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CROSS ROLLER GUIDE WAY

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Contents

Components & Features	D-02
Types and Features	D-03
Accuracy	D-04
Safe working load & Service Life	D-04
Pre-Laod	D-05
Accuracy of Mounting Surface	D-06
Installation Method	D-06
Lubrication & Contamination Prevention	D-07
Caution in Use	D-07
WRG Type	D-08~11
WRGO Type	D-12
WRGW Type	D-14
WRGT Type	D-16~19
WRGU Type	D-20~23

Cross Roller Guide Way

Components & Features

WON's Cross Roller Guide Way consists of the precisely ground raceway and the roller cage. The roller cage, in which precision rollers are incorporated at right angle to one another, is fitted into the 90° V-grooved raceway machined on the race rail.

WON's Cross Roller Guide Way is a compact linear motion system with high rigidity and high accuracy as a kind of linear motion bearing with low frictional resistance, tight clearance & non-circulation method by big rollers with big contact areas as a rolling body. Therefore, the Cross Roller Guide Way is being applied to a wide range of equipment, a computer and peripherals, several precision equipments, a tool grinder, automatic lathe machines, electric discharge machines, and slides used in X-ray equipments, to name just a few.

■ Delicate slide, High rigidity & High accuracy

The number of the effective rolling body are many as the rolling body uses precision rollers and it is not circulated (non-circulation). So that, the rigidity is high, the load capacity is big, the fluctuation of frictional resistance is small and there is not almost the difference between the starting frictional resistance and the dynamic frictional resistance.

Therefore, in spite of delicate sliding, the linear motion can keep high precise (accurate).

■ Corrosion resistance

Serves stainless steel materials of 2 types 'WRG/A' & 'WRGW/A' for this feature.

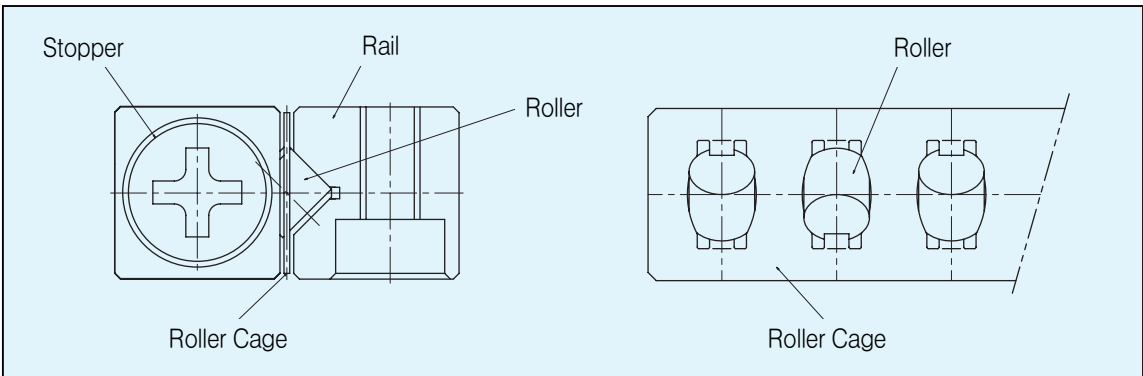
■ Correspondence in load-direction & Zero-clearance

When two roller guides are installed in parallel, the resulting system can bear loads in all directions perpendicular to the rails. Moreover, since a preload can be applied easily, the system can be a highly rigid, nimble slide mechanism with no clearance.


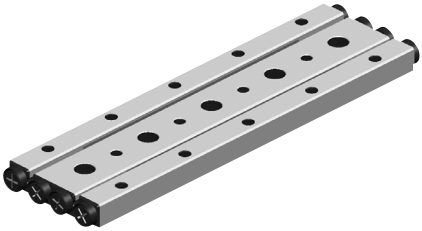
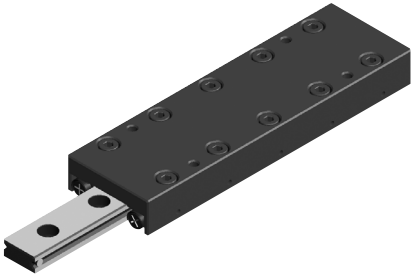

■ Low noisy

In Cross Roller Guide Way, a roller is contacted on the surface of the race rail. So that, the noise is low and rollers have a smooth movement without contact-noise as rollers are supported by a roller cage.

Fig.1 Features



Types & Features

Classification	Type	Shape	Feature
Guide	WRG WRGO		WON's Cross Roller Guide Way consists of the precisely ground raceway and the roller cage. The roller cage, in which precision roller are incorporated at right angle to one another, is fitted into to 90°-grooved raceway machined on the race rail.
	WRGW		WRG Guide Way is compact linear motion system with high rigidity and high accuracy as a kind of linear motion bearing with low frictional resistance, tight clearance & non-circulation method by big rollers with big contact areas as a rolling body.
Table	WRGT		WRGU Cross roller guide is assembled between precision table and base WRGT is compact and strong linear guide unit.
	WRGU		



Accuracy

There are 3 kind of accuracy grades for WON Cross Roller Guide. Normal, High and Precision.

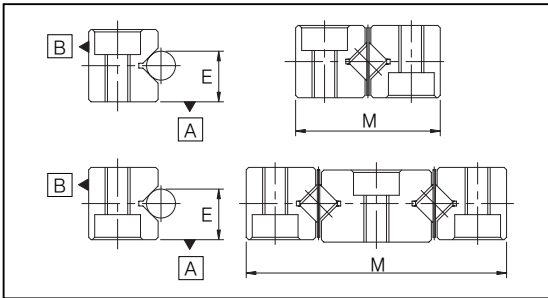


Table1 Accuracy for Race rail.

Accuracy grade	Normal	High	Precision
Items	No Symbol	H	P
Raceway parallelism to surface ① & ②	Refer to Table 2		
Dimensional tolerance for height E	±0.02		±0.01
Height E difference among rails	0.02	0.01	0.005
Dimensional tolerance for width M	0 -0.2	0	-0.1

Note 1) Difference of Height 'E' applies to 4 rails installed on the same plane.

Note 2) Please inquire to WON for another dimensions of Cross Roller Guide Way as we do.

Table2 Raceway Parallelism to surface ① to ②

Accuracy grade	Normal (No symbol)	High (H)	Precision (P)
Rail length			
Less than 200	8	4	2
From 200 to 400	10	5	3
From 400 to 600	14	7	4
From 600 to 800	15	9	5
More than 800	20	10	5

Unit: μm

Safe working load & Service life

The basic load rating C_z , C_{oz} is calculate by the number of running roller(Z) in actual use and basic load ratings C, C_o Per running roller.

$$\text{Basic dynamic load rating } C = \left[\frac{Z}{2} \right]^{\frac{3}{4}} \cdot C_z$$

$$\text{Basic static load rating } C_o = \left[\frac{Z}{2} \right] \cdot C_{oz}$$

$$\ast \frac{Z}{2} = \text{The number of effective roller (Constant)}$$

Rating life means overall running stroke without any material's damage(spalling or flaking) by 90% of fatigue when a group of LM System is individually travelled at the same conditions. Basic dynamic load rating is calculated by the rating life. Hence comes the life of Cross Roller Guide Way as the below equation.

$$L = \left[\left(\frac{f_H \cdot f_T}{f_w} \right) \cdot \left(\frac{C}{P_C} \right) \right]^{\frac{10}{3}} \cdot 100$$

L : Basic rating life (km)

C : Basic dynamic load rating (kgf)

P_C : Calculated load (kgf)

f_H : Hardness factor

f_T : Temperature factor

f_w : Load factor

When the stroke & the number of return are indicated, service life is able to be calculated.

$$L_h = \frac{L \times 10^3}{2 \times S \times n_1 \times 60}$$

L_h : Service life (hr)

S : Stroke (m)

n_1 : The number of return (o.p.m.)

