



MARK ROBERTS MOTION CONTROL

TURNTABLE

AUTOMATED PRODUCT PHOTOGRAPHY



QUICK START GUIDE

QSG Product Code: MPMC-2279-00

Products covered: MPMC-1579-01, MPMC-1097-00

Turntable Quick Start Guide

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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 the 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.

General care

- Do not force switches or external connections.
- When moving the unit, disconnect the mains 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.

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 Large Turntable from Mark Roberts Motion Control (MRMC). You can use the Turntable for day in and day out use in product photography. It comes in both Servo and Stepper motor options.

Turntable gives you the following features:

- High speed
- Zero backlash
- Precise movement
- Different size disks can be used depending on your product dimensions
- Centreless so cables or power can be fed through to appliances
- Can take weight of up to 600kg

Large Turntable (Ethernet)

Adding the Legs for 6ft Disk

The 6ft disk support can be added to the large turntable to support wider objects on the turntable.

1. Slide the leg under the turntable while sliding the large D-nuts into the cross beam of the leg.
2. Use a tape measure to ensure that all the legs are pulled by the same length so the turntable is balanced properly.
3. Tighten the 4 x screws on the legs but not fully tighten them yet.



4. Repeat step 3 for any other legs to be attached to the turntable.
5. Level the legs using the swivel pads. To adjust the swivel pad unscrew the lock nut and then lower or raise the swivel pad by turning clockwise or anti-clockwise.



6. Tighten all the screws to secure the legs with the turntable.

7. Before adding the disk, ensure that the turntable and all the legs are level for smoother disc rotations over the castor wheels during turntable movements.

Note

For smooth moves, ensure that the underside of the disc is even before adding it on to the turntable.

Attaching the control box

1. Rest the Large Turntable on the side opposite to where the connectors are. Slide the control box into the slot on the Large Turntable until you hear a slight click.



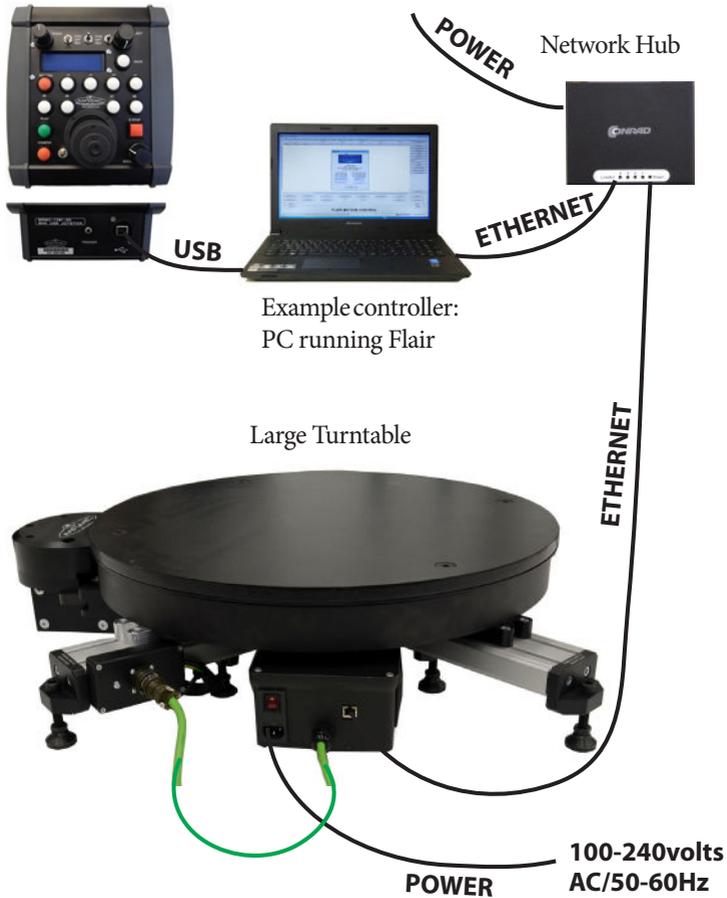
2. Use an hex key to tighten the grub screw to secure the control box to the Large Turntable.



Grub screw

Connecting the cables

MRMC Controller



The diagram shows a typical application.

Connecting the cables (Large Turntable that runs off Milo driver box)



Driver box
(similar to that of
a Milo or Titan)

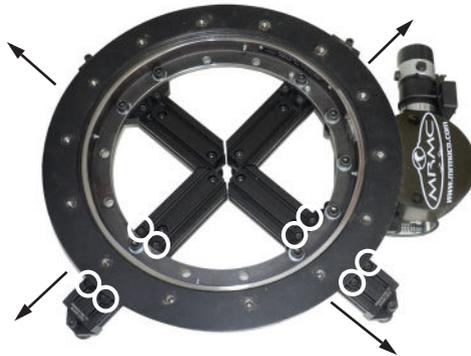
Motor cable plugs to
one of the axis ports



Fitting the disc



Adjusting the legs



1. To support larger objects on the turntable, loosen the four screws on each leg to adjust the leg.
2. Use a tape measure to ensure that all the legs are pulled by the same length so the turntable is balanced properly.
3. After you have adjusted the legs, tighten the screws.

