Upper Barrel Misalignment

Summary
At a few customer sites following the installation of the new OneNMR probe we have seen issues with sample spinning instabilities and/or probe insert scoring. This is due to the misalignment of the upper barrel during installation. This can occur as part of a new system installation or a probe install on an existing system. This bulletin provides some awareness of the issue and precautions to take when installing the upper barrel.

Failure Cause
Sample spinning or scoring on the OneNMR Probe is attributable to a small misalignment of the upper barrel and probe. This can occur as a result of poorly wrapped tygon tubing on the upper barrel assembly. Loose tubing can bunch together and push against the tube of upper barrel changing the alignment of the upper barrel and probe. This can cause a slight tilt in an NMR sample tube sitting at the bottom of the barrel. This slight tilt may cause spin instabilities and/or score the glass insert, which can cause lineshape to fail. A slight tilt is more significant with the OneNMR probe because the glass insert is closer to the NMR sample tube.

Field Action
- Before inserting the upper barrel into the magnet, make sure there is a tight connection between tygon tubing and the upper barrel ports. Some ports should have tie-wraps.
- The tubing should go spirally up along the outer diameter of the upper barrel tube.
- Install the upper barrel into the magnet.
- When installing the probe, try not to rotate the center tube of the upper barrel as this may cause the tygon tubing to bunch together.

Make sure the connections are tight.