

XGT/XGL/XGS Flexible Couplings - High-gain Rubber Type

Zero Backlash High gain supported High torque Vibration absorption

Structure

Set Screw Type

XGT Standard type → P.xxxx

XGS Short type → P.xxxx



Single Clamping Type

XGT-CS Standard type → P.xxxx

XGS-CS Short type → P.xxxx



Double Clamping Type

XGT-C Standard type → P.xxxx

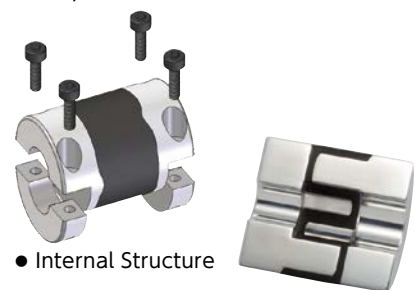
XGL-C Long type → P.xxxx

XGS-C Short type → P.xxxx



XGT-C XGL-C XGS-C Split Type

Easy to mount and remove screws.



Internal Structure

The designed shape of vibration-absorbing rubber achieves high torsional stiffness and high torque according to the finite element method. This product also succeeds in elongating its life by evenly dispersing the stress focusing on around the inner diameter of the jaw throughout the entire jaw.

Applicable motors

	XGT / XGL / XGS
Servomotor	○
Stepping Motor	○
General-purpose Motor	●

○: Excellent ●: Available

Property

	XGT / XGL / XGS
Zero Backlash	○
For Servomotor High Gain	○
High Torque	○
High Torsional Stiffness	○
Allowable Misalignment	○
Vibration Absorption Characteristics	○
Allowable Operating Temperature	-20°C to 80°C

○: Excellent ○: Very good

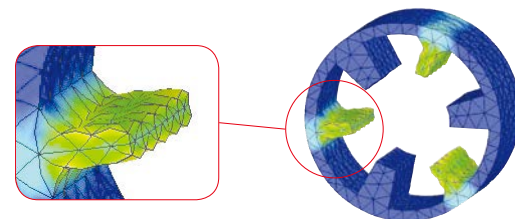
- A completely integrated flexible coupling that connects hubs on both sides with high-gain rubber.
- It is suitable for control motors with high responsiveness, enabling high-accuracy positioning and shortened stabilization time.
- About reduction of stabilization time → P.xxxx

Application

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

Material/Finish

	XGT / XGL / XGS
Hub	A2017
High-Gain Rubber	HNBR
Hex Socket Head Cap Screw / Hex Socket Set Screw	SCM435 Ferrosoferric Oxide Film (Black)

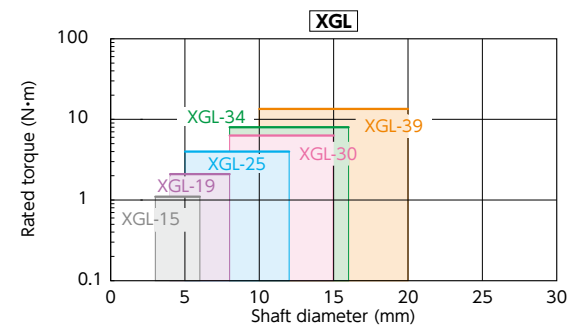
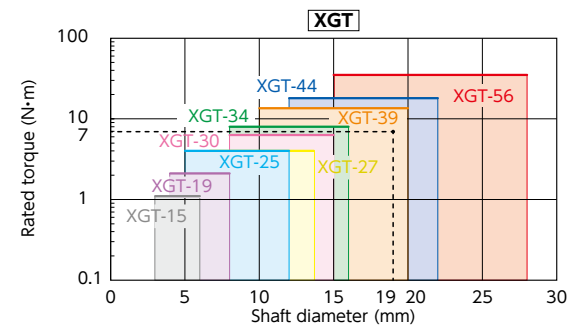


Additional Keyway at Shaft Hole → P.xxxx Cleanroom Wash & Packaging → P.xxxx Change to Stainless Steel Screw → P.xxxx
Available / Add'l charge Please combine with Stainless Steel Screw Alteration Service Available / Add'l charge

