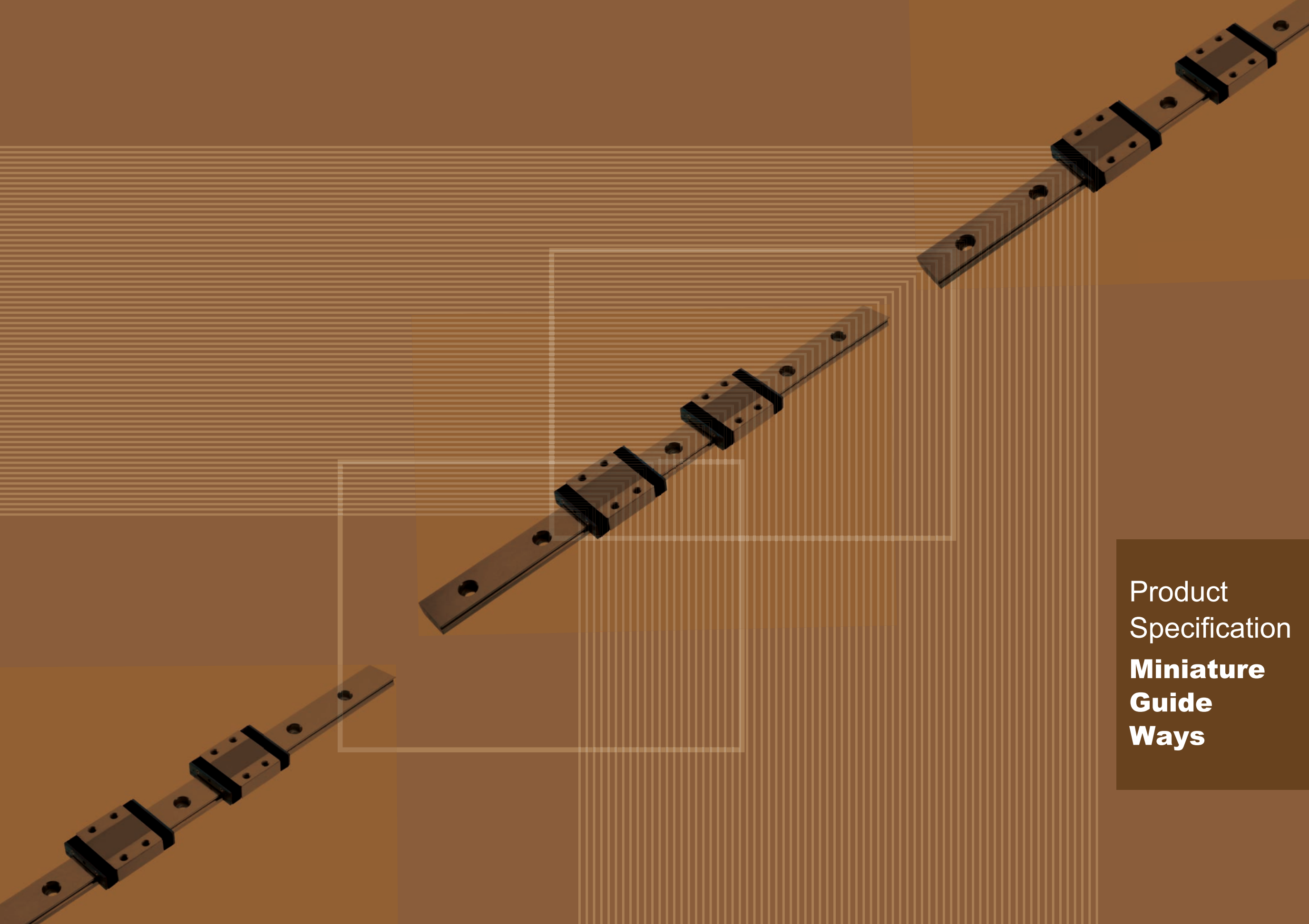




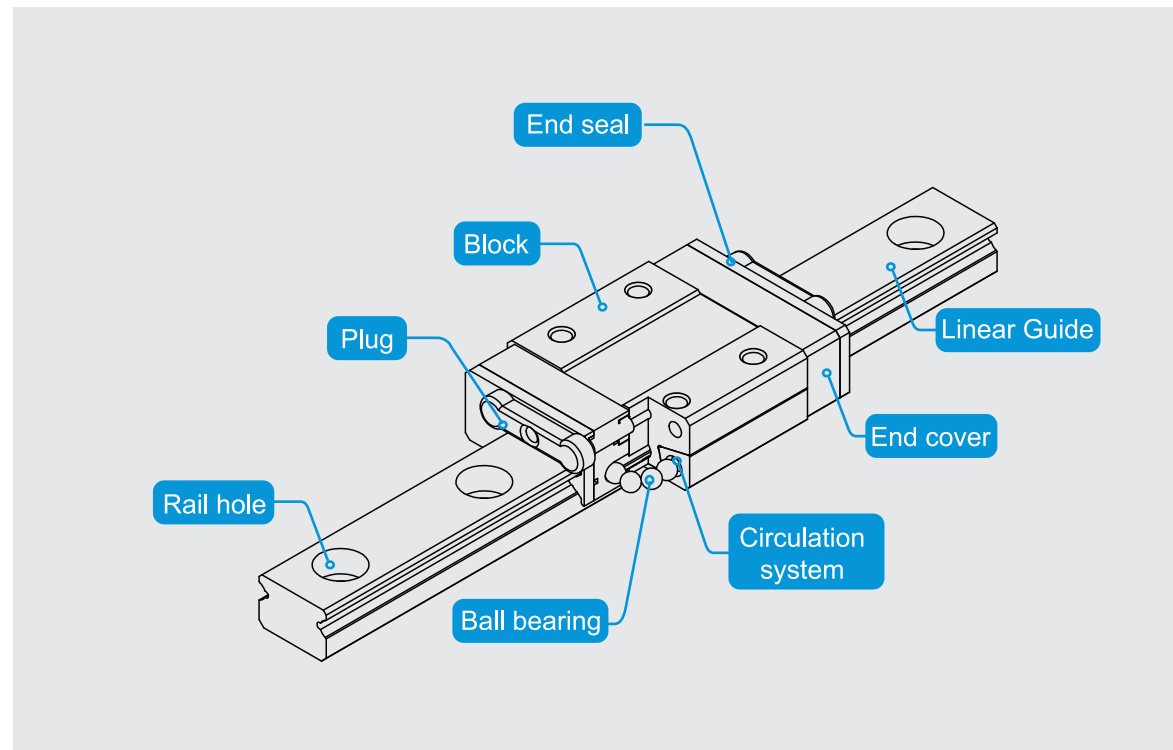
## Guides & Bearings

---



Product  
Specification  
**Miniature  
Guide  
Ways**

## Product Structure



## Product Character

- ◎ 4 contact points formed by circulated ball bearings in 45 degrees contact to the guide rail surface to produce an even-loading performance of each side of the guide.
- ◎ Circulation system is a plastic part designed to reduce friction noise during block running.
- ◎ End and bottom seals design to prevent dust and foreign objects entering from block running, to extend product usage life.

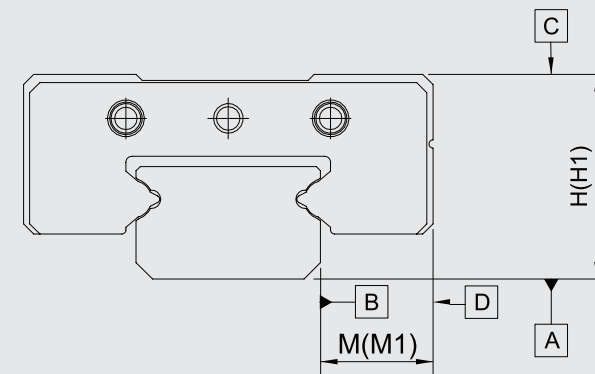
### 【Standard rail width】

- ◎ Fit to low profile equipment.
- ◎ Stainless steel material
- ◎ High rigidity and accuracy.

### 【Wide rail width】

- ◎ Suitable for single axis usage.
- ◎ High loading capacity.
- ◎ High rigidity and accuracy.
- ◎ Stainless steel material.

## Accuracy Reference Table



Accuracy Reference of GSN and GSW

Accuracy	Code	Standard (N)	High (H)	Precision (P)
H tolerance	H	±35(μm)	±15(μm)	±10(μm)
H tolerance between multiple blocks	H1	20(μm)	15(μm)	10(μm)
M tolerance	M	±35(μm)	±15(μm)	±10(μm)
M tolerance between multiple blocks	M1	25(μm)	15(μm)	10(μm)

Dynamics straightness (A-C)/(B-D) compare to rail length Accuracy Chart

Rail Length	Accuracy		
	Standard Grade(N)	High Grade (H)	Precision Grade (P)
50Less	12	6	2
50-100	14	8	4
100~200	15	9	4
200~300	17	11	5
300~400	18	11	6
400~500	19	12	6
500~600	20	13	7
600~700	21	13	7
700~800	22	14	8
800~900	23	16	9
900~1000	25	18	11

## Usage Life Calculation

Usage life is a total moving distance achieved while the contact surface between the guide rails has been scratched that means limited critical conditions are produced after contact friction force circulated continuously between ball bearings and guide rails surface during block running with loading.

### ◎ Rated Usage Life Definition

Rated usage life means 90% of the tested linear guide rail surface without scratch situation from a certain quantity of linear guide moving under same conditions and rated loading.

### ◎ Usage Life Calculation

Usage life is considered basic rated loading and total loading for calculation due to different working conditions.

C : Basic rated dynamic loading(kN)

L : Rated usage life(km)

P<sub>c</sub> : Radial loading calculation(kN)

f<sub>t</sub> : Temperature factor

f<sub>w</sub> : Loading factor

$$L = \left( \frac{f_t}{f_w} \cdot \frac{C}{P_c} \right)^{\frac{10}{3}} \times 100$$

### ◎ Usage Life Time(L<sub>h</sub>)

Please refer to the following calculation formula to have an idea usage life time if stroke and repeatable cycles per minute are fixed situation upon rated usage life figure is calculated.

L<sub>h</sub> : Working life hours (hr)

ℓ<sub>s</sub> : Stroke length (mm)

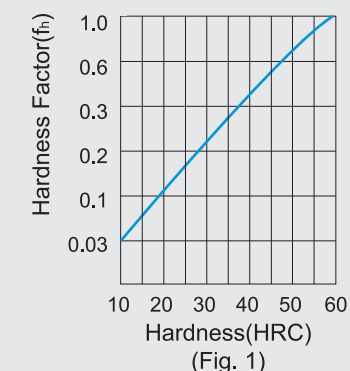
n<sub>1</sub> : Travel times per minute (min<sub>1</sub>)

$$L_h = \frac{L \times 10^6}{2 \times \ell_s \times n_1 \times 60}$$

## Life Factor

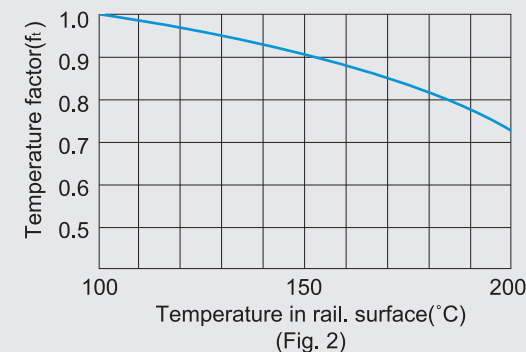
### ◎ Hardness Factor(f<sub>h</sub>)

Hardness of contact surface on cycling guide rails requires HRC56-60. Guide rail rated life and usage life will be reduced in case lower hardness. Use Hardness factor shown on (Fig. 1) to multiple the rated dynamic and static loading equals to available reference figures.



### ◎ Temperature factor(f<sub>t</sub>)

Use Temperature factor shown on (Fig. 2) to multiple the basic rated loading equals to available reference figures when the working environment temperature is more than 100°C.



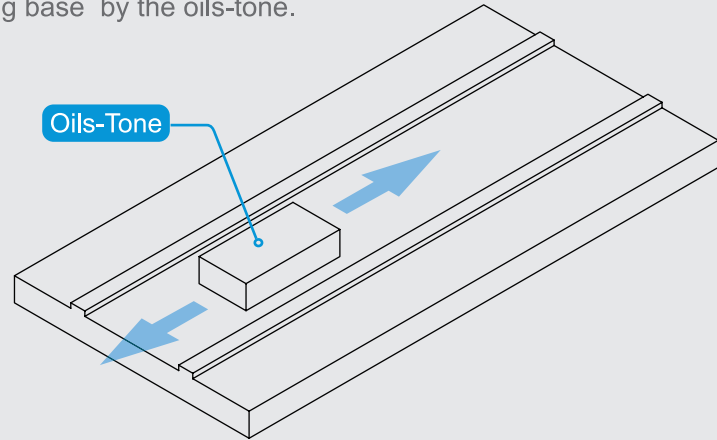
### ◎ Loading Factor(f<sub>w</sub>)

Use the following loading factor (f<sub>w</sub>) generated from experienced vibration & drive force to calculate a reference loading figure due to rapid vibration or strong drive force during high speed running. as hardly getting precise calculations. Therefore, when the actual operating load data cannot be calculated, or when the impact of speed and vibration is very large, divide the basic rated load (C) except the corresponding empirical load factor in the following table.

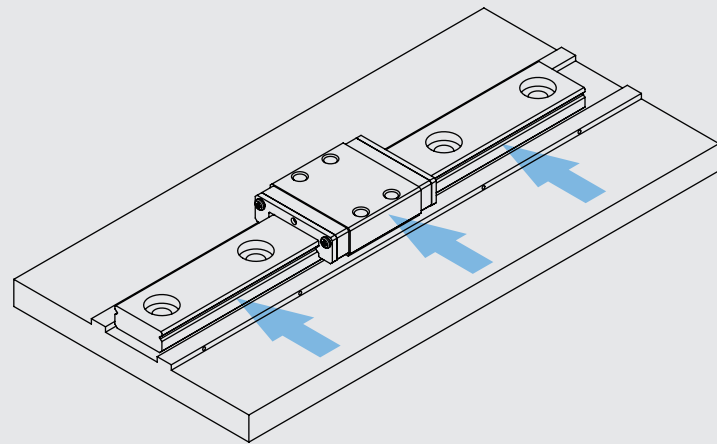
Vibration / Drive force	Velocity (V)	Loading Factor (f <sub>w</sub> )
Softly	Slight speed V ≤ 0.25m/s	1~1.2
Light	Low speed 0.25 < V ≤ 1m/s	1.2~1.5

## Mounting Method

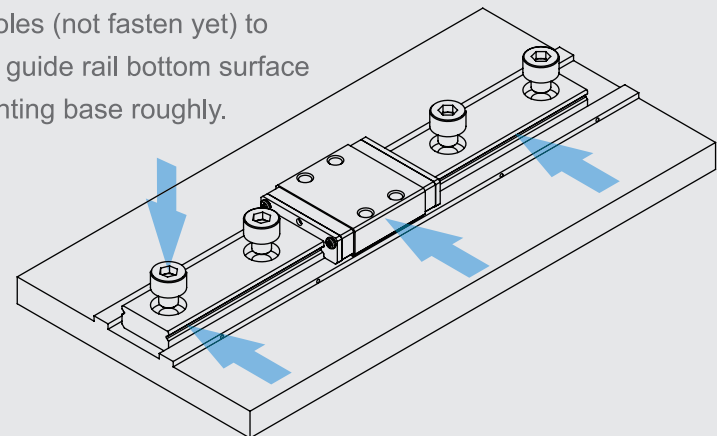
Remove and clean dust and foreign objects from assembly surface of the mounting base by the oils-tone.



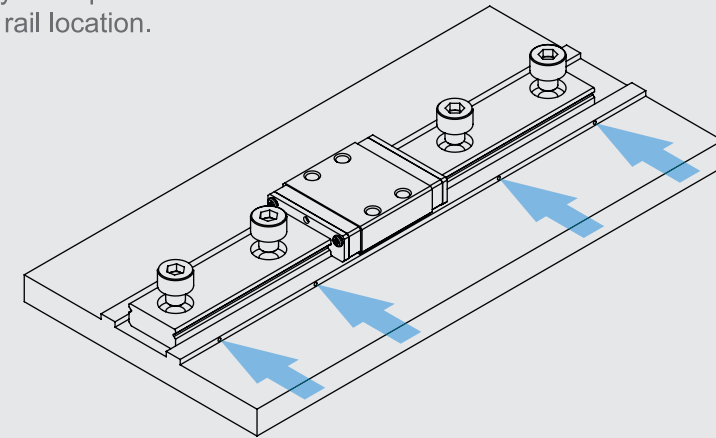
Put and align the miniature guide rail on the mounting base.



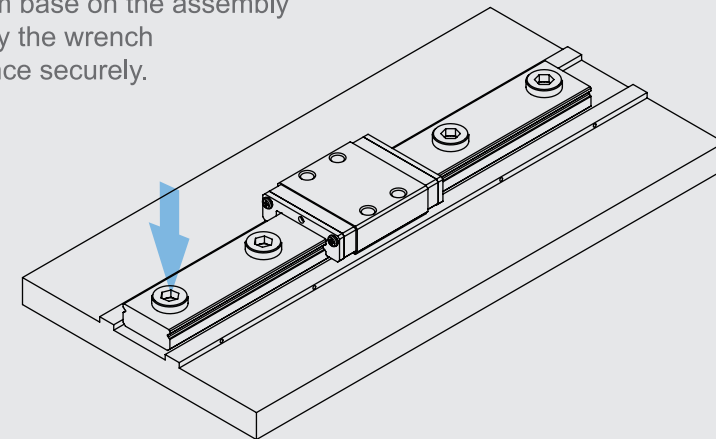
Slightly screw on bolts to check mounting holes (not fasten yet) to position the guide rail bottom surface on the mounting base roughly.



Use side-fixing screws to force the guide rail side datum surface to the assembly side tightly in sequence to ensure the guide rail location.



Tighten each bolt to force the guide rail bottom base on the assembly surface by the wrench in sequence securely.



Follow step 1 to step 5 repeatably to assembly other guide rails.

### Specification Introduction

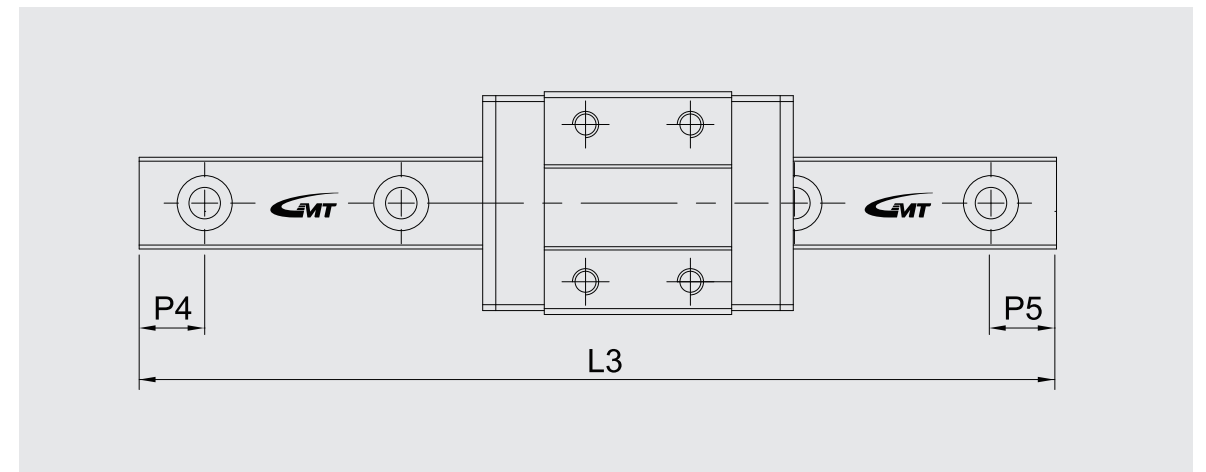
Product Type	Block Type	Block Quantity	Accuracy Grade	Preload Grade
Miniature	N Standard Block	Blocks on each rail	P Precision grade	F Micro-clearance
	L Long block		H High grade	0 No preload
			N Standard grade	1 Light preload

**GS 05 - N 2 - N 2 - 200L - P - 0**

Nominal Dimensions	Rail Type	Rail Quantity	Rail Length
05	N Standard width	Required rail quantity per axis	Refer to P. 0160 for standard length. Note: Length out of standard is available on request.
07	W Wide rail		
09			
12			
15			



### End Pitch & Rail Length

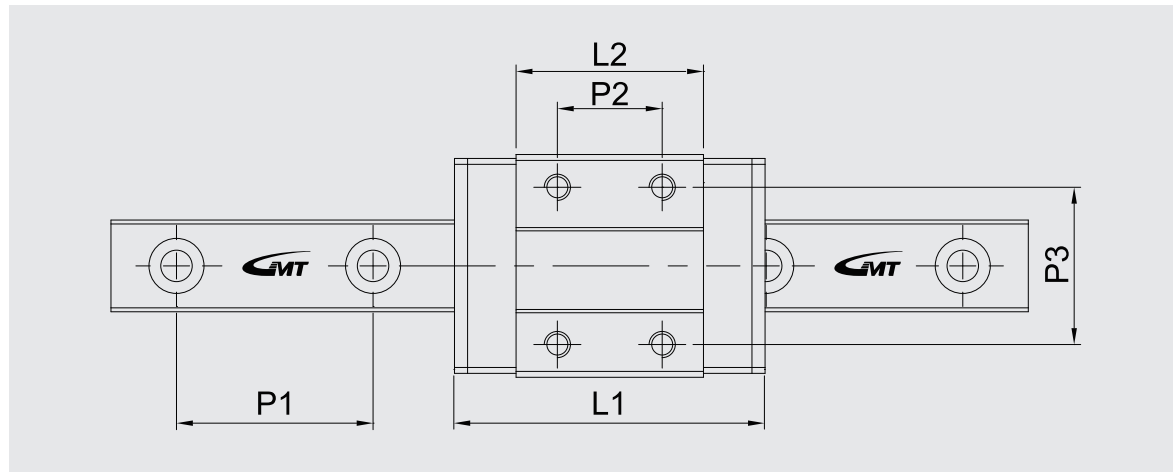


Unit : mm

Specifications	GSN					GSW						
	5N	7N	9N	12N	15N	5W	7W	9W	12W	15W		
Standard Length	40	40	55	70	70	50	50	50	70	110		
	55	55	75	95	110	70	80	80	110	150		
	70	70	95	120	150	90	110	110	150	190		
	85	85	115	145	190	110	140	140	190	230		
	100	100	135	170	230	130	170	170	230	270		
	N/A	N/A	130	155	195	270	150	200	200	270	310	
			175	220	310	170	260	260	310	430		
			195	245	350	N/A	N/A	290	290	390	550	
			275	270	390			320	470	670		
			N/A	N/A	375	320	430	N/A	N/A	N/A	N/A	N/A
					370	470						
	470	550										
		570	670									
		N/A	870									
Pitch	15	15	20	25	40	20	30	30	40	40		
Standard End Pitch(P4)	3	3	4	4	4	4	3	4	4	4		
Standard End Pitch (P5)	3	3	4	4	4	4	3	4	4	4		
Available max. End Pitch	10	10	20	20	35	15	25	25	35	35		
Max. Rail Length (L3)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000		

Standard Width Type

Standard Width Type



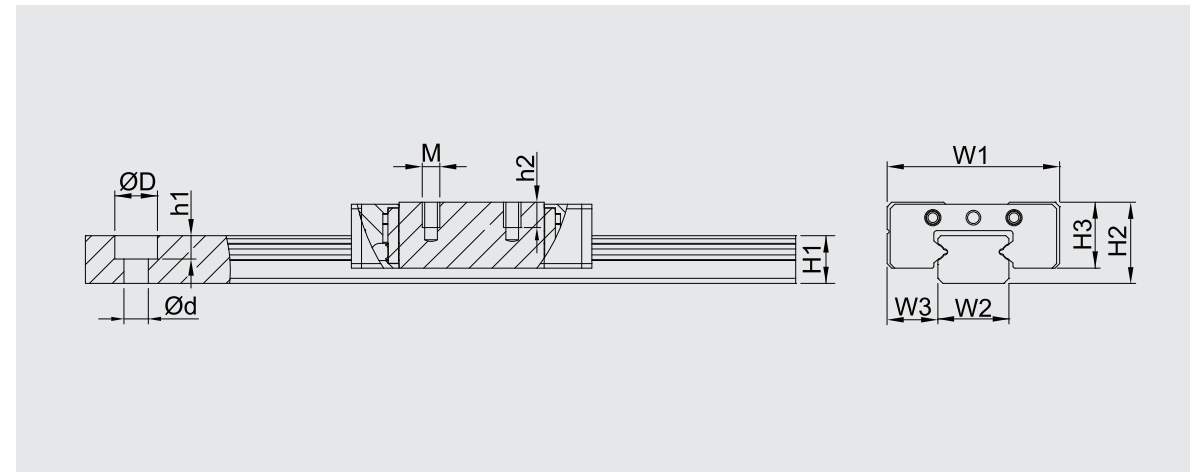
Unit : mm

Model no.	Assembled Dimensions		Rail Dimensions				Block Dimensions			
	H2	W3	W2	H1	P1	ØDxØdxh1	W1	L1	L2	H3
GS05-N-N	6	3.5	5	3.5	15	3.5x2.4x1	12	16	10	4.5
GS05-N-L	6	3.5	5	3.5	15	3.5x2.4x1	12	19.6	13.5	4.5
GS07-N-N	8	5	7	4.7	15	4.2x2.4x2.3	17	23.7	14.3	6.5
GS07-N-L	8	5	7	4.7	15	4.2x2.4x2.3	17	31.2	21.8	6.5
GS09-N-N	10	5.5	9	5.5	20	6x3.5x3.5	20	30.6	20.5	7.8
GS09-N-L	10	5.5	9	5.5	20	6x3.5x3.5	20	40.9	30.8	7.8
GS12-N-N	13	7.5	12	7.5	25	6x3.5x4.5	27	35.4	22	10
GS12-N-L	13	7.5	12	7.5	25	6x3.5x4.5	27	47.6	34	10
GS15-N-N	16	8.5	15	9.5	40	6x3.5x4.5	32	43	27	12
GS15-N-L	16	8.5	15	9.5	40	6x3.5x4.5	32	60	44	12

◎ Plug thickness 1.5 mm of each is not included in block length L1.

Standard Width Type

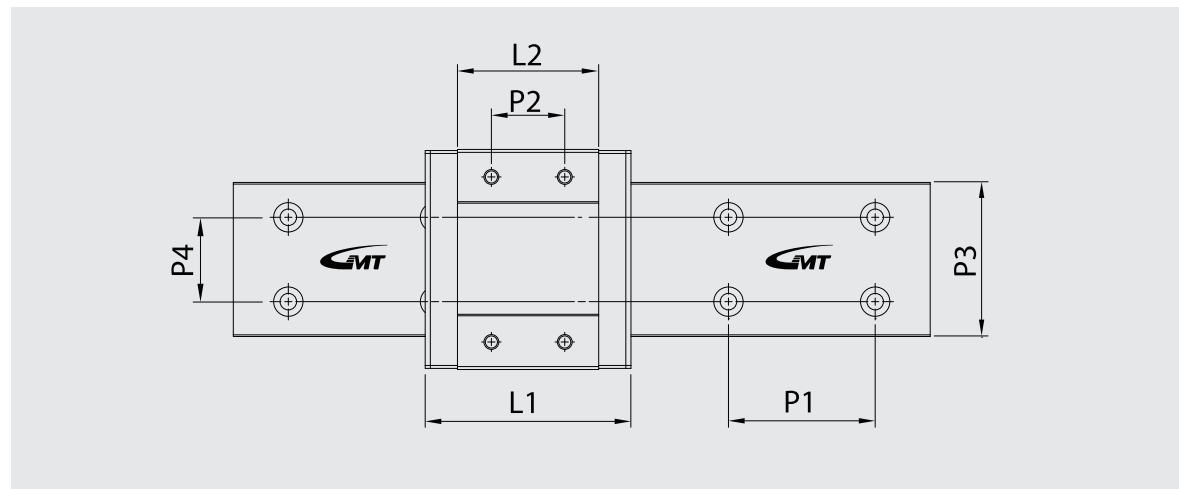
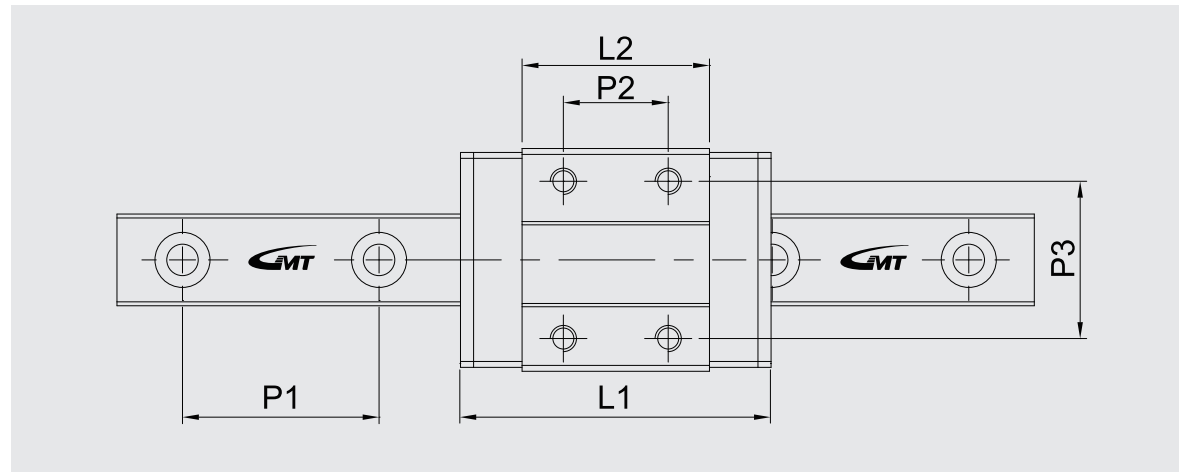
Standard Width Type



Model no.	Block Dimensions (mm)			Rated Loading (N)		Static Torque (Nm)			Weight	
	P2	P3	Mxh2	C	C0	M <sub>R</sub>	M <sub>p</sub>	M <sub>v</sub>	Block (g)	Rail (g/m)
GS05-N-N	-	8	M2x1.5	318	523	1.6	1.0	1.0	3	114
GS05-N-L	7	-	M2.6x2.0	447	855	2.3	2.0	2.0	4	114
GS07-N-N	8	12	M2x2.5	846	1330	4.9	3.1	3.1	8	211
GS07-N-L	13	12	M2x2.5	1245	2318	8.6	7.3	7.3	14	211
GS09-N-N	10	15	M3x3.0	1492	2370	11.1	6.1	6.1	18	295
GS09-N-L	16	15	M3x3.0	2028	3686	17.3	11.8	11.8	27	295
GS12-N-N	15	20	M3x3.5	2193	3292	20.4	12.3	12.3	33	590
GS12-N-L	20	20	M3x3.5	3078	5349	33.2	28.7	28.7	50	590
GS15-N-N	20	25	M3x5.5	3620	5311	41.4	25.7	25.7	60	911
GS15-N-L	25	25	M3x5.5	5083	8626	66.5	60.1	60.1	88	911

◎ Plug thickness 1.5 mm of each is not included in block length L1.

Wide Rail Type



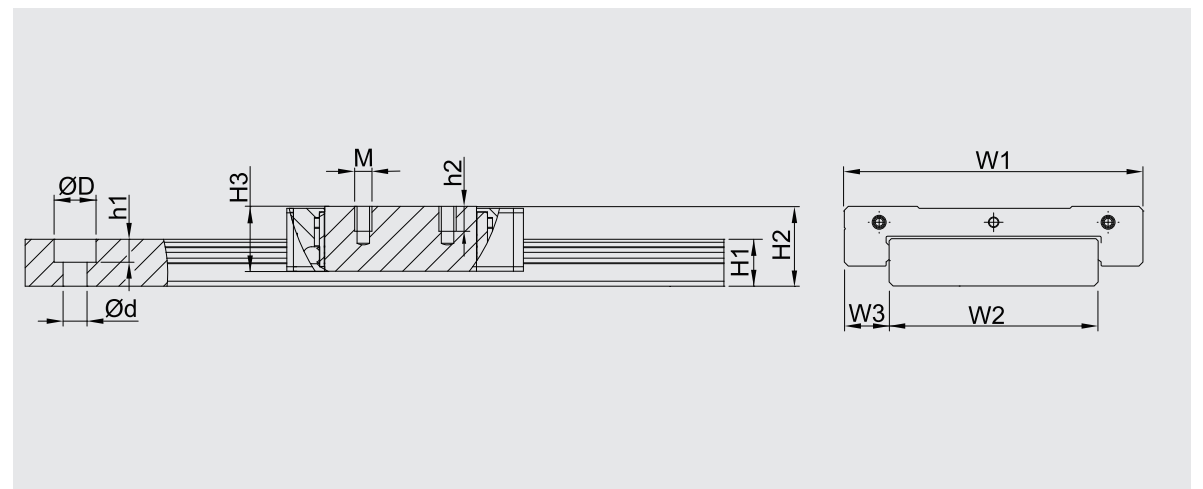
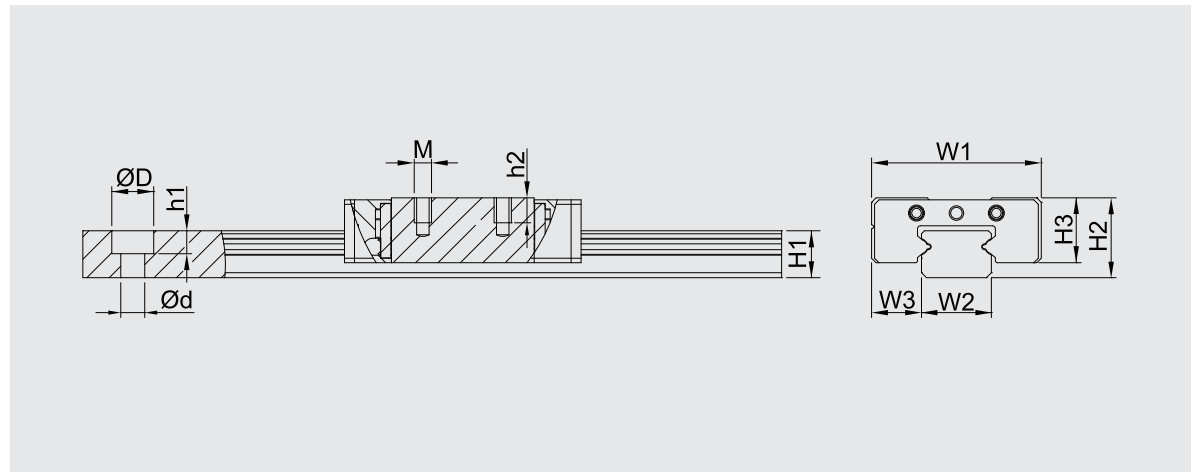
© Dimension P4 is referred to GS15-W-N / GS15-W-L models.

Unit : mm

Model no.	Assembled Dimensions		Rail Dimensions (mm)				ØDxØdxh1	Block Dimensions (mm)			
	H2	W3	W2	H1	P1	P4		W1	L1	L2	H3
GS05-W-N	6.5	3.5	10	4	20	23	5.5x3x1.6	17	21.1	15.1	5
GS05-W-L	6.5	3.5	10	4	20		5.5x3x1.6	17	27.2	21.2	5
GS07-W-N	9	5.5	14	5.2	30		6x3.5x3.5	25	31.6	21.2	7
GS07-W-L	9	5.5	14	5.2	30		6x3.5x3.5	25	40.5	30.1	7
GS09-W-N	12	6	18	7.3	30		6x3.5x4.5	30	39.1	27.9	8.6
GS09-W-L	12	6	18	7.3	30		6x3.5x4.5	30	50.7	39.5	8.6
GS12-W-N	14	8	24	8.5	40		8x4.5x4.5	40	44.4	31	10.1
GS12-W-L	14	8	24	8.5	40		8x4.5x4.5	40	59.4	46	10.1
GS15-W-N	16	9	42	9.5	40		8x4.5x4.5	60	55.3	38.5	12
GS15-W-L	16	9	42	9.5	40		8x4.5x4.5	60	74.4	57.6	12

© Plug thickness 1.5 mm of each is not included in block length L1.

Wide Rail Type










© Dimension P4 is referred to GS15-W-N / GS15-W-L models.

Model no.	Block Dimensions (mm)			Rated Loading (N)		Static Torque (Nm)			Weight	
	P2	P3	Mxh2	C	C0	M <sub>R</sub>	M <sub>P</sub>	M <sub>Y</sub>	Block (g)	Rail (g/m)
GS05-W-N	6.5	13	M2.5x1.5	451	855	4.4	2.1	2.1	6	274
GS05-W-L	11	13	M2.5x1.5	584	1249	6.5	3.9	3.9	8	274
GS07-W-N	10	19	M3x3	1121	1990	14.3	6.9	6.9	19	506
GS07-W-L	19	19	M3x3	1492	2983	21.5	14.2	14.2	26	506
GS09-W-N	12	21	M3x3	1929	3425	31.5	13.0	13.0	36	921
GS09-W-L	24	23	M3x3	2423	4741	43.6	25.4	25.4	50	921
GS12-W-N	15	28	M3x3.5	2912	4940	60.5	25.0	25.0	64	1443
GS12-W-L	28	28	M3x3.5	3867	7410	90.8	53.6	53.6	91	1443
GS15-W-N	20	45	M4x4.5	4812	7966	163.1	43.4	43.4	134	2762
GS15-W-L	35	45	M4x4.5	6389	11951	244.7	88.4	88.4	196	2762

© Plug thickness 1.5 mm of each is not included in block length L1.

# GR V 03 - 75 - S - H

Transmission Type	Rail Type		Roller (Ball) Diameter (mm)	Rail Length (mm)	Corrosion resistance Material	Precision Level
	V-Rails	D-Rails				
GR			03	75	S	H
GR : Roller SUS304 Retainer			00 : Ø1.0 01 : Ø1.5 02 : Ø2.0 03 : Ø3.0	Length selection as specification table	S:SUS440C + Ni	P:Precision Grade H:High Grade
GB : Ball SUS304 Retainer			04 : Ø4.0 06 : Ø6.0 09 : Ø9.0			
GR : Roller POM Retainer			P - POM Retainer 01 : Ø1.5 02 : Ø2.0 03 : Ø3.0 04 : Ø4.0 06 : Ø6.0			
GR : Roller Anti-Creep			02 : Ø2.0 03 : Ø3.0 04 : Ø4.0 06 : Ø6.0			

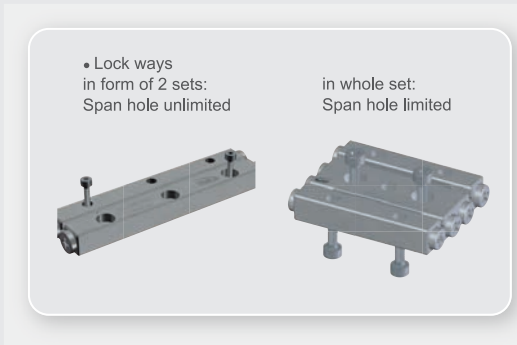
Model No.	Material			
	Rail	Retainer	Roller	Ball
GRV	SUS440C+Ni	SUS304	SUS440C	X
GRD		SUS304	SUS440C	X
GRV-S	SUS440C+Ni	SUS304	SUS440C	X
GRD-S		SUS304	SUS440C	X
GRVG-S	SUS440C+Ni	Brass + Ni	SUS440C	X
GRVP		POM	SUS440C	X
GRDP	SUS440C+Ni	Brass	SUS440C	X
GRVG		POM	SUS440C	X
GBV	SUS440C+Ni	Phosphor bronze (C5191)	X	SUS440C
GBD		Phosphor bronze (C5191)	X	SUS440C

GRV-S; GRD-S; GRVG-S Series are antitrust and corrosion resistant specification, and suitable for application to clean rooms.

© Rails have been finished with cryogenic treatment (Refer to P.0451)

## Selection Procedure- Crossed Roller Slide Rail Set

1. Rolling element retainer selection upon load request :
2. Heavy duty → roller, light duty → ball.
3. To decide "rolling element diameter"
4. Model type selected per installation way.
5. Specification confirmed.
6. Material selection per environment :  
SUSJ2 or SUS440C.



## GMT Crossed Roller Slide Rail Set

Composed of two pieces of stainless steel rails with V-grooves, been hardened and ground forming precisely, and rolling elements. Roller type moves in connective 90 degrees alternately to meet requirement of high parallelism and high flatness. In construction, rolling elements are transmitted in cross-contact by precise roller and V-grooves in rails, and in non circulation. Variation caused by friction resistance is little as well, even almost no difference between starting friction resistance and dynamic friction resistance in light duty. High accuracy moving and loading capacity could be performed.

© Comparison of roller and ball character ( Refer to P.0209~P.0210)

## Crossed Roller Slide Rail Set Application

Widely applied to accuracy moving device in heavy duty or light duty, in variety of measuring instrument, Printed Circuit Board drilling machine...etc, or slide table used in Optical Measuring Instrument, Precise Gauge in Optical Experiment, precision fine tuning Optical Stage, Operation Mechanism, Survey Device, precise positioning, quantitative movement, X-ray Device & Micro-hole EDM.

## Lubrication

Linear motion needs effective lubrication. Abrasion increase of rolling elements and life decrease would be caused in running without lubrication.

Function of lubrication :

- 1.Reduce friction between running parts greatly, so that it could prevent lock and decrease abrasion.
- 2.Forming oilfilm on rolling surface to reduce abrasion of metal medium to extend life of rolling elements.
- 3.Covering on metal surface to prevent rust.

© Relevant request of lubricant Compatibility (Refer to P.0450)

## Roller Type

- GRV / GRD / GRV-S / GRD-S / GRVP / GRDP are composed of precise crossed rollers with hardened steel formed precisely to be V-grooves rail guides to create linear motion element in high accuracy.
- Limited stroke linear motion system with high rigidity, mid-hard load and spry moment.

GRV (GRV-S)



GRD (GRD-S)



GRVP



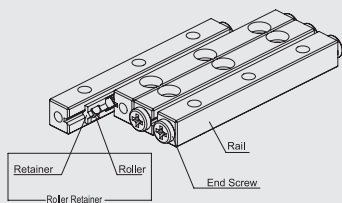
GRVG



GRDP

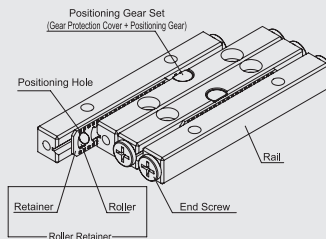


GRV (GRV-S / GRVP)



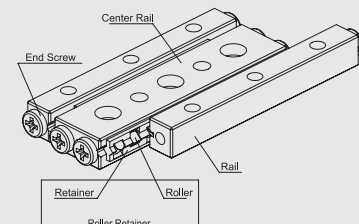
1 set =  
4 rails + 2 roller retainers  
+ 8 end screws

GRVG (GRVG-S)



1 set =  
4 rails + 2 roller retainers  
+ 8 end screws

GRD (GRD-S / GRDP)



1 set =  
1 center rail + 2 rails + 2 roller retainers  
+ 8 end screws

## Ball Type

- GBV&GBD are composed of ball retainer combined with precise ball arranged in smaller clearance, with the exclusive rails been heat treatment and cryogenic finish, then, forming precisely grinding V-grooves.
- Limited stroke linear motion system with low friction, light load and high accuracy.

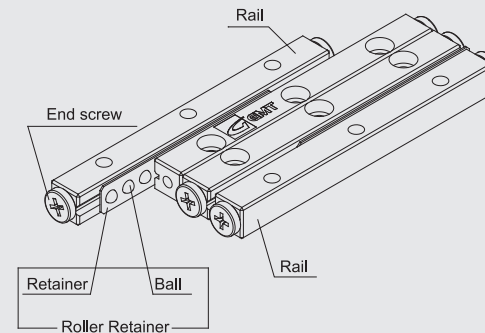
GBV



GBD

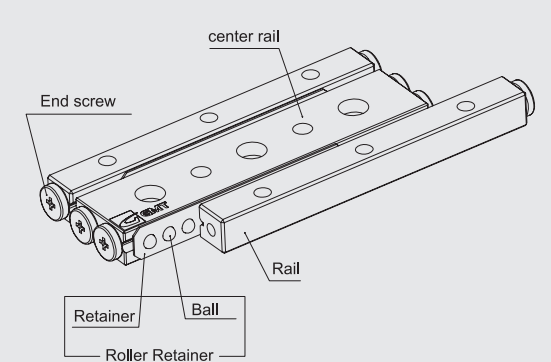


GBV



1 set =  
4 rails + 2 ball retainers + 8 end screws

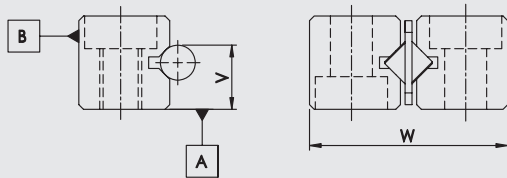
GBD



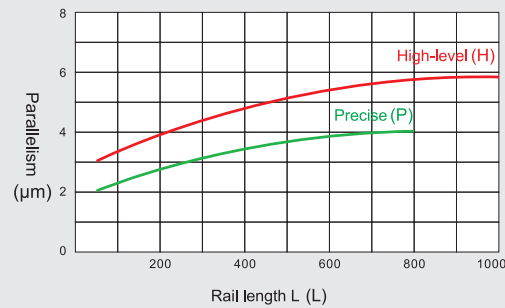
1 set =  
1 center rail + 2 rails + 2 ball retainers + 8 end screws

## Accuracy Specification

### Measure way



### Rail Length and Parallelism of Rolling Plane



### Accuracy Level

Item	Highlevel	Precise Level
	H	P
Parallelism of rolling plane to A&B	As shown drawing	
Allowable dimension tolerance to Height V	±0.02	±0.01
Paired mutual tolerance to Height V	0.01	0.005
Allowable tolerance to Width W dimension	0 -0.20	0 -0.10

## Advantages

### Suited To Micro-Movement

Due to tiny friction resistance, and almost no difference between starting friction resistance and dynamic friction resistance. In case of tiny movement could also maintain correct trace perform high precision on the linear motion mechanism.

### Stability in Low Speed

Even in case of light loading, its variation of friction resistance is also tiny, so stability from low to high speed could be kept.

### High Rigidity, High Loading Capacity

Comparison of roller and ball, larger contact area, less elasticity deformation, and non-circulation, great number of units rotating effectively, so high rigidity and large load capacity.

### Low Noise

GMT Crossed Roller Slide Rail Set has no circulated rotating, no noise occurred. Using roller slide way with roller retainer makes no noise caused by contact friction in between each rolling unit moves alternately, to ensure a quiet movement motion.

