### Couplings Overview

**How to Select a Coupling**
- Couplings are machine components designed to connect two separate rotating bodies and transmit a torque between them. They allow various misalignments (Angular/Lateral/Shaft) of the rotating bodies to be absorbed, and facilitate installation and adjustment work. Modern couplings, however, protect expensive inter-connected machine components from sudden and unexpected stress loads by breaking and disconnecting. Please select appropriate coupling type from the chart provided based on your application specific needs.
- For applications with frequent direction reversals, choose a coupling with max. torque capacity 2 ~ 5 times of the motor’s peak torque.
- For servo motor applications, choose a servo motor and calculate the compensation torque according to the formula below. Choose a coupling with max. torque capacity of the calculated compensation torque.

\[
\text{Compensation Torque} = \text{Motor's Peak Torque} \times \text{Compensation Factor}
\]

*For Compensation Factor, please see products page.*

- Compensation is for reference when using couplings with servo motors in general. Please use the values as reference.
- Ensure that the specification parameters such as Allowable Torque, Max. Rotational Speed and Dimensions listed in this catalog are properly applicable to your application.
- Resin spacer couplings such as Oldham and Jaw Types have allowable torque values that vary depending on operating temperatures. Select couplings by multiplying allowable torque values by 1.3 for operating temperatures of 70°C or higher.

### Precautions for Use

- Make sure to keep misalignment within the allowable range and avoid excessive torque. Otherwise the coupling’s service life will be shortened considerably due to plastic deformation.
- For safety, enclose the revolving parts of equipment with a protective cover.

**Disc Couplings Zero Backlash, and Best Suited for High Torque Servo Motor Applications**
- **Feature**
  - Designed to absorb misalignments by disc flexures. Zero backlash nature provides high angular accuracy, suitable for applications requiring high positioning accuracies.
  - High-Rigidity Type have largely improved torsional rigidity over the Standard Types due to screw-coupled discs instead of the swage-coupled discs of the Standard Type.
- Products in red frame are servo motor compatible couplings.

### Oldham Couplings Easy to Install with Large Angular/Lateral Misalignment Allowances
- **Feature**
  - The spacers are designed to flex and slide to allow misalignments.
  - Make sure to keep misalignment within the allowable range and avoid excessive torque. Otherwise the coupling’s service life will be shortened considerably due to plastic deformation.
- Larger misalignment allowance ranges compared to the other types, making for easy to adjust for installation.
- Misalignments are: Angular Misalignment (Fig. 1); Lateral Misalignment (Fig. 2); and Axial Misalignment (Fig. 3). Be sure to adjust the shaft misalignments occurring at a given time.

### Simple Method to Confirm the Alignment of Disc Type Coupling
- **Before installing**
  - Confirm that the clamping screws are loosened, and wipe clean the iron bore and shaft surfaces off dust and oils.
  - Insert the shaft into the coupling while taking care not to apply excessive compressive/tensile forces on the disc section.
- **Quick Angular Misalignment Check**
  - With all the locking screws loose, slide the coupling axially over both shafts (Fig. 4) to ensure smooth sliding movements.
  - If not smooth, perform the lateral alignment procedure again. If not smooth, perform the lateral alignment procedure again.
- **Final Assembly**
  - With a torque wrench, tighten the screws on both the motor and driven shafts to the recommended torque.
  - Check for tightening torques after approximately 30 minutes of continuous operation to account for any initial self-loosening of the screws.

### Sit Couplings Integrated Structure with No Backlash
- **Feature**
  - Sits are designed to allow misalignments.
  - Because backlash is 0, it is suitable for applications where rotation accuracy is required.
  - Please consider the Disc Types of higher torque transmission capability is needed.
- Products in red frame are servo motor compatible couplings.

### Couplings Others

<table>
<thead>
<tr>
<th>Type</th>
<th>SCXW</th>
<th>CPX</th>
<th>CPL</th>
<th>CLSP</th>
<th>CPS</th>
<th>CPSC</th>
<th>CPSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaft Bore Dia. (mm)</td>
<td>6~25</td>
<td>6~25</td>
<td>6~25</td>
<td>2~25</td>
<td>2~25</td>
<td>6~25</td>
<td>2~25</td>
</tr>
<tr>
<td>Torque (N·m)</td>
<td>0.5~16</td>
<td>0.5~16</td>
<td>0.5~16</td>
<td>0.15~7.0</td>
<td>0.25~11.0</td>
<td>0.25~11.0</td>
<td>0.25~11.0</td>
</tr>
</tbody>
</table>

### Alignment Adjustment

Couplings are designed to transmit angular motion and torque while being able to absorb some misalignments. However, if the allowable maximum values are exceeded, the coupling’s service life may dramatically be reduced, or result in vibrations. Coupling alignment procedures must always be performed.

- Misalignments: Angular Misalignment (Fig. 1), Lateral Misalignment (Fig. 2), and Axial Misalignment (Fig. 3). Be sure to adjust the shaft alignment using tools such as dial indicators etc. to meet the tolerances shown in the dimensions and performance table.
- The allowable misalignment values shown in the specification chart assume that only one of: Angular, Lateral or Axial Misalignment is occurring at a given time.
- When multiple misalignments are occurring simultaneously, the allowable maximum value of each will be reduced to 1/2. It is recommended that each misalignment is to be kept below 1/3 of the allowed maximum value in order to prolong the service life of couplings.

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  - Larger misalignment allowance ranges compared to the other types, making for easy to adjust for installation.
  - The High-Rigidity Type has bronze spacer material instead of resin, and has torque capacity 2x of the conventional type.
  - The Space Saving Type are up to 17% shorter in length, contributing to space saving machine designs.

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