

XYZ MB1500 Series Manipulators

With 4.5" (CF63) Flanges

The **MB1500** series of precision XYZ manipulators is, quite simply, the **best** value on the market today. In terms of features, quality, possible configurations *and cost*, the MTS manipulator sets the standard.



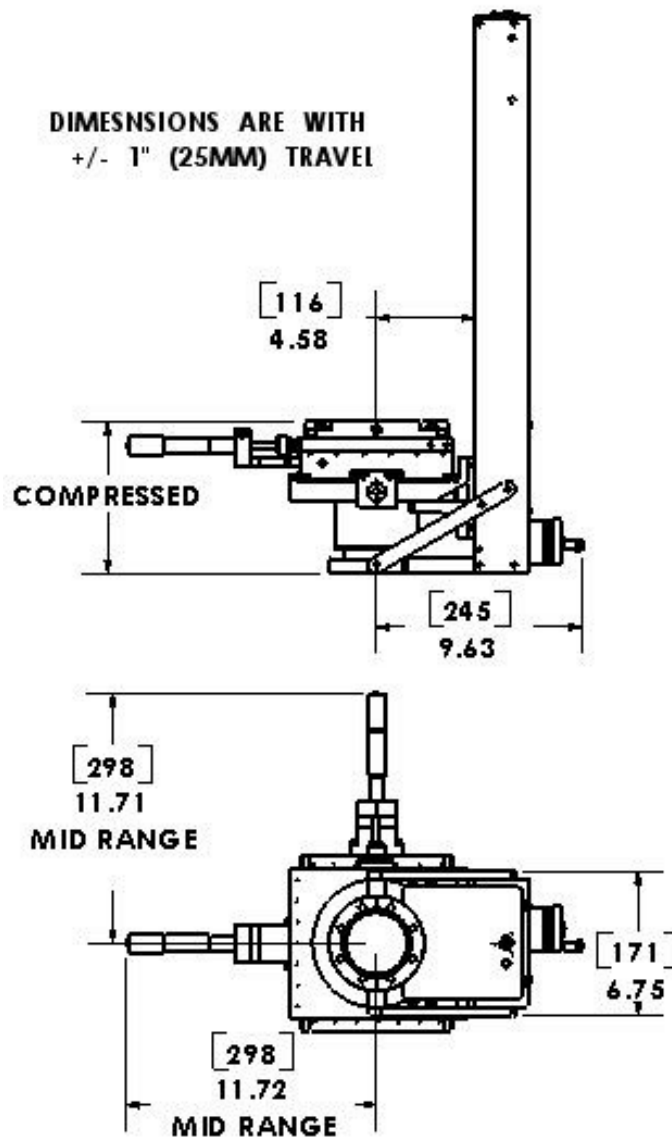
Strong statements. Just take a close look at how we back them up.

Standard features and benefits

- **Top Flange Tilt - with $\pm 2^\circ$ adjustment. A Hositrad Exclusive!**

- X-axis micrometer may be mounted on either left or right side of manipulator
- **Bellows clear I.D. 2.87" (73 mm)**
- Compact, rugged design with full Z axis frame provides extra rigidity to allow strokes in excess of 36" (900 mm).
- Adjustable, crossed roller bearings for extra rigidity.
- XY travel $\pm 0.5"$ (12.5 mm) **or** $\pm 1.0"$ (25 mm) ***circular pattern***
- Z travel 4" -36" (100 - 900 mm).
- Standard resolution $>0.0005"$ (12.5 μ)
- Large micrometers optional, resolution to $>0.0001"$ (2.5 μ)
- Field conversion to stepper motors in 15 minutes.
- Top flange may be either **tapped** or **non-tapped** to suit your equipment.
- Base flange 4.5" (CF63) conflat standard.
- Optional base flange 6", 8" or 10" conflat.
- Drawings and CAD models are available

Drawing



MB1500-1/2 Part List

XY Travel ± 0.5" (± 12.5 mm) circular pattern

Top (traveling) flange 4.5" (CF63) tapped 5/16-24 or M8 (your choice)

