



## Operation and Maintenance Manual for MTS Rework Systems

P/N 5050-0520, Rev B

	<b>Voltage</b>	<b>Part Number</b>
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-B
MTS 300 System	230 VAC	8007-0419-B
MTS 350 System	115 VAC	8007-0416-B
MTS 350 System	230 VAC	8007-0417-B



(MTS 200 Shown with optional TD-100 and SX-80 Handpieces)

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**General Information**

**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.

**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.

**Specifications**

<b>Specification</b>	<b>MTS 200</b>	<b>MTS 300/350</b>
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 - 454 °C (500 °F – 850 °F) Available Power Module Performance Levels: 5, 5.5, 6, 6.5, 7, 7.5, 8, & 8.5	

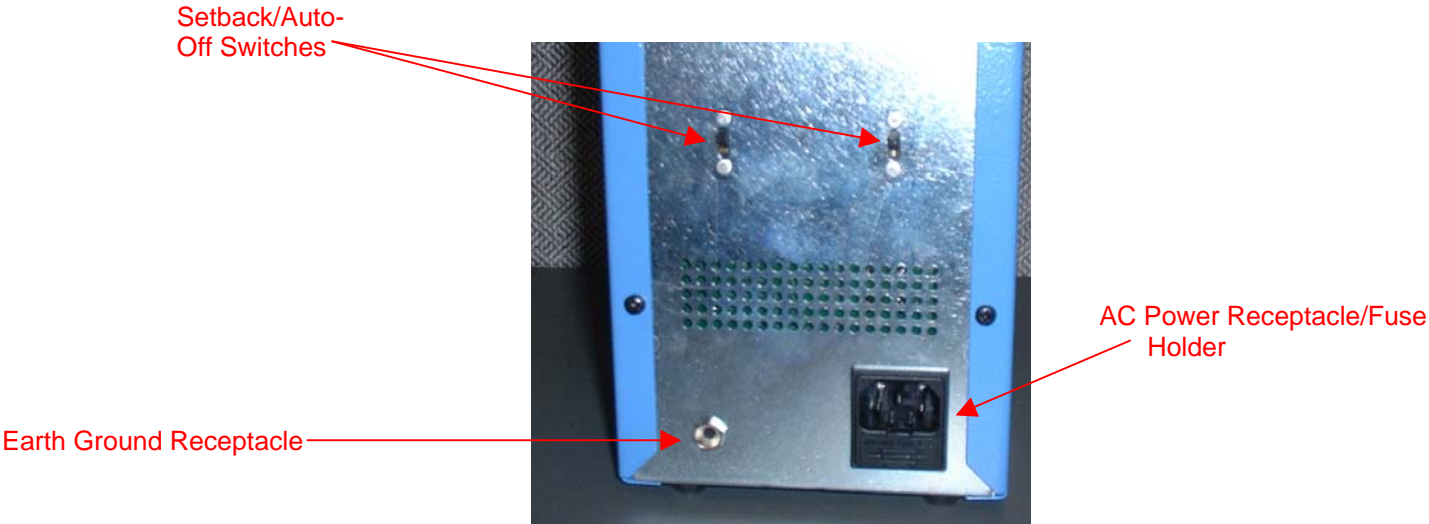
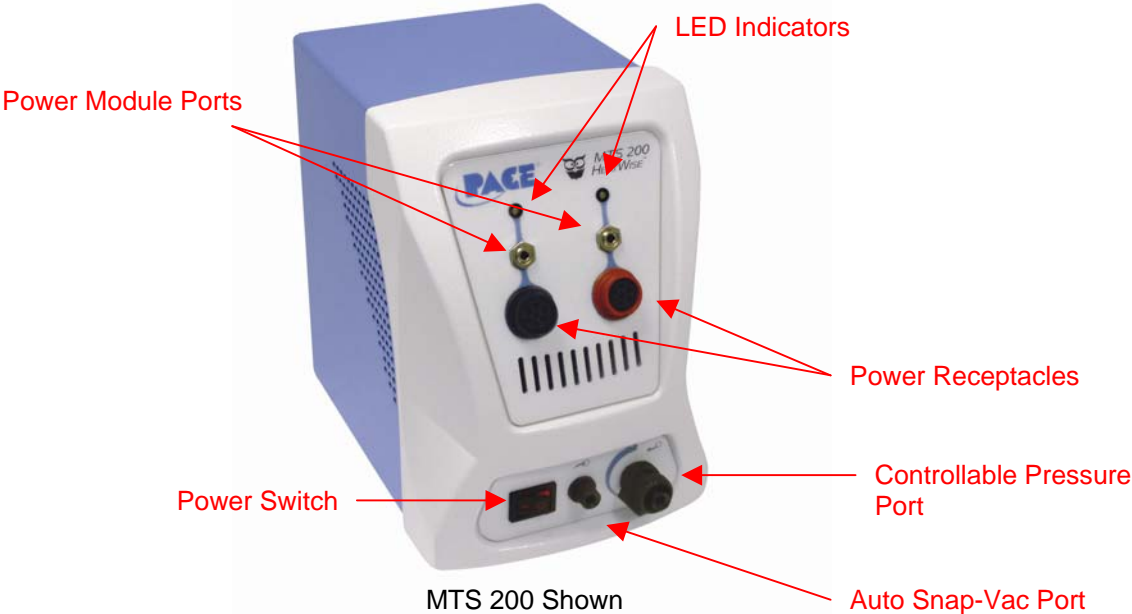
**Environmental Requirements**

