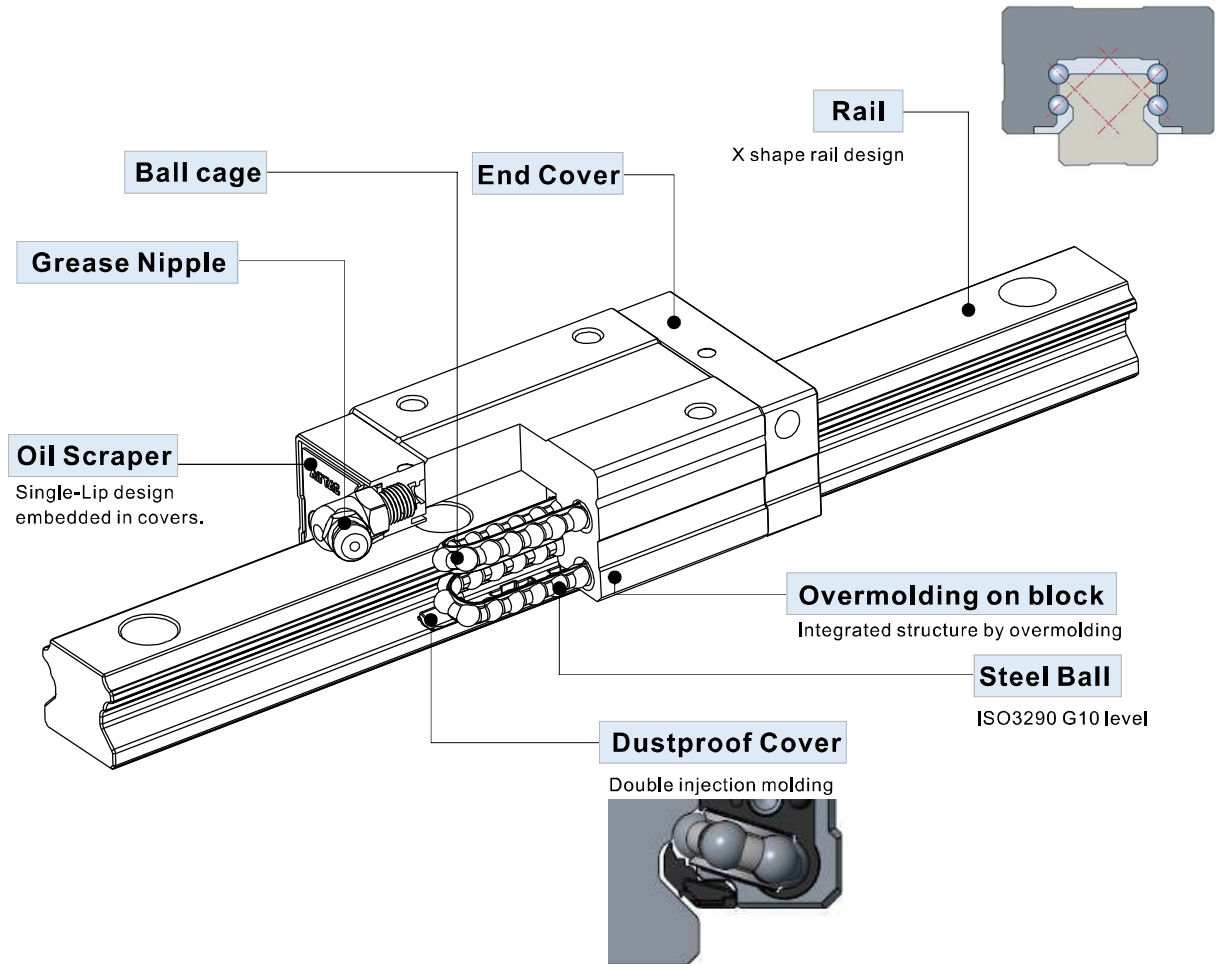




# LSQH Series Caged Ball Type Linear Guide

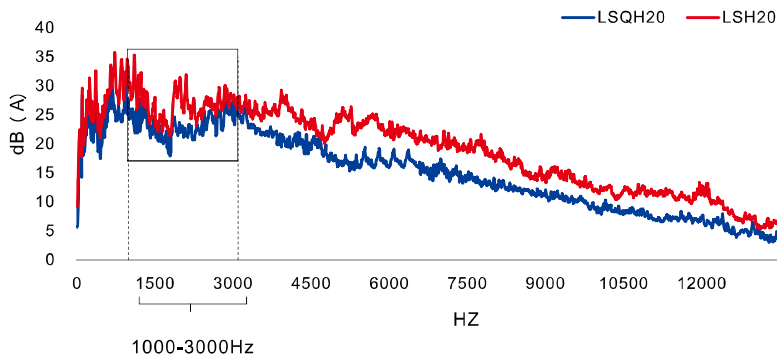
## Product Introduction



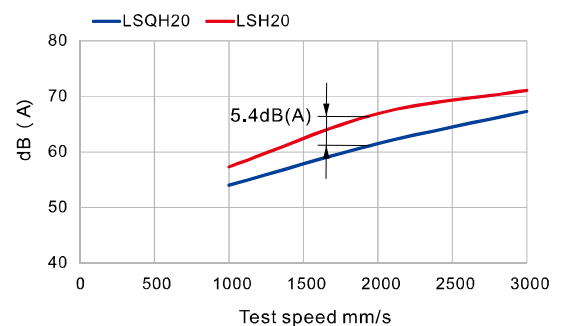
## Product Features

### 1. Low noise design

The use of a special ball cage makes balls aligned precisely in a certain even distance, thus to eliminate noise made by random friction between balls, especially effective on high pitch noise. (details see Pic.1). According to study, human body is most sensitive to the sound between 1,000 and 3,000 Hz. After thorough lab test within allowable speed range, LSQH series can reduce noise degree by 5 dB(A) compared with LSH series. (details see Pic.2)



Pic.1 - Noise frequency comparison test between LSQH series and LSH series.



Pic.2 - Noise degree comparison test between LSQH series and LSH series.



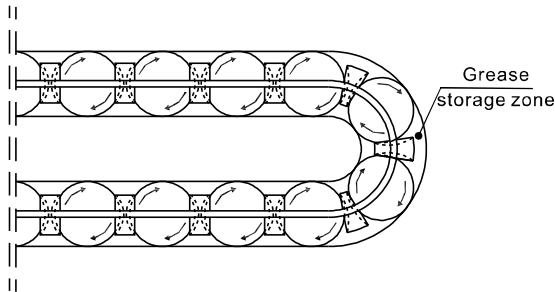


# LSQH Series Caged Ball Type Linear Guide

## 2. Self-lubricating design

Maintain designated grease storage zones at specific intervals in ball cage, precisely meeting the lubrication needs of the balls. When the circulation system operates to the direction reversal area, lubricant is automatically and evenly refilled, reducing the frequency and workload of manual grease refilling.

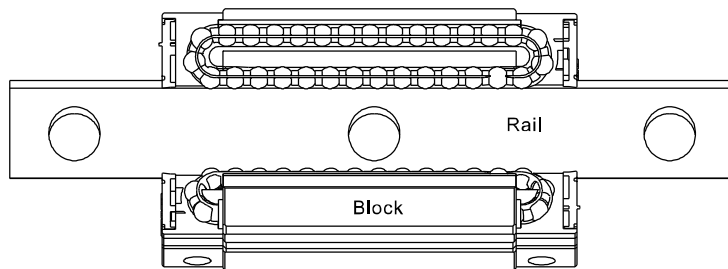
general ultra-light loads, no additional maintenance is required, lowering the total maintenance cost.



| Test model | LSQH20HN1X2000S20AH-M6                                                                  | Lifespan test |
|------------|-----------------------------------------------------------------------------------------|---------------|
| Speed      | 1 m/s                                                                                   |               |
| Lubricant  | Only add grease at the beginning of test (No grease supply in the middle of experiment) |               |
| Load       | 4.7 KN                                                                                  |               |
| Stroke     | 1200 KM                                                                                 |               |

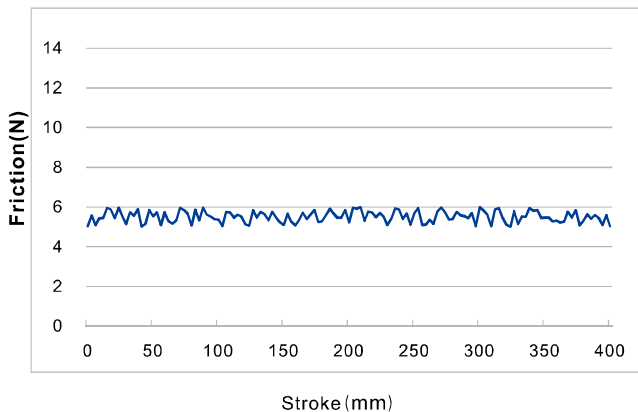
## 3. High-velocity design

The spacer design of the ball cage eliminates friction between balls. With the balls and ball cage forming an annular line contact, friction is significantly reduced. During high-speed operation, energy loss is minimized, and heat generation is controlled, enabling the linear guide to achieve exceptional high-speed performance. This provides precise and stable linear motion guidance for high-speed mechanical systems, expanding applications in high-speed automation production lines and related fields.

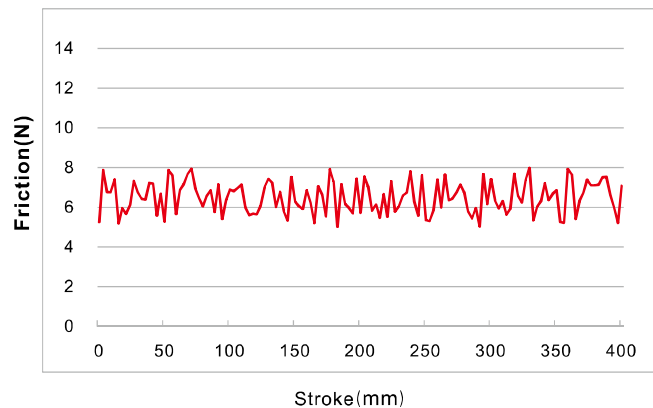


## 4. Improve smoothness

In traditional linear guide which is without ball cage, balls experience back-and-forth collisions during initial operation, causing severe fluctuations in friction and poor stability. The ball cage can link the balls together, allowing them to start moving almost simultaneously along with block movement, eliminating back-and-forth collisions. This maintains stable motion inertia, reduces variations in friction, ensures smooth and stable movement, and enhances fluidity and stability metrics, providing reliable support for high-precision motion control.



