

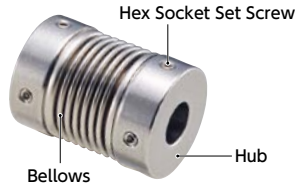
**Structure**

- Set Screw type

**MFB** Aluminum alloy hub → P.199



**MFBS** Made of all stainless steel → P.199



- Clamping type

**MFB-C** Aluminum alloy hub → P.199



**MFBS-C** Made of all stainless steel → P.199



- Recommended applicable motor

	MFB	MFBS
Servomotor	-	-
Stepping motor	○	○
General-purpose motor	-	-

◎: Excellent ○: Very good △: Available

- Property

	MFB	MFBS
Zero Backlash	◎	◎
Allowable Misalignment	○	○
Corrosion Resistance (All S.S.)	-	◎

◎: Excellent ○: Very good

- This is a bellows type flexible coupling.
- The bellows allow the eccentricity, and angular misalignment, and end-play.
- Even if there is misalignment, the constant revolution is performed.
- There are two types of bellows: phosphor bronze type and stainless steel type.

- Application

Encoder

- Material/Finish

RoHS2 Compliant

	MFB / MFB-C	MFBS / MFBS-C
Hub	A2017 Alumite Treatment	SUS303
Bellows	C5191	SUS316L
Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film	SUSXM7
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film	SUSXM7

- Part number specification

**MFB-20C-6-8**

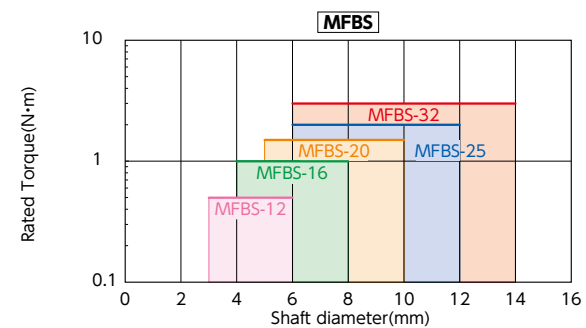
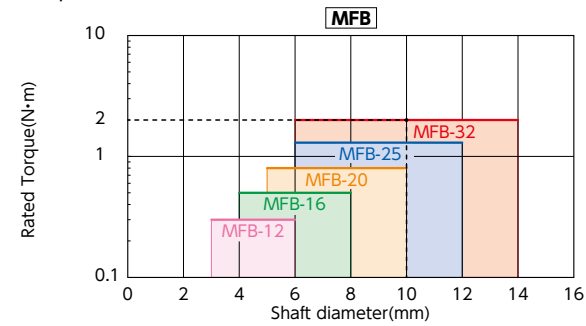
Product Code   Size   Bore Diameter

Please refer to dimensional table for part number specification.

**Selection**

- Selection based on shaft diameter and rated torque

The area bounded by the shaft diameter and rated torque indicates is the selection size.



- Selection example

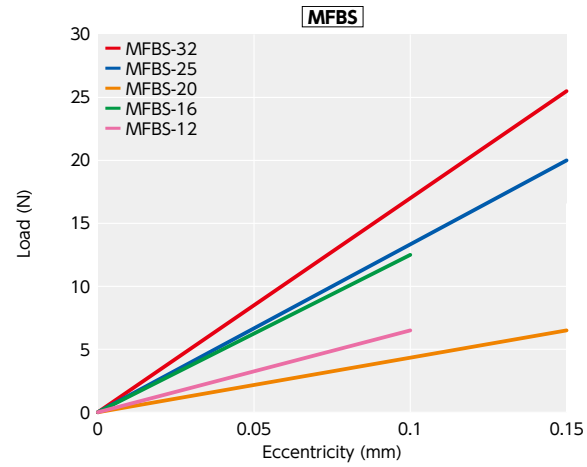
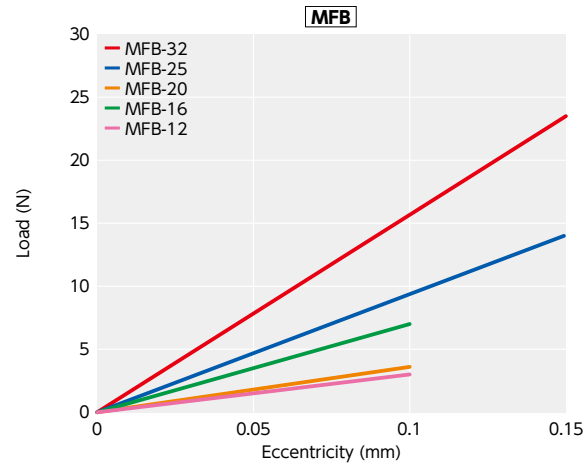
In case of selected parameters of shaft diameter of  $\phi$  10 and load torque of 2 N·m, the selected size for

