

## 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.



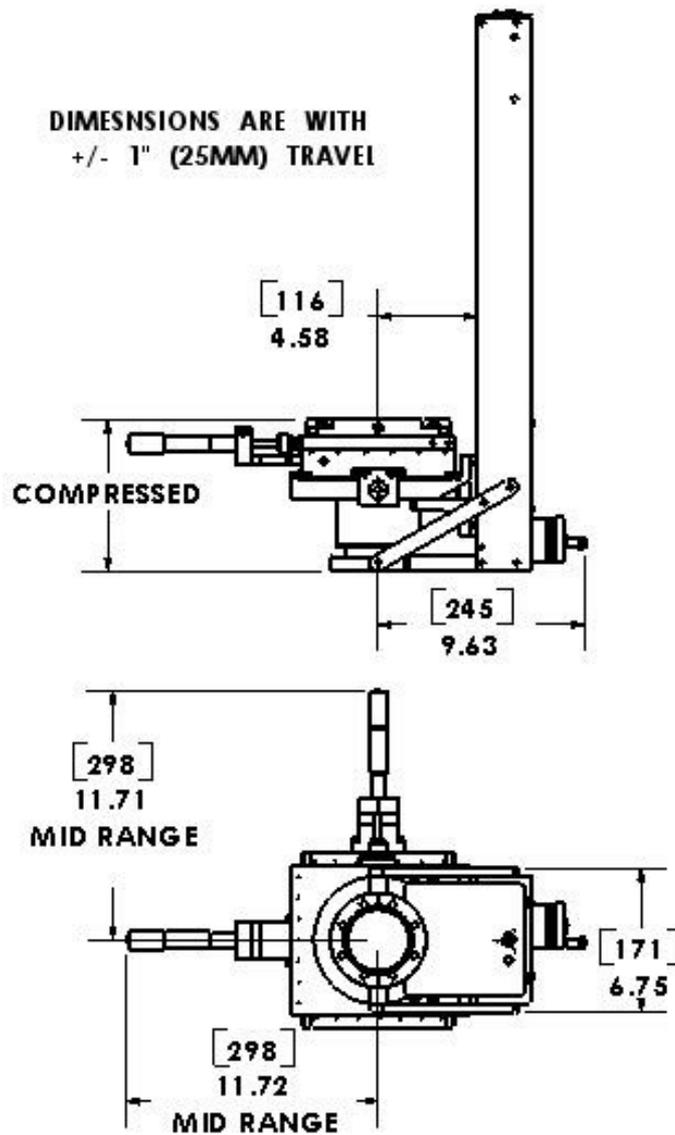
Strong statements. Just take a close look at how we back them up.

### 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  $\mu$ )
- Large micrometers optional, resolution to  $>0.0001"$  (2.5  $\mu$ )
- 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



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**MB1500-1/2 Part List**

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***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

<b>Model</b>	<b>Z Travel</b>	<b>Compressed</b>	<b>Clear ID</b>
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**

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**MB1500 Part List**

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**XY Travel  $\pm 1.0$ " ( $\pm 25$  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  $\mu$ ) resolution

[Large micrometers](#) - (optional) - 0.0001" (2.5  $\mu$ ) resolution

<b>Model</b>	<b>Z Travel</b>	<b>Compressed</b>	<b>Clear ID</b>
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)

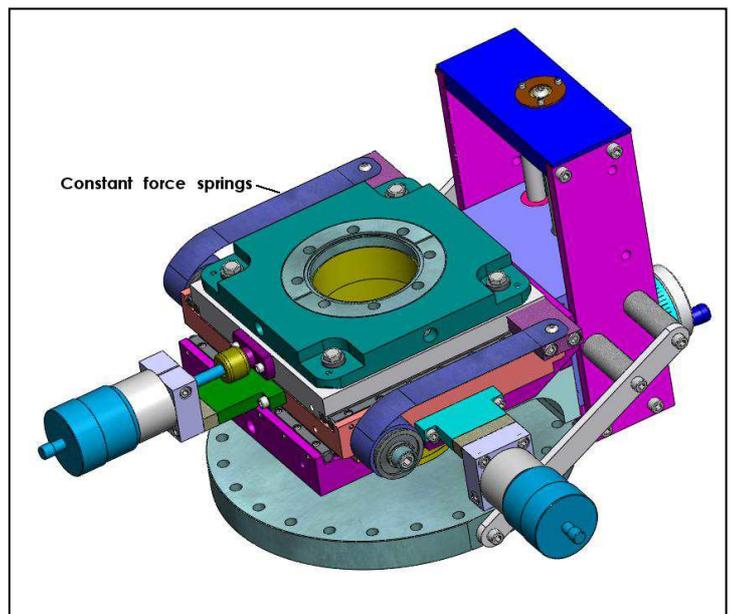
Base flange 10" (CF200)

