SLIDE TABLE

The NB slide table is a precision table equipped with a slide way. Its high-precision and low-friction characteristics make it well suited for use in electronics automatic-assembly machines and optical measurement devices.

STRUCTURE AND ADVANTAGES

The NB slide table consists of a slide way sandwiched between an accurately machined table and a bed. Stopper is provided within the table.

High Accuracy:

The mounting surfaces of the table and bed are precision finished to ensure high-precision linear motion, resulting in a high-performance slide way.

Low Friction:

Its non-recirculating mechanism provides stable motion from low to high speeds.

Compact and High Rigidity:

Being designed compactly, the NB slide table holds the high load capacity and high-rigidity characteristics.

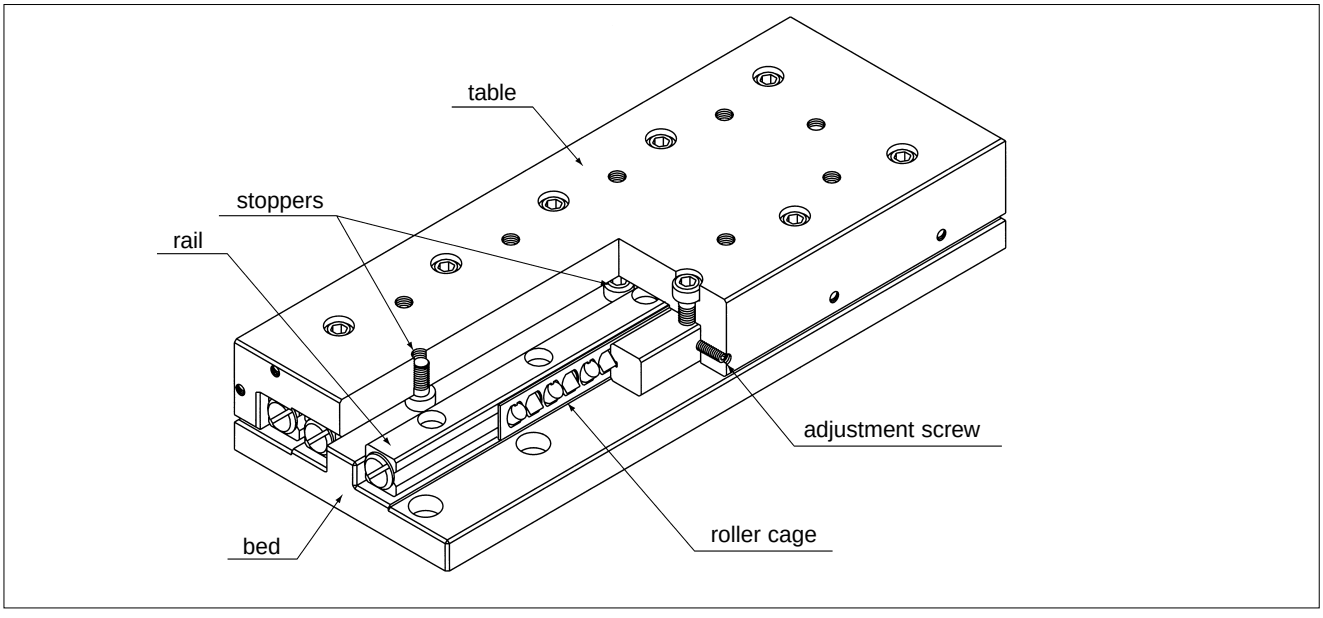
No Need for Adjustment:

The table is carefully assembled so that the accuracy and pre-load are optimized, so it can be used immediately without any further adjustment.

Ease of Mounting:

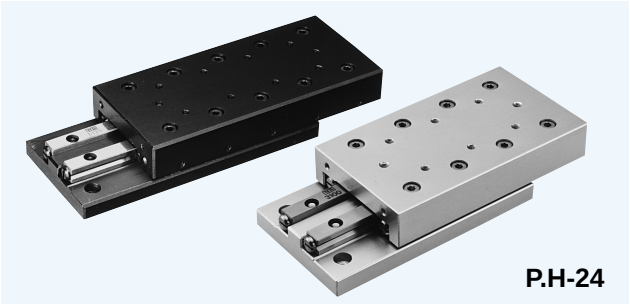
Standardized mounting holes are provided in the table and bed. High-precision linear motion can be achieved simply by mounting.

Figure H-12 Structure of SVT Type Slide Table



TYPE

SVT・SVTS Type



P.H-24

In the SVT type slide table, the slide way is sandwiched between an accurately machined steel tabletop and bed. In the SVTS type, an anti-corrosion SVS type slide way is sandwiched between an accurately machined aluminum tabletop and bed.

SYT・SYTS Type

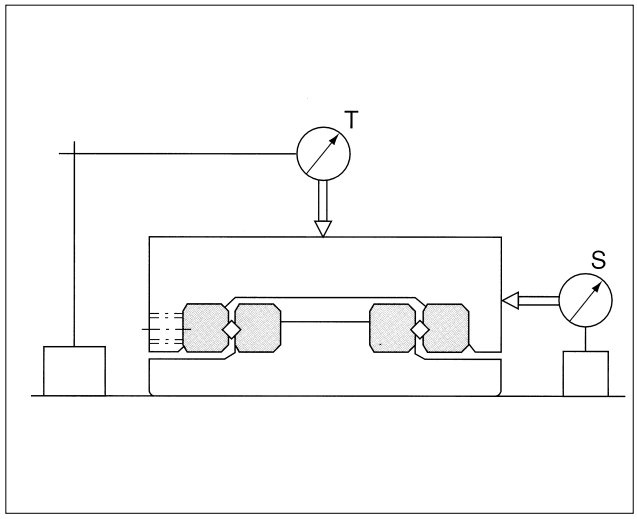
P.H-30

The SYT/SYTS type is a thin, compact slide table. Either tapped or counterbore type is available. The anti-corrosion SYTS type slide table is fabricated with all stainless steel components, making it suitable for use in clean rooms.

ACCURACY

The motion accuracy of a slide table is measured by placing indicators at the centers of the top and side surfaces of the table, as illustrated in Figure H-13. It is expressed in terms of the indicator diflections when the table is moved to the right and left under no-load conditions.

Figure H-13 Accuracy Measurement Method



RATED LIFE

The life of an NB slide table is calculated using the following equations.

Travel life :

$$L = \left(\frac{f_T}{f_W} \cdot \frac{C}{P}\right)^{10/3} \cdot 50$$

L : travel life (km) f_T : temperature coefficient
f_W : load coefficient
※ Refer to page Eng. 5 for the coefficients.

Life time :

$$L_h = \frac{L \cdot 10^3}{2 \cdot \ell s \cdot n_1 \cdot 60}$$

L_h : life time (hr) ℓ_S : stroke length (m)
n_1 : number of strokes per minute (cpm)

NOTES ON OPERATION

Careful Handling:

Dropping a table may result in scratches or dents on the raceway surface, preventing smooth motion and reducing the life. Care should be exercised when handling a table.

Dust Prevention:

Dust and foreign particles can affect the accuracy and lifetime of a slide table. A slide table used in a hostile environment should be protected with a cover.

Lubrication:

Lithium soap lubrication is applied prior to shipment, so a table can be used immediately upon delivery. Periodic application of a similar lubricant should be necessary depending on the operating conditions.

Cage Slippage:

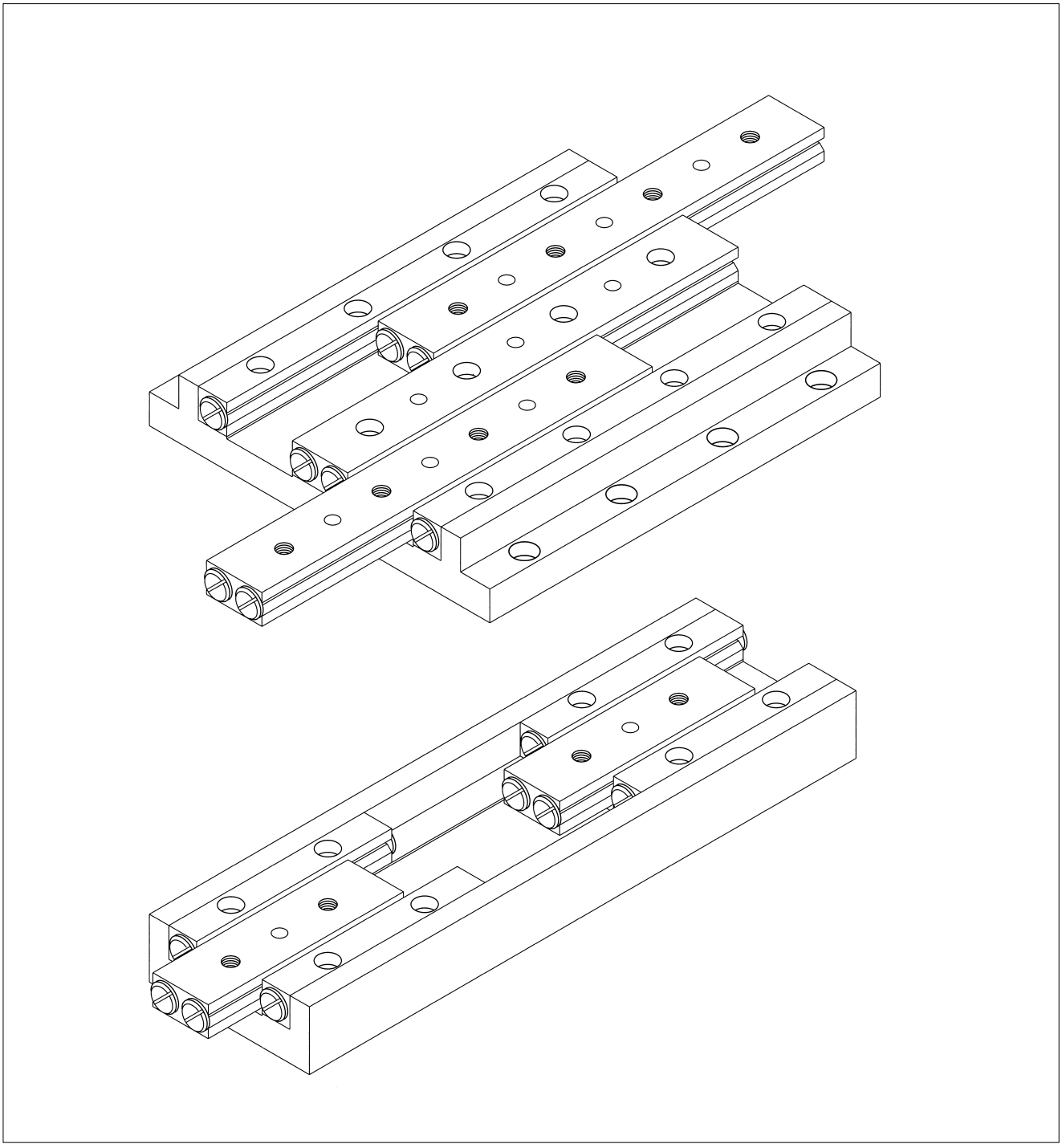
The cage can slip under high-speed motion, unbalanced-loading, and vibrating conditions. The motion speed of a slide table should be kept under 30 m/min.

