



# LINEAR BEARINGS & RAIL











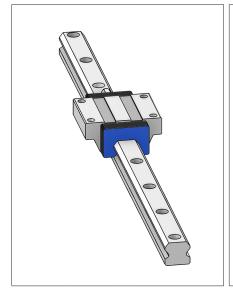
TS16949

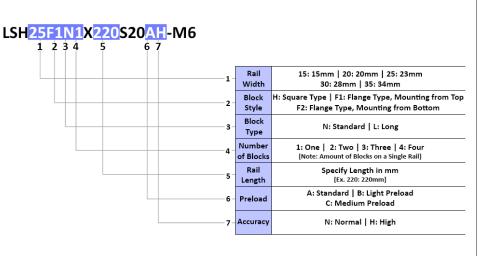
- Industry Standard Rail Sizes 15MM, 20MM, 25MM, 30MM & 35MM
- Manufactured Utilizing the Most Advanced High Precision Machining Available
- High Accuracy, Linearity, & Parallelism



# **How to Order**

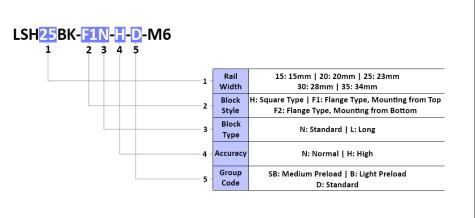
#### **Block & Rail Assembly**





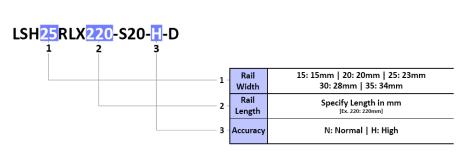
# **Block Only**





#### **Rail Only**

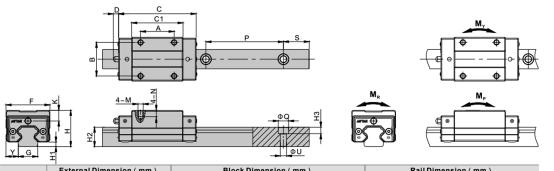








Square Block Type

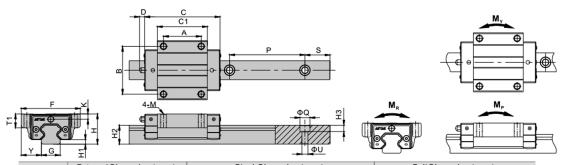


Model\Item	External Dimension ( mm )					Block Dimension ( mm )						Rail Dimension ( mm )							
	Н	H1	F	Y	С	C1	Α	В	K	D	М	N	G	H2	Р	S	ΦQ	ΦU	Н3
LSH15HN	28	3.5	34	9.5	60	40	26	26	8.3	6	M4X0.7	5	15	15	60	20	8	4.8	5.3
LSH20HN	30	4.3	44	12	76.5	52	36	32	6.5	12.5	M5X0.8	6	20	17.5	60	20	9.5	5.8	8.5
LSH20HL	30	4.3	44	12	90.5	66	50	32	6.5	12.5	M5X0.8	6	20	17.5	60	20	9.5	5.8	8.5
LSH25HN	40	6.5	48	12.5	83.5	58.5	35	35	10.9	12.5	M6X1.0	8	23	22	60	20	11.2	7	9
LSH25HL	40	6.5	48	12.5	105	80	50	35	10.9	12.5	M6X1.0	8	23	22	60	20	11.2	7	9
LSH30HN	45	6.5	60	16	95.5	70.5	40	40	11	13	M8X1.25	10	28	26	80	20	14.2	9	12
LSH30HL	45	6.5	60	16	118	93	60	40	11	13	M8X1.25	10	28	26	80	20	14.2	9	12
LSH35HN	55	7	70	18	109	80	50	50	16.2	12.5	M8X1.25	12	34	29	80	20	14.2	9	12
LSH35HL	55	7	70	18	134.5	105.5	72	50	16.2	12.5	M8X1.25	12	34	29	80	20	14.2	9	12

Model\Item	Mounting	Dynamic Load Rating(kN)	Static Load Rating(kN)	Static Ra	ated Momer	nt (kN.m)	Weight		
Model/Itelli	Screw	С	C <sub>o</sub>	M <sub>R</sub>	M <sub>P</sub>	M <sub>Y</sub>	Block(kg)	Rail(kg/m)	
LSH15HN	M4	11.3	17.9	0.12	0.12	0.12	0.2	1.43	
LSH20HN	M5	18.6	28.6	0.27	0.25	0.25	0.33	2.23	
LSH20HL	M5	22.2	37.6	0.35	0.34	0.34	0.41	2.23	
LSH25HN	M6	26.9	39.4	0.44	0.38	0.38	0.53	3.32	
LSH25HL	M6	32.9	53.0	0.58	0.57	0.57	0.7	3.32	
LSH30HN	M8	37.4	55.0	0.66	0.67	0.67	0.91	4.5	
LSH30HL	M8	45.7	73.1	0.88	0.91	0.91	1.17	4.5	
LSH35HN	M8	50.8	72.3	1.05	0.92	0.92	1.26	6.37	
LSH35HL	M8	61.9	96.1	1.52	1.45	1.45	1.68	6.37	



