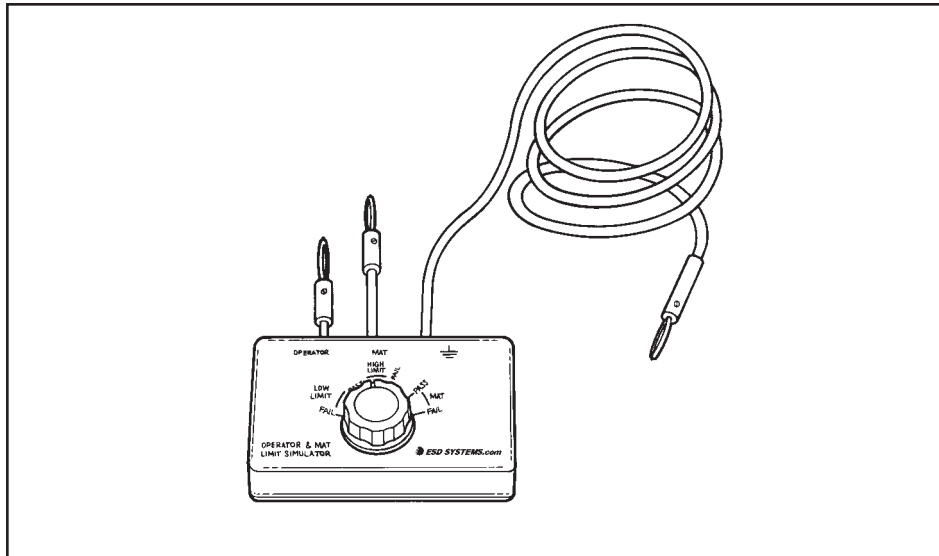


# Operation of Calibration Unit for Continuous Workstation Monitors



Made in America



**Figure 1. Item 41121 Calibration unit.**

## Description

The ESD Systems.com item 41121 calibration unit is designed to simplify the process of calibrating Continuous Workstation Monitors. The unit allows the user to quickly and easily verify whether a monitor is operating within specifications. The 41121 is a passive device and requires no power source.

Remove the calibration unit from the carton and inspect for shipping damage. Each unit should include:

- 1 Calibration unit, unit 41121
- 1 Alligator clip
- 1 12149 stacking snap banana jack adapter

## Calibration Test Procedures

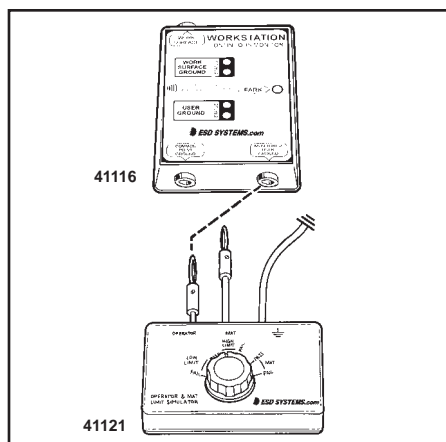
The calibration unit was specifically designed for use in calibration of ESD Systems.com brand wave distortion monitors. The following procedures will cover calibration for specific test units. The procedures will not cover adjustment of the test equipment. For detailed information regarding adjustment of specific ESD Systems.com brand testers contact our Customer Service Department at (508) 485-7390.

## Calibration Test of the ESD Systems.com Item #41116

### Testing Operator

**Step 1:** Connect the calibration unit's banana plug wire marked with ground symbol to a known ground.

**Step 2:** Insert the calibration unit's banana plug marked "Operator" into the jack marked "Monitored User Ground" on the 41116 tester. See figure 2.



**Figure 2. Connecting test lead from 41121 to 41116.**

**Step 3:** Start the calibration unit's selector switch at the full counter-clockwise position. When testing Operator, test only first four limits on the calibration unit. Rotate selector switch to LOW LIMIT FAIL position; the red light on the 41116 will light and alarm.

**Step 4:** Rotate selector switch clockwise to the LOW LIMIT PASS position of the green sector. The 41116's green Operator LED should turn on.

