MARK ROBERTS MOTION CONTROL

LLS/RLS PTZ LIFT UNIT

QUICK START GUIDE

QSG Product code: MRMC-2275-00
Product Covered: MRMC-8077-00, MRMC-8096-00

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Chapter 1 **Quick Start**

Important safety instructions

To ensure the best from the product, please read this manual carefully. Keep it in a safe place for future reference.

To reduce the risk of electric shock, do not remove the cover from the unit. No user serviceable parts inside. Refer servicing to qualified personnel.

Power and connections

- This unit must be connected to a mains socket outlet with a protective earth connection.
- This unit is not disconnected from the AC power source as long as it is connected to the wall outlet.
- When not using the unit for a long period of time, ensure that the AC power cord is disconnected from the wall outlet.
- The AC wall outlet should be installed near to the unit and be easily accessible.
- Do not plug in or attempt to operate an obviously damaged unit.

General care

- Do not force switches or external connections.
- When moving the unit, disconnect the mains cable and then disconnect the long umbilical cable.
- Do not attempt to clean the unit with chemical solvents or aerosol cleaners, as this may damage the unit. Use a clean dry cloth.
- Do not use around flammable gas. All electrical equipment can generate sparks that can ignite flammable gas.
- Keep away from pets and children. The head has powerful motors that can pinch, so take care not to get your hands trapped in the head or cabling.

- 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.

Location

Installation of this unit should be away from sources of excessive heat, vibration, and dust.

Keep the brakes on caster wheels on when using the SLH lift column.

Intellectual property

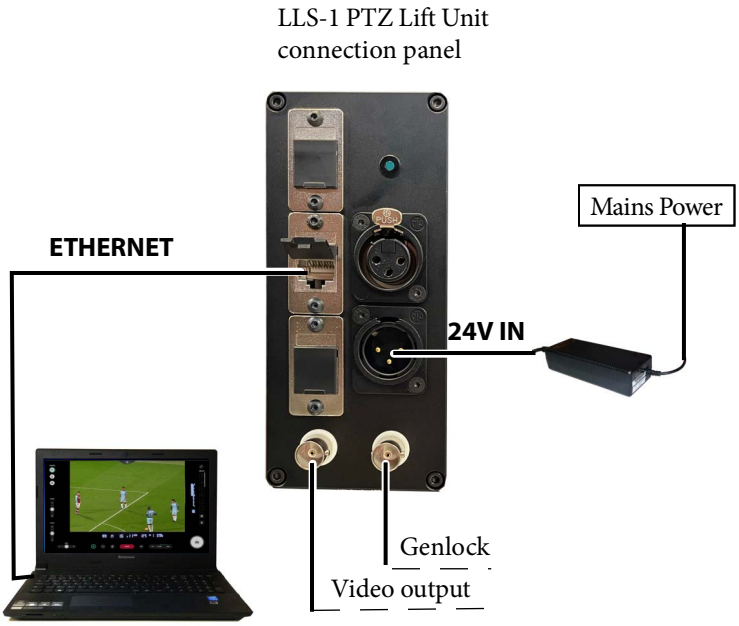
This product includes confidential and/or trade secret property. Therefore, you may not copy, modify, adapt, translate, distribute, reverse engineer, or decompile contents thereof.

Overview

Thank you for using the LLS-1 PTZ Lift Unit column from Mark Roberts Motion Control (MRMC). A light duty lift column to move PTZ cameras vertically up and down with floor, wall or ceiling mounting options available. With a range of height configurations, the LLS-1 can comfortably capture sitting and standing shots without reconfiguration making it a versatile robotic system in indoor studio environments. You can use the Ethernet connection on the LLS to connect directly to a PC running the Multi-Head Controller (MHC) or Polymotion Chat software.

It also has genlock sync input to allow synchronised FreeD positional data to be output from the LLS-1, enabling its use with virtual graphics' systems. The LLS-1 is also supplied with a Vesa mount to allow small/ lightweight display-based prompter to be added underneath the PTZ.

