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

These worms produce axial thrust forces. See Page 362 for more details.

For W2-shape products, a set screw is included. When setting up the mating wheel, make sure no friction occurs within the set screw.

The previous grade of Series products is required to the value shown in the table.

* FC200’s tensile strength (200N/mm^2) is derived from test specimens and differs according to the product shape.

For quantities of 21 or more pieces, we need to quote price and lead time.
### Module 1.5

#### Specifications
- **Precision grade:** KHK W 001 grade 4
- **Face width:** 150.27
- **Module:** 1.5
- **Face width depth:** 45.33
- **Material:** Steel Worms

#### Catalog No.

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Description</th>
<th>Normal module</th>
<th>Material</th>
<th>Module</th>
<th>Normal depth</th>
<th>Type</th>
<th>Key</th>
<th>Weight (g)</th>
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</thead>
<tbody>
<tr>
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<td>J Series</td>
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#### Catalog No. (Available-on-demand)

- **Catalog No.** BG.5-20R1
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-request)

- **Catalog No.** BG.5-20R2
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-demand)

- **Catalog No.** BG.5-30R1
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-request)

- **Catalog No.** BG.5-30R2
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-demand)

- **Catalog No.** BG.5-40R1
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-request)

- **Catalog No.** BG.5-40R2
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-demand)

- **Catalog No.** BG.5-50R1
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-request)

- **Catalog No.** BG.5-50R2
- **Weight (g):** 45.33
- **Type:** Steel Worms

---

**BG • CG**

#### Bronze Worm Wheels & Gray Iron Worm Wheels

#### Specifications
- **Material:** Steel Worms
- **Precision grade:** KHK W 002 grade 4
- **Face width:** 150.27
- **Module:** 1.5
- **Face width depth:** 45.33
- **Material:** Steel Worms

#### Catalog No.

<table>
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<th>Catalog No.</th>
<th>Description</th>
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<th>Module</th>
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<td>Steel Worms</td>
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#### Catalog No. (Available-on-demand)

- **Catalog No.** SW.5-21R1
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-request)

- **Catalog No.** SW.5-21R2
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-demand)

- **Catalog No.** SW.5-31R1
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-request)

- **Catalog No.** SW.5-31R2
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-demand)

- **Catalog No.** SW.5-41R1
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-request)

- **Catalog No.** SW.5-41R2
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-demand)

- **Catalog No.** SW.5-51R1
- **Weight (g):** 45.33
- **Type:** Steel Worms

#### Catalog No. (Available-on-request)

- **Catalog No.** SW.5-51R2
- **Weight (g):** 45.33
- **Type:** Steel Worms

---

**BG • CG**

#### Other Products

- **BG • CG**
- **Description:** Bronze Worm Wheels & Gray Iron Worm Wheels
- **Material:** Steel Worms
- **Precision grade:** KHK W 002 grade 4
- **Face width:** 150.27
- **Module:** 1.5
- **Face width depth:** 45.33

---

**BG • CG**

#### To order J Series products, please specify:

**Catalog No. + J + BORE**

- **Catalog No.:** 8
  - **Type:** Steel Worms
- **Material:** Steel Worms
- **Precision grade:** KHK W 002 grade 4
- **Face width:** 150.27
- **Module:** 1.5
- **Face width depth:** 45.33

---

**BG • CG**

#### Other Products

- **BG • CG**
- **Description:** Bronze Worm Wheels & Gray Iron Worm Wheels
- **Material:** Steel Worms
- **Precision grade:** KHK W 002 grade 4
- **Face width:** 150.27
- **Module:** 1.5
- **Face width depth:** 45.33
### Module 2

#### specifications

- Gear ratio: Standard full depth
- Material: 17NiCrMo6-3
- Hard treatment: Hard annealing
- Angle: 14° 30’
- Keyways: Made according to JIS B1301 standards, Js9 tolerance.

#### Catalog No.

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Normal module</th>
<th>Normal number of teeth</th>
<th>Module</th>
<th>Normal pressure angle</th>
<th>Face width</th>
<th>Backlash</th>
<th>Lead angle</th>
<th>Keyway</th>
<th>Keyway act.</th>
<th>Weight (kg)</th>
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<td>46</td>
<td>15°</td>
<td>2.30</td>
<td>40.08</td>
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<td>104.00</td>
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<td>0.33</td>
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<td>65.50</td>
<td>104.00</td>
<td>1</td>
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</tbody>
</table>

*Please see Page 394 for Caution on Product Characteristics and Caution on Performing Secondary Operations.*

---

### BG - CG

#### Bronze Worm Wheels & Gray Iron Worm Wheels

- Material: Bronze Worm Wheels & Gray Iron Worm Wheels
- Keyway act.: C5 has a sand mold casting finish.

