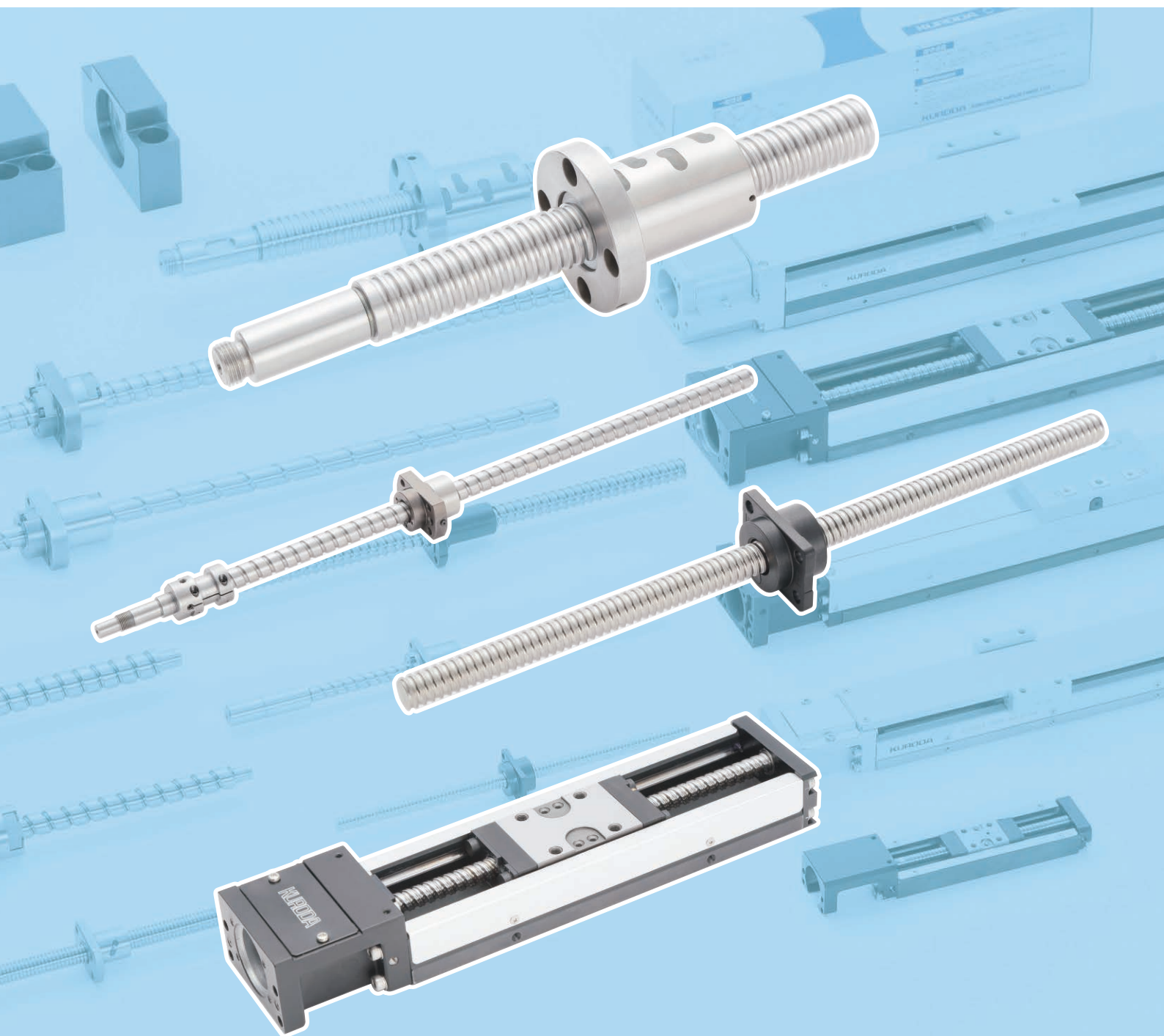


# Ball Screws and Ballscrew Actuator

## Guide Book



# KURODA

The logo for KURODA JENATEC features the word "KURODA" in a large, bold, blue sans-serif font at the top. Below it is a thick horizontal grey line. Underneath the line is a stylized graphic consisting of several vertical bars of varying heights and widths, some solid grey and some white with grey outlines, creating a sense of depth and movement. To the right of this graphic is the word "JENATEC" in a bold, blue sans-serif font, matching the style of "KURODA".

JENATEC

**Under our new brand, we will support the advancement of industry through developing precision technologies.**


**KURODA** PRECISION INDUSTRIES LTD. was established as a gauge manufacturer in 1925. Based on its precision processing technology, it has successively developed precision press dies, grinding machines, special polishing machines, tooling for machining, ball screws for precision positioning, and ultra-precise measuring systems. Responding to the needs of customers centered on the Japan and Asian regions in the automobile, processing machine, semiconductor, electric and electronic fields, we are highly regarded by our customers as “KURODA for Precision”. With regard to ball screws, KURODA specializes in the manufacture of small to medium diameter ball screws.

**JENA TEC** maintains manufacturing bases in Germany, the U.K., and the United States, and mainly supplies high quality linear and rotation-related components such as ball screws and spindles to machining, automobile, and medical equipment manufacturers in Europe and America, and the company is highly trusted as a precision brand in the European and American markets. Particularly with regard to ball screws, JENA TEC is manufacturing custom-made products focused on large diameter ball screws in Jena City, which is known as a region where German precision technology is focused.

In November 2012, KURODA PRECISION INDUSTRIES LTD. and JENA TEC entered into a management merger with the objective of demonstrating the synergetic effect by utilizing both companies’ precision technologies to the maximum. Going forward, we will integrate our brands in order to provide more outstanding products and services centered on ball screws to customers throughout the world.

Based on the new KURODA JENA TEC brand, we will provide products and services that make best use of the synergies between both companies.

# Ball Screw Products Lineup

Photos	Features	Series	Accuracy Grades	Page
<i>NEW</i> 	Light weight Compact Low price	RW series	C7	6
<i>NEW</i> 	Short delivery time	GK/FK series with BTA	C5-C7	7
	Wide variation	GE series	C7	8
		GG series	C5	
		GP series	C3	11
	High rotational speed Ultra-quiet	FE series	C7	9
		FG series	C5	
	High speed conveyance	HG series	C5	10
	Compact Fine-pitch positioning	DP series	C3	11
	Conveyance Wide variation	GY series	C10	12-13
		GW series	C7	
	Customized product	GR series	C0-C10	14
		DR series		
		FR series		
<i>NEW</i> 	Customized product	J series	P1-P5 T7	15
	Actuator Fine-pitch positioning	SG series	Grade P Grade H	18-19
	Actuator Conveyance	SE series	Grade U Grade W	18-19
	Actuator Full-cover type	SC series	Grade U Grade W	18-19

\* The ball screws are manufactured in conformity with JIS standards (DIN standards for J series).

# Ball Screw Range

## Screw Shaft Diameter & Lead Combination (Standard)

### ● Standard Ball Screw for Conveyance (Accuracy Grade: C7, C10)

		Lead (mm)													
		1.5	2	2.5	4	5	6	8	10	15	16	20	25	32	40
Nominal diameter (mm)	8	○	○ ○ △		○ ○	○		○							
	10		○ ○ ○ ●	○ ●	○ ○ ●	○			○ ○ ○ ◇						
	12		○ ○	○ ●	○ ○ ●	○ □		○	○ ○ □ ◇			○ □ ◇			
	15		○		○ ○	○ ◇ □			○ ○ □ ◇	○		○ ○ □ ◇			
	16										○			○ ●	
	20				○	○ ○ ●			○ ○ ◇			○ ○ □ ◇			○ ●
	25					○ ○ ◇			○ ○ ◇			○ ○ □ ◇	○		
	28						○							○ ●	
	32					○			○ ○					○	
	36								○				○		
	40									○			○		○

○ : GE series (Accuracy Grade: C7)    ○ : GY series (Accuracy Grade: C10)    □ : GK series with BTA (Accuracy Grade: C7)    △ : RW series (Accuracy Grade: C7)  
 ◇ : FE series (Accuracy Grade: C7)    ● : GW series (Accuracy Grade: C7)    ■ : FK series with BTA (Accuracy Grade: C7)

### ● Standard Ball Screw for Positioning (Accuracy Grade: C3, C5)

		Lead (mm)																			
		1	1.5	2	2.5	3	4	5	6	10	12	15	16	20	25	30	32	40	50	60	64
Nominal diameter (mm)	6	△						○													
	8	△	● ○	○ ○ △			●			○											
	10		● ○	○ ○ △	○		●			● ◇											
	12		○ ○	○ ○ △	△		○ ○			● ◇	■			● ◇		○					
	14						△														
	15		○ ●				○ ●			○ ● ◇	■		●		○ ○						
	16												●				○				
	20						○ ●			○ ● ◇					○ ○			○			○
	25						○ ● ◇			○ ● ◇					○ ○			○			
	32						○ ●			○ ●									○		○

● : GG series (Accuracy Grade: C5)    ○ : GP series (Accuracy Grade: C3)    ○ : HG series (Accuracy Grade: C5)    ■ : FK series with BTA (Accuracy Grade: C5)  
 ◆ : FG series (Accuracy Grade: C5)    △ : DP series (Accuracy Grade: C3)    □ : GK series with BTA (Accuracy Grade: C5)

### ● Customized Ball Screw

		Lead (mm)															
		1	1.5	2	2.5	4	5	6	8	10	15	16	20	30	32	40	50
Nominal diameter (mm)	6	○															
	8	○	○														
	10	○	○														
	12		○											○			
	14																
	15													○			
	16													○			
	20													○			
	25													○			
	32													○ ●			
	40													○ ●			
	50													○ ●			
	55													○ ●			
	63													○ ●			
	80													○ ●			
	100													○ ●			
125													○ ●				

○ : GR series, DR series, FR series  
 ● : J series

\* The ball screw materials utilize steel that has been subjected to heat treatment.

