MAXIMA QL

Oct. 2017

USER MANUAL

1.0 Imprint

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1.1 Scope:

This manual is only focusing on the components and the setup of the **MAXIMA QL**.
The Control Software the so called GUI is available as a separate manual.
You can find this manual on the USB stick or on the ARRI CSS web page in the download area.

1.2 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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1.0 For your safety

Before use, please ensure that all users comprehensively read, understand, and follow the instructions in this document.

1.1.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.

1.2. About This Manual

ARRI recommends that all users of the **MAXIMA QL** system read the manual in its entirety prior to use. For experienced users, the manual's structure also provides quick access for reference.

In this manual:

- System Components
- Safety Guidelines
- General Precautions
- Functions
- System Setup
- Camera Preparation
- Balancing the System
- FCC

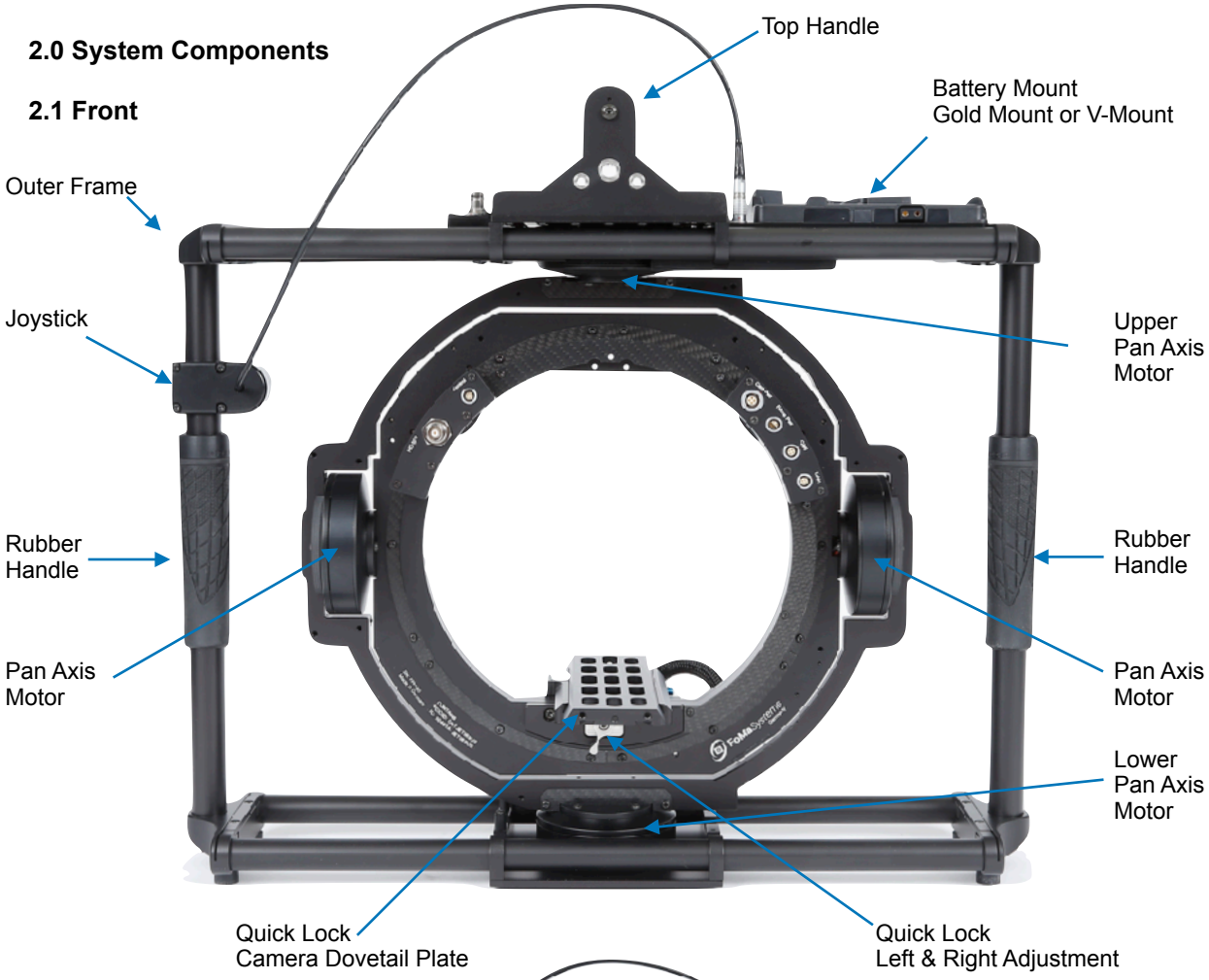
How to Use This Manual

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.

