KCP Gear Coupling follows the international standards of AGMA and JIS, which easily allows to replace with major industrial products. Our Gear coupling compensate angular misalignment, parallel misalignment and end float. The fully crowned hub teeth provide minimum loading stress, and ensure longer life.

1. Characteristic

1. High torque, small size, long life and very little loss of transmitting power.

2. The concave-convex flange design allows easy assembly and the high quality gasket prevent leakage of lubricant.

3. Gear Coupling permits parallel, angular misalignments and end floating by crown gear teeth.

- **Parallel Misalignment**
  The driving and driven shafts are not parallel to each other, but not on the same straight line.

- **Angular Misalignment**
  The driving and driven shafts installed with an limited angle.

- **End Floating**
  The driving and driven shafts slide slightly along with the gear teeth.

- **Composite Misalignment**
  Most of cases, above 3 misalignments appear with mixed in general use.
KCP Gear Coupling

Allowable Misalignment

<table>
<thead>
<tr>
<th>Size</th>
<th>10G</th>
<th>15G</th>
<th>20G</th>
<th>25G</th>
<th>30G</th>
<th>35G</th>
<th>40G</th>
<th>45G</th>
<th>50G</th>
<th>55G</th>
<th>60G</th>
<th>70G</th>
<th>80G</th>
<th>90G</th>
<th>100G</th>
<th>110G</th>
<th>120G</th>
</tr>
</thead>
<tbody>
<tr>
<td>ε (mm)</td>
<td>1.2</td>
<td>1.3</td>
<td>1.7</td>
<td>2.1</td>
<td>2.4</td>
<td>2.9</td>
<td>3.2</td>
<td>3.6</td>
<td>4.1</td>
<td>4.5</td>
<td>5.0</td>
<td>5.9</td>
<td>6.7</td>
<td>7.4</td>
<td>8.2</td>
<td>12.7</td>
<td>12.7</td>
</tr>
<tr>
<td>θ (°)</td>
<td>3(1.5)</td>
<td>3(1.5)</td>
<td>3(1.5)</td>
<td>3(1.5)</td>
<td>3(1.5)</td>
<td>3(1.5)</td>
<td>3(1.5)</td>
<td>3(1.5)</td>
<td>3(1.5)</td>
<td>3(1.5)</td>
<td>3(1.5)</td>
<td>3(1.5)</td>
<td>2(1)</td>
<td>2(1)</td>
<td>2(1)</td>
<td>2(1)</td>
<td>2(1)</td>
</tr>
</tbody>
</table>

- Data subject to double engagement couplings.

5. The coupling made of S45C has a good endurance to high speed and peak load.
   Consult us for special materials, if required.
6. Customer’s requirements of special design can be acceptable.

2. Structure

1. Internal Gear (Flanged Sleeve)
2. Crown Gear (Crown Gear Hub)
3. Reamer Bolt or AGMA Bolt
4. Gasket
5. O-ring
6. Spring Washer

- The crowned hub teeth provide larger contact area and decrease the stress.

3. Application

1. Heavy load, but compact design coupling.
2. Highs speed up to 5,000rpm (Depending on size, refer to the data)
3. Low speed, but high starting torque.
4. End float application.
5. Spacer required, due to longer distance between shaft ends.
6. Low load and light weight application is not recommendable.
KCP Gear Coupling

4. Standard Material

<table>
<thead>
<tr>
<th>INTERNAL GEAR</th>
<th>CROWN GEAR</th>
<th>FLANGE</th>
<th>Bolt</th>
<th>O-Ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM 45C-N</td>
<td>SM 45C-H</td>
<td>NBR</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Special material and/or specific treatment is required under the unusual application environments, such as high speed, high or low temperature, chemical corrosiveness, maximum load stress.
- Under the heavy load, high speed and corrosive environment, special materials shall be required.