Adjustment/Installation Screws:

The NB slide table is adjusted to achieve optimum accuracy and pre-load. The adjustment screw and tracking-bed installation screws should not be changed.

SPECIAL REQUIREMENTS

NB can fabricate tables to meet special requirements, including tables with a micrometer head and tables for projectors. Contact NB for further information.



SVT TYPE

– SVT1/SVT2 –

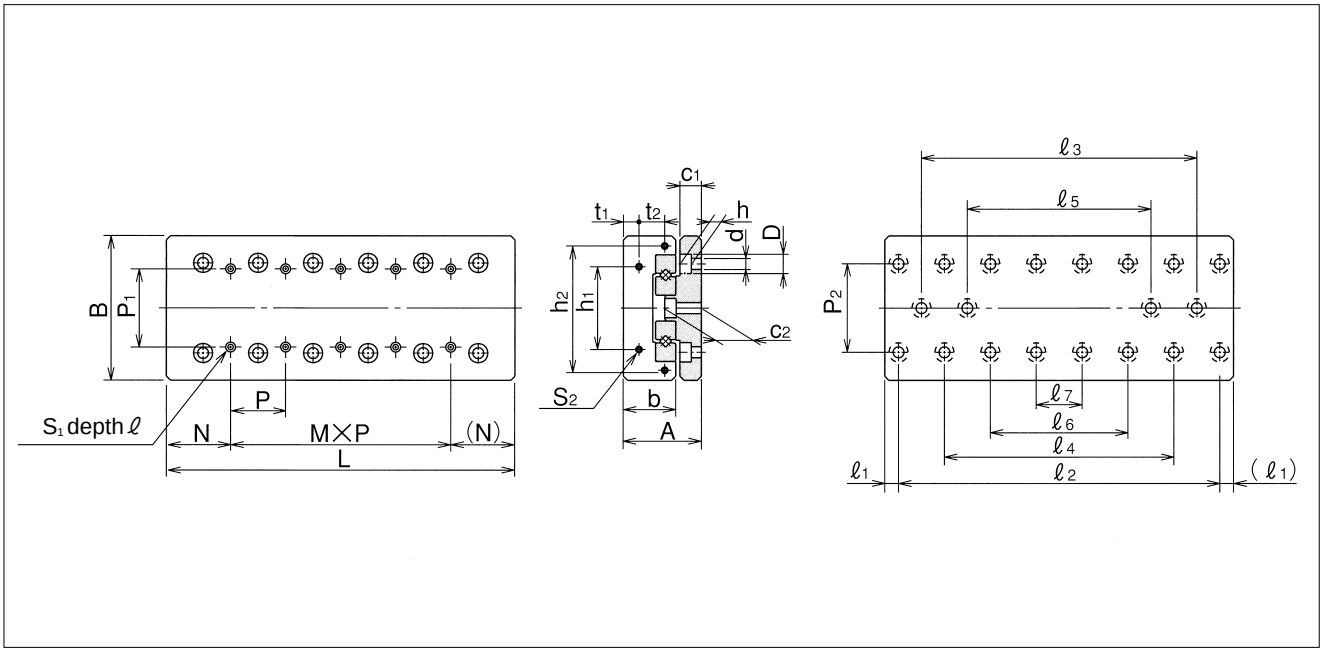
part number structure example

SVTS 6 210

- SVTS: specification
- 6: size
- 210: over-all length

specification	
SVT	standard
SVTS	anticorrosion

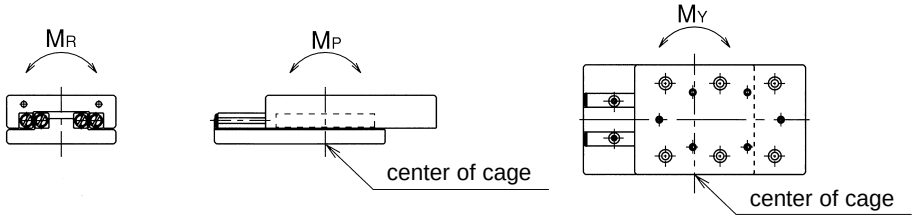
part number		stroke	major dimensions				table-top mounting-hole dimensions					table-end mounting-hole dimensions					
standard	anticorrosion	mm	A mm	B mm	L mm	b mm	P_1 mm	S_1	ℓ mm	N mm	M×P mm	h_1 mm	h_2 mm	t_1 mm	t_2 mm	S_2	P_2 mm
SVT1025	**SVTS1025**	12			25						—						
1035	**1035**	18			35						1×10						
1045	**1045**	25			45						2×10						
1055	**1055**	32	$17^{\pm 0.1}$	$30^{-0.2}_{-0.4}$	55	11	10	M2	4	12.5	3×10	12	–	2.5	–	M2	22
1065	**1065**	40			65						4×10						
1075	**1075**	45			75						5×10						
1085	**1085**	50			85						6×10						
SVT2035	**SVTS2035**	18			35						—						
2050	**2050**	30			50						1×15						
2065	**2065**	40			65						2×15						
2080	**2080**	50			80						3×15						
2095	**2095**	60			95						4×15						
2110	**2110**	70	$21^{\pm 0.1}$	$40^{-0.2}_{-0.4}$	110	14	15	M3	6	17.5	5×15	16	–	3.4	–	M2	30
2125	**2125**	80			125						6×15						
2140	**2140**	90			140						7×15						
2155	**2155**	100			155						8×15						
2170	**2170**	110			170						9×15						
2185	**2185**	120			185						10×15						



bed-surface mounting-hole dimensions										accuracy※		basic load rating		allowable static moment			mass		size
												dynamic	static				SVT	SVTS	
d×D×h	c_1	c_2	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	T	S	C	Co	M_P	M_Y	M_R			
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	μm	μm	N	N	N·m	N·m	N·m	g	g	
				18	–	–	–	–	–	2	4	340	312	1.1	1.0	2.1	82	36	**1025**
				28	–	–	–	–	–	2	4	572	624	2.0	2.3	4.2	120	50	**1035**
				38	–	–	–	–	–	2	4	676	780	4.6	4.3	5.3	158	69	**1045**
2.5×4.5×2.5	5.5	9	3.5	48	–	28	–	–	–	2	5	776	936	6.3	5.9	6.3	190	83	**1055**
				58	–	38	–	–	–	2	5	871	1,090	8.3	7.8	7.3	225	98	**1065**
				68	–	48	–	–	–	2	5	1,050	1,400	13	12.4	9.5	260	113	**1075**
				78	–	58	–	–	–	2	5	1,140	1,560	15.7	15.0	10.5	295	128	**1085**
				25	–	–	–	–	–	2	4	594	588	3.5	2.9	5.3	195	90	**2035**
				40	–	–	–	–	–	2	4	805	882	6.1	5.5	7.9	280	133	**2050**
				55	–	–	–	–	–	2	5	999	1,180	9.7	8.8	10.6	370	175	**2065**
				70	–	40	–	–	–	2	5	1,350	1,760	14	15.3	15.9	450	220	**2080**
				85	–	55	–	–	–	2	5	1,520	2,060	19.1	20.6	18.5	540	250	**2095**
3.5×6.5×3.5	6.5	10.9	5	100	–	70	–	–	–	3	6	1,680	2,350	31.7	30.0	21.2	630	285	**2110**
				115	–	85	–	–	–	3	6	1,840	2,650	39.1	37.2	23.8	720	330	**2125**
				130	–	100	–	70	–	3	6	2,130	3,230	47.3	49.6	29.1	800	360	**2140**
				145	–	115	–	85	–	3	6	2,280	3,530	56.3	58.8	31.8	880	400	**2155**
				160	–	130	–	100	–	3	7	2,420	3,820	76.7	74.1	34.4	970	440	**2170**
				175	–	145	–	115	85	3	7	2,560	4,120	88.1	85.3	37.0	1,060	480	**2185**

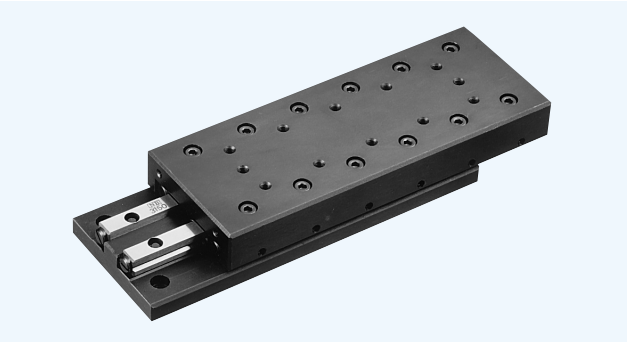
※ Refer to Figure H-13 (page H-21) for accuracy T and S.