### Straightness

High-level(H)			Precise level(P)		
Length(mm)		Straightness (µm)	Length(mm)		Straightness (µm)
Above	Below		Above	Below	
—	50	2.0	—	50	1.0
50	100	2.0	50	100	1.0
100	160	3.0	100	160	2.0
160	310	3.0	160	310	2.0
310	510	4.0	310	510	3.0
510	600	4.0	510	600	3.0

( Ra 0.2 µm) ( Ra 0.1 µm)

In selecting slide rail set, stroke length and roller quantity shall be taken into account besides accuracy, load capacity and rated capacity.

### Maximum Stroke Length Calculation and Selection

(EX) In case of using cross roller side by side, which specification should be chosen?

Specification... GRV04  
Loading.....P=4000N  
Stroke length.....SW=120mm

SOL: Expected stroke length lower than 80% of rail stroke length, required stroke length could be calculated by formula as below.

$$SW \leq 0.8 S \quad S : \text{Stroke length, mm}$$

$$SW : \text{Stroke length in use, mm}$$

$$\text{If } SW=120\text{mm} \quad S \geq (1 / 0.8) \times 120=150$$

As Rail shown in GMT catalog the maximum stroke would be 154mm, product model no. is GRV04-200.

### Allowable Load Calculation

$$F=2 (Z / 2) FU \quad Z : \text{roller quantity}$$

$$Z / 2 : \text{integer, no remainder}$$

$$FU : \text{Load capacity (N) for each roller (as catalog statistic)}$$

SOL: Searched from catalog : Z=18 , FU = 390 , F = 2 ( 18 / 2 ) x 390 =7020 N

So allowed load F is bigger than loading P=4000 N

Load ratio =4000/7020\*100=56.98%

It's mid-load to product spec, model no.GRV04-200.

### Calculation of Retainer Length and Roller Quantity

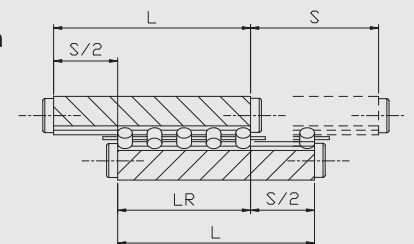
Guide length is decided by stroke length and max. slide length, and calculation depends on end screws and stopper specification. Distance between two end rollers in the retainer is to have stroke length deduct half of max. stroke length.

$$L_R = L - \frac{S}{2}$$

$L_R$  : rated distance between two rollers in ends of retainer mm

L : rail length mm

S : stroke length mm



### Load Capacity of Ball Bearing

Condition	Single-Axis Use	Single-Axis Vertical Use	Dual-Axes Abreast Use
Loading direction			
Basic dynamic load rating $\Sigma C$	$B^{3/4} * \cos \frac{\pi}{4} * C$	$B^{3/4} * 2^{7/9} * \cos \frac{\pi}{4} * C$	
Basic static load rating $\Sigma Co$	$B * \cos \frac{\pi}{4} * Co$	$B * 2^{7/9} * Co$	

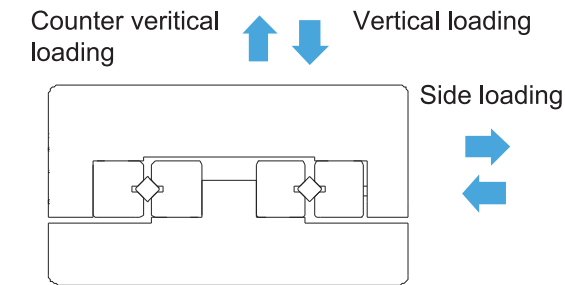
C : basic dynamic load rating (N)    Co : basic static load rating(N)  
B : ball quantity in sigle row

### Load Capacity of Roller

Condition	Single-Axis Use	Single-Axis Vertical Use	Dual-Axes Abreast Use
Loading direction			
Basic dynamic load rating $\Sigma C$	$C = (\frac{R}{2})^{3/4} * C$	$C = (\frac{R}{2})^{3/4} * C * 2^{7/9}$	
Basic static load rating $\Sigma Co$	$Co = \frac{R}{2} * Co$	$Co = R * Co$	

C : Basic dynamic load rating (N)    Co : Basic static load rating(N)  
R : Roller quantity in sigle row    R/2 : Integer, no remainder

### Safety Factory Fd in Different Loading Direction



Classification	Loading Direction	Fd
Basic Dynamic Loading	Vertical	1.0
	Side	0.9
	Counter vertical	0.8
Basic Static Loading	Vertical	1.0
	Side	0.9
	Counter vertical	0.8

### Safety Factor Fv in Variable Loading

Running Condition	Fv
Normal Running	1~0.5
Smooth Motion Required	0.5~0.25
Vibration, Shock	0.3~0.2

Common contact factor Fc in single rail

Quantity of Linear System Assembled in Single Shaft	Conact Factor Fc
1	1.00
2	0.81
3	0.72
4	0.66
5	0.61

### Life Calculation

Ball

$$L = (F_d * F_v * \frac{\Sigma C}{P})^{10/3} * 50$$

Roller

$$L = (F_d * F_v * \frac{\Sigma C}{P})^3 * 50$$

L : Usage life (km)    Fd : Safety factor in loading direction    P : Loading  
Fv : Safety factor in variable direction

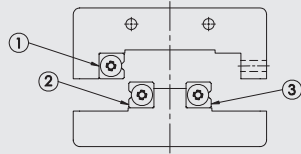
### Rail Stroke (S), Stroke in Use (Sw)

Stroke in use is less or equal to 80% of rail stroke     $Sw \leq 0.8S$

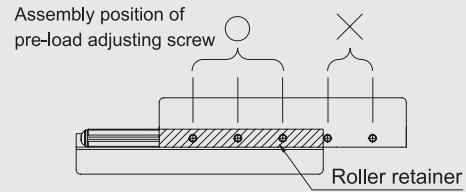
### Rail Length (L)

Rail length shall be higher than 1.5 times to stroke length in use, or 1.2 times to rail stroke length.  
 $L \geq 1.5Sw$     or     $L \geq 1.2S$

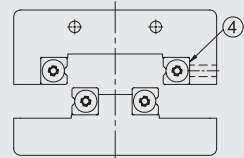
**1** Lay oil in low viscosity on contact planes, fix rail (code ①~③) with regular torque.



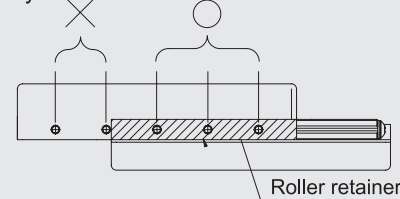
**5** Move table to end of one side, and lock pre-load adjusting screw slightly.



**2** Temporarily lock rail in adjusted side (code ④)

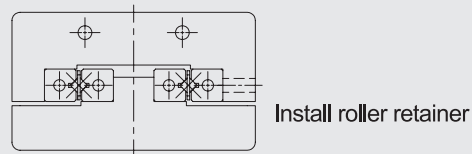


**6** Move table to the end of another side, as above description, and lock pre-load adjusting screw slightly.

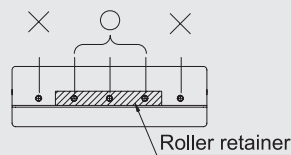


**3** Disassemble end screw from end of one side, and carefully insert roller retainer to nearby center of the rail.

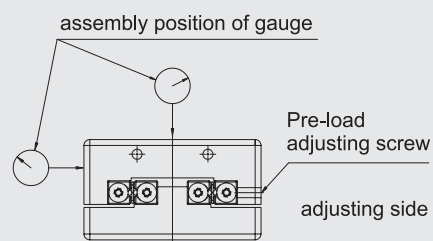
(3-1) Lock the end screw again.  
(3-2) Slowly move table back and forth to the rail end, and adjust roller retainer position to rail center.



**7** Return table back to center and lock pre-loads adjusting screw slightly. Adjust clearance of table to zero. In case of clearance free, move table back and forth, and index change performance on the fixed gauge would be smallest. Notice that, last adjustment of preloading is to set correct torque value with torque wrench and prepare to lock rail fix screw.

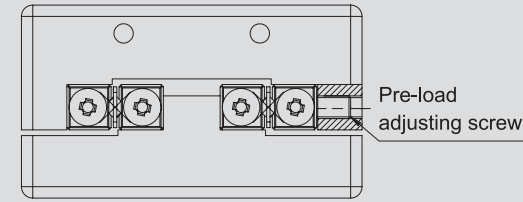


**4** Fix gauges both in center and side of the table (level plane)

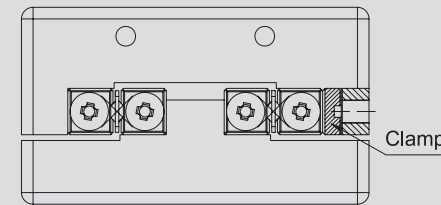


**8** Finally surely lock the rail (code ④). As steps of screw adjustment, move table back and forth, then have the table over roller retainer, and lock screws in order.

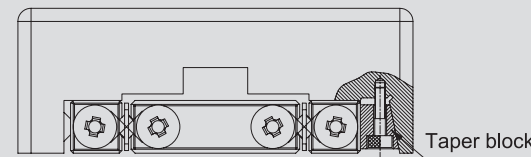
O : Loading on to pre-load adjusting screw.  
x : Loading off to pre-load adjusting screw.



In regular situation, use pre-load adjusting screw to adjust pre-load.



Use clamp to meet require of accuracy and rigidity.

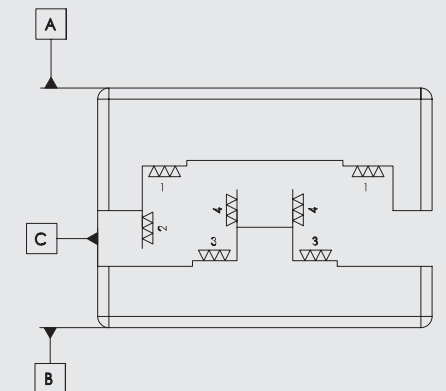


Use taper block to meet special requirement of high rigidity and high accuracy.

### Installation Precaution

- In order to let GMT Crossed Roller Slide Rail Set perform its excellent product function, it's recommended to install assembly planes with accuracy same as parallelism precisely processed in Crossed Roller Slide Rail Set.
- All burrs, dent, dust, miscellaneous objects on the rail of table and base need to be cleaned spotlessly and keep eyes on assembly operation application.
- Preload adjustment, too much preload would cause press damage to reduce life; it's normally recommended to use zero or tiny preload.

### Accuracy of intallation assembly plane.



Pre-Load Adjusting Screw Lock Torque (Unit/n·m)

Specification	Screw Size	Lock Torque
GRV1	M2	0.008
GRV2	M3	0.012
GRV3	M4	0.05
GRV4	M4	0.08
GRV6	M5	0.2
GRV9	M6	0.4

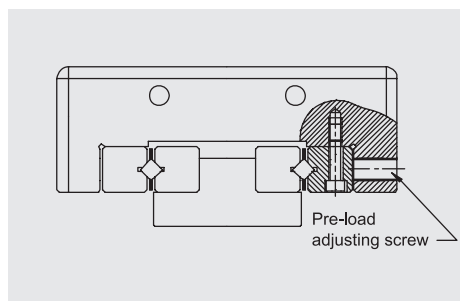
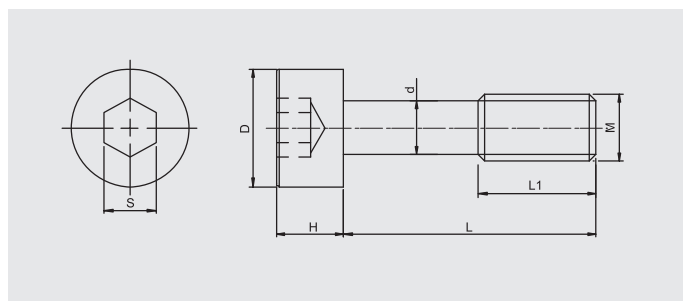
Fix Screw Lock Torque (Unit/n·m)

Specification	Lock Torque
M2	0.28
M3	1.02
M4	2.37
M5	4.77
M6	8.14
M8	19.69

(Use steel alloy screw)

Reserved Lock Screw

GMT Crossed Roller SlideRail Set, used in socket-head screw hole assembly, it's recommended to use reserved lock screw.



M (mm)	d (mm)	D (mm)	H (mm)	L (mm)	L1 (mm)	S (mm)	Slide way
M3	2.3	5	3	12	5	2.5	GRV3
M4	3.1	5.8	4	15	7	3	GRV4
M5	3.9	8	5	20	8	4	GRV6
M6	4.6	8.5	6	30	12	5	GRV9
M8	6.25	11.3	8	40	17	6	GRV12

Adjustment

Operating under situations of improper accuracy of assembly plane & preloadadjustment, would cause running in low accuracy and slip-out to affect usage life. Notice more in adjustment.

Retainer Deviation

GMT Crossed Roller Slide Rail Set, in high speed or off-center load, vibration load, might cause retainer deviation. Please keep enough space for stroke design, and not to have over pre-load set.

End Screw

Ends of Crossed Roller Slide Rail Set are located with end screws, but this funtion is to prevent retainer falling off, instead of stopping mechanism. If requirement of stopping function, it's recommended to design reserved block mechanism.

Careful Operation

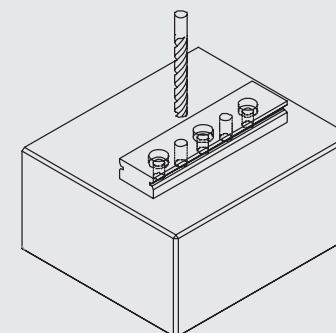
Any carelessness of falling off Crossed Roller Slide Rail Set or unusual collision and extruding, would appear identation made by contact of V-groove and rollers (ball), to cause non-smooth motion, affected accuracy. Please be more careful in operation.

Whole Set Match Principle

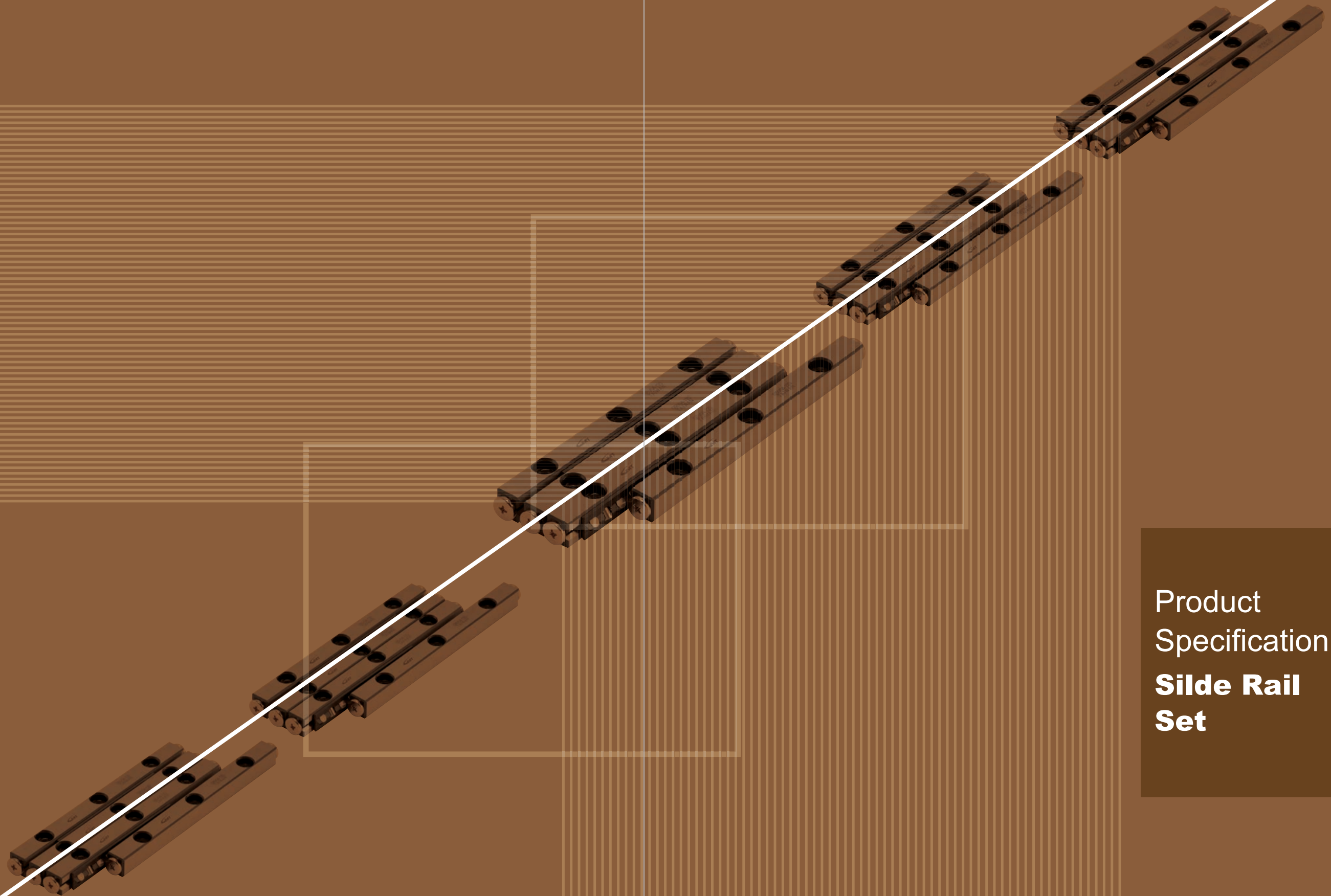
Crossed Roller Slide Rail Set accuracy is made by whole set as unit to precisely control it's error range. Different sets of slide rail set mixed in use may result in accuracy variation. Please notice more in assembling.

Locating Pin Hole

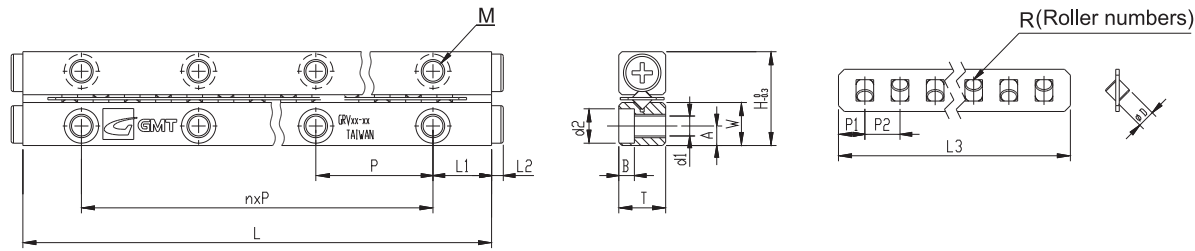
GMT Crossed Roller Slide Rail Set, application series - GRD&GBD series, locating pin hole processing needs to fix center rail on the plane, and drilling process. Be sure to clean all cutting bits out, and washing if necessary after pin hole process.



Locating pin hole processing



Product  
Specification  
**Slide Rail  
Set**



Specification

Model No.		Max. Stroke (mm)	Main Dimensions (mm)						Retainer Dimensions (mm)					
Standard	Antirust		H	T	W	L	n*p	L1	L2	ØD	L3	R	P1	P2
GRV00-20	GRV00-20-S	17	6.2	3	2.9	20	1*10	5	0.7	Ø1	12.4	6	1.3	2
GRV00-30	GRV00-30-S	21				30	2*10				16.4	8		
GRV00-40	GRV00-40-S	25				40	3*10				20.4	10		
GRV00-50	GRV00-50-S	29				50	4*10				24.4	12		
GRV00-60	GRV00-60-S	33				60	5*10				28.4	14		
GRV00-70	GRV00-70-S	37				70	6*10				32.4	16		
GRV00-80	GRV00-80-S	41				80	7*10				36.4	18		
GRV01-20	GRV01-20-S	13	8.5	4	3.9	20	1*10	5	1.3	Ø1.5	15.8	5	1.9	3
GRV01-30	GRV01-30-S	21				30	2*10				21.8	7		
GRV01-40	GRV01-40-S	29				40	3*10				27.8	9		
GRV01-50	GRV01-50-S	37				50	4*10				33.8	11		
GRV01-60	GRV01-60-S	45				60	5*10				39.8	13		
GRV01-70	GRV01-70-S	53				70	6*10				45.8	15		
GRV01-80	GRV01-80-S	61				80	7*10				51.8	17		
GRV02-30	GRV02-30-S	24	12	6	5.5	30	1*15	7.5	1.5	Ø2	21.6	5	2.8	4
GRV02-45	GRV02-45-S	30				45	2*15				33.6	8		
GRV02-60	GRV02-60-S	44				60	3*15				41.6	10		
GRV02-75	GRV02-75-S	58				75	4*15				49.6	12		
GRV02-90	GRV02-90-S	72				90	5*15				57.6	14		
GRV02-105	GRV02-105-S	86				105	6*15				65.6	16		
GRV02-120	GRV02-120-S	100				120	7*15				73.6	18		
GRV02-135	GRV02-135-S	106				135	8*15				85.6	21		
GRV02-150	GRV02-150-S	120				150	9*15				93.6	23		
GRV02-165	GRV02-165-S	134				165	10*15				101.6	25		
GRV02-180	GRV02-180-S	148				180	11*15				109.6	27		

Ordering Example :	GR	V	01	40	S	P
	Roller	V rail	Roller dia.	Rail length	Antirust	Precision Level

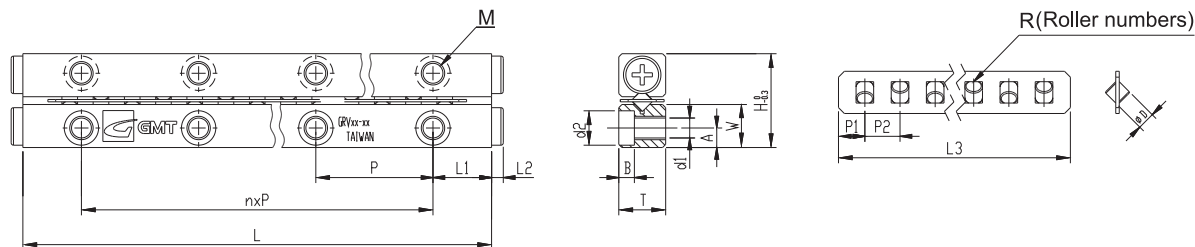


Material Specification

Material Component	Rail	Roller	Retainer
GRV	SUJ2		SUS304
GRV - S	SUS440C +Ni	SUS440C	

GRV-S No Surface finished to V-groove surface of the rail.

Mounting Dimensions (mm)					Load Per Roller			Weight (g) / 2 Pieces	
A	M	d1	d2	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard	Antirust
1.2	M1.4	1.1	2.1	4	62N/1pcs	72N/1pcs	24N/1pcs	2.4	2.6
								3.5	3.8
								4.6	5
								5.7	6.2
								6.8	7.4
								7.9	8.6
								9	9.8
1.8	M2	1.65	3	1.4	125N/1pcs	144N/1pcs	48N/1pcs	4	4
								6	7
								8	9
								10	11
								12	13
								14	16
								16	17
2.5	M3	2.55	4.4	2	293N/1pcs	292N/1pcs	97N/1pcs	13	14
								20	21
								26	28
								32	35
								39	42
								45	48
								51	55
								58	62
								64	69
								70	76
								77	82



Specification

Model No.		Max. Stroke (mm)	Main Dimensions (mm)							Retainer Dimensions (mm)				
Standard	Antirust		H	T	W	L	n*p	L1	L2	ØD	L3	R	P1	P2
GRV03-50	GRV03-50-S	34	18	8	8.3	50	1*25	12.5	2	Ø3	36.4	7	3.2	5
GRV03-75	GRV03-75-S	54				75	2*25				51.4	10		
GRV03-100	GRV03-100-S	74				100	3*25				66.4	13		
GRV03-125	GRV03-125-S	104				125	4*25				76.4	15		
GRV03-150	GRV03-150-S	124				150	5*25				91.4	18		
GRV03-175	GRV03-175-S	144				175	6*25				106.4	21		
GRV03-200	GRV03-200-S	164				200	7*25				121.4	24		
GRV03-225	GRV03-225-S	184				225	8*25				136.4	27		
GRV03-250	GRV03-250-S	204				250	9*25				151.4	30		
GRV03-275	GRV03-275-S	224				275	10*25				166.4	33		
GRV03-300	GRV03-300-S	244	300	11*25	181.4	36								
GRV04-80	GRV04-80-S	54	22	11	10	80	1*40	20	2	Ø4	57.6	8	4.3	7
GRV04-120	GRV04-120-S	92				120	2*40				78.6	11		
GRV04-160	GRV04-160-S	130				160	3*40				99.6	14		
GRV04-200	GRV04-200-S	154				200	4*40				127.6	18		
GRV04-240	GRV04-240-S	192				240	5*40				148.6	21		
GRV04-280	GRV04-280-S	230				280	6*40				169.6	24		
GRV04-320	GRV04-320-S	254				320	7*40				197.6	28		
GRV04-360	GRV04-360-S	292				360	8*40				218.6	31		
GRV04-400	GRV04-400-S	330				400	9*40				239.6	34		
GRV04-440	GRV04-440-S	354				440	10*40				267.6	38		
GRV04-480	GRV04-480-S	392	480	11*40	288.6	41								

Ordering Example : GR Roller - V V rail - 03 Roller dia. - 75 Rail length - S Antirust - P Precision Level



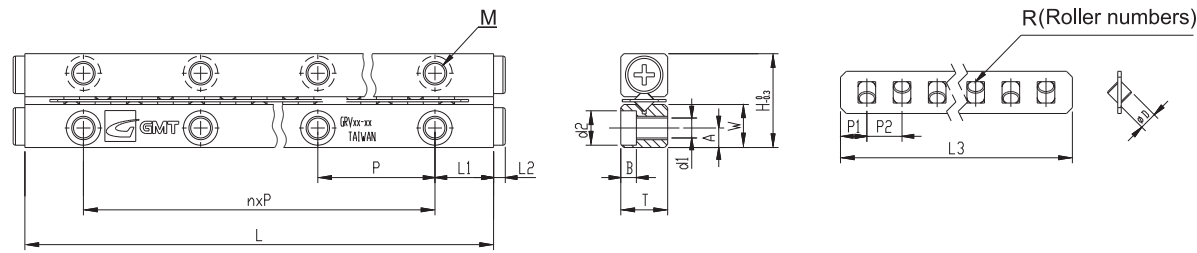
Material Specification

Material Component	Rail	Roller	Retainer
GRV	SUJ2		SUS304
GRV - S	SUS440C +Ni	SUS440C	

GRV-S No Surface finished to V-groove surface of the rail.

Mounting Dimensions (mm)					Load Per Roller			Weight (g) / 2 Pieces	
A	M	d1	d2	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard	Antirust
3.5	M4	3.3	6	3.1	638N/1pcs	761N/1pcs	254N/1pcs	46	49
								68	73
								90	97
								112	120
								134	144
								157	168
								179	191
								201	215
								223	239
								245	262
267	286								
4.5	M5	4.3	7.5	4.1	1230N/1pcs	1170N/1pcs	390N/1pcs	122	130
								180	193
								238	254
								296	317
								355	380
								413	442
								472	505
								530	568
								589	631
								647	694
706	756								

GRV / GRV - S



Specification

Model No.		Max. Stroke (mm)	Main Dimensions (mm)							Retainer Dimensions (mm)				
Standard	Antirust		H	T	W	L	n*p	L1	L2	ØD	L3	R	P1	P2
GRV06-100	GRV06-100-S	80	31	15	14	100	1*50	25	2	Ø6	64.8	7	5.4	9
GRV06-150	GRV06-150-S	108				150	2*50				100.8	11		
GRV06-200	GRV06-200-S	154				200	3*50				127.8	14		
GRV06-250	GRV06-250-S	200				250	4*50				154.8	17		
GRV06-300	GRV06-300-S	246				300	5*50				181.8	20		
GRV06-350	GRV06-350-S	274				350	6*50				217.8	24		
GRV06-400	GRV06-400-S	320				400	7*50				244.8	27		
GRV06-450	GRV06-450-S	366				450	8*50				271.8	30		
GRV06-500	GRV06-500-S	412				500	9*50				298.8	33		
GRV06-550	GRV06-550-S	458				550	10*50				325.8	36		
GRV06-600	GRV06-600-S	486	600	11*50	361.8	40								
GRV09-200	/	158	44	22	20.2	200	1*100	50	3.5	Ø9	130.0	9	9	14
GRV09-300	/	246				300	2*100				186.0	13		
GRV09-400	/	306				400	3*100				256.0	18		
GRV09-500	/	394				500	4*100				312.0	22		
GRV09-600	/	482				600	5*100				368.0	26		
GRV09-700	/	570				700	6*100				424.0	30		
GRV09-800	/	658				800	7*100				480.0	34		
GRV09-900	/	746				900	8*100				536.0	38		
GRV09-1000	/	806				1000	9*100				606.0	43		
GRV09-1100	/	894				1100	10*100				662.0	47		
GRV09-1200	/	982	1200	11*100	718.0	51								
GRV12-200	/	160	58	28	26.9	200	1*100	50	3.5	Ø12	130.0	7	11	18
GRV12-300	/	216				300	2*100				202.0	11		
GRV12-400	/	308				400	3*100				256.0	14		
GRV12-500	/	400				500	4*100				310.0	17		
GRV12-600	/	492				600	5*100				364.0	20		
GRV12-700	/	548				700	6*100				436.0	24		
GRV12-800	/	640				800	7*100				490.0	27		
GRV12-900	/	732				900	8*100				544.0	30		
GRV12-1000	/	824				1000	9*100				598.0	33		
GRV12-1100	/	916				1100	10*100				652.0	36		
GRV12-1200	/	972	1200	11*100	724.0	40								

Ordering Example :	GR	V	06	200	S	P
	Roller	V rail	Roller dia.	Rail length	Antirust	Precision Level

GRV / GRV - S



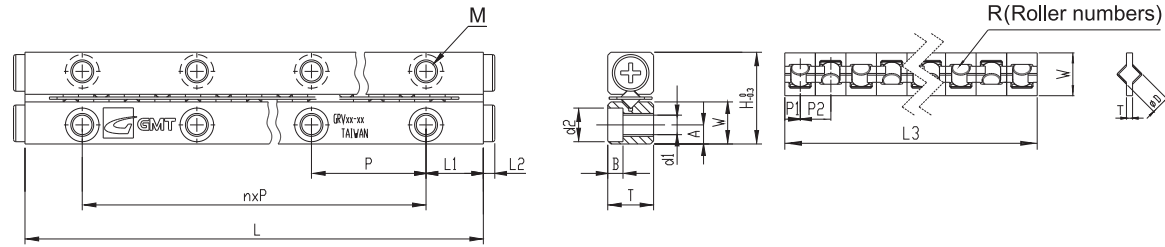
Material Specification

Material Component Model No.	Rail	Roller	Retainer
GRV	SUJ2		SUS304
GRV - S	SUS440C +Ni	SUS440C	

GRV-S No Surface finished to V-groove surface of the rail.

Mounting Dimensions (mm)					Load Per Roller			Weight (g) / 2 Pieces	
A	M	d1	d2	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard	Antirust
6	M6	5.3	9.5	5.2	2570N/1pcs	2632N/1pcs	877N/1pcs	287	311
								435	466
								577	618
								721	773
								864	925
								1006	1078
								1150	1232
								1292	1385
								1436	1539
								1579	1691
9	M8	6.8	10.5	6.2	7190N/1pcs	7274N/1pcs	2425N/1pcs	1267	/
								1891	/
								2509	/
								3133	/
								3756	/
								4628.1	/
								4915.2	/
								5525.3	/
								6140.9	/
								6751.1	/
12	M10	8.5	13.5	8.2	14700N/1pcs	13187N/1pcs	4396N/1pcs	2114	/
								3161	/
								4195	/
								5242	/
								6276	/
								7734.8	/
								8829.2	/
								9261.2	/
								10281.7	/
								11302.3	/
12336.4	/								

GRVP



Specification

Model No.	Max. Stroke (mm)	Main Dimensions (mm)						Retainer Dimensions (mm)					
		H	T	W	L	n*p	L1	L2	ØD	L3	R	P1	P2
GRVP01-20	8.4	8.5	4	3.9	20	1*10	5	1.3	Ø1.5	15.8	5	1.9	3
GRVP01-30	16.4				30	2*10				21.8	7		
GRVP01-40	24.4				40	3*10				27.8	9		
GRVP01-50	32.4				50	4*10				33.8	11		
GRVP01-60	40.4				60	5*10				39.8	13		
GRVP01-70	48.4				70	6*10				45.8	15		
GRVP01-80	56.4				80	7*10				51.8	17		
GRVP02-30	16.8	12	6	5.5	30	1*15	7.5	1.5	Ø2	21.6	5	2.8	4
GRVP02-45	22.8				45	2*15				33.6	8		
GRVP02-60	36.8				60	3*15				41.6	10		
GRVP02-75	50.8				75	4*15				49.6	12		
GRVP02-90	64.8				90	5*15				57.6	14		
GRVP02-105	78.8				105	6*15				65.6	16		
GRVP02-120	92.8				120	7*15				73.6	18		
GRVP02-135	98.8				135	8*15				85.6	21		
GRVP02-150	112.8				150	9*15				93.6	23		
GRVP02-165	126.8				165	10*15				101.6	25		
GRVP02-180	140.8				180	11*15				109.6	27		
GRVP03-50	27.2	18	8	8.3	50	1*25	12.5	2	Ø3	36.4	7	3.2	5
GRVP03-75	47.2				75	2*25				51.4	10		
GRVP03-100	67.2				100	3*25				66.4	13		
GRVP03-125	97.2				125	4*25				76.4	15		
GRVP03-150	117.2				150	5*25				91.4	18		
GRVP03-175	137.2				175	6*25				106.4	21		
GRVP03-200	157.2				200	7*25				121.4	24		
GRVP03-225	177.2				225	8*25				136.4	27		
GRVP03-250	197.2				250	9*25				151.4	30		
GRVP03-275	217.2				275	10*25				166.4	33		
GRVP03-300	237.2				300	11*25				181.4	36		

Ordering Example :	GR Roller	-	V V rail	-	P POM Retainer	-	06 Roller dia.	-	100 Rail length	-	P Precision Level
--------------------	-----------	---	----------	---	----------------	---	----------------	---	-----------------	---	-------------------

GRVP

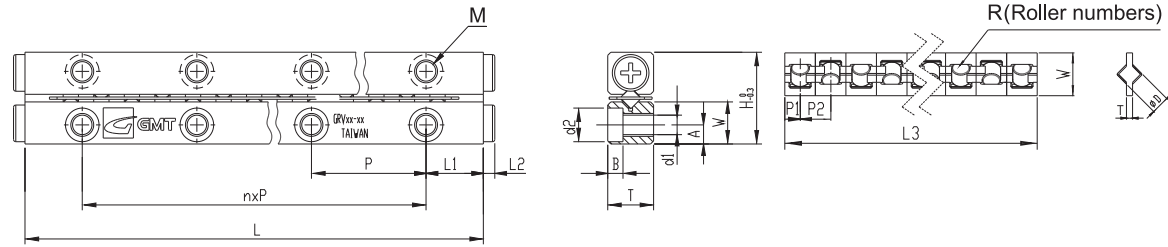


Material Specification

Material Component	Rail	Roller	Retainer
Model No.	SUJ2		POM
GRVP	SUJ2		POM

Mounting Dimensions (mm)					Load Per Roller			Weight (g) / 2 Pieces
A	M	d1	d2	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard
1.8	M2	1.65	3	1.4	125N/1pcs	144N/1pcs	48N/1pcs	4.0
								6.0
								8.0
								10.0
								12.0
								14.0
								16.0
2.5	M3	2.55	4.4	2	293N/1pcs	292N/1pcs	97N/1pcs	13.0
								20.0
								26.0
								32.0
								39.0
								45.0
								51.0
								58.0
								64.0
								70.0
								77.0
3.5	M4	3.3	6	3.1	638N/1pcs	761N/1pcs	254N/1pcs	46.0
								68.0
								90.0
								112.0
								134.0
								157.0
								179.0
								201.0
								223.0
								245.0
								267.0

GRVP



Specification

Model No.	Max. Stroke (mm)	Main Dimensions (mm)						Retainer Dimensions (mm)					
		H	T	W	L	n*p	L1	L2	ØD	L3	R	P1	P2
GRVP04-80	44.8	22	11	10	80	1*40	20	2	Ø4	57.6	8	4.3	7
GRVP04-120	82.8				120	2*40				78.6	11		
GRVP04-160	120.8				160	3*40				99.6	14		
GRVP04-200	144.8				200	4*40				127.6	18		
GRVP04-240	182.8				240	5*40				148.6	21		
GRVP04-280	220.8				280	6*40				169.6	24		
GRVP04-320	244.8				320	7*40				197.6	28		
GRVP04-360	282.8				360	8*40				218.6	31		
GRVP04-400	320.8				400	9*40				239.6	34		
GRVP04-440	344.8				440	10*40				267.6	38		
GRVP04-480	382.8	480	11*40	288.6	41								
GRVP06-100	70.4	31	15	14	100	1*50	25	2	Ø6	64.8	7	5.4	9
GRVP06-150	98.4				150	2*50				100.8	11		
GRVP06-200	144.4				200	3*50				127.8	14		
GRVP06-250	190.4				250	4*50				154.8	17		
GRVP06-300	236.4				300	5*50				181.8	20		
GRVP06-350	264.4				350	6*50				217.8	24		
GRVP06-400	310.4				400	7*50				244.8	27		
GRVP06-450	356.4				450	8*50				271.8	30		
GRVP06-500	402.4				500	9*50				298.8	33		
GRVP06-550	448.4				550	10*50				325.8	36		
GRVP06-600	476.4	600	11*50	361.8	40								

Ordering Example : GR Roller - V rail - POM Retainer - 06 Roller dia. - 100 Rail length - P Precision Level

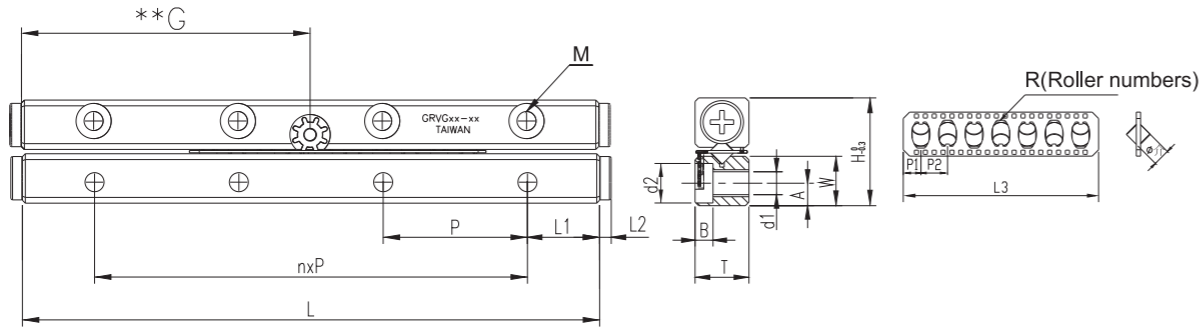
GRVP



Material Specification

Material	Component	Rail	Roller	Retainer
GRVP	Model No.	SUJ2		POM

Mounting Dimensions (mm)					Load Per Roller			Weight (g) / 2 Pieces
A	M	d1	d2	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard
4.5	M5	4.3	7.5	4.1	1230N/1pcs	1170N/1pcs	390N/1pcs	122
								180
								238
								296
								355
								413
								472
								530
								589
								647
706								
6	M6	5.3	9.5	5.2	2570N/1pcs	2632N/1pcs	877N/1pcs	287
								435
								577
								721
								864
								1006
								1150
								1292
								1436
								1579
1273								



If n is a dual number,  
the distance of \*\*G is :  
 $GRVG02\text{-}G = (L / 2) - 7.5$

Specification

Model No.		Max. Stroke (mm)	Main Dimensions (mm)								Retainer Dimensions (mm)					
Standard	Antirust		G	H	T	W	L	n*p	L1	L2	ØD	L3	R	P1	P2	
GRVG02-30	GRVG02-30-S	22	15	12	6	55	30	1*15	7.5	1.5	Ø2	21	5	2.5	4.2	
GRVG02-45	GRVG02-45-S	18	15				45	2*15				38	9			
GRVG02-60	GRVG02-60-S	40	30				60	3*15				42	10			
GRVG02-75	GRVG02-75-S	52	30				75	4*15				51	12			
GRVG02-90	GRVG02-90-S	74	45				90	5*15				55	13			
GRVG02-105	GRVG02-105-S	78	45				105	6*15				67.5	16			
GRVG02-120	GRVG02-120-S	100	60				120	7*15				72	17			
GRVG02-135	GRVG02-135-S	106	60				135	8*15				84.5	20			
GRVG02-150	GRVG02-150-S	127	75				150	9*15				88.5	21			
GRVG02-165	GRVG02-165-S	140	75				165	10*15				97	23			
GRVG02-180	GRVG02-180-S	144	90	180	11*15	109.5	26									



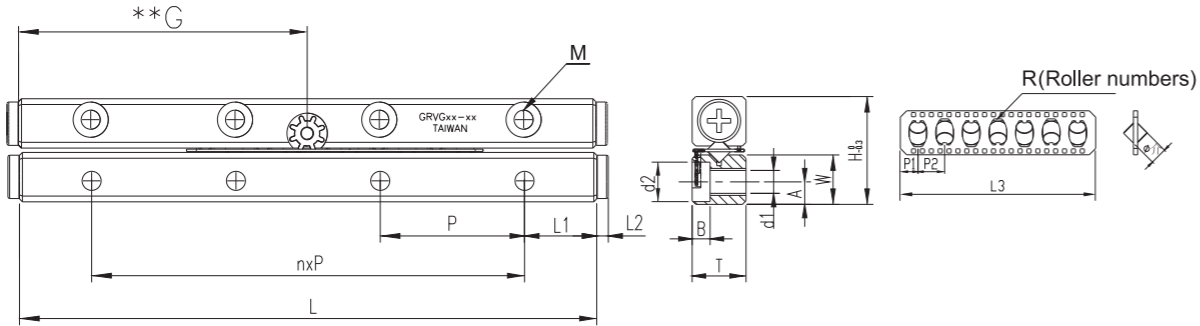
Material Specification

Material Component	Rail	Roller	Retainer	Gear	Gear Cover
GRVG	SUJ2		Brass	Brass	SUS304
GRVG - S	SUS440C +Ni	SUS440C	Brass +Ni	Brass +Ni	

GRVG - S No Surface finished to V-groove surface of the rail

Mounting Dimensions (mm)					Load Per Roller			Weight (g) / 2 Pieces	
A	M	d1	d2	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard	Antirust
2.5	M3	2.6	4.4	2	293N/1pcs	292N/1pcs	97N/1pcs	13	14
								20	21
								26	28
								32	35
								39	42
								45	48
								51	55
								58	62
								64	69
								70	76
								77	82

Ordering Example :	GR	V	G	02	30	S	P
	Roller	V rail	Anti-Creep	Roller dia.	Rail length	Antirust	Precision Level



If n is a dual number,  
the distance of \*\*G is :  
GRVG03之G= (L / 2) - 7.5

Specification

Model No.		Max. Stroke (mm)	Main Dimensions (mm)								Retainer Dimensions (mm)					
Standard	Antirust		G	H	T	W	L	n*p	L1	L2	ØD	L3	R	P1	P2	
GRVG03-50	GRVG03-50-S	34	25	18	8	83	50	1*25	12.5	2	Ø3	34	8	2.45	4.2	
GRVG03-75	GRVG03-75-S	50	30				75	2*25				51	12			
GRVG03-100	GRVG03-100-S	76	50				100	3*25				63.5	15			
GRVG03-125	GRVG03-125-S	100	55				125	4*25				76	18			
GRVG03-150	GRVG03-150-S	125	75				150	5*25				88.5	21			
GRVG03-175	GRVG03-175-S	150	80				175	6*25				101	24			
GRVG03-200	GRVG03-200-S	166	100				200	7*25				118	28			
GRVG03-225	GRVG03-225-S	182	105				225	8*25				135	32			
GRVG03-250	GRVG03-250-S	208	125				250	9*25				147.5	35			
GRVG03-275	GRVG03-275-S	216	130				275	10*25				168.5	40			
GRVG03-300	GRVG03-300-S	248	150	300	11*25	178	42									



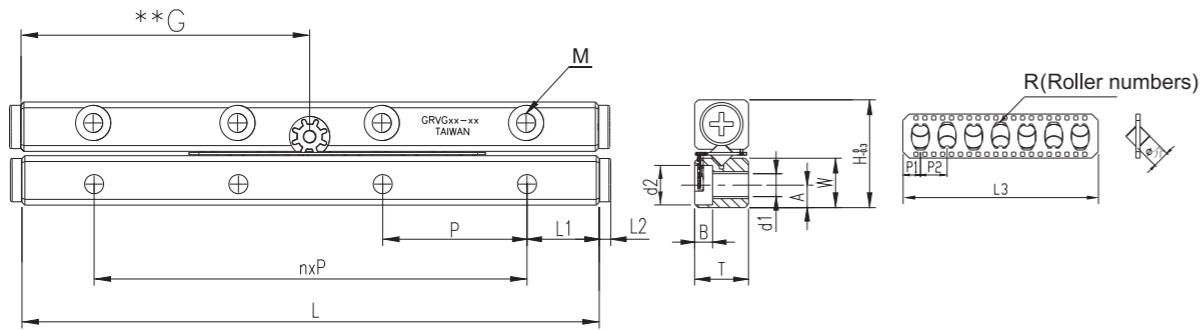
Material Specification

Material Component	Rail	Roller	Retainer	Gear	Gear Cover
Model No.					
GRVG	SUJ2		Brass	Brass	SUS304
GRVG - S	SUS440C +Ni	SUS440C	Brass +Ni	Brass +Ni	

GRVG - S No Surface finished to V-groove surface of the rail

Mounting Dimensions (mm)					Load Per Roller			Weight (g) / 2 Pieces	
A	M	d1	d2	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard	Antirust
3.5	M4	3.3	6	3.1	638N/1pcs	761N/1pcs	254N/1pcs	46	49
								68	73
								90	97
								112	120
								134	144
								157	168
								179	191
								201	215
								223	239
								245	262
								267	286

Ordering Example :	GR	V	G	03	50	S	P
	Roller	V rail	Anti-Creep	Roller dia.	Rail length	Antirust	Precision Level



If n is a dual number,  
the distance of \*\*G is :  
 $GRVG04\text{-}G = (L / 2) - 10$

