PET Insert 20/12

- Site Planning Information

Version 003

Innovation with Integrity

Preclinical Imaging

Document Number: 9007201638400267

P/N: Site_Planning_PET Insert

Contents

Contents

1 About this Manual

This Site Planning Information is to be used by the System Owner and planning offices that have been entrusted by the operator to plan installation and meet the installation requirements of a PET instrument.

The manual does not provide specific guidelines to the layout and radioactive protection calculation of laboratories using radioactive materials. Bruker cannot provide service for such detailed planning tasks of radioprotection and certification. It is strongly recommended to contact local third party planning services with the expertise and all certifications to plan the set-up and certification of such laboratories. Bruker can assist you in finding suitable local planning services.

This manual does not provide instructions for installation. A PET instrument may only be installed by Bruker Service and Lifecycle Support (SLS) or by personnel authorized by SLS.

1.1 Additional Documents

This information supplements the Site Planning Information of the Bruker BioSpec 47/40, 70/30 and 94/30 USR instruments.

1.2 Responsibilities

The responsibility for planning the installation and for correctly implementing the installation requirements lies with the System Owner (responsible body), also if the System Owner has outsourced planning services to an external provider. Unless otherwise stipulated in the individual case by the contract of sale, Bruker can only provide information to the System Owner.

The transfer of risk is established in the general business terms and/or in the "Terms and Conditions" of the respective contract of sale and must accordingly be taken into account when the System Owner plans the installation. If there is a delay of receipt on the part of the System Owner after readiness for shipment has been sent to Bruker BioSpin MRI, the System Owner may be charged for the resulting additional costs. The regulations on a delay of receipt are established in the General Business Terms and the "Terms and Conditions" of the respective contract of sale.

1.3 Validity

This version of the manual represents the technical status of the installation requirements at the time of publication. Technical modifications that are established in the general business conditions and in the “Terms and Conditions” of the contract of sale may require modifications in the installation requirements. Any instrument configurations shown in this manual are typical examples. However, the final configuration of the ordered instrument is solely defined by the corresponding contract.

1.4 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.

General Hazard

Sign indicating a general hazard.

Read the manual for safety instructions or action guidelines. Noncompliance with the information provided in the manual may result in hazards or incorrect operation.

Hazardous Electrical Voltage

Sign indicating hazardous electrical voltage.

Noncompliance with the safety instructions provided in the manual may result in serious hazards.

Radioactive Material or Ionizing Radiation

Sign indicating radioactive material or ionizing radiation.

Noncompliance with the safety instructions provided in the manual may result in serious hazards.

⚠ DANGER

DANGER: Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

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 that, 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 that, if not avoided, could result in minor or moderate injury.

This is the consequence of not following the warning.

1. This is the safety condition.

▶ This is the safety instruction.

NOTICE

NOTICE: Indicates information considered important, but not hazard-related (e.g. messages relating to property damage).

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.

About this Manual

2 PET Insert Overview

The PET Insert consists of the following functional components:

- PET Detector which is to be inserted into the BGA 20S HP MRI gradient system
- PET Electronics for the acquisition of PET signals
- PET Server for data storage and image reconstruction
- PET Workplace to control the PET and MR data acquisition

These components are located at different sites within the laboratory:

- PET Detector (1) and PET Electronics (2) in the magnet room.
- PET Server & Workplace in the operating area.

Figure 2.1: PET-Insert with electronic cabinet as trolley.

The PET Insert is to be inserted into the MR instrument from the service end and is stored on the trolley beside the magnet if not in use.

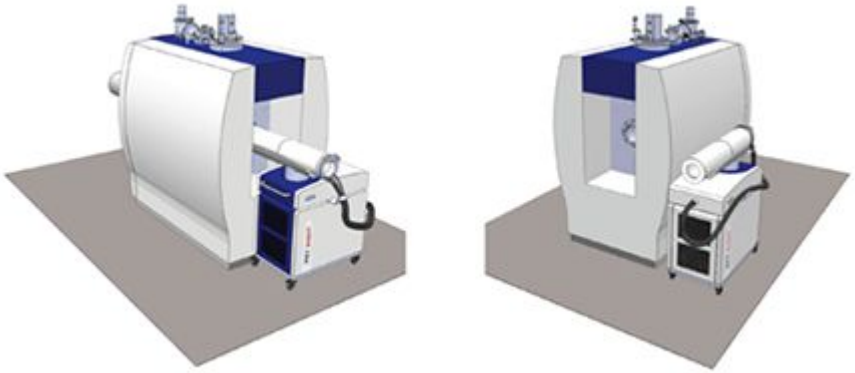


Figure 2.2: Overview PET-Insert at the position prior to inserting it into the magnet bore (left). Park position when not in use (right).

The PET Insert is designed for use within an MR instruments that is located inside an RF shielded room (Faraday Cage). In case the PET Insert is to be used in an MR instruments without RF shielded room, additional filter elements in the CCM of the MR magnet are needed. As stand-alone PET , the PET Insert can be used outside shielded rooms.

