

**ESD Safe**  
**UL Approved**

**INSTRUCTIONAL  
MANUAL**

<b>MODEL</b>		<b>PART NUMBER</b>
<b>EX-685</b>	<b>110V</b>	<b>0685-0000</b>
<b>EX-685</b>	<b>220V</b>	<b>0685-2000</b>

**TEMPERATURE CONTROLLED  
SOLDERING STATION**

**⚡AUTOMATED PRODUCTION EQUIPMENT**

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## PRODUCT DESCRIPTION

The electronically temperature soldering station was developed to meet the present and future needs of the electronic production industry. The many features of the APE product make it the ideal tool for both service and repair as well as production line soldering.

Tip temperature is maintained to within 6° F of any setting from 300-850°F by an electronic circuit which has a temperature sensor located at the end of the heating element. The variable temperature design means no tip or the heating elements changes are necessary to adjust temperature.

**Analog stations** include a linear-scale meter, which indicates the current tip temperature. LED indicator lights are used to signal Power “ON” (Green) and heater “ON” (Red).

**Digital stations** include one three digit LED Display to accurately indicate the current tip temperature directly with the tolerance of 1° F and one red led to indicate heater “ON”.

**Non-Display stations** include a multi-color LED to indicate power “ON” (Green) and heater “ON” (Red).

This soldering station incorporated a temperature lock to prevent unwanted temperature adjustments by the operator. Lock in the selected temperature by an allen head screw on the front panel. An allen key for this purpose is included.

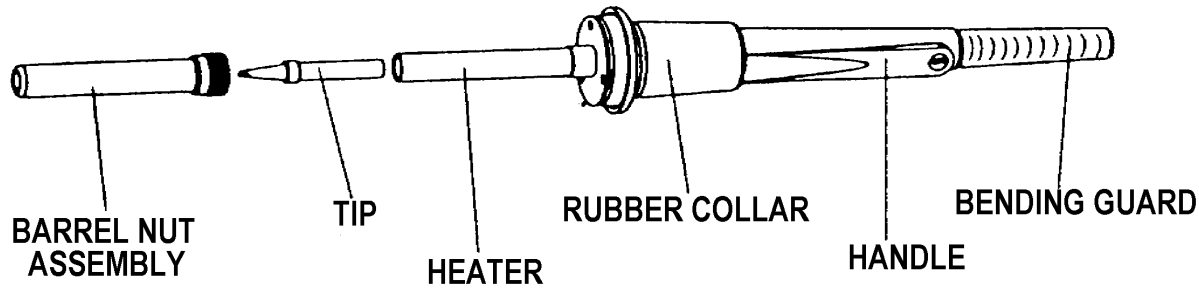
A new feature is a calibration port located on the face of the unit that allows for quick and convenient fine-tuning of the electronic temperature control system.

The detachable soldering iron is connected to the base unit by a fire resistant silicone rubber cable fitted with heavy duty 5 or 6 pin plug and a steel locking ring. All housings are molded of tough, heat resistant PC resin to better withstand the high impact bumps and abrasions. All materials used comply with DOD, CE, and MIL specs.

The power unit is isolated from the ac line by a high efficiency 24VAC output transformer for user's safety and to prevent unwanted high voltage leakage that may damage current sensitive components. Zero-voltage switching circuit is incorporated to protect the C-MOS IC from damage by transient voltage damage.

FIG. 1

## SOLDERING IRON PN 6910-2700



### WORKING TEMPERATURE

A low temperature will slow the rate of flow of the solder. A high temperature will burn the flux in the solder, which in turn will emit a heavy white smoke resulting in a dry joint or damage to the p. c. b.

When iron is set to correct temperature for the particular soldering situation at hand, a good joint is assured. Key to successful soldering is knowing the type of solder you are using, the size of the joint to be soldered and the characteristics of the p. c. b. & components used and adjusting the tip temperature to meet the need of the application.

The most common solder alloy used in the electronic industry is 60% tin, 40% lead (60/40). The tip working temperature of the soldering is detailed below and can vary from manufacturer to manufacturer.

Below are listed the common temperature for the specific job.

### SOLDERING

Melting point	419° F
Normal operation	518-608° F
Production line operation	608-716° F

Any temperature above 770° F is not recommended for normal soldering functions but, can be used for short periods of time when high temperatures are required.

<u>ITEM</u>	<u>Part number</u>
EX 685-110V	0685-0000
EX 685-220V	0685-2000
SOLDER IRON	6910-2700
HEATER ASSY.	6910-2724
ALLEN KEY	
SOLDER IRON TIPS	SEE PAGE 5

## OPERATING INSTRUCTIONS

- Ensure that the working voltage matches your power supply before plugging in the station
- Check carefully for any damage during transportation.

**Analog stations-** linear analog meter.

Set the temperature by rotating temperature control knob on the front of the front panel stopping at the desired temperature.

