

## MODEL MK-670

### ROTA-ROD TREADMILL FOR RATS & MICE



MK-670 is used to assess the effect of drugs, brain damage, diseases on motor-coordination or fatigue resistance. Both rats and mice can be tested. Rod is divided into five (5) sections and each section can be used independently. Keypad and all the switches and indicators are located on the inclined front panel. The revolving speed can be set for the range of 1 - 20 RPM by 1 RPM steps. When animals stop running and fall off the rod onto the plates, the counting stops and staying time on the rod is displayed on LCD. Falling is detected by photo-beam.

The RS-232C interface is provided on the rear panel of the main unit. Using the attached Data Collection Software (Windows Version) the data obtained can be exported to a personal computer and saved as a CSV file.

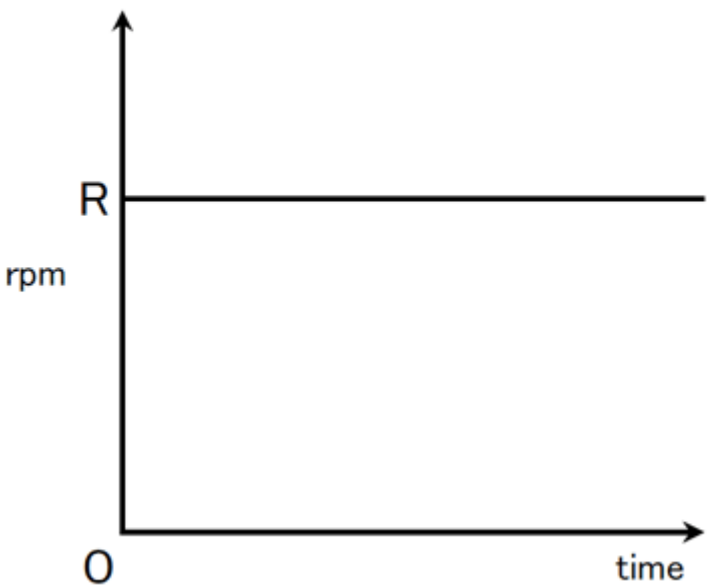
**In addition to the conventional constant speed mode (MODE A), the 2 acceleration modes (MODE B and C) and the programming mode (MODE D) are included in the standard system.**

#### Main Features

- Each counter gets started or reset independently.
- The revolving speed can be set for the range of 1 - 20 rpm by 1 rpm steps.
- Constant or accelerated speed mode can be selected by the key.
- Speed and acceleration rate are programmable.
- Cleaning work is very easy, since plastic trays are provided with each division for excrements. Further, the top part of the unit can be removed by loosening one screw.
- DCS-670 Data Collection Software comes supplied with the system.
- Printer is available as optional extra in two types ----- Thermal and Dot-Impact. When printer is connected, test results will be printed out at the same time when animals fall.

## SPECIFICATIONS

MAIN UNIT	
Revolving Speed	1 - 20 rpm (1 rpm steps) *MODE A Can be preset with the keyboard and displayed on LCD
Rod Diameter	Rat : 90 mm    Mouse : 30 mm
Material of Rota	Polyvinyl Chloride
Flange to Flange Distance	80 mm
Display	Date, Time, Revolving Speed, Cut-Off Time, Lapse Time of Each Channel (3 digit, by second)
RS232C Output Port	Baud Rate : 9600 bps    Connector : D-sub 9P male
Power	AC 85-130V    50 or 60 Hz
Dimension	650W x 420D x 500 mmH
Weight	Approx. 18 kg

