PRODUCT OVERVIEW

The economical Hevi-Rail® guide systems offer a lifetime of durability under continuous use. The easily interchangeable bearing components provide even dispersion of forces in the profile rails for longer system life and stability.

Linear Bearings:
• Outer ring made of case-hardened steel
• Handles very high axial and radial loads
• Easily interchangeable components for less down-time

Profile Rails:
• Standard length up to 6 meters
• Sand blasted or lightly oiled
• U-channel or I-channel available

Flange Plates:
• Simple mounting for bearings
• Can be ordered pre-welded to bearing

Ordering example: HVB-054/HVPO

Clamp Flanges:
• Adjustable
• Eliminates need for welding and straightening
• Easily adjustable parallelism

APPLICATIONS
• Telescoping applications (ex. overhead extending jib crane)
• Warehouse handling systems / other material handling
• Custom and standard lift units
• Large Shrink-wrap machinery
• Steel and coil handling
• Large variety of material handling
**TECHNICAL SPECIFICATIONS**

**Linear Bearing for Axial & Radial Loads**
Prior to welding, disassemble bearing components. To avoid cracks in welded joints, please use welding electrodes and core weld for unalloyed steel.

**Materials:**
- **Outer ring** - Case-hardened steel UNI 20 MnCr 5 hardened at 60-2 HRC
- **Inner ring** - Hardened steel En 31 - SAE 52100 hardened at 62-2 HRC
- **Cylindrical rollers** - Flat ground heads are hardened steel, En 31 - SAE 52100, hardened at 59-64 HRc

**Bolt tolerance** = 0.05 mm

**Profile Rails**: High quality steel, ASTM A 252 Gr.1, A 252 Gr.2, A 252 Gr.3, A 663 Gr.45-80, A 675 Gr. 45-90. Standard length (1024/1524 steel) of 6 m (19.7ft.). MnCr 5 with maximum contact pressure of 750 MPa (N/mm²). Optional sand blasted and/or lightly oiled. Rails are not hardened but have a Brinell hardness of 145-185. The guide ways in the rails should be lightly greased and not painted.

**Clamp Flange**: Low carbon steel, adjustable clamp

**Flange Plate**: Low carbon steel. Special designs available, contact manufacturer.

**Seals**: Bearings with fixed axial bearing (HVB-053 to HVB-063) - radial bearing has steel labyrinth and side guide roller with rubber seals

**Bearing Life Calculations**:

\[
L10 = \left( \frac{166}{n} \right) \left( \frac{C}{P} \right)^{1/3} \text{ (Hours)}
\]

- **C** = Dynamic load rating (KN)
- **P** = Automatic dynamic load (KN)
- **n** = Revolutions per minute (rpm)

**NOTE**: Above calculation formula is for predicting life expectancy with 90% reliability level. Customers shall use their discretion to determine the reduction factor based on the actual operation needs and conditions such as reliability level, load, speed, impact and environments.

**Adjusting Axial Bearing (HVB-454 to HVB-463)**

1. Remove front screws.
2. Rotate axial bearing shaft
3. Check dimension A
4. Re-install front screws

**SYSTEM DESIGN CLEARANCE**

1. The overall system clearance should be 1.524 mm to 3.048 mm

\[
\text{Inner Rail Distance} = \text{Saddle Width} + (1.524 \text{ mm to 3.048 mm})
\]

2. Verify that the Axial bearing is aligned parallel to the rail, especially in vertical operations.

**CALCULATION OF FMAX FOR CANTILEVERED LOADS**

\[
F_{\text{max stat radial}} = \frac{Q \times L}{2 \times A}
\]

- **Q** = Load capacity (N)
- **L** = Load distance to suspension point (mm)
- **P** = Suspension point
- **A** = Bearing distance (mm) recommended 500–1000 mm

Formula: \( F_{\text{max stat radial}} = \frac{Q \times L}{2 \times A} \)

**Pzul** = 750 N/mm² for all profile rails. Indicated here are \( F_{\text{max stat radial}} \) + axial for each bearing.