LSQH20 caged ball type(light preload) linear guide friction variation curve

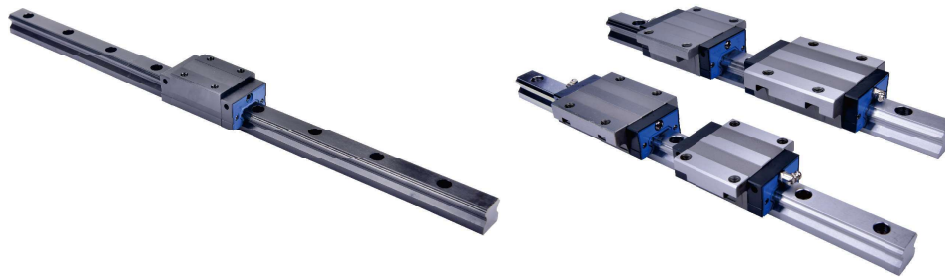


LSH20 standard type(light preload) linear guide friction variation curve



# Caged Ball Type Linear Guide

## LSQH Series



### Order Information(Combined)

LSQH □ 20 H N 1 X220 S20 A H - AM8 - B - T

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

|                                   |                                                                                                                                                       |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| ① Model Code                      | LSQH:Caged Ball Type Linear Guide                                                                                                                     |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |
| ② Rail&Block surface treatment    | Blank: without additional coating. (natural color)<br>★BB: Block and rail coated with black chrome                                                    |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |
| ③ Rail Width                      | 15: 15mm    20: 20mm    25: 23mm    30: 28mm    35: 34mm                                                                                              |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |
| ④ Block Style                     | H: Square type            F1: Flange type, Mounting from top<br>F2: Flange type, Mounting from bottom<br>F3: Flange type, Mounting from top or bottom |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |
| ⑤ Block type                      | N: Standard    L: Long [w/o 15 series]                                                                                                                |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |
| ⑥ Number of Block                 | 1: One        2: Two [Note: Amount of block on a single set of linear guide]                                                                          |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |
| ⑦ Length of Rail                  | 220:220mm    .....[Defined by customer]                                                                                                               |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |
| ⑧ Position of first mounting hole | S□ : Distance from end of rail to the center of first mounting hole<br>(It is recommended to be greater than minimum margin)                          |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |
| ⑨ Preload                         | A: Standard clearance    B: Light Preload    C: Medium Preload    D: Heavy Preload                                                                    |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |
| ⑩ Accuracy                        | N : Normal            H : High            P : Precision                                                                                               |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |
| ⑪ Nipple /adapter type            | 15                                                                                                                                                    | M4:<br>M4 Nipple |            | 20<br>25<br>30<br>35 | M6:<br>M6 Nipple    |            |                                                                                       |
|                                   |                                                                                                                                                       | AM6:<br>M4 to M6 | I type<br> |                      | A01:<br>M6 to PT1/8 | I type<br> |                                                                                       |
|                                   |                                                                                                                                                       | LM6:<br>M4 to M6 | L type<br> |                      | AM8:<br>M6 to M8    | L type<br> |                                                                                       |
|                                   |                                                                                                                                                       |                  |                                                                                                 |                      | L01:<br>M6 to PT1/8 |                                                                                                 |                                                                                       |
|                                   |                                                                                                                                                       |                  |                                                                                                 |                      | LM8:<br>M6 to M8    |                                                                                                 |  |
|                                   |                                                                                                                                                       |                  |                                                                                                 |                      | SM6:<br>M6 Nipple   |                                                                                                 |  |
| ⑫ Packing type                    | Blank: the block and rail are assembled<br>B: block and rail are put separately                                                                       |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |
| ⑬ Rail type                       | Blank: Top-mount    T: Bottom-mount                                                                                                                   |                  |                                                                                                 |                      |                     |                                                                                                 |                                                                                       |

★ [Note 1] Self-lubricator standard type please refer to Pg. 81. for more detail.

[Note 2] Heavy preload is available for LSQH25/30/35 only.

[Note 3] LSQH15 only Square(H) and Flange mounting from top(F1) block styles are available.

[Note 4] For LSQH-BB series, standard length of a rail is 3 m.

Please contact with our company if length of rail exceeds the maximum.

# Caged Ball Type Linear Guide

## LSQH Series

### Butt-jointed Order Information

LSQH □ 20 H N 1X2970 T 2940 T 2970 A H – AM8-B – T

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Butt-jointed end margin: 1/2P ,  
Position of the first and last  
hole is defined by customer.

|                               |                                                                                                                                                       |                  |                                                                                                 |                      |                     |                                                                                                 |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|----------------------|---------------------|-------------------------------------------------------------------------------------------------|
| ①Model Code                   | LSQH:Caged Ball Type Linear Guide                                                                                                                     |                  |                                                                                                 |                      |                     |                                                                                                 |
| ②Rail&Block surface treatment | Blank: without additional coating. (natural color)<br>★BB: Block and rail coated with black chrome                                                    |                  |                                                                                                 |                      |                     |                                                                                                 |
| ③Rail Width                   | 15: 15mm    20: 20mm    25: 23mm<br>30: 28mm    35: 34mm                                                                                              |                  |                                                                                                 |                      |                     |                                                                                                 |
| ④Block Style                  | H: Square type            F1: Flange type, Mounting from top<br>F2: Flange type, Mounting from bottom<br>F3: Flange type, Mounting from top or bottom |                  |                                                                                                 |                      |                     |                                                                                                 |
| ⑤Block type                   | N: Standard    L: Long [w/o 15 series]                                                                                                                |                  |                                                                                                 |                      |                     |                                                                                                 |
| ⑥Number of Block              | 1: One            2: Two<br>[Note: Amount of block on a single set of linear guide]                                                                   |                  |                                                                                                 |                      |                     |                                                                                                 |
| ⑦Length of first Rail         | 2970:2970mm .....[Defined by customer]                                                                                                                |                  |                                                                                                 |                      |                     |                                                                                                 |
| ⑧Butt-jointed mark            | T: Rail Butt-jointed mark<br>(Butt-jointed end margin:1/2P) [P is the standard hole distance]                                                         |                  |                                                                                                 |                      |                     |                                                                                                 |
| ⑨Length of second Rail        | 2940:2940mm .....[Defined by customer]                                                                                                                |                  |                                                                                                 |                      |                     |                                                                                                 |
| ⑩Butt-jointed mark            | Blank: two rails joint            T: Rail Butt-jointed mark<br>(Butt-jointed end margin:1/2P) [P is the standard hole distance]                       |                  |                                                                                                 |                      |                     |                                                                                                 |
| ⑪Length of third Rail         | Blank: two rails joint    2970:2970mm.....[Defined by customer]                                                                                       |                  |                                                                                                 |                      |                     |                                                                                                 |
| ⑫Preload                      | A: Standard clearance    B: Light Preload    C: Medium Preload    D: Heavy Preload                                                                    |                  |                                                                                                 |                      |                     |                                                                                                 |
| ⑬Accuracy                     | N : Normal            H : High                                                                                                                        |                  |                                                                                                 |                      |                     |                                                                                                 |
| ⑭Nipple /adapter type         | 15                                                                                                                                                    | M4:<br>M4 Nipple |            | 20<br>25<br>30<br>35 | M6:<br>M6 Nipple    |            |
|                               |                                                                                                                                                       | AM6:<br>M4 to M6 | I type<br> |                      | A01:<br>M6 to PT1/8 | I type<br> |
|                               |                                                                                                                                                       |                  | L type<br> |                      | AM8:<br>M6 to M8    |                                                                                                 |
|                               |                                                                                                                                                       | LM6:<br>M4 to M6 |            |                      | L01:<br>M6 to PT1/8 | L type<br> |
|                               |                                                                                                                                                       |                  |                                                                                                 |                      |                     | LM8:<br>M6 to M8                                                                                |
|                               |                                                                                                                                                       |                  |                                                                                                 |                      | SM6:<br>M6 Nipple   |            |
| ⑮Packing type                 | Blank: the block and rail are assembled<br>B: block and rail are put separately                                                                       |                  |                                                                                                 |                      |                     |                                                                                                 |
| ⑯Rail type                    | Blank: Top-mount    T: Bottom-mount                                                                                                                   |                  |                                                                                                 |                      |                     |                                                                                                 |

★ [Note1] Self-lubricator standard type please refer to Pg. 81. for more detail.

[Note2] Number of joints cannot be more than 2 times(three rails at most).

For LSQH15/20/25, maximum length of jointed rail is 11800mm.

For LSQH30/35, it's 11880. Customization is needed for joint times more than standard.

[Note3] Heavy preload is available for LSQH25/30/35 only.

[Note4] LSQH15 only Square(H) and Flange mounting from top(F1) block styles are available.

[Note5] For LSQH-BB series, standard length of a rail is 3 m.

Maximum length of two-joint rail is 6 m.

Maximum length of three-joint rail is 9 m.

Please contact with our company

if length of rail exceeds the maximum.

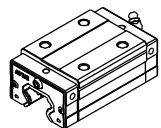
# Caged Ball Type Linear Guide

## LSQH Series

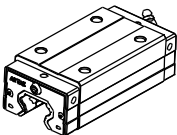
### 1. Block Order Information

LSQH □ 20 BK-H N-H-D-AM8

1 2 3 4 5 6 7 8 9



N: Standard



L: Long

|                        |                                                                                                                                            |                                                 |                  |                      |                                                                                                           |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------|----------------------|-----------------------------------------------------------------------------------------------------------|
| ① Model Code           | LSQH:Caged Ball Type Linear Guide                                                                                                          |                                                 |                  |                      |                                                                                                           |
| ② Coating on block     | Blank: Block without additional coating. (natural color) ★B: Block coated with black chrome                                                |                                                 |                  |                      |                                                                                                           |
| ③ Rail Width           | 15: 15mm 20: 20mm 25: 23mm 30: 28mm 35: 34mm                                                                                               |                                                 |                  |                      |                                                                                                           |
| ④ Block Code           | BK: Block                                                                                                                                  |                                                 |                  |                      |                                                                                                           |
| ⑤ Block Style          | H: Square type F1: Flange type, Mounting from top<br>F2: Flange type, Mounting from bottom<br>F3: Flange type, Mounting from top or bottom |                                                 |                  |                      |                                                                                                           |
| ⑥ Block type           | N: Standard L: Long [w/o 15 series]                                                                                                        |                                                 |                  |                      |                                                                                                           |
| ⑦ Accuracy             | N: Normal H: High                                                                                                                          |                                                 |                  |                      |                                                                                                           |
| ⑧ Group code           | SA SB SC SE SF B C D [Add]                                                                                                                 |                                                 |                  |                      |                                                                                                           |
| ⑨ Nipple /adapter type | 15                                                                                                                                         | M4: M4 Nipple<br>AM6: M4 to M6<br>LM6: M4 to M6 | I type<br>L type | 20<br>25<br>30<br>35 | M6: M6 Nipple<br>A01: M6 to PT1/8<br>AM8: M6 to M8<br>L01: M6 to PT1/8<br>LM8: M6 to M8<br>SM6: M6 Nipple |

★ [Note 1] Self-lubricator standard type please refer to Pg. 81. for more detail.

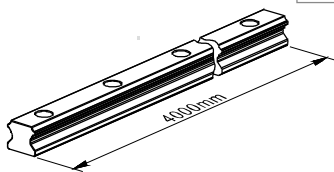
[Note 2] LSQH15 only Square(H) and Flange mounting from top(F1) block styles are available.

Add: When selecting rails and bearings, the different pairing codes can change the units preload. details see "preload pairing chart".

### 2. Rail(4m) Order Information

LSH 15 RL X 4000-H-E-T

1 2 3 4 5 6 7



|               |                                              |  |  |  |  |
|---------------|----------------------------------------------|--|--|--|--|
| ① Model Code  | LSH:Standard Type Linear Guide               |  |  |  |  |
| ② Rail Width  | 15: 15mm 20: 20mm 25: 23mm 30: 28mm 35: 34mm |  |  |  |  |
| ③ Rail Code   | RL: Rail                                     |  |  |  |  |
| ④ Rail Length | 4000 : 4000mm                                |  |  |  |  |
| ⑤ Accuracy    | N: Normal H: High                            |  |  |  |  |
| ⑥ Group code  | E [Note]                                     |  |  |  |  |
| ⑦ Rail type   | Blank: Top-mount T: Bottom-mount             |  |  |  |  |

Note: ● Standard length of LSH rail is four meters.

● For LSH15/20/25, both margin pitch of rail are 20mm.

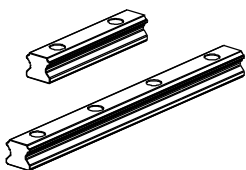
● For LSH30/35, one side of margin pitch is 20mm, the other side is 60mm.

● When selecting rails and bearings, the different pairing codes can change the units preload. details see "preload pairing chart".

### 3. Rail Order Information

LSH □ 15 RL X 220-S20-H-E-T

1 2 3 4 5 6 7 8 9



|                                   |                                                                                                                              |  |  |  |  |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| ① Model Code                      | LSH:Standard Type Linear Guide                                                                                               |  |  |  |  |
| ② Coating on rail                 | Blank: Rail without additional coating. (natural color) ★B: Rail coated with black chrome                                    |  |  |  |  |
| ③ Rail Width                      | 15: 15mm 20: 20mm 25: 23mm 30: 28mm 35: 34mm                                                                                 |  |  |  |  |
| ④ Rail Code                       | RL: Rail                                                                                                                     |  |  |  |  |
| ⑤ Rail Length                     | 220:220mm .....[Defined by the customer]                                                                                     |  |  |  |  |
| ⑥ Position of first mounting hole | S□ : Distance from end of rail to the center of first mounting hole<br>(It is recommended to be greater than minimum margin) |  |  |  |  |
| ⑦ Accuracy                        | N: Normal H: High                                                                                                            |  |  |  |  |
| ⑧ Group code                      | E [Note]                                                                                                                     |  |  |  |  |
| ⑨ Rail type                       | Blank: Top-mount T: Bottom-mount                                                                                             |  |  |  |  |

Note: 1. When selecting rails and bearings, the different pairing codes can change the units preload. details see "preload pairing chart".

