# Stabilized Remote Head

# SRH-3 & SRH-360 SUP 3.0

## Manual

**Date 01.06.2021**

**Dedicated to these products**

| | |
|---|---|
| **KK.0037270** | SRH-3 Stabilized Remote Head, No Radio, Set, Standard Joystick |
| **KK.0037271** | SRH-3 Stabilized Remote Head, No Radio, Set, Microforce Joystick |
| **KK.0037272** | SRH-3 Stabilized Remote Head, No Radio, Set, Broadcast Joystick |

**Dedicated to these products**

| | |
|---|---|
| **KK.0037273** | SRH-360 Stabilized Remote Head, No Radio, Set, Standard Joystick |
| **KK.0037275** | SRH-360 Stabilized Remote Head, No Radio, Set, Microforce Joystick |
| **KK.0037276** | SRH-360 Stabilized Remote Head, No Radio, Set, Broadcast Joystick |

## Imprint


Original version.

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**Document revision history**

| Version | Release Nr | SUP | Date |
|---|---|---|---|
| **1.1** | F07424 | **3.0** | 01.06.2021 |

**Scope**

This document describes the components and the setup of the SRH-3 and SRH-360 Stabilized Remote Head system and its components.

**Disclaimer**

Before using the products described in this manual, be sure to read and understand all the respective instructions.
Otherwise the customer must contact ARRI before using the product.
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To minimize the risk of damage to property or injury (including death) to persons arising from defects in the products, customers must incorporate sufficient safety measures in their work with the system and heed the stated conditions of use.
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ARRI assumes no responsibility for any errors that may appear in this document.

**The information is subject to change without NOTICE.**

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In the event that one or all of the foregoing clauses are not allowed by applicable law, the fullest extent permissible clauses by applicable law are validated.

# Table of Contents

# 1 User Advisory / Application Requirements

The SRH-3 & SRH-360 stabilized remote head and related products should only be used by experienced and trained operators.
**This product is not designed for inexperienced users, and must not be used without proper training.**

Stabilization of remote heads is an extremely complex and at times difficult task and therefore stabilized remote heads do have their limitations. For example, the remote head will only correct for angular movement and not parallel movement. This means that when the remote head is attached directly to a lift, or to a pole, or structure that is subjected to vertical movement, it cannot compensate for lift as it moves up and down (because that movement is parallel). In order to absorb vertical and parallel movements, the remote head must be mounted on a suitable shock absorber.

Stabilization systems are limited by engine power, as well as their bandwidth or frequency response. Very fast movements required to correct the camera position may not be within system capabilities. This can be seen when using longer lenses.
The use of suitable Iso Dampers devices improves the application.
Mounting a suitable Iso Dampers device between the remote head and the mounting point of the head, will soak up the fast, unwanted movements, leaving the stabilization with unwanted movements that are slower and within the bandwidth of the system.
There are many Iso Damper devices that follow different designs and qualities.
Choosing the right Iso Damper is as important as the stabilized head itself.
Another purpose of Iso Dampers is that they decouple the stabilized remote head from some resonance and flexing of the mounting point.

All gimbal-based stabilized remote heads will always face some kind of drift.
Drift is unwanted movement of the system usually caused by the gyros and the earth’s rotation, which can’t be measured by the MEMS sensors.
Drift is normally measured in degrees per hour.
The SRH-3 & SRH-360 remote head has a very small amount of drift that would only be noticed while the head is stationary over a long period of time. The average drift can be up to approximately 10° in 30 minutes. Drift can also be caused by a non-calibrated joystick or a loose camera setup, or an Iso Damper that is too soft.

Reduction of flexing or bending of the camera and lens package, and flexing of the remote head attachment are critical. The overall setup needs be as rigid as possible because any flexing can cause the head to vibrate or oscillate. Every attempt to improve the stiffness of the camera setup and the head attachment, and to reduce or eliminate any flexing should be made.

Many different camera and lens packages can be used with the SRH-3 & SRH-360, and there are also many different ways to mount the remote head. As a result, it is not always possible or practical to obtain perfect conditions regarding rigidity and balance. This may cause the load to become unstable and it will then shake and oscillate when the stabilization is active. In these situations, adjustment of the PID parameters will be required. The correct setting of these PID values is crucial for the proper working of the system.

An unbalanced camera setup will place more strain on the motors of the SRH-3 & SRH-360.
The system will need more force to move the load and this will sometimes increase the possibility of the load becoming unstable, and that the remote head may over compensate or shake and oscillate.

Please remember that what the remote head is mounted on, and the manner in which it is mounted, will directly impact on its performance. The total mass of the head and its load are an important consideration when choosing how and where to mount it. This torque will change in direction and amplitude in varying amounts. The more solid the mount, the easier it is for the system to perform well. Sometimes even the leveling linkage on a camera crane will have play or backlash that allows the mounting point to move slightly when loads are reversed. If there is mechanical play between the components in the shock absorber, vibrations of the overall system may occur. Iso Dampers with the appropriate dimensions and hardness should always be used - the system may become too elastic if the Iso Damper used is too soft, causing vibration.

**NOTE**
Each of these aspects can lead to the motor power of single axis having to be lowered, which will limit the effectiveness of the overall stabilization.

# 2 For your safety

| ⚠ Warning |
| --- |
| The SRH-3 and SRH-360 stabilized remote heads and related products should only be used by experienced and trained operators. This product is **not** designed for inexperienced users and should not and must not be used without proper training. ARRI recommends that all users of the stabilized remote head read the manual in its entirety prior to use. |

**How To Use This Manual**
All directions are given from a camera operator's point of view.
For example, camera-right side refers to the right side of the camera when standing behind the camera and operating it in a normal fashion.

| NOTICE |
| --- |
| The product is solely and exclusively available for commercial customers and shall be used by skilled personnel only. Every user should be trained according to ARRI guidelines. Use the product only for the purpose described in this document. Always follow the valid instructions and system requirements for all equipment involved. |

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The ARRI Academy courses provide unrivaled insights into the full possibilities of working with ARRI camera systems, camera stabilizer systems, lenses, lights and accessories.
To learn more, please visit http://arri.com/academy.

## 2.1 Risk Levels and Alert Symbols

Safety warnings, safety alert symbols, and signal words in these instructions indicate different risk levels.

| ⚠ DANGER |
| --- |
| *DANGER* indicates an imminent hazardous situation which, if not avoided, **will result in** death or serious injury. |

| ⚠ Warning |
| --- |
| *WARNING* indicates a potentially hazardous situation which, if not avoided, **may result in** death or serious injury. |

| ⚠ CAUTION |
| --- |
| *CAUTION* indicates a potentially hazardous situation which, if not avoided, **may result in** minor or moderate injury. |

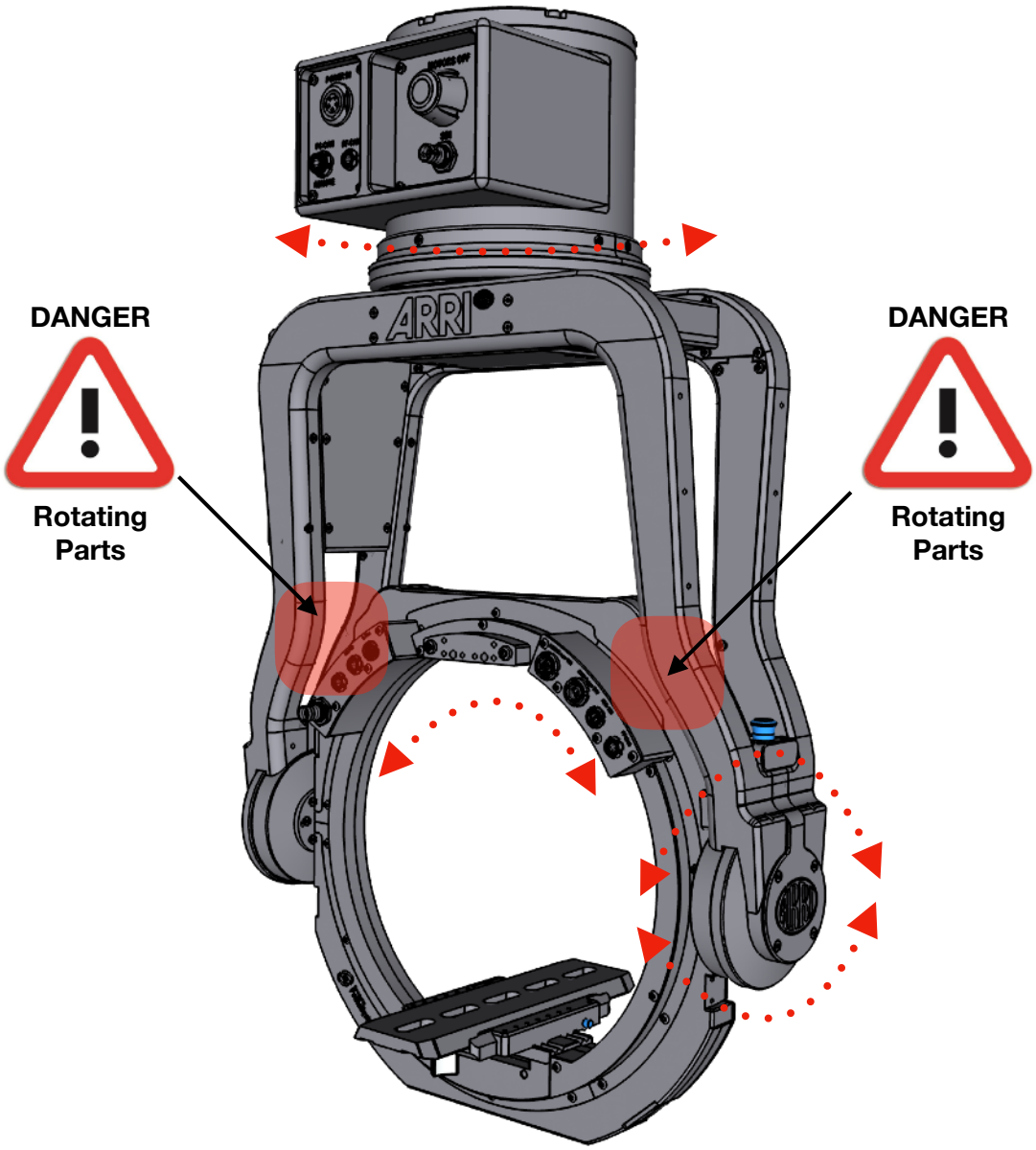
| NOTICE |
| --- |
| *NOTE* explains practices not related to physical injury. No safety alert symbol appears with this signal word. |

| NOTE |
| --- |
| Provides additional information to clarify or simplify a procedure. |

2.2
**Safety Instructions**

**⚠ DANGER**

Pay attention during setup and the entire operation that no fingers or limbs end up between the outer yoke and inner ring.
A high kinetic force can result between the outer and inner ring, depending on the weight and length of the camera.
Serious injuries can result through negligence. If this does happen then, cut off the power supply straight away and seek medical attention if necessary.