Bearing with eccentric adjustable axial bearing (HVB-454 to HVB-463) - Both radial and axial bearings utilize rubber seals (RS type)

**Lubrication**: Bearings are supplied lubricated with grease grade 3. Bearings from HVB-056 to HVB-063 can be re-lubricated with grease zerk. Adjustable bearings are not available with zerk.

**Temperature**: Resistant from -10°C to 80°C (14°F to 176°F)
**SELECTION GUIDE** (when used with Profile Rails HVR-S to HVR-6)

Use the following chart to select the bearings (fixed or adjustable), rails, flange plates and clamp flanges according to your system’s maximum static radial and axial loading. A “system” is defined as a bearing in the corresponding rail. For dimensional and detailed specifications for the system selected, simply refer to the corresponding pages.

<table>
<thead>
<tr>
<th>F (KN) MAX STAT RADIAL</th>
<th>F (KN) MAX STAT AXIAL</th>
<th>COMBINED BEARING AXIAL BEARING FIXED</th>
<th>COMBINED BEARING AXIAL BEARING ADJUSTABLE</th>
<th>PROFILE RAILS</th>
<th>CLAMP FLANGE</th>
<th>FLANGE PLATE</th>
<th>PAGE NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2</td>
<td>1.7</td>
<td>HVB-053</td>
<td>–</td>
<td>HVR-S</td>
<td>–</td>
<td>HVPS-1</td>
<td>246</td>
</tr>
<tr>
<td>7.2</td>
<td>2.4</td>
<td>HVB-054</td>
<td>HVBEA-454</td>
<td>HVR-0</td>
<td>HVC-0</td>
<td>HVP0-1</td>
<td>244</td>
</tr>
<tr>
<td>8.6</td>
<td>2.8</td>
<td>HVB-055</td>
<td>HVBEA-455</td>
<td>HVR-1, HVRI-07</td>
<td>HVC-1</td>
<td>HVP1-1</td>
<td>248</td>
</tr>
<tr>
<td>8.9</td>
<td>3.0</td>
<td>HVB-056</td>
<td>HVBEA-456</td>
<td>HVR-2</td>
<td>HVC-2</td>
<td>HVP2-1</td>
<td>249</td>
</tr>
<tr>
<td>8.9</td>
<td>3.0</td>
<td>HVB-057</td>
<td>HVBEA-457</td>
<td>HVRI-08</td>
<td>–</td>
<td>HVP2-1</td>
<td>250</td>
</tr>
<tr>
<td>15.6</td>
<td>5.2</td>
<td>HVB-058</td>
<td>HVBEA-458</td>
<td>HVR-3, HVRI-09</td>
<td>HVC-3</td>
<td>HVP3-1</td>
<td>251</td>
</tr>
<tr>
<td>15.5</td>
<td>5.1</td>
<td>HVB-059</td>
<td>HVBEA-459</td>
<td>HVRI-10</td>
<td>–</td>
<td>–</td>
<td>252</td>
</tr>
<tr>
<td>16.5</td>
<td>5.5</td>
<td>HVB-060</td>
<td>HVBEA-460</td>
<td>HVRI-11</td>
<td>–</td>
<td>–</td>
<td>252</td>
</tr>
<tr>
<td>16.5</td>
<td>5.5</td>
<td>HVB-061</td>
<td>HVBEA-461</td>
<td>HVR-4</td>
<td>HVC-4</td>
<td>HVP4-1</td>
<td>253</td>
</tr>
<tr>
<td>23.5</td>
<td>7.8</td>
<td>HVB-062</td>
<td>–</td>
<td>HVR-5</td>
<td>–</td>
<td>HVP4-1</td>
<td>254</td>
</tr>
<tr>
<td>41.1</td>
<td>13.7</td>
<td>HVB-063</td>
<td>HVBEA-463</td>
<td>HVR-6</td>
<td>–</td>
<td>HVP6-1</td>
<td>255</td>
</tr>
</tbody>
</table>

