



MARK ROBERTS MOTION CONTROL

# ULTI-HEAD WITH LIFT COLUMN



## QUICK START GUIDE

QSG Product Code: MRMC-2260-00

Products Covered: MRMC-1565-01,MRMC-1006-01

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# Chapter 1 Quick Start

## Safety

- Do not use around flammable gas. All electrical equipment can generate sparks that can ignite flammable gas.
- The head has powerful motors that can pinch, so take care not to get your hands trapped in the head or cabling.
- Keep the equipment dry. The system has **not** been made weatherproof. Do not use with wet hands.
- Keep cables tidy. Use cable ties to keep them out of harm's way. If you have a head with slip rings then make use of them; avoid running any cables between the base and the rotating head or camera.

## Overview

Thank you for using the Ulti-Head with Lift Column broadcast rig from Mark Roberts Motion Control (MRMC). The Ulti-Head with Lift Column is designed for reliable day-in, day-out use in professional studio and Outside Broadcast environments. It is a versatile rig that can be used as a Remote or Motion Control rig, making it suitable for studio and field use. It works with film, video or HD cameras along with a Teleprompter with total payload upto 40kg.

The Ulti-Head and Lift Column are controlled from devices running Multi-Head Controller (MHC) software or Flair motion control software. You can use the Ethernet connection on the Ulti-Head to connect directly or remotely to a PC running the software.

## Setting up the hardware

1. Mount the Ulti-Head onto the lift column using 4xM5 screws. Before securing the screws, ensure that the Pan axis has the desired travel in both directions without obstruction.