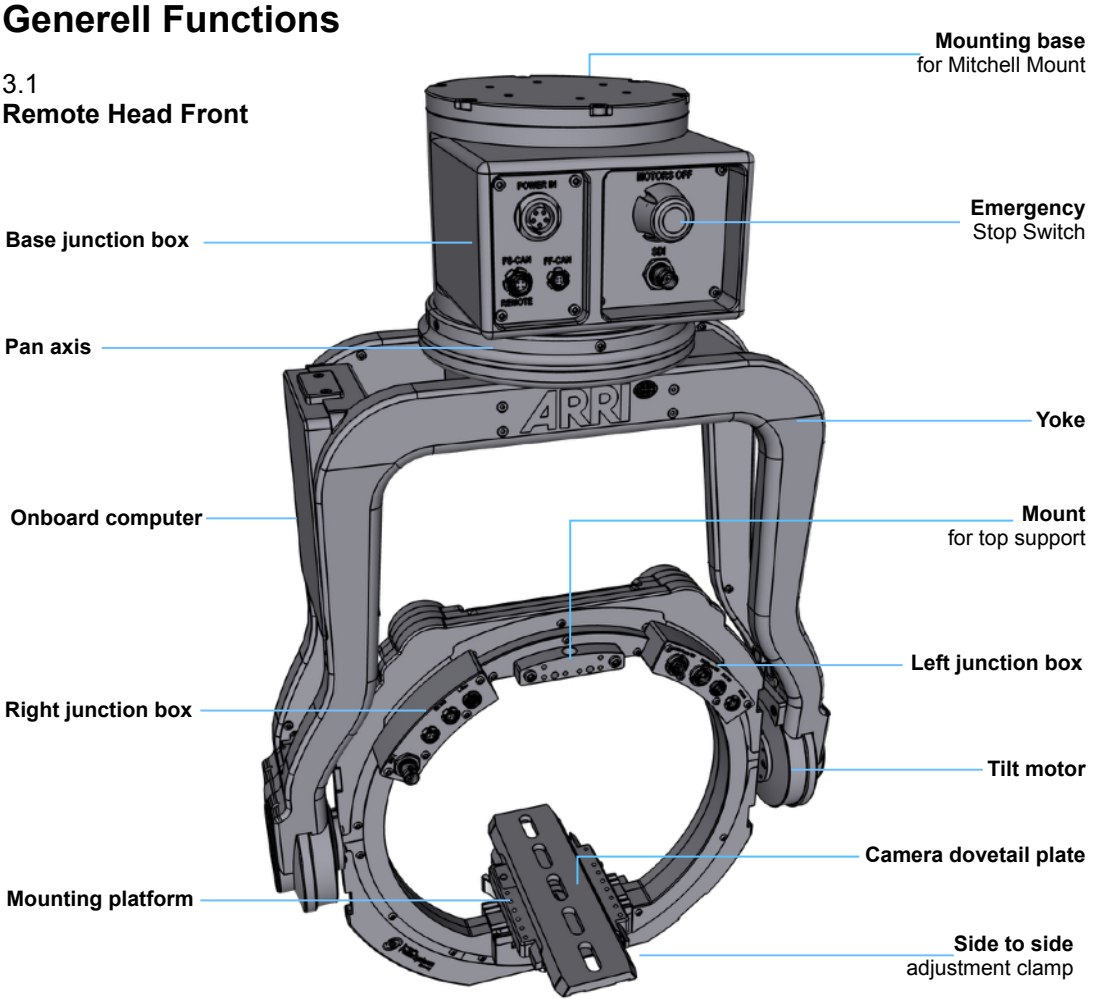



**⚠ CAUTION**

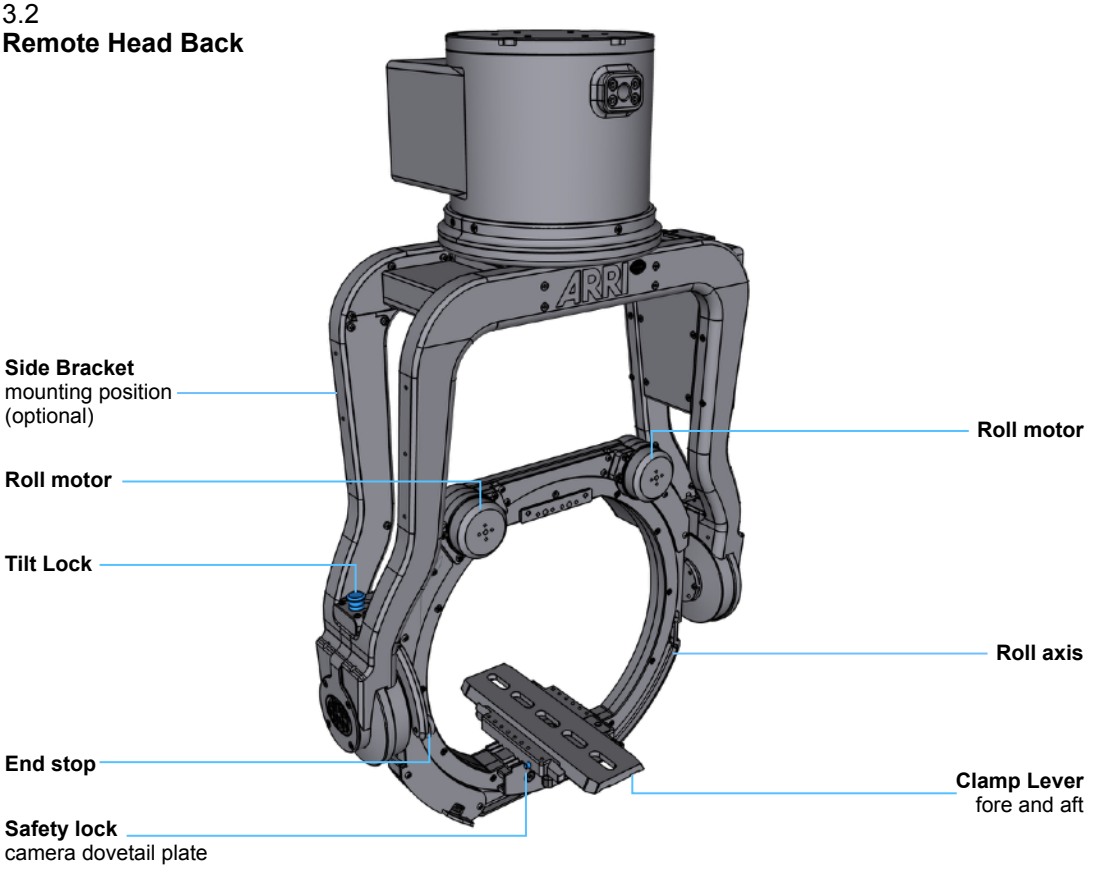
Keep in mind that the SRH-3 & SRH-360 stabilized remote head is a fully stabilized Gimbal based device with a payload capacity of 30kg / 66 lb.
The amount of available torque is very high.

# 3 Generell Functions

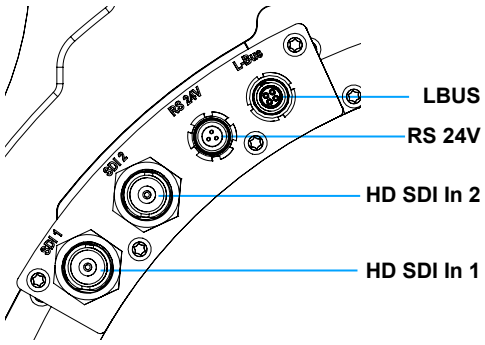
## 3.1 Remote Head Front

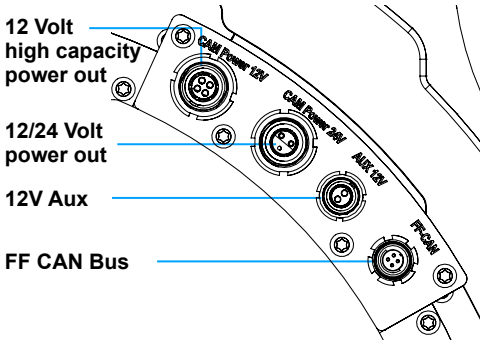



## 3.2 Remote Head Back



3.3
## Connectors SRH-3

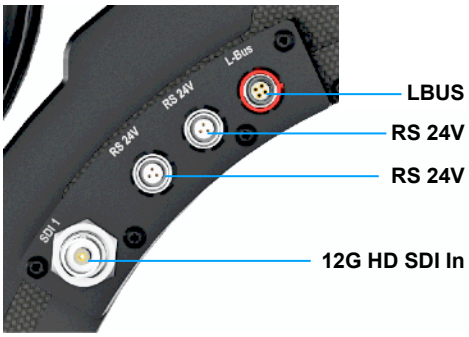


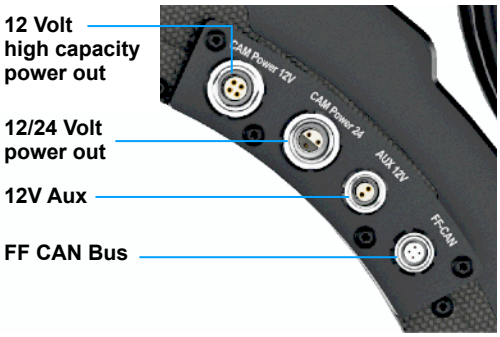




**Right junction box** **Left junction box**

| ⚠ CAUTION |
| --- |
| **The 12V aux power consumption should not exceed 14,4V / 5 Amps.** |

3.4
## Connectors SRH-360



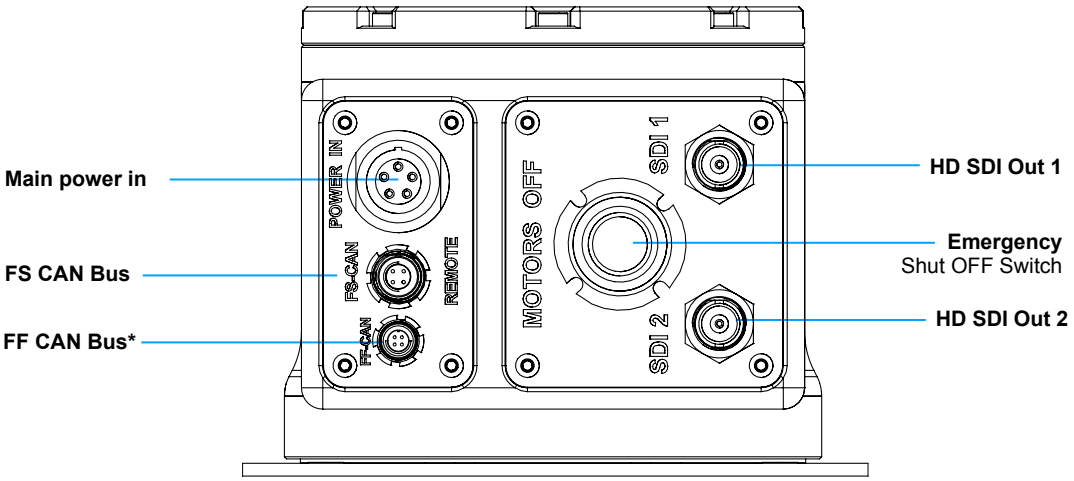




**Right junction box** **Left junction box**

| ⚠ CAUTION |
| --- |
| **The 12V aux power consumption should not exceed 14,4V / 5 Amps.** |

| NOTICE |
| --- |
| When using a 12G video signal from the camera, only a 12G video cable may be used. Using non-12G specified video cables will result in image quality problems. |

3.5
## Junction Box SRH-3




3.6
## Junction Box SRH-360


| NOTICE |
| --- |
| * Reserved for future accessories. Do not use! |

3.7
## Available cables

| | |
|---|---|
| Cam Power, Cine, 12V, XLR, HiCap | **K2.0010470** |
| Cam Power, Cine, 24V, Fischer 2pin | **K2.0010471** |
| Cam Power, Cine, 24V, ALEXA Mini | **K2.0020467** |
| Cam Power, Cine, 12V, HiCap, ALEXA | **K2.0010538** |
| Cam Power, Cine, 12V, HiCap, ALEXA Mini | **K2.0010540** |
| Cam Power, Cine, 12V, HiCap, AMIRA, 90° | **K2.0010565** |
| Cam Power, Cine, 12V, HiCap, Red EPIC | **K2.0010472** |
| Cam Power, Cine & EFP, 12V, XLR | **K2.0010469** |
| | |
| HD SDI BNC Cable | **K2.0010476** |
| | |
| Cable LBUS 0.2m/8 inch | **K2.0006749** |
| Cable LBUS 0.3m/1ft | **K2.0006750** |
| Cable LBUS 0.5m/1.5ft | **K2.0006751** |
| Cable LBUS 0.8m/2.5ft | **K2.0006752** |
| Cable LBUS 1.5m/5ft | **K2.0006753** |
| | |
| SRH Power Supply Set, 600W | **K0.0019478** |
| SRH Power Supply Power and Data Cable, 12V/24V, 20m/65.6ft | **K2.0019303** |
| SRH High Capacity Camera Power Cable Set | **K0.0012269** |
| SRH High Capacity Battery Power Cable Set, 12V/24V, 20m/66ft | **K0.0021437** |
| SRH High Capacity Battery Power Cable Set 12V/24V, 10m/33ft. | **K0.0021438** |
| SRH High Capacity Battery Power Cable, 12V/24V, 0.5m/1.64ft | **K2.0019306** |
| SRH High Capacity Battery Power Cable 12V, 4pin XLR, 20m/66ft | **K2.0021430** |
| SRH High Capacity Battery Power Cable 24V, 3pin XLR, 20m/66ft | **K2.0021429** |
| SRH High Capacity Battery Power Cable 12V, 4pin XLR, 10m/33ft | **K2.0021428** |
| SRH High Capacity Battery Power Cable 24V, 3pin XLR, 10m/33ft | **K2.0021427** |
| | |
| SRH FS CAN Bus Cable, 1m/3.2ft | **K2.0033762** |
| SRH FS CAN Bus Cable, 5m/16.4ft | **K2.0037701** |
| SRH FS CAN Bus Cable, 10m/32.8ft | **K2.0019302** |
| SRH FS CAN Bus Cable, 25m/82 ft | **K2.0019301** |
| SRH FS CAN Bus Coupler, 0.2m/0.65ft | **K2.0019300** |

# 4 Remote Head Attachment

4.1
**Mounting the Stabilized Remote Head**

| NOTICE |
| --- |
| In order to be able to use the maximum stabilization performance of the SRH-3 & SRH-360, the remote head may only be mounted on cranes, dollies, towers, cable cams or other support suitable for use. |

| ⚠ DANGER |
| --- |
| Mounting the stabilized remote head to a crane, dolly, support arm or any other device, has to be done by experienced operator or grip personal.<br>**Make sure that all safety regulations have been considered.** |

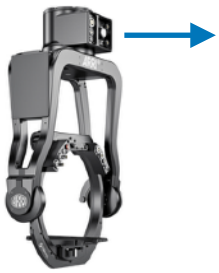
Step 1

4.2
**Mechanical Home Position SRH-3**

| NOTICE |
| --- |
| **Since the SRH-3 has no slip ring and therefore the rotation of the pan axis is limited to +/- 270 °, the mechanical zero / home position must already be considered during the assembly of the SRH-3 on a crane or dolly.**<br>The position will be displayed as: **-270° / 0° / +270°** |

**Use the junction box at the pan axis as orientation:**

In Underslung the junction box points into the set, in Overslung in the opposite direction.



**Underslung**

**0°** / Home Position

**Overslung**

**0°** / Home Position

Step 2

4.3
**ISO Damper**

| NOTICE |
| --- |
| Stabilization systems are limited by engine power, as well as their bandwidth or frequency response. Stabilized remote heads have difficulty isolating certain shocks and violent movements in the vertical axis. Even certain lateral movements can not always be perfectly corrected.<br>Very fast movements required to correct the camera position may not be within system capabilities.This can be seen when using longer lenses.<br>The use of Iso Dampers devices improves the application.<br>Mounting the Iso Dampers device between the remote head and the mounting point of the head, will soak up the fast, unwanted movements, leaving the stabilization with unwanted movements that are slower and within the bandwidth of the system. When a stabilized remote head, such as the SRH-3 & SRH-360, is attached to a fast-moving vehicle that travels over difficult terrain, extreme shocks and forces are applied to the remote head. |

4.4
**Vibration Isolator for SRH-3 & SRH-360**

The vibration isolator offers Mitchell Mounts at both ends.
To support fast and easy mounting of the SRH-3 & SRH-360, the shape of the lower blue Mitchell Mount is optimized for the SRH-3 & SRH-360.

