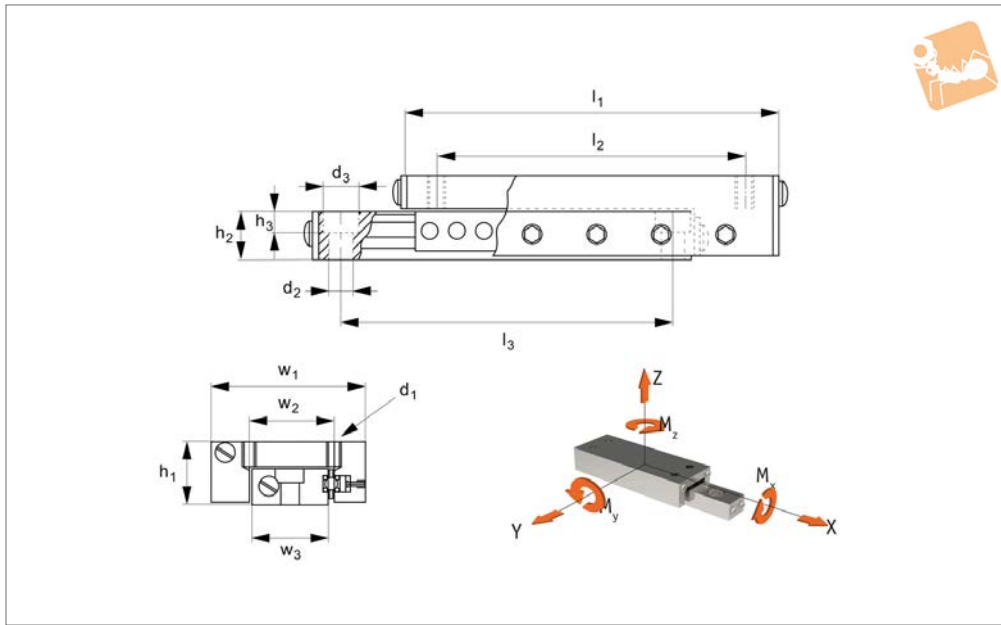


Ball Slide Assemblies

standard precision

Linear Tables



L1024

LINEAR TABLES

Material

Aluminium carriage clear anodized, base black anodized.
Hardened steel shafts and balls, mild steel end caps.

Technical Notes

Straight line accuracy: 13µ/25mm travel.
Positional repeatability: 5µ.
Coefficient of friction 0,003 typical.

Tips

Stroke is centred on the mid-point of the slides (ie 50% of total stroke each way).

