

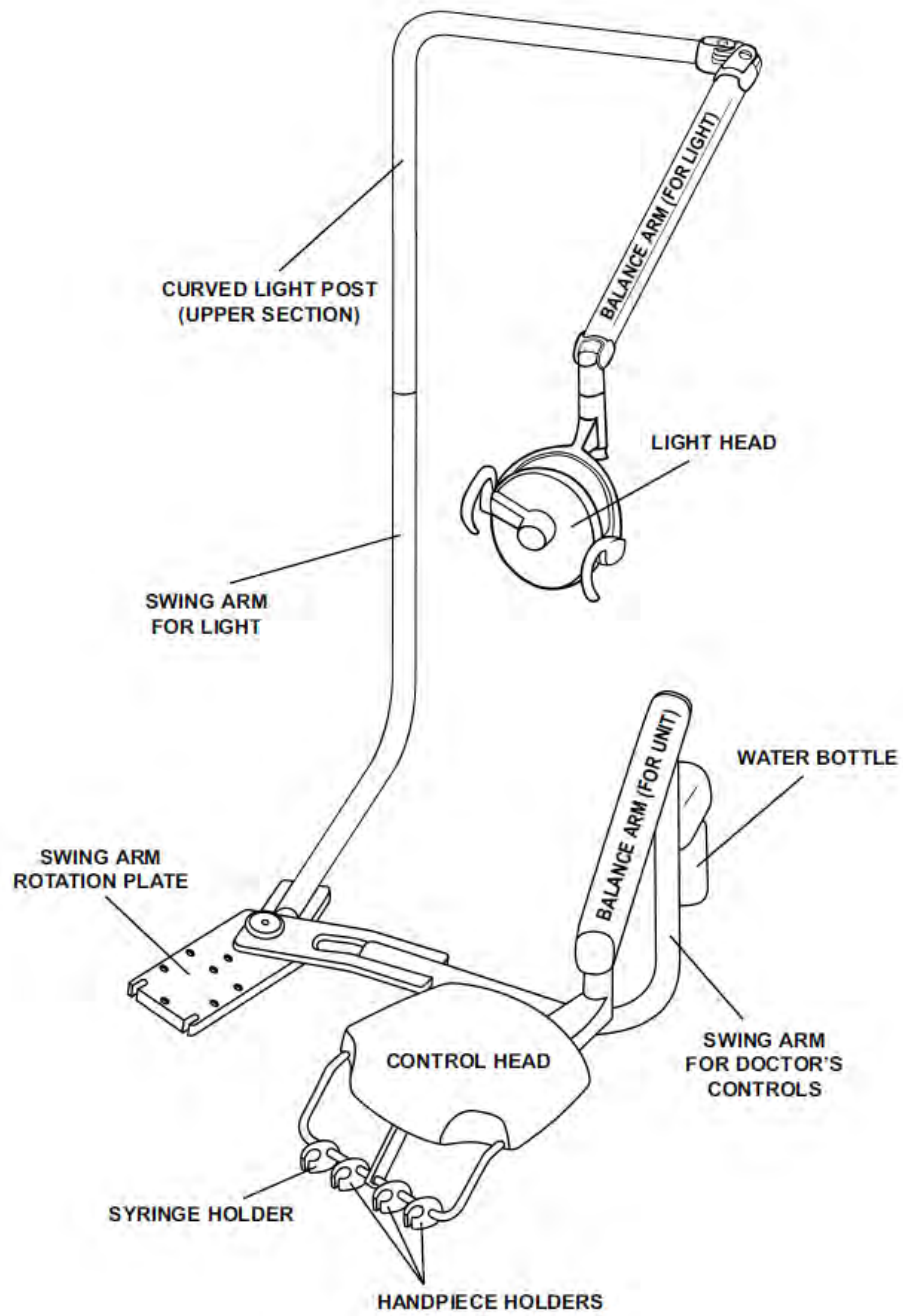
# ***Belmont Dental Delivery Systems***

***Installation Instructions:  
Swing Mounted Unit With Light***

## ***BDS2570***

X-Calibur Units

## Swing-Mounted Style



*Installation Instructions  
for BDS2570  
X-Calibur Dental Units*

03-20-18

<b>BDS    Swing Mounted Unit with Clesta Light</b>
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Installation Time: Approximately 2 hours

Shipping Packages:

