easymount®

## Automatic sample mount and retrieval for the mardtb

MX18YZ0072
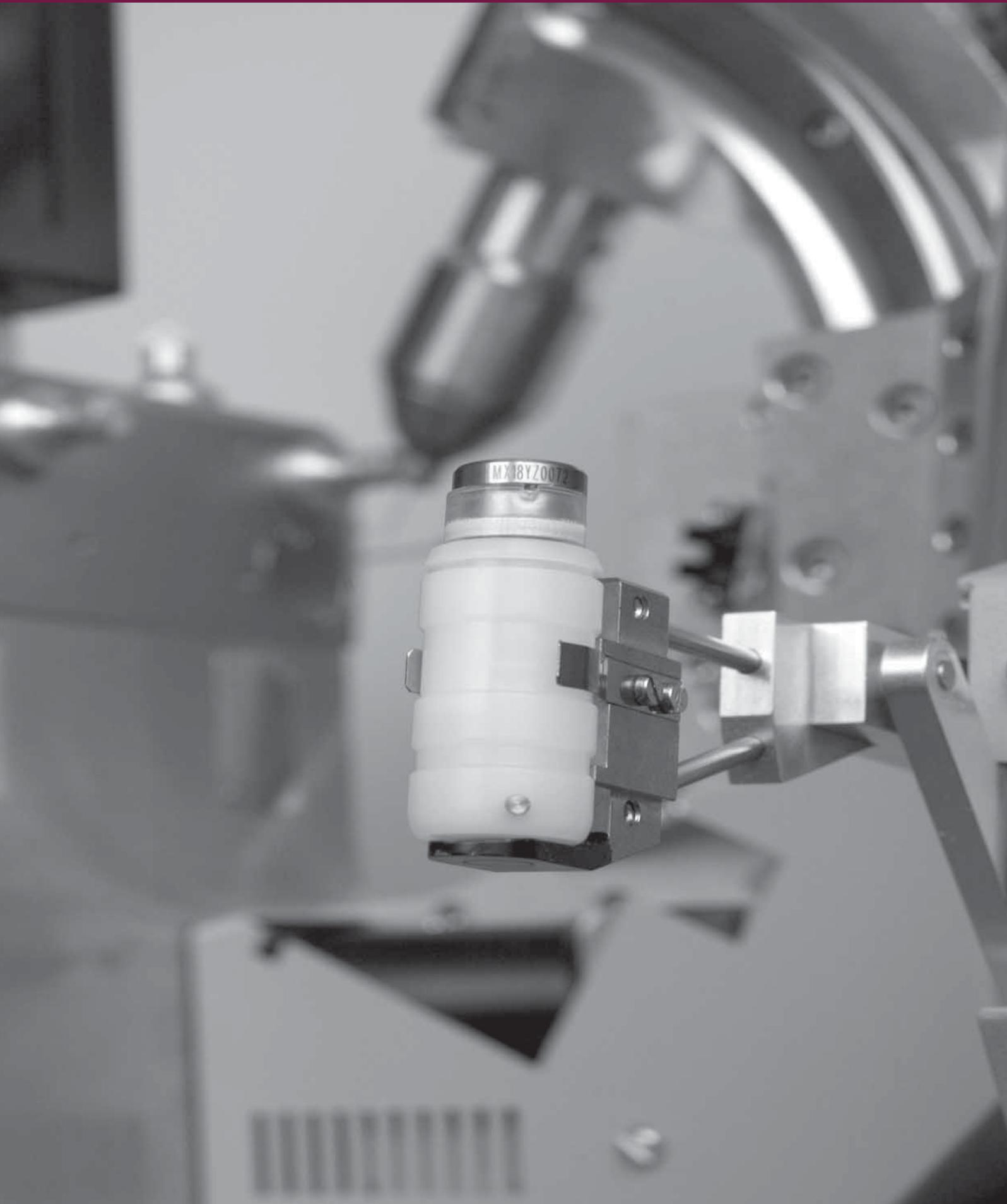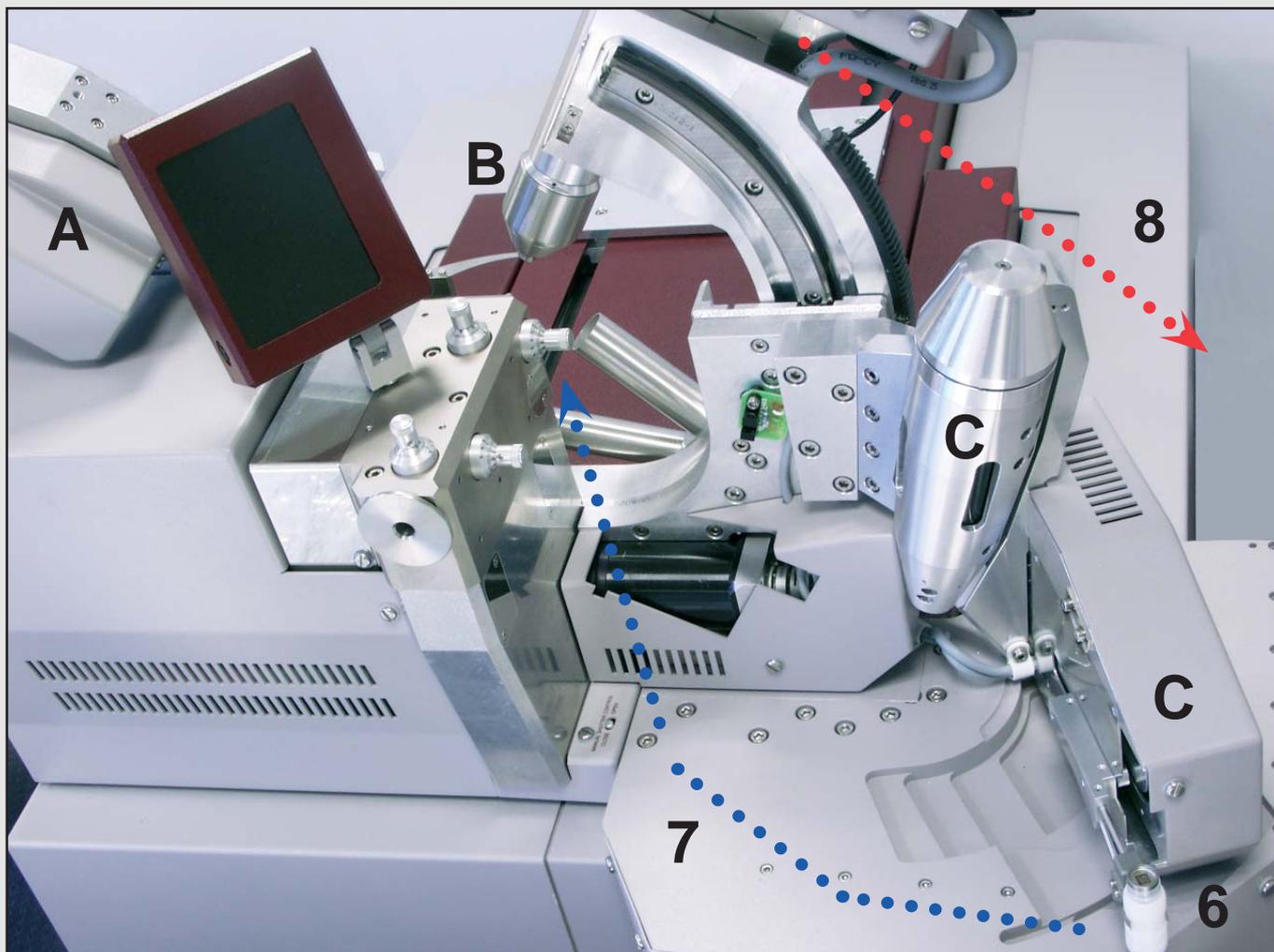
Overview

