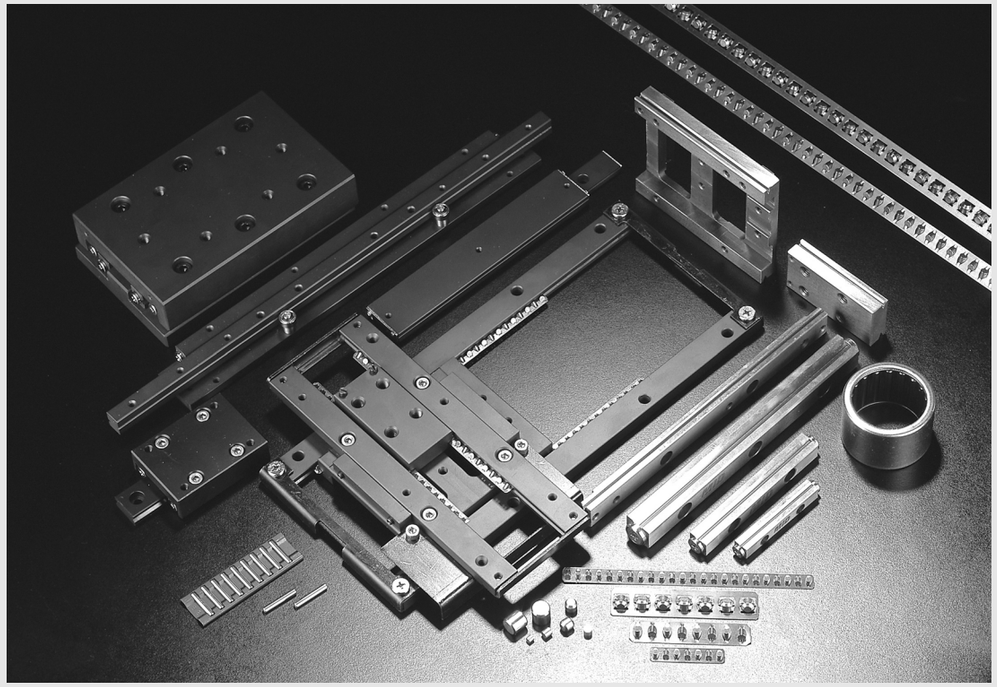
Cross Roller Guide

Technical Data / Cross Roller Guide SCVR Type /
Cross Roller Table SCVRT Type, SCVRU Type

CROSS ROLLER GUIDE

SBC cross roller guides are mechanical bearings where a roller cage is assembled between two rails with “V” grooved raceway. Since the rollers are incorporated at right angles to each other, they can carry loads in all directions to create a highly rigid, high precision, compact linear motion guide.

The cross roller guide is commonly used in : Measuring and Optical instruments and other applications requiring high precision linear motion.



[SBC Cross roller products]

- CROSS ROLLER GUIDE : SCVR
  A combination of four rails and two cages.
- CROSS ROLLER TABLE : SCVRT, SCVRU
  A stage using cross roller guides for precision motion.

Cross Roller Guide

Technical Data

Basic dynamic load rating

The basic dynamic load rating is the guide’s load capacity with a constant direction and constant magnitude load where a group of identical cross roller guides operating under the same conditions will last for at least 100Km of travel.

[Basic dynamic load rating symbol]

SCVR (Cross roller guide) : Cz (kN)

SCVRT, SCVRU (Cross roller table) : C (kN)

Basic static load rating

The basic static load rating is the guide’s load capacity with a constant direction and constant magnitude load where the total permanent deformation of roller and raceway equals 0.0001 times the roller diameter.

[Basic static load rating symbol]

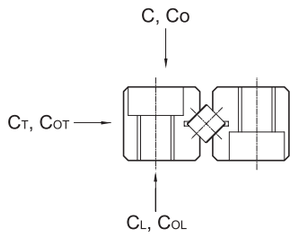
SCVR (Cross roller guide) : Coz (kN)

SCVRT, SCVRU(Cross roller table) : Co (kN)

Rated loads in all directions

[SCVR(Cross roller guide) rated load]

The dynamic load rating and static load rating in the tables is per roller. To calculate the load capacity for the bearing set, use the equation below.



$C_O = C_L = \left(\frac{Z}{2}\right)^{\frac{3}{4}} \times C_Z,\ C_T = 2C$

$C_O = C_{OL} = \left(\frac{Z}{2}\right)^{\frac{3}{4}} \times C_{OZ},\ C_{OT} = 2C_O$

($\frac{Z}{2}$ Delete below the decimal point.)

[SCVRT, SCVRU(Cross roller table) rated load]

The rated loads of models SCVRT and SCVRU are equal in all four directions (radial, reverse radial, lateral directions) and their rated load values are same as C and Co from the specification table.

Static Safety Factors (fs)

When Cross roller guide products are used in applications, they may carry unexpected loads. For example, reciprocating machines typically create moment loads because of an offset center-of-gravity and the acceleration.

When selecting the right cross roller guide products, consider all of the loads.

$$f_S = \frac{C_O}{P}$$ (Radial Load)

$$f_S = \frac{M_O}{M}$$ (Moment Load)

- Co : Basic dynamic load rating
- P : Calculated load
- Mo : Static permissible moment (Mpo, Mro, Myo)
- M : Loaded moment

(Reference value of fs)

Operating conditions	Load conditions	fs
Occasional operating	Small impact	1.0 ~ 1.3
	Impact or Twisting load	2.0 ~ 3.0
Ordinary operating	Normal load	1.0 ~ 1.5
	Impact or Twisting load	2.5 ~ 7.0

Cross Roller Guide

Technical Data

Life Calculation

The life calculation of a cross roller guide is calculated using the equation below.

[Nominal life]

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

- L (km) : Nominal life
- P (N) : Calculated load
- C (N) : Basic dynamic load rating
- fT : Temperature factor
- fw : Load factor

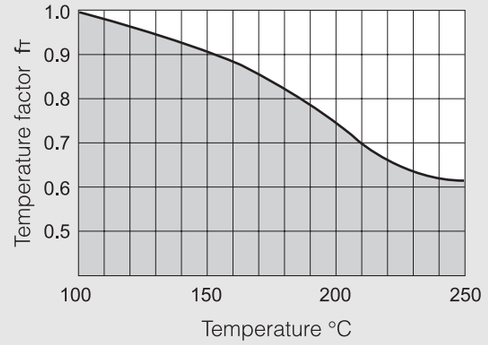
Temperature factor (fT)

If the temperature of the environment is over 100°C, the bearing capacity must be derated according to the chart.

The temperature factor (fT) should be utilized.

※ Under 80°C, fT= 1.0

※ Over 80°C, Contact SBC



Load factor (fw)

Reciprocating machines typically create vibrations which are very difficult to calculate precisely. Please refer to the following table to compensate for these vibrations.

Vibration and Impact	Velocity (V)	Load factor f_w
Very slight	Very low $V \leqq 0.25$m/s	1 ~ 1.2
Slight	Low $0.25 < V \leqq 1.0$m/s	1.2 ~ 1.5
Moderate	Medium $1.0 < V \leqq 2.0$m/s	1.5 ~ 2.0
Strong	High $V < 2.0$m/s	2.0 ~ 3.5

[Calculating Service life time]

After the nominal life in Km is calculated, the stroke and reciprocation frequency can be used to calculate the service life time using the equation below.

- L_h (h) : Service life time
- L (km) : Nominal life
- ℓ_s (mm) : Stroke
- n_1 (min^{-1}) : Reciprocation cycles per minute

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

Clearance and Preload

It is easy to adjust the preload of a cross roller guide, please refer to preload adjustment section of the catalog.

Accuracy

Refer to the catalog page of the specific model number for the specified accuracy.

Mounting method

Refer to the catalog pages of each model no.

Lubrication

Prevent abrasion and generation of heat, please use grease to lubricate properly.

[Grease lubrication]

❶ Clean before lubricating with grease
Before lubricating the raceways with grease, the anti-rust oil must be removed. Mixing anti-rust oil and grease can reduce the effectiveness of the grease.

❷ Recommended grease
Lithium-based grease.

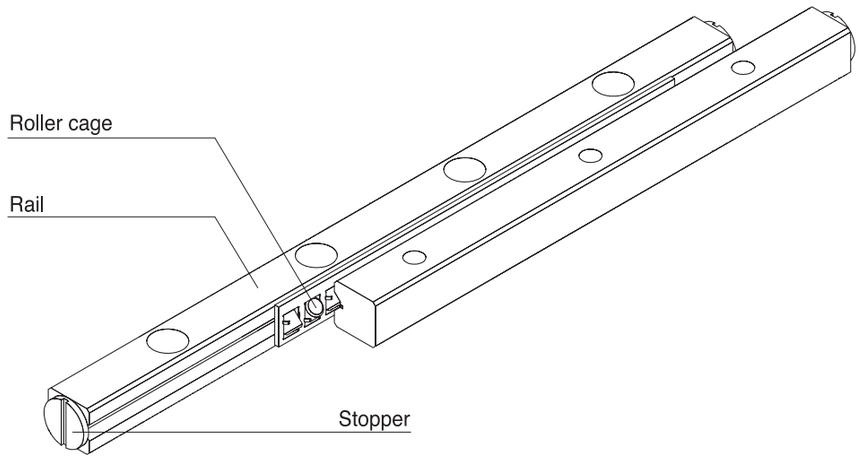
[Oil lubrication]

When lubricating with oil, the anti-rust oil does not need to be removed prior to lubrication.
We recommend to using lubricant: VG15~100, ISO Viscosity grades

Cross Roller Guide

Cross Roller Guide SCVR Type

Structure and Features



SCVR type is a liner guide where the ball cage is assembled to between the rails with “V” grooved raceway. Since the rollers are incorporated at right angles to each other, they can carry loads in all directions to form a highly rigid, high precision, compact linear motion guide.

[High rigidity]

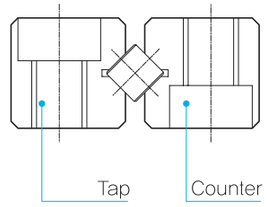
SBC cross roller guides have no clearance and can be preloaded easily. They have high rigidity due to roller’s long contact length and preload.

[Smooth movement]

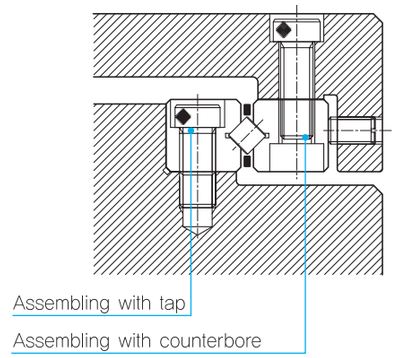
SBC cross roller guides have high precision raceways, where precision rollers are spaced apart in a roller cage creating smooth movement with a low coefficient of friction.

[Easy mounting]

Since mounting holes in raceways are counter bored with tapped holes, it is possible to mount the guide in both directions.

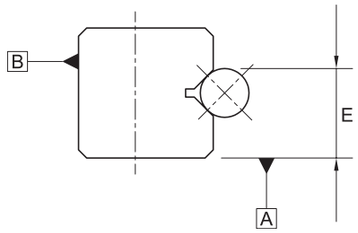


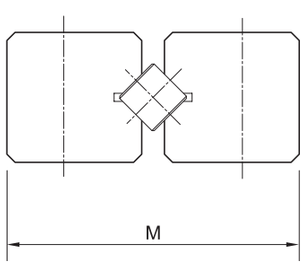
(Dedicated rail mounting hole)



(How to mount bolts on dedicated rails)

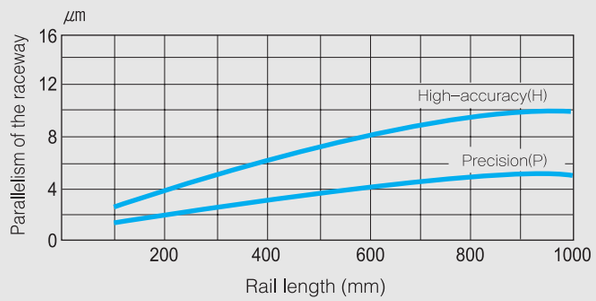
Accuracy Standards



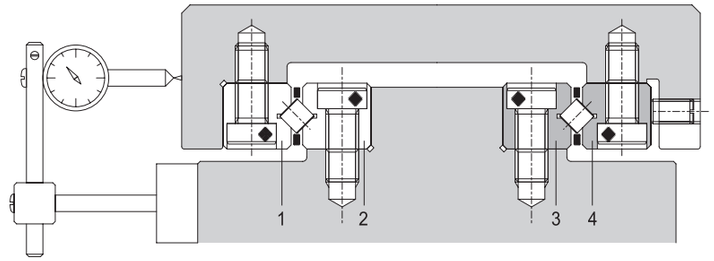


Accuracy grades	H (High-accuracy)	P (Precision)
Parallelism of the raceway against Surfaces A and B	See Graph	
Dimensional tolerance in height E	±0.02	±0.01
Difference in height E (*)	0.01	0.005
Dimensional tolerance in width M	0 ~ -0.2	0 ~ -0.1

(*The difference in height E applies to four rails used on the same plane.)



