# MBB Flexible Couplings - Bellows Type

Zero Backlash　High torque　High Rigidity

## Structure

● Clamping Type

**MBB-C** Aluminum alloy hub

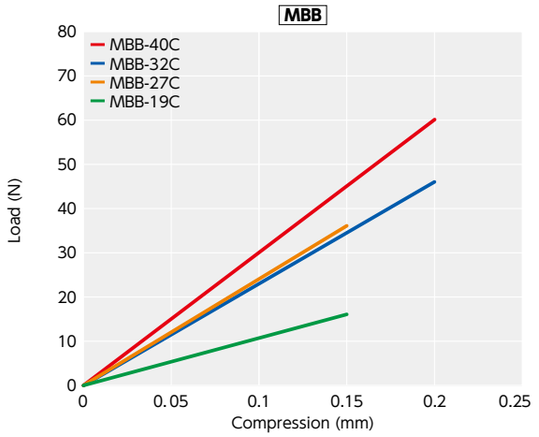

● Material/Finish

RoHS

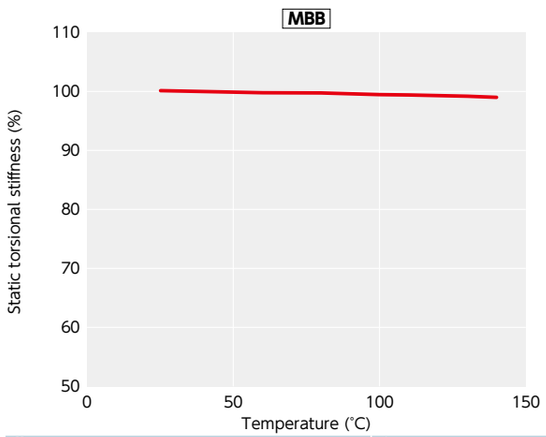
| | MBB |
|---|---|
| Hub | A2017<br>Anodized*1 |
| Bellows | SUS304 |
| Hex Socket Head Cap Screw | SCM435<br>Ferrosoferric Oxide Film (Black) |

*1: Due to manufacturing process requirements, couplings may have bores with or without surface treatment. This does not affect the performance of the couplings.

● Eccentric Reaction Force




● Change in static torsional stiffness due to temperature




● Applicable motors

| | MBB |
|---|---|
| Servomotor | ◎ |
| Stepping Motor | ◎ |
| General-purpose Motor | ● |

◎: Excellent ●: Available

● Property

| | MBB |
|---|---|
| Zero Backlash | ◎ |
| Allowable Misalignment | ○ |

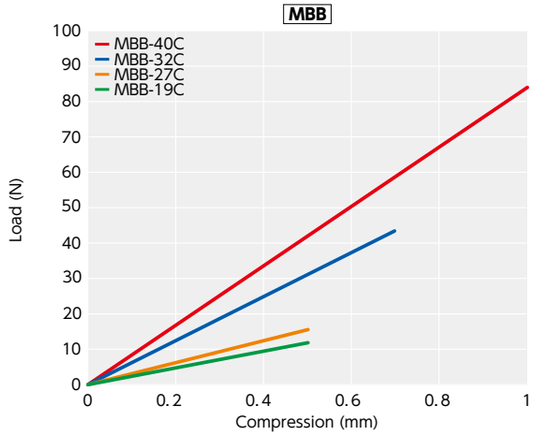
◎: Excellent ○: Very good

- This is a bellows type flexible coupling.
- The bellows allows eccentricity, angular misalignment, and end-play.
- The bellows is stainless steel.

● Application

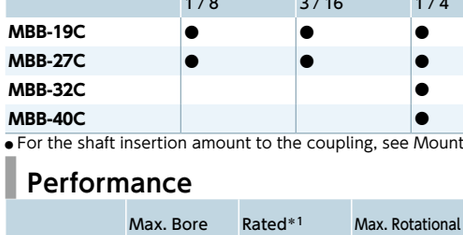
Actuator / High precision XY stage / Semiconductor devices / Encoder

● Thrust Reaction Force




This is a value under the condition where the static torsional stiffness at 20℃ is 100%.
The change of **MBB** in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. If the unit is used under higher temperature, be careful about misalignment due to elongation or deflection of the shaft associated with thermal expansion.