2. For LSH-B series, standard length of a rail is 3 m.

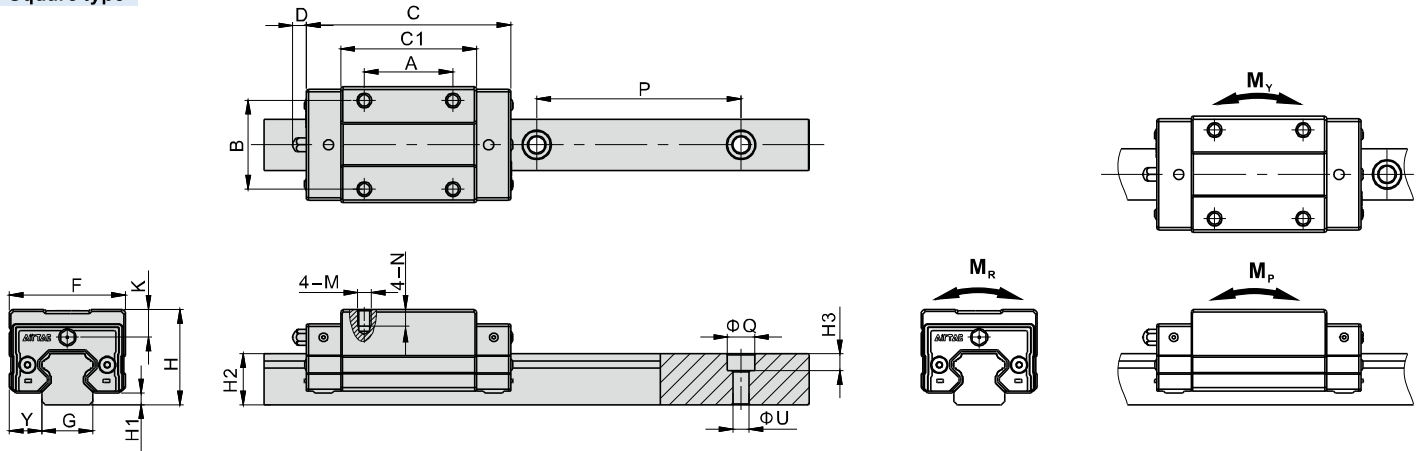


# Caged Ball Type Linear Guide

## LSQH Series

### Specifications and Dimensions

#### Square type



| Model\Item | External Dimension ( mm ) |     |    |      |       | Block Dimension ( mm ) |    |    |      |      |         |    |    | Rail Dimension ( mm ) |    |      |     |     |
|------------|---------------------------|-----|----|------|-------|------------------------|----|----|------|------|---------|----|----|-----------------------|----|------|-----|-----|
|            | H                         | H1  | F  | Y    | C     | C1                     | A  | B  | K    | D    | M       | N  | G  | H2                    | P  | ΦQ   | ΦU  | H3  |
| LSQH15HN   | 28                        | 3.5 | 34 | 9.5  | 61.5  | 41.5                   | 26 | 26 | 8.3  | 6    | M4X0.7  | 5  | 15 | 15                    | 60 | 8    | 4.8 | 5.3 |
| LSQH20HN   | 30                        | 4.5 | 44 | 12   | 77    | 54.5                   | 36 | 32 | 6.5  | 12.5 | M5X0.8  | 5  | 20 | 17.5                  | 60 | 9.5  | 5.8 | 8.5 |
| LSQH20HL   | 30                        | 4.5 | 44 | 12   | 92    | 69.5                   | 50 | 32 | 6.5  | 12.5 | M5X0.8  | 5  | 20 | 17.5                  | 60 | 9.5  | 5.8 | 8.5 |
| LSQH25HN   | 40                        | 6.5 | 48 | 12.5 | 83.5  | 60                     | 35 | 35 | 10.9 | 12.5 | M6X1.0  | 8  | 23 | 22                    | 60 | 11.2 | 7   | 9   |
| LSQH25HL   | 40                        | 6.5 | 48 | 12.5 | 104.5 | 81                     | 50 | 35 | 10.9 | 12.5 | M6X1.0  | 8  | 23 | 22                    | 60 | 11.2 | 7   | 9   |
| LSQH30HN   | 45                        | 6.5 | 60 | 16   | 97.5  | 73                     | 40 | 40 | 11   | 13   | M8X1.25 | 10 | 28 | 26                    | 80 | 14.2 | 9   | 12  |
| LSQH30HL   | 45                        | 6.5 | 60 | 16   | 122   | 97                     | 60 | 40 | 11   | 13   | M8X1.25 | 10 | 28 | 26                    | 80 | 14.2 | 9   | 12  |
| LSQH35HN   | 55                        | 7   | 70 | 18   | 113   | 82                     | 50 | 50 | 16.2 | 12.5 | M8X1.25 | 12 | 34 | 29                    | 80 | 14.2 | 9   | 12  |
| LSQH35HL   | 55                        | 7   | 70 | 18   | 140.5 | 109.5                  | 72 | 50 | 16.2 | 12.5 | M8X1.25 | 12 | 34 | 29                    | 80 | 14.2 | 9   | 12  |

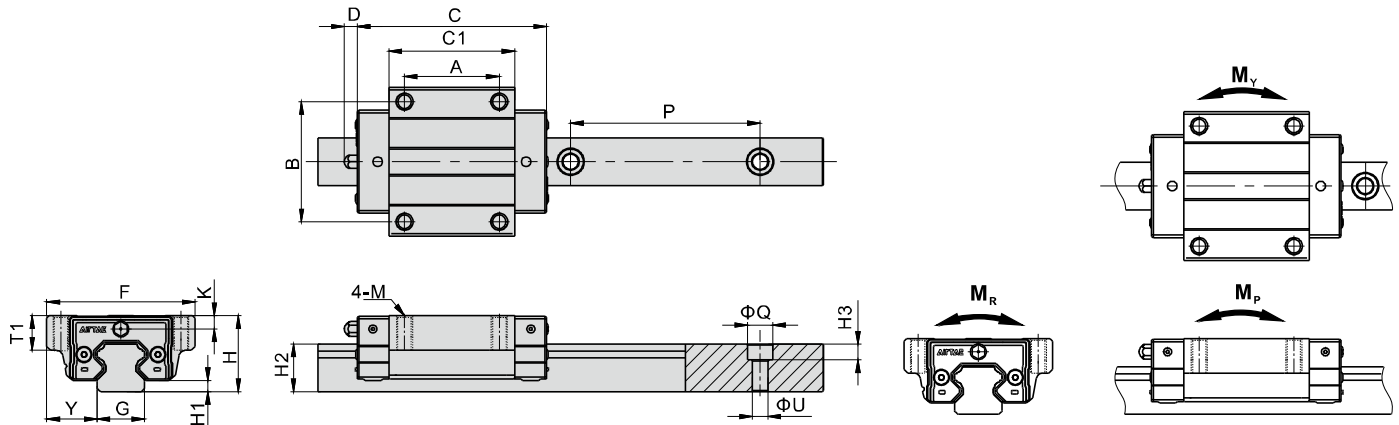
  

| Model\Item | Mounting Screw | Dynamic Load Rating(kN) | Static Load Rating(kN) | Static Rated Moment (kN.m) |                |                | Weight    |            |
|------------|----------------|-------------------------|------------------------|----------------------------|----------------|----------------|-----------|------------|
|            |                | C                       | C <sub>0</sub>         | M <sub>R</sub>             | M <sub>P</sub> | M <sub>V</sub> | Block(kg) | Rail(kg/m) |
| LSQH15HN   | M4             | 13.8                    | 14.9                   | 0.10                       | 0.10           | 0.10           | 0.2       | 1.43       |
| LSQH20HN   | M5             | 24.2                    | 27.5                   | 0.26                       | 0.24           | 0.24           | 0.33      | 2.23       |
| LSQH20HL   | M5             | 28.9                    | 36.4                   | 0.34                       | 0.33           | 0.33           | 0.41      | 2.23       |
| LSQH25HN   | M6             | 29.9                    | 37.6                   | 0.42                       | 0.35           | 0.35           | 0.54      | 3.32       |
| LSQH25HL   | M6             | 36.6                    | 47.5                   | 0.52                       | 0.51           | 0.51           | 0.70      | 3.32       |
| LSQH30HN   | M8             | 42.8                    | 55.0                   | 0.66                       | 0.67           | 0.67           | 0.91      | 4.5        |
| LSQH30HL   | M8             | 52.3                    | 70.0                   | 0.84                       | 0.87           | 0.87           | 1.17      | 4.5        |
| LSQH35HN   | M8             | 56.3                    | 72.3                   | 1.05                       | 0.92           | 0.92           | 1.51      | 6.37       |
| LSQH35HL   | M8             | 58.6                    | 92.6                   | 1.47                       | 1.40           | 1.40           | 1.93      | 6.37       |

# Caged Ball Type Linear Guide

## LSQH Series

Flange type, Top-Mount



| Model\Item | External Dimension ( mm ) |     |     |      |       | Block Dimension ( mm ) |    |    |     |      |         |    | Rail Dimension ( mm ) |      |    |      |     |     |
|------------|---------------------------|-----|-----|------|-------|------------------------|----|----|-----|------|---------|----|-----------------------|------|----|------|-----|-----|
|            | H                         | H1  | F   | Y    | C     | C1                     | A  | B  | K   | D    | M       | T1 | G                     | H2   | P  | ΦQ   | ΦU  | H3  |
| LSQH15F1N  | 24                        | 3.5 | 47  | 16   | 61.5  | 41.5                   | 30 | 38 | 4.3 | 6    | M5X0.8  | 11 | 15                    | 15   | 60 | 8    | 4.8 | 5.3 |
| LSQH20F1N  | 30                        | 4.5 | 63  | 21.5 | 77    | 54.5                   | 40 | 53 | 6.5 | 12.5 | M6X1.0  | 10 | 20                    | 17.5 | 60 | 9.5  | 5.8 | 8.5 |
| LSQH20F1L  | 30                        | 4.5 | 63  | 21.5 | 92    | 69.5                   | 40 | 53 | 6.5 | 12.5 | M6X1.0  | 10 | 20                    | 17.5 | 60 | 9.5  | 5.8 | 8.5 |
| LSQH25F1N  | 36                        | 6.5 | 70  | 23.5 | 83.5  | 60                     | 45 | 57 | 6.9 | 12.5 | M8X1.25 | 16 | 23                    | 22   | 60 | 11.2 | 7   | 9   |
| LSQH25F1L  | 36                        | 6.5 | 70  | 23.5 | 104.5 | 81                     | 45 | 57 | 6.9 | 12.5 | M8X1.25 | 16 | 23                    | 22   | 60 | 11.2 | 7   | 9   |
| LSQH30F1N  | 42                        | 6.5 | 90  | 31   | 97.5  | 73                     | 52 | 72 | 8   | 13   | M10X1.5 | 18 | 28                    | 26   | 80 | 14.2 | 9   | 12  |
| LSQH30F1L  | 42                        | 6.5 | 90  | 31   | 122   | 97                     | 52 | 72 | 8   | 13   | M10X1.5 | 18 | 28                    | 26   | 80 | 14.2 | 9   | 12  |
| LSQH35F1N  | 48                        | 7   | 100 | 33   | 113   | 82                     | 62 | 82 | 9.2 | 12.5 | M10X1.5 | 21 | 34                    | 29   | 80 | 14.2 | 9   | 12  |
| LSQH35F1L  | 48                        | 7   | 100 | 33   | 140.5 | 109.5                  | 62 | 82 | 9.2 | 12.5 | M10X1.5 | 21 | 34                    | 29   | 80 | 14.2 | 9   | 12  |