Adding Large Turntable via Ethernet in Flair

Before you start using the Ethernet Turntable first time, once you have cabled the Turntable with the Ethernet hub and powered it up, it needs to be added to the Flair software so Flair can communicate with it.

1. In Windows Explorer, navigate to the Flair folder, and open the Flair.ini file.
2. Change the following in the Flair.ini file:
 - Add 1 to the value of ***NetworkBoards** and ***LoadNetworkBoards**.
 - Add an axis to the existing number in ***Axes** and ***ShownAxes** fields, if a model mover axis is not already added in Flair

- Add a line with **Node Program** field with the number of node you are adding and set it to **Uni6Ether_II.bt1**.
- Set ***Autorecalibrate** and ***LoadFromHC** to **True**

For example, if you are adding an Ethernet Turntable as a third network board and a 10th axis (9 axis already added in Flair), then in Flair.ini file change the following settings:

```
*NetworkBoards:      3
*LoadNetworkBoards:  3
*Axes:               10
*ShownAxes:         10
```

And add the following lines:

```
*NodeProgram3:      Uni6Ether_II.bt1
*Autorecalibrate:   True
*LoadFromHC:       True
```

Note

The '3' on the NodeProgram field corresponds to the node for the turntable.

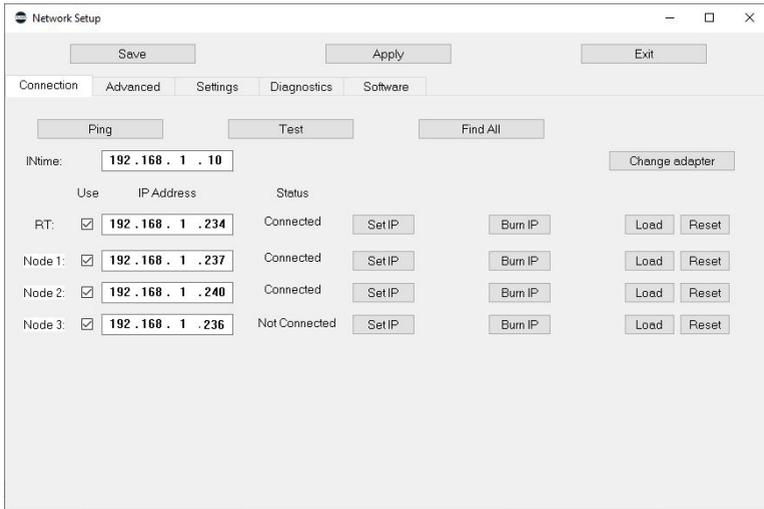
3. Save and close the Flair.ini file. Launch Flair.
4. If you get any error messages, click on **OK** to close them.
5. When you get a message about network failure, click on the **Network Setup** button in the message:



or...

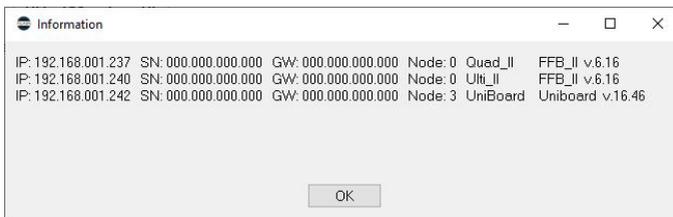
If the Flair installation already has a valid Ethernet connection on a network then you might not get the network failure message. In this

case, start the Network Setup facility manually by choosing the **Setups > Network Setup** menu option in Flair.



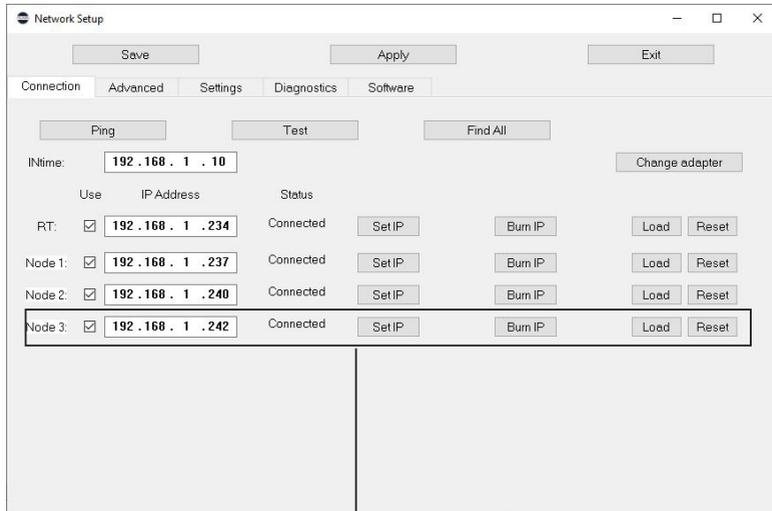
The Network Setup window, Connection tab, lists the Nodes (board and head connections) that Flair is looking for, as defined in the NetworkDirect.ini file. Any changes that you make and **Save** in the Network Setup window are saved in the NetworkDirect.ini file. You can also edit this file by using the menu option **Help > View Network.ini File**. If Flair cannot find the Turntable on the network at the IP address shown then the node's status is **Not connected**.

