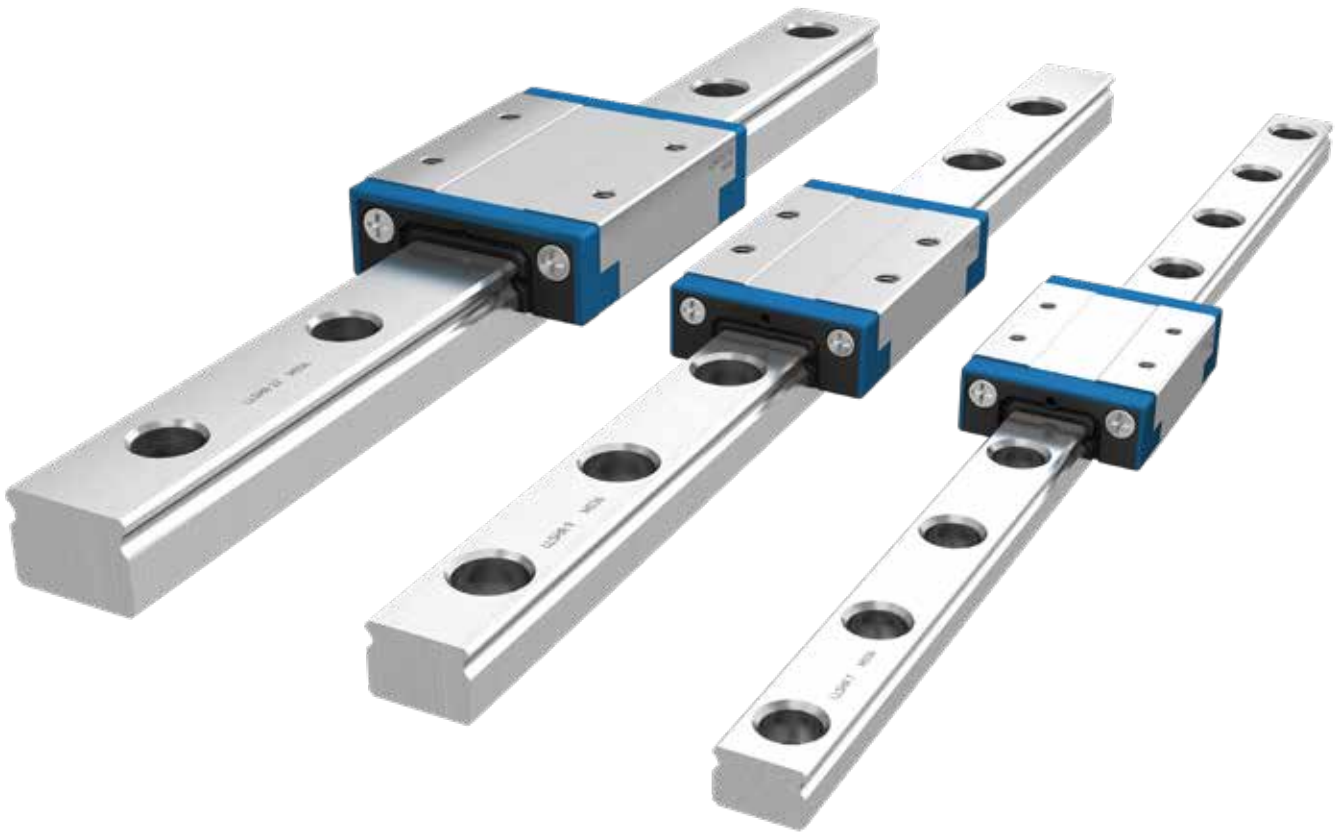
EWELLIX

MAKERS IN MOTION

Miniature profile rail guides - LLS



EWELLIX

Heritage of innovation for technology leadership

Ewellix is a global innovator and manufacturer of linear motion and actuation solutions. Today, our state-of-the-art linear solutions are designed to increase machine performance, maximise uptime, reduce maintenance, improve safety and save energy.

