

Bellows Couplings

Set Screw / Clamping

■ **Features:** Suitable for encoders because of its speed constancy even with misalignment. Allowable axial misalignment is big and can absorb the shaft length changes caused by temperature changes in the shaft.



Set Screw
CPB (Aluminum)
CPBS (Stainless Steel)

Clamping
CPBC (Aluminum)
CPBSC (Stainless Steel)

4-M
When d1 and d2 are both less than 4mm, there are 2 set screws.

Tolerances for d1 and d2 are values before slit machining.
The lateral, angular, and axial misalignment values shown are for each occurring individually. When multiple misalignments are occurring simultaneously, the allowable maximum value of each will be reduced to 1/2.
For the selection criteria and alignment procedures, see **P1061**.

Parts	Hub		Bellow	Accessory	
	Material	Surface Treatment	Material	CPB, CPBS	CPBC, CPBSC
CPB, CPBC	Aluminum Alloy	Clear Anodize	Phosphor Bronze	Set Screw	Hex Socket Head Cap Screw
CPBS, CPBSC	Stainless Steel	-	Stainless Steel		

Part Number		d1, d2 Selection (d1≤d2)					L	ℓ	F	Set Screw		Unit Price	
Type	D									M	Tightening Torque (N·m)	CPB	CPBS
Set Screw CPB CPBS	12	3	4	5	6		23.5	7.5	2.5	M2.5	0.5		
	16		4	5	6	8	26.5	9	3				
	*20			5	6	8	33(32)	10	3.5	M3	0.7		
	25				6	8	36.5	12	4.5				
	32					10				M4	1.7		
					6	8	42	13.5	5.5				

* Overall length of CPBS20 is 32.

Part Number		d1, d2 Selection (d1≤d2)					L	ℓ	F	G	Clamp Screw		Unit Price	
Type	D										M	Tightening Torque (N·m)	CPBC	CPBSC
Clamping CPBC CPBSC	12	4	5				23.5	7.5	2.3	4	M2	0.5		
	16		5	6			26.5	9	3	5				
	*20			6	8		33(32)	10	3.5	6.5	M2.5	1		
	25				8	10	36.5	12	4.5	9	M3	1.5		
	32				8	10	42	13.5	5	11	M4	2.5		

* Overall length of CPBSC20 is 32.

Part Number	D	Allowable Torque (N·m)	Angular Misalignment (°)	Lateral Misalignment (mm)	Static Torsional Spring Constant (N·m/rad)	Max. Rotational Speed (r/min)	Moment of Inertia (kg·m ²)	Variable Axial Misalignment (mm)	Mass (g)
CPB (Aluminum)	12	0.3	1.5	0.10	82	52000	9.0x10 ⁻⁸	+0.4	4
	16	0.5			110	39000	3.5x10 ⁻⁷	-1.2	9
	20	0.8		0.15	180	31000	9.9x10 ⁻⁷	+0.6	16
	25	1.3	2		240	25000	3.1x10 ⁻⁶	-1.8	32
	32	2		0.20	330	19000	9.2x10 ⁻⁶	+9.8	57
CPBS (Stainless Steel)	12	0.5	1.5	0.10	100	52000	2.1x10 ⁻⁷	+0.4	9
	16	1			150	39000	8.0x10 ⁻⁷	-1.2	20
	20	1.5		0.15	220	31000	2.3x10 ⁻⁶	+0.6	37
	25	2	2		330	25000	7.0x10 ⁻⁶	-1.8	73
	32	3		0.20	490	19000	2.1x10 ⁻⁵	+9.8	130
CPBC (Aluminum)	12	0.3	1.5	0.10	82	52000	9.7x10 ⁻⁸	+0.4	4
	16	0.5			110	39000	3.7x10 ⁻⁷	-1.2	10
	20	0.8		0.15	180	31000	1.0x10 ⁻⁶	+0.6	16
	25	1.3	2		240	25000	3.1x10 ⁻⁶	-1.8	32
	32	2		0.20	330	19000	9.6x10 ⁻⁶	+9.8	58
CPBSC (Stainless Steel)	12	0.5	1.5	0.10	100	52000	2.1x10 ⁻⁷	+0.4	9
	16	1			150	39000	8.1x10 ⁻⁷	-1.2	22
	20	1.5		0.15	220	31000	2.3x10 ⁻⁶	+0.6	38
	25	2	2		330	25000	6.9x10 ⁻⁶	-1.8	74
	32	3		0.20	490	19000	2.1x10 ⁻⁵	+9.8	130

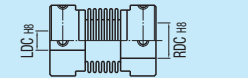
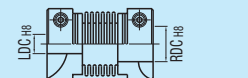
Ordering Example

Part Number - Shaft Bore Dia. d1 - Shaft Bore Dia. d2

CPB20 - 6 - 8

Keyway Dimension

Shaft Bore Dia. d1, d2	LK, RK	b	t	Key Nominal Dim. both
8, 10	3	±0.0125	1.4	3x3
12	4	±0.0150	1.8	4x4
14	5	±0.0150	2.3	5x5