**NOTE:** For cantilevered loads, static verification calculations can be found on page 244. *All dimensions in mm.

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**MOUNTING CONFIGURATIONS**

**HANDLING UNITS**

**ADJUSTABLE CLAMP SYSTEM**

**LIFTING UNITS**

**HORIZONTAL TELESCOPE**
Hevi-Rail® Linear Bearing System
0.6 US Ton-Force

AXIAL BEARING - FIXED  HVB-053

WEIGHT = 0.36 Kg

BEARING RADIAL LOAD
Max. dynamic load = 24 KN
Max. static load = 33 KN

BEARING AXIAL LOAD
Max. dynamic load = 10 KN
Max. static load = 14 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

PROFILE RAIL U-CHANNEL  HVR-S

WEIGHT = 5.3 Kg/m

MOMENT OF INERTIA
Ix = 5.2 cm^4, Iy = 38.8 cm^4

MOMENT OF RESISTANCE
Wx = 2.50 cm^3, Wy = 11.90 cm^3

RADIUS OF INERTIA
ix = 0.80 cm, iy = 2.40 cm

DIST. TO CENTER OF GRAVITY
ey = 0.94 cm, ex = 32.50 cm

FLANGE PLATE  HVPS-1

WEIGHT
= 0.36 Kg

M8 x 1.25 thru

MOMENT OF INERTIA
Ix = 5.2 cm^4, Iy = 38.8 cm^4

MOMENT OF RESISTANCE
Wx = 2.50 cm^3, Wy = 11.90 cm^3

RADIUS OF INERTIA
ix = 0.80 cm, iy = 2.40 cm

DIST. TO CENTER OF GRAVITY
ey = 0.94 cm, ex = 32.50 cm

WHEN USED WITH SHOWN PROFILE RAILS
System Max. Static Radial Load = 5.2 KN / 0.6 US Ton-Force
System Max. Static Axial Load = 1.7 KN / 0.2 US Ton-Force
**AXIAL BEARING - FIXED**

<table>
<thead>
<tr>
<th>Model</th>
<th>Weight (Kg)</th>
<th>Bearing Radial Load</th>
<th>Bearing Axial Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVB-054</td>
<td>0.53</td>
<td>Max. dynamic load = 39 KN</td>
<td>Max. static load = 65 KN</td>
</tr>
</tbody>
</table>

**ECCENTRIC ADJUSTABLE**

<table>
<thead>
<tr>
<th>Model</th>
<th>Weight (Kg)</th>
<th>Bearing Radial Load</th>
<th>Bearing Axial Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVBEA-454</td>
<td>0.53</td>
<td>Max. dynamic load = 39 KN</td>
<td>Max. static load = 65 KN</td>
</tr>
</tbody>
</table>

**NOTE:** Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

**PROFILE RAIL U-CHANNEL**

<table>
<thead>
<tr>
<th>Model</th>
<th>Weight (Kg/m)</th>
<th>Ix</th>
<th>Iy</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVR-0</td>
<td>10.5</td>
<td>15.35 cm²</td>
<td>137.05 cm²</td>
</tr>
</tbody>
</table>

**RADIUS OF INERTIA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Ix</th>
<th>Iy</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVR-0</td>
<td>1.07 cm²</td>
<td>3.20 cm²</td>
</tr>
</tbody>
</table>

**DIST. TO CENTER OF GRAVITY**

<table>
<thead>
<tr>
<th>Model</th>
<th>ey</th>
<th>ex</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVR-0</td>
<td>1.29 cm</td>
<td>4.33 cm</td>
</tr>
</tbody>
</table>

**NOTE:** Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

**FLANGE PLATE**

<table>
<thead>
<tr>
<th>Model</th>
<th>M10 x 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVP0-1</td>
<td>11</td>
</tr>
</tbody>
</table>

**CLAMP FLANGE**

<table>
<thead>
<tr>
<th>Model</th>
<th>M10 x 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVC-0</td>
<td>11</td>
</tr>
</tbody>
</table>

* “h” refers to the depth of the axial bearing, so “h” depends on choice of HVB-054 or HVBEA-454.

