

Maintaining the condition of a manipulator

Narishige micromanipulators are precisely adjusted. By paying attention to handling and use, you can maintain your micromanipulator in good condition for a long time. This Web News discusses points for handling and use of manipulators.

Always rotate the control knob within its movement range!

Micromanipulation is often performed in view of a microscope. Sometimes the user continues to rotate the manipulator's control knob, unaware that the end of the movement range has come. This can result in the control knob falling off or the drive unit becoming stuck or disengaged. When the control knob is stuck, it suggests that the manipulator is out of alignment and may result in expensive repairs.

To prevent manipulators from mishaps, we encourage you to install a manipulator with its drive unit set in the center of its movement range in principle. After the installation, it is very important that you drive the manipulator in full movement range to make sure not to bump on any part of the microscope and also see the range of movement that the manipulator reaches. A coarse manipulator is driven in all three axes to bring a pipette into the optical axis of a microscope. It is important that the manipulator is installed so that a pipette tip can situate near the optical axis before being adjusted by the manipulator.

(*[Please refer back to Narishige Web News No.045 Key Points for Installation:3 - Assembly.](#))



The SM-15 micromanipulator is used separately from a microscope. However, recently the number of SM-15 sent in for repair has increased due to excess rotation of the control knob. Particularly the Z-axis fine control knob tends to be driven beyond its movement range (0mm-8mm). Before you operate the SM-15 manipulator to descend an electrode, you are encouraged to check position of movement range in advance and also be sure of the direction in which to turn the control knob. When you find the control knob cannot rotate further, check the incorporated scale to see the position of the drive unit. With regard to the SM-15, we can provide a leaflet on this issue upon request.

Hard tension of the control knob

Manual manipulators have lead screws with grease on them. The grease prevents the parts from getting rusty and worn out. On the other hand, the grease can become hard if the part is not used for a long time. When you find the grease has slightly hardened, you are encouraged to drive the manipulator back and forth several times in the full movement range. Smoothness of the manipulator will be restored. You are also encouraged to do this once a month to sustain the good condition.

When the grease is insufficient or hardened, the feel of the manipulator is rough rather than heavy. In such cases, the manipulator should be sent in for service as soon as possible. Continued use of the manipulator in this condition can cause damage to its essential parts and result in expensive repairs.

Do not apply commercially available lubricants (such as KURE-CRC 5-56) to manipulators. It can remove the original grease and leave dust after drying. This action can result in damaging the manipulator.

Keep away from dust

Narishige manipulators are basically designed so that the lead screws are not exposed. Unfortunately some parts cannot be covered entirely. If a manipulator is left in dusty conditions, the dust can be caught by the grease on the manipulator and become stiff. When the manipulator is not being used, you are encouraged to take measures against dust in order to maintain good condition of the manipulator.

Solutions for a detached control knob and adjustment methods are available in FAQ pages of the Narishige Web Site. The FAQ pages will elaborate further.

If you have any questions or need further information, please contact us.

Narishige Group Website

URL: <http://narishige-group.com>