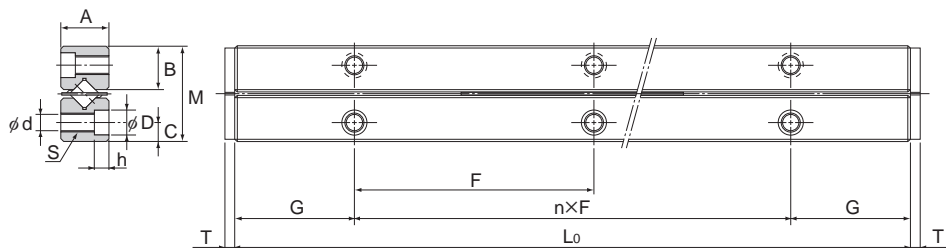


# Cross Roller Guide Model VR (VR1)



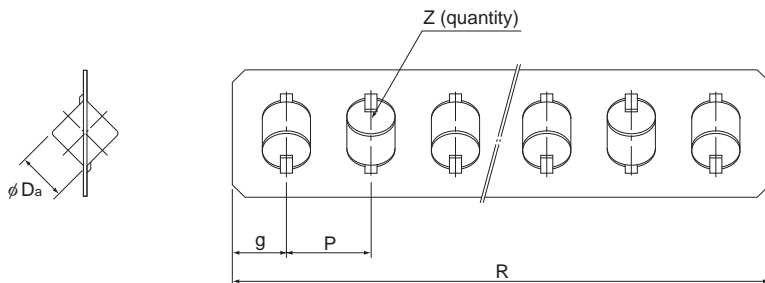
Model No.	Maximum stroke	Main								
		Combined dimensions			Mounting					
		M	A	L <sub>0</sub>	n×F	G	B	C	S	d
VR 1-20×5Z	12	8.5	4	20	1×10	5	3.9	1.8	M2	1.65
VR 1-30×7Z	22			30	2×10					
VR 1-40×10Z	27			40	3×10					
VR 1-50×13Z	32			50	4×10					
VR 1-60×16Z	37			60	5×10					
VR 1-70×19Z	42			70	6×10					
VR 1-80×21Z	52			80	7×10					

## Model number coding

**VR1 -30 H × 8Z**

|  
 | Accuracy symbol  
 | Dedicated rail dimension in mm  
 | (example of indication for a combination of different overall lengths: 40/50)  
 | Combined model number (for Ball Guide: VB)

Note) "One set" in the model No. above indicates a combination of four rails and two cages.



Unit: mm

dimensions								Permissible preload $\delta$ $\mu\text{m}$	Basic load rating (per roller)		Mass (rail) kg/m
dimensions									$C_z$ kN	$C_{oz}$ kN	
D	h	T	$D_a$	R	g	P	Z				
3	1.4	1.6	1.5	14	2	2.5	5	-2	0.152	0.153	0.11
				19			7				
				26.5			10				
				34			13				
				41.5			16				
				49			19				
				54			21				

Note) When desiring a Ball Guide in combination with a ball cage, refer to **A7-26** on Ball Cage Model B and indicate the required number of balls.

(Example) VB1-50H x  $\underline{12Z}$   
└─── Number of balls

The mass in the table indicates the value per rail/m.

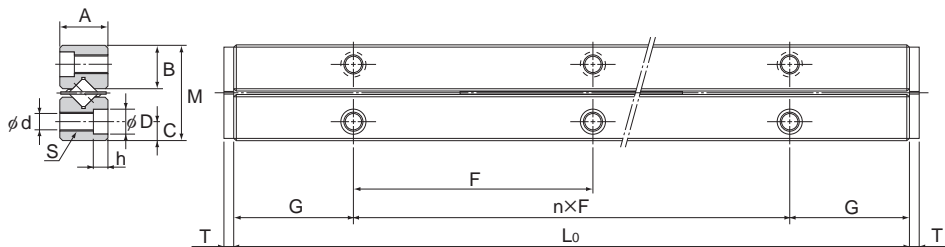
Stainless steel type with high corrosion resistance is also available. (symbol M, e.g., VR1M)

To fix the dedicated rail of model VR1, use cross-recessed screws for precision equipment (No. 0 screw).

