

# SG Series: High Accuracy GROUND

## Ball Screw Actuator



### ●High Accuracy

Linear motion unit uses 4 Ballway, 4 point-contact structure to assure high rigidity. Guide rail, slide block and ground ball screw shaft are precisely integrated, making accurate positioning possible.

### ●Space Savings

Slide block is set in U-guide rail, making it possible to reduce the size and space considerably as compared with the usual table type structure.

### ●High Rigidity

Despite of its compact structure, the rigidity of single axis module has been remarkable improved by using a U-guide rail, so that it can be applied even to a structure supported at only one end. In addition, short block, long block and second block are available to enhance permissible moment.

### ●No Need for Adjustment

Guide rail and ball screw are integrated into a single axis module, eliminating the need for complicated fine adjustment, thus reducing the number of working processes to a great extent.

## VARIATIONS

Model No.		SG20	SG26	SG33	SG3320	SG46	SG55
Performance grade		P: Repeated positioning accuracy $\pm 1\mu\text{m}^*$ H: Repeated positioning accuracy $\pm 3\mu\text{m}^*$					
Screw shaft dia. (mm)		6	8	10	12	15	20
Lead (mm)	1	◎					
	2		◎	●			
	5	◎	◎	◎		●	●
	10			◎		◎	●
	20				◎	◎	◎

◎ Stocking item

● Manufactured to order

\*Astericked items may be different from the values shown above depending on applied options and usage

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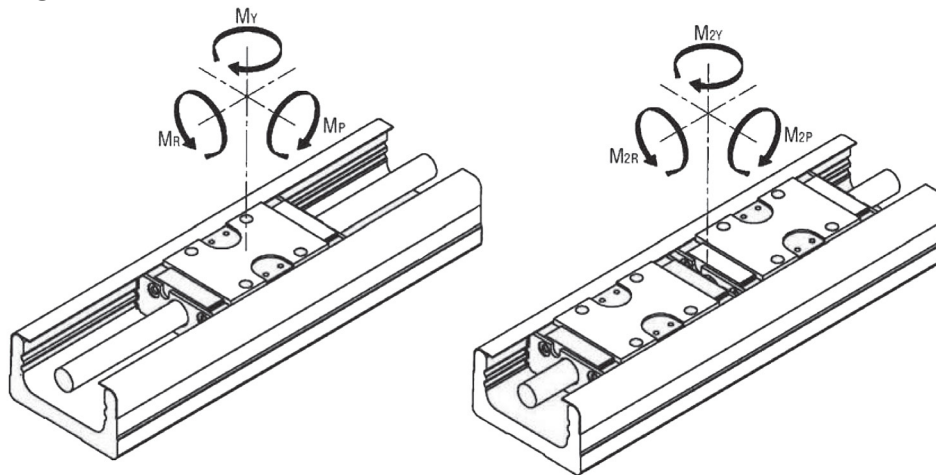
## Ball Screw Actuator

