

PAGE™
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PROPERTY OF
ENGINEERING SERVICES

OPERATION AND
MAINTENANCE
INSTRUCTIONS
5050-0067

DO NOT REMOVE

MODEL PRC-150A SERIES

Bench Top Repair Systems

Featuring -
THERMO DRIVE™ HEAT CONTROL





MODEL PRC-150A SERIES

INTRODUCTION

The PACE Model PRC-150A is a completely self-contained, Bench-Top Repair System for the repair, rework and modification of electronic assemblies.

Exceptionally compact, the standard PRC-150A System consists of a Power Source and selected function tools and aids.

Capabilities:

The standard System provides controlled desoldering for removal of most solder joint configurations.

Abrading, milling, drilling, grinding and cutting for circuit board repair. Removal of conformal coatings. High strength reflow soldering, standard component soldering, and accurate component forming.

Optional function accessories will expand capability to handle most repair requirements.

POWER SOURCE:

1. Power Source: Models PPS-100A series

The strong aluminum case houses the Power Supply, Power Indicator, Main Power Switch, Continuous Run Switch, Overload Protection, Temperature Controls, Air Pressure and Vacuum Controls and Quick Connect Fittings, Positive Ground Terminal, High and Low Voltage Outlets and Mechanical Power Drive for Function Tool Operation. The Three-wire Grounded Cord meets safety code requirements.

2. Foot Pedal

The two position foot pedal allows hand free control of power to function tools for required heat time cycle, vacuum/pressure dwell time, and fine control of rotary power. Partial depression actuates Heating outputs-Full depression actuates Heating outputs and Vacuum/Pressure and Minichine. Short ON/OFF pulsing is useful for fine control.

FUNCTION ACCESSORIES SUPPLIED WITH THE PRC-150A SYSTEM:

Function accessories utilize the controlled power from the Power Source and apply it to the workpiece, thereby creating a process. They may be used in combination, and with the appropriate Power Source to provide the flexibility and capability to meet all the working needs of the user.

1. Sodr-X-Tractor Model SX-200

Utilizing, controlled temperature, pressure vacuum and airflow for easy removal of virtually any type of solder joint. Unit provided with air line, power cord, cleaning brushes and tip kit.

2. Minichine Model PM-165

A highly versatile system for removing conformal coating, oxides, eyelets, rivets and damaged plating from assemblies. The spindle shaft terminates at an easy to grip handle with collet chuck for handling up to 3/32" diameter shank drill bits and mandrels.

3. Universal Power Cord P/N 7000-0005

Eliminates the need for separate and/or integral power cords on the low voltage heated function tools.

4. Thermo Part Model TP-15-Conformal Coating Removal Tool

Application of controlled heat via alloy tip thermally degrades conformal coating for fast safe removal.

Clinched D.I.P. and often difficult to handle leads can be easily and safely unclined with the controllable heated Tip.

Accelerated cool down and debris removal can be provided thru an integral air jet which blows cool air across the units tip.

5. Lap Flo Model LS-15-Lap Reflow Soldering Tool

Produces high strength lap solder joints for planar or offset lead mountings. It is ideal

for repairing broken circuit runs and replacing IC flat packs and planar mounted connectors. The miniature handpiece provides continuous clamping of the lead before, during and after soldering. The LapFlo's operation assures complete reflow of solder between the pad and undersides of the component lead for maximum strength. Tip permits rapid cooldown through heat absorption; however, integral air may also be used for accelerated cooldown. Other "Quick Change" tips are also available in various shapes.

6. Soldering Iron with Clad Tip P/N 1102-0004

7. Special Aids Kit I-450

Special Aids Kit consists of mountable hot tool holder with cleaning unit assembly for maintenance of soldering iron and extractor tips. The Conform I™ component forming tool.

GETTING ACQUAINTED WITH YOUR PACE MODEL PRC-150A REPAIR SYSTEM

Before using your new PACE Bench Top Repair System, take a few minutes to become familiar with its setup, controls, function tools and operating features.

POWER SOURCE:

Power Source General Characteristics:

High torque, low RPM mechanical output
Corrosion-proof, sliding rotor, dry vane brushless motor pump
Variable air pressure and flow control
Variable vacuum and flow control
Quick Connect Vacuum/Air Pressure Fitting
Adjustable temperature level control
Foot pedal with dual switch control
Continuous Run Switch
Zero Power Switch (ZPS) Optional
Mechanical Parameters 9 1/4" wide X 7 1/2" High X 11 3/16" Front to back
Weight 18 lbs.
Power Requirements: 115VAC 50/60 Hz, 5 amps.

Export Models: 220/240VAC, 50/60 Hz (PRC-150AE) (PRC-150AECH) (PRC-150AES) 2 amp, 100VAC, 50/60 Hz (PRC-150AEJ) 5 amp.

Variable Air Pressure

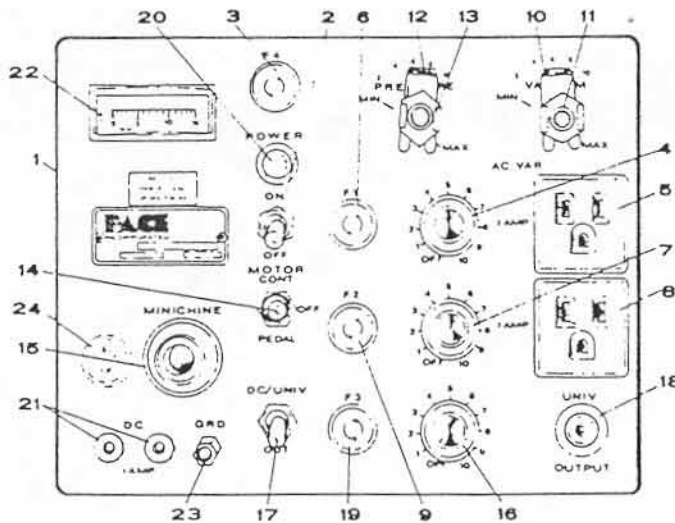
0.05 psi to 20.0 psi
0.03 atm to 1.36 atm