Model No.	Type	Nominal name of screw $\times$ pitch
For model VR1	No. 0 pan-head screw (class 3)	M1.4 $\times$ 0.3

Japan Camera Industry Association Standard JCIS 10-70  
 Cross-recessed screw for precision equipment (No. 0 screw)

# Cross Roller Guide Model VR (VR2)



Model No.	Maximum stroke	Main								
		Combined dimensions			Mounting					
		M	A	L <sub>0</sub>	n×F	G	B	C	S	d
VR 2- 30×5Z	18	12	6	30	1×15	7.5	5.6	2.5	M3	2.55
VR 2- 45×8Z	24			45	2×15					
VR 2- 60×11Z	30			60	3×15					
VR 2- 75×13Z	44			75	4×15					
VR 2- 90×16Z	50			90	5×15					
VR 2-105×18Z	64			105	6×15					
VR 2-120×21Z	70			120	7×15					
VR 2-135×23Z	84			135	8×15					
VR 2-150×26Z	90			150	9×15					
VR 2-165×29Z	96			165	10×15					
VR 2-180×32Z	102			180	11×15					

## Model number coding

**VR2 -30 H × 6Z**

Number of rollers or balls

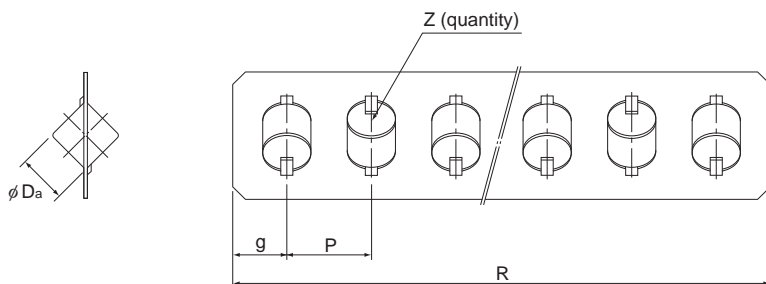
Accuracy symbol

Dedicated rail dimension in mm

(example of indication for a combination of different overall lengths: 90/105)

Combined model number (for Ball Guide: VB)

Note) "One set" in the model No. above indicates a combination of four rails and two cages.



Unit: mm

dimensions								Permissible preload $\delta$ $\mu\text{m}$	Basic load rating (per roller)		Mass (rail) kg/m
dimensions							No. of rollers Z		$C_z$ kN	$C_{oz}$ kN	
D	h	T	$D_a$	R	g	P		Z			
4.4	2	1.5	2	21	2.5	4	5	-3	0.276	0.271	0.23
				33			8				
				45			11				
				53			13				
				65			16				
				73			18				
				85			21				
				93			23				
				105			26				
				117			29				
			129			32					

Note) When desiring a Ball Guide in combination with a ball cage, refer to **A7-26** on Ball Cage Model B and indicate the required number of balls.

(Example) VB2-90H x 15Z

Number of balls

The mass in the table indicates the value per rail/m.

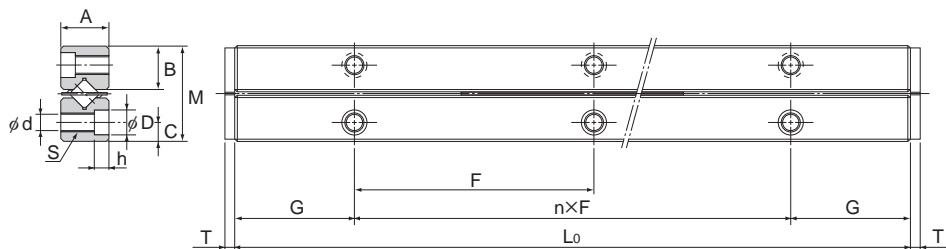
Stainless steel type with high corrosion resistance is also available. (symbol M, e.g., VR2M)

To fix the dedicated rail of model VR2, use cross-recessed screws.

