


# LC-SPE

- Organizer 3.0  
User Manual  
Version 001



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This manual was written by

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# 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

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It is the policy of Bruker 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. Support engineers are advised to regularly check with Bruker for updated information.

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

## 1.2 Symbols and Conventions

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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

The BRUKER Organizer is used in a BRUKER/Spark LC-SPE-NMR system together with an ACE (Automatic Cartridge Exchanger) and a HPD (High pressure dispenser). It integrates into the instrument assembly.



Figure 2.1: The BRUKER LC-SPE Organizer 3.0

The main task of the Organizer is the control of flow of N<sub>2</sub> gas towards the ACE. In the ACE it is used for drying of cartridges and for flushing of the cartridges with blanket gas that replaces the ambient air and thus prevents absorption of impurities of the SPE cartridges from the air.

The flow of the N<sub>2</sub> gas can be switched on and off by electric valves which are controlled through the software. The valves are switch relays contacts in the ACE. Pressure and flow regulation is initially adjusted manually at the Organizer during installation.

In addition the Organizer allows convenient positioning of the Makeup Pump which is part of the LC-SPE-NMR system and provides a tube where the solvent bottles for the HPD can be located. A metal spring allows safe positioning of smaller solvent bottles which are typically used for expensive deuterated solvents.

## 2.1 Intended Use

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The Organizer has been designed and constructed solely for the intended use described here.

The Organizer is only to be used in a BRUKER/Spark LC-SPE-NMR system, together with an ACE (Automatic Cartridge Exchanger) and a HPD (High pressure dispenser). The Organizer integrates into the instrument assembly and is mainly used to control the flow of N<sub>2</sub> gas towards the ACE. In the ACE it is used for drying of cartridges and for flushing of the cartridges with blanket gas that replaces the ambient air and thus prevents absorption of impurities of the SPE cartridges from the air.

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 Compatibility

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The Organizer is delivered for usage with ACE 2.0 (1841101 SPE ACE DUAL 2XISS BRUKER UNIT 2.0), however it is also fully compatible with previous version ACE 1.0 (85314 SPE ACE DUAL 2XISS BRUKER UNIT).

The Organizer does not have its own power supply, power is supplied through a cable from the 24V power connector of the ACE 2.0. In case the Organizer is used with an older ACE 1.0 (for example as repair exchange) the separate power supply of the previous installation must be used, as this ACE 1.0 does not have a 24V power outlet. Data, power and capillary connections and dimensions are compatible.

## 2.3 Safety

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There are no specific safety issues for the Organizer. Before using the Organizer users must read all relevant safety information for the BRUKER/Spark LC-SPE-NMR system and any other system used.



## 2.4 EU Declaration of Conformity

**EU Konformitätserklärung**  
**EU-Declaration of Conformity**  
**Declaration de Conformité – UE**  
 Bruker BioSpin Group



Der Unterzeichner, der den nachstehenden Hersteller vertritt:  
 The undersigned, representing the following manufacturer:  
 Le signataire, qui représente le producteur suivant:

Hersteller / Manufacturer / Producteur: **Bruker BioSpin GmbH**  
 Anschrift / Address / Adresse: Silberstreifen 4, 76287 Rheinstetten / Germany

erklärt hiermit, dass die... / herewith declares that... / déclare par la présente que la ...

Produkt Serie / Product Series/ Série de Produit **LC-SPE ORGANIZER 3.0 CPL**



Produkt ID / Product ID / ID de Produit: **H154496**

...in Übereinstimmung mit den Bestimmungen der nachstehenden EU-Richtlinien (einschließlich aller zutreffenden Änderungen) ist.  
 ...is in conformity with the provisions of the following EU directives (including all applicable amendments).  
 ...est conforme aux dispositions des directives d'union européennes suivantes (y compris tous les amendements applicables).