Selection

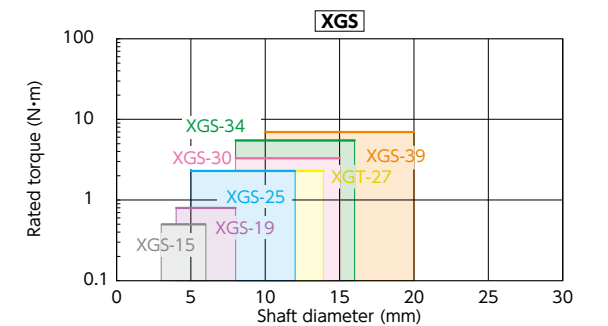
Selection Based on Shaft Diameter and Rated Torque

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 19 and load torque of 7 N·m, the selected size is **XGT-39C**.



Selection Based on the Rated Output of the Servomotor

Rated Output (W)	Servomotor Specifications*1			Selection Size		
	Diameter of Motor Shaft (mm)	Rated Torque (N·m)	Instantaneous Max. Torque (N·m)	XGT	XGL	XGS
10	5 - 6	0.032	0.096	15C	15C	15C
20	5 - 6	0.064	0.19	15C	15C	15C
30	5 - 7	0.096	0.29	19C	19C	19C
50	6 - 8	0.16	0.48	19C	19C	19C
100	8	0.32	0.95	19C	19C	25C
200	9 - 14	0.64	1.9	27C	30C	27C
400	14	1.3	3.8	27C	30C	34C
750	16 - 19	2.4	7.2	39C	39C	—

*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.

Related Products

XGT2 enables further improvement of productivity by adding damping performance to **XGT**.



Part number specification

XGT-19C-6-8

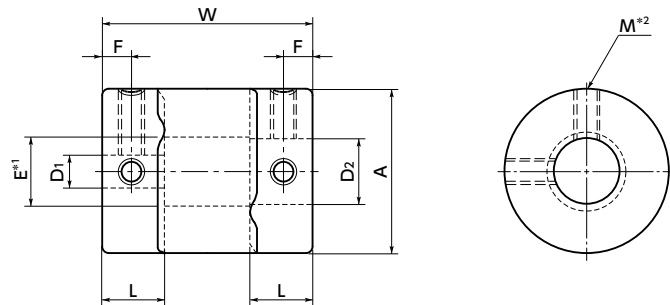
Product Code Size Bore Diameter

Please refer to dimensional table for part number specification.

XGT Flexible Couplings - High - gain Rubber Type - Set Screw Type

Zero Backlash High gain supported High torque Vibration absorption

XGT



*1 : $E = D_2 + 0.5 (D_2 < 5)$

$E = D_2 + 1 (D_2 \geq 5)$

*2 : In a case where the bore diameter is $\phi 4$ or less, the set screw is used in only one place.

Dimensions

Unit : mm

Part Number	A	L	W	F	M	Screw Tightening Torque (N · m)
XGT-15	15	6.5	23	3	M3	0.7
XGT-19	19	7.7	26	4	M3	0.7
XGT-25	25	9.5	32	5	M4	1.7
XGT-27	27	9.5	32	5	M4	1.7
XGT-30	30	11	36	5.5	M4	1.7
XGT-34	34	12	38	6	M5	4
XGT-39	39	15.5	48	8	M5	4
XGT-44	44	15	48	7.5	M6	7
XGT-56	56	19.5	60	10	M6	7