**Order Numbers**

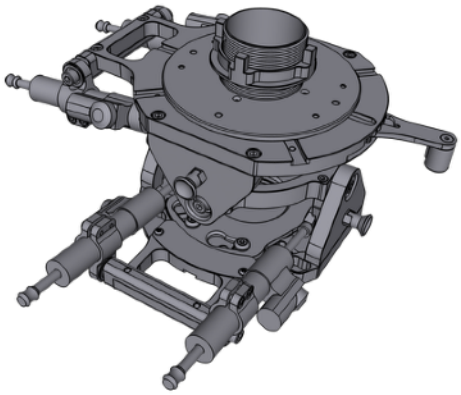
| | |
|---|---|
| Vibration Isolator for SRH, Gen. 2, metric, Basic Set | **KK.0039359** |
| Vibration Isolator for SRH, Gen. 2, imperial, Basic Set | **Available soon** |

contains:

| | |
|---|---|
| K2.0038752 | Vibration Isolator for SRH, Gen. 2, metric |
| Or | |
| K2.00xxxxx | Vibration Isolator for SRH, Gen. 2, imperial |
| Plus | |
| K2.0038756 | Wrench for SRH Castle Nut, Mitchell Mount |
| K2.0038758 | Case for Vibration Isolator for SRH, Gen 2 |

4.5
**Black-Tek ISO Damper**

The Black-Tek ISO-Damper offers adjustable oil-dampened double axis swing. The damper perfectly reduces vibrations, when accelerating and braking the boom of a Techno-Crane. It will also prevent your remote head from damage when using it on tracking vehicles in rough terrain.
A quick lock mechanisms will reduced rigging time.



**Available soon**

# 5 Camera Preparation / Balancing

| NOTICE |
|---|
| The entire balancing procedure of the stabilized remote head is based on symmetry and neutral balance.<br><br>Only a precisely executed camera preparation will enable you to get the best performance out of the SRH-3 & SRH-360 stabilized remote head. |

**Step 3**

5.1

**The right Camera Dovetail Plates and accessories**

We highly recommend to use the so called Stabilizer Adapter Mount / SAM plates.

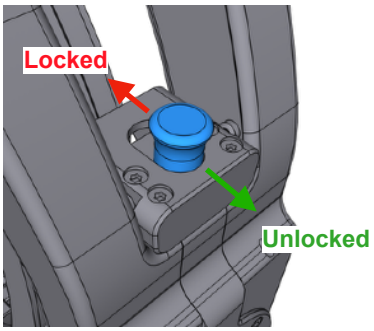
The SAM plates ensure secure and vibration-free attachment of the camera to the SRH-3 & SRH-360. The SAM plates allow the use of other accessories, such as the SSB-1 bracket and the counterweights.
By mounting the Sam plates on longer CSS dovetail plates, longer camera settings can be used with the SRH-3 & SRH-360.

To secure the camera from the top, the Top support bracket is highly recommended.

LINK
https://www.arri.com/en/camera-systems/camera-stabilizer-systems/stabilized-remote-heads/dovetail-plates-and-brackets

**Step 4**

5.2
**Tilt Lock**




**⚠ DANGER**

While **camera setup** the **Tilt Lock** needs to be **engaged**! (Locked)

Before **powering** up the remote head, the **Tilt Lock** must be **disengaged**!

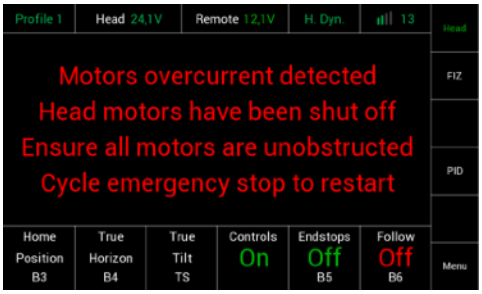
An **engaged Tilt Lock** may **cause damage** by overheating the tilt motors.

**Overcurrent detection remote head**

In case the remote head detects that one or multiple of its axes can not be moved anymore for longer than 20 (pan and tilt axes) respective 5 (roll axis) seconds, all motors are turned off automatically and an according message is displayed at the remote control.

A common cause for this situation can be the tilt lock (which must be removed for the normal operation of the remote head).
Or the roll axis is blocked by accessories, which are mounted to the camera.

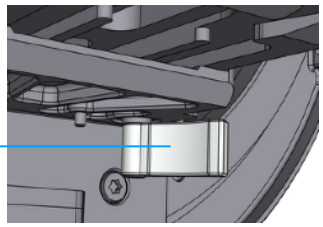
Remove the condition which blocks the axis movement and cycle the emergency stop in order to enable the motors again.



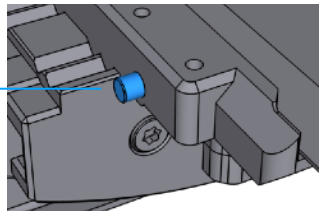
**Step 5**

5.3
**Mounting Camera Dovetail Plate**

First open the clamp lever to insert the camera dovetail / SAM plate.



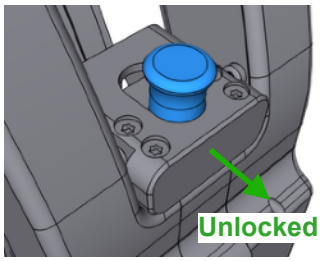

To remove the camera dovetail / SAM plate push the blue safety lock.



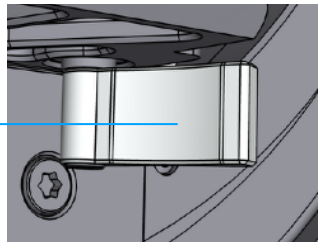

**Step 6**

5.4
**Fore and Aft Balance**

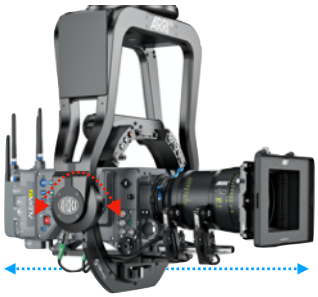
Unlock the tilt lock mechanism first.




Open the clamp lever to move the dovetail plate forward or backward.




Move the camera **fore** or **aft**, until the camera remains in a neutral horizontal position.

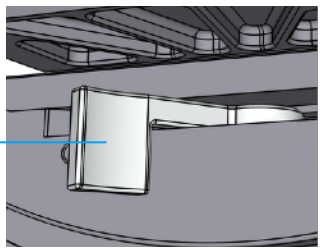


| NOTICE |
| --- |
| When adding or removing components, the camera position must be readjusted. |

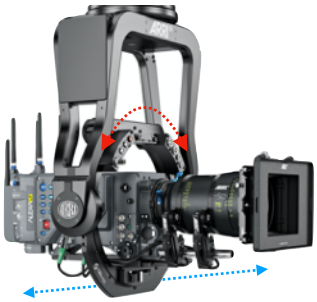
**Step 7**

5.5
**Side to Side Balance**

Open the clamp leaver at the front.




Move the camera **left** or **right** until the camera remains in a neutral horizontal position.



| NOTICE |
| --- |
| When adding or removing components, the camera position must be readjusted. |

# 6 Powering the SRH-3 & SRH-360

**⚠ CAUTION**

To perform in the desired way, the stabilized remote head requires at least min. **24V / 8A** over the **3pin XLR** plug and min. **12V / 5A** via the **4pin XLR** plug.

**Use only suitable and recommended power cords, batteries and power supplies.**

**Otherwise the desired performance cannot be guaranteed.**

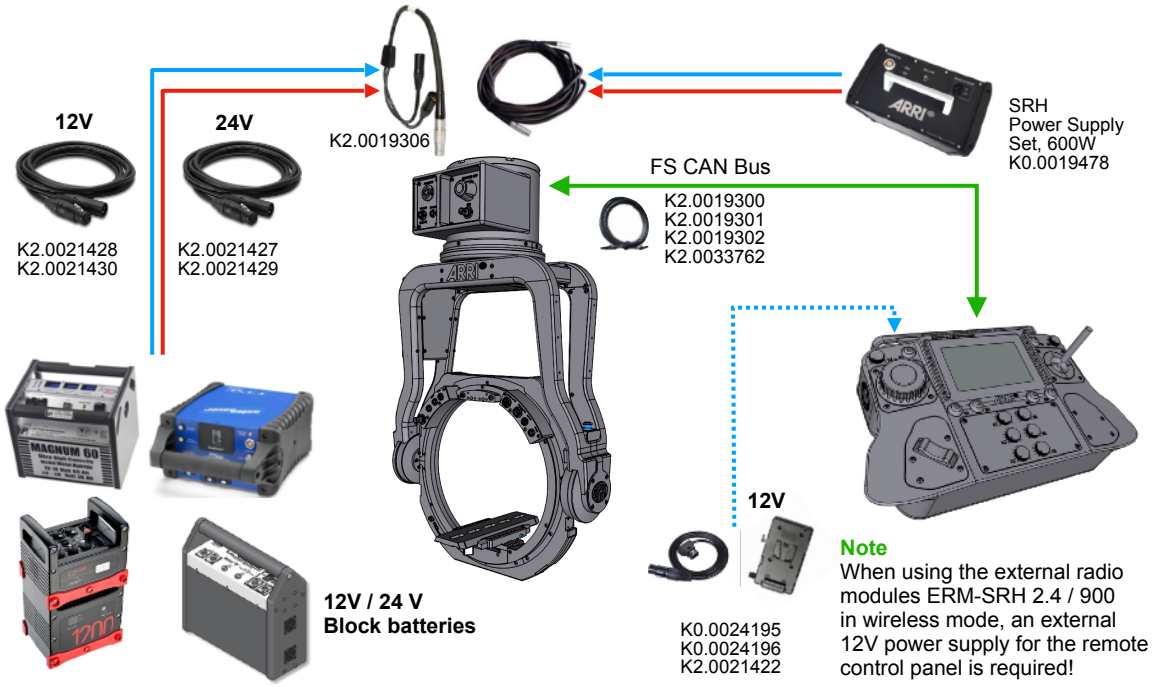
The power supply for the EUT, has to provide "SELV" and a short-circuit-proof „limited power source", according to EN 60950-1.

## 6.1 Batteries (Recommended)

| | |
|---|---|
| BEBOB CUBE 1200 | www.bebob.de |
| Anton Bauer CINE VCLX | www.antonbauer.com |
| Block Battery | www.blockbattery.com |
| Cinepower Magnum 60 | www.cinepower.com |

**Step 8**

## 6.2 Wiring the SRH-3 & SRH-360 remote head and the Remote Control Panel



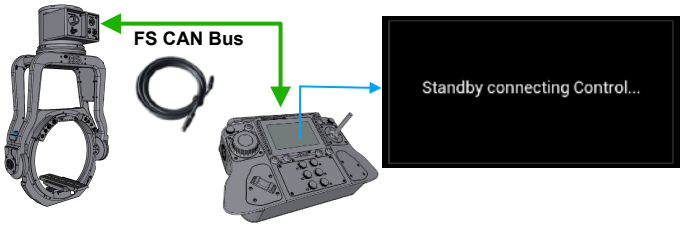
# 7 Remote Control Panel

**Step 9**

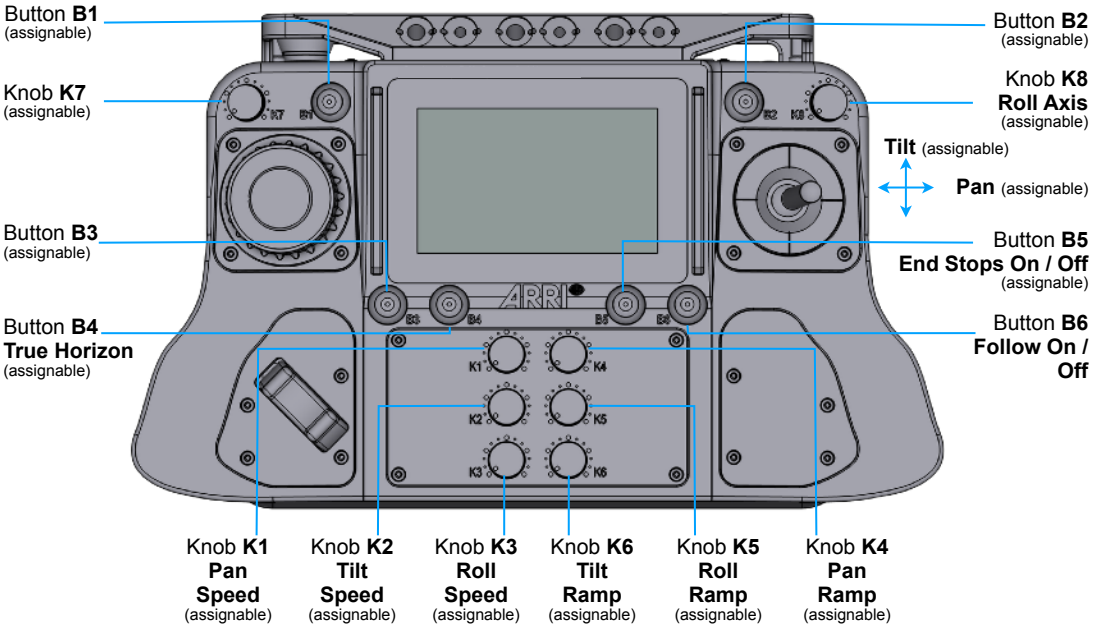
## 7.1 Connecting the remote control panel with the remote head (hardwired)