**Step 5:** Rotate selector switch clockwise to the HIGH LIMIT PASS position. The 41116's green Operator LED should remain on.

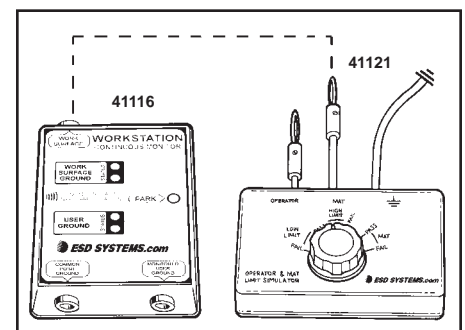
**Step 6:** Rotate the selector switch clockwise to the HIGH LIMIT FAIL position. The green Operator LED should turn off and the red operator LED should turn on and alarm.

**Step 7:** Disconnect calibration unit from 41116.

### Testing Mat

**Step 1:** Connect the calibration unit's banana plug wire marked with ground symbol to a known ground.

**Step 2:** Insert the calibration unit's banana plug marked "Mat" into the jack marked "Work Surface" on the 41116. See figure 3.



**Figure 3. Testing 41116 work surface PASS AND FAIL.**

**Step 3:** Rotate calibration unit's selector switch to MAT FAIL at far clockwise position. The 41116 Work Surface red LED should turn on and alarm.

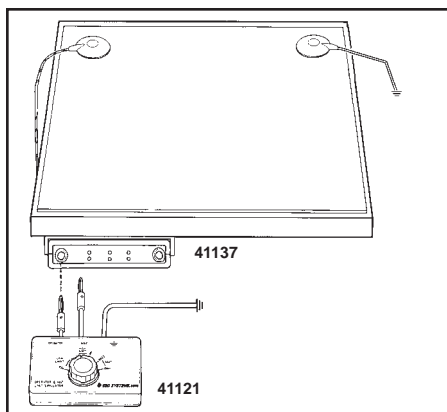
**Step 4:** Rotate selector switch counterclockwise to MAT PASS position. The 41116 Work Surface green LED should turn on.

### Calibration Test of the ESD Systems.com Item #41137

**Prior to calibration of the 41137, disconnect Remote Jacks (if used) from the unit. Remote Jacks may cause intermittencies in calibration. Leave mat connection to 19208 in place.**

**Step 1:** Connect calibration unit's banana plug marked with ground symbol into a known ground.

**Step 2:** Insert the calibration unit's



banana plug marked "Operator" into the "OP1" jack on the 41137. See figure 4.

**Figure 4. Connecting test lead from 41121 to 41137.**

**Step 3:** Start selector switch at the full counterclockwise position. When testing the Operator circuit, test only first four limits on the calibration unit. Rotate selector switch to LOW LIMIT FAIL position. The OP1 red Operator LED will light and alarm.

**Step 4:** Rotate selector switch clockwise to the LOW LIMIT PASS position of the green sector. The OP1 green Operator LED should turn on.

**Step 5:** Rotate selector switch clockwise to the HIGH LIMIT PASS position at the end of the green sector. The OP1 green Operator LED should remain on.

**Step 6:** Rotate the selector switch clockwise to the HIGH LIMIT FAIL position. The OP1 green Operator LED should turn off and the red Operator LED should turn on and alarm.

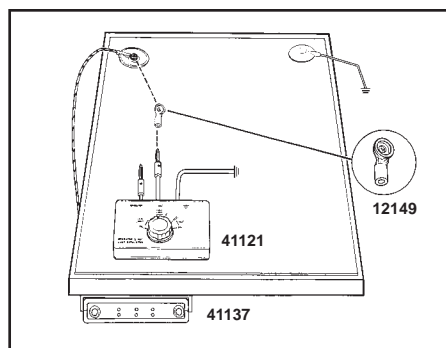
**Step 7:** Repeat this procedure for Operator (2) on the OP2 jack.

