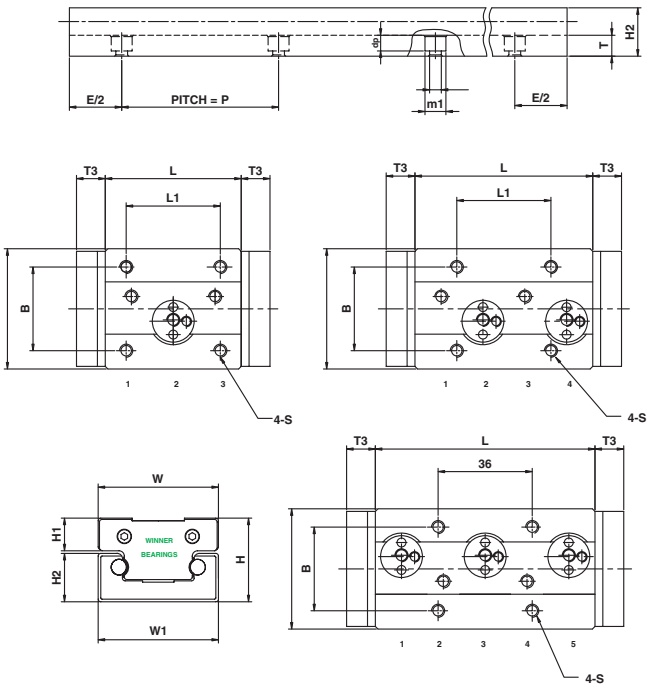
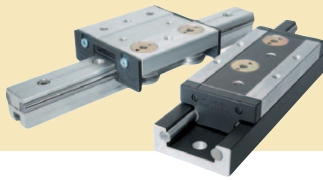
Speed Guide®

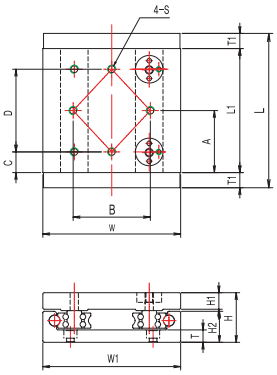
SG TYPE

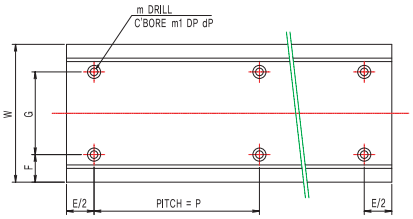


SG		Whole system		Speed Guide® Rail SGR										Speed Guide® Block SGB														SG	
SGR	SGB	H	W	W1	H2	dp	P	shaft	Weight (g/m)	T	m1	m	W	H1	L	B	L1	S	T3	Bearing q'ty	Eccentric position	Basic dynamic safe working load(N) Yo	Basic dynamic safe working load(N) Zo	Dynamic moment (N-m) Mxo	Dynamic moment (N-m) Myo	Dynamic moment (N-m) Mzo	Weight (g/ea)	SGR	SGB
	-3														47					3	2								-3
10	-4	23	28	28	14	3.3	60	5	1,051	4.5	6.5	3.4	28	8	63	21	18	M4		4	2,4	343	322	6.4	6.8	7.1	70	10	-4
	-5														78					5	2,4,5								-5
	-3														60					3	2	490	460	7.4	7.8	10.2	105		-3
15N	-4	32	44	38	18.5	6	120	6	1,651	8	8	4.5	44	12	80	26	26	M5	11	4	2,4	700	660	13.2	14	14.5	140	15N	-4
	-5														100					5	2,4,5	980	920	20.3	37	39	170		-5
	-3														52					3	2	490	460	9.2	9.8	13.8	110		-3
15	-4	32	46	46	18.5	6	120	6	1,784	8	8	4.5	46	12	68	32	36	M5	11	4	2,4	700	660	19.8	21.1	22.4	145	15	-4
	-5														84					5	1,3,5	980	920	27.7	44.3	47	185		-5
	-3														80					3	2	820	700	15.4	21.5	29.4	195		-3
20N	-4	36	47	47	22.5	6	120	8	2,427	9	9.5	5.5	47	12	106	38	30	M6	11	4	2,4	1400	1000	42	52	61.6	265	20N	-4
	-5														132					5	2,4,5	1960	1400	58.8	92.4	129	325		-5
	-3														72					3	2	820	700	18.2	25.4	42.1	210		-3
20	-4	36	60	60	22.5	6	120	8	2,744	9	9.5	5.5	60	12	94	50	40	M6	11	4	2,4	1400	1000	44	60.2	72.8	280	20	-4
	-5														116					5	2,4,5	1960	1400	84.2	109.2	152.8	350		-5
	-3														100					3	2	1470	1260	41.58	48.51	67.62	460		-3
25	-4	44	70	69	26	7	120	10	3,873	10	11	6.6	70	16.65	133	57	45	M8	11	4	2,4	2100	1800	96.6	118.8	138.6	615	25	-4
	-5														166					5	2,4,5	2940	2520	135	249.48	291.06	775		-5
	-3														140					3	2	2800	2380	126	135	159.6	1100		-3
35	-4	55	100	90	35	8.5	160	12	6,442	12	14	9	100	18	185	82	62	M10	11	4	2,4	4000	3400	228	360	478	1450	35	-4
	-5														230					5	2,4,5	5600	4760	319.2	756	758	1835		-5



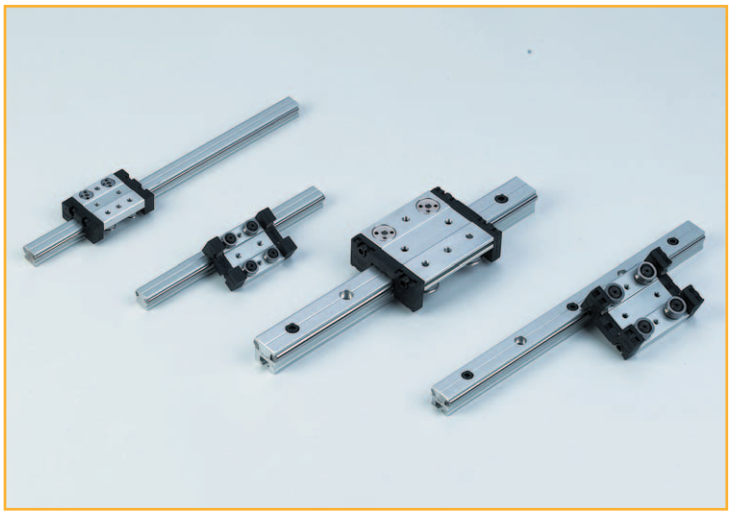
SG WIDE TYPE

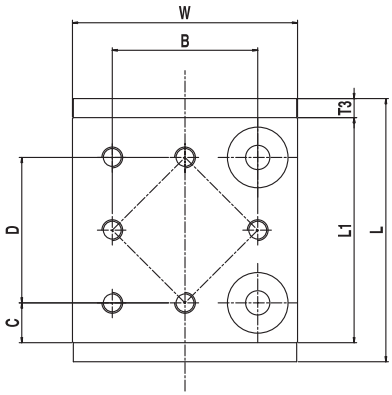


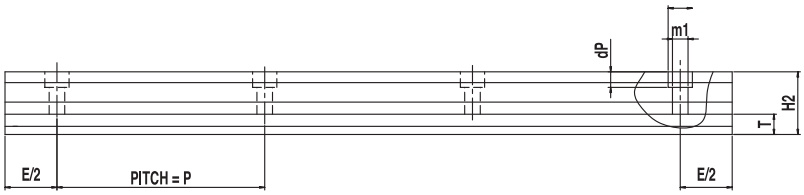


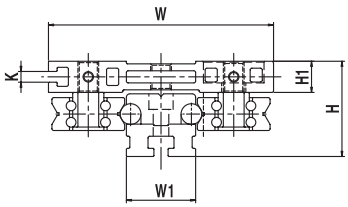
SGW	Whole system		*Speed Guide*® Rail SGWR									*Speed Guide*® Block SGWB														SGW
	H	W	W_1	H_2	G	F	T	P	m	m_1	dp	Weight (g/m)	L	L_1	A	B	C	D	G	H_1	S	T_1	Basic dynamic safe working load(N) Yo	Basic dynamic safe working load(N) Zo	Dynamic moment (N-m) Mxo	Dynamic moment (N-m) Myo	Dynamic moment (N-m) Mzo	Weight (g/ea)	
10	23	67	67	14	38	14.5	4.5	60	3.4	6.5	3.3	1,051	84	64	32	42	14.5	35	38	8	M4	10	360	340	7.8	7.0	8.2	70	10
15	32	88	88	18.5	48	20	8	120	4.5	8	6	1,784	102	80	40	52	15	50	48	12	M5	11	700	660	19.8	21.1	24.6	120	15
20	36	100	100	22.5	60	20	9	120	5.5	9.5	6	2,744	112	90	45	56	15	60	60	12	M6	11	1000	1400	60.2	61.6	67.8	240	20
25	44	120	120	26	70	25	10	120	6.6	11	7	3,873	122	100	50	60	20	60	70	16.5	M8	11	1800	2100	96.9	138.6	130.7	520	25

OSG TYPE

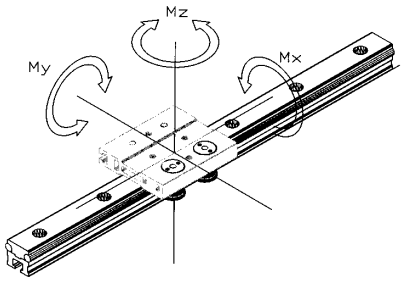


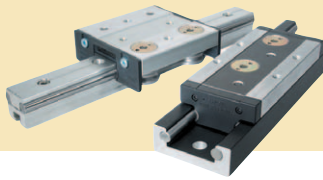






Whole			Speed Guide® Rail OSGR																		Speed Guide® Block OSGB						
Type	W	H	W1	H2	T	shaft	weight (g/m)	m	m1	dP	P	W	H1	L	B	L1	S	T3	C	D	K	Basic dynamic safe working load(N) Yo	Zo	Dynamic moment (N-m) Mxo	Myo	Mzo	weight (g/ea)	Type
OSG-20	60	32	20	20.25	11.45	6	1230	5.5	9.5	5.5	60	60	12	80	38	60	M5	11	11	38	4.3	700	660	23.03	33.41	35.47	120	OSG-20
OSG-25	80	37	25	24.75	13.93	8	2015	6.6	11	6.5	60	80	12	100	51	80	M6	11	14.5	51	4.2	1400	1000	62.76	68	95.2	240	OSG-25
OSG-30	100	46	30	30.3	16.18	10	2987	6.6	11	6.5	60	100	16.5	120	61	100	M8	11	19.5	61	5.2	2100	1800	105.98	147.89	172.54	520	OSG-30
OSG-40	130	55	40	36.2	18.7	12	5216	9	14	9	60	130	18	150	84	130	M12	11	23	84	6.2	4000	3400	280.64	380	448	1130	OSG-40





memo

Speed Guide® Ordering accessories

Speed Guide®'s accessories are Winner's know-how's result from two year's continuous effort. All accessories are precision machined,hardened and corrosion-resisting. Since Winner bearings have enough stock, Winner are ready to prompt delivery.

