

# Hardware User's Manual

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## Automated spatial place preference box



### References:

LE896 (76-0376), LE898 (76-0441)

### Publication:

PB-MF-MAN-063-REV1.0

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#### Limitation of Liability

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Some symbols may have more than one interpretation by professionals unaccustomed to their usage.

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## 1. SYMBOLS TABLE

Recognising the symbols used in the manual will help to understand their meaning:

DESCRIPTION	SYMBOL
Warning about operations that must not be done because they can damage the equipment	
Warning about operations that must be done, otherwise the user can be exposed to a hazard.	
Protection terminal ground connection.	
Warning about a hot surface which temperature may exceed 65°C	
Warning about a metal surface that can supply electrical shock when it's touched.	
Decontamination of equipments prior to disposal at the end of their operative life	
Waste Electrical and Electronic Equipment Directive (WEEE)	

## 2. GOOD LABORATORY PRACTICE

Check all units periodically and after periods of storage to ensure they are still fit for purpose. Investigate all failures which may indicate a need for service or repair.

Good laboratory practice recommends that the unit be periodically serviced to ensure the unit is suitable for purpose. You must follow preventive maintenance instructions. In case equipment has to be serviced you can arrange this through your distributor. Prior to Inspection, Servicing, Repair or Return of Laboratory Equipment the unit must be cleaned and decontaminated.



### Decontamination prior to equipment disposal

In use this product may have been in contact with bio hazardous materials and might therefore carry infectious material. Before disposal the unit and accessories should all be thoroughly decontaminated according to your local environmental safety laws.

### 3. UNPACKING AND EQUIPMENT INSTALLATION

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**WARNING:** Failure to follow the instructions in this section may cause equipment faults or injury to the user.


- A. Due to the weight of the cage and its dimensions it should be moved between two persons in order to avoid possible damage when moving it.
- B. Inspect the instrument for any signs of damage caused during transit. If any damage is discovered, do not use the instrument and report the problem to your supplier.
- C. Ensure all transport locks are removed before use. The original packing has been especially designed to protect the instrument during transportation. It is therefore recommended to keep the original carton with its foam parts and accessories box for re-use in case of future shipments. Warranty claims are void if improper packing results in damage during transport.
- D. Place the equipment on a flat surface and leave at least 10 cm of free space between the rear panel of the device and the wall. Never place the equipment in zones with vibration or direct sunlight.
- E. Once the equipment is installed in the final place, the main power switch must be easily accessible.
- F. Only use power cords that have been supplied with the equipment. In case that you have to replace them, the spare ones must have the same specs that the original ones.



- G. Make sure that the AC voltage in the electrical network is the same as the voltage selected in the equipment. **Never connect the equipment to a power outlet with voltage outside these limits.**



**WARNING**

For electrical safety reasons you only can connect equipment to power outlets provided with earth connections .

This equipment can be used in installations with category II over-voltage according to the General Safety Rules.

The manufacturer accepts no responsibility for improper use of the equipment or the consequences of use other than that for which it has been designed.

## PC Control



Some of these instruments are designed to be controlled from a PC. To preserve the integrity of the equipment it is essential that the attached PC itself conforms to basic safety and EMC standards and is set up in accordance with the manufacturers' instructions. If in doubt consult the information that came with your PC. In common with all computer operation the following safety precautions are advised.

- WARNING**
- To reduce the chance of eye strain, set up the PC display with the correct viewing position, free from glare and with appropriate brightness and contrast settings
  - To reduce the chance of physical strain, set up the PC display, keyboard and mouse with correct ergonomic positioning, according to your local safety guidelines.

## Class A equipment is intended for use in an industrial environment.



- WARNING**
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with these instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## 4. MAINTENANCE

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**WARNING:** Failure to follow the instructions in this section may cause equipment fault.

- **PRESS KEYS SOFTLY** – Lightly pressing the keys is sufficient to activate them.
- Equipments do not require being disinfected, but cleaned for removing urine, faeces and odour. To do so, we recommend using a wet cloth or paper with soap (which has no strong odour). **NEVER USE ABRASIVE PRODUCTS OR DISSOLVENTS.**
- **NEVER** pour water or liquids on the equipment.
- Once you have finished using the equipment turn it off with the main switch. Clean and check the equipment so that it is in optimal condition for its next use.
- The user is only authorised to replace fuses with the specified type when necessary.

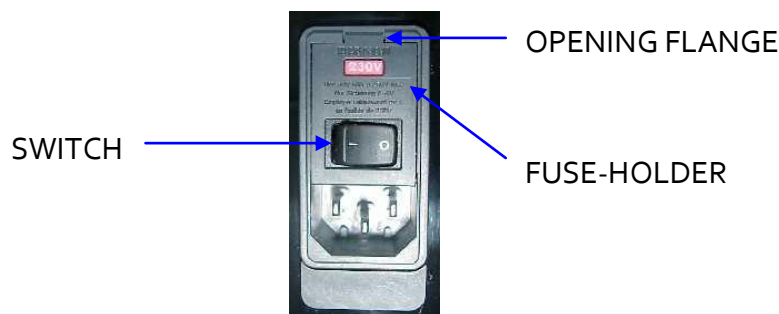


Figure 1. Power inlet, main switch and fuse holder.

### FUSE REPLACEMENT

In case of an over-voltage or other incident in the AC net making it impossible to turn on the equipment, check fuses according to the following procedure.

- 1 Remove power cord from the power inlet

- 2 Open fuse-holder by pulling the flange with a regular screwdriver



Figure 2. Open fuse-holder door.

- 3 Extract fuse holder using the screwdriver.

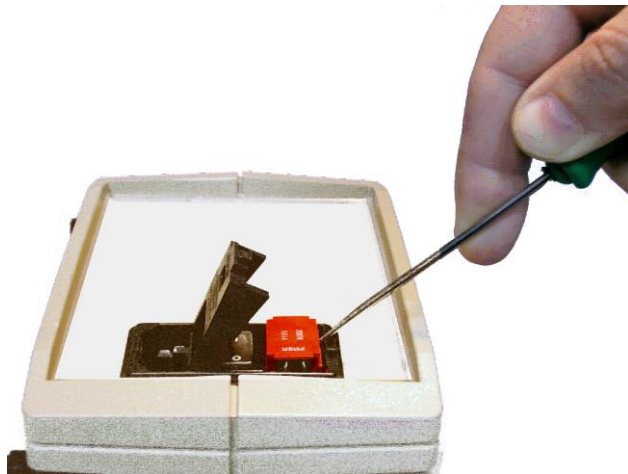


Figure 3. Extract fuse-holder.