**MFB MFBS-32**.

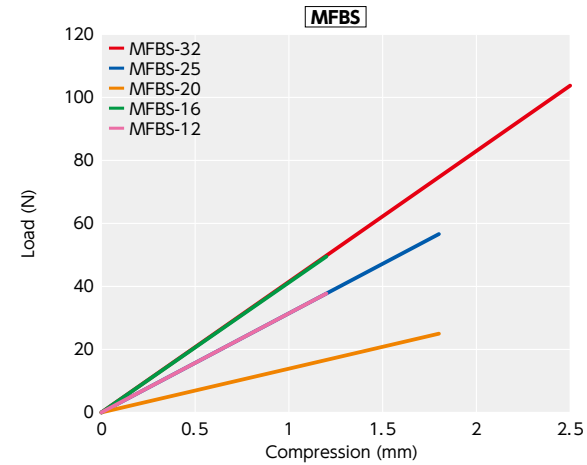
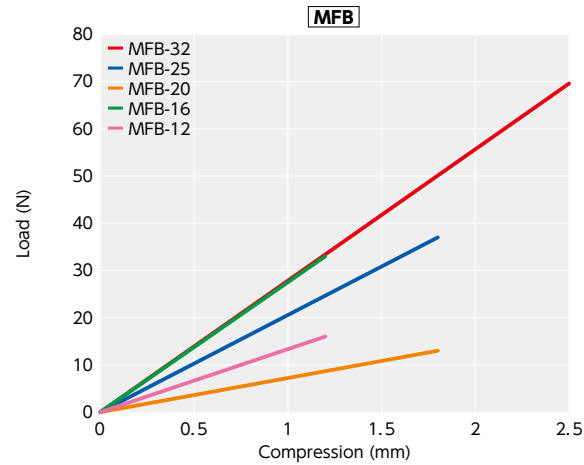


## Technical Information

### • Eccentric reaction force



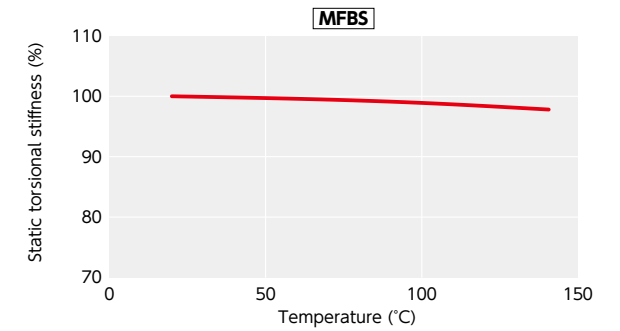
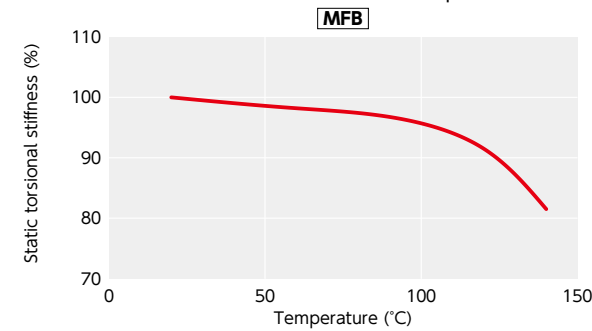
### • Thrust Reaction Force (N)



### • Change in static torsional stiffness due to temperature

This is a value under the condition where the static torsional stiffness at 20°C is 100%.