**Available cables**

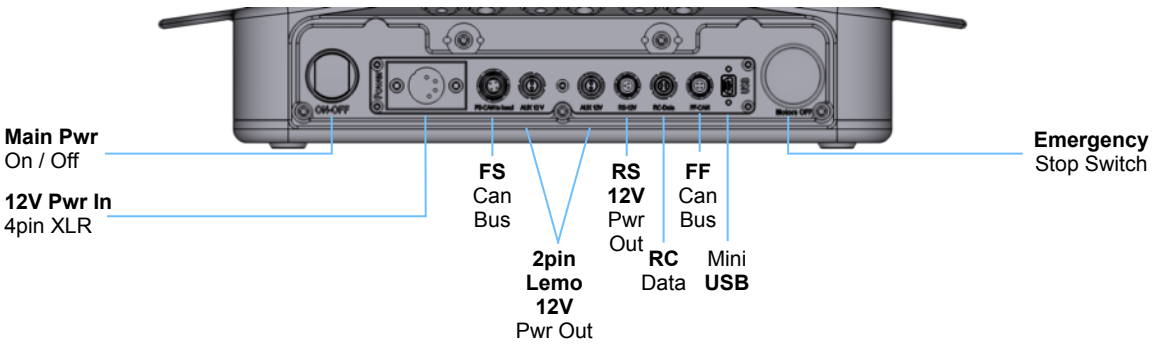
| | |
|---|---|
| SRH FS CAN Bus Cable, 1m/3.2ft | **K2.0033762** |
| SRH FS CAN Bus Cable, 5m/16.4ft | **K2.0037701** |
| SRH FS CAN Bus Cable, 10m/32.8ft | **K2.0019302** |
| SRH FS CAN Bus Cable, 25m/82 ft | **K2.0019301** |
| SRH FS CAN Bus Coupler, 0.2m/ 0.65ft | **K2.0019300** |



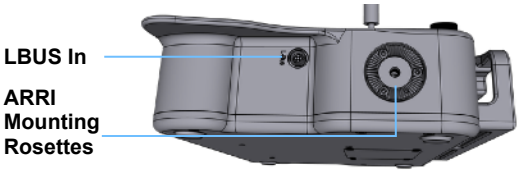

## 7.2 Functions on the top (factory presets)




## 7.3 Functions on the rear



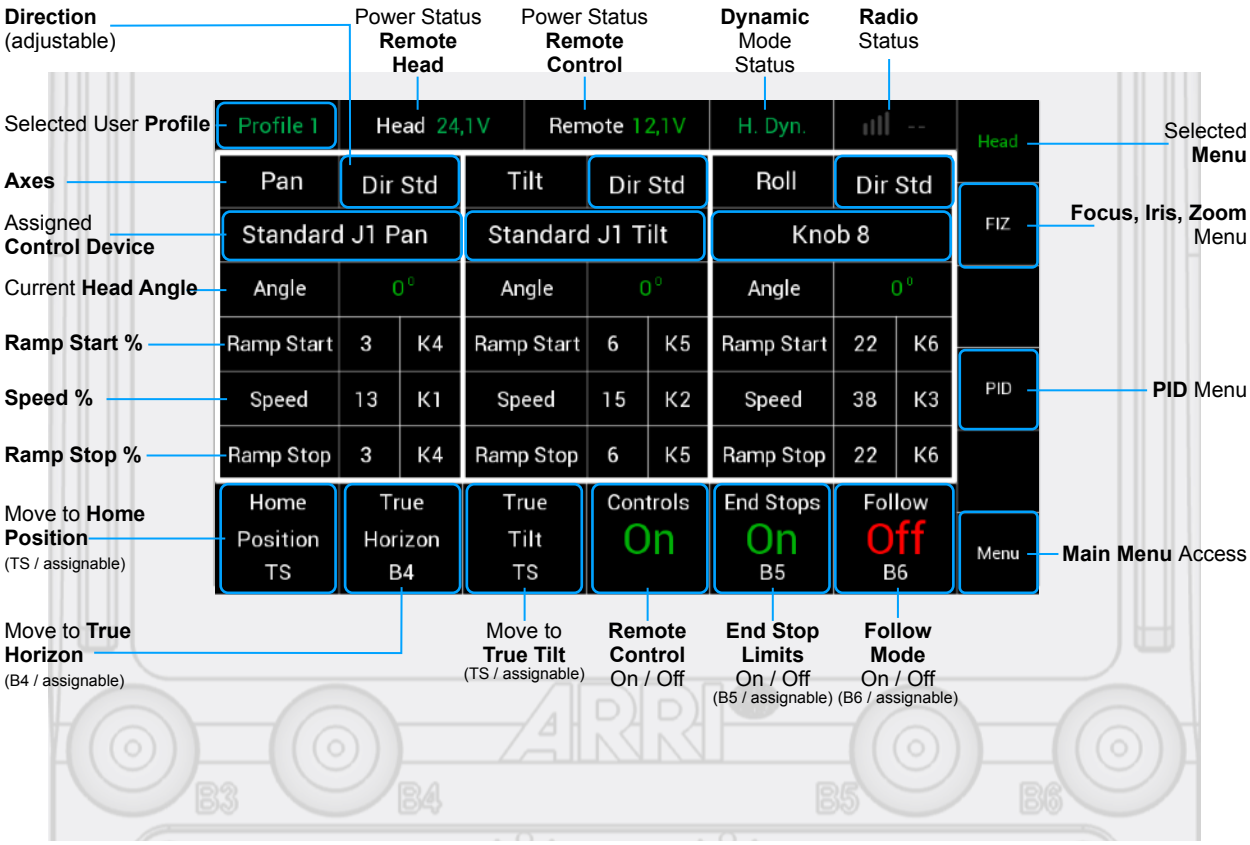

## 7.4 Functions on the right and left side



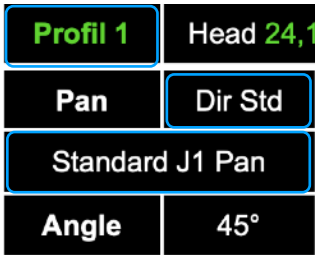
# 8 Remote Control / GUI (Graphical User Interface)

## 8.1 Software factory presets

The SRH-3 & SRH-360 has a factory preset for the main functions such as joystick, speed and ramp.
The factory preset settings ensure all necessary basic functions and enable immediate operation.




### General functionality of the touchscreen




## 8.2 Home Screen

All fields marked in **blue** open a submenu for quick adjustments

## 8.3 Sub Menus

Touch **Save** to store the current settings.

Touch **Factory Presets** to reset the current setting to the factory settings.

Touch **Discard** to cancel the actual settings.

Touch **Back** to return to the previous page

**Step 10**

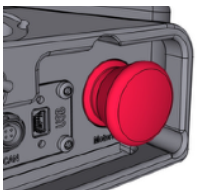
8.3
**Emergency Stop** remote control panel / remote head

This information appears on the screen after the **emergency stop switch** has been triggered.

The emergency stop switch can be triggered on the remote control panel and on the remote head.

This means that the remote head has its motors **turned off** as long as the **emergency stop** switch is **activated**.

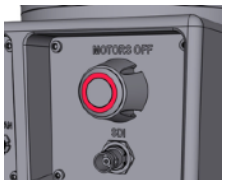
8.4
**Emergency Stop** remote control panel

**⚠ CAUTION**

**Do not pull** the Emergency Stop knob!
**Turn the knob to the left.**

8.5
**Emergency Stop** remote head

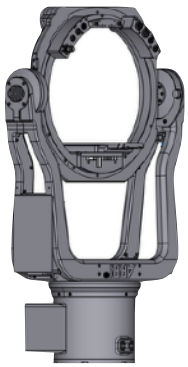



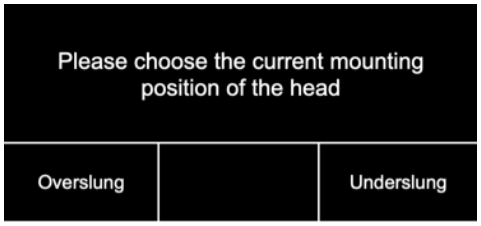

**NOTE**

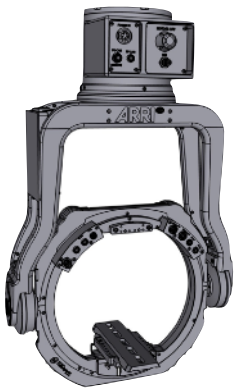
An activated **emergency stop switch** will backlit by a **red LED** ring.
Pressing the switch deactivates the emergency stop.

**Step 11**

8.6
**Mounting Position**
Once the remote control is connected to the remote head, the display will ask for the position of the remote head.





Standing
**Overslung**

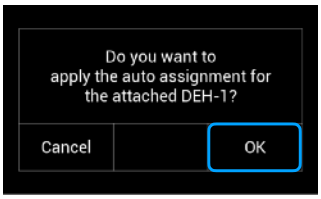
Hanging
**Underslung**

# 9 Controls Setup

Step 12

## 9.1 Auto Assignment Controller

For a fast and easy setup, this menu will show up, as soon the **DRW-1, DEH-1, Knob Solo** is connected to the remote control panel.




| NOTE |
|---|
| Press **Cancel** if DRW-1 or DEH-1 has already been assigned and values have already been set.<br><br>**Press OK to overwrite your last values.** |

| NOTE |
|---|
| The Auto Assignment function can be deactivated in the **Settings** menu for the remote control. |

## 9.2 Manual Assignment


Touch the **field** below **Pan, Tilt, Roll** and select the desired controller in the submenu.

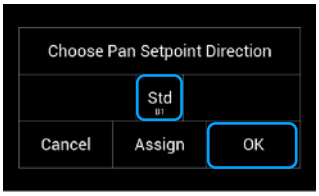
### Available controllers Pan, Tilt, Roll

| | | | | | |
|---|---|---|---|---|---|
| **SJ1T** | Standard J 1 **Tilt** | Standard Joystick 1 up/down | **DRWP** | DRW-1 **Pan** | DRW-1, ARRI Wheels, **Pan** |
| **SJ1P** | Standard J 1 **Pan** | Standard Joystick 1 left /right | **DRWT** | DRW-1 **Tilt** | DRW-1, ARRI Wheels, **Tilt** |
| | | | **DRWR** | DRW-1 **Roll** | DRW-1, ARRI Wheels, **Roll** |
| **MF1T** | Microforce J 1 **Tilt** | Microforce Joystick 1 up/down | | | |
| **MF1P** | Microforce J 1 **Pan** | Microforce Joystick 1 left /right | **DEHP** | DEH-1 **Pan** | DEH-1, ARRI Encoder Head, **Pan** |
| | | | **DEHT** | DEH-1 **Tilt** | DEH-1, ARRI Encoder Head, **Tilt** |
| **BC1T** | Broadcast J 1 **Tilt** | Broadcast Joystick 1 up/down | | | |
| **BC1P** | Broadcast J 1 **Pan** | Broadcast Joystick 1 left /right | **TS** | Touchscreen | Control through the Touchscreen of the Remote Control Panel |
| **K1 … K8** | Knob **1** … Knob **8** | Knobs | **B1 … B6** | Button **1** … Button **6** | Buttons |

**NOTE**
As soon as a controller is connected to the Remote Control Panel, the following information appears briefly.

9.3
**Changing Direction**

The marked field indicates the selected direction.

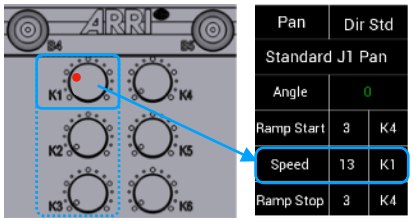

Touching the marked field opens the Direction submenu.

Touching the field in the middle **toggles** between **Standard** and **Reverse**.

9.4
**Speed (K1, K2, K3)**

In factory preset **Speed** is assigned to:
K1 Pan
K2 Tilt
K3 Roll

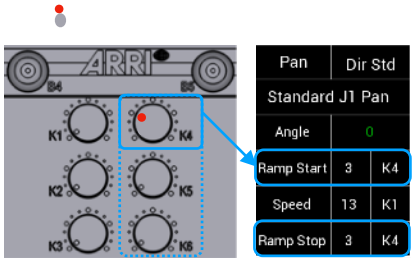
Turning the knob to the right will increase the **Speed** value.
The selected **Speed** values are displayed on the home screen.




9.5
**Ramp (K4, K5, K6)**

In factory preset **Ramp** is assigned to:
K4 Pan
K5 Tilt
K6 Roll

Turning the knob to the right will increase the **Start** and **Stop Ramp** value.
The selected **Start** and **Stop Ramp** values are displayed on the home screen.




9.6
**Controls On / Off**

As a **security measure,** you can **lock all controllers** of the remote control panel by touching **Controller On / Off**.

Touching will toggle between **On** and **Off**.

# 10 PID / Quick Setup

**NOTICE**

It is important to understand and to accept that all necessary steps, such as setting up the camera, attaching the remote head to the crane, the quality of the crane itself and the PID settings, must be taken into account and properly performed.

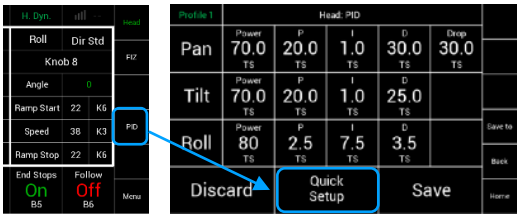
1. Start with a solid camera setup.
2. Make sure that all required components are firmly attached to the camera.
3. Avoid assemblies that use tape or Velcro.
4. Check that all clamps are securely locked.

If only one step is missing, the desired overall system performance can not be achieved.

**Step 13**

10.1
**PID Quick Setup**

To reach the **PID Quick Setup** press **PID** at the Home page, then press **Quick Setup**.

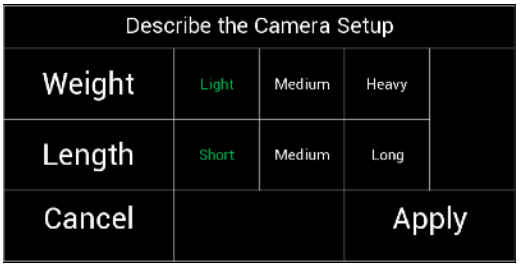



10.2
**Camera Weight / Size Preselection**

With this simple selection you can set the weight and the length of the camera.