Order No.	Stroke	Load kg max.	w ₁	l ₁	h ₁	l ₂	w ₂	h ₂	w ₃	l ₃	Weight g
L1024.010-008	8	0.34	9.5	13.3	5.8	6.0	4.0	3.4	4.0	6.0	2
L1024.010-013	13	0.68	9.5	19.0	5.8	13.0	4.0	3.4	4.0	10.0	3
L1024.010-025	25	0.68	9.5	32.0	5.8	26.0	4.0	3.4	4.0	20.0	4
L1024.010-038	38	0.68	9.5	44.0	5.8	37.0	4.0	3.4	4.0	30.0	7
L1024.014-013	13	2	14.2	27.0	8.0	15.0	6.0	4.7	6.4	19.0	9
L1024.014-025	25	4	14.2	52.0	8.0	41.0	6.0	4.7	6.4	35.0	14
L1024.014-050	50	5	14.2	78.0	8.0	66.0	6.0	4.7	6.4	60.0	23
L1024.014-075	75	6	14.2	103.0	8.0	92.0	6.0	4.7	6.4	86.0	31
L1024.014-100	100	8	14.2	128.0	8.0	117.0	6.0	4.7	6.4	89.0	34
L1024.014-127	127	8	14.2	154.0	8.0	142.0	6.0	4.7	6.4	114.0	43
L1024.019-013	13	4	19.0	27.0	10.4	15.0	9.0	6.3	9.5	19.0	11
L1024.019-025	25	5	19.0	52.0	10.4	41.0	9.0	6.3	9.5	35.0	26
L1024.019-050	50	5	19.0	78.0	10.4	66.0	9.0	6.3	9.5	60.0	37
L1024.019-075	75	6	19.0	103.0	10.4	92.0	9.0	6.3	9.5	86.0	48
L1024.019-100	100	7	19.0	128.0	10.4	117.0	9.0	6.3	9.5	89.0	60
L1024.019-127	127	8	19.0	154.0	10.4	142.0	9.0	6.3	9.5	114.0	71
L1024.025-013	13	5	25.4	40.0	12.7	32.0	10.0	6.3	12.7	32.0	34
L1024.025-025	25	5	25.4	65.0	12.7	57.0	10.0	6.3	12.7	57.0	48
L1024.025-038	38	6	25.4	78.0	12.7	65.0	10.0	6.3	12.7	65.0	54
L1024.025-050	50	7	25.4	90.0	12.7	82.0	10.0	6.3	12.7	82.0	62
L1024.025-075	75	8	25.4	116.0	12.7	108.0	10.0	6.3	12.7	108.0	142
L1024.027-019	19	7	26.9	40.0	13.4	32.0	10.0	7.9	12.7	28.0	37
L1024.027-038	38	8	26.9	65.0	13.4	57.0	10.0	7.9	12.7	54.0	65
L1024.027-050	50	9	26.9	90.0	13.4	82.0	10.0	7.9	12.7	79.0	85
L1024.027-075	75	11	26.9	116.0	13.4	102.0	10.0	7.9	12.7	82.0	147
L1024.027-100	100	14	26.9	152.0	13.4	140.0	10.0	7.9	12.7	102.0	170
L1024.027-150	150	16	26.9	203.0	13.4	190.0	10.0	7.9	12.7	127.0	198
L1024.027-200	200	18	26.9	254.0	13.4	240.0	10.0	7.9	12.7	178.0	227
L1024.038-025	25	7	38.0	51.0	15.8	35.0	16.0	8.6	19.0	37.0	82
L1024.038-050	50	9	38.0	76.0	15.8	60.0	16.0	8.6	19.0	60.0	122
L1024.038-075	75	11	38.0	102.0	15.8	85.0	16.0	8.6	19.0	85.0	170
L1024.038-088	88	14	38.0	127.0	15.8	110.0	16.0	8.6	19.0	85.0	190



LINEAR TABLES

Order No.	Stroke	Load kg max.	w ₁	l ₁	h ₁	l ₂	w ₂	h ₂	w ₃	l ₃	Weight g
L1024.038-100	100	16	38.0	152.0	15.8	136.0	16.0	8.6	19.0	100.0	232
L1024.038-150	150	20	38.0	203.0	15.8	186.0	16.0	8.6	19.0	128.0	261
L1024.038-200	200	25	38.0	254.0	15.8	238.0	16.0	8.6	19.0	178.0	326
L1024.044-025	25	9	44.0	51.0	19.0	35.0	20.0	10.2	22.2	38.0	113
L1024.044-038	38	14	44.0	70.0	19.0	55.0	20.0	10.2	22.2	55.0	170
L1024.044-050	50	19	44.0	83.0	19.0	65.0	20.0	10.2	22.2	65.0	184
L1024.044-075	75	24	44.0	102.0	19.0	85.0	20.0	10.2	22.2	85.0	227
L1024.044-100	100	27	44.0	152.0	19.0	140.0	20.0	10.2	22.2	100.0	335
L1024.044-150	150	34	44.0	203.0	19.0	190.0	20.0	10.2	22.2	126.0	445
L1024.044-200	200	41	44.0	254.0	19.0	240.0	20.0	10.2	22.2	178.0	553
L1024.067-025	25	14	66.5	67.0	25.4	54.0	35.0	15.9	38.1	54.0	283
L1024.067-038	38	16	66.5	67.0	25.4	42.0	35.0	15.9	38.1	42.0	283
L1024.067-050	50	28	66.5	102.0	25.4	75.0	35.0	15.9	38.1	75.0	425
L1024.067-075	75	40	66.5	127.0	25.4	100.0	35.0	15.9	38.1	100.0	590
L1024.067-100	100	54	66.5	152.0	25.4	125.0	35.0	15.9	38.1	125.0	771
L1024.067-127	127	61	66.5	203.0	25.4	175.0	35.0	15.9	38.1	187.0	879
L1024.067-150	150	68	66.5	229.0	25.4	75,0 (x2)	35.0	15.9	38.1	178.0	498
L1024.067-228	228	84	66.5	305.0	25.4	75,0 (x3)	35.0	15.9	38.1	254.0	1318
L1024.067-304	304	93	66.5	381.0	25.4	75,0 (x4)	35.0	15.9	38.1	330.0	1644

