LHA Series Linear Guide Hand

Gripper Designed to Achieve High Durability for Use in High-Speed Applications

Key Features
- Integral linear guide used for high rigidity, high accuracy, and long service life
- Supporting long external finger
- Extra-smooth sliding (option)
- Centering accuracy ±0.05mm (option)
- Rubber cover (option)
- L1 series (long stroke type) available

How To Order

Standard - LHA-01AS

Option - LHA-01AS-L1-ET3S2-NO (single acting to open) with 2 of ET3 non-contact reed switches

<table>
<thead>
<tr>
<th>Model</th>
<th>Symbol</th>
<th>Name</th>
<th>Size</th>
<th>Stroke</th>
<th>Sensor, Quantity</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>LHA-01AS</td>
<td>LHA</td>
<td>Normal</td>
<td>006AS</td>
<td>03AS</td>
<td>ET3</td>
<td>L1</td>
</tr>
<tr>
<td>LHA-01AS-L1</td>
<td>L1</td>
<td>Long Stroke Type</td>
<td>01AS</td>
<td>03AS-L1</td>
<td>ET3L</td>
<td>L1</td>
</tr>
<tr>
<td>LHA-01AS</td>
<td>ET3S2</td>
<td>Normal</td>
<td>04AS</td>
<td>05AS</td>
<td>ET3L</td>
<td>S2</td>
</tr>
</tbody>
</table>

How To Order

Performance Data

<table>
<thead>
<tr>
<th>Model</th>
<th>LHA-006AS</th>
<th>LHA-01AS</th>
<th>LHA-03AS</th>
<th>LHA-04AS</th>
<th>LHA-05AS</th>
<th>LHA-06AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure (MPa)</td>
<td>0.1 to 0.7</td>
<td>0.1 to 0.7</td>
<td>0.3 to 0.7</td>
<td>0.3 to 0.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not Required</td>
<td>or Turbine Oil Class 1 (ISO VG32)</td>
<td>or Turbine Oil Class 1</td>
<td>or Turbine Oil Class 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature (°C)</td>
<td>5 to 60</td>
<td>5 to 60</td>
<td>5 to 60</td>
<td>5 to 60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Jaw Stroke (mm)</td>
<td>4</td>
<td>5</td>
<td>10</td>
<td>9</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>Cylinder Diameter (mm)</td>
<td>dia.6</td>
<td>dia.12</td>
<td>dia.16</td>
<td>dia.20</td>
<td>dia.25</td>
<td>dia.32</td>
</tr>
<tr>
<td>Rod Diameter (mm)</td>
<td>dia.3</td>
<td>dia.6</td>
<td>dia.8</td>
<td>dia.10</td>
<td>dia.12</td>
<td>dia.16</td>
</tr>
<tr>
<td>Internal Volume (cc/min)</td>
<td>0.10</td>
<td>0.32</td>
<td>0.64</td>
<td>1.58</td>
<td>3.16</td>
<td>2.89</td>
</tr>
<tr>
<td>Repeatability (°)</td>
<td>±0.01</td>
<td>±0.01</td>
<td>±0.01</td>
<td>±0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>0.04</td>
<td>0.085</td>
<td>0.094</td>
<td>0.15</td>
<td>0.19</td>
<td>0.36</td>
</tr>
</tbody>
</table>

Seals List

<table>
<thead>
<tr>
<th>No.</th>
<th>LHA-006AS</th>
<th>LHA-01AS</th>
<th>LHA-03AS</th>
<th>LHA-04AS</th>
<th>LHA-05AS</th>
<th>LHA-06AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>PWR-6</td>
<td>PSD-12</td>
<td>PSD-16</td>
<td>PSD-20</td>
<td>PSD-25</td>
<td>PSD-32</td>
</tr>
<tr>
<td>12</td>
<td>MYA-3</td>
<td>MYA-6</td>
<td>MYA-8</td>
<td>MYA-10</td>
<td>MYA-12</td>
<td>MYA-16</td>
</tr>
<tr>
<td>13</td>
<td>dia.4(\times)dia.1</td>
<td>dia.10(\times)dia.1</td>
<td>dia.14(\times)dia.1</td>
<td>dia.18(\times)dia.1</td>
<td>dia.22.3(\times)dia.1.02</td>
<td>S-29</td>
</tr>
</tbody>
</table>

Grip Force

The graph shows grip force in opening and closing with effective external finger lengths \(f\) from gripper cover surface under different air pressure (MPa)

Open (○) - - - - - - - - - -

Closed (●)

*Grip force in opening is 1.3 times higher than that in closing
LHA Series  
Linear Guide Hand

Gripper Designed to Achieve High Durability for Use in High-Speed Applications

Key Features
- Integral linear guide used for high rigidity, high accuracy, and long service life
- Supporting long external finger
- Extra-smooth sliding (option)
- Centering accuracy ±0.05mm (option)
- Rubber cover (option)
- L1 series (long stroke type) available

