



AN OSRAM BUSINESS

SCENIUS SPOT

PARTS REPLACEMENT GUIDE



SCENIUS SPOT PARTS REPLACEMENT GUIDE

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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 operation;
- Wear transparent safety glasses to prevent small parts or springs to cause eyes injury;
- Wear suitable protective gloves when handling broken glass-like parts;

2. WARNINGS

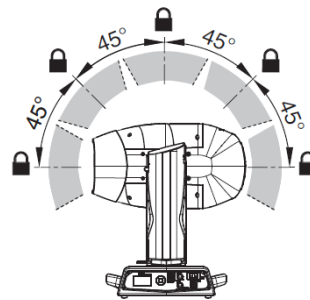
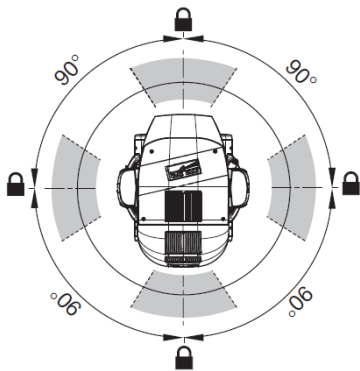
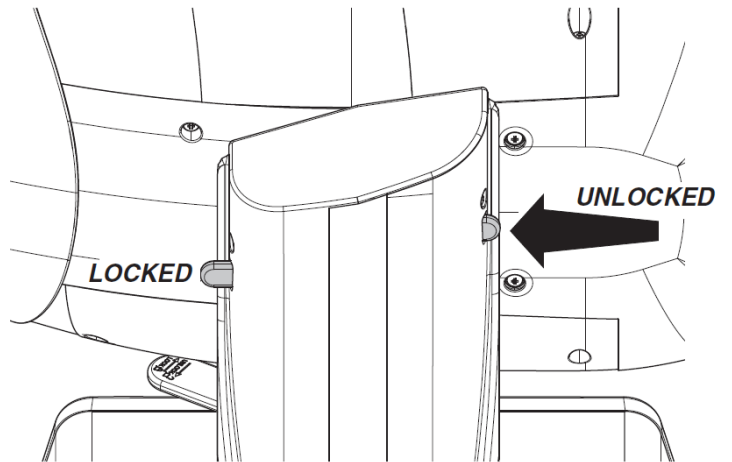
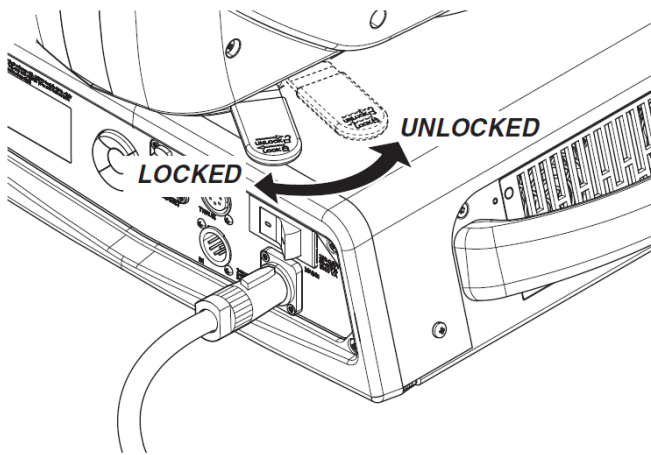
- Before performing any operation, be sure to completely read and understand all the related instructions, including the preliminary and final actions;
- Always use electrostatic bags for sensitive electronic parts;
- Watch out not to lose any parts (especially shaft spacers) during disassembling operation;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

3. NEEDED TOOLS

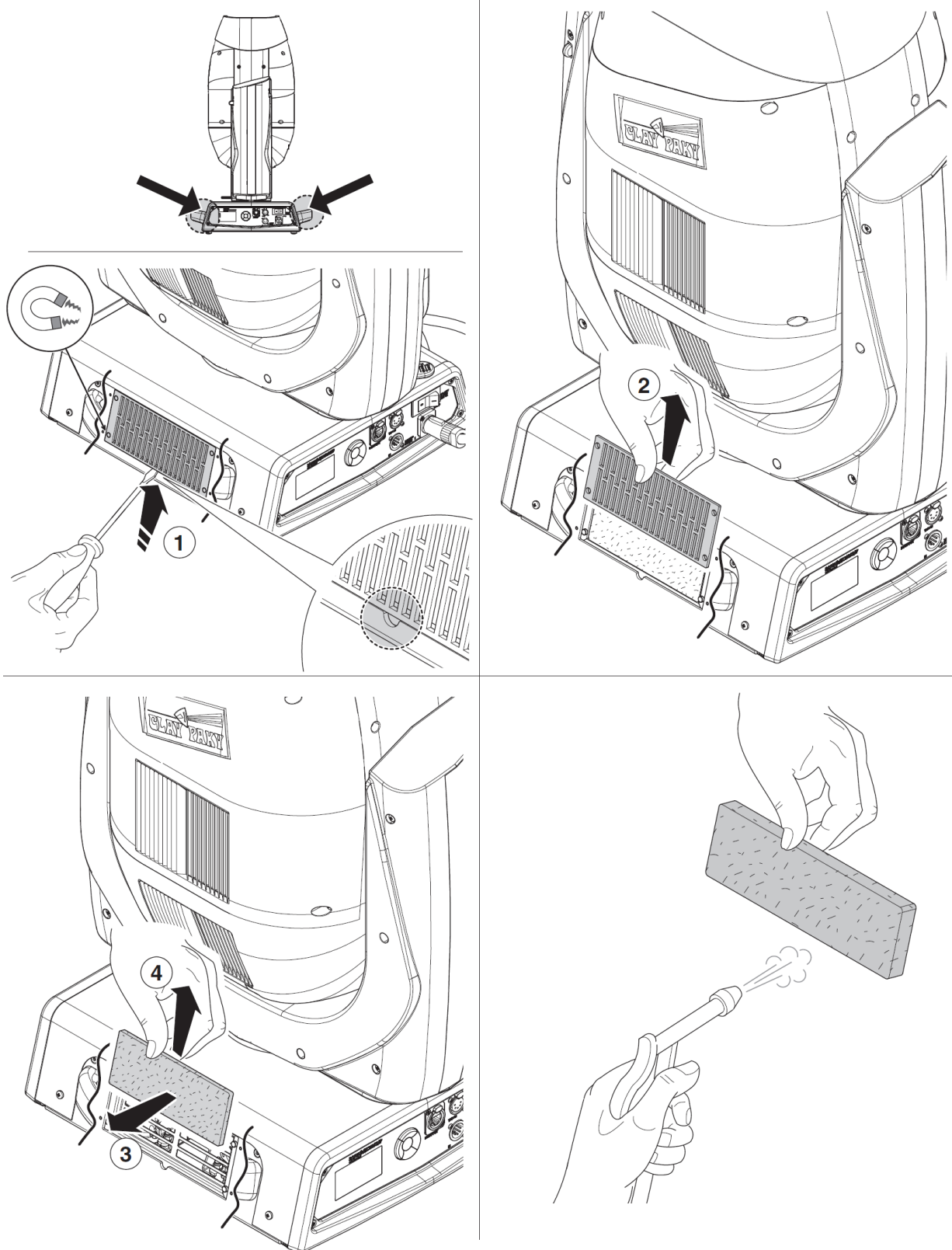
- PH2 Phillips screwdriver
- PH1 Phillips screwdriver
- PH0 Phillips screwdriver
- T20 Torx screwdriver
- T10 Torx screwdriver
- Thin flat screwdriver
- 5.5mm nut spinner
- 7mm nut spinner
- 1.5mm T-shaped Allen key
- 2mm T-shaped Allen key
- 2.5mm T-shaped Allen key
- 3mm T-shaped Allen key
- 4mm T-shaped Allen key
- 1 L-shaped Allen key set
- 1 L-shaped Torx key set
- 5.5mm nut driver
- 7mm nut driver
- Electrician scissors
- Crooked nose pliers
- Nippers

4. PRELIMINARY OPERATIONS AND GENERAL MAINTENANCE

4.1. Pan - tilt locking and releasing

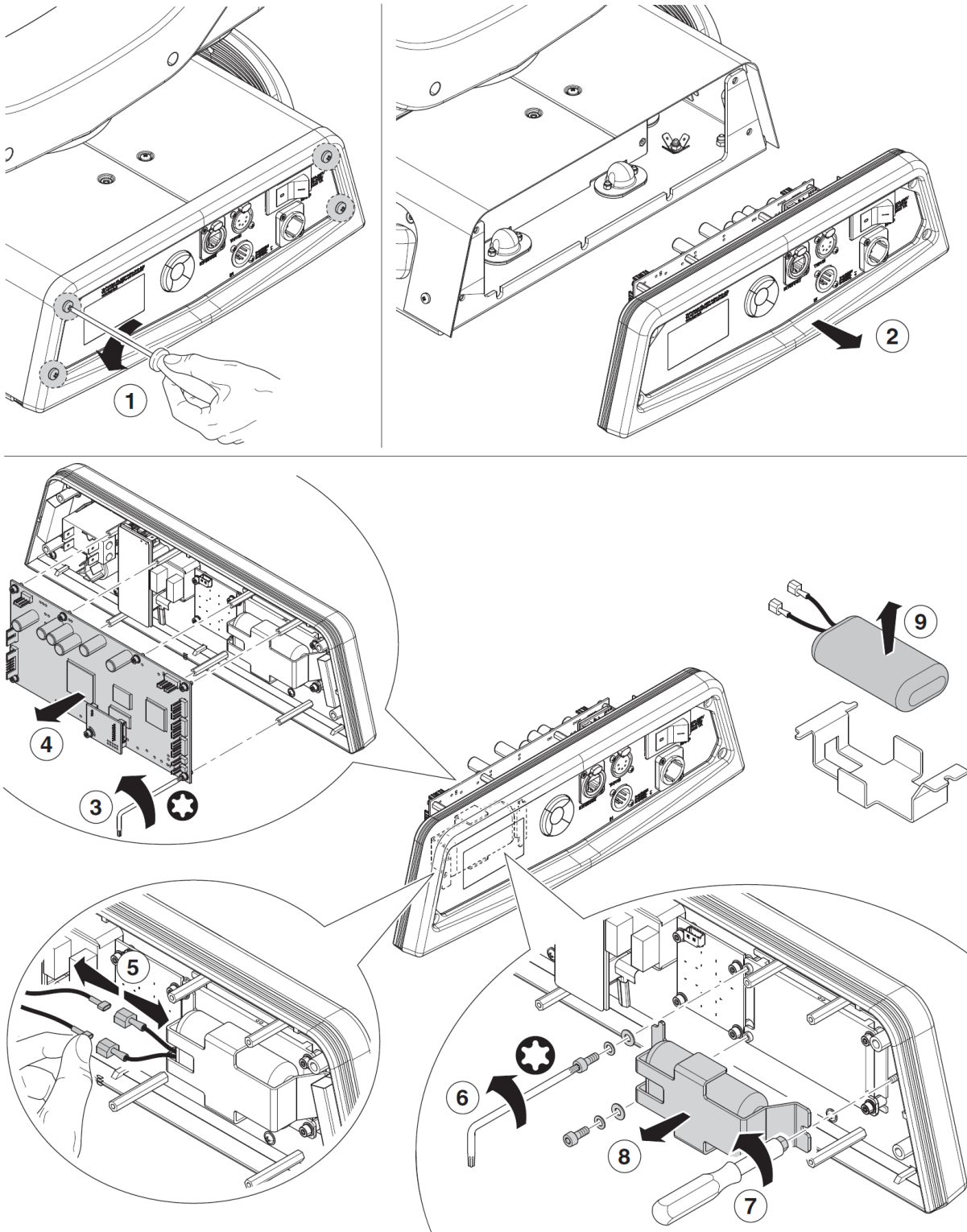


4.2. Dust filters cleaning / replacement

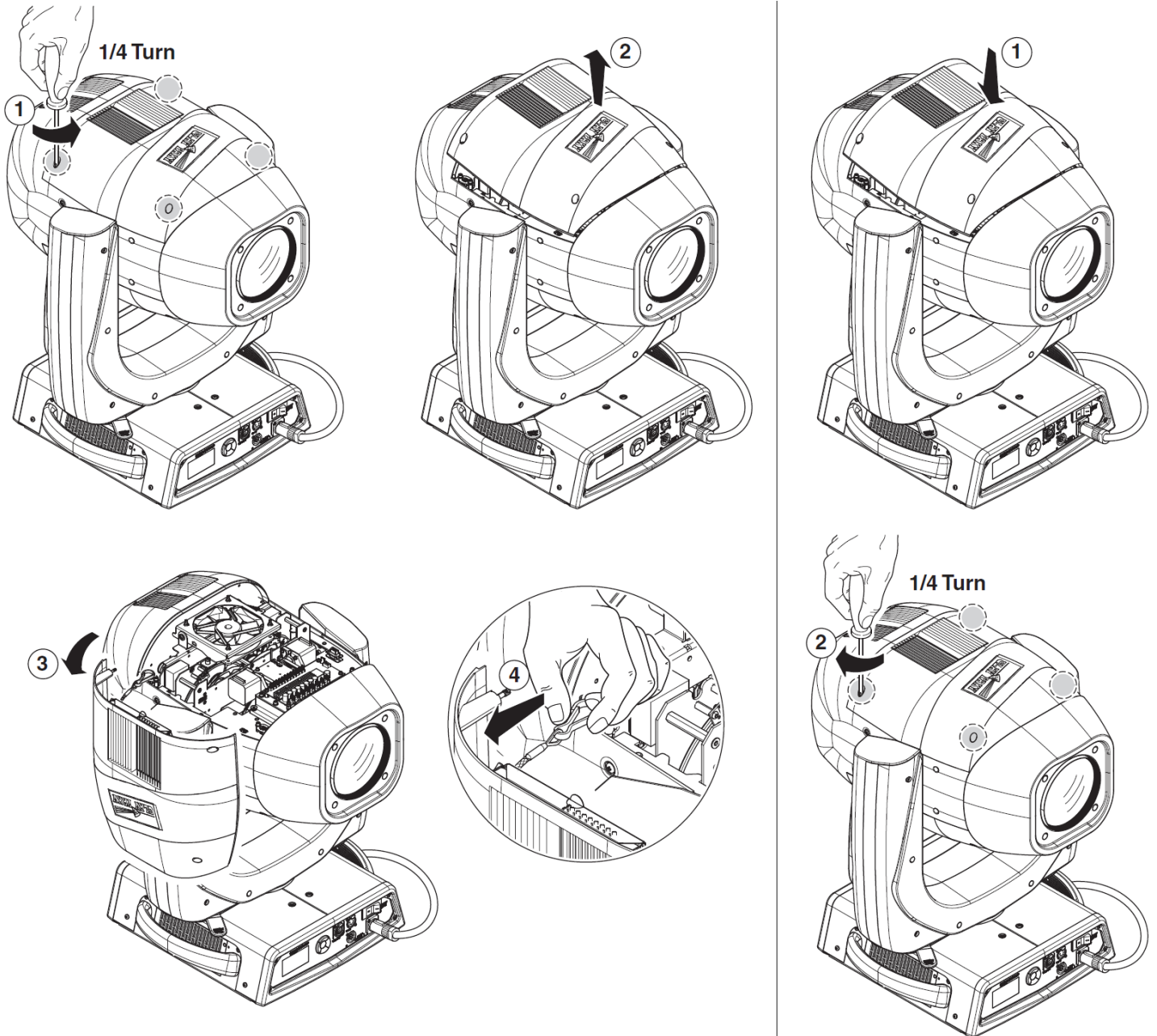


4.3. Battery removal

At the end of the fixture / battery life proceed as following illustrated. If removing the battery, dispose of it according to the applying regulations!



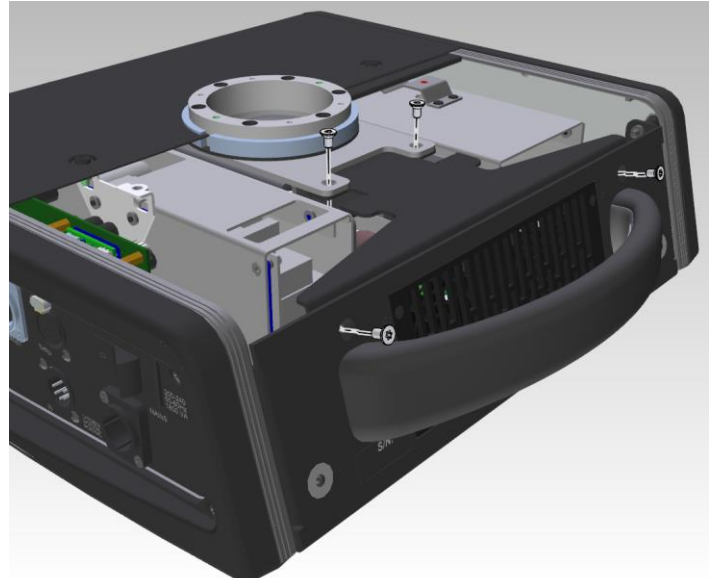
4.4. Head covers opening and closing



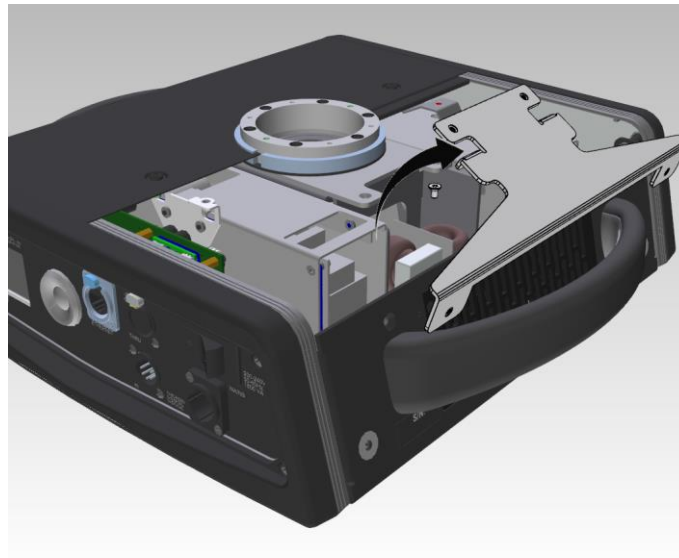
4.5. Covers opening / Base protections removal



Locate and, using a PH1 screwdriver, loosen the 4 fixing screws to free the carter



Locate the other 4 screws and remove them as well, if needed.



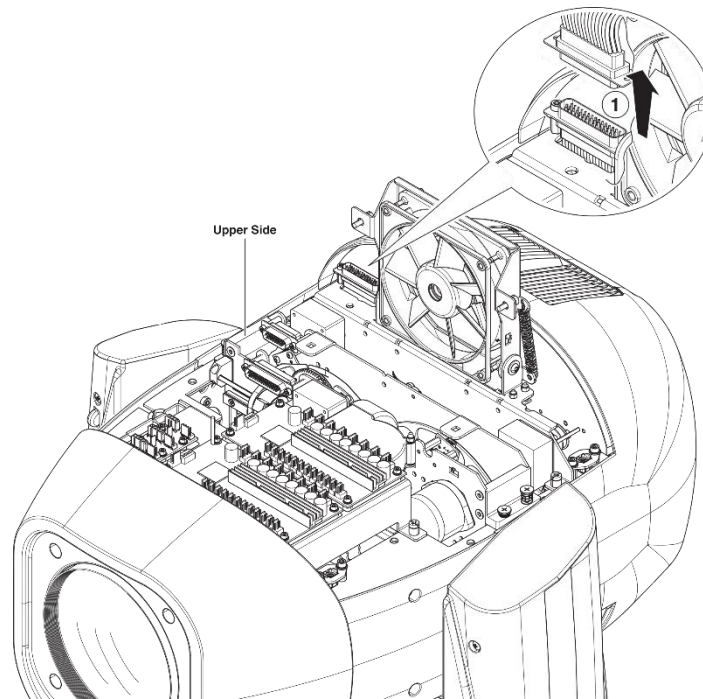
Remove the internal protection and store it in a safe place

If needed, perform the same operation on the opposite side of the base.

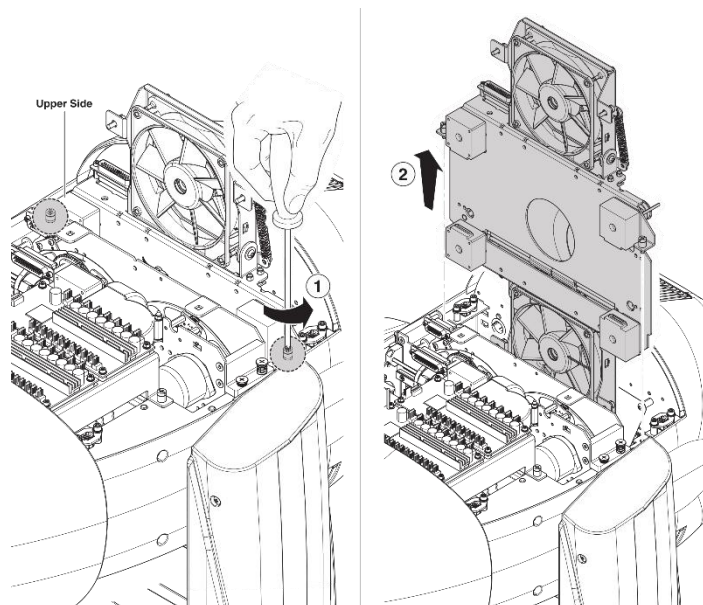
4.6. CMY module removal

Preliminary / final Actions

- Head covers removal;
- Lamp - effects functional check.