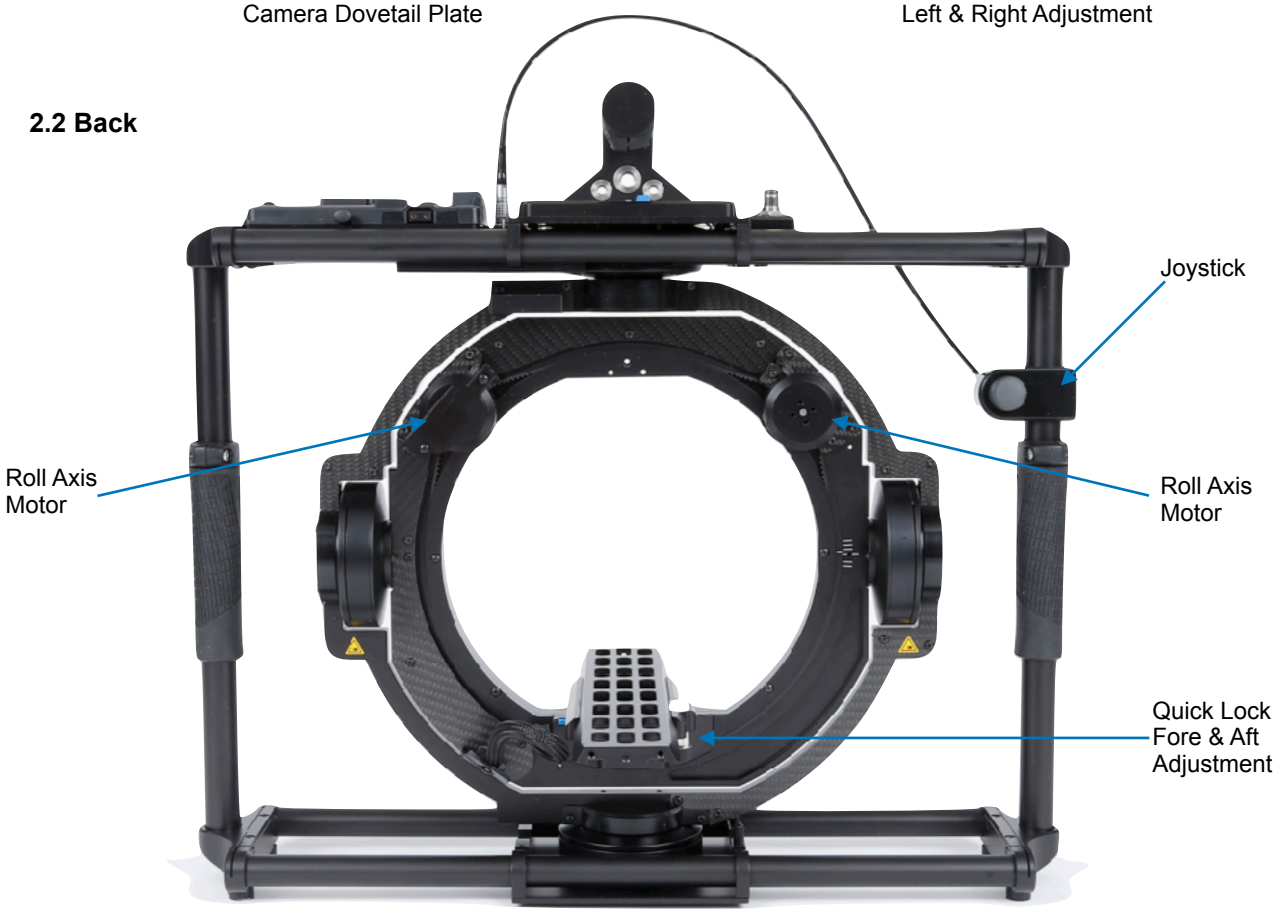
The appendix at the back of the manual contains useful reference material including MAXIMA QL specifications, connector pin-out diagram.

