Animal Bed Rat Cryo

User Manual

Version 003

Innovation with Integrity

MRI

Document Number: Z4D12375B 003

P/N: Z33107

Contents

Contents

1 About This Manual

This manual enables safe and efficient handling of the device.

This manual is an integral part of the device, and must be kept in close proximity to the device where it is permanently accessible to personnel. In addition, instructions concerning labor protection laws, operator regulations tools and supplies must be available and adhered to.

Before starting any work, personnel must read the manual thoroughly and understand its contents. Compliance with all specified safety and operating instructions, as well as local work safety regulations, are vital to ensure safe operation.

The figures shown in this manual are designed to be general and informative and may not represent the specific Bruker model, component or software/firmware version you are working with. Options and accessories may or may not be illustrated in each figure.

1.1 Policy Statement

It is Bruker's policy to improve products as new techniques and components become available. Bruker reserves the right to change specifications at any time.

Every effort has been made to avoid errors in text and Figure presentation in this publication. In order to produce useful and appropriate documentation, we welcome your comments on this publication. Field Service Engineers are advised to check regularly with Bruker for updated information.

Bruker is committed to providing customers with inventive, high-quality, environmentally-sound products and services.

1.2 Symbols and Conventions

Safety instructions in this manual and labels of devices are marked with symbols. .

The safety instructions are introduced using indicative words which express the extent of the hazard.

In order to avoid accidents, personal injury or damage to property, always observe safety instructions and proceed with care.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

This is the consequence of not following the warning.

1. This is the safety condition.

▶ This is the safety instruction.

⚠ WARNING

WARNING indicates a hazardous situation, which, if not avoided, could result in death or serious injury.

This is the consequence of not following the warning.

1. This is the safety condition.

▶ This is the safety instruction.

⚠ CAUTION

CAUTION indicates a hazardous situation, which, if not avoided, may result in minor or moderate injury or severe material or property damage.

This is the consequence of not following the warning.

1. This is the safety condition.

▶ This is the safety instruction.

NOTICE

NOTICE indicates a property damage message.

This is the consequence of not following the notice.

1. This is a safety condition.

▶ This is a safety instruction.

SAFETY INSTRUCTIONS

SAFETY INSTRUCTIONS are used for control flow and shutdowns in the event of an error or emergency.

This is the consequence of not following the safety instructions.

1. This is a safety condition.

▶ This is a safety instruction.

This symbol highlights useful tips and recommendations as well as information designed to ensure efficient and smooth operation.

2 Introduction

2.1 Intended Use

The device has been designed and constructed solely for the intended use described here.
The Bio Animal Bed Rat Cryo (Animal Bed) is suitable for magnetic resonance imaging (MRI) and magnetic resonance spectroscopy (MRS) examinations of rat brains using an MRI CryoProbe. It can be used within BRUKER BioSpec®, PharmaScan® and ClinScan® systems. The Animal Bed provides a stereotactic fixation and a setup for gas anesthesia.
Intended use also includes compliance with all specifications within this manual.
Any use which exceeds or differs from the intended use shall be considered improper use.
No claims of any kind for damage will be entertained if such claims result from improper use.

2.2 Installation and Initial Commissioning

Installation, initial commissioning, retrofitting, repairs, adjustments or dismantling of the device must only be carried out by Bruker Service or personnel authorized by Bruker. Damage due to servicing that is not authorized by Bruker is not covered by your warranty.

2.3 Limitation of Liability

All specifications and instructions in this manual have been compiled taking account of applicable standards and regulations, the current state of technology and the experience and insights we have gained over the years.

The manufacturer accepts no liability for damage due to:

- Failure to observe this manual.
- Improper use.
- Deployment of untrained personnel.
- Unauthorized modifications.
- Technical modifications.
- Use of unauthorized spare parts.

The actual scope of supply may differ from the explanations and depictions in this manual in the case of special designs, take-up of additional ordering options, or as a result of the latest technical modifications.

The undertakings agreed in the supply contract, as well as the manufacturer's Terms and Conditions and Terms of Delivery, and the legal regulations applicable at the time of the conclusion of the contract shall apply.

2.4 Warranty Terms

The warranty terms are included in the manufacturer's Terms and Conditions.