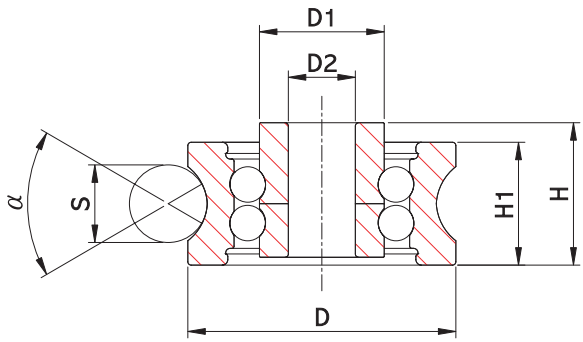
Speed Guide®'s Double-low bearing

1) Double angular contacting deep-groove bearing's application table

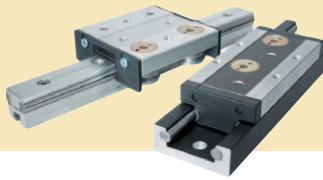
Bearing ID	4mm	5mm	6mm	8mm	12mm
SGB	10	15N, 15	20N, 20	25	35
OSGB	15	20	25	30	40

How to order: SG-BR(A) No 5, 8pcs

- no-recording : standard bearing
- Bearing Number : same with general bearing Number
- (A) : radent treatment for clean room



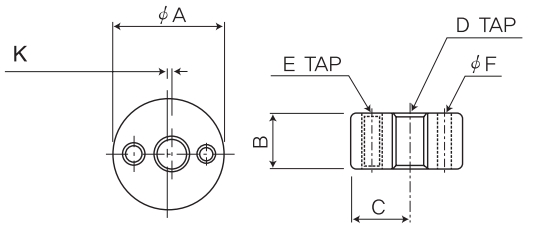
Bearing I.D	H	H1	ϕ S	ϕ D	ϕ D2	α	Basic static load (N)			
							⇨ ⇦		⇩	
							Cy(N)	Cyo	Cz	Czo
4mm	7	6	5	13	4	gothic arch	330	600	80	130
5mm	9.75	8	6	17	5	gothic arch	890	1610	200	340
6mm	12.75	11	8	24	6	gothic arch	2280	4100	550	1080
8mm	15.5	14	10	30	8	gothic arch	3500	6000	850	1700
12mm	22	19	12	42	12	gothic arch	5200	9800	1910	4190



Speed Guide® Ordering eccentric nut

Order mark: SG-nut M5 12pcs

TYPE	A	B	C	D	E	F	K
SG-10/OSG15	12	6	6.5	M4	M3	2.5	0.5
SG-15,15N/OSG-20	16	8	8.5	M5	M4	3.4	0.5
SG-20,20N/OSG-25	20	8	10.5	M6	M4	3.4	0.5
SG-25/OSG-30	25	11	13.5	M8	M4	3.4	1
SG-35/OSG-40	35	12	18.5	M12	M4	3.4	1

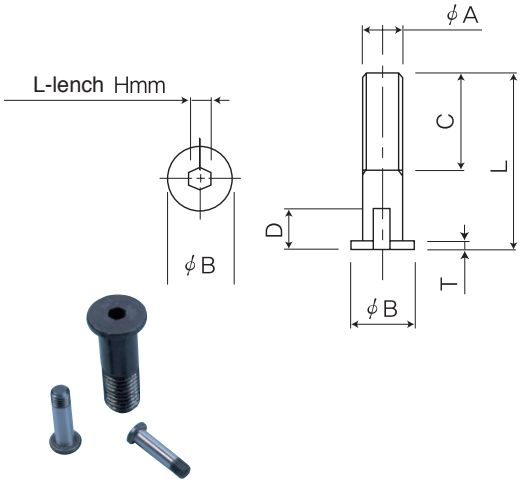


- eccentric K
- bolt position P
- shaking-proof position E

Speed Guide® Bolt for bearing

Order mark: SG-bolt M6 20pcs

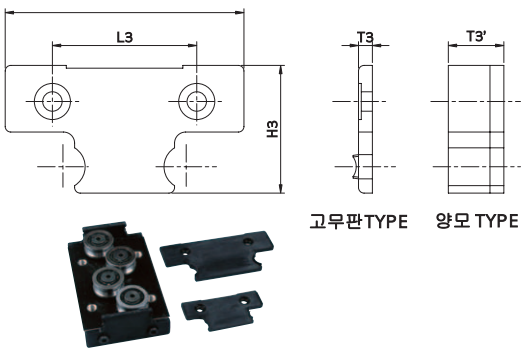
TYPE	A	B	C	D	H	T	L
SG-10/OSG-15concentric	4	7	8	3	2.02	1	17
SG-10/OSG-15eccentric	4	7	8	3	2.02	1	17
SG-15,15N/OSG-20concentric	5	8	12	5	2.5	1	21.75
SG-15,15N/OSG-20eccentric	5	8	5	5	2.5	1	21.75
SG-20,20N/OSG-25concentric	6	10	12.05	5	3	1.2	24.75
SG-20,20N/OSG-25eccentric	6	10	5	5	3	1.2	24.75
SG-25/OSG-30concentric	8	13.2	16.6	5	4	1.5	32
SG-25/OSG-30eccentric	8	13.2	8	5	4	1.5	32
SG-35/OSG-40concentric	12	18	18.1	7	5	2	40
SG-35/OSG-40eccentric	12	18	9	7	5	2	40



Speed Guide® Rubber-plate for seal

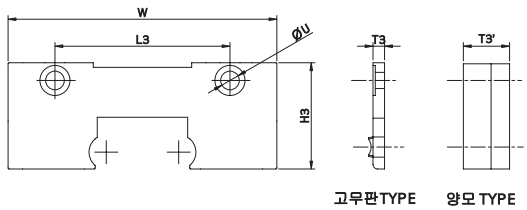
Order mark: SGB UU 25 2pcs

TYPE	W	L3	H3	T3'
SG-10UU	28	18.5	17.1	10.5
SG-15UU	45	26	23	11
SG-15NUU	43	26	23	11
SG-20UU	59	38.38	25.5	11
SG-20NUU	46	25.38	25.5	11
SG-25UU	69	40.23	32.5	11
SG-35UU	99	48.5	41.5	11

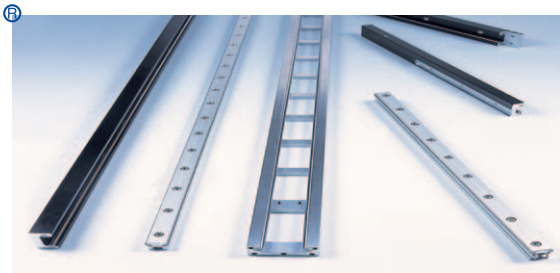


OSGB U 30 4pcs

TYPE	W	H3	L3	ϕ U	T3'
OSG-15UU	44	18.5	17.2	3.4	11
OSG-20UU	59	22	38	5.5	11
OSG-25UU	79	24.5	51	6.5	11
OSG-30UU	99	31.5	61	6.5	11
OSG-40UU	129	40	84	6.5	11



How to order Speed Guide®



Ordering Speed Guide rail (SGR)

1) Standard length and others' length of Speed Guide

Type		Standard length	Standard length of Aluminum base	Shaft maximum length	minimum length
SG	10,15N, 15	4000mm	4000mm	6060mm	60mm
	20N, 20	4000mm		6060mm	80mm
	25, 35	4000mm		6060mm	140mm
OSG	15, 20	4000mm		6060mm	70mm
	25	4000mm		6060mm	90mm
	30, 40	4000mm		6060mm	150mm

☞When you need over standard length, it will be machined by special order to connect the ends of shaft.

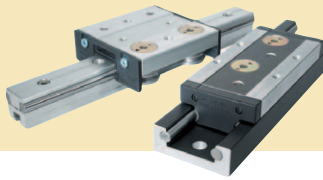
2) Speed Guide Rail that corrosion-resisting shaft is pressed into with straightness.

Users can order Speed Guide for corrosion-resisting in a low price immediately. Rusts in Guides cut down the life and damage the machine's quality. Speed Guide's rail has elegant exterior and no-scar by anodizing, so it raises the machine's quality and shows maximum ability in clean room.

