

7.0 Calibration Procedure for 2831/2831N/2850 Non-Contact Prealigners

7.1 CCD CALIBRATION

NOTE: *Calibration of the CCD is not a regular maintenance procedure. A special centering wafer (P/N 0123-5552) is required. Data from the calibration are stored in the battery-backup RAM.*

- 7.1.1 Locate and note the **X** and **Y** coordinates. Then locate the **CV** value. You will find these on the inside of the right cover (looking from the front). They can also be located on the back of the Prealigner (See Fig 1). If you cannot locate them please contact Cybeq Systems with the make, serial number, date shipped and the manufacture of the main system.

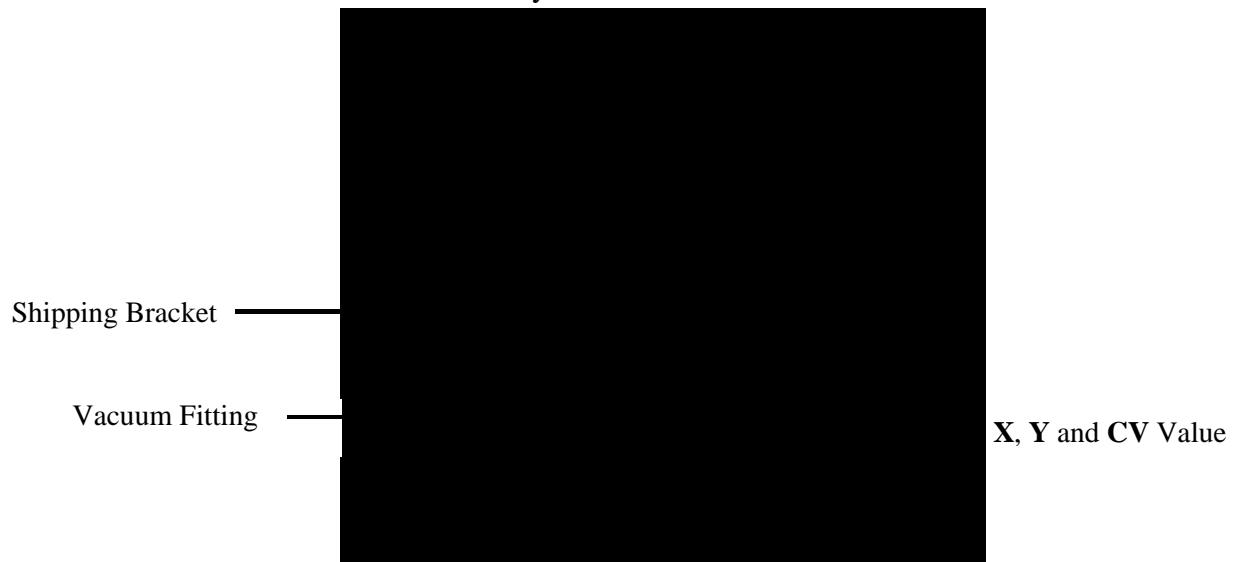
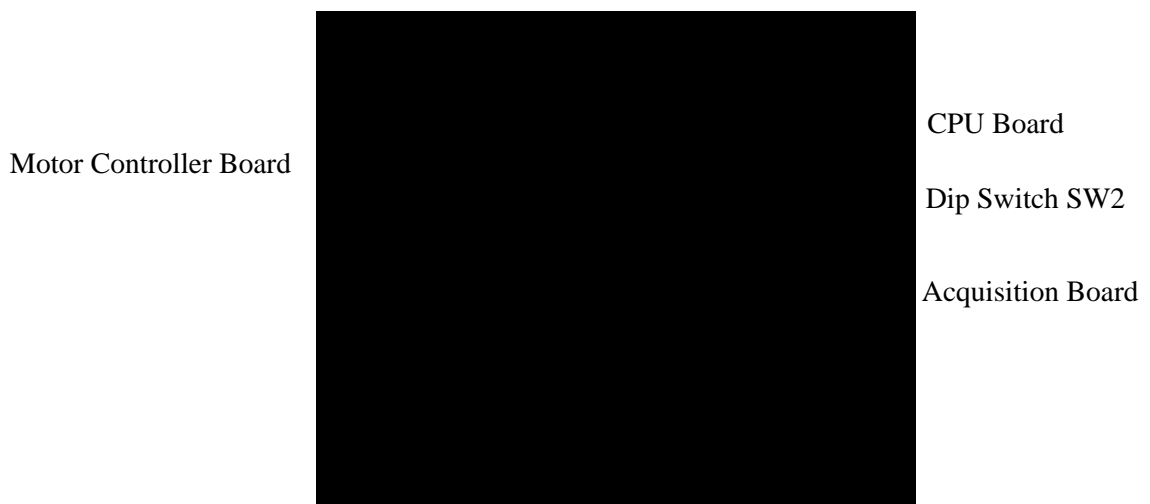
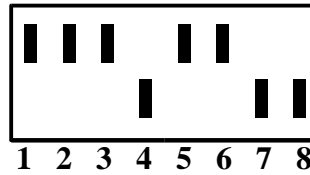