Mounting Method



❶ Install the rails 2 and 3 to base and rail 1 to table. Tighten the rail-mounting bolts ensuring the rails are firmly against the mounting surfaces.

❷ Temporarily mount the rail 4 to the table.
(※ When designing the system, please remember that the rail must be mounted and tightened after assembly)

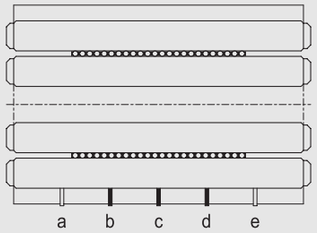
❸ Set the base and table according to G-8 and insert the roller cages. If the cages will not fit due to clearance, move the rail 4 slightly to create more clearance and insert cages.

❹ Set a dial gauge like G-8. While moving the table slowly back and forth, set all preloading bolts until there is no clearance.

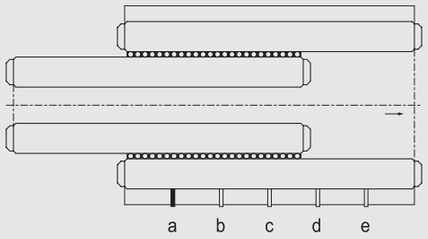
❺ Install end stops in the ends of the rails.

❻ Reset the cage position to get required stroke while moving table.

❼ Position roller cage in the center of the rail as in G-9. Tighten the preload bolts b, c, d evenly with a torque wrench within the area of roller until dial gauge shows desired value.
(※ The value of dial gauge is same as the preload of one roller.)



❽ Move table like G-9 and tighten the rest of the adjusting bolts a,e the same as adjusting bolts b,c,d.

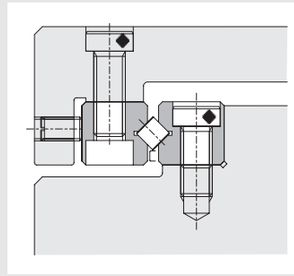


[Assembling two or more units]

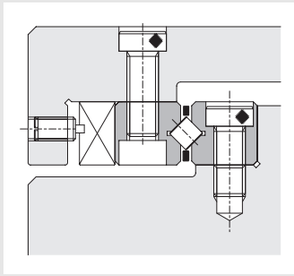
When mounting two or more units, first gauge the tightening torque of the adjustment bolts for the first unit or the sliding resistance of the first unit. And then, install the second unit so that their tightening torques or sliding resistances equal that of the first unit. In this method, almost the same preload can be provided.

Clearance adjusting

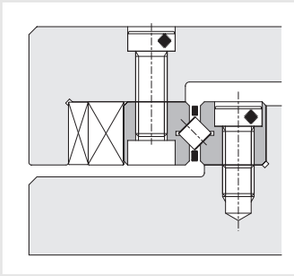
Design the preload method to uniformly preload the rail over the entire length.



❶ Normal



❷ Using pressing plate



❸ Using tapered gibs

❶ Normal : Most common method of preloading using a setscrew to push the rail.
❷ Press plate : A press plate should be used when higher precision and smoothness is needed
❸ Tapered gibs : Use tapered gibs when high rigidity and precision is needed.

Preload

Too much preload may cause indentation (brinelling) and reduce the service life. The acceptable preload per roller is shown in the specification table. Tighten the adjustment bolts while watching the displacement of the roller contact area.

Accuracy of the Mounting Surface

To acquire a high level of running accuracy a high level of parallelism and straightness is required in the mounting surfaces. The parallelism and flatness of the rail mounting surface should be completed by grinding to at least the same precision as the rail (See page no. ⓔ/10)

Additionally, the rails must be securely mounted up against the mounting surfaces.

Cross Roller Guide

Cross Roller Guide SCVR Type

Precautions

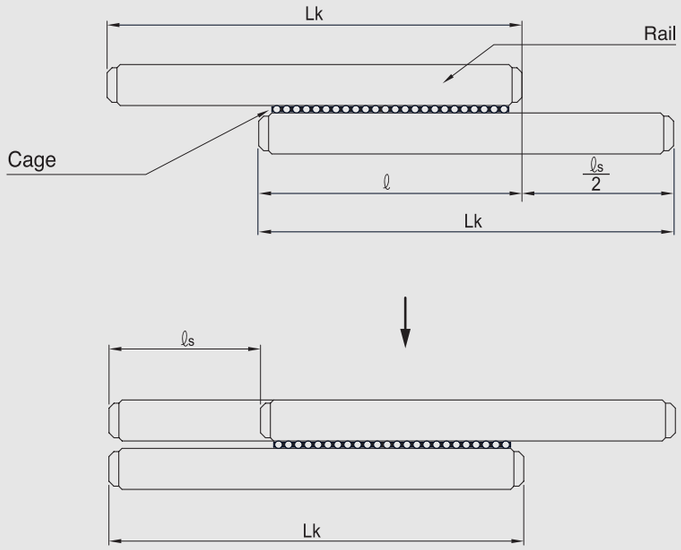
※ When using a cross roller guide, please follow these precautions.

[Rail length]

The roller cage move the half the travel distance of the table in the same direction.

If the cage length is ℓs, the rail length (Lk) must match the following equation to prevent the cage from crashing into the end of the rail.

$$Lk \leq \ell + \frac{\ell s}{2}$$



[Cage Creep]

The roller cage moves accurately but it may drift off center over time (cage creep) due to vibrations, inertia or impact.

Please mount an external stop for the table. Do not depend on the rail end stops to control the travel.

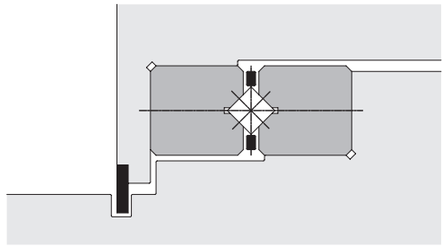
[Rail End Stops]

The purpose of Rail End Stops is to prevent the roller cage from coming outside of the rail. The rail end stops are attached to the end of the rails.

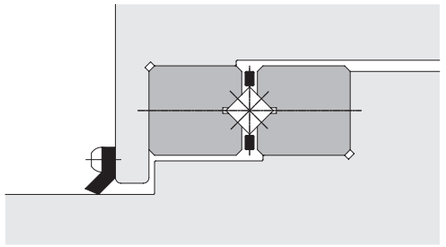
If the cages frequently bump into the rail end stops, they may become damaged or loosen the rail end stops.

[Protection against dust]

To prevent the cross roller guide from dust and debris, side dust protections as shown in figure G-13 are available. For the other part of guide, consider using bellows or telescopic cover.



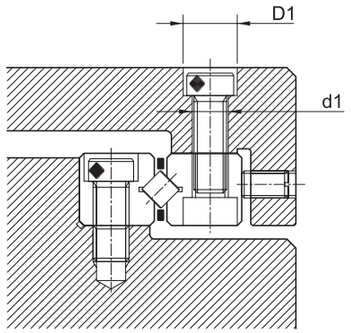
Labyrinth cover



Wiper seal

Design Mounting Bolt

The holes of the bolt(D1, d1) should be designed carefully for the preload adjustment.



Ordering Example

[Cross roller guide]

SCVR 2 P – 75 x 13Z – R
[1] [2] [3] [4] [5]

[1] Model No. : SCVR 1, 2, 3, 4, 6, 9 type
[2] Accuracy Grade : H(High), P(Precision)
[3] Rail Length
[4] Number of Rollers
[5] Surface treatment : No Symbol (Standard), R (Surface treatment)

※ A combination of four rails and two cages.
※ When ordering surface treatment, please fill out Symbols for surface treatment.
❶ Standard (no treatment), Black Chrome coating (Raydent treatment), Fluorocarbon resin coating, Hard Chrome plating
❷ Contact SBC for special surface treatment.

[Roller Cage]

SCVR 2 x 13Z
[1] [2]

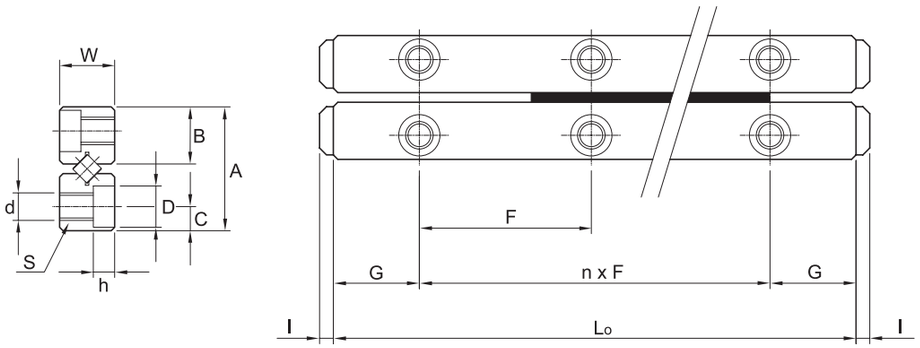
[1] Model No. : SCVR 1, 2, 3, 4, 6, 9 type
[2] Number of Rollers

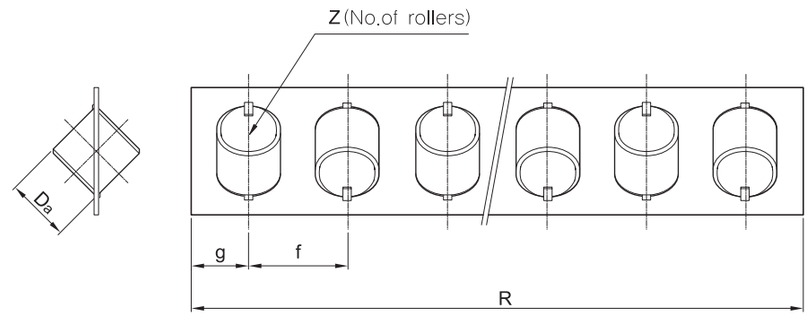
Cross Roller Guide

Cross Roller Guide SCVR Type

Cross Roller Guide SCVR Type

SCVR1 Type





(Unit : mm)

Model No.	Max Stroke	Combined Dimensions			Assembled Dimensions					
		A	W	Lo	nxF	G	B	C	S	d
SCVR1-20x5Z	12	8.5	4	20	1x10	5	3.9	1.8	M2	1.65
SCVR1-30x7Z	22			30	2x10					
SCVR1-40x10Z	27			40	3x10					
SCVR1-50x13Z	32			50	4x10					
SCVR1-60x16Z	37			60	5x10					
SCVR1-70x19Z	42			70	6x10					
SCVR1-80x21Z	52			80	7x10					

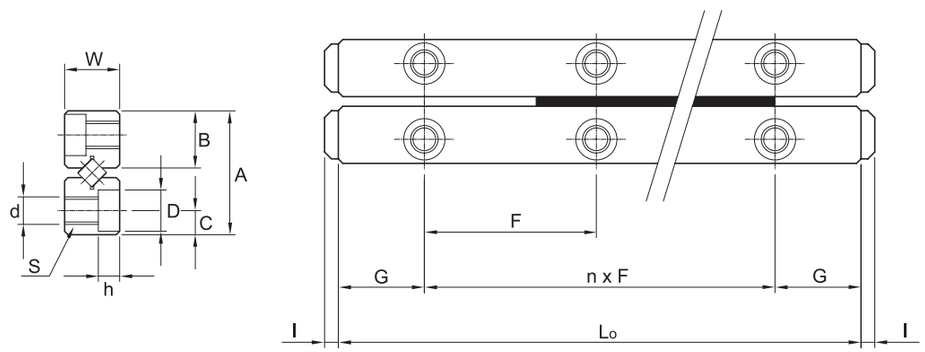
(Unit : mm)

