# Explanation of Terminology

## Rated torque

This is a torque value that can be continuously transmitted by Coupling.
This is a value with load variation during operation considered and does not require correction of the rated torque at the time of selection(Except for Oldham Couplings).
Select the Coupling so that the load torque generated by continuous operation may not be more than the rated torque.

## Max. torque

This is a torque value that can be instantaneously transmitted by Coupling.

## Slip Torque

Set screw type couplings directly secure the round shaft using hexagon socket set screws. The slip torque refers to the load torque at which the round shaft begins to slip against the set screws. Clamping type couplings clamp the round shaft with screw clamping force. The slip torque refers to the load torque at which the round shaft begins to slip against the coupling when tightened with the specified screw tightening torque.
The load torque applied to the coupling must be less than the slip torque. Slip torque varies depending on the operating conditions. Be sure to perform testing under the same conditions as actual use in advance.

## Misalignment

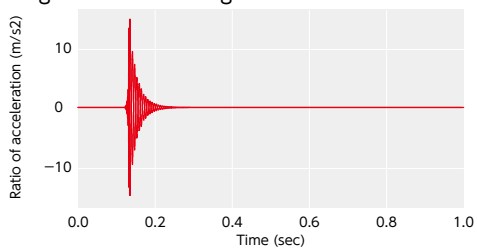
This is a shaft center error.
There are three types of misalignment: eccentricity, argument, and end-play.
For details, please refer to Mounting and Maintenance.

## Max. rotational frequency

This is a maximum rotational frequency available for Coupling.
A value calculated based on peripheral speed 33 m/s is described and we have confirmed that this frequency does not damage the unit by a test. (Except for **MOM** **MOHS** **MWBS**)

## Damping ratio

This is a parameter that represents the damping property of vibration amplitude.
**XGT2** **XGL2** **XGS2** have a large damping ratio, thus enabling the servomotor gain to be raised.

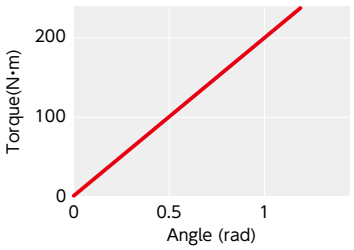



## Moment of Inertia

This is a value that indicates the rotational difficulty of Coupling.
Smaller moment of inertia reduces the load torque at the time of start and stop.

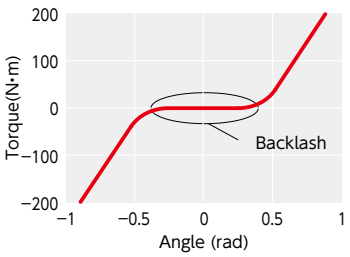
## Static Torsional Stiffness

This is rigidity against torsion of Coupling and the inclination shown in the graph indicates the static torsional stiffness.
Static torsional stiffness for the entire Coupling including not only deflection part but also hub is described here.



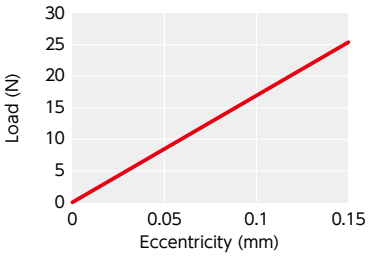

## Backlash

This is a backlash against the rotational direction of Coupling. When high precision positioning is required, select a Coupling with zero backlash.



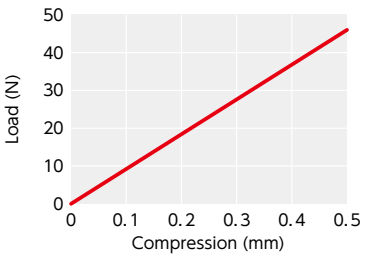

## Eccentric reaction force

This is a force generated when making Coupling in eccentric condition.
As the eccentric reaction force becomes smaller, the force acting on the shaft bearing also becomes smaller.




## Thrust Reaction Force

This is a force generated when compressing Coupling in the shaft direction.
As the thrust reaction force becomes smaller, the force acting on the motor also becomes smaller.