## Ordering Number

### ●Standard Products

#### ●Without end machining

GE 15 05 D S – B A L R – 0600 A  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

#### ●With end machining

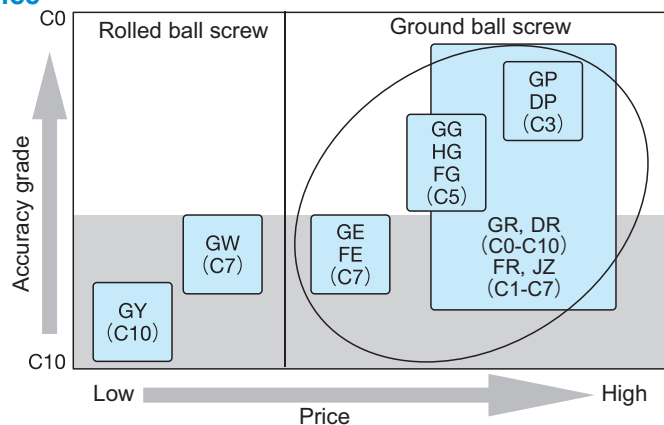
GE 15 05 D S – B A L R – 0600 X 0500 – C7 M  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

### ●Customized Products

GR 15 05 D S – B A L R – 0600 X 0500 – C7 M  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭

<p>① Series          Customized products          GR : GR series (C0-C10)          DR : DR series (C0-C10)          FR : FR series (C1-C7)          JZ : J series (P1-P5, T7)</p> <p>② Screw shaft diameter (mm)          5-125          However, this should be displayed as 5:05, 6:06, 10:10, 100:A0, and 125:C5.</p> <p>③ Lead (mm)          1-64          However, this should be displayed as 1.5:1F, 2.5:2F, and 5:05.</p> <p>④ Number of circuits          A : 1.5 turns 1 circuit          B : 1.5 turns 2 circuits          D : 2.5 turns 1 circuit          E : 2.5 turns 2 circuits          G : 3.5 turns 1 circuit          Q : End cap type          P : End deflector type          Z : Others</p> <p>⑤ Nut type          S : Single nut          T : Integral nut          D : Double nut          Z : Others</p> <p>⑥ Flange type          A-H: Catalogue configurations          N : Without flange          Z : Others</p> <p>⑦ Ball return system          A : Tube method          D : Deflector method          E : End cap method          P : End deflector method          Z : Others</p>	<p>Standard products          GP : GP series (C3)          DP : DP series (C3)          GG : GG series (C5)          FG : FG series (C5)          HG : HG series (C5)          GE : GE series (C7)          FE : FE series (C7)          GW : GW series (C7)          GY : GY series (C10)</p> <p>⑧ Wiper material          P : Plastic wiper          L : Lip seal          S : LUBSEAL          N : No wiper</p> <p>⑨ Thread direction          R : Right hand thread          L : Left hand thread</p> <p>⑩ Overall length of screw shaft (mm)</p> <p>⑪ Shaft end configuration          In the case where the shaft and nut are ordered as a set          A : Without end machining (Standard product)          B : One shaft end machining as per your drawing (Standard product)          X : End machining as per your drawing (Customized product or standard product with additional machining)</p> <p>⑫ Thread length (mm)</p> <p>⑬ Accuracy grade          C0, C1, C2, C3, C4, C5, C7, C10          P1, P3, P5, T7 (J series)</p> <p>⑭ Axial clearance          S : 0          F : Max. 0.005 mm          H : Max. 0.010 mm          M : Max. 0.030 mm          L : Max. 0.2 mm          Y : Axial play for rolled ball screw          Z : Others</p>
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### ●Accuracy Grade and Price



**NEW**

## Standard Ball Screw – Resin Nut Ball Screw RW

RW: C7

The resin nut ball screw utilizes a super engineering plastic (PPS resin) which even among resins has outstanding mechanical properties and resistance to chemicals for the nut part, and uses stainless steel for the screw shaft and the internal circulating balls.

Due to the merits of the ball screw characteristic transmission efficiency, the whining noise heard in lead screws will not occur, resulting in the realization of a quiet and smooth operation over all strokes, from low speeds to high speeds.

In addition, due to the utilization of components made from resin,

it has been made possible to realize lower pricing and shorter delivery times than the previous steel-made ball screws, and we are proposing these as optimum solutions for equipment used in light loading applications!



### ● Ordering Number



### ● Specifications and Performance

#### ● Performance

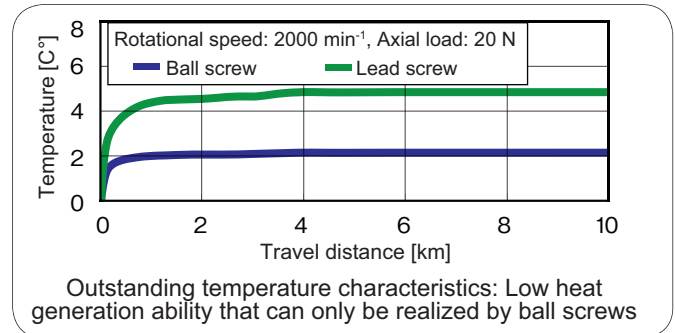
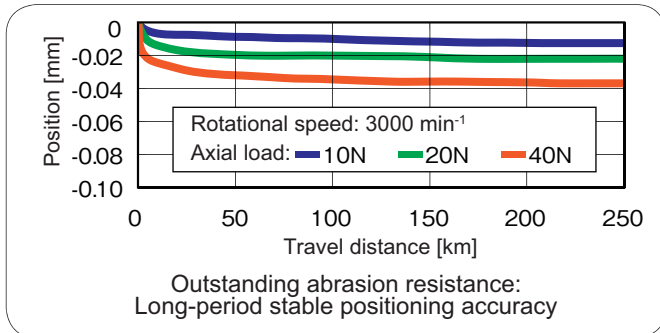
- Travel lifetime: 250 km or more (1.25 million or more return trips at a stroke of 100 mm)
- Permissible axial load: 40 N
- Permissible rotational speed: 3000 min<sup>-1</sup>
- Initial axial clearance: 0.030 mm or less

#### ● Positioning accuracy and temperature characteristics

Test conditions: Shaft diameter: 8 mm, lead: 2 mm, stroke: 100 mm, and loading direction: vertical

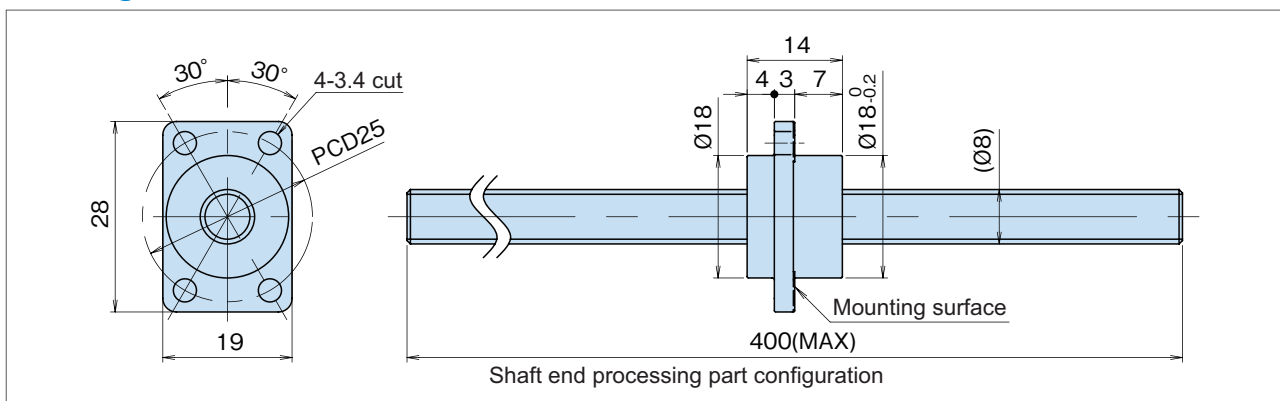
#### ● Materials

- Screw shaft: Stainless steel (SUS304)
- Nut: Super engineering plastic (PPS)
- Ball: Stainless steel (SUS440C)
- \* The standard grease used is Alvania Grease S2.



\* The test results described above will differ according to the specifications and environment, and are not a guarantee of the performance.

### ● Configuration dimensions



\* Please contact KURODA concerning the shaft end configurations.

**NEW**

## Standard Ball Screw – Ball Screw with BTA

GK/FK with BTA

The ball screws with shaft end adapters have been standardized as the GK Series (Tube method) and FK (End deflector method).

“Shaft end adapters” are “adapters that have already been processed” using KURODA’s recommended fixed shaft end configuration. By directly inserting these adapters on the screw shaft diameter, they allow provision of a shaft end unit that has the same strength and accuracy as the previous one-piece fixed shaft end in a short delivery time.



### ● Ordering Number

GK 

Shaft dia.	Lead			–				–	Overall length of screw shaft	T	Thread length	–	C5F C7M
------------	------	--	--	---	--	--	--	---	-------------------------------	---	---------------	---	------------

### ● Accuracy Grade and Axial Clearance

Single nut, accuracy grade: C5, axial clearance: Max. 0.005 mm (Configuration display symbol: F)

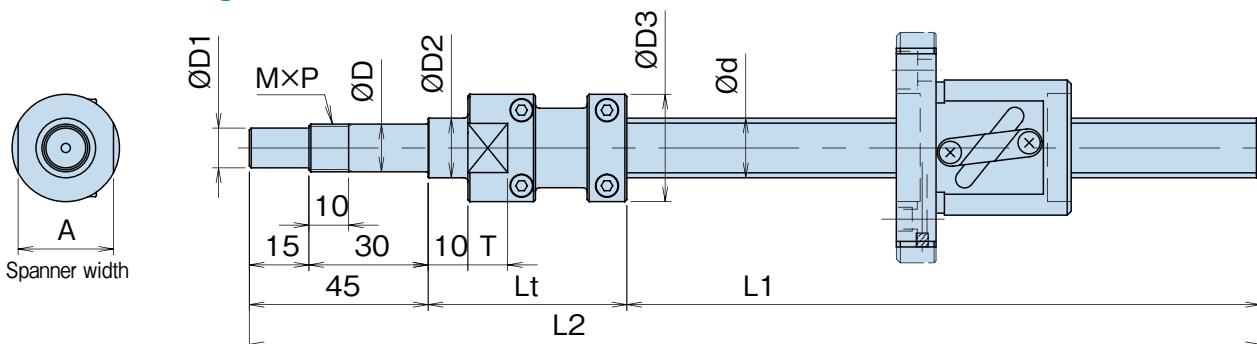
Single nut, accuracy grade: C7, axial clearance: Max. 0.030 mm (Configuration display symbol: M)

### ● Specifications and Performance

Model	Ball screw				Adapter unit		
	Shaft dia. d	Lead [mm]	Lead accuracy	Axial clearance [mm]	Permissible input torque [Nm]	Maximum axial load* [N]	Component bracket deviation accuracy [mm]
GK12	12	5, 10, 20	C5/C7	C5: Max. 0.005 mm C7: Max. 0.030 mm	3.8	500	0.020
FK12		10, 20					
GK15	15	5, 10, 15, 20	C5/C7	C5: Max. 0.005 mm C7: Max. 0.030 mm	3.8	500	0.020
FK15		5, 10, 20					

\* This is the maximum axial load that is applied to the adapter unit during acceleration and deceleration.

