

# TRINITY 2 Setup

QUICK GUIDE

01.09.2022



# 1 TRINITY 2 assembly quick guide

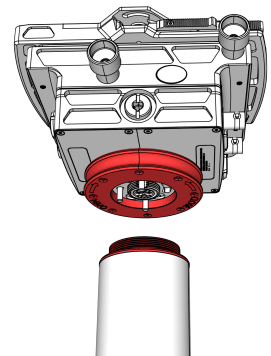
## Preperations

### ADVICE

- Always ensure that you are using a proper C-Stand, Low Boy Stand or an another suitable stand.
- Make sure the stand is set up on even ground.
- Make sure you are not exposed to strong wind or heavy rain.
- Securing the stand with sand bags.
- Make sure that the Yoke of the Docking Bracket is placed above the longest leg of the stand.

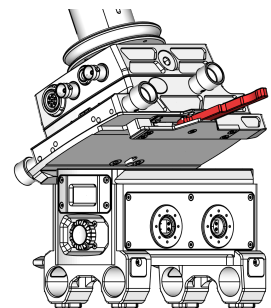
## Mount the Top Stage TST-2

- ▶ Bring the top stage close to the bottom of the inner post.
- ▶ Locate the red dot on the main cable plug and socket.
- ▶ When both marks are aligned, insert the Lemo 3B plug into the socket.
- ▶ Turn the blue docking ring with your fingers until the thread fully engages.
- ▶ Use the **Post Tool** (K2.0040046) to finally tighten the Docking Ring.



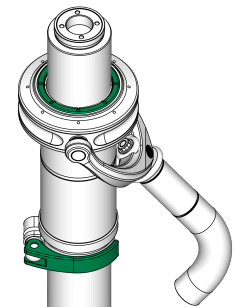
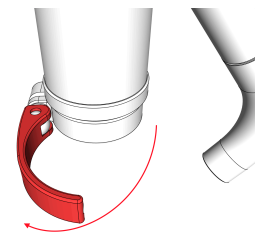
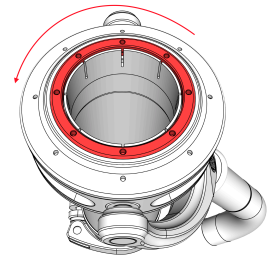
## Mount the Battery Hanger BHM-2 to the Top Stage TST-2

- ▶ Unlock and open the Top Stage clamp mechanism.
- ▶ Align the Battery Hanger Module dovetail with the Top / Bottom Stage mount.
- ▶ Lift the Battery Hanger Module completely into the Top / Bottom Stage.
- ▶ Lock the dovetail clamp mechanism.



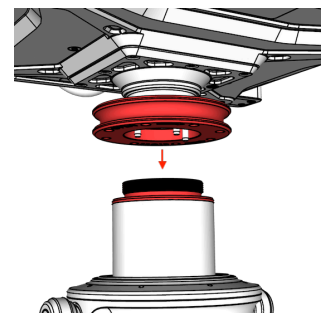
### Install the 1.8in Gimbal to the Center Post

- ▶ Use the **Post Tool** (K2.0040046) to open the centering ring by turning it to the left.
- ▶ Open the gimbal clamp lever.
- ▶ Place the Gimbal onto the Post
- ▶ Tighten carefully the center ring.  
**Do not overtighten the center ring!**
- ▶ Move the gimbal to the desired position by rotating and sliding the gimbal.
- ▶ Lock the clamp lever. → The Gimbal is positioned.



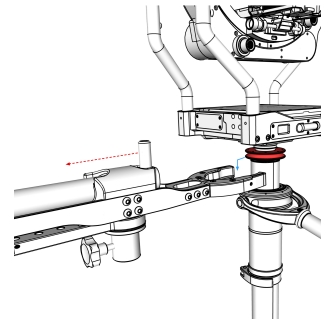
### Attach the TRINITY 2 head to the upper Post

- ▶ Bring the TRINITY 2 head close to the upper end of the post.
- ▶ Ensure that the bubble at the back of the TRINITY 2 head is pointing in the same direction as the bubble at the Top Stage.
- ▶ Locate the red dot on the main cable plug and socket.
- ▶ When both marks are aligned, insert the Lemo 3B plug into the socket.
- ▶ Turn the blue docking ring with your fingers until the thread fully engages.
- ▶ Use the **Post Tool** (K2.0040046) to finally tighten the Docking Ring.



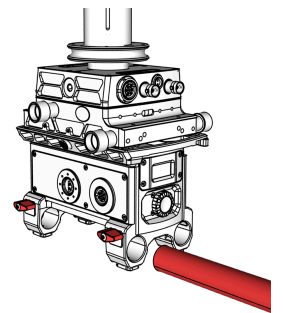
## Place the TRINITY 2 System into the Docking Bracket

- ▶ Push the **Balance Rod** fully back first.
- ▶ Lift the rig into the Docking Bracket and slide the post into the park position.



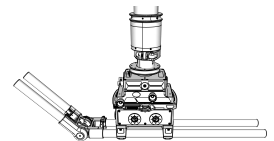
## Add the 19mm Rods to the Battery Hanger BHM-2

- ▶ Turn both Rod Clamp wing nuts to the left to open the clamp mechanism.
- ▶ Insert the desired 19mm rods with the already mounted hinge at the back.
- ▶ Tighten both rod clamp wing nuts.



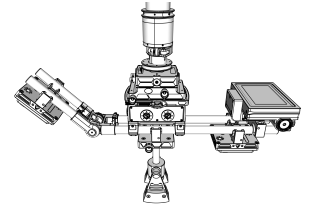
### ATTENTION

Do not over tighten, when using carbon fiber rods.



