Motorized stages from Holmarc are general purpose positioners for a wide range of applications in manufacturing and research. There are hundreds of models to choose from. Holmarc manufactures these stages with traverse ranging from 5 mm to 500 mm, proportionately varying with size and load capacity. In case our standard positioners do not fit for the application requirements, we can custom design and manufacture stages.

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Motorized Linear and Rotation Stages

Holmarc manufactures a wide range of motorized linear and rotation stages, ranging from short travel micro translation stages to multi axis stages. These products provide attributes like rotation and precise tilting on various axis at required orientation in three dimensional space. There are stages to suit customer demands and applications with utmost accuracy and repeatability. Our market proven quality, sturdy design and minimal pricing are helping to build trust and confidence with valued customers. Please go through our standard models listed under various categories. Please contact us at sales@holmarc.com for any assistance/support.

Manual Linear and Rotation Stages

Holmarc manufactures a wide range of linear and rotation stages, ranging from short travel micro translation stages to multi axis stages. These products provide attributes like rotation and precise tilting on various axis at required orientation in three dimensional space. There are stages to suit customer demands and applications with utmost accuracy and repeatability. Our market proven quality, sturdy design and minimal pricing are helping to build trust and confidence with valued customers. Please go through our standard models listed under various categories. Please contact us at sales@holmarc.com for any assistance/support.
LINEAR TRANSLATION STAGES

TS-35 Translation Stage

These are miniature stages for space restricted applications. Pre loaded ball bearing guide ways ensure friction free and play-less movement. The stages are modular in design so that these can be assembled in XY and XYZ configurations.

Specifications

- Straight line accuracy: 5 μm
- Micrometer linear resolution: 10 μm
- Guide way: Precision ball bearing guide way
- Construction: Aluminum alloy B51S
- Finish: Black anodized
- Mounting holes: M4 tapped holes on carriage
- Guide-way: Precision ball bearing guide way
- Construction: Aluminum alloy B51S
- Finish: Black anodized
- Mounting options: Post mountable by using M6 thread
- Design: Modular design for multi axis configurations
- Travel: 6mm
- Carriage Size: 35mm x 35mm
- Load Capacity: 3kg vertical on X axis
- Drive: Option-1) 10 μ Micrometer
  Option-2) 5 μ Micrometer
**TS-50 Translation Stage**

These stages have pre-loaded rolling contact guide ways to ensure friction free movement and precise positioning. XY and XYZ configurations are possible with the help of angle brackets and adapter plates.

**Specifications**
- Straight line accuracy: 7.5μm
- Micrometer linear resolution: 10 μm
- Guide way: Precision ball bearing guide way
- Construction: Aluminum alloy B51S
- Finish: Black anodized
- Mounting Holes: M4 tapped holes on carriage
  - M6 tapped hole on top and bottom
  - M4 CBR hole for mounting the stage to base plate
- Mounting options: Post mountable by using M6 thread
  - Breadboard mounting by using base plate
- Design: Modular design for multi-axis configurations
- Travel: 10mm
- Carriage Size: 50mmx50mm
- Load Capacity: 5kg vertical on X axis
- Drive: Micrometer

<table>
<thead>
<tr>
<th>Model No: Micrometer Drive 5μ resolution</th>
<th>Model No: Micrometer Drive 10μ resolution</th>
<th>Configuration</th>
<th>Load Capacity (kg)</th>
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<tbody>
<tr>
<td>TS50-Mu05-01</td>
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<tr>
<td>TS50-Mu05-02</td>
<td>TS50-Mu10-02</td>
<td>XY Axis</td>
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<td>XYZ Axis</td>
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<td>TS50-Mu05-04</td>
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<td>TS50-Mu05-05</td>
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<td>XZ Axis</td>
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</table>

**Accessories**

<table>
<thead>
<tr>
<th>Base Plate</th>
<th>Adapter Plate</th>
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<tbody>
<tr>
<td>BPTS-35</td>
<td>APTS-35</td>
</tr>
<tr>
<td>Z Axis Angle Bracket with Base Plate</td>
<td>ABZTS-35</td>
</tr>
</tbody>
</table>

**TS-50 Torque**

These stages have pre-loaded rolling contact guide ways to ensure friction free movement and precise positioning. XY and XYZ configurations are possible with the help of angle brackets and adapter plates.

**Specifications**
- Straight line accuracy: 7.5μm
- Micrometer linear resolution: 10 μm
- Guide way: Precision ball bearing guide way
- Construction: Aluminum alloy B51S
- Finish: Black anodized
- Mounting Holes: M4 tapped holes on carriage
  - M6 tapped hole on top and bottom
  - M4 CBR hole for mounting the stage to base plate
- Mounting options: Post mountable by using M6 thread
  - Breadboard mounting by using base plate
- Design: Modular design for multi-axis configurations
- Travel: 10mm
- Carriage Size: 50mmx50mm
- Load Capacity: 5kg vertical on X axis
- Drive: Micrometer

<table>
<thead>
<tr>
<th>Model No: Micrometer Drive 5μ resolution</th>
<th>Model No: Micrometer Drive 10μ resolution</th>
<th>Configuration</th>
<th>Load Capacity (kg)</th>
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<td>TS50-Mu05-03</td>
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<td>XYZ Axis</td>
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<tr>
<td>TS50-Mu05-04</td>
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<td>TS50-Mu05-05</td>
<td>TS50-Mu10-05</td>
<td>XZ Axis</td>
<td>2</td>
</tr>
</tbody>
</table>
**TS-65 Translation Stage**

These stages have guide ways using crossed rollers for enhanced load capacity and rigidity. Pre-loading ensures play-less and precision movement.

**Specifications**

- Straight line accuracy: 7.5μm
- Micrometer linear resolution: 10 μm
- Guide way: Precision ball bearing guide way
- Construction: Aluminum alloy B51S
- Finish: Black anodized
- Mounting holes: M6 tapped holes on carriage
- Mounting options: Can be mounted to breadboard directly or by using Base Plate
- Design: Modular design for multi axis configurations
- Travel: 15mm
- Carriage Size: 65mm x 65mm
- Load Capacity: 20kg vertical on X axis
- Drive: Micrometer / digital micrometer

**Accessories >>**

- **Base Plate**: BPTS-50
- **Z Axis Angle Bracket with Base Plate**: ABZTS-50
- **Adapter Plate**: APTS-50
- **Angle Bracket**: ABTS-50

**Digital Micrometer 1μ**

- Length: L - 108
- Pitch: 0.5mm

**Micrometer 5μ**

- Length: L - 42.5 +/- 7.5
- Resolution: 0.01 mm
- Pitch: 0.25mm

**Micrometer 10μ**

- Length: L - 42.5 +/- 7.5
- Resolution: 0.01 mm
- Pitch: 0.25mm
**TS-90 Translation Stage**

These stages have pre-loaded rolling contact guide ways using crossed rollers. The use of crossed rollers ensures high load capacity along with rigidity and stability.

### Specifications

- **Straight line accuracy:** 7.5µm
- **Micrometer linear resolution:** 10µm
- **Guide way:** Precision ball bearing guide way
- **Construction:** Aluminum alloy B51S
- **Finish:** Black anodized
- **Mounting holes:** M6 tapped holes on carriage
- **Mounting options:** Can be mounted to breadboard directly or by using Base Plate
- **Design:** Modular design for multi axis configurations
- **Travel:** 25mm
- **Carriage Size:** 90mmx65mm
- **Load Capacity:** 20kg vertical on X Axis
- **Drive:** Micrometer/digital micrometer

### Accessories

- **Base Plate:** BPTS-65
- **Angle Bracket:** ABTS-65
- **Adapter Plate:** APTS-65
- **Z Axis Angle Bracket with Base Plate:** ABZTS-65

**Model No:**

- **Micrometer Drive 5µ resolution**
  - TS65-Mu05-01
  - TS65-Mu05-02
  - TS65-Mu05-03
  - TS65-Mu05-04
  - TS65-Mu05-05

- **Micrometer Drive 10µ resolution**
  - TS65-Dmu10-01
  - TS65-Dmu10-02
  - TS65-Dmu10-03
  - TS65-Dmu10-04
  - TS65-Dmu10-05

<table>
<thead>
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<th>Configuration</th>
<th>Base Plate Qty</th>
<th>Adapter Plate Qty</th>
<th>Angle Bracket Qty</th>
<th>Z Axis Angle Bracket with Base Plate Qty</th>
<th>Load Capacity (kg)</th>
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<tbody>
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<td>5</td>
</tr>
<tr>
<td>XY Axis</td>
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<td>1</td>
<td>1</td>
<td>2</td>
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</tbody>
</table>
**Model No:**
- Micrometer Drive 5µ resolution
- Micrometer Drive 10µ resolution
- Digital Micrometer 1µ
- Digital Micrometer 1µ Pitch: 0.5mm

**Configuration**
- X Axis
- XY Axis
- XYZ Axis
- Z Axis
- XZ Axis

**Load Capacity (kg)**
- 20
- 20
- 6
- 6
- 6

**Accessory Configuration**
- XY configuration
- XYZ configuration
- Z configuration
- XZ configuration

**Angle Bracket**
- ABTS-90
- Z Axis Angle Bracket with Base Plate
- APTS-90

**Accessories**
- Base Plate
- Adapter Plate

**Optical Tube 2” Tilt & Translation Mount**

Holmarc's optical tube 2” tilt & translation mount is designed for collimator tube adjustments. It provides +/-3 degree optical tube tilting adjustments in X & Y plane. 10mm travel linear translation stage used for fine positioning in desired axes. Optical tube can be held in position by nylon tipped set-screws.
**TSQ-90 Translation Stage**

TSQ-90 stages have square shape having length and width 90mm. These stages too have rolling contact guide ways using crossed rollers. The increased width ensures highly stable positioning.

### Specifications

- **Straight line accuracy:** 10 μm
- **Micrometer linear resolution:** 10 μm
- **Guide way:** Precision ball bearing guide way
- **Construction:** Aluminum alloy B51S
- **Finish:** Black anodized
- **Mounting holes:** M6 tapped holes on carriage
  - M6 CBR hole for mounting the stage to base plate or breadboard
- **Mounting options:** Can be mounted to breadboard directly or by using Base Plate
- **Design:** Modular design for multi axis configurations
- **Travel:** 25mm
- **Carriage Size:** 90mmx90mm
- **Load Capacity:** 20kg vertical on X Axis
- **Drive:** Micrometer/ Digital micrometer

---

### Accessories

- **Base Plate:** BPTSQ-90
- **Adapter Plate:** APTSQ-90
- **Z Axis Angle Bracket with Base Plate:** ABZTSQ-90
- **Z Axis Angle Bracket:** ABTSQ-90
**TS-120 Translation Stage**

TS-120 translation stage has 50mm traverse with micrometer drive. These stages have rolling contact guide ways for friction free and playless positioning. Top surface has M6 mounting holes on 25 mm grid.

**Specifications**

- **Straight line accuracy**: ±10 μm for total travel length
- **Guide way**: Precision ball guide way
- **Drive**: Micrometer
- **Construction**: Aluminium alloy B51S
- **Finish**: Black anodized
- **Tapped Holes on Carriage**: M6 tapped holes on 25mm grid
- **Mounting Holes on the base plate**: M6 tapped holes
- **Bread Board Mounting**: With base plate/ direct
- **Design**: Modular Design for Multi Axis Configurations
- **Travel**: 50mm
- **Carriage Size**: 120mmx90mm
- **Load Capacity**: 20kg vertical on X axis
- **Drive**: Micrometer

**Accessories**

- **Base Plate**: BPTS-120
- **Adapter Plate**: APTS-120
- **Angle Bracket**: ABTS-120
- **Z Axis Angle Bracket with Base Plate**: ABZTS-120

---

**Model No:**

<table>
<thead>
<tr>
<th>Micrometer Drive</th>
<th>Digital Micrometer Drive</th>
<th>Configuration</th>
<th>Load Capacity (kg)</th>
<th>Qty Base Plate</th>
<th>Qty Adapter Plate</th>
<th>Qty Angle Bracket</th>
<th>Qty Z Axis Angle Bracket with Base Plate</th>
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</table>

**Digital Micrometer 1μ**

- **Length**: L - 108
- **Resolution**: 0.01 mm
- **Lead screw pitch**: 0.5 mm

**Micrometer 5μ**

- **Length**: L - 65 +/- 12.5
- **Resolution**: 0.01 mm
- **Pitch**: 0.25 mm

**Micrometer 10μ**

- **Length**: L - 65 +/- 12.5
- **Resolution**: 0.01 mm
- **Pitch**: 0.5 mm

---
**Precision Translation Stage**

**TSV-65 Translation Stage**

These stages have V grooved guide ways for precise positioning as well as for better straight line accuracy of movement compared to TS-65 stages.

**Specifications**

- **Straight line accuracy**: $\pm 2 \mu m$ for total travel length
- **Positioning accuracy**
  - Option-1) Micrometer linear resolution: 1 $\mu m$
  - Option-2) Micrometer linear resolution: 10 $\mu m$
- **Guide way**: Precision V grooved guide way
- **Drive**: Micrometer
- **Construction**: Aluminium alloy BS1S or stainless steel
- **Finish**: Black anodized for aluminium and ground finish for SS
- **Mounting holes**: M6 Tapped holes on carriage
- **Mounting options**: Directly mount to breadboard by using M6 screws or using base plate
- **Design**: Modular design for multi axis configurations
- **Travel**: 15mm
- **Carriage Size**: 65mm x 65mm
- **Load Capacity**: 20kg vertical on X Axis
- **Drive**
  - Option-1) Micrometer 1 $\mu m$ Resolution (Digital)
  - Option-2) Micrometer 5 $\mu m$ Resolution
  - Option-3) Micrometer 10 $\mu m$ Resolution

**NOTE**: TS-65 stages make use of flattened rods as guide ways whereas TSV-65 stages use V grooved guide ways. V grooved guide ways offer better stability and straight line accuracy.

---

**Model No:**

<table>
<thead>
<tr>
<th>Micrometer Drive 5µ resolution</th>
<th>Micrometer Drive 10µ resolution</th>
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<tbody>
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<td>Model No:</td>
<td>Model No:</td>
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<td>Micrometer Drive</td>
<td>Micrometer Drive</td>
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<td>5µ resolution</td>
<td>10µ resolution</td>
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<table>
<thead>
<tr>
<th>Micrometer 5µ</th>
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</thead>
<tbody>
<tr>
<td>Length: L= 100 +/- 25</td>
</tr>
<tr>
<td>Travel Range : 50mm</td>
</tr>
<tr>
<td>Lead Screw Pitch : 0.5 mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Micrometer 10µ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length: L= 110 +/- 25</td>
</tr>
<tr>
<td>Travel Range : 50mm</td>
</tr>
<tr>
<td>Lead Screw Pitch : 0.5 mm</td>
</tr>
</tbody>
</table>
### Digital Micrometer Drive

- **Material**: Stainless Steel 304
- **Micrometer**: 5µm
  - **Length**: L
  - **Lead Screw Pitch**: 0.5mm

### Micrometer 10µm

- **Material**: Stainless Steel 304
- **Micrometer**: 10µm
  - **Length**: L
  - **Lead Screw Pitch**: 0.5mm

### Accessories

- **Base Plate**: BPTSV-65
- **Adapter Plate**: APTS-65
- **Angle Bracket**: ABTSV-65
- **Z Axis Angle Bracket**: ABZTSV-65

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**Rotation Stage with ARS Slide Fitted on Dual Rod Assembly**

**Rotation Stage Model**: RS-75
**ARS Slide Model**: ARS250
**Dual Rod Model**: DRS-300

ARS250 Slide is used to positioning of RS-75 rotation stage. Linear slide ensures the smooth movement of 250mm and provided a position lock mechanism.
**Precision Translation Stage**

**LTSV-65 Translation Stage : Side Drive**

These stages have micrometer fixed by the side of the stage. This reduces the overall length of the stage. As in the case of TSV stages, these models also use V grooved guide ways for better straight line accuracy as well as stable positioning.

**Specifications**

- **Straight line accuracy**: ±2 μm for total travel length
- **Positioning accuracy**
  - Option-1) Micrometer linear resolution: 5 μm
  - Option-2) Micrometer linear resolution: 10 μm
- **Guide way**: Precision V grooved guide way
- **Drive**: Micrometer
- **Construction**: Aluminium alloy BS1S or stainless steel
- **Finish**: Black anodized (aluminium) & ground finish for SS
- **Mounting holes**: M6 Tapped holes on carriage
  - M6 CBR hole for mounting stage to base plate or breadboard
- **Mounting options**: Directly mount to breadboard by using M6 screws or using base plate
- **Design**: Modular design for multi axis configurations
- **Travel**: 15mm
- **Carriage Size**: 65mmx65mm
- **Load Capacity**: 20kg vertical on X Axis
- **Drive**: Option-1) Micrometer 5μm Resolution
  - Option-2) Micrometer 10μm Resolution

**Specifications Table**

<table>
<thead>
<tr>
<th>Model No: Micrometer 5μm</th>
<th>Model No: Micrometer 10μm</th>
<th>Configuration</th>
<th>Load Capacity (kg)</th>
</tr>
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**Material: Stainless Steel 304**

<table>
<thead>
<tr>
<th>Model No: Micrometer 5μm</th>
<th>Model No: Micrometer 10μm</th>
<th>Configuration</th>
<th>Load Capacity (kg)</th>
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<td>XZ Axis</td>
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</tr>
</tbody>
</table>

**Accessories**

- **Base Plate**: BPTSV-65
- **Angle Bracket**: ABZTSV-65
- **Adapter Plate**: APTSV-65

**Maintenance Note**

- These stages have micrometer fixed by the side of the stage. This reduces the overall length of the stage. As in the case of TSV stages, these models also use V grooved guide ways for better straight line accuracy as well as stable positioning.
Precision Translation Stage

**TSV-90 Translation Stage**

TSV-90 stages use V grooved guide ways with pre-loaded crossed rollers. V grooved guides ensure straight line accuracy and stable positioning.

**Specifications**
- **Straight line accuracy**: ±3.5 μm for total travel length
- **Positioning accuracy**
  - Option-1) Micrometer linear resolution: 1 μm
  - Option-2) Micrometer linear resolution: 5 μm
- **Guide way**: Precision V grooved guide way
- **Drive**: Micrometer
- **Construction**: Aluminium alloy B61S or stainless steel
- **Finish**: Black anodized for aluminium & ground finish for SS
- **Mounting holes**: M6 tapped holes on carriage
  - M6 CBR hole for mounting stage to base plate or breadboard
- **Mounting options**: Directly mount to breadboard by using M6 screws or using base plate
- **Design**: Modular design for multi-axis configurations
- **Travel**: 25mm
- **Carriage Size**: 90mm x 90mm
- **Load Capacity**: 25kg vertical on X Axis
- **Drive**:
  - Option-1) Micrometer 1μm Resolution (Digital)
  - Option-2) Micrometer 5μm Resolution
  - Option-3) Micrometer 10μm Resolution

**Accessories**
- **Base Plate**: BPTSV-90
- **Adapter Plate**: APTSV-90
- **Angle Bracket**: ABTSV-90
- **Z Axis Angle Bracket with Base Plate**: ABZTSV-90

**Loading Capacity (kg)**

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Load Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>X Axis</td>
<td>22</td>
</tr>
<tr>
<td>XY Axis</td>
<td>22</td>
</tr>
<tr>
<td>XYZ Axis</td>
<td>6</td>
</tr>
<tr>
<td>Z Axis</td>
<td>6</td>
</tr>
<tr>
<td>XZ Axis</td>
<td>6</td>
</tr>
</tbody>
</table>

**Specifications Table**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Material</th>
<th>Linear Resolution</th>
<th>Material</th>
<th>Lead Screw Pitch</th>
<th>Load Capacity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSV90-DMu01-01</td>
<td>Aluminium Alloy</td>
<td>0.001 mm</td>
<td>Stainless Steel 304</td>
<td>0.5mm</td>
<td>22</td>
</tr>
<tr>
<td>TSV90-DMu01-02</td>
<td>Aluminium Alloy</td>
<td>0.001 mm</td>
<td>Stainless Steel 304</td>
<td>0.5mm</td>
<td>22</td>
</tr>
<tr>
<td>TSV90-DMu01-03</td>
<td>Aluminium Alloy</td>
<td>0.001 mm</td>
<td>Stainless Steel 304</td>
<td>0.5mm</td>
<td>6</td>
</tr>
<tr>
<td>TSV90-DMu01-04</td>
<td>Aluminium Alloy</td>
<td>0.001 mm</td>
<td>Stainless Steel 304</td>
<td>0.5mm</td>
<td>6</td>
</tr>
<tr>
<td>TSV90-DMu01-05</td>
<td>Aluminium Alloy</td>
<td>0.001 mm</td>
<td>Stainless Steel 304</td>
<td>0.5mm</td>
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</tr>
<tr>
<td>SSVTSV90-DMu01-01</td>
<td>Stainless Steel 304</td>
<td>0.001 mm</td>
<td>Stainless Steel 304</td>
<td>0.5mm</td>
<td>22</td>
</tr>
<tr>
<td>SSVTSV90-DMu01-02</td>
<td>Stainless Steel 304</td>
<td>0.001 mm</td>
<td>Stainless Steel 304</td>
<td>0.5mm</td>
<td>22</td>
</tr>
<tr>
<td>SSVTSV90-DMu01-03</td>
<td>Stainless Steel 304</td>
<td>0.001 mm</td>
<td>Stainless Steel 304</td>
<td>0.5mm</td>
<td>6</td>
</tr>
<tr>
<td>SSVTSV90-DMu01-04</td>
<td>Stainless Steel 304</td>
<td>0.001 mm</td>
<td>Stainless Steel 304</td>
<td>0.5mm</td>
<td>6</td>
</tr>
<tr>
<td>SSVTSV90-DMu01-05</td>
<td>Stainless Steel 304</td>
<td>0.001 mm</td>
<td>Stainless Steel 304</td>
<td>0.5mm</td>
<td>6</td>
</tr>
</tbody>
</table>

**Material**
- **Aluminium Alloy**: B61S
- **Stainless Steel 304**: Ground finish

**On Top of 304**

- **Black anodized**: B61S

**Documentation**

- **Technicaldrawings**: Digital Micrometer 1μm
  - Linear resolution: 0.001 mm
  - Lead screw pitch: 0.5mm
- **Micrometer 5μm**
  - Lead Screw Pitch: 0.25 mm
- **Micrometer 10μm**
  - Lead Screw Pitch: 0.5 mm

**NOTE**:
Precision Translation Stage

LTSV-90 Translation Stage: Side Drive

LTSV-90 stages have side drive micrometers to make stage as compact as possible. These stages use V grooved guide ways with pre-loaded crossed rollers for improved straight line accuracy as well as stable positioning.

