Installation Guide

A-dec® S76

SURGICAL LIGHT

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General Warnings

WARNING: Electrical mains wiring (100 - 240 VAC) must be installed by a license electrician or other qualified personnel according to local codes and regulations.

WARNING: The installation of this device is reserved for authorized technical personnel.

WARNING: To avoid injury or damage to the equipment, follow all instructions in the sequence provided.

WARNING: Failure to turn off or disconnect the power before you begin this procedure can lead to product damage and result in serious injury or death.

WARNING: Shock hazard. When you remove or replace the covers, take care not to damage any wiring or tubing. Verify that the covers are secure after you replace them.

ATTENTION: Circuit boards are sensitive to static electricity. Electrostatic Discharge (ESD) precautions are required when touching a circuit board or making connections to or from the circuit board. Circuit boards should be installed only by an electrician or qualified service person.

ATTENTION: a USB port is located on the LCD display. To maintain optimal ESD protection, keep the USB port cover in place whenever the port is not in use and reinstall it promptly after completing any log file download or firmware update.

NOTE: A data line has been included with the dental light for use with A-dec products that can operate the light through the touch control system. This includes the DS7 touchscreen on A-dec 500 Pro products, as well as limited control on other A-dec user interfaces. Contact A-dec customer service for additional detail. The data line should never be plugged into a telephone jack. If the system does not include touch control, disregard the instructions for the data line.

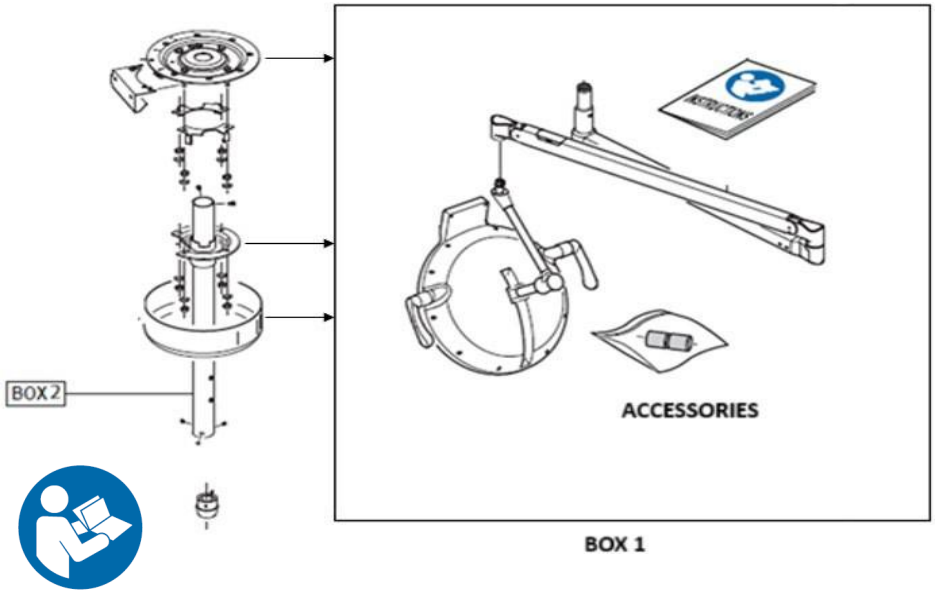
Electrical Connection Instructions (IEC 60601-1, clause 8.11.1)

The equipment is permanently installed with free terminals for direct connection to the electrical panel.

Provide a single omnipolar disconnect device (circuit breaker or switch disconnector interrupting both phase and neutral, minimum rating 6A curve C) integrated in the electrical panel upstream of the terminals, equipped with a luminous indicator clearly showing the ON/OFF status. Suitable examples: ABB S201-C6 with indicator module or IEC/EN 60898 certified equivalents. Before any maintenance intervention, switch off and verify the disconnect device status via the indicator.

Note for USA/Canada (ANSI/AAMI ES60601-1, NFPA 99/NEC): Use hospital-grade breaker/receptacle compliant with NFPA 99 (Category 1/2 for patient-care areas) and NEC Article 517, minimum 15A rating.

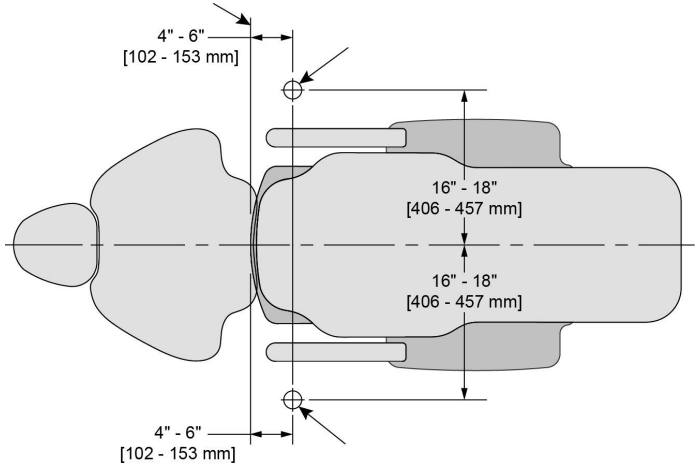
Unboxing

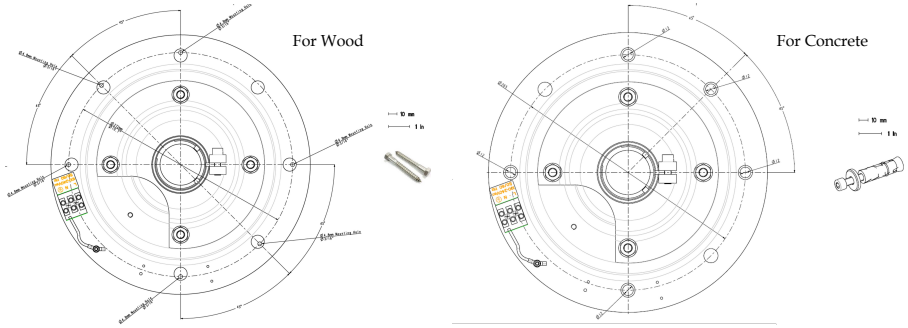


Prepare the Ceiling

WARNING: Mounting structure must be designed to support a minimum static load of 110 lbs (50 Kgf) and a minimum moment of 5630 in-lb (65 kgf*m). Consult a licensed professional, i.e. structural or architectural engineer as needed. Ensure that all installations conform to local code requirements.

