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INTO INSTRUMENTS

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MOTORY COORDINATION, ACTIVITY, GRIP STRENGTH

# Rat Rota-Rod

Cat. No. 47750



## General

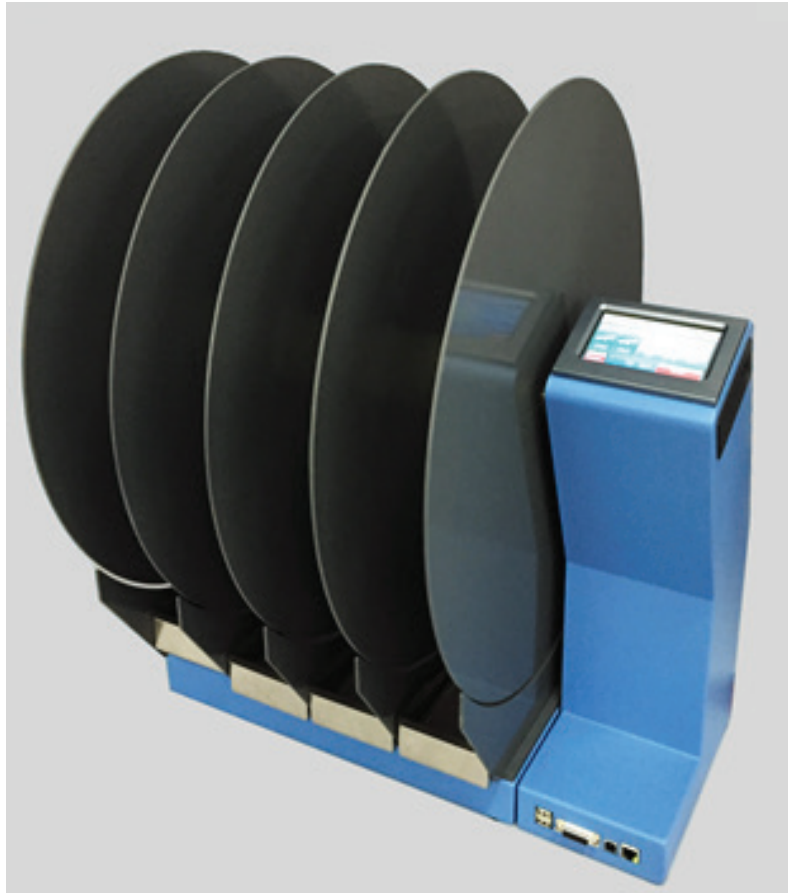
Ugo Basile designed the first industrial Rota-Rod in the 1960s, based on the 1957 paper by N.W Dunham and T.S Miya.

The name we coined soon became so popular, now everybody knows this instrument as RotaRod!

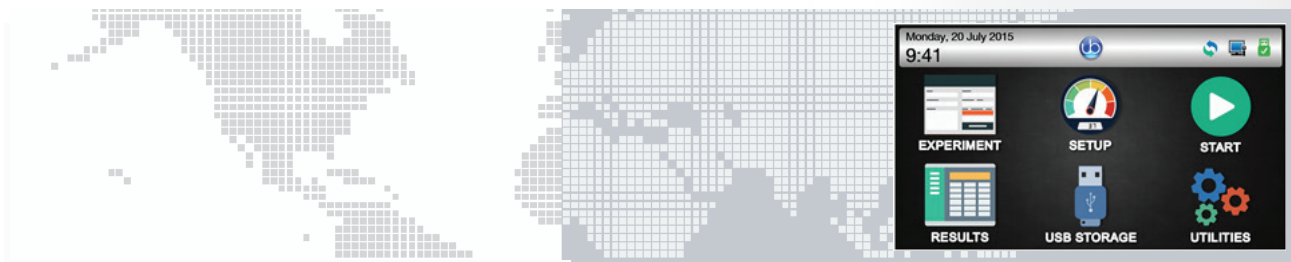
The Rota-Rod is the reference test to screen drugs potentially active, or having side effects, on motor coordination.

The **47750 Rota-Rod NG** (Next Generation), is an evolution of the original model and the result of many years of research in cooperation with the latest development in behavioral and pharmacological research.

The 47750 combines the same functionality of the previous version, now considered the standard, with additional new features: **surprisingly silent operation, much easier experimental organization and data management.**



- UGO BASILE DESIGNED THE ORIGINAL ROTA-ROD IN THE 1960S; SINCE THEN, OUR ROTA-RODS HAVE BEEN CITED IN THOUSANDS OF SCIENTIFIC PAPERS
- NEXT GENERATION ROTA-ROD: SAME RELIABILITY, INNOVATIVE TECHNOLOGY!



## Main Features

- **SPEED:** adjustable in the range 3-80 RPM, in steps of 1 RPM
- **MODE:** constant, ramp (accelerating), multi-step ramp and pause (**NEW!**)
- **ROTATION:** forward, reverse and rocking
- **DRIVE:** totally silent motor. Zero noise!
- **CONTROLS:** 4"3 touch-screen to set and monitor the test
- **X-PAD SOFTWARE:** brand new, user-friendly version, to set the experiment and manage the results
- **DETECTION:** new design: trip-boxes to enclose the animals, stainless-steel to ease sterilization

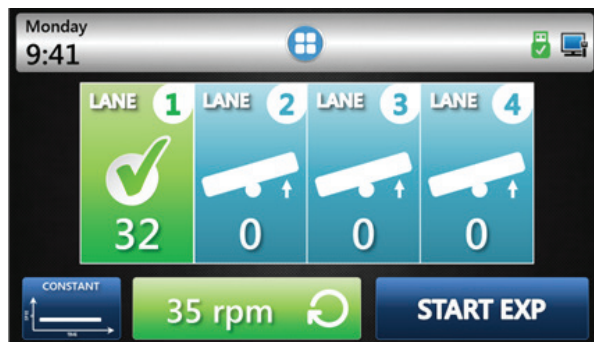
Ugo Basile: more than 25,000 citations

## General

The Ugo Basile Rota-Rod NG consists of a 6cm diam. rod, suitably machined to provide grip. Five flanges divide the four 8.7cm lanes, enabling **four** rats to be simultaneously on test.