Rail shaft	standard hardened shaft	High-carbon chrom plating bearing steel	stainless shaft
material	STB-2(SUJ-2)	STB-2(SUJ-2)	SUS 440C
H_RC(heat treatment hardness)	62±2	64±2	60±2
The others	Winner can offer the others material depends on user' asking		

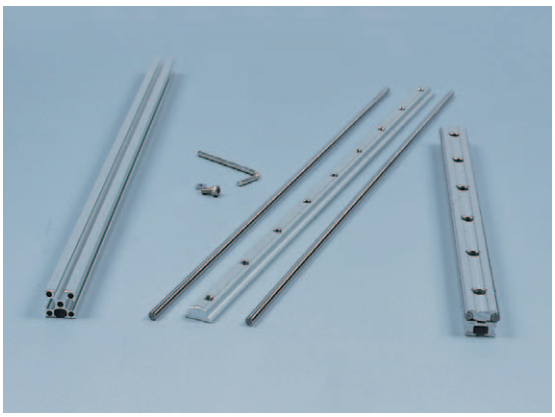
3) Screw processing for lateral installation of Speed Guide

One of Speed Guide's powerful feature is to use for high load bearing's cross direction load and possible for lateral assembling of rail strong for slack. It shows powerful applications for high speed system such as linear moter system.



4) Opened-Type Speed Guide Rail (OSGR)

OSGR is the best system for machine asked light weight. As we guarantee shaft's straightness, aluminum base's modifications when processing shaft instering can be minimized and the precision is raised with maximum and moment load abillity is optimized.
Limitless length, running precision (±0.015mm) without accumulation, light weight, low priced wear-resistance rail, big Mx direction's moment load, and easy for assembling rails, are po werful applications for OSGR



Easy order example **OSGR 20-2000-2** (OSGR No20 rail length 2000mm 2pcs)

detail example

(O)SG(C)R 20N-3800(1800-0)- (S)(40-60-40)- 2

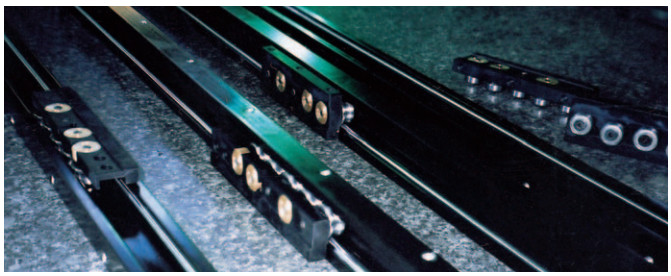
- rail-q'ty
- no-recording: $\frac{E}{2}$
  - recording : distance from last hole center to right end
- no-recording : standard pitch
  - recording : order pitch between holes
- no-recording : $\frac{E}{2} = \frac{L-n\times P}{2}$
  - L= rail length
  - n = maximum hole q'ty in rail
  - E = entire length - distance from first hole to last hole
  - P = pitch between hole and hole
  - recording : distance from left end to left first hole center.
- no-recording : hole machining for assembling the bottom of rail
  - recording : screw machining on side of rail for lateral attachment
- rail right connecting length
- rail left connecting length
- rail length(mm)
- rail dimension
- no-recording : Standard hardened shaft, C : hard chrom plating shaft
  - A : Stainless steel shaft material name : the others material
- SG : *Speed Guide*® / SGR : *Speed Guide*® Rail / SGB : *Speed Guide*® Block
- recording : OSGR no-recording : SGR

☞ OSGR can be delivered separately, the shaft and aluminum base, as customer asks
☞ Assembling bolt of OSGR is free of charge

When ordering Speed Guide® block(SGB)

Speed Guide Block (O)SGB can be machined according to designer's drawing like block machining and bearing q'ty modification.

- Depending on the block's load, user can decide the bearing's q'ty.
- To increase moment load, user can modify the bearing position.
- To install sensor or belt, special machining is possible.
- For economical block design it is possible to reduce the numbers of bearings by 2.
- The long length (maximum 3M) block is possible.
- To removel parallel deflection of rail, the block can be attached with flat-outering ball bearings.
- The eccentic position can be modified depending on the design situation.

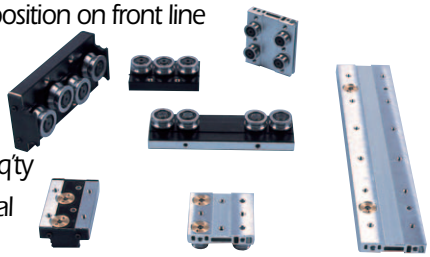


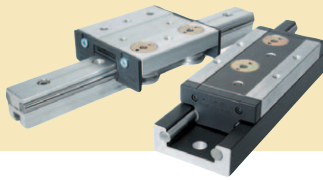
SGB 20N (UU)-(D)-3(3)-4

- the block q'ty
- no-recording : standard eccentric nut
  recording : the position of eccentric bearing number registered in catalogue
- the bearing's q'ty in block
- no-recording : no-drawing recording : drawing reference
- (UU) : no-recording : no-seal U: one side seal UU : both sides seal
- The block's dimension
- R : Speed Guide® Rail, B : Speed Guide® Block
- Speed Guide. Minimized the interval between bearings

OSGB 20(UU)-(2)-(200-10-40)-2

- order block q'ty
- no-recording : standard block
  recording : 2 pcs of bearing's attaching position on back line
- no-recording : standard block
  recording : 2 pcs of bearing's attaching position on front line
- no-recording : standard block
  recording : block's entire length
- no-recording : standard block with four-bearing
  recording : block with bearing as many as recording q'ty
- no-recording : no-seal/ U: one side seal / UU : both sides seal
- OSG block's dimension
- Speed Guide, its bearing do rolling motion in outer rail





When ordering *Speed Guide*® full set

If the load , life, and assembling method are deceided, user can order easily as following .

SG

In case of the standard items,
SGC 20N UU-4-2-2500-2
Type 20N, inserted hard chrom plating shaft in 2500mm rail and two block with four bearing are one set. Finally it means two sets, the rail is 2pcs and block is 4pcs.

In case of different assembling in rail,
SGC 20N UU-4-2-2500-(20-60-20)-2
The distance from left and right end to first hole center is 20mm and pitch is 60mm

In case of lateral assembling,
SGC 20N UU-4-2-2500-(S)-2
screw machining for rail side - pitch is same with standard item

In case of special machining in drawing,
SGC 20N UU-(D)-4-2-2500-2
Refer the drawing in block machining

OSG

In case of OSG standard item,
OSG 20 UU-2-2000-2
Type 20, inserted High-precision hardened and ground shaft in 2000mm rail and two block with four bearings is one set. Finally it means two set, the rail is 2pcs and block is 4pcs.

In case of different assembling in rail,
OSG 20 UU-2-2000-(60-80-20)-2
The distance from first hole center to start point is 60mm and pitch is 80mm and the distance from last hole center to opposite end is 20mm

In case of connecting rail,
OSG 20 UU-2-3500-(800-700)-2
entire rail 3500mm OSGR's connecting rail ,left length is 800mm and center length is 2000mm and right part is 700mm

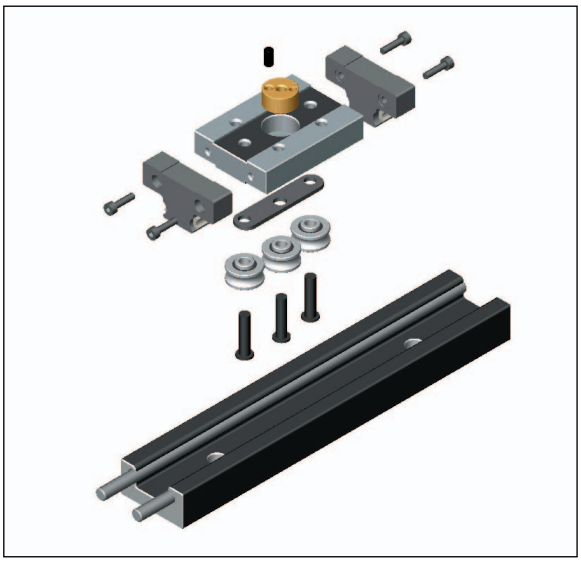
When you placing the attaching position of bearings in long block
OSG 20 UU-2-(400-20-120)-2000-2
The block's "X" direction length is 400mm and the distance from block left to front line bearing center is 20mm and the distance from block left to back line bearing center is 120mm.
Finally , "X" direction between bearings is 100mm.

Order example : SGA 15N U-(D)-5(1,2,4)-2-2700-(700-)-(S)-(80-100-20)-2

Rail : Two rails of SGR 15N
Shaft : Stainless streel shaft
Assembling of Rail : Screw maching for lateral assembling
Pitch : Left side is 80mm, Pitch is 100mm, Right side is 20mm
Rail length : 2700mm(700mm+2000mm)
Block : Machined four blocks by user's drawing
Eccentric nut : No.1, 2, 4

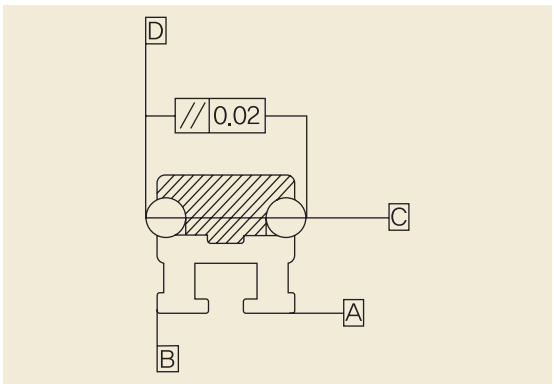
Speed Guide® precision

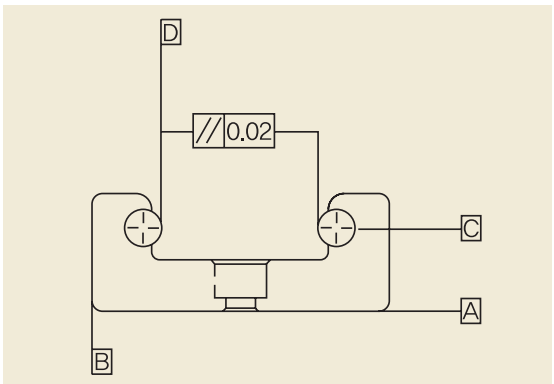
Since the alumium base is straightened through precision extrusion, the dimension precision less ±10 ㎛/4000mm is guaranteed. In case of being asked the running precision, as making the base-face flat, you can gain ±0.02mm running precision .