2.5 Customer Service

Our customer service division is available to provide technical information. See the chapter Contact for contact information.

In addition, our employees are always interested in acquiring new information and experience gained from practical application; such information and experience may help improve our products.

3 Safety

3.1 System Owner's Responsibility

System Owner

The term *system owner* refers to the person who operates the device for trade or commercial purposes, or who surrenders the device to a third party for use/application, and who bears the legal product liability for protecting the user, the personnel or third parties during the operation.

System Owner‘s Obligations

The device is used in the industrial sector, universities and research laboratories. The system owner of the device must therefore comply with statutory occupational safety requirements.

In addition to the safety instructions in this manual, the safety, accident prevention and environmental protection regulations governing the operating area of the device must be observed.

In this regard, the following requirements should be particularly observed:

- The system owner must obtain information about the applicable occupational safety regulations, and - in the context of a risk assessment - must determine any additional dangers resulting from the specific working conditions at the usage location of the device. The system owner must then implement this information in a set of operating instructions governing operation of the device.
- During the complete operating time of the device, the system owner must assess whether the operating instructions issued comply with the current status of regulations, and must update the operating instructions if necessary.
- The system owner must clearly lay down and specify responsibilities with respect to installation, operation, troubleshooting, maintenance and cleaning.
- The system owner must ensure that all personnel dealing with the device have read and understood this manual. In addition, the system owner must provide personnel with training and hazards information at regular intervals.
- The system owner must provide the personnel with the necessary protective equipment.
- The system owner must warrant that the device is operated by trained and authorized personnel as well as all other work, such as transportation, mounting, start-up, the installation, maintenance, cleaning, service, repair and shutdown, that is carried out on the device.
- All personnel who work with, or in the close proximity of the device, need to be informed of all safety issues and emergency procedures as outlined in this user manual.
- The system owner must document the information about all safety issues and emergency procedures in a laboratory SOP (Standard Operating Procedure). Routine briefings and briefings for new personnel must take place.
- The system owner must ensure that new personnel are supervised by experienced personnel. It is highly recommended to implement a company training program for new personnel on all aspects of product safety and operation.
- The system owner must ensure that personnel are regularly informed of the potential hazards within the laboratory. This is all personnel that work in the area, but in particular laboratory personnel and external personnel such as cleaning and service personnel.

- The system owner is responsible for taking measures to avoid inherent risks in the handling of dangerous substances, preventing industrial disease, and providing medical first aid in emergencies.
- The system owner is responsible for providing facilities according to the local regulations for the prevention of industrial accidents and generally accepted safety regulations according to the rules of occupational medicine.
- All substances needed for operating and cleaning the device samples, solvents, cleaning agents, gases, etc. have to be handled with care and disposed of appropriately. All hints and warnings on storage containers must be read and adhered to.
- The system owner must ensure that the work area is sufficiently illuminated to avoid reading errors and faulty operation.
- The system owner must ensure that the laboratory is equipped with an oxygen warning device, in case the device is operated with nitrogen.

Furthermore, the system owner is responsible for ensuring that the device is always in a technically faultless condition. Therefore, the following applies:

- The system owner must ensure that the maintenance intervals described in this manual are observed.
- The system owner must ensure that all (electrical, mechanical, etc.) safety devices are regularly checked to ensure full safety functionality and completeness.

3.2 Personnel Requirements

3.2.1 Qualifications

This manual specifies the personnel qualifications required for the different areas of work, listed below:

Laboratory Personnel

Laboratory personnel are health care professionals, technicians, and assistants staffing a research or health care facility where specimens are grown, tested, or evaluated and the results of such measurements are recorded. Laboratory personnel are able to carry out assigned work and to recognize and prevent possible dangers self-reliant due to their professional training, knowledge and experience as well as profound knowledge of applicable regulations.

The workforce must only consist of persons who can be expected to carry out their work reliably. Persons with impaired reactions due to, for example, the consumption of drugs, alcohol, or medication are prohibited from carrying out work on the device.

When selecting personnel, the age-related and occupation-related regulations governing the usage location must be observed.

3.2.2 Unauthorized Persons

⚠ WARNING

Risk to life for unauthorized personnel due to hazards in the danger and working zone!

