

# NMR SAMPLE TUBE WASHING UNIT

## NMR Sample Tube Washing Unit Operating Instructions

The **U500 NMR Tube Washing Unit** quickly and easily cleans, rinses and dries a single 7" or 8" long 5mm NMR tube in only seconds.

The U500 is constructed entirely of borosilicate glass, making it impervious to all common cleaning solvents.

It is extremely portable, so it can be positioned at any convenient point of use. It functions well on a low vacuum source such as a water aspirator, the laboratory vacuum line or a small, dedicated vacuum pump situated nearby.

In use, the bottom 10mm O.D. plain glass stem of the Washing Unit is connected through a rubber stopper of a correct size to fit into the tooled neck of a heavy wall filtering or vacuum flask, typically an Erlenmeyer style flask having a sidearm tubulation for connection to the vacuum source through a rubber hose. The filtering flask collects the used solvent and prevents it from aspirating into the vacuum source.

A small filtering flask of 125mL or 250mL capacity works well for cleaning small numbers of NMR tubes. A larger size flask, however, is more convenient, allowing a larger number of NMR tubes to be cleaned before the flask fills to capacity with spent solvent.

Each Tube Washing Unit includes an adjustable sealing disc (a specially modified 5mm standard NMR tube cap made from soft, pliable ethylene-vinyl acetate, or EVA) that holds and seals the NMR tube in the tapered, tooled top of the Washing Unit. The top of the cap has been cut away with a sharp blade,

exposing the interior bore, and then the cap is sliced through and split lengthwise to allow easy positioning along the length of the NMR tube. These are easily made and replaced if necessary.

After assembling the Washing Unit to the filtering flask, and connecting to a vacuum source, the neck of the split cap is pushed a short distance over the bottom of the NMR tube. The open end of the NMR tube is then inserted into the top of the Washing Unit, down and over the small 3mm OD glass solvent tube inside, until the split cap seats and seals in the top of the Washing Unit.

Please be careful, however, not to insert an 8" long NMR tube so far into the Tube Washing Unit to permit the NMR tube to push into or hit the bend in the small inner 3mm solvent tube as this can break or chip the solvent tube or the NMR tube.

Upon adding a small amount of a suitable cleaning solvent into the shorter adjoining solvent chamber, vacuum causes a stream or jet of cleaning solvent to impinge against the inside bottom of the NMR tube, cleaning and rinsing the full length of the NMR tube from the bottom. When the solvent chamber empties of solvent, a stream of air enters, purging and drying residual cleaning solvent away, with the entire process requiring only mere seconds to complete.