## Electrical insulation

This is insulation against electricity between both hubs of Coupling.
The electrical insulation value of Coupling with rubber/resin used between both hubs is as shown in the following table.

| Product Code | Electric resistance value |
|---|---|
| **XGT2 (O.D. ϕ56 or Less) / XGL2 / XGS2** | Not less than 2 MΩ |
| **XGT2 (O.D. ϕ68) / XGT / XGL / XGS** | Not less than 10 kΩ and not more than 1 MΩ |
| **MJC / MJS / MJB** | Not less than 2 MΩ |
| **MOR / MOL / MOS** | Not less than 2 MΩ |
| **MOHS** | Not less than 2 MΩ |
| **MOP** | Not less than 2 MΩ |
| **MSXP** | Not less than 2 MΩ |
| **MSF** | Not less than 2 MΩ |

## Constant velocity

This is speed unevenness for one rotation of Coupling.
In general, the higher the misalignment is, the lower the constant velocity becomes.
**MFB** **MWBS** are superior in constant velocity even when misalignment exists and is appropriate for detection devices such as encoder.

## Allowable operating temperature

This is a temperature available for Coupling.
The allowable operating temperature for rubber/resin-used Coupling is as shown in the following table.

| Product Code | Allowable operating temperature |
|---|---|
| **XGT2 (O.D. ϕ56 or Less) / XGL2 / XGS2** | −10℃ - 120℃ |
| **XGT2 (O.D. ϕ68) / XGT / XGL / XGS** | −20℃ - 80℃ |
| **MJC / MJS / MJB** | −20℃ - 60℃ |
| **MOC / MOR / MOL / MOS** | −20℃ - 80℃ |
| **MOHS** | −20℃ - 200℃ |
| **MOP** | −20℃ - 120℃ |
| **MSXP** | −20℃ - 80℃ |
| **MSF** | −20℃ - 60℃ |

## Temperature correction factor

For couplings that use rubber or resin, the rated torque and maximum torque may vary depending on the operating temperature (excluding MSXP, MOP, and MOHS).
If the ambient temperature exceeds 30˚C, apply the correction factors shown in the table below to both the rated torque and maximum torque.

| Ambient temperature | Temperature correction factor |
|---|---|
| −20 - 30℃ | 1.00 |
| 30 - 40℃ | 0.80 |
| 40 - 60℃ | 0.70 |
| 60 - 120℃ | 0.55 |

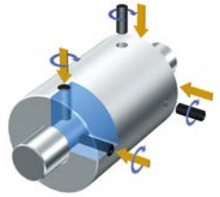
Note that the correction factors can only be applied within the allowable operating temperature range of each coupling.
Refer to each product page for details on operating temperature.

For all-metal couplings, as well as MSXP, MOP, and MOHS, the effect of temperature on torque reduction is minimal, thus, no correction using this table is required.

## Attachment

There are seven types of shaft attachment methods as follows. Select a method according to your needs.

❶ Set screw type
This is low cost and most common attachment method. However, since the screw point directly contacts the shaft, note that it may damage the shaft or make it difficult to remove the unit.



❷ Clamping type
The bore is contracted by tightening force of the screw to clamp the shaft. Mounting and removal can be easily conducted, which does not damage the shaft.

❸ Split type
The bore portion can be completely divided. Therefore, it can be easily mounted or removed without moving the device. In addition, the shaft is not damaged.

❹ Semi-split type
This is an attachment method in which one side of the hubs is clamping type and the other side is split type. The device can be connected only on the split type side while keeping the clamping type side attached on the shaft.

❺ Key type
As with set screw type, this is a general attachment method and can be applied to the transmission of relatively high torque. To prevent the movement in the shaft direction, this is used together with set screw type and clamping type.

❻ Bushing type
Attachment method using taper wedge effect enables secure and stable attachment. This is suitable to high torque transmission and is the most appropriate for the spindle of a machine tool.

❼ Adapter + Clamping type
This is a type made by inserting an adapter into the clamping type so as to be applied to 1/10 taper shaft of the servomotor.