

THE CARE AND FEEDING OF THE HAKKO 485.

The Hakko 485 represents a considerable investment, and should be granted the care such an investment demands. You wouldn't run your car without oil, would you? For a long healthy life -

DAILY CLEANING.

Clean your Hakko 485 according to the following procedures before operating the unit.

1. Remove the tabletop.
2. Turn the unit on. Make sure the solder in the solder bath is completely melted and the ready light is 'ON' before continuing.
3. Skim the oxides off the surface of the bath, using the spatula, and deposit them in the dross pot next to the bath.
4. Clean away any residue.
5. Replace the anti-oxidizer in the anti-oxidizer plate.

MONTHLY CLEANING.

Clean your Hakko 485 thoroughly every month. Make sure the solder in the solder bath is completely melted and the ready light is 'ON', then proceed according to the following:

1. Disassembly.
 - Using a ladle, remove the molten solder from the bath until the bolts inside the chamber are visible.
 - Remove the nuts.
 - Using a 2.0 mm. Allen wrench, remove the joint screw.
 - Drop the impeller.
 - Remove any anti-oxidizer from the anti-oxidizer plate.
 - Remove the anti-oxidizer plate.
 - While holding the solder outlet with pliers, remove the flow chamber. The bottom plate will lift out at the same time.
2. Cleaning.
 - Use the spatula to remove all oxides and detritus from the chamber and outlet area.

NOTE:

When the stainless steel heating element pipes become visible, turn the power OFF to avoid damaging them.

3. REASSEMBLY.

- Place the impeller into the chamber and set the bottom plate in place.
- Place the chamber assembly on the bolt in the solder bath.
- Slip the impeller through the hole in the anti-oxidizer plate and set it into the joint.
- Secure the D-cut on both the impeller and motor shafts into the joint, then tighten the set-screws.

CALIBRATION PROCEDURE.

This procedure is to be followed only after every other adjustment and repair has been made. The operator or technician who embarks upon this procedure will find that the virtue of patience has not been over-rated.

TEST EQUIPMENT REQUIRED:

Hakko 191 or 192-5C; A1310 probe for solder bath.

1. Follow the turn-on procedure as described in the manual.
Select MANUAL mode.

3. Set temperature to 250⁰C. at the temperature control meter.
4. When the selected temperature is reached (the middle **III** indicator on the temperature control meter is lit, and the READY light is on), insert the temperature probe approximately 3 mm (1/8") into the solder bath, one inch away from the edges. Allow the reading to stabilize. The acceptable range is 225 to 275⁰ C. ($\pm 10\%$ of set temperature).
5. If the temperature of the solder bath is too high, turn the RESET potentiometer on the temperature control meter one division counterclockwise. Allow four hours for the solder bath to reach thermal equilibrium.
6. Repeat steps 4 and 5 until the bath temperature is within tolerance.
7. If the temperature of the solder bath is too low, turn the RESET potentiometer on the temperature control module one division clockwise. Allow four hours for the solder bath to reach thermal equilibrium.
8. Repeat steps 4 and 5 until the bath temperature is within tolerance.

NO OTHER CALIBRATION OR ADJUSTMENT IS REQUIRED.

A YOUNG PERSON'S GUIDE TO 485 NOZZLERY

Custom nozzles can be made for most reasonable applications. This note exists solely to define 'reasonable' as it obtains to the Hakko 485.

The solder flow capacity of the 485 is limited by the amount of solder in the bath and the characteristics of the impeller. The impeller is a little propeller-like device that acts as a pump for the molten solder; its size, shape and speed of rotation determine the volume of solder delivered to the nozzle. Since the nozzles are centre-fed, the length of the nozzle becomes a limiting criterion. If it is too long, the solder will not flow uniformly but lump up in the middle, causing uneven distribution of the solder across the surface and missing the ends entirely.

The maximum volume for any special nozzle is not supposed to exceed 40,000mm³. This is to guarantee that the solder surface will be flat, that solder will not slosh about or squirt madly over the ends, and that nobody will be hurt.

Nozzles should not be any longer than 140 mm (5.5 inches) for the same reason.

Hakko cannot guarantee that nozzles exceeding these dimensions will work, as the customer desires. It is a matter of moving a fixed amount of solder through an orifice of fixed dimensions, to fill a volume (and a shape) that is on the margin of the system's capability.