### ● Exterior configuration



Model	Shaft dia. d	Adapter unit								Overall length L2	Screw length L1
		Bearing unit diameter D	Component bracket diameter D1	Shoulder diameter D2	Connector diameter D3	Connector length Lt	Length of two-surface width T	Two-surface width A	Thread M x P		
GK12	12h7	10 <sup>-0.002</sup> <sub>-0.008</sub>	8 <sup>0</sup> <sub>-0.009</sub>	12	24	45	9	21	M10×1	Up to 1140±1	Up to 1050
FK12											
GK15	15h7	12 <sup>-0.003</sup> <sub>-0.011</sub>	10 <sup>0</sup> <sub>-0.009</sub>	15	27	50	10	24	M12×1	Up to 1645±1	Up to 1550
FK15											

\* In the screw shaft connection unit, because there is some projection of the fastening bolts, take care that this does not interfere with the surrounding components.

\* Regarding the configurations and dimensions of each size of nut unit, refer to the GE/GG and FE/FG Series.

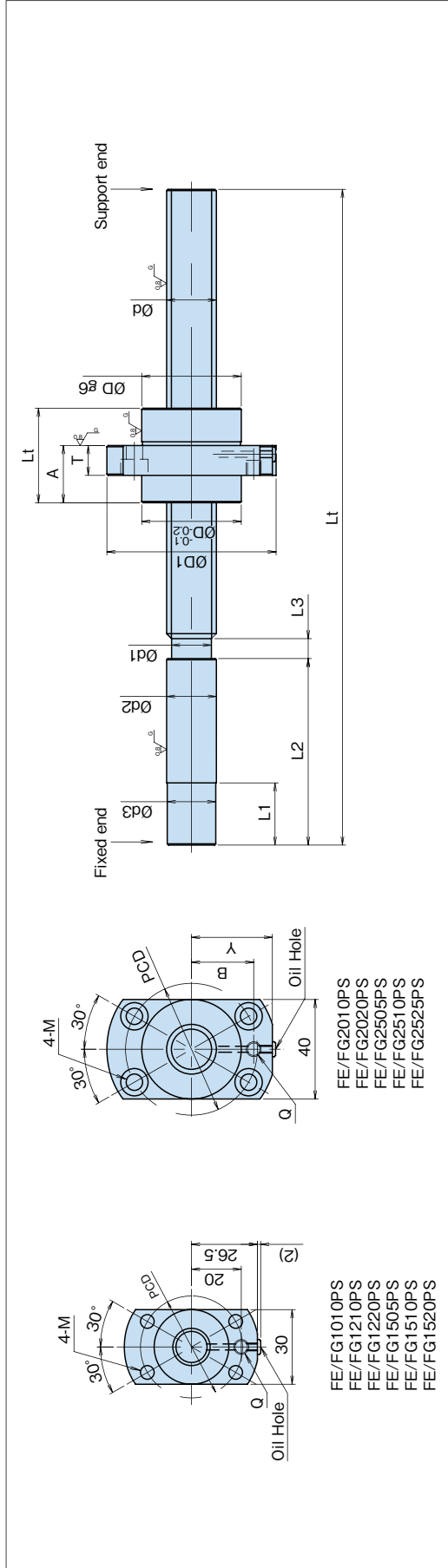




**F Series – End Deflector Method** FE (Accuracy Grade: C7)/FG (Accuracy Grade: C5)

FE Shaft dia. Lead PS-HP ※ Overall length of screw shaft A  
 FG Shaft dia. Lead PS-HP ※ Overall length of screw shaft A

Model No.



FE/FG2010PS  
 FE/FG2020PS  
 FE/FG2505PS  
 FE/FG2510PS  
 FE/FG2525PS

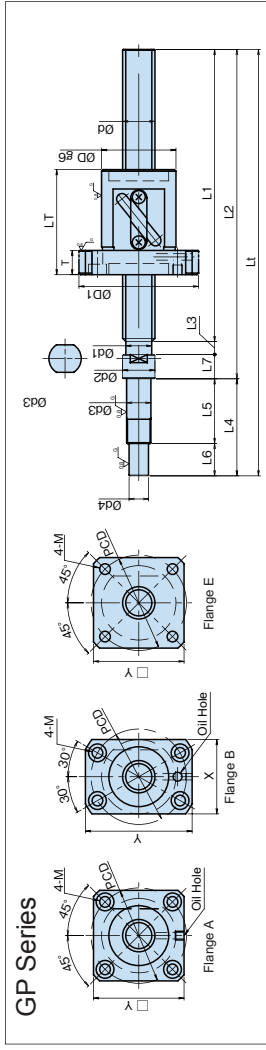
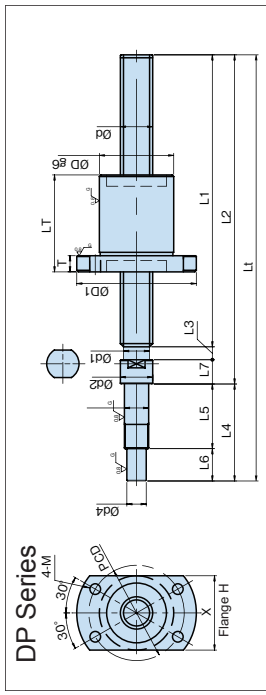
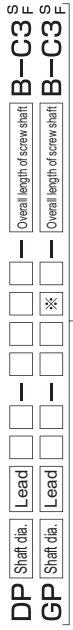
FE/FG1010PS  
 FE/FG1210PS  
 FE/FG1220PS  
 FE/FG1505PS  
 FE/FG1510PS  
 FE/FG1520PS

Model No.	Shaft dia. d	Lead	Root dia. d1	Circuit & turn	Axial clearance	Basic dynamic load rating (N)	Basic static load rating (N)	Shaft dimensions						Nut dimensions										
								Shaft ends			Body diameter D	Lt	Flange			Mounting hole M	Mounting hole M Countersunk depth	Oil hole Q						
								d2	d3	L1			L2	L3	T				D1	X	Y	PCD	B	
FE/FG1010PS-HPNR-□□□□□□□□□□	10	10	8.1	1.7×1		2600	3800	14	13.7	8	25.5/45.5/65.5	23	27	17.5	10	44	24	21.5	32	16	4.5			
FE/FG1210PS-HPNR-□□□□□□□□□□	12	10	9.5	2.7×1		6700	10700	12	11.7	20	45.5/60.5	27	38	19.5	10	47	27	23	36	18	4.5			M3
FE/FG1220PS-HPNR-□□□□□□□□□□		20	9.5	1.7×1		4300	6700	12		5	45.5/60.5/90.0	27	48	20	10	47	27	23	36	18	4.5			
FE/FG1505PS-HPNR-□□□□□□□□□□		5	12.5	2.7×1		7400	12900				60.0/110.0	30	25	17.3	9.5	54	30	26.5	41	20				
FE/FG1510PS-HPNR-□□□□□□□□□□		10	12.5	2.7×1	M: FE F: FG	7400	12900	15	14.5	25	60.0/90.0/110.0/130.0/150.0	30	38	20	10	54	30	26.5	41	20	5.5			M6
FE/FG1520PS-HPNR-□□□□□□□□□□		20	12.5	1.7×1		4800	8200				60.0/90.0/110.0/130.0/150.0	30	48	20.5	10	54	30	26.5	41	20				
FE/FG2010PS-HPNR-□□□□□□□□□□	20	10	16	2.7×1		18000	33900	20	19.5	75	60.5/100.5/150.5/180.5	40	38	23	12	68	40	32.5	53	25				
FE/FG2020PS-HPNR-□□□□□□□□□□		20	15.9	1.7×1		11600	20600				100.5/150.5/180.5	40	48	23	12									
FE/FG2505PS-HPNR-□□□□□□□□□□		5	22.5	3.7×1		13100	31800	25	24.5	25	60.0/100.0/150.0/180.5	40	30	20	12	68	40	32.5	53	25	6.6			M6
FE/FG2510PS-HPNR-□□□□□□□□□□	25	10	21	2.7×1		20400	42600			100	102.0/152.0/222.0	45	37	25	15	74	45	35.5	59	28				
FE/FG2525PS-HPNR-□□□□□□□□□□		25		1.7×1		13100	25900			8	102.0/152.0/202.0		58	27	15									

Model No. □□□□□□□□□□ : Overall length Axial clearance M: Max. 0.030 mm F: Max. 0.005 mm Wiper material N: No wiper or S: LUBSEAL (option) can be selected.



