

USB ROTA-ROD TREADMILLS

USER'S MANUAL

ENV-575(M) / ENV-578(R) User's Manual
DOC-054
Rev. 1.6

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CHAPTER 1

Introduction

This manual applies to the ENV-575M Mouse, ENV-575 Rat, ENV-578 Extra-Tall Mouse and ENV-578R Extra-Tall Rat USB Rota-Rod Treadmills. These treadmills from MED Associates Inc. are designed to accurately measure both motor coordination and fatigue.

The Rota-Rod treadmill has two speed modes, fixed or accelerating. In the fixed speed mode the drum will turn at a constant speed. In the accelerating speed mode the drum begins turning at the lowest speed and takes five minutes to steadily reach the highest speed.

The Rota-Rod Treadmill has been specially machined to provide a suitable grip for the animal. The ENV-575M is divided into five test zones so that up to five animals may be tested at the same time, and the ENV-575 for rats, ENV-578 for mice and ENV-578R for rats each have four test zones.

Each zone has a photo beam that senses when the animal falls off the Treadmill. Once the photo beam is broken, the test data for that specific zone is automatically displayed on the computer screen and saved to the designated location. Up to four Rota-Rod Treadmills per computer can be supported.

CHAPTER 2

Driver and Software Installation

NOTE: Installation requires a password that is issued during software registration.

Insert the Rota-Rod Software CD into the CD-ROM drive and the screen shown in Figure 2-1 will appear. Click **Install the RotaRod Software** and the screen shown in Figure 2-2 will appear.

Figure 2-1 - Driver and Software Installation Screen



Click **Install** to begin installation. Complete the steps of the installation. Once the driver and software installations are complete, the screen shown in Figure 2-3 will appear.

Figure 2-2 – Installation Checklist



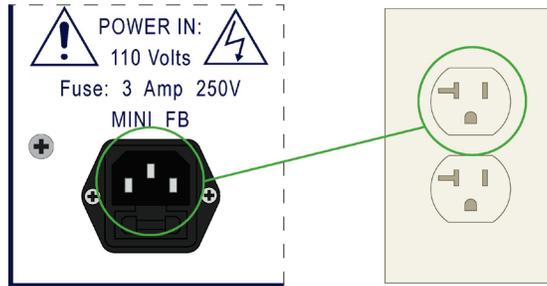
The driver and software have been successfully installed. Click **Finish** to close this screen.

Figure 2-3 – Driver and Software Installation Complete

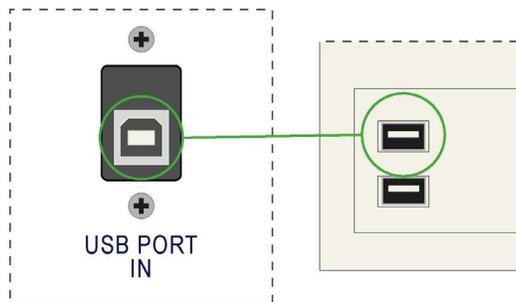


Device Driver Installation

Using the included power cord, plug the Rota-Rod into a standard wall outlet.



Using the included USB cable, connect the **USB PORT IN** on the Rota-Rod to any available USB port on the computer.



The screen shown in Figure 2-4 will appear. Select **Install the software automatically (Recommended)** and click **Next>**.

Figure 2-4 - Found New Hardware Wizard, USB Device Driver



The Generic USB Board driver has been installed, click **Finish** to close this screen and the screen shown in Figure 2-6 will appear.

