



AN OSRAM BUSINESS

A.LEDA B-EYE K10

PARTS REPLACEMENT GUIDE

Rev. October, 23rd 2014 - ENGLISH

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1. CAUTIONS

- Ensure the unit is physically not connected to any electric line when unnecessary
- Allow the unit to cool down before performing any operation
- Wear transparent safety glasses to prevent small parts to cause eyes injury
- Wear suitable protective gloves when handling broken glass-like parts
- Never look at the LEDs directly or through optical components

2. WARNINGS

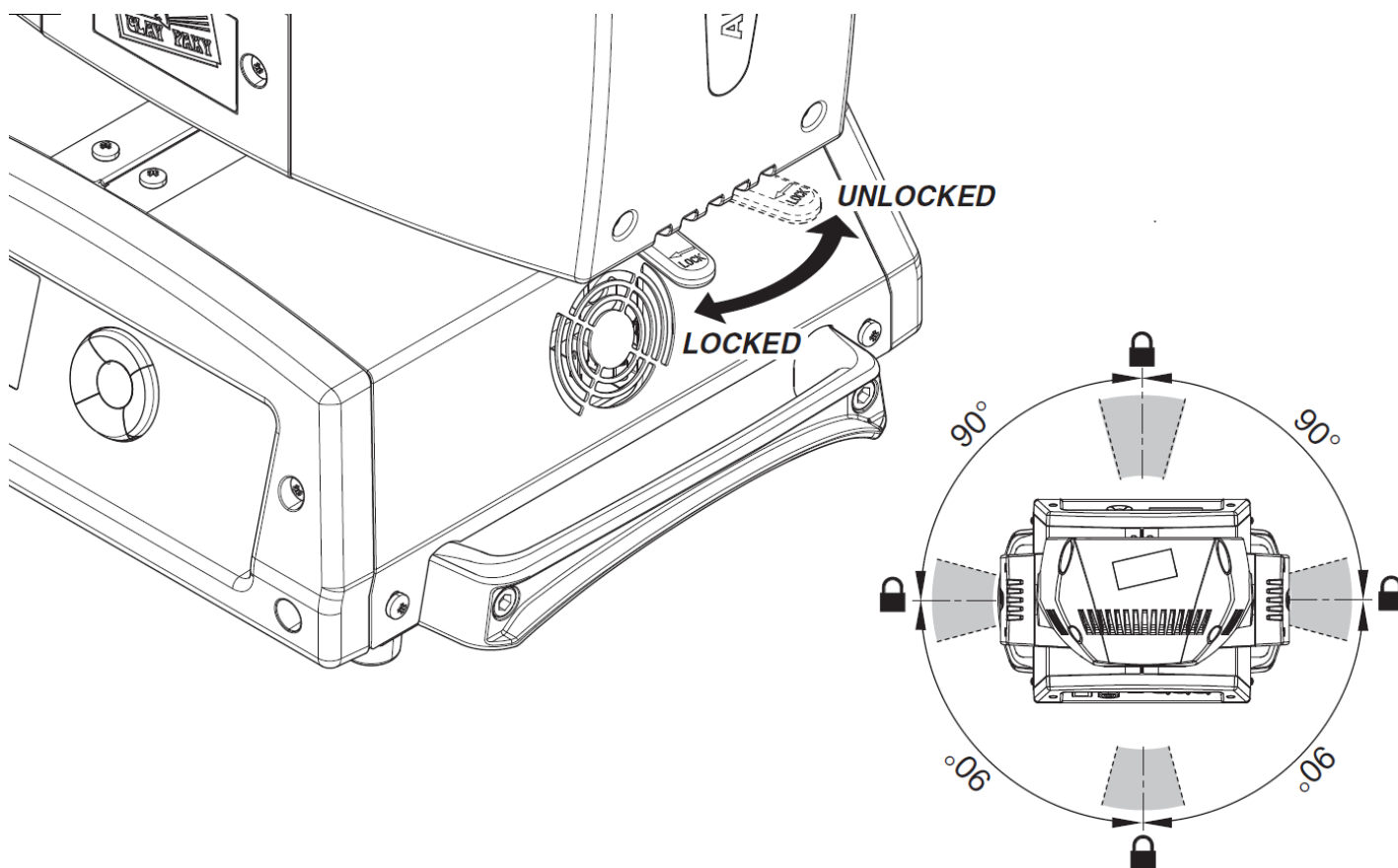
- Before performing any operation, be sure to have completely read and understood all the related instructions, including the preliminary and final actions;
- Always use electrostatic bags for sensitive electronic parts;
- Watch out not to lose any parts during disassembling operation;
- Ensure not to scratch glass / plastic parts when removing metal based ones.

3. NEEDED TOOLS

- | | |
|----------------------------|----------------------------|
| • PH0 Phillips screwdriver | • 3mm T-shaped Allen key |
| • PH1 Phillips screwdriver | • 4mm T-shaped Allen key |
| • PH2 Phillips screwdriver | • 1 L-shaped Allen key set |
| • Thin flat screwdriver | • 1 L-shaped Torx key set |
| • 5.5mm nut spinner | • 5.5mm nut driver |
| • 7mm nut spinner | • 7mm nut driver |
| • 10mm nut spinner | • Electrician scissors |
| • 1.5mm T-shaped Allen key | • Crooked nose pliers |
| • 2mm T-shaped Allen key | • Nippers |
| • 2.5mm T-shaped Allen key | |

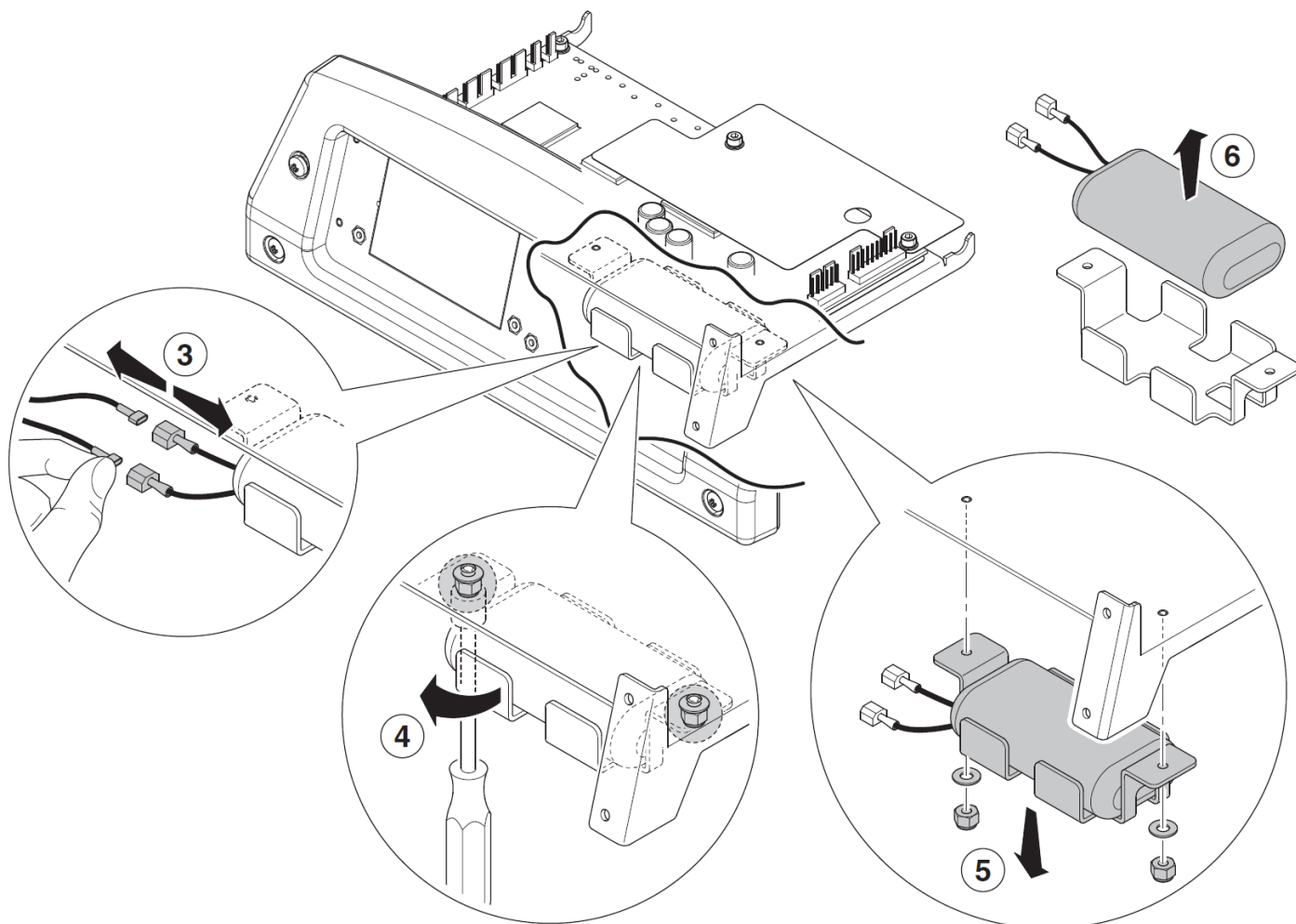
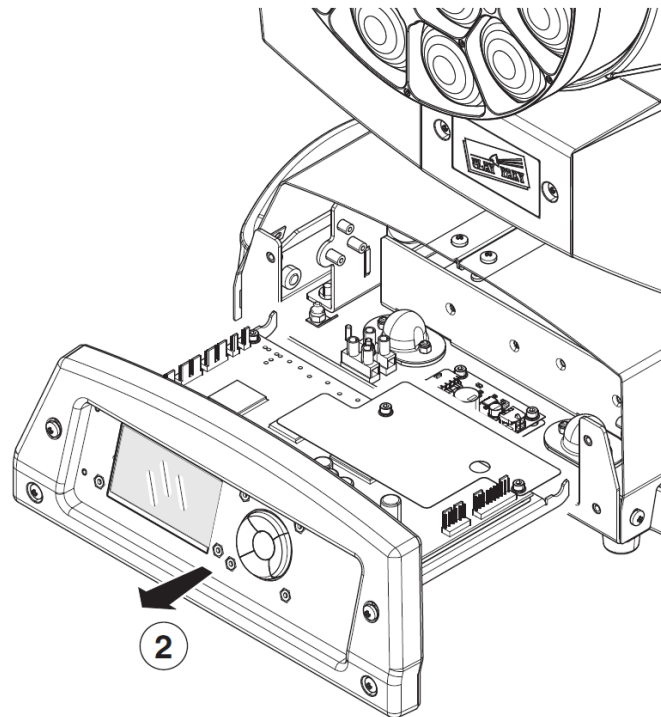
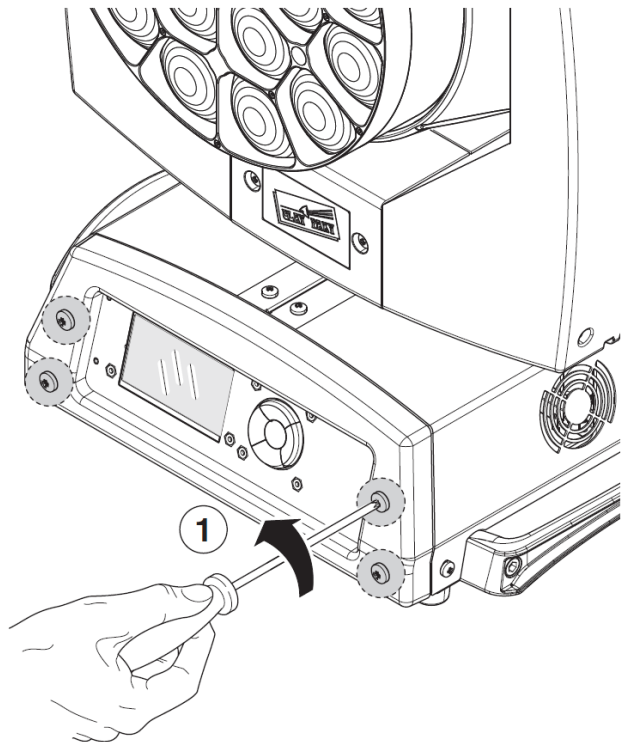
4. PRELIMINARY OPERATIONS AND GENERAL MAINTENANCE

4.1. *Pan locking and releasing*

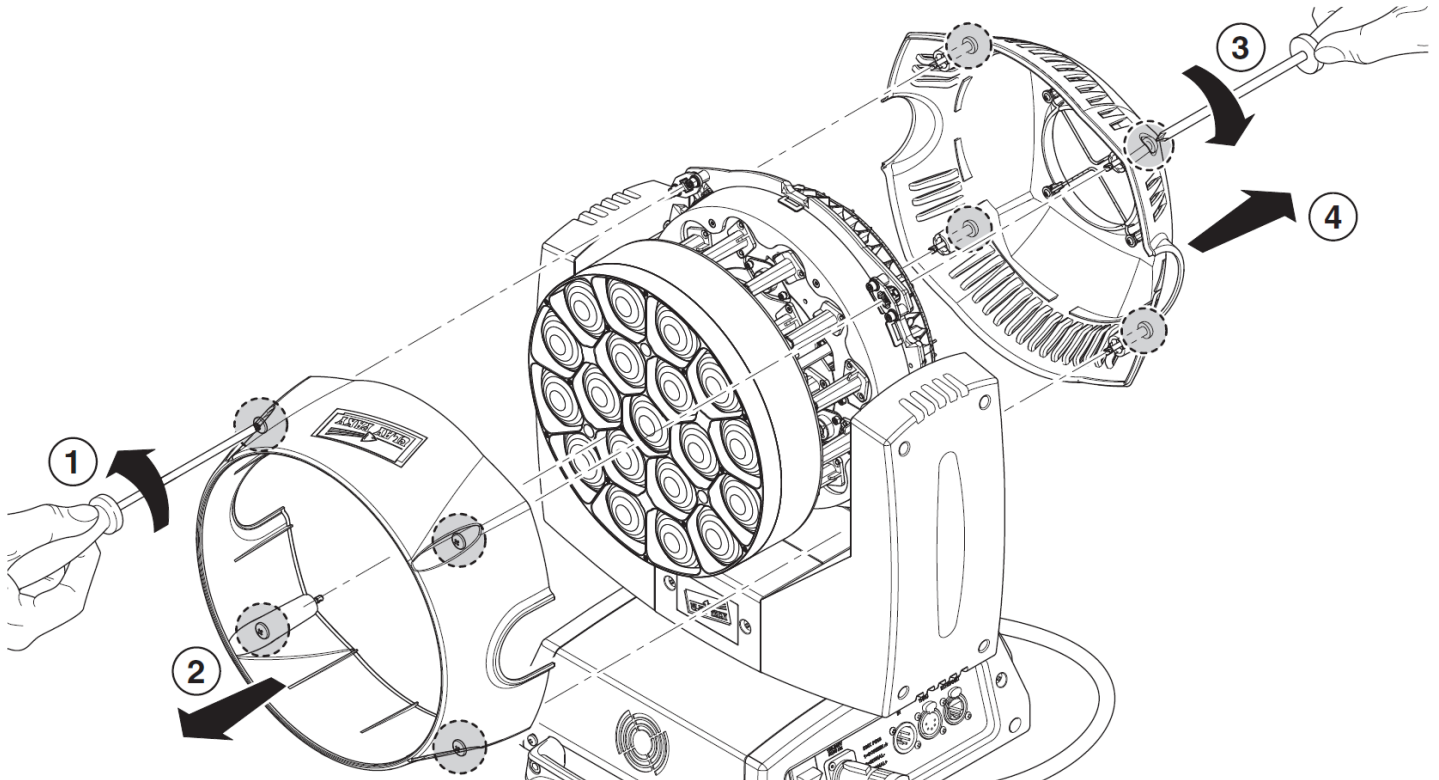


4.2. Base covers removal and battery removal

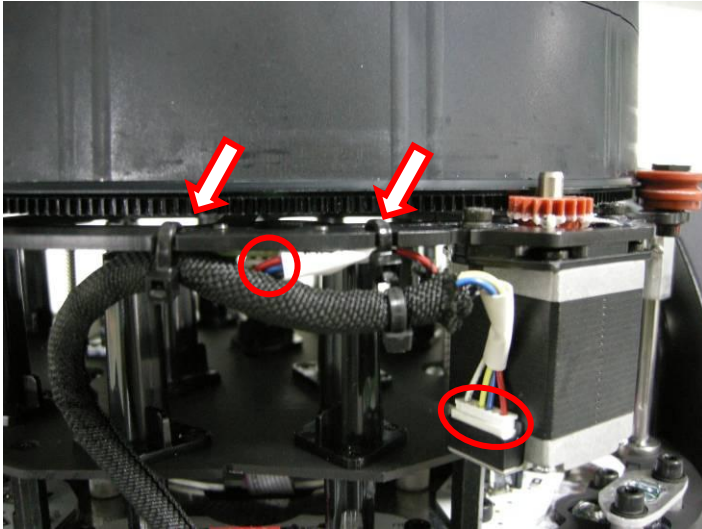
At the end of fixture / battery life, or if covers opening is needed, proceed as following illustrated. If removing the battery, dispose of it accordingly to the applying regulation.