**D Series – Deflector Method DP (Accuracy Grade: C3)**  
**G Series – Tube Method GP (Accuracy Grade: C3)**



**DP Series**

Model No.	Shaft dia. d	Lead	Root dia. d1	Circuit & turn	Axial clearance	Basic dynamic load rating (N)	Basic static load rating (N)	Shoulder			Shaft dimensions			Shaft ends			Nut dimensions			Body diameter D	Bolt configuration	Wiper	Oil hole																																																																																	
								d2	L7	L1	L2	Lt	L3	L4	L5	d3	d4	L6	L7					L8	L9	L10	L11	L12	L13	L14	L15	L16	L17	L18	L19	L20	L21	L22	L23	L24	L25	L26	L27	L28	L29	L30	L31	L32	L33	L34	L35	L36	L37	L38	L39	L40	L41	L42	L43	L44	L45	L46	L47	L48	L49	L50	L51	L52	L53	L54	L55	L56	L57	L58	L59	L60	L61	L62	L63	L64	L65	L66	L67	L68	L69	L70	L71	L72	L73	L74	L75	L76	L77	L78	L79	L80	L81	L82	L83	L84	L85	L86	L87	L88
DP0601.US-HDNR-0130B-C3F/S	6	1	---	1×3		550	1150	9.5	7	90	100	130	3	30	22.5	6	7.5	4.5	10	14.5	3.5	22	14	16	M3	N	N/A																																																																													
DP0601.US-HDNR-0210B-C3F/S	6	1	---	1×3		650	1300	9.5	7	170	180	210	3	30	22.5	6	7.5	4.5	10	14.5	3.5	22	14	16	M3	N	N/A																																																																													
DP0801.US-HDNR-01180B-C3F/S	8	1	7.3	1×3		650	1300	11.5	8	132	143	180	3	37	27	8	10	6	12	15	4	25	16	19	M3	N	N/A																																																																													
DP0802.US-HDNR-0130B-C3F/S	8	2	7	1×3		1350	2300	11.5	8	132	143	180	3	37	27	8	10	6	14	21	4	27	17	21	M3	N	N/A																																																																													
DP0802.US-HDNR-0210B-C3F/S	8	2	7	1×3		1550	3000	11.5	8	172	183	220	3	37	27	8	10	6	14	21	4	27	17	21	M3	N	N/A																																																																													
DP1002.US-HDNR-0320B-C3F/S	10	2	11	1×3	F/S	1650	3600	14	10	242	255	300	3	45	30	10	15	8	16	22	5	33	21	25	M4	N	N/A																																																																													
DP1202.US-HDNR-0300B-C3F/S	12	2	11	1×3	F/S	1650	3600	14	10	242	255	300	3	45	30	10	15	8	18	22	5	35	22	27	M4	N	N/A																																																																													
DP1202.US-HDNR-0400B-C3F/S	12	2	11	1×3	F/S	1650	3600	14	10	242	255	300	3	45	30	10	15	8	18	22	5	35	22	27	M4	N	N/A																																																																													
DP1203.US-HDPR-0300B-C3F/S	12	3	10.3	1×3		3450	6100	14	10	340	355	400	5	45	30	10	15	8	21	36	5	38	23	30	M4	P	N/A																																																																													
DP1404.US-HDPR-0230B-C3F/S	14	4	12.1	1×3		4600	8600	15	10	170	185	230	5	45	30	12	15	10	26	40	10	45	29	35	M4	P	M6																																																																													
DP1404.US-HDPR-0300B-C3F/S	14	4	12.1	1×3		4600	8600	15	10	220	235	280	5	45	30	12	15	10	26	40	10	45	29	35	M4	P	M6																																																																													
DP1404.US-HDPR-0400B-C3F/S	14	4	12.1	1×3		4600	8600	15	10	270	285	330	5	45	30	12	15	10	26	40	10	45	29	35	M4	P	M6																																																																													
DP1404.US-HDPR-0500B-C3F/S	14	4	12.1	1×3		4600	8600	15	10	370	385	430	5	45	30	12	15	10	26	40	10	45	29	35	M4	P	M6																																																																													
DP1404.US-HDPR-0600B-C3F/S	14	4	12.1	1×3		4600	8600	15	10	470	485	530	5	45	30	12	15	10	26	40	10	45	29	35	M4	P	M6																																																																													

Axial clearance S: Max. 0 mm F: Max. 0.005 mm Wiper material N: No wiper P: Plastic

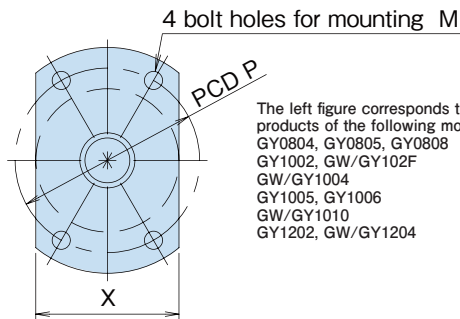
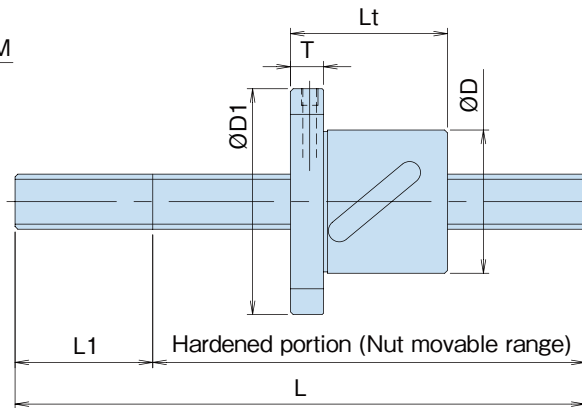
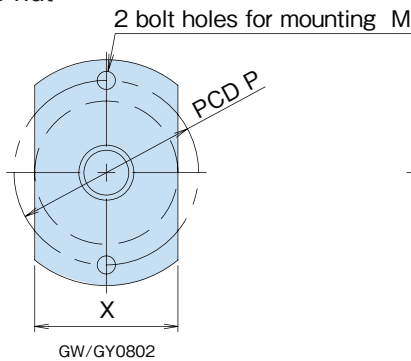
**GP Series**

Model No.	Shaft dia. d	Lead	Root dia. d1	Circuit & turn	Axial clearance	Basic dynamic load rating (N)	Basic static load rating (N)	Shoulder			Shaft dimensions			Shaft ends			Nut dimensions			Body diameter D	Bolt configuration	Wiper	Oil hole																																																																																	
								d2	L7	L1	L2	Lt	L3	L4	L5	d3	d4	L6	L7					L8	L9	L10	L11	L12	L13	L14	L15	L16	L17	L18	L19	L20	L21	L22	L23	L24	L25	L26	L27	L28	L29	L30	L31	L32	L33	L34	L35	L36	L37	L38	L39	L40	L41	L42	L43	L44	L45	L46	L47	L48	L49	L50	L51	L52	L53	L54	L55	L56	L57	L58	L59	L60	L61	L62	L63	L64	L65	L66	L67	L68	L69	L70	L71	L72	L73	L74	L75	L76	L77	L78	L79	L80	L81	L82	L83	L84	L85	L86	L87	L88
GP081FDS-AAFR-0170B-C3F/S	8	1.5	7.1	2.5×1		850	1900	11.5	8	122	133	170	3	37	27	8	10	6	16	24	5	23	M3	F	N/A																																																																															
GP081FDS-AAFR-0250B-C3F/S	8	2	6.6	2.5×1		(520)	(950)	11.5	8	202	213	250	3	37	27	8	10	6	20	30	5	27	M3	F	N/A																																																																															
GP0802DS-AAFR-0170B-C3F/S	8	2	6.6	2.5×1		1950	2800	11.5	8	122	133	170	3	37	27	8	10	6	20	30	5	27	M3	F	N/A																																																																															
GP0802DS-AAFR-0250B-C3F/S	8	2	6.6	2.5×1		(1220)	(1300)	11.5	8	202	213	250	3	37	27	8	10	6	20	30	5	27	M3	F	N/A																																																																															
GP1002DS-AAFR-0210B-C3F/S	10	2	8.6	2.5×1		2250	3300	11.5	8	162	173	210	3	37	27	8	10	6	23	30	5	31	M4	F	N/A																																																																															
GP1002DS-AAFR-0320B-C3F/S	10	2	8.6	2.5×1		(1410)	(1650)	11.5	8	272	283	320	4	37	27	8	10	6	24	35	8	43	M4	F	N/A																																																																															
GP102FDS-AAFR-0210B-C3F/S	10	2.5	8.3	2.5×1		2700	4200	11.5	8	161	173	210	4	37	27	8	10	6	24	35	8	43	M4	F	N/A																																																																															
GP102FDS-AAFR-0320B-C3F/S	10	2.5	8.3	2.5×1		(1700)	(2100)	11.5	8	271	283	320	4	37	27	8	10	6	24	35	8	43	M4	F	N/A																																																																															
GP1202DS-AAFR-0300B-C3F/S	12	2	10.6	2.5×1		2450	4100	14	10	242	255	300	3	45	30	10	15	8	25	35	8	44	M4	P	N/A																																																																															
GP1202DS-AAFR-0400B-C3F/S	12	2	10.6	2.5×1		(1540)	(2050)	14	10	342	355	400	3	45	30	10	15	8	26	34	8	45	M4	P	N/A																																																																															
GP122FDS-AAFR-0300B-C3F/S	12	2.5	10.3	2.5×1		2950	5100	14	10	240	255	300	5	45	30	10	15	8	26	34	8	45	M4	P	N/A																																																																															
GP122FDS-AAFR-0400B-C3F/S	12	2.5	10.3	2.5×1		(1850)	(2550)	14	10	340	355	400	5	45	30	10	15	8	26	34	8	45	M4	P	N/A																																																																															
GP1204DS-AAFR-0300B-C3F/S	12	4	10.1	2.5×1		3600	6750	14	10	240	255	300	5	45	30	10	15	8	30	41	10	54	M5	P	N/A																																																																															
GP1204DS-AAFR-0400B-C3F/S	12	4	10.1	2.5×1		(2280)	(3370)	14	10	340	355	400	5	45	30	10	15	8	30	41	10	54	M5	P	N/A																																																																															
GP1205DS-BALR-0300B-C3F/S	12	5	9.5	2.5×2		5950	9800	14	10	240	255	300	5	45	30	10	15	8	30	41	10	54	M5	P	N/A																																																																															
GP1205DS-BALR-0400B-C3F/S	12	5	9.5	2.5×2		(3740)	(4900)	14	10	390	405	450	5	45	30	10	15	8	30	41	10	54	M5	P	N/A																																																																															
GP1502DS-BAPR-0300B-C3F/S	15	2	13.6	2.5×1		2700	5500	15	10	242	255	300	3	45	30	12	15	10	30	44	10	50	M4	L	N/A																																																																															
GP1502DS-BAPR-0600B-C3F/S	15	2	13.6	2.5×1		(1700)	(2750)	15	10	542	555	600	3	45	30	12	15	10	30	44	10	50	M4	L	N/A																																																																															
GP1504DS-BALR-0400B-C3F/S	15	4	13.1	2.5×1		4100	8550	15	10	340	355	400	5	45	30	12	15	10	32	41	10	56	M5	L	N/A																																																																															
GP1504DS-BALR-0600B-C3F/S	15	4	13.1	2.5×1		(2580)	(4270)	15	10	540	555	600	5	45	30	12	15	10	32	41	10	56	M5	L	N/A																																																																															
GP1505DS-BA*R-0400B-C3F/S	15	5	12.5	2.5×2		6900	12500	15	10	340	355	400	5	45	30	12	15	10	34	44	10	58	M5	L/S	N/A																																																																															
GP1505DS-BA*R-0600B-C3F/S	15	5	12.5	2.5×2		(4340)	(6250)	15	10	540	555	600	5	45	30	12	15	10	34	44	10	58	M5	L/S	N/A																																																																															
GP2004ES-AALR-0605B-C3F/S	20	4	18.1	2.5×2		8600	23400	20	15	525	545	605	5	60	40	15	20	12	40	49	10	64	M6	L	N/A																																																																															
GP2004ES-AALR-1009B-C3F/S	20	4	18.1	2.5×2		(6410)	(11700)	20	15	925	945	1																																																																																												

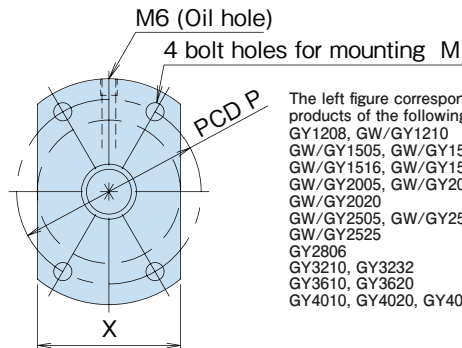
Contact KURODA for No-backlash rolled ball screw.

