Module 1, 1.5

**Specifications**

- Precision grade: KHK W 001 grade 2
- Spur gear
- Material: C45C
- Heat treatment: Teeth induction hardened
- Module: 1

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>AG1.5-60R1</th>
<th>AG1-60R1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>of products</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Tooth hardness**

Material: CAC702 (formerly JIS A 5504 grade 2)

**Ordering Information**

- Please specify “J BORE” when ordering J Series products.
- Catalog No. + J + BORE

**Allowable Torque**

Allowable torque (N·m) = (torque rating) / (gear ratio)

**Note:**

- For AG1.5-60R1, AG1-60R1, AG1.5-50R1, AG1-50R1, AG1.5-40R1, AG1-40R1, AG1.5-30R2, AG1-30R2, AG1.5-30R1, AG1-30R1, AG1.5-20R2, AG1-20R2, AG1.5-20R1, AG1-20R1, AG1.5-15R2, AG1-15R2, AG1.5-15R1, AG1-15R1, AG1.5-10R2, AG1-10R2, AG1.5-10R1, AG1-10R1, AG1.5-8R2, AG1-8R2, AG1.5-8R1, AG1-8R1, AG1.5-6R2, AG1-6R2, AG1.5-6R1, AG1-6R1, AG1.5-4R2, AG1-4R2, AG1.5-4R1, AG1-4R1, AG1.5-3R2, AG1-3R2, AG1.5-3R1, AG1-3R1, AG1.5-2R2, AG1-2R2, AG1.5-2R1, AG1-2R1, AG1.5-2R0, AG1-2R0, AG1.5-1R2, AG1-1R2, AG1.5-1R1, AG1-1R1, AG1.5-1R0, AG1-1R0, AG1.5-0R2, AG1-0R2, AG1.5-0R1, AG1-0R1, AG1.5-0R0, AG1-0R0.

**Contact on Product Characteristics**

- Catalog No: SWG1.5-R1, AG1.5-60R1, AG1.5-50R1, AG1.5-40R1, AG1.5-30R2, AG1.5-30R1, AG1.5-20R2, AG1.5-20R1, AG1.5-15R2, AG1.5-15R1, AG1.5-10R2, AG1.5-10R1, AG1.5-8R2, AG1.5-8R1, AG1.5-6R2, AG1.5-6R1, AG1.5-4R2, AG1.5-4R1, AG1.5-3R2, AG1.5-3R1, AG1.5-2R2, AG1.5-2R1, AG1.5-1R2, AG1.5-1R1, AG1.5-0R2, AG1.5-0R1, AG1.5-0R0.

**Contact on J Series**

- As available-on-request products, requires a lead-time for shipping within 2 working-days (includes the day ordered), after placing an order.

**Contact on Secondary Operations**

- Secondary operations for safety concerns. KHK Quick-Mod Gears, the KHK’s system for quick modification of KHK stock gears is also available.

**Notes:**

- When ordering J Series products, please specify the number of products we can process for one order is 1 to 20 units. For quantities of 21 or more pieces, please contact us for price and lead time.

**Contact on Product Characteristics**

- Catalog No: AG1.5-60R1, AG1.5-50R1, AG1.5-40R1, AG1.5-30R2, AG1.5-30R1, AG1.5-20R2, AG1.5-20R1, AG1.5-15R2, AG1.5-15R1, AG1.5-10R2, AG1.5-10R1, AG1.5-8R2, AG1.5-8R1, AG1.5-6R2, AG1.5-6R1, AG1.5-4R2, AG1.5-4R1, AG1.5-3R2, AG1.5-3R1, AG1.5-2R2, AG1.5-2R1, AG1.5-1R2, AG1.5-1R1, AG1.5-0R2, AG1.5-0R1, AG1.5-0R0.

**Contact on Secondary Operations**

- Please read “Contact on Performing Secondary Operations” (Page 362) when performing modifications and/or secondary operations for safety concerns. KHK Quick-Worm Gears, the KHK’s system for quick modification of KHK stock gears is also available.

**Contact on Product Characteristics**

- Catalog No: AG1.5-60R1, AG1.5-50R1, AG1.5-40R1, AG1.5-30R2, AG1.5-30R1, AG1.5-20R2, AG1.5-20R1, AG1.5-15R2, AG1.5-15R1, AG1.5-10R2, AG1.5-10R1, AG1.5-8R2, AG1.5-8R1, AG1.5-6R2, AG1.5-6R1, AG1.5-4R2, AG1.5-4R1, AG1.5-3R2, AG1.5-3R1, AG1.5-2R2, AG1.5-2R1, AG1.5-1R2, AG1.5-1R1, AG1.5-0R2, AG1.5-0R1, AG1.5-0R0.

**Contact on Secondary Operations**

- Please read “Contact on Performing Secondary Operations” (Page 362) when performing modifications and/or secondary operations for safety concerns. KHK Quick-Worm Gears, the KHK’s system for quick modification of KHK stock gears is also available.

