

# XHW-C / XHW-C-L / XHW-AC Flexible Couplings - Disk Type

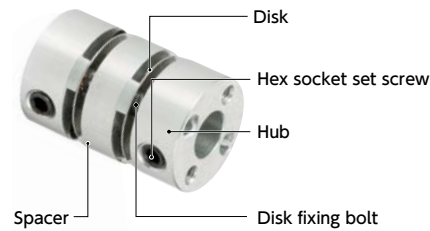
Zero Backlash High torque High Rigidity

## Structure

### • Set Screw Type

#### XHW-10

Outside diameter  $\phi 10$

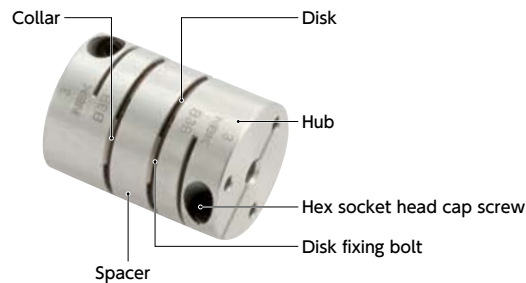


### • Clamping Type

#### XHW-C

#### XHW-C-L

Outside diameter  $\phi 15 - \phi 98$



### • Adapter + Clamping Type

#### XHW-AC

Outside diameter  $\phi 34 - \phi 79$



### • Applicable motors

	XHW-C / XHW-C-L / XHW-AC
Servomotor	○
Stepping Motor	○
General-purpose Motor	●

○: Excellent ●: Available

### • Property

	XHW-C / XHW-C-L / XHW-AC
Zero Backlash	○
High-gain Supported	○
High Torque	○
High Torsional Stiffness	○
Allowable Misalignment	○

○: Excellent ○: Very good

- This is a disk type flexible coupling.
- High-torque specification with rated torque 1.5 times higher than conventional products.
- This is the most appropriate for a servomotor with instantaneous max. torque of 350%.
- The stainless steel disk allows eccentricity, angular alignment, and end-play.
- Standardized **XHW-AC** adapter type that also supports 1/10 taper shafts of servomotors.

### • Application

Actuator / Surface-mount machine / High precision XY stage / Index table

### • Material/Finish



	XHW-10	XHW-C / XHW-C-L	XHW-AC
Hub	A2017 Anodized*1	A2017 Anodized*1	A2017 Anodized*1
Spacer	A2017 Anodized	A2017 Anodized	A2017 Anodized
Disk Fixing Bolt	SWCH16A Black Trivalent Chromate Treatment*2	SCM435 Ferrosferric Oxide Film (Black)	SCM435 Ferrosferric Oxide Film (Black)
Disk	SUS304	SUS304	SUS304
Collar	-	SUS304	SUS304
Adapter	-	-	SUS303
Hex Socket Head Cap Screw	-	SCM435 Ferrosferric Oxide Film (Black)	SCM435 Ferrosferric Oxide Film (Black)
Hex Socket Set Screw	SCM435 Ferrosferric 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.

\*2: Because **XHW-10** is a disk fixing bolt with anti-loosening applied, its heat resistant temperature is 90°C.

• Bore/keyway additional modification and stainless steel screw change service are not available for **XHW-10**.

### • Part Number Specification

#### XHW-34C-10-11

Product Symbol Size Bore Diameter

Please refer to dimensional table for part number specification.

