

Grip Strength Meter

Cat. No. 47200

General

The Ugo Basile Grip Strength Meter automatically measures grip-strength (*i.e.* peak force and time resistance) of forelimb or hindlimb (via the grid) in rats and mice.

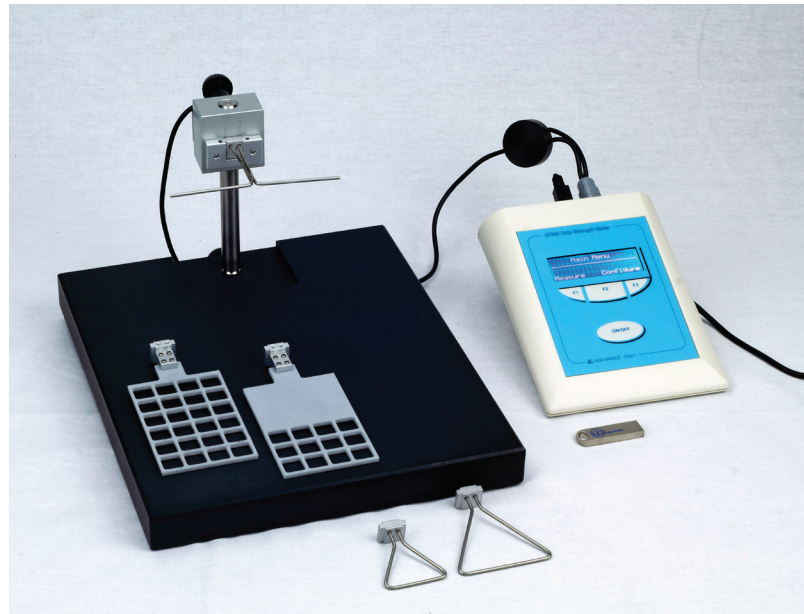
The Grip Strength test is a perfect complement to the gold standard Ugo Basile Rota-Rod device for motor coordination and motor function experiments.

The effects of drugs, toxins, muscle relaxants, disease, ageing or neural damage on muscle strength may be assessed.

The animal is placed over a base plate, in front of a grasping tool (either T-shaped, trapeze-shaped or grid), whose height is adjustable.

The bar is fitted to a force sensor connected to the control unit, which can be used as a stand-alone or connected to a PC via the USB port, for monitoring and data recording, via the **NEW** software provided as standard

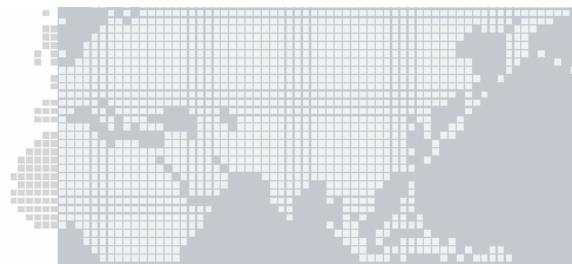
Full Optional
including software
3 grasping tools &
2 grasping grids



Consistency
facilitated by the
force-rate
monitoring tool

for Rats

for Mice



Features and Benefits

- Software included - **NEW 2014 Release**
- Grasping tools and grasping-grids included for rats and mice
- No calibration needed
- Force-rate monitoring (via software or LCD display)
- Grasping bar / grasping trapeze positioned at adjustable height. Optional metal grid available
- Maximum applicable force 1500g; resolution 0.1g

Rationale of the Grip Strength test

When pulled by the tail, the animal grasps at the bar. Rodents instinctively grab anything they can, to try to stop this involuntary backward movement, until the pulling force overcomes their grip strength. After the animal loses its grip on the grasping bar, the peak amplifier **automatically stores the peak pull-force achieved by the limbs** and shows it on the display.

The instrument basically consists of a base plate of black sand-blasted Perspex, complete with a force transducer and a grasping device (bar, trapeze or the optional grid), which can be positioned at an adjustable height.

The force transducer has a maximum applicable force of 1500g, with a resolution 0.1g.

The transducer incorporates a proprietary memory chip to store all calibration parameters, so that no further calibration is required for normal use; moreover, the controller will prompt to auto-zeroing routine at every measurement to automatically adjust any offset.

Data Monitoring and Storage

The device comes standard with both a control unit with internal memory and the **new DCA software** for signal monitoring, data transfer and analysis.