Table 3 Hardness factor

Material of race rail	f_H
Carbon steel	1
Stainless steel	0.8

Table 4 Temperature factor

Raceway temperature (°C)	f_T
100	1.00
120	0.97
140	0.93
160	0.88
180	0.82

Table 5 Load factor

Impact & Vibration	Velocity (V)	Measured value (G)	f_w
No Shock · vibration from outside	Low speed $V \leq 15\text{m/min}$	$G \leq 0.5$	1.0~1.5
Small Shock · vibration from outside	Middle speed $15 < V \leq 60\text{m/min}$	$0.5 \leq G \leq 1.0$	1.0~1.5
Shock · vibration from outside	High speed $V > 60\text{m/min}$	$1.0 \leq G \leq 2.0$	1.0~1.5

Pre-load

In Cross Roller Guide Way, the application of an excessive preload may cause dents, shorten the service life, and lead to similar problems. The mounted torque of Adjust Bolt should be observed while checking the permissible pre-load levels. (※ Adjust Bolt is tightened on the same line with Roller.)

Table 6 Permissible pre-load levels for a row of Roller Cage

Part No.	V1	V2	V3	V4	V6	V9
Permissible preload	-2	-3	-4	-5	-7	-10

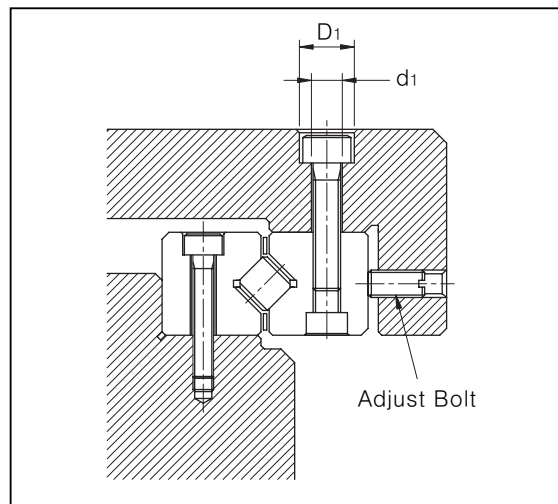
Unit: μm

Table 7 mounting torque of adjust bolt

Part No.	Adjust Bolt	Mounted torque
WRG1/WRGW1	M2	0.008
WRG2/WRGW2	M3	0.012
WRG3/WRGW3	M4	0.05
WRG4/WRGW4	M4	0.08
WRG6	M5	0.20
WRG9	M6	0.40

Unit: μm

Fig. 2 Adjusting pre-load

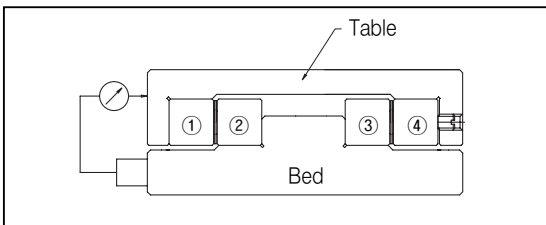


Accuracy of Mounting surface

To ensure high running accuracy, the rail mounting surface should be finished by grinding or a similar method, to a degree of equivalent to or greater than that of the Table. See Table 1

Installation Method

Fig.3 Installation Method



- ① Press rails ①, ② & ③ firmly against the bed and the table, while correctly positioning the mounting surfaces. Firmly tighten the rail-mounting bolts.
- ② Temporarily fasten rail ④ to the table and make a sure some space for inserting Roller Cage from the rail ends.
- ③ Position a dial gauge as shown in Fig. 3. While gently pressing the table, tighten Adjust Bolt uniformly until there is no slack. Then, attach stoppers to the rail ends, and set the dial gauge to zero.
- ④ Position Roller Cage at the center of rails as shown in Fig.4 Uniformly tighten Adjust Bolt by using a torque wrench or the like, until the dial gauge shows the specified displacement. Then, the displacement showing on the dial gauge is equal to the permissible preload. Fully tighten the mounting bolts within the adjusted area.
- ⑤ Slide the table from the right and left and complete the installation by mounting the remaining Adjust Bolt (Ⓐ, Ⓔ in Fig.4) and the Tightened Bolt. at this displacement in the dial

preload amount. Tighten the mounting bolts at the adjusted positions securely. move the table to the side, finish the installation as tightening the remaining adjustment bolts (Ⓐ, Ⓔ) in the same way.

Fig.4 Order to bolting

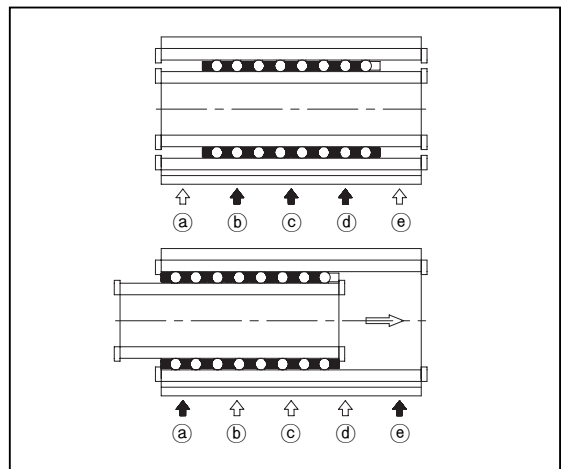
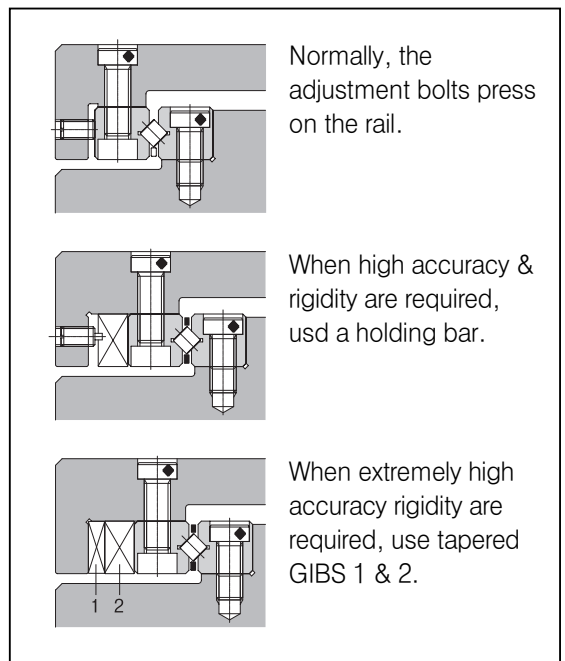


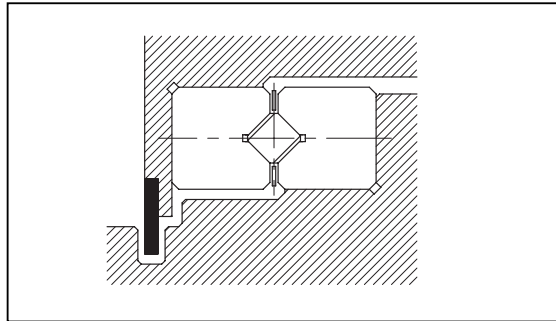
Fig.5 Adjust Clearance



Lubrication & Contamination Prevention

WON's Cross Roller Guide Way(WRGT, WRGU) may be used as the high quality lithium-soap group of grease cares for it's lubrication. The same kind of grease is recommended for the supplement. We recommend to attach a cover to protect a cross roller guide way as the below Fig.8 in case that a lot of foreign matters or dusts enter into a cross roller guide way and it is used in the kind of environment where is big foreign matter as like cut tips or sand.

