

WEST·BOND[®] INC.

ULTRASONIC BOARD CALIBRATION P/N 6795 For “E” Series Machines

1. EQUIPMENT REQUIRED:

- 1.1 Oscilloscope with high impedance and low capacitance probe
- 1.2 Multimeter. (Capable of measuring RMS voltages up to 100KHz)
- 1.3 20 Ω , 5 watt resistor

- All following measurements are made with respect to circuit common ground, TP7.

2. DC VOLTAGE VERIFICATION:

- 2.1 Turn on bonder main power.
- 2.2 Using DC volt meter, verify the DC voltages at the test points as follows:
 - TP5 for -12 VDC, $\pm 0.3V$
 - TP6 for -15 VDC, $\pm 0.3V$
 - TP8 for +15 VDC, $\pm 0.3V$
 - TP9 for +12 VDC, $\pm 0.3V$

3. OSCILLOSCOPE CALIBRATION:

- 3.1 Disconnect transducer at connector J2.
- 3.2 Connect the oscilloscope probe to TP1.
- 3.3 Verify that the signal is approximately a sine wave. The amplitude of the signal is about 2.8Vp-p.
- 3.4 Adjust potentiometer R37 until the frequency is 63.5 KHz, ± 0.3 KHz.
- 3.5 Move the Oscilloscope probe to TP2.
- 3.6 Verify that the signal is approximately a square wave. The amplitude of the signal is about 2.8Vp-p.
- 3.7 Adjust potentiometer R36 until the frequency is 63.5 KHz, ± 0.3 KHz.

4. OUTPUT VOLTAGE CALIBRATION:

- 4.1 Connect a 20 Ω , 5-watt resistor across pin 1 and pin 2 of connector J2. (Transducer connector).
- 4.2 Connect Oscilloscope TP4. Set to read 50ms pulse at 50ms intervals.
- 4.3 Set switch S1 to “H” position, (UP).
- 4.4 Program the selected buffer to have bond power 999 (full power) and bond time 999 (999ms)
- 4.5 While triggering the U/S, verify that the scope reads 22.6Vp-p (8Vrms), Adjust potentiometer R34 if required.
- 4.6 Set switch S1 to “L” position, (DOWN).
- 4.7 While triggering the U/S, verify that the scope reads 12.7Vp-p (4.5Vrms), Adjust potentiometer R35 if required.
 - NOTE: that every time R34 is adjusted then R35 must be readjusted.

5. FINAL CHECK:

- 5.1 Remove 20 Ω , 5-watt resistive load at J2 and reconnect transducer connector to it.
- 5.2 Return the switch, S1, to original position.
- 5.3 Verify the tool is installed to the proper tool drop and that the set screw is the correct size. Wedge set screw – 2-56 x 3/32, Ball socket screw: 0-80 x 5/32.
- 5.4 Connect Oscilloscope to TP5 and trigger ultrasonics and verify frequency of <65 KHz.
- 5.5 Remove all test leads.
- 5.6 While pressing the U/S test button, verify that the U/S indicator comes on and there is no error message.