

CLESTA LIGHT

MODEL IO-5000

AL-511T Unit Mount

AL-512T Ceiling Mount

AL-515T Track Mount

AL-517N / AL-517T

Cabinet Mount

AL-518T Wall Mount

AL-530X Swing Mount

INSTALLATION and OPERATION INSTRUCTIONS

⚠ IMPORTANT

After installation is completed, check all the bolts, screws and fasteners to confirm that they are securely fastened.

 Belmont®

Intended Use of the Product

This product is intended for the exclusive use for diagnoses, treatments and relative procedures of dentistry, and must be operated or handled by the qualified dentists or by dental staffs under the supervision of the dentist. Such dentists or dental staffs should instruct and/or assist the patients to approach to and leave from the product. Patients should not be allowed to operate or handle the product unless he/she is so instructed.

WARNING

Operation of a dental light under Electro Magnetic Interferences.

This equipment may malfunction by electromagnetic interferences.




Do not install dental light close to the equipment that generates electromagnetic interference (i.e. communication equipment, elevator)

Do not use the device that creates interference (i.e. cellular phone) near this equipment.

Do not use electric surgical knife or laser knife with dental light.

Light may turns on/off by itself due to malfunction of a sensor caused by electromagnetic interferences.

Symbols

	Caution It means "caution, warnings, or possibility to danger".		Type B Applied Parts		Manufacturer
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Environmental condition for Operation

Temperature : 41~104F (5 ~ 40°C)

Humidity : 10 ~ 80%

Pressure : 8.7~15.4 psi (600 ~ 1060 hpa)

Environmental condition for Storage

Temperature : 14~122F (-10 ~ 50°C)

Humidity : 10 ~ 80%

Pressure : 8.7~15.4 psi (600 ~ 1060 hpa)

Environmental condition for Transportation

Temperature : 14~122F (-10 ~ 50°C)

Humidity : 10 ~ 80%

Pressure : 8.7~15.4 psi (600 ~ 1060 hpa)

 **WARNING**

- To avoid the risk of electric shock, this equipment must only be connected to supply mains with protective earth.
- Lamp cover becomes very hot during use. To avoid burning fingers, do not touch lamp cover.
- Position a light head by holding light handle(s).
- Installation and service work should be conducted by an authorized installation/service personnel only.
- Always put a lamp cover on to avoid burning fingers.

 **WARNING: The followings are prohibited.**

- To modify this equipment.
- To use the equipment under any failure condition.
- To use the equipment without doing the daily and periodical check-up.
- To wipe the plastic covers with any disinfectant or detergent that contains organic solvent.

Precautions for Installation

- Assure that the ceiling and/or framing can provide the 70 lb. (31.5kg) of dead weight capacity and the additional force of movement and positioning of the light.
- Keep the equipment away from water.
- Keep in circumstances safe from influence by temperature, humidity, wind, sun light, air containing salts and minerals.
- Care about stability such as inclination, vibration and impact, including handling and transportation.
- Do not keep the equipment in a place where chemicals are or where gas is emitted.
- During lifting and unpacking of the light, make sure to hold only the designated parts.
- Do not drop or hit the light.
- Do not connect to power supply other than AC120V 60HZ.
- Ground light properly prior to turning power on.
- When the installation process has been completed, verify that all the mechanical and electrical functions are working properly.
- Thick gloves are highly recommended at unpacking.
- Do not modify this equipment.

CAUTION

Before use

- Check connection of switches and make sure that the device functions properly.
- Make sure that grounding wire is connected.
- Make sure that cables are properly and perfectly connected.

During use

- Do not use the light longer than required for examination or treatment.
- Always watch the patient and the equipment to make sure nothing is wrong.
- If anything wrong is observed with the equipment or the patient, take a proper action, such as stopping the use of equipment as well as keeping the patient in safe.
- Keep an eye on the patient not to touch the equipment.

After use

- Turn off the light.
- Clean the equipment and get it ready for use.

CAUTION

Do not spray liquids directly onto light surfaces.

In order to prevent damage to electrical components and systems, do not apply excess cleaning solution onto light surfaces.

NOTE

Warranty does not cover damage to equipment caused by disinfectant solutions


Replacement of parts (Except the Bulb and Lamp cover)

Replacement must be done by an professional technician(s) of our company or a company authorized by us.

[1] SPECIFICATIONS

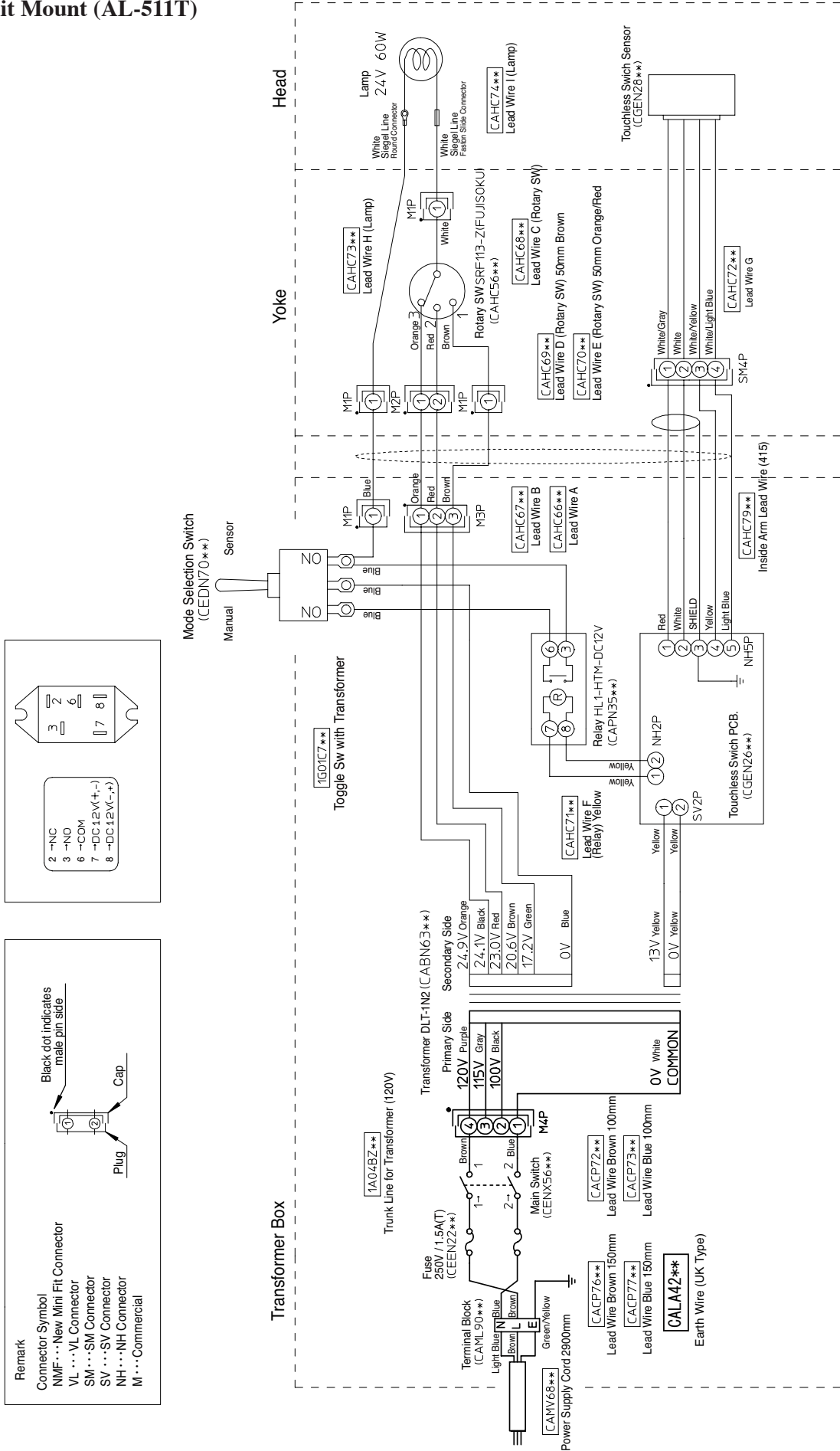
1. Focal Distance..... 27.5"
2. Color Temperature 5000° Kelvin at 28000 Lux
3. Light Intensity..... H : 28000 Lux / 2600 FTC
M: 22000 Lux / 2000 FTC
L : 8000 Lux / 740 FTC
4. Light Pattern..... 2.4" x 6.7" at 27.5"
5. Power Requirement..... AC. 120V / 60 Hz
6. Bulb Type..... Tungsten Halogen Type (JA 24V 60W)

[2] CLASSIFICATION

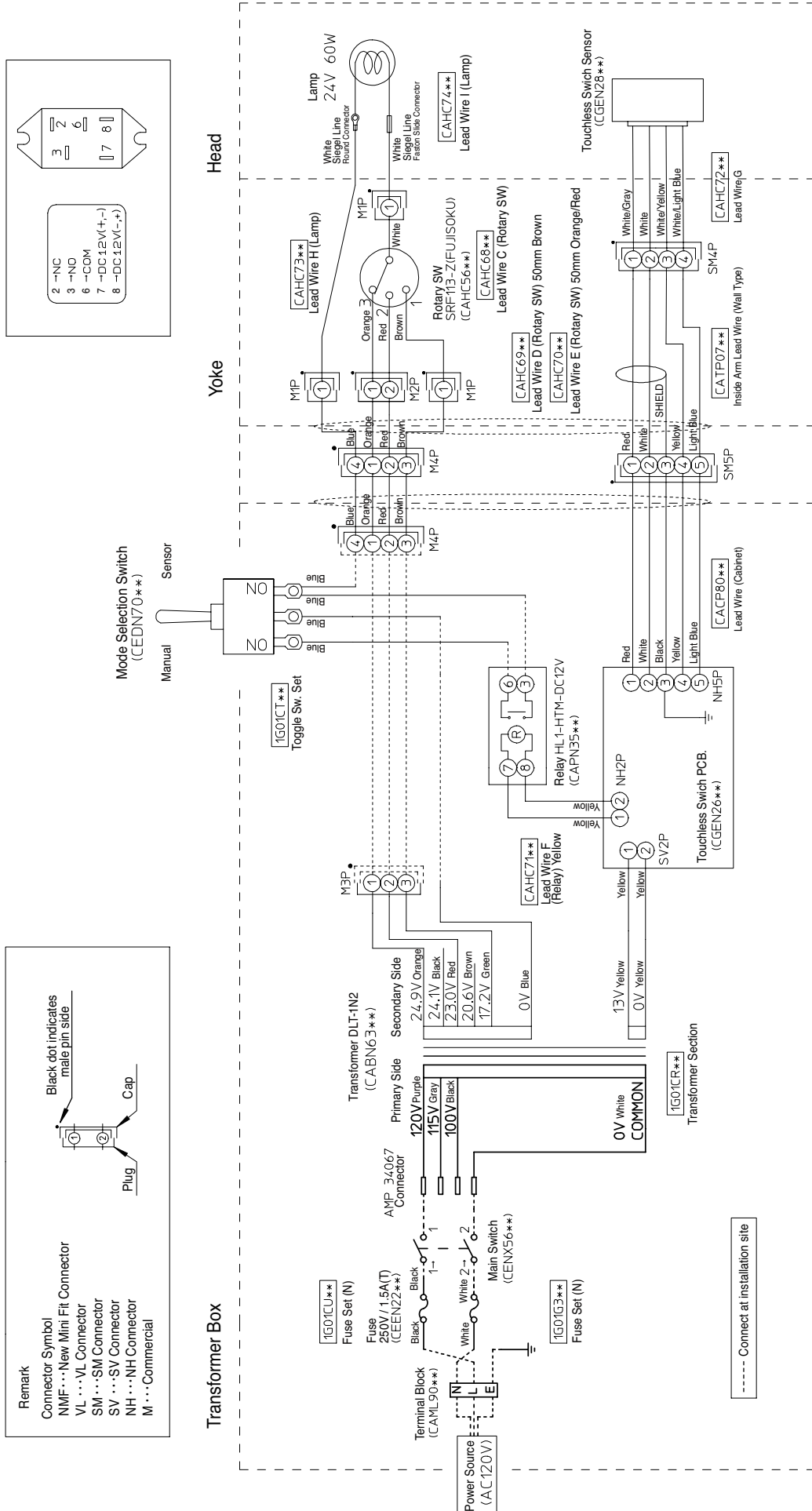
- a. Protection against electric shock : Class I Equipment, Type B Applied Parts 
- b. Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.

