Operation and Maintenance Manual for MTS Rework Systems

(P/N 5050-0520, Rev A-PRM)

	Voltage	Part Number
MTS 200 SC System	115 VAC	8007-0414
MTS 200 SC System	230 VAC	8007-0415
MTS 200 SA System	115 VAC	8007-0412
MTS 200 SA System	230 VAC	8007-0413
MTS 300 System	115 VAC	8007-0418
MTS 300 System	230 VAC	8007-0419
MTS 350 System	115 VAC	8007-0416
MTS 350 System	230 VAC	8007-0417

(Shown with optional TD-100 and SX-80 Handpieces)

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Introduction

The MTS family of rework systems offer the greatest level of flexibility for your operations. PACE offers 10 different handpieces that can be used with the MTS systems. MTS systems feature HEATWISE performance control technology. The key to HEATWISE is PACE's POWERMODULES. Power Modules control the performance level of the attached handpiece(s) and a wide range of Power Modules are available. Power Modules are clearly visible from a distance so you can tell what performance level operators are using for quick and easy process verification and by restricting access to POWERMODULES, you can protect your process by locking operators into using the performance level you specify. The MTS 200 is available in a self contained version as well as a shop air version. The MTS 200 provides 2 handpiece channels that are active simultaneously. One channel can power any of PACE's Heater Cartridge (HC) handpieces and the other can power any of PACE's Fixed Heater (FH) Handpieces. See chart below. The MTS 300/350 provides 3 handpiece channels that are simultaneously active. The MTS 300 features 2 HC channels and one FH channel, the MTS 350 features 1 HC channel and 2 FH channels. The system also comes standard with Auto-Setback and Auto-Off functions to preserve tip life.

HC Handpieces	FH Handpieces
TD-100 ThermoDrive Soldering Iron	PS-90 Soldering Iron
MT-100 MINITWEEZE	PS-70 Soldering Iron
	SX-70 Sodr-X-Tractor
	SX-80 Sodr-X-Tractor
	TF-65 ThermoTweeze
	TJ-70 Thermojet
	TJ-80 ThermoJet
	TP-65 ThermoPik

Packing Contents

Description	MTS-200	MTS 300	MTS 350
Power Supply	One MTS 200 Power Supply	One MTS 300 Power Supply	One MTS 350 Power Supply
AC Power Cord	One	One	One
Power Module	Two #7 1207-0362-05-P1	Three #7 1207-0362-05-P1	Three #7 1207-0362-05-P1
CD Manual	One	One	One

Specifications

Specification	MTS 200	MTS 300/350
Power Requirements	97-127 VAC 50/60 Hz, 200 W Max or 197-253 VAC 50/60 Hz, 200 W Max	97-127 VAC 50/60 Hz, 200 W Max or 197-253 VAC 50/60 Hz, 200 W Max
Dimensions	184mm H x 107mm W x 122mm D (7.25" H x 4.2" W x 4.8" D)	184mm H x 107mm W x 122mm D (7.25" H x 4.2" W x 4.8" D)
Weight	3.8 Kgs (8.3 lbs)	
Tip to Ground Resistance	< 2 Ohms	
Temperature Stability	Within +/- 5 °C (9 °F), idle tip temperature	
Abs. Temp. Accuracy	N/A	
Performance Level Range	260 °C - 425 °C (500 °F – 800 °F) Available Power Module Performance Levels: 5, 5.5, 6, 6.5, 7, 7.5, & 8	

Environmental Requirements

Ambient Operating Temperature: 0 ºC to 50 ºC (32 ºF to 120 ºF)
Storage Temperature: -20 ºC to 75 ºC (-4 ºF to 170 ºF)
95% Humidity, non-condensing max.

Electrical Specifications

MTS 200 1.3 Amp 115 VAC, 60 Hz Max OR .7 Amp, 230 VAC, 50 Hz Max
Fuse: 2 Amp, SloBlo 115 V System - 1 Amp TimeBlo, 230 V System

MTS 300 1.3 Amp 115 VAC, 60 Hz Max OR .7 Amp, 230 VAC, 50 Hz Max
Fuse: 2 Amp, SloBlo 115 V System - 1 Amp TimeBlo, 230 V System

MTS-350 1.3 Amp 115 VAC, 60 Hz Max OR .7 Amp, 230 VAC, 50 Hz Max
Fuse: 2 Amp, SloBlo 115 V System - 1 Amp TimeBlo, 230 V System

Figure 1: MTS 200 System

Safety Guidelines

English Language 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

To set up an MTS system use the following steps and associated images.