Connecting the Cables



Note

All Ethernet connectors on the LLS panel share a common internal hub. The Genlock and SDI ports are interchangeable.

Using the LLS-1 Lift Unit

LLS-1 Lift Unit can be controlled by MRMC MHC software application. Refer to *MHC Quick Start Guide* for detailed instruction on using the software.

Power up the system by connecting the 24V DC in power supply.

You will need to Home all the lift axis every time the unit is powered up.

Homing LLS-1

1. To home lift axis, launch MHC.
2. Logo in as a User – Operator, Engineer or Supervisor.
3. Click/press  →**Robot**→**Axes**. Select **Lift** axis. Click the **Home** button.
4. Use the MHC main screen to operate the unit.

There are two switches each end of the carriage, “Closed & Datum” and “Extended”. The carriage always homes to the Closed direction. Once it backs off the limit switch, current location is set in the software.

> Note
>
> When the unit is tripod mounted, this will be Zero, with positive direction extending the carriage. When the unit is ceiling mounted, this datum will be the maximum range value, with the position counting down to the extended location.

All other protection must be respected when homing, for example, the tilt switch in dual mode, or the extended limit switch, as for either to change state, there must be a fault.

After homing, software limits apply just before each switch comes active, in both directions.

FreeD

The units have FreeD output and this depends on correct datum.

Rail Lift System

RLS is a variant of the LLS-1 in which a PTZ head can move down a Quiet Rail System (QRS) which in turn is vertically lifted by dual LLS providing a 5-axis motion.

Designed to be quiet in operation, the RLS-1 offers a configurable vertical lift speed of 0.5 – 60mm/s, alongside horizontal motion of 40 cm/s / 16 in/s making it ideal for on-air movement of PTZs.The system is easily controlled by using MRMC's MHC software, or Polymotion Chat for automated movement. The mounted rail on the dual LLS can be of 1m, 2m or 3m in length.

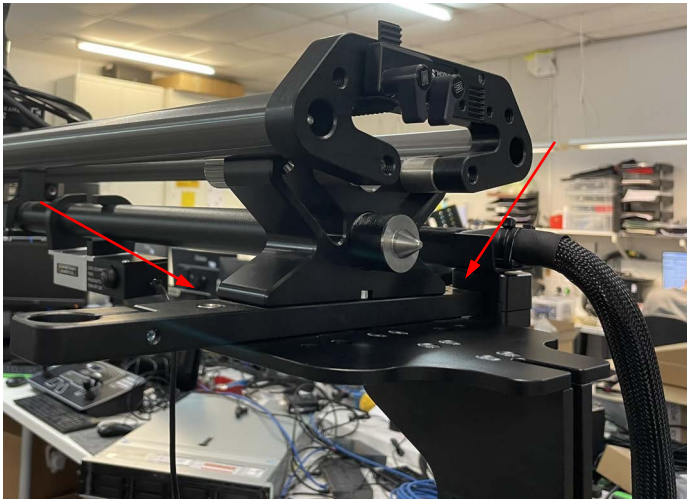
Assembling the RLS-1 system

1. Assemble 2x LLS-1 as detailed in the *LLS Short Assembly Guide*.
2. Assemble the QRS-1 and add the carriage using the procedure detailed in the *QRS Quick Start Guide*.

3. Place the LLS such that the camera platforms in both are facing each other.

4. Level both LLS using a spirit level. You can use the rocker switch on each LLS unit to level them; or you can use the MHC/Polymotion software to home each of the LLS units individually.