Remove the marked connector pulling it gently

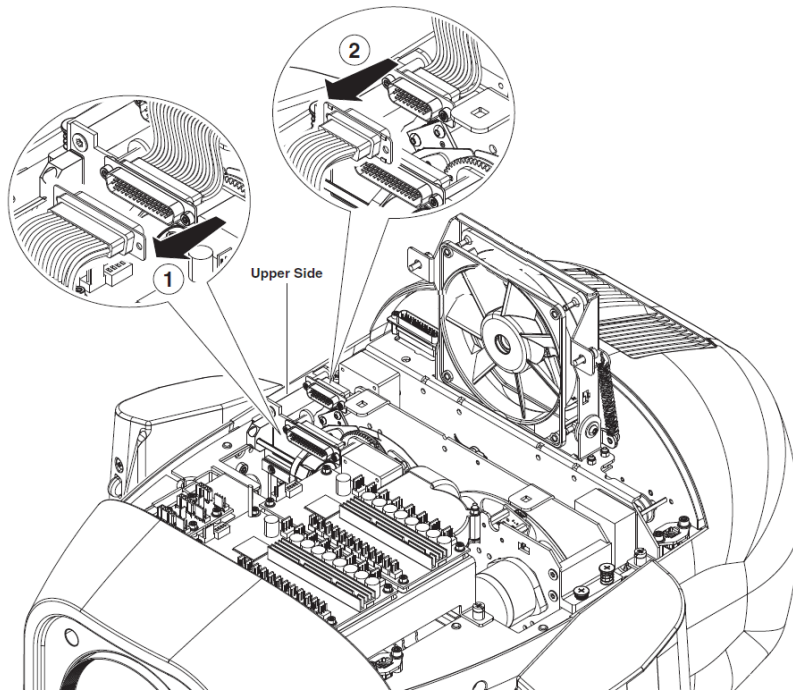


Loosen the marked screws, then remove the module ensuring both fans are in the open position

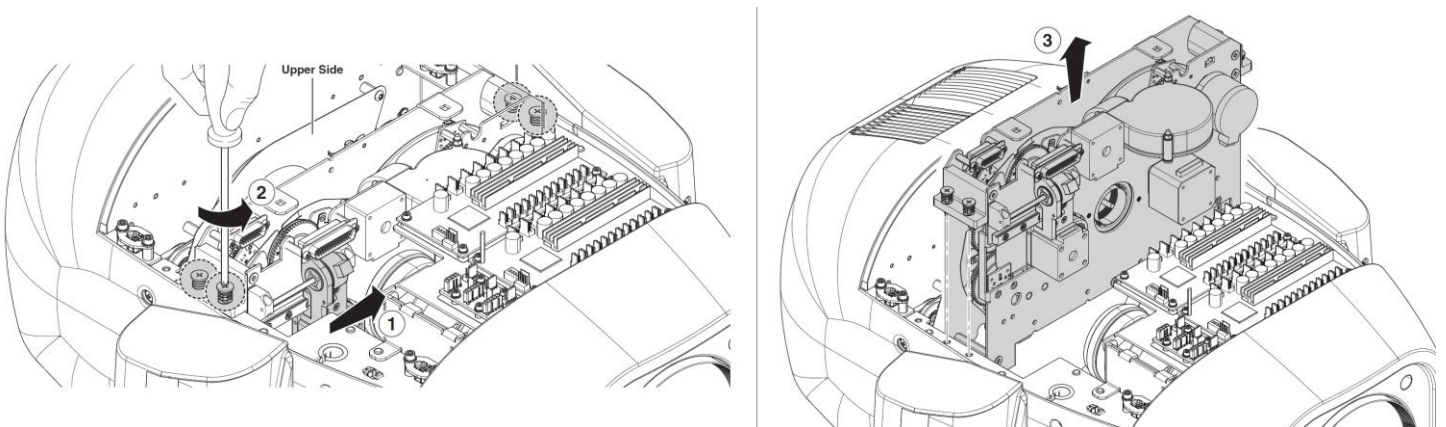
4.7. Effects module removal

Preliminary / final Actions

- Head covers removal;
- Lamp - effects functional check.

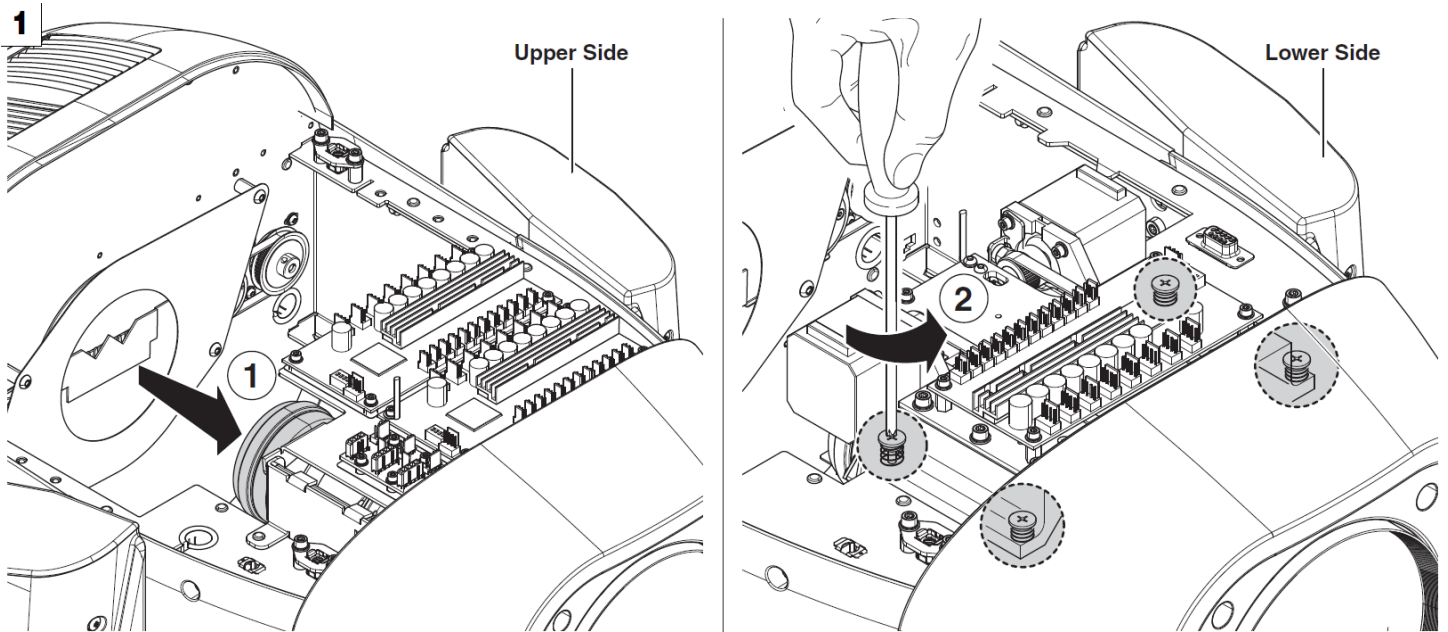


Remove the marked connector pulling them gently

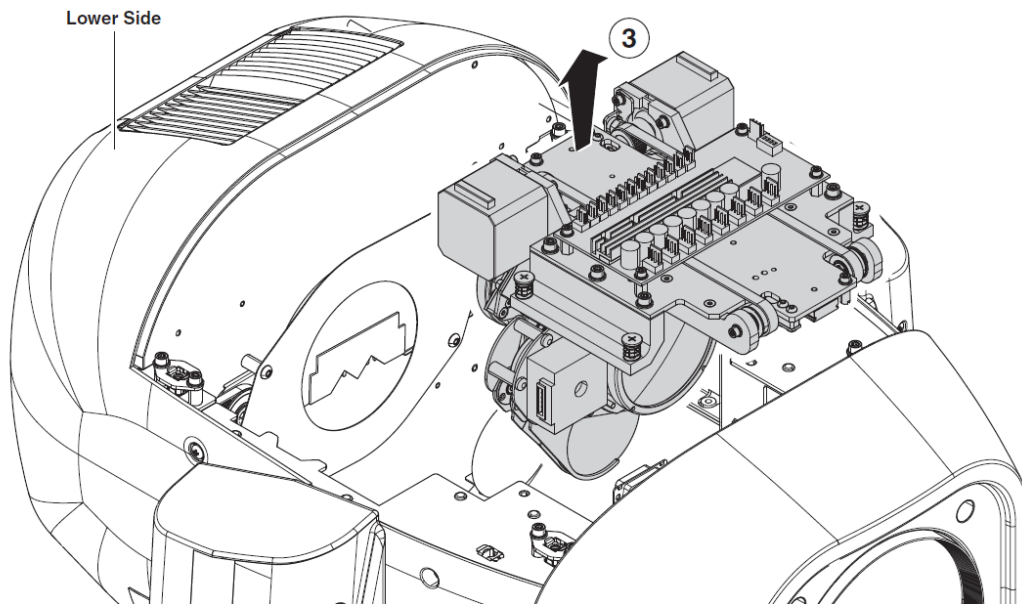


Remove the circled screws to extract the effects module

4.8. Optics removal

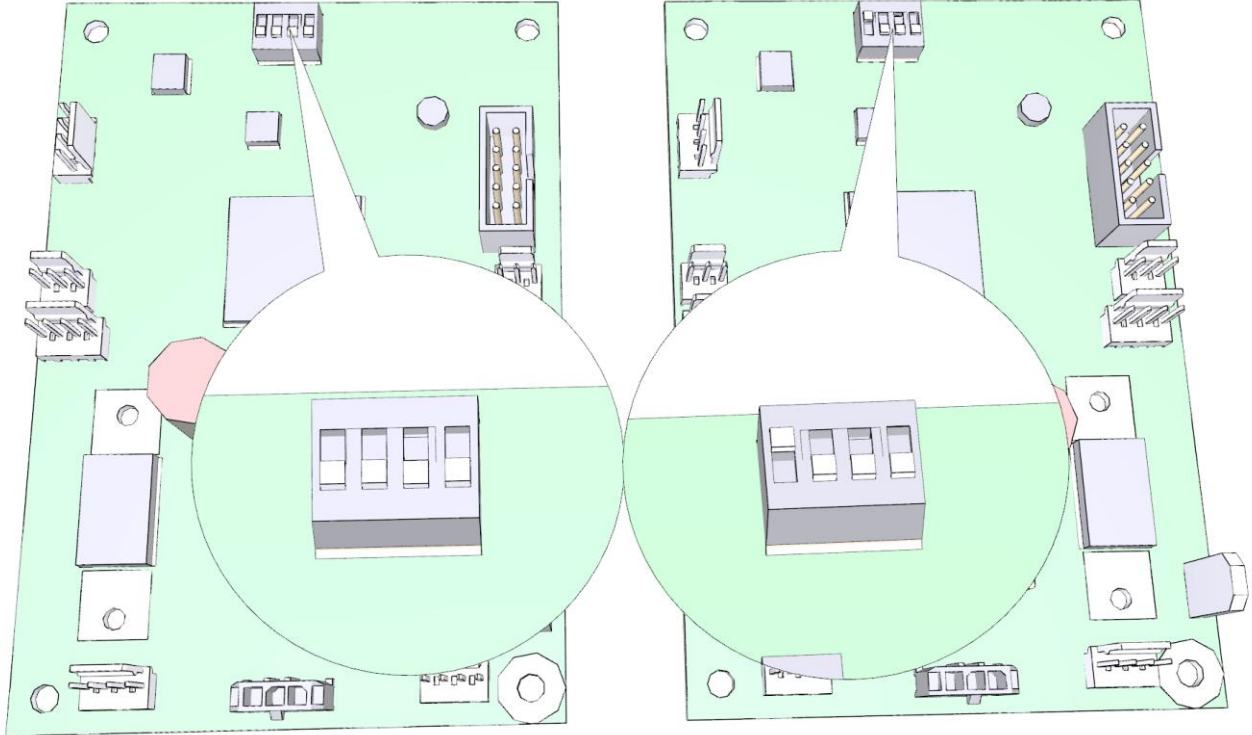


Push the focus lens to the inside, then loosen the 4 highlighted screws.



Extract the optics module from the unit body.

4.9. Pan - tilt effects disabling



This dip switch settings are the correct ones for normal use

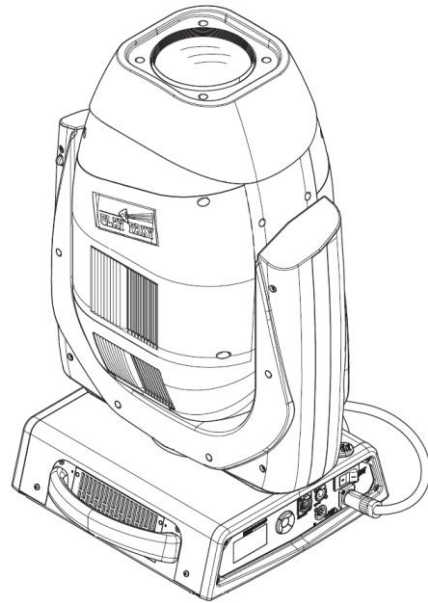
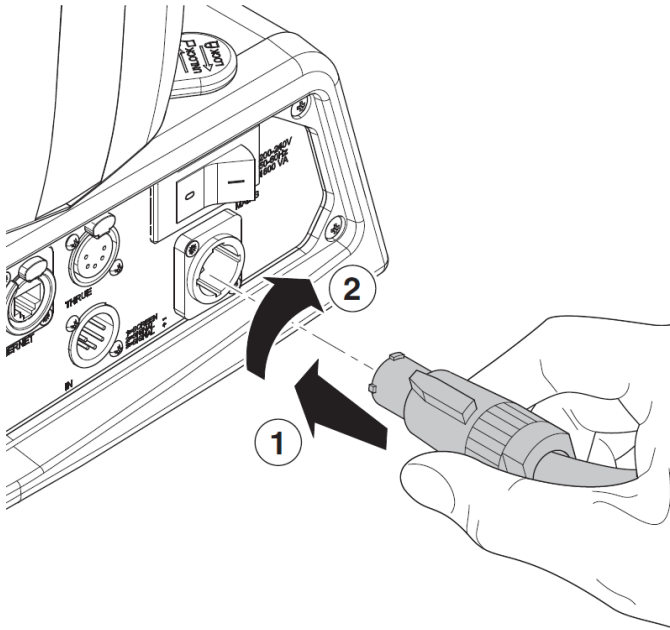
This dip switch settings will disable the pan / tilt drivers, leaving the head free to move



When head movement is not needed, ensure both pan / tilt locks are engaged to prevent unwanted head movement.

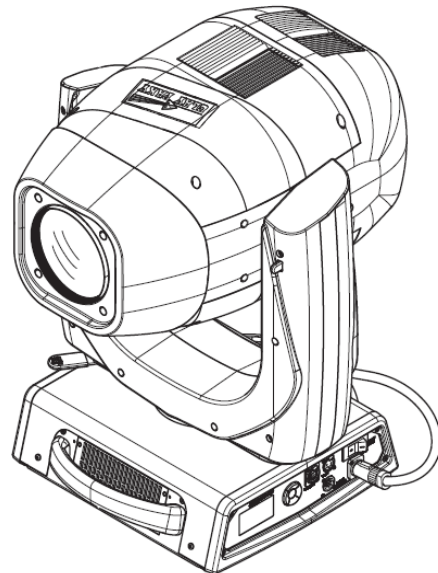
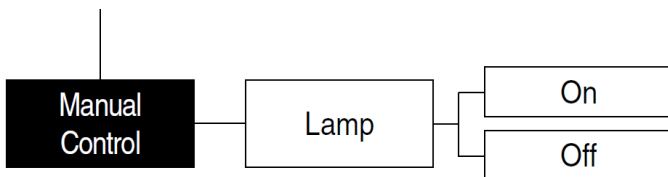
Sticking a piece of tape to the unit's shoulder will help you remind to reactivate the pan / tilt functions.

4.10. Lamp - effects functional check



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

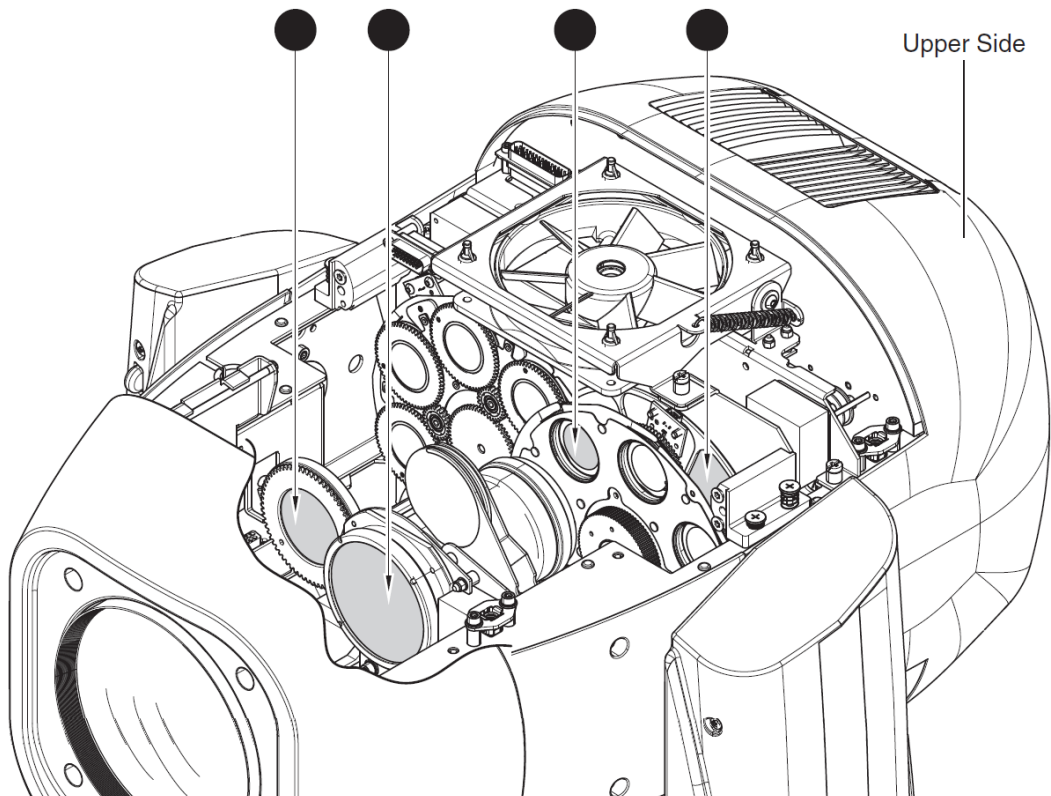
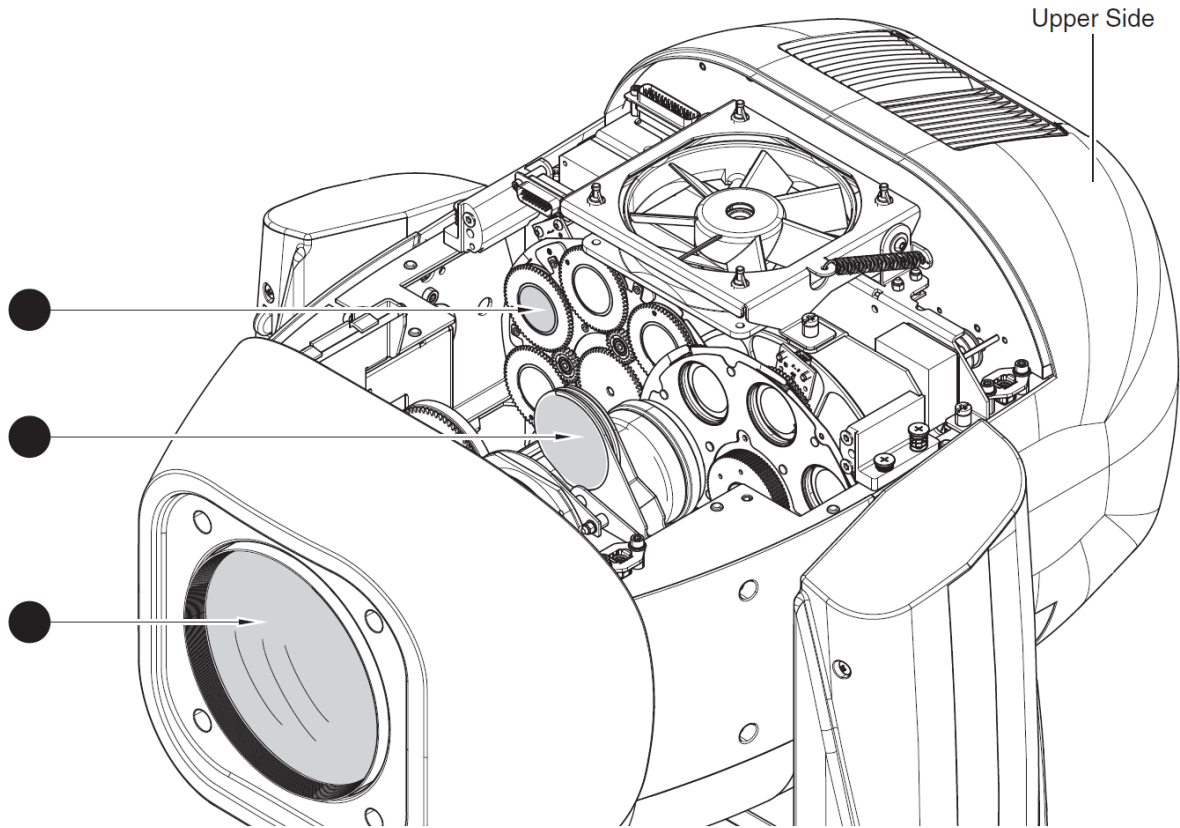
After the unit moves to home position, connect a DMX 512 console to it and point the head to a test wall



Using the control panel or DMX desk (ch 32), strike the lamp and set the unit to open white

Check for stable and continuous light output and effects movement

4.11. Optical parts cleaning



5. BASE / YOKE PARTS REPLACEMENT

5.1. Power supply replacement

Preliminary / final Actions

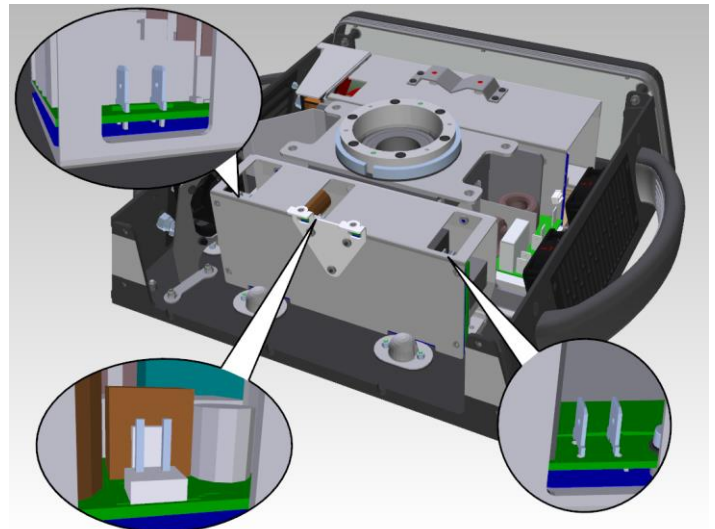
- Base covers removal;
- Lamp - effects functional check.

Needed Parts

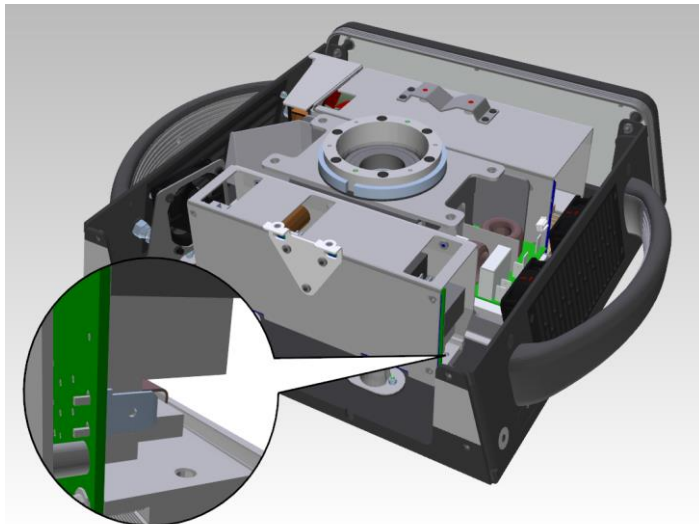
- Electronic power supply assembly (P/N: **283220/801**);
- Thermal pad for Scenius power supply (P/N: **264102/001**).



Open the front panel removing the 4 circled screws with a PH2 screwdriver, then remove the carters as well.



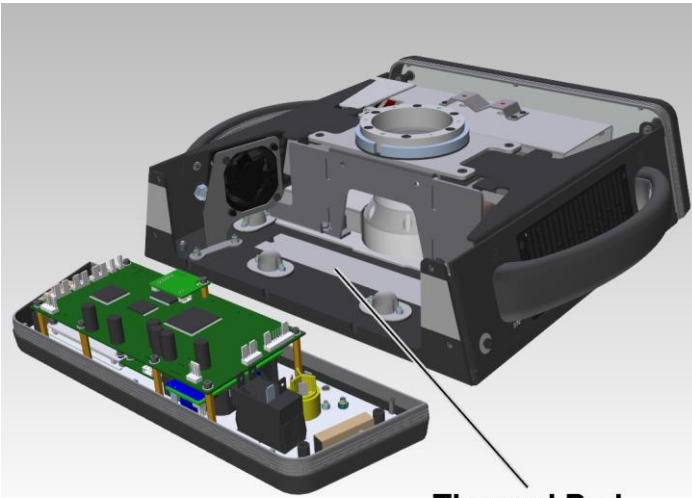
Detach the spade connectors, then press the lever of the middle connector to set in free.