Model No.	Type	Nominal name of screw X pitch
For model VR2	Pan Head Screw	M2×0.4

Cross-recessed screw JIS B 1111 (pan head screw)

## Cross Roller Guide Model VR (VR3)



Model No.	Maximum stroke	Main								
		Combined dimensions			Mounting					
		M	A	L <sub>0</sub>	n×F	G	B	C	S	d
VR 3- 50×7Z	28	18	8	50	1×25	12.5	8.3	3.5	M4	3.3
VR 3- 75×10Z	48			75	2×25					
VR 3-100×14Z	58			100	3×25					
VR 3-125×17Z	78			125	4×25					
VR 3-150×21Z	88			150	5×25					
VR 3-175×24Z	108			175	6×25					
VR 3-200×28Z	118			200	7×25					
VR 3-225×31Z	138			225	8×25					
VR 3-250×35Z	148			250	9×25					
VR 3-275×38Z	168			275	10×25					
VR 3-300×42Z	178			300	11×25					

### Model number coding

**VR3 -75 H × 9Z**

Number of rollers or balls

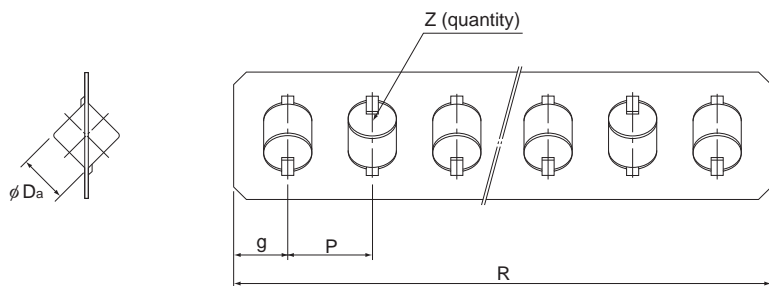
Accuracy symbol

Dedicated rail dimension in mm

(example of indication for a combination of different overall lengths: 100/125)

Combined model number (for Ball Guide: VB)

Note) "One set" in the model No. above indicates a combination of four rails and two cages.



Unit: mm

dimensions								Permissible preload $\delta$ $\mu\text{m}$	Basic load rating (per roller)		Mass (rail) kg/m	
dimensions							No. of rollers Z		$C_z$ kN	$C_{0z}$ kN		
D	h	T	$D_a$	R	g	P						
6	3.1	2	3	36	3	3	5	7	-4	0.639	0.611	0.45
				51				10				
				71				14				
				86				17				
				106				21				
				121				24				
				141				28				
				156				31				
				176				35				
				191				38				
				211				42				

Note) When desiring a Ball Guide in combination with a ball cage, refer to **A7-26** on Ball Cage Model B and indicate the required number of balls.

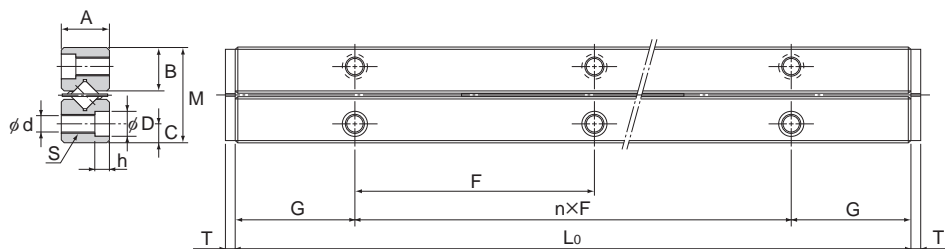
(Example) VB3-150H x 20Z

Number of balls

The mass in the table indicates the value per rail/m.

