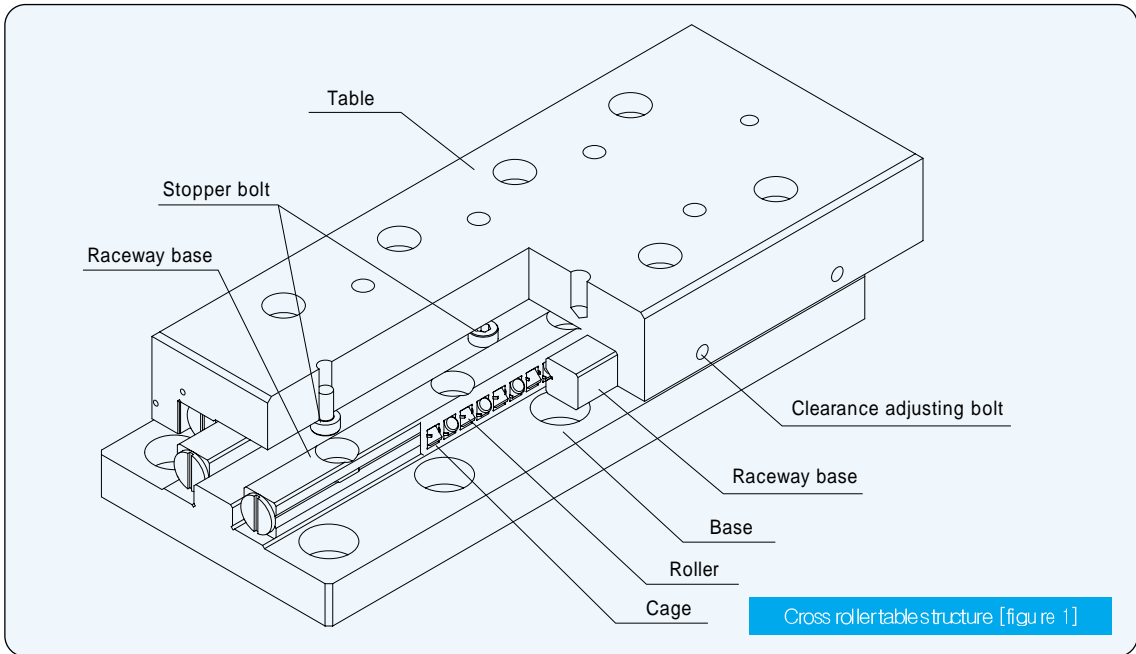


Cross Roller Table



Cross Roller Table

Cross Roller Table



The SBC cross roller table is a precision table assembled with SBC cross roller guide SCVR type. Since there is no elastic displacement against all directions preload, it can obtain high rigidity and stable linear motion.

The SCVRU type and miniature SCVRT type of roller tables are available. They can be applied for OA equipment, automation—assembly machines and optical measurement devices.

HIGH-ACCURACY

The rail is mounted to the precisely machined bed with simple design and SBC cross roller guide of SCVR type is assembled to the opposite side. In resulting, it can reach to high-performance linear motion.

HIGH-RIGIDITY

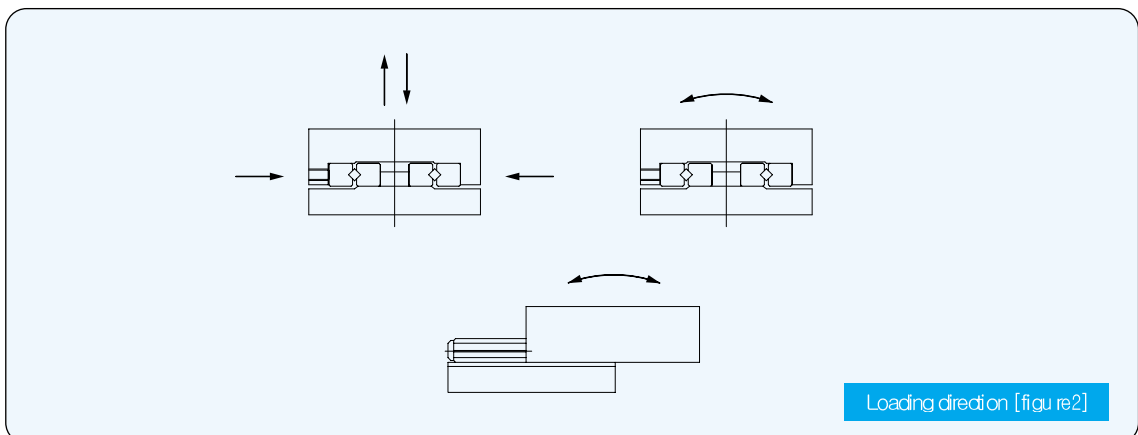
Due to high-rigidity design of base and table by compact design, there is little elastic displacement against all directions preload so it make possible to get high-rigidity.

LARGE PERMISSABLE LOAD

Because the high load rating of roller is assembled at a short pitch, it makes possible to have high-rigidity linear motion guide and heavy loads and along service life.