**When used with shown profile rails**

System Max. Static Radial Load = 7.2 KN / 0.8 US Ton-Force
System Max. Static Axial Load = 2.4 KN / 0.3 US Ton-Force
Hevi-Rail® Linear Bearing Systems
0.9 US Ton-Force

**AXIAL BEARING - FIXED**

**HVB-055**

- **WEIGHT** = 0.80 Kg
- **BEARING AXIAL LOAD**
  - Max. dynamic load = 18 KN
  - Max. static load = 26 KN

**NOTE:** Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

**PROFILE RAIL U-CHANNEL**

**HVR-1**

- **WEIGHT** = 14.8 Kg/m
- **MOMENT OF INERTIA**
  - Ix = 27.29 cm^4, Iy = 273.50 cm^4
- **DIST. TO CENTER OF GRAVITY**
  - ey = 1.50 cm, ex = 5.16 cm
- **RADIUS OF INERTIA**
  - ix = 1.20 cm, iy = 3.81 cm
- **MOMENT OF RESISTANCE**
  - Wxmin = 10.91 cm^3
  - Wxmax = 18.20 cm^3
  - Wy = 53.00 cm^3

**FLANGE PLATE**

**HVP1-1**

*“h” refers to the depth of the axial bearing, so “h” depends on choice of HVB-055 or HVBEA-455.*

**ECCENTRIC ADJUSTABLE**

**HVBEA-455**

- **WEIGHT** = 0.80 Kg
- **BEARING RADIAL LOAD**
  - Max. dynamic load = 56 KN
  - Max. static load = 93 KN

**NOTE:** Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

**PROFILE RAIL I-CHANNEL**

**HVRI-07**

- **WEIGHT** = 19.4 Kg/m
- **MOMENT OF INERTIA**
  - Ix = 344.29 cm^4, Iy = 57.63 cm^4
- **DIST. TO CENTER OF GRAVITY**
  - ey = 4.90 cm, ex = 3.25 cm
- **RADIUS OF INERTIA**
  - ix = 3.73 cm, iy = 1.52 cm
- **MOMENT OF RESISTANCE**
  - Wxmin = 10.91 cm^3
  - Wxmax = 18.20 cm^3
  - Wy = 53.00 cm^3

**CLAMP FLANGE**

**HVC-1**

**NOTE:** Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

**WHEN USED WITH SHOWN PROFILE RAILS**

- **System Max. Static Radial Load** = 8.6 KN / 0.9 US Ton-Force
- **System Max. Static Axial Load** = 2.8 KN / 0.3 US Ton-Force
**Hevi-Rail® Linear Bearing Systems**

**1.0 US Ton-Force**

---

### AXIAL BEARING - FIXED

**HVB-056**

**WEIGHT** = 1.00 Kg  
**BEARING RADIAL LOAD**  
Max. dynamic load = 59 KN  
Max. static load = 102 KN  
**BEARING AXIAL LOAD**  
Max. dynamic load = 20 KN  
Max. static load = 32 KN  
**NOTE:** Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

---

### ECCENTRIC ADJUSTABLE

**HVBEA-456**

**WEIGHT** = 1.00 Kg  
**BEARING RADIAL LOAD**  
Max. dynamic load = 59 KN  
Max. static load = 102 KN  
**BEARING AXIAL LOAD**  
Max. dynamic load = 23 KN  
Max. static load = 36 KN  
**NOTE:** Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