1N≒0.102kgf 1N·m≒0.102kgf·m



SVT TYPE

– SVT3/SVT4 –



part number structure example

SVTS 6 210

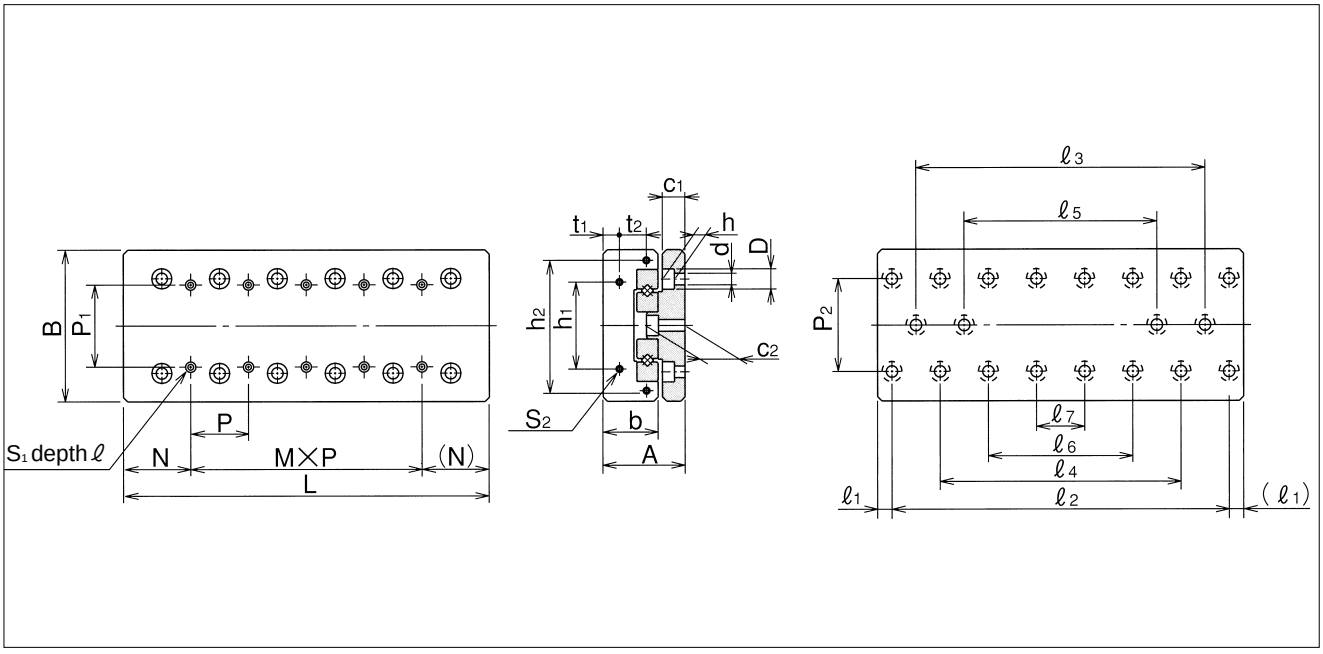
over-all length

size

specification

SVT	standard
SVTS	anticorrosion

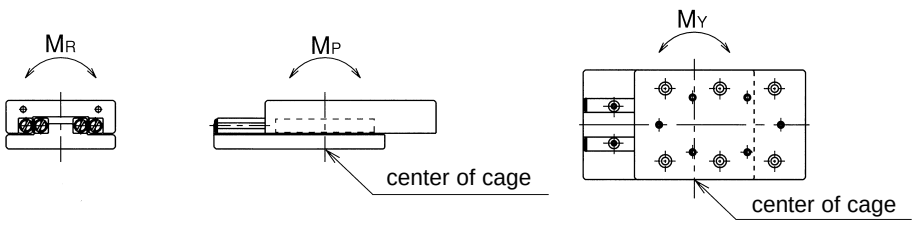
part number		stroke	major dimensions				table-top mounting-hole dimensions					table-end mounting-hole dimensions					
standard	anticorrosion	mm	A mm	B mm	L mm	b mm	P_1 mm	S_1	ℓ mm	N mm	M×P mm	h_1 mm	h_2 mm	t_1 mm	t_2 mm	S_2	P_2 mm
SVT3055	**SVTS3055**	30			55						–						
3080	**3080**	45			80						1×25						
3105	**3105**	60			105						2×25						
3130	**3130**	75			130						3×25						
3155	**3155**	90			155						4×25						
3180	**3180**	105	$28^{\pm0.1}$	$60^{\pm0.1}$	180	18.5	25	M4	8	27.5	5×25	40	–	5.5	–	M3	40
3205	**3205**	130			205						6×25						
3230	**3230**	155			230						7×25						
3255	**3255**	180			255						8×25						
3280	**3280**	205			280						9×25						
3305	**3305**	230			305						10×25						
SVT4085	**SVTS4085**	50			85						–						
4125	**4125**	75			125						1×40						
4165	**4165**	105			165						2×40						
4205	**4205**	130			205						3×40						
4245	**4245**	155	$35^{\pm0.1}$	$80^{\pm0.1}$	245	24	40	M5	10	42.5	4×40	55	–	6.5	–	M3	55
4285	**4285**	185			285						5×40						
4325	**4325**	210			325						6×40						
4365	**4365**	235			365						7×40						
4405	**4405**	265			405						8×40						



bed-surface mounting-hole dimensions										accuracy※		basic load rating		allowable static moment			mass		size
												dynamic	static				SVT	SVTS	
d×D×h	c_1	c_2	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	T	S	C	Co	M_P	M_Y	M_R			
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	μm	μm	N	N	N·m	N·m	N·m	g	g	
4.5×8×4.5	9	15	10	35	–	–	–	–	–	2	5	1,800	2,120	10.6	12.4	29.7	640	300	**3055**
				60	–	–	–	–	–	2	5	2,640	3,530	29.2	32.4	49.4	955	440	**3080**
				85	–	–	–	–	–	3	6	3,030	4,240	57.4	53.5	59.3	1,250	580	**3105**
				110	–	–	–	–	–	3	6	3,760	5,650	95.1	90.0	79.1	1,570	715	**3130**
				135	85	–	–	–	–	3	6	4,440	7,060	117	124	98.8	1,850	850	**3135**
				160	110	–	–	–	–	3	7	5,100	8,470	169	177	119	2,150	990	**3180**
				185	135	85	–	–	–	3	7	5,410	9,180	199	207	129	2,450	1,130	**3205**
				210	160	110	–	–	–	3	7	5,720	9,880	264	256	138	2,740	1,270	**3230**
				235	185	135	–	–	–	3	7	6,320	11,300	301	311	158	3,040	1,410	**3255**
				260	210	160	110	–	–	3	7	6,620	12,000	340	350	168	3,360	1,540	**3280**
				285	235	185	135	–	–	3	7	6,910	12,700	425	414	178	3,660	1,680	**3305**
5.5×10×5.4	10.5	18	10	65	–	–	–	–	–	2	5	3,560	4,350	52.8	47.4	87.0	1,700	780	**4085**
				105	–	–	–	–	–	3	6	5,220	7,250	121	112	145	2,500	1,140	**4125**
				145	–	–	–	–	–	3	7	6,720	10,200	165	178	203	3,300	1,510	**4165**
				185	105	–	–	–	–	3	7	8,120	13,100	273	289	261	4,100	1,870	**4205**
				225	145	–	–	–	–	3	7	9,430	16,000	409	428	319	4,900	2,240	**4245**
				265	185	–	–	–	–	3	7	10,700	18,900	571	594	377	5,700	2,600	**4285**
				305	225	145	–	–	–	4	8	11,900	21,800	760	787	435	6,500	3,000	**4325**
				345	265	185	–	–	–	4	8	13,100	24,700	977	1,010	493	7,300	3,300	**4365**
				385	305	225	–	–	–	4	8	13,600	26,100	1,220	1,190	522	8,100	3,700	**4405**

※ Refer to Figure H-13 (page H-21) for accuracy T and S.

1N≒0.102kgf 1N·m≒0.102kgf·m



SVT TYPE

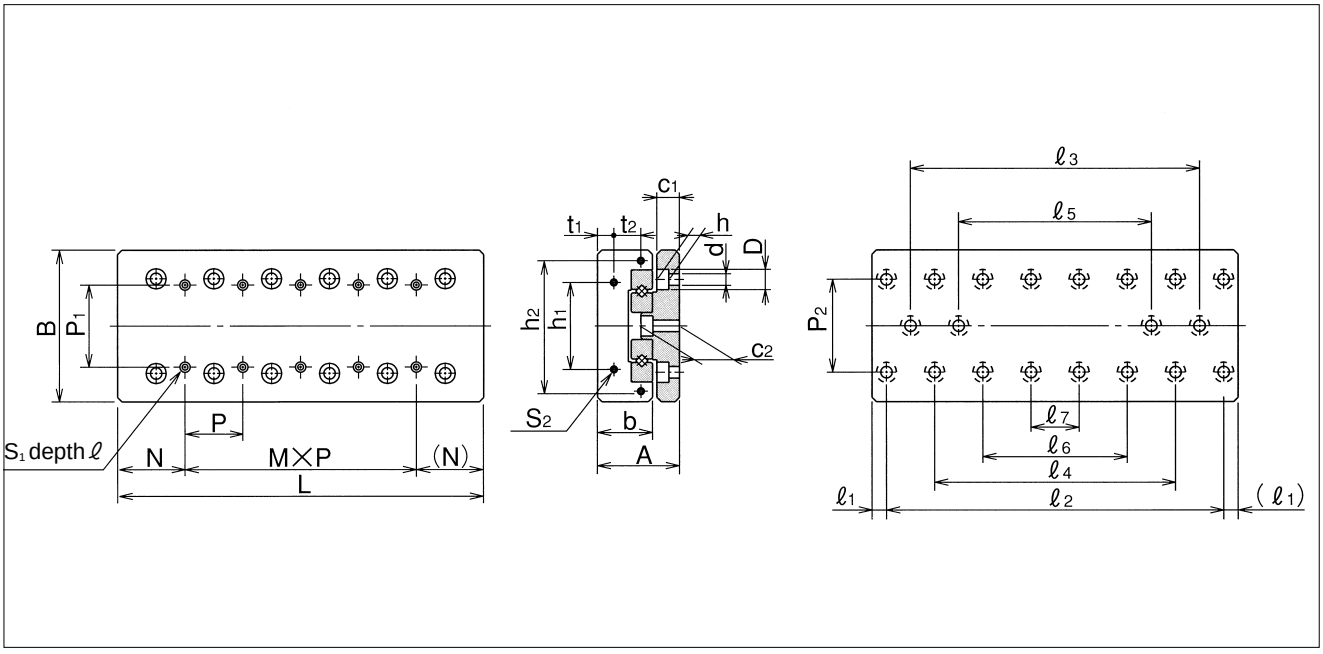
– SVT6/SVT9 –

part number structure example

SVTS | 6 | 210

- SVTS: specification (SVT: standard; SVTS: anticorrosion)
- 6: size
- 210: over-all length