GY  Shaft dia.  Lead   -         Overall length of screw shaft **A**  
 GW  Shaft dia.  Lead   -         Overall length of screw shaft **A**  
 Model No.

### Round type nut



The left figure corresponds to the products of the following models.  
 GY0804, GY0805, GY0808  
 GY1002, GW/GY102F  
 GW/GY1004  
 GY1005, GY1006  
 GW/GY1010  
 GY1202, GW/GY1204



The left figure corresponds to the products of the following models.  
 GY1208, GW/GY1210  
 GW/GY1505, GW/GY1510  
 GW/GY1516, GW/GY1520  
 GW/GY2005, GW/GY2010  
 GW/GY2020  
 GW/GY2505, GW/GY2510  
 GW/GY2525  
 GY2806  
 GY3210, GY3232  
 GY3610, GY3620  
 GY4010, GY4020, GY4040

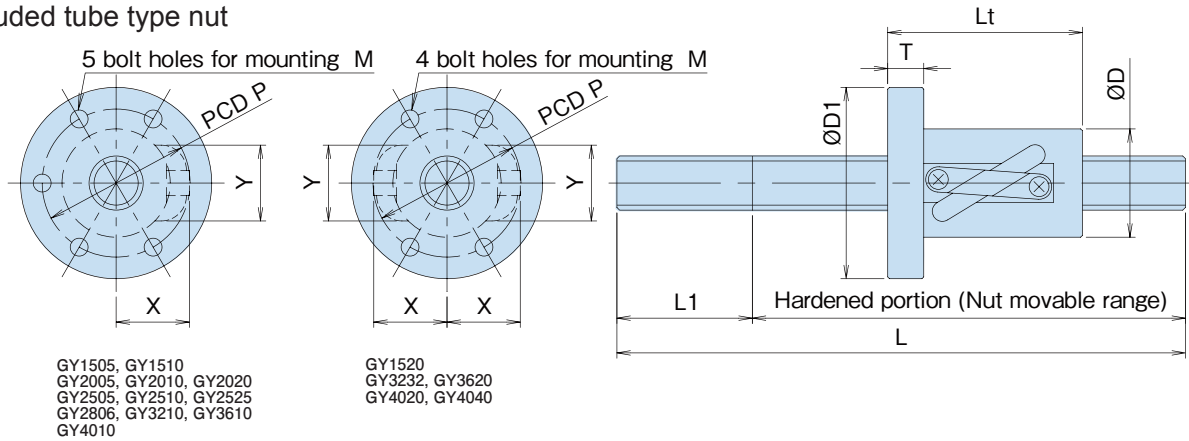
(Unit: mm)

Model No.	Shaft dia. d	Lead	Root dia	Circuit & turn	Basic dynamic load rating (N)	Basic static load rating (N)	Shaft dimensions		Nut dimensions							
							Overall length L	Length of shaft end machining L1	Body diameter D	Lt	T	D1	X	PCD P	Bolt M	Oil hole Q
GW/GY0802GS-HG NR-□□□□ A	8	2	6.6	3.5×1	1800	3200	200/400	55	20	28	6	40	24	30	M4	N/A
GY0804DS-HANR-□□□□ A		4	6.3	2.5×1	1900	3100			23	28	5	38	24	30	M3	
GY0805DS-HUNR-□□□□ A		5	6.4	2.5×1	1900	3100			22	27	6	38	22	29	M3	
GY0808DS-HANR-□□□□ A		8	6.3	2.5×1	1200	1800			23	28	5	38	24	30	M3	
GY1002DS-HANR-□□□□ A	10	2	8.4	2.5×1	1700	3000	400/600	60	23	28	6	43	27	33	M4	N/A
GW/GY102FGS-HG NR-□□□□ A		2.5	8.2	3.5×1	2600	5200			24	32	8	44	27	34	M4	
GW/GY1004DS-HANR-□□□□ A		4	7.8	2.5×1	2300	4800			26	34	8	46	28	36	M4	
GY1005DS-HUNR-□□□□ A		5	7.7	2.5×1	2300	4800			26	32	8	42	26	34	M4	
GY1006DS-HANR-□□□□ A		6	7.7	2.5×1	2300	4800			26	36	8	42	26	34	M4	
GW/GY1010AS-HANR-□□□□ A		10	7.8	1.5×1	1850	3200			28	34	8	47	30	36	M4	
GY1010BS-HANR-□□□□ A	10	7.8	1.5×2	3360	6400	28	34	8	47	30	36	M4				
GY1202DS-HANR-□□□□ A	12	2	10.6	2.5×1	2000	3600	400/800	60	25	30	8	42	27	34	M4	N/A
GW/GY1204DS-HANR-□□□□ A		4	10	2.5×1	2600	5800			30	35	8	50	30	40	M4	
GY1208DS-HULR-□□□□ A		8	10	2.5×1	3800	6700			29	44	10	45	30	37	M4	
GW/GY1210AS-HULR-□□□□ A		10	9.6	1.5×1	2850	4950			30	44	12	54	32	41	M5	
GW/GY1210BS-HULR-□□□□ A	10	9.6	1.5×2	5100	9900	30	44	12	54	32	41	M5				
GW/GY1505DS-HU* R-□□□□ A	15	5	12.5	2.5×1	5100	10500	600/1200	60	34	40	10	54	34	44	M4	M6
GW/GY1510DS-HU* R-□□□□ A		10	12.5	2.5×1	5100	10500			34	52	10	57	34	45	M5	
GW/GY1510ES-HU* R-□□□□ A		10	12.5	2.5×2	9200	21000			34	52	10	57	34	45	M5	
GW/GY1516BS-HULR-□□□□ A		16	12.7	1.5×2	4300	10200			32	51	10	53	32	42	M4	
GW/GY1520BS-HU* R-□□□□ A	20	12.5	1.5×2	5800	13300	34	59	10	57	34	45	M5				
GW/GY2005DS-HU* R-□□□□ A	20	5	17.5	2.5×1	6200	14700	600/1200/2000	80	40	40	10	60	40	50	M4	M6
GW/GY2010DS-HU* R-□□□□ A		10	16.3	2.5×1	10600	22700			52	57	12	82	52	67	M6	
GW/GY2020DS-HU* R-□□□□ A		20	17.5	2.5×1	6200	14700			39	78	10	62	39	50	M5	
GW/GY2020ES-HU* R-□□□□ A		20	17.5	2.5×2	11200	29400			39	78	10	62	39	50	M6	
GW/GY2505DS-HU* R-□□□□ A	25	5	21.8	2.5×1	6600	18700	1000/2000/2500	110	43	40	10	67	43	55	M5	M6
GW/GY2505ES-HU* R-□□□□ A		5	21.8	2.5×2	11900	37300			43	55	10	67	43	55	M5	
GW/GY2510ES-HU* R-□□□□ A		10	20.3	2.5×2	27500	76300			60	92	15	96	60	78	M8	
GW/GY2525DS-HU* R-□□□□ A		25	21.5	2.5×1	9300	22700			47	96	12	74	47	60	M6	
GY2525ES-HU* R-□□□□ A	25	21.5	2.5×2	16800	45400	47	96	12	74	47	60	M6				
GY2806ES-HUBR-□□□□ A	28	6	25.6	2.5×2	12100	42300	1000/2000/2500	150	50	65	12	80	50	65	M6	M6
GY3210ES-HUBR-□□□□ A		10	27.2	2.5×2	32800	86700			67	92	15	103	67	85	M8	
GY3232BS-HUBR-□□□□ A	32	32	27.8	1.5×2	14600	38900	1000/2000/3000	150	58	86	15	92	58	74	M8	M6
GY3610ES-HUBR-□□□□ A		10	31.1	2.5×2	35100	98200			70	93	17	110	70	90	M10	
GY3620ES-HUBR-□□□□ A	36	20	31.1	2.5×2	35100	98200	1000/2000/3000	200	70	89	17	110	70	90	M10	M6
GY4010ES-HUBR-□□□□ A		10	35.1	2.5×2	37100	105600			76	93	17	116	76	96	M10	
GY4020ES-HUBR-□□□□ A	40	20	35.1	2.5×2	37100	105600	2000/3000/4000	200	76	89	17	116	76	96	M10	M6
GY4040BS-HUBR-□□□□ A		40	35.1	1.5×2	23900	66900			73	103	17	114	73	93	M10	

Model No. □□□□ : Overall length of screw shaft

For the products marked with "\*", it is possible to select L: Lip seal or S: LUBSEAL (Option).