Specifications

- **Direct line accuracy**: ± 3.5 μm for total travel length
- **Positioning accuracy**
  - Option-1): Micrometer linear resolution: 5 μm
  - Option-2): Micrometer linear resolution: 10 μm
- **Guide way**: Precision V grooved guide way
- **Drive**: Micrometer
- **Construction**: Aluminium alloy B51S or stainless steel
- **Finish**: Black anodized for aluminium & ground finish for SS
- **Mounting holes**: M6 Tapped holes on carriage
- **Mounting options**: Directly mount to breadboard by using M6 screws or using base plate
- **Design**: Modular design for multi axis configurations
- **Travel**: 25mm
- **Carriage Size**: 90mm x 90mm
- **Load Capacity**: 22kg vertical on X Axis
- **Drive**: Option-1): Micrometer 5μm Resolution
  - Option-2): Micrometer 10μm Resolution

**Specifications Table**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Micrometer 5μm</th>
<th>Micrometer 10μm</th>
<th>Configuration</th>
<th>Load Capacity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTSV90-Mu05-01</td>
<td>LTSV90-Mu10-01</td>
<td>X Axis</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>LTSV90-Mu05-02</td>
<td>LTSV90-Mu10-02</td>
<td>XY Axis</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>LTSV90-Mu05-03</td>
<td>LTSV90-Mu10-03</td>
<td>XYZ Axis</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>LTSV90-Mu05-04</td>
<td>LTSV90-Mu10-04</td>
<td>Z Axis</td>
<td>6</td>
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<tr>
<td>LTSV90-Mu05-05</td>
<td>LTSV90-Mu10-05</td>
<td>XZ Axis</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

**Material**: Stainless Steel 304

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Micrometer 5μm</th>
<th>Micrometer 10μm</th>
<th>Configuration</th>
<th>Load Capacity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSLSUV90-Mu05-01</td>
<td>SSLSUV90-Mu10-01</td>
<td>X Axis</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>SSLSUV90-Mu05-02</td>
<td>SSLSUV90-Mu10-02</td>
<td>XY Axis</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>SSLSUV90-Mu05-03</td>
<td>SSLSUV90-Mu10-03</td>
<td>XYZ Axis</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>SSLSUV90-Mu05-04</td>
<td>SSLSUV90-Mu10-04</td>
<td>Z Axis</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>SSLSUV90-Mu05-05</td>
<td>SSLSUV90-Mu10-05</td>
<td>XZ Axis</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

**Material**: Aluminium Alloy

**Accessories**

- **Base Plate**: BPTSV-90
- **Angle Bracket**: ABSTSV-90
- **Z Axis Angle Bracket with Base Plate**: ABSTSV-90
- **Adapter Plate**: APTSV-90

**Features**

- Straight line accuracy: ± 3.5 μm for total travel length
- Positioning accuracy
  - Option-1): Micrometer linear resolution: 5 μm
  - Option-2): Micrometer linear resolution: 10 μm
- Guide way: Precision V grooved guide way
- Drive: Micrometer
- Construction: Aluminium alloy B51S or stainless steel
- Finish: Black anodized for aluminium & ground finish for SS
- Mounting holes: M6 Tapped holes on carriage
- Mounting options: Directly mount to breadboard by using M6 screws or using base plate
- Design: Modular design for multi axis configurations
- Travel: 25mm
- Carriage Size: 90mm x 90mm
- Load Capacity: 22kg vertical on X Axis
- Drive: Option-1): Micrometer 5μm Resolution
  - Option-2): Micrometer 10μm Resolution

**Guides Way**: Precision V grooved guide way

**Drive**: Micrometer

**Construction**: Aluminium alloy B51S or stainless steel

**Finish**: Black anodized for aluminium & ground finish for SS

**Mounting Holes**: M6 Tapped holes on carriage

**Mounting Options**: Directly mount to breadboard by using M6 screws or using base plate

**Design**: Modular design for multi axis configurations

**Travel**: 25mm

**Carriage Size**: 90mm x 90mm

**Load Capacity**: 22kg vertical on X Axis

**Drive**: Option-1): Micrometer 5μm Resolution
  - Option-2): Micrometer 10μm Resolution

**Material**: Stainless Steel 304

**Accessories**:

- **Base Plate**: BPTSV-90
- **Angle Bracket**: ABSTSV-90
- **Z Axis Angle Bracket with Base Plate**: ABSTSV-90
- **Adapter Plate**: APTSV-90
**Vertical Translation Stages - [VTS series]**

Vertical movement is obtained by activating a spring-loaded cam by micrometer head. Rolling contact guide ways using crossed rollers are employed for friction and stick-slip free translation. These guide ways are factory preloaded to eliminate play and wobble. There are tapped holes at the top and clearance slots at the base for mounting purpose. The stage is constructed in aluminium alloy and finished by black anodizing. Holmarc manufactures vertical stages in three models for 25 mm, 10 mm and 5 mm travel.

### Specifications

- **Straight line accuracy**: ±10 μm
- **Positioning accuracy**: 10 μ
- **Guide way**: Precision ball slide
- **Drive**: Precision lead screw/micrometer
- **Construction**: Aluminium alloy BS1S
- **Finish**: Black anodized (aluminium)
- **Mounting holes**: M4/ M6 tapped holes on carriage
- **Mounting options**: Post mountable by using M6 thread (VTS5 only)
- **Design**: Modular type design for multi axis configurations

### Models

- **VTS-10-Mu10**: 25 mm travel
- **VTS-5-Mu10**: 10 mm travel
- **VTS-10-90-Mu10**: 25 mm travel with 90° rotation
- **VTS-25-Mu10**: 5 mm travel

Holmarc manufactures vertical stages in three models for 25 mm, 10 mm and 5 mm travel.
LINEAR MOTION SLIDES

Linear motion Slides are ready to fit and cost-effective bearing assemblies for achieving straight-line movements in a mechanism. Essentially, the linear motion slide consists of two parts, a fixed base and a moving carriage. Rolling elements, balls or rollers provide the interface between base and carriage and perfectly rolls on four surfaces arranged at 90 degree, called guide ways. In the case of slides from holmarc, hardened and ground rods act as guide ways. Wear and tear is negligible even after long use as there is a perfect rolling contact between rolling elements and guide ways. Friction is very less and in most cases, co-efficient of friction is less than 0.002. The slides can support heavy loads without compromising performance accuracies. Factory pre-loading of the slides during assembly practically eliminate play and wobble.

The use of these readily available slide units saves time during design as well as for manufacturing. Compared to other options for linear motion, slide assemblies are cost effective, maintenance free and durable. Linear slides find a variety of applications in the following areas,

1) Industrial automation
2) Robotics
3) Metrology and measuring equipments
4) Medical equipments
5) Product packing
6) Textile industries
7) Electronic manufacturing
8) Machine tool equipments
9) Manufacturing processes like welding, drilling, wood industries etc:

Holmarc offers wide range of linear slides assemblies to choose from. There are four major categories namely, Miniature ball slides, Spring loaded slides, Ball slides and Roller slides. Dozens of models depending upon footprint and travel range are available in each category.
**Multi Axis Translation Stages**

**XYZ Compact Translation Stage**  Model: XYZCTS50

This stage is designed and constructed to be compact and to be suitable for space restricted applications. Unlike our TS series modular stages, these stages are factory assembled as a three axes positioner. Micrometers or lead screws can be used for driving the stage.

All the driving adjustment lead screws/micrometers are fixed on one side for ergonomical positioning control. M6 tapped holes are provided on top and bottom for mounting purpose. A base plate need to be used for mounting on to breadboards and optical tables.

- Single side control
- 10mm travel for X axis
- 5mm travel for YZ axis
- 50x50mm top size
- 50mm minimum height
- 3kg load capacity
- Straight line accuracy: 0.010mm
- Precision micrometer driven
- M6/M4 mounting holes
- Base mountable

---

**XYZ Compact Translation Stage**  Model: XYZCTS65

- 15mm travel for XY axis
- 15mm travel for Z axis
- 65x65mm top size
- 75mm minimum height
- 3kg load capacity
- Straight line accuracy: 0.010mm
- Precision micrometer driven
- M6 mounting holes
- Base mountable

---

**XYZ Compact Translation Stage**  Model: XYZCTS90

- 25mm travel for X axis
- 10mm travel for YZ axis
- 90x90mm top size
- 90mm minimum height
- 5kg load capacity
- Straight line accuracy: 0.010mm
- Precision micrometer driven
- M6 mounting holes
- Base mountable
XYZ Compact Translation Stage

In these stages, the mounting surface is vertical as shown in the picture. All the three axes have pre-loaded rolling contact guides for play less and friction free movement. Drive is by 80 tpi leadscrew. Top surface of the stage has M6 tapped holes for component mounting. A base plate with M6 counter bored slot is fixed at the bottom for convenient fixing of this stage to breadboards and tables.

**XYZ, Linear Travel - 10 & 15mm**
- Drive: Leadscrew
- Resolution: 0.1mm
- Load Capacity: 1kg
- Straight Line Accuracy: 0.01mm
- M6/M3 Mounting Holes

**XYZ Positioner**

In these stages, mounting surface is horizontal as obvious from the photograph. All drive micrometers are arranged along adjacent sides for ergonomical use.

<table>
<thead>
<tr>
<th>Model No:</th>
<th>Drive</th>
<th>Orientation</th>
<th>Travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS-3AR-M10</td>
<td>Micrometer 10µ</td>
<td>Right</td>
<td>5mm</td>
</tr>
<tr>
<td>CTS-3AL-M10</td>
<td>Micrometer 10µ</td>
<td>Left</td>
<td>5mm</td>
</tr>
</tbody>
</table>

- 76mm height
- X Travel 5mm
- Y Travel 5mm
- Z Travel 5mm
- Aluminium Alloy
- Black anodized finish
- Load capacity 2kg
- Drive by micrometer
4 Axis Stages  
Model: XYZ4A

Four axis stages from holmarc are best suited for positioning lasers or optical imaging devices like CCD cameras. The stage has two linear movements (Y, Z) and two tilt adjustments (theta, phi). All four axes are driven by standard micrometer heads. Y and Z axes have rolling contact guides with crossed rollers for frictionless precise positioning. 'Phi' axis uses a spring loaded kinematic one whereas 'theta' axis uses pre-loaded rotary bearings for stable positioning. Construction material is aluminium alloy and finish is black anodized.

- YZ Linear Travel: 10mm
- Theta, phi travel: +/-2.5 degree
- Drive: Micrometer
- Resolution: 10 microns
- Straight line accuracy: 0.01mm
- Load capacity: 10kg
- M6 Mounting Holes

HOLMARC provides positioning stages in custom specifications as well. Please contact us with your specifications.

5 Axis Positioner

These positioners have three linear stages and two tilt stages. All the five stages have adjustment micrometers for precise positioning. Linear stages have rolling contact guides using balls as rolling elements.

- 76mm height
- X Travel 5mm
- Y Travel 5mm
- Z Travel 5mm

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Drive</th>
<th>Orientation</th>
<th>Travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS-5AR-Mu05</td>
<td>Micrometer 5µ</td>
<td>Right</td>
<td>5mm</td>
</tr>
<tr>
<td>CTS-5AL-Mu05</td>
<td>Micrometer 5µ</td>
<td>Left</td>
<td>5mm</td>
</tr>
</tbody>
</table>

- Aluminium Alloy
- Black anodized finish
- ø1 Tilting Range ± 2°
- ø2 Tilting Range ± 2°
XYZ Heavy Duty Translation Stages

These translation stages are designed for positioning heavy loads in X, Y and Z directions precisely without play and wobble. Pre-loaded roller bearing guides are used for all the three axes for friction free and play less movement. Even with heavy loads, movement is smooth and effortless. Worm gear drive is used in Z axis where as lead screw drive is used for X and Y axes. Top surface of the stage is provided with M6 tapped holes at 25 mm grid. Linear scale with vernier is provided for repeatable positioning with measurements. The stage is constructed in aluminium alloy and given black anodized finish. These stages can be made available in various sizes, travel ranges, heights and load capacity.

If the travel requirement is below 50 mm, X and Y axes can be driven by micrometers with 0.01 mm resolution. In this case, more precise positioning is possible compared to lead screw drive and vernier reading. Another feature of this stage is locking facility after positioning. Lock is normally provided by the side of the stage with appropriately sized hand knobs. Lock prevents accidental movements of the stage from its fixed position. Holmarc manufactures custom stages as well in this configuration.

- Construction Material: Aluminum alloy B51S
- Finish: Black anodized (Aluminium)
- Mounting: M6 tapped holes on carriage
  - M6 CLR slot for mounting the stage to breadboard

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Travel</th>
<th>Size(LXxBxH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYZTS-200200-3</td>
<td>X-100, Y-100, Z 75</td>
<td>200x200x200mm</td>
</tr>
<tr>
<td>XYZTS-250200-3</td>
<td>X-100, Y-100, Z 75</td>
<td>250x200x240mm</td>
</tr>
</tbody>
</table>

- Travel: 100mm XY & 75mm for Z axis
- Load capacity: 50kg
- Drive: Lead screw
- Straight line accuracy: 10 microns
- Read out: 0.1mm (Vernier scale)
- Guide way: Precision ball bearing guide way
**XY MOVING PLATFORM**

**XYTSM Series**

These are factory assembled XY stages for general purpose positioning applications. The stages employ rolling contact linear guide ways using crossed rollers. Friction, stick-slip and play are absent for all practical designs. They are available with lead screw drives as well as micrometer drives. Carriage (moving top) remains spring loaded by a tension spring against the micrometer spindle. This feature eliminates back-lash. In standard models, construction material is aluminium alloy. We manufacture these products in mild steel and stainless steel as well.

---

**Model No:**
- XYTSM-25-Mu-10
- XYTSM-50-Mu-10
- XYTSM25-DMu

**Drive:**
- Micrometer
- Micro-rotation

**Resolution:**
- 0.01 mm
- 0.01 mm
- 0.01 mm

**Travel:**
- 25 mm
- 50 mm
- 25 mm

**Load Capacity:**
- 25 kg
- 30 kg
- 25 kg

---

**MOTION CONTROL SYSTEMS**

Since 1993, we at HOLMARC have been manufacturing hundreds of motion control and positioning systems for our customers. We are supplying motion control products to industry and research institutions around the world.

Our precision motion control products provide critical performance required for today's demanding applications in markets such as life science, photonics, laser processing, nano technology and others.

Our product line in motion control includes automated high-speed gantries, linear stages, rotary stages, tilt stages, single and multi-axis motion controllers, goniometers, gimbal mounts, etc. This wide range of products makes us unique among motion control manufacturers.
**XYTSWM Series XY Moving Platform**

These stages have through holes at the center with a step on the top of the stage for placing a transparent glass disc if required. Optical instruments like profile projectors, microscopes, etc. require illumination from underneath the sample. Stages under this series are suitable for such applications. The center hole can also act as an access hole for fixing components like gauges, sensors etc. to the fixed base.

All other features remain the same as that of our standard stages. Precision crossed roller based rolling contact guides are used for achieving perfect linear motion. Co-efficient of friction is maintained below 0.002. Play and wobble are eliminated for all practical purpose. The stage is constructed out of aluminium alloy and finished by black anodizing.

Holmarc manufactures these stages with custom specifications. In many cases, we manufacture stages with rectangular or square access holes at the center instead of circular holes. Various drive options as well as sizes are also available. Contact us @ sales@holmarc.com

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Carriage Size</th>
<th>Travel</th>
<th>Load Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYTSWM25</td>
<td>120x120</td>
<td>25</td>
<td>25 kg</td>
</tr>
<tr>
<td>XYTSWM50</td>
<td>150x150</td>
<td>50</td>
<td>30 kg</td>
</tr>
</tbody>
</table>

**Glass Plate for XYTSWM series**

Glass plates are available for XYTSWM series XY translation stages.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Compatible Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYTSWM25</td>
<td>XYTSWM25</td>
</tr>
<tr>
<td>XYTSWM50</td>
<td>XYTSWM50</td>
</tr>
</tbody>
</table>
HEAVY DUTY XY MOVING PLATFORM

XYTSWM Series XY Heavy Duty Moving Platform

These are heavy duty XY stages capable of supporting comparative heavy loads. These stages find applications in positioning heavy loads. For example, a microscope can be placed on the stage and positioned precisely. Standard stages have slots for M6 screws on the base for fixing rigidly to any platform. The drive can be either by lead screw or micrometer. Crossed roller based linear guides are used for achieving precision linear motion.

The guide ways are factory preloaded to eliminate play and wobble. Coefficient of friction is less than 0.003. Standard stages are constructed in aluminium alloy and finished by black anodizing.

- Precision V grooved guide ways with crossed rollers
- Mounting holes on base and top
- 0.004mm straight line accuracy
- Micrometer drive, LC 10 micrometer
- Aluminium Alloy B51S
- Black Anodized

<table>
<thead>
<tr>
<th>Model</th>
<th>Travel</th>
<th>Carriage Size</th>
<th>Height</th>
<th>Load Capacity (Vertical) Kg</th>
<th>Construction Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYTSWM-150</td>
<td>25mm</td>
<td>150mm x 150mm</td>
<td>48mm</td>
<td>25 kg</td>
<td>Aluminium Alloy</td>
</tr>
<tr>
<td>XYTSWM-200</td>
<td>25mm</td>
<td>200mm x 200mm</td>
<td>56mm</td>
<td>35</td>
<td>Aluminium Alloy</td>
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<tr>
<td>XYTSWM-250</td>
<td>50mm</td>
<td>250mm x 250mm</td>
<td>64mm</td>
<td>50</td>
<td>Aluminium Alloy</td>
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<tr>
<td>SS XYTSWM-150</td>
<td>25mm</td>
<td>150mm x 150mm</td>
<td>48mm</td>
<td>35 kg</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>SS XYTSWM-200</td>
<td>25mm</td>
<td>200mm x 200mm</td>
<td>56mm</td>
<td>45</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>SS XYTSWM-250</td>
<td>50mm</td>
<td>250mm x 250mm</td>
<td>64mm</td>
<td>65</td>
<td>Stainless Steel</td>
</tr>
</tbody>
</table>
**XYTS Series XY Moving Platform**

These are heavy duty XY positioning stages driven by lead screw-nut mechanism fixed by the side of the stage. The side drive design reduces overall footprint of the stage, especially, total length. There are side locks for both X and Y stages to keep the stage rigid after positioning. Top and bottom surfaces of the stage have M6 mounting holes at 50 mm grid. Crossed roller based linear guides are used for achieving precision linear motion. The guide ways are factory preloaded to eliminate play and wobble. Coefficient of friction is less than 0.003. Standard stages are constructed in aluminium alloy and finished by black anodizing.

**Applications**
- XY moving platforms
- Inspection microscopes
- Hardness testing
- Induction hardening
- Measuring microscopy

**>> Applications**
- Upto 25kg load capacity
- Straight line accuracy: 0.010 mm
- Precision lead screw
- M6 mounting holes
- Base mountable

For motorized model
Refer page: 213

XYTS Series stages help to position heavy object up to 25kg. These stages are ideal choice for microscope probe station interfacing.

Platforms are available up to 370 x 240mm size. Custom mounting hole patterns are available for easy integration with other system components.