### Testing 41137 Worksurface for "Pass" and "Fail"

**Step 1:** Insert the calibration unit's banana plug marked with the ground symbol into a known ground. (Use alligator clip if required.)

**Step 2:** Connect the 12149 adapter to the banana plug marked "Mat" on the calibration unit. Disconnect mat connect from monitor to mat, but leave mat monitoring cord attached to monitor. Attach the 12149 adapter from calibration unit to monitor's mat monitoring cord. See figure 5.

**Note:** Adapter must be isolated from



grounded mat.  
**Figure 5. Testing 41137 work surface for "PASS" and "FAIL" ranges as indicated on calibration unit.**

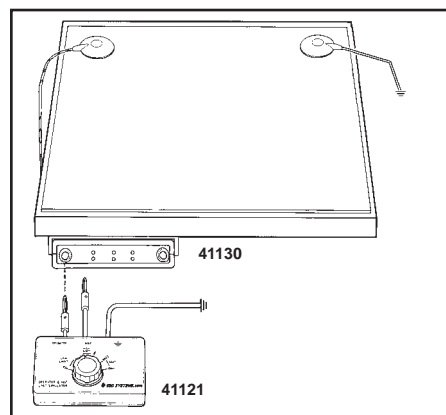
**Step 3:** Turn selector switch to MAT FAIL at far clockwise position. The Work Surface red LED should turn on and alarm.

**Step 4:** Turn selector switch to MAT PASS position. The Work Surface green LED should turn on.

### Calibration Test of the ESD Systems.com Item #41130

**Step 1:** Connect calibration unit's banana plug marked with ground symbol into a known ground.

**Step 2:** Insert the calibration unit's banana plug marked "Operator" into the "OP1" jack on the 41130. See figure 6.



**Figure 6. Connecting test lead from 41121 to 41130.**

**Step 3:** Start selector switch at the full counterclockwise position. When testing the Operator circuit, test only first four limits on the calibration unit. Rotate selector switch to LOW LIMIT FAIL position. The OP1 red Operator LED will light and alarm.

**Step 4:** Rotate selector switch clockwise to the LOW LIMIT PASS position of the green sector. The OP1 green Operator LED should turn on.

**Step 5:** Rotate selector switch clockwise to the HIGH LIMIT PASS position at the end of the green sector. The OP1 green Operator LED should remain on.

**Step 6:** Rotate the selector switch clockwise to the HIGH LIMIT FAIL position. The OP1 green Operator LED should turn off and the red Operator LED should turn on.

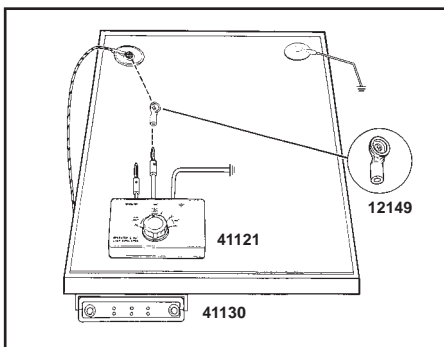
**Step 7:** Repeat this procedure for Operator (2) on the OP2 jack.

## Testing 41130 Worksurface for “Pass” and “Fail”

**Step 1:** Insert the calibration unit’s banana plug marked with the ground symbol into a known ground. (Use alligator clip if required.)

**Step 2:** Connect the 12149 adapter to the banana plug marked “Mat” on the calibration unit. Disconnect mat connect from monitor to mat, but leave mat monitoring cord attached to monitor. Attach the 12149 adapter from calibration unit to monitor’s mat monitoring cord. See figure 7.