Fig.6



Caution in Use

■ Installation

WON's Cross Roller Guide Way should observe the uniform pre-load and the mounting torque. When the pre-load is adjusted poorly and the accuracy of the supporting plane is low, the motion accuracy deteriorates. This causes skewing and adversely influences the life.

■ Stopper

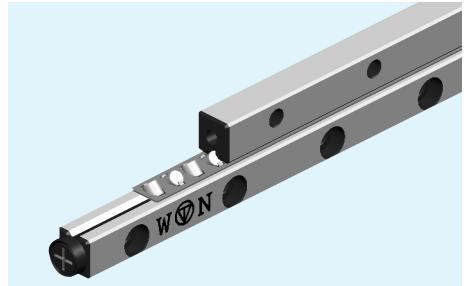
Stoppers are provided at the rail ends to prevent cages from falling off. A stopper for the table should be separately installed in outside.

■ One set of use

In WON's Cross Roller Guide Way, one set of WRG type consists of 4 race rails, WRGW type consists of 3 race rails for one set.

The pair reciprocal tolerance between the individual V-grooves is adjusted within one set and so, to combine the different sets may be a factor to deteriorate the life and the accuracy by reciprocal error. Therefore, installation should be paid attention to these points.

WRG type



Examples of model number formation

WRG 2 - 150 H - 26Z

1
 2
 3
 4
 5

- 1 Part No. 2 Roller Size 3 Length of Race rail
- 4 Accuracy: Normal(No symbol), High(H), Precision(P)
- 5 The number of Roller

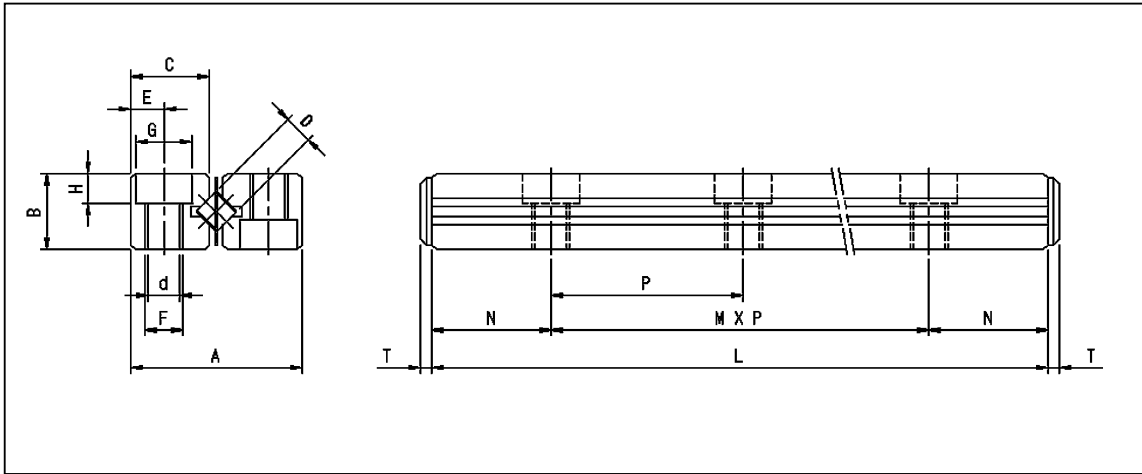
※ Please inquire us for your specially required dimensions & application.

Part No.	Max. Stroke	D	No. of Roller Z	Dimensions					
				L	A	B	C	M×P	N
WRG 1020	12	1.5	5	20	8.5	4	3.8	1×10	5
1030	22		7	30				2×10	
1040	27		10	40				3×10	
1050	32		13	50				4×10	
1060	37		16	60				5×10	
1070	42		19	70				6×10	
1080	52		21	80				7×10	
WRG 2030	18	2	5	30	12	6	5.5	1×15	7.5
2045	24		8	45				2×15	
2060	30		11	60				3×15	
2075	44		13	75				4×15	
2090	50		16	90				5×15	
2105	64		18	105				6×15	
2120	70		21	120				7×15	
2135	84		23	135				8×15	
2150	90		26	150				9×15	
2165	96		29	165				10×15	
2180	102		32	180				11×15	
WRG 3050	28	3	7	50	18	8	8.3	1×25	12.5
3075	48		10	75				2×25	
3100	58		14	100				3×25	
3125	78		17	125				4×25	
3150	88		21	150				5×25	
3175	108		24	175				6×25	
3200	118		28	200				7×25	
3225	138		31	225				8×25	
3250	148		35	250				9×25	
3275	168		38	275				10×25	
3300	178		42	300				11×25	
3325	198		45	325				12×25	
3350	208		49	350				13×25	

Note 1) 1Set = 4 Race rail + 2 Roller cages + 8 Stoppers.

2) Basic load ratings are based on 1 set.

CROSS ROLLER GUIDE WAY



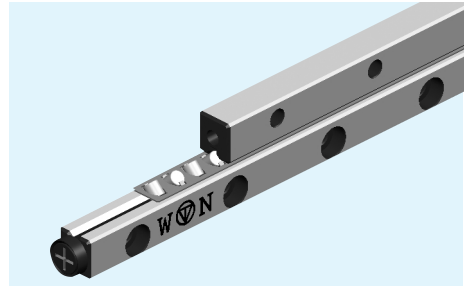
Unit: mm

Dimensions						Basic load ratings		Mass kg/m (Rail/EA)	Part No.
E	F	d	G	H	T	Dyn. C (N)	Stat. Co (N)		
1.8	M2	1.65	3	1.4	1.5	333	303	0.11	WRG 1020
						450	460		
						666	764		
						764	921		
						940	1225		
						1029	1372		
						1117	1528		
2.5	M3	2.55	4.4	2	2	578	578	0.23	WRG 2030
						980	1156		
						1156	1440		
						1323	1724		
						1646	2303		
						1803	2597		
						1950	2920		
						2087	3165		
						2371	3743		
						2508	4037		
						2773	4606		
3.5	M4	3.30	6	3.1	2.5	1764	2077	0.45	WRG 3050
						2508	3459		
						3332	4841		
						3684	5537		
						4351	6918		
						4998	8300		
						5605	9682		
						5899	10290		
						6487	11760		
						7046	13132		
						7595	14504		
						7869	15190		
						8398	16562		

