

# ZD-985 Desoldering Station





# !!!STOP !!!

**IF YOU READ NOTHING ELSE, PLEASE READ THIS:** The de-soldering tips have been dipped in solder by the manufacturer. That means they are “clogged”. Prior to first use, set the temperature controls of the desoldering tool to the highest temperature, wait for the unit to reach that temperature and then depress the trigger to vacuum the solder from the tip. If that is unsuccessful, use one of the cleaning rods to dislodge the solder.

## USA TECHNICAL SUPPORT HOTLINE:

Call Memotronics at (281) 257-8587 or email [tech@memotronics.com](mailto:tech@memotronics.com)

# Unpacking and Setting Up Your ZD-985 Desoldering Station

Carefully unpack the ZD-985 from the shipping box. The box should contain the following items:

ZD985 Base unit with attached gun holder base

Handpiece Gun with attached vacuum hose and control cable

Handpiece Gun holder

Accessories and Consumables

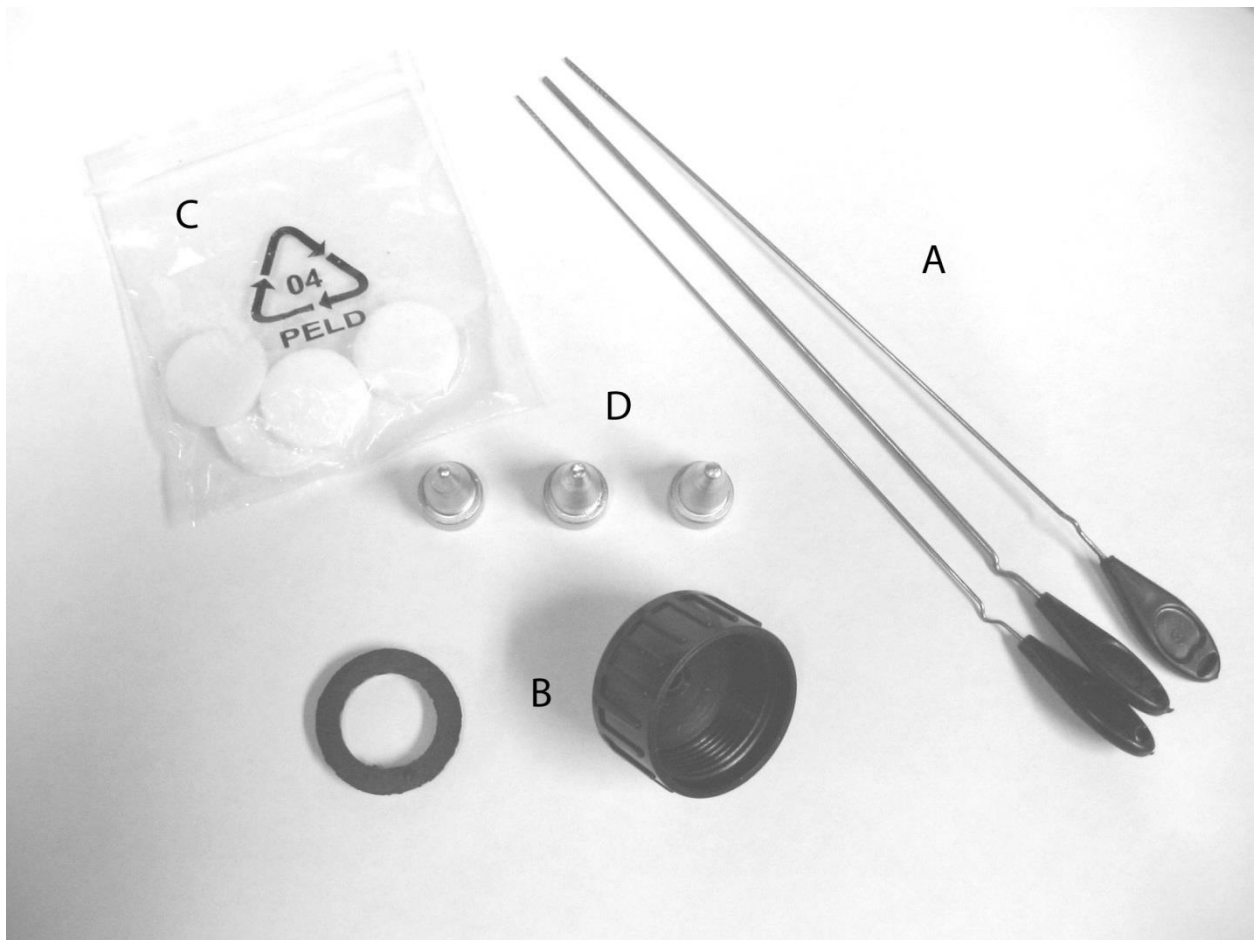


Figure 1

Refer to Figure 1 on page 4

Ref. A) (3) Solder Tip Cleaning Tools (Labeled on handle A – B – C)  
A 0.75 mm B 0.94 mm C 1.25 mm

Ref. B) Black Filter Housing and Rubber Gasket (Mates to vacuum inlet on ZD-985 Base)

Ref. C) (1) Additional Base Vacuum Filter (One is already in the front of the vacuum inlet)

Ref. C) (3) Additional Gun Vacuum Filters (One is already in the Solder Capture Chamber)

Ref. D) (3) Tips (Note: One is already installed on the gun)

Note: All Consumable supplies, and replacement parts are available from:

**Memotronics**

**Phone: (903) 732-0058**

**E-Mail: [tech@memotronics.com](mailto:tech@memotronics.com)**

See the “Parts and Accessories” listing on page 18 of the manual for more details.