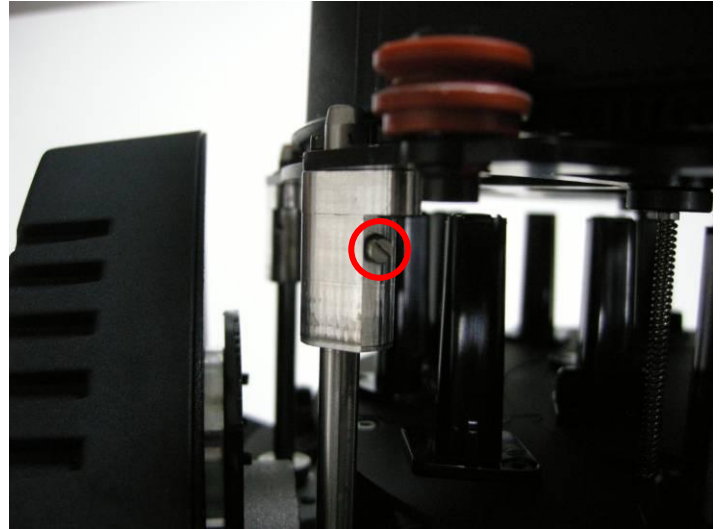
4.3. Head covers opening and closing



4.4. Lens assembly module removal



Locate the lens rotation motor and unplug the circled connectors, then cut the arrowed cable ties



On each zoom guide, remove the screw that acts as an end stopper.



Acting as evenly as possible, slide the group out of the smooth rods.

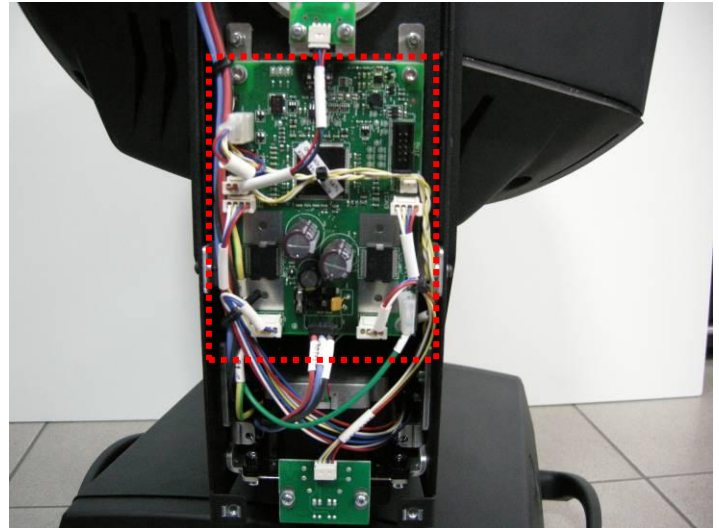


When putting the module back in the light, ensure both the smooth rod and motor shafts are properly aligned to avoid breaking them!!

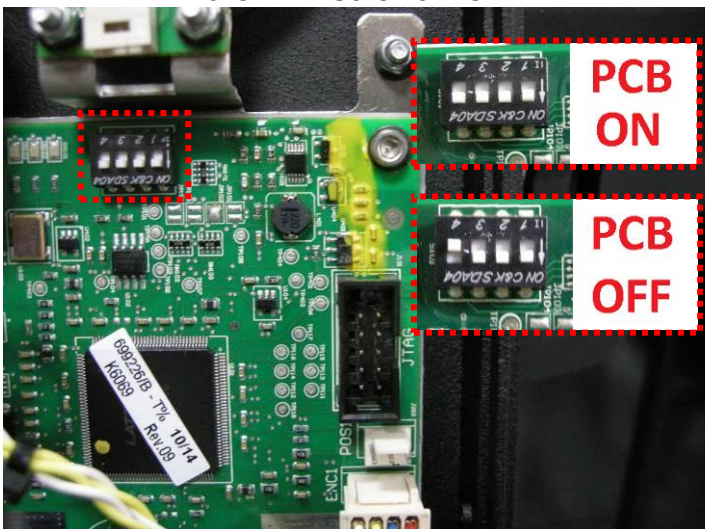
4.5. Pan & Tilt effects disabling



Remove the yoke shoulder cover on the opposite side of the pan lock (2 screws not shown) using the PH2 screwdriver.



Locate the pan / tilt board.



Identify the on board DIP switches and set LOW the switch number 4. Set it to HIGH to restore motors functionality



Close back the yoke shoulder cover.



When head movement is not needed, ensure the pan lock is engaged to prevent unwanted yoke movement.

Sticking a piece of tape to the unit's shoulder will help you remind to reactivate the pan / tilt functions.

4.6. Temporary tilt locking for maintenance

Preliminary Actions

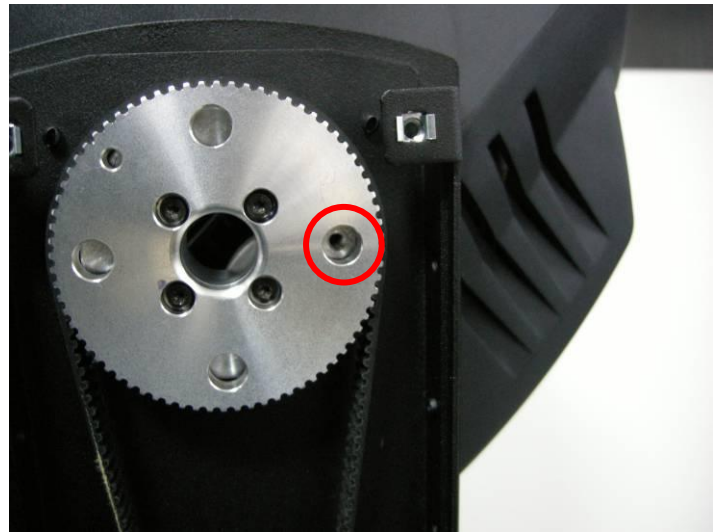
- Pan & Tilt effects disabling

Needed Parts

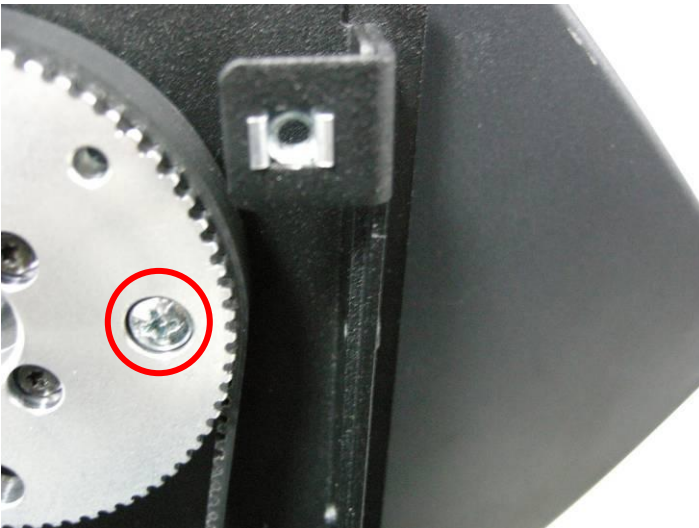
- 1 M3 screw, minimum length 15mm, or similar object



Remove the yoke shoulder cover carrying the pan lock (2 screws not visible) using the PH2 screwdriver



Locate the screw hole under the belt gear (the actual position may vary on a 45° base).

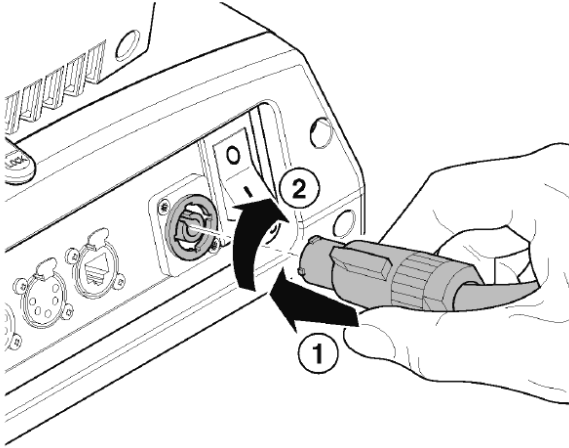


Use an M3 screw, or a similar, strong enough object to prevent the head from moving without damaging the hole thread. **Use hand tools!**
Be sure you put the head in the position that will prevent parts from falling on the floor in later steps!

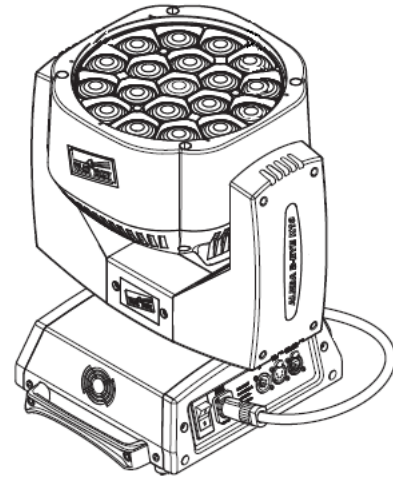


After the operation, **ensure to remove the screw** to restore the tilt functionality.
Keep the head weight with a hand while removing the temporary screw, this will avoid damage to the outer part of the thread.

4.7. Effects functional check



Connect the unit to the mains supply voltage via a PowerCon, release the pan lock and close the breaker, then wait for the unit to perform the automated reset routine



After the unit moves to home position, connect a DMX 512 console to it and point the head to a test wall



Check for stable and continuous light output and effects movement

4.8. Optical parts cleaning



Only use neutral soap and water to clean the lenses, then dry carefully with a soft, non-abrasive cloth.

WARNING: the use of alcohol or any other cleaning solution could damage the lenses

5. BASE / YOKE PARTS REPLACEMENT

5.1. Main board replacement

Preliminary / final Actions

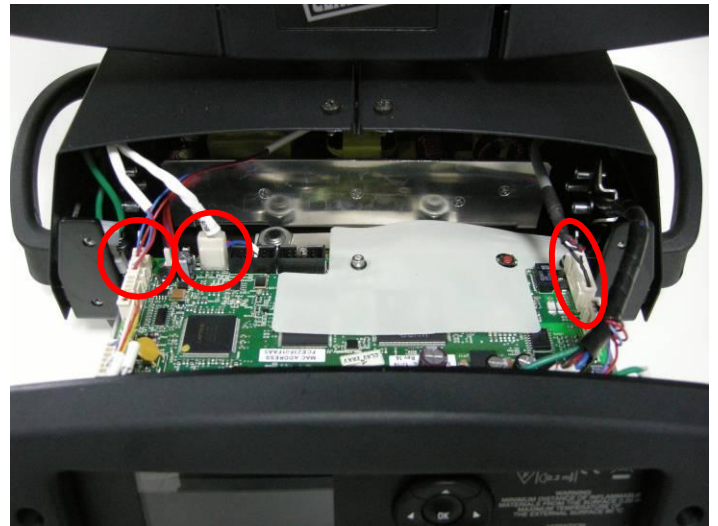
- Effects functional check

Needed Parts

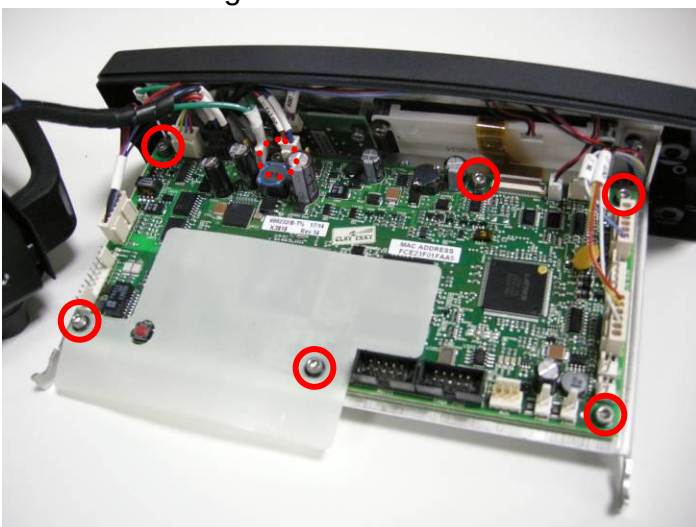
- A.leda B-EYE K10 CPU (P/N: 699232)



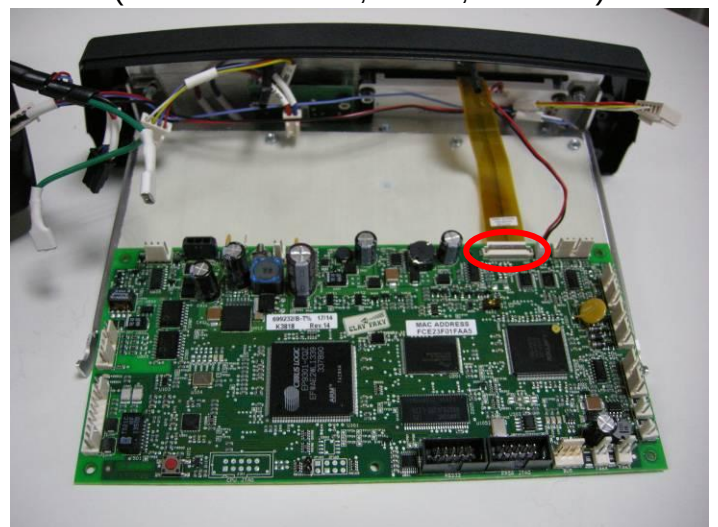
On the front panel, remove the circled screws using the PH2 screwdriver