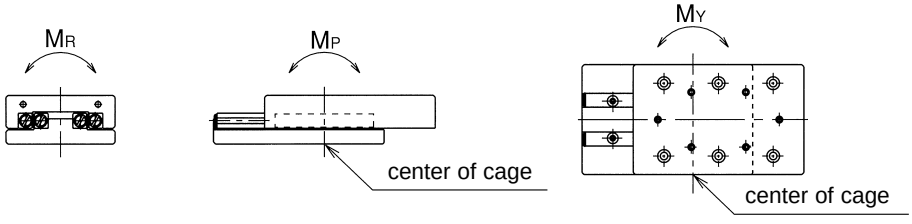
part number		stroke	major dimensions				table-top mounting-hole dimensions					table-end mounting-hole dimensions					
standard	anticorrosion	mm	A mm	B mm	L mm	b mm	P_1 mm	S_1	ℓ mm	N mm	M×P mm	h_1 mm	h_2 mm	t_1 mm	t_2 mm	S_2	P_2 mm
SVT6110	**SVTS6110**	60			110						–						
6160	**6160**	95			160						1×50						
6210	**6210**	130			210						2×50						
6260	**6260**	165			260						3×50						
6310	**6310**	200	$45^{\pm0.1}$	$100^{\pm0.1}$	310	31	50	M6	12	55	4×50	60	92	8	15	M4	60
6360	**6360**	235			360						5×50						
6410	**6410**	265			410						6×50						
6460	**6460**	300			460						7×50						
6510	**6510**	335			510						8×50						
SVT9210	–	130			210						–						
9310	–	180			310						1×100						
9410	–	350			410						2×100						
9510	–	450			510						3×100						
9610	–	550	$60^{\pm0.1}$	$145^{\pm0.2}$	610	43	85	M8	16	105	4×100	90	135	11	20	M4	90
9710	–	650			710						5×100						
9810	–	750			810						6×100						
9910	–	850			910						7×100						
91010	–	950			1,010						8×100						



bed-surface mounting-hole dimensions										accuracy※		basic load rating		allowable static moment			mass		size
												dynamic	static				SVT	SVTS	
d×D×h	c_1	c_2	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	T	S	C	Co	M_P	M_Y	M_R			
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	μm	μm	N	N	N·m	N·m	N·m	g	g	
7×11.5×7	13	23	10	90	—	—	—	—	—	3	6	8,750	10,900	160	144	244	3,280	1,705	**6110**
				140	—	—	—	—	—	3	6	12,800	18,100	366	338	407	4,820	2,480	**6160**
				190	90	—	—	—	—	3	7	16,500	25,300	653	615	570	6,270	3,255	**6210**
				240	140	—	—	—	—	3	7	20,000	32,600	1,020	974	733	7,740	4,030	**6260**
				290	190	—	—	—	—	3	7	23,200	39,800	1,470	1,420	896	9,200	4,805	**6310**
				340	240	140	—	—	—	4	8	26,300	47,100	1,730	1,800	1,060	10,740	5,580	**6360**
				390	290	190	—	—	—	4	8	29,300	54,300	2,310	2,380	1,220	12,190	6,355	**6410**
				440	340	240	—	—	—	4	8	32,200	61,500	2,960	3,050	1,380	13,800	7,130	**6460**
				490	390	290	190	—	—	4	8	35,000	68,800	3,700	3,800	1,550	15,300	7,905	**6510**
9×14×9	16	29	55	100	—	—	—	—	—	3	7	21,400	29,000	840	760	1,050	12,520	—	**9210**
				200	—	—	—	—	—	3	7	32,500	50,800	1,650	1,780	1,830	17,950	—	**9310**
				300	100	—	—	—	—	4	8	32,500	50,800	2,160	2,030	1,830	23,950	—	**9410**
				400	200	—	—	—	—	4	8	39,300	65,300	3,380	3,220	2,400	30,090	—	**9510**
				500	300	100	—	—	—	4	9	45,700	79,900	4,090	4,290	2,900	35,990	—	**9610**
				600	400	200	—	—	—	4	9	51,800	94,400	5,720	5,950	3,400	41,890	—	**9710**
				700	500	300	100	—	—	5	10	54,700	102,000	7,620	7,370	3,700	47,790	—	**9810**
				800	600	400	200	—	—	5	10	60,500	116,000	10,000	9,500	4,200	53,690	—	**9910**
				900	700	500	300	100	—	5	10	66,100	131,000	12,000	12,000	4,700	59,590	—	**91010**

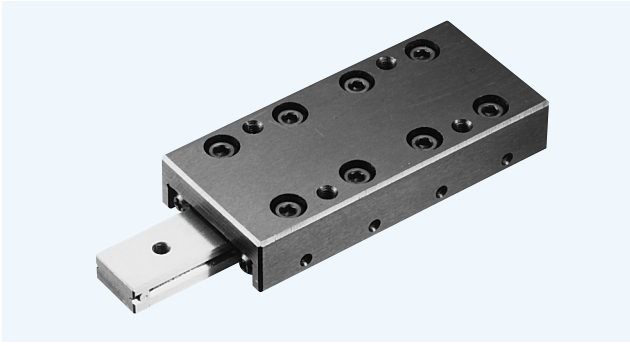
※ Refer to Figure H-13 (page H-21) for accuracy T and S.

1N≒0.102kgf 1N·m≒0.102kgf·m



SYT TYPE

– SYT1/SYT2 –



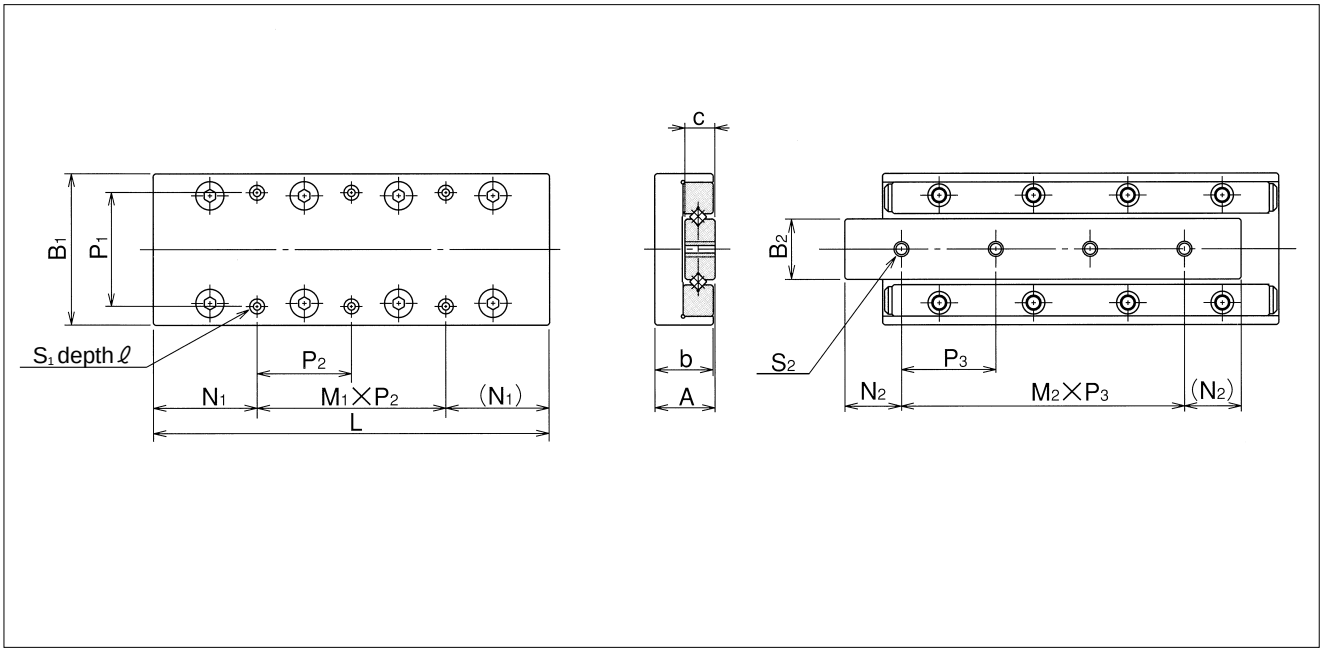
part number structure example

SYTS | 3 | 155

- SYTS: specification
- 3: size
- 155: over-all length

specification	
SYT	standard
SYTS	anticorrosion

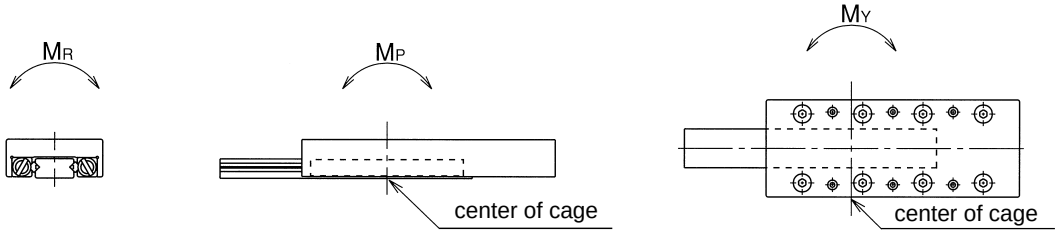
part number		stroke	major dimensions						table-top mounting-hole dimensions		
standard	anticorrosion	mm	A mm	B_1 mm	L mm	b mm	B_2 mm	c mm	P_1 mm	S_1	ℓ mm
SYT1025	**SYTS1025**	12			25						
1035	**1035**	18			35						
1045	**1045**	25			45						
1055	**1055**	32	$8^{\pm 0.1}$	$20^{\pm 0.1}$	55	7.5	6.6	4	14	M2.6	3.5
1065	**1065**	40			65						
1075	**1075**	45			75						
1085	**1085**	50			85						
SYT2035	**SYTS2035**	18			35						
2050	**2050**	30			50						
2065	**2065**	40			65						
2080	**2080**	50	$12^{\pm 0.1}$	$30^{\pm 0.1}$	80	11.5	12	6	22	M3	5.5
2095	**2095**	60			95						
2110	**2110**	70			110						
2125	**2125**	80			125						



		center rail mounting-hole dimensions			accuracy※		basic load rating		allowable static moment			mass	size
							dynamic	static					
N_1	$M_1 \times P_2$	S_2	N_2	$M_2 \times P_3$	T	S	C	Co	M_P	M_Y	M_R		
mm	mm		mm	mm	μm	μm	N	N	N·m	N·m	N·m	g	
3.5	1×18		5	2×7.5	2	4	340	312	1.1	1.0	1.1	22	**1025**
3.5	1×28		7.5	2×10	2	4	572	624	2.0	2.3	2.3	33	**1035**
12.5	1×20		7.5	3×10	2	5	676	780	4.6	4.3	2.9	42	**1045**
12.5	1×30	M2.6	7.5	4×10	2	5	776	936	6.3	5.9	3.5	52	**1055**
12.5	2×20		7.5	5×10	2	5	871	1,090	8.3	7.8	4.1	63	**1065**
22.5	1×30		7.5	6×10	2	5	1,050	1,400	13.0	12.4	5.3	72	**1075**
12.5	2×30		7.5	7×10	2	5	1,140	1,560	15.7	15.0	5.9	83	**1085**
3.5	1×28		7.5	1×20	2	4	594	588	3.5	2.9	3.8	79	**2035**
3.5	1×43		10	2×15	2	4	805	882	6.1	5.5	5.7	113	**2050**
17.5	1×30		10	3×15	2	5	999	1,180	9.7	8.8	7.6	150	**2065**
17.5	1×45	M3	10	4×15	2	5	1,350	1,760	14.0	15.3	11.5	185	**2080**
17.5	2×30		10	5×15	2	5	1,520	2,060	19.1	20.6	13.4	215	**2095**
32.5	1×45		10	6×15	2	5	1,680	2,350	31.7	30.0	15.3	255	**2110**
17.5	2×45		10	7×15	2	5	1,840	2,650	39.1	37.2	17.2	295	**2125**