Flange Top-Mount Block Type



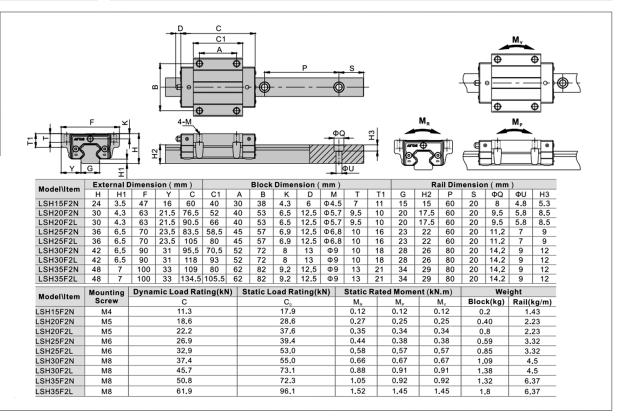
Model\Item	External Dimension ( mm )					Block Dimension ( mm )							Rail Dimension ( mm )						
Moderatem	Н	H1	F	Y	С	C1	Α	В	K	D	M	T1	G	H2	Р	S	ΦQ	ΦU	Н3
LSH15F1N	24	3.5	47	16	60	40	30	38	4.3	6	M5X0.8	11	15	15	60	20	8	4.8	5.3
LSH20F1N	30	4.3	63	21.5	76.5	52	40	53	6.5	12.5	M6X1.0	10	20	17.5	60	20	9.5	5.8	8.5
LSH20F1L	30	4.3	63	21.5	90.5	66	40	53	6.5	12.5	M6X1.0	10	20	17.5	60	20	9.5	5.8	8.5
LSH25F1N	36	6.5	70	23.5	83.5	58.5	45	57	6.9	12.5	M8X1.25	16	23	22	60	20	11.2	7	9
LSH25F1L	36	6.5	70	23.5	105	80	45	57	6.9	12.5	M8X1.25	16	23	22	60	20	11.2	7	9
LSH30F1N	42	6.5	90	31	95.5	70.5	52	72	8	13	M10X1.5	18	28	26	80	20	14.2	9	12
LSH30F1L	42	6.5	90	31	118	93	52	72	8	13	M10X1.5	18	28	26	80	20	14.2	9	12
LSH35F1N	48	7	100	33	109	80	62	82	9.2	12.5	M10X1.5	21	34	29	80	20	14.2	9	12
LSH35F1L	48	7	100	33	134.5	105.5	62	82	9.2	12.5	M10X1.5	21	34	29	80	20	14.2	9	12
	Мон	ntina	Dvna	mic L	oad Ra	tina(kl	N) S	tatic L	oad Ra	atina(k	N) Static	Rated	d Mom	ent (kl	N.m)		Wei	aht	

Model\Item	Mounting	Dynamic Load Rating(KN)	Static Load Rating(KN)	Static Ra	atea Momer	weight		
woderlitem	Screw	С	C₀	M <sub>R</sub>	M <sub>P</sub>	M <sub>Y</sub>	Block(kg)	Rail(kg/m)
LSH15F1N	M4	11.3	17.9	0.12	0.12	0.12	0.2	1.43
LSH20F1N	M5	18.6	28.6	0.27	0.25	0.25	0.40	2.23
LSH20F1L	M5	22.2	37.6	0.35	0.34	0.34	0.8	2.23
LSH25F1N	М6	26.9	39.4	0.44	0.38	0.38	0.59	3.32
LSH25F1L	М6	32.9	53.0	0.58	0.57	0.57	0.85	3.32
LSH30F1N	М8	37.4	55.0	0.66	0.67	0.67	1.09	4.5
LSH30F1L	M8	45.7	73.1	0.88	0.91	0.91	1.38	4.5
LSH35F1N	M8	50.8	72.3	1.05	0.92	0.92	1.32	6.37
LSH35F1L	M8	61.9	96.1	1.52	1.45	1.45	1.8	6.37

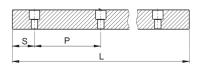




**Bottom-Mount Block Type** 

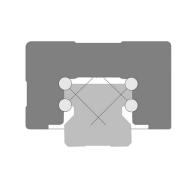


# **Rail Specifications**



- L: Total length of rail P: Distance between bolt holes (mm) S: Edge of first mounting hole (mm)
- Model LSH15 LSH20 LSH25 LSH30 LSH35 Pitch (P) 60 60 60 80 80 Standard Edge Pitch (S) 20 20 20 20 20 Max Length of Rail for Standard Edge 4000 4000 4000 3960 3960 Max Length (Lmax) 4000 4000 4000 4000 4000 Dimensions Noted in MM

### **Product Features**



#### 1. Self-Adjusting Ability

The X-shaped (45°-45°) groove design makes the rail self-aligning. Even if small variations exists on the mounting surface, the design of the LSD & LSH series can help absorb the misalignment and maintain high precision along with smooth and stable linear motion.