**ROTATIONAL MOTION FOR XYTS SERIES MOVING PLATFORM**

This rotation stage can be used with XYTS series XY moving platform. The stage has C’ bored holes around the corner and can easily be attached to the XY stage using M6 screws. An angular scale along the outer edge of the mounting surface allows the user to set the angular orientation of the stage, which can then be fixed using locking setscrew.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Carriage Size (mm)</th>
<th>Travel (mm)</th>
<th>Height (mm)</th>
<th>L (mm)</th>
<th>W (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYTS150150</td>
<td>150x150</td>
<td>50,50</td>
<td>65</td>
<td>150</td>
<td>150</td>
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<tr>
<td>XYTS170170</td>
<td>170x170</td>
<td>100,100</td>
<td>65</td>
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<td>170</td>
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<tr>
<td>XYTS270170</td>
<td>270x170</td>
<td>200,100</td>
<td>75</td>
<td>270</td>
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<td>XYTS270240</td>
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<td>200,170</td>
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<tr>
<td>XYTS370240</td>
<td>370x240</td>
<td>300,170</td>
<td>75</td>
<td>370</td>
<td>240</td>
</tr>
</tbody>
</table>
XYTSW Series XY moving Stage

These stages have rectangular through holes at the center, primarily meant for back illumination. The top surface has stepped under cut on the periphery of the central hole for keeping a glass plate of suitable size. Lead screw-nut mechanism provides the linear drive, fixed by the side of the stage. These stages are best suited for measuring instruments like profile projectors and custom microscopes.

Crossed roller based linear guides are used for achieving precision linear motion. The guide ways are factory preloaded to eliminate play and wobble. Coefficient of friction is less than 0.003. Standard stages are constructed in aluminium alloy and finished by black anodizing.

**Applications**
- Precision ground lead screw / ball screw
- Quick movement
- Black anodized finish
- Straight line accuracy : 0.010mm
- M6 mounting holes

**Applications**
- Profile projector
- Measuring microscope
- Inspection microscope
- Dispensing

**Glass plates are available for XYTSW series XY translation stages**

<table>
<thead>
<tr>
<th>Glass Plate Model</th>
<th>Size</th>
<th>Compatible Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>GI7575</td>
<td>95 x 95</td>
<td>XYTSW175175</td>
</tr>
<tr>
<td>GI125125</td>
<td>145 x 145</td>
<td>XYTSW225225</td>
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<td>GI225125</td>
<td>245 x 145</td>
<td>XYTSW325225</td>
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<tr>
<td>GI225195</td>
<td>245 x 215</td>
<td>XYTSW325295</td>
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<tr>
<td>GI325195</td>
<td>345 x 215</td>
<td>XYTSW425295</td>
</tr>
</tbody>
</table>

**Model No:** XYTSW175175
**Carriage Size:** 175 x 175
**Aperture Size:** 75 x 75
**Travel (H):** 50, 100, 150, 200, 250
**Travel (L):** 175, 325, 425
**W (L):** 175, 225, 325, 425
**W1 (L):** 75, 125, 225, 295

*All dimensions are in mm*

For motorized model Refer page: 214

XYTSW Series manual stages can be used with profile projector, microscope etc. For automated application please see the MXYTSW Series stages.

Linear encoder is available on special request for digital readout application. Contact us at sales@holmarc.com

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**Custom stages**

Platforms are available up to 500x500mm size, Materials other than aluminium are also available on request.
Translation Stage With Vernier readout

These stages are suitable for manual coarse positioning applications. A graduated scale with vernier readout is fixed to one side of the stage for repeated positioning. There are two choices for drive lead screws, 1 mm pitch & 9 mm pitch.

- Straight line accuracy: ±10 μm for total travel length
- Vernier Readout: 0.1 mm
- Guide way: Precision ball slide
- Drive: Precision lead screw
- Construction: Aluminium alloy B51S
- Finish: Black anodized
- Tapped Holes on Carriage: M6 tapped holes
- Mounting Holes on the base: M6 Tap and M4 CBR
- Design: Modular type
- Travel: 30 to 90 mm
- Carriage width: 50mm
- Load Capacity: 6kg vertical
- Leadscrew: 1mm pitch/9mm pitch

Drive Details

1 mm Pitch lead screw
- Pitch: 1 mm
- Lead Screw Type: Ground
- Linear Resolution: 1mm/rotation
- Readout: 0.1mm precision vernier
- Feature: Fine Movement

9 mm Pitch lead screw
- Pitch: 9 mm
- Lead Screw Type: Ground
- Linear Resolution: 9mm/rotation
- Readout: 0.1mm precision vernier
- Feature: Course Movement

Model No. | Speed (RPM) | Positioning Accuracy | Travel range | Model No. | Speed (RPM) | Positioning Accuracy | Travel range
---|---|---|---|---|---|---|---
TSC-1-5030 | 1 mm | 0.02 mm | 30 mm | TSC-1-5050 | 1 mm | 0.02 mm | 50 mm |
TSC-1-5050 | 1 mm | 0.02 mm | 50 mm | TSC-1-5075 | 1 mm | 0.02 mm | 75 mm |
TSC-1-5075 | 1 mm | 0.02 mm | 75 mm | TSC-1-5090 | 1 mm | 0.02 mm | 90 mm |
TSC-1-5090 | 1 mm | 0.02 mm | 90 mm |

Accessories

- Vertical Bracket: VAB-TSC5030
- Horizontal Bracket: HAB-TSC5050
- Base Plate: BP-TSC5090

Accessories

- Platform Size: 50x50mm
- With M6 tapped holes

Base plates: Base plates can be used for mounting translation stages to breadboards and tables conveniently.

Angle Bracket: Angle bracket can be used for assembling Z-axis stages. Horizontally fixed height platforms can be constructed by combining two angle brackets.
MLS Series Translation Stages

MLS series stages are available in various sizes. The width ranges from 65 mm to 200mm. The stage can be locked anywhere after positioning by making use of a locking nut which is provided along with the drive knob.

- Straight line accuracy : ± 10 μm for total travel length
- Vernier Readout : 0.1mm
- Guide way : Precision ball slide
- Drive : Precision lead screw
- Construction : Aluminium alloy B51S
- Finish : Black anodized
- Tapped Holes on Carriage : M6 tapped holes
- Mounting Holes on the base : M6 tap and M4 CBR
- Design : Modular type
- Configuration : Multi axis
- Travel : 25 to 150 mm
- Carriage width : 65mm to 200mm
- Load Capacity : 5-35kg vertical
- Leadscrew : 1mm pitch/9mm pitch
- Lock : Can be locked at desired position

**Drive Details**

**1mm Pitch Lead screw**
- Pitch : 1mm
- Lead screw Type : Ground
- Linear Resolution : 1mm/rotation
- Positioning Accuracy : ±10 μm
- Repeatability : 100 μm
- Readout : 0.1mm Vernier
- Feature : Fine controlled motion with 1mm pitch lead screw

<table>
<thead>
<tr>
<th>Model No</th>
<th>Load Capacity Vertical (X Axis) T</th>
<th>Load Capacity Vertical (X Axis) W</th>
<th>Travel T</th>
<th>W</th>
<th>L</th>
<th>T/2</th>
<th>X</th>
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</thead>
<tbody>
<tr>
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<td>6</td>
<td>6</td>
<td>25</td>
<td>65</td>
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<td>12.5</td>
<td>M4</td>
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<tr>
<td>MLS-7575-1</td>
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<td>7</td>
<td>35</td>
<td>75</td>
<td>75</td>
<td>17.5</td>
<td>M4</td>
</tr>
<tr>
<td>MLS-75100-1</td>
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<td>25</td>
<td>M4</td>
</tr>
<tr>
<td>MLS-75150-1</td>
<td>25</td>
<td>24</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>75</td>
<td>M4</td>
</tr>
<tr>
<td>MLS-75200-1</td>
<td>28</td>
<td>24</td>
<td>150</td>
<td>250</td>
<td>200</td>
<td>75</td>
<td>M4</td>
</tr>
<tr>
<td>MLS-100100-1</td>
<td>20</td>
<td>15</td>
<td>50</td>
<td>100</td>
<td>250</td>
<td>75</td>
<td>M6</td>
</tr>
<tr>
<td>MLS-100150-1</td>
<td>25</td>
<td>20</td>
<td>100</td>
<td>150</td>
<td>250</td>
<td>75</td>
<td>M6</td>
</tr>
<tr>
<td>MLS-100200-1</td>
<td>28</td>
<td>24</td>
<td>150</td>
<td>250</td>
<td>250</td>
<td>75</td>
<td>M6</td>
</tr>
<tr>
<td>MLS-150150-1</td>
<td>25</td>
<td>22</td>
<td>100</td>
<td>150</td>
<td>250</td>
<td>50</td>
<td>M6</td>
</tr>
<tr>
<td>MLS-150200-1</td>
<td>35</td>
<td>30</td>
<td>150</td>
<td>200</td>
<td>75</td>
<td>75</td>
<td>M6</td>
</tr>
<tr>
<td>MLS-200200-1</td>
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<td>30</td>
<td>150</td>
<td>200</td>
<td>75</td>
<td>75</td>
<td>M6</td>
</tr>
</tbody>
</table>

Angle Bracket :
- Angle bracket can be used for assembling Z-axis stages. Horizontally fixed height platforms can be constructed by combining two angle brackets.

Base plates :
- Base plates can be used for mounting translation stages to breadboards and tables conveniently.

HOLMARC
Custom engineered positioning systems

Custom design and manufacturing of linear stages is a regular activity being carried out at Holmarc. Stages are designed for multitudes of applications in research and manufacturing. The standard stages described in the preceding pages of this brochure are in fact the result of years of experience in customization of linear positioning for our esteemed clients. Sourcing mechanics, electronics and software from a single manufacturer reduces hassles of integration. Our engineers at Holmarc will be happy to configure innovative as well as traditional design to suit your specific application.

Holmarc has standardized an array of positioning stages. These include linear slides having traverse from 5 mm to 500 mm, stages driven by micrometer and lead screw, motorized stages in modular as well as standalone configurations, etc. Applications are diverse as well.

In many cases, customization of our standard stage is done at a reasonable cost. All our esteemed customers are welcome to discuss application needs and unique requirements with our engineers.

HOLMARC designs and manufactures wide range of linear and rotary translation products to help you construct a flexible and stable motion systems. Send us your technical requirement at sales@holmarc.com.
LTTS series manual translation stages provide maximum travel with minimum overall footprint. Re-circulating type ball bearing guide ways are used in all models. Drive is given by either ball screws or lead screws fixed by the side of the stage.

Travel can range from 50 mm to 500 mm. Tapped holes are provided on top and counter bored holes are provided on base for mounting purpose. For all the standard products, construction is in aluminium alloy. Circular graduations are there on driving knob. There are linear graduations by the side of the stage.

**Accessories Sold Separately**

**Angle Brackets:**
It is used to transform horizontal translators into vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.

**Base plates:**
Base plates can be used for mounting translation stages to breadboards and tables conveniently.

Manually Driven Translation Stage

**LTTS50 Series**

These stages used re-circulating type rolling contact guide ways. Drive knobs have rotary graduations in addition to the linear scale fixed to the side of the stage.

- Straight line accuracy: ±20 μm over 200mm travel
- Vernier readout: 0.1mm
- Guide way: Precision re-circulating
  - Guide way: M4 tapped holes
- Drive: M6 tap and M4 CBR
- Construction: Modular type
- Finish: Black anodized
- Tapped holes on carriage: M4 tapped holes
- Mounting holes on the base: M6 tap and M4 CBR
- Design: Multi Axis Configuration
- Travel: 50 to 150 mm
- Carriage Size: 50mm X 50mm
- Load Capacity: 2kg vertical on X Axis
- Leadscrew: 1mm pitch lead screw

### Drive Details

**1mm Pitch Lead screw with spring loaded nut mechanism**

- Pitch: 1mm
- Lead screw type: Ground
- Linear resolution: 1mm / rotation
- Positioning accuracy: 0.1 mm
- Readout: 0.1mm precision vernier
- Feature: Fine controlled motion with 1mm pitch lead screw

**9mm Pitch Lead screw and resin nut**

- Pitch: 9mm
- Lead screw type: Rolled
- Linear resolution: 9mm / rotation
- Positioning accuracy: 0.5 mm
- Readout: 0.1mm precision vernier
- Feature: Coarse movement with 9mm pitch lead screw

### Specifications

<table>
<thead>
<tr>
<th>Lead screw Pitch</th>
<th>Load Capacity Vertical(X Axis)</th>
<th>Load Capacity Vertical(Z Axis)</th>
<th>9mm Pitch Lead screw</th>
<th>Load Capacity Vertical(X Axis)</th>
<th>Load Capacity Vertical(Z Axis)</th>
<th>Travel (mm)</th>
<th>Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1mm</td>
<td>2</td>
<td>1</td>
<td>LTTS50-50</td>
<td>2</td>
<td>1</td>
<td>50</td>
<td>155</td>
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<td></td>
<td>2</td>
<td>1</td>
<td>LTTS50-75Z</td>
<td>2</td>
<td>1</td>
<td>75</td>
<td>180</td>
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<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>LTTS50-100Z</td>
<td>2</td>
<td>1</td>
<td>100</td>
<td>205</td>
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<td>LTTS50-150Z</td>
<td>2</td>
<td>1</td>
<td>150</td>
<td>280</td>
</tr>
</tbody>
</table>

### Accessories

- **Vertical Bracket**: VAB-LTTS50-50
- **Horizontal Bracket**: HAB-LTTS-50
- **Base Plate**: BP-LTTS50-50

**Angle Brackets**

- **Base plates**: Used for mounting translation stages to breadboards and tables conveniently.

- **Angle Brackets**: Used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.
Manually Driven Translation Stage
LTTS-75 Series

These stages are similar to LTTS-50, except that width is 75mm instead of 50mm. A linear scale is fixed to the side for positioning references. For precise measurements, vernier scale is also available as an optional feature.

Engraved vernier scales are provided for select LTTS series translation stages.

► Straight line accuracy : ±20μm over 200mm travel
► Vernier readout : 0.1mm
► Guide way : Precision re-circulating Guide way
► Drive : Precision lead screw
► Construction : Aluminium alloy B51S
► Finish : Black anodized
► Tapped holes on carriage : M4 tapped holes
► Mounting holes on the base : M6 tap and M4 CBR
► Design : Modular type
► Configuration : Multi axis
► Travel : 50 to 250 mm
► Carriage Size : 75mm X 75mm
► Load Capacity : 5kg vertical on X axis
► Lead Screw : 1mm pitch / 9mm pitch

Drive Details

1mm Pitch Lead screw with spring loaded nut mechanism
Pitch : 1mm
Lead screw type : Ground
Linear resolution : 1mm / rotation
Positioning accuracy : 0.1 mm
Readout : 0.1mm precision vernier
Feature : Fine controlled motion with 1mm pitch lead screw

9mm Pitch Lead screw and resin nut
Pitch : 9mm
Lead screw type : Rolled
Linear resolution : 9mm / rotation
Positioning accuracy : 0.5 mm
Readout : 0.1mm precision vernier
Feature : Coarse movement with 9mm pitch lead screw

<table>
<thead>
<tr>
<th>1mm Pitch Model No.</th>
<th>Load Capacity Vertical(X Axis) Kg</th>
<th>Load Capacity Vertical(Z Axis) Kg</th>
<th>9mm Pitch Model No.</th>
<th>Load Capacity Vertical(X Axis) Kg</th>
<th>Load Capacity Vertical(Z Axis) Kg</th>
<th>Travel (mm)</th>
<th>Length (mm)</th>
<th>Accessories</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTTS75-50</td>
<td>5</td>
<td>1</td>
<td>LTTS75-50Z</td>
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<tr>
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<td>LTTS75-75Z</td>
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<td>Horizontal Bracket</td>
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<td>Base Plate</td>
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<td>LTTS75-150</td>
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<td>LTTS75-150Z</td>
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<td>1</td>
<td>150</td>
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<tr>
<td>LTTS75-250</td>
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<td>250</td>
<td>280</td>
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Accessories

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<tr>
<th>Vertical Bracket</th>
<th>Horizontal Bracket</th>
<th>Base Plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAB-LTTS75-50</td>
<td>BP-LTTS75-50</td>
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<td>VAB-LTTS75-150</td>
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<tr>
<td>VAB-LTTS75-250</td>
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</table>

Angle Brackets:
It is used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.

Base plates:
Base plates can be used for mounting translation stages to breadboards and tables conveniently.
Manually Driven Translation Stage

**LTTS-125 Series**

These stages feature carriages having 125mm width. Recirculating type ball bearing guide ways makes the linear motion play-less and friction free. Standard stages feature linear scale for position reference. Vernier with 0.1mm resolution is also available as an optional feature.

- **Straight line accuracy**: ±20 μm over 300mm travel
- **Vernier readout**: 0.1mm
- **Guide way**: Precision re-circulating guide way
- **Drive**: Precision ball screw
- **Construction**: Aluminum alloy B51S
- **Finish**: Black anodized
- **Tapped holes on carriage**: M6 tapped holes
- **Mounting holes on the base**: M6 tap and M4 CBR
- **Design**: Modular type
- **Configuration**: Multi axis
- **Travel**: 100 to 500 mm
- **Carriage Size**: 125mm x 125mm
- **Load Capacity**: 45-50kg vertical on X axis
- **Ball Screw**: 4mm pitch

<table>
<thead>
<tr>
<th>4mm Pitch Ball Screw</th>
<th>Load Capacity Vertical (X Axis)</th>
<th>Load Capacity Vertical (Z Axis)</th>
<th>Travel (mm)</th>
<th>Length (mm)</th>
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<tbody>
<tr>
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<td>50 Kg</td>
<td>10 Kg</td>
<td>100mm</td>
<td>340mm</td>
</tr>
<tr>
<td>LTTS125-150</td>
<td>50 Kg</td>
<td>10 Kg</td>
<td>200mm</td>
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</tr>
<tr>
<td>LTTS125-200</td>
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**Accessories**

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<th>Horizontal Bracket</th>
<th>Base Plate</th>
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<tbody>
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<tr>
<td>VAB-LTTS125-350</td>
<td>Size: 125x125mm</td>
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<td>VAB-LTTS125-500</td>
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</table>

**Angle Brackets**

It is used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.

**Base plates**

Base plates can be used for mounting translation stages to breadboards and tables conveniently.
Manually Driven Translation Stage

**LTTS-150 Series**

These stages have 150mm width carriages for mounting heavy loads. Re-circulating type ball bearing guide-ways ensure stability under heavy loads.

- **Straight line accuracy**: ±20 μm over 300mm travel
- **Vernier readout**: 0.1mm
- **Guide way**: Precision re-circulating Guide way
- **Drive**: Precision lead screw
- **Construction**: Aluminium alloy B51S
- **Finish**: Black anodized
- **Tapped holes on carriage**: M6 tapped holes
- **Mounting holes on the base**: M6 tap and M6 CBR
- **Design**: Modular type
- **Configuration**: Multi axis
- **Travel**: 100 to 750 mm
- **Carriage Size**: 150mm X 150mm
- **Load Capacity**: 45-75kg vertical on X axis
- **Ball Screw**: 4mm pitch

**Drive Details**

4mm Pitch ball screw with lock
- **Pitch**: 4mm
- **Ball screw type**: Rolled
- **Linear resolution**: 4mm / rotation
- **Positioning accuracy**: 0.1mm
- **Readout**: 0.1mm precision vernier
- **Feature**: Precision movement with 4mm pitch ball screw

<table>
<thead>
<tr>
<th>4mm Pitch Ball Screw</th>
<th>Load Capacity Vertical(X Axis)</th>
<th>Load Capacity Vertical(Z Axis)</th>
<th>Travel (mm)</th>
<th>Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model No.</td>
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<td>Kg</td>
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</tr>
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</tr>
<tr>
<td>LTTS150-500</td>
<td>75</td>
<td>50</td>
<td>500mm</td>
<td>735mm</td>
</tr>
<tr>
<td>LTTS150-750</td>
<td>75</td>
<td>50</td>
<td>750mm</td>
<td>985mm</td>
</tr>
</tbody>
</table>

**Vacuum Compatible Motion Control**

HOLMARC can provide high-precision engineered motion control systems for innovative solutions. Almost all our products can be produced as vacuum compatible modification. Please contact us for modifications.

**Angle Brackets**

- It is used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.

**Base plates**

- Base plates can be used for mounting translation stages to breadboards and tables conveniently.
**Manually Driven Translation Stage**

**LTTS-200 Series**

These stages can be loaded up to 90 kg vertically. Re-circulating type ball bearing guide ways are used to ensure stability under load conditions.