Figure 1

- 7.1.2 Locate the PCB CPU for the Prealigner (*Model 2831 Cybeq P/N 0123-5235; Model 2850 0123-5411*) in the controller. (See Figure 2 below).



- 7.1.3 Turn off the power and set Dip Switch 4 to the Off Position (Diagnostic Mode) on Switch SW2 on the CPU (See Fig 3 below).



- 7.1.3 Turn on the power. Go to Terminal Mode. To do this, at the C:\ type in Robot\Teach.
- 7.1.4 Prior to entering the **X**, **Y** and **CV** values, check to determine that the correct values are currently entered into the memory. To do this at the Terminal Mode enter: **P0WRD1AE60,L10**. The return displayed values should match those that are located on the rear of the Prealigner.
- 7.1.5 Regardless whether the values match, in order to properly Calibrate the Prealigner you must perform the steps as follows. From the Terminal Mode input the **X** and **Y** coordinates and the **CV** value as follows:

Response	Example	P0SX4549	(Sets X Coordinate)	Enter/Return	Wait for
Response		P0SY2880	(Sets Y Coordinate)	Enter/Return	Wait for
Response		P0CV75	(Sets the CV Level)	Enter/Return	Wait for
Response		P0RS	(Reset Command)	Enter/Return	Wait for Response

- 7.1.5 Place Calibration Wafer on Prealigner. From the Terminal Mode, issue the following commands:

P0VN	(Turns the Vacuum On)	Enter Return	Wait for Response
P0CB	(Calibrates Prealigner)	Enter Return	Wait for Response

Calibration will be completed correctly when you get one of the following responses:

6006 6106 6306

If you do not get one of the above three responses, repeat steps 1.3 & 1.4.

In order to verify and or correct voltage proceed with Step 7.1.6

- 7.1.6 Locate the Video Processor Board (located on the underside of the Dome carriage assembly). Turn off the power. Connect a DVM to **R16** (Positive) and **R14** (ground). Turn on the power. Turn the Resistor R18 located on the rear of the Dome carriage assembly to adjust the voltage.

The voltage for the 2831 is **-0.60 VDC**.

The voltage for the 2831N is **-0.28 VDC**.

The voltage for the 2850 is **-0.28 VDC**.

