



MARK ROBERTS MOTION CONTROL

BROADCAST JIB ARM



QUICK START GUIDE

QSG Product code: MRMC-2165-00

Product Covered: MRMC-2159-00

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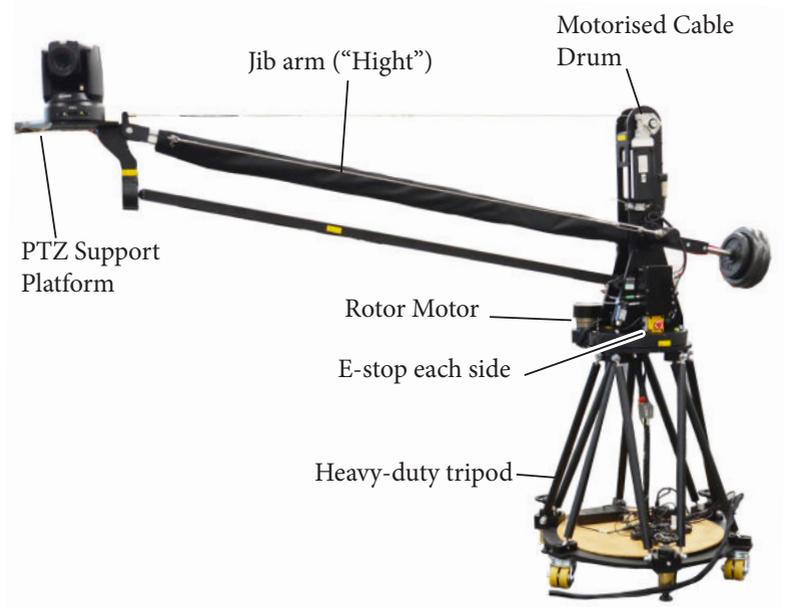
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Chapter 1 Quick Start

Overview

Thank you for using the Broadcast Jib Arm from Mark Roberts Motion Control (MRMC). The Broadcast Jib Arm is designed for reliable day-in, day out use in professional studio environments. The extremely quiet and Jib Arm is controlled by MRMC's Flair software with a capability to be used with a PTZ type camera unit controlled using MRMC's Polymotion Chat software, is designed to help you achieve automated, smooth and repeatable camera motions. It can handle a total payload of up to 4.2kg.



Broadcast Jib Arm has the following components:

- A heavy duty tripod on which the jib arm system rests
- Rotate Motor that rotates Jib am unit around tripod top plate
- Jib arm, or "Height", moves up and down by cable from motorised cable drum
- PTZ support platform to seat the PTZ camera unit

- An emergency-stop (E-stop) button on each side

Safety

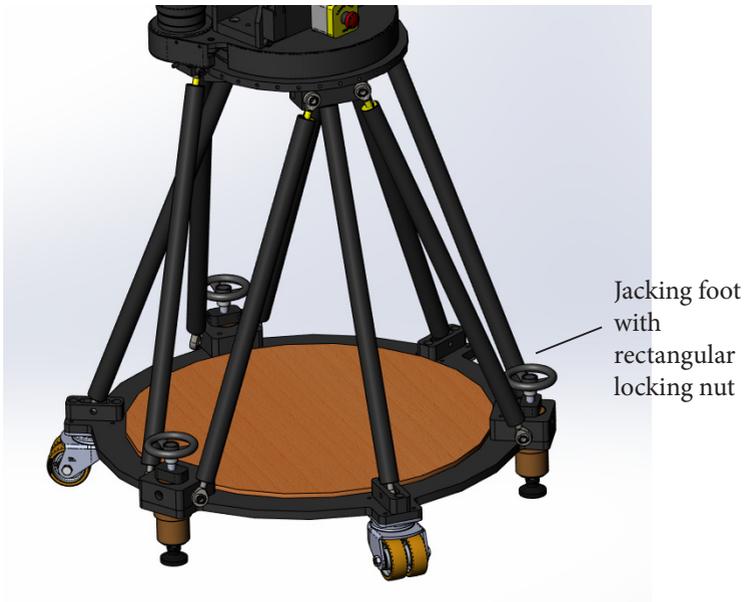
- Do not use around flammable gas. All electrical equipment can generate sparks that can ignite flammable gas.
- Keep Away From Pets And Children. The track and camera heads have powerful motors that can pinch, so take care not to get your hands trapped in the gears or cabling.
- Keep the equipment dry. 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, and use the cable housing on the Jib arm to avoid running any cables between the rotor motor and the PTZ.
- Do not insert hands and fingers in any crevices, especially when the E-stop is released. The robot includes moving parts and motors and can result in serious injury.

