

# Weller® Tech Sheet

## WTCPT SOLDERING STATION

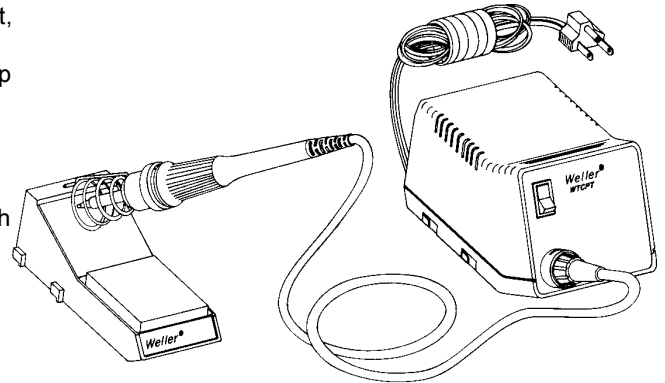
A transformer powered soldering station, complete with a lightweight, heat insulated, low voltage, temperature controlled soldering iron. The special Weller® "closed loop" method of controlling maximum tip temperature sensitive components. The soldering iron features a stainless steel, plug in heating element construction, a non-burning silicone rubber cord, and a large selection of tips in sizes from 1/64" diameter to 15/64" diameter with a choice of tip temperature of 600°F, 700°F and 800°F. The soldering iron is normally provided with a PTA7 1/16" screwdriver 700°F.

The station features a housing of an impact resistant polycarbonate plastic for durability and protection against accidental damage, a quick disconnect plug for the soldering iron, a lighted on-off switch, and a flexible 3 wire power cord.

The plastic soldering iron holder can be used attached to either side of the transformer case, or separated as shown. The iron holder incorporates a water reservoir with wick to keep the tip wiping sponge moist.

The station housing and hand piece are grounded with a separate conductor that terminates at the third pin on the power cord. The Weller® units are UL listed.

**WARNING:** This product, when used for soldering and similar applications, produces chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.



## SPECIFICATIONS

### POWER UNIT

1. Power input: 120 VAC, 60 Hz, (240VAC  $\pm$ 10%, 50/60 Hz) 60 watts.
2. Power unit output voltage: isolated 24 VAC @ 1.75 amperes.
3. Size: 4.5" x 5.875" x 3.625".
4. Line Cord: 3 wire U.L. recognized.

### SOLDERING IRON

1. Wattage: 42 watts.
2. Iron weight: 2 ounces
3. Recovery time (from 100°F drop) with PTA7 tip: 11 seconds.
4. Cord: Silicone rubber, burn resistant, 4 feet.



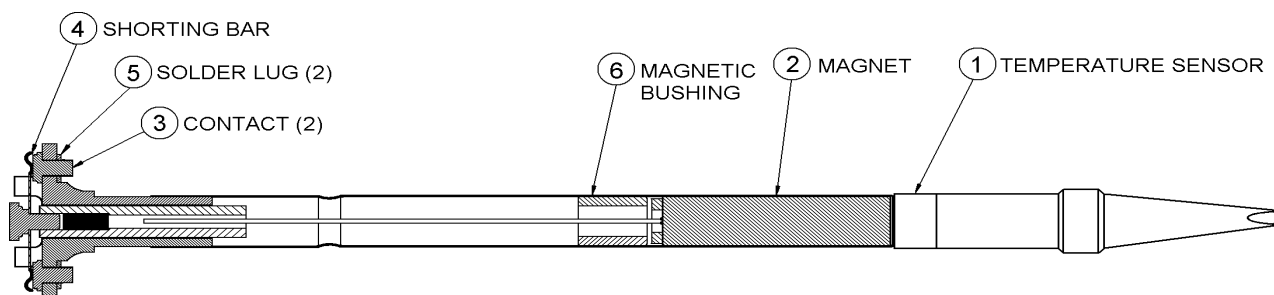
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## PRINCIPLE OF OPERATION

When the soldering tip is cold, a ferromagnetic temperature sensor (1) attached to the tip attracts a permanent magnet (2). The magnet movement causes a shorting bar (4) to make contact with a set of isolated electrical contacts (3) thereby supplying power to the heating element through the solder lugs (5). When the tip reaches its idle temperature, the sensor becomes nonmagnetic and no longer attracts the magnet. Then a magnetic bushing (6) attracts the magnet causing the shorting bar to break the circuit. In this manner, power to the heating element is turned on and off automatically.