**Digital Stations-** digital display.

Set temperature by moving “SET-READ” switch to “SET” position, rotate temperature control knob until the digital display reads the desired temperature, then move “SET-READ” switch to “READ” position. The station will then maintain the preset temperature.

### **First Time Use:**

1. Ensure the base unit’s power switch is in the “OFF” position.
2. Set the temperature control knob to the MIN setting.
3. Switch the base unit power switch to the “ON” position. Note that the LED light will turn off when the tool reaches the set temperature. A multi-color LED will indicate that the iron has reached the desired temperature by changing from green to orange in color.
4. Rotate the temperature control knob to 480° F, waiting until the LED turns off to begin liberally tinning the soldering tip with a protective layer of solder.
5. Adjust the temperature to the desired setting. When the LED turns off (or changes color) you are ready to begin.

**CAUTION:** Solder irons operate at high temperatures and can easily burn people or objects. **Do not touch** the tip and the heater at any time while the unit is on and keep a safe distance from inflammable materials. Please allow sufficient time for it to cool before changing tips or servicing the unit!

### **COMMON CAUSES OF TIP UNWETTING**

1. Tip temperature higher than 770° F.
2. The tip working surfaces are not tinned while the iron idling.
3. Lack of flux in soldering, wicking, repairing, and touch-up operations.
4. Wiping the tip on a high sulfur content, dirty or dry sponges and rags.
5. Touching with organic substances such as plastic, resin, silicone, grease, and other chemicals.
6. Impurities in solder and/or low tin content.

## CARE OF TIPS

**Caution:** The solder iron can reach very high temperatures. Be sure to turn the unit off prior to carrying out any maintenance or trouble shooting steps listed below!

### IMPORTANT

Remove the tip and clean after moderate to heavy use or at least daily if on production line. Remove any loose buildups in the tip retaining assembly to prevent tip freezing.

The solder tips supplied are iron clad copper and if used properly, they should maintain optimum life.

1. Always clean tip before returning it to holder, turning off the station, or storing it for long periods of time. Wipe the tip on a wet sponge prior to use.
2. Keeping iron set at high temperatures (more than 750° F) will shorten tip life.
3. Do not use excessive pressure on the tip or rub the joint with tip while soldering, it does not improve the heat transfer and may cause damage to tip.
4. Apply solder to the joint, not the tip when soldering. The flux is naturally caustic and thus will eat away the tip.
5. Never clean tip with a file or abrasive material.
6. Do not use fluxes, which contain chloride or acid. Use only rosin resin activated fluxes.
7. If an oxide film forms on the tip, it can be removed by careful buffing with a 600-800 grit emery cloth, isopropyl alcohol or equivalent and then wrapping rosin core solder around the newly exposed surfaces. Coat the tinned areas with rosin-core solder after the rosin-core has melted.

### NEW TIPS

Following these steps will lead to optimum tip life.

1. Set temperature to min. then turn the main power switch to the “ON” position.
2. Set temperature to 482° F.
3. Coat the tinned surface with rosin-core solder after reaching 482° F.
4. Set to the desired temperature after allowing the unit to idle at 482° F for 3 minutes
5. The iron will be ready for use once it reaches the preset temperature.

**IMPORTANT:** remove and clean the tip daily. If a new tip is installed, remove any loose build ups in the barrel assembly, otherwise the tip may fuse to the heating element or retaining barrel.

### MAINTENANCE

#### TIP MAINTENANCE AND DRESSING

Tips can be changed or replaced simply by unscrewing the knurled nut barrel assembly.

The station must be switched off and allowed to cool before this operation, damage may result if the system is left ON without the tip in place.

After removing the tip, blow out any oxide dust that may have formed in the tip retaining area of the barrel. Be careful to avoid getting this dust in your eyes. Replace the tip and screw back the knurled nut barrel assembly using only firm hand pressure to tighten. Pliers should only be used to tighten the nut to avoid burning your fingers, but care should be taken not to over-tighten as this could damage the element.

## GENERAL CLEANING

The outer cover of the iron and station may be cleaned with a damp cloth using small amounts of liquid detergent. Never submerge the unit in liquid or allow any liquid to enter the case of the station. Never use any solvent to clean the case.

## SERVICE

If the station should become faulty or, for some reason not operate normally, the system should be returned to the service department of you authorized dealer, or agent. If the supply cord is damaged, the manufacturer or its service agent or a similarly qualified person must replace the cord in order to avoid hazard.

**WARNING:** This tool must be placed on its stand when not in use.

**WARNING:** Keep out of reach of children.

**WARNING:** Do not inhale solder fumes.

**WARNING:** Keep tip and heating element away from body, clothes and flammable material when in operation.

## INTERCHANGEABLE TIPS

### Heater

Part number 6910-2724 SOLDER IRON HEATER