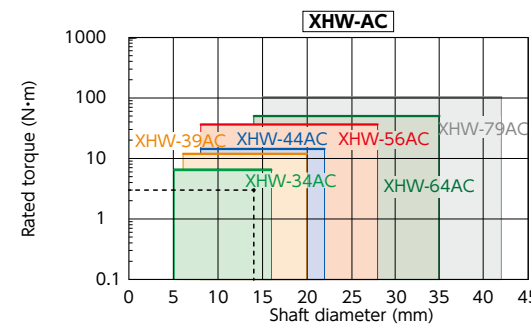
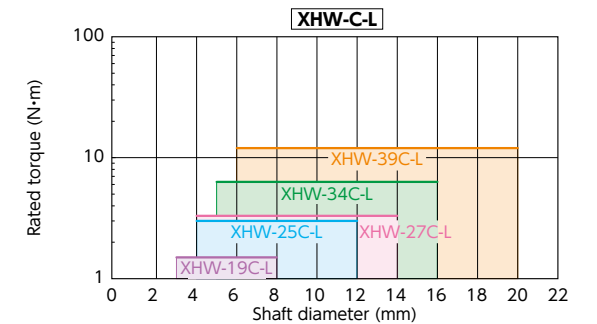
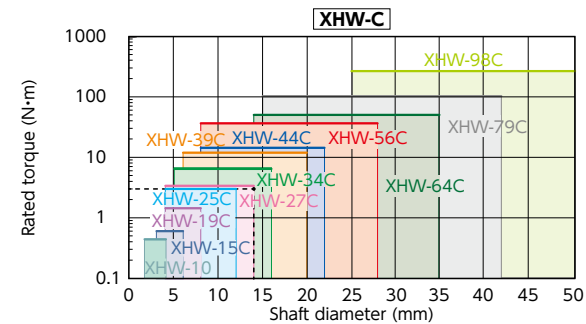
Additional Keyway at Shaft Hole Available / Add'l charge	Cleanroom Wash & Packaging Please feel free to contact us	SUS Change to Stainless Steel Screw Available / Add'l charge
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## Selection

### • Selection Based on Shaft Diameter and Rated Torque

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



### • Selection Example

In case of selected parameters of shaft diameter of  $\phi 14$  and load torque of  $3N \cdot m$ , the selected size is

**XHW-27C**.

### • Selection Based on the Rated Output of the Servomotor

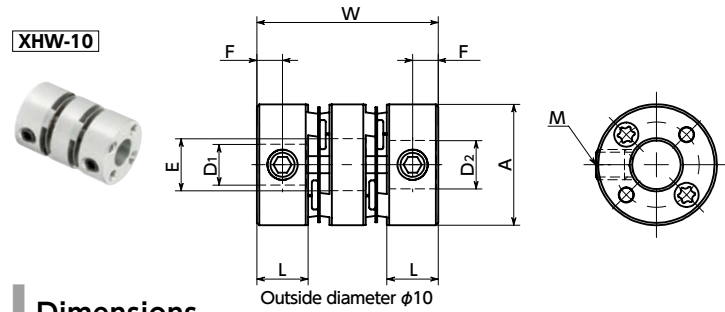
**XHW-C** supports the servomotor with instantaneous max. torque increased to 350% of the rated torque and the size can be more reduced than the size of conventional product **XBW-C**.

Rated Output (W)	Servomotor Type				Servomotor Specifications*1			Selection Size	
	Mitsubishi Electric Corporation	YASKAWA Electric Corporation	SANYO DENKI Co., Ltd.	KEYENCE CORPORATION	Diameter of Motor Shaft (mm)	Rated Torque (N·m)	Instantaneous Max. Torque (N·m)	XHW-C	XBW-C
100					8	0.32	1.1	XHW-19C	XBW-25C
200					14	0.64	2.2	XHW-27C	XBW-34C
400	HG-KR	SGMJV	R2	SV	14	1.3	4.5	XHW-34C	XBW-39C
750					16 - 19	2.4	8.4	XHW-39C	XBW-44C

\*1: Motor specifications are based on general values. For details, see the motor manufacturer's catalogs. This is the size for cases where devices such as reduction gears are not used.