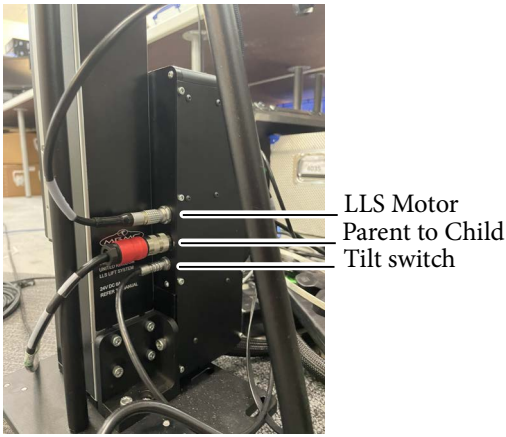
5. Ensuring that the LLS units are levelled, carefully seat the both ends of the rail unit on the camera platforms of the LLS. Use the 2xM10 screws to secure the QRS base with the LLS platforms.



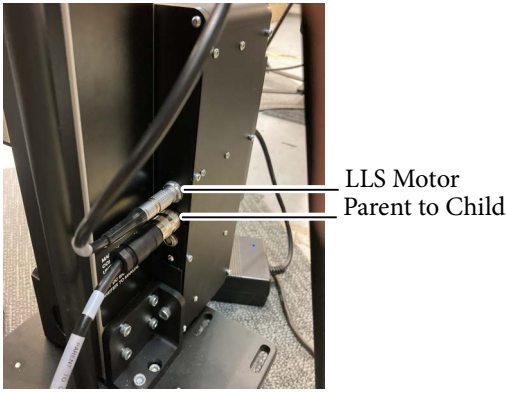
6. Add the drag chain, the camera head and its connections using the procedure detailed in the *QRS Quick Start Guide*.

7. Add the Tilt Switch assembly, as shown.

8. Add the RLS cable connections on the **parent** side. Note that the Parent to Child cable is labelled 'Parent' for the parent side..



9. Add the RLS cable connections on the **child** side. Note that the Parent to Child cable is labelled 'Child' for the child side..



10. Add other connections for both parent and child as shown in *Connecting the Cables* on page 4.

11. After connecting all cables, power on the RLS-1 system.

Resolving the RLS Levelling Error

The RLS system is equipped with a Tilt switch which includes the red LED that lights up should an error occur.

To resolve this error:

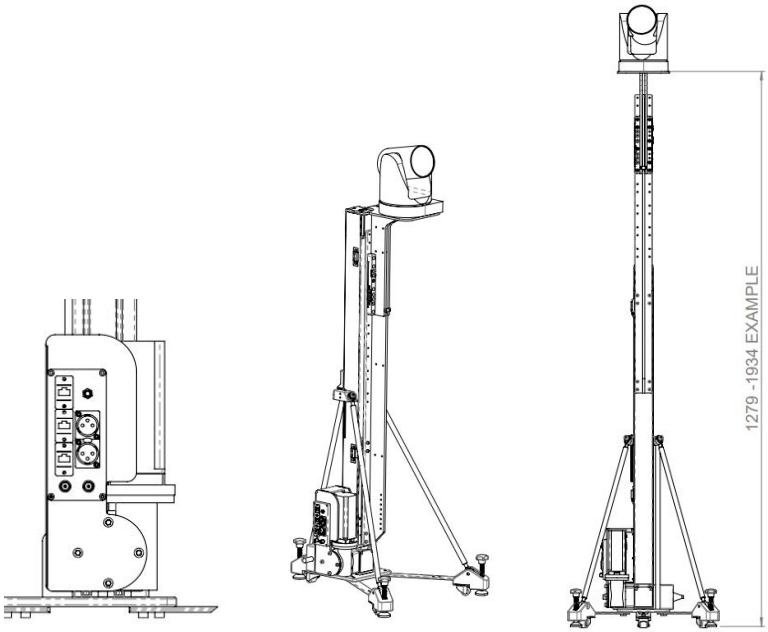
1. Disconnect the Parent to Child cable from both LLS units.
2. Use the rocker switch on each of the LLS to level them using a spirit level.
3. When levelled, press the button on the Tilt switch to activate the e-stop and reconnect the Parent to Child cable to both LLS units.

