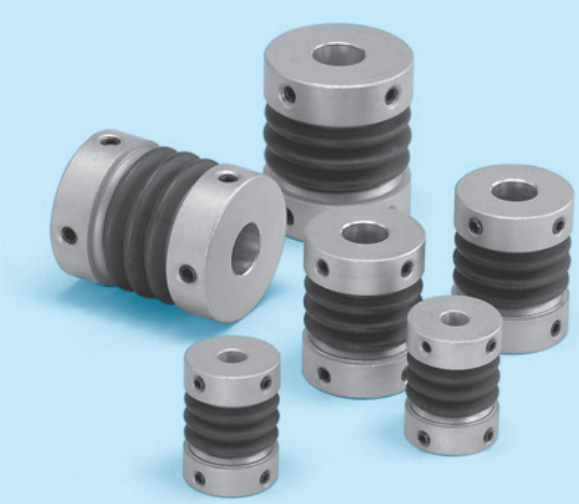
Bellowflex coupling

General-purpose motor | Stepping motor | Servo motor | Detector | Engine



Vibrational absorption

Vibration is absorbed by a plastic boot rich in elasticity.

Compact and lightweight design with zero backlash

A compact design that integrates a hub and boot features are tight and lightweight. Backlash is zero.

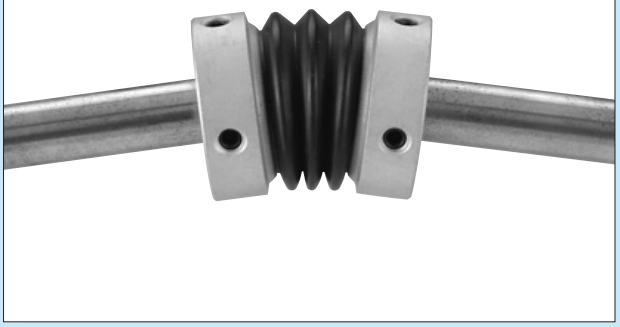
Ideal for use in a stepping motor or encoder

Shaft reaction force caused by vibrational absorption and mounting misalignment is extremely small.

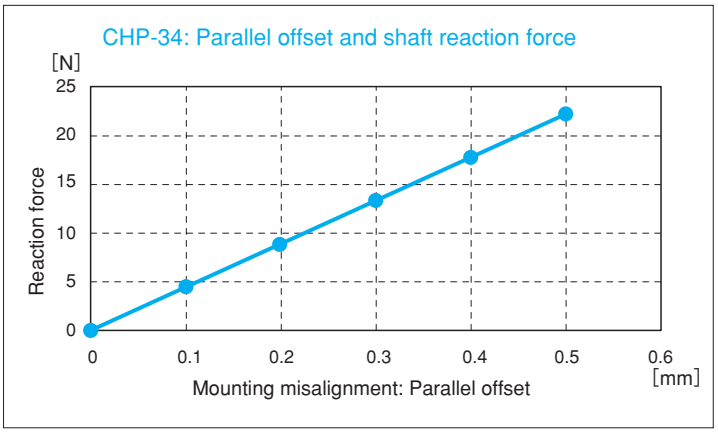
Normal operating torque [N·m]		0.4 ~ 1.5
Bore processing finished product [mm]		ϕ3 ~ 18
Operational temp. [℃]		−20 ~ +60
Backlash		Zero
Max. permissible misalignment	Parallel offset [mm]	0.5
	Angular misalignment [°]	10
	Axial displacement [mm]	±0.5

Flexible by the resin bellows

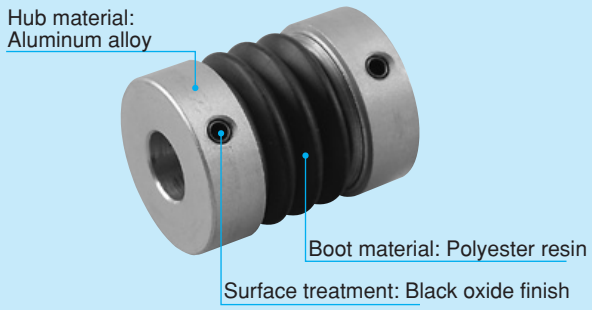
Allowing maximally 10° of angular misalignment



Reaction force caused by mounting misalignment is small.



