OPERATING MANUAL

FREELENSING CINE®

SETTING UP FREELENSING CINE®

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1. CAMERA PREPARATION

Eliminate as many elements as possible so that the camera can enter as naked as possible and thus be free to make as many movements and displacements as possible.

HEIGHT STANDARD → 19MM RODS. The camera must allow placing the 19mm rods in its standard position and as flush as possible to the camera body. The camera must have the necessary Risers to reach the 19mm height of the 19mm studio, and the Dovetail must be centered.

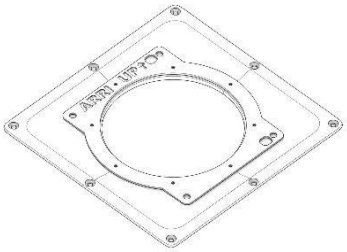
Everything should be as centered and flushed as possible to avoid any accessory limiting the movements of the Frelensing Cine®.

For Alexa Mini LF, Sony Venice 1&2 and RED DSMC2 ▯ Remove the PL or LPL mount that is placed on the camera body.

For RED V-RAPTOR → remove the lens cap, maintain the RF mount on the camera body.

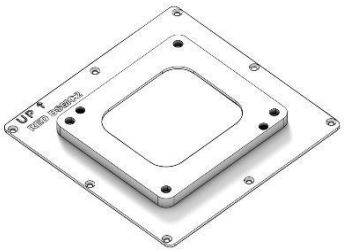
Choose the appropriate camera mount for the FREELENSING CINE®:

- ARRI MINI | MINI LF | 35
- RED V-RAPTOR
- RED DSMC2 & DSMC3
- SONY VENICE (1&2)

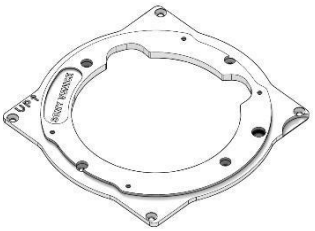


ARRI MINI | MINI LF | 35

RED V-RAPTOR



RED DSMC2 | DSMC3



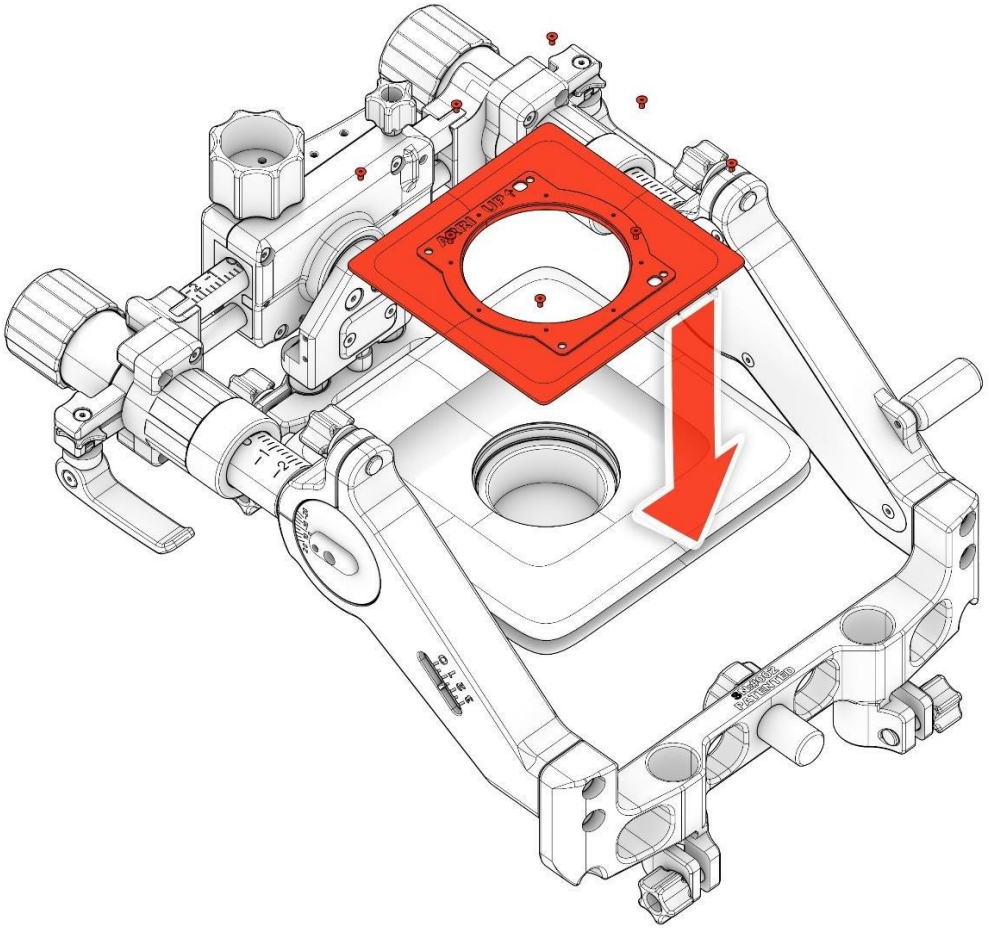
SONY VENICE (1&2)

2. FIX THE CORRESPONDING CAMERA MOUNT TO THE BELLOWS

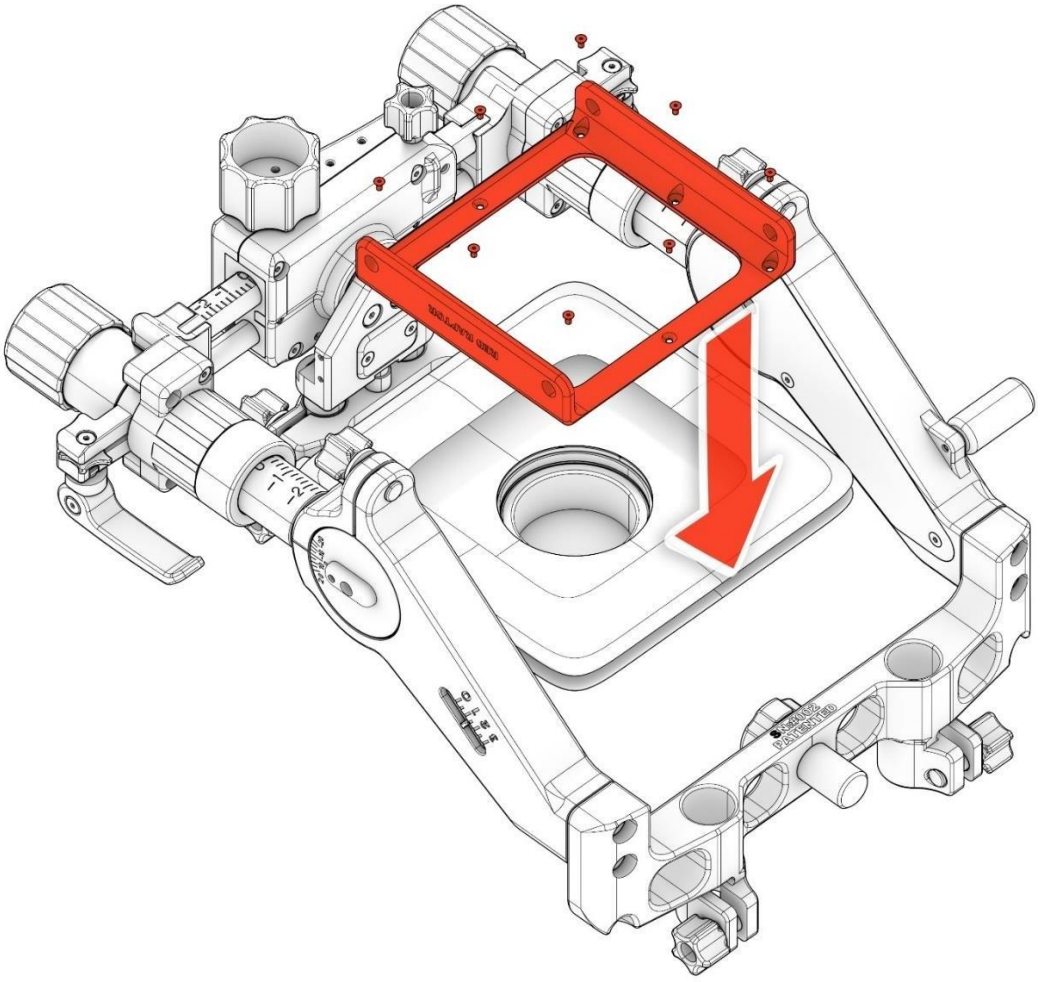
The corresponding camera mount from the FREELENSING CINE® should be fixed to the bellows with 8 x M2 flat screws.

Check the correct position → See detailed infographics below.

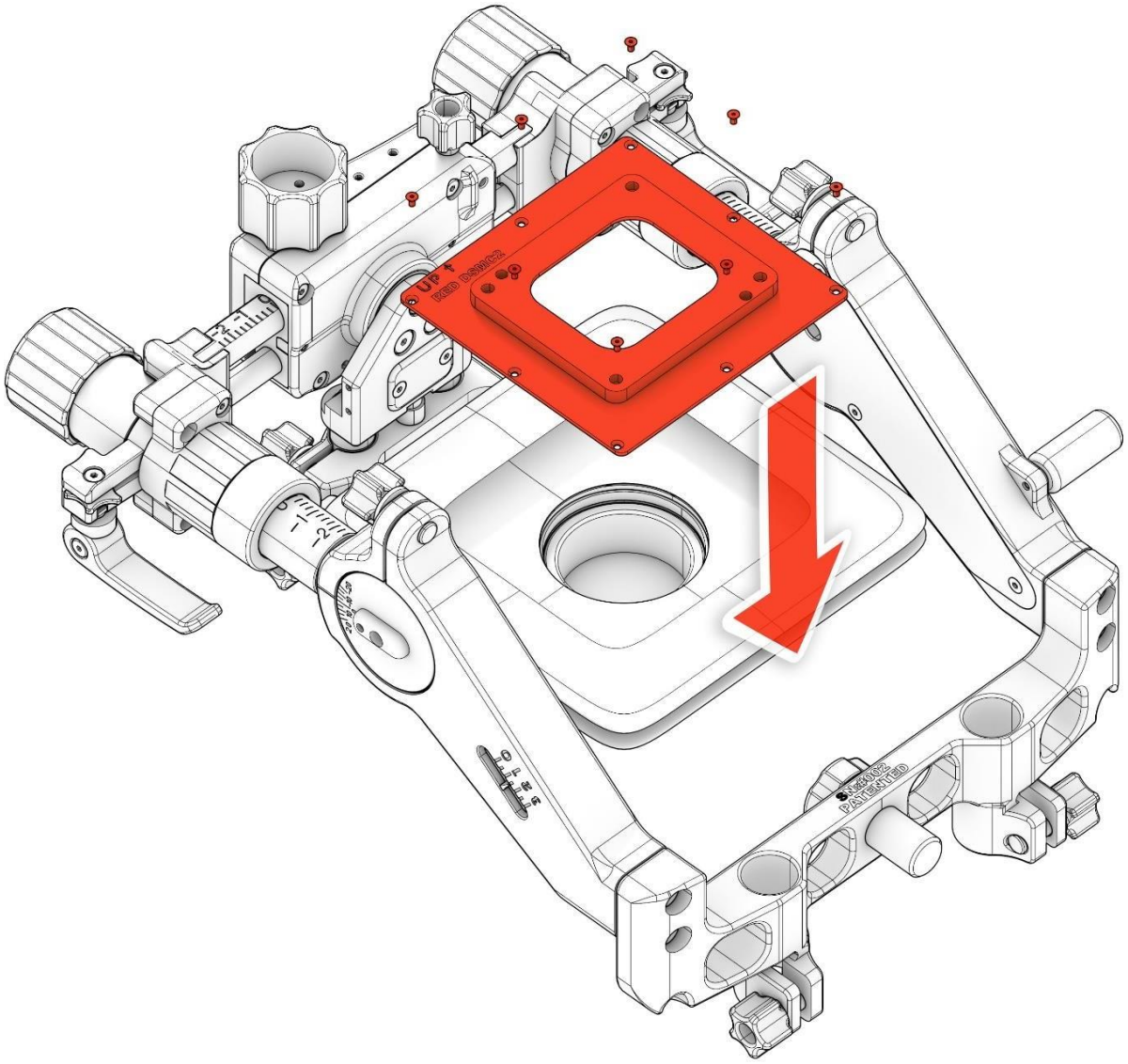
2.1 Alexa MINI | MINI LF | 35 mount placement



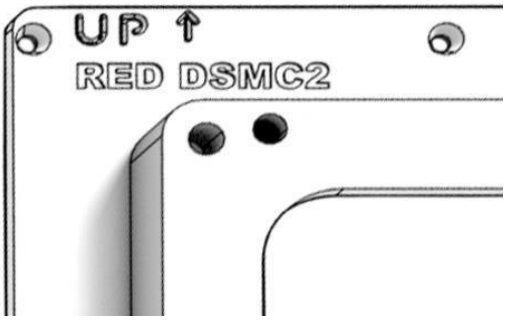
2.2 RED V-Raptor mount placement



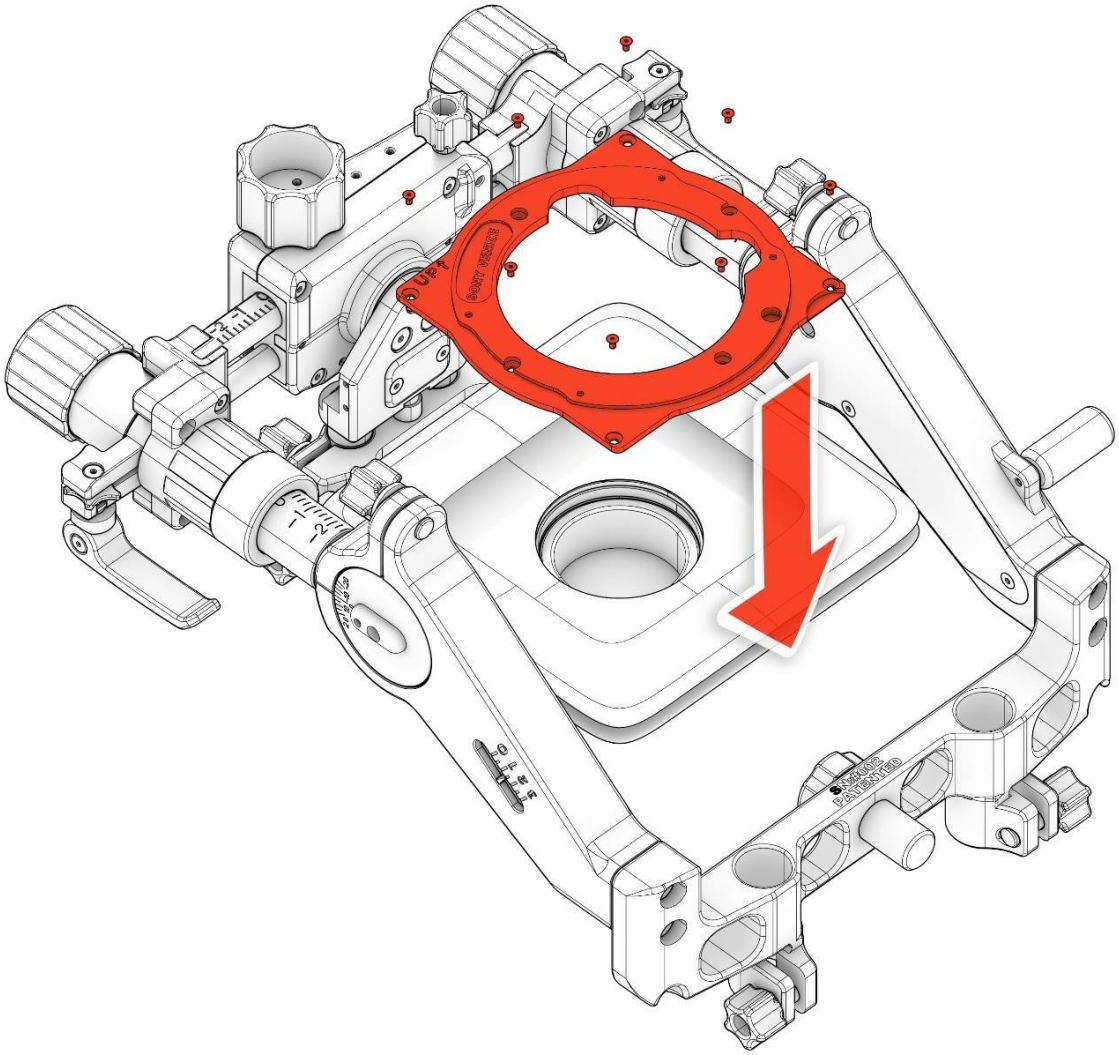
2.3 RED DSMC2 & DSMC3 mount placement



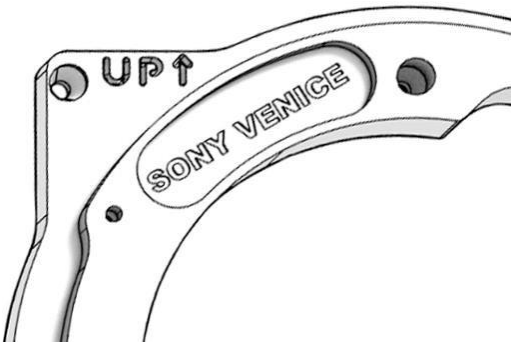
For SONY VENICE & RED DSMC2, when attaching the screws, the operator must always look at the "UP" side of the mount → and see the position of the upward arrow.