2014/30/EU		
Europäische Richtlinie Elektromagnetische Verträglichkeit (EMV) betreffend...	European Directive Electromagnetic Compatibility (EMC) to...	Directive européen Compatibilité Electromagnétique (CEM) concernant...
...die elektromagnetische Verträglichkeit ...Electromagnetic compatibility ...la Compatibilité Electromagnétique	(Neufassung) (recast) (refonte)	(früher 2004/108/EG) (former 2004/108/EC) (avant 2004/108/CE)
Angewandte harmonisierte Normen / Applied harmonized standards / Suite à des normes harmonisées applicables: - bei geprüften Komponenten / on tested components / à des composants éprouvés		
<b>EN 61326-1:2013 / IEC 61326-1 (2<sup>nd</sup> Edition)</b>		

**Hinweis:** Verwendung dieser Baugruppe - nur in Verbindung mit den dafür vorgesehenen Bruker BioSpin Systemen.  
**Note:** Operation of this component - only in conjunction with the appropriate Bruker BioSpin systems.  
**Note:** Utilisation de ce module uniquement en rapport avec un system Bruker BioSpin appropriés.

Rheinstetten, 14.Jul.2016  
 Deutschland / Germany / Allemagne

Dr. Ulrich Braumann  
 Produkt Manager / Product Manager / Responsable de Produit  
 Hyphenation, Metabolic Profiler, SPE-NMR /  
 AIC Division – Bruker BioSpin Group



# 3 Installation and Initial Commissioning



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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.

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## 3.1 Limitation of Liability

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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.

## 3.2 Warranty Terms

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

## 3.3 Customer Service

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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.

## 3.4 Product Safety and Electromagnetic Compatibility

The device complies with the standard

- IEC 61326-1 for Electromagnetic Compatibility (EMC)

## 3.5 Included Parts

The complete unit is available as part number: **H154496**, description: **LC-SPE ORGANIZER 3.0 CPL** and consists of the following parts:

- Organizer Housing.
- Metall spring for fixation of bottles.
- Power cable for connection to the ACE 2.0 24V power outlet.
- Data cable for connection to the ACE relays contacts.
- 6 mm N2 tubing with adapters for connection to compressed N2 supply.
- Cable ties and other installation material to fix capillaries and cables.

## 3.6 Positioning the Organizer

- Unpack the Organizer.
- Place ACE in the desired position.
- Place the HPD on the right side on top of the ACE.

