

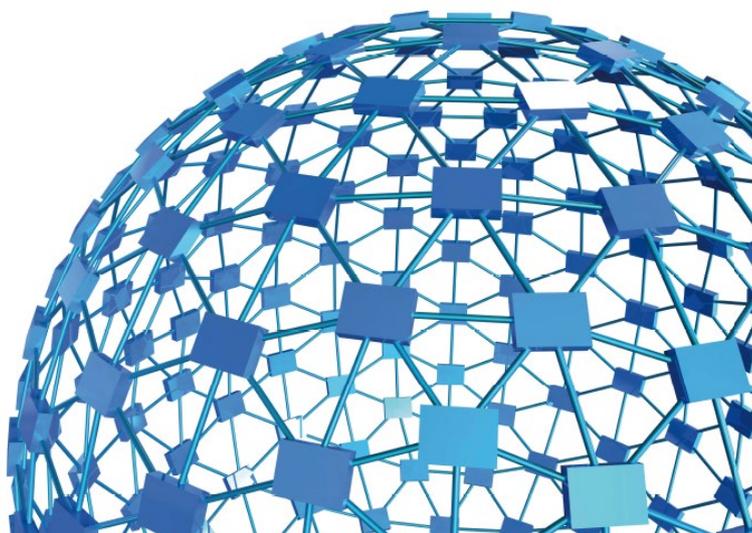


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TRANSFORMING IDEAS  
INTO INSTRUMENTS

# instruction manual

**Set-Up for Passive Avoidance (step-down)**  
**Cat. No. 40570**



**UGO BASILE S.R.L.**

[sales@ugobasile.com](mailto:sales@ugobasile.com) / [service@ugobasile.com](mailto:service@ugobasile.com) [www.ugobasile.com](http://www.ugobasile.com)

**UGO BASILE S.R.L.**

Via G. Di Vittorio, 2  
21036 GEMONIO, VA, ITALY  
Phone: +39 0332 744574

sales@ugobasile.com / service@ugobasile.com  
www.ugobasile.com

**instruction manual**

**Passive Avoidance Set-Up  
Cat. No. 40570**

Serial No.

## **SAFETY CONSIDERATIONS**

**ALTHOUGH THIS INSTRUMENT HAS BEEN DESIGNED WITH INTERNATIONAL SAFETY STANDARD, THIS MANUAL CONTAINS INFORMATION, CAUTIONS AND WARNINGS WHICH MUST BE FOLLOWED TO ENSURE SAFE OPERATION AND TO RETAIN THE INSTRUMENT IN SAFE CONDITIONS.**

**SERVICE AND ADJUSTMENTS SHOULD BE CARRIED OUT BY QUALIFIED PERSONNEL, AUTHORIZED BY UGO BASILE ORGANIZATION.**

**ANY ADJUSTMENT, MAINTENANCE AND REPAIR OF THE OPENED INSTRUMENT UNDER VOLTAGE SHOULD BE AVOIDED AS MUCH AS POSSIBLE AND, WHEN INEVITABLE, SHOULD BE CARRIED OUT BY A SKILLED PERSON WHO IS AWARE OF THE HAZARD INVOLVED.**

**CAPACITORS INSIDE THE INSTRUMENT MAY STILL BE CHARGED EVEN IF THE INSTRUMENT HAS BEEN DISCONNECTED FROM ITS SOURCE OF SUPPLY.**

Instruction Manual dated March 2019  
Revision 0





## Passive Avoidance Step-Down *New Model*

Cat. No. 40570

### General

The **Passive Avoidance step-down cage**, for **mice or immature rats**, is based on the step-down scheme in which the animal is dropped on an elevated platform which becomes uncomfortable because of vibrations.

The instrument basically consists of an **arena**, shaped as a cage (Cat. No. **47573**) and a control unit with touch-screen

The method is based on the mouse tendency to step-down a small platform, uncomfortable because of vibrations, onto the floor of the testing apparatus, which is electrified.

The animal inhibits its behaviour in order to avoid shock; this is measured by longer latency or refusal to step down. Latency is used to assess memory.

Increase or decrease of the **retention latency** gives an indication of improvement or impairment in memory and learning processes.



Step-Down Cage

Multiple-Cage Set-Up

Measures the increase/decrease of retention latency to study memory & learning processes



### Main Features

- The electronic unit encompasses all controls for **up to 4 animal cages!**
- Specifically designed for mice or immature rats
- Latency time recorded down to 0.1 seconds

### NEW on the 2014 version!

- The new "launcher" application, makes it possible to manage other UB behavioral cages with the same **Touch-Screen Controller 40500-001**; just purchase the hardware and the application software for the additional test!
- **Remote Control feature** will make remote service and software upgrades extremely simple!



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## CHECK-LIST

### Cat. 40570 Passive Avoidance Step-Down

CLIENTE / CUSTOMER \_\_\_\_\_

Ordine No. / Order No. \_\_\_\_\_ Data / Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_

UB code	CAT.No.	✓	Q.ty	DESCRIPTION	DESCRIZIONE		
	40500-001		1	CONTROLLER & SHOCKER	UNITÀ CONTROLLO CON SHOCKER		
	40570-010	✓		SOFTWARE ACTIVATION	SOFTWARE E ATTIVAZIONE		
<b>↳ IMPORTANT: SOFTWARE IS PRE-INSTALLED ON 40500-001</b>							
	47573		1	P.A. MOUSE CAGE (STEP)	GABBIA P.A. TOPO (STEP-DOWN)		
	47573-320		1	VIBRATING PLATFORM, Ø 7cm	PIATTAFORMA Ø 7cm		
	47573-321		1	VIBRATING PLATFORM, Ø 11cm	PIATTAFORMA Ø 11cm		
	47573-322		1	CATCH PAN	VASCHETTA RACCOLTA FECI		
	40570-303		1	PEDAL SWITCH	PEDALE		
E-AU 041 USB pen-drive	40550-302		1	INSTRUCTION MANUAL	MANUALE DI ISTRUZIONE		
<b>↳ INSTRUCTION MANUAL IS ALSO ONLINE, ON THE TOUCH-SCREEN CONTROLLER</b>							
E-AU 074			1	POWER SUPPLY	ALIMENTATORE		
E-WP 008				MAINS CABLE	EUROPE	CAVO RETE	EUROPA
E-WP 008-1					U.S.A.		U.S.A.
<b>OPTIONAL (MULTIPLE CAGES)</b>							
	40500-005		1	EXPANSION BOX	BOX ESPANSIONE		
	47573			ADDITIONAL P.A. MOUSE CAGE/S	GABBIA P.A. TOPO AGGIUNTIVA		

DATE / /	Serial No.	IMBALLATO DA / PACKED BY
Universal Input 85-264 VAC, 50-60Hz		

#### IMPORTANT/IMPORTANTE:

Check the shipment for completeness immediately after receipt: should you find any discrepancy, please fill in the following part and transmit it to our fax no. **+39 0332 745488**

Al ricevimento della merce controllate che la spedizione sia completa: in caso di discrepanza, completate il formulario di seguito riportato ed **inviatelo** al nostro fax no. **0332 745488**

FROM: Name	Company/Institution
DATE	REF.

**NOTE**

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# Passive Avoidance Set-Up (step-down)

Cat. 40570

## 1 GENERAL

Behavioral scientists are well acquainted with passive avoidance methods that have been used for several decades, originally by psychologists, who were interested in animal behavior.