Specification

Model No.		Max. Stroke (mm)	Main Dimensions (mm)								Retainer Dimensions (mm)				
Standard	Antirust		G	H	T	W	L	n*p	L1	L2	ØD	L3	R	P1	P2
GRVG04-80	GRVG04-80-S	62	40	22	11	10	80	1*40	20	2	Ø4	52	8	3.97	6.3
GRVG04-120	GRVG04-120-S	92	50				120	2*40				77	12		
GRVG04-160	GRVG04-160-S	134	80				160	3*40				96	15		
GRVG04-200	GRVG04-200-S	164	90				200	4*40				121	19		
GRVG04-240	GRVG04-240-S	194	120				240	5*40				146	23		
GRVG04-280	GRVG04-280-S	236	130				280	6*40				165	26		
GRVG04-320	GRVG04-320-S	252	160				320	7*40				196	31		
GRVG04-360	GRVG04-360-S	308	170				360	8*40				209	33		
GRVG04-400	GRVG04-400-S	338	200				400	9*40				234	37		
GRVG04-440	GRVG04-440-S	355	210				440	10*40				266	42		
GRVG04-480	GRVG04-480-S	396	240				480	11*40				285	45		



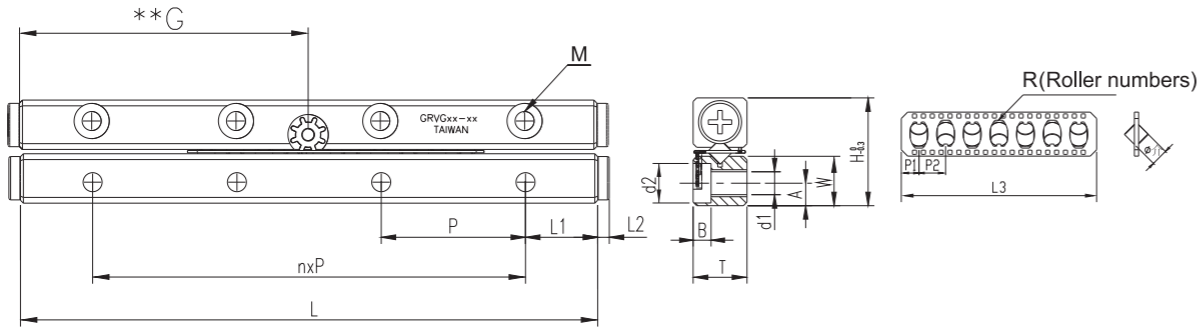
Material Specification

Material Component	Rail	Roller	Retainer	Gear	Gear Cover
Model No.					
GRVG	SUJ2		Brass	Brass	SUS304
GRVG - S	SUS440C +Ni	SUS440C	Brass +Ni	Brass +Ni	

GRVG - S No Surface finished to V-groove surface of the rail

Mounting Dimensions (mm)					Load Per Roller			Weight (g) / 2 Pieces	
A	M	d1	d2	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard	Antirust
4.5	M5	4.3	7.5	4.1	1230N/1pcs	1170N/1pcs	390N/1pcs	122	130
								180	193
								238	254
								296	317
								355	380
								413	442
								472	505
								530	568
								589	631
								647	694
								706	756

Ordering Example :	GR	V	G	04	80	S	P
	Roller	V rail	Anti-Creep	Roller dia.	Rail length	Antirust	Precision Level



If n is a dual number,  
the distance of \*\*G is :  
 $GRVG06-G = (L / 2) - 10$

### Specification

Model No.		Max. Stroke (mm)	Main Dimensions (mm)								Retainer Dimensions (mm)					
Standard	Antirust		G	H	T	W	L	n*p	L1	L2	ØD	L3	R	P1	P2	
GRVG06-100	GRVG06-100-S	86	50	31	15	14	100	1*50	25	2	Ø6	61	7	5.3	8.9	
GRVG06-150	GRVG06-150-S	118	65				150	2*50				94	11			
GRVG06-200	GRVG06-200-S	168	80				200	3*50				119	14			
GRVG06-250	GRVG06-250-S	212	115				250	4*50				148	17			
GRVG06-300	GRVG06-300-S	260	120				300	5*50				174	20			
GRVG06-350	GRVG06-350-S	292	165				350	6*50				208	24			
GRVG06-400	GRVG06-400-S	340	160				400	7*50				234	27			
GRVG06-450	GRVG06-450-S	388	215				450	8*50				260	30			
GRVG06-500	GRVG06-500-S	436	200				500	9*50				285	33			
GRVG06-550	GRVG06-550-S	484	265				550	10*50				311	36			
GRVG06-600	GRVG06-600-S	516	300	600	11*50	346	40									



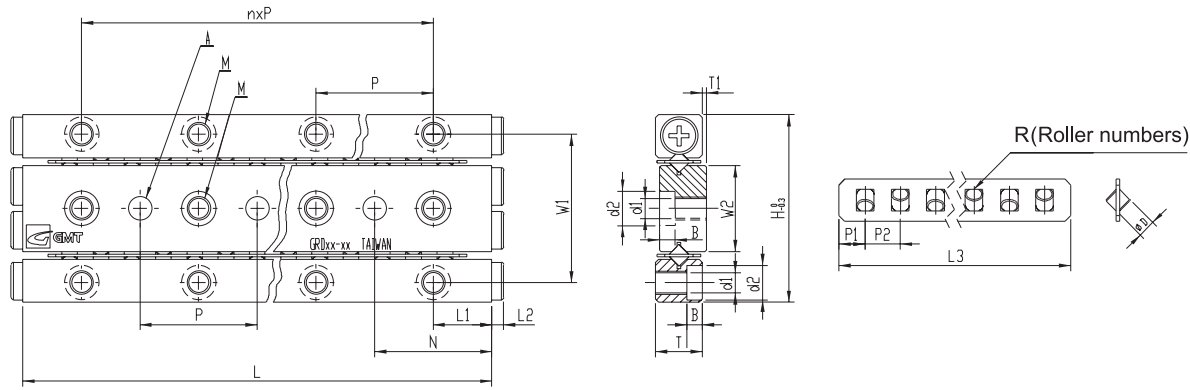
### Material Specification

Material Component	Rail	Roller	Retainer	Gear	Gear Cover
GRVG	SUJ2	Brass	Brass	SUS304	
GRVG - S	SUS440C +Ni	SUS440C	Brass +Ni	Brass +Ni	

GRVG - S No Surface finished to V-groove surface of the rail

Mounting Dimensions (mm)					Load Per Roller			Weight (g) / 2 Pieces	
A	M	d1	d2	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard	Antirust
6	M6	5.3	9.5	5.2	2570N/1pcs	2632N/1pcs	877N/1pcs	287	311
								435	466
								577	618
								721	773
								864	925
								1006	1078
								1150	1232
								1292	1385
								1436	1539
								1579	1691
								1273	1846

Ordering Example :	GR	V	G	06	100	S	P
	Roller	V rail	Anti-Creep	Roller dia.	Rail length	Antirust	Precision Level



Specification

Model No.		Max. Stroke (mm)	Main Dimensions (mm)								Retainer Dimensions (mm)					
Standard	Antirust		H	T	L	n*p	W1	W2	L1	L2	N	ØD	L3	R	P1	P2
GRD01-20	GRD01-20-S	13	17	4	20	1*10	13.4	7.8	5	1.3	10	Ø1.5	15.8	5	1.9	3
GRD01-30	GRD01-30-S	21			30	2*10							21.8	7		
GRD01-40	GRD01-40-S	29			40	3*10							27.8	9		
GRD01-50	GRD01-50-S	37			50	4*10							33.8	11		
GRD01-60	GRD01-60-S	45			60	5*10							39.8	13		
GRD01-70	GRD01-70-S	53			70	6*10							45.8	15		
GRD01-80	GRD01-80-S	61			80	7*10							51.8	17		
GRD02-30	GRD02-30-S	24	24	6	30	1*15	19	11	7.5	1.5	15	Ø2	21.6	5	2.8	4
GRD02-45	GRD02-45-S	30			45	2*15							33.6	8		
GRD02-60	GRD02-60-S	44			60	3*15							41.6	10		
GRD02-75	GRD02-75-S	58			75	4*15							49.6	12		
GRD02-90	GRD02-90-S	72			90	5*15							57.6	14		
GRD02-105	GRD02-105-S	86			105	6*15							65.6	16		
GRD02-120	GRD02-120-S	100			120	7*15							73.6	18		
GRD02-135	GRD02-135-S	106			135	8*15							85.6	21		
GRD02-150	GRD02-150-S	120			150	9*15							93.6	23		
GRD02-165	GRD02-165-S	134			165	10*15							101.6	25		
GRD02-180	GRD02-180-S	148			180	11*15							109.6	27		

Ordering Example :	GR	D	01	40	S	P
	Roller	D rail	Roller dia.	Rail length	Antirust	Precision Level

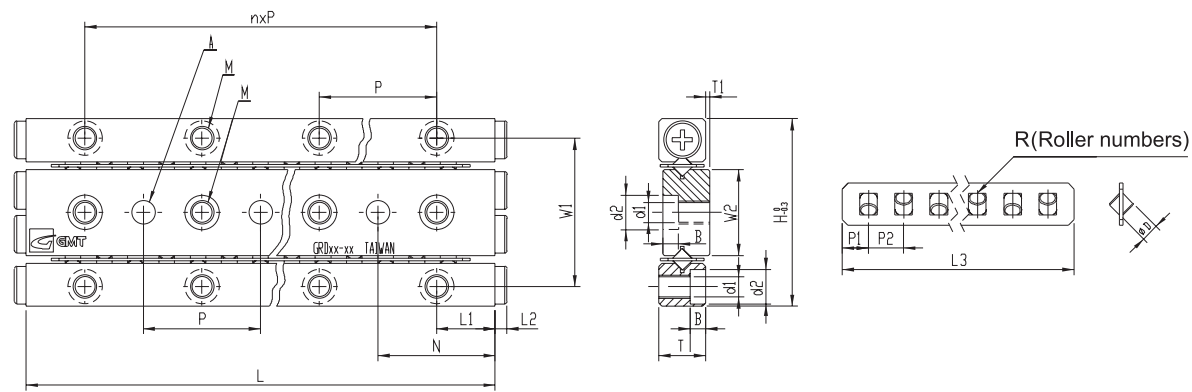


Material Specification

Material Component Model No.	Rail	Roller	Retainer
GRD	SUJ2		SUS304
GRD - S	SUS440C +Ni	SUS440C	

GRD-S No Surface finished to V-groove surface of the rail.

Mounting Dimensions (mm)						Load Rer Roller			Weight (g) / 2 Pieces	
T1	M	d1	d2	A	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard	Antirust
0.5	M2	1.65	3	2 <sup>+0.010</sup> <sub>0</sub>	1.4	125N/1pcs	144N/1pcs	48N/1pcs	9	9
									13	13
									17	18
									20	22
									24	26
									29	31
33	35									
0.5	M3	2.55	4.4	3 <sup>+0.010</sup> <sub>0</sub>	2	293N/1pcs	292N/1pcs	97N/1pcs	27	29
									40	43
									53	57
									66	70
									78	84
									91	98
									104	111
									117	125
130	139									
142	153									
155	166									



Specification

Model No.		Max. Stroke (mm)	Main Dimensions (mm)									Retainer Dimensions (mm)				
Standard	Antirust		H	T	L	n*p	W1	W2	L1	L2	N	ØD	L3	R	P1	P2
GRD03-50	GRD03-50-S	34	36	8	50	1*25	29	16.6	12.5	3	25	Ø3	36.4	7	3.2	5
GRD03-75	GRD03-75-S	54			75	2*25							51.4	10		
GRD03-100	GRD03-100-S	74			100	3*25							66.4	13		
GRD03-125	GRD03-125-S	104			125	4*25							76.4	15		
GRD03-150	GRD03-150-S	124			150	5*25							91.4	18		
GRD03-175	GRD03-175-S	144			175	6*25							106.4	21		
GRD03-200	GRD03-200-S	164			200	7*25							121.4	24		
GRD03-225	GRD03-225-S	184			225	8*25							136.4	27		
GRD03-250	GRD03-250-S	204			250	9*25							151.4	30		
GRD03-275	GRD03-275-S	224			275	10*25							166.4	33		
GRD03-300	GRD03-300-S	244	300	11*25	181.4	36										
GRD04-80	GRD04-80-S	54	44	11	80	1*40	35	20	20	2	40	Ø4	57.6	8	4.3	7
GRD04-120	GRD04-120-S	92			120	2*40							78.6	11		
GRD04-160	GRD04-160-S	130			160	3*40							99.6	14		
GRD04-200	GRD04-200-S	154			200	4*40							127.6	18		
GRD04-240	GRD04-240-S	192			240	5*40							148.6	21		
GRD04-280	GRD04-280-S	230			280	6*40							169.6	24		
GRD04-320	GRD04-320-S	254			320	7*40							197.6	28		
GRD04-360	GRD04-360-S	292			360	8*40							218.6	31		
GRD04-400	GRD04-400-S	330			400	9*40							239.6	34		
GRD04-440	GRD04-440-S	354			440	10*40							267.6	38		
GRD04-480	GRD04-480-S	392	480	11*40	288.6	41										

Ordering Example : 

GR	D	03	75	S	P
Roller	D rail	Roller dia.	Rail length	Antirust	Precision Level



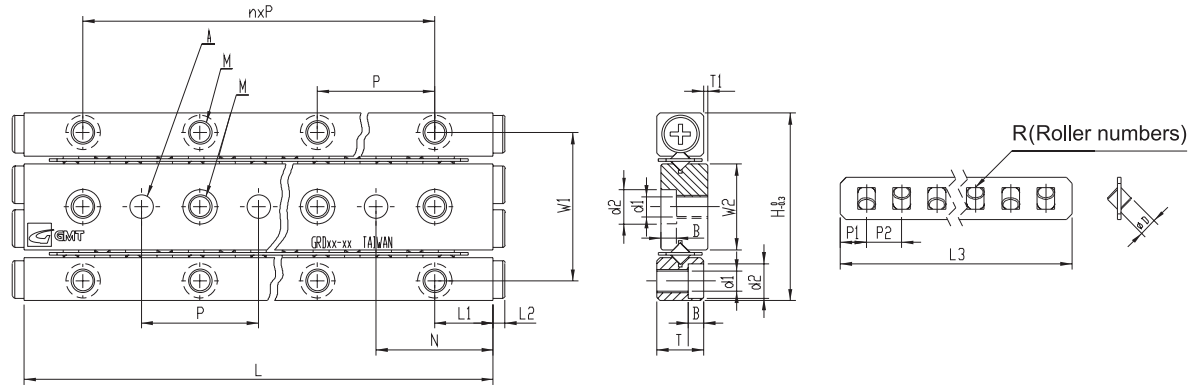
Material Specification

Material Component	Rail	Roller	Retainer
GRD	SUJ2		SUS304
GRD - S	SUS440C +Ni	SUS440C	

GRD-S No Surface finished to V-groove surface of the rail.

Mounting Dimensions (mm)						Load Per Roller			Weight (g) / 2 Pieces	
T1	M	d1	d2	A	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard	Antirust
0.5	M4	3.3	6	4 <sup>+0.012</sup> <sub>0</sub>	3.1	638N/1pcs	761N/1pcs	254N/1pcs	94	101
									139	148
									183	196
									228	244
									273	292
									317	340
									362	387
									406	435
									451	483
									496	531
540	579									
0.5	M5	4.3	7.5	5 <sup>+0.012</sup> <sub>0</sub>	4.1	1230N/1pcs	1170N/1pcs	390N/1pcs	248	265
									366	392
									484	518
									602	645
									722	773
									840	900
									959	1028
									1079	1156
									1197	1283
									1316	1411
1434	1538									

GRDP



Specification

Model No.	Max. Stroke (mm)	Main Dimensions (mm)									Retainer Dimensions (mm)				
		H	T	L	n*p	W1	W2	L1	L2	N	ØD	L3	R	P1	P2
GRDP01-20	13	17	4	20	1*10	13.4	7.8	5	1.3	10	Ø1.5	15.8	5	1.9	3
GRDP01-30	21			30	2*10							21.8	7		
GRDP01-40	29			40	3*10							27.8	9		
GRDP01-50	37			50	4*10							33.8	11		
GRDP01-60	45			60	5*10							39.8	13		
GRDP01-70	53			70	6*10							45.8	15		
GRDP01-80	61	80	7*10	51.8	17										
GRDP02-30	24	24	6	30	1*15	19	11	7.5	1.5	15	Ø2	21.6	5	2.8	4
GRDP02-45	30			45	2*15							33.6	8		
GRDP02-60	44			60	3*15							41.6	10		
GRDP02-75	58			75	4*15							49.6	12		
GRDP02-90	72			90	5*15							57.6	14		
GRDP02-105	86			105	6*15							65.6	16		
GRDP02-120	100			120	7*15							73.6	18		
GRDP02-135	106			135	8*15							85.6	21		
GRDP02-150	120			150	9*15							93.6	23		
GRDP02-165	134			165	10*15							101.6	25		
GRDP02-180	148	180	11*15	109.6	27										
GRDP03-50	34	36	8	50	1*25	29	16.6	12.5	2	2.5	Ø3	36.4	7	3.2	5
GRDP03-75	54			75	2*25							51.4	10		
GRDP03-100	74			100	3*25							66.4	13		
GRDP03-125	104			125	4*25							76.4	15		
GRDP03-150	124			150	5*25							91.4	18		
GRDP03-175	144			175	6*25							106.4	21		
GRDP03-200	164			200	7*25							121.4	24		
GRDP03-225	184			225	8*25							136.4	27		
GRDP03-250	204			250	9*25							151.4	30		
GRDP03-275	224			275	10*25							166.4	33		
GRDP03-300	244	300	11*25	181.4	36										
GRDP04-80	54	44	11	80	1*40	35	20	20	2	40	Ø4	57.6	8	4.3	7
GRDP04-120	92			120	2*40							78.6	11		
GRDP04-160	130			160	3*40							99.6	14		
GRDP04-200	154			200	4*40							127.6	18		
GRDP04-240	192			240	5*40							148.6	21		
GRDP04-280	230			280	6*40							169.6	24		
GRDP04-320	254			320	7*40							197.6	28		
GRDP04-360	292			360	8*40							218.6	31		
GRDP04-400	330			400	9*40							239.6	34		
GRDP04-440	354			440	10*40							267.6	38		
GRDP04-480	392	480	11*40	288.6	41										

Ordering Example :	GR	D	P	03	75	P
	Roller	D rail	POM Retainer	Roller dia.	Rail length	Precision Level

GRDP

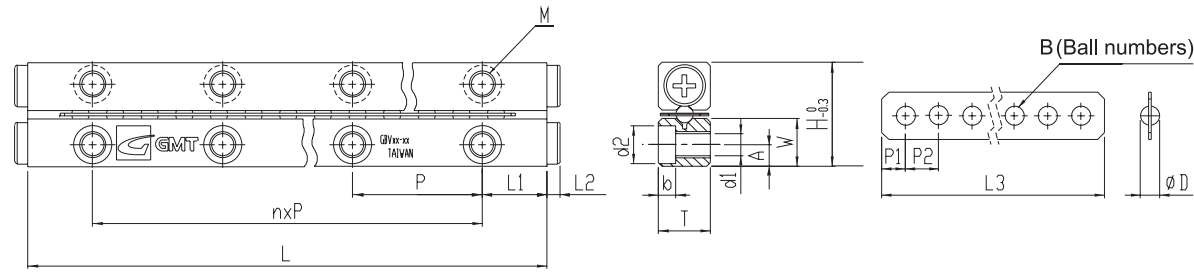


Material Specification

Material Component	Rail	Roller	Retainer
Model No.			
GRDP	SUJ2		POM

Mounting Dimensions (mm)						Load Per Roller			Weight (g) / 2 Pieces
T1	M	d1	d2	A	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard
0.5	M2	1.65	3	2 <sup>+0.010</sup> <sub>0</sub>	1.4	125N/1pcs	144N/1pcs	48N/1pcs	9
									13
									17
									20
									24
									29
0.5	M3	2.55	4.4	3 <sup>+0.010</sup> <sub>0</sub>	2	293N/1pcs	292N/1pcs	97N/1pcs	33
									27
									40
									53
									66
									78
0.5	M4	3.3	6	4 <sup>+0.012</sup> <sub>0</sub>	3.1	638N/1pcs	761N/1pcs	254N/1pcs	91
									104
									117
									130
									142
									155
0.5	M5	4.3	7.5	5 <sup>+0.012</sup> <sub>0</sub>	4.1	1230N/1pcs	1170N/1pcs	390N/1pcs	155
									183
									228
									273
									317
									362
406									
451									
496									
540									
585									
630									
675									
720									
765									
810									
855									
900									
945									
990									
1035									
1080									
1125									
1170									
1215									
1260									
1305									
1350									
1395									
1440									

GBV



Specification

Model No.	Max. Stroke (mm)	Main Dimensions (mm)						Retainer Dimensions (mm)					
		H	T	W	L	n*p	L1	L2	ØD	L3	B	P1	P2
GBV01-20	13	8.5	4	3.9	20	1*10	5	1.3	Ø1.5	15.5	5	1.75	3
GBV01-30	21				30	2*10				21.5	7		
GBV01-40	29				40	3*10				27.5	9		
GBV01-50	37				50	4*10				33.5	11		
GBV01-60	45				60	5*10				39.5	13		
GBV01-70	53				70	6*10				45.5	15		
GBV01-80	61				80	7*10				51.5	17		
GBV02-30	24	12	6	5.5	30	1*15	7.5	1.5	Ø2	20.6	5	2.3	4
GBV02-45	30				45	2*15				32.6	8		
GBV02-60	44				60	3*15				40.6	10		
GBV02-75	58				75	4*15				48.6	12		
GBV02-90	72				90	5*15				56.6	14		
GBV02-105	86				105	6*15				64.6	16		
GBV02-120	100				120	7*15				72.6	18		
GBV02-135	106				135	8*15				84.6	21		
GBV02-150	120				150	9*15				92.6	23		
GBV02-165	134				165	10*15				100.6	25		
GBV02-180	148				180	11*15				108.6	27		

Ordering Example :	GB	V	01	40	P
	Ball	V rail	Ball dia.	Rail length	Precision Level

GBV



Material Specification

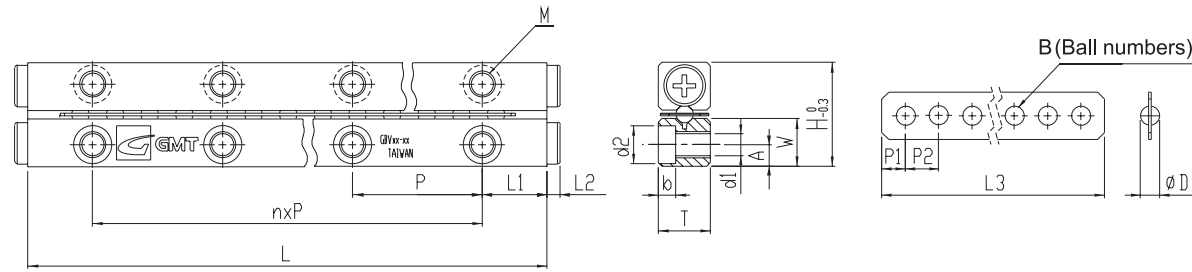
Material Component	Rail	Ball Bearing	Retainer
Model No.			
GBV	SUJ2		Phosphor bronze (C5191)

Mounting Dimensions (mm)					Load Per Ball Bearing			Weight (g) / 2 Pieces
A	M	d1	d2	b	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard
1.8	M2	1.65	3	1.4	7.6N/1pcs	21N/1pcs	7.0N/1pcs	4
								6
								8
								10
								12
								14
2.5	M3	2.55	4.4	2	12N/1pcs	37N/1pcs	12.3N/1pcs	16
								13
								20
								26
								32
								39
								45
								51
								58
								64
								70
77								

Product Specification

Product Specification

GBV



Specification

Model No.	Max. Stroke (mm)	Main Dimensions (mm)						Retainer Dimensions (mm)					
		H	T	W	L	n*p	L1	L2	ØD	L3	B	P1	P2
GBV03-50	34	18	8	8.3	50	1*25	12.5	2	Ø3	35.7	7	2.86	5
GBV03-75	54				75	2*25				50.7	10		
GBV03-100	74				100	3*25				65.7	13		
GBV03-125	104				125	4*25				75.7	15		
GBV03-150	124				150	5*25				90.7	18		
GBV03-175	144				175	6*25				105.7	21		
GBV03-200	164				200	7*25				120.7	24		
GBV03-225	184				225	8*25				135.7	27		
GBV03-250	204				250	9*25				150.7	30		
GBV03-275	224				275	10*25				165.7	33		
GBV03-300	244				300	11*25				180.7	36		
GBV04-80	54	22	11	10	80	1*40	20	2	Ø4	56.8	8	3.9	7
GBV04-120	92				120	2*40				77.8	11		
GBV04-160	130				160	3*40				98.8	14		
GBV04-200	154				200	4*40				126.8	18		
GBV04-240	192				240	5*40				147.8	21		
GBV04-280	230				280	6*40				168.8	24		
GBV04-320	254				320	7*40				196.8	28		
GBV04-360	292				360	8*40				217.8	31		
GBV04-400	330				400	9*40				238.8	34		
GBV04-440	354				440	10*40				266.8	38		
GBV04-480	392				480	11*40				287.8	41		

Ordering Example :	GB	V	03	75	P
	Ball	V rail	Ball dia.	Rail length	Precision Level

GBV

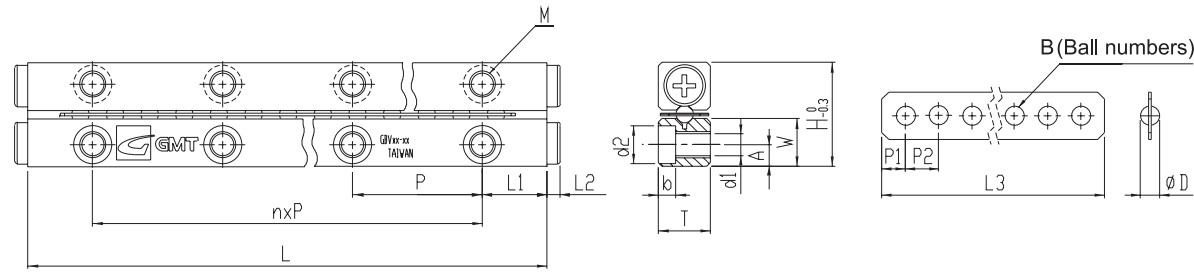


Material Specification

Material Component	Rail	Ball Bearing	Retainer
Model No.			
GBV	SUJ2		Phosphor bronze (C5191)

Mounting Dimensions (mm)					Load Per Ball Bearing			Weight (g) / 2 Pieces
A	M	d1	d2	b	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard
3.5	M4	3.3	6	3.1	26.5N/1pcs	84N/1pcs	28N/1pcs	46
								68
								90
								112
								134
								156
								178
								200
								222
								244
								266
								121
								179
								237
								295
								353
4.5	M5	4.3	7.5	4.1	43N/1pcs	148N/1pcs	49.3N/1pcs	411
								470
								528
								586
								645
								703

GBV



### Specification

Model No.	Max. Stroke (mm)	Main Dimensions (mm)						Retainer Dimensions (mm)					
		H	T	W	L	n*p	L1	L2	ØD	L3	B	P1	P2
GBV06-100	80	31	15	14	100	1*50	25	2	6	63.6	7	4.8	9
GBV06-150	108				150	2*50				99.6	11		
GBV06-200	154				200	3*50				126.6	14		
GBV06-250	200				250	4*50				153.6	17		
GBV06-300	246				300	5*50				180.6	20		
GBV06-350	274				350	6*50				216.6	24		
GBV06-400	320				400	7*50				243.6	27		
GBV06-450	366				450	8*50				270.6	30		
GBV06-500	412				500	9*50				297.6	33		
GBV06-550	458				550	10*50				324.6	36		
GBV06-600	486	600	11*50	360.6	40								

Ordering Example :	GB	V	06	200	P
	Ball	V rail	Ball dia.	Rail length	Precision Level

GBV

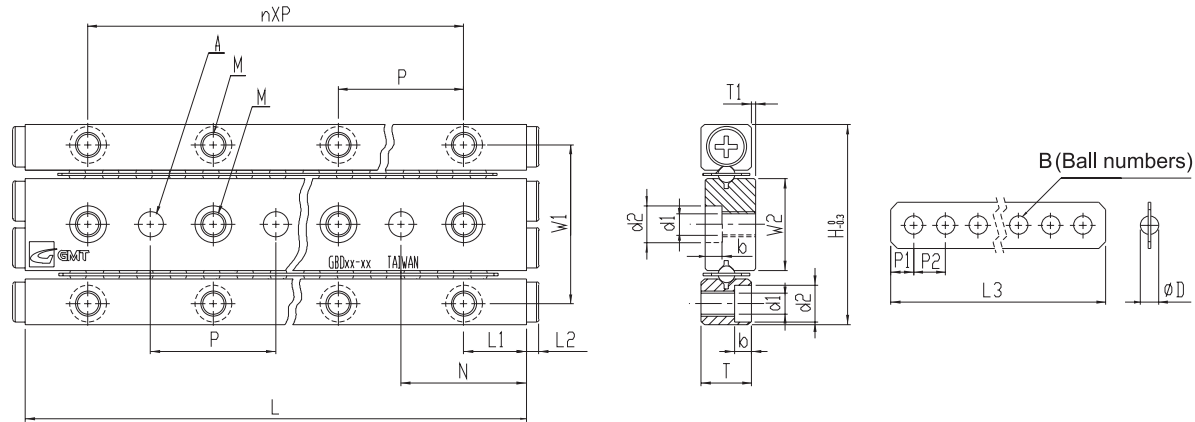


### Material specification

Material Component	Rail	Ball Bearing	Retainer
Model No.			
GBV	SUJ2		Phosphor bronze (C5191)

Mounting Dimensions (mm)					Load Per Ball Bearing			Weight (g) / 2 Pieces
A	M	d1	d2	b	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard
6	M6	5.3	9.5	5.2	92N/1pcs	330N/1pcs	110N/1pcs	287
								429
								571
								712
								852
								993
								1135
								1275
								1417
								1558
1250								

GBD



Specification

Model No.	Max. Stroke (mm)	Main Dimensions (mm)									Retainer Dimensions (mm)					
		H	T	L	n*p	W1	W2	L1	L2	N	ØD	L3	B	P1	P2	T1
GBD01-20	13	17	4	20	1*10	13.4	7.8	5	1.3	10	Ø1.5	15.5	5	1.75	3	0.5
GBD01-30	21			30	2*10							21.5	7			
GBD01-40	29			40	3*10							27.5	9			
GBD01-50	37			50	4*10							33.5	11			
GBD01-60	45			60	5*10							39.5	13			
GBD01-70	53			70	6*10							45.5	15			
GBD01-80	61			80	7*10							51.5	17			
GBD02-30	24	24	6	30	1*15	19	11	7.5	1.5	15	Ø2	20.6	5	2.3	4	0.5
GBD02-45	30			45	2*15							32.6	8			
GBD02-60	44			60	3*15							40.6	10			
GBD02-75	58			75	4*15							48.6	12			
GBD02-90	72			90	5*15							56.6	14			
GBD02-105	86			105	6*15							64.6	16			
GBD02-120	100			120	7*15							72.6	18			
GBD02-135	106			135	8*15							84.6	21			
GBD02-150	120			150	9*15							92.6	23			
GBD02-165	134			165	10*15							100.6	25			
GBD02-180	148			180	11*15							108.6	27			

Ordering Example :	GB	D	01	40	P
	Ball	D rail	Ball dia.	Rail length	Precision Level

GBD

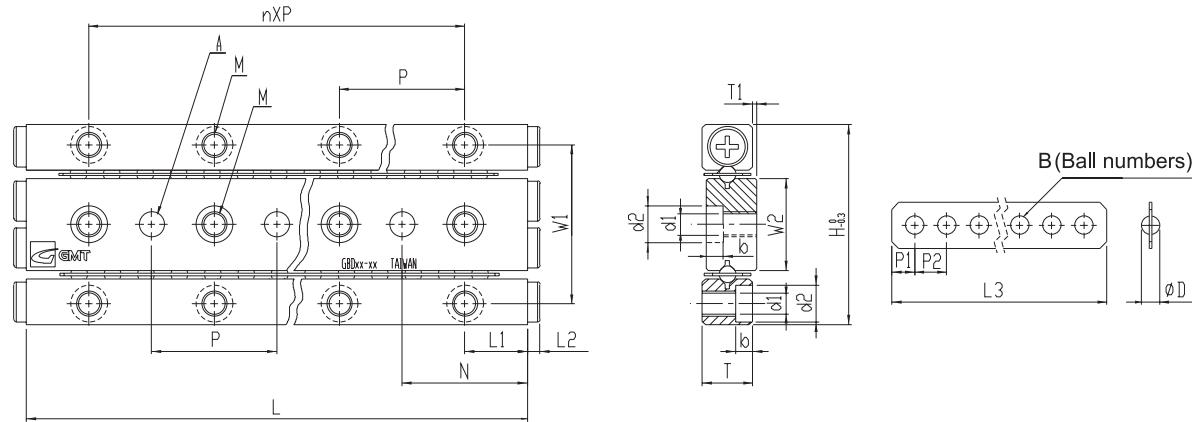


Material Specification

Material Component	Rail	Ball Bearing	Retainer
Model No.			
GBD	SUJ2		Phosphor bronze (C5191)

Mounting Dimensions (mm)					Load Per Ball Bearing			Weight (g) / 2 Pieces
M	d1	d2	A	B	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard
M2	1.65	3	2 <sup>+0.010</sup> <sub>0</sub>	1.4	7.6N/1pcs	21N/1pcs	7.0N/1pcs	9
								13
								16
								20
								24
								28
M3	2.55	4.4	3 <sup>+0.010</sup> <sub>0</sub>	2	12N/1pcs	37N/1pcs	12.3N/1pcs	33
								27
								40
								53
								66
								78
								91
								104
								117
								129
								142
155								

GBD



Specification

Model No.	Max. Stroke (mm)	Main Dimensions (mm)								Retainer Dimensions (mm)						
		H	T	L	n*p	W1	W2	L1	L2	N	ØD	L3	B	P1	P2	T1
GBD03-50	34	36	8	50	1*25	29	16.6	12.5	2	25	Ø3	35.7	7	2.86	5	0.5
GBD03-75	54			75	2*25							50.7	10			
GBD03-100	74			100	3*25							65.7	13			
GBD03-125	104			125	4*25							75.7	15			
GBD03-150	124			150	5*25							90.7	18			
GBD03-175	144			175	6*25							105.7	21			
GBD03-200	164			200	7*25							120.7	24			
GBD03-225	184			225	8*25							135.7	27			
GBD03-250	204			250	9*25							150.7	30			
GBD03-275	224			275	10*25							165.7	33			
GBD03-300	244	300	11*25	180.7	36											
GBD04-80	54	44	11	80	1*40	35	20	20	2	40	Ø4	56.8	8	3.9	7	0.5
GBD04-120	92			120	2*40							77.8	11			
GBD04-160	130			160	3*40							98.8	14			
GBD04-200	154			200	4*40							126.8	18			
GBD04-240	192			240	5*40							147.8	21			
GBD04-280	230			280	6*40							168.8	24			
GBD04-320	254			320	7*40							196.8	28			
GBD04-360	292			360	8*40							217.8	31			
GBD04-400	330			400	9*40							238.8	34			
GBD04-440	354			440	10*40							266.8	38			
GBD04-480	392	480	11*40	287.8	41											

Ordering Example :	GB	D	03	75	P
	Ball	D rail	Ball dia.	Rail length	Precision Level

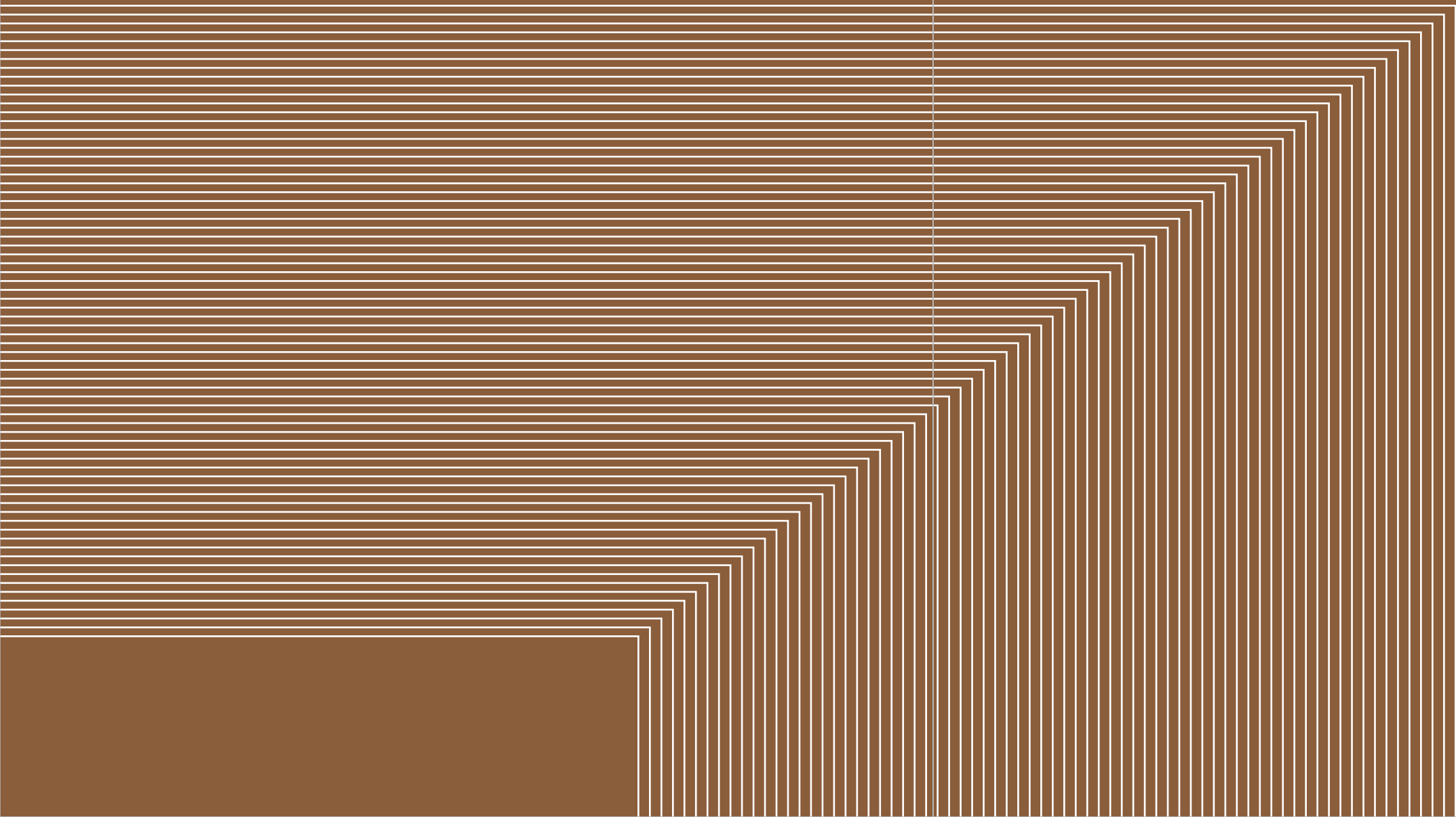
GBD



Material Specification

Material Component	Rail	Ball Bearing	Retainer
Model No.			
GBD	SUJ2		Phosphor bronze (C5191)

Mounting Dimensions (mm)					Load Per Ball Bearing			Weight (g) / 2 Pieces
M	d1	d2	A	b	Basic Dynamic Load Rating (C)	Basic Static Load Rating (Co)	Allowable Load (Fu)	Standard
M4	3.3	6	4 <sup>+0.012</sup> <sub>0</sub>	3.1	26.5N/1pcs	84N/1pcs	28N/1pcs	94
								139
								183
								228
								272
								317
								361
								406
								450
								495
M5	4.3	7.5	5 <sup>+0.012</sup> <sub>0</sub>	4.1	43N/1pcs	148N/1pcs	49.3N/1pcs	539
								247
								365
								483
								601
								720
								838
								957
								1076
								1194
								1314
								1432



Product  
Specification  
**Retainer**



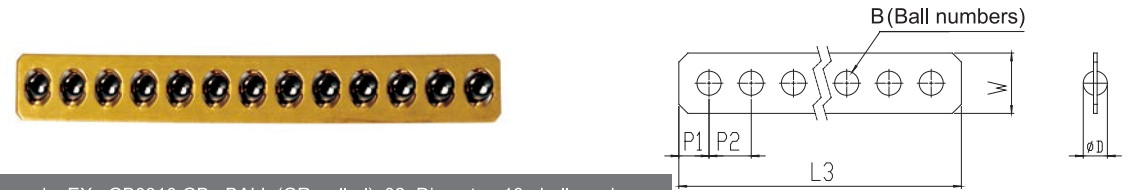
Guide code, EX : GR0206 GR= roller (GB=ball), 02=diameter, 06= roller numbers

Model no.	Retainer dimensions (mm)					Basic dynamic load rating C <sub>N</sub>	Basic static load rating C <sub>0N</sub>	Material standard / Antirust		Material corrosion-resisting	
	ØD	P1	P2	T (thickness)	W (width)			Retainer	Roller	Retainer	Roller
GR01	Ø1.5	1.9	3	0.2	3.75	125	144	SUS304	SUJ2	SUS304	SUS440C
GR02	Ø2.0	2.8	4	0.3	5.50	293	292				
GR03	Ø3.0	3.2	5	0.4	7.50	638	761				
GR04	Ø4.0	4.3	7	0.5	9.80	1230	1170				
GR06	Ø6.0	5.4	9	0.8	14.00	2570	2632				
GR09	Ø9.0	9.0	14	1.0	20.50	7190	7274				
GR12	Ø12.0	11.0	18	1.2	26.50	14700	13187				

Model no.	Retainer dimensions (mm)							Rail length	Model no.	Retainer dimensions (mm)							Rail length
	ØD	P1	P2	T (thickness)	W (width)	L3 (length)	R (roller qty)			ØD	P1	P2	T (thickness)	W (width)	L3 (length)	R (roller qty)	
GR0105	Ø1.5	1.9	3	0.2	3.75	15.8	5	GRV01-20	GR0408	57.6	8	GRV04-80					
GR0107						21.8	7	GRV01-30	GR0411	78.6	11	GRV04-120					
GR0109						27.8	9	GRV01-40	GR0414	99.6	14	GRV04-160					
GR0111						33.8	11	GRV01-50	GR0418	127.6	18	GRV04-200					
GR0113						39.8	13	GRV01-60	GR0421	148.6	21	GRV04-240					
GR0115						45.8	15	GRV01-70	GR0424	169.6	24	GRV04-280					
GR0117						51.8	17	GRV01-80	GR0428	197.6	28	GRV04-320					
GR0205						Ø2	2.8	4	0.3	5.5	21.6	5	GRV02-30	GR0431	218.6	31	GRV04-360
GR0208											33.6	8	GRV02-45	GR0434	239.6	34	GRV04-400
GR0210											41.6	10	GRV02-60	GR0438	267.6	38	GRV04-440
GR0212											49.6	12	GRV02-75	GR0441	288.6	41	GRV04-480
GR0214											57.6	14	GRV02-90	GR0607	64.8	7	GRV06-100
GR0216	65.6	16	GRV02-105	GR0611	100.8						11	GRV06-150					
GR0218	73.6	18	GRV02-120	GR0614	127.8						14	GRV06-200					
GR0221	85.6	21	GRV02-135	GR0617	154.8						17	GRV06-250					
GR0223	93.6	23	GRV02-150	GR0620	181.8						20	GRV06-300					
GR0225	101.6	25	GRV02-165	GR0624	217.8						24	GRV06-350					
GR0227	109.6	27	GRV02-180	GR0627	244.8						27	GRV06-400					
GR0307	Ø3	3.2	5	0.4	7.5						36.4	7	GRV03-50	GR0630	271.8	30	GRV06-450
GR0310						51.4	10	GRV03-75	GR0633	298.8	33	GRV06-500					
GR0313						66.4	13	GRV03-100	GR0636	325.8	36	GRV06-550					
GR0315						76.4	15	GRV03-125	GR0640	361.8	40	GRV06-600					
GR0318						91.4	18	GRV03-150	GR0909	130	9	GRV09-200					
GR0321						106.4	21	GRV03-175	GR0913	186	13	GRV09-300					
GR0324						121.4	24	GRV03-200	GR0918	256	18	GRV09-400					
GR0327						136.4	27	GRV03-225	GR0922	312	22	GRV09-500					
GR0330						151.4	30	GRV03-250	GR0926	368	26	GRV09-600					
GR0333						166.4	33	GRV03-275	GR1207	130	7	GRV12-200					
GR0336						181.4	36	GRV03-300	GR1211	202	11	GRV12-300					
													GR1214	Ø12	11	18	1.2
								GR1217						310	17	GRV12-500	
								GR1220						364	20	GRV12-600	

Model no.	GR	02	08	GR	03	12	03
	Roller	Diameter	Roller numbers	Type	Dia	Roller(ball) qty	Roller(ball) material
	GR-S	02	08	GR : Roller	01=Ø1.5	per request	S : SUS440C
	Roller Antirust Material	Diameter	Roller numbers		02=Ø2		
					03=Ø3		
					04=Ø4		
					06=Ø6		

★ Customized specification, purchasement per appoint roller quantity with the standard roller diameter.



