American Hakko Products, Inc.

# HAKKO FG-100 Calibration Instructions

Revision 2013-12

## Tools Required:

- Room Temperature Thermometer
- Yokogawa CA-71 Portable Calibrator or equivalent
- Phillips head screwdriver

## Temperature Measurement Calibration

⚠ Be sure to attach the thermometer reference junction temperature detection sensor (For Yokogawa the part number is RJ Sensor B9638CR) and place it near the HAKKO FG-100 being calibrated. Failing to do so will result in a faulty calibration.

⚠ Be sure to allow the calibration tools and the HAKKO FG-100 being calibrated to acclimate to their environment for 30 to 40 minutes. The ideal environment for performing the calibration will be a room temperature of 23°C ±3°C and a relative humidity between 20% and 80%. The conditions in the room should be stable, specifically the temperature no fluctuating more than ±1°C during the calibration process.

1. Set the Yokogawa CA-71 Portable Calibrator or equivalent device for source operation and to output a Type-K Thermocouple signal.

2. Turn on the HAKKO FG-100.

3. Remove the sensor wire from the HAKKO FG-100.

4. Open the HAKKO FG-100 by removing the 2 Phillips screws along the bottom back of the casing.

5. Carefully separate the two halves of the unit revealing the PCB.

6. Press the CAL button (SW 2) located to the lower right of center of the PCB from your view.

7. Carefully re-assemble the two halves of the unit and position the unit to give you a clear view of the LCD display.

8. Verify that the LCD display shows ‘CAL’, 500, and °C. If the HAKKO FG-100 is one that displays in Fahrenheit, the LCD display will show ‘CAL’, 932, and °F.

9. Attach the source leads from the Yokogawa CA-71 Portable Calibrator or equivalent device to the corresponding terminal posts on the HAKKO FG-100.

Be sure to insulate the clips on the lead wires to prevent them from heating while handling and making the connections to the posts. If the clips on the lead wires are heated, this could introduce measurement error.

10. Set the output value on the Yokogawa CA-71 Portable Calibrator or equivalent device to 500°C and start the source supply.

11. Press the MAX HOLD button on the HAKKO FG-100 and ensure the 'CAL' indication disappears from the display.

12. Stop the source supply on the Yokogawa CA-71 Portable Calibrator or equivalent device.

13. Verify the calibration by setting the output value on the Yokogawa CA-71 Portable Calibrator or equivalent device to the values in the table below and confirm that the display shows the standard values corresponding to each output setting.

| Output Value (Type K, °C) | Standard Value (°C) |
|---|---|
| 0 | 0 ±2 |
| 200 | 200 ±2 |
| 300 | 300 ±2 |
| 400 | 400 ±2 |
| 500 | 500 ±2 |
| 600 | 600 ±2 |

14. If there is any deviation outside the standard values, perform the calibration again.

15. When finished, turn off the HAKKO FG-100. Ensure the source supply is stopped on the Yokogawa CA-71 Portable Calibrator or equivalent device and remove the source leads from the HAKKO FG-100. Re-secure the two halves of the unit by installing the 2 Phillips screws along the bottom back of the casing, and re-install the sensor wire.