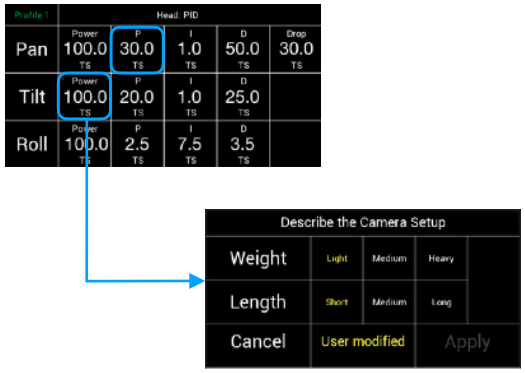
The selection then results in **motor power** and the necessary **torque**.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Light** | camera weight | 5 | - | 10 | kg | 11 | - | 22 | lb. |
| **Medium** | camera weight | 10 | - | 20 | kg | 22 | - | 44 | lb. |
| **Heavy** | camera weight | 20 | - | 30 | kg | 44 | - | 66 | lb. |




When you have made your selection, press **Apply.**

**NOTE**
As soon as you manually fine-tune the PID values of the PID presets and thus change the PID presets, this is indicated by yellow values.



**Step 14**

10.3
**Fine tuning of the current PID values**

**1** Set the Joystick **Ramp** to **ZERO** (Pan & Tilt) (K4 & K5)

**2** Physical test to determine the necessary tilt power value. Touch the lens at the front end, slowly push the camera down and check if the tilt axis starts to slip.

**3** If the **Tilt** axis **slips**, you **must increase** the **Power value** for the **Tilt** axis.

**NOTE**

When the remote head starts to **vibrate**, **reduce** the **Power value**!


**4** Once the **Tilt Power** value meets your expectations, the same **Power** value will be used for the **Pan** axis as well.
Press **Save!**



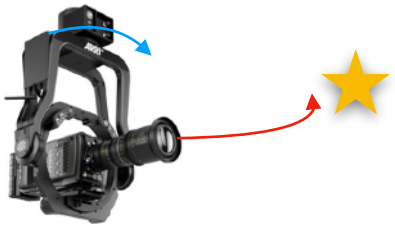

**5** Adjusting the **PID** values:

**NOTE**

Now a camera picture on a larger monitor screen is needed.

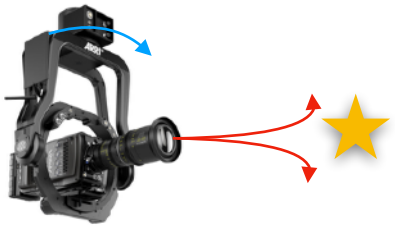
**6** Choose and frame a fixed point in the set.

**7** Use the joystick and move the remote head to the selected position in the set and stop the head right there.



**8** Check if the camera:
- stops at the selected point
- whether the camera exceeds the point
- whether the camera is bouncing left and right

**9** If the camera exceeds the desired point, **increase** the **P** and **D values** in increments of five.



**NOTE**

The **D value** must be min. **5 higher** then the **P value.**

**NOTE**

When the remote head starts to **vibrate**, **reduce** the **P value**!


**10** If the remote head **bounces** to the left and right when you reach the desired point, you must slowly **increase** the **D value** of the **Pan** axis.

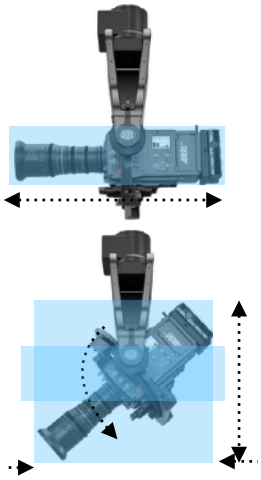
**11** Once the **Pan PID** values meets your expectations, reduce the P and D values by 10 and use the little lower values for the **Tilt** axis.
Press **Save!**

# 11 Drop

Step 15

| NOTICE |
| --- |
| **Without** any **Drop compensation**, strong **vibrations** occur at steep angles. |

At very steep angles, the weight distribution of the camera setup changes extremely.



The weight of the camera remains the same during tilting, but the overall length of the weight distribution becomes shorter and shorter the steeper the tilt angle becomes. Therefore, power and torque must be adjusted in relation to the current angle of inclination.

A correct Drop setting permanently balances the Pan and Tilt values as the camera angle gets steeper and steeper.

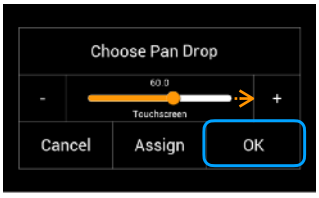
## 11.1 **Adjusting Drop**


Touch Drop to open the Drop Sub Menu.

Slowly move the camera to the 90° top-down position.

As soon as the remote head starts to vibrate, slowly move the slider to the right and increase the **Drop** value until the remote head stops vibrating.

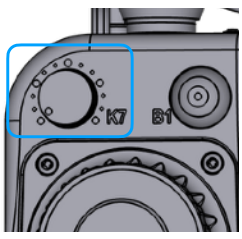
Press **OK**.




## 11.2 „**Master Control**“

**NOTE**
The **Drop** setting is a pretty powerful way to control the overall performance and behavior of the SRH-3 & SRH-360.

Although the PID settings were carried out perfectly, there may be undesirable vibrations in connection with the general mounting situation on the crane or dolly.




In order to get this unexpected vibrations under control immediately, it is advisable to assign the drop on one of the knobs, e.g. K7.

As soon as vibrations occur, simply turn K7 a little to the left to lower the drop value and the vibrations will disappear immediately.

# 12 Home Position SRH-3

This function moves the remote head back to its predefined starting position.

| NOTICE |
| --- |
| **Since the SRH-3 has no slip ring and therefore the rotation of the pan axis is limited to +/- 270 °, the mechanical zero / home position must already be considered during the assembly of the SRH-3 on a crane or dolly.**<br><br>The position will be displayed as: **-270° / 0° / +270°** |

| NOTICE |
| --- |
| **Use the junction box at the pan axis as orientation.** |

**Underslung**

**0°** / Home Position

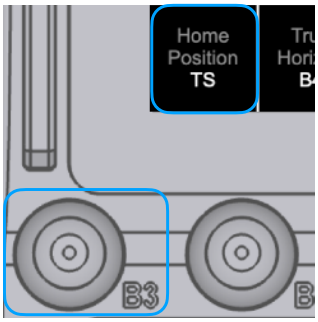
**Overslung**

**0°** / Home Position

**In Underslung the junction box points into the set, in Overslung in the opposite direction.**

By default, this function is assigned to the Touch Screen.

Touching **Home Position** on the Home Screen, will open a submenu, where the remote head can be moved in the Home Position and where this function can be assigned to a button.

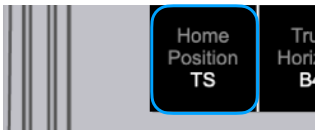



NOTE
If the function is used more often, it is helpful to assign it to **B3**.

| NOTICE |
| --- |
| **With the SRH-3, the Home Position, are fixed values and cannot be changed by the user.** |

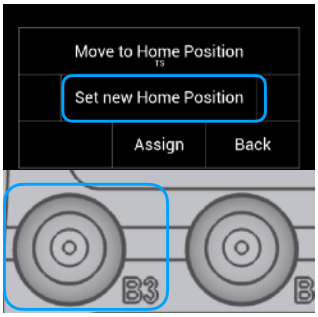
## 12.1 Setting a new Home Position SRH-360

By default, this function is assigned to the Touch Screen.




Touching H**ome Position** on the Home Screen, will open a submenu.

To set a new custom Home Position, use the controller (joystick, wheels) to move the Pan, Tilt and Roll axes in the desired Home Position.




Press **Set new Home Position**

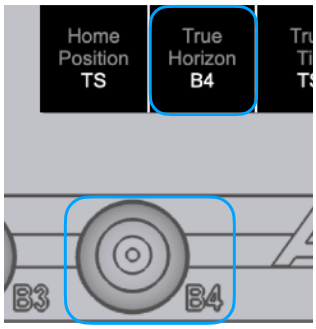
Press **Ok** to store the new Home Position.

NOTE
If the function is used more often, it is helpful to assign it to **B3**.

# 13 True Horizon

The **True Horizon** function, moves the **Roll** axis back moves the Roll axis back to the set position.

When using the DRW-1 wheels or the DEH-1 encoder head, it can be very helpful to return horizon / roll axis to the neutral position by simply pressing a button.




**True Horizon** will also work when using the second Rocker to control the Roll axis.

**NOTE**
By factory preset, this function is assigned to **B4**.

Touching **True Horizon** on the Home Screen, will open a submenu, where the remote head can be moved in the **True Horizon** position and where this function can be assigned to a button.

**Customizing the True Horizon only SRH-360**

To set a new custom True Horizon Position, use the controller (joystick, wheels) to move the Roll axes in the desired position.


Press **Set new True Horizon.**

Press **Ok** to store the new Home Position.

# 14 True Tilt

The **True Tilt** function, moves the Tilt axis back to the set position.

**NOTE**
By default, this function is assigned to the **Touch Screen**.


Touching **True Tilt** on the Home Screen, will open a submenu, where the remote head can be moved in the Home Position and where this function can be assigned to a button.

**Customizing the True Tilt only SRH-360**

To set a new custom True Tilt Position, use the controller (joystick, wheels) to move the Roll axes in the desired position.


Press **Set new True Tilt.**

Press **Ok** to store the new Home Position.

# 15 End Stops On / Off

**NOTICE**

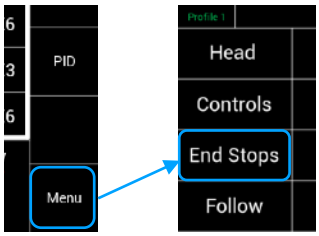
**The End Stops for the Pan axis of the SRH-360 can be enabled only when this axis is operated in speed mode.**


**End Stops N/A** Indicates whether end stops / limits values are not set and are therefore **not active.**


**End Stops On** Indicates whether end stops / limits values are set and are therefore **active.**

By default, this function is assigned to button **B5**.

15.1
**Setting End Stops**




The **End Stops values** can be set in the End Stops menu in the **Main** menu.

Touch **Main** and then **End Stops** will open the End Stops settings menu.

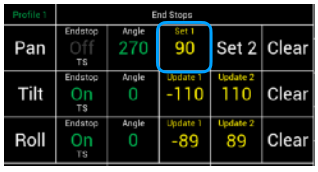
In the **End Stops** settings menu you can define the **start** and **end positions** for each axis and activate or deactivate them individually.

15.2
**End Stops On / Off**
Here you can activate the End Stop function for each axis. Just touch On / Off.

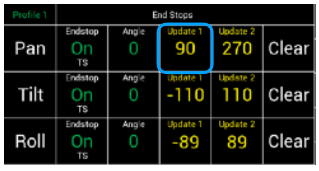

**NOTE**
Both end stops per axis must be set in order to finally activate the end stop function.

15.3
**Current Angle**
The green numbers indicate the current positions of the individual axes.


15.4
To set the end stop positions, move the head to the desired first end position and touch Set 1 of the axis.
Afterwards, move the head to the desired opposite end position and touch Set 2 of the axis.



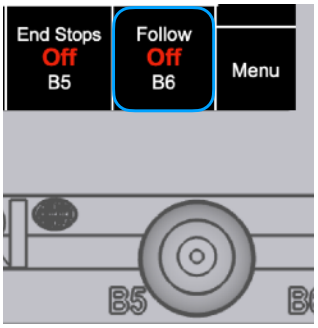

15.5
Press Update, to redo any of the End Stops.




15.6
Press Clear to delete both end stops of the current axis.

# 16 Follow Mode On / Off

| NOTICE |
| --- |
| **This Function is only available in Speed Mode.** |




Indicates if the **Follow Mode** is **active or not.**

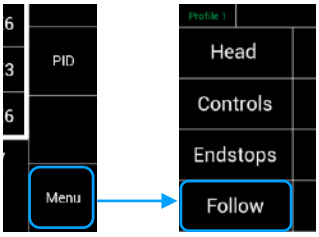
By default, this function is assigned to button **B6.**

**Follow Mode / Pan Lock**

The Follow mode allows the horizontal Pan and the vertical Tilt movement of the remote head to be synchronized with the horizontal Pan and the vertical Tilt movement of the crane.

This function is also called **Pan Lock**.

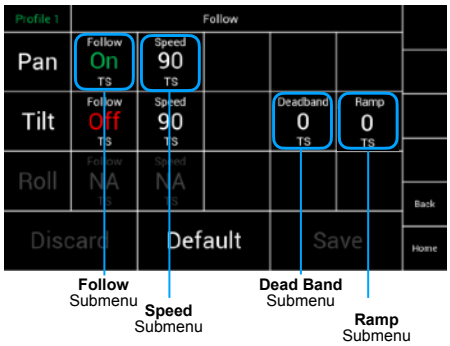
16.1
**Setting Follow Mode**



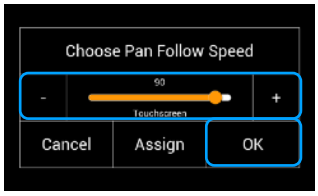

In the **Follow** mode settings menu you can define **Speed**, **Dead Band** and **Ramp** of the Follow mode individually for each axis.

Touch **Main** and then **Follow** to go to the Follow settings menu.

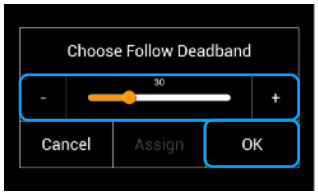
16.2
Touch **Follow On / Off** to activate the Follow mode.




16.3
**Follow Speed**
Touch Speed and set a minimum speed value of **89** (better 100) to ensure synchronized movement between the crane and the remote head.
Press **OK**

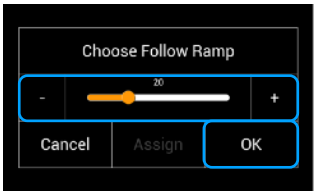



16.4
**Follow Dead Band**
The Follow Dead Band selection opens a new menu with a slider that allows you to set the Dead Band of the Follow function for each axis individually.