Part Number	Standard Bore Diameter (Dimensional Allowance H8)									
	D1-D2									
XGT-15	3 - 5	3 - 6	4 - 4	4 - 5	4 - 6	4.5 - 5	5 - 5	5 - 6	6 - 6	
XGT-19	4 - 5 6.35 - 8	4 - 8 8 - 8	5 - 5	5 - 6	5 - 7	5 - 8	6 - 6	6 - 6.35	6 - 7	6 - 8
XGT-25	5 - 6 8 - 10	5 - 8 8 - 11	6 - 6 8 - 12	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 12 - 12	6 - 12	6.35 - 8	6.35 - 10	8 - 8
XGT-27	5 - 6 8 - 10	5 - 8 8 - 11	5 - 14 8 - 12	6 - 6 8 - 14	6 - 8 10 - 10	6 - 10 10 - 12	6 - 11 10 - 14	6 - 12 12 - 12	6 - 14 12 - 14	8 - 8 14 - 14
XGT-30	8 - 8 10 - 15	8 - 10 11 - 12	8 - 11 12 - 12	8 - 12 12 - 14	8 - 14 12 - 15	8 - 15 14 - 14	10 - 10 14 - 15	10 - 11 15 - 15	10 - 12	10 - 14
XGT-34	8 - 8 10 - 15	8 - 10 11 - 11	8 - 11 11 - 12	8 - 12 12 - 12	8 - 14 12 - 14	8 - 15 12 - 15	10 - 10 14 - 14	10 - 11 14 - 15	10 - 12 15 - 15	10 - 14 16 - 16
XGT-39	10 - 10 12 - 20	10 - 12 14 - 14	10 - 14 14 - 15	10 - 15 14 - 16	10 - 16 15 - 15	12 - 12 15 - 16	12 - 14 15 - 19	12 - 15 16 - 16	12 - 16 17 - 17	12 - 19 20 - 20
XGT-44	12 - 12 15 - 19	12 - 14 15 - 20	12 - 16 16 - 16	12 - 19 16 - 19	14 - 14 17 - 17	14 - 15 19 - 20	14 - 16 20 - 20	14 - 19	15 - 15	15 - 16
XGT-56	15 - 15	15 - 19	15 - 20	15 - 25	19 - 20	19 - 24	20 - 20	20 - 25	24 - 25	25 - 25

- All products are provided with hex socket set screws.
- Recommended tolerance for shaft diameters is h6 and h7.
- For the shaft insertion amount to the coupling, see Mounting/maintenance.

Performance

Part Number	Max. Bore Diameter (mm)	Keyway Additional Modification Max. Bore Diameter (mm)	Rated Torque *1 (N · m)	Max. Rotational Frequency (min ⁻¹)	Moment *2 of Inertia (kg · m ²)	Static Torsional Stiffness (N · m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass *2 (g)
XGT-15	6	—	1.1	42000	2.6×10^{-7}	43	0.15	1.5	±0.2	9
XGT-19	8	6	2.1	33000	7.5×10^{-7}	88	0.15	1.5	±0.2	15
XGT-25	12	9	4	25000	2.7×10^{-6}	140	0.15	1.5	±0.2	29
XGT-27	14	10	4	23000	3.6×10^{-6}	140	0.15	1.5	±0.2	32
XGT-30	15	11	6.3	21000	6.3×10^{-6}	220	0.2	1.5	±0.3	46
XGT-34	16	12	8	18000	1.1×10^{-5}	390	0.2	1.5	±0.3	66
XGT-39	20	15	13.5	16000	2.4×10^{-5}	520	0.2	1.5	±0.3	103
XGT-44	22	17	18	14000	4.0×10^{-5}	640	0.2	1.5	±0.3	133
XGT-56	28	22	35	11000	1.3×10^{-4}	1500	0.2	1.5	±0.3	267

*1 : Correction of rated torque due to load fluctuation is not required. If ambient temperature exceeds 30°C, be sure to correct the rated torque with temperature correction factor shown in the following table.

The allowable operating temperature of **XGT** is -20°C to 80°C.

※ 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.

● Ambient Temperature / Temperature Correction Factor

Ambient Temperature	Temperature Correction Factor
-20°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 80°C	0.55