2.4 SONY Venice mount placement



For SONY VENICE & RED DSMC2 when attaching the screws, the operator must always look at the "UP" side of the mount → and see the position of the upward arrow.



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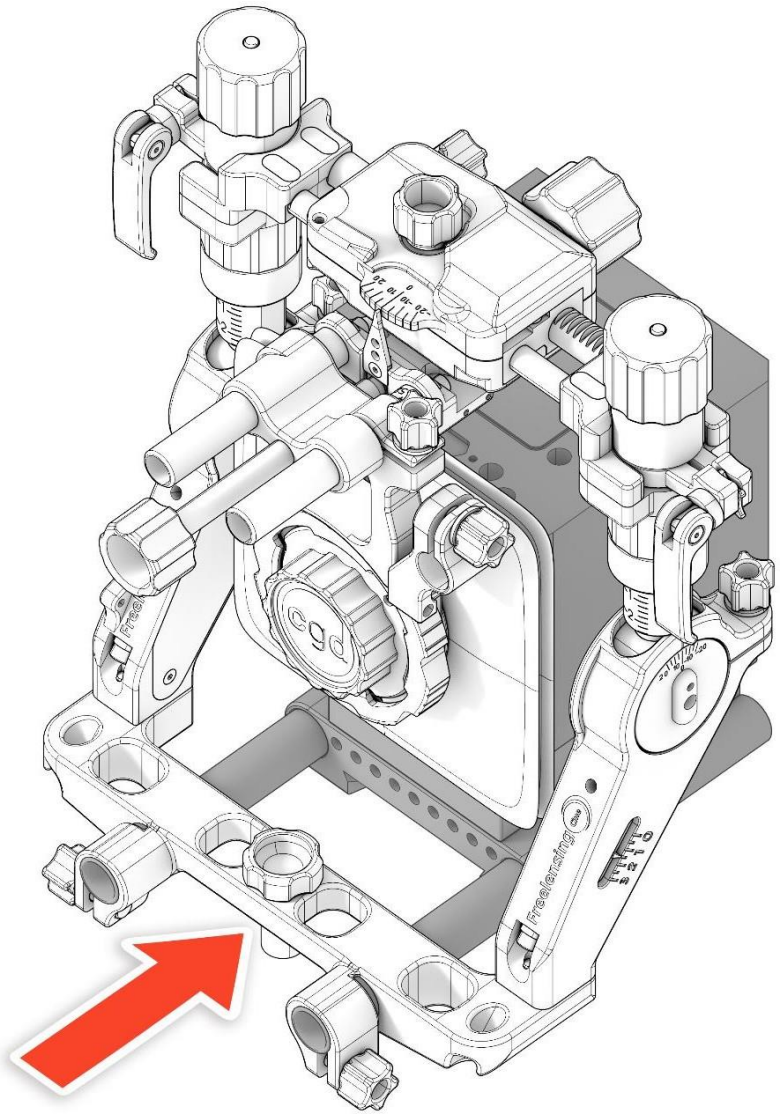
3. MARRIAGE BETWEEN CAMERA & FREELENSING CINE®

Once the camera and FREELENSING CINE® are ready (separately), the 19mm rods[3] attached to the camera will have to be inserted into the FREELENSING CINE® or the other way around.

3.1 Placing FREELENSING CINE® on rods with the camera

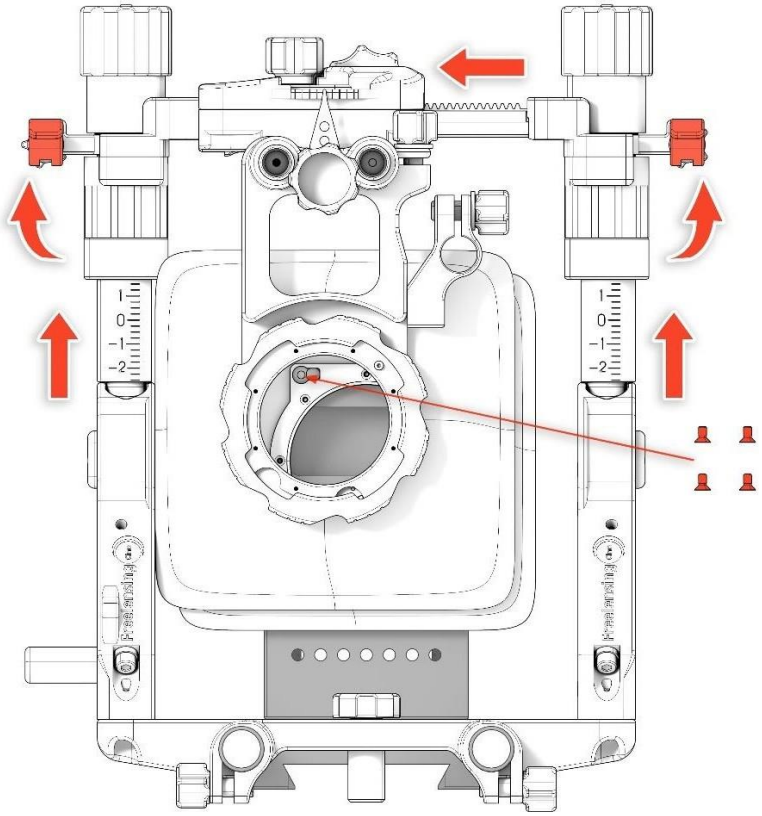


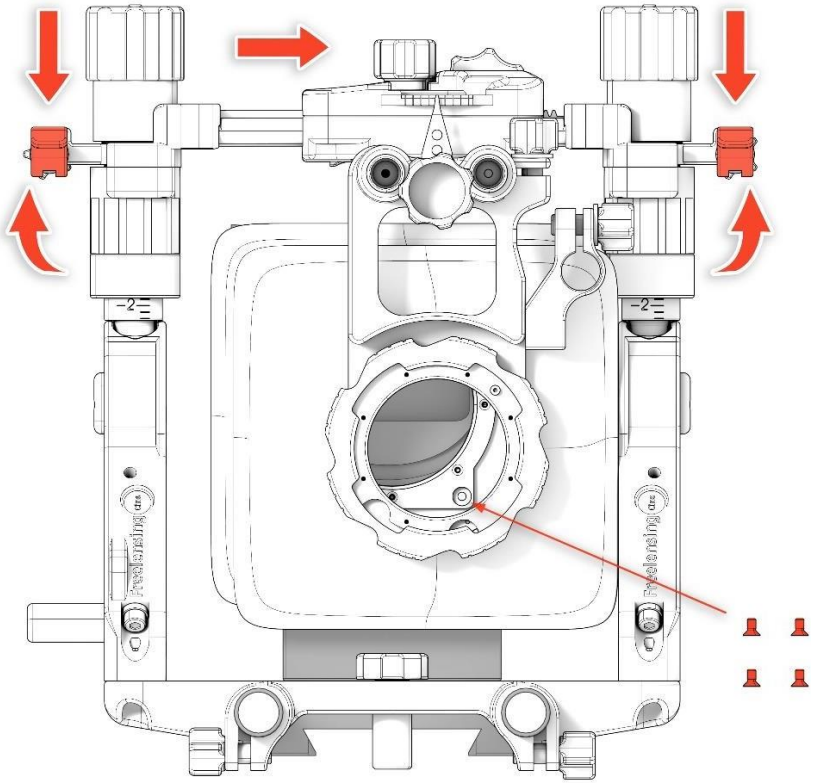
[3]Adapters for 15mm rods.

3.2 Attaching the Alexa MINI | MINI LF | 35 mount

It is necessary to take advantage of the movement of the FREELENSING CINE® to face the screws, in frontal position.

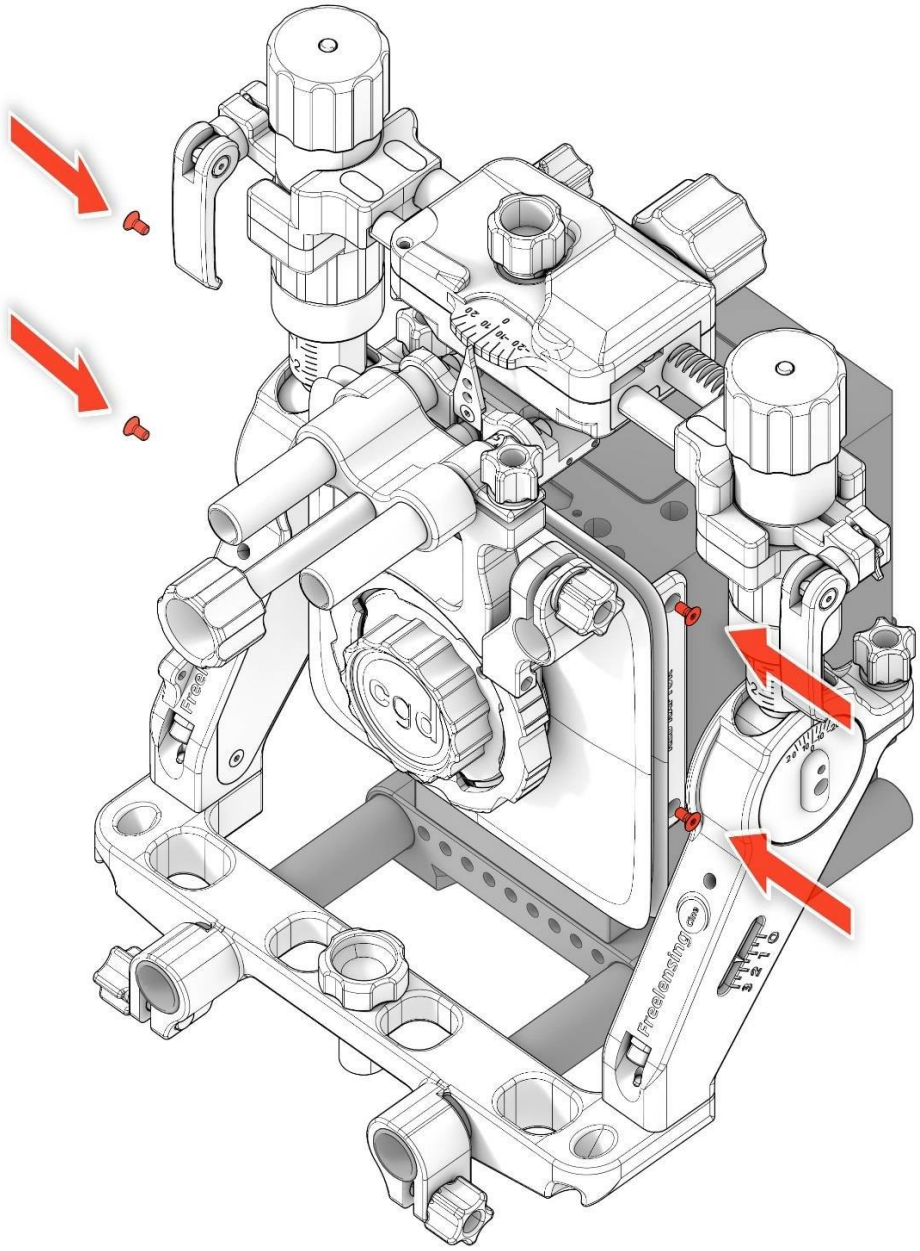
The image shows two screws, but it must be done on all four.





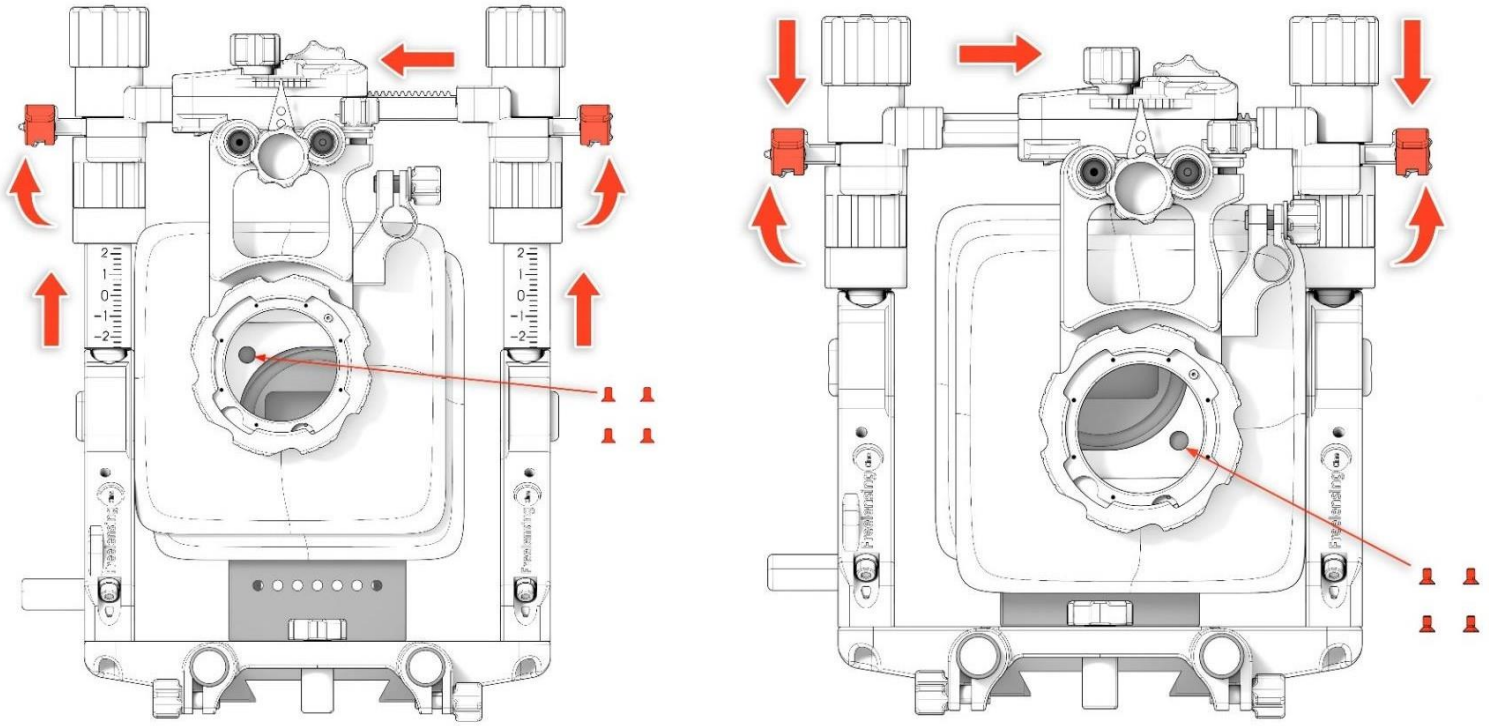
3.3 Attaching the RED V-Raptor mount

WARNING: to avoid affecting the front tally light of this camera, it must be switched off through the camera menu.



3.4 Attaching the RED DSMC2 & DSMC3 mount and SONY Venice mount

For RED DSMC2 & DSMC 3 (DSMC2 and DSMC3 plates are different although here they are shown as one and the same) & SONY VENICE → Place the camera mount (already installed in the bellows of the FREELENSING CINE®), align it with the screws(must be inserted already) and tighten them in each of the corresponding holes of the camera → This adjustment will have to be made through the hole of the lens mount. The movement of the system will give us more mobility to make these adjustments.