Stainless steel type with high corrosion resistance is also available. (symbol M, e.g., VR3M)

## Cross Roller Guide Model VR (VR4)



Model No.	Maximum stroke	Main								
		Combined dimensions			Mounting					
		M	A	L <sub>0</sub>	n×F	G	B	C	S	d
VR 4- 80×7Z	58	22	11	80	1×40	20	10.2	4.5	M5	4.3
VR 4-120×11Z	82			120	2×40					
VR 4-160×15Z	106			160	3×40					
VR 4-200×19Z	130			200	4×40					
VR 4-240×23Z	154			240	5×40					
VR 4-280×27Z	178			280	6×40					
VR 4-320×31Z	202			320	7×40					
VR 4-360×35Z	226			360	8×40					
VR 4-400×39Z	250			400	9×40					
VR 4-440×43Z	274			440	10×40					
VR 4-480×47Z	298			480	11×40					

### Model number coding

**VR4 -80 P × 9Z**

Number of rollers or balls

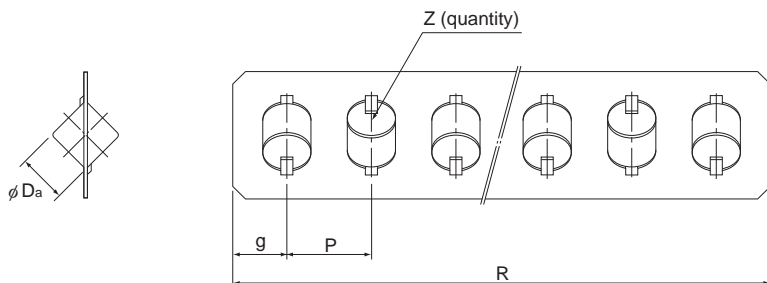
Accuracy symbol

Dedicated rail dimension in mm

(example of indication for a combination of different overall lengths: 120/160)

Combined model number (for Ball Guide: VB)

Note) "One set" in the model No. above indicates a combination of four rails and two cages.



Unit: mm

dimensions								Permissible preload $\delta$ $\mu\text{m}$	Basic load rating (per roller)		Mass (rail) kg/m	
dimensions							No. of rollers Z		$C_z$ kN	$C_{0z}$ kN		
D	h	T	$D_a$	R	g	P						
8	4.2	2	4	51	4.5	7		7	-5	1.38	1.35	0.8
				79				11				
				107				15				
				135				19				
				163				23				
				191				27				
				219				31				
				247				35				
				275				39				
				303				43				
			331			47						

Note) When desiring a Ball Guide in combination with a ball cage, refer to **A7-26** on Ball Cage Model B and indicate the required number of balls.

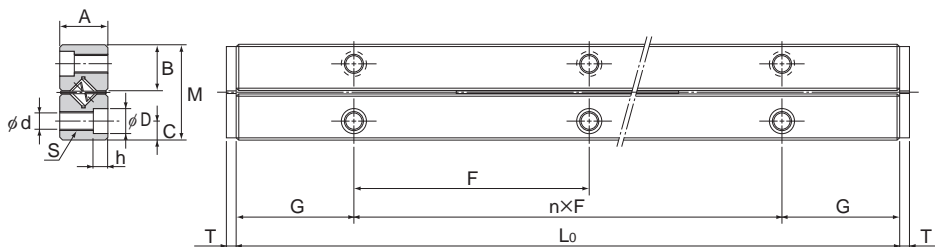
(Example) VB4-200H x 17  
└─── Number of balls

The mass in the table indicates the value per rail/m.

Stainless steel type with high corrosion resistance is also available. (symbol M, e.g., VR4M)



## Cross Roller Guide Model VR (VR6)



Model No.	Maximum stroke	Main								
		Combined dimensions			Mounting					
		M	A	L <sub>0</sub>	n×F	G	B	C	S	d
VR 6-100×7Z	56	30	15	100	1×50	25	14.4	6	M6	5.2
VR 6-150×10Z	96			150	2×50					
VR 6-200×13Z	136			200	3×50					
VR 6-250×17Z	156			250	4×50					
VR 6-300×20Z	196			300	5×50					
VR 6-350×24Z	216			350	6×50					
VR 6-400×27Z	256			400	7×50					
VR 6-450×31Z	276			450	8×50					
VR 6-500×34Z	316			500	9×50					
VR 6-550×38Z	336			550	10×50					
VR 6-600×41Z	376			600	11×50					