## **Setting Up the Unit**

**Step 1:** Put the black rubber seal into the filter housing. Check to make sure there is a white felt filter inserted in the front of the black vacuum outlet on the base unit. Screw the filter housing onto the vacuum outlet. Snug the housing down but be careful not to over tighten.

**Step 2:** Insert the Handpiece Gun Holder into the slot on the top of the Gun Holder Base. Note that the Gun Holder Base is able to be detached from the main unit by sliding it towards the back. This allows you to use the Gun Holder either in an attached arrangement or in a remote position if that is more convenient.



**Step 3:** Remove the strap on the Gun Cords and straighten them out. Place the Gun into the Holder and attach the control cord with the notch towards the top into the jack and then slide the black vacuum hose over the barb on the vacuum outlet of the filter housing.

**Step 4:** Attach the power cord to the receptacle in the back of the ZD-985 unit and plug the other end into a mains AC outlet.

**Step 5:** Turn on the ZD-985. The display will light all the LCD segments briefly followed by a version number and finally the main screen readout. The screen will appear similar to Figure 2.



Figure 2

The “TEMP.” gives us the current temperature of the Tip in degrees centigrade. The “SET” gives us the target temperature that we have selected for the tip. Note that the left button marked C/F will allow you to switch between Centigrade and Fahrenheit Units. The HEAT ON is telling us that the ZD-985 is actively heating the tip and the WAIT is telling us that the system has not stabilized within 10 degrees of the target temperature yet. We can easily adjust the SET Temperature by pushing the UP or DOWN buttons below the display. Each push of a button will move the SET by one degree. To more rapidly adjust the SET temperature, push and hold either the UP or DOWN button. To help choose a proper setting for your application a solder temperature chart is included under the “Tips and Techniques” section of this manual.