2.0 System Components

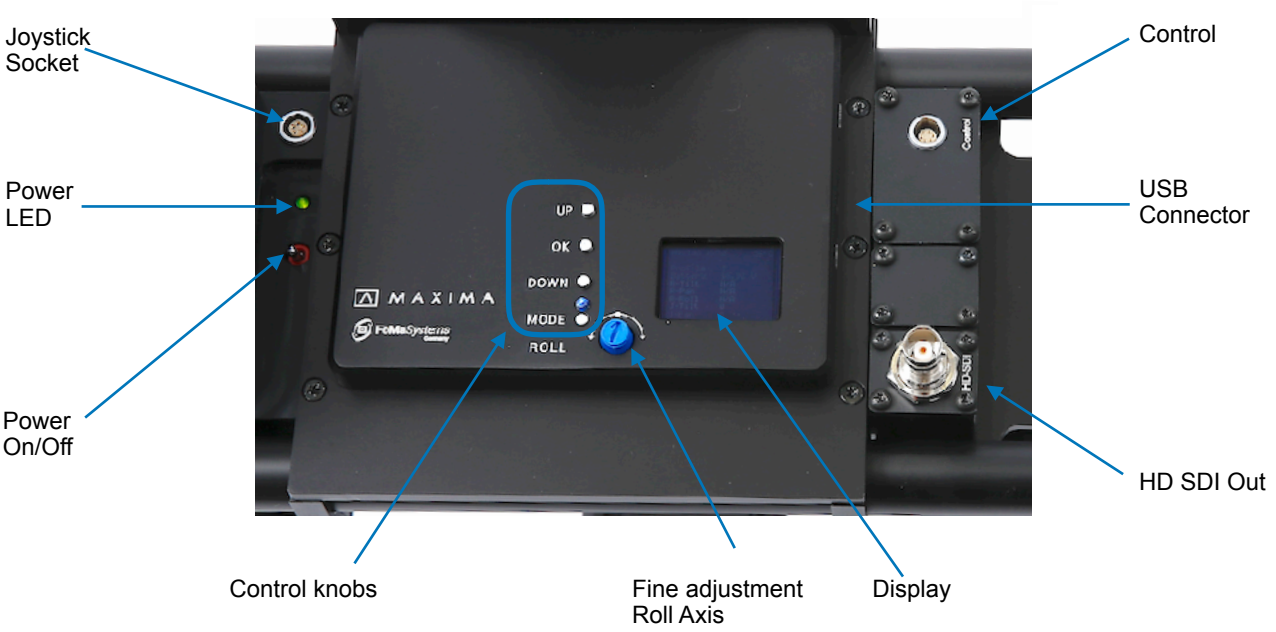
2.1 Front



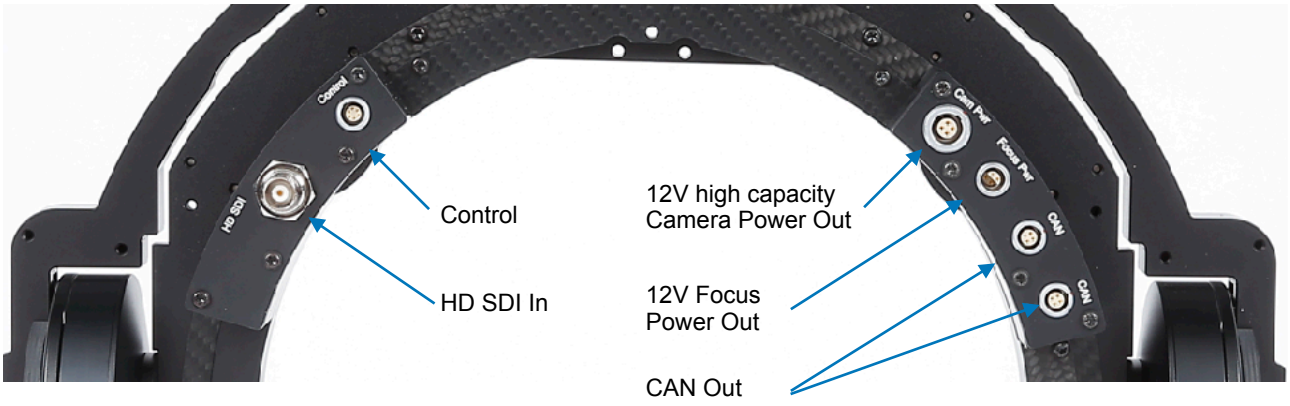
2.2 Back



2.3 Top



2.4 Connectors



2.5 Cam Pwr:
The 12V high capacity Camera Power (max 10Amp) can be used with following cables:

Cam Power / Cine / 12V HiCap / ALEXA	**K2.0010538**
Cam Power / Cine / 12V HiCap / ALEXA Mini	**K2.0010540**
Cam Power / Cine / 12V HiCap / ALEXA Mini / 90°	**K2.0010565**
Cam Power / Cine / 12V HiCap / Red EPIC	**K2.0010472**