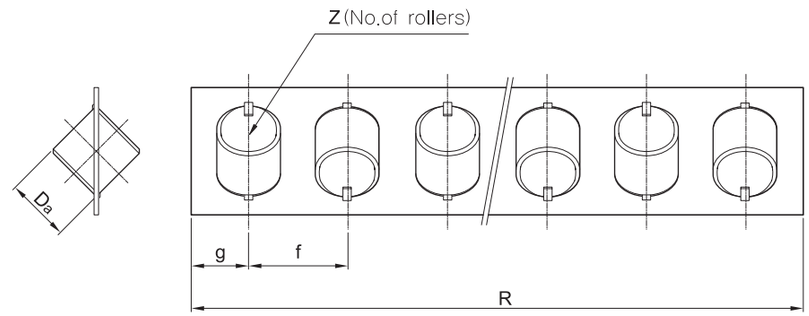
Assembled Dimensions			Roller Cage Dimensions				No. of Rollers	Permissible Preload	Basic Load Rating (per roller)		Mass (Rail) [Kg/m]
D	h	l	Da	R	g	f	Z		Cz[kN]	Coz[kN]	
3	1.4	1.6	1.5	14	2	2.5	5	-0.002	0.098	0.069	0.11
				19			7				
				26.5			10				
				34			13				
				41.5			16				
				49			19				
				54			21				

Cross Roller Guide

Cross Roller Guide SCVR Type

SCVR2 Type





(Unit : mm)

Model No.	Max Stroke	Combined Dimensions			Assembled Dimensions					
		A	W	Lo	nxF	G	B	C	S	d
SCVR2-30x5Z	18	12	6	30	1x15	7.5	5.6	2.5	M3	2.55
SCVR2-45x8Z	24			45	2x15					
SCVR2-60x11Z	30			60	3x15					
SCVR2-75x13Z	44			75	4x15					
SCVR2-90x16Z	50			90	5x15					
SCVR2-105x18Z	64			105	6x15					
SCVR2-120x21Z	70			120	7x15					
SCVR2-135x23Z	84			135	8x15					
SCVR2-150x26Z	90			150	9x15					
SCVR2-165x29Z	96			165	10x15					
SCVR2-180x32Z	102			180	11x15					

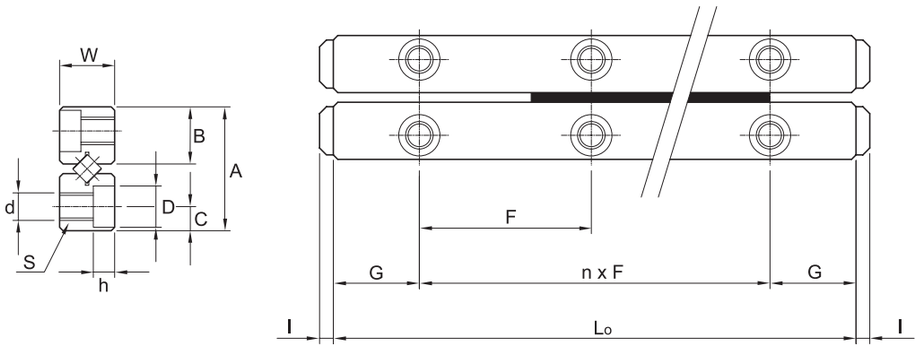
Assembled Dimensions			Roller Cage Dimensions				No. of Rollers	Permissible Preload	Basic Load Rating (per roller)		Mass (Rail) [Kg/m]
D	h	l	Da	R	g	f	Z		Cz[kN]	Coz[kN]	
4.4	2	1.5	2	21	2.5	4	5	-0.003	0.176	0.127	0.23
				33			8				
				45			11				
				53			13				
				65			16				
				73			18				
				85			21				
				93			23				
				105			26				
				117			29				
				129			32				

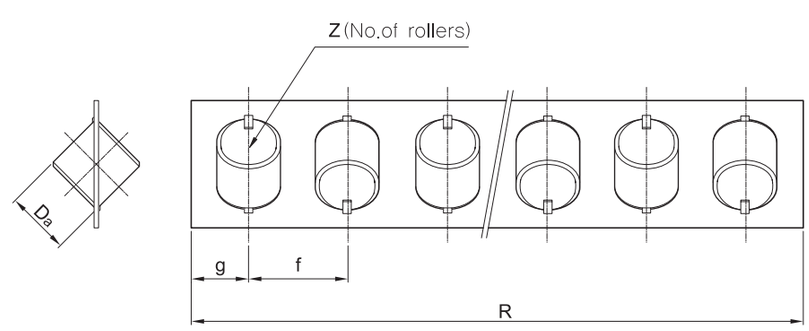
Cross Roller Guide

Cross Roller Guide SCVR Type

Cross Roller Guide SCVR Type

SCVR3 Type





(Unit : mm)

Model No.	Max Stroke	Combined Dimensions			Assembled Dimensions					
		A	W	Lo	nxF	G	B	C	S	d
SCVR3-50x7Z	28	18	8	50	1x25	12.5	8.3	3.5	M4	3.8
SCVR3-75x10Z	48			75	2x25					
SCVR3-100x14Z	58			100	3x25					
SCVR3-125x17Z	78			125	4x25					
SCVR3-150x21Z	88			150	5x25					
SCVR3-175x24Z	108			175	6x25					
SCVR3-200x28Z	118			200	7x25					
SCVR3-225x31Z	138			225	8x25					
SCVR3-250x35Z	148			250	9x25					
SCVR3-275x38Z	168			275	10x25					
SCVR3-300x42Z	178			300	11x25					

(Unit : mm)

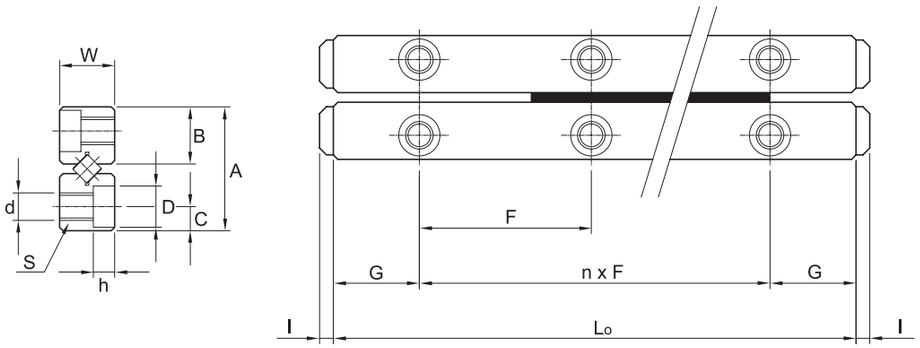
Assembled Dimensions			Roller Cage Dimensions				No. of Rollers	Permissible Preload	Basic Load Rating (per roller)		Mass (Rail) [Kg/m]
D	h	l	Da	R	g	f	Z		Cz [kN]	Coz [kN]	
6	3.1	2	3	36	3	5	7	-0.004	0.363	0.275	0.45
				51			10				
				71			14				
				86			17				
				106			21				
				121			24				
				141			28				
				156			31				
				176			35				
				191			38				
				211			42				

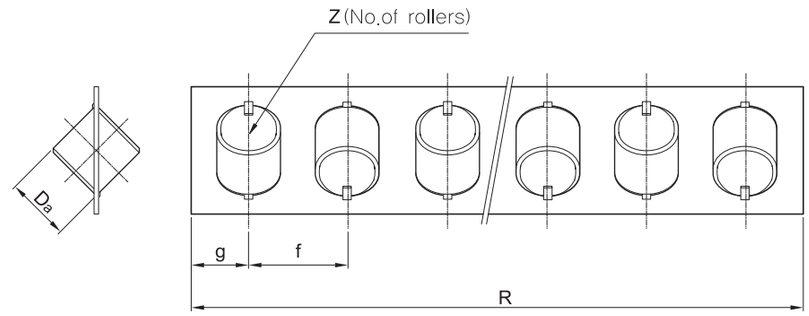
Cross Roller Guide

Cross Roller Guide SCVR Type

Cross Roller Guide SCVR Type

SCVR4 Type



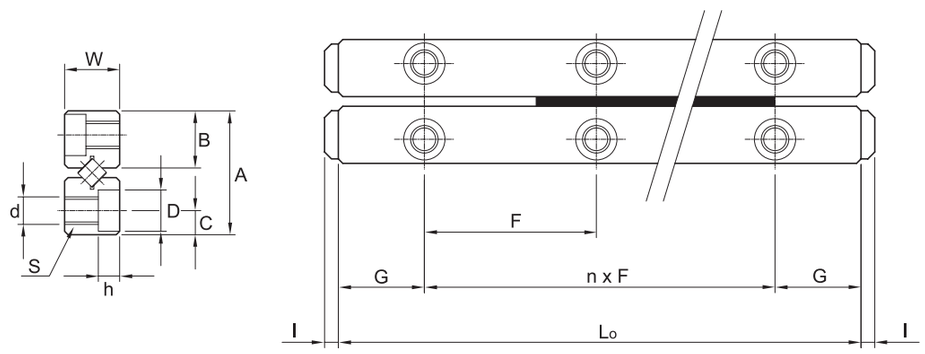


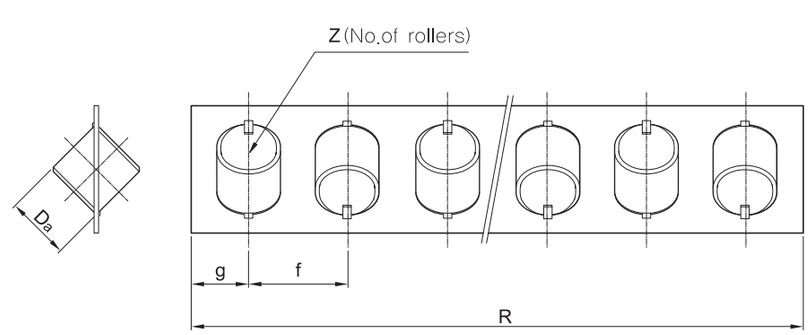
(Unit : mm)

Model No.	Max Stroke	Combined Dimensions			Assembled Dimensions					
		A	W	Lo	nxF	G	B	C	S	d
SCVR4-80x7Z	58	22	11	80	1x40	20	10.2	4.5	M5	4.3
SCVR4-120x11Z	82			120	2x40					
SCVR4-160x15Z	106			160	3x40					
SCVR4-200x19Z	130			200	4x40					
SCVR4-240x23Z	154			240	5x40					
SCVR4-280x27Z	178			280	6x40					
SCVR4-320x31Z	202			320	7x40					
SCVR4-360x35Z	226			360	8x40					
SCVR4-400x39Z	250			400	9x40					
SCVR4-440x43Z	274			400	10x40					
SCVR4-480x47Z	298			480	11x40					

Assembled Dimensions			Roller Cage Dimensions				No. of Rollers	Permissible Preload	Basic Load Rating (per roller)		Mass (Rail) [Kg/m]
D	h	I	Da	R	g	f	Z		Cz [kN]	Coz [kN]	
8	4.2	2	4	51	4.5	7	7	-0.005	0.764	0.637	0.8
				79			11				
				107			15				
				135			19				
				163			23				
				191			27				
				219			31				
				247			35				
				275			39				
				303			43				
				331			47				

SCVR6 Type





(Unit : mm)