How To Order

<table>
<thead>
<tr>
<th>LHA-01AS</th>
<th>LHA-01AS-L1</th>
<th>LHA-01AS-L1-NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>06AS</td>
<td>03AS</td>
<td>04AS</td>
</tr>
<tr>
<td>05AS</td>
<td>05AS</td>
<td>05AS</td>
</tr>
</tbody>
</table>

Standard  
LHA-01AS

<table>
<thead>
<tr>
<th>Option</th>
<th>Model</th>
<th>Size</th>
<th>Stroke</th>
<th>Sensor</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>LHA-01AS-L1-NO</td>
<td>LHA-01AS-L1-NO</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For option detail  
*L1 series (long stroke type) available

<table>
<thead>
<tr>
<th>Specification</th>
<th>Model</th>
<th>LHA-006</th>
<th>LHA-01</th>
<th>LHA-03</th>
<th>LHA-04</th>
<th>LHA-05</th>
<th>LHA-06</th>
</tr>
</thead>
<tbody>
<tr>
<td>LHA-006</td>
<td>AS (Standard)</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td></td>
</tr>
<tr>
<td>LHA-01</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td></td>
</tr>
<tr>
<td>LHA-03</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td></td>
</tr>
<tr>
<td>LHA-04</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td></td>
</tr>
<tr>
<td>LHA-05</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td></td>
</tr>
<tr>
<td>LHA-06</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td></td>
</tr>
</tbody>
</table>

Working Pressure  
Pneumatic: 0.1 to 0.7 MPa
Turbine Oil: 0.3 to 0.7Mpa for NO & NC types

Lubrication  
Not Required or Turbine Oil Class 1 (ISOVG32)

Ambient Temperature  
-5 to 60°C

Total Jaw Stroke  
4 | 5 | 10 | 11 | 12 | 15 | 30 | 20 | 40

Cylinder Diameter  
dia.6 | dia.12 | dia.16 | dia.20 | dia.25 | dia.32

Rod Diameter  
dia.3 | dia.6 | dia.8 | dia.10 | dia.12 | dia.16

Internal Valve (Repetitively)  
0.10 | 0.32 | 0.64 | 1.58 | 3.16 | 2.89 | 5.78 | 6.32 | 12.6 | 14.07 | 28.1

Repeatability  
±0.01

Weight  
0.04 | 0.085 | 0.15 | 0.19 | 0.36 | 0.37 | 0.52 | 0.62 | 0.82 | 0.97

Internal Structure / Parts & Seals

- LHA-006AS
  - LHA-01 to 05AS (1)
  - LHA-06AS (1)
  - LHA-06AS-K

Parts List

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Material</th>
<th>No.</th>
<th>Name</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum</td>
<td>11</td>
<td>Piston Seal</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>2</td>
<td>Piston</td>
<td>Stainless Steel</td>
<td>12</td>
<td>Rod Seal</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>3</td>
<td>Cylinder Cover</td>
<td>Resin</td>
<td>13</td>
<td>Cylinder Seal</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>4</td>
<td>Arm</td>
<td>*</td>
<td>14</td>
<td>Half Moon Shape Magnet</td>
<td>Linear Guide</td>
</tr>
<tr>
<td>5</td>
<td>Linear Guide</td>
<td>C-Type Snap Ring</td>
<td>15</td>
<td>Guide Plate Holder</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>6</td>
<td>Master Plate</td>
<td>Stainless Steel</td>
<td>16</td>
<td>Piston A</td>
<td>Aluminum</td>
</tr>
<tr>
<td>7</td>
<td>Cushion</td>
<td>Stainless Steel</td>
<td>17</td>
<td>Piston B</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>8</td>
<td>Fullcrum Shaft</td>
<td>Carbon Steel</td>
<td>18</td>
<td>Piston Rod</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>9</td>
<td>Operating Shaft</td>
<td>Carbon Steel</td>
<td>19</td>
<td>Operating Shaft A</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>10</td>
<td>Locating Pin</td>
<td>Carbon Steel</td>
<td>20</td>
<td>Stainless Steel</td>
<td>Stainless Steel</td>
</tr>
</tbody>
</table>

Seals List

<table>
<thead>
<tr>
<th>No.</th>
<th>LHA-006AS</th>
<th>LHA-01AS (1)</th>
<th>LHA-03AS (1)</th>
<th>LHA-04AS (1)</th>
<th>LHA-05AS (1)</th>
<th>LHA-06AS (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>MYA-3</td>
<td>MYA-6</td>
<td>MYA-8</td>
<td>MYA-10</td>
<td>MYA-12</td>
<td>MYA-16</td>
</tr>
<tr>
<td>12</td>
<td>MYA-3</td>
<td>MYA-6</td>
<td>MYA-8</td>
<td>MYA-10</td>
<td>MYA-12</td>
<td>MYA-16</td>
</tr>
</tbody>
</table>