3 Safety

The following chapter provides safety information that is relevant for the site preparation for installation and the installation of the PET Insert itself. It is assumed that the PET insert is installed inside an existing MRI instrument and that all safety instructions for the site preparation of the MRI instruments are known to the system owner.

During the site preparation and during the actual installation of the PET Insert in the MR instrument people, buildings, and equipment can in principle be put at risk. The following safety measures must therefore be heeded by the MR system owner.

- General Safety aspects with respect to high voltages and handling of heavy loads
- Safety aspects relating to strong magnetic fields
- Safety aspects from radioactive materials

3.1 General Safety

The PET Insert has been developed in accordance with EN 61010-1 (IEC 61010-1) — *Safety requirements for electrical equipment for measurement, control and laboratory use* and EN 61326-1 (IEC 61326-1) — *Electrical equipment for measurement, control and laboratory use – EMC requirements - Part 1: General requirements*.

Improper use or failure to follow the safety instructions can result in serious injuries and/or property damage. Any non-observance infringes the Intended Use. In this case Bruker does not assume any liability.

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.

⚠ WARNING

Danger of injury from electrical shock.

A life threatening shock may result when the service access housing is opened and work performed while connected to the line power.

Only electrically qualified personnel should open the housing and carry out work.

- ▶ Disconnect from line power.
- ▶ Prevent reconnection.
- ▶ Test for absence of harmful voltages.

⚠ CAUTION

Heavy load.

Some Service actions require handling of heavy loads.

- ▶ Ensure compliance with worker protection regulatory limits.
- ▶ Potentially handle with at least 2 persons where applicable.
- ▶ Potentially, hire professional staff trained in handling heavy loads.

3.2 Safety Aspects relating to Strong Magnetic Fields

The Site Planning Information of the main MRI instruments provides all safety warnings arising from working in strong magnetic fields. Please be familiar with the required safety measures and make sure that only trained and qualified personnel get access to the PET and MR instruments.

The PET Insert and the PET electronics are designed to be compatible with strong magnetic fields.

⚠ WARNING

Risk of personal injury or death due to effects originating from strong magnetic fields: Establish and maintain a Controlled Access Area.

Approaching a strong magnetic field bears various risks that can lead to serious injuries. It is the responsibility of the System Owner (responsible body) to establish and maintain a Controlled Access Area which is defined by the three dimensional region where the magnetic field exceeds 0.5 mT (5 Gauss). People with medical implants or pacemakers or people carrying magnetic parts must not enter the Controlled Access Area.

- ▶ Establish a Controlled Access Area with minimum size of the 0.5 mT region.
- ▶ Train and authorize all personnel that needs to enter the Controlled Access Area. Do not forget to inform facility management, cleaning personnel, or potentially local fire brigade.
- ▶ Check authorization regularly and refresh training on safety.
- ▶ Refuse and prevent actively people carrying medical implants entering the Controlled Access Area.
- ▶ Refuse and prevent actively non-authorized and or non-trained personnel entering the Controlled Access Area. Inform visitors on the potential risk originating from the high magnetic field. Do not leave visitors unattended.
- ▶ It is good practice to establish a standard procedure when entering the Controlled Access Area and depose all personal accessories outside that might be affected or become dangerous projectiles.

3.3 Safety Aspects relating to the Use of Radioactive Material

By definition, the operation of the PET insert requires the use of radioactive tracers. The usage of such materials is normally strictly regulated by the local occupational standards and permissions and under the responsibility of the system owner and/or the local radiation officer.

The tune-up and the acceptance tests that are performed during the installation of the PET insert requires the use of radioactive tracers. It is essential that the laboratory holds the required licenses for the use of radioactive tracers before the start of the installation.

Please refer to section *Use of Radioactive Tracers for the Installation [▶ 25]* for detailed information about the need of radioactive tracers during installation and acceptance.

⚠ WARNING

Health hazard by ionizing radiation.

Radioactive sources are to be used for Tune up and Quality Assurance. Compliance with occupational safety and health regulations are in the responsibility of the System Owner (responsible body).

- ▶ Care for regulatory clearance prior to the installation of the instrument.
- ▶ Ensure compliance with regulatory.

The standard for the protection of laboratory personnal against radiation exposure are commonly stated “As Low as Reasonably Achievable” (ALARA). ALARA can be achieved in part by considering concepts of time (decay), distance, probability of exposure and shielding. In order to implement these principles in laboratory workflow, it is essential to include all steps of handling radioactive tracer material, starting from the delivery of radioactive materials, its transport pathways and usage up to the final disposal of radioactive waste, materials and tools as well as the probability of persons being exposed to radiation.

It is strongly recommended the include local third party planning services with the expertise and all certifications to plan the set-up and certification of laboratories using radioactive materials. Bruker can assist in identifying suitable local radiation planning partners.