These procedures were later exploited by neuroscientists, who specifically perform systematic studies of the behavioral changes mainly produced by brain lesions, to define the functions of different C.N.S. sections.

The Passive Avoidance was soon extended to several other areas of research such as behavior genetics, psychopharmacology and behavioral toxicology.

More recently, such use has become routine in animal model studies of aging and of Alzheimer-type dementia, including the search for new drugs of potential therapeutic value, consisting of attenuation of behavioral deficits.

The **Passive Avoidance** task is a **one trial fear-motivated avoidance task**, classically used to assess short-term or long-term memory on small laboratory animals (rodents).

Passive Avoidance is a broad term that includes an ample selection of methods and an equally wide variety of different versions of each method.

In our Passive Avoidance instrument one exploits the tendency to step down from a vibrating, hence definitely uncomfortable floor section.

### 1.1 Principle of Operation

The Passive Avoidance step-down version, for mice or immature rats, Cat. 40570 is based on the step-down scheme in which the animal is dropped on an elevated platform which becomes uncomfortable because of vibrations. The cage incorporates an electrified grid floor.

After an initial habituation, during the training phase the rodent learns to refrain from stepping down to the electrified grid, due to the association of the non-vibrating floor with an aversive stimulus, represented by a mild foot shock.

When the elevated platform onto which the mouse (or immature rat) is dropped, becomes uncomfortable because of vibrations, the animal steps down to an electrified grid.

The counter on the Control Unit, see paragraph 4.3-TEST Window, records the latency time in tenths of seconds.

See the following flow-chart, describing the P.A. test (step-down).

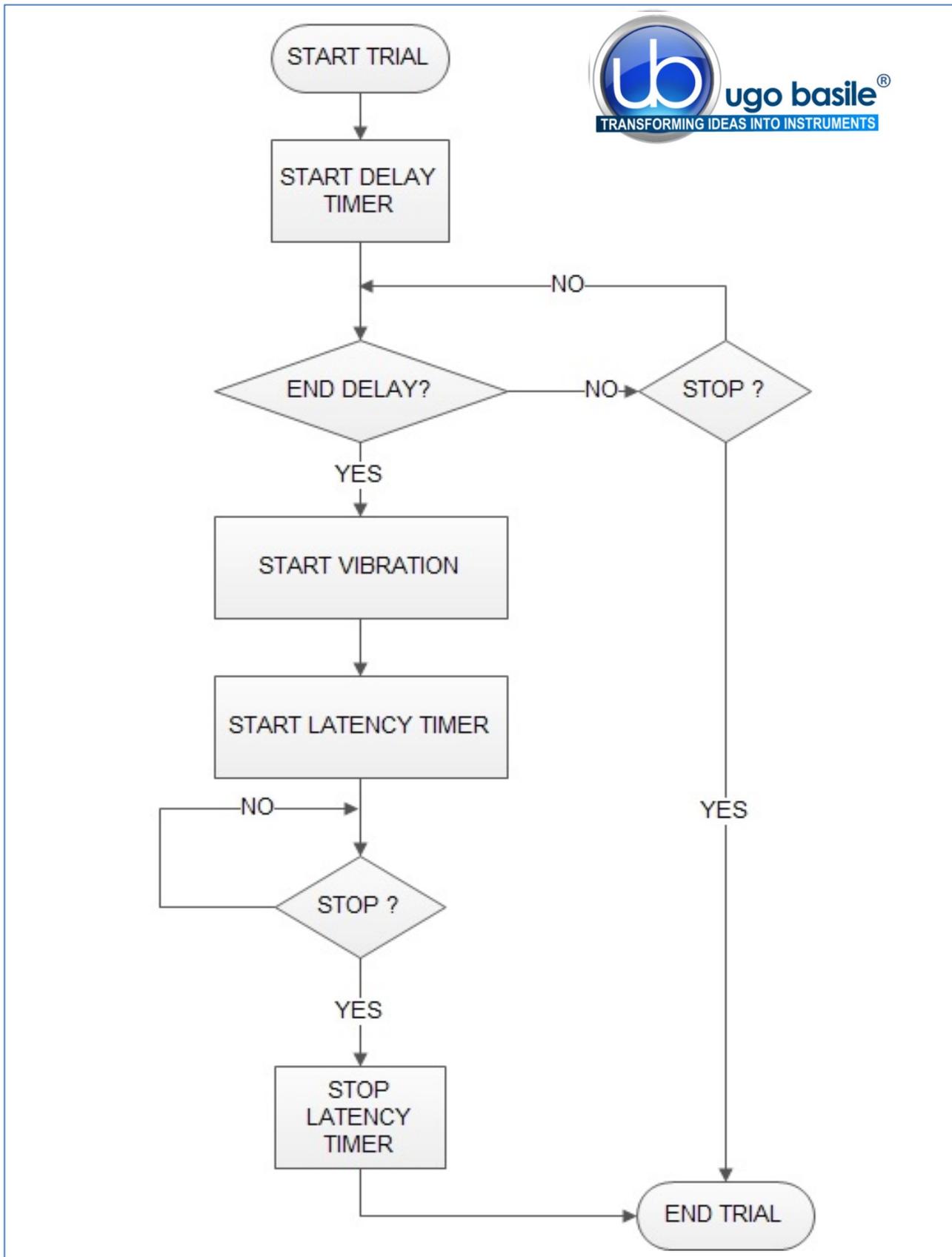


Figure 1 "P.A. Flow-Chart"

## 2 INSTRUMENT DESCRIPTION

The Passive Avoidance Set-Up by Ugo Basile is an efficient and reliable instrument for the Passive Avoidance Test (step-down method), designed so as to maximize versatility, besides ensuring reliability of functions and therefore reproducibility of the results.

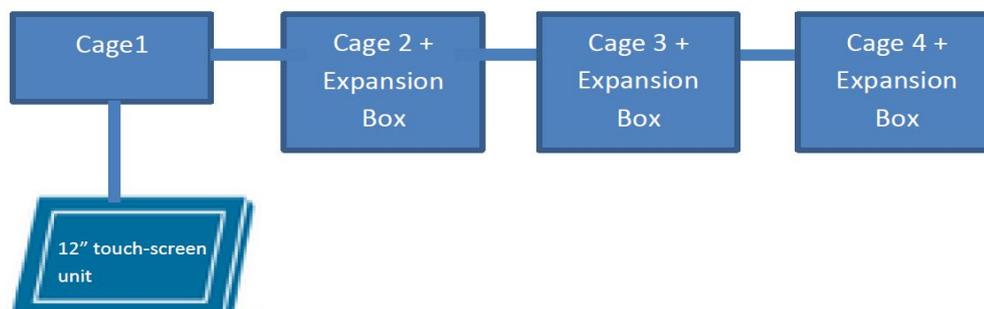
The experimenter can easily vary critical parameters according to her/his needs, at the same time, being confident that possible confounding variables have been made absolutely negligible.

### The instrument basically consists of:

- **40500-001** 12" Touch-Screen Controller, encompassing a precision 8-pole shocker
- **40570-010** P.A. Software (installed on the Controller)
- **47573** Mouse Cage

Multiple configurations (up to 4 cages) can be controlled by the new electronic unit via the:

- **40500-005** Expansion Box, according to the following configuration:



### 2.1 P.A. Controller

The **Programming/Recording Unit**, consolidates all controls and incorporates a constant-current high precision 8-pole shocker, in a single, compact electronic unit, of attractive design.