1N ≙ 0.102kgf



WRG type



Examples of model number formation

WRG 2 - 300 H - 20Z

1
 2
 3
 4
 5

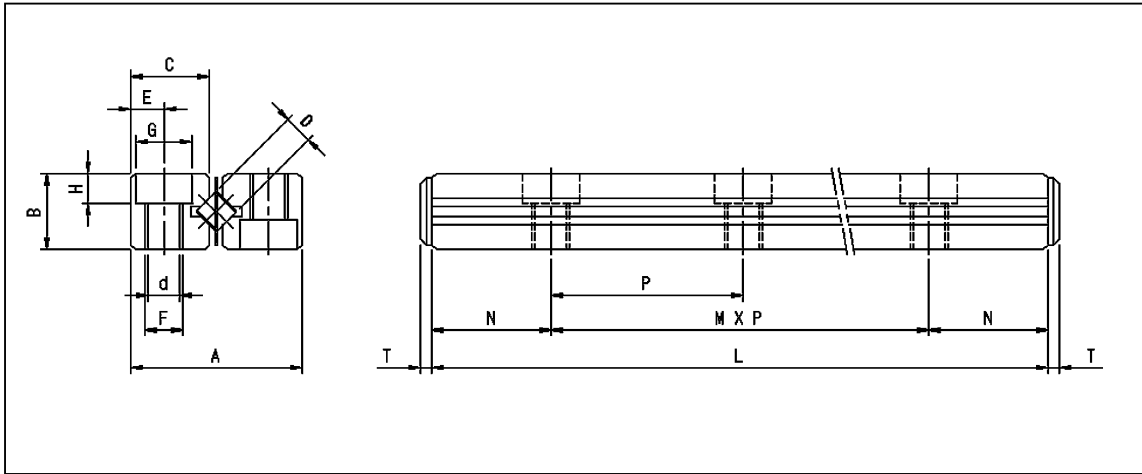
- 1 Part No.
- 2 Roller Size
- 3 Length of Race rail
- 4 Accuracy: Normal(No symbol), High(H), Precision(P)
- 5 The number of Roller

* Please inquire us for your specially required dimensions & application.

Part No.	Max. Stroke	D	No. of Roller Z	Dimensions					
				L	A	B	C	M×P	N
WRG 4080	58	4	7	80	22	11	10.2	1×40	20
4120	82		11	120				2×40	
4160	106		15	160				3×40	
4200	130		19	200				4×40	
4240	154		23	240				5×40	
4280	178		27	280				6×40	
4320	202		31	320				7×40	
4360	226		35	360				8×40	
4400	250		39	400				9×40	
4440	274		43	440				10×40	
4480	298	47	480	11×40					
WRG 6100	56	6	7	100	31	15	14.2	1×50	25
6150	96		10	150				2×50	
6200	136		13	200				3×50	
6250	156		17	250				4×50	
6300	196		20	300				5×50	
6350	216		24	350				6×50	
6400	256		27	400				7×50	
6450	276		31	450				8×50	
6500	316		34	500				9×50	
6600	376		41	600				11×50	
WRG 9200	118	9	10	200	44	22	20.2	1×100	50
9300	178		15	300				2×100	
9400	238		20	400				3×100	
9500	298		25	500				4×100	
9600	358		30	600				5×100	
9700	418		35	700				6×100	
9800	478		40	800				7×100	
9900	538		45	900				8×100	
91000	598		50	1000				9×100	

Note 1) 1Set = 4 Race rail + 2 Roller cages + 8 Stoppers.
 2) Basic load ratings are based on 1 set.

CROSS ROLLER GUIDE WAY



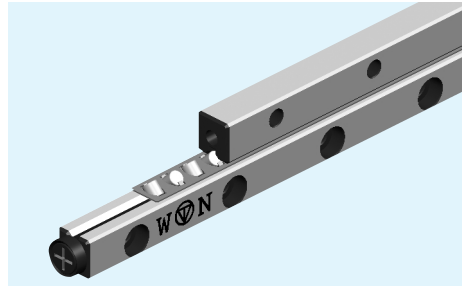
Unit: mm

Dimensions						Basic load ratings		Mass kg/m (Rail/EA)	Part No.
E	F	d	G	H	T	Dyn. C (N)	Stat. Co (N)		
4.5	M5	4.3	8	4.2	2.5	3488	4263	0.8	WRG 4080
						5116	7105		4120
						6586	9996		4160
						7958	12838		4200
						8232	15680		4240
						10486	18522		4280
						11662	21364		4320
						12838	24206		4360
						13916	27048		4400
						14994	29890		4440
						16072	32732		4480
6	M6	5.2	9.5	5.2	3	8693	10878	1.5	WRG 6100
						12760	18130		6150
						14622	21756		6200
						18150	29008		6250
						21452	36260		6300
						24598	43512		6350
						26117	47138		6400
						29086	54390		6450
						31850	61642		6500
						35104	72520		6600
9	M8	6.8	10.5	6.2	4	24794	35574	3.2	WRG 9200
						31850	49784		9300
						41650	71148		9400
						47726	85358		9500
						56448	106820		9600
						64974	120540		9700
						70070	142100		9800
						75264	156800		9900
						82810	178360		91000

1N ≙ 0.102kgf



WRGO type



Examples of model number formation

WRGO 6 - 300 H - 20Z

1
 2
 3
 4
 5

- 1 Part No. 2 Roller Size 3 Length of Race rail
- 4 Accuracy: Normal(No symbol), High(H), Precision(P)
- 5 The number of Roller

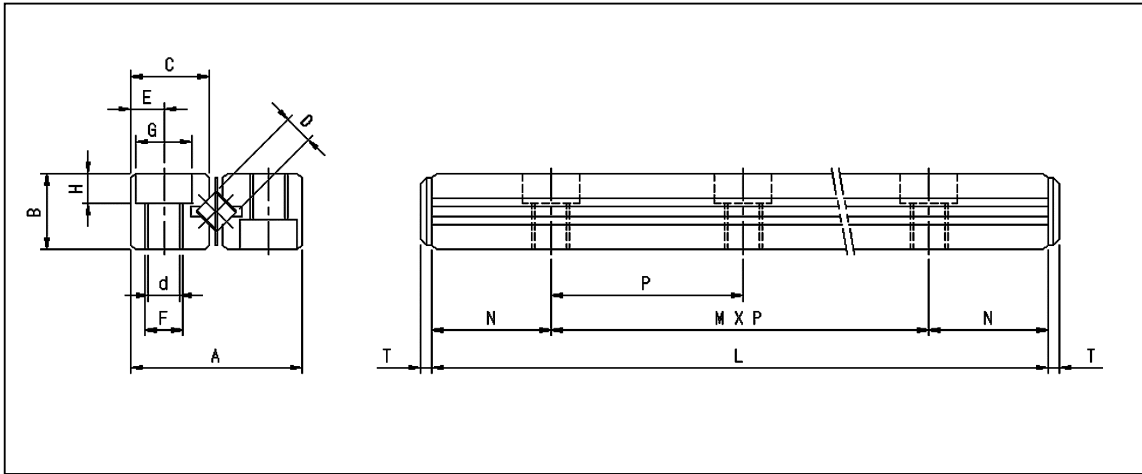
* Please inquire us for your specially required dimensions & application.

Part No.	Max. Stroke	D	No. of Roller Z	Dimensions					
				L	A	B	C	M×P	N
WRGO 6100	56	6	7	100	30	15	14.4	1×50	25
6150	96		10	150				2×50	
6200	136		13	200				3×50	
6250	156		17	250				4×50	
6300	196		20	300				5×50	
6350	216		24	350				6×50	
6400	256		27	400				7×50	
6450	276		31	450				8×50	
6500	316		34	500				9×50	
6550	336		38	550				10×50	
6600	376		41	600				11×50	
WRGO 9200	118		9	10				200	
9300	178	15		300	2×100				
9400	238	20		400	3×100				
9500	298	25		500	4×100				
9600	359	30		600	5×100				
9700	418	35		700	6×100				
9800	478	40		800	7×100				
9900	538	45		900	8×100				
91000	598	50		1000	9×100				
91100	658	55		1100	10×100				
91200	718	60		1200	11×100				

Note 1) 1Set = 4 Race rail + 2 Roller cages + 8 Stoppers.

2) Basic load ratings are based on 1 set.

