High-quality High-performance
WON Linear Motion Guide

WON ST Linear Motion Guide is a four-row circular face-to-face duplex structure and a 4-direction equal load type which is excellent in bearing high load with high rigidity as well as compatibility between a rail and a block, and allows smooth and precise operation.

Cross Roller Guide Way

Cross Roller Guide Way
Contents

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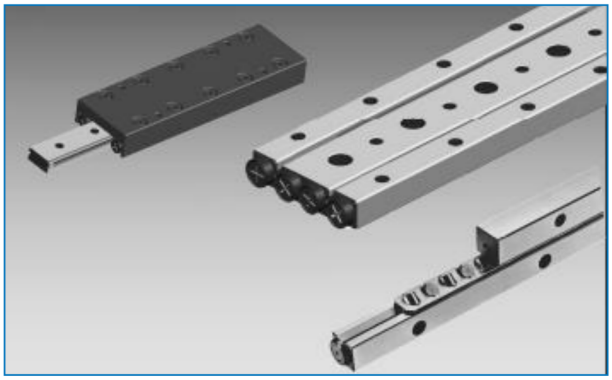


1 Cross Roller Guide Way

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 v-grooved raceway machined on the race rail.
WON's Cross Roller 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.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.

1. 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 fricitional resistance and the dynamic fricitional resistance.
Therefore, in spite of delicate sliding, the linear motion can Keep high precise accuracy.

2. Low noise

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.

3. 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.

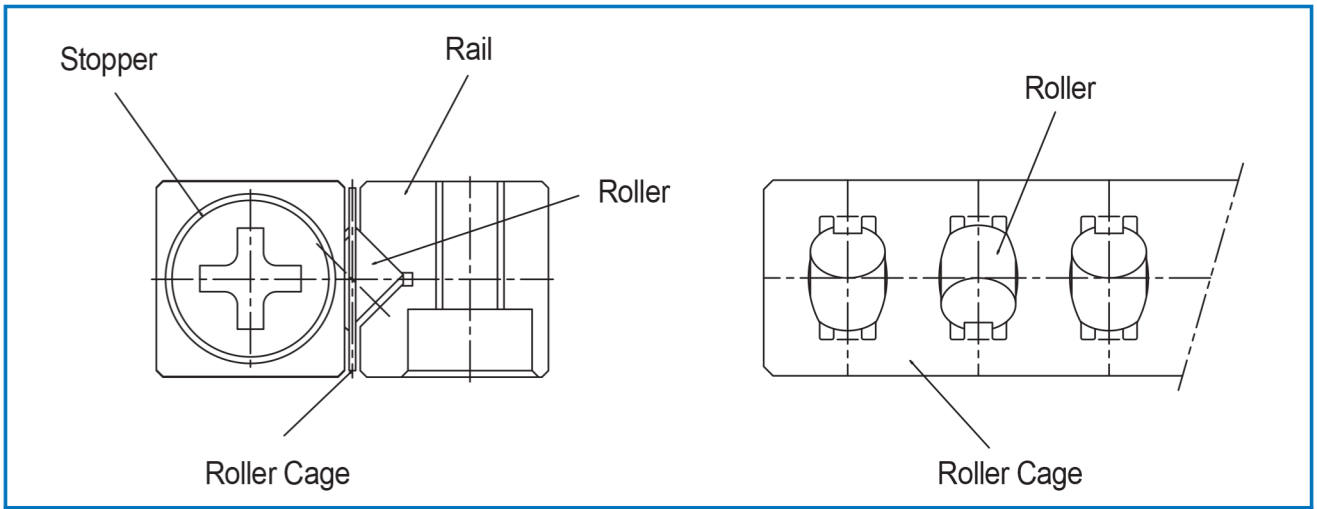
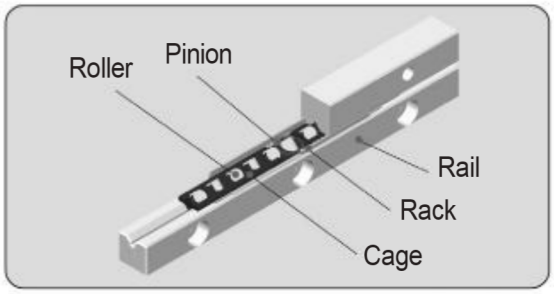


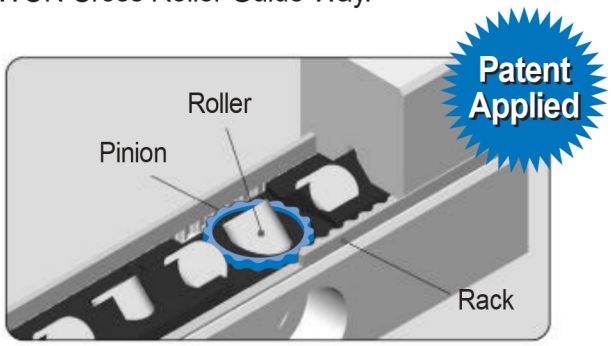
Fig 1. Features

2 Anti-Creep Cross Roller Guide Way

Anti Creep type Cross Roller Guide Way has anti-creep performance with the extremely high precision degree. It is built in a Rack and Pinion gear into the existing WON Cross Roller Guide Way.



WON Anti-Creep Cross Roller Guide Way Construction Plan



Anti-Creep Detail Plan

1. Meet the application diversity

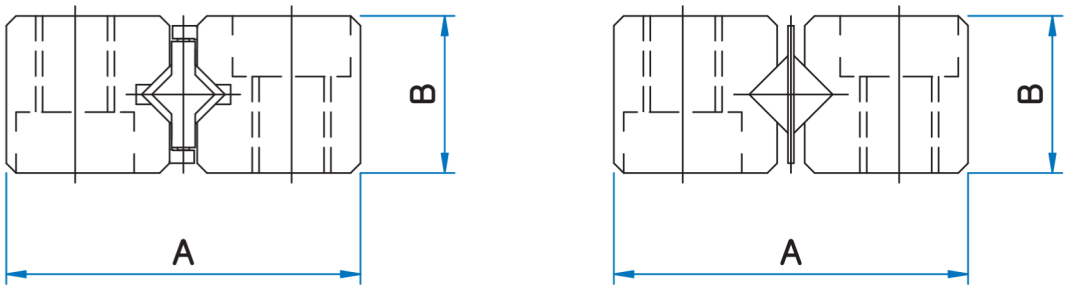
It is available to meet the ultra accelerated and reduced speed working condition by anti-creeping performance on the race rail so it is conveniently applicable to a vertical axis etc.

2. Low Noise and working very smoothly

Plastic Cage is applied to it instead existing Steel Cage so it causes to minimize a noise between rollers and to work more smoothly and quietly as well.

3. Keep high load performance by the sound compatibility of assembly dimensions between old and new one

Our exclusive technology which the pinion gear wraps the cage roller enables to maintain perfectly compatible with load rating, stroke,assembly measurement as the number of roller is same with general cross roller guide way. 1)



Anti-Creep Cross Roller Guide Way

An Cross Roller Guide Way

Fig 2. Dimension compatibility

Note 1) The number of roller is not same to No1, No2.

3 Types & Features

Classification	Type	Feature	
Guide	Roller Cage		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 night angle to one another, is fitted into to 90v-grooved raceway machined on the race rail. 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, fight clearance & non-cirulation method by big rollers with big contact areas as a rolling body.
	WRG WRGO WRG-AC		
	WRGW		
Table	WRGT		WRGU Cross roller guide is assembled between precision table and base WRGT is compact and strong linear guide unit.
	WRGU WRGU-AC		

4 Accuracy

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

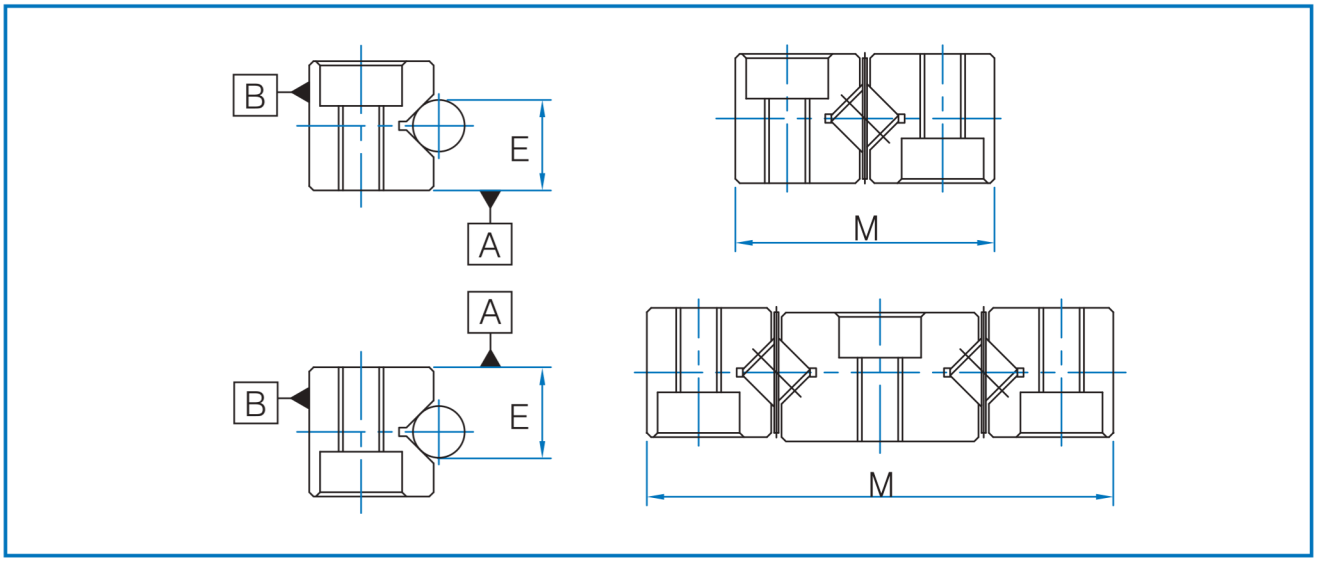


Table1. Accuracy for Race rail.