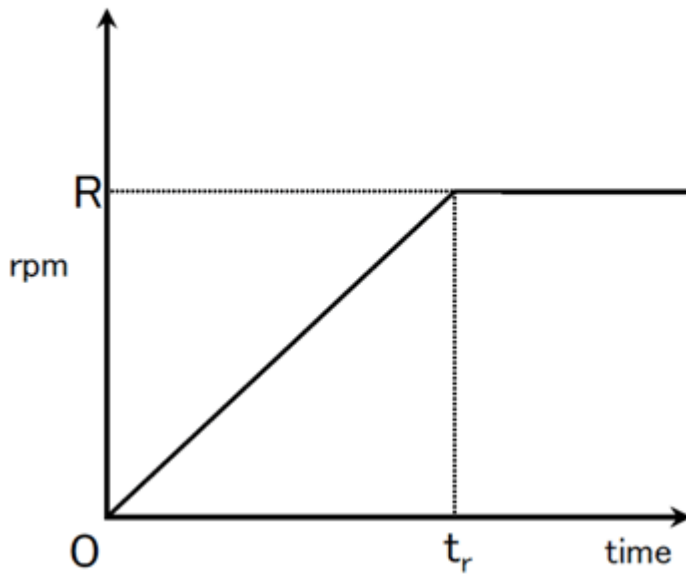
MODE A													
<p><b>MODE A is the constant speed mode. (1 - 20 rpm by 1 rpm steps)</b>            Measurement in each lane starts and ends independently. When animals stop running and fall off the rod onto the plates, the counting stops and staying time on the rod is displayed on LCD.</p>													
<div style="text-align: center;"> <p><b>MODE A</b></p>  </div>	<table border="1" style="width: 100%;"> <thead> <tr> <th style="background-color: #00FFCC;">PARAMETER</th> <th style="background-color: #00FFCC;"></th> </tr> </thead> <tbody> <tr> <td>Test Number</td> <td>Can be entered up to 10 digits</td> </tr> <tr> <td>Number of Revolution</td> <td>1-20 rpm ( by 1 rpm steps)</td> </tr> <tr> <td>Cutoff Time</td> <td>0-999 sec (by 1 sec steps)</td> </tr> </tbody> </table> <table border="1" style="width: 100%;"> <tr> <td style="width: 15%;">LCD</td> <td>Time elapsed in each lane, Number of revolution</td> </tr> <tr> <td>Outputs</td> <td>Date, Mode, Test Number, Number of Revolution, Cutoff Time, Start and End Time in Each Lane, Staying Time on Rod</td> </tr> </table>	PARAMETER		Test Number	Can be entered up to 10 digits	Number of Revolution	1-20 rpm ( by 1 rpm steps)	Cutoff Time	0-999 sec (by 1 sec steps)	LCD	Time elapsed in each lane, Number of revolution	Outputs	Date, Mode, Test Number, Number of Revolution, Cutoff Time, Start and End Time in Each Lane, Staying Time on Rod
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**MODE B**

**MODE B is the acceleration mode I.**

Select number of revolution to reach finally and accelerating duration from the list below. (75 combination is available) Acceleration gets started for all the lanes when the rotor is in a state of complete stop. When the animal falls, time measurement of the corresponding lane will be stopped. When it reaches the preset number of revolution, it keeps on revolving at the speed. When all the animals fall, the measurement will be terminated and the rotor drum will come to a complete stop.

**MODE B**



PARAMETER	
Test Number	Can be entered up to 10 digits
No. of Revolution to Reach	10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80rpm (Select either)
Accelerating Time	60, 120, 180, 240, 300 sec (Select either)

LCD	Time elapsed in each lane, Operation mode
Outputs	Date, Mode, Test Number, Number of Revolution to Reach finally, Accelerating Time, Start and End Time in Each Lane, Staying Time on Rod, Number of Revolution when animals fell

Example : Number of revolution to reach finally and accelerating time are 40 rpm and 60 sec, respectively

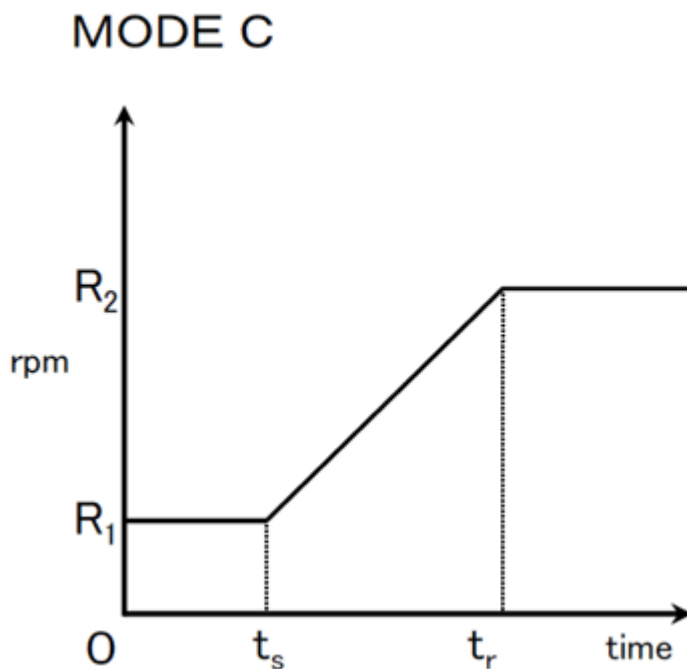
The rotor starts acceleration so that it will reach 40 rpm in a period of 60 seconds. When it reaches 40 rpm, it keeps the speed of 40 rpm. In this case number of revolution will reach 10 rpm in a period of 15 seconds and 20 rpm in 30 seconds.

## MODE C

### MODE C is the acceleration mode II.

Select number of revolution to reach finally and accelerating time from the list. (45 combination is available)

Measurement in all the lanes starts at the same time when the rotor is revolving at the speed of 1/10th of the number of revolution to reach finally. When the animal falls, time measurement of the corresponding lane will be stopped. When it reaches the preset number of revolution, it keeps on revolving at the speed. When all the animals fall, the measurement will be terminated and the rotor drum will come to a complete stop.