### Model number coding

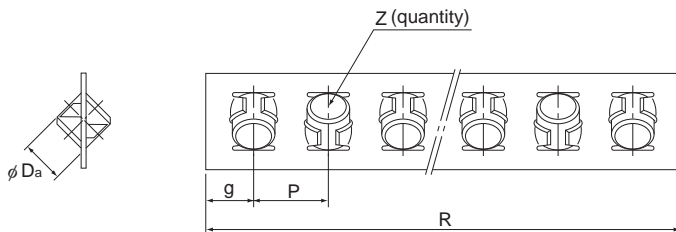
**VR6 -100 P × 6Z**

Number of rollers or balls  
Accuracy symbol

Dedicated rail dimension in mm  
(example of indication for a combination of different overall lengths: 300/400)

Combined model number (for Ball Guide: VB)

Note) "One set" in the model No. above indicates a combination of four rails and two cages.



Unit: mm

dimensions								Permissible preload $\delta$ $\mu\text{m}$	Basic load rating (per roller)		Mass (rail) kg/m
dimensions				No. of rollers					$C_z$ kN	$C_{0z}$ kN	
D	h	T	$D_a$	R	g	P	Z				
9.5	5.2	3.2	6	72	6	10	7	-7	3.78	3.78	1.5
				102			10				
				132			13				
				172			17				
				202			20				
				242			24				
				272			27				
				312			31				
				342			34				
				382			38				
				412			41				

Note) When desiring a Ball Guide in combination with a ball cage, refer to **A7-26** on Ball Cage Model B and indicate the required number of balls.

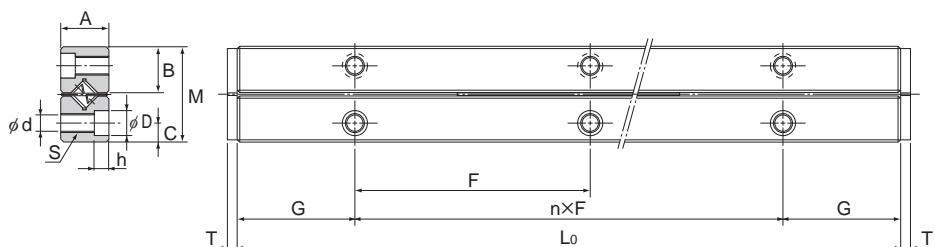
(Example) VB6-300H x18Z

— Number of balls

The mass in the table indicates the value per rail/m.

Stainless steel type with high corrosion resistance is also available. (symbol M, e.g., VR6M)

## Cross Roller Guide Model VR (VR9)



Model No.	Maximum stroke	Main								
		Combined dimensions			Mounting					
		M	A	L <sub>0</sub>	n×F	G	B	C	S	d
VR 9- 200×10Z	118	40 (40.74)	20	200	1×100	50	19.2	8	M8	6.8
VR 9- 300×15Z	178			300	2×100					
VR 9- 400×20Z	238			400	3×100					
VR 9- 500×25Z	298			500	4×100					
VR 9- 600×30Z	358			600	5×100					
VR 9- 700×35Z	418			700	6×100					
VR 9- 800×40Z	478			800	7×100					
VR 9- 900×45Z	538			900	8×100					
VR 9-1000×50Z	598			1000	9×100					
VR 9-1100×55Z	658			1100	10×100					
VR 9-1200×60Z	718			1200	11×100					

### Model number coding

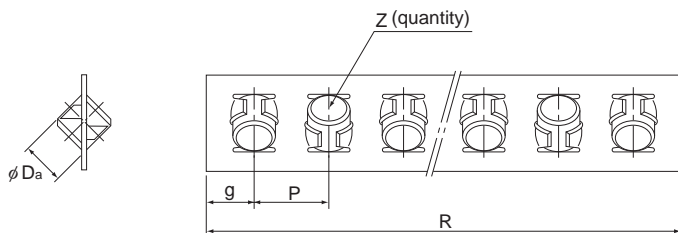
**VR9 -600 H × 30Z**

Number of rollers or balls  
Accuracy symbol

Dedicated rail dimension in mm  
(example of indication for a combination of different overall lengths: 300/400)

Combined model number (for Ball Guide: VB)

Note) "One set" in the model No. above indicates a combination of four rails and two cages.



