MARK ROBERTS MOTION CONTROL

BROADCAST TALOS

QUICK START GUIDE

QSG Product code: MRMC-2113-00
Product Covered: MRMC-2081-00

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Broadcast Talos Quick Start Guide

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Chapter 1 **Assembling the hardware**

Safety

- Due to the size and weight of Talos components, it is recommended that you use at least **two** people to assemble it.

- Do not use around flammable gas. All electrical equipment can generate sparks that can ignite flammable gas.
- Talos has powerful motors that can pinch, so take care not to get your hands trapped in the rig 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 Talos and the rotating head or camera if possible.
- Use a 240V AC power supply that is properly **earthed** (grounded). This is not only for safety reasons; electrical noise on an unearthed system can make axes controller boards trip out unpredictably, interrupting the shoot and creating intermittent problems that can be difficult to trace.

Overview

Thank you for using the Broadcast Talos motion control rig from Mark Roberts Motion Control (MRMC). Talos is designed for reliable day-in, day-out use in professional studio and Outside Broadcast environments.

Broadcast Talos is typically part of a complete motion control system that includes:

- **Talos** itself.
- A **head** such as an Ulti-Head or SFH-50, on which you mount your video camera.
- A Teleprompter
- A Windows PC running **MRMC** Software.
- Additional **controllers** such as a Broadcast Panel, Hand-Held Box (HHB), Mimic Handwheels or Pan Bars.

General procedure

1. Mount the Head- page 4.
2. Mount Talos on a track - page 5. If you want, you can mount the Talos base onto the track first and then build Talos on the track starting with step 2.
3. Connect the cables - page 8.

Mounting the head

If not already mounted, you can mount the head under-slung as shown or over-slung.

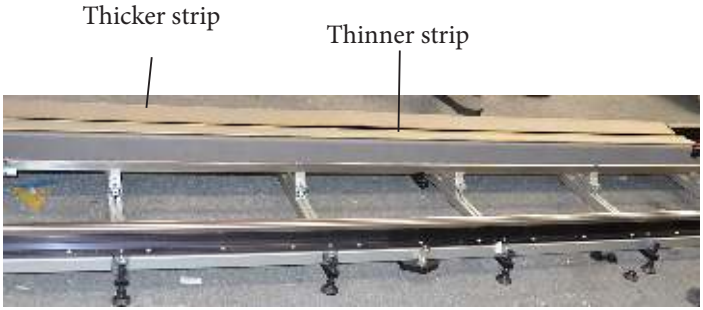
- Mount the head to the swan neck with the single bolt and disk, making sure that the key on the head fits into the slot in the neck.

Mounting Talos on the Track

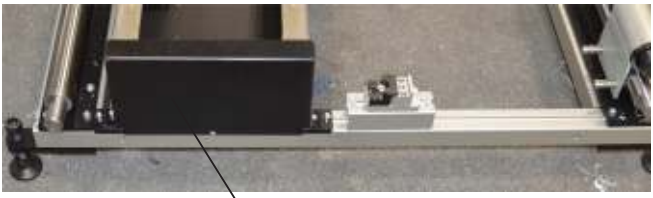
1. Roll the Talos to a position just off the end of the track, raise the rig on its wheels high enough to go over the track using the wheel cranks, and rotate the Talos on its wheels to be the correct way around so that the track motor gear on the Talos underside is on the toothed side of the rack. **Do not engage the teeth yet; just make sure the rig is the correct way around for the track.**
2. On the underside of the Talos, remove the pinch wheel if you haven't already done so and push the track motor out of the way on its sliding bearings, so that the track motor gear will not interfere with the Rack on the track. (For details of removing the pinch wheel, follow the procedure on page 11 in reverse order.) **Do not slide the pinion gear too far away from the rack when moving it into place, the rear (inner) track motor mounting bolt will hit the racking as you drop the rig down.**
3. Push the Talos on its wheels over the track about a metre, being careful not to push the track motor gear against the rack while moving.
4. Carefully lower the Talos onto the track, ensuring that the track motor gear on the underside of the Talos clears the rack.
5. Apply the brakes to the wheels to keep them from pivoting against the track (the brakes affect both rotation and pivot), and raise the wheels off the ground so the full Talos weight is taken by the track.

