

TAKING PROBE DESIGN TO NEW HEIGHTS

The Phoenix Premium HXY Probe

PhoenixNMR provides a highly innovative line of Solid State NMR probes packed with benefits designed to keep your focus on your science, not on your instrumentation. We implement features that provide modularity and performance, and eliminate condensation and frost build-up when operating at sample temperatures below room temperature. Our modular probe design allows greater experimental flexibility with less expense. We are confident that you will find PhoenixNMR's products truly elevate your science. Let us take a moment to describe the probe's most innovative attribute: **modularity**.

A HIGHLY-FLEXIBLE MODULAR DESIGN.

What does modularity mean? It means that when you purchase a new PhoenixNMR probe today, you are actually purchasing two components: a **Probe Body** and a **Probe Head**.

THE PROBE BODY houses all elements common to every PhoenixNMR probe, including:

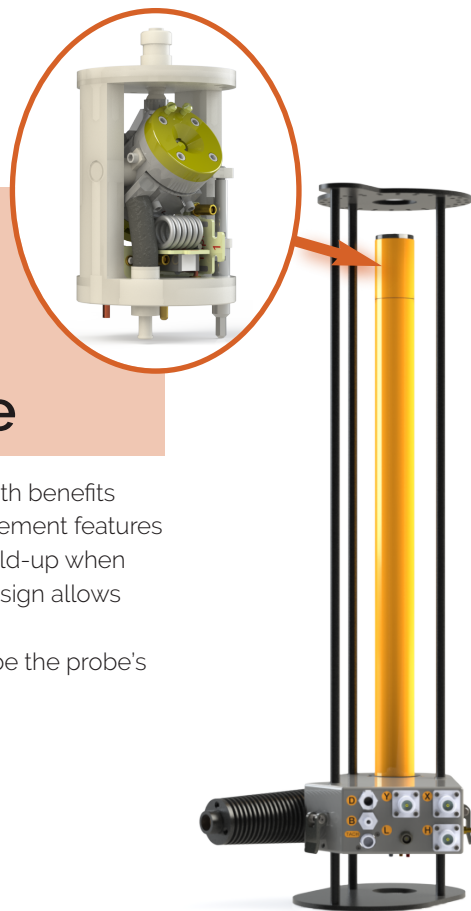
- ▮ Frost and condensation free Variable Temperature system
- ▮ H to F or H and F high band tuning assembly
- ▮ Sample spin speed tachometer
- ▮ RF connectors
- ▮ High efficiency broadband high power tuning tubes
- ▮ Low Gamma Accessory to extend broadband tuning to ~12 MHz
- ▮ Standard Broadband X and Y channels: ³¹P to ¹⁵N and ²³Na to ¹⁵N
- ▮ Optional: simultaneously pulse/observe Near-Band Nuclei, e.g., ¹⁷O/²H

THE PROBE HEAD, on the other hand, houses all:

- ▮ Sample size-specific and channel configuration-specific items
- ▮ Band select elements (Trap and Series Capacitor)
- ▮ Magic Angle adjust mechanism and Spin speed fiber optics
- ▮ Spinning module
- ▮ Variable temperature isolation shells

ONE PROBE / MULTIPLE SPINNING MODULES

When a PhoenixNMR Probe Body and Head are combined, they complete a probe capable of 1 to 4 channel operation, the details of which are governed only by the initial selection of the Probe Body and Probe Head module and your imagination. This gives you unmatched flexibility in the world of NMR probes because, at any time in the future, instead of purchasing a completely new probe, you only need to purchase a new probe head to expand your capability. This modularity provides you with the opportunity to expand your future research at about half the cost.



Exchange Probe Heads for the HXY Probe body in your lab using one small screwdriver, and be ready for an entirely new suite of experiments, with no sacrifice in spinning, RF, or VT performance, in less than 30 minutes.