Unit: mm

dimensions								Permissible preload $\delta$ $\mu\text{m}$	Basic load rating (per roller)		Mass (rail) kg/m
dimensions							No. of rollers $Z$		$C_z$ kN	$C_{oz}$ kN	
D	h	T	$D_a$	R	g	P					
10.5	6.2	4	9 (9.525)	141	7.5	14	10	-10	9.53	9.48	3.2
				211			15				
				281			20				
				351			25				
				421			30				
				491			35				
				561			40				
				631			45				
				701			50				
				771			55				
			841			60					

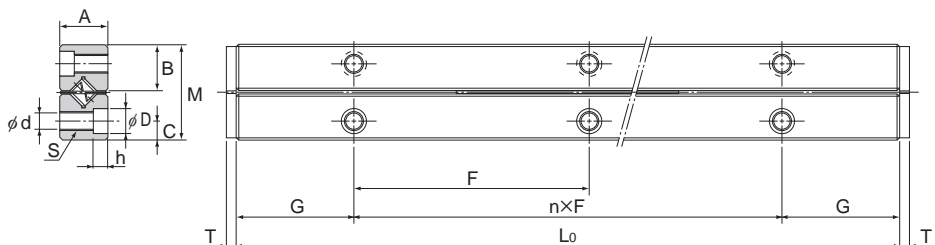
Note) The dimensions in the parentheses above indicate the dimensions of the Ball Guide.  
When desiring a Ball Guide in combination with a ball cage, refer to **A7-26** on Ball Cage Model B and indicate the required number of balls.

(Example) VB9-700H x 33Z  
└─── Number of balls

The mass in the table indicates the value per rail/m.

Stainless steel type with high corrosion resistance is also available. (symbol M, e.g., VR9M)

## Cross Roller Guide Model VR (VR12)



Model No.	Maximum stroke	Main								
		Combined dimensions			Mounting					
		M	A	L <sub>0</sub>	n×F	G	B	C	S	d
VR12- 200× 7Z	110	58 (57.86)	28	200	1×100	50	28	12	M10	8.5
VR12- 300×10Z	190			300	2×100					
VR12- 400×14Z	230			400	3×100					
VR12- 500×17Z	310			500	4×100					
VR12- 600×21Z	350			600	5×100					
VR12- 700×24Z	430			700	6×100					
VR12- 800×28Z	470			800	7×100					
VR12- 900×31Z	550			900	8×100					
VR12-1000×34Z	630			1000	9×100					
VR12-1100×38Z	670			1100	10×100					
VR12-1200×41Z	750			1200	11×100					

### Model number coding

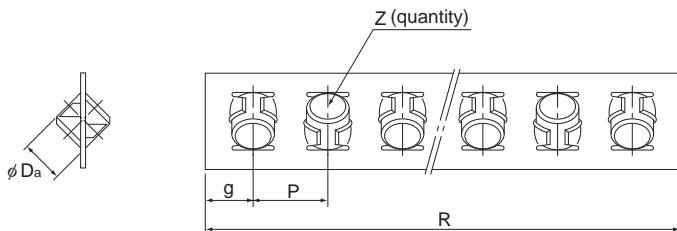
**VR12 -200 P × 9Z**

Number of rollers or balls  
Accuracy symbol

Dedicated rail dimension in mm  
(example of indication for a combination of different overall lengths: 300/400)

Combined model number (for Ball Guide: VB)

Note) "One set" in the model No. above indicates a combination of four rails and two cages.