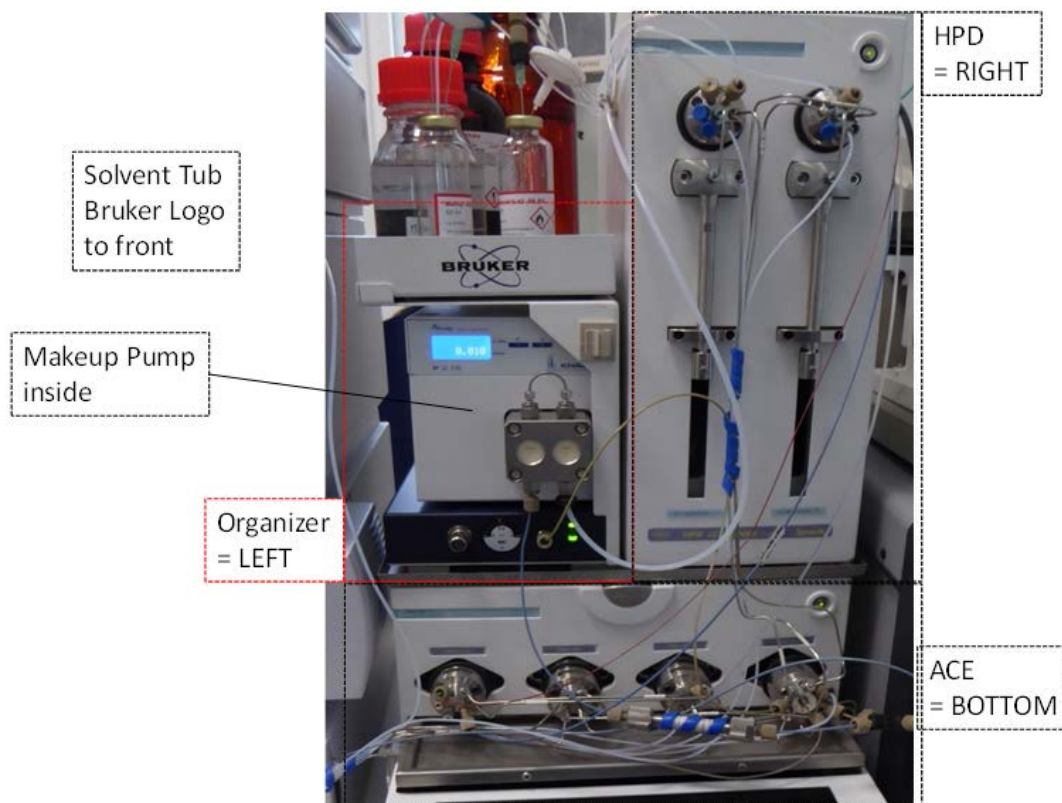


Figure 3.1: Position of the Organizer

- Place the Organizer on top of the ACE on the left side of the HPD.
- Place the SPE Makeup pump (Knauer K100, K120, S100, P4.1S) in the space above the housing with the valve and below the solvent tub. Continue with the installation of the Makeup pump as described in a separate manual.
- Insert the metal tub into the Organizer so that the BRUKER logo is visible on the front side.
- Put the solvent bottles for the LC-SPE system into the solvent tub. If deuterated solvents are supplied in small 10-50ml containers, put them in the front of the solvent tube and use the metal spring to fix the containers and prevent that they fall over.