[3] WIRING DIAGRAM

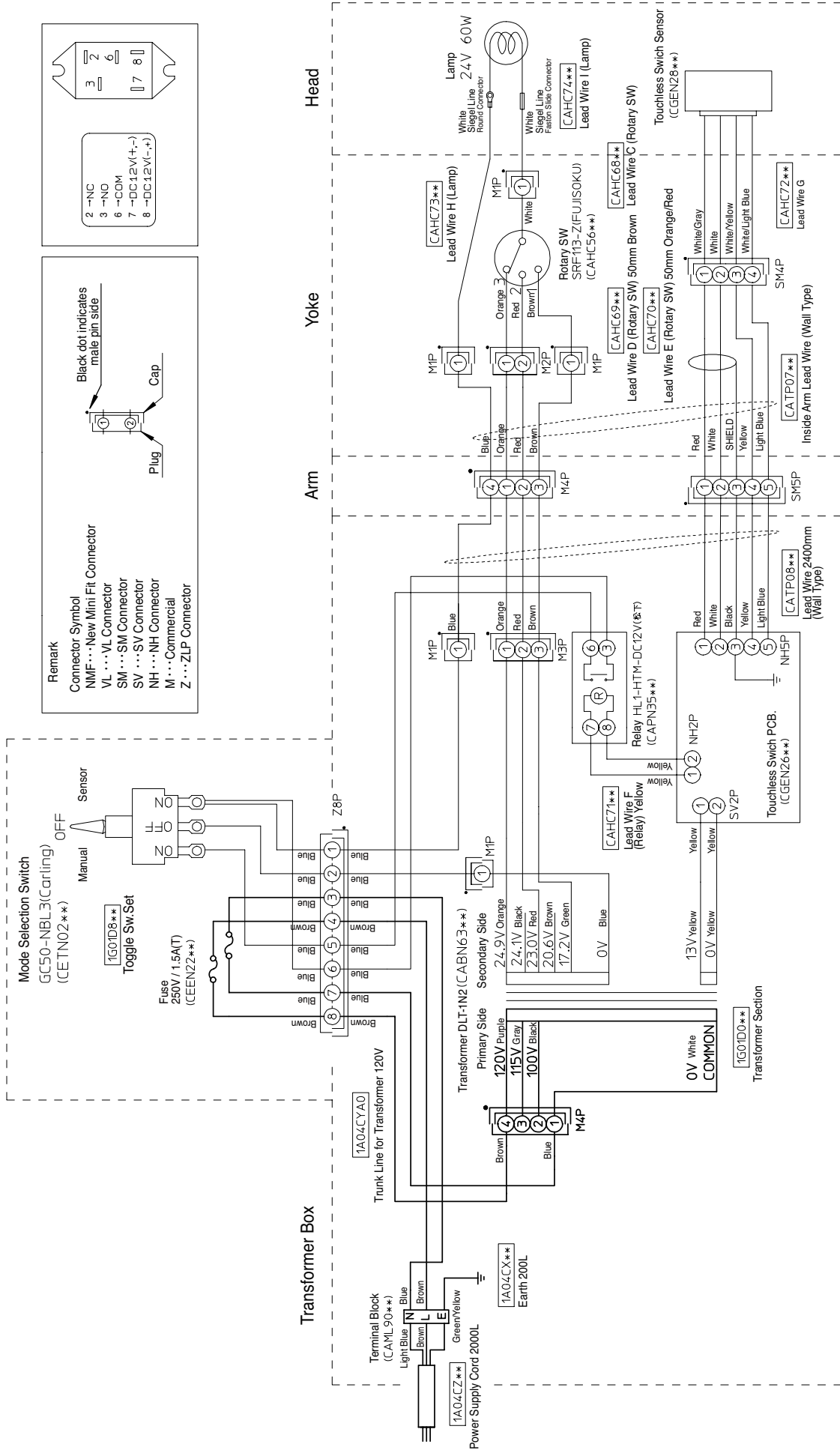
3-1. Unit Mount (AL-511T)



3-4. Cabinet Mount (AL-517N / AL-517T)

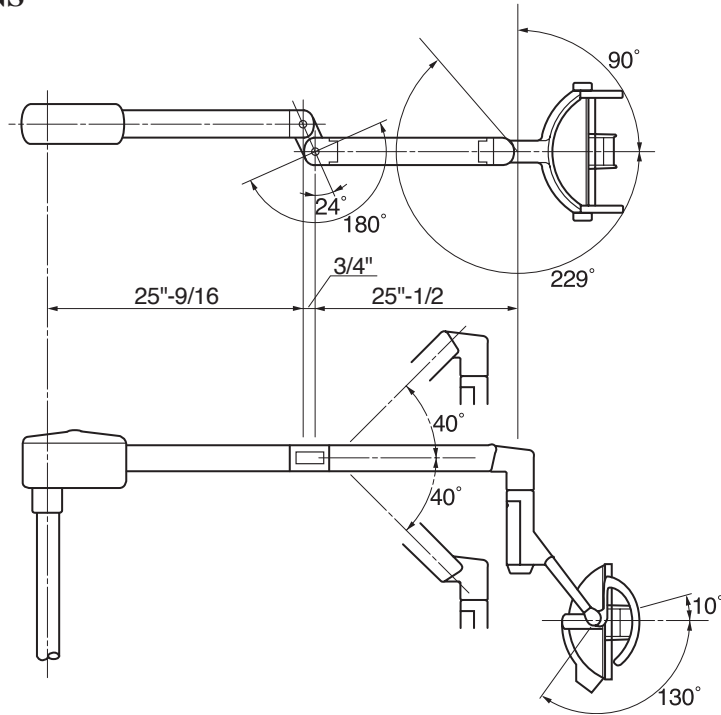


3-5. Wall Mount (AL-518T)



[4] UNIT MOUNT TYPE (AL-511T)

4-1. DIMENSIONS



4-2. INSTALLATION INSTRUCTIONS

* All necessary parts are included in the box.

- | | | | |
|------------------------------|-------|------------------------------|-------|
| •M3 x 6 Screw | 2pcs. | •External Tooth Washer | 1pce. |
| •M4 x 8 Screw | 1pce. | •Yoke Cover..... | 1pce. |
| •M4 x 10 Painted Screw | 2pcs. | •Intensity Switch Knob..... | 1pce. |
| •M5 x 8 Set Screw | 2pcs. | | |

1) Install the light head to the balance arm with M4 x 10 painted screws and M5 x 8 set screws.

2) Fix the ground wire to yoke post with M4 x 8 screw and washers.

3) Connect the wire harness.