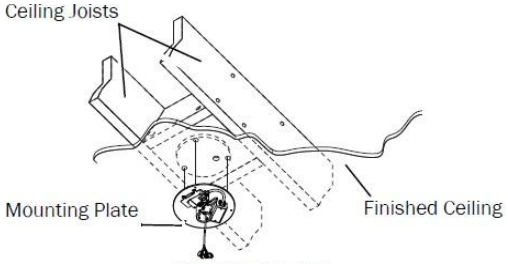
MountingLocation and Ceiling Mount Templates



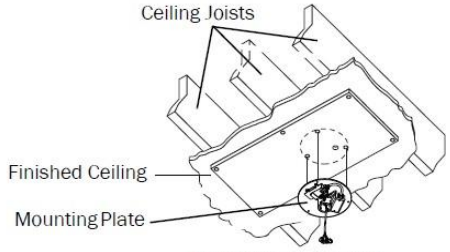


Determine Ceiling and Bracing Type

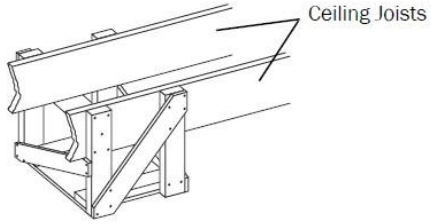
WARNING: In the United States, the Surgical Light support structure must be built at a ceiling tile height that allows installation of the mounting plate below the ceiling tile or the ceiling tile must be modified so the mounting plate is visible and can be installed between the support structure and ceiling tile. The space between the tile and mounting plate should be 1/2" (13 mm) or less. Complete the required modifications for the type of ceiling structure.



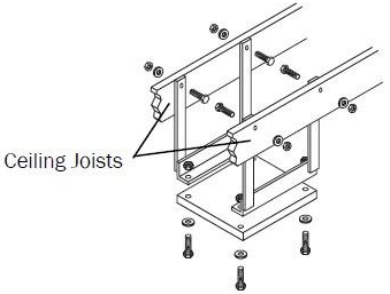
New Construction



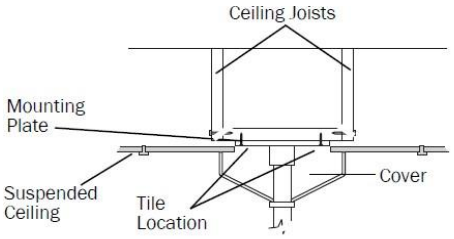
Existing Construction



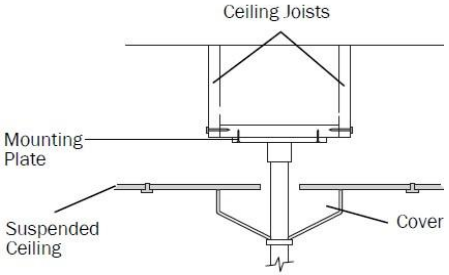
Suspended Ceiling, Wood Construction



Suspended Ceiling, Metal Construction



Suspended Ceiling, Support Structure - United States

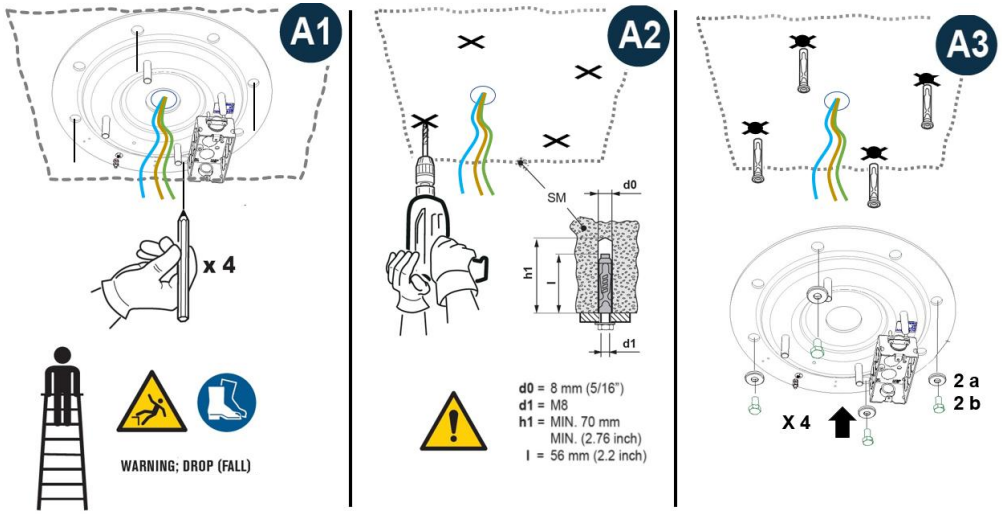


Suspended Ceiling, Support Structure - Other Countries

Install the Mounting Plate

Concrete

Concrete C20/25 to C50/60, non-cracked
Concrete C12/15
Natural stone with dense structure.
A1 - Locate the mains wiring exit point from the ceiling
Place the mounting plate (1) on the ceiling and use a template to mark the holes.
A2- Drill 4 holes.
A3 - Insert the 4 expanders (2).
Place the mounting plate (1) against the ceiling and secure the screws (2b) into the expanders with the washers (2a).



Wood

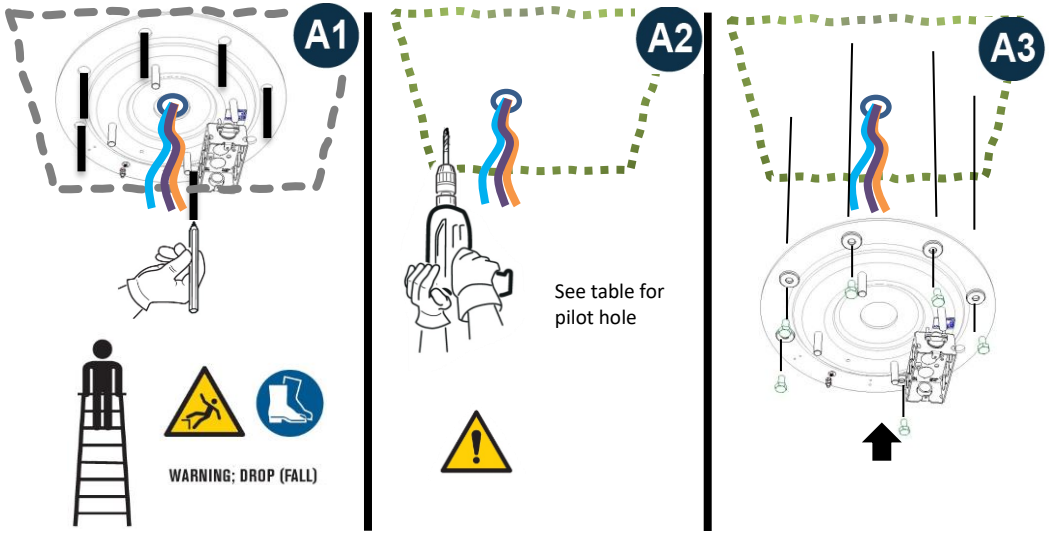
ALSC Group woods

- Soft Wood
- Medium Wood
- Hard Wood

A1 - Locate the mains wiring exit point from the ceiling
Place the mounting plate (1) on the ceiling and use a template to mark the holes.
A2-A3 - drill pilot holes before installation to prevent splitting.
Drill 6 Pilot holes.
For ¼ " bolts following pilot holes dimension table is suggested.
WARNING: Always confirm the size of the pilot hole by licensed professional.