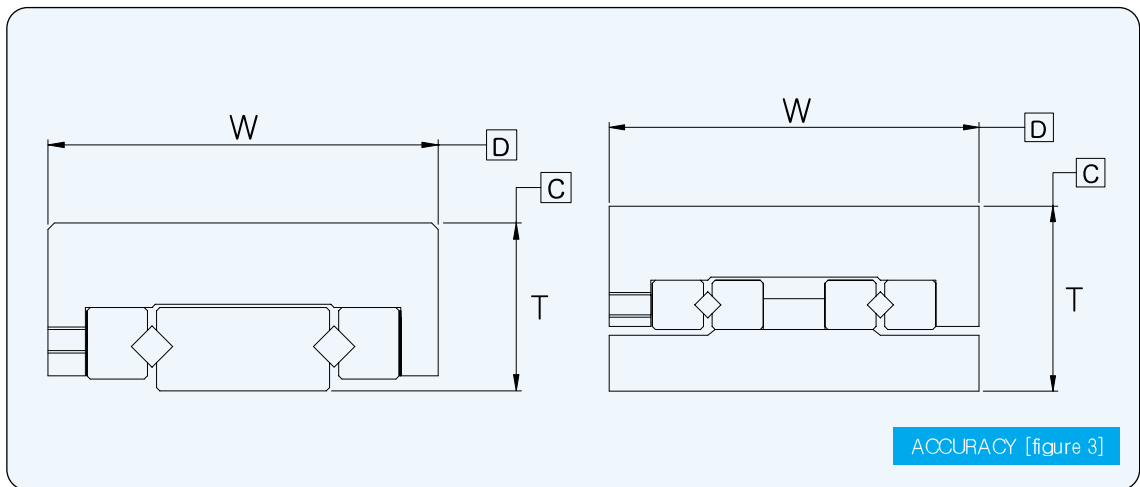
EASY MOUNTING

Standardized mounting holes are provided in the table and bed. High-precision linear motion can be achieved by mounting.



ACCURACY

The running accuracy of a cross roller table is measured by indicators as shown in Figure 3. The indicators are placed at the centers of the top and side surfaces of the table. The tolerance of table height (T) and width (W) are shown in the dimension table.



Life

The nominal life can be calculated using following equation

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

L : Nominal Life (km)

C : Basic dynamic load rating (kN)

P_C : Calculated load (kN)

f_T : Temperature factor

f_W : Load factor

Once nominal life is obtained, Below equation is used for Life Time calculation.

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

L_h : Service life in hours (h), l_s : Stroke length (mm),

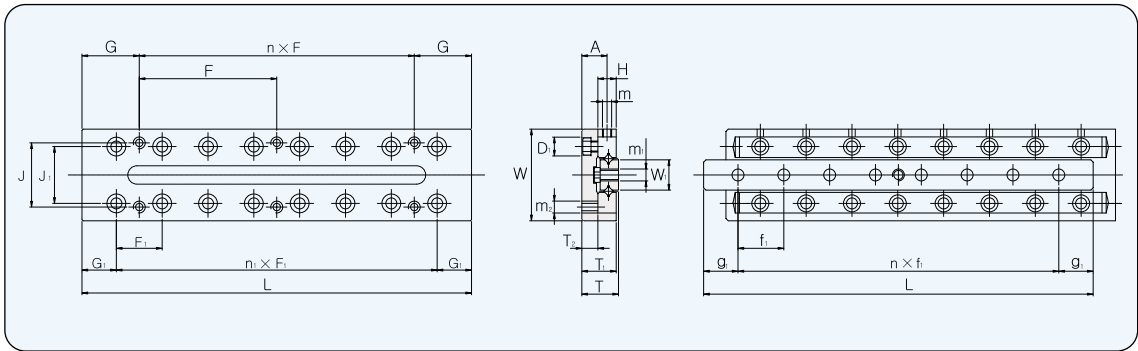
n_1 : Number of reciprocal operations per minute (min^{-1})

f_T : Temperature factor

CAGE SLIPPAGE

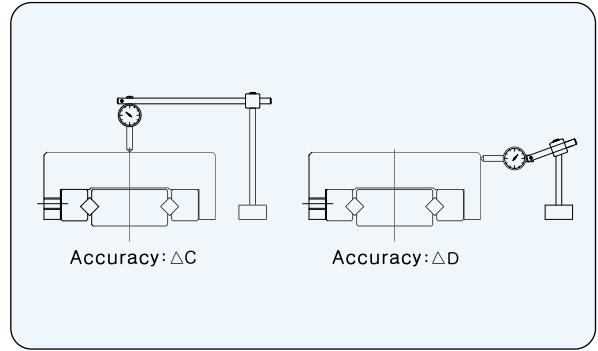
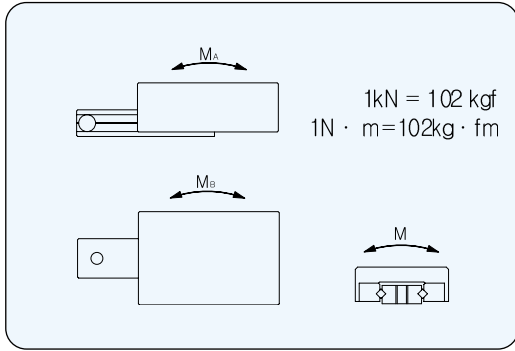
When used under high-speed, unbalanced-load, or machine vibration conditions, cage slippage may occur. If this keep happens in any case, please apply miniature linear rail system of SBM series.

SCVRT TYPE MINIATURE TYPE (Base tapped-hole type)



Model number	Major Dimensions					Table dimensions									
	Max stroke	Width W ±0.1	Height T ±0.1	Length L	Mass G	Table-mounting tapped-hole position					F ₁	n ₁ × F ₁	J ₁	D ₁	G ₁
						J	F	n × F	G	m ₂					
SCVRT 1025	12	20	8	25	23	14	18	1 × 18	3.5	M2.6 × 0.45	10	1 × 10	12.4	4.1	7.5
SCVRT 1035	18			35	32		28	1 × 28							
SCVRT 1045	25			45	42		20	1 × 20							
SCVRT 1055	32			55	52		30	1 × 30	12.5			4 × 10			
SCVRT 1065	40			65	62		20	2 × 20	5 × 10						
SCVRT 1075	45			75	72		30	1 × 30	22.5			6 × 10			
SCVRT 1085	50			85	82		30	2 × 30	12.5			7 × 10			
SCVRT 2035	18	30	12	35	78	22	28	1 × 28	3.5	M3 × 0.5	15	1 × 15	20	6	10
SCVRT 2050	30			50	113		43	1 × 43	3.5			2 × 15			
SCVRT 2065	40			65	147		30	1 × 30	17.5			3 × 15			
SCVRT 2080	50			80	184		45	1 × 45	17.5			4 × 15			
SCVRT 2095	60			95	220		30	2 × 30	17.5			5 × 15			
SCVRT 2110	70			110	257		45	1 × 45	32.5			6 × 15			
SCVRT 2125	80			125	290		45	2 × 45	17.5			7 × 15			

