LED Display now reads "End". The Set-Up Mode procedure is now complete. Choose one of the following steps:

- Press and release the Scroll Up (▲) Key to exit Set-Up Mode and return to normal operation.
- Press and release the Scroll Down (▼) Key to return to the start of the Set-Up Mode procedure. Go back to step 4.



Factory Settings

The ST 45 systems come equipped with a number of features, which may be adjusted as desired by the user. Listed below are the features and factory settings of each. To change and/or learn about any of these features, refer to the applicable part of the "Customizing Your System" section of this manual.

Feature	Factory Setting
Password	None Entered
Default Temperature Scale (°C/°F)	°F for 115 VAC Systems
	°C for 230 VAC Systems
"HI" (Upper) Temperature Limit	454 °C (850 °F)
"LO" (Lower) Temperature Limit	204 °C (400 °F)
Set Temperature	"OFF"
Tip Offset Constant	"0"
Temperature Setback	Enabled, 30 minutes
Auto Off	Enabled, 30 minutes
Temperature Display Impedance Mode	Enabled

Factory Settings




Corrective Maintenance


System Accuracy and Calibration

No calibration adjustments are necessary to maintain the accuracy of the system.

LED Display Message Codes

Listed below are message codes, which, may be shown on the LED Display if a mistake were to be made by the operator (e.g., wrong Password entry) or if the system has malfunctioned.

LED Display Message	Description
	The incorrect password has been entered. The displayed message will time out after 6 seconds and revert to normal operation. Enter the correct password.
	No handpiece is connected to the power receptacle. Connect handpiece.
	The handpiece heater assembly sensor is open. Refer to the appropriate handpiece manual
	The handpiece heater assembly sensor is shorted. Refer to the appropriate handpiece manual

	The handpiece heater assembly may be defective. Refer to the appropriate handpiece manual
	Power source malfunction. Contact PACE or your authorized local representative for assistance.

LED Display Message Codes

Power Source

Most malfunctions are simple and easy to correct.

Symptom	Probable Cause	Solution
No power to system	Blown Fuse	Check handpiece using Heater Assembly Checkout Procedures in the appropriate handpiece manual. Replace the fuse (located in the AC Receptacle Fuse Holder) with one of the same rated value (see Table 4, Spare Parts)
Handpiece will not heat	Defective Heater	Refer to the appropriate handpiece manual
	Power Source Malfunction	Contact PACE

Power Source Corrective Maintenance

Handpieces

Please refer to the specific handpiece manual for the “Heater Assembly Checkout Procedures.”

Packing List

Item #	Description	Part Number	ST 45 Only	ST 45 E Only	ST 45 with PS-90	ST 45E with PS-90
1	System Power Supply	7008-0266-01	1	0	1	0
2	System Power Supply (Export)	7008-0266-02	0	1	0	1
3	PS-90 Handpiece Kit (51W)	6993-0199-P1	0	0	1	1
4	PS-90 High Capacity Chisel Tip	1122-0010	0	0	1	1
5	Power Cord, 115V	1332-0094	1	0	1	0
6	Power Cord, 230V	1332-0093	0	1	0	1
7	Tip Tool	1100-0206	0	0	1	1
9	Hot Grip Removal Pad	1100-0307	0	0	1	1
10	Operations Manual CD	CD5050-0459	1	1	1	1

Packing List

Spare Parts

Item #	Description	PACE Part Number
1	Fuse, 1.0 Amp Time Lag (ST 45)	1159-0246-P5
	Fuse, 1.0 Amp Time Lag (ST 45E)	1159-0213-P5
2	Tip & Temperature Selection Chart	5050-0251
3	Replacement PCB Assembly	6020-0189-P1
4	TEKLINK Cable	1332-0252-P1
5	TEKLINK Remote Box	3008-0218-P1
5	Optional Under Workbench Mounting Bracket	1321-0609-P1

Spare Parts

Service

Please contact PACE or your local distributor for service and repair.

“SODRTEK by PACE” LIMITED WARRANTY STATEMENT

Limited Warranty

Seller warrants to the first user that products manufactured by it and supplied hereunder are free of defects in materials and workmanship for a period of one (1) year from the date of receipt by such user. Monitors, computers and other brand equipment supplied but not manufactured by PACE are covered under their respective manufacturer's warranty in lieu of this Warranty.

This warranty does not cover wear and tear under normal use, repair or replacement required as a result of misuse, improper application, mishandling or improper storage. Consumable items such as tips, heaters, filters, etc. which wear out under normal use are excluded. Failure to perform recommended routine maintenance, alterations or repairs made other than in accordance with Seller's directions, or removal or alteration of identification markings in any way will void this warranty. This warranty is available only to the first user, but the exclusions and limitations herein apply to all persons and entities.

SELLER MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Seller will, at its option, repair or replace any defective products at its facility or other location approved by it at no charge to user, or provide parts without charge for installation by the user in the field at user's expense and risk. User will be responsible for all costs of shipping equipment to Seller or other location for warranty service.

EXCEPT FOR THE REMEDY ABOVE DESCRIBED, UNLESS OTHERWISE REQUIRED BY APPLICABLE LAW, SELLER WILL HAVE NO OTHER OBLIGATION WITH REGARD TO ANY BREACH OF WARRANTY OR OTHER CLAIM WITH RESPECT TO THE PRODUCTS, OR LIABILITY FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, OR INCIDENTAL LOSS OR DAMAGE CAUSED BY OR OCCURRING IN CONNECTION WITH ANY OF THE PRODUCTS.

Warranty service may be obtained by contacting the appropriate PACE Company or local Authorized PACE distributor as set forth below to determine if return of any item is required, or if repairs can be made by the user in the field. Any warranty or other claim with respect to the products must be made with sufficient evidence of purchase and date of receipt, otherwise user's rights under this warranty shall be deemed waived.

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FAX: 301-498-3252

For PACE EUROPE Customers:

PACE EUROPE LIMITED
Sherbourne House, Sherbourne Drive,
Tilbrook, Milton Keynes
MK7 8HX
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Tel. (44) 1908 277666
WARRANTY SERVICE FAX: (44) 1908 277 777

All other Customers:

Local Authorized PACE Distributor

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