

Inside an NMR Magnet

NMR Equipment

The workstation computer (1) controls the NMR spectrometer (2). Radio-frequency pulses are sent from the spectrometer to the probe within the magnet (3).

1 Workstation Computer

2 NMR Spectrometer Console

3 NMR Magnet

A VARIAN Mercury 300 MHz NMR SPECTROMETER with an Oxford Instruments Ltd. superconducting magnet .



NMR Sample & Spinner

A few milligrams of material is dissolved in a deuterated solvent and placed in a 5 mm tube. The NMR sample tube is inserted into the spinner and positioned using the gold-colored depth gauge.



NMR Magnet

The NMR sample and spinner are inserted into the bore tube (A) and pneumatically lowered into the magnet and NMR probe below (C).

A: Top of the Bore Tube

B: Outer Magnet Can

C: Bottom of the Probe

A VARIAN Mercury 300 MHz NMR SPECTROMETER with an Oxford Instruments Ltd. superconducting magnet .



Within the Magnet Can

The superconducting magnet (inner black area) is emersed in liquid helium (4 K). The outer insulated chamber is filled with liquid nitrogen (77 K).

For more information on this picture go to [JEOL USA](#) A JEOL 270 MHz NMR SPECTROMETER with an Oxford Instruments Ltd. superconducting magnet .

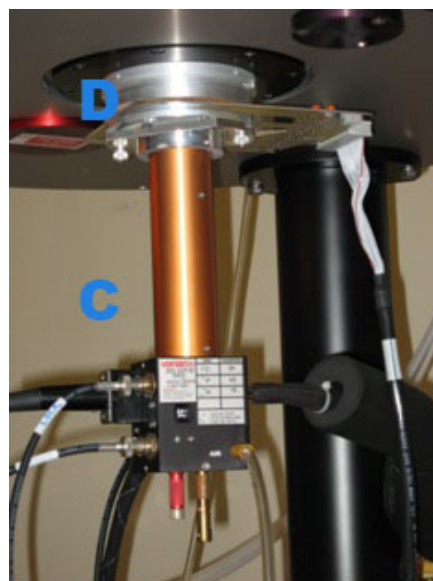


Under the Magnet

The probe and the shim stack are inserted into the magnet from below. Spectrometer connections to the Shim Stack and the Probe are made here.

C: Bottom of Probe

D: Bottom of the Shim Stack



Within the Magnet

The sample sits inside the Shim Stack, which adjusts the magnetic field for maximum homogeneity.

C: Bottom of the Probe

D: Shim Stack

E: Sample Tube and Spinner



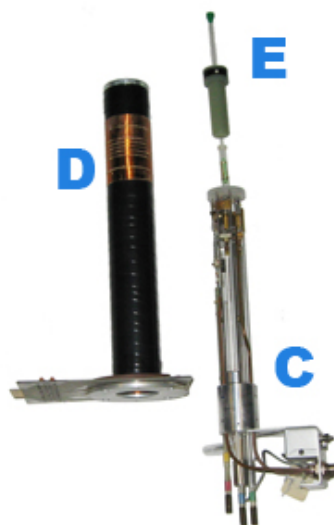
Within the Shim Stack

The sample sits in the probe.

C: Probe

D: Shim Coils

E: Sample Tube and Spinner

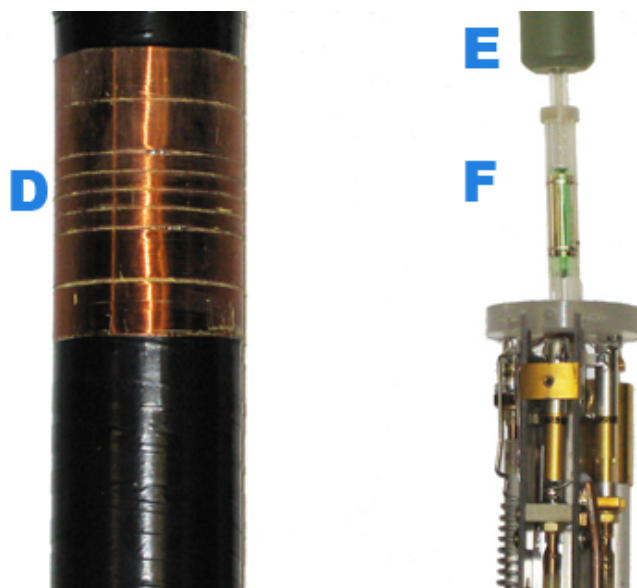


Shim Stack Close-up

D: Center of the Shim Coil

E: Sample Tube and Spinner with a green liquid

F: RF coil



Within the Probe

The NMR sample is located within two RF coils. The inner and outer coils transmit RF to the sample and measure the RF received from the sample.