6. .Add the cable chain to the tray such that the panel can be mounted at the end of the rails and the bracket at other end can be secured with Talos.

7. Secure the cable chain with the cable tray top.
8. Attach the track motor pinch wheel on the underside of the Talos, described in *Attaching the track motor pinch wheel to Talos* on page 11.
9. Add the cable tray cover strips along the length of the track. The thicker one is for the side closer to the edge of the rail and thinner one for the other side. Secure using nylocks.



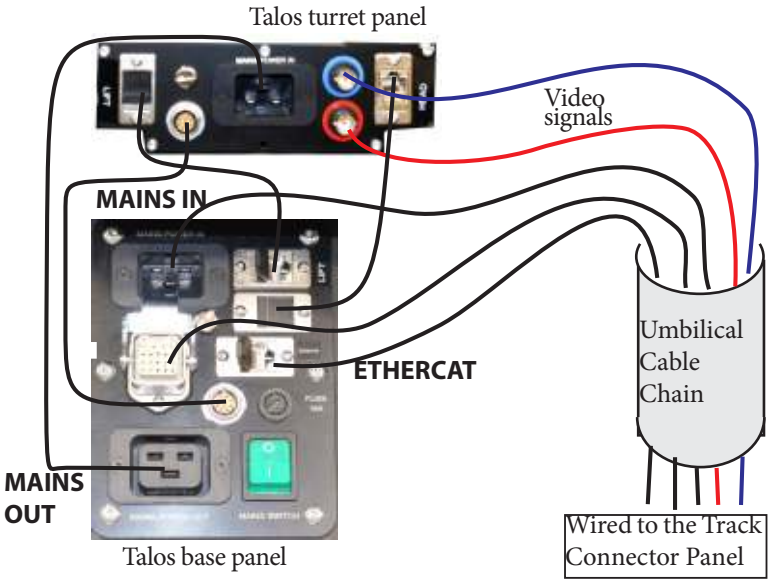
10. Secure the cable tray cover (using 2 x screws) at the end of the round rail track to close the tray opening.