### Protruded tube type nut



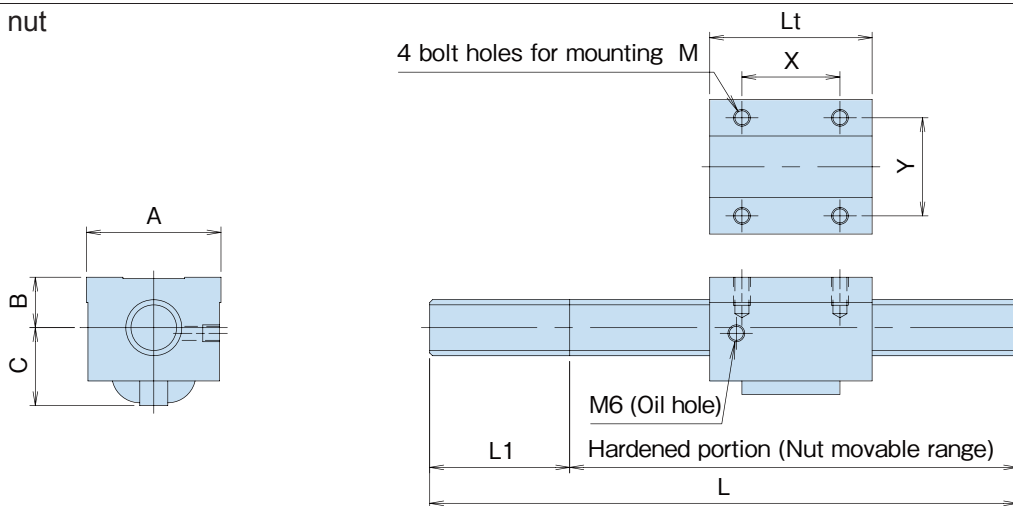
(Unit: mm)

Model No.	Shaft dia. d	Lead	Root dia	Circuit & turn	Basic dynamic load rating (N)	Basic static load rating (N)	Shaft dimensions		Nut dimensions							
							Overall length L	Length of shaft end machining L1	Body diameter D	Lt	T	D1	PCD P	Bolt M	X	Y
GY1505DS-CT*R-□□□□A	15	5	12.5	2.5×1	5100	10500	600/1200	60	30	45	10	48	40	M5	22	23
GY1510DS-CT*R-□□□□A		10	12.5	2.5×1	5100	10500			30	54	10	53	41	M5	22	23
GY1520BS-CT*R-□□□□A		20	12.5	1.5×2	5800	13300			30	60	10	53	42	M5	22	23
GY2005DS-CT*R-□□□□A	20	5	17.5	2.5×1	6200	14700	600/1200/2000	80	40	45	10	58	50	M5	27	28
GY2010DS-CT*R-□□□□A		10	16.3	2.5×1	10600	22700			40	58	12	64	53	M6	30	30
GY2020DS-CT*R-□□□□A		20	17.5	2.5×1	6200	14700			35	80	12	62	52	M5	25	28
GY2505ES-CT*R-□□□□A	25	5	21.8	2.5×2	11900	37300	1000/2000/2500	110	44	62	12	68	57	M6	29	33
GY2510ES-CT*R-□□□□A		10	20.3	2.5×2	27500	76300			44	92	15	78	62	M8	35	39
GY2525DS-CT*R-□□□□A		25	21.8	2.5×1	9300	22700			44	97	12	78	63	M8	31	33
GY2806ES-CTBR-□□□□A	28	6	25.6	2.5×2	12100	42300	1000/2000/2500	150	50	75	15	79	65	M6	33	34
GY3210ES-CTBR-□□□□A		10	27.2	2.5×1	32800	86700			55	97	18	95	75	M10	39	45
GY3232BS-CTBR-□□□□A		32	27.8	1.5×2	14600	38900			55	88	15	98	80	M10	37	40
GY3610ES-CTBR-□□□□A	36	10	31.1	2.5×2	35100	98200	1000/2000/3000	200	60	98	18	100	80	M10	41	49
GY3620ES-CTBR-□□□□A		20	31.1	2.5×2	35100	98200			60	96	18	100	80	M10	41	49
GY4010RS-CTBR-□□□□A		10	35.1	3.5×2	49600	153700			65	117	20	114	90	M12	44	53
GY4020ES-CTBR-□□□□A	40	20	35.1	2.5×2	37100	105600	2000/3000/4000	200	65	93	20	114	90	M12	44	53
GY4040BS-CTBR-□□□□A		40	35.1	1.5×2	23900	66900			65	105	18	118	95	M12	44	50

Model No. □□□□ : Overall length of screw shaft

For the products marked with "\*", it is possible to select L: Lip seal or S: LUBSEAL (Option).

### Square type nut

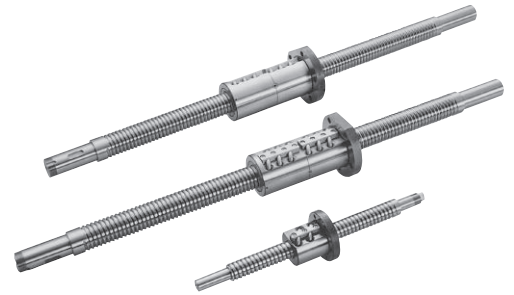


(Unit: mm)

Model No.	Shaft dia. d	Lead	Root dia	Circuit & turn	Basic dynamic load rating (N)	Basic static load rating (N)	Shaft dimensions		Nut dimensions							
							Overall length L	Length of shaft end machining L1	A	B	C	Lt	Mounting holes pitch X	Mounting holes pitch Y	Bolt M	Oil hole Q
GW/GY1505DS-NKLR-□□□□A	15	5	12.5	2.5×1	5100	10500	600/1200	60	34	13	18	35	22	26	M4	M6
GW/GY1510DS-NKLR-□□□□A		10	12.5	2.5×1	5100	10500			36	15	22	52	32	26	M5	M6
GW/GY2005DS-NKLR-□□□□A		5	17.5	2.5×1	6200	14700			48	17	22	35	22	35	M6	M6
GW/GY2010DS-NKLR-□□□□A	20	10	16.3	2.5×1	10600	22700	600/1200/2000	80	48	18	30	58	35	35	M6	M6
GW/GY2505DS-NKLR-□□□□A		5	21.8	2.5×1	6600	18700			60	20	25	35	22	40	M8	M6
GW/GY2510ES-NKLR-□□□□A		10	20.3	2.5×2	27500	76300			60	23	30	94	60	40	M8	M6
GY3210ES-NKBR-□□□□A	32	10	27.2	2.5×2	32800	86700	1000/2000/3000	150	86	29	38	96	60	60	M10	M6

Model No. □□□□ : Overall length of screw shaft

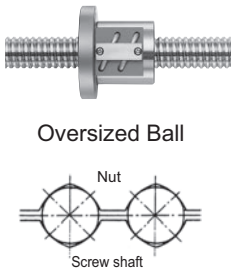
As the customized ball screws, the nut configuration of the circulating system has been standardized into the tube method (GR), deflector method (DR), and the end deflector method (FR) to support various kinds of applications.



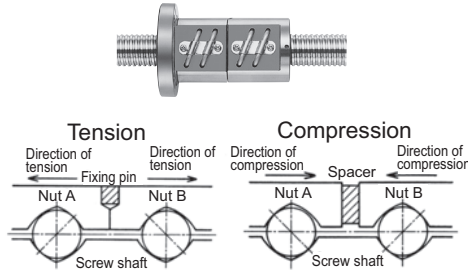
## Accuracy Grade and Axial Clearance

- Single nut, axial clearance 0: C0S-C5S
- Single nut, axial clearance 0.005 mm or less: C1F-C5F
- Single nut, axial clearance 0.030 mm or less: C4M, C5M, C7M
- Single nut, axial clearance 0.20 mm or less: C7L, C10L
- Integral nut, axial clearance 0: C0S-C5S
- Double nut, axial clearance 0: C0S-C5S

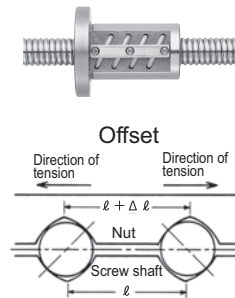
### ● Single Nut Preloaded



### ● Double Nut Preloaded



### ● Integral Nut Preloaded



### ● Others

KURODA is manufacturing ball screws for use in special environments, such as manufacture using stainless steels, special surface treatment, and special grease specifications. Please contact KURODA for more information.

## ● Accuracy Grade and Manufacturable Length of Screw Shaft

(Unit: mm)

Accuracy grade	Screw shaft dia.																			
	5	6	8	10	12	15	16	20	25	28	32	36	40	45	50	63	70	80	100	125
C0	90	160	240	340	420	500	500	800	1100	1200	1600	1800	2000	2000	2000	2000	-	-	-	-
C1	120	180	280	400	500	600	600	900	1300	1500	1800	2000	2200	2300	2800	3000	3000	3000	3000	3000
C2	120	180	280	400	500	600	600	1100	1600	1800	2200	2500	2800	3000	3600	4000	4500	4500	4500	4500
C3	140	210	340	480	600	700	700	1400	1800	2000	2500	2800	3200	3600	4000	5000	5000	5000	5000	5000
C4	140	210	340	480	600	800	800	1400	1800	2000	2500	2800	3200	3600	4000	5000	5000	5000	5000	5000
C5	140	210	340	500	700	1500	1500	2000	2000	2000	2800	3100	3600	4100	4500	5000	5000	5000	5000	5000
C7	-	-	340	500	700	1500	1500	2000	2300	2600	3200	3600	4600	5000	5000	5000	5000	5000	5000	5000
C10	-	-	-	-	-	1500	1500	2000	2300	2600	3600	4000	4600	5000	5000	5000	5000	5000	5000	5000

When the lead is larger than the screw shaft diameter, the manufacturable accuracy grade is C2-C10.

## ● Screw Shaft Dia. & Lead Combination

Nominal diameter (mm)	Lead (mm)																		
	1	1.5	2	2.5	3	4	5	6	8	10	12	15	16	20	25	30	32	40	50
5	○																		
6	△																		
8	△	○	○	○	○	○		○	○										
10	○	○	○	○	○	○	○			○	◇								
12		○	○	○	○	○	○	○		○	◇			○	◇				
14						△													
15		○	○	○	○	○	○	○	○	○	◇		○	○	○	◇			
16						○	○	△	○				○						
20			○		○	○	△	○	○	△	◇			○	◇	○		○	
25					○	○	△	◇	○	△	◇			○	◇			○	
28						○				○									
32					○	○	△	◇	○	○	◇	○	◇				○		
36						○	○	○	○	○	◇			○	◇				
40							○	○	○	△	◇	○	◇	○	◇		○	○	
45							○	○	○	○	○			○					
50							○	○	○	△	○			○	○			○	○
55								○	○	○				○	○				
63								○	○	○				○	○				
70									○	○				○	○				
80									○	○				○	○				
100										○				○	○				
125														○	○				

- : GR series (Tube method)
- △ : DR series (Deflector method)
- ◇ : R series (End deflector method)

**NEW**

## Customized Ball Screws / J Series

J

As well as offering a lineup of nut dimensions in standard configurations compatible with German DIN standards, support is also being provided for various other nut configurations, using the end deflector method.