Unauthorized personnel who do not meet the requirements described in this manual will not be familiar with the dangers in the working zone. Therefore, unauthorized persons face the risk of serious injury or death.

- ▶ Unauthorized persons must be kept away from the danger and working zone.
- ▶ If in doubt, address the persons in question and ask them to leave the danger and working zone.
- ▶ Cease work while unauthorized persons are in the danger and working zone.

3.3 Basic Dangers

The following section specifies residual risks which may result from using the device and have been established by means of a risk assessment.

In order to minimize health hazards and avoid dangerous situations, follow the safety instructions specified here as well as in the following chapters of this manual.

3.3.1 General Workplace Dangers

⚠ WARNING

Danger to life from nonfunctional or insufficient safety devices!

If safety devices are not functioning or are disabled, there is a danger of serious injury or death.

- ▶ Check that all safety devices are fully functional and correctly installed before starting work.
- ▶ Never disable or bypass safety devices.
- ▶ Ensure that all safety devices are always accessible.

NOTICE

Risk of material damage during the insertion of the Animal bed equipped with animal and animal monitoring system

- ▶ The CryoProbe has to be installed in the MRI system before the Animal Bed can be inserted.
- ▶ Before inserting an animal with monitoring setup on an Animal bed into the MRI system, any possible collision of the setup with the Coilhead has to be checked by using the Rat Position Gauge.
- ▶ Insertion and removal of the Animal Bed is only possible when the blue lever is in the *down* position.

3.3.2 Dangers from Magnetic Fields

⚠ WARNING

Risk to life due to high magnetic fields

A magnetic field of more than 0.5 mT (5 Gauss) is life-threatening for people with pacemakers or active metal implants. Exposure to more than 8 T can cause damage to health. Duration of exposure (8 h/day) above the limit of 200 mT can cause damage to health. Ferromagnetic tools in the magnetic field are significantly hazardous. Disks and electronic devices may be damaged.

- ▶ Mark the magnetic field of more than 0.5 mT (5 Gauss) before start up.
- ▶ Keep people with active medical implants or heart pacemakers away from the 0.5 mT (5 Gauss) area.
- ▶ The permanent workplace of employees must be outside the 0.5 mT (5 Gauss) area.
- ▶ Do not stay or work at magnetic fields of more than 8 T.
- ▶ Prevent exposure of more than 200 mT for more than 8 h/day.
- ▶ Keep disks, credit cards and electronic devices away from the identified area.
- ▶ Do not use ferromagnetic tools or items within the identified area.
- ▶ Only use non-ferromagnetic transportation dewars or pressure cylinders for the cryogenic agents.
- ▶ Only use non-ferromagnetic ladders or steps.
- ▶ Remove magnetic items (jewelry, watches, pens etc.) before carrying out maintenance work.

The magnetic field of the device does not cause any personal injuries or property damage. For further information see the manual of the magnet used.

3.3.3 Danger from Chemical Substances

⚠ WARNING

Exposure and other health hazards to maintenance personnel.

The device must be cleaned if contaminated before performing any maintenance.

- ▶ Register all substances with which the device has come into contact.
- ▶ Sign a certification form verifying that the device has been properly cleaned if contaminated to protect maintenance personnel.
- ▶ Obviously contaminated, insufficiently cleaned units, as well as units without a signed cleaning certification will not be repaired and returned to the sender.

4 Transport, Packaging and Storage

Installation, initial commissioning, retrofitting, repairs, adjustments or dismantling of the device must only be carried out by Bruker Service or personnel authorized by Bruker. Damage due to servicing that is not authorized by Bruker is not covered by your warranty.

4.1 Inspection at Delivery

Upon receipt, immediately inspect the delivery for completeness and transport damage.

Proceed as follows in the event of externally apparent transport damage:

- Do not accept the delivery, or only accept it subject to reservation.
- Note the extent of the damage on the transport documentation or the shipper's delivery note.
- Initiate complaint procedures.

Issue a complaint in respect to each defect immediately following detection. Damage compensation claims can only be asserted within the applicable complaint deadlines.