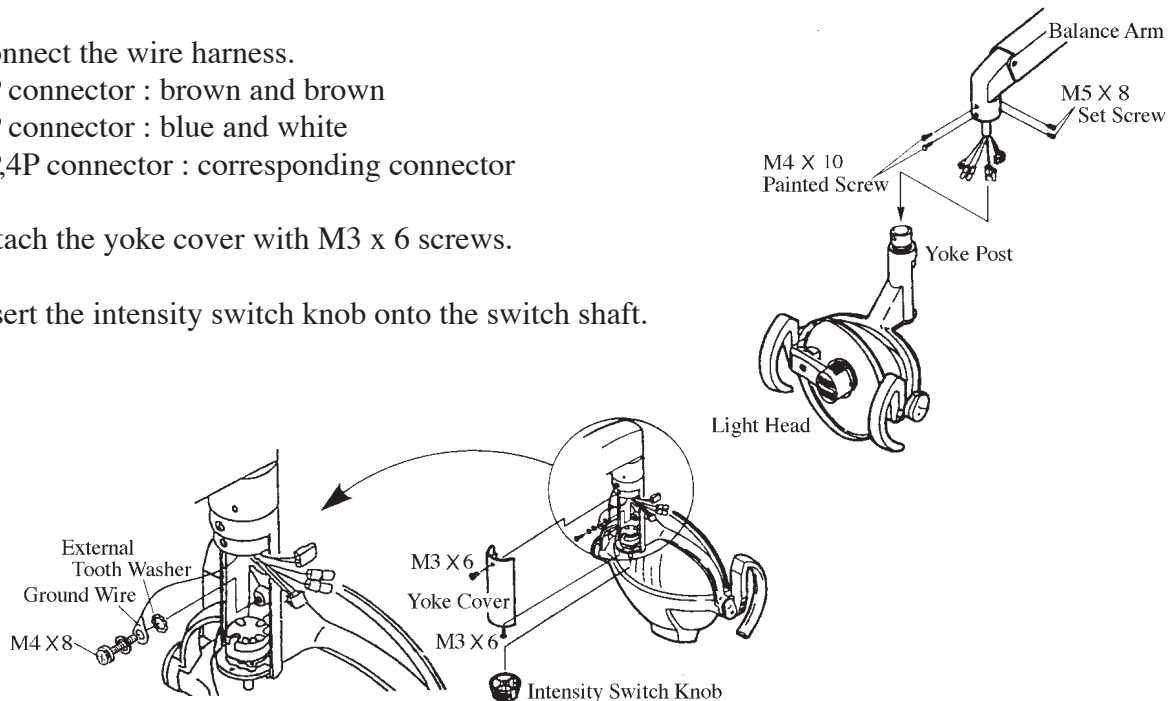
1P connector : brown and brown

1P connector : blue and white

2P,4P connector : corresponding connector

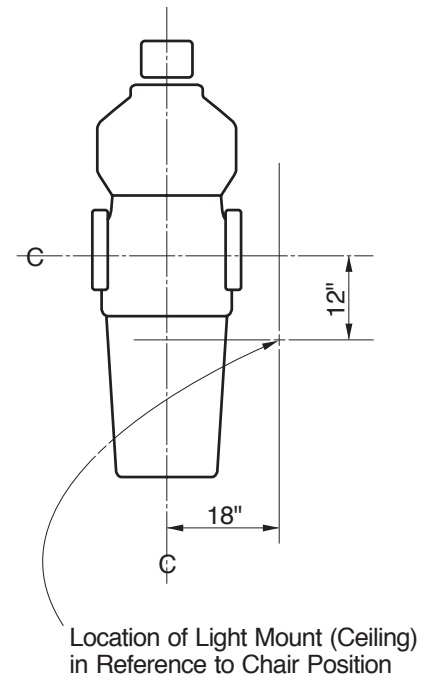
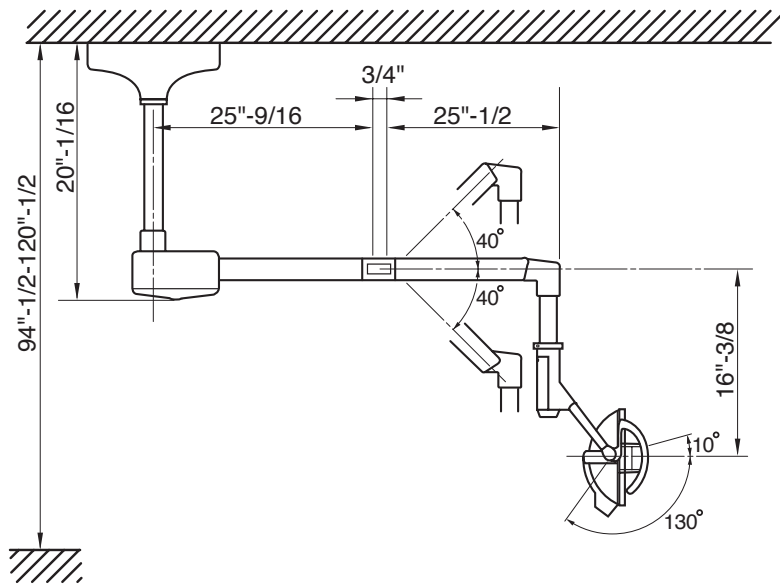
4) Attach the yoke cover with M3 x 6 screws.

5) Insert the intensity switch knob onto the switch shaft.



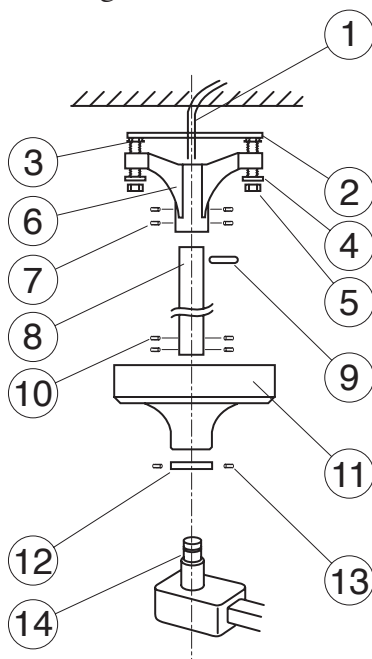
[5] CEILING MOUNT TYPE (AL-512T)

5-1. DIMENSIONS



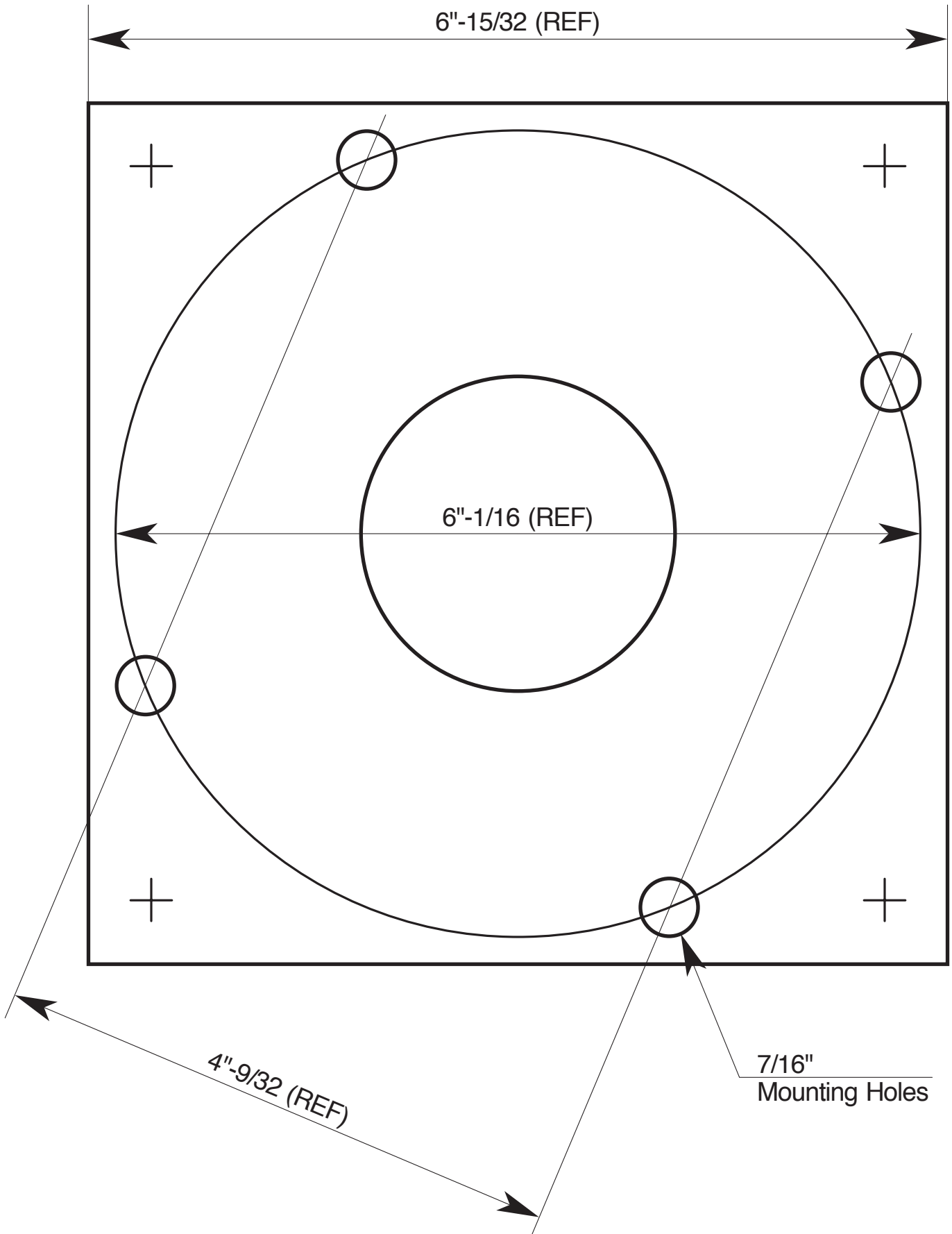
5-2. INSTALLATION INSTRUCTIONS

- 1) Secure mounting plate to the ceiling.
- 2) Route the power supply through the center of the mounting plate.
- 3) Install the leveling nuts between the mounting plate and the ceiling flange.
- 4) Install the ceiling flange to the mounting plate with washers and nuts supplied.
- 5) Insert the suspension tube into the ceiling flange and secure it with roll pin and set screws supplied.
- 6) Be sure the suspension tube is plumb.
- 7) Slide the flange cover and flange cover ring (flat side up) over the suspension tube and secure them about half way up the tube. Use only one set screw as you will be moving this on final installation.
- 8) Install the light assembly to the suspension tube running the 3 wire cord up through the tube to the ceiling flange. Secure it with 4 Allen set screws.
- 9) Connect the incoming power to the 3 wire cord from the light assembly. Be sure to follow the local electrical codes.
- 10) Test the light for proper operation.
- 11) Reposition the flange cover and secure it with the flange cover ring - Secure all set screws.



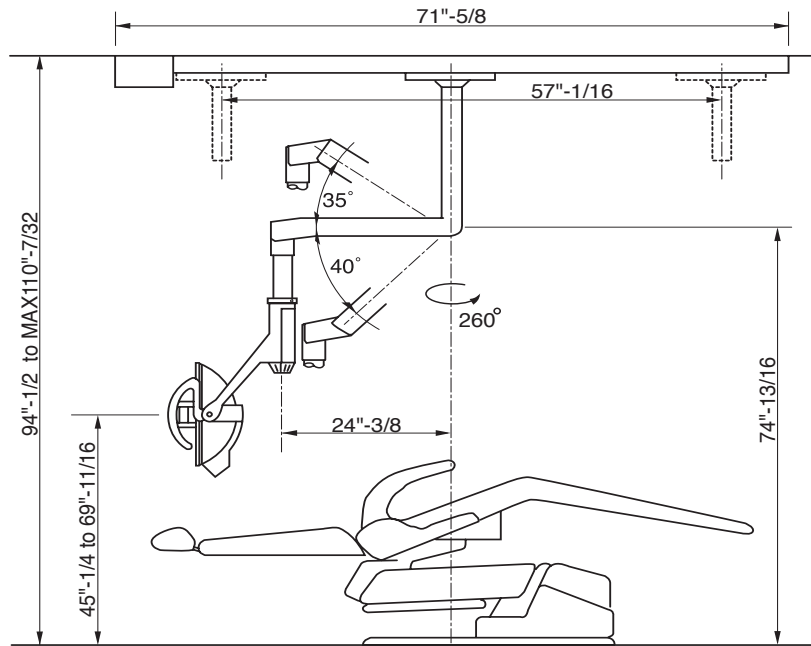
- (1) Power Supply Cable
- (2) Mounting Plate
- (3) Leveling Nut
- (4) Washer
- (5) Nut
- (6) Ceiling Flange
- (7) Socket Screw for Flange
- (8) Suspension Tube
- (9) Roll Pin
- (10) Socket Screw for Arm
- (11) Flange Cover
- (12) Cover Ring
- (13) Socket Screw for Ring
- (14) Suspension Tube of Arm

FULL-SIZE MOUNTING TEMPLATE



[6] TRACK MOUNT LIGHT (AL-515T)

6-1. DIMENSIONS



6-2. CEILING PREPARATION

For safety in operation as well as stability of the light source, the importance of proper ceiling structure cannot be overemphasized. In general, a ceiling structure capable of supporting 200 lb. dead weight is required.

- A) In conventional ceilings with **joists perpendicular** to the center line of the light, attach the pallet by **at least 6 - 5/16 x 3" lag screws**. Suitable holes are provided in pallet for most installations, utilizing 16" or 12" cc ceiling joists. For other spacings or locations, additional holes can be cut in pallet. (SEE FIGURE 1.)

IMPORTANT: Locate transformer end of track at headrest end of chair. - Not legrest.

- B) For conventional ceilings with **joists parallel** to the center line of the light, cross blocks must be installed in 3 places to allow mounting with **at least 6 - 5/16 x 3" lag screws**. (SEE FIGURE 2.)
- C) For suspended ceilings, appropriate rigid structure must be attached to the ceiling framework to provide 200 lb. dead weight capacity. (SEE FIGURE 3.)