## Complete the Battery Hanger / Sled

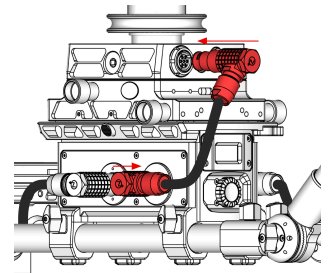
- ▶ Attach one battery mount to the rear hinge and the second battery mount to the bottom front bars.
- ▶ Attach the RCP-3 on top of the 19mm rods in front.
- ▶ Attach the pendulum to the 19mm rods in the center under the battery hanger module.
- ▶ **Tighten** all clamp wing nuts.



### ATTENTION

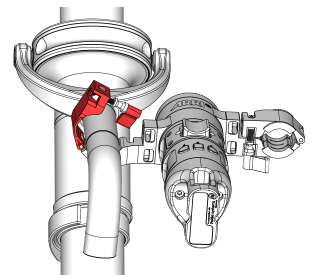
Do not over tighten, when using carbon fiber rods.

- ▶ Connect the Power Cable, BHM-2 to TST (K2.0037771).
- ▶ Connect the Battery Mounts to the Battery Hanger.
- ▶ Connect the RCP-3 to the Top Stage using the RCP-3 FS Can Bus Cable (K2.0043883).



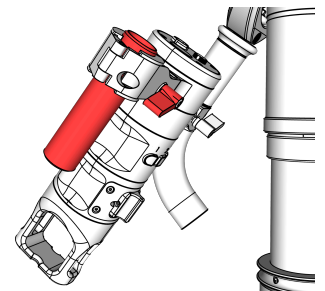
## Mount the Master Grip TRINITY

- ▶ Before you begin, make sure the gimbal handle extension is attached to the Gimbal handle.
- ▶ Open the clamp lever of the Mounting Bracket.
- ▶ Place the Master Grip TRINITY 2 on the gimbal grip as close as possible to the bend.
- ▶ When you have reached the desired position, tighten the clamp wing nut.



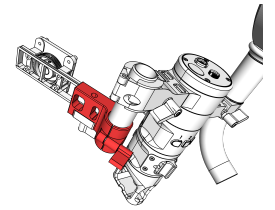
## Mount the Monitor to the Master Grip TRINITY 2

- ▶ Loosen the mounting bracket clamp lever.
- ▶ Slide the 19mm rod into the insert.



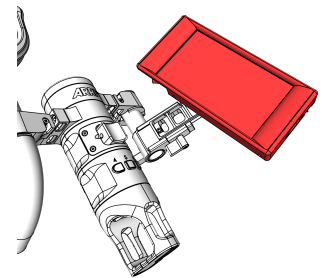
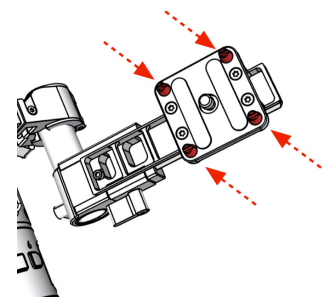
## Mount the Monitor Adapter to the Master Grip TRINITY 2

- ▶ There are two different monitor adapters to choose from: Monitor Adapter for Transvideo (K2.0014831)  
Monitor Adapter for Small HD (K2.0014832).
- ▶ Slide the monitor adapter on the 19mm rod and bring it in the desired position.
- ▶ Tighten the clamp.



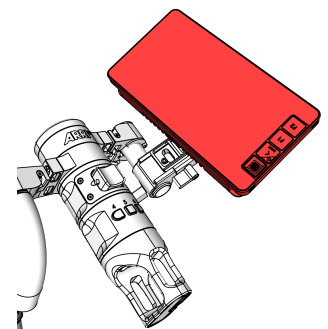
## Mounting the Transvideo Starlite Monitor

- ▶ Remove the location pins first.
- ▶ Place the monitor and bring it in the desired angle.
- ▶ Tighten the screw at the back.



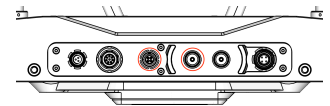
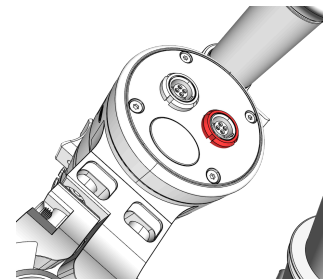
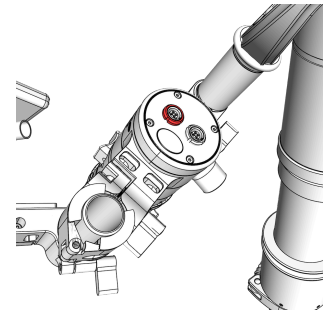
## Mounting the Small HD 503 Monitor

- ▶ Place the monitor.
- ▶ Bring it in the desired angle.
- ▶ Tighten the screw at the back.



## Wiring Master Grip TRINITY 2

- ▶ Connect the MTG Monitor Pwr, Lemo 0B, 5pin (K2.0038999) with the **Transvideo / ARRI Starlite** monitor and with the **upper** LBUS Socket at the Master Grip TRINITY.
- ▶ Or connect the MTG Monitor Pwr, Lemo 0B, 2pin (K2.0038998) with the **SmallHD** monitor and with the **upper** LBUS Socket at the Master Grip TRINITY.
- ▶ Connect the TRINITY 2 **Joystick Cable** 75cm/29.5in (K2.0043861) with the **lower** LBUS Socket at the Master Grip TRINITY and with the LBUS Socket at the TRINITY 2 head.
- ▶ Connect the 12G HD SDI BNC Cable, 0,63m/25in (K2.0041984) with the Monitor Out at the TRINITY 2 head and the Video In of the monitor.



