HMC1000-series XY Manipulators

With 2.75" (CF38) Flanges

The **MC-series** of XY translators combine extremely high rigidity, a large working bore and affordable cost.

They are available in ± 0.5" (± 12.5 mm) travel, circular pattern with both manual and stepper motorized versions. In fact, conversion from micrometers to stepper motors can be done in 15 minutes at the user's site.

These include **±2° tilt adjustment** on the top flange, and the ability to mount the X-axis micrometer (or motor) on either side.

**Expandable**

One distinct advantage of the **MC1000** is the cost savings when long Z Axis strokes are required. Since only the bellows in the XY portion needs to be larger than the probe, the user can extend the Z Axis stroke using a smaller diameter (less costly) bellows that just clears the probe running through it. To make your selection, add the total travel required in either the X or Y axis to the **maximum** diameter of the device that will pass through the manipulator. This sum determines the **minimum** bellows inside diameter (ID).

Next, select the bottom flange that best mates to your chamber or other equipment. While the standard size is 2.75" OD (CF38), either tapped or non-tapped flange sizes of 4½" (CF63), 6" (CF100) and 8" (CF150) and larger are available. Consult the factory for more information.
**MC1000 Price List**

<table>
<thead>
<tr>
<th>Model</th>
<th>X-Y Travel</th>
<th>Clear ID</th>
<th>Height*</th>
<th>Ship. Wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC1000-1.1.5</td>
<td>± 0.5&quot; (12.5)</td>
<td>1.5&quot; (38)</td>
<td>4.5&quot; (114)</td>
<td>13 (6)</td>
</tr>
</tbody>
</table>

Dimensions are in inches (mm)
Flanges are **not threaded**, unless specified otherwise
**Option** each tapped flange

*Custom Heights available* - consult factory

**Options**
- # Large micrometers
- # Stepper motors
- # Stepper Motor Controller - consult factory
Circular Pattern vs. Square Pattern

XY Manipulator motions are defined as either Circular Pattern (sometimes called Vector Sum) or as Square Pattern.

For example, a manipulator with a ±0.5" (±12.5 mm) of XY travel, Circular Pattern, will move the center of the translated device anywhere within a 1" (25 mm) circle, as shown in the graphic, below. Note that the radial offset (the sum of the vectors) will remain constant while the individual X and Y offsets vary. For a manipulator with ±1.0" (±25 mm) of XY travel, Circular Pattern, the values will be twice that of the ±0.5" (±12.5 mm) values but the relationships will persist.

Unless specified otherwise, all HMTS manipulators, as well as all other manufacturer's manipulators are circular pattern. Also, the minimum bellows ID must equal twice the radial offset plus the diameter of the device to be translated. Be sure to keep this in mind when specifying a manipulator.

A manipulator with ±0.5" (±12.5 mm) of XY travel, Square Pattern, will move the center of the translated device anywhere within a 1" square so that when both the X and Y orthogonal offsets are at 0.5" (12.5 mm), the bellows is actually offset 0.707" (18 mm). As above, for a manipulator with ±1.0" (±25 mm) of XY travel, the values will be twice that of the ±0.5" (±12.5 mm) values, but the relationships will persist.