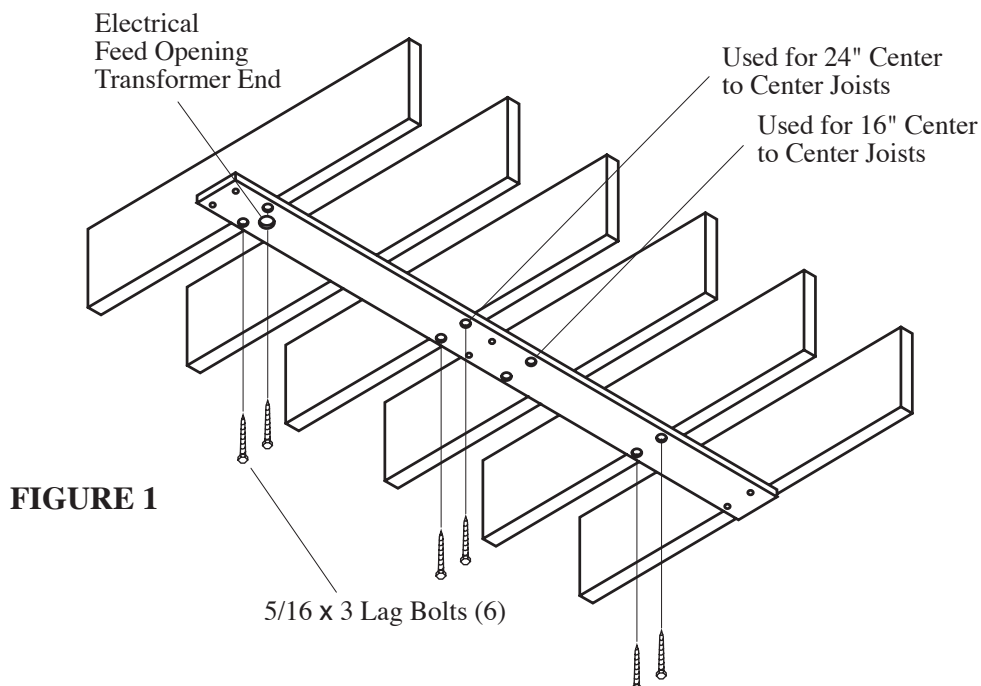


FIGURE 1

CEILING PREPARATION

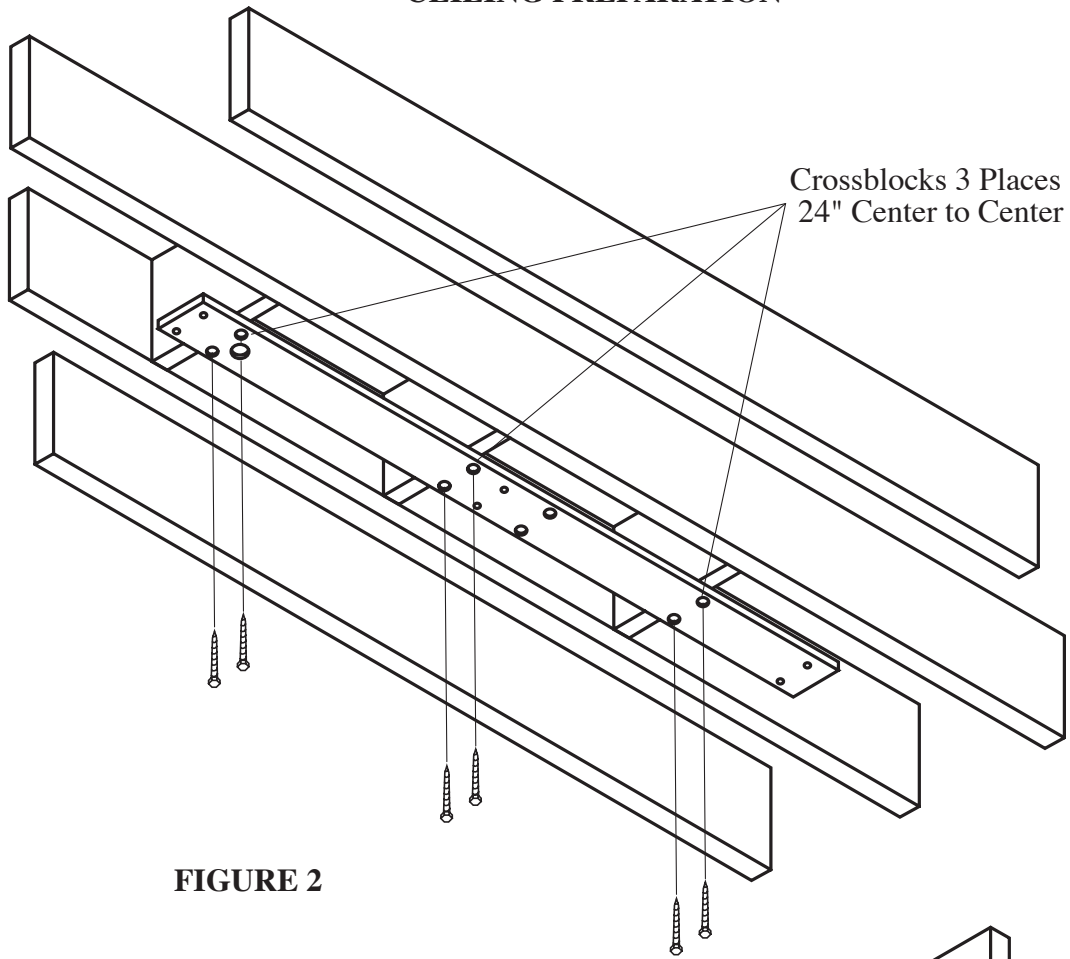


FIGURE 2

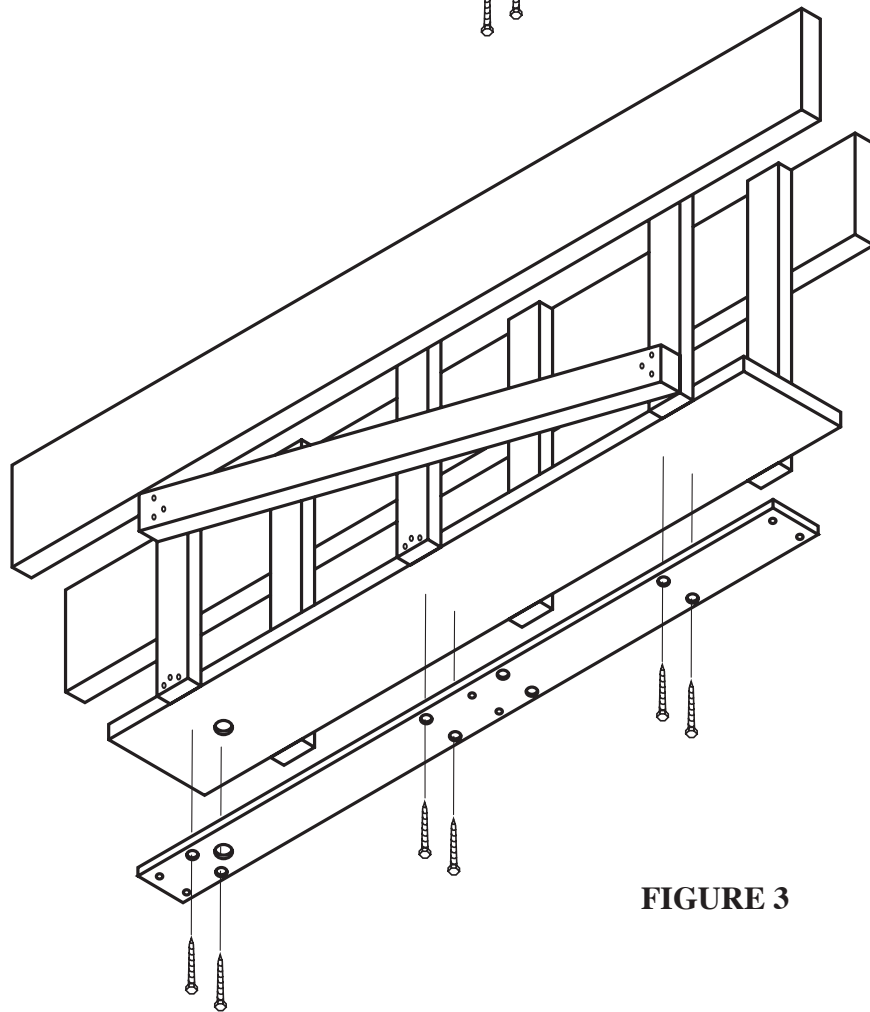


FIGURE 3

6-3. ELECTRICAL PREPARATION

Refer to **FIGURE 4** for the location of electrical feed opening in pallet, provide 3 wire, 120V, 60Hz circuit (15 amp. fuse or breaker) through flexible conduit with enough slack to protrude at least 2" below the pallet when installed. Terminate the conduit with 1/2" body box connector suitable for mounting through 3/16 thickness. A readily accessible shut-off switch for this circuit is recommended. Use wiring suitable for 90°C service.

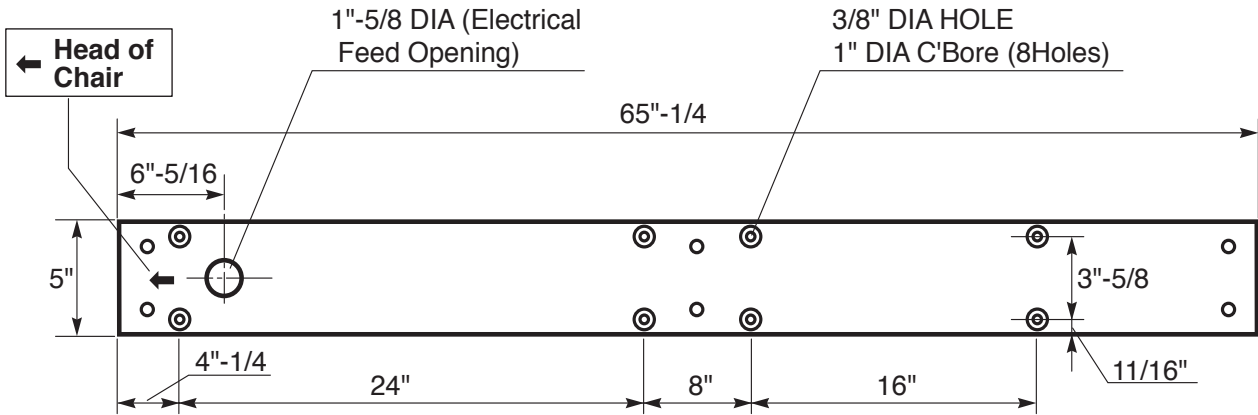
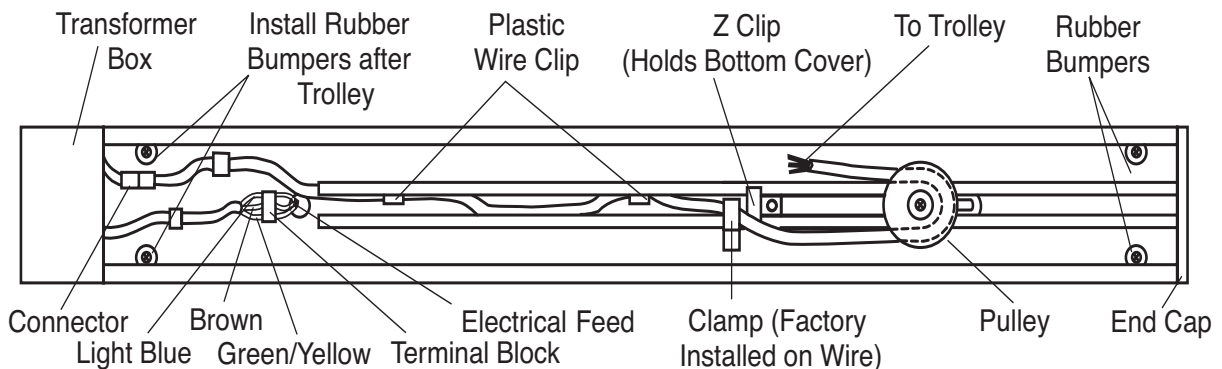


