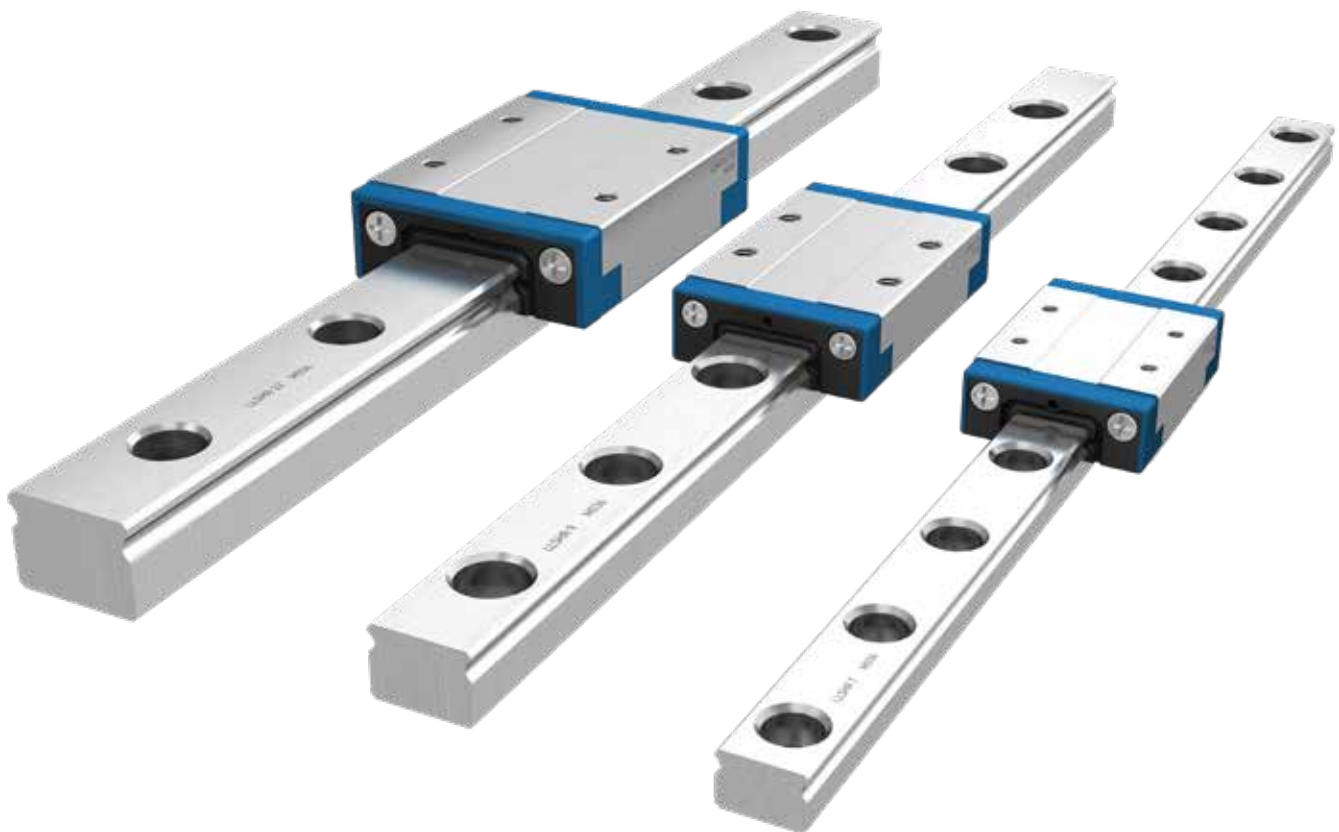


EWELLIX

MAKERS IN MOTION

Miniature profile rail guides - LLS



The heritage of innovation

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. Long standing 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.