## 2 TRINITY 2 camera setup quick guide

### Foreword

#### ADVICE

Only a precisely executed camera preparation will enable you to get the TRINITY 2 system in perfect **SYMMETRY** and **NEUTRAL BALANCE**.

### Balance Strategy

The camera preparation must meet the following requirements:

#### ADVICE

##### Compact length and low Center Of Gravity (COG)

- Keep the COG (centre of gravity) of the TRINITY 2 head as low as possible and the overall length of the camera setup should be as compact as possible.
- If the camera length is unnecessarily long, the COG / hight of the Tilt axis of the TRINITY 2 head could be quite high, which will force you to extend the Center Post to compensate for top weight. As the Center Post lengthens the more extreme the degree of inertia will be and will reduce the agility of the TRINITY 2.
- When using an ALEXA 35 or ALEXA Mini LF, Signature Prime lenses or a zoom lens keeps the camera setup at an optimal length.
- If the ARRI ALEXA LF or AMIRA is being used a Prime Lens will be required.
- Most box-type television cameras with a zoom lens do have the right length for use with the TRINITY 2 system.
- Video Transmitters should be mounted to the rear Battery Hanger. This uses the weight of the transmitter as a counterweight and the total weight of the system can be kept low.

### Camera Preparation

The camera preparation must meet the following requirements:

#### ADVICE

- Camera components and accessories mounted on the camera must be attached symmetrically and matched to each other.
- If two focus motors are needed, use two 15mm rods (equal length and same material) and mount them on the **top** of the camera.  
Now place one focus motor on each rod.  
Make sure that the gears are facing the front of the lens and the motor housing of the camera body.
- If only one focus motor is required, then two rods are also required.  
Place the focus motors vertical **above** the lens.



## Secure component and accessory attachment

### ADVICE

Make sure that all components of the camera and accessories in the setup are fully tightened. Ensure that none of the components are loose or have any play to avoid vibration and any performance issues.

## Camera Dovetail Plates



Using the SAM plates will speed up the camera setup and later the balancing process. The special height of every SAM plate will lift the dedicated camera right into the center of the TRINITY 2 inner ring. This way a perfect COG of the camera is guaranteed.

Available SAM plates and lens support brackets:

K2.0041201	Stabilizer Adapter Mount SAM-Zero
K2.0018851	Stabilizer Adapter Mount SAM-1 for ALEXA
K2.0014215	Stabilizer Adapter Mount SAM-2 for ALEXA
KK.0016116	Stabilizer Adapter Mount SAM-2 Set for ALEXA Mini
K2.0014630	Stabilizer Adapter Mount SAM-3 Set for AMIRA
K2.0024508	Stabilizer Adapter Mount SAM-6
K2.0039405	Stabilizer Adapter Mount SAM-6 450mm/18in
K2.0034512	CSS Broadcast Dovetail Plate (SAM plate standard width)
K2.0039803	Stabilizer Plate for CBP 355mm/14in
K2.0038536	Stabilizer Plate for CBP 450mm/18in
K2.0033662	Stabilizer Adapter Mount SAM-4
KK.0038971	Long Stabilizer Mount 15mm Mini/Mini
KK.0038972	Long Stabilizer Mount 19mm Mini/Mini LF
K2.0039089	Compact Lens Support CLS-1
K2.0040036	Balance Utility Dovetail BUD-2
K2.0039861	Dovetail Utility Base DUB-1
K2.0038537	Stabilizer System Bracket SSB-2 19mm
K2.0038618	Stabilizer System Bracket SSB-2 15mm

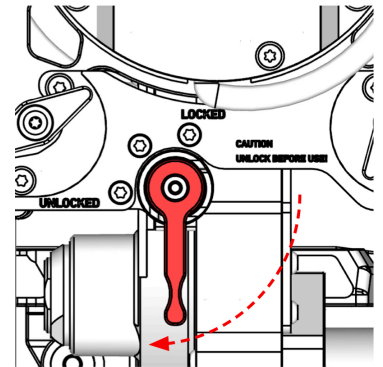
## Prepare the TRINITY 2 Head

### ATTENTION

Ensure that the Stabilizer is switched OFF.

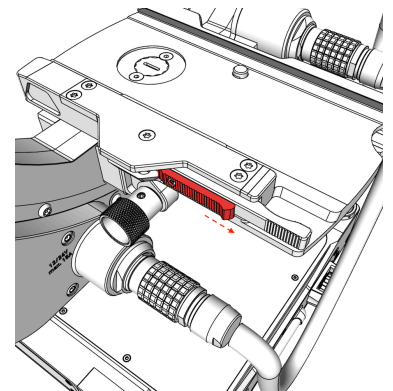
#### Tilt-Lock

- ▶ Move the Lock lever to the left in the **Locked** position.



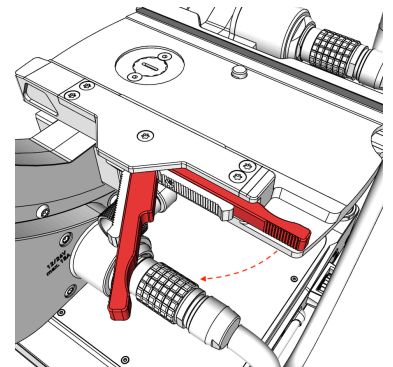
#### Safety Latch

- ▶ Touch the safety latch with your thumb and slide it fully to the right.



#### Clamp Lever

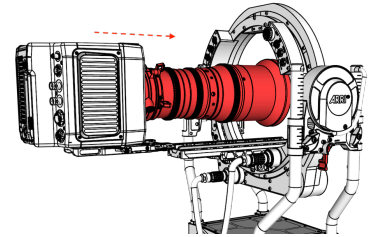
- ▶ Place your index finger behind the clamping lever and pull the clamping lever forward until it reaches the end stop on the left side.