Variable Vacuum Pressure

0.05 in. Hg to 20.0 in. Hg
0.0017 atm to 0.668 atm

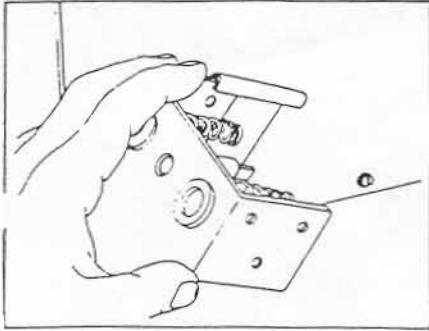
Zero Power Switching (ZPS) Optional for all models for desoldering C-MOS and MOS/FET Devices. Zero Power Switching should be ordered factory installed.

THE POWER SOURCE

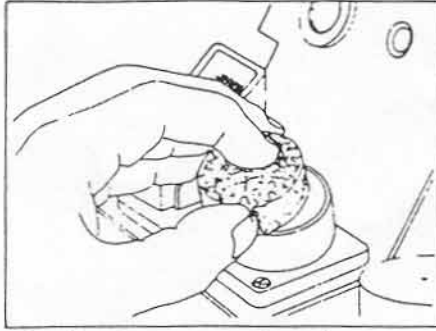


1. High Strength Aluminum Cabinet
2. Main Power Switch
3. Main Power Fuse F-4
4. Heat Control #1
5. A.C. Power Receptacle #1
6. Heat Control Fuse #1 F-1
7. Heat Control #2
8. A.C. Power Receptacle #2
9. Heat Control Fuse #2 F-2
10. Vacuum Variable Flow Control
11. Vacuum Quick Connect Fitting
12. Pressure Variable Flow Control
13. Pressure Quick Connect Fitting
14. Switch 3 Position Motor
15. Minichine Drive
16. Heating/DC Output Control
17. Switch DC/Universal Outputs
18. Universal Output Receptacle
19. DC/Universal Output Fuse F-3
20. DC/Universal Output Indicator
21. Main Power Indicator, Red
22. Meter, Swaplater Voltage
23. Ground Terminal Post
24. Fuse F-5; Models PPS-100AECH & PPS-100AECH w/ZPS only

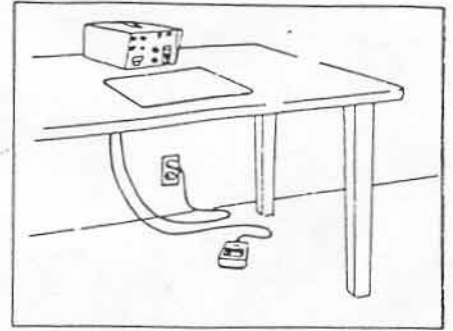
SET UP



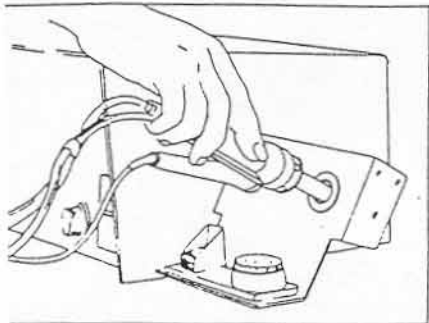
1. Attach Hot Tool Holder to bracket.



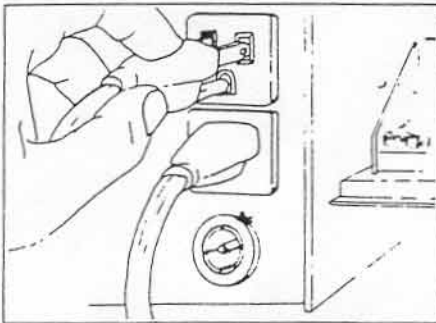
2. Remove cover and soak sponge in warm water. Replace in container.



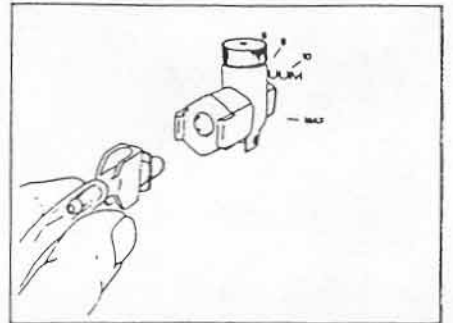
3. Position Foot Switch for operator convenience.



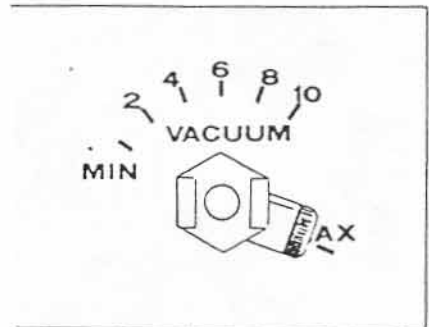
4. Place Extractor and Soldering Iron in Hot Tool Holder. Assemble clips to attach vacuum hose to power cord.



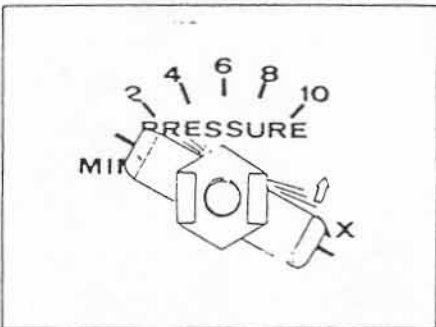
5. Connect Extractor plug to upper AC Power receptacle, Soldering Iron to lower receptacle.