Structure and Material



- The CHP series designed to achieve a high flexibility and low inertia

Ordering Information

CHP - 26 - 8 - 8

- 26: Size
- 8: d1: Bore diameter 1
- 8: d2: Bore diameter 2

Standard bore diameter

Standard bore diameter [mm]							
d1	3	5	6	8	10	12
d2	3	5	6	8	10	12
Model CHP-20	●	●	●			
Model CHP-26			●	●	●	
Model CHP-34				●	●	●

* The bore diameter tolerance is d $^{+0.05}$.
* There are two setscrews processed on each hub.
* For bore diameters other than the standard, additional machining is required.
* The recommended machining tolerance of the mate mounting shaft is h8.

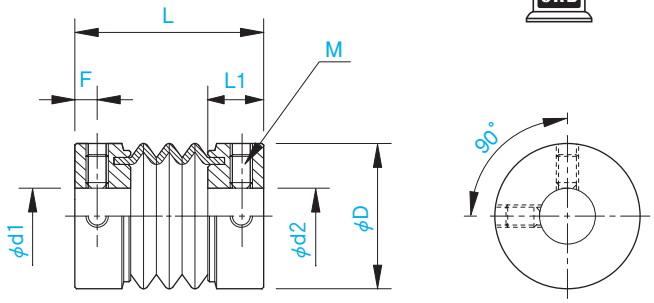
Specification

Model	Torque		Max. permissible misalignment			Max. rotation speed [min⁻¹]	Static torsional spring constant (at 20℃) [N·m/rad]	Moment of inertia [kg·m²]	Mass [kg]	Price
	Normal [N·m]	Max. [N·m]	Parallel offset [mm]	Angular misalignment [°]	Axial displacement [mm]					
CHP-20	0.4	0.8	0.5	10	±0.5	9000	5.9	6.30×10^{-7}	0.012	—
CHP-26	0.7	1.4	0.5	10	±0.5	7000	12.5	2.40×10^{-6}	0.026	—
CHP-34	1.5	3.0	0.5	10	±0.5	5500	32.8	7.90×10^{-6}	0.051	—

* The indicated values of the moment of inertia are measured with the minimum bore diameter.
* The indicated prices are applied to the standard bore diameter.
* If the rotation speed exceeds (2,000min⁻¹), misalignment must be less than 50% of the tolerance.

Dimensions

CAD



Unit [mm]

Model	d1 · d2		D	L	L_1	F	M	CAD file No.
	Min.	Max.						
CHP-20	3	8	20	28	8	3	M3	CHP1
CHP-26	6	13	26	34	10	4	M4	CHP2
CHP-34	8	18	34	40	12	5	M5	CHP3

* If the bore diameter is (φ 3) in CHP-20, the setscrew position will be 120° .

Design check items

- Do not bend, compress or pull more than necessary when mounting or dismounting.
- If exposed to direct sunshine, the life of the boot may be shortened. Provide a suitable cover.
- When additionally processing bores, exercise caution and avoid putting chips and powders into boots and deforming hubs.

Selection

Selection Procedure

❶ Calculate torque Ta applied to the coupling based on the motor output P and coupling operating rotation speed n.

$$Ta\ [N\cdot m] = 9550\times\frac{P[kW]}{n[min^{-1}]}$$

❷ Calculate corrected torque Td applied to the coupling after deciding the service factor K based on use and operating conditions.

$$Td\ [N\cdot m] = Ta\cdot K1\cdot K2$$

K1: Operating coefficient by load character
K2: Corrected coefficient by ambient temperature

❸ Select the size that the coupling permissible torque Tn becomes greater than the corrected torque Td.

$$Tn \geqq Td$$

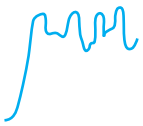
❹ Select the size that the maximum torque of the coupling Tm becomes greater than the peak torque Ts generated by the motor or driven machine, or both. Maximum torque is defined as torque which can be temporarily applied. For 8-hour operating time per day, it is about 10 times.

$$Tm \geqq Ts$$

❺ If the required shaft diameter is over the maximum bore diameter of the selected size, select a coupling suiting it.

Service Factor

●Operating coefficient by load character: K1

Load character			
Constant	Fluctuations: small	Fluctuations: medium	Fluctuations: large
			
1.0	1.25	1.75	2.25

●Corrected coefficient by ambient temperature: K2

Temp. [℃]	−20	0	+20	+40	+60
K2	1.0			1.2	1.3