3.4 Emergency Plan

PET specific emergency procedures for the case of different emergency situations need to be established, documented and trained in form of an emergency plan. It is the responsibility of the system owner to establish such emergency procedures and documents. Typical emergency situation are listed below, but the list is not meant to be complete:

- Event of Fire, i.e. training of personnel and the local fire brigade
- Contamination with radioactive materials, i.e. training of medicare staff
- Spilling of radioactive fluids, i.e. safety protection for cleaning

3.5 Biological Safety

In relation to the health and safety of employees and laboratory animals, we refer to compliance with national specifications and regulations. Repairs by Bruker BioSpin MRI can only be carried out after decontamination of equipment has been demonstrated in writing and any damage to the health of Bruker employees has been ruled out. Appropriate aids, access and procedures that rule out any damage to the health of service personnel must therefore be provided for maintenance, service, and repair of the PET system.

- Measures and aids for cleaning and decontaminating hardware and accessories.
- If there a hazard category exists: Planning a physical separation between various hazard areas for different parts of the MR system, e.g. technical room and its access in a non-hazardous area.

4 Standards

4.1 Standards

The device complies with the standard

- IEC 61010-1 and with UL 61010-1 / CSA C22.2 No. 61010-1-04 Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use
- IEC 61326-1 Electromagnetic Compatibility (EMC)

4.2 Environmental Conditions

The following environmental conditions must be fulfilled to maintain **electrical safety** at the installation site.

General conditions

- Indoor use
- Height up to 2000 m above sea level.
- Temperature range 5°C to 40°C
- Highest relative humidity 80% for temperatures up to 31°C, declining thereafter linearly to 50% relative humidity at 40°C
- Degree of pollution II

Electrical network specifications

- IP classification 20
- Power supply fluctuations no greater than ±10%
- Transient overvoltages as they normally occur in the main power supply

To achieve operational qualification of the instrument, the performance specifications of the different room areas must be met in addition to the environmental conditions. See chapter *Site Preparation Requirements [▶ 19]*.

Standards

5 Laboratory Infrastructure and Interactions

The following chapters will describe the planning factors, which concern the operational procedure and possible interactions between the PET system and its surroundings.

5.1 Operational Procedures

In addition to the regulatory clearance of the laboratory for PET investigations, it is recommended already for the planning phase to consider the workflow and to establish operational procedures. Important factors are:

- Avoid long routes between tracer preparation, animal preparation, and imaging instrument
- Consider cleaning and disinfection areas
- Access and procedures for service and maintenance

5.2 Interactions

Today, no interactions between the environment at the installation site and the quality of molecular imaging is known. No functional specifications are required with respect to environmental conditions like floor vibration, electromagnetic or magnetic interactions, or others.

6 Site Preparation Requirements

6.1 Installation Overview

Planning for a PET Insert installation site comprises the following subject areas:

- Defining the general laboratory structure for optimized workflows and adequate operational procedures.
- Realization of the required Infrastructure for the installation and operation of the PET insert:
  - Extension of the existing MRI Insert filter plate to host feedthroughs for the PET Insert.
  - Installation of ultra-fast Ethernet lines between PET Electronics and PET Reconstruction Server.
  - Provision of compressed air.
  - Installation of electrical power for the PET workplace.
  - Realization of enhanced environmental conditions.

In order to optimally prepare the site before the installation starts, the filter plate and compressed air connectors (if ordered from Bruker) can be sent upfront prior to the installation. Please contact your local Bruker office for obtaining the components upfront.