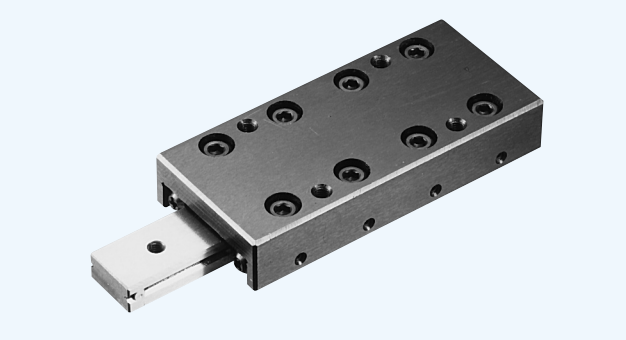
※ Refer to Figure H-13 (page H-21) for accuracy T and S.

1N≒0.102kgf　1N·m≒0.102kgf·m



SYT TYPE

– SYT3 –



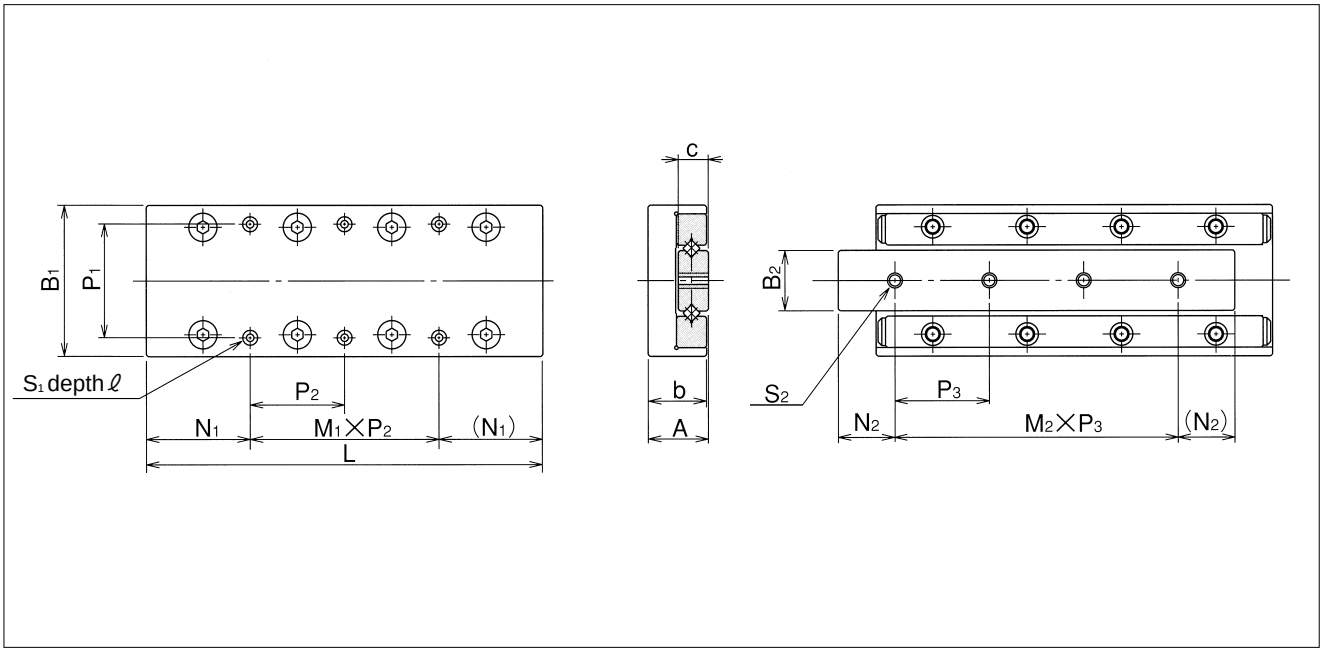
part number structure example

SYTS | 3 | 155

- SYTS: specification
- 3: size
- 155: over-all length

specification	
SYT	standard
SYTS	anticorrosion

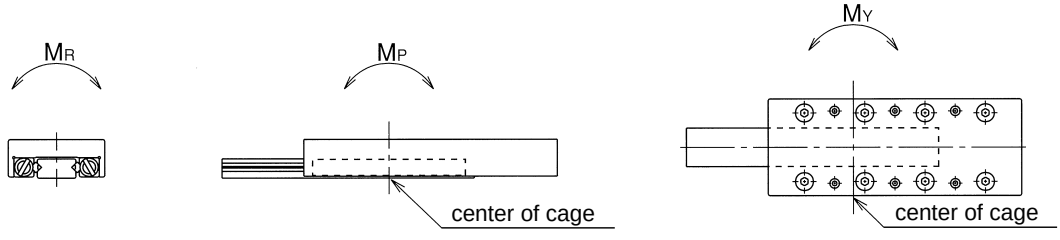
part number		stroke	major dimensions						table-top mounting-hole dimensions		
standard	anticorrosion	mm	A mm	B_1 mm	L mm	b mm	B_2 mm	c mm	P_1 mm	S_1	ℓ mm
SYT3055	**SYTS3055**	30			55						
3080	**3080**	45			80						
3105	**3105**	60			105						
3130	**3130**	75	$16^{\pm 0.1}$	$40^{\pm 0.1}$	130	15.5	16	8	30	M4	7.5
3155	**3155**	90			155						
3180	**3180**	105			180						
3205	**3205**	130			205						



		center rail mounting-hole dimensions			accuracy※		basic load rating		allowable static moment			mass	size
							dynamic	static					
N_1	$M_1 \times P_2$	S_2	N_2	$M_2 \times P_3$	T	S	C	Co	M_P	M_Y	M_R		
mm	mm		mm	mm	μm	μm	N	N	N·m	N·m	N·m	g	
7.5	1×40		10	1×35	2	5	1,800	2,120	10.6	12.4	18.4	225	**3055**
7.5	1×65		15	2×25	2	5	2,640	3,530	29.2	32.4	30.7	340	**3080**
27.5	1×50		15	3×25	3	5	3,030	4,240	57.4	53.5	36.9	440	**3105**
27.5	1×75	M4	15	4×25	3	5	3,760	5,650	95.1	90.0	49.1	560	**3130**
27.5	2×50		15	5×25	3	5	4,440	7,060	117	124	61.4	655	**3155**
52.5	1×75		15	6×25	3	5	5,100	8,470	169	177	73.7	770	**3180**
27.5	2×75		15	7×25	3	5	5,410	9,180	199	207	79.8	880	**3205**

※ Refer to Figure H-13 (page H-21) for accuracy T and S.