**Note:** Adapter must be isolated from grounded mat.



**Figure 7.** Testing 41130 work surface for “PASS” and “FAIL” ranges as indicated on calibration unit.

**Step 3:** Turn selector switch to MAT FAIL at far clockwise position. The Work Surface red LED should turn on.

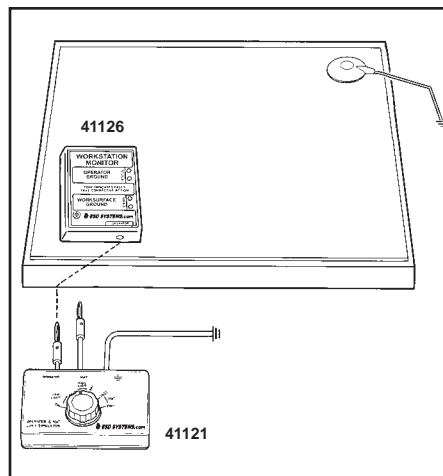
**Step 4:** Turn selector switch to MAT PASS position. The Work Surface green LED should turn on.

## Calibration of the Item #41126

### Testing Operator

**Step 1:** Connect the calibration unit’s banana plug wire marked with ground symbol to a known ground.

**Step 2:** Insert the calibration unit’s banana plug marked “Operator” into the jack marked “Operator” on the 41126 tester. See figure 8.



**Figure 8.** Connecting test lead from 41121 to 41126.

**Step 3:** Start the calibration unit’s selector switch at the full counterclockwise position. When testing Operator, test only first four limits on the calibration unit. Rotate selector switch to LOW LIMIT FAIL position; the red light on the 41126 will light and alarm.

**Step 4:** Rotate selector switch clockwise to the LOW LIMIT PASS position of the green sector. The 41126’s green Operator LED should turn on.

**Step 5:** Rotate selector switch clockwise to the HIGH LIMIT PASS position at the end of the green sector. The 41126’s green Operator LED should remain on.

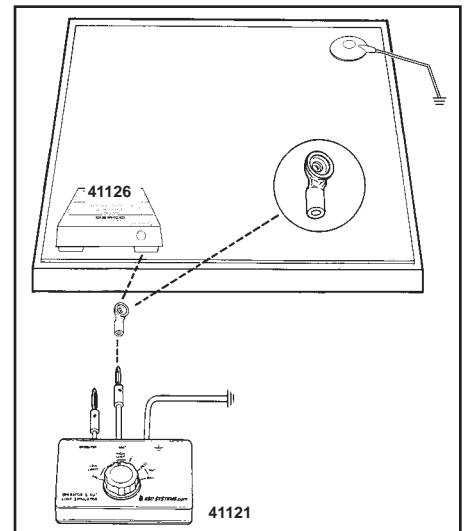
**Step 6:** Rotate the selector switch clockwise to the HIGH LIMIT FAIL position. The green Operator LED should turn off and the red operator LED should turn on and alarm.

**Step 7:** Disconnect calibration unit from 41126.

### Testing Mat

**Step 1:** Make sure the calibration unit’s banana plug wire marked with ground symbol is connected to a known ground.

**Step 2:** Connect the 12149 adapter to the banana plug marked “Mat” on the calibration unit. Disconnect the 41126 from the mat and re-install to calibration unit’s adapter. See figure 9.



**Figure 9.** Testing 41126 work surface PASS AND FAIL.

**Step 3:** Rotate calibration unit’s selector switch to MAT FAIL at far clockwise position. The 41126 Work Surface red LED should turn on and alarm.

**Step 4:** Rotate selector switch counterclockwise to MAT PASS position. The 41126 Work Surface green LED should turn on.

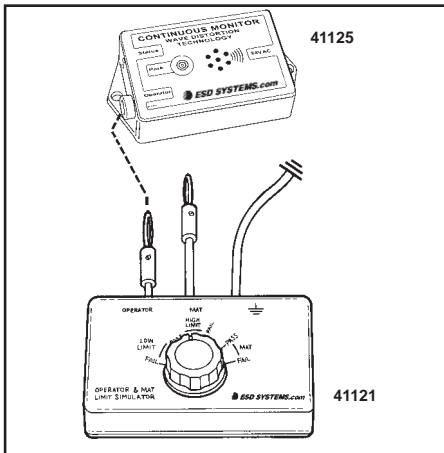
## Calibration of the Item #41125

### Testing Operator

**Step 1:** Connect the calibration unit’s banana plug wire marked with ground symbol to a known ground.

**Step 2:** Insert the calibration unit’s banana plug marked “Operator” into the jack marked “Operator” on the 41121 tester. See figure 10.