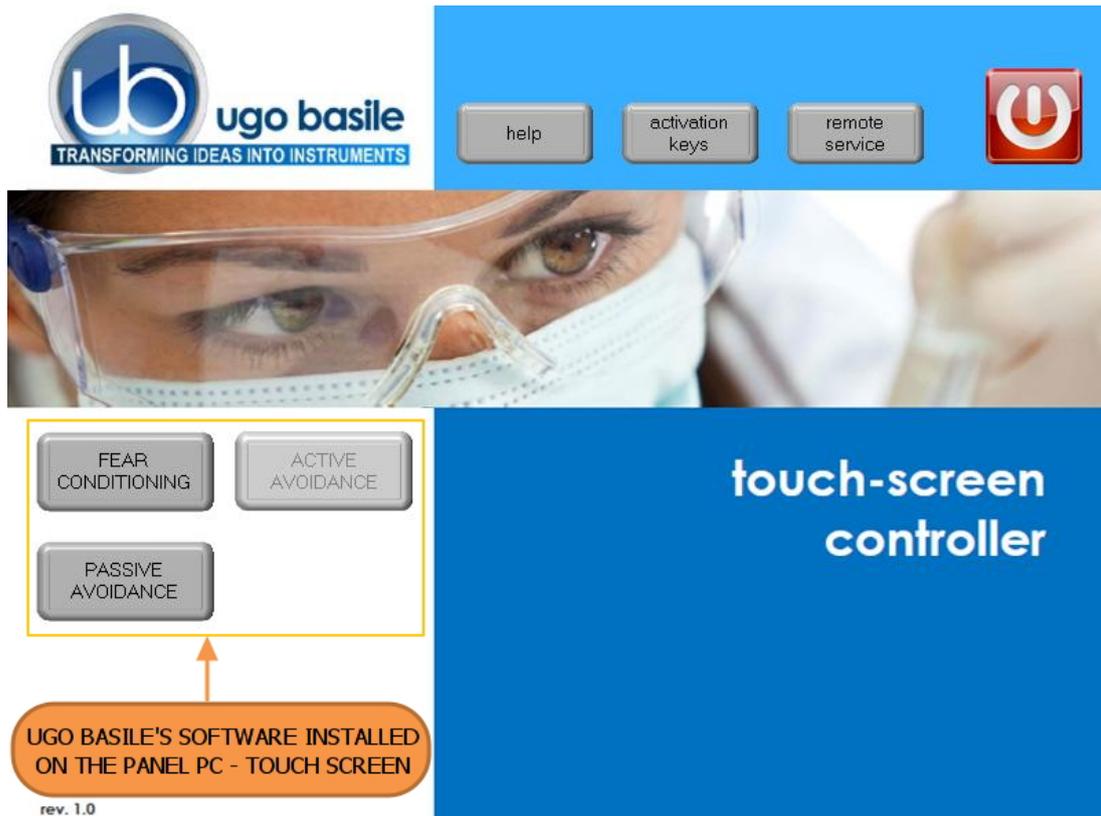
The **40500-001 Touch-Screen Controller** is a powerful and versatile tool, which will function as main unit in a number of tests:

- a. Fear Conditioning - available (see 46000-100)
- b. Passive Avoidance - available
- c. Passive Step Down - available
- d. Active Avoidance - available
- e. Learned Helplessness - available
- f. Startle/Response - available soon

For each test, a specific application software will be available for installation. Each software is sold separately, so it is easy to customize each controller according to the experimental needs.

The application “**Launcher UB**” is installed on the 12” touch-screen (TS12).

When starting the system, the following screen will appear:



**Figure 2 “Launcher”**

The bottom left section of the screen shows the available applications, which appear as buttons, labelled with the name of the related test.

The color shade of the button indicates the application status, according to the following scheme:



Light grey: software installed, but not enabled, it is necessary to enter the activation key



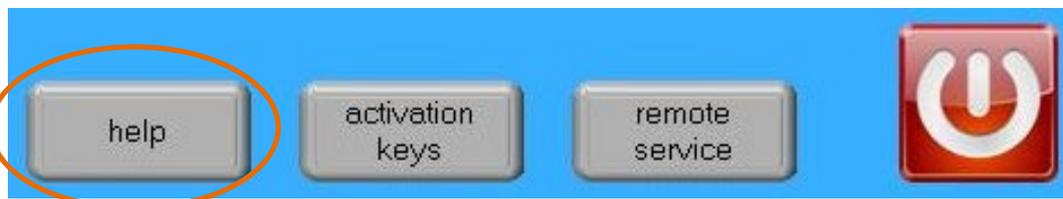
Dark Grey: software installed and active: press the button to run the application software.

The 12” touch-screen unit manages the Passive Avoidance Test via the **40550-010 Software** (which comes pre-installed on the controller, when the touch-screen and the cage are purchased together).

In case an application software is not active it is necessary to enter the activation key.



**Also refer to the help section on the launcher menu on the Controller Unit.**



Having run the P.A. application software, the 40500-001 becomes the main Controller Unit to perform Passive Avoidance Tests, with single or multiple cage setting.

Up to 4 cages can be connected to the same Controller; if more than one cage is connected, an expansion box 40500-005 is required for each additional cage.

The P.A. Controller also manages data acquisition: data are stored inside the unit and can be downloaded via the USB key provided as standard, for further processing via Excel, Access, etc.

The test parameters can be set easily, with a quick touch of the screen: parameters can be adjusted with an easy and intuitive approach.

Protocols can be loaded, saved, imported or exported and deleted with just one touch.



**Figure 3 “Controller”**

Test results and input data can be also displayed; each event can be easily monitored during the entire course of each test.

## 2.2 Passive-Avoidance Cage (step-down)

The Mouse Cage **47573**, made of Perspex sheets, is dimensioned 28(width)x23(depth)x26 (height)cm; it is provided with a hinged top lid of clear Perspex and a suitable catch pan.

The cage floor consists of a set of 40 bars of stainless steel, diam. 0.2cm, spaced 0.5cm apart. The bars are mounted into Perspex beams outside the cage, quite close to the side walls but far enough to prevent a film of urine to bypass, at least partially, the shock current.

The bars are wired to a constant current 8-pole scrambling circuit, located in, and managed by the control unit.

The detachable circular platform 40570-320, diam. 7cm, is positioned at the centre of the cage, 0.3 cm over the floor level, on a protruding stud fastened to the actuator, the mechanism which energizes the platform vibration.

A larger platform diam. 11cm (40570-321) is also supplied with the standard package, see also 6-ORDERING INFORMATION.

The actuator (the mechanism which energizes the vibrating platform) is located in the actuator block, fastened to the cage base.

Both the grid floor and the actuator block are fastened to the cage via large knurled knobs, to ease the dismantling of the whole, indispensable for a thorough cleaning.