Figure 3.2: Metal Spring to Fix the Containers

## 3.7 Connection Rear Side

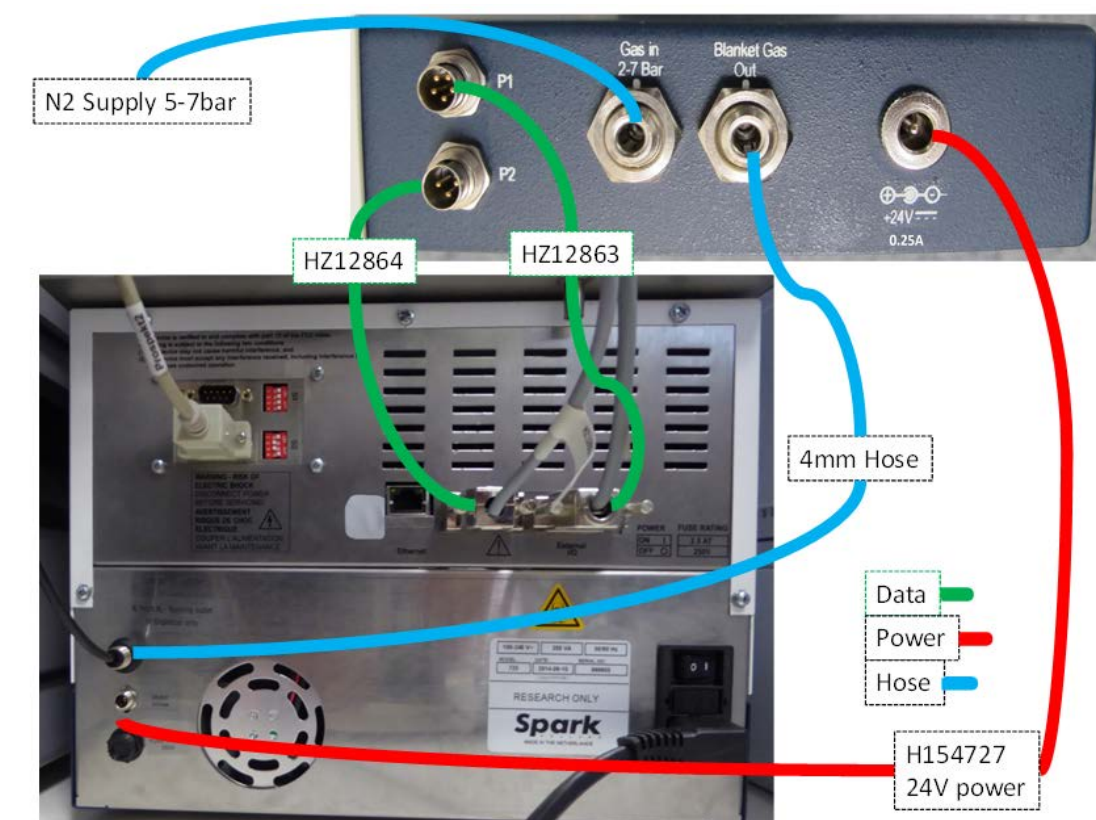



Figure 3.3: Connections Rear Side

### Electrical Connections

Use the cables

- HZ12863 to connect P1 of the Organizer to the port marked “External IO” of the ACE.
- HZ12864 to connect P2 of the Organizer to the port marked with  of the ACE.
- H154727 to connect the 24V power input to the port marked with “24VDC 300mA” of the ACE.

### Pneumatic Connections

- Use 88568 black 4mm N2 tubing to connect to compressed N2 supply.  
Several adapters are provided for various sources. As the gas consumption is low, you can typically insert the 8mm T-piece into the N2 supply for the NMR spectrometer and connect the hose with the 4-8mm adapter to the 3rd outlet of the T-piece.
- Use 88568 black 4mm N2 tubing to connect the blanket gas outlet on the rear side of the Organizer to the Blanket gas inlet of the ACE.

## 3.8 Connection Front Side



Figure 3.4: Connection Front Side

- Use the green 1/16" Peek tubing to connect the drying gas outlet of the front side of the Organizer to port (3) of the 9 port multi-position valve at the right side of the ACE.
- Connect the solvent reservoirs for the HPD into the solvent tub. Adjust length of capillaries and connect to the ACE. For details see installation manual for the LC-SPE-system.
- Connect the bottle to the HPD.





# 4 Operation

Before operating, ensure that the LC-SPE system and HyStar Software have been installed correctly.

- Power the ACE and HPD on.
- Verify that the warning LED is red.
- Turn on the gas supply and adjust the pressure to 5-7 bar. Check the adjustment valve on the front of Organizer and adjust the pressure to 5 bar. Verify that the red LED turns off.
- Start the HyStar software.
- Open the flow injection window and select **Direct control** of the Prospekt2.