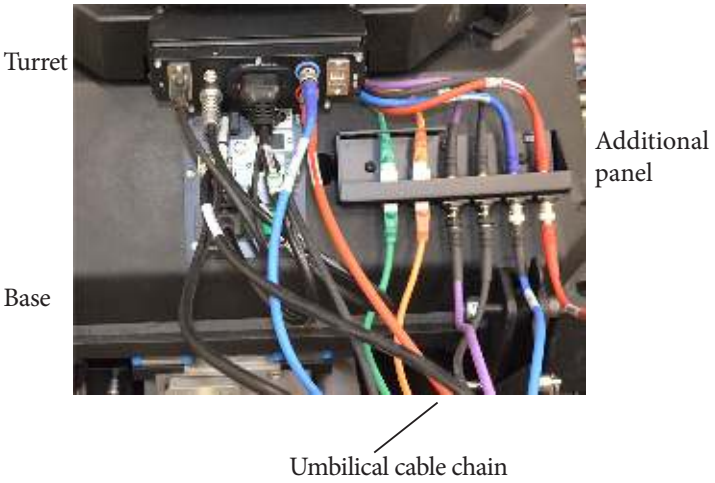
Tray cover

Connecting the cables

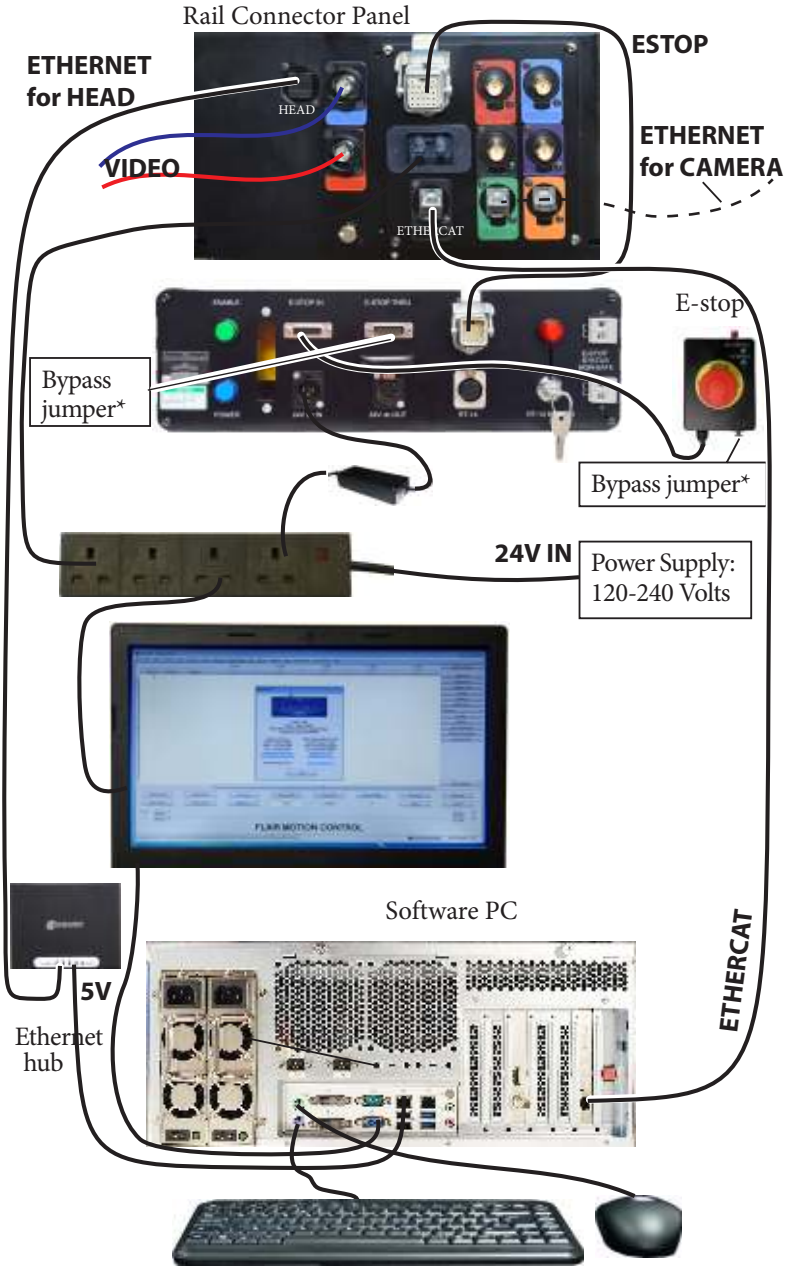
Umbilical cable - base - turret connections



Picture of umbilical - base - turret connections:



Rail Connector Panel - Flight Case connections

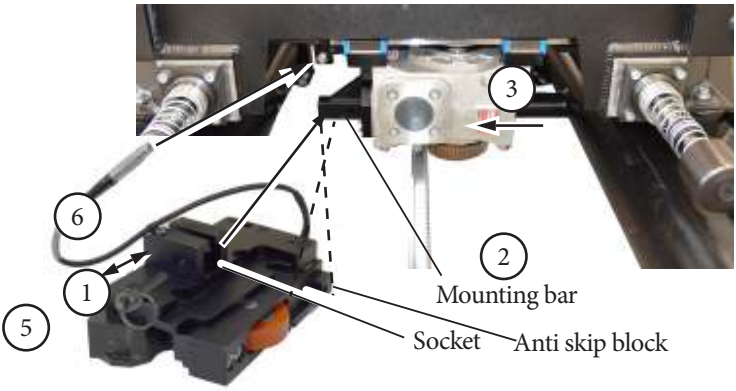


Important

For more information on using the Universal Robot system, refer to the Universal E-stop System Quick Start Guide.