## Installation of the Camera in the TRINITY 2 Head

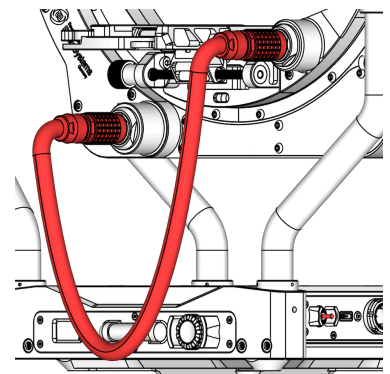
### Placing the camera

- ▶ Gently slide the camera into the ring from either the front or back.
- ▶ Bring the camera as close as possible to its center of gravity.
- ▶ Lock the dovetail clamp mechanism.
- ▶ Assemble all required accessories such as focus motors, transmitters, connect all required cables such as camera power and video cables.



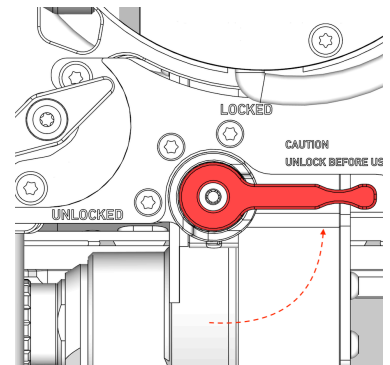
### Connecting the Ring Main Camera

- ▶ Plug in the Ring Main Cable.
- ▶ Take the part of the cable that is plugged into the inner ring and attach it with a bongo tie to the back of the camera or to the rear bracket of the ALEXA 35 / Mini LF.

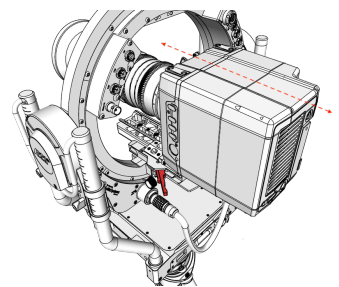


### COG / Fore and aft adjustment

- ▶ Open the Tilt-Lock.

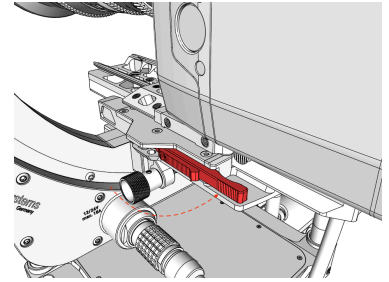


- ▶ Move the camera forth and back until it reaches its center of gravity.



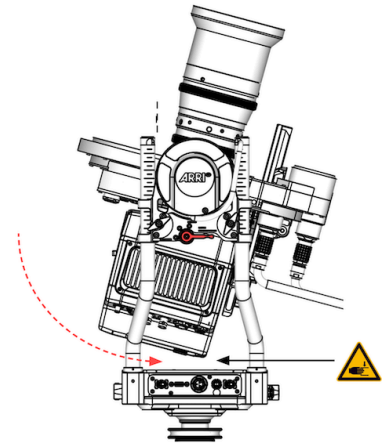
### Locking Clamp Lever

- ▶ After the camera has reached the desired position / COG, push the clamp lever all the way to the right until the dovetail clamp mechanism is securely locked.



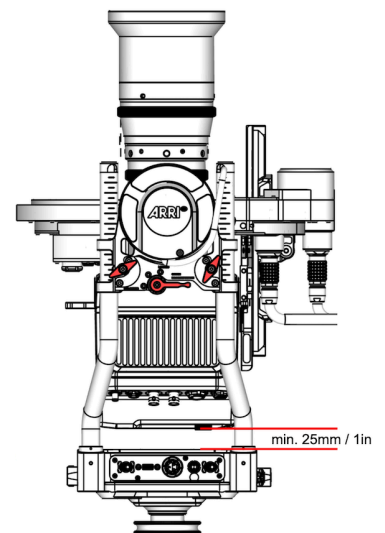
### Checking the current height of the tilt axis

- ▶ Slowly and carefully tilt the rear of the camera until the bottom corner of the camera approaches the top cover of the TRINITY 2 head.



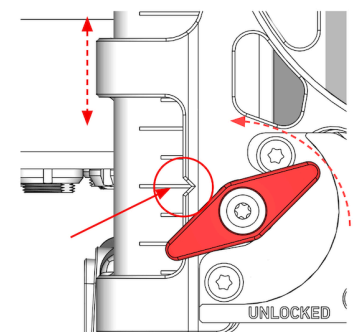
### Minimum height of the tilt axis

- ▶ To ensure enough clearance for the ring main cable, which is located on the back of the camera, a minimum distance of approx. **25mm / 1in** be available.



### Height Adjustment Clamps

- ▶ Open the four wing clamp screws and raise the complete tilt together with your assistant.
- ▶ Make sure the small notch on all 4 rod clamps is exactly on the same line!
- ▶ Once the desired position has been reached, tighten all four wing clamp screws.



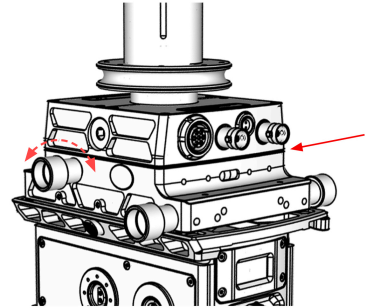
### 3 TRINITY 2 balance quick guide

#### Center the Top Stage

##### Adjust Side to Side

- ▶ Turn the side to side adjustment until the top stage is left and right in the center.