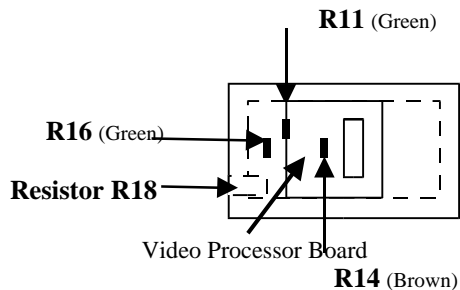


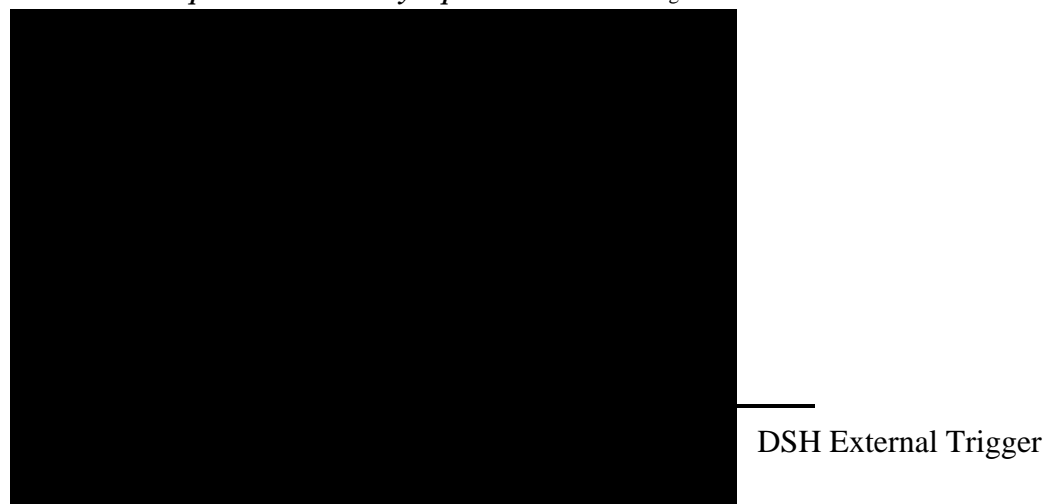
Figure 4

Bottom View of Prealigner

Use the following step to check the illumination as follows. You will need an oscilloscope for this test. Set Channel 1 on the Oscilloscope to 50um Seconds and 1.0 v per division .

- 7.1.7 Turn off the power. Locate the Data Acquisition Board in the controller (Refer Card Cage, Section 9, page 9-5). Connect your external trigger to the DSH test point.

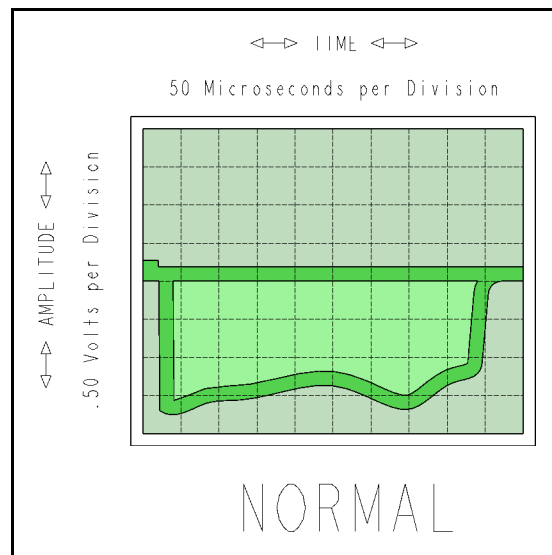
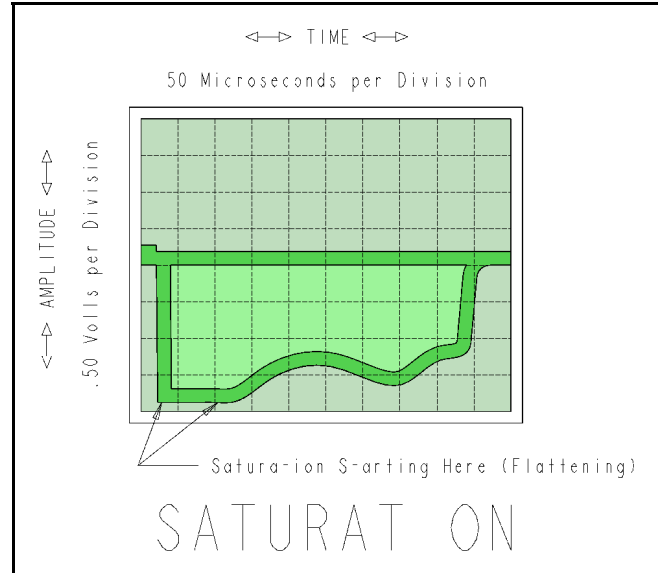
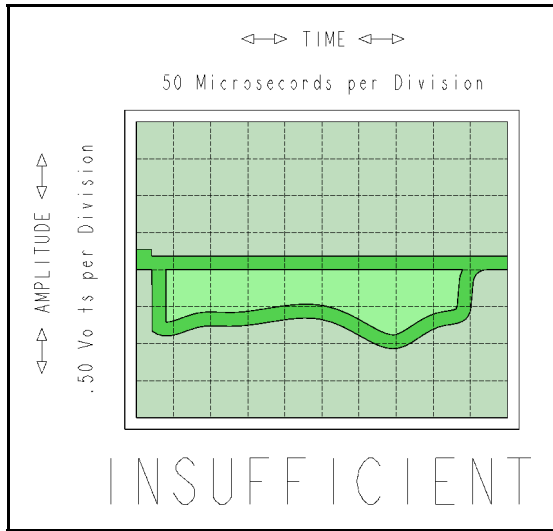
Data Acquisition Board --Cybeq P/N 0123-5406 Figure 5