4.2 Packaging

About Packaging

The individual packages are packaged in accordance with anticipated transport conditions. Only environmentally friendly materials have been used in the packaging.

The packaging is intended to protect the individual components from transport damage, corrosion and other damage prior to assembly. Therefore do not destroy the packaging and only remove it shortly before assembly.

Handling Packaging Materials

Keep the original container and packing assembly, at least as long the warranty is valid, in case the unit has to be returned to the factory. When the packaging material is no longer needed dispose of in accordance with the relevant applicable legal requirements and local regulations.

4.3 Storage

Storage of the Packages

Store the packages under the following conditions:

- Do not store outdoors.
- Store in dry and dust-free conditions.
- Do not expose to aggressive media.
- Protect against direct sunlight.

- Avoid mechanical shocks.
- Storage temperature: 15 to 35 °C.
- Relative humidity: max. 60%.
- If stored for longer than 3 months, regularly check the general condition of all parts and the packaging. If necessary, top-up or replace preservatives.

Under certain circumstances, storage instructions may be affixed to packages which expand the requirements specified here. Comply with these accordingly.

5 Design and Function

5.1 Bio Animal Bed Rat Cryo and Rat Position Gauge

Figure 5.1: Total View of the Animal Bed and Rat Position Gauge

1. Animal support area of the Animal Bed where the animal is positioned.
2. Rat Position Gauge for testing the correct position of the animal.

See also

Bio Animal Bed Rat Cryo and Rat Position Gauge [15]

5.2 Animal Warming Blanket

An animal warming blanket (*Figure 5.2 [15]*) to stabilize the body temperature of the rat during investigation is provided with the Animal Bed. The animal warming blanket has to be connected to a conventional water heating system.

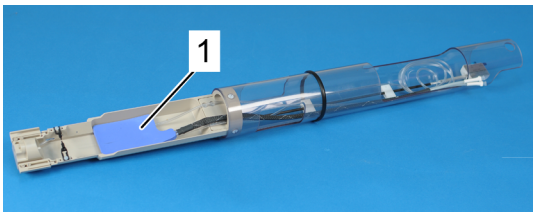

Figure 5.2: Animal Bed with animal warming blanket (1).

The temperature of the water heating system has to be adjusted in order to stabilize the animals physiological body temperature.

6 Operation

6.1 Provided Tools

⚠ CAUTION

Risk of injury due to magnetic tools

▶ When tightening screws within the 0.5 mT line of the magnet only use the non-magnetic screw driver provided with the Animal Bed.

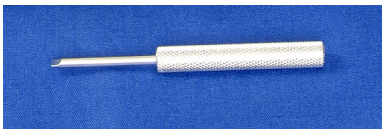

Figure 6.1: Non-magentic screw driver for adjustments on the Animal Bed.

6.2 Anesthesia and Fixation

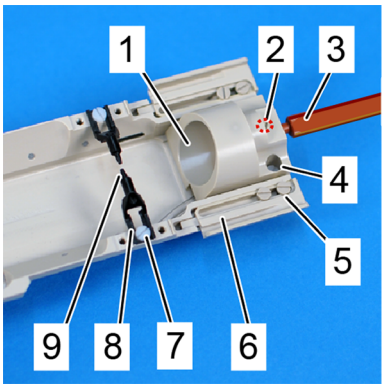

Figure 6.2: Animal support area

1. Respiration mask
2. Slotted headless screw
3. Extension screw
4. White fixation screw
5. PEEK screws
6. Mechanical stop
7. White screw
8. Ear plug holder
9. Ear plug

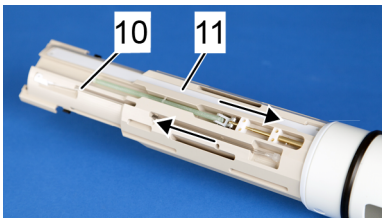

Figure 6.3: Bottom view of the animal support area with gas supply

10. Silicon tube for narcotic gas supply
11. Silicon tube for narcotic gas extraction

The animal support area consists of the following parts, see *Animal support area [▶ 17]* and *Bottom view of the animal support area with gas supply [▶ 18]* for the location of the numbers in brackets:

- Anesthetic gas supply: A passive gas anesthesia including supply and extraction is provided within the respiration mask (1). The respiration mask is connected to the two silicon tubes (supply: (10), extraction: (11)).
- Respiration mask: The respiration mask can be shifted within a certain range. To reposition the respiration mask loosen the white fixation screw (4).
- Tooth bar: To adjust the position of the tooth bar apply the extension screw (3) and loosen the slotted headless screw (2). After positioning the tooth bar fix the slotted headless screw and remove the extension screw.
- Stereotactic fixation: The stereotactic fixation device (8) is realized by ear plugs fitting into the ear canals. The stereotactic fixation can be placed in three different positions in reference to the respiration mask. To change the position the white screws (7) have to be removed. The position of the ear plug within the ear canal can be adjusted by moving the complete ear plug holder (8) and the ear plugs (9) independently. To move the complete ear plug holder loosen the white screw (7). The ear plugs do have a thread and can be moved by using the provided non-magnetic screw driver.
- Mechanical stop: To adjust the position of the object to be imaged in relation to the centre of the Coilhead the mechanical stop (6) can be moved. To do so, the PEEK screws (5) have to be loosened. The correct position can be checked by using the Rat Position Gauge (*Rat Position Gauge [▶ 20]*).

Connect the tube of the narcotic gas extraction to the specific exhaust system within the lab. The specific exhaust system has to be adjusted with the appropriate flow in order to ensure a stable anesthesia of the animal.

NOTICE

Hazardous situation of damaging the Coilhead due to punctiform pressure! This will cause a sudden loss of vacuum and a temporary freezing of the RF window which may cool the animal to lethal temperatures.

- ▶ Remove the extension screw (*Animal support area [▶ 17]* (3)) whenever the bed is used in the Rat Position Gauge or the MRI system.
- ▶ It is not allowed to position the respiration mask beyond the end of the Animal Bed otherwise its functionality cannot be guaranteed.
- ▶ Place the Animal Bed in the Rat Position Gauge to check for any possible collision with the Coilhead ("Rat Position Gauge" on page 12).

6.2.1 Balancing Ring

The lifting mechanism of the Animal Bed is designed to accommodate a properly-balanced load consisting of the animal and the monitoring equipment (imaging setup). Therefore, the balance has to be checked and adjusted for each new imaging setup.

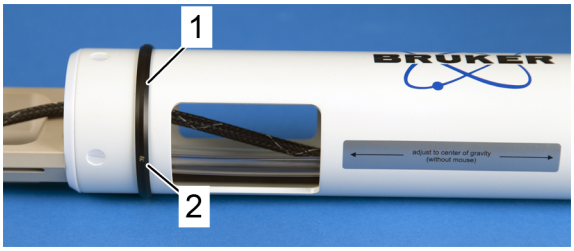

Figure 6.4: Balancing ring of the Animal bed

1. Screw to fix the balancing ring
2. Balancing ring

1. Position the fully equipped Animal Bed on a flat table and check for a properly-balanced load.
2. Loosen the screw (2) and move the ring (1) so that the Animal Bed is balanced.
3. Tighten the screw again.

6.2.2 Lifting Mechanism

NOTICE

The blue lever has to be in the *down* position when inserting or removing the Animal Bed from the Rat Position Gauge and the MRI system.

The lifting mechanism is controlled by the blue lever at the end of the Animal Bed.

The blue lever is positioned in the *down* position as shown on the left side of *Figure 6.5 [▷ 19]*, the lifting arm is recessed in the Animal Bed, as shown on the right of *Figure 6.5 [▷ 19]* .

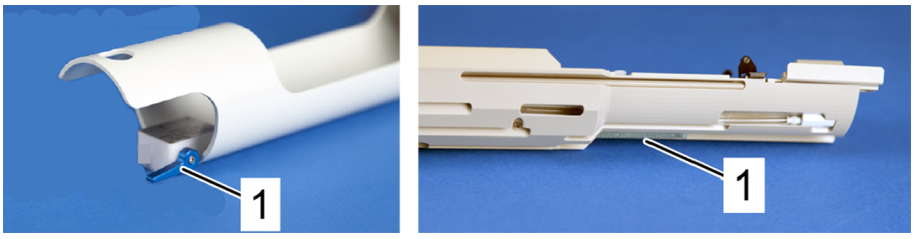

Figure 6.5: Left side: Blue lever (1) in down position. Right side: The lifting arm (1) is in recessed position in the Animal Bed.