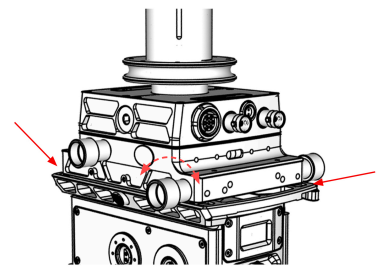
Or until the edges of the housing are aligned.



##### Adjust Fore and Aft

- ▶ Turn the fore and aft adjustment until the top stage is front and back / left in the center.

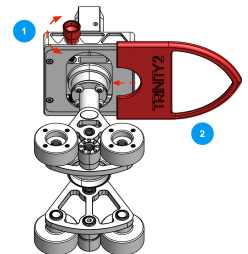
There should be equal spacing at both ends.



#### Center the Pendulum side to side

##### Adjust the Pendulum side to side position

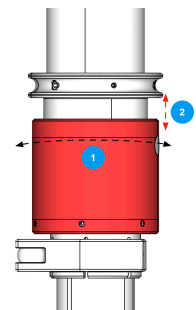
- ▶ Use the TRINITY 2 centering template. Turn the side-to-side adjuster left or right until the center column of the pendulum is centered and you can slide in the centering template.



#### Center the Post

##### Adjust the Post Fine Trim

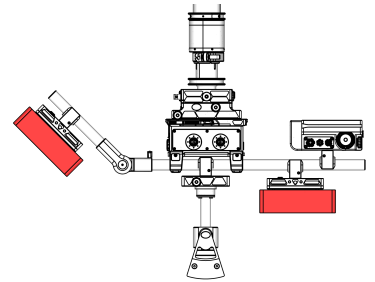
- ▶ Turn the fine trim adjustment until there is about 10mm + / 0.4in + clearance.



## Add Batteries

### Batteries

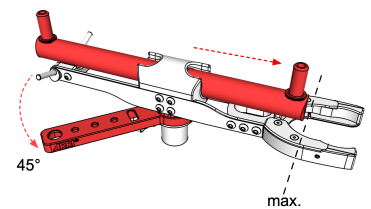
- ▶ Add two compact 90 watt or maximum 150 watt batteries to either battery mount.
- ▶ Double check that all cables are properly connected.



## Docking Bracket Balance Position

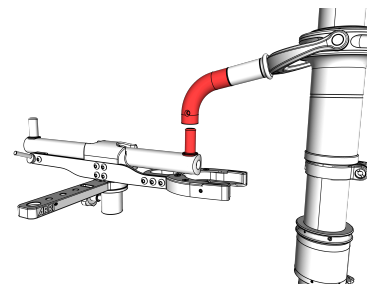
### Balance Rod

- ▶ Move the Balance Rod clamp into a 45° position.
- ▶ Push the rod to the shown position.



### Balance Pin

- ▶ Lift the Gimbal handle onto the Balance Pin.



## Power up the TRINITY 2 Battery Hanger

### ADVICE



#### Powering TRINITY 2 Head, Top and Bottom Stage at the same time

This would cause more than the allowed amount of volts to flow through the ARTEMIS 2 and TRINITY 2. Risk of damage to the accessories.

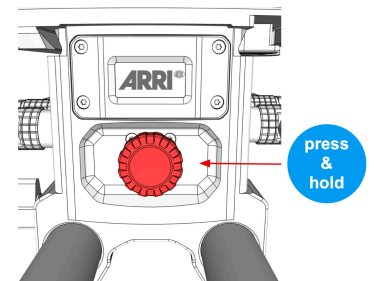
- Only use the Top Stage **TST-2** in combination with the Battery Hanger Module **BHM-2** for the **internal power supply** of the TRINITY 2 Head.

Alternatively, an external power source can be used to power the TRINITY 2 Head.

- **DO NOT combine** the **internal** with an **external** power supply!

#### Main Power Battery Hanger

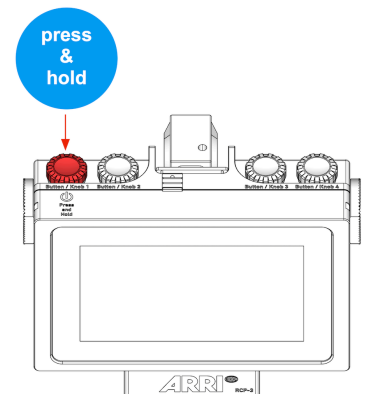
- ▶ To turn the BHM-2 / the entire system **ON** and **OFF**, **press and hold** down the Jog-Wheel until the ARRI logo appears on the display.



## Power up the RCP-3

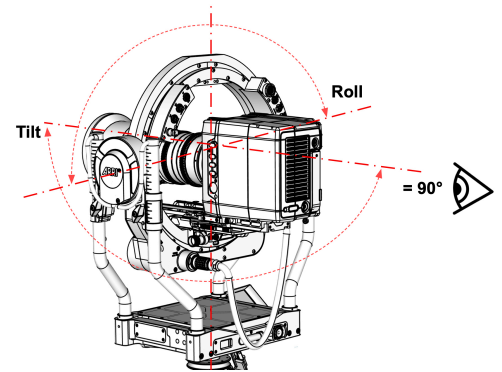
#### Main Power RCP-3

- ▶ To turn the RCP-3 **ON** and **OFF**, press and hold down the Jog-Wheel until the ARRI logo appears on the display.
- ▶ Ensure that the TRINITY Mode is active and **Follow Mode** is **OFF**.  
(GUI main screen lower right)



## Center the Camera

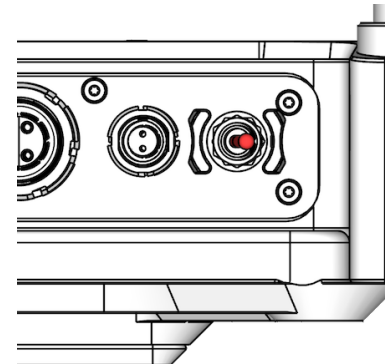
- ▶ Move the camera to a **neutral position** in both the **Tilt** and **Roll** axis.