5. Selection method of size

1. Selection

① Using the following formula, obtain Design Torque required.

\[
T = 97,400 \frac{kw}{N} \times S \cdot F \quad \text{또는} \quad T = 71,620 \frac{HP}{N} \times S \cdot F
\]

- \( T \) = Design torque (kg cm)
- \( kw \) = Power (kw)
- \( HP \) = Power (HP)
- \( N \) = Working revolution (rpm)
- \( S \cdot F \) = Recommended Service Factor

② Select the size with the same or greater value at the Basic Torque column, Refer to the maximum speed allowed to the size selected size, and then compare the shaft diameters of the application with the max. bore dia of the selected size. If the coupling bore is not suitable, select the next larger coupling size.

2. Special requirements.

① At the application of the Sliding Gear Coupling (type KGH) that endfloat movement occurs more than 5 times per hour, add 0.5 to the listed value of service factor

② At the applications such as continuous reverse revolutions, intermit operation, often peak load and high inertia required system, multiply 1.5 to the Design Torque calculated.

③ In the type of KGES-R and KGFS-O, the thickness and length of intermediate shaft must be determined according to our company’s material specifications, consult with our Engineer.

④ Selecting the size of types KGDBW and KGSBW: apply brake power, if exceeds the prime mover power.
3. Example

Select Gear Coupling to connect 450HP, 1,170rpm electric motor with reducer. Motor shaft diameter is 80\(\phi\) mm, Reducer shaft diameter is 90\(\phi\) mm, Max. parallel alignment is 1.5mm

① Select type KGDE for higher valued application of parallel misalignment.
② Service factor is 2.0
③ Use the normal formula

\[
\text{HP/100rpm} = \frac{450 \times 100 \times 2.0}{1,170} = 76.9
\]

Size KGDE25 is selected with rating of 90 HP per 100rpm. To apply larger shaft dia 90\(\phi\) mm, finally KGDE 30 is selected.

6. Designation

KCP ── 15 KGD

Type of Gear Coupling
Size No.
KCP COUPLINGS
- KGD : Double Engagement Coupling
- KGDL : Double Engagement Large Coupling
- KGS : Single Engagement Coupling
- KGSL : Single Engagement Large Coupling
- KGDS : Spacer Coupling - Double Engagement
- KGH10 : Double Engagemen - Horizontal Sliding Coupling
- KGH20 : Single Engagmen - Horizontal Sliding Coupling

KCP ── 250 KSS

Type of Gear Coupling
Size No.
(KCP COUPLINGS
- KSS : Double Engament Coupling
- KSE : Single Engagement Coupling
- KCC : Double Engagement Coupling - Large type
- KCE : Single Engagement Coupling - Large type
7. Instruction for Installation

1. Small Size (up to size 60)

Hub bore and keyway must be machined accurately. During the key-fit to the shaft and the hub, be careful with the oil leakage.

① Clean all parts. Grease the crowned gear teeth and O-Ring. Put O-Ring onto the shafts.
② Place the flanged sleeves on the shafts and mount the hubs.
③ Using a spacer bar, make the gap between the hubs equal to the normal gap specified.
④ Align the shaft with a straight bar by checking every 90° degree, referring to the table 3. Make it sure with a dial gauge not to exceed the offset limit.
⑤ Insert gasket between the flanged sleeves and fasten the bolts, positioning the lube plug at 90°
⑥ Fill grease until overflowing at the open opposite Lub plug hole.

Fig. 3 Operating Limits of misalignment (mm)

<table>
<thead>
<tr>
<th>Size</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
<th>50</th>
<th>55</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angular degree</td>
<td>0.125</td>
<td>0.125</td>
<td>0.25</td>
<td>0.25</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Gap</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4.5</td>
<td>4.5</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>9.5</td>
<td>10</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Flange Bolt Torque (kg · cm)</td>
<td>96</td>
<td>320</td>
<td>480</td>
<td>960</td>
<td>960</td>
<td>1,650</td>
<td>1,650</td>
<td>1,650</td>
<td>2,070</td>
<td>2,070</td>
<td>2,070</td>
<td>2,980</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- The life of coupling is reduced by excess of the OFFSET limit.
2. Large Size (over size 70)

Hub bore and Keyway must be machined accurately. During the Key-Fit work, be careful Internal Gear not to make oil leakage.