Lag Bolt Size	Pilot Hole Size		
	Soft Wood*	Medium Wood*	Hard Wood*
1/4"	3/32"	5/32"	3/16"

Push the mounting plate (1) against the ceiling and secure the screws into the wood with the washers.

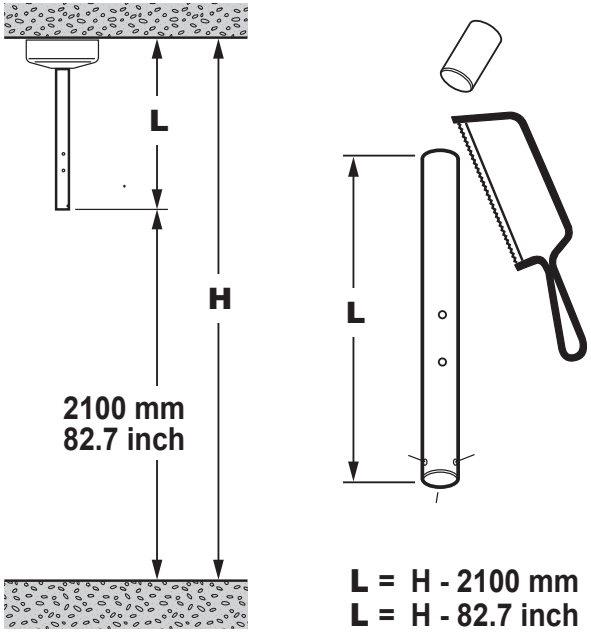


Light Post Mounting

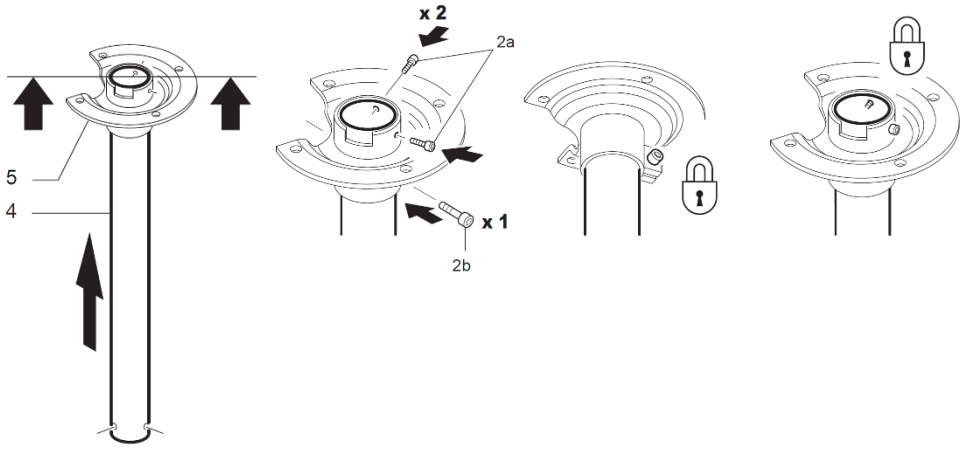
Available light post lengths

S76 Post Lengths	Recommended Ceiling Height
25″ (63.5cm)	9′ (2.75m) & 9′6″ (2.9m)
37″ (94cm)	10′ (3m) & 10′6″ (3.2m)
61″ (155cm)	12′ (3.7m) & custom lengths

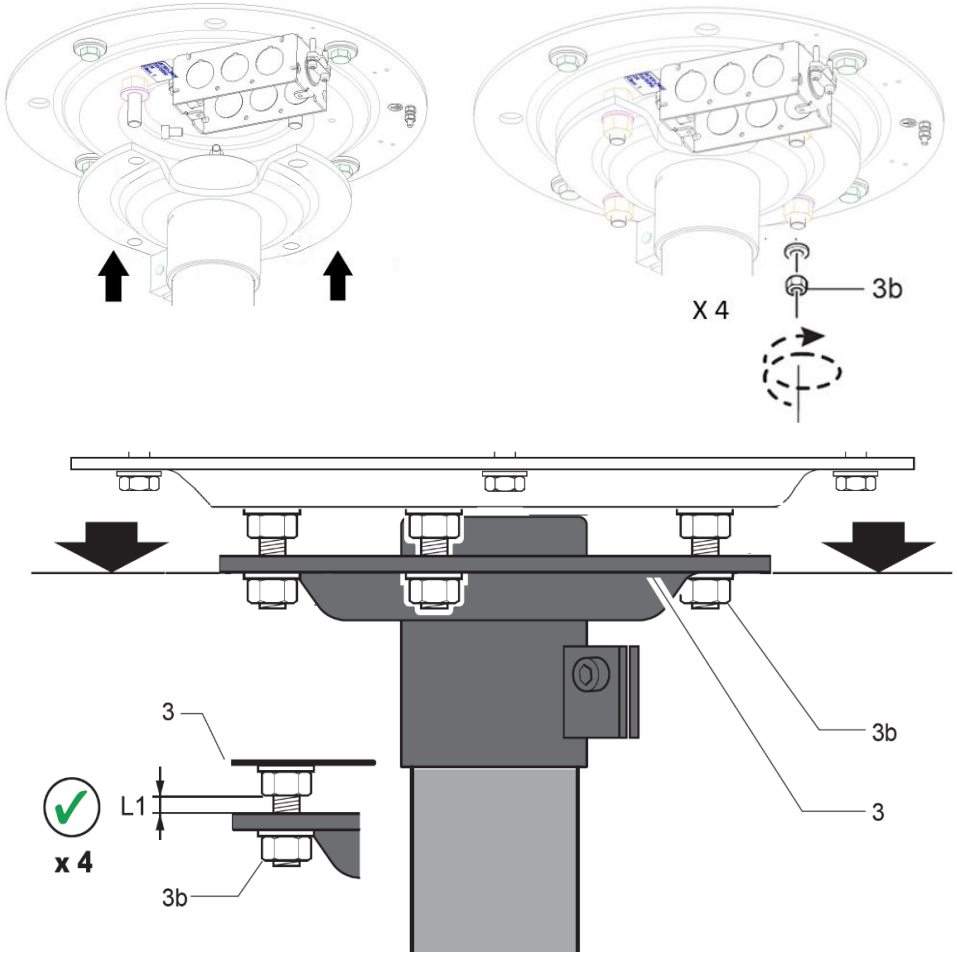
Custom lengths: for ceiling heights <12′ (3.7m) modify the post lengths based on the information below.



Insert the light post (4) into post plate flange (5). Secure the 2 screws (2a) and the bolt (2b).