- 4 Replace fuses if necessary. Insert fuses in the fuse-holder in the correct position.



CORRECT



INCORRECT

Figure 4. Fuses position.

- 5 Insert again fuse-holder, both possible positions are correct because power supply is universal.
- 6 If the fuses blow again unplug the equipment and contact technical service.



WARNING

For electrical safety, never open the equipment. The power supply has dangerous voltages.

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## 6. INTRODUCTION

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The Spatial Place Preference<sup>1</sup> Cage has been designed to optimise Place Preference studies. This cage allows:



Figure 5. Spatial Place Preference.

- Multiple combinations.
- Optimised differentiation between compartments.
- Minimization of spatial preference during the preliminary trial time.
- Transparent corridor walls to minimize the time that the animal stays in this compartment.
- Detection of animal position by load cells.

The spatial configuration of the compartments can be easily modified with three dimensional elements placed in the corners, and the floor can be modified with panels having smooth or rough surfaces.

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<sup>1</sup> This type of experiment was developed by professors Rafael Maldonado and Olga Valverde from the Neuropharmacology laboratory at Pompeu Fabra University, Barcelona (Spain).

## 7. EQUIPMENT DESCRIPTION

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### 7.1. CONTROL UNIT FRONT PANEL

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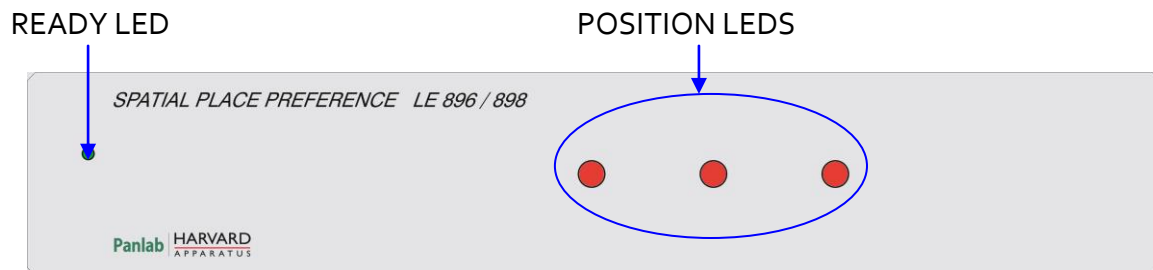


Figure 6. Control unit front panel.

- **READY LED:** 3 mm green led. When the control unit is turned on and the cage is connected to the control unit, it will flash for approximately 20 seconds, indicating that the system is carrying out an auto-balance. Once the sensors are balanced this led remains continuously on.
- **POSITION LEDS:** There are three 5 mm red leds, one for each compartment of the cage. These leds remain on while the animal is detected in the respective compartment.

## 7.2. CONTROL UNIT REAR PANEL

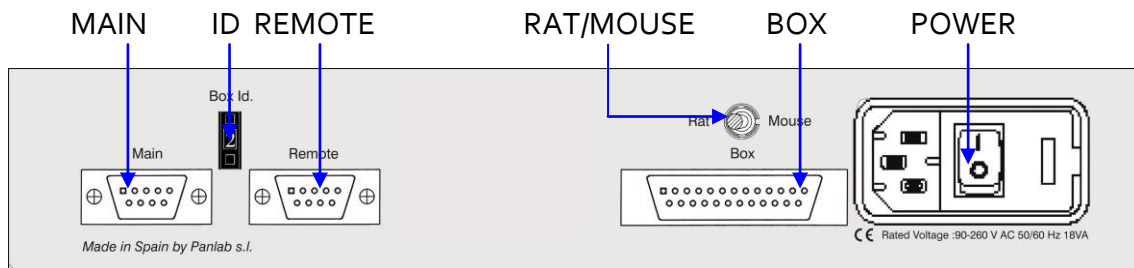
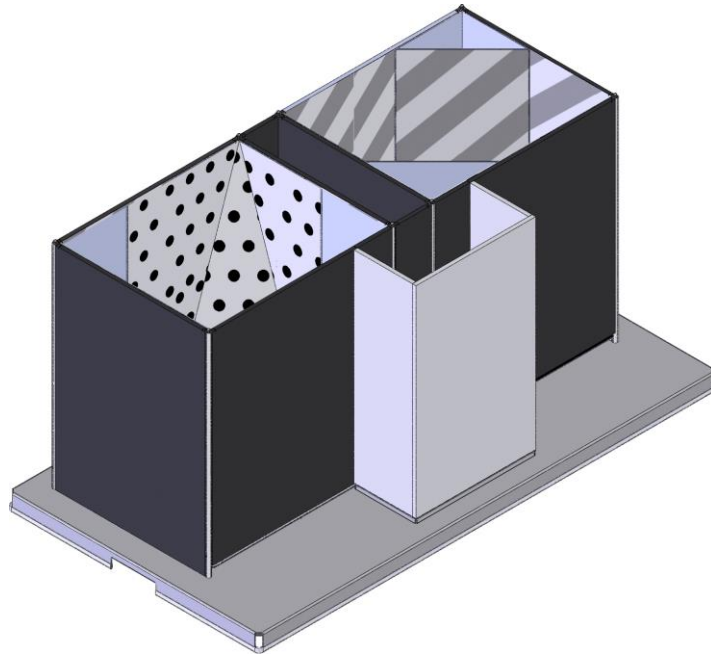


Figure 7. Control Unit Rear Panel.

- **MAIN:** DB9 female port. It is used to connect the control unit to the computer serial port (if control unit is the first), or to connect the control unit to the REMOTE port of the previous control unit.
- **REMOTE:** DB9 male port. It is used to connect the control unit to the MAIN port of the next control unit (when there are several units). If the control unit is the last unit, this port is left free.
- **ID:** Decimal selector used to identify the control unit. A computer is able to control up to 8 control units using **PPCWin** software. All connected cages must have a different identifier so that the computer can identify them.
- **BOX:** DB25 connector used to connect the control unit to the experimentation box. The control unit receives information through this connector from the cage load cells to identify where the animal is.
- **RAT/MOUSE:** This switch must be set in the correct position according to the box being worked with:
  - **RAT:** When working with the LE 898 rat cage.
  - **MOUSE:** When working with the LE 896 mice cage.
- **POWER:** Power inlet, main switch and fuse holder.