Unit: mm

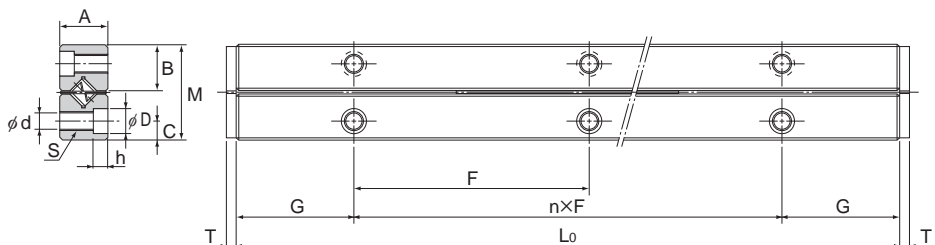
dimensions								Permissible preload $\delta$ $\mu\text{m}$	Basic load rating (per roller)		Mass (rail)  kg/m
dimensions							No. of rollers  Z		$C_z$ kN	$C_{0z}$ kN	
D	h	T	$D_a$	R	g	P					
14	8.2	5	12 (11.906)	145	12.5	20	7	-13	17.6	17.2	5.3
				205			10				
				285			14				
				345			17				
				425			21				
				485			24				
				565			28				
				625			31				
				685			34				
				765			38				
				825			41				

Note) The dimensions in the parentheses above indicate the dimensions of the Ball Guide.  
When desiring a Ball Guide in combination with a ball cage, refer to **A7-26** on Ball Cage Model B and indicate the required number of balls.

(Example) VB12-700H x 20Z  
└─── Number of balls

The mass in the table indicates the value per rail/m.  
Stainless steel type with high corrosion resistance is also available. (symbol M, e.g., VR12M)

# Cross Roller Guide Model VR (VR15)



Model No.	Maximum stroke	Main								
		Combined dimensions			Mounting					
		M	A	L <sub>0</sub>	n×F	G	B	C	S	d
VR15- 300× 8Z	190	71 (71.11)	36	300	2×100	50	34.4	14	M12	10.5
VR15- 400×11Z	240			400	3×100					
VR15- 500×13Z	340			500	4×100					
VR15- 600×16Z	390			600	5×100					
VR15- 700×19Z	440			700	6×100					
VR15- 800×22Z	490			800	7×100					
VR15- 900×25Z	540			900	8×100					
VR15-1000×27Z	640			1000	9×100					
VR15-1100×30Z	690			1100	10×100					
VR15-1200×33Z	740			1200	11×100					

## Model number coding

**VR15 -300 H × 10Z**

Number of rollers or balls

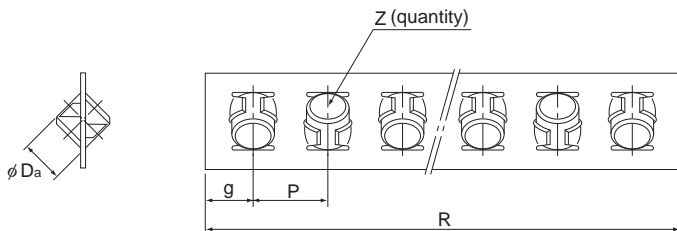
Accuracy symbol

Dedicated rail dimension in mm

(example of indication for a combination of different overall lengths: 300/400)

Combined model number (for Ball Guide: VB)

Note) "One set" in the model No. above indicates a combination of four rails and two cages.



Unit: mm

dimensions								Permissible preload $\delta$ $\mu\text{m}$	Basic load rating (per roller)		Mass (rail) kg/m
dimensions							No. of rollers Z		$C_z$ kN	$C_{0z}$ kN	
D	h	T	$D_a$	R	g	P					
17.5	10.2	6	15 (15.081)	205	15	25	8	-16	27.9	26.8	8.3
							11				
							13				
							16				
							19				
							22				
							25				
							27				
							30				
							33				

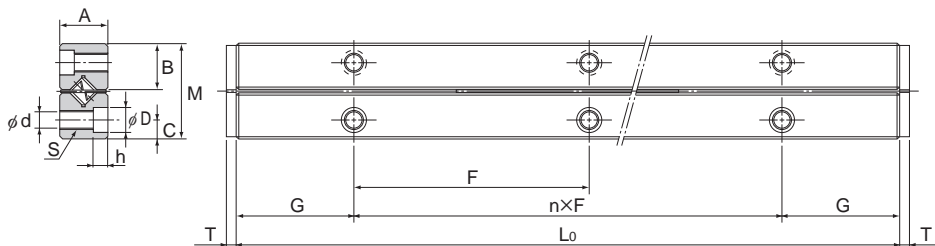
Note) The dimensions in the parentheses above indicate the dimensions of the Ball Guide.  
When desiring a Ball Guide in combination with a ball cage, refer to **A7-26** on Ball Cage Model B and indicate the required number of balls.