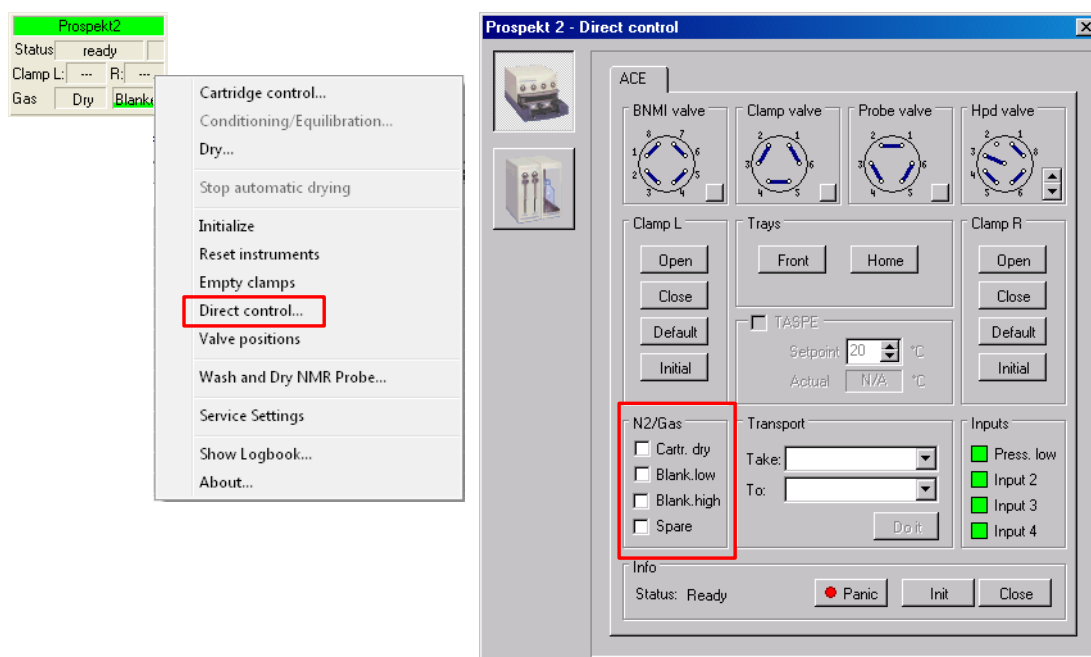


Figure 4.1: Direct Control of the Prospekt2

- Disconnect the capillary from the multiposition valve port 3.
- Check the checkbox **Cartr. Dry**. The LED **Drying** should turn green, and you should *hear* a gas flow.
- Close the connection at the multi position valve until it is tight.

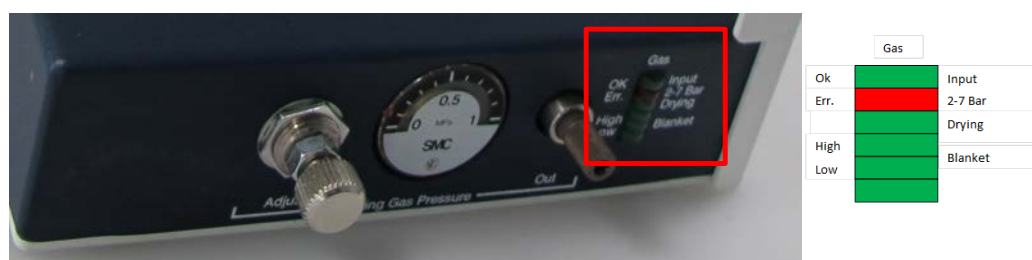


Figure 4.2: Location of the LEDs

- Remove the cover from the cartridge compartment. Check the checkbox **Blank, Low**. The LED **Low Blanket** should turn green and you should feel gas flow at the outlet for the capillary at the bottom of the cartridge compartment.
- Check the checkbox **Blank, High**. The LED **High Blanket** should turn green and you should feel an increased gas flow at the outlet for the capillary at the bottom of the cartridge compartment.