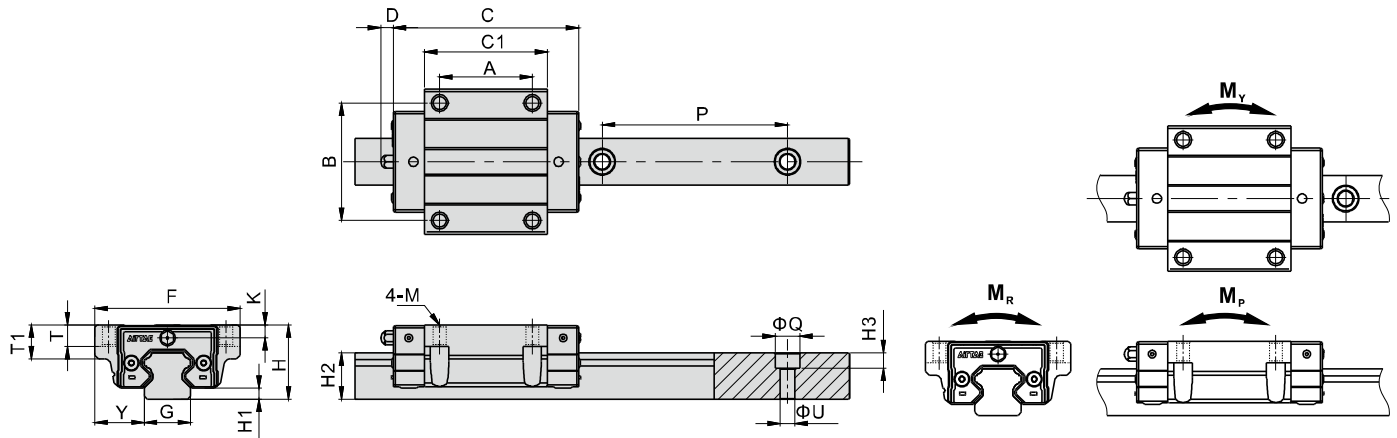
| Model\Item | Mounting Screw | Dynamic Load Rating(kN) | Static Load Rating(kN) | Static Rated Moment (kN.m) |                |                | Weight    |            |
|------------|----------------|-------------------------|------------------------|----------------------------|----------------|----------------|-----------|------------|
|            |                | C                       | C <sub>0</sub>         | M <sub>R</sub>             | M <sub>p</sub> | M <sub>y</sub> | Block(kg) | Rail(kg/m) |
| LSQH15F1N  | M4             | 13.8                    | 14.9                   | 0.10                       | 0.10           | 0.10           | 0.20      | 1.43       |
| LSQH20F1N  | M5             | 24.2                    | 27.5                   | 0.26                       | 0.24           | 0.24           | 0.40      | 2.23       |
| LSQH20F1L  | M5             | 28.9                    | 36.4                   | 0.34                       | 0.33           | 0.33           | 0.80      | 2.23       |
| LSQH25F1N  | M6             | 29.9                    | 37.6                   | 0.42                       | 0.35           | 0.35           | 0.60      | 3.32       |
| LSQH25F1L  | M6             | 36.6                    | 47.5                   | 0.52                       | 0.51           | 0.51           | 0.86      | 3.32       |
| LSQH30F1N  | M8             | 42.8                    | 55.0                   | 0.66                       | 0.67           | 0.67           | 1.09      | 4.5        |
| LSQH30F1L  | M8             | 52.3                    | 70.0                   | 0.84                       | 0.87           | 0.87           | 1.38      | 4.5        |
| LSQH35F1N  | M8             | 56.3                    | 72.3                   | 1.05                       | 0.92           | 0.92           | 1.57      | 6.37       |
| LSQH35F1L  | M8             | 58.6                    | 92.6                   | 1.47                       | 1.40           | 1.40           | 2.05      | 6.37       |

# Caged Ball Type Linear Guide

## LSQH Series

Flange type, Bottom-Mount

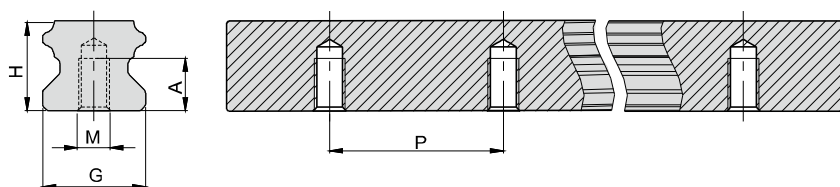
Flange type, Top or Bottom-Mount



| Model\Item    | External Dimension(mm) |     |     |      |       | Block Dimension(mm) |    |    |     |      |                  |                         |     |    | Rail Dimension(mm) |      |    |      |     |     |  |
|---------------|------------------------|-----|-----|------|-------|---------------------|----|----|-----|------|------------------|-------------------------|-----|----|--------------------|------|----|------|-----|-----|--|
|               | H                      | H1  | F   | Y    | C     | C1                  | A  | B  | K   | D    | M                |                         | T   | T1 | G                  | H2   | P  | ΦQ   | ΦU  | H3  |  |
|               |                        |     |     |      |       |                     |    |    |     |      | Bottom<br>-Mount | Top or Bottom<br>-Mount |     |    |                    |      |    |      |     |     |  |
| LSQH20F2(F3)N | 30                     | 4.5 | 63  | 21.5 | 77    | 54.5                | 40 | 53 | 6.5 | 12.5 | Φ5.7             | M6X1.0                  | 9.5 | 10 | 20                 | 17.5 | 60 | 9.5  | 5.8 | 8.5 |  |
| LSQH20F2(F3)L | 30                     | 4.5 | 63  | 21.5 | 92    | 69.5                | 40 | 53 | 6.5 | 12.5 | Φ5.7             | M6X1.0                  | 9.5 | 10 | 20                 | 17.5 | 60 | 9.5  | 5.8 | 8.5 |  |
| LSQH25F2(F3)N | 36                     | 6.5 | 70  | 23.5 | 83.5  | 60                  | 45 | 57 | 6.9 | 12.5 | Φ6.8             | M8X1.25                 | 10  | 16 | 23                 | 22   | 60 | 11.2 | 7   | 9   |  |
| LSQH25F2(F3)L | 36                     | 6.5 | 70  | 23.5 | 104.5 | 81                  | 45 | 57 | 6.9 | 12.5 | Φ6.8             | M8X1.25                 | 10  | 16 | 23                 | 22   | 60 | 11.2 | 7   | 9   |  |
| LSQH30F2(F3)N | 42                     | 6.5 | 90  | 31   | 97.5  | 73                  | 52 | 72 | 8   | 13   | Φ9               | M10X1.5                 | 10  | 18 | 28                 | 26   | 80 | 14.2 | 9   | 12  |  |
| LSQH30F2(F3)L | 42                     | 6.5 | 90  | 31   | 122   | 97                  | 52 | 72 | 8   | 13   | Φ9               | M10X1.5                 | 10  | 18 | 28                 | 26   | 80 | 14.2 | 9   | 12  |  |
| LSQH35F2(F3)N | 48                     | 7   | 100 | 33   | 113   | 82                  | 62 | 82 | 9.2 | 12.5 | Φ9               | M10X1.5                 | 13  | 21 | 34                 | 29   | 80 | 14.2 | 9   | 12  |  |
| LSQH35F2(F3)L | 48                     | 7   | 100 | 33   | 140.5 | 109.5               | 62 | 82 | 9.2 | 12.5 | Φ9               | M10X1.5                 | 13  | 21 | 34                 | 29   | 80 | 14.2 | 9   | 12  |  |

| Model\Item    | Mounting Screw | Dynamic Load Rating(kN) | Static Load Rating(kN) | Static Rated Moment (kN.m) |                |                | Weight    |            |
|---------------|----------------|-------------------------|------------------------|----------------------------|----------------|----------------|-----------|------------|
|               |                | C                       | C <sub>0</sub>         | M <sub>R</sub>             | M <sub>P</sub> | M <sub>Y</sub> | Block(kg) | Rail(kg/m) |
| LSQH20F2(F3)N | M5             | 24.2                    | 27.6                   | 0.26                       | 0.24           | 0.24           | 0.40      | 2.23       |
| LSQH20F2(F3)L | M5             | 28.9                    | 36.4                   | 0.34                       | 0.33           | 0.33           | 0.80      | 2.23       |
| LSQH25F2(F3)N | M6             | 29.9                    | 37.6                   | 0.42                       | 0.35           | 0.35           | 0.60      | 3.32       |
| LSQH25F2(F3)L | M6             | 36.6                    | 47.5                   | 0.52                       | 0.51           | 0.51           | 0.86      | 3.32       |
| LSQH30F2(F3)N | M8             | 42.8                    | 55.0                   | 0.66                       | 0.67           | 0.67           | 1.09      | 4.5        |
| LSQH30F2(F3)L | M8             | 52.3                    | 70.0                   | 0.84                       | 0.87           | 0.87           | 1.38      | 4.5        |
| LSQH35F2(F3)N | M8             | 56.3                    | 72.3                   | 1.05                       | 0.92           | 0.92           | 1.57      | 6.37       |
| LSQH35F2(F3)L | M8             | 58.6                    | 92.6                   | 1.47                       | 1.40           | 1.40           | 2.05      | 6.37       |

### Dimension of bottom-mount type rail



| Model\Item | G  | H    | M       | A  | P  |
|------------|----|------|---------|----|----|
| LSQH15T    | 15 | 15   | M5X0.8  | 8  | 60 |
| LSQH20T    | 20 | 17.5 | M6X1.0  | 10 | 60 |
| LSQH25T    | 23 | 22   | M6X1.0  | 12 | 60 |
| LSQH30T    | 28 | 26   | M8X1.25 | 15 | 80 |
| LSQH35T    | 34 | 29   | M8X1.25 | 17 | 80 |

# Caged Ball Type Linear Guide

## LSQH Series

### Accuracy

LSQH standard type linear guide comes with 3 accuracy levels.

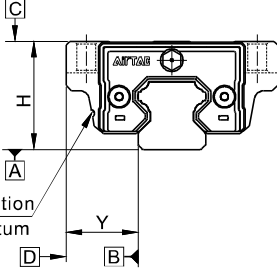
|                                                                                                                               | Accuracy Standards (mm)                        |                                           |          |         |          |                |
|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-------------------------------------------|----------|---------|----------|----------------|
|                                                                                                                               | Accuracy                                       | N : Normal                                |          | H: High |          | P: Precision   |
|                                                                                                                               | Model                                          | 15/20                                     | 25/30/35 | 15/20   | 25/30/35 | 15/20 25/30/35 |
|  <p>The identification line of the Datum</p> | Tolerance of height H                          | ±0.1                                      |          | ±0.03   | ±0.04    | ±0.015 ±0.02   |
|                                                                                                                               | Variation of height ΔH                         | 0.02                                      | 0.025    | 0.01    | 0.015    | 0.006 0.007    |
|                                                                                                                               | Tolerance of width Y                           | ±0.1                                      |          | ±0.03   | ±0.04    | ±0.015 ±0.02   |
|                                                                                                                               | Variation of width ΔY                          | 0.02                                      | 0.03     | 0.01    | 0.015    | 0.006 0.007    |
|                                                                                                                               | Parallelism of C-surface relative to A-surface | Parallelism of raceway (Refer to Table 1) |          |         |          |                |
|                                                                                                                               | Parallelism of D-surface relative to B-surface | Parallelism of raceway (Refer to Table 1) |          |         |          |                |

Table 1 : Parallelism of the raceway

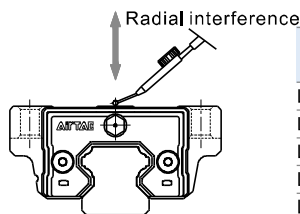
| Rail Length(mm)<br>Accuracy    |   | 100 under | 100~200 | 200~300 | 300~500 | 500~700 | 700~900 | 900~1100 | 1100~1500 | 1500~1900 | 1900~2500 | 2500~3100 | 3100~3600 | 3600~4000 |
|--------------------------------|---|-----------|---------|---------|---------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Parallelism of the raceway(μm) | N | 12        | 14      | 15      | 17      | 20      | 22      | 24       | 26        | 28        | 31        | 33        | 36        | 37        |
|                                | H | 7         | 9       | 10      | 12      | 13      | 15      | 16       | 18        | 20        | 22        | 25        | 27        | 28        |
|                                | P | 3         | 4       | 5       | 6       | 7       | 8       | 9        | 11        | 13        | 15        | 18        | 20        | 21        |

### Preload Level

#### 1. Preload interference

The LSQH standard type Linear Guide has three preload categories: A, B and C.