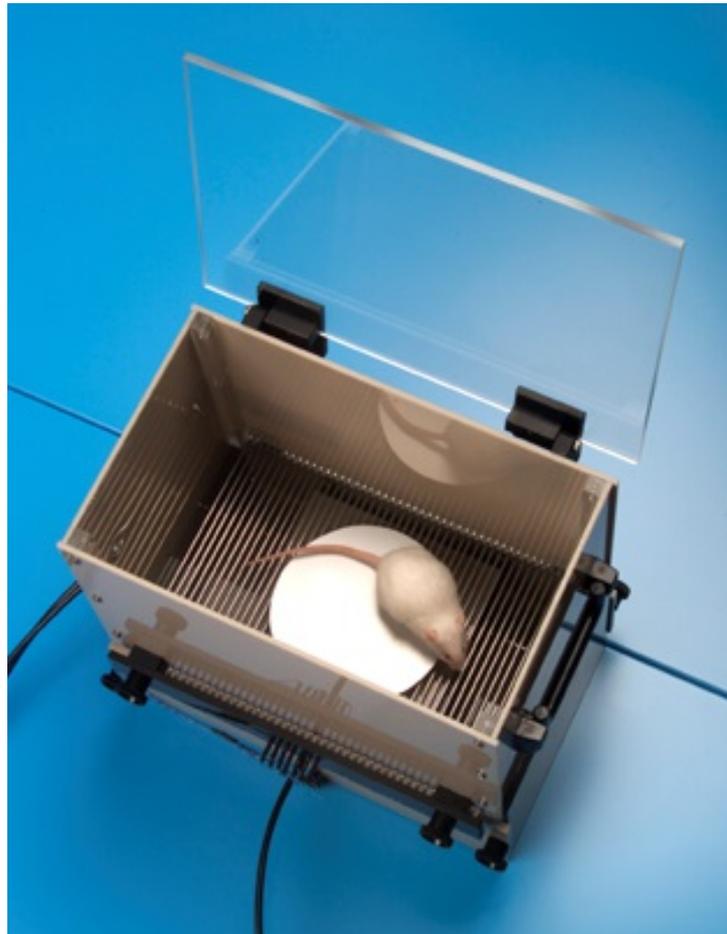


Figure 4 “Rat Cage 47573”

## 3 INSTALLATION

### 3.1 Unpacking & Preliminary Check

Check the contents of the shipment for completeness, packing list to hand, and visually inspect the instrument as soon you take it out of the packaging. Use the supplied **Check List**.

If the instrument is damaged, inform the carrier immediately, notifying our company. If after having tested it, the P.A. set-up fails to meet rated performances, please contact our after sales service, see paragraph 5.6-Customer Support.



### **Protect the environment!**

Dispose of packaging properly, according to existing and applicable waste management rules and regulations.

## 3.2 Notes on the Instruction Manual

The 40570 Instruction Manual included in package (on the USB pen-drive) is necessary for the correct installation and operation of the instrument.

The manual is also available in the HELP section of the P.A. application software, see paragraph 4.5-HELP Window.

We recommend reading the manual with attention, as it is essential for the correct installation and operation of the instrument.

Please save the manual, ready to be consulted by the qualified personnel who use the instrument. Print it, only if necessary.

Our Instruction Manuals are available as free download on our website.

For any additional information and/or assistance, you are welcome to contact our Service Department (see paragraph 5.6-Customer Support), specifying the instrument serial number.

## 3.3 Assembling the Instrument

Assemble the Passive Avoidance Set-Up on a stable bench or table surface. Once the P.A. set-up is assembled, do not attempt to lift or move the combined unit; remove the connections first.

The Cage should be placed on a stable horizontal board. If the Cage structure is twisted, this can cause the floor to seize and result in incorrect operation.

## 3.4 Recommended Operating Condition

Place the P. A. Apparatus in a room which is acoustically isolated or at least remote from sudden or intense noises; temperature is an important factor since below 18-20°C the rodents sometimes react less promptly to stimuli. Optimum temperature is 22-25°C.

The room should not be illuminated too brightly. In particular, avoid direct light on the Cage, e.g., from a table lamp. Best practice is to carry out the test in the darkness or red light.

## 3.5 Setting-Up a Basic System

Setting-up a Standard System consists in the installation of:

- Animal Cage 47573
- Touch-Screen Controller 40500-001 (with preinstalled software 40570-010)

The 7 cm platform is fitted on the cage when the instrument is tested in our lab. If the larger (11 cm diam.) platform is more suitable to your experimental needs, simply remove the platform in use, then insert the alternate platform on the protruding stud of the platform actuator.

Avoid excessive tightening when fitting the platform and adjust it to avoid that it touches the floor when vibrating.



### 3.5.1 Connections

Observe the back panel of the Touch-Screen Controller:



Figure 5 “Controller, Back Panel”

And the same back panel, with all connections:

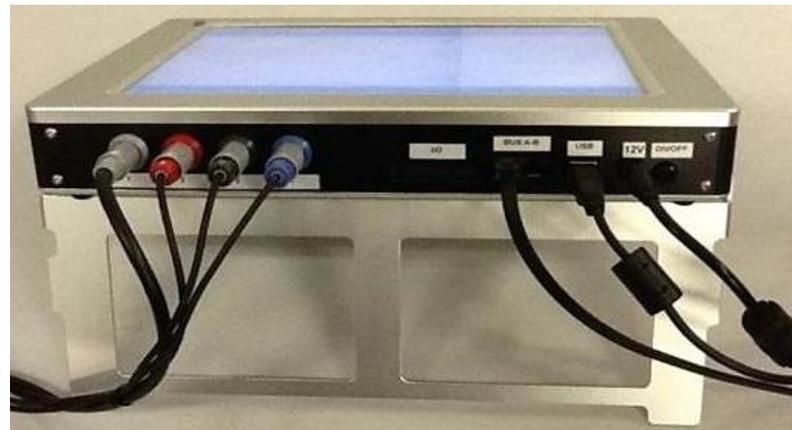


Figure 6 “Controller, Connections”

- **Connectors 1 to 4** go to cage 1 via the connectors provided on the junction box of cage 1. Possible mismatching is prevented by color coding:
  - **Connector 1** (grey color): shock
  - **Connector 2** (red color): **NOT IN USE**
  - **Connector 3** (black color): sound
  - **Connector 4** (blue color): pedal switch

- **BUS A-B** is the communication cable, which goes to the second cage (first expansion-box), and from there to third and fourth cage in a daisy-chain, see next paragraph.
- **12V** for the power supply.

### 3.5.2 Connection of Multiple-Cage Systems

Connections are arranged as follows on the back panel of the CAGE 1:

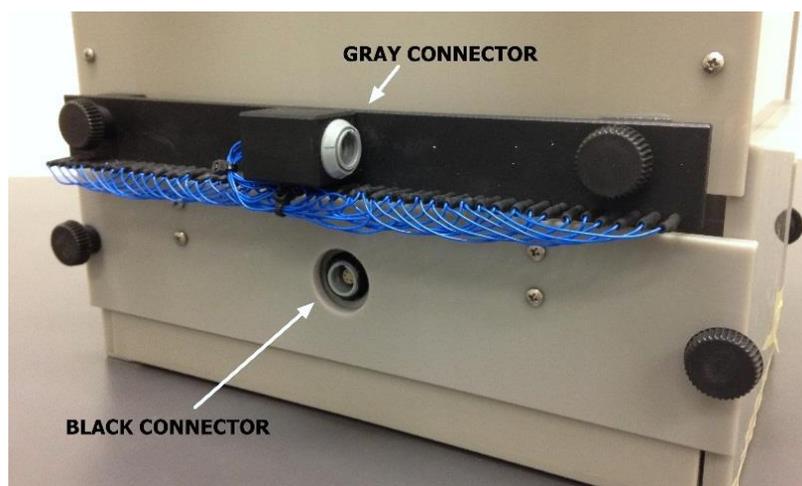
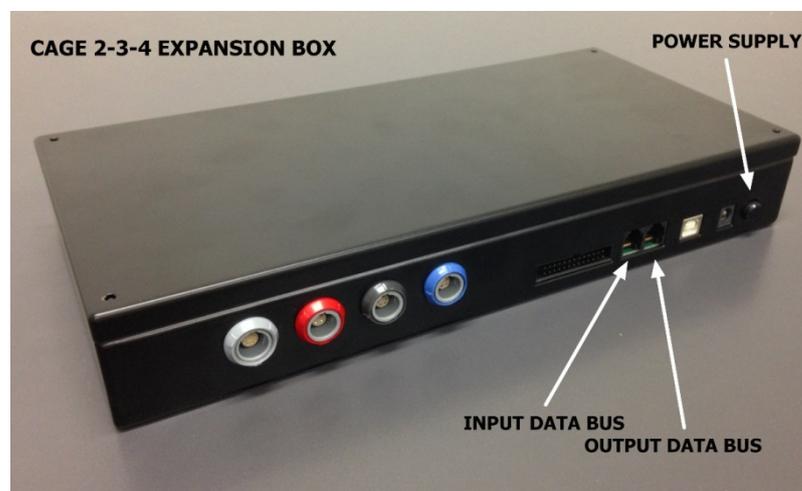