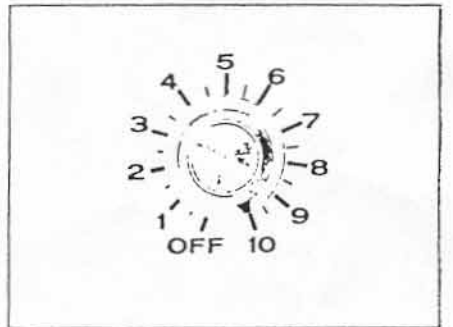
6. Attach Extractor hose to appropriate fitting vacuum for solder removal pressure for pressure or hot air jet.



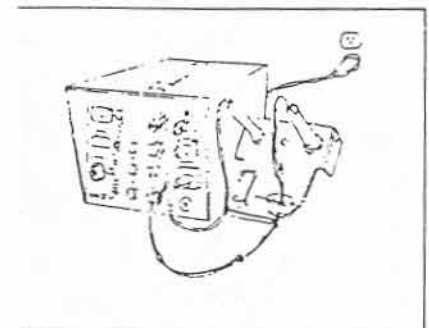
7. Adjust vacuum flow control valve to maximum for solder removal.



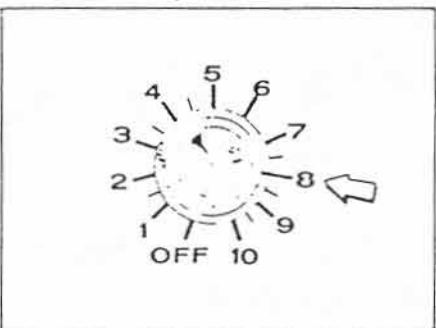
8. Adjust pressure flow control valve to maximum for air pressure, minimum for hot air jet.



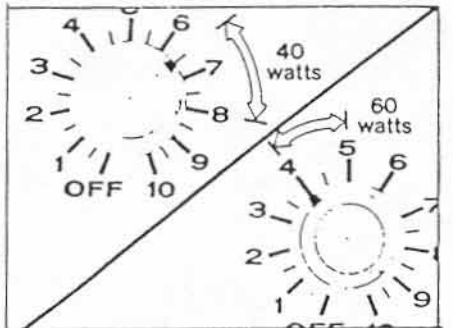
9. Adjust Soldering Iron power to maximum for normal soldering.



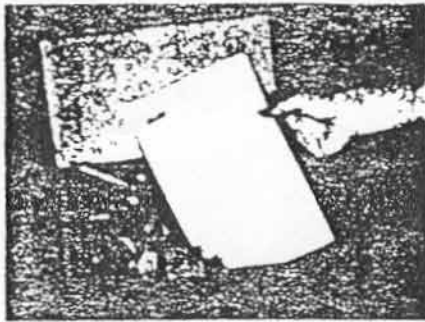
10. Plug in Line Power Cord. Turn main power switch ON. 3 Position Switch to Pedal.



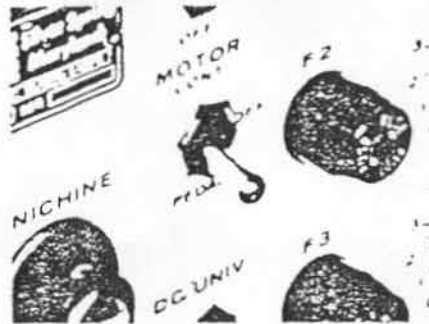
11. Warm-up. Adjust extractor power to 8. Allow 15 minutes for 60 Watt heater.



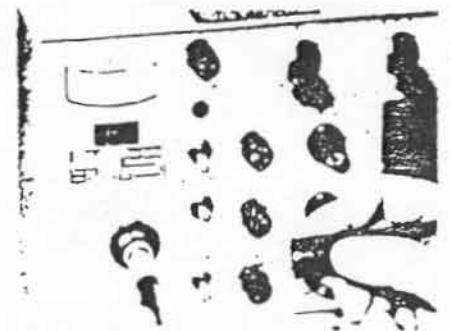
12. Adjust operating temperature for extractor. 6.5-8 for 40 Watt heater. 4-5 for 60 Watt heater.



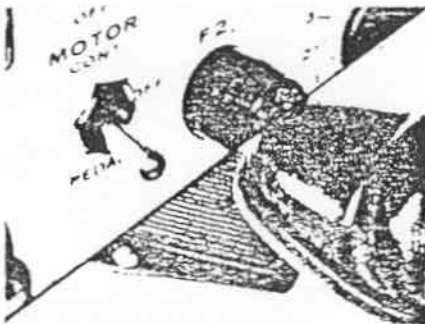
13. Operating and Maintenance instructions of function tools are included in each individual box.



14. To use Minichine, turn switch #14 (see page 2 in this manual) to pedal position.



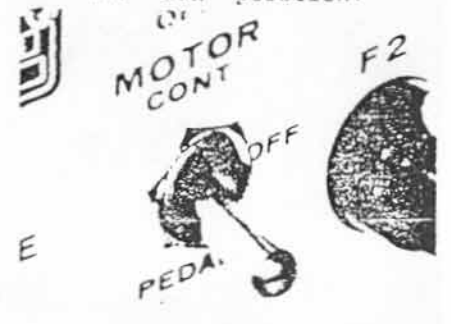
15. Insert flex shaft into Minichine Drive. Tap foot pedal to rotate drive for easy engagement. Double detent provides "ready" and "run" position.



