

Instructions for the Tritech Research MICROMAGNIPULATOR™

Microinjection Needle Positioning System

WARNINGS!!!!

THE MICROMAGNIPULATOR™ BASE IS A CUBE OF SOLID STEEL WEIGHING OVER 22 POUNDS (10 KG); IT IS SMALL, HAS SHARP EDGES AND CAN BE DIFFICULT TO MOVE. TAKE CARE NOT TO DROP IT OR STRAIN YOUR HANDS, ARMS, OR BACK WHILE LIFTING IT. THE POLISHED SURFACE ON THE BLOCK MUST BE GREASED BEFORE ASSEMBLY, OR THE SURFACE WILL BE SCRATCHED. NEVER TRY TO MOVE THE BASE BY HOLDING ONTO THE MAGNETIC NEEDLE HOLDER ASSEMBLY; IT MAY NOT HOLD THE WEIGHT, AND BECAUSE THE INTERFACE IS GREASED, THE BASE WILL ALMOST CERTAINLY SLIDE OFF!

SETTING UP:

As stated in the WARNINGS above, the MICROMAGNIPULATOR™ base is heavy, so take great care when removing it from the box and unpacking it to avoid injury. Also, be careful not to scratch the surface on top. Many possible configurations are possible, but to start with, position the base to the RIGHT side of the microinjection microscope, with the Tritech Research sticker facing the user.

Install the three X - Y positioning bolts a few turns into the three nuts on the base.

Unpack the magnetic needle holder / Z - control assembly, taking care not to displace the glide disk on the bottom. So as not to be damaged, the top of the base and bottom of the magnetic holder assembly **MUST be greased thoroughly** before they are put together. A highly viscous grease, such as silicone-based vacuum grease (Dow Corning, Beckman, etc.) is preferable and will give smoothest operation and longest life. Petroleum jelly is an acceptable, but less desirable alternative.

Make sure the magnet control knob is set to OFF, and carefully place the magnetic holder assembly on the base between the three X - Y positioning bolts, with the cotton swab facing the microscope. Turn the magnet control knob toward ON. The cotton swab is there to show you where the microinjection needle holder should be installed. A "straight arm" needle holder, such as the solid brass needle holder available with the Tritech Research microINJECTOR™ System is ideal.

Adjust the position of the MICROMAGNIPULATOR™ and needle holder such that the needle holder is slightly above the microscope stage, coming down at a shallow angle. If extra height is necessary, the MICROMAGNIPULATOR™ can be placed on a block of marble, or other heavy, stable object.

USE:

Tightly install the needle holder, containing the microinjection pipette, between the holding washers, using the thumb screw. Position the end of the pipette in the general vicinity of the microscopic viewing area using the pole adjustments and by where you install the needle holder.

Practice sliding the magnetic holder assembly on its base by hand, adjusting the position of the magnetic control knob until the magnetic holder assembly moves slowly, smoothly, and does not stick in place. To move directly by hand, firmly grasp the magnetic holding cube and slowly apply pressure. Twist the cube slightly if it is stuck initially.

Adjust the pipette's X - Y position by sliding the magnetic holder assembly on the base. This can be accomplished either by sliding the magnetic holder assembly directly by hand, or by use of the X - Y positioning bolts.

Adjust the pipette's Z position, and angle, with the Z adjustment knob located on the horizontal pole. There are a variety of swivel points, so feel free to completely reconfigure the poles and swivels to best suit your positioning / micromanipulating needs.