Order No.	d ₁	d ₂	d ₃	h ₃	Counterbore screw size	Moment M _x	Moment M _y	Moment M _z
						Nm max.	Nm max.	Nm max.
L1024.010-008	M2	M2	-	-	n/a	0.02	0.01	0.01
L1024.010-013	M2	M2	-	-	n/a	0.03	0.01	0.02
L1024.010-025	M2	M2	-	-	n/a	0.04	0.01	0.04
L1024.010-038	M2	M2	-	-	n/a	0.06	0.01	0.05
L1024.014-013	M2	2.2	4.0	2.2	M2	0.1	0.1	0.1
L1024.014-025	M2	2.2	4.0	2.2	M2	0.5	0.1	0.5
L1024.014-050	M2	2.2	4.0	2.2	M2	1.0	0.2	1.0
L1024.014-075	M2	2.2	4.0	2.2	M2	1.6	0.2	1.5
L1024.014-100	M2	2.2	4.0	2.2	M2	2.1	0.2	2.
L1024.014-127	M2	2.2	4.0	2.2	M2	2.7	0.3	2.6
L1024.019-013	M3	3.5	6.1	3.4	M3	0.2	0.2	0.2
L1024.019-025	M3	3.5	6.1	3.4	M3	0.6	0.2	0.5
L1024.019-050	M3	3.5	6.1	3.4	M3	1.0	0.3	1.0
L1024.019-075	M3	3.5	6.1	3.4	M3	1.6	0.3	1.5
L1024.019-100	M3	3.5	6.1	3.4	M3	2.1	0.3	2.0
L1024.019-127	M3	3.5	6.1	3.4	M3	2.7	0.4	2.6
L1024.025-013	M4	3.5	6.1	3.4	M3	2.4	0.3	0.4
L1024.025-025	M4	3.5	6.1	3.4	M3	1.0	0.3	1.0
L1024.025-038	M4	3.5	6.1	3.4	M3	1.2	0.4	1.2
L1024.025-050	M4	3.5	6.1	3.4	M3	1.6	0.4	1.5
L1024.025-075	M4	3.5	6.1	3.4	M3	2.4	0.5	2.3
L1024.027-019	M4	4.6	8.1	4.4	M4	0.5	0.4	0.5
L1024.027-038	M4	4.6	8.1	4.4	M4	1.3	0.5	1.2
L1024.027-050	M4	4.6	8.1	4.4	M4	2.1	0.6	2.0
L1024.027-075	M4	4.6	8.1	4.4	M4	3.3	0.7	3.1
L1024.027-100	M4	4.6	8.1	4.4	M4	5.3	0.4	5.1
L1024.027-150	M4	4.6	8.1	4.4	M4	7.9	1.0	7.5
L1024.027-200	M4	4.6	8.1	4.4	M4	10.9	1.2	10.3
L1024.038-025	M4	4.6	8.1	4.4	M4	0.7	0.6	0.7
L1024.038-050	M4	4.6	8.1	4.4	M4	1.4	0.8	1.4
L1024.038-075	M4	4.6	8.1	4.4	M4	2.4	1.0	2.3
L1024.038-088	M4	4.6	8.1	4.4	M4	3.9	1.2	3.7
L1024.038-100	M4	4.6	8.1	4.4	M4	5.8	1.5	5.5
L1024.038-150	M4	4.6	8.1	4.4	M4	9.6	1.9	9.1
L1024.038-200	M4	4.6	8.1	4.4	M4	14.3	2.3	13.6
L1024.044-025	M4	4.6	8.1	4.4	M4	0.9	1.0	0.9
L1024.044-038	M4	4.6	8.1	4.4	M4	2.1	1.4	2.0
L1024.044-050	M4	4.6	8.1	4.4	M4	3.5	2.0	3.3
L1024.044-075	M4	4.6	8.1	4.4	M4	4.9	2.5	4.7
L1024.044-100	M4	4.6	8.1	4.4	M4	10.0	2.9	10.0
L1024.044-150	M4	4.6	8.1	4.4	M4	16.0	3.6	15.2
L1024.044-200	M4	4.6	8.1	4.4	M4	23.4	4.3	22.3
L1024.067-025	M5	5.8	10.0	5.3	M5	2.0	2.5	1.9
L1024.067-038	M5	5.8	10.0	5.3	M5	2.0	2.9	1.9