Figure 2-5 - Generic USB Board Driver Installed



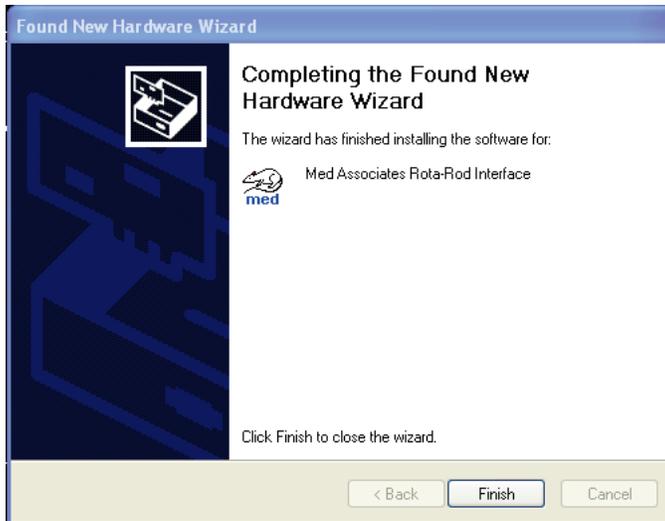
Select **Install the software automatically (Recommended)** and click **Next>**.

Figure 2-6 - Found New Hardware Wizard, RotaRod Interface Driver



All of the necessary drivers have now been installed and the hardware may now be used. Click **Finish** to close this screen.

Figure 2-7 - RotaRod Interface Driver Installed



CHAPTER 3

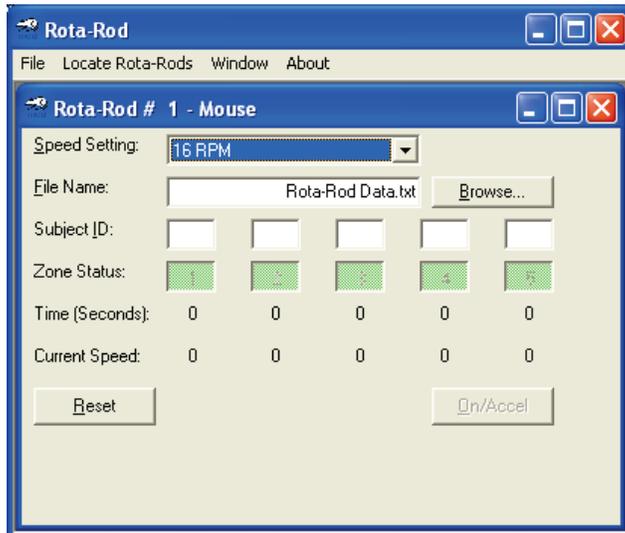
Running the Rota-Rod Software

Opening the Application

Open the Rota-Rod software by selecting **Start | Programs | Med Associates | Rota-Rod** or by double clicking on the desktop shortcut that was created during software installation.

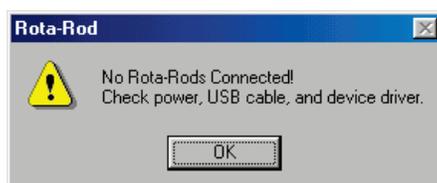
If the Rota-Rod is connect to the USB port on the computer that was used during driver installation and is plugged in and switched on, it will be detected by the software and the screen shown in Figure 3-1 will appear. The software detects whether the Rota-Rod is a mouse or rat version. If an ENV-578 Extra-Tall Mouse Rota-Rod is being used, please refer to the next section of this manual.

Figure 3-1 - Rota-Rod Software



If no Rota-Rods are detected, the message shown in Figure 3-2 will appear. If this message appears and the Rota-Rod(s) are connected, check the power to the Rota-Rod, the USB connection, and the driver installation. Select **Locate Rota-Rods** from the menu bar and the software will check again for the Rota-Rods. If it does not detect them, contact MED Associates, Inc. for support.

Figure 3-2 - No Rota-Rods Connected Message



Extra-Tall Mouse Rota-Rod

If an ENV-578 Extra-Tall Mouse Rota-Rod is being used, the screen will appear as shown below when the software is opened. Because the ENV-578 has only four stations (or zones) the status of Zone 5 is highlighted in red. Enable the **Extra Tall** option on the bottom of the screen, and Zone 5 will no longer appear on the screen, as shown in Figure 3-4.

