### Cautions on Performing Secondary Operations

① The allowable forces shown in the table are calculated values according to the assumed usage conditions. Please see Page 194 for more details.

② Please use the SHE Helical Gear for the mating pinion.

③ After attaching the racks to the base, please fasten with dowel pins. Clamping only with mounting screws could possibly cause the screws to be broken, due to a heavy load.

④ These gears produce axial thrust forces. Please see Page 167 for more details.

### SHE Helical Gears

**Specifications**

- Precision grade: JIS grade 7 (90° cone)
- Normal plane: Standard full depth
- Helix angle/nutation: 20°
- Material: 45G
- Heat Treatment: Normal
- Tooth hardness: Less than 194HB
- Surface treatment: Black oxide coating

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Module (front view)</th>
<th>No. of teeth</th>
<th>Face width</th>
<th>Height</th>
<th>Height to pitch line</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHE1.5-20L</td>
<td>m1.5 (CPS)</td>
<td>20</td>
<td>0.390</td>
<td>32</td>
<td>31.83</td>
</tr>
<tr>
<td>SHE1.5-25L</td>
<td>m1.5 (CPS)</td>
<td>25</td>
<td>0.404</td>
<td>32</td>
<td>39.79</td>
</tr>
<tr>
<td>SHE2-20L</td>
<td>m2 (CP6.667)</td>
<td>20</td>
<td>0.418</td>
<td>54</td>
<td>63.66</td>
</tr>
<tr>
<td>SHE2-25L</td>
<td>m2 (CP6.667)</td>
<td>25</td>
<td>0.424</td>
<td>54</td>
<td>79.38</td>
</tr>
<tr>
<td>SHE3-20L</td>
<td>m3 (CP10)</td>
<td>30</td>
<td>0.418</td>
<td>54</td>
<td>79.38</td>
</tr>
<tr>
<td>SHE3-25L</td>
<td>m3 (CP10)</td>
<td>35</td>
<td>0.424</td>
<td>54</td>
<td>79.38</td>
</tr>
<tr>
<td>SHE4-20L</td>
<td>m4 (CP13.33)</td>
<td>40</td>
<td>0.424</td>
<td>74</td>
<td>107.86</td>
</tr>
<tr>
<td>SHE4-25L</td>
<td>m4 (CP13.33)</td>
<td>45</td>
<td>0.424</td>
<td>74</td>
<td>107.86</td>
</tr>
<tr>
<td>SHE6-20L</td>
<td>m5 (CP16.667)</td>
<td>60</td>
<td>0.424</td>
<td>109</td>
<td>137.32</td>
</tr>
<tr>
<td>SHE6-25L</td>
<td>m6 (CP20)</td>
<td>65</td>
<td>0.424</td>
<td>109</td>
<td>137.32</td>
</tr>
</tbody>
</table>

(Caution in Table Designation)

① The allowable forces shown in the table are calculated values according to the assumed usage conditions. Please see Page 194 for more details.

② The backlash values shown in the table are theoretical values for the backlash in the normal direction of SHE Helical Racks with the same pitch.

③ These gears produce axial thrust forces. Please see Page 167 for more details.

### Allowable Force (Nkgf)

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Allowable force (Nkgf)</th>
<th>Allowable force (kgf)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHE1.5-20L</td>
<td>100</td>
<td>35.6</td>
<td>0.60</td>
</tr>
<tr>
<td>SHE1.5-25L</td>
<td>125</td>
<td>46.5</td>
<td>1.05</td>
</tr>
<tr>
<td>SHE2-20L</td>
<td>150</td>
<td>57.6</td>
<td>1.66</td>
</tr>
<tr>
<td>SHE2-25L</td>
<td>175</td>
<td>70.3</td>
<td>2.28</td>
</tr>
<tr>
<td>SHE3-20L</td>
<td>175</td>
<td>70.3</td>
<td>2.28</td>
</tr>
<tr>
<td>SHE3-25L</td>
<td>200</td>
<td>83.2</td>
<td>2.89</td>
</tr>
<tr>
<td>SHE4-20L</td>
<td>225</td>
<td>107.8</td>
<td>3.51</td>
</tr>
<tr>
<td>SHE4-25L</td>
<td>250</td>
<td>121.9</td>
<td>4.13</td>
</tr>
<tr>
<td>SHE6-20L</td>
<td>325</td>
<td>167.6</td>
<td>6.79</td>
</tr>
<tr>
<td>SHE6-25L</td>
<td>375</td>
<td>187.1</td>
<td>7.64</td>
</tr>
</tbody>
</table>

(Caution in Table Designation)

① Please read "Cautions on Performing Secondary Operations" (Page 194) when performing modifications and/or secondary operations for safety concerns.

② Avoid performing secondary operations that narrow the tooth width, as it affects precision and strength.

### SHE Helical Gears

**Module 1.5 ~ 6**

- **Specifications**
  - Precision grade: JIS grade N8
  - Normal plane: Standard full depth
  - Helix angle/nutation: 20°
  - Material: 45G
  - Heat Treatment: Normal
  - Tooth hardness: Less than 194HB
  - Surface treatment: Black oxide coating

- **Modules**
  - SHE1.5-20R
  - SHE1.5-25R
  - SHE2-20R
  - SHE2-25R
  - SHE3-20R
  - SHE3-25R
  - SHE4-20R
  - SHE4-25R
  - SHE6-20R
  - SHE6-25R

- **Catalog Number**
  - SHE1.5-20R
  - SHE1.5-25R
  - SHE2-20R
  - SHE2-25R
  - SHE3-20R
  - SHE3-25R
  - SHE4-20R
  - SHE4-25R
  - SHE6-20R
  - SHE6-25R

- **Allowable Force (Nkgf)**
  - SHE1.5-20R: 2410 kgf, 245 kgf, 43.3 kgf
  - SHE1.5-25R: 8210 kgf, 837 kgf, 168 kgf
  - SHE2-20R: 15200 kgf, 1550 kgf, 275 kgf
  - SHE2-25R: 22500 kgf, 2300 kgf, 419 kgf
  - SHE3-20R: 33400 kgf, 3410 kgf, 738 kgf

(Caution in Table Designation)

① Please read "Cautions on Performing Secondary Operations" (Page 194) when performing modifications and/or secondary operations for safety concerns.

② KHK Quick-Mod Gears, the KHK system for quick modification of KHK stock gears, is also available.

You can download CAD data (DXF format) of KHK Products from the Web Catalog.