DSMC2 and DSMC3

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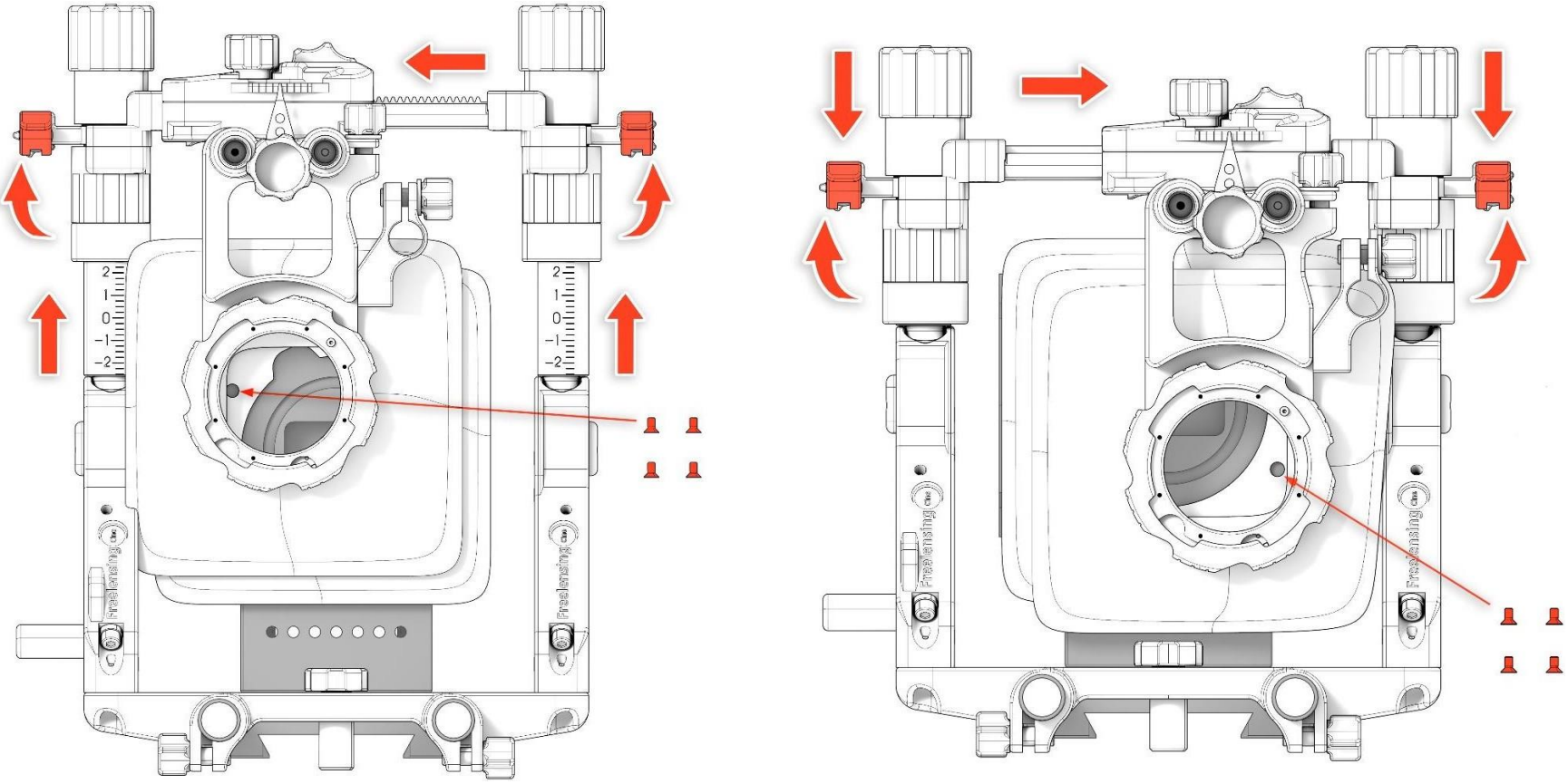
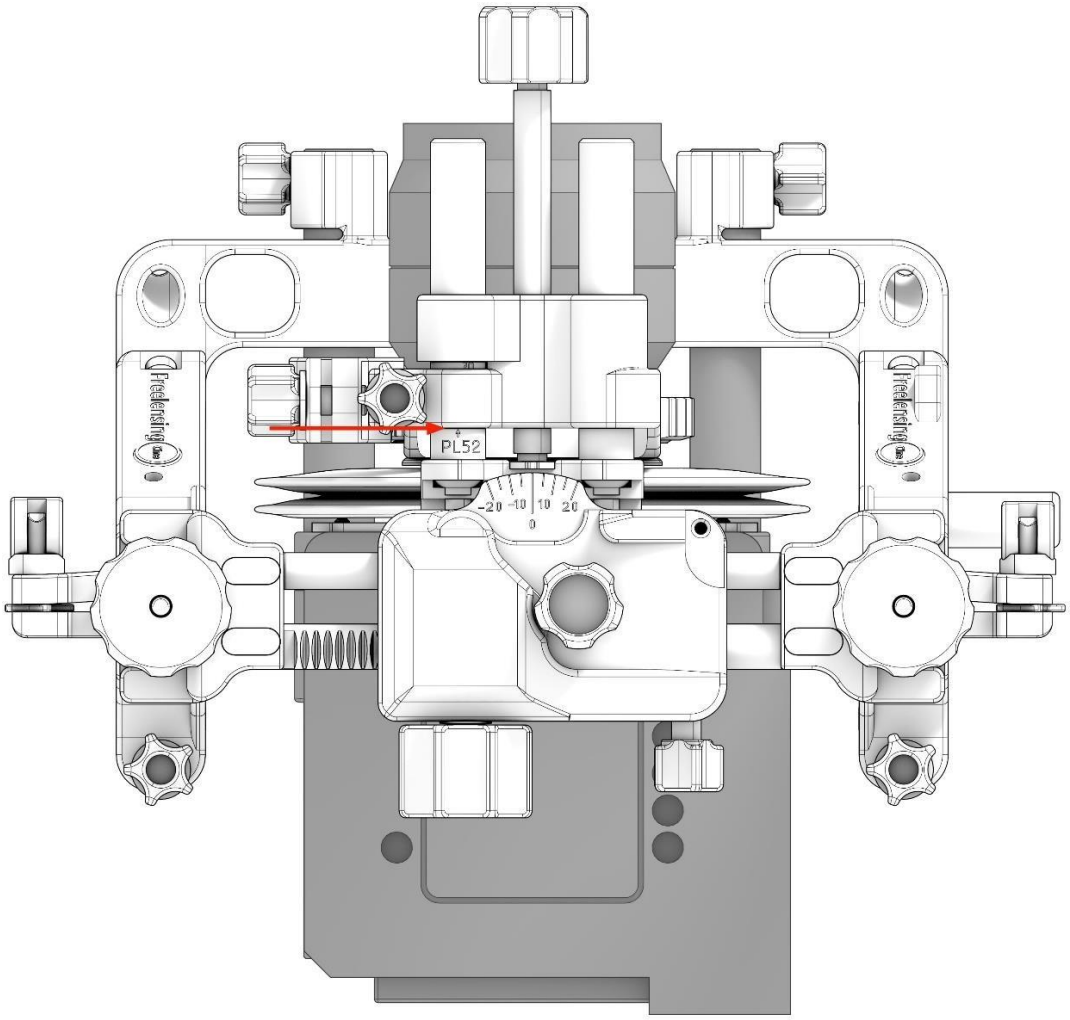


SONY Venice

3.5 Mounting the lens

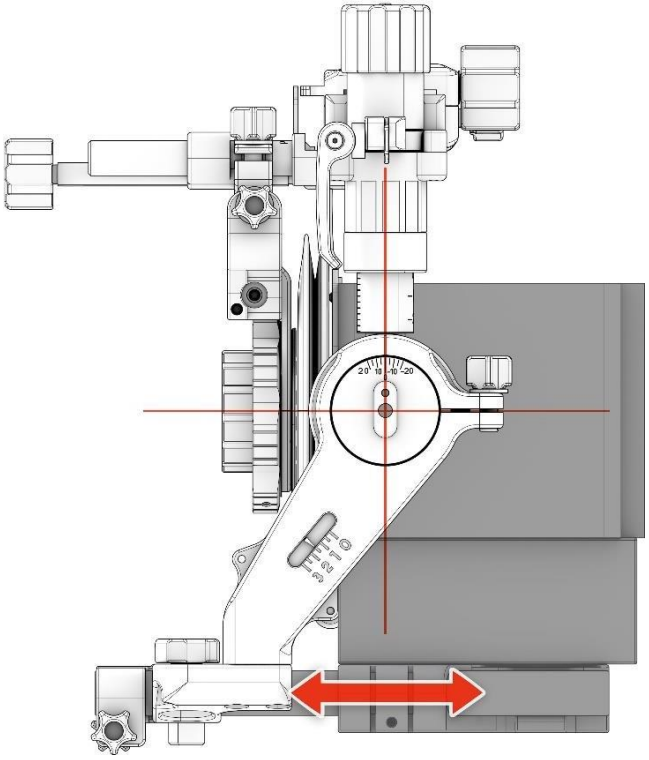
Set the "collimation" Z-axis adjustment knob to 52mm PL[4] → final collimation will be made in the next steps. Check: 3.6 Matching FREELENSING CINE® and camera and 4 Final adjustments.

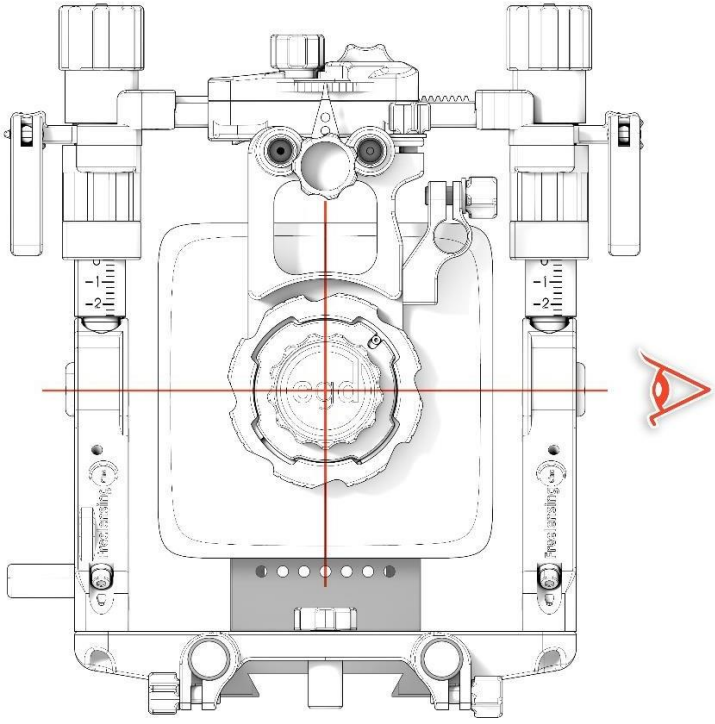


3.6 Matching FREELENSING CINE® and camera

Bring the HOLES on the SIDES of the FREELENSING CINE® close to the NODAL POINT MARK on each of the cameras.

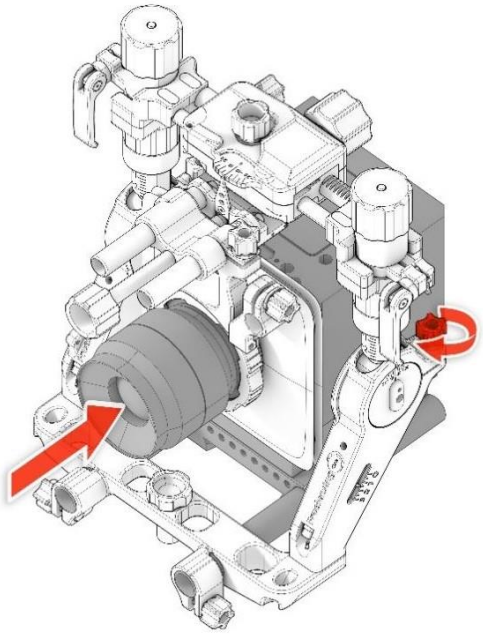
To make sure we are in line with the focal plane[5] → look through the holes to make sure they are as aligned as possible to this point.

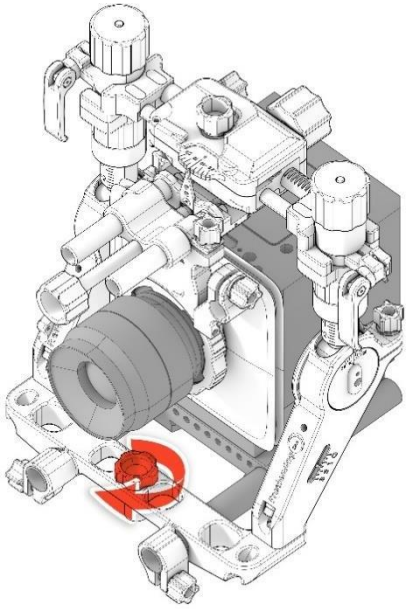




4. FINAL ADJUSTMENTS

4.1 Mounting the lens





Set all FREELENSING CINE® settings to "0" except Z-axis, already fixed at 52mm. Check 3.5 Mounting the lens.

We fix all camera peripherals (rods, etc) and tighten the red 3/8 screw located above the serial number, inside a 3/8 hole.

We finish adjusting by moving the camera body closer or further away from the FREELENSING CINE® until the object is sharp and in focus to the correct distance from the object. For example:

- We have a focus chart at 2 meters from the focal plane.
- We place the lens at 2 meters mark.
- We move the camera body over the 19mm rods and dovetail until theobject is in focus.
- We lock all the camera settings.

As of this moment...

FREE YOUR LENS, FREE YOUR MIND.

WHAT MOVEMENTS DOES FREELENSING CINE® OFFER?

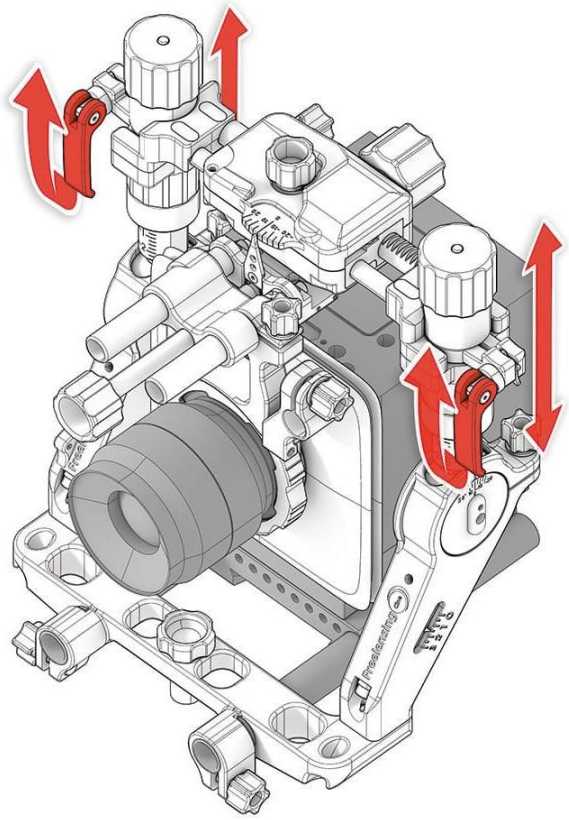
(*) The max movements (mm or º) listed in the following pages will be reduced if there is a combination of movements.

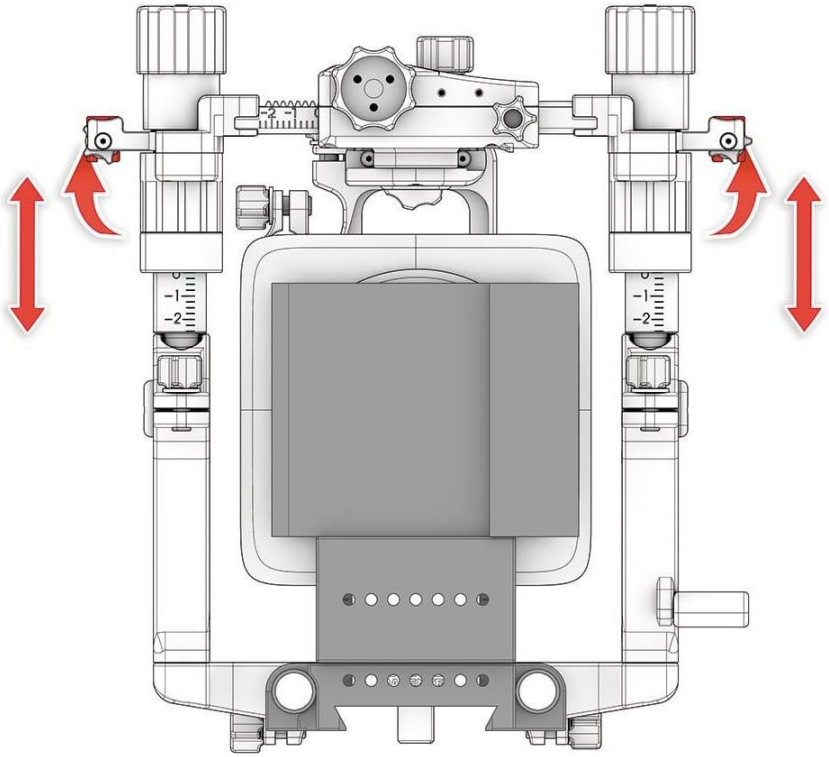
(**) The max movements (mm or º) the system offers will depend on the camera and lens mount, and the physical limitations these may have.

5. Y-AXIS SHIFT OFFSET (max ± 25mm)

Depending on the weight hanging from the lens mount of the system, there are interchangeable Gas Springs, check point 10 “Gas spring replacement”.

