Installation Protocol

NMR Probe

BRUKER

Customer Information

Customer Name	Prof. Steven Brown
Operator Name	
Company	Department of Physics. University of Warwick
Address	
Postal Code / City / Country	CV4 7AL Coventry, United Kingdom
Phone Contact Customer	+442476574359
Fax	
E-Mail	S.P.Brown@warwick.ac.uk

Bruker Information

Office	Bruker UK
Engineer	Haydn M Smith
Central Hotline Phone	+442476855200
Central Hotline E-Mail	customersupport.bbio.eimea@bruker.com

Probe Information

Order No.	
Contract No.	
Description	PH MASDVT1200S6 BL0.7 15N-11B/H NO_I/E
P/N	H187907
S/N	0001

Installation Summary

I, an authorized customer representative, acknowledge that the above referenced probe was installed and demonstrated to operate in accordance with the specifications mutually agreed upon by both parties. We accept the delivery and installation of this probe as specified in the purchase order and release Bruker from any further obligation, other than those obligations as specified during the warranty period. If the contract requires a formal acceptance protocol this document serves as such.

Warranty

The warranty period commences according to the contractual agreement.

Place	CV4 7AL Coventry, United Kingdom	Place	CV4 7AL Coventry, United Kingdom
Date	April 10, 2025	Date	April 10, 2025

Prof. Steven Brown	Haydn M Smith
Customer representative signature	Bruker representative signature

Spectrometer Information

Order No.	HCAB-22_00014
System	Avance Neo 1200
Location	
TopSpin Version	TopSpin 4.5.0 - Build local

NMR Probe

Description	Probe ID	Inspection Lot	Status
PH MASDVT1200S6 BL0.7 15N-11B/H NO_I/E	H187907_0001	0.7_acpt	pass

Copies of all spectra (default and additional) are included in customer's PDF report.

Installation Checklist

Installation	pass	fail	n/a
All firmware	❑	❑	☑
Cortab for required nuclei	❑	❑	☑
Lift / spin calibration	❑	❑	☑

Customer Training	pass	fail	n/a
Basic safety	❑	❑	☑
Handling of cryogenic liquids	❑	❑	☑
Troubleshooting	❑	❑	☑
Backup (nmr_save, Images)	❑	❑	☑
Introduction to IconNMR	❑	❑	☑
Assure-SST / Performance check	❑	❑	☑
CryoProbe	❑	❑	☑
Handling / cleaning of probe	❑	❑	☑
He cylinder exchange	❑	❑	☑
He compressor cooling	❑	❑	☑
RF heating / power limits	❑	❑	☑
RF routing	❑	❑	☑

Acceptance and Warranty	pass	fail	n/a
Explaination of warranty	❑	❑	☑
Customer support hotlines	❑	❑	☑

Optional Components	pass	fail	n/a
Sample Changer	❑	❑	☑
MAS controller	❑	❑	☑
High power equipment	❑	❑	☑
LC-NMR	❑	❑	☑
Liquid Handler SamplePro Tube	❑	❑	☑
Micro-Imaging	❑	❑	☑
Diffusion	❑	❑	☑
CryoProbe / Cryoplatform	❑	❑	☑
BNL / BSNL	❑	❑	☑
Additional cooling/heating units (like BCU1 / BCU2)	❑	❑	☑
LT-MAS (Low Temperature MAS equipment)	❑	❑	☑
Gyrotron magnet and DNP console	❑	❑	☑

General Test Information

Summary of Inspection Lot

Description	Probe ID	Inspection Lot
PH MASDVT1200S6 BL0.7 15N-11B/H NO_I/E	H187907_0001	0.7_acpt

Experiments Measured

Sample	Experiment	Status
Z163271	Magic Angle setting, MAS (NPT_79Br_MAS_magicAngle)	pass
Z163271	Maximum spin rate testing, MAS (NPT_79Br_MAS_maxSpinRate)	pass
Z163271	Optimization of 79Br frequency (NPT_79Br_MAS_fieldsetting)	pass
Z163274	Optimization of 13C frequency (NPT_13C_MAS_fieldsetting_dec1h)	pass
Z163274	P90 1H pulse calibration, MAS (NPT_1H_MAS_p90det_1h)	pass
Z163271	P90 79Br pulse calibration, MAS (NPT_79Br_MAS_p90det_79br)	pass
Z163276	P90 13C 1H-13C CP pulse calibration, MAS (NPT_13C_MAS_p90det_cp1h_13c)	pass
Z163276	P90 15N 1H-15N CP pulse calibration, MAS (NPT_15N_MAS_p90det_cp1h_15n)	pass
Z163274	13C sensitivity, MAS (NPT_13C_MAS_sino_13c)	pass
Z163276	CP 1H-13C parameter optimization, MAS (NPT_13C_MAS_paropt_cp1h_13c)	pass
Z163276	CP 1H-15N parameter optimization, MAS (NPT_15N_MAS_paropt_cp1h_15n)	pass

Achieved Specifications

Pulse Width

Nucleus	Sample		90° Pulse		Power Limit [W]	Method	Status
			Duration [µs]	Power [W]			
^{1}H	Z163274	spec.	1.00	-	70	direct	pass
		ach.	0.99	63.2			
^{13}C	Z163276	spec.	1.80	-	50	with CP	pass
		ach.	1.37	40.0			
^{15}N	Z163276	spec.	3.10	-	80	with CP	pass
		ach.	3.02	45.0			
^{79}Br	Z163271	spec.	1.80	-	50	direct	pass
		ach.	1.77	31.6			

Sensitivity with NS

Nucleus	Sample		S/N	FWHM [Hz]	NS	Remarks	Status
^{13}C	Z163274	spec.	-	15.0	32	noise: 20 ppm variable, method: sino best	pass
		ach.	73.7	6.6	32		

Samples used for Inspection Lot

Sample	Description
Z163271	Potassium Bromide (KBr, 0.5 ul)
Z163274	Adamantane (0.5 ul)
Z163276	2-^{13}C, ^{15}N alpha-glycine (0.5 ul)

Remarks / Exclusions