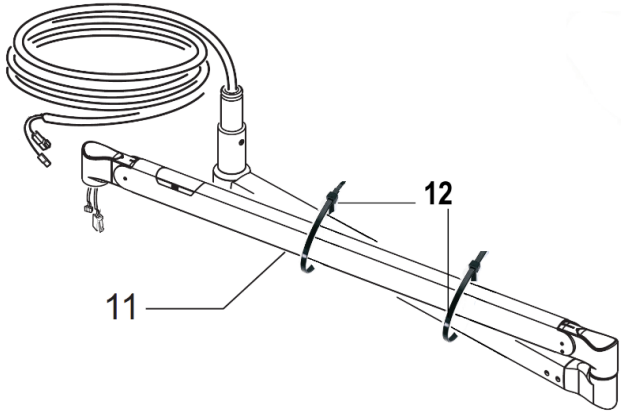


Push the light post with plate up against the mounting plate. Tighten the nuts to hold the light post assembly in place.
Leave enough space L1 (3 rotations back of screw 3b) to allow for leveling of the light post at the end of the installation.

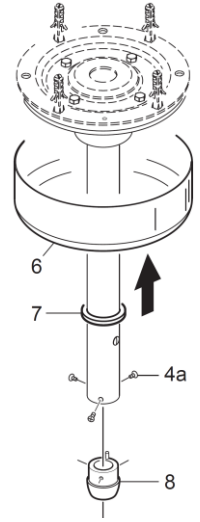


Light Arm Mounting

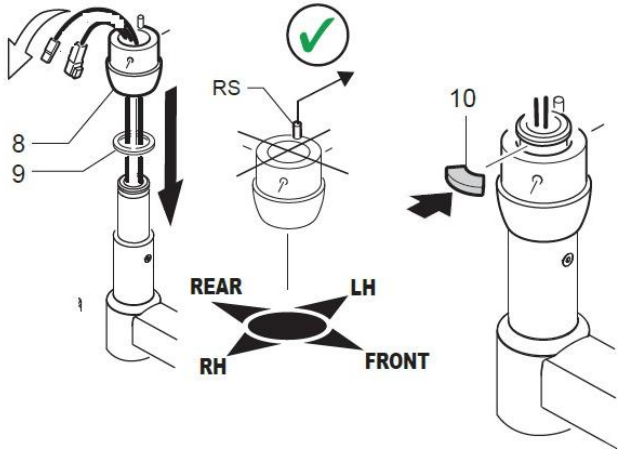
WARNING: The dental light flex arm is spring loaded and under tension. To prevent injury, keep the arm binding in place until the light installation is complete. Do not remove the cable tie (12) until the installation of the head is completed.



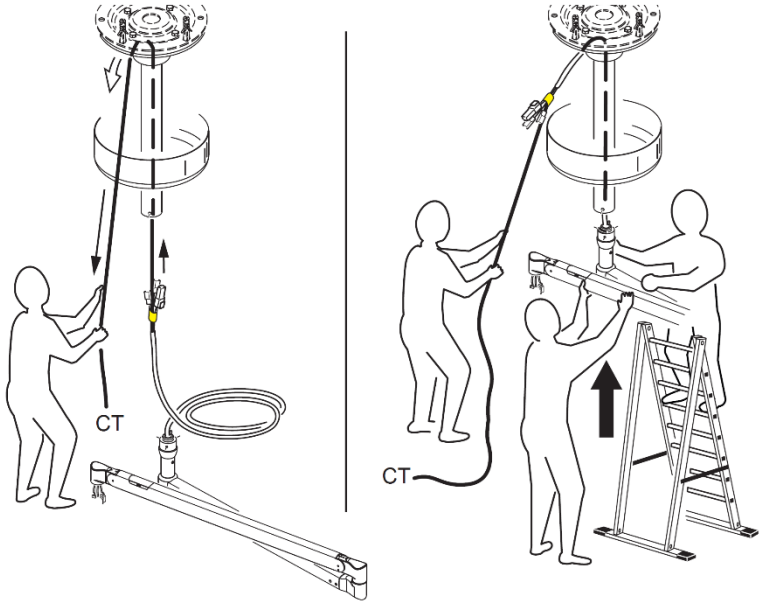
Remove clear film from ceiling mount cover (6) and insert through the light post, followed by the black gasket (7). Remove the 3 screws (4a) that secure the light post collar (8) in place, then remove the collar.



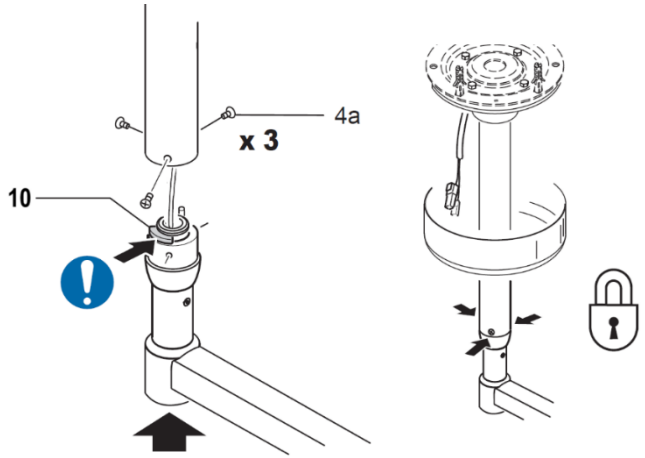
Insert the washer (9) and the light post collar (8) on the light arm knuckle. Important: place the rotation stop (RS) on the opposite side of the operatory field. Insert the half-moon nut (10).



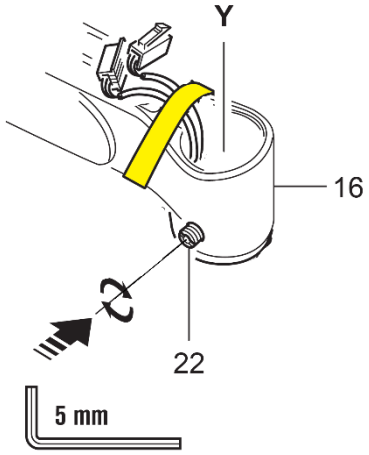
Use wiring pulling cable (CT) to route the light cable. Pull the cable down while closing the arm system up to the light post.



Tighten the 3 screws (4a) to secure the light post collar to the light post Remove the traction cable (CT) leaving the cables out of the mouting plate.

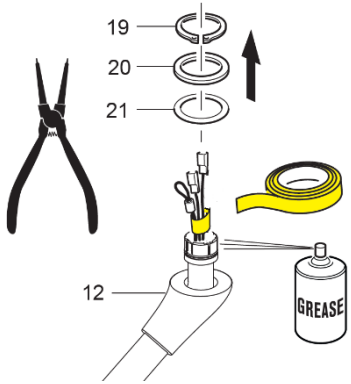


Arrange the cables coming out from the arms with some tape to have a clear view of the joining area.
Unscrew the friction with a 5 mm hexagonal key.