Accuracy grade / Items \ Symbol	Normal (No Symbol)	High (H)	Precision (P)
Raceway parallelism to surface Ⓐ & Ⓑ	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 tolerancefor width M	0 −0.2		0 −0.1

Note 1) Difference of Hight '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 Ⓐ to Ⓑ

Unit : ㎛

Accuracy grade / Rail length	Normal (No symbol)	High (H)	Precision (P)
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

5 Safe working load & Service life

The basic load rating Cz, Coz is calculate by the number of running roller(Z) in actual use and basic load ratings C, Co Per running roller.

Basic dynamic load rating

$$C = \left(\frac{Z}{2}\right)^{\frac{3}{4}} \cdot Cz$$

Basic static load rating

$$Co = \left(\frac{Z}{2}\right) \cdot Coz$$

※ $\left(\frac{Z}{2}\right)$ = 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	(kN)
Pc	: Calculated load	(kN)
f_H	: Hardness factor	
f_T	: Temperature factor	
fw	: Load factor	

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

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

L_h	: Service life	(hr)
ℓ_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 (℃)	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 ≦ 15m/min	G≦0.5	1.0 ~ 1.5
Small Shock vibration from outside	Middle speed 15 < V ≦ 60m/min	0.5≦G≦1.0	1.0 ~ 1.5
Shock vibration from outside	High speed V > 60m/min	1.0≦G≦2.0	2.0 ~ 3.5

6 Pre-load

In Cross Roller Guide Way, the application of an excessive pre-load 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

Unit : μm

Part No.	R1	R2	R3	R4	R5	R9
Permissible Pre-load	−2	−3	−4	−5	−7	−10

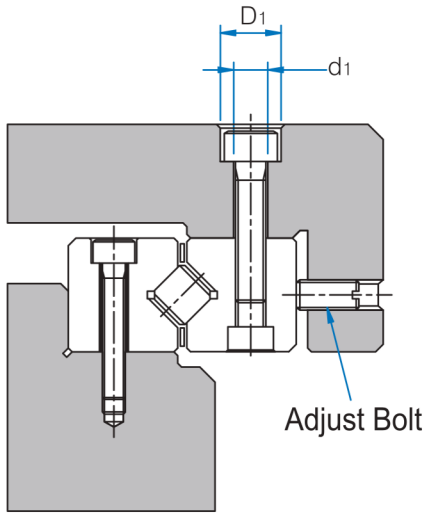


Fig 3. Adjusting pre-load

7 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

8 Installation Method

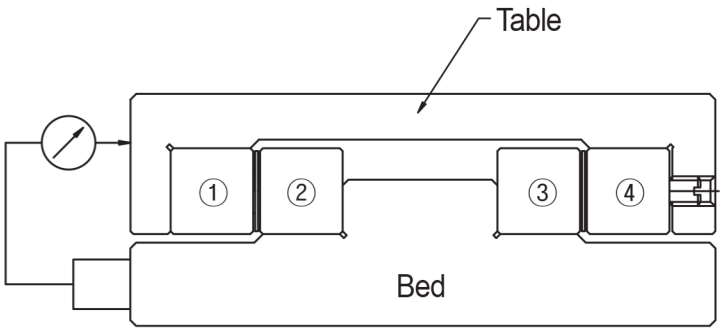


Fig 4. Installation Method

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. 4. 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.5 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 A djust Bolt(ⓐ, ⓔ in Fig.4) and the Tightened Bolt. at this displacement in the dial pre-load 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.

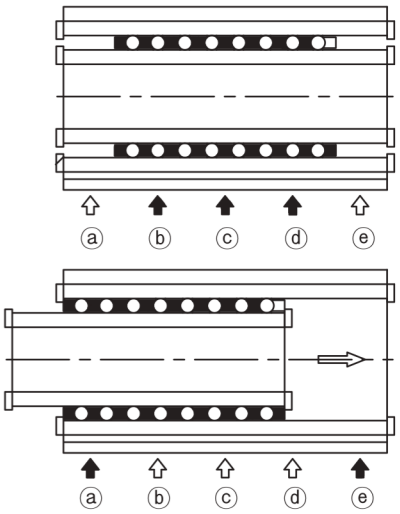
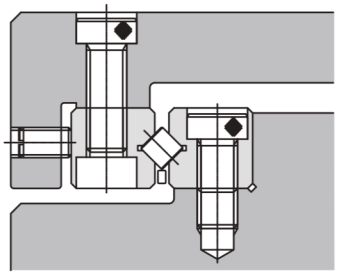
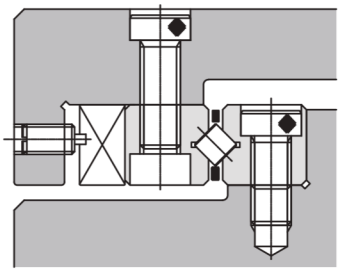


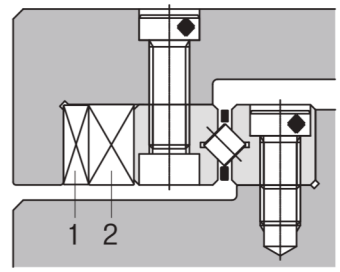
Fig 5. Order to bolting



Normally, the adjustment bolts press on the rail.



When high accuracy & rigidity are required, usd a holding bar.



When extremely high accuracy rigidity are required, use tapered GIBS 1 & 2.

Fig.6 Adjust Clearance

9 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.7)

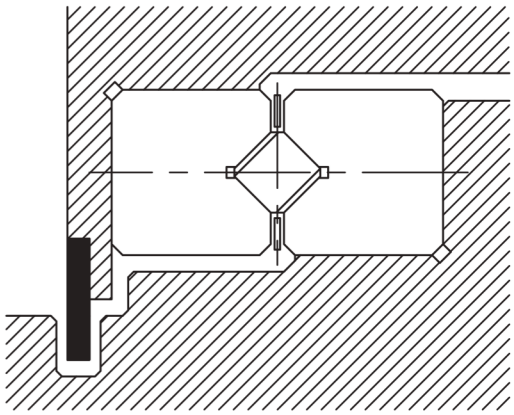


Fig 7.

10 Caution in Use

1. 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.

2. 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.

3. One set of use

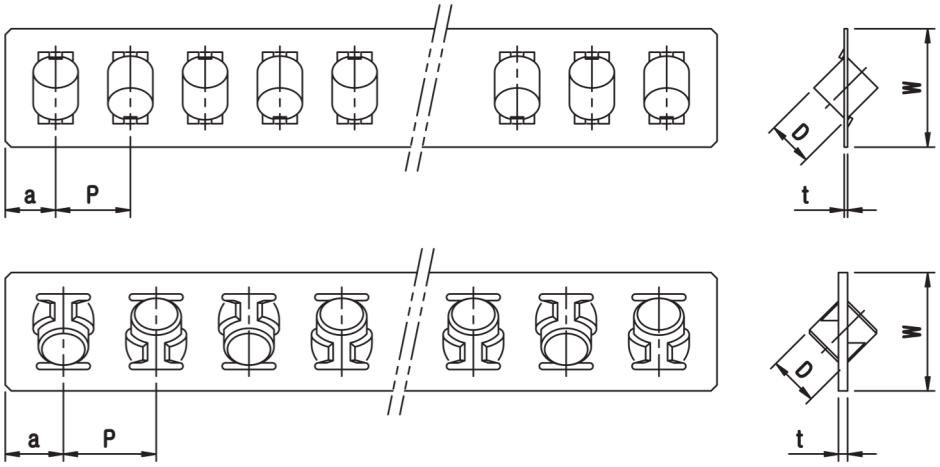
In WON' s Cross Roller Guide Way, one set of WRG type consists of 4 race rails, WRGW type consists of 3 race rails for one set.
The pair reciprocal tolerance between the individual V-grooves is adjusted within one set and so, to combine the different sets may be a factor to deteriorate the life and the accuracy by reciprocal error. Therefore, installation should be paid attention to these points.