---

### PROFILE RAIL U-CHANNEL

**HVR-2**

**WEIGHT** = 20.9 Kg/m  
**RADIUS OF INERTIA**  
ix = 1.19 cm, iy = 4.30 cm  
**MOMENT OF RESISTANCE**  
Wxmin = 14.83 cm³, Wxmax = 24.58 cm³, Wy = 81.38 cm³  
**DIST. TO CENTER OF GRAVITY**  
ey = 1.54 cm, ex = 6.07 cm

---

### FLANGE PLATE

**HVP2-1**

---

### CLAMP FLANGE

**HVC-2**

---

*“h” refers to the depth of the axial bearing, so “h” depends on choice of HVB-056 or HVBEA-456.*
Hevi-Rail® 1.0 US Ton-Force

**AXIAL BEARING - FIXED**

<table>
<thead>
<tr>
<th>HVB-057</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WEIGHT</strong> = 0.90 Kg</td>
</tr>
<tr>
<td><strong>BEARING RADIAL LOAD</strong></td>
</tr>
<tr>
<td>Max. dynamic load = 59 KN</td>
</tr>
<tr>
<td>Max. static load = 102 KN</td>
</tr>
<tr>
<td><strong>BEARING AXIAL LOAD</strong></td>
</tr>
<tr>
<td>Max. dynamic load = 20 KN</td>
</tr>
<tr>
<td>Max. static load = 32 KN</td>
</tr>
<tr>
<td><strong>NOTE:</strong> Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.</td>
</tr>
</tbody>
</table>

**PROFILE RAIL I-CHANNEL**

<table>
<thead>
<tr>
<th>HVRI-08</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WEIGHT</strong> = 25.3 Kg/m</td>
</tr>
<tr>
<td><strong>MOMENT OF INERTIA</strong></td>
</tr>
<tr>
<td>I_x = 597.54 cm^4, I_y = 76.79 cm^4</td>
</tr>
<tr>
<td><strong>DIST. TO CENTER OF GRAVITY</strong></td>
</tr>
<tr>
<td>e_y = 5.70 cm, e_x = 3.30 cm</td>
</tr>
<tr>
<td><strong>RADIUS OF INERTIA</strong></td>
</tr>
<tr>
<td>i_x = 4.24 cm, i_y = 1.54 cm</td>
</tr>
<tr>
<td><strong>MOMENT OF RESISTANCE</strong></td>
</tr>
<tr>
<td>W_x = 104.92 cm^3, W_y = 23.27 cm^3</td>
</tr>
</tbody>
</table>

**FLANGE PLATE**

<table>
<thead>
<tr>
<th>HVP2-1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WEIGHT</strong> = 0.90 Kg</td>
</tr>
<tr>
<td><strong>BEARING RADIAL LOAD</strong></td>
</tr>
<tr>
<td>Max. dynamic load = 59 KN</td>
</tr>
<tr>
<td>Max. static load = 102 KN</td>
</tr>
<tr>
<td><strong>BEARING AXIAL LOAD</strong></td>
</tr>
<tr>
<td>Max. dynamic load = 20 KN</td>
</tr>
<tr>
<td>Max. static load = 36 KN</td>
</tr>
<tr>
<td><strong>NOTE:</strong> Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.</td>
</tr>
</tbody>
</table>

*“h” refers to the depth of the axial bearing, so “h” depends on choice of HVB-057 or HVBEA-457.*
**Hevi-Rail® Linear Bearing Systems**

1.7 US Ton-Force

---

### Profile Rail U-Channel: HVR-3

- **Weight:** 28.6 Kg/m
- **Radius of Inertia:** 
  - $I_x = 89.47 \text{ cm}^4$, $I_y = 965.23 \text{ cm}^4$
- **Moment of Resistance:** 
  - $W_{x,\text{min}} = 27.03 \text{ cm}^3$
  - $W_{x,\text{max}} = 44.96 \text{ cm}^3$
  - $W_y = 127.80 \text{ cm}^3$
- **Dist. to Center of Gravity:** 
  - $e_y = 1.99 \text{ cm}$, $e_x = 6.77 \text{ cm}$