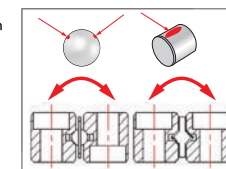
Guide code, EX : GB0310 GB= BALL (GR=roller), 02=Diameter, 10= ball numbers

Model no.	Retainer dimensions (mm)					Basic dynamic load rating C <sub>N</sub>	Basic static load rating C <sub>0N</sub>	Material standard	
	ØD	P1	P2	T (thickness)	W (width)			Retainer	Ball
GB01	Ø1.5	1.75	3	0.2	3.5	7.6	21.0	Phosphoy bronze (C5191)	SUJ2
GB02	Ø2.0	2.30	4	0.3	5.0	12.0	37.0		
GB03	Ø3.0	2.86	5	0.4	7.0	26.5	84.0		
GB04	Ø4.0	3.90	7	0.5	9.0	43.0	148.0		
GB06	Ø6.0	4.80	9	0.6	13.5	92.0	330.0		

Model no.	Retainer dimensions (mm)							Rail length	Model no.	Retainer dimensions (mm)							Rail length
	ØD	P1	P2	T (thickness)	W (width)	L3 (length)	R (ball qty)			ØD	P1	P2	T (thickness)	W (width)	L3 (length)	R (ball qty)	
GB0105	Ø1.5	1.75	3	0.2	3.5	15.5	5	GBV01-20	GB0408	56.8	8	GBV04-80					
GB0107						21.5	7	GBV01-30	GB0411	77.8	11	GBV04-120					
GB0109						27.5	9	GBV01-40	GB0414	98.8	14	GBV04-160					
GB0111						33.5	11	GBV01-50	GB0418	126.8	18	GBV04-200					
GB0113						39.5	13	GBV01-60	GB0421	147.8	21	GBV04-240					
GB0115						45.5	15	GBV01-70	GB0424	168.8	24	GBV04-280					
GB0117						51.5	17	GBV01-80	GB0428	196.8	28	GBV04-320					
GB0205						Ø2	2.3	4	0.3	5	20.6	5	GBV02-30	GB0431	217.8	31	GBV04-360
GB0208											32.6	8	GBV02-45	GB0434	238.8	34	GBV04-400
GB0210											40.6	10	GBV02-60	GB0438	266.8	38	GBV04-440
GB0212											48.6	12	GBV02-75	GB0441	287.8	41	GBV04-480
GB0214											56.6	14	GBV02-90	GB0607	63.6	7	GBV06-100
GB0216	64.6	16	GBV02-105	GB0611	99.6						11	GBV06-150					
GB0218	72.6	18	GBV02-120	GB0614	126.6						14	GBV06-200					
GB0221	84.6	21	GBV02-135	GB0617	153.6						17	GBV06-250					
GB0223	92.6	23	GBV02-150	GB0620	180.6						20	GBV06-300					
GB0225	100.6	25	GBV02-165	GB0624	216.6						24	GBV06-350					
GB0227	108.6	27	GBV02-180	GB0627	243.6						27	GBV06-400					
GB0307	Ø3	2.86	5	0.4	7						35.7	7	GBV03-50	GB0630	270.6	30	GBV06-450
GB0310						50.7	10	GBV03-75	GB0633	297.6	33	GBV06-500					
GB0313						65.7	13	GBV03-100	GB0636	324.6	36	GBV06-550					
GB0315						75.7	15	GBV03-125	GB0640	360.6	40	GBV06-600					
GB0318						90.7	18	GBV03-150									
GB0321						105.7	21	GBV03-175									
GB0324						120.7	24	GBV03-200									
GB0327						135.7	27	GBV03-225									
GB0330						150.7	30	GBV03-250									
GB0333						165.7	33	GBV03-275									
GB0336						180.7	36	GBV03-300									

Model no.	GB	03	10
	Ball	Dia.	Ball qty

• Character comparison of roller & ball



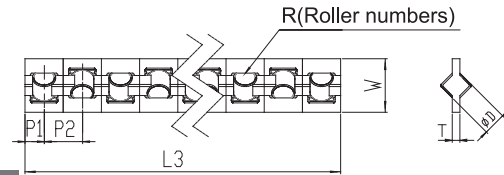
• Suggestion :

- (1)Ball type : Usually in light load, high speed, retainer is made of bronze alloy.
- (2)Roller type : Usually in mid-high load, high speed, retainer is made per environment request.
- (3)Running inertial, temperature rise, and environment shall be all taken into account while using.

Item	Roller	Ball
Rigidity	⊙⊙⊙⊙	⊙⊙
Load	⊙⊙⊙⊙	⊙⊙
Accuracy	⊙⊙⊙⊙	⊙⊙⊙
Life	⊙⊙⊙⊙	⊙⊙⊙
Friction	⊙⊙	⊙⊙⊙⊙
Speed	⊙⊙	⊙⊙⊙⊙

⊙ : Normal ⊙⊙ : Good  
⊙⊙⊙ : Better ⊙⊙⊙⊙ : Best

★ Customized specification, purchasement per appoint roller quantity with the standard roller diameter.



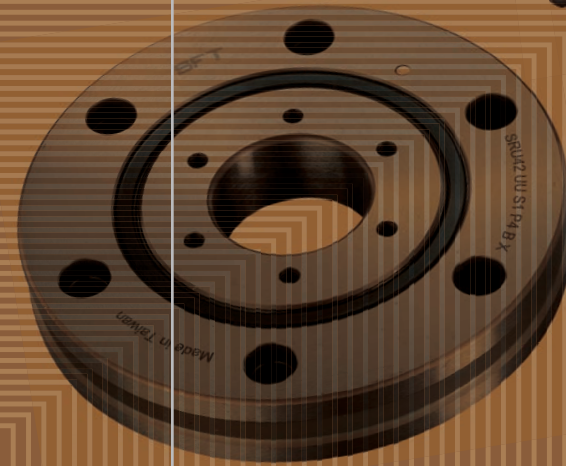
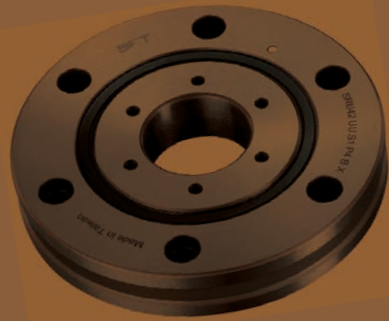
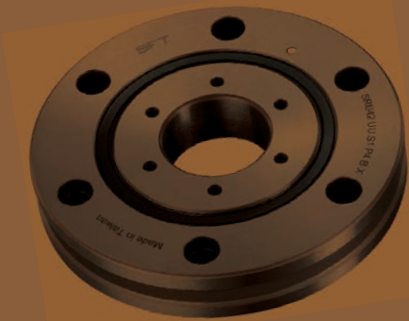
Guide code, EX : GR0206 GR= roller (GB=ball), 02=diameter, 06= roller numbers

Model no.	Retainer dimensions (mm)					Basic dynamic load rating	Basic static load rating	Material standard	
	ØD	P1	P2	T (thickness)	W (width)	C N	Co N	Retainer	Roller
GRP01	Ø1.5	1.9	3	0.5	3.8	125	144	POM	SUJ2
GRP02	Ø2.0	2.8	4	0.8	5	293	292		
GRP03	Ø3.0	3.2	5	0.9	7	638	761		
GRP04	Ø4.0	4.3	7	1.4	9.8	1230	1170		
GRP06	Ø6.0	5.4	9	1.9	14	2570	2632		

Model no.	Retainer dimensions (mm)					Rail length	Model no.	Retainer dimensions (mm)					Rail length				
	ØD	P1	P2	T (thickness)	W (width)			L3 (length)	R (roller qty)	ØD	P1	P2		T (thickness)	W (width)	L3 (length)	R (roller qty)
GRP0105	Ø1.5	1.9	3	0.5	3.8	15.8	5	GRVP01-20	GRP0408	Ø4	4.3	7	1.4	9.8	57.6	8	GRVP04-80
GRP0107						21.8	7	GRVP01-30	GRP0411						78.6	11	GRVP04-120
GRP0109						27.8	9	GRVP01-40	GRP0414						99.6	14	GRVP04-160
GRP0111						33.8	11	GRVP01-50	GRP0418						127.6	18	GRVP04-200
GRP0113						39.8	13	GRVP01-60	GRP0421						148.6	21	GRVP04-240
GRP0115	Ø2	2.8	4	0.8	5	45.8	15	GRVP01-70	GRP0424	Ø6	5.4	9	1.9	14	169.6	24	GRVP04-280
GRP0117						51.8	17	GRVP01-80	GRP0428						197.6	28	GRVP04-320
GRP0205						21.6	5	GRVP02-30	GRP0431						218.6	31	GRVP04-360
GRP0208						33.6	8	GRVP02-45	GRP0434						239.6	34	GRVP04-400
GRP0210						41.6	10	GRVP02-60	GRP0438						267.6	38	GRVP04-440
GRP0212	49.6	12	GRVP02-75	GRP0441	288.6	41	GRVP04-480										
GRP0214	Ø3	3.2	5	0.9	7	57.6	14	GRVP02-90	GRP0607	Ø6	5.4	9	1.9	14	64.8	7	GRVP06-100
GRP0216						65.6	16	GRVP02-105	GRP0611						100.8	11	GRVP06-150
GRP0218						73.6	18	GRVP02-120	GRP0614						127.8	14	GRVP06-200
GRP0221						85.6	21	GRVP02-135	GRP0617						154.8	17	GRVP06-250
GRP0223						93.6	23	GRVP02-150	GRP0620						181.8	20	GRVP06-300
GRP0225	101.6	25	GRVP02-165	GRP0624	217.8	24	GRVP06-350										
GRP0227	109.6	27	GRVP02-180	GRP0627	244.8	27	GRVP06-400										
GRP0307	Ø3	3.2	5	0.9	7	36.4	7	GRVP03-50	GRP0630	Ø6	5.4	9	1.9	14	271.8	30	GRVP06-450
GRP0310						51.4	10	GRVP03-75	GRP0633						298.8	33	GRVP06-500
GRP0313						66.4	13	GRVP03-100	GRP0636						325.8	36	GRVP06-550
GRP0315						76.4	15	GRVP03-125	GRP0640						361.8	40	GRVP06-600
GRP0318						91.4	18	GRVP03-150									
GRP0321	106.4	21	GRVP03-175														
GRP0324	121.4	24	GRVP03-200														
GRP0327	136.4	27	GRVP03-225														
GRP0330	151.4	30	GRVP03-250														
GRP0333	166.4	33	GRVP03-275														
GRP0336	181.4	36	GRVP03-300														

Model no.	GRP	02	12
	Roller	Diameter	Roller numbers

★ Customized specification, purchasement per appoint roller quantity with the standard roller diameter.



Product  
Specification  
**Crossed  
Roller  
Bearing /  
Gonio Ways**

## Usage Precautions

### ◎ Lubrication

Use lithium soap based lubricating grease.

### ◎ Retainer Deviation

Retainers will deviate from their correct positions when GMT gonio way are used under conditions such as high-speed, vibrations and unbalanced loads. To minimize this deviation, maintain additional travel distance, avoid excessive pre-load and cycle the rails to return the cage to its central position.

### ◎ Dust-Proof

GMT gonio ways may not realize their ideal performance due to dust or foreign objects likely to enter the interior depending on operating environment; it is recommended to protect GMT gonio way by using external dustproof covers if they are to be used in extreme environments.

### ◎ End Pieces

End pieces are installed to the end the GMT gonio way to prevent the roller cage from falling off the track.

### ◎ Working Environment :

It is recommended to operate GMT gonio ways with temperature range from -20°C to 110°C.

### ◎ Paired Usage

GMT gonio way accuracy is based on a complete set in order to realize a precise control. Combining different gonio ways sets will affect accuracy; please exercise caution when assembling GMT gonio ways.

### ◎ Adjustments

Inaccurate installation on the mounting surface or improper preload adjustment will reduce motion accuracy; thus causing the rail to skew and reduce performance and service life; exercise extreme caution during adjustment.

### ◎ Allowable Load

Allowable load is defined as a guaranteed smooth roller movement under which a small enough total elastic deformation of the rolling element and the raceway in the contact area that receives maximum contact stress. Please use the product within the allowable load to ensure high accuracy and smooth motion.



## Product Introduction

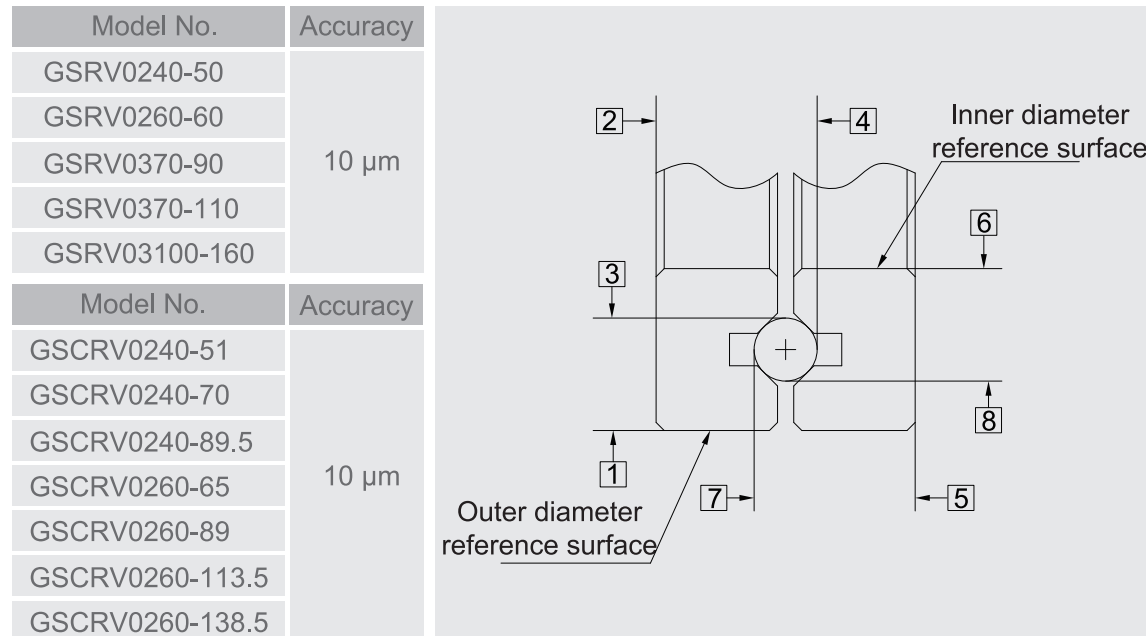
GMT Gonio Way is a non-circulating, curved cross roller slide way, and the precision rollers that have extremely low friction resistance provide a stable arc movement. They are mainly used in high-precision positioning where rotation centers remain unchanged and accurate tilting angles are required. They are widely used to meet the purposes of optical instruments and measuring devices.

## Product Features

- ◎ High rigidity and load capacity
- ◎ Same rotation centers
- ◎ Low friction and accurate movement
- ◎ Easy installation
- ◎ Low noise

### Accuracy

© GMT Gonio Way accuracy is measured by the method shown in the following figure which measures the mutual dimensional deviations of the four rails along their full length.



### Rated Life

The rated life of GMT Gonio Ways is calculated using the following formula.

$L_r$  : Rated life( $10^6$  cycle)

$\theta$ : Rotational angle (degree)

$C$  : Basic dynamic load rating (N)

$F$  : Applied load (N)

$f_t$  : Temperature coefficient

$f_L$  : Applied load coefficient

$$L_r = \frac{90}{\theta} \times \left( \frac{f_t}{f_L} \times \frac{C}{F} \right)^{\frac{10}{3}}$$

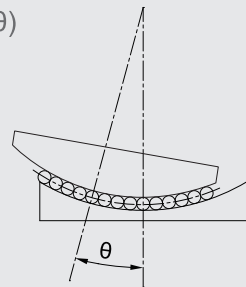
### Life Time

$L_t$  : Life time (hr)

$r$  : number of rotation per minute (rpm)

$$L_t = \frac{L_r \times 10^6}{60 \times r}$$

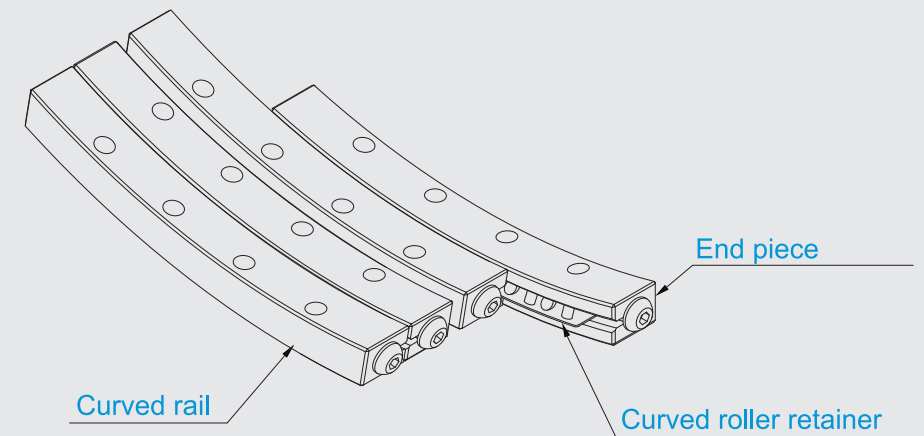
Rotating angle( $\theta$ )



### Gonio Way Structure

GSRV models (figure 1.) of GMT Gonio Ways are made up of precisely ground V-shaped track and curved roller cages.

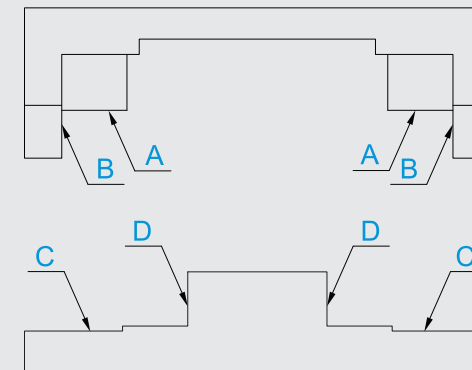
Figure 1



### Installing Gonio Ways

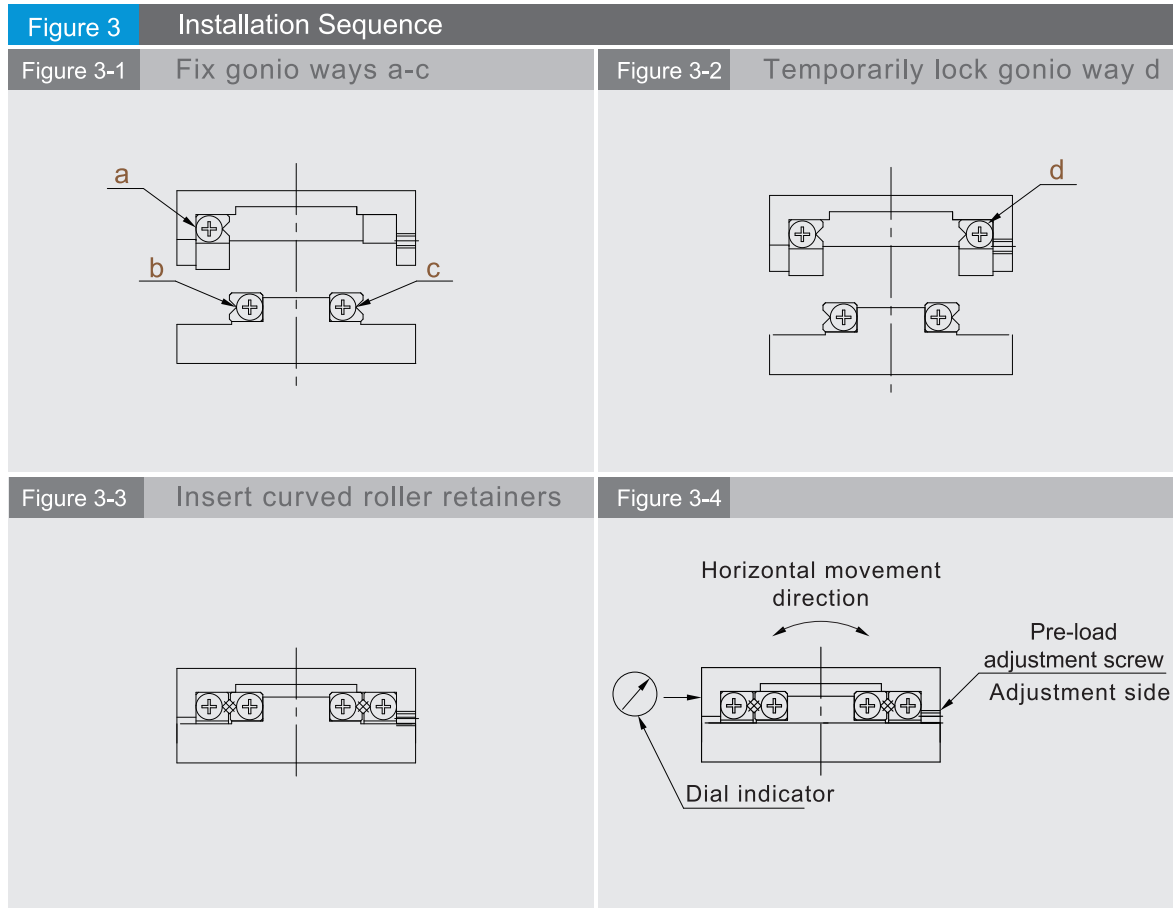
Accuracy of the mounting surface as shown in (figure 2), the accuracy of surfaces A-D will directly affect the motion.

Figure 2

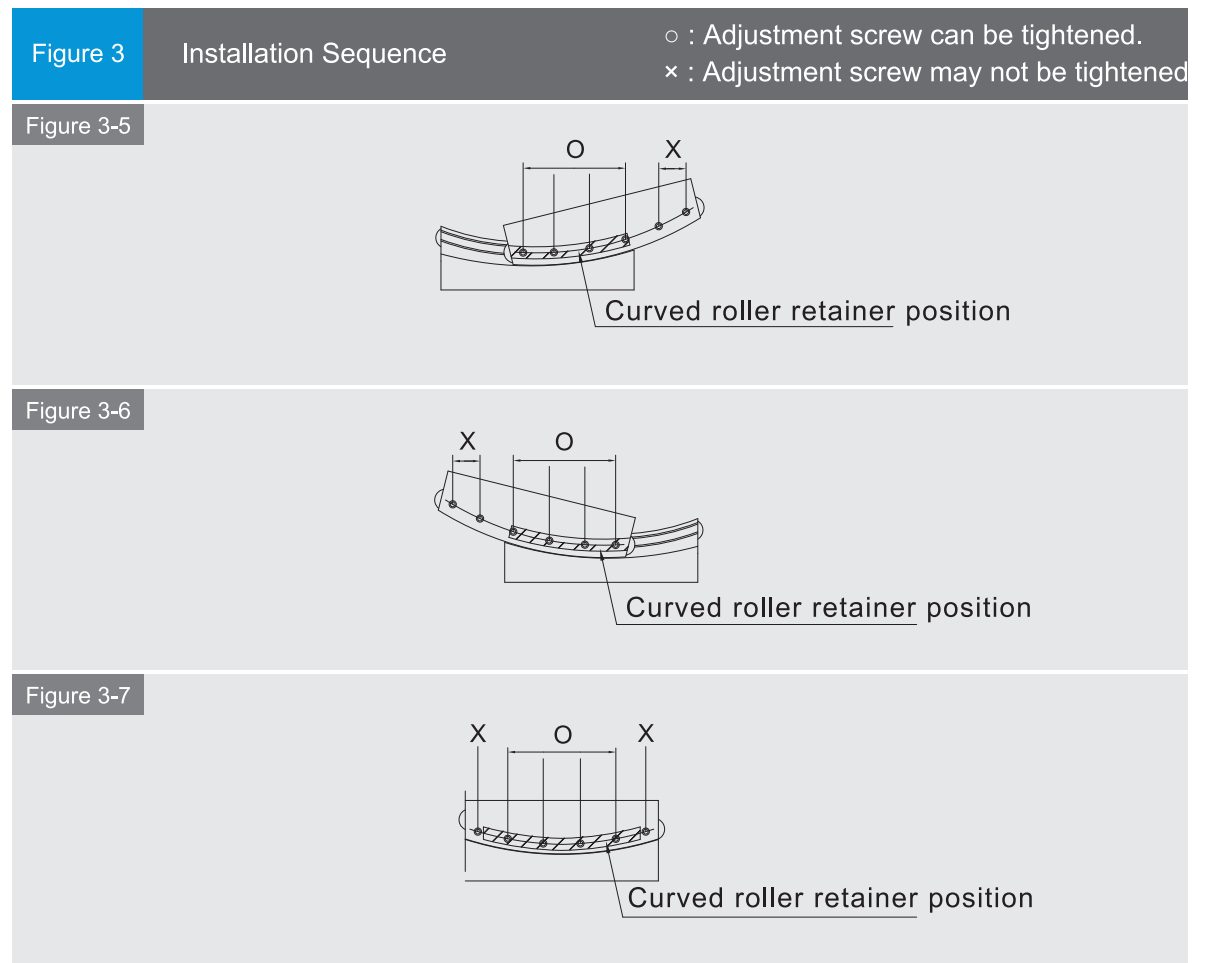


## Installation Sequence

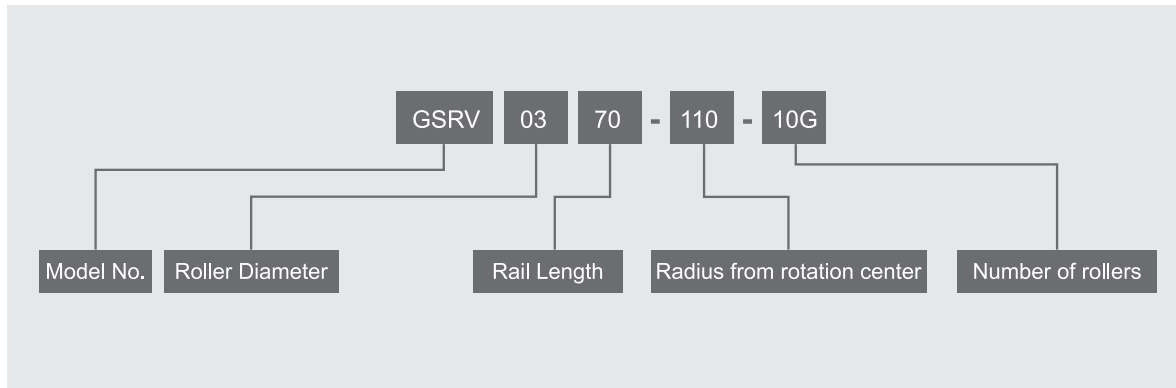
- (1) Thoroughly clean the slideways and the mounting surface on the table to prevent the entry of foreign objects during installation.
- (2) Apply lube oil with low viscosity onto each mounting surface and lock gonio ways a, b, c and each surface using the suggested torque (figure 3-1).
- (3) Temporarily lock gonio way d (figure 3-2).
- (4) Remove the end pieces from one end and insert the curved roller cages to the central position of the gonio way; upon the completion, re-attach the end pieces to its original position. (figure 3-3).
- (5) Move the table horizontally to its maximum traveling end and adjust the curved roller cage to its central position.
- (6) Install a dial gauge at the side of the slideway base level as reference.(figure 3-4).



- (7) Move the slideway to one travel end and slightly lock adjustment screw above the curved roller cage. (figure 3-5).
- (8) Move the sliding way fully to the other end and slightly lock adjustment screw. (figure 3-6).
- (9) Move the slideway to the central position and slightly lock the adjustment screw at the central position (figure 3-7).
- (10) Repeat steps from (7) to (9) until there is no clearance with dial gauge showing minimum variation. Caution against applying excessive preloads.
- (11) Once there is no clearance in the horizontal direction; carry out final preload calibration by repeating operations from (7) to (9) using the recommended torque force for locking screws.
- (12) Tighten the gonio way d (figure 3-2) by tightening the mounting screws sequentially in the same way as the adjustment screws.

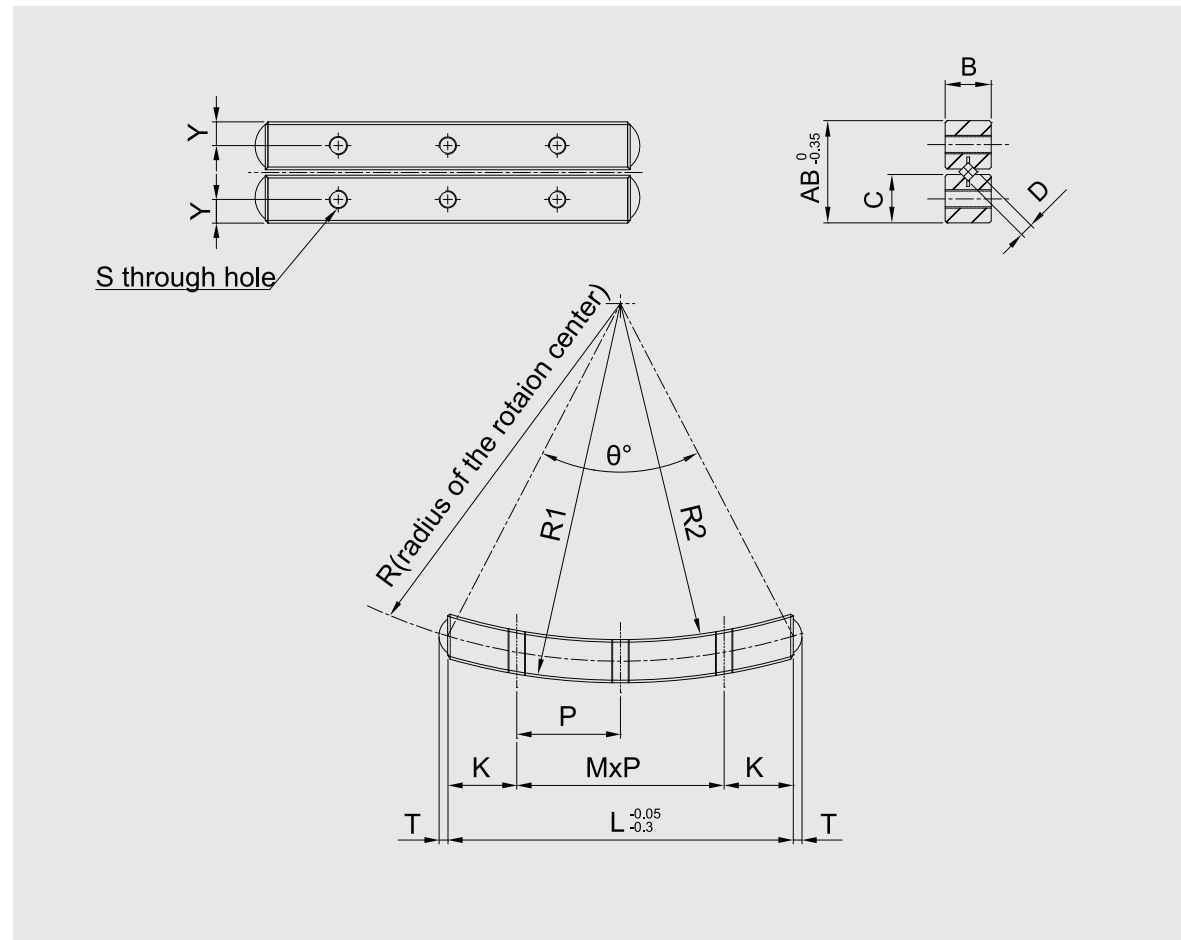


## Model No. Introductions



## Product Specification

© One set of GSRV contains 4 rails, 2 curved roller retainers and 8 end pieces.



## GSRV Model

Model No.	Rotation Range	Roller Diameter (D)	Roller Quantity (G)	Main Dimensions						
				L	R	R1	R2	A	B	C
GSRV0240-50-7G	±10°	2	7	40	50	53	47	15	6	7.25
GSRV0260-60-12G			12	60	63	57				
GSRV0370-90-11G		3	11	70	90	94	86	18	8	8.5
GSRV0370-110-10G			10		110	114	106			
GSRV03100-160-14G			14		100	160	164			
Model No.	Weight Per Set (g)	Allowable Load (F)(N)	Basic Load Rating		θ°	T	S	Y	K	MxP
			Static (Co)(N)	Dynamic (C)(N)						
GSRV0240-50-7G	47	480	1420	800	47.1°	1.5	M3	2.5	7.5	2x12.5
GSRV0260-60-12G	78	930	2870	1430	59.9°				11.25	3x12.5
GSRV0370-90-11G	135	1820	5480	2620	45.7°	1.9	M3	3	12.5	3x15
GSRV0370-110-10G	131	1800	5600	2420	37°					
GSRV03100-160-14G	191	2600	7870	2480	36.3C					

## GSCRV Model

Model No.	Rotation Range	Roller Diameter (D)	Roller Quantity (G)	Main Dimensions						
				L	R	R1	R2	A	B	C
GSCRV0240-51-7G	±8°	2	7	40	51	53.5	48.5	11.3	5	5.25
GSCRV0240-70-7G	±6°				70	72.5	67.5			
GSCRV0240-89.5-7G	±5°				89.5	92	87			
GSCRV0260-65-11G	±8°	11	60	65	68	62	16	6	7.6	
GSCRV0260-89-11G				89	92	86				
GSCRV0260-113.5-11G	±6°	9	9	113.5	116.5	110.5				
GSCRV0260-138.5-9G	±5°			138.5	141.5	135.5				
Model No.	Weight Per Set (g)	Allowable Load (F)(N)	Basic Load Rating		θ°	T	S	Y	K	MxP
			Static (Co)(N)	Dynamic (C)(N)						
GSCRV0240-51-7G	29	480	1420	800	46.2°	1.5	M2	2	8	2x12
GSCRV0240-70-7G					33.2°					
GSCRV0240-89.5-7G					25.8°					
GSCRV0260-65-11G	79	853	2629	1320	55°	M3	2.5	11.25	3x12.5	
GSCRV0260-89-11G	39.4°									
GSCRV0260-113.5-11G	77				30.7°					
GSCRV0260-138.5-9G					25°					

## Precautions

### ⦿ Instructions on lubrication

- (1) Each cross roller bearings are pre-lubricated with high quality lithium soap grease No. 2. However, the bearings need lubricating on a regular basis and users are required to reapply same type of grease at a minimum interval ranging from 6 to 12 months to enable the distribution of grease within the entire internal structure of the bearing; the actual interval depends on the machine or usage.
- (2) Avoid mixing various kinds of lubrication grease.
- (3) When the bearings are used under such special conditions as high vibration, clean rooms, vacuum, low and high temperature, it may be impossible to use general-purpose lubrication grease and please contact us before using special type grease.

### ⦿ Precautions on Use

- (1) Foreign objects entering the interior of the bearings may damage the revolution path of the rollers or disable their functions; take caution to prevent foreign objects entering the bearing.
- (2) If bearings are used at an ambient temperature above 80°C, contact us first.
- (3) When foreign objects enter the interior of bearings, apply lube oil again after cleaning the product.
- (4) Do not attempt to remove the screws and nuts on the split type bearings.

## Product Introduction

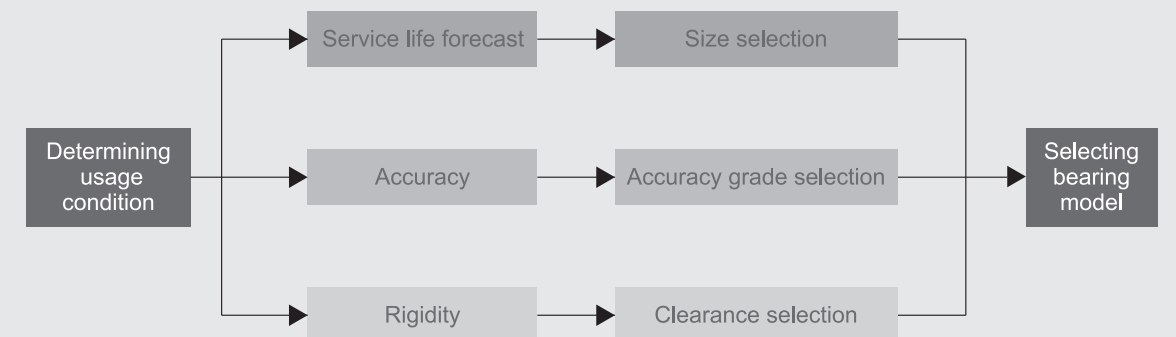
Cross roller bearings consist of inner rings, outer rings, spacer retainers and cylindrical rollers cross arranged on the V-shaped 90° groove between the inner and outer rings. This structure can withstand radial, axial and moment loads in all directions because the rollers' line contact with raceway surfaces achieve a large load-bearing area despite the minimum dimensions. Therefore these bearings are widely used on the rotating parts of industrial robots, machine tools, precision rotary tables, measuring instruments and IC manufacturing machines.

## Product Features

- ⦿ Large load capacity
- ⦿ Easy to install and adjust
- ⦿ Available to bear load from any directions simultaneously
- ⦿ Stable rotation accuracy
- ⦿ High rigidity

## Product Selection

The procedures for the selection and uses of crossed roller bearings are based on the following figure.

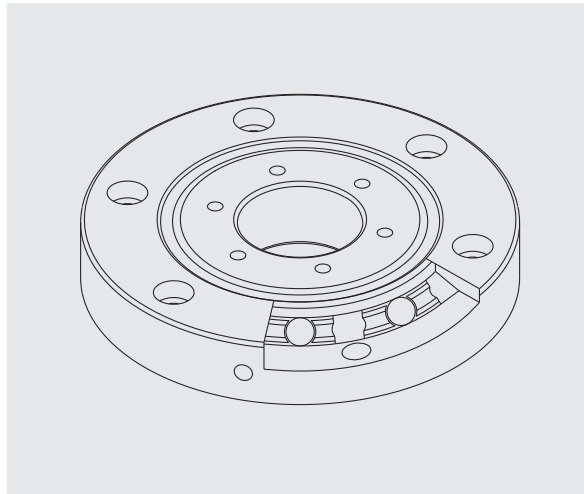


## Product Models and Specifications

### GSRU

### One-Piece Inner & Outer Ring

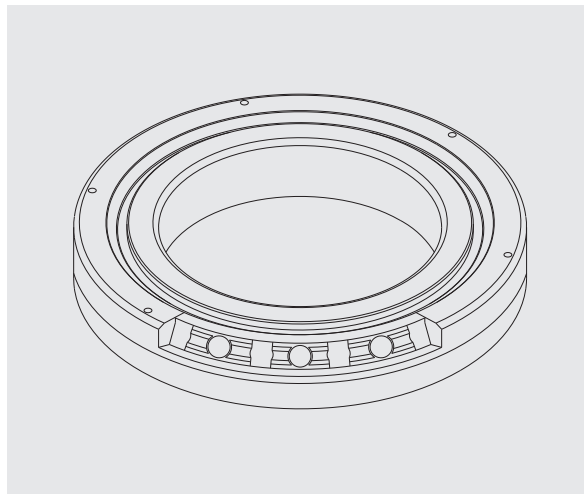
The single structure with mounting holes on inner and outer rings does not require the use of flange discs or housings; therefore reduces mounting errors, achieves stable rotational accuracy and moment torque. Suitable for inner and outer ring rotation.



### GSRB

### Split Outer Ring Model for Inner Ring Rotation

Standard model with two split outer rings bolted together and a one-piece inner ring suitable for precision inner ring rotation.

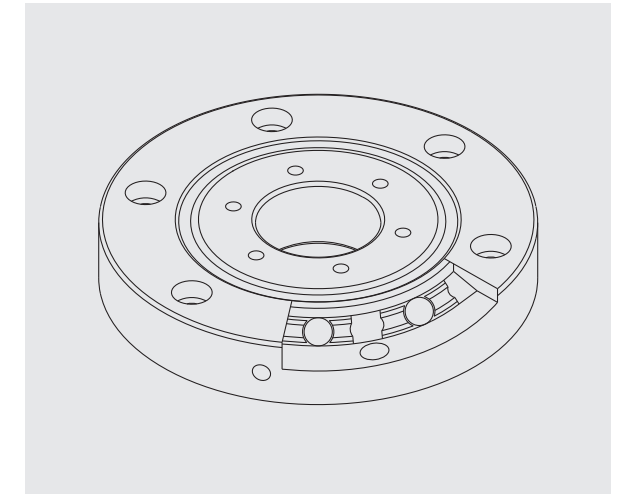


## Product Models and Specifications

### GSRBE

### One-Piece Inner & Outer Ring

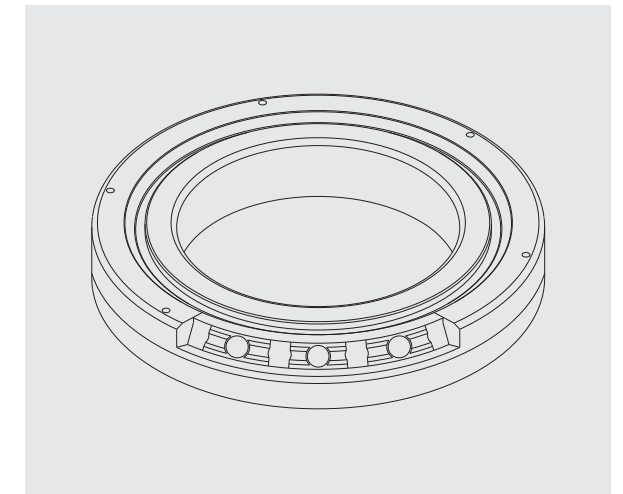
The one-piece inner & outer ring structure provides high rigidity, high accuracy and smooth rotation; suitable for inner and outer ring rotation



### GSRAU

### One-Piece Inner & Outer Ring

Super slim type cross roller bearing with three options of bearing width: 5mm, 8mm and 13mm. Rigid and compact design is suitable for limited space and lightweight mechanism.

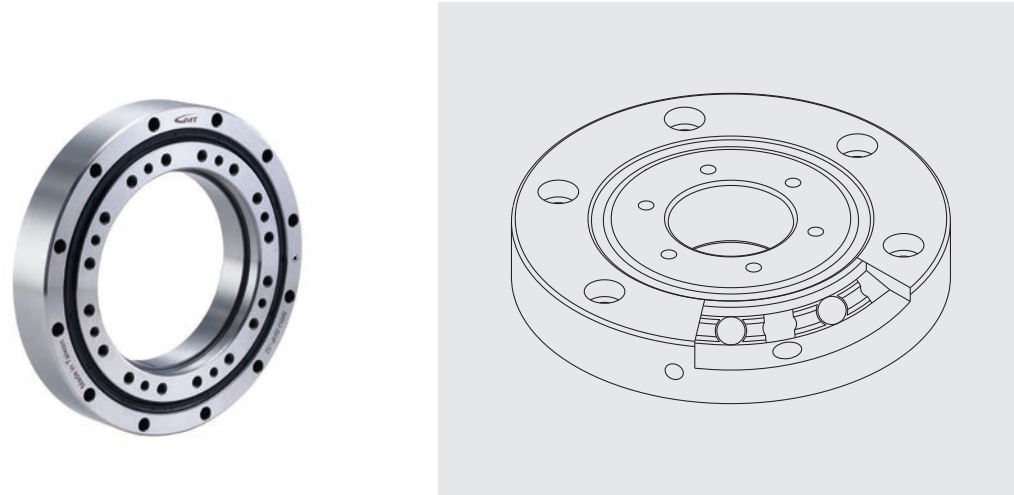


## Product Models and Specifications

### GSSHf

### One-Piece Inner & Outer Ring

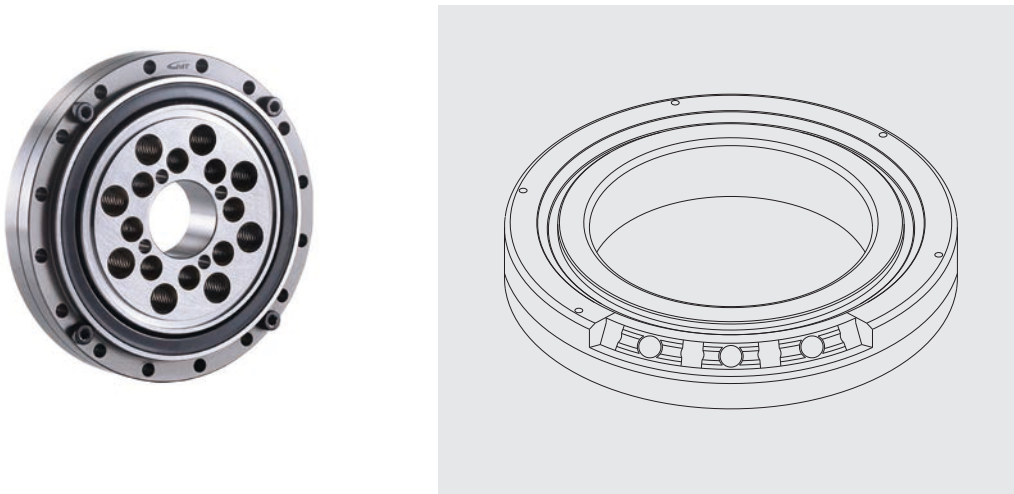
Specifically designed for SHF type strain wave gears, this cross roller bearing has mounting holes for easy installation.



### GSCSG

### Split Outer Ring

Specifically designed for CSG type strain wave gears, this cross roller bearing has mounting holes for easy installation.



## Basic Rated Life

The 90% of a group of identical Cross Roller Bearings can operate individually under the same conditions without showing material damage such as flaking caused by rolling fatigue. The basic rated life is represented by the total service hours for rotations at a constant rotational speed.

The service life of the cross roller bearing is calculated using the following formula:

L : Basic rated life

C : Basic dynamic load rating

P : Dynamic-equivalent load

The number of revolutions is expressed in the unit of  $10^6$  (rev)

$$L = \left( \frac{C}{P} \right)^{10/3}$$

## Dynamic Equivalent Radial Load : P

The dynamic-equivalent radial load on cross roller bearings is calculated using the following formula:

P : dynamic-equivalent radial load (kN)

Fr : radial load (kN)

Fa : axial load (kN)

M : moment (kN.mm)

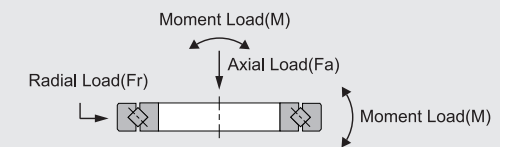
X : dynamic radial coefficient (see table1)

Y : dynamic axial coefficient (see table1)

dw : pitch circle diameter of rollers (mm)

$$P = X \cdot \left( Fr + \frac{2M}{dw} \right) + Y \cdot Fa$$

## Dynamic Equivalent Radial Load : P



## Dynamic radial and axial coefficients (Table 1)

Categories	X	Y
$\frac{Fa}{Fr+2M/dw} \leq 1.5$	1	0.45
$\frac{Fa}{Fr+2M/dw} > 1.5$	0.67	0.67

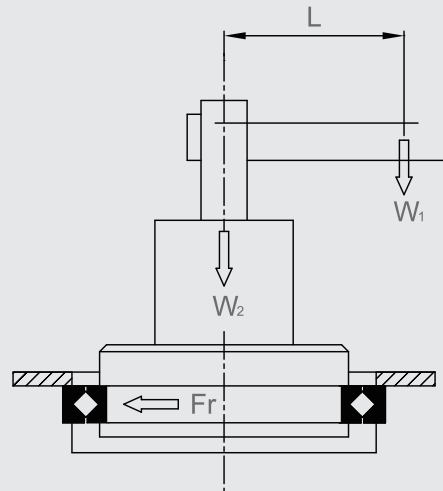
## An Example for Rated Life Calculation

Calculate the rated life when bearings are used under the following conditions

ID : d=110 (mm)  
OD : D=160 (mm)  
W<sub>1</sub>= 700 (N)  
W<sub>2</sub>= 2000 (N)  
Fr = 2500 (N)  
L = 700 (mm)

Example: Model GSRB11020

Pitch circle diameter : dw= 135 (mm)  
Basic dynamic rated load C = 34,000 N  
Basic static rated load C<sub>0</sub> = 54,000 N  
Radial load : Fr = 2500 (N)  
Axial load : Fa=W<sub>1</sub>+W<sub>2</sub>=700+2000=2700 (N)  
Moment : M=W<sub>1</sub>xL=700x700=490000 (N•mm)  
Pitch circle diameter : dw=(d+D)/2=(110+160)/2=135 (mm)



$$\frac{F_a}{F_r + 2M / dw} = \frac{2700}{2500 + 2 \times 490000 / 135} \approx 0.2766 < 1.5$$

Hence, if radial load coefficient: x=1, axial load coefficient: y=0.45,  
then dynamic-equivalent radial load:

$$P = X \cdot \left( F_r + \frac{2M}{dw} \right) + Y \cdot F_a$$

$$= 1 \times \left( 2500 + \frac{2 \times 490000}{135} \right) + 0.45 \cdot 2700 = 10974(\text{N})$$

Basic rated life:

$$L = \left( \frac{C}{P} \right)^{\frac{10}{3}} = \left( \frac{34000}{10974} \right)^{\frac{10}{3}} = 43.35^6 (\times 10 \text{ rev})$$

## Static Safety Coefficient

This coefficient is determined by the basic static rated Static safety coefficient load (C<sub>0</sub>) and static-equivalent radial load (P<sub>0</sub>). When a load is statically or dynamically applied, the static safety coefficients shown in the following figure should be considered.

f<sub>s</sub> : Static safety coefficient  
C<sub>0</sub> : Basic static rated load (kN)  
P<sub>0</sub> : Static equivalent radial load (kN)

Static safety coefficient (f<sub>s</sub>)

$$f_s = \frac{C_0}{P_0}$$

Load Conditions	Lower Limit of f <sub>s</sub>
Normal load	1 ~ 2
Impact load	2 ~ 3

## Static Equivalent Radial Load : P<sub>0</sub>

The cross roller bearing's static equivalent radial load is calculated using the following formula.