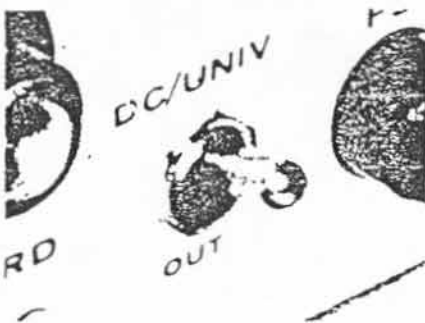
16. Rotational power for the Minichine is actuated with the foot pedal or the continuous run switch.



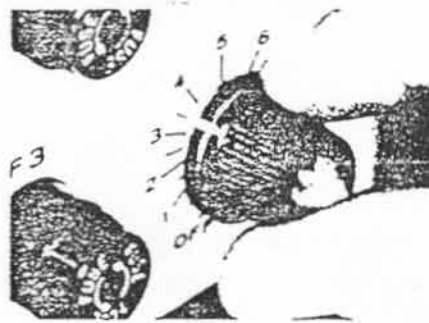
17. For use, attach the desired function tool to the Universal Cord.



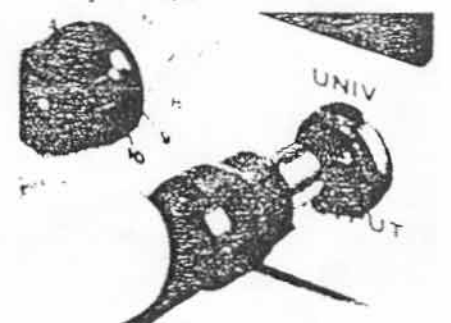
18. Position Switch (#14) to OFF for low voltage outputs/DC (if vacuum/pressure is not required).



19. Position Switch (#17) to DC/Univ.



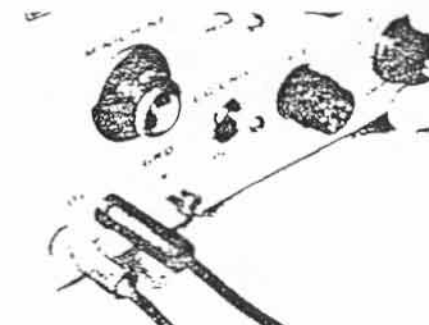
20. Adjust Control (#16) for desired power level to function tool. Start with a lower setting, increase heat as required.



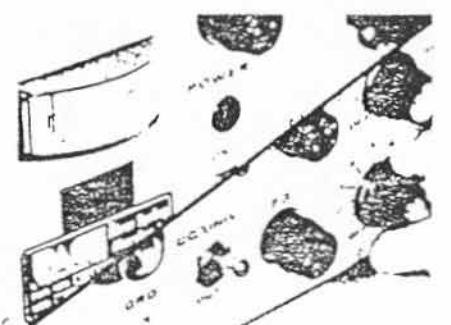
21. Insert universal cord into Univ. output power receptacle. (#18)