Performance Data

- Grip Force
  - The graph shows grip force in opening and closing with effective external finger length l from gripper cover surface under different air pressure (MPa)

- Open (C) ------------------
- Closed ( )

- Grip force in opening is 1.3 times higher than that in closing

LHA-006AS

LHA-01AS (1)

LHA-03AS (1)

LHA-04AS (1)

LHA-05AS (1)

LHA-06AS (1)
**LHA Series Linear Guide Hand**

**Layout Drawing**

**LHA-006AS** (Optimal Grip Force 5N to 11N)

- **LHA-006AS** Standard • NO • NC

*Values inside ( ) are for NO (Normally Open) and NC (Normally Closed) type

![Diagram for LHA-006AS Standard](image)

**LHA-006AS-E**

![Diagram for LHA-006AS-E](image)

**LHA-01AS** (Optimal Grip Force 15N to 30N)

- **LHA-01AS** Standard • NO • NC

*Values inside ( ) are for NC (Normally Closed) type

![Diagram for LHA-01AS Standard](image)

**LHA-01AS-L1** Standard • NO • NC

*Values inside ( ) are for NC (Normally Closed) type

![Diagram for LHA-01AS-L1 Standard](image)

**LHA-01AS-G** Standard • NO • NC

*Values inside ( ) are for NC (Normally Closed) type

![Diagram for LHA-01AS-G Standard](image)

**LHA-01AS-L1-G**

![Diagram for LHA-01AS-L1-G](image)

For CAD data, please go to [Link]
Layout Drawing

**LHA-006AS** (Optimal Grip Force 5N to 11N)

**LHA-006AS Standard • NO • NC**

*Values inside ( ) are for NO (Normally Open) and NC (Normally Closed) type*

**LHA-006AS-E • S**

**LHA-01AS** (Optimal Grip Force 15N to 30N)

**LHA-01AS Standard • NO • NC**

*Values inside ( ) are for NC (Normally Closed) type*

**LHA-01AS-L1 Standard • NO • NC**

**LHA-01AS-G Standard • NO • NC**

*Values inside ( ) are for NC (Normally Closed) type*

**LHA-01AS-L1-G**

For CAD data, please go to [Link]
LHA Series Linear Guide Hand

**Layout Drawing**

**LHA-03AS** (Optimal Grip Force 30N to 50N)

- **LHA-03AS** Standard • NO • NC
  - Values inside ( ) are for NC (Normally Closed) type

- **LHA-03AS-L1** Standard • NO • NC
  - Values inside ( ) are for NC (Normally Closed) type

**LHA-04AS** (Optimal Grip Force 40N to 80N)

- **LHA-04AS** Standard • NO • NC
  - Values inside ( ) are for NC (Normally Closed) type

- **LHA-04AS-L1** Standard • NO • NC
  - Values inside ( ) are for NC (Normally Closed) type
LHA-05AS (Optimal Grip Force 80N to 150N)

LHA-05AS Standard • NO • NC

Values inside ( ) are for NC (Normally Closed) type

LHA-05AS-L1 Standard • NO • NC

Values inside ( ) are for NC (Normally Closed) type

LHA-05AS-G Standard • NO • NC

Values inside ( ) are for NC (Normally Closed) type

LHA-05AS-K Standard

LHA-06AS (Optimal Grip Force 100N to 250N)

LHA-06AS Standard • NO • NC

Values inside ( ) are for NO (Normally Open) and NC (Normally Closed) type

LHA-06AS-L1 Standard • NO • NC

Values inside ( ) are for NO (Normally Open) and NC (Normally Closed) type

LHA-06AS-G Standard • NO • NC

Values inside ( ) are for NO (Normally Open) and NC (Normally Closed) type

LHA-06AS-K Standard
LHA Series  Linear Guide Hand

**LHA-05AS**  (Optimal Grip Force 80N to 150N)

**LHA-05AS** Standard • NO • NC

Values inside \( \_ \) are for NC (Normally Closed) type

**LHA-05AS1-L1** Standard • NO • NC

Values inside \( \_ \) are for NC (Normally Closed) type

**LHA-05AS-G** Standard • NO • NC

Values inside \( \_ \) are for NC (Normally Closed) type

**LHA-05AS-K** Standard

**LHA-06AS**  (Optimal Grip Force 100N to 250N)

**LHA-06AS** Standard • NO • NC

Values inside \( \_ \) are for NO (Normally Open) and NC (Normally Closed) type

**LHA-06AS1-L1** Standard • NO • NC

Values inside \( \_ \) are for NO (Normally Open) and NC (Normally Closed) type

**LHA-06AS-G** Standard • NO • NC

Values inside \( \_ \) are for NO (Normally Open) and NC (Normally Closed) type

**LHA-06AS-K** Standard