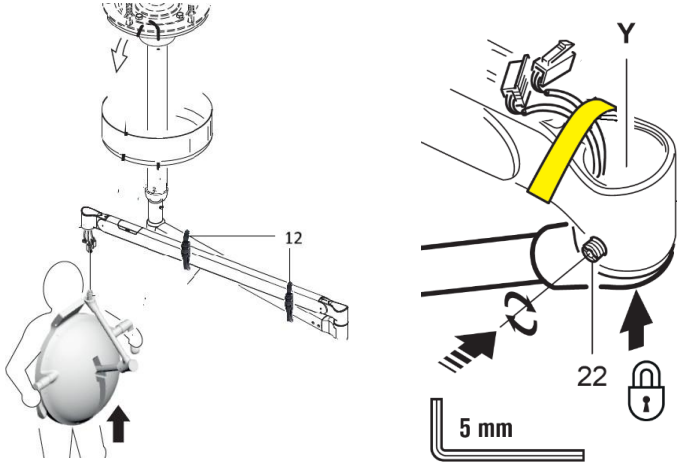


Light Head Mounting

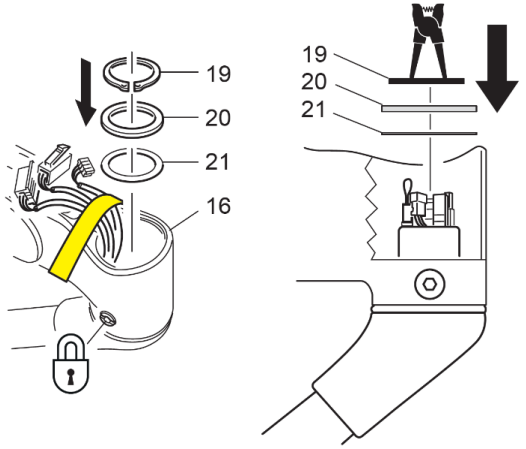
Remove the circle-clip (19) with the suitable tool. Remove the steel washer (20) and the Teflon washer (21).
Only these parts shall be used to secure the light head (12).
Put some grease on the side-top part of the post. Arrange the cables coming out from the arms and from the light head with some tape to have a clear view of the joining area.



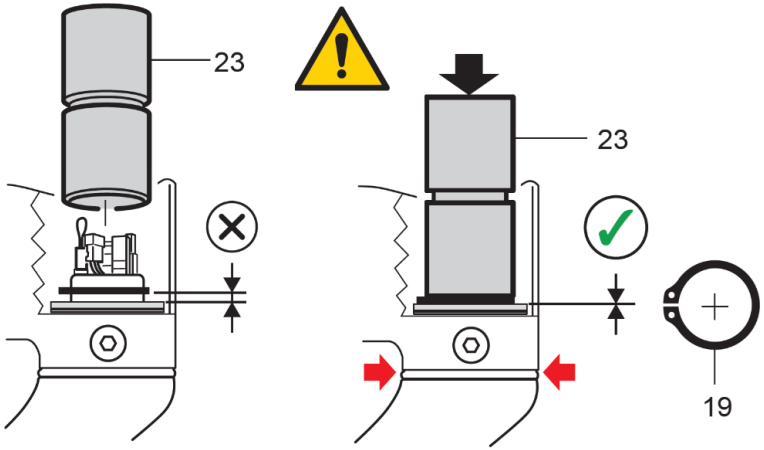
CAUTION DANGER OF IMPACT WITH RISK OF INJURY. **Do not remove the zip ties (12) until** the light head is installed. Leave arms bonded during this step to avoid injury.
Join the light head and the light arm together and keep pressed.
Tighten the friction screw (22).



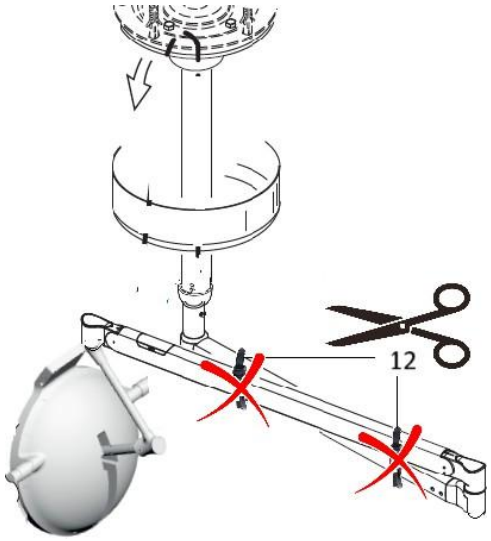
Keeping the light head and the arm joined together, insert the teflon washer (21), followed by the steel washer (20).
Insert the keyed circle clip (19) on top of the post.



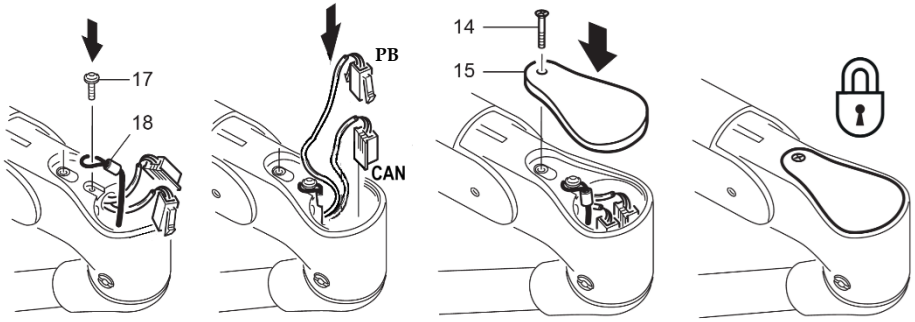
Take the tube (23) supplied as accessory.
Place the tube on the circle clip, taking care not to pinch any wiring.
Strongly press the tube (23) downward, opposing from the other side. The circle clip (19) must be closed as shown.
Little to no gap should appear between the joints (red arrows).



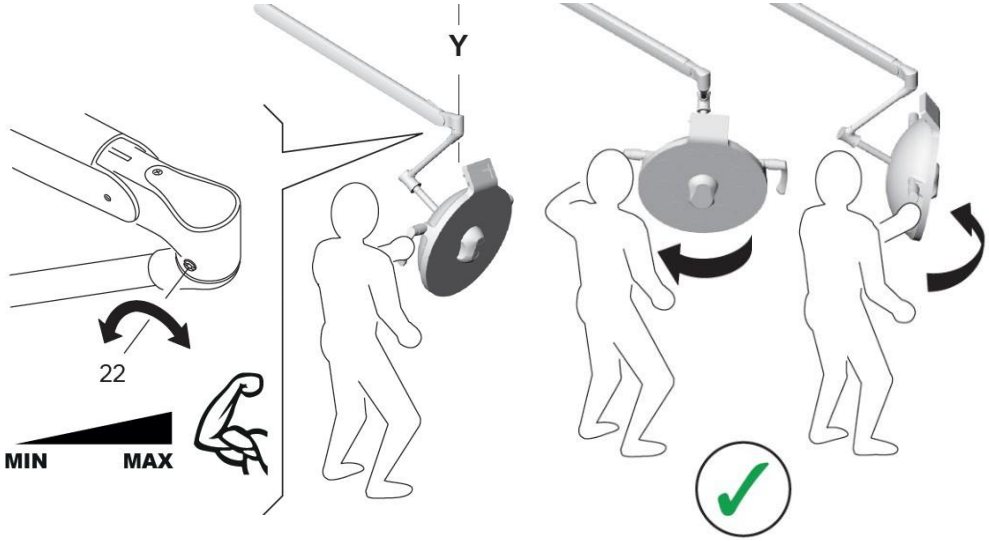
Remove the zip ties (12) from the light arms.