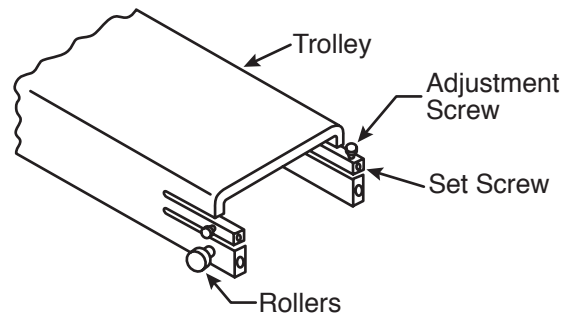
FIGURE 4

6-4. INSTALLATION INSTRUCTIONS

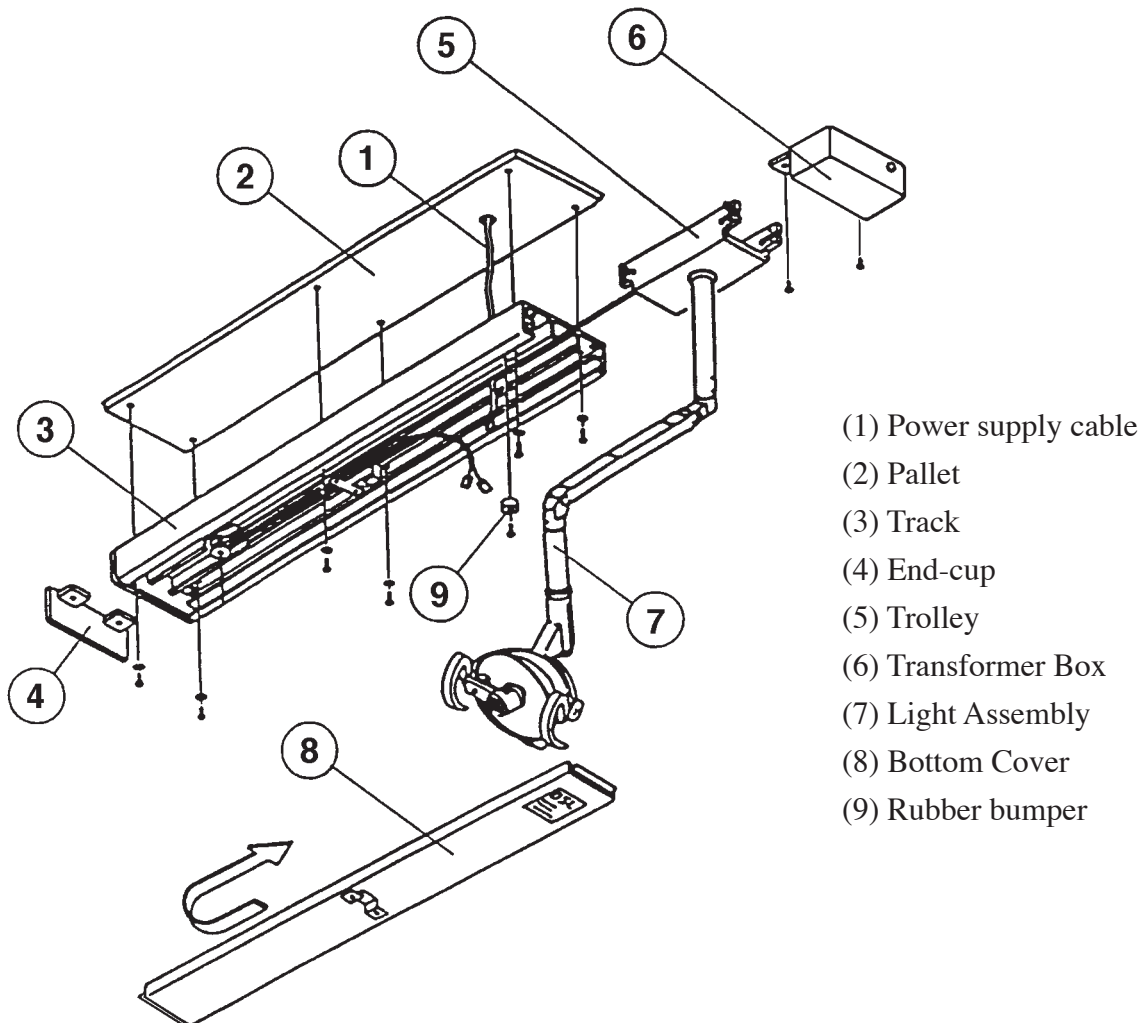
- 1) Lead out the power supply cable from the ceiling where the track light is mounted.
- 2) Run the power supply cable through the pallet and mount the pallet.
- 3) Place track against the pallet and slightly engage two mounting bolts at the end opposite to the electrical opening.
- 4) Allowing the free end to hang down slightly for access, install the conduit box connector to the track.
- 5) Finish bolting the track securely to the pallet.
- 6) Connect the wires from the feed to the terminal block.
- 7) Slide the trolley onto the track (end near electrical opening) with the arrow on the trolley oriented toward the pulley on the track.
- 8) Carefully guide the wire from the trolley, around the spring-loaded pulley and back toward the end of track.
- 9) Attach retainer clamp to small screw in track. Clip the free end of the trolley wire into the plastic clip near end.
- 10) Install rubber bumpers at the end of the track in the holes provided.



11) Check operation of the trolley. It is factory adjusted to provide smooth effortless travel, without play; however rollers can be readjusted if necessary. Loosen the set screw and adjust the socket cap screw to vary roller clearance.

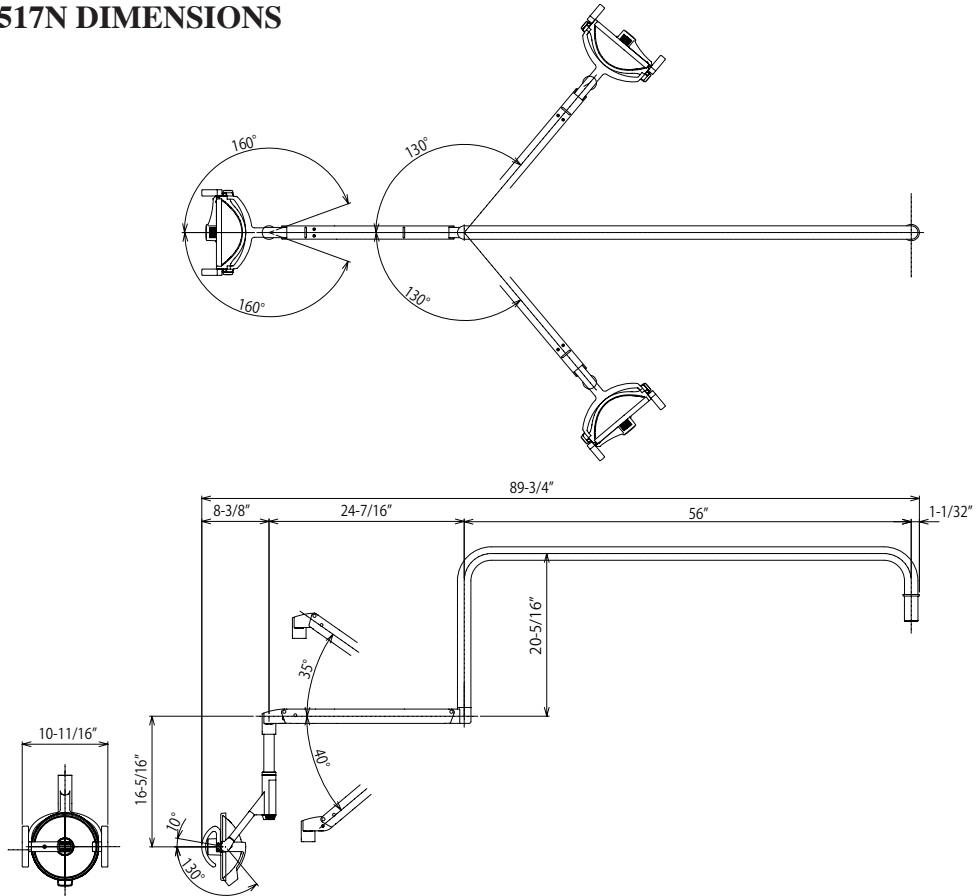


- 12) Unpack the transformer / housing assembly and mount it to the track with screws provided.
- 13) Attach the pigtail leads to the corresponding power line wires at the terminal block. Retain the wires under the plastic clip.
- 14) Connect the plug-in connector to the trolley wire.
- 15) Carefully slide bottom cover onto the track from free end. Be sure to engage lip onto Z bracket.
- 16) Install the end-cap with the screws provided.
- 17) Slide the trolley back and forth, checking for binding or rubbing.
- 18) Confirm that the swing arm is properly adjusted to stay where it is placed. If necessary, move the head up or down to expose the appropriate cross drilled nut and adjust with the tool provided.
- 19) Turn on power and check electrical operation of the light.

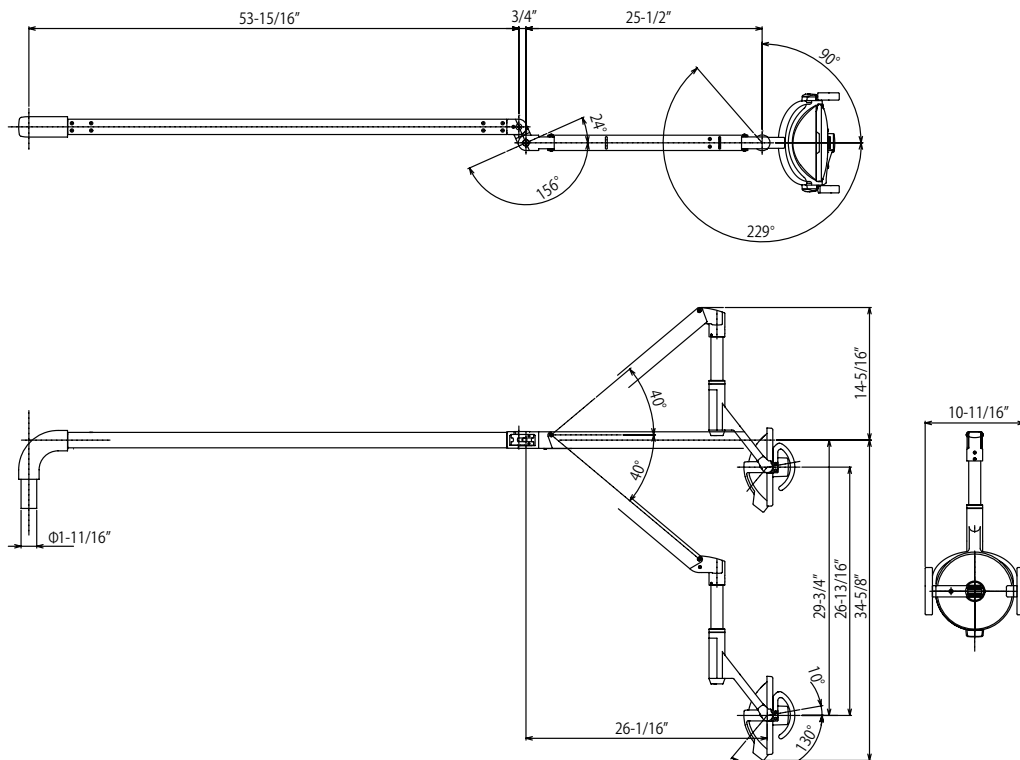


[7] CABINET MOUNT LIGHT (AL-517N / AL-517T)

