XRP Rigid Coupling

WEB Selection Tool　WEB CAD Download　Zero Backlash　High Rigidity

GOOD DESIGN

Structure

● Clamping type

XRP-C ➡ P.209

● Material/Finish　RoHS2 Compliant

	XRP-C
Main Body	A7075
Hex Socket Head Cap Screw	SCM435 Ferrosoferric Oxide Film

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 ϕ 14 and load torque of 9 N・m, the selected size is **XRP-39C**.

● Recommended applicable motor

	XRP-C
Servomotor	◎
Stepping motor	◎
General-purpose motor	–

◎: Excellent　○: Very good　△: Available

● Property

	XRP-C
Zero Backlash	◎
High Torque	○
High Torsional Stiffness	◎

◎: Excellent　○: Very good

- This is a high precision rigid coupling.
- Coaxiality, bore diameter, and run out have been pursued to the ultimate level.
- An inspection report is attached to all products before shipment.
- Light weight and ultra small moment of inertia. High response.
- This is a shaft fastening structure with consideration of rotational balance and unbalance is ultra small.
- Extra super duralumin (A7075) featuring the highest strength among aluminum alloy is adopted.

● Application

High precision measurement device/High precision XY stage/Encoder

● Part number specification

XRP-19C-6-8

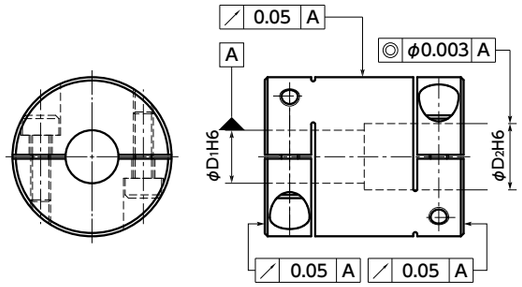
Product Code / size / Bore Diameter

Please refer to dimensional table for part number specification.

Additional Keyway at Shaft Hole ➡ P.803	Cleanroom Wash & Packaging ➡ P.807	Change to Stainless Steel Screw ➡ P.805
Please feel free to contact us	Available / Add'l charge	Available / Add'l charge

● Commitment to high precision

- The coaxiality of both bores is not more than 3 μm.
- Bore diameter tolerance is H6.
- Radial run out and run out of end face against bore are not more than 50μm.



● Precision assurance by total inspection

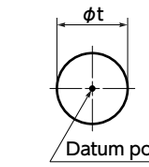
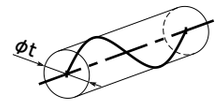
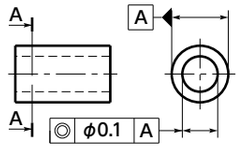
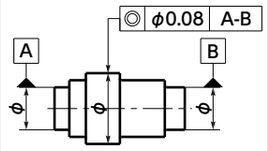
- The inspection is conducted in an environment of constant temperature and humidity.
- Inspection item:
  Bore diameters D1 and D2
  Coaxiality of bores D1 and D2
  Radial run out and run out of end face against bore

● 3D measurement device:

UPMC850CARAT SuperAcc made by Carl Zeiss

Measurement precision　Max. allowable instruction error 0.7+L/600μm
Max. allowable probing error 0.6μm
Measurement environment　Temperature 20±1℃
Humidity 50±10%

● Concentricity tolerance and coaxiality tolerance

Property symbol	Definition of tolerance zone	
◎		If the symbol ϕ is attached to the tolerance value, the tolerance zone is regulated by a circle of diameter t. The center of circular tolerance zone coincides with datum A.
		If the symbol ϕ is attached to the tolerance value, the tolerance zone is regulated by a cylinder of diameter t. The axis line of cylindrical tolerance zone coincides with datum A.
	Example and explanation of instruction method	
◎		The actual (reproduced) center of the outside circle must be within the circle concentric with datum circle A and of 0.1 in diameter.
		The actual (reproduced) shaft line of inside cylinder must be within a cylindrical tolerance area coaxial with common datum axis line A-B and of 0.08 in diameter.

● Excerpt from JIS B 0021

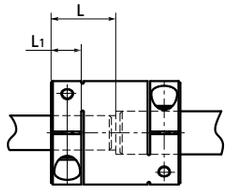
● Shaft insertion length

The shaft insertion length should be not less than L_1 (clamp portion) and not more than L.

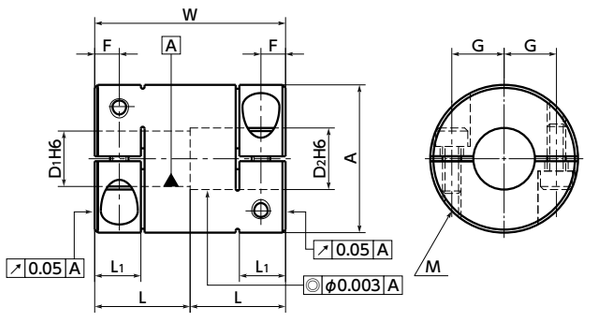
The insertion length of a shaft to maintain the high precision should be L dimension if possible.

However, be careful so that both shaft ends do not interfere with each other.

If the shaft insertion length is less than L_1, it may derange the coaxiality or generate vibration when fastening the shaft.



XRP-C



Dimensions

Unit : mm

Part Number 1	A	L	L1	W	F	G	M	Screw Tightening Torque (N・m)
XRP-16C	16	10	5	20	2.6	5	M2	0.5
XRP-19C	19	13	6.5	26	3.5	6.25	M2.5	1
XRP-24C	24	15	7	30	3.75	7.75	M3	1.5
XRP-34C	34	20	8	40	4	12	M3	1.5
XRP-39C	39	24	10	48	5	14.5	M4	2.5

Part Number	Standard Bore Diameter D1・D2 2		
XRP-16C	5 - 5	5 - 6	6 - 6
XRP-19C	6 - 6	6 - 8	8 - 8
XRP-24C	8 - 8	8 - 10	10 - 10
XRP-34C	10 - 10	10 - 12	12 - 12
XRP-39C	12 - 12	12 - 14	15 - 15

- All products are provided with hex socket head cap screws.
- Recommended tolerance of applicable shaft diameter is h6.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft. ➡ P.258

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Performance

Part Number	Max. Bore Diameter (mm)	Rated torque*1 (N・m)	Max. Rotational Frequency (min^{-1})	Moment of Inertia*2 ($kg \cdot m^2$)	Mass*2 (g)
XRP-16C	6	1	39000	3.1×10^{-7}	9
XRP-19C	8	2.5	33000	8.0×10^{-7}	15
XRP-24C	10	4.5	26000	2.7×10^{-6}	32
XRP-34C	15	7.5	18000	1.4×10^{-5}	87
XRP-39C	18	10	16000	3.9×10^{-5}	140

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

- Part number specification

XRP-24C - 8-10
1 2