Ambient Operating Temperature: 0 °C to 50 °C (32 °F to 120 °F)  
 Storage Temperature: -20 °C to 75 °C (-4 °F to 170 °F)  
 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

**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, installed tips, and heater cartridge 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.



**Mounting Options**

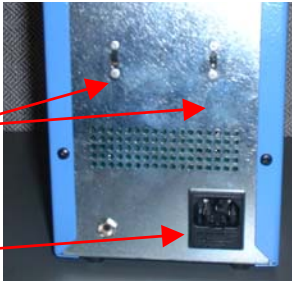
- 1. MTS systems can be placed directly on a work surface
- 2. MTS systems can be placed inside the optional Tool Chest.

**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.

Setback/Auto-Off Switches

AC Power Receptacle/Fuse Holder



**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 thumb screw slightly, adjusting the cubby to the desired angle, and tightening the thumb screw.



Thumb Screw

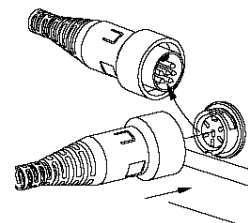
### **Handpiece Connection**

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. Likewise, Fixed Heater handpieces have black connectors and can only be connected to black ports.



To connect the handpiece to the power supply, refer to the figure to the right. 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.



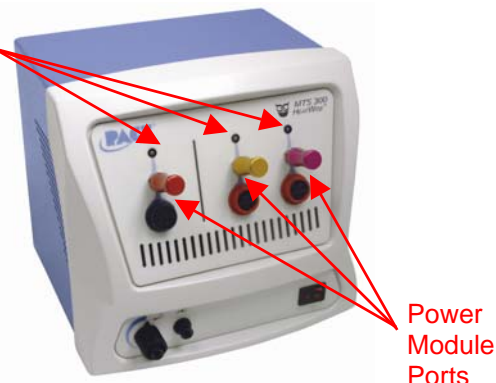
## Operation of the MTS Systems

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, 8, and 8.5. 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.

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.

LED Indicators



Power Module Ports

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.

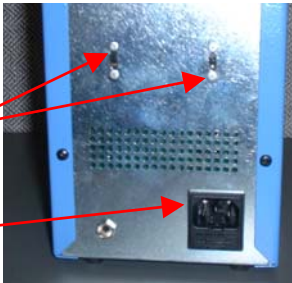
To operate the unit, please make sure the set-up procedure has been followed. Then follow the procedure below.

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 ("1"). 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. As received from the factory, this feature is enabled.

Setback/Auto-Off  
Switches

AC Power  
Receptacle/Fuse  
Holder



**Vacuum Pump Operation**

The PACE MTS 300/350 contains two different vacuum pumps.

1. HiFlo pump
  - a) To activate, depress the handpiece activation button.
  - b) An Optional Foot Pedal can be used to actuate the HiFlo pump via the rear panel foot switch socket.
2. LoFlo Pump
  - a) This pump will be activated by a front panel mounted Illuminated LoFlo Pump Switch.
  - b) Used for the TJ-80 and PV-65 Pic Vac Wand.