① Clean all parts. Pack with grease and seals with grease before assembly.

② Place the side covers with sealing gaskets on the shafts before mounting the crown gears. Mount crown gears on their respective shafts. Mount Internal Gears with side cover gaskets.

③ Use a spacer bar equal into the gap. The difference in minimum and maximum measurements should not exceed the angular limit specified in table 3.

④ Align with a straightedge, rests squarely at every 90° as shown in photo Check with feelers. The tolerance should not exceed the offset limit specified in Table 3.

⑤ Insert gasket between flanges. Position Internal Gears with lube holes at about 90° and then fasten the bolt & nuts.

⑥ Remove all lube plugs and fill recommended grease into the coupling until excess flow through the opposite lub plug hole. And screw down plugs.
KCP Gear Coupling

8. Selection of Puller Holes

9. Lubrication and Handling

Information of the adequate lubricant for good performance and long life.

1. Lubricant

① Grease the Internal gear teeth and crown gear teeth, and fill enough lubricant Grease.
② Lub weight - Refer to "Dimensions Table" on page30.
③ Supplement and Replacement;
   Add grease every moth or every 240~250 hours operating.
   Renew all the contaminated grease every 3 months or every 4,000 hours operationg
④ Selection
   Allowable temperature of grease is from -17°C to 70°C. Refer to the table 6 that shows the coupling RPM allowed for the listed grease.

Table 5

<table>
<thead>
<tr>
<th>Company</th>
<th>Oil</th>
<th>Grease # 1</th>
<th>Grease # 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gulf Oil Corp.</td>
<td>Gulfcrown Grease EP #1</td>
<td>Gulfcrown Grease EP #0</td>
<td></td>
</tr>
<tr>
<td>Shell Oil Corp.</td>
<td>Alvania Grease EP #1</td>
<td>Alvania Grease EP-RO</td>
<td></td>
</tr>
<tr>
<td>Texaco Inc.</td>
<td>Multifak EP – 1</td>
<td>Multifak EP – 0</td>
<td></td>
</tr>
<tr>
<td>Mobil Oil Corp.</td>
<td>Mobilux EP – 1</td>
<td>Mobilux EP – 0</td>
<td></td>
</tr>
</tbody>
</table>

■ NOTE : Lubricants listed in this manual are typical products.
2. Lubricant Filling

① Place the Lub plug holes x 2EA horizontal level. Fill up Lubricant until it overflows from the opposite hole.
② Supplement every month, or 240-250 hours operating.
③ Replacement completely all the contaminated lubricant, every 3 months or every 4,000 hours operating.

3. Selection of Lubricant

Table 6

<table>
<thead>
<tr>
<th>Company</th>
<th>Shell</th>
<th>Mobil</th>
<th>Michang</th>
<th>Buhmwoo</th>
<th>Gulf</th>
<th>Fujikosan</th>
<th>Houghton</th>
<th>Hanil</th>
<th>Caltex</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST 40°C</td>
<td>CST 40°C</td>
<td>68</td>
<td>Mobilgear 626</td>
<td>Pio Gear EP 68</td>
<td>Buhmwoo Gearlube BG-68</td>
<td>Gulf EP Lubricant R 68</td>
<td>Hirax ME GO 300</td>
<td>MP Gear Oil 68</td>
<td>Nico Gear SP 68</td>
</tr>
<tr>
<td>CST 40°C</td>
<td>CST 40°C</td>
<td>68</td>
<td>Mobilgear 626</td>
<td>Pio Gear EP 68</td>
<td>Buhmwoo Gearlube BG-100</td>
<td>Gulf EP Lubricant HD 100</td>
<td>Hirax ME GO 500</td>
<td>MP Gear Oil 100</td>
<td>Nico Gear SP 100</td>
</tr>
<tr>
<td>100</td>
<td>465</td>
<td>omala 68</td>
<td>Mobilgear 626</td>
<td>Pio Gear EP 68</td>
<td>Buhmwoo Gearlube BG-130</td>
<td>Gulf EP Lubricant R150, HD150</td>
<td>Hirax ME GO 700</td>
<td>MP Gear Oil 150</td>
<td>Nico Gear SP 150</td>
</tr>
</tbody>
</table>