### SPECIFICATIONS

Model No.			SG2001		SG2005		SG2602		SG2605		SG3305		SG3310		SG3320		SG4610		SG4620		SG5520					
Performance grade			H	P	H	P	H	*P	H	*P	H	P	H	P	H	P	H	P	H	P	H	P				
Guide	Radial clearance		μm		-3~0	-6~-3	-3~0	-6~-3	-4~0	-8~-4	-4~0	-8~-4	-3~0	-7~-3	-3~0	-7~-3	-3~0	-7~-3	-5~0	-11~-5	-5~0	-11~-5	-6~0	-18~-6		
	Long block	Basic dynamic load	C	kN		4.27		7.78		12.6		12.6		29.8		29.8		43.2								
		Basic static load	C <sub>0</sub>	kN		7.89		14.98		22.7		22.7		51.2		51.2		74.0								
		Static permissible moment	M <sub>P</sub>	N·m	35		99		181		181		610		610		1,088									
			M <sub>2P</sub>		199		550		1,035		1,035		3,285		3,285		5,465									
			M <sub>Y</sub>		42		118		215		215		727		727		1,297									
			M <sub>2Y</sub>		237		656		1,233		1,233		3,914		3,914		6,513									
			M <sub>R</sub>		101		255		500		500		1,612		1,612		2,701									
	M <sub>2R</sub>	201		509		1,000		1,000		3,224		3,224		5,402												
	Short block	Basic dynamic load	C	kN		Not available		Not available		7.8		Not available		19.9		19.9		Not available								
		Basic static load	C <sub>0</sub>	kN		Not available		Not available		11.4		Not available		28.8		28.8		Not available								
		Static permissible moment	M <sub>P</sub>	N·m	49		Not available		Not available		49		Not available		207		207		Not available							
			M <sub>2P</sub>		368		Not available		Not available		368		Not available		1,336		1,336		Not available							
			M <sub>Y</sub>		59		Not available		Not available		59		Not available		246		246		Not available							
M <sub>2Y</sub>			439		Not available		Not available		439		Not available		1,593		1,593		Not available									
M <sub>R</sub>			250		Not available		Not available		250		Not available		907		907		Not available									
M <sub>2R</sub>	500		Not available		Not available		500		Not available		1,814		1,814		Not available											
Ball screw	Shaft diameter		mm		6		8		10		12		15		15		20									
	Lead		mm		1		5		2		5		5		10		20		10		20		20			
	Spacer to ball ratio				—		—		—		0		—		1:1		—		1:1		—		2:1		—	
	Basic dynamic load	C <sub>a</sub>	kN		0.63	0.65	2.60	2.35	3.35	2.11	2.20	1.39	2.32	1.46	4.40	2.77	4.40	3.36	5.40	4.12						
	Basic static load	C <sub>0a</sub>	kN		1.34	0.92	3.64	3.30	5.90	2.95	3.50	1.75	4.05	2.03	7.90	3.95	7.90	5.27	10.50	7.00						
Fixed side bearing	Model No. of bearing				AC5-14DF or equivalent		AC6-16DF or equivalent		708ADFP5 or equivalent				7001ADFP5 or equivalent				7002ADFP5									
	Basic dynamic load	C <sub>b</sub>	kN		1.31		1.79		4.40				6.77				7.74									
	Basic static load	C <sub>0b</sub>	kN		1.25		1.76		4.36				7.45				9.50									

Static permissible moment, M<sub>2P</sub> and M<sub>2Y</sub>, means the values for when 2 slide blocks are used in close contact with each other.  
 \*For your use of P grade model of SG20 and SG26 at small stroke (SG2001: 7mm or less, SG2005: 25mm or less, SG2602: 14mm or less, SG2605: 25mm or less) and at high-frequency reciprocation, consult KURODA.

### DIRECTION OF MOMENT



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### ACCURACY

Model No.	Guide Rail Length (mm)	*Repeated Positioning Accuracy (μm)		Positioning Accuracy (μm)		Traveling Parallelism (μm)		Backlash (μm)		**Starting Torque (N·m)	
		H	P	H	P	H	P	H	P	H	P
SG20	100	±3	±1	50	20	25	10	5	2	0.01	0.012
	150										
	200										
SG26	150	±3	±1	50	20	25	10	5	2	0.015	0.04
	200										
	250										
	300										
SG33	150	±3 (±5)	±1 (±3)	30	15	25	10	5	2	0.07	0.15
	200			35	20						
	300			40	25						
	400			70	-	35	15				
	500			-	-	-	-				
600	-	-	-	-							
SG46	340	±3 (±5)	±1 (±3)	35	20	35	15	5	2	0.10	0.15
	440			40	25						
	540			50	30						
	640			80	-	50	-				
	740		-	-	-	-					
	840		-	-	-	-					
	940		-	-	-	-					
	1040		-	-	-	-					
	1140		-	-	-	-					
1240	-	-	-	-							
SG55	980	±3	±1	80	35	50	25	5	2	0.12	0.17
	1080			40	30						
	1180		100	-	-						
	1280		-	-	-						
	1380		-	-	-						