Roller Cage

Examples of model number formation

R 6 - 13Z
1 2 3

1 Part No. 2 Roller Size
3 The number of Roller



Unit : mm

Part No.	D	t	W	P	a	Cz(kN)	Coz(kN)
R1	1.5	0.2	3.8	2.5	2	0.152	0.153
R2	2	0.25	5	4	2.5	0.276	0.271
R3	3	0.3	7	5	3	0.639	0.611
R4	4	0.3	10.5	7	4.5	1.38	1.35
R6	6	0.6	13.5	10	6	3.78	3.78
R9	9	1.0	19	14	7.5	9.53	9.48

1N ≒ 0.102kgf

WRG Type

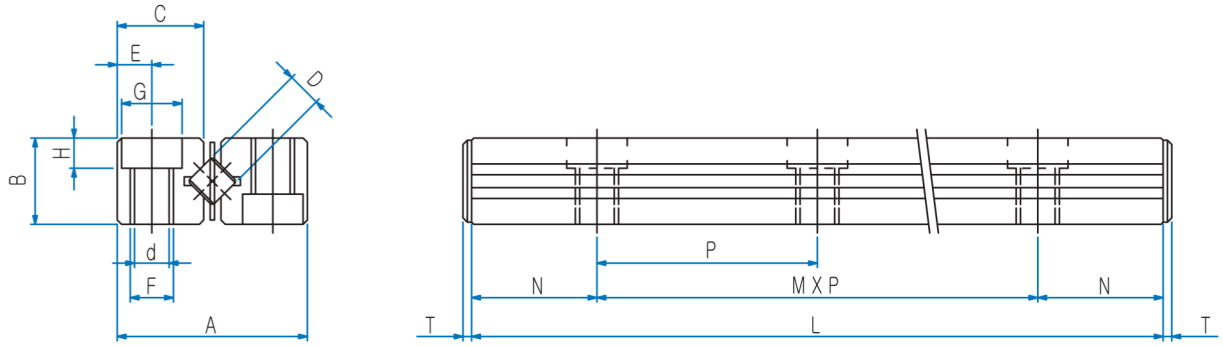
Examples of model number formation

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 & applicaton

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
WRG 1030	22		7	30				2×10	
WRG 1040	27		10	40				3×10	
WRG 1050	32		13	50				4×10	
WRG 1060	37		16	60				5×10	
WRG 1070	42		19	70				6×10	
WRG 1080	52		21	80				7×10	
WRG 2030	18	2	5	30	12	6	5.5	1×15	7.5
WRG 2045	24		8	45				2×15	
WRG 2060	30		11	60				3×15	
WRG 2075	44		13	75				4×15	
WRG 2090	50		16	90				5×15	
WRG 2105	64		18	105				6×15	
WRG 2120	70		21	120				7×15	
WRG 2135	84		23	135				8×15	
WRG 2150	90		26	150				9×15	
WRG 2165	96		29	165				10×15	
WRG 2180	102		32	180				11×15	
WRG 3050	28	3	7	50	18	8	8.3	1×25	12.5
WRG 3075	48		10	75				2×25	
WRG 3100	58		14	100				3×25	
WRG 3125	78		17	125				4×25	
WRG 3150	88		21	150				5×25	
WRG 3175	108		24	175				6×25	
WRG 3200	118		28	200				7×25	
WRG 3225	138		31	225				8×25	
WRG 3250	148		35	250				9×25	
WRG 3275	168		38	275				10×25	
WRG 3300	178		42	300				11×25	
WRG 3325	198		45	325				12×25	
WRG 3350	208		49	350				13×25	

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



Unit : mm

Dimensions						Basic load ratings		Mass (1set) g	Part No.
E	F	d	G	H	T	Dyn. C (kN)	Stat. Co (kN)		
1.8	M2	1.65	3	1.4	1.5	0.46	0.61	9	WRG 1020
						0.63	0.92	13	WRG 1030
						0.95	1.53	18	WRG 1040
						1.09	1.84	22	WRG 1050
						1.37	2.45	26	WRG 1060
						1.50	2.75	30	WRG 1070
						1.63	3.06	35	WRG 1080
2.5	M3	2.55	4.4	2	2	0.84	1.08	28	WRG 2030
						1.46	2.17	43	WRG 2045
						1.74	2.71	57	WRG 2060
						2.01	3.25	71	WRG 2075
						2.52	4.34	85	WRG 2090
						2.76	4.88	98	WRG 2105
						3.00	5.42	112	WRG 2120
						3.23	5.96	126	WRG 2135
						3.68	7.05	140	WRG 2150
						3.90	7.59	153	WRG 2165
						4.32	8.67	166	WRG 2180
3.5	M4	3.30	6	3.1	2.5	2.71	3.67	98	WRG 3050
						4.06	6.11	148	WRG 3075
						5.28	8.55	195	WRG 3100
						5.86	9.78	242	WRG 3125
						6.98	12.2	289	WRG 3150
						8.05	14.7	336	WRG 3175
						9.08	17.1	384	WRG 3200
						9.58	18.33	431	WRG 3225
						10.56	20.8	478	WRG 3250
						11.52	23.2	525	WRG 3275
						12.45	25.7	572	WRG 3300
						12.91	26.9	619	WRG 3325
						13.82	29.3	647	WRG 3350

1N ≒ 0.102kgf

WRG Type

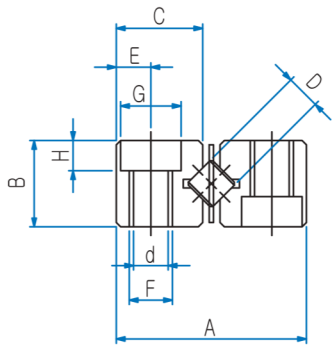
Examples of model number formation

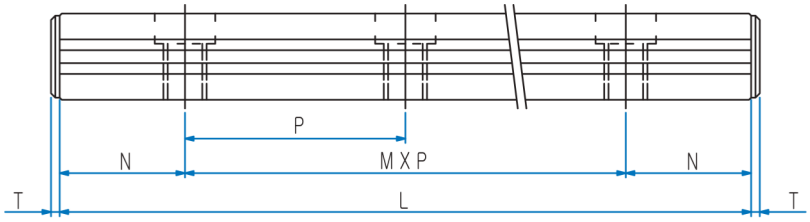
WRG 4 - 400 H - 39Z
1 2 3 4 5

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 & applicaton

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
WRG 4120	82		11	120				2×40	
WRG 4160	106		15	160				3×40	
WRG 4200	130		19	200				4×40	
WRG 4240	154		23	240				5×40	
WRG 4280	178		27	280				6×40	
WRG 4320	202		31	320				7×40	
WRG 4360	226		35	360				8×40	
WRG 4400	250		39	400				9×40	
WRG 4440	274		43	440				10×40	
WRG 4480	298		47	480				11×40	
WRG 6100	56	6	7	100	31	15	14.2	1×50	25
WRG 6150	96		10	150				2×50	
WRG 6200	136		13	200				3×50	
WRG 6250	156		17	250				4×50	
WRG 6300	196		20	300				5×50	
WRG 6350	216		24	350				6×50	
WRG 6400	256		27	400				7×50	
WRG 6450	276		31	450				8×50	
WRG 6500	316		34	500				9×50	
WRG 6550	336		38	550				10×50	
WRG 6600	376		41	600				11×50	
WRG 9200	118	9	10	200	44	22	20.2	1×100	50
WRG 9300	178		15	300				2×100	
WRG 9400	238		20	400				3×100	
WRG 9500	298		25	500				4×100	
WRG 9600	358		30	600				5×100	
WRG 9700	418		35	700				6×100	
WRG 9800	478		40	800				7×100	
WRG 9900	538		45	900				8×100	
WRG 91000	598		50	1000				9×100	

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





Unit : mm

Dimensions						Basic load ratings		Mass (1set) g	Part No.
E	F	d	G	H	T	Dyn. C (kN)	Stat. Co (kN)		
4.5	M5	4.3	8	4.2	2.5	5.92	8.10	260	WRG 4080
						8.85	13.5	400	WRG 4120
						11.5	18.9	530	WRG 4160
						14.0	24.3	660	WRG 4200
						16.4	29.7	790	WRG 4240
						18.7	35.1	920	WRG 4280
						20.88	40.5	1050	WRG 4320
						23.0	45.9	1180	WRG 4360
						25.1	51.3	1300	WRG 4400
						27.1	56.7	1430	WRG 4440
						29.1	62.1	1530	WRG 4480
6	M6	5.2	9.5	5.2	3	16.4	22.7	630	WRG 6100
						24.5	37.8	950	WRG 6150
						28.2	45.4	1260	WRG 6200
						35.4	60.5	1570	WRG 6250
						42.1	75.6	1880	WRG 6300
						48.5	90.7	2190	WRG 6350
						51.7	98.3	2490	WRG 6400
						57.8	113	2810	WRG 6450
						63.7	128	3110	WRG 6500
						69.5	143	3420	WRG 6550
						72.3	151	3730	WRG 6600
9	M8	6.8	10.5	6.2	4	62.3	94.8	2710	WRG 9200
						81.1	133	4050	WRG 9300
						107	190	5350	WRG 9400
						123	228	6680	WRG 9500
						147	284	8010	WRG 9600
						162	322	9330	WRG 9700
						184	379	10650	WRG 9800
						198	417	11970	WRG 9900
						219	474	13300	WRG 91000