1N≒0.102kgf 1N·m≒0.102kgf·m



SYT-D TYPE

– SYT1/SYT2 –

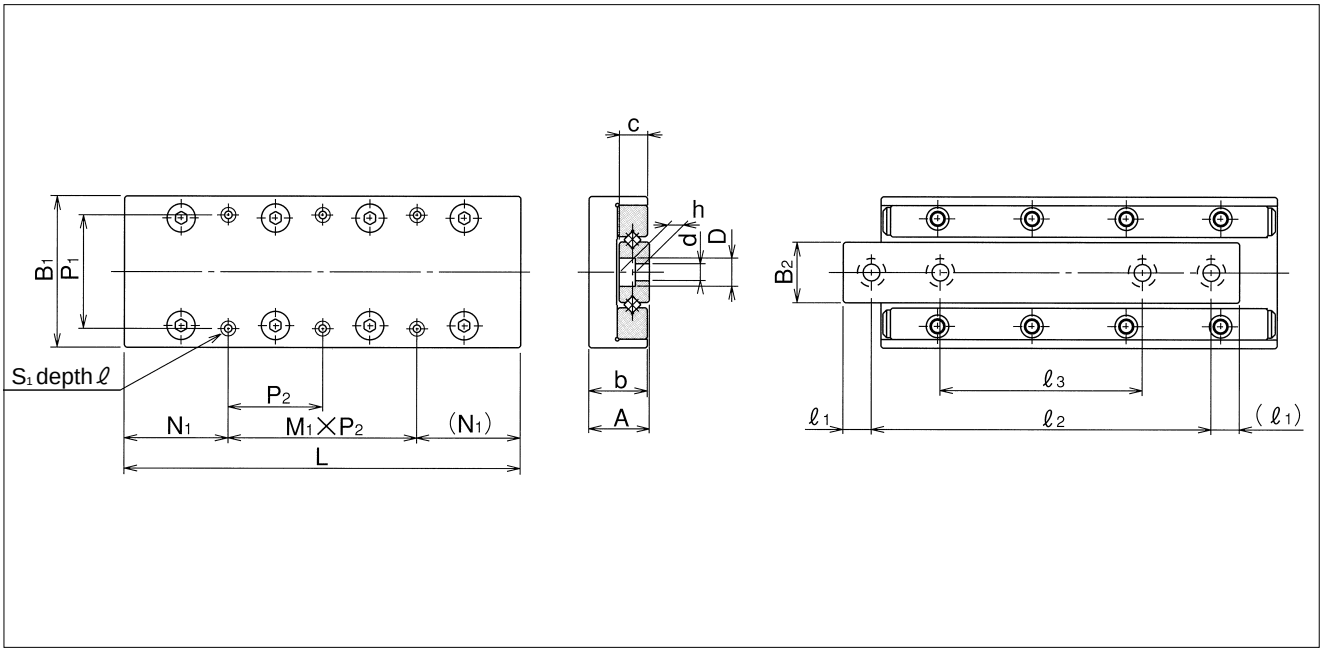
part number structure example

SYTS | 3 | 155 | - | D

- D: with counterbore
- 155: overall length
- 3: size
- SYTS: specification

specification	
SYT	standard
SYTS	anticorrosion

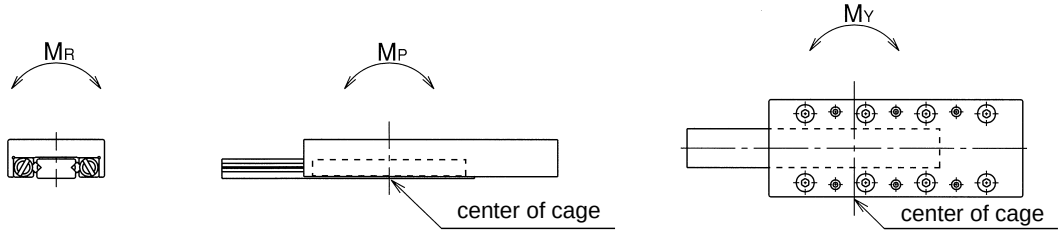
part number		stroke	major dimensions						table-top mounting-hole dimensions			
standard	anticorrosion	mm	A mm	B_1 mm	L mm	b mm	B_2 mm	c mm	P_1 mm	S_1	ℓ mm	N_1 mm
SYT1025-D	**SYTS1025-D**	12			25							3.5
1035-D	**1035-D**	18			35							3.5
1045-D	**1045-D**	25			45							12.5
1055-D	**1055-D**	32	$8^{\pm 0.1}$	$20^{\pm 0.1}$	55	7.5	6.6	4	14	M2.6	3.5	12.5
1065-D	**1065-D**	40			65							12.5
1075-D	**1075-D**	45			75							22.5
1085-D	**1085-D**	50			85							12.5
SYT2035-D	**SYTS2035-D**	18			35							3.5
2050-D	**2050-D**	30			50							3.5
2065-D	**2065-D**	40			65							17.5
2080-D	**2080-D**	50	$12^{\pm 0.1}$	$30^{\pm 0.1}$	80	11.5	12.0	6	22	M3	5.5	17.5
2095-D	**2095-D**	60			95							17.5
2110-D	**2110-D**	70			110							32.5
2125-D	**2125-D**	80			125							17.5



	center rail mounting-hole dimensions				accuracy※		basic load rating		allowable static moment			mass	size
							dynamic	static					
$M_1 \times P_2$	d×D×h	ℓ_1	ℓ_2	ℓ_3	T	S	C	Co	M_P	M_Y	M_R		
mm	mm	mm	mm	mm	μm	μm	N	N	N·m	N·m	N·m	g	
1×18		3.5	18	—	2	4	340	312	1.1	1.0	1.1	22	**1025**
1×28		5	25	—	2	4	572	624	2.0	2.3	2.3	33	**1035**
1×20		3.5	38	25	2	5	676	780	4.6	4.3	2.9	42	**1045**
1×30	2.5×4.1×2.2	3.5	48	29	2	5	776	936	6.3	5.9	3.5	52	**1055**
2×20		5	55	31	2	5	871	1,090	8.3	7.8	4.1	63	**1065**
1×30		5	65	35	2	5	1,050	1,400	13.0	12.4	5.3	72	**1075**
2×30		5	75	40	2	5	1,140	1,560	15.7	15.0	5.9	83	**1085**
1×28		5	25	—	2	4	594	588	3.5	2.9	3.8	79	**2035**
1×43		7.5	35	—	2	4	805	882	6.1	5.5	5.7	113	**2050**
1×30		5	55	33	2	5	999	1,180	9.7	8.8	7.6	150	**2065**
1×45	3.5×6×3.3	5	70	40	2	5	1,350	1,760	14.0	15.3	11.5	185	**2080**
2×30		5	85	45	2	5	1,520	2,060	19.1	20.6	13.4	215	**2095**
1×45		7.5	95	50	2	5	1,680	2,350	31.7	30.0	15.3	255	**2110**
2×45		7.5	110	55	2	5	1,840	2,650	39.1	37.2	17.2	295	**2125**

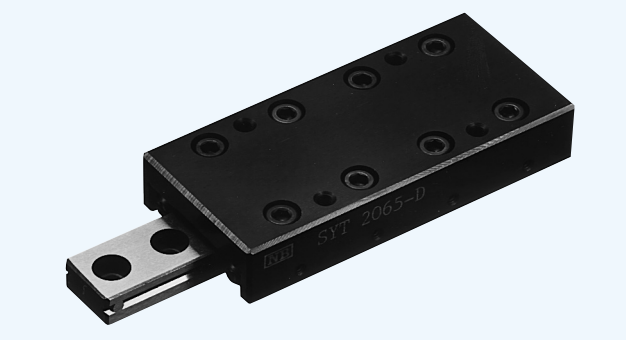
※ Refer to Figure H-13 (page H-21) for accuracy T and S.

1N≒0.102kgf 1N·m≒0.102kgf·m



SYT-D TYPE

– SYT3 –

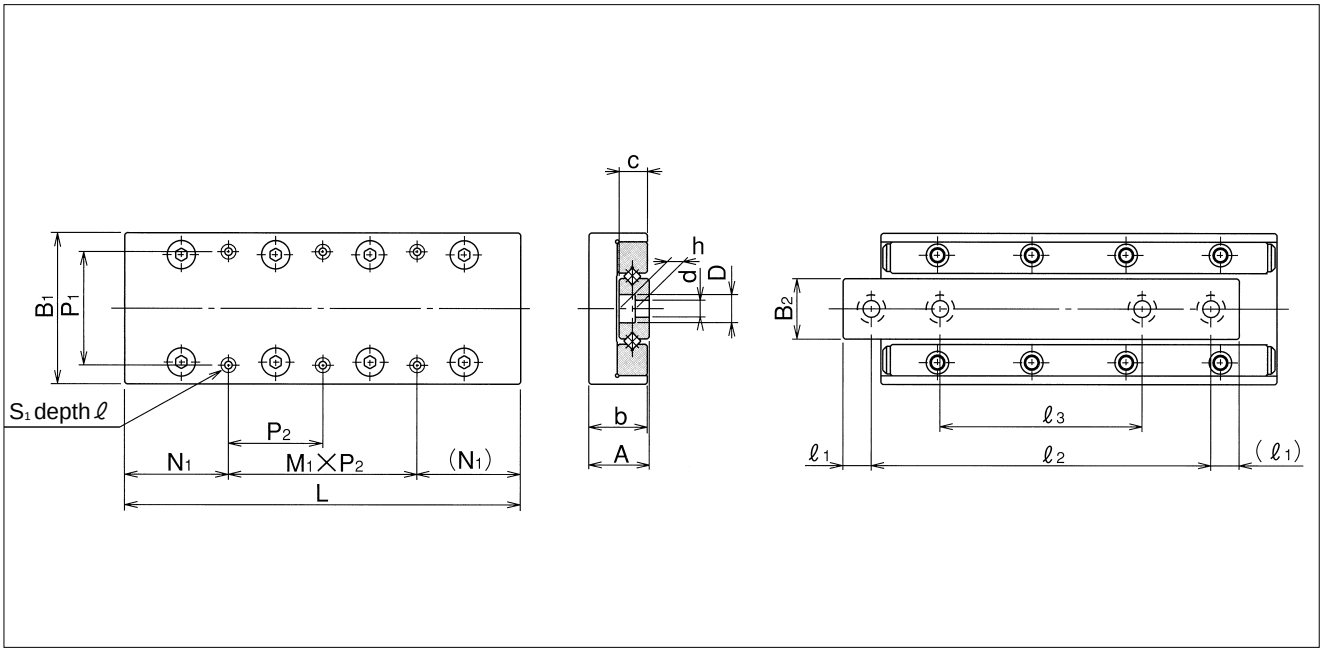


part number structure example

SYTS | **3** | **155** - **D**

- D: with counterbore
- 155: overall length
- 3: size
- SYTS: specification — anticorrosion
- SYT: specification — standard

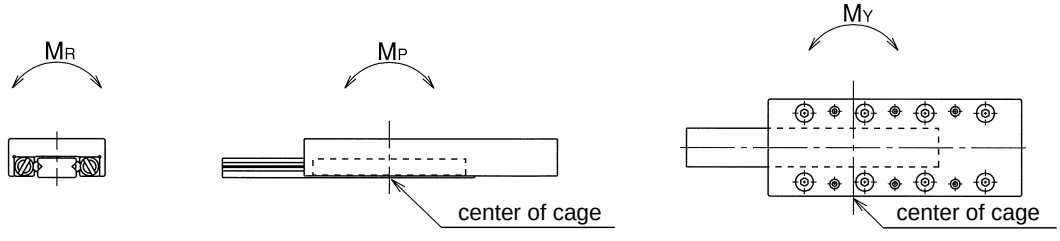
part number		stroke	major dimensions						table-top mounting-hole dimensions			
standard	anticorrosion	mm	A mm	B_1 mm	L mm	b mm	B_2 mm	c mm	P_1 mm	S_1	ℓ mm	N_1 mm
SYT3055-D	**SYTS3055-D**	30			55							7.5
3080-D	**3080-D**	45			80							7.5
3105-D	**3105-D**	60			105							27.5
3130-D	**3130-D**	75	$16^{\pm 0.1}$	$40^{\pm 0.1}$	130	15.5	16	8	30	M4	7.5	27.5
3155-D	**3155-D**	90			155							27.5
3180-D	**3180-D**	105			180							52.5
3205-D	**3205-D**	130			205							27.5



	center rail mounting-hole dimensions				accuracy※		basic load rating		allowable static moment			mass	size
							dynamic	static					
$M_1 \times P_2$	d×D×h	ℓ_1	ℓ_2	ℓ_3	T	S	C	Co	M_P	M_Y	M_R		
mm	mm	mm	mm	mm	μm	μm	N	N	N·m	N·m	N·m	g	
1×40		7.5	40	—	2	5	1,800	2,120	10.6	12.4	18.4	225	**3055**
1×65		6	68	43	2	5	2,640	3,530	29.2	32.4	30.7	340	**3080**
1×50		7.5	90	55	3	5	3,030	4,240	57.4	53.5	36.9	440	**3105**
1×75	4.5×7.5×4.3	7.5	115	65	3	5	3,760	5,650	95.1	90.0	49.1	560	**3130**
2×50		7.5	140	95	3	5	4,440	7,060	117	124	61.4	655	**3155**
1×75		7.5	165	85	3	5	5,100	8,470	169	177	73.7	770	**3180**
2×75		7.5	190	95	3	5	5,410	9,180	199	207	79.8	880	**3205**

※ Refer to Figure H-13 (page H-21) for accuracy T and S.