Tripod Safety

Caution: Risk of toppling over! Do not roll the equipment close to steps, ramps: must be used on smooth horizontal surfaces.

Caution: When using the rig under a ceiling or lintel, raise the boom to the top before moving or stowing the boom, to keep it clear from the surroundings and less chance of improper handling. Use buttons provided before powering down.

- Raise all three jacking feet well clear of the floor before moving.
- Drop all three jacking feet to make good contact with the floor when parking, and lock off using the top nuts before using the boom in robotic control.

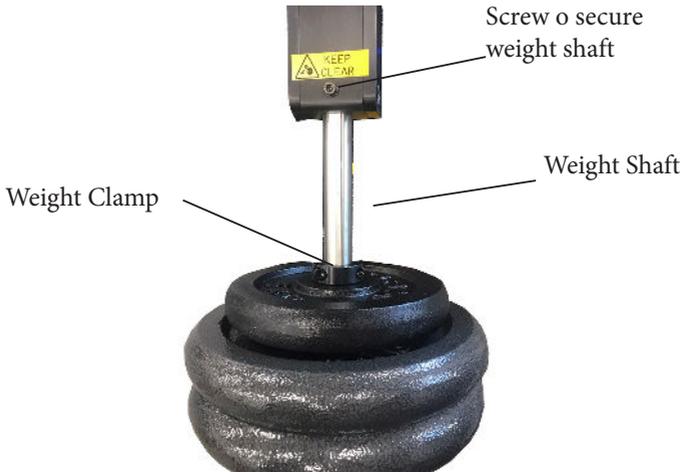


Mounting Jib Arm on Tripod

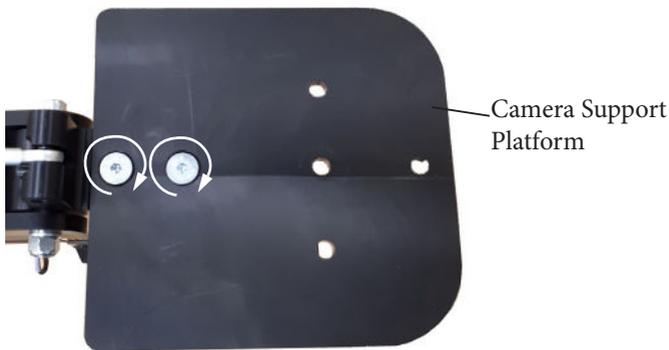


1. Unpack the tripod and wheel it to a sturdy and levelled floor.
2. Two people lift the Jib Arm and thread the umbilical cable through the centre cavity in the tripod.

3. While aligning the screw cavities, seat the base of the arm on the tripod.
4. Keep the arm firmly in position and tighten the 4 x M8 x 20 Cap head screws to secure the arm to the base.
5. Attach the weight shaft to the arm using the screw supplied.
6. Add the weights and tighten the 2x weight clamps using the 4 x screws.