#### Catalog No.

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Normal module</th>
<th>Normal number of teeth</th>
<th>Module</th>
<th>Normal pressure angle</th>
<th>Face width</th>
<th>Backlash</th>
<th>Lead angle</th>
<th>Keyway</th>
<th>Keyway act.</th>
<th>Weight (kg)</th>
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<tbody>
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<td>106.00</td>
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<td>0.56</td>
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</table>

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### To order J Series products, please specify:

**Catalog No. + J BORE**

- Products are identified by background color.

---

*Please see Page 395 for Caution on J Series and other products.*

---

*Please see Page 394 for Cautions on Product Characteristics and Caution on Performing Secondary Operations.*

---

**For (Caution on J Series), please see Page 395.**
**Module 2.5**

### Specifications

- **Position grade:** KHK W001 grade 4
- **Weight:** Normal plane
- **Material:** Standard full depth
- **Hardness:** G40C
- **Tolerances:** Normal plane
- **Function:** Black oxide coating

### Catalog No.

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Normal plate</th>
<th>Number of plates</th>
<th>Lead angle</th>
<th>Hand thread</th>
<th>Shape</th>
<th>Hole dia.</th>
<th>Pitch dia.</th>
<th>Outside dia.</th>
<th>Hole width (R)</th>
<th>Hole width (Q)</th>
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<tbody>
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<td>1</td>
<td>3.5°2' R</td>
<td>W1K</td>
<td>15</td>
<td>17</td>
<td>30</td>
<td>37</td>
<td>42</td>
<td>45</td>
<td>18</td>
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<tr>
<td>H1K</td>
<td>2</td>
<td>7°46' R</td>
<td>W1K</td>
<td>15</td>
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<td>30</td>
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<td>H1K</td>
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<td>37</td>
<td>42</td>
<td>45</td>
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### Steel Worms

#### J Series

- **Catalog No.:** SW2.5-30R1
- **Normal plate:** 1
- **Number of plates:** 3
- **Lead angle:** 7°46'
- **Hand thread:** R
- **Shape:** W1K
- **Hole dia.:** 15
- **Pitch dia.:** 17
- **Outside dia.:** 37
- **Hole width (R):** 42
- **Hole width (Q):** 45
- **Length:** 18

**NOTE:** H1K has a sand mold casting finish.

### Cautions on Secondary Operations

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

2. Gear tooth hardening of the worm reduces the precision, introduces errors in the lead and pressure angle. Avoid heat treating as it will create bad tooth contact causing abrasion of the wheel.

### 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. Please allow additional shipping time to get to your local distributor.

- **Number of products we can process for one order:** 1 to 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, J9 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.”

---

**BG • CG**

**Bronze Worm Wheels & Gray Iron Worm Wheels**

### Specifications

- **Position grade:** BG, CG
- **Weight:** Normal plane
- **Material:** Standard full depth
- **Hardness:** Black oxide coating

### Catalog No.

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Normal plate</th>
<th>Number of plates</th>
<th>Lead angle</th>
<th>Hand thread</th>
<th>Shape</th>
<th>Hole dia.</th>
<th>Pitch dia.</th>
<th>Outside dia.</th>
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<td>18</td>
</tr>
</tbody>
</table>

---

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

- **Product shapes of J Series items:** identified by background color.

---

*Please see Page 354 for Cautions on Product Characteristics and Cautions on Performing Secondary Operations.*
**Module 3**

**SW Steel Worms**

**Specifications**
- Precision grade: KHK W 001 grade 4 +
- Type of gear: Normal plane
- Gear teeth: Standard full depth
- Pressure angle: 14° 30’
- Helix angle: 7° 50’
- Module: 3
- Screw: Internal
- Material: HB

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Normal plate</th>
<th>Number of products</th>
<th>L (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm)</th>
<th>E (mm)</th>
<th>F (mm)</th>
<th>G (mm)</th>
<th>Hole dia.</th>
<th>Pitch dia.</th>
<th>Outside dia.</th>
<th>Face width</th>
<th>Hub width</th>
<th>Hub width (R)</th>
<th>Hub width (Q)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB3-20L1</td>
<td>1</td>
<td>3.55’ R</td>
<td>15</td>
<td>44</td>
<td>50</td>
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<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**BRONZE WORM WHEELS & GRAY IRON WORM WHEELS**

**Specifications**
- Precision grade: KHK W 001 grade 4 +
- Type of gear: Normal plane
- Gear teeth: Standard full depth
- Pressure angle: 14° 30’
- Helix angle: 7° 50’
- Module: 3
- Screw: Internal
- Material: HB