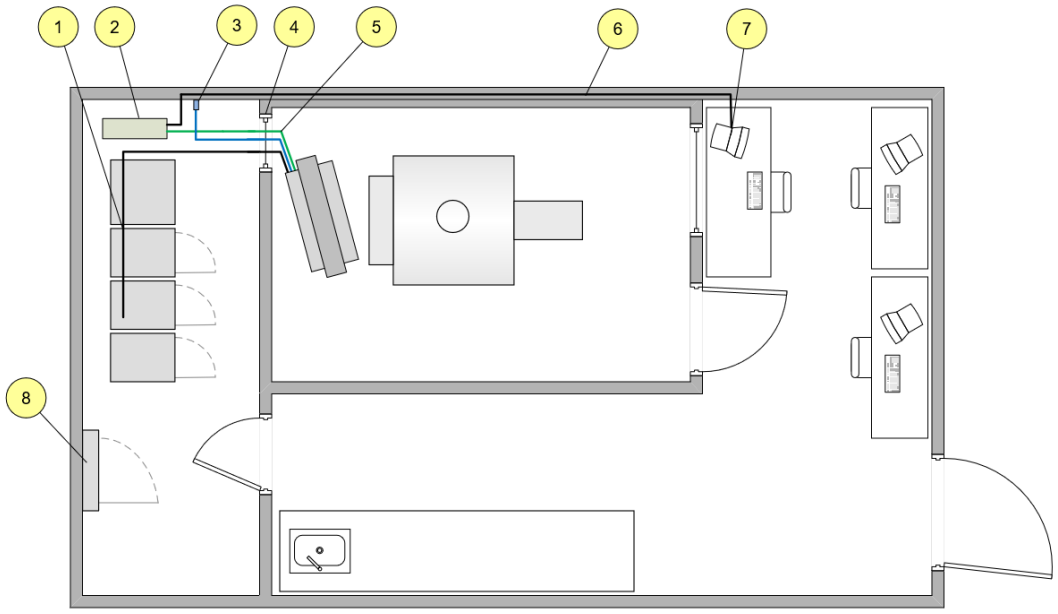


Figure 6.1: Installation Overview PET Insert.

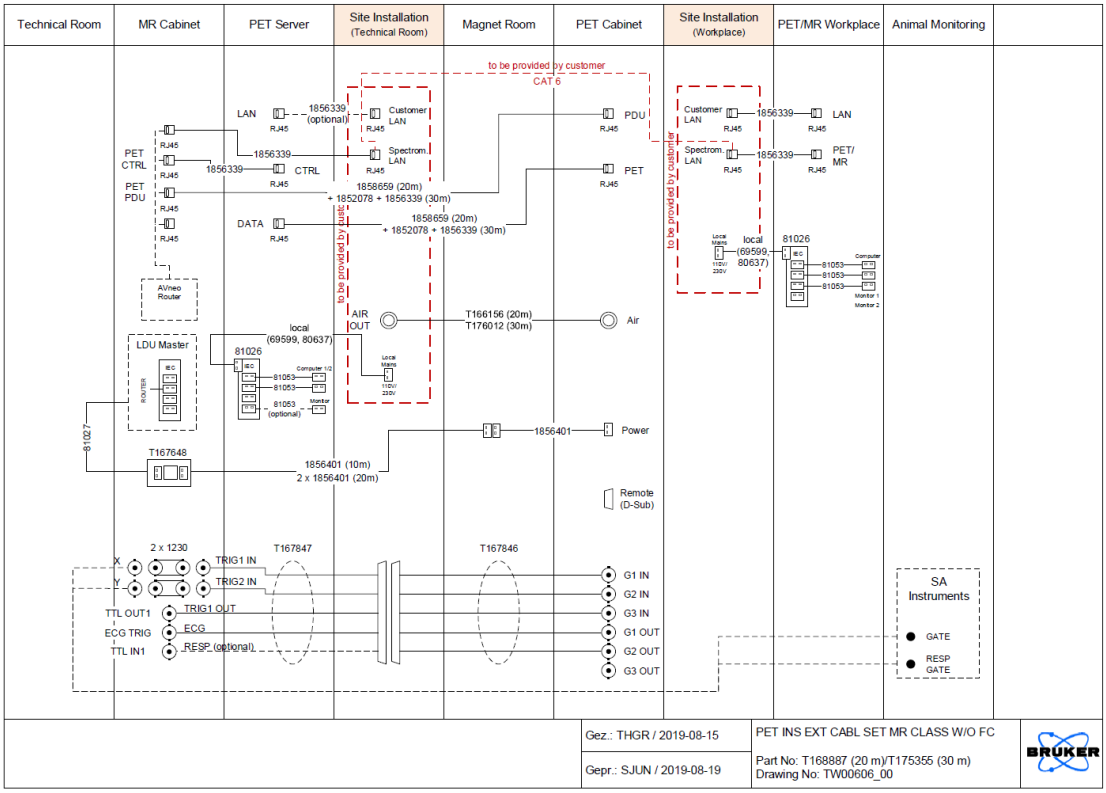
1	Power Supply from MRI Cabinet	2	PET Reconstruction Server
3	Compressed Air Supply	4	MRI Filter Plate
5	Ultra-fast Ethernet line to PET reconstruction server	6	LAN connection to MR Workplace
7	PET/MR Workplace	8	Line Power Distributor (LPD)