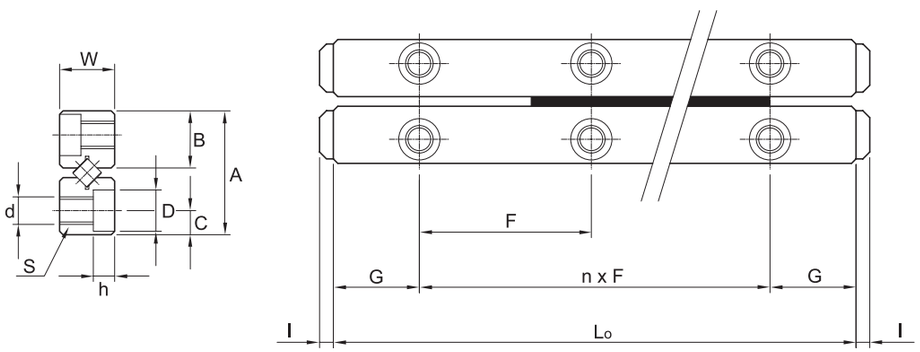
Model No.	Max Stroke	Combined Dimensions			Assembled Dimensions					
		A	W	Lo	nxF	G	B	C	S	d
SCVR6-100x7Z	56	30	15	100	1x50	25	14.4	6	M6	5.2
SCVR6-150x10Z	96			150	2x50					
SCVR6-200x13Z	136			200	3x50					
SCVR6-250x17Z	156			250	4x50					
SCVR6-300x20Z	196			300	5x50					
SCVR6-350x24Z	216			350	6x50					
SCVR6-400x27Z	256			400	7x50					
SCVR6-450x31Z	276			450	8x50					
SCVR6-500x34Z	316			500	9x50					
SCVR6-550x38Z	336			550	10x50					
SCVR6-600x41Z	376			600	11x50					

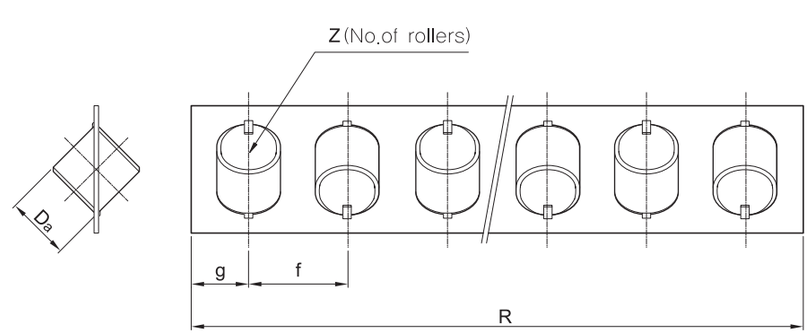
Assembled Dimensions			Roller Cage Dimensions				No. of Rollers	Permissible Preload	Basic Load Rating (per roller)		Mass (Rail) [Kg/m]
D	h	l	Da	R	g	f	Z		Cz [kN]	Coz [kN]	
9.5	5.2	3.2	6	72	6	10	7	-0.007	1.91	1.76	1.5
				102			10				
				132			13				
				172			17				
				202			20				
				242			24				
				272			27				
				312			31				
				342			34				
				382			38				
				412			41				

Cross Roller Guide

Cross Roller Guide SCVR Type

SCVR9 Type



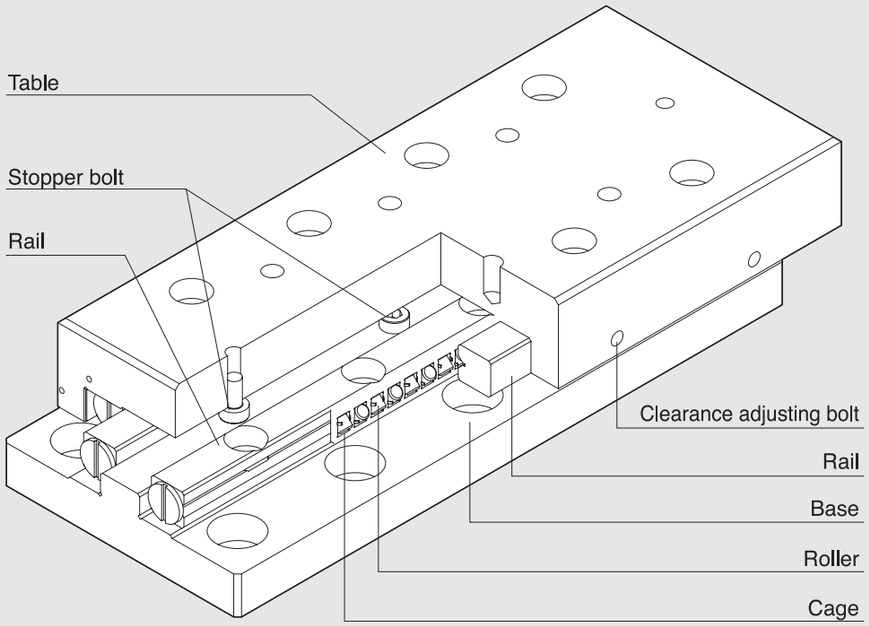


(Unit : mm)

Model No.	Max Stroke	Combined Dimensions			Assembled Dimensions					
		A	W	Lo	nxF	G	B	C	S	d
SCVR9-200x10Z	118	40	20	200	1x100	50	19.2	8	M8	6.8
SCVR9-300x15Z	178			300	2x100					
SCVR9-400x20Z	138			400	3x100					
SCVR9-500x25Z	298			500	4x100					
SCVR9-600x30Z	358			600	5x100					
SCVR9-700x35Z	418			700	6x100					
SCVR9-800x40Z	478			800	7x100					
SCVR9-900x45Z	538			900	8x100					
SCVR9-1000x50Z	598			1000	9x100					
SCVR9-1100x55Z	658			1100	10x100					
SCVR9-1200x60Z	718			1200	11x100					

Assembled Dimensions			Roller Cage Dimensions				No. of Rollers	Permissible Preload	Basic Load Rating (per roller)		Mass (Rail) [Kg/m]
D	h	I	Da	R	g	f	Z		Cz[kN]	Coz[kN]	
10.5	6.2	4	9	141	7.5	14	10	-0.010	4.31	4.36	3.2
				211			15				
				281			20				
				351			25				
				421			30				
				491			35				
				561			40				
				631			45				
				701			50				
				771			55				
				841			60				

CROSS ROLLER TABLE



The SBC cross roller table is a precision table assembled with SBC cross guides (SCVR type). Since there is minimal elastic deformation the table achieves high rigidity and stable linear motion. The tables can be used for OA equipment, Automation-assembly machines and Optical measurement devices.

[Cross Roller Table Model Type]

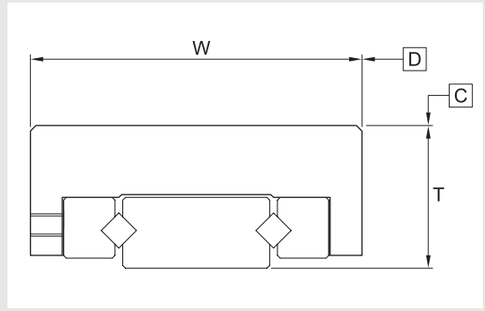
- SCVRT Type : Miniature Type (Base Tapped-hole)
- SCVRT-A Type : Miniature Type (Base Mounting-hole)
- SCVRU Type

Cross Roller Guide

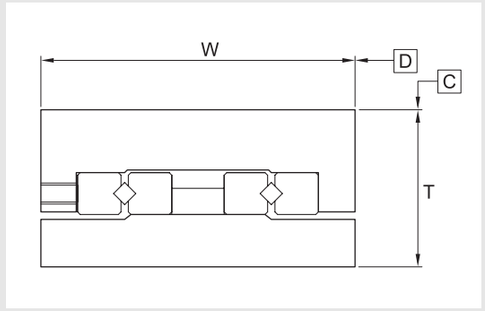
Cross Roller Table SCVRT Type, SCVRU Type

Accuracy

The running accuracy of a cross roller table is measured with dial indicators as shown in Figure below. The tolerance of table height C and D are shown in the dimension tables.



(SCVRT, SCVRT-A Type)



(SCVRU Type)

Precautions

[Cross Roller Table Model Type]

When machining additional features into the Table and the Base of the Cross Roller Table, please observe the precautions below.

❶ Prevent cutting chips and foreign substance from entering the Cross Roller Guide.

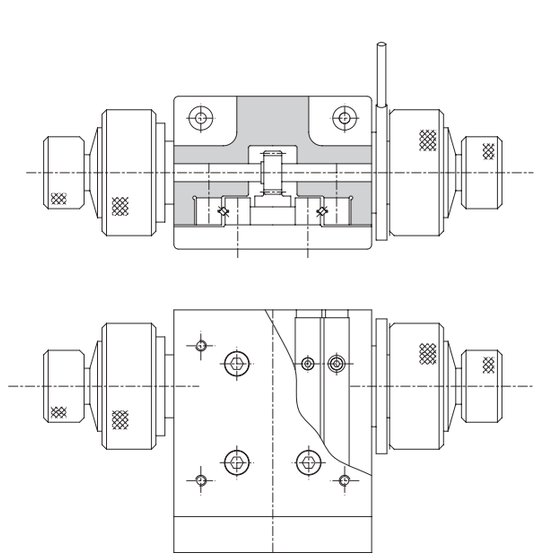
❷ Design the mounting holes as blind holes, not penetrating (thru) holes. For additional machining, please contact SBC Linear.

❹ The preload of the Cross Roller Table is fixed to the proper level. Please do not adjust the preload adjustment bolts.

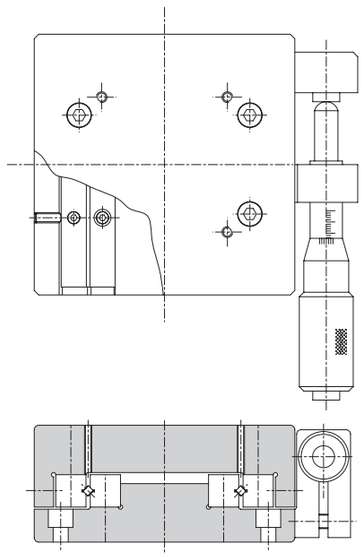
[Cage Creep]

WheThe Roller Cage moves accurately but may be drift (cage creep) due to vibrations, inertia or impact. Please mount an external stop for the table to control the travel.

[Example]



(Rack & Pinion)



(Micro head)

Ordering Example

[SCVRT Miniature Type (Base Tapped-hole)]

SCVRT 2035 – T – R
[1] [2] [3]

[1] Model No. : SCVRT(Base Tapped-hole)
[2] Additional processing : No Symbol (Standard), T (Additional processing)
[3] Surface Treatment : No symbol (Standard), R (Surface Treatment)

[SCVRT-A Miniature Type (Base Mounting-hole)]

SCVRT 2035A – T – R
[1] [2] [3]

[1] Model No. : SCVRT-A (Base Mounting-hole)
[2] Additional processing : No Symbol (Standard), T (Additional processing)
[3] Surface Treatment : No symbol (Standard), R (Surface Treatment)

[SCVRU]

SCVRU 2035 – T – R
[1] [2] [3]

[1] Model No. : SCVRU
[2] Additional processing : No Symbol (Standard), T (Additional processing)
[3] Surface Treatment : No symbol (Standard), R (Surface Treatment)

※ When ordering surface treatment, please include the symbol of the surface treatment.

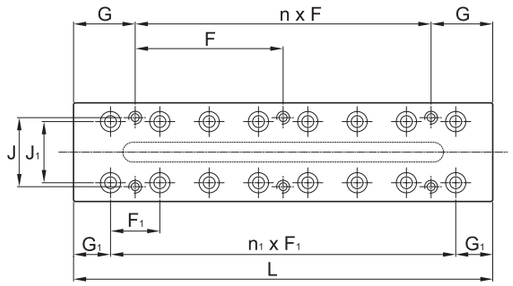
❶ Standard , Black Chrome coating (Raydent treatment), Fluorocarbon resin coating, Hard Chrome plating

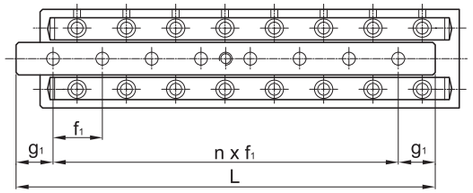
❷ Contact SBC for special surface treatments.