● Part number specification

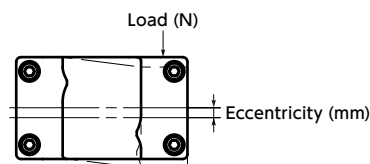
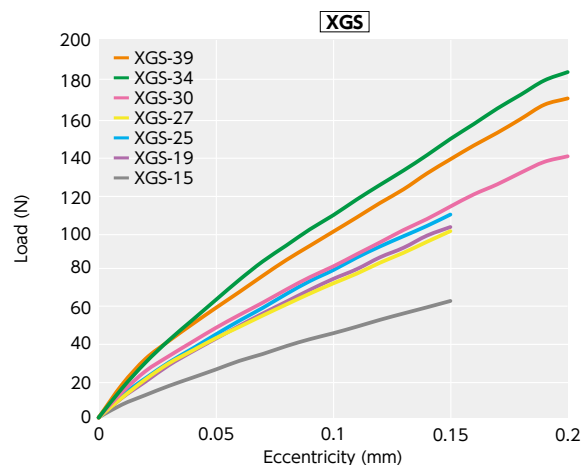
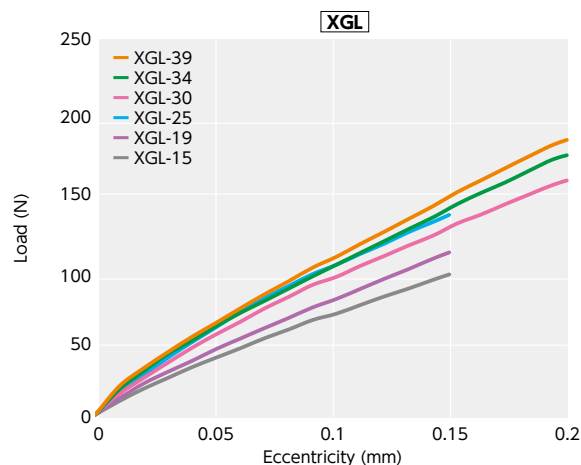
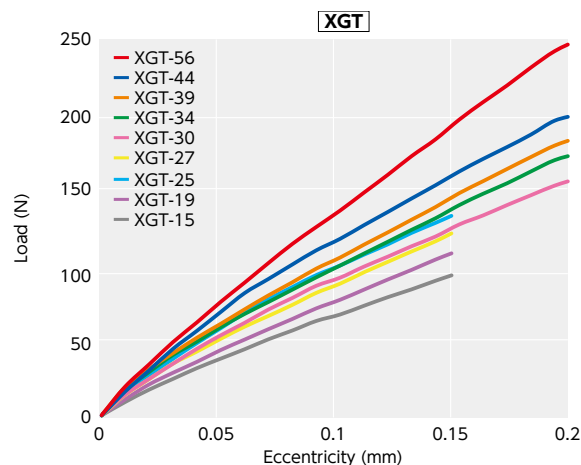
XGT-39 - 12-20

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Additional Keyway at Shaft Hole ➡ P.xxxx Cleanroom Wash & Packaging ➡ P.xxxx Change to Stainless Steel Screw ➡ P.xxxx
Available / Add'l charge Please combine with Stainless Steel Screw Alteration Service Available / Add'l charge

Technical Information

• Eccentric Reaction Force

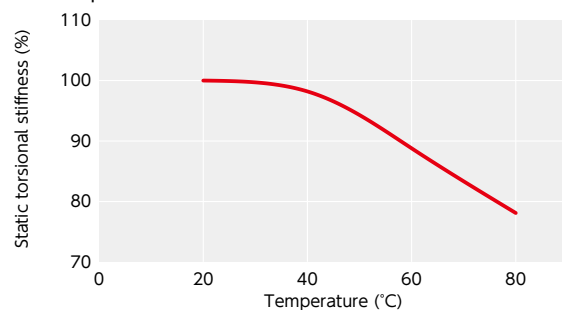


This is the force generated when placing **XGT** **XGL** **XGS** in an eccentric condition. As the eccentric reaction force becomes smaller, the force acting on the shaft bearing also becomes smaller.

• 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%.

Changes in the static torsion spring constant within the operating temperature are shown in the graph. Before using the unit, be aware of the deterioration of responsiveness.