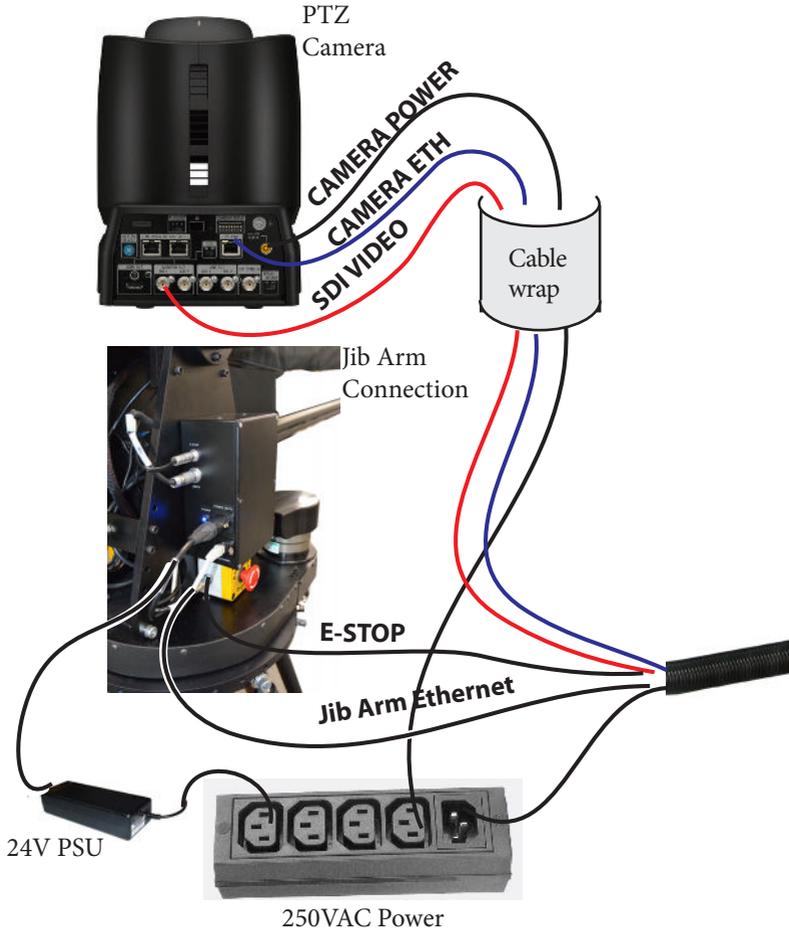


7. Attach the Camera Support Platform to the arm using 2 x screws.

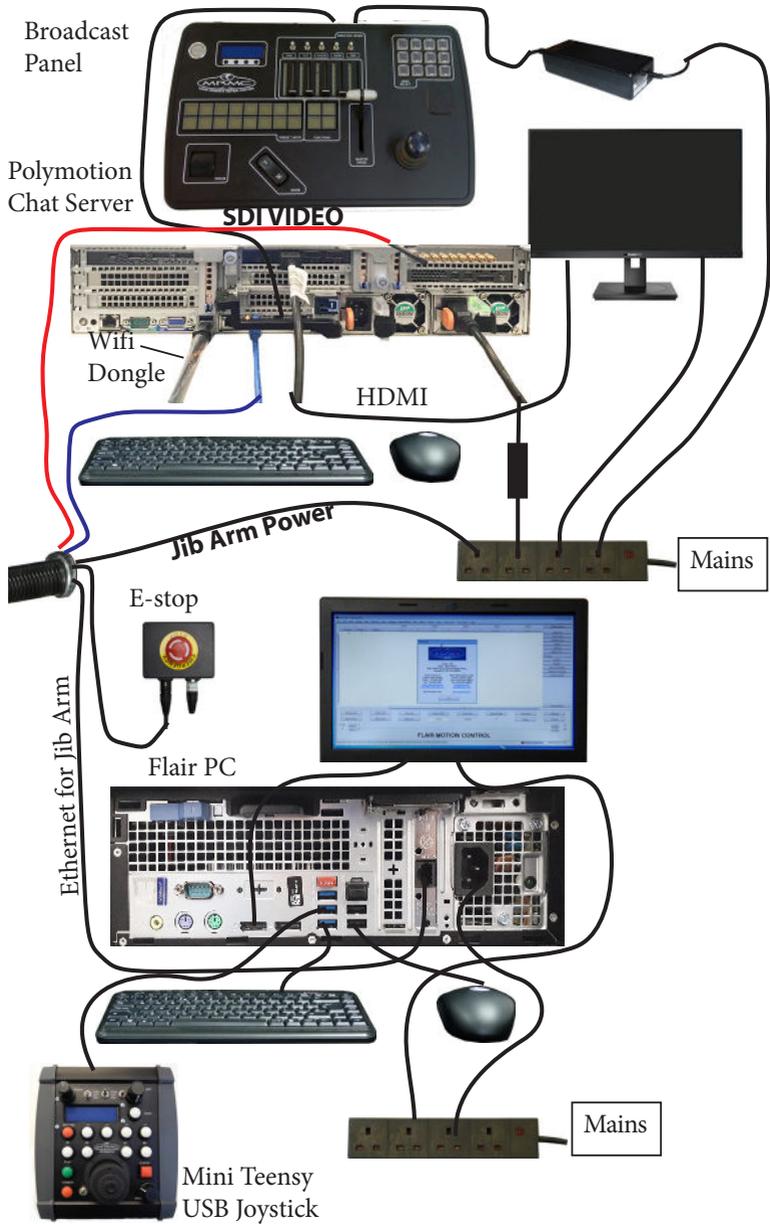


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Connecting the Cables



Note
Cable connections in the arm are done at the factory and must not be modified.