6.2 Interconnection Overview

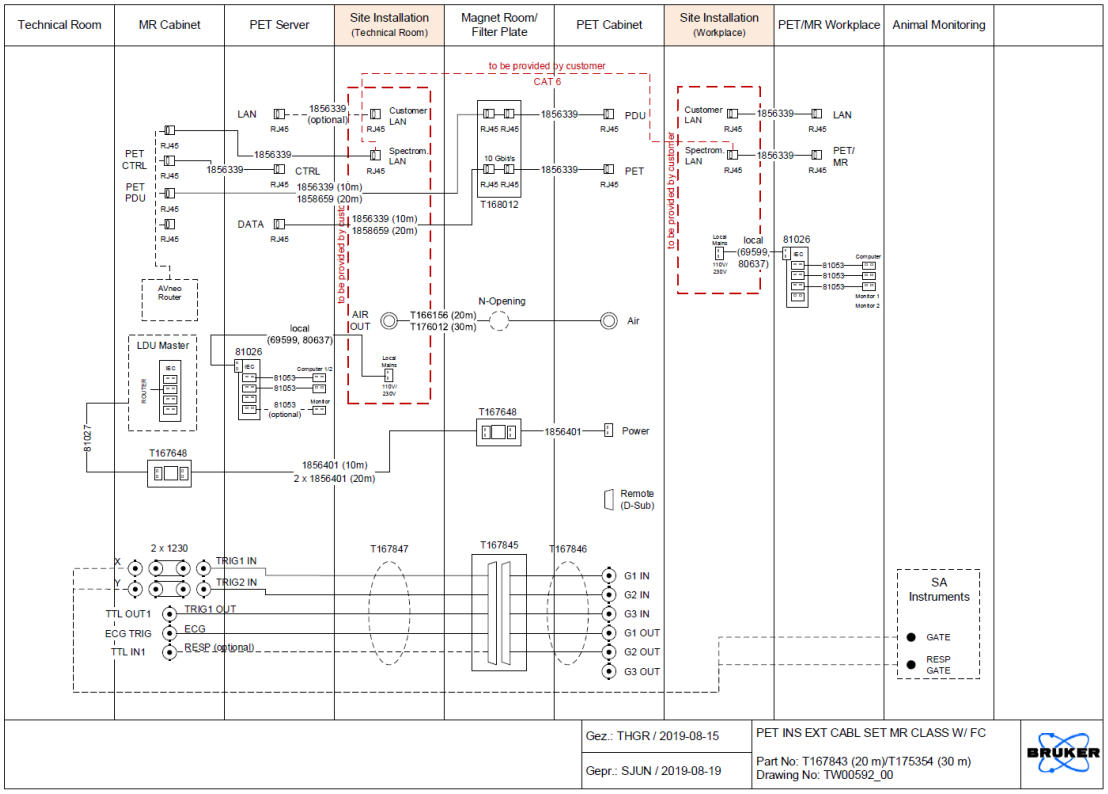
The figures below provide the overview of the external wiring and interfacing with the BioSpec MR instrument.

Please note the indicated site installations that need to be installed during site preparation prior to installation: ultra-fast Ethernet lines, mains in the operator room and compressed air outlet. Please refer to the specific requirements on these installations in the subsequent chapters.

Installation without Filter Plate



Installation with Filter Plate


Technical Room
MR Cabinet
PET Server
Site Installation (Technical Room)
Magnet Room/ Filter Plate
PET Cabinet
Site Installation (Workplace)
PET/MR Workplace
Animal Monitoring
to be provided by customer
CAT 6
LAN
1856339 (optional)
Customer LAN
Spectrom. LAN
PDU
PET
PET CTRL
CTRL
PET PDU
1856339 (10m)
1858659 (20m)
DATA
T168012
to be provided by customer
to be provided by customer
PET/ MR
local (69599, 80637)
81026
AV/neo Router
LDU Master
N-Opening
AIR OUT
T166156 (20m)
T176012 (30m)
Air
81053
81053 (optional)
T167648
1856401
Power
1856401 (10m)
2 x 1856401 (20m)
81027
Remote (D-Sub)
2 x 1230
X
Y
TRIG1 IN
TRIG2 IN
TTL OUT1
TRIG1 OUT
ECG TRIG
ECG
TTL IN1
RESP (optional)
T167847
T167845
T167846
G1 IN
G2 IN
G3 IN
G1 OUT
G2 OUT
G3 OUT
SA Instruments
GATE
RESP GATE
Gez.: THGR / 2019-08-15
Gepr.: SJUN / 2019-08-19
PET INS EXT CABL SET MR CLASS W/ FC
Part No: T167843 (20 m)/T175354 (30 m)
Drawing No: TW00592_00
BRUKER

6.3 Space Requirements

The installation and operation of a PET insert requires additional space in the magnet room.

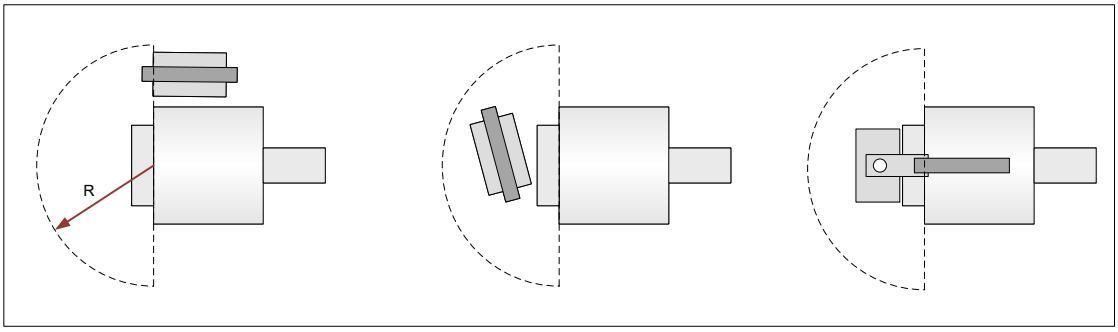


Figure 6.2: Space Requirements

1	PET Insert in the “parking position” when not in use. It can be parked left or right.	2	PET Insert and the PET electronics are moved behind the magnet for the insertion position
3	PET Insert in the operation position	4	