P<sub>0</sub> : Static-equivalent radial load (kN)  
Fr : Radial load (kN)  
Fa : Axial load (kN)  
M : Moment (kN.mm)  
X<sub>0</sub> : Static radial coefficient (X<sub>0</sub>=1)  
Y<sub>0</sub> : Static axial coefficient (Y<sub>0</sub>=0.44)  
Dw : Pitch circle diameter of rollers (mm)

$$P_0 = X_0 \cdot \left( F_r + \frac{2M}{dw} \right) + Y_0 \cdot F_a$$

## Fit

### ◎ Fitting of Models GSRU

Fitting required positioning accuracy, h7 and H7 are recommended.

### ◎ Fitting of Models GSRB

Fitting required positioning accuracy are recommended in the following table.

Fitting for Models GSRB				
Radial Clearance	Use Conditions		Shaft	Support Unit
C1	Inner ring rotational load	General load	h5	H7
		Large impacts and moments		
	Outer ring rotational load	General load	g5	Js7
		Large impacts and moments		

## Accuracy Specifications

Accuracy and dimensional tolerances of crossed roller bearings are in accordance with the specifications shown in tables from 3 through 15.

**Table 3** GSRU、GSRB、GSRBE inner diameter dimensional accuracy Unit : μm

Inner ring diameter (d) Nominal dimension (mm)		Tolerance dm					
		0、P5、P4、P2		PS5		PS4、PS2	
		Above	Below	Above	Below	Above	Below
18	30	0	-10	0	-6	0	-5
30	50	0	-12	0	-8	0	-6
50	80	0	-15	0	-9	0	-7
80	120	0	-20	0	-10	0	-8
120	150	0	-24	0	-12	0	-9
150	180	0	-24	0	-12	0	-10
180	250	0	-30	0	-14	0	-12
250	315	0	-34	0	-17	-	-

**Table 4** GSRU、GSRB、GSRBE outer diameter dimensional accuracy Unit : μm

Outer ring diameter (D) Nominal dimension (mm)		Tolerance dm					
		0、P5、P4、P2		PS5		PS4、PS2	
		Above	Below	Above	Below	Above	Below
30	50	0	-11	0	-7	0	-6
50	80	0	-13	0	-9	0	-7
80	120	0	-15	0	-10	0	-8
120	150	0	-18	0	-10	0	-9
150	180	0	-24	0	-12	0	-9
180	250	0	-30	0	-15	0	-10
250	315	0	-34	0	-18	0	-12

**Table 5** GSRAU ID and OD dimensional accuracy Unit : μm

Inner ring diameter (d) Nominal dimension (mm)		SRAU Inner Ring		SRAU Outer Ring	
		Above	Below	Above	Below
-	18	0	-8	-	-
18	30	0	-10	0	-9
30	50	0	-12	0	-11
50	80	0	-15	0	-13
80	120	0	-20	0	-15
120	150	0	-25	0	-18
150	180	0	-25	0	-25
180	315	0	-30	0	-30

## Accuracy Specifications

**Table 6** GSRU inner & outer ring rotational accuracy Unit : μm

Model No.	Inner ring radial/axial run-out tolerance			Outer ring radial/axial run-out tolerance		
	P5	P4	P2	P5	P4	P2
	GSRU42	4	3	2.5	8	5
GSRU66	5	4	2.5	10	6	5
GSRU85	5	4	2.5	10	6	5
GSRU124	5	4	2.5	12	8	5
GSRU148	6	5	2.5	15	10	7
GSRU178	6	5	2.5	15	10	7
GSRU228	8	6	5	18	11	7

**Table 7** GSRB inner ring rotational accuracy Unit : μm

Inner ring diameter (d) Nominal dimension (mm)		Inner ring radial run-out tolerance				Inner ring axial run-out tolerance			
		0	PS5 P5	PS4 P4	PS2 P2	0	PS5 P5	PS4 P4	PS2 P2
18	30	12	4	3	2.5	12	4	3	2.5
30	50	13	5	4	2.5	13	5	4	2.5
50	80	15	5	4	2.5	15	5	4	2.5
80	120	20	6	5	2.5	20	6	5	2.5
120	150	20	8	6	2.5	20	8	6	2.5
150	180	25	8	6	5	25	8	6	5
180	250	25	10	8	5	25	10	8	5
250	315	35	13	10	-	35	13	10	-

## Accuracy Specifications

Table 8 GSRBE inner ring rotational accuracy Unit : $\mu\text{m}$											
Inner ring diameter (d) Nominal dimension (mm)		Inner ring radial run-out tolerance					Inner ring axial run-out tolerance				
		0	P6	P5	P4	P2	0	P6	P5	P4	P2
Above	Below	Max.					Max.				
-	20	13	8	4	3	2.5	13	8	4	3	2.5
20	30	15	10	5	4	2.5	15	10	5	4	2.5
30	35	15	10	5	4	2.5	15	10	5	4	2.5
35	50	20	10	5	4	2.5	20	10	5	4	2.5
50	65	20	10	5	4	2.5	20	10	5	4	2.5
65	80	25	13	6	5	2.5	25	13	6	5	2.5
80	100	25	13	6	5	2.5	25	13	6	5	2.5
100	120	30	18	8	6	2.5	30	18	8	6	2.5

Table 9 GSRBE outer ring rotational accuracy Unit : $\mu\text{m}$											
Outer ring diameter (d) Nominal dimension (mm)		Outer ring radial run-out tolerance					Outer ring axial run-out tolerance				
		0	P6	P5	P4	P2	0	P6	P5	P4	P2
Above	Below	Max.					Max.				
50	60	20	10	7	5	2.5	20	10	7	5	2.5
60	80	25	13	8	5	4	25	13	8	5	4
80	95	25	13	8	5	4	25	13	8	5	4
95	120	35	18	10	6	5	35	18	10	6	5
120	140	35	18	10	6	5	35	18	10	6	5
140	150	40	20	11	7	5	40	20	11	7	5
150	165	40	20	11	7	5	40	20	11	7	5
165	180	45	23	13	8	5	45	23	13	8	5
180	210	45	23	13	8	5	45	23	13	8	5
210	240	50	25	15	10	7	50	25	15	10	7

## Accuracy Specifications

Table 10 GSRAU inner ring rotational accuracy Unit : $\mu\text{m}$									
Inner ring diameter (d) Nominal dimension (mm)		Inner ring radial run-out tolerance				Inner ring axial run-out tolerance			
		0	P6	P5	P4	0	P6	P5	P4
Above	Below	0	P6	P5	P4	0	P6	P5	P4
-	18	10	-	-	-	10	-	-	-
18	40	13	-	-	-	13	-	-	-
40	65	13	10	5	4	13	10	5	4
65	80	15	10	5	4	15	10	5	4
80	100	15	13	6	5	15	13	6	5
100	120	20	13	6	5	20	13	6	5
120	140	25	18	8	6	25	18	8	6
140	180	25	18	8	6	25	18	8	6
180	200	30	20	10	8	30	20	10	8

Table 11 GSRAU outer ring rotational accuracy Unit : $\mu\text{m}$							
Outer ring diameter (d) Nominal dimension (mm)		Outer ring radial run-out tolerance			Outer ring axial run-out tolerance		
		0	P5	P4	0	P5	P4
Above	Below	0	P5	P4	0	P5	P4
-	65	13	-	-	13	-	-
65	80	13	8	5	13	8	5
80	100	15	10	6	15	10	6
100	120	15	10	6	15	10	6
120	140	20	11	7	20	11	7
140	180	25	11	7	25	11	7
180	200	25	15	10	25	15	10
200	250	30	15	10	30	15	10

## Accuracy Specifications

**Table 12** GSRU Inner & Outer ring thickness tolerances  
Unit :  $\mu\text{m}$

Model No.	Tolerances	
	Above	Below
GSRU42	0	-70
GSRU66	0	-70
GSRU85	0	-70
GSRU124	0	-70
GSRU148	0	-70
GSRU178	0	-80
GSRU228	0	-80

**Table 13** GSRB Inner & Outer ring thickness tolerances (for all grades)  
Unit :  $\mu\text{m}$

Inner ring diameter (d) Nominal dimension (mm)		Tolerances		Tolerances	
		GSRB Inner Ring		GSRB Outer Ring	
Above	Below	Above	Below	Above	Below
18	30	0	-70	0	-90
30	50	0	-70	0	-90
50	80	0	-70	0	-90
80	120	0	-70	0	-90
120	150	0	-80	0	-100
150	180	0	-80	0	-100
180	250	0	-80	0	-100
250	315	0	-80	0	-130

**Table 14** GSRBE Inner & Outer ring thickness tolerances  
Unit :  $\mu\text{m}$

Tolerance	
Max.	Min.
0	-75

**Table 15** GSRAU Inner & Outer ring thickness tolerances  
Unit :  $\mu\text{m}$

Tolerance	
Max.	Min.
0	-120

## Radial Clearance

The radial clearance of standard GSRU, GSRB, GSRBE and GSRAU shown in tables from 16 through 18.

**Table 16** GSRU model radial clearance  
Unit :  $\mu\text{m}$

Model No.	S1 Radial Clearance		C1 Radial Clearance	
	Min.	Max.	Min.	Max.
GSRU42	-8	0	0	24
GSRU66	-8	0	0	28
GSRU85	-8	0	0	38
GSRU124	-12	0	0	38
GSRU148	-12	0	0	38
GSRU178	-12	0	0	48
GSRU228	-12	0	0	58

**Table 17** GSRB & GSRBE model radial clearance  
Unit :  $\mu\text{m}$

Roller Pitch Circle Diameter (dw) (mm)		S1 Radial Clearance		C1 Radial Clearance	
Above	Below	Min.	Max.	Min.	Max.
18	30	-8	0	0	14
30	50	-8	0	0	24
50	80	-8	0	0	28
80	120	-8	0	0	38
120	140	-8	0	0	38
140	160	-10	0	0	38
160	180	-10	0	0	48
180	200	-10	0	0	48
200	225	-10	0	0	58
225	250	-10	0	0	58
250	280	-14	0	0	78
280	315	-14	0	25	98
315	355	-14	0	25	108

**Table 18** GSRAU model radial clearance  
Unit :  $\mu\text{m}$

Roller Pitch Circle Diameter (dw) (mm)		S1 Radial Clearance		C1 Radial Clearance	
Above	Below	Min.	Max.	Min.	Max.
-	18	-	-	0	15
18	30	-	-	0	15
30	50	-	-	0	15
50	80	-8	0	0	15
80	120	-8	0	0	15
120	140	-8	0	0	15
140	160	-8	0	0	15
160	180	-10	0	0	20
180	200	-10	0	0	20
200	225	-10	0	0	20

## Methods and Design of The Housing and Flange Disc

Due to the thin wall structure of the cross roller bearings, full consideration must be given to the rigidity of the housing and flange discs. With split type bearings, if the housing or flange disc is not rigid enough, the inner ring or outer ring cannot be evenly held, resulting bearing deformation when moment load is applied. Therefore, the contact area of the rollers will become uneven, causing significant decrease in bearing performance.

To prevent this from occurring, it is recommended to design the housing and flange discs by the following methods:

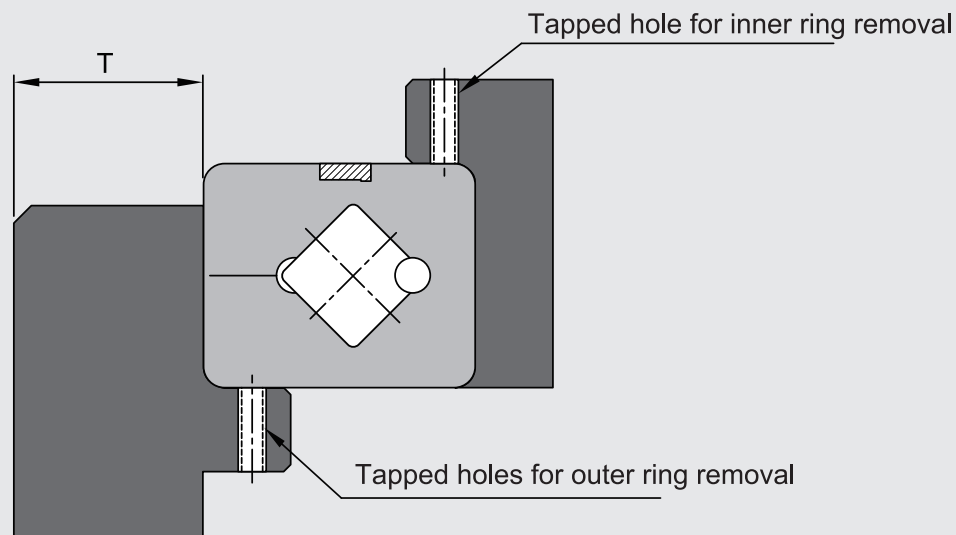
**Housing:** at least 60% of the sectional height of the cross roller bearing

Housing wall thickness : 
$$T = \frac{(D - d)}{2} \times 0.6 \text{ or greater}$$

(D: outer diameter of the outer ring; d: inner diameter of the inner ring)

**Tapped hole for bearing removal**

Alternatively, tapped holes for removing bearings may be set up on the housing; when it is necessary to remove the bearings from housing, the screws may be locked into the tapped holes to push the bearing out without incurring any damage.



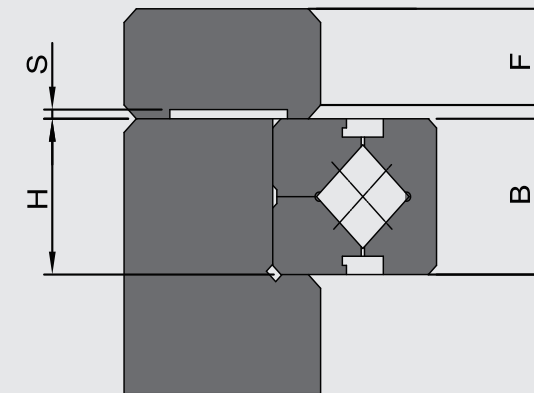
## Flange Discs and Locking Screws

The values of the wall thickness (F) or the clearance (S) of the flange discs may be designed per the following formula. As for the quantity of locking screws, it may be configured at equal intervals by using the quantity shown in table (1).

$$F = B \times 0.5 \sim B \times 1.2$$

$$H = B_{-0.1}^{0}$$

$$S = 0.5 \text{ (mm)}$$



It is recommended to secure the flange discs using materials made of iron. It is advised to firmly lock the screws using torque wrenches. See table (2) for the locking torques of supporting seats or supported flange discs which are made of medium hardness steel.

Table 1		Number of locking screws and size Unit : mm		Table 2		Screw locking torque Unit : N-m	
Outer diameter of the outer ring (D)		Number of screws	Screw size (base value)	Screw Model	Locking torque	Screw model	Locking torque
Above	Below						
–	100	8 or more	M3~M5	M3	2.1	M10	72
100	200	12 or more	M4~M8	M4	3.9	M12	122
200	500	16 or more	M5~M12	M5	9	M16	201
500	–	24 or more	M12 or more	M6	13	M20	392
				M8	31	M22	531

## Installation Steps

Please follow below steps when installing cross roller bearings:

### 1. Checking each part and component before installing

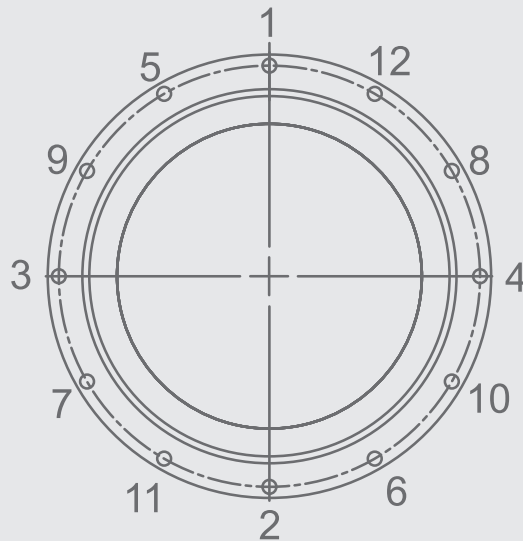
Clean the housing and other installation components, remove dirt and make sure there are no burrs.

### 2. Insert the crossed roller bearings into supporting seat or shaft

The cross roller bearing is easily tilted due to its thin wall structure. To install, level one side, and gradually insert the bearing by evenly and cautiously hammering along the perimeter using a rubber hammer or similar tool until the sound of the ring come in full contact with the mounting surface.

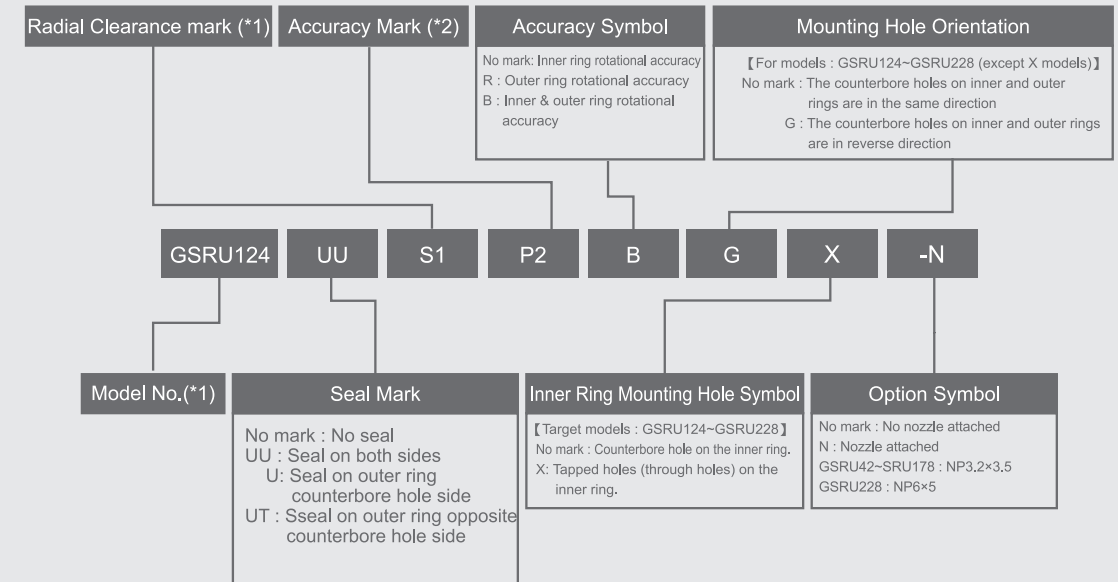
### 3. Installing the flange disc

- (1) Place the disc into position, shake it along its circumference back and forth several times to match the bolt holes.
- (2) Install screws. When manually turning the screws, make sure that the screw is fully aligned with the screw hole.
- (3) Tighten the screws in the order on the diagonal repeatedly as shown in the following figure, and fasten the disc from loose to tighten in three to four steps. When tightening the split type inner or outer rings, slightly turn the one-piece inner or outer rings to correct the misalignment between the ring and body.



## Model Specification

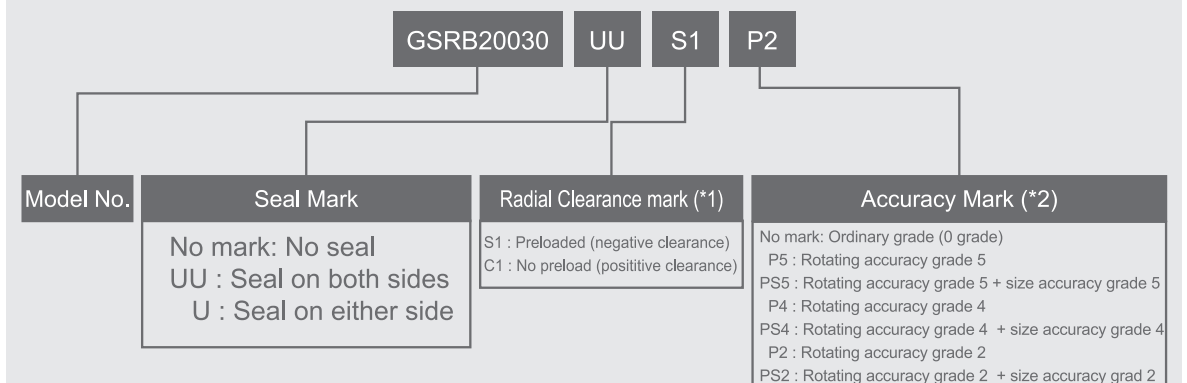
### ◎ GSRU Models (One piece inner & outer ring)



(\*1) Please refer to P.19

(\*2) Please refer to P.15

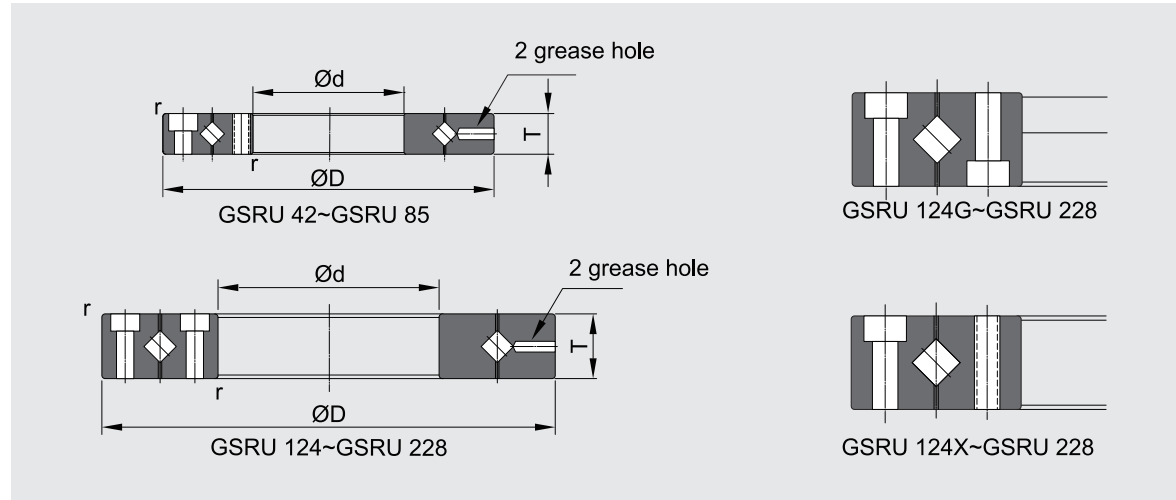
### ◎ GSRB Models (Split outer ring model for inner ring rotation)



(\*1) Please refer to P.19

(\*2) Please refer to P.15

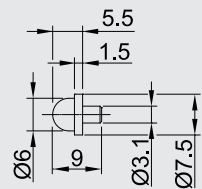
GSRU Model (One piece inner & outer ring)



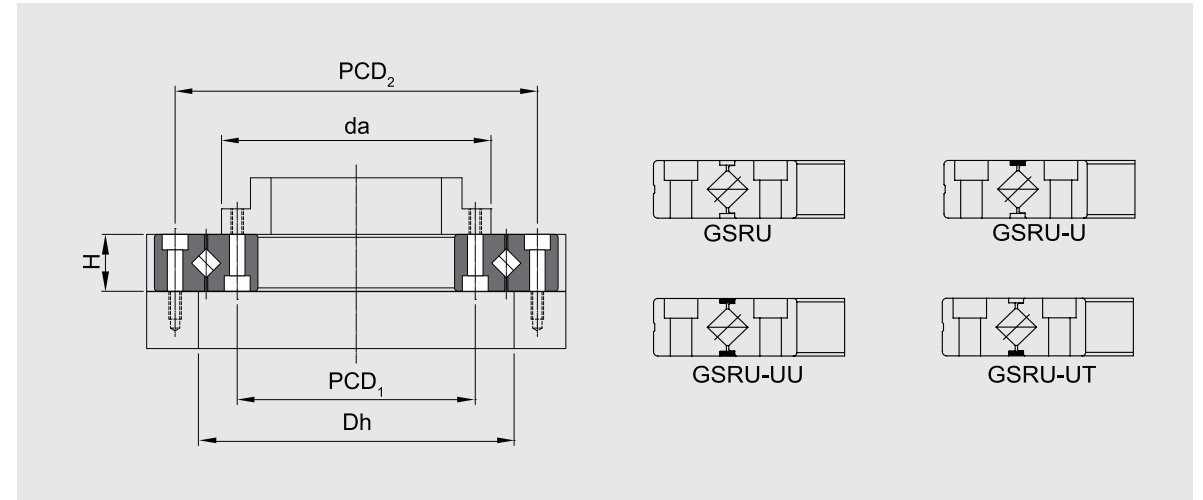
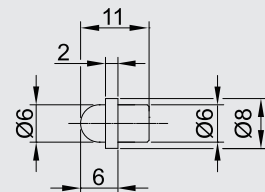
Unit: mm

Shaft Diameter	Model Number	Main Dimensions					Shoulder Height		Basic Load Rating (Radial)		Weight Kg
		Inner Diameter Ød	Outer Diameter ØD	Thickness T	Greasing Hole d <sub>1</sub>	Chamfer r <sub>min</sub>	Øda	ØDh	C kN	C <sub>0</sub> kN	
20	GSRU42	20	70	12	3	0.5	36	46	7.3	8.33	0.28
35	GSRU66	35	95	15	3	0.5	58	75	17.53	22.31	0.6
55	GSRU85	55	120	15	3	0.5	78	94	20.31	29.55	1.1
80	GSRU124(G)	80	165	22	3	1	115	133	33	50.85	2.61
	GSRU124X										
90	GSRU148(G)	90	210	25	3	1.5	134	161	49	76.83	4.95
	GSRU148X										
115	GSRU178(G)	115	240	28	3	1.5	162	194	80.32	134.9	6.78
	GSRU178X										
160	GSRU228(G)	160	295	35	6.1	2	207	247	103.5	172.8	10.5
	GSRU228X										

NP3.2x3.5



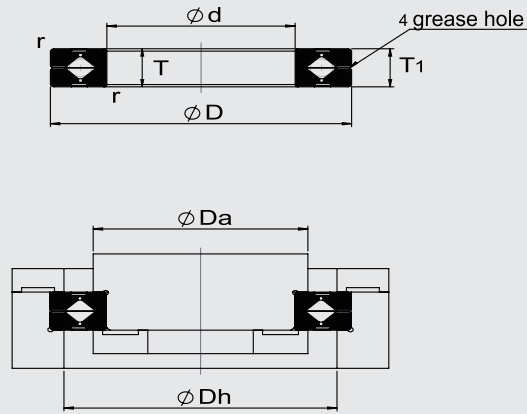
NP6x5



Mounting Hole Specifications

Inner Ring		Outer Ring	
PCD <sub>1</sub>	Mounting Hole	PCD <sub>2</sub>	Mounting Hole
28	6-M3 through	57	6-Ø3.5 Through , Ø6.5 hole depth 3.5
45	8-M4 through	83	8-Ø4.5 Through , Ø8 hole depth 4.5
65	8-M5 through	105	8-Ø5.5 Through , Ø10 hole depth 5.5
97	10-Ø5.5 Through , Ø10 hole depth 5.5	148	10-Ø5.5 Through , Ø10 hole depth 5.5
	10-M5 through		
112	12-Ø9.0 Through , Ø14 hole depth 8.5	187	12-Ø9.0 Through , Ø14 hole depth 8.5
	12-M8 through		
139	12-Ø9.0 Through , Ø14 hole depth 8.5	217	12-Ø9.0 Through , Ø14 hole depth 8.5
	12-M8 through		
184	12-Ø11 Through , Ø18 hole depth 10.8	270	12-Ø11 Through , Ø18 hole depth 10.8
	12-M10 through		

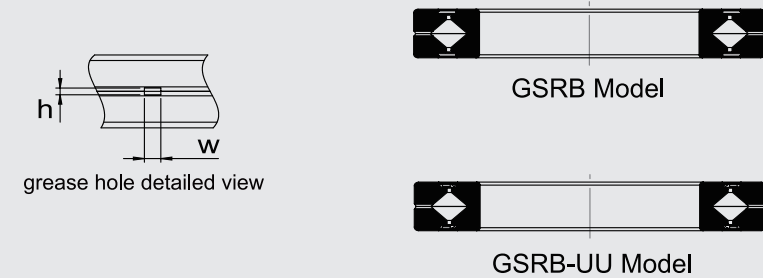
GSRB Model (Split Outer Ring model for inner ring rotation)



Unit : mm

Shaft Diameter	Model Number	Main Dimensions						Shoulder Height		Basic Load Rating (Radial)		Weight Kg
		Inner Diameter Ød	Outer Diameter ØD	Thickness T, T <sub>1</sub>	Greasing Hole		Chamfer r <sub>min</sub>	Øda	ØDh	C kN	C <sub>0</sub> kN	
					w	h						
20	GSRB2008	20	36	8	2.1	0.7	0.5	24	30	3.2	3.1	0.06
25	GSRB2508	25	41	8	2.1	0.7	0.5	29	35	3.6	3.8	0.07
30	GSRB3010	30	55	10	2.6	0.8	0.6	37.5	46.5	7.4	8.4	0.14
35	GSRB3510	35	60	10	2.6	0.8	0.6	41.5	51	7.6	9.1	0.12
40	GSRB4010	40	65	10	2.6	0.8	0.6	47	58	8.3	10.8	0.18
45	GSRB4510	45	70	10	2.6	0.8	0.6	51.5	61	8.6	11.1	0.15
50	GSRB5013	50	80	13	2.6	1.5	0.6	57	72.5	16.6	20.7	0.28
60	GSRB6013	60	90	13	2.6	1.5	0.6	67.5	82.5	18	24.1	0.32
70	GSRB7013	70	100	13	2.6	1.5	0.6	78.5	91.5	19.5	27.9	0.37
80	GSRB8016	80	120	16	3.1	1.5	0.8	91.5	110	30	42	0.72
90	GSRB9016	90	130	16	3.1	1.5	1.0	98.8	117	31.3	45.1	0.77
100	GSRB10016	100	140	16	3.6	1.5	1.0	110	128	31.8	48.8	0.82
	GSRB10020		150	20	3.6	1.5	1.0	117	132	33	51	1.47
110	GSRB11012	110	135	12	2.6	0.8	0.6	118	126	12.6	24	0.42
	GSRB11015		145	15	3.6	1.5	0.6	123	135	23.8	41.8	0.76
	GSRB11020		160	20	3.6	1.5	1.0	121	139	34	54	1.58
120	GSRB12016	120	150	16	3.6	1.5	0.8	128	140	24.3	43.4	0.74
	GSRB12025		180	25	3.6	2.1	1.5	134	163	66.8	100.2	2.62

© Note) (w) and (h) greasing hole dimensions in the detailed view are reference values.

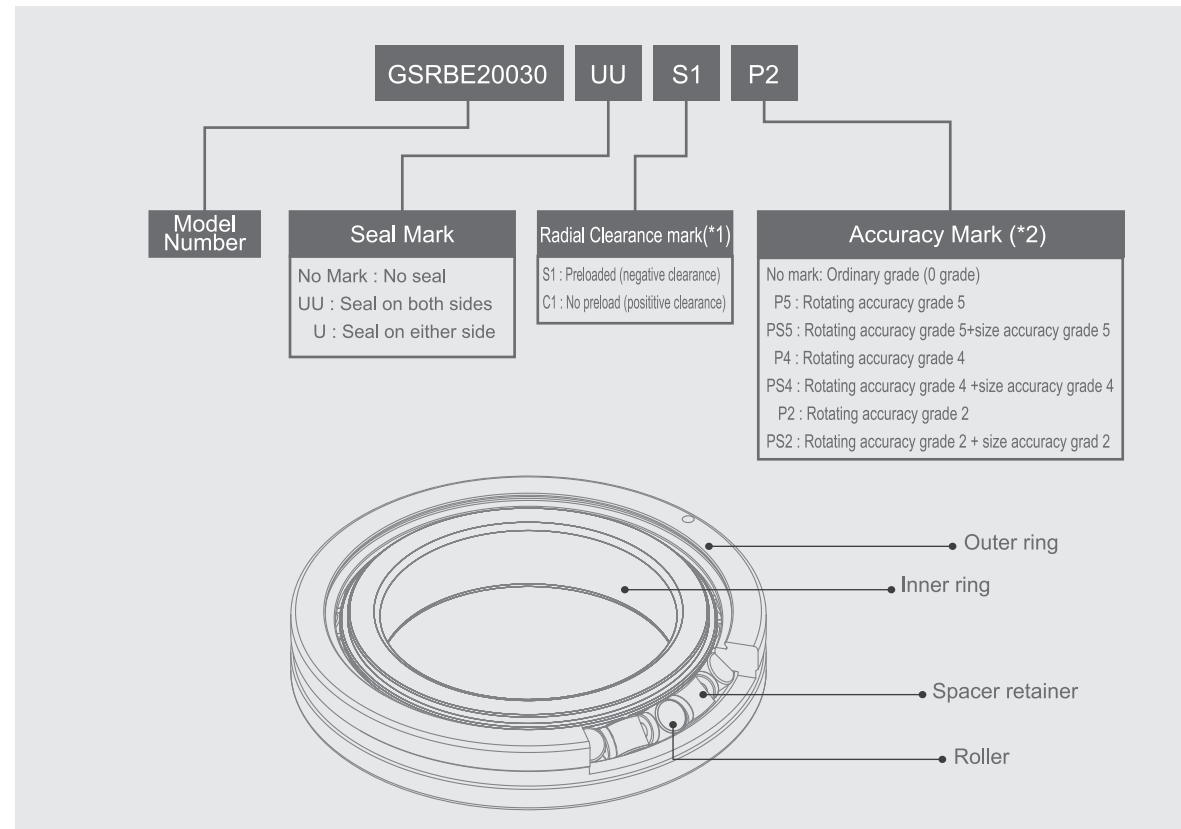


Unit : mm

Shaft Diameter	Model Number	Main Dimensions						Shoulder Height		Basic Load Rating (Radial)		Weight Kg
		Inner Diameter Ød	Outer Diameter ØD	Thickness T, T <sub>1</sub>	Greasing Hole		Chamfer r <sub>min</sub>	Øda	ØDh	C kN	C <sub>0</sub> kN	
					w	h						
130	GSRB13015	130	160	15	3.6	1.5	0.8	136	151	25	46.9	0.74
	GSRB13025		190	25	3.6	2.1	1.2	144	173	69.7	107.3	2.8
140	GSRB14016	140	175	16	2.6	1.5	0.8	148	163	26	50.3	1.1
	GSRB14025		200	25	3.6	2.1	1.2	155	184	74.7	121	2.98
150	GSRB15013	150	180	13	2.6	1.5	0.5	158	171	27.1	53.7	0.66
	GSRB15025		210	25	3.6	2.1	1.2	165	193	76.5	128	3.18
	GSRB15030		230	30	4.6	3.1	1.5	174	210	100	156	5.2
160	GSRB16025	160	220	25	3.6	2.1	1.2	172	205	81.6	135	3.12
170	GSRB17020	170	220	20	3.6	1.5	1.2	185	197	29.2	62	2.2
180	GSRB18025	180	240	25	3.6	1.8	1.2	196	224	84.3	143	3.41
190	GSRB19025	190	240	25	3.6	1.5	0.8	203	221	41.8	82.7	2.97
200	GSRB20025	200	260	25	3.6	1.8	1.8	214	246	84.1	157	4.2
	GSRB20030		280	30	4.6	2.8	1.8	222	257	113	202	6.8
	GSRB20035		295	35	5.1	2.8	1.8	224	271	151	251	9.8
220	GSRB22025	220	280	25	3.6	1.8	1.8	236	264	92.1	173	4
240	GSRB24025	240	300	25	3.6	1.8	2.2	255	282	68.4	146	4.7
250	GSRB25025	250	310	25	3.6	1.8	2.2	264	291	69.2	152	5.2

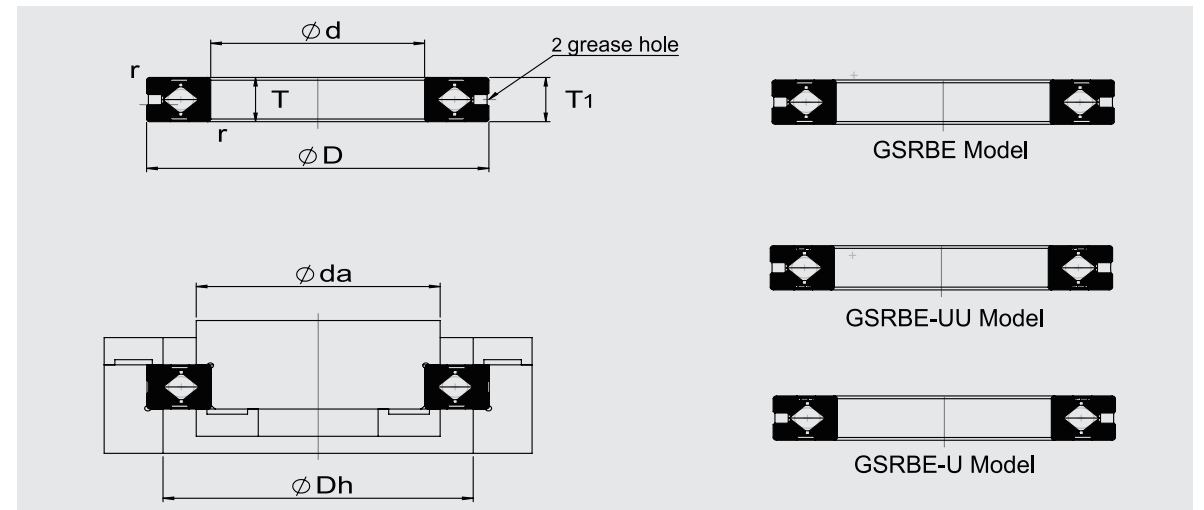
© Note) (w) and (h) greasing hole dimensions in the detailed view are reference values.

### GSRBE Model (One piece inner & outer ring)



Unit : mm

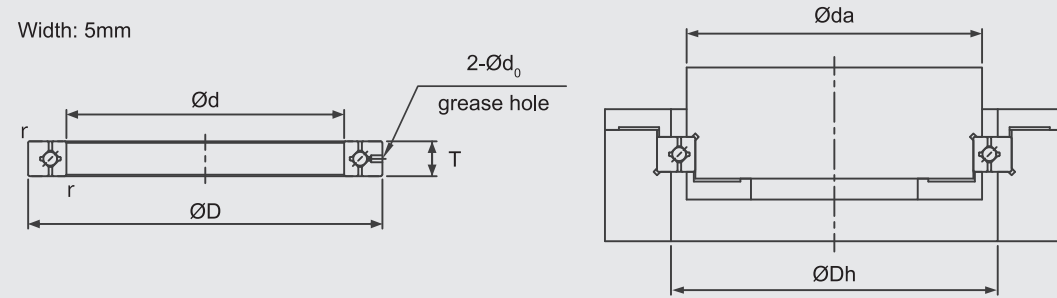
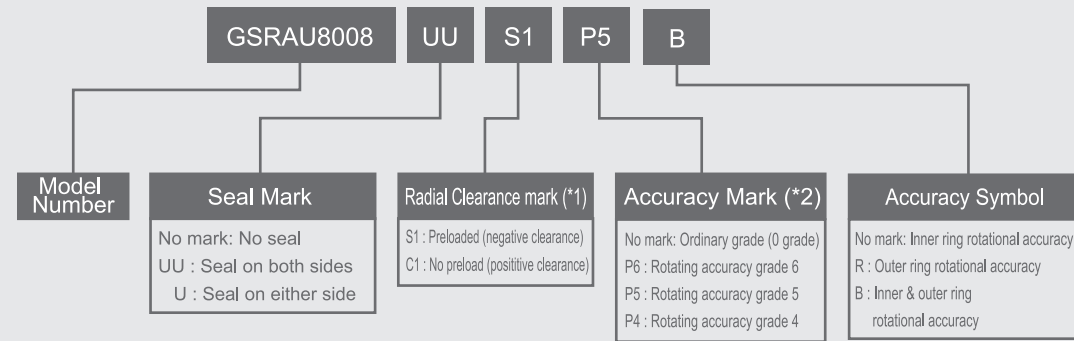
Shaft Diameter	Model Number	Main Dimensions					Shoulder Height		Basic Load Rating (Radial)		Weight Kg
		Inner Diameter Ød	Outer Diameter ØD	Thickness T, T <sub>1</sub>	Greasing Hole	Chamfer r <sub>min</sub>	Øda	ØDh	C kN	C <sub>0</sub> kN	
20	GSRBE2008	20	36	8	2-Ø2	0.5	24	30	3.2	3.1	0.06
25	GSRBE2508	25	41	8	2-Ø2	0.5	29	35	3.6	3.8	0.07
30	GSRBE3010	30	55	10	2-Ø2	0.6	37.5	46.5	7.4	8.4	0.14
35	GSRBE3510	35	60	10	2-Ø2	0.6	41.5	51	7.6	9.1	0.12
40	GSRBE4010	40	65	10	2-Ø2	0.6	47	58	8.3	10.8	0.18
45	GSRBE4510	45	70	10	2-Ø2	0.6	51.5	61	8.6	11.1	0.15
50	GSRBE5013	50	80	13	2-Ø3	0.6	57	72.5	16.6	20.7	0.28
60	GSRBE6013	60	90	13	2-Ø3	0.6	67.5	82.5	18	24.1	0.32
70	GSRBE7013	70	100	13	2-Ø3	0.6	78.5	91.5	19.5	27.9	0.37
80	GSRBE8016	80	120	16	2-Ø3	0.8	91.5	110	30	42	0.72
90	GSRBE9016	90	130	16	2-Ø3	1.0	98.8	117	31.3	45.1	0.77
100	GSRBE10016	100	140	16	2-Ø3	1.0	110	128	31.8	48.8	0.82
	GSRBE10020		150	20	2-Ø3	1.0	117	132	33	51	1.47



Unit : mm

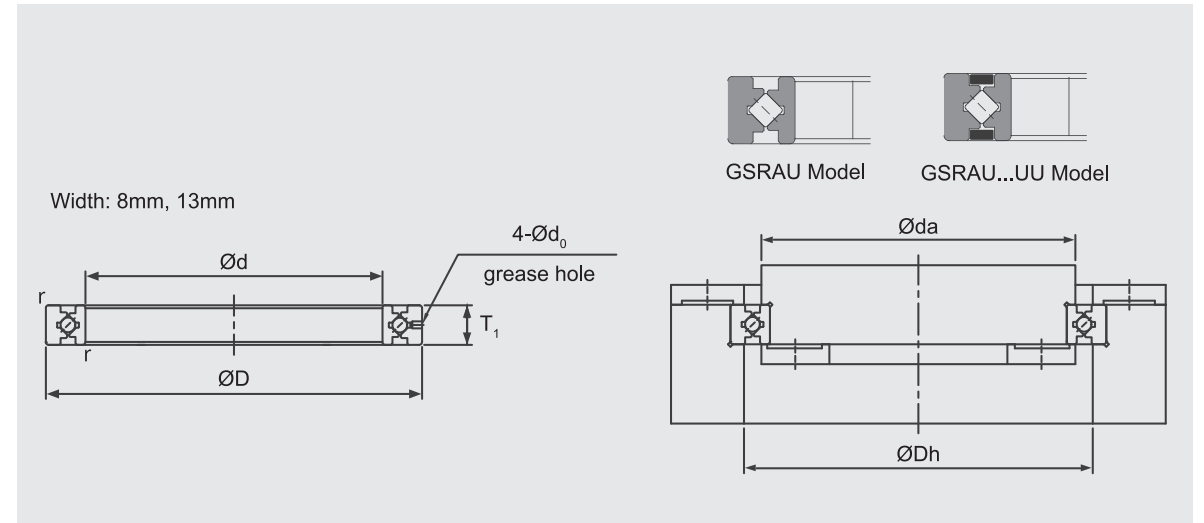
Shaft Diameter	Model Number	Main Dimensions									
		Inner Diameter Ød	Outer Diameter ØD								
110	GSRBE11012	110	135	12	2-Ø3	0.6	118	126	12.6	24	0.42
	GSRBE11015		145	15	2-Ø3	0.6	123	135	23.8	41.8	0.76
	GSRBE11020		160	20	2-Ø3	1.0	121	139	34	54	1.58
120	GSRBE12016	120	150	16	2-Ø3	0.8	128	140	24.3	43.4	0.74
	GSRBE12025		180	25	2-Ø3	1.5	134	163	66.8	100.2	2.62
130	GSRBE13015	130	160	15	2-Ø3	0.8	136	151	25	46.9	0.74
	GSRBE13025		190	25	2-Ø3	1.2	144	173	69.7	107.3	2.8
140	GSRBE14016	140	175	16	2-Ø3	0.8	148	163	26	50.3	1.1
	GSRBE14025		200	25	2-Ø3	1.2	155	184	74.7	121	2.98
150	GSRBE15013	150	180	13	2-Ø3	0.5	158	171	27.1	53.7	0.66
	GSRBE15025		210	25	2-Ø3	1.2	165	193	76.5	128	3.18
	GSRBE15030		230	30	2-Ø3	1.5	174	210	100	156	5.2
160	GSRBE16025	160	220	25	2-Ø3	1.2	172	205	81.6	135	3.12
170	GSRBE17020	170	220	20	2-Ø3	1.2	185	197	29.2	62	2.2
180	GSRBE18025	180	240	25	2-Ø3	1.2	196	224	84.3	143	3.41
190	GSRBE19025	190	240	25	2-Ø3	0.8	203	221	41.8	82.7	2.97
200	GSRBE20025	200	260	25	2-Ø3	1.8	214	246	84.1	157	4.2
	GSRBE20030		280	30	2-Ø3	1.8	222	257	113	202	6.8
	GSRBE20035		295	35	2-Ø3	1.8	224	271	151	251	9.8
220	GSRBE22025	220	280	25	2-Ø3	1.8	236	264	92.1	173	4
240	GSRBE24025	240	300	25	2-Ø3	2.2	255	282	68.4	146	4.7
250	GSRBE25025	250	310	25	2-Ø3	2.2	264	291	69.2	152	5.2