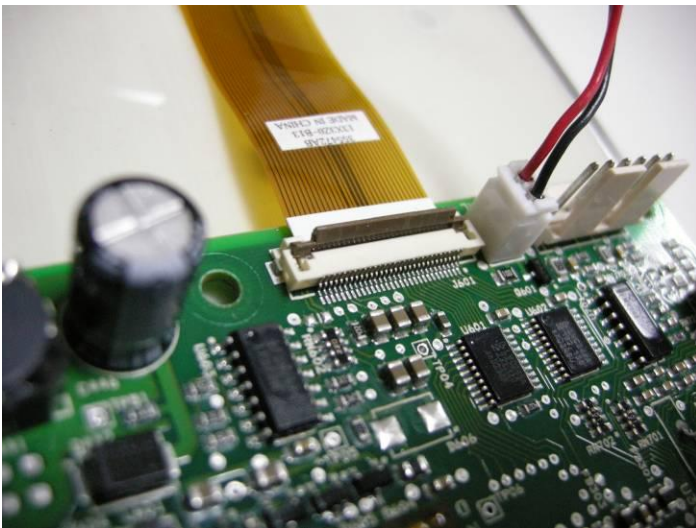
Unplug the marked connectors (FAN1 and FAN2, BUS2, ethernet)



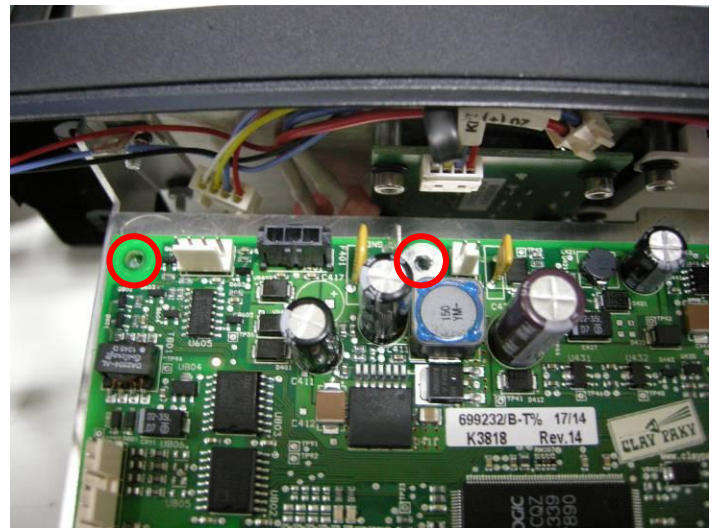
Remove the 7 screws fixing the CPU minding to keep apart the thermal protection.



Remove all the other connectors, minding the circled one has a release lever on it



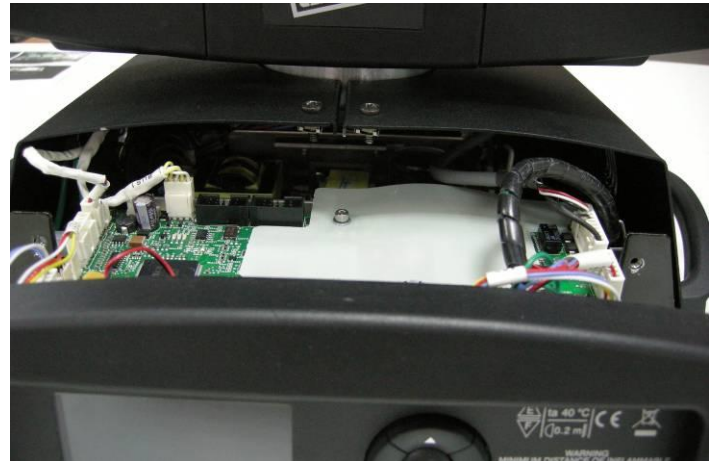
Put in place the new board, closing the lever fixing the screen cable



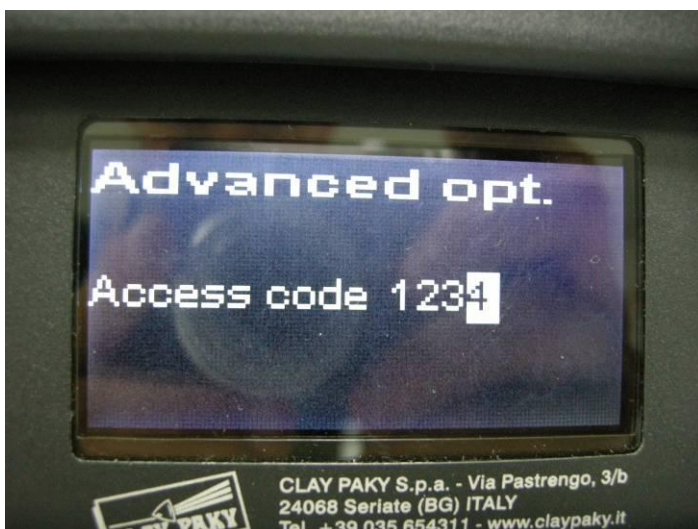
Put in place the 2 screws in the top left zone first



Plug back in all the other connections referring to the names on the wiring itself.



Lift gently the CPU holder to put it in place. You may find helpful to open the side carters for better view.



Push a button on the user interface to power the board, then navigate to the ADVANCED menu.



Insert the code "1234" and select "Setup Model", then select "A.leda B-EYE K10"

5.2. Display replacement

Preliminary / final Actions

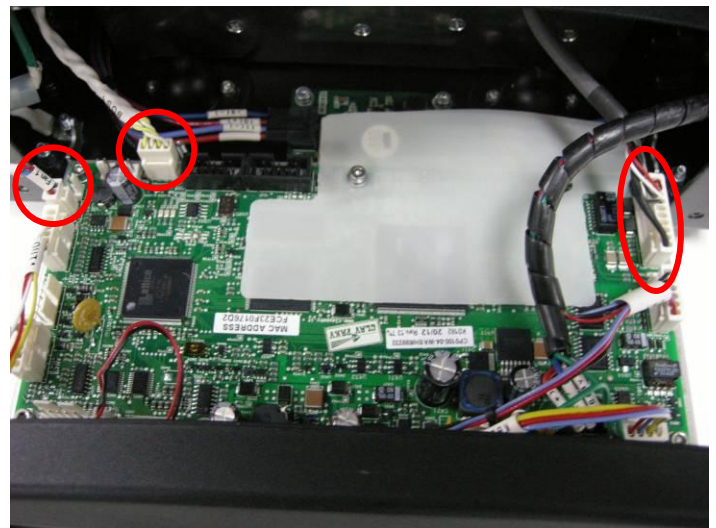
- Main board removal
- Effects functional check

Needed Parts

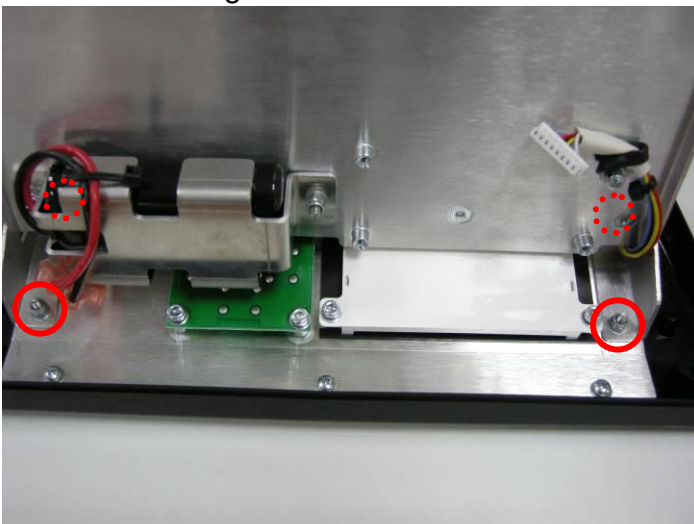
- A.leda B-EYE K10 display (P/N: DIP001/001)



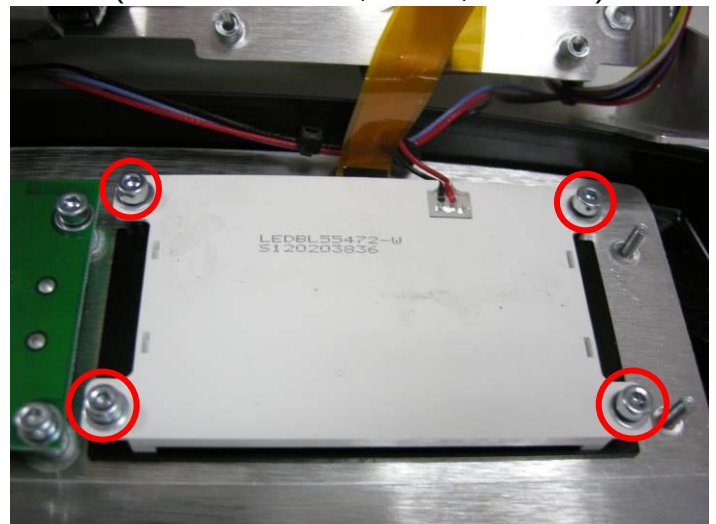
On the front panel, remove the circled screws using the PH2 screwdriver



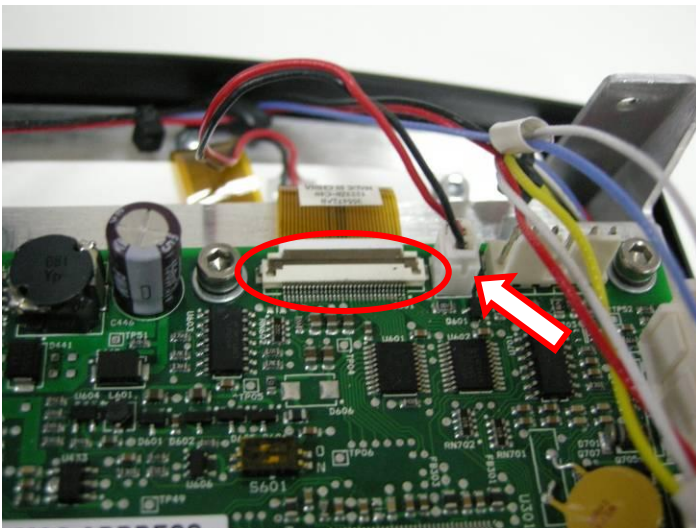
Unplug the marked connectors (FAN1 and FAN2, BUS2, ethernet)



Turn the CPU 90° as in the picture and remove the circled fixing nuts using the 5.5mm hex key, then repeat the same operation on the opposite side of the CPU frame for two more nuts



Locate the display and to remove it loosen the circled screws with the 2.5mm hex key, minding it is still connected to the CPU.



On the CPU, remove the arrowed connector and lift the release lever to extract the flat cable, then plug both connectors from the new one.

Restore the 4 screws fixing the display, then fix back the CPU group with the 4 nuts and replug the 3 connectors.

5.3. User interface replacement

Preliminary / final Actions

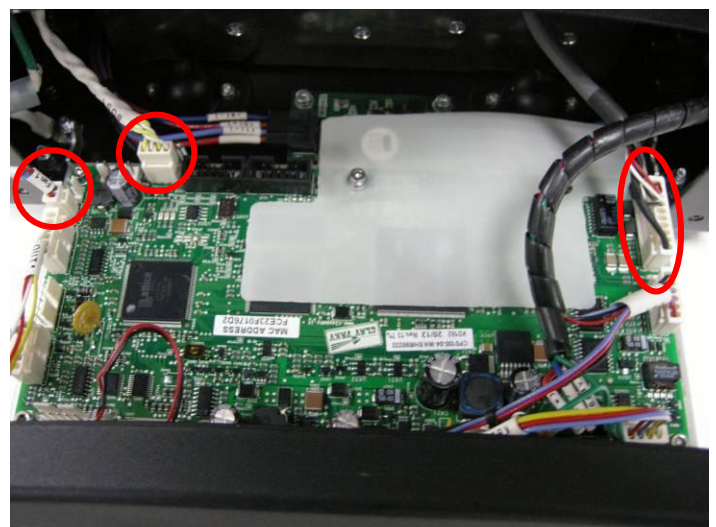
- Main board replacement
- Effects functional check

Needed Parts

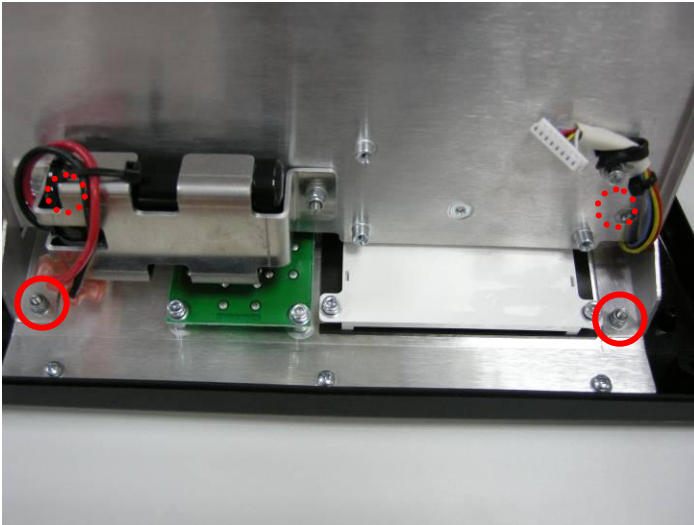
- Clay Paky User button PCB (P/N: 699178)



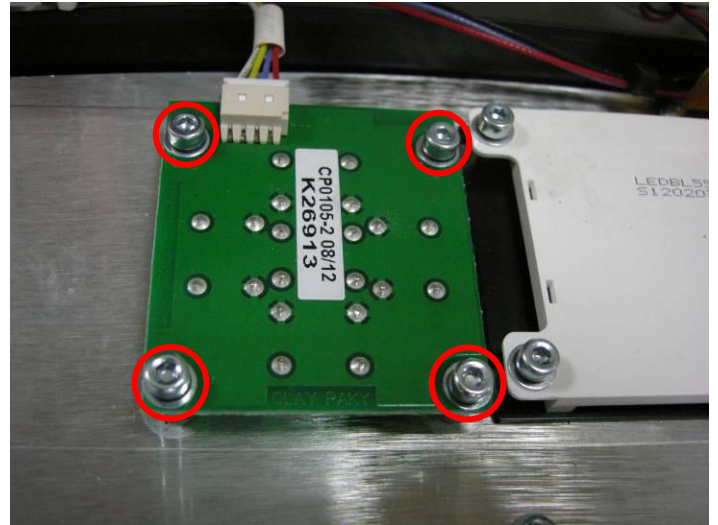
On the front panel, remove the circled screws using the PH2 screwdriver



Unplug the marked connectors (FAN1, BUS2, ethernet)



Turn the CPU 90° as in the picture and remove the circled fixing nuts, then repeat the same operation on the opposite side of the CPU frame



Locate the user buttons PCB and disconnect the arrowed wiring, then remove the 4 fixing screws using the 2.5mm hex key.