Parameter	Value/Definition
Distance behind the magnet	Radius ≥ 125 cm for 70/30 Radius ≥ 135 cm for 94/30
Distance of PET trolley to filter plate	≤ 10 m

Table 6.1: Space Requirement

The distance / radius «r» is measured from the end flange of the magnet and takes the 40 cm deep CCM box at the rear of the magnet into account.

6.4 Performance Environmental Requirements

The PET Insert is safe for the operator under the environmental conditions as described in *General Safety [▷ 11]*. In order to achieve the full performance specifications of the PET Insert, the following performance environmental conditions need to be fulfilled and provided by a suitable air conditioning system.

To achieve the full performance of the PET system, the requirements for the performance environmental conditions for the operation of the PET Insert must be met.

Air-conditioning system for the magnet room	Cooling performance
Room temperature	22 ± 2°C
Humidity	40 – 80 %

Air-conditioning system for the magnet room	Cooling performance
Maximum temperature drift rate	1°C/hour

Table 6.2: Performance Environmental Conditions

6.5 Faraday Cage Requirements

The following additional filter elements and feedthroughs for the PET insert need to be installed on existing openings (covered by blind plates) of the existing BioSpec MRI filter plate:

- Ethernet filter, to be installed instead of a 80 x 40 mm blind plate
- Power filter, to be installed instead of a 80 x 40 mm blind plate
- Trigger feedthroughs, to be installed instead of a 100 x 100 mm blind plate
- Compressed air will be feed through an existing opening of an unused N connector

During the site planning and site preparation, the availability of such non-used blind plates need to be verified. Please contact your local Bruker office in case that no such blind plates and openings are available.

6.6 Compressed Air Requirements

A connection point for compressed air needs to be provided in close proximity to the filter plate.

Parameter	Value/Definition
Air quality	dry air, dew point max. 6°C
Oil filter	< 0.1 mg/m³ (according to category II of ISO 8573-1)
Particle filter	< 20,000 particle/m³ with Ø 0.1…0.5 µm
Flow and pressure	250 l/min @ 4 bar
Connections	Pipe thread G1/2'' (according to ISO 228-1)
Tube to filter plate	Bruker provides a 6 m tube with min. 20 cm bending radius

Table 6.3: Compressed Air Requirements

Connector type: FESTO KD4-1/2-A (2145) — Bruker SAP P/N: 1813228

Risk of deteriorate performance or possibly wrong measurement results.

A failure of the compressed air system during operation of the PET Insert will deteriorate the performance and might lead to wrong results. It does not but do not bear the risk of a damage of the PET Insert

▶ consider to install a compressed air supervising unit.

6.7 Data Line Requirements

Two Ethernet lines need to be installed between the filter plate and the operator room.

Parameter	Value/Definition
Ethernet category (PET DATA)	CAT6A S/FTP TIA/EIA-568-A (according to ISO 11801)
Ethernet category (PET CTRL)	
Receptacle	RJ-45 CAT 6A
Max. distance to filter plate [m]	10
Max. distance to PET server [m]	10

Table 6.4: Data Line Requirements.

6.8 PET Workplace Requirements

The PET Insert workplace comprises the PET/MR workplace computer and a dedicated PET reconstruction server. Both computer are installed close to the operator's console and require:

- a minimum of two line power sockets using local power connectors plugs and
- 2x CAT 6 Ethernet connection to the internet.

IEC Socket	Parameter	Ethernet Connection
PET/MR workplace computer	1x 110/230V 50/60Hz 1~PN	YES
PET Reconstruction Server	2x 110/230V 50/60Hz 1~PN	YES
Monitors	2x 110/230V 50/60Hz 1~PN	NO
Spare	1x 110/230V 50/60Hz 1~PN	NO

6.9 Electrical Power Backup and UPS

The risk of loss of data during power outages can be minimized by the use of uninterruptible power supply systems (UPS). Bruker does not provide such UPS systems upon delivery. If required, Bruker can assist you in identifying suitable UPS systems to cover the electrical power of the PET computer system during power outages.

Suitable devices are double conversion units with a rating of 1.6 kVA.

7 Delivery and Installation Requirements

7.1 Delivery and Storage

The PET Insert is shipped in a single crate (Bruker SAP PN 182 8683, 1450 x 1450x 1390 mm) weighing approximately 100 kg. The crate includes the PET electronics, the PET insert, the PET reconstruction server and all accessories. In certain configurations, additional components may be shipped in a smaller second crate.

