Roller Chain Couplings

- Connect quickly and easily
- Handle high torque
- Keep your profits turning
Roller Chain Couplings

The Quality Connection

Roller Chain Couplings from U.S. Tsubaki are your connection to better profits and productivity. We’ve combined the best in the business — high-quality Roller Chain with a pair of specially cut, hardened-tooth Sprockets — to create a powerful, flexible coupling that keeps your operation running at peak performance.

For clean areas and light loads, choose our Nylon Chain Couplings. Assembled couplings are also available upon request.

Make the Connection

Farming... mining... metal manufacturing...and more. When you need to connect two shafts, Roller Chain Couplings from U.S. Tsubaki are the right choice.

You can’t make a better match!

• **Simple to Install**
  Save valuable production time by getting your lines up and running fast. Simple construction makes our units easy to install, remove, and replace. Our unique, single-pin connection of the chain keeps downtime — and hassles — to a minimum. One clip is all it takes!

• **Compact and Powerful**
  Remarkably efficient construction transmits torque easily by apportioning it over the entire strand of roller chain and all the sprocket teeth. You get the power you need to drive your business at an economical unit price.

• **Flexible for Easy Alignment**
  Clearances within the chain itself and between the chain and the sprocket teeth make our Roller Chain Couplings flexible and responsive. They align quickly and accurately and protect against overheating and abrasion caused by expansion or contraction of the shaft. You save time and money on adjustments and repairs.

• **Built to Last**
  Get the only flexible coupling on the market built to the quality standards of U.S. Tsubaki. Special double-strand roller chain with single-pin connector. Precision hardened sprockets with our standard dual set screw locking arrangement. The durability you need to handle high speed and torque, keeping maintenance and replacement costs low.
Coupling Covers Add Safety and Efficiency

Coupling Covers improve the safety, cleanliness, and overall performance of your system. Safe and smart, they protect the unit from outside elements and provide better workplace operation.

- Split-type construction provides easy installation and inspection.
- Continuous lubrication keeps lines running smoothly with minimum maintenance, extending service life.
- Smooth-surface design covers entire unit with no projecting bolts, providing a neat appearance and safe operation.

Reduce Your Hassles with a Single, Reliable Source

Partner with U.S. Tsubaki for savings and convenience. You benefit from the power of one:

- One call to get the highest quality power transmission products available
- One order to track
- One delivery to handle
- One invoice to process

Time is money. Reduce your processing time and increase your profits with a single call to U.S. Tsubaki.

The Key to Quick Connections

Keep downtime to a minimum with our unique single-pin connection — available only from U.S. Tsubaki. A single pin holds the chain in place for easy installation. You spend less time setting up your equipment and can quickly get production rolling.
Method for Selection

1. Based on the operating conditions, determine the Service Factor, using Table 1.
2. Obtain the design horsepower by multiplying the horsepower to be transmitted by the Service Factor.
3. With the required rpm, choose the coupling that satisfies the horsepower from the Horsepower Rating, shown in Table 2.
4. When the required shaft diameter exceeds the maximum bore diameter of the coupling you have chosen, use a coupling that is one size larger.
5. In the low-speed range, the shearing pressure might be too great when using a standard key. In this case, calculate the key shearing pressure to determine if it is necessary to use a special key or spline bore.
6. Note the lubrication system required and select the coupling cover as necessary. In all applications, use of a coupling cover will provide quieter running, longer life, and safer operation.

Table 1. Service Factor

<table>
<thead>
<tr>
<th>Load Classification</th>
<th>Electric motors or steam turbines</th>
<th>Reciprocating engines 4 or more cylinders</th>
<th>Reciprocating engines less than 4 cylinders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uniform load, little shock, low starting torque, no reversing</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Moderate fluctuation of load, moderate shock, no reversing (for most common applications)</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Large fluctuations of load, heavy shock, reversal under load, full load starting</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Note: Additional service factor for Roller Chain Coupling by operating hours (at 50 r/min and more)
8 hours to 16 hours/day - 0.5
16 hours or more/day - 1.0