4 Boxes:

- 1- Doctor Table/Arm Assembly
- 1- Dual Swing Arm Assembly
- 1- Umbilical & J-Box Components
- 1- Clesta light with curved post, transformer and Sensor/Switch Box

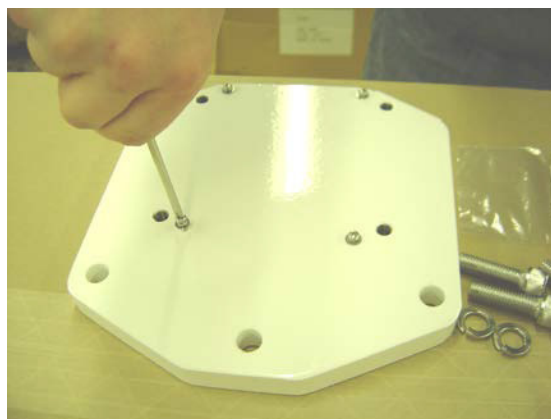
Tools Needed:

- Hex key wrench set or socket drive set
- Adjustable wrench
- Slotted screwdriver
- Phillips head screwdriver
- Bubble Level
- Wire cutter
- Masking Tape
- (Silicone Spray Lube)

1. Open large shipping carton that contains the Swing Arm Assembly. This package contains a smaller box where the Swing Mount Bracket and Mounting Hardware are located.

Remove Swing Mount Bracket and bag of hardware.

2. Locate and install **(4)** 4mm x10 mm screws into the bottom side of the Swing Mount Bracket using a Phillips screwdriver, as shown below. This step clears excess paint from threaded holes.



B50N Chair Swing Mount Bracket (8-Sided Plate)

3.) Attach the Chair Mounting Plate to B50N chair using hardware provided (also attaches to B50, B20N, B20+ and B20).

Chair Mounting Plate is attached on the top of the gray chair casting extension as shown below. Attach Plate to chair using a 10 mm hex key wrench to tighten the **(3)** 12mm x 55 mm socket bolts with 12mm spring washers



Chair Mounting Plate is attached on top of the gray extension casting on B50N Chairs



Attached mounting bracket, seen from below.  
Note (4) 4mm x 10mm Phillips screw heads face down. (These are used for mounting sensor/switch box for Clesta light )

#### 4) Attaching the Swing Arm Assembly

**IMPORTANT! :**

**Reset lower chair limit position after attaching the Swing Arm Assembly to the chair. Damage to J-Box, chair base & lift arm covers and swing arm can result from improperly set lower limit position. Please refer to chair manufacturer's instructions for setting lower limit of travel.**

Remove Swing Arm Assembly from shipping package and place Rotation Plate on the top side of the Swing Mounting Bracket.



Use an 8 mm hex key wrench to partially tighten Swing Arm Assembly to Swing Mounting Bracket as follows:

Add **(2)** 10mm x 40mm socket bolts with spring washers to front recessed holes on Swing Arm Rotation Plate and partially tighten to support Swing Arm Assembly.  
Place the Bracket for umbilical hose on top of the Swing Arm Rotation Plate and align the back/inside hole with threaded hole of Chair Mounting Plate underneath the slotted end of the Rotation Plate. Add 10mm x 40mm socket bolt with 10mm spring washer and 10 mm flat washer. Add remaining bolt/split ring washer/ flat washer to secure other slotted end of rotation plate. Use an 8 mm wrench to partially tighten assembly.



Bracket for Umbilical Hose is secured using socket bolt with spring washer and flat washer. Note: M10 x 20 leveling set screws & M10 x 35 leveling set screw with nut shown.

Insert long (35mm) leveling set screw with locking nut through hole in Umbilical Mounting Bracket, as shown above. Nut should be tightened after final leveling of swing arms & unit.

## 5.) Swing Arm Leveling

- Using an 8mm hex key wrench, add **(1)** M10 x 35 through hole in Umbilical Mounting Bracket (as shown above, at right) and **(3)** M10 x 20 Leveling Set Screws to the top of Rotation Plate.
- Place a bubble level on top of the flat surface of the Rotation Plate and check Swing Arm Assembly leveling. Adjust the Leveling Set Screws for rough leveling, as indicated by bubble level.
- Gradually tighten **(4)** M10 x 40 Socket Bolts to secure Rotation Adapter to Swing Mounting Bracket, making adjustments to Leveling Set Screws, as necessary.