GSRAU (One piece inner & outer ring)



Unit : mm

Shaft Diameter	Model Number	Main Dimensions						Shoulder Height		Basic Load Rating (Radial)		Weight Kg
		Inner Diameter Ød	Outer Diameter ØD	Pitch Circle Diameter dw	Thickness T	Greasing Hole d₀	Chamfer r <sub>min</sub>	Øda	ØDh	C kN	C <sub>0</sub> kN	
20	GSRAU2005	20	31	24.7	5	1	0.15	22.5	27	1.49	1.4	0.015
30	GSRAU3005	30	41	34.7	5	1	0.15	32.5	37	1.89	2.14	0.021
40	GSRAU4005	40	51	44.7	5	1	0.15	42.5	47	2.14	2.74	0.027
50	GSRAU5005	50	61	54.7	5	1	0.15	52.5	57	2.43	3.49	0.032
60	GSRAU6005	60	71	64.7	5	1	0.15	62.5	67	2.63	4.09	0.038
70	GSRAU7005	70	81	74.7	5	1	0.15	72.5	77	2.81	4.68	0.044
80	GSRAU8005	80	91	84.7	5	1	0.15	82.5	87	3.05	5.43	0.5
90	GSRAU9005	90	101	94.7	5	1	0.15	92.5	97	3.19	6.03	0.056
100	GSRAU10005	100	111	104.7	5	1	0.15	102.5	107	3.37	6.63	0.061

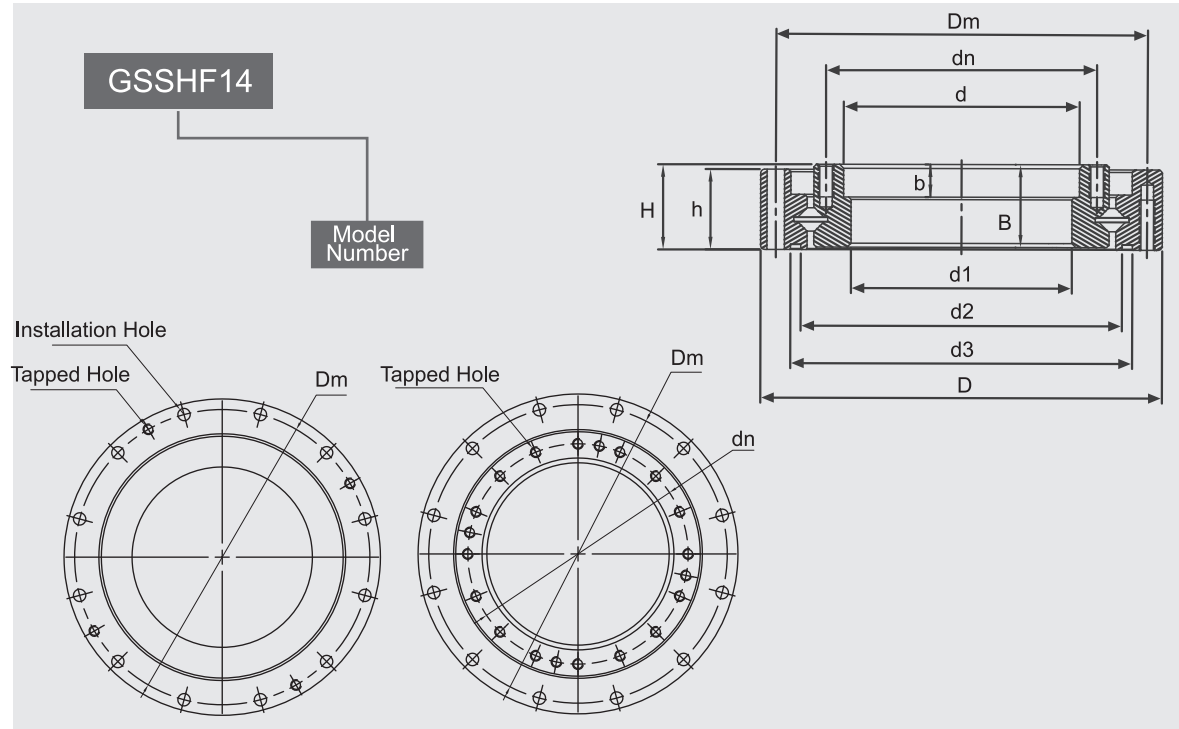


Unit : mm

Shaft Diameter	Model Number	Main Dimensions						Shoulder Height		Basic Load Rating (Radial)		Weight Kg
		Inner Diameter Ød	Outer Diameter ØD	Pitch Circle Diameter dw	Thickness T	Greasing Hole d₀	Chamfer r <sub>min</sub>	Øda	ØDh	C kN	C <sub>0</sub> kN	
50	GSRAU5008	50	66	57	8	1.5	0.5	53.5	60.5	5.1	7.19	0.08
60	GSRAU6008	60	76	67	8	1.5	0.5	63.5	70.5	5.68	8.68	0.09
70	GSRAU7008	70	86	77	8	1.5	0.5	73.5	80.5	5.98	9.8	0.1
80	GSRAU8008	80	96	87	8	1.5	0.5	83.5	90.5	6.37	11.3	0.11
90	GSRAU9008	90	106	97	8	1.5	0.5	93.5	100.5	6.76	12.4	0.12
100	GSRAU10008	100	116	107	8	1.5	0.5	103.5	110.5	7.15	13.9	0.14
110	GSRAU11008	110	126	117	8	1.5	0.5	113.5	120.5	7.45	15	0.15
120	GSRAU12008	120	136	127	8	1.5	0.5	123.5	130.5	7.84	16.5	0.17
130	GSRAU13008	130	146	137	8	1.5	0.5	133.5	140.5	7.94	17.6	0.18
140	GSRAU14008	140	156	147	8	1.5	0.5	143.5	150.5	8.33	19.1	0.19
150	GSRAU15008	150	166	157	8	1.5	0.5	153.5	160.5	8.82	20.6	0.2
160	GSRAU16013	160	186	172	13	2	0.8	165	179	23.3	44.9	0.59
170	GSRAU17013	170	196	182	13	2	0.8	175	189	23.5	46.5	0.64
180	GSRAU18013	180	206	192	13	2	0.8	185	199	24.5	49.8	0.68
190	GSRAU19013	190	216	202	13	2	0.8	195	209	24.9	51.5	0.69
200	GSRAU20013	200	226	212	13	2	0.8	205	219	25.8	54.5	0.71

GSSHF Model (One piece inner & outer ring)

GSSHF (One piece inner & outer ring)



Unit : mm

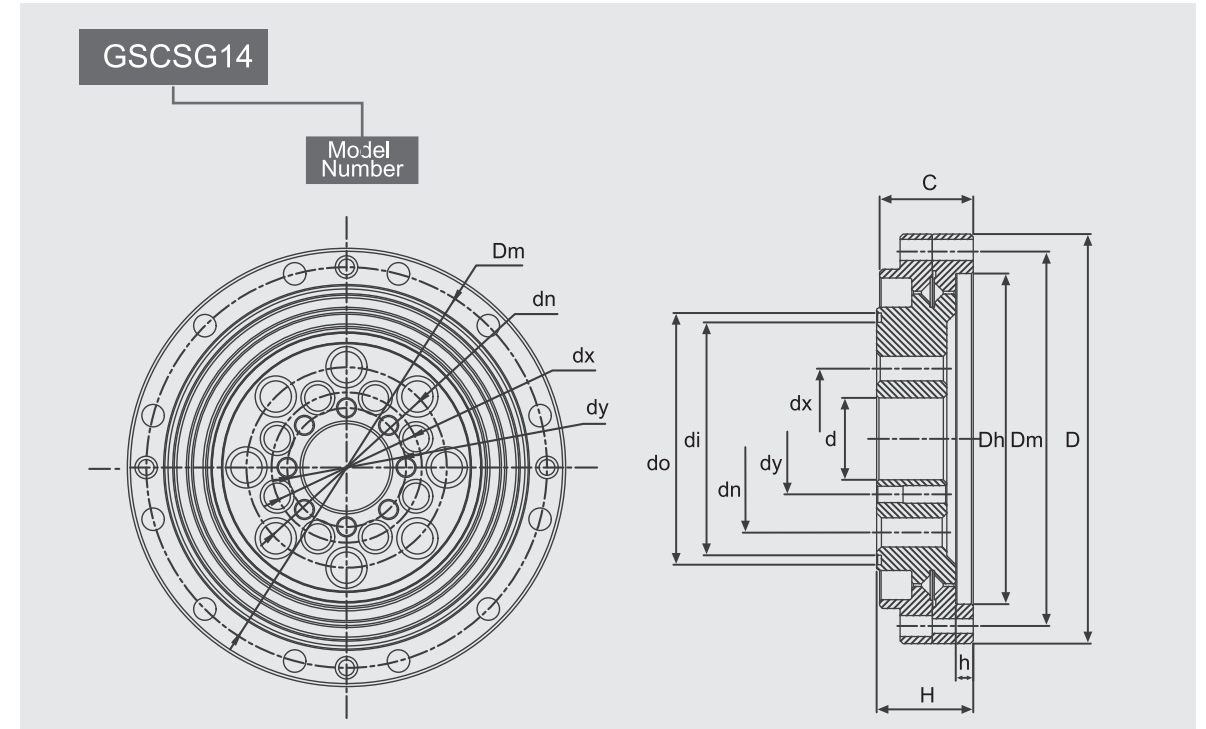
Model Number	Main Dimensions								
	D	d	d1	d2	d3	H	h	B	b
GSSHF14	70	38	36	53	57	15.1	14.1	14.7	5
GSSHF17	80	47	45.5	64	68.1	17	16	16.5	6.5
GSSHF20	90	54	51.3	72.6	78	18.5	17.5	17.5	7
GSSHF25	110	67	64.2	90	94.8	20.7	19.7	19.7	7.5
GSSHF32	142	88	84	117.5	123	24.4	23.4	22.9	8

Unit : mm

Model Number	Installation Hole Dimension (PCD&PEC)					Basic Load Rating (Radial)		Weight
	Outer Ring			Inner Ring		C kN	C <sub>o</sub> kN	
	Dm	Installation Hole	Tapped Hole	dn	Tapped Hole			Kg
GSSHF14	64	8-Ø3.5	2-M3	44	12-M3	10.34	13.82	0.1
GSSHF17	74	12-Ø3.5	4-M3	54	20-M3	10.07	14.12	0.34
GSSHF20	84	12-Ø3.5	4-M3	62	4-M3 / 16-M3	20.73	28.01	0.45
GSSHF25	102	12-Ø4.5	4-M3	77	4-M3 / 16-M4	23.22	34.64	0.7
GSSHF32	132	12-Ø5.5	4-M4	100	8-M4 / 16-M5	40.81	64.07	1.55

GSCSG Model (Split outer ring)

GSCSG (Split outer ring)



Unit : mm

Model Number	Main Dimensions								Basic Load Rating (Radial)		Weight
	D	Dh	d	do	di	H	h	C	C KN	C <sub>o</sub> KN	
GSCSG14	55	41.8	11	29.7	28.3	16.5	2.5	16	4.88	5.68	0.13
GSCSG17	62	49	10	36	33.8	16.5	2.7	16	5.46	7.02	0.22
GSCSG20	70	56.5	14	43	39.8	16.5	3	16	6.67	9.66	0.2
GSCSG25	85	68	20	55.4	52.5	18.5	2	18	10.3	14.76	0.45
GSCSG32	112	90	26	74.1	68.4	22.5	3	21.5	22.6	32.97	0.88

Unit : mm

Model Number	Installation Hole Size (PCD&PEC)							
	Outer Ring		Inner Ring					
	Dm	Installation Hole	dn	Tapped Hole	dx	Tapped Hole	dy	Hole Size
GSCSG14	49	8-Ø3.5	23	6-M4	17	6-M4	15	6-Ø2.5
GSCSG17	56	10-Ø3.5	27	6-M5	19	6-M5	15	6-Ø3
GSCSG20	64	12-Ø3.5	32	8-M6	24	8-M5	19	8-Ø3
GSCSG25	79	16-Ø3.5	42	8-M8	30	8-M6	26	8-Ø3
GSCSG32	104	16-Ø4.5	55	8-M10	40	8-M8	34	4-Ø5

# GR A 30 65 - S

unit : mm

GR	A				30	65	N
Transmission Model	Normal	Black Coating	Antirust(N)	Corrosionresisting (S)	Table Width	Table Length	Material
GR: roller	A					30, 40, 60 80, 100, 145	As shown SPEC N:S50C+Ni S:SUS440C+Ni B:S50C+phosphate
	B					30, 40, 60 80, 100, 145	
	C					20, 30, 40	
	M					30, 40, 60 80, 100	
	H					20, 30, 40	
	S					20, 30, 40	

- Table in N series, is antirust, apply to clean room environment.
- Table in S series, is antirust and corrosion-resisting, apply to clean room environment.
- Table in B series, is antirust, apply to clean room environment.
- All parts are cryogenic finished to increase 30% durability. ( Refer to P.0451 )

## Component Material Introduction

Apply To	Model No.	Material Indication			
		Table	Rail	Retainer	Roller
Normal	GRA/GRB/GRC CRM/GRH/GRS	Aluminum+anodized black	SUJ2	SUS304	SUJ2
	GRA-N/GRB-N GRC-N/GRM-N GRH-N/GRS-N				
Antirust	GRA-B/GRB-B GRC-B/GRM-B GRH-B/GRS-B	S50C+PHOSPHATE	SUJ2	SUS304	SUJ2
	GRA-S/GRB-S GRC-S/GRM-S GRH-S/GRS-S				
Corrosion-Resisting		SUS440C+Ni		SUS304	SUS440C
		<ul style="list-style-type: none"> <li>• Table and rail in 1 unit in this series</li> <li>• V-groove in rail, no surface finished</li> </ul>			

## Crossed Roller Slide Table

Table is composed of GMT crossed roller type slide rail set, V-grooved, crossed rollers matched with assembly plane in high accuracy processing, and base; installed with limit mechanism between two ends of table, is small type of limit stroke linear motion product in high rigidity. Performance as high accuracy and low friction, apply to electric parts used in automatic installation equipment and optical gauge.

## Slide Table Unit Selection Procedure

1. Select unit width and length.
2. Select model per installation.
3. Acquire model no. from catalogs.
4. Select standard, antirust or corrosion-resisting per environment request.

## Installation Selection

Screw Lock		Countersink Lock	
GRA		GRM	
GRS		GRB	
GRC		GRH	

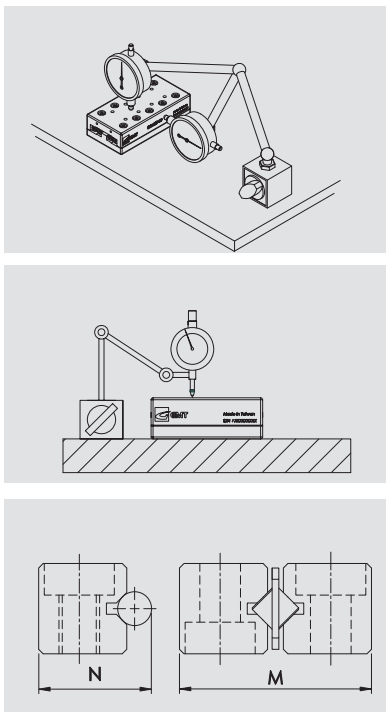
### Slide Table Property

<b>High Accuracy</b>	In order to perform function of GMT Slide Table entirely, all assembly planes of table and base are processed in precise grinding to get linear motion in high accuracy.
<b>Low Friction</b>	Low friction because of non-circulation. Stable performance in whether low speed or high speed.
<b>High Rigidity, Space Saving</b>	Besides high load capacity and high rigidity of roller guide in GMT linear motion table, space saving design is also considered at same time.
<b>No Demand of Adjustment</b>	Accuracy and preload would be matched perfectly to use directly without heavy adjustment.
<b>Easy Installation</b>	Standardized assembly holes of unit and base are easy to lock and secure with screw only to have linear motion in high accuracy.

### Table Accuracy Description

Unit : mm

Table Accuracy Inspection Level			Rail Accuracy Inspection Level		
Table Length	Middelivery amplitude	Sidedelivery amplitude	N Size Tolerance	M Size Tolerance	Straightness
0~50	0.002	0.004	- 0.015 - 0.035	- 0.03 - 0.07	0.002
50~100	0.002	0.005			0.002
100~150	0.003	0.006			0.003
150~200	0.003	0.007			0.003
200~250	0.003	0.007			0.003
250~300	0.003	0.007			0.003
300~350	0.004	0.008			0.004
350~400	0.004	0.008			0.004
400~450	0.004	0.008			0.004
450~500	0.004	0.008			0.004
500~550	0.004	0.009			0.004
550~600	0.004	0.009			0.004



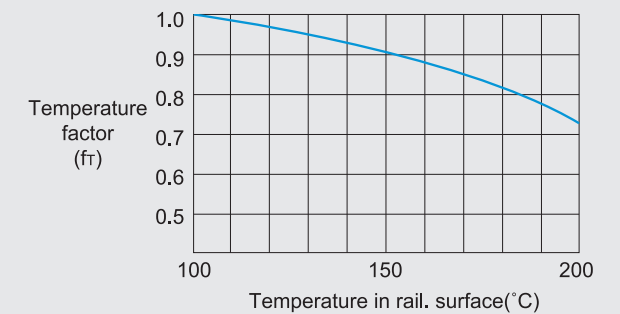
### Rated Life Calculation

$$L = \left( \frac{f_T}{f_W} \cdot \frac{C}{P_C} \right)^{\frac{10}{3}} \times 100$$

L : Rated life (km)  
 C : Basic dynamic load (kN)  
 P<sub>C</sub> : Radial load calculated value (kN)  
 f<sub>T</sub> : Temperature factor  
 f<sub>W</sub> : Load factor

#### f<sub>T</sub> : Temperature factor

Running system in environment over 100°C, needs consideration of bad effect from high temperature, basic rated load x temperature factor as shown on the right figuration.



#### f<sub>W</sub> : Load factor

Machine running back and forth usually is accompanied with vibration or shock, especially vibration happened in high speed running or shock caused by running stop frequently, but not easy to calculate all of them correctly. When actual load could not be calculated, or in case of large effect from speed, vibration, please use basic rated load (C) to divide relative experienced load factors as right data shown.

#### Load factor (f<sub>W</sub>)

Vibration / Shock	Speed (V)	f <sub>W</sub>
Tiny	Dead slow V ≤ 0.25m/s	1~1.2
Small	Slow 0.25 < V ≤ 1m/s	1.2~1.5

#### Working life hours (L<sub>h</sub>)

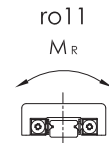
After acquirement of rated life (L), use formula stated on the right side to calculate working life hours, if stroke length and travel times per minute are constant.

$$L_h = \frac{L \times 10^6}{2 \times l_s \times n_1 \times 60}$$

L<sub>h</sub> : Working life hours (h)  
 l<sub>s</sub> : Stroke length (mm)  
 n<sub>1</sub> : Travel times per minute (min<sup>-1</sup>)

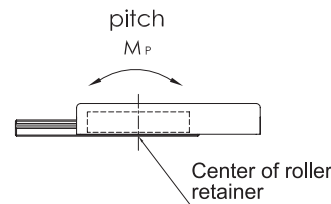
### Torque $M_R$

Single static load rating $C_o$ B for Ball quantity in one row	Center distance between two rows $L_R$ R for Roller quantity in one row
Ball	Roller
$M_R = B * \cos \frac{\pi}{4} * C_o * L_R$	$M_R = \frac{R}{2} * C_o * L_R$



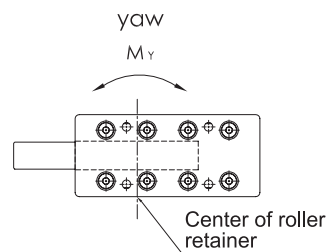
### Torque $M_P$

Ball pitch P Ball quantity = B Roller pitch P Roller quantity = R	
Ball	Roller
$M_P = Fd \div Sf * 2^{\frac{7}{9}} * C_o * \cos \frac{\pi}{4} * P * \frac{2B^2 - B}{6}$	$M_P = \frac{1}{2} * (\frac{R^2}{2}) * C_o * P$



### Torque $M_Y$

Ball	Roller
$M_Y = Fd \div Sf * 2^{\frac{7}{9}} * C_o * \cos \frac{\pi}{4} * P * \frac{2B^2 - B}{6}$	$M_Y = \frac{1}{2} * (R^2 - R) * C_o * P$



Sf : Safety factor

### Please Operate Carefully

In case of carelessness of falling off Slide Table or having unusual collision and extrusion, may cause surface dent on V-grooves and rollers to result in running in non-smooth, and bad effect to accuracy. Therefore please operate with care particularly.

### Anti-Dust

If dust, impurities mixed with components inside Slide table, may cause decrease of accuracy or life hours. Please set outer dust cover to protect table used in bad environment.

### Lubrication

Slide table filled with lithium soap lubricant before inspection, could be used directly as soon as acquirement. Subsequently add lubricant in same series as condition.

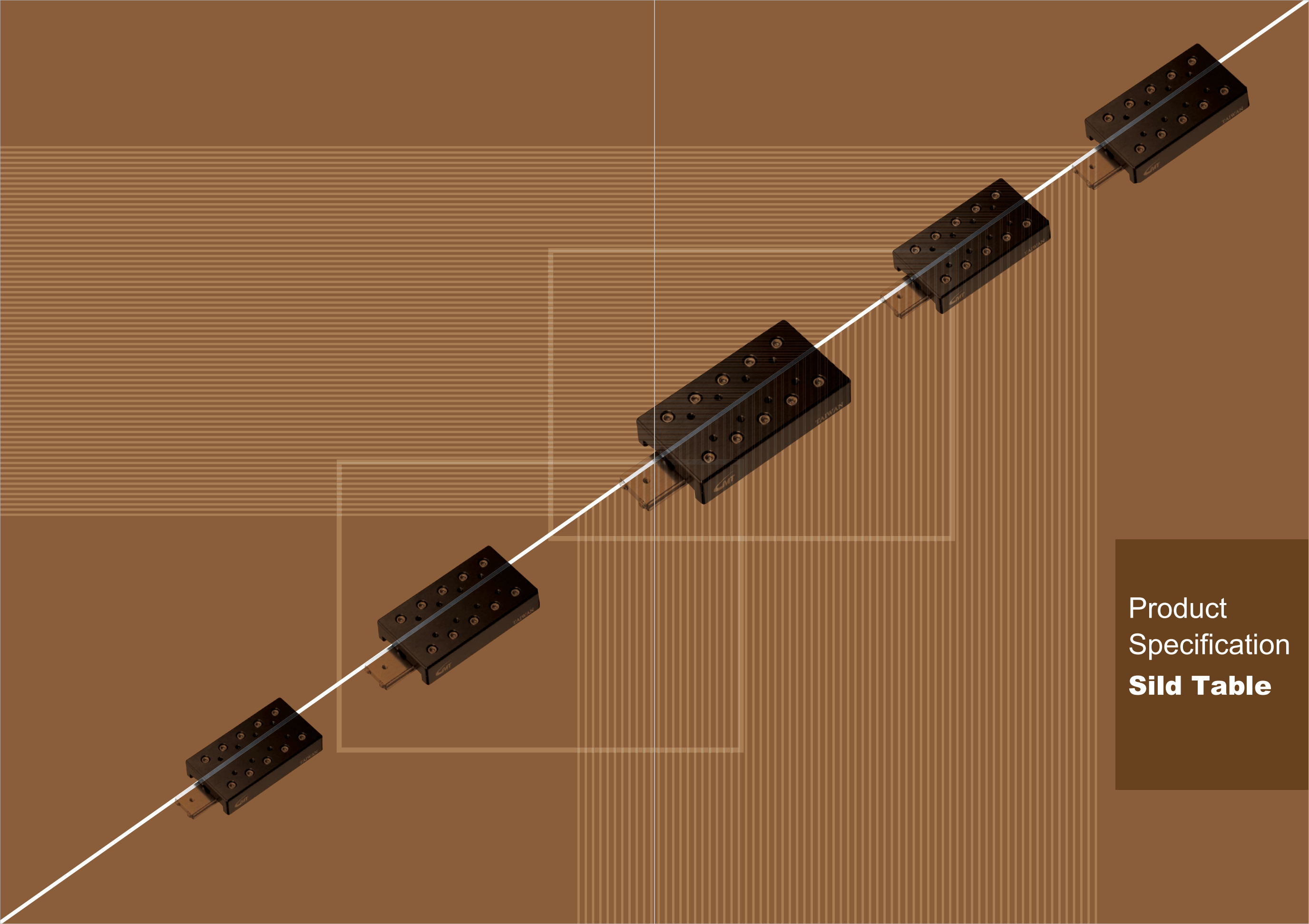
© Relative request of lubricant compatibility ( Refer to P.0450 )

### Deviation Of Roller Retainer

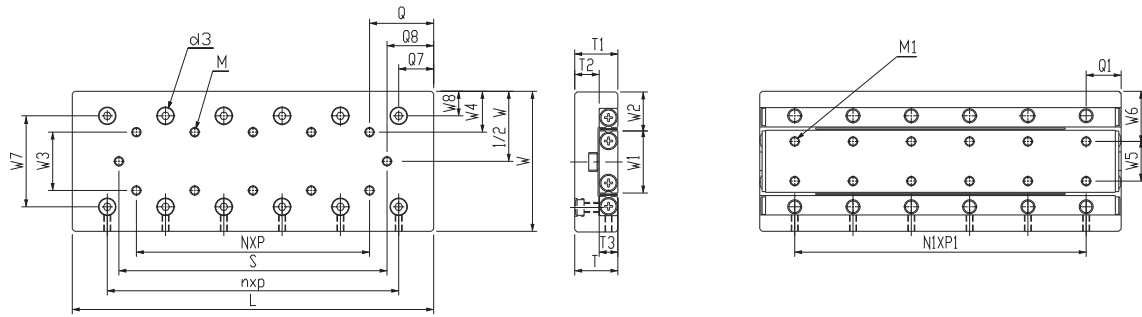
Slide table running in high speeding, off-center load or vibration conditions, may cause retainer deviation. It's normally recommended to use in speed below 30m/min. In addition, suggested solution to deviation of roller retainer is couple times of movement in full stroke to center roller retainer while running.

### Screw Adjustment

Slide table, proofread in best accuracy and preloaded in perfect condition. No disassemble arbitrarily lock screw of adjust screw and rail.



Product  
Specification  
**Sild Table**



Specification

Model No.			Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Table Mounting Dimensions (mm)																								
Standard	Antirust	Black Coating			W	T	L	W <sub>3</sub>	W <sub>4</sub>	W <sub>7</sub>	W <sub>8</sub>	Q	Q <sub>7</sub>	Q <sub>8</sub>	N*P	M	n*p	S	d <sub>3</sub>	T <sub>1</sub>	T <sub>2</sub>											
GRA30-25	GRA30-25-N	GRA30-25-B	12	Ø1.5	30±0.1	11±0.1	55	10	10	18.4	5.8	12.5	7.5	7.5	3*10	M2	4*10	40	4.1	11	7											
GRA30-35	GRA30-35-N	GRA30-35-B	18																			25	2.5	/	1*10	20						
GRA30-45	GRA30-45-N	GRA30-45-B	25																			35	4.5	1*10	2*10	26						
GRA30-55	GRA30-55-N	GRA30-55-B	32																			45	6	2*10	3*10	33						
GRA30-65	GRA30-65-N	GRA30-65-B	40																			65	8.5	4*10	5*10	48						
GRA30-75	GRA30-75-N	GRA30-75-B	45																			75	11	5*10	6*10	53						
GRA30-85	GRA30-85-N	GRA30-85-B	50																			85	13.5	6*10	7*10	58						
GRA40-35	GRA40-35-N	GRA40-35-B	18	Ø2.0	14±0.1	35	25	7.5	10	3	/	1*15	29	6	14	8	10	3	/	1*15	29	6	14	8								
GRA40-50	GRA40-50-N	GRA40-50-B	30																						50	12.5	4.5	1*15	1*25	41		
GRA40-65	GRA40-65-N	GRA40-65-B	40																						65	20	7	2*15	1*25	51		
GRA40-80	GRA40-80-N	GRA40-80-B	50	Ø3.0	40±0.1	15±0.1	80	15	12.5	25.5	7.25	17.5	15	9.5	3*15	M3	2*25	61	7.5	15	7	22.5	12	4*15	2*25	71						
GRA40-95	GRA40-95-N	GRA40-95-B	60																								95	22.5	12	4*15	2*25	71
GRA40-110	GRA40-110-N	GRA40-110-B	70																								110	17.5	14.5	5*15	3*25	81
GRA40-125	GRA40-125-N	GRA40-125-B	80																								125	25	17	6*15	3*25	91
GRA60-55	GRA60-55-N	GRA60-55-B	30																								Ø3.0	60±0.1	18.5±0.1	130	25	17.5
GRA60-80	GRA60-80-N	GRA60-80-B	45	80	10.5	1*25	2*25	59																								
GRA60-105	GRA60-105-N	GRA60-105-B	60	105	15.5	2*25	3*25	74																								
GRA60-130	GRA60-130-N	GRA60-130-B	75	130	20.5	3*25	4*25	89																								
GRA60-155	GRA60-155-N	GRA60-155-B	90	155	25.5	4*25	5*25	104																								
GRA60-180	GRA60-180-N	GRA60-180-B	105	180	30.5	5*25	6*25	119																								
GRA60-205	GRA60-205-N	GRA60-205-B	130	205	30.5	6*25	7*25	144																								

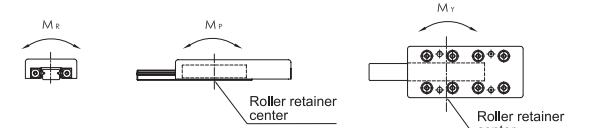
Ordering Example :	GRA	30	25	N
	A type table	Table width	Table length	Antirust



Material Specification

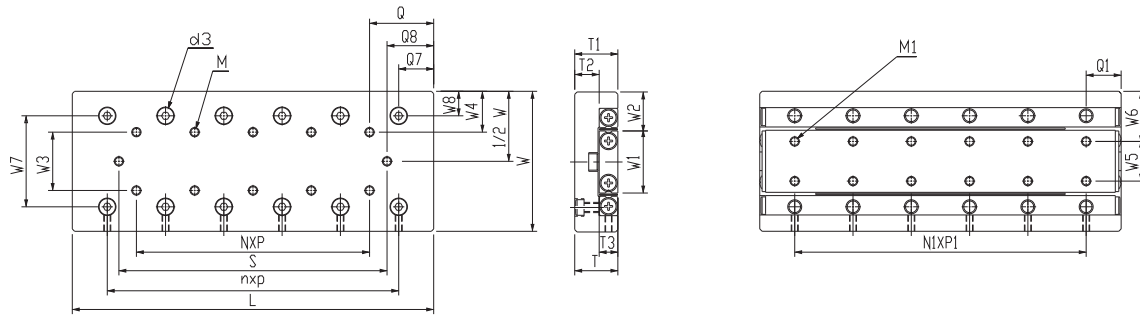
Material	Table	Rail	Retainer	Roller
GRA	Aluminum alloy +black anodized	SUJ2	SUS304	SUJ2
GRA - N	S50C+Ni	SUJ2+Ni	SUS304	SUJ2
GRA - B	S50C +phosphate	SUJ2	SUS304	SUJ2

GRA-N No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

Base Mounting Dimensions (Mm)								Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-able Load Fu(N)	Static Rated Moment			Weight (kg)		Table Moving Accuracy (µm)	
T <sub>3</sub>	W <sub>1</sub>	W <sub>2</sub>	W <sub>5</sub>	W <sub>6</sub>	N <sub>1</sub> *P <sub>1</sub>	Q <sub>1</sub>	M <sub>1</sub>				M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>V</sub> (N·m)	Standard	Antirust	Center Parallelism	Side Parallelism
4	12.8	8.6	/	15	1*10	7.5	M2	379	576	192	2.6	1.2	1.4	0.03	0.05	4	
								523	865	288	3.9	2.6	3.0	0.04	0.08		
								657	1,153	384	5.2	4.6	5.2	0.05	0.10		
								783	1,441	480	6.5	7.2	7.9	0.06	0.12		
								903	1,729	576	7.8	10.4	11.2	0.07	0.15		
								1,131	2,306	769	10.4	18.4	17.3	0.09	0.17		
								1,240	2,594	865	11.7	23.3	22.0	0.10	0.19		
6	17	11.5	/	20	1*15	10	M3	8,95	1,170	390	7.0	3.1	3.9	0.07	0.13	4	
								2,901	4,567	1,522	42.6	22.8	26.6	0.13	0.21		
								2,901	4,567	1,522	42.6	22.8	19.0	0.14	0.25		
								4,338	7,611	2,537	71.0	63.4	57.1	0.20	0.33		
8	13.1	13.5	/	20	2*25	10	M3	3,640	6,089	2,030	56.8	40.6	45.7	0.21	0.36	5	
								5,005	9,133	3,044	85.2	91.3	98.9	0.27	0.45		
								5,005	9,133	3,044	85.2	91.3	83.7	0.28	0.48		
								2,901	4,567	1,522	42.6	22.8	26.6	0.23	0.43		
								4,338	7,611	2,537	71.0	63.4	57.1	0.34	0.62		
8	26.6	16.7	17	21.5	4*25	15	M4	5,646	10,655	3,552	99.5	124.3	115.4	0.45	0.82	6	
								6,268	12,178	4,059	113.7	162.4	172.5	0.57	1.02		
								7,462	15,222	5,074	142.1	253.7	266.4	0.66	1.21		
								8,603	18,266	6,089	170.5	365.3	350.1	0.77	1.41		
								9,157	19,789	6,596	184.7	428.8	445.2	0.87	1.60		
								2,901	4,567	1,522	42.6	22.8	26.6	0.23	0.43		



Specification

Model No.			Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Table Mounting Dimensions (mm)															
Standard	Antirust	Black Coating			W	T	L	W <sub>3</sub>	W <sub>4</sub>	W <sub>7</sub>	W <sub>8</sub>	Q	Q <sub>7</sub>	Q <sub>8</sub>	N*P	M	n*p	S	d <sub>3</sub>	T <sub>1</sub>	T <sub>2</sub>		
GRA80-85	GRA80-85-N	GRA80-85-B	50	Ø4.0	80±0.1	24±0.1	85							10.5	/	1*40	64						
GRA80-125	GRA80-125-N	GRA80-125-B	75				125									18	1*40	2*40	89				
GRA80-165	GRA80-165-N	GRA80-165-B	105				165									23	2*40	3*40	119				
GRA80-205	GRA80-205-N	GRA80-205-B	135				205	40	20	53	13.5	42.5	22.5	28	3*40	M5	4*40	149	9.5	24	13		
GRA80-245	GRA80-245-N	GRA80-245-B	155				245							38	4*40		5*40	169					
GRA80-285	GRA80-285-N	GRA80-285-B	185				285							43	5*40		6*40	199					
GRA80-325	GRA80-325-N	GRA80-325-B	215				325							48	6*40		7*40	229					
GRA100-110	GRA100-110-N	GRA100-110-B	60	Ø6.0	100±0.1	31±0.1	110							16.5	/	1*50	77						
GRA100-160	GRA100-160-N	GRA100-160-B	95				160							23.5	1*50		2*50	113					
GRA100-210	GRA100-210-N	GRA100-210-B	130				210							31	2*50		3*50	148					
GRA100-260	GRA100-260-N	GRA100-260-B	165				260	50	25	64	18	55	30	38.5	3*50	M6	4*50	183	11	31	16		
GRA100-310	GRA100-310-N	GRA100-310-B	200				310							46	4*50		5*50	218					
GRA100-360	GRA100-360-N	GRA100-360-B	235				360							53.5	5*50		6*50	253					
GRA100-410	GRA100-410-N	GRA100-410-B	265				410							63.5	6*50		7*50	283					
GRA145-210	GRA145-210-N	GRA145-210-B	130	Ø9.0	145±0.1	42.5±0.1	210							27	/	1*100	156						
GRA145-310	GRA145-310-N	GRA145-310-B	180				310							52	1*100		2*100	206					
GRA145-410	GRA145-410-N	GRA145-410-B	350				410	85	30	98	23.5	105	55		2*100	M8	3*100	376	14	43	21		
GRA145-510	GRA145-510-N	GRA145-510-B	450				510							17	3*100		4*100	476					
GRA145-610	GRA145-610-N	GRA145-610-B	550				610								4*100		5*100	576					

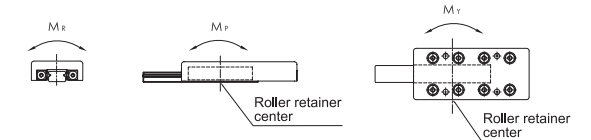
Ordering Example :	GRA	30	25	N
	A type table	Table width	Table length	Antirust



Material Specification

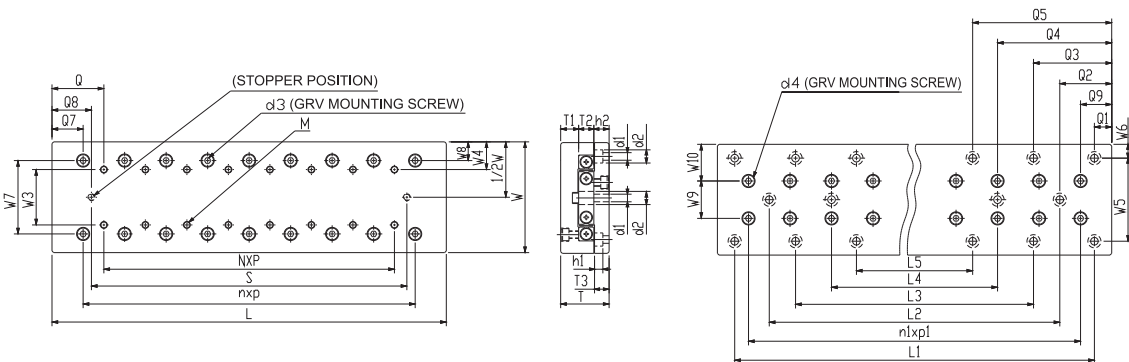
Material	Table	Rail	Retainer	Roller
GRA	Aluminum alloy +black anodized	SUJ2	SUS304	SUJ2
GRA - N	S50C+Ni	SUJ2+Ni	SUS304	SUJ2
GRA - B	S50C +phosphate	SUJ2	SUS304	SUJ2

GRA-N No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

Base Mounting Dimensions (mm)								Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-Able Load Fu(N)	Static Rated Moment			Weight (kg)		Table Moving Accuracy (µm)								
T <sub>3</sub>	W <sub>1</sub>	W <sub>2</sub>	W <sub>5</sub>	W <sub>6</sub>	N <sub>1</sub> *P <sub>1</sub>	Q <sub>1</sub>	M <sub>1</sub>				M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>V</sub> (N·m)	Standard	Antirust	Center Parallelism	Side Parallelism							
11	38	21	27	26.5	1*40	22.5	M5	6,617	9,357	3,119	124.8	87.3	76.4	0.64	1.17	2	5							
					2*40			9,097	14,035	4,678	187.1	196.5	180.1	0.95	1.72	3	6							
					3*40			10,264	16,375	5,458	218.3	267.5	286.6	1.25	2.27									
					4*40			12,496	21,053	7,018	280.7	442.1	466.7	1.56	2.83									
					15			42	29	26	37	5*40	30	M6	14,612	25,732	8,577	343.1	660.4	690.5	1.87	3.39	4	8
												6*40			16,646	30,410	10,137	405.5	922.4	957.9	2.18	3.94		
												7*40			18,612	35,089	11,696	467.8	1228.1	1187.2	2.49	4.50		
1*50	13,923	21,053	7,018	315.8		2525.6	221.1					1.31			2.39	3	7							
2*50	16,592	26,316	8,772	394.7		394.7	434.2					1.93			3.50									
21	68.4	38.3	46	49.5	3*100	55	M8	21,592	36,842	12,281	552.6	773.7	828.9	2.56	4.61	4	8							
					4*100			26,285	47,369	15,790	710.5	1279.0	1207.9	3.16	5.70									
					5*100			30,744	57,895	19,298	868.4	1910.5	1823.7	3.78	6.81									
					6*100			35,024	68,421	22,807	1026.3	2668.4	2565.8	4.41	7.93									
					7*100			39,160	78,948	26,316	1184.2	3552.6	3434.2	5.03	9.04									
21	68.4	38.3	46	49.5	4*100	55	M8	46,991	72,741	24,247	1745.8	1697.3	1527.6	5.35	9.30	3	7							
					5*100			61,165	101,838	33,946	2444.1	3326.7	3564.3	7.96	13.79									
					3*100			67,898	116,386	38,795	2793.3	4345.1	4073.5	10.47	18.18	4	8							
					4*100			80,829	145,482	48,494	3491.6	6789.2	6449.7	13.06	22.66									
5*100	93,191	158,400	52800	2640.0	8870.4	8500.8	15.65	27.14																



Specification

Model No.			Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)					Table Mounting Dimensions (mm)																																														
Standard	Antirust	Black Coating			W	T	L	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	N*P	n*p	M	S	d <sub>3</sub>	Q	Q <sub>7</sub>	Q <sub>8</sub>	W <sub>3</sub>	W <sub>4</sub>	W <sub>7</sub>	W <sub>8</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	n*p <sub>1</sub>																														
GRB30-25	GRB30-25-N	GRB30-25-B	12	Ø1.5	30±0.1	17±0.1	55	7	4	5.5	/	1*10	20													18		1*10																												
GRB30-35	GRB30-35-N	GRB30-35-B	18								35	1*10																	2*10	26	4.5	28	/	2*10																						
GRB30-45	GRB30-45-N	GRB30-45-B	25								45	2*10																	3*10	33	6	38		3*10																						
GRB30-55	GRB30-55-N	GRB30-55-B	32								65	4*10																	5*10	48	8.5	58	38	5*10																						
GRB30-65	GRB30-65-N	GRB30-65-B	40								75	5*10																	6*10	53	11	68	48	6*10																						
GRB30-75	GRB30-75-N	GRB30-75-B	45								85	6*10																	7*10	58	13.5	78	58	7*10																						
GRB30-85	GRB30-85-N	GRB30-85-B	50																																																					
GRB40-35	GRB40-35-N	GRB40-35-B	18	Ø2.0		35	8	6	6.5	/	1*15	29	6	10	3													1*15																												
GRB40-50	GRB40-50-N	GRB40-50-B	30							50	1*15																		1*25	41	12.5	4.5	40	/	1*25																					
GRB40-65	GRB40-65-N	GRB40-65-B	40							65	2*15																			51	20	7	55		1*25																					
GRB40-80	GRB40-80-N	GRB40-80-B	50							Ø3.0	40±0.1																		21±0.1	80	7	8	5.5	3*15	M3	61	7.5	17.5	15	9.5	15	12.5	25.5	7.25	70	/	40	2*25								
GRB40-95	GRB40-95-N	GRB40-95-B	60																															95															4*15		71	22.5	12	85	55	2*25
GRB40-110	GRB40-110-N	GRB40-110-B	70																															110															5*15		81	17.5	14.5	100	70	3*25
GRB40-125	GRB40-125-N	GRB40-125-B	80																															125															6*15		91	25	17	115	85	3*25
GRB60-55	GRB60-55-N	GRB60-55-B	30	Ø3.0	60±0.1	28±0.1	130	10.5	8	9	/	1*25	44														1*25																													
GRB60-80	GRB60-80-N	GRB60-80-B	45								80	1*25																2*25	59	10.5	60	/	2*25																							
GRB60-105	GRB60-105-N	GRB60-105-B	60								105	2*25																3*25	74	15.5	85		3*25																							
GRB60-130	GRB60-130-N	GRB60-130-B	75								130	3*25																4*25	M4	89	7.5	27.5	15	20.5	25	17.5	39	10.5	110	/	4*25															
GRB60-155	GRB60-155-N	GRB60-155-B	90								155	4*25																5*25	104	25.5	135	85	5*25																							
GRB60-180	GRB60-180-N	GRB60-180-B	105								180	5*25																6*25	119	30.5	160	110	6*25																							
GRB60-205	GRB60-205-N	GRB60-205-B	130								205	6*25																7*25	144	30.5	185	135	85	7*25																						

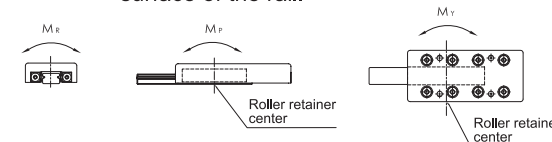
Ordering Example : GRB - 30 - 25 - N  
 B type table - Table width - Table length - Antirust



Material Specification

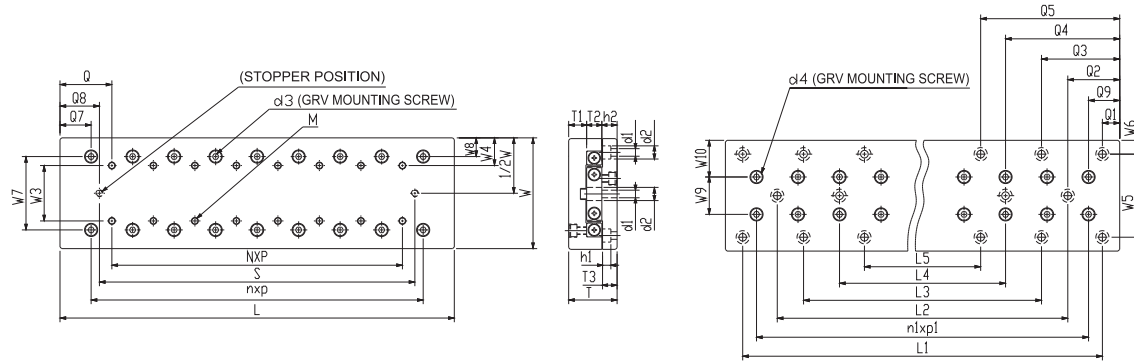
Component	Table	Rail	Retainer	Roller
GRB	Aluminum alloy +black anodized	SUJ2	SUS304	SUJ2
GRB - N	S50C+Ni	SUJ2+Ni	SUS304	SUJ2
GRB - B	S50C +phosphate	SUJ2	SUS304	SUJ2