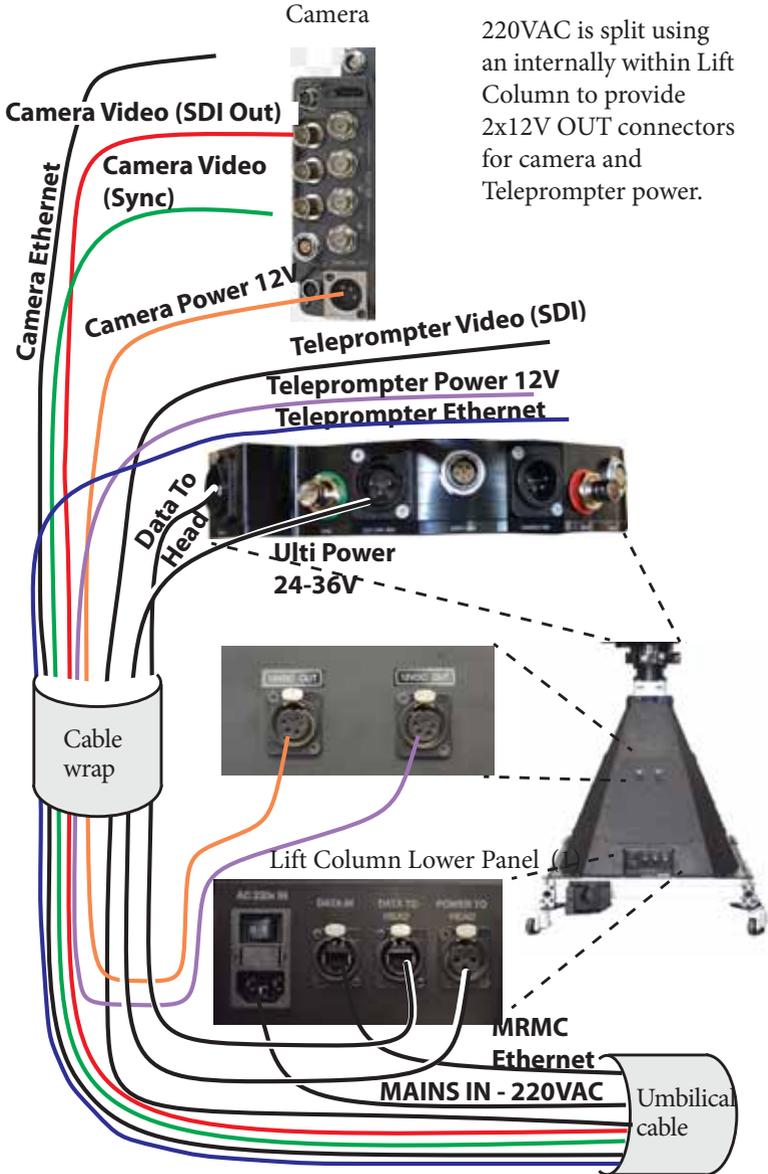


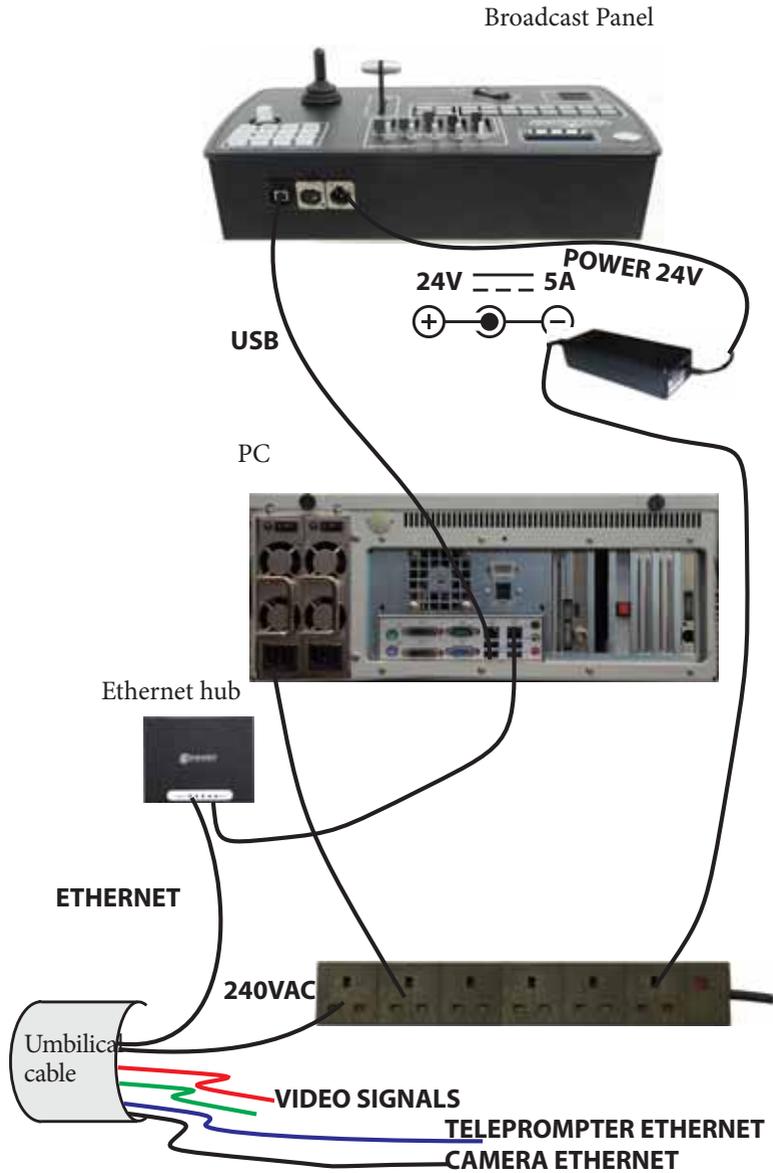
2. Wheel the rig to the desired spot and secure in position by tightening the grub screws in the four castors.
3. Place the camera on the platform, move the camera forward or backward to balance the platform in Tilt, then insert the camera

mounting bolts under the platform and into the bottom of the camera housing and tighten firmly.



## Connecting the cables





## Ulti-Head Connections



## Your first session

When you want to use the head you typically need to perform the steps given below. Refer to the manual that came with your controller or software for details.

1. Attach the cables to the PC, head, lift column and controller, as described in the previous section.

**Hint**

It is a good idea to attach the power cables last, after all the other cables are in place.

2. Power up the Lift Column.

There is no power switch on the Ulti-Head; the power is on whenever the 24-volt power supply is attached and live. Similarly, to turn off the head you simply remove the power cable. All MRMC controllers and heads have robust electronics that are designed to withstand the rigours of connection and disconnection to live power cables.

3. Set the control directions.

In the software, you need to specify the directions of the focus, zoom and joystick or wheel controls for your particular head, lens gearing attachments, and preference. For example, some people prefer the camera to point upward when the joystick is pulled back, while others prefer the opposite logic whereby pushing forward (“up”) on the joystick targets the camera upward in the scene.

4. HomeZero the axes.
5. Set the limits.

In order to prevent damage to cables and other equipment, you can set limits to the range of physical travel of the head movement and lens controls. This is especially important if you have a head without slip rings, where cabling can get wrapped around the head, or if you have a lens with external control motors.