22. For auxillary heating or fast cool down operations, set switch #14 to Pedal, switch #17 to DC/Univ.

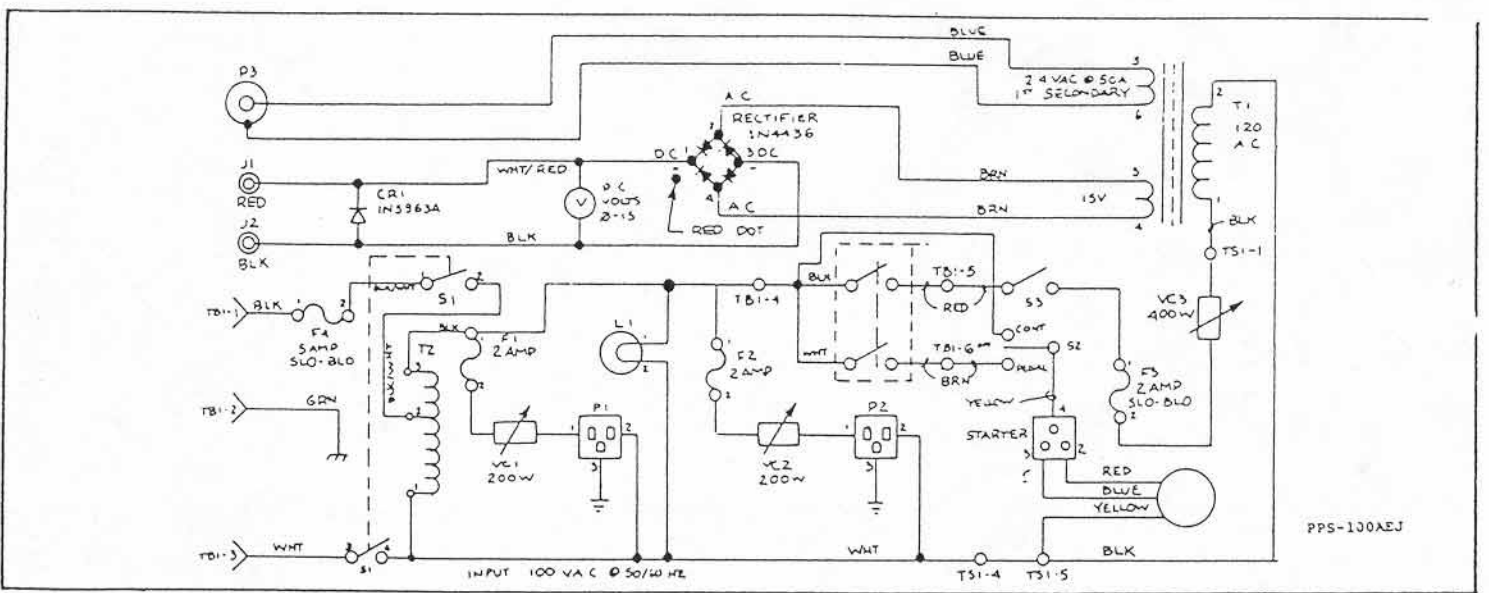
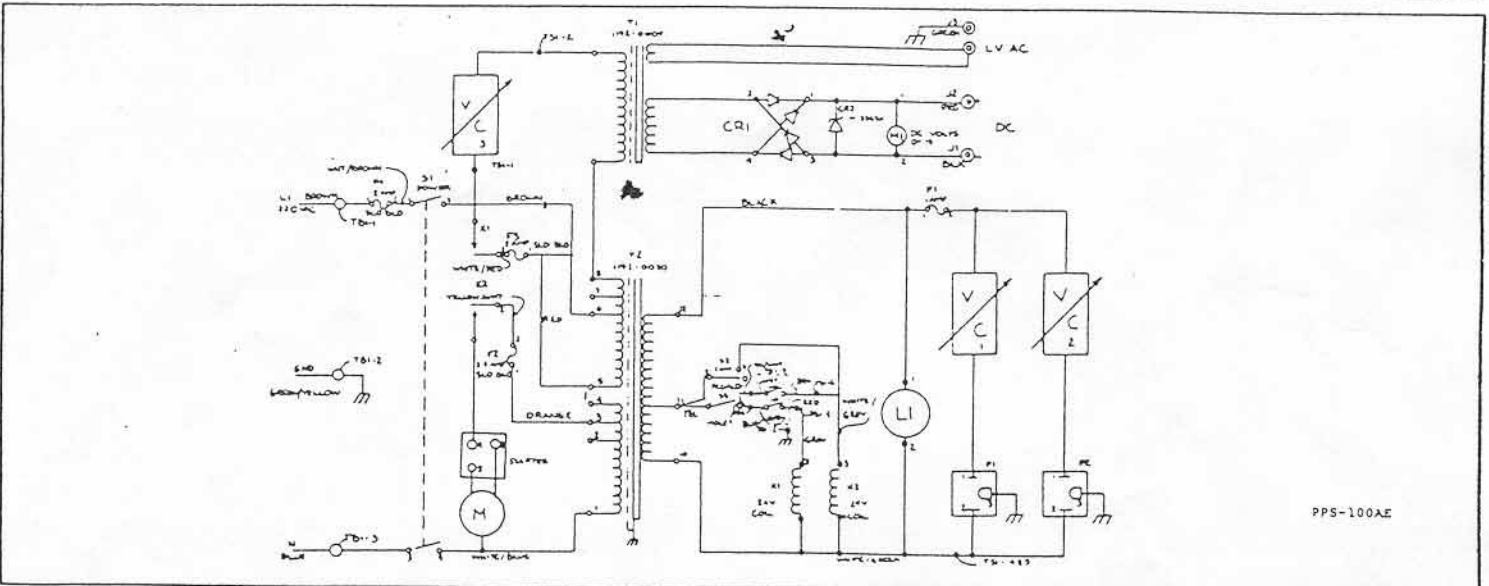
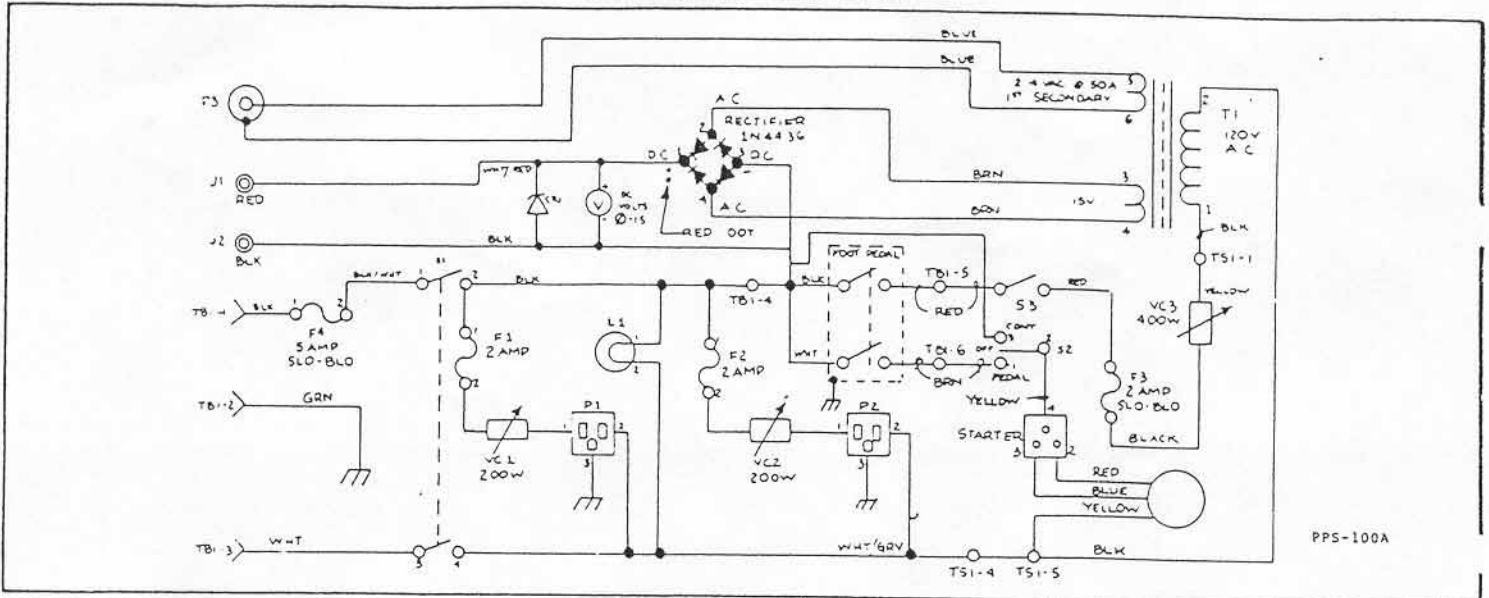


23. Attach Plating Cables to color coded receptacles.



24. Adjust control (#16) with pedal depressed for desired DC voltage on Swap Plater Meter for plating operations.

SCHEMATIC DIAGRAMS



HEAT APPLICATION CHART

The following low voltage electrical settings can be used for the function tools listed below. These settings are only approximate. In actual use, the output may be slightly lower or higher.