Figure 3-3 – Rota-Rod Software Main Screen with ENV-578 Extra-Tall Mouse Rota-Rod

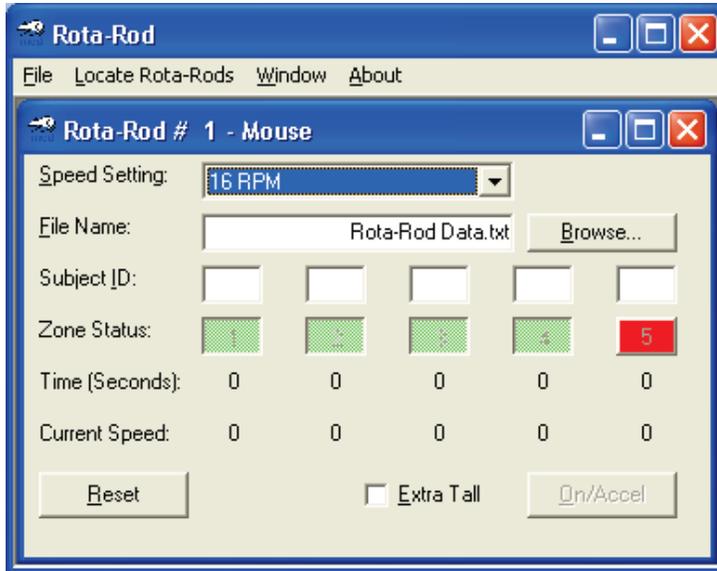
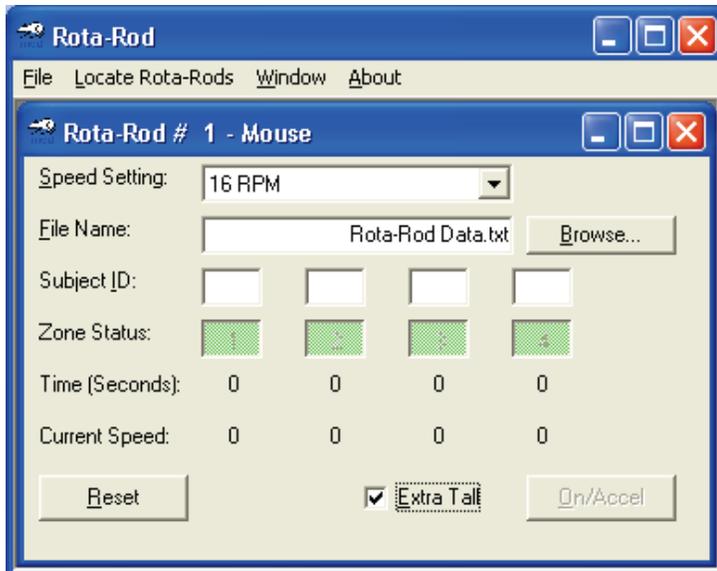


Figure 3-4 – Rota-Rod Main Screen with Extra-Tall Option Enabled



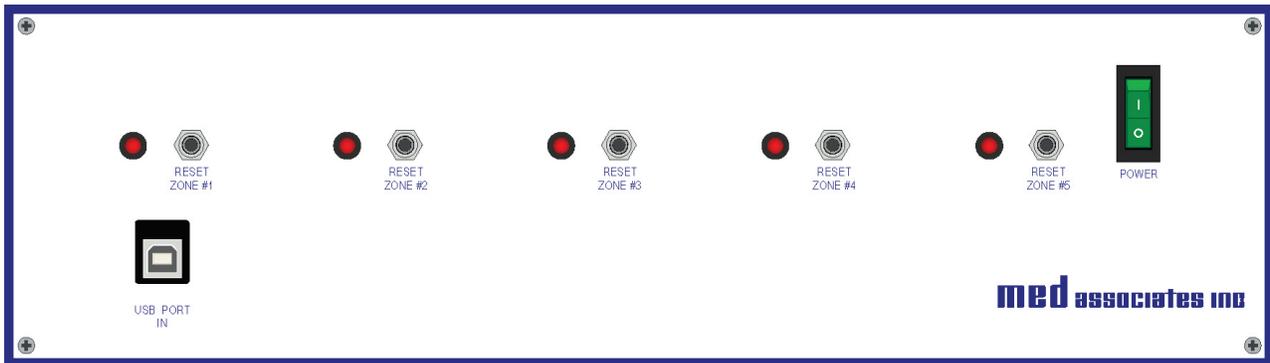
Resetting the Zone Status

The Zone Status indicators on the software main screen are green for zones that are ready to be run and red for zones that need to be reset.