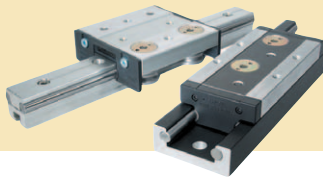
Since Speed Guide Block is a clearance adjustment type. It can be adjust radial clearance to 0㎛ from all side of direction X,Y,Z. It useful for automatic machine being asked repetition direction precision.

The dimension precision of rail



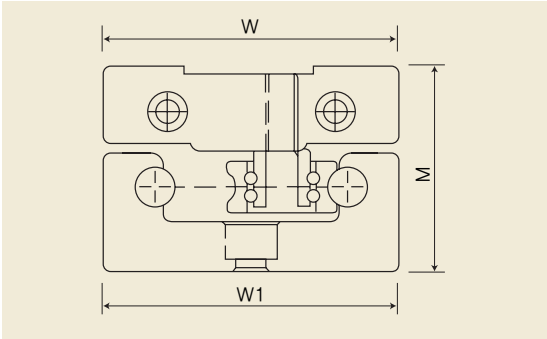


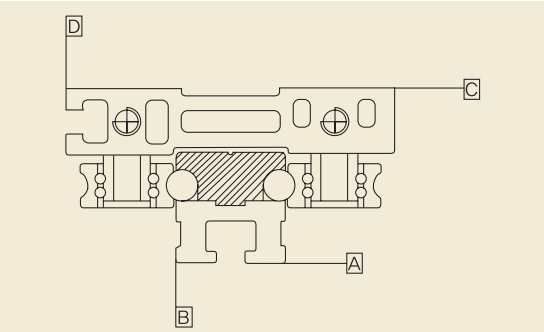
The auto shaft-inserting machine is developed by Winner Bearings' know-how
So even though heat-treated shaft is pressed into the rail, the machine makes that rail dimension precision raises within ±0.01mm.



Speed Guide® running precision

Speed Guide®'s precision doesn't have effect on the system length. Since the shaking of bearing is less ±3 ㎛, the running precision guarantees according to rail length without accumulation .



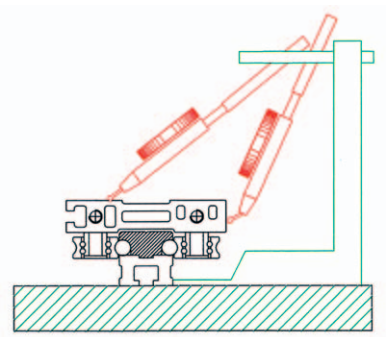


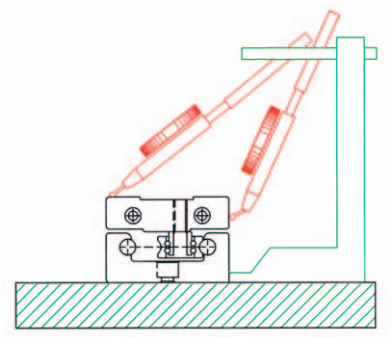
unit:mm

Precision condition	SG	OSG
block C's running straightness about "A"	±0.02	±0.015
block D's running straightness about "B"	±0.015	±0.02
dimension allowed difference for SG' all height M	±0.15	±0.1
mutual difference about each block for height M	±0.03	±0.025
dimension allowed difference for SG' all width W	±0.15	±0.1
mutual difference about each block for width W	±0.03	±0.03

▶The precision was applicated for whole Guide Rail length.
*It isn' t included bottom precision .
*In case of rail assemble, keep the regular tork.

How to measure the running precision





The operation situation of *Speed Guide*®

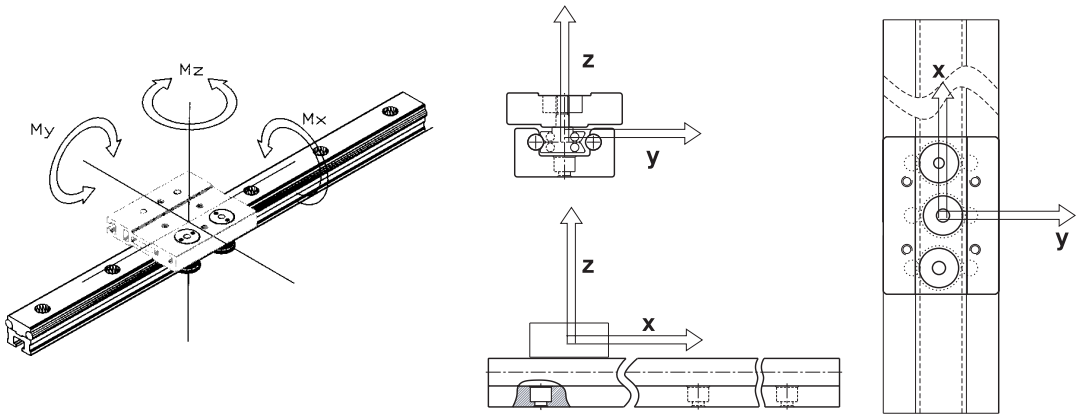
Maximum driving speed	Maximum acceleration	Running allowable temperature
10m/sec	50%	-20℃~80℃

Speed Guide® load transmission ability

SG and OSG is designed to keep the moment of all-axis and the load of all direction.
The load transmission ability in catalogue is safe workingload including safe static load cause, and several driving condition.

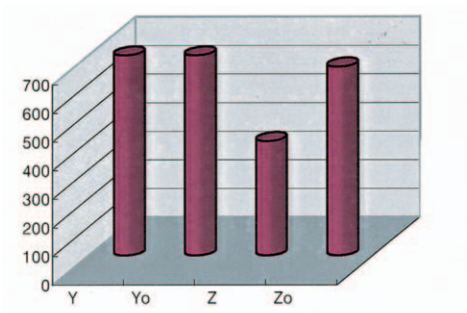
Coordinate axes

Working directions of the load and moment on this cataiogue depend on below drawings.

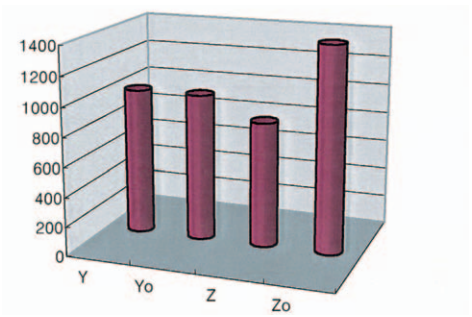


Speed Guide® load and moment comparative table(OSG)

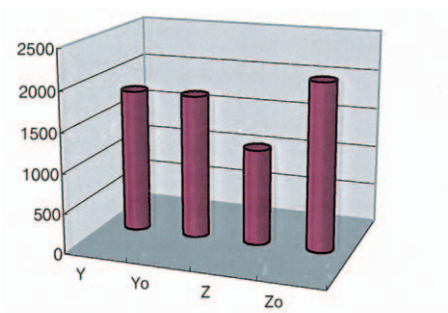
OSGB 20(N)



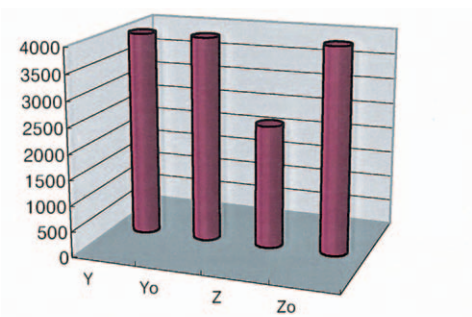
OSGB 25(N)

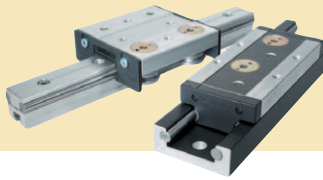


OSGB 30(N)

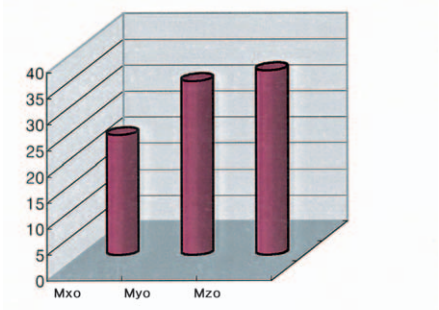


OSGB 40(N)

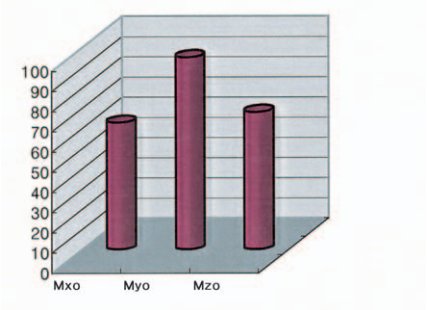




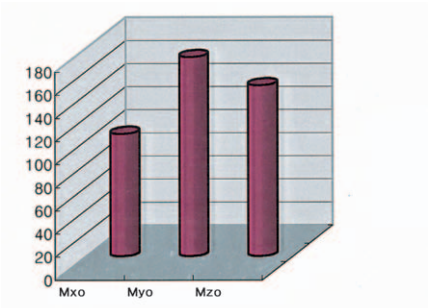
OSGB 20(N-m)



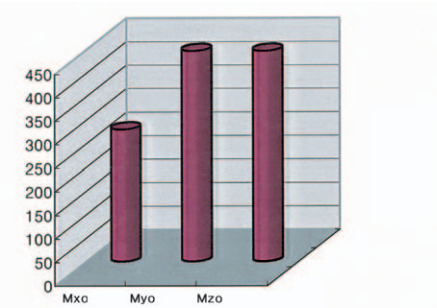
OSGB 25(N-m)

