HLF Series  Linear Guide Parallel Hand

Thin Body and Light-Weight with Cost in Mind!

Key Features

- **Thin and light-weight**
  25% reduced gripper height and 30% reduced body weight (compared to similar older models)
- **High grip force**
  Using 2 pistons to give more grip force
- **Long stroke**
  Ideal for numerous areas of application and workpieces
- **4 different mounting surfaces**
  The body has 4 different mounting surfaces with tap holes and 1 surface with through holes
- **Switch slots available for sensing jaw position (open or closed)**
  Various types of sensors (non-contact reed switch, contact switch, or oil-resistant switches) available

How To Order

**Standard**  HLF-16AS1

**Option**  HLF-16AS1- E24LS2  . . . . HLF-16AS1 with 2 of E24 sensors

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>HLF-08AS1</th>
<th>HLF-12AS1</th>
<th>HLF-16AS1</th>
<th>HLF-20AS1</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Layout Drawing</td>
<td>For Layout Drawing</td>
<td>For Layout Drawing</td>
<td>For Layout Drawing</td>
<td></td>
</tr>
<tr>
<td>Working Pressure</td>
<td>0.2 to 0.7MPa</td>
<td>0.2 to 0.7MPa</td>
<td>0.2 to 0.7MPa</td>
<td>0.2 to 0.7MPa</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not Required or Turbine Oil Class 1 (ISOVG32)</td>
<td>Not Required or Turbine Oil Class 1 (ISOVG32)</td>
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</tr>
<tr>
<td>Ambient Temperature (℃)</td>
<td>5 to 60</td>
<td>5 to 60</td>
<td>5 to 60</td>
<td>5 to 60</td>
</tr>
<tr>
<td>Cylinder Diameter (mm)</td>
<td>dia.8X2</td>
<td>dia.12X2</td>
<td>dia.16X2</td>
<td>dia.20X2</td>
</tr>
<tr>
<td>Internal Hole [Reproduction] (mm)</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Repeatability (mm)</td>
<td>±0.03</td>
<td>±0.03</td>
<td>±0.03</td>
<td>±0.03</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>0.098</td>
<td>0.206</td>
<td>0.428</td>
<td>0.812</td>
</tr>
</tbody>
</table>

**Grip Force**

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

Open ( )

Closed ( )
Hand (2-Jaw)

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EJBʷ

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How To Order

Standard  ► HLF-16AS1

Option  ► HLF-16AS1- E24LS2  ► HLF-16AS1 with 2 of E24 sensors

Internal Structure / Parts & Seals

■ HLF-08AS1

■ HLF-12AS1 to 20AS1

Parts List

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Material</th>
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<th>Name</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum</td>
<td>8</td>
<td>Cushion</td>
<td>Resin</td>
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<tr>
<td>2</td>
<td>Cylinder Cover Port</td>
<td>Aluminum</td>
<td>9</td>
<td>Center Plate</td>
<td>Aluminum</td>
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<tr>
<td>3</td>
<td>Cylinder Cover</td>
<td>Resin</td>
<td>10</td>
<td>Pinion</td>
<td>Stainless Steel</td>
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<tr>
<td>4</td>
<td>LM Guide</td>
<td>Stainless Steel</td>
<td>11</td>
<td>Pinion Shaft</td>
<td>Bearing Steel</td>
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<tr>
<td>5</td>
<td>Rack</td>
<td>Stainless Steel</td>
<td>12</td>
<td>Piston Seal</td>
<td>Stainless Steel</td>
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<tr>
<td>6</td>
<td>Piston</td>
<td>Resin</td>
<td>13</td>
<td>Cylinder Seal</td>
<td>Stainless Steel</td>
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<tr>
<td>7</td>
<td>Rack Joint</td>
<td>Stainless Steel</td>
<td>14</td>
<td>Locating Pin</td>
<td>Bearing Steel</td>
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</table>

Seals List

<table>
<thead>
<tr>
<th>No.</th>
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<tbody>
<tr>
<td>12</td>
<td>HLF-08AS1</td>
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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 ( )

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<td>For Layout Drawing</td>
<td>( \frac{9}{5} )</td>
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<td>Ambient Temperature (°C)</td>
<td>5 to 60</td>
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<td>5 to 60</td>
</tr>
<tr>
<td>Cylinder Diameter (mm)</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Total Jaw Stroke (mm)</td>
<td>16</td>
<td>24</td>
<td>32</td>
<td>40</td>
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<tr>
<td>Dead Zone (mm)</td>
<td>1.6</td>
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<td>1.6</td>
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<tr>
<td>Repeatability (%)</td>
<td>±0.03</td>
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<tr>
<td>Weight (kg)</td>
<td>0.088</td>
<td>0.208</td>
<td>0.428</td>
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Performance Data

HLL-08AS1

HLL-12AS1

HLL-16AS1

HLL-20AS1
HLF Series Linear Guide Parallel Hand

**HLF-08AS1** (Optimal Grip Force 20N to 35N)

**HLF-12AS1** (Optimal Grip Force 60N to 80N)

**HLF-16AS1** (Optimal Grip Force 110N to 160N)

**HLF-20AS1** (Optimal Grip Force 160N to 250N)

For CAD data, please go to [this link](#).
### HLF-08AS1 (Optimal Grip Force 20N to 35N)

**HLF-08AS1 Standard**

- **Dimensions:**
  - 2 x 2-W3, 5 x 0, 4 depth 3
  - 2 x 2-W3, 5 x 0, depth 2
  - W3 x 0, 5 depth 4

- **Ports:**
  - W3 x 0, 5 air port (Close)
  - W3 x 0, 5 air port (Open)

### HLF-12AS1 (Optimal Grip Force 60N to 80N)

**HLF-12AS1 Standard**

- **Dimensions:**
  - 4 x 2-W3, 7 x 0, 5 depth 3.4
  - 2 x 2-W4, 7 x 0, depth 2.3

- **Ports:**
  - W5 x 0, 8 air port (Close)
  - W5 x 0, 8 air port (Open)

### HLF-16AS1 (Optimal Grip Force 110N to 160N)

**HLF-16AS1 Standard**

- **Dimensions:**
  - 2 x 2-W5, 8 depth 4.2
  - 4 x 2-W6, 8 depth 5

- **Ports:**
  - W5 x 0, 8 air port (Close)
  - W5 x 0, 8 air port (Open)

### HLF-20AS1 (Optimal Grip Force 160N to 250N)

**HLF-20AS1 Standard**

- **Dimensions:**
  - 2 x 2-W6, 1 depth 12
  - 4 x 2-W7, 1 depth 3

- **Ports:**
  - W5 x 0, 8 air port (Close)
  - W5 x 0, 8 air port (Open)