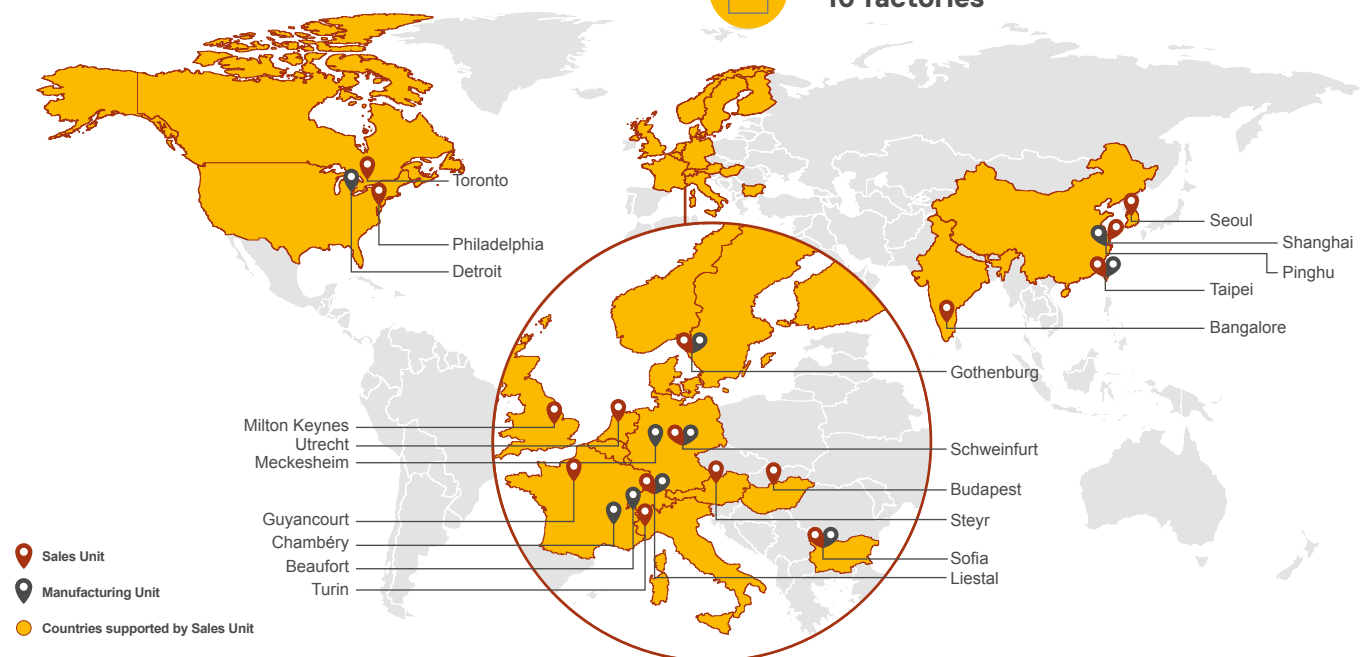
1 200 employees



16 sales units



10 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 research and development into the new design.

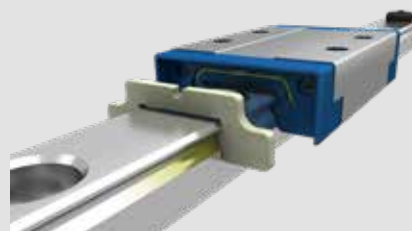
The demands placed on modern linear guidance technology have risen significantly in recent years - especially in terms of service life, precise motion combined with a high robustness of the product. At the same time, users expect installation and maintenance outlay to be as low as possible and this is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



Robust ball retention system



Lubrication channel



Lubrication reservoir



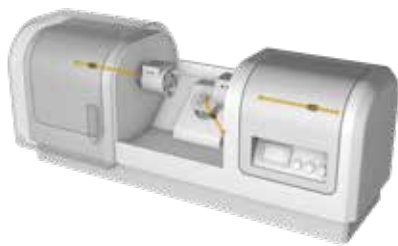
Optimized seal design

Features

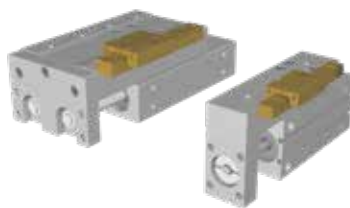
- Secure and safe mounting with unique and robust ball retention system
- Smooth running performance with optimized ball recirculation
- Nearly maintenance-free operation, by factory pre-lubrication
- Up to 20 000 km in service life with lubrication reservoir
- Extremely low friction with new and optimized seal design
- Zero Rail Concept (ZRC) increase flexibility with interchangeable carriages on rails
- High stiffness due to optimized raceway and carriage design
- High dynamic values: speed $v = 5 \text{ m/s}$
acceleration $a = 140 \text{ m/s}^2$
- Extended temperature range $-20 \text{ }^{\circ}\text{C}$ to $+100 \text{ }^{\circ}\text{C}$
(sealed version $+80 \text{ }^{\circ}\text{C}$)

Optimized for your application

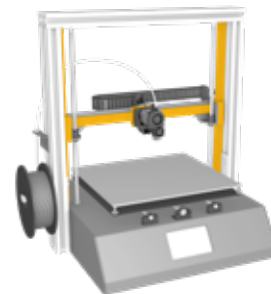
Minimal service requirements combined with low friction and silent running, the new LLS series provides high performance for industrial and laboratory automation.