5.1 Movement Y-axis shift offset





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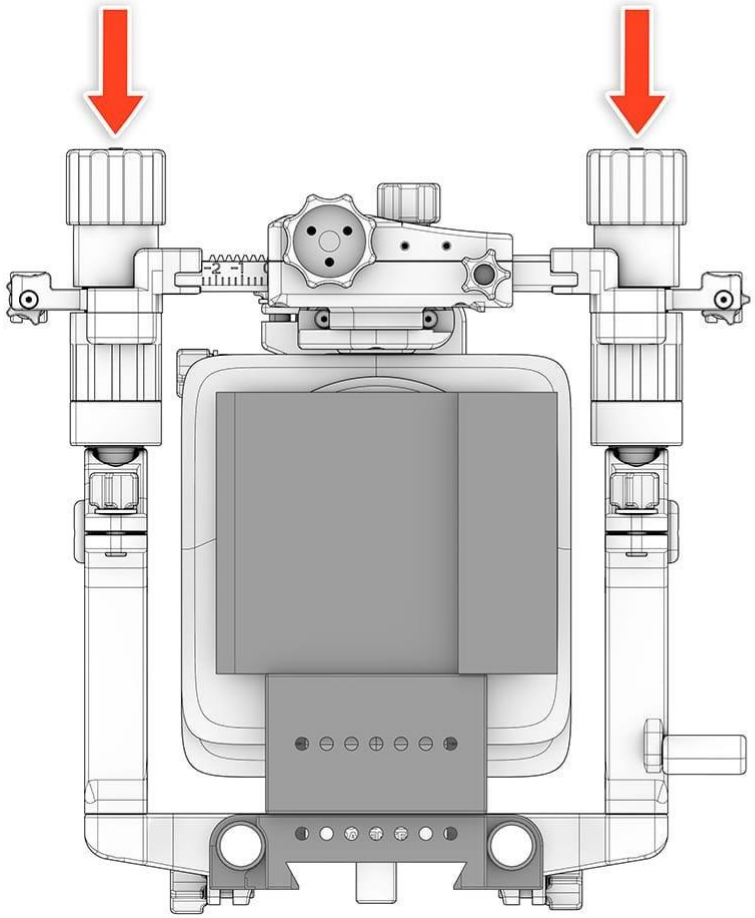
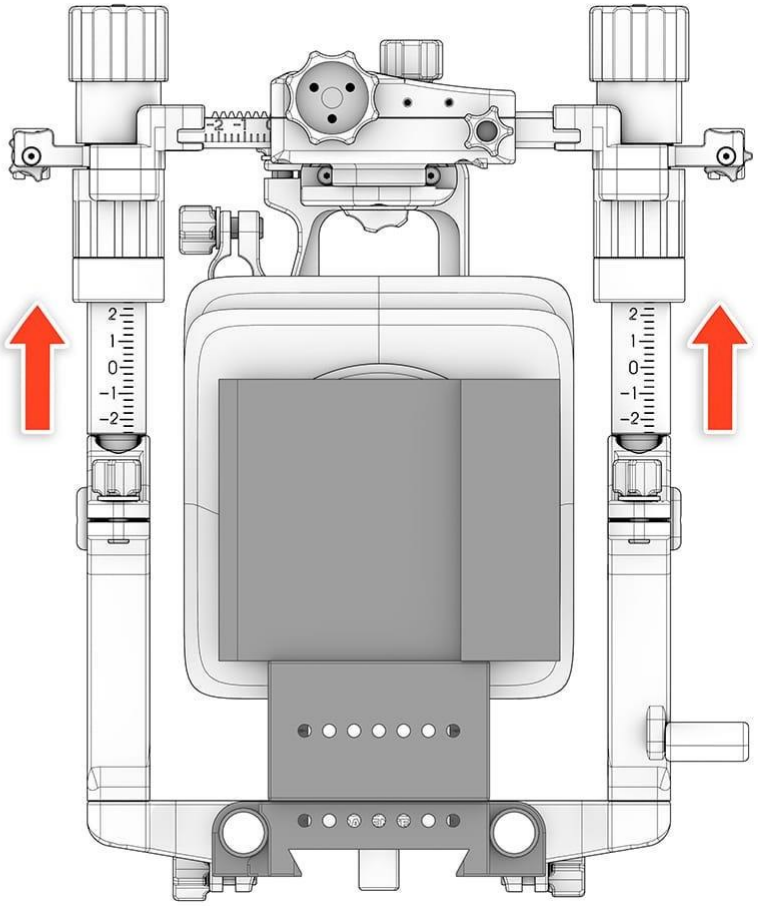
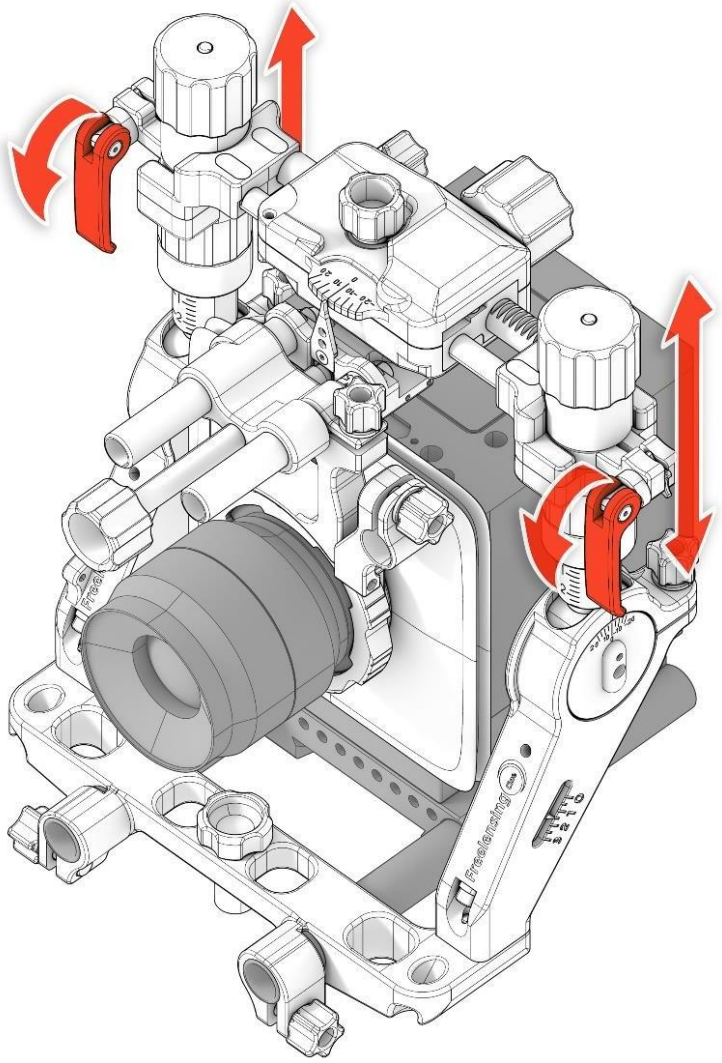
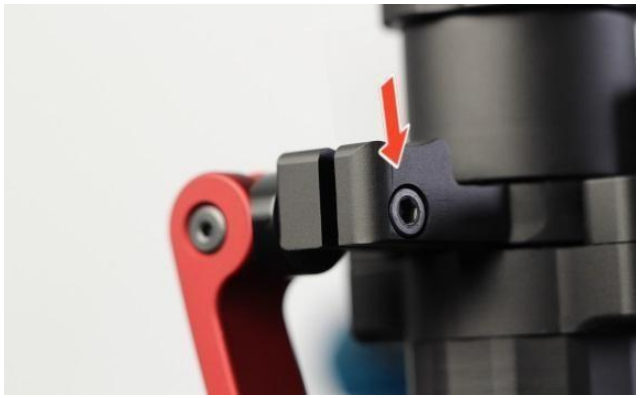






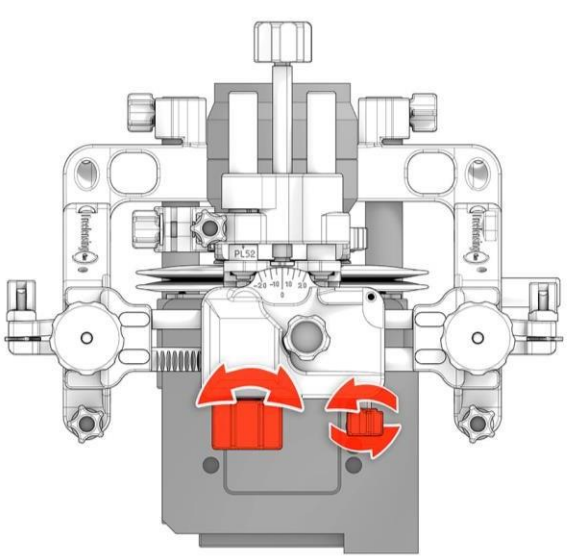
ADJUSTING SCREW (M3) from the locking cam for Y-shift (pay Special attention to the pressure of this screw, as it could loosen due to vibrations during transport).

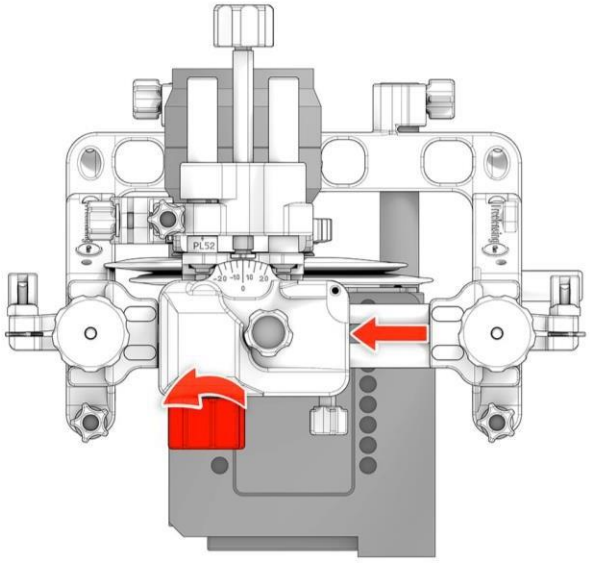
Adjust without the lens on and with 3kg gas spring.

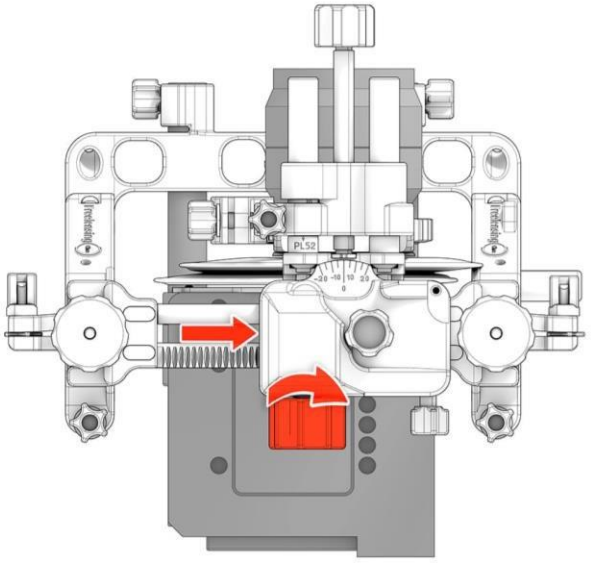


6. X-AXIS SHIFT OFFSET (max ± 25mm)

6.1 Movement X-axis shift offset

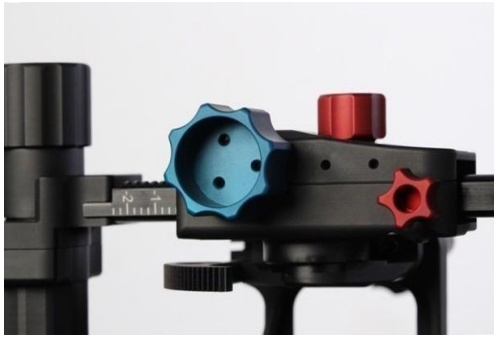






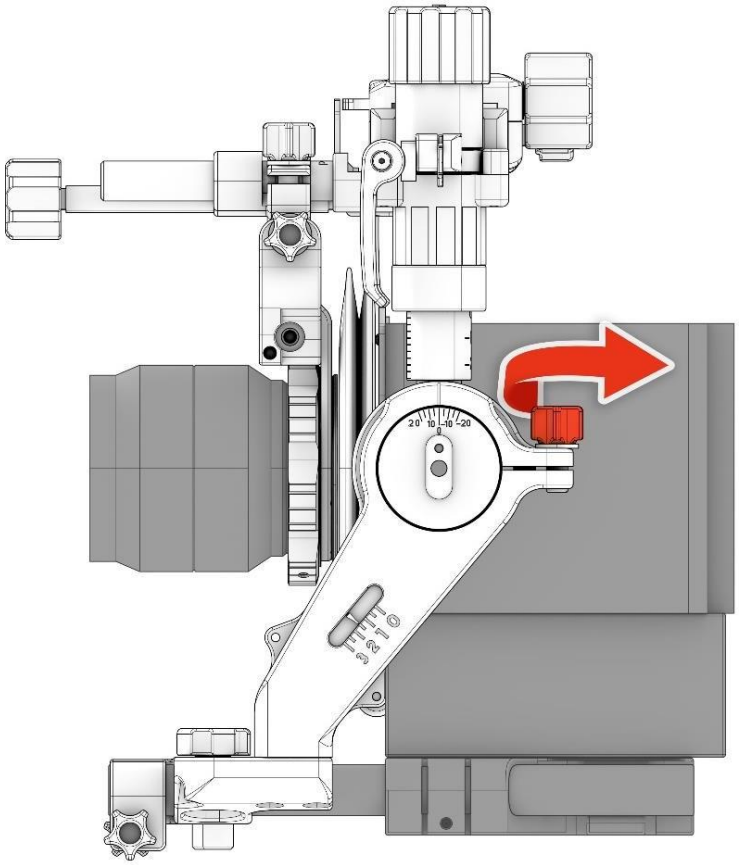
LOCKING SCREW for X-shifting

SCROLL KNOB for X-shift

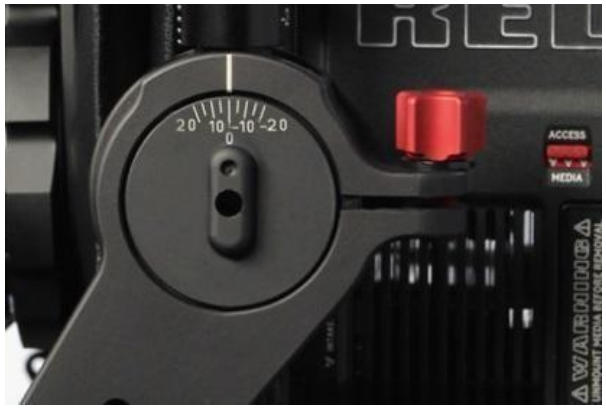


7. Y-AXIS ROTATION (TILT-Y) (max ± 20º)

7.1 Movement Y-axis tilt rotation

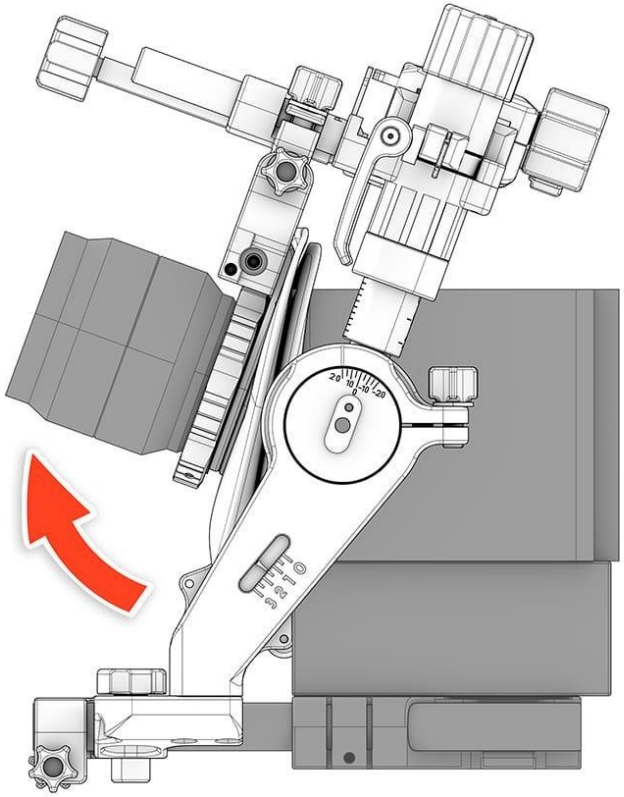


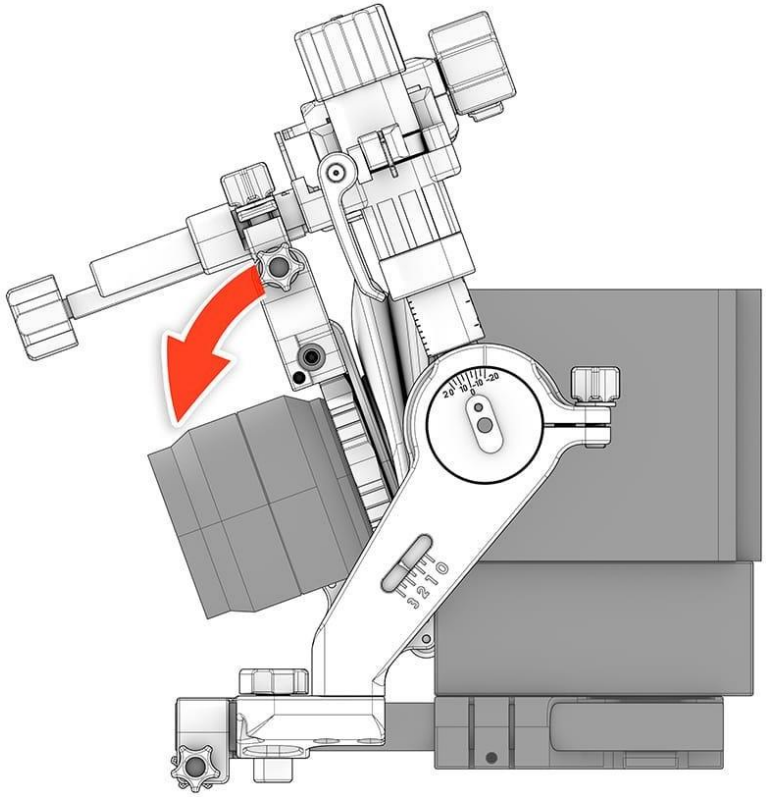
LOCKING SCREW for Y rotation



7.2 Movement Y-axis tilt rotation (up to +20º and down to -20º)

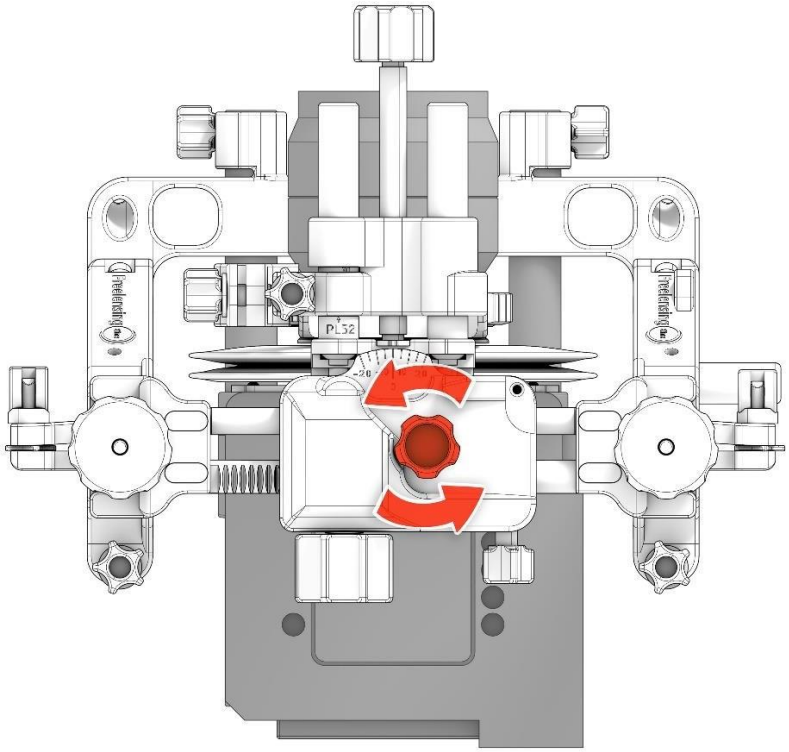
Depending on the counterbalance needed to balance the lens there is the possibility to change the pressure of the counterbalance. Check point 11 “Counterbalance pressure change”.