Choosing suitable preload level will enhance rigidity, precision and torsion resistant performance of the linear guide.



| Model  | Radial interference(μm) |                  |                   |                  |
|--------|-------------------------|------------------|-------------------|------------------|
|        | Standard clearance(A)   | Light Preload(B) | Medium Preload(C) | Heavy Preload(D) |
| LSQH15 | -7~-1                   | -12~-4           | -22~-14           | -                |
| LSQH20 | -8~-1                   | -13~-5           | -23~-15           | -                |
| LSQH25 | -9~-1                   | -14~-6           | -24~-16           | -33~-25          |
| LSQH30 | -10~-1                  | -16~-7           | -29~-20           | -38~-29          |
| LSQH35 | -11~-1                  | -21~-11          | -34~-24           | -43~-33          |

#### 2. Common Application

Refer to following table for suitable application of different preload grade:

| Preload grade         | Requirement                                                                 | Common Application                                                                                                                                             |
|-----------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standard clearance(A) | One axial movement, small vibration and impact, accuracy requirement is low | Conveyor Machine, Semiconductor Equipment, Stage Equipment, Press Machine, Welding Machine and other light movement equipments                                 |
| Light Preload(B)      | Equipment that requires light-load and high-precision.                      | Z-axis movement for industrial use, NC lathe, EDM, Precision XY platform, Vertical machine center, measurement instrument, material feeder or industrial robot |
| Medium Preload(C)     | Equipment that requires high rigidity, large vibration and shock.           | Machining centers, NC lathes, grinders, vertical or horizontal milling machines, boring machines, tool guides, heavy cutting machines.                         |
| Heavy Preload(D)      | Equipment that requires higher rigidity, larger vibration and shock.        | Machining centers, NC lathes, grinders, vertical or horizontal milling machines, boring machines, tool guides, heavy cutting machines.                         |

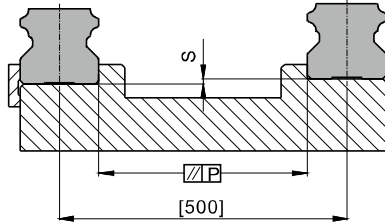
# Caged Ball Type Linear Guide

## LSQH Series

### Installation Illustration

#### 1. Allowable tolerance of mounting surface

LSQH series is an arc-shape, two-point contact design of linear guide. Its self-centering feature allows some tolerance on mounting surface without affecting the smoothness of linear motion. The allowable tolerance is indicated in following table:

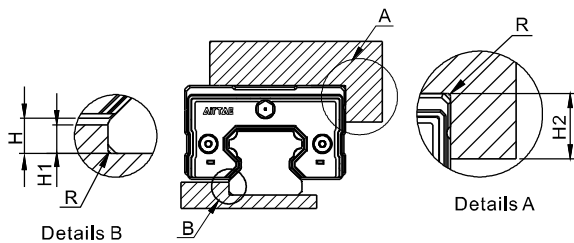


| Model  | Allowable tolerance of parallelism P(μm) |                  |                   | Allowable tolerance of top and bottom S (μm) |                  |                   |
|--------|------------------------------------------|------------------|-------------------|----------------------------------------------|------------------|-------------------|
|        | Standard clearance(A)                    | Light Preload(B) | Medium Preload(C) | Standard clearance(A)                        | Light Preload(B) | Medium Preload(C) |
| LSQH15 | 25                                       | 18               | 13                | 130                                          | 85               | 35                |
| LSQH20 | 25                                       | 20               | 18                | 130                                          | 85               | 50                |
| LSQH25 | 30                                       | 22               | 20                | 130                                          | 85               | 70                |
| LSQH30 | 40                                       | 30               | 27                | 170                                          | 110              | 90                |
| LSQH35 | 50                                       | 35               | 30                | 210                                          | 150              | 120               |

Note: The value in the table is the allowable value when the distance between the two linear guides is 500mm, and the allowable value is proportional to the distance between the two linear guides.

#### 2. Height and Chamfer of Reference Edge

In order to ensure accurate installation of LSQH Linear Guide, the contact space should not exceed the given figures in following table.



Unit : mm

| Model  | H   | H1  | H2 | R(Max) |
|--------|-----|-----|----|--------|
| LSQH15 | 3.5 | 3   | 4  | 0.5    |
| LSQH20 | 4.5 | 3.7 | 5  | 0.5    |
| LSQH25 | 6.5 | 5   | 5  | 1      |
| LSQH30 | 6.5 | 5   | 5  | 1      |
| LSQH35 | 7   | 6   | 6  | 1      |

#### 3. Screw Tighten Torque

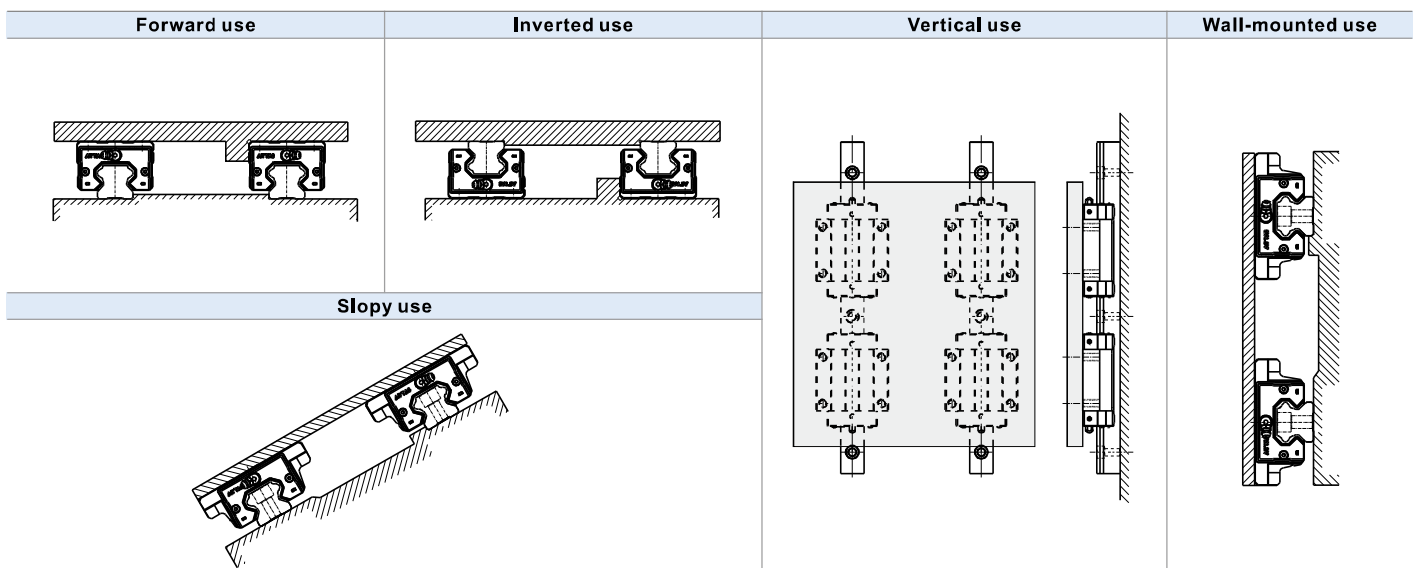
When installing linear guide, whether the screws are well tighten and surface is well contacted will affect accuracy significantly. Please refer to following table for tightening force to ensure a perfect installation.

| Model  | Screw size | Tighten Torque(N.cm) |         |                |
|--------|------------|----------------------|---------|----------------|
|        |            | Iron                 | Casting | Aluminum alloy |
| LSQH15 | M4         | 412                  | 274     | 206            |
| LSQH20 | M5         | 882                  | 588     | 441            |
| LSQH25 | M6         | 1370                 | 921     | 686            |
| LSQH30 | M8         | 3040                 | 2010    | 1470           |
| LSQH35 | M8         | 3040                 | 2010    | 1470           |

#### 4. Installation and Application

Linear guide installation methods can be divided into the followings.

For installations other than forward installation, the lubricant may fail.

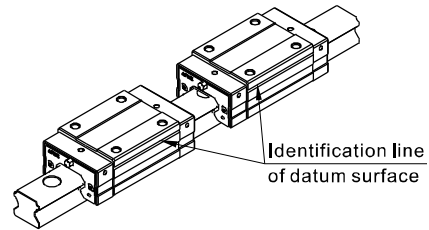


# Caged Ball Type Linear Guide

## LSQH Series

### 5. Datum plane

- Datum plane for installation must be ground or finely milled to ensure accuracy.
- Both sides of Rail can be used as the datum plane.
- For multi-blocks on a rail, identification line on blocks should be put on the same side to ensure moving accuracy.



### 6. Fixation Method

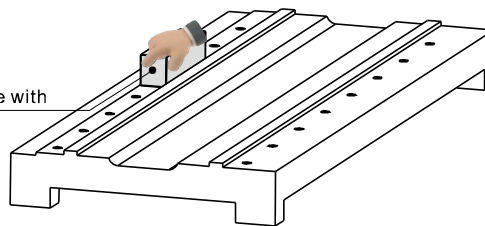
Rails and blocks are possible to be displaced while the machine is subjected to vibrations and impacts thus to affect the accuracy. In order to avoid those difficulties and achieve high running accuracy, the following four methods are recommended for fixing.

| Mounting with a plate | Mounting with screw | Mounting with taper | Mounting with needle roller |
|-----------------------|---------------------|---------------------|-----------------------------|
|                       |                     |                     |                             |

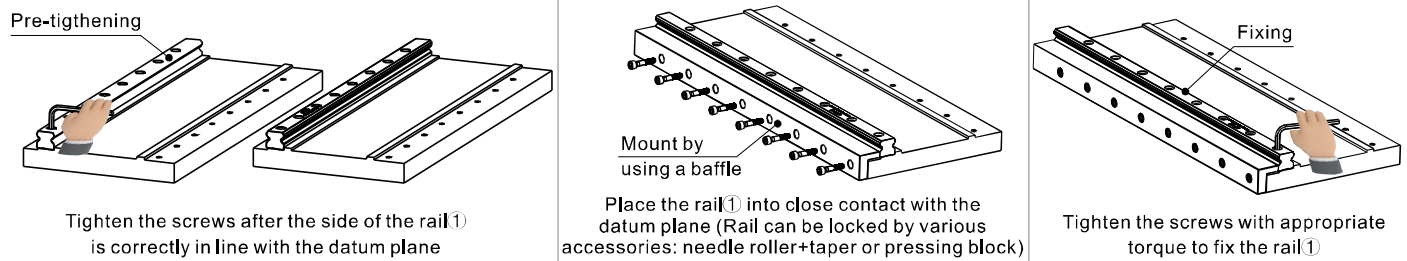
### 7. Rail Installation

A. Before installing the rail, remove all dirt from the mounting surface with oil stone, and then wipe with a clean cloth.

Remove all dirt from the mounting surface with oil stone, and then wipe with a clean cloth



B. Place the rail gently on the bed firstly, then put the bolts into the mounting holes and pre-tighten them, place the rail① into close contact with the datum plane of the bed by using the baffle, tighten the bolts with appropriate torque to fix the rail. Refer to "3. Screw tighten torque" for recommended torque value.

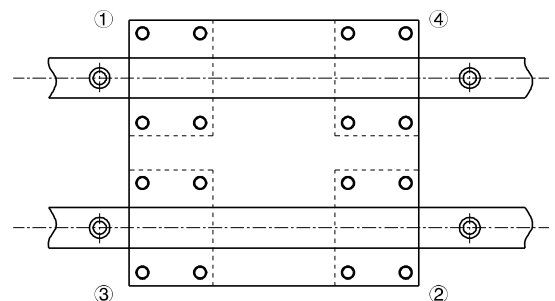
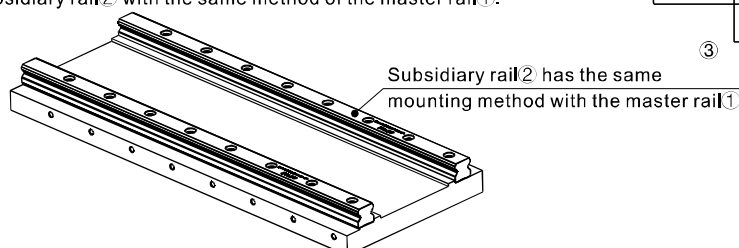


### 8. Block Installation

- Temporarily fix the table on the block by using the mounting bolts.
- Push the block datum plane against the side datum plane of the table and position the block by tightening the set screws.
- Tighten the mounting bolts in 1 to 4 sequences to fix the table on the block.

### 9. Subsidiary Rail Installation

Under the condition that the subsidiary rail has a reference datum plane, remove all dirt from the mounting surface with oil stone, and then wipe with a clean cloth, mount the subsidiary rail② with the same method of the master rail①.