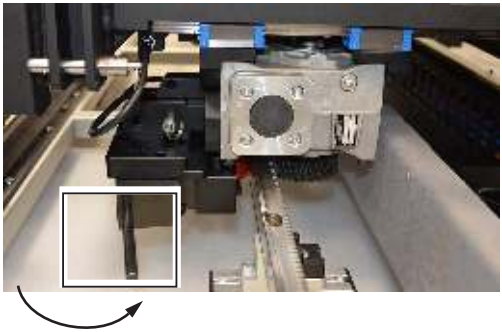
Example: Connections to the slip ring base on the Ulti-head:

Attaching the track motor pinch wheel to Talos



1. On the separately supplied pinch wheel assembly, remove the brass retaining pin by pulling on the ring.
2. Mount the pinch wheel assembly onto the track motor on the Talos underside, by sliding the track motor gear against the rack and putting the pinch wheel Socket onto the track motor Mounting bar.
3. Push the track motor slightly towards the rail racking so that the track motor gear is in mesh with the rack.
4. Replace the retaining pin in the pinch wheel assembly by pushing on the ring (not the sleeve), to hold the assembly in place on the track motor.

5. Use the lever into the pinch wheel CAM to pull it towards the rack until it snaps into position. This holds the track motor gear firmly against toothed side of the rack.

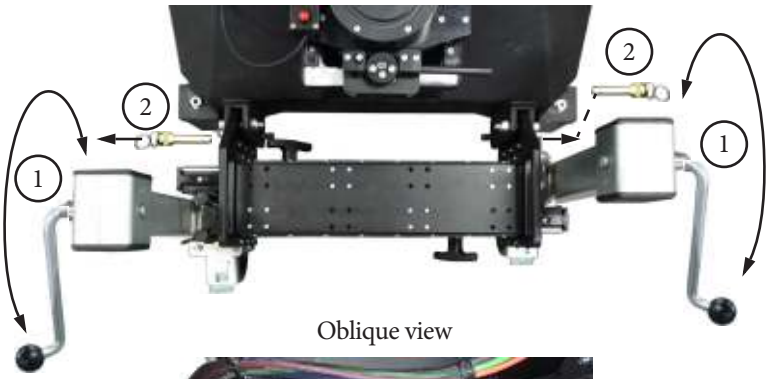


6. Connect the pinch wheel cable and use cable ties to hold it securely up away from the track.

Removing the trolley wheels

If you mount Talos onto a track or permanent base then you can remove the two trolley wheel units that are on either side of the Talos base.

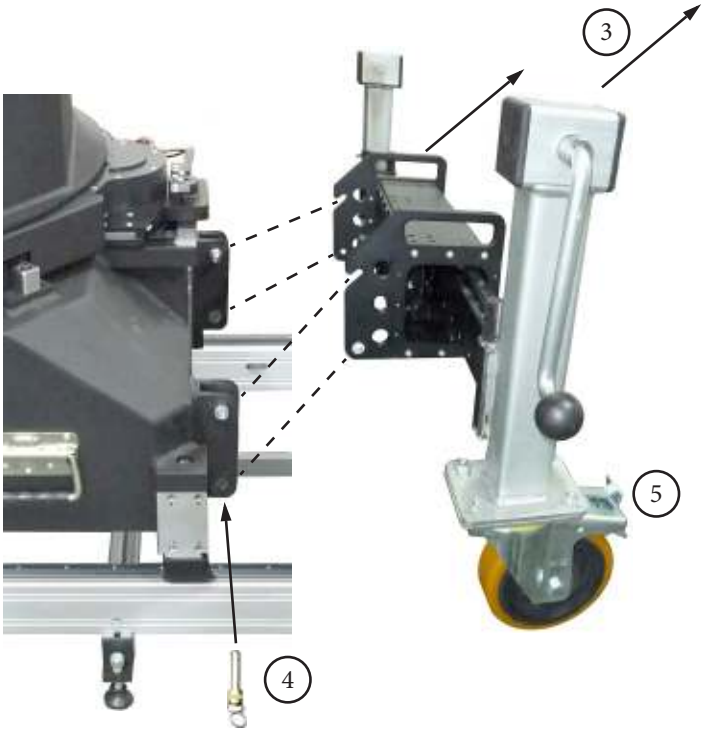
Top view



Oblique view

Retaining pin

1. With the base of Talos supported by the track or other base mount, turn the crank on each end of the wheel unit so that the wheels are suspended in the air, just above the ground.
2. Lift the wheel unit slightly to take the stress off the brass retaining pins, and pull out the retaining pin at each end of the wheel unit.