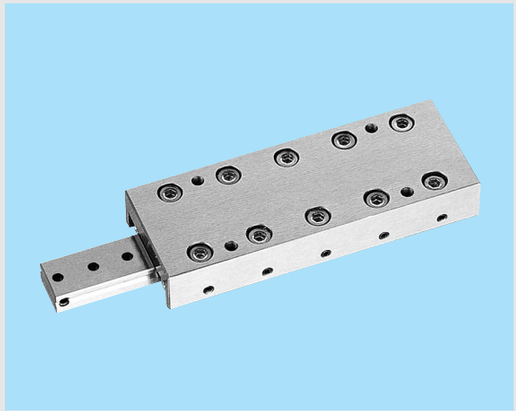
Cross Roller Guide

Cross Roller Table SCVRT Type

SCVRT1 Miniature Type (Base Tapped-hole)







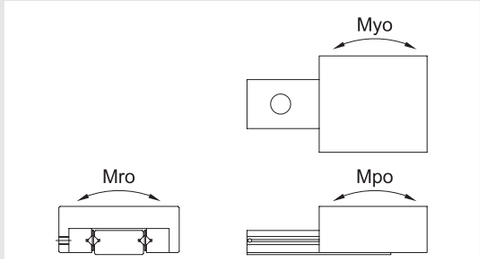
(Unit : mm)

Model No.	Max Stroke	Major Dimensions				Top Dimensions							
		W ±0.1	T ±0.1	L	Mass [g]	J	nxF	G	m2	n1xF1	J1	D1	G1
SCVRT 1025	12	20	8	25	23	14	1x18	3.5	M2.6	1x10	12.4	4.1	7.5
SCVRT 1035	18			35	32		1x28	3.5		2x10			
SCVRT 1045	25			45	42		1x20	12.5		3x10			
SCVRT 1055	32			55	52		1x30	12.5		4x10			
SCVRT 1065	40			65	62		2x20	12.5		5x10			
SCVRT 1075	45			75	72		1x30	22.5		6x10			
SCVRT 1085	50			85	82		2x30	12.5		7x10			

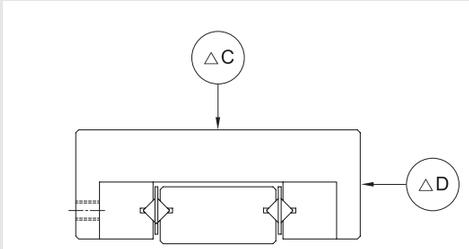
(Unit : mm)

End Dimensions						Base Dimensions mounting-hole position			No. of Rollers	Basic load rating [kN]		Static permissible moment [N.m]			Accuracy [㎛]	
T1	T2	H	W1	A	m	m1	nxf1	g1	Z	C	Co	Mpo	Myo	Mro	△C	△D
7.5	3.5	4	6.7	5.5	M2	M2.6	2x7.5	5	5	0.28	0.27	0.75	0.46	0.69	2	4
							2x10	7.5	7	0.38	0.41	1.23	0.85	1.03		
							3x10		10	0.56	0.69	2.18	1.67	1.72		5
							4x10		12	0.65	0.82	2.97	2.35	2.06		
							5x10		14	0.73	0.96	3.87	3.17	2.40		
							6x10		18	0.87	1.27	6.05	5.16	3.19		
							7x10		20	0.94	1.37	7.32	6.37	3.43		

* Static permissible moment



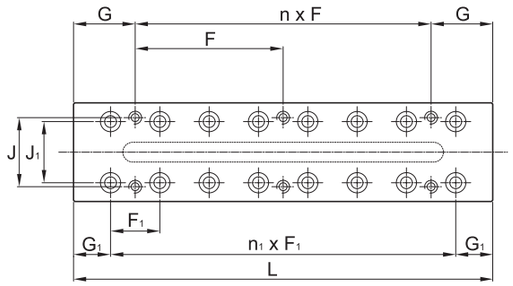
* Accuracy

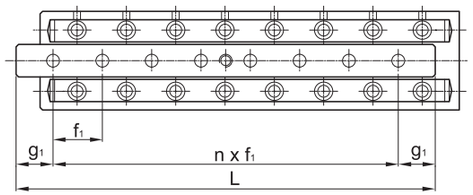


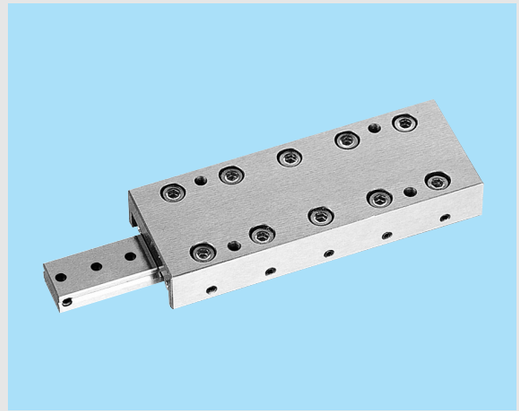
Cross Roller Guide

Cross Roller Table SCVRT Type

SCVRT2 Miniature Type (Base Tapped-hole)







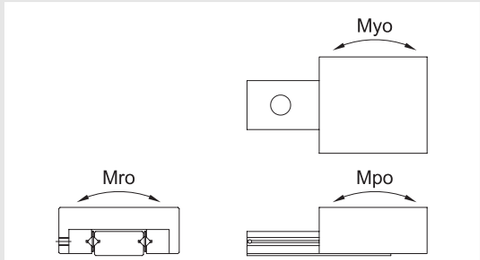
(Unit : mm)

Model No.	Max Stroke	Major Dimensions				Top Dimensions							
		W ±0.1	T ±0.1	L	Mass [g]	J	nxF	G	m2	n1xF1	J1	D1	G1
SCVRT 2035	18	30	12	35	78	22	1x28	3.5	M3	1x15	20	6	10
SCVRT 2050	30			50	113		1x43	3.5		2x15			
SCVRT 2065	40			65	147		1x30	17.5		3x15			
SCVRT 2080	50			80	184		1x45	17.5		4x15			
SCVRT 2095	60			95	220		2x30	17.5		5x15			
SCVRT 2110	70			110	257		1x45	32.5		6x15			
SCVRT 2125	80			125	290		2x45	17.5		7x15			

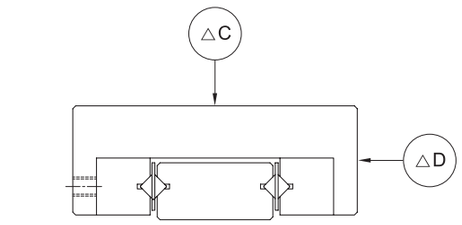
(Unit : mm)

End Dimensions						Base Dimensions mounting-hole position			No. of Rollers	Basic load rating [kN]		Static permissible moment [N.m]			Accuracy [㎛]	
T1	T2	H	W1	A	m	m1	nxf1	g1	Z	C	Co	Mpo	Myo	Mro	△C	△D
11.5	5.5	6	12.2	8.5	M2	M3	1x20	7.5	5	0.51	0.51	2.29	1.37	2.21	2	4
							2x15	5	7	0.69	0.76	3.76	2.65	3.32		
							3x15		9	0.85	0.98	5.62	4.22	4.25		5
							4x15		12	0.98	1.27	9.10	7.26	5.52		
							5x15		14	1.18	1.57	11.8	9.71	6.80		
							6x15		17	1.47	2.06	16.7	14.1	8.93		
							7x15		19	1.57	2.25	20.4	17.5	9.77		

* Static permissible moment



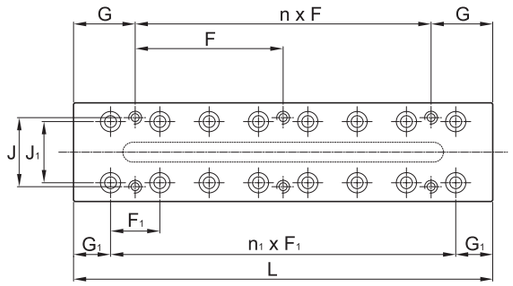
* Accuracy

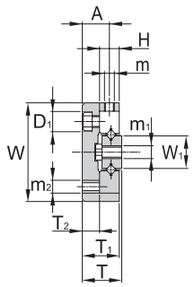


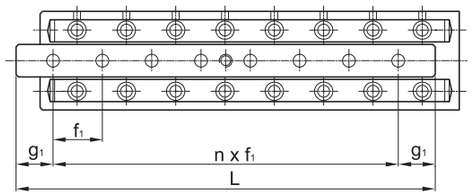
Cross Roller Guide

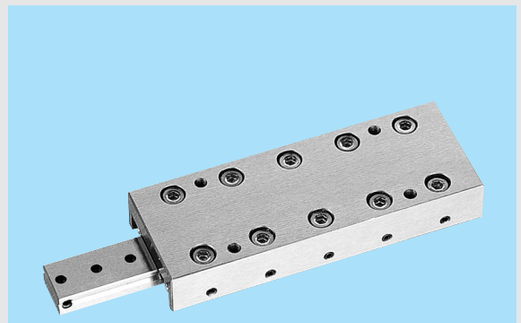
Cross Roller Table SCVRT Type

SCVRT3 Miniature Type (Base Tapped-hole)







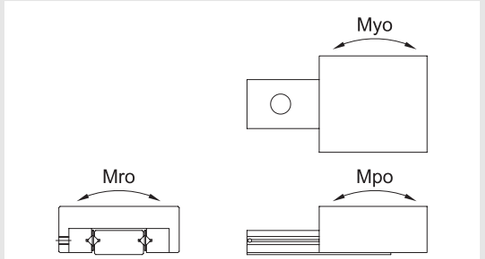


(Unit : mm)

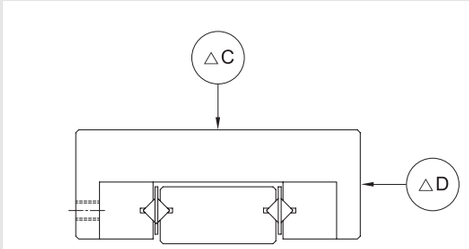
Model No.	Max Stroke	Major Dimensions				Top Dimensions							
		W ±0.1	T ±0.1	L	Mass [g]	J	nxF	G	m2	n1xF1	J1	D1	G1
SCVRT 3055	30	40	16	55	229	30	1x40	7.5	M4	1x25	28.4	7.5	15
SCVRT 3080	45			80	336		1x65	7.5		2x25			
SCVRT 3105	60			105	442		1x50	27.5		3x25			
SCVRT 3130	75			130	551		1x75	27.5		4x25			
SCVRT 3155	90			155	657		2x50	27.5		5x25			
SCVRT 3180	105			180	766		1x75	52.5		6x25			
SCVRT 3205	130			205	871		2x75	27.5		7x25			

End Dimensions						Base Dimensions mounting-hole position			No. of Rollers	Basic load rating [kN]		Static permissible moment [N.m]			Accuracy [㎛]	
T1	T2	H	W1	A	m	m1	nxf1	g1	Z	C	Co	Mpo	Myo	Mro	△C	△D
15.5	7.5	8	16	11.5	M2	M4	1x35	10	6	1.27	1.37	9.85	6.57	7.97	2	5
							2x35	15	10	2.16	2.84	22.2	17	16.5		
							3x25		13	2.94	4.22	34.8	28.1	24.4	5	6
							4x25		17	3.63	5.69	55.8	47.1	33.3		
							5x25		20	3.92	6.37	74.7	64.6	36.9		
							6x25		24	4.02	6.57	104	92.3	38.1		
							7x25		26	4.22	7.16	120	107	41.5		

* Static permissible moment



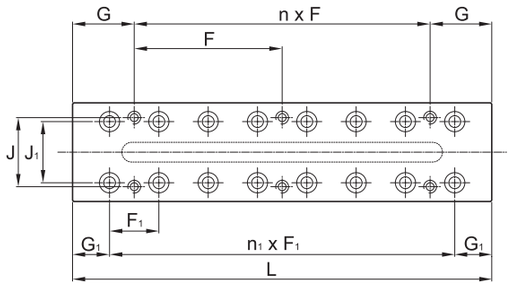
* Accuracy

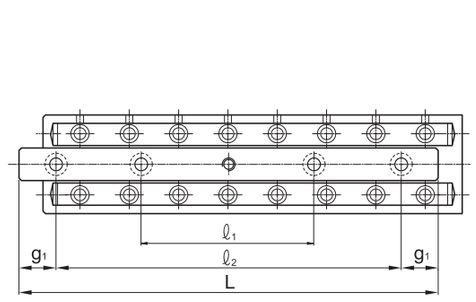


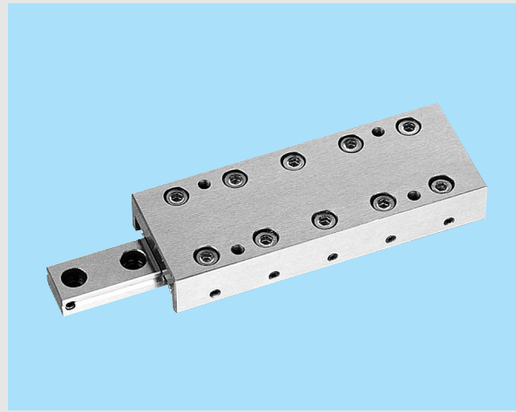
Cross Roller Guide

Cross Roller Table SCVRT Type

SCVRT1-A Miniature Type (Base Mounting-hole)