**Contact on Product Characteristics**

- Catalog No: AG1.5-60R1, AG1.5-50R1, AG1.5-40R1, AG1.5-30R2, AG1.5-30R1, AG1.5-20R2, AG1.5-20R1, AG1.5-15R2, AG1.5-15R1, AG1.5-10R2, AG1.5-10R1, AG1.5-8R2, AG1.5-8R1, AG1.5-6R2, AG1.5-6R1, AG1.5-4R2, AG1.5-4R1, AG1.5-3R2, AG1.5-3R1, AG1.5-2R2, AG1.5-2R1, AG1.5-1R2, AG1.5-1R1, AG1.5-0R2, AG1.5-0R1, AG1.5-0R0.
## Spur Gears

### Specifications
- **KHK W 001 grade 2**
- **Axial precision grade**
- **Standard full depth
- **Teeth induction hardened**
- **Material** S45C
- **Heat treatment**
  - Tooth induction hardened
  - Hardness 60 to 62 HRC
- ** xmm outside diameter for grinding**

### Catalog No.

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Number of Spur</th>
<th>Number of Teeth</th>
<th>Pitch Dia.</th>
<th>Outside Dia.</th>
<th>Price (in)</th>
<th>Hub Width (J)</th>
<th>Hub Width (L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>12</td>
<td>25</td>
<td>35</td>
<td>32</td>
<td>15</td>
<td>3</td>
<td>3</td>
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<tr>
<td>2</td>
<td>14</td>
<td>25</td>
<td>35</td>
<td>32</td>
<td>15</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

**Note:** The precision grade of J Series products is equivalent to the value shown in the table.

- **SWG2-R1**
- **SWG2-R2**
- **SWG2-R2J12**
- **SWG2-R2J14**
- **SWG2-G.5-R1**
- **SWG2-R2J15**
- **SWG2-R2J16**
- **SWG2-R2J17**

**Catalog No. Reducers:**

- **SWG2-R2J12**
- **SWG2-R2J14**
- **SWG2-R2J16**
- **SWG2-R2J17**

**Ground Worms:**

- **AG2-40R1**
- **AG2-30R1**
- **AG2-20R1**
- **AG2.5-20R2**

**Caution on Product Characteristics**

- **● Catalog No. Reduced:
  - **SWG2-R2J12**
  - **SWG2-R2J14**
  - **SWG2-R2J16**
  - **SWG2-R2J17**

**Worm Wheels**

- **AG2.5-60R1 J BORE**
- **AG2.5-50R1 J BORE**
- **AG2.5-40R1 J BORE**
- **AG2.5-30R2 J BORE**
- **AG2.5-20R1 J BORE**
- **AG2-40R1 J BORE**
- **AG2-30R1 J BORE**

You can download CAD data (DXF format) of KHK Products from the Web Catalog.
These worms produce axial thrust forces. See Page 362 for more details.

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>[Series (available-on-request)]</th>
<th>Axial module</th>
<th>No. of parts</th>
<th>axial module</th>
<th>pitch thread</th>
<th>Shape</th>
<th>bore</th>
<th>hub dia.</th>
<th>pitch dia.</th>
<th>outside dia.</th>
<th>face width</th>
<th>hub width (I)</th>
<th>hub width (Q)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWG3-R1</td>
<td></td>
<td>3 1/2° R</td>
<td>1</td>
<td>10 W3</td>
<td>30 50 70</td>
<td>4</td>
<td>15</td>
<td>20</td>
<td>4</td>
<td>5</td>
<td>20</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>SWG3-R2</td>
<td></td>
<td>2 7°40' R</td>
<td>m3</td>
<td>16 W3</td>
<td>30 50 70</td>
<td>4</td>
<td>20</td>
<td>30</td>
<td>4</td>
<td>5</td>
<td>30</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>SWG3-R3</td>
<td></td>
<td>3 11/34° R</td>
<td>m4</td>
<td>17 W3</td>
<td>30 50 70</td>
<td>4</td>
<td>25</td>
<td>35</td>
<td>4</td>
<td>5</td>
<td>35</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

| AG3-44-R1 |                                 | 4 3°14' R    | 1             | 10 W3        | 30 50 70    | 4     | 25   | 35      | 4          | 5           | 35         | 4           | 8           |
| AG3-44-R2 |                                 | 2 7°21' R    | m4           | 22 W3        | 30 50 70    | 4     | 25   | 35      | 4          | 5           | 35         | 4           | 8           |

**W3**

**W3K**

**AG Series**

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**SWG Series (except AG3-50R1 J BORE) & AG3-50R1 J BORE**

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>[Series (available-on-request)]</th>
<th>Axial module</th>
<th>No. of parts</th>
<th>axial module</th>
<th>pitch thread</th>
<th>Shape</th>
<th>bore</th>
<th>hub dia.</th>
<th>pitch dia.</th>
<th>outside dia.</th>
<th>face width</th>
<th>hub width (I)</th>
<th>hub width (Q)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWG3-R1</td>
<td></td>
<td>3 1/2° R</td>
<td>1</td>
<td>10 W3</td>
<td>30 50 70</td>
<td>4</td>
<td>15</td>
<td>20</td>
<td>4</td>
<td>5</td>
<td>20</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>SWG3-R2</td>
<td></td>
<td>2 7°40' R</td>
<td>m3</td>
<td>16 W3</td>
<td>30 50 70</td>
<td>4</td>
<td>20</td>
<td>30</td>
<td>4</td>
<td>5</td>
<td>30</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>SWG3-R3</td>
<td></td>
<td>3 11/34° R</td>
<td>m4</td>
<td>17 W3</td>
<td>30 50 70</td>
<td>4</td>
<td>25</td>
<td>35</td>
<td>4</td>
<td>5</td>
<td>35</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

**Note**: Allowable torque shown in the table are calculated values according to the assumed usage conditions. Please see Page 358 for more details.