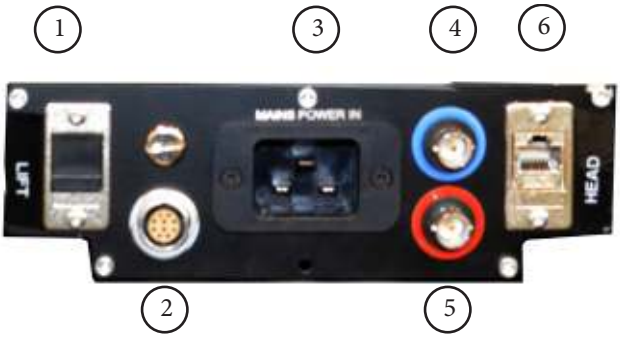


3. Lift the wheel unit away from the Talos base.
4. Insert the retaining pins back into the Talos base, for safe keeping.
5. If you are going to store the wheels for weeks or months, release the wheel brakes so they don't leave a dent in the wheel rubber. You can also retract the wheels into their narrowest position if you want.

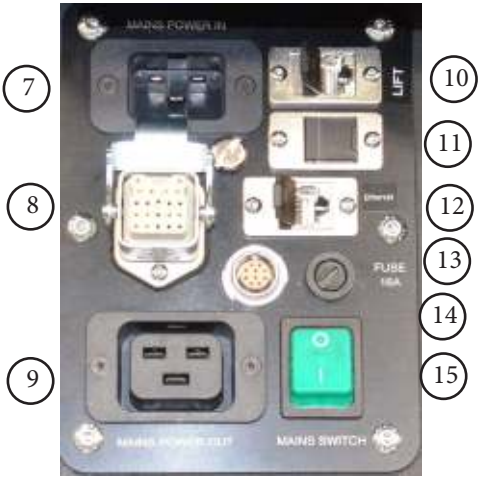
Appendix 1 **Talos panels**

Panel summary

Turret panel



Base panel



1, 10. **LIFT** Ethernet RJ45 connector to connect to the Ethernet connector on the turret (10) to service the lift arm.

2, 13. **E-stop** used to connect the two Estop connectors on the base and the turret.

3. **MAINS IN** power input connector, 240V AC, for the lift arm, head, and camera. Note that the turret has a built-in transformer that supplies 34 Volts DC power to the head and camera, via one of the cables in the main cable collection that goes to the head.

4, 5. **VIDEO** connectors for sending or receiving signals to and from the head and/or camera. This uses standard coaxial cable which can be used for video, trigger, and sync signals.

6. **HEAD** Ethernet RJ45 connector connects to Ethernet connector (11) in the base for controlling the head with the software.

7. **MAINS IN** power input connector, 240V AC, used to power Talos and the attached head and camera.

9. **MAINS OUT** connector, 240V AC. You normally connect this to the **MAINS IN** connector on the Talos turret to power the upper parts of Talos (lift arm, head, and camera).

12. **ETHERCAT** connector. You use this to connect the cifX board in the Talos base to the cifX board in the software PC. The cifX EtherCAT network is an industrial grade high speed network used to control the Talos motion, and is completely separate from the Ethernet network that runs the lift arm, head and camera.

14. **FUSE** with a rating of 16 Amps.

15. **MAINS SWITCH**. You should only turn on Talos when all mechanical parts are securely mounted in place and all cables are connected.

Appendix 2 **Specifications**

Weight: 492 Kg (1085 lbs) including trolley wheels and 10 counterweights

Payload (camera and head): 40 Kg

Power requirements: 110-240 Volts AC (earthed/grounded).

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

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

Dimensions:
Length: 3270 mm
Width (without trolley wheels): 706 mm (28 in)
Width (with trolley wheels) 737-1175 mm (29-46 in)
Height (on trolley wheels, horizontal arm): 1960 mm (77 in)

Notes

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