### Accuracy Grade and Axial Clearance

- Single nut, axial clearance 0: P1S-P5S
- Single nut, axial clearance 0.005 mm or less: P1F-P5F
- Single nut, axial clearance 0.030 mm or less: P5M, T7M
- Single nut, axial clearance 0.20 mm or less: T7L
- Integral nut, axial clearance 0: P1S-P5S
- Double nut, axial clearance 0: P1S-P5S

### ● Accuracy Grade and Manufacturable Length of Screw Shaft

(Unit: mm)

		Accuracy Grade			
		P1	P3	P5	T7
Nominal diameter	32	1500	2000	3000	3000
	40	1500	2000	4000	6000
	50	1500	2700	7000	7000
	63	1500	4000	7000	7000
	80	1500	4000	7000	7000
	100	1500	4000	7000	7000
	125	1500	4000	4000	4000

\*Note that due to circumstances relating to manufacture, the nominal diameter and screw shaft diameter will be different.

### ● Screw Shaft Dia. & Lead Combination

		Lead (mm)							
		5	10	15	16	20	30	40	50
Nominal diameter (mm)	32	○	○			○			
	40	○	○			○		○	
	50	○	○			○	○		
	63	○	○			○		○	
	80		○	○		○			○
	100		○			○	○		○
	125				○	○	○		

\*Note that due to circumstances relating to manufacture, the nominal diameter and screw shaft diameter will be different.

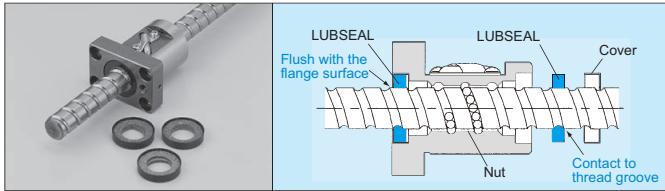
# Lubrication Unit for Ball Screw LUBSEAL

LUBSEAL is a lubrication unit which contacts the ball rolling portion of the screw shaft groove and supplies an appropriate amount of lubricant (grease).

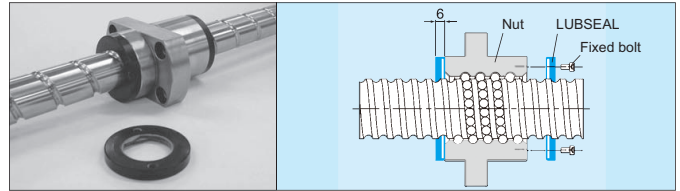
It can fit into the both ends of ball screw nut and becomes compact in size.

Most suitable for semiconductor/liquid crystal manufacturing machines, detection devices, food machines, medical equipment, machine tools and automobile facilities.

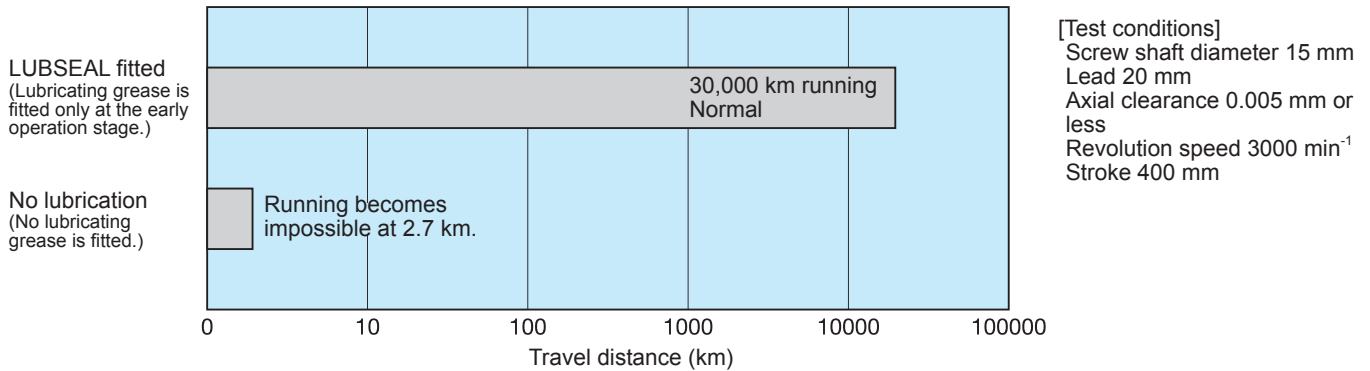
## ●G Series Installation Structure



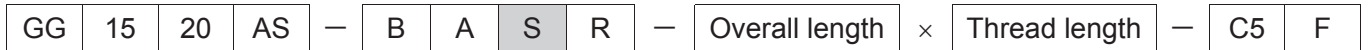
## ●F Series Installation Structure



## ●Performance



## ●Notation by Model No.



## ●Series and Size

Shaft diameter	Lead	Series to which LUBSEAL can be fitted			
		FE/FG	GE/GG	GP	GY/GW
10	10	○			
	12	○			
15	20	○			
	5	○	○	○	○
	10	○	○		○
	15	○	○		○
20	20	○	○		○
	5		○	○	○
	10	○	○		○
25	20	○	○		○
	5	○	○		○
	10	○	○		○
	25	○	○		○

\*LUBSEAL cannot be fitted to the GY/GW series square nut.

## ⚠ Precautions on handling

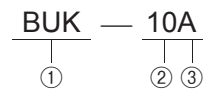
- (Note 1) For LUBSEAL, grease having the same ingredients as those of Alvania Grease S2 filled in the unit is impregnated. For use of other greases, consult us.
- (Note 2) For LUBSEAL fitting on ball screws other than the above series and surface treated bass screws, contact us.
- (Note 3) The maximum operating temperature is 50°C. For the case where it is 50°C or higher, contact us.
- (Note 4) During cleaning, do not use organic solvent and illuminating kerosene.



## Support Units/BUK, BUM, BUT

- Applicable to 6-32 mm dia. ball screw
- Accurate center height
- Angular bearing preload adjustment completed  
Preload adjusted angular bearing DF (Face-to-Face) combination as standard.  
DB (Back-to-Back) combination is also available on your request when higher rigidity is required.
- Special surface treatment, special grease, etc. consult KURODA.

### Ordering Number



- ① Series  
BUK : Direct mount (Rectangle) Support Unit  
BUM : Circle Flange Support Unit  
BUT : Support unit for machine tool
- ② Bearing journal diameter (mm)
- ③ Combination  
A : Set of fixed and supported end units  
F : Fixed end unit  
S : Supported end unit  
T : Diameter support unit only  
No mark: Fixed end unit and supported end bearing



BUK Series				BUM Series				BUT Series
Set	Fixed-end unit	Supported-end unit	Diameter support unit	Set	Fixed-end unit	Supported-end bearing	Supported-end unit	Fixed-end unit
BUK-6	BUK-6	-	-	BUM-6	BUM-6F	606ZZ	-	-
BUK-8A	BUK-8F	BUK-6S	-	BUM-8	BUM-8F	606ZZ	BUM-6S	-
BUK-10A	BUK-10F	BUK-8S	BUK-12T	BUM-10	BUM-10F	608ZZ	BUM-8S	-
BUK-12A	BUK-12F	BUK-10S	BUK-15T	BUM-12	BUM-12F	6000ZZ	BUM-10S	-
BUK-15A	BUK-15F	BUK-15S	-	BUM-15	BUM-15F	6002ZZ	BUM-15S	-
BUK-20A	BUK-20F	BUK-20S	-	BUM-20	BUM-20F	6204ZZ	BUM-20S	BUT-20
BUK-25A	BUK-25F	BUK-25S	-	BUM-25	BUM-25F	6205ZZ	-	BUT-25
-	-	-	-	-	-	-	-	BUT-30
-	-	-	-	-	-	-	-	BUT-35
-	-	-	-	-	-	-	-	BUT-40

## Related Products

- Resin Nut Lead Screw



Model No.	Shaft diameter	Lead	Mean travel deviation	Shaft center runout	Initial axial play		
PY1004GPR-0600A	10	4	C10 ± 0.21/300	0.25	0.1 or less		
PY1010GPR-0600A		10		0.25			
PY1204GPR-0800A	12	4		C7 ± 0.05/300		0.32	
PY1210GPR-0800A		10				0.32	
PW1004GPR-0600A	10	4	C7 ± 0.05/300		0.15	0.1 or less	
PW1010GPR-0600A		10			0.15		
PW1204GPR-0800A	12	4			C7 ± 0.05/300		0.20
PW1210GPR-0800A		10					0.20

- KURODA Dust Preventive Grease Series

KURODA dust preventive grease series has excellent performance of dust prevention, stable torque, lubrication, and rust prevention. KURODA grease series meets the demand for cleanliness of semiconductor manufacturing machines, LCD manufacturing lines, medical care instruments, etc.

- ◇ KURODA C Grease  
For dust prevention!



Appearance	Yellow white
Thickening	Ureic
Base oil	Synthetic oil
Consistency	280 (No.2)
Operating temperature range	-30 to +150°C

- ◇ NOTATION  
C1-080G-J (80 g in bellows type container)  
C1-400G-J (400 g in bellows type container)

- ◇ KURODA S Grease  
For short stroke motion!



Appearance	Yellow white
Thickening	Ureic
Base oil	Mineral oil
Consistency	280 (No.2)
Operating temperature range	-20 to +150°C

- ◇ NOTATION  
S1-080G-J (80 g in bellows type container)  
S1-400G-J (400 g in bellows type container)

\* You can install the above container directly to your grease gun. (Please use grease gun produced in accordance with JIS B 9808-1991)

A ballscrew actuator of KURODA is a compact single-axis unit consisting of a ball screw and a slide guide. With its slide block set in U-guide rail, the actuator has achieved low-profile design and compact shape, making it possible to considerably reduce necessary space as compared with the usual table type structure. Despite of its compact structure, the actuator with U-guide rail shows high rigidity against bending moment and deflection, and it can be applied to a structure supported by one end.