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### Profile Rail I-Channel: HVRI-09

- **Weight:** 34.1 Kg/m
- **Radius of Inertia:** 
  - $I_x = 1037.22 \text{ cm}^4$, $I_y = 161.89 \text{ cm}^4$
- **Moment of Resistance:** 
  - $W_x = 160.07 \text{ cm}^3$
  - $W_y = 127.80 \text{ cm}^3$
- **Dist. to Center of Gravity:** 
  - $e_y = 6.48 \text{ cm}$, $e_x = 4.05 \text{ cm}$

---

### Clamping Flange: HVC-3

- **Weight:** 1.62 Kg
- **Radius of Inertia:** 
  - $I_x = 4.89 \text{ cm}$, $I_y = 1.93 \text{ cm}$
- **Moment of Resistance:** 
  - $W_{x,\text{min}} = 27.03 \text{ cm}^3$
  - $W_{x,\text{max}} = 44.96 \text{ cm}^3$
  - $W_y = 127.80 \text{ cm}^3$

---

### Axial Bearing - Fixed: HVB-058

- **Weight:** 1.62 Kg
- **Radius of Inertia:** 
  - $I_x = 1.57 \text{ cm}$, $I_y = 4.87 \text{ cm}$
- **Moment of Resistance:** 
  - $W_{x,\text{min}} = 27.03 \text{ cm}^3$
  - $W_{x,\text{max}} = 44.96 \text{ cm}^3$
  - $W_y = 127.80 \text{ cm}^3$

---

### Eccentric Adjustable: HVBEA-458

- **Weight:** 1.62 Kg
- **Radius of Inertia:** 
  - $I_x = 1.57 \text{ cm}$, $I_y = 4.87 \text{ cm}$
- **Moment of Resistance:** 
  - $W_{x,\text{min}} = 27.03 \text{ cm}^3$
  - $W_{x,\text{max}} = 44.96 \text{ cm}^3$
  - $W_y = 127.80 \text{ cm}^3$

---

*“h” refers to the depth of the axial bearing, so “h” depends on choice of HVB-058 or HVBEA-458.*

---

When used with shown profile rails:

- System Max. Static Radial Load = 15.6 KN / 1.7 US Ton-Force
- System Max. Static Axial Load = 5.2 KN / 0.6 US Ton-Force
**Hevi-Rail® Linear Bearing Systems**

**1.8 US Ton-Force**

### AXIAL BEARING - FIXED

**HVB-059**

- **WEIGHT**: 1.80 Kg
- **BEARING RADIAL LOAD**
  - Max. dynamic load = 92 KN
  - Max. static load = 153 KN
- **BEARING AXIAL LOAD**
  - Max. dynamic load = 32 KN
  - Max. static load = 50 KN

**WEIGHT**: 1.74 Kg

- **BEARING RADIAL LOAD**
  - Max. dynamic load = 91 KN
  - Max. static load = 140 KN
- **BEARING AXIAL LOAD**
  - Max. dynamic load = 32 KN
  - Max. static load = 50 KN

**NOTE**: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

#### WHEN USED WITH SHOWN PROFILE RAILS

- **System Max. Static Radial Load**: 15.5 KN / 1.7 US Ton-Force
- **System Max. Static Axial Load**: 5.1 KN / 0.6 US Ton-Force

### ECCENTRIC ADJUSTABLE

**HVBEA-459**

- **WEIGHT**: 2.30 Kg
- **BEARING RADIAL LOAD**
  - Max. dynamic load = 100 KN
  - Max. static load = 174 KN
- **BEARING AXIAL LOAD**
  - Max. dynamic load = 39 KN
  - Max. static load = 66 KN