### 7.3. EXPERIMENTATION BOX

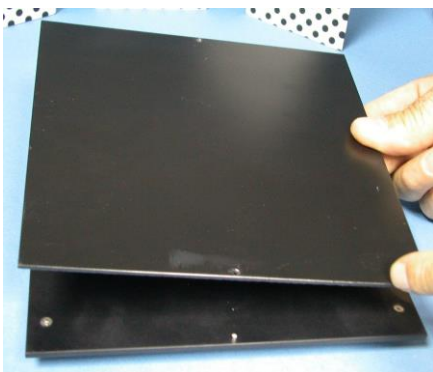
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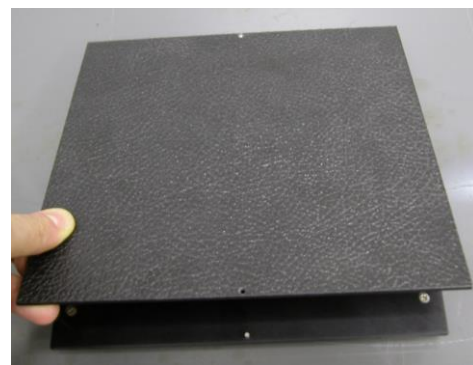
**Figure 8. Spatial place preference cage.**

The experimentation cage has 3 well-defined areas. On the left there is a compartment with white walls with black dots and a black floor. In the central section there is a corridor with transparent walls and floor that allows the animal to pass between compartments. On the right there is a compartment with white walls with diagonal grey stripes and a grey floor.

The floors in the left and right zones can be smooth or rough, simply turn the platform surface over to change it.



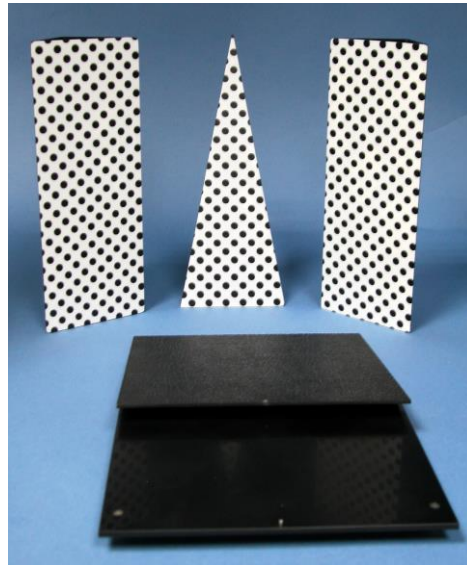
**Figure 9. Smooth floor.**



**Figure 10. Rough floor.**

Spatial configuration in the left and right zones can be modified using accessories placed in the corners of the walls. The accessories are painted like the walls and have the following shapes:

- 2 triangular-based prisms.
- 1 oblique triangular-based pyramid.



**Figure 11.** Left zone accessories used to modify its spatial configuration.



**Figure 12.** Right zone accessories used to modify its spatial configuration.

These accessories are attached to the corners by means of magnets and notches that fit into a support located at the bottom of the cage.

There are two load cells under the platform, one for the transparent corridor and one for the right zone (white walls with diagonal grey stripes). The animal's position is determined by load cells. If the animal is not in either of the two compartments with detection, the equipment determines that the animal is in the third compartment.

## 8. EQUIPMENT CONNECTION

Figure 13 shows the necessary connections.