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Normal plate</th>
<th>Number of products</th>
<th>L (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm)</th>
<th>E (mm)</th>
<th>F (mm)</th>
<th>G (mm)</th>
<th>Hole dia.</th>
<th>Pitch dia.</th>
<th>Outside dia.</th>
<th>Face width</th>
<th>Hub width</th>
<th>Hub width (R)</th>
<th>Hub width (Q)</th>
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<tbody>
<tr>
<td>CB3-20L1</td>
<td>1</td>
<td>3.55’ R</td>
<td>15</td>
<td>44</td>
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<td>50</td>
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</tr>
</tbody>
</table>

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*Please see Page 394 for Cautions on Product Characteristics and Cautions on Performing Secondary Operations.*

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

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* Please see Page 394 for Cautions on Product Characteristics and Cautions on Performing Secondary Operations.*
**Module 4**

**Bronze Worm Wheels & Gray Iron Worm Wheels**

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Normal modules</th>
<th>Number of teeth</th>
<th>Pitch dia. (mm)</th>
<th>Shape</th>
<th>Bore (mm)</th>
<th>Pitch dia. (mm)</th>
<th>Thrust dia. (mm)</th>
<th>Outside dia. (mm)</th>
<th>Face width (mm)</th>
<th>Spindle width (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG-20R1</td>
<td>20</td>
<td>20</td>
<td>34.2</td>
<td>R</td>
<td>H1</td>
<td>20</td>
<td>60</td>
<td>80.17</td>
<td>88</td>
<td>90</td>
</tr>
<tr>
<td>BG-20R2</td>
<td>10</td>
<td>20</td>
<td>34.2</td>
<td>R</td>
<td>H1</td>
<td>20</td>
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<td>80.17</td>
<td>88</td>
<td>90</td>
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<tr>
<td>BG-30R1</td>
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<td>R</td>
<td>HB</td>
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<tr>
<td>BG-30R2</td>
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<td>R</td>
<td>HB</td>
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<td>171</td>
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<td>R</td>
<td>HB</td>
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<td>60</td>
<td>200.42</td>
<td>208</td>
<td>211</td>
</tr>
<tr>
<td>CG-20R1</td>
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<td>20</td>
<td>34.2</td>
<td>R</td>
<td>H2</td>
<td>20</td>
<td>70</td>
<td>200.42</td>
<td>208</td>
<td>211</td>
</tr>
<tr>
<td>CG-20R2</td>
<td>10</td>
<td>20</td>
<td>34.2</td>
<td>R</td>
<td>H2</td>
<td>20</td>
<td>70</td>
<td>200.42</td>
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<td>211</td>
</tr>
<tr>
<td>CG-30R1</td>
<td>30</td>
<td>30</td>
<td>34.2</td>
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<td>HB</td>
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<td>70</td>
<td>240.55</td>
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<td>251</td>
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<td>30</td>
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<td>R</td>
<td>HB</td>
<td>20</td>
<td>70</td>
<td>240.55</td>
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<td>251</td>
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<tr>
<td>CG-40R1</td>
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<td>R</td>
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<td>HB</td>
<td>20</td>
<td>70</td>
<td>320</td>
<td>328</td>
<td>331</td>
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</table>

**NOTE:**
- Table shows allowable torque based on worm speed (rpm)
- **BG-20R1**
- **BG-20R2**
- **BG-30R1**
- **BG-30R2**
- **BG-40R1**
- **BG-40R2**

**NOTE 1:** Allowable torque based on worm speed (rpm)

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Normal modules</th>
<th>Number of teeth</th>
<th>Pitch dia. (mm)</th>
<th>Shape</th>
<th>Bore (mm)</th>
<th>Pitch dia. (mm)</th>
<th>Thrust dia. (mm)</th>
<th>Outside dia. (mm)</th>
<th>Face width (mm)</th>
<th>Spindle width (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG-20L1</td>
<td>20</td>
<td>20</td>
<td>34.2</td>
<td>R</td>
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<td>20</td>
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<td>90</td>
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<tr>
<td>CG-20L2</td>
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<td>130</td>
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<tr>
<td>CG-30L2</td>
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<td>30</td>
<td>34.2</td>
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<td>HB</td>
<td>20</td>
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<td>130</td>
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<td>HB</td>
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<td>171</td>
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<tr>
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</tr>
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<td>R</td>
<td>H2</td>
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<td>208</td>
<td>211</td>
</tr>
<tr>
<td>CG-50L2</td>
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<td>50</td>
<td>34.2</td>
<td>R</td>
<td>H2</td>
<td>20</td>
<td>70</td>
<td>240.55</td>
<td>248</td>
<td>251</td>
</tr>
</tbody>
</table>