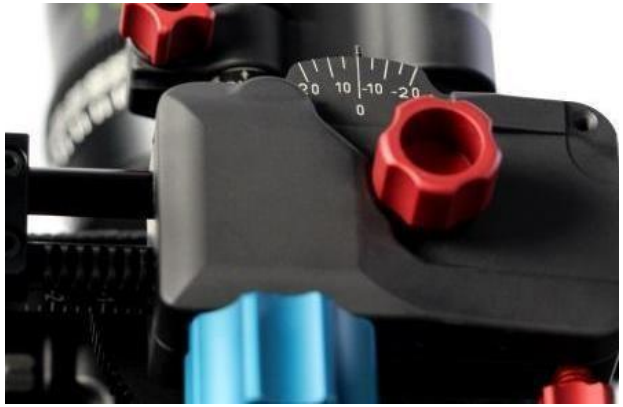


8. X-AXIS ROTATION (SWING-X) (max ± 20º)

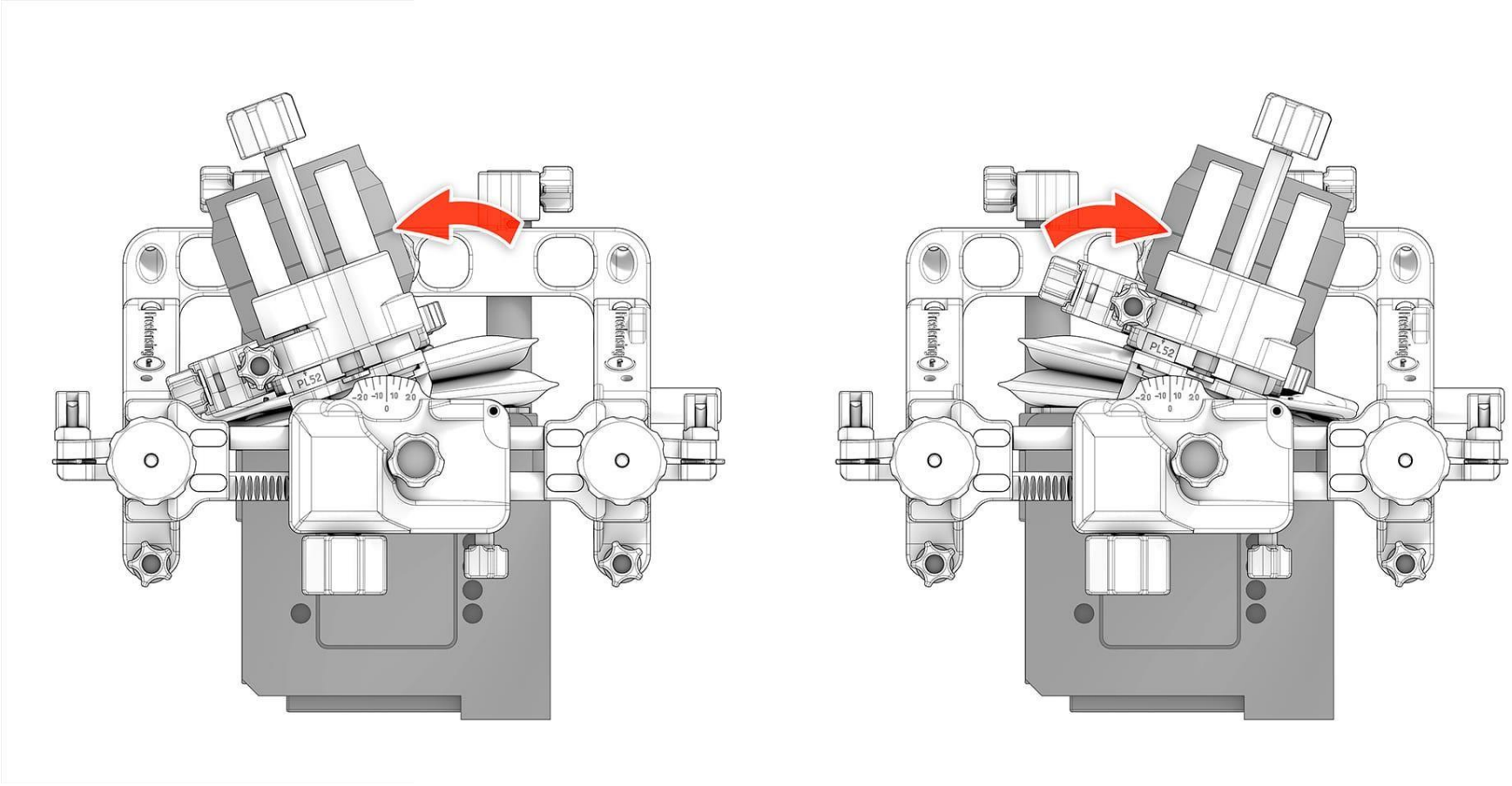
8.1 Movement X-axis swing rotation



LOCKING SCREW for X-rotation



8.2 Movement X-axis swing down to -20° and rotation (up to +20°)



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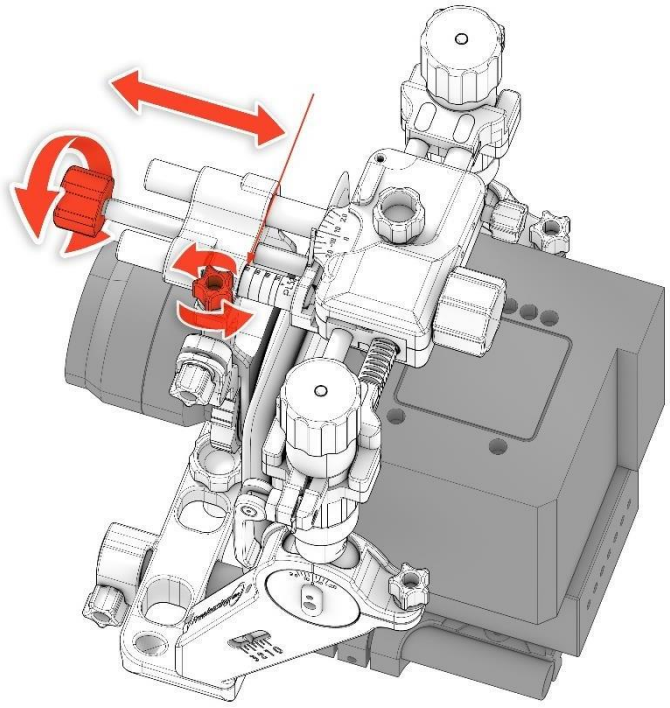
9. Z-AXIS SHIFT OFFSET “COLLIMATION”

Shift in Z → macro positions and expansion of lens focus ring travel.

- LPL 44mm (work in progress)
- PL 52mm



LOCKING SCREW for Z-shift "collimation"

ADJUSTMENT KNOB for Z-shift "collimation”

OTHER IMPORTANT FEATURES FROM FREELENSING CINE®

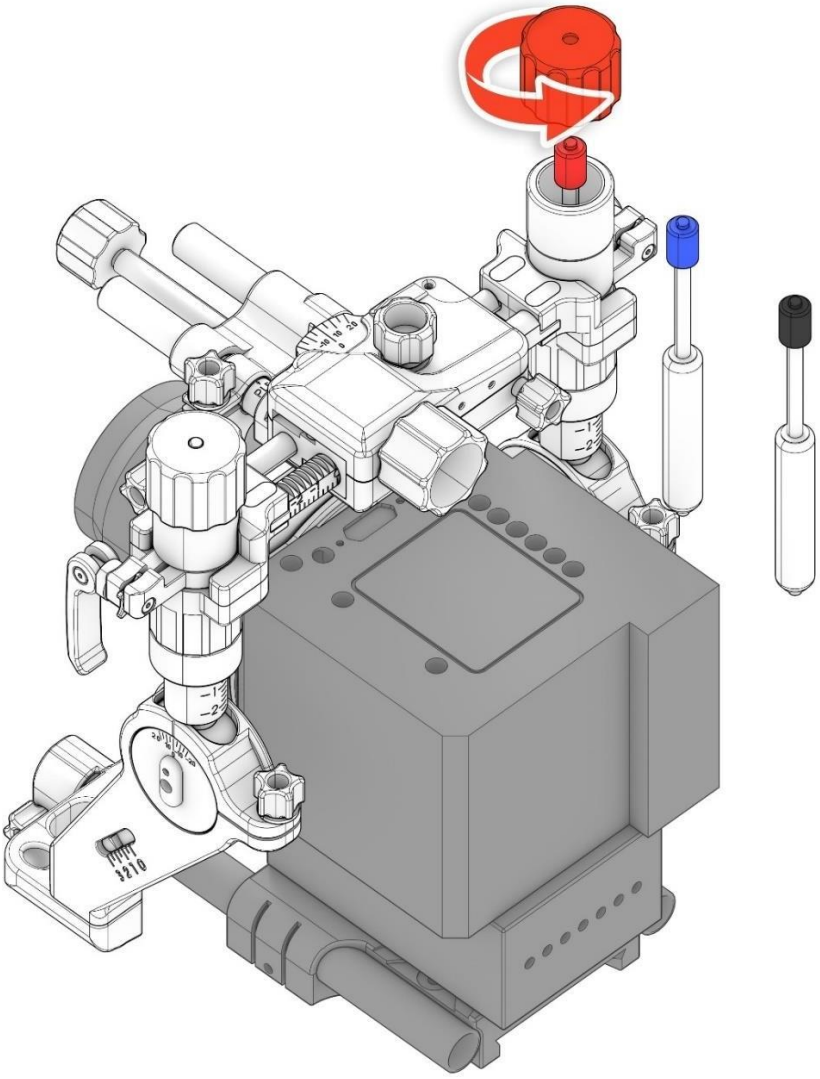
10. GAS SPRING REPLACEMENT

To make the most out of Y-AXIS SHIFT OFFSET (point 5) there are interchangeable GAS SPRINGS that must be changed depending on the weight hanging from the system:

- Blue → around 2kg
- Red → around 3kg
- Black → around 4kg

Depending on the weight of the set that the system must support, a shock absorber must be introduced on each side or others. In this case, the sum of lens, filter holder and motors must be considered.

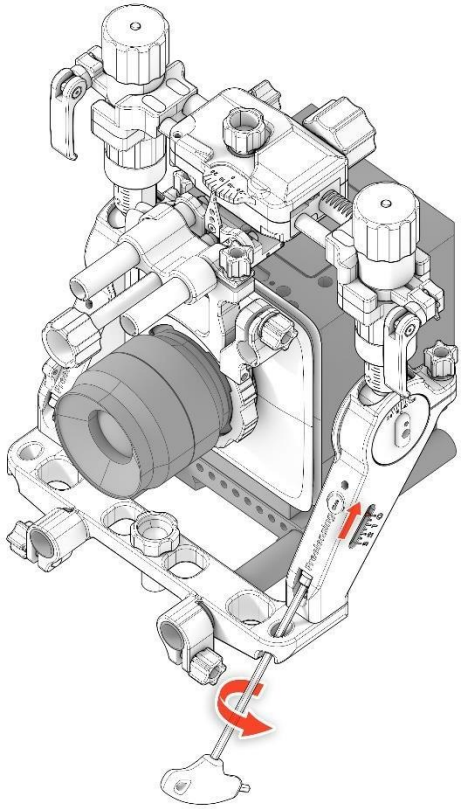
10.1 Gas Spring Change

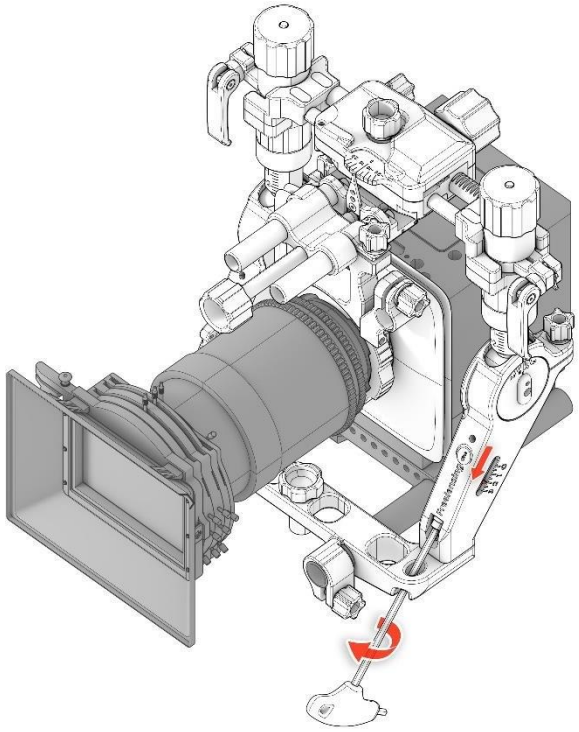


11. COUNTERBALANCE PRESSURE CHANGE

Adjust the counterbalance for the Y-axis Tilt rotation, it will depend on the weight in front of the lens mount (lens, matte box, etc.) and the gas spring inserted in the system. See point 7 Y-AXIS ROTATION (TILT-Y).

ALLEN WRENCH M4 → To be adjusted to compensate for the weight of the lens with the counterbalance, with 0 being the minimum force and 3 being the maximum force.

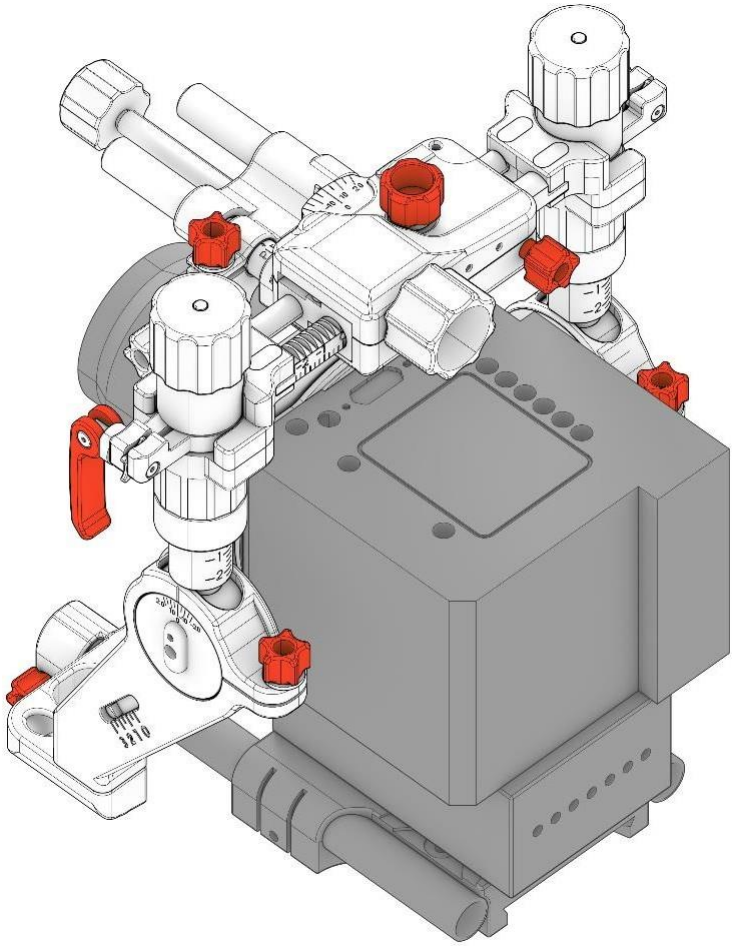


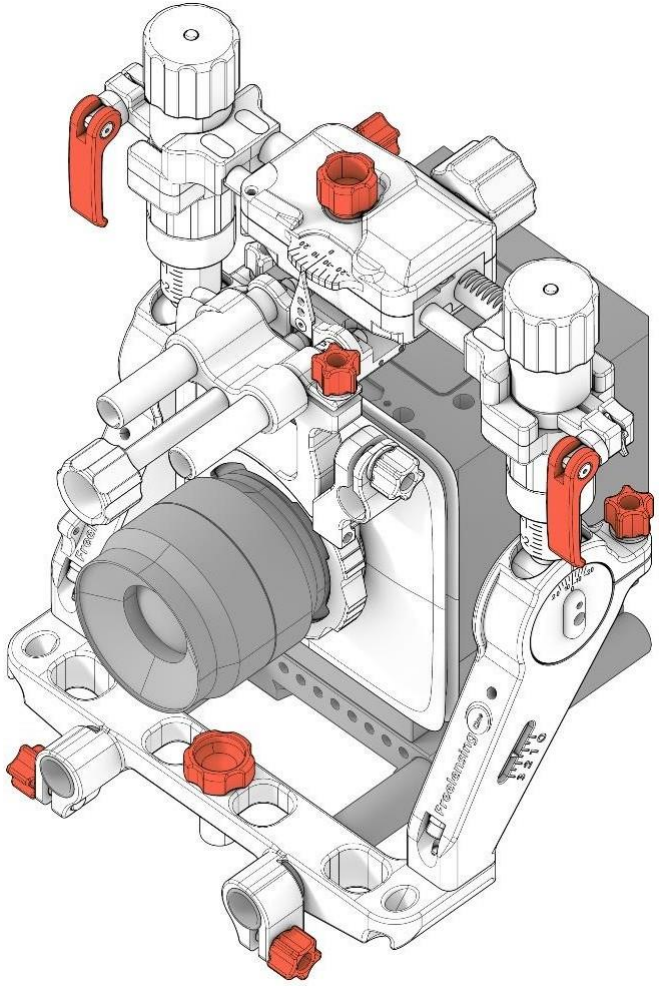


Adjustment: the counterbalance counteracts the gravity drop of the lens, allowing it to float, i.e., in neutral position in front of the sensor.