Lastly, locate and remove the ground spade connector on the right, bottom side

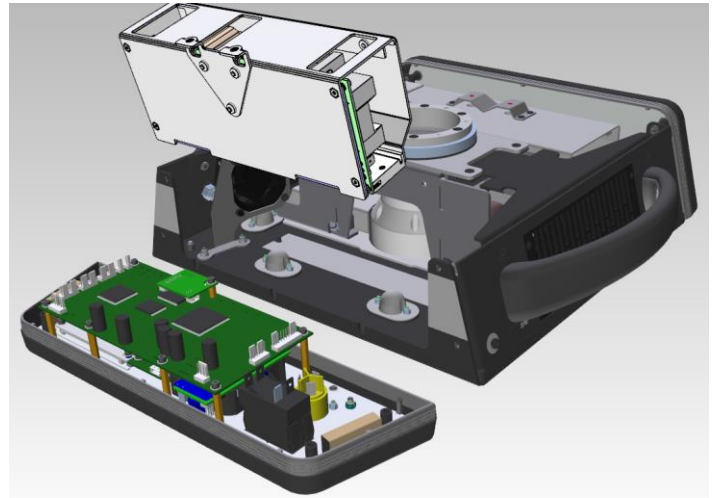


Locate and remove the 3 screws one the base backside

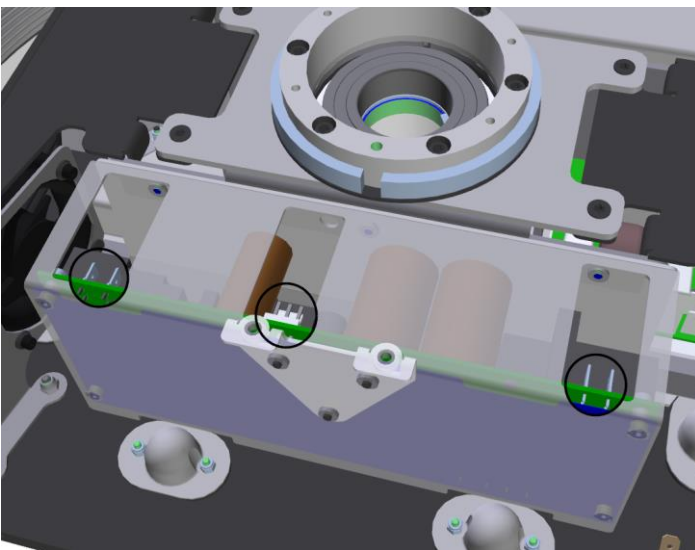


Thermal Pad

Ensure the thermal pad is still in good conditions, in case replace it as well



Extract the old SMPS and put the new one in place, plugging the ground first



Plug the remaining connectors respecting their polarity, and then check the unit for proper functioning.

5.2. Lamp driver replacement

Preliminary / final Actions

- Base covers removal;
- Lamp - effects functional check.

Needed Parts

- Lamp power supply assembly (P/N: **283321/801**);
- Thermal pad for lamp power supply (P/N: **264101/001**).



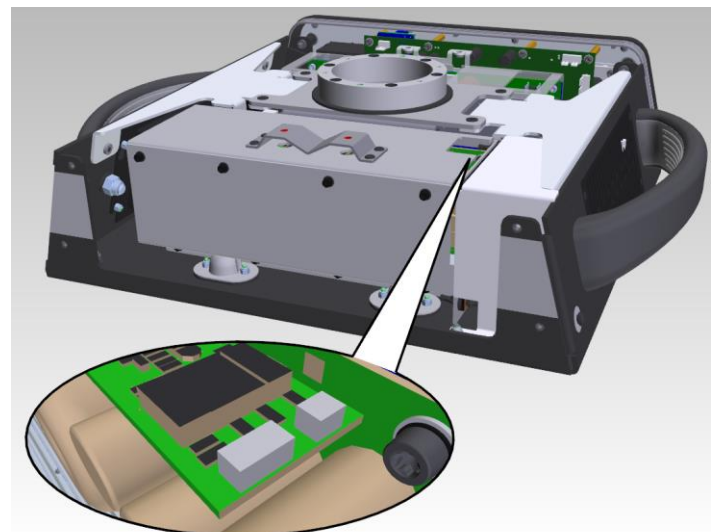
Rest the fixture as shown in the picture



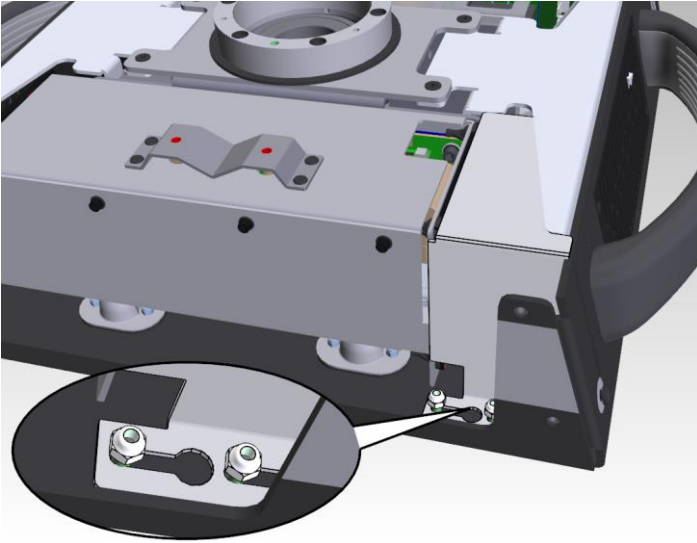
Using a T20 screwdriver, remove the 3 highlighted screws, then put back the unit on its feet.



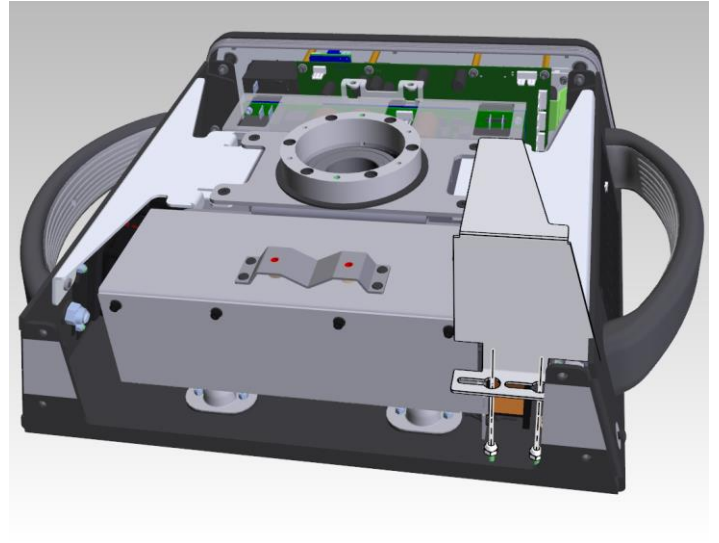
Remove the back carter to clearly see the ballast



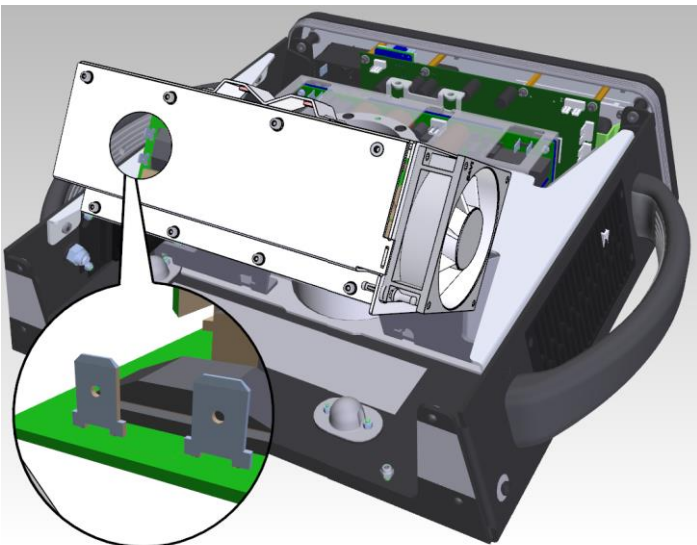
Gently push the release lever to free the control cable



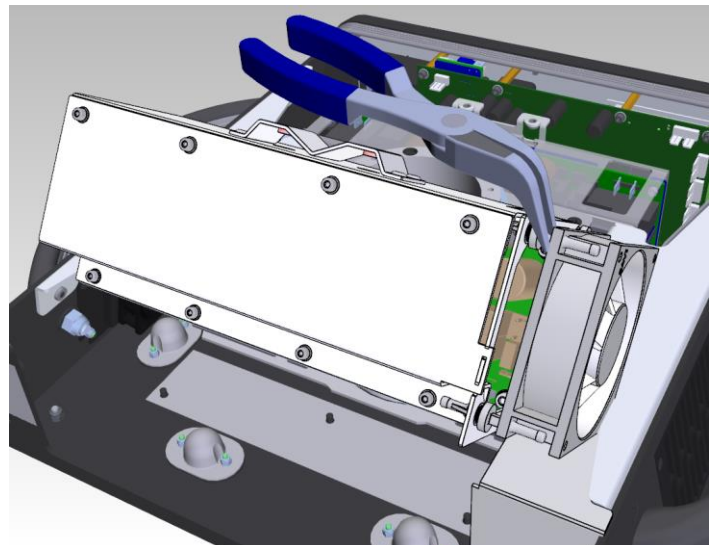
Loosen the two nuts keeping in place the air duct



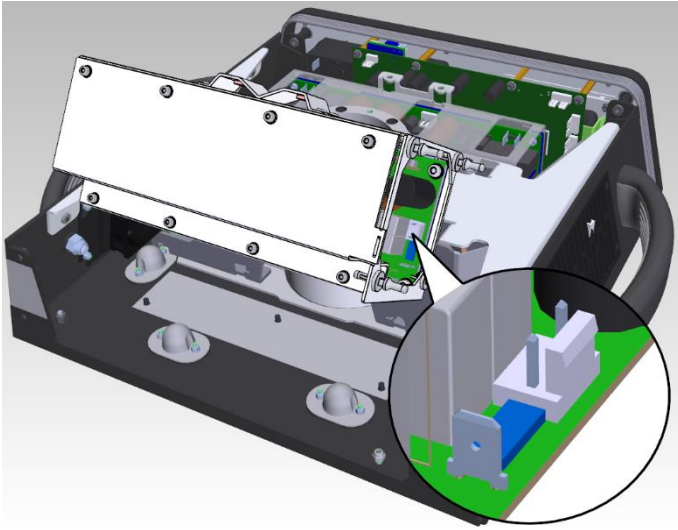
Slide the air duct towards the inside, then lift it to remove it.



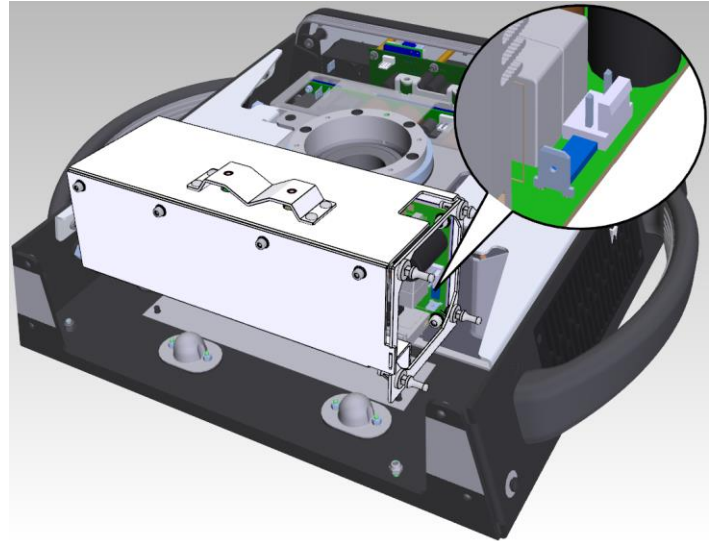
Partially lift the lamp power supply, release the fan connector and then the spade connectors on the left side.



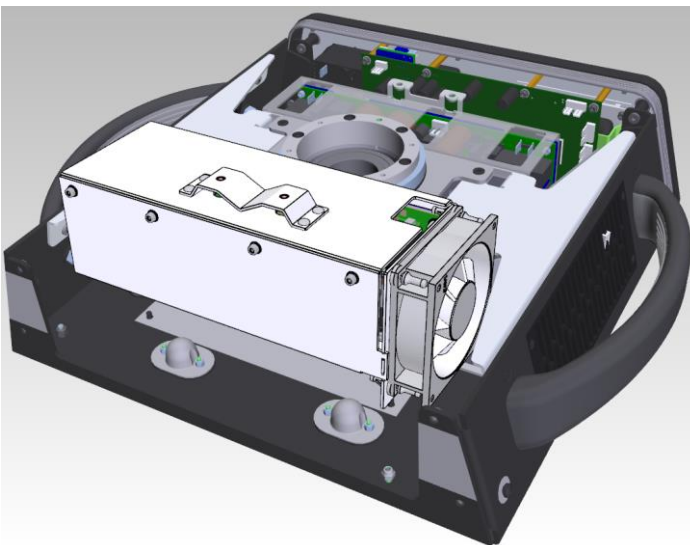
Slightly pull the fan to elongate the shock absorbers, keep them in position using a pair of pliers and remove the fan only



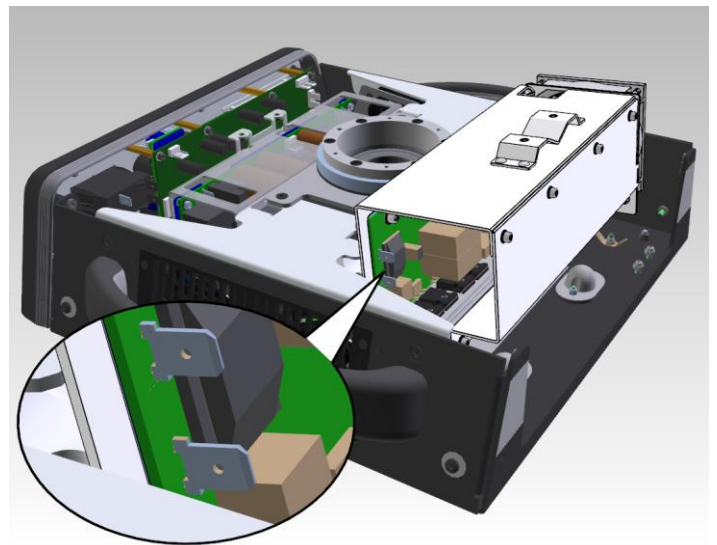
Disconnect the ground first, than the DC input releasing the lever on the connector.



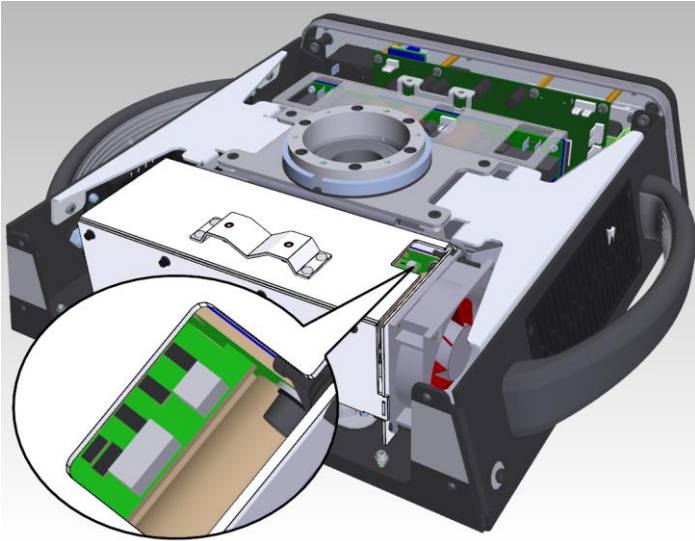
Reconnect the ground, then plug in the connector. Do not pass the wires where the fan will be located!



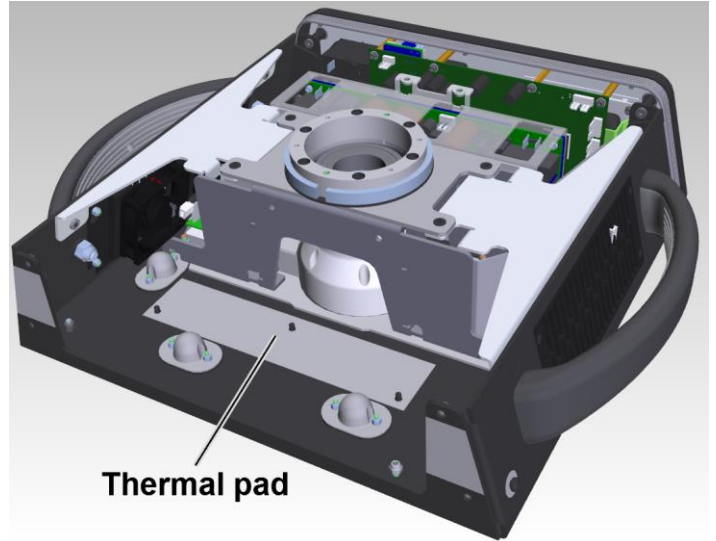
Pass the tip of the shock absorbers through the fan's holes, then slide them keeping the base in position.



Plug in the spade connectors, ensuring the connectors didn't get loose. If so, tighten them using a plier.

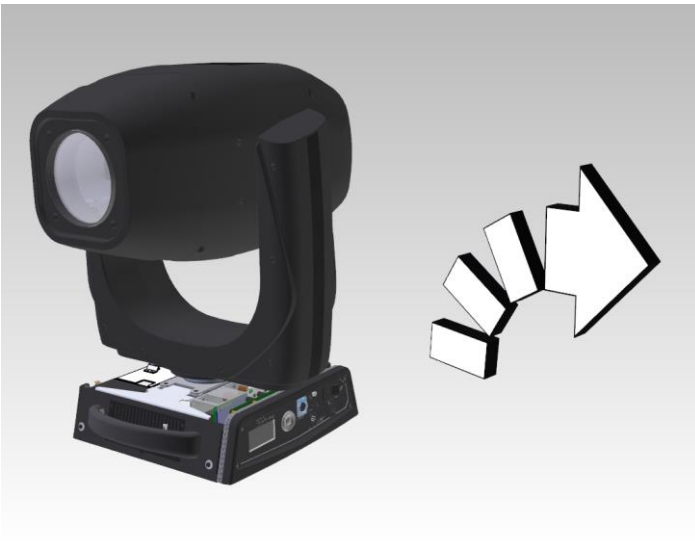


Plug in the lamp control wire, too, then restore the fan air duct as well.



Thermal pad

Ensure the thermal pad is correctly in place. Should it move, fix it using a tiny drop of joint compound.



Turn the unit on a side, then put back the fixing screws.



Put the carters back in place, then check for proper working.

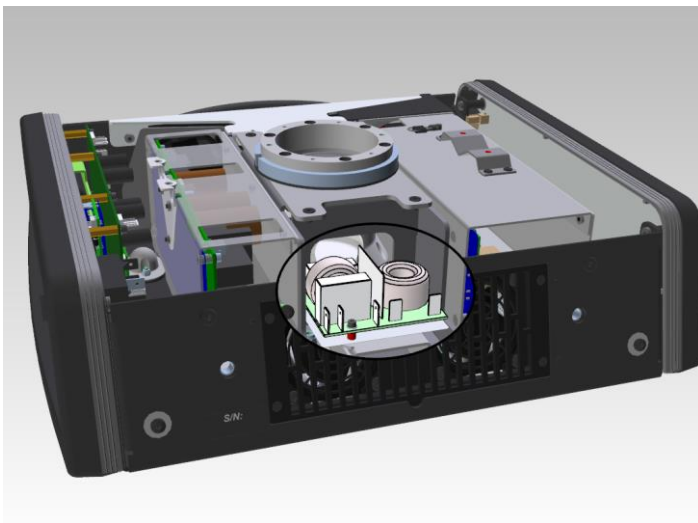
5.3. EMI filter replacement

Preliminary / final Actions

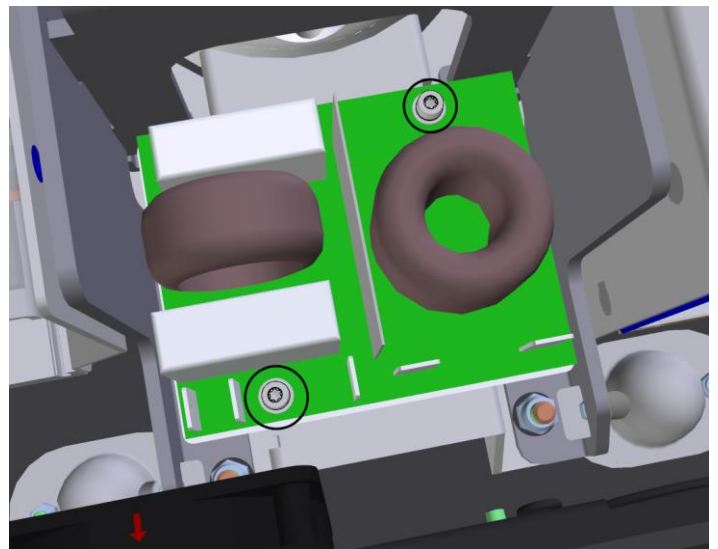
- Base covers removal;
- Right side base protections removal
- Lamp - effects functional check.

Needed Parts

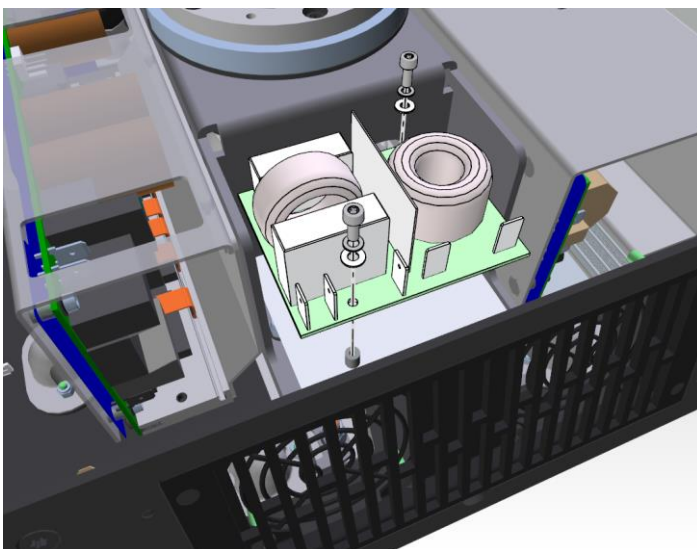
- 13A EMI Filter (P/N: **031877**).



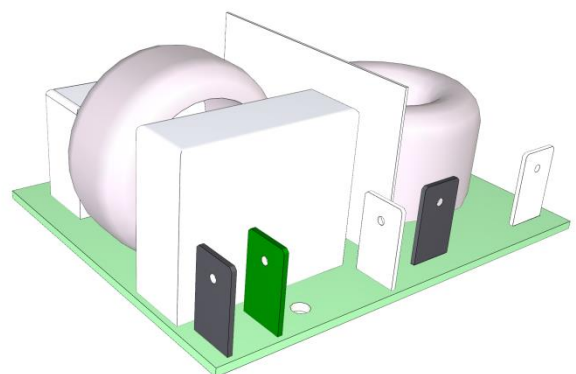
Locate the EMI filter and, with a pair of pliers, remove the connected wirings, noting down the existing connections sequence



Remove the screws fixing the EMI filter assembly with a T10 key and extract it from the unit



Put in place the new EMI filter (spades facing the outside) and restore the fixing screws, ensuring the mylar protection is still in place



Replug the wirings according to this order: BLACK, GREEN, WHITE, BLACK, WHITE.

