# Rapid Automated Modular Mounts (RAMM parts)

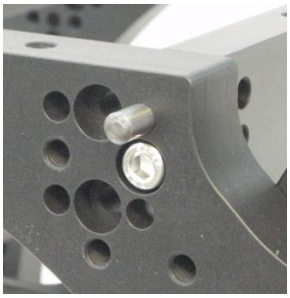
The RAMM components are engineered to provide a means to quickly put together an inverted microscope and automated microscope stage configuration for dedicated automated applications. The basic components are built around metric standard dimensions and complete assemblies are best used with metric breadboards.

**RAMM-BASIC** framework.

The basic RAMM frame work provides a mounting platform 400 mm wide by 450 mm deep by 250 mm tall. The arches contain a series of counter-bored holes for M8 bolts as well as holes for 8 mm dowel pins. Cross bars, which accept the M8 bolts and dowel pins, can be attached in several locations. The cross bars include mounting holes for several ASI stage models to mount to the RAMM when the bars are used on the top outside positions. The recommended stages to use with the RAMM hardware are the IX71/81 inverted stages, in either normal, piezo-Z or flat-top configurations. These stages are designed for travel centered about an optical axis in the center of the RAMM assembly.

**RAMM-FULL,** with top-side riser.

Frequently equipment needs to be mounted above the stage, so a riser assembly is available that allows the mounting of top-side equipment without reducing normal stage travel. There are several hole sets for mounting the cross bar in various positions. Like the basic framework, the connections are pinned with 8mm dowels.



The RAMM has evolved to include a more flexible mounting system for the drop arms. These stands are called the RAMM-DV series which have a sliding dovetail attachment for the support arms so the supports are not restricted to only positions where there are mounting holes.

**RAMM-BASIC-DV** framework

Any number of special mounting bars and fixtures can be bolted to the RAMM structure. One worth mentioning is the mounting system for the MIM. Pairs of special hangers are designed to hold the MIM centered within the RAMM framework, and also allow for substantial vertical adjustment. The hangers either attached directly to the LS-50 focus actuator, or to the collars that can be used to support MIM tube lenses.

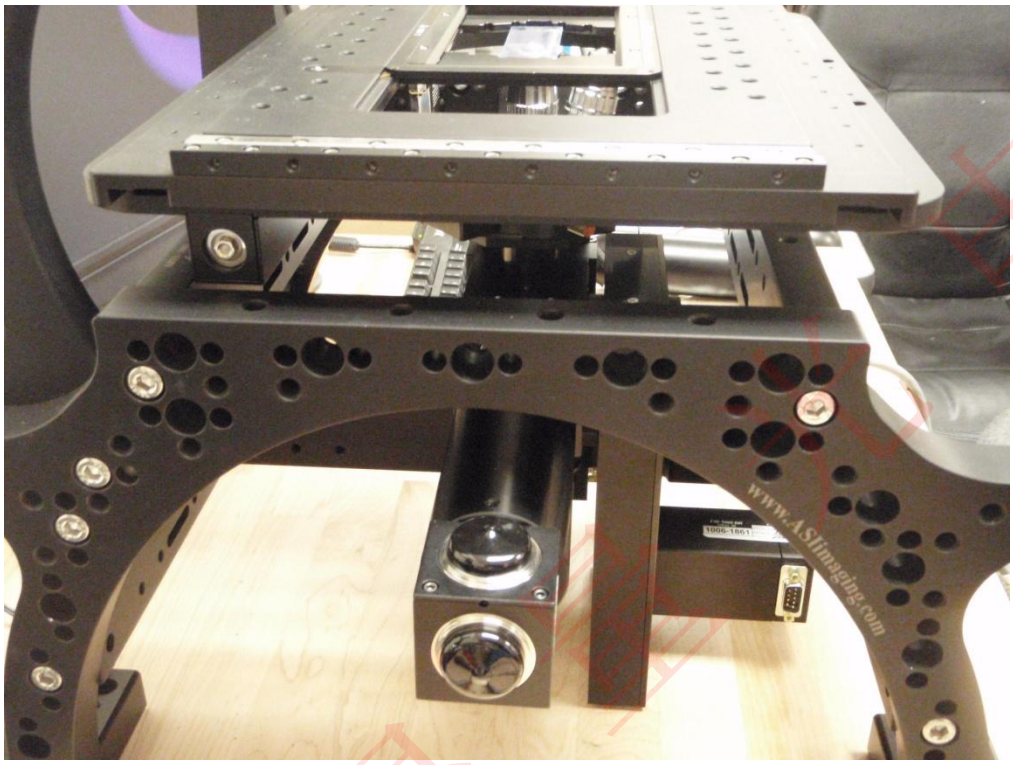
When large assemblies are built below the stage level, RAMM-SILTS can provide more room for optical components underneath.

Another set of RAMM main mounting bars may be attached to the BASIC frame with a set of top-side bar supports. This allows secure mounting of a top-side modular microscope which can be arranged directly above the one below.

A complex modular microscope system that uses both of these frame options is shown in the photo at the left.