Jib Arm

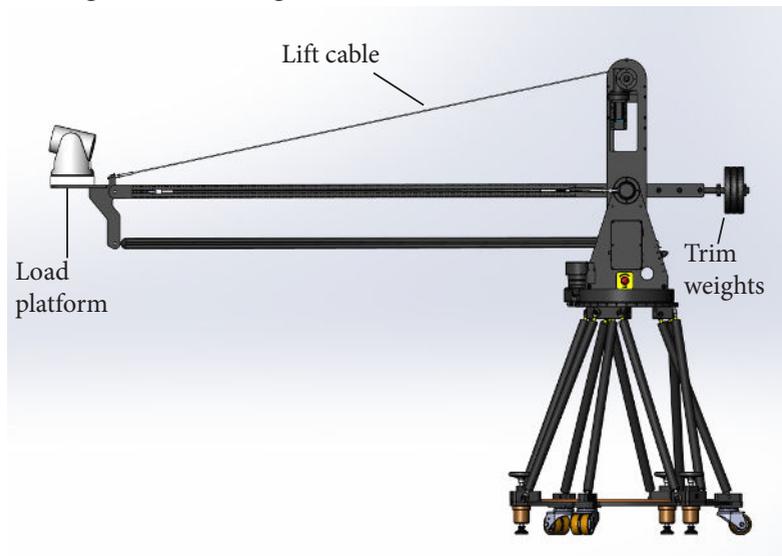
Caution: DO NOT lift and try to lower the Jib arm by hand unless guided by the procedure below. The cable should remain under tension all the time.

Caution: DO NOT place any object greater than 4.2kg on the load platform.

Caution: DO NOT remove all the balance weights with a payload on the load platform.

Caution: Ensure that you follow the “Setting Jib Arm Mass” procedure below before operating under fully automated control. You will need to set the trim weights only once so long as the payload is not changed.

Setting Jib Arm Weight:



1. Power up and jog the arm to the horizontal position using the **HEIGHT** rocker switch. If the cable is slack and the arm does not fall,

ease it down by hand gently ensuring cable is wound cleanly from the drum, and hold in the horizontal position below.

2. Remove any payload from the load plate and adjust the trim masses until the arm is balanced very lightly on the lift cable – if you lift the load plate it should hardly want to fall again. Ensure the trim mass clamps are tightened securely and the masses can't bounce against each other.
3. Place the PTZ camera on the load platform. Move the Height (Jib arm) up and down a few times on the rocker switch and ensure that the height cable is running smoothly on the drum without snagging or turning on itself. Winding down, then back up, should rectify most issues.

The arm is now safe to operate.

Cable Adjustments

Caution: If any cable is damaged and shows sharp ends or fraying, stop using the equipment and cover cable damage for safety. Contact MRMC for replacement parts.

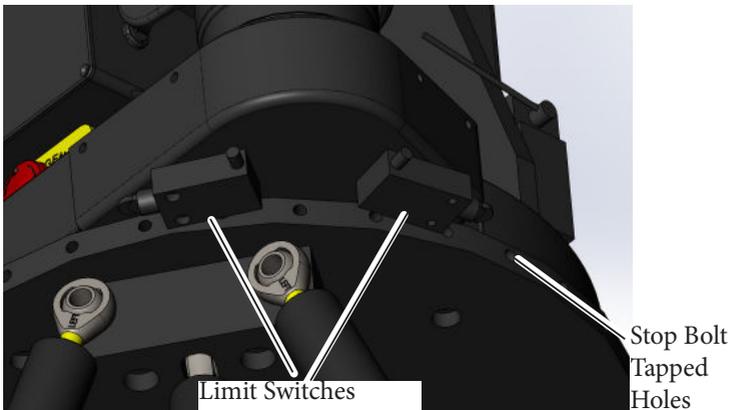
If the arm is noted to sway, and if you can feel slack in the cable fittings to the O rings on each end, tension adjusters for each Side Tension cable can be used. Adjust each one a little, keeping a balanced tension each side of the arm, until the cables are snug against the O rings. Further tension will not be helpful and may damage the boom. Avoid applying turns into the cable itself: the adjusters have left and right hand threads each end and both turn for the adjustment to take place.