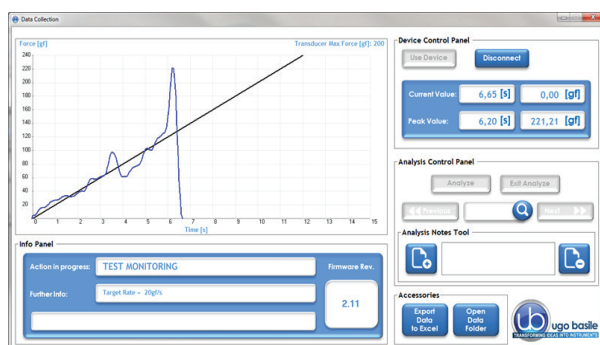
Once saved, data can be browsed on the control unit and/or transferred to a PC in proprietary, Excel (.xls) or text (.txt) format, to be managed by most statistical analysis packages available on the market.

Ease of use

The GSM device has been designed to make sensitivity experiments easy and consistent, thanks to its:

- Effective **peak detector**, for a reliable and automated detection of the animal response
- **Ratemeter** feature (on control unit), ensuring the desired force is applied at a consistent rate
- **NEW Software**, acting as a quality control tool, by showing the applied pulling force (**blue line**), the desired target force rate (**black line**), and the peak detection in real time (**Slope function**).

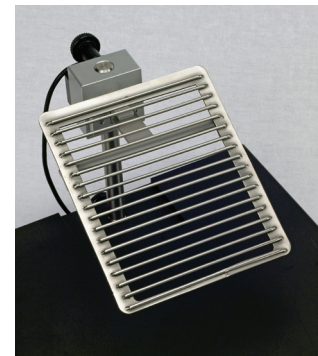
The experimenter can consistently apply the force (pull the animal) at the desired rate, by making sure that the blue trace lays on the black line, see figure:



Grasping-Grids

Two basic plastic grasping-grids are included in the standard package, for integrated measurement of the four limbs or hindlimbs (partly blind grid) in mice, see front picture.

A metal grid, Cat. No. **47200-327**, 13x1cm is also available as optional.



Ordering Information

47200	Grip-Strength Meter , new model for rats & mice, complete with following standard accessories
47200-001	Control Unit, with Power Supply
47200-002	Force Sensor
47200-004	Baseplate and upright
38500-011	DCA Software (on USB Key)
M-LM 589	T-shaped Grip-Bar
M-LM 590	Grip-Trapeze for Rat
M-LM 588	Grip-Trapeze for Mouse
47200-325	Mouse Grasping Grid
47200-326	Mouse Grasping Grid ("blind" top)
38500-303	Pedal Switch
52010-325	USB Cable

All components lodged in a dedicated plastic case

Physical

Weight	4.8kg
Shipping weight	6.5Kg
Packing	46x38x27cm

Bibliography

- J.D. Lee et alia: "Pharmacological inhibition of complement C5a-C5aR1 signalling ameliorates disease pathology in the hSOD1G93A mouse model of amyotrophic lateral sclerosis" *Br. J. Pharmacol.* DOI: 10.1111/bph.13730, 2017
- M. Wiesmann et alia: "A specific dietary intervention to restore brain structure and function after ischemic stroke" *Theranotics* 7 (2): 493-512, 2017
- A. Lenihan et alia: "Decreased Anxiety-Related Behaviour but Apparently Unperturbed NUMB Function in Ligand of NUMB Protein-X (LNX) 1/2 Double Knockout Mice" *Molecular Neurobiology*: 1-20, 2016
- G.J. Huang et alia: "Ectopic Cerebellar Cell Migration Causes Maldevelopment of Purkinje Cells and Abnormal Motor Behaviour in Cxcr4 Null Mice". *PLoS ONE* 9 (2): e86471, 2014 (Mouse)
- R. Barone et alia: "Endurance Exercise and Conjugated Linoleic Acid (CLA) Supplementation Up-Regulate CYP17A1 and Stimulate Testosterone Biosynthesis" *PLoS ONE* 8 (11): e79686, 2013 (Mouse)
- N. Lange et alia: "Behavioural and Pharmacological Examinations in a Transgenic Mouse Model of 2 early-onset torsion dystonia" *Pharmacology, Biochemistry and Behavior* 97 (4): 647-655, 2011 (Mouse)
- M. Savic et alia: "Behavioural Characterization of Four Endemic Stachys Taxa" *Phytother. Res.*, 2010 (Rat)