Technology leadership

Our journey began **over 50 years** ago as part of the SKF Group, and our history with SKF provided us with the **expertise to continuously develop new technologies** and use them to create cutting edge products that offer our customers a competitive advantage.

In 2019, we became independent from SKF and changed our name to Ewellix. **We are proud of our heritage.** This gives us a unique foundation on which to build an agile business with engineering excellence and innovation as our core strengths.

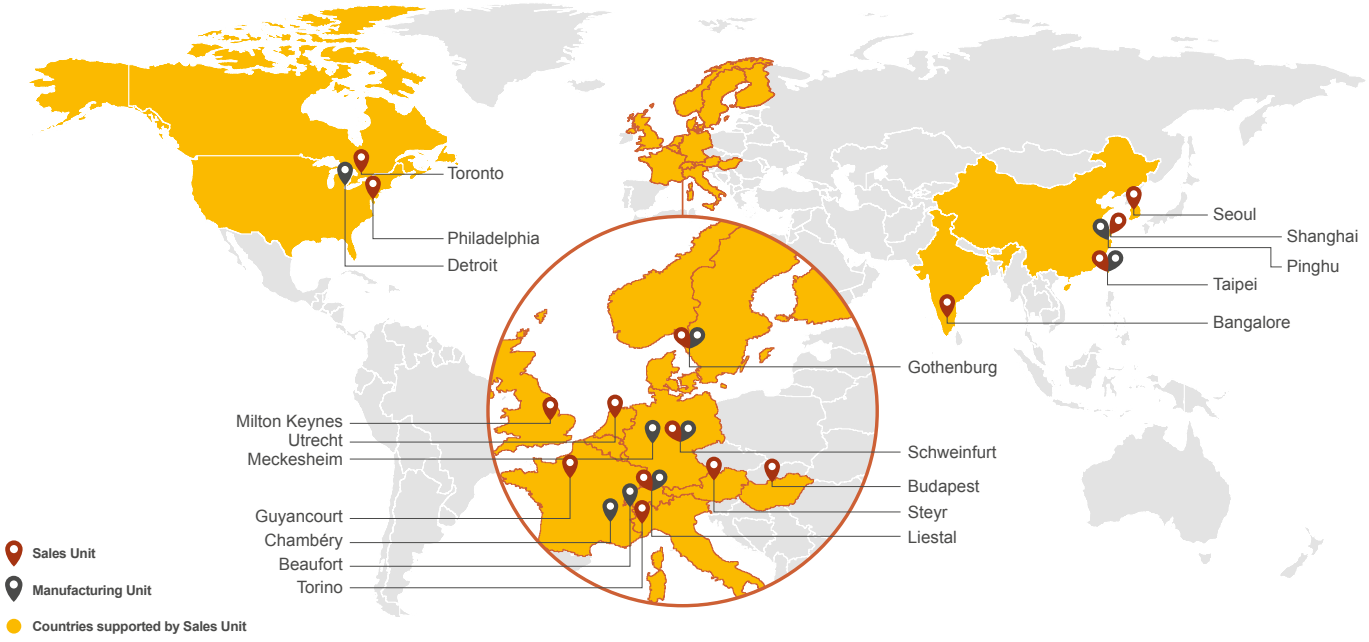
Global presence and local support

With our **global presence**, we are uniquely positioned to deliver **standard components and custom-engineered solutions**, with full technical and applications support around the world. The long lasting relationships with our distributor partners allow us to support customers in a variety of different industries. At Ewellix, we don't just provide products; **we engineer integrated solutions** that help customers realise their ambitions.

1 400 employees

16 sales units

9 factories



Solid design meets smooth running

The new miniature profile rail guide series for industrial and laboratory automation

Miniature profile rail guides are the ideal solution for applications requiring compact dimensions, high running accuracy, long service life and low noise as for example in laboratory and small industrial machinery.

With the new miniature profile rail guide series LLS, Ewellix has coupled its practical experience gained in the automation industry with the latest findings from its own reasearch and development into the new design.