Fix the safety cable (18) with the screw (17). Connect the data cable (DCS) and Power Supply Cable (PB).
Close the joint with the ceiling mount cover (15), securing the screw (14).

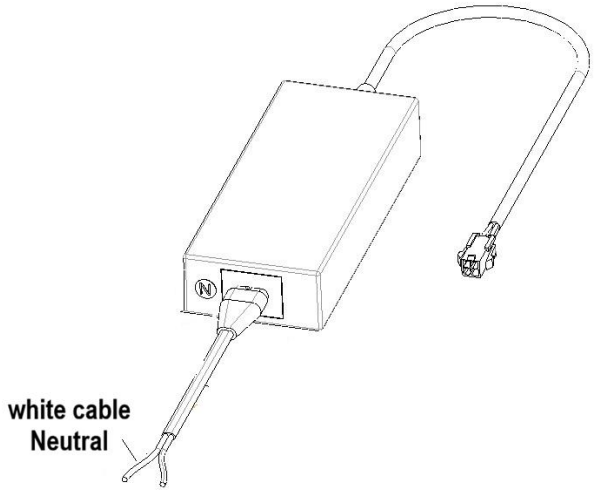


Check that the light head rotates around the Y-axis with the desired force. If the rotation is too loose or too hard, adjust the friction screw (22).

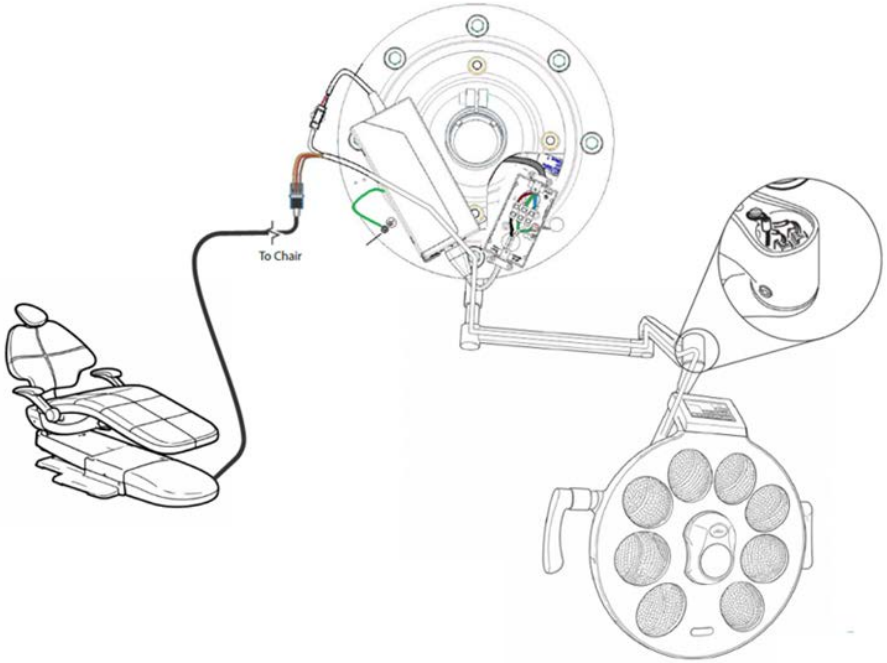


Electrical and data cable connection

WARNING: the product is a permanent installation.
According to IEC 60601-1 permanent installation cannot be fused on the Neutral line.
To avoid polarity inversion the cable is supplied assembled with the power supply.
Do not detach the cable from the power supply.
In case the cable is detached, take care to respect the neutral connection between the cable and the power supply, according to the identification symbol N present on the cable and the power supply.



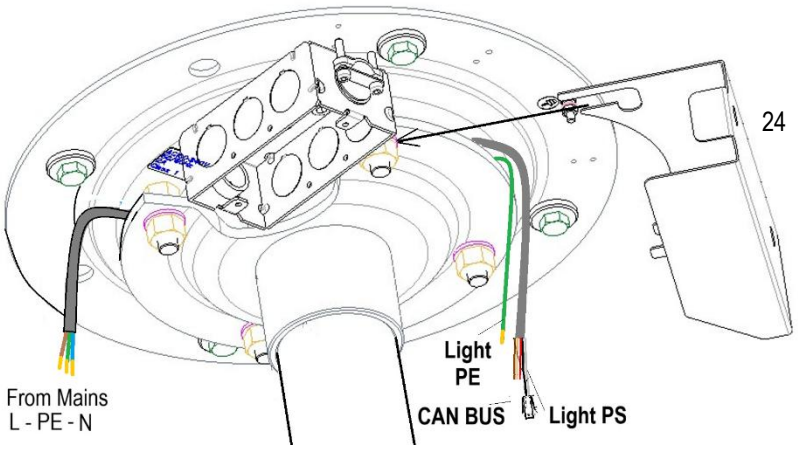
Schematic of the connections



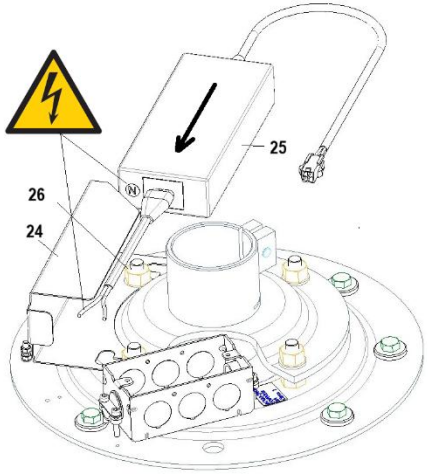
Main Input Power	USA	Rest of World
Hot	Black	Brown
Ground	Green	Green
Neutral	White	Blue

Power Supply connection

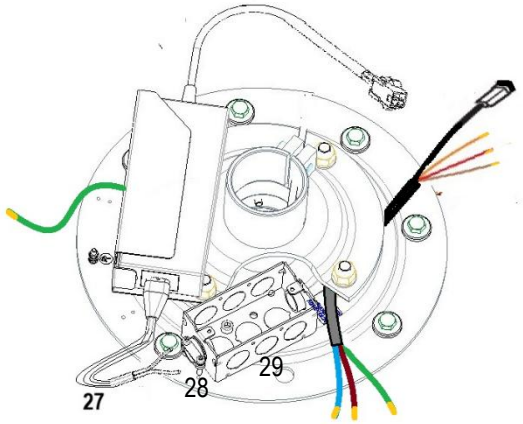
Fix the mount cover (24) of the power supply to only one screw of the mounting plate.