1N≒0.102kgf 1N·m≒0.102kgf·m



Miniature Slide Table SYBS Type

The NB miniature slide table SYBS type is a limited stroke slide with the most compact envelope dimensions, featuring two ball raceway grooves. The SYBS type utilizes ball as the rolling elements. The ultra compact design contributes greatly to the creation of smaller and lighter industrial machinery and equipment of all types.

Structure and Advantages

NB's miniature slide table incorporates a unique integrated ball cage between the table and bed. All components have been produced with high precision machining technologies.

Ultra Compact Design

The table height of the SYBS type is 3.2 ~ 4.5mm and the width is 6 ~ 12mm. This compact envelope when compared with conventional slide tables helps to realize the miniaturization of machinery and equipment.

Low Friction - Low Noise

Since the rolling ball elements do not re-circulate, the frictional resistance will not vary significantly resulting in smooth operation reliable high precision.

Additionally, the caged balls greatly reduce the contact noise of the rolling elements bringing about a low-noise operation.

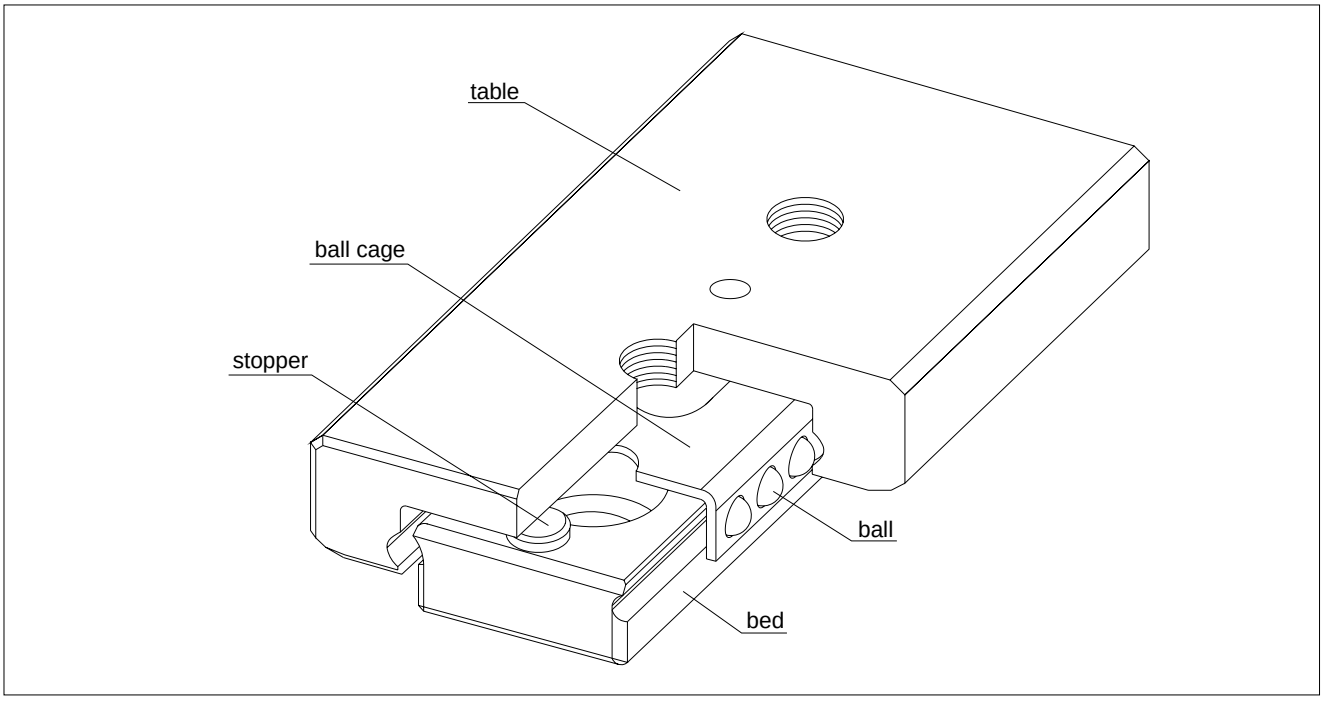
High Accuracy

The ball raceway grooves of the bed and table are processed through simultaneous precision machining resulting in minimal processing errors, and bringing about extremely smooth, precision linear movement.

Stainless Steel Structure

The SYBS type slide table is constructed from only stainless steel materials. This allows for use in corrosive or high temperature applications. The SYBS is a perfect component for vacuum or clean room type environments.

Figure H-14 Structure of SYBS Type Slide Table



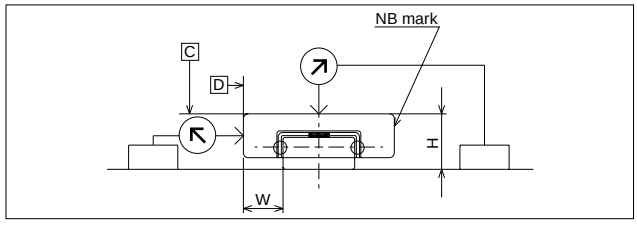
Accuracy

Table H-5 reflects the measured accuracies of the SYBS Miniature Slide Table. The deviation is measured as Figure H-15 illustrates. Dial indicators are placed to the centers of the table's top and side (opposite side from the NB mark) and then the table is moved the full travel distance without any load.

Table H-5 Accuracy Unit: mm

Item	Tolerance and Acceptable Values
Height (H)	±0.020
Width (W)	±0.025
Deviation from Center of Surface C	0.004
Deviation from Center of Surface D	0.006

Figure H-15 Accuracy Measurement Method



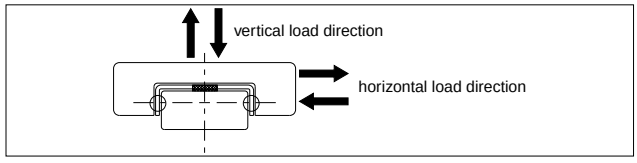
Load Rating

The load capacity of the Miniature Slide Table varies depending upon the direction of the applied load.

Table H-6 Variation of Load Rating vs. Direction of Load

Basic Dynamic Rated Load	Vertical Direction	1.00 x C
	Horizontal Direction	1.13 x C
Basic Static Rated Load	Vertical Direction	1.00 x C_0
	Horizontal Direction	1.19 x C_0

Figure H-16 Direction of Load



Rated Life

The life of an NB miniature slide table can be calculated using the following equations:

Travel life:

$$L=\left(\frac{f_T}{f_W}\cdot\frac{C}{P}\right)^3\cdot 50$$

L: travel life (km) f_T : temperature coefficient fw: load coefficient
C: basic dynamic load (N) P: applied load (N)

Life Time:

$$L_h=\frac{L\cdot 10^3}{2\cdot \ell s\cdot n_1\cdot 60}$$

Lh: life time (hr) ℓs: stroke length (m)
n1: number of strokes per minute (cpm)

Temperature Coefficient: f_T

A miniature slide table is process with quench hardening in order to enhance the hardness while reducing wear. When the application's operating temperature exceed 100℃, the hardness begins to deteriorate, which results in a decrease of load capacity. Refer to Figure H-17 for the temperature coefficient (f_T), which is the variable of the hardness according to the temperature.

Load Coefficient: f_w

When calculating the load applied to a miniature slide table, a number of variable factors must be taken into consideration. Generally, the travel life calculation is simplified by using the load coefficient (f_w) as provided in Table H-7.

Figure H-17 Temperature Coefficient: f_T

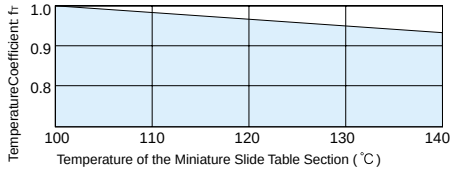


Table H-7 Load Coefficient: f_w

Operating Condition		Load Factor
Load	Speed	
No Impact or Vibration	15 m/min. or less	1.0 to 1.5
Slight Impact or Vibration	30 m/min. or less	1.5 to 2.0

Mounting

Shape of Mounting Surface

In most general installations, the Miniature Slide Table is mounted by pushing the reference planes of the bed and table against a shoulder that is set up on the mounting surface. Machined escape grooves should be used in the corners of the shoulder (as illustrated in Figure H-18) so that the corners will not interfere with the reference corners of the bed and/or table. Table H-8 lists the recommended shoulder heights of the mounting reference planes for the opposing sides.

When installing the Miniature Slide Table without providing machined escape grooves, the corner radius may be realigned as illustrated in Figure H-19. Table H-19 list the values of the corner radius of the mounting surfaces.

Figure H-18 Shape of Mounting Surface -1

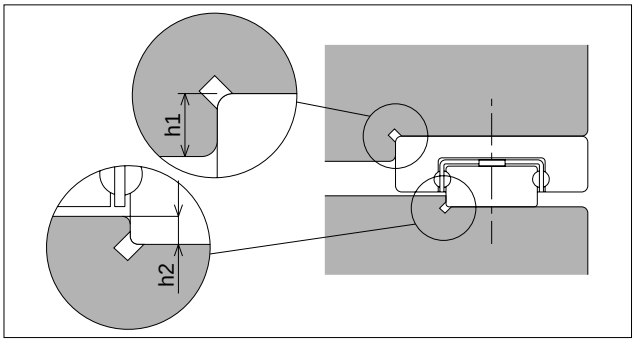


Table H-8 Shoulder Height of Mounting Reference Surfaces Unit: mm

Part Number	Shoulder Height of Table h1	Shoulder Height of Bed h2
SYBS 6	1.0	0.5
SYBS 8	1.2	0.8
SYBS 12	1.5	0.8

Figure H-19 Shape of Mounting Surface -2

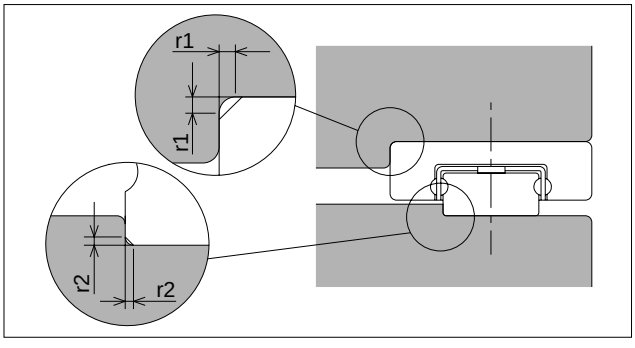


Table H-9 Maximum Corner Radius Unit: mm

Part Number	Mounting Surface of Table	Mounting Surface of Bed
	r1	r2
SYBS 6	0.1	0.05
SYBS 8	0.15	0.1
SYBS 12	0.15	0.1

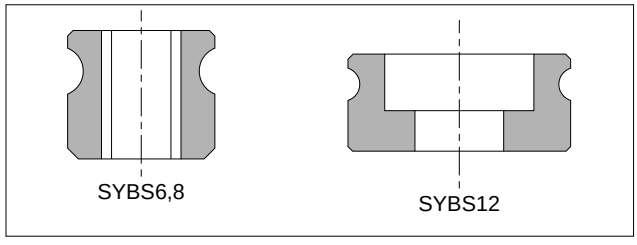
Recommended Torque Values

The bed should be tightened with a consistent torque by using a torque wrench. Table H-10 lists the recommended tightening torque values:

Table H-10 Recommended Torque Value Unit: N・m

Part Number	Nominal Bolt	Recommended Torque
SYBS 6	M1	0.03
SYBS 8	M1.6	0.15
SYBS 12	M2	0.31

Figure H-20 Shape of SYBS Bed



Precautions for Use

Mounting Example and Mounting Screws

All taps used for mounting the SYBS are fully through-hole. Mount the SYBS type as illustrated in Figure H-21 only after considering the size of mounting screw, the maximum penetration depth, and the height of the bed. Make certain that the mounting screws do not interfere with the ball cage; otherwise, the accuracy and travel life of this table will be affected adversely. Special bolts are designed for SYBS type and are available from NB. Please refer to Table H-11 for dimensions of these special mounting screws.