MTS 350 Shown



LoFlo Pressure Port

LoFlo Vacuum Port

Illuminated LoFlo Pump Switch

HiFlo Pressure Port

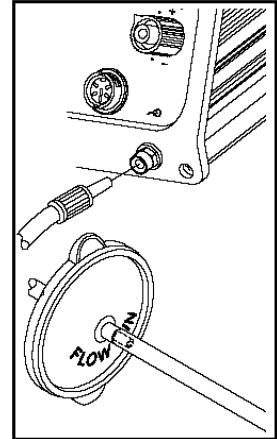
HiFlo Vacuum Port



## Handpiece Vacuum/Pressure

To set up your Sodr-X-Tractor air hose connection, perform the following steps:

1. Air Hose To Handpiece Connection
  - a) Attach one end of a 137cm (54 inch) length of air hose to the metal tube in the back of the handpiece.
  - b) If you have a PACE system incorporating only one handpiece, attach the air hose to the power cable using the supplied Hose Clamps. Space them evenly along the length of the power cable starting at a point 6 inches from the ends of the handpiece.
  - c) If you have a PACE system incorporating 2 or more air handpieces, you may wish to leave the air hose assembly unattached to allow a quick change to any air handpiece being used.
  
2. Prepare a VisiFilter in the following manner:
  - a) Connect a 1 inch (2.5cm) length of clear pvc air hose to the FLOW OUT side of the VisiFilter; push and turn the hose onto the VisiFilter nipple to seat.
  - b) Insert the ribbed end of a male quick connect hose mount fitting (P/N 1259-0087) into the free end of the 1 inch (2.5cm) length of air hose connected to the FLOW OUT side of the VisiFilter.
  - c) Connect the free end of the 137cm (54 inch) length of air hose to the FLOW IN side of the VisiFilter.
  - d) Insert the end of the quick connect hose mount fitting (on VisiFilter FLOW OUT side) into the power source Vacuum Port.
  
3. When using air pressure, and/or utilizing multiple air handpieces, PACE recommends the use of the following set up procedure which utilizes additional quick connect hose mount fittings. An assortment of quick connect air fittings are supplied with each additional air handpiece.
  - a) Disconnect the 137cm (54 inch) length of air hose from the FLOW IN side of the VisiFilter assembly. Insert the ribbed end of a male quick connect hose mount fitting (P/N 1259-0087) into the free end of this air hose.
  - b) Connect the free end of a 1 inch (2.5cm) length of air hose with an installed female quick connect hose mount fitting (P/N 1259-0086) to the FLOW IN side of the VisiFilter Assembly.
  - c) The 137cm (54 inch) length of air hose can now be easily moved between the VisiFilter Assembly and the Controllable Pressure Port. The VisiFilter assembly remains connected to the Vacuum Port.
  
4. Additional fittings may also be added to the hose connection at the rear of each air handpiece to ease changing of handpieces.



**NOTE:** When removing any air hose, turn and pull. Do not attempt to pull hose directly off. Damage to or breakage of fitting or VisiFilter may occur. Use your Sodr-X-Tractor with a clean VisiFilter element. Otherwise a deterioration in performance or damage to the unit may occur.

Ensure that only one air hose is connected to the **VACUUM** or controllable **PRESSURE** port of the same Flo Pump at one time. Attachment to both ports simultaneously will cause deterioration in performance.



**Corrective Maintenance**

**Handpieces**

Please refer to the respective handpiece manual for the maintenance procedures.

Handpiece/System	TW/HW	MTS
PS 90		x
SX 70/80		x
TT 65		x
TP 65		x
TJ 70/80		x
TD 100	x	x
MT 100	x	x

The above table illustrates the handpieces that can be utilized with the respective system.

**Power Source**

Refer to the table below. Most malfunctions are simple and easy to correct.


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

Power Source Corrective Maintenance

**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
Hot Grip Removal Pad	One	One	One
CD Manual	One	One	One

**Replacement Power Modules**

	Description	PACE Part Number
	Power Modules	
	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
	8.5/Silver	1207-0362-08-P1

**Service**

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

**Contact Information**

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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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