2.6 Focus Pwr:
The 12V Focus Power (max 10Amp) socket can be used with:

Focus Power / ARRI & cmotion	**K2.0010548**

2.7 HD SDI BNC:
The 3GHz HD SDI BNC socket can be used with:

BNC Video Cable / HD SDI / 4.5 GHz	**K2.0010476**

2.8 Can Bus:

NOTE
This function will be available through future upgrades.

⚠ DANGER !
Do not connect any Video Power Cables to this Socket
Do not connect any L-Bus Motors, or other LBUS products
to this connector, until your MAXIMA had been updated to LBUS.

2.9 Control:

NOTE
This function will be available through future upgrades.

3.0 General Safety Instructions

⚠CAUTION:

The MAXIMA QL contains two separate rings, one for Pan and one for Tilt.
Both rings can move freely when the MAXIMA is moved out of the hard case and as long the system is not finally setup.

⚠ DANGER !
Under no circumstances push fingers or other limbs in between the TRINITY Yoke and the inner ring, as this can result in injury.

⚠ DANGER !

Pay attention during setup that no fingers or other limbs end up between the outer 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.

3.1 Batteries and battery charger:

⚠CAUTION:
Observe the following safety advice without fail, in order to avoid injuries and damages to the environment.

Please observe the following safety advice, in order to avoid leakage, overheating, burning or exploding of the batteries and possible electric shocks. Owing to the use of batteries and/or charging devices of other manufacturers we will not be liable and the manufacturer safety advice is valid.

Prior to the use of the batteries, always check these for a perfect state. Do not use any batteries which have damage such as tears, bulges or fluid egress. Defective batteries can burn or explode and thus cause substantial damage to people and the environment.

Never heat or burn batteries, as they can explode and cause injuries and damage to the environment.

Always store batteries in a charged state and only in a cool dry room. Ensure that the contacts cannot come into contact with other metallic objects and that the batteries are not subjected to any direct sunlight or damp and humidity. Do not subject the batteries to any shocks and permanent vibrations.

Always charge under supervision and place the charging device only on non-flammable and heat-resistant material. Please remove the batteries after complete charging, in order to avoid a possible overload (danger of explosion). Should you detect the smell of burning or a high heat during charging, immediately disconnect the charging device from the socket (FIRE or EXPLOSION DANGER) and contact the authorized specialized dealer.

Always keep the charging device and the batteries away from children. The danger of electric shocks or poisoning by the battery fluid exists. Immediately seek medical help if this should happen.

If battery fluid should enter the eyes, immediately rinse them with flowing cold water and immediately seek medical attention.
If battery fluid should splatter on the skin, rinse this straight away with flowing cold water and immediately seek medical attention.
Should battery splatter on clothing, rinse the spots straight away with cold water.

Please dispose defective batteries environment-friendly via the admitting facilities provided. Do not dispose of these via domestic waste under any circumstances to protect the environment.

3.3 MAXIMA QL

⚠CAUTION:
Please check the MAXIMA QL for proper functioning prior to each use and while considering the operating instructions. An operation without problems can only be ensured in this manner.

Only use the lithium batteries provided. Batteries which are not approved can lead to shorts and to damages of the MAXIMA QL. NiMH batteries must not be used.

Place the batteries into the holder provided cautiously and with care. Check the contacts for damage beforehand.

Do not subject the MAXIMA QL to humidity and do not immerse it into water.
Do not short any contacts or modify the power supply or the electronics under any circumstances.

4.0 Camera Preparation:

Foreword:
The entire balancing procedure of the MAXIMA QL system is based on **SYMMETRY** and **NEUTRAL BALANCE**.

NOTE
Only a precisely executed camera preparation will enable you to get the best performance out of the MAXIMA QL.
The camera preparation must meet the following requirements:

4.1 Compact length

NOTE
You should keep the COG (center of gravity) of the MAXIMA QL as low as possible and the total length of the camera should be as compact as possible.

NOTE
If an ALEXA Mini is being used, a Zoom Lens similar to the ARRI/FUJINON Alura 15.5-45/T2.8 will keep the Camera setup at an optimum length.