Under the condition that the subsidiary rail ② has a reference datum plane, remove all dirt from the mounting surface with oil stone, and then wipe with a clean cloth,

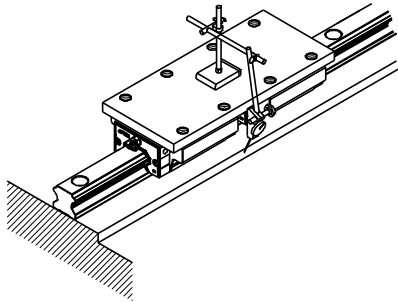
# Caged Ball Type Linear Guide

## LSQH Series

### 10. Rail Installation without Side Datum Surface

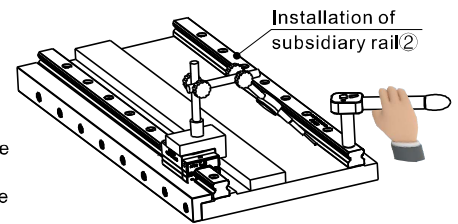
#### Using a provisional datum plane

Use the datum plane provided on the bed for straight alignment of the rail from one end to the other, attention must be paid to fix two blocks in close contact on the measuring plate.



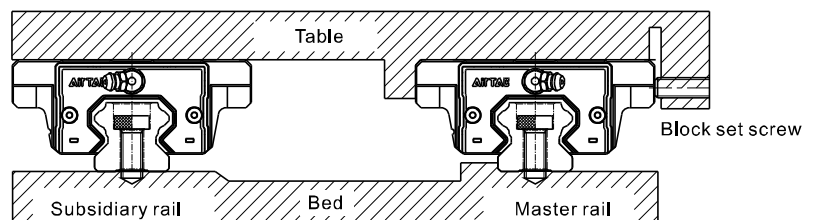
#### Using a straight-edge

Put the straight-edge between the two rails and use a dial gauge to adjust straight-edge in parallel with the side datum plane of the master rail. Use the dial gauge to ensure the straightness of the subsidiary rail by using the straight-edge as reference, then tighten the mounting bolts in proper sequence when the subsidiary rail is parallel to the master rail.



### 11. Rail Installation without Set Screws

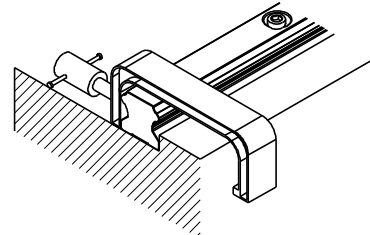
To ensure parallelism between the subsidiary rail and the master rail in the condition without set screws, the following installation methods are recommended, and the installation of the block is the same as mentioned previously.



#### Installation of the master rail

##### Using a vice

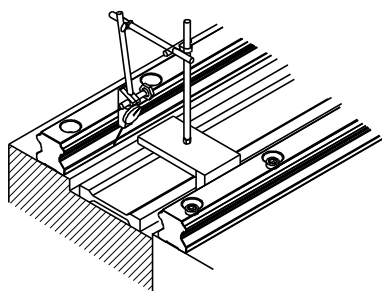
Put the rail on the bed mounting surface and temporarily fasten the mounting bolts, then push the rail against the side datum plane of the bed by using a vice to ensure the rail position. Tighten the mounting bolts in proper sequence with specific torque.



#### Installation of the subsidiary rail

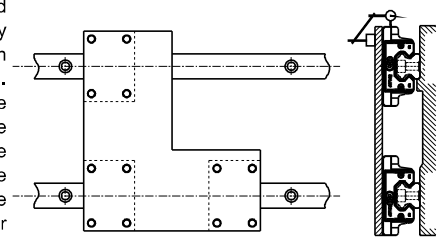
##### Using a straight-edge

Put the straight-edge between the two rails and use a dial gauge to adjust straight-edge in parallel with the side datum plane of the master rail. Use the straight-edge to ensure the straightness of the subsidiary rail, then tighten the mounting bolts in proper sequence with specific torque.



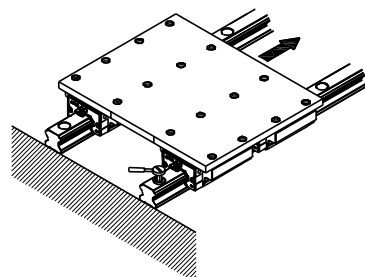
##### Using a table

Fix two blocks on the master rail to the table, and temporarily fix the subsidiary rail to the bed and one block on the subsidiary rail to the table. Place the gauge against the side surface of the block on the subsidiary rail, move the table from one end of the rail to the other end, then tighten the mounting bolts in proper sequence with specific torque while aligning the subsidiary rail parallel to the master rail.



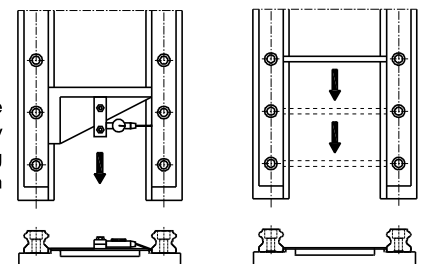
##### Following the master rail

Fix the table to the two blocks on the master rail and one of the two blocks on the subsidiary rail, temporarily fix the other block on the subsidiary rail to the table and subsidiary rail to the bed. Moving the table from one end of the master rail and tighten the mounting bolts on the subsidiary rail in proper sequence with specific torque at the same time.



##### Using a jig

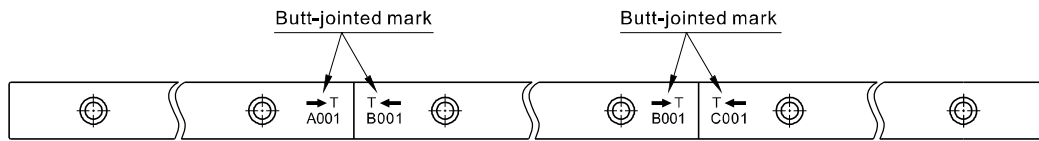
Use a special jig to help ensure the position of the subsidiary rail, and tighten the mounting bolts in proper sequence with specific torque.



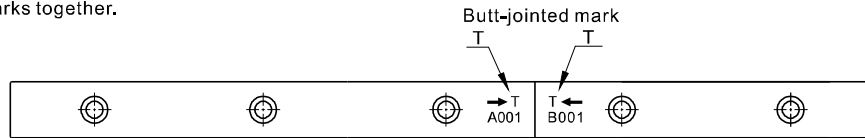
## LSQH Series

### 12. Rail Butt-jointed

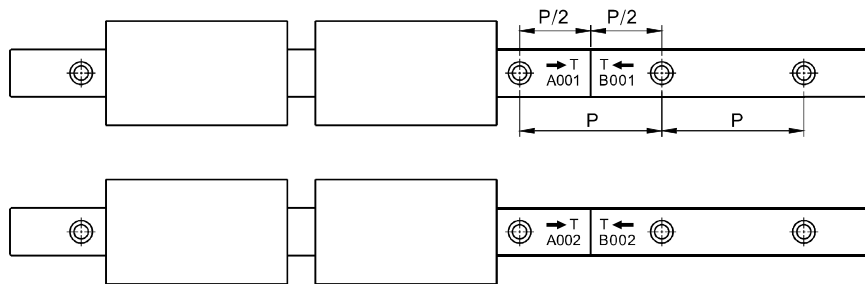
- When it comes to butt-jointed rail installation, it must follow the butt-jointed marks shown below.
- In order to avoid the accuracy caused by installing the matched jointed rails, it is recommended to stagger the butt-jointed positions, see figure below.



- When jointing rails, it must follow group marks on rail to ensure the accuracy of linear guide. These marks are located on the top surface at joint side. Please put the same group marks together.



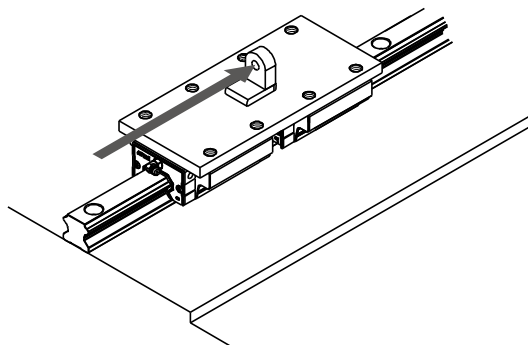
- Be aware serial number of group mark when assemble. A001 and B001 are in a group, so as to A002 and B002 and so on.
- Be aware the installation direction while assembly, the serial numbers are not upside down and arrows point to each other.



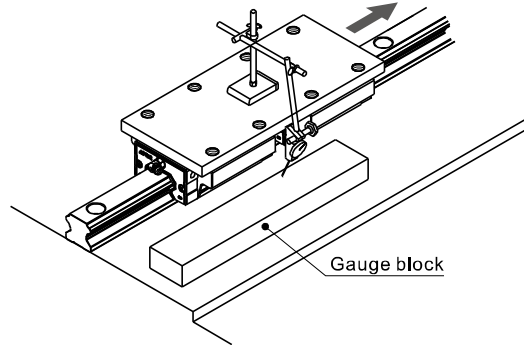
### 13. Measurement Method after Installation

When measuring running accuracy of the block, two blocks should be fixed on an inspection table in close contact to obtain stable accuracy.

When using a dial gauge, a provisional benchmark (like a straight-edge) is recommended to put as close as possible to the block for accurate measurement.



Method using an autocollimator



Method using a dial gauge

# Caged Ball Type Linear Guide

## LSQH Series

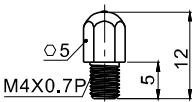
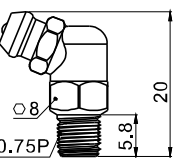
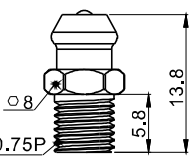
### Lubrication method

When a linear guide is well lubricated, it can reduce wear and increase lifespan significantly. Lubrication has the following benefits :

- Reduces friction of the rollers and raceway to minimize wear.
- The grease film between contact surface can prevent roller fatigue.
- Prevent rust.

#### 1. Lubrication Grease

Use the correct grade of lubrication. While lubricating, a grease gun can be used to pump grease into slider through the grease nipple on it. The suitable condition for lube is when working speed is under 60 m/min and not in cooling process.

| •Nipple type       | L-P-M4                                                                                             | L-P-M6                                                                                                                              | L-P-SM6                                                                                                                               |
|--------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Grease nipple type | <b>LSQH15</b><br> | <b>LSQH20<br/>LSQH25<br/>LSQH30<br/>LSQH35</b><br> | <b>LSQH20<br/>LSQH25<br/>LSQH30<br/>LSQH35</b><br> |

#### •Grease amount

LSQH series linear guide is well lubricated with 'Shell Alvania grease S2' in factory. Customers are recommended to use identical or the same grade of lubricant. After lubrication, block needs to be moved back and forth at least three times for the length of three blocks and repeat at least twice. Check if the surface of rail is well covered by grease film.

| Model  | Grease amount for the first lubrication(cm <sup>3</sup> ) |           | Replenishment amount(cm <sup>3</sup> ) |           |
|--------|-----------------------------------------------------------|-----------|----------------------------------------|-----------|
|        | Standard type                                             | Long type | Standard type                          | Long type |
| LSQH15 | 0.9                                                       | -         | 0.3                                    | -         |
| LSQH20 | 1.8                                                       | 2.7       | 0.6                                    | 0.9       |
| LSQH25 | 3.6                                                       | 4.5       | 1.1                                    | 1.4       |
| LSQH30 | 5.4                                                       | 7.2       | 1.7                                    | 2.2       |
| LSQH35 | 8.1                                                       | 10        | 2.5                                    | 3         |

#### •Lubrication frequency

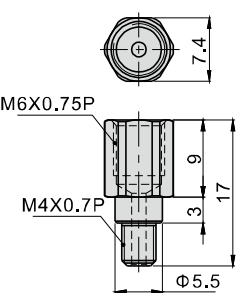
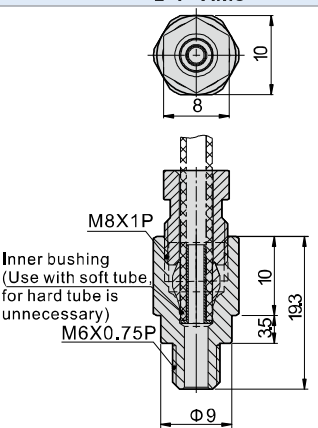
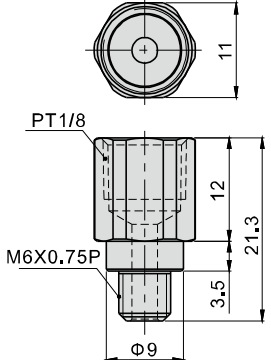
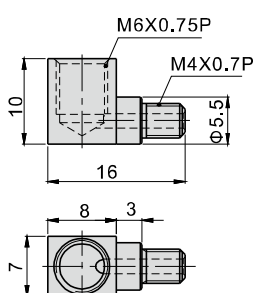
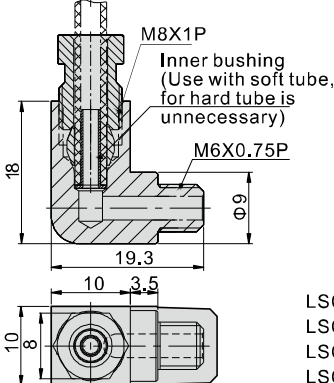
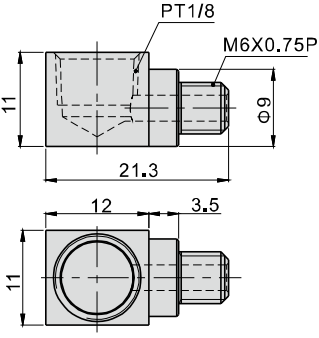
Although the linear guides are well lubricated at the factory and retains grease well, frequent lubrication is still necessary to avoid undesirable wear. Recommended lubrication period is every 100km of movement or every 3~6 months. (Refer to table on the top for suggested amount)

#### 2. Lubricating oil

Recommended oil viscosity for lubrication use is about 30 to 150 cst.