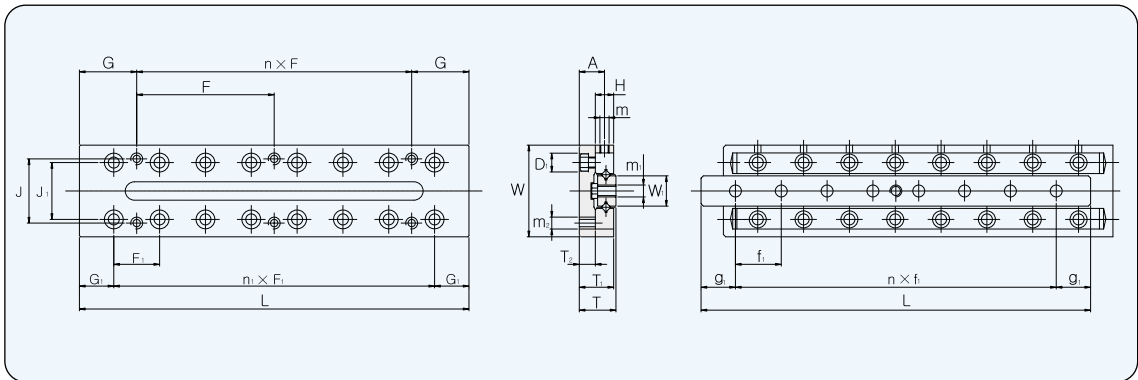
Cross Roller Table



Unit:mm

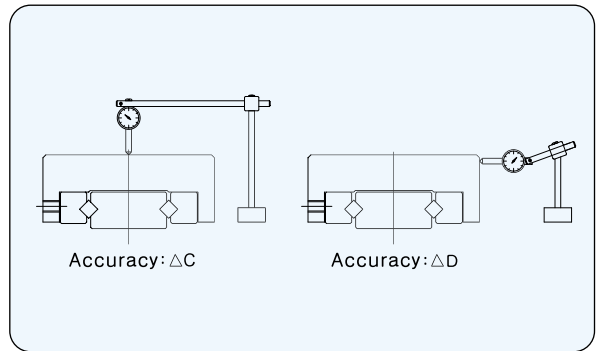
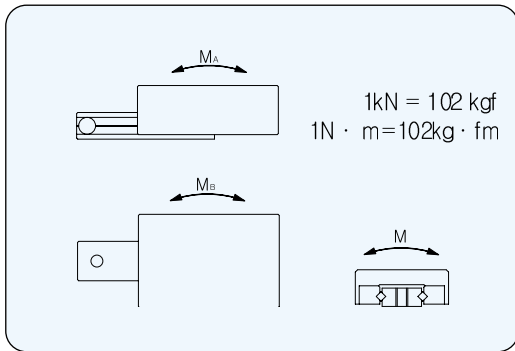
Side dimensions						Base dimensions mounting-hole position					Basic load rating		Static permissible moment			Accuracy μm	
T_1	T_2	H	W_1	A	m	m_1	f_1	$n \times f_1$	g_1	No. of rollers Z	C kN	C_0 kN	M_A N·m	M_B N·m	M_C N·m	ΔC	ΔD
7.5	3.5	4	6.6	5.5	M2	M2.6 × 0.45	7.5	2 × 7.5	5	5	0.28	0.27	0.75	0.46	0.69	2	4
								2 × 10		7	0.38	0.41	1.23	0.85	1.03		
								3 × 10		10	0.56	0.69	2.18	1.67	1.72		
								4 × 10		12	0.65	0.82	2.97	2.35	2.06		
								5 × 10		14	0.73	0.96	3.87	3.17	2.40		
								6 × 10		18	0.87	1.27	6.05	5.16	3.19		
								7 × 10		20	0.94	1.37	7.32	6.37	3.43		
11.5	5.5	6	12	8.5	M2	M3 × 0.5	15	1 × 20	10	5	0.51	0.51	2.29	1.37	2.21	5	4
								2 × 15		7	0.69	0.76	3.76	2.65	3.32		
								3 × 15		9	0.85	0.98	5.62	4.22	4.25		
								4 × 15		12	0.98	1.27	9.10	7.26	5.52		
								5 × 15		14	1.18	1.57	11.8	9.71	6.80		
								6 × 15		17	1.47	2.06	16.7	14.1	8.93		
								7 × 15		19	1.57	2.25	20.4	17.5	9.77		

SCVRT TYPE MINIATURE TYPE (Base tapped-hole type)



Model number	Major Dimensions					Table dimensions									
	Max stroke	Width W ± 0.1	Height T ± 0.1	Length L	Mass G	Table-mounting tapped-hole position					F_1	$n_1 \times F_1$	J_1	D_1	G_1
						J	F	$n \times F$	G	m_2					
SCVRT 3055	30	40	16	55	229	30	40	1×40	7.5	M4 × 0.7	25	1×25	28.4	7.5	15
SCVRT 3080	45			80	336		65	1×65				2×25			
SCVRT 3105	60			105	442		50	1×50				3×25			
SCVRT 3130	75			130	551		75	1×75				4×25			
SCVRT 3155	90			155	657		50	2×50				5×25			
SCVRT 3180	105			180	766		75	1×75				6×25			
SCVRT 3205	130			205	871		75	2×75				7×25			