2. Innovative Design: Low Profile, High Rigidity, Equal Load in Four Directions

The design of the rail profile and four rows of steel ball bearings allows the bearing block to achieve the ideal two-point contact. It can withstand the action and reaction force from both radial and lateral directions. In addition, a pre-load can be applied to increase rigidity if necessary. The reduced height and length of the slide block and height of the rail help to achieve a compact bearing rail solution.

The LSD & LSH Series are manufactured with strict tolerances and dimensional accuracy. This precision paired with the ball retainer allows for interchangeability when with-in the same spec.



#### **How to Order**

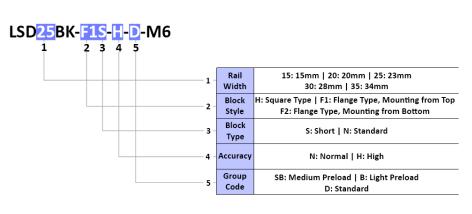
#### **Block & Rail Assembly**



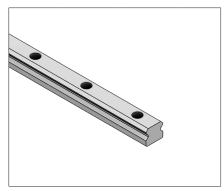


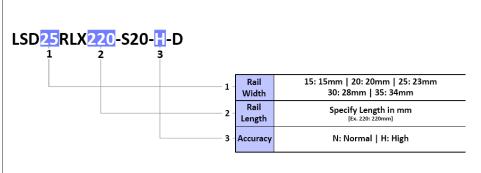
#### **Block Only**





## **Rail Only**

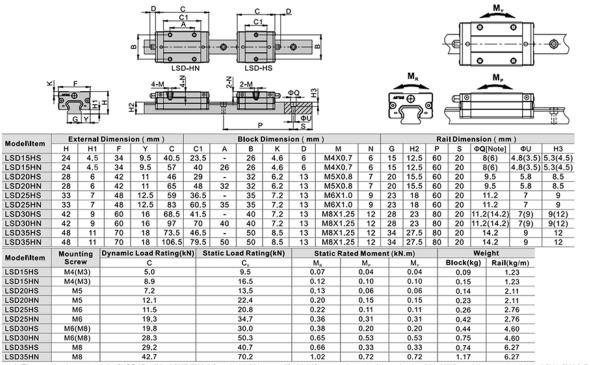








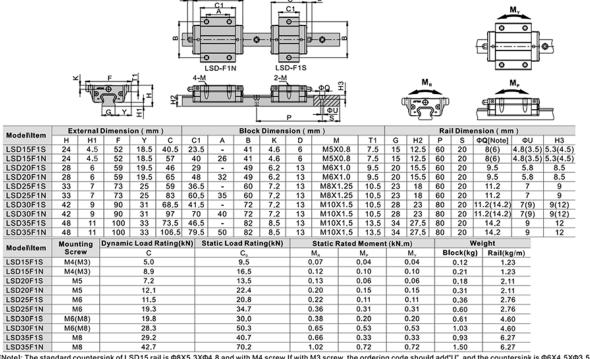
Square Block Type



[Note]: The standard countersink of LSD15 rail is  $\Phi$ 8X5.3X $\Phi$ 4.8 and with M4 screw. If with M3 screw, the ordering code should add"U", and the countersink is  $\Phi$ 6X4.5X $\Phi$ 3.5. The standard countersink of LSD30 rail is  $\Phi$ 11.2X9X $\Phi$ 7 and with M6 screw. If with M8 screw, the ordering code should add"U", and the countersink is  $\Phi$ 14.2X12X $\Phi$ 9.



Flange Top-Mount Block Type

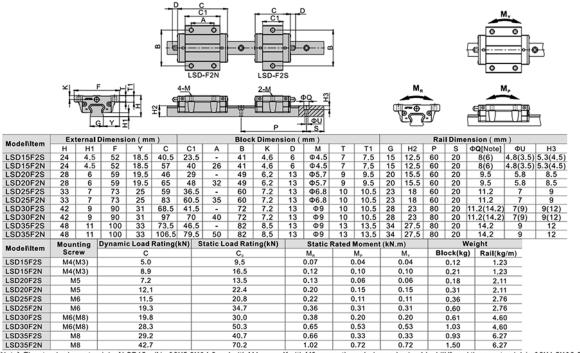


[Note]: The standard countersink of LSD15 rail is Φ8X5.3XΦ4.8 and with M4 screw. If with M3 screw, the ordering code should add "U", and the countersink is Φ6X4.5XΦ3.5.
The standard countersink of LSD30 rail is Φ11.2X9XΦ7 and with M6 screw. If with M8 screw, the ordering code should add "U", and the countersink is Φ14.2X12XΦ9.



