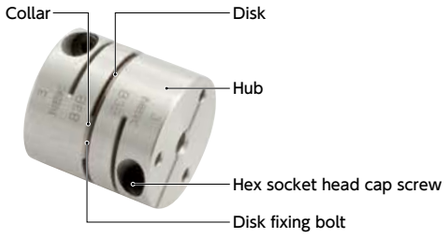
XHS-C Flexible Couplings - Single - Disk Type

Zero Backlash High torque High Rigidity

Structure

● Clamping Type ➡ P.xxxx

XHS-C Short Type



● Applicable motors

	XHS-C
Servomotor	◎
Stepping Motor	◎
General-purpose Motor	●

◎: Excellent ●: Available

● Property

	XHS-C
Zero Backlash	◎
High-gain Supported	○
High Torque	◎
High Torsional Stiffness	◎
Allowable Misalignment	○

◎: Excellent ○: Very good

- This is a single 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, and angular misalignment, and end-play.

● Application

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

● Material/Finish

RoHS

	XHS-C
Hub	A2017 Anodized*1
Disk Fixing Bolts	SCM435 Ferrosoferric Oxide Film (Black)
Disk	SUS304
Collar	SUS304
Hex Socket Head Cap Screw	SCM435 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.

● Part number specification

XHS-27C-10 - 11

Product Code | Size | Bore Diameter

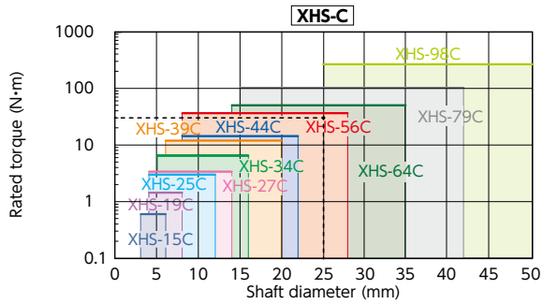
Please refer to dimensional table for part number specification.

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

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 ϕ 25 and load torque of 30 N•m, the selected size is XHS-56C.

● **Selection Based on the Rated Output of the Servomotor**

XHS-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 XBS-C.

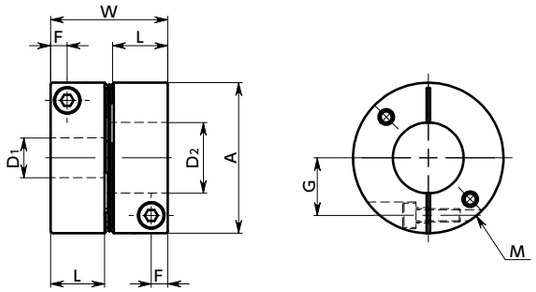
Rated Output (W)	Servomotor Type				Servomotor Specifications*1			Selection Size	
	Mitsubishi Electric Corporation	YASKAWA Electric Corporation	SANYO DENKI Co., Ltd.	KEYENCE CORPORATION	Diameter of Motor Shaft (mm)	Rated Torque (N・m)	Instantaneous Max. Torque (N・m)	XHS-C	XBS-C
100	HG-KR	SGMJV	R2	SV	8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

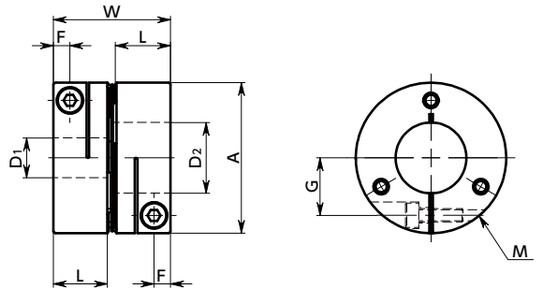
XHS-C Flexible Couplings - Single - Disk Type

Zero Backlash　High torque　High Rigidity

XHS-C



Outside diameter ϕ15



Outside diameter ϕ19 - ϕ98

Dimensions

Unit : mm

Part Number 1	A	L	W	F	G	M	Screw Tightening Torque (N・m)
XHS-15C	15	7.8	16.5	2.3	5	M2	0.45
XHS-19C	19	9.2	19.3	2.6	7	M2	0.5
XHS-25C	25	11	23.1	3.3	9.25	M2.5	1
XHS-27C	27	11	23.1	3.3	10.25	M2.5	1
XHS-34C	34	12.5	26.4	3.75	13	M3	1.5
XHS-39C	39	15.5	32.8	4.5	14.5	M4	3.5
XHS-44C	44	15.5	32.8	4.5	17	M4	3.5
XHS-56C	56	20.5	43.5	6	21	M5	8
XHS-64C	64	24	51.2	7	24	M6	13
XHS-79C	79	30	63.6	8.75	29	M8	28
XHS-98C	98	32	69	8.7	38	M8	28

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	50
XHS-15C	●	●	●	●																									
XHS-19C	●	●	●	●	●	●																							
XHS-25C		●	●	●	●	●	●	●	●	●																			
XHS-27C		●	●	●	●	●	●	●	●	●	●																		
XHS-34C			●	●	●	●	●	●	●	●	●	●	●																
XHS-39C				●	●	●	●	●	●	●	●	●	●	●	●	●	●												
XHS-44C						●	●	●	●	●	●	●	●	●	●	●	●	●											
XHS-56C						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
XHS-64C								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
XHS-79C											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
XHS-98C																				●	●	●	●	●	●	●	●	●	●

- All products are provided with hex socket head cap screw.
- Recommended tolerance for shaft diameters is h6 and h7. (Recommended tolerance for shaft diameter ϕ35 only is −0.025 to +0.010.)
- For the shaft insertion amount to the coupling, see Mounting/maintenance.