The **easymount** is an addition to the *marresearch desktop beamline* (**dtb**). Its purpose is to safely mount (and retrieve) samples onto (from) the goniometer head. The operation is supported from both a local motor control unit and from the software. The following motors and utilities are added to a standard **dtb**:

(A) Motorized cryo actuator: moves the cryo nozzle out of the way during sample load or unload.

(B) Motorized x,y,z-translations for the goniometer head.

(C) Two additional motors for the sample loading and unloading mechanism.

(D) Illumination unit for well-defined illumination conditions around the sample (not visible).

(E) Extended local motor control unit with buttons for x,y,z and Phi-motions as well as for activating the load/unload mechanism (not shown).

Operation

The UNLOAD operation comprises the following steps:

(1) The Chi axis moves up into a vertical position.

(2) A vial holding device swings out to an easily accessible position and waits for a vial filled with LN2 to be inserted by the user.

(3) The vial holder transfers the vial to the goniometer head.

(4) The cap is taken off the head and placed on the vial.

(5) The vial holder transfers the vial to a position where it can easily be grabbed by the user.

The LOAD operation reverses the UNLOAD operation:

(6) The user inserts a vial with a cap into the vial holder.

(7) The vial holder transfers the vial to the goniometer head (blue arrow) and leaves the cap on the goniometer head.

(8) The Chi axis moves back down (red arrow).