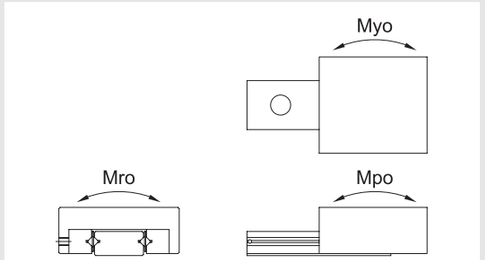
(Unit : mm)

Model No.	Max Stroke	Major Dimensions				Top Dimensions							
		W ±0.1	T ±0.1	L	Mass [g]	J	nxF	G	m2	n1xF1	J1	D1	G1
SCVRT 1025A	12	20	8	25	23	14	1x18	3.5	M2.6	1x10	12.4	4.1	7.5
SCVRT 1035A	18			35	32		1x28	3.5		2x10			
SCVRT 1045A	25			45	42		1x20	12.5		3x10			
SCVRT 1055A	32			55	52		1x30	12.5		4x10			
SCVRT 1065A	40			65	62		2x20	12.5		5x10			
SCVRT 1075A	45			75	72		1x30	22.5		6x10			
SCVRT 1085A	50			85	82		2x30	12.5		7x10			

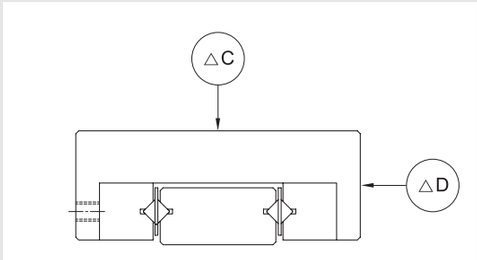
(Unit : mm)

End Dimensions						Base Dimensions mounting-hole position						No. of Rollers	Basic load rating [kN]		Static permissible moment [N.m]			Accuracy [㎛]	
T1	T2	H	W1	A	m	m1	D	h	ℓ1	ℓ2	g1	Z	C	Co	Mpo	Myo	Mro	△C	△D
7.5	3.5	4	6.7	5.5	M2	2.5	4.1	2.2	-	18	3.5	5	0.28	0.27	0.75	0.46	0.69	2	4
									-	25	5	7	0.38	0.41	1.23	0.85	1.03		
									25	38	3.5	10	0.56	0.69	2.18	1.67	1.72		5
									29	48	3.5	12	0.65	0.82	2.97	2.35	2.06		
									31	55	5	14	0.73	0.96	3.87	3.17	2.40		
									35	65	5	18	0.87	1.27	6.05	5.16	3.19		
									40	75	5	20	0.94	1.37	7.32	6.37	3.43		

* Static permissible moment



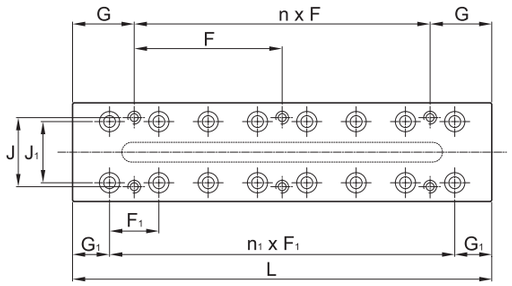
* Accuracy

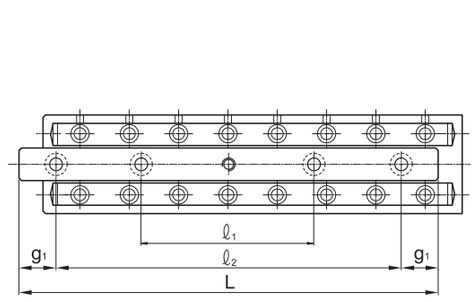


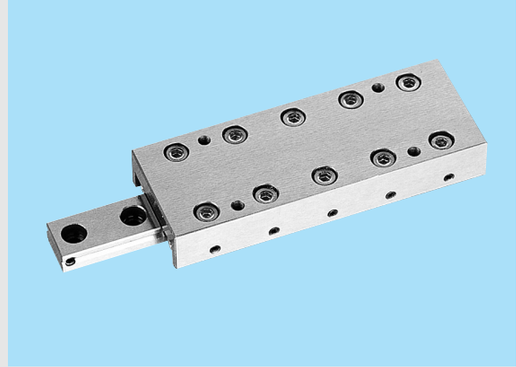
Cross Roller Guide

Cross Roller Table SCVRT Type

SCVRT2-A Miniature Type (Base Mounting-hole)





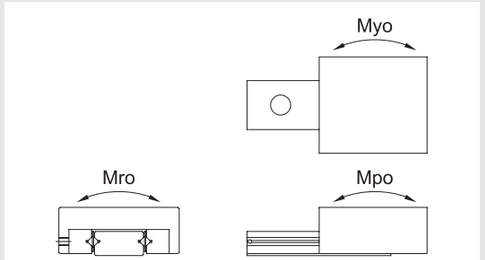


(Unit : mm)

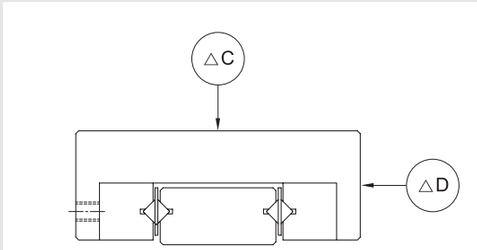
Model No.	Max Stroke	Major Dimensions				Top Dimensions							
		W ±0.1	T ±0.1	L	Mass [g]	J	nxF	G	m2	n1xF1	J1	D1	G1
SCVRT 2035A	18	30	12	35	78	22	1x28	3.5	M3	1x15	20	6	10
SCVRT 2050A	30			50	113		1x43	3.5		2x15			
SCVRT 2065A	40			65	147		1x30	17.5		3x15			
SCVRT 2080A	50			80	184		1x45	17.5		4x15			
SCVRT 2095A	60			95	220		2x30	17.5		5x15			
SCVRT 2110A	70			110	257		1x45	32.5		6x15			
SCVRT 2125A	80			125	290		2x45	17.5		7x15			

End Dimensions						Base Dimensions mounting-hole position						No. of Rollers	Basic load rating [kN]		Static permissible moment [N.m]			Accuracy [㎛]	
T1	T2	H	W1	A	m	m1	D	h	ℓ1	ℓ2	g1	Z	C	Co	Mpo	Myo	Mro	△C	△D
11.5	5.5	6	12.2	8.5	M2	3.5	6	3.2	-	25	5	5	0.51	0.51	2.29	1.37	2.21	2	4
									-	35	7.5	7	0.69	0.76	3.76	2.65	3.32		
									33	55	5	9	0.85	0.98	5.62	4.22	4.25		5
									40	70	5	12	0.98	1.27	9.10	7.26	5.52		
									45	85	5	14	1.18	1.57	11.8	9.71	6.80		
									50	95	7.5	17	1.47	2.06	16.7	14.1	8.93		
									55	110	7.5	19	1.57	2.25	20.4	17.5	9.77		

* Static permissible moment



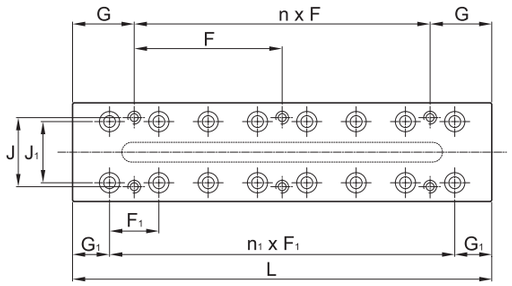
* Accuracy

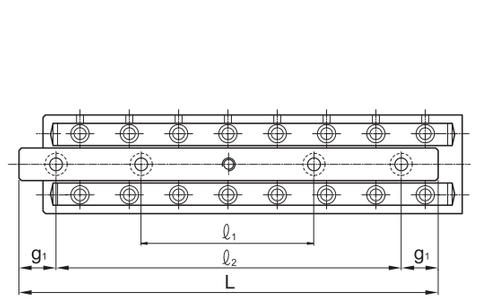


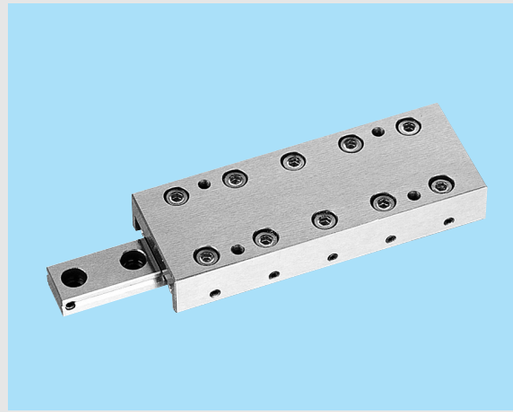
Cross Roller Guide

Cross Roller Table SCVRT Type

SCVRT3-A Miniature Type (Base Mounting-hole)





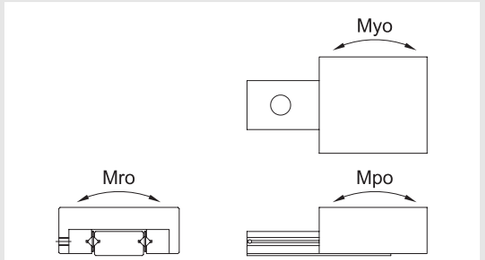


(Unit : mm)

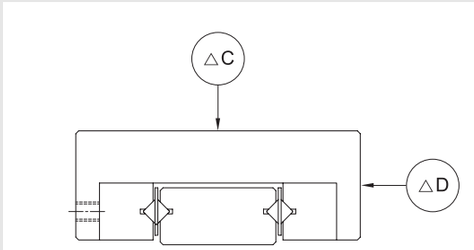
Model No.	Max Stroke	Major Dimensions				Top Dimensions							
		W ±0.1	T ±0.1	L	Mass [g]	J	nxF	G	m2	n1xF1	J1	D1	G1
SCVRT 3055A	30	40	16	55	229	30	1x40	7.5	M4	1x25	28.4	7.5	15
SCVRT 3080A	45			80	336		1x65	7.5		2x25			
SCVRT 3105A	60			105	442		1x50	27.5		3x25			
SCVRT 3130A	75			130	551		1x75	27.5		4x25			
SCVRT 3155A	90			155	657		2x50	27.5		5x25			
SCVRT 3180A	105			180	766		1x75	52.5		6x25			
SCVRT 3205A	130			205	871		2x75	27.5		7x25			

End Dimensions						Base Dimensions mounting-hole position						No. of Rollers	Basic load rating [kN]		Static permissible moment [N.m]			Accuracy [㎛]	
T1	T2	H	W1	A	m	m1	D	h	ℓ1	ℓ2	g1	Z	C	Co	Mpo	Myo	Mro	△C	△D
15.5	7.5	8	16	11.5	M2	4.5	7.5	4.2	-	40	7.5	6	1.27	1.37	9.85	6.57	7.97	2	6
									43	68	6	10	2.16	2.84	22.2	17	16.5		
									55	90	7.5	13	2.94	4.22	34.8	28.1	24.4	3	6
									65	115	7.5	17	3.63	5.69	55.8	47.1	33.3		
									958	140	7.5	20	3.92	6.37	74.7	64.6	36.9		
									85	165	7.5	24	4.02	6.57	104	92.3	38.1		
									90	190	7.5	26	4.22	7.16	120	107	41.5		