(Example) VB15-800H x 20Z  
└─── Number of balls

The mass in the table indicates the value per rail/m.  
Stainless steel type with high corrosion resistance is also available. (symbol M, e.g., VR15M)



# Cross Roller Guide Model VR (VR18)



Model No.	Maximum stroke	Main								
		Combined dimensions			Mounting					
		M	A	L <sub>0</sub>	n×F	G	B	C	S	d
VR18-300×6Z	228	83	40	300	2×100	50	40.2	18	M14	12.5
VR18-400×9Z	248			400	3×100					
VR18-500×11Z	328			500	4×100					
VR18-600×13Z	408			600	5×100					
VR18-700×16Z	428			700	6×100					
VR18-800×18Z	508			800	7×100					
VR18-900×20Z	588			900	8×100					
VR18-1000×23Z	608			1000	9×100					
VR18-1100×25Z	688			1100	10×100					
VR18-1200×27Z	768			1200	11×100					

## Model number coding

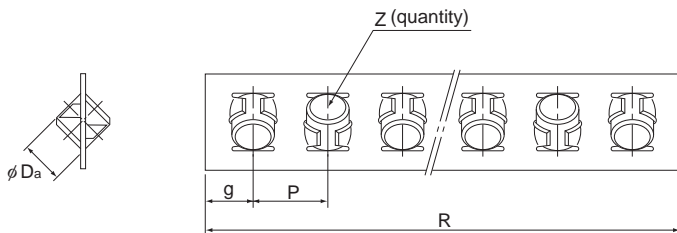
**VR18 -400 H × 10Z**

Number of rollers or balls  
Accuracy symbol

Dedicated rail dimension in mm  
(example of indication for a combination of different overall lengths: 300/400)

Combined model number (for Ball Guide: VB)

Note) "One set" in the model No. above indicates a combination of four rails and two cages.

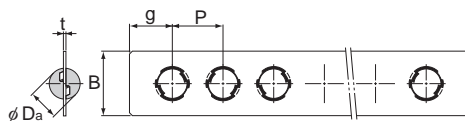


Unit: mm

dimensions								Permissible preload $\delta$ $\mu\text{m}$	Basic load rating (per roller)		Mass (rail) kg/m
dimensions							No. of rollers Z		$C_z$ kN	$C_{0z}$ kN	
D	h	T	$D_a$	R	g	P					
20	12.2	6	18	186	18	30	6	-18	40.9	38.8	10.5
				276			9				
				336			11				
				396			13				
				486			16				
				546			18				
				606			20				
				696			23				
				756			25				
				816			27				

Note) The mass in the table indicates the value per rail/m.  
Stainless steel type with high corrosion resistance is also available. (symbol M, e.g., VR18M)

## Ball Cage Model B



Unit: mm

Model No.	Main dimensions					Basic load rating (per ball)		Combined rail
	$D_a$	t	B	P	g	$C_z$ N	$C_{0z}$ N	
B 1	1.5	0.2	3.5	2.5	2	7.84	21.6	V1
B 2	2	0.3	5	4	3	12.7	39.2	V2
B 3	3	0.4	7	6	4.5	27.5	87.3	V3
B 4	4	0.5	9	7	4.5	45.1	155	V4
B 6	6	0.6	13.5	10	6	98	353	V6
B 9	9.525	1	19	14	8.5	216	784	V9
B 12	11.906	1	25	20	12.5	324	1420	V12
B 15	15.081	1.2	31	25	15	490	2160	V15