**Step 6.** It is now necessary to clear the solder plug that came with your new Desoldering tip. The manufacturer dips each tip in solder to seal and protect the tip from oxidation until it is put in service. Turn the SET to the Maximum setting, 480 degrees C. When the unit stabilizes push the trigger on the gun and the solder plug should be vacuumed into the Solder Capture Container. If for some reason the plug doesn't clear, use the appropriate cleaning rod (A, B or C) from the accessory kit that was supplied with the unit to gently push the solder plug free. After the solder plug is cleared return the unit to an appropriate temperature using the DOWN button. It is important to select a SET Temperature for the unit that is high enough to do the job but not so high that the tip is put under excessive corrosion risk or that the parts that you are desoldering are damaged.

### **Auto Tip Saver Function**

As an additional protection against tip corrosion due to excessive heat the ZD-985 has a timed Auto Tip Saver function that drops the SET to 200 degrees C every 15 minutes. When this occurs it is only necessary to push the "UP", "DOWN", or "C/F" button to reset the machine to your selected SET point.

## Tips and Techniques

The following is a list of the common solder alloys and their respective melt points. This can be used as a guide to choosing the appropriate SET point for your application. Keep in mind that many variables factor into the optimal set point and you may have to experiment to get the best results. One of the important considerations, if you are salvaging usable parts, is to have the temperature of the tip high enough so that you can quickly heat the joint and evacuate the solder before heat can travel up the lead and damage the component.

### Alloy Melt Ranges

LEAD-FREE

215 C to 245 C

TIN-LEAD

Sn60/Pb40 through Sn30/Pb70 185 C to 258 C

Sn05/Pb95 301 C to 320 C

TIN-LEAD-SILVER

180 C to 300 C

### Effective Desoldering Technique

Choose a solder tip hole size that is appropriate for the size of the solder pads that you will be cleaning. See the “Maintenance of the ZD-985” section for the proper tip changing procedure. Use enough tip heat so that you can place the tip over the target solder joint and within a second or two push the trigger of the gun. Continue to hold the trigger as you pull the gun from the solder joint. This allows air to enter the tip and sweep the residual solder into the solder capture container. Once you are clear of the joint you can release the trigger. If the board has traces on multiple levels or if the traces are very wide it may be necessary to leave the Desoldering tip on the pad longer to allow complete solder melting to occur before pulling the trigger. Sometimes it is also necessary to move the tip laterally on the pad so as to reposition the wire slightly so all the solder can be vacuumed from the pad.

# Maintenance of the ZD-985

## Changing the Tip

Make certain that the gun is cool before attempting to change tips. When under power all the metal parts associated with the tip of the gun become dangerously hot and can create serious injury. Once the gun has cooled to room temperature unscrew the knurled finger nut near the base of the heater element. If it is too tight for manual removal gently use a plier. This retaining nut has standard right hand threads. Once the nut is loose, pull the tip retention Outer Sheath forward to uncover the Tip and Heater Element. Be aware that there is a secondary sheath that covers the heater element and may also come off with the Outer Sheath and the Tip. See Figure 3. The Inner Sheath must be placed back on the Heater Element before the Tip is re-installed. If the Tip is still on the front of the heater the inner sheath is still in place as it will not slide over the Tip. Pull the Tip off the Heater Element and vacuum tube. Use your fingers or a soft tool to do this. The Tip is precision and the use of pliers or other hard tools may damage its surface or its seal with the heater element. Push the new Tip onto the vacuum tube and seat it securely against the heater element. Slide the Outer Sheath and Knurled Nut over the Tip and Heater Element and finger tighten the nut. You can tighten this as much as you can with your fingers. It is not uncommon for this nut to loosen with time due to the heating and cooling of the gun from one use to another. It is recommended that the tightness be checked before each use and prior to turning the unit on. Do Not use a pliers to over tighten the nut.