## Power up the TRINITY 2 Head Main Power

### Main Power ON

- ▶ Bring the **MAIN** switcher into the **ON** position.



### ATTENTION

After switching on, the TRINITY 2 head is supplied with 24V, camera, monitor, accessories are supplied with 12V and 24V, depending on the case.

The **motors are not yet active** as long as the **Stabilizer** is set to **OFF**.

As long as the **Stabilizer** is **OFF**, you can work on the camera setting.



## Power up the TRINITY 2 Stabilization

### ⚠ CAUTION



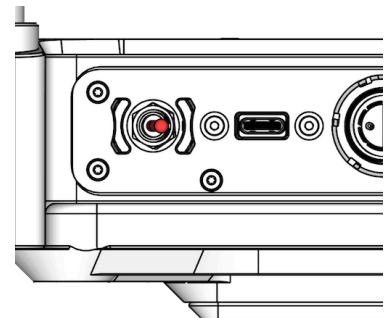
#### Automatically move to the home position

Risk of crushing fingers. The camera / tilt and roll axis will automatically move to the home position, after turning on the stabilization.

- ▶ Make sure that your fingers do not get between the top cover and the camera while checking the tilt axis.

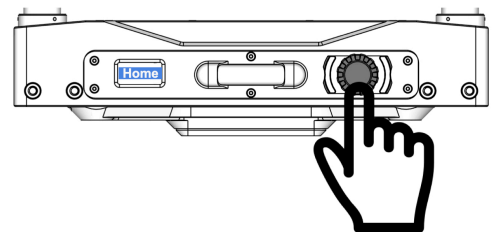
### Stabilizer ON

- ▶ Turn the **Stabilizer ON**, when the camera preparation is complete.

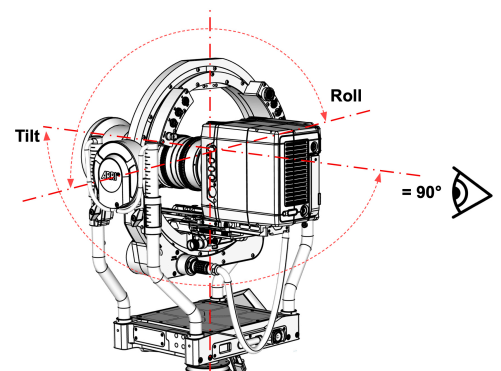


### Global Home Position / Display

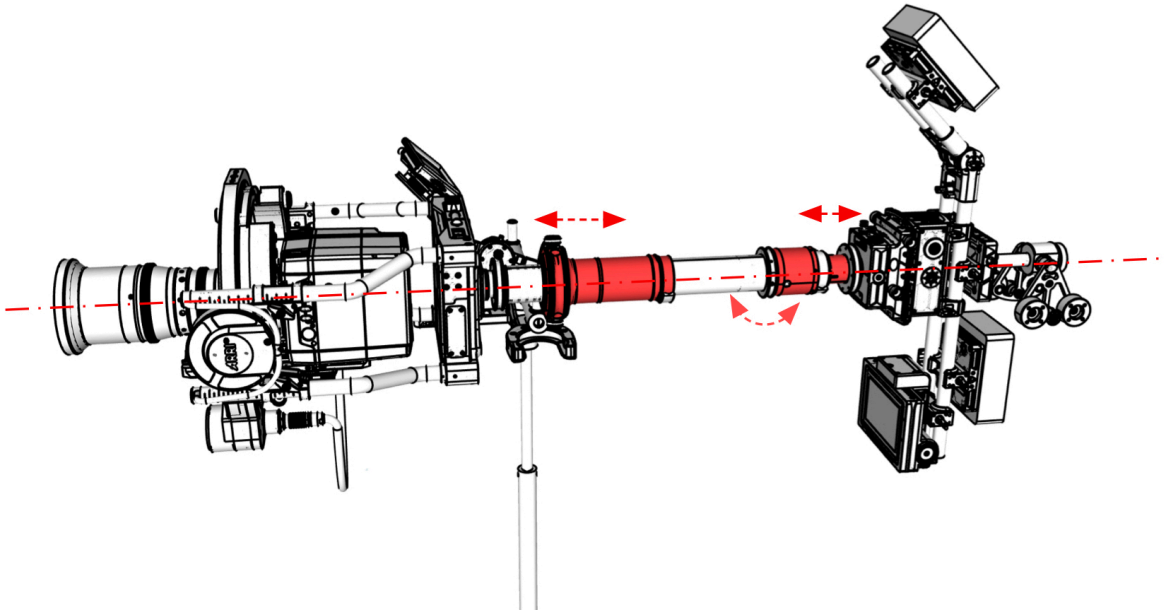
- ▶ **Home** is displayed in the small display.
- ▶ **Press** the **Jog-Wheel** to move the Tilt and Roll axis in the **neutral Home Position**.



- ▶ Observe that the TILT and ROLL axis have automatically moved to the global / absolute zero position.



## Neutral Horizontal Balance



- ▶ Bring the entire rig **slowly** into a horizontal position.
- ▶ Make sure that none of the cables, brackets or other accessories are blocking the movement of the TRINITY 2 Head.
- ▶ Move the Gimbal in the desired position.
- ▶ Telescope the center post and use the Fine Trim adjustment until you reach the **neutral horizontal position** and don't feel any drop down.

