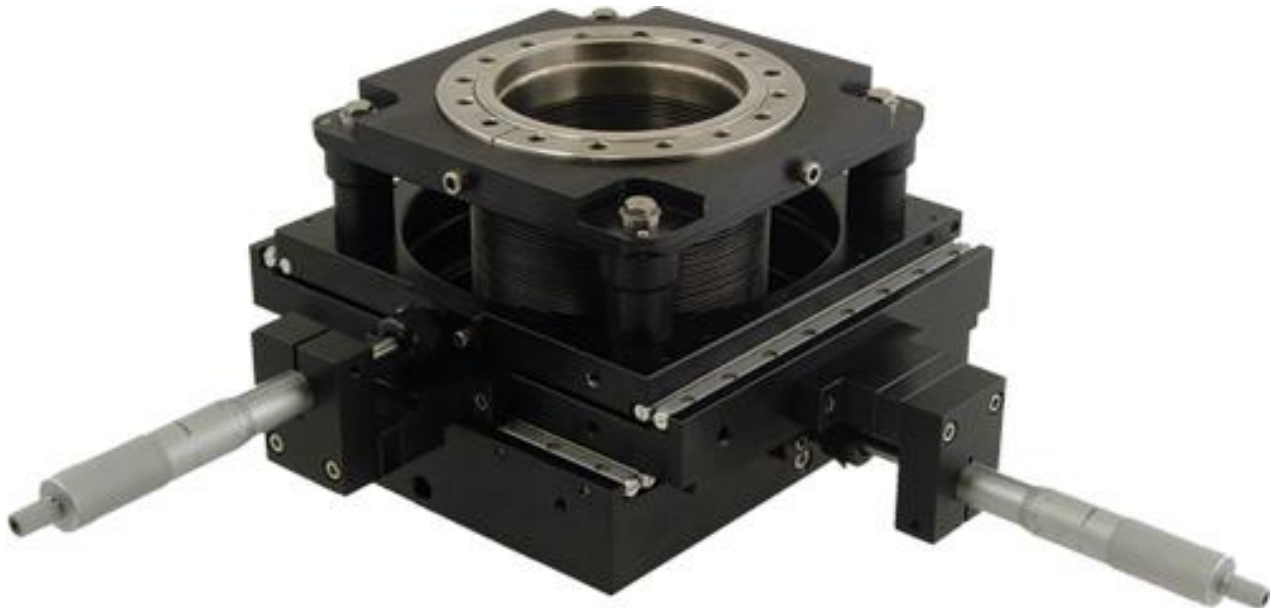


## HOMC2000-series XY Manipulators

With 6.0" (CF100) Flanges



### Include $\pm 2^\circ$ tilt adjustment on the top flange

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

They are available in both  $\pm 1.0$  ( $\pm 25$  mm) and  $\pm 0.5$ " ( $\pm 12.5$  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.

The entire HOMC-series ranges in size from the very large HOMC3000, through the HOMC2000 shown here, to the smaller HOMC1500 and, finally, the compact HOMC1000. They have features not found on translators available elsewhere. **These include  $\pm 2^\circ$  tilt adjustment on the top flange**, and the ability to mount the X-axis micrometer (or motor) on either side, which are standard

## Expandable

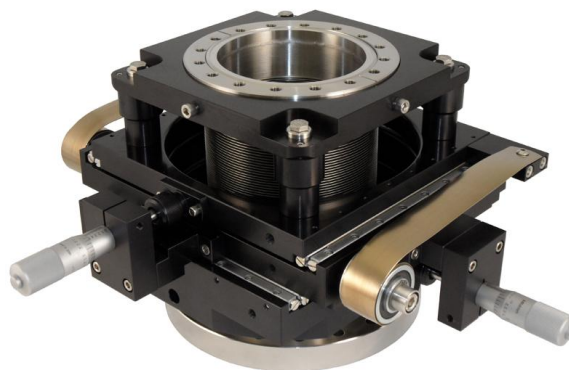
One distinct advantage of the HOMC2000 is the cost savings when long Z Axis strokes are required. Since only the bellows in the XY portion needs to be larger than the probe, the user can extend the Z Axis stroke using a smaller diameter (less costly) bellows that just clears the probe running through it. Simply select the model below that best suits your needs.

The HOMC2000-series manipulator is also available with virtual-axis adjustment to allow eucentric sample tilt / rotation, even if the sample is 12-40" (300-1000 mm) away from the actual manipulator. Contact the factory with your specifications and for a detailed discussion.



## Horizontal mounting

For horizontal mounting, i.e., with the flange faces vertical, dual constant force counterbalance springs are available that compensate for gravitational loads. If required, this feature can be added in the field, after the user accurately determines the weight of the devices to be mounted.



## Payload

The top flange carries the 'payload' of whatever is mounted on it and also carries an atmospheric load of approximately 90 Kg for the MC20 series. This flange can be adjusted up to  $\pm 2^\circ$  to compensate for any slight misalignment of chamber flanges or installed devices.

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 HOMC2000. 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 most common size is 6" OD (CF100), either tapped or non-tapped flange sizes of 4½" (CF63), 8" (CF150) and larger are available. Consult the factory for more information.

Now you are ready to select a Z axis translator that best mates to the device to be manipulated, to complete your XYZ sample manipulator.

### **Payload**

The top flange carries the 'payload' of whatever is mounted on it and also carries an atmospheric load of approximately 90 Kg for the MC20 series. This flange can be adjusted up to +/-2° to compensate for any slight misalignment of chamber flanges or installed devices.