**NOTE**
The Dead Band should be 0 to max 30 to enable the Pan Lock.

16.5
**Follow Ramp**
The Follow Ramp selection opens a new menu with a slider that allows you to set the **Ramp** of the Follow function for each axis individually.




**NOTE**
The **Ramp** should be **0** to enable a proper Pan Lock.

# 17 Dynamic Modes

The SRH-3 & SRH-360 offer three different Dynamic Modes:

**Low Dynamic Mode / L. Dyn**
If the remote head is used on a tripod or dolly and it is important that the head drifts as little as possible, then the **Low** Dynamic Mode is the right choice.

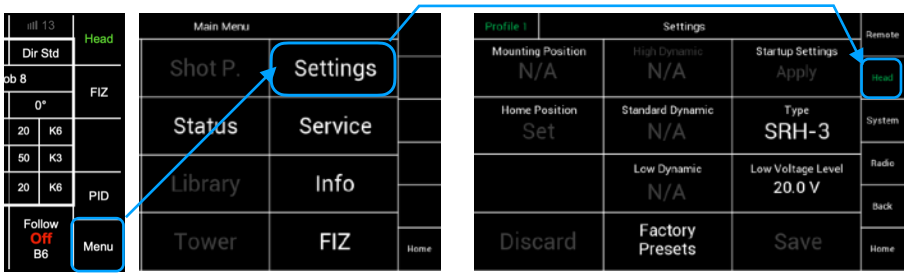
**Standard Dynamic Mode / Std. Dyn**
By default, the remote head works in **Standard** dynamic mode, which ensures the best overall performance for the average daily shooting scenarios.

**High Dynamic Mode / H. Dyn**
When the remote head is used in extreme centrifugal conditions, the overall stabilization performance is maximized by activating the **High** dynamic mode.

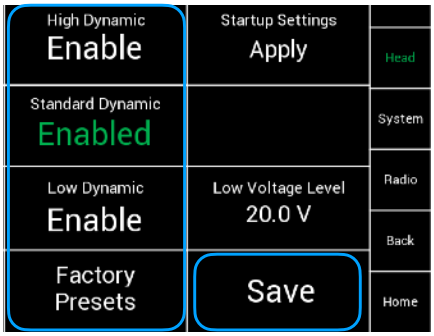
## 17.1 Status Dynamic Mode

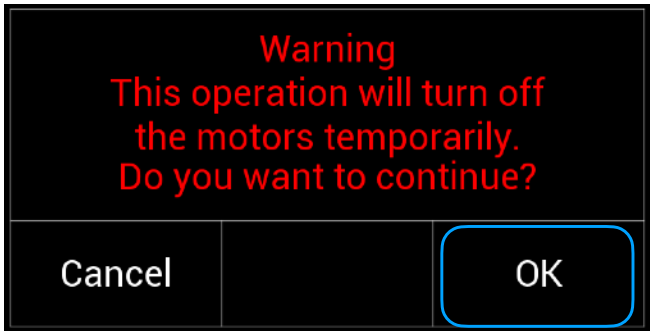
The home screen indicates the current Dynamic Mode.
In this case **Standard Dynamic Mode**.


## 17.2 Changing the Dynamic Modes




Touch **Menu** Touch **Settings** Touch **Head**



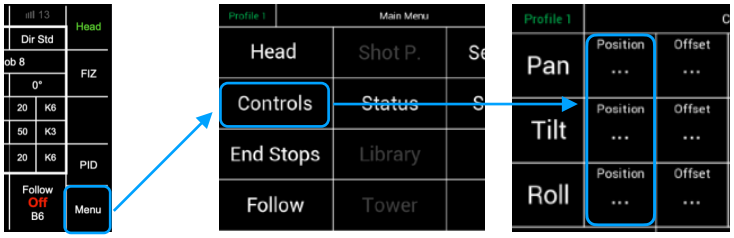




| NOTICE |
| --- |
| **The activation / deactivation of the Low and High dynamic mode takes up to 2 minutes!**<br><br>**Do not touch or move the remote head until dynamic mode activation / deactivation is complete!** |

| NOTICE |
| --- |
| **Press always Standard to leave the Low or High dynamic mode!** |

# 18 Additional Controls Setup

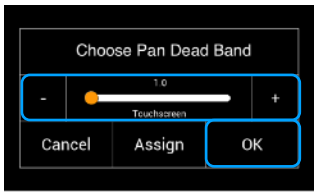
- **Dead Band**
- **Sensitivity**
- **Filter**
- **Ratio**




Select **Main** Select **Position** Select the **Axis**

18.1
**Dead Band**


This value determines when the remote head responds after the control device (joystick) has been moved.




**NOTICE**

If the **DRW-1** wheels or the **DEH-1** encoder head is used as a controller, Dead Band must be **set to 0**!
Otherwise there would be a delay in response!

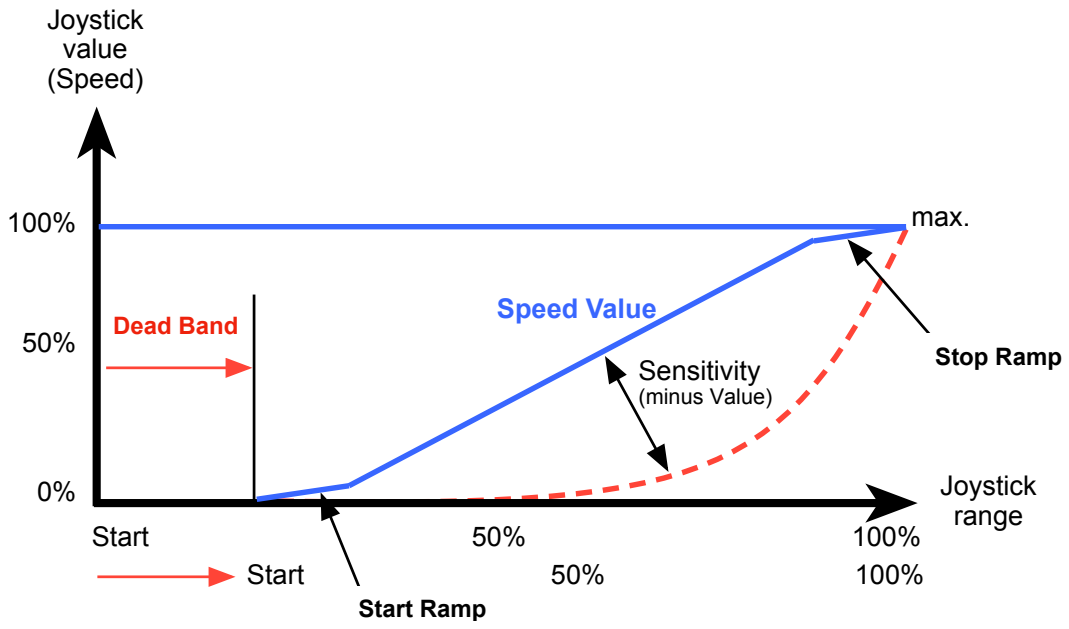
18.2
**Sensitivity**


Sensitivity will change the sensitivity for the selected controller

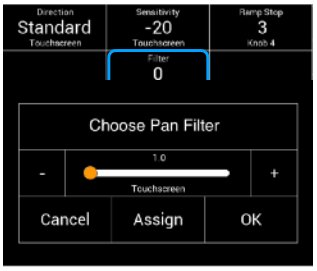
If the sensitivity value is too low, there will be more or less **no** movement in the end.

**NOTICE**

If the **DRW-1** wheels or the **DEH-1** encoder head is used as a controller, Sensitivity must be **set to 0**!
Otherwise there would be a delay in response!



18.3
**Filter**




Additional low pass filter function for encoder based controllers, like the DEH-1.

When the DEH-1 is used in a car or a train, vibrations of the vehicle may be transmitted to the DEH-1's encoders.

This can lead to irritations in the pan and tilt axis.
In case of such irritations, the operator can use the **Filter** function to set a low-pass filter value, which allows to **eliminate** these disturbing vibrations.

18.4
**Ratio in Speed Mode**


Selecting **Ratio** will open a new sub menu where you can select the required **Speed Ratio** of the selected axis.

When shooting with an extreme tele lens, it can be very helpful to change the speed ratio from 0 (1:1) to -30.
This will reduce the speed development to -**30%**.

18.5
**Ratio in Angle Mode**

In angle mode, the position of the **DEH-1** encoder head is sent as an exact angle, i.e. H. 1: 1 to the remote head.

Since only angle data is transmitted, there is normally no speed control.

In order to be able to change the „perceived speed“, you have to change the gear ratio between controller and remote head.
This adjustment happens via the ratio value.

**Speed 50 means a 1: 1 gear ratio.**

A higher value increases the gear ratio / the „perceived speed“

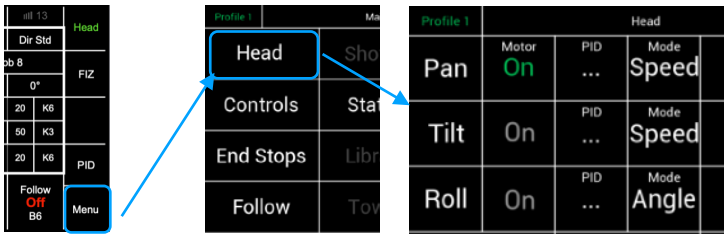
**To simplify the setting, the Ratio settings is assigned to the Speed knobs K1, K2, K3.**

**NOTE**
To simulate the original gear ratio of the ARRI gear head (slow, medium and fast), you need to set the speed values as shown in the list.

| | Speeds: | Turns | Movement | **Speed Value** | Angle / Turn |
|---|---|---|---|---|---|
| Pan | Slow | 65 | for 360° Pan | **39** | 3,45° |
| Tilt | Slow | 17.5 | for 60° Tilt | **39** | 5,51° |
| Roll | Slow | 17.5 | for 60° Tilt | **39** | 3,45° |
| | | | | | |
| **Pan** | Medium | 35.5 | for 360° Pan | 50 | 6,49° |
| **Tilt** | Medium | 9.25 | for 60° Tilt | 50 | 10,14° |
| **Roll** | Medium | 9.25 | for 60° Tilt | 50 | 6,49° |
| | | | | | |
| Pan | Fast | 19 | for 360° Pan | **61** | 12,45° |
| Tilt | Fast | 4.75 | for 60° Tilt | **61** | 19,06° |
| Roll | Fast | 4.75 | for 60° Tilt | **61** | 12,45° |

# 19 Additional Remote Head Settings

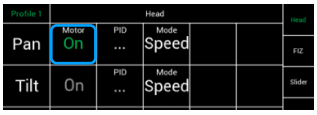
- **Pan Motor On / Off**
- **Motor Mode**




Select **Main** Select **Head**

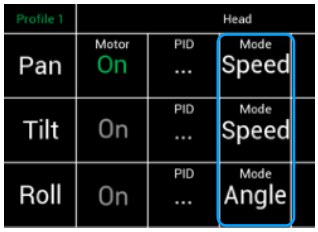
19.1
**Pan Motor On / Off**

Selecting **Motor On / Off** will toggle between Pan motor **On** and **Off.**



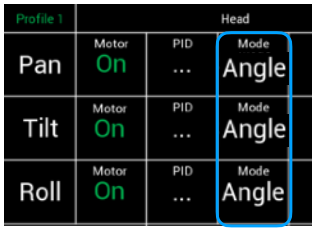

19.2
**Motor Mode**

In the **Motor Mode** column, the motors can be set to **Speed** or **Angle** mode.




| NOTICE |
| --- |
| If you use the internal **Joystick** the Pan and Tilt motors should be set to **Speed mode**. |

**Speed Mode** is the right choice when shooting in very dynamic situations with fast moving targets, like cars, or sport. The control of the head is more intuitive and more „direct“.




| NOTICE |
| --- |
| If you use **DRW-1** wheels or the **DEH-1** encoder head, the Pan and Tilt motors should be set to **Angle mode.** |

Angle Mode is the right choice for cranes, dollies, static applications or when very long focal lengths are used.

# 20 External Radio Modules

| NOTICE |
| --- |
| **Since 2020, the SRH-3 and SRH-360 remote heads do not have an internal radio system, both remote heads can only be controlled wirelessly via the External Radio Modules.** |

To operate the SRH-3 & SRH-360 without internal radio wireless, the ERM-2400 or ERM-900 must be connected to the remote head and the remote control panel and set up in the radio setup menu.

**ERM-2400** Ext. Radio Module **2.4 GHz** RXD-TXD Set **K2.0033757**
**ERM-900** Ext. Radio Module **900 MHz** RXD-TXD Set **K2.0033758**

## 20.1 External Radio Modules ERM-2400 and ERM-900 setup

By connecting the external radio modules ERM-2400 and ERM-900 via the FS-CAN Bus cable to the remote control panel and the remote head, the modules will change after an initial setup automatically into transmitter and receiver mode. The FS-CAN Bus cable provides data and power to the external radio modules.

| NOTICE |
| --- |
| **Please read the separate manual of the ERM modules.** |

## 20.2 Range

| NOTICE |
| --- |
| The quality and range of the radio connection strongly depends on the general radio situation on site.<br>1. Make sure that you select the correct region in which you operate the device.<br>2. Avoid multiple products that use the same frequency or the same channel in the 2.4 GHz bandwidth.<br>3. Start first those devices that use fixed frequencies. Then devices that work with channel hopping.<br>4. WiFi transmitters, receivers or networks can strongly influence the quality of the 2.4 GHz connection.<br>5. Ask your staff to turn off the "hotspot" function in their mobile phones.<br>6. Disable unnecessary, unused WiFi systems, such as routers for example.<br>7. Especially non-certified or illegal radio systems, can affect the range of the wireless connection extremely.<br>8. Disable all illegal radio systems. |

# 21 Focus - Iris - Zoom / FIZ

Introduction

Using the optional internal focus wheel or the internal zoom rocker or LBUS-based controls such as Master Grips Focus and Zoom or the OCU-1 allows you to control the cforce mini motors or selected broadcast lenses via the LCUBE CUB-2.