7-1-1. AL-517N DIMENSIONS



7-1-2. AL-517T(for Canada) DIMENSIONS



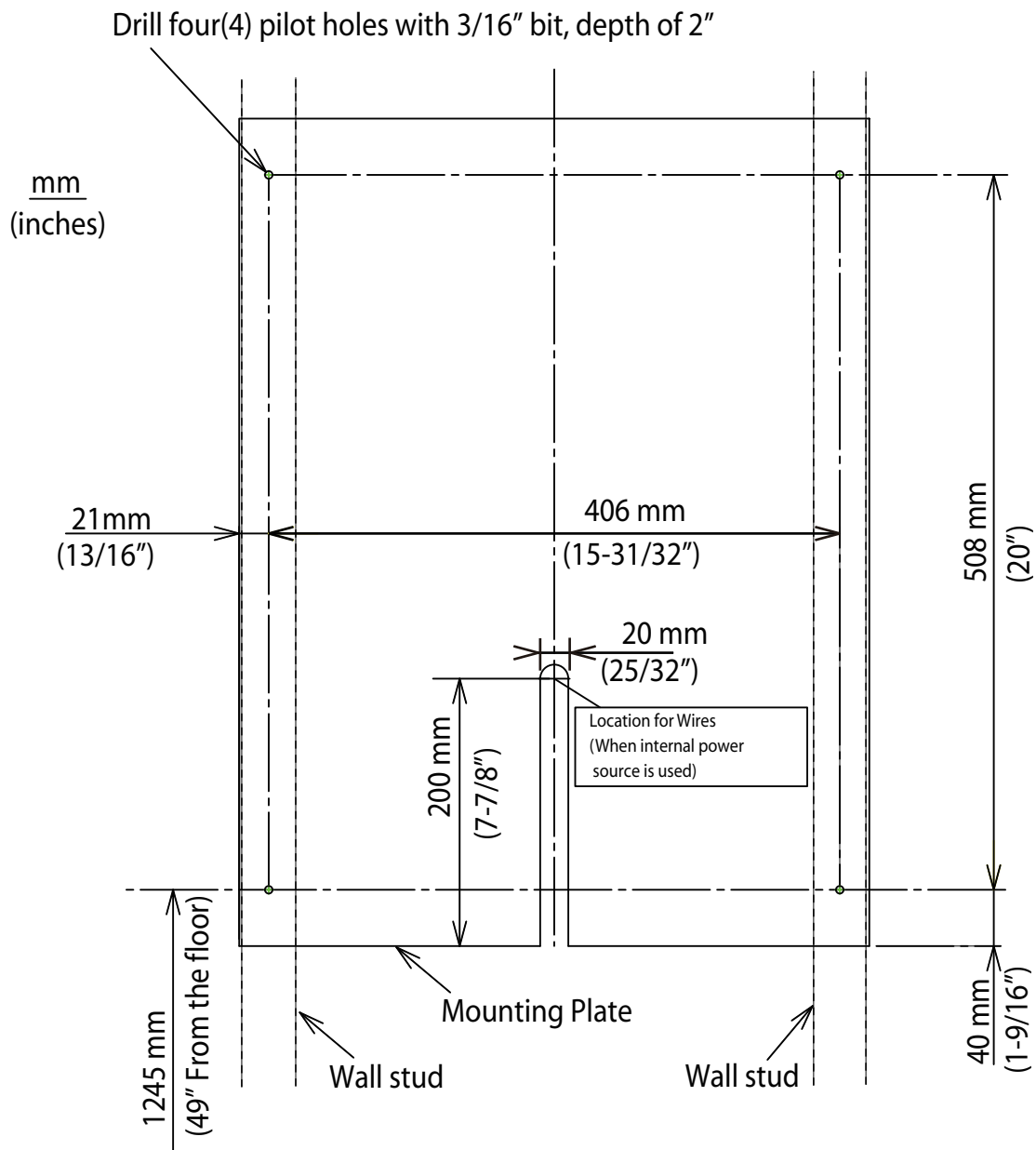
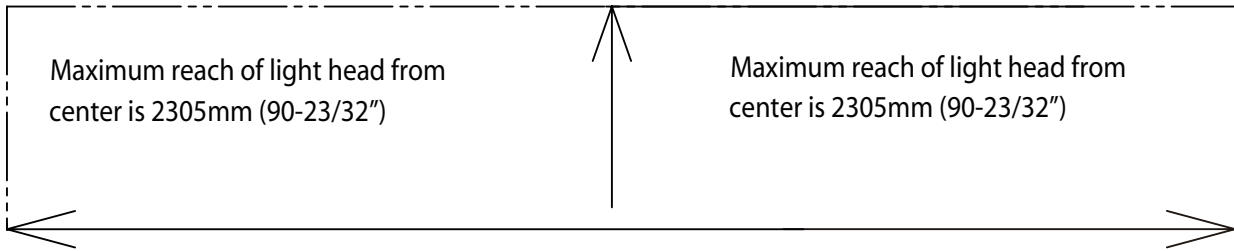
7-2. INSTALLATION INSTRUCTIONS

Wiring diagram and installation instruction , See in cabinet installation manual.

AL-518T Wall Mount Light

Mounting plate pre-installation requirement

Ceiling height should be 2200(86-5/8) or higher



8-3. Pre INSTALLATION REQUIREMENT

1) Mounting Location

The light backboard must be securely mounted to the wall studs.

DO NOT mount to metal studs.

2) Electrical Code Compliance

Confirm code requirements in your area.

3) Mounting to the backboard

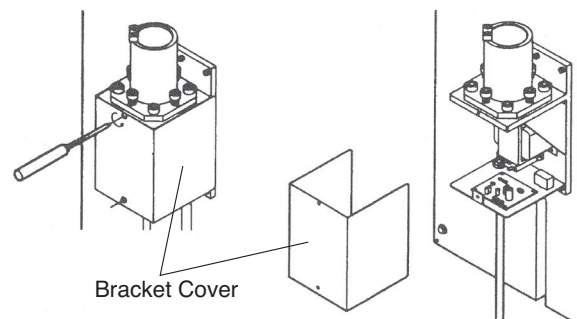
1. A maximum of 71” to the top of the backboard from the floor.
2. A minimum of 8” from the top of the backboard to the ceiling.
3. It is important to locate the backboard no closer than 50” to the perpendicular wall.
4. The backboard should be approximately mid-line of the dental chair.

8-4. INSTALLATION

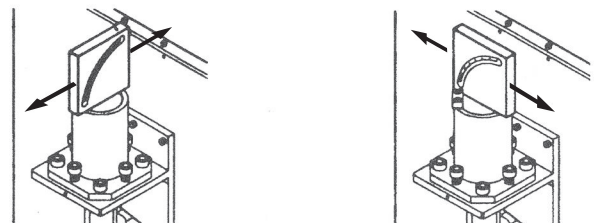
1) With a 3/16” drill, drill four (4) pilot holes approximately 2’ depth. See page 17.

2) Mount Wall Plate Assembly to the studs, with four (4) lag bolts and washers (Supplied).

3) Remove Bracket Cover by removing two (2) screws from it. This cover will be attached later on.

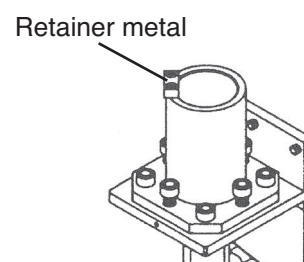


4) Place a level on top of Pole Receptacle left to right and front to back, and adjust the level with four leveling bolts.



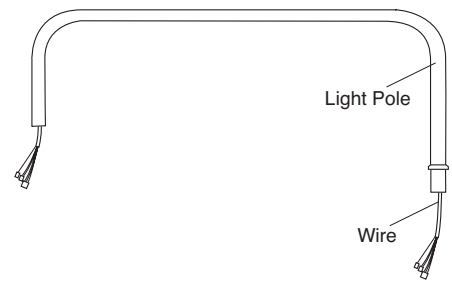
5) Remove the retainer metal from top of pole receptacle .

(This metal must be installed later on)



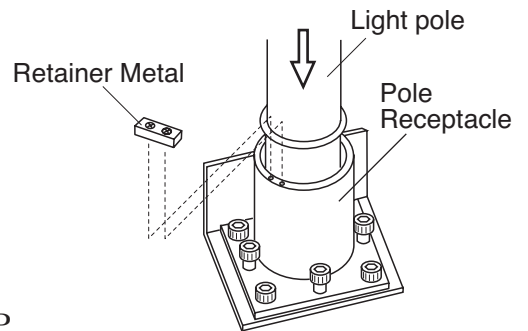
6) Light Pole Mounting

a) Insert the wires from the longer end of light pole through light pole receptacle.



b) Mount light pole onto the receptacle. To make this job easier, hold the light pole horizontally, and swing it right and left while inserting into pole receptacle.

7) Re-attach retainer metal which was removed in step 5.



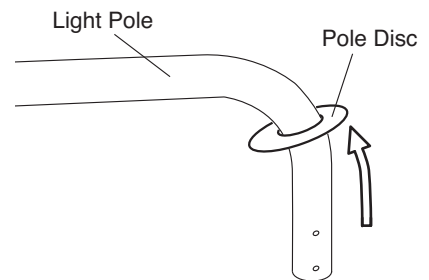
8) Connection of wiring

a. 3P connector (Orange, Red, Brown) from light pole to 3P connector from transformer. (Orange, Red, Green)

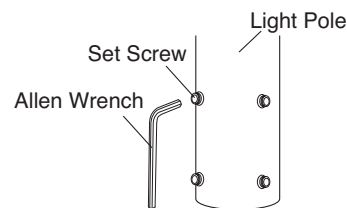
b. 5P housing (Pink, White, Black, Yellow, Blue) to pins on PCB.

c. 1P connector (Blue) to 1P connector from 8P connector.(Blue)

9) Slide pole disc onto the light pole from the shorter end of the pole.



10) Loosen four (4) set screws on the light pole (DO NOT remove set screws).

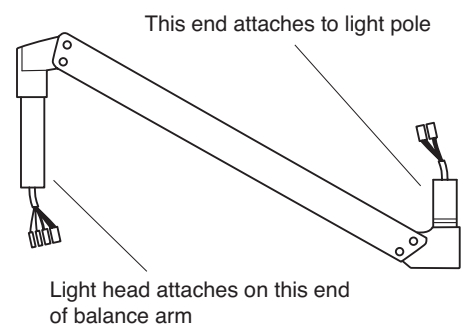


11) Attach light and balance arm assembly to light pole :

a. Join connectors from light pole to those from balance arm

b. Insert balance arm stem into light pole.(If wires stick, pull wires from wall bracket inside)

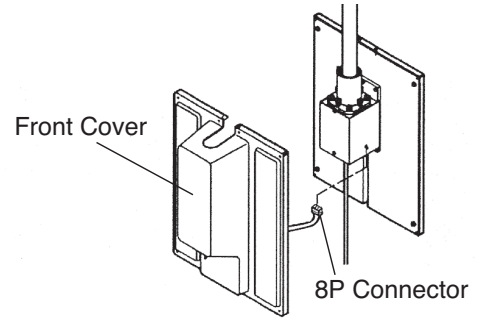
c. Tighten four (4) set screws loosened in step 10. These screws also limit the swing range of balance arm.