- **Straight line accuracy**: ±20 μm over 300mm travel
- **Vernier readout**: 0.1mm
- **Guide way**: Precision re-circulating Guide way
- **Drive**: Precision lead screw
- **Construction**: Aluminium alloy B51S
- **Finish**: Black anodized
- **Tapped holes on carriage**: M6 tapped holes
- **Mounting holes on the base**: M6 tap and M6 CBR
- **Design**: Modular type
- **Configuration**: Multi axis
- **Travel**: 100 to 750 mm
- **Carriage Size**: 200mm X 200mm
- **Load Capacity**: 55-90kg vertical on X axis
- **Ball Screw**: 4mm pitch

---

**Drive Details**

**4mm Pitch ball screw with lock**

- **Pitch**: 4mm
- **Ball screw type**: Rolled
- **Linear resolution**: 4mm / rotation
- **Positioning accuracy**: 0.1mm
- **Readout**: 0.1mm precision vernier
- **Feature**: Precision movement with 4mm pitch ball screw

**10mm Pitch ball screw with lock**

- **Pitch**: 10mm
- **Leadscrew type**: Rolled
- **Linear resolution**: 10mm / rotation
- **Positioning accuracy**: 0.5mm
- **Readout**: 0.1mm precision vernier
- **Feature**: Precision movement with 10mm pitch ball screw

---

<table>
<thead>
<tr>
<th>4mm Pitch Ball screw</th>
<th>10mm Pitch Ball screw</th>
<th>Load Capacity Vertical(X Axis)</th>
<th>Load Capacity Vertical(Z Axis)</th>
<th>Travel (mm)</th>
<th>Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTTS200-100</td>
<td>LTTS200-100-10P</td>
<td>90</td>
<td>50</td>
<td>100mm</td>
<td>335mm</td>
</tr>
<tr>
<td>LTTS200-150</td>
<td>LTTS200-150-10P</td>
<td>90</td>
<td>50</td>
<td>150mm</td>
<td>385mm</td>
</tr>
<tr>
<td>LTTS200-200</td>
<td>LTTS200-200-10P</td>
<td>90</td>
<td>50</td>
<td>200mm</td>
<td>435mm</td>
</tr>
<tr>
<td>LTTS200-300</td>
<td>LTTS200-300-10P</td>
<td>90</td>
<td>50</td>
<td>300mm</td>
<td>535mm</td>
</tr>
<tr>
<td>LTTS200-500</td>
<td>LTTS200-500-10P</td>
<td>85</td>
<td>50</td>
<td>500mm</td>
<td>735mm</td>
</tr>
<tr>
<td>LTTS200-750</td>
<td>LTTS200-750-10P</td>
<td>75</td>
<td>50</td>
<td>750mm</td>
<td>985mm</td>
</tr>
</tbody>
</table>

**Accessories**

- **Vertical Bracket**: VAB-LTTS200-100
- **Horizontal Bracket**: HAB-LTTS-200
- **Base Plate**: BP-LTTS200-100

**ACCESORIES**

- **Angle Brackets**: It is used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.
- **Base plates**: Base plates can be used for mounting translation stages to breadboards and tables conveniently.
Manually Driven Translation Stage

**LTTS-250 Series**

These are designed for carrying heavy loads. Size of the mounting platform is made 250x250mm to accommodate loads up to a size of 300 x 30mm (length x width). Re-circulating type ball bearing guide ways are used to ensure play less and friction free movement with heavy loads.

**Drive Details**

4mm Pitch ball screw with lock
- Pitch: 4mm
- Ball screw type: Rolled
- Linear resolution: 4mm / rotation
- Positioning accuracy: 0.1mm
- Readout: 0.1mm precision vernier
- Feature: Precision movement with 4mm pitch ball screw

10mm Pitch ball screw with lock
- Pitch: 10mm
- Leadscrew type: Rolled
- Linear resolution: 10mm / rotation
- Positioning accuracy: 0.5mm
- Readout: 0.1mm precision vernier
- Feature: Precision movement with 10mm pitch ball screw

<table>
<thead>
<tr>
<th>4mm Pitch Ball screw</th>
<th>10mm Pitch Ball screw</th>
<th>Load Capacity Vertical(Z Axis)</th>
<th>Load Capacity Vertical(X Axis)</th>
<th>Travel (mm)</th>
<th>Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model No.</td>
<td>Model No.</td>
<td>Kg</td>
<td>Kg</td>
<td>T</td>
<td>L</td>
</tr>
<tr>
<td>LTTS250-100</td>
<td>LTTS250-100-10P</td>
<td>65</td>
<td>120</td>
<td>100mm</td>
<td>440mm</td>
</tr>
<tr>
<td>LTTS250-150</td>
<td>LTTS250-150-10P</td>
<td>65</td>
<td>120</td>
<td>150mm</td>
<td>490mm</td>
</tr>
<tr>
<td>LTTS250-200</td>
<td>LTTS250-200-10P</td>
<td>65</td>
<td>120</td>
<td>200mm</td>
<td>540mm</td>
</tr>
<tr>
<td>LTTS250-300</td>
<td>LTTS250-300-10P</td>
<td>65</td>
<td>120</td>
<td>300mm</td>
<td>640mm</td>
</tr>
<tr>
<td>LTTS250-500</td>
<td>LTTS250-500-10P</td>
<td>65</td>
<td>100</td>
<td>500mm</td>
<td>840mm</td>
</tr>
<tr>
<td>LTTS250-750</td>
<td>LTTS250-750-10P</td>
<td>65</td>
<td>100</td>
<td>750mm</td>
<td>1090mm</td>
</tr>
<tr>
<td>LTTS250-1000</td>
<td>LTTS250-1000-10P</td>
<td>65</td>
<td>100</td>
<td>1000mm</td>
<td>1340mm</td>
</tr>
</tbody>
</table>

**ACCESSORIES**

- **Angle Brackets**
  - It is used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.

- **Base plates**
  - Base plates can be used for mounting translation stages to breadboards and tables conveniently.
Motorized Stages

Motorized Goniometer 1
Rotary Encoder (Optional)

X Axis Motorized Translation Stage LMS Series
Stepper Motor

Base Plate
Linear Encoder (Optional)

Motorized Goniometer 2

Z Axis Motorized Translation Stage LMS Series

Micro Position Controller

Precision Ground Lead screw drive
Precision Ball screw drive
Vacuum Compatibility

XY Theta Stage ▲
XYZ Theta Stage ▲
XZ Theta Stage ▲

For more products and information, please log on to www.holmarc.com or contact us at sales@holmarc.com

All Products are manufactured and marketed by HOLMARC Opto-Mechatronics Pvt. Ltd

For more products and information, please log on to www.holmarc.com or contact us at sales@holmarc.com
CONTROL ELECTRONICS AND SOFTWARE

Micro Position Controller

Holmarc offers a wide range of high-precision micro positioning devices and systems. Micro Position Controller along with a combination of one or more of the MTS, LTMS or MTTS series motorized stages make a high accuracy positioning system for research and industrial applications. The option for selecting any of the various models of motorized translation stages makes it easy to develop a complete position control system involving any or all of the three linear or rotational axes.

Holmarc’s stepper motor controller has microstep drives offers microstepping down to 256 microsteps per step. Usually stepper motor has 200 steps per revolution. We can increase step per revolution by using drives which can divide a single step into 128 microstep. This allows much higher resolution up to 25600 micro steps per revolution.

Micro position controller unit also supports encoder feedback. Built in algorithm counts the incoming pulses from the encoder and compares it with the commanded number of steps to verify the accuracy of movement.

Multi Axis Positioning

Holmarc provides positioning controllers up to 6 axes for all motion applications, individually programmable for stepper motor driven stages. Multi axis position controller is recommended for a wide variety of both simple and complex motion applications.

Customized Motion Control and Data Acquisition Systems

Holmarc also provides custom motion controllers with graphics LCD and micro switch keyboard which facilitates stand alone operation with a wide range of functions, without interfacing to a PC. The user interface in these systems can be developed according to specific application. Hence, the user is freed from meddling with unwanted features. The short learning curve also allows the user to dedicate more time on actual task.

We will help you to develop a complete system for your motion control and data acquisition application using Holmarc’s wide range of standard and custom products. Any third party instruments which have commonly used hardware or software interfaces like RS232, GPIB, DCOM etc can be use with the system.

Handheld Motion Control System

Hand-held stepper motor controller-driver offers up to 4 axes control for actuators, linear stages and rotation stages. The hand held unit features 128X micro stepping ratio for smooth, high resolution positioning. Two primary control modes are available, manual control and computer control.

To drive the stage using a PC, a command set will be provided to communicate with the controller using LabVIEW or any other programming language through RS 232 port.
Software-(Instudio)

Instudio, a software developed by Holmarc is an easy to use package to drive all Holmarc made positioning stages. It allows the user to operate the system in two modes, namely Manual and Programmable.

The Micro Position Controller software has a very short learning curve. According to the application requirements, the stages can be operated at different speeds and motion profiles. It incorporates facility to provide delay in between the movements to perform other tasks, trigger external devices or circuits and get itself triggered by an external trigger source. The software enables the user to program each movement of the stage in the form of the following commands executed sequentially.

**Manual Mode**

There are 4 buttons in the Manual mode region of the dialog window, the functions of which are explained below.

- > : Move the stage one step towards far-end.
- < : Move the stage one step towards home.
- >> : Move the stage continuously towards far-end. Click again to stop the movement.
- << : Move the stage continuously towards home. Click again to stop the movement.

- Home : Move the stage towards home. Click again to stop the movement.
- Reset : Click this button to reset the position display to zero.

**Programmable mode**

This mode enables the user to write a program, containing instructions to move different stages simultaneously, set the speed, incorporate delays and loop a set of instructions, execute that program and save it for later use.

**Instruction Set**

- **Home W** : Moves the stage of the axis specified towards home.
- **Move** [Displacement] : Moves the stage for the specified displacement. Wait incorporates a delay.
- **Speed** : Set the speed.
- **Trigger IN** : The program waits for an external trigger which is a TTL pulse applied through the Trigger Input on the front panel of the controller.
- **Trigger OUT** : The controller output a trigger which is a TTL pulse.
- **Loop** [index, address] : The program loops index times from the address specified.
- **Goto address** : The program jumps to the address specified.
- **Reset W** : Resets the position display of the axis specified to zero.

**Micro-Position Controller**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Number of axis</th>
<th>Motor Type</th>
<th>Motor Torque (kg cm)</th>
<th>Control</th>
<th>Typical Payload (kg)*</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPCL1 L-OL</td>
<td>1</td>
<td>Stepper</td>
<td>1.5</td>
<td>Open Loop</td>
<td>20</td>
<td>None</td>
</tr>
<tr>
<td>MPCL2 L-CL</td>
<td>2</td>
<td>Servo</td>
<td>7</td>
<td>Closed Loop</td>
<td>35</td>
<td>None</td>
</tr>
<tr>
<td>MPCL3 L-OL</td>
<td>3</td>
<td>Stepper</td>
<td>10</td>
<td>Open Loop</td>
<td>50</td>
<td>None</td>
</tr>
<tr>
<td>MPCL4 L-CL</td>
<td>4</td>
<td>Servo</td>
<td>15</td>
<td>Closed Loop</td>
<td>60</td>
<td>None</td>
</tr>
<tr>
<td>MPCL6 L-OL</td>
<td>6</td>
<td>Stepper</td>
<td>31</td>
<td>Open Loop</td>
<td>80</td>
<td>None</td>
</tr>
<tr>
<td>MPC4L-CL-H</td>
<td>4</td>
<td>Stepper</td>
<td>7</td>
<td>Closed Loop</td>
<td>35</td>
<td>Hand Held Unit</td>
</tr>
</tbody>
</table>

* Typical payload for a linear translation stage, mounted horizontally, driven by the specified model

**Precise Automation**

We offer a wide range of positioning devices for precision applications.

We offer a wide range of positioning devices for precision applications.
Customized Motion Control and Data Acquisition Applications

Measurement of spatial distribution of

- Magnetic field strength of medium and large sized electromagnets.
- Microwave and RF signal intensity of antennae.
- Optical intensity of scattered, reflected or transmitted light in optical systems.

Multi-dimensional position control of the following

- Mirror mounts, polarizers and light sources in optical systems.
- Samples in nonlinear optics experiments.
- Sensors and other components inside vacuum chambers and glove boxes.
- High power laser head for laser cutting applications.
- Spindles for marking and engraving applications.
- Nanofiber Electrospinning targets for weaving of nanofibers.

Applications

- Material Science
- Stress and strain analysis of fibers
- Climate Science
- Sun tracking

Motorized Translation Stage Ordering Information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td>........ mm</td>
</tr>
<tr>
<td>Carriage Size</td>
<td>........ LxW (linear) or diameter (rotary) in mm</td>
</tr>
<tr>
<td>Load Capacity</td>
<td>........ Kg</td>
</tr>
<tr>
<td>Resolution</td>
<td>........ micron (linear) or arc sec (rotary)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>........ micron (linear) or arc sec (rotary)</td>
</tr>
<tr>
<td>Speed</td>
<td>........ mm/sec (linear) or degree/sec (rotary)</td>
</tr>
<tr>
<td>Configuration</td>
<td>........ X, Y, Z (linear)</td>
</tr>
<tr>
<td></td>
<td>A (Yaw), B (Pitch), C (Roll) (rotary)</td>
</tr>
<tr>
<td>Combination</td>
<td>It is possible to select different combinations like XY, XZ, XYZ, XAY, XZA, XYA, XZC, XYZ, XYABC, XYZBC, XYZABC.</td>
</tr>
<tr>
<td>User Interface</td>
<td>........ PC, hand held unit, both.</td>
</tr>
<tr>
<td>Control</td>
<td>........ Closed loop &amp; open loop</td>
</tr>
<tr>
<td>Closed loop control</td>
<td>It uses an encoder attached to stage or motor which gives feedback motion of stage or motor.</td>
</tr>
<tr>
<td>Open loop control</td>
<td>It depends on accuracy of steps of the motor and does not have a feedback from encoder.</td>
</tr>
</tbody>
</table>
Ready to use linear stages
from holmarc are cost effective solutions for linear positioning.

Various designs to suit multitudes of applications in industry and research.

Holmarc manufactures motorized linear translation stages in ready to operate design for applications in research and manufacturing. We have categorized our standard stages in four different series, namely MTS, LMS and RCMTS based on their design. All these stages are modular in design and construction. Multi-axes configurations are possible by assembling single axis stages at user end. For standard stages, construction material is aluminum alloy. We make stages in stainless steel and mild steel as well for custom requirements.

Linear Guides:
Pre-loaded rolling contact bearings are used as guide ways. Both non-re-circulating type and re-circulating type guides are used depending upon the design and use. For non-re-circulating type, rollers are used as rolling elements where as for re-circulating type, balls are used.

Drive:
Either lead screws or ball screws are used as mechanical drive. For ground lead screw, nut is spring loaded to minimize play and back-lash.

Actuator:
Stepper motors are used as electrical actuators. DC or AC servos can as well be used with our standard models on special request.

PITCH, STEP & RESOLUTION

Ball screw or lead screw pitch depends upon the speed and resolution requirements. Drive electronics of stepper motor decides both these parameters. In all our standard stages, 200 steps/revolution stepper motors are used. For ball screws, 4 mm is the standard pitch in our stages. For lead screws, pitch can be 0.5 mm, 1 mm, and 2 mm.

For any stages with lead screw/ ball screw pitch, resolution other than standard depends on the drive electronics. There are micro-step driver cards for the stepper motors having 1/8 to 1/256 micro steps.
**Motorized Actuator**

Holmarc’s motorized actuator can be used to replace micrometers in translation stages or lead screws in kinematic mounts for making the positioning automated with appropriate control electronics. Drive is achieved by a stepper motor coupled to a precision lead screw–nut mechanism.

The spindle of the actuator which moves forward and backward when the motor rotates is made non-rotating to bring in extra precision. Construction material is stainless steel. Our standard position controllers can be used to drive these actuators without any customization. Holmarc can supply kinematic mounts and stages fitted with these actuators for custom applications. You are welcome to discuss your needs with our sales engineers.

**Specifications:**

<table>
<thead>
<tr>
<th>MODEL No</th>
<th>Travel</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>HO-MA-15</td>
<td>15mm</td>
<td>0.001mm</td>
</tr>
<tr>
<td>HO-MA-25</td>
<td>25mm</td>
<td>0.001mm</td>
</tr>
</tbody>
</table>

**New**

**Piezo Nanopositioner & Controllers**

Holmarc’s Advanced Precision Motion Systems

Piezo actuator is an ideal choice when high precision nano scale positioning is required. Holmarc Piezo Actuators are high-resolution nano positioning systems designed for a variety of applications in nano technology, bio technology etc. We offer Piezo Actuators and Translators for scientific and industrial applications. In addition to the standard products, we manufacture custom designs tailored for requirements.

**HOLMARC OPTO-MECHATRONICS PVT. LTD**

**OFFICE & FACTORY ADDRESS**

B 7, H.M.T. INDUSTRIAL ESTATE, H.M.T. P.O, KALAMASSERY, KOCHI, KERALA, INDIA

Ph.No. +91-484 2540075 Fax: +91-484 2540882

For more products and information, visit us @

www.holmarc.com

E-mail: sales@holmarc.com

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Motorized Translation Stages – MTS-M series

Holmarc’s MTS-M series motorized stages are miniature in size with a footprint as small as 35 x 35 mm. Drive motor is stepper with 28 mm frame size. The stage features precision V grooved guides with balls and precision leadscrew drive having 1 mm /0.4 mm pitch. Standard stages are constructed in aluminium alloy though stainless steel stages can also be manufactured on request. There are four footprint sizes to choose from as described in the drawing.

These stages are available in five factory assembled configurations (x, XY, XYZ, Z and XZ). Please see the chart below for details.

**Drive Details**

<table>
<thead>
<tr>
<th>4mm Pitch Lead Screw</th>
<th>1mm Pitch Lead Screw</th>
<th>0.4mm Pitch Precision Lead Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positioning Accuracy : 0.1mm</td>
<td>Positioning Accuracy : 0.01mm</td>
<td>Positioning Accuracy : 0.002mm</td>
</tr>
<tr>
<td>Repeatability : 0.2mm</td>
<td>Repeatability : 0.01mm</td>
<td>Repeatability : 0.002mm</td>
</tr>
<tr>
<td>Resolution : 0.01mm</td>
<td>Resolution : 0.0003125 (Micro Step Mode)</td>
<td>Resolution : 0.000125 (Micro Step Mode)</td>
</tr>
<tr>
<td>Speed : 16 mm/Sec (4 rps)</td>
<td>Speed : 4mm/Sec (4 rps)</td>
<td>Speed : 1.2mm/Sec (4 rps)</td>
</tr>
</tbody>
</table>

**Straight Line Accuracy : 5 Micron**

**Guide way** : Precision V grooved guide way

**Drive** : Precision lead screw

**Construction** : Black anodized

**Tapped Holes on Moving Plate** : M4 tapped holes

**Mounting Holes** : M3 tapped holes

**Drive Details**

- **4mm Pitch Lead Screw**
  - Positioning Accuracy : 0.1mm
  - Repeatability : 0.2mm
  - Resolution : 0.01mm
  - Speed : 16 mm/Sec (4 rps)

- **1mm Pitch Lead Screw**
  - Positioning Accuracy : 0.01mm
  - Repeatability : 0.01mm
  - Resolution : 0.0003125 (Micro Step Mode)
  - Speed : 4mm/Sec (4 rps)

- **0.4mm Pitch Precision Lead Screw**
  - Positioning Accuracy : 0.002mm
  - Repeatability : 0.002mm
  - Resolution : 0.000125 (Micro Step Mode)
  - Speed : 1.2mm/Sec (4 rps)

**MTSM-3760**

**MTSM-5050**

**MTSM-5065H**

**MTSM-5075H**

**MTSM-5090H**

**ACCESSORIES**

<table>
<thead>
<tr>
<th>Base Plate</th>
<th>Vertical Bracket</th>
<th>Horizontal Bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP-MTSM-3760</td>
<td>VB-MTSM-3760</td>
<td>HB-MTSM-3760</td>
</tr>
<tr>
<td>BP-MTSM-5050H</td>
<td>VB-MTSM-5050H</td>
<td>HB-MTSM-5050H</td>
</tr>
<tr>
<td>BP-MTSM-5065H</td>
<td>VB-MTSM-5065H</td>
<td>HB-MTSM-5065H</td>
</tr>
<tr>
<td>BP-MTSM-5075H</td>
<td>VB-MTSM-5075H</td>
<td>HB-MTSM-5075H</td>
</tr>
<tr>
<td>BP-MTSM-5090H</td>
<td>VB-MTSM-5090H</td>
<td>HB-MTSM-5090H</td>
</tr>
</tbody>
</table>
Motorized Translation Stages-MTS series

MTS series stages are compact and modular motorized positioners for short travel applications (up to 50 mm travel range). Stepper motor is used as electrical actuator. It has V grooved precision guide ways using crossed rollers. Construction material for standard stage is aluminium alloy. Linear drive is by a precision lead screw-nut combination. There are two limit switches built in to the system, one for home and other for far end. Electrical junction box with suitable 9 pin connector is also a standard feature.

These stages are X, XY, XYZ, XZ & Z axis configurable with the help of angle bracket and base plates.