6. In the Network Setup window click on **Find All**, then on **OK** in the pop-up to confirm.
7. An Information pop-up displays information about the devices that Flair has found on the network:



Make a note of the Turntable's IP address that is displayed in the pop-up; for example 192.168.1.242. Note that the two other IP addresses are of devices that appear connected in the Network Setup dialog box before.

8. Change the IP address of the Turntable node to the one noted above (in this case, 192.168.1.242).
9. Click **Set IP**, click **Save** and then click **Apply**.
10. Click on **Load** for the node belonging to the Turntable to reset and load it. It should now appear connected



Turntable connected

11. Close the Network Setup window by clicking on **Exit**.

Resolving IP Address Conflict

It is possible that the IP address of the turntable is same as that of one of the existing network devices already connected with the Flair PC resulting in an IP address conflict. In such a case, you will need to change the IP address stored in the board of the turntable using Flair. Such a conflict can be detected when you add the turntable on the PC network with existing connected node(s) and click **Find All** in the Network Setup dialog box, an additional node fails to appear in list of nodes in the Information pop up or Network Setup dialog box.

To resolve this type of conflict:

1. Unplug the network hub from the PC.
2. Connect the PC directly to the turntable via Ethernet.
3. Start Flair. In the Network Setup dialog box, click **Find All**. In the appearing Information popup, you might see the additional board. If you do not then restart the PC and relaunch Flair. You should now see the additional board after clicking Find All in the Network Setup dialog box.
4. Add a unique IP address to the node line of the board that has the same IP address as that of the turntable. **DO NOT** click Save and Apply yet.
5. Click **Set IP** for the changed IP address board and click **Apply**.
6. Now, change the IP address for the Turntable node to the one that was conflicting.
7. Click **Set IP** and then click **Load** for the turntable node.
8. Once it is loaded, you can change the IP Address of the turntable to a unique value. This should be different from all connected nodes.
9. Click **Set IP**, then click **Burn IP** to permanently change the IP address on the turntable board. The turntable might appear disconnected temporarily before appearing connected again.
10. To test that this is all done correctly, power down the turntable by unplugging power to it. (Do not exit Flair.) After a few seconds, turn it back on and click Find All in the Network Setup dialog box in Flair to see if the turntable node has the new unique IP address that you assigned. If it does not, then start again from Step 6.
11. If the IP address of the turntable is now changed to the desired value, you will need to revert the IP address of the conflicting node to its original value. To do this:
 - 11.1 Change the IP address of the node to the original one.
 - 11.2 Click **Set IP**, click **Save** and then click **Apply**. Exit Network Setup.

Setting up the Axis

1. Note that an additional axis appears in the Flair Numeric screen.

Large Turntable Quick Start Guide

2. Right-click the new axis and select **Axis Setup**.
3. Specify a name in the **Axis name** box.
4. In the **Node** box, select **3** (same as the number above) and in the **Port** box, select **1**.

The screenshot shows the 'Axis Setup' dialog box for a 'Turntable' axis. The dialog is titled 'Axis 10 Setup - Turntable' and has tabs for 'Basic', 'Control', and 'Tuning'. The 'Basic' tab is active. The 'Axis Name' is 'Turntable', 'Node' is '3', and 'Port' is '1'. The 'Type' is 'Independent'. The 'Axis Internal Scale' is '2.2274936', 'Axis Display Scale' is '125.8220635', and 'Units' is 'Degrees'. The 'Backlash Offset' is '0.000'. The 'Control Limits Settings' section includes: 'Axis Velocity' (90.00), 'Axis Acceleration' (1000.00), 'Maximum Limit' (empty), 'Minimum Limit' (empty), 'Run time Factor' (0.950), 'Cuto Velocity' (0.400), 'Cuto Acceleration' (0.750), 'Fractil Factor' (1.000), and 'Postroll Factor' (1.000). The 'Zeroing Settings' section includes: 'Zero' (Opto Datum Zero), 'Zero Velocity' (-7.00), 'Zero Time' (20.00), 'Zero Offset' (22.130), 'Zero At' (0.000), and 'Transport' (0.000).

5. Click **Apply** and then click **Save**.

Appendix 1 Specifications

Large Turntable

Weight: 73kg including the disc

Power requirements: 5 amps from 140V from Milo power supply or 240V AC from Mains

Temperature range: -10 to +45 °C

Humidity tolerance: 0% to 90% relative humidity, non-condensing

Rotation speed: 100°/s

Load capacity: 600kg

Dimensions are shown as follows. All measurements are in mm.



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