5.4. CPU replacement

Preliminary / final Actions

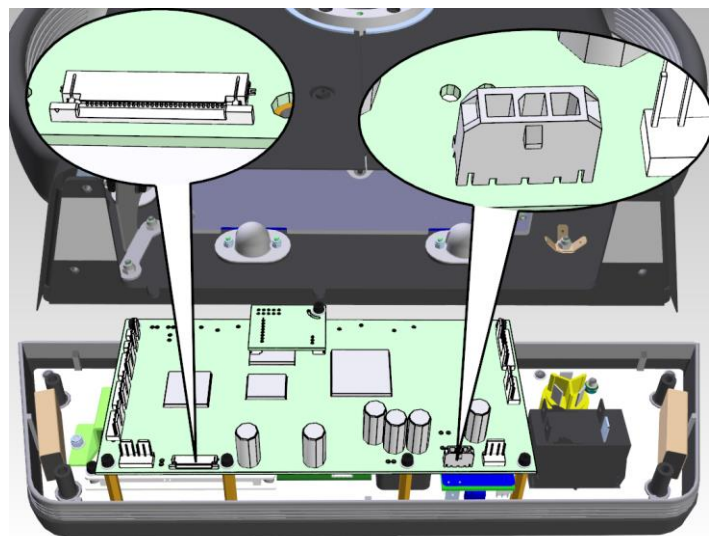
- Base covers removal;
- Lamp - effects functional check.

Needed Parts

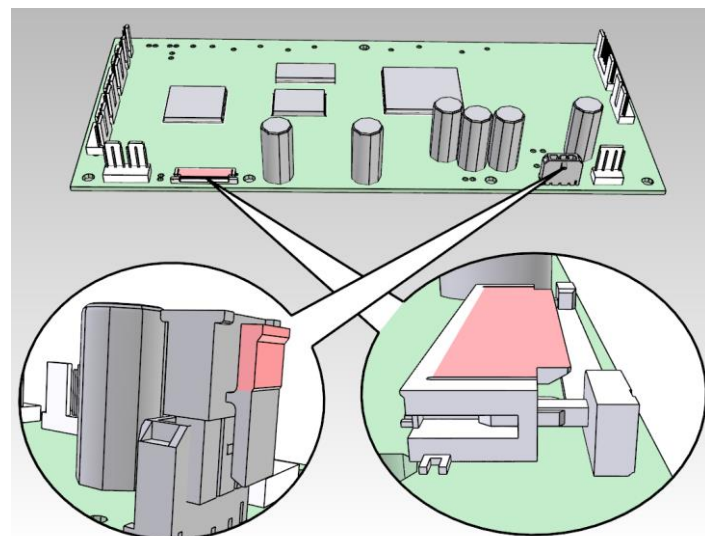
- CPU Electronic Board (P/N: **699188**).



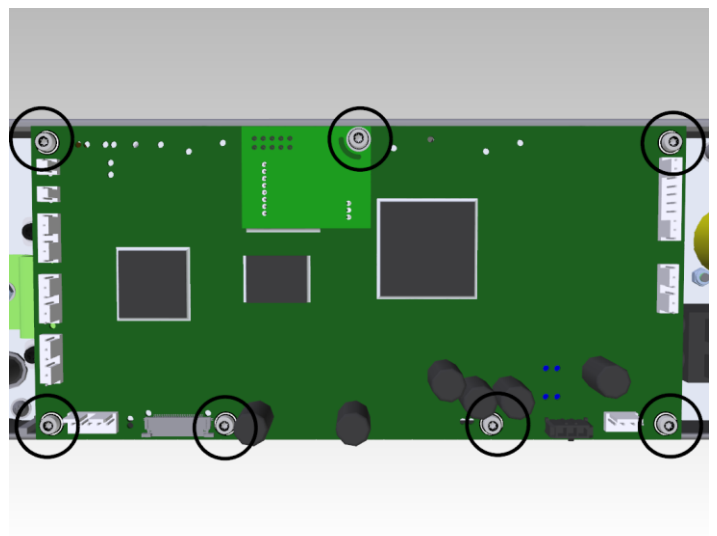
To expose the CPU, remove the circled screws on the front panel using a PH2 screwdriver.



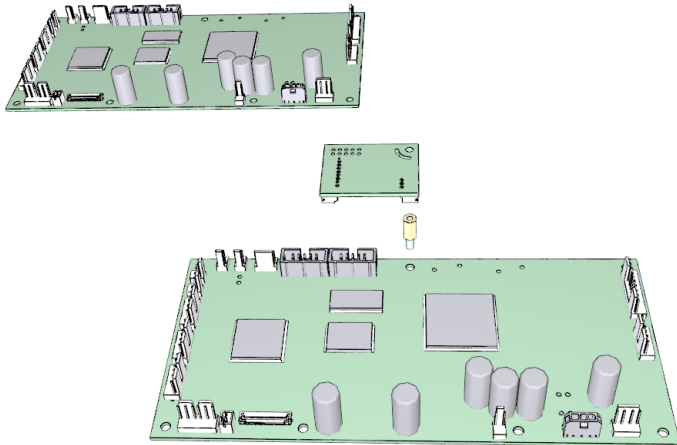
Remove all connectors **except for the circled ones**.



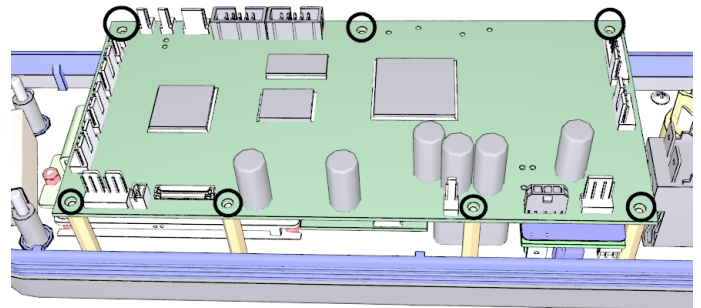
Free the other connectors; actuating the relevant release levers (marked in red).



Using the 2.5mm hex key and 5.5mm nut driver remove the circled screw and spacer, then extract the 2 PCBs.



Mount the smaller PCB in the **RS232** socket and fix it with the last screw. Replug the PCB if the screw and spacer do not match!



Mount the CPU fixing the 6 screws and the spacer, then plug the connectors according to the stamps on the connectors).

Advanced opt.

Access code 1234

Replug the other connectors as per the image, CPU might turn on. Access the **ADVANCED** menu from the unit interface

Model Setup

Please define a model

Supersharpy

Mythos

Scenius Spot

Choose "Setup Model", then select "Scenius Spot"

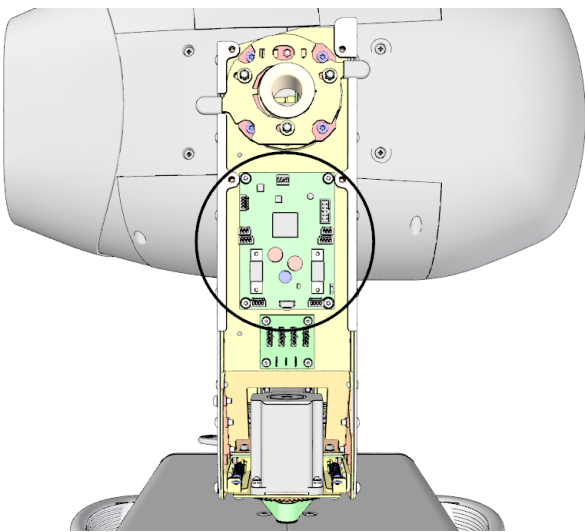
5.5. Pan - tilt PCB replacement

Preliminary / final Actions

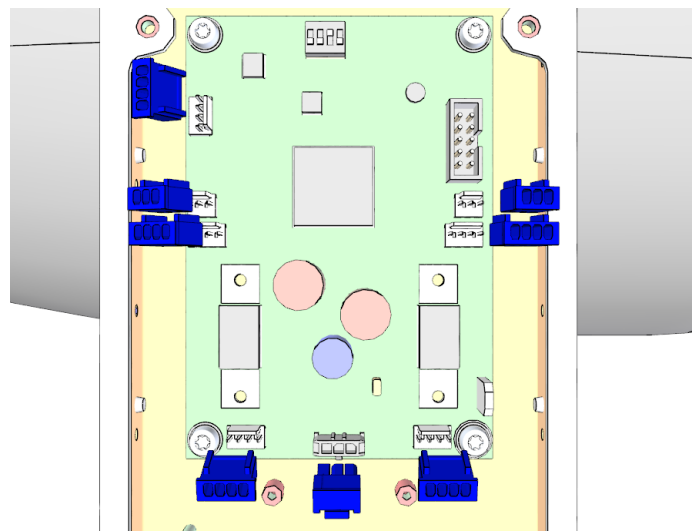
- Base covers removal;
- Lamp - effects functional check.

Needed Parts

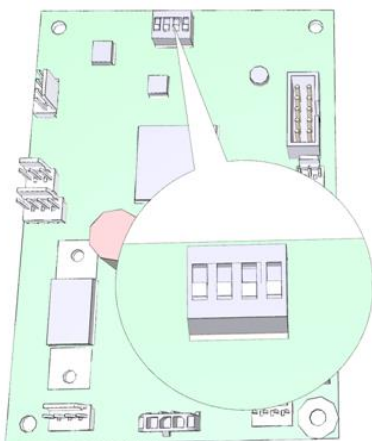
- Pan -Tilt electronic board (P/N: 699175).



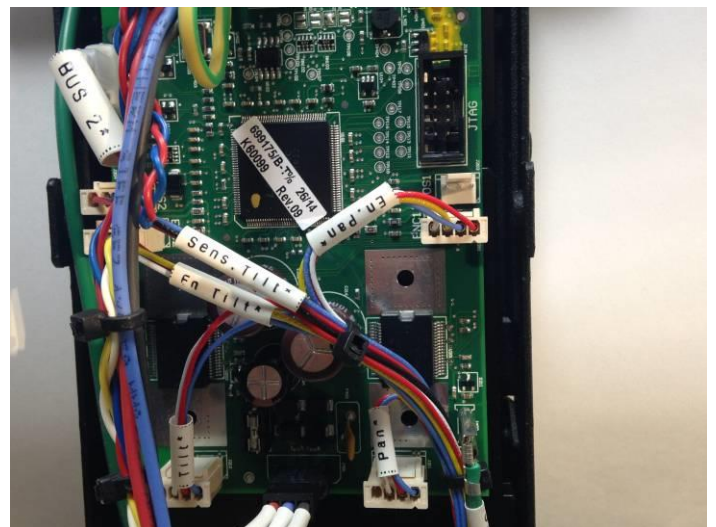
Remove both yoke covers and locate the pan tilt board next to the tilt lock assembly



Remove all the connectors plugged in the PCB, starting from "BUS2" and proceeding CCW



Replace the PCB and ensure the DIP switches are all HIGH (direction of the arrow)



Reconnect the wirings according to the photo, using the stamps on the wirings as a reference.

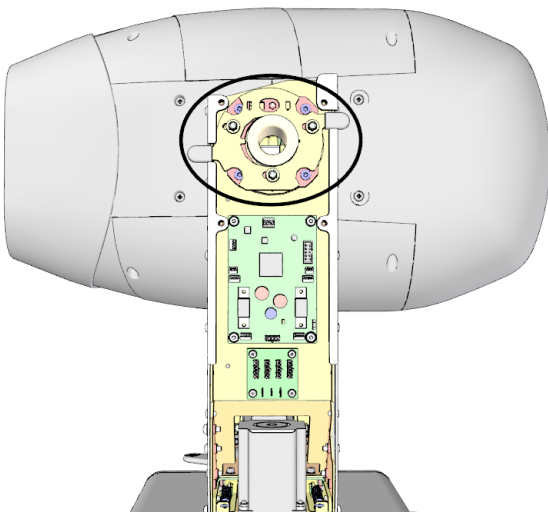
5.6. Tilt lock assembly replacement

Preliminary / final Actions

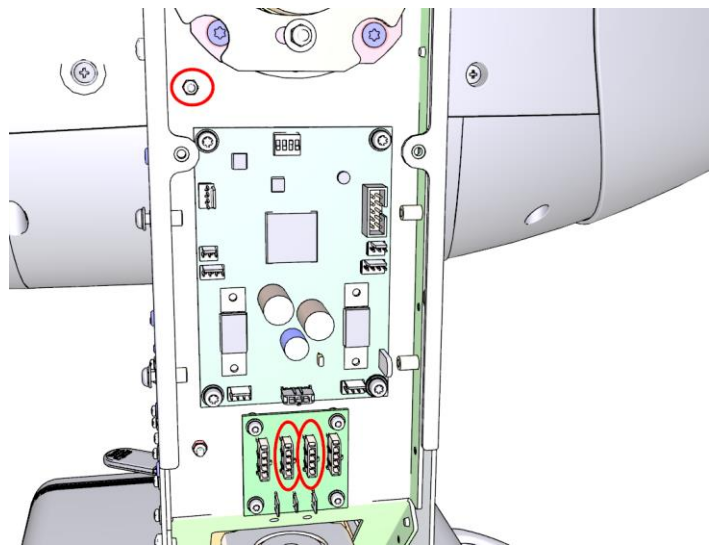
- Head covers removal;
- Base covers removal (display side only);
- Lamp - effects functional check.

Needed Parts

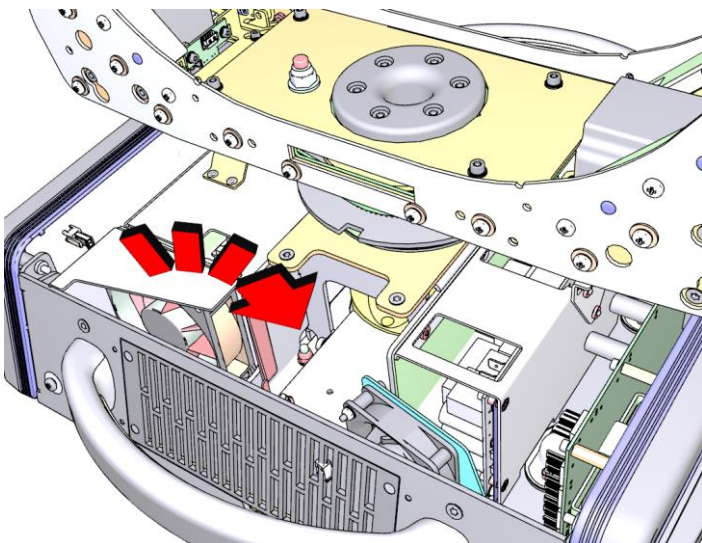
- Tilt lock assembly (P/N: 283210/801).



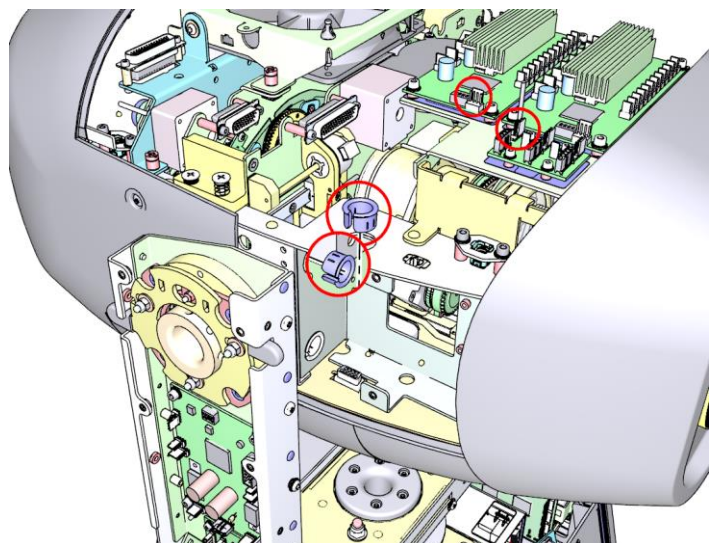
Remove both the yoke covers and locate the tilt lock



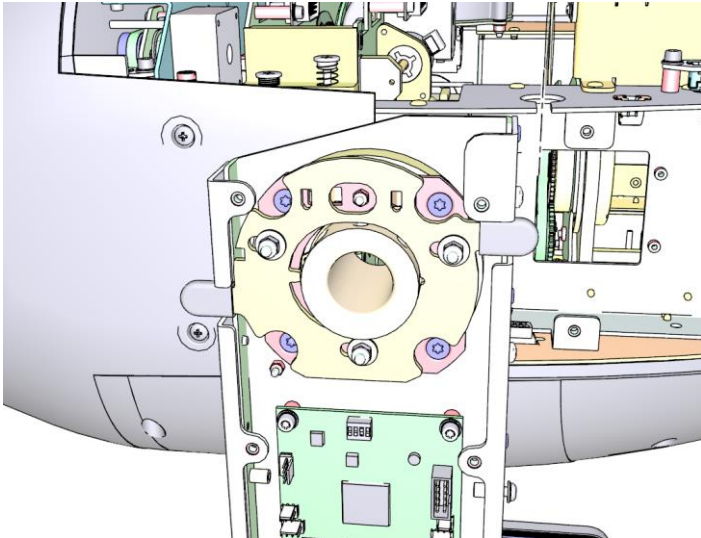
Remove the circled connectors from the power distribution board (lower marks), then free the 5.5mm nut to free the ground. Cut any cable ties keeping such wires bound to other ones.



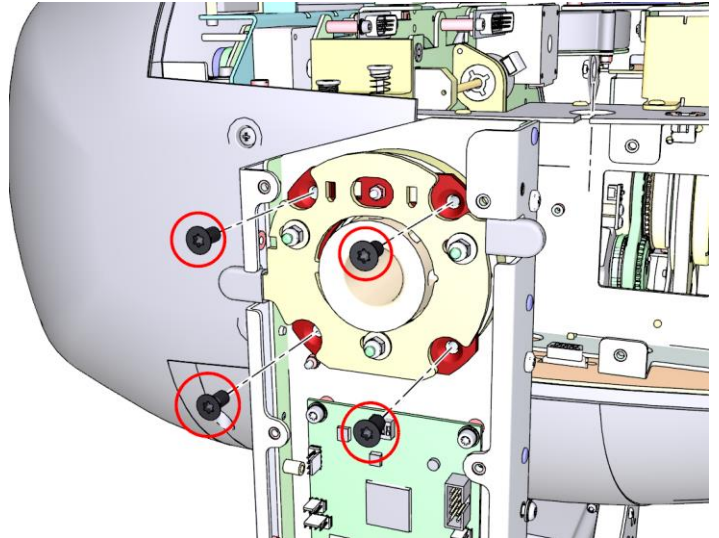
Locate the black Molex connector located where the arrow is pointing and open it, so that the thicker black wires can slide through both hubs



Disconnect the two circled connectors, then slide them through the tilt bearing. Sliding out the circled cable guides will ease the process.



Ensure all the wirings passing through the tilt lock are now free, sliding through it the ones that are still hanging from it.



Remove the 4 circled screws to release the tilt lock assembly, then restore the wirings as needed.

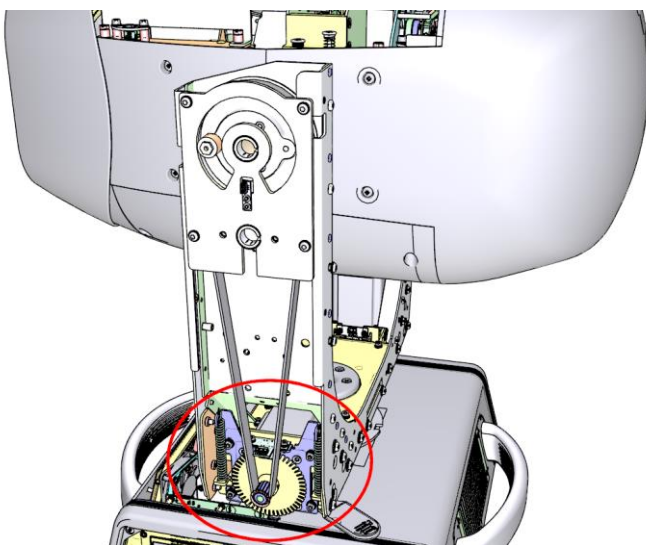
5.7. Tilt motor replacement

Preliminary / final Actions

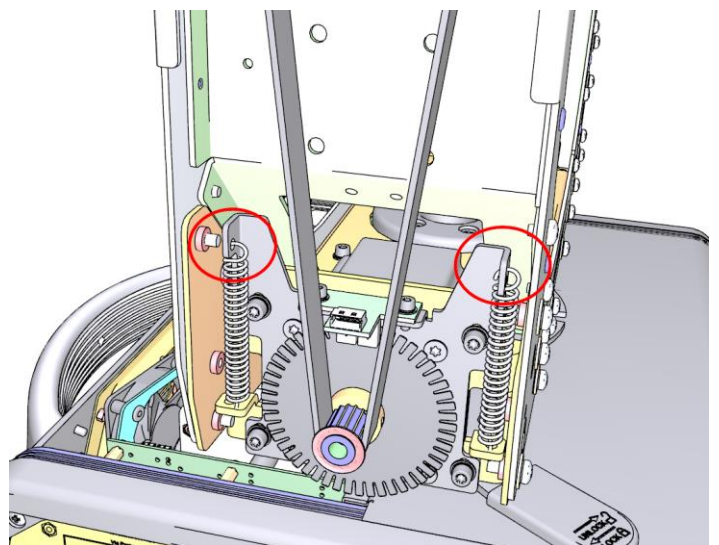
- Head covers removal;
- Lamp - effects functional check.

Needed Parts

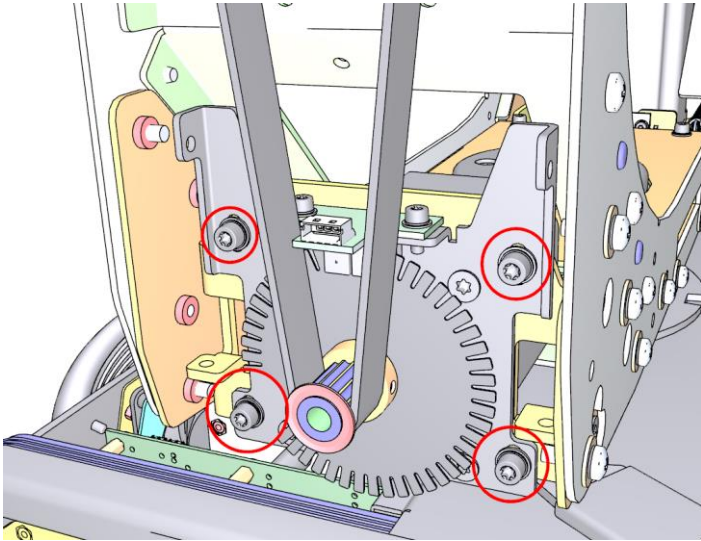
- Single shaft motor, 3-phase (P/N: **MOP001**).