1N ≒ 0.102kgf

WRGO Type

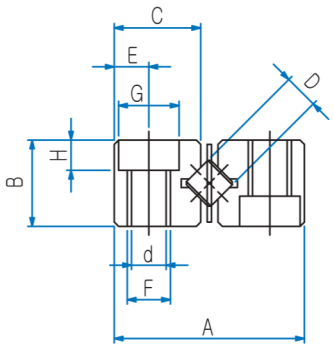
Examples of model number formation

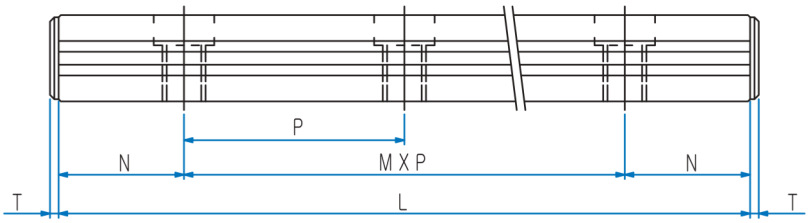
WRGO 6 - 300 H - 20Z
1 2 3 4 5

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 & applicaton

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
WRGO 6150	96		10	150				2×50	
WRGO 6200	136		13	200				3×50	
WRGO 6250	156		17	250				4×50	
WRGO 6300	196		20	300				5×50	
WRGO 6350	216		24	350				6×50	
WRGO 6400	256		27	400				7×50	
WRGO 6450	276		31	450				8×50	
WRGO 6500	316		34	500				9×50	
WRGO 6550	336		38	550				10×50	
WRGO 6600	376		41	600				11×50	
WRGO 9200	118	9	10	200	40	20	19.2	1×100	50
WRGO 9300	178		15	300				2×100	
WRGO 9400	238		20	400				3×100	
WRGO 9500	298		25	500				4×100	
WRGO 9600	359		30	600				5×100	
WRGO 9700	418		35	700				6×100	
WRGO 9800	478		40	800				7×100	
WRGO 9900	538		45	900				8×100	
WRGO 91000	598		50	1000				9×100	
WRGO 91100	658		55	1100				10×100	
WRGO 91200	718		60	1200				11×100	

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





Unit : mm

Dimensions						Basic load ratings		Mass kg/m (Rail/EA)	Part No.
E	F	d	G	H	T	Dyn. C (kN)	Stat. Co (kN)		
6	M6	5.2	9.5	5.2	3	16.4	22.7	640	WRGO 6100
						24.5	37.8	940	WRGO 6150
						28.2	45.4	1250	WRGO 6200
						35.4	60.5	1560	WRGO 6250
						42.1	75.6	1860	WRGO 6300
						48.5	90.7	2170	WRGO 6350
						51.7	98.3	2490	WRGO 6400
						57.8	113	2780	WRGO 6450
						63.7	128	3090	WRGO 6500
						69.5	143	3390	WRGO 6550
						72.3	151	3700	WRGO 6600
8	M8	6.8	10.5	6.2	4	62.3	94.8	2280	WRGO 9200
						81.1	133	3400	WRGO 9300
						107	190	4510	WRGO 9400
						123	228	5620	WRGO 9500
						147	284	6740	WRGO 9600
						162	322	7850	WRGO 9700
						184	379	8960	WRGO 9800
						198	417	10070	WRGO 9900
						219	474	11190	WRGO 91000
						232	512	12300	WRGO 91100
						252	569	13410	WRGO 91200

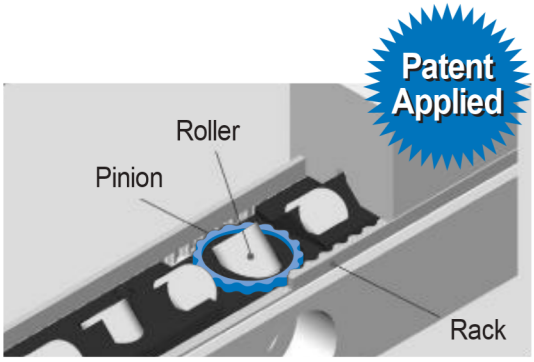
1N ≒ 0.102kgf

WRG-AC Type

Examples of model number formation

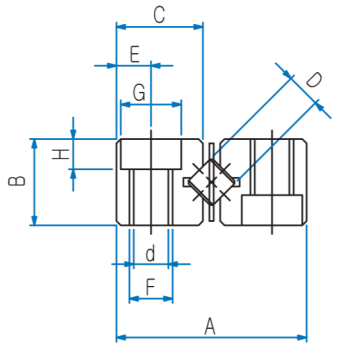
WRG 3 - 125 AC H - 17Z
1 2 3 4 5 6

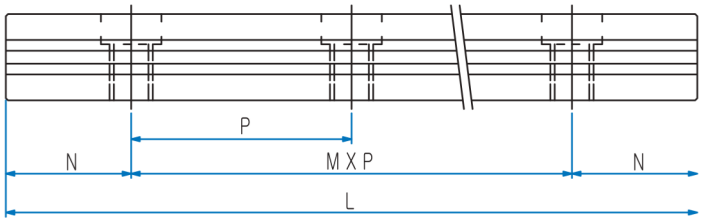
1 Part No. 2 Roller Size 3 Length of Race rail
4 Anti-Creep
5 Accuracy : Normal(No symbol), High(H), Precision(P)
6 The number of Roller
* Please inquire us for your specially required dimensions & applicaton



Part No.	Max. Stroke	D	No.of Roller Z	Dimensions					
				L	A	B	C	M×P	N
WRG 2030 AC	18	2	4	30	12	6	5.4	1×15	7.5
WRG 2045 AC	24		7	45				2×15	
WRG 2060 AC	30		10	60				3×15	
WRG 2075 AC	44		12	75				4×15	
WRG 2090 AC	50		15	90				5×15	
WRG 2105 AC	64		17	105				6×15	
WRG 2120 AC	70		20	120				7×15	
WRG 2135 AC	84		22	135				8×15	
WRG 2150 AC	90		25	150				9×15	
WRG 2165 AC	96		28	165				10×15	
WRG 2180 AC	102		31	180				11×15	
WRG 3050 AC	28	3	7	50	18	8	8.3	1×25	12.5
WRG 3075 AC	48		10	75				2×25	
WRG 3100 AC	58		14	100				3×25	
WRG 3125 AC	78		17	125				4×25	
WRG 3150 AC	88		21	150				5×25	
WRG 3175 AC	108		24	175				6×25	
WRG 3200 AC	118		28	200				7×25	
WRG 3225 AC	138		31	225				8×25	
WRG 3250 AC	148		35	250				9×25	
WRG 3275 AC	168		38	275				10×25	
WRG 3300 AC	178		42	300				11×25	
WRG 3325 AC	198		45	325				12×25	
WRG 3350 AC	208		49	350				13×25	
WRG 4080 AC	58	4	7	80	22	11	10.2	1×40	20
WRG 4120 AC	82		11	120				2×40	
WRG 4160 AC	106		15	160				3×40	
WRG 4200 AC	130		19	200				4×40	
WRG 4240 AC	154		23	240				5×40	
WRG 4280 AC	178		27	280				6×40	
WRG 4320 AC	202		31	320				7×40	
WRG 4360 AC	226		35	360				8×40	
WRG 4400 AC	250		39	400				9×40	
WRG 4440 AC	274		43	440				10×40	
WRG 4480 AC	298		47	480				11×40	

Note 1) 1Set = 4 Race rail + 2 Roller cages + 8 Stoppers.
2) Basic load ratings are based and mass on 1 set.
3) Needed stopper additional indication is required.





Unit : mm

Dimensions					Basic load ratings		Mass (1set) g	Part No.
E	F	d	G	H	Dyn. C (kN)	Stat. Co (kN)		
2.5	M3	2.55	4.4	2	0.62	0.73	28	WRG 2030 AC
					0.86	1.10	43	WRG 2045 AC
					1.28	1.83	57	WRG 2060 AC
					1.48	2.20	71	WRG 2075 AC
					1.67	2.56	85	WRG 2090 AC
					1.85	2.93	98	WRG 2105 AC
					2.2	3.66	112	WRG 2120 AC
					2.37	4.03	126	WRG 2135 AC
					2.54	4.39	140	WRG 2150 AC
					2.86	5.13	153	WRG 2165 AC
					3.02	5.49	166	WRG 2180 AC
3.5	M4	3.30	6	3.1	2.71	3.67	98	WRG 3050 AC
					4.06	6.11	148	WRG 3075 AC
					5.28	8.55	195	WRG 3100 AC
					5.86	9.78	242	WRG 3125 AC
					6.98	12.2	289	WRG 3150 AC
					8.05	14.7	336	WRG 3175 AC
					9.08	17.1	384	WRG 3200 AC
					9.58	18.33	431	WRG 3225 AC
					10.56	20.8	478	WRG 3250 AC
					11.52	23.2	525	WRG 3275 AC
					12.45	25.7	572	WRG 3300 AC
					12.91	26.9	619	WRG 3325 AC
					13.82	29.3	647	WRG 3350 AC
4.5	M5	4.3	8	4.2	5.92	8.10	260	WRG 4080 AC
					8.85	13.5	400	WRG 4120 AC
					11.5	18.9	530	WRG 4160 AC
					14.0	24.3	660	WRG 4200 AC
					16.4	29.7	790	WRG 4240 AC
					18.7	35.1	920	WRG 4280 AC
					20.88	40.5	1050	WRG 4320 AC
					23.0	45.9	1180	WRG 4360 AC
					25.1	51.3	1300	WRG 4400 AC
					27.1	56.7	1430	WRG 4440 AC
					29.1	62.1	1530	WRG 4480 AC