The change of **MFB** **MFBS** in torsional stiffness due to temperature is small and the change in responsiveness is extremely small. However, if the unit is used at higher temperature, be cautious about misalignment due to elongation or deflection of the shaft associated with thermal expansion.



### • Slip Torque

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

Unit: N·m

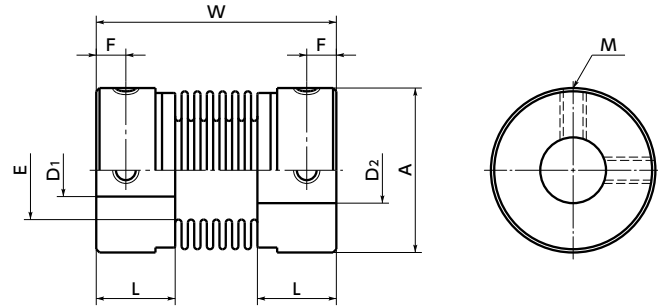
Part Number	Bore Diameter (mm)	
	4	5
<b>MFBS-12C</b>	0.4	
<b>MFBS-16C</b>		0.9

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

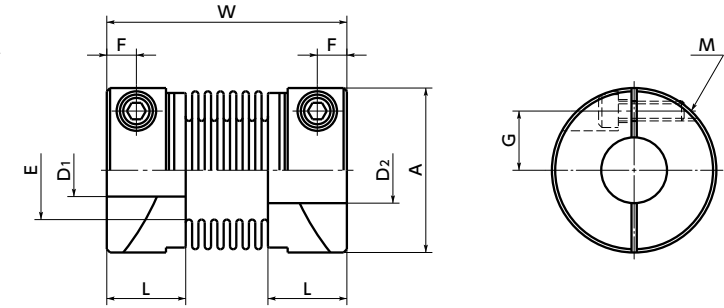
# MFB/MFBS/MFB-C/MFBS-C Flexible Coupling - Bellows - type

[WEB Selection Tool](#)
[WEB CAD Download](#)
[0](#)
[Zero Backlash](#)
[SUS Stainless steel](#)

**MFB** Aluminum alloy hub  
**MFBS** Made of all stainless steel



**MFB-C** Aluminum alloy hub  
**MFBS-C** Made of all stainless steel



## Dimensions

Unit : mm

Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N·m)	Standard Bore Diameter D1 · D2								
									3	4	5	6	8	10	12	14	
<b>MFB-12</b>	12	7.5	23.5	7	2.5		M2.5	0.5	●	●	●	●					
<b>MFB-16</b>	16	9	26.5	9.5	3		M3	0.7		●	●	●	●				
<b>MFB-20</b>	20	10	33	12.5	3.5		M3	0.7			●	●	●	●			
<b>MFB-25</b>	25	12	36.5	15	4.5		M4	1.7				●	●	●	●		
<b>MFB-32</b>	32	13.5	42	21	5.5		M4	1.7				●	●	●	●	●	
<b>MFBS-12</b>	12	7.5	23.5	7	2.5		M2.5	0.5	●	●	●	●					
<b>MFBS-16</b>	16	9	26.5	9.5	3		M3	0.7		●	●	●	●				
<b>MFBS-20</b>	20	10	32	12.5	3.5		M3	0.7			●	●	●	●			
<b>MFBS-25</b>	25	12	36.5	15	4.5		M4	1.7				●	●	●	●		
<b>MFBS-32</b>	32	13.5	42	21	5.5		M4	1.7				●	●	●	●	●	
<b>MFB-12C</b>	12	7.5	23.5	7	2.25	4	M2	0.5		●	●						
<b>MFB-16C</b>	16	9	26.5	9.5	3	5	M2.5	1			●	●					
<b>MFB-20C</b>	20	10	33	12.5	3.5	6.5	M2.5	1				●	●				
<b>MFB-25C</b>	25	12	36.5	15	4.5	9	M3	1.5					●	●			
<b>MFB-32C</b>	32	13.5	42	21	5	11	M4	2.5					●	●	●	●	
<b>MFBS-12C</b>	12	7.5	23.5	7	2.25	4	M2	0.5		●	●						
<b>MFBS-16C</b>	16	9	26.5	9.5	3	5	M2.5	1			●	●					
<b>MFBS-20C</b>	20	10	32	12.5	3.5	6.5	M2.5	1				●	●				
<b>MFBS-25C</b>	25	12	36.5	15	4.5	9	M3	1.5					●	●			
<b>MFBS-32C</b>	32	13.5	42	21	5	11	M4	2.5					●	●	●	●	