Plug the connector in the new PCB and put it back in place

5.4. Power supply replacement

Preliminary / final Actions

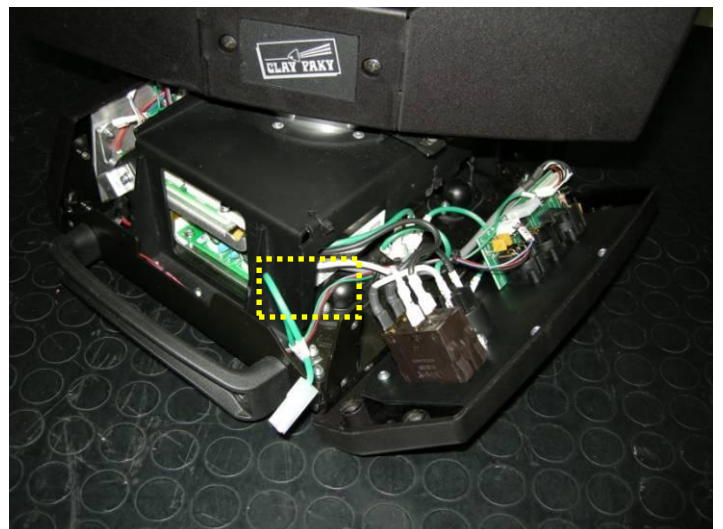
- Base covers removal
- Effects functional check

Needed Parts

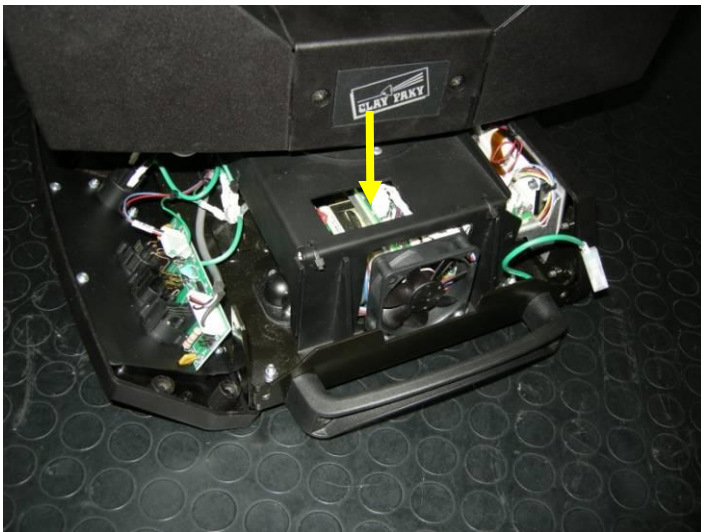
- A.leda B-EYE K10 Power Supply (P/N: ALI001)



Open the side carters and the connections panel.



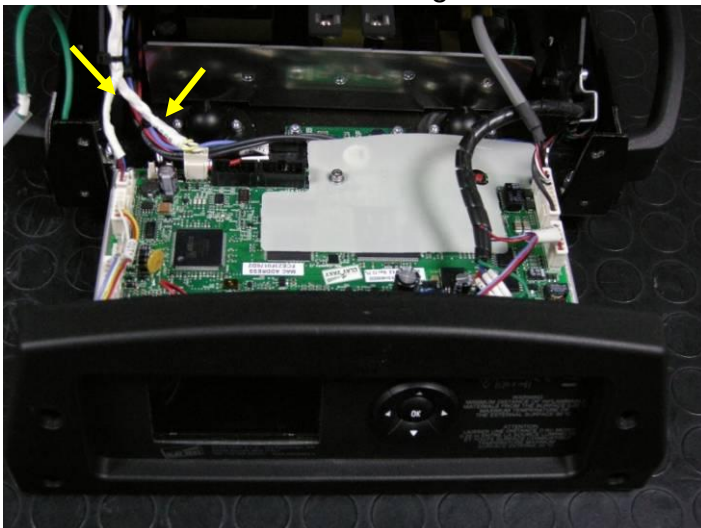
Unplug the 3 power inputs (ground, live and neutral) on the side of the unit.



Unplug the 2 power outputs from the top of the metal housing.



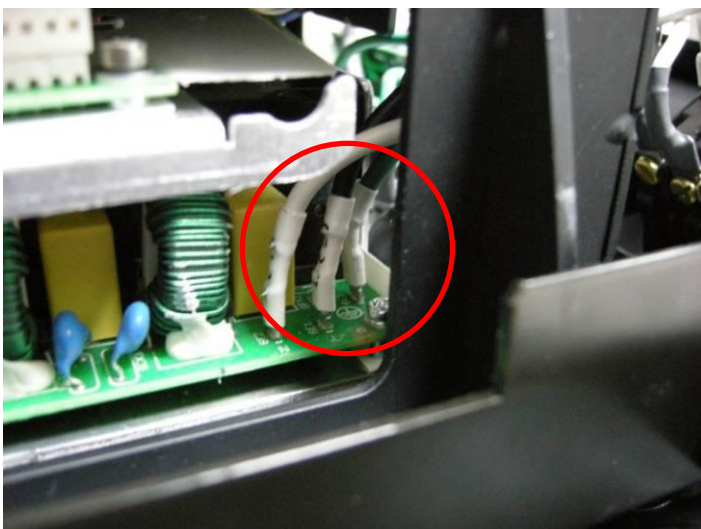
Flip the unit and remove the 3 circled screws.



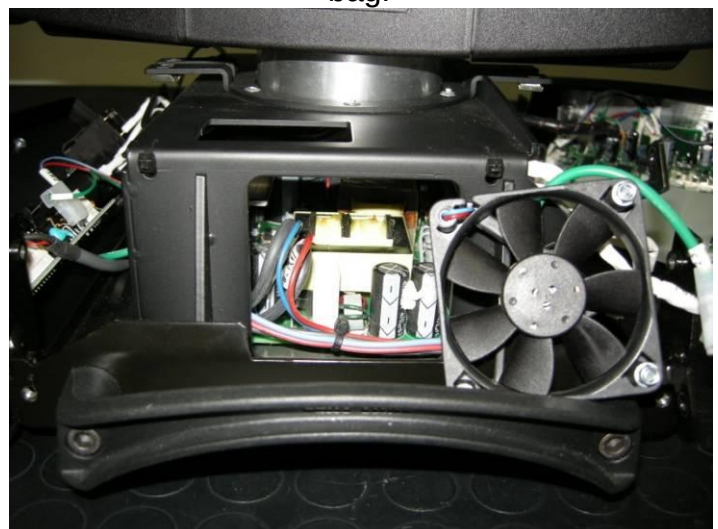
Open the display panel, gently slide out the main board and remove the highlighted connectors.



Rotate the main board assembly and slide out the CPU. Store the faulty part in an antistatic bag.



Put back in place the CPU and reconnect the inputs starting from the ground. Close the back panel



Move the PSU fan to reconnect the power cables, keeping blue on the left side and red on right.



Fix the PSU to the base.



Reconnect the BUS1 and FAN1 connectors in their position and put in place the main board.

5.5. Pan & Tilt PCB / Tilt Hall sensor replacement

Preliminary / final Actions

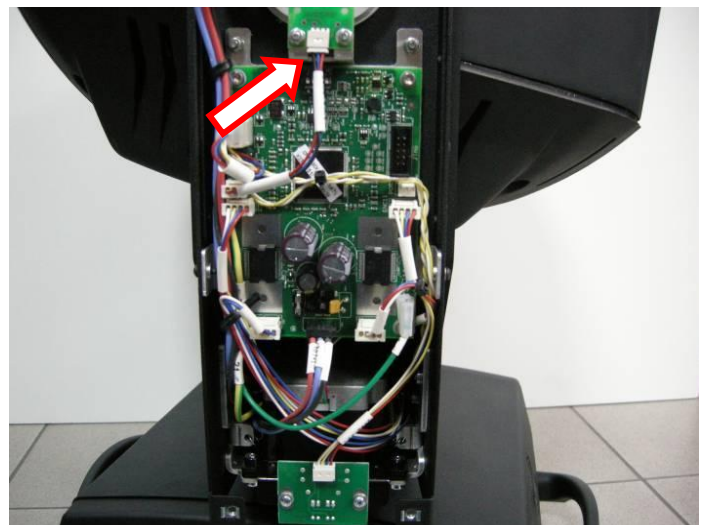
- Effects functional check

Needed Parts

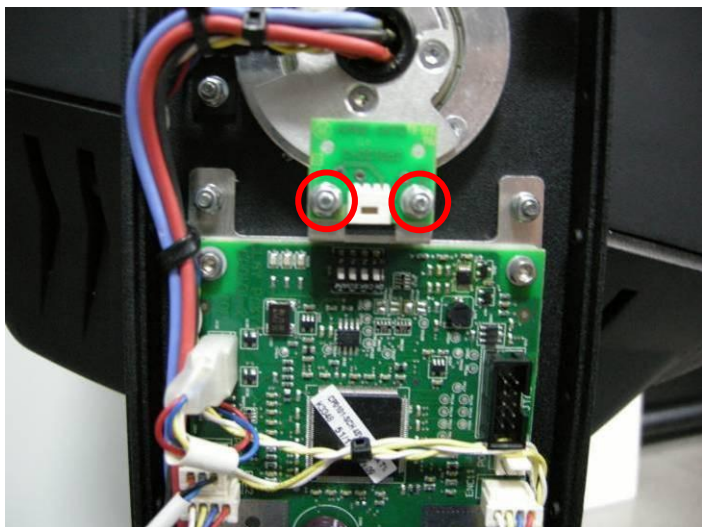
- A.leda B-EYE K10 P/T Board (P/N: 699226)
or
- Hall sensor (P/N: 699177)



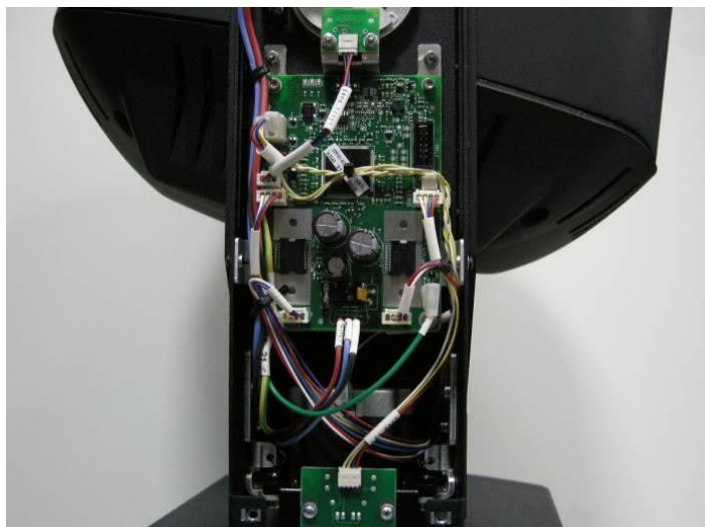
Locate the yoke arm without the pan lock and remove the 4 fixing screws (2 screws not shown)



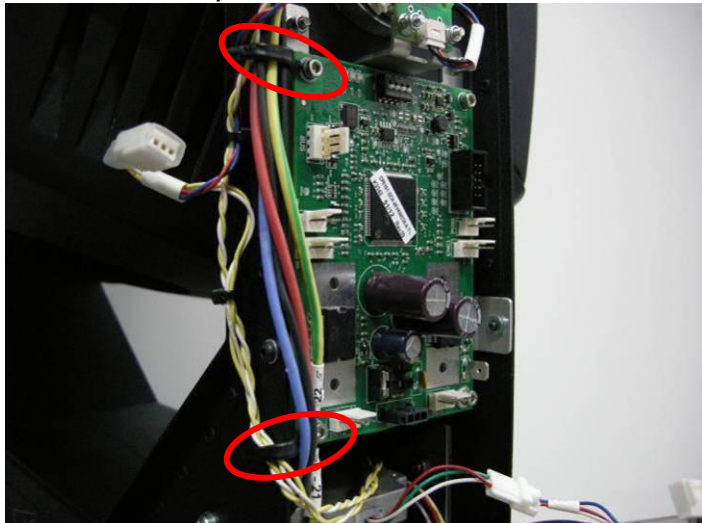
To replace the tilt Hall sensor, unplug the arrowed connector



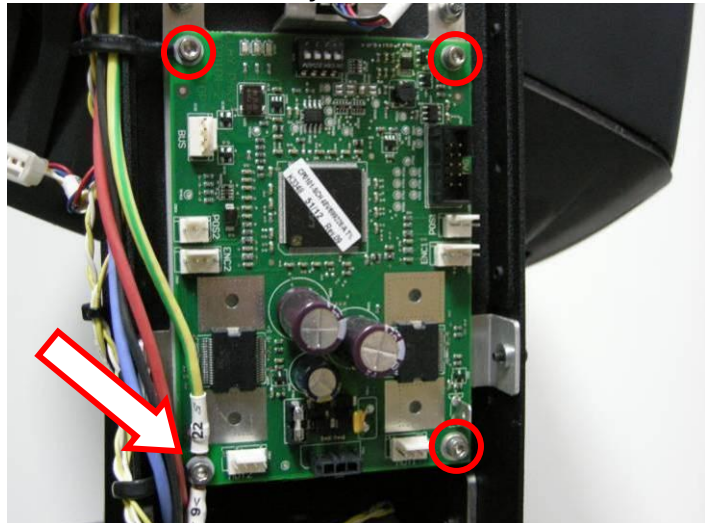
Remove the circled nuts with the 5.5mm key and replace the Hall sensor.