Being zero the minimum value and 3 the maximum value, it is necessary to adjust it on both sides and depends on the weight and the distal position of the center of mass.

12. LOCKS

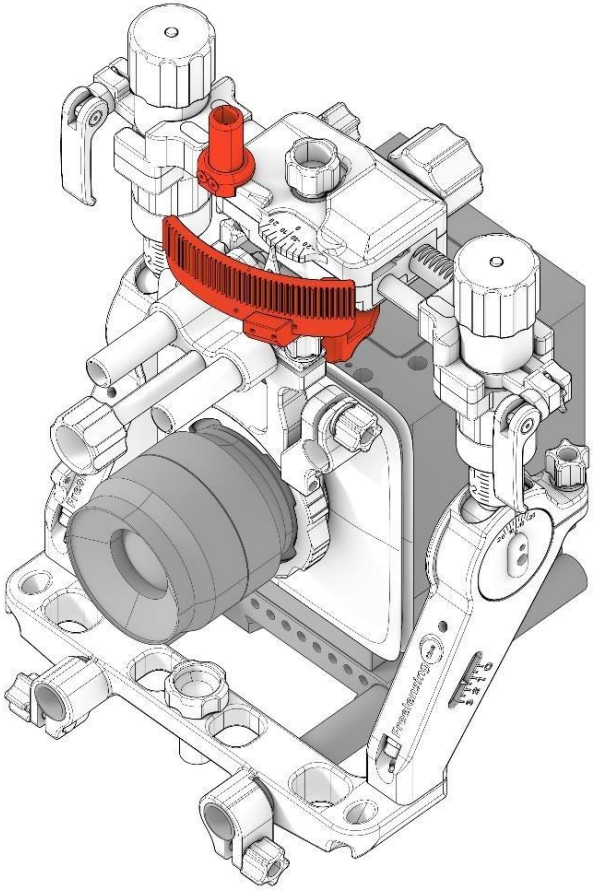


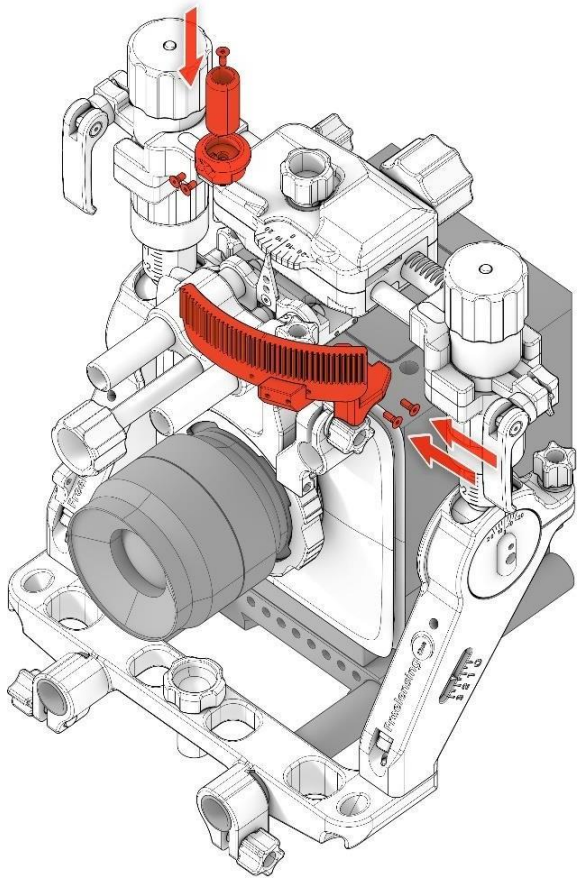


13. MOTORIZATION

13.1 Gears for motorization: X rotation (x-Swing)

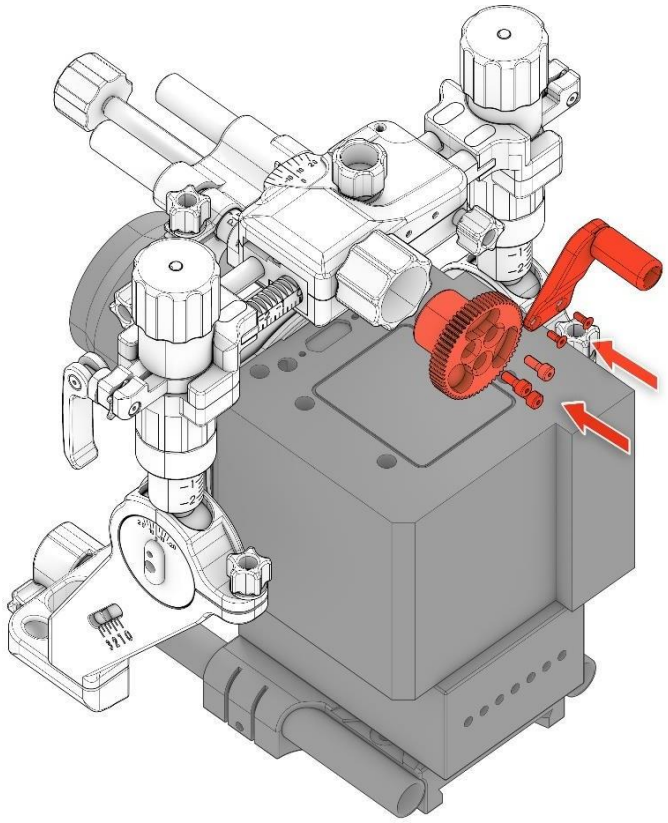
Motorizable with standard motors from Follow Focus (0.8 gear).

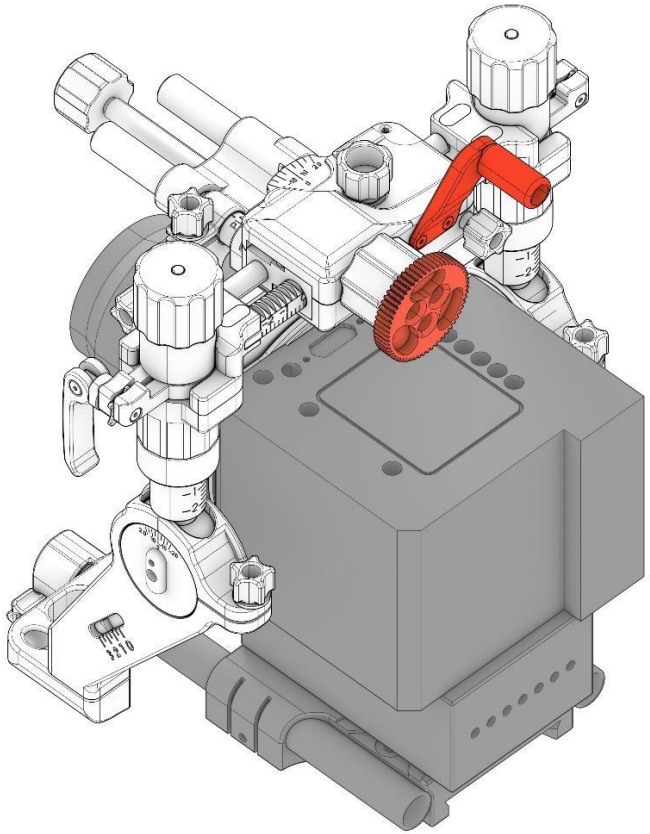




13.2 Gears for motorization: X-shift

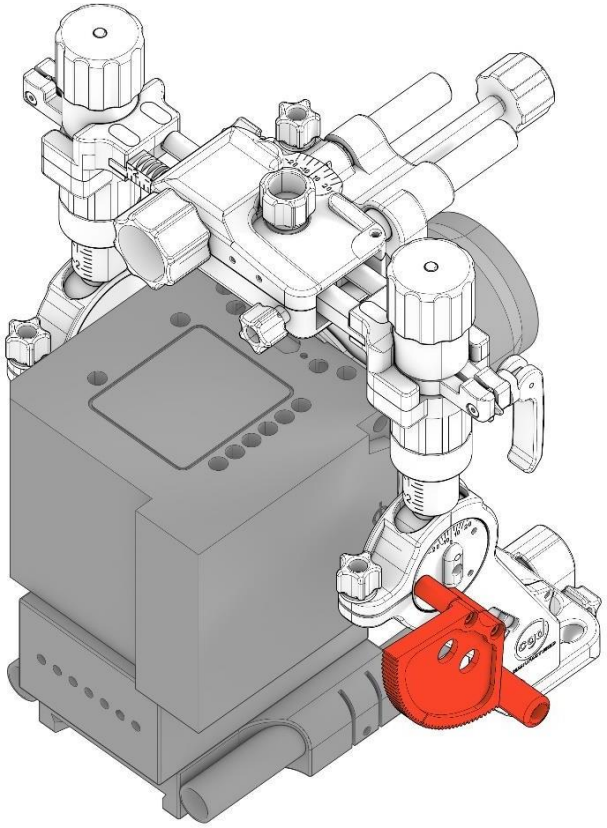
Motorizable with zoom fluid or motors with enough torque (0.8 gear).

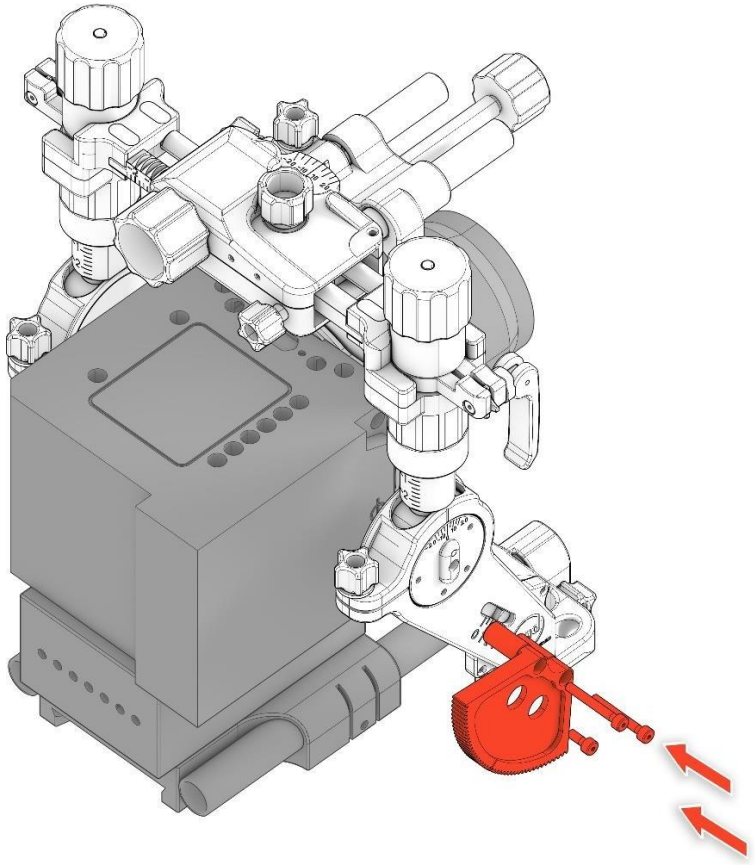




13.3 Gears for motorization: Y rotation (Y-Tilt)

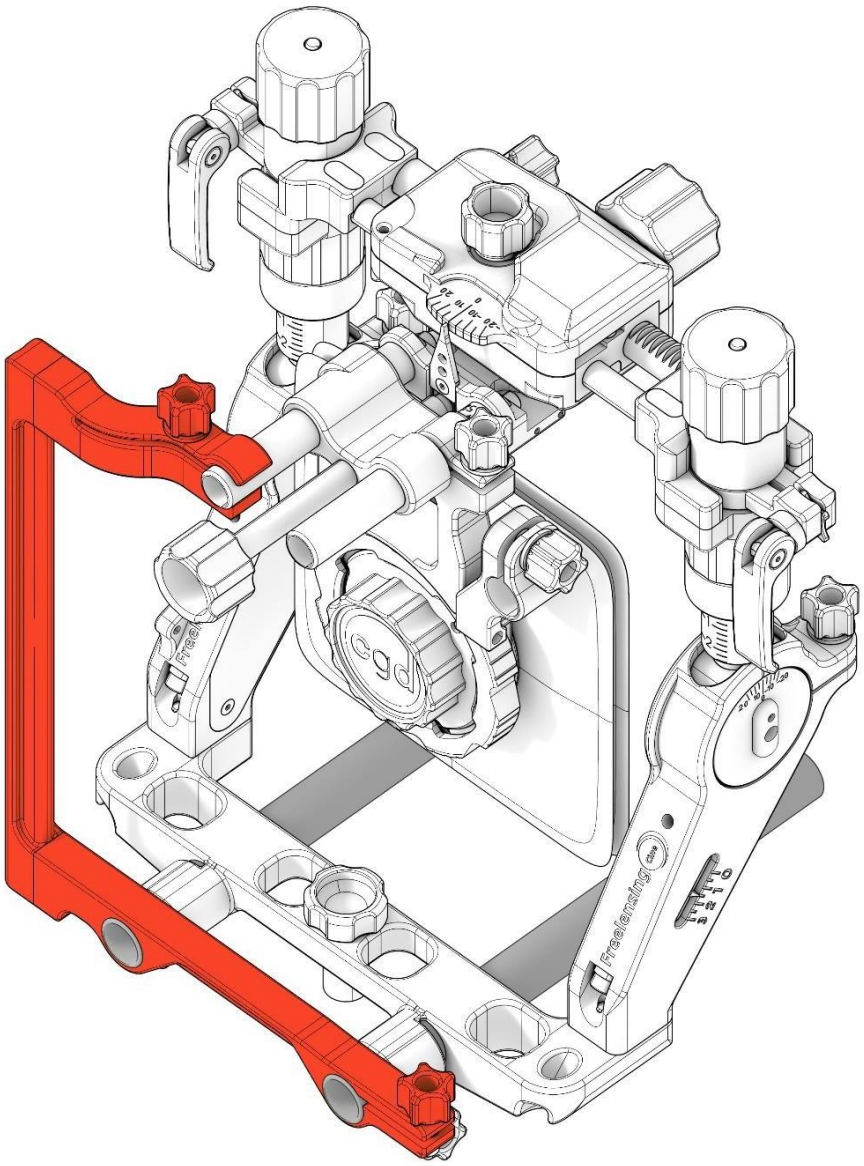
Motorizable with zoom fluid or motors with enough torque (0.8 gear).





