A high-precision, high-rigidity motorized stage using the HG-VCR method.

- Precision screw and ball screw specifications are available.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

### Features

- **Model name**: High-Grade X Stage
- **Travel direction**: X-axis single direction
- **Travel amount**: ±7.5 mm ±10 mm
- **Stage surface**: 40 mm x 40 mm 50 mm x 50 mm
- **Motor used**: PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)
- **Resolution**: 0.001 mm 0.002 mm 0.001 mm 0.002 mm
- **Feed screw specification**: Precision screw Ball screw
- **Feed screw lead**: 0.5 mm 1 mm 0.5 mm 1 mm
- **Travel guide**: HG-VCR (V-groove and cross rollers)
- **Travel accuracy**:
  - Yawing 20 s, pitching 30 s
  - Yawing 15 s, pitching 25 s
- **Positioning accuracy**:
  - Yawing 0.01 mm 0.003 mm 0.012 mm 0.008 mm
  - Pitching ≤0.0005 mm ≤0.0003 mm ≤0.0003 mm ≤0.0003 mm
- **Lost motion**:
  - Yawing 0.005 mm 0.001 mm 0.005 mm 0.001 mm
  - Pitching 0.015 mm 0.015 mm 0.01 mm
- **Parallelism of motion**:
  - Yawing 0.02 mm 0.015 mm
  - Pitching 0.015 mm
- **Moment rigidity**:
  - Yaw rigidity 0.25 s/N·cm, pitch rigidity 0.3 s/N·cm
  - Roll rigidity 0.15 s/N·cm
  - Yaw rigidity 0.15 s/N·cm, pitch rigidity 0.2 s/N·cm
  - Roll rigidity 0.2 s/N·cm
- **Load capacity**: 49 N (5 kgf)
- **Mass**: 0.32 kg 0.4 kg
- **Maximum speed (at 8,000 pps)**: 8 mm/s 16 mm/s 8 mm/s 16 mm/s
- **Main materials/surface treatment**: Aluminum alloy/black satin anodized finish
- **Home position sensor**: Normally closed contact point (break contact, B contact) operation, photo sensor
- **Limit sensor**: Normally closed contact point (break contact, B contact) operation, photo sensor
- **Applicable cables**: TACB-STM-D3, TARC-STM-D3

### Connection method: Connection cable and driver

- **Stage side**: TACB-STM-D3 (3 m)
- **Connection cable**: TARC-STM-D3 (3 m)

**Sensor operating logic and timing chart**

- **Mechanical stopper**
- **CCW limit**
- **Home position sensor**
- **CW limit**
- **CW direction (reverse motor side)**

### Model numbers

- **(standard)**
  - TALS-4011-G0M
  - TALS-4011-G1M
  - TALS-5012-G0M
  - TALS-5012-G1M

- **(symmetrical)**
  - TALS-4011-G0M-R
  - TALS-4011-G1M-R
  - TALS-5012-G0M-R
  - TALS-5012-G1M-R
High-Grade Stages ▶ Motorized Stages ▶

Product Appearance

* TALS-4011-G0M has the same dimensions as TALS-4011-G1M.  ▶ TALS-4011-G1M

* TALS-4011-G0M-R has the same dimensions as TALS-4011-G1M-R.  ▶ TALS-4011-G1M-R

* TALS-5012-G0M has the same dimensions as TALS-5012-G1M.  ▶ TALS-5012-G1M

* TALS-5012-G0M-R has the same dimensions as TALS-5012-G1M-R.  ▶ TALS-5012-G1M-R
# High-Grade X Stage 60 x 60, 70 x 70

## Features
- A high-precision, high-rigidity motorized stage using the HG-VCR method.
- Precision screw and ball screw specifications are available.
- Versatile use for precision positioning of cameras, sensors, workpieces, and more.