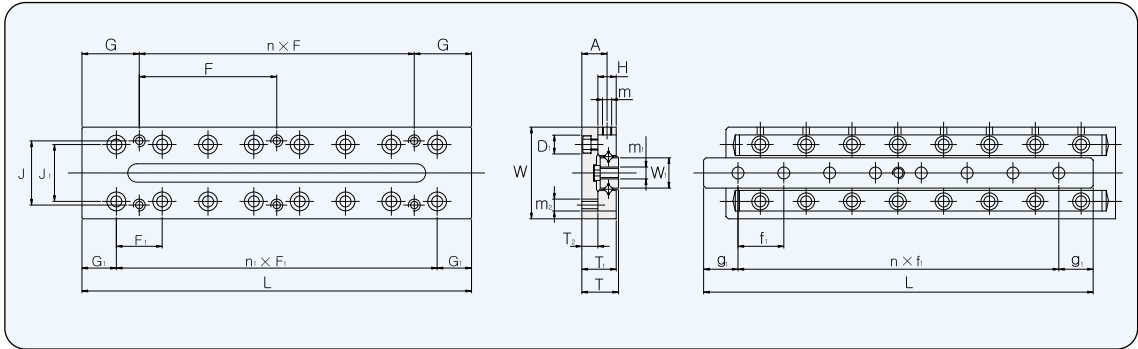
Cross Roller Table



Unit:mm

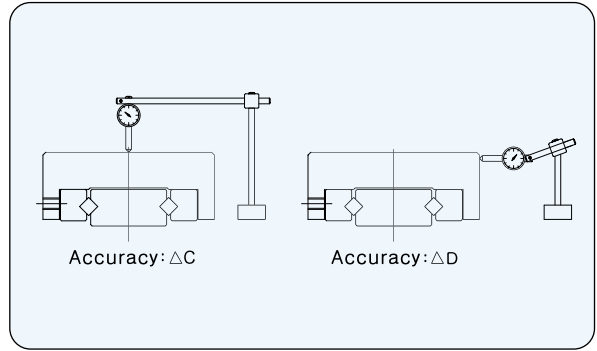
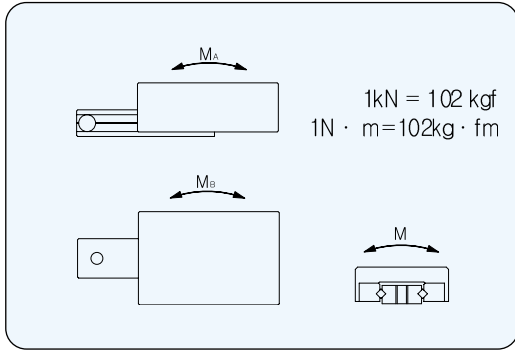
Side dimensions						Base dimensions mounting-hole position					Basic load rating		Static permissible moment			Accuracy μm	
T_1	T_2	H	W_1	A	m	m_1	f_1	$n \times f_1$	g_1	No. of rollers Z	C kN	C_0 kN	M_A N·m	M_B N·m	M_C N·m	ΔC	ΔD
15.5	7.5	8	16	11.5	M2	M4 × 0.7	35	1×35	10	6	1.27	1.37	9.85	6.57	7.97	2	5
							25	2×25	15	10	2.16	2.84	22.2	17.0	16.5		
								3×25		13	2.94	4.22	34.8	28.1	24.4		
								4×25		17	3.63	5.69	55.8	47.1	33.3		
								5×25		20	3.92	6.37	74.7	64.6	36.9	3	6
								6×25		24	4.02	6.57	104	92.3	38.1		
							7×25	26	4.22	7.16	120	107	41.5				

SVRT TYPE : MINIATURE TYPE (Base mounting-hole type)



Model number	Major Dimensions					Table dimensions									
	Max stroke	Width W ±0.1	Height T ±0.1	Length L	Mass G	Table-mounting tapped-hole position					F ₁	n × F ₁	J ₁	D ₁	G ₁
						J	F	n × F	G	S					
SVRT 1025 A	12	20	8	25	23	14	18	1 × 18	3.5	M2.6 × 0.45	10	1 × 10	12.4	4.1	7.5
SVRT 1035 A	18			35	32		28	1 × 28	3.5			2 × 10			
SVRT 1045 A	25			45	42		20	1 × 20	12.5			3 × 10			
SVRT 1055 A	32			55	52		30	1 × 30	12.5			4 × 10			
SVRT 1065 A	40			65	62		20	2 × 20	12.5			5 × 10			
SVRT 1075 A	45			75	72		30	1 × 30	2.5			6 × 10			
SVRT 1085 A	50			85	82		30	2 × 30	12.5			7 × 10			
SVRT 2035 A	18	30	12	35	78	22	28	1 × 28	3.5	M3 × 0.5	15	1 × 15	20	6	10
SVRT 2050 A	30			50	113		43	1 × 43	3.5			2 × 15			
SVRT 2065 A	40			65	147		30	1 × 30	17.5			3 × 15			
SVRT 2080 A	50			80	181		45	1 × 45	17.5			4 × 15			
SVRT 2095 A	60			95	217		30	2 × 30	17.5			5 × 15			
SVRT 2110 A	70			110	254		45	1 × 45	32.5			6 × 15			
SVRT 2125 A	80			125	287		45	2 × 45	17.5			7 × 15			