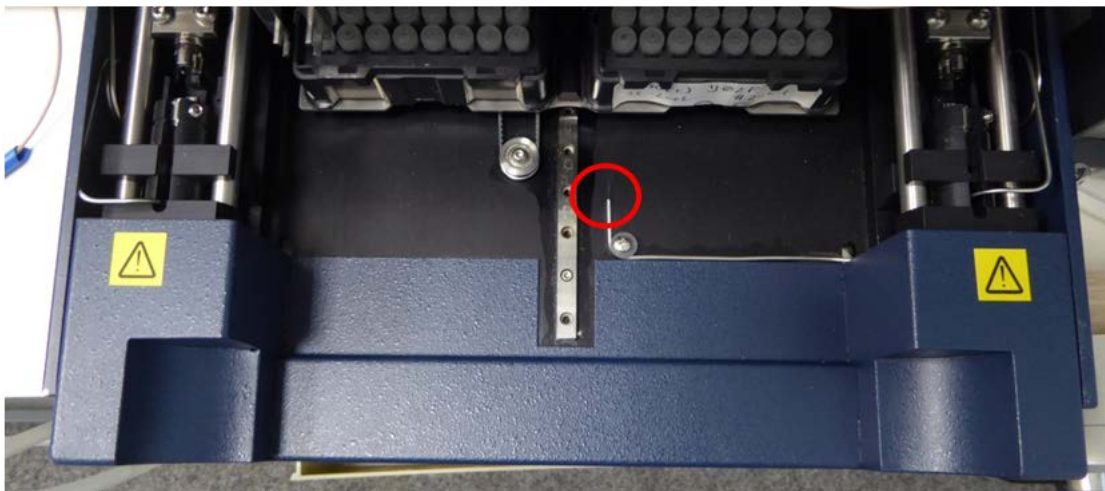


Figure 4.3: Outlet for the Capillary

- Uncheck **all** checkboxes and close the direct control window.

### 4.1 Operation with HyStar 3.2

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After initial installation the N2 flow is controlled by the software HyStar.

No adjustments in the software are required for:

- Cartridge drying, the N2 is automatically started for the required time.
- Intermediate processing steps during operation of the LC-SPE system, the N2 is automatically started with internally defined times (several seconds).

Blanket gas can be set by the user in the *Service Settings*:

- Click **Service Settings** in the context menu of the Prospekt2 icon.

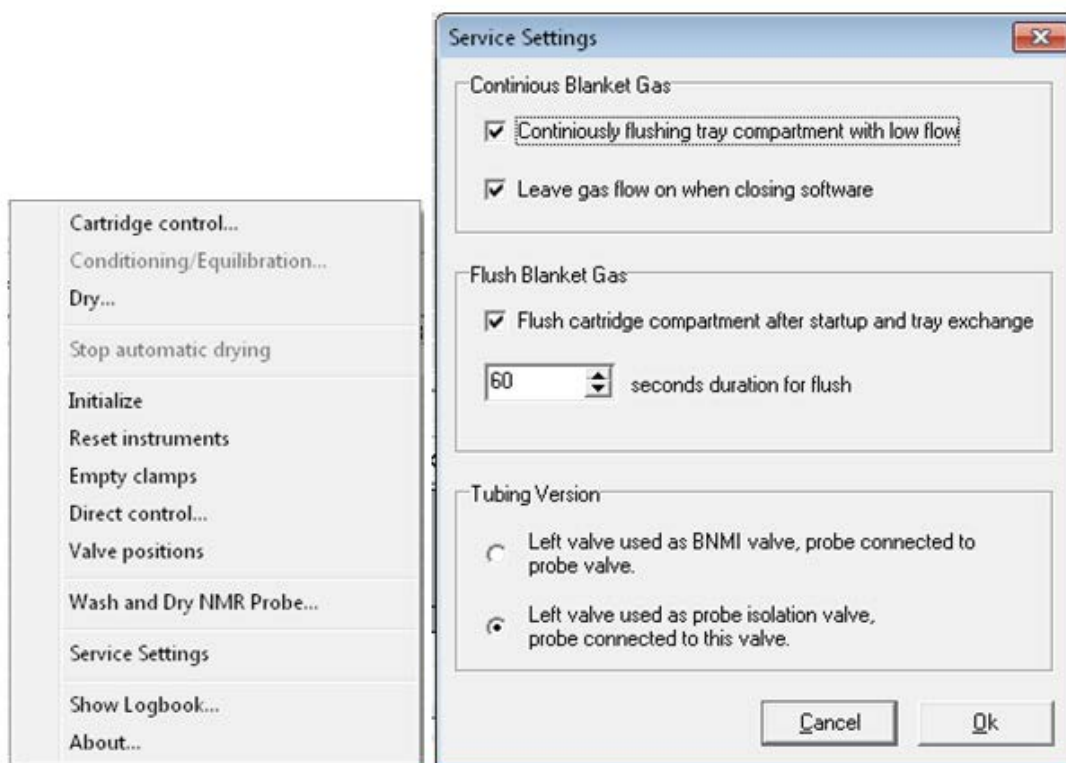


Figure 4.4: Service Settings

- Select **Continuously flushing tray compartment with low flow** to activate or deactivate blanket gas. The usage is strongly recommended. Consumption is approx. 40l/h depending on the initial adjustment of the flow.
- If samples are collected on the cartridges, it is recommended to select the option **Leave gas flow on when closing software**.
- Optionally you can define an elevated N2 flow after access of cartridges and startup of the software. Select the option **Flush cartridge compartment after startup ...** and set the desired time. Typically the cartridge compartment should be flushed for 60-180 seconds.