**Step 3:** Start the calibration unit’s selector switch at the full counterclockwise position. When testing Operator, test only first four limits on the calibration unit. Rotate selector switch to LOW LIMIT FAIL position; the red light on the 41125 will light and alarm.



**Figure 10. Connecting test lead from 41121 to 41125.**

**Step 4:** Rotate selector switch clockwise to the LOW LIMIT PASS position of the green sector. The 41125's green Operator LED should turn on.

**Step 5:** Rotate selector switch clockwise to the HIGH LIMIT PASS position at the end of the green sector. The 41125's green Operator LED should remain on.

**Step 6:** Rotate the selector switch clockwise to the HIGH LIMIT FAIL position. The green Operator LED should turn off and the red operator LED should turn on and alarm.

**Step 7:** Disconnect calibration unit from 41125.

## Calibration of the Item #41118

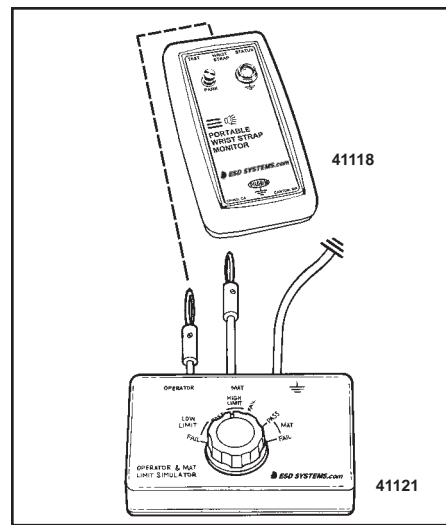
### Testing Operator

**Step 1:** Connect the calibration unit's banana plug wire marked with ground symbol to a known ground.

**Step 2:** Insert the calibration unit's banana plug marked "Operator" into the jack marked "Wrist Strap" on the 41118 tester. See figure 11.

**Step 3:** Start the calibration unit's selector switch at the full counterclockwise position. When testing Operator, test only first four

limits on the calibration unit. Rotate selector switch to LOW LIMIT FAIL position; the red light on the 41118 will light and alarm.



**Figure 11. Connecting test lead from 41121 to 41118.**

**Step 4:** Rotate selector switch clockwise to the LOW LIMIT PASS position of the green sector. The 41118's green Operator LED should turn on.

**Step 5:** Rotate selector switch clockwise to the HIGH LIMIT PASS position at the end of the green sector. The 41118's green Operator LED should remain on.

**Step 6:** Rotate the selector switch clockwise to the HIGH LIMIT FAIL position. The green Operator LED should turn off and the red operator LED should turn on and alarm.

**Step 7:** Disconnect calibration unit from 41118.

### Specifications

Weight:	6.8 oz.
Length:	4 1/2 inches
Width:	1 3/16 inches

### Limited Warranty

ESD Systems.com expressly warrants that for a period of one (1) year from the date of purchase, our 41121's will be free of defects in material (parts) and workmanship (labor). Within the warranty period, a unit will be tested, repaired or replaced at our option, free of charge. Call Customer Service at 508-485-7390 for a Return Material Authorization (RMA) and proper shipping instructions and address. You should include a copy of your original packing slip, invoice, or other proof of purchase date. Any unit under warranty should be shipped prepaid to the ESD Systems.com factory. Warranty repairs will take approximately two weeks.

If your unit is out of warranty, ESD Systems.com will quote repair charges necessary to bring your unit up to factory standards. Call Customer Service at 508-485-7390 for a Return Material Authorization (RMA) and proper shipping instructions and address. Ship you unit freight prepaid.

### Warranty Exclusions

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean or repair products.

### Limit of Liability

In no event will ESD Systems.com or any seller be responsible or liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.



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