1. Store the shipping container in a convenient location. Reuse of the container will prevent damage if you store or ship your system(s).
2. Place the Power Switch in the “OFF” or “0” position. See Figure 2.

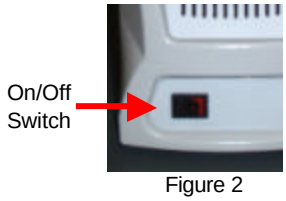


Figure 2

Mounting Options

1. MTS systems can be placed directly on a work surface or can be placed inside the optional Tool Chest.

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.

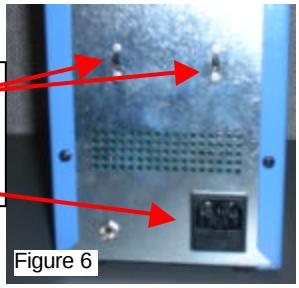


Figure 6

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. Fume extraction equipment is recommended when melting solder or heating flux or flux containing solders.

Handpieces

MTS systems can be used with any combination of TD-100 ThermoDrive Soldering Irons, MT-100 MiniTweezers, PS-70, PS-90, SX-70, SX-80, TT-65, TJ-70, TJ-80 and TP-65. All handpieces are purchased separately. The MTS system's handpiece ports are either black or red. Red ports can connect to the TD-100 and MT-100 ONLY. The Black ports can be connected to the PS-70, PS-90, SX-70, SX-80, TT-65, TJ-70, TJ-80 or TP-65. FIXED HEATER HANDPIECES CANNOT BE CONNECTED TO THE RED PORTS AND HEATER CARTRIDGE HANDPIECES CANNOT BE CONNECTED TO THE BLACK PORTS BECAUSDE THE CONNECTORS ARE NOT COMPATIBLE.

Handpiece Tip & Tool Stands

The Tip & Tool Stand is usually placed on the workbench next to the power source.

Adjusting the Angle of the Cubby

Some Handpiece Tip & Tool stands have adjustable cubbies. For example, the angle of the TD-100 Cubby may be adjusted by loosening the angle adjustment screw slightly, adjusting the cubby to the desired angle, and tightening the adjustment screw. See Figure 3.

Figure 3

Handpiece Connection

When connecting a handpiece, always match the color on the connector and handpiece port on the system. For example, HC handpieces have the red connector and will only connect to red ports. See Figure 4. Likewise, Fixed Heater handpieces have black connectors and can only be connected to black ports.

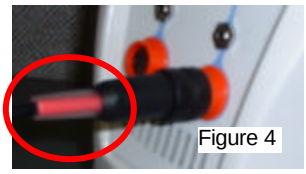


Figure 4

To connect the handpiece to the power supply, refer to figure 5. Connect the handpiece connector plug into the Power Receptacle in the following manner.

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

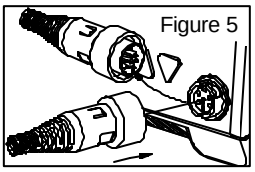


Figure 5

Tip Cartridge Installation for the TD-100 and MT-100

Both TD-100 and MT-100 tip cartridges are fitted with a key lock device. This feature ensures that tip cartridges are held firmly in position and will maintain their orientation. MT-100 tip cartridges CANNOT be fully inserted into the TD-100 and TD-100 tip cartridges CANNOT be fully inserted into the MT-100. To install a tip cartridge, please follow the procedure below.

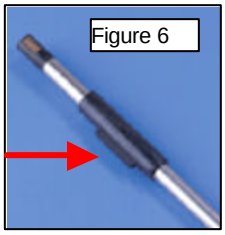
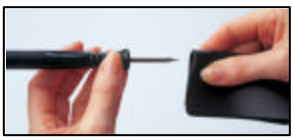


Figure 6

1. Line up the key lock feature on the tip cartridge with the notch on the front of the handpiece. See Figure 6.
2. Push the tip cartridge all the way into the handpiece.

To remove a tip cartridge, use the hot grip removal pad that is included with each handpiece to grasp the tip cartridge and pull the tip cartridge out of the handpiece. Be careful when completing this procedure as the tip cartridge may be hot and direct contact can cause injury.



Tips cartridges can be changed at any time and without turning off the power to the unit.

For information on all Fixed heater handpieces, please refer to the individual handpiece instructions included with the handpiece or on the CD manual included with the power source.