### NOTE:

**Final leveling of Swing Arm Assembly should be repeated and adjusted after Doctor Table/ Balance Arm Assembly & Light Assembly have been attached to the Swing Arm Assembly in step 11.**



Adjusting (4) set screws for leveling of Swing Arm Assembly

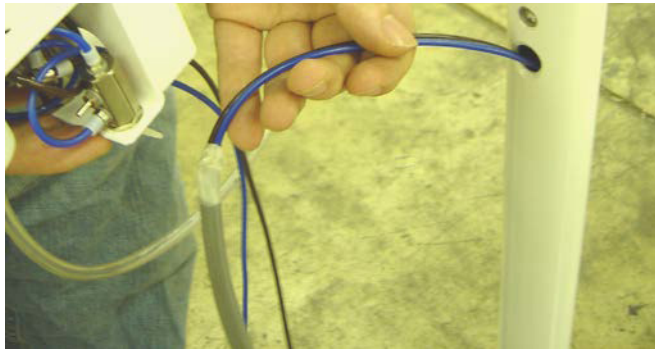
## 6). Attaching the Swing Arm Bottled Water System Assembly

- a) Using a Phillips screwdriver, remove M6 x 20 mounting screw for water bottle bracket from unit Swing Arm.



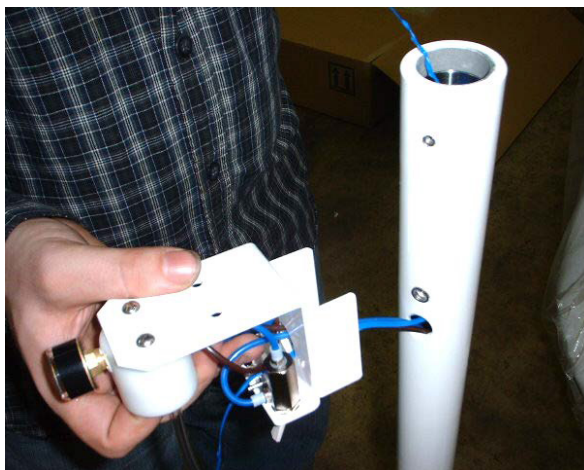
Use Philips screw driver to remove 6mm x 20mm water bracket mounting screw

- b) Remove Bottled Water System assembly and Cover from box containing J-Box Accessories. Insert 1/8" blue and 1/8" brown tubing (with gray outer sleeve) from water system into hole on the side of the swing arm and route downward through swing arm.



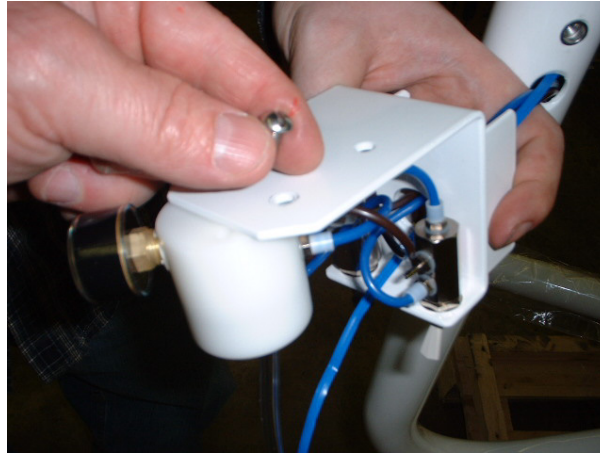
Insert 1/8" blue & brown tubing into the hole on the side of the swing arm and feed tubing down through bottom end of the Swing Arm

- c) Feed lower end of the blue flexible ribbon wire through center hole in the Water Bottle Mounting Bracket.

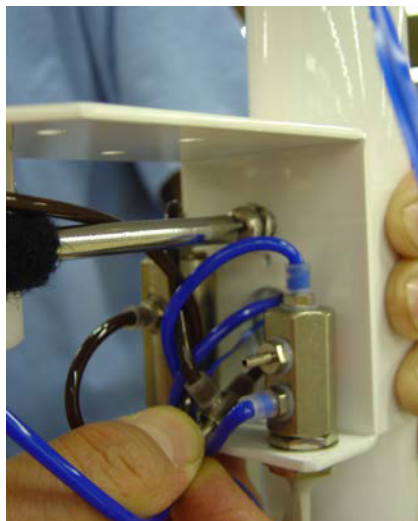


- d) Use a slotted screwdriver to remove one 10-32 x 1/2" screw from top of the Water Bottle Mounting Bracket and loosen the second screw.