### Vertical Balance



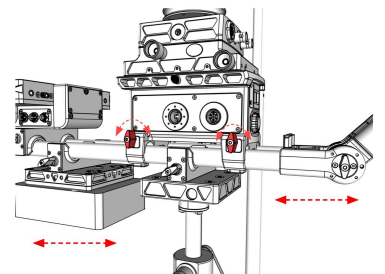
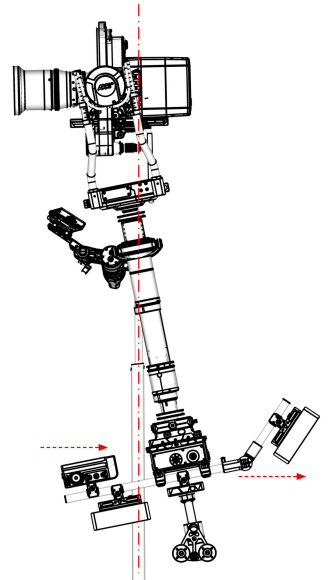
After the center of gravity COG of the camera has been set in the TRINITY 2 Head, the camera is the **reference** for the following adjustment.

**Do not move the camera fore or aft from the previously determined neutral position! (COG)**

#### Fore and Aft

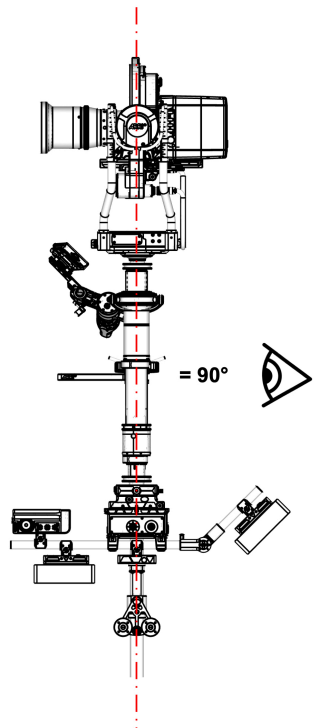
- ▶ Bring the TRINITY Rig back into the vertical position.

- ▶ Open the 19mm rod clamp at the battery hanger and move the entire assemble (rods, batteries and the RCP-3) fore or aft till the entire rig reaches a **neutral vertical position**.



#### Check Fore and Aft

- ▶ To verify that the entire system is neutral in the vertical axis, check that the post is in a line with the stand.



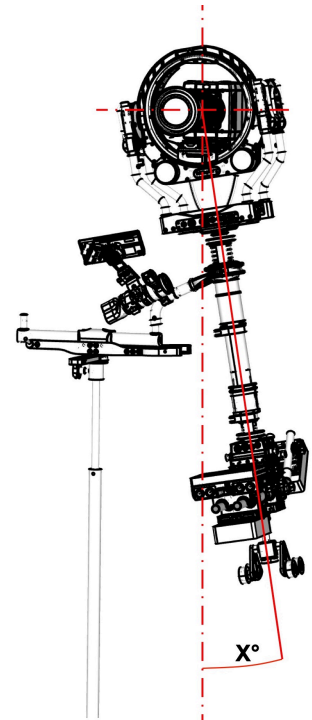
## Side to Side Balance



After the Top Stage and the Pendulum had been centered, the Battery Hanger is now the **reference** for the side to side adjustment.

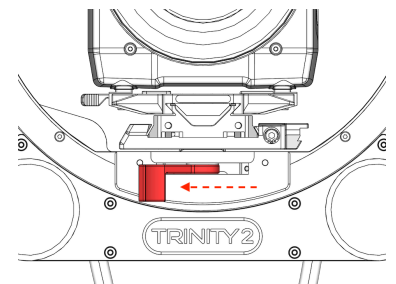
**Do not move the Top Stage or the Pendulum out the previously determined neutral centerposition!**

- ▶ Now a sideways movement becomes visible.
- ▶ To bring the entire rig into a **vertical position**, the **camera** inside the **ring** needs a **side to side** adjustment.



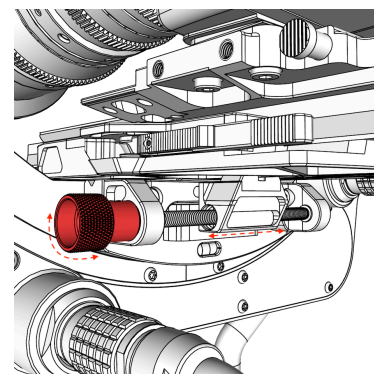
## Side to Side Lock

- ▶ Open the side locking mechanism by pushing the clamp lever to the left.

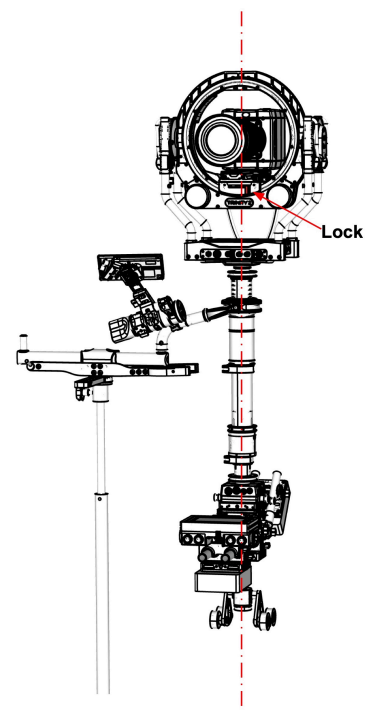


**Side to Side Fine Adjustment**

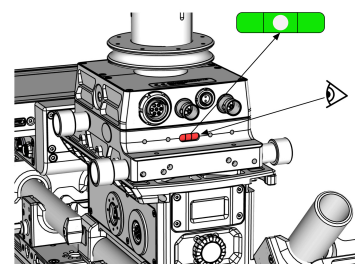
- ▶ Turning the fine adjustment to the right moves the camera further to the right.
- ▶ Turning left moves the camera further to the left.