Operation of the MTS Systems

MTS systems require the use of Power Modules. The Power Module selects the desired heat/performance level for operation. MTS systems come standard with two or three #7 Power Modules. Additional Power Modules are available in performance levels of 5, 5.5, 6, 6.5, 7.5, and 8. Please refer to the Accessory Section for Power Module part numbers. A heat level of 5 corresponds to a nominal temperature of 500 °F; a heat level of 6.5 corresponds to a nominal temperature of 650 °F, etc. Actual temperatures may vary slightly due to tip geometry.

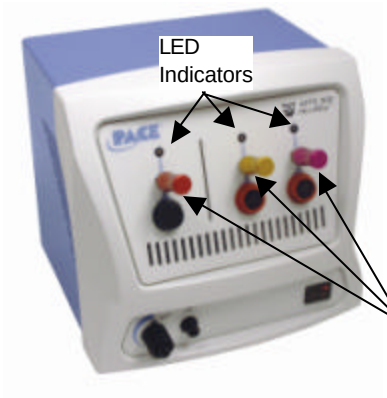


Figure 7

Verify the following:

a) Power cord connection between an appropriate AC supply receptacle and the power source.
b) Handpiece connection to the power source.
c) Desired Power Module is installed.

If the power is turned on while a Power Module is not installed, or if the Power Module is removed during operation, the system will turn itself off and the LED indicator light on the front panel will turn red. See Figure 7.

To operate the unit, please make sure the set-up procedure has been followed. Then follow the procedure below.

1. If using the TD-100 handpiece, make sure the desired Tip Cartridge is installed. If using the MT-100, make sure the desired pair of tips are installed.
2. Install the desired Power Module into the Power Port on the front of the unit that corresponds to the appropriate handpiece channel.
3. The LED indicator will turn amber while the tip(s) is(are) heating to the desired performance level.
4. Once the tip has reached the desired level, the LED indicator will turn green and the system is ready to use.

To preserve tip life and save energy, MTS systems come standard with Auto-Setback and Auto-Off Features. These are pre-programmed for 30 minute Auto-Setback and 30 minute Auto-Off, which can be turned off by the switch on the back of the unit. If the handpiece channel has not been used for 30 minutes, the channel will enter setback mode, the performance level will be adjusted to 3.5 and the LED will blink amber. To exit Setback mode, place the tip in the sponge to load it thermally or turn the Power Switch OFF ("0") and then back ON ("I"). After an additional 30 minute period of inactivity the channel will turn off and the LED will turn off. To exit Auto-Off mode, cycle the system power. The Setback/Auto-Off feature can be turned off for each channel individually. Refer to Figure 8 for the location of each switch. As received from the factory, this feature is enabled.

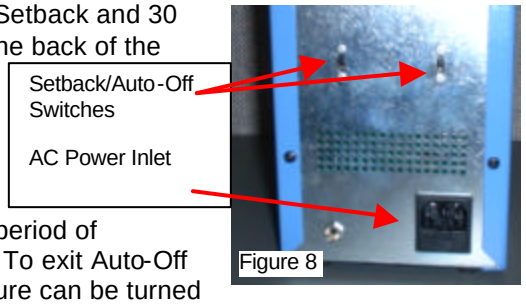
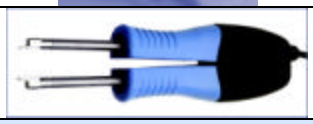
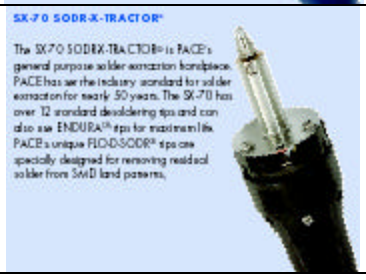
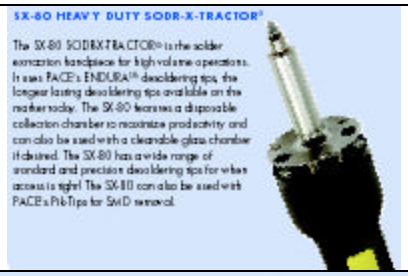
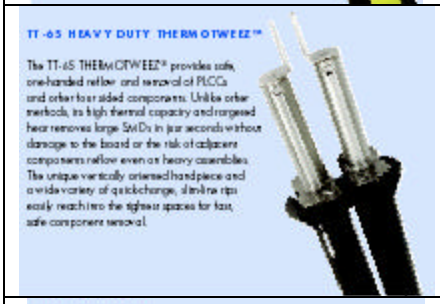


Figure 8

Accessory and replacement parts for MTS systems are listed below.