1N ≒ 0.102kgf

WRGW Type

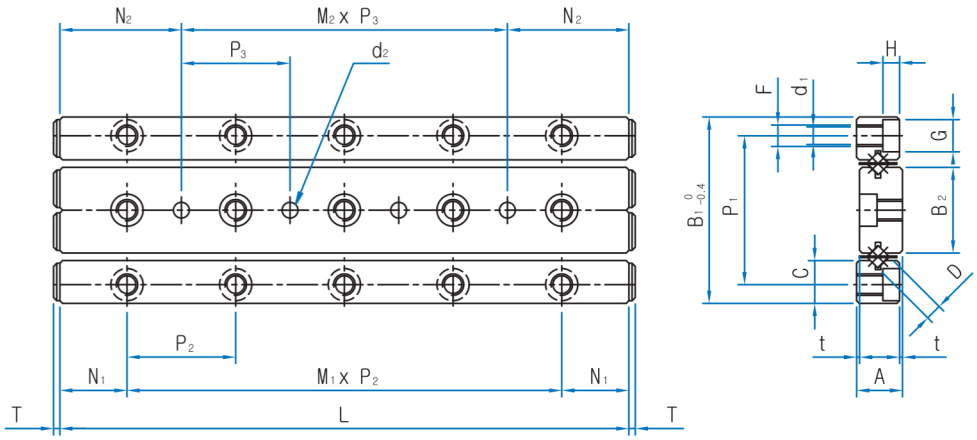
Examples of model number formation

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 & applicaton

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
WRGW 1030	22		7	30						
WRGW 1040	27		10	40						
WRGW 1050	32		13	50						
WRGW 1060	37		16	60						
WRGW 1070	42		19	70						
WRGW 1080	52		21	80						
WRGW 2030	18	2	5	30	6.5	0.5	24	11	5.5	19
WRGW 2045	24		8	45						
WRGW 2060	30		11	60						
WRGW 2075	44		13	75						
WRGW 2090	50		16	90						
WRGW 2105	64		18	105						
WRGW 2120	70		21	120						
WRGW 3050	28	3	7	50	8.5	0.5	36	16.6	8.3	29
WRGW 3075	48		10	75						
WRGW 3100	58		14	100						
WRGW 3125	78		17	125						
WRGW 3150	88		21	150						
WRGW 3175	108		24	175						
WRGW 3200	118		28	200						
WRGW 4080	58	4	7	80	11.5	0.5	44	20.4	10.2	35
WRGW 4120	82		11	120						
WRGW 4160	106		15	160						
WRGW 4200	130		19	200						
WRGW 4240	154		23	240						
WRGW 4280	178		27	280						

Note 1) 1Set = 3 Race rail + 2 Roller cages + 8 Stoppers.
Note 2) Basic load ratings are based on 1 set.



Unit : mm

Dimensions										Basic load ratings		Mass (1set) g	Part No.
M×P2	N1	M2×P3	N2	F	d1	G	H	T	d2	Dyn. C (kN)	Stat. Co (kN)		
1×10		–								0.46	0.61	9	WRGW 1020
2×10		1×10								0.63	0.92	14	WRGW 1030
3×10		2×10								0.95	1.53	18	WRGW 1040
4×10	5	3×10	10	M2	1.65	3	1.4	1.5	2	1.09	1.84	22	WRGW 1050
5×10		4×10								1.37	2.45	26	WRGW 1060
6×10		5×10								1.50	2.75	31	WRGW 1070
7×10		6×10								1.63	3.06	35	WRGW 1080
1×15		–								0.46	1.08	29	WRGW 2030
2×15		1×15								0.81	2.17	43	WRGW 2045
3×15		2×15								0.96	2.71	58	WRGW 2060
4×15	7.5	3×15	15	M3	2.55	4.4	2	2	3	1.11	3.25	72	WRGW 2075
5×15		4×15								1.39	4.34	83	WRGW 2090
6×15		5×15								1.52	4.38	99	WRGW 2105
7×15		6×15								1.65	5.42	113	WRGW 2120
1×25		–								2.71	3.67	101	WRGW 3050
2×25		1×25								4.06	6.11	142	WRGW 3075
3×25		2×25								5.28	8.55	197	WRGW 3100
4×25	12.5	3×25	25	M4	3.3	6	3.1	2.5	4	5.86	9.78	240	WRGW 3125
5×25		4×25								6.98	12.2	292	WRGW 3150
6×25		5×25								8.05	14.7	339	WRGW 3175
7×25		6×25								9.08	17.1	387	WRGW 3200
1×40		–								5.92	8.10	263	WRGW 4080
2×40		1×40								8.85	13.5	401	WRGW 4120
3×40	20	2×40	40	M5	4.3	8	4.2	2.5	5	11.5	18.9	530	WRGW 4160
4×40		3×40								14.0	24.3	660	WRGW 4200
5×40		4×40								16.4	29.7	787	WRGW 4240
6×40		5×40								18.7	35.1	920	WRGW 4280

1N ≒ 0.102kgf

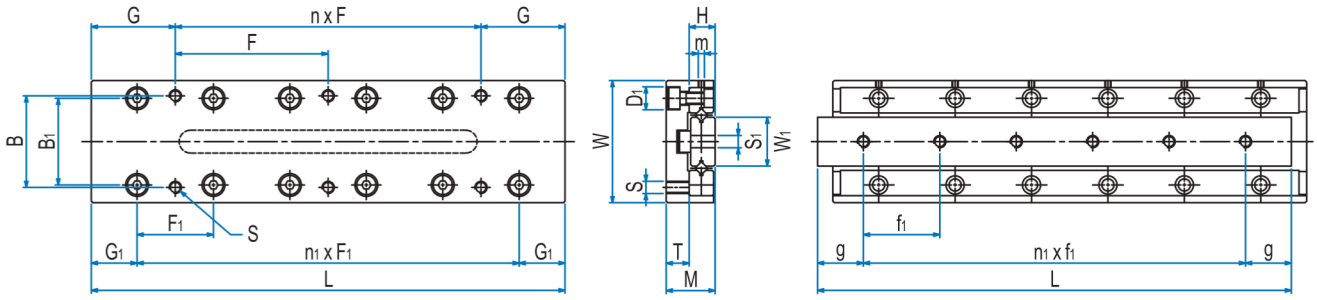
WRGT Type

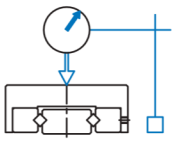
Examples of model number formation

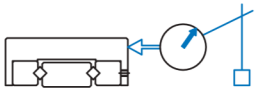
WRGT 2 055
1 2 3

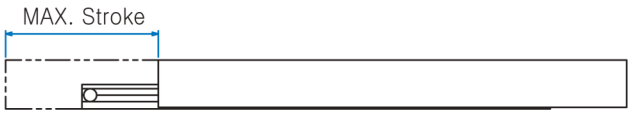
1 Part No. 2 Roller Size 3 Length of Race rail
4 Hole Type onto the middle rail : Tab(No symbol), Hole(B)
* Please inquire us for your specially required dimensions & applicaton

Part No.	Main Dimensions				Dimensions of the table-surface									
	Max. Stroke	Whidth W ±0.1	Height M ±0.1	Length L	Location of taps onto the table					F_1	$n_1 \times F_1$	D_1	B_1	G_1
					B	F	n×F	G	S					
WRGT 1025	12			25		18	1×18	3.5			1×10			
WRGT 1035	18			35		28	1×28	3.5			2×10			
WRGT 1045	25			45		20	1×20	12.5			3×10			
WRGT 1055	32	20	8	55	14	30	1×30	12.5	M2.6	10	4×10	4.1	12.4	7.5
WRGT 1065	40			65		20	2×20	12.5			5×10			
WRGT 1075	45			75		30	1×30	22.5			6×10			
WRGT 1085	50			85		30	2×30	12.5			7×10			
WRGT 2035	18			35		28	1×28	3.5			1×15			
WRGT 2050	30			50		43	1×43	3.5			2×15			
WRGT 2065	40			65		30	1×30	17.5			3×15			
WRGT 2080	50	30	12	80	22	45	1×45	17.5	M3	15	4×15	6	20	10
WRGT 2095	60			95		30	2×30	17.5			5×15			
WRGT 2110	70			110		45	1×45	32.5			6×15			
WRGT 2125	80			125		45	2×45	17.5			7×15			
WRGT 3055	30			55		40	1×40	7.5			1×25			
WRGT 3080	45			80		65	1×65	7.5			2×25			
WRGT 3105	60			105		50	1×50	27.5			3×25			
WRGT 3130	75	40	16	130	30	75	1×75	27.5	M4	25	4×25	7.5	28.4	15
WRGT 3155	90			155		50	2×50	27.5			5×25			
WRGT 3180	105			180		75	1×75	52.5			6×25			
WRGT 3205	130			205		75	2×75	27.5			7×25			