K0.0019595

KK.0022270

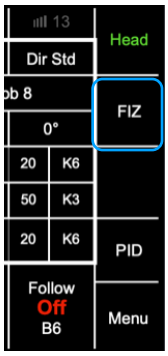
K2.0009363
K2.0009490

KK.0024836

**Step 1**

21.1
**Assigning Focus, Iris and Zoom**

Touching **FIZ** on the **Home** screen will open the FIZ controller menu.

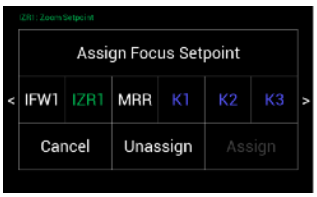



21.2
**Assigning Focus Iris and Zoom**

The **FIZ home screen** allows to assign the wanted controllers by touching the marked areas.


**Touching** the **marked area** will open a new menu, where the desired controllers can be assigned.

21.3
**Available Controllers**

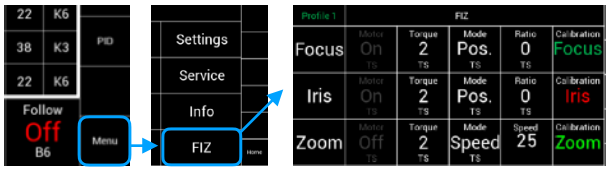



| | | |
|---|---|---|
| **IFW1** | **Focus** Wheel 1 | Internal Focus Wheel 1 |
| **IFW2** | **Focus** Wheel 2 | Internal Focus Wheel 2 |
| **IZR1** | **Zoom** Rocker 1 | Internal Zoom Rocker 1 |
| **IZR2** | **Zoom** Rocker 2 | Internal Zoom Rocker 2 |
| | | |
| **MLW** | Left **Wheel** | Master Grip Left Focus Wheel |
| **MRW** | Right **Wheel** | Master Grip Right Focus Wheel |
| **MLR** | Left **Rocker** | Master Grip Left Zoom Rocker |
| **MRR** | Right **Rocker** | Master Grip Right Zoom Rocker |
| | | |
| **MLRB** | MLR **Button** | Master Grip Left Rocker, Red Button |
| **MRRB** | MRR **Button** | Master Grip Right Rocker, Red Button |
| **MLWB** | MLW **Button** | Master Grip Left Wheel, Red Button |
| **MRWB** | MRW **Button** | Master Grip Right Wheel, Red Button |
| | | |
| **OCU** | OCU-1 | OCU Focus Wheel |

Step 1

21.4
**FIZ Controllers Adjustments**

- Motor Mode
- Calibration
- Torque
- Speed

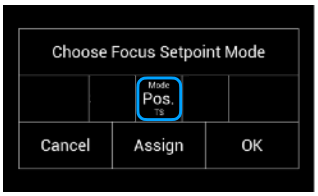



Select **Menu** Select **FIZ**

21.5
**Motor Mode**

In the **Motor Mode** column, the motors can be changed from **Position** to **Speed** mode.

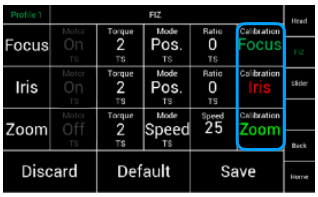
Touching the **marked area** will toggle between **Position** and **Speed** mode.


| NOTICE | |
|---|---|
| **Focus** Wheel | should be set to **Position**. |
| **Iris** Slider | should be set to **Position**. |
| **Zoom** Rocker | should be set to **Speed.** |

21.6
**Calibration**

By selecting **Calibrate**, every single **cforce mini motor** will be calibrated.



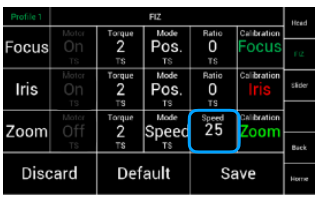

| NOTICE |
|---|
| **Green** indicates that the motor is calibrated.<br>**Red** means that the motor needs to be calibrated. |

| NOTICE |
|---|
| You can also calibrate the motors by pressing the calibration knob at the single cforce motor. |

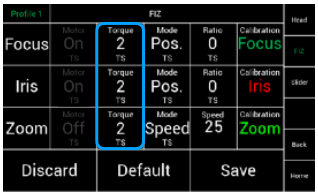
| NOTICE |
|---|
| When using the **LCUBE CUB-2** with broadcast lenses, calibration is **not required**. |

21.7
**Speed**

In general, the speed of FIZ motors can only be adjusted while the motor is operating in **Speed** mode.
Selecting **Speed** selection will open the speed adjustment menu.

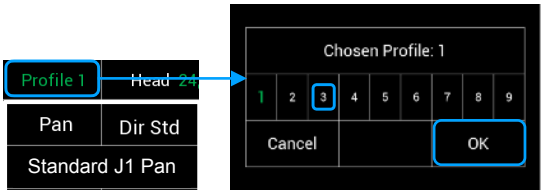



21.8
**Torque**
Selecting **Torque** selection will open the torque adjustment menu.
Keep the Torque value as low as possible.
This will help to keep the overall power consumption low.



# 22 Profile Management

## 22.1 Selecting Profiles




During use, all values, assignments and settings are permanently written to the current selected profile.
**In this case in Profile 1**.

**Touching Profile** opens a new window where another profile can be selected.

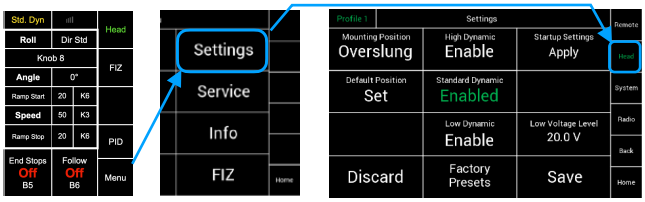
## 22.2 Cloning Setting

In some menus, like PID menu the values can also be stored / cloned into other profiles.


## 22.3 Startup Settings

To ensure that the remote head works properly when it is switched on even when the remote control panel is not connected, you can save the current profile in the remote head.

In this way, the remote head starts with the proper PID values and LBUS settings until the remote control panel is connected.

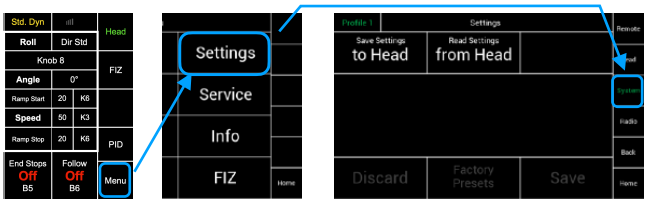



Selecting **Startup Settings Apply** will save the current profile in the remote head.


## 22.4 Profiles Backup

As a backup all nine profiles can be stored into the remote head.

If the remote control panel needs to be swapped, you can read your current profiles back to the new remote control panel.

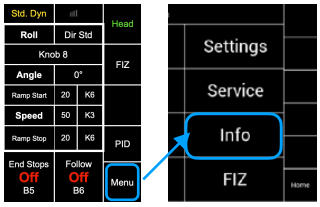



Selecting **Save Settings to Head** will save the all profiles in the remote head.

Selecting **Read Settings from Head** will read back all profiles in the remote control panel.

# 23 Info

**Info Menu Remote / Head**

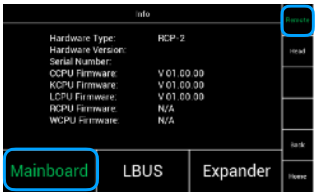



## 23.1 Remote Control Panel

Selecting **Remote** will provide information about the **Mainboard**, **LBUS**, and **Expander**.

## 23.2 Mainboard

The **Mainboard Info Screen** will show the actual SW version.

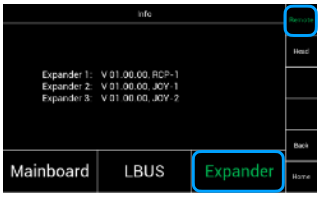



## 23.3 LBUS

The **LBUS Info Screen** will show the actual SW version of the connected LBUS controller.

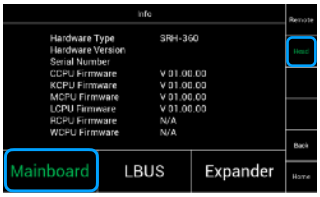

## 23.4 Expander

The **Expander Info Screen** will show the actual SW version of the connected Expanders, like the Joystick or the internal Focus and Zoom controllers.

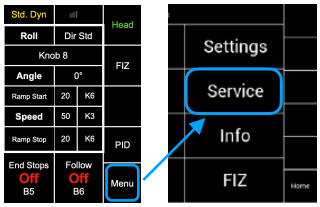



## 23.5 Head

Selecting **Head** will provide information about the **Mainboard**, **LBUS**, and **Expander** for the remote head.

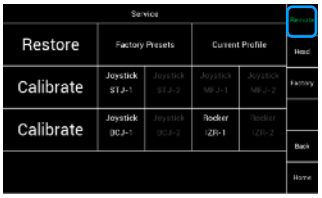


# 24 Service




Touching **Service** opens a new submenu in which you can carry out calibrations and restores for the remote control panel and the remote head.

## 24.1 Remote Control Panel




Selecting **Remote** will open the remote control panel **Service** menu.

## 24.2 Calibrate

By selecting **Calibrate**, internal controllers such as the internal joystick or zoom rocker can be calibrated.


**NOTICE**

**Don't touch the controller during the calibration process.**

## 24.3 Restore Current Profile

Touching **Current Profile** will restore the current user profile.


**⚠ CAUTION**

**All settings, of the selected user profile will be deleted!**
The current **selected** user profile will be restored back to the factory presets.

## 24.4 Restore Factory Presets / Remote Control Panel

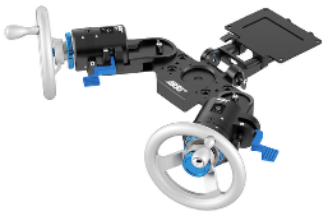
Touching **Factory Presets** will restore all user profiles.


**⚠ CAUTION**

**All settings, all User Profiles will be deleted!**
All user profiles will be restored back to the Factory Presets.

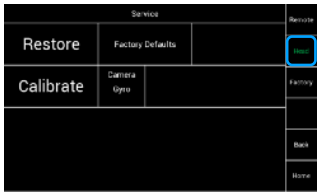
**NOTICE**

**The previously connected controllers are retained and are recognized again immediately.**



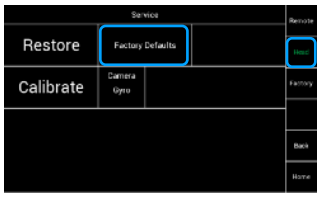
24.5
**Remote Head**

Selecting **Head** will open the head service menu.




24.6
**Restore Factory Presets / Remote Head**

If **Factory Presets** is selected, all memory settings of the remote head will be restored back to the factory presets.



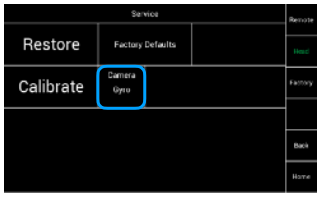

**NOTICE**

**Don't worry.**
**All Remote Control Panel settings are retained.**
In this way you can ensure that all current Remote Control Panel values are updated and refreshed in the remote head.

24.7
**Sensor & Gyro Calibration**

If the remote head behaves abnormally, the situation can be remedied immediately by calibrating the gyro.

Calibration is also recommended when the head has been transported over long distances.
For example, the remote head was last used in a city and next it will be used in the mountains.



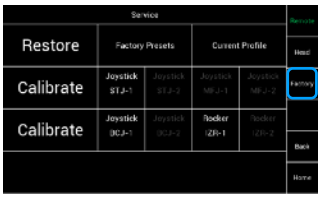

Choose **Gyro Calibration** in order to perform the Camera Gyro calibration.

**NOTICE**

**Secure the camera**.
Since the **motors** are **switched off** during the calibration, it may be that the camera tilts over the tilt axis.

24.8
**Factory**

Only an ARRI service technician can access this function.



# 25 Power Disconnection

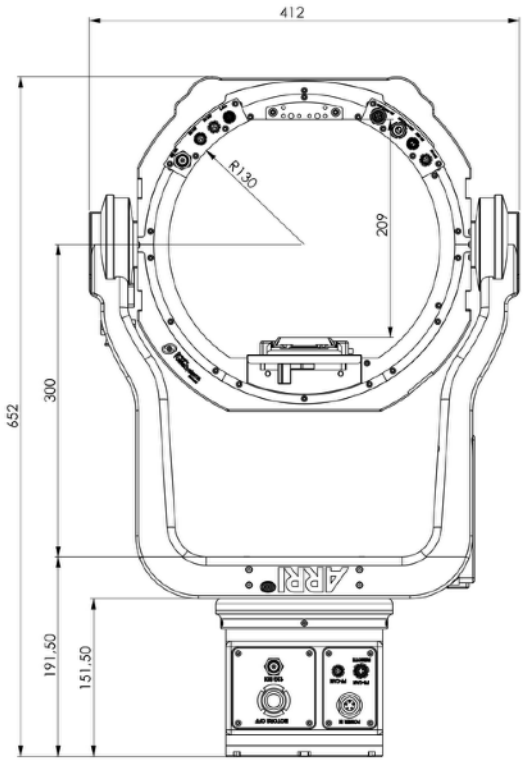
**⚠ CAUTION**

To disconnect the device safely from the power source, remove both cables from the SRH-3 / SRH-360 remote head.
Mount and operate the device in an orientation to ensure easy access to the connectors.