Moving the blue lever into the *up* position (shown on the left of *Figure 6.6 [▷ 20]*) lifts the front end of the Animal Bed by pushing out the lifting arm (shown on the right of *Figure 6.6 [▷ 20]*). The lifting mechanism is force limited.

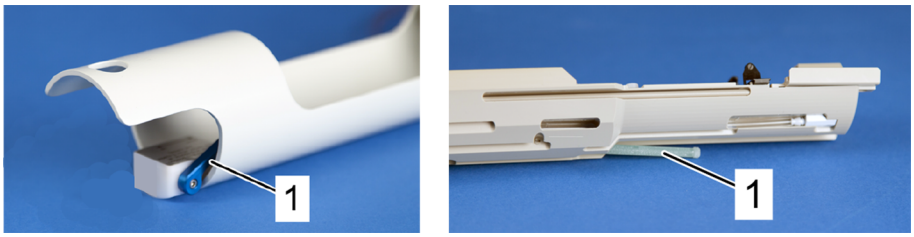

Figure 6.6: Left side: Blue lever (1) in up position. Right side: The lifting arm (1) is pushed out to lift the Animal Bed.

6.2.3 Rat Position Gauge

The Rat Position Gauge (*Figure 6.7 [▶ 20]*) simulates the real situation of placing an imaging setup underneath the Coilhead. It has two functions. For safety reasons it has to be used to check for any possible collision of the imaging setup (Animal bed with the animal and all accessories) and the Coilhead. Furthermore, it can be used to check for the correct position of the imaging setup in relation to the Coilhead and the movement of the lifting mechanism.

- Install the Animal Bed into the Rat Position Gauge carefully.
- The cross on the acrylic glass marks the centre of the coil system of the Coilhead as shown in *Figure 6.7 [▶ 20]* (1). It can be used to check for the correct position of the subject to be imaged in relation to the Coilhead.

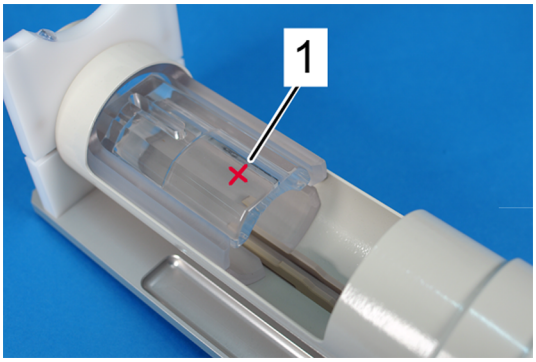

Figure 6.7: Rat Position Gauge for testing the correct position of the rat. The cross (1) marks the center of the coil system of the Coilhead.

6.2.4 Handling of the Bio Animal Bed Rat Cryo on the MRI System

NOTICE

Risk of material damage during the insertion of the Animal bed equipped with animal and animal monitoring system

- ▶ The CryoProbe has to be installed in the MRI system before the Animal Bed can be inserted.
- ▶ Before inserting an animal with monitoring setup on an Animal bed into the MRI system, any possible collision of the setup with the Coilhead has to be checked by using the Rat Position Gauge.
- ▶ Insertion and removal of the Animal Bed is only possible when the blue lever is in the *down* position.

Insertion

- Check for the correct installation of the CryoProbe in the MRI system before inserting the Animal Bed.
- To insert the Animal Bed into the MRI system, move the blue lever into the *down* position.
- The Animal Bed has to be moved into the MRI system from the patient end.
- Constantly check for the correct rotational orientation (level) of the Animal Bed while moving it into the MRI system until the mechanical stop is reached.
- Put the blue lever into the *up* position.

Removal

- Put the blue lever into the *down* position.
- Carefully remove the Animal Bed from the MRI system. Keep aligned in respect to rotation until clear of the Coilhead.