- All products are provided with hex socket set screws (**MFB**, **MFBS**) and hex socket head cap screws (**MFB-C**, **MFBS-C**).
- In a case where the bore diameter is  $\phi 4$  or less, the set screw is used in only one place.
- The dimensional allowance for bore diameter of a set screw type is H8.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting a clamping type **MFB-C** **MFBS-C** on D-cut shaft, be careful about the position of the D-cut surface of the shaft. → P.258

## Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 torque (N·m)	Max. Rotational Frequency (min <sup>-1</sup> )	Moment*2 of Inertia (kg·m <sup>2</sup> )	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
<b>MFB-12</b>	6.35	0.3	52000	$9.0 \times 10^{-8}$	82	0.1	1.5	$+0.4$ $-1.2$	4.1
<b>MFB-16</b>	8	0.5	39000	$3.5 \times 10^{-7}$	110	0.1	1.5	$+0.4$ $-1.2$	9
<b>MFB-20</b>	10	0.8	31000	$9.9 \times 10^{-7}$	180	0.15	2	$+0.6$ $-1.8$	16
<b>MFB-25</b>	12	1.3	25000	$3.1 \times 10^{-6}$	240	0.15	2	$+0.6$ $-1.8$	32
<b>MFB-32</b>	16	2	19000	$9.2 \times 10^{-6}$	330	0.2	2	$+0.8$ $-2.5$	57
<b>MFBS-12</b>	6.35	0.5	52000	$2.1 \times 10^{-7}$	100	0.1	1.5	$+0.4$ $-1.2$	9.1
<b>MFBS-16</b>	8	1	39000	$8.0 \times 10^{-7}$	150	0.1	1.5	$+0.4$ $-1.2$	20
<b>MFBS-20</b>	10	1.5	31000	$2.3 \times 10^{-6}$	220	0.15	2	$+0.6$ $-1.8$	37
<b>MFBS-25</b>	12	2	25000	$7.0 \times 10^{-6}$	330	0.15	2	$+0.6$ $-1.8$	73
<b>MFBS-32</b>	16	3	19000	$2.1 \times 10^{-5}$	490	0.2	2	$+0.8$ $-2.5$	130
<b>MFB-12C</b>	5	0.3	52000	$9.7 \times 10^{-8}$	82	0.1	1.5	$+0.4$ $-1.2$	3.8
<b>MFB-16C</b>	6.35	0.5	39000	$3.7 \times 10^{-7}$	110	0.1	1.5	$+0.4$ $-1.2$	9.8
<b>MFB-20C</b>	8	0.8	31000	$1.0 \times 10^{-6}$	180	0.15	2	$+0.6$ $-1.8$	16
<b>MFB-25C</b>	10	1.3	25000	$3.1 \times 10^{-6}$	240	0.15	2	$+0.6$ $-1.8$	32
<b>MFB-32C</b>	14	2	19000	$9.6 \times 10^{-6}$	330	0.2	2	$+0.8$ $-2.5$	58
<b>MFBS-12C</b>	5	0.5	52000	$2.1 \times 10^{-7}$	100	0.1	1.5	$+0.4$ $-1.2$	9.2
<b>MFBS-16C</b>	6.35	1	39000	$8.1 \times 10^{-7}$	150	0.1	1.5	$+0.4$ $-1.2$	22
<b>MFBS-20C</b>	8	1.5	31000	$2.3 \times 10^{-6}$	220	0.15	2	$+0.6$ $-1.8$	38
<b>MFBS-25C</b>	10	2	25000	$6.9 \times 10^{-6}$	330	0.15	2	$+0.6$ $-1.8$	74
<b>MFBS-32C</b>	14	3	19000	$2.1 \times 10^{-5}$	490	0.2	2	$+0.8$ $-2.5$	130

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

● Part number specification

**MFB-12C-4-5**

1 2