# XHW-C/XHW-C-L Flexible Couplings - Disk Type

Zero Backlash High torque High Rigidity



## Dimensions

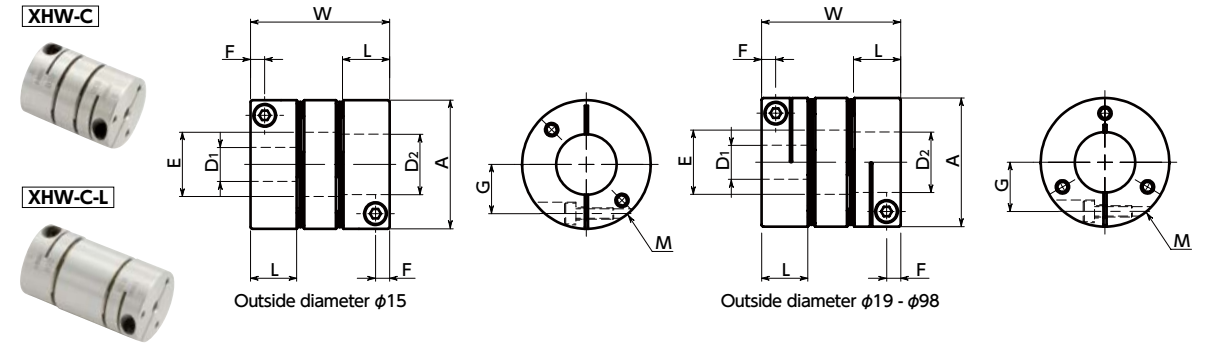
Unit : mm

Part Number	A	L	W	E	F	G	M	Screw Tightening Torque (N·m)
XHW-10	10	4.25	15	4.3	2.125	-	M2.5	0.5
XHW-15C	15	7.8	22.4	6.3	2.3	5	M2	0.45
XHW-19C	19	9.2	25.7	8.5	2.6	7	M2	0.5
XHW-25C	25	11	32.2	12.5	3.3	9.25	M2.5	1
XHW-27C	27	11	32.2	14.5	3.3	10.25	M2.5	1
XHW-34C	34	12.5	36.8	16.5	3.75	13	M3	1.5
XHW-39C	39	15.5	46.6	20.5	4.5	14.5	M4	3.5
XHW-44C	44	15.5	46.6	22.5	4.5	17	M4	3.5
XHW-56C	56	20.5	61.2	28.5	6	21	M5	8
XHW-64C	64	24	74.4	36	7	24	M6	13
XHW-79C	79	30	97.2	43	8.75	29	M8	28
XHW-98C	98	32	104	51	8.7	38	M8	28
XHW-19C-L	19	9.2	34	8.5	2.6	7	M2	0.5
XHW-25C-L	25	11	42	12.5	3.3	9.25	M2.5	1
XHW-27C-L	27	11	42	14.5	3.3	10.25	M2.5	1
XHW-34C-L	34	12.5	44	16.5	3.75	13	M3	1.5
XHW-39C-L	39	15.5	55	20.5	4.5	14.5	M4	3.5

Part Number	Standard Bore Diameter D1/D2																												
	2	3	4	5	6	6.35	8	9.525	10	11	12	14	15	16	17	18	19	20	22	24	25	28	30	32	35	38	40	42	45
XHW-10	●	●	●																										
XHW-15C		●	●	●	●																								
XHW-19C			●	●	●	●	●																						
XHW-25C				●	●	●	●	●	●																				
XHW-27C					●	●	●	●	●	●																			
XHW-34C						●	●	●	●	●	●																		
XHW-39C							●	●	●	●	●	●																	
XHW-44C								●	●	●	●	●	●																
XHW-56C									●	●	●	●	●	●	●														
XHW-64C										●	●	●	●	●	●	●													
XHW-79C												●	●	●	●	●	●	●											
XHW-98C																													
XHW-19C-L		●	●	●	●	●																							
XHW-25C-L			●	●	●	●	●				●	●	●																
XHW-27C-L				●	●	●	●	●			●	●	●	●															
XHW-34C-L					●	●	●	●	●		●	●	●	●	●														
XHW-39C-L						●	●	●	●	●		●	●	●	●	●													

- All products are provided with hex socket head cap screw. (Only XHW-10 is provided with hex socket set screws.)
- Recommended tolerance for shaft diameters is h6 and h7. (Recommended tolerance for shaft diameter φ35 only is -0.025 to +0.010.)
- Bore/keyway additional modification and stainless steel screw change service are not available for XHW-10.