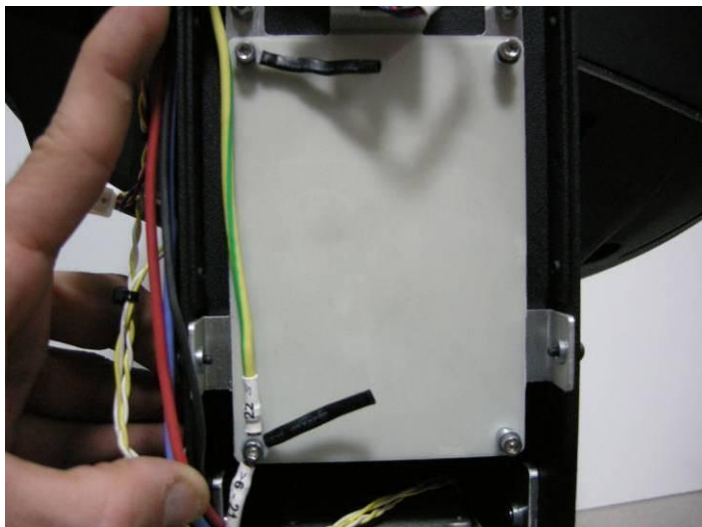
For pan / tilt PCB replacement, remove all the connectors directly linked to the PCB itself



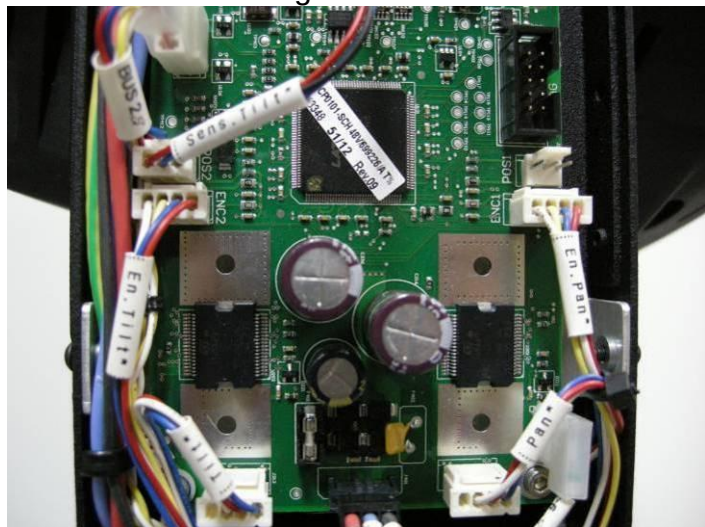
Open the 2 metal cable ties and use them to keep the wirings on the external side of the yoke arm



Remove the circled screws using the 2.5mm Hex key. The arrowed screw retains the 2 PCB frame grounds.



Remove the PCB and replace it. Refer to the image (PCB not shown on purpose) to properly restore the metal cable ties and grounds.



Replug the connectors as per the image

5.6. Pan motor replacement

Preliminary / final Actions

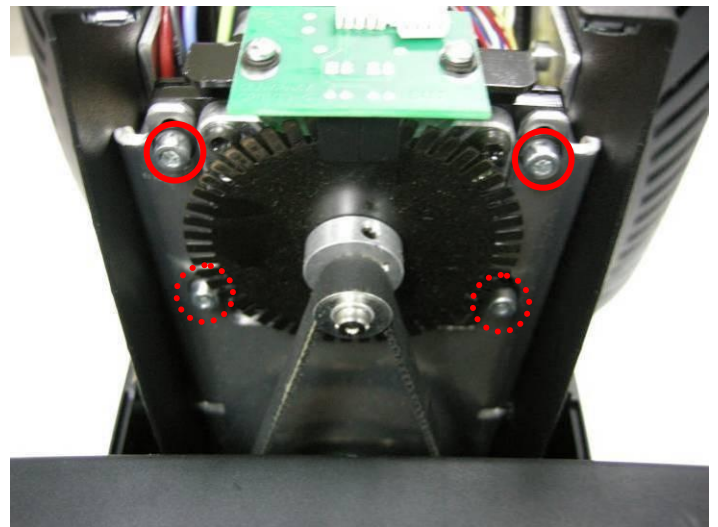
- Effects functional check

Needed Parts

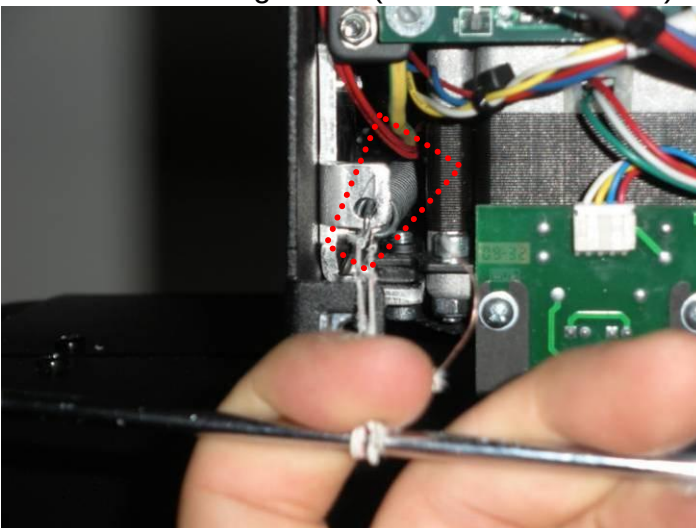
- A.leda B-EYE K10 pan motor (P/N: 031947)



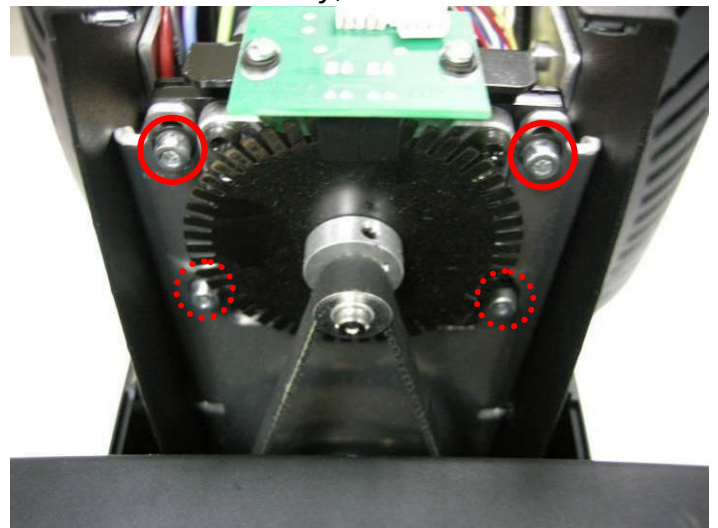
Locate the yoke arm without the pan lock and remove the fixing screw (2 screws not shown)



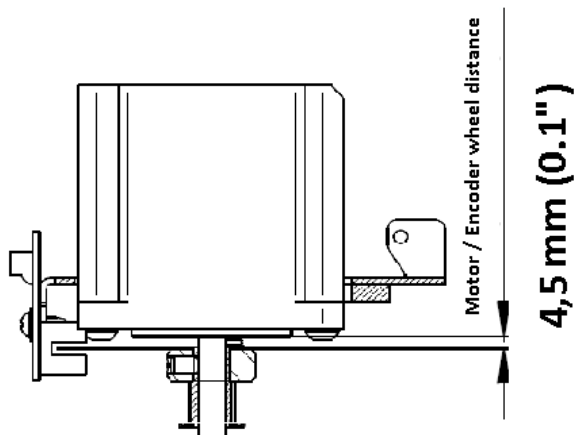
Using a 3mm Hex key loosen the circled screws under the motor body, but do not remove them



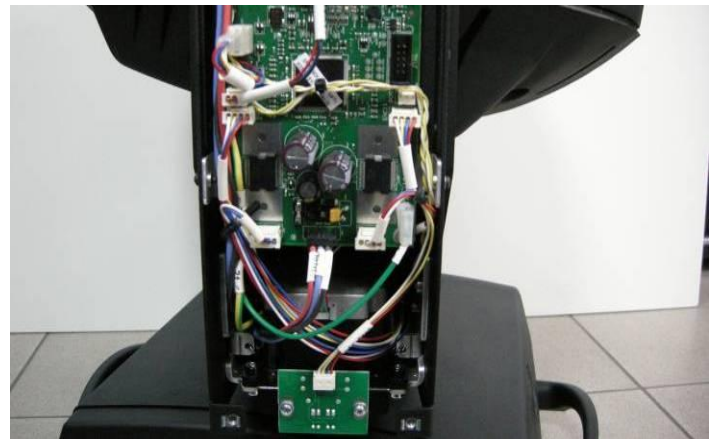
Remove the highlighted tensioning springs (1 spring not visible) using a pair of pliers or a hook



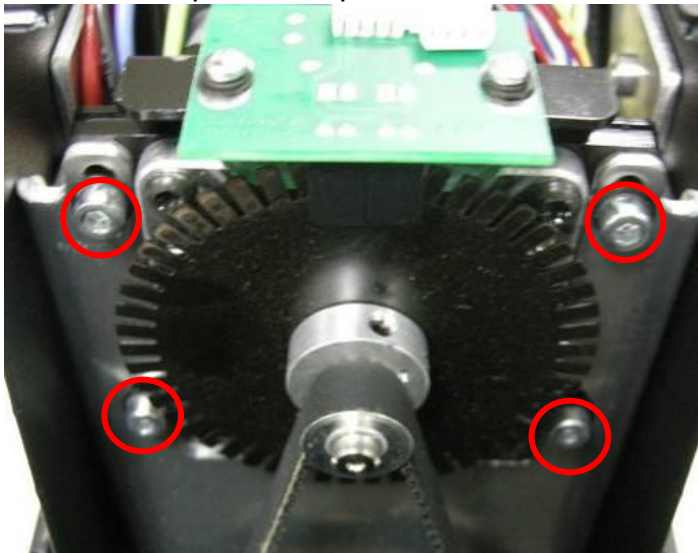
Disconnect the motor and encoder PCB connectors, then remove the screws you previously loosened to remove the motor group



Assemble the new motor group following the provided specifications



Put the new motor group in place and wire the relevant connectors.



Point the motor screws, then put the belt in place and restore the springs using a hook or pliers, then tighten the fixing screws

5.7. Tilt motor replacement

Preliminary / final Actions

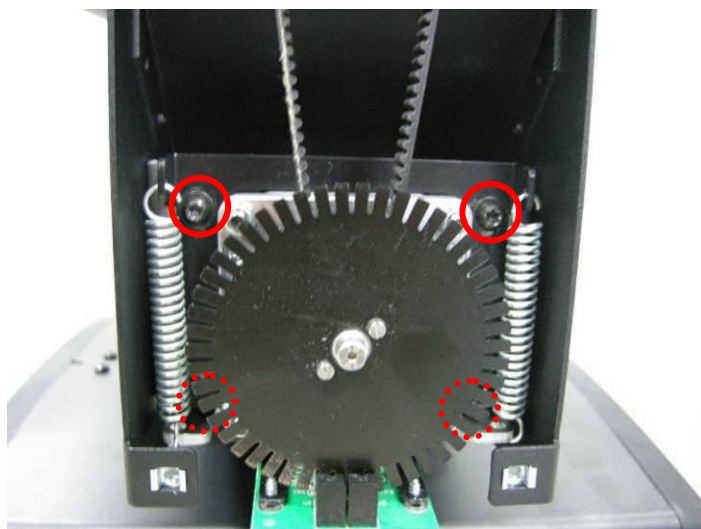
- Effects functional check

Needed Parts

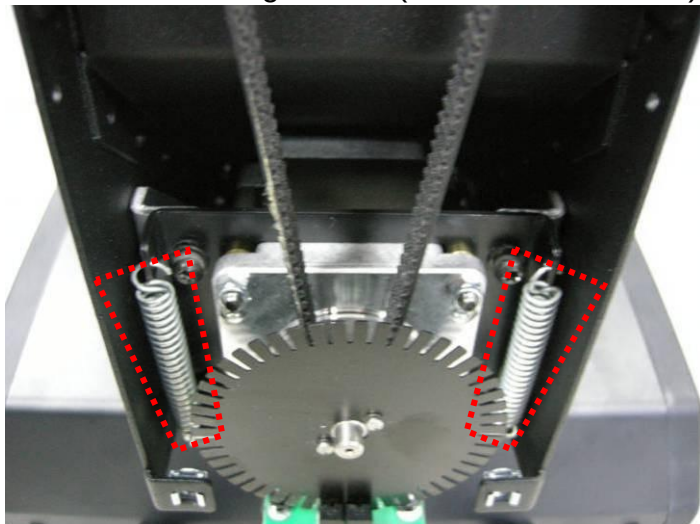
- A.leda B-EYE K10 tilt motor (P/N: 031947)



Locate the yoke arm with the pan lock and remove the 4 fixing screws (2 screws not shown)



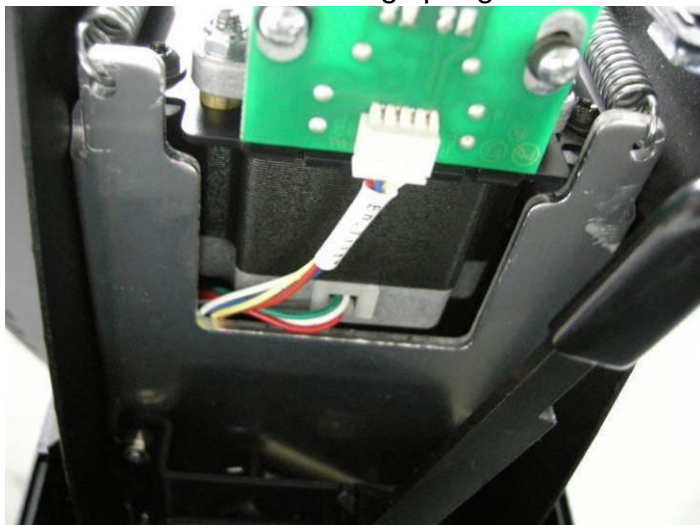
Loosen the circled screws using a T20 Torx key (do not remove them)



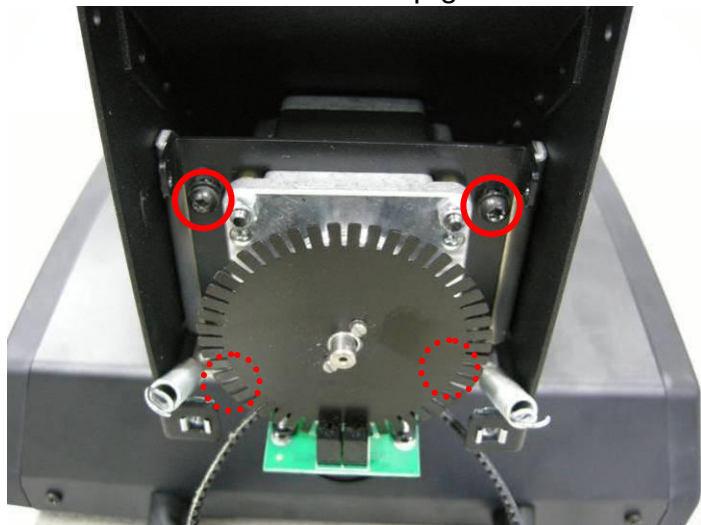
Using a hook or the crooked nose pliers, remove the tensioning springs



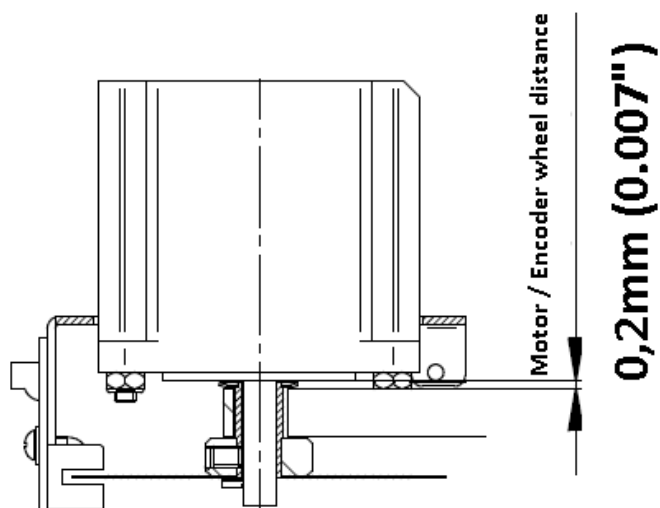
Slightly lift the motor with a hand and free the belt from the top gear.