CROSS ROLLER GUIDE WAY



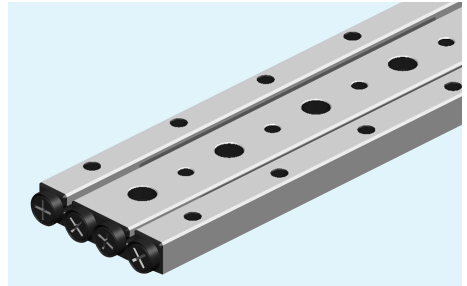
Unit: mm

Dimensions						Basic load ratings		Mass kg/m (Rail/EA)	Part No.
E	F	d	G	H	T	Dyn. C (N)	Stat. Co (N)		
6	M6	5.2	9.5	5.2	3	8692	10878	1.5	WRGO 6100
						12760	18130		
						14622	21756		
						18150	29008		
						21452	36260		
						24598	43512		
						26117	47138		
						29086	54390		
						31948	61642		
						34712	68894		
						36084	72520		
8	M8	6.8	10.5	6.2	4	24794	35574	3.2	WRGO 9200
						31850	49784		
						41650	71148		
						47726	85358		
						56448	106820		
						62328	120540		
						70070	142100		
						75264	156800		
						82810	178360		
						88808	195804		
						96099	217560		

1N ≅ 0.102kgf



WRGW type



Examples of model number formation

WRGW 2 - 120 H - 21Z

1
 2
 3
 4
 5

- 1 Part No. 2 Roller Size 3 Length of Race rail
- 4 Accuracy: Normal(No symbol), High(H), Precision(P)
- 5 The number of Roller

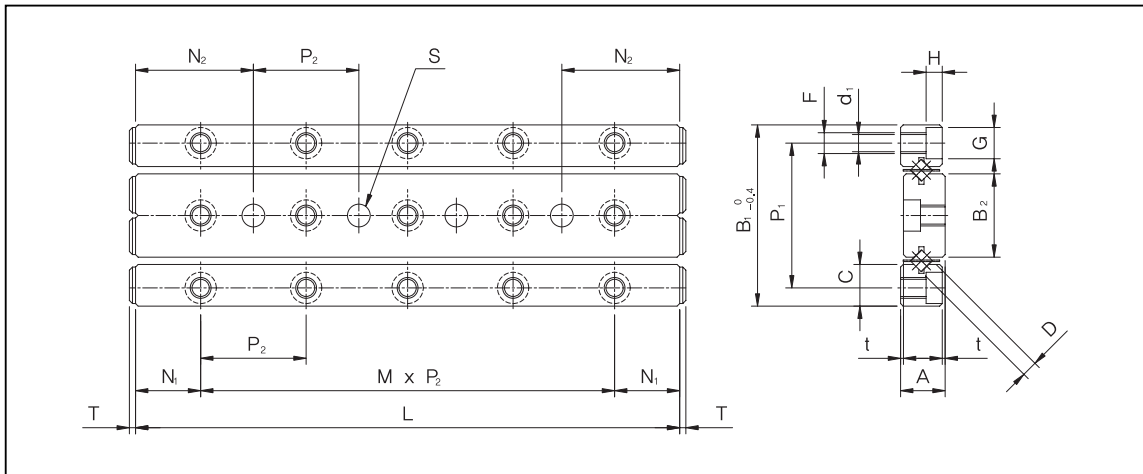
※ Please inquire us for your specially required dimensions & application.

Part No.	Max. Stroke	D	No. of Roller Z	Dimensions						
				L	A	t	B ₁	B ₂	C	P ₁
WRGW 1020	12	1.5	5	20	4.5	0.5	17	7.6	3.8	13.4
1030	22		7	30						
1040	27		10	40						
1050	32		13	50						
1060	37		16	60						
1070	42		19	70						
1080	52		21	80						
WRGW 2030	18	2	5	30	6.5	0.5	24	11	5.5	19
2045	24		8	45						
2060	30		11	60						
2075	44		13	75						
2090	50		16	90						
2105	64		18	105						
2120	70		21	120						
WRGW 3050	28	3	7	50	8.5	0.5	36	16.6	8.3	29
3075	48		10	75						
3100	58		14	100						
3125	78		17	125						
3150	88		21	150						
3175	108		24	175						
3200	118		28	200						
WRGW 4080	58	4	7	80	11.5	0.5	44	20.4	10.2	35
4120	82		11	120						
4160	106		15	160						
4200	130		19	200						
4240	154		23	240						
4280	178		27	280						

Note 1) 1Set = 4 Race rail + 2 Roller cages + 8 Stoppers.

2) Basic load ratings are based and mass on 1 set.

CROSS ROLLER GUIDE WAY



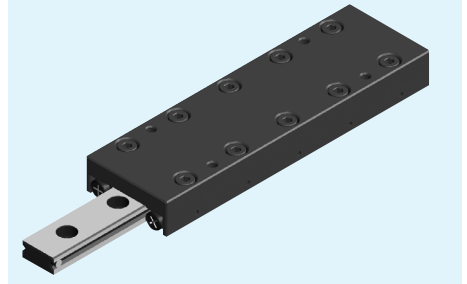
Unit: mm

Dimensions										Basic load ratings		Mass kg/m	Part No.
M × P ₂	N ₁	N ₂	F	d ₁	G	H	T	S	S Allowable Tolerance	Dyn. C (N)	Stat. C ₀ (N)		
1 × 10										333	303	0.46	WRGW 1020 1030 1040 1050 1060 1070 1080
2 × 10										450	460		
3 × 10										666	764		
4 × 10	5	10	M2	1.65	3	1.4	1.5	2	+0.010	764	921		
5 × 10									+0	940	1225		
5 × 10										1029	1372		
7 × 10										1117	1528		
1 × 15										578	578	0.98	WRGW 2030 2045 2060 2075 2090 2105 2120
2 × 15										980	1156		
3 × 15										1156	1440		
4 × 15	7.5	15	M3	2.55	4.4	2	2	3	+0.010	1323	1724		
5 × 15									+0	1646	2303		
6 × 15										1803	2597		
7 × 15										1950	2920		
1 × 25										1764	2077	1.94	WRGW 3050 3075 3100 3125 3150 3175 3200
2 × 25										2587	3459		
3 × 25										3332	4841		
4 × 25	12.5	25	M4	3.3	6	3.1	2.5	4	+0.012	3684	5537		
5 × 25									+0	4351	6918		
6 × 25										4998	8300		
7 × 25										5605	9682		
1 × 40										3488	4263	3.36	WRGW 4080 4120 4160 4200 4240 4280
2 × 40										5116	7105		
3 × 40										6586	9996		
4 × 40	20	40	M5	4.3	8	4.2	2.5	5	+0.012	7958	12838		
5 × 40									+0	9232	15680		
6 × 40										10486	18522		

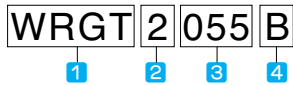
1N ≙ 0.102kgf



WRGT type



Examples of model number formation

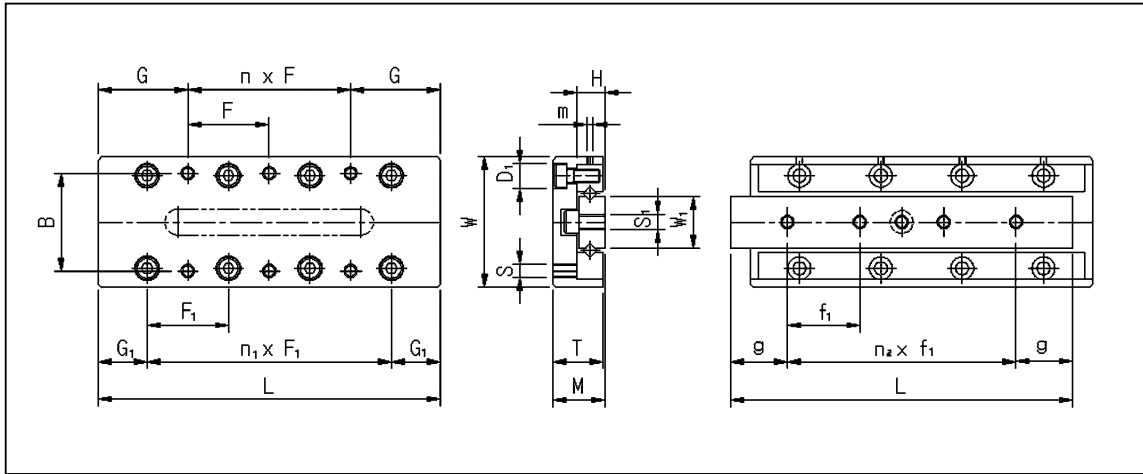


1 Part No. 2 Roller Size 3 Length of Table 4 Hole Type onto the middle rail : Tab(No symbol), Hole(B)

* Please inquire us for your specially required dimensions & application.