**CAUTION:** Tip is grounded, do not solder an energized circuit.



## WTCPT OPERATING INSTRUCTIONS

Unpack unit carefully. Place spring and funnel in slot in top of tool stand. Attach tool stand to either side of power unit, if desired. Fill reservoir with water and wet sponge, distilled water is preferred. Insert tool in holder and connect tool plug to receptacle on power unit; rotate plug housing to lock plug into receptacle. Insure correct tip is installed in iron, insert line cord plug into properly grounded AC receptacle and turn unit on. Wait 30 seconds and tin tip with solder. Unit is not ready for use.

All Weller® PT series soldering iron tips are plated with an exclusive process that deposits three protective coatings. The high conductivity copper tips are iron plated, nickel plated, then chromium plated on the non-working surfaces. The working surface is then pre-tinned. The chromium and nickel plating of the tip prevents oxidation of the iron plating which can cause freezing of the tip in the iron. Weller® "temperature sensing" tips have a small ferromagnet sensing element attached to the tip shank. The sensing element is coded with a number to indicate the tip idle temperature in hundreds of degrees F. Thus a simple change of tips is all that is necessary to adapt the tool to an entirely different temperature range. **Use only original Weller® soldering tips. The use of non-Weller components may void product warranty if the non-Weller component causes damage to the unit.**

## SELECTION OF WELLER® PT SERIES TIPS

1. Select a tip configuration with the maximum working surface, thickest cross section, and shortest reach compatible with the size, the accessibility, and the visual restrictions of the solder joint.
2. Select a tip temperature based on the size of the solder joint, the temperature sensitivity of the components, and the production rate required. Please note that tip life is directly related to tip temperature, the lower the tip temperature the longer the tip life.

| 600°F | 700°F | 800°F | DESCRIPTION        | TIP    | REACH |
|-------|-------|-------|--------------------|--------|-------|
|       | PTA7  | PTA8  | Screwdriver        | 1/16"  | 5/8"  |
| PTA6  | PTAA7 | PTAA8 | Single Flat        | 1/16"  | 5/8"  |
|       | PTB7  | PTB8  | Screwdriver        | 3/32"  | 5/8"  |
| PTB6  | PTBB7 | PTBB8 | Single Flat        | 3/32"  | 5/8"  |
|       | PTC7  | PTC8  | Screwdriver        | 1/8"   | 5/8"  |
| PTC6  | PTCC7 | PTCC8 | Single Flat        | 1/8"   | 5/8"  |
|       | PTD7  | PTD8  | Screwdriver        | 3/16"  | 3/4"  |
| PTD6  | PTDD7 | PTDD8 | Single Flat        | 3/16"  | 5/8"  |
|       | PTE7  | PTE8  | Screwdriver        | 15/64" | 5/8"  |
|       | PTF7  | PTF8  | Conical Flat       | 1/32"  | 5/8"  |
|       | PTH7  | PTH8  | Screwdriver        | 1/32"  | 5/8"  |
| PTH6  | PTJ7  | PTJ8  | Screwdriver        | 1/64"  | 1"    |
|       | PTK7  | PTK8  | Long Screwdriver   | 3/64"  | 1"    |
| PTK6  | PTL7  | PTL8  | Long Screwdriver   | 5/64"  | 1"    |
|       | PTM7  | PTM8  | Long Screwdriver   | 1/8"   | 1"    |
|       | PTN7  |       | Screwdriver        | 1/16"  | 3/4"  |
| PTO6  | PTO7  | PTO8  | Long Conical       | 1/32"  | 1"    |
| PTP6  | PTP7  | PTP8  | Conical            | 1/32"  | 5/8"  |
| PTQ6  |       | PTQ8  | Single Flat        | 1/32"  | 5/8"  |
| PTR6  | PTR7  | PTR8  | Narrow Screwdriver | 1/16"  | 5/8"  |
| PTS6  | PTS7  | PTS8  | Long Conical       | 1/64"  | 1"    |
|       |       | PTT8  | Conical            | .025   | 5/8"  |
| PTX6  | PTX7  |       | Bent, Slotted      | 1/32"  |       |
|       | PTZ7  | PTZ8  | Bent, Slotted      | .020   |       |