Figure H-21 Mounting Example

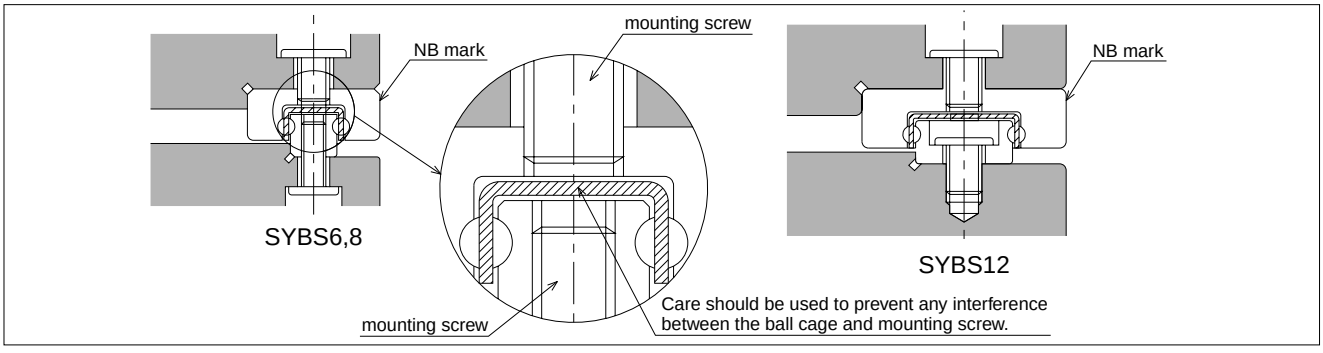
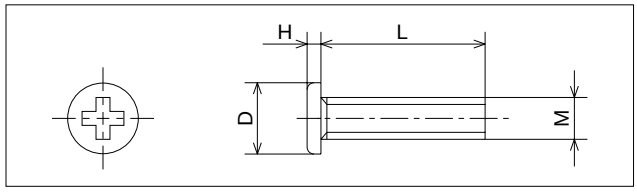


Table H-11 Mounting Screws (Material: Stainless Steel) Unit: mm

M (Nominal Bolt)	D	H	Pitch	L
M1	1.8	0.5	0.25	5
M1.4	2.5	0.5	0.3	6
M1.6	3	0.8	0.35	5.7
M2	3	0.8	0.4	6

Figure H-22 Mounting Screw



Stopper

On both ends of the SYBS Miniature Slide Table bed section, stopper screws have been attached to prevent the ball cage from escaping. Please note that the screws are designed only to prevent the ball cage from escaping and are not intended for the use as a mechanical stopper. The ball cage may become deformed on contact with the stopper and this will result in a negative affect of the accuracy and rated life of the table.

Lubrication

NB's Miniature Slide Table SYBS Type is supplied with an initial application of lithium soap grease and therefore is ready for immediate use. Periodic application of a similar lubricant should be necessary depending on the operating conditions. For use in clean rooms or vacuum environments, miniature slide tables without grease or with customer specified grease are available. NB also provides "K Grease" for low dust generation lubricant. Please contact NB for further details.

Ball Cage Displacement

When a miniature slide table is operated at high speeds; when offset loads or vibrations are present, the ball cage may deviate from the nomal position. In general operating conditions this is normal and it is recommended that the table be cycled to perform maximum full stroke travel several times during operation. This will allow the ball cage to be returned to its normal central position.

Pre-Load

The SYBS Minearture Slide Table is prepared with only a slight positive-clearance.

SYBS TYPE

part number structure example

SYBS | 8 – 31

SYBS TYPE

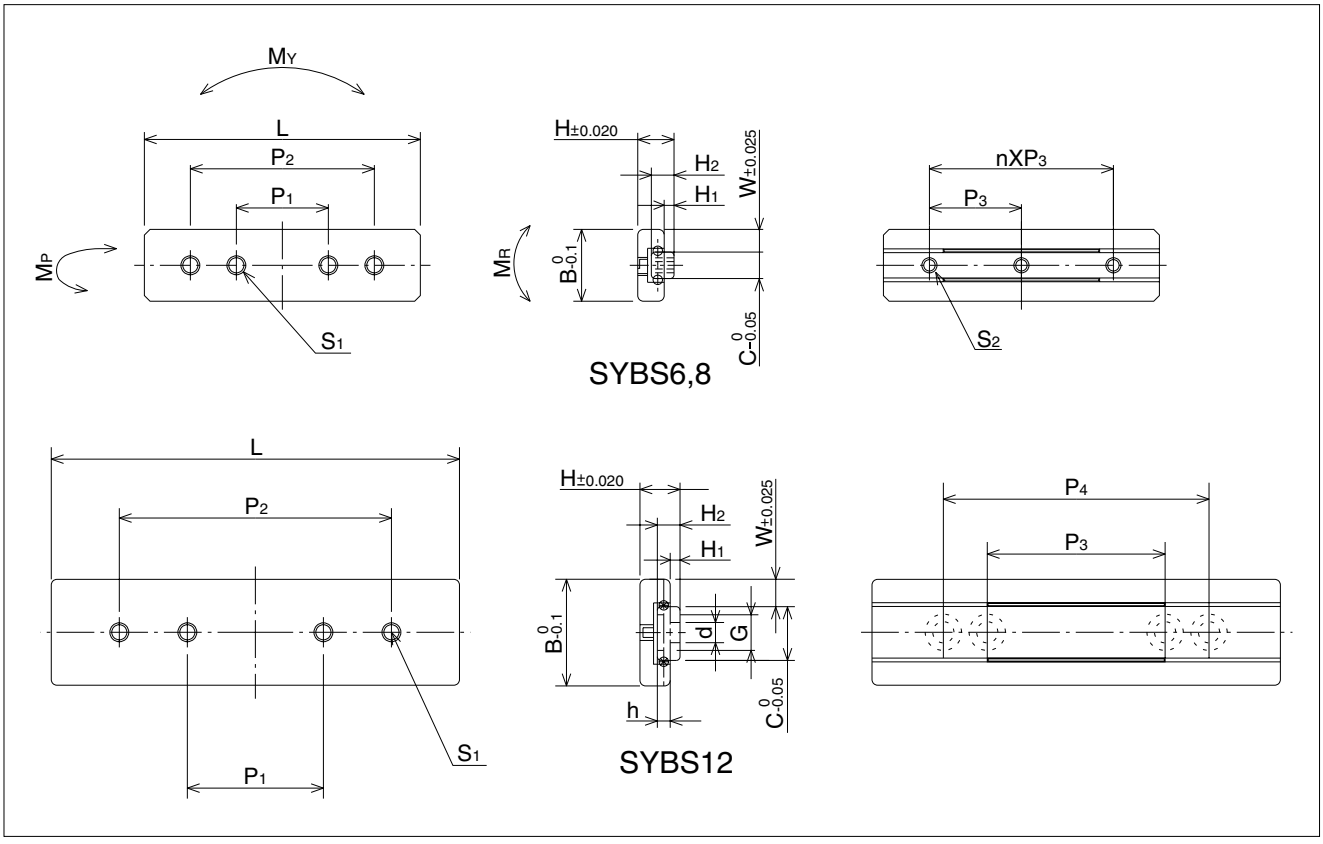
size

over-all length

part number	major dimensions				table-top mounting-hole dimensions					
	H mm	W mm	H_1 mm	stroke mm	B mm	L mm	P_1 mm	P_2 mm	S_1	maximum screw penetration depth mm
SYBS 6−13	3.2	2	0.7	5	6	13	6.0	−	M1.4	0.5
SYBS 6−21				12		21	10.0	−		
SYBS 8−11	4	2.5	1	4	8	11	5.5	−	M2	0.7
SYBS 8−21				12		21	10.0	−		
SYBS 8−31				18		31	10.0	21		
SYBS 12−23	4.5	3	1	12	12	23	8.0	−		1.2
SYBS 12−31				18		31	15.0	−		
SYBS 12−46				28		46	15.0	31		

※1:Exclusive mounting screws are provided with the SYBS-12 type only.

Other various sizes are also available. (Please refer to page H-41, H-11)



bed-surface mounting-hole dimensions							basic load rating		allowable static moment			mass	size
H_2 mm	C mm	d×G×h mm	S_2	P_3 mm	n	P_4 mm	dynamic C N	static C_0 N	M_P N・m	M_Y N・m	M_R N・m	g	
2.0	2	−	M1	7	1	−	90	150	0.08	0.10	0.18	1.4	6−13
				7	2	−	160	270	0.26	0.30	0.32	2.2	6−21
2.6	3	−	M1.6	5	1	−	110	180	0.09	0.11	0.31	2.0	8−11
				10	1	−	260	430	0.50	0.60	0.74	3.7	8−21
				10	2	−	370	620	1.03	1.23	1.05	5.5	8−31
2.6	6	※1 2.4×4×1.5	−	15	1	−	290	490	0.66	0.79	1.59	7.6	12−23
				15	1	−	370	620	1.03	1.23	1.99	10.2	12−31
				20	−	30	590	990	2.65	3.16	3.18	15.2	12−46