### **Ordering Information**

<b>Model</b>	<b>X-Y Travel</b>	<b>Clear ID</b>	<b>Height*</b>	<b>Ship Wt. lbs (kg)</b>
HOMC2000-1.3	± 0.5" (12.5)	2.87" (73)	4.75" (117)*	36 (16)
HOMC2000-1.4	± 0.5" (12.5)	4.0" (100)	6.0" (150)*	37 (16.8)
HOMC2000-2.3	±1.0" (25)	2.87" (73)	5.75" (146)	38 (17)
HOMC2000-2.4	±1.0" (25)	4.0" (100)	7.12" (180)*	39 (17.7)

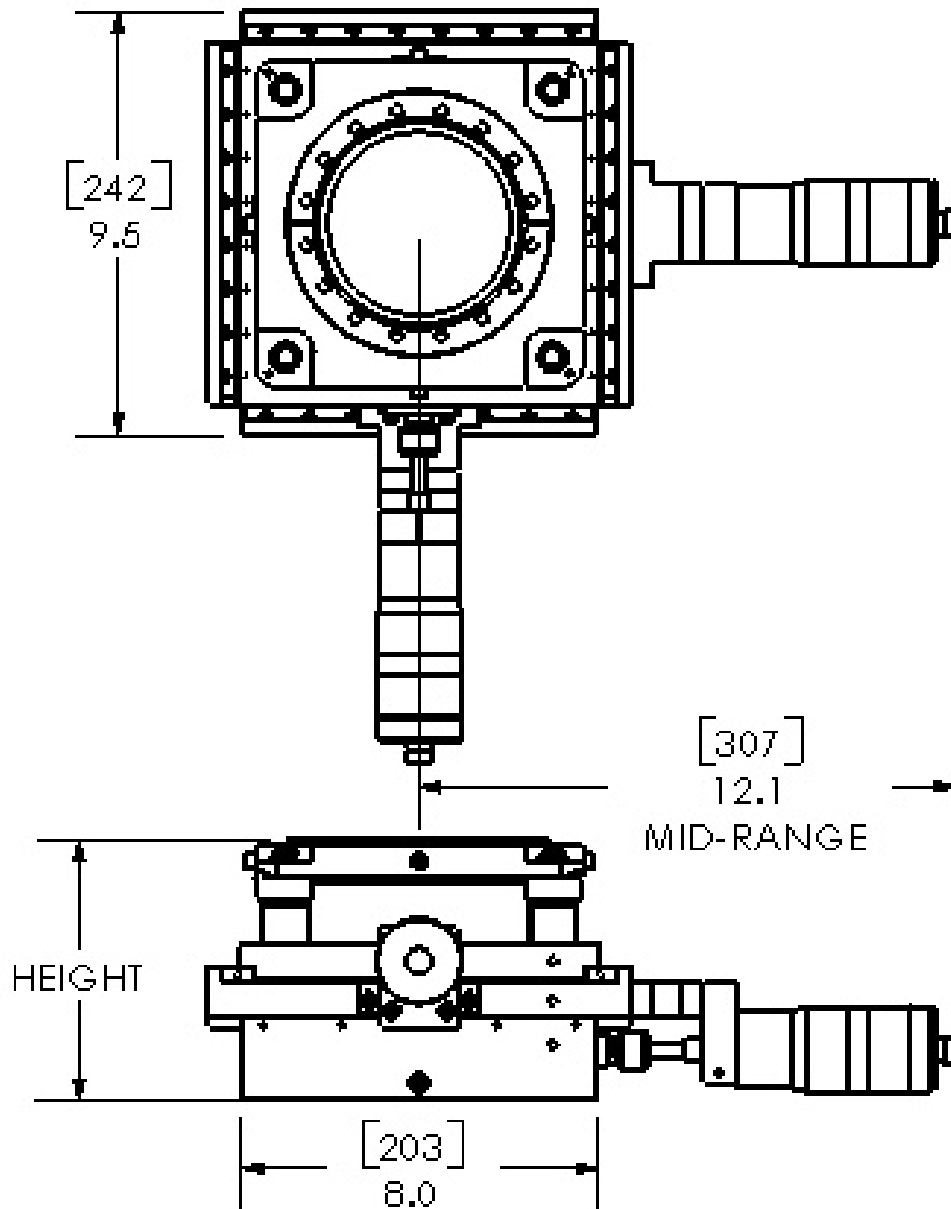
Dimensions are in inches (mm)

Flanges are not threaded, unless specified otherwise

### **Options**

- 1) \*Height: reduce height by 0.5" (12.7) for each tapped flange (small price!)
- 2) For ±1" (±25 mm) models, available per pair for large micrometers
- 3) For ±0.5" (±12.5 mm) models, available per pair for large micrometers
- 4) Horizontal Mounting Kit
- 5) Stepper motors
- 6) Stepper Motor Controller (first axis)
- 7) Additional Axes (may be combined - consult factory)

Drawing



**MC2000-2.4  
with LARGE  
MICROMETERS**

## 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  $\pm 0.5"$  ( $\pm 12.5$  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  $\pm 1.0"$  ( $\pm 25$  mm) of XY travel, **Circular Pattern**, the values will be twice that of the  $\pm 0.5"$  ( $\pm 12.5$  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  $\pm 0.5"$  ( $\pm 12.5$  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  $\pm 1.0"$  ( $\pm 25$  mm) of XY travel, the values will be twice that of the  $\pm 0.5"$  ( $\pm 12.5$  mm) values, but the relationships will persist.