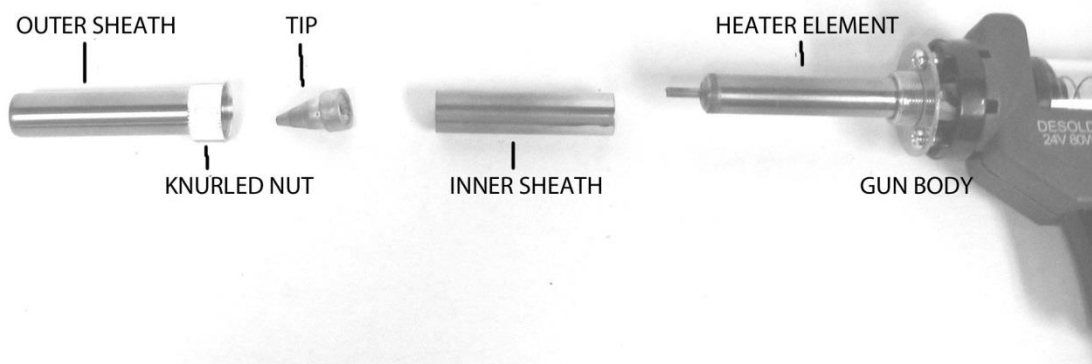


Figure 3

## ERROR Message

The ERROR message on the display indicates that something is wrong with the system. Most simply the handpiece gun may not be plugged into the front jack or it may be loose. Make certain the plug is tight and turn the unit off and on again once more to see if the problem has cleared. If the ERROR persists contact Memotronics at (903) 732-0058 or email us at [tech@memotronics.com](mailto:tech@memotronics.com)

## Cleaning the Solder Capture Container

The first step in cleaning the Solder Capture Container is to remove it from the gun. Check out Figure 4 for a picture of the release button on the back of the gun.

Figure 4

Apply some pressure with your thumb to the bre~~ch~~ to relieve tension on the release latch. Slide the black button #2 down and this will release the bre~~ch~~. Next, take a hold of the Clear Glass Solder Capture Chamber and push it back against the open bre~~ch~~ far enough so that you can lift the front of the chamber up and out of the front recess. See Figure 5:



Figure 5

Please note that there is a thin black vacuum seal washer that sits ahead of the black plastic cap of the Solder Capture Chamber. It is possible for this washer to be pulled out along with the chamber. When the washer sticks to the Capture Chamber it makes the removal of the chamber more difficult. A thin coating of talcum powder on the washer can minimize this problem. Be careful not to lose this washer. If it comes out with the chamber it is best to put it back in place in the front housing immediately. The Glass Chamber is breakable if dropped so use due caution. The Solder Capture Chamber itself and associated seals are shown in Figure 6. Note the Breech Plunger Silicone Seal is not removed during the routine cleaning procedure. These parts are available as The Glass-Spare Kit. See the Parts and Accessories List on page 18.