It is always best to start with a lower setting and increase the heat in small increments to prevent over heating and damage to the work piece.

Function Tool	Swaplater Meter Indication	Control Settings	Operation
Resistweez	9-12	9-10	Soldering Cup Terminal
Resistweez	12	10	Feed thru Capacitor Removal
ThermoPart	1	5-6	Foam & Poly U Removal
ThermoPart	1	5.5-6.5	Epoxy Removal
ThermoPart	1.5	6.5-7	Lifting Clinched Lead
Lapflo	1	5.5-6.5	Flat Pack Soldering Std. Tip
Striptweez	1.5-2	6-7	Wire Stripping Vinyl Insulation
Striptweez	5.5-12	8.5-10	Wire Stripping Teflon Insulation
Conductweez	4-7	8-8.5	Light Work
	7-12	8.5-12	Heavy Work
ElectroPlating	8	8.75	Electro Clean
	6	8.5	Nickel Plating
	3-4	7.5-8	Gold Plating

POWER SOURCE MAINTENANCE

WARNING - Disconnect Power from Source of Supply before Servicing.

- FILTER-MUFFLER
Check filters weekly, clean or replace monthly.

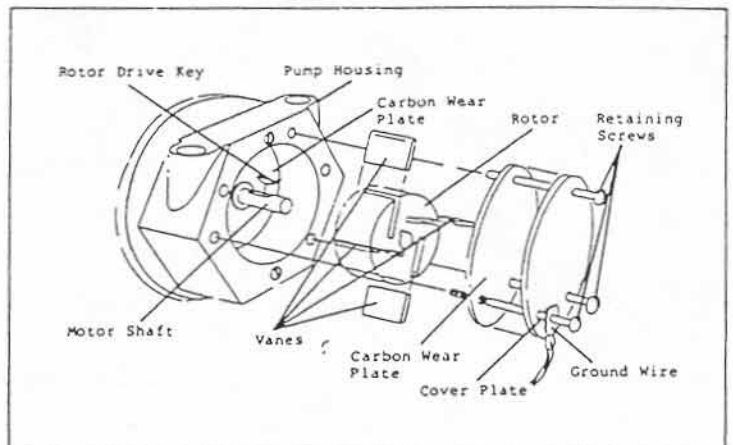
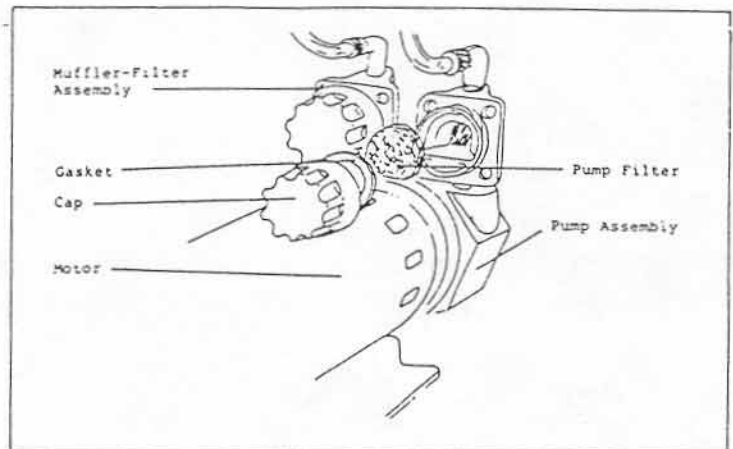
PUMP

The carbon vane pump should never be lubricated.

A gradual loss of vacuum may be caused by flux or coating residue within the pump. To clean pump, open rear cover Loosen 3 screws and remove screws, cover plate as one assembly. Remove vanes and flush pump housing and rotor with flux solvent. Wash vanes in same solvent. Reassemble vanes. Replace cover/wear plate as one assembly. Refer to Spare Parts List for Pump Overhaul Kit.

ELECTRICAL PROTECTION

All the electrical elements of the PRC-150A power source are fuse protected. Refer to the Specification sheet for proper replacement fuses for your Model PRC-150A power source.



Replacement Parts for Models PPS-100AECH
and PPS-100AECH w/ZPS

Description	Part Number
Transformer	1192-0030
Fuse, .315 Amp, Fast Acting F-5	1159-0105
Fuse, 1Amp, Fast Acting F-1	1159-0110
Fuse, 2.5Amp, S.B. F-2	1159-0220
Fuse, 2Amp, S.B. F-3 & F-4	1159-0219
Fuse Holder	1161-0008
Relay PPS-100AECH without ZPS	1194-0009
Printed Circuit Assemblies for ZPS (3 per unit)	4008-0022
Power Cord	1332-0036
Schematic Diagram PPS-100AECH w/ZPS	5000-0113