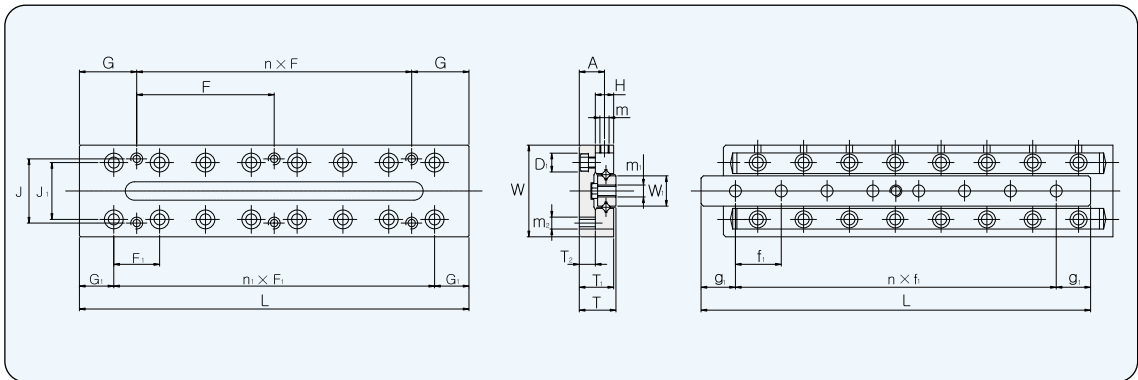
Cross Roller Table



Unit:mm

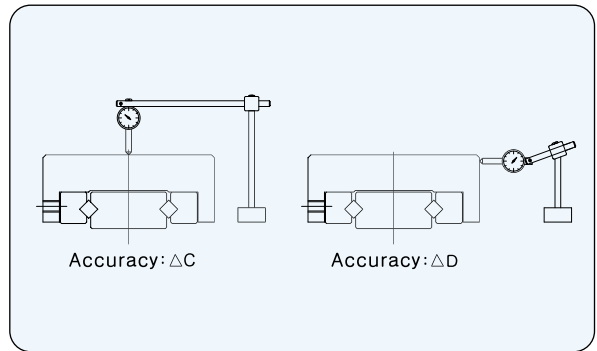
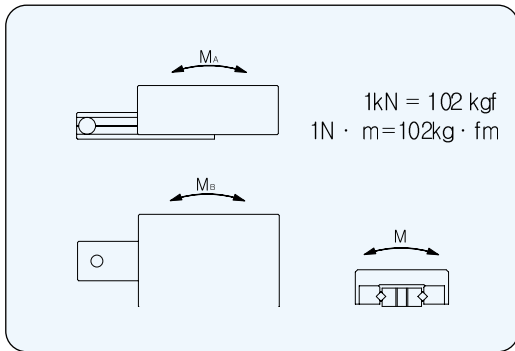
Side dimensions						Base dimensions mounting-hole position					Basic load rating		Static permissible moment			Accuracy μm	
T_1	T_2	H	W_1	A	m	$m_1 \times D \times h$	l_1	l_2	g_1	No. of rollers Z	C kN	C_0 kN	M_A N·m	M_B N·m	M_C N·m	ΔC	ΔD
7.5	3.5	4	6.6	5.5	M2	$2.5 \times 4.1 \times 2.2$	-	18	3.5	5	0.28	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		
							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								
11.5	5.5	6	12	8.5		$3.5 \times 6 \times 3.2$	-	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		
							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									

MINIATURE TYPE (Base tapped-hole type)



Model number	Major Dimensions					Table dimensions									
	Max stroke	Width W ±0.1	Height T ±0.1	Length L	Mass G	Table-mounting tapped-hole position					J ₁	n ₁ × F ₁	B ₁	D ₁	G ₁
						J	F	n × F	G	S					
SVRT 3055	30	40	16	55	226	30	40	1 × 40	7.5	M4 × 0.7	25	1 × 25	28.4	7.5	15
SVRT 3080	45			80	333		65	1 × 65	7.5			2 × 25			
SVRT 3105	60			105	439		50	1 × 50	27.5			3 × 25			
SVRT 3130	75			130	548		75	1 × 75	27.5			4 × 25			
SVRT 3155	90			155	652		50	2 × 50	27.5			5 × 25			
SVRT 3180	105			180	761		75	1 × 75	52.5			6 × 25			
SVRT 3205	130			205	866		75	2 × 75	27.5			7 × 25			