GRB-N No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

Base Mounting Dimensions (mm)													Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allowable Load Fu(N)	Static Rated Moment			Weight (kg)		Table Moving Accuracy (µm)	
Q <sub>1</sub>	Q <sub>2</sub>	Q <sub>3</sub>	Q <sub>9</sub>	W <sub>5</sub>	W <sub>6</sub>	W <sub>9</sub>	W <sub>10</sub>	d <sub>1</sub>	d <sub>2</sub>	d <sub>4</sub>	h <sub>1</sub>	h <sub>2</sub>				M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>Y</sub> (N·m)	Standard	Antirust	Center Parallelism	Side Parallelism
3.5	/	/	7.5	22	4	/	15	2.55	4.1	4.1	2.5	6	379	576	192	2.6	1.2	1.4	0.04	0.09	2	4
													523	865	288	3.9	2.6	3.0	0.06	0.12		
													657	1,153	384	5.2	4.6	5.2	0.07	0.16		
													783	1,441	480	6.5	7.2	7.9	0.09	0.19		
													903	1,729	576	7.8	10.4	11.2	0.10	0.23		
													1,131	2,306	769	10.4	18.4	17.3	0.12	0.27		
													1,240	2,594	865	11.7	23.3	22.0	0.14	0.30		
5	/	/	10	30	5	/	20	3.5	6	6	3.2	6	895	1,170	390	7.0	3.1	3.9	0.10	0.20	2	5
													2,901	4,567	1,522	42.6	22.8	26.6	0.16	0.29		
													2,901	4,567	1,522	42.6	22.8	19.0	0.18	0.36		
													4,338	7,611	2,537	71.0	63.4	57.1	0.25	0.46		
													3,640	6,089	2,030	56.8	40.6	45.7	0.27	0.53		
													5,005	9,133	3,044	85.2	91.3	98.9	0.34	0.63		
													5,005	9,133	3,044	85.2	91.3	83.7	0.36	0.69		
10	/	/	15	40	10	17	21.5	4.5	7.5	7.5	4.5	9.5	2,901	4,567	1,522	42.6	22.8	26.6	0.31	0.65	2	6
													4,338	7,611	2,537	71.0	63.4	57.1	0.46	0.96		
													5,646	10,655	3,552	99.5	124.3	115.4	0.61	1.27		
													6,268	12,178	4,059	113.7	162.4	172.5	0.76	1.57		
													7,462	15,222	5,074	142.1	253.7	266.4	0.90	1.87		
													8,603	18,266	6,089	170.5	365.3	350.1	1.05	2.18		
													9,157	19,789	6,596	184.7	428.8	445.2	1.20	2.47		



Specification

Model No.			Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)					Table Mounting Dimensions (mm)																																		
Standard	Antirust	Black Coating			W	T	L	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	N*P	n*p	M	S	d <sub>3</sub>	Q	Q <sub>7</sub>	Q <sub>8</sub>	W <sub>3</sub>	W <sub>4</sub>	W <sub>5</sub>	W <sub>6</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	n <sub>1</sub> *p <sub>1</sub>																
GRB80-85	GRB80-85-N	GRB80-85-B	50	Ø4.0	80±0.1	35±0.1	205	13	11	10.5	/	1*40	64									40					1*40																	
GRB80-125	GRB80-125-N	GRB80-125-B	75								125	1*40																2*40	89	18	80	/	2*40											
GRB80-165	GRB80-165-N	GRB80-165-B	105								165	2*40																3*40	119	23	120		3*40											
GRB80-205	GRB80-205-N	GRB80-205-B	135								205	3*40																4*40	M5	149	9.5	42.5	22.5	28	40	20	53	13.5	160	/	80	/	/	4*40
GRB80-245	GRB80-245-N	GRB80-245-B	155								245	4*40																5*40	169	38	200	120	5*40											
GRB80-285	GRB80-285-N	GRB80-285-B	185								285	5*40																6*40	199	43	240	160	6*40											
GRB80-325	GRB80-325-N	GRB80-325-B	215								325	6*40																7*40	229	48	280	200	7*40											
GRB100-110	GRB100-110-N	GRB100-110-B	60	Ø6.0	100±0.1	45±0.1	16	15	13		/	1*50	77									90					1*50																	
GRB100-160	GRB100-160-N	GRB100-160-B	95								160	1*50																2*50	113	23.5	140	/	2*50											
GRB100-210	GRB100-210-N	GRB100-210-B	130								210	2*50																3*50	148	31	190	90	3*50											
GRB100-260	GRB100-260-N	GRB100-260-B	165								260	3*50																4*50	M6	183	11	55	30	38.5	50	25	64	18	240	140	/	/	4*50	
GRB100-310	GRB100-310-N	GRB100-310-B	200								310	4*50																5*50	218	46	290	190	5*50											
GRB100-360	GRB100-360-N	GRB100-360-B	235								360	5*50																6*50	253	53.5	340	240	6*50											
GRB100-410	GRB100-410-N	GRB100-410-B	265								410	6*50																7*50	283	63.5	390	290	7*50											
GRB100-510	GRB100-510-N	GRB100-510-B	350	450	7*50	8*50	390	60	450	390	8*50																																	
GRB145-210	GRB145-210-N	GRB145-210-B	130	Ø9.0	145±0.1	60±0.1	410	21	22	16	/	1*100	156									100					1*100																	
GRB145-310	GRB145-310-N	GRB145-310-B	180								310	1*100																2*100	206	52	200	/	2*100											
GRB145-410	GRB145-410-N	GRB145-410-B	350								410	2*100																3*100	M8	376	14	105	55	85	30	98	23.5	300	100	/	/	/	3*100	
GRB145-510	GRB145-510-N	GRB145-510-B	450								510	3*100																4*100	476	17	400	200	4*100											
GRB145-610	GRB145-610-N	GRB145-610-B	550								610	4*100																5*100	576		500	300	5*100											

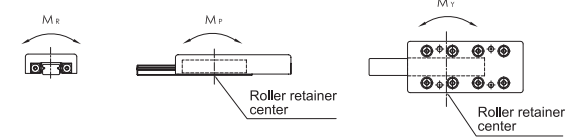
Ordering Example :	GRB	30	25	N
	B type table	Table width	Table length	Antirust



Material Specification

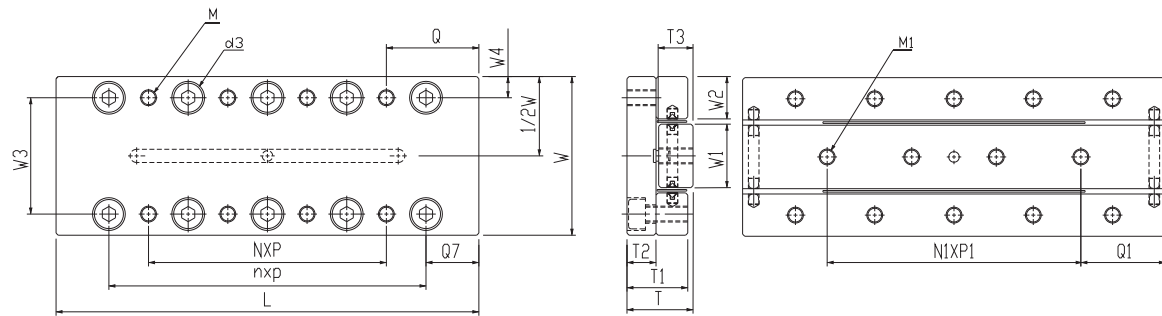
Component	Table	Rail	Retainer	Roller
GRB	Aluminum alloy +black anodized	SUJ2	SUS304	SUJ2
GRB - N	S50C+Ni	SUJ2+Ni	SUS304	SUJ2
GRB - B	S50C +phosphate	SUJ2	SUS304	SUJ2

GRB-N No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

Base Mounting Dimensions (mm)															Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-Able Load Fu(N)	Static Rated Moment			Weight (kg)		Table Moving Accuracy (µm)		
Q <sub>1</sub>	Q <sub>2</sub>	Q <sub>3</sub>	Q <sub>4</sub>	Q <sub>5</sub>	Q <sub>6</sub>	W <sub>5</sub>	W <sub>6</sub>	W <sub>9</sub>	W <sub>10</sub>	d <sub>1</sub>	d <sub>2</sub>	d <sub>4</sub>	h <sub>1</sub>	h <sub>2</sub>				M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>Y</sub> (N·m)	Standard	Antirust	Center Parallelism	Side Parallelism	
															6,617	9,357	3,119	124.8	87.3	76.4	0.84	1.72	2	5	
		/													9,097	14,035	4,678	187.1	196.5	180.1	1.25	2.55		6	
		/	/	/											10,264	16,375	5,458	218.3	267.5	286.6	1.65	3.37			
22.5	/					22.5	60	10	27	26.5	5.5	9.5	9.5	6	11	12,492	21,053	7,018	280.7	442.1	466.7	2.06	4.18	3	7
		62.5													14,612	25,732	8,577	343.1	660.4	690.5	2.46	5.00			
															16,646	30,410	10,137	405.5	922.4	957.9	2.87	5.83			
															18,612	35,089	11,696	467.8	1228.1	1187.2	3.27	6.64	4	8	
															13,923	21,053	7,018	315.8	252.6	221.1	1.72	3.51			
		/													16,592	26,316	8,772	394.7	394.7	434.2	2.53	5.15		6	
		/													21,596	36,842	12,281	552.6	773.7	828.9	3.34	6.79	3	7	
10			/	/		30	60	20	26	37	7	11	11	6.5	14	26,285	47,369	15,790	710.5	1279.0	1207.9	4.13	8.39		
		60													30,744	57,895	19,298	868.4	1910.5	1823.7	4.95	10.04			
															35,024	68,421	22,807	1026.3	2668.4	2565.8	5.75	11.64			
															39,160	78,948	26,316	1184.2	3552.6	3434.2	6.56	13.28	4	8	
															45,141	84,600	28,200	1269.0	4568.4	4441.5	8.17	16.52			
		/													46,991	72,741	24,247	1745.8	1697.3	1527.6	6.75	13.23			
		/													61,165	101,838	33,946	2444.1	3326.7	3564.3	10.03	19.62	3	7	
55		/	/	/		55	90	27.5	46	49.5	9	14	14	8.5	17.5	67,898	116,386	38,795	2793.3	4345.1	4073.5	13.21	25.88		
		155													80,829	145,482	48,494	3491.6	6789.2	6449.7	16.48	32.26	4	8	
															87,562	160,030	53,343	3840.8	7807.6	6958.9	19.75	38.64			



Specification

Model No.			Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Table Mounting Dimensions (mm)									
Standard	Antirust	Black Coating			W	T	L	W <sub>3</sub>	W <sub>4</sub>	N*P	Q	M	n*p	Q <sub>7</sub>	d <sub>3</sub>	T <sub>1</sub>	T <sub>2</sub>
GRC20-25	GRC20-25-N	GRC20-25-B	12	Ø1.5	20±0.1	8±0.1	25	14	3	1*18	3.5	1*10	7.5	4.1	7.5	3.5	
GRC20-35	GRC20-35-N	GRC20-35-B	18				35			1*28		2*10					
GRC20-45	GRC20-45-N	GRC20-45-B	25				45			1*20	3*10						
GRC20-55	GRC20-55-N	GRC20-55-B	32				55			1*30	4*10						
GRC30-65	GRC30-65-N	GRC30-65-B	40	Ø2.0	30±0.1	12±0.1	65	22	4	1*30	17.5	M3	3*15	10	6	11.5	5.5
GRC30-80	GRC30-80-N	GRC30-80-B	50				80			1*45			4*15				
GRC30-95	GRC30-95-N	GRC30-95-B	60				95			2*30			5*15				
GRC40-105	GRC40-105-N	GRC40-105-B	60	Ø3.0	40±0.1	16±0.1	105	30	5	1*50	27.5	M4	3*25	15	7.5	15.5	7.5
GRC40-130	GRC40-130-N	GRC40-130-B	75				130			1*75			4*25				
GRC40-155	GRC40-155-N	GRC40-155-B	90				155			2*50			5*25				

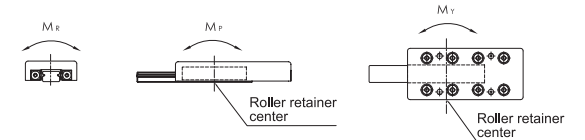
Ordering Example : **GRC** - **30** - **25** - **N**  
C type table - Table width - Table length - Antirust



Material Specification

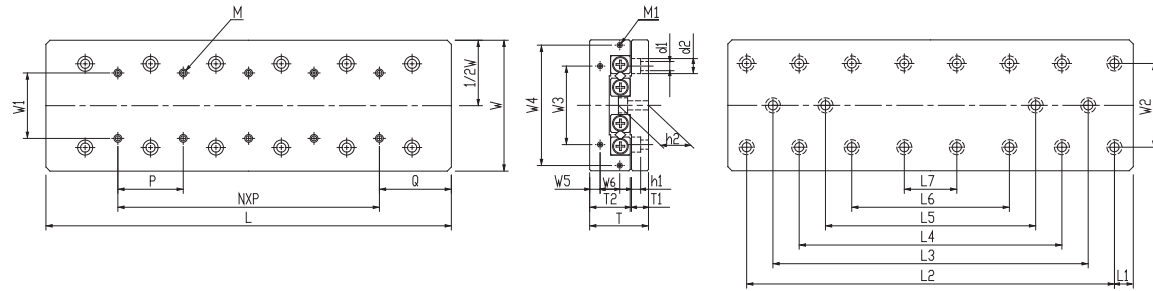
Material / Model No.	Table	Rail	Retainer	Roller
GRC	Aluminum alloy +black anodized	SUJ2	SUS304	SUJ2
GRC - N	S50C+Ni	SUJ2+Ni	SUS304	SUJ2
GRC - B	S50C +phosphate	SUJ2	SUS304	SUJ2

GRC-N No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

Base Mounting Dimensions (mm)							Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-able Load Fu(N)	Static Rated Moment			Weight (kg)		Table Moving Accuracy (µm)	
W <sub>1</sub>	W <sub>2</sub>	N <sub>1</sub> *P <sub>1</sub>	Q <sub>1</sub>	M <sub>1</sub>	T <sub>3</sub>	M <sub>R</sub> (N·m)				M <sub>P</sub> (N·m)	M <sub>V</sub> (N·m)	Standard	Antirust	Center Parallelism	Side Parallelism	
7	6.5	2*7.5	5	M2.5	4	2.2	2.6	2.2	0.02	0.03	2	4				
		2*10	7.5			3.0	4.6	5.2	0.03	0.04						
		3*10	7.5			3.7	7.2	7.9	0.03	0.05						
		4*10	7.5			4.4	10.4	11.2	0.04	0.06						
12	9	3*15	10	M3	6	12.7	19.5	21.4	0.11	0.16	5					
		4*15				17.7	38.2	35.5	0.13	0.20						
		5*15				20.3	49.9	46.8	0.16	0.24						
16	12	3*25	15	M4	8	61.8	124.3	133.2	0.31	0.48	3	6				
		4*25				79.5	205.5	194.1	0.39	0.59						
		5*25				97.1	307.0	293.0	0.46	0.70						



Specification

Model No.			Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)				Table Mounting Dimensions (mm)				External Connection Mounting Dimensions (mm)									
Standard	Antirust	Black Coating			W	T	T <sub>2</sub>	L	W <sub>1</sub>	M	Q	N*P	W <sub>3</sub>	W <sub>4</sub>	W <sub>5</sub>	W <sub>6</sub>	M <sub>1</sub>	W <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	T <sub>1</sub>
GRM30-25	GRM30-25-N	GRM30-25-B	12				25			/												
GRM30-35	GRM30-35-N	GRM30-35-B	18				35			1*10												
GRM30-45	GRM30-45-N	GRM30-45-B	25				45			2*10												
GRM30-55	GRM30-55-N	GRM30-55-B	32	Ø1.5	30±0.1	17±0.1	11	55	10	M2*4L	12.5	3*10	12	/	2.5	/	M2*6L	22	2.5	4.5	2.5	5.5
GRM30-65	GRM30-65-N	GRM30-65-B	40				65			4*10												
GRM30-75	GRM30-75-N	GRM30-75-B	45				75			5*10												
GRM30-85	GRM30-85-N	GRM30-85-B	50				85			6*10												
GRM40-35	GRM40-35-N	GRM40-35-B	18				35			/												
GRM40-50	GRM40-50-N	GRM40-50-B	30				50			1*15												
GRM40-65	GRM40-65-N	GRM40-65-B	40				65			2*15												
GRM40-80	GRM40-80-N	GRM40-80-B	50				80			3*15												
GRM40-95	GRM40-95-N	GRM40-95-B	60				95			4*15												
GRM40-110	GRM40-110-N	GRM40-110-B	70	Ø2.0	40±0.1	21±0.1	14	110	15	M3*6L	17.5	5*15	16	/	3.4	/	M2*6L	30	3.5	6.5	3.5	6.5
GRM40-125	GRM40-125-N	GRM40-125-B	80				125			6*15												
GRM40-140	GRM40-140-N	GRM40-140-B	90				140			7*15												
GRM40-155	GRM40-155-N	GRM40-155-B	100				155			8*15												
GRM40-170	GRM40-170-N	GRM40-170-B	110				170			9*15												
GRM40-185	GRM40-185-N	GRM40-185-B	120				185			10*15												
GRM60-55	GRM60-55-N	GRM60-55-B	30				55			/												
GRM60-80	GRM60-80-N	GRM60-80-B	45				80			1*25												
GRM60-105	GRM60-105-N	GRM60-105-B	60				105			2*25												
GRM60-130	GRM60-130-N	GRM60-130-B	75				130			3*25												
GRM60-155	GRM60-155-N	GRM60-155-B	90				155			4*25												
GRM60-180	GRM60-180-N	GRM60-180-B	105	Ø3.0	60±0.1	28±0.1	18.5	180	25	M4*8L	27.5	5*25	40	/	5.5	/	M3*6L	40	4.5	8	4.5	9
GRM60-205	GRM60-205-N	GRM60-205-B	130				205			6*25												
GRM60-230	GRM60-230-N	GRM60-230-B	155				230			7*25												
GRM60-255	GRM60-255-N	GRM60-255-B	180				255			8*25												
GRM60-280	GRM60-280-N	GRM60-280-B	205				280			9*25												
GRM60-305	GRM60-305-N	GRM60-305-B	230				305			10*25												

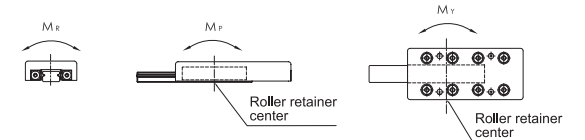
Ordering Example :	GRM	30	25	N
	M type table	Table width	Table length	Antirust



Material Specification

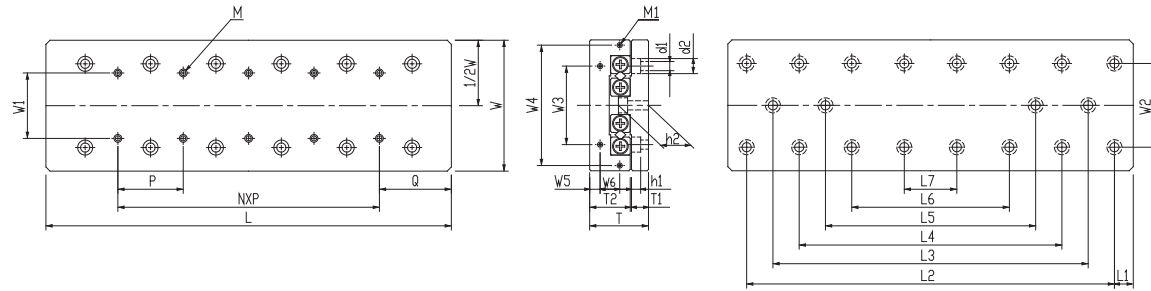
Component	Table	Rail	Retainer	Roller
GRM	Aluminum alloy +black anodized	SUJ2	SUS304	SUJ2
GRM - N	S50C+Ni	SUJ2+Ni	SUS304	SUJ2
GRM - B	S50C +phosphate	SUJ2	SUS304	SUJ2

GRM-N No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

Base Mounting Dimensions (mm)							Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-Able Load Fu(N)	Static Rated Moment			Weight (kg)		Table Moving Accuracy (µm)	
h <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>7</sub>				M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>V</sub> (N·m)	Standard	Antirust	Center Parallelism	Side Parallelism
9	3.5	18					379	576	192	2.6	1.2	1.4	0.04	0.09	2	4
		28	/				523	865	288	3.9	2.6	3.0	0.05	0.12		
		38					657	1,153	384	5.2	4.6	5.2	0.07	0.16		
		48	/	28	/	/	783	1,441	480	6.5	7.2	7.9	0.08	0.19		
		58		38			903	1,729	576	7.8	10.4	11.2	0.10	0.23	5	
		68		48			1,131	2,306	769	10.4	18.4	17.3	0.12	0.27		
		78		58			1,240	2,594	865	11.7	23.3	22.0	0.13	0.30		
		85		68			1,420	2,994	975	13.4	28.8	27.4	0.14	0.34		
10.9	5	25					895	1,170	390	7.0	3.1	3.9	0.09	0.20	2	4
		40	/				1,552	2,339	780	14.0	12.5	10.9	0.13	0.29		
		55					1,849	2,924	975	17.5	19.5	17.5	0.17	0.38		
		70		40	/		2,134	3,509	1,170	21.1	28.1	30.4	0.21	0.46		
		85		55			2,407	4,093	1,364	24.6	38.2	40.9	0.25	0.55	3	5
		100	/	70	/		2,930	5,263	1,754	31.6	63.2	59.6	0.30	0.64		
		115		85			3,181	5,848	1,949	35.1	78.0	74.1	0.34	0.73		
		130		100		70	3,427	6,433	2,144	38.6	94.3	98.6	0.38	0.82		
		145		115		85	3,668	7,017	2,339	42.1	112.3	117.0	0.42	0.91	7	
		160		130		100	4,136	8,187	2,729	49.1	152.8	147.4	0.46	1.00		
175		145		115	4,365	8,772	2,924	52.6	175.4	169.6	0.50	1.08				
185		155		125	4,615	9,367	3,119	56.1	198.9	192.1	0.54	1.16				
15	10	35					2,901	4,567	1,522	42.6	22.8	26.6	0.29	0.66	2	5
		60	/				4,338	7,611	2,537	71.0	63.4	57.1	0.43	0.96		
		85					5,646	10,655	3,552	99.5	124.3	115.4	0.57	1.26		
		110		85	/		6,268	12,178	4,059	113.7	162.4	172.5	0.71	1.57		
		135		110			7,462	15,222	5,074	142.1	253.7	266.4	0.84	1.87		
		160		135		85	8,603	18,266	6,089	170.5	365.3	350.1	0.98	2.17		
		185		160		110	9,157	19,789	6,596	184.7	428.8	445.2	1.12	2.47		
		210		185		135	9,702	21,311	7,104	198.9	497.3	515.0	1.25	2.77	7	
		235		210		160	10,767	24,355	8,118	227.3	649.5	629.2	1.39	3.07		
		260		235		185	11,288	25,877	8,626	241.5	733.2	711.6	1.53	3.37		
285		260		210	11,802	27,400	9,133	255.7	822.0	844.8	1.66	3.68				



Specification

Model No.			Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)				Table Mounting Dimensions (mm)				External Connection Mounting Dimensions (mm)										
Standard	Antirust	Black Coating			W	T	T <sub>2</sub>	L	W <sub>1</sub>	M	Q	N*P	W <sub>3</sub>	W <sub>4</sub>	W <sub>5</sub>	W <sub>6</sub>	M <sub>1</sub>	W <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	T <sub>1</sub>	
GRM80-85	GRM80-85-N	GRM80-85-B	50				85			/													
GRM80-125	GRM80-125-N	GRM80-125-B	75				125			1*40													
GRM80-165	GRM80-165-N	GRM80-165-B	105				165			2*40													
GRM80-205	GRM80-205-N	GRM80-205-B	130				205			3*40													
GRM80-245	GRM80-245-N	GRM80-245-B	155	4.0	80±0.1	35±0.1	24	245	40	M5*10L	42.5	4*40	55	/	6.5	/	M3*6L	55	5.5	10	5.4	10.5	
GRM80-285	GRM80-285-N	GRM80-285-B	185				285			5*40													
GRM80-325	GRM80-325-N	GRM80-325-B	210				325			6*40													
GRM80-365	GRM80-365-N	GRM80-365-B	235				365			7*40													
GRM80-405	GRM80-405-N	GRM80-405-B	265				405			8*40													
GRM100-110	GRM100-110-N	GRM100-110-B	60				110			/													
GRM100-160	GRM100-160-N	GRM100-160-B	95				160			1*50													
GRM100-210	GRM100-210-N	GRM100-210-B	130				210			2*50													
GRM100-260	GRM100-260-N	GRM100-260-B	165				260			3*50													
GRM100-310	GRM100-310-N	GRM100-310-B	200	6.0	100±0.1	45±0.1	31	310	50	M6*12L	55	4*50	60	92	8	15	M4*8L	60	7	11.5	7	13	
GRM100-360	GRM100-360-N	GRM100-360-B	235				360			5*50													
GRM100-410	GRM100-410-N	GRM100-410-B	265				410			6*50													
GRM100-460	GRM100-460-N	GRM100-460-B	300				460			7*50													
GRM100-510	GRM100-510-N	GRM100-510-B	335				510			8*50													

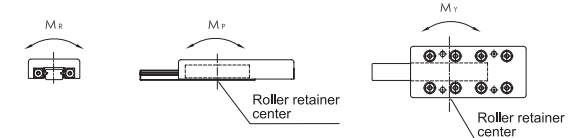
Ordering Example :	GRM	30	25	N
	M type table	Table width	Table length	Antirust



Material Specification

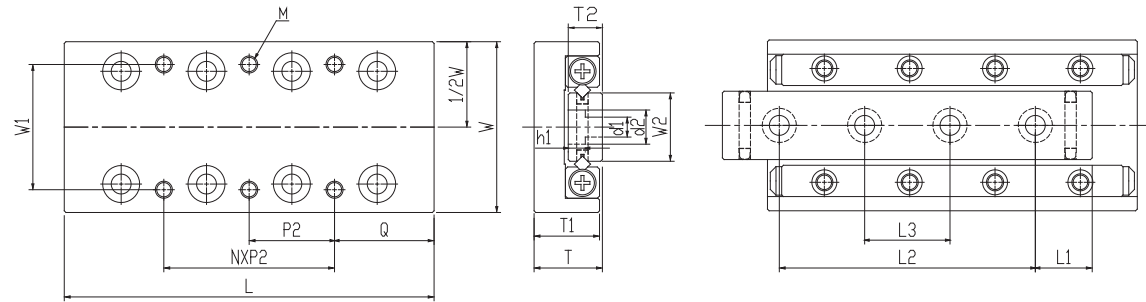
Component Material Model No.	Table	Rail	Retainer	Roller
GRM	Aluminum alloy +black anodized	SUJ2	SUS304	SUJ2
GRM - N	S50C+Ni	SUJ2+Ni	SUS304	SUJ2
GRM - B	S50C +phosphate	SUJ2	SUS304	SUJ2

GRM-N No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

Base Mounting Dimensions (mm)							Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-Able Load Fu(N)	Static Rated Moment			Weight (kg)		Table Moving Accuracy (μm)	
h <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>7</sub>				M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>V</sub> (N·m)	Standard	Antirust	Center Parallelism	Side Parallelism
10.5	10.5	65					6,617	9,357	3,119	124.8	87.3	76.4	0.76	1.69	2	5
		105	/				9,097	14,035	4,678	187.1	196.5	180.1	1.12	2.50		6
		145					10,264	16,375	5,458	218.3	267.5	286.6	1.48	3.31	3	7
		185	105	/			12,492	21,053	7,018	280.7	442.1	466.7	1.84	4.11		
		225	145		/	/	14,612	25,732	8,577	343.1	660.4	690.5	2.20	4.91		
		265	185				16,646	30,410	10,137	405.5	922.4	957.9	2.56	5.72	4	8
		305	225	145			18,612	35,089	11,696	467.8	1228.1	1269.0	2.92	6.51		
		345	265	185			20,519	39,767	13,256	530.2	1577.4	1623.8	3.28	7.32		
		385	305	225			22,377	44,445	14,815	592.6	1970.4	1918.6	3.65	8.13		
		23	10	90	/				13,923	21,053	7,018	315.8	252.6	221.1	1.60	3.48
140							16,592	26,316	8,772	394.7	394.7	434.2	2.36	5.10		
190	90			/			21,596	36,842	12,281	552.6	773.7	828.9	3.11	6.70		
240	140				/	/	26,285	47,369	15,790	710.5	1279.0	1207.9	3.86	8.32	4	8
290	190						30,744	57,895	19,298	868.4	1910.5	1823.7	4.62	9.94		
340	240			140			35,024	68,421	22,807	1026.3	2688.4	2565.8	5.36	11.53		
390	290			190			39,160	78,948	26,316	1184.2	3552.6	3434.2	6.12	13.15		
440	340			240			41,181	84,211	28,070	1263.2	4042.1	4168.4	6.87	14.76	4	8
490	390			290	190		45,141	94,737	31,579	1421.1	5115.8	5257.9	7.62	16.36		



Specification

Model No.			Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)					Table Mounting Dimensions (mm)					d <sub>1</sub>	d <sub>2</sub>	
Standard	Antirust	Black Coating			W	T	L	T <sub>1</sub>	T <sub>2</sub>	W <sub>2</sub>	W <sub>1</sub>	M	Q	N*P <sub>2</sub>			
GRH20-25	GRH20-25-N	GRH20-25-B	12	Ø1.5	20±0.1	8±0.1	25	7.5	4	6.6	14	M2.5*3.5L	12.5	1*18	2.5	4.1	
GRH20-35	GRH20-35-N	GRH20-35-B	18				35							3.5			1*28
GRH20-45	GRH20-45-N	GRH20-45-B	25				45							1*20			
GRH20-55	GRH20-55-N	GRH20-55-B	32				55							1*30			
GRH20-65	GRH20-65-N	GRH20-65-B	40				65							2*20			
GRH20-75	GRH20-75-N	GRH20-75-B	45				75							1*30			
GRH20-85	GRH20-85-N	GRH20-85-B	50				85							2*30			
GRH30-35	GRH30-35-N	GRH30-35-B	18	Ø2.0	30±0.1	12±0.1	35	11.5	6	12.0	22	M3*5.5L	17.5	1*28	3.5	6	
GRH30-50	GRH30-50-N	GRH30-50-B	30				50							3.5			1*43
GRH30-65	GRH30-65-N	GRH30-65-B	40				65							1*30			
GRH30-80	GRH30-80-N	GRH30-80-B	50				80							1*45			
GRH30-95	GRH30-95-N	GRH30-95-B	60				95							2*30			
GRH30-110	GRH30-110-N	GRH30-110-B	70				110							1*45			
GRH30-125	GRH30-125-N	GRH30-125-B	80				125							2*45			
GRH40-55	GRH40-55-N	GRH40-55-B	30	Ø3.0	40±0.1	16±0.1	55	15.5	8	16	30	M4*7.5L	27.5	1*40	4.5	7.1	
GRH40-80	GRH40-80-N	GRH40-80-B	45				80							7.5			1*65
GRH40-105	GRH40-105-N	GRH40-105-B	60				105							1*50			
GRH40-130	GRH40-130-N	GRH40-130-B	75				130							1*75			
GRH40-155	GRH40-155-N	GRH40-155-B	90				155							2*50			
GRH40-180	GRH40-180-N	GRH40-180-B	105				180							1*75			
GRH40-205	GRH40-205-N	GRH40-205-B	130				205							2*75			

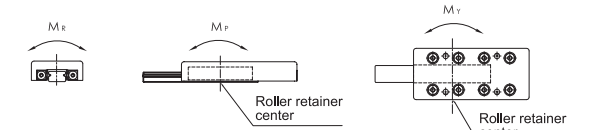
Ordering Example :	GRH	30	25	N
	H type table	Table width	Table length	Antirust



Material Specification

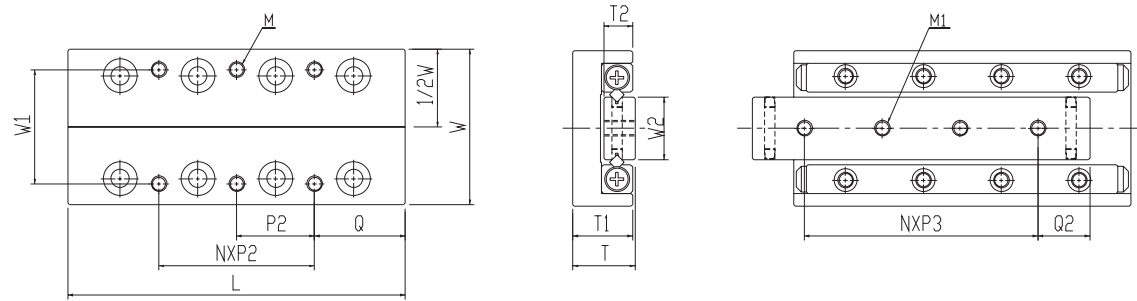
Material / Model No.	Table	Rail	Retainer	Roller
GRH	Aluminum alloy +black anodized	SUJ2	SUS304	SUJ2
GRH - N	S50C+Ni	SUJ2+Ni	SUS304	SUJ2
GRH - B	S50C +phosphate	SUJ2	SUS304	SUJ2

GRH-N No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

Base Mounting Dimensions (mm)				Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-Able Load Fu(N)	Static Rated Moment			Weight (kg)		Table Moving Accuracy (µm)	
h <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>				M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>V</sub> (N·m)	Standard	Antirust	Center Parallelism	Side Parallelism
2.2	3.5	18	/	379	576	192	1.4	1.2	1.4	0.01	0.02	4	
		25		523	865	288	2.2	2.6	3.0	0.02	0.03		
	3.5	38	25	657	1,153	384	2.9	4.6	5.2	0.03	0.04	2	
		48	29	783	1,441	480	3.6	7.2	7.9	0.03	0.05		
	5	55	31	903	1,729	576	4.3	10.4	11.2	0.04	0.06		5
		65	35	1,131	2,306	769	5.8	18.4	17.3	0.05	0.08		
3.3	5	75	40	1,240	2,594	865	6.5	23.3	22.0	0.05	0.09	2	
		5	25	/	895	1,170	390	5.1	3.1	3.9	0.05		0.05
	35		1,552		2,339	780	10.1	12.5	10.9	0.07	0.12		
	5	55	33	1,849	2,924	975	12.7	19.5	17.5	0.09	0.15		2
		70	40	2,164	3,509	1,170	15.2	28.1	30.4	0.11	0.19		
	5	85	45	2,407	4,093	1,364	17.7	38.2	40.9	0.14	0.23		
7.5		95	50	2,930	5,263	1,754	22.8	63.2	59.6	0.16	0.26		
4.3	7.5	110	55	3,181	5,848	1,949	25.3	78.0	74.1	0.18	0.30	2	
		6	40	/	2,901	4,567	1,522	26.5	22.8	26.6	0.15		0.24
	65		43		4,338	7,611	2,537	44.1	63.4	57.1	0.21		0.35
	7.5	90	55	5,646	10,655	3,552	61.8	124.3	115.4	0.28	0.46		3
		115	65	6,268	12,178	4,059	70.6	162.4	172.5	0.35	0.57		
		140	95	7,462	15,222	5,074	88.3	253.7	266.4	0.42	0.68		
165		85	8,603	18,266	6,089	105.9	365.3	350.1	0.49	0.80			
7.5	190	90	9,157	19,789	6,596	114.8	428.8	445.2	0.56	0.91			



Specification

Model No.			Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)					Table Mounting Dimensions (mm)				
Standard	Antirust	Black Coating			W	T	L	T <sub>1</sub>	T <sub>2</sub>	W <sub>2</sub>	W <sub>1</sub>	M	Q	N*P <sub>2</sub>
GRS20-25	GRS20-25-N	GRS20-25-B	12	Ø1.5	20±0.1	8±0.1	25	7.5	4	6.6	14	M2.5*3.5L	3.5	1*18
GRS20-35	GRS20-35-N	GRS20-35-B	18				35						2*28	
GRS20-45	GRS20-45-N	GRS20-45-B	25				45						1*20	
GRS20-55	GRS20-55-N	GRS20-55-B	32				55						1*30	
GRS20-65	GRS20-65-N	GRS20-65-B	40				65						2*20	
GRS20-75	GRS20-75-N	GRS20-75-B	45				75						1*30	
GRS20-85	GRS20-85-N	GRS20-85-B	50				85						2*30	
GRS30-35	GRS30-35-N	GRS30-35-B	18	Ø2.0	30±0.1	12±0.1	35	11.5	6	12	22	M3*5.5L	3.5	1*28
GRS30-50	GRS30-50-N	GRS30-50-B	30				50						1*43	
GRS30-65	GRS30-65-N	GRS30-65-B	40				65						1*30	
GRS30-80	GRS30-80-N	GRS30-80-B	50				80						1*45	
GRS30-95	GRS30-95-N	GRS30-95-B	60				95						2*30	
GRS30-110	GRS30-110-N	GRS30-110-B	70				110						1*45	
GRS30-125	GRS30-125-N	GRS30-125-B	80				125						2*45	
GRS40-55	GRS40-55-N	GRS40-55-B	30	Ø3.0	40±0.1	16±0.1	55	15.5	8	16	30	M4*7.5L	7.5	1*40
GRS40-80	GRS40-80-N	GRS40-80-B	45				80						1*65	
GRS40-105	GRS40-105-N	GRS40-105-B	60				105						1*50	
GRS40-130	GRS40-130-N	GRS40-130-B	75				130						1*75	
GRS40-155	GRS40-155-N	GRS40-155-B	90				155						2*50	
GRS40-180	GRS40-180-N	GRS40-180-B	105				180						1*75	
GRS40-205	GRS40-205-N	GRS40-205-B	130				205						2*75	

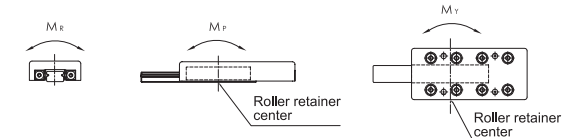
Ordering Example :	GRS	30	25	N
	S type table	Table width	Table length	Antirust



Material Specification

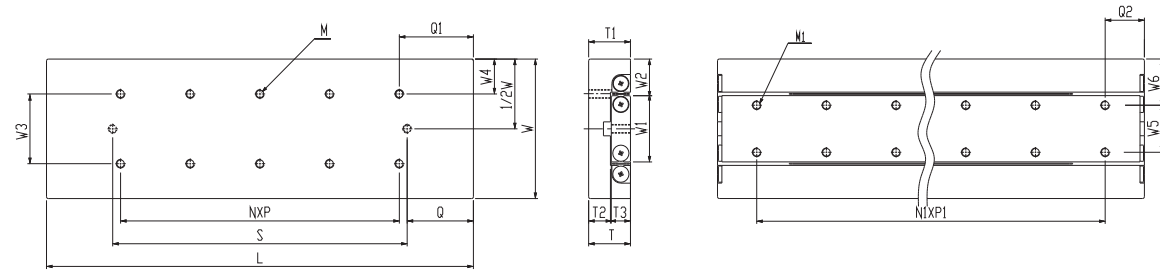
Component	Table	Rail	Retainer	Roller
Material	Aluminum alloy +black anodized	SUJ2	SUS304	SUJ2
Model No.	GRS	GRS - N	GRS - B	
	S50C+Ni	SUJ2+Ni	SUS304	SUJ2
	S50C +phosphate	SUJ2	SUS304	SUJ2

GRS-N No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

Base Mounting Dimensions (mm)			Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-able Load Fu(N)	Static Rated Moment			Weight (kg)		Table Moving Accuracy (µm)	
M1	Q <sub>2</sub>	N*P <sub>3</sub>				M <sub>R</sub> (N·m)	M <sub>p</sub> (N·m)	M <sub>v</sub> (N·m)	Standard	Antirust	Center Parallelism	Side Parallelism
M2.6	5	2*7.5	379	576	192	1.4	1.2	1.4	0.01	0.02	2	4
		2*10	523	865	288	2.2	2.6	3.0	0.02	0.03		
	7.5	3*10	657	1,153	384	2.9	4.6	5.2	0.03	0.05	2	5
		4*10	783	1,441	480	3.6	7.2	7.9	0.03	0.06		
		5*10	903	1,729	576	4.3	10.4	11.2	0.04	0.07		
		6*10	1,131	2,306	769	5.8	18.4	17.3	0.05	0.08		
		7*10	1,240	2,594	865	6.5	23.3	22.0	0.05	0.09		
M3	7.5	1*20	895	1,170	390	5.1	3.1	3.9	0.05	0.05	2	4
		2*15	1,552	2,339	780	10.1	12.5	10.9	0.07	0.12		
	10	3*15	1,849	2,924	975	12.7	19.5	17.5	0.10	0.16	2	5
		4*15	2,134	3,509	1,170	15.2	28.1	30.4	0.12	0.19		
		5*15	2,407	4,093	1,364	17.7	38.2	40.9	0.14	0.23		
		6*15	2,930	5,263	1,754	22.8	63.2	59.6	0.16	0.27		
		7*15	3,181	5,848	1,949	25.3	78.0	74.1	0.18	0.30		
M4	10	1*35	2,901	4,567	1,522	26.5	22.8	26.6	0.15	0.24	2	5
		2*25	4,338	7,611	2,537	44.1	63.4	57.1	0.22	0.35		
	15	3*25	5,646	10,655	3,552	61.8	124.3	115.4	0.29	0.46	3	5
		4*25	6,268	12,178	4,059	70.6	162.4	172.5	0.36	0.58		
		5*25	7,462	15,222	5,074	88.3	259.7	266.4	0.42	0.69		
		6*25	8,603	18,266	6,089	105.9	365.3	350.1	0.49	0.80		
		7*25	9,157	19,789	6,596	114.8	428.8	445.2	0.56	0.91		



Specification

Model No.	Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Mounting Dimensions (mm)																			
			W	T	L	W <sub>3</sub>	W <sub>4</sub>	Q	S	N*P	M	Q1	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>										
GRA30-25-S	12	Ø1.5	30±0.1	8±0.1	25	10	10	12.5	2.5	/	M2	20	11	7	4										
GRA30-35-S	18				35				4.5	1*10		26													
GRA30-45-S	25				45				6	2*10		33													
GRA30-55-S	32				55				7.5	3*10		40													
GRA30-65-S	40				65				8.5	4*10		48													
GRA30-75-S	45				75				11	5*10		53													
GRA30-85-S	50				85				13.5	6*10		58													
GRA40-35-S	18	Ø2.0	40±0.1	14±0.1	35	15	12.5	17.5	3	/	M3	29	14	8	6										
GRA40-50-S	30			50	4.5				1*15	41															
GRA40-65-S	40	Ø3.0	40±0.1	15±0.1	65	15	12.5	17.5	7	2*15	M3	51	15	7	8										
GRA40-80-S	50				80				9.5	3*15		61													
GRA40-95-S	60				95				12	4*15		71													
GRA40-110-S	70				110				14.5	5*15		81													
GRA40-125-S	80				125				17	6*15		91													
GRA60-55-S	30				Ø3.0				60±0.1	18.5±0.1		55				25	17.5	27.5	5.5	/	M4	44	18.5	10.5	8
GRA60-80-S	45											80							10.8	1*25		59			
GRA60-105-S	60	105	15.5	2*25		74																			
GRA60-130-S	75	130	20.8	3*25		89																			
GRA60-155-S	90	155	25.5	4*25		104																			
GRA60-180-S	105	180	30.5	5*25		119																			
GRA60-205-S	130	205	30.5	6*25		144																			

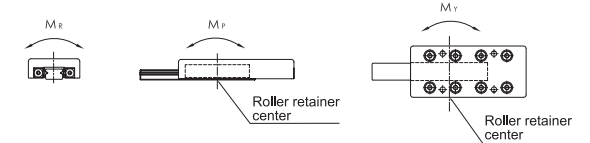
Ordering Example : GRA - 30 - 25 - S  
 A type table - Table width - Table length - Corrosion Resistance



Material Specification

Material / Component / Model No.	Table	Rail	Retainer	Roller
GRA - S	SUS440C+Ni	SUS304	SUS304	SUS440C

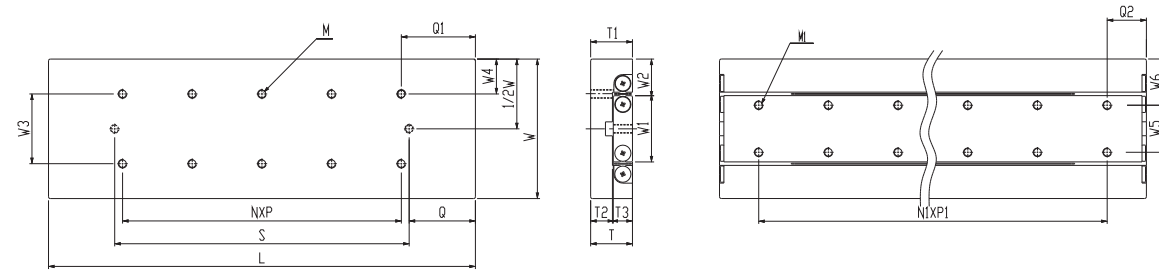
Table and rail are in one unit in this series.  
 GRA-S No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

W <sub>1</sub>	W <sub>2</sub>	W <sub>5</sub>	W <sub>6</sub>	N <sub>1</sub> *P <sub>1</sub>	Q <sub>2</sub>	M <sub>1</sub>	Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-Able Load Fu(N)	Static Rated Moment			Weight (kg)	Table Moving Accuracy (µm)	
										M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>V</sub> (N·m)		Center Parallelism	Side Parallelism
12.8	8.6	/	15	1*10	7.5	M2	379	576	192	2.6	1.2	1.4	0.09	2	4
				2*10			523	865	288	3.9	2.6	3.0	0.12		
				3*10			657	1,153	384	5.2	4.6	5.2	0.16		
				4*10			783	1,441	480	6.5	7.2	7.9	0.19		
				5*10			903	1,729	576	7.8	10.4	11.2	0.23		
				6*10			1,131	2,306	769	10.4	18.4	17.3	0.26		
				7*10			1,240	2,594	865	11.7	23.3	22.0	0.30		
17	11.5	/	20	1*15	10	M3	895	1,170	390	7.0	3.1	3.9	0.20	2	4
				2*15			2,901	4,567	1,522	42.6	22.8	26.6	0.29		
				2*15			2,901	4,567	1,522	42.6	22.8	19.0	0.36		
13.1	13.5	/	20	4*15	10	M3	4,338	7,611	2,591	71.0	63.4	57.1	0.46	3	6
				4*15			3,640	6,089	2,030	56.8	40.6	45.7	0.52		
				5*15			5,005	9,133	3,044	85.2	91.3	98.9	0.63		
				5*15			5,005	9,133	3,044	85.2	91.3	83.7	0.69		
				5*15			5,005	9,133	3,044	85.2	91.3	83.7	0.69		
26.6	16.7	17	21.5	1*25	15	M4	2,901	4,567	1,522	42.6	22.8	26.6	0.65	3	5
				2*25			4,338	7,611	2,537	71.0	63.4	57.1	0.95		
				3*25			5,646	10,655	3,552	99.5	124.3	115.4	1.25		
				4*25			6,268	12,178	4,059	113.7	162.4	172.5	1.55		
				5*25			7,462	15,222	5,074	142.1	253.7	266.4	1.85		
				6*25			8,603	18,266	6,089	170.5	365.3	350.1	2.15		
				7*25			9,157	19,789	6,596	184.7	428.8	445.2	2.45		

GRA - S



Specification

Model No.	Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Mounting Dimensions (mm)																			
			W	T	L	W <sub>3</sub>	W <sub>4</sub>	Q	S	N*P	M	Q1	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>										
GRA80-85-S	50	Ø4.0	80±0.1	24±0.1	85	40	20	42.5	10.5	/	M5	64	24	13	11										
GRA80-125-S	75				125				18	1*40		89													
GRA80-165-S	105				165				23	2*40		119													
GRA80-205-S	135				205				28	3*40		149													
GRA80-245-S	155				245				38	4*40		169													
GRA80-285-S	185				285				43	5*40		199													
GRA80-325-S	215				325				48	6*40		229													
GRA100-110-S	60	Ø6.0	100±0.1	31±0.1	110	50	25	55	16.5	/	M6	77	31	16	15										
GRA100-160-S	95				160				23.5	1*50		113													
GRA100-210-S	130				210				31	2*50		148													
GRA100-260-S	165				260				38.5	3*50		183													
GRA100-310-S	200				310				46	4*50		218													
GRA100-360-S	235				360				53.5	5*50		253													
GRA100-410-S	265				410				63.5	6*50		283													
GRA100-510-S	340				510				81	7*50		348													
GRA145-210-S	130				Ø9.0				145±0.1	42.5±0.1		210				85	30	105	27	/	M8	156	43	21	21
GRA145-310-S	180											310							52	1*100		206			
GRA145-410-S	350	410	12	2*100		376																			
GRA145-510-S	450	510	17	3*100		476																			
GRA145-610-S	550	610	17	4*100		576																			

Ordering Example :	GRA	-	80	-	85	-	S
	A type table		Table width		Table length		Corrosion Resistance

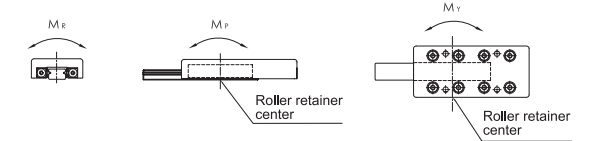
GRA - S



Material Specification

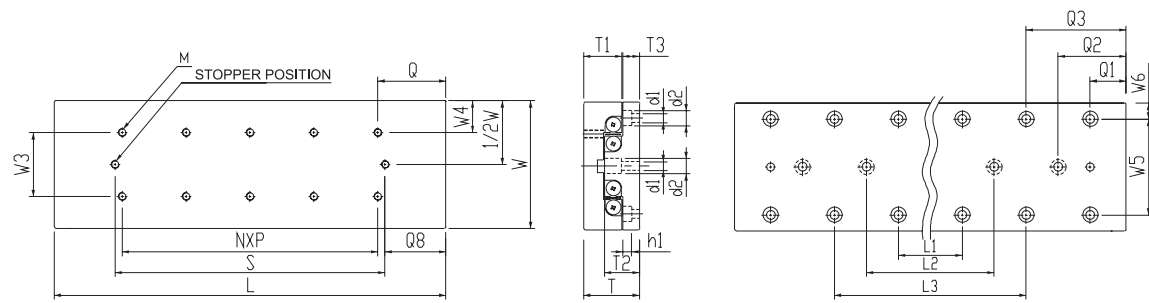
Component	Table	Rail	Retainer	Roller
Material	SUS440C+Ni	SUS304	SUS304	SUS440C
Model No.				

