#### 1. Product Introduction

# High load and high moment capaity

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.

#### **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 hole pattern on the block and cage within the hole pitch. The one piece cage therefore does not influence the mounting of the rail while the preload is preset by ball sorting.



#### Temperature

The ST Miniature Stroke Slide Series can withstand temperatures of 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.



www.motiontech.com.au



#### 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 screws are made of stainless steel as well -- providing a great model for maintenance and inspection applications.

#### 2. Technical Information

#### Accuracy

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

#### Preload

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

## 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).

. The mounting surface geometric

V1

f2 f3

130 3

200

350

4

8

and positional accuracy factor

fı

5

V0

f1 f2 f3

5 200 4 3

5 300

6 380 8 4 250 6

7

Size

7

9

12

15

$e_1(mm) = b(mm) \cdot f_1 \cdot 10^{-4}$	(15)
$e_2(mm) = \left(\frac{d}{Lc} \frac{(mm)}{(mm)}\right) \cdot f_2 \cdot 10^{-5}$	(21)
$e_{3(mm)} = f_3 \cdot 10^{-3}$	(17)

Ordering designation

27 / 30 x 30 To

Block Lb length

Max temperature<sup>®</sup>C T0:150 T1:200 T2:300

Rail **L**r length

ST MINIATURE STROKE SLIDE SERIES

Ordering Designation

Size

M: Standard W: Wide

ST 7 M

Stroke type

V0

Ρ

N: Normal

: Precisio

Max stroke [mm]

H: High

V0: Clearance V1: Light preload



#### Lubrication

Rating life L

Lubrication of the ST Miniature Stroke Slide Series can be performed by adding the lubricant onto the raceway of the rail. The rating life of the ST Miniature Stroke Slide Series can be calculated by formulas (19) and (20), in accordance with ISO 14728-1.

# Height and Chamfered Reference

12

530

6 4

### 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 part numbering system is shown above.

## ST

## 4. Dimensions and Specifications

W:

M





Model Code	Fabricate Din	nensions (mm)	Rail Dimensions (mm)					Block Dimensions (mm)					
	Н	W2	Р	Wı	hı	D x d x g <sub>1</sub>	P۱	P2	W	h2	Mxg <sub>2</sub>	t	Model Code
ST7M	8	5	15	7	4.7	4.2x2.4x2.3	15	12	17	6.5	M2x2.5	1	ST7M
ST9M	10	5.5	20	9	5.5	6x3.5x3.5	20	15	20	7.8	M3x3.0	1.3	ST9M
ST12M	13	7.5	25	12	7.5	6x3.5x4.5	25	20	27	10	M3x3.5	1.3	ST12M

Model Code	Max Stroke		Rail Dimer	nsions (mm)		Block Dimensions (mm)				Load Capacities (N)		Static Moment (Nm)		
	Ls	Lr	L2	Lg	N	Lb	Li	P4	n	C <sub>100B</sub> (dyn)	Co(stat)	Mro	Mp₀	Myo
ST7M	27	30	28	6.5	1	30	28	6.5	1	910	1580	5.9	3.4	3.4
ST7M	41	45	43	6.5	2	45	43	6.5	2	1220	2500	9.1	8	8
ST7M	55	60	58	6.5	3	60	58	6.5	3	1490	3330	12.4	14.6	14.6
ST9M	38	40	38	9	1	40	38	9	1	1590	2773	13.1	6.8	6.8
ST9M	58	60	58	9	2	60	58	9	2	2080	4170	19.7	16	16
ST9M	78	80	78	9	3	80	78	9	3	2520	5547	26.2	29.2	29.2
ST12M	44	50	47.4	11.2	1	50	47.4	11.2	1	2550	4340	27	16	16
ST12M	69	75	72.4	11.2	2	75	72.4	11.2	2	3350	6510	40.1	35.6	35.6
ST12M	94	100	97.4	11.2	3	100	97.4	11.2	3	4050	8670	54	62.8	62.8