Unplug the motor and encoder connectors. The motor connector might not be visible, pull it gently and push the release lever to free it.



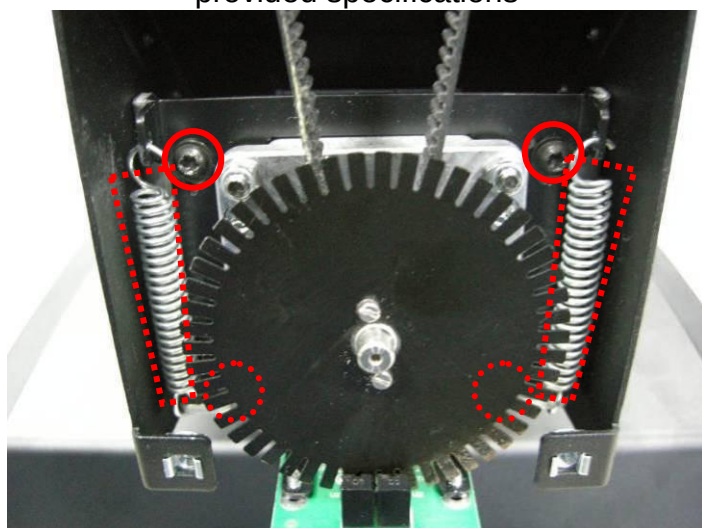
Remove the screws you previously loosened and extract the motor group.



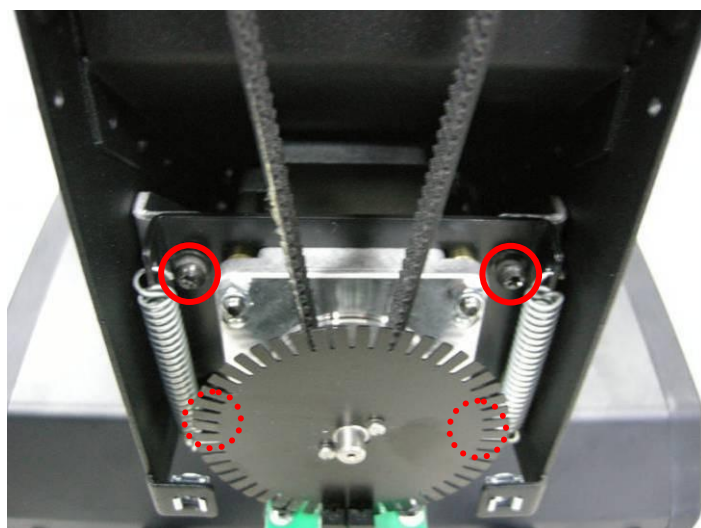
Assemble the new motor group according to the provided specifications



Fit the belt on the top gear



Point the fixing screws, then fix back the springs using a hook or pliers.



Once the belt is tensioned by the springs, tighten the 4 fixing screws.

6. HEAD PARTS REPLACEMENT

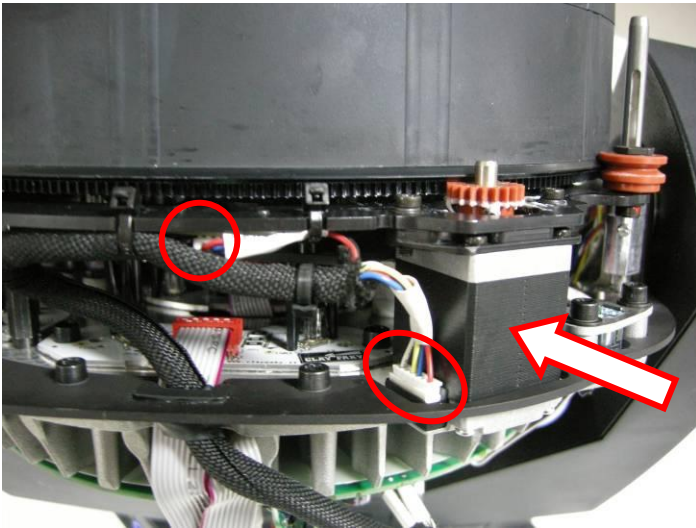
6.1. Top hat rotation motor / rotation gear replacement

Preliminary / final Actions

- Head covers opening and closing
- Effects functional check

Needed Parts

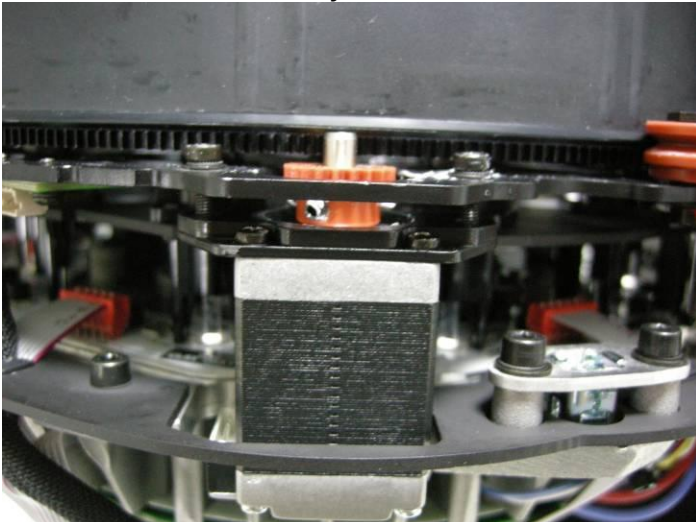
- A.leda B-EYE K10 top hat rotation motor (P/N: MOP00E)
or
- A.leda B-EYE K10 top hat rotation gear (P/N: 086314/801)



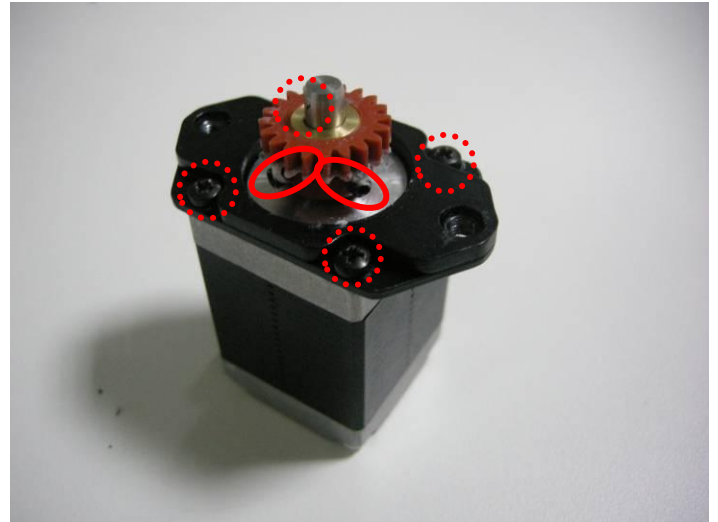
Locate the top hat rotation motor, remove its wiring, and cut the cable ties, then move the top hat fully outside.



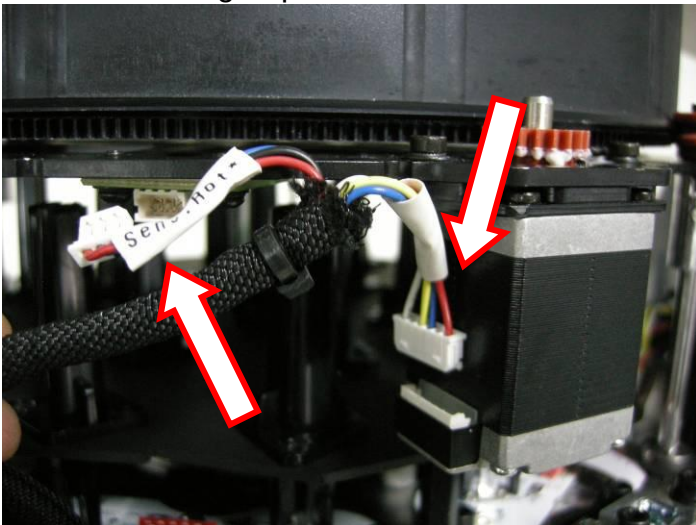
Loosen the circled screws with the T10 key, then gently pull the motor towards the plate's edge.



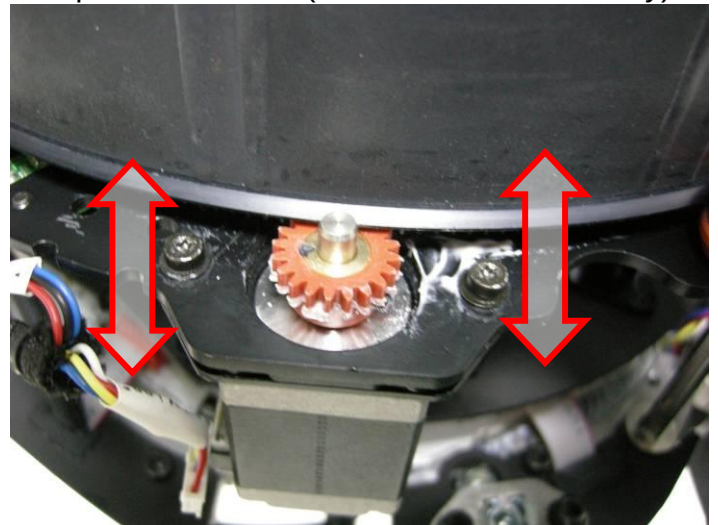
Completely remove the screws you loosened to free the motor group and slide it from the bottom



Loosen the circled grub screws then, if needed, replace the motor (dashed screws, T10 key)



Put the gear in place leaving just enough space for it not to touch the motor casing (0.1mm), then put the motor group back in place and wire it.



Ensure the motor has proper grip on the big gear, test the rotation and, in case, adjust the pressure of the smaller gear in all head positions.

6.2. Top hat concentric rotation gear replacement

Preliminary / final Actions

- Head covers opening and closing
- Temporary tilt locking for maintenance
- Effects functional check

Needed Parts

- A.leda B-EYE K10 concentric rotation gear (P/N: 300208/801)

This section refers to the replacement of the concentric rotation gears, located on the same head side as the zoom rotation motor. Should the gear you have to replace be fixed on the opposite side, please refer to section 6.3.



Locate the concentric rotation gear you have to replace on the same side as the rotation motor.



Loosen the circled screw with a T20 key, keeping still the gear on the opposite side.



Put the new gear in place holding it with the 10mm Hex key.
By rotating the part, you will be able to adjust the pressure applied on the lens group.



Ensure the top hat group rotates properly and is firmly fixed. By pivoting the gear you can move it closer or more far away to the lens group.

6.3. Top hat eccentric rotation gear replacement

Preliminary / final Actions

- Head covers opening and closing
- Temporary tilt locking for maintenance
- Effects functional check

Needed Parts

- A.leda B-EYE K10 eccentric rotation gear (P/N: 300208/802)

This section refers to the replacement of the off center rotation gears, located on the opposite side compared to the zoom rotation motor. Should the gear you have to replace be fixed on the zoom rotation motor side, please refer to section 6.2.



Locate the eccentric rotation gear rotation gear you have to replace on the opposite side as the rotation motor's one.



Loosen the circled screw with a T20 key, keeping still the gear on the opposite side with a 10mm Hex key.



Put the gear back in place holding it with the 10mm Hex key, but do not tighten the part yet.



Ensure the top hat group rotates properly and evenly, then tighten the screw. Check for even rotation, if needed readjust accordingly.

6.4. Zoom smooth rods replacement

Preliminary / final Actions

- Head covers opening and closing
- Temporary tilt locking for maintenance
- Lens assembly module removal
- Effects functional check

Needed Parts

- A.leda B-EYE K10 smooth rods (P/N: PER020/801)



Locate the smooth rod fixing screw and remove it with a T20 key to free the rod.



Take the new smooth rod and install it so that the long milling faces the outside.



Restore the screw, ensuring the indexing slot on the rod matches the hole on the heat sink, too.

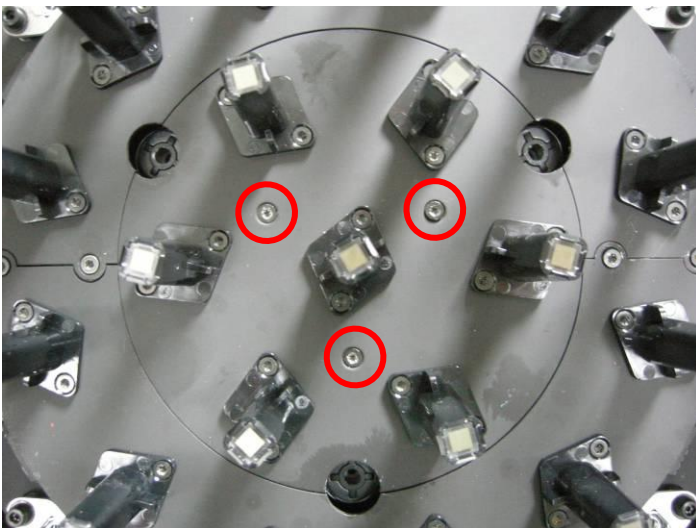
6.5. Zoom motors replacement

Preliminary / final Actions

- Head covers opening and closing
- Temporary tilt locking for maintenance
- Lens assembly module removal
- Effects functional check

Needed Parts

- A.leda B-EYE K10 zoom motor (P/N: ATL001/001)



Locate the zoom motor you need to replace and remove the 2 mixing rod plates next to it using the T10 key



Gently turn the motor towards you to expose the fixing nuts and remove both of them with a 7mm hex key



Move up the motor just enough to expose the wiring, then unplug it using a thin screwdriver and remove slide it out.



Remove the 2 fixing screws and replace the motor, then put it back in place. Use needle nose pliers to fix the wiring back in place.



Tighten the fixing nuts on the rubber support, caring not to cause deformation to the supports.