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

Stepper motors and  
limit switches, per axis

Stepper motor controller, 1st axis

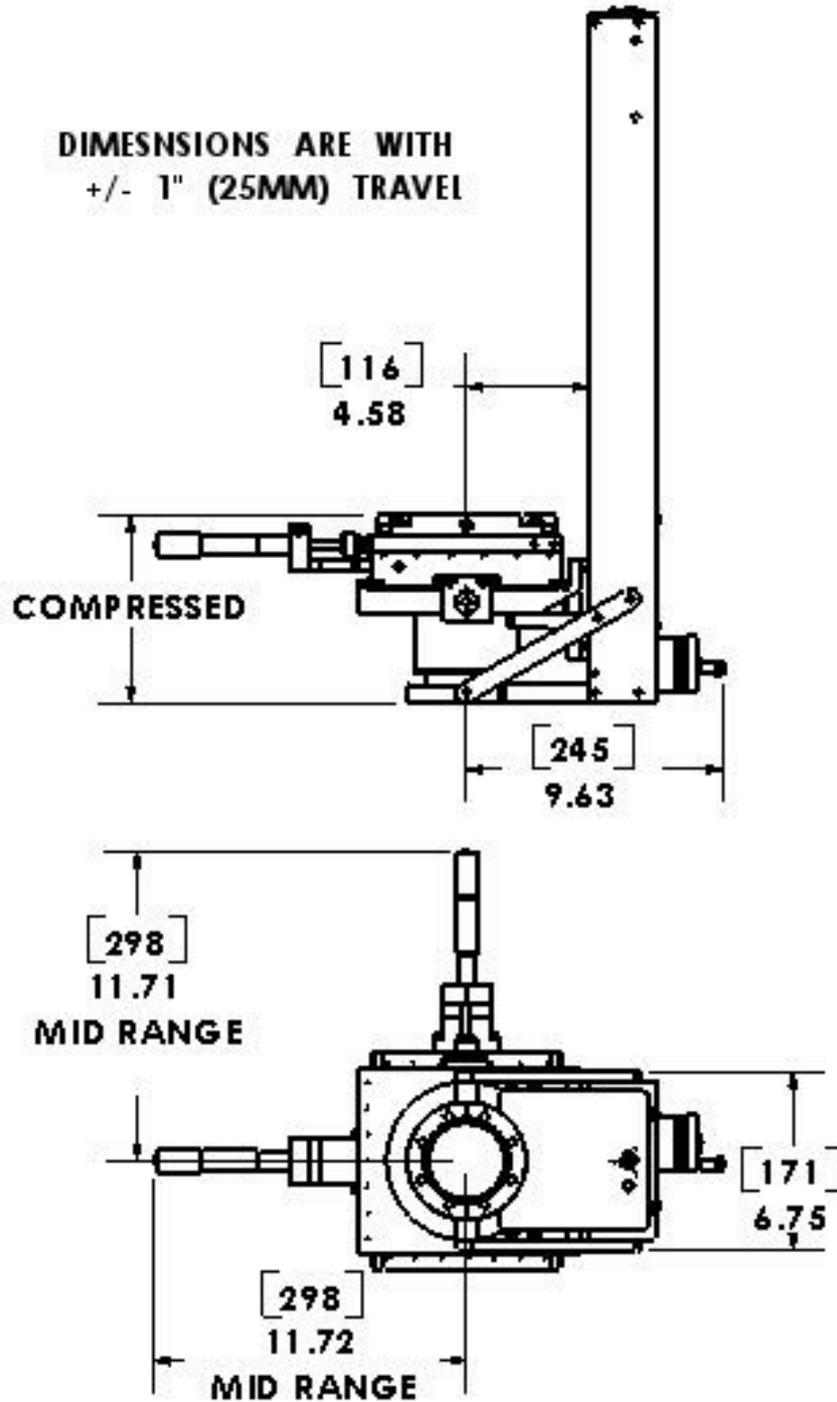
Stepper motor controller,  
additional axes (may be combined)



## 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](mailto: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  $\pm 0.5"$  ( $\pm 12.5$  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.