We have provided suitable mounting holes for assembling multi-axes configurations

- Straight line accuracy: 2 Micron
- Guide way: Precision V grooved guide way
- Drive: Precision lead screw
- Construction: Aluminium alloy B51S
- Finish: Black anodized
- Tapped holes on moving plate: M6 tapped holes
- Mounting holes on the base Plate: M3/M6 C’bored holes

**Drive Details**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1mm Pitch Lead Screw</strong></td>
<td>Positioning accuracy: 0.011mm</td>
</tr>
<tr>
<td></td>
<td>Resolution: 0.0003125mm (in micro step mode)</td>
</tr>
<tr>
<td><strong>0.4mm pitch precision lead screw</strong></td>
<td>Positioning accuracy: 0.001mm</td>
</tr>
<tr>
<td></td>
<td>Resolution: 0.000125mm (in micro step mode)</td>
</tr>
<tr>
<td>Model No.</td>
<td>Model No.</td>
</tr>
<tr>
<td>----------</td>
<td>-----------</td>
</tr>
<tr>
<td>MTS-6565-1-01</td>
<td>MTS-6565-2-01</td>
</tr>
<tr>
<td>MTS-6565-1-02</td>
<td>MTS-6565-2-02</td>
</tr>
<tr>
<td>MTS-6565-1-03</td>
<td>MTS-6565-2-03</td>
</tr>
<tr>
<td>MTS-6565-1-04</td>
<td>MTS-6565-2-04</td>
</tr>
<tr>
<td>MTS-6565-1-05</td>
<td>MTS-6565-2-05</td>
</tr>
</tbody>
</table>

**Accessories**

- **Angle Brackets**: It is used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.
- **Base plates**: Base plates can be used for mounting translation stages to breadboards and tables conveniently.
Motorized Translation Stages - LMS Series: Stepper motor

**Drive Details**

<table>
<thead>
<tr>
<th>0.4mm Pitch Leadscrew</th>
<th>1mm Pitch precision Leadscrew</th>
<th>2mm Pitch precision Leadscrew</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positioning Accuracy</strong>: 0.001mm</td>
<td><strong>Positioning Accuracy</strong>: 0.0025mm</td>
<td><strong>Positioning Accuracy</strong>: 0.005mm</td>
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<tr>
<td><strong>Repeatability</strong>: 0.001mm</td>
<td><strong>Repeatability</strong>: 0.0025mm</td>
<td><strong>Repeatability</strong>: 0.005mm</td>
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<tr>
<td><strong>Resolution</strong>: 0.000125 (in Micro Step Mode)</td>
<td><strong>Resolution</strong>: 0.000125 (in Micro Step Mode)</td>
<td><strong>Resolution</strong>: 0.000125 (in Micro Step Mode)</td>
</tr>
<tr>
<td><strong>Speed</strong>: 1.6 mm/sec</td>
<td><strong>Speed</strong>: 4 mm/sec</td>
<td><strong>Speed</strong>: 8 mm/sec</td>
</tr>
</tbody>
</table>

**LMS series motorized stages** provide travel up to 150 mm. Drive mechanism comprises of precision ground lead screw and preloaded nut. Stepper motor used is of 56 mm frame size and 10 kg-cm torque. There are limit switches for home and far end. Electrical junction box with 9 pin connector is also a standard feature. Linear guide ways using V grooved guides and crossed rollers are used for playless and stick-slip free precision positioning. Standard stages are constructed in aluminium alloy and finished by black anodizing. Tapped holes are provided on top and bottom surfaces for mounting. XY and XYZ configurations can be assembled from single axis stages along with accessories like base plates and angle brackets.

### Table of Specifications

<table>
<thead>
<tr>
<th>Model no.</th>
<th>Travel(mm)</th>
<th>Lead screw Pitch</th>
<th>Load Capacity (Kg)</th>
<th>Size L x B (mm)</th>
<th>Accessories</th>
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<tbody>
<tr>
<td>LMS 75100 - 1</td>
<td>50</td>
<td>2 mm</td>
<td>8</td>
<td>100 x 75</td>
<td>AB - LMS 75100, BP - LMS 75100</td>
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<tr>
<td>LMS 75100 - 2</td>
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<td>1 mm</td>
<td>10</td>
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<td>9</td>
<td>150 x 75</td>
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<td>1 mm</td>
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<td>16</td>
<td>100 x 100</td>
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<td></td>
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<td>LMS 100100 - 3</td>
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<td>0.4 mm</td>
<td>8</td>
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<tr>
<td>LMS 100150 - 1</td>
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<td>2 mm</td>
<td>15</td>
<td>150 x 100</td>
<td>AB - LMS 100150, BP - LMS 100150</td>
</tr>
<tr>
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<td>1 mm</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LMS 100200 - 1</td>
<td>150</td>
<td>2 mm</td>
<td>17</td>
<td>200 x 100</td>
<td>AB - LMS 100200, BP - LMS 100200</td>
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<td>16</td>
<td>150 x 150</td>
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<td>30</td>
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<td>1 mm</td>
<td>35</td>
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</table>
Drawings - LMS Stages

LMS-75-150

LMS-75-200

LMS-100-150

LMS-150-200

LMS-200-200

ACCESSORIES

Angle Brackets :

It is used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.

Base plates :

Base plates can be used for mounting translation stages to breadboards and tables conveniently.
Motorized Precision Long Travel Translation stages (Linear and XY)

These stages are based on linear guide ways using V grooved guides and crossed rollers are used for play-less and stick-slip free precision positioning. Stages are constructed in aluminium alloy and finished by black anodizing. Tapped holes are provided on top and bottom surfaces for mounting.

- Precision roller slides
- 100-200mm travel
- 1-5 micron straight line accuracy
- 5 micron positioning accuracy
- 0.625 micron resolution
- 2mm pitch backlash free lead screw and nut
- 4mm pitch ball screw and nut
- 8-16mm Maximum speed
- Up to 50 kg load capacity
- Stepper motor for computer control movement
- Optional Servo motor control
- Controller with software for computer controlling
- Additional handheld unit or joysticks available as per request

### Table: Linear Translation Stage (X Axis)

<table>
<thead>
<tr>
<th>Model No</th>
<th>Travel Range X</th>
<th>Load Capacity (Vertical)</th>
<th>Resolution</th>
<th>Max. Speed</th>
<th>Carriage Size W x L</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLTS-100-250</td>
<td>125mm</td>
<td>15kg</td>
<td>0.000625mm</td>
<td>8mm/sec</td>
<td>100x150mm</td>
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<td>MLTS-100-350</td>
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<td>15kg</td>
<td>0.000625mm</td>
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<td>MLTS-100-500</td>
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<td>25kg</td>
<td>0.00125mm</td>
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<td>MLTS-175-175</td>
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<tr>
<td>MLTS-175-350</td>
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<td>25kg</td>
<td>0.00125mm</td>
<td>16mm/sec</td>
<td>175x300mm</td>
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<td>75kg</td>
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<td>16mm/sec</td>
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### Table: Linear Translation Stage (X & Y)

<table>
<thead>
<tr>
<th>Model No</th>
<th>Travel Range X &amp; Y</th>
<th>Load Capacity (Vertical)</th>
<th>Resolution</th>
<th>Max. Speed</th>
<th>Carriage Size W x L</th>
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</thead>
<tbody>
<tr>
<td>MLTS-175-175</td>
<td>50mm</td>
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<td>50 &amp; 350mm</td>
<td>25kg</td>
<td>0.00125mm</td>
<td>16mm/sec</td>
<td>175x500mm</td>
</tr>
<tr>
<td>MLTS-250-250</td>
<td>125mm</td>
<td>50kg</td>
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<tr>
<td>MLTS-250-400</td>
<td>125 &amp; 250mm</td>
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<td>0.00125mm</td>
<td>16mm/sec</td>
<td>250x400mm</td>
</tr>
<tr>
<td>MLTS-250-600</td>
<td>125 &amp; 450mm</td>
<td>75kg</td>
<td>0.00125mm</td>
<td>16mm/sec</td>
<td>250x600mm</td>
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</tbody>
</table>
Belt Driven High Speed Translation Stage (Linear)

- Suitable for faster movements and positioning
- Precision re circulating slide
- 100-1500mm Travel
- 600mm/sec maximum speed
- 2mm/sec minimum speed
- 100 micron straight line accuracy
- 50 micron positioning accuracy
- 100x65mm carriage size
- Timing belt and pulley mechanism
- Up to 5 kg load capacity
- Shaft extension for connecting rod free slide (XY)**
- Stepper motor for computer control movement
- Controller with software for computer controlling
- Additional handheld unit or joysticks available as per request

**500mm positioning accuracy

<table>
<thead>
<tr>
<th>Model No</th>
<th>Travel Range</th>
<th>Positioning Accuracy</th>
<th>Min .Speed</th>
<th>Max .Speed</th>
<th>Length</th>
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<tbody>
<tr>
<td>HS-LTS-100</td>
<td>100 mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>388mm</td>
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<tr>
<td>HS-LTS-200</td>
<td>200mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>488mm</td>
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<tr>
<td>HS-LTS-300</td>
<td>300mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>588mm</td>
</tr>
<tr>
<td>HS-LTS-500</td>
<td>500mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>788mm</td>
</tr>
<tr>
<td>HS-LTS-600</td>
<td>600mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>888mm</td>
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<tr>
<td>HS-LTS-750</td>
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<td>1038mm</td>
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<td>HS-LTS-1000</td>
<td>1000mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>1288mm</td>
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<tr>
<td>HS-LTS-1250</td>
<td>1250mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>1538mm</td>
</tr>
<tr>
<td>HS-LTS-1500</td>
<td>1500mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>1788mm</td>
</tr>
<tr>
<td>HS-LTS-***</td>
<td>Specify X Travel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS-LTS-1750</td>
<td>X=1750mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>1750+288mm</td>
</tr>
</tbody>
</table>

How to order custom travel
HS-LTS-1750 X=1750mm
**Belt Driven High Speed Translation Stage (XY)**

Belt-driven stages are ideal for applications requiring long distances and high speeds. Speeds as high as 600mm per second can be achieved. The belt drive’s high efficiency make it an ideal choice for moving light loads at high speed and for continuous duty applications. They are not recommended for vertical applications because of the risk of load free-fall in the event of belt failure.

- Suitable for faster movements and positioning
- Precision re circulating slide
- 100-1500mm Travel
- 2mm/sec minimum - 600mm/sec maximum speed control
- 100micron straight line accuracy & 500micron positioning accuracy
- 100x65mm carriage size
- Timing belt and pulley mechanism
- Up to 5 kg load capacity
- Shaft extension for connecting rod free slide (XY)***
- Stepper motor for computer control movement
- Controller with software for computer controlling
- Additional handheld unit or joysticks available as per request

<table>
<thead>
<tr>
<th>Model No</th>
<th>Travel Range X &amp; Y</th>
<th>Positioning accuracy</th>
<th>Min. Speed</th>
<th>Max. Speed</th>
<th>Length &amp; Width</th>
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<tbody>
<tr>
<td>HS-XYLTS-100-100</td>
<td>100 mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>388mm</td>
</tr>
<tr>
<td>HS-XYLTS-200-200</td>
<td>200mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>488mm</td>
</tr>
<tr>
<td>HS-XYLTS-300-300</td>
<td>300mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>588mm</td>
</tr>
<tr>
<td>HS-XYLTS-500-500</td>
<td>500mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
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<td>788mm</td>
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<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>888mm</td>
</tr>
<tr>
<td>HS-XYLTS-750-750</td>
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<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>1038mm</td>
</tr>
<tr>
<td>HS-XYLTS-1000-1000</td>
<td>1000mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>1288mm</td>
</tr>
<tr>
<td>HS-XYLTS-1250-1250</td>
<td>1250mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>1538mm</td>
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<tr>
<td>HS-XYLTS-1500-1500</td>
<td>1500mm</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>1788mm</td>
</tr>
<tr>
<td>HS-XYLTS-X/Y***</td>
<td>Specify X travel</td>
<td>0.5mm</td>
<td>2mm/sec</td>
<td>600mm/sec</td>
<td>X + 288</td>
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<tr>
<td></td>
<td>Specify Y travel</td>
<td></td>
<td></td>
<td></td>
<td>Y + 288</td>
</tr>
</tbody>
</table>

**How to order custom travel**

200mm X travel
200 + 288

1800mm Y travel
1800 + 288

---

**Custom engineering & manufacturing**

HOLMARC is a worldwide designer and manufacturer of precision positioning systems and motion control products. We provides custom engineering and manufacturing services to OEMs, industrial and research and development customers in the optical, medical, life sciences, semiconductor, robotics, and industrial automation sectors. Contact us for your custom manufacturing needs.
RCMTS Series Motorized Stages

RCMTS series stages use re-circulating type linear bearings. Hence, the carriage (moving part) in this case will be smaller in length than the base. As in the case of our standard stages described in preceding pages, there are two drive options, precision lead screws and ball screws. Its design permits dust protection by the use of bellows. Holmarc manufacture these stages up to a travel of 500 mm in various carriage sizes and load bearing capacities. Apart from the standard stages described in this section, we also manufacture custom stages in aluminum, steel and stainless steel for variety of applications. Kindly contact our sales engineers for details.

HOLMARC's experienced support engineers will be glad to help you to determine which product suits your needs. Call us at +91 484 2540075 or send us a mail to sales@holmarc.com
**Motorized Stages RCMTS-50 Series**

These stages use re-circulating type ball bearing guideways along with leadscrews positioned above the guideways as shown in the drawing. This configuration helps to keep the footprint as minimum as possible. In this case, width of the stage could be reduced to 50mm. Construction is in aluminum alloy with black anodized finish.

There are two options for leadscrew pitch, 1mm and 4mm. For those applications where greater speed is required, 9mm pitch lead screw can be considered.

**Vacuum Compatible Motion Control**
Almost all our products can be produced as vacuum compatible modification. Please contact us for modifications.

- **Straight line Accuracy**: +/-20 Micron over 200mm travel
- **Drive**: Precision Lead screw
- **Construction**: Aluminium Alloy B51S
- **Finish**: Black anodized
- **Tapped Holes on Carriage**: M4 Tapped Holes
- **Mounting Holes on the base**: M6 Tap and M4 CBR
- **Design**: Modular Type
- **Configuration**: Multi axis
- **Travel**: 50 to 150 mm
- **Carriage Size**: 50mm x 50mm
- **Load Capacity**: 2kg vertical on X Axis
- **Lead screw**: 1mm pitch / 2mm pitch

**Drive Details**

### 1mm Pitch precision Leadscrew
- Positioning Accuracy: 0.0025mm
- Repeatability: 0.0025mm
- Resolution: 0.000125 (in Micro Step Mode)
- Speed: 4 mm/sec

### 2mm Pitch precision Leadscrew
- Positioning Accuracy: 0.005mm
- Repeatability: 0.005mm
- Resolution: 0.000125 (in Micro Step Mode)
- Speed: 8 mm/sec

<table>
<thead>
<tr>
<th>1mm Pitch Lead screw</th>
<th>Load Capacity Vertical(X Axis) Kg</th>
<th>Load Capacity Vertical(Z Axis) Kg</th>
<th>2mm Pitch Lead screw</th>
<th>Load Capacity Vertical(X Axis) Kg</th>
<th>Load Capacity Vertical(Z Axis) Kg</th>
<th>Travel (mm) T</th>
<th>Length (mm) L</th>
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<tbody>
<tr>
<td>RCMTS50-50-1</td>
<td>2</td>
<td>1</td>
<td>RCMTS50-50-2</td>
<td>2</td>
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<td>2</td>
<td>1</td>
<td>150</td>
<td>280</td>
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**Accessories**

<table>
<thead>
<tr>
<th>Vertical Bracket</th>
<th>Horizontal Bracket</th>
<th>Base Plate</th>
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<tbody>
<tr>
<td>VAB-RCMTS50-50</td>
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<tr>
<td>VAB-RCMTS50-75</td>
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<td>VAB-RCMTS50-100</td>
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</tr>
<tr>
<td>VAB-RCMTS50-150</td>
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</tbody>
</table>

**Angle Brackets**
- It is used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.

**Base plates**
- Base plates can be used for mounting translation stages to breadboards and tables conveniently.
Motorized Stages RCMTS-75 Series

RCMTS-75 series are light duty stages with respect to load capacity. Point contact ball bearing guides are used in these stages to keep height of the stage at 42 mm which is height of the drive motor. Bellows are provided for the protection of the stage from dust as well as to protect the environment from the accidental contamination from grease used in the guideways and leadscrew drives. Standard stages are fixed with stepper motors.

There are two models to choose from, stages with 1 mm pitch leadscrew (low speed) and stages with 9mm pitch leadscrew (high speed).

**Drive Details**

### 1mm Pitch precision Leadscrew

- **Positioning Accuracy**: 0.0025mm
- **Repeatability**: 0.0025mm
- **Resolution**: 0.000125mm (in Micro Step Mode)
- **Speed**: 4 mm/sec

### 2mm Pitch precision Leadscrew

- **Positioning Accuracy**: 0.005mm
- **Repeatability**: 0.005mm
- **Resolution**: 0.000125mm (in Micro Step Mode)
- **Speed**: 8 mm/sec

### Load Capacity

<table>
<thead>
<tr>
<th>Model No</th>
<th>Load Capacity Vertical(X Axis)</th>
<th>Load Capacity Vertical(Z Axis)</th>
<th>Load Capacity Vertical(X Axis)</th>
<th>Load Capacity Vertical(Z Axis)</th>
<th>Travel (mm)</th>
<th>Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCMTS75-50</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>50</td>
<td>180</td>
</tr>
<tr>
<td>RCMTS75-100</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>100</td>
<td>230</td>
</tr>
<tr>
<td>RCMTS75-150</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>150</td>
<td>280</td>
</tr>
<tr>
<td>RCMTS75-200</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>200</td>
<td>330</td>
</tr>
<tr>
<td>RCMTS75-250</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>250</td>
<td>380</td>
</tr>
</tbody>
</table>

### Accessories

- **VAB-RCMTS75-50**
- **VAB-RCMTS75-100**
- **VAB-RCMTS75-150**
- **VAB-RCMTS75-200**
- **VAB-RCMTS75-250**
- **HAB-RCMTS75**
- **BP-RCMTS75-50**
- **BP-RCMTS75-100**
- **BP-RCMTS75-150**
- **BP-RCMTS75-200**
- **BP-RCMTS75-250**

- **Angle Brackets**
  - Base plate can be used for mountingtranslation stages to breadboards and tables conveniently.
  - It is used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.

- **Base Plates**
  - Can be Locked at desired position.

- **Drive Details**
  - **Positioning Accuracy** : +/-20 Micron over 200mm travel
  - **Drive** : Precision lead screw
  - **Construction** : Aluminium alloy B51S
  - **Finish** : Black anodized
  - **Tapped Holes on Carriage** : M4 tapped holes
  - **Mounting Holes on the base** : M6 tap and M4 CBR
  - **Design** : Modular type
  - **Configuration** : Multi axis
  - **Travel** : 50 to 250 mm
  - **Carriage Size** : 75mm X 250mm
  - **Load Capacity** : 5kg vertical on X Axis
  - **Leadscrew** : 1mm pitch/9mm pitch
  - **Lock** : Can be Locked at desired position
Motorized Stages RCMTS-125 Series

RCMTS-125 series stages are designed to carry heavy loads, yet to move and position precisely. Recirculating type ball bearing linear ways are used as guides. Drive is provided by a combination of ball screw and stepper motor.

Z-axis: In these stages in vertical configuration, if the load is more than 15 kgs, the carriage may come down under gravity when power to the motor is switched off. This is when ball screw is directly attached to the stepper motor. If the load to be lifted is more than 15 kgs, it is advisable to use our Z axis stages with a gear box (1:6 ratio) in between motor and ball screw. Though this reduces speed in Z axis, load capacity increases considerably.

<table>
<thead>
<tr>
<th>Straight line Accuracy</th>
<th>Drive</th>
<th>Construction</th>
<th>Finish</th>
<th>Tapped Holes on Carriage</th>
<th>Mounting Holes on the base</th>
<th>Design</th>
<th>Configuration</th>
<th>Travel</th>
<th>Carriage Size</th>
<th>Load Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>+/-20 Micron over 300mm travel</td>
<td>Precision lead / ball screw</td>
<td>Aluminium alloy B51S</td>
<td>Black anodized</td>
<td>M4 tapped holes</td>
<td>M6 tap and M4 CBR</td>
<td>Modular type</td>
<td>Multi axis</td>
<td>100 to 500 mm</td>
<td>125mm X 125mm</td>
<td>Up to 90kg vertical</td>
</tr>
</tbody>
</table>

Drive Details

4mm Pitch Ball screw With Magnetic brake

Positioning Accuracy : 0.01mm
Repeatability : 0.01mm
Resolution : 0.00125 (in Micro Step Mode)

Speed : 16mm/sec (4RPS)
Feature : Magnetic break helps stages carriage from sudden falling while loading heavy load in 2 axis

4mm Pitch Ball Screw

Positioning Accuracy : 0.02mm
Repeatability : 0.01mm
Resolution : 0.00125 (in Micro Step Mode)

Speed : 16mm/sec (4RPS)

Feature : Magnetic break helps stages carriage from sudden falling while loading heavy load in 2 axis

<table>
<thead>
<tr>
<th>4mm Pitch Ball screw</th>
<th>Load Capacity</th>
<th>4mm Pitch Ball screw with Magnetic brake</th>
<th>Load Capacity</th>
<th>Travel (mm)</th>
<th>Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model No</td>
<td>X Axis Kg</td>
<td>Z Axis Kg</td>
<td>Model No</td>
<td>T</td>
<td>L</td>
</tr>
<tr>
<td>RCMTS125-100-2</td>
<td>50</td>
<td>15</td>
<td>RCMTS125-100-B</td>
<td>100</td>
<td>310</td>
</tr>
<tr>
<td>RCMTS125-150-2</td>
<td>50</td>
<td>15</td>
<td>RCMTS125-150-B</td>
<td>70</td>
<td>150</td>
</tr>
<tr>
<td>RCMTS125-200-2</td>
<td>50</td>
<td>15</td>
<td>RCMTS125-200-B</td>
<td>62</td>
<td>200</td>
</tr>
<tr>
<td>RCMTS125-300-2</td>
<td>45</td>
<td>15</td>
<td>RCMTS125-300-B</td>
<td>60</td>
<td>300</td>
</tr>
<tr>
<td>RCMTS125-500-2</td>
<td>45</td>
<td>15</td>
<td>RCMTS125-500-B</td>
<td>55</td>
<td>500</td>
</tr>
</tbody>
</table>

Accessories

Vertical Bracket | Horizontal Bracket | Base Plate
--- | --- | ---
VAB-RCMTS125-100 | BP-RCMTS125-100 | BP-RCMTS125-100
VAB-RCMTS125-150 | BP-RCMTS125-150 | BP-RCMTS125-150
VAB-RCMTS125-200 | BP-RCMTS125-200 | BP-RCMTS125-200
VAB-RCMTS125-300 | BP-RCMTS125-300 | BP-RCMTS125-300
VAB-RCMTS125-500 | BP-RCMTS125-500 | BP-RCMTS125-500

Customization

HOLMARC’s experienced support engineers will be glad to help you.