- Aboves are sample products.
## KCP Gear Coupling

### Type G20, (Double Gear) Gear Coupling - AGMA Type

![Type G20 Diagram]

#### Type G20 Standard Flanged Sleeve

<table>
<thead>
<tr>
<th>Size</th>
<th>HP per 100 rpm</th>
<th>Torque Rating (lb-in)</th>
<th>Allow Speed rpm</th>
<th>Max bore da</th>
<th>Min bore da</th>
<th>Cplg Wt lb G20</th>
<th>Lube wt lb</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>J</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>1010G</td>
<td>16</td>
<td>10,080</td>
<td>8,000</td>
<td>1,875</td>
<td>50</td>
<td>10</td>
<td>.03</td>
<td>4.56</td>
<td>3.50</td>
<td>1.69</td>
<td>2.70</td>
<td>3.30</td>
<td>1.53</td>
<td>.125</td>
</tr>
<tr>
<td>1015G</td>
<td>33</td>
<td>20,790</td>
<td>6,500</td>
<td>2,375</td>
<td>75</td>
<td>20</td>
<td>1.16</td>
<td>6.00</td>
<td>4.00</td>
<td>1.94</td>
<td>3.40</td>
<td>4.14</td>
<td>1.88</td>
<td>.125</td>
</tr>
<tr>
<td>1020G</td>
<td>60</td>
<td>37,800</td>
<td>5,600</td>
<td>2,875</td>
<td>100</td>
<td>35</td>
<td>2.25</td>
<td>7.00</td>
<td>5.00</td>
<td>2.44</td>
<td>4.14</td>
<td>4.96</td>
<td>2.34</td>
<td>.125</td>
</tr>
<tr>
<td>1025G</td>
<td>105</td>
<td>66,150</td>
<td>5,000</td>
<td>3,625</td>
<td>125</td>
<td>65</td>
<td>50</td>
<td>8.38</td>
<td>6.25</td>
<td>3.03</td>
<td>5.14</td>
<td>6.10</td>
<td>2.82</td>
<td>.188</td>
</tr>
<tr>
<td>1030G</td>
<td>170</td>
<td>107,100</td>
<td>4,400</td>
<td>4,125</td>
<td>150</td>
<td>95</td>
<td>.80</td>
<td>9.44</td>
<td>7.37</td>
<td>3.59</td>
<td>6.00</td>
<td>7.10</td>
<td>3.30</td>
<td>.188</td>
</tr>
<tr>
<td>1035G</td>
<td>260</td>
<td>163,800</td>
<td>3,900</td>
<td>4,875</td>
<td>200</td>
<td>150</td>
<td>1.20</td>
<td>11.00</td>
<td>8.63</td>
<td>4.19</td>
<td>7.00</td>
<td>8.32</td>
<td>3.84</td>
<td>.250</td>
</tr>
<tr>
<td>1040G</td>
<td>430</td>
<td>270,900</td>
<td>3,600</td>
<td>5,750</td>
<td>250</td>
<td>215</td>
<td>2.00</td>
<td>12.50</td>
<td>9.75</td>
<td>4.75</td>
<td>8.25</td>
<td>9.66</td>
<td>4.38</td>
<td>.250</td>
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<tr>
<td>1045G</td>
<td>590</td>
<td>371,700</td>
<td>3,200</td>
<td>6,750</td>
<td>300</td>
<td>300</td>
<td>2.30</td>
<td>13.62</td>
<td>10.93</td>
<td>5.31</td>
<td>9.25</td>
<td>10.79</td>
<td>4.84</td>
<td>.312</td>
</tr>
<tr>
<td>1050G</td>
<td>795</td>
<td>500,900</td>
<td>2,900</td>
<td>7,375</td>
<td>400</td>
<td>420</td>
<td>3.90</td>
<td>15.31</td>
<td>12.37</td>
<td>6.03</td>
<td>10.00</td>
<td>12.04</td>
<td>5.54</td>
<td>.312</td>
</tr>
<tr>
<td>1055G</td>
<td>1,040</td>
<td>655,200</td>
<td>2,650</td>
<td>8,250</td>
<td>500</td>
<td>550</td>
<td>4.90</td>
<td>16.75</td>
<td>13.56</td>
<td>6.62</td>
<td>11.00</td>
<td>13.16</td>
<td>6.22</td>
<td>.312</td>
</tr>
<tr>
<td>1060G</td>
<td>1,270</td>
<td>800,100</td>
<td>2,450</td>
<td>9,125</td>
<td>550</td>
<td>675</td>
<td>7.00</td>
<td>18.00</td>
<td>15.13</td>
<td>7.41</td>
<td>12.00</td>
<td>14.41</td>
<td>6.66</td>
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<tr>
<td>1070G</td>
<td>1,900</td>
<td>1,197,000</td>
<td>2,150</td>
<td>10,875</td>
<td>500</td>
<td>1070</td>
<td>9.60</td>
<td>20.75</td>
<td>17.75</td>
<td>8.69</td>
<td>14.00</td>
<td>16.73</td>
<td>7.70</td>
<td>.375</td>
</tr>
</tbody>
</table>