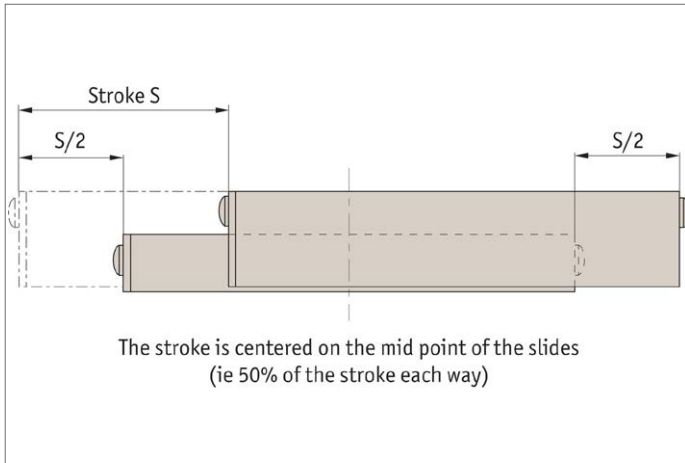
Ball Slide Assemblies

standard precision

Linear Tables



Order No.	d ₁	d ₂	d ₃	h ₃	Counterbore screw size	Moment M _x Nm max.	Moment M _y Nm max.	Moment M _z Nm max.
L1024.067-050	M5	5.8	10.0	5.3	M5	7.2	5.11	6.9
L1024.067-075	M5	5.8	10.0	5.3	M5	13.1	7.2	12.5
L1024.067-100	M5	5.8	10.0	5.3	M5	21.5	9.7	20.5
L1024.067-127	M5	5.8	10.0	5.3	M5	33.6	11.1	32.0
L1024.067-150	M5	5.8	10.0	5.3	M5	42.3	12.3	40.3
L1024.067-228	M5	5.8	10.0	5.3	M5	64.5	15.2	61.4
L1024.067-304	M5	5.8	10.0	5.3	M5	85.1	16.8	81.0





