Orbital Rig Quick Start Guide

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## Contents

### Chapter 1  Quick Start

- Important safety instructions ...................................... 1
- General care .................................................................. 1
- Location ........................................................................ 1
- Intellectual property ..................................................... 1

### Chapter 2  Spin Rig Setup

- Overview ........................................................................ 7
- PC Requirements .......................................................... 7
- System preparation ........................................................ 7
- Installing and setting up the digiCamControl software ........................................................ 8
- Setting up Flair .............................................................. 8

### Appendix 1  Specifications

### Appendix 2  Rear Panel

- Panel and connector summary................................. 17
- Connector pin-out information ................................ 18
  - E-Stop Connector .................................................. 18
  - Mains In connector ............................................... 18
  - SDI connector .................................................... 18
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 Orbital rig from Mark Roberts Motion Control (MRMC). The Orbital is a robust e-commerce solution for taking high-volume product shots in conjunction with the MRMC turntables providing full-control whether you are shooting stills, 360 spins, Multi-row photography or video. Camera controls and presets for the rig can be configured and saved in Flair Motion Control Software by MRMC for a fully automated product photography.

Mounting the camera on the camera bracket

1. Remove the camera plate from the camera bracket by removing the two knurled knobs. Mount the camera on to the camera mounting Plate.
2. Aligning the centre of the camera with the tilt pivot, mount the Camera plate on to the camera bracket and screw the two knurled knobs.

Camera bracket underside
Mounting the lens control motor

1. Mount the lens control motor onto the camera bracket by clamping it on the matte bar and ensuring that the gears on the motor are in mesh with the lens ring gears.

2. Plug the required cables to the camera, such as the Ten Pin cable for the camera power, HDMI cable and USB cable.
Attaching the cables

The diagram shows a typical application. Attach the power cables last.
Notes
Chapter 2  Spin Rig Setup

Overview
Spin Rig is a tool built into Flair Motion Control software that, once configured, allows you to communicate with digiCamControl software to trigger capture, download pictures, and to control camera settings via USB.

digiCamControl is used to control the camera remotely from your Windows PC via USB. You can use digiCamControl to trigger image capture, review images right after photo is captured, control camera settings, view the image in LiveView as you see it in the camera’s viewfinder and autofocus and zoom in and out remotely.

This guide tells you how to install digiCamControl on a Windows PC running Flair Motion Control Software and setting up Spin Rig display to use the digiCamControl functions.

PC Requirements
- Personal computer using the Intel x86 architecture
- Windows 7 Professional
- USB capability
- 4 Gbytes of memory
- DSLR camera
- USB cable compatible with the camera
- Setup files

System preparation
Make changes to the following settings, which you can access in Windows Control Panel:

1. Set file extensions to be visible:
   Appearance and Personalization > Folder Options, and in the pop-up go to the View tab and turn off “Hide extensions for known file types”, and then click on OK.

2. Obtain the installer for digiCamControl for Flair.
Installing and setting up the digiCamControl software

1. Copy the folder containing the digiCamControl setup files onto your Windows Desktop, then double-click on the folder (on the Desktop) to display its contents in a file browser.

2. In the file browser that appears, right-click on digiCamControlsetup_2.0.0.0.msi and in the pop-up menu choose Run as administrator.

3. Follow the on-screen instructions to install digiCamControl.

4. If not already connected, connect the camera with the PC via USB. Ensure that the camera is turned on.

5. Use the controls in digiCamControl to make sure that the software is talking to the camera.

   5.1 Turn on the LiveView in digiCamControl


7. Check Enable TCP server.

   ![TCP Server Settings]

   - Enable TCP server
   - Server port: 9100

   Click on Save.

Setting up Flair

1. Navigate to the FLAIR6 folder C:\Flair\Flair6 and open the Flair.ini file.

2. Change the values of the following fields to these values:

   - *KineModel:spinrig

   Add the following lines in the Flair.ini file.

   - *Spinrig:Default
   - *DigiCamControl:True
3. Save and close Flair.ini.
4. Ensure that digiCamControl is running and the DSLR camera is connected via USB to the PC.
5. Launch Flair and check that Flair opens in the Spin Rig Display. Use this page to set up Steps, Goto Speed, Angle and Time settings for the Spin Rig.
6. Choose the Settings button or choose **Setups > Digicam settings** in Flair. You can use this interface to specify the camera control settings that will be effective in digiCamControl.
7. Use the **Focus** tab to trigger camera captures via Flair.
Appendix 1 Specifications

Weight: 90 kg (198 lbs) without camera and turntable, 100 kg (220.4 lbs) including Medium Turntable

Payload (camera and head): 15kg

Power requirements: 110-240 Volts AC (earthed/grounded) AC 50-60Hz.

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

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

Maximum width: 0.5m x 1.8m (2m with Turntable)

Maximum height: 1.4m

Axes:

Track: 1m

Tilt: +15 deg, -90 deg

Lift: 1.06m

Maximum speed: Track: 20 cm/s

Lift: 20 cm/s
All measurements are in mm.
Notes
Appendix 2  **Rear Panel**

Panel and connector summary

1. **NETWORK** RJ45 connector, for connection to the PC running the Flair Motion Control software. The Ethernet port is rated at 100Mbits/sec but can operate at lower speeds of 10 Mbits/sec or less.

2. **E-STOP** connector for connecting to the Emergency Stop. The Emergency stop or E-Stop is a necessary safety feature fitted to almost all motion control equipment. The E-Stop button is placed close to the operator and pressed when the rig is required to be stopped immediately. For pin-out information see [E-Stop Connector](#) on page 18.

3. **MAINS IN** connector to supply power. Orbital requires a 15A 240V DC power supply. For pin-out information see [Mains In connector](#) on page 18.

4. **SDI** port for viewing the HDMI output from the camera to a display.

5. **USB** port for downloading pictures and videos from the camera to the PC.
Connector pin-out information

E-Stop Connector

The ESTOP connector is a two-pin female connector, to which you attach the dedicated external E-stop buttons. The polarity does not matter, so there are no specific pin-out allocations. The rig will not operate without the E-stop buttons attached, as they complete the E-stop circuit loop and allow the rig to run. Breaking the circuit loop at any point (for example by depressing an E-stop button) invokes the E-stop for the entire rig.

Mains In connector

Power input connector for the Orbital. It is a 3-Way (Male) C14 IEC connector. 240 Volts AC.

1. Earth
2. Live
3. Neutral

SDI connector

The VIDEO connectors on the Orbital is rated at 3 GHz BNC connector allowing the camera signal come out through the base.

1. VIDEO (inner)
2. GND (outer)