Rotate Limits

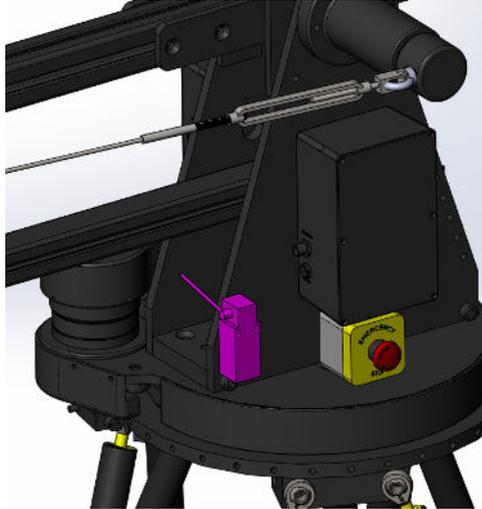
The Rotate motor is equipped with an absolute encoder. The system should be configured with software limits appropriate to the install site.

To prevent improper motion outside the software limits mechanical switches are provided. Fit the stop bolts into the most appropriate tapped holes for each direction of rotation. The closest bolt outside the software limit is to be used to catch any unexpected loss of control.



Jib Arm Limits

Lever arm switches are used to catch Jib arm down and up limits. These will be factory set. If the jib arm motion needs to be further limited then the lever may be adjusted on the switch. The Software limits must then be adjusted to remain within these limit switches.



Picture of cable connections

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Appendix 1 Specifications

Max Payload: 4.2kg, PTZ Type camera unit

Boom Platform reach: 2000mm from pivot

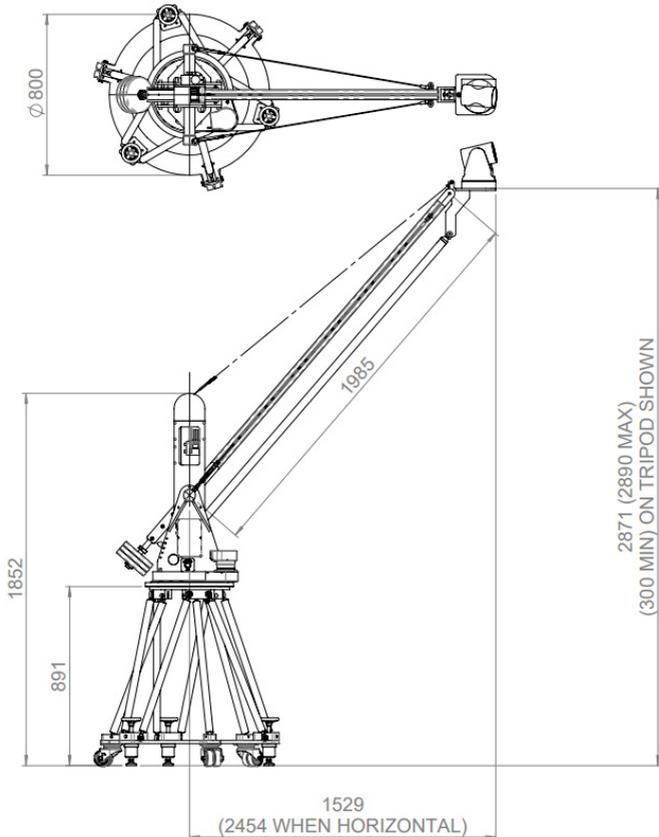
Lift Range: 2890mm Max, 300mm Min, subject to tripod/support

Reach: 2454mm when boom is horizontal

Max Speeds: Rotation: 20°/s, Lift: 150mm/s. Motion profiled with appropriate ramp times for shot

Total Masses: 75kg Jib arm with Rotate unit + 50kg High Torsion tripod

Power: 90-240VAC, 3A, IEC Type Cable



Notes



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