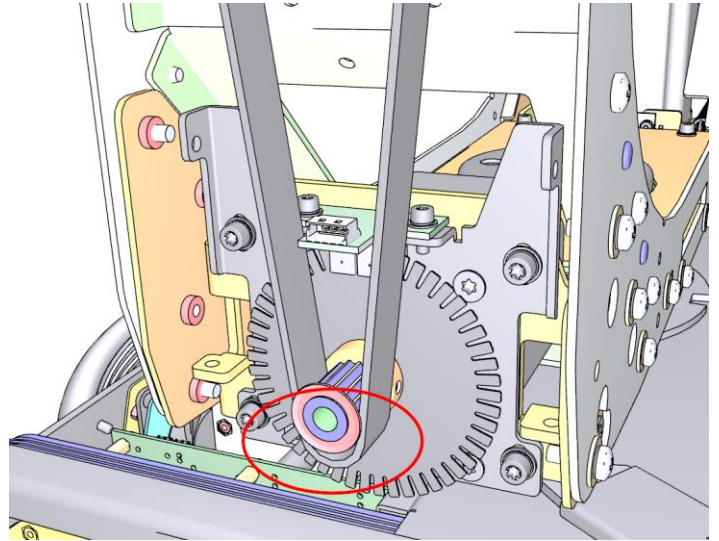
Remove both yoke covers and locate the tilt motor and belt.



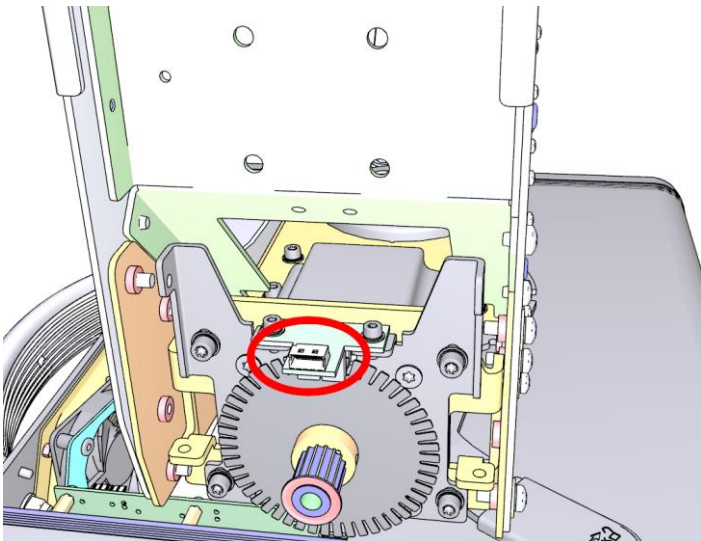
Using a hook, grab the springs and remove both of them. Protect your eyes!



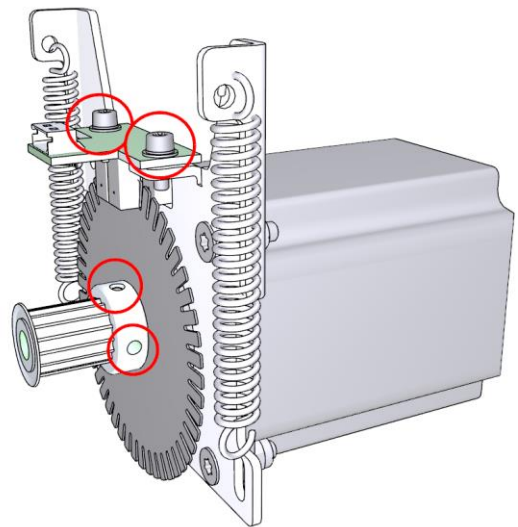
Using a T20 key, loosen the 4 circled screws
(do not remove them yet!)



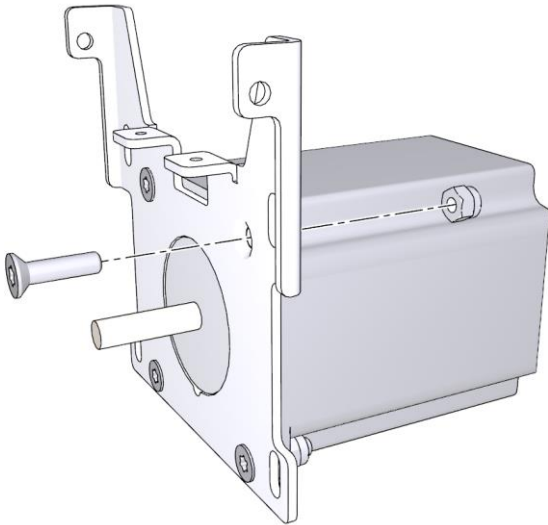
Slide the belt from the lower gear and let it hang
freely



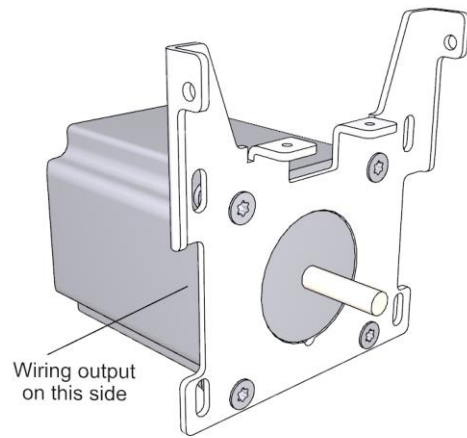
Remove the screws you previously loosened and
unplug the encoder and motor wiring (the latter
comes with a release lever and is hidden by the
motor itself in the picture)



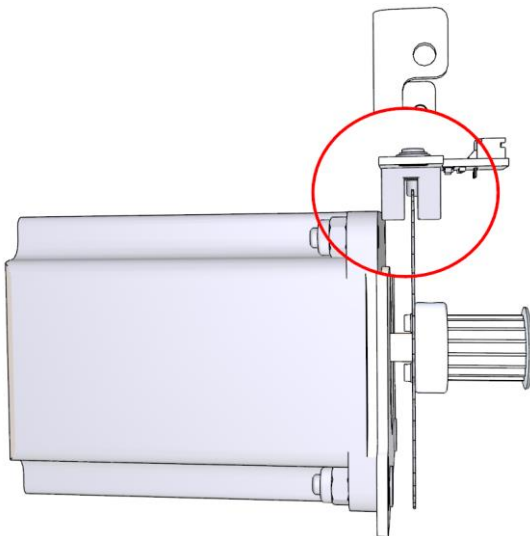
Remove the encoder PCB (T10 key), then the
encoder wheel (2mm hex key)



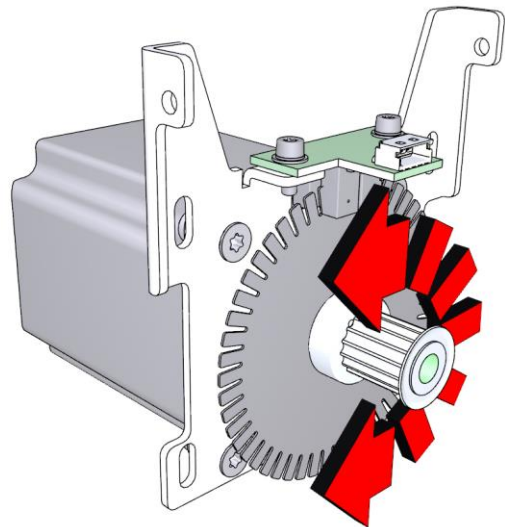
Using a 7mm fixed key and a T20 screwdriver remove the motor from the frame



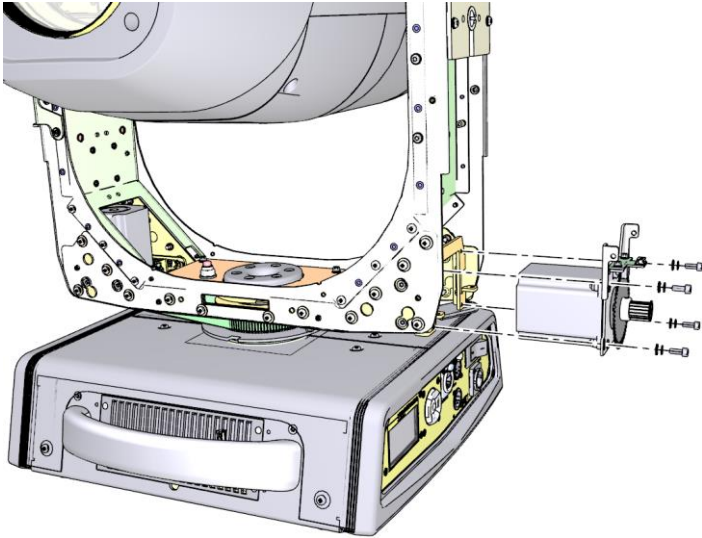
Mount the new motor in place with the wiring on the opposite side of the encoder mounting zone



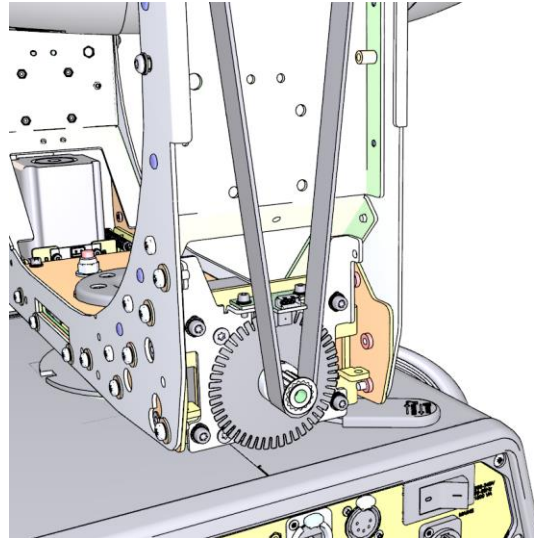
Mount the encoder PCB and wheel so that the back sensor is at the same height as the motor mounting point, then fix the wheel to match the encoder position



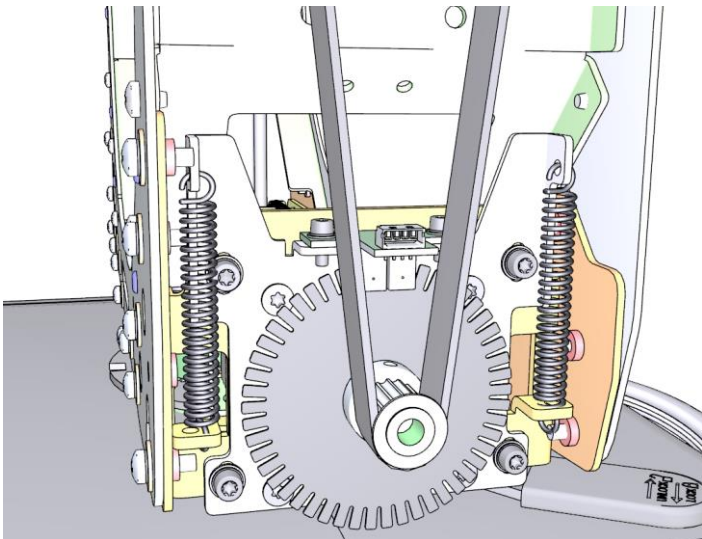
Rotate the encoder wheel, ensuring no audible noise is caused by contacts between the wheel and the sensor. Should they touch, adjust the wheel according to the PCB position.



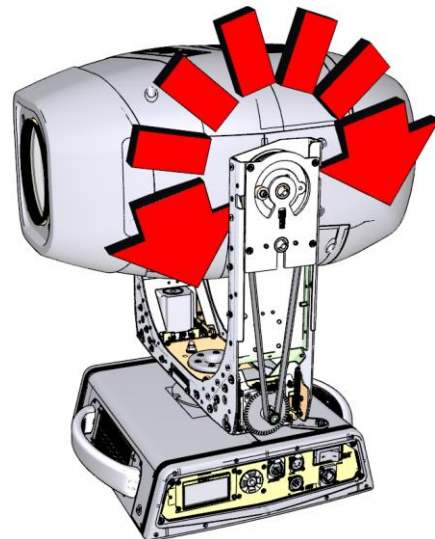
Restore the motor and encoder connectors, then put the motor in place just pointing the screws.



Fit the belt on the lower gear



Mount the springs back making sure both are mounted as in the picture (upper hook aperture facing left)



Move the head a couple of times, then fully close the screws. Avoid closing the screw while the head is at an end stopper.

6. HEAD PARTS REPLACEMENT

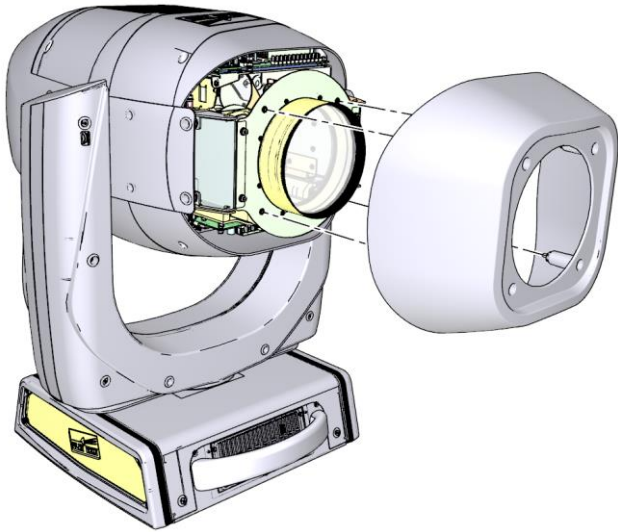
6.1. Front cover / front lens replacement

Preliminary / final Actions

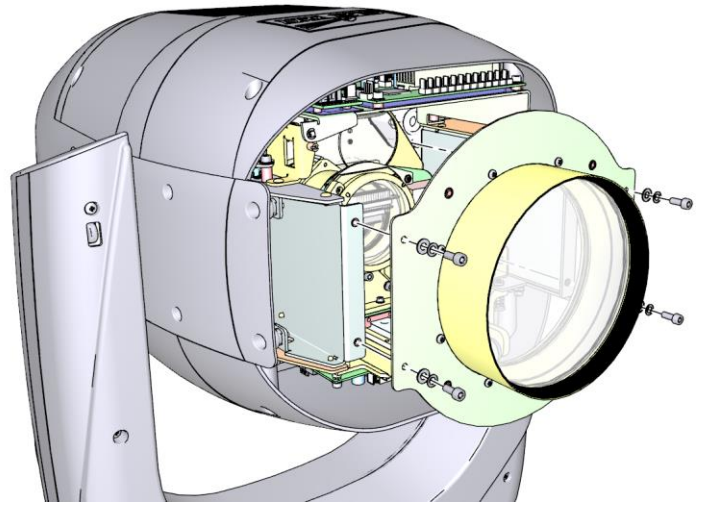
- Head covers removal;
- Lamp - effects functional check.

Needed Parts

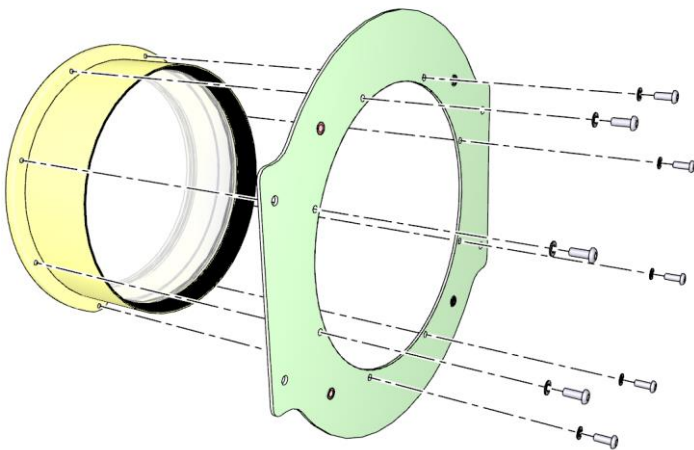
- Front cover (P/N: **285019/801**);
or
- Front lens (P/N: **285093/801**).



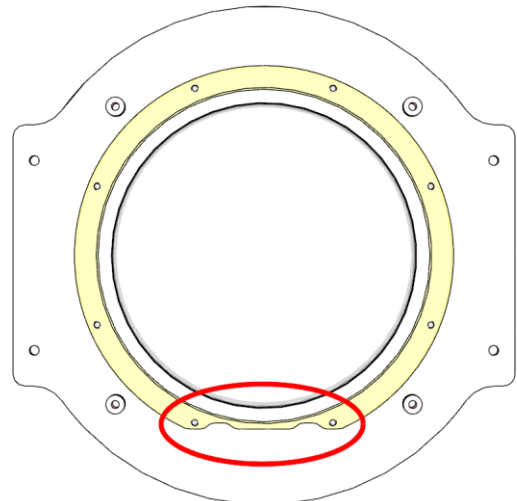
Using a PH1 screwdriver, remove the 4 fixing screws to free the front cover.



If needed, locate and remove the marked screws to remove the front lens, too.
The head will not be balanced anymore!



Remove the 8 fixing screws to free the lens, replace it and



Carefully clean the lens while it's cold, then mount it so that the cut off parts are in proximity of the optical module plate

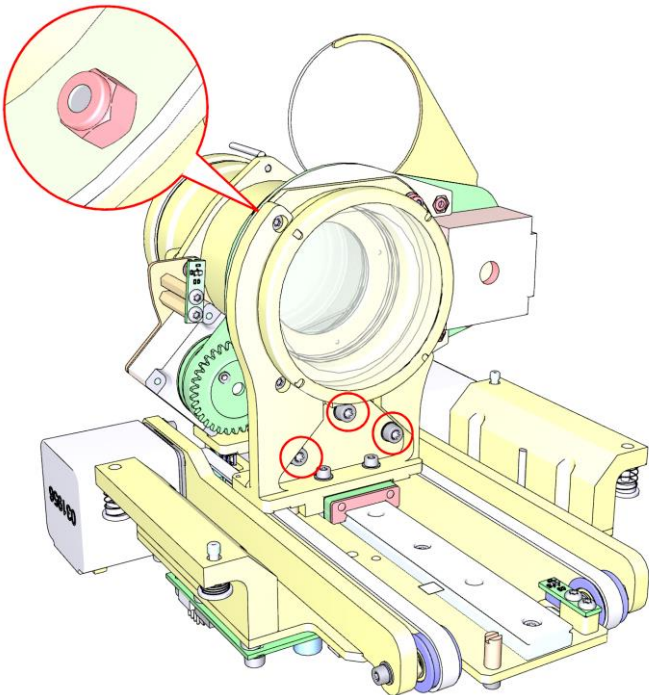
6.2. Zoom lens replacement

Preliminary / final Actions

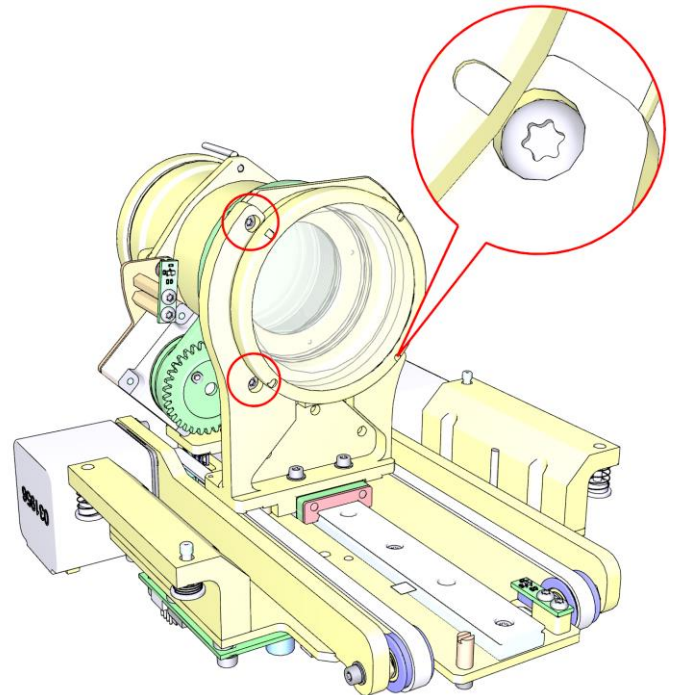
- Head covers removal;
- Optics module removal
- Lamp - effects functional check.

Needed Parts

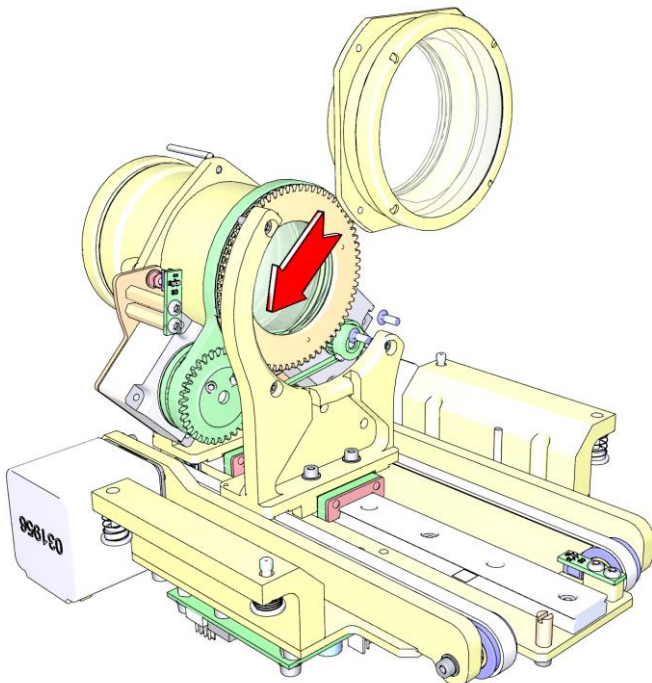
- Zoom lens assembly (P/N: 285094/801).



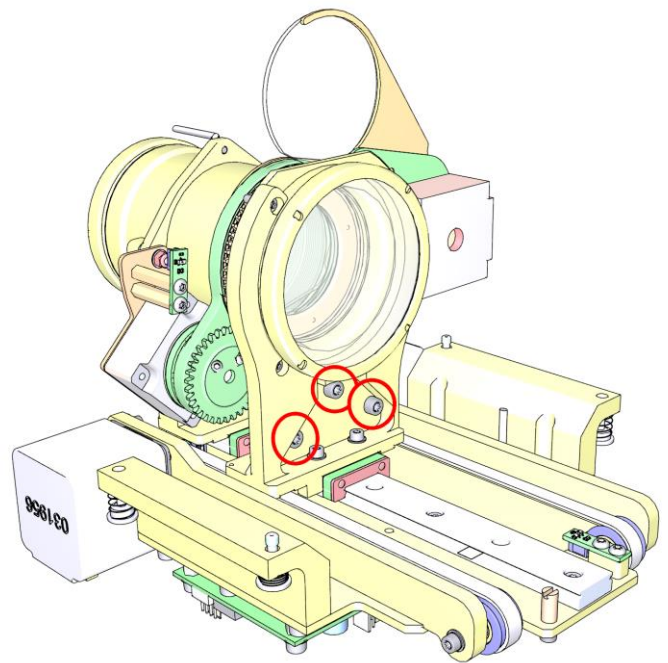
Remove the nut in the close up without removing its fixing screw, then the 3 screws in the lower circles to remove the frost assembly



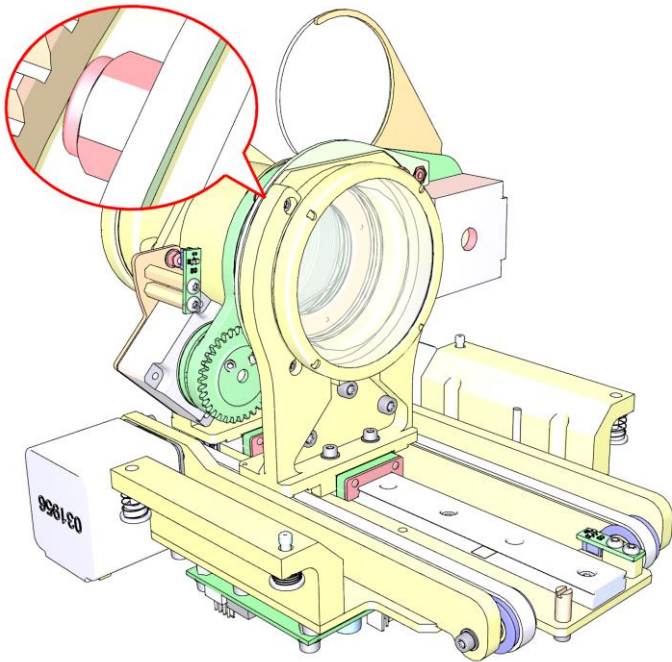
Remove the 3 screws to free the lens itself from its housing. To slide it out of the block, lift it towards the top / right



Put the lens in place and restore the fixing screws. The longest one goes in the highest position.