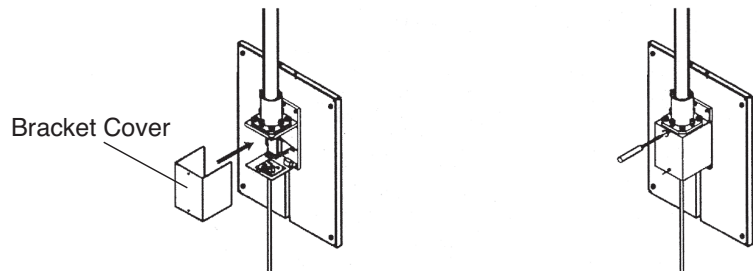
12) Install light head on balance arm
See Page 8, “4-2 Installation instructions” of Unit mount type

13) Connect power supply cable to proper source.

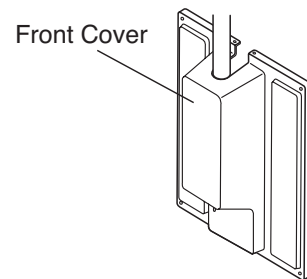
14) Connect 8P connector from sensor/manual switch on front cover to 8P connector on wall bracket.



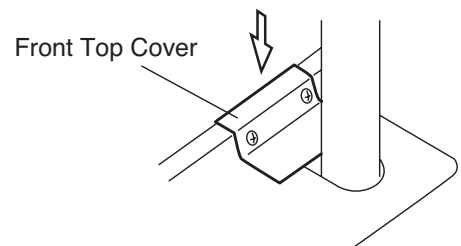
15) Re-attach the bracket cover.



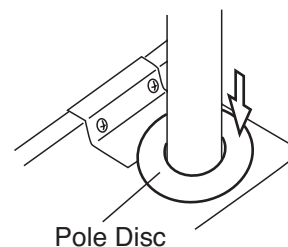
16) Place Front Cover over the Wal Plate (From upper side first, then bottom) and secure it with tapping screws with washers supplied.



17) Attach Front Top cover and secure it with two (2) self tapping screws with washers supplied.



18) Slide Pole Disk down to cover the opening around light pole on the Front Top Cover.

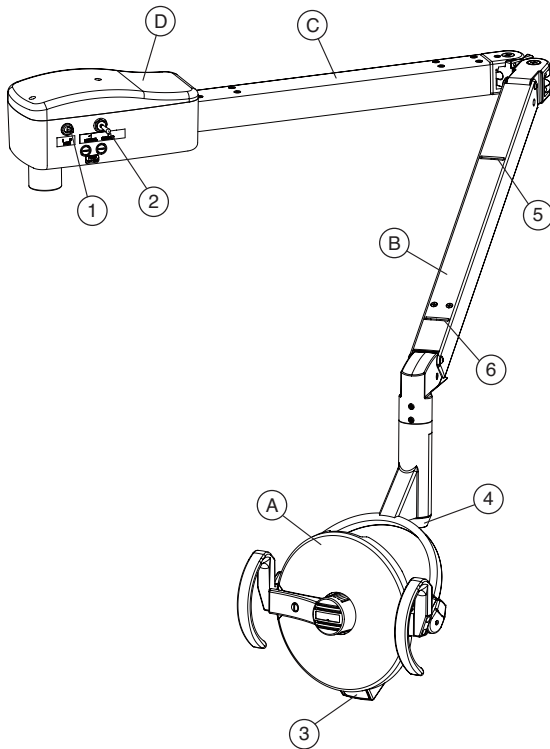


[9] SWING MOUNT TYPE (AL-530X)

Wiring diagram and installation instructions , See the section in Dental Unit installation manual.

[10] OPERATING INSTRUCTIONS

10-1. MAJOR PARTS IDENTIFICATION



- (A) Head Assembly
- (B) Balance Arm Assembly
- (C) Swing Arm Assembly
- (D) Transformer Housing Assembly

- (1) Main Switch
- (2) Mode Selection Switch
- (3) Touchless Switch
- (4) Intensity Switch
- (5) Slot for Adjusting Tension of Balance Arm
- (6) Slot for Adjusting Angle of Head

10-2. MAIN SWITCH

Turn on the main switch to the side marked with 'I'.

- Power on : 'I' Mark
- Power off : 'O' Mark

10-3. MODE SELECTION SWITCH

Switching modes can be changed by this switch. This switch is located on transformer housing.

- Sensor : Touchless ON/OFF
- Manual : Manual Mode (ON only)
- : OFF (AL-518T, AL-530X)

10-4. TOUCHLESS SWITCH

Touchless Switch is located on the lower part of head.

Approach a hand to the Touchless Switch when turning on/off the light.

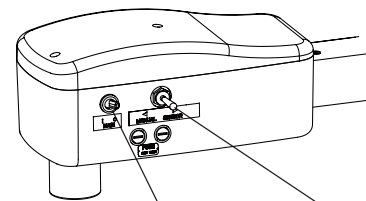
Reaction zone : 0 ~ 60 mm / 0" ~ 2-3/8"

10-5. INTENSITY SWITCH

Intensity Switch is located on the lower part of yoke.

- High : Turn the intensity switch to H position
- Medium : Turn the intensity switch to M position
- Low : Turn the intensity switch to L position

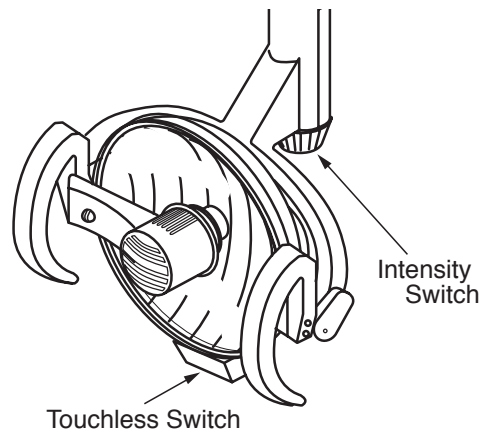
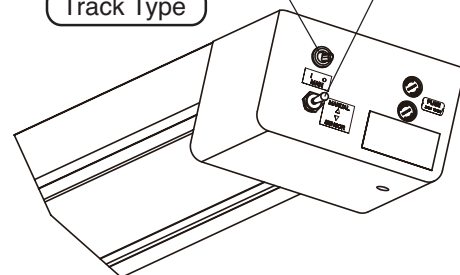
Unit & Ceiling Type



Main Switch

Mode Selection Switch

Track Type



Touchless Switch

Intensity Switch

[11] ADJUSTING TENSION of BALANCE ARM

Fig. 11-1 for AL-511T/AL-512T/AL515T/AL-517N/AL-517T/AL-518T Type

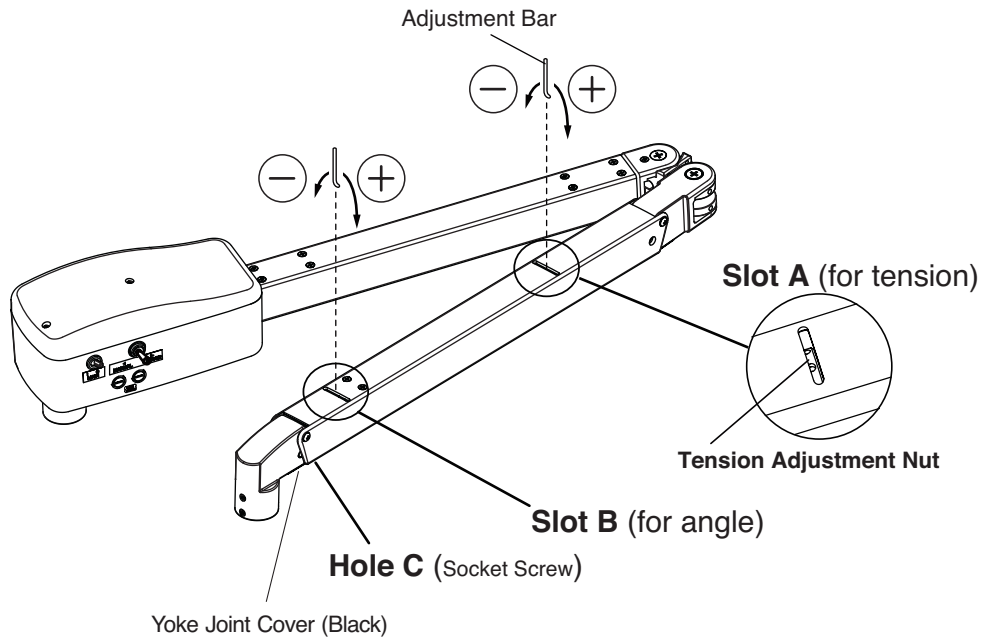
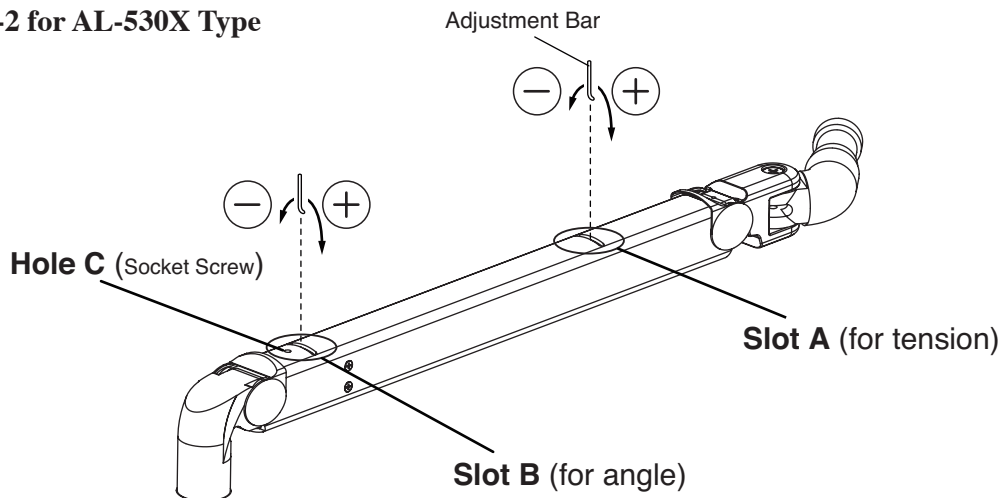


Fig.11-2 for AL-530X Type



11-1. Adjustment of the tension of the balance arm

Position the angle of the balance arm so the tension adjustment nut becomes visible just under slot A. (Fig.11-1 and Fig.11-2)

Turn the nut and adjust the tension with the adjustment bar supplied with the light.

Direction of rotation of the nut

When the light head tends to go up, turn the nut to + direction.