* Static permissible moment



* Accuracy

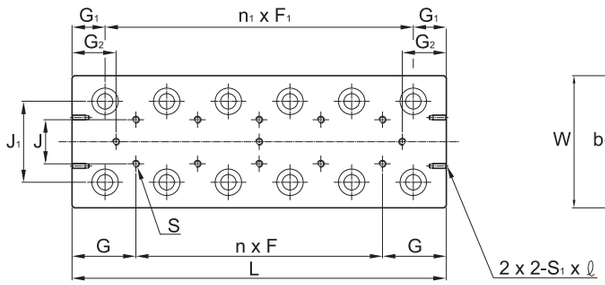


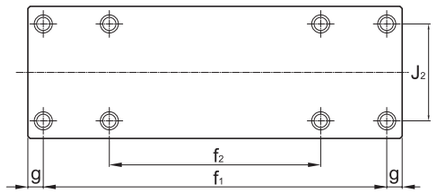
Cross Roller Guide

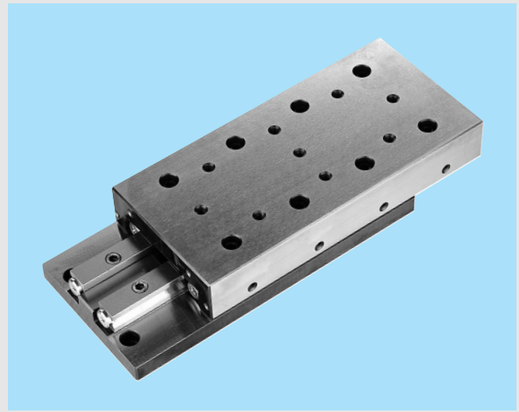
Cross Roller Table SCVRU Type

Cross Roller Table SCVRU Type

SCVRU1 Type







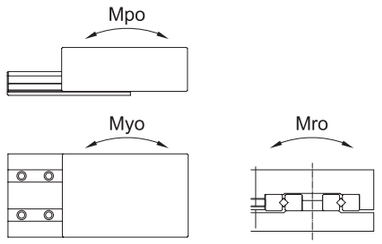
(Unit : mm)

Model No.	Max Stroke	Major Dimensions				Top Dimensions												
		W -0.2 -0.4	T ±0.1	L	Mass [kg]	J	nxF	G	S	J1	n1xF1	G1	G2	b1	T3	S1xℓ	T2	T1
SCVRU 1025	12	30	17	25	0.08	10	-	12.5	M2	18.4	-	7.5	2.5	12	2.5	M2x4	11	5.5
SCVRU 1035	18			35	0.11		1x10				1x10		4.5					
SCVRU 1045	25			45	0.15		2x10				2x10		6					
SCVRU 1055	32			55	0.18		3x10				3x10		7.5					
SCVRU 1065	40			65	0.21		4x10				4x10		8.5					
SCVRU 1075	45			75	0.24		5x10				5x10		11					
SCVRU 1085	50			85	0.27		6x10				6x10		13.5					

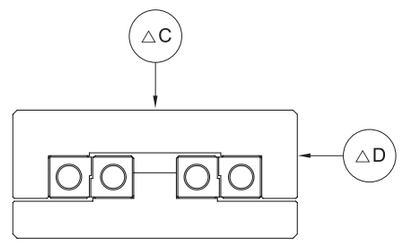
(Unit : mm)

End Dimensions								Base Dimensions mounting-hole position				No. of Rollers	Basic load rating [kN]		Static permissible moment [N.m]			Accuracy [㎛]	
K	d	D	h	D1	m1	A	m2	J2	f1	f2	g	Z	C	Co	Mpo	Myo	Mro	△C	△D
6.5	2.55	4.1	2.5	4.1	M2	9	M2	22	18	-	3.5	5	0.28	0.27	0.75	0.46	1.24	2	4
									28	-		7	0.38	0.41	1.23	0.85	1.85		
									38	-		10	0.56	0.69	2.18	1.67	3.09		5
									48	28		12	0.65	0.82	2.97	2.35	3.71		
									58	38		14	0.73	0.96	3.87	3.17	4.33		
									68	48		18	0.87	1.27	6.05	5.16	5.74		
									78	58		20	0.94	1.37	7.32	6.34	6.18		

* Static permissible moment



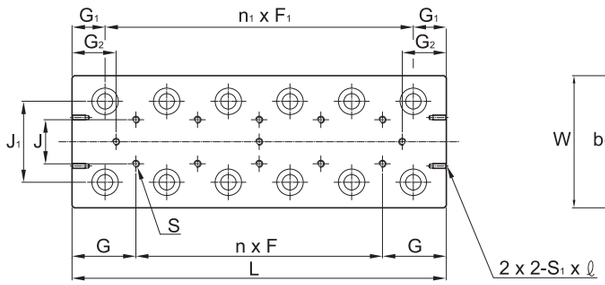
* Accuracy

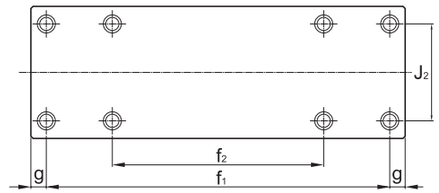


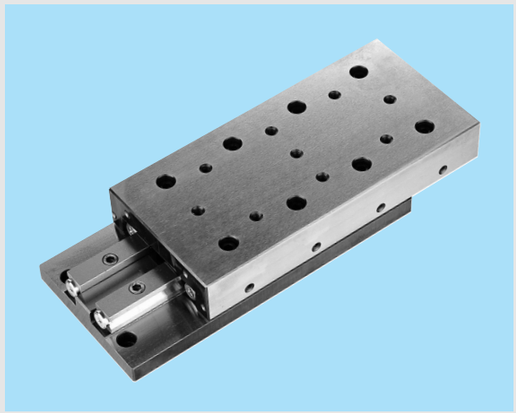
Cross Roller Guide

Cross Roller Table SCVRU Type

SCVRU2 Type







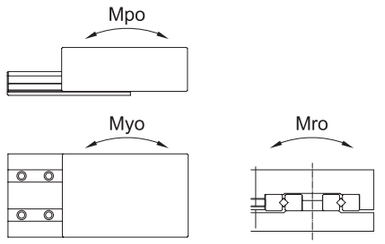
(Unit : mm)

Model No.	Max Stroke	Major Dimensions				Top Dimensions												
		W -0.2 -0.4	T ±0.1	L	Mass [kg]	J	nxF	G	S	J1	n1xF1	G1	G2	b1	T3	S1xℓ	T2	T1
SCVRU 2035	18	40	21	35	0.2	15	-	17.5	M3	25	1x15	10	3	16	3.4	M2x4	14	6.5
SCVRU 2050	30			50	0.26		1x15				2x15		4.5					
SCVRU 2065	40			65	0.34		2x15				3x15		7					
SCVRU 2080	50			80	0.42		3x15				4x15		9.5					
SCVRU 2095	60			95	0.5		4x15				5x15		12					
SCVRU 2110	70			110	0.58		5x15				6x15		14.5					
SCVRU 2125	80			125	0.66		6x15				7x15		17					

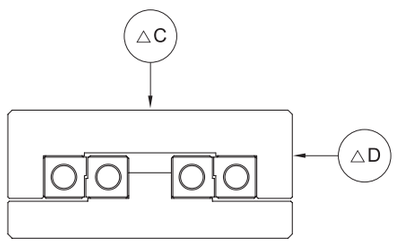
(Unit : mm)

End Dimensions								Base Dimensions mounting-hole position				No. of Rollers	Basic load rating [kN]		Static permissible moment [N.m]			Accuracy [㎛]	
K	d	D	h	D1	m1	A	m2	J2	f1	f2	g	Z	C	Co	Mpo	Myo	Mro	△C	△D
7.5	3.5	6	3.5	6	M3	11	M3	30	25	-	5	5	0.51	0.51	2.29	1.4	3.06	2	4
									40	-		7	0.69	0.76	3.76	2.6	4.59		
									55	-		9	0.85	0.98	5.62	4.17	5.89		5
									70	40		12	1.18	1.57	9.1	7.22	9.42		
									85	55		14	1.27	1.76	11.8	9.7	10.5		
									100	70		17	1.47	2.06	16.7	14.1	12.3	3	6
									115	85		19	1.57	2.25	20.4	17.5	13.5		

* Static permissible moment



* Accuracy

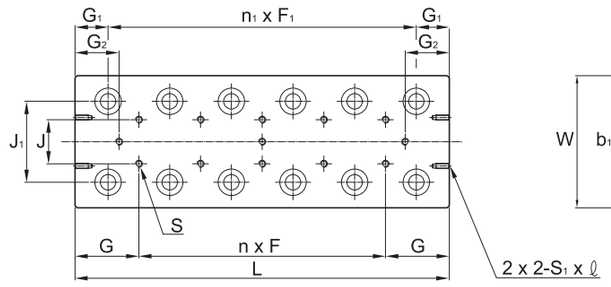


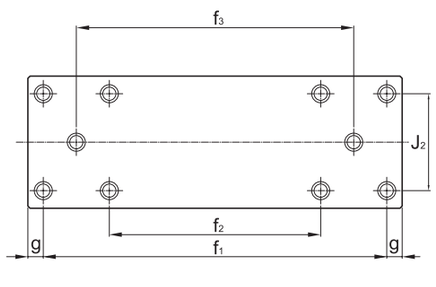
Cross Roller Table SCVRU Type

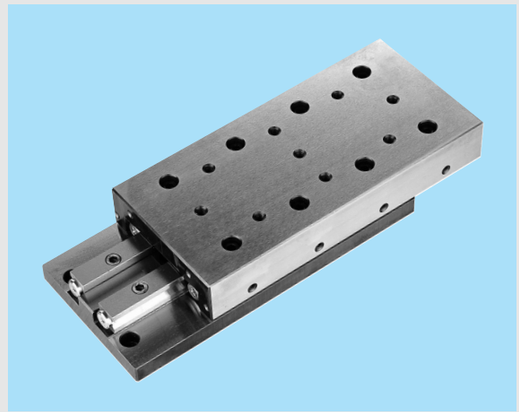
Cross Roller Guide

Cross Roller Table SCVRU Type

SCVRU3 Type







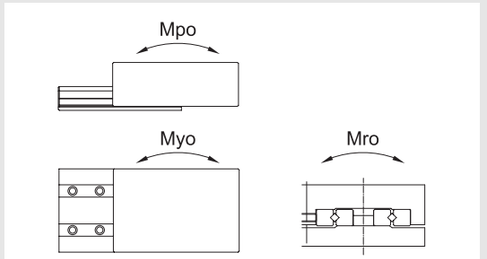
(Unit : mm)

Model No.	Max Stroke	Major Dimensions				Top Dimensions												
		W ±0.1	T ±0.1	L	Mass [kg]	J	nxF	G	S	J1	n1xF1	G1	G2	b1	T3	S1xℓ	T2	T1
SCVRU 3055	30	60	28	55	0.57	25	-	27.5	M4	39	1x25	15	5.5	40	5.5	M3x6	18.5	9
SCVRU 3080	45			80	0.80		1x25				2x25		10.5					
SCVRU 3105	60			105	1.03		2x25				3x25		15.5					
SCVRU 3130	75			130	1.26		3x25				4x25		20.5					
SCVRU 3155	90			155	1.49		4x25				5x25		25.5					
SCVRU 3180	105			180	1.72		5x25				6x25		30.5					
SCVRU 3205	130			205	1.95		6x25				7x25		30.5					

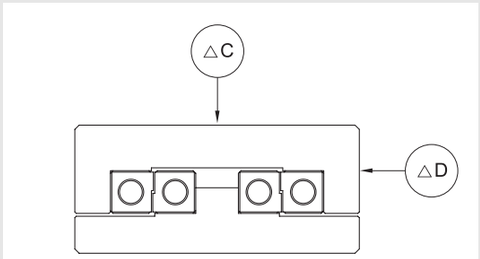
(Unit : mm)

End Dimensions								Base Dimensions mounting-hole position					No. of Rollers	Basic load rating [kN]		Static permissible moment [N.m]			Accuracy [㎛]	
K	d	D	h	D1	m1	A	m2	J2	f1	f2	f3	g	Z	C	Co	Mpo	Myo	Mro	△C	△D
10	4.5	7.5	5	7.5	M4	14.5	M4	40	3	-	-	10	6	C	1.67	9.85	6.54	15.5	2	5
									60	-	-		10	1.47	2.75	22.2	17	25.6		
									85	-	-		13	2.06	3.33	34.8	28.1	31.1	3	6
									110	-	-		17	2.35	4.41	55.8	47.1	41.2		
									135	-	85		20	2.94	5.49	74.7	64.6	51.2		
									160	-	110		24	3.53	6.57	104	92.3	61.3		7
									185	85	135		26	4.02	7.16	120	107	66.8		