Restore the middle rod plate, ensuring the indexing slot matches to ensure proper mounting

6.6. Zoom motors shaft replacement

Preliminary / final Actions

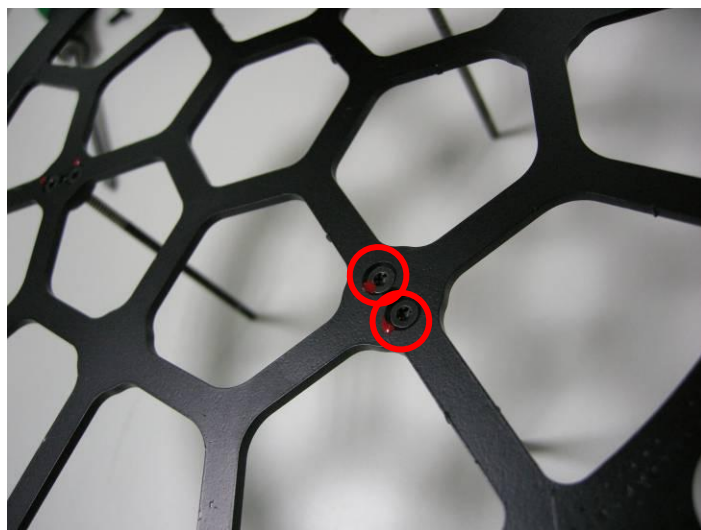
- Head covers opening and closing
- Lens assembly module removal
- Top hat concentric rotation gear replacement
- Effects functional check

Needed Parts

- A.leda B-EYE K10 zoom motor shaft (P/N: ATL001/002)



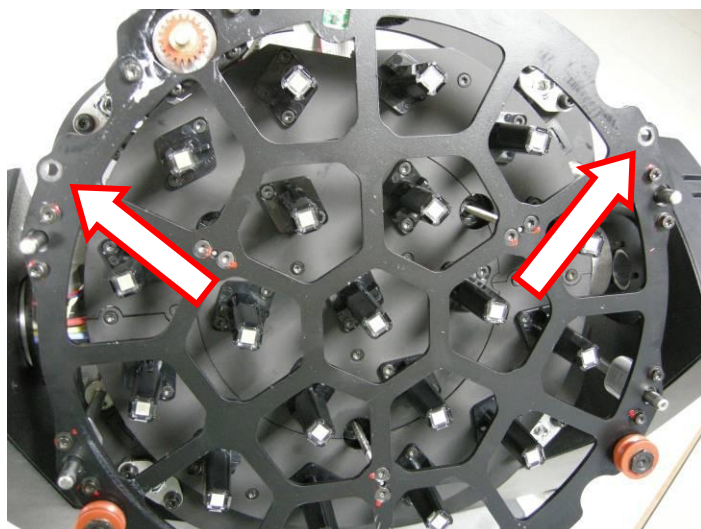
After having removed both concentric gear (see section 6.3) extract the lens group and store it in a safe place.



Turn the lens group frame and remove the circled screws with a T10 key



Put in place the new motor shaft with the same orientation as the other ones



Put in place the lens group holder, then slide in the lens group leaving the missing rotation gears on the top side (arrowed) and reassemble as per section 6.3

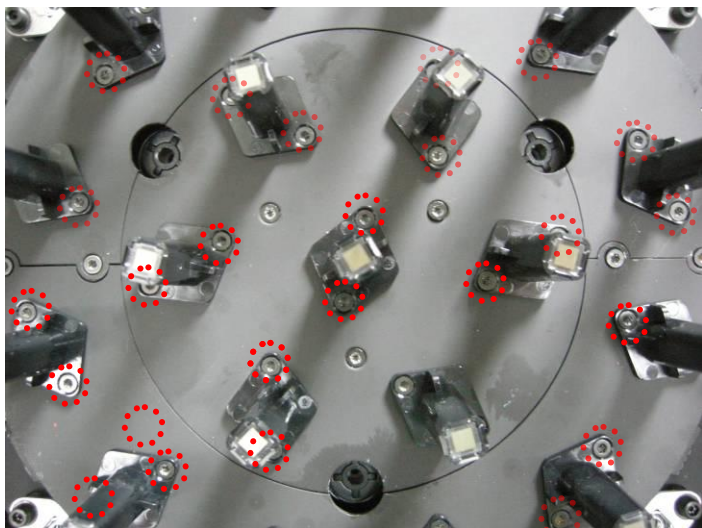
6.7. Mixing rod replacement

Preliminary / final Actions

- Head covers opening and closing
- Temporary tilt locking for maintenance
- Lens assembly module removal
- Effects functional check

Needed Parts

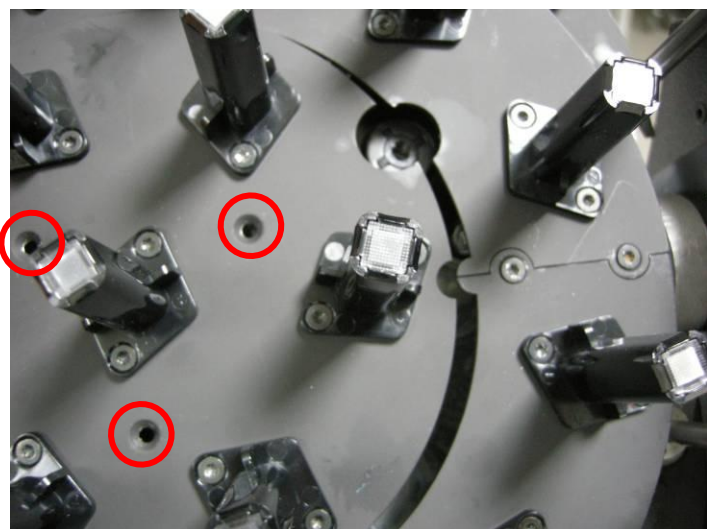
- A.leda B-EYE K10 mixing rod (P/N: LEO00B)



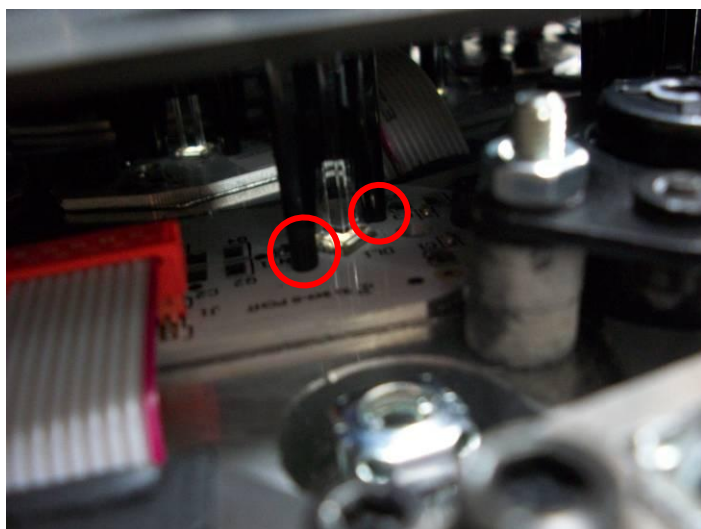
Locate the mixing rod you need to replace and remove the 2 fixing screws using a T10 key.



Put the new mixing rod in place. The alignment pins of the top side have to match the holes that are not threaded (inner side still painted in black)



Should you have to replace an outer rod, consider removing the middle rod plate loosening the 3 fixing screws (T10 key) before the next step



Fix the mixing rod and, before tightening, ensure the alignment pins on the LED pcb side are correctly in place.

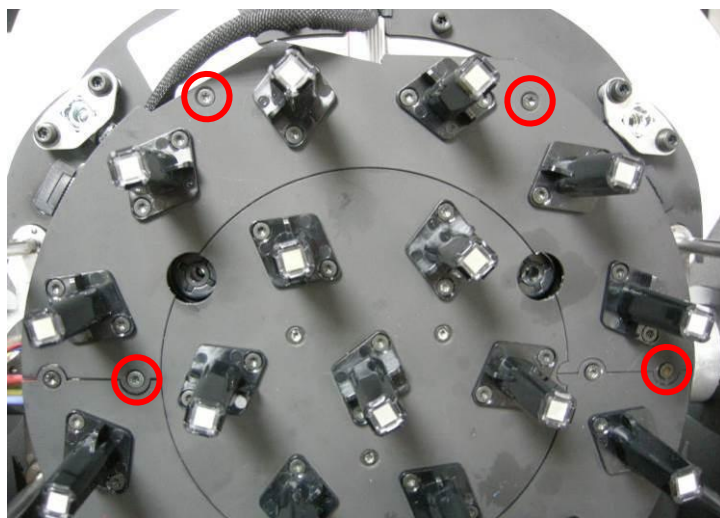
6.8. Outer LED boards replacement

Preliminary / final Actions

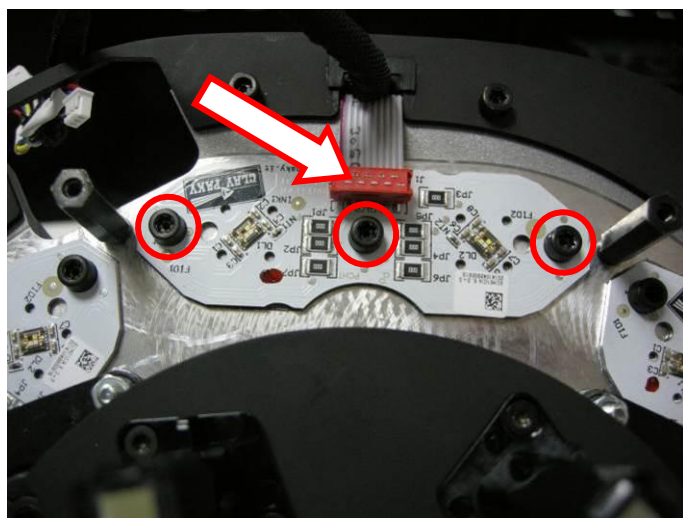
- Head covers opening and closing
- Temporary tilt locking for maintenance
- Lens assembly module removal
- Effects functional check

Needed Parts

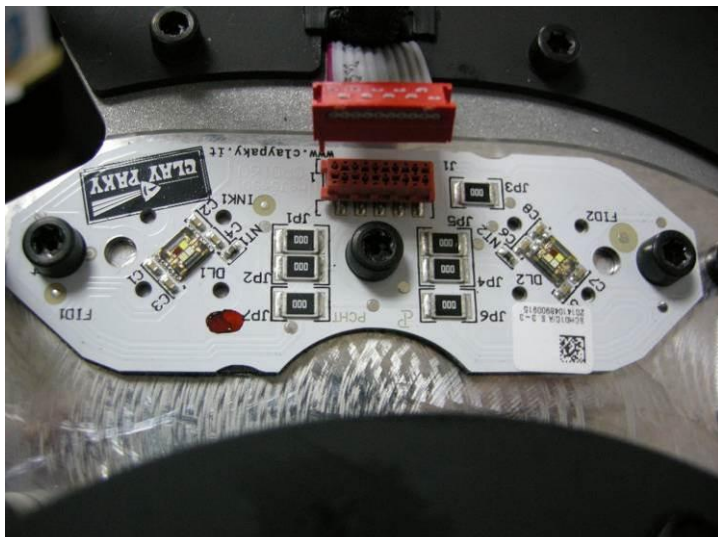
- A.leda B-EYE K10 2 LED PCB (P/N: SCH01C)



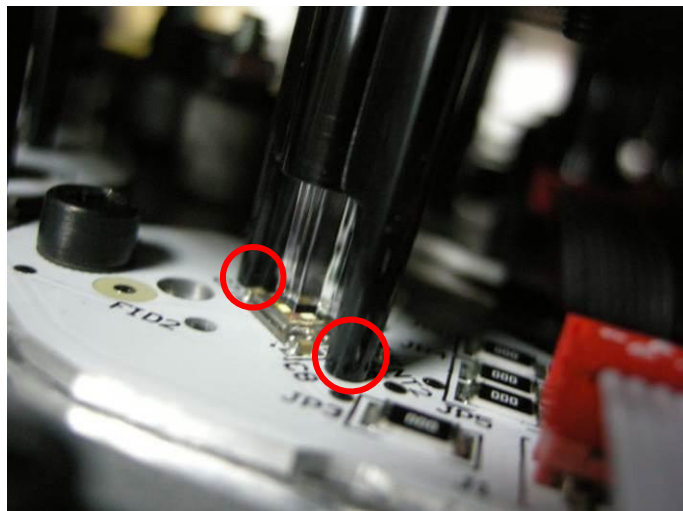
Locate the LED chip you have to replace and remove the related mixing rod plate with a T10 key



Disconnect the LED PCB connector and remove the circled screws (T20 key) to free the board.



Mount the LED board and replug the wiring



Restore the mixing rods plate ensuring all alignment pins are correctly in place

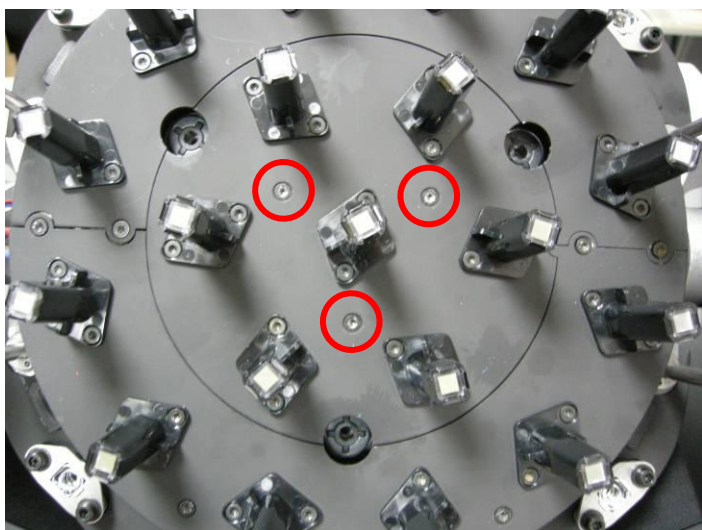
6.9. Center LED board replacement

Preliminary / final Actions

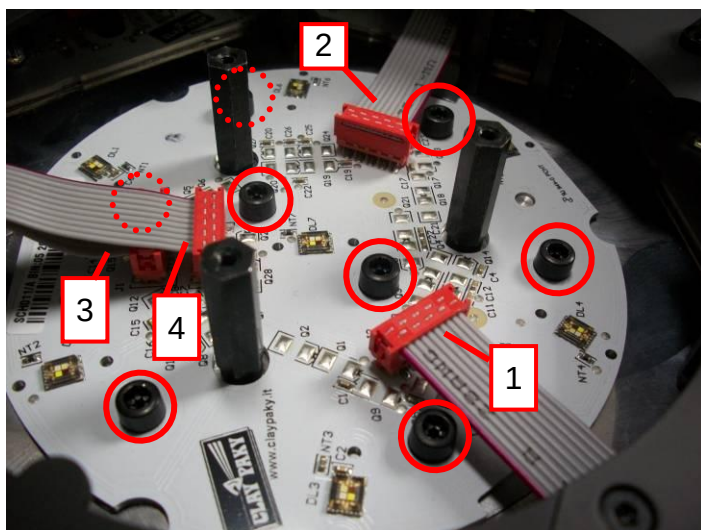
- Head covers opening and closing
- Temporary tilt locking for maintenance
- Lens assembly module removal
- Effects functional check

Needed Parts

- A.leda B-EYE K10 7 LED PCB (P/N: SCH01J)



Remove the middle mixing rods plate acting on the circled screws with a T10 key



Disconnect the PCB connectors (1 - 4) and loosen the circled screws (T20 key) to free the board.



Fix the LED board and replug the wirings.



Restore the mixing rods plate, indexing slots on the side of the other boards will set the proper orientation.

