

ST MINIATURE STROKE SLIDE SERIES

ST



ST Miniature Stroke Slide series

ST

ST MINIATURE STROKE SLIDE SERIES

1. Product Introduction

High load and high moment capacity

The ST Miniature Stroke Slide series is designed with two rows of balls. The ball track has a Gothic profile design with a 45 degree contact angle to achieve equal load capacity in a mono block. This provides more space for the larger rolling elements while enhancing the load and moment capacity.

High running accuracy and smoothness

The steel balls of the ST Miniature Stroke Slide series roll on the rail without recirculation, resulting in excellent running behavior, smoothness, low friction, and high accuracy without vibration.

Temperature

The ST Miniature Stroke Slide series can withstand temperatures up to 150°C. There are two treatment options for higher temperature applications:

T1 : 200°C

T2 : 300°C

Applying treatments for higher temperature applications will reduce the load capacity.



Dual plate design

The ST Miniature Stroke Slide series adopts a pair of end plates into the design. Both the center rail and bearing block sides have a plate installed that prevents the linear guide from over-stroking.

Easy mounting

The mounting of the ST Miniature Stroke Slide series is accomplished by fitting the fixing screw downward into the count bore of the rail by intersecting the bore pattern on the block and cage within a hole pitch. The one piece cage therefore does not influence the mounting of the rail. The preload is preset by ball sorting.



Anti-corrosion feature

The ST Miniature Stroke Slide series is composed of quenched hardened process stainless steel for the rail, block, and steel balls. The block plate and screw are made of stainless steel as well – great for maintenance and inspection applications.

ST

ST MINIATURE STROKE SLIDE SERIES

2. Technical Information

Accuracy

The ST Miniature Stroke Slide series have three grades for accuracy. Precision (P), High (H) and Normal (N).

Preload

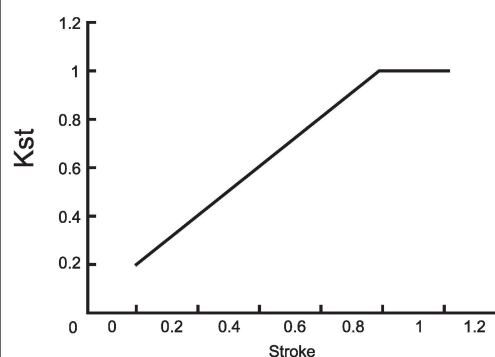
The ST Miniature Stroke Slide series have two classes of preload, V0 and V1, as described in the MR miniature linear guide series table of preload.

Rating life calculation

$$L = K_{st} \left(\frac{C_{1008}}{P} \right)^3 \cdot 10^5 \quad \text{--- (19)}$$

$$L_h = \frac{L}{2 \cdot s \cdot n \cdot 60} = K_{st} \cdot \frac{L}{v_m \cdot 60} \quad \text{--- (20)}$$

Short stroke factor diagram



According to ISO14728-1 short stroke factor

Lubrication

Lubrication of the ST Miniature Stroke Slide series can be done by adding the lubricant onto the raceway of the rail.

Rating life L

The rating life of the ST Miniature Stroke Slide series can be calculated by the formulas (19) , (20) in accordance with ISO 14728-1.

Geometric and positional accuracy of the mounting surface

The inaccuracy of the mounting surfaces will affect the running accuracy and reduce the operating lifetime of the ST Miniature Stroke Slide. If the inaccuracies of the mounting surface exceed the values calculated by formulas (15), (21), and (17), the lifetime will be shortened, as calculated by formulas (19) and (20).

$$e_1(\text{mm}) = b(\text{mm}) \cdot f_1 \cdot 10^{-4} \quad \text{--- (15)}$$

$$e_2(\text{mm}) = \left(\frac{d}{L_C} \frac{(\text{mm})}{(\text{mm})} \right) \cdot f_2 \cdot 10^{-5} \quad \text{--- (21)}$$

$$e_3(\text{mm}) = f_3 \cdot 10^{-3} \quad \text{--- (17)}$$

Size	V0			V1		
	f ₁	f ₂	f ₃	f ₁	f ₂	f ₃
7	5	200	4	3	130	3
9	5	300	6	4	200	4
12	6	380	8	4	250	6
15	7	530	12	5	350	8

Ordering Designation							
ST	7	M	V0	P	27 / 30	x 30	To
Stroke type	Size	M: Standard W: Wide	V0: Clearance V1: Light preload	N: Normal H: High P: Precision	Max stroke (mm)	Block Lb length (mm)	Rail Lr length (mm) Max temperature °C T0:150 T1:200 T2:300

Height and chamfered reference edge

The tables for the chamfered reference edge corner and the height of the reference edge for the MR Miniature Linear Guide series are also suitable for the ST Miniature Stroke Slide series.