Before resetting the zone, verify that the photobeams are not obstructed. Then, if any of the red fault indicators on the front of the Rota-Rod hardware are lit, press the corresponding **RESET** button(s) on the front panel of the Rota-Rod to clear them.

The Rota-Rod will not operate unless all zones are clear.

Figure 3-5 - Rota-Rod Control Panel



Setting the Speed

Use the Speed Setting drop-down menu to select the desired speed. The first five selections on the menu are the fixed speeds and the next five selections are the acceleration speeds. The acceleration speeds begin at the lower speed, and over a five-minute time period the speed gradually increases to the higher speed.

Note that the fixed speeds are different for the Mouse system than the Rat system. The Speed Setting menu displays the speeds for the type of system connected (mouse or rat).

Refer to Table 1 below for a list of speeds for each system.

Figure 3-6 - Speed Setting Pull Down Menu

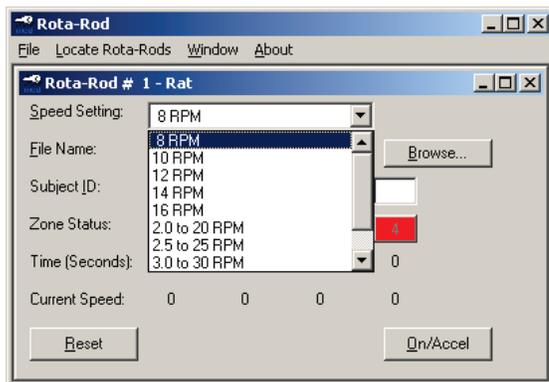


Table 1 – Rota-Rod Speed Settings

ENV-575 Rat Rota-Rod Treadmill	
Fixed Speeds	Accel Speeds
RPM	RPM
8	2.0-20
10	2.5-25
12	3.0-30
14	3.5-35
16	4.0-40

ENV-575M Mouse Rota-Rod Treadmill	
Fixed Speeds	Accel Speeds
RPM	RPM
16	2.0-20
20	2.5-25
24	3.0-30
28	3.5-35
32	4.0-40

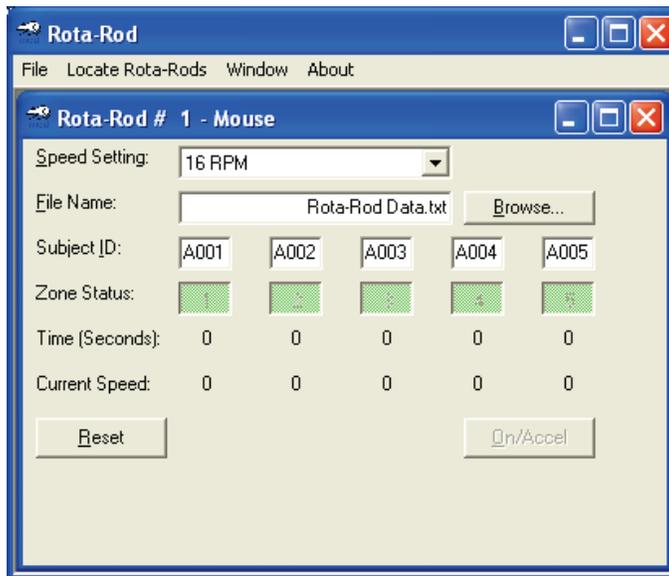
Selecting Data Destination Folder

To enter the File Name for storing the data, select **File | Save As** or click the **Browse** button, then select a directory or filename. Select the **Save** button to store the filename and directory. If no path is specified, the data will be stored in the same directory as the Rota-Rod application.

Entering Subject IDs

If desired, enter the Subject IDs to identify the subjects in each zone on the Rota-Rod. The Subject ID field display four characters; however, more characters may be used and they will be output in their entirety in the data file.