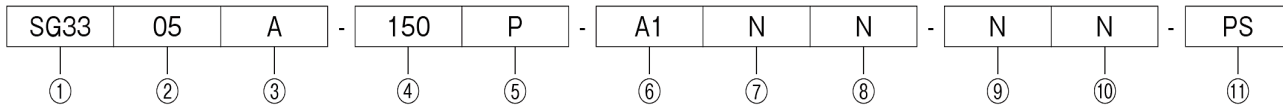
\*For repeated positioning accuracy, the value in parentheses is for parallel motor mounted configurations

\*\* Above starting torque value is applied when the standard grease is used. The value may change depending on the properties of the grease. Measurement is to be performed with KURODA's specified motor mounted.

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### HOW TO INTERPRET MODEL NO.



#### ① Model ② Lead

① Model	② Lead
SG20	1, 5
SG26	2, 5
SG33	5, 10, 20
SG46	10, 20
SG55	20

#### ③ Slide block

Model	Slide block
SG20	A: With 1 long block B: With 2 long blocks
SG26	A: With 1 long block B: With 2 long blocks
<sup>(NOTE 1)</sup> SG33	A: With 1 long block B: With 2 long blocks
SG46	C: With 1 short block D: With 2 short blocks
SG55	A: With 1 long block B: With 2 long blocks

#### ④ Guide rail length <sup>(NOTE 2)</sup> <sup>(NOTE 3)</sup>

Model	Guide rail length (mm)
SG20	100, 150, 200
SG26	150, 200, 250, 300
SG33	150, 200, 300, 400, 500, 600*
SG46	340, 440, 540, 640, 740, 840*, 940*, 1040*, 1140*, 1240*
SG55	980, 1080, 1180, 1280*, 1380*

#### ⑤ Performance grade

P	Repeated positioning accuracy $\pm 1\mu\text{m}$
H	Repeated positioning accuracy $\pm 3\mu\text{m}$

#### ⑥ Motor bracket configuration

Model	Motor bracket configuration
SG20	A0, A1, A3, A5, A6, A8, A9, AA, R0
SG26	A0, A1, A3, A5, A6, A8, A9, AA, R0
SG33	A0, A1, A2, A3, A4, A5, A6, A7, B1, B2, R0, E□, F□
SG46	A0, A1, A2, A3, A4, B0, C0, D0, R0, E□, F□, G□
SG55	A0, A1, A2, A3, A4, R0

#### ⑦ Type of cover

N	Without cover
C	With cover
L	Low housing

#### ⑧ Sensor

Model	Sensor
SG20	N: Without sensor S: Photo-microsensor
SG26	K, E: Proximity sensor 1: For sensor rails only
SG33	Without sensor
SG46	M, Y, C, P, H, J: Photo-microsensor K, E: Proximity sensor
SG55	1, 2, 3: For sensor rails only

#### ⑨ Surface treatment <sup>(Note 4)</sup>

N	Standard treatment
L	Anti corrosive black coating

#### ⑩ Grease <sup>(Note 5)</sup>

Model	Grease
SG20	N: Standard grease S: Dust preventive KURODA S grease
SG26	
SG33	
SG46	
SG55	

#### ⑪ Additional options

Blank	No dowel pin hole
PS	For slide block only
PR	For guide rail only
PSR	For both slide block and guide rail

(Note 1) Short slide block type (Symbol: C, D) is not available in lead 20mm.

(Note 2) For specifications of guide rail with long rails or intermediate stroke with non-standard length, consult KURODA.

(Note 3) Asterisked (\*) items in the table apply only to performance grade H.

(Note 4) With standard surface treatment (Symbol: N), guide rails of SG20 and SG26 are not treated with anti corrosive coating.

For SG33, SG46 and SG55, only guide rails are treated with black coating as the standard surface treatment.

(Note 5) With standard grease (Symbol: N), Multemp PS No.2 Grease (KYODO YUSHI CO., LTD.) is contained in slide block and ball screw components.