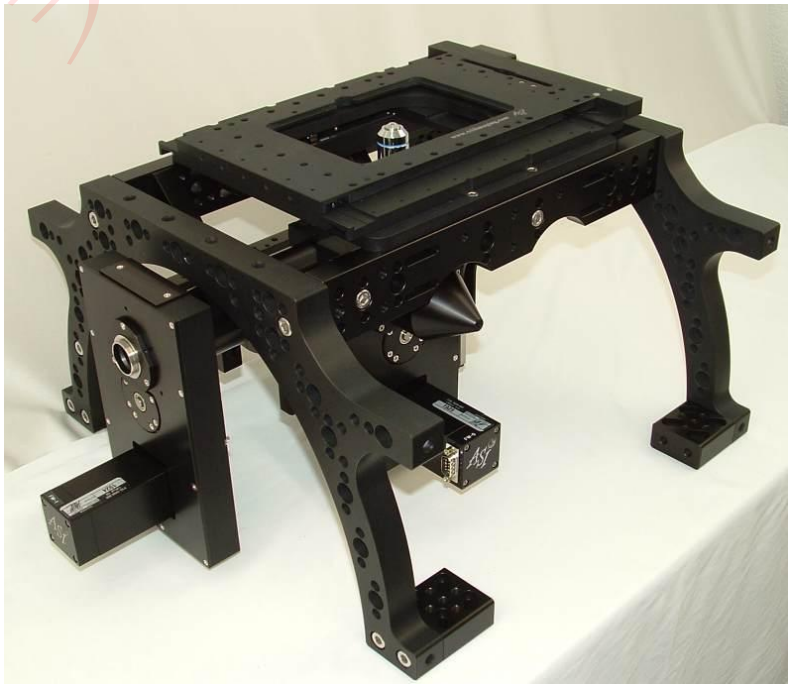
***RAMM & MIM Assemblies***

Here are a few example photos of RAMM/MIM systems that can be assembled with these components.

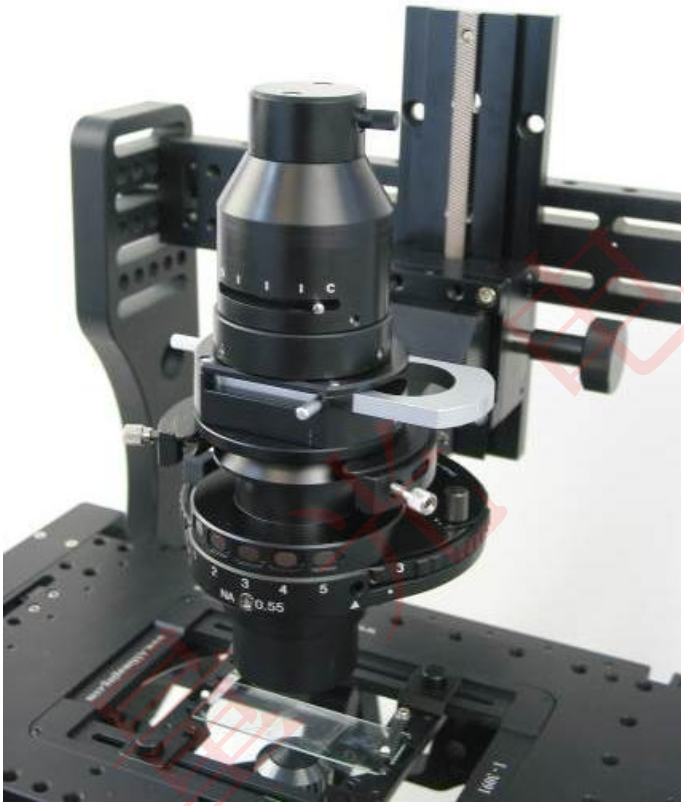


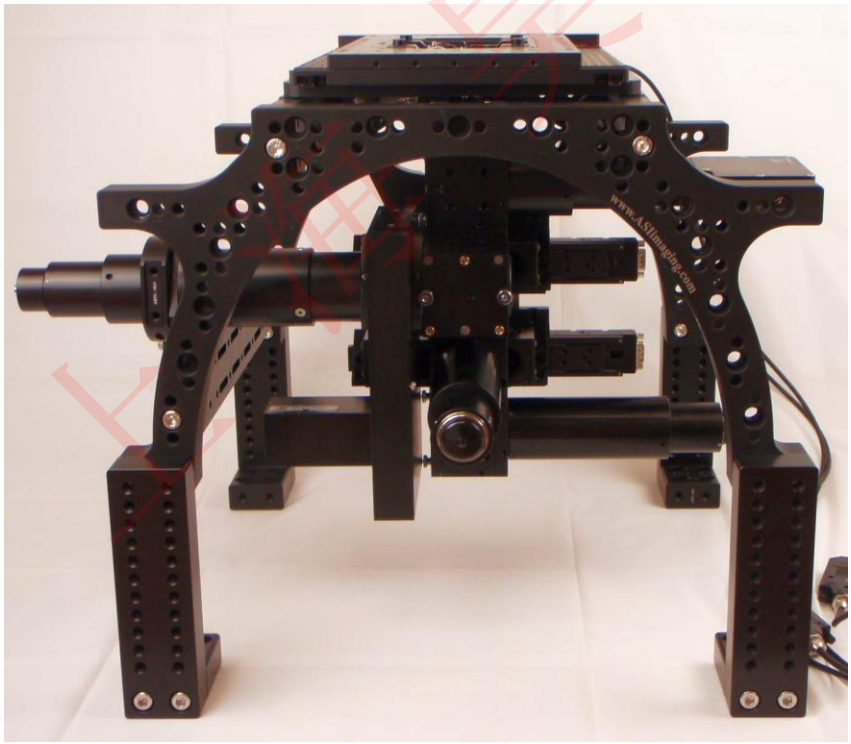

Complete system with large stage, filter wheel, and motorized objective turret and a C-mount Splitter for two cameras.

A Basic RAMM/MIM system with XYZ stage system and two filterwheels for fluorescent imaging is shown, right.



The Olympus condenser transmitted light option on a RAMM frame.





Multi-cube, multi-port fluorescent imaging system.