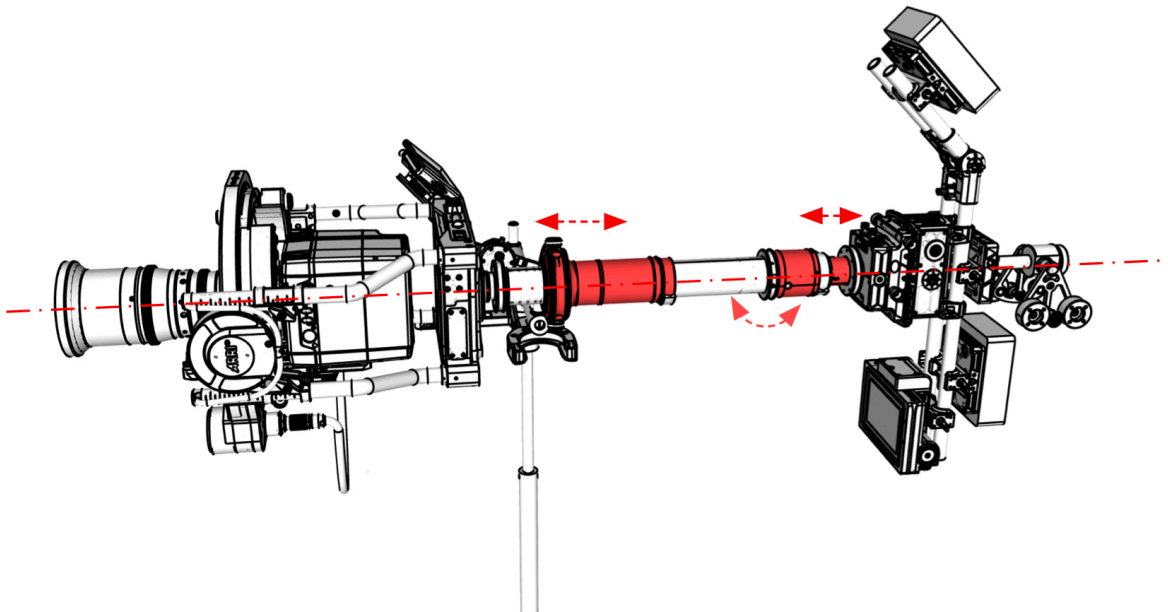
- ▶ Lock the clamp once the entire system is vertical.



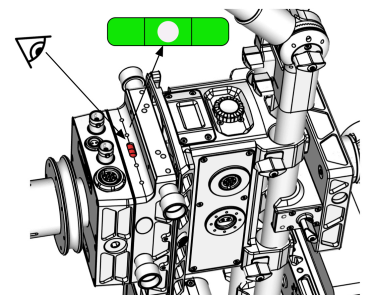
- ▶ To verify that the entire system is **neutral** in the **vertical axis**, check the bubble at the top stage.



### Final Check

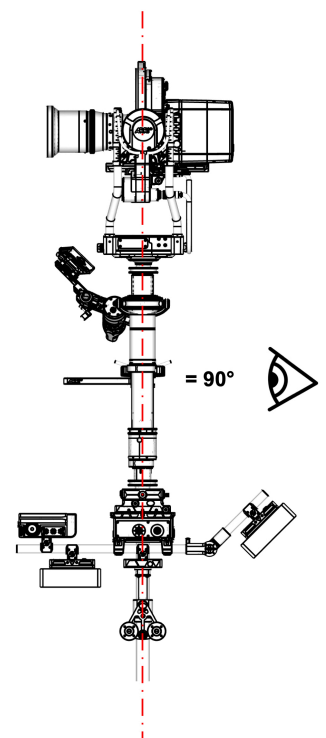


- ▶ Bring the entire rig back to a horizontal position.
- ▶ Make sure the entire rig is still vertically neutral and there is still no dropdown.
- ▶ To verify that the entire system is neutral in the horizontal roll axis, check the **bubble** at the top stage.



### Check For and Aft

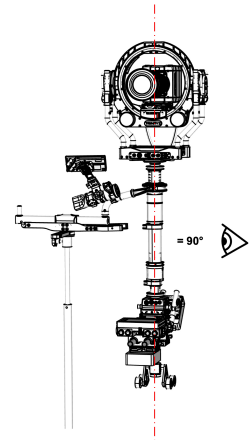
- ▶ To verify that the entire system is neutral in the vertical axis, check that the post is in a line with the stand.



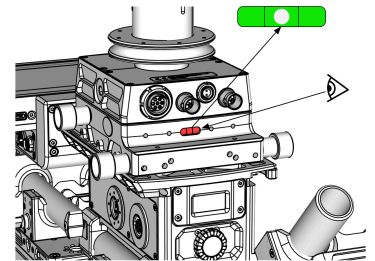
## Final Check

### Check Side to Side

- ▶ To verify that the entire system is neutral in the vertical axis, check that the post is in a line with the stand.



- ▶ And double check the **bubble** at the Top Stage too.



- ▶ You have achieved **perfect balance** when the camera / **side-to-side adjustment** is also in the **middle** as much as possible.
- ▶ If the camera comes to rest **too far** off center, then it clearly indicates that one of the sides of the camera is too light.
- ▶ Either you place the motors differently or add extra counterweight on one side.
- ▶ Use as less extra counterweight as possible!