Table 2. HP Rating Table

<table>
<thead>
<tr>
<th>Cplg No.</th>
<th>Max Allowable Transmissible Torque at Below 50 rpm (in lbs.)</th>
<th>Speed of rotation (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4012</td>
<td>1921 0.03 .015 .30 .78 1.54 2.32 3.53 4.64 5.57 6.65 7.60 9.40 11.44 12.98 15.56 18.37 19.85 24.00 27.76 32.32 35.32 41.30</td>
<td></td>
</tr>
<tr>
<td>4016</td>
<td>3416 0.05 0.28 0.55 1.38 2.76 4.14 6.29 8.27 9.94 11.87 13.54 15.76 20.52 23.20 28.16 32.72 35.27 42.78 49.62 57.66 62.89 73.62</td>
<td></td>
</tr>
<tr>
<td>5016</td>
<td>6505 0.11 0.52 1.05 2.61 5.24 7.86 11.96 15.69 18.91 22.52 25.75 31.92 38.76 44.12 53.51 62.22 67.05 81.27 94.41 109</td>
<td></td>
</tr>
<tr>
<td>5018</td>
<td>8240 0.13 0.67 1.33 3.33 6.64 9.96 15.15 19.98 23.87 28.56 32.72 40.36 49.08 55.79 67.72 78.85 85.02 103 120</td>
<td></td>
</tr>
<tr>
<td>6018</td>
<td>15489 0.24 1.25 2.51 6.26 12.51 18.77 28.56 37.55 45.06 53.77 61.55 76.17 92.66 105 128 149 161 194</td>
<td></td>
</tr>
<tr>
<td>6020</td>
<td>17868 0.28 1.43 2.86 7.21 14.34 21.55 23.72 43.17 51.85 61.90 70.84 87.59 106.58 121 147 171 185 223</td>
<td></td>
</tr>
<tr>
<td>8018</td>
<td>34341 0.55 2.78 5.55 13.81 27.76 41.57 63.30 83.28 99.91 119 135 169 205 233 283 330 355</td>
<td></td>
</tr>
<tr>
<td>8020</td>
<td>41027 0.66 3.30 6.61 16.49 33.05 49.55 75.17 99.22 18.54 141.3 162 201 244 278 337 393 423</td>
<td></td>
</tr>
<tr>
<td>10020</td>
<td>77710 1.25 6.25 12.51 31.25 62.49 93.87 142 188 225 268 307 380 463 526 638 743</td>
<td></td>
</tr>
</tbody>
</table>

Lubrication System 1 2 3
### Standard RC Couplings Specification Table

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4012</td>
<td>½, ¾, ¾</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>0.5</td>
<td>0.4</td>
<td>0.20 x 10^-2</td>
</tr>
<tr>
<td>4016</td>
<td>¾, ¾, ½, ¾, ¾a, ¾b</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>0.5</td>
<td>0.4</td>
<td>0.60 x 10^-2</td>
</tr>
<tr>
<td>5016</td>
<td>¾, ½, 1, ½, ½, ½, ½, ½, ½b, ½a</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>2.2</td>
<td>1.2</td>
<td>1.89 x 10^-2</td>
</tr>
<tr>
<td>5018</td>
<td>¾, ½, 1, ½, ½, ½, ½, ½, ½, ½a, ½b</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>2.2</td>
<td>1.2</td>
<td>3.39 x 10^-2</td>
</tr>
<tr>
<td>6018</td>
<td>1, ⅔, ½, ⅔, ½, ⅔, ½, ⅔, ½, ⅔, ½, ½a, ½b</td>
<td>1</td>
<td>2½</td>
<td>3½</td>
<td>1½</td>
<td>⅓a</td>
<td>⅓a</td>
<td>5</td>
<td>5</td>
<td>2.4</td>
</tr>
<tr>
<td>6020</td>
<td>1½, ⅔, ½, ⅔, ½, ⅔, ½, ⅔, ½, ⅔, ½a, ½b</td>
<td>1</td>
<td>2½</td>
<td>3½</td>
<td>1½</td>
<td>⅓a</td>
<td>⅓a</td>
<td>5</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>8018</td>
<td>1½, ⅔, ½, ⅔, ½, ⅔, ½, ⅔, ⅔, ⅔, ⅔a, ⅔b</td>
<td>1½</td>
<td>3½</td>
<td>4½</td>
<td>2½</td>
<td>2½*</td>
<td>⅔b</td>
<td>6</td>
<td>11</td>
<td>5.5</td>
</tr>
<tr>
<td>8020</td>
<td>1½, ⅔, ½, ⅔, ½, ⅔, ⅔, ⅔, ⅔, ⅔, ⅔a, ⅔b</td>
<td>1½</td>
<td>3½</td>
<td>4½</td>
<td>2½</td>
<td>2½*</td>
<td>⅔b</td>
<td>6</td>
<td>11</td>
<td>5.5</td>
</tr>
<tr>
<td>10020</td>
<td>2, ⅔, ½, ⅔, ½, ⅔, ⅔, ⅔, ⅔, ⅔, ⅔a, ⅔b</td>
<td>1½</td>
<td>4½</td>
<td>6½a</td>
<td>3½</td>
<td>⅔b</td>
<td>⅔b</td>
<td>9½</td>
<td>31.8</td>
<td>10.8</td>
</tr>
</tbody>
</table>