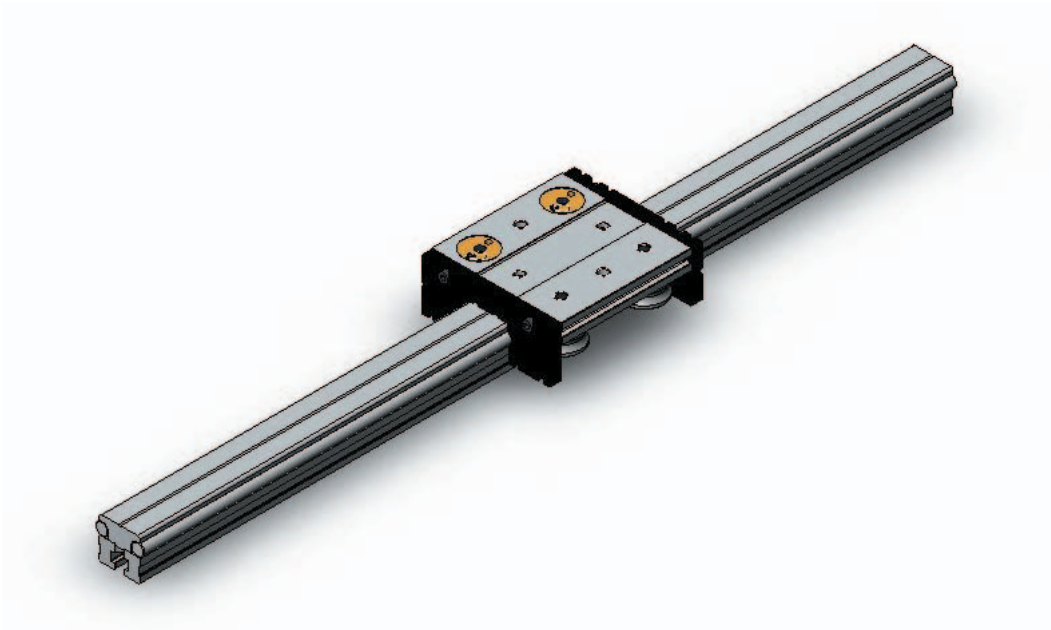


OSGB 30(N-m)



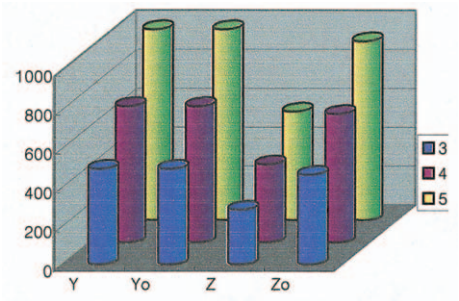
OSGB 40(N-m)



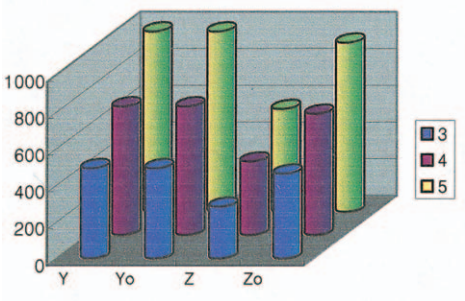


Speed Guide® load and moment comparative table(SG)

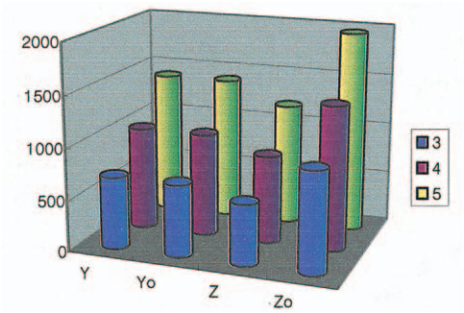
Type : 15N (Unit:N)



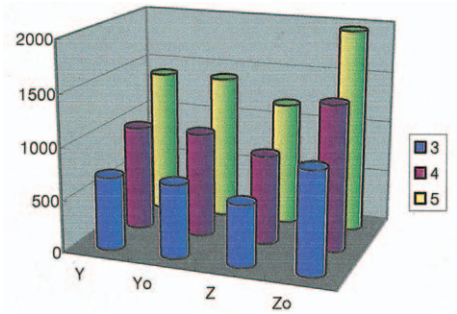
Type : 15 (Unit:N)



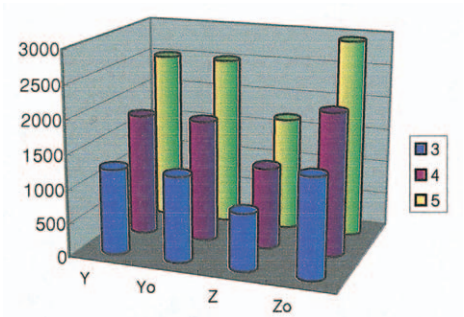
Type : 20N (Unit:N)



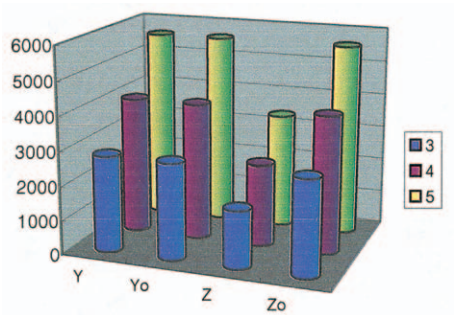
Type : 20 (Unit:N)

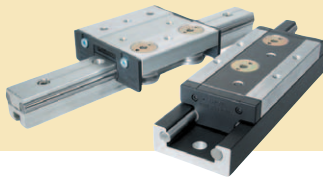


Type : 25 (Unit:N)

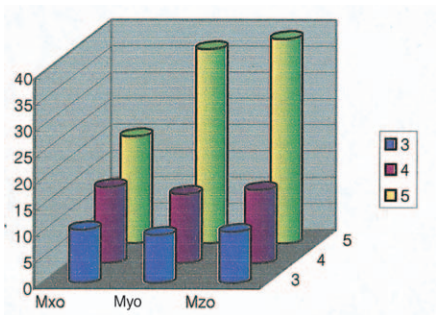


Type : 35 (Unit:N)

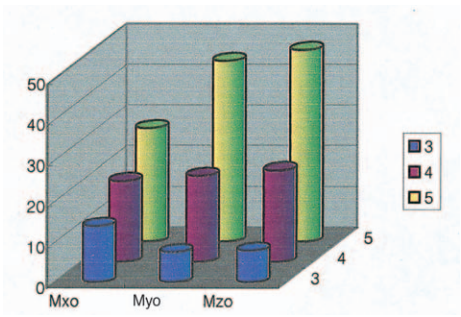




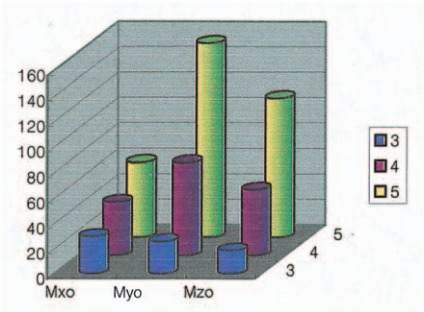
Type : 15N (Unit:N-m)



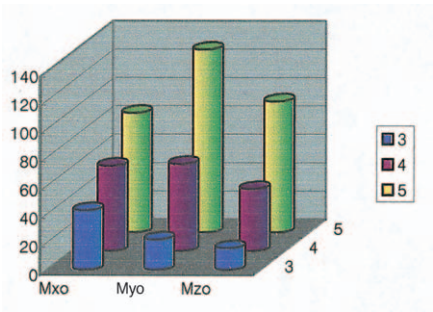
Type : 15 (Unit:N-m)



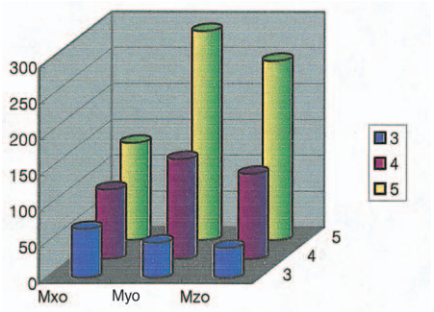
Type : 20N (Unit:N-m)



Type : 20 (Unit:N-m)



Type : 25 (Unit:N-m)



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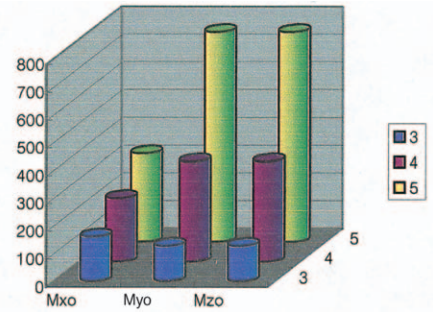
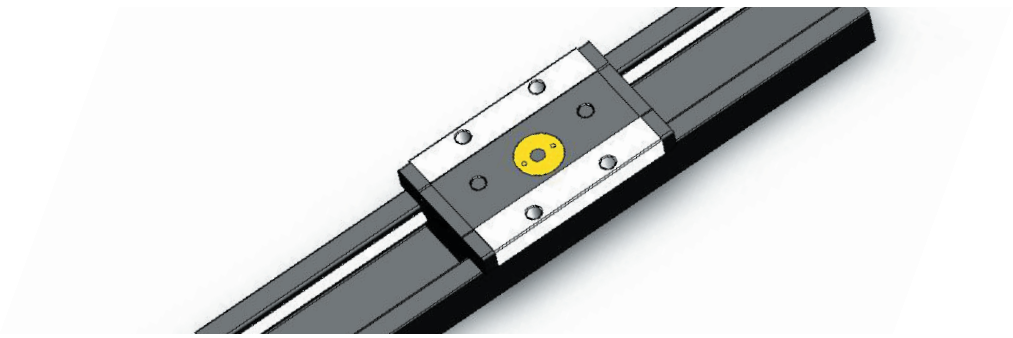
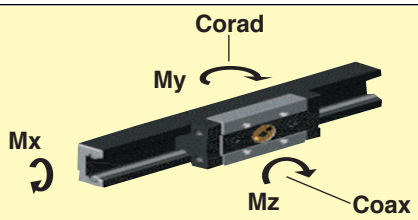
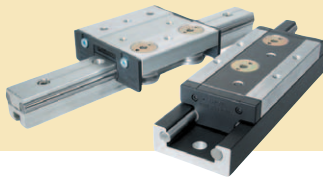