Put in place the frost assembly, then fix the 3 lower screws.
(toothed washers only, no flat ones)



Restore the top nut using a nut spinner or driver.
Do not try to turn the screw, the thread will get
worn out and the lens will be wasted as well!

Carefully clean both sides of the lens before
closing the unit

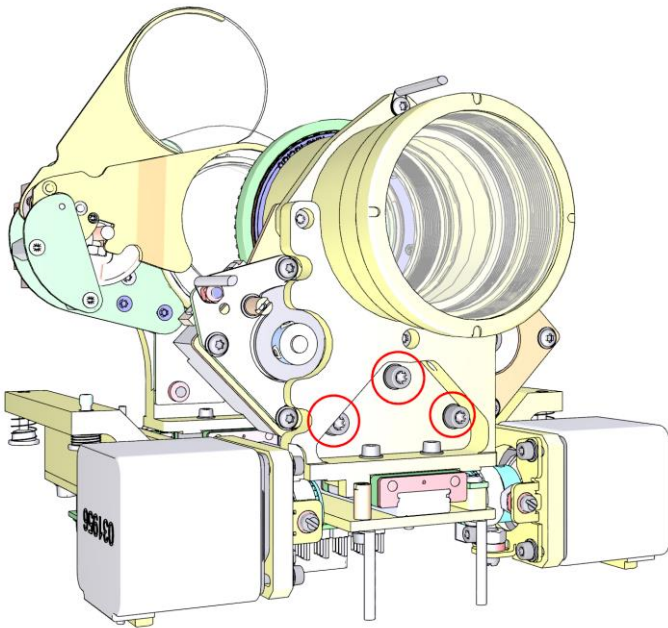
6.3. Focus lens replacement

Preliminary / final Actions

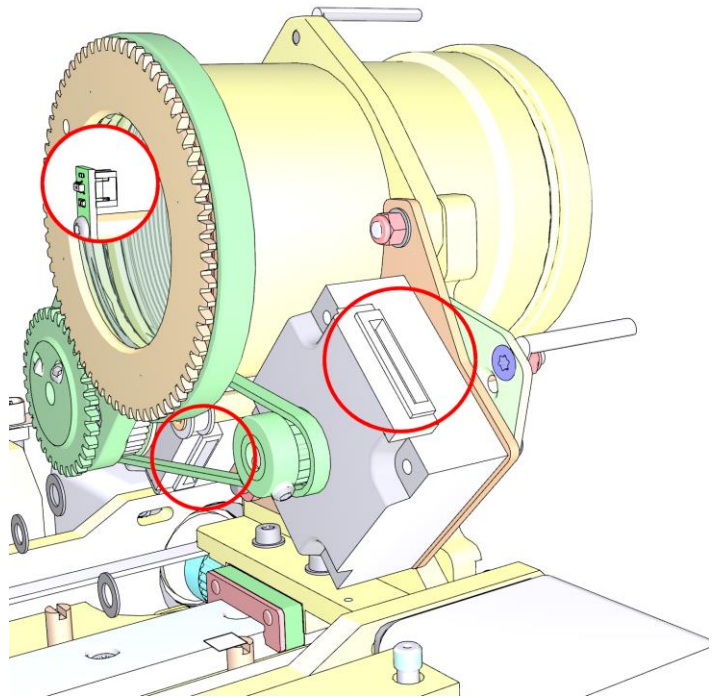
- Head covers removal;
- Prism / diffuser assemblies detachment;
- Lamp - effects functional check.

Needed Parts

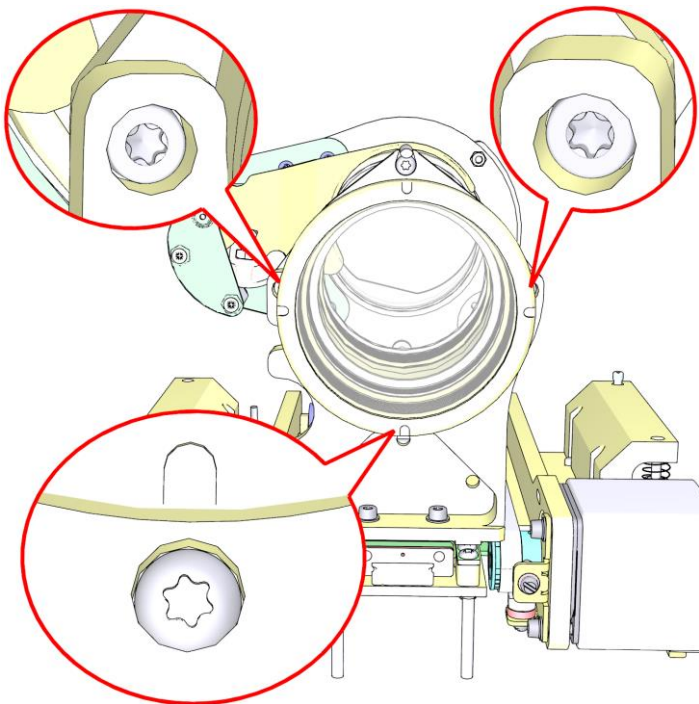
- Focus lens assembly (P/N: **285095/801**).



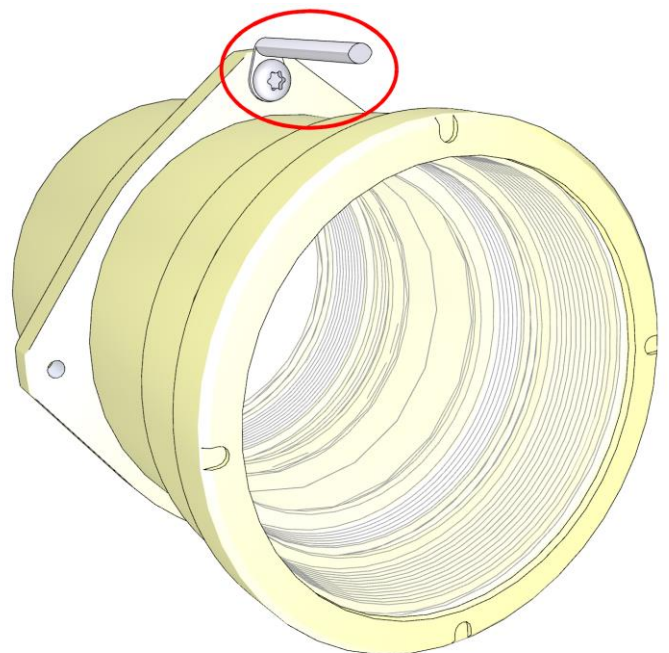
Locate and completely loosen the circled screws, using a T20 key, to separate the prism assembly from the focus lens.



Open the 3 connectors and the metal cable ties to completely remove the assembly



Remove the 3 circled screws to free the focus lens



Transfer the metal cable tie from the old focus lens to the new one, then restore the other screws to put back the lens and prism assy in place.

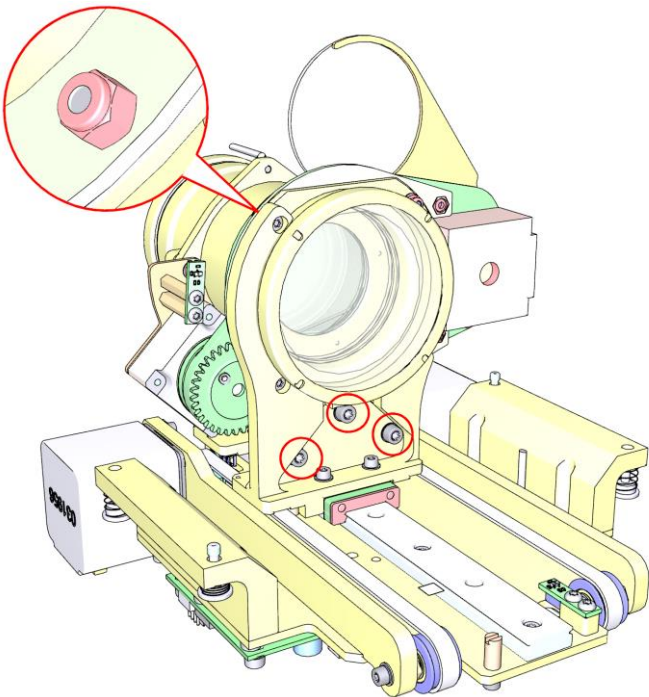
6.4. Frost filters replacement

Preliminary / final Actions

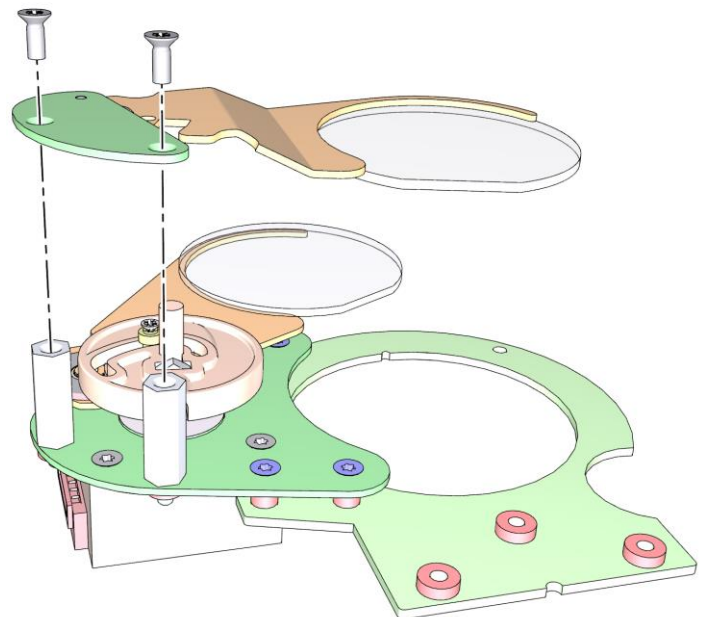
- Head covers removal;
- Optical group removal;
- Lamp - effects functional check.

Needed Parts

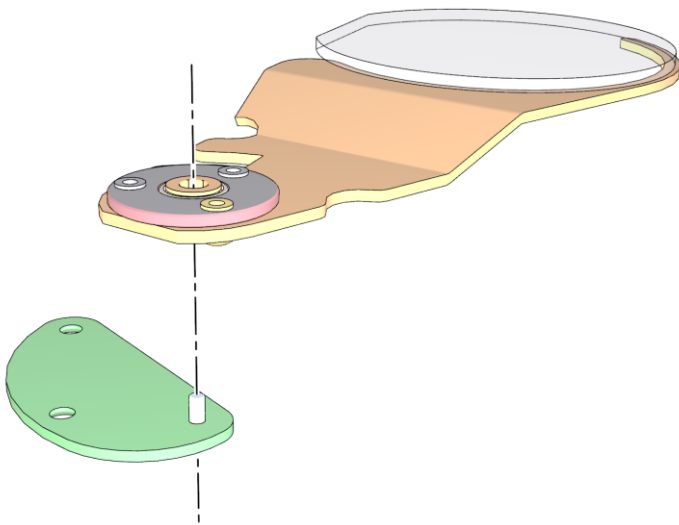
- Light frost assembly (P/N: **286039/801**)
or
- Heavy frost assembly (P/N: **286039/802**)



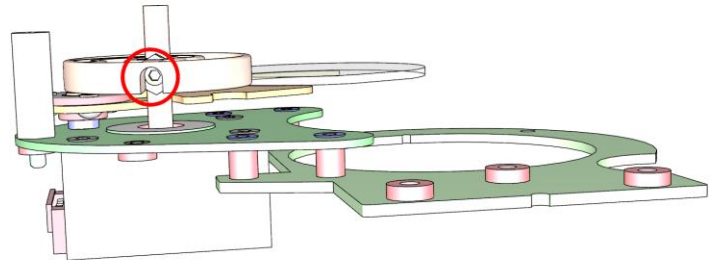
Remove the nut in the close up without touching the fixing screw, then the 3 screws in the lower circles to remove the frost assembly



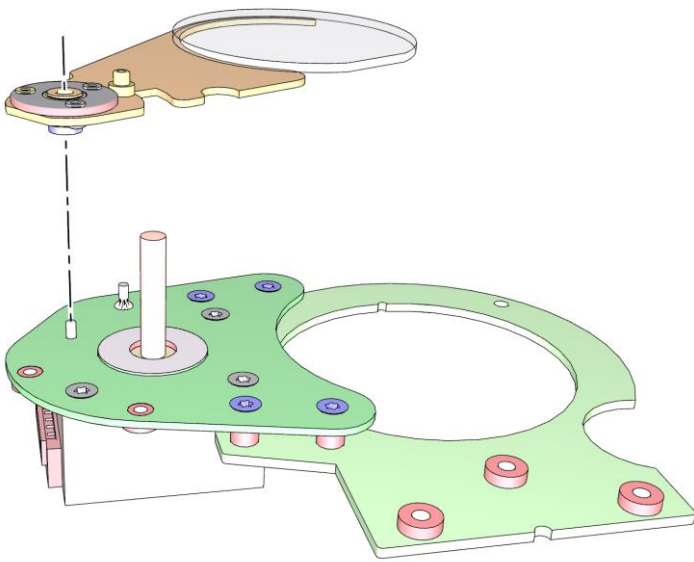
Rest the assembly on a stable surface, then remove the marked screws to remove the light frost assembly



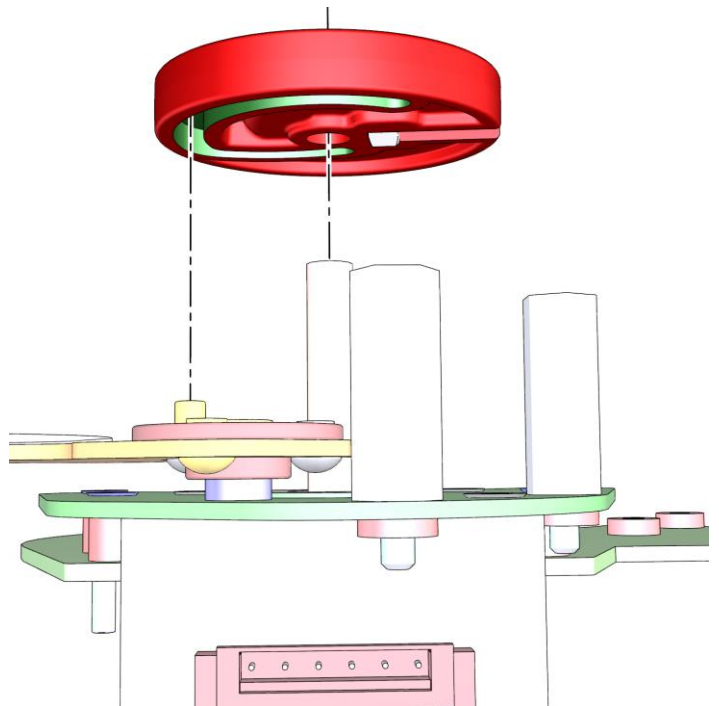
If the light frost has to be replaced, separate it from the supporting place using a 3mm allen key. Otherwise, proceed to the next step



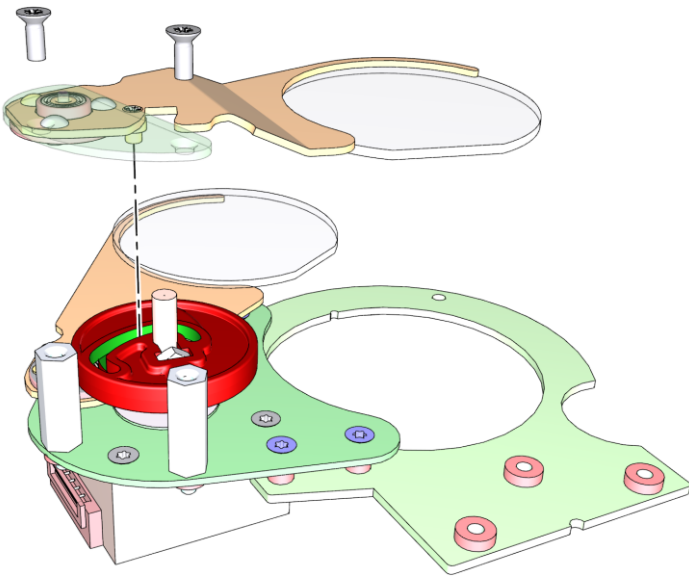
Loosen of 1 / 2 turns the circled grub screws, then extract the plastic gear from the shaft



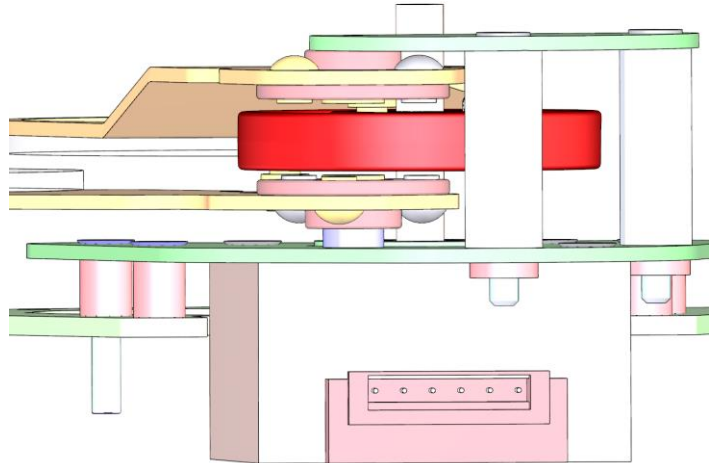
Separate the heavy frost from the supporting place using a 3mm Allen key, then put the new assembly in place



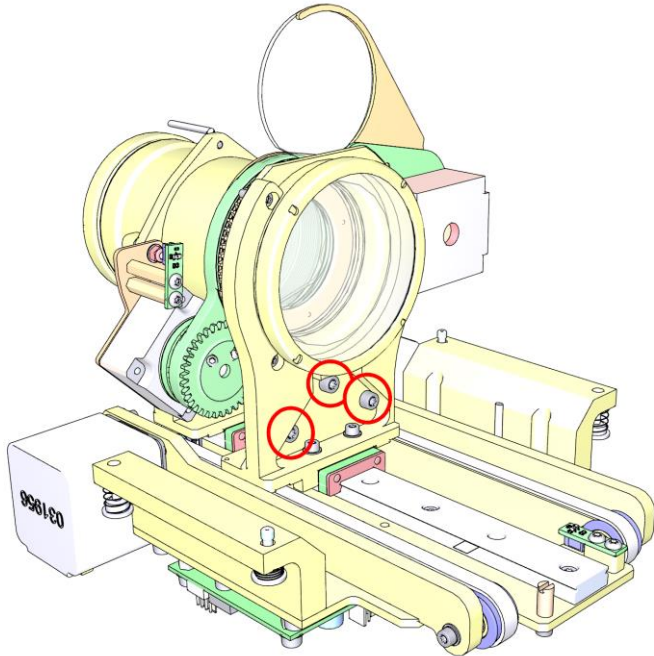
Fit the plastic gear without tightening the grub screw, but making sure the pins on the frost assembly match the groove in it (green section).



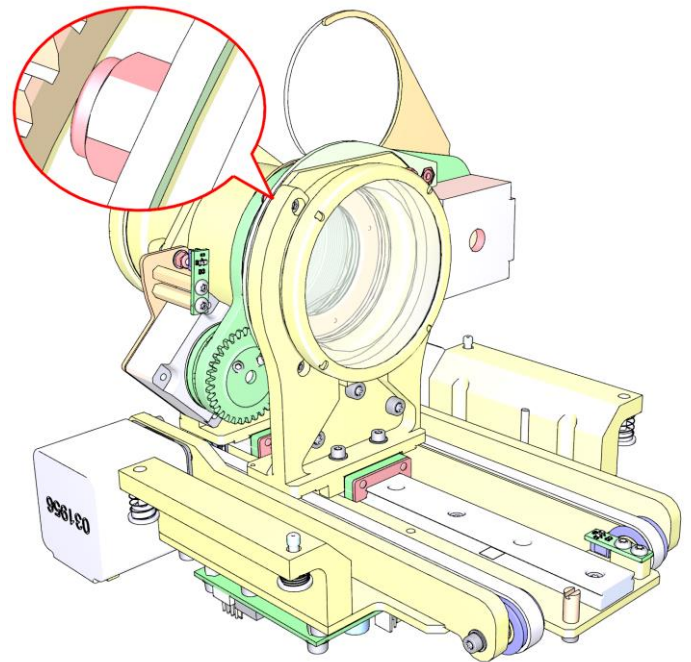
Fit the heavy frost assembly caring that the pin and groove match (green area) also for the top diffuser, then tighten the two Phillips screws.



Adjust the plastic gear so that the pins are equally inserted in its grooves, then tighten the grub screw to fix it.



Put in place the frost assembly, then fix the 3 lower screws.
(toothed washers only, no flat ones)



Restore the top nut using a nut spinner or driver.
Do not try to turn the screw, the thread will get worn out and the lens will be wasted as well!

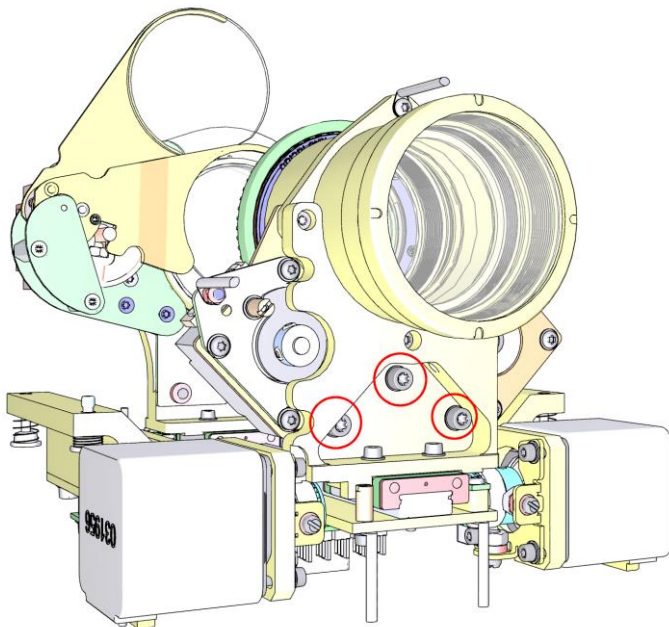
6.5. Prism assembly replacement

Preliminary / final Actions

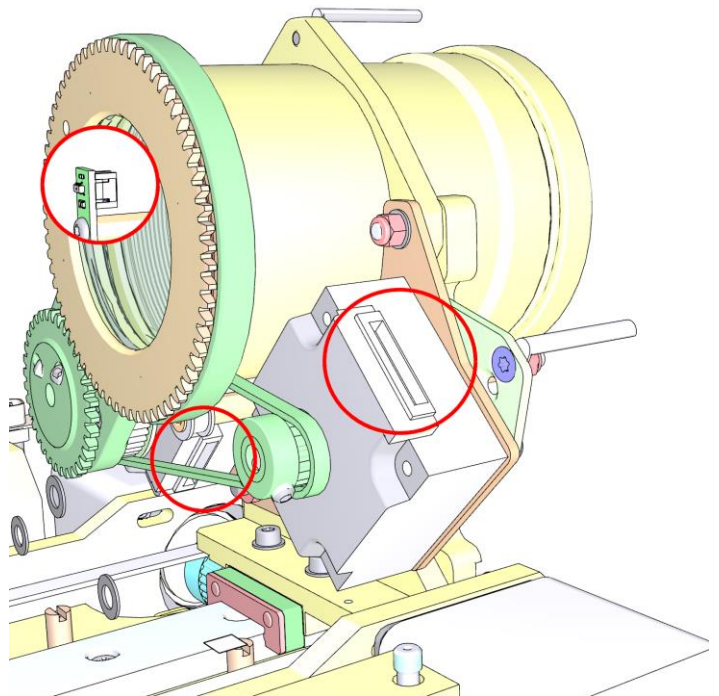
- Head covers removal;
- Prism / diffuser assemblies detachment;
- Lamp - effects functional check.