Figure 7 “Cage and Expansion Box Connections”

On the back panel of the cage 2 (expansion 1) and cage 3 (expansion 2), connections are arranged as follows, from left to right:

- Power supply
- Communication cable coming from the previous cage
- Communication cable going to the following cage



- 4 connectors to cage, with same color code as described in paragraph 3.5.1.

### 3.5.3 P.A. Software 40570-010

The P.A. software is preinstalled on the controller, when the cage and the main unit are purchased together; the software version appears on the bottom left corner of the screen, below the Ugo Basile Logo (see paragraph 4.1).

If the software is not active, enter the activation key, following the instructions on the HELP section of the launcher application, see also paragraph 2.1)

When a new PA software version is available, it may be uploaded via the "**Update Application**" button (see paragraph 4.2.1).

### 3.6 Intended Use

The P.A. Set-Up is intended for investigation use on laboratory animals only.

### 3.7 General Safety Instructions

The following guidelines must be followed to ensure safe operation.

- ! **DO NOT** attempt to open or perform any service work
- ! **DO NOT** connect up human subjects



### 3.8 Additional Safety Consideration

- a. The cage floor is electrified; use maximum care and always use rubber gloves when handling the cage, to position/remove the animal, or the catch pan.
- b. Use original accessories and spare parts only, see also paragraph 6-ORDERING INFORMATION
- c. Do not operate the instrument in hazardous environments or outside prescribed environmental limitations (i.e. +18C°/+24C°, 60% relative humidity, non-condensing);
- d. Do not spray any liquid on the connectors;
- e. Keep inflammables far from the instruments.



**UGO BASILE DOES NOT ACCEPT ANY RESPONSIBILITY FOR PROBLEMS OR HARM CAUSED TO THINGS OR PERSONS, ARISING FROM:**

- incorrect electrical supply;
- incorrect installation procedure;
- incorrect or improper use or, in any case, not in accordance with the purpose for which the instrument has been designed and the warnings stated in the instruction manual supplied with the instrument;
- replacement of original components, accessories or parts with others not approved by the manufacturer;
- servicing carried out by unauthorized personnel

see also paragraph 5-MAINTENANCE.

## 4 OPERATION

### 4.1 Switching-On

The touch-screen controller is switched ON by pressing the ON/OFF' button located on the back panel, see Figure 6 “Controller, Back Panel”.



Start the P.A. application software by the related button on the launcher menu.



**Also refer to the help section on the launcher menu on the Controller**



### 4.2 GENERAL SET-UP Window

When opening the P.A. program, the GENERAL SET-UP window will appear, from which the user can set the test parameters.



Figure 8 “GENERAL SET-UP Window”

The window also shows, on the bottom row, how many cages are connected:



The above example considers a system of 4 cages: the four virtual keys, with the caption



confirm that the connection is correct and that communication between the devices is operational.

The software version appears on the bottom left corner, below the UB Logo (in this example 1.1.6.20). This information is useful in case after sales assistance is required.

Each cage is identified by a different frame color:

- **green** for cage 1 (see Figure 4)
  - **yellow** for cage 2
  - **purple** for cage 3
  - **blue** for cage 4
- } (see following examples)



The General Set-up page is divided into three sub-sections:

- LOAD/SAVE Protocol
- Features
- Settings

The above options are described in detail in the next paragraphs.

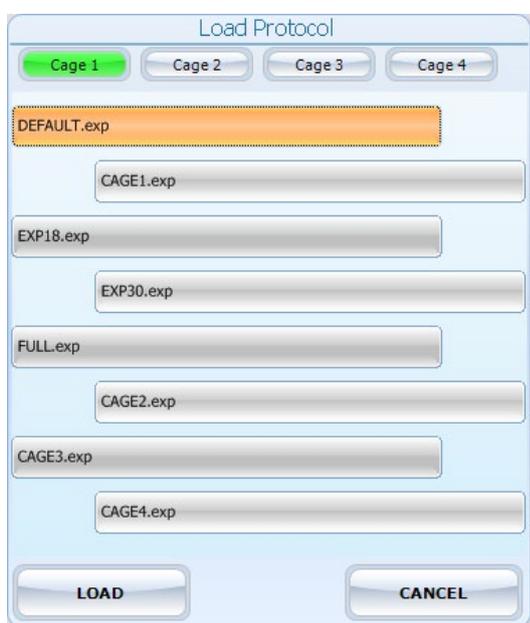
#### 4.2.1 LOAD/SAVE Protocol

From this section the user may save his/her own protocols, and upload them on the internal disk or USB key, by acting on one of the 6 virtual buttons available and entering the protocol name:



#### 4.2.1.1 Load From Disk

When selecting the “Load from Disk” option, a window will appear, from which it is possible to select a protocol (file with extension \*.exp) from the list of protocols previously saved in the touch-screen disk.



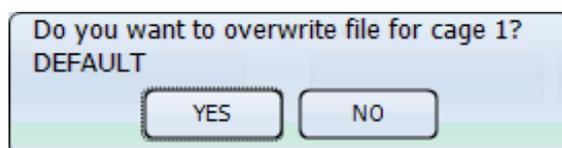
By selecting or deselecting the button related to Cage1, Cage2, Cage3 or Cage4 respectively, you will define the cage/s to which the selected protocol will apply.

The list of all protocols previously saved in the disk may be scrolled on the touch screen.

#### 4.2.1.2 Save to Disk

This function saves the protocol in use on the touch screen disk.

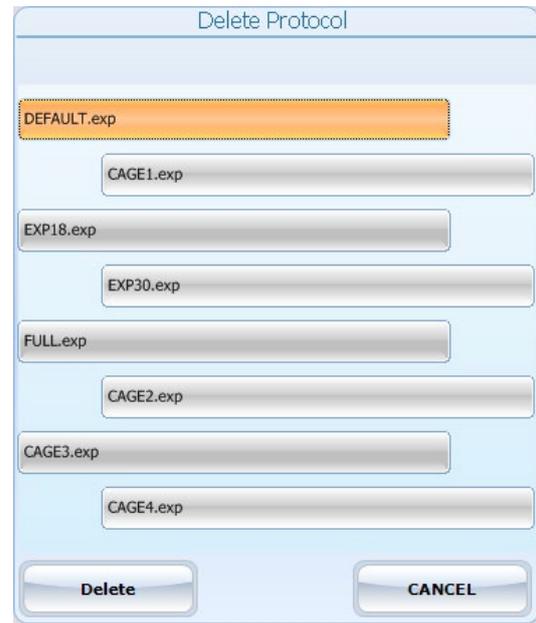
If the protocol name already exists, a window will appear, see example, for each cage active on the system.