Base flange 4.5" (CF63) clearance holes, standard

Small micrometers (std.) - 0.0005" (12.5 μ) resolution

Large micrometers - (optional) - 0.0001" (2.5 μ) resolution

| Model | Z Travel | Compressed | Clear ID |
|--------------|-----------------|-------------------|-----------------|
| MB1504-1/2 | 4" (100) | 6.1" (155) | 2.87" (73) |
| MB1506-1/2 | 6" (150) | 6.4" (160) | 2.87" (73) |
| MB1508-1/2 | 8" (200) | 6.7" (170) | 2.87" (73) |
| MB1510-1/2 | 10" (250) | 7.0" (178) | 2.87" (73) |
| MB1512-1/2 | 12" (300) | 7.3" (185) | 2.87" (73) |
| MB1516-1/2 | 16" (400) | 7.9" (200) | 2.87" (73) |
| MB1520-1/2 | 20" (500) | 8.5" (215) | 2.87" (73) |
| MB1524-1/2 | 24" (600) | 9.1" (231) | 2.87" (73) |

See below for options

MB1500 Part List

XY Travel ± 1.0 " (± 25 mm) [circular pattern](#)

Top (traveling) flange 4.5" (CF63) tapped 5/16-24 or M8 (your choice)

Base flange 4.5" (CF63) clearance holes, standard

Small micrometers (std.) - 0.0005" (12.5 μ) resolution

[Large micrometers](#) - (optional) - 0.0001" (2.5 μ) resolution

| Model | Z Travel | Compressed | Clear ID |
|--------------|-----------------|-------------------|-----------------|
| MB1504 | 4" (100) | 6.8" (173) | 2.87" (73) |
| MB1506 | 6" (150) | 7.1" (180) | 2.87" (73) |
| MB1508 | 8" (200) | 7.4" (188) | 2.87" (73) |
| MB1510 | 10" (250) | 7.7" (196) | 2.87" (73) |
| MB1512 | 12" (300) | 8.0" (203) | 2.87" (73) |
| MB1516 | 16" (400) | 8.6" (218) | 2.87" (73) |
| MB1520 | 20" (500) | 9.2" (234) | 2.87" (73) |
| MB1524 | 24" (600) | 9.8" (249) | 2.87" (73) |

Dimensions in inches (mm)

Options ●

Large micrometers

For 1" (25) travel, pair

For 2" (50) travel, pair



Horizontal mounting

Base flange 6.0" (CF 100)

Base flange 8" (CF150)

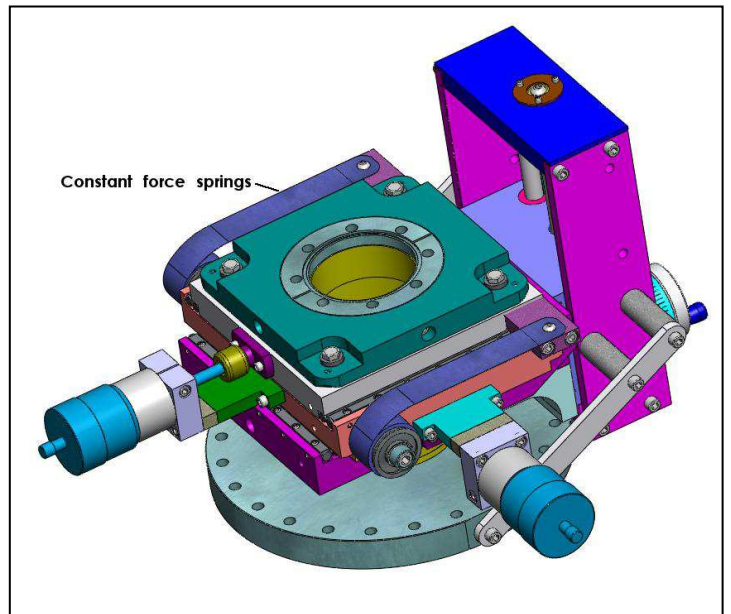
Base flange 10" (CF200)

