**Features**

Characteristics of Pawls and Ratchets

- A simple structure used to restrict the rotational direction in one way.
- The tips of pawls and the teeth of ratchets are induction hardened and therefore have superior durability.

**Points to observe during use**

- No secondary operations can be performed on tooth areas including the bottom land (approx. 2 to 3 mm), due to gear tooth induction hardened.
- The pawls are designed to prevent reverse rotation. They are not suitable for use as driving ratchets or driving rotation.
- SRT/2 C is manufactured using a lost wax casting method.
- Regarding SRTB ratchets with hubs, please note the direction of teeth, viewing from the hub side.

**Bending strength of Ratchets**

The allowable transmission forces $F_a (N)$ of ratchets is the value calculated by the following formula:

$$F_a = \frac{P}{A_s} - \frac{P}{A_t} - \frac{1}{b}$$

Also, the SRT Ratchet's allowable torque $T (N \cdot m)$ for bending strength is calculated by the following formula.

$$T = F_a \cdot r_f$$

Where

- $P_s$: Bending stress (Assumed 225 SSI/MPa)
- $b$: Face width (mm)
- $e$: Root length (mm)
- $h$: Depth of teeth (H) (mm)
- $S_r$: Safety factor (Assumed 2)
- $r_t$: Tooth root radius (mm)
- $r_f$: Outside dia $D - (2 \times h)$

---

**Application**

*The illustration is a design example, not a design for machinery or a device in actual use.

Example: SRT Ratchets used as a free-fall prevention mechanism of a lift device

Example: Ratchets used for complete reverse prevention of worm gears
### Ratchets

**Specifications**

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Shape</th>
<th>K</th>
<th>M</th>
<th>P</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRT2/3-C</td>
<td>5</td>
<td>30</td>
<td>6</td>
<td>0.020</td>
<td></td>
</tr>
<tr>
<td>SRT2-A</td>
<td>10</td>
<td>39</td>
<td>12</td>
<td>0.055</td>
<td></td>
</tr>
<tr>
<td>SRT2-B</td>
<td>12</td>
<td>55</td>
<td>15</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td>SRT2-C</td>
<td>12</td>
<td>65</td>
<td>20</td>
<td>0.23</td>
<td></td>
</tr>
</tbody>
</table>

**Caution on Product Characteristics**

1. The pawls are designed to prevent reverse rotation. They are not suitable for use as driving ratchets or driving rotation.
2. SRT2/3-C is manufactured using a lost wax casting method.

---

### Other Products

**Specifications**

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Shape</th>
<th>K</th>
<th>M</th>
<th>P</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRT3-C</td>
<td>T5</td>
<td>30</td>
<td>6</td>
<td>0.102</td>
<td></td>
</tr>
<tr>
<td>SRT3-C</td>
<td>12</td>
<td>65</td>
<td>20</td>
<td>0.30</td>
<td></td>
</tr>
</tbody>
</table>

**Newly added**

- Ratchets
- Series

---

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

**Specifications**

<table>
<thead>
<tr>
<th>Screw size</th>
<th>10</th>
<th>12</th>
<th>15</th>
<th>18</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog No.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Caution on Product Characteristics**

1. Regarding SRT-C ratchets with hubs, please note the direction of teeth, viewed from the hub side. HKH can produce ratchets that have teeth pointed in the opposite direction as a custom order item.
2. Due to heat treating, some deformation of the bore may occur. It may be necessary to ream the bore to bring to the stated dimensions.

---

**Material:** S45C

**Heat Treatment:** Induction hardened teeth

**Pitch hardness:** 50 ~ 60 HRC

---

See our web site for corrections on HKH Catalogs.
### SRTB Ratchets

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Pitch</th>
<th>Diameter</th>
<th>Material</th>
<th>Teeth hardness</th>
<th>Screw offset</th>
<th>Hub width</th>
<th>Pitch</th>
<th>Screw size</th>
<th>Angle of Teeth</th>
<th>Teeth hardness</th>
<th>Tooth hardness</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRTB2/3-50</td>
<td>2.09</td>
<td>60</td>
<td>S45C</td>
<td>50 ± 0.03</td>
<td>50</td>
<td>0.156</td>
<td>1.50</td>
<td>41.4</td>
<td>60°</td>
<td>50 ± 0.03</td>
<td>50 ± 0.03</td>
<td>0.31</td>
</tr>
<tr>
<td>SRTB2/3-60</td>
<td>2.09</td>
<td>60</td>
<td>S45C</td>
<td>50 ± 0.03</td>
<td>50</td>
<td>0.156</td>
<td>1.50</td>
<td>41.4</td>
<td>60°</td>
<td>50 ± 0.03</td>
<td>50 ± 0.03</td>
<td>0.31</td>
</tr>
</tbody>
</table>

### Pitch 2.09 ~ 12.57

- **Specifications**
  - **Angle of Teeth**: 60°
  - **Material**: S45C
  - **Heat Treatment**: Induction hardened teeth
  - **Tooth hardness**: 50 ~ 60HRC

### SRTB2/3-50

- **Pitch**: 2.09
- **Diameter**: 60
- **Material**: S45C
- **Teeth hardness**: 50 ± 0.03
- **Screw offset**: 50
- **Hub width**: 0.156
- **Pitch**: 1.50
- **Screw size**: 41.4
- **Angle of Teeth**: 60°
- **Teeth hardness**: 50 ± 0.03
- **Tooth hardness**: 50 ± 60HRC
- **Weight**: 0.31 kg

---

### SRTB2/3-60

- **Pitch**: 2.09
- **Diameter**: 60
- **Material**: S45C
- **Teeth hardness**: 50 ± 0.03
- **Screw offset**: 50
- **Hub width**: 0.156
- **Pitch**: 1.50
- **Screw size**: 41.4
- **Angle of Teeth**: 60°
- **Teeth hardness**: 50 ± 0.03
- **Tooth hardness**: 50 ± 60HRC
- **Weight**: 0.31 kg

---

### Caution on Product Characteristics

1. **Regarding SRTB ratchets with hubs**: Please note the direction of teeth, viewed from the hub side. KHK can produce ratchets that have teeth pointed in the opposite direction as a custom order item.
2. **Due to heat treatment, some deformation of the bore may occur. It may be necessary to ream the bore to bring it to the stated dimensions.**

---

### Other Products

- **SRT-C Pawls**

  - **Specifications**
    - **Angle of Teeth**: 60°
    - **Material**: S45C
    - **Heat Treatment**: Induction hardened teeth
    - **Tooth hardness**: 50 ~ 60HRC

  - **Catalog No.**
    - **Shape**: T5
    - **Pitch**: 2.09
    - **Weight**: 0.38 kg

---

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

- **Keyway size**: 4 × 1.8, 5 × 0.3
- **The product shapes of J Series items are identified by background color.**

---

### Caution on J Series

1. **For available-on-request products, requires a lead time for shipping within 2 working days (excluding the day ordered), after placing in order. Please allow additional shipping time to our local distributor.**
2. **Number of products we can produce for one order is 1 to 20 sets. For quantities of 21 or more pieces, we need to quote prior and lead time.**
3. **Keyways are made according to JS B101 standards, ±0.01 tolerance.**
4. **Certain products which would otherwise have a very long tapped hole are contrived to reduce the length of the tap.**
5. **Areas of products which have been re-worked will not be black under coated.**
6. **For products having a tapped hole, a set screw is included.**

---

### Please see our web site for corrections on KHK Catalogs.