Appendix 1 **Specifications**

Recommended Payload in Stand-alone configuration	10Kg
Speed Range	0.5 – 60mm/s. Motion Quality On Shot, Subject to Zoom and Camera Chosen Homing speed: 30mm/s. Max speed: 60mm/s. Accel / decel 60mm/s^2.
LLS-1 Self Weight	Core lift unit = 21.5 kg / 47 lb, Tripod option = 5.5 kg / 12 lb, Wall kit option = 1 kg / 2.2 lb
Motorised Lift Distance	655mm
Lowest Possible Platform	515mm
Highest Possible Elevation	2160mm (Subject to configuration)
Power	24V 6A Via 90-240 VAC Auto-Ranging PSU with IEC input.
Network	IP control, 3 ports on motor unit (1 RJ45 input, 2 output)
Sync In/Out	Additional hardware required for FreeD data
Noise	Very Quiet

RLS-1 Rail Length	Subject to length in sections 0.8.m / 2.6ft, 1.2m / 3.9ft, 2m / 6.5ft, 3m / 9.8ft
Rail Max Speed	40cm/s / 16 in/s

Unit Images

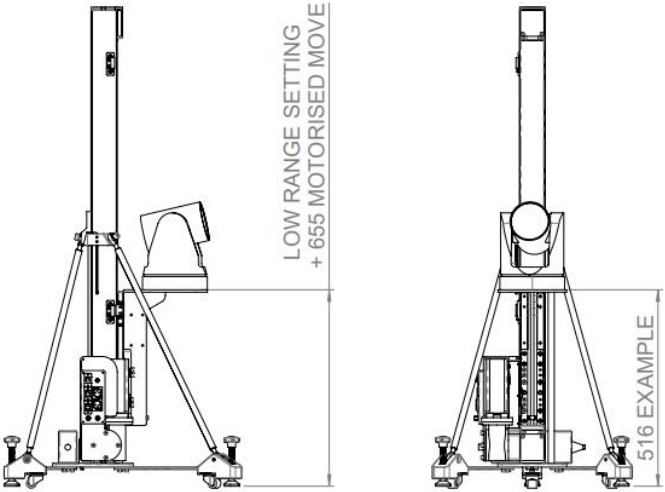


Low Bolt Range

Lowest Location: 516mm (motorised range 516-1171)

Highest Location: 830mm (motorised range 830-1485

The platform can be bolted at locations within this range, approx. 30mm apart, always using 4x 6mm bolts.



Extended Lift Range

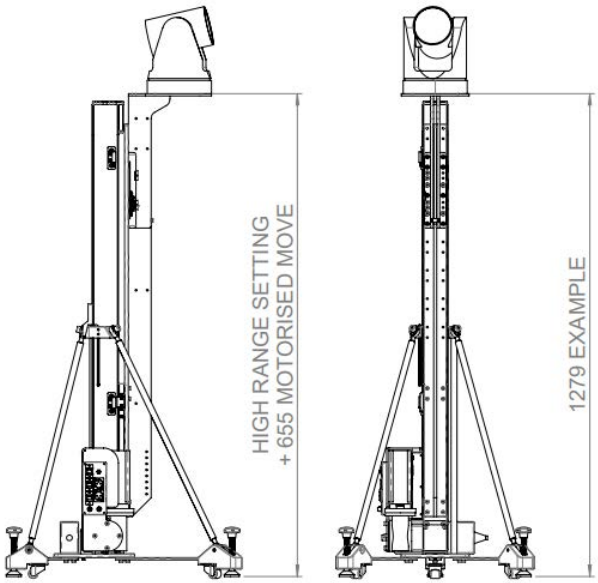
When using the supplied support extension:

Lowest Location: 950mm (motorised range 950-1605).

Highest Location: 1505mm (motorised range 1505 - 2160).

The platform can be bolted at locations within this range, approx. 30mm apart, always using 4x 6mm bolts.

Only use 5Kg or less payloads when using higher locations.