#### 4.2.1.3 Delete from Disk

The command “Delete” enables the user to cancel a protocol previously saved on the touch-screen disk.

It is possible to scroll on the touch screen the list of all protocols previously saved in the touch-screen disk.



#### 4.2.1.4 New Protocol

The **New Protocol** key resets all the fields in the “Features” section, carried on from previous protocol, and starts new protocol with empty fields.

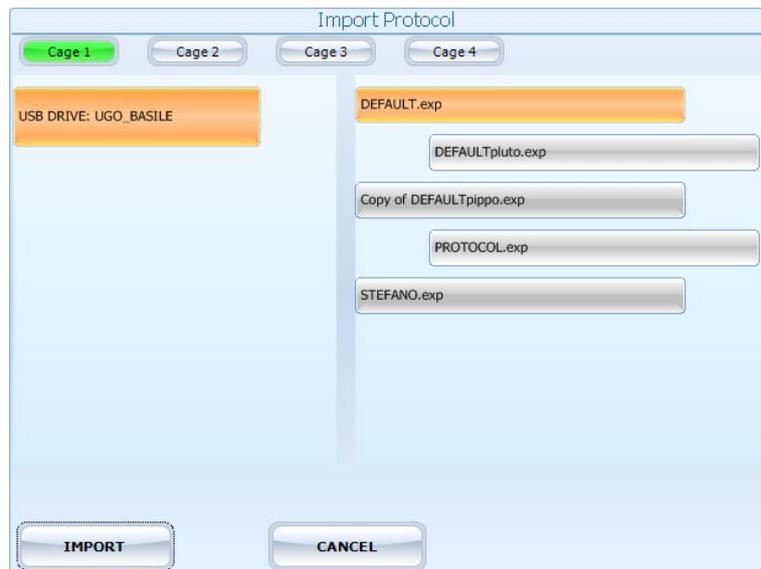
The reset applies to all cages connected.

#### 4.2.1.5 Import from USB Drive

Insert the USB key on its slot on the controller, and wait for it to be recognized.

By choosing the “IMPORT” option, the “IMPORT PROTOCOL” window will open, from which it is possible to select the protocol (file with extension \*.exp).

By selecting or deselecting the button related to Cage1, Cage2, Cage3 or Cage4 respectively, you will define the cage/s to which the selected protocol will apply.



The list of all protocols previously saved in the USB drive may be scrolled on the touch screen.

#### 4.2.1.6 Export to USB Drive

This function saves the protocol in use on the USB drive. If the protocol name already exists, a window will appear, for each cage active on the system.

If no name is entered in the “File Data Name” field, the file will be exported with the name “default”.



#### 4.2.1.7 Protocol Name

The “Protocol Name” field, in the LOAD/SAVE Protocol section, can be edited, to rename the protocol in use, referred to the selected cage.



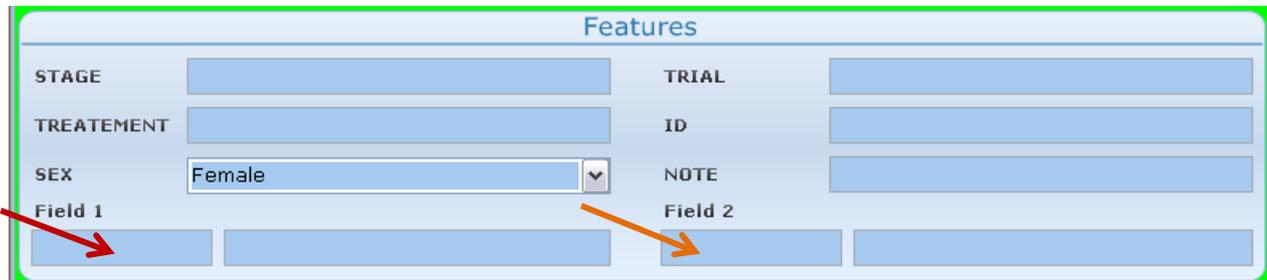
If no name is entered, the protocol name will be “default”.

#### 4.2.2 Features

This section includes several text fields, all editable (except “gender”), which will enable the user to personalize the basic datum, by adding the following information:

- **STAGE:** indicating the number/name of the test
- **TRIAL:** indicating an trial number/name
- **TRETEMENT:** indicating the type of treatment
- **ID:** animal identification (number/name)
- **GENDER:** animal gender
- **NOTE** to enter general comments
- **Field 1:** this is an additional descriptive field. Entering a label in the first field (indicated by the red arrow in the picture below) will automatically rename the related column in the Excel database which will be generated. The new name will be common to all cages
- **Field 2:** this is a second additional descriptive field. Entering a label in the first field (indicated by the orange arrow in the picture

below) will automatically rename the related column in the Excel database which will be generated. The new name will be common to all cages



The screenshot shows a form titled "Features" with the following fields:

- STAGE: [Text Input]
- TRIAL: [Text Input]
- TREATMENT: [Text Input]
- ID: [Text Input]
- SEX: [Dropdown Menu] (Current selection: Female)
- NOTE: [Text Input]
- Field 1: [Text Input]
- Field 2: [Text Input]

Red and orange arrows point to the "Field 1" and "Field 2" labels respectively.

Every field can be edited by pressing the same, and entering the data on the virtual keyboard which appears on the screen. Each information will appear in a different column within the RESULTS table (see paragraph 4.4-RESULTS Window).

### 4.2.3 Settings

When a new PA software version is available, you may upload it via the "**Update Application**" button.

Having received the file with the new version (e-mail or FTP), follow the steps below to install it on your controller unit:

- 1) Copy the new file "*Passive.exe*" on the root of a USB key
- 2) Insert the USB key and, if necessary, wait for the touch-screen controller to recognize the peripheral
- 3) Press "Update Application"
- 4) If the USB key is recognized, the UPDATE APPLICATION window will appear



- 5) Pressing "UPDATE APPLICATION" will start the file copy
- 6) The process will be confirmed by the caption "Updated Successfully"
- 7) The new SW will start automatically; you can verify the update by reading the new version at the bottom left corner, below the UGO BASILE logo.

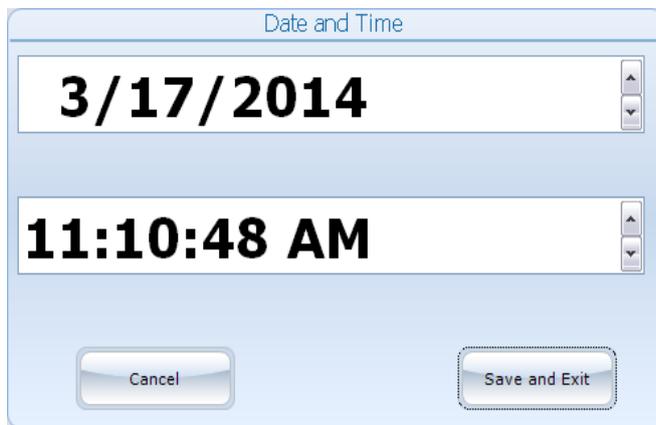


**NOTES:**

- It might be necessary to repeat action 5) more than once.
- If the USB key is not recognized, the following warning will appear:  
 “USB DRIVE NOT PRESENT!!!”

**4.2.3.1 Set Date and Time**

By selecting “**Set Date and Time**”, the following window will appear:



Select the value to be modified, by pressing it, then change it via the arrows on the right.