7 Maintenance

7.1 Material

The half shell of the Animal Bed system is made of PEEK. PEEK is fire-proof according to the guidelines of DIN 4102 B2. The maximum operating temperature should not exceed 75°C air temperature, even without mechanical load.

The Animal Bed is a highly complex and delicate accessory. It should be handled with great care. Do not drop or bend the Animal Bed and avoid impact with hard objects which may scratch or damage it.

7.2 Cleaning

For cleaning, neutral antistatic plastic cleaners or disinfection cleaners are recommended. Commercial household cleaners without polishing agents can be used.

Never use cleaners that contain organic solvents such as benzene, acetone or chlorinated hydrocarbons. Also, alcohol cleaners in high concentration must not be used, otherwise the Animal bed system can be severely damaged.

NOTICE

Risk of material damage due to organic solvents

Cleaner containing organic solvents or alcohol can damage the Animal bed.

▶ Use only neutral antistatic plastic cleaners or disinfection cleaners. Commercial household cleaners without polishing agents can also be used.

8 Replacements of Parts

8.1 Required Parts for Animal Bed Z140780 with ECL 2.0 – Z162635 with ECL 0.0

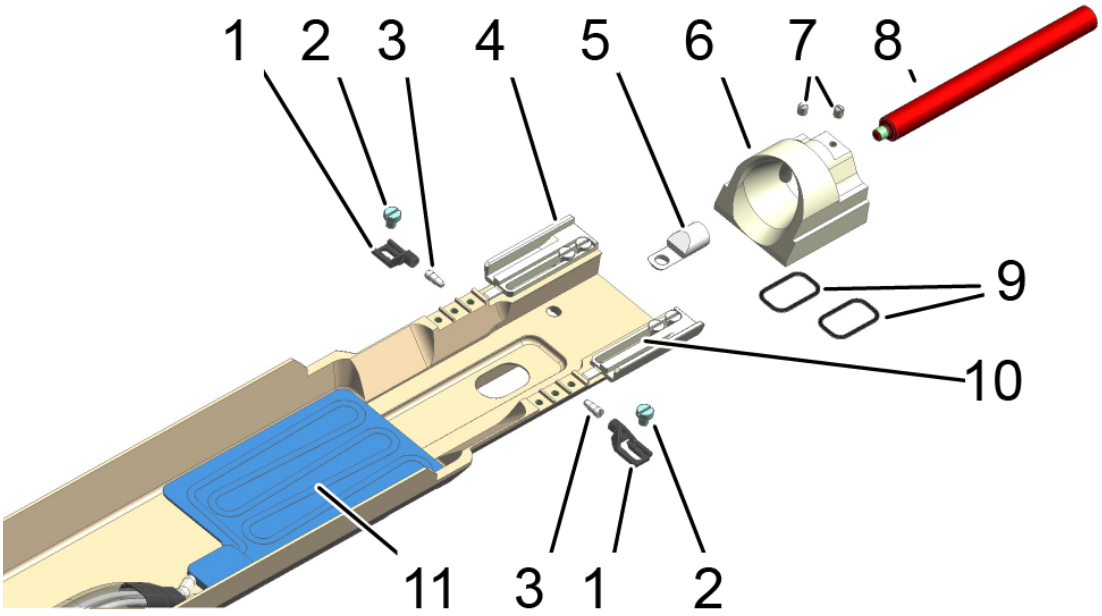

Figure 8.1: Explosion view of the Animal Bed showing the parts which can be separately ordered as listed in Table 8.1 [▶ 25].

Position	Part number	Description	Material
1	Z162756	Ear plug holder Type 3	POM (Polyoxymethylene) black
	Z162757	Ear plug holder Type 4 low	POM white
2	28477	White screw M3 x 4	PA (Polyamide)
3	Z162755	Ear plug rat	POM black
4	Z113764	Guide rail left 180° flex long	PEEK (Polyetheretherketone)
5	Z151112	Toothbar Type 1 short	PET-C (Polyethylene terephthalate)
	Z151113	Toothbar Type 2 long	PET-C
6	Z162758	Respiration mask rat V1	PEEK
7	Z113763	Headless screw M3	PEEK
8	Z151111	Extension toothbar red	PA
9	23025	O-rings 15 x 1	PMMA (Polymethyl methacrylate)
10	Z113765	Guide rail right 180° flex long	PEEK
11	T10690	Heating cover	

Position	Part number	Description	Material
	Z113800	Screw driver	
	Z33107	Animal Bed Rat Cryo Manual	

Table 8.1: Parts for the Animal Bed: Please check what has to be replaced or is missing.