Notes: The dimensions marked with an asterisk indicates set screws at 90 deg. from keyway.

### Covers

Covers allow excellent lubrication, and their use is suggested on all applications to increase both product life and safety.

<table>
<thead>
<tr>
<th>Cover Part No.</th>
<th>For Sizes</th>
<th>D</th>
<th>W</th>
<th>Wt. Lbs.</th>
<th>Cplg Chain</th>
<th>Cover Inertia (in lb sec^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 Cover</td>
<td>4012 - 4016</td>
<td>4</td>
<td>2</td>
<td>.85</td>
<td>0.69 x 10^-2</td>
<td></td>
</tr>
<tr>
<td>50 Cover</td>
<td>5016 - 5018</td>
<td>5½</td>
<td>2%</td>
<td>1.45</td>
<td>2.00 x 10^-2</td>
<td></td>
</tr>
<tr>
<td>60 Cover</td>
<td>6018 - 6020</td>
<td>6½</td>
<td>2½%</td>
<td>2.55</td>
<td>5.40 x 10^-2</td>
<td></td>
</tr>
<tr>
<td>80 Cover</td>
<td>8018 - 8020</td>
<td>8½%</td>
<td>4</td>
<td>5.05</td>
<td>18.9 x 10^-2</td>
<td></td>
</tr>
<tr>
<td>10020 Cover</td>
<td>10020</td>
<td>10%</td>
<td>5½</td>
<td>12.55</td>
<td>55.8 x 10^-2</td>
<td></td>
</tr>
</tbody>
</table>

Aluminum covers are supplied with seals to cover the listed sizes. Covers have a rounded exterior in order to offer protection to screw heads.
**QD® Couplings**

Lubrication

Choose one of the following lubrication systems when using Roller Chain Couplings. The choice depends upon the operating speed. (Refer to the Horsepower Ratings, Table 2, pg. 3.) Use NLGI grade 1 or 2 grease.

The amount of grease to apply is shown in Table 3. If these amounts are followed, there will be a slight amount of leakage at the beginning of the operation, but this will soon stop.

For System 3, it is especially important to use high-grade grease. Because of centrifugal force, there is a tendency for the grease to stick to the inner surface of the cover, resulting in inadequate lubrication.

**TAPER-LOCK® Couplings**

Lubrication

Choose one of the following lubrication systems when using Roller Chain Couplings. The choice depends upon the operating speed. (Refer to the Horsepower Ratings, Table 2, pg. 3.) Use NLGI grade 1 or 2 grease.

The amount of grease to apply is shown in Table 3. If these amounts are followed, there will be a slight amount of leakage at the beginning of the operation, but this will soon stop.

For System 3, it is especially important to use high-grade grease. Because of centrifugal force, there is a tendency for the grease to stick to the inner surface of the cover, resulting in inadequate lubrication.
Installation

1. Place the oil seals for the cover on the sprocket halves.

2. Bring the sprocket faces close together and correct the angular and offset misalignment.

3. Measure the distance “C” between the sprocket faces and firmly fasten the set bolt (refer to Specifications table, pg.4).

4. Lubricate the chain with grease, then wrap the chain around both sprockets and fix with the connecting pin.

5. Fill the required quantity of grease into both sides of case and fasten them firmly. Do not forget to use gaskets.

Notes: 1. During high-speed operations or conditions of large vibration, please use locking cement when fastening the bolts.
2. Install a cover when there is a risk of chain breakage.
3. Ambient temperature range is 14˚ to 140˚F. If you will use the coupling outside this temperature range, please consult with U.S. Tsubaki.
U.S. Tsubaki—
Roller Chain Coupling

- Connect quickly and easily
- Handle high torque
- Keep your profits turning

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