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	$n_2 \times f_1$	g	Dyn. C (kN)	Stat. Co (kN)	⊿C	⊿D	
7.5	4	6.6	M2	M2.6	4.5	2×7.5	5	0.46	0.61	2	4	WRGT 1025
					10.0	2×10	7.5	0.63	0.92	2	4	WRGT 1035
					10.0	3×10	7.5	0.95	1.53	2	5	WRGT 1045
					10.0	4×10	7.5	1.09	1.84	2	5	WRGT 1055
					10.0	5×10	7.5	1.23	2.14	2	5	WRGT 1065
					10.0	6×10	7.5	1.50	2.75	2	5	WRGT 1075
					10.0	7×10	7.5	1.63	3.06	2	5	WRGT 1085
11.5	6	12.0	M2	M3	20.0	1×20	7.5	0.84	1.08	2	4	WRGT 2035
					15.0	2×15	10	1.17	1.63	2	4	WRGT 2050
					15.0	3×15	10	1.46	2.17	2	5	WRGT 2065
					15.0	4×15	10	2.01	3.25	2	5	WRGT 2080
					15.0	5×15	10	2.27	3.79	2	5	WRGT 2095
					15.0	6×15	10	2.52	4.34	2	5	WRGT 2110
					15.0	7×15	10	2.76	4.88	2	5	WRGT 2125
15.5	8	16.0	M2	M4	35.0	1×35	10	2.71	3.67	2	5	WRGT 3055
					25.0	2×25	15	4.06	6.11	2	5	WRGT 3080
					25.0	3×25	15	4.68	7.33	3	6	WRGT 3105
					25.0	4×25	15	5.86	9.78	3	6	WRGT 3130
					25.0	5×25	15	6.98	12.2	3	6	WRGT 3155
					25.0	6×25	15	8.05	14.7	3	6	WRGT 3180
					25.0	7×25	15	8.57	15.9	3	6	WRGT 3205

1N ≒ 0.102kgf

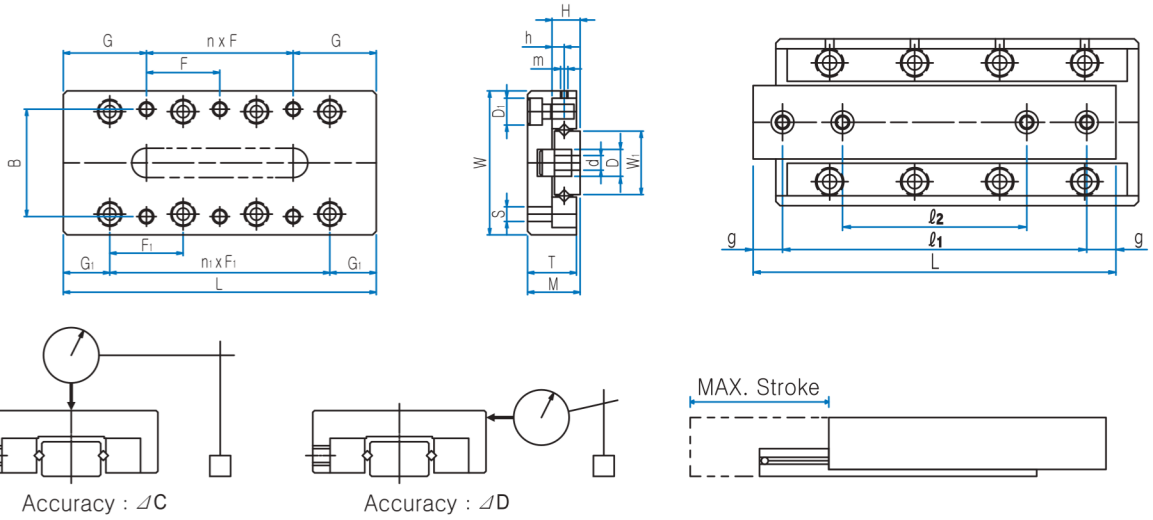
WRGT-B Type

Examples of model number formation

WRGT 2 055 B
1 2 3

1 Part No. 2 Roller Size 3 Length of Race rail
4 Hole Type onto the middle rail : Tab(No symbol), Hole(B)
* Please inquire us for your specially required dimensions & applicaton

Part No.	Main Dimensions				Dimensions of the table-surface									
	Max. Stroke	Whidth W ±0.1	Height M ±0.1	Length L	Location of taps onto the table					F_1	$n_1 \times F_1$	D_1	B_1	G_1
					B	F	n×F	G	S					
WRGT 1025B	12			25		18	1×18	3.5			1×10			
WRGT 1035B	18			35		28	1×28	3.5			2×10			
WRGT 1045B	25			45		20	1×20	12.5			3×10			
WRGT 1055B	32	20	8	55	14	30	1×30	12.5	M2.6	10	4×10	4.1	12.4	7.5
WRGT 1065B	40			65		20	2×20	12.5			5×10			
WRGT 1075B	45			75		30	1×30	22.5			6×10			
WRGT 1085B	50			85		30	2×30	12.5			7×10			
WRGT 2035B	18			35		28	1×28	3.5			1×15			
WRGT 2050B	30			50		43	1×43	3.5			2×15			
WRGT 2065B	40			65		30	1×30	17.5			3×15			
WRGT 2080B	50	30	12	80	22	45	1×45	17.5	M3	15	4×15	6	20	10
WRGT 2095B	60			95		30	2×30	17.5			5×15			
WRGT 2110B	70			110		45	1×45	32.5			6×15			
WRGT 2125B	80			125		45	2×45	17.5			7×15			
WRGT 3055B	30			55		40	1×40	7.5			1×25			
WRGT 3080B	45			80		65	1×65	7.5			2×25			
WRGT 3105B	60			105		50	1×50	27.5			3×25			
WRGT 3130B	75	40	16	130	30	75	1×75	27.5	M4	25	4×25	7.5	28.4	15
WRGT 3155B	90			155		50	2×50	27.5			5×25			
WRGT 3180B	105			180		75	1×75	52.5			6×25			
WRGT 3205B	130			205		75	2×75	27.5			7×25			



Unit : mm

Dimensions of the side				Dimensions of the bed-surface				Basic load ratings		Accuracy ㎛		Part No.
T	H	W_1	m	d×D×h	ℓ_1	ℓ_2	g	Dyn. C (kN)	Stat. Co (kN)	⊿C	⊿D	
7.5	4	6.6	M2	2.5×4.1×2.2	18	–	3.5	0.46	0.61	2	4	WRGT 1025B
					25	–	5.0	0.63	0.92	2	4	WRGT 1035B
					38	25	3.5	0.95	1.53	2	5	WRGT 1045B
					48	29	3.5	1.09	1.84	2	5	WRGT 1055B
					55	31	5.0	1.23	2.14	2	5	WRGT 1065B
					65	35	5.0	1.50	2.75	2	5	WRGT 1075B
					75	40	5.0	1.63	3.06	2	5	WRGT 1085B
11.5	6	12.0	M2	3.5×6×3.2	25	–	5.0	0.84	1.08	2	4	WRGT 2035B
					35	–	7.5	1.17	1.63	2	4	WRGT 2050B
					55	33	5.0	1.46	2.17	2	5	WRGT 2065B
					70	40	5.0	2.01	3.25	2	5	WRGT 2080B
					85	45	5.0	2.27	3.79	2	5	WRGT 2095B
					95	50	7.5	2.52	4.34	2	5	WRGT 2110B
					110	55	7.5	2.76	4.88	2	5	WRGT 2125B
15.5	8	16.0	M2	4.5×7.5×4.2	40	–	7.5	2.71	3.67	2	5	WRGT 3055B
					68	43	6.0	4.06	6.11	2	5	WRGT 3080B
					90	55	7.5	4.68	7.33	3	6	WRGT 3105B
					115	65	7.5	5.86	9.78	3	6	WRGT 3130B
					140	95	7.5	6.98	12.2	3	6	WRGT 3155B
					165	85	7.5	8.05	14.7	3	6	WRGT 3180B
					190	90	7.5	8.57	15.9	3	6	WRGT 3205B