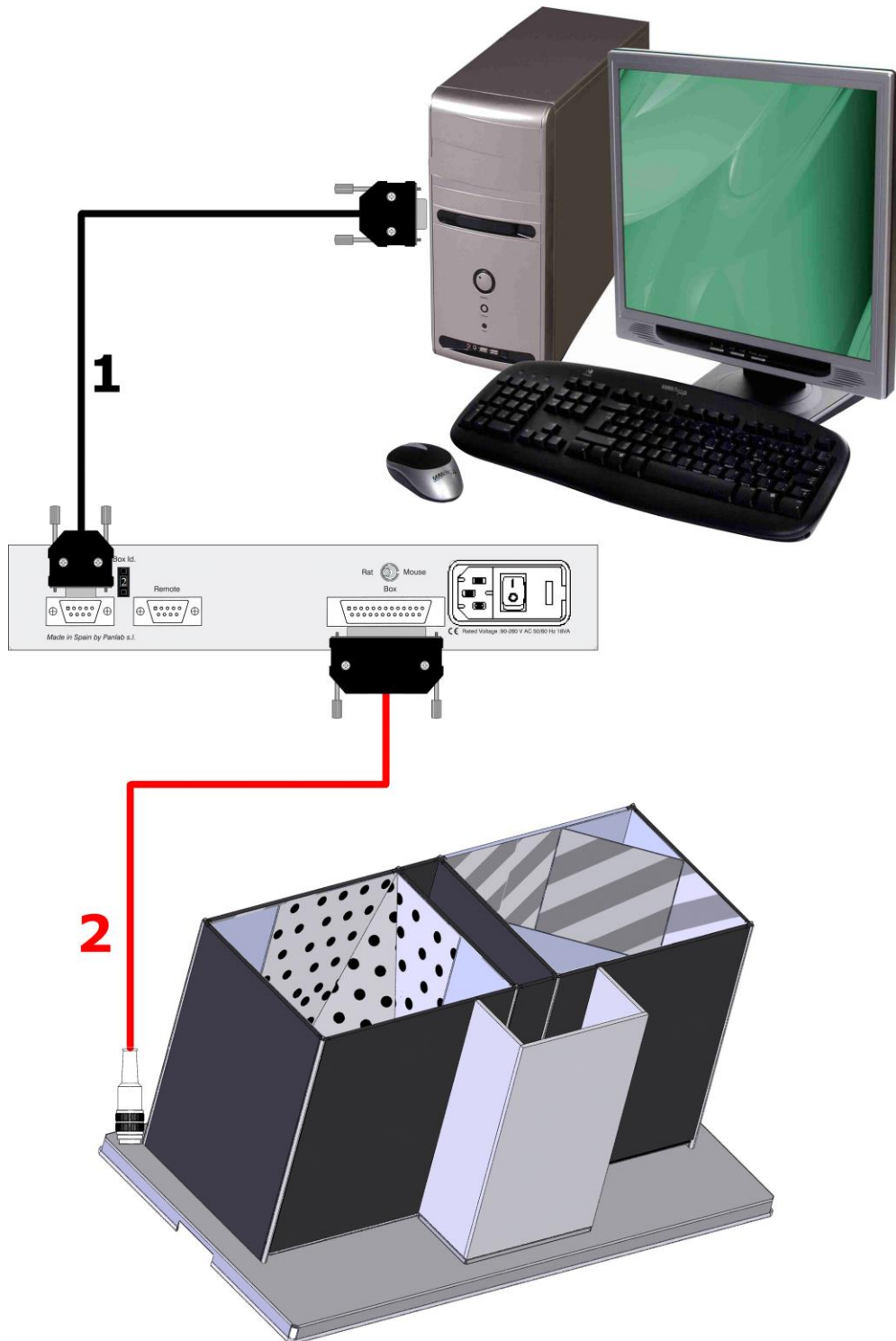


Figure 13. Equipment connection.

The necessary connections and cables are listed in the next table:

	FROM	TO	CABLE
1	LE 89X MAIN	Computer COM port	RS 232
2	LE 89X Box	Cage platform	DB25 to DIN7

A computer can control up to eight cages by connecting control units in cascade.

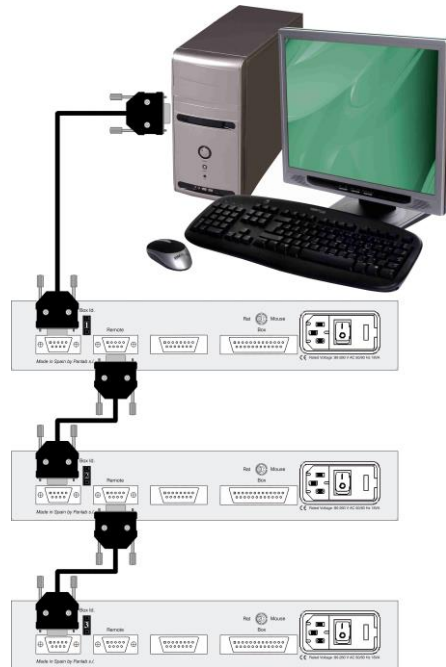


Figure 14. Example of connection of 3 cages.

Figure 14 shows an example of how three control units would be connected. The program used to control the system is **PPCWin**. Certain points should be taken into account when connecting more than one control unit to a computer:

- All control units must have a different identifier, or **ID**, so that the computer can correctly identify them.
- It is not necessary for all ID numbers to be consecutive. For example, a system with 3 cages can work with IDs 1-2-3 or 4-6-8.
- It is not necessary for the control units to be physically connected in order according to their ID number. For example, a system with three units (1, 2 and 3) could be connected in the following combinations: 1-2-3, 1-3-2, 2-1-3, 2-3-1, 3-1-2 or 3-2-1.
- The computer serial port is connected to the MAIN port of the first unit.
- The REMOTE port of each control unit is connected to the MAIN port of the next control unit.
- The REMOTE port of the last unit is left free.



## 9. WORKING WITH THE EQUIPMENT

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### 9.1. CONDUCTING AN EXPERIMENT

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The following steps must be followed to work with the unit.

1. Connect equipment as shown in Chapter 8.
2. Configure boxes with accessories (prisms, pyramids and floors).
3. If working with a RAT cage, set the switch on the rear panel of the control unit to the RAT position. Otherwise, if working with a MOUSE cage, set the switch on the rear panel of the control unit to the MOUSE position.
4. Connect the control units to AC power and turn them on.
5. Wait for approximately 20 seconds while the ready led flashes (this shows that the system is auto-balancing).
6. Follow the instructions in the **PPCWin** user's manual to prepare the experiment.
7. Place the animal in the experimentation box and run the experiment.
8. Once the experiment has ended, remove animal from the experimentation box, clean the box and return to step 7 to repeat the experiment with more animals.
9. Once the experimental session has ended, turn off control units, exit from the **PPCWin** software and clean the experimental boxes.

### 9.2. ERROR MESSAGE

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If the control unit has not been connected to the experimentation cage, or the floors have not been correctly placed in their supports, or if one or both load cells are damaged, the ready led will start flashing as soon as the control unit is turned on, indicating that the system is auto-balancing, but after 20 seconds the two red leds on the right side will also flash.

This is an error message indicating that the system will not work. Proceed as follows to solve this problem:

- Turn off the control unit.

- Ensure that the control unit and experimentation box are correctly connected.
- Ensure that the floors are correctly placed in their supports.
- Turn on the control unit.
- Wait approximately 20 seconds while the system auto-balances.

If an error message still appears, it means that the load cells are damaged.

### 9.3. CLEANING THE FLOORS

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To clean the floors you can use a lightly wet cloth and then dry them with a dry cloth. If they're too dirty you can wet the cloth with a soapy solution to clean them, then remove foam with a wet cloth and finally dry them with a dry cloth.

### 9.4. CLEANING THE DOORS

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To clean the doors you can use a lightly wet cloth and then dry them with a dry cloth. If they're too dirty you can wet the cloth with a soapy solution to clean them, then remove foam with a wet cloth and finally dry them with a dry cloth.

### 9.5. CLEANING THE TRANSPARENT PARTS

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**WARNING:** To clean transparent parts never use alcohol or alcohol derived products, otherwise stripes will appear in the transparent plastic.

To clean transparent parts you can use a lightly wet cloth and then dry them with a dry cloth. If they're too dirty you can wet the cloth with a soapy solution to clean them, then remove foam with a wet cloth and finally dry them with a dry cloth.

### 9.6. WALLS CLEANING

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To clean the walls you can use a lightly wet cloth and then dry them with a dry cloth. If they're too dirty you can wet the cloth with a soapy solution to clean them, then remove foam with a wet cloth and finally dry them with a dry cloth.

### 9.7. CLEANING PRISMS & PYRAMIDS

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To prisms and pyramids you can use a lightly wet cloth and then dry them with a dry cloth. If they're too dirty you can wet the cloth with a soapy solution to clean them, then remove foam with a wet cloth and finally dry them with a dry cloth.