Part No.	Main Dimensions				Dimensions of the table-surface								
	Max. Stroke	Width W ±0.1	Height M ±0.1	Length L	Location of taps onto the table					F ₁	n ₁ ×F ₁	D ₁	G ₁
					B	F	n×F	G	S				
WRGT 1025	12			25		18	1×18	3.5			1×10		
1035	18			35		28	1×28	3.5			2×10		
1045	25			45		20	1×20	12.5			3×10		
1055	32	20	8	55	14	30	1×30	12.5	M2.6	10	4×10	4.1	7.5
1065	40			65		20	2×20	12.5			5×10		
1075	45			75		30	1×30	22.5			6×10		
1085	50			85		30	2×30	12.5			7×10		
WRGT 2035	18			35		28	1×28	3.5			1×15		
2050	30			50		43	1×43	3.5			2×15		
2065	40			65		30	1×30	17.5			3×15		
2080	50	30	12	80	22	45	1×45	17.5	M3	15	4×15	6	10
2095	60			95		30	2×30	17.5			5×15		
2110	70			110		45	1×45	32.5			6×15		
2125	80			125		45	2×45	17.5			7×15		
WRGT 3055	30			55		40	1×40	7.5			1×25		
3080	45			80		65	1×65	7.5			2×25		
3105	60			105		50	1×50	27.5			3×25		
3130	75	40	16	130	30	75	1×75	27.5	M4	25	4×25	7.5	15
3155	90			155		50	2×50	27.5			5×25		
3180	105			180		75	1×75	52.5			6×25		
3205	130			205		75	2×75	27.5			7×25		

CROSS ROLLER GUIDE WAY



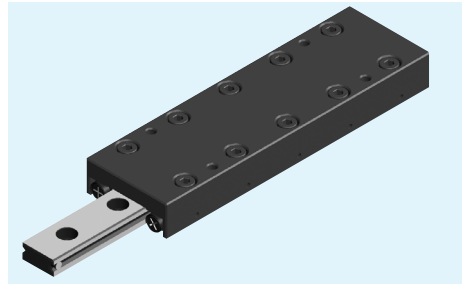
Unit: mm

Dimensions of the side				Dimensions of the bed-surface				Basic load ratings		Accuracy μm		Part No.
T	H	W ₁	m	S ₁	f ₁	n ₂ × f ₁	g	Dyn. C (N)	Stat. Co (N)	ΔC	ΔD	
7.5	4	6.6	M2	M2.6	4.5	2 × 7.5	5.0	284	274	2	4	WRGT 1025 1035 1045 1055 1065 1075 1085
					10.0	2 × 10	7.5	382	412	2	4	
					10.0	3 × 10	7.5	559	686	2	5	
					10.0	4 × 10	7.5	647	823	2	5	
					10.0	5 × 10	7.5	725	960	2	5	
					10.0	6 × 10	7.5	872	1274	2	5	
					10.0	7 × 10	7.5	941	1372	2	5	
11.5	6	12.0	M2	M3	20.0	1 × 20	7.5	510	510	2	4	WRGT 2035 2050 2065 2080 2095 2110 2125
					15.0	2 × 15	10.0	686	764	2	4	
					15.0	3 × 15	10.0	853	980	2	5	
					15.0	4 × 15	10.0	980	1274	2	5	
					15.0	5 × 15	10.0	1176	1470	2	5	
					15.0	6 × 15	10.0	1470	2058	2	5	
					15.0	7 × 15	10.0	1568	2254	2	5	
15.5	8	16.0	M2	M4	35.0	1 × 35	10.0	1274	1372	2	5	WRGT 3055 3080 3105 3130 3155 3180 3205
					25.0	2 × 25	15.0	2156	2842	2	5	
					25.0	3 × 25	15.0	2940	4214	3	6	
					25.0	4 × 25	15.0	3626	5684	3	6	
					25.0	5 × 25	15.0	3920	6370	3	6	
					25.0	6 × 25	15.0	4018	6566	3	6	
					25.0	7 × 25	15.0	4214	7154	3	6	

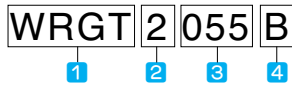
1N ≙ 0.102kgf



WRGT type



Examples of model number formation

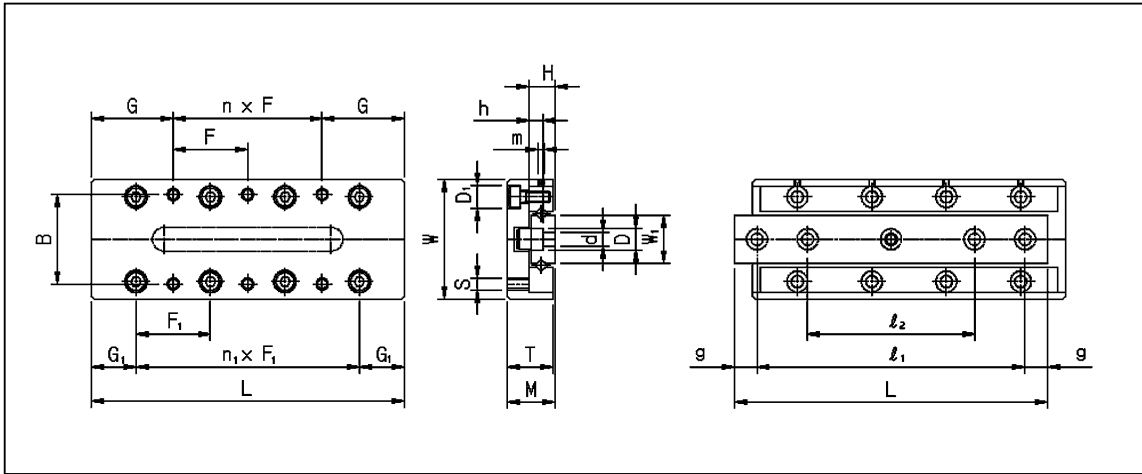


1 Part. No. 2 Roller Size 3 Length of Table 4 Hole Type onto the middle rail: Tab (No symbol), Hole (B)

* Please inquire us for your specially required dimensions & application.