Additional Keyway at Shaft Hole Available / Add'l charge	Cleanroom Wash & Packaging Please feel free to contact us	Change to Stainless Steel Screw Available / Add'l charge
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## Performance

Part Number	Max. Bore Diameter (mm)	Rated Torque *1 (N·m)	Max. Rotational Frequency (min <sup>-1</sup> )	Moment of Inertia *2 (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)
XHW-10	4	0.25	63000	3.8×10 <sup>-8</sup>	70	0.05	1.4	±0.2	2.5
XHW-15C	6	0.6	42000	3.0×10 <sup>-7</sup>	100	0.1	1.4	±0.2	9.6
XHW-19C	8	1.5	33000	8.8×10 <sup>-7</sup>	300	0.12	2	±0.2	17
XHW-25C	12	3	25000	3.4×10 <sup>-6</sup>	1000	0.15	2	±0.3	35
XHW-27C	14	3.3	23000	4.4×10 <sup>-6</sup>	1400	0.15	2	±0.4	39
XHW-34C	16	6.3	18000	1.3×10 <sup>-5</sup>	2500	0.2	2	±0.5	75
XHW-39C	20	12	16000	2.9×10 <sup>-5</sup>	4700	0.25	2	±0.5	123
XHW-44C	22	15	14000	4.7×10 <sup>-5</sup>	6400	0.25	2	±0.6	156
XHW-56C	28	37.5	11000	1.7×10 <sup>-4</sup>	12000	0.3	2	±0.7	340
XHW-64C	35	50	9800	3.3×10 <sup>-4</sup>	15000	0.35	2	±0.9	490
XHW-79C	42	100	7900	1.0×10 <sup>-3</sup>	22000	0.5	2	±1.1	1100
XHW-98C	50	280	6400	2.6×10 <sup>-3</sup>	47000	0.5	2	±1.3	1740
XHW-19C-L	8	1.5	33000	1.2×10 <sup>-6</sup>	300	0.25	2	±0.2	22
XHW-25C-L	12	3	25000	4.3×10 <sup>-6</sup>	1000	0.3	2	±0.3	45
XHW-27C-L	14	3.3	23000	5.8×10 <sup>-6</sup>	1400	0.3	2	±0.4	50
XHW-34C-L	16	6.3	18000	1.6×10 <sup>-5</sup>	2500	0.3	2	±0.5	89
XHW-39C-L	20	12	16000	3.4×10 <sup>-5</sup>	4700	0.4	2	±0.5	144

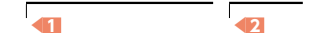
- \*1: Correction of rated torque due to load fluctuation is not required. The shaft's slip torque may be smaller than the coupling's rated torque depending on the shaft bore.
- \*2: These are values with max. bore diameter.

### ⚠ Precautions for Use

- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft.
- There are sizes where the hex socket head cap screw exceeds the outer diameter of the coupling and the rotating diameter is larger than the outer diameter. Please be careful of the interference of coupling.

### • Part Number Specification

XHW-25C-L-8-10

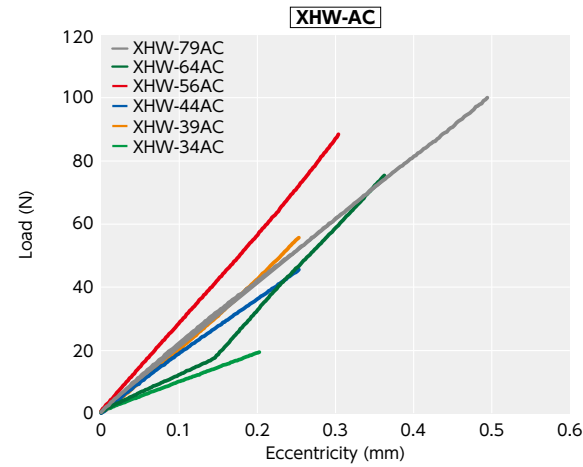
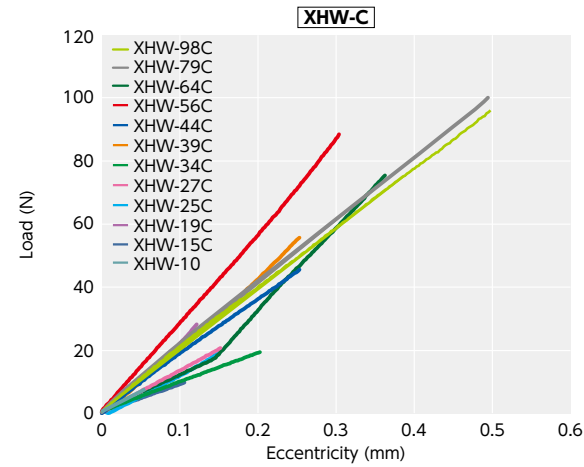