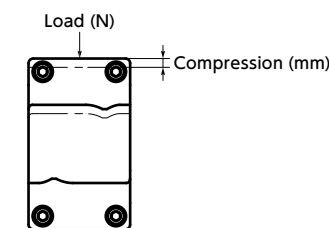
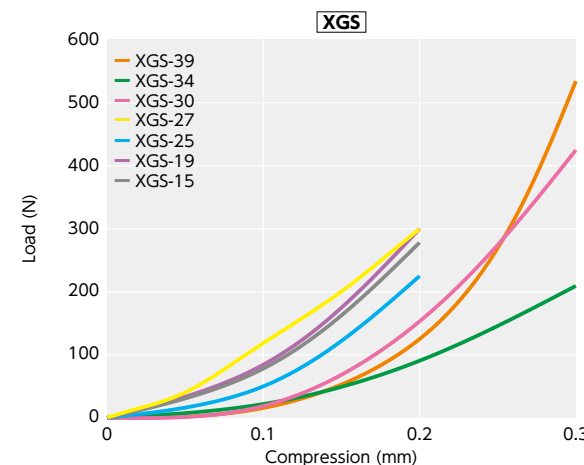
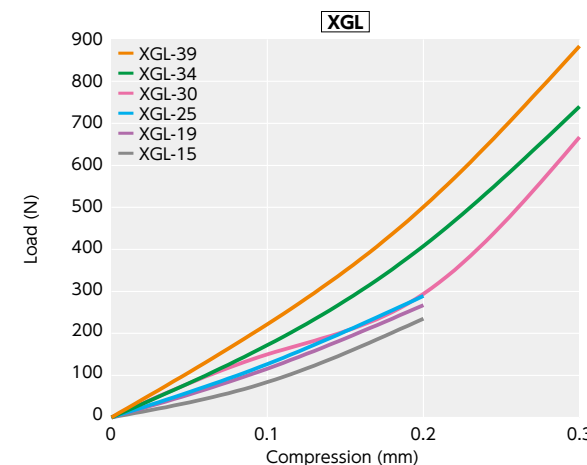
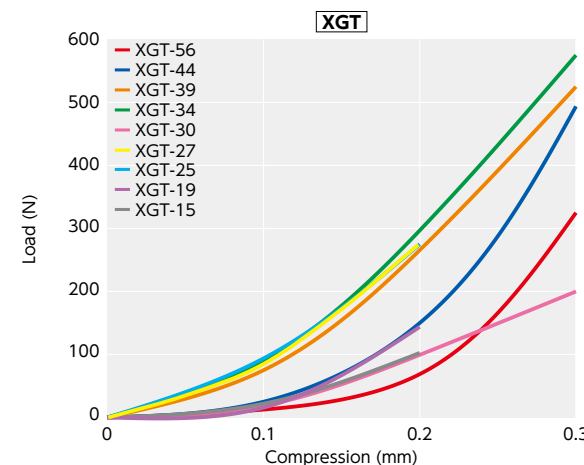


• Physical property and chemical resistance of high-gain type rubber (HNBR)

	Effect
Aging Resistance	⊙
Weather Resistance	⊙
Ozone Resistance	⊙
Gasoline / Gas Oil	○ - ⊙
Benzene / Toluene	△ - ○
Alcohol	⊙
Ether	× - △
Ketone (MEK)	×
Ethyl Acetate	× - △
Water	⊙
Organic Acid	⊙
High Concentration Inorganic Acid	○
Low Concentration Inorganic Acid	⊙
Strong Alkali	⊙
Weak Alkali	⊙

⊙: Excellent ○: Available △: Available depending on conditions ×: Not available

• Thrust Reaction Force



This is the force generated when compressing **XGT** **XGL** **XGS** in the axial direction. As the thrust reaction force becomes smaller, the force acting on the motor also becomes smaller.

• Slip Torque

For set screw type **XGT** **XGS**, see Aluminum Alloy Coupling under "Slip Torque of Coupling - Set Screw Type" for details.

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

Outside Diameter	Bore Diameter (mm)																	
	3	4	4.5	5	6	6.35	7	8	10	11	12	12.7	14	15	16	17	19	20
15	1	1.3	1.5	1.7	1.9													
19		2.2		2.7	3.1	3.3	3.8											
25				4.3	5	5.5		6.8										
27				3.8	5			6.8										
30								7.5	10	12								
34								8.3	10	10	12		13					
39									13		15	17	17	18	18	23	25	
44											16		19	20	21	23	25	27
56														45			50	61

• 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 **XGT-C** **XGT-CS** **XGS-C** **XGS-CS** **XGL-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.