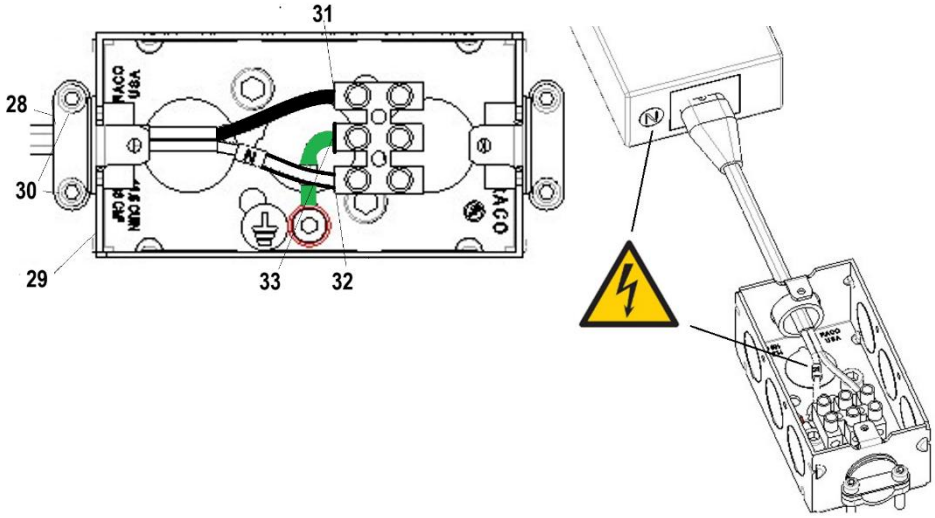
Insert the power supply (25) into the mount cover.
Then fix the power supply mount cover (24) with second screw (26).



Insert the cable (27) into the fitting (28) of the metal junction box (29).

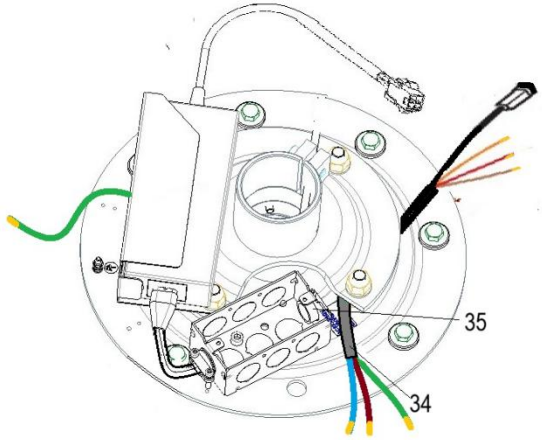


Close the screws (30) of the metal junction box to secure the cable.
Connect Line cable (black) into connector
Connect Neutral Cable (white) into the connector.
PE Cable (33) preassembled in Factory.

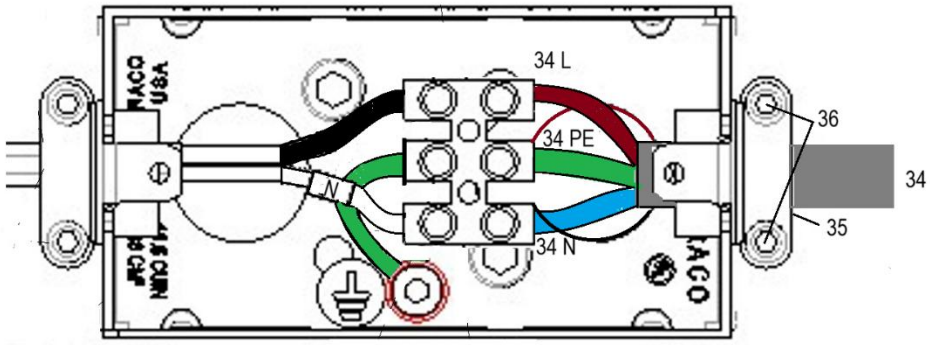


Mains Connection

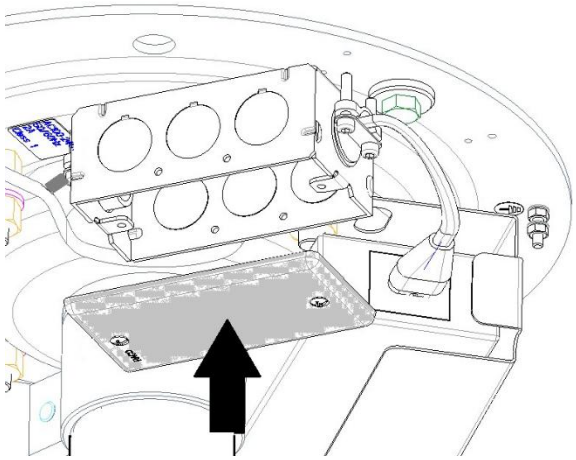
Pass the mains cable (34) into the fitting (35) of the junction box.



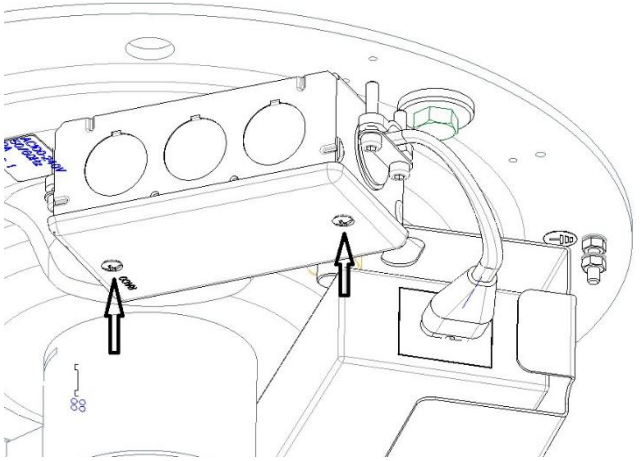
Close the screws (36) of the metal junction box to secure the cable (34)
Connect the Protective Earth cable (34 PE) to the connector.
Connect the Line cable (34 L) to the connector (correspondence black cable)
Connect the Neutral cable (34 N) to the connector (correspondence white cable).