Rotate Water Bottle Manifold to get better access for tightening the Water Bottle Mounting Bracket to the Swing Arm.



e) Replace 6mm x 20 mm Phillips mounting screw and tighten Water Bottle Mounting Bracket to Swing Arm.



#### 7.) Installing Doctor Table/Balance Arm Assembly onto Swing Arm

- Open Doctor Table/ Balance Arm Assembly shipping carton.
- Remove plastic fitting bag tied to the end of the unit umbilical.
- Attach flexible ribbon wire from Balance Arm Assembly umbilical to blue flexible ribbon at top of Swing Arm. Pull flexible ribbon through Water Bottle Mounting Bracket.



Pull flexible ribbon wire with blue & brown tubing from unit umbilical down & out through the routing hole of the Water Bottle Mounting Bracket.

- d) Insert end of Touchpad Wire Harness (gray insulation) into the top of the Swing Arm and feed downward.



Feed Touch Pad Wire Harness down through Swing Arm.

(Note: A light application of Silicone Spray to the outside of main umbilical tubing and wire harnesses will ease passage through the Swing Arm)

- e) Lift Doctor Table/ Balance Arm Assembly out of the shipping carton and support on shoulder. Feed main umbilical down into Swing Arm.



Mount Doctor Table/ Balance Arm Assembly to Swing Arm.  
Feed umbilical and touchpad wire harness downward and gradually pull green flexible ribbon attached to ends of 1/8" brown & 1/8" blue tubing through hole in Water Bottle Mounting Bracket.



Mount Balance Arm onto Swing Arm.

Note: plated Balance Arm joint must be fully seated onto Swing Arm.

Push Umbilical and Touch Pad Wire Harness downward, while gradually pulling ribbon wire attached to 1/8" brown and 1/8" blue tubing through Water Bottle Mounting Bracket.



- f) Remove M6 x 5 set screw and 4mm hex key wrench from the small bag attached to water bottle (shipped inside J-Box carton).  
Insert the set screw into the threaded hole at the top of the Swing arm.  
Tighten set screw to minimize drift of Doctor Table/Balance arm Assembly.  
(Units shipped prior to spring of Y2009 require installation of a brass friction disc prior to addition of setscrew. Failure to add brass disc to these units will result in permanent damage to unit balance arm pivot).

**IMPORTANT !:**

**Do Not Over-Tighten Set Screw.**

**Over tightening will strip the thread inside the Swing Arm.**



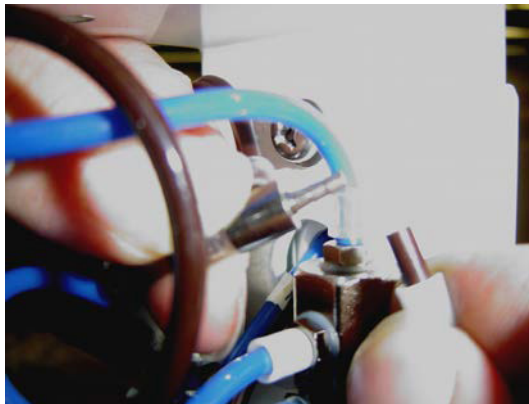
Set Screw and Hex Key Wrench are shipped in a bag attached to the water bottle inside of the J-Box. Insert the 6mm x 5mm set screw into threaded hole on the Swing Arm and tighten to minimize drifting of Balance Arm

**DO NOT OVERTIGHTEN SET SCREW**



## 8. Connecting Bottled Water System to Doctor Table Section

- a) Trim 1/8" brown tubing from Dr. Table/ Balance Arm Assembly to desired length for connection to the open barb on the Tee fitting on the Water Bottle System Bracket.  
Note: Allow enough tubing length to prevent kinking.  
Slip 1/8" tubing collar onto tubing and connect and secure tubing to Tee Fitting.



Slip tubing collar over trimmed end of 1/8" brown tubing and insert tubing onto Tee. Secure tubing collar down over barbed tubing connection.

- b) Trim 1/8" blue tubing from Dr. Table/ Balance Arm Assembly to desired length for connection to the open barbed fitting on the Water Selector Valve attached to the Water Bottle System Bracket. Allow a little extra length of tubing to prevent kinking.