Part No.	Main Dimensions				Dimensions of the table-surface								
	Max. Stroke	Width W ±0.1	Height M ±0.1	Length L	Location of taps onto the table					F ₁	n ₁ ×F ₁	D ₁	G ₁
					B	F	n×F	G	S				
WRGT 1025B	12			25		18	1×18	3.5			1×10		
1035B	18			35		28	1×28	3.5			2×10		
1045B	25			45		20	1×20	12.5			3×10		
1055B	32	20	8	55	14	30	1×30	12.5	M2.6	10	4×10	4.1	7.5
1065B	40			65		20	2×20	12.5			5×10		
1075B	45			75		30	1×30	22.5			6×10		
1085B	50			85		30	2×30	12.5			7×10		
WRGT 2035B	18			35		28	1×28	3.5			1×15		
2050B	30			50		43	1×43	3.5			2×15		
2065B	40			65		30	1×30	17.5			3×15		
2080B	50	30	12	80	22	45	1×45	17.5	M3	15	4×15	6	10
2095B	60			95		30	2×30	17.5			5×15		
2110B	70			110		45	1×45	32.5			6×15		
2125B	80			125		45	2×45	17.5			7×15		
WRGT 3055B	30			55		40	1×40	7.5			1×25		
3080B	45			80		65	1×65	7.5			2×25		
3105B	60			105		50	1×50	27.5			3×25		
3130B	75	40	16	130	30	75	1×75	27.5	M4	25	4×25	7.5	15
3155B	90			155		50	2×50	27.5			5×25		
3180B	105			180		75	1×75	52.5			6×25		
3205B	130			205		75	2×75	27.5			7×25		

CROSS ROLLER GUIDE WAY

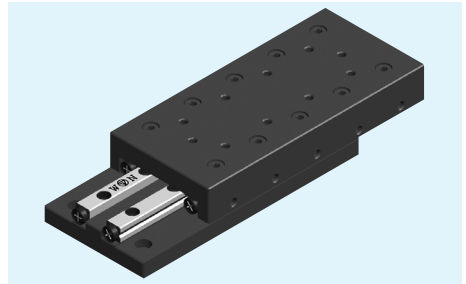


Unit: mm

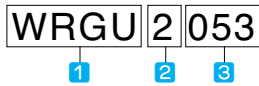
Dimensions of the side				Dimensions of the bed-surface			Basic load ratings		Accuracy μm		Part No.	
T	H	W ₁	m	d×D×h	l ₁	l ₂	g	Dyn. C (N)	Stat. Co (N)	∠C		∠D
7.5	4	6.6	M2	2.5×4.1×2.2	18	—	3.5	284	274	2	4	WRGT 1025B 1035B 1045B 1055B 1065B 1075B 1085B
					25	—	5.0	382	412	2	4	
					38	25	3.5	559	686	2	5	
					48	29	3.5	647	823	2	5	
					55	31	5.0	725	960	2	5	
					65	35	5.0	872	1274	2	5	
					75	40	5.0	941	1372	2	5	
11.5	6	12.0	M2	3.5×6×3.2	25	—	5.0	510	510	2	4	WRGT 2035B 2050B 2065B 2080B 2095B 2110B 2125B
					35	—	7.5	686	764	2	4	
					55	33	5.0	853	980	2	5	
					70	40	5.0	980	1274	2	5	
					85	45	5.0	1176	1470	2	5	
					95	50	7.5	1470	2058	2	5	
15.5	8	16.0	M2	4.5×7.5×4.2	40	—	7.5	1274	1372	2	5	WRGT 3055B 3080B 3105B 3130B 3155B 3180B 3205B
					68	43	6.0	2156	2842	2	5	
					90	55	7.5	2940	4214	3	6	
					115	65	7.5	3626	5684	3	6	
					140	95	7.5	3920	6370	3	6	
					165	85	7.5	4018	6566	3	6	
					190	90	7.5	4214	7154	3	6	

1N ≙ 0.102kgf

WRGU type



Examples of model number formation

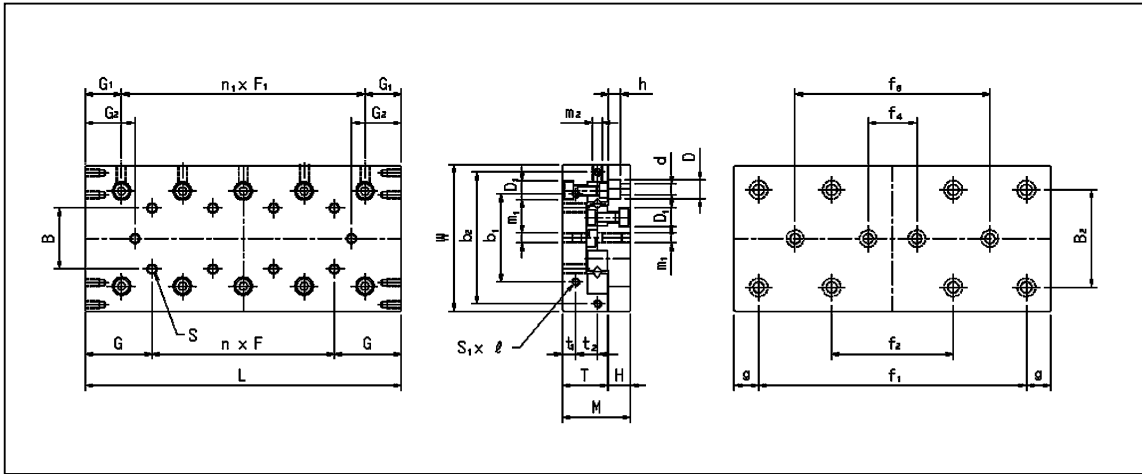


1 Part. No. 2 Roller Size 3 Length of Table

* Please inquire us for your specially required dimensions & application.

Part No.	Main Dimensions						Dimensions of the table-surface												
	Max. Stroke	Width W	Tolerance	Height M ±0.1	Length L	Mass (kg)	Location of taps onto the table				Taps' Location onto the side table								
							B	n×F	G	S	n1×F1	G1	G2	b1	t1	S1×ℓ			
WRGU 1025	12				25	0.08		–				1×10		2.5					
1035	18				35	0.11		1×10				2×10		4.5					
1045	25				45	0.15		2×10				3×10		6.0					
1055	32	30	–0.2 –0.4	17	55	0.18	10	3×10	12.5	M2	4×10	7.5	7.5	12	2.5	M2×4			
1065	40				65	0.21		4×10			5×10		8.5						
1075	45				75	0.24		5×10			6×10		11.0						
1085	50				85	0.27		6×10			7×10		13.5						
WRGU 2035	18				35	0.20		–				1×15		3.0					
2050	30				50	0.26		1×15				2×15		4.5					
2065	40				65	0.34		2×15				3×15		7.0					
2080	50	40	–0.2 –0.4	21	80	0.42	15	3×15	17.5	M3	4×15	10	9.5	16	3.4	M2×4			
2095	60				95	0.50		4×15			5×15		12.0						
2110	70				110	0.58		5×15			6×15		14.5						
2125	80				125	0.66		6×15			7×15		17.0						
WRGU 3055	30				55	0.57		–				1×25		5.5					
3080	45				80	0.80		1×25				2×25		10.5					
3105	60				105	1.03		2×25				3×25		15.5					
3130	75	60	±0.1	28	130	1.26	25	3×25	27.5	M4	4×25	15	20.5	40	5.5	M3×6			
3155	90				155	1.49		4×25			5×25		25.5						
3180	105				180	1.72		5×25			6×25		30.5						
3205	130				205	1.95		6×25			7×25		30.5						