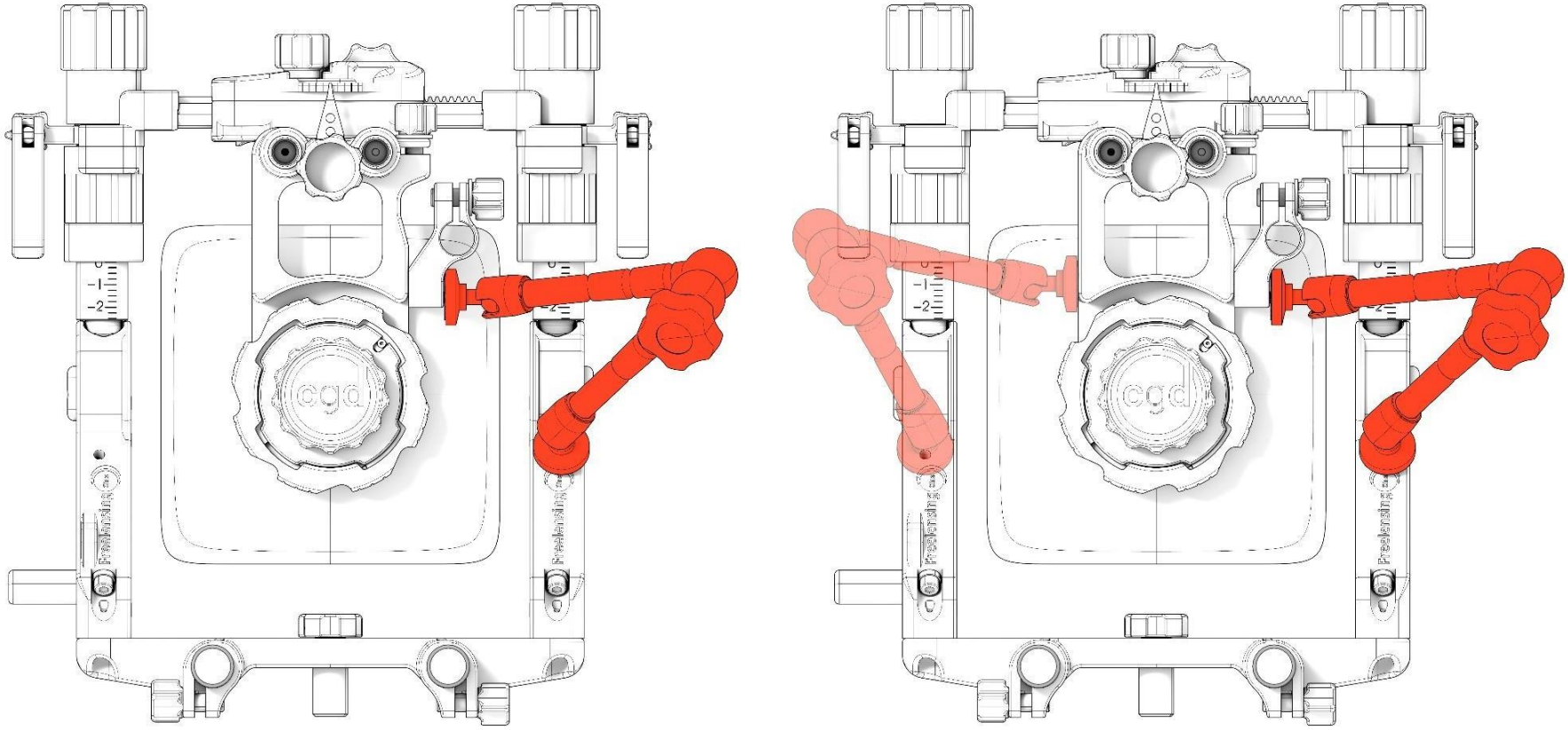
14. FIXING TO AVOID MOVEMENTS OR VIBRATIONS

14.1 Fixing for transportation



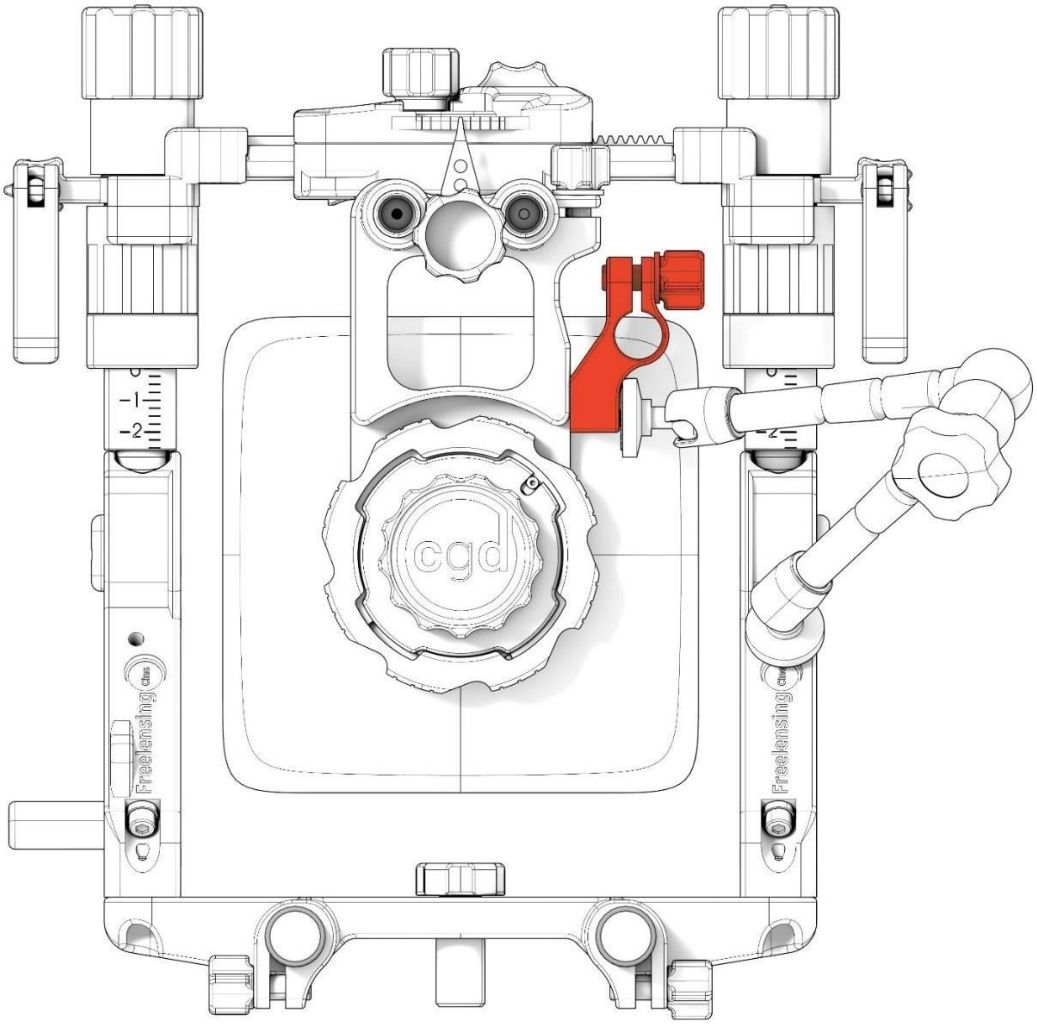
Use the cage with U shape included in the kit to fix the system and avoid vibrations. The system will suffer due to vibrations during transportation if the U-cage is not attached.

14.2 Fixing with Magic Arm



Extra bracket

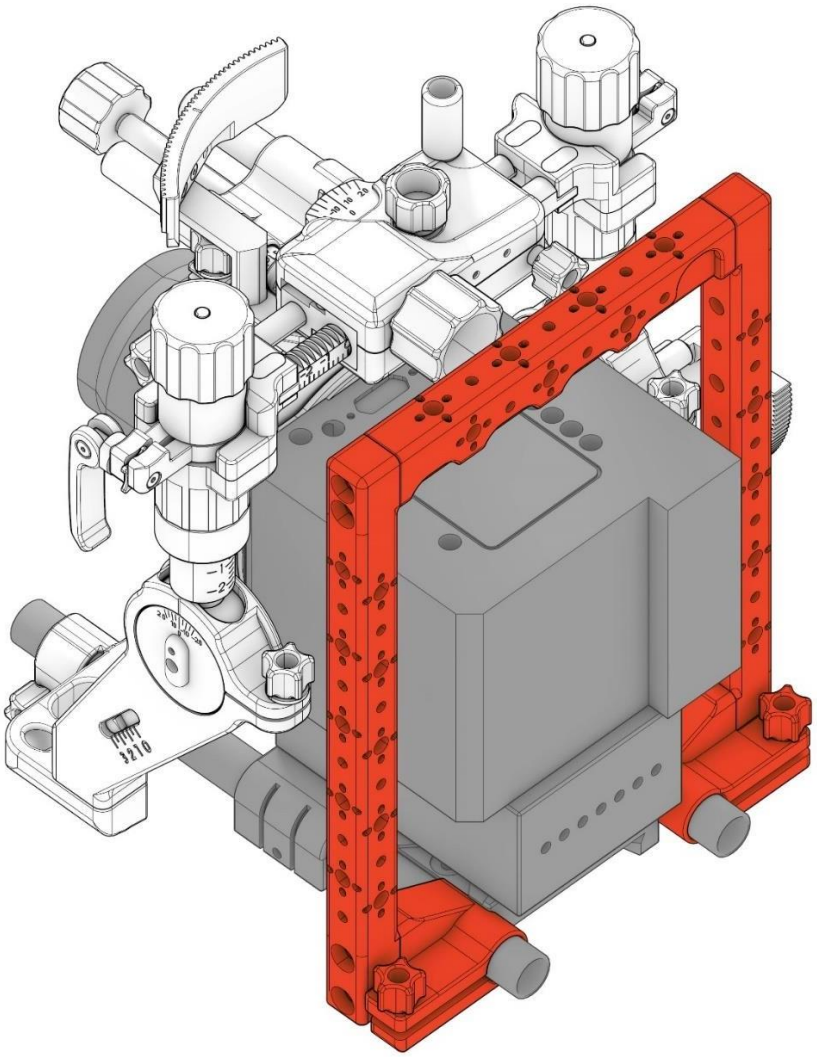
Extra bracket to unitarily associate the 15 rods with the frame holder, which allows to motorize the iris, focus, and zoom in case it is necessary.



15. HANDLE | GRIP

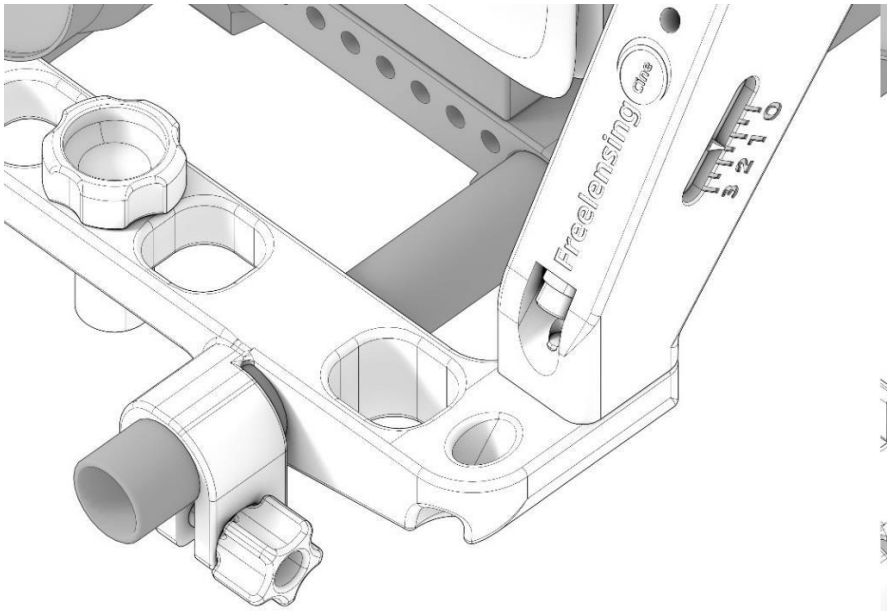
Transport and positioning of elements with ¼" and 3/8" screws (with an anti-rotation system).

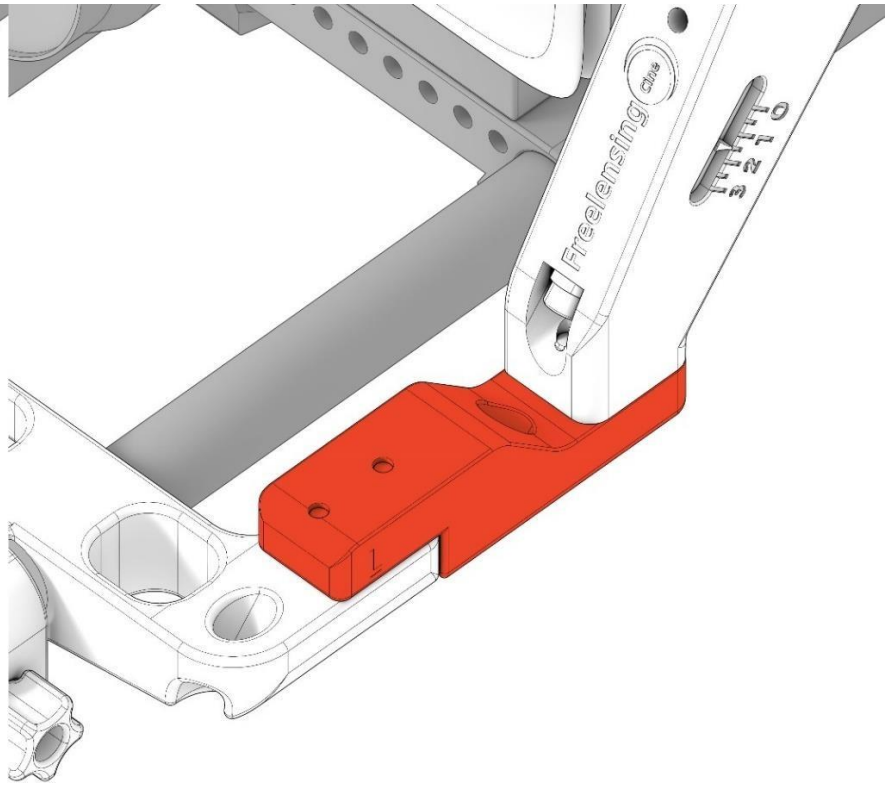
To be placed on the same 19mm bars as the FREELENSING CINE®.



16. EXTENDER

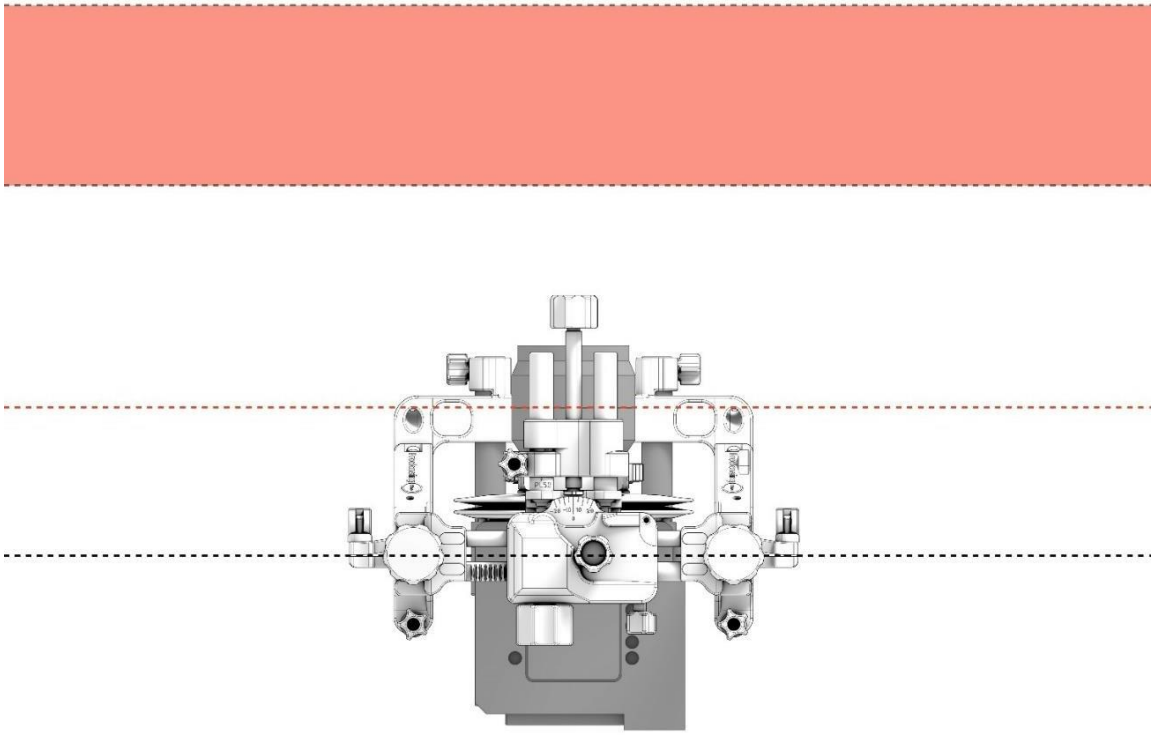
In case you want to delay the turning radius or to save different camera configurations that may limit the position of the FREELENSING CINE®.