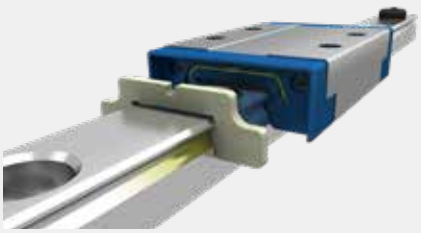
The demands placed on modern linear guidance technology have risen significantly in recent years - especially in terms of service life, precise motion combined with a high robustness of the product. At the same time, users expect installation and maintenance outlay to be as low as possible and this is particularly true in the field of medical applications.

Features

- New optimized ball recirculation
- To maximize the maintenance-free operation, all LLS carriages are factory pre-lubricated and equipped with a lubrication reservoir which secures the lubrication condition in the complete guiding system
- Robust ball retention system
- New and optimized seal design
- Reduced friction
- High dynamic values: speed v = 5 m/s, acceleration a = 140 m/s^2
- Extended temperature range -20 +100 °C (sealed version +80 °C)
- Interchangeable according to ISO 12090–2
- High stiffness due to optimized number of balls

Robust ball retention system

Lubrication channel

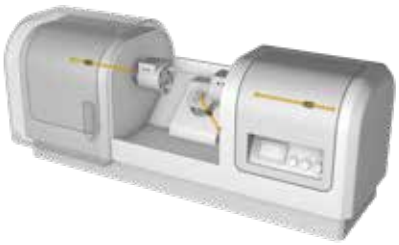


Lubrication reservoir

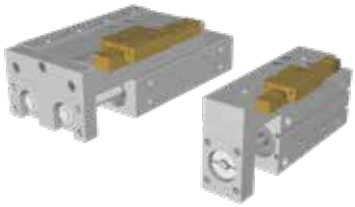
Optimized seal design

Optimized for your application

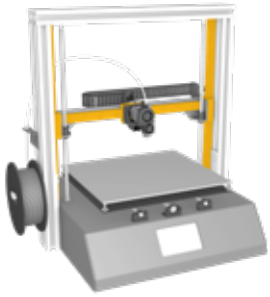
Minimal service requirements combined with low friction and silent running, the new LLS series provides high performance for industrial and laboratory automation.