Basic safe working load and moment for Speed Guide®'s life calculation

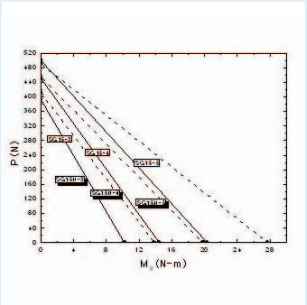
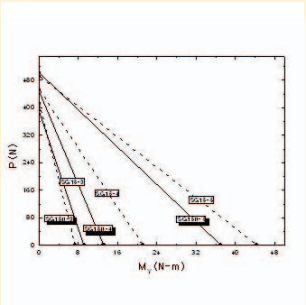
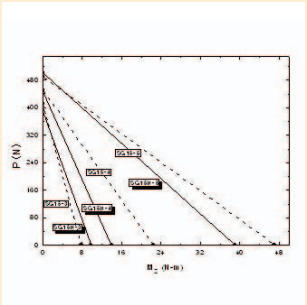
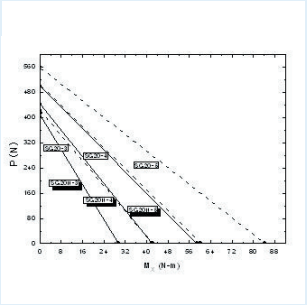
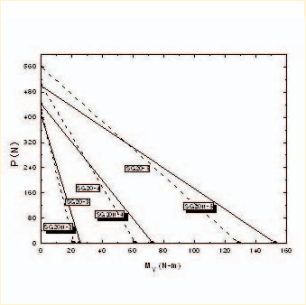
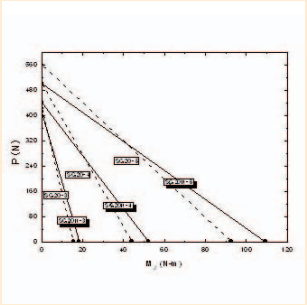
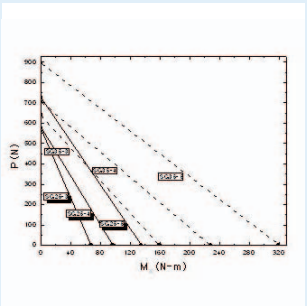
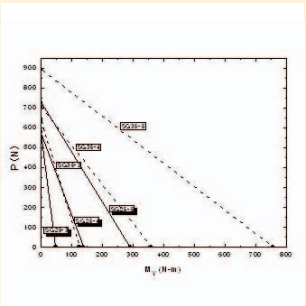
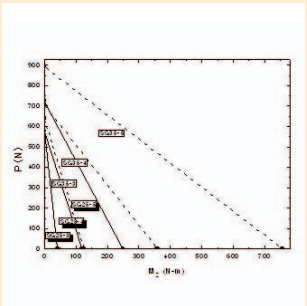
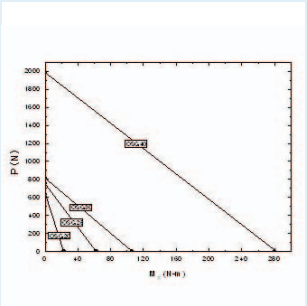
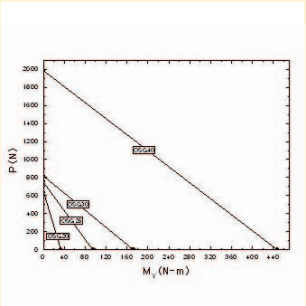
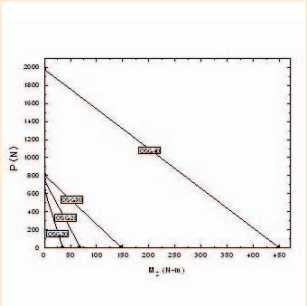
Type \ Load						
			Basic static safe working load(N)	Basic dynamic safe working load(N)	Basic static safe working load(N)	Basic dynamic safe working load(N)
SGB	Load direction		Corad	Crad	Coax	Cax
	10	3	623	343	350	322
	15N	3	890	490	490	460
		4	1,210	700	924	660
		5	1,400	980	1,288	920
	15	3	890	490	490	460
		4	1,210	700	3,924	660
		5	1,400	980	1,288	920
	20N	3	1,610	820	980	700
		4	1,930	1,400	1,560	1,000
		5	2,120	1,960	2,230	1,400
	20	3	1,610	820	980	700
		4	1,930	1400	1,560	1,000
		5	2,120	1,960	2,230	1,400
	25	3	2,800	1,470	1,764	1,260
		4	3,180	2,100	2,520	1,800
		5	3,420	2,940	3,528	2,520
	35	3	3,990	2,800	3,332	2,380
		4	4,890	4,000	4,760	3,400
		5	5,320	5,600	6,664	4,760
OSGB	15		847	490	630	450
	20		1,210	700	924	660
	25		1,930	1,400	1,560	1,000
	30		3,180	2,100	2,520	1,800
	40		4,890	4,000	4,760	3,400

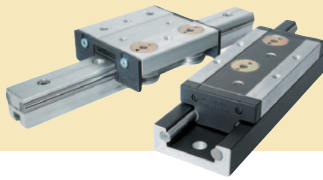


Type \ Load			Corad / My / Mx / Mz / Coax		
			Dynamic allowed moment(Nm)		
SGB	Load direction		Mx	My	Mz
	10	3	6.4	6.8	7.1
	15N	3	10.2	9.2	9.8
		4	14.5	13.2	14
		5	20.3	37	39
	15	3	13.8	7.4	7.8
		4	19.8	21.1	22.4
		5	27.7	44.3	47
	20N	3	29.4	25.4	18.2
		4	42	72.8	52
		5	58.8	152.8	109.2
	20	3	42.1	21.5	15.4
		4	60.2	61.6	44
		5	84.2	129	92.4
	25	3	67.62	48.51	41.58
		4	96.6	138.6	118.8
		5	135.24	291.06	249.48
	35	3	159.6	126	126
		4	228	360	360
		5	319.2	758	756
OSGB	15		16.12	23.83	24.83
	20		23.03	33.41	35.47
	25		62.76	95.2	68
	30		105.98	172.54	147.89
	40		280.64	448	448