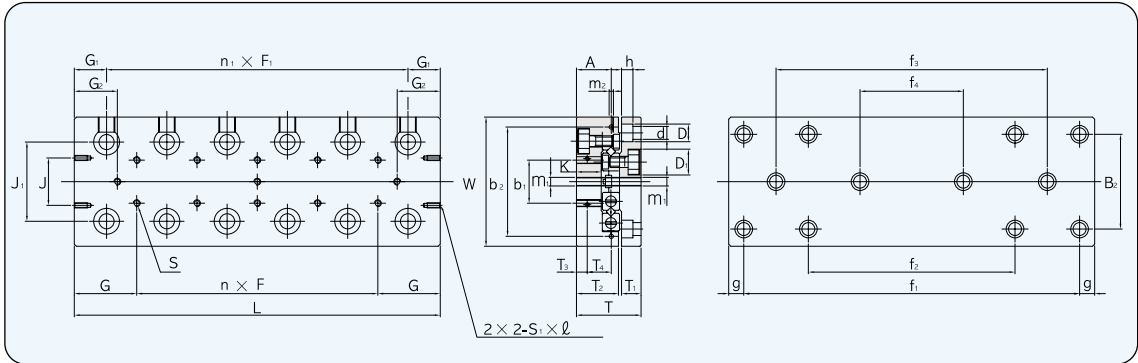
Cross Roller Table



Unit:mm

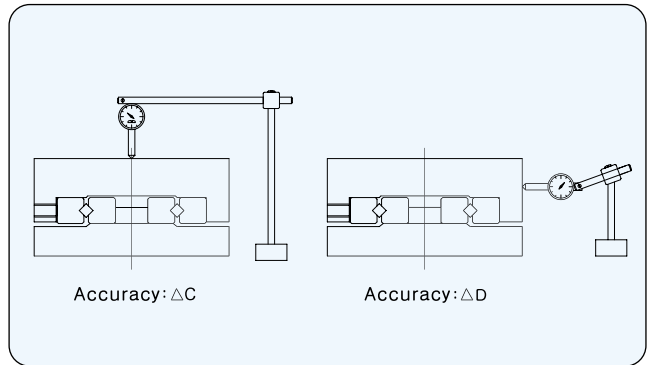
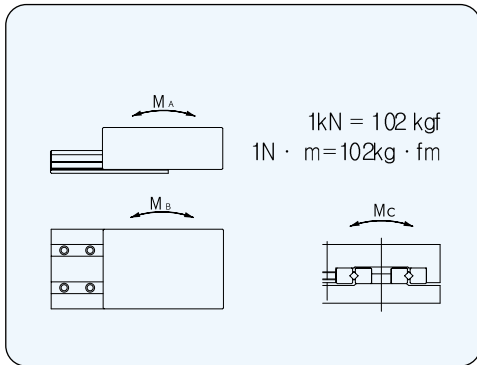
Side dimensions						Base dimensions mounting-hole position					Basic load rating		Static permissible moment			Accuracy μm	
T_1	T_2	H	W_1	A	m	$m_1 \times D \times h$	l_1	l_2	g_1	No. of rollers Z	C kN	C_0 kN	M_A N·m	M_B N·m	M_C N·m	ΔC	ΔD
15.5	7.5	8	16	11.5	M2	4.5 × 7.5 × 4.2	—	40	7.5	6	1.27	1.37	9.85	6.57	7.97	2	5
							43	68	6	10	2.16	2.84	22.2	17.0	16.5		
							55	90	7.5	13	2.94	4.22	34.8	28.1	24.4	3	6
							65	115		17	3.63	5.69	55.8	47.1	33.3		
							95	140		20	3.92	6.37	74.7	64.6	36.9		
							85	165		24	4.02	6.57	104	92.3	38.1		
							90	190		26	4.22	7.16	120.8	107.9	41.5		

SCVRU TYPE



Model number	Major Dimensions					Table dimensions											
	Max stroke	Width -0.2 -0.1	Height T ±0.1	Length L	Mass kg	Table-mounting tapped-hole position				Sidemounting tapped-hole position							
						J	n × F	G	S	B ₁	n ₁ × F ₁	G ₁	G ₂	b ₁	T ₃	S ₁ × ℓ	
SCVRU 1025	12			25	0.08		—					1 × 10		2.5			
SCVRU 1035	18			35	0.11		1 × 10					2 × 10		4.5			
SCVRU 1045	25			45	0.15		2 × 10					3 × 10		6			
SCVRU 1055	32	30	17	55	0.18	10	3 × 10	12.5	M2 × 0.4	18.4	4 × 10	7.5	7.5	12	2.5		
SCVRU 1065	40			65	0.21		4 × 10				5 × 10		8.5				
SCVRU 1075	45			75	0.24		5 × 10				6 × 10		11				
SCVRU 1085	50			85	0.27		6 × 10				7 × 10		13.5				
SCVRU 2035	18			30	0.2		—				1 × 15		3				
SCVRU 2050	30			50	0.26		1 × 15				2 × 15		4.5				
SCVRU 2065	40			65	0.34		2 × 15				3 × 15		7				
SCVRU 2080	50	40	21	80	0.42	15	3 × 15	17.5	M3 × 0.5	25	4 × 15	10	9.5	16	3.4		
SCVRU 2095	60			95	0.5		4 × 15				5 × 15		12				
SCVRU 2110	70			110	0.58		5 × 15				6 × 15		14.5				
SCVRU 2125	80			125	0.66		6 × 15				7 × 15		17				