Then select “**Save and Exit**” to save the new parameters (or “**Cancel**”, if you do not wish to save the change) to go back to the GENERAL SETUP menu.

**4.3 TEST Window**



Please note that the protocol which generates in the “TEST” menu, by defining the test features, will be common to all cages connected to the control unit.

Before proceeding with the test, from the TEST window it is possible to set the following parameters:

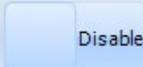
<b>Width Vibration</b>	This setting defines the platform <b>vibration amplitude</b> , from <b>0 to 10</b> , in steps of <b>1</b>
<b>Platform Vibration</b>	This parameter sets the platform <b>vibration frequency</b> , from <b>10 to 100Hz</b> , in <b>10Hz</b> steps
<b>Vibration Delay</b>	This is the <b>delay</b> from the START to the beginning of vibration, from <b>0 to 15 seconds</b> , in <b>1s</b> steps.
<b>Shock</b>	The <b>shock intensity</b> can be preset from <b>0 to 3mA</b> , in <b>0.1mA</b> steps.
<b>Shock</b> 	This slide selector <b>enables</b> or <b>disables</b> the shock. For safety reasons, default value is “ <b>disable</b> ”.



Figure 9 “TEST Window”



**NOTES:**

- **While the test is running**, all the above settings, except the Enable/Disable slide-switch, are blocked and they can't be modified
- If the protocol considers a “**Vibration Delay**” **different from zero**, the latency timer starts its countdown from the value set as vibration delay, then the vibration actuator is energized, and the **Latency Timer** activated, measuring the time elapsing from the vibration start to the moment the animal steps down from the platform.

**4.3.1.1 Experiment START/STOP**

Gently drop the mouse on the platform, shut the cage lid without causing any appreciable noise.

The experiment is started by the green “**PRESS TO START**” button.



When the test is running, the test window will look as follows:



When the animal steps down from the platform, the operator stops the test, and the latency timer by depressing either the **“PRESS TO STOP”** button on the touch-screen, or the pedal switch.



#### 4.4 RESULTS Window

Pressing the “RESULT” label on the top of the touch screen, will open the RESULT menu:

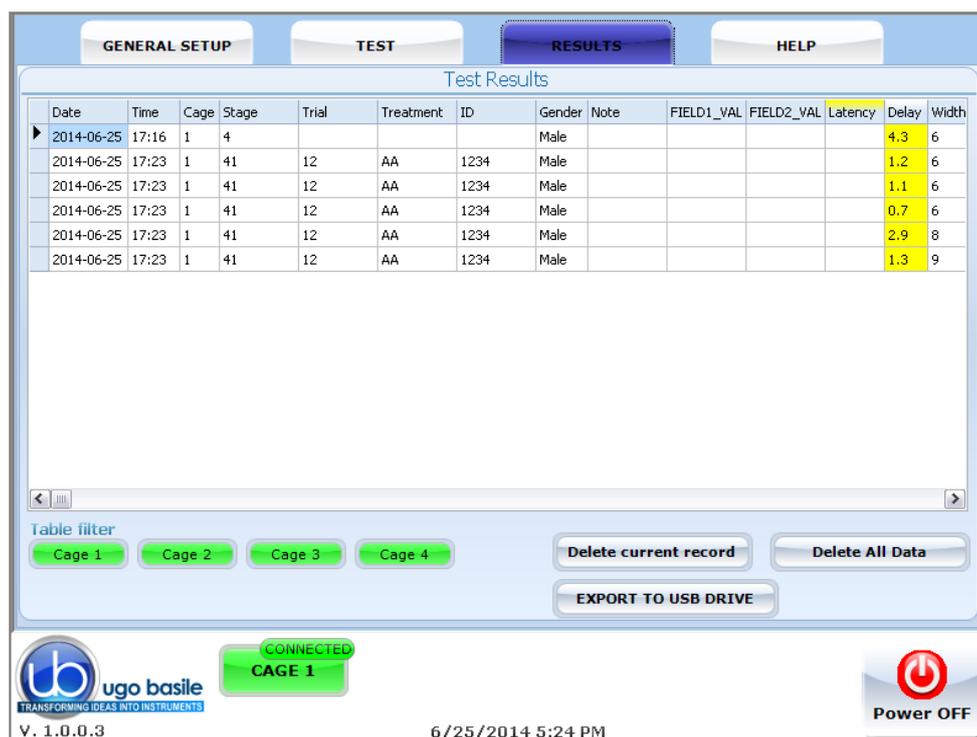


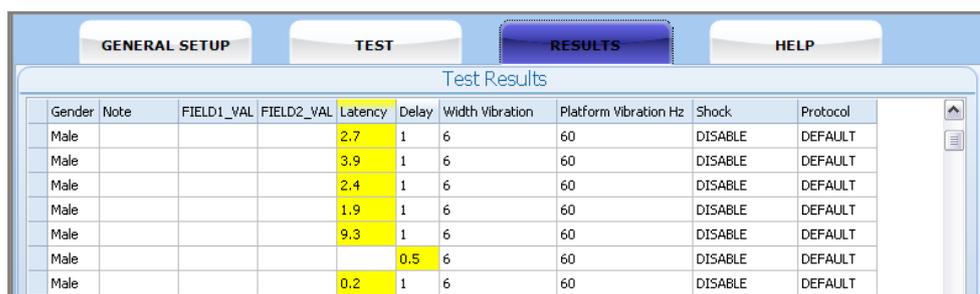
Figure 10 “RESULTS Window”

### 4.4.1 Test Results

The “Test Result” table lists the relevant data for all the trials completed with each cage.

The first columns indicate date and time, while the third column indicates the number of the cage on which the trial was performed. The following columns contain the additional information entered by the user on the “Features” menu, see paragraph 4.2.2. Finally, the column “**Latency**” reports the test result.

Shifting to the right, you will be able to read the test settings, as delay, vibration width, platform vibration, shock, etc., see paragraph 4.3-TEST Window:



Gender	Note	FIELD1_VAL	FIELD2_VAL	Latency	Delay	Width Vibration	Platform Vibration Hz	Shock	Protocol
Male				2.7	1	6	60	DISABLE	DEFAULT
Male				3.9	1	6	60	DISABLE	DEFAULT
Male				2.4	1	6	60	DISABLE	DEFAULT
Male				1.9	1	6	60	DISABLE	DEFAULT
Male				9.3	1	6	60	DISABLE	DEFAULT
Male				0.5	6	6	60	DISABLE	DEFAULT
Male				0.2	1	6	60	DISABLE	DEFAULT

### 4.4.2 Table Filter



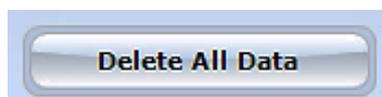
Selecting one or more cages in the table filter, will activate the filters, and the results will be ordered by cage number.

### 4.4.3 Delete Options



To delete a single record, select it by pressing anywhere inside the related row, then press “Delete Current Record”.

Confirm or cancel the selection by answering **YES** or **NO** to the question “**Delete current record?**”



To delete all records saved in the “Test results” table, select “Delete All Data”

Confirm or cancel the selection by answering **YES** or **NO** to the question “**Delete All Data?**”

### 4.4.4 Export to USB Drive



To export the data in the “Test results” table, insert a USB key in the dedicated slot on the touch-scren controller, then select “EXPORT TO USB DRIVE”: the data will be saved in .CVS format.