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**To order J Series products, please specify, Catalog No. + J + BORE**

---

**Other products**

For products having a tapped hole, a set screw is included.

---

**Quick-Mod Gears**

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

---

**Catalog No. (Cautionary Option)**

1. Please read “Caution on Performing Secondary Operations” (Page 362) when performing modifications and/or secondary operations for safety concerns. KHK Quick-Mod Gears, the KHK’s system for quick modification of KHK stock gears is also available.

---

**Miter Gears**

As available-on-request products, requires a lead-time for shipping within 2 working-days (excludes the day ordered), after placing an order. Please allow additional shipping time to get to your local distributor.

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**Bevel Gearboxes**

Number of products we can process for one order is 1 x 20 units. For quantities of 21 or more pieces, we need to quote price and lead time. Keyways are made according to JIS B1301 standards, JIS tolerance. Areas of products which have been re-worked will not be black oxide coated. For products having a tapped hole, a set screw is included.
## SWG Ground Worms

**Module 5, 6**

**Specifications**
- **Precision grade**: H3K W001 grade 2
- **Hardness**: 454C
- **Gear ratio**: Standard face depth
- **Material**: Cast iron

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Actual module</th>
<th>Number of starts</th>
<th>Lead angle</th>
<th>Hard tooth hardness</th>
<th>Shaft</th>
<th>Brinell</th>
<th>Hub dia.</th>
<th>Pinion dia.</th>
<th>Outside dia.</th>
<th>Face width of pinion</th>
<th>Face width of hub</th>
<th>Ultimate torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW5G6-R1</td>
<td>m5</td>
<td>1</td>
<td>4.11°</td>
<td>R</td>
<td>W3</td>
<td>23</td>
<td>54</td>
<td>20</td>
<td>85</td>
<td>85</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>SW5G6-R2</td>
<td>m5</td>
<td>2</td>
<td>4.11°</td>
<td>R</td>
<td>W3</td>
<td>25</td>
<td>56</td>
<td>20</td>
<td>85</td>
<td>85</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>SW5G6-R3</td>
<td>m6</td>
<td>1</td>
<td>4.11°</td>
<td>R</td>
<td>W3</td>
<td>30</td>
<td>63</td>
<td>80</td>
<td>92</td>
<td>100</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>SW5G6-R4</td>
<td>m6</td>
<td>2</td>
<td>4.11°</td>
<td>R</td>
<td>W3</td>
<td>30</td>
<td>63</td>
<td>80</td>
<td>92</td>
<td>100</td>
<td>35</td>
<td>35</td>
</tr>
</tbody>
</table>

For further details, please refer to Page 306.

## AG Worm Wheels

**Module 5, 6**

**Specifications**
- **Precision grade**: H3K W001 grade 2
- **Hardness**: Standard face depth
- **Material**: Cast iron

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Reduction ratio</th>
<th>Thermal expansion</th>
<th>Number of teeth</th>
<th>Hub thickness</th>
<th>Pinion dia.</th>
<th>Outside dia.</th>
<th>Ultimate torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG5-2B1</td>
<td>20</td>
<td>m5</td>
<td>20</td>
<td>1</td>
<td>4.05°</td>
<td>R</td>
<td>22</td>
</tr>
<tr>
<td>AG5-3B1</td>
<td>30</td>
<td>m5</td>
<td>20</td>
<td>2</td>
<td>4.08°</td>
<td>R</td>
<td>22</td>
</tr>
<tr>
<td>AG5-4B1</td>
<td>40</td>
<td>m5</td>
<td>20</td>
<td>3</td>
<td>4.12°</td>
<td>R</td>
<td>22</td>
</tr>
</tbody>
</table>

For further details, please refer to Page 306.

---

### SI Units (inch threads on worm gearing)

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Reduction ratio</th>
<th>Pinion (in)</th>
<th>Worm (in)</th>
<th>Ultimate torque (lb ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG5-2B1</td>
<td>20</td>
<td>15</td>
<td>6.4</td>
<td>120</td>
</tr>
<tr>
<td>AG5-3B1</td>
<td>30</td>
<td>20</td>
<td>8.0</td>
<td>160</td>
</tr>
<tr>
<td>AG5-4B1</td>
<td>40</td>
<td>25</td>
<td>9.6</td>
<td>200</td>
</tr>
</tbody>
</table>

For further details, please refer to Page 306.