NOTE
If the ARRI ALEXA or AMIRA is being used a Prime Lens will be required.

NOTE
Most box type cameras with a zoom lens are very close to the length of a full bodied camera with a prime lens.

Setup with two motors

4.2 Low COG (center of gravity)

Any accessories mounted to the camera should be attached as low as possible.

Setup with one motor

4.3 Symmetry

NOTE
Camera components and accessories that are mounted on the camera have to be attached in **symmetrically** and **balanced**.

For example:
If two Focus Motors are needed, use two 15mm rods (equal length and same material) and mount them on the base 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 below the lens.
This way you can achieve the need for a low COG and symmetry

5.0 Secure Component / Accessory Attachment

⚠CAUTION
Keep in mind the MAXIMA QL head is a fully stabilized Gimbal with a payload capacity of 30kg / 66 lb. The amount of available torque is very high.

NOTE
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 costly performance issues.

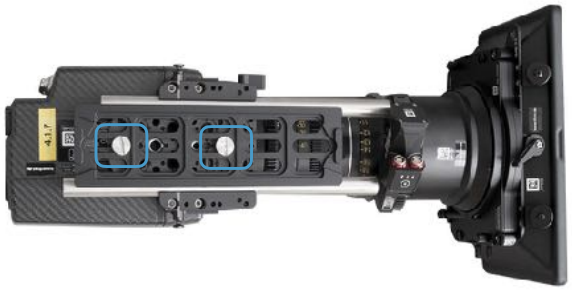
⚠CAUTION
Please double check all clamps are tight and that all components are fitted correctly.

⚠CAUTION
Ensure that MAXIMA QL is switched OFF.

6.0 Mounting the Camera Dovetail Plate

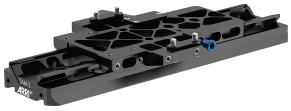
The MAXIMA QL comes with a symmetric camera dovetail plate, the so called Quick Lock plate.

⚠CAUTION
Always use two 3/8“ or 1/4“ screws to ensure a solid fit.
Use always two 3/8“ or 1/4“ screw to ensure a solid fit. Using only one screw or a short distance between the screws will force sidewise rotation of the camera, as also vibration of the entire system. So try to maximize the distance in between the camera screws.



NOTE
Using the SAM1, SAM2 and the SAM3 plates will speed up the later balancing process and guarantee the best performance of the MAXIMA QL.

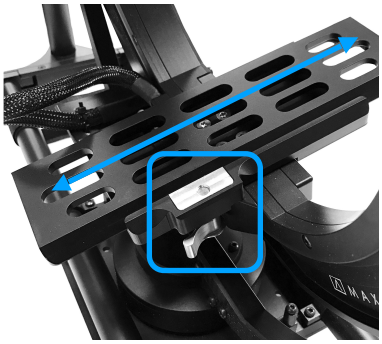
SAM-1 Stabilizer Adapter Mount for ALEXA
K2.0014022



SAM-2 Stabilizer Adapter Mount for ALEXA Mini
K2.0014215

SAM-3 Stabilizer Adapter Mount for AMIRA
K2.0014630

6.1 Preparing the Quick Lock Camera Mount



The MAXIMA QL comes with a Quick Lock mounting mechanism. It offers one clamp mechanism for the Camera Dovetail Plate located at the right back of the mount and a side to side adjustment located at the front of the mount.

⚠CAUTION
Ensure that the MAXIMA is switched OFF.
Under no circumstances push fingers or other limbs in between the TRINITY Yoke and the inner ring, as this can result in injury.

6.2 Centering the Quick Lock Camera Mount

NOTE
Make sure that the side to side adjustment is in a center position before you start with the balancing procedure.

To move the Quick Lock Camera Mount left and right, the clamp leaver at the front Quick Lock Camera Mount has to be open.

⚠CAUTION
Make sure that the clamp is tightened after the adjustment has been done.

6.3 Opening the Quick Lock Camera Mount

To open the Quick Lock Camera Mount clamp mechanism, open the clamp leaver on the right side at the back of the Quick Lock Camera Mount.

After you opened the clamp mechanism you can slide in the camera dovetail plate inside the ring.

NOTE
It may be necessary to detach some accessories to mount the camera inside the MAXIMA QL ring. These can be reattached after the camera is mounted.