Replacement Parts for Models PPS-100AES
and PPS-100AES w/ZPS

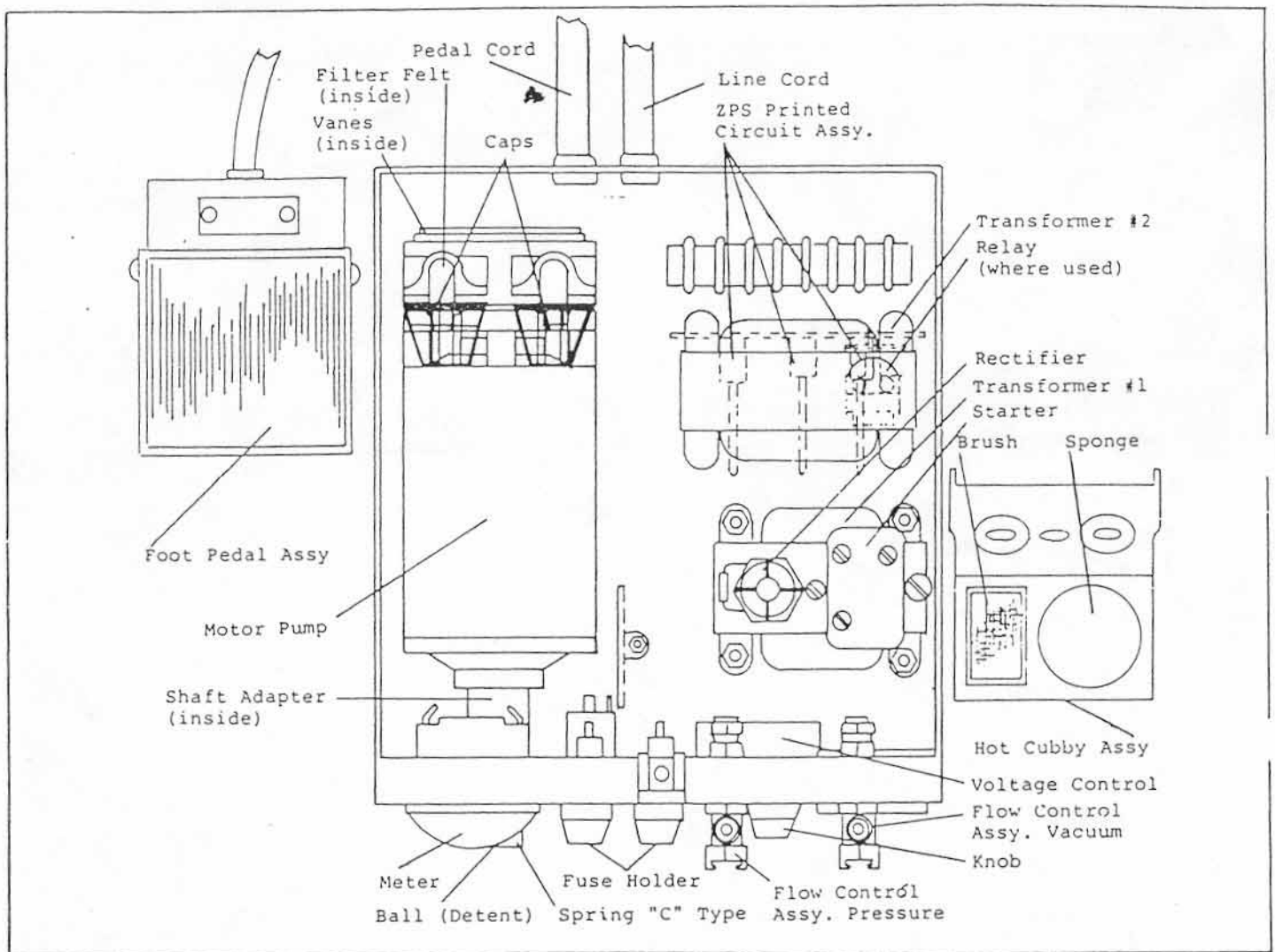
Description	Part Number
Transformer	1192-0030
Fuse, 1Amp, Fast Acting F-1	1159-0110
Fuse, 2Amp, S.B. F-3 & F-4	1159-0219

Fuse, 2.5Amp, S.B. F-2	1159-0220
Fuse Holder	1161-0008
Relay PPS-100AES without ZPS	1194-0009
Printed Circuit Assemblies for ZPS (3 per unit)	4008-0022
Schematic Diagram PPS-100AES w/ZPS	5000-0096
Power Cord	1332-0036

Replacement Parts for Model PPS-100AEJ

Description	Part Number
Transformer	1192-0014
Fuse, 2Amp, Fast Acting F-1 & F-2	1159-0004
Fuse, 2Amp, S.B. F-3	1159-0005
Fuse, 5Amp, S.B. F-4	1159-0002
Fuse Holder	1161-0002
Power Cord	1332-0023

When corresponding with the factory concerning your equipment, please include the Power Source Model Type and Serial Number from the manufacturer's plate on the front panel.



OPTIONAL FUNCTION ACCESSORIES & WORK AIDS AVAILABLE

**Cir-Kit™
Selector Pack**

Everything you need to repair and/or replace lifted, damaged or missing pads or tracks on PC boards.



Environmental Probe

Model HP-150

Lets you locate heat-caused intermittents, dry localized areas and accelerate the curing of conformal coatings.



OPTIONAL FOR
**PRC-150A
SYSTEMS**

**Stereo
Microscope
Model
POL-30
10X Stereo
Magnification**



Fully illuminated, distortion-free 3-D optics... brings even the smallest components up to workable size.

Model POL-12

Readily Portable for field use



Optical Lighting System

Model POL-15

Fully illuminated, distortion-free 3-D optics... brings even the smallest components up to workable size.



**SensaTemp™
Model ST-10**

A high sensitive and responsive unit to measure critical heating temperatures of miniature soldering and desoldering tools, hot air jets, probes and other heating devices.