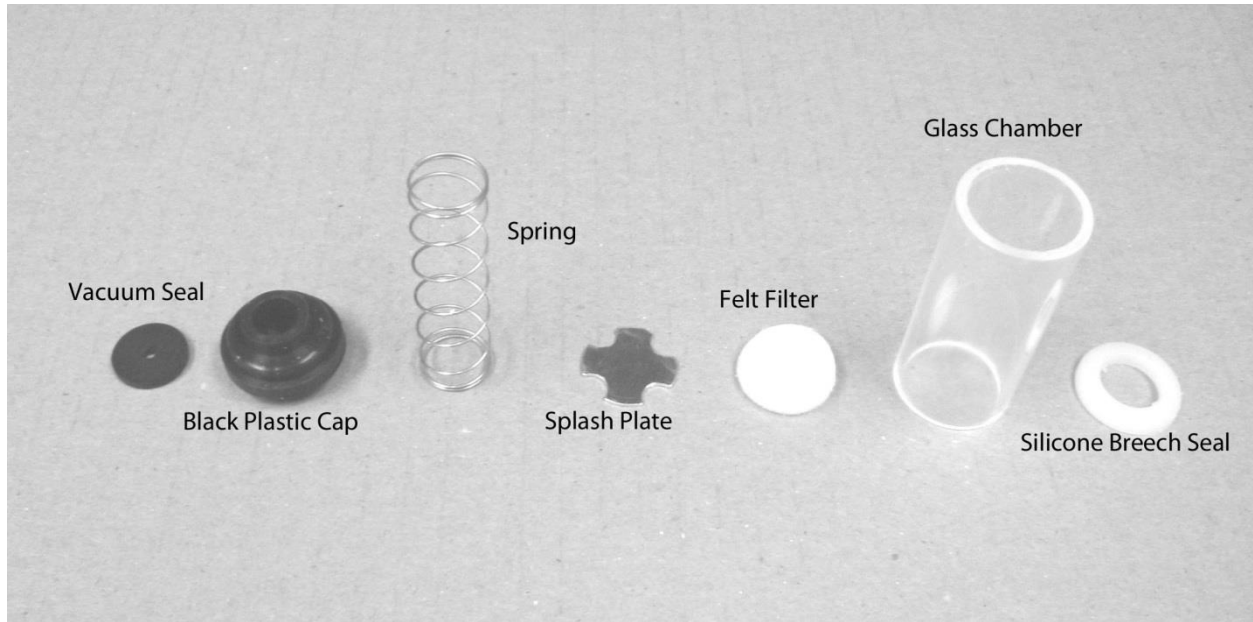


Figure 6

From left to right these parts are the Vacuum Seal, Black Plastic Cap, Spring, Splash Plate, Felt Debris Filter, Chamber, and Silicone Breech Seal. It is important that these parts are assembled in the proper order to provide the best service from the ZD-985. The Spring slips over the small shoulder of the cap. The Splash Shield sits on top of the Spring and the Felt Filter sits on top of the Splash Shield. The Chamber slides over the other parts and on to the larger shoulder of the Cap. When solder enters the Capture Chamber it will impact with the splash shield at the back of the chamber. Most of the solder will accumulate in this area. The Felt Filter keeps small particles of solder from getting into the vacuum hose. The spring serves the purpose of holding the Splash Plate to the back of the Chamber against the Filter and also helps to keep the molten solder off the Chamber wall.

To clean the solder from the chamber, disassemble and remove the impacted solder from the Splash Plate and then carefully from the spring. It is important not to bend or stretch the spring in this process. If you wish to clean the splatter from inside the clear Chamber, use a wooden or plastic stick or a brush. When the gross splatter is removed a soft cloth can be twisted into the chamber to complete the job.

Note: The solder, depending on the alloys involved, can be hazardous to the environment and should be collected and recycled in the proper manner.

Reassemble the Chamber and place the Felt Filter against the spring loaded plunger of the breech. Be careful to ensure the filter is centered on the breech plunger as it is easy for the fibers of the felt to break the seal that the Silicone Seal must make with the Chamber Housing. Once properly positioned, push back on the chamber and tip it into the front housing. Finally push the Breech forward until it clicks and locks into place. The ZD-985 is now once again ready to return to service. Figure 4 identifies the Plunger and Silicone Seal.

Be sure to keep adequate consumables and spare parts on hand to eliminate down time and to protect the function of the Desoldering Station.

### **Routine Tip Cleaning**

It is important to routinely clear the residual oxidized solder and scale from the Desoldering tip. This is easily accomplished by pushing the, appropriate, cleaning rod (A, B, or C) through the tip and into the solder capture chamber, at the end of each use, before turning the machine off. Use the vacuum trigger to apply vacuum during and after the cleaning rod is push through and removed. This routine procedure should eliminate the need to fight with a clogged tip. Caution as cleaning rods become very hot when inserted into the tip.