# 26 Dimensions

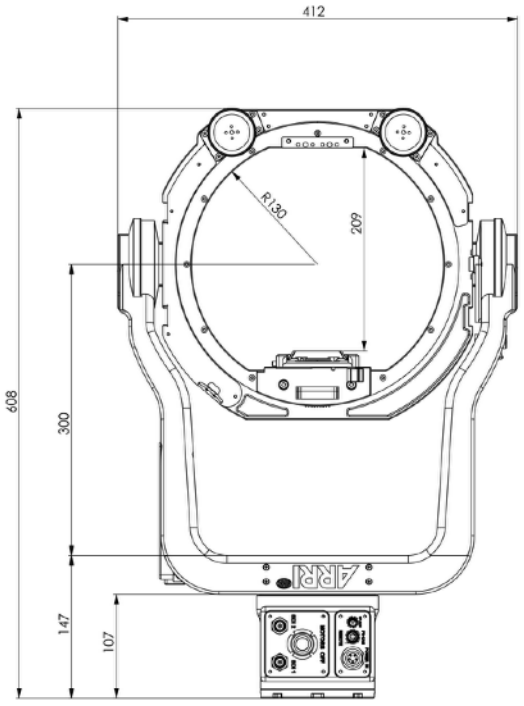
26.1
**Remote Head SRH-360**

| | |
|---|---|
| Stabilized Axes | 3 (Pan, Tilt, Roll) |
| Max. Payload | up to 30 Kg / 66 lbs. |
| Height | 652 mm / 25,67in |
| Width | 412 mm / 16,22in |
| Depth Head | 150 mm / 5,9in |
| Depth Base | 246 mm / 9,68in |
| Ring Diameter | 260 mm / 10,23in |
| Ring Height centre | 209 mm / 8,23in |
| Weight | 11,6 Kg / 25,57lbs |
| Max. Tilt Range | + 60° / -110° |
| Max. Roll Range | +/- 90° |
| Max. Pan Range | Unlimited / Slip Ring |
| Max. Pan Rate | 240° / Sec. |
| Max. Tilt Rate | 240° / Sec. |




26.2
**Remote Head SRH-3**

| | |
|---|---|
| Stabilized Axis | 3 (Pan, Tilt, Roll) |
| Max. Payload | up to 30 Kg / 66 lbs. |
| Height | 608 mm / 23.93“ |
| Width | 412 mm / 16.22“ |
| Depth Head | 150 mm / 5.9“ |
| Death Base | 165 mm / 6,49“ |
| Ring Diameter | 260 mm / 10.23“ |
| Ring Height centre | 209 mm / 8.23“ |
| Weight | 9,4 Kg / 20,7 lbs. |
| Max. Tilt Range | + 60° / -110° |
| Max. Roll Range | +/- 90° |
| Max. Pan Range | 540° +/-270° |
| Max. Pan Rate | 240° / Sec. |
| Max. Tilt Rate | 240° / Sec. |

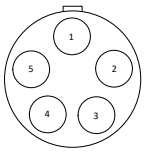



All data subject to change without further notice.

# 27 Pinout
# Remote Head SRH-3 SRH-360 / Remote Control Panel

12V/ 24V / FS-CAN IN

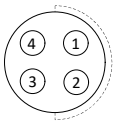
LEMO ECG.3B.305.CLL




1 = GND
2 = FOMA BUS Slow L
3 = FOMA BUS Slow H
4 = 12 V IN
5 = 24 V IN

FS-CAN

Fischer DBP 103 A053 - 140



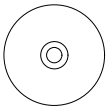

1 = GND
2 = CAN1 L
3 = CAN2 H
4 = 12V OUT

FF-CAN

Fischer DBP 102 A053 - 140


1 = GND
2 = CAN1 L
3 = CAN2 H
4 = 12V

HD BNC 6G-SDI AMPHENOL 112522



FF-CAN: 4 POL*

Fischer DBP 102 A053 - 140


1 = GND
2 = CAN1 L
3 = CAN2 H
4 = 12V

AUX Pwr 12V

LEMO ECG.0B.302.CLN


1 = GND
2 = 12V OUT

CAM PWR 12V/ 24V

LEMO ECP.1S.303.CLN


1 = 12V
2 = GND
3 = 24V

12V HiCap

LEMO ECG.1B.304.CLN


1 = 12V
2 = GND
3 = GND
4 = 12V

LBUS

LEMO ECG.0B.304.CLN


1 = GND
2 = CAN L
3 = 12V
4 = CAN H

RS 24V
Lötseite Buchse FISCHER DGP 102 A052 - 13


1 = GND
2 = 12V/24V

# 28 Assignable Controllers and Functions

| | | |
|---|---|---|
| **SJ1P** | Standard J 1 **Pan** | Standard Joystick 1, Pan, left /right |
| **SJ1T** | Standard J 1 **Tilt** | Standard Joystick 1, Tilt, up/down |
| | | |
| **MF1P** | Microforce J 1 **Pan** | Microforce Joystick 1, Pan, left /right |
| **MF1T** | Microforce J 1 **Tilt** | Microforce Joystick 1, Tilt, up/down |
| | | |
| **BC1P** | Broadcast J 1 **Pan** | Broadcast Joystick 1, Pan, left /right |
| **BC1T** | Broadcast J 1 **Tilt** | Broadcast Joystick 1, Tilt, up/down |
| | | |
| **J2 H** | Joystick 2 **H** | Additional Joystick 2, Pan, left /right |
| **J2 V** | Joystick 2 **V** | Additional Joystick 2, Tilt, up/down |
| | | |
| **DRWP** | DRW **Pan** | DRW-1, ARRI Wheels, Pan, Pan, left /right |
| **DRWT** | DRW **Tilt** | DRW-1, ARRI Wheels, Tilt, up/down |
| **DRWR** | DRW **Roll** | DRW-1, ARRI Wheels, Roll |
| | | |
| **DEHP** | DEH **Pan** | DEH-1, ARRI Encoder Head, Pan, left /right |
| **DEHT** | DEH **Tilt** | DEH-1, ARRI Encoder Head, Tilt, up/down |
| | | |
| **TS** | Touchscreen | Control through Remote Control Panel |
| **K1 … K8** | Knob **1** … Knob **8** | Knobs |
| **B1 … B6** | Button **1** … Button **6** | Buttons |
| | | |
| **IFW1** | **Focus** Wheel 1 | Wheel 1 |
| **IFW2** | **Focus** Wheel 2 | Wheel 2 |
| **IZR1** | **Zoom** Rocker 1 | Rocker 1 |
| **IZR2** | **Zoom** Rocker 2 | Rocker 2 |
| | | |
| **MLW** | Left **Wheel** | Master Grip Left Focus Wheel |
| **MRW** | Right **Wheel** | Master Grip Right Focus Wheel |
| **MLR** | Left **Rocker** | Master Grip Left Zoom Rocker |
| **MRR** | Right **Rocker** | Master Grip Right Zoom Rocker |
| | | |
| **MLRB** | MLR **Button** | Master Grip Left Rocker, Red Button |
| **MRRB** | MRR **Button** | Master Grip Right Rocker, Red Button |
| **MLWB** | MLW **Button** | Master Grip Left Wheel, Red Button |
| **MRWB** | MRW **Button** | Master Grip Right Wheel, Red Button |
| | | |
| **OCU** | OCU **Wheel** | OCU-1 Wheel |
| **OCUL** | OCU **Left** | OCU-1 Left Button |
| **OCUM** | OCU **Middle** | OCU-1 Middle Button |
| **OCUR** | OCU **Right** | OCU-1 Right Button |
| | | |
| **MLRJ** | MLR Joystick **center** | Master Grip Left Rocker Joystick center |
| **MLRL** | MLR Joystick **left** | Master Grip Left Rocker Joystick, left |
| **MLRR** | MLR Joystick **right** | Master Grip Left Rocker Joystick, right |
| **MLRU** | MLR Joystick **up** | Master Grip Left Rocker Joystick, up |
| **MLRD** | MLR Joystick **down** | Master Grip Left Rocker Joystick, down |
| **MLRH** | MLR Joystick **horizontal** (left & right) | Master Grip Left Rocker Joystick, horizontal (left & right) |
| **MLRV** | MLR Joystick **vertical** (up & down) | Master Grip Left Rocker Joystick, vertical (up & down) |
| | | |
| **MRRJ** | MRR Joystick **center** | Master Grip Left Rocker Joystick center |
| **MRRL** | MRR Joystick **left** | Master Grip Left Rocker Joystick left |
| **MRRR** | MRR Joystick **right** | Master Grip Left Rocker Joystick right |
| **MRRU** | MRR Joystick **up** | Master Grip Left Rocker Joystick up |
| **MRRD** | MRR Joystick **down** | Master Grip Left Rocker Joystick down |
| **MRRH** | MRR Joystick **horizontal** (left & right) | Master Grip Left Rocker Joystick horizontal (left & right) |
| **MRRV** | MRR Joystick **vertical** (up & down) | Master Grip Left Rocker Joystick vertical (up & down) |

All data subject to change without further notice.

# 29 Declaration of Conformity

**EU–Declaration of Conformity**

Brand Name: ARRI
Product Description: Camera Stabilizer System:

• ARRI Stabilized Remote Head SRH-360 Pro Set including ARRI Stabilized Remote Head – SRH-360 and ARRI Remote Control Panel – Remote Control-1 & 2

+ Europe Setting for Software 01.14.00 or later and Antenna Proant 333 Ex-It 2400 Foldable, Accessories regarding Appendix I

The designated products conform to the specifications of the following European directives:

1. Directive 2014/53/EU of the European Parliament and the Council of 16 April 2014 on the harmonization of the laws of the Member States relating to the making available on the market of radio equipment - OJ L 153, 22 May 2014, p. 62–106

2. Directive 2011/65/EU of the European Parliament and the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment - OJ L 174, 1 July 2011, p. 88–110

The compliance with the requirements of the European Directives was proved by the application of the following standards:

Essential Requirements regarding No 1

- Art. 3.1 a following 2014/35/EU
  - o EN 62368-1: 2014 + AC:2015-05 + AC:2015-11; EN 60950-1: 2006+A11:2009+A1:2010+A12:2011+AC2011+A2:2013 ; EN 62479 :2010

- Art. 3.1 b following 2014/30/EU
  - o EN 301 489-1 V2.1.1; EN 301 489-17 V3.1.1; EN 61000-4-2:2009; EN 61000-4-3:2006 A1:2009 A2:2010 ; EN 55032: 2012, EN 55035 :2017

- Art. 3.2
  - o EN 300 328 V2.1.1;

  Essential Requirements regarding No 2
  • EN 50581: 2012;

To evaluate the respective information, we used:
http://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/index_en.htm

Year of affixed CE-marking: 2018

Munich 13.12.2018

Sign Sign

Walter Trauninger
Managing Director

Dr. Sebastian Lange
Head of Quality Management

APPENDIX-I

List of additional accessories:

| Item | Model name |
|---|---|
| **1** | **ARRI Digital Remote Wheels - DRW-1** |

Arnold & Richter Cine Technik GmbH & Co. Betriebs KG

Business Unit Camera Systems, Türkenstr.89, D-80799 München

## EU–Konformitätserklärung
EU–Declaration of Conformity

Markenname / Brand Name: ARRI

Produktbezeichnung / Product Description:

Kamerastabilisierungssystem / Camera Stabilizer System:

- **ARRI Stabilized Remote Head SRH-3 Pro Set including ARRI Stabilized Remote Head – SRH-3 and ARRI Remote Control Panel – RCP-1**

  \+ Europa Setting der Software 01.14.00 oder höher und Antenne Proant 333 Ex-IT 2400, Zubehör gemäß Apendix I

  \+ Europe Setting for Software 01.14.00 or later and Antenna Proant 333 Ex-It 2400 Foldable, Accessories regarding Apendix I

Die bezeichneten Produkte stimmen mit den Vorschriften folgender Europäischer Richtlinien überein:
The designated products conform to the specifications of the following European directives:

1. Richtlinie 2014/53/EU des Europäischen Parlaments und des Rates vom 16. April 2014 zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Funkanlagen auf dem Markt - OJ L 153, 22.5.2014, S. 62–106

   Directive 2014/53/EU of the European Parliament and the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment - OJ L 153, 22 May 2014, p. 62–106

2. Richtlinie 2011/65/EU des Europäischen Parlaments und des Rates vom 8. Juni 2011 zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten - OJ L 174, 1.7.2011, S. 88–110

   Directive 2011/65/EU of the European Parliament and the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment - OJ L 174, 1 July 2011, p. 88–110

Die Übereinstimmung mit den Richtlinien erfolgte unter Anwendung nachfolgend genannter Normen:
The compliance with the requirements of the European Directives was proved by the application of the following standards:

Grundlegende Anforderungen zu Nr. 1. Essential Requirements regarding No 1

- Art. 3.1 a nach 2014/35/EU –following 2014/35/EU
  - EN 62368-1: 2014 + AC:2015-05 + AC:2015-11;
  - EN 60950-1: 2006+A11:2009+A1:2010+A12:2011+AC2011+A2:2013 ; EN 62479 :2010
- Art. 3.1 b nach 2014/30/EU –following 2014/30/EU
  - EN 301 489-1 V2.1.1; EN 301 489-17 V3.1.1; EN 61000-4-2:2009; EN 61000-4-3:2006 A1:2009 A2:2010 ; EN 55032: 2012, CISPR 32 :2015, EN 55035 :2017
- Art. 3.2
  - EN 300 328 V2.1.1;

Grundlegende Anforderungen zu Nr. 2. - Essential Requirements regarding No 2

- EN 50581: 2012;

Für die Ermittlung der entsprechenden Normen haben wir die folgende Quelle verwendet:
To evaluate the respective information, we used:

http://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/index_en.htm

Jahr der Anbringung des CE-Zeichens / Year of affixed CE-marking: 2018

München, den 15.07.2019

gez/sig
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Geschäftsführer / Managing Director

gez/sig
Dr. Sebastian Lange
Leiter Qualitätsmanagement / Head of Quality Management

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Persönlich haftende Gesellschafterin: Arnold & Richter Cine Technik GmbH
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