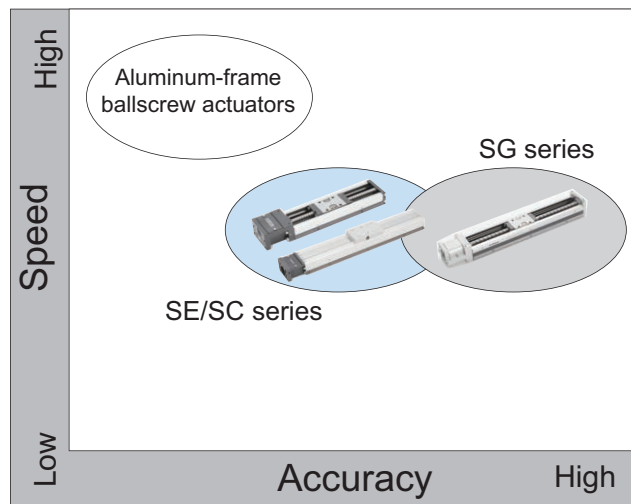
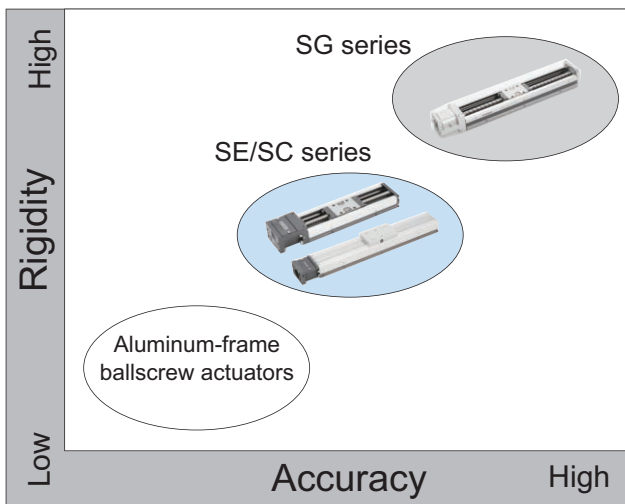
The linear motion unit, which is gothic arched and in 4 points-contact structure, makes it possible to deliver high precision and high rigidity.

The series types which are available to support the various needs include the high accuracy type SG Series, the high rigidity type SE Series, and the full cover SC Series that greatly increases the dust-proofing ability.

A wide variety of options are available, including various motor bracket configurations for connecting various types of motors, top covers to support dust proofing, various sensors, and lubricating units.

In addition, for the support of customized products, KURODA is also manufacturing guide rail intermediate stroke, long rail specification, and clean environment supporting products. Please contact KURODA for more information.

## Positions of Ballscrew Actuators



● High accuracy type SG series

● High rigidity type SE series

● Full cover type SC series



## Wide Variations

Model No.	SG series						SE series				SC series (Note 2)		
	SG20	SG26	SG33	SG3320	SG46	SG55	SE15	SE23	SE30	SE45	SC23	SC30	SC45
Performance grade (Note 1)	P: Repeated positioning accuracy $\pm 1 \mu\text{m}$ H: Repeated positioning accuracy $\pm 3 \mu\text{m}$						U: Repeated positioning accuracy $\pm 5 \mu\text{m}$ W: Repeated positioning accuracy $\pm 10 \mu\text{m}$						
Screw shaft dia.	6	8	10	12	15	20	6	8	10	15	8	10	15
Lead	1	○					○						
	2		○	●			○	○	●		○	●	
	4							●	○		○	○	
	5	○	○	○		●	●		○	○	○	○	○
	8							●			●		
	10			○		○	●			○	○	○	○
Standard guide rail length	100	150	150		340	980	100	150	150	340	150	150	540
	-	-	-		-	-	-	-	-	-	-	-	-
	200	300	600		1240	1380	200	300	750	940	300	750	940
Types of slide blocks	A	A	B	A	B	A	A	A	A	A	A	A	A
	B	B	C	B	C	B	B	B	B	C			
			D		D				D				

○ : In-stock items ● : Manufactured by order

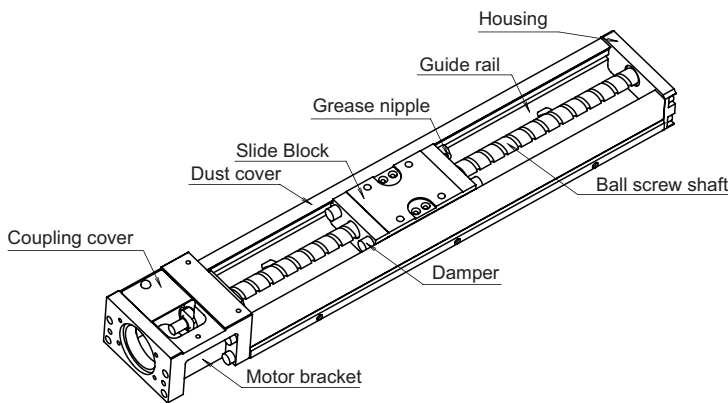
A: With 1 long block unit B: With 2 long block units C: With 1 short block unit D: With 2 short block units

(Note 1) The above table shows precision information on repeated positioning accuracy in particular, as an example. Performance of actuators may be different from the values shown above, depending on applied options and usage. For more details, refer to the Ballscrew Actuator General Catalogue.

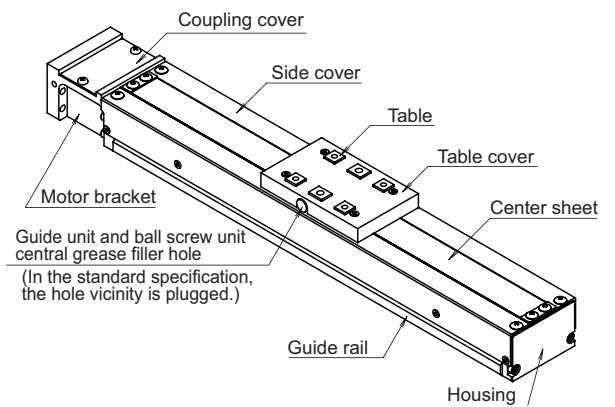
(Note 2) SC series is a full-cover version of SE series ballscrew actuators. For more details, refer to the Ballscrew Actuator General Catalogue.

# High Accuracy, High Rigidity Ballscrew Actuators

## ●SG/SE Exterior Configuration



## ●SC Exterior Configuration



## ●How to Interpret Model No.

Model No.	Lead	Slide block	Guide rail length	Performance grade	Motor bracket configuration	Type of cover	Sensor	Surface treatment	Grease	Dowel pin hole
SG33	10	A	500	P	A1	C	C	N	N	PS
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
Model No. of Main Body					Model No. of Option					

- ① Model of ballscrew actuator
- ② Lead of ball screw
- ③ Variation of slide blocks and number of blocks to be mounted
- ④ Guide rail length
- ⑤ Performance of ballscrew actuators, including various positioning accuracy indicators and traveling parallelism
- ⑥ Motor bracket configuration
- ⑦ Type of cover
- ⑧ With or without sensor/type of sensor
- ⑨ With or without surface treatment applied
- ⑩ Type of grease applied on slide blocks and ball screws of ballscrew actuators
- ⑪ With or without dowel pin holes

## ●Option Support Table

Category	Item	SG series					SE series				SC series			
		SG20	SG26	SG33	SG46	SG55	SE15	SE23	SE30	SE45	SC23	SC30	SC45	
Option	Motor bracket configuration	Motor bracket	○	○	○	○	○	○	○	○	○	○	○	○
		Intermediate flange	○	○	○	○	○	○	○	○	○	○	○	○
		R0/RN type bracket (Note 1)	○	○	○	○	○	-	-	○	○	-	○	○
		Parallel motor mounting unit	-	-	○	○	-	-	-	○	○	-	○	○
	Type of cover	Without dustproof cover	○	○	○	○	○	○	○	○	○	-	-	-
		With dustproof cover	○	○	○	○	○	○	○	○	○	-	-	-
		Standard full-cover (Note 2)	-	-	-	-	-	-	-	-	-	○	○	○
		Full-cover with grease nipple (Note 2)	-	-	-	-	-	-	-	-	-	○	○	○
		Full-cover with wiper (Note 2)	-	-	-	-	-	-	-	-	-	○	○	○
	Sensor	Photo-microsensor	○	○	○	○	○	-	○	○	○	○	○	○
		Proximity sensor	○	○	○	○	○	○	○	○	○	○	○	○
	Surface treatment (Note 3)		○	○	○	○	○	○	○	○	○	○	○	○
	Dust preventing grease		○	○	○	○	○	○	○	○	○	○	○	○
	Dowel pin hole		○	○	○	○	○	-	○	○	○	-	-	-
Lubrication unit LUBSEAL (Note 4)		-	-	-	-	-	-	○	○	○	○	○	○	

(Note 1) The R0 type bracket is applicable for the SG series, while the RN type bracket is applicable for the SE series and SC series.  
 (Note 2) The full-cover specification types with wipers and grease nipples are only applicable for the SC series.  
 (Note 3) For the surface treatment, anticorrosive black-colored coating treatment (film thickness: 1-2µm) is implemented. Regarding other surface treatment, contact KURODA for more information.  
 (Note 4) Due to the LUBSEAL which connected to the both side of slide block, LUBSEAL may not be produced depending on the guide rail length.

 **WARNING**

- Select a ball screw and a ballscrew actuator properly.
- The ball screw and the ballscrew actuator should be handled by person who have sufficient knowledge and rich experience.
- The products described in the guide book are used mainly for general industrial machinery.
- During operation, make sure to keep your hands away from either of stroke ends, where slide block of the ballscrew actuator moves, to prevent your finger from being caught.
- During operation, make sure to keep your hands away from screws and axis terminals of ball screw shaft, which are rotating parts, to prevent your hands from being caught.
- Pay adequate attention not to allow the products described in the guide book to be used for military purpose including for arms and weapons.
- Before use, be sure to refer to the instructions of the BALL SCREW CATALOG and the BALLSCREW ACTUATOR.

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