## 10. ASSEMBLING THE CAGE

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### 10.1. PLACING FLOORS IN THE PLATFORM

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The floors of the different compartments must be positioned so that their legs rest on the 4 holes in the platform.

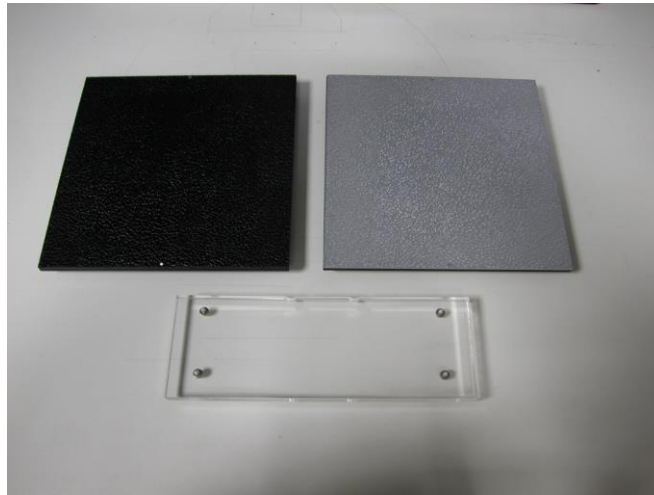


Figure 15. Floors of the different compartments.

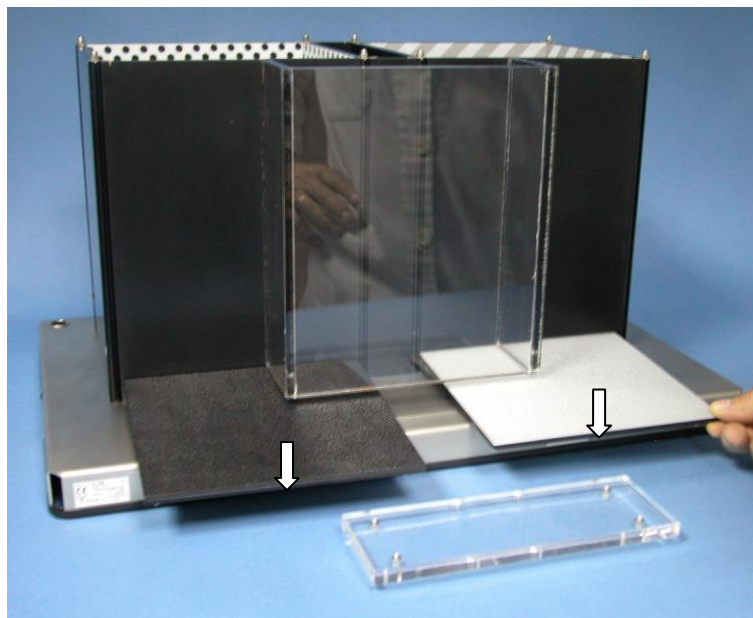


Figure 16. Placement of floors in the cage.

In figure 16, the arrows indicate the points on the floors to orient the position in which they should be inserted (always with dots on the front and back, never on the sides).

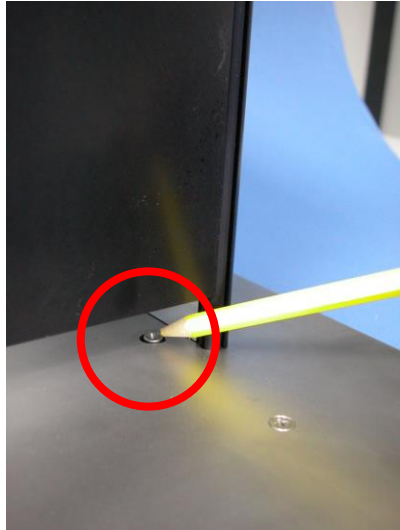


Figure 17. Floor leg support in the platform.

The right and centre (corridor) compartments have load cells to detect the presence of the animal. There is no load cell in the left compartment, and thus it is assumed that the animal is there if not detected in either of the other two compartments.

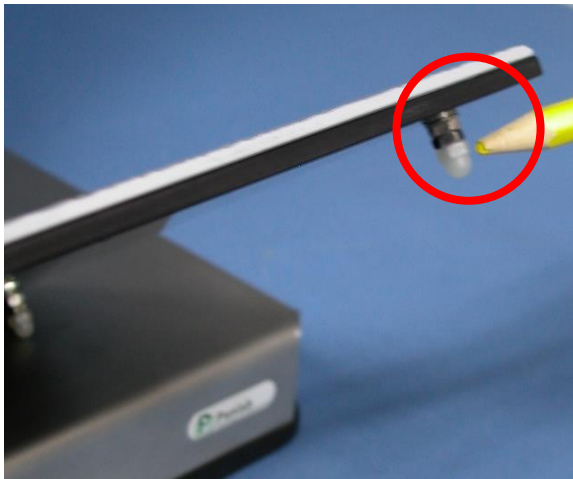


Figure 18. Floor leg.

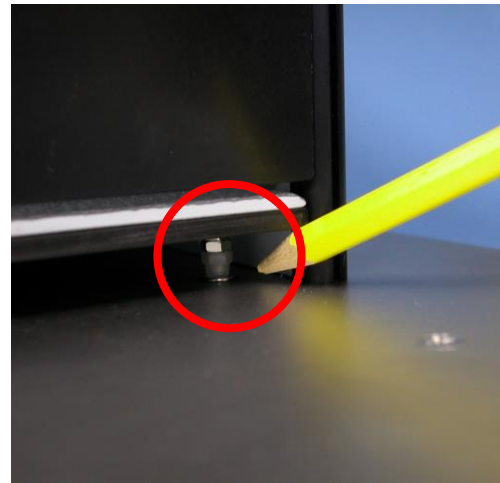


Figure 19. Floor, final position.

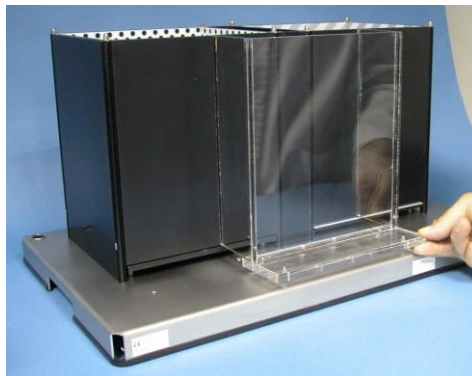


Figure 20. Corridor transparent floor placement.