Upon arrival, all packages of the PET Insert need to be

- checked visually for obvious damages that need to be immediately reported to Bruker,
- stored in a locked and safe room that fulfils the environmental conditions mentioned in *Environmental Conditions [▶ 15]*.

Do not unpack the instrument. Uncrating of the system without the permission or supervision of Bruker personnel will void the warranty.

Keep the original crates and packing materials, at least as long as the warranty is valid. When the packaging material is no longer needed, dispose of in accordance with the relevant local guidelines and regulations.

7.2 Use of Radioactive Tracers for the Installation

It is the responsibility of the system owner (responsible body) to register the PET with their state, local or country specific Radiation Safety Agency. This should be coordinated with the Radiation Safety Officer (RSO) at your facility. Clearance is prerequisite for the PET installation.

For the tune up of the PET insert during installation, sealed radioactive sources are required. These sources are ordered by Bruker and need to be delivered directly to the customer site. Prerequisite for the process is that the customer provides all locally required permission to handle sealed and open radioactive sources in a hot laboratory environment. The clearance document needs to be sent to Bruker and to the local supplier of the sealed radioactive sources at least 2 months prior to delivery of the PET Insert.

The provision of the release documents is under the responsibility of the customer. Without having the documents provided in time to Bruker and E&Z, the installation cannot include any on-site test tune-up and verification tests. In this case, the PET Insert will be installed without any such verification tests and the customer needs to accept the installation under these conditions.

Bruker uses the Ecker & Ziegler Group and its worldwide offices to purchase the required phantoms. For the contact information of your responsible Eckert & Ziegler presentative see www.ezag.com.

Description	Bruker SAP PN	E&Z PN
PET SOURCE NA22/0.37 IM NU4 D0.25	1849304	MMS09-022-10U
PET SOURCE GE68/7.40 IM QA D95	1827065	RFQ1379-068-2

The phantom ordering process must be started shortly after the time of the PET purchase. Although the radioactive sources are standard items, the lead time is typically 8 weeks. Depending on the country, customs, importation, and coordination with local agencies can add additional lead time to the delivery. **An import license is required. Consult your Radiation Safety Officer (RSO) or equivalent consultant for assistance.**

For the execution of the verification tests of the acceptance procedure of the PET inserts, daily access to FDG is required at various activities and quantities. It is assumed that the customer can provide FDG in time and in the required quantities.

A local supplier of the FDG must be defined and delivery of the required quantities and activities needs to be confirmed by the customer.

The following quantities are required in a typical installation, but might differ in certain cases depending on the individual progress of the installation and acceptance.

Date	Time	FDG Activity and Volume
Day 1	9:00 am	No FDG required, all tests using the point sources
Day 1	5:00 pm	50 MBq / 1 ml
Day 2	9:00 am	3.7 MBq / 1 ml
Day 2	1:00 pm	3.7 MBq / 1 ml
Day 3	9:00 am	3.7 MBq / 1 ml
Day 3	1:00 pm	3.7 MBq / 1 ml

7.3 Required Laboratory Equipment

For the calibration process and for performing the verification tests of the acceptance procedure, Bruker requires a functional PET tracer laboratory with the following minimum set of equipment:

- Calibrated Dose Calibrator in close proximity of the PET Insert installation site
- Hazardous disposal containers and general disposal containers
- Laboratory Safety Equipment for Bruker Staff
  - Nitrile gloves
  - Lab coats
  - Safety glasses
- Syringes
- 15 ml Falcon tubes
- Cleaning wipes