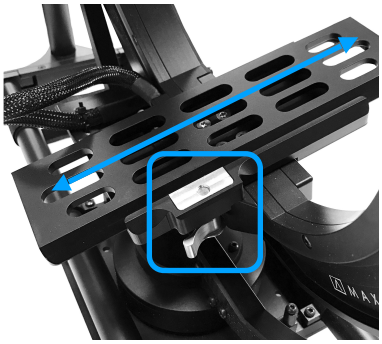
NOTE
When adding or removing components from the camera, adjust the fore and aft to bring the camera into a neutral and horizontal position.

NOTE
To remove the camera dovetail plate, you will need to push the safety lock, to be able to release the plate.

NOTE
Make sure that the camera is always level front to back with the COG fully neutral when the camera is horizontally adjusting fore and aft.

NOTE
When adding or removing components from the camera adjust the fore and aft to bring the camera into a neutral and horizontal position.

6.4 Balancing the camera

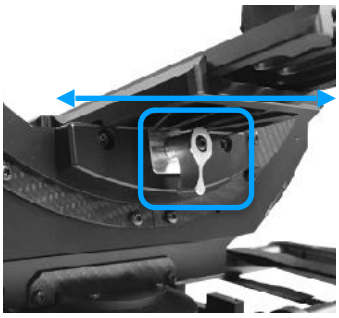


Fore and Aft
To get the entire system in a neutral balance, the **COG** of the camera has to be positioned right in the center of the main ring. The clamp mechanism allows you to adjust the fore and aft adjustments to move the camera in into its **COG** (center of gravity).

NOTE
Before you finally tighten the camera plate, please move the entire camera fore and aft until the camera stays horizontal.

⚠CAUTION
Make sure that the clamp mechanism is fully tighten after the fore and aft adjustment. A slightly loose screw will produce vibrations.

Side to Side:
At the front of the QL mount, you will find the clamp mechanism for the side to side adjustment.
You should always try to keep the camera setup as symmetrical as possible.
But if the camera is still too heavy on any side, you should use the side to side adjustment, to get the camera sidewise in perfect **COG**.



⚠CAUTION
Make sure that the clamp mechanism is fully tighten after the fore and aft adjustment. A slightly loose clamp will produce vibrations.

⚠ DANGER
Under no circumstances push fingers or other limbs in between the TRINITY Yoke and the inner ring, as this can result in injury.

7.0 Powering the MAXIMA QL

The MAXIMA QL is available with Gold Mound and with V-Mount battery mounts.

⚠CAUTION
Before you insert any batteries please read the safety instructions on page 10.

⚠CAUTION
Do not use any low quality batteries from unknown manufactures

⚠CAUTION
To power the MAXIMA QL, the camera and accessories, minimum a 150 Watt battery is needed.

7.1 Connect the camera with the required power cable.

⚠CAUTION
Make sure all power and video cables go through the inner ring.

7.2 Switch on the MAXIMA QL.

8.0 Controls and adjustments operated directly on the MAXIMA QL

8.1 Changing Profiles

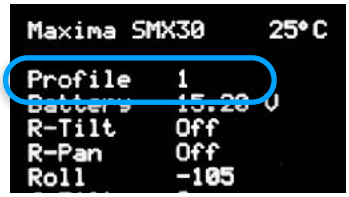
Changing Profiles

By pressing **MODE** one time,
you will recall profile number ONE.

By pressing **MODE** twice,
you will recall profile number TWO and so on.

By pressing **MODE** three times,
you will recall profile number THREE and so on.

NOTE
You can see the selected Profile

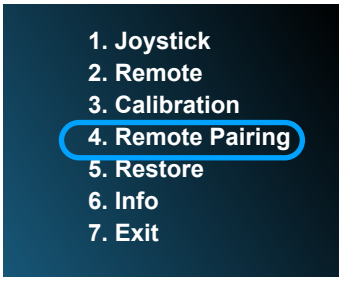


8.2 Changing the Joystick Direction

- Press **OK** until **Joystick** is displayed
- Press **OK**
- Select: **Normal** - **Inverted** - **Off** by pressing **UP** or **DOWN**
- Press **OK** to confirm your selection

8.3 Paring the Wireless Remote Control

- First switch **Off** the Remote Control!
- Press **OK**
- Press **Down** until you see **Remote Pairing**
- Press **OK**
- Now the MAXIMA will start a 10 sec. count down.
- After **5 sec.** the MAXIMA will **beeb**.
- **Switch ON** the wireless Remote Control.
- Now the Remote will be paired



9.0 The 5 Default User Presets (factory settings)

The MAXIMA QL is supplied with this five Default User Presets, which are programmed for camera setups up to 10 Kg / 22 lb.