## 5 Troubleshooting and Fine Adjustment

The pressure valve on the front panels shows the current output pressure. Typically this should be regulated to 4-5 bar. If the pressure is too low, adjust the pressure regulation valve. If this is not possible, check the input pressure.

When the input pressure drops below 6 bar, a red LED indicates the too low input pressure. If the red LED is on, check that the N<sub>2</sub> supply is correct.

The flow for the blanket gas is pre-adjusted. In case a higher/lower flow rate is required, two valves are available to adjust the flow rate. To change the flow rate remove all items from the Organizer and access the valve on the bottom of the unit. In HyStar enter direct control, switch the blanket gas on and adjust the flow rate to the desired value.

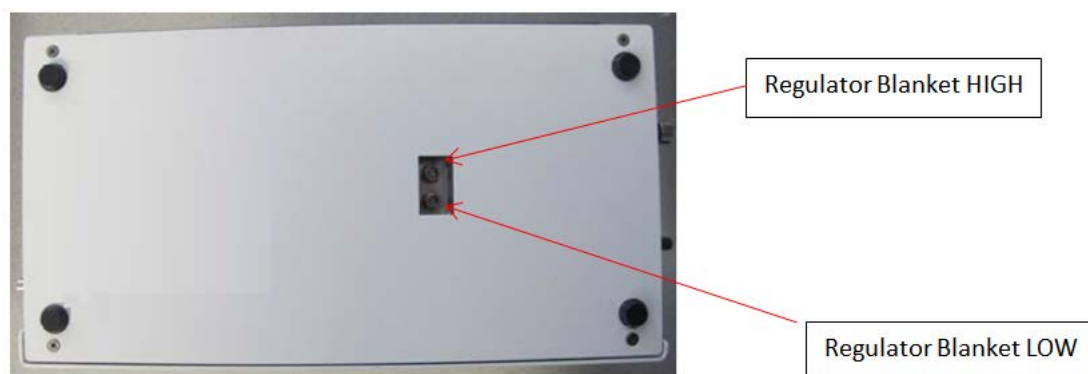


Figure 5.1: Regulator



## 6 Dismantling and Disposal

Following the end of its operational life, the device must be dismantled and disposed of in accordance with the environmental regulations.



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.

### 6.1 Dismantling

Before starting dismantling:

1. Shut down the device and secure to prevent restarting.
2. Disconnect the power supply from the device; discharge stored residual energy.
3. Remove consumables, auxiliary materials and other processing materials and dispose of in accordance with the environmental regulations.
4. Clean assemblies and parts properly and dismantle in compliance with applicable local occupational safety and environmental protection regulations.

### 6.2 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**

## **6.3 Disposal USA and Other Countries**

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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](http://www.eiae.org).



# 7 Contact

## Manufacturer

Bruker BioSpin GmbH  
Silberstreifen 4  
D-76287 Rheinstetten  
Germany  
<http://www.bruker.com>

WEEE DE43181702

## NMR Hotlines

Contact our NMR service centers.

Bruker BioSpin NMR provides dedicated hotlines and service centers, so that our specialists can respond as quickly as possible to all your service requests, applications questions, software or technical needs.

Please select the NMR service center or hotline you wish to contact from our list available at:

<https://www.bruker.com/service/information-communication/helpdesk.html>

Phone: +49 721-5161-6155

E-mail: [nmr-support@bruker.com](mailto:nmr-support@bruker.com)



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