Close the Metal Junction box cover



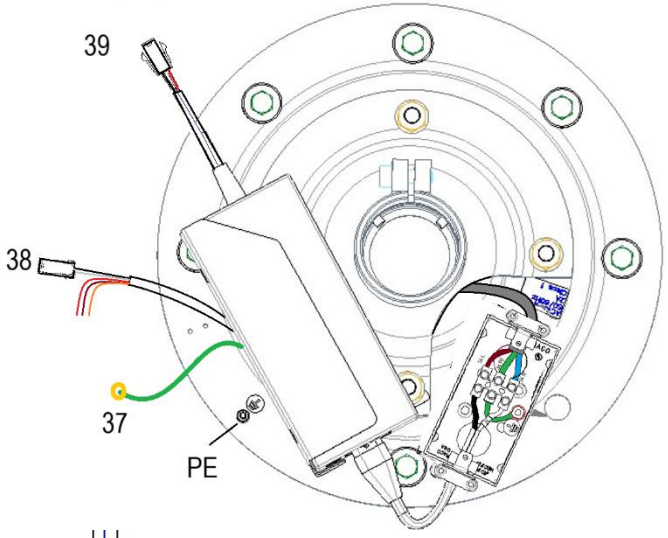
Secure the cover with the two screws

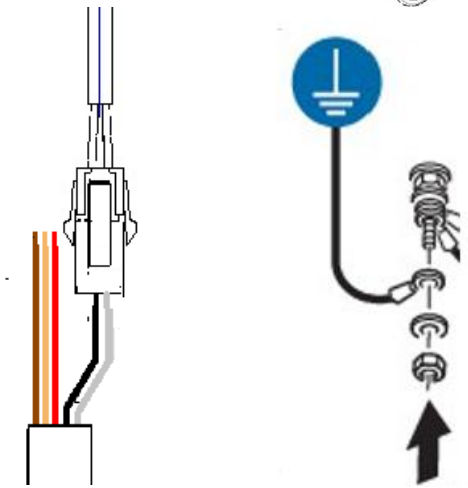


Light Connection

Power and earth cable

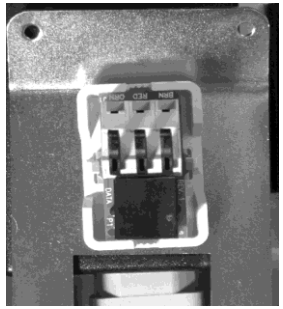
Connect the Earth cable of the light (37) to the PE terminal of the mouting plate. Connect the connector of the power of the light (38) with the output connector of the power supply (39).



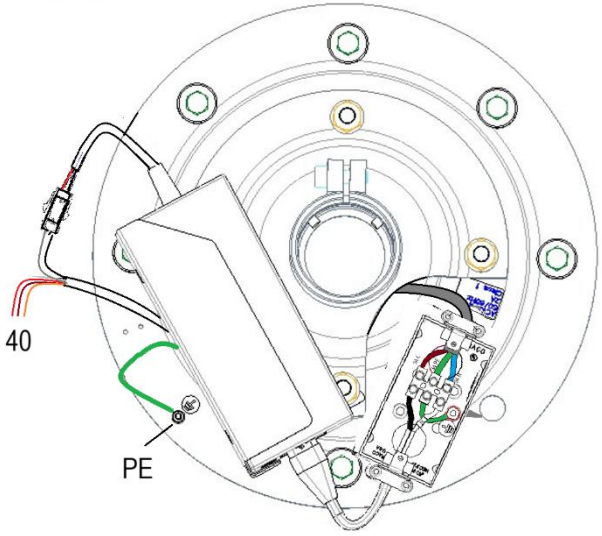


Data cable connection

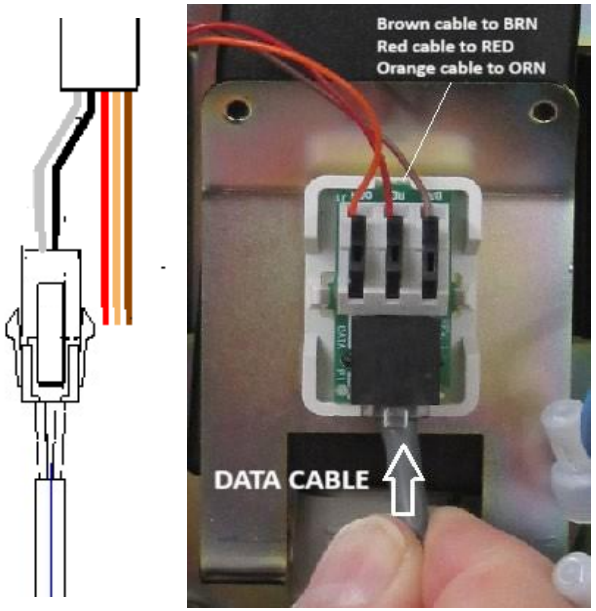
If installing for use with A-dec touch controls, connect the data cable to A-dec's Data Communication System (DCS).
Proceed with connection (data cable, 40) using the A-dec LED Dental Light Adaptor Board (AB).



Stick the AB on the mounting plate after peeling the backing off the AB, route the cable to the A-dec 500 Pro delivery or applicable A-dec universal chair board and connect.

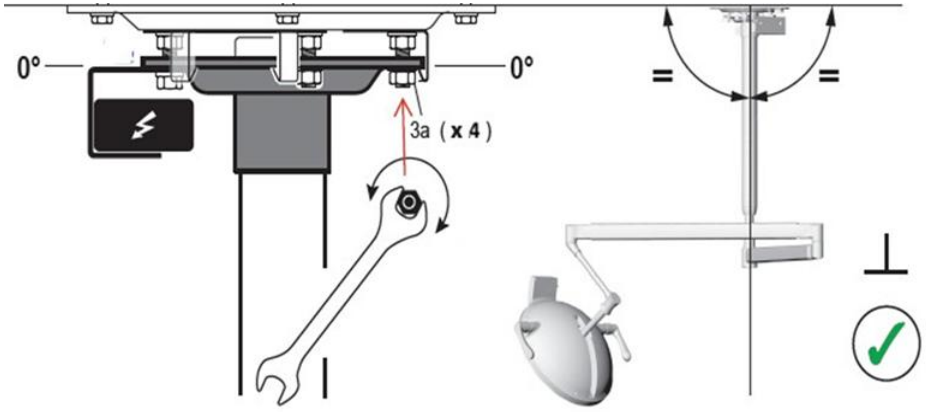


Connect the wires of the light and data cable coming from the chair or delivery system.



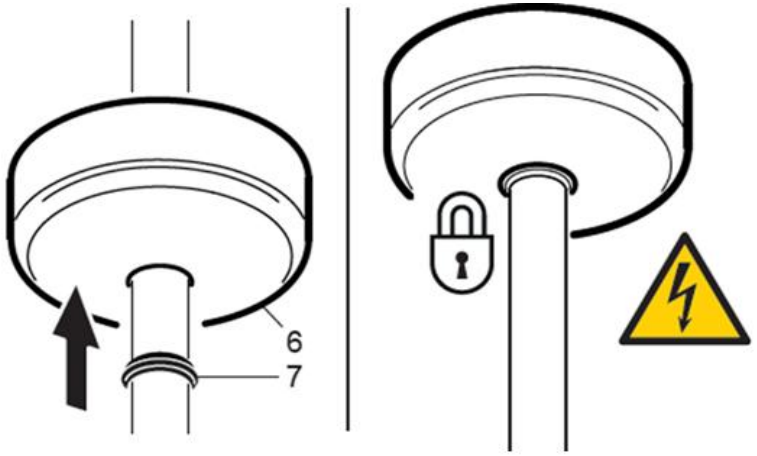
Levelling of the light post

Adjust the 4 bottom nuts (3a) to level the vertical post.
Tighten the top nuts down onto the plate, after it is level.



Closure and end of installation

Close the cover to hide all cables, press it against the ceiling, then secure it with the black gasket (7).



Power on the single omnipolar device.

WARNING FALLING OBJECT HAZARD WITH RISK OF INJURY.
Check that the installation is correct and complete.
Switch the light on, check that functioning and movements are regular.

a-dec®

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