Needed Parts

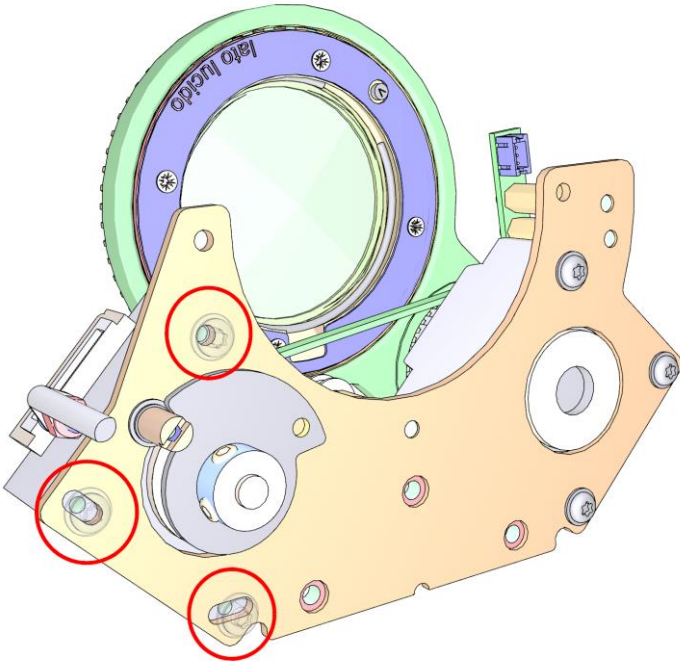
- 4 facet prism only (P/N: **PRS004/002**);
or
- Rotating prism assembly, complete (P/N: **285020/801**).



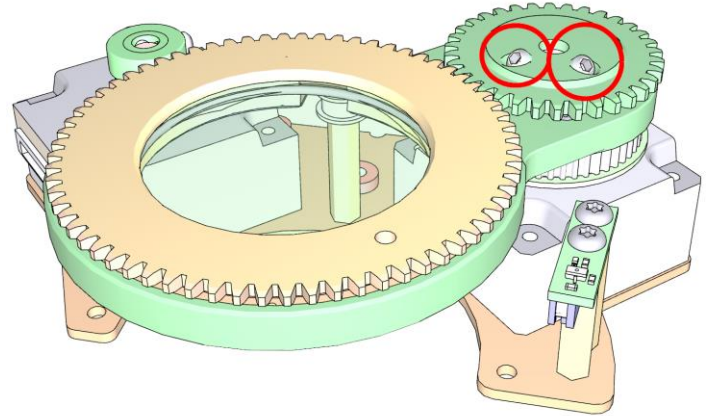
Locate and completely loosen the circled screws, using a T20 key, to separate the prism assembly from the focus lens.



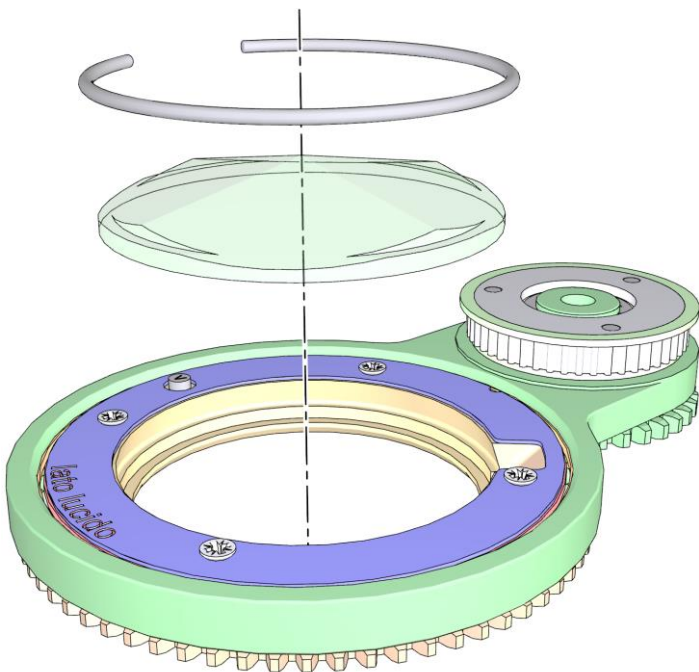
Open the 3 connectors and the metal cable ties to completely remove the assembly



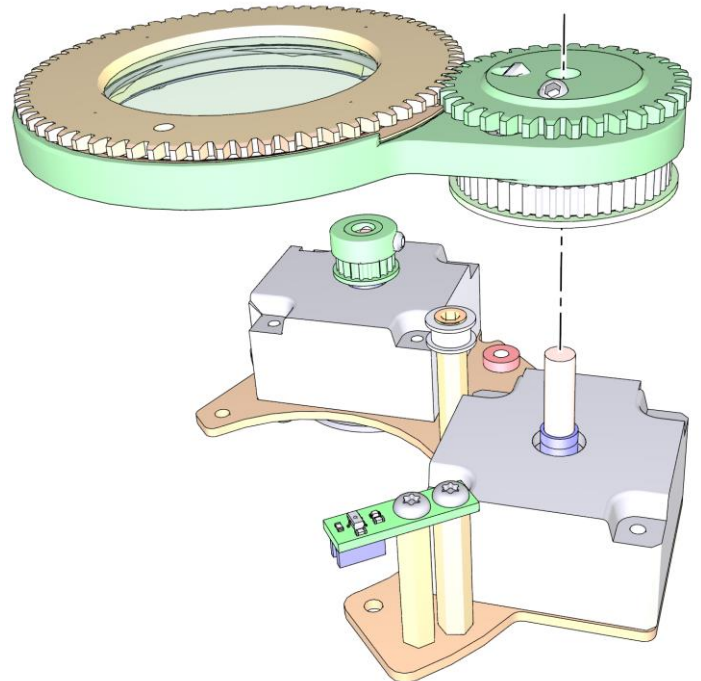
Loosen of 1 / 2 turns the circled screws, then pull the motor to the inside to make the belt loose



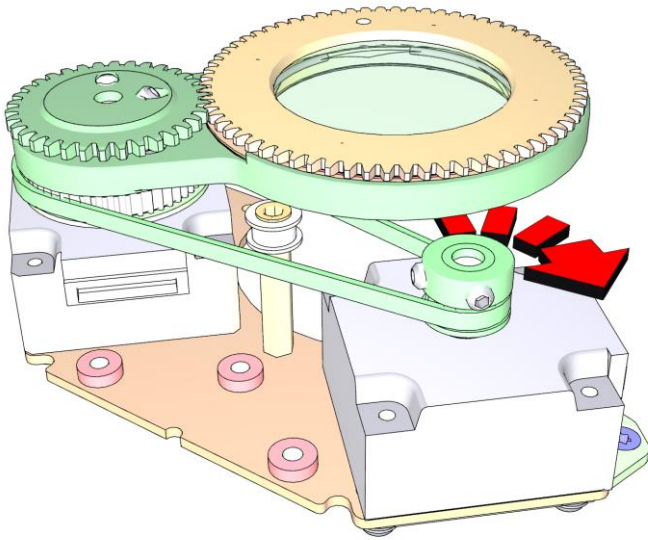
Slide the belt from the prism assembly, then loosen of 1 / 2 turns the circled screws to remove the prism assembly.
A small spacer is fitted on the motor's shaft, watch out not to lose it!



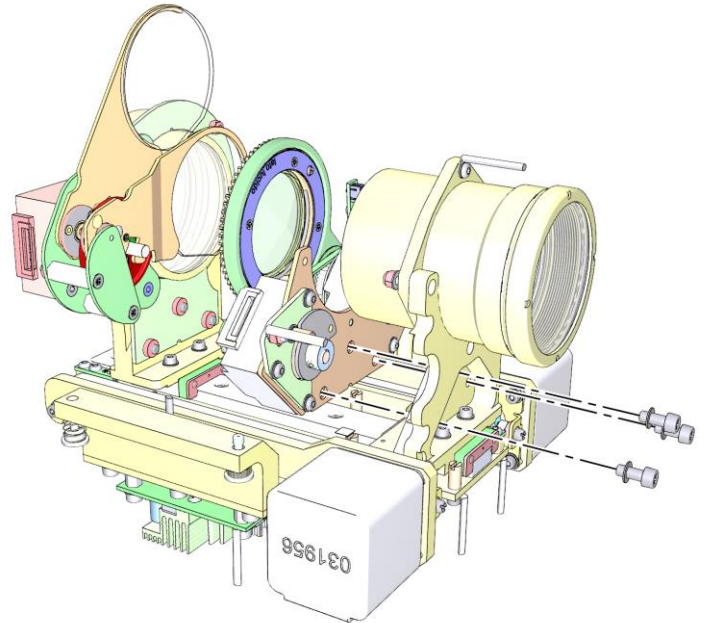
Remove the spring and change the prism itself, if needed, or skip to the next step if replacing the whole assembly.



Put the assembly back in place until it touches the spacers, then tighten the grub screws.



Slide the belt back in place, then tighten it and close the motor fixing screws.

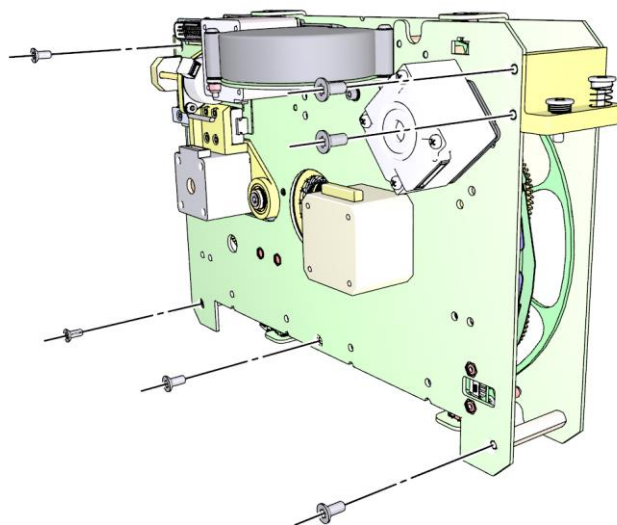


Put back in place the fixing screws, the plug the connectors back in place.

6.6. *Effects module splitting*

Preliminary / final Actions

- Head covers removal;
- Colours / gobos assembly removal;
- Lamp - effects functional check.



Locate and remove the 6 highlighted screws, storing them in a safe place.

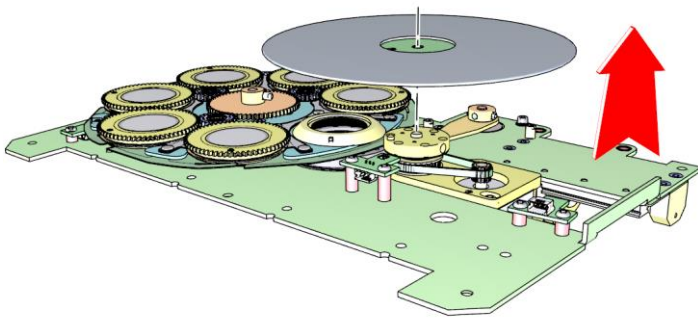
6.7. Animation wheel replacement

Preliminary / final Actions

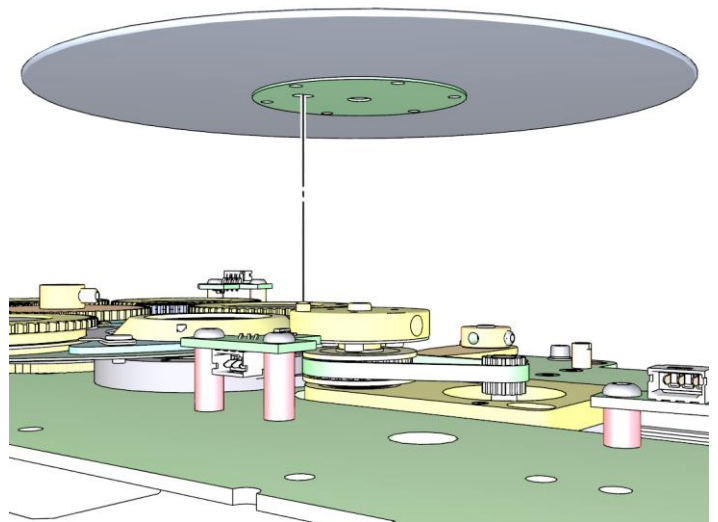
- Head covers removal;
- Effects module opening;
- Lamp - effects functional check.

Needed Parts

- Animation wheel (P/N: 285211/801).



Locate the animation wheel, then grab it from the sides to detach it from the magnets that lock it in place



Gently put back in place the animation wheel, ensuring the alignment pin and slot are aligned. The black side should face the plate.

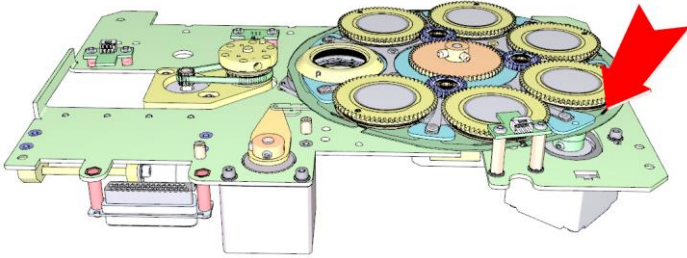
6.8. Rotating gobo wheel 2 replacement

Preliminary / final Actions

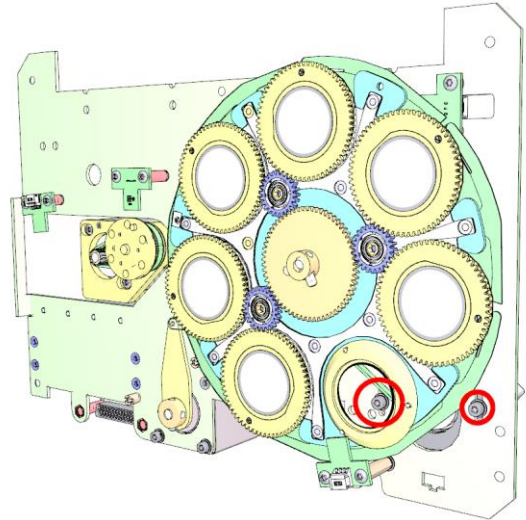
- Head covers removal;
- Colours / gobos assembly removal;
- Effects module splitting
- Animation wheel removal;
- Lamp - effects functional check.

Needed Parts

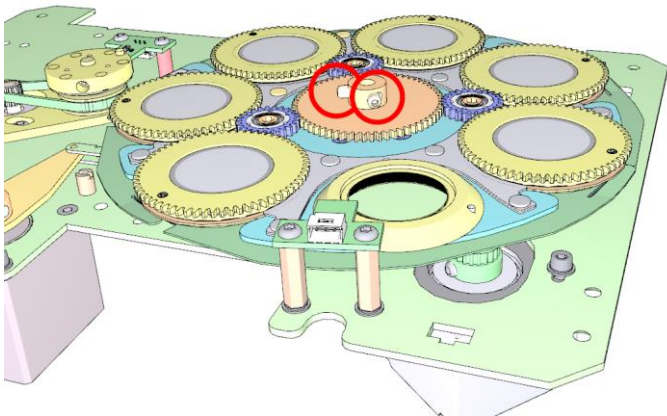
- Rotating gobo wheel 2, complete (P/N: 285075-804).



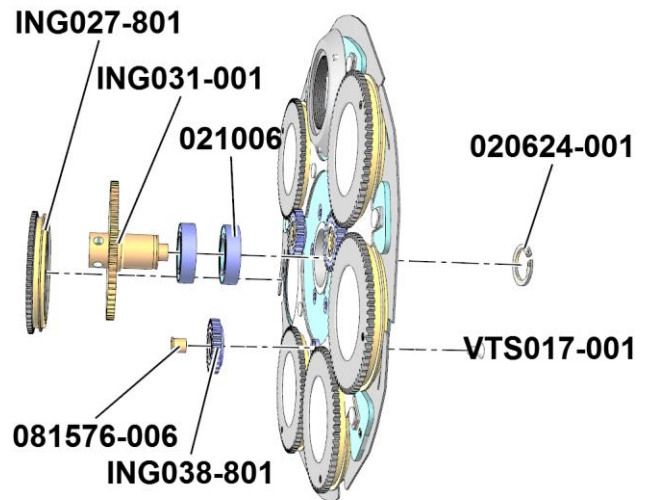
Rotate the wheel so that the open white position overlaps the gobo change motor (arrowed)



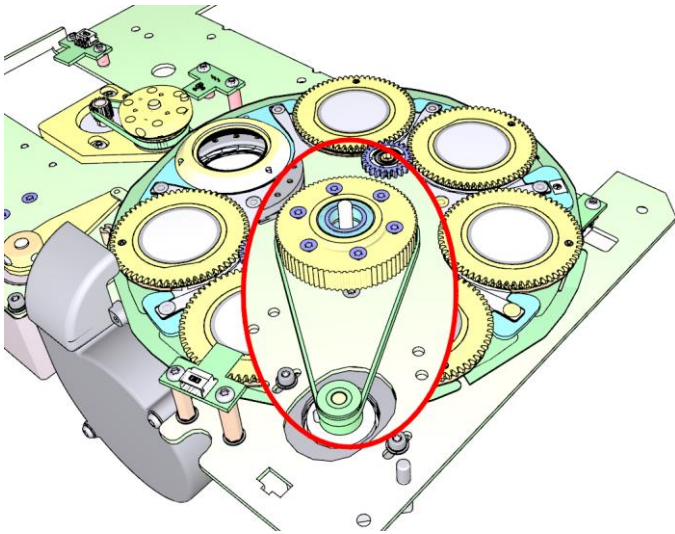
Loosen of 1 / 2 turns the circled screws to make the belt loose, then slide the belt out of the gear.



Loosen the 2 circled grub screws to free the gobo wheel. Depending on the HW version, removing the sensor and air duct may be needed, too.



Replace any gobos, holders or gear that may need replacement, then put back in place the gobo wheel reminding about the belt.



Fit the belt, then pull the motor and tighten the screws to tension it



Put all the needed parts back in the light, then turn it on and, once the homing is finished, access the advanced menu



Access the "Rot Gobo2 Index" voice, then start the procedure
The unit will start its internal calibration routine, which might take up to 3 minutes.

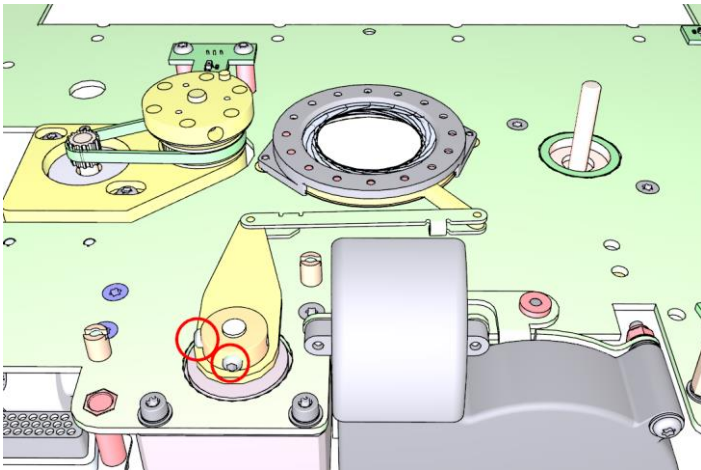
6.9. Iris replacement

Preliminary / final Actions

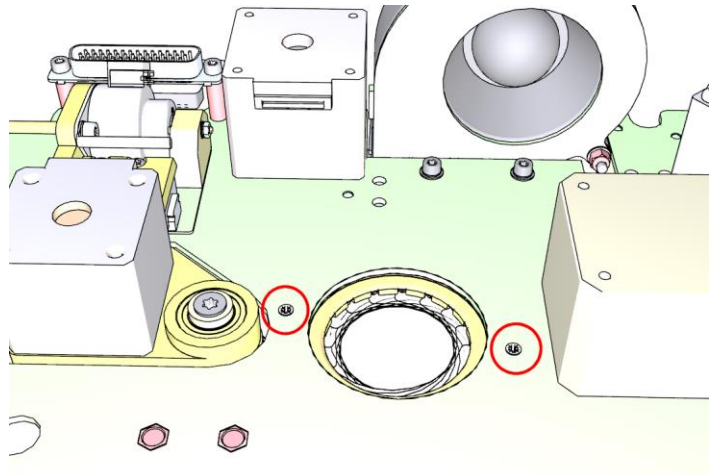
- Head covers removal;
- Colours / gobos assembly removal;
- Effects module splitting
- Animation wheel removal;
- Rotating gobo wheel 2 removal;
- Lamp - effects functional check.

Needed Parts

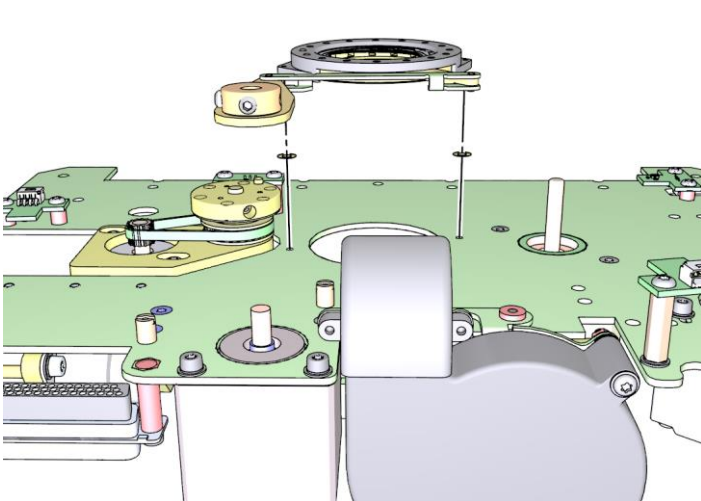
- Iris assembly (P/N: **285205/801**).