⚠ Precautions for Use

- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.xxxx
- There are sizes where the hex socket head bolt 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. ➡ P.xxxx

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

Performance

Part Number	Max. Bore Diameter (mm)	Rated *1 Torque (N・m)	Max. Rotational Frequency (min^{-1})	Moment*2 of Inertia ($kg \cdot m^2$)	Static Torsional Stiffness (N・m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass *2 (g)
XHS-15C	6	0.6	42000	2.2×10^{-7}	110	0.01	0.7	±0.1	6.8
XHS-19C	8	1.5	33000	6.3×10^{-7}	330	0.02	1	±0.1	13
XHS-25C	12	3	25000	2.3×10^{-6}	1200	0.02	1	±0.15	25
XHS-27C	14	3.3	23000	3.1×10^{-6}	1800	0.02	1	±0.2	27
XHS-34C	16	6.3	18000	9.2×10^{-6}	3900	0.02	1	±0.25	52
XHS-39C	20	12	16000	2.0×10^{-5}	6000	0.02	1	±0.25	84
XHS-44C	22	15	14000	3.3×10^{-5}	7900	0.02	1	±0.3	107
XHS-56C	28	37.5	11000	1.1×10^{-4}	14000	0.02	1	±0.35	233
XHS-64C	35	50	9800	2.2×10^{-4}	16000	0.02	1	±0.45	328
XHS-79C	42	100	7900	6.7×10^{-4}	23000	0.02	1	±0.55	748
XHS-98C	50	280	6400	1.7×10^{-3}	52000	0.02	1	±0.65	1120

*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. ➡ P.xxxx
*2 : These are values with max. bore diameter.

● Part number specification

XHS-27C - 8-10
1　2

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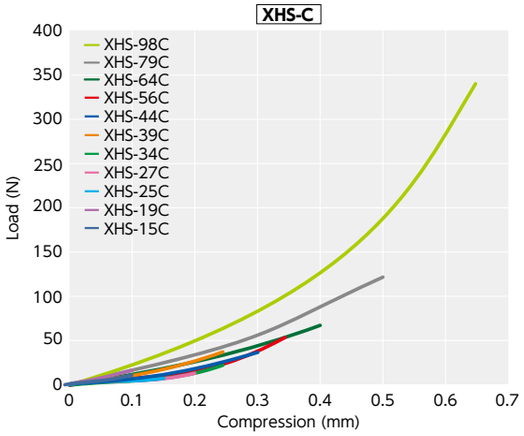
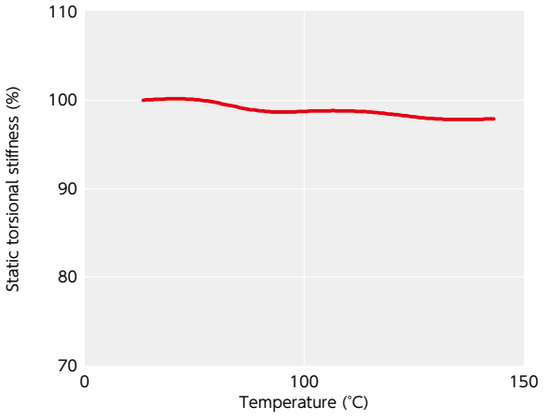
Technical Information

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℃ is 100%.
The change of XHS-C 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 type XHS-C has different slip torque according to the bore diameter. Take care during selection.

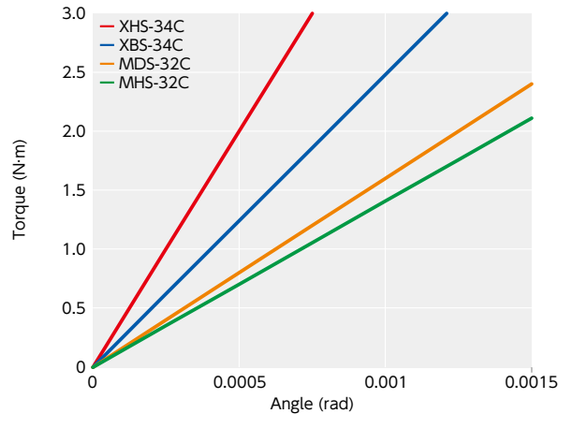
Unit : N・m

Outside Diameter	Bore Diameter (mm)																					
	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 XHS-C 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 (single disk-type)

XHS-C has high static torsional stiffness and responsiveness.
Optimal for high-speed and precision positioning for servomotors, etc.



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