ResisTweez™

Model TW-15

A resistance tweezer heating system for soldering and desoldering closely spaced pins, terminals and lugs.



Materials Kit T-300

Coating Kit - Solvent Kit - Brush, Stiff - Bonding Kit (Platen, Spatulas, Wood Swabs, Cotton, Epoxy, Part 1 & 2, Mixing Cup) - Chem Strip Kit -



Hot Wire Parting Unit

Model TP-200

Provides the means for pre-tensioning a resistance wire between spring-loaded uprights for thermally parting vertical surfaces 6" long by 2" wide.



ConductTweez™

Model CT-15

A conductive tweezer heating system for rapid desoldering of component leads in tight spaces without damage.



Tools Kit

T-400

Includes various pliers, clamp, solder, tweezer, tool set, oxide remover, heat sinks and soldering iron.



Spray Unit

Model SU-101

An easy-to-use unit for dispensing any sprayable material with a quick change capability.



StripTweez™

Model TS-15

A thermal wire stripper to remove wire insulation quickly without nicks and scrapes.



SwaPlating™ Unit

Model PE-200A

For replating damaged or worn connectors, contacts, etc. without cumbersome tanks.



**Vacuum Cleaning/
Handling Unit**

Model VT-100

For cleaning dust and grit from difficult to reach areas.



Probe Heating Unit*

Model PS-100

A single-contact carbon probe capable of using a wide range of tips to handle medium range resistance soldering work wherever grounding is possible.



Tweezer Heating Unit*

(Heavy Duty)
Model TW-250

For soldering heavy lugs, terminals or connections in switch boxes, switchboards, inside machines, etc. Electrode holders turn and lock in any position.



Work Handling Unit

Model WP-6

Provides adjustable, positive gripping of the work piece to facilitate precise work on miniature and delicate instruments.



Clamp Heating Unit*

(Heavy Duty) Model PS-250

Ideal for heavy soldering jobs where work can be held between jaws and heated, such as for sweating copper tubing and fittings, soldering lugs, etc.



Fused Eyeletting Unit*

Model PF-25A

Lets you repair damaged or missing plated thru holes and terminals with 'factory-new' quality.



* Requires PPS-20A Auxiliary Power Source

SYSTEM IDENTIFICATION

The following chart is included to help you identify your PRC-150A system number with the part number for the power source provided.

All Model PRC-150A systems consist of a Power Source and a selection of the most commonly used function tools.

MODEL	PART NUMBER	POWER SOURCE	PART NUMBER
PRC-150A	8006-0002	PPS-100A	7008-0026
PRC-150A w/ZPS	8006-0008	PPS-100A w/ZPS	7008-0088
PRC-150AE	8006-0003	PPS-100AE	7008-0029
PRC-150AE w/ZPS	8006-0011	PPS-100AE w/ZPS	7008-0091
PRC-150AECH	8006-0012	PPS-100AECH	7008-0094
PRC-150AECH w/ZPS	8006-0040	PPS-100AECH w/ZPS	7008-0085
PRC-150AES	8006-0006	PPS-100AES	7008-0074
PRC-150AES w/ZPS	8006-0013	PPS-100AES w/ZPS	7008-0102
PRC-150AEJ	8006-0005	PPS-100AEJ	7008-0053

REPLACEMENT PARTS LIST

Parts common to Power Source Models PPS-100A, PPS-100AECH, PPS-100AECH w/ZPS, PPS-100AES, PPS-100A w/ZPS, PPS-100AE, PPS-100AE w/ZPS, PPS-100AES w/ZPS, PPS-100AEJ.

Description	Part Number
Motor Pump	1336-0013
Transformer	1192-0009
Shaft Adapter	1261-0013
Spring "C" Type	1221-0022
all (Detent)	1251-0001
Voltage Control (High Voltage)	1285-0014
Voltage Control (Low Voltage)	1285-0018
Starter, All PPS-150A	1194-0003
Models Without ZPS	
Starter, All PPS-150A	1194-0011
Models With ZPS	
Knob	1222-0006
Meter, 0-15VDC	1198-0005
Rectifier	1196-0001
Flow Control Assy Vacuum	1285-0004
Flow Control Assy Pressure	1285-0003
Foot Pedal Assy	6008-0022
Pump Overhaul Kit	6993-0033
Hot Cubby Assy with Cleaning Unit	6019-0011
Brush	1127-0012
Sponge	4021-0001
Vanes	1338-0001
Cap, Filter	1311-0059
Filter Felt (HALF MOON)	1309-0015
Diode, Zener, 30 Volt	1183-0015
Soldering Iron with Tip	1102-0004

Replacement Parts for Models PPS-100A and PPS-100A w/ZPS

Description	Part Number
Fuse, 5Amp, S.B. F-4	1159-0004
Fuse, 2Amp, S.B. F-3	1159-0002
Fuse, 2Amp, Fast Acting F-1 & F-2	1159-0005
Fuse Holder	1161-0002
Power Cord	1332-0023
Schematic Diagram	5000-0095

PPS-100A w/ZPS
Printed Circuit Assemblies for ZPS 4008-0021
(3 per unit)

Replacement Parts for Models PPS-100AE and PPS-100AE w/ZPS

Description	Part Number
Transformer	1192-0030
Fuse, 1Amp, Fast Acting F-1	1159-0011
Fuse, 2Amp, 250V S.B. F-3 & F-4	1159-0019
Fuse, 2.5Amp, S.B. F-2	1159-0022
Fuse Holder	1161-0002
Relay, PPS-100AE without ZPS	1194-0009
Printed Circuit Assemblies for ZPS 4008-0022 (3 per unit)	
Schematic Diagram	5000-0096
PPS-100AE w/ZPS	
Power Cord	1332-0036