* Static permissible moment



* Accuracy

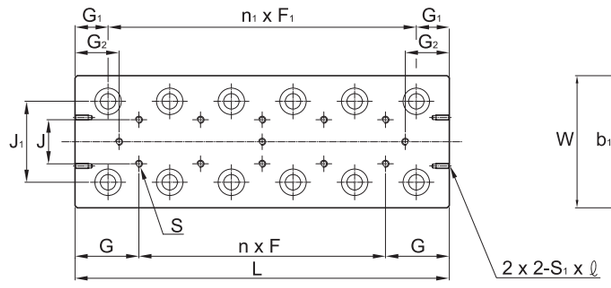


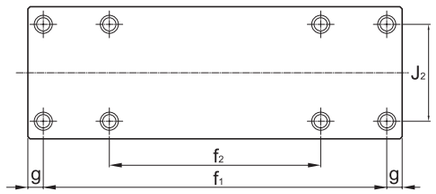
Cross Roller Table SCVRU Type

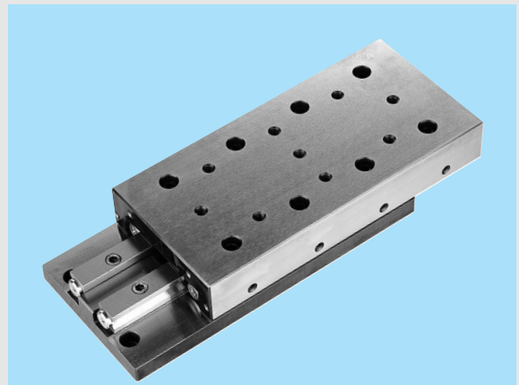
Cross Roller Guide

Cross Roller Table SCVRU Type

SCVRU4 Type





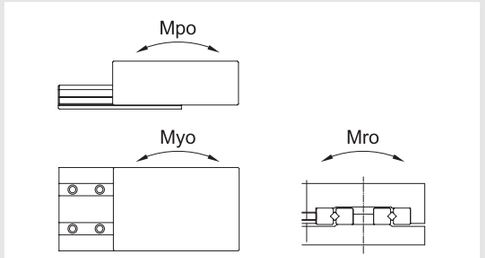


(Unit : mm)

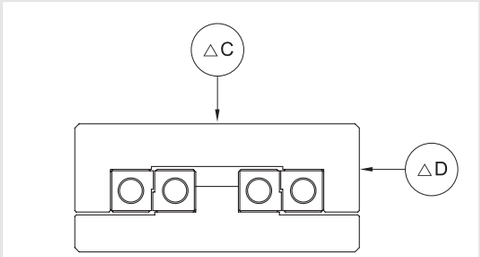
Model No.	Max Stroke	Major Dimensions				Top Dimensions														
		W ±0.1	T ±0.1	L	Mass [kg]	J	nxF	G	S	J1	n1xF1	G1	G2	b1	b2	T3	T4	S1xℓ	T2	T1
SCVRU 4085	50	80	35	85	1.5	40	-	42.5	M5	53	1x40	22.5	10.5	55		6.5		M3x6	24	10.5
SCVRU 4125	75			125	2.3		1x40				2x40		18							
SCVRU 4165	105			165	3.1		2x40				3x40		23							
SCVRU 4205	135			205	3.8		3x40				4x40		30.5							
SCVRU 4245	155			245	4.6		4x40				5x40		38							
SCVRU 4285	185			285	5.3		5x40				6x40		43							

End Dimensions								Base Dimensions mounting-hole position	No. of Rollers			Basic load rating [kN]		Static permissible moment [N.m]			Accuracy [㎛]	
K	d	D	h	D1	m1	A	m2	J2	f1	f2	g	Z	C	Co	Mpo	Myo	Mro	△C	△D
12.5	5.5	9.5	6	9.5	M4	18.5	M4	60	65	-	10	7	3.53	4.8	48.7	33.7	64	2	5
									80	-	22.5	11	5.2	8.04	101	79.1	107	3	6
									120	-		14	6.77	11.3	153	125	150		7
									160	80		18	8.14	14.5	239	204	193		
									200	120		22	9.42	17.7	344	302	235		
									240	160		26	10.7	20.9	468	418	278		

* Static permissible moment

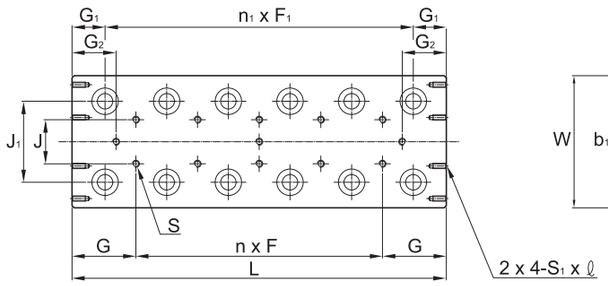


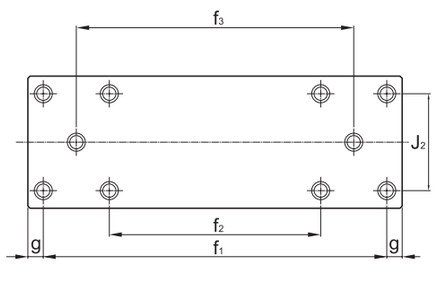
* Accuracy

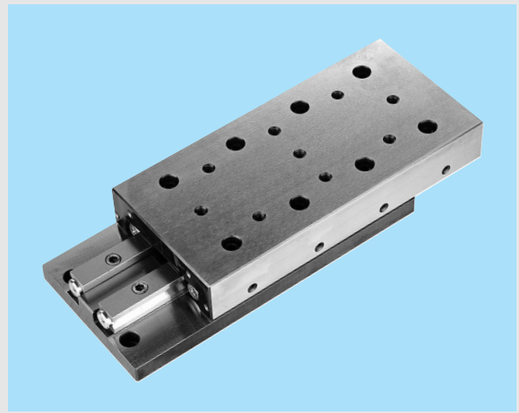


Cross Roller Table SCVRU Type

SCVRU6 Type





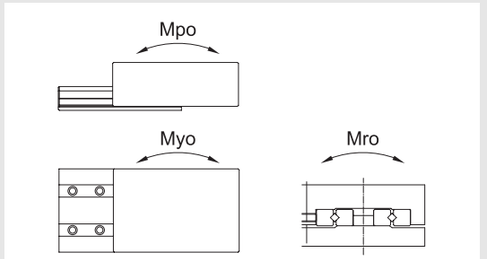


(Unit : mm)

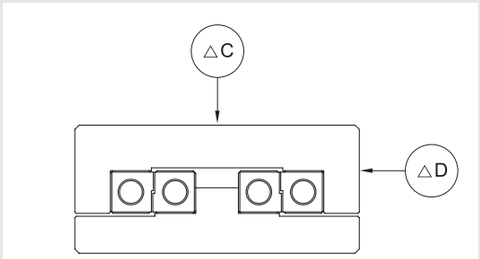
Model No.	Max Stroke	Major Dimensions				Top Dimensions														
		W ±0.1	T ±0.1	L	Mass [kg]	J	nxF	G	S	J1	n1xF1	G1	G2	b1	b2	T3	T4	S1xℓ	T2	T1
SCVRU 6110	60	100	45	11	3.2	50	-	55	M6	63	1x50	30	16	60	92	8	15	M4x8	31	13
SCVRU 6160	95			160	4.6		1x50				2x50		23.5							
SCVRU 6210	130			210	6		2x50				3x50		31							
SCVRU 6260	165			260	7.4		3x50				4x50		38.5							
SCVRU 6310	200			310	8.7		4x50				5x50		46							
SCVRU 6360	235			360	10.1		5x50				6x50		53.5							
SCVRU 6410	265			410	11.5		6x50				7x50		63.5							

End Dimensions								Base Dimensions mounting-hole position					No. of Rollers	Basic load rating [kN]		Static permissible moment [N.m]			Accuracy [㎛]	
K	d	D	h	D1	m1	A	m2	J2	f1	f2	f3	g	Z	C	Co	Mpo	Myo	Mro	△C	△D
15	7	11	7	11	M5	23.5	M5	60	90	-	-	10	9	7.45	10.6	121	80.5	158	3	6
									140	-	-		9	9.31	14.1	231	171	211		
									190	-	90		13	12.5	21.1	428	345	317		7
									240	-	140		16	15.6	28.2	616	516	423		
									290	-	190		19	17.1	31.8	838	720	476	4	8
									340	140	240		22	19.8	38.8	1090	958	582		
									390	190	290		26	22.5	45.9	1480	1320	688		

* Static permissible moment



* Accuracy

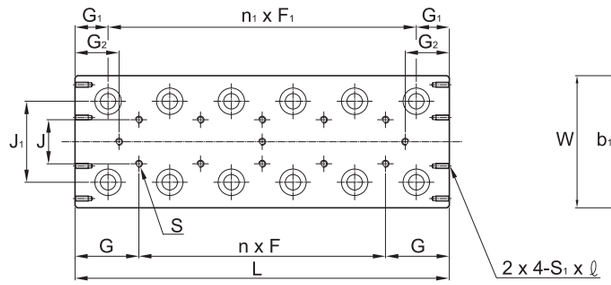


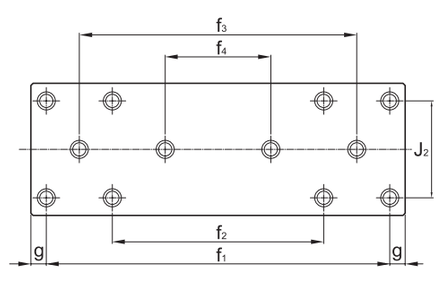
Cross Roller Guide

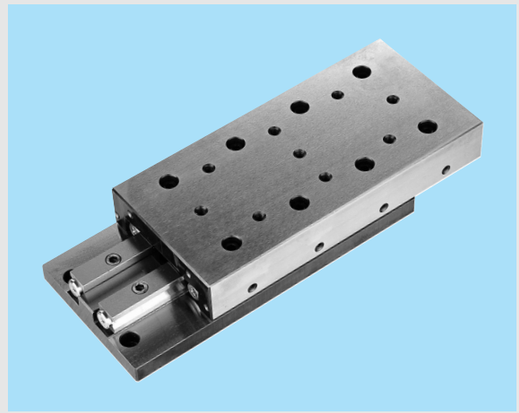
Cross Roller Table SCVRU Type

Cross Roller Table SCVRU Type

SCVRU9 Type





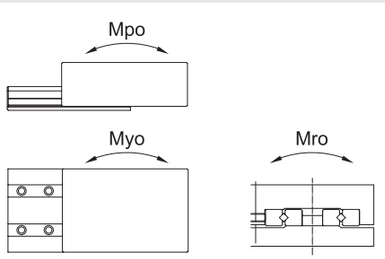


(Unit : mm)

Model No.	Max Stroke	Major Dimensions				Top Dimensions														
		W ±0.1	T ±0.1	L	Mass [kg]	J	nxF	G	S	J1	n1xF1	G1	G2	b1	b2	T3	T4	S1xℓ	T2	T1
SCVRU 9210	130	145	60	210	12	85	-	105	M8	96	1x100	55	27	90	135	11	20	M4X8	43	16
SCVRU 9310	180			310	17.6		1x100				2x100		52							
SCVRU 9410	350			410	23.2		2x100				3x100									
SCVRU 9510	450			510	28.8		3x100				4x100									
SCVRU 9610	550			610	34.4		4x100				5x100		17							
SCVRU 9710	650			710	40		5x100				6x100									
SCVRU 9810	750			810	45.6		6x100				7x100									

End Dimensions								Base Dimensions mounting-hole position					No. of Rollers	Basic load rating [kN]		Static permissible moment [N.m]			Accuracy [㎛]	
K	d	D	h	D1	m1	A	m2	J2	f1	f2	f3	f4	g	Z	C	Co	Mpo	Myo	Mro	△C	△D
21	9	14	9	14	M8	32	M6	90	100	-	-	-	55	9	20.9	34.9	837	622	838	3	7
									200	-	-	-		14	31.9	61.1	1760	1440	1460		
									300	-	100	-		15	31.9	61.1	1990	1650	1460	4	8
									400	-	200	-		19	38.4	78.5	3030	2600	1880		
									500	100	300	-		22	44.7	96	3950	3460	2300		9
									600	200	400	-		26	50.6	114	5380	4810	2730		
									700	300	500	100		29	53.5	123	6600	5960	2940	5	10

* Static permissible moment



* Accuracy