Profile	Motor Power	Tilt	Pan	Feels	Good for
1	**45**	**Follow**	**Follow**	Very direct	Handheld Look
2	**45**	***Fully Stabilized***	**Follow**	Very direct	Handheld Look
3	**45**	**Follow**	**Follow**	Less direct	Easy Rig / running shots
4	**45**	***Fully Stabilized***	**Follow**	Less direct	Easy Rig / running shots
5	**45**	***Fully Stabilized***	***Fully Stabilized***	Very direct	To be used with the wireless control or wheels

NOTE
To be able to change any of this adjustment, you need to install the FoMa Control software. and you need to read the User Manual **GUI**.

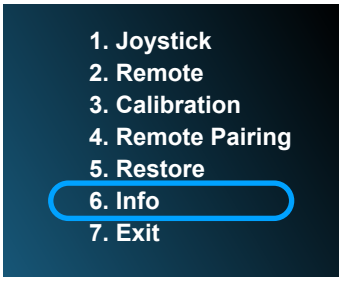
The manual is available on the USB stick and on the ARRI CSS web page in the download area.

10.0 Trouble shooting:

For Service and Remote Access we will need to know the firmware version and serial number.

10.1 **Firmware** version and serial number can be find here:

- Press the **OK**
- Press **OK**
- Press **DOWN** until **Info** is displayed
- Press **OK** to confirm
- Now you can see the required information



10.2 Restore Sensors:

If the MAXIMA is hard to control or having troubles holding its position, it could be helpful to reset the sensors.

- Press the **OK** key
- Press **DOWN** until **Restore** is displayed
- Press **OK** to confirm
- Press **DOWN** until **Sensors** is displayed
- Press **OK** to confirm

⚠CAUTION
Do not touch or move the MAXIMA while you restore the sensors!
Wait till the MAXIMA is back in operation.

10.3 Restore Settings:

If you want to restore all setting to the factory setup follow the steps below.

NOTE
This could be helpful when you will work with a rented MAXIMA.

⚠CAUTION
Do not touch or move the MAXIMA while you restore the sensors!
Wait till the MAXIMA is back in operation.

10.4 Remote access

The service team can remotely access the MAXIMA.
To enable us to access your MAXIMA, you need to install the „TeamViewer“ software on your PC first. https://www.teamviewer.com

Then you need to contact the ARRI service.

NOTE
You will need a stable internet connection.

TeamViewer

11.0 MAXIMA Accessories:

11.1 Mounting the Top Holder (K2.0010336)

NOTE
A 4mm 5/32” hex key is needed.

Open and remove the screw on the top of MAXIMA QL, which secures the top handle.

Remove the Top Handle.

Engage both hooks of the Top Mount with the rod at the back of the MAXIMA QL.

Bring back the screw and tighten it.

⚠CAUTION
Make sure that the screw is fully tightened.

11.2 Mounting the Spider (K2.0010425)

NOTE
A 4mm 5/32” hex key is needed.

Open all eight M4 screws and remove all four top covers of the Spider.

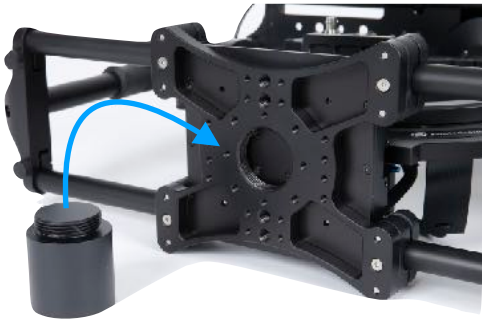
Place the bottom of the MAXIMA QL inside the Spider.

Place the four top covers of the Spider onto the bottom rods of the MAXIMA QL and tighten the eight screws.

⚠CAUTION
Do not over tighten the 8 screws.

NOTE
You can mount three different adapters at the bottom of the Spider

11.3 Cone Mount



If you want to use the MAXIMA QL with an artemis spring arm or any other arm using a Ø 5/8" (15.8 mm) arm posts, you need to attached the included Cone Mount.

NOTE
For use with a spring arm, the 10“ arm post (K2.0010455) is needed, to ensure enough clearance between the frame of the MAXIMA QL and the arm chassis.

11.4 Euro Mount

If you want to use the MAXIMA QL with an Euro Mount (K2.0010426), you need to attache the optional Euro Mount to the bottom of the Spider.