**NOTE 1:** Allowable torque based on worm speed (rpm)

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Normal modules</th>
<th>Number of teeth</th>
<th>Pitch dia. (mm)</th>
<th>Shape</th>
<th>Bore (mm)</th>
<th>Pitch dia. (mm)</th>
<th>Thrust dia. (mm)</th>
<th>Outside dia. (mm)</th>
<th>Face width (mm)</th>
<th>Spindle width (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG-20L1</td>
<td>20</td>
<td>20</td>
<td>34.2</td>
<td>R</td>
<td>H1</td>
<td>20</td>
<td>60</td>
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<td>90</td>
</tr>
<tr>
<td>CG-20L2</td>
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<td>20</td>
<td>34.2</td>
<td>R</td>
<td>H1</td>
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<tr>
<td>CG-30L1</td>
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<td>34.2</td>
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<td>HB</td>
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<td>120.25</td>
<td>128</td>
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</tr>
<tr>
<td>CG-30L2</td>
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<td>171</td>
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<tr>
<td>CG-40L2</td>
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<td>R</td>
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<td>20</td>
<td>60</td>
<td>200.42</td>
<td>208</td>
<td>211</td>
</tr>
</tbody>
</table>

**NOTE 1:** Allowable torque based on worm speed (rpm)
**Module 5, 6**

**Steel Worms**

### Specifications
- **Precision grade**: KHK W 001 grade 4
- **Heat treatment**: Normal plane
- **Gear teeth**: Standard full depth
- **Pressure angle**: 14° 30’
- **Material**: S45C
- **Surface treatment**: Black oxide coating

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Normal module</th>
<th>Normal number of teeth</th>
<th>Normal external thread shape</th>
<th>Shape</th>
<th>Bore</th>
<th>Hub dia.</th>
<th>Pitch dia.</th>
<th>Outside dia.</th>
<th>Price with (G)</th>
<th>Hub width (H)</th>
<th>Price with (Q)</th>
<th>Price with (Q)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWS-R1</td>
<td>m5</td>
<td>2</td>
<td>4°26'</td>
<td>R</td>
<td>W3</td>
<td>25</td>
<td>54</td>
<td>70</td>
<td>80</td>
<td>85</td>
<td>28</td>
<td>20</td>
</tr>
<tr>
<td>SWS-R2</td>
<td>m5</td>
<td>2</td>
<td>8°15'</td>
<td>R</td>
<td>W3</td>
<td>25</td>
<td>56</td>
<td>70</td>
<td>80</td>
<td>85</td>
<td>28</td>
<td>20</td>
</tr>
<tr>
<td>SWS-R2</td>
<td>m5</td>
<td>2</td>
<td>8°38'</td>
<td>R</td>
<td>W3</td>
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<td>56</td>
<td>70</td>
<td>80</td>
<td>85</td>
<td>28</td>
<td>20</td>
</tr>
</tbody>
</table>

**Catalog No.**

- Please see “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.
- Gear tooth hardening of the worm reduces the precision (introduces errors in the lead and pressure angles). Avoid heat treating as it will create bad tooth contact causing abrasion of the wheel.

### BG - CG

#### Bronze Worm Wheels & Gray Iron Worm Wheels

### Catalog No.

<table>
<thead>
<tr>
<th>Reduction ratio</th>
<th>Normal module</th>
<th>Normal number of teeth</th>
<th>Normal external thread shape</th>
<th>Shape</th>
<th>Bore</th>
<th>Hub dia.</th>
<th>Pitch dia.</th>
<th>Outside dia.</th>
<th>Price with (G)</th>
<th>Hub width (H)</th>
<th>Price with (Q)</th>
<th>Price with (Q)</th>
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</thead>
<tbody>
<tr>
<td>BG6-20R1</td>
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<td>2</td>
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<td>R</td>
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<td>52</td>
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<td>20</td>
</tr>
<tr>
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<td>m5</td>
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<td>4°26'</td>
<td>R</td>
<td>H1</td>
<td>25</td>
<td>100</td>
<td>132</td>
<td>136</td>
<td>52</td>
<td>20</td>
</tr>
<tr>
<td>BG6-20R1</td>
<td>20</td>
<td>2</td>
<td>8°15'</td>
<td>R</td>
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<td>25</td>
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<td>132</td>
<td>136</td>
<td>52</td>
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</tr>
</tbody>
</table>

**Catalog No.**

- Please see “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.
- Gear tooth hardening of the worm reduces the precision (introduces errors in the lead and pressure angles). Avoid heat treating as it will create bad tooth contact causing abrasion of the wheel.

**NOTE**

- All tooth forces in parenthesis are derived from test specimens and differ according to the product shape.

- *F(1) m*)

- CS has a sand mold casting finish.

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