Slip 1/8" tubing collar onto tubing and connect and secure tubing to barbed fitting on the Water Selector Valve.



Slip tubing collar over trimmed end of 1/8" blue tubing and insert tubing onto Water Selector Valve. Secure tubing collar down over barbed tubing connection.

c) Replace 10-32 slotted screw from step 6, d) and re-tighten both screws.

d) Attach Water Bottle System Assembly Housing Cover to Bracket using (2) 4mm x 16mm self-tapping Philips screws, as shown below.



e) Secure Unit umbilical to Swing Arm Pivot using Nylon C-clamp and M4 x 10 Philips screw provided.



## 9. Unpacking Clesta Light components

- a) Unpack Upper Curved Light Post and Clesta AL-520X light from light box.
- b) Locate Lower Light Post Wire Harness (Gray Insulation) packed in box with the J-Box Accessories.
- c) Loosen blue flexible ribbon on Upper Curved Light Post, but do not remove. Remove accessory bag taped to Upper Curved Light Post. Bag contains Brass Friction Discs, Set Screws and Hex key wrench.
- d) Remove white plastic Washer from bottom of Curved Light Post. Insert Washer over mounting stud on Light Swing Arm.



Slip washer onto mounting stud.

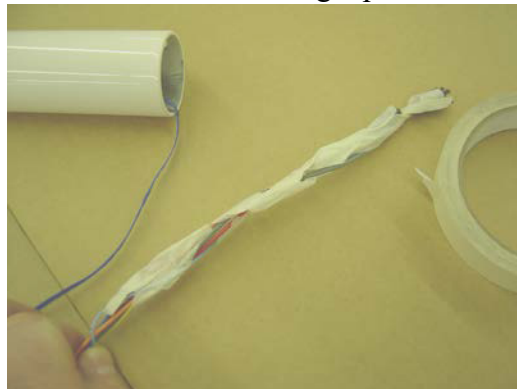
- e) Remove Clesta light and Balance Arm Assembly from box.
- f) Unpack the transformer and sensor switchbox from the AL-520X shipping carton.
- g) Remove protective clear plastic tube from the end of the light wire harness.
- h) Remove spare light bulb and adjustment tool bag from wire harness.
- i) Remove bag taped to end of Light Balance Arm Assembly with **(2)** 5mm x 15mm painted cap screws.



Remove clear plastic tube from connectors, bag with screws and bag with spare bulb and adjustment tool.

## 10. Assembling Clesta light to Upper Curved Light Post

- a) Wrap wires in a loose helix with masking tape before routing into Upper Curved Light Post.



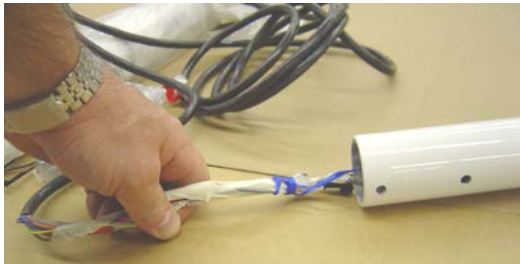
Tape wire harness connectors in a loose helix.

- b) The Upper Curved Light Post has 2 small through-holes on the top end where light will be attached.  
Wrap the end of the blue flexible ribbon wire that extends from this end of the Upper Curved Light Post around the taped end of the wire harness from the light.

Gently pull the wire harness through the Curved Light Post.

**CAUTION!**

**Alternately feed wire harness into top of light post, while gently pulling ribbon wire from the opposite (bottom) end.  
Electrical connections and wiring can be damaged if wire harness is pulled with excessive force.**



Taped wire harness is wrapped with blue flexible ribbon wire and pulled through top end of Upper Curved Light Post.



Gently pull wire harness connectors and wire harness from the bottom of the light post

- c) Insert end of Clesta light Balance Arm Assembly into the Curved Light Post.  
d) Using a 3 mm hex key wrench, fasten assembly together using the (2) 5mm x 15mm painted cap screws.



Insert Light Balance Arm into Upper Curved Post.  
Note: Align through-holes in light post with threaded holes in balance arm prior to insertion.