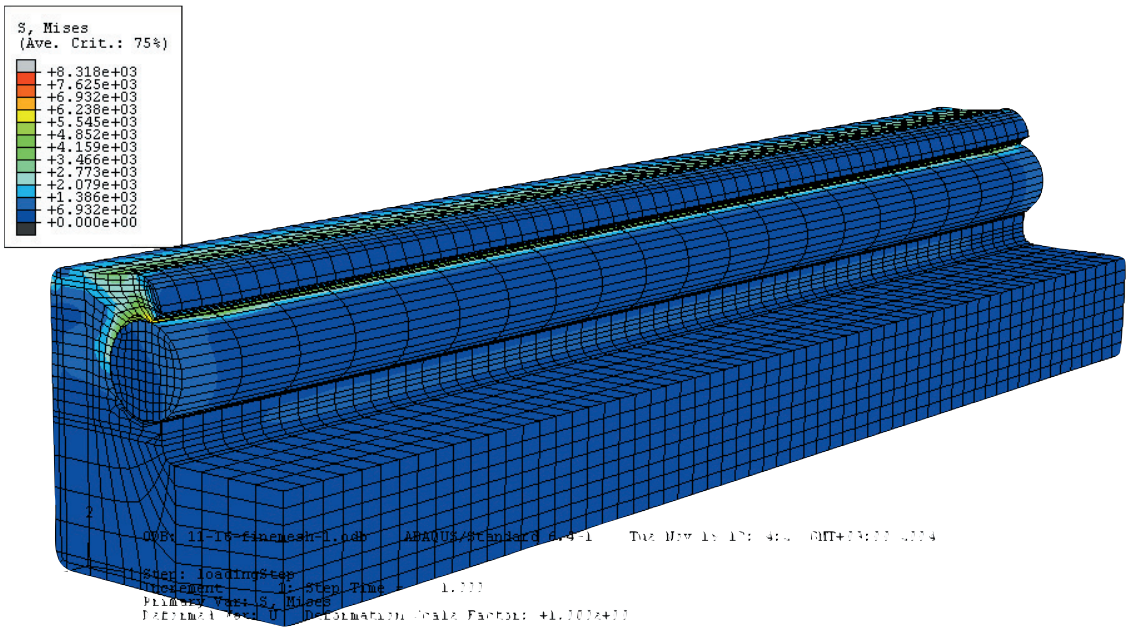
형번에 따른 BLOCK의 하중과 모멘트의 관계

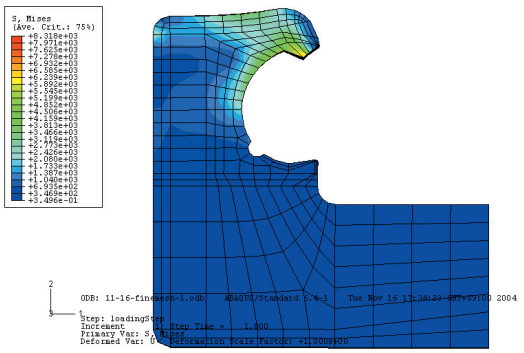
- $P : M_X$
- $P : M_Y$
- $P : M_Z$

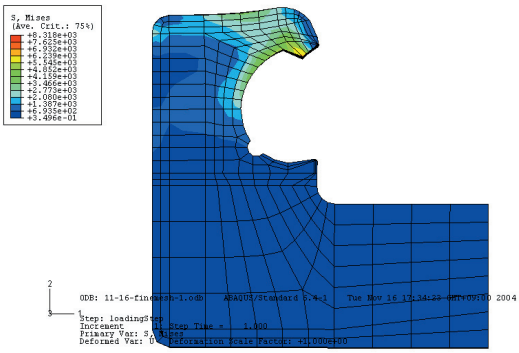















레일 및 샤프트 압입시 Von Mises Stress







• 레일을 바닥면에 취부하기 위한 나사의 기준 토크

단위 : kg • cm

재 료 / 나 사	체 결 토 크		
	철	주물	알루미늄
M4	50	35	25
M5	60	40	30
M6	90	60	45
M8	140	110	70

Speed Guide®'s Construction analysis

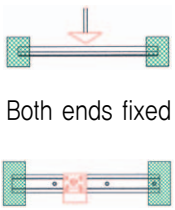
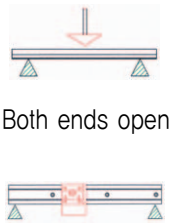
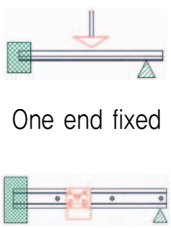
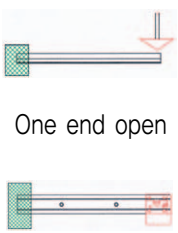
1) Speed Guide® Rail SGR's slack calculation

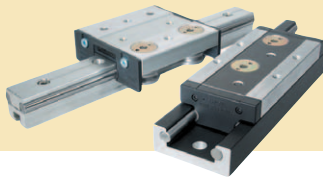
Strong points of SGR are to use as machine costruction in itself and to install on aluminium profile without additional machining. There can be a lot of applications and cost saving effects when SGR is used for lateral or when rails are installed with SGB on its bottom. To use efficiently these strong functions, we show you as following information.

2) Safe load and slack per unit length(L=1000mm)

Safety factor S=3 (S=rail's yield strength)

(unit=kgf)

Fixing way	Type	Standard installation		Side installation	
		Safe load(kgf)	Slack(mm)	Safe load(kgf)	Slack(mm)
 Both ends fixed	SGB-15N	50	8.8	164.6	1.5
	SGB-15	46.1	11.9	219.9	1.3
	SGB-20N	81.7	7.6	293.7	1.2
	SGB-20	148	10.5	444	1
	SGB-25	145.2	8.7	702.3	0.8
	SGB-35	360.6	6.1	1621.7	0.6
	OSGB-20	39.2	2.7	37.3	3
	OSGB-25	70.2	2.1	69	2.3
	OSGB-30	120.7	1.9	108.3	2.2
	OSGB-40	243.8	1.5	247.8	1.6
 Both ends open	SGB-15N	25	17.5	82.3	3
	SGB-15	23.1	23.8	109.9	2.5
	SGB-20N	40.9	15.3	146.8	2.5
	SGB-20	74	21	222	1.9
	SGB-25	72.6	17.4	351.2	1.7
	SGB-35	180.3	12.2	810.9	1.3
	OSGB-20	14.7	4.1	104	4.5
	OSGB-25	35.1	4.3	34.5	4.6
	OSGB-30	60.3	3.9	54.2	4.4
	OSGB-40	121.9	3	123.9	3.1
 One end fixed	SGB-15N	33.3	0.6	109.8	1.8
	SGB-15	30.7	0.3	146.6	1.5
	SGB-20N	54.5	0.4	195.8	1.5
	SGB-20	98.7	0.4	296	1.2
	SGB-25	96.8	0.2	468.2	1
	SGB-35	240.4	0.2	1081.2	0.8
	OSGB-20	26.2	3.2	24.9	3.1
	OSGB-25	46.8	2.6	46	2.5
	OSGB-30	80.4	2.3	72.2	2.1
	OSGB-40	162.5	1.8	165.2	1.8
 One end open	SGB-15N	6.2	70.1	20.6	12.2
	SGB-15	5.8	95.1	27.5	10
	SGB-20N	10.2	61.1	36.7	9.9
	SGB-20	18.5	84.2	55.5	7.7
	SGB-25	18.2	69.5	87.8	6.7
	SGB-35	45.1	48.6	202.7	5.1
	OSGB-20	4.9	21.7	4.7	24.1
	OSGB-25	8.8	17.1	8.6	18.6
	OSGB-30	15.1	15.5	13.5	17.7
	OSGB-40	30.5	11.9	31	12.5



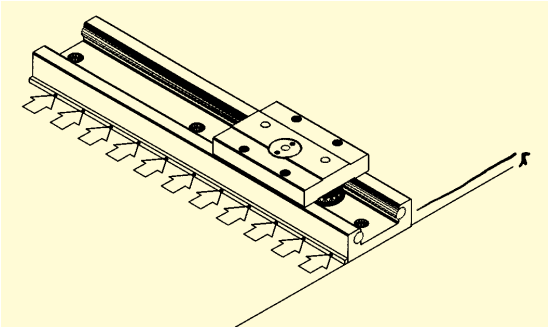
Speed Guide® installation

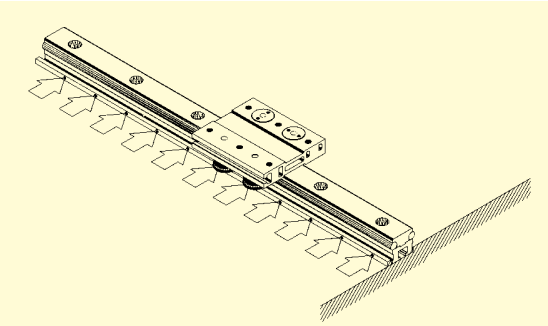
Speed Guide guarantees the precision driving over entire rail without the accumulation of tolerance. Since beairng's Gothic Arch groove and shaft have two point contact, in case that users don't need the precision running,as a merit of automatic self-aligning construction, ground flat working doesn't need specially.

You have to mind below factors to install speed guide.

☞ **The running precision** ☞ **The running situation** ☞ **The load and moment** ☞ **The running speed**

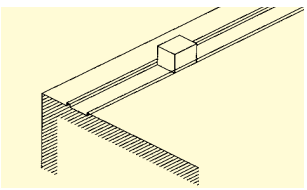
1) Speed Guide rail (O)SGR's precision assemble



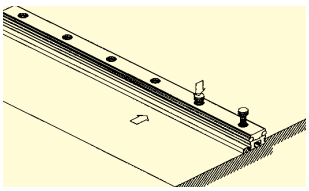


When SGB installation, the side having less bearingis is basic face.

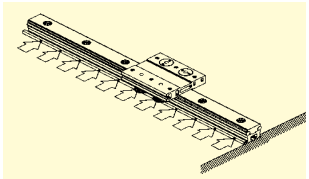
① Remove the contamination



② After attaching the rail in installation basic face, joint attaching bolt

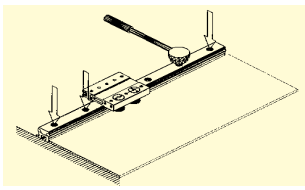


③ While jointing the push bolt, guarantee side straightness

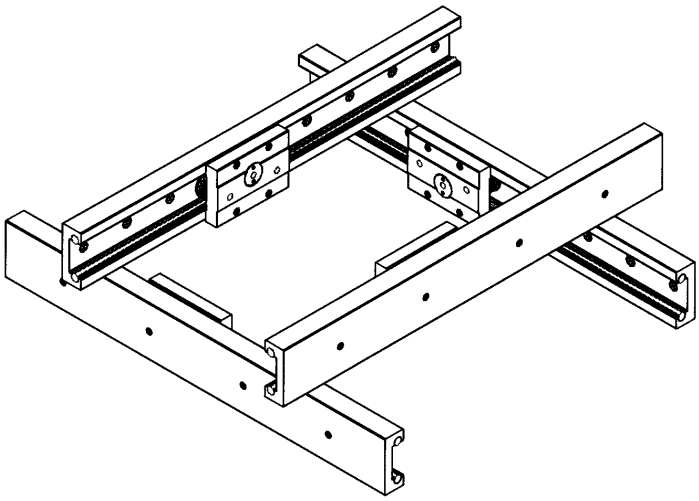


④ Tighten rail in turn by joining tork on the basis of below joint tork
on next page

⑤ After assembling basic rail, insert SGB
(After considering the load and moment, decide the block's direction)

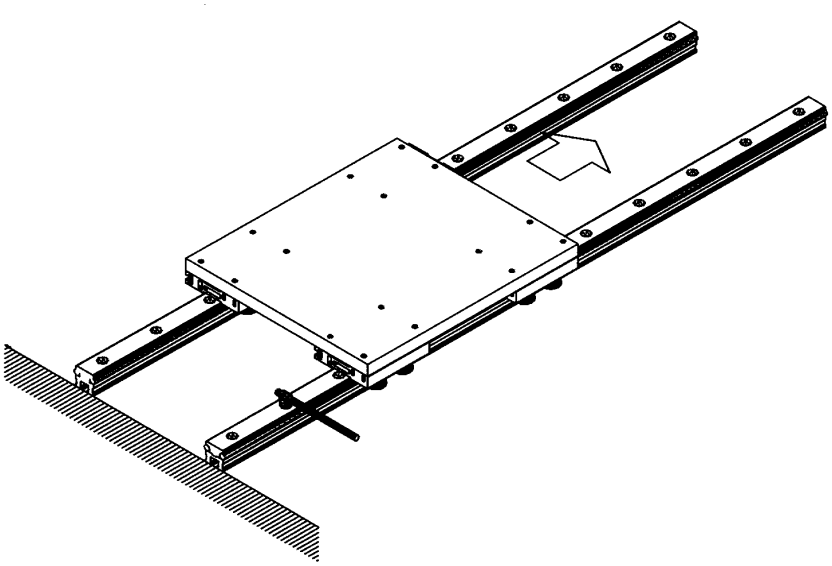


☞Generally, the side located in eccentric nut is basic face and when SGR assembling on bottom, the basic face have to be inside and when assembled in lateral, the block's basic have to be upperside.