## CARE OF WELLER® PT SERIES TIPS

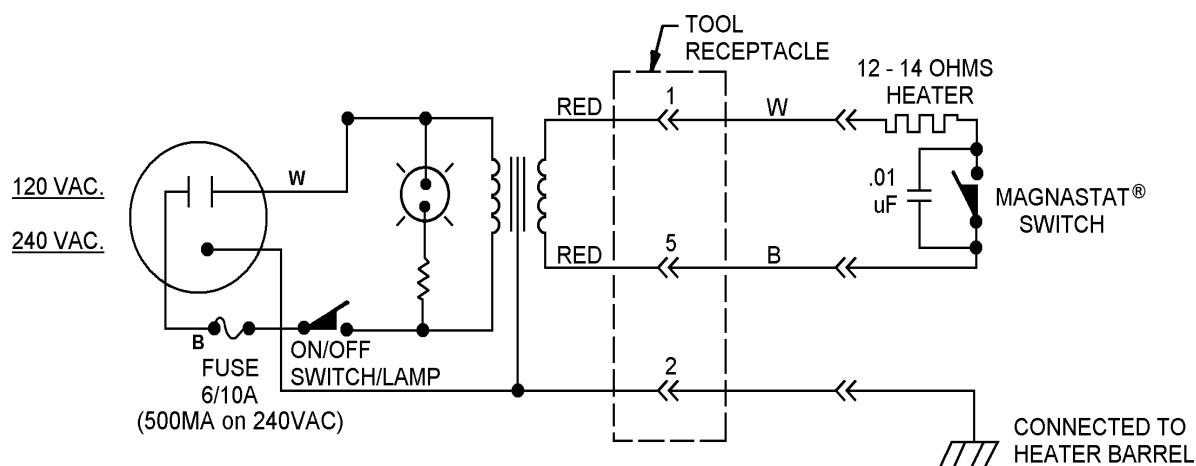
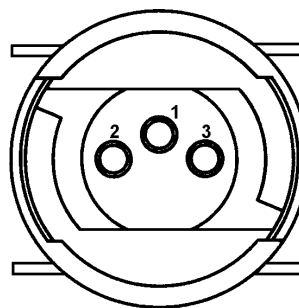
1. Keep tinned, wipe only before using.
2. Use rosin or activated rosin fluxes. Acid type flux will greatly reduce tip life.
3. Remove tip and clean with suitable cleaner for flux used. The frequency of cleaning will depend on the type of work and usage. Tips in constant use should be cleaned at least once a week.
4. Don't try to clean tip with abrasive materials and never file tip, to do so will greatly reduce tip life. If the tip becomes unwettable, it may be cleaned with a soft iron or brass brush using solder flux as a solvent; or the Weller® WPB1 Polishing bar.
5. Don't remove excess solder from heated tip before sorting. The excess solder will prevent oxidation of the wettable surface when tip is reheated.
6. Don't use anti-seize compounds on tips, the tips have been plated for oxidation protection.

## WTCPT TROUBLESHOOTING GUIDE

**WARNING:** AC line voltage is present inside power unit even when power switch is off. Refer service to qualified personnel.

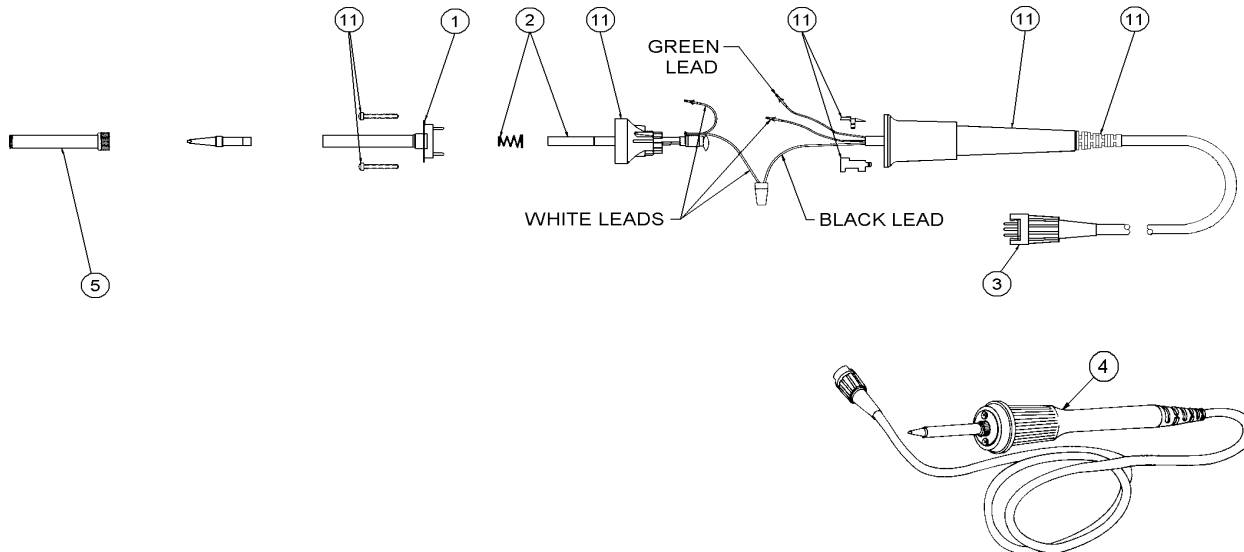
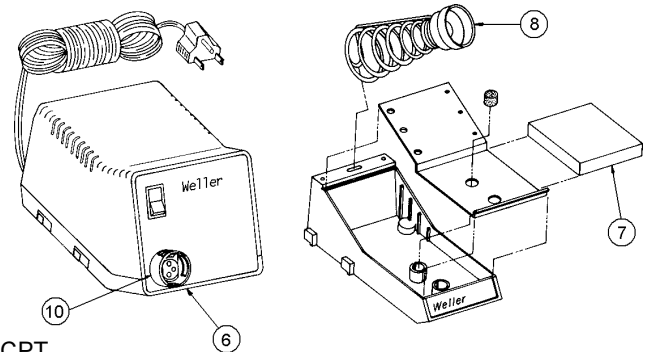
**NOTE:** Access to internal parts may be gained by removing four rubber feet, four bottom screws and case top.