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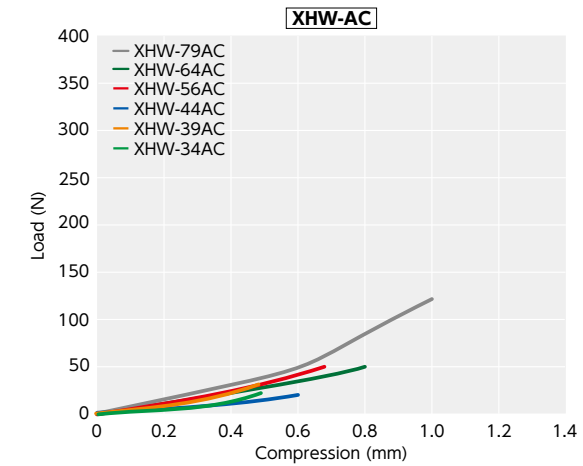
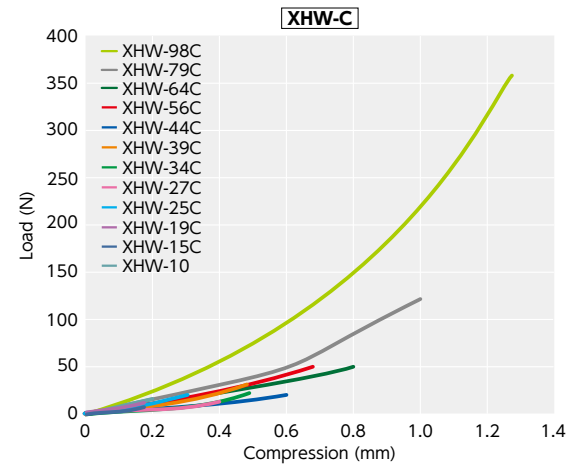
Zero Backlash High torque High Rigidity

## Technical Information

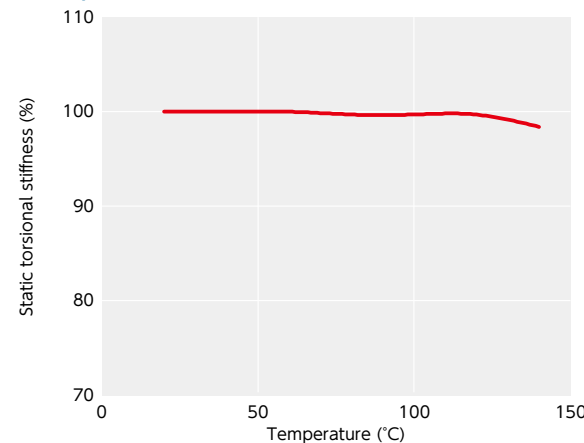
### Eccentric Reaction Force



### Thrust Reaction Force



### 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 **XHW-C** and **XHW-AC** 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.

### Slip Torque

As in the table below, the clamping types **XHW-C** and **XHW-C-L** have different slip torque according to the bore diameter. Take care during selection.

Outside Diameter	Bore Diameter (mm)																			Unit : N · m				
	3	4	5	6	6.35	8	9.525	10	11	12	14	15	16	25	28	30	32	35	38		40	42	45	
15	0.7																							
19	0.7	1.7	3																					
25		2.5	3.6	4.7	5																			
27		2	2.9	4	4.2	5.8																		
34			3.5	4.9	5.5	7.9	10	11	12															
39				6	8	13	18	19	23															
44						8	13	15	20	26														
56							22	34	37	45	55	66												
64									23	42	60	88												
79											140	150	180											
98														120	140	150	170	190	210	220	240	260		

- These are test values based on the conditions of shaft dimensional allowance: h7, hardness: 34 - 40 HRC, and screw tightening torque of the values described in **XHW-C** **XHW-C-L** dimension tables. They are not guaranteed values.
- Slip torque changes with usage conditions. Carry out tests under conditions similar to actual conditions in advance.

### Comparison of Static Torsional Stiffness (Double Disk Type)

**XHW-C** and **XHW-AC** have high static torsional stiffness and responsiveness.

Optimal for high-speed and precision positioning for servomotors, etc.