**WEIGHT**: 2.27 Kg

- **BEARING RADIAL LOAD**
  - Max. dynamic load = 100 KN
  - Max. static load = 174 KN
- **BEARING AXIAL LOAD**
  - Max. dynamic load = 32 KN
  - Max. static load = 50 KN

**NOTE**: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

#### WHEN USED WITH SHOWN PROFILE RAILS

- **System Max. Static Radial Load**: 16.5 KN / 1.8 US Ton-Force
- **System Max. Static Axial Load**: 5.5 KN / 0.6 US Ton-Force

### PROFILE RAIL I-COLUMN

**HVRI-10**

- **WEIGHT**: 30.9 Kg/m
- **MOMENT OF INERTIA**
  - Ix = 1078.01 cm^4, Iy = 104.38 cm^4
- **DIST. TO CENTER OF GRAVITY**
  - ey = 6.99 cm, ex = 3.49 cm
- **MOMENT OF RESISTANCE**
  - Wx = 154.33 cm^3, Wy = 29.89 cm^3

**WEIGHT**: 40.5 Kg/m

- **MOMENT OF INERTIA**
  - Ix = 1670.08 cm^4, Iy = 184.52 cm^4
- **DIST. TO CENTER OF GRAVITY**
  - ey = 7.62 cm, ex = 4.15 cm
- **RADIUS OF INERTIA**
  - ix = 5.69 cm, iy = 1.91 cm
- **MOMENT OF RESISTANCE**
  - Wx = 219.17 cm^3, Wy = 44.46 cm^3
**AXIAL BEARING - FIXED**

**HVB-061**

- **WEIGHT** = 2.82 Kg
- **BEARING RADIAL LOAD**
  - Max. dynamic load = 100 KN
  - Max. static load = 174 KN
- **BEARING AXIAL LOAD**
  - Max. dynamic load = 39 KN
  - Max. static load = 66 KN

**NOTE:** Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

**ECCENTRIC ADJUSTABLE**

**HVBEA-461**

- **WEIGHT** = 2.82 Kg
- **BEARING RADIAL LOAD**
  - Max. dynamic load = 100 KN
  - Max. static load = 174 KN
- **BEARING AXIAL LOAD**
  - Max. dynamic load = 32 KN
  - Max. static load = 50 KN

**NOTE:** Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

**PROFILE RAIL U-CHANNEL**

**HVR-4**

- **WEIGHT** = 35.9 Kg/m
- **MOMENT OF INERTIA**
  - \(I_x = 150.98 \text{ cm}^4\)
  - \(I_y = 1,494.32 \text{ cm}^4\)
- **DIST. TO CENTER OF GRAVITY**
  - \(e_y = 2.25 \text{ cm}, e_x = 7.86 \text{ cm}\)
- **RADIUS OF INERTIA**
  - \(i_x = 1.82 \text{ cm}, i_y = 5.72 \text{ cm}\)
- **MOMENT OF RESISTANCE**
  - \(W_{x_{\text{min}}} = 39.00 \text{ cm}^3\)
  - \(W_{x_{\text{max}}} = 67.13 \text{ cm}^3\)
  - \(W_y = 190.12 \text{ cm}^3\)

**FLANGE PLATE**

**HVP4-1**

- **CLAMP FLANGE**

**HVC-4**

*“h” refers to the depth of the axial bearing, so “h” depends on choice of HVB-061 or HVBEA-461.*

**WHEN USED WITH SHOWN PROFILE RAILS**

- System Max. Static Radial Load = 16.5 KN / 1.8 US Ton-Force
- System Max. Static Axial Load = 5.5 KN / 0.6 US Ton-Force
<table>
<thead>
<tr>
<th><strong>AXIAL BEARING - FIXED</strong></th>
<th><strong>HEVI-RAIL®</strong></th>
<th><strong>ECCENTRIC ADJUSTABLE</strong></th>
<th><strong>HEVI-RAIL®</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HVB-062</strong></td>
<td></td>
<td><strong>HVBEA-462</strong></td>
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</tr>
<tr>
<td><strong>WEIGHT</strong> = 4.50 Kg</td>
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<td><strong>WEIGHT</strong> = 3.90 Kg</td>
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<td><strong>BEARING RADIAL LOAD</strong></td>
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<td>Max. dynamic load = 41 KN</td>
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<tr>
<td>Max. static load = 90 KN</td>
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<td>Max. static load = 72 KN</td>
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</tbody>
</table>