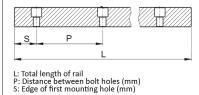


Flange **Bottom-Mount Block Type** 



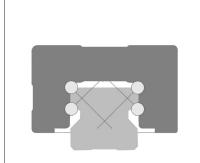
[Note]: The standard countersink of LSD15 rail is Φ8X5.3XΦ4.8 and with M4 screw. If with M3 screw, the ordering code should add"U", and the countersink is Φ6X4.5XΦ3.5.
The standard countersink of LSD30 rail is Φ11.2X9XΦ7 and with M6 screw. If with M8 screw, the ordering code should add"U", and the countersink is Φ14.2X12XΦ9.

# **Rail Specifications**



Model	LSD15	LSD20	LSD25	LSD30	LSD35							
Pitch (P)	60	60	60	80	80							
Standard Edge Pitch (S)	20	20	20	20	20							
Max Length of Rail for Standard Edge	4000	4000	4000	3960	3960							
Max Length (Lmax)	4000	4000	4000	4000	4000							
	Dimensions Noted in MM											

#### **Product Features**



#### 1. Self-Adjusting Ability

The X-shaped (45°-45°) groove design makes the rail self-aligning. Even if small variations exists on the mounting surface, the design of the LSD & LSH series can help absorb the misalignment and maintain high precision along with smooth and stable linear motion.

2. Innovative Design: Low Profile, High Rigidity, Equal Load in Four Directions

The design of the rail profile and four rows of steel ball bearings allows the bearing block to achieve the ideal two-point contact. It can withstand the action and reaction force from both radial and lateral directions. In addition, a pre-load can be applied to increase rigidity if necessary. The reduced height and length of the slide block and height of the rail help to achieve a compact bearing rail solution.

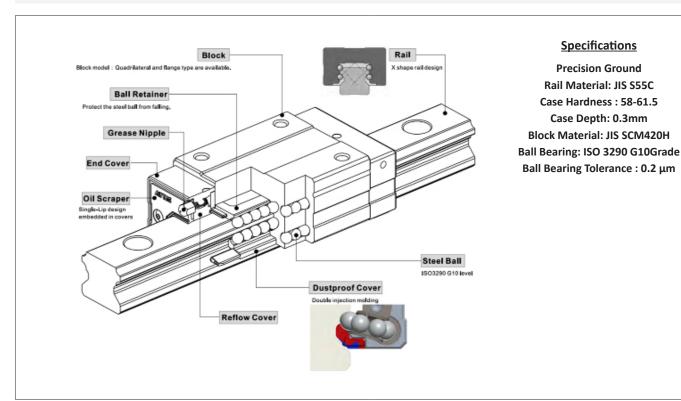
### 3. Interchangeable

The LSD & LSH Series are manufactured with strict tolerances and dimensional accuracy. This precision paired with the ball retainer allows for interchangeability when with-in the same spec.



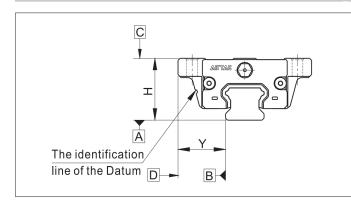
#### **Construction Features**

The LSD & LSH Series Linear Bearings & Rail Offer well Engineered Construction Which Allow for Long Term Functionality and Easy Maintenance



# Online Rail Life Expectancy Calculator Available - Go to the rail section of www.ThePneumaticStore.com for more Info

#### **Accuracy & Parallelism**



Accuracy Standards												
Accuracy	N: N	Normal	H:	High	P: Precision							
Model	15/20	15/20 25/30/35 15/20 25/30/3				25/30/35						
Tolerance of Height H	+/	<b>/- 0.1</b>	+/- 0.3	+/- 0.4	+/- 0.015	+/- 0.02						
Variation of height $\triangle$ H	0.02	0.025	0.01	0.015	0.006	0.007						
Tolerance of width Y	+/	<b>/- 0.1</b>	+/- 0.3	+/- 0.4	+/- 0.015	+/- 0.02						
Variation of width $\triangle$ Y	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)											

Accuracy Rail Length (mm)		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	Normal Grade	12	14	15	17	20	22	24	26	28	31	33	36	37
Raceway (µm)	High Grade	7	9	10	12	13	15	16	18	20	22	25	27	28