PARAMETER	
Test Number	Can be entered up to 10 digits
No. of Revolution to Reach	10, 15, 20, 25, 30, 35, 40, 45, 50 rpm (Select either)
Accelerating Time	60, 120, 180, 240, 300 (Select either)

LCD	Time elapsed in each lane, Operation mode
Outputs	Date, Mode, Test Number, Number of Revolution to Reach finally, Accelerating Time, Start and End Time of Each Lane, Staying Time on Rod, Number of Revolution when animals fall

O: Measurement starts at the speed of 1/10th of the number of revolution to reach finally.

$t_s$ : starting point set up by the operator.

$t_s - t_r$ : acceleration time

Example : Number of revolution to reach finally and accelerating time are 40 rpm and 60 sec, respectively

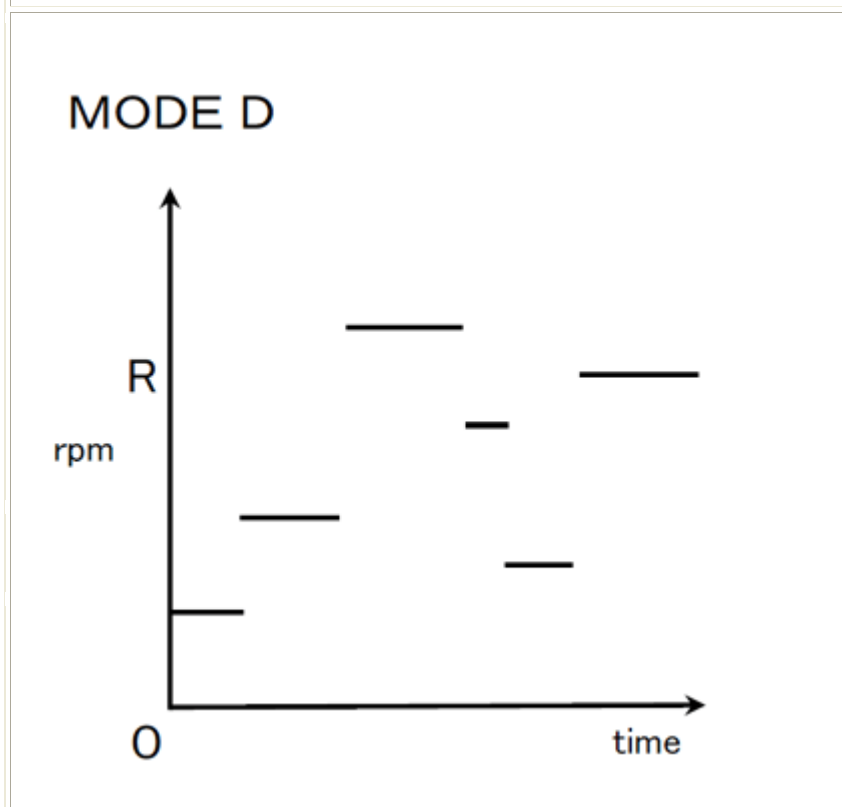
The rotor starts acceleration when the rotor is revolving at the speed of 4 rpm so that it will reach 40 rpm in a period of 60 seconds. When it reaches 40 rpm, it keeps the speed of 40 rpm. In this case number of revolution will reach 13 rpm in 15 sec and 22 rpm in 30 sec.

Difference between MODE B & MODE C		
	No. of revolution at the start of measurement	Pattern
<b>MODE B</b>	0 (Complete stop)	75
<b>MODE C</b>	1/10 of number of revolution to reach finally	45

## MODE D

### MODE D is the programming mode.

Number of revolution and revolving duration can be programmed up to 6 steps. Measurement of each lane starts at the same time when the rod is in a state of complete stop. When animals stop running and fall off the rod onto the plates, the counting of each lane stops and staying time on the rod is displayed on LCD. The measurement will be terminated and the rotor drum will come to a complete stop either when all the animals fall or the preset program is finished.



PARAMETER	
Test Number	Can be entered up to 10 digits
Number of Step	Up to 6 steps
Number of Revolution	1-60 rpm (by 1 rpm steps)
Duration	1-3600 seconds for each step Total duration must be up to 3600 sec

LCD	Time elapsed in each lane, Operation mode
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Outputs	Date, Mode, Test Number, Programmed Contents, Start and End Time in Each Lane, Staying Time on Rod, Number of Revolution at the step executed when animals fall
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The Standard System Includes:	
MK-670 Main Unit	1
Rat Adaptor	5
DCS-MRR Data Collection Software (Windows Version)	1
RS232C Communication Cable (1.5 m)	1
Dust Cover	1



Used for Mice



Used for Rats

NOTE: MK-610A Rota-Rod Treadmill for Mice and MK-630B Single-Lane Rota-Rod Treadmill for Rat & Mouse are also available.

Specifications are subject to change without notice.

**MUROMACHI KIKAI CO., LTD.**

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