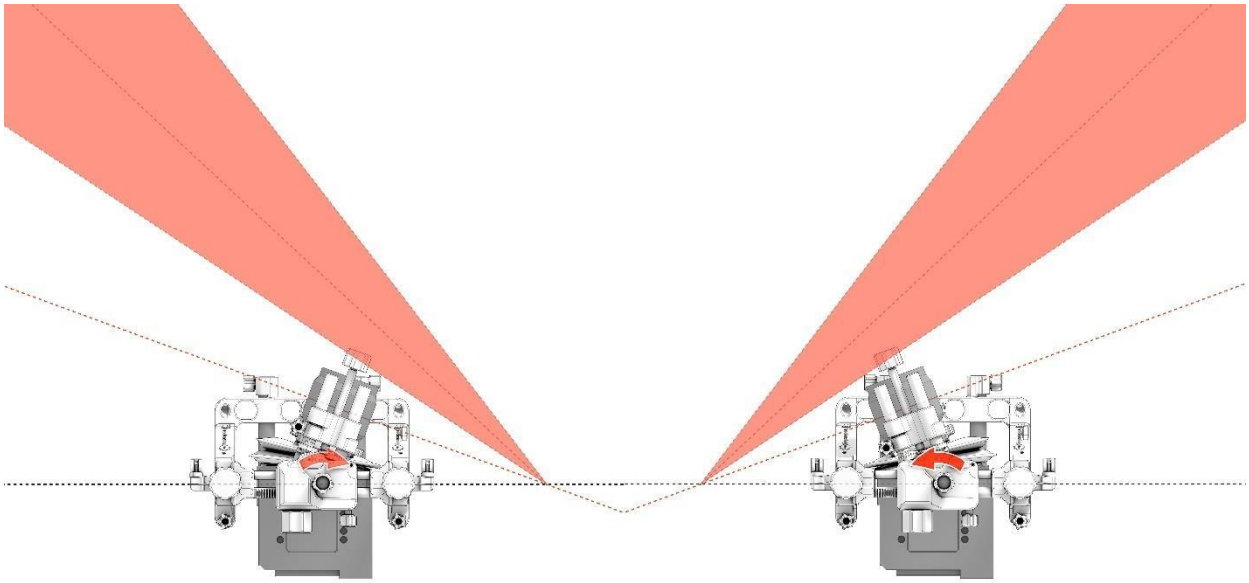


17. DEPTH-OF-FIELD AND FOCUS CONSIDERATIONS

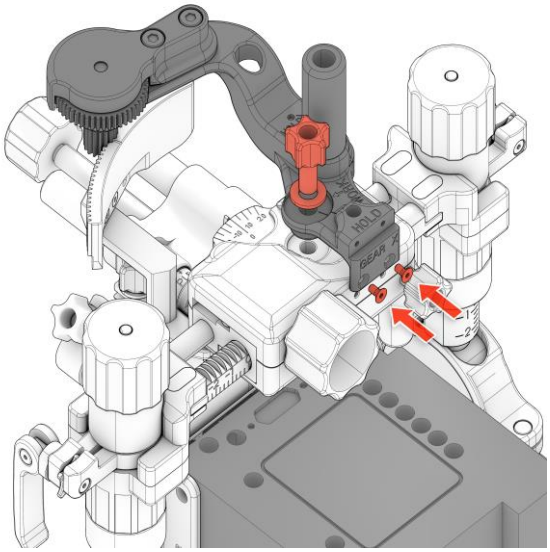
Depth of field: with the X and Y rotation angles at zero, depending on the depth of field of the T.stop used.

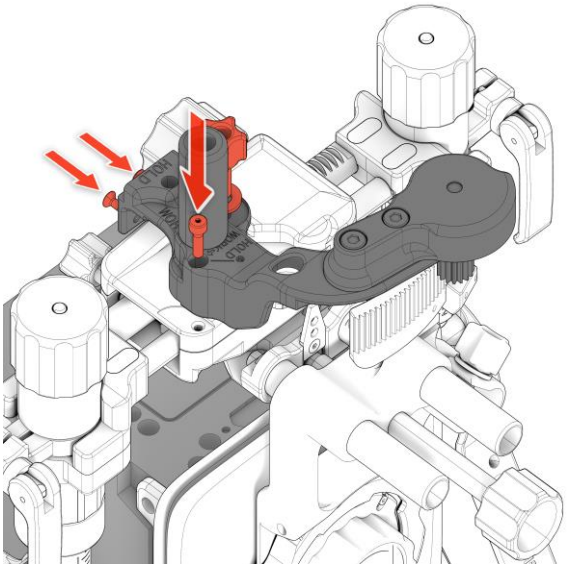


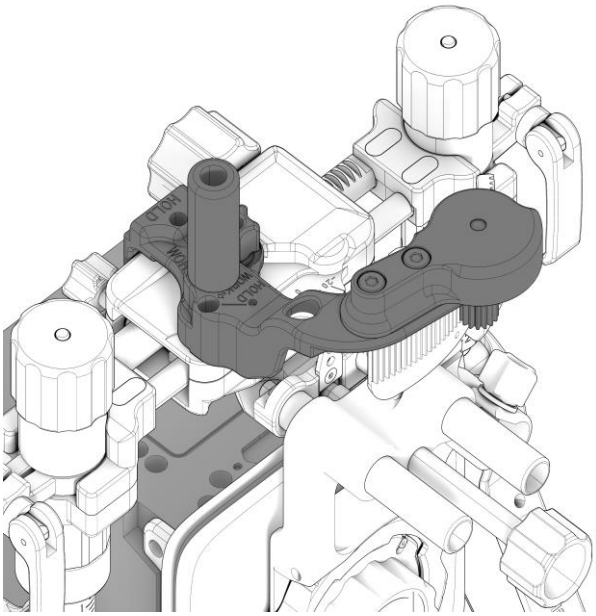
With the selection of the focal plane, depending on the angle of X and Y (in the illustration the rotation of X is shown).



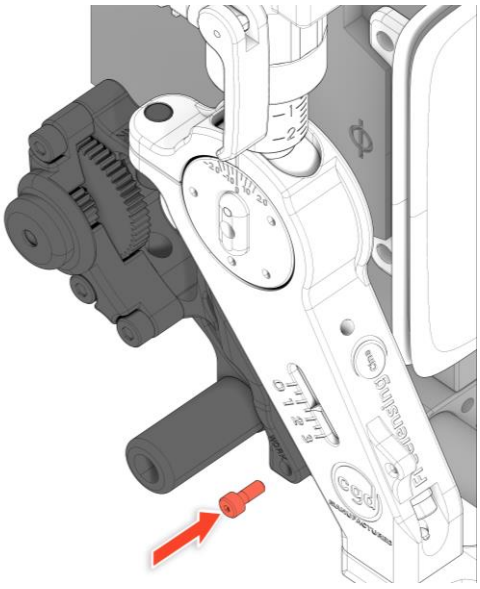
18. INSTALL REDUCTION KIT MOTORIZATION SWING (X)

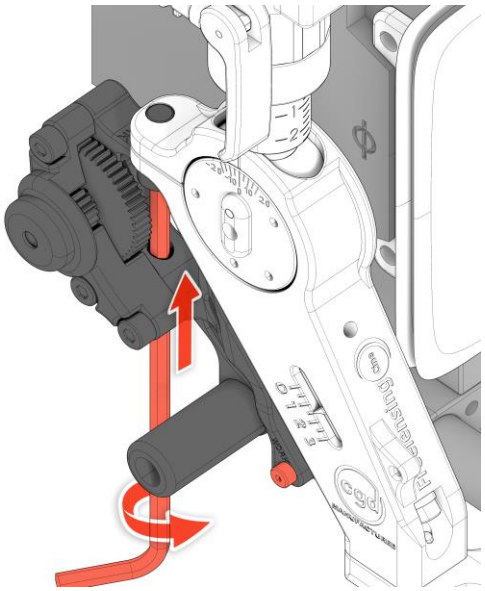






19. INSTALL REDUCTION KIT MOTORIZATION TILT (Y)

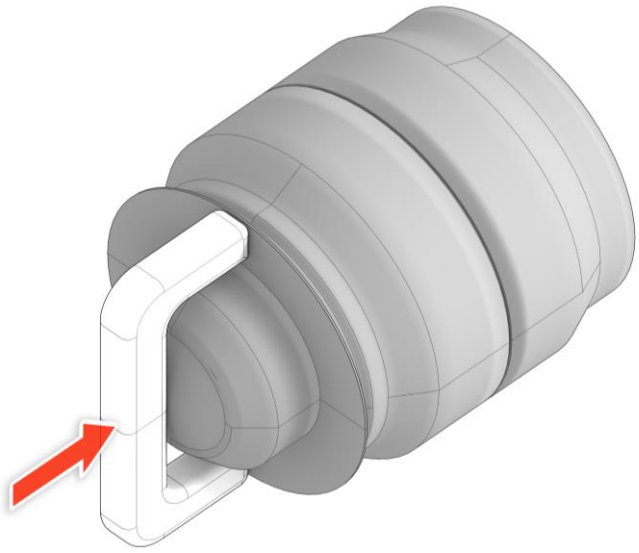


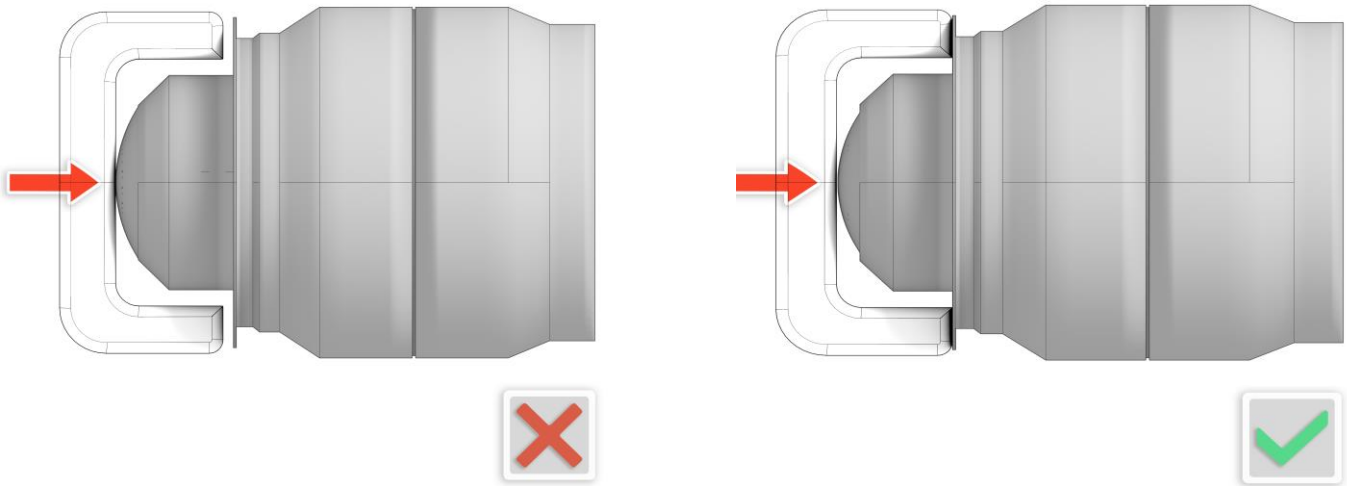


To calibrate the motors with the reduction kit, it is necessary to follow the following steps:

1) Place the system without torque and calibrate according to the instructions that appear in the manual. It is important to have the counterbalance of the lens well calibrated for the work of the Y rotation motor to be optimal. (FLC Manual Page 31).
2) Set all settings to 0. Swing 0°, Tilt 0°, X-shift to 0, Y-shift to 0.
3) Correctly attach the motors to the 19 mm rods but not to the Freelensing Cine® sprockets.
4) Connect the motors to the box or V and stop them. WITHOUT CATCHING the Freelensing Cine® sprockets.
5) Make sure that the left Tilt rotation locking screw is not blocked.
6) Place minimum torque and speed on the motors.
7) Attack the motors to the Freelensing Cine® motor gear and calibrate each axis one by one, that is, first one of the two axes and return to 0° and then the next. This is because if, for example, we leave the rotation of Y at minus -5°, the rotation of X will only be able to reach +/-15° (approximately, depending on characteristics of each camera).

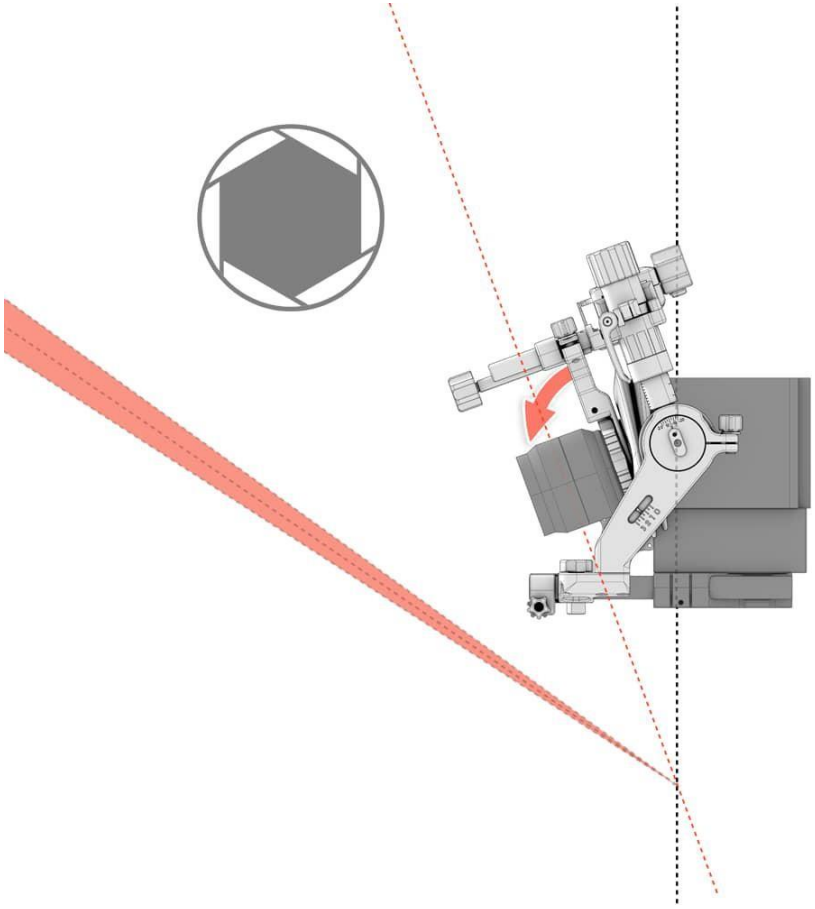
20. LENS TEST. PL or LPL

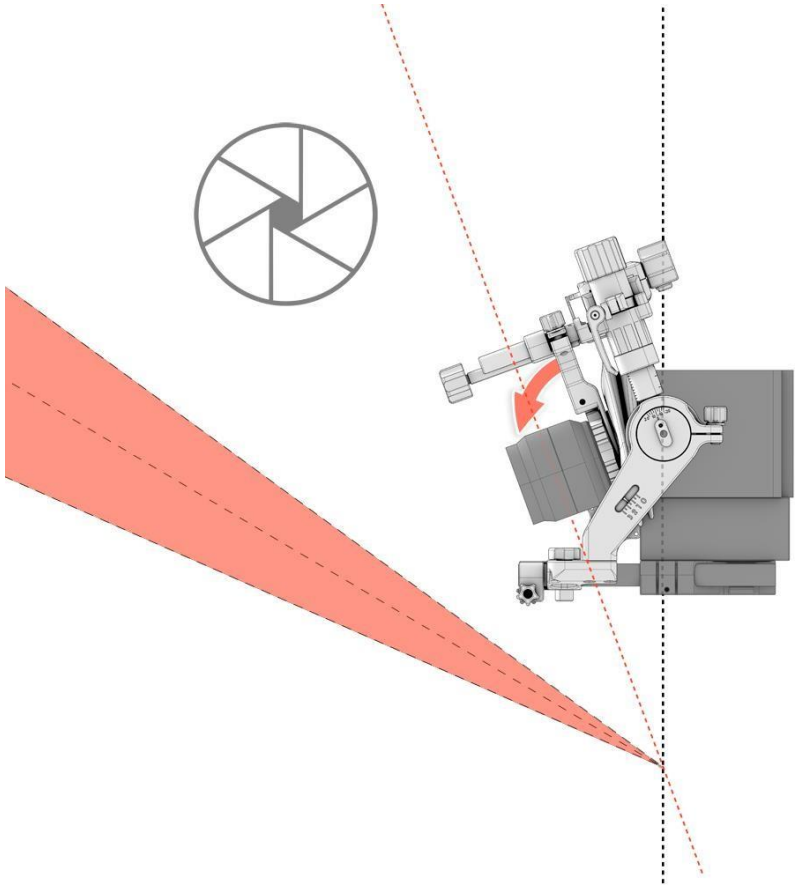




Remember that the depth of field is also affected by the T.Stop of the lens.

Remember that the minimum depth of focus is close to the focal plane and increases to infinity.





WARNINGS

- Maximum weight suspended from the lens mount: 4 kg (8.81 lbs) including lens, matte box, motors and/or any other accessory to be placed in front of the system.

- Do not hold the upper part of the FREELENSING CINE® (especially withthe camera on) UNDER ANY CIRCUMSTANCES → it can lead to breakage of the system, as well as the fall of the complete camera equipment → it is designed to withstand the load of the lenses in the established range (max 4 kg).

- To change it or to hold it by the side arms (where it says FREELENSING CINE®).

- Vibrations induced in the system can affect the image.

- Do not exert force if you feel resistance in any position.

- The FREELENSING CINE® should always be positioned vertically and upwards, without inverting or turning it upside down. This may cause deterioration of the product.

- For 9:16 or vertical perspective images, only rotate the camera while keeping the system in vertical position, i.e.: lay the camera inside the system.

- To store the FREELENSING CINE® it is recommended to lock the locks in these positions:

    - Y-axis at its maximum travel.
    - X-axis → centered.
    - Rotation of X at 0°.
    - Rotation of Y at +20°.

- To change the lens, it is advisable to lock the TILT of the Y axis (vertical rotation).

- Operating temperature of use: between 0°C and 40°C avoiding direct sun, dust, rain, ice. Storage temperature between -10°C and + 50°C avoiding direct sunshine.

- Avoid corrosive agents, both basic and acidic.

- Do not hit.
- Use the tools provided with the system.
- Always supervise all the axes and their fixation.
- The camera must be correctly fixed and centered with respect to the 19mm rod Bridge Plate so that the lens is placed in the correct positionwith respect to the FREELENSING CINE® marks[6].
- Keep the complete image in the projection circle, avoid split images (image circle and black) with shifting movements.
- Lens elements protruding into the sensor from the mount must be carefully analyzed and the user is responsible for any damage to the lens.
- In the event of any resistance to movement, abstain from forcing it and/or continuing to exert pressure.
- Before moving the camera, it is advisable to keep the System locked.
- Do not grease.

[6] We are now working on adapters to be able to use the FREELENSING CINE® in a 15mm Studioset-up.

OPERATING MANUAL

FREELENSING CINE®