1. Tool does not heat.
  - 1.1 Check at pin 1 and pin 2 of power unit tool receptacle for 24VAC. If not present, proceed to step 1.3. If power unit tests good, TC201T tool is defective.
  - 1.2 TC201T troubleshooting guide. (Tool does not heat).
    - 1.2.1 Tip Check – inspect tip for missing magnastat or wrong type tip. Replace tip. Check tip spring action, there should be 1/16" minimum spring action.
    - 1.2.2 Heating Element Check – check resistance at pin 1 and pin 2 of tool plug for 12 to 14 ohms. If tool tests good, connector pins are worn or damaged and not making good contact. If tool tests bad, remove two screws from heating element flange. Grasp heater barrel and black heat insulator, pull heating element free from tool. Check resistance at two closely spaced pins on heating element for 12 to 14 ohms.
    - 1.2.3 Magnastat Switch Check – Place tool on workbench with flat at rear of handle up. Insert 3/16" flat blade screwdriver into slot at rear of handle. Compress cord by pushing downward and toward handle until cord is pushed into handle (do not pry on handle). This releases the strain relief catch. Slide handle down cord to expose switch terminals. Check for proper magnastat switch operation by testing for continuity across magnastat switch terminals with tip held against end of switch; and loss of continuity when tip is removed. If magnastat checks good, check iron cord wiring for continuity.
  - 1.3 PU120T power unit troubleshooting guide. (No 24VAC at tool receptacle, step 1.1).
    - 1.3.1 Check for switch light when unit is turned on. If switch light is not illuminated, replace fuse located in base. Use 6/10 amp fuse (500MA, 5x20MM on 240V models). If still not illuminated, the switch, line cord, or associated wiring is defective. Unplug unit from AC line and check wiring.
    - 1.3.2 Check for 26VAC,  $\pm 2V$ , between red and yellow transformer leads, Replace fuse or transformer if defective.
2. TC201T iron overheats or temperature is higher than marked on tip.
  - 2.1 Replace tip with Weller® tip.
  - 2.2 Check magnastat switch and heating element. Refer to step 1.2.2 and 1.2.3 above.
3. High tip voltage or indication of circuit component damage.
  - 3.1 Check for 2 ohms maximum from tip to ground prong on line cord plug, repair as required.



## REPLACEMENT PARTS FOR THE WTCPT

| KEY NUMBER | PART NUMBER | DESCRIPTION                       |
|------------|-------------|-----------------------------------|
| 1          | EC234       | Heater                            |
| 2          | SW60        | Switch assembly with spring       |
| 3          | TC217       | Corset with plug                  |
| 4          | TC201T      | Soldering iron with PTA7 tip      |
| 5          | BA60        | Barrel nut assembly               |
| 6          | PU120T      | Power unit only, WTCPT, 120V      |
| 7          | TC205       | Sponge                            |
| 8          | TC204       | Spring and funnel for iron stand  |
| 9          | PH1201ESD   | Iron stand with spring and funnel |
| 10         | PL120       | Plug/receptacle kit               |
| 11         | TC218       | Handle assembly                   |
| Not Shown  | SHA1        | Cushion grip sleeve               |
| Not Shown  | SW130       | Switch, 120VAC, WTCPT             |
| Not Shown  | SW230       | Switch, 240VAC, WTCPTD            |
| Not Shown  | TR215       | Power transformer, 120VAC, WTCPT  |
| Not Shown  | TR216       | Power transformer, 240VAC, WTCPTD |



## OPTIONAL PARTS FOR THE WTCPT

| PART NUMBER | DESCRIPTION                                |
|-------------|--------------------------------------------|
| SF60        | Tool funnel for SMT tips                   |
| SMTA6       | 600°F Surface mount tip adapter for TC201T |
| SMTA8       | 800°F Surface mount tip adapter for        |
| WPB1        | Weller® tip polishing bar                  |