Lubrication oil is suitable for all kinds of load and impact application, but not for high temperature use due to its tendency of vaporization.

#### •Adaptor

| L-P-AM6                                                                                           | L-P-AM8                                                                                                                            | L-P-A01                                                                                                                              |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|  <p>LSQH15</p> |  <p>LSQH35<br/>LSQH30<br/>LSQH25<br/>LSQH20</p> |  <p>LSQH35<br/>LSQH30<br/>LSQH25<br/>LSQH20</p> |
| L-P-LM6                                                                                           | L-P-LM8                                                                                                                            | L-P-L01                                                                                                                              |
|  <p>LSQH15</p> |  <p>LSQH35<br/>LSQH30<br/>LSQH25<br/>LSQH20</p> |  <p>LSQH35<br/>LSQH30<br/>LSQH25<br/>LSQH20</p> |

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### Lubrication method

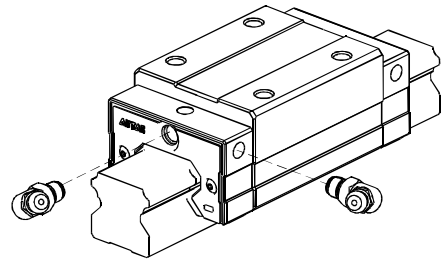
#### •Oil supply rate

Loss of lubrication oil is faster than lubrication grease. Pay attention to sufficiency of oil while using.

| Model  | Oil amount for the first lubrication(cm <sup>3</sup> ) | Feeding Speed(cm <sup>3</sup> /hr) |
|--------|--------------------------------------------------------|------------------------------------|
| LSQH15 | 0.6                                                    | 0.2                                |
| LSQH20 | 0.6                                                    | 0.2                                |
| LSQH25 | 0.9                                                    | 0.3                                |
| LSQH30 | 0.9                                                    | 0.3                                |
| LSQH35 | 0.9                                                    | 0.3                                |

#### 3. Grease nipple/adaptor installation

- Grease nipple or adaptor can be installed in the two sides of block for manual or automatic lubrication based on customer's requirement.
- There are a secondary set of lubricating ports on the side of the block. When using, it is not recommended to use the side with datum line unless necessary.
- Lateral nipple installation is not recommended for flange type blocks.  
(The grease / oil nipple may interfere with block)
- If lateral lubrication is needed for above spec, please contact us for customization.

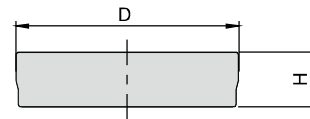


### Bolt hole plug

#### 1. Plug type

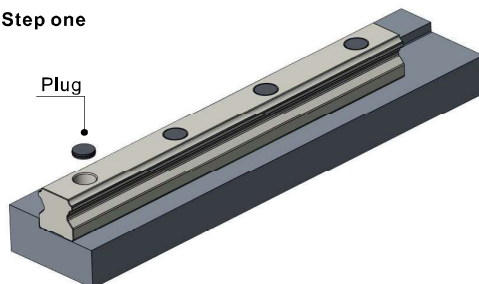
In order to prevent metal swarf or external objects from entering blocks and affecting precision and lifespan, customers must put plugs into holes during installation. Every rail is equipped with default plugs.

| Model | Bolt | Diameter(D)(mm) | Thickness(H)(mm) |
|-------|------|-----------------|------------------|
| LSH15 | M4   | 8.15            | 1.1              |
| LSH20 | M5   | 9.65            | 2.5              |
| LSH25 | M6   | 11.4            | 2.5              |
| LSH30 | M8   | 14.4            | 3.5              |
| LSH35 | M8   | 14.4            | 3.5              |



#### 2. Plug installation Steps

##### Step one



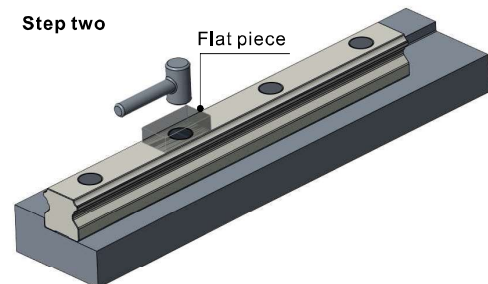
Plug

Place the plug in counterbore.

Note :

- Please make sure the plugs do not protrude the rail surface.
- After installation, please clean the surface before use.

##### Step two



Flat piece

Place the flat piece on mounting hole, hit the piece vertically with a plastic hammer and fix the plug into counterbore.

# Self-lubricator Standard Linear Guide

## LSQH Series



### Order Information(Combined)

LSQH □ 20 H N 1 X220 S20 A H - AM8 - B - T - E

1 2 3 4 5 6 7 8 9 10 11 12 13 14

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------|--|--|------------------|---------------------------------------------------------------------------------------|--|--|-------------------|---------------------------------------------------------------------------------------|
| ① Model Code                      | LSQH:Self-lubricator Standard Linear Guide                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ② Rail&Block surface treatment    | Blank: without additional coating. (natural color)<br>★BB: Block and rail coated with black chrome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ③ Rail Width                      | 15: 15mm 20: 20mm 25: 23mm 30: 28mm 35: 34mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ④ Block Style                     | H: Square type F1: Flange type, Mounting from top<br>F2: Flange type, Mounting from bottom<br>F3: Flange type, Mounting from top or bottom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ⑤ Block type                      | N: Standard L: Long [w/o 15 series]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ⑥ Number of Block                 | 1: One 2: Two [Note: Amount of block on a single set of linear guide]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ⑦ Length of Rail                  | 220:220mm .....[Defined by customer]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ⑧ Position of first mounting hole | S□ : Distance from end of rail to the center of first mounting hole<br>(It is recommended to be greater than minimum margin)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ⑨ Preload                         | A: Standard clearance B: Light Preload C: Medium Preload D: Heavy Preload                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ⑩ Accuracy                        | N : Normal H : High P : Precision                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ⑪ Nipple /adapter type            | <table border="1"> <tr> <td>M4:<br/>M4 Nipple</td><td></td><td>M6:<br/>M6 Nipple</td><td></td></tr> <tr> <td>AM6:<br/>M4 to M6</td><td>I type<br/></td><td>A01:<br/>M6 to PT1/8</td><td>I type<br/></td></tr> <tr> <td>LM6:<br/>M4 to M6</td><td>L type<br/></td><td>L01:<br/>M6 to PT1/8</td><td>L type<br/></td></tr> <tr> <td></td><td></td><td>LM8:<br/>M6 to M8</td><td></td></tr> <tr> <td></td><td></td><td>SM6:<br/>M6 Nipple</td><td></td></tr> </table> |                     |                                                                                                 | M4:<br>M4 Nipple |  | M6:<br>M6 Nipple |  | AM6:<br>M4 to M6 | I type<br> | A01:<br>M6 to PT1/8 | I type<br> | LM6:<br>M4 to M6 | L type<br> | L01:<br>M6 to PT1/8 | L type<br> |  |  | LM8:<br>M6 to M8 |  |  |  | SM6:<br>M6 Nipple |  |
| M4:<br>M4 Nipple                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | M6:<br>M6 Nipple    |            |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| AM6:<br>M4 to M6                  | I type<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | A01:<br>M6 to PT1/8 | I type<br> |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| LM6:<br>M4 to M6                  | L type<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | L01:<br>M6 to PT1/8 | L type<br> |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | LM8:<br>M6 to M8    |            |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SM6:<br>M6 Nipple   |            |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ⑫ Packing type                    | Blank: the block and rail are assembled<br>B: block and rail are put separately                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ⑬ Rail type                       | Blank: Top-mount T: Bottom-mount                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |
| ⑭ Self-lubricator Standard Type   | E: Self-lubricator Standard Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                                                                                                 |                  |                                                                                       |                  |                                                                                       |                  |                                                                                                 |                     |                                                                                                 |                  |                                                                                                 |                     |                                                                                                 |  |  |                  |                                                                                       |  |  |                   |                                                                                       |

[Note 1] Heavy preload is available for LSQH25/30/35 only.

[Note 2] LSQH15 only Square(H) and Flange mounting from top(F1) block styles are available.

[Note 3] For LSQH-BB series, standard length of a rail is 3 m.

Please contact with our company if length of rail exceeds the maximum.

# Self-lubricator Standard Linear Guide

## LSQH Series

### Butt-jointed Order Information

LSQH □ 20 H N 1X2970T2940T2970 A H – AM8-B – T – E

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰

Butt-jointed end margin:1/2P ,  
Position of the first and last  
hole is defined by customer.

|                                 |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ① Model Code                    | LSQH:Self-lubricator Standard Linear Guide                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ② Rail&Block surface treatment  | Blank: without additional coating. (natural color)<br>★BB: Block and rail coated with black chrome                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ③ Rail Width                    | 15: 15mm    20: 20mm    25: 23mm<br>30: 28mm    35: 34mm                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ④ Block Style                   | H: Square type                      F1: Flange type, Mounting from top<br>F2: Flange type, Mounting from bottom<br>F3: Flange type, Mounting from top or bottom |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑤ Block type                    | N: Standard                      L: Long [w/o 15 series]                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑥ Number of Block               | 1: One                      2: Two<br>[Note: Amount of block on a single set of linear guide]                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑦ Length of first Rail          | 2970:2970mm .....[Defined by customer]                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑧ Butt-jointed mark             | T: Rail Butt-jointed mark<br>(Butt-jointed end margin:1/2P) [P is the standard hole distance]                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑨ Length of second Rail         | 2940:2940mm .....[Defined by customer]                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑩ Butt-jointed mark             | Blank: two rails joint                      T: Rail Butt-jointed mark<br>(Butt-jointed end margin:1/2P) [P is the standard hole distance]                       |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑪ Length of third Rail          | Blank: two rails joint    2970:2970mm.....[Defined by customer]                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑫ Preload                       | A: Standard clearance    B: Light Preload    C: Medium Preload    D: Heavy Preload                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑬ Accuracy                      | N : Normal                      H : High                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑭ Nipple /adapter type          | 15                                                                                                                                                              | M4:<br>M4 Nipple<br><br><br>I type<br><br><br>L type<br><br><br>LM6:<br>M4 to M6<br> | 20<br>25<br>30<br>35 | M6:<br>M6 Nipple<br><br><br>A01:<br>M6 to PT1/8<br><br><br>AM8:<br>M6 to M8<br><br><br>L01:<br>M6 to PT1/8<br><br><br>LM8:<br>M6 to M8<br><br><br>SM6:<br>M6 Nipple<br> |
| ⑮ Packing type                  | Blank: the block and rail are assembled<br>B: block and rail are put separately                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑯ Rail type                     | Blank: Top-mount                      T: Bottom-mount                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ⑰ Self-lubricator Standard Type | E: Self-lubricator Standard Type                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

[Note1] Number of joints cannot be more than 2 times(three rails at most).

For LSQH15/20/25, maximum length of jointed rail is 11800mm.

For LSQH30/35, it's 11880, Customization is needed for joint times more than standard.