Figure 3-7 - Entering Subject IDs



Starting the Rota-Rod

To start the Rota-Rod, click the **Reset** button and the Rota-Rod will start turning. If a fixed speed is selected, the Rota-Rod will turn at that speed and if an accelerating speed is selected the Rota-Rod will turn at the beginning (or lowest) speed. This is useful if it is preferred to place the animals on the Rota-Rod while it is turning, but before the Time counters starts.

Clicking the **On/Accel** button causes the Time counters to start incrementing every second, and if an accelerating speed is selected, the five-minute acceleration period will begin. Once the Rota-Rod is running, the **On/Accel** button becomes the **Abort** button.

Once a photo beam is broken, the Time counter for that zone will stop and the data for that zone will be written to the data file.

If another animal is to be run in this zone, at the same speed the unit is currently running, update the Subject ID and reset the Zone Status. Resetting the Zone Status will also reset the Time counter. It is important to remember to change the Subject ID before resetting the beam so the correct Subject ID will be saved to the data file.

The Rota-Rod will stop if the photobeams for all zones have been interrupted.

Stopping the Rota-Rod

To stop the Rota-Rod, click the **Abort** button.

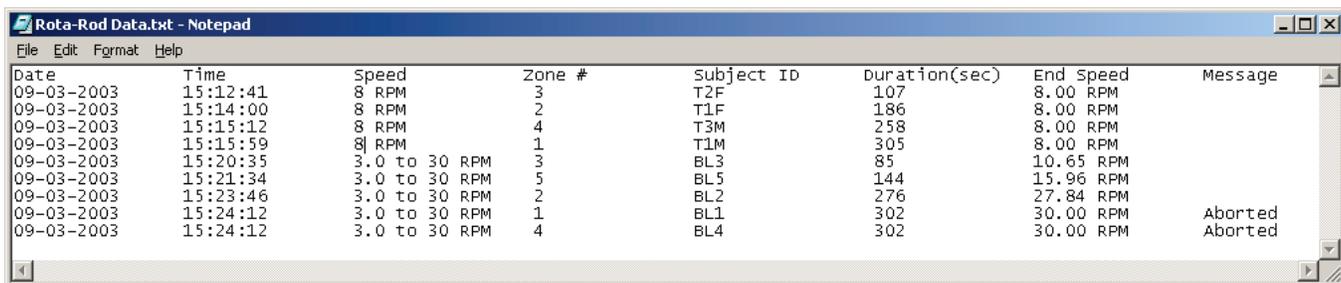
CHAPTER 4

The Rota-Rod Data File

The Rota-Rod data file is a tab-delimited text file. This file can be easily imported into a spreadsheet, such as Microsoft Excel™.

The data file contains a header row that describes the data stored in each column. Each subsequent row in the data file contains information about a Rota-Rod session. The Message column will be blank unless the session was aborted.

Figure 4-1 - Sample Data File



Date	Time	Speed	Zone #	Subject ID	Duration(sec)	End Speed	Message
09-03-2003	15:12:41	8 RPM	3	T2F	107	8.00 RPM	
09-03-2003	15:14:00	8 RPM	2	T1F	186	8.00 RPM	
09-03-2003	15:15:12	8 RPM	4	T3M	258	8.00 RPM	
09-03-2003	15:15:59	8 RPM	1	T1M	305	8.00 RPM	
09-03-2003	15:20:35	3.0 to 30 RPM	3	BL3	85	10.65 RPM	
09-03-2003	15:21:34	3.0 to 30 RPM	5	BL5	144	15.96 RPM	
09-03-2003	15:23:46	3.0 to 30 RPM	2	BL2	276	27.84 RPM	
09-03-2003	15:24:12	3.0 to 30 RPM	1	BL1	302	30.00 RPM	Aborted
09-03-2003	15:24:12	3.0 to 30 RPM	4	BL4	302	30.00 RPM	Aborted

CHAPTER 5

Adjusting the Tension Knob

The tension knob on the right side of the Rota-Rod base, adjusts the tension on the drive chain. This tension is factory set, and should not need to be changed. However, if adjustments are necessary, loosen the adjustment knob and allow the weight of the drive motor to drop the adjustment knob. Do not lift or press down on the adjustment knob. Tighten the adjustment knob.

Figure 5-1 – Rota-Rod Adjustment Knob