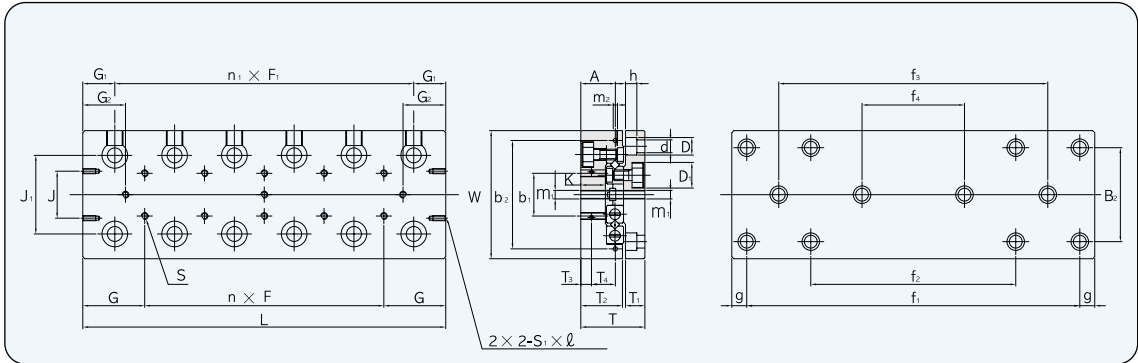
Cross Roller Table



Unit:mm

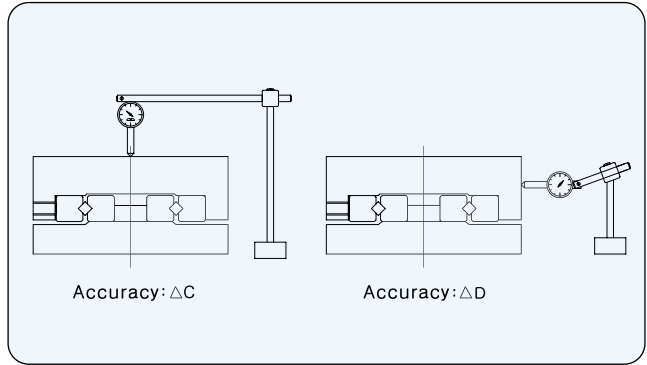
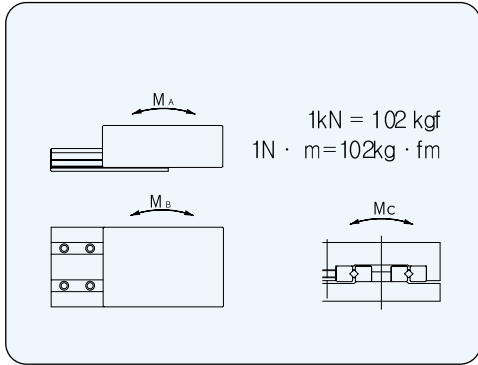
Side dimensions							Base dimensions mounting-hole position							Basic load rating			Static permissible moment			Accuracy μm	
T_2	T_1	K	$d \times D \times h$	D_1	m_1	A	m_2	J_1	f_1	f_2	f_3	f_4	g	No. of rollers Z	C kN	C_0 kN	M_A N·m	M_B N·m	M_C N·m	ΔC	ΔD
11	5.5	6.5	$2.55 \times 4.1 \times 2.5$	4.1	M2	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		
									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		5
									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		
14	6.5	7.5	$2.55 \times 4.1 \times 2.5$	6	M3	11	M3	30	25	-	-	-	5	5	0.51	0.51	2.29	1.40	3.06	3	4
									40	-	-	-		7	0.69	0.76	3.76	2.60	4.59		
									55	-	-	-		9	0.85	0.98	5.62	4.17	5.89		
									70	40	-	-		12	1.18	1.57	9.10	7.22	9.42		5
									85	55	-	-		14	1.27	1.76	11.8	9.70	10.5		
									100	70	-	-		17	1.47	2.06	16.7	14.1	12.3		
									115	85	-	-		19	1.57	2.25	20.4	17.5	13.5		6

SCVRU TYPE



Model number	Major Dimensions					Table dimensions										
	Max stroke	Width w -0.2 -0.1	Height T ±0.1	Length L	Mass kg	Table-mounting tapped-hole position				Side mounting tapped-hole position						
						J	n × F	G	S	B ₁	n ₁ × F ₁	G ₁	G ₂	b ₁	T ₃	S ₁ × ℓ
SCVRU 3055	30			55	0.57		—					1 × 25	2.5			
SCVRU 3080	45			80	0.8		1 × 25					2 × 25	10.5			
SCVRU 3105	60			105	0.13		2 × 25					3 × 25	15.5			
SCVRU 3130	75	60	28	130	1.26	25	3 × 25	27.5	M4 × 0.7	39	4 × 25	15	20.5	40	5.5	
SCVRU 3155	90			155	1.49		4 × 25				5 × 25	25.5				
SCVRU 3180	105			180	1.72		5 × 25				6 × 25	30.5				
SCVRU 3205	130			205	1.95		6 × 25				7 × 25	30.5				M3 (Pitch 0.5) ×6
SCVRU 4085	50			85	1.5		—				1 × 40	10.5				
SCVRU 4125	75			125	2.3		1 × 40				2 × 40	18				
SCVRU 4165	105			165	3.1		2 × 40		M5 × 0.8		3 × 40	23				
SCVRU 6205	135	80	35	205	3.8	40	3 × 40	42.5		53	4 × 40	22.5	30.5	55	6.5	
SCVRU 4245	155			245	4.6		4 × 40				5 × 40	38				
SCVRU 4285	185			285	5.3		5 × 40				6 × 40	43				