[Note2] Heavy preload is available for LSQH25/30/35 only.

[Note3]LSQH15 only Square(H) and Flange mounting from top(F1) block styles are available.

[Note4] For LSQH-BB series, standard length of a rail is 3 m.

Maximum length of two-joint rail is 6 m. Maximum length of three-joint rail is 9 m.

Please contact with our company if length of rail exceeds the maximum.

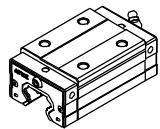
# Self-lubricator Standard Linear Guide

## LSQH Series

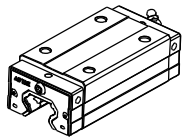
### 1. Block Order Information

LSQH □ 20 BK-H N-H-D-AM8-E

1 2 3 4 5 6 7 8 9 10



N: Standard



L: Long

|                                 |                                                                                                                                                 |               |        |                      |                 |        |  |  |  |  |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------|----------------------|-----------------|--------|--|--|--|--|
| ① Model Code                    | LSQH:Self-lubricator Standard Linear Guide                                                                                                      |               |        |                      |                 |        |  |  |  |  |
| ② Coating on block              | Blank: Block without additional coating. (natural color)   ★ B: Block coated with black chrome                                                  |               |        |                      |                 |        |  |  |  |  |
| ③ Rail Width                    | 15: 15mm   20: 20mm   25: 23mm   30: 28mm   35: 34mm                                                                                            |               |        |                      |                 |        |  |  |  |  |
| ④ Block Code                    | BK: Block                                                                                                                                       |               |        |                      |                 |        |  |  |  |  |
| ⑤ Block Style                   | H: Square type      F1: Flange type, Mounting from top<br>F2: Flange type, Mounting from bottom<br>F3: Flange type, Mounting from top or bottom |               |        |                      |                 |        |  |  |  |  |
| ⑥ Block type                    | N: Standard      L: Long [w/o 15 series]                                                                                                        |               |        |                      |                 |        |  |  |  |  |
| ⑦ Accuracy                      | N : Normal      H : High                                                                                                                        |               |        |                      |                 |        |  |  |  |  |
| ⑧ Group code                    | SA SB SC SE SF B C D [Note1]                                                                                                                    |               |        |                      |                 |        |  |  |  |  |
| ⑨ Nipple /adapter type          | 15                                                                                                                                              | M4: M4 Nipple | I type | 20<br>25<br>30<br>35 | M6:M6 Nipple    | I type |  |  |  |  |
|                                 |                                                                                                                                                 | AM6: M4 to M6 |        |                      | A01:M6 to PT1/8 |        |  |  |  |  |
|                                 |                                                                                                                                                 | LM6: M4 to M6 | L type |                      | AM8:M6 to M8    | L type |  |  |  |  |
|                                 |                                                                                                                                                 |               |        |                      | L01:M6 to PT1/8 |        |  |  |  |  |
|                                 |                                                                                                                                                 |               |        |                      | LM8:M6 to M8    |        |  |  |  |  |
|                                 |                                                                                                                                                 |               |        |                      | SM6:M6 Nipple   |        |  |  |  |  |
| ⑩ Self-lubricator Standard Type | E: Self-lubricator Standard Type                                                                                                                |               |        |                      |                 |        |  |  |  |  |

[Note1]: When selecting rails and bearings, the different pairing codes can change the units preload. details see "preload pairing chart".

[Note 2] LSQH15 only Square(H) and Flange mounting from top(F1) block styles are available.

## LSQH Series

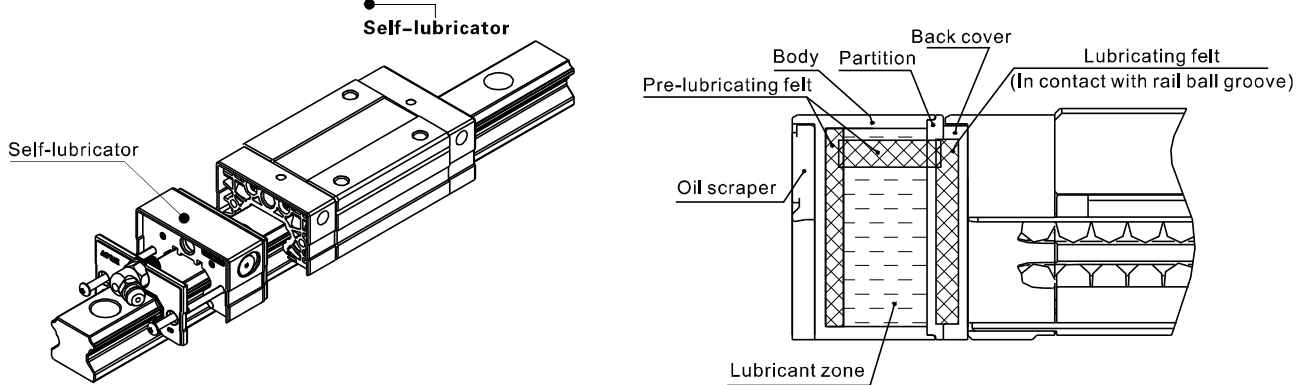
### Self-lubricator illustration

#### 1.Code and structure

AirTAC provides self-lubricator for applications e.g. limited spaces, or where grease maintenance is challenging.

If needed, please add the code "E" after the product model.

E.g. LSQH20HN1X220S20AH-AM8-B-T-E



### Product Features

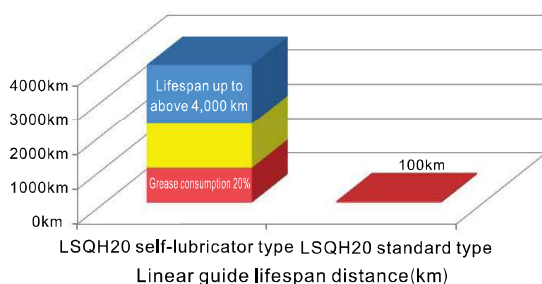
- Easy Maintenance and Long-Term Maintenance-Free Operation:** In normal applications, basically no additional grease maintenance is required throughout lifespan of linear guide.
  - Cost Savings:** No additional lubrication is needed for the block, reducing labor and material costs.
  - Flexible Use in Specific Environments:** Equipped with a high-capacity grease tank, allowing the use of specific lubricants for specific environments.
  - Dustproof Design:** Built-in dustproof structure extends lifespan.
  - Flexible in usage and installation:** the assembling and disassembling of self-lubricator in integrity structure is convenient, can have it according to different working condition.
- [Note] Self-lubricator type block is not applicable for ultra-smooth application, as the higher viscosity of the lubricant in self-lubricator will increases friction by approximately 5-7N.

#### Durability test of self-lubricator

| Test specification | Test specification | Model  | Speed   | Stroke | Lubricant type                                    |
|--------------------|--------------------|--------|---------|--------|---------------------------------------------------|
|                    | Lubricating effect | LSQH20 | 30m/min | 1200mm | ISO VG680 high-quality extreme pressure lubricant |

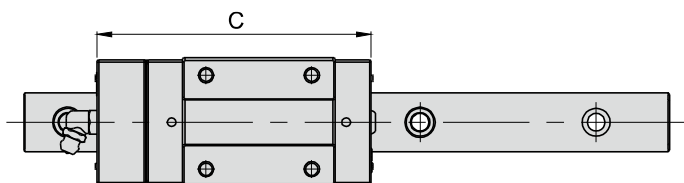
#### Test result

Test result shows that after running 1,000 km, only 20% of the grease is consumed, and the linear guide remains lubricated. The expected service life can possibly exceed 4,000 km.



When comparing each sub-series with the self-lubricator and the standard model, the length of block will change. Please refer to the table below for details.

- Block dimension comparison (only dimension C is different from the standard, the rest remains the same)



| Model    | Type     | Length C(mm)     |                               |
|----------|----------|------------------|-------------------------------|
|          |          | Standard (Blank) | Self-lubricator Standard Type |
| LSQH15□N | Standard | 61.5             | 77                            |
| LSQH20□N | Standard | 77               | 94                            |
| LSQH20□L | Long     | 92               | 109                           |
| LSQH25□N | Standard | 83.5             | 100.5                         |
| LSQH25□L | Long     | 104.5            | 121.5                         |
| LSQH30□N | Standard | 97.5             | 114.5                         |
| LSQH30□L | Long     | 122              | 139                           |
| LSQH35□N | Standard | 113              | 130                           |
| LSQH35□L | Long     | 140.5            | 157.5                         |

# Caged Ball Type Linear Guide

## LSQH Series

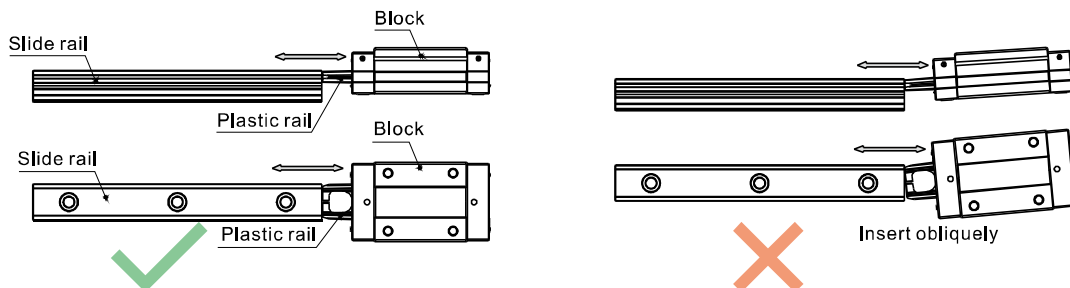
### Precautions on use

#### 1. Block disassembly

With ball retainers and a dustproof cover, normally the balls are prevented from falling out when block is removed from rail.

However, if obliquely insert rail into blocks or quickly assembled or disassembled, there is a risk for balls of falling out.

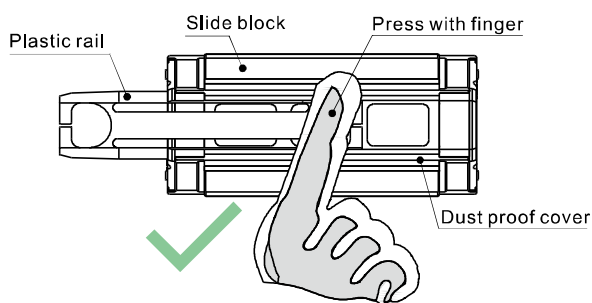
Please carefully assemble the linear guide or use plastic rails to assist.



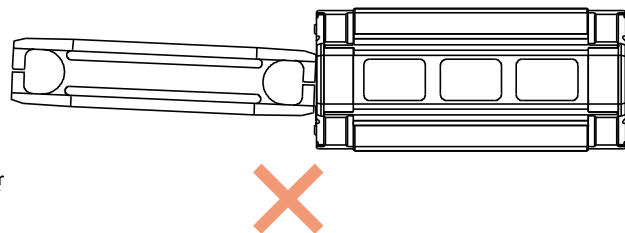
#### 2. Plastic rail installation

A plastic rail is equipped for individual block set. Please do not remove plastic rail whenever it is not necessary.

If plastic rail falls out and needs to be reinstalled, press the dustproof covers with fingers and install slowly to prevent balls from falling out due to misalignment of plastic rail.



Press the dust-proof covers and insert plastic rail in alignment.



Without pressing dust-proof covers or insert plastic rail obliquely.

#### 3. Caution

- Parts may slide out if linear guide is put unevenly. Please be careful.
- Hitting or dropping linear guide could have huge effect on accuracy and lifespan even though appearance may remain intact. Please be careful.
- Do not disassemble linear guide as external objects may enter blocks and cause accuracy problem.

#### 4. Lubrication

- Linear guide have been treated with anti-rust oil during production. Before use, wipe the rail and treat it with lubrication.
- Do not mix lubricating oil (grease) with different properties.
- After lubrication, move block back and forth for the length of three blocks long and repeat at least 2 times to ensure there is a grease film on rail.

#### 5. Use

- The operating environment temperature should not exceed 80°C, and the maximum temperature should not exceed 100°C.
- Do not separate blocks from rail whenever it is not necessary. If you need to separate them, please use plastic rails to prevent steel balls from falling out.

#### 6. Storage

- When storing blocks, rails or linear guide set, please be sure that anti-rust oil is well applied and product is well sealed as well as placed horizontally. Avoid humidity and high temperatures environment.