How to use Agilent NMR manually (day time at IBS600 or KARA400)

Idle

- 1. Adjust depth of NMR tube in Spinner turbine with depth gauge.
- 2. login on vnmrj with your account. Click "eject" \rightarrow input NMR tube into magnet \rightarrow click "insert"

Insert Eject

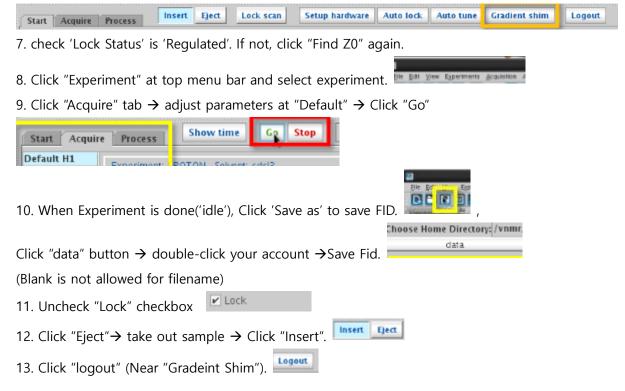
- 3. check status is 'Idle'
- 4. input 'Sample name' and select 'solvent'.

Start Aci	uire Process	Insert Eject Lock scan	Setup hardware Auto lock Auto tun						
Sample Info Lock Shim Spin/Temp	Operator: dgwon Sample Information								
opin, renp	Sample name Sample directory Solvent	sample_name_001	Email Comments sample_name_001						
		DMSO CDCI3 D20 Other	sample_name_001						

5. click "find Z0" (usually takes 3~5 sec)

	uire Process	Insert Eject	Lock scan
Sample Info Lock	Spin 0 Hz		
Shim Spin/Temp	Lock	Z0 . <u>1285</u>	±10 1285 =
	Lock status off	Power	±1 27 =
	Select lock signal		±5 33 =
	Find z0	241	±10 241 =

6. click "Gradient Shim" Never touch mouse and keyboard until gradient shim is done('idle'). .



Tips

1. Sample volume should be more than 600ul. If not, "Gradient shim" is not properly working.

5. If "Gradient Shim" button is not working after Clicking 'find $z0' \rightarrow$ Click "Proton" of experiment list at Top Menu solvent \rightarrow Click "Gradient shim" again.

6. Still "Gradient shim" button is not working \rightarrow Click "Acquisition" at Top Menu \rightarrow "Do Gradient shimming" \rightarrow "Use Ik/Gradient Map" for Gradient Shimming.

6-1. If sample volume is less than 600ul, but user still want to use gradient shimming \rightarrow type "gmapsys".

Start Acquire	Process	Show time	Go	Stop	Arrays	Sec	juence diagr	am	Sequence	help
Defaults Gradient Shim Acquisition Pulse Sequence Channels Flags Future Actions	Gradient Shim Setup		Mai	Make Shimmap				Gradient Autoshim		
	Acquire Trial Spectra Set Acquisition Parameters: PFG H1 Homospoil H1 PFG H2 Homospoil H2 Gradient Type: nnc Shim z1-z4 first Shaped pulses Define band Temp compensation off			Automake Shimmap			Gradient Autoshim on Z Quit Gradient Autoshim			
				Current mapname: Set by date DPFG_Ik_2019-05-21 Load map: DPFG_Ik_2019-05-21 # Shims Used 5 Window Size 30.0 Set Window from Cursors Find Window Find Frequency						
			IDF # S					Display FitDisplay ShimmapPlot FitPlot ShimmapSet mapname into probe fileAdd mapname into Gmap list		
	lanore spinner			Make Shimman Uking Ourrent Settings				Recet Shime		

Set parameter properly. # "Shim Used" : 3~5, #"Window Size" : 24~32.

Click "Gradient Autoshim on Z" and wait until done("Idle") → Click "Quit Gradient Autoshim"

6-2. After Gradient Shim, check 'Z1~ Z7' value is between -10,000 ~ 10,000. If out of range, Click "Read default shims" and Do 'Gradient shimming' again.

Start Acc	quire Process Insert Eject	Lock scan Setup ha	ardware Auto lock A
Sample Info Lock Shim Spin/Temp	Lock scan FID scan 20 -15591 ±1 Lk Power 26 ±1	$\begin{array}{c c} \hline 21\\ \hline 8594 & \pm 16 \\ \hline 22\\ \hline 610 & \pm 16 \\ \hline 23\\ \hline 1780 & \pm 32 \\ \hline 24\\ \hline -7320 & \pm 64 \\ \hline 25\\ \hline 1343 & \pm 32 \\ \hline \end{array}$	$\begin{array}{c cccc} & \times 1 & \times 3 \\ \hline & -8268 & \pm 16 & \times 3 \\ \hline & -1978 & \pm 16 & 9399 \\ \times 2 & \pm 32 & \times 22 \\ -2564 & \pm 32 & \times 22 \\ -2058 & \pm 32 & \frac{722}{-3564} \\ \hline & \times 7 \\ -2771 & \pm 64 & \frac{2\times 7}{5135} \end{array}$
	Lk Gain ±1 Lk Phase 265 Lock		100 1890 ±64 ZX2Y2 -3764 Read default shims Read shims from pars

Still have problem with gradient shimming \rightarrow Click "Read default shims" \rightarrow adjust shim manually

7. If 'lock status' is 'not regulate' \rightarrow change '(lk) Power' and '(lk)Gain' to adjust 'Lock level between 40~60. # Gain > Power and 0< Gain – power <10

13 . Never click 'system logout'