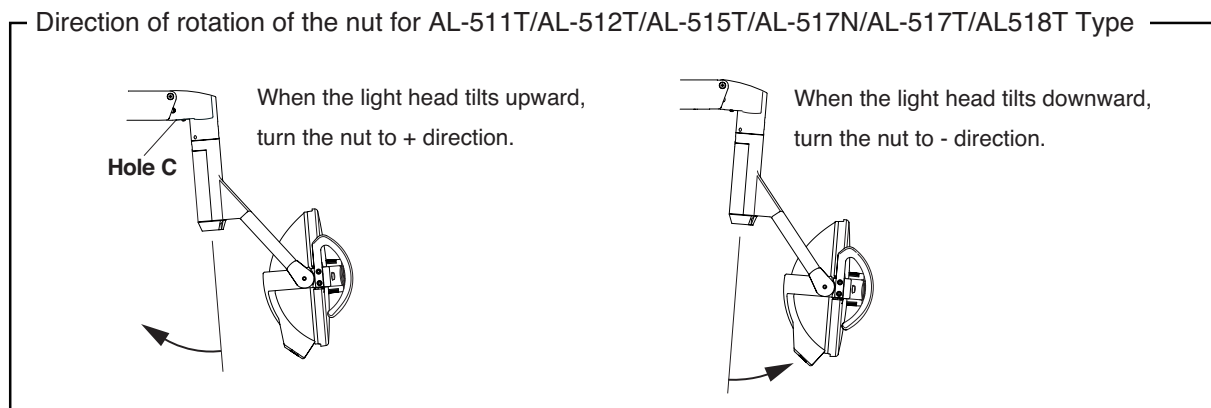
When the light head tends to go down, turn the nut to - direction.

11-2 Adjustment of the angle of the light head

11-2-1. AL-511T/AL-512T/AL-515T/AL-517N/AL-517T/AL-518T Type

- 1) Remove the yoke joint cover from under the balance arm.(Fig.11-1)
- 2) Use a 2mm hex key wrench to loosen socket screw in front of Hole C.(Fig.11-1)
- 3) Position the angle of the balance arm so the head angle adjustment nut becomes visible just under the slot B. Turn the nut and adjust the tension with the adjustment bar supplied with the light.

Note : Adjusting the head without loosening the socket screw will damage the arm.

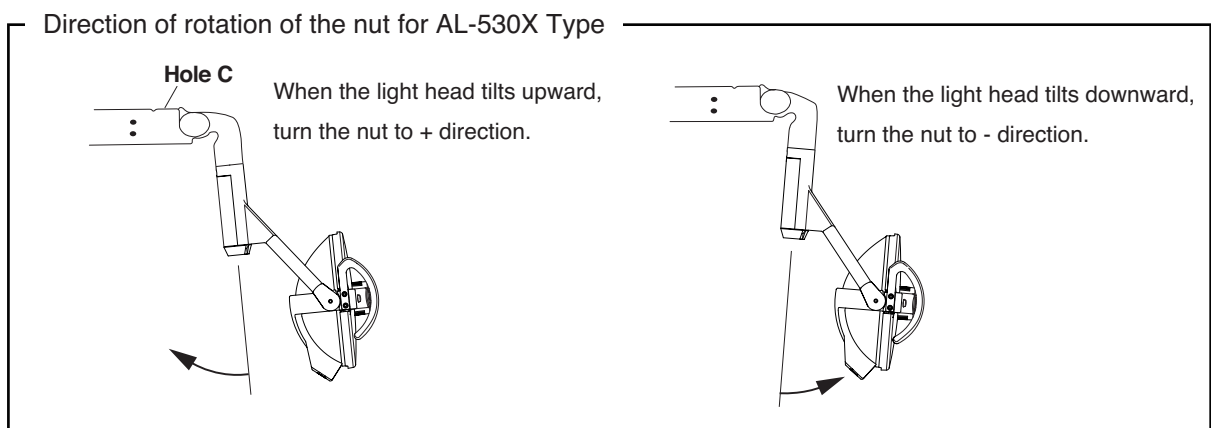


- 4) After adjustment is done, re-tighten the socket screw.
- 5) Reattach the yoke joint cover to balance arm.

Note : Unless this socket screw is re-tightened, the angle of the head will be changed during use.

11-2-2. AL-530X Type

- 1) Use a 2mm hex key wrench to loosen socket screw in front of Hole C.(Fig.11-2)
- 2) Position the angle of the balance arm so the head angle adjustment nut becomes visible just under the slot B. Turn the nut and adjust the tension with the adjustment bar supplied with the light.



- 3) After adjustment is done, re-tighten the socket screw.

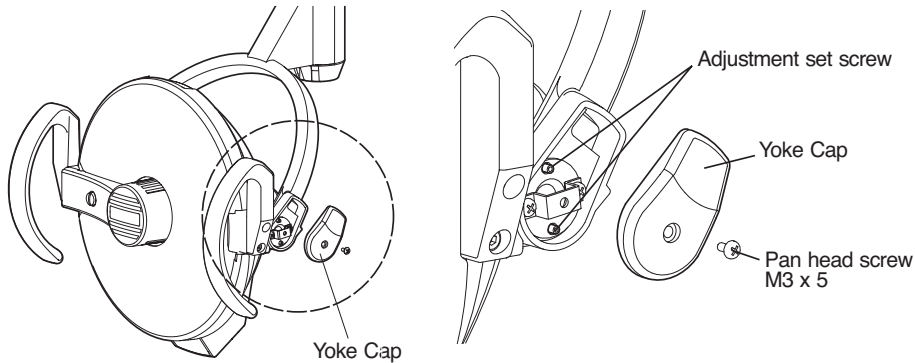
Note : Unless this socket screw is re-tightened, the angle of the head will be changed during use.

11-3 Adjustment of the tension of the vertical rotation

Loosen the pan head screws to remove York caps.

Use supplied L-shaped wrench to turn the adjustment set screws (two on each side).

When adjustment is done, reattach York caps.



[12] HALOGEN BULB CHANGING

⚠ CAUTION

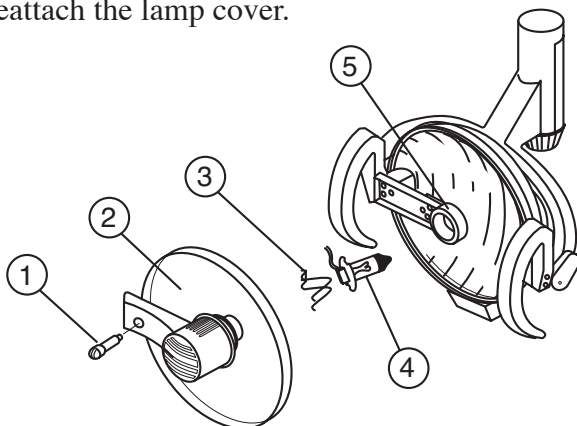
Make sure the power supply is turned off.

Halogen bulb and surrounding parts be hot immediately after the lamp goes off. Wait until they get cool down.

IMPORTANT

Do not touch glass with bare hand. Halogen bulb surface must be clean. Oil or body moisture will affect bulb span of life. If glass surface is touched, clean with alcohol.

- 1) To install replacement halogen bulb, turn the light off and the turn lamp cover stopper counterclockwise (90°, 1/4 turn) to remove the lamp cover.
- 2) Remove the lamp cover and disconnect the electrical connector of halogen bulb.
- 3) Unlock the spring clip and pull the electrical wire of halogen bulb to remove the halogen bulb from the socket.
- 4) Attach the electrical wire and insert a new bulb into the housing.
- 5) After the new bulb is seated in the housing. Insert and lock the spring clip in position.
- 6) Reattach the lamp cover.



- (1) Lamp Cover Stopper
- (2) Lamp Cover
- (3) Spring Clip
- (4) Halogen Bulb
- (5) Socket

[13] CLEANING, MAINTENANCE PARTS & DISPOSAL

1. Cleaning

CAUTION

Allow light to cool prior to cleaning.

Use a soft cloth or cotton only to gently clean surfaces. Use of other materials can scratch and damage surfaces. Covers can be cleaned with a soft cloth or cotton moistened with alcohol. The reflector can be cleaned with a soft and dry cloth or cotton with extreme care.

2. Maintenance Parts

Bulb, lamp cover and fuse are maintenance parts.

Period for repair and supplying parts

We will supply parts of the equipment for 10 years, after the manufacturing of this equipment is discontinued.

3. Lifetime

Provided that the recommended and authorized care and maintenance are correctly performed, the working

lifetime of this equipment is 10 years from the date of initial shipment from the manufacturer.

4. Disposal

This is not an infectious device, but prior to disposal make sure that no parts of the device is infected. Follow the federal, state and local regulations for disposal.

[14] MAINTENANCE AND INSPECTION

Guide for daily maintenance and inspection (Maintenance and inspection by user)

Management of maintenance and inspection of medical equipment should be implemented by the user (medical inspection). In case the user does not implement such management, it is permitted that such management is outsourced to a qualified entity such as a medical equipment repair company.

For safe use of this product, it is necessary that inspection should be conducted in the specified frequency on the items described below.

No.	Item	Frequency	Inspection Method and diagnosis	Influence if inspection is not conducted	Maintenance required in case of nonconformity
1	Appearance of Lamp Cover	Before start	Check deformation, scratches by eyes	Deterioration of optical performance	Change a lamp cover.
2	Lamp cover is firmly attached or not	Before start	Pull the lamp cover. Make sure that the lamp cover doesn't fall	Lamp cover may fall.	Reattach a lamp.
3	Light bulb	Before start	Check whether the light brinks or not due to the poor connection.	Light bulb turns very hot. This could shorten bulb life.	Securely insert a light bulb into the bulb holder.
4	Light switch	Before start	Set Sensor/Manual switch to Manual. Confirms the light turns on.	Light doesn't function.	Replace a light bulb.
5	Touchless sensor	Before start	Set Sensor/Manual switch to Sensor. Confirms the light turns on.	Light doesn't function.	Clean the sensor surface.
6	Intensity switch	Before start	Change intensity.	It may cause the difficulty at dental practice.	Turn off the light. Call customer service.
7	Functionality of Balance Arm	Before start	Swing the balance arm up/down. Swing the balance arm right/left. Make sure the balance arm stops and holds its position.	Light head doesn't stay at the desired position.	Adjust the tension of the balance arm. Follow instructions on page 22.
8	Vertical rotation of the Light head	Before start	Rotate the light head up/down. Make sure the light head stops and holds its position.	Light head doesn't stay at the desired position.	Adjust the tension of vertical rotation. Follow instructions on page 24.
9	Light head angle	Before start	Confirms the light head is vertically aligned.	Light head doesn't stay at the desired position.	Adjust the angle of the light head.
10	Light head rotation	Before start	Rotate the light head right/left. Make sure the light rotate 160° to each direction.	Light head rotates freely. This may cause the snapping of a wire.	Call customer service.
11	Care exterior	Before start	Chemical and dirt on the product exterior must be cleaned.	Discoloration and deterioration to the exterior, and corrosion and rusting to metallic components may arise.	Executes wiping in accordance with "Cleaning Instructions"
12	Other 1	Once every week	Make sure that no abnormal noise occurs when the product is operated.	Light may not function right.	Turn off the light. Call customer service.
13	Other 2		If the light has not been used for a long time, make sure the light functions correctly and safely.	/	If the light malfunctions, call customer service.

NOTE



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