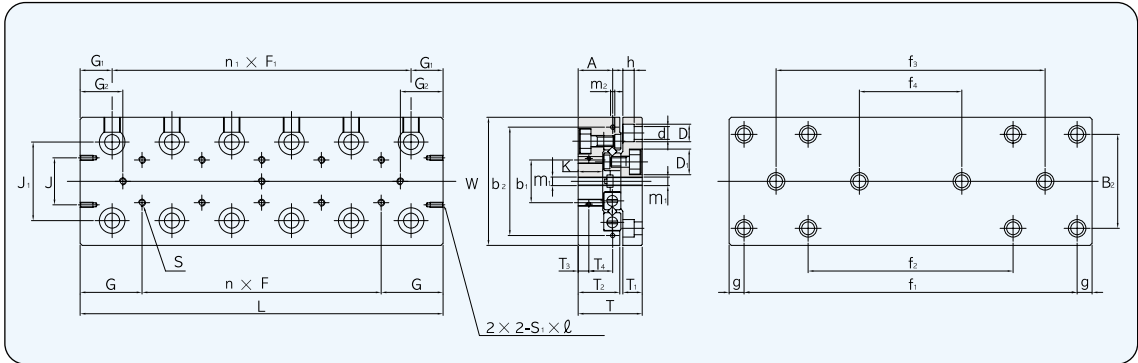
Cross Roller Table



Unit:mm

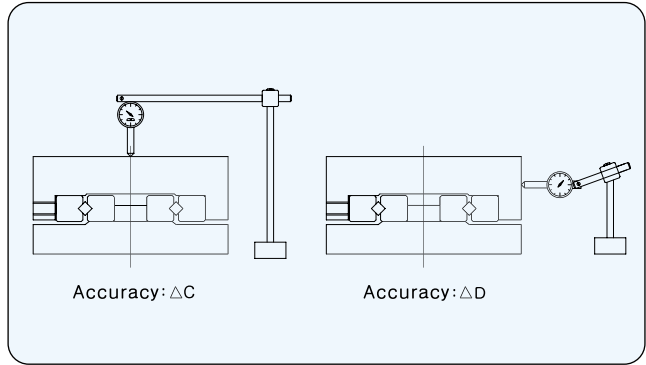
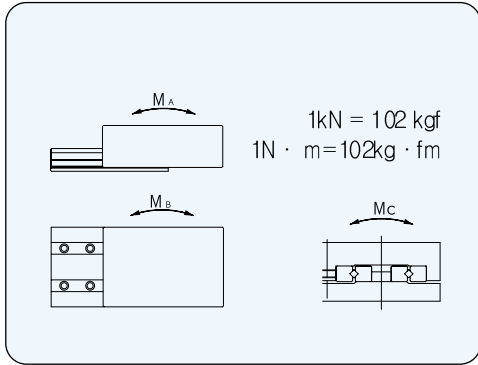
Side dimensions							Base dimensions mounting-hole position							Basic load rating			Static permissible moment			Accuracy μm										
T_2	T_1	K	$d \times D \times h$	D_1	m_1	A	m_2	J_1	f_1	f_2	f_3	f_4	g	No. of rollers Z	C kN	C_0 kN	M_A N·m	M_B N·m	M_C N·m	ΔC	ΔD									
18.5	9	10	$4.5 \times 7.5 \times 5$	7.5	M4	14.5	M4	40	35	-	-	-	10	6	1.47	1.67	9.85	6.54	15.5	2	5									
									60	-	-	-		10	2.06	2.75	22.2	17.0	25.6											
									85	-	-	-		13	2.35	3.33	34.8	28.1	31.1	3	6									
									110	-	-	-		17	2.94	4.41	55.8	47.1	41.2											
									135	-	85	-		20	3.53	5.49	74.7	64.6	51.2											
									24	10.5	12.5	$5.5 \times 9.5 \times 6$		9.5	M4	18.5	M4	60	160	-	110	-	24	4.02	6.57	104	92.3	61.3	7	7
																			185	85	135	-	26	4.22	7.16	120	107	66.8		
65	-	-	-	10	7	3.53	4.80	48.7					33.7						64.0	2	5									
80	-	-	-	11	5.20	8.04	101	79.1					107						3	6										
120	-	-	-	14	6.77	11.3	153	125					150																	
160	80	-	-	18	8.14	14.5	239	204	193																					
24	10.5	12.5	$5.5 \times 9.5 \times 6$	9.5	M4	18.5	M4	60	200	120	-	-	22	9.42	17.7	344	302	235	3	7										
									240	160	-	-	26	10.7	20.9	468	418	278												

SCVRU TYPE



Model number	Major Dimensions					Table dimensions													
	Max stroke	Width W ±0.1	Height T ±0.1	Length L	Mass kg	Table-mounting tapped-hole position				Side mounting tapped-hole position									
						J	n×F	G	S	B ₁	n ₁ ×F ₁	G ₁	G ₂	b ₁	b ₂	T ₃	t ₂	S ₁ ×ℓ	
SCVRU 6110	60			110	3.2		—					1×50	16						
SCVRU 6160	95			160	4.6		1×50					2×50	23.5						
SCVRU 6210	130			210	6.0		2×50					3×50	31						
SCVRU 6260	165	100	45	260	7.4	50	3×50	55	M6	63	4×50	30	38.5	60	92	8	15		
SCVRU 6310	200			310	8.7		4×50				5×50	46							
SCVRU 6360	235			360	10.1		5×50				6×50	53.5							
SCVRU 9410	265			410	11.5		6×50				7×50	63.5							
SCVRU 9210	130			210	12.0		—				1×100	27							
SCVRU 9310	180			310	17.6		1×100				2×100	52							
SCVRU 9410	350			410	23.2		2×100				3×100	17							
SCVRU 9510	450	140	60	510	28.8	85	3×100	105	M8	96	4×100	55		90	135	11	20		
SCVRU 9610	550			610	34.4		4×100				5×100								
SCVRU 9710	650			710	40.0		5×100				6×100								
SCVRU 9810	750			810	45.6		6×100				7×100								

Cross Roller Table



Unit:mm

Side dimensions				Base dimensions mounting-hole position							Basic load rating			Static permissible moment			Accuracy μm				
T_2	T_1	K	$d \times D \times h$	D_1	m_1	A	m_2	J_1	f_1	f_2	f_3	f_4	g	No. of rollers Z	C kN	C_0 kN	M_A N·m	M_B N·m	M_C N·m	ΔC	ΔD
31	13	15	7 × 11 × 7	11	M5	23.5	M5	60	90	-	-	-	10	6	7.45	10.6	121	80.5	158	3	6
									140	-	-	-		9	9.31	14.1	231	171	211	3	6
									190	-	90	-		13	12.5	21.1	428	345	317	3	7
									240	-	140	-		16	15.6	28.2	616	516	423	3	7
									290	-	190	-		19	17.1	31.8	838	720	476	4	8
									340	140	240	-		22	19.8	38.8	1090	958	582	4	8
									390	190	290	-		26	22.5	45.9	1480	1320	688	4	8
43	16	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	3	7
									300	-	100	-		15	31.9	61.1	1990	1650	1460	4	8
									400	-	200	-		19	38.4	78.5	3030	2600	1880	4	8
									500	100	300	-		22	44.7	96.0	3950	3460	2300	4	9
									600	200	400	-		26	50.6	114	5380	4810	2730	4	9
									700	300	500	100		29	53.5	123	6600	5960	2940	5	10