1N ≒ 0.102kgf

WRGU Type

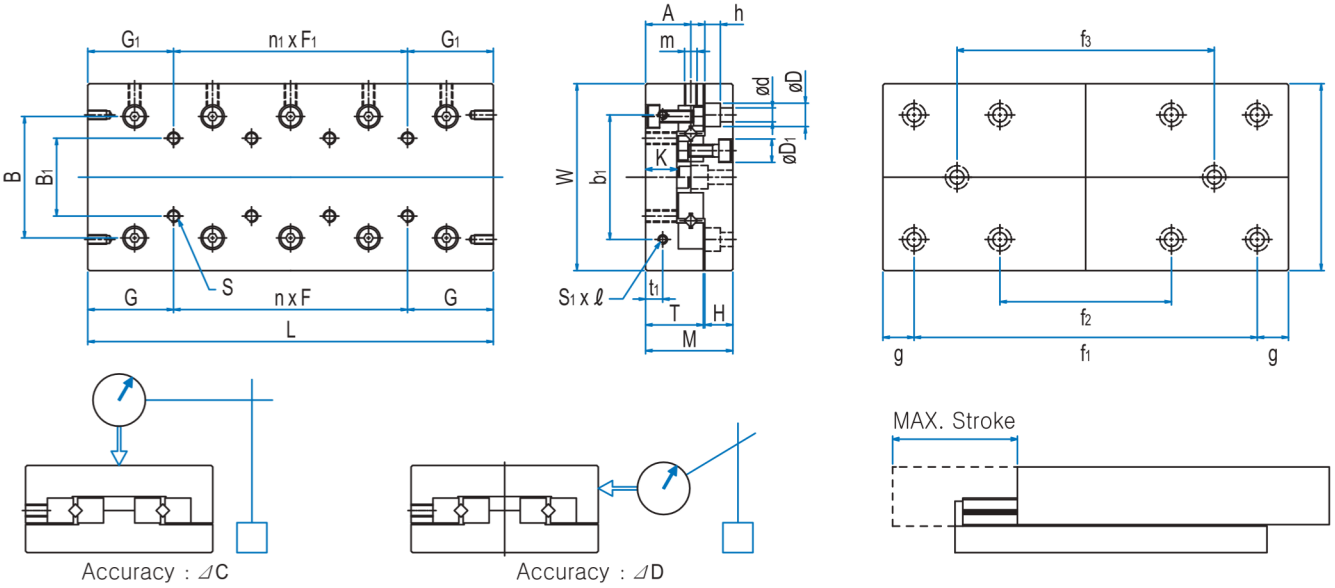
Examples of model number formation

WRGU 3 130
1 2 3

1 Part No. 2 Roller Size 3 Length of Race rail

* Please inquire us for your specially required dimensions & applicaton

Part No.	Main Dimensions						Dimensions of the table-surface										
							Location of taps onto the table					Tap's Location onto the side table					
	Max. Stroke	Whidth W	Tole-rance	Height M ±0.1	Length L	Mass (kg)	B	n×F	G	S	B_1	$n_1 \times F_1$	G_1	K	b_1	t_1	$S_1 \times \ell$
WRGU 1025	12				25	0.08		–				1×10					
WRGU 1035	18				35	0.11		1×10				2×10					
WRGU 1045	25				45	0.15		2×10				3×10					
WRGU 1055	32	30	−0.2 −0.4	17	55	0.18	18.4	3×10	12.5	M2	10	4×10	7.5	6.5	12	2.5	M2×4
WRGU 1065	40				65	0.21		4×10				5×10					
WRGU 1075	45				75	0.24		5×10				6×10					
WRGU 1085	50				85	0.27		6×10				7×10					
WRGU 2035	18				35	0.2		–				1×15					
WRGU 2050	30				50	0.26		1×15				2×15					
WRGU 2065	40				65	0.34		2×15				3×15					
WRGU 2080	50	40	−0.2 −0.4	21	80	0.42	25	3×15	17.5	M3	15	4×15	10	7.5	16	3.4	M2×4
WRGU 2095	60				95	0.5		4×15				5×15					
WRGU 2110	70				110	0.58		5×15				6×15					
WRGU 2125	80				125	0.66		6×15				7×15					
WRGU 3055	30				55	0.57		–				1×25					
WRGU 3080	45				80	0.8		1×25				2×25					
WRGU 3105	60				105	1.03		2×25				3×25					
WRGU 3130	75	60	±0.1	28	130	1.26	39	3×25	27.5	M4	25	4×25	15	10	40	5.5	M3×6
WRGU 3155	90				155	1.49		4×25				5×25					
WRGU 3180	105				180	1.72		5×25				6×25					
WRGU 3205	130				205	1.95		6×25				7×25					



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	A	m	B_2	f_1	f_2	f_3	g	Dyn. C (kN)	Stat. Co (kN)	⊿C	⊿D	
11	5.5	2.55×4.1×2.5	4.1	9	M2	22	18	–	–	3.5	0.46	0.61	2	4	WRGU 1025
							28	–	–		0.63	0.92	2	4	WRGU 1035
							38	–	–		0.95	1.53	2	4	WRGU 1045
							48	28	–		1.09	1.84	2	5	WRGU 1055
							58	38	–		1.23	2.14	2	5	WRGU 1065
							68	48	–		1.50	2.75	2	5	WRGU 1075
							78	58	–		1.63	3.06	2	5	WRGU 1085
14	6.5	3.5×6×3.5	6.0	11	M3	30	25	–	–	5	0.84	1.08	2	4	WRGU 2035
							40	–	–		1.17	1.63	2	4	WRGU 2050
							55	–	–		1.46	2.17	2	5	WRGU 2065
							70	40	–		2.01	3.25	2	5	WRGU 2080
							85	55	–		2.27	3.79	2	5	WRGU 2095
							100	70	–		2.52	4.34	3	6	WRGU 2110
							115	85	–		2.76	4.88	3	6	WRGU 2125
18.5	9	4.5×7.5×5	7.5	14.5	M4	40	35	–	–	10	2.71	3.67	2	5	WRGU 3055
							60	–	–		4.06	6.11	2	5	WRGU 3080
							85	–	–		4.68	7.33	3	6	WRGU 3105
							110	–	–		5.86	9.78	3	6	WRGU 3130
							135	–	85		6.98	12.2	3	6	WRGU 3155
							160	–	110		8.05	14.7	3	7	WRGU 3180
							185	85	135		8.57	15.9	3	7	WRGU 3205

1N ≒ 0.102kgf

WRGU Type

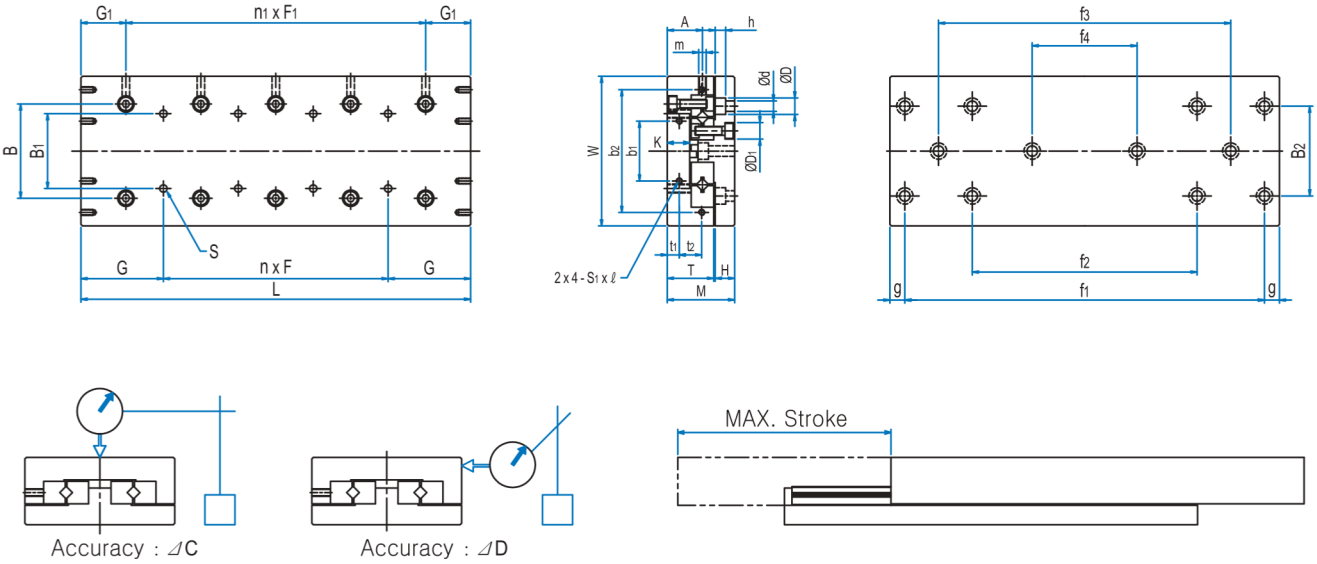
Examples of model number formation

WRGU 4 125
1 2 3

1 Part No. 2 Roller Size 3 Length of Race rail

* Please inquire us for your specially required dimensions & applicaton

Part No.	Main Dimensions					Dimensions of the table-surface											
						Location of taps onto the table				Tap's Location onto the side table							
	Max. Stroke	Whidth W ±0.1	Height M ±0.1	Length L	Mass (kg)	B	n×F	G	S	$n_1 \times F_1$	G_1	G_2	b_1	b_2	t_1	t_2	$S_1 \times \ell$
WRGU 4085	50	80	35	85	1.5	40	–	42.5	M5	1×40	22.5	10.5	55	–	6.5	–	M3×6
WRGU 4125	75			125	2.3		1×40			2×40		18.0					
WRGU 4165	105			165	3.1		2×40			3×40		23.0					
WRGU 4205	135			205	3.8		3×40			4×40		30.5					
WRGU 4245	155			245	4.6		4×40			5×40		38					
WRGU 4285	185			285	5.3		5×40			6×40		43.0					
WRGU 6110	60	100	45	110	3.2	50	–	55	M6	1×50	30.0	16.0	60	92	8	15	M4×8
WRGU 6160	95			160	4.6		1×50			2×50		23.5					
WRGU 6210	130			210	60		2×50			3×50		31.0					
WRGU 6260	165			260	7.4		3×50			4×50		38.5					
WRGU 6310	200			310	8.7		4×50			5×50		46.0					
WRGU 6360	235			360	10.1		5×50			6×50		53.5					
WRGU 6410	265			410	11.5		6×50			7×50		63.5					
WRGU 9210	130	145	60	210	12.0	85	–	105	M8	1×100	55.0	27.0	90	135	11	20	M4×8
WRGU 9310	180			310	17.6		1×100			2×100		52.0					
WRGU 9410	350			410	23.2		2×100			3×100		17.0					
WRGU 9510	450			510	28.8		3×100			4×100		17.0					
WRGU 9610	550			610	34.4		4×100			5×100		17.0					
WRGU 9710	650			710	40.0		5×100			6×100		17.0					
WRGU 9810	750			810	45.6		6×100			7×100		17.0					
WRGU 9910	850			910	51.2		7×100			8×100		17.0					
WRGU 91010	950			1010	56.8		8×100			9×100		17.0					