Z-Axis DC motor w/pendant
switch and power supply

Stepper motors and
limit switches, per axis

Stepper motor controller, 1st axis

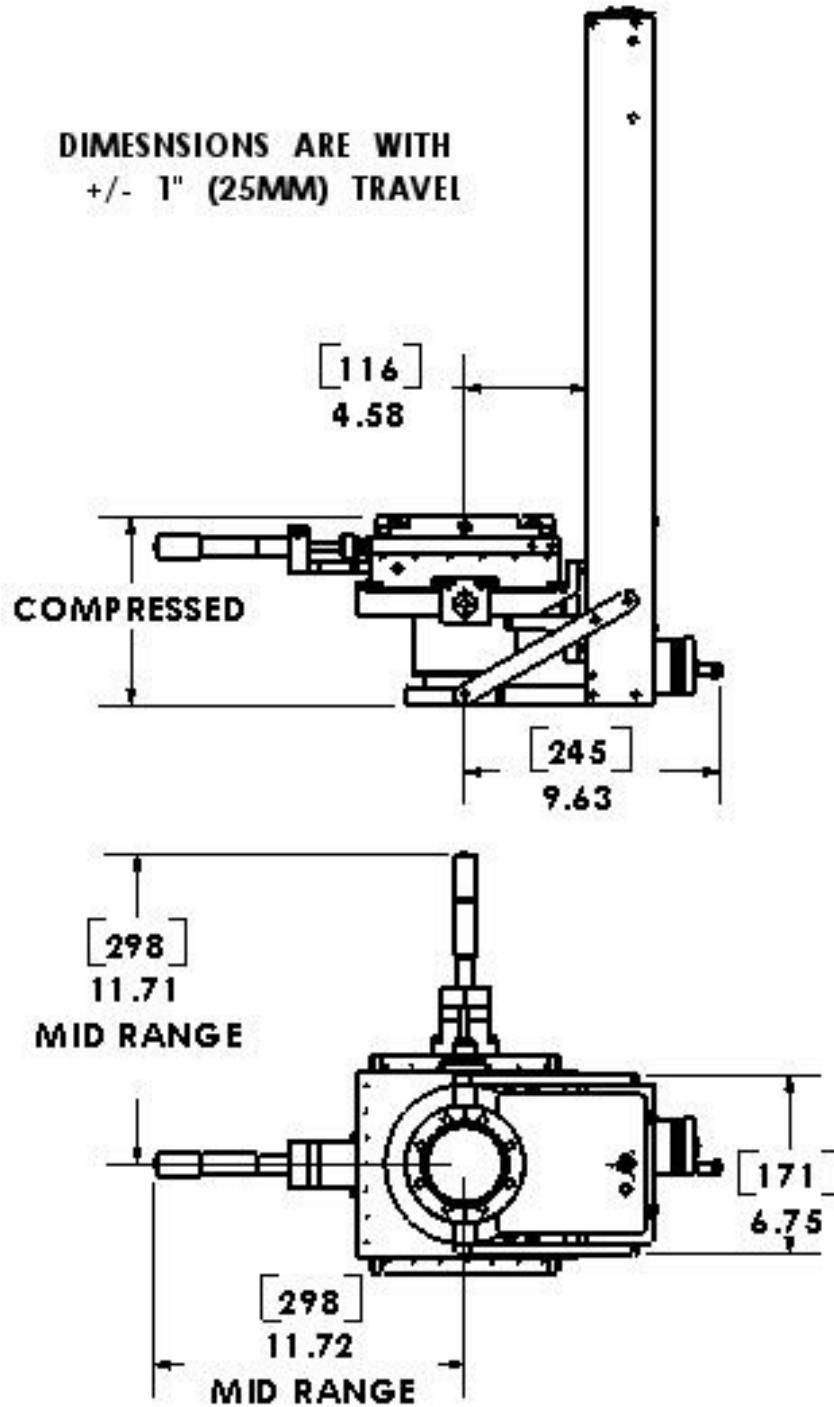
Stepper motor controller,
additional axes (may be combined)



Dimensions in inches (millimeters)-

All printed prices and dat are subject to change without notice, for the actual price please contact Email: info@hositrade.com

Drawing



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