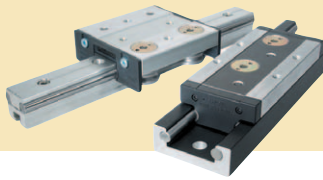


☞For fluctuating rail's exact installation, we recommend following methods

⑥ Temporary- connect tables on SGB 2pcs of basic rail and on SGB 2pcs of fluctuating rail
⑦ Tighten two bolts on temperary-connect table. One is on (O)SGB of basic rail the other is on (O)SGB) of fluituating rail
⑧ While checking joint resistance, joint assembling bolt in fluctuating rail one by one
⑨ Joint last temporary-connect bolt in table into diagonal direction

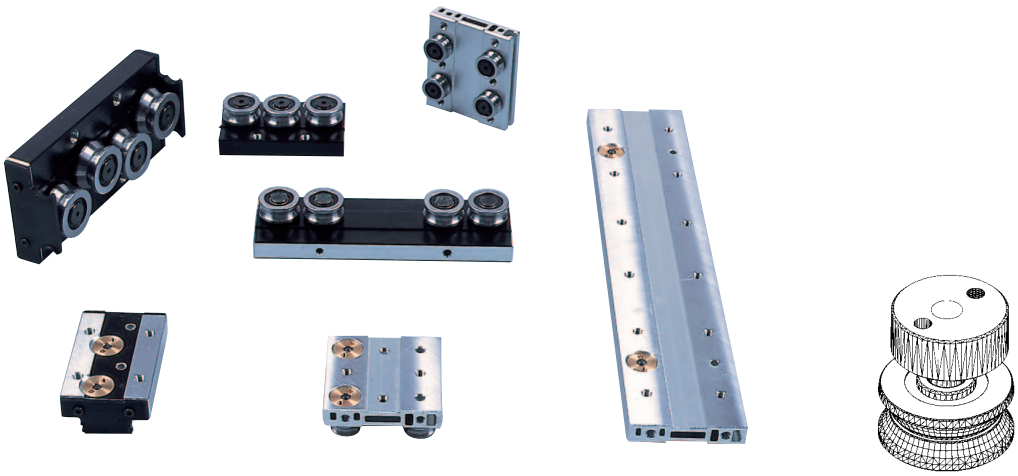


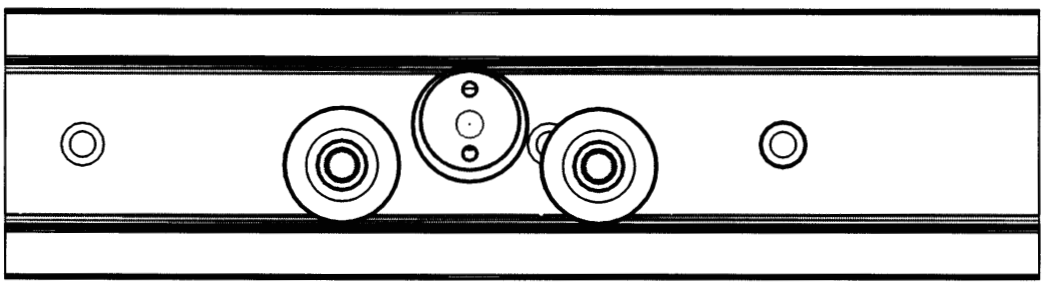
Bolt/Nut	M4	M5	M6	M8	M10	M12
Tork(Nm)	2.7	5.5	9.5	23	46	80



2) Block's clearance adjustment.

Speed Guide's block, SGB or OSGB, is designed to stand double-row deep groove bearing's centrifugal and axial load. The eccentric nut raises the (O)SGB's load and life by precision repetition without clearance and is designed to esay for clearance adjustment.





All the Speed Guide realized ZERO clearance in order to keep the precision running.
Two bearings are fixed in one side of shaft and, as the last one (in case of SGB 3 1pcs , in case of SGB4 2pcs, in case of SGB5 3pcs) is eccentric nut, entire bearings do rolling motion by regular contact pressure. Accordingly, when eccentric adjustment isn't right for block, the life will be reduced because of deflection load.

☞Suitable eccentric adjustment guarantees long-life

Speed Guide®'s clearance adjust

☞Speed Guide is shipped in standard goods assembled the No.1 & 3 bearings, as a fix-axis.

① Insert Eccentric nuts in nut holes on block

- when it is hard to insert, it can be inserted if you use bearing bolt to push a eccontric nut in nutholes of block

② After temporary-joint the bearing bolt in eccentric nut and inserting SGB in SGR, temporary-joint the eccentric adjust position .

③ Take out SGB which is adjusted temporariiy from SGR

④ In situation that eccentric temporary-adjustment, joint the eccentric nut and bearing bolt by joint tork in the catalogue.

⑤ Insert SGB in SGR

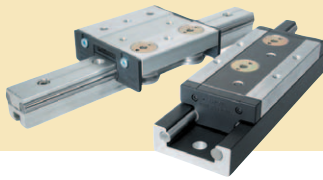
⑥ In case of pre-load, turn the eccentric nut into clock opposite side over 90 °

⑦ In situation fixing the eccentric adjust position, joint the eccentric nut and bearing bolt againby joint tork in catalogue

⑧ Insert SGB in SGR

⑨ Adjust the pre-load with turning the eccentric nuts into clock direction In case of turning pre-load excessively, return No 6 In case of SGB having over four bearings, after adjust according to No 6 order, adjsut No 5 bearing's clearance according to same method

⑩ After pre-load adjust, check rolling motion in shaft face Eccentric nut's hole indicate the pre-load and in case of block having four bearings, what the eccentric nut keeps the regular direction means same pre-load,and it is good for life and load.



When handling Speed Guide's , suggestion and lubrication

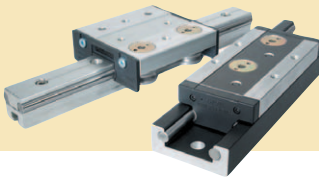
① Since Speed Guide is straightened with precision, when carrying, users have to pay attention not to be bended

② When all Speed Guides' delivery, since clearance is adjusted,users don't have to rotate eccentric nut by force. The life might be reduced.

③ Block's Falling and Crashing might be life reduction

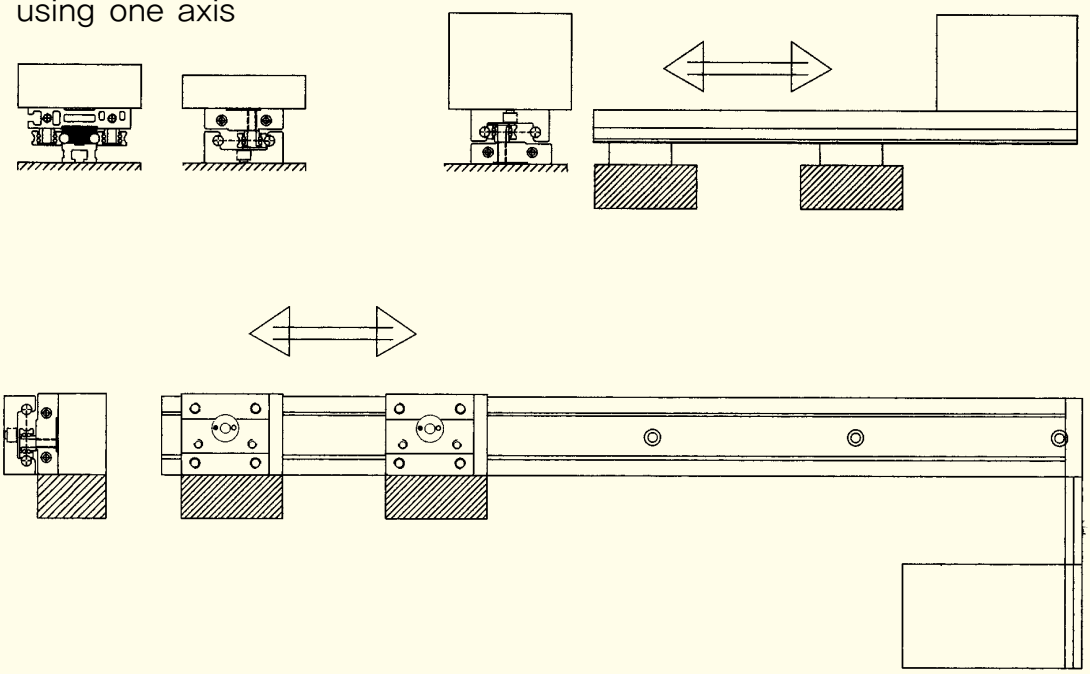
④ Users don' t need to lubricate in bearing in block, since bearing is lubricated until use-up the bearing

⑤ Since rolling motion of bearings might make the shaft worn-out, it needs to lubricate regularly on rails.

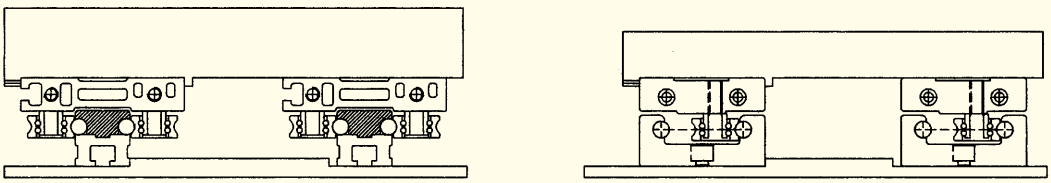


Speed Guide's installation example

using one axis



Using two axes



Using two lateral axes