### **Cleaning a Clogged Tip**

Note: This is the only maintenance procedure where it is necessary to have the unit at high temperature. Extra caution should be exercised to prevent burns and injury. If proper techniques are followed a clogged tip should be a rare occurrence. Select the correct cleaning rod from your accessory kit. SET the target temperature to the maximum 480 degrees C. Try once again to clear the clog with the vacuum alone. If the clog is still present, activate the vacuum trigger again and push the cleaning rod (A, B, or C) gently into the tip orifice. Alternately push and remove the cleaning rod to allow the vacuum to clear any debris to the Collection Chamber. It is important to approach the surface of the tips surfaces, internally and externally, with care as scratches and abrasions will shorten the life of the tip. Do not Drill or use cutters to clean a tip. If your tip is scratched or corroded, contact Memotronics for replacement parts.

## Fuse Replacement

Note: A blown fuse may indicate an internal problem with the circuitry of the unit. Never use a fuse larger than the one specified. (3.15A for 120 Volt unit). Repeated replacement of a fuse can push the problem with the unit deeper into the circuitry and exacerbate the problem.



Figure 7

Remove the power cord from the back of the unit and slide the fuse holder out of the lower section of the power cord jack. See Figure 7. The fuse holder comes with one stored replacement fuse. Insert the replacement fuse into the holder in place of the failed fuse and slide the holder back into the AC cord jack. Replace the power cord and turn on the unit. Get a replacement fuse to put back in the storage position of the fuse holder for future needs.

## Poor Vacuum

Begin the trouble shooting process by removing the Solder Capture Chamber from the gun. Make sure there is no debris around the large hole in the Breech Plunger. Briefly turn on the unit and trigger the vacuum. Place your finger tip over the hole in the center of the Plunger and test the strength of the vacuum. Turn off the unit. If you have no vacuum at the plunger, go to paragraph "A". If there is a vacuum at the Plunger, go to paragraph "B".

"A" If there is no vacuum at the plunger, pull the black hose off the Black Filter Housing on the front of the unit. Once again briefly turn on the unit and trigger the vacuum. This time check the vacuum at the inlet to the Black Filter Housing. Turn off the unit. If there was no vacuum at the vacuum inlet then there is an internal problem with the vacuum pump. If you had vacuum at the vacuum inlet you will have to check the hose that goes up to the Breech of the gun for an obstruction or kink.

"B" Since we have vacuum at the Breech we will check the path from the tip to the Solder Capture Chamber. Choose the proper Cleaning Rod for your tip and insert it into the tip. If the Tip and vacuum pipe are clear you should be able to push the rod all the way through to the area of the Solder Capture Area. If the rod will not go through, this is the source of your poor vacuum. Remove the tip and look down the vacuum tube towards the Solder Capture Chamber. You should be able to see a clear, unobstructed, path. If not you may have to reassemble the chamber and heat up the gun and try to clear the pipe with the cleaning rod. If the tip and the vacuum pipe are both clear then it is likely that you have a poor seal on the housing of the Solder Capture Chamber. Make certain that the flat Black Vacuum Seal washer that sits ahead of the Chamber Cap is in its proper position. Check to make certain that the felt filter is not frayed with pieces hanging to the sides as this can prevent a good vacuum seal. Inspect the clear Silicone Seal on the Breech for cuts or tears. Reinstall the Solder Capture Chamber paying attention to the position of the felt filter and making certain that the Breech seal seats properly into the Chamber Housing.

Turn on the unit and run it up to temperature and test it on a solder pad.

## Specifications

Supply Power: AC 110-130 V or AC 220-240 V 140 Watts

Gun Rated Voltage and Power: 24 Volts 80 Watts

Dimensions: W: 18 cm H: 16 cm D: 16 cm (Not including Gun profile or AC Cord)

Weight: 2.2 Kg

Temperature Range: 160 C to 480 C or 320 F to 896 F

Tip Orifice: 0.8 mm, 1.0 mm, 1.3 mm

Static Vacuum Level: 23 cm of Hg

Sound Level: 75db @ 1 Meter

## Warranty

Available from Memotronics

Phone: (903) 732-0058

E-Mail: [tech@memotronics.com](mailto:tech@memotronics.com)