Reasonable values for soft limits are factory-set for all the axes. However, if you do need to set new limits, change them in the software. For instructions, refer to the software User Manual.

## Subsequent sessions

After you have initially set up the system for your particular camera lens and preferences, subsequent sessions take less time to set up, especially if

you have not disconnected control cables or moved sites. For subsequent sessions at the same site you typically need to do the following at the start of every session.

1. Attach the power cables to the PC, lift column, head and controller.
2. Power up the head and start the software on the PC.
3. Zero the axes.

If you have moved sites you will need to connect the control cables before the power cables, and then set new limits after you have zeroed the axes.

## Appendix 1 Troubleshooting

### Typical symptoms, causes, and actions

Symptoms	Cause and/or action
<p>The head does not move</p> <p>The head does not appear connected in software</p>	<p>The head is not been able to load in the software.</p> <p>Check that all cables are connected, and all devices have power.</p> <p>If you have connected more than one head, connected the MRMC system to another local network, or moved the controller and head between networks, check that correct LAN addresses have been entered in the software.</p> <p>Check the order in which the devices are powering up. If two devices on the network try to power up and initialise their Ethernet connection at the same time, the devices can conflict with each other on the network. Avoid powering the head from the power output socket on the joystick, in order to avoid powering them up simultaneously. Use an independent power source for each, and connect the joystick to the PC after powering up the head.</p>

### Working with Local Area Networks

The MHC on the PC and the head communicate with each other through an Ethernet Local Area Network (LAN). The PC and head are **devices** on the network. Under certain circumstances you might need to change the LAN settings of the devices so that the devices not only work together, but do so when connected to another network. For example:

- If you install the head as part of a multi-component system.
- If you connect your MRMC equipment to a local network.
- If you move the equipment between networks.

- If you have customised the LAN settings in a head for one of the above reasons and then sent the head back to MRMC for servicing. The service might change the LAN settings back to the factory defaults, and you will need to customise them again when you get the head back.

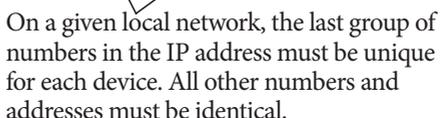
## Introduction to LAN addresses

Each device on an Ethernet network has a suite of three addresses:

- Internet Protocol (IP) address
- Subnet (SN) address
- Gateway (GW) address

Together, these addresses indicate the device's identity and location on the network. Each address is usually written as a group of four numbers separated by periods. The factory default values used in MRMC equipment are shown in the next table:

		Head
IP address	192.168.1.235	192.168.1.236
SN address	255.255.255.0	255.255.255.0
GW address	192.168.1.1	192.168.1.1



On a given local network, the last group of numbers in the IP address must be unique for each device. All other numbers and addresses must be identical.

The LAN addresses of the PC and head(s) are **static**. That is, they will stay the same unless you explicitly change them.

### Hint

Most local networks use the SN and GW addresses shown in the above table, so under ordinary circumstances you will only need to be concerned with **IP addresses**. The rest of this section therefore concentrates on **IP addresses**, but you might also need to inspect or change the SN and GW addresses, depending on the structure of the network that you are using to access the head.

In a basic setup using MHC, there are two devices, the PC (connected with a USB joystick) and a head. Therefore, there are two IP addresses involved:

1. **The IP address of the PC itself.** You don't ordinarily need to change this unless you are connecting it to a local network that requires different settings.
2. **The actual IP address of the head.** This is usually the IP address shown in the above table unless it has been changed, or unless you specified a different address when you ordered the head. In any case, the factory-set IP address of a head is ordinarily printed on a sticker on the head.
3. **The actual IP address of the lift column.** The IP address is factory-set unless it has been changed, or unless you specified a different address when you ordered the lift column. In any case, the factory-set IP address of a lift column is ordinarily printed on a sticker on the column.

If the IP address of a head or the lift column has been changed to an unknown value so you can't load the head from the software, you will need to contact MRMC.

## Appendix 2 Specifications

Weight: 112kg

Power requirements: 220VAC

Temperature range: 0-45 °C (32-113 °F)

Humidity tolerance: 0% to 85% relative humidity, non-condensing

Payload: 40kg (camera, teleprompter, cables & accessories)

Maximum speed: Pan: 120 degrees/sec

Tilt: 120 degrees/sec

Lift: 3 cm/sec

Travel: Pan: Limited by cabling

Tilt: Limited by cabling

Lift: 0.8m

Accuracy of playback (angular resolution): Better than 0.0001°.

Notes

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