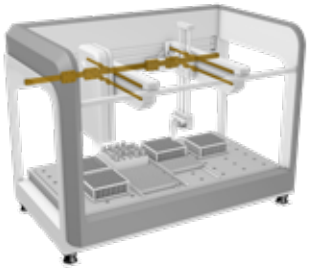
Dental milling machine



Minislides in automation



3D Printing machine



Robotic analyzer for laboratories

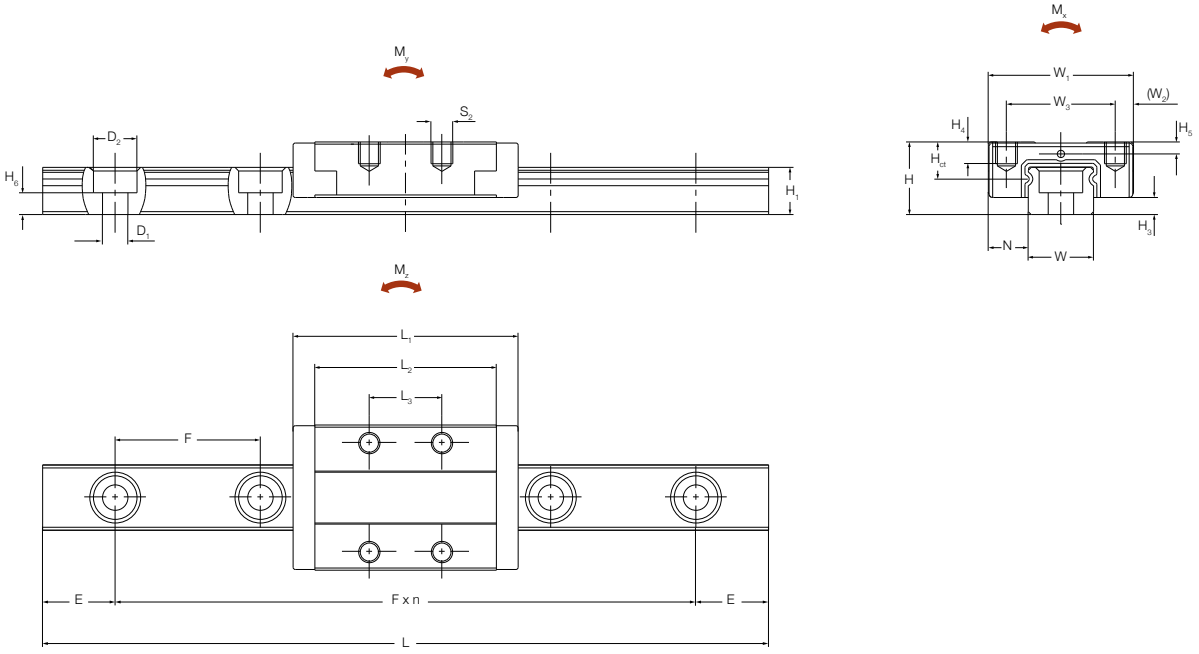
Benefits

- Low noise for laboratory and office environments
- Self-lubrication for long service life
- Smooth running for position accurancy
- Safe and quick mounting due to innovative ball retention system
- Robust and compact design
- Interchangeability of carriages and rails type ZRC
- Stainless steel components
- RoHs and REACH conform
- Customized designs for better integrations

Typical applications

- Laboratory analyzer
- Minislides in automation
- 3D-Printing machine
- Laboratory machine tool
- Engraving machine
- Dental equipment

Dimensional drawing



Designation	Size	H	W_1	W_2	W_3	L_1	L_2	L_3	S_2	H_1	H_3	H_4	H_5	H_6	H_{ct}	W	N	L ±1,5	D_1xD_2	E_{min} ±0,5	E_{max} ±0,5	F
		mm																				
LLSHS 7 TA	**7**	8	17	2,5	12	23,5	18	8	M2	4,8	1,5	2,5	1,7	2,3	4,6	7	5	1 000	2,5 × 4,5	4,5	12	15
LLSHS 7 LA	**7**	8	17	2,5	12	31,5	26	13	M2	4,8	1,5	2,5	1,7	2,3	4,6	7	5	1 000	2,5 × 4,5	4,5	12	15
LLSHS 9 TA	**9**	10	20	2,5	15	31	25	10	M3	6,5	2,35	3	1,65	3	5,1	9	5,5	1 000	3,5 × 6	5	16	20
LLSHS 9 LA	**9**	10	20	2,5	15	40,5	34,4	16	M3	6,5	2,35	3	1,65	3	5,1	9	5,5	1 000	3,5 × 6	5	16	20
LLSHS 12 TA	**12**	13	27	3,5	20	35	29	15	M3	8,8	3,35	3,5	2,65	4,3	6,5	12	7,5	1 000	3,5 × 6	5	21	25
LLSHS 12 LA	**12**	13	27	3,5	20	46,5	40,5	20	M3	8,8	3,35	3,5	2,65	4,3	6,5	12	7,5	1 000	3,5 × 6	5	21	25

Technical data

Designation	Size	C 100 km	C_o	M_{xC} dyn	M_{xC0} stat	M_{yC}/M_{zC} dyn	M_{yCO}/M_{zCO} stat	Weight Carriage	Rail
		N		Nm				kg	kg/m
LLSHS 7 TA	**7**	915	1 460	3,0	4,6	1,7	2,6	0,01	0,23
LLSHS 7 LA	**7**	1 270	2 400	4,1	7,6	3,9	7,4	0,02	0,23
LLSHS 9 TA	**9**	1 700	2 800	7,1	11,5	4,6	7,5	0,02	0,4
LLSHS 9 LA	**9**	2 280	4 300	9,6	17,7	9,6	18,0	0,03	0,4
LLSHS 12 TA	**12**	2 500	3 900	14,0	21,5	7,5	11,7	0,04	0,75
LLSHS 12 LA	**12**	3 550	6 300	19,9	34,8	17,1	30,4	0,06	0,75

Zero Rail Concept (ZRC)

The newly developed Zero Rail Concept (ZRC) offers freedom in flexibility and availability. Within the ZR-Concept any carriage can be mounted together with the rail of the same size. Spare parts can be handled much quicker and due to standardization delivery times are shorter in comparison to system configurations.