Type	CPB, CPBS	CPBC, CPBSC	CPB, CPBS, CPBC, CPBSC
Alterations	Shaft Bore Dia.	Shaft Bore Dia.	Keyway
Spec.	 0.1mm Increment Ordering Code LDC7.5 RDC9.5	 0.1mm Increment Ordering Code LDC7.5 RDC9.5	 Ordering Code LK5 RK3 For keyway dimensions, refer to the above. Keyway machining is available for Ø6- Cannot be combined with shaft bore change (LDC, RDC) alterations.
	D LDC, RDC 12 3.0~ 6.0 16 4.0~ 8.0 20 5.0~10.0 25 6.0~12.0 32 6.0~14.0	D LDC, RDC 12 4.0 ~ 5.0 16 5.0 ~ 6.3 20 6.0 ~ 8.0 25 6.35~10.0 32 8.0 ~14.0	Shaft Dia. d1, d2 LK, RK 8, 10 3 12 4 14 5
Code	LDC (Left Shaft) RDC (Right Shaft)	LDC (Left Shaft) RDC (Right Shaft)	LK (Left Shaft) RK (Right Shaft)

Plastic Coupling

Set Screw, Short

■ **Features:** Economical couplings for low torque applications. Suitable for encoders and potentiometers where little torque is required.



MCJN

MCJSN (Short)

Operating Temperature: -20°C ~ 80°C
The lateral, angular, and axial misalignment values shown are for each occurring individually. When multiple misalignments are occurring simultaneously, the allowable maximum value of each will be reduced to 1/2.
For the selection criteria and alignment procedures, see **P1061**.

Type	Material	Accessory
MCJN	Glass Fiber Reinforced PBT Resin	Set Screw
MCJSN	PBT Resin	

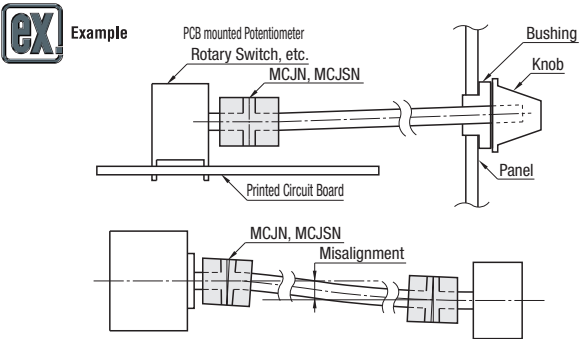
Part Number		d1	d2	D	L	ℓ	F	Set Screw		Unit Price
Type	No.							M x Length	Tightening Torque (N·m)	
MCJN	9	1.5	1.5	9	11.4	3.2	1.6	M2x4	0.08	
	10	2	2	10	13.2					
	12	3	3	12	20	5.1	2.6	M3x4	0.15	
	14	4	2.5 3 3.2 4	13.5	21	5.3	2.7	M3x5	0.2	
	15	5	3 3.2 4 5	15	20.5					
	16	6	3 3.2 4 5 6	16	21	5.5			0.25	
	20	8	4 5 6 8	20	24	6.8	3.5	M4x6	0.4	
	22	10	10	22	25.6	7.1	3.6		0.5	
	28	12	12	28	34.4	7.5	3.9	M4x8	0.8	

Part Number		d1	d2	D	L	ℓ	F	Set Screw		Unit Price
Type	No.							M x Length	Tightening Torque (N·m)	
MCJSN	8	2	2	8	9	3.2	1.6	M2x3	0.05	
	12	2.5	3	12	14.5	5.3			0.18	
	14	4	3.2 4	14	14.2					
	15	5	4 5	14	15	5.2	2.6	M3x4	0.2	
	18	6	2.4 3.2 4 5 6	15	15.5	5.5	2.8			
	18	8	4 5 6 8	18	17.8	5.5	2.6	M3x5	0.25	

Part Number	Allowable Torque (N·m)	Angular Misalignment (°)	Lateral Misalignment (mm)	Static Torsional Spring Constant (N·m/rad)	Max. Rotational Speed (r/min)	Moment of Inertia (kg·m ²)	Allowable Axial Misalignment (mm)	Mass (g)
MCJN	9 0.05	2	0.15	1.5	4000	1x10 ⁻⁶	±0.2	0.9
	10 0.06			2	4000	1.4x10 ⁻⁶		1.1
	12 0.08			4	4000	4.5x10 ⁻⁶		2.5
	14 0.1	2.5	0.2	10	5000	0.8x10 ⁻⁷		3.4
	15 0.12			12	5000	1x10 ⁻⁷		4
	16 0.15			16	6000	1.3x10 ⁻⁷	±0.3	4.5
	20 0.25			28	8000	4x10 ⁻⁷		7.5
	22 0.35			32	10000	7x10 ⁻⁷		10
	28 0.8	2		40	12000	2.1x10 ⁻⁶		19
MCJSN	8 0.05	2	0.05	1.8	4000	0.5x10 ⁻⁶	±0.15	0.7
	12 0.1			2	4000	0.4x10 ⁻⁷		2.3
	14 0.15		0.1	8	5000	0.6x10 ⁻⁷	±0.2	2.7
	15 0.15			9	6000	0.8x10 ⁻⁷		3
	18 0.2		0.15	16	6000	2.5x10 ⁻⁷	±0.3	4

Precautions for Use

- Avoid rough handling. The couplings are highly reliable in light loading applications. They are suitable for potentiometers and encoders.
- Do not apply excessive bending and torsional forces during installation. Be sure to maintain **tightening torque for set screws**. (Resin material breaks if the tightening torque exceeds the allowable range)
- The couplings have been proven with heat-run tests that show 10 years of service life and 10⁸ revolutions if used at under the allowable torque and misalignment values.



(Note)1. For small misalignment, use one MCJ Series for connection.
2. For big misalignment, use two MCJ Series for connection.