8.2 Returning the Unit for Repair

If the Bruker Hotline diagnoses an instrument failure that requires a part to be returned for repair, please follow the procedure listed here:

1. Contact your local Bruker office to start the repair process (see Contact). Repair is always handled by your local Bruker office. Their reply will contain all necessary information for the subsequent repair process steps.
2. They will provide you with details on the shipping address, and also in most cases a “Return Merchandise Authorization” number (RMA number) that allows references to the repair case. Always refer to this RMA number in case of questions.
3. Send the defective part to the local Bruker office and include the following documents:
   – RMA sheet (if RMA number was assigned).
   – Signed Equipment Clearance Form (BBIOF002/H152631). The Equipment Clearance Form will be sent to you as part of step 1 (see above) with information about the returned part (part number, serial number, your contact details) already filled in.
4. Attach the relevant papers to the *outside* of the packaging, for instance in a transparent polybag.

The unit should be returned using the original container and packing assembly. If this packaging is no longer available, contact your local Bruker office for further instructions.

9 Disposal

Installation, initial commissioning, retrofitting, repairs, adjustments or dismantling of the device must only be carried out by Bruker Service or personnel authorized by Bruker. Damage due to servicing that is not authorized by Bruker is not covered by your warranty.

9.1 Disposal Europe

Environmental information for laboratory and industrial customers within the EU (European Union)

This laboratory product is developed and marketed for Business-to-Business (B2B), so does not fall under article 6 clause 3 of the German Act ElectroG. To meet the demands of the European Directive 2012/19/EU WEEE 2 (Waste of Electrical and Electronic Equipment) and the national Equipment Safety Act, electrical and electronic equipment that is marked with this symbol directly on or with the equipment and/or its packaging must not be disposed of together with unsorted municipal waste or at local municipal waste collecting points. The symbol indicates that the equipment should be disposed of separately from regular industrial/ domestic waste.

Correct disposal and recycling will help prevent potential negative consequences for the environment and risk to personal health. It is your responsibility to dispose of this equipment using only legally prescribed methods of disposal and at collection points defined by government or local authorities in your area.

The WEEE register number can be found on the product label of the equipment. If you need further information on the disposal of equipment or collection and recovery programs available, contact your local Bruker BioSpin sales representative. Local authorities or professional waste management companies may also provide information on specific waste disposal services available in your area.

Disposal - End of Life (EoL) information: the common procedure as defined in the sales contract with Bruker BioSpin

After the lifespan of an electrical and electronic product, Bruker BioSpin takes responsibility for final disassembly and correct disposal in accordance with the European directive 2012/19/ EU WEEE 2.

Bruker BioSpin offers to take back the equipment (only for deliveries after 23.03.2006) after termination of use at the customer site upon request by the customer. This request must be affirmed when the equipment is ordered from Bruker BioSpin. Additional costs for dismantling and transport service will apply!

Only 100% pre-decontaminated equipment can and will be accepted by Bruker BioSpin. A release document for decontamination can be inquired from your nearest Bruker BioSpin contact site, also to be used when repairs, going back to Bruker sites, are requested.

In compliance with WEEE II directive: **2012/19/EU**

9.2 Disposal USA and Other Countries

Disposal of these materials may be regulated due to environmental considerations. For disposal or recycling information, please contact our local office or your local authorities, or in the U.S.A., contact the Electronics Industry Alliance web site at *www.eiae.org*.

10 Contact

Bruker Corporation provides dedicated hotlines and service centers. Please select the NMR service center or hotline you wish to contact from our list available at:

https://www.bruker.com/nc/service/products/labscape-bruker-biospin-service-life-cycle-support-for-magnetic-resonance-and-imaging/europe.html

Contact our NMR service centers, so that our specialists can respond as quickly as possible to all your service requests, application questions, software or technical needs.

Contact for Hardware Specific Questions about MRI CryoProbes

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