The field “File Data Name” (see screenshot) is editable via the touch-screen virtual keyboard.

If no name is entered in the “File Data Name” field, the file will be exported with the name “default”.

## 4.5 HELP Window

The instruction manual of the Passive Avoidance Step-Down system is available online in the HELP section.

## 4.6 Switching Off

The touch-screen controller can be switched off from any menu, by pressing the Power Off virtual button, or by the 'ON/OFF' button located on the back panel, see Figure 6 “Controller, Back Panel”.



# 5 MAINTENANCE

Ugo Basile P.A. Set-Up is covered by a 24-month warranty. Service, if necessary, has to be done by authorized UB personnel only; servicing by anyone other than an authorized service facility will void the warranty.

If a problem occurs, contact your representative, see paragraph 5.6-Customer Support.



**UNPLUG THE MAINS CORD BEFORE CARRYING OUT ANY MAINTENANCE JOB!**

## 5.1 Cleaning and Sterilization

The Fear Conditioning hardware may be wiped down with a dry, lint-free cloth. Clean only the case of the Controller using a damp, soft cloth; do not use chemicals or abrasive elements.

Under no circumstances allow moisture to penetrate the instrument. Unplug power cord from AC outlet before cleaning.

## 5.2 Disposal

Send to a recycling center equipped to handle electronics.

## 5.3 Abnormal conditions

Operate the instrument only as intended by the manufacturer. If you suspect the instrument protection has been impaired, disconnect the power cord and secure the instrument against any unintended operation.

The protection is likely to be impaired if, for example, the instrument shows visible damage or has been subjected to severe transport stress. Proper use of instrument depend on careful reading of all instruction and labels.

## 5.4 P.A. Cage

The bars of the Cage floor should be cleaned daily, to remove traces of the animal faeces which impair contact, especially when dry. Cotton wool, dipped in water/alcohol mixture is recommended for cleaning the bars.

The cleaning operation is made much easier if the three main components, cage, grid floor and actuator block are separated.

Both the grid floor and the actuator block are fastened to the cage structure via large knurled knobs, to ease the dismantling of the whole; this enables the operator to eliminate even traces of urine and faeces which, in the long run, can reach the Actuator Block.



The Cage is provided with a **catch pan** which slides in, on two side rails, below the floor grid. The platform can be easily removed.

For cleaning the cage walls, do not use organic solvents, as they are liable to impair the Perspex surface.

## 5.5 Long Inactivity

The instrument does not require any particular maintenance after long inactivity.

## 5.6 Customer Support

For any further information you may desire concerning the use and/or maintenance of the P.A. Set-Up, please do not hesitate to contact our **service department** (or our local distributor) either directly or via our support page <http://www.ugobasile.com/support.html> :



### UGO BASILE/R s.r.l.

Via G. Di Vittorio 2  
21036 GEMONIO – Varese, ITALY



Phone : +39 0332 744574



[service@ugobasile.com](mailto:service@ugobasile.com)  
[logistics@ugobasile.com](mailto:logistics@ugobasile.com)  
[sales@ugobasile.com](mailto:sales@ugobasile.com)

**Before sending any instrument to our factory for repair**, please contact our logistics department to obtain a return authorization number (RMA) and shipping/packing instructions.

We may not be held responsible for damages during transport due to poor packing; whenever possible, please use the original packing.

## 6 ORDERING INFORMATION

- 40500-001 Controller with Touch Screen and 8-pole Scrambling Shocker, including  
40570-010 Software and activation
- 47573 P.A. Mouse Cage
  - 47573-320 7cm diam. Platform
  - 47573-321 11cm diam. Platform
- E-WP 008 Mains Cable
- E-AU 074 Power Supply
- 40570-303 Pedal Switch
- E-AU 041 USB pen-drive, including  
40570-302 Instruction Manual

### 6.1 Optional (Multiple-Cage Set-Up)

#### 6.1.1 Example of a Multiple-Cage Set-Up

The following is an example of configuration of a 4-Cage Mouse set-up:

- No. 1 40500-001 Controller with Touch Screen and 8-pole Scrambling Shocker

		<b>40570-010</b> Software and activation
No. 4	<b>40753</b>	P.A. Mouse Cage
No. 3	<b>40500-005</b>	Expansion Box (one is required for each additional cage)

## 7 INSTRUMENT SPECIFICATIONS

### Touch Screen Controller

LCD	12" with resistive touch screen
CPU Module Port	2 USB Port 2.0; 1 Ethernet port 10/100Mb; 1 DVI port for external monitor
Peripheral Port	4 output for Sound, Shock and light; 1 Power supply 12V-2A
Expansion Bus Connection	2 RJ11 connectors 1 USB port type B ( not used )

### Settings

Shock	Constant current
Shock Intensity	from 0 to 3mA, in 0.1mA steps
Platform Vibration	10-100Hz, in 10Hz steps
Vibration Width	0-10, in steps of 1
Vibration Delay	0-15 seconds, in 1s steps
Operating Temperature	10° to 40°C
Sound Level	Negligible
Pollution Degree	≤ 2

### Physical

Net weight	Cage	3.5Kg
	Controller	2.7Kg
Shipping Weight		12Kg
Dimensions	Cage	28(w)x23(d)x26(h)cm
	Controller	33(w)x25(d)x5.5(h)cm
Packing Dimensions	Controller and One Cage	80x60x44cm

### Warranty

40570 is covered by a 24-month warranty

## 8 BIBLIOGRAPHY

### 8.1 Papers Mentioning UB P.A. Cage (Step-Down)

- A. Mikulecká et alia: “**Consequences of early postnatal benzodiazepines exposure in Rats. I. Cognitive-like behavior**” Front. Behav. Neuroscience 8 : 101, **2014**
- I.K. Celikyurt et alia: “**Effect of harmaline, an endogenous  $\beta$ -carboline, on learning and memory in rats**” Pharmacol.Biochem.Behav 103:666-671, **2013**
- M.T. Georgieva-Kotetarova et alia: “**Effect of atorvastatin and rosuvastatin on learning and memory in rats with diazepam-induced amnesia**” Folia Med 55(2): 58-65, **2013**
- D.S. Dimitrova & D.P. Getova-Spassova: “**Effects of Galantamine and Donepezil on Active and Passive Avoidance Tests in Rats With Induced Hypoxia**” J. Pharmacol. Sciences 101 : 199-204, **2006**
- M. Sakaguchi et alia: “**Effects of beta-casomorphin-5 on passive avoidance response in mice**” Biosci.Biotechnol. Biochem 67 (11): 2501-2504, **2003**



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**Notes**

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TRANSFORMING IDEAS  
INTO INSTRUMENTS

## CE CONFORMITY STATEMENT

Manufacturer **UGO BASILE srl**  
Address Via G. di Vittorio, 2 – 21036 Gemonio, VA, ITALY  
Phone n. +39 0332 744574  
Fax n. +39 0332 745488

*We hereby declare that*

Instrument. **PASSIVE AVOIDANCE SET-UP (STEP-DOWN)**  
Catalog number **47573 – 40500-001**

*is manufactured in compliance with the following European Union Directives  
and relevant harmonized standards*

- *2014/35/UE relating to electrical equipment designed for use within certain voltage limits*
- *2014/30/UE relating to electromagnetic compatibility*
- *2011/65/UE and 2015/863/UE on the restriction of the use of certain hazardous substances in electrical and electronic equipment*

Account Manager

Mauro Uboldi

Nome / Name

October 2018

Date

Firma / Signature