Call us at +91 484 2540075 or send us a mail to sales@holmarc.com

Angle Brackets:

It is used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.

Base Plates:

Base plates can be used for mounting translation stages to breadboards and tables conveniently.
Motorized Stages RCMTS-150 Series

RCMTS-150 series stages are available for travel upto 150 mm. Carriage size is 150 x 150 mm. Drive is by ball screw-stepper motor combination. There are bellows for dust protection. Re-circulating type linear ways are used as guides.

Z-axis: In these stages, in vertical configuration, if the load is more than 15 kgs, the carriage may come down under gravity when power to the motor is switched off. This is when ball screw is directly attached to the stepper motor. If the load to be lifted is more than 15 kgs, it is advisable to use our Z axis stages with a gear box (1:6 ratio) in between motor and ball screw. Though this reduces speed in Z axis, load capacity increases considerably. Please see the tables and chart below for details.

### Drive Details

**4mm Pitch Ball Screw With Magnetic brake**

- Positioning Accuracy: 0.01 mm
- Repeatability: 0.01 mm
- Resolution: 0.00125 (in Micro Step Mode)
- Speed: 16 mm/sec (4RPS)

**4mm Pitch Ball Screw**

- Positioning Accuracy: 0.02 mm
- Repeatability: 0.01 mm
- Resolution: 0.00125 (in Micro Step Mode)
- Speed: 16 mm/sec (4RPS)

**Feature**: Magnetic brake helps stages carriage from sudden falling while loading heavy load in 2 axis.

### Accessories

- **Vertical Bracket**: VAB-RCMTS150-100, VAB-RCMTS150-150, VAB-RCMTS150-200, VAB-RCMTS150-300, VAB-RCMTS150-500, VAB-RCMTS150-750
- **Horizontal Bracket**: HAB-RCMTS-150, Size: 150x150mm
- **Base Plate**: BP-RCMTS150-100, BP-RCMTS150-150, BP-RCMTS150-200, BP-RCMTS150-300, BP-RCMTS150-500, BP-RCMTS150-750

### Controller

Controller sold separately please refer page 193

### Vacuum Compatible Motion Control

Almost all our products can be produced as vacuum compatible modification. Please contact us for modifications.

### Drive Details

<table>
<thead>
<tr>
<th>4mm Pitch Ball screw</th>
<th>Load Capacity</th>
<th>X Axis</th>
<th>Z Axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCMTS150-100-2</td>
<td>50</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>RCMTS150-150-2</td>
<td>50</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>RCMTS150-200-2</td>
<td>50</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>RCMTS150-300-2</td>
<td>45</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>RCMTS150-500-2</td>
<td>45</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>RCMTS150-750-2</td>
<td>45</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4mm Pitch Ball screw with Magnetic brake</th>
<th>Load Capacity</th>
<th>X Axis</th>
<th>Z Axis</th>
<th>Travel (mm)</th>
<th>Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCMTS150-100-B</td>
<td>90</td>
<td>70</td>
<td>100</td>
<td>330</td>
<td></td>
</tr>
<tr>
<td>RCMTS150-150-B</td>
<td>90</td>
<td>70</td>
<td>150</td>
<td>380</td>
<td></td>
</tr>
<tr>
<td>RCMTS150-200-B</td>
<td>86</td>
<td>62</td>
<td>200</td>
<td>430</td>
<td></td>
</tr>
<tr>
<td>RCMTS150-300-B</td>
<td>85</td>
<td>60</td>
<td>300</td>
<td>480</td>
<td></td>
</tr>
<tr>
<td>RCMTS150-500-B</td>
<td>80</td>
<td>55</td>
<td>500</td>
<td>790</td>
<td></td>
</tr>
<tr>
<td>RCMTS150-750-B</td>
<td>80</td>
<td>50</td>
<td>750</td>
<td>1070</td>
<td></td>
</tr>
</tbody>
</table>

### Quality Control

We have a state of the art laboratory for quality control and inspection. We have established a fail safe inspection procedure to make sure of the quality standard of our products before shipment.

**Angle Brackets**: It is used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.

**Base Plates**: Base plates can be used for mounting translation stages to breadboards and tables conveniently.
Motorized Stages RCMTS-200 Series

RCMTS-200 series stages have 200 mm width and carriages (load bearing moving surfaces) have 200 mm x 200 mm size. Drive is by ball screw-stepper motor combination. Re-circulating type linear ways are used as guides (two linear ways per stage). These stages are available up to travel of 750 mm as standard products. For more traverse, please contact us.

**Z-axis:** In these stages, in vertical configuration, if the load is more than 15 kgs, the carriage may come down under gravity when power to the motor is switched off. This is when ball screw is directly attached to the stepper motor. If the load to be lifted is more than 15 kgs, it is advisable to use our Z axis stages with a gear box (1:6 ratio) in between motor and ball screw. Though this reduces speed in Z axis, load capacity increases considerably. Please see the tables and chart below for details.

### Drive Details

**4mm Pitch Ball screw With Magnetic brake**

- **Positioning Accuracy:** 0.01 mm
- **Repeatability:** 0.01 mm
- **Resolution:** 0.00125 mm (in Micro Step Mode)
- **Speed:** 16 mm/sec (4RPS)
- **Feature:** Magnetic break helps stages carriage from sudden falling while loading heavy load in 2 axis

<table>
<thead>
<tr>
<th>4mm Pitch Ball screw</th>
<th>Load Capacity</th>
<th>4mm Pitch Ball screw with Magnetic brake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model No</td>
<td>X Axis (Kg)</td>
<td>Z Axis (Kg)</td>
</tr>
<tr>
<td>RCMTS200-100-2</td>
<td>100</td>
<td>15</td>
</tr>
<tr>
<td>RCMTS200-200-2</td>
<td>100</td>
<td>15</td>
</tr>
<tr>
<td>RCMTS200-300-2</td>
<td>100</td>
<td>15</td>
</tr>
<tr>
<td>RCMTS200-500-2</td>
<td>95</td>
<td>15</td>
</tr>
<tr>
<td>RCMTS200-750-2</td>
<td>90</td>
<td>15</td>
</tr>
</tbody>
</table>

**Accessories**

- **Vertical Bracket:** VAB-RCMTS200-100
- **Horizontal Bracket:** HAB-RCMTS-150
- **Base Plate:** BP-RCMTS200-100

Controller sold separately. Please refer page 193.

---

**Motorized Stages RCMTS-200 Series**

- **Straight line Accuracy:** +/-30 Micron over 300mm travel
- **Drive:** Precision lead screw
- **Construction:** Aluminum alloy B51S
- **Finish:** Black anodized
- **Tapped Holes on Carriage:** M4 tapped holes
- **Mounting Holes on the base:** M6 tap and M4 CBR
- **Design:** Modular type - Multi axis
- **Travel:** 100 to 750 mm
- **Carriage Size:** 200mm x 200mm
- **Load Capacity:** Up to 150 kg vertical
**Motorized Stages RCMTS-250 Series**

Carriages (load bearing surface of the stage which moves) of RCMTS-250 stages have 250 mm x 250 mm size. Standard models are available for up to 750 mm traverse. There are two linear guideways for each axis and these are re-circulating type with balls. Drive is by ball screw-stepper motor combination. Servo motors can also be made available for specific applications where speed requirements are not possible with steppers.

**Z-axis:** In these stages, in vertical configuration, if the load is more than 15 kgs, the carriage may come down under gravity when power to the motor is switched off. This is when ball screw is directly attached to the stepper motor. If the load to be lifted is more than 15 kgs, it is advisable to use our Z axis stages with a gear box (1:6 ratio) in between motor and ball screw. Though this reduce speed in Z axis, load capacity increases considerably. Please see the tables and chart below for details.

- **Straight line Accuracy**: +/-30 Micron over 300mm travel
- **Drive**: Precision lead screw
- **Construction**: Aluminium alloy B51S, Black anodized finish
- **Tapped Holes on Carriage**: M4 tapped holes
- **Mounting Holes on the base**: M6 tap and M4 CBR
- **Design**: Modular type - multi axis
- **Travel**: 100 to 1000 mm
- **Carriage Size**: 250x250mm
- **Load Capacity**: Up to 150 kg vertical

### Drive Details

**4mm Pitch Ball screw With Magnetic break**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Load Capacity</th>
<th>X Axis</th>
<th>Z Axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCMTS250-100-2</td>
<td>100 kg</td>
<td>15 kg</td>
<td></td>
</tr>
<tr>
<td>RCMTS250-200-2</td>
<td>100 kg</td>
<td>15 kg</td>
<td></td>
</tr>
<tr>
<td>RCMTS250-250-2</td>
<td>100 kg</td>
<td>15 kg</td>
<td></td>
</tr>
<tr>
<td>RCMTS250-300-2</td>
<td>100 kg</td>
<td>15 kg</td>
<td></td>
</tr>
<tr>
<td>RCMTS250-500-2</td>
<td>95 kg</td>
<td>15 kg</td>
<td></td>
</tr>
<tr>
<td>RCMTS250-750-2</td>
<td>90 kg</td>
<td>15 kg</td>
<td></td>
</tr>
<tr>
<td>RCMTS250-1000-2</td>
<td>90 kg</td>
<td>15 kg</td>
<td></td>
</tr>
</tbody>
</table>

- **Positioning Accuracy**: 0.01mm
- **Repeatability**: 0.01mm
- **Resolution**: 0.00125 (in Micro Step Mode)
- **Speed**: 16mm/sec (4RPS)

**Feature**: Magnetic break helps stages carriage from sudden falling while loading heavy load in Z axis.

### 4mm Pitch Ball Screw

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Load Capacity</th>
<th>X Axis</th>
<th>Z Axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCMTS250-100-B</td>
<td>150 kg</td>
<td>120 kg</td>
<td></td>
</tr>
<tr>
<td>RCMTS250-200-B</td>
<td>150 kg</td>
<td>120 kg</td>
<td></td>
</tr>
<tr>
<td>RCMTS250-250-B</td>
<td>150 kg</td>
<td>120 kg</td>
<td></td>
</tr>
<tr>
<td>RCMTS250-300-B</td>
<td>150 kg</td>
<td>115 kg</td>
<td></td>
</tr>
<tr>
<td>RCMTS250-500-B</td>
<td>140 kg</td>
<td>90 kg</td>
<td></td>
</tr>
<tr>
<td>RCMTS250-750-B</td>
<td>135 kg</td>
<td>90 kg</td>
<td></td>
</tr>
<tr>
<td>RCMTS250-1000-B</td>
<td>135 kg</td>
<td>85 kg</td>
<td></td>
</tr>
</tbody>
</table>

- **Positioning Accuracy**: 0.02mm
- **Repeatability**: 0.01mm
- **Resolution**: 0.00125 (in Micro Step Mode)
- **Speed**: 16mm/sec (4RPS)

**Angle Brackets**: It is used to transform horizontal translators to vertical ones. Horizontally fixed height platforms can be constructed by combining two angle brackets.

**Base plates**: Base plates can be used for mounting translation stages to breadboards and tables conveniently.

**Custom Miniature Motorized Positioners**

- **45x45mm carriage size**
- **40x40mm motorized translation stage**

**Accessories**

<table>
<thead>
<tr>
<th>Vertical Bracket</th>
<th>Horizontal Bracket</th>
<th>Base Plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAB-RCMTS250-100</td>
<td>BP-RCMTS250-100</td>
<td>BP-RCMTS250-100</td>
</tr>
<tr>
<td>VAB-RCMTS250-200</td>
<td>BP-RCMTS250-200</td>
<td>BP-RCMTS250-200</td>
</tr>
<tr>
<td>VAB-RCMTS250-250</td>
<td>BP-RCMTS250-250</td>
<td>BP-RCMTS250-250</td>
</tr>
<tr>
<td>VAB-RCMTS250-300</td>
<td>BP-RCMTS250-300</td>
<td>BP-RCMTS250-300</td>
</tr>
<tr>
<td>VAB-RCMTS250-500</td>
<td>BP-RCMTS250-500</td>
<td>BP-RCMTS250-500</td>
</tr>
<tr>
<td>VAB-RCMTS250-750</td>
<td>BP-RCMTS250-750</td>
<td>BP-RCMTS250-750</td>
</tr>
<tr>
<td>VAB-RCMTS250-1000</td>
<td>BP-RCMTS250-1000</td>
<td>BP-RCMTS250-1000</td>
</tr>
</tbody>
</table>
XY MOVING PLATFORM (Motorized)

MXYTS series motorized stages are manufactured in five different sizes for general purpose positioning and measurement applications. The stages are supplied with or without mounting holes as per requirement. Drive leadscrew along with motor is mounted by the side of the stage. One end of the lead screw is attached to a rotary knob for manual adjustments, whenever required. Limit switches are fixed at both extremes for home and far end location. Crossed roller based linear guides are used for achieving precision linear motion. The guide ways are factory pre-loaded to eliminate play and wobble. Coefficient of friction is less than 0.003. Standard stages are constructed in aluminium alloy and finished by black anodizing.

- 20kg load capacity
- Straight line accuracy: 0.010mm
- Repeatability: 0.002mm
- Precision lead screw
- M6 mounting holes
- Base mountable

Applications
- XY moving platforms
- XY dispensing units
- Inspection microscopes
- Hardness testing
- Induction hardening
- Measuring microscopes

For manual model refer page: 177

Micro Position Control & Software

Holmarc manufactures control electronics for all our stages. We have state of the art electronics and software development lab for position and motion control products. Apart from standard products, we can develop custom solutions for drive electronics as well.

Holmarc provides services for integration of stages and position controller with other instruments and equipments.

Position controller sold separately.
Please refer Control electronics & software Page No: 193

Encoder

Controllers are available in both open-loop and closed-loop modes. Open loop controllers are used to drive translation stages without encoders. Closed loop controllers can be used to drive translation stages with encoders. Digital readout for manual stages with encoder is also available.

For more please contact us

HOLMARC Optomechatronics Pvt. Ltd
Ph.No. 91-4842540075
Fax: 91-4842540882
sales@holmarc.com

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Carriage Size</th>
<th>Travel X&amp;Y</th>
<th>Height</th>
<th>L</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>MXYTS150150</td>
<td>150x150</td>
<td>50,50</td>
<td>65</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>MXYTS170170</td>
<td>170x170</td>
<td>100,100</td>
<td>65</td>
<td>170</td>
<td>170</td>
</tr>
<tr>
<td>MXYTS270170</td>
<td>270x170</td>
<td>200,100</td>
<td>75</td>
<td>270</td>
<td>170</td>
</tr>
<tr>
<td>MXYTS270240</td>
<td>270x240</td>
<td>200,170</td>
<td>75</td>
<td>270</td>
<td>240</td>
</tr>
<tr>
<td>MXYTS370240</td>
<td>370x240</td>
<td>300,170</td>
<td>75</td>
<td>370</td>
<td>240</td>
</tr>
</tbody>
</table>

All dimensions are in “mm”
MXYTSW Series XY Stage (Motorized)

MXYTSW Series stages are provided with a rectangular through hole at the center. This holes can either be used as access hole for keeping other instruments or for illuminating objects from underneath. Drive lead screw along with motor is mounted by the side of the stage. One end of the lead screw is attached to a rotary knob for manual adjustments, whenever required. Limit switches are fixed at both extremes for home and far end location.

Crossed roller based linear guides are used for achieving precision linear motion. The guide ways are factory pre-loaded to eliminate play and wobble. Coefficient of friction is less than 0.003. Standard stages are constructed in aluminium alloy with black anodized finish.

- Stepper motor driven
- Precision lead screw
- Straight line accuracy : 0.010mm
- Repeatability : 0.002mm
- Black anodized finish
- M6 Mounting Holes

>> Applications
- Profile projector
- Measuring microscope
- Inspection microscope
- Dispensing unit
- Automated pipetting system

Vacuum Compatible Motion Control
All our products can be procured as vacuum compatible modification. Please contact us for modifications.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Carriage Size</th>
<th>Aperture Size</th>
<th>Travel X&amp;Y</th>
<th>L</th>
<th>W</th>
<th>L1</th>
<th>W1</th>
</tr>
</thead>
<tbody>
<tr>
<td>MXYTSW175175</td>
<td>175 x 175</td>
<td>75 x 75</td>
<td>50,50</td>
<td>65</td>
<td>65</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>MXYTSW225225</td>
<td>225 x 225</td>
<td>125 x 125</td>
<td>100,100</td>
<td>65</td>
<td>65</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>MXYTSW325225</td>
<td>325 x 225</td>
<td>225 x 125</td>
<td>200,100</td>
<td>75</td>
<td>75</td>
<td>225</td>
<td>225</td>
</tr>
<tr>
<td>MXYTSW325295</td>
<td>325 x 295</td>
<td>225 x 195</td>
<td>300,170</td>
<td>75</td>
<td>75</td>
<td>225</td>
<td>195</td>
</tr>
<tr>
<td>MXYTSW425295</td>
<td>425 x 295</td>
<td>325 x 195</td>
<td>400,170</td>
<td>75</td>
<td>75</td>
<td>225</td>
<td>195</td>
</tr>
</tbody>
</table>

All dimensions are in “mm”

One of the application of MXYTSW Series motorized stage is automated pipetting system in which sample tray is connected to the motorized stage. These XY stages are fitted with a drive mechanism that provides controlled, precise positioning along X and Y axis. Pre programmed position control unit allows accurate positioning of sample compartment below the pipetting system.

Make your Choice !!!

Linear encoder for digital readout, Platforms are available up to 500x500 mm size, Materials other than aluminium are also available.

Glass plates are available for XYSW series XY translation stages

<table>
<thead>
<tr>
<th>Glass Plate Model</th>
<th>Size</th>
<th>Compatible Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>GI7575</td>
<td>95 x 95</td>
<td>XYSW175175</td>
</tr>
<tr>
<td>GI125125</td>
<td>145 x 145</td>
<td>XYSW225225</td>
</tr>
<tr>
<td>GI225125</td>
<td>245 x 145</td>
<td>XYSW325225</td>
</tr>
<tr>
<td>GI225195</td>
<td>245 x 215</td>
<td>XYSW325295</td>
</tr>
<tr>
<td>GI325195</td>
<td>345 x 215</td>
<td>XYSW425295</td>
</tr>
</tbody>
</table>
Rotary Stages

Holmarc manufactures goniometers and rotation stages in variety of standard designs for wide range of applications. Size of these stages can range from 50 mm to 500 mm in diameter. Construction material can be aluminium alloy, mild steel, stainless steel or brass depending on the application. There are motorized and manual stages to choose from in various designs. This chapter describes various standard models in detail.

Vacuum Compatible Motion Control
Almost all our products can be produced as vacuum compatible modification. Please contact us for modifications.

Selecting precision stages & controls
HOLMARC’s experienced support engineers will be glad to help you determine which product suits your needs. Call us at +91 484 2540075 or send us a mail to sales@holmarc.com.
Goniometer-Worm Gear Drive

GM Series Goniometers - Single Axis

Goniometers are used to rotate an object or sample about a point in space. Holmarc's GM series goniometer allows adjustment of ±10° around a defined optical axis by means of a precision worm gear drive and V grooved guide ways. These GM series goniometers are modular for building multi axis configurations.

- Travel: ±10°
- Readout: 1°
- Guide way: Precision ball guideway
- Construction: Aluminium alloy B61S / SS
- Finish: Black anodized (aluminium)
- Tapped Holes on Carriage: M3/M4/M6 tapped holes
- Mounting Holes on the base: M3/M4/M6 CBR
- Design: Modular type
- Configuration: Multi axis configurable
- Travel: ±10°
- Carriage Sizes: 35x35 mm, 50x50mm & 65x65mm
- Load Capacity: 1-5kg vertical on X axis
- Drive: Precision worm gear

<table>
<thead>
<tr>
<th>Model No:</th>
<th>Center Height</th>
<th>Load Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumium</td>
<td>Stainless Steel</td>
<td>Kg</td>
</tr>
<tr>
<td>GM-35-37</td>
<td>SSGM-35-37</td>
<td>37mm</td>
</tr>
<tr>
<td>GM-35-55</td>
<td>SSGM-35-55</td>
<td>55mm</td>
</tr>
<tr>
<td>GM-50-43</td>
<td>SSGM-50-43</td>
<td>43mm</td>
</tr>
<tr>
<td>GM-50-63</td>
<td>SSGM-50-63</td>
<td>63mm</td>
</tr>
<tr>
<td>GM-65-50</td>
<td>SSGM-65-50</td>
<td>50mm</td>
</tr>
<tr>
<td>GM-65-75</td>
<td>SSGM-65-75</td>
<td>75mm</td>
</tr>
</tbody>
</table>

Goniometers are used to rotate an object or sample about a point in space.
Combi Goniometer-Worm Gear Drive

GM Series Goniometers - Dual Axis

The CGM series Combi-Goniometer is a two axis positioner. It enables precise positioning along pitch and roll direction with the help of a precision worm gear drive and V grooved guide ways. It has ± 10° positioning range around a defined optical point as it provides adjustment around an axis with defined optical height.