Tighten cap screws to fasten Light Balance arm to Upper Curved

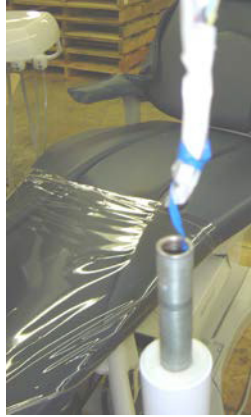
- e) Use the chair foot control to lower the chair base for installation of Clesta Curved Post Light Assembly onto Light Swing Arm.  
f) Fold light Balance Arm toward the Curved Light Post and lift Clesta light.  
g) Take the end of blue flexible ribbon wire and feed through the mounting stud on the Light Swing Arm.



- h) Carefully feed wire harness connectors through the mounting stud and gently pull flexible ribbon wire and wire downward through the Light Swing Arm.

**CAUTION!**

**Alternately feed wire harness through Swing Arm, while gently pulling ribbon wire from the opposite end. Electrical connections and wiring can be damaged if wire harness is pulled with excessive force.**



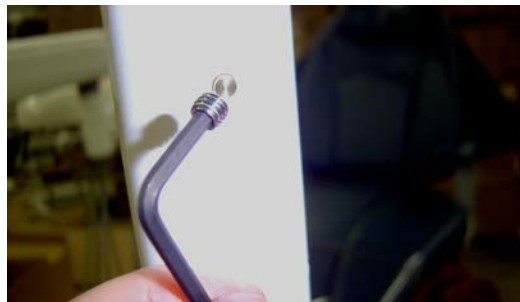
Carefully insert wrapped connectors into mounting stud.

- i) Mount Clesta light post onto the Swing Arm mounting stud.
- j) Insert brass friction discs and set screws into the 3 holes around the lower portion of the curved light post using the hex key wrench provided. Tighten set screws only enough to apply friction to minimize drifting of light.

**IMPORTANT!**

**Do Not Over-Tighten Set Screws.**

**Over-tightening will strip the threads inside the Curved Light Post.**



Insert brass discs and set screws to minimize drifting of light.  
Do not over-tighten screws!

11. Re-check the leveling of the Unit/Light Swing Arm Assembly.  
Re-adjust as necessary (See Step 5).

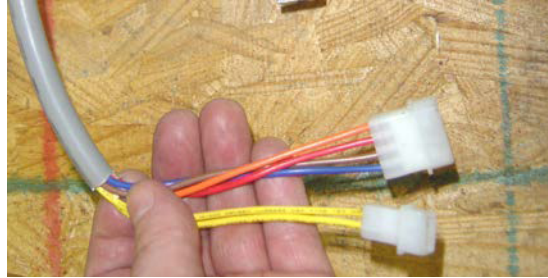


## 12. Umbilical

**Note: Consult Floor Template supplied with each delivery system.**

**Plumbing for the delivery system must be in accordance with all state and local codes.**

- a) Feed the Lower Wire Harness for the Clesta light through the umbilical Duct Hose.  
Note: lower end of wire harness has 2 rectangular connectors for attaching to light transformer, which will be located inside of the J-Box (see photo below).



- b) Apply a light coating of silicone spray to the outside of unit umbilical tubing. Feed umbilical from unit through the grey corrugated duct hose, then snap Umbilical Duct Hose Connector into the Umbilical Bracket up on the unit Rotation Plate.



Apply a light coating of silicone spray to outside of the tubing.



Umbilical is shown installed into Duct Hose. Duct Hose is connected to the Umbilical Bracket.  
(Note: Vac Pac umbilical also shown in photo)

- c) Connecting Clesta Sensor/Switch Box

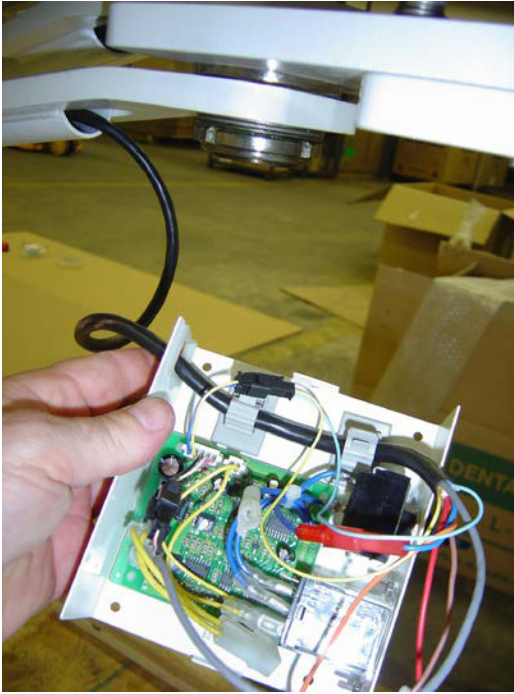
To remove the cover of the Clesta Sensor/Switch Box, use a Phillips screwdriver to remove screws on each side.