Dental milling machine



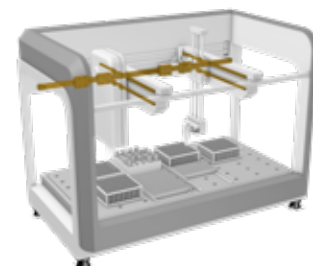
Minislides in automation



3D Printing machine

Benefits

- Low noise for laboratory and office environments
- Self-lubrication for long service life in any application
- Smooth running for more position accuracy
- Secure machine performance with no steel ball losses during mounting
- Safe mounting with two reference sides on rails and carriages
- More flexibility and availability with new ZRC range offer
- Good environment resistance using stainless steel components
- RoHs and REACH conform products

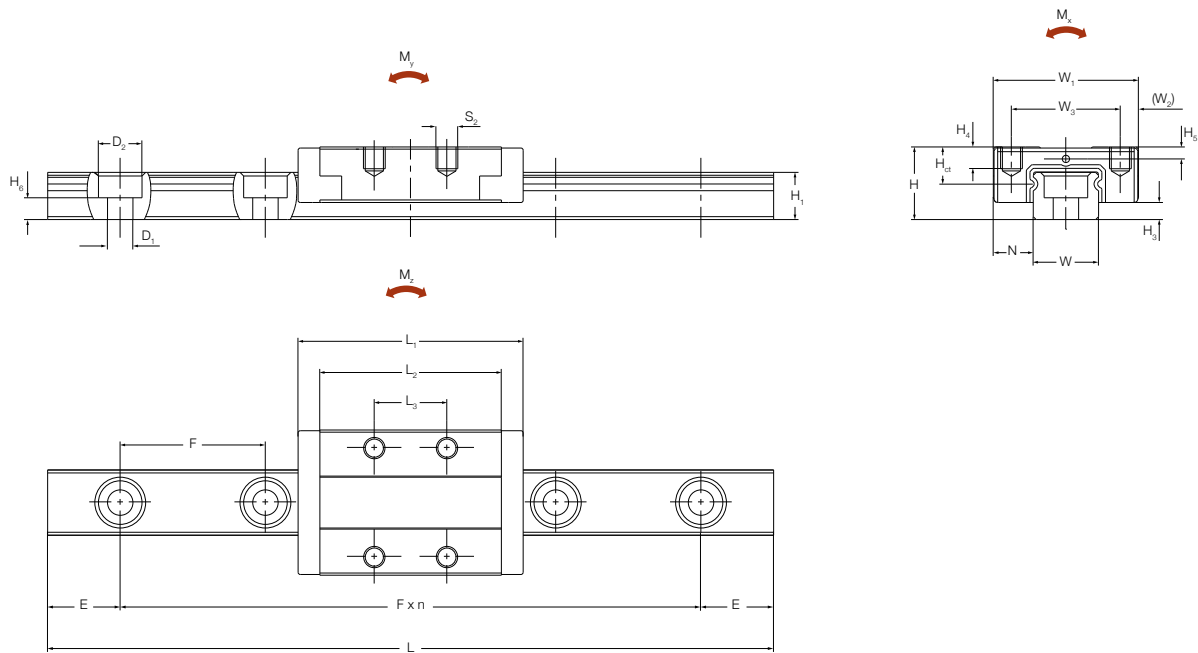


Robotic analyzer for laboratories

Typical applications

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

Dimensional drawing



Designation	Size	mm																				E_{\min} $\pm 0,5$	E_{\max} $\pm 0,5$	F
		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 $\pm 1,5$	D ₁ xD ₂					
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							Weight	
		C	C ₀	M _{xc}	M _{xc0}	M _{yc} /M _{zc}	M _{yc0} /M _{zc0}	Carriage	Rail
		100 km		dyn	stat	dyn	stat	kg	kg/m
		N		Nm					
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

LLS Miniature profile rail guide series	L	L	S	H	S	1	2	T	A	R	4	T	0	-	5	0	0	P	5	W	2	.	E	1	0
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 Length																									
up to 1 000 mm length (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

	LLSHC	12	TAR	T0	P5	ZRC
--	-------	----	-----	----	----	-----

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 carriage¹⁾
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

	LLSHR	9	-	1000	P5	E0	ZRC
--	-------	---	---	------	----	----	-----

LLS Miniature profile rail guide series _____

System type _____
H Standard type

Type code _____
R Rail

Size _____
7, 9, 12

Rail Length _____
up to 1 000 mm length (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

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.

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



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