med associates inc

instrumentation and software for research

ACTIVITY WHEEL WITH ELECTRONIC DRAG

ENV-042

PRODUCT MANUAL

DOC-099
Rev. 3.4

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CHAPTER 1

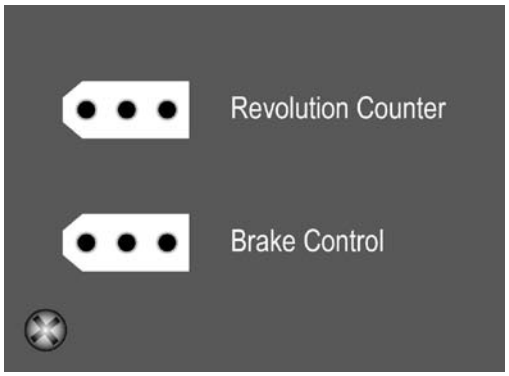
Overview

The ENV-042 Activity Wheel system includes a two bay modular resting cage which is separated from the entrance of the activity wheel by a manually operated guillotine door. The ENV-042 Activity Wheel also has an electronic brake with ten levels of drag that can be selected via a thumbwheel switch. With the brake off, the drag of the wheel is approximately 12 grams; however, in order to match multiple wheels, nine discrete steps from 15 to 80 grams may be selected. The electronic brake requires a separate 28 VDC power supply. A 90-degree cam, micro-switch, and LCD digital counter is provided for stand-alone operation. The cam switch may also be connected to any MED Associates' standard input module, SuperPort™, or SmartCtrl™ for automated data collection. For critical research, activity wheels may be ordered with an optional optical encoder. This provides a resolution of 5.625 degrees or up to 64 counts per full revolution.

CHAPTER 2

Connections (For Standard Activity Wheel Systems)

Figure 1 – Connection Panel



Brake Control Connector

The **Brake Control** connector is a male 3-pin mini-Molex. Connect one end of the supplied SG-218A cable to the Brake Control connector and the other end to any available Output on a standard MED Associates Connection Panel.

The pin out and function for this connector is as follows:

Figure 2 – 3-Pin Mini Molex Connector Diagram

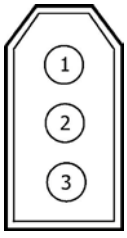


Table 1 – Brake Control Connector Pinout

Pin Number	Function
1	28 V Ground
2	Operate
3	+ 28 Volts DC

Revolution Counter Connector

The **Revolution Counter** connector is a male 3-pin mini-Molex. The two pins of this connector that are used give the user access to the wheel switch connections. Connect one end of the supplied SG-218A cable to the Revolution Counter connector and the other end to any available Input on a standard MED Associates Connection Panel.

The pin out and function for this connector is as follows:

Figure 3 – Revolution Counter Connector Diagram

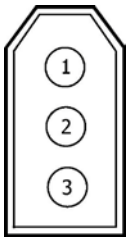


Table 2 – Revolution Counter Connector Pinout

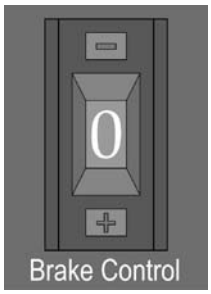
Pin Number	Function
1	28 V Ground
2	Normally Open Switch Contact
3	Not Used

CHAPTER 3

Operating Instructions

Electronic Brake Control

Figure 4 – Brake Control Thumbwheel Switch



Set the wheel drag tension by using the Brake Control thumbwheel switch mounted on the side of the control box. The drag tension has been factory set according to the chart below. It is possible to recalibrate the tension if desired. Call factory for details on recalibration.

Table 3 – Brake Control Thumbwheel Settings

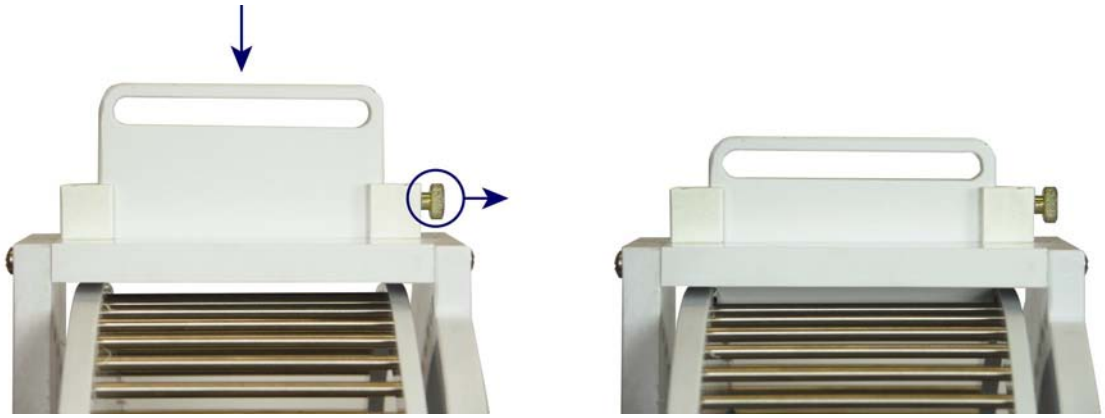
Thumbwheel Setting	Drag Tension (grams)
0	12
1	15
2	20
3	25
4	30
5	35
6	40
7	50
8	60
9	80

Manual Brake Control

The manual brake allows the wheel to be disabled without the use of external power. To engage the manual brake, pull out on the release knob while pressing down on the manual brake. It may be necessary to turn the wheel slightly for the brake to engage completely.

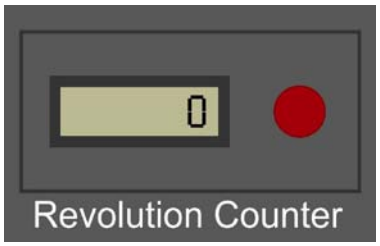
To disengage the manual brake, pull out on the release knob while pulling up on the manual brake handle.

Figure 5 – Engaging the Manual Brake



Revolution Counter

Figure 6 – Revolution Counter



The revolution counter will increment once for every quarter turn of the wheel. It will also provide a closed switch contact to the **Revolution Counter** output connector. To reset the counter, depress the small red button located on the face of the counter.

CHAPTER 4

Cleaning the Wheel

It is necessary to remove the controller box prior to cleaning the activity wheel. Once the controller box is removed, the unit is completely washable.

The controller box is easily removed from the unit by unscrewing the two thumbscrews on the top flange of the controller box, indicated as Step 1 in Figure 7. Pull the controller box straight away from the activity wheel. Next unscrew the two thumbscrews on the activity wheel base plate, indicated as Step 2 in Figure 7. Lift the activity wheel straight up off the base plate.

When replacing the controller box, it may be necessary to rotate the wheel slightly to properly align the drive spline.

Figure 7 – Removing the Thumbscrews