#### Type G20 Standard Flanged Sleeve

<table>
<thead>
<tr>
<th>Size</th>
<th>Torque Rating (lb-in/millions)</th>
<th>Allow Speed rpm</th>
<th>Max bore da</th>
<th>Min bore da</th>
<th>Cplg Wt lb G20</th>
<th>Lube wt lb</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>J</th>
<th>K</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>1080G</td>
<td>1,506</td>
<td>2,070</td>
<td>1,750</td>
<td>10,50</td>
<td>4,000</td>
<td>1150</td>
<td>21</td>
<td>23.25</td>
<td>20.02</td>
<td>9.82</td>
<td>14.00</td>
<td>9.56</td>
<td>22.50</td>
<td>.375</td>
</tr>
<tr>
<td>1090G</td>
<td>1,997</td>
<td>2,791</td>
<td>1,550</td>
<td>11,25</td>
<td>4,500</td>
<td>2170</td>
<td>27</td>
<td>26.00</td>
<td>22.26</td>
<td>10.88</td>
<td>15.50</td>
<td>10.44</td>
<td>25.25</td>
<td>.500</td>
</tr>
<tr>
<td>1100G</td>
<td>2,747</td>
<td>3,919</td>
<td>1,450</td>
<td>12,75</td>
<td>5,000</td>
<td>2870</td>
<td>33</td>
<td>28.00</td>
<td>24.50</td>
<td>12.00</td>
<td>17.50</td>
<td>11.56</td>
<td>27.50</td>
<td>.500</td>
</tr>
<tr>
<td>1110G</td>
<td>3,654</td>
<td>5,393</td>
<td>1,330</td>
<td>14,00</td>
<td>5,500</td>
<td>3700</td>
<td>39</td>
<td>30.50</td>
<td>26.74</td>
<td>13.12</td>
<td>19.50</td>
<td>12.69</td>
<td>29.50</td>
<td>.500</td>
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<tr>
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<td>6,880</td>
<td>1,200</td>
<td>15,25</td>
<td>6,000</td>
<td>4660</td>
<td>46</td>
<td>33.00</td>
<td>28.26</td>
<td>13.88</td>
<td>21.50</td>
<td>13.44</td>
<td>32.50</td>
<td>.500</td>
</tr>
</tbody>
</table>

Most sizes are kept in stock, for availability please contact your Finer representative.

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Every effort has been taken to ensure that the data listed in this catalogue is correct. Finer Power Transmissions P/L will not accept liability for any damage, or loss caused as a result of the data in this catalogue.