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	f_4	g	Dyn. C (kN)	Stat. Co (kN)	⊿C	⊿D	
24	10.5	5.5×9.5×6	9.5	M4	M4	60	65	–	–	–	10	5.92	8.10	2	5	WRGU 4085
							80	–	–	–	22.5	8.85	13.5	3	6	WRGU 4125
							120	–	–	–	22.5	11.5	18.9	3	7	WRGU 4165
							160	80	–	–	22.5	14.0	24.3	3	7	WRGU 4205
							200	120	–	–	22.5	16.4	29.7	3	7	WRGU 4245
							240	160	–	–	22.5	18.7	35.1	3	7	WRGU 4285
31	13	7×11×7	11	M5	M5	60	90	–	–	–	10	16.4	22.7	3	6	WRGU 6110
							140	–	–	–	10	20.5	30.2	3	6	WRGU 6160
							190	–	90	–	10	28.2	45.4	3	7	WRGU 6210
							240	–	140	–	10	35.4	60.5	3	7	WRGU 6260
							290	–	190	–	10	38.8	68.0	4	8	WRGU 6310
							340	140	240	–	10	45.4	83.2	4	8	WRGU 6360
							390	190	290	–	10	51.7	98.3	4	8	WRGU 6410
43	16	9×14×9	14	M8	M6	90	100	–	–	–	55	52.3	75.8	3	7	WRGU 9210
							200	–	–	–	55	81.1	133	3	7	WRGU 9310
							300	–	100	–	55	81.1	133	4	8	WRGU 9410
							400	–	200	–	55	98.7	171	4	8	WRGU 9510
							500	100	300	–	55	115	209	4	9	WRGU 9610
							600	200	400	–	55	131	246	4	9	WRGU 9710
							700	300	500	100	55	139	265	5	10	WRGU 9810
							800	400	600	200	55	155	303	5	10	WRGU 9910
							900	500	700	300	55	169	341	5	10	WRGU 91010

1N ≒ 0.102kgf

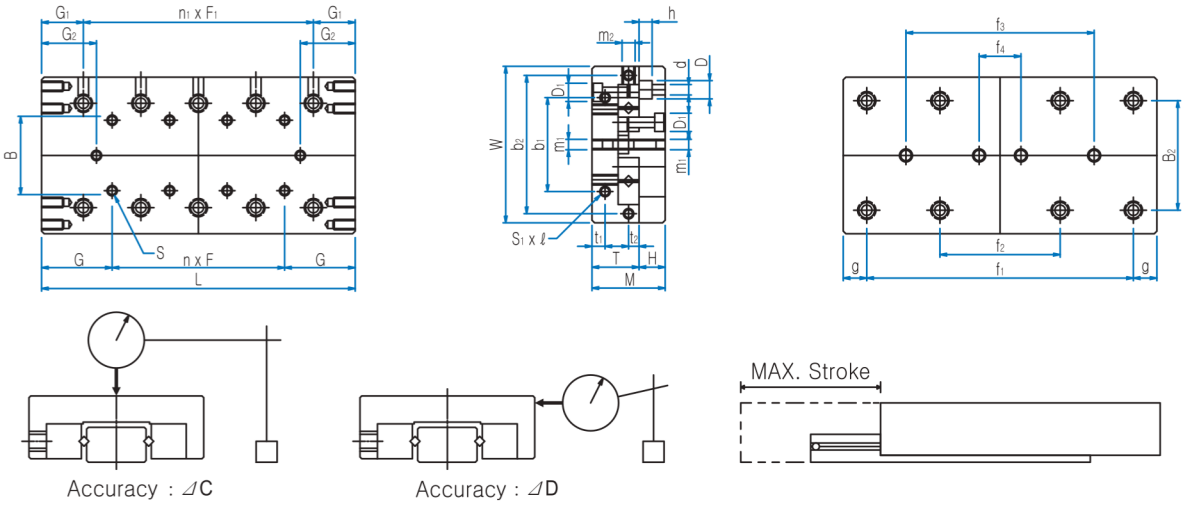
WRGU-AC Type

Examples of model number formation

WRGU 3 130 AC
1 2 3 4

1 Part No. 2 Roller Size 3 Length of Race rail
4 Anti-Creep
* Please inquire us for your specially required dimensions & applicaton

Part No.	Main Dimensions					Dimensions of the table-surface										
						Location of taps onto the table					Tap's Location onto the side table					
	Max. Stroke	Whidth W ±0.1	Height M ±0.1	Length L	Mass (kg)	B	n×F	G	S	B_1	$n_1 \times F_1$	G_1	G_2	b_1	t_1	$S_1 \times \ell$
WRGU 2035 AC	18	40	21	35	0.2	25	–	17.5	M3	15	1×15	10	3	16	3.4	M2×4
WRGU 2050 AC	30			50	0.26		1×15				2×15		4.5			
WRGU 2065 AC	40			65	0.34		2×15				3×15		7			
WRGU 2080 AC	50			80	0.42		3×15				4×15		9.5			
WRGU 2095 AC	60			95	0.5		4×15				5×15		12			
WRGU 2110 AC	70			110	0.58		5×15				6×15		14.5			
WRGU 2125 AC	80			125	0.66		6×15				7×15		17			
WRGU 3055 AC	30	60	28	55	0.57	39	–	27.5	M4	25	1×25	15	5.5	40	5.5	M3×6
WRGU 3080 AC	45			80	0.8		1×25				2×25		10.5			
WRGU 3105 AC	60			105	1.03		2×25				3×25		15.5			
WRGU 3130 AC	75			130	1.26		3×25				4×25		20.5			
WRGU 3155 AC	90			155	1.49		4×25				5×25		25.5			
WRGU 3180 AC	105			180	1.72		5×25				6×25		30.5			
WRGU 3205 AC	130			205	1.95		6×25				7×25		30.5			
WRGU 4085 AC	50	80	35	85	1.5	53	–	42.5	M5	40	1×40	22.5	10.5	55	6.5	M3×6
WRGU 4125 AC	75			125	2.3		1×40				2×40		18.0			
WRGU 4165 AC	105			165	3.1		2×40				3×40		23.0			
WRGU 4205 AC	130			205	3.8		3×40				4×40		30.5			
WRGU 4245 AC	155			245	4.6		4×40				5×40		38.5			
WRGU 4285 AC	185			485	5.3		5×40				6×40		43 0			



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 (kN)	Stat. Co (kN)	⊿C	⊿D	
14	6.4	3.5×6×3.5	6.0	M3	M3	30	25	–	–	5	0.46	1.08	2	4	WRGU 2035 AC
							40	–	–		0.64	1.63	2	4	WRGU 2050 AC
							55	–	–		0.81	2.17	2	5	WRGU 2065 AC
							70	40	–		1.11	3.25	2	5	WRGU 2080 AC
							85	55	–		1.25	3.79	2	5	WRGU 2095 AC
							100	70	–		1.39	4.34	3	6	WRGU 2110 AC
							115	85	–		1.52	4.88	3	6	WRGU 2125 AC
18.5	9	4.5×7.5×5	7.5	M4	M4	40	35	–	–	10	2.71	3.67	2	5	WRGU 3055 AC
							60	–	–		4.06	6.11	2	5	WRGU 3080 AC
							85	–	–		4.68	7.33	3	6	WRGU 3105 AC
							110	–	–		5.86	9.78	3	6	WRGU 3130 AC
							135	–	85		6.98	12.2	3	6	WRGU 3155 AC
							160	–	110		8.05	14.7	3	7	WRGU 3180 AC
							185	85	135		8.57	15.9	3	7	WRGU 3205 AC
24	10.5	5.5×9.5×6	9.5	M4	M4	60	65	–	–	10	5.92	8.10	2	5	WRGU 4085 AC
							80	–	–	22.5	8.85	13.5	3	6	WRGU 4125 AC
							120	–	–	22.5	11.5	18.9	3	7	WRGU 4165 AC
							160	80	–	22.5	14.0	24.3	3	7	WRGU 4205 AC
							200	120	–	22.5	16.4	29.7	3	7	WRGU 4245 AC
							240	160	–	22.5	18.7	35.1	3	7	WRGU 4285 AC

1N ≒ 0.102kgf

WON

LINEAR MOTION SYSTEM