8 Technical Data

8.1 Drawings

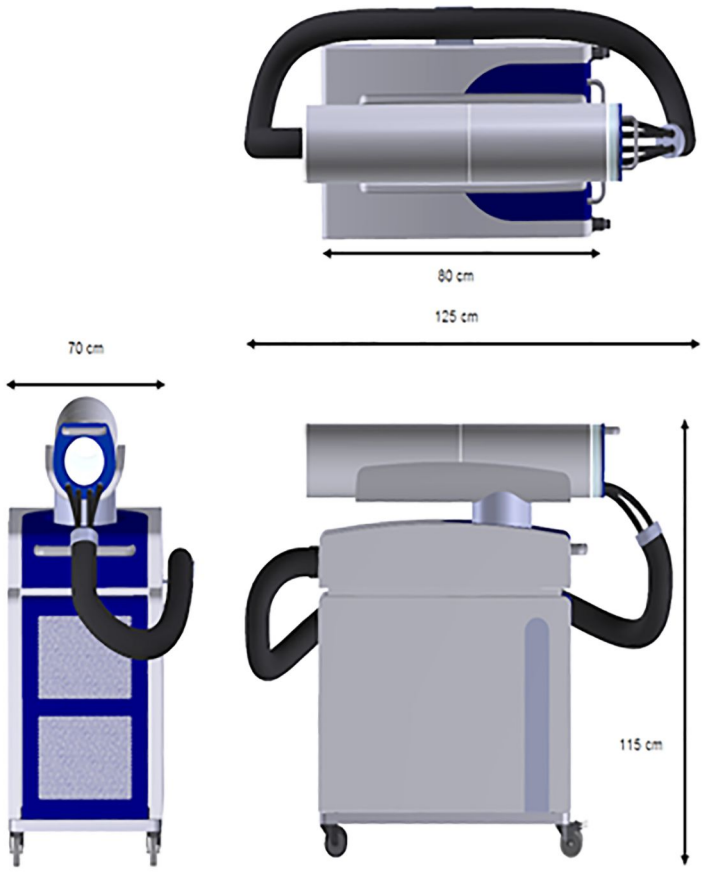


Figure 8.1: System views (all dimensions in cm)

8.2 General

Parameter	Value/Definition
PET Electronics	
Dimension (L x H x W) [cm]	125 x 115 x 70
Weight [kg]	75
PET Detector	
Dimension (L x H x W) [cm]	105 x 20 x 20
Weight [kg]	15

8.3 Ratings

PET Insert	Specification
Nominal voltage	110 – 230 V, ±10%, 1 PN~
Frequency	50 or 60 Hz
Electrical Power	450 W
Fuse	6 A Type B

Table 8.1: Connection values PET Insert

PET Workplace	Specification
Nominal voltage	110 – 230 V, ±10%, 1 PN~
Frequency	50 or 60 Hz
Electrical Power	800 W
Fuse	10 A Type B

Table 8.2: Connection values PET Workplace

Heat Dissipation	Specification
Heat Dissipation in Magnet Room	ca. 500 W
Heat Dissipation to Operating Area	250 … 800 W

Table 8.3: Heat Dissipation into Ambient Air

9 Contact

Manufacturer

Bruker BioSpin MRI GmbH
Rudolf-Plank-Str. 23
D-76275 Ettlingen
Germany
Phone: +49 721-5161-6531
www.bruker.com / *preclinical imaging*
WEEE DE92533205

Hotlines

Service Hotline

Phone: +49 721-5161-6521
E-Mail MR: *mri-hardware-support@bruker.com*
E-Mail PET: *Support.NMI@bruker.com*

Application Hotline

Phone: +49 721-5161-6621
E-Mail: *mri-application-support@bruker.com*

Software Hotline

Phone: +49 721-5161-6588
E-Mail: *mri-software-support@bruker.com*

Service Centers

Service Centers or general *Service Helpdesk*.

Please refer to the product label located typically at the outside of the main electronic cabinet and report Type, Model No., Serial No. and Internal Order where different to Serial No.:

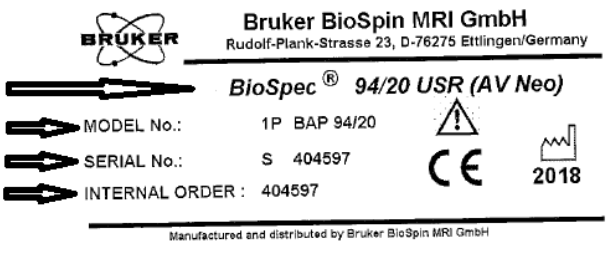
Product Label / Identification for Hotline		
	Type Model No. Serial No. Internal Order	

Table 9.1: Example showing BioSpec 94/20 USR (AVANCE NEO).

Contact

10 Appendix: Pre-Installation Checklist

The time between purchase and delivery of the instrument must be used to fulfill the requirements for the installation. A close cooperation between the responsible person at the site and Bruker is mandatory. The pre-installation checklist below needs to be completed prior to scheduling the installation.

Please e-mail a scanned copy to *mri-hardware-support@bruker.com*

Customer Information

Institution	
System Owner Name	
Responsible Person for Site Planning	
Phone	
Email	
Delivery Address	

Installation Requirements	Completed
Institution	
License to handle radioactive material provided to Bruker	
License to handle radioactive material provided to E&Z	
Local provider for FDG nominated	
Compressed air installed and available	
High-speed Ethernet line between scanner room and PET workplace installed	
Power socket for the PET workplace	
Ethernet connections for the PET workplace	
Access route to installation room free	
Sufficient space to unpack the PET insert	

Installation Requirements	Available
Calibrated dose calibrator	
Availability of FDG during verification tests	
Safety and Protection clothes for personal	
Facility access at extended working hours for Bruker personnel	

As the person named responsible for the installation planning by the customer, I hereby confirm details given beforehand.

Place & Date .....

Name (in block letters) .....

Signature .....

Appendix: Pre-Installation Checklist

Bruker Corporation

info@bruker.com
www.bruker.com

Order No: Site_Planning_PET Insert