Model No (Material) | Center Height (X) | Load Capacity (Kg)
--- | --- | ---
CGM-35-37 (Aluminium) | 37mm | 1
SSCGM-35-37 (Stainless Steel) | 37mm | 1
CGM-50-43 (Aluminium) | 43mm | 2
SSCGM-50-43 (Stainless Steel) | 43mm | 2
CGM-65-50 (Aluminium) | 50mm | 5
SSCGM-65-50 (Stainless Steel) | 50mm | 5

- **Travel**: ± 10°
- **Readout**: 1°
- **Guide way**: Precision ball guideway
- **Construction**: Aluminium alloy B51S / SS
- **Finish**: Black anodized (aluminium)
- **Tapped Holes on Carriage**: M3/M4/M6 tapped holes
- **Mounting Holes on the base**: M3/M4/M6 CBR
- **Design**: Modular type
- **Configuration**: Multi axis configurable
- **Feature**: Common axial point in XY configuration
- **Carriage Sizes**: 35x35 mm, 50x50mm & 65x65mm
- **Load Capacity**: 1-5kg vertical on X axis
- **Drive**: Precision worm gear

Fig. Goniometer along with RS-50 Series rotation stage
Rotation Stages

This RS Series precision rotary stage allows unlimited coarse movement and a limited +/- 4 degree azimuth at resolutions of 0.1 degree. It is suitable for horizontal and vertical rotary axes. Pre-loaded rolling contact bearings are used to minimize friction and to eliminate play. M6 clearance holes are provided at four corners to mount the stage directly to breadboards. For mounting to linear stages and other systems, adapter plates with sufficient tapped holes and C bored holes are used.

Vacuum Compatible Motion Control
Almost all our products can be produced as vacuum compatible modification. Please contact us for modifications.

<table>
<thead>
<tr>
<th>Model No: Material</th>
<th>Model No: Material</th>
<th>Load Capacity Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-25 Aluminum</td>
<td>SS-RS-25 SS</td>
<td>1</td>
</tr>
<tr>
<td>RS-35 Aluminum</td>
<td>SS-RS-35 SS</td>
<td>1</td>
</tr>
<tr>
<td>RS-50 Aluminum</td>
<td>SS-RS-50 SS</td>
<td>3</td>
</tr>
<tr>
<td>RS-75 Aluminum</td>
<td>SS-RS-75 SS</td>
<td>8</td>
</tr>
<tr>
<td>RS-100 Aluminum</td>
<td>SS-RS-100 SS</td>
<td>15</td>
</tr>
<tr>
<td>RS-125 Aluminum</td>
<td>SS-RS-125 SS</td>
<td>35</td>
</tr>
<tr>
<td>RS-150 Aluminum</td>
<td>SS-RS-150 SS</td>
<td>45</td>
</tr>
</tbody>
</table>

- Readout: 0.1°
- Construction: Aluminium alloy B51S / stainless steel
- Finish: Black anodized(Al)/Ground finish(SS)
- Tapped holes on top disc: M4/M6 tapped holes
- Mounting holes on the base: M4/M6 CBR
- Design: Modular
- Coarse travel: 360°
- Fine travel: ± 4°
- Top disc size: Diameter 25mm - 150mm
- Load capacity: 45kg vertical
- Drive: Micrometer

RS-25 or SS-RS-25
RS-35 or SS-RS-35
RS-50 or SS-RS-50
RS-75 or SS-RS-75
RS-100 or SS-RS-100
RS-125 or SS-RS-125
RS-150 or SS-RS-150
Rotation Stage with through hole at the center

This RSC Series precision rotary stage allows unlimited coarse movement and limited +/- 4 degree azimuth at resolutions of 0.1 degree. It is suitable for horizontal and vertical rotary axes. Preloaded rolling contact bearings are used to minimize friction and to eliminate play. M6 clearance holes are provided at four corners to mount the stage directly to breadboards. For mounting to linear stages and other systems, adapter plates with sufficient M6 tapped holes and C'bored holes can be used. The stage is constructed out of aluminium alloy with black anodized finish.

Through-hole or M16x1 threaded hole in the center allows the stage to be used in an imaging application that requires illumination from underneath the sample. Holmarc provides custom mounting pattern as well possible for easy integration with other devices.

<table>
<thead>
<tr>
<th>Model No:</th>
<th>Load Capacity</th>
<th>Bore Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium</td>
<td>Stainless Steel</td>
<td></td>
</tr>
<tr>
<td>RSC-50</td>
<td>SS-RSC-50</td>
<td>2kg</td>
</tr>
<tr>
<td>RSC-50T</td>
<td>SS-RSC-50T</td>
<td>2kg</td>
</tr>
<tr>
<td>RSC-75</td>
<td>SS-RSC-75</td>
<td>5kg</td>
</tr>
<tr>
<td>RSC-75T</td>
<td>SS-RSC-75T</td>
<td>5kg</td>
</tr>
<tr>
<td>RSC-100</td>
<td>SS-RSC-100</td>
<td>8kg</td>
</tr>
<tr>
<td>RSC-125</td>
<td>SS-RSC-125</td>
<td>25kg</td>
</tr>
<tr>
<td>RSC-150</td>
<td>SS-RSC-150</td>
<td>25kg</td>
</tr>
</tbody>
</table>

Readout: 0.1°
Construction: Aluminium alloy B51S / Stainless steel
Finish: Black anodized (Al) / Ground finish (SS)
Tapped holes on top disc: M4/M6 tapped holes
Mounting holes on the base: M4/M6 CBR
Design: Modular
Coarse Travel: 360°
Fine Travel: ± 4°
Bore Type: M16x1 thread or 25-100mm through Bore
Top Disc Sizes: 50mm -150mm Dia.
Load Capacity: 25kg vertical
Drive: Micrometer
Rotation Stages - Continuous Rotation

**WRS series Rotation Stages**
In these stages, top rotating surface is plain without any center through hole. There are tapped holes provided on this top surface for mounting components and devices. These stages are also available either in aluminium alloy or stainless steel.

**WRSC series Rotation Stages**
In these rotation stages, a through hole is provided at the center. This through hole can be utilized for mounting components or taking out cables through the center. These stages are available in aluminium alloy and stainless steel. Please refer to table describing models for details.

**WRSC Series Rotation Stage**
- M6 tapped holes
- Precision worm gear drive
- Minimum back lash
- Angular resolution-0.1°
- 360° continuous motion
- Black anodized finish

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Load Capacity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRS-50</td>
<td>12</td>
</tr>
<tr>
<td>WRS-75</td>
<td>25</td>
</tr>
<tr>
<td>WRS-100</td>
<td>80</td>
</tr>
<tr>
<td>WRS-150</td>
<td>125</td>
</tr>
<tr>
<td>WRS-200</td>
<td>150</td>
</tr>
<tr>
<td>WRS-300</td>
<td>180</td>
</tr>
<tr>
<td>WRSC-100</td>
<td>30</td>
</tr>
<tr>
<td>WRSC-150</td>
<td>80</td>
</tr>
<tr>
<td>WRSC-200</td>
<td>150</td>
</tr>
<tr>
<td>WRSC-300</td>
<td>300</td>
</tr>
</tbody>
</table>
Holmarc’s goniometers use rolling contact guides with balls rolling on precision curved 'V' grooves for friction less and stick-slip free movements. Pre-loading of the ball guides ensure play less positioning and long term stability. Drive is achieved by a worm and gear mechanism. Graduations are marked on one side of the stage for measurements and repeatable positioning. Construction material of the goniometer is chosen as aluminium alloy for keeping the self weight of the device as minimum as possible. Black anodized finish is given to make the goniometer optics lab compatible.

Holmarc makes goniometers for custom applications as well. Please contact our sales engineers for more details.

<table>
<thead>
<tr>
<th>Model No:</th>
<th>Travel</th>
<th>Central Height</th>
<th>Load Capacity</th>
<th>Base Plate Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGM-35-55</td>
<td>+/- 5°</td>
<td>55mm</td>
<td>1 kg</td>
<td>BP-MGM-35</td>
</tr>
<tr>
<td>MGM-50-63</td>
<td>+/- 7.5°</td>
<td>63mm</td>
<td>2 kg</td>
<td>BP-MGM-63</td>
</tr>
<tr>
<td>MGM-65-75</td>
<td>+/- 10°</td>
<td>75mm</td>
<td>6 kg</td>
<td>BP-MGM-75</td>
</tr>
<tr>
<td>MGM 90-100</td>
<td>+/- 15°</td>
<td>100mm</td>
<td>10 kg</td>
<td>BP-MGM-90</td>
</tr>
</tbody>
</table>

Model No: MGM-35

Model No: MGM-50

Model No: MGM-65

Model No: MGM-90
Sine Drive Angular Stage **Sin216R** Series

Precision High-Performance Motorized Goniometer / Rotation Stage

The Sin216R series are ultra-precision computer-controlled angular stages developed for accurate positioning applications. Sine-bar mechanism is employed in this device for higher resolution angular positioning. A precision linear translation stage with a high resolution optical encoder is used in the mechanism for achieving angular tilt of the sine bar. The absolute encoder allows instant initialization at the time of power up and eliminates the need for a home cycle. The stepper motor turns the drive lead screw which moves the drive block which in turn pushes the sine bar to rotate the platform, providing stable and excellent performances in angular positioning.

The principle of sine drive mechanism is shown schematically in Fig. When a lever of length \( L \) is rotated through an angle \( \theta \) about one end, the other end moves through a distance \( X = L \sin \theta \) perpendicular to the initial position of the lever. Standard metric M4 mounting holes patterns are provided on the top plate of these stages. Top plate can be used to position manually large optical and other components through with accuracy of \( 1^\circ \). Custom mounting patterns can be provided for easy integration with other systems/components.

The Sin216R series stages are perfect for rotary positioner testing, laser pointing, optical calibration systems and metrology systems. Other specific applications include optical encoder accuracy testing, missile seeker testing, photonic component alignment and precision wafer inspection.

Sine drive rotation stages are also offered in high-vacuum and ultra-high-vacuum configurations. Please contact us for details.

<table>
<thead>
<tr>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle Calibration</td>
</tr>
<tr>
<td>Laser Nano Scanning</td>
</tr>
<tr>
<td>X-Ray Mirror Deflection</td>
</tr>
<tr>
<td>Nano Probe Positioning</td>
</tr>
</tbody>
</table>

Talk to our engineers, we will help you to select appropriate device, for your application in precision rotary motion, from the drive and bearing system to the encoder and motion controller.

### Sin216R Rotation Stages for Industry and Research

High Precision Mechanical Arc Sec Positioning System

#### Model Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>HO-Sin216R</th>
<th>HO-Sin216R8</th>
<th>HO-Sin216R4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angular Measurement</td>
<td>Sin bar</td>
<td>Sin bar</td>
<td>Sin bar</td>
</tr>
<tr>
<td>Travel Range</td>
<td>16° (±8°)</td>
<td>8° (±4°)</td>
<td>4° (±2°)</td>
</tr>
<tr>
<td>Platform Size</td>
<td>150mm Dia</td>
<td>150mm Dia</td>
<td>150mm Dia</td>
</tr>
<tr>
<td>Rotation Axis Height</td>
<td>80mm</td>
<td>80mm</td>
<td>80mm</td>
</tr>
<tr>
<td>Speed max. (Degree/sec.)</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Stepper Resolution</td>
<td>0.125 Arc Sec (0.00003477 Degree)</td>
<td>0.0625 Arc Sec (0.0000174 Degree)</td>
<td>0.0625 Arc Sec (0.0000087 Degree)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>Arc Sec (0.0002778 Degree)</td>
<td>0.5 Arc Sec (0.000138 Degree)</td>
<td>0.25 Arc Sec (0.000069 Degree)</td>
</tr>
<tr>
<td>Repeatability</td>
<td>1 Arc Sec (0.0002778 Degree)</td>
<td>0.5 Arc Sec (0.000138 Degree)</td>
<td>0.25 Arc Sec (0.000069 Degree)</td>
</tr>
<tr>
<td>Tapped Holes on Carriage M6</td>
<td>M4</td>
<td>M4</td>
<td>M4</td>
</tr>
<tr>
<td>Interface</td>
<td>USB 2.0 &amp; RS 232</td>
<td>USB 2.0 &amp; RS 232</td>
<td>USB 2.0 &amp; RS 232</td>
</tr>
<tr>
<td>Size (LxWxH)</td>
<td>310x250x80mm</td>
<td>520x250x85mm</td>
<td>750x250x90mm</td>
</tr>
</tbody>
</table>
MRSC Series Motorized Rotation Stage

These stages are suitable for applications where positioning needs to be automated. The drive mechanism consists of worm and gear assembly perfectly matched to minimize play and backlash. There is an access hole through the center of the stage for illumination from underneath or for similar purposes.

Radial play is eliminated by the use of preloaded thrust bearings. Stepper motor is used as the electrical actuator and is connected to the worm. Shaft of the stepper motor is connected to a rotating knob for manual adjustments, whenever required. Top surface of the stage is provided with tapped holes and base with counter bored holes for mounting. Standard stages are manufactured in aluminum alloy and finished by black anodizing. The stage can be manufactured in stainless steel and mild steel with the required finish.

- 360° rotatable
- Fine rotation <1 arc min.
- Up to 500 kgs load capacity
- Double bearing design
- Precision worm gears
- M6/M8 mounting holes
- M6/M8/M12 C'bored holes
- Aluminium / steel material

Pre loaded rolling contact bearings are used to minimize friction and to eliminate play.
Driven by precision worm gear assembly.
Graduated rotary scales are provided for visual reference of positions.
Can be fitted to our motorized linear stages for multi axis configurations.
Custom stages can be constructed out of aluminium, steel and SS depending on the application.
Custom mounting patterns are available for easy integration with other devices.

**Applications**
- Scattering photometer
- Probe positioning

### Specifications

<table>
<thead>
<tr>
<th>Model No</th>
<th>Top Disc Dia (mm)</th>
<th>Through Hole Dia (mm)</th>
<th>Load capacity (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRSC 50</td>
<td>50</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>MRSC 75</td>
<td>75</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>MRSC 100</td>
<td>100</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>MRSC 150</td>
<td>150</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>MRSC 200</td>
<td>200</td>
<td>70</td>
<td>150</td>
</tr>
<tr>
<td>MRSC 300</td>
<td>300</td>
<td>90</td>
<td>200</td>
</tr>
<tr>
<td>MRSC 500</td>
<td>500</td>
<td>125</td>
<td>300</td>
</tr>
</tbody>
</table>

MRSC Series Motorized Rotation Stage with XY Positioner

**Application Idea**

MRSC series rotation stage can be assembled along with XY stage. It can be used to position the rotation stage precisely in X and Y directions.

Ball Base Mounting Platform

This base provides 360 degree rotation about its axis and swings 90 degree to the side. The device can be locked at any desired position.
MRS Series  Motorized Rotation Stage

MRS series motorized rotation stages are designed and manufactured for automated positioning applications. Since perfectly matched worm gear assembly is used as drive mechanism, play and backlash is minimal in these stages. The top rotating part which is plane in this case, is provided with rotary graduations on the periphery throughout 360 degrees.

Radial play is eliminated by the use of preloaded thrust bearings with balls as rolling elements. Stepper motor is used as the electrical actuator and is connected to the worm. Shaft of the stepper motor is connected to a rotating knob as well for manual adjustments, whenever required. Top surface of the stage is provided with tapped holes and base with counter bored holes for mounting. Standard stages are manufactured in aluminium alloy and finished by black anodizing. The stage can be manufactured in stainless steel and mild steel as well with required finish.

Vacuum compatible rotation stages are available for special applications. These stages are motor driven, use vacuum compatible grease and epoxies and are non-anodized. These rotation stages are being used successfully in vacuum applications down to 10^-6 Torr.

>> Applications
- Radar Positioning
- Probe Positioning, etc

Miniature vacuum compatible rotation stage
**MICRO POSITION CONTROL & SOFTWARE**

Fully programmable line of stepper motor controllers and motor drivers are available for using with positioning systems. Micro position controller and software are sold separately. Please refer page 193 for more information.

- 360° rotatable
- Fine rotation <1 arc min.
- Up to 500 kgs load capacity
- Double bearing design
- Precision worm gears
- M6/M8 mounting holes
- M6/M8/M12 CBR holes
- Material: aluminium / steel

Pre loaded rolling contact bearings are used to minimize friction and to eliminate play.

Driven by precision worm gear assembly.

Graduated rotary scales are provided for position reference.

Can be fitted to our motorized linear stages for multi axis configurations.

Custom stages can be constructed out of aluminium, steel and SS depending on the application.

Holmarc can provide custom mounting pattern on request.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>D (mm)</th>
<th>W (mm)</th>
<th>H (mm)</th>
<th>Load Capacity (kg)</th>
<th>Degree Rotation</th>
<th>Half Step Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRS 50</td>
<td>50</td>
<td>65</td>
<td>45</td>
<td>6</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>MRS 75</td>
<td>75</td>
<td>90</td>
<td>45</td>
<td>9</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>MRS 100</td>
<td>100</td>
<td>150</td>
<td>50</td>
<td>50</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>MRS 150</td>
<td>150</td>
<td>175</td>
<td>50</td>
<td>150</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>MRS 200</td>
<td>200</td>
<td>250</td>
<td>60</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
</tbody>
</table>

All dimensions are in "mm"
MRSH Series Motorized Heavy Duty Rotation Stages

These are heavy duty stages which can take axial loads beyond 200 kg’s. Perfectly matched worm and gear assembly to minimize play and back-lash. The top rotating part which is plane in this case, is provided with rotary graduations on the periphery throughout 360 degree.

Radial play is eliminated by the use of preloaded thrust bearings using balls as rolling elements. Stepper motor which is connected to the worm is used as an electrical actuator. Shaft of the stepper motor is connected to the rotating knob as well for manual adjustments, when ever required. Top surface of the stage is provided with tapped holes and base with counter bored holes for mounting. Standard stages are manufactured in aluminium alloy with black anodizing finish. The stage can be manufactured in stainless steel and mild steel as well with the required finish.

- 360 rotatable
- Fine rotation <1 arc min.
- Up to 300 kgs load capacity
- Double bearing design
- Precision worm gears
- M6/M8 mounting holes
- M6/M8/M12 C’bored holes
- Material: Aluminium / Steel

>> Applications
- Radar positioning
- Probe positioning
- Sun tracking radiometer
- Antenna positioning etc.

To meet the most critical positioning demands, rotary encoder is used. It converts the angular position of a shaft to digital code, making it an angle transducer.

Specifications

<table>
<thead>
<tr>
<th>Material</th>
<th>Aluminium / SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn table dimension</td>
<td>up to 500X500mm.</td>
</tr>
<tr>
<td>Load Capacity</td>
<td>up to 300 Kg.</td>
</tr>
<tr>
<td>Maximum Speed</td>
<td>10 degree/sec</td>
</tr>
<tr>
<td>Traverse</td>
<td>360°</td>
</tr>
<tr>
<td>Actuator</td>
<td>Stepper motor</td>
</tr>
<tr>
<td>Control Type</td>
<td>Closed loop using rotary encoder.</td>
</tr>
<tr>
<td>Encoder resolution</td>
<td>200 ppr.</td>
</tr>
</tbody>
</table>

Other Features include 50 mm grid of M8 tapped holes, Stainless steel inserts, Black anodized finish.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>D</th>
<th>W</th>
<th>H</th>
<th>load Capacity</th>
<th>Degree / Rotation</th>
<th>Resolution Half step</th>
<th>Available micro stepping</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRSH 300</td>
<td>300mm</td>
<td>250mm</td>
<td>60mm</td>
<td>300kg</td>
<td>1.8°</td>
<td>0.0045°</td>
<td>1/8, 1/16, 1/256</td>
</tr>
<tr>
<td>MRSH 400</td>
<td>400mm</td>
<td>450mm</td>
<td>80mm</td>
<td>350kg</td>
<td>2.4°</td>
<td>0.006°</td>
<td></td>
</tr>
<tr>
<td>MRSH 500</td>
<td>500mm</td>
<td>500mm</td>
<td>80mm</td>
<td>400kg</td>
<td>2°</td>
<td>0.005°</td>
<td></td>
</tr>
</tbody>
</table>

Vacuum Compatible Linear Slides

- Available in special sizes and travels
- Custom hole pattern on carriage faces
- Balls / rollers
- Aluminum / stainless steel
- High accuracies

For more details please contact us

☎ 91-484 2540075

www.holmarc.com sales@holmarc.com
Holmarc’s extensive line of computer controlled motorized linear slides, miniature linear actuators, motorized rotary stages, motorized mirror mounts, goniometers and other devices, make automation of sub-micron positioning applications quick, easy, and affordable.

