

## QTOF Clean & Tune

### Step 1: Windows updates

- Open 'check for updates'
- click 'resume updates'
- wait for updates to download and install,
- restart PC
- Open 'check for updates'
- Pause updates for at least 1 week

### Step 2: Prepare instrument

- Instrument should already be in standby (lights orange on LC units)
  - *If not in standby select 'shutdown' and click 'ok'*
- LabSolutions software should already be open
  - *If not, open 'Labsolutions' from the taskbar and double click 'LCMS-9050'*
- Check that 'heater block temperature' and 'interface temperature' are <50 degrees
- Check that the gas flows are off.

### Step 3: Cleaning

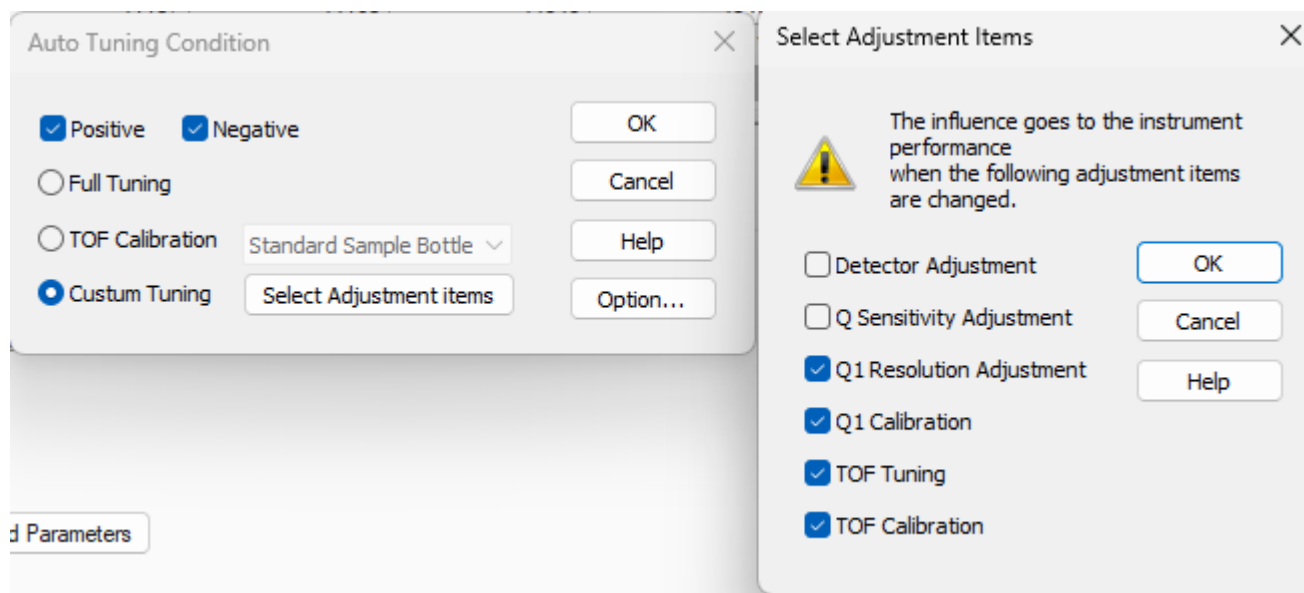
- Remove the source
  - Detach both tubes and insert plugs to source and peak tubing, unlatch door, insert DL pin, remove source
- Clean the source
  - Spray with 1:1 IPA:H<sub>2</sub>O, scrub with alumina?, rinse and wipe with clean cloth, dry with compressed air
- Clean the heater block
  - Remove DL, unscrew heater block, re-insert DL, scrub/sonicate block, reassemble
- Wipe area around the heater block/DL line
- Reattach the source and remove the DL pin and latch shut. Insure black knob in front of source is locked in.
- Reattach the two tubes (make top tube pushed in properly)

### Step 4: Full Tune (~ 30 minutes)

- Turn the instrument on (press orange power button on the LC unit)
- Open the tuning window (main > tuning)
- Check the 'autotune conditions'
  - If doing a routine tune just select 'TOF calibration'
  - If doing a full tune select 'custom parameters' and then select 'Q1 resolution', 'Q1 calibration', 'TOF tuning', and 'TOF calibration'.
- Run the auto-tune (will take a few minutes to get to temperature)
  - TOF calibration should only take a few mins
  - Full tune will take 15-20mins
- Once complete check the output is reasonable
  - Mass difference should be below 3ppm (most masses <1ppm)
  - Resolution should be >40,000 (around 43,000-45,000 for the 1971 mass)
- Once complete 'save the tune file as'
  - Call it the days date followed by either 'posneg cal' or 'full tune'
  - Select 'yes' when it asks if you want to use it as the default tune file
  - When analysing a sample check that the correct tuning file is used.
- Close the tune window
- Turn off the CDS and sub voltage
- Open the standby method and download.
- Press 'instrument on'



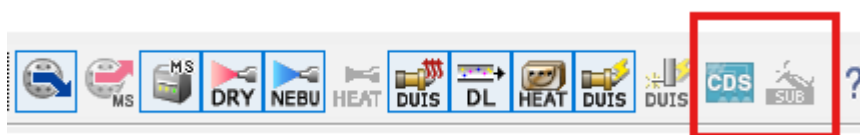
Heater block: The semi-circle shaped piece which is removed by using an Allan key on the two small screws



Custom settings to be ticked for a 'full tune'

|                   |            |            |            |            |            |             |             |             |
|-------------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|
| Target m/z        | 172.883462 | 472.671944 | 622.566185 | 772.460427 | 922.354668 | 1372.037391 | 1971.614356 | 2421.297080 |
| Actual m/z        | 172.883249 | 472.672078 | 622.566378 | 772.460820 | 922.355152 | 1372.036975 | 1971.613479 | 2421.296480 |
| Difference(ppm)   | -1.23      | 0.28       | 0.31       | 0.51       | 0.52       | -0.30       | -0.44       | -0.25       |
| Difference(u)     | -0.000213  | 0.000134   | 0.000193   | 0.000393   | 0.000484   | -0.000416   | -0.000877   | -0.000600   |
| Resolution        | 27482      | 39246      | 41948      | 42689      | 44902      | 44859       | 46190       | 39635       |
| Profile Intensity | 8421       | 11450      | 7288       | 5768       | 4965       | 1896        | 1308        | 283         |

Tuning results – yellow highlight shows values to check



Click 'CDS' to turn off CDS and Sub interface voltage