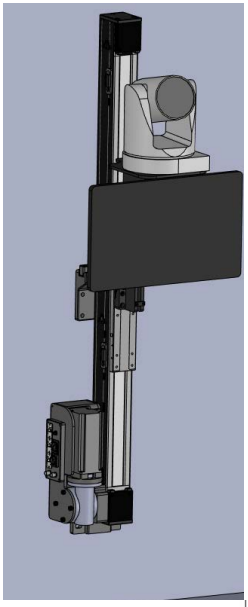


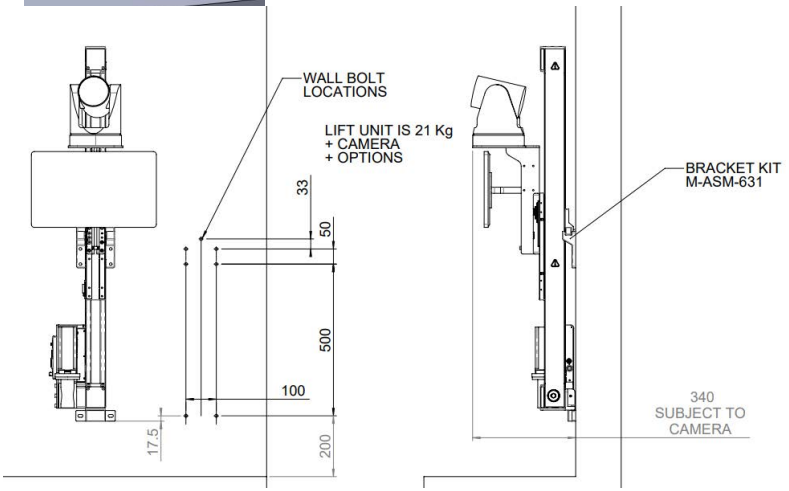
VESA Monitor Mount

It is possible to mount a monitor in some configurations using a standard VESA mounting kit (available from MRMC).

Wall Mounting

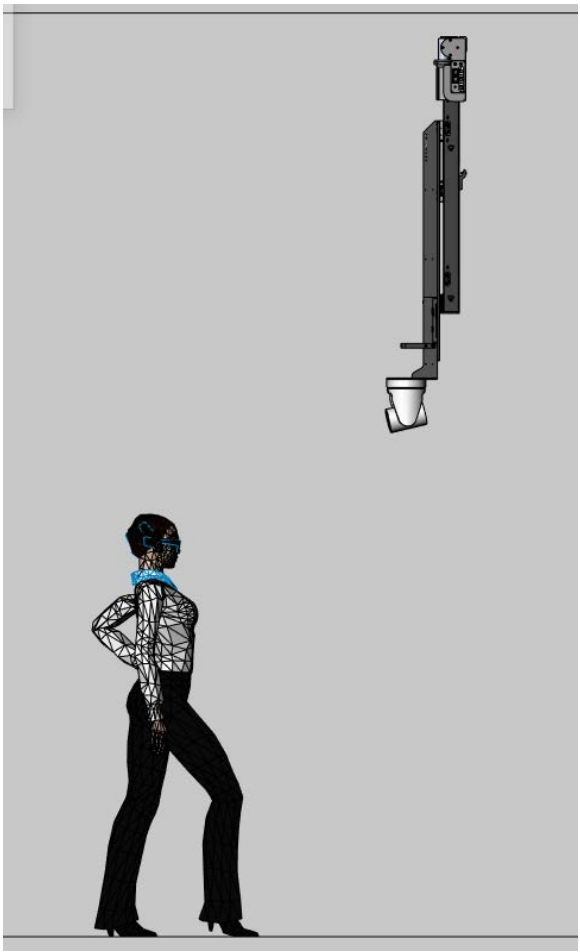
Wall mounting kit is available. To be mounted to good masonry or suitable timber structures – even small vibrations can travel around walls and buildings (doors closing etc) and may disturb the camera.





Ceiling Mount

Please contact R&D for ceiling mount options. This will require custom hardware and review of payloads, head clearances and other considerations.



Notes

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