Zero Rail Concept carriages and rails are delivered separately. The ZRC offer is standardized for precision class P5 (Standard precision) together with preload class T0 (Zero preload) and T1 (Light preload). Any carriage or rail from this range must be ordered with the suffix ZRC in the ordering key.

Ordering key systems

L	L	S	H	S	1	2	T	A	R	4	T	0	-	5	0	0	P	5	W	2	.	E	1	0

LLS Miniature profile rail guide series

System type
H Standard type

Type code
S System consisting of carriage and rail

Size
7, 9, 12

Carriage type
TA Standard carriage
LA Standard carriage, extended length

Seal options
. Shielded carriage[1)]
R Low friction sealed carriage

Number of carriages per rail
1, 2, 3, 4, 6

Preload Class
T0 Zero preload
T1 Light preload
T2 Medium preload (On request)

Rail Lenght
up to 1 000 mm lenght (in 1 mm steps)

Precision Class
P5 Standard precision
P1 High precision (Available as system only)

Rail arrangement (Number of parallel mounted rails)
. Arrangement of single rail as standard[1)]
W2 Arrangement of two parallel mounted rails
Wx Arrangement of x number of parallel mounted rails

Rail type
. Standard rail[1)]
D Customized rail

Distance between end face and the center of the first mounting hole of the rail
E0 Standard "E" dimension, even when not selected. The holes at both rails and will be positioned equidistantly from either end of the rails with shortest possible distance
Exx Specified "E" dimension for one rail end with the following options per size: Size 7 from 4,5 mm to 11 mm, Size 9 from 5 mm to 15 mm, Size 12 from 5 mm to 20 mm

[1)] No code for standard

Examples : LLSHS12TAR3T0-652P5E10 or LLSHS9LA1T1-140P1W2E0 or LLSHS7LA2T0-210P5W3E6

Ordering key carriages ZRC range

LLS Miniature profile rail guide series

System type
H Standard type

Type code
C Carriage

Size
7, 9, 12

Carriage type
TA Standard carriage
LA Standard carriage, extended length

Seal options
. Shielded carriage[1)]
R Low friction sealed carriage

Preload Class
T0 Zero preload
T1 Light preload

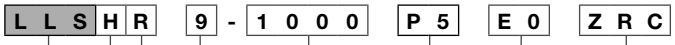
Precision Class
P5 Standard precision

Zero Rail Concept
ZRC The Zero Rail Concept (ZRC) offers the interchangeability of carriages and rails. Any carriage does fit onto any rail of the same size, if both components belong to the Zero Rail Concept. ZRC component have the suffix ZRC and can be ordered as components only. Single carriages do have standard the ZRC suffix

[1)] No code for standard

Examples : LLSHC 12 LAR T0 P5 ZRC or LLSHC 7 TA T1 P5 ZRC

Ordering key rails ZRC range



LLS Miniature profile rail guide series

System type
H Standard type

Type code
R Rail

Size
7, 9, 12

Rail Lenght
up to 1 000 mm lenght (in 1 mm steps)

Precision Class
P5 Standard precision

Distance between end face and the center of the first mounting
E0 Standard “E” dimension, even when not selected. The holes at both rails and will be positioned equidistantly from either end of the rails with shortest possible distance
Exx Specified “E” dimension for one rail end with the following options per size: Size 7 from 4,5 mm to 11 mm, Size 9 from 5 mm to 15 mm, Size 12 from 5 mm to 20 mm

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Examples : LLSHR 12-1000 P5 E8 ZRC or LLSHR 7-200 P5 ZRC or LLSHR 9-326 P5 E0 ZRC

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