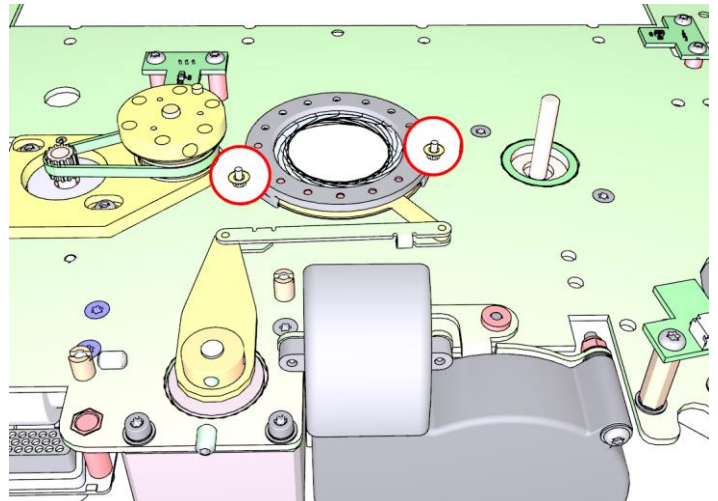
Locate and slightly loosen the circled screws



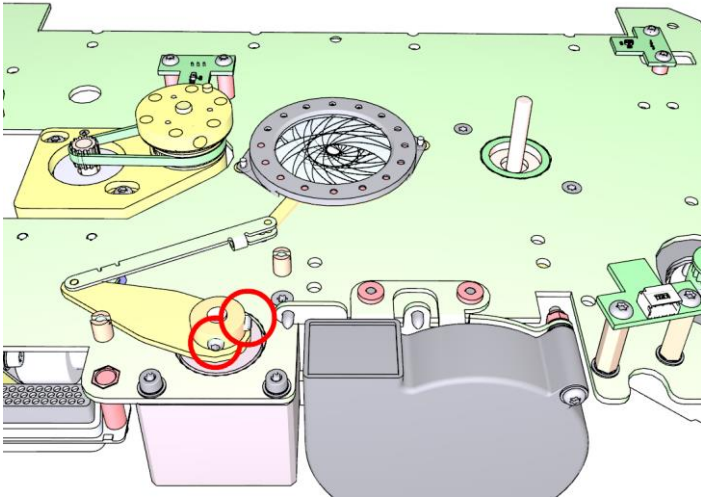
Remove the circled screws using a PH0 screwdriver. Be careful as the slots may get wasted! Do not remove the iris yet, as some washers may get lost doing so.



Carefully lift the iris, recovering the 2 precision washers located underneath it.



Put the new iris in place ensuring the actuation lever is fitted on the motor shaft (do not tighten it yet), then tighten the 2 small Phillips screws.



Close the iris, then tighten both grub screws.

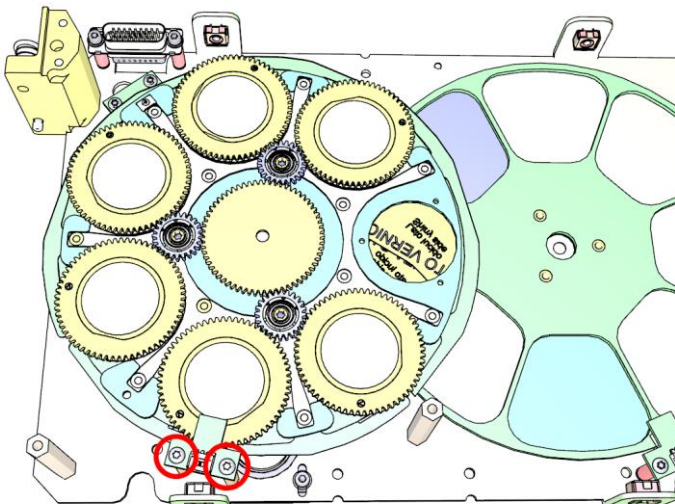
6.10. Rotating gobo wheel 1 replacement

Preliminary / final Actions

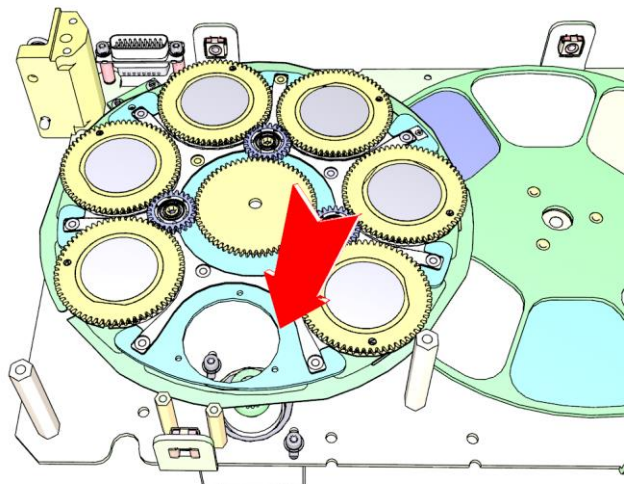
- Head covers removal;
- Colours / gobos assembly removal;
- Effects module splitting
- Lamp - effects functional check.

Needed Parts

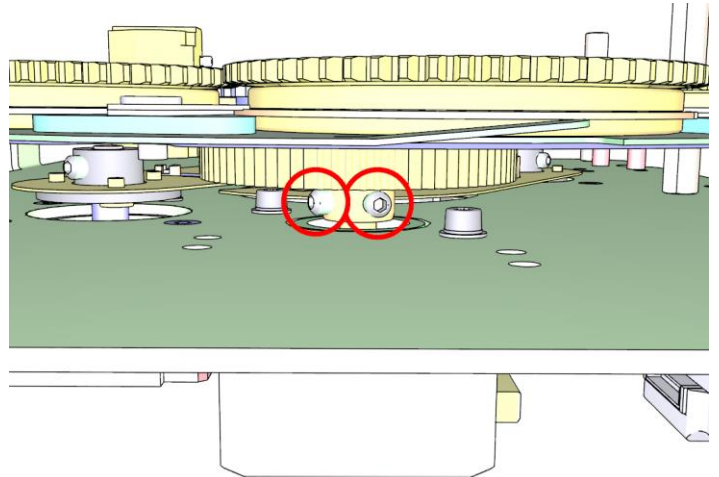
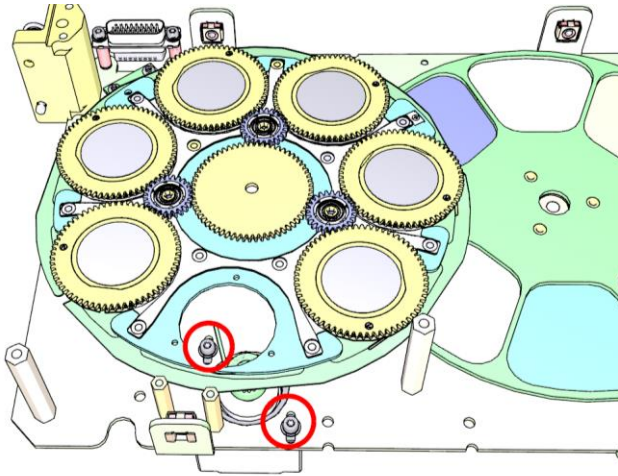
- Rotating gobo wheel 1, complete (P/N: **285075-803**).



Locate and remove the screws fixing the gobo rotation sensor

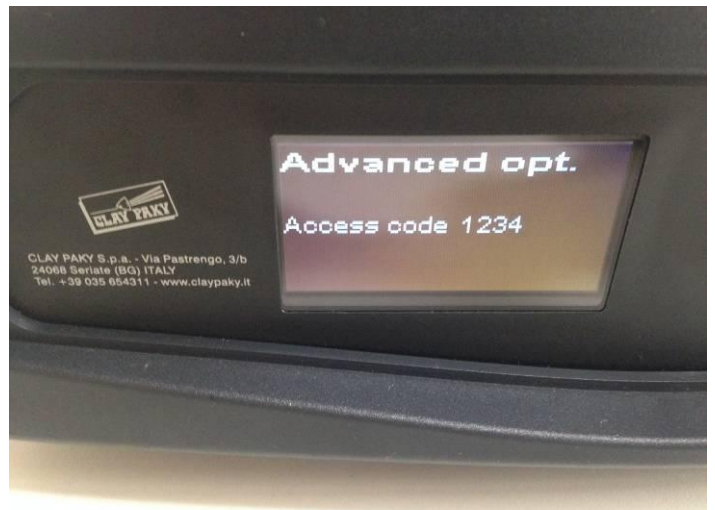
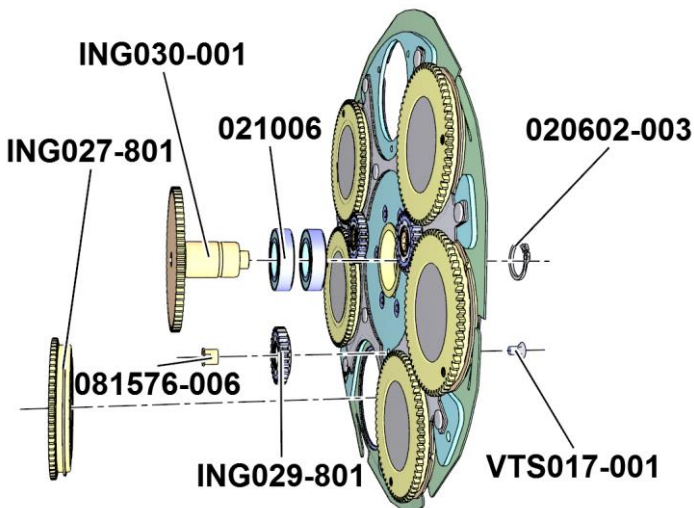


Rotate the gobo wheel so that the open white position matches the gobo rotation motor



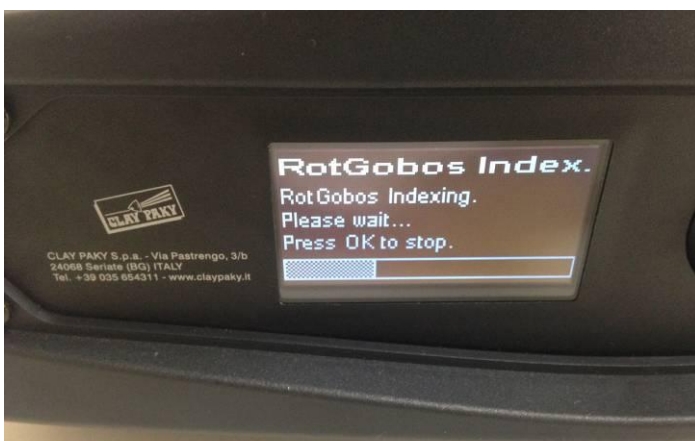
Loosen of 1 / 2 turns the circled screws to make the belt loose, then slide the belt out of the gear.

Under the gobo wheel, locate and loosen of ½ turns the circled grub screws, then lift the wheel to remove it.



Replace any gobos, holders or gear that may need replacement, then put back in place the gobo wheel reminding about the belt.

Put all the needed parts back in the light, then turn it on and, once the homing is finished, access the advanced menu



Replace any gobos, holders or gear that may need replacement, then put back in place the gobo wheel reminding about the belt, too.

Put all the needed parts back in the light, then turn it on and, once the homing is finished, access the advanced menu

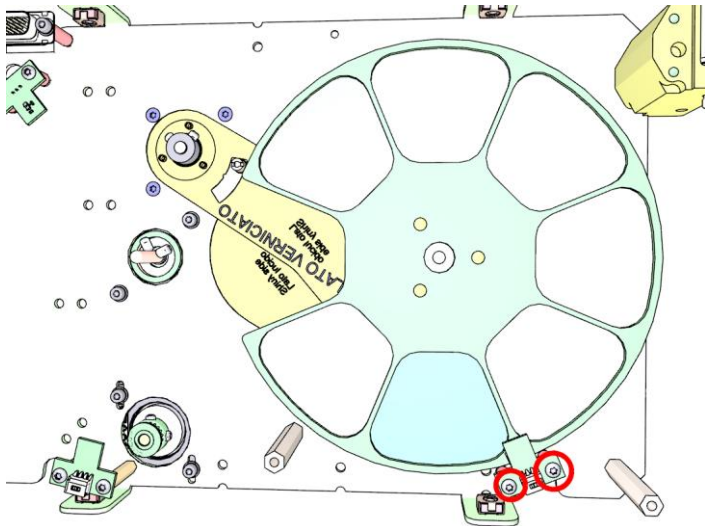
6.11. Color wheel replacement

Preliminary / final Actions

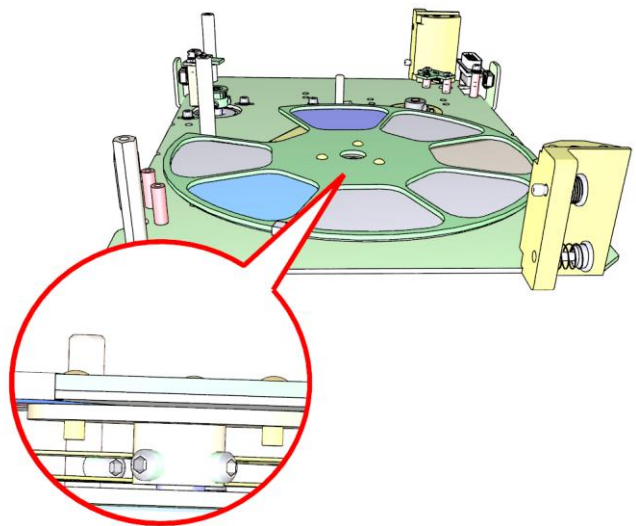
- Head covers removal;
- Colours / gobos assembly removal;
- Effects module splitting
- Rotating gobo wheel 1 removal;
- Lamp - effects functional check.

Needed Parts

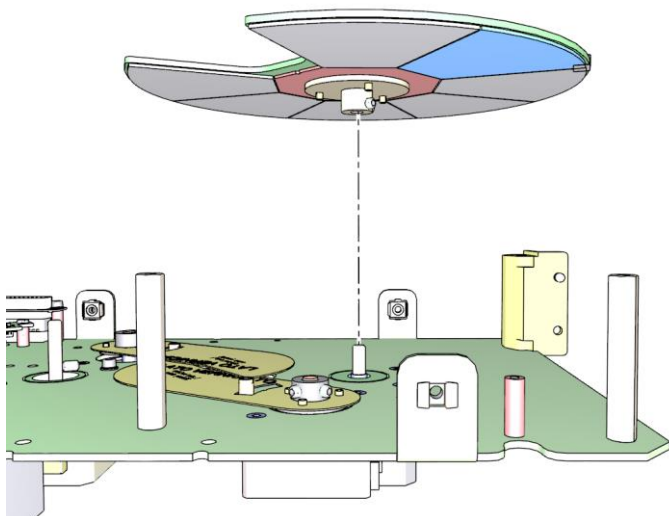
- Colour wheel, complete (P/N: 285087-801).



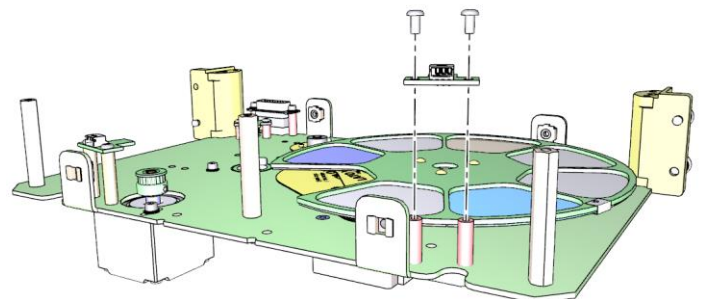
Locate and remove the screws fixing the color wheel position sensor



Locate the grub screws underneath the color wheel and loosen them to free the wheel



Remove the damaged wheel, then put in place the new one and tighten the grub screws.



Restore the sensor and fixing screws, then mount the other effects.

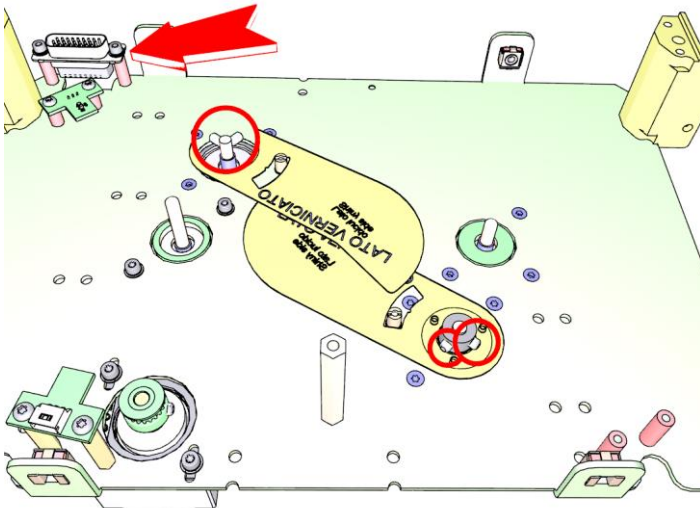
6.12. Strobe blades replacement

Preliminary / final Actions

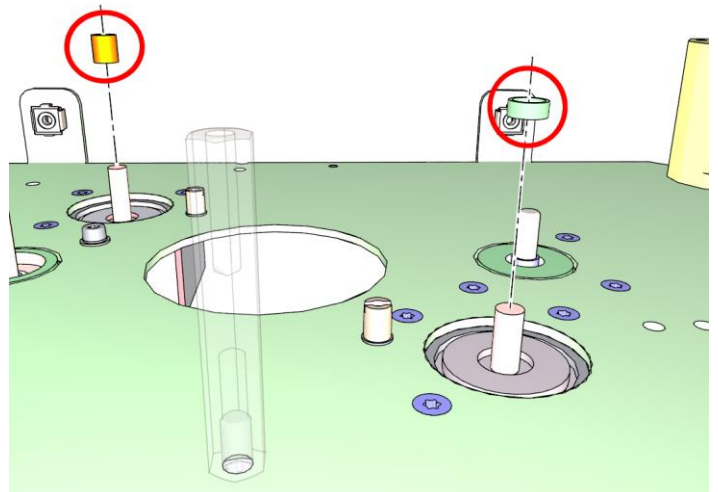
- Head covers removal;
- Colours / gobos assembly removal;
- Effects module splitting
- Rotating gobo wheel 1 removal;
- Color wheel removal;
- Lamp - effects functional check.

Needed Parts

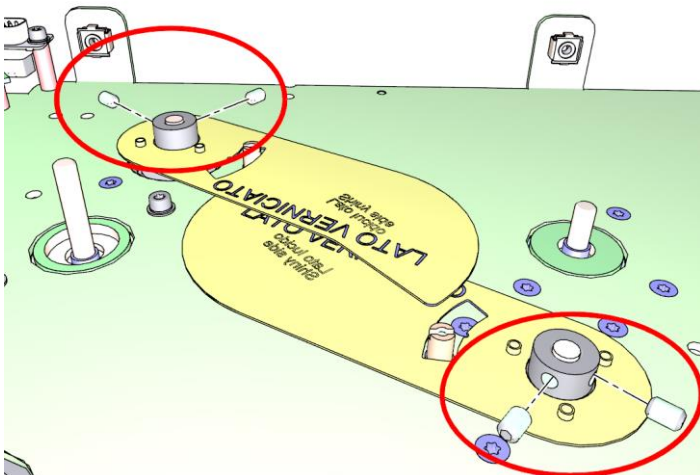
- Strobe blade (P/N: 285049/802).



Locate and remove the circled grub screws starting from the ones close to the arrowed D-connector then remove the shutter blades.



Mount the strobe blades ensuring the highlighted spacers are still in position, starting from the one colored in green in the picture.



Retighten both grub screws, then check for proper working.

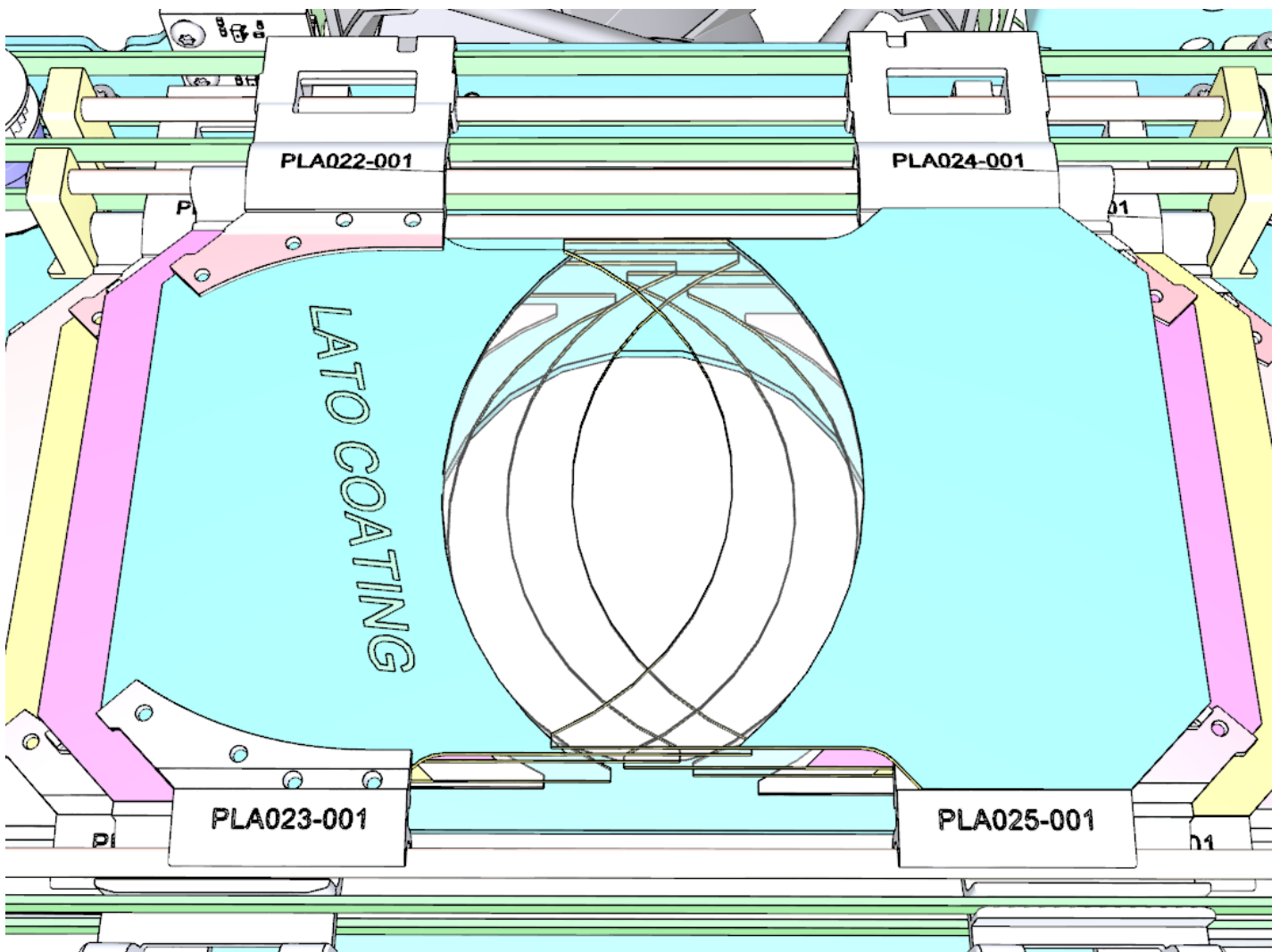
6.13. Color mixing flags replacement

Preliminary / final Actions

- Head covers removal;
- CMY module removal;
- Lamp - effects functional check.

Needed Parts

- Cyan color flags couple, with belt (P/N: **xxx**);
- Magenta color flags couple, with belt (P/N: **xxx**);
- Yellow color flags couple, with belt (P/N: **xxx**);
- CTO flags couple, with belt (P/N: **xxx**);



For specific information about part numbers, replacement procedures and tools, please contact your distributor providing a photo of your bulkhead as in the image and the unit SN.

Clay Paky will provide you the needed information.