Web Site: [www.memotronics.com](http://www.memotronics.com)

Thank you for purchasing the ZD985 Desoldering Station. Your product is guaranteed against defects in material and workmanship for a period of 6 months from the date of receipt. It is vital that you keep your receipt if you need to make a claim under this warranty. For all warranty related inquiries, please contact our customer service department by e-mail at [service@memotronics.com](mailto:service@memotronics.com) or by phone: (903) 732-0058

## Parts and Accessories

The following Parts and Consumables are available on the Memotronics Web Site:  
[www.memotronics.com](http://www.memotronics.com)

Note: Please inquire for the availability of any non-listed parts.

Description	Reference	Part Number
Desoldering Tip, Large	Fig. 1 (D) Pg. 4	SOLTIPLG
Desoldering Tip, Medium	Fig. 1 (D) Pg. 4	SOLTIPMD
Desoldering Tip, Small	Fig. 1(D) Pg. 4	SOLTIPSM
Cleaning Rod Large Tips	Fig. 1 (A) Pg. 4	SOLRDLG
Cleaning Rod Medium Tips	Fig. 1 (A) Pg. 4	SOLRDMD
Cleaning Rod Small Tips	Fig. 1 (A) Pg. 4	SOLRDSM
Gun Reservoir (17mm)		
Capture Chamber Filter(10)	Fig. 6 Pg. 13	SOLFLTRSM
Filter for Station (21mm) (10)	Fig. 1 (C) Pg. 4	SOLFLTRLG
Yellow Tip Cleaning Sponge		SOLSPG-A
Complete Gun Assembly (Medium Tip Included)		SOLGUN-A
Heating Element (Includes Temperature Sensor)		SOLHTR-A
Spares Kit ( 9 Tips, 10 Small + 10 Large Filters, 1 Sponge and 1 Heater Element)		SOLACC552
Capture Chamber (Reservoir) Kit: (Glass Chamber, Spring, Splash Plate, Cap, Disk, Silicone Seal)		SOLGLASS-552

## **!!! Words of Caution !!!**

The manufacturer and distributor assume no responsibility for uses of this device other than those described in the operating instructions. The manufacturer and distributor assume no liability for any alteration of the device mechanically or electrically.

**HIGH TEMPERATURES,** The unit can reach temperatures that are over 400 C ( 752 F) which can cause serious burns and can cause materials to combust. Be certain to comply with the following precautions:

- Do not touch any of the metal surfaces near the tip/nozzle.
- Do not use the unit near flammable items.
- Advise other people in your work area about the temperatures and dangers related to the unit.
- Turn off the switch on the unit when it is not in use or being monitored by qualified personnel.
- Except for Tip Cleaning always turn off the unit, unplug it and allow it to cool to room temperature prior to performing any maintenance.
- Tip temperature may exceed the flash point of some materials so be aware of adjacent materials in your work area.
- Place the gun in its stand when not in use. Do not lay it on the bench or place it near items that may melt or combust.
- Do not place the tip on any spot for an extended period of time.
- Do not use in an explosive atmosphere.
- Be aware heat can be transferred along adjacent metal and to combustible material that may be out of sight.

### **OTHER RECOMMENDATIONS:**

- Do not use this device for purposes for which it was not designed or intended.
- Do not try to dislodge debris or clogs by striking the gun or tapping it on a hard surface.
- Do not file the soldering tip to remove scale. Use the wet sponge to clean the tip.

- Use only accessories and replacement parts that are designed for the ZD-985 and are listed in the operation manual.
- Turn off the power before disconnecting the Handpiece Gun from the main unit.
- This unit is not intended for the use of unsupervised children. Proper training in the use of the unit is important for all ages.
- Protect yourself from electrical shocks. Avoid touching grounded parts with your body while working on equipment. The grips, of antistatic designed soldering tools, are conductive.
- Observe the safety regulations that are specific to your work place.