PROBE COMPARISON:

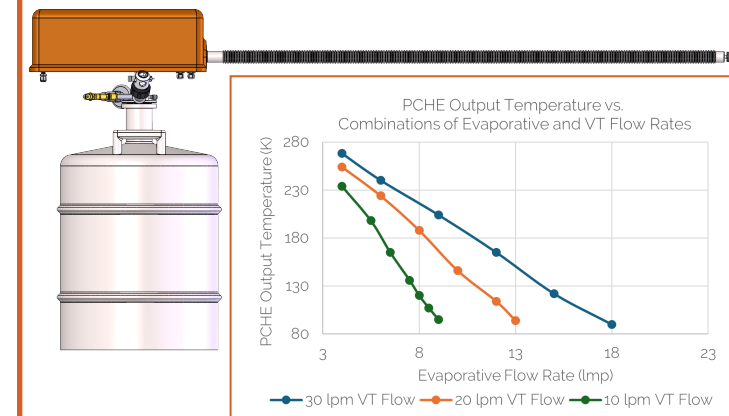
Option	Phoenix HXY Premium	Phoenix HX
HXY, FXY	✓	-
HFX	✓	-
HX, FX	✓	✓
HFX	✓	✓
LOW GAMMA (add-on)	✓	✓
CLOSELY-SPACED γ 's e.g., ¹⁷ O (add-on)	✓	-
1.2, 1.3, 1.6, 2.5, 3.2, 4, 5, 6 mm	✓	✓
STATIC	✓	✓
FREQUENCY	400 to 1200 MHz	400 to 700 MHz
VT RANGE	-125°C to +125°C	-75°C to +100°C
LOW ¹ H or ¹⁹ F	✓	✓
INTERCHANGEABLE PROBE HEAD	✓	-



Take Control of Your Spinning with the PMAS Speed Controller

This pneumatic control system is compatible with virtually all commercial spinning systems and probes. Upgrade your current speed control system, or bundle this with a PhoenixNMR H(F)X probe to add affordable SSNMR capability to a liquids NMR system. Features:

- ▮ Touch-screen interface
- ▮ Speed detection beyond 180 kHz
- ▮ Auto-calibration for unknown modules or extreme conditions
- ▮ Accommodate unlimited number of spin profiles
- ▮ Simple user updates for new module profiles
- ▮ PID teaching mode for non-Phoenix probes
- ▮ Bearing and drive automation
- ▮ Easy, instant switching between automated and manual spinning modes while spinning
- ▮ Time stamp data logging for all parameters



Extend your VT Capability with the Phoenix Cryogenic Heat Exchanger (PCHE)

PCHE provides an automated feed-back algorithm to stabilize VT temperatures when operating with cryogenic liquids. Features:

- ▮ Generate VT gas as low as 90K and 30 lpm indefinitely
- ▮ Regulate temperature from 90K to room temperature
- ▮ 50-l dewar can generate VT gas at 90K and 30 lpm indefinitely, with refill of LN₂ every 24-36 hours without interrupting NMR experiments
- ▮ Available adaptors make PCHE compatible with all manufacturers' equipment.

AFFORDABLE SSNMR PLUS PERFORMANCE

The Phoenix HX Probe

The Phoenix HX probe is available in rotor sizes from 1.2 mm up to 6 mm for 400 MHz-700 MHz performance! This affordable probe, which is about half the cost of the fully featured HXY probe, makes it easy to add solids to any existing standard bore liquids NMR system by bundling with a PMAS speed controller from PhoenixNMR.

- ▮ Proton channel tunes ¹H to ¹⁹F with an optional simultaneous H&F capability
- ▮ X channel tunes ³¹P to ¹⁵N, optional low gamma tuning.
- ▮ Fits most NB, SB, MB, or WB Magnets
- ▮ Specs available for High-power and 100-W Amplifiers
- ▮ Utilizes a similar VT delivery system as the Phoenix HXY Premium probe to give minimal temperature offset and sample gradient
- ▮ Compatible with JEOL, Bruker, Varian/Agilent, and Tecmag NMR systems