- 7.1.8 On the Video Processor Board (located on the underside of the Dome carriage assembly) connect channel 1 probe onto **R11** and the ground to **R14** (Refer to Figure 4 above).

SECTION 7**CALIBRATION/ADJUSTMENT PROCEDURES**

7.1.9 Turn on the power. Look at the saturation level on the oscilloscope, it should **not** be in saturation (Reference Chart 1 Prealigner). Adjust the Potentiometer on the CPU board if necessary to achieve this.



7.1.9 After this put normal wafer on Prealigner and run fifty (50) cycles to confirm that the system is operational and working normally.

7.1.10 In order to check the Pixel count use the following procedure.

2831 -- After Calibrating the system, again from the Terminal Mode of the Run Robot Program, enter **P0WRD15E50, L10**. The return value displayed should resemble:

168 1700 xxxx xxxx xxxx xxxx xxxx

The difference in the first two numbers should be a minimum of **1400**, optimally around **1500**.

Next determine the exterior pixel count by entering **P0WRD 20000, L10**, again you should see eight sets of numbers similar to what is shown below (the numbers should be consistent and ± 50 of 1200):

1208 1208 1208 1208 1208 1208 1208 1208

2831N -- After Calibrating the system, again from the Terminal Mode of the Run Robot Program, enter **P0WRD15E50, L10**. The return value displayed should resemble:

168 1700 xxxx xxxx xxxx xxxx xxxx xxxx

The difference in the first two numbers should be a minimum of **1400**, optimally around **1500**.

Next enter **P0WRD 20000, L10**, again you should see eight sets of numbers similar to what is shown below (the numbers should be consistent and ± 100 of 2000):

2011 2011 2011 2011 2011 2011 2011 2011

2850 -- After Calibrating the system, again from the Terminal Mode of the Run Robot Program, enter **P0WRD10E50, L10**. The return value displayed should resemble:

524 3742 xxxx xxxx xxxx xxxx xxxx xxxx

The difference in the first two numbers should be a minimum of **1900**, optimally around **2000**.

Next enter **P0WRD 20000, L10**, again you should see eight sets of numbers similar to what is shown below (the numbers should be consistent and ± 100 of 2000):

2011 2011 2011 2011 2011 2011 2011 2011

If you still have problems please call Rad Electronics Inc.