NOTE
A 5mm Hex key is needed.

Place the Euro Mount right in the center of the spider, as shown.

Place the four screws and ensure that all screws are tightened.

11.5 Mitchell Mount

If you want to use the MAXIMA QL with an Mitchell Mount (K2.0010427), you need to attache the optional Mitchell Mount at the bottom of the Spider.

NOTE
A 5mm Hex key is needed.

Place the Mitchell Mount right in the center of the spider, as shown.

Place the four screws and ensure that all screws are tightened.

11.6 Mounting Plate

If you need to add more accessories to the top of the MAXIMA QL, you need to add the Maxima Mounting Plate (K2.0014909).

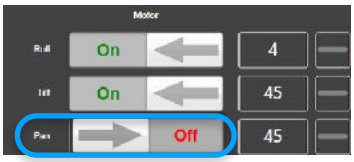
Place the plate onto the top right of the MAXIMA QL.
The three screws can be reached from the bottom.

11.6 Pan Lock

From time to time you might need a more „handheld“ look.
So it will be necessary to lock the pan axis of the MAXIMA QL.

The Maxima Pan Lock (K2.0014908) will allow you to lock the pan axis.

NOTE
The lock can also be used for transportation purposes.



⚠CAUTION
Before using the Pan Lock, you need to switch off the Pan Motors using the GUI!

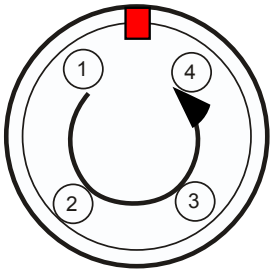
⚠CAUTION
Using the Pan Lock with an active motor will cause over heating and possible failure of the Pan motors.

Open both Clamps and place the bracket onto the rods.

Move the Bracket under the outer ring and tighten the clamp screws

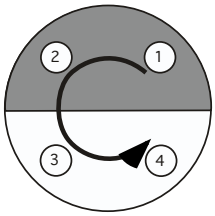
12.0 Pinouts

Camera Power Out



Lemo 1B 304
Pin 1 12V plus
Pin 2 Ground
Pin 3 Ground
Pin 4 12V plus

Focus Power Out



Lemo 0S 304
Pin 1 12V plus
Pin 2 NC
Pin 3 Ground
Pin 4 NC

13.0 CE / FCC

ISO 9001:2009

Hard- und Software Entwicklung

Foltyn Industriesystemelektronik GmbH

Foltyn Industriesystemelektronik GmbH • Strengenbergstraße 24 • D-90607 Rückersdorf

CE

Declaration of Conformity

Product Type	**Camera Stabilizer Systems**
Brand Name	**MAXIMA**
Product Name	**SMX20** / **SMX30** (maybe followed by suffixes)
Address	Foltyn Industriesystemelektronik GmbH Strengenbergstraße 24 D-90607 Rückersdorf

The product complies witch the requirements of the following European directives:

2004/108/EG

Directive of the European Parliament and of the council on the approximation of the Laws of the Member States relating to electromagnetic compatibility.

Compliance was proved by the application of the following standards:

EN 55011 : 2009 +A1 : 2010
EN 55022 : 2010 +AC : 2011
EN 61000-6-2 : 2005 +AC : 2005

2011/65/EU

Directive of the European Parliament and of the council on the restriction of the use certain hazardous substances in electrical and electronic equipment.

Compliance was proved by the application of the following standards:

EN 50581 : 2012

Year of the first marking: **2015**

Rückersdorf, 2015-04-20

Roman Foltyn
CEO

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ACS
Excellence in Compliance Testing

Certification Test Report

FCC ID: ONTJETIR5US
IC: 10491A-JETIR5US

FCC Rule Part: 15.247
IC Radio Standards Specification: RSS-210

ACS Report Number: 13.2001.W06.1B

Manufacturer: Esprit Model
Model: JETIR5LUS

Test Begin Date: **January 3, 2013**
Test End Date: **February 9, 2013**

Report Issue Date: May 2, 2013

ACLASS ACCREDITED TESTING

FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER AT-1533

This report must not be used by the client to claim product certification, approval, or endorsement by ACLASS, ANSI, or any agency of the Federal Government.

Project Manager:

Thierry Jean-Charles
EMC Engineer
Advanced Compliance Solutions, Inc.

Reviewed by:

Kirby Munroe
Director, Wireless Certifications
Advanced Compliance Solutions, Inc.

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This report contains 43 pages

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