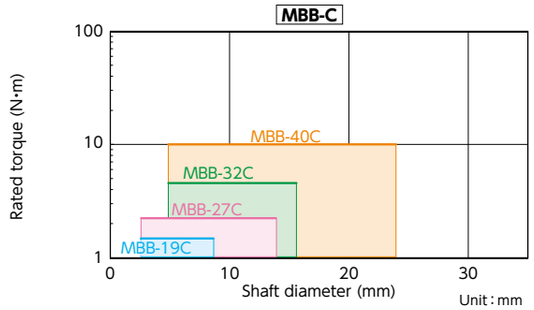
| Additional Keyway at Shaft Hole ➡ P.xxxx | Cleanroom Wash & Packaging ➡ P.xxxx | Change to Stainless Steel Screw ➡ P.xxxx |
|---|---|---|
| Please feel free to contact us | Not Available | Please feel free to contact us |




## Selection

● Selection Example

In case of selected parameters of shaft diameter of $\phi$ 10 and load torque of 2 N·m, the selected size for **MBB** is **MBB-27C**.




Unit : mm

## Dimensions

| Part Number ①| Bore Diameter | A | L | W | E | F | G | M | WrenchTorque(N·m) |
|---|---|---|---|---|---|---|---|---|---|
| **MBB-19C** | 3≦D≦8 | 19 | 10.5 | 30 | 12 | 3 | 6.75 | M2 | 0.5 |
| **MBB-27C** | 3≦D≦14 | 27 | 12.5 | 35 | 17 | 3.5 | 10.25 | M2.5 | 0.9 |
| **MBB-32C** | 5≦D≦16 | 32 | 15.5 | 46 | 22 | 4.25 | 12 | M3 | 1.5 |
| **MBB-40C** | 5≦D≦20 | 40 | 16 | 51 | 28 | 5 | 15 | M4 | 3.5 |
| | 20<D≦24 | | | | | | | M3 | 1.5 |

| Part Number | Standard Bore Diameter D1·D2 ② | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 15 | 16 | 17 | 19 | 20 | 22 | 24 |
| **MBB-19C** | ● | ● | ● | ● | ● | | | | | | | | | | |
| **MBB-27C** | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| **MBB-32C** | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | |
| **MBB-40C** | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

| Part Number | Standard Bore Diameter D1·D2 ② | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 / 8 | 3 / 16 | 1 / 4 | 3 / 8 | 1 / 2 | 5 / 8 | 3 / 4 | 7 / 8 |
| **MBB-19C** | ● | ● | ● | | | | | |
| **MBB-27C** | ● | ● | ● | ● | ● | | | |
| **MBB-32C** | | | ● | ● | ● | ● | | |
| **MBB-40C** | | | ● | ● | ● | ● | ● | ● |

● For the shaft insertion amount to the coupling, see Mounting/maintenance.

## Performance

| Part Number | Max. Bore Diameter (mm) | Rated*1 Torque (N?m) | Max. Rotational Frequency ($min^{-1}$) | Moment*2 of Inertia ($kg·m^2$) | Static Torsional Stiffness (N·m/rad) | Max. Lateral Misalignment (mm) | Max. Angular Misalignment (°) | Max. Axial Misalignment (mm) | Mass*2 (g) |
|---|---|---|---|---|---|---|---|---|---|
| **MBB-19C** | 8 | 1.5 | 33000 | $8.6\times10^{-7}$ | 170 | 0.15 | 1.5 | ±0.5 | 16 |
| **MBB-27C** | 14 | 2.3 | 23000 | $3.6\times10^{-6}$ | 800 | 0.15 | 1.5 | ±0.5 | 32 |
| **MBB-32C** | 16 | 4.5 | 19000 | $1.1\times10^{-5}$ | 1600 | 0.2 | 1.5 | ±0.7 | 68 |
| **MBB-40C** | 24 | 10 | 15000 | $2.8\times10^{-5}$ | 2700 | 0.2 | 1.5 | ±1 | 110 |

*1: Correction of rated torque due to load fluctuation is not required.
*2: These are values with max. bore diameter.

● Slip Torque

Concerning the sizes shown in the table, please note that the shaft's slip torque is smaller than the rated torque of **MBB-C**.

Unit : N·m

| Part Number | Bore Diameter (mm) | | |
|---|---|---|---|
| | 3 | 5 | 6 |
| **MBB-19C** | 0.8 | | |
| **MBB-32C** | | 2 | 4.2 |
| **MBB-40C** | | 9.8 | |

● These are test values based on the condition of shaft's dimensional allowance: h7, hardness: from 34 - 40 HRC, and screw tightening torque of the values described in **MBB-C** dimensional table.

● Part number specification

**MBB-19C-6-1/4**
① ②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