Our linear motion slides are time tested products, widely used for automation in quality control and manufacturing. There are hundreds of models of linear motion assemblies to choose from. We have micrometer and lead screw driven stages in single and multi-axes configurations in modular as well as standalone designs. These are specifically designed and manufactured for optics and laser related positioning. Measuring stages manufactured by Holmarc are OEM devices which are used by manufacturers of optical measuring devices like profile projectors and tool makers microscopes.

3 Axis Table

Size : 300X300mm
Load Capacity : 200Kg
X Axis
Travel : 100mm
Drive : Lead screw
Y Axis
Travel : 100mm
Drive : Lead screw
Z Axis
Travel : 75mm
Drive : Worm gear

For more details contact at sales@holmarc.com
3-Axis Precision Positioning System (XY & Independent Z) with Optional CNC Software

Motorized 3-Axis linear positioning system is a high precision positioning device can be used in industrial and scientific automated motion applications. The X, Y, and Z axes produce linear motion in three mutually orthogonal directions. Secondary linear axes & rotational axes can be provided optionally. A range of system configurations are possible and options including automated CNC operation. We also offer vacuum compatible and all steel construction motorized linear translation stages.

- Suitable for Micromachining applications
- Precision roller slides
- 100-200mm travel
- 5 micron positioning accuracy
- 0.625 micron resolution
- 2mm pitch backlash free lead screw and nut
- Optional CNC software
- Up to 50 kg load capacity
- Stepper motor for computer control movement
- Optional Servo motor control
- Controller with software for computer controlling
- Additional handheld unit or joysticks available as per request

<table>
<thead>
<tr>
<th>Model No</th>
<th>Travel Range X, Y, Z</th>
<th>Load Capacity X, Y &amp; Z</th>
<th>Resolution</th>
<th>Max Speed</th>
<th>Carriage Size X, Y &amp; Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>MXY-MZ-100</td>
<td>100mm</td>
<td>25KG &amp; 10KG</td>
<td>0.000625mm</td>
<td>8mm/sec</td>
<td>150x150mm</td>
</tr>
<tr>
<td>MXY-MZ-150</td>
<td>150mm</td>
<td>50KG &amp; 25KG</td>
<td>0.000625mm</td>
<td>8mm/sec</td>
<td>150x200mm</td>
</tr>
<tr>
<td>MXY-MZ-200</td>
<td>200mm</td>
<td>50KG &amp; 25KG</td>
<td>0.000625mm</td>
<td>8mm/sec</td>
<td>200x300mm</td>
</tr>
</tbody>
</table>

As a manufacturer of customized special stages, we are well-known for innovative solutions and delivering individual customer requirements. Provides a large variety of positioning stages, from single axis stepper motor stages, XY servo stages to complex 6-Axis systems.

http://www.holmarc.com/3_axis_precision_positioning_system.php
LONG TRAVEL POSITIONING STAGES

Multi-Axes Stage (Linear & Rotary Configuration)

Most of the linear and rotary stages manufactured by Holmarc are modular in design that these can be assembled with suitable angle brackets and adapter plates to obtain multi-axes stages. Three of the linear and rotary combination stages are described in this section.

XYZ Theta Motorized Stage (Model: HO-MXYZR-500)

In this model, theta stage is fixed to carriage of the Z stage with bracket so that top surface of the theta stage is horizontal. As shown in the photograph, one side of the theta stage is obstructed by Z axis. All linear stages are given bellows protection.

Specifications
- Travel X: 500mm
- Travel Y: 500mm
- Travel Z: 500mm
- Rotation: 360° Continuous rotation
- Load Capacity: 25kg
- Construction: Aluminium alloy B51S

Customization
We can customize these product to your needs. If you do not find suitable specifications for your application please contact us for custom solution.

XY Thuta Motorized Stage (Model: HO-MXYR-300)

As evident from the photograph, theta stage is placed on top of X-Y stages. All three axes are motorized, still hand knobs are given behind each motor for manual adjustments if required. X and Y stages have bellows protection. Top surface of theta stage is provided with tapped holes for mounting.

Specifications
- Travel X: 300mm
- Travel Y: 300mm
- Rotation: 360° Continuous rotation
- Load Capacity: 25 kg
- Construction: Aluminium alloy B51S
- Finish: Black anodized

XYZ Motorized Stage (Model: HO-MXYZ-250)

In this design, a long travel z stage is fixed on top of 250mm travel XY stage. 200x200mm area angle bracket is placed on the z stage for mounting components. All axes are motorized with stepper.

Specifications
- Travel X: 250mm
- Travel Y: 250mm
- Travel Z: 800mm
- Load Capacity: 25 kg
- Construction: Aluminium alloy
- Finish: Black anodized
XYZ Motorized Stage (Model: HO-MXYZ-HLTTS-750)

This stage has three axes movements, with X and Z having 750 mm traverse and Y axis with 250 mm traverse. Angle bracket is fixed to the Z stage with horizontal platform which can carry maximum load of 75 kgs.

Specifications
- X Axis Travel: 750 mm
- Y Axis Travel: 250 mm
- Z Axis Travel: 750 mm
- Carriage size: 150x150mm
- Bracket size: 300x150mm
- Load capacity: 75kg
- Lead screw pitch: 10 mm
- Drive: Motorized
- Base: base with caster wheel and leveling bolts

Customization
We can customize these products to your needs. If you do not find suitable specifications for your application, please contact us for a custom solution.

XYZ Motorized Translation Stage (Model: HO-XZ-HLTTS-750)

This model is a long travel two axes stage having 750 mm traverse in both X and Z axes and assemblies as shown in the picture. Angle bracket is fixed to the Z stage for carrying load which can be up to 50 kgs. Base with castor wheel and adjustable resting bolts shown in the picture is optional.

Specifications
- Travel X: 750mm
- Travel Z: 750mm
- Drive: Motorized
- Carriage size: 150x150mm
- Bracket size: 150x150mm
- Load capacity: 50kg
- Lead screw pitch: 10 mm
- Construction: Aluminium alloy B51S
- Base: base with caster wheel and leveling bolts

XY Theta Motorized Stage (Model: HO-XYR-HLTTS-500)

This XY theta stage is suitable for positioning large load which can be up to 350 kgs placed on to the top surface of theta stage with 460 mm diameter. Theta stage driven by worm gear assembly and stepper motor can rotate full 360 degree. X and Y stages are assembled on a shell structure to reduce overall weight of the assembly.

Specifications
- Travel X: 1150mm
- Travel Y: 750mm
- Theta Rotation: 360° Continuous
- Theta top size: 460mm
- Load Capacity: 350kg
- Lead screw pitch: 10mm
- Drive: Motorized
- Construction: Aluminium alloy B51S
- Total size: 1650x1250x286mm
XZ Motorized Translation Stage

Model: HO-XZ-HLTT-1200

This is a heavy duty two axes translation stage which provide 1200 mm traverse in both X and Z axes. It can position a load of 130 kgs. The stages are driven by ball screw-stepper motor combination. An electronic brake is provided for the Z axis to arrest the load in position when control electronics is switched off. X axis are provided with cable drag chain. The platform shown in the picture with castor wheels and leveling bolts is optional and customized as per the application requirements.

Specifications

- Travel X: 1200mm
- Travel Z: 1200mm
- Carriage size: 300x300mm
- Bracket size: 500x350mm
- Load capacity: 130 kg
- Lead screw pitch: 20 mm
- Drive: Motorized
- Construction: Aluminium alloy BS15
- Base: base with caster wheel and leveling bolt

Custom solutions that meet your needs

In addition to our standard products for research and industry, HOLMARC offer designing and developing custom-built stages and parts. A dedicated team of highly qualified engineers is ready to discuss your specific application and to design and produce the optimal solution for you.

Contact us with a first description of your needs and we will be happy to get back to you to discuss the project in depth.

Mailing Address
B.7., H.M.T Industrial Estate
H.M.T. PO, Kalamassery, Kochi
Kerala, India - 683 503

Phone Contacts 91-484-2540075
E-mail Contacts mail@holmarc.com

3 Axis Rotation/Position Platform

Designed for angular alignment of optical system. It provides ±30° angular adjustment in roll and elevation, 360° continuous rotation provided on azimuth plane.

MODEL: MRS-3-200 (Manual)

- Azimuth: 360 degree
- Elevation: +/-30 degree
- Roll: +/-30 degree
- Top size: 250x250mm
- Footprint size: 350x350mm
- Load capacity: 35 kg
- Drive: Manual
Long travel linear stage

The models shown in the pictures below are assembled on shell structure to reduce overall weight of the system. Re-circulating ball bearing guideways along with ball screws are used for building the stages. The stages can be manual or motorized with stepper or brushless servo. Motorized models are provided with cable drag chains. Top surface of the stages are provided with tapped holes/mounting holes which can be customized as per the requirements.

Features:
- Long travel range
- Precision ball screw with big pitch
- Precision linear bearing
- Drive options - Hand Wheel, Stepper Motor & Brushless Drives

<table>
<thead>
<tr>
<th>Model</th>
<th>Travel</th>
<th>Carriage Size</th>
<th>Total Size</th>
<th>Load Capacity</th>
<th>Lead Screw Pitch</th>
<th>Drive Options</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCMTS-500-1300</td>
<td>1300mm</td>
<td>150x432mm</td>
<td>1560x432x120mm</td>
<td>100kg</td>
<td>20mm</td>
<td>Manual or Motorised</td>
<td>Aluminium alloy B51S</td>
</tr>
<tr>
<td>LTTS-500-1300</td>
<td>1300mm</td>
<td>150x432mm</td>
<td>1560x432x120mm</td>
<td>100kg</td>
<td>20mm</td>
<td>Manual or Motorised</td>
<td>Aluminium alloy B51S</td>
</tr>
<tr>
<td>RCMTS-500-850-1650</td>
<td>1100mm</td>
<td>500x850mm</td>
<td>1650x850x103mm</td>
<td>50kg</td>
<td>4mm</td>
<td>Manual or Motorised</td>
<td>Aluminium alloy B51S</td>
</tr>
<tr>
<td>RCMTS-500-500-1250</td>
<td>750mm</td>
<td>500x500mm</td>
<td>1250x500x101mm</td>
<td>350kg</td>
<td>4mm</td>
<td>Motorised</td>
<td>Aluminium alloy B51S</td>
</tr>
<tr>
<td>RCMTS-500-850-1650</td>
<td>1100mm</td>
<td>500x850mm</td>
<td>1650x850x103mm</td>
<td>50kg</td>
<td>4mm</td>
<td>Manual or Motorised</td>
<td>Aluminium alloy B51S</td>
</tr>
<tr>
<td>RCMTS-500-500-1250</td>
<td>750mm</td>
<td>500x500mm</td>
<td>1250x500x101mm</td>
<td>350kg</td>
<td>4mm</td>
<td>Motorised</td>
<td>Aluminium alloy B51S</td>
</tr>
</tbody>
</table>

Belt Driven High Speed Long Travel Translation Stage

Belt-driven stages are ideal for applications requiring long distances and high speeds. Speeds as high as 600mm per second can be achieved. The belt drive’s high efficiency make it an ideal choice for moving light loads at high speed and for continuous duty applications. Refer Page 204 for details.
THETA 2 THETA STAGE

Holmarc’s theta 2 theta stage consists of two rotation stages arranged in such a way that axis of rotation for both the stages are same. Both stages have preloaded ball bearing guides for wobble free rotation and positioning. 360° limitless movement is possible for inner and outer stages. Holmarc manufactures these stages with manual as well as motorized drive configurations. Rotary graduations are provided in 1°/ 2° with appropriate vernier graduations depending on the size of the stage. For motorized rotation stage, worm and gear is our standard drive mechanism. Surfaces of both stages are provided with M6 tapped holes for mounting components and sub-assemblies. Holmarc manufactures custom theta 2 theta stages to suit specific applications as well.

MULTI AXIS POSITIONING STAGE

Gantri Design Stage

In gantri configuration, Z axis which is fixed to Y axis moves over a fixed platform/ surface. Length and width of this platform covered by Z movement are limited to traverses in X and Y axes. Holmarc manufactures standard and custom stages in gantri configurations. Driver motors can be either stepper, BLDC or AC servo depending on the application. Holmarc provides control hardware and software for gantri stages with or without linear and circular interpolations. Standard stages are manufactured in aluminium alloy which is well suited for clean room environment. For rugged applications, construction material can be steel as well. Re-circulating ball bearing guides are used for X and Y axes. For Z axes, guideways can be either re-circulating or non-recirculating depending on the traverse and load conditions.

<table>
<thead>
<tr>
<th>Model No</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTNDT 100</td>
<td>100</td>
<td>100</td>
<td>25</td>
</tr>
<tr>
<td>GTNDT 200</td>
<td>200</td>
<td>200</td>
<td>50</td>
</tr>
<tr>
<td>GTNDT 300</td>
<td>300</td>
<td>300</td>
<td>75</td>
</tr>
<tr>
<td>GTNDT 500</td>
<td>500</td>
<td>500</td>
<td>100</td>
</tr>
<tr>
<td>GTNDT 500-1000</td>
<td>1000</td>
<td>500</td>
<td>200</td>
</tr>
<tr>
<td>GTNDT 500-1200</td>
<td>1200</td>
<td>600</td>
<td>200</td>
</tr>
<tr>
<td>GTNDT 800-1500</td>
<td>1500</td>
<td>750</td>
<td>200</td>
</tr>
</tbody>
</table>

All dimensions are in mm

Cartesian Design Stage

In Cartesian configuration, Y axis is fixed to the carriage of X axis and the Z axis is fixed to the carriage of Y axis. The stage is fixed to a suitable base structure depending on the application. As in the case of our standard motorized stages, drive motors can be stepper, BLDC or AC servo. Holmarc manufactures control electronics and software to go with these stages which can be standard as well as custom.

Customization with respect to size of the stages, traverse, load capacity, drive motor selection, ball screw pitch, speed, etc are offered by holmarc at the price of standard products. Our customers are welcome to discuss application needs with our engineers.
Radiography (Conventional, Digital & CT) Multi-axis Manipulator

Conventional and digital radiography techniques have been widely used by industries for routine and in-service inspection for non-destructive testing (NDT).

Automated positioning and movement systems (manipulators) enable quality radiography images with minimum number of exposures.

Holmarc manufactures six axes manipulators for X-ray & CT applications as standard products. The system is equipped with six motorized axis and two/three manual stages. On one of the arms, X-ray source (100kgs approx.) can be mounted while flat panel with lead mask (200kgs approx.) can be mounted on the other arm. Both these arms have X-Z movement (300 mm) with accuracy of 50 micron and option to have two more additional motorized axes. At the center of these two arms, the sample stage is mounted with motorized X,Y,Z and (rotation) stages. The manipulator makes the alignment of the source, detector and sample easy and precise. The position (rotation) of sample and automatically acquired radiography images for each are used to create computed tomogram of objects.

Optional features such as motorized shutters, mounts for additional sources and detector etc. are available. We can tailor the system to our customers needs as well.

Holmarc’s Radiography manipulators provide customers:
- Remote operation of the X-ray or CT system with reduced operator intervention
- Fast, precise and efficient positioning of samples, source and detector.
- Easy alignment
- Quality X-ray images with minimum number of exposures
- Faster CT with reduced artifacts
- Low cost and easy maintenance

Source Arm
- Vertical height adjustment : 600mm
- Positioning accuracy : 1mm
- Drive : Ball screw with manual gear box

Object Arm
- Number of axis : 4 (X,Y,Z,Ө)
- Positioning accuracy : 0.05mm
- X stage travel : 600mm
- Y stage travel : 300mm
- Z stage travel : 600mm
- Theta stage travel : 360 degree
- Accuracy : 0.1 degree
- Drive : all axis motorized
- Maximum object size : 250x600mm
- Objects held by : self centering chuck

Detector Arm
- Vertical height adjustment : 600mm
- Positioning accuracy : 1mm
- Drive : ball screw with manual gear box
- Linear axis travel : 600mm
- Positioning accuracy : 0.05mm
Object Manipulator

Holmarc manufactures multi-axes linear and rotary stages for manipulating objects for NDT and other applications. Two standard models are described in this section. Both the models have four axes of freedom, three linear and one rotary. There are hand knobs fitted behind the motors for manual adjustments when ever required. Though fitted with stepper motors in standard models, brush less DC motors can as well be supplied along with rotary or linear encoder depending on the application needs.

Motorized X,Y,Z & θ Stage  MODEL : HO-RGMAM-OM3AR

- X Travel : 100 mm
- Y Travel : 100 mm
- Z Travel : 100 mm
- Theta Travel : 360°
- Positioning accuracy : 0.05 mm
- Maximum object size : 100x100x100 mm
- Object locking mechanism : Self centering jaw

ANTENNA POSITIONING SYSTEM

Azimuth Positioner  MODEL : HO-APS-500

Holmarc’s azimuth antenna positioner consists of horizontal heavy duty rotation stage driven by stepper/servo motor mounted horizontally. Antenna can be positioned at 1 meter height from the surface of the positioner using antenna mast made in wood or plastic. We provide suitable antenna mast along with the system as per customer specifications. There are two standard models having 300 mm diameter (medium duty) and 500 mm diameter (heavy duty) mounting area. Construction material is aluminium alloy for medium duty positioner and steel for heavy duty positioner. Stepper motor or BLDC servo motor is used as actuator. Manual positioning facility is provided by a hand wheel fixed to worm shaft. Rotary graduations in degree with one degree resolution is marked on the rotating surface for visual reference.

Holmarc manufactures positioning systems for far field and near field measurements for microwave antennas in following three models:

1. Azimuth Antenna Positioner
2. Theta X and Theta Z (two axis) positioner
3. Four axis robotic positioner

For all these three models, we provide motion control hardware and software. Our engineering services are available for integrating the system with data acquisition hardware as well.

In this model, two rotary positioners are arranged perpendicular to each other. One rotation stage is in the horizontal plane (theta X) as in the azimuth positioner and the second rotary stage is arranged in vertical plane (theta Z). Antenna holding clamp is fixed to theta Z. Both stages are driven either by stepper motor or brush less DC servo motor. The positioner is constructed in aluminium alloy for clean room compatibility. Rotary graduations are provided for both theta X and theta Z stages. Manual positioning is possible by a hand wheel fixed to the worm shaft.
**CRYOSTAT POSITIONERS**

When cryostats with optical windows need to be mounted and positioned, Holmarc’s cryostat positioners can be considered. These XYZ three axis positioners are made for smooth and precise movements with heavy loads. Rolling contact bearings are used for all the three axis for play less and wobble free movements and positioning with rigidity and stability. A bracket having mounting holes for cryostat can be fixed to the Z axis as shown in the figure. Z-axis is driven by worm gear assembly for effortless vertical positioning. These positioners are available in motorized and manual versions.

- **MODEL : HO-CRYO-50**
  - X travel : 50 mm
  - Y travel : 50 mm
  - Z travel : 50 mm
  - Positioning accuracy : 0.01 mm

---

**X, THETA-X, Y & THETA – Z STAGE**

- Travel range : X-500mm, Theta-X: 360°
- Y-300mm, Theta-Z: 360°
- Load capacity : Upto 25 Kg

**MODEL : HO-APS-300XYR2**

**THETA X AND THETA Z CONFIGURATION**

- Travel range : Theta X - 360° / Theta y - ±90°
- Load capacity : Upto 25 Kg

Refer page number 233 for details.
MICROSCOPE TRANSLATION STAGES

XY Sample Positioning Stage
Holmarc manufactures precision XY stages for standard microscopes of various makes as per custom specifications. These stages have coarse and fine travel mechanisms. Coarse movement with resolution of 0.01 mm is achieved by micrometer heads whereas fine travel with resolution of 0.0003 is achieved by a combination of micrometer and lever mechanism. Sample size is generally 25 mm x 75 mm (suitable for standard glass slides). Both X and Y stages have ball bearing guideways for friction less and stick slip free movements. The stage is constructed in aluminium alloy and given black anodized, reflection free finish.

Manual Sample Stage
- Sample Size: 25mm x 75mm
- Travel Range: 10mm Continuous
- Coarse travel resolution: 10 Micrometer
- Fine travel resolution: 0.1 Micrometer
- Suitable for inverted microscope

Motorized XY Sample Stage
- Sample Size: 60mm x 50mm
- Travel: 150mm (X) & 50mm (Y)
- Sample Size: 60mm x 50mm Max.
- Drive: Motorized
- Resolution: 10 Micrometer
- Suitable for inverted microscope

XY Manual Stage for Microscope
- Sample Size: 60mm x 50mm
- Travel: 150mm (X) & 50mm (Y)
- Drive: Motorized
- Resolution: 10 Micrometer
- Suitable for inverted microscope

INSPECTION & IMAGING APPLICATION
The GTSNDT and SGTS series can be custom configured with cameras and video microscopes having automated focusing and motorized zoom. A wide array of lighting options are also available including coaxial, bottom and angled illuminators with variable intensity and uniform light distribution. The large number of options available allow the unit to be easily configured for a wide variety of image acquisition, inspection, 3D positioning and profiling applications.