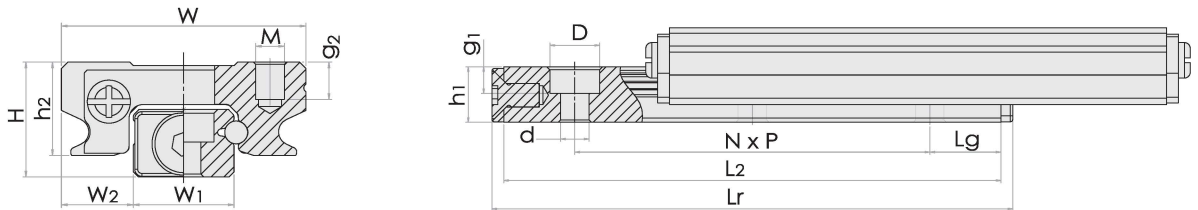
3. Ordering Information

An example of the ST Miniature Stroke Slide series parts numbering system is shown above.

ST

ST MINIATURE STROKE SLIDE SERIES

4. Dimensions and Specifications

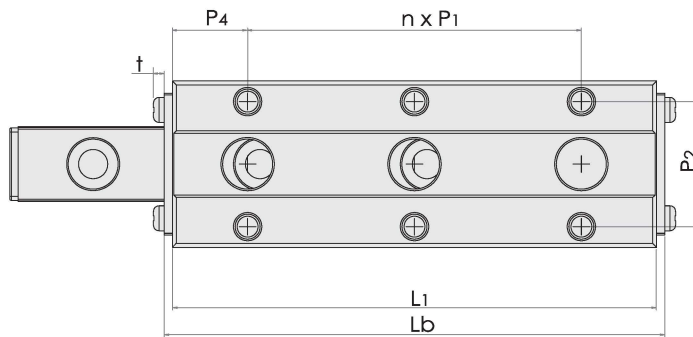


Model Code	Fabricate Dimensions (mm)		Rail Dimensions (mm)			
	H	W ₂	P	W ₁	h ₁	D x d x g ₁
ST7M	8	5	15	7	4.7	4.2x2.4x2.3
ST9M	10	5.5	20	9	5.5	6x3.5x3.5
ST12M	13	7.5	25	12	7.5	6x3.5x4.5

Model Code	Max Stroke	Rail Dimensions (mm)				Lb
	Ls	Lr	L ₂	Lg	N	
ST7M	27	30	28	6.5	1	30
ST7M	41	45	43	6.5	2	45
ST7M	55	60	58	6.5	3	60
ST9M	38	40	38	9	1	40
ST9M	58	60	58	9	2	60
ST9M	78	80	78	9	3	80
ST12M	44	50	47.4	11.2	1	50
ST12M	69	75	72.4	11.2	2	75
ST12M	94	100	97.4	11.2	3	100

ST MINIATURE STROKE SLIDE SERIES

ST



Block Dimensions (mm)						Model Code
P1	P2	W	h2	Mxg ₂	t	
15	12	17	6.5	M2x2.5	1	ST7M
20	15	20	7.8	M3x3.0	1.3	ST9M
25	20	27	10	M3x3.5	1.3	ST12M

Block Dimensions (mm)			Load Capacities		Static Moment		
L1	P4	n	C ₁₀₀₈ (dyn)	Co(stat)	Mr ₀	Mp ₀	My ₀
28	6.5	1	910	1580	5.9	3.4	3.4
43	6.5	2	1220	2500	9.1	8	8
58	6.5	3	1490	3330	12.4	14.6	14.6
38	9	1	1590	2773	13.1	6.8	6.8
58	9	2	2080	4170	19.7	16	16
78	9	3	2520	5547	26.2	29.2	29.2
47.4	11.2	1	2550	4340	27	16	16
72.4	11.2	2	3350	6510	40.1	35.6	35.6
97.4	11.2	3	4050	8670	54	62.8	62.8