

If you have any issues or questions while completing these steps, please contact your regional team at:

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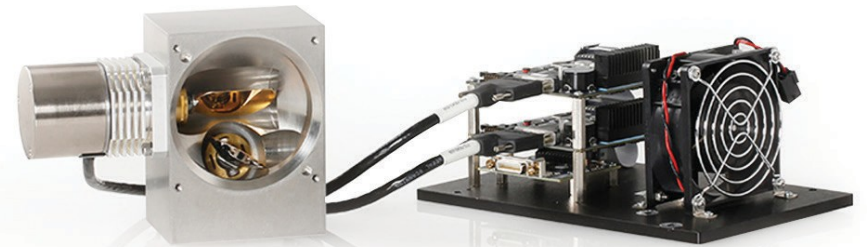
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## LIGHTNING™ II

### Important Connection Instructions for XY2-100 Interface

#### Models

2-Axis Scan Head\*

3-Axis Scan Head\*

\*with XY2-100 Interface Board

# LIGHTNING™ II

## 2-Axis Scan Head & 3-Axis Scan Head

### Important Connection Instructions (XY2-100 Interface)



Please wear an ESD strap when performing these steps.

#### STEP 1: Connect Power Cable

1. Make sure your power supply meets the following requirements.

Lightning™ II Electrical Specifications	
Input Voltage	48 ± 2V DC, Single Power Supply
Power Requirements	6A Peak, 3A RMS per axis

#### 2-Axis Scan Head

2. Find the power cable in your shipping package. Connect the color-coded wires of the power cable to the power supply as shown at the left side of Figure 1. **Make sure that the GND (White) and 0V (Black) are tied to the Chassis Ground (Green) at the power supply end as shown in Figure 1.**

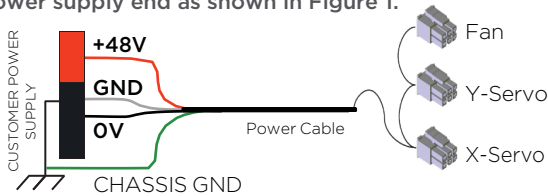


Figure 1

3. Connect the daisy-chained power connectors at the other end of the power cable to the servo boards and fan in the order shown at the right side of Figure 1. Make sure that the first connector in the chain goes to the X-Servo and the last connector goes to the fan.

#### 3-Axis Scan Head

2. Make a power cable with a DB9 female connector based on the pin assignments shown below. **Make sure that the GND (White) and 0V (Black) are tied to the Chassis Ground at the power supply end as shown in Figure 2.**

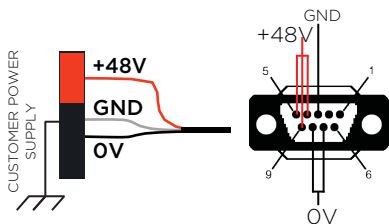


Figure 2

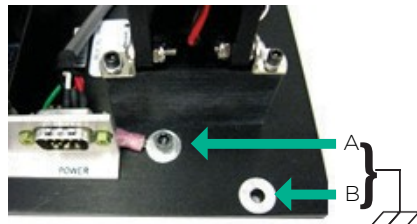


Figure 3

3. Make sure that the servo stack is tied to the system Chassis Ground by one of the locations (A) or (B) shown in Figure 3.

#### STEP 2: Connect Galvos

Carefully connect the LIGHTNING II galvos to their corresponding servo boards using the provided galvo cables as shown in Figure 4.

Make sure that the X-axis galvo connects to X-axis servo, Y-axis galvo connects to Y-axis [and for 3-Axis Scan Head that the Z-axis galvo connects to the Z axis]. Note that the labels on the galvo cables match labels on the corresponding servo board connectors.

Make sure that the connectors are firmly seated and the two side screws are connected securely.

A flathead screwdriver may be useful to fully engage the screws.

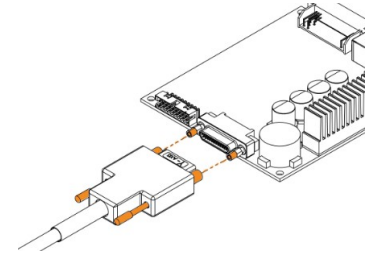


Figure 4

#### STEP 3: Apply Power

Apply power to the scan head. You should see the red LED on each servo board blink twice and then flicker at high frequency. The galvos should seek their home positions and be ready to follow commands within 5 seconds.

#### STEP 4: Verify Proper Grounding

Before connecting your controller to the LIGHTNING II scan head, complete the following:

1. With the LIGHTNING II servo boards and your controller powered on, and your XY2-100 cable plugged into your controller only, measure the **voltage difference between the servo chassis ground (A) and your XY2-100 cable DB25 (B) connector shell.** The **voltage should be less than 0.3V.** This verifies that your controller is properly grounded to the chassis. If you measure >0.3V, do NOT connect XY2-100 cable and contactus. See Figure 5.

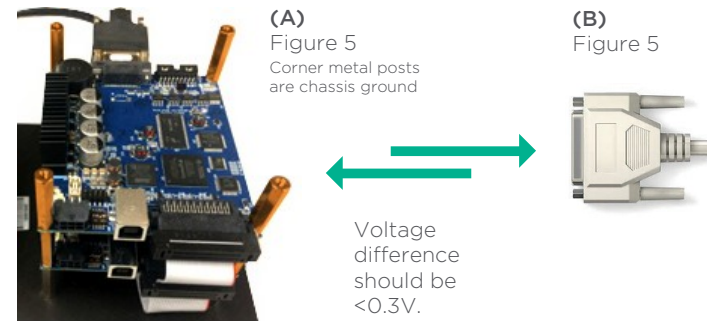


Figure 5

2. Turn off the power to the scan head and controller.

3. Connect your controller to the XY2-100 interface board via your XY2-100 cable. The XY2-100 interface board is at the bottom of the LIGHTNING II servo board stack.

4. Apply power to the scan head and controller.