### PROFILE RAIL U-CHANNEL

**HVB-062**

- **WEIGHT** = 4.2 Kg
- **MOMENT OF INERTIA**
  - $I_x = 205.84 \text{ cm}^4$
  - $I_y = 2,185.32 \text{ cm}^4$
- **DIST. TO CENTER OF GRAVITY**
  - $e_y = 2.37 \text{ cm}$, $e_x = 8.75 \text{ cm}$
- **RADIUS OF INERTIA**
  - $i_x = 1.94 \text{ cm}$, $i_y = 6.32 \text{ cm}$
- **MOMENT OF RESISTANCE**
  - $W_{x_{\text{min}}} = 48.42 \text{ cm}^3$
  - $W_{x_{\text{max}}} = 86.89 \text{ cm}^3$
  - $W_y = 249.75 \text{ cm}^3$

### FLANGE PLATE

**HVP4-1**

- **WEIGHT** = 4.50 Kg
- **BEARING RADIAL LOAD**
  - Max. dynamic load = 135 KN
  - Max. static load = 242 KN
- **BEARING AXIAL LOAD**
  - Max. dynamic load = 47 KN
  - Max. static load = 90 KN

*“h” refers to the depth of the axial bearing, so “h” depends on choice of HVB-062 or HVBEA-462.*
**Hevi-Rail® Linear Bearing Systems**

**4.6 US Ton-Force**

### AXIAL BEARING - FIXED

**HVB-063**

- **WEIGHT**: 6.52 Kg
- **BEARING RADIAL LOAD**
  - Max. dynamic load = 183 KN
  - Max. static load = 353 KN
- **BEARING AXIAL LOAD**
  - Max. dynamic load = 82 KN
  - Max. static load = 131 KN

**NOTE**: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

### ECCENTRIC ADJUSTABLE

**HVBEA-463**

- **WEIGHT**: 6.50 Kg
- **BEARING RADIAL LOAD**
  - Max. dynamic load = 183 KN
  - Max. static load = 353 KN
- **BEARING AXIAL LOAD**
  - Max. dynamic load = 41 KN
  - Max. static load = 72 KN

**NOTE**: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

### PROFILE RAIL

**HVR-6**

- **WEIGHT**: 52.3 Kg/m
- **MOMENT OF INERTIA**
  - \( I_x = 269.52 \text{ cm}^4 \)
  - \( I_y = 3,423.08 \text{ cm}^4 \)
- **DIST. TO CENTER OF GRAVITY**
  - \( e_y = 2.40 \text{ cm} \)
  - \( e_x = 10.08 \text{ cm} \)

- **RADIUS OF INERTIA**
  - \( i_x = 2.01 \text{ cm} \)
  - \( i_y = 7.17 \text{ cm} \)

- **MOMENT OF RESISTANCE**
  - \( W_{x\text{min}} = 57.15 \text{ cm}^3 \)
  - \( W_{x\text{max}} = 112.11 \text{ cm}^3 \)
  - \( W_y = 339.76 \text{ cm}^3 \)

### FLANGE PLATE

**HVP6-1**

- **Note**: “h” refers to the depth of the axial bearing, so “h” depends on choice of HVB-063 or HVBEA-463.

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**WHEN USED WITH SHOWN PROFILE RAILS**

System Max. Static Radial Load = 41.1 KN / 4.6 US Ton-Force
System Max. Static Axial Load = 13.7 KN / 1.5 US Ton-Force