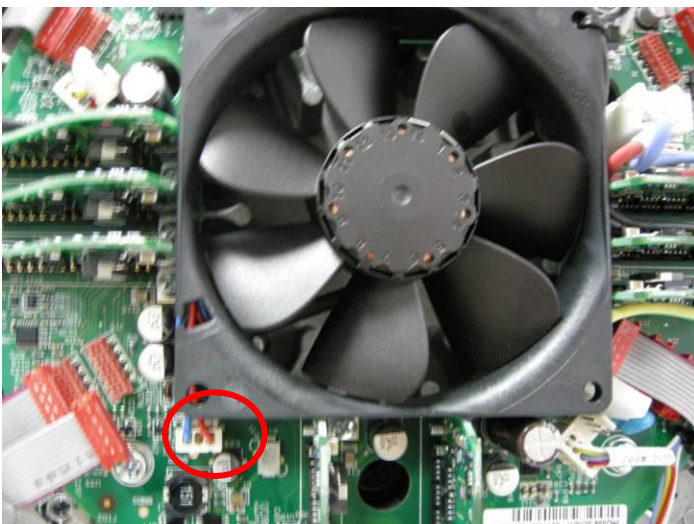
6.10. Head fan replacement

Preliminary / final Actions

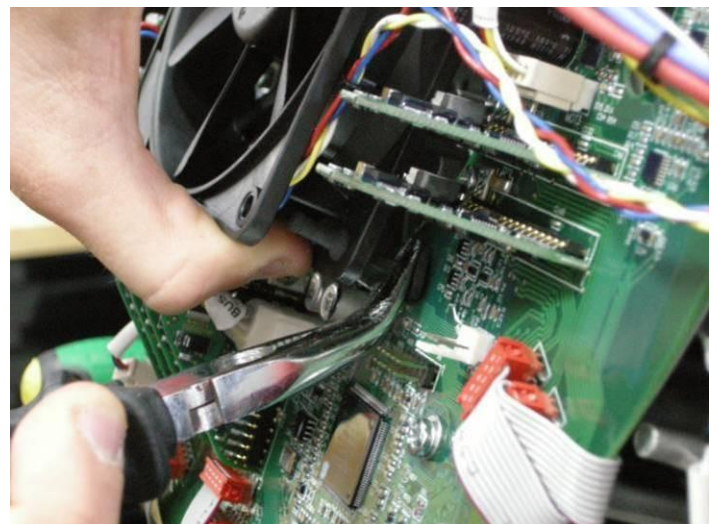
- Head covers opening and closing
- Effects functional check

Needed Parts

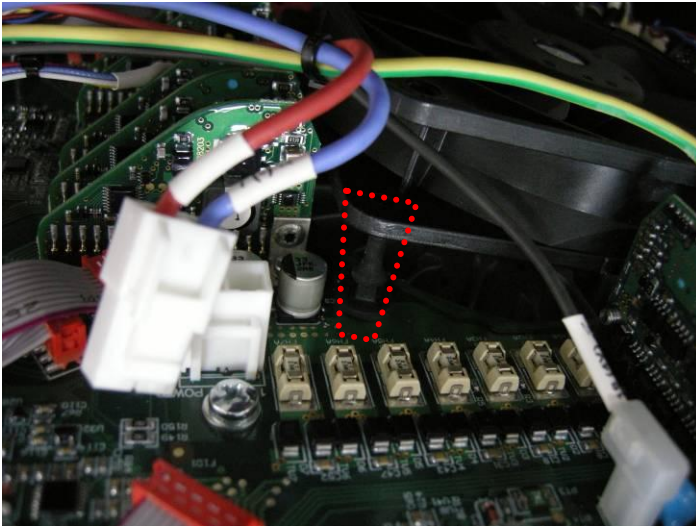
- A.leda B-EYE K10 head fan (P/N: 270079/802)



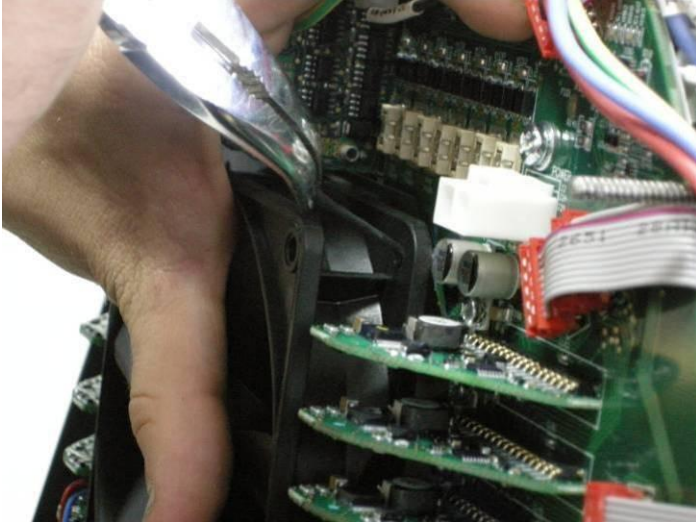
Unplug the circled connector



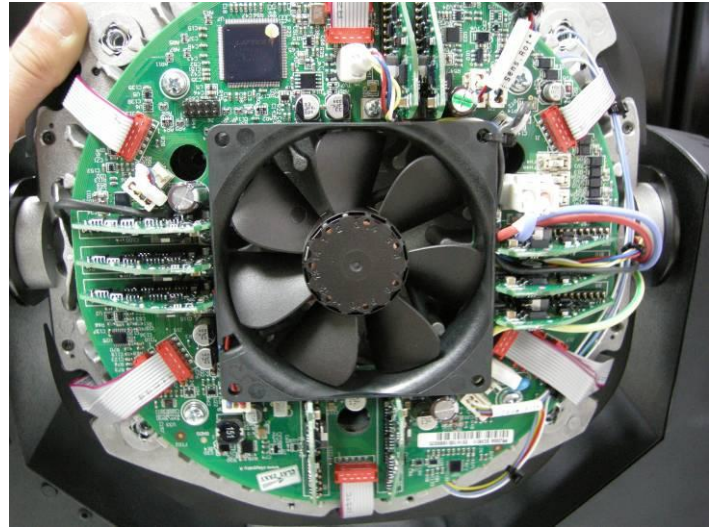
Lift the fan 1 cm to expose the fixing rubber feet, then carefully keep it in place against the PCB and lift only the fan



Do the same with the other rubber feet, then turn the head on the opposite side and repeat the process caring not to damage PCB components



Keep the fan well against the PCB, then pass the spacer head towards the holes and pull it gently.



Put the new fan in place, caring to keep the connector on the same side as before.

Should a rubber feet detach from the PCB, refer to the next section to remove the PCB and fit back on it the rubber spacers

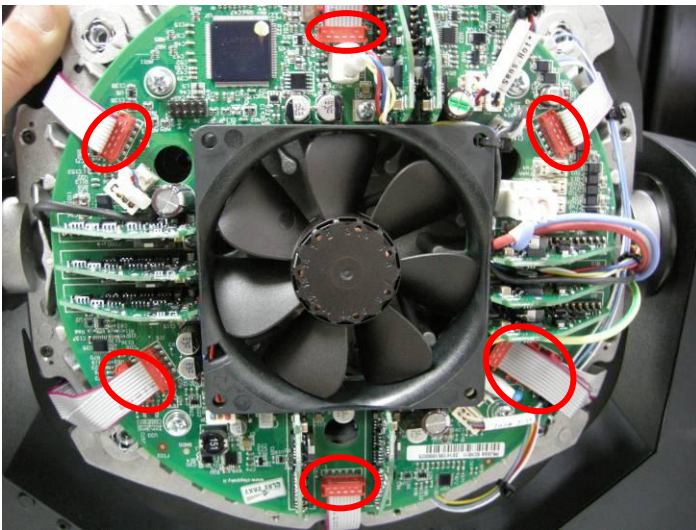
6.11. LED drivers PCB replacement

Preliminary / final Actions

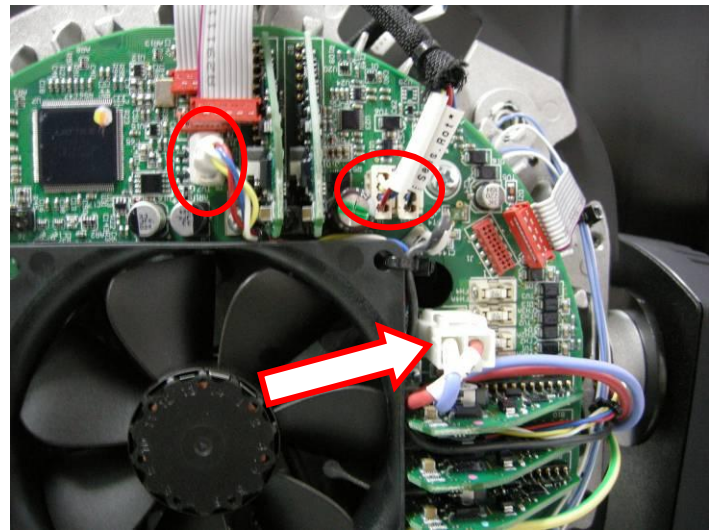
- Head covers opening and closing
- Effects functional check

Needed Parts

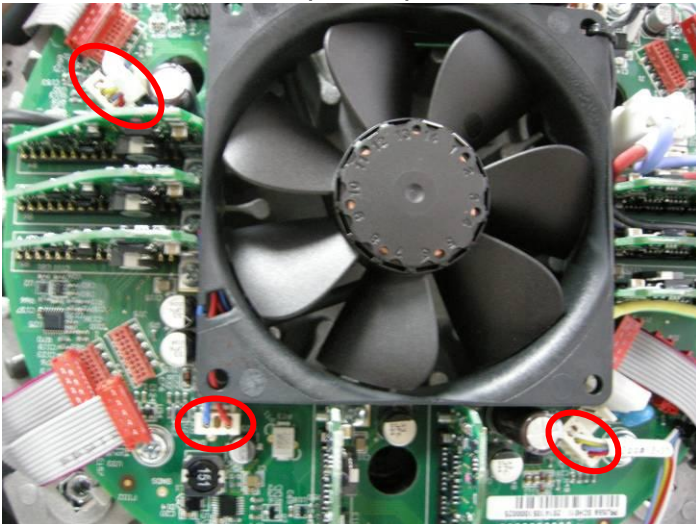
- A.leda B-EYE K10 LED DRIVERS PCB (P/N: SCH01I)



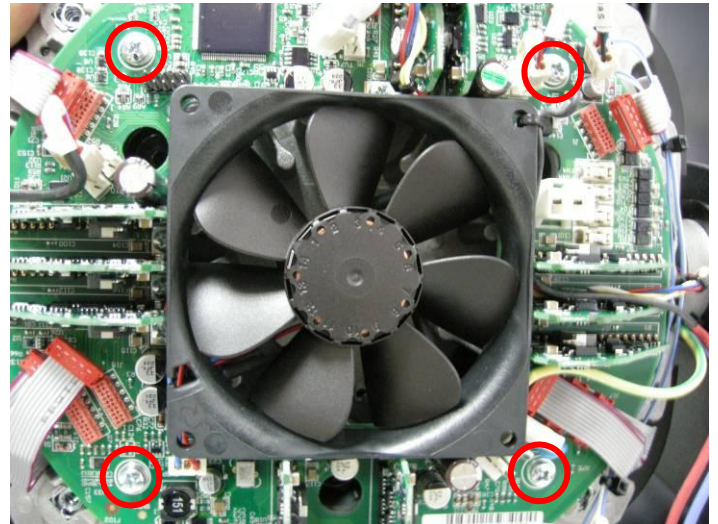
Disconnect all the flat cables pulling them gently with a pair of pliers.



Disconnect the 4 highlighted connectors, the arrowed one comes with a release lever



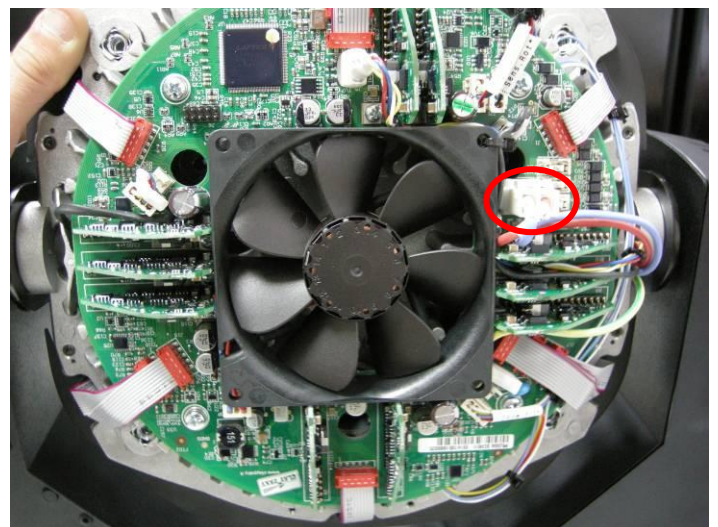
Disconnect all the other connectors



Remove the circled screws to free the PCB

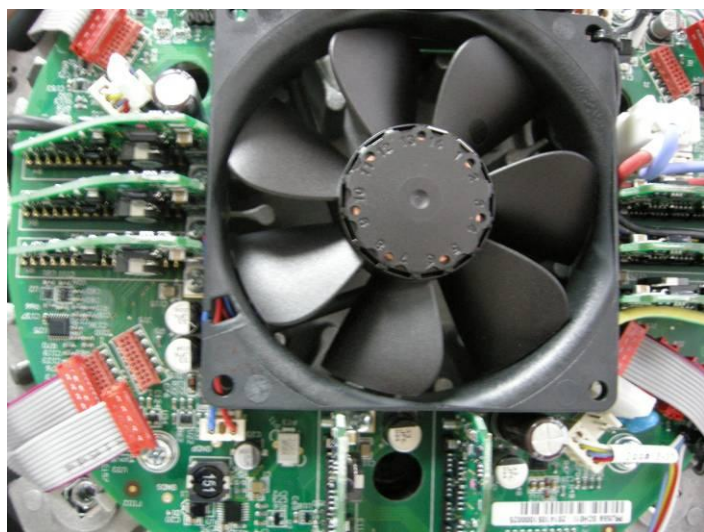


Move the fan on the new PCB, minding to orient it so that the connector faces its plug (circled)

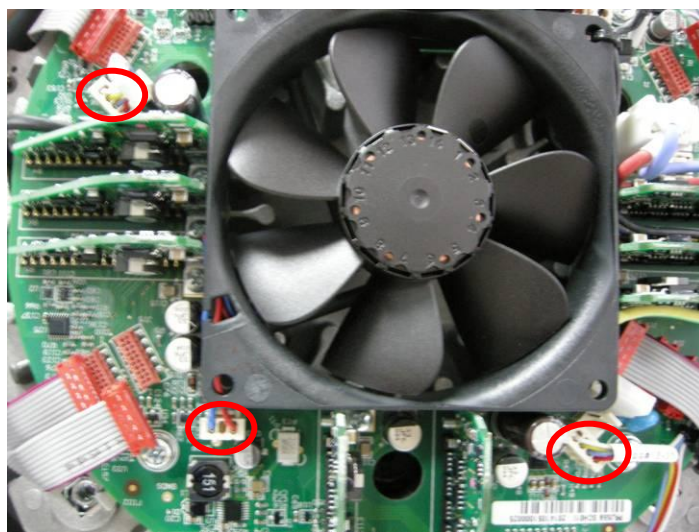


Using the circled connector as a reference put the PCB in place and fix it

A.LEDA B-EYE K10 PARTS REPLACEMENT GUIDE



Plug the red connectors in place, the lower ones if overlapping are to be mounted closer to the edge of the PCB than the top ones.



Plug the wirings into the circled connectors