	Description	PACE Part Number
	TD-100 ThermoDrive Iron w/ Tip and Tool Stand	6993-0242-P1
	MT-100 MINITWEEZE w/ Tip and Tool Stand	6993-0243-P1
	PS-70 w/ Tip and Tool Stand	6993-0236-P1
	PS-90 w/ Tip and Tool Stand	6993-0199-P1
	PS-90 w/ SMT Tip and Tool Stand	6993-0238-P1
	SX-70 w/ Sodr-X-tractor Tip and Tool Stand	6993-0227-P1

	SX-80 w/ Sodr-X-tractor Tip and Tool Stand	6993-0213-P1
	TT-65 Thermo-Tweeze w/ Tip and Tool Stand	6993-0207-P1
	TJ-70 Thermo-Jet w/ Tip and Tool Stand	6993-0206-P1
	TJ-80 w/ Thermo-Jet Tip and Tool Stand	6993-0247-P1
	TP-65 Thermo-Pik w/ Tip and Tool Stand	6993-0205-P1
	Tip Case – Holds 10 Tips (Tips not included)	1310-0034-P1

	Tip Stand – Allows for an additional 10 tips to be stored on the tool stand. (Shown with TC 100 Tool Stand, tips not included)	1321-0639-P1
	Replacement TD 100 cord assembly	3008-0131-P1
	Replacement O-rings for TD 100. Package of 5.	1213-0090-P5
	TC 100 Tool Stand (TC 100 Handpiece and tips not included)	1257-0258-P1
	Power Modules	1213-0090-P5
	5/Green	1207-0362-01-P1
	5.5/Blue	1207-0362-02-P1
	6/Orange	1207-0362-03-P-1
	6.5/Gold	1207-0362-04-P1
	7/Red	1207-0362-05-P1
	7.5/Purple	1207-0362-06-P1
	8/Black	1207-0362-07-P1
	Hot Grip Removal Pad	1100-0307-P1

Corrective Maintenance

Handpieces

The TD-100 handpiece features a replaceable O-ring that protect the contact area from flux fumes and other contamination. The O-ring may need to be replaced over time.

To replace the O-ring in the TD-100 follow the procedure below:

1. Disconnect the TD 100 from the power source
2. Remove the tip cartridge
3. Unscrew the cap from the back of the TD 100
4. Slide the connector assembly out of the handle
5. Remove and replace the old O-ring from the connector assembly (Old “O” ring may remain in handle)
6. Reinstall the connector assembly. Be sure to line up the keyways on the handle and connector assembly. Do not force the connector assembly into the handle.
7. Reinstall the cap and make sure it is fully seated against the handle
8. Install a tip cartridge

The O-rings on the MT-100 do not need to be replaced.

For information on all Fixed heater handpieces, please refer to the individual handpiece instructions included with the handpiece or on the CD manual included with the power source.

Power Source

Most malfunctions are simple and easy to correct. Refer to Table 3.

Symptom	Probable Cause	Solution
No power to system	Blown Fuse	Replace the fuse (located in the AC Receptacle Fuse Holder) with one of the same rated value.
Handpiece will not heat	Defective Heater	Change Tip Cartridge
	Power Source Malfunction	Contact PACE

Table 3: Power Source Corrective Maintenance

Applicable Regulations

MTS systems are available in either 115 VAC or 230 VAC versions, which incorporate a highly responsive, closed loop control system providing up to 150 Watts of total output power. 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.

Service & Warranty

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

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 three (3) years from the date of receipt by such user. Blowers and motor pumps (which wear out during normal use) are warranted for a period of one (1) year.

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 plates 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.

Defective products may not be returned to PACE without a Service Authorization ("SA") Number.

Any warranty or other claim with respect to the products must be made in writing delivered to PACE (or local Authorized PACE distributor for Buyers outside the USA and the United Kingdom) within a reasonable time of the expiration date of this warranty with sufficient evidence of purchase and date of receipt, otherwise user's rights under this warranty shall be deemed waived.

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PACE products meet or exceed all applicable military and civilian EOS/ESD, temperature stability and other specifications including MIL STD 2000, ANSI/JSTD 001, IPC7711, and IPC A-610.

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