## 10.2. SPATIAL CONFIGURATION OF THE CAGE

Accessories are available for left and right compartments to modify the shape of the compartment. They are attached to metal bars in the corners by magnets, and the notches must rest on pivots on the walls of cage for this purpose.

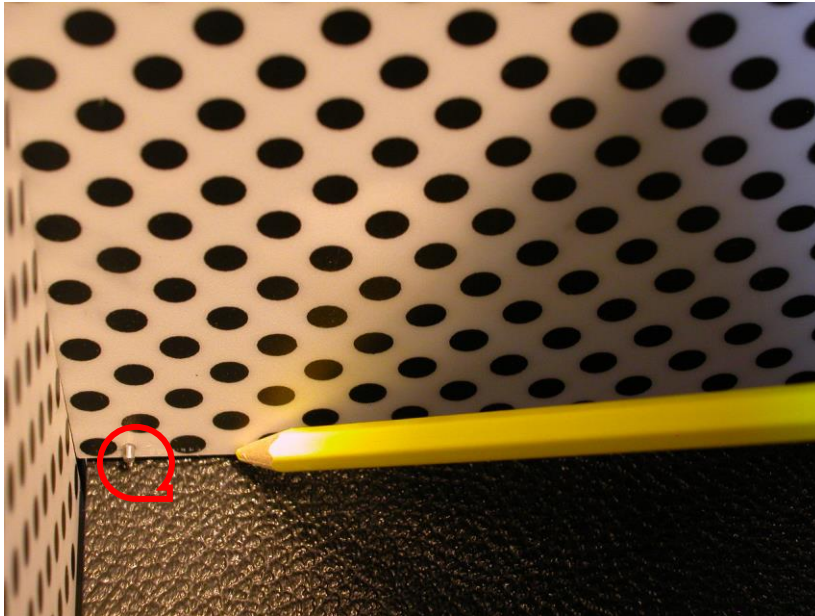


Figure 21. Pivots that match with accessory notch.



Figure 22. Notch.

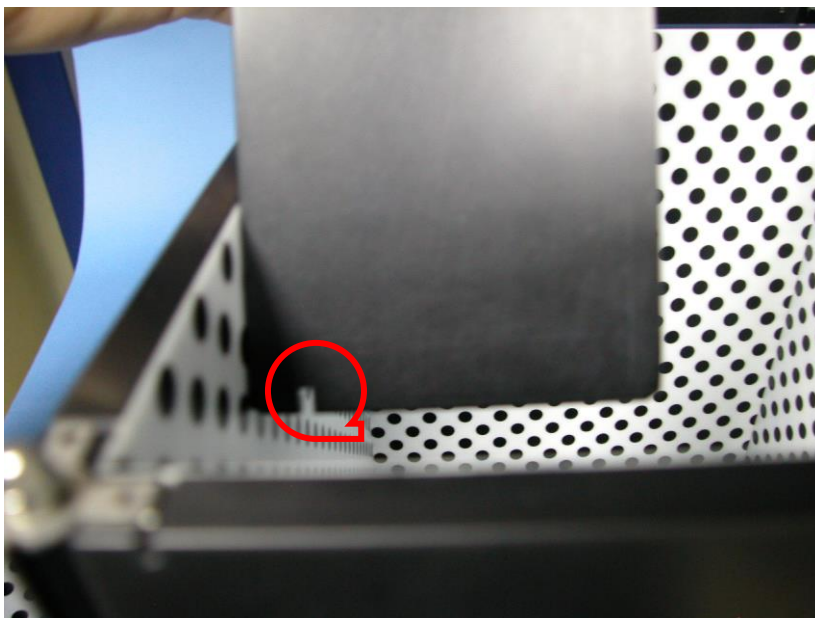


Figure 23. Notch.

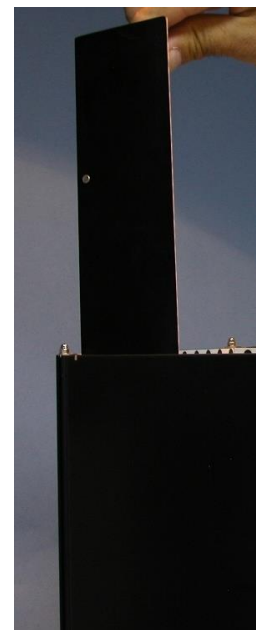


Figure 24. Accessory placement.