<table>
<thead>
<tr>
<th>Model number (standard)</th>
<th>TALS-6012-G0M</th>
<th>TALS-6012-G1M</th>
<th>TALS-7013-G0M</th>
<th>TALS-7013-G1M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model number (symmetrical)</td>
<td>TALS-6012-G0M-R</td>
<td>TALS-6012-G1M-R</td>
<td>TALS-7013-G0M-R</td>
<td>TALS-7013-G1M-R</td>
</tr>
<tr>
<td>Model name</td>
<td>High-Grade X Stage</td>
<td>X-axis single direction</td>
<td>X-axis single direction</td>
<td>X-axis single direction</td>
</tr>
<tr>
<td>Travel direction</td>
<td>X-axis single direction</td>
<td>X-axis single direction</td>
<td>X-axis single direction</td>
<td>X-axis single direction</td>
</tr>
<tr>
<td>Travel amount</td>
<td>±12.5 mm</td>
<td>±15 mm</td>
<td>±12.5 mm</td>
<td>±15 mm</td>
</tr>
<tr>
<td>Stage surface</td>
<td>60 mm x 60 mm</td>
<td>70 mm x 70 mm</td>
<td>60 mm x 60 mm</td>
<td>70 mm x 70 mm</td>
</tr>
<tr>
<td>Motor used</td>
<td>PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)</td>
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<td>PK523HPB equivalent (5-wire type pentagonal wiring, 0.75 A/phase)</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.001 mm</td>
<td>0.002 mm</td>
<td>0.001 mm</td>
<td>0.002 mm</td>
</tr>
<tr>
<td>Feed screw specification</td>
<td>Precision screw</td>
<td>Ball screw</td>
<td>Precision screw</td>
<td>Ball screw</td>
</tr>
<tr>
<td>Feed screw lead</td>
<td>0.5 mm</td>
<td>1 mm</td>
<td>0.5 mm</td>
<td>1 mm</td>
</tr>
<tr>
<td>Travel guide</td>
<td>HG-VCR (V-groove and cross rollers)</td>
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<td>Travel accuracy</td>
<td>Yawing 20 s, pitching 30 s</td>
<td>Yawing 15 s, pitching 25 s</td>
<td>Yawing 20 s, pitching 30 s</td>
<td>Yawing 15 s, pitching 25 s</td>
</tr>
<tr>
<td>Positioning accuracy</td>
<td>0.014 mm</td>
<td>0.01 mm</td>
<td>0.016 mm</td>
<td>0.012 mm</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.0005 mm</td>
<td>±0.0003 mm</td>
<td>±0.0005 mm</td>
<td>±0.0003 mm</td>
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<tr>
<td>Lost motion</td>
<td>0.005 mm</td>
<td>0.001 mm</td>
<td>0.005 mm</td>
<td>0.001 mm</td>
</tr>
<tr>
<td>Parallelism of motion</td>
<td>0.015 mm</td>
<td>0.01 mm</td>
<td>0.015 mm</td>
<td>0.01 mm</td>
</tr>
<tr>
<td>Moment rigidity</td>
<td>Yaw rigidity 0.1 s/N·cm, pitch rigidity 0.1 s/N·cm, roll rigidity 0.1 s/N·cm</td>
<td>Yaw rigidity 0.06 s/N·cm, pitch rigidity 0.08 s/N·cm, roll rigidity 0.08 s/N·cm</td>
<td>Yaw rigidity 0.1 s/N·cm, pitch rigidity 0.1 s/N·cm, roll rigidity 0.1 s/N·cm</td>
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<td>Load capacity</td>
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<td>49 N (5 kgf)</td>
<td>49 N (5 kgf)</td>
</tr>
<tr>
<td>Mass</td>
<td>0.5 kg</td>
<td>0.62 kg</td>
<td>0.5 kg</td>
<td>0.62 kg</td>
</tr>
<tr>
<td>Maximum speed (at 8,000 pps)</td>
<td>8 mm/s</td>
<td>16 mm/s</td>
<td>8 mm/s</td>
<td>16 mm/s</td>
</tr>
<tr>
<td>Main materials/surface treatment</td>
<td>Aluminum alloy/black satin anodized finish</td>
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<td>Home position sensor</td>
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<td>Limit sensor</td>
<td>Normally closed contact point (break contact, B contact) operation, photo sensor</td>
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</tr>
</tbody>
</table>

### Sensor operating logic and timing chart

### Connection method: Connection cable and driver

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THK CHUO
| Product Appearance |

![Diagram of manual handle and stepper motor setup]

- **Manual handle**
- **Stepper motor**
- **Connector**

4-M3 depth 8
4-M4 depth 10
4-M5 drilled 7.5 deep counterbore
4-M4 depth 8.5

40
60

134
2
25
60

16.5
30.5

32
50

50
60

- **TALS-6012-G0M** has the same dimensions as TALS-6012-G1M.
- **TALS-6012-G1M-R** has the same dimensions as TALS-6012-G1M-R.
- **TALS-7013-G0M** has the same dimensions as TALS-7013-G1M.
- **TALS-7013-G1M-R** has the same dimensions as TALS-7013-G1M-R.