CROSS ROLLER GUIDE WAY



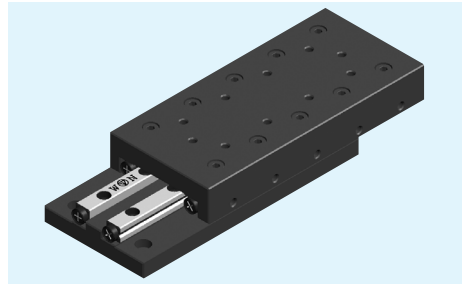
Unit: mm

Dimensions of the side						Dimensions of the bed-surface					Basic load ratings		Accuracy μm		Part No.
T	H	d×D×h	D ₁	m ₁	m ₂	B ₂	f ₁	f ₂	f ₃	g	Dyn. C (N)	Stat. Co (N)	ΔC	ΔD	
11	5.5	2.55×4.1×2.5	4.1	M2	M2	22	18	-	-	3.5	284	274	2	4	WRGU 1025
							28	-	-		382	412	2	4	
							38	-	-		559	686	2	4	
							48	28	-		647	823	2	5	
							58	38	-		725	960	2	5	
							68	48	-		872	1274	2	5	
							78	58	-		941	1372	2	5	
14	6.4	3.5×6×3.5	6.0	M3	M3	30	25	-	-	5	510	510	2	4	WRGU 2035
							40	-	-		686	764	2	4	
							55	-	-		853	980	2	5	
							70	40	-		980	1274	2	5	
							85	55	-		1176	1470	2	5	
							100	70	-		1470	2058	3	6	
							115	85	-		1568	2254	3	6	
18.5	9	4.5×7.5×5	7.5	M4	M4	40	35	-	-	10	1274	1372	2	5	WRGU 3055
							60	-	-		2156	2842	2	5	
							85	-	-		2940	4214	3	6	
							110	-	-		3626	5684	3	6	
							135	-	85		3920	6370	3	6	
							160	-	110		4018	6566	3	7	
185	85	135	4214	7154	3	7									

1N \approx 0.102kgf



WRGU type



Examples of model number formation

WRGU 2 055

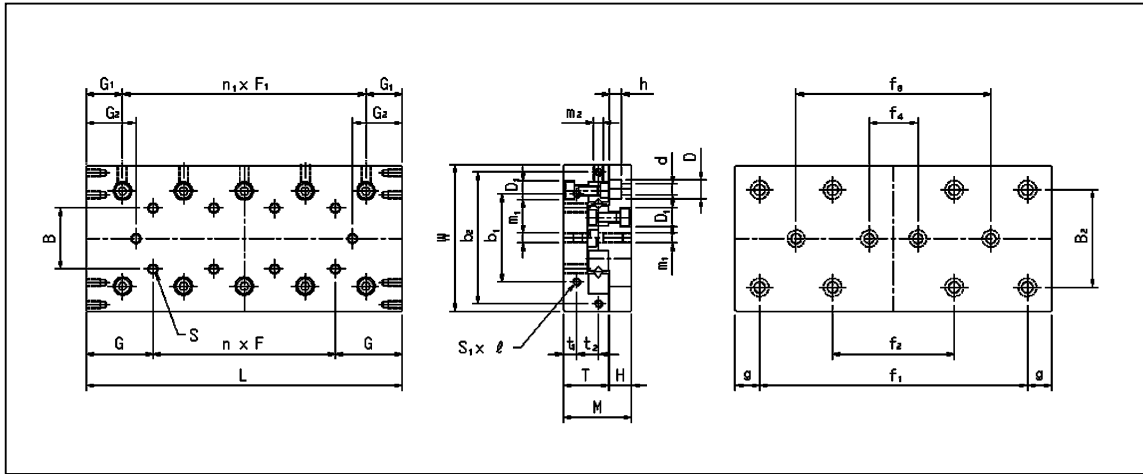
1
 2
 3

1 Part. No. 2 Roller Size 3 Length of Table

* Please inquire us for your specially required dimensions & application.

Part No.	Main Dimensions					Dimensions of the table-surface															
	Max. Stroke	Width W ±0.1	Height M ±0.1	Length L	Mass (kg)	Location of taps onto the table				Taps' Location onto the side table											
						B	n×F	G	S	n ₁ ×F ₁	G ₁	G ₂	b ₁	b ₂	t ₁	t ₂	S ₁ ×ℓ				
WRGU 4085	50			85	1.5		-			1×40		10.5									
4125	75			125	2.3		1×40			2×40		18.0									
4165	105	80	35	165	3.1	40	2×40	40	M5	3×40	22.5	23.0	55	-	6.5	-					M3×6
4205	130			205	3.8		3×40			4×40		30.5									
4245	155			245	4.6		4×40			5×40		38.5									
4285	185			485	5.3		5×40			6×40		43.0									
WRGU 6110	60			v110	3.2		-			1×50		16.0									
6160	95			160	4.6		1×50			2×50		23.5									
6210	130	100	45	210	60.0	50	2×50	50	M6	3×50	30.0	31.0	60	92	8	15					M4×8
6260	165			260	7.4		3×50			4×50		38.5									
6310	200			310	8.7		4×50			5×50		46.0									
6360	235			360	10.1		5×50			6×50		53.5									
6410	265			410	11.5		6×50			7×50		63.5									
WRGU 9210	130			210	12.0		-			-		27.0									
9310	180			310	17.6		1×100			1×100		52.0									
9410	350			410	23.2		2×100			2×100		17.0									
9510	450	145	60	510	28.8	85	3×100	85	M8	3×100	55.0	17.0	90	135	11	20					M4×8
9610	550			610	34.4		4×100			5×100		17.0									
9710	650			710	40.0		5×100			6×100		17.0									
9810	750			810	45.6		6×100			7×100		17.0									
9910	850			910	51.2		7×100			8×100		17.0									
91010	950			1010	56.8		8×100			8×100		17.0									

CROSS ROLLER GUIDE WAY



Unit: mm

Dimensions of the side						Dimensions of the bed-surface					Basic load ratings		Accuracy μm		Part No.	
T	H	d x D x h	D1	m1	m2	B2	f1	f2	f3	f4	g	Dyn. C (N)	Stat. Co (N)	ΔC		ΔD
24	10.5	5.5 x 9.5 x 6	9.5	M4	M4	60	65	-	-	-	10	3528	4802	2	5	WRGU 4085 4125 4165 4205 4245 4285
							80	-	-	-	22.5	5194	8036	3	6	
							120	-	-	-	22.5	6762	11270	3	7	
							160	80	-	-	22.5	8134	14504	3	7	
							200	120	-	-	22.5	9408	17640	3	7	
							240	160	-	-	22.5	10682	20874	3	7	
31	13	7 x 11 x 7	11	M5	M5	60	90	-	-	-	10	7448	10584	3	6	WRGU 6110 6160 6210 6260 6310 6360 6410
							140	-	-	-	10	9310	14112	3	6	
							190	-	90	-	10	12544	21168	3	7	
							240	-	140	-	10	15582	28224	3	7	
							290	-	190	-	10	17052	31752	4	8	
							340	140	240	-	10	19796	38808	4	8	
							390	190	290	-	10	22442	45864	4	8	
43	16	9 x 14 x 9	14	M8	M6	90	100	-	-	-	55	20874	34888	3	7	WRGU 9210 9310 9410 9510 9610 9710 9810 9910 91010
							200	-	-	-	55	31850	61504	3	7	
							300	-	100	-	55	31850	61504	4	8	
							400	-	200	-	55	38416	78498	4	8	
							500	100	300	-	55	44688	95942	4	9	
							600	200	400	-	55	50568	113680	4	9	
							700	300	500	100	55	53508	122500	5	10	
							800	400	600	200	55	59094	139160	5	10	
							900	500	700	300	55	64582	156800	5	10	

1N \approx 0.102kgf