Table and rail are in one unit in this series. GRA-S No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

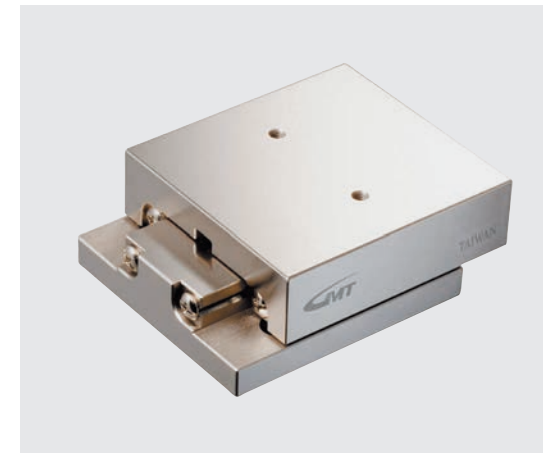
W <sub>1</sub>	W <sub>2</sub>	W <sub>5</sub>	W <sub>6</sub>	N <sub>1</sub> *P <sub>1</sub>	Q <sub>2</sub>	M <sub>1</sub>	Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-Able Load Fu(N)	Static Rated Moment			Weight (kg)	Table Moving Accuracy (µm)	
										M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>V</sub> (N·m)		Center Parallelism	Side Parallelism
38	21	27	26.5	1*40	22.5	M5	6,617	9,357	3,119	124.8	87.3	76.4	1.14	2	5
				2*40			9,097	14,035	4,678	187.1	196.5	180.1	1.68	3	7
				3*40			10,264	16,375	5,458	218.3	267.5	286.6	2.22		
				4*40			12,492	21,053	7,018	280.7	442.1	466.7	2.76		
				5*40			14,612	25,732	8,577	343.1	660.4	690.5	3.30		
				6*40			16,646	30,410	10,137	405.5	922.4	957.9	3.84		
				7*40			18,612	35,089	11,696	467.8	1228.1	1187.2	4.38	4	8
42	29	26	37	1*50	30	M6	13,923	21,053	7,018	315.8	252.6	221.1	2.33	3	6
				2*50			16,592	26,316	8,772	394.7	394.7	434.2	3.42		
				3*50			21,596	36,842	12,281	552.6	773.7	828.9	4.51		
				4*50			26,285	47,369	15,790	710.5	1279.0	1207.9	5.57	4	8
				5*50			30,744	57,895	19,298	868.4	1910.5	1823.7	6.66		
				6*50			35,024	68,421	22,807	1026.3	2668.4	2565.8	7.75		
				7*50			39,160	78,948	26,316	1184.2	3552.6	3434.2	8.84		
				8*50			47,576	100,001	33,334	1500.0	5194.7	5044.7	11.02		
68.4	38.3	46	49.5	1*100	55	M8	46,991	72,741	24,247	1745.8	1697.3	1527.6	9.08	3	7
				2*100			61,165	101,838	33,946	2444.1	3326.7	3564.3	13.46		
				3*100			67,898	116,386	38,795	2793.3	4345.1	4073.5	17.74	4	8
				4*100			80,829	145,482	48,494	3491.6	6789.2	6449.7	22.11		
				5*100			87,073	160,031	53,344	3840.7	8214.9	8588.3	26.47		



Specification

Model No.	Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Mounting Dimensions (mm)																			
			W	T	L	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	N*P	M	S	Q	Q <sub>8</sub>	W <sub>3</sub>	W <sub>4</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>							
GRB30-25-S	12	Ø1.5	30±0.1	17±0.1	25	11	10	5.5	/	M2	20	12.5	7.5	10	10	18	/	28							
GRB30-35-S	18				35				1*10		26					4.5			28	/					
GRB30-45-S	25				45				2*10		33					6			38	/					
GRB30-55-S	32				55				3*10		40					12.5			7.5	10	48	/	28		
GRB30-65-S	40				65				4*10		48					8.5			58	38					
GRB30-75-S	45				75				5*10		53					11			68	45					
GRB30-85-S	50				85				6*10		58					13.5			78	58					
GRB40-35-S	18	Ø2.0	40±0.1	21±0.1	35	14	14	5.5	/	M3	29	17.5	9.5	15	12.5	25	/	40							
GRB40-50-S	30				50				1*15		41					4.5			40	/					
GRB40-65-S	40	65	2*15	51	7	55	55																		
GRB40-80-S	50	Ø3.0	40±0.1	21±0.1	80	14	14	5.5	3*15	M3	61	17.5	9.5	15	12.5	70	/	40							
GRB40-95-S	60				95				4*15		71					12		85	55						
GRB40-110-S	70				110				5*15		81					14.5		100	70						
GRB40-125-S	80				125				6*15		91					17		115	85						
GRB60-55-S	30				Ø3.0				60±0.1		28±0.1					55		18.5	17.5	9	/	M4	44	27.5	20.8
GRB60-80-S	45	80	1*25	59		10.8	60	/																	
GRB60-105-S	60	105	2*25	74		15.5	85	85																	
GRB60130-S	75	130	3*25	89		27.5	20.8	25		110		/	110	/	85										
GRB60-155-S	90	155	4*25	104		25.5	135	85																	
GRB60-180-S	105	180	5*25	119		30.5	160	110																	
GRB60-205-S	130	205	6*25	144		30.5	185	135		85															

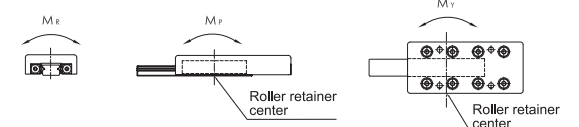
Ordering Example :	GRB	30	25	S
	B type table	Table width	Table length	Corrosion Resistance



Material Specification

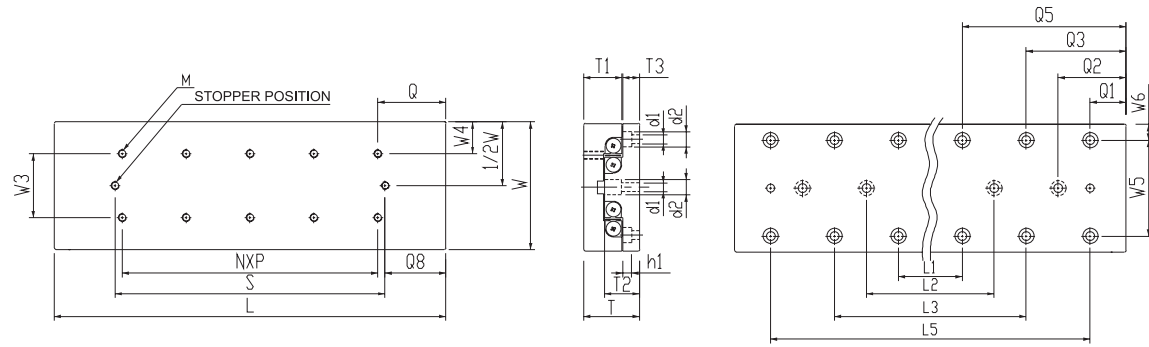
Component	Table	Rail	Retainer	Roller
GRB - S	SUS440C+Ni	SUS304	SUS304	SUS440C

Table and rail are in one unit in this series. GRB-S No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

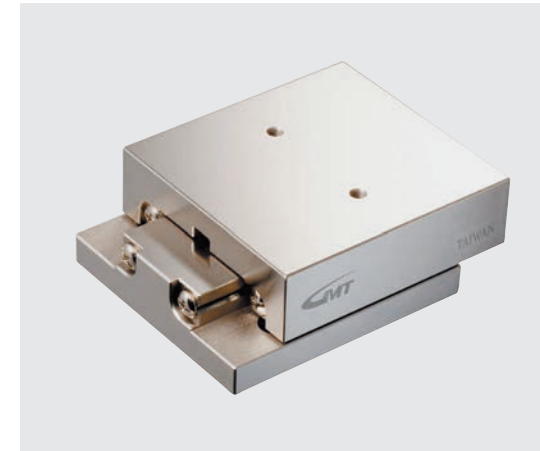
Q <sub>1</sub>	Q <sub>2</sub>	Q <sub>3</sub>	W <sub>5</sub>	W <sub>6</sub>	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allowable Load Fu(N)	Static Rated Moment			Weight (kg)	Table Moving Accuracy (µm)									
											M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>Y</sub> (N·m)		Center Parallelism	Side Parallelism								
3.5	/	/	22	4	2.55	4.1	2.5	379	576	192	2.6	1.2	1.4	0.09	2	4								
								523	865	288	3.9	2.6	3.0	0.12										
								657	1,153	384	5.2	4.6	5.2	0.16										
								5	/	/	30	5	3.5	6	3.2	783	1,441	480	6.5	7.2	7.9	0.19	2	5
																903	1,729	576	7.8	10.4	11.2	0.23		
																1,131	2,306	769	10.4	18.4	17.3	0.26		
10	/	/	40	10	4.5	7.5	4.5									1,240	2,594	865	11.7	23.3	22.0	0.30	3	6
																895	1,170	390	7.0	3.1	3.9	0.20		
																2,901	4,567	1,522	42.6	22.8	26.6	0.29		
								35	/	/	40	10	4.5	7.5	4.5	2,901	4,567	1,522	42.6	22.8	26.6	0.29	2	5
																2,901	4,567	1,522	42.6	22.8	19.0	0.36		
																4,338	7,611	2,591	71.0	63.4	57.1	0.46		
60	/	/	40	10	4.5	7.5	4.5									3,640	6,089	2,030	56.8	40.6	45.7	0.52	3	6
																5,005	9,133	3,044	85.2	91.3	98.9	0.63		
																5,005	9,133	3,044	85.2	91.3	83.7	0.69		
								6,268	12,178	4,059	113.7	162.4	172.5	1.55										
7	/	/	40	10	4.5	7.5	4.5	7,462	15,222	5,074	142.1	253.7	266.4	1.85	3	7								
								8,603	18,266	6,089	170.5	365.3	350.1	2.15										
7	/	/	40	10	4.5	7.5	4.5	9,157	19,789	6,596	184.7	428.8	445.2	2.45	3	7								
								9,157	19,789	6,596	184.7	428.8	445.2	2.45										



Specification

Model No.	Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Mounting Dimensions (mm)																													
			W	T	L	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	N*P	M	S	Q	Q <sub>8</sub>	W <sub>3</sub>	W <sub>4</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>																	
GRB80-85-S	50	Ø4.0	80±0.1	35±0.1	85	24	22	10.5	3*40	M5	64	42.5	28	40	20	40	/	80	/																
GRB80-125-S	75				125											1*40				89	18	80	/												
GRB80-165-S	105				165											2*40				119	23	120	/												
GRB80-205-S	135				205											3*40				149	28	160	/	80											
GRB80-245-S	155				245											4*40				169	38	200	/	120											
GRB80-285-S	185				285											5*40				199	43	240	/	160											
GRB80-325-S	215	325	6*40	229	48	280	/	200																											
GRB100-110-S	60	Ø6.0	100±0.1	45±0.1	110	31	29	13	3*50	M6	77	55	38.5	50	25	90	/	140	/																
GRB100-160-S	95				160											1*50				113	23.5	140	/												
GRB100-210-S	130				210											2*50				148	31	190	90												
GRB100-260-S	165				260											3*50				183	38.5	240	/	140											
GRB100-310-S	200				310											4*50				218	46	290	190												
GRB100-360-S	235				360											5*50				253	53.5	340	240												
GRB100-410-S	265				410											6*50				283	63.5	390	290												
GRB100-510-S	365				510											8*50				390	60	490	390												
GRB145-210-S	130				Ø9.0											145±0.1				60±0.1	210	43	38.5	16	1*100	M8	156	105	12	85	30	100	/	200	/
GRB145-310-S	180																				310											2*100			
GRB145-410-S	350	410	3*100	276		69	400	200	/																										
GRB145-510-S	450	510	4*100	376		86	500	300	/																										
GRB145-610-S	550	610	4*100	476		116	576	300	/																										

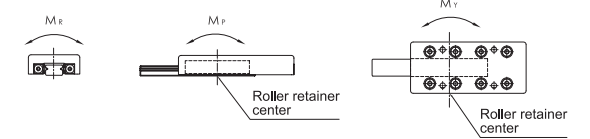
Ordering Example :	GRB	80	85	S
	B type table	Table width	Table length	Corrosion Resistance



Material Specification

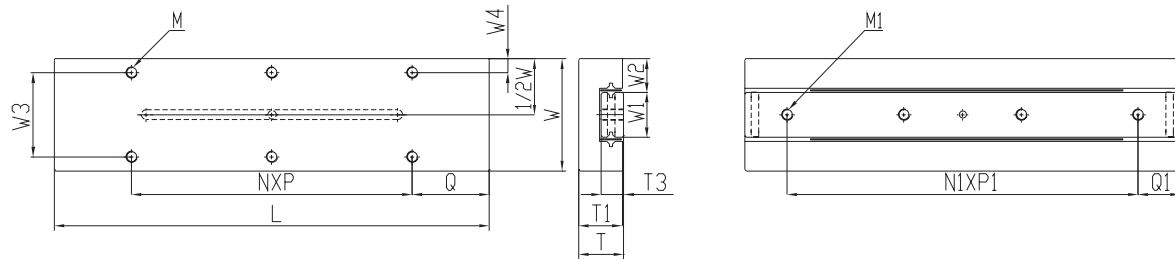
Component	Table	Rail	Retainer	Roller
Material	SUS440C+Ni	SUS304	SUS304	SUS440C
Model No.				

Table and rail are in one unit in this series.  
GRB-S No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

L <sub>5</sub>	Q <sub>1</sub>	Q <sub>2</sub>	Q <sub>3</sub>	Q <sub>5</sub>	W <sub>5</sub>	W <sub>6</sub>	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-able Load Fu(N)	Static Rated Moment			Weight (kg)	Table Moving Accuracy (µm)										
													M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>Y</sub> (N·m)		Center Parallelism	Side Parallelism									
/	22.5	/	/	/	60	10	5.5	9.5	6	6,617	9,357	3,119	124.8	87.3	76.4	1.70	2	5									
										9,097	14,035	4,678	187.1	196.5	180.1	2.52	3	6									
										10,264	16,375	5,458	218.3	267.5	286.6	3.34											
										12,492	21,053	7,018	280.7	442.1	466.7	4.14	7										
										14,612	25,732	8,577	343.1	660.4	690.5	4.95											
										16,646	30,410	10,137	405.5	922.4	957.9	5.77											
120	10	/	62.5	/	60	20	7	11	6.5	18,612	35,089	11,696	467.8	1228.1	1187.2	6.57	4	8									
13,923										21,053	7,018	315.8	252.6	221.1	3.48	3	6										
16,592										26,316	8,772	394.7	394.7	434.2	5.10												
21,596										36,842	12,281	552.6	773.7	828.9	6.72	7											
26,285										47,369	15,790	710.5	1279.0	1207.9	8.31												
30,744										57,895	19,298	868.4	1910.5	1823.7	9.95												
140	55	/	60	/	60	20	7	11	6.5	35,024	68,421	22,807	1026.3	2668.4	2565.8	11.53	4	8									
190										39,160	78,948	26,316	1184.2	3552.6	3434.2	13.16											
290										155	/	/	/	90	27.5	9	14	8.5	45,141	84,600	28,200	1269.0	4568.4	4441.5	16.52	3	7
46,991																			72,741	24,247	1745.8	1697.3	1527.6	13.11			
61,165																			101,838	33,946	2444.1	3326.7	3564.3	19.44	4	8	
67,898																			116,386	38,795	2793.3	4345.1	4073.5	25.65			
80,829	145,482	48,494	3491.6	6789.2	6449.7	31.97	38.22																				
87,073	160,031	53,344	3840.7	8214.9	8588.3	38.22																					



Specification

Model No.	Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Mounting Dimensions (mm)								
			W	T	L	W <sub>3</sub>	W <sub>4</sub>	N*P	Q	M	T <sub>1</sub>	W <sub>1</sub>	W <sub>2</sub>	N <sub>1</sub> *P <sub>1</sub>
GRC20-25-S	12	Ø1.5	20±0.1	8±0.1	25	14	3	1*18	3.5	M2.5	7.5	7	6.5	2*7.5
GRC20-35-S	18				1*28			2*10						
GRC20-45-S	25				1*20			3*10						
GRC20-55-S	32				1*30			4*10						
GRC30-65-S	40	Ø2.0	30±0.1	12±0.1	65	22	4	1*30	17.5	M3	11.5	12	9	3*15
GRC30-80-S	50				1*45			4*15						
GRC30-95-S	60				2*30			5*15						
GRC40-105-S	60	Ø3.0	40±0.1	16±0.1	105	30	5	1*50	27.5	M4	15.5	16	12	3*25
GRC40-130-S	75				1*75			4*25						
GRC40-155-S	90				2*50			5*25						

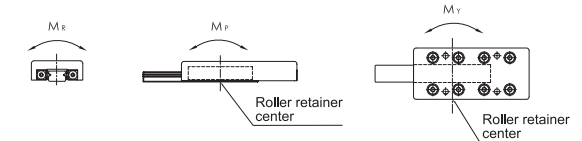
Ordering Example :	GRC	20	25	S
	C type table	Table width	Table length	Corrosion Resistance



Material Specification

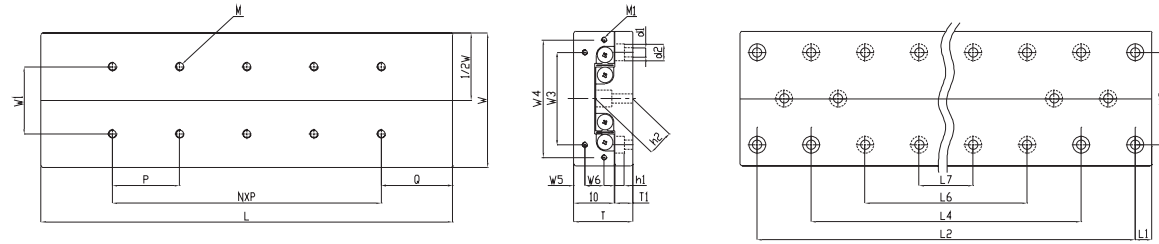
Component	Table	Rail	Retainer	Roller
Material				
Model No.				
GRC - S	SUS440C+Ni	SUS304	SUS440C	SUS440C

Table and rail are in one unit in this series.  
GRC-S No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

Q <sub>1</sub>	M <sub>1</sub>	T <sub>3</sub>	Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-Able Load Fu(N)	Static Rated Moment			Weight (kg)	Table Moving Accuracy (µm)	
						M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>Y</sub> (N·m)		Center Parallelism	Side Parallelism
5	M2.5	4	523	865	288	2.2	2.6	2.2	0.03	2	4
			657	1153	384	3.0	4.6	5.2	0.04		
7.5	M2.5	4	783	1441	480	3.7	7.2	7.9	0.05		
			903	1729	576	4.4	10.4	11.2	0.06		
10	M3	6	1849	2924	975	12.7	19.5	21.4	0.16	3	5
			2407	4093	1364	17.7	38.2	35.5	0.20		
			2672	4678	1559	20.3	49.9	46.8	0.24		
15	M4	8	5646	10655	3552	61.8	124.3	133.2	0.47	3	6
			6872	13700	4567	79.5	205.5	194.1	0.58		
			8038	16744	5581	97.1	307.0	293.0	0.70		



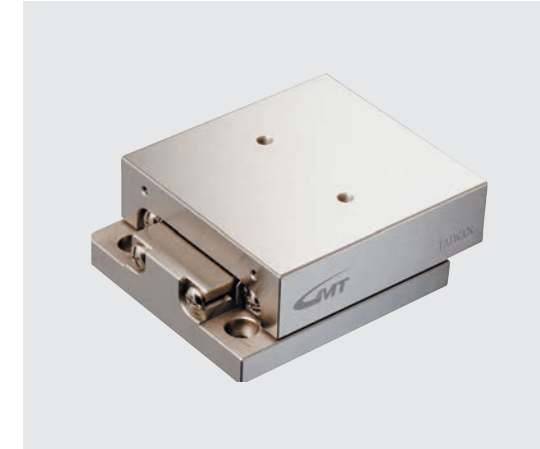
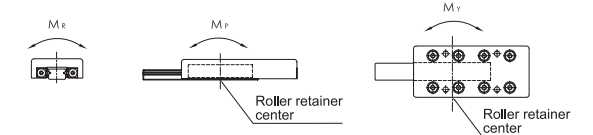
Specification

Model No.	Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Mounting Dimensions (mm)										
			W	T	L	T <sub>2</sub>	W <sub>1</sub>	M	Q	N*P	W <sub>3</sub>	W <sub>5</sub>	M <sub>1</sub>	W <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>
GRM30-25-S	12	Ø1.5	30±0.1	17±0.1	25	11	10	M2*4L	125	/	12	2.5	M2*6L	22	2.5	4.5
GRM30-35-S	18				1*10											
GRM30-45-S	25				2*10											
GRM30-55-S	32				3*10											
GRM30-65-S	40				4*10											
GRM30-75-S	45				5*10											
GRM30-85-S	50				6*10											
GRM40-35-S	18	Ø2.0	40±0.1	21±0.1	35	14	15	M3*6L	17.5	/	16	3.4	M2*6L	30	3.5	6.5
GRM40-50-S	30				1*15											
GRM40-65-S	40				2*15											
GRM40-80-S	50				3*15											
GRM40-95-S	60				4*15											
GRM40-110-S	70				5*15											
GRM40-125-S	80				6*15											
GRM40-140-S	90				7*15											
GRM40-155-S	100				8*15											
GRM40-170-S	110				9*15											
GRM40-185-S	120	10*15														

Material Specification

Component	Table	Rail	Retainer	Roller
Material				
Model No.				
GRM - S	SUS440C+Ni	SUS304	SUS440C	SUS440C

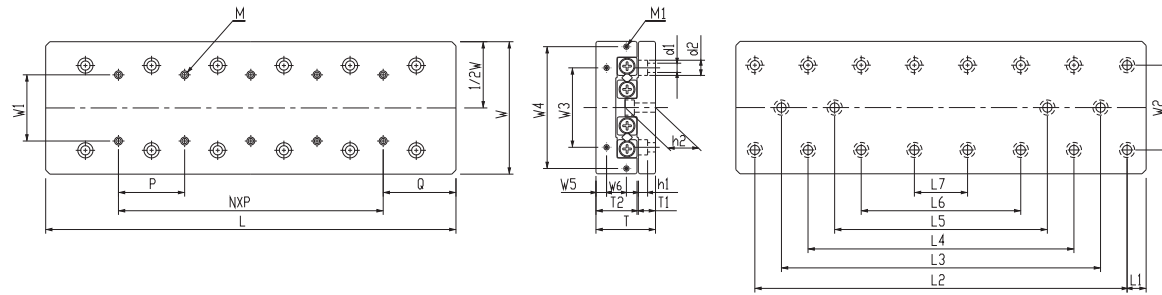
Table and rail are in one unit in this series. GRM-S No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

h <sub>1</sub>	T <sub>1</sub>	h <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>4</sub>	L <sub>6</sub>	L <sub>7</sub>	Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-Able Load Fu(N)	Static Rated Moment			Weight (kg)	Table Moving Accuracy (µm)	
											M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>Y</sub> (N·m)		Center Parallelism	Side Parallelism
2.5	5.5	10	3.5	18	/	/	/	379	576	192	2.6	1.2	1.4	0.09	2	4
				28				523	865	288	3.9	2.6	3.0	0.12		
				38				657	1,153	384	5.2	4.6	5.2	0.16		
				48				783	1,441	480	6.5	7.2	7.9	0.19		
				58				903	1,929	576	7.8	10.4	11.2	0.23		
				67				1,131	2,306	769	10.4	18.4	17.3	0.26		
				78				1,240	2,594	865	11.7	23.3	22.0	0.30		
3.5	6.5	13	5	25	/	/	/	895	1,170	390	7.0	3.1	3.9	0.20	2	4
				40				1,552	2,339	780	14.0	12.5	10.9	0.29		
				55				1,849	2,924	975	17.5	19.5	17.5	0.38		
				70				2,134	3,509	1,170	21.1	28.1	30.4	0.46		
				85				2,407	4,093	1,364	24.6	38.2	40.9	0.55		
				100				2,930	5,263	1,754	31.6	63.2	59.6	0.64		
				115				3,181	5,848	1,949	35.1	78.0	74.1	0.72		
				130				3,427	6,433	2,144	38.6	94.3	98.6	0.83		
				145				3,668	7,017	2,339	42.1	112.3	117.0	0.90		
				160				4,136	8,187	2,729	49.1	152.8	147.4	0.99		
175	4,365	8,772	2,924	52.6	175.4	169.6	1.07									

Ordering Example : GRM - 30 - 25 - S  
M type table - Table width - Table length - Corrosion Resistance



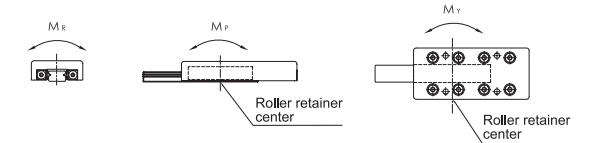
Specification

Model No.	Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Mounting Dimensions (mm)										
			W	T	L	T <sub>2</sub>	W <sub>1</sub>	M	Q	N*P	W <sub>3</sub>	W <sub>5</sub>	M <sub>1</sub>	W <sub>2</sub>	d <sub>1</sub>	d <sub>2</sub>
GRM60-55-S	30	Ø3.0	60±0.1	28±0.1	55	18.5	25	M4*8L	27.5	/	40	5.5	M3*6L	40	4.5	8
GRM60-80-S	45				1*25											
GRM60-105-S	60				2*25											
GRM60-130-S	75				3*25											
GRM60-155-S	90				4*25											
GRM60-180-S	105				5*25											
GRM60-205-S	130				6*25											
GRM60-230-S	155				7*25											
GRM60-255-S	180				8*25											
GRM60-280-S	205				9*25											
GRM60-305-S	230	10*25														
GRM80-85-S	50	Ø4.0	80±0.1	35±0.1	85	24	40	M5*10L	42.5	/	55	6.5	M3*6L	55	5.5	10
GRM80-125-S	75				1*40											
GRM80-165-S	105				2*40											
GRM80-205-S	130				3*40											
GRM80-245-S	155				4*40											
GRM80-285-S	185				5*40											
GRM80-325-S	210				6*40											
GRM80-365-S	235				7*40											
GRM80-405-S	265				8*40											

Material Specification

Component	Table	Rail	Retainer	Roller
Material				
Model No.				
GRM - S	SUS440C+Ni	SUS304	SUS304	SUS440C

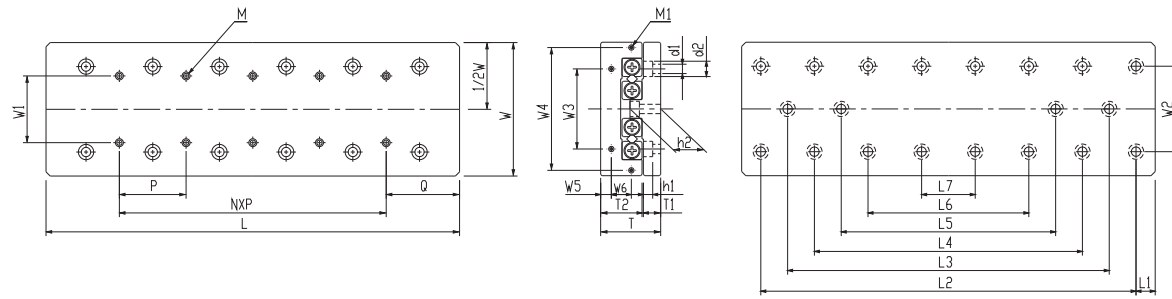
Table and rail are in one unit in this series.  
GRM-S No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

h <sub>1</sub>	T <sub>1</sub>	h <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-able Load Fu(N)	Static Rated Moment			Weight (kg)	Table Moving Accuracy (µm)	
											M <sub>R</sub> (N-m)	M <sub>P</sub> (N-m)	M <sub>V</sub> (N-m)		Center Parallelism	Side Parallelism
4.5	9	17.5	10	35	/	/	/	2,901	4,567	1,522	42.6	22.8	26.6	0.65	2	5
				60				4,338	7,611	2,537	71.0	63.4	57.1	0.95		
				85				5,646	10,655	3,552	99.8	124.3	115.4	1.25	3	7
				110				6,268	12,178	4,059	113.7	162.4	172.5	1.55		
				135				7,492	15,222	5,074	142.1	253.7	266.4	1.85		
				160				8,603	18,266	6,089	170.5	365.3	350.1	2.15		
				185				9,157	19,789	6,596	184.7	428.8	445.2	2.44	4	8
				210				9,702	21,311	7,104	198.9	497.3	515.0	2.74		
				235				10,767	24,355	8,118	227.3	649.5	629.2	3.04		
				260				11,288	25,877	8,626	241.5	733.2	711.6	3.33		
285	11,802	27,400	9,133	255.7	822.0	844.8	3.63									
5.4	10.5	22	10	60	/	/	/	6,617	9,357	3,119	124.8	87.3	76.4	1.68	2	5
				105				9,097	14,035	4,678	187.1	196.5	180.1	2.48		
				145				10,264	16,375	5,458	218.3	267.5	286.6	3.27	3	7
				185				12,492	21,035	7,018	280.7	442.1	466.7	4.06		
				225				14,612	25,732	8,577	343.1	660.4	690.5	4.86		
				265				16,646	30,410	10,137	405.5	922.4	957.9	5.66		
				305				18,612	35,089	11,696	467.8	1228.1	1269.0	6.44	4	8
				345				20,519	39,767	13,256	530.2	1577.4	1623.8	7.24		
				385				22,377	44,445	14,815	592.6	1970.4	1918.6	8.04		

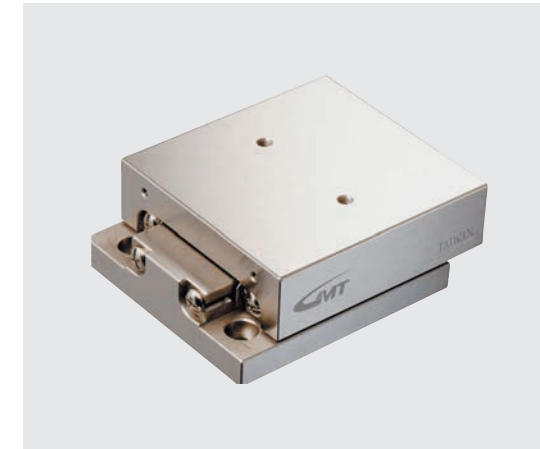
Ordering Example :	GRM	60	55	S
	M type table	Table width	Table length	Corrosion Resistance



Specification

Model No.	Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Mounting Dimensions (mm)											
			W	T	L	T <sub>2</sub>	W <sub>1</sub>	M	Q	N*P	W <sub>3</sub>	W <sub>4</sub>	W <sub>5</sub>	W <sub>6</sub>	M <sub>1</sub>	W <sub>2</sub>	d <sub>1</sub>
GRM100-110-S	60	Ø6.0	100±0.1	45±0.1	110	31	50	M6*12L	55	/	60	92	8	15	M4*8L	60	7
GRM100-160-S	95				160					1*50							
GRM100-210-S	130				210					2*50							
GRM100-260-S	165				260					3*50							
GRM100-310-S	200				310					4*50							
GRM100-360-S	235				360					5*50							
GRM100-410-S	265				410					6*50							
GRM100-460-S	300				460					7*50							
GRM100-510-S	335				510					8*50							

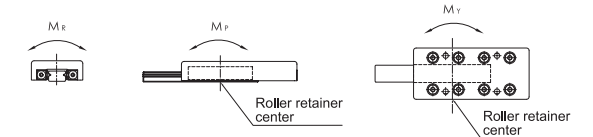
Ordering Example :	GRM	100	110	S
	M type table	Table width	Table length	Corrosion Resistance



Material Specification

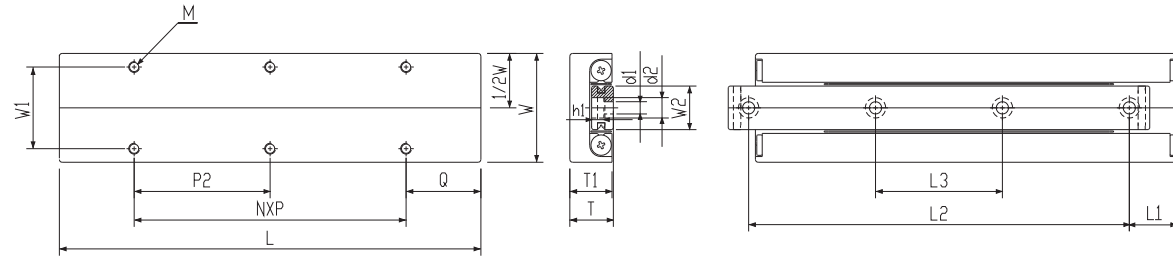
Component	Table	Rail	Retainer	Roller
Material				
Model No.				
GRM - S	SUS440C+Ni	SUS304	SUS440C	SUS440C

Table and rail are in one unit in this series. GRM-S No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

d <sub>2</sub>	h <sub>1</sub>	T <sub>1</sub>	h <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-Able Load Fu(N)	Static Rated Moment			Weight (kg)	Table Moving Accuracy (µm)	
												M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>Y</sub> (N·m)		Center Parallelism	Side Parallelism
11.5	7	13	29	10	90	/	/	/	13,923	21,053	7,018	315.8	252.6	221.1	3.45	3	6
					140				16,592	26,316	8,772	394.7	394.7	646.2	5.05		
					190				21,596	36,842	12,281	522.6	773.9	828.9	6.63		
					240	26,285	49,369	15,790	710.5	1279.0	1207.9	8.23	4	8			
					290	30,744	57,895	19,298	868.4	1910.5	1823.7	9.84					
					340	35,024	68,421	22,807	1026.3	2668.4	2565.8	11.41					
					390	39,160	78,948	26,316	1184.2	3552.6	3434.2	13.01					
					440	41,481	84,211	28,070	1263.2	4042.1	4168.4	14.61					
					490	45,141	94,737	31,579	1421.1	5115.8	5257.9	16.20					



Specification

Model No.	Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Mounting Dimensions (mm)																	
			W	T	L	T <sub>1</sub>	W <sub>2</sub>	W <sub>1</sub>	M	Q	N*P	d <sub>1</sub>	d <sub>2</sub>										
GRH20-25-S	12	Ø1.5	20±0.1	8±0.1	25	7.5	6.6	14	M2.5*3.5L	3.5	1*18	2.5	4.1										
GRH20-35-S	18				1*28																		
GRH20-45-S	25				1*20																		
GRH20-55-S	32				1*30																		
GRH20-65-S	40				2*20																		
GRH20-75-S	45				1*30																		
GRH20-85-S	50				2*30																		
GRH30-35-S	18	Ø2.0	30±0.1	12±0.1	35	11.5	12.0	22	M3*5.5L	3.5	1*28	3.5	6										
GRH30-50-S	30				1*43																		
GRH30-65-S	40				1*30																		
GRH30-80-S	50				1*45																		
GRH30-95-S	60				2*30																		
GRH30-110-S	70				1*45																		
GRH30-125-S	80				2*45																		
GRH40-55-S	30				Ø3.0						40±0.1			16±0.1	55	15.5	16	30	M4*7.5L	7.5	1*40	4.5	7.5
GRH40-80-S	45														1*65								
GRH40-105-S	60														1*50								
GRH40-130-S	75	1*75																					
GRH40-155-S	90	2*50																					
GRH40-180-S	105	1*75																					
GRH40-205-S	130	2*75																					

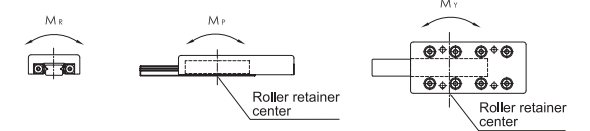
Ordering Example :	GRH	20	25	S
	H type table	Table width	Table length	Corrosion Resistance



Material Specification

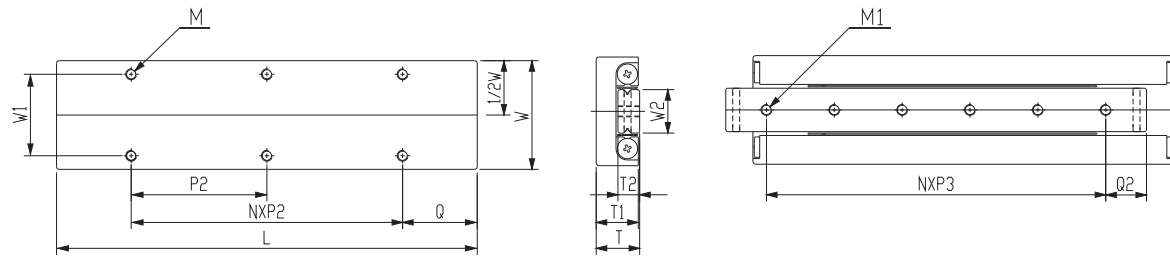
Component	Table	Rail	Retainer	Roller
Material	SUS440C+Ni	SUS304	SUS304	SUS440C
Model No.				

Table and rail are in one unit in this series. GRH-S No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

h <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-able Load Fu(N)	Static Rated Moment			Weight (kg)	Table Moving Accuracy (µm)		
							M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>Y</sub> (N·m)		Center Parallelism	Side Parallelism	
2.2	3.5	3.5	18	379	576	192	1.4	1.2	1.4	0.02	2	4	
		5	25	523	865	288	2.2	2.6	3.0	0.03			
	3.5	38	25	657	1,153	384	2.9	4.6	5.2	0.04	2	5	
		48	29	783	1,441	480	3.6	7.2	7.9	0.05			
	5	5	55	31	903	1,729	576	4.3	10.4	11.2	0.06	2	5
			65	35	1,131	2,306	769	5.8	18.4	17.3	0.07		
5	5	75	40	1,240	2,594	865	6.5	23.3	22.0	0.08	2	5	
		5	25	895	1,170	390	5.1	3.1	3.9	0.08			2
3.3	7.5	35	35	1,552	2,339	780	10.1	12.5	10.9	0.12	2	4	
		55	33	1,849	2,924	975	12.7	19.5	17.5	0.15			
	5	70	40	2,164	3,509	1,170	15.2	28.1	30.4	0.19	2	5	
		85	45	2,407	4,093	1,364	17.7	38.2	40.9	0.22			
	7.5	7.5	95	50	2,930	5,263	1,754	22.8	63.2	59.6	0.26	2	5
			110	55	3,181	5,848	1,949	25.3	78.0	74.1	0.29		
4.5	7.5	40	/	2,901	4,567	1,522	26.5	22.8	26.6	0.23	2	5	
		6	65	43	4,338	7,611	2,537	44.1	63.4	57.1			0.34
	7.5	90	55	5,646	10,655	3,552	61.8	124.3	115.4	0.45	2	5	
		115	65	6,268	12,178	4,059	70.6	162.4	172.5	0.56			
		140	95	7,462	15,222	5,074	88.3	253.7	266.4	0.66			
		165	85	8,603	18,266	6,089	105.9	365.3	350.1	0.78			
7.5	190	90	9,157	19,789	6,596	114.8	428.8	445.2	0.88	3	5		



Specification

Model No.	Max. Stroke (mm)	Roller Dia. (mm)	Main Dimensions (mm)			Mounting Dimensions (mm)							
			W	T	L	T <sub>1</sub>	T <sub>2</sub>	W <sub>2</sub>	W <sub>1</sub>	M	M <sub>1</sub>	Q	Q <sub>2</sub>
GRS20-25-S	12	1.5	20±0.1	8±0.1	25	7.5	4	6.6	14	M2.5*3.5L	M2.6	3.5	5
GRS20-35-S	18				35								7.5
GRS20-45-S	25				45								
GRS20-55-S	32				55								
GRS20-65-S	40				65								
GRS20-75-S	45				75								
GRS20-85-S	50				85								
GRS30-35-S	18	2.0	30±0.1	12±0.1	35	11.5	6	12	22	M3*5.5L	M3	3.5	7.5
GRS30-50-S	30				50								10
GRS30-65-S	40				65								
GRS30-80-S	50				80								
GRS30-95-S	60				95								
GRS30-110-S	70				110								
GRS30-125-S	80				125								
GRS40-55-S	30	3.0	40±0.1	16±0.1	55	15.5	8	16	30	M4*7.5L	M4*7.5L	7.5	10
GRS40-80-S	45				80								15
GRS40-105-S	60				105								
GRS40-130-S	75				130								
GRS40-155-S	90				155								
GRS40-180-S	105				180								
GRS40-205-S	130				205								

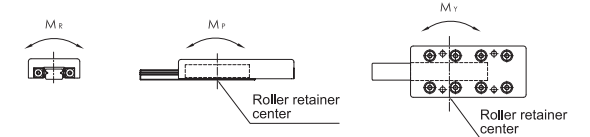
Ordering Example :	GRS	20	25	S
	S type table	Table width	Table length	Corrosion Resistance



Material Specification

Component	Table	Rail	Retainer	Roller
Material				
Model No.				
GRS - S	SUS440C+Ni	SUS304	SUS440C	SUS440C

Table and rail are in one unit in this series.  
GRS-S No Surface finished to V-groove surface of the rail.



★ Each of load and torque changes oppositely in stroke variation

N*P <sub>2</sub>	N*P <sub>3</sub>	Basic Dynamic Load Rating C(N)	Basic Static Load Rating Co(N)	Allow-Able Load Fu(N)	Static Rated Moment			Weight (kg)	Table Moving Accuracy (μm)			
					M <sub>R</sub> (N·m)	M <sub>P</sub> (N·m)	M <sub>V</sub> (N·m)		Center Parallelism	Side Parallelism		
1*18	2*7.5	379	576	192	1.4	1.2	1.4	0.02	2	4		
1*28	2*10	523	865	288	2.4	2.6	3.0	0.03				
1*20	3*10	657	1,153	384	2.9	4.6	5.2	0.04	2	5		
1*30	4*10	783	1,441	480	3.6	7.2	7.9	0.05				
2*20	5*10	903	1,729	576	4.3	10.4	11.2	0.06				
1*30	6*10	1,131	2,306	769	5.8	18.4	17.3	0.07				
2*30	7*10	1,240	2,594	865	6.5	23.3	22.0	0.08				
1*28	1*20	895	1,170	390	5.1	3.1	3.9	0.08			2	4
1*43	2*15	1,552	2,339	780	10.1	12.5	10.9	0.12				
1*30	3*15	1,849	2,924	975	12.7	19.5	17.5	0.15				
1*45	4*15	2,134	3,509	1170	15.2	28.1	30.4	0.19	2	5		
2*30	5*15	2,407	4,093	1364	17.7	38.2	40.9	0.22				
1*45	6*15	2,930	5,263	1754	22.8	63.2	59.6	0.26				
2*45	7*15	3,181	5,848	1949	25.3	78.0	74.1	0.30				
1*40	1*40	2,901	4,567	1522	26.5	22.8	26.6	0.23				
1*65	1*65	4,338	7,611	2,537	44.1	63.4	57.1	0.34				
1*50	1*50	5,646	10,655	3,552	61.8	124.3	115.4	0.45				
1*75	1*75	6,268	12,178	4,059	70.6	162.4	172.5	0.56	3	5		
2*50	2*50	7,462	15,222	5,074	88.3	253.7	266.4	0.67				
1*75	1*75	8,603	18,266	6,089	105.9	365.3	350.1	0.78				
2*75	2*75	9,157	19,789	6,596	114.8	428.8	445.2	0.89				