

# Bruker MAS III unit; new spinning profiles

The screenshot shows the 'MAS display' software interface. At the top, there are menu tabs: Main, Monitoring, Recording, Configuration, Log, and Help. The main display area is divided into several sections:

- Spinrate:** A large green digital display shows '19998 Hz'. To its right, the 'Target Spinrate' is set to '20000 Hz' with a range of '(10000 Hz ... 67000 Hz)' and a 'Set' button.
- Control Buttons:** A row of buttons labeled 'Insert', 'Go', 'Stop', and 'Eject'.
- Pressure Readings:**
  - Supply Pressure: 9988 mbar
  - System Pressure: 5738 mbar
  - Bearing Pressure: 3147 mbar
  - Bearing Sense Pressure: 3133 mbar
  - Drive Pressure: 449 mbar
- Cooling State:** 'Frame Cooling State' is 'Off' (indicated by a red minus sign in a circle). 'Target Frame Cooling Pressure' is '500 mbar' with a 'Set' button.
- Probe and Configuration:**
  - Probe: PH MAS 500W2 BL 1.3 X/F/H DVT (with 'Exchange Probe' button)
  - Profile: 1.3mm slow (profile for 1.3mm Probe Heads) (with 'Show profile' button)
  - Rotor Type: 1.3 mm
  - Cap: VESPEL
  - Temperature Limits: -30 °C ... 80 °C
  - Spinrate Limits: 10000 Hz ... 67000 Hz

The bottom status bar shows: MAS Unit State: ● Rotation Running | Spinrate: 19998 Hz | System Pressure: 5738 mbar | Probe Temperature: 28.6 °C

# Why do we need to disconnect the fuse?



Figure 5.6: Rotor Quick Stop Button on the Back Panel of the MAS III



Figure 5.7: Mains Switch



## Rotation Profiles

### Filter

Hide profiles  from this unit and/or  provided by Bruker

Apply

### List

New Delete Export Import Clone

Name	Probe	Source	Actions
<input type="checkbox"/> LLC_3.2mm	H13900 / 0001	This MAS/3	Edit View
<input type="checkbox"/> MAS7mm	H13895 / 0001	This MAS/3	Edit View
<input type="checkbox"/> Probe13_new	H13863 / 0003	This MAS/3	Edit View
<input type="checkbox"/> Generic 0.7mm	7 mm	Bruker	View
<input type="checkbox"/> Generic 1.3mm	1.3 mm	Bruker	View
<input type="checkbox"/> Generic 1.9mm	1.9 mm	Bruker	View
<input type="checkbox"/> Generic DNP 1.9mm	1.9 mm	Bruker	View
<input type="checkbox"/> Generic 2.5mm	2.5 mm	Bruker	View
<input type="checkbox"/> Generic 3.2mm	3.2 mm	Bruker	View

Ready

Spin Rate (Hz)

User Name:  
Service

Log out

## Profile Identification

Name	LLC_3.2mm
Description	3.2 mm HXY LLC
Last Modified On	18 12 2018 10:38 (DDMMYY)

### Probe

Part No	H13900
Serial No	0001

### Spin Up

Delete Spin Up Step Below Insert Spin Up Step Here

From 0 to (Hz)	1500
Ramp up only	<input checked="" type="checkbox"/>
Timeout (s)	25
<b>Bearing</b>	
Slope ( $\mu$ bar/Hz)	0
Offset (mbar)	600
Maximum (mbar)	600
<b>Drive</b>	
Increment By (mbar)	2
Increment Step Duration (ms)	400
Decrement By (mbar)	2
Decrement Step Duration (ms)	400
Maximum (mbar)	250

Delete Spin Up Step Below Insert Spin Up Step Here

From 1500 to (Hz)	5000
Ramp up only	<input type="checkbox"/>
Timeout (s)	20

Increment Step Duration (ms)	250
Decrement By (mbar)	10
Decrement Step Duration (ms)	250
Maximum (mbar)	2500

Add Spin Up Step

**Spin Down**

No step defined.  
 The unit will use its default spin down procedure:  
 1. Drive is decreased to zero at 0.5 bars/s  
 At the same time bearing is decreased to 0.5 bar at 0.11 bars/s  
 2. Bearing is decreased to zero at 0.10 bars/s

Add Spin Down Step

Copy from Spin Up

**Regulation**

Delete Regulation Step Below

Insert Regulation Step Here

From 0 to (Hz)	6000
P	900
I	5
D	0
T	200
Timeout (s)	0

Delete Regulation Step Below

Insert Regulation Step Here

From 6000 to (Hz)	24000
P	1080
I	28
D	2
T	200
Timeout (s)	0

Add Regulation Step

three weighted terms (proportional, integral and derivative), the heater power is adjusted (control signal).