Connect black wire harness from light to connectors inside of the Sensor/Switch Box:

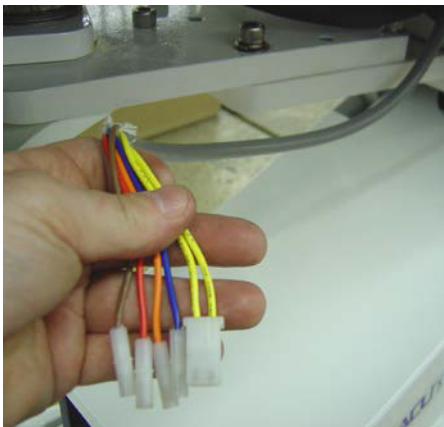
- Join 3-pin and 2-pin sensor wire connectors to splitter on PC Board:  
(pink/ white/ black) and (yellow/blue)
- Join blue wires with red connectors

Connect gray lower wire harness from umbilical to Sensor/Switch Box:

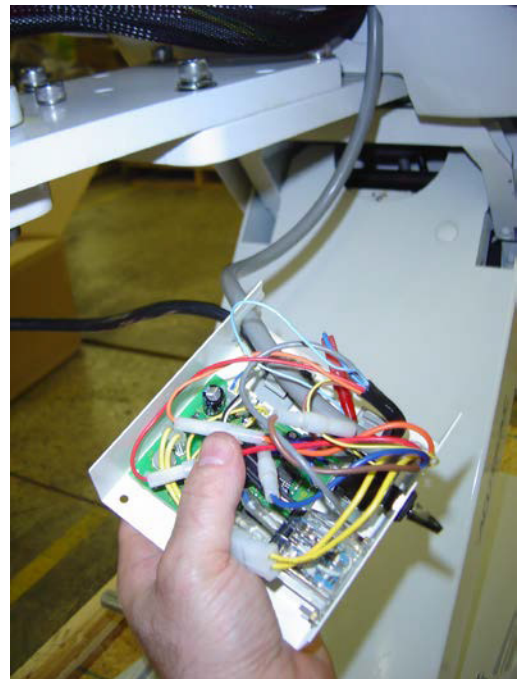
- Join 2-pin connector with yellow wires from lower wire harness to 2-pin connector attached to the circuit board.
- Join single pin brown, red and orange connectors from wire harness from light to wire harness from umbilical
- Join single pin blue wire with white connector from umbilical to single pin blue wire attached to the switch.



From light wire harness, join 2-pin & 3-pin black sensor wire connectors and blue wire with single pin red connector to sensor switch box.



From umbilical wire harness, join brown, red, orange and blue wire with single pin white connectors and yellow wire 2-pin connector to sensor switch box



Lower wire harness single pin and double pin connections to the Sensor/Switch Box.

- d) Mounting Sensor/ Switch Box to chair  
Replace Cover of Sensor/Switch Box and fasten with 2 Phillips screws removed in step 12c).



- e) Remove (4) 4mm x 10 Phillips screws from step 2.  
Attach Sensor/Switch Box to the bottom of the Swing Mounting Bracket.



- f) Secure wire harness from the light to the C-clamp on the light swing arm rotation stud





g) Transformer Connection to light wire harness

Place the transformer inside of the J-Box.

Join the 4-pin orange, red, brown and blue connector and 2-pin yellow connector from the light wire harness to the corresponding transformer wire connectors.

Connect grounded plug to power supply inside the J-Box.

Verify Clesta light functions correctly:

test light function with Manual ON/OFF and Sensor switch positions



h) Plumbing Connections

Secure J-Box frame to the floor using mounting holes provided, at desired location.

Connect lower end of Umbilical Duct Hose to J-Box Frame.

Attach the manual shut-off valves to the J-Box air and water supply pipes. Purge lines prior to attaching air/ water assemblies and umbilical tubing to shut-off valves.

Attach Air & Water regulator assemblies to umbilical tubing.

i) Test the Delivery System to verify that there is no air or water leakage and that the unit is fully functional.

Place J-Box Cover over Frame and secure with **(4)** 10-32 x ½” slotted screws provided.

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