When a rat falls off its rod section into the trip-box below, its endurance in RPMs is recorded. Height to fall is 30cm.

A 4"3 touch-screen shows the information for each section, and indicates the actual speed, (RPM):



## What's new

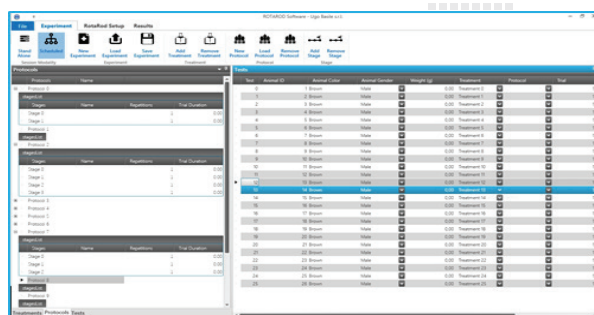
Physically similar to the previous versions, the new model features stainless-steel trip-boxes to facilitate cleaning and confine the animals when they fall off the rod.

Totally new is the software included as standard, see paragraphs below. Remote diagnosis and internet access are provided.

## Experimental Configuration

Via the new **X-PAD** software, the operator can easily **organize** the experiment on her/his PC, and upload it to the Rota-Rod via the USB key. Custom ramp and pause are managed via the X-PAD only.

Treatments, protocols, stages, animals, and various test features (speed, mode, revolution, etc.) can be quickly defined and saved for future use.



## Data Collection and Management

A basic version of the collected data can be viewed on the touch-screen; when transferred to PC via USB drive, test results appear in full version.

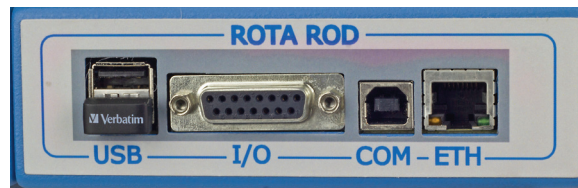
The **X-PAD** software automatically classifies the data, combining configuration settings with test results. The user can add information, before or after the test. Results appear in a tree-like structure, where columns can be dragged and dropped to customize the layout.

Configurations and data are exported as **Text**, **Excel** or **Pdf** reports and can be saved to cloud via **DropBox**, **OneDrive**, **GoogleDrive**.

## 47850 Combo-Package for Mouse & Rat

You work with both rats and mice? You should consider the Combination Package 47850, including both Mouse and Rat Rota-Rods.

## Connections



**USB1** this USB 2.0 enables data exchange (protocols & results) with the PC, and allows firmware upgrades

**USB2** the lower USB port accommodates the USB storage key and should not be removed

**I/O** D-SUB 15 connector provides TTL outputs for lane status, rotation and speed

**COM** USB-B 2.0 allows communication to the PC (for factory use only)

**ETH** Ethernet connector for remote diagnosis & Internet access

## Ordering Information

**47750** **RAT ROTA-ROD**, standard package, including:

**47750-320** Stainless-Steel Trip-Box

**47750-302** Instruction Manual (on USB key)

**X-PAD** Dedicated Software Package (on USB)

Mains Cord

### Optional

**47850** Combination Package 47650 Mouse Rota-Rod and 47750 Rat Rota-Rod

### Physical

Universal input 85-264 VAC, 50/60 Hz

Dimensions 55(w)x46(d)x57(h)cm

Weight Kg 15

Shipping Weight Kg 21 (approx.)

Packing 76x60x75cm

## Bibliography

### Method Papers

- N.W. Dunham & T.S. Miya: "A Note on a Simple Apparatus for Detecting Neurological Deficit in Rats & Mice" *J. Am. Pharmaceut. Assoc.*, Scientific Edit., XLVI: No. 3, 1957
- B.J. Jones & D.J. Roberts: "The Quantitative Measurement of Motor Incoordination in Naive Mice Using an Accelerating Rotarod" *J. Pharm. Pharmacol.*: 20: 302-304, 1968

### Papers Dealing With UB Rat Rota-Rod

- L. Micheli et alia: "Acute and subchronic antinociceptive effects of nociception/orphanin FQ receptor agonists infused by intrathecal route in rats" *Eur. J. Pharmacol.* 754: 73-81, 2015
- L. A. Griffiths et alia: "Knocking Down Metabotropic Glutamate Receptor 1 Improves Survival And Disease Progression in the SOD1G93A Mouse Model of Amyotrophic Lateral Sclerosis" *J. Of Pain*, accepted manuscript, 2015
- JV. Jokinen et alia: "Pregabalin enhances the antinociceptive effect of oxycodone and morphine in thermal models of nociception in the rat without any pharmacokinetic interactions" *Eur. J. Pain* DOI: 10.1002/ejp.728, 2015
- JF. Barthel et alia: "Long-term Application of Glycine Transporter Inhibitors Acts Antineuropathic and Modulates Spinal N-methyl-D-aspartate Receptor Subunit NR-1 Expression in Rats" *Anesthesiology* 121.1: 160-169, 2014
- C.D. Heldermon et alia: "Therapeutic Efficacy of Bone Marrow Transplant, Intracranial AAV-mediated Gene Therapy, or Both in the Mouse Model of MPS IIIB" *Molecular Therapy* 15(5): 873-880, 2010 (*rocking, mouse*)