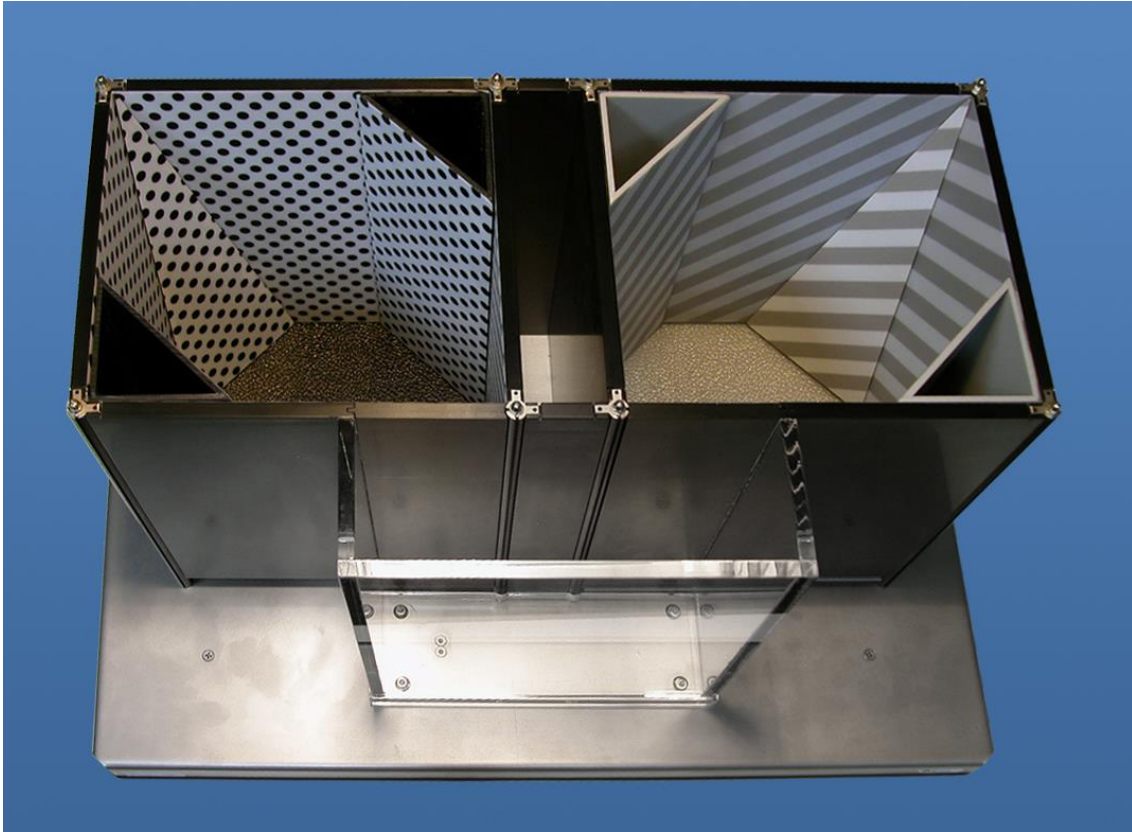


Figure 25. Example of spatial configuration.

## 11. TROUBLESHOOTING

This table features instructions to solve the most frequent problems.

PROBLEM	SOLUTION
The equipment does not start up.	<ul style="list-style-type: none"> <li>• Ensure that the voltage of mains is the same as that selected in the fuse holder.</li> <li>• Check the condition of the fuses.</li> </ul>
The two right side red position leds are blinking.	<ul style="list-style-type: none"> <li>• Ensure that the cable DB25 to DIN7 connects the cage and control unit.</li> <li>• Check that the floors are correctly placed.</li> <li>• If the cable is connected and all is correctly placed this means both load cells are damaged.</li> </ul>
One of the red position leds placed to the right is blinking.	<ul style="list-style-type: none"> <li>• The load cell is damaged or blocked.</li> </ul>
The control unit does not detect animal position.	<ul style="list-style-type: none"> <li>• Check that <b>Ready</b> led is on.</li> <li>• Check that floors are correctly placed.</li> <li>• Check that the RAT/MOUSE switch is in the correct position. (Rat weight threshold detection is 30gr, if you work with mice the equipment will not be able to detect them).</li> </ul>
The equipment does not communicate with <b>PPCWin</b> .	<ul style="list-style-type: none"> <li>• Make sure your equipment is connected to PC via RS-232.</li> <li>• Check that <b>PPCWin</b> settings so that the serial port is correct.</li> <li>• Restart the equipment and the PC to do a RESET in communications.</li> <li>• Check in the rear panel of control unit that the ID number is the same that the one set in <b>PPCWin</b>.</li> </ul>

## 12. PREVENTIVE MAINTENANCE

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	EXPERIMENT
CLEANING THE FLOORS	<input checked="" type="checkbox"/>
CLEANING THE DOORS	<input checked="" type="checkbox"/>
CLEANING THE TRANSPARENT PARTS	<input checked="" type="checkbox"/>
CLEANING THE PRISMS	<input checked="" type="checkbox"/>
CLEANING THE PYRAMIDS	<input checked="" type="checkbox"/>
CLEANING THE WALLS	<input checked="" type="checkbox"/>
CHECK CABLES CONNECTION	<input checked="" type="checkbox"/>



## 13. TECHNICAL SPECIFICATIONS

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<b>POWER SUPPLY</b> Input voltage: Frequency: Fuse: Maximum Power: Conducted Noise:	Universal 100-240V AC 50/60 Hz 2 fuses 5mm*20mm 2A 250V Fast 18W EN55022 /CISPR22/CISPR16 class B
<b>ENVIRONMENTAL CONDITIONS</b> Operating temperature: Operating relative humidity: Storage temperature:	10°C to +40°C 0% to 85% RH, non-condensing 0°C to +50°C, non-condensing
<b>POSITION DETECTION</b> Rat: Mouse:	30 gr 7 gr
<b>CONNECTOR MAIN, REMOTE</b> <u>Pin</u> 2 3 5 7 9	<u>Function</u> Rxd Txd Gnd Rts Cts
<b>COMUNICATIONS OUTPUT</b> Standard Interface: Connector: Transmission speed:	RS232C Delta 9 contacts connector 19200 bauds, 8 bits, no parity
<b>CONNECTOR BOX</b> <u>Pin</u> 10 11 12 13 23 24 25	<u>Function</u> Transducer left S- Transducer left S+ Transducer Right S+ Transducer Right S- Transducer +Exc (10V) Transducer - Exc Gnd
<b>DIMENSIONS (CONTROL UNIT)</b> Width x Height x Depth: Weight:	285mm x 70mm x 250mm 1.84 kg

DIMENSIONS (EXPERIMENTATION CAGE)<sup>2</sup>

MODEL	ANIMAL	SIZE (Length*Width*Height)	WEIGHT (Kg)
LE896	Mouse	582*362*321	13,5
LE898	Rat	1022*560*512	37,5

<sup>2</sup> Dimensions are expressed in millimeters.

**DECLARACIÓN DE CONFORMIDAD  
DECLARATION OF CONFORMITY  
DECLARATION DE CONFORMITÉ**

Nombre del fabricante: Manufacturer's name: Nom du fabricant:	<b>Panlab s.l.u.</b> <a href="http://www.panlab.com">www.panlab.com</a> <a href="mailto:info@panlab.com">info@panlab.com</a>
Dirección del fabricante: Manufacturer's address: Adresse du fabricant:	Energía, 112 08940 Cornellà de Llobregat Barcelona SPAIN
Declaro bajo su responsabilidad que el producto: Declares under his responsibility that the product: Déclare sous sa responsabilité que le produit:	<b>SPATIAL PLACE PREFERENCE</b>
Marca / Brand / Marque:	<b>PANLAB</b>
Modelo / Model / Modèle:	<b>LE 896 – LE 898</b>
Cumple los requisitos esenciales establecidos por la Unión Europea en las directivas siguientes: Fulfills the essential requirements established by The European Union in the following directives: Remplit les exigences essentielles établies pour l'Union Européenne selon les directives suivantes:	
<b>2006/95/EC</b>	Directiva de baja tensión / Low Voltage / Basse tension
<b>2004/108/EC</b>	Directiva EMC / EMC Directive / Directive CEM
<b>2012/19/EU</b>	La Directiva de Residuos de Aparatos Eléctricos y Electrónicos (WEEE) / The Waste Electrical and Electronic Equipment Directive (WEEE) / Les déchets d'équipements électriques et électroniques (WEEE)
<b>2011/65/EU</b>	Restricción de ciertas Sustancias Peligrosas en aparatos eléctricos y electrónicos (ROHS) / Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (ROHS) / Restriction de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques (ROHS)
<b>2006/42/EC</b>	Directiva mecánica / Machinery directive / Directive mécanique
Para su evaluación se han aplicado las normas armonizadas siguientes: For its evaluation, the following harmonized standards were applied: Pour son évaluation, nous avons appliqué les normes harmonisées suivantes:	
Seguridad / Safety / Sécurité:	<b>EN61010-1:2011</b>
EMC:	<b>EN61326-1:2013 Class A<sup>1</sup></b>
Safety of machinery:	<b>EN ISO 12100:2010</b>
<small><sup>1</sup>This equipment complies with the limits for class A equipment in accordance with CISPR 11 definition and is classed as a Class A digital device, pursuant to CFR Title 47 part 15 of the FCC Rules and is intended to be used in an industrial environment.</small>	
En consecuencia, este producto puede incorporar el marcado CE: Consequently, this product can incorporate the CE marking: En conséquence, ce produit peut incorporer le marquage CE:	
En representación del fabricante: Manufacturer's representative: En représentation du fabricant:	Carme Canalís General Manager Panlab s.l.u., a division of Harvard BioScience
Cornellà de Llobregat, Spain 30/04/2014	

**(GB) Note on environmental protection:**



After the implementation of the European Directive 2002/96/EU in the national legal system, the following applies:

Electrical and electronic devices may not be disposed of with domestic waste. Consumers are obliged by law to return electrical and electronic devices at the end of their service lives to the public collecting points set up for this purpose or point of sale. Details to this are defined by the national law of the respective country. This symbol on the product, the instruction manual or the package indicates that a product is subject to these regulations. By recycling, reusing the materials or other forms of utilising old devices, you are making an important contribution to protecting our environment.

**(E) Nota sobre la protección medioambiental:**



Después de la puesta en marcha de la directiva Europea 2002/96/EU en el sistema legislativo nacional, Se aplicara lo siguiente:

Los aparatos eléctricos y electrónicos, así como pilas y baterías, no se deben tirar a la basura doméstica. El usuario está legalmente obligado a llevar los aparatos eléctricos y electrónicos, así como pilas y baterías, al final de su vida útil a los puntos de recogida municipales o devolverlos al lugar donde los adquirió. Los detalles quedaran definidos por la ley de cada país. El símbolo en el producto, en las instrucciones de uso o en el embalaje hace referencia a ello. Gracias al reciclaje, a la reutilización de materiales i a otras formas de reciclaje de aparatos usados, usted contribuirá de forma importante a la protección de nuestro medio ambiente.

**(F) Remarques concernant la protection de l'environnement :**



Conformément à la directive européenne 2002/96/CE, et afin d'atteindre un certain nombre d'objectifs en matière de protection de l'environnement, les règles suivantes doivent être appliquées.

Elles concernent les déchets d'équipement électriques et électroniques. Le pictogramme "picto" présent sur le produit, son manuel d'utilisation ou son emballage indique que le produit est soumis à cette réglementation. Le consommateur doit retourner le produit usager aux points de collecte prévus à cet effet. Il peut aussi le remettre à un revendeur. En permettant enfin le recyclage des produits, le consommateur contribuera à la protection de notre environnement. C'est un acte écologique.

**(D) Hinweis zum Umweltschutz:**



Ab dem Zeitpunkt der Umsetzung der europäischen Richtlinie 2002/96/EU in nationales Recht gilt folgendes:

Elektrische und elektronische Geräte dürfen nicht mit dem Hausmüll entsorgt werden. Der Verbraucher ist gesetzlich verpflichtet, elektrische und elektronische Geräte am Ende ihrer Lebensdauer an den dafür eingerichteten, öffentlichen Sammelstellen oder an die Verkaufsstelle zurückzugeben. Einzelheiten dazu regelt das jeweilige Landesrecht. Das Symbol auf dem Produkt, der Gebrauchsanleitung oder der Verpackung weist auf diese Bestimmungen hin. Mit der Wiederverwertung, der stofflichen Verwertung oder anderer Formen der Verwertung von Altgeräten leisten Sie einen wichtigen Beitrag zum Schutz unserer Umwelt.

**(I) Informazioni per protezione ambientale:**



Dopo l'implementazione della Direttiva Europea 2002/96/EU nel sistema legale nazionale, ci sono le seguenti applicazioni:

I dispositivi elettrici ed elettronici non devono essere considerati rifiuti domestici. I consumatori sono obbligati dalla legge a restituire i dispositivi elettrici ed elettronici alla fine della loro vita utile ai punti di raccolta collerici preposti per questo scopo o nei punti vendita. Dettagli di quanto riportato sono definiti dalle leggi nazionali di ogni stato. Questo simbolo sul prodotto, sul manuale d'istruzioni o sull'imballo indicano che questo prodotto è soggetto a queste regole. Dal riciclo, e re-utilizzo del material o altre forme di utilizzo di dispositivi obsoleti, voi renderete un importante contributo alla protezione dell'ambiente.

**(P) Nota em Protecção Ambiental:**



Após a implementação da directiva comunitária 2002/96/EU no sistema legal nacional, o seguinte aplica-se:

Todos os aparelhos eléctricos e electrónicos não podem ser despejados juntamente com o lixo doméstico. Consumidores estão obrigados por lei a colocar os aparelhos eléctricos e electrónicos sem uso em locais públicos específicos para este efeito ou no ponto de venda. Os detalhes para este processo são definidos por lei pelos respectivos países. Este símbolo no produto, o manual de instruções ou a embalagem indicam que o produto está sujeito a estes regulamentos. Reciclando, reutilizando os materiais dos seus velhos aparelhos, esta a fazer uma enorme contribuição para a protecção do ambiente.