Size + Weight

For light/medium loads

L1020-L1037

Ball roller versions



L1024 - L1038

Cross roller versions



L1020 - L1026

Stainless steel versions

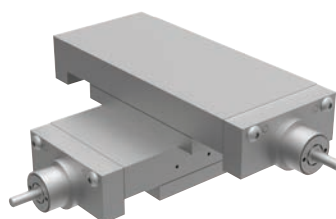


L1022 - L1023

For heavy duty loads and motorised

L3000-L3500

Needle roller & dovetail stage



L3170 - L3194

Motorised stages

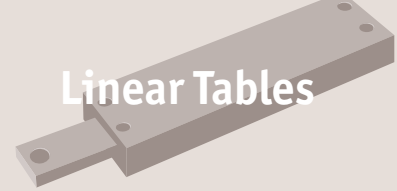


L3500 - L3510

Micrometer driven stages

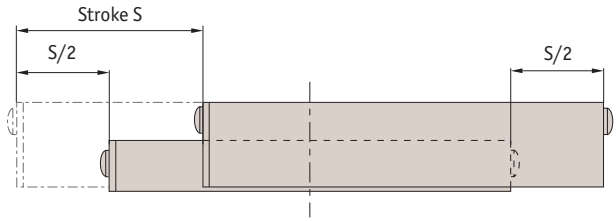


L3100 - L3123



Factors affecting stage selections...


- Size and weight of load
- Moment loads
- Stroke required
- Accuracy required
- Usage conditions of water, chemicals, shock loads etc.



Generally ball slides are less expensive but cross roller slides can carry 8 to 10 times the load of ball slides.

The stroke is centred on the mid point of the slides (i.e. 50% of the stroke each way).

LINEAR TABLES

A selection...		
<p>L1020 Crossed roller tables</p>  <p>Steel and aluminium, accuracy typically 5µ.</p>	<p>L1022/23 Cross roller table</p>  <p>Stainless Steel, accuracy typically 3µ.</p>	<p>L1024 Ball slide tables</p>  <p>Aluminium, accuracy typically 12µ.</p>
<p>L1026 Crossed roller slide tables</p>  <p>Aluminium, accuracy typically 5µ.</p>	<p>L1028 Precision ball slide tables</p>  <p>Aluminium, accuracy typically 3µ.</p>	<p>L1029 Precision crossed roller tables</p>  <p>Aluminium, accuracy typically 3µ.</p>
<p>L1034 Flanged ball slide tables - precision</p>  <p>With flange accuracy to 1µ.</p>	<p>L1038 Anti-creep ball slide tables</p>  <p>Special anti-creep function prevents cage misalignment.</p>	<p>L1039 Non-magnetic ball slide</p>  <p>Non-magnetic accuracy typically 3µ.</p>



Steel - L1020

- Standard steel / cast iron



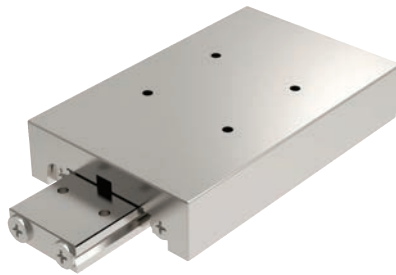
Aluminium - L1021

- Lower weight, lower profile
- Good for high accelerations



Stainless steel - L1022 + L1023

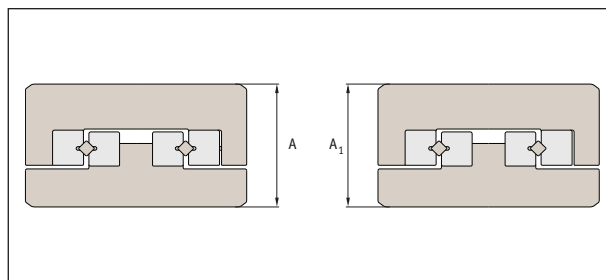
- Stainless steel (440C+Ni) corrosion resistant



Rated life

$$L \text{ (Km)} = \left(\frac{F_t \cdot C}{F_w \cdot P_c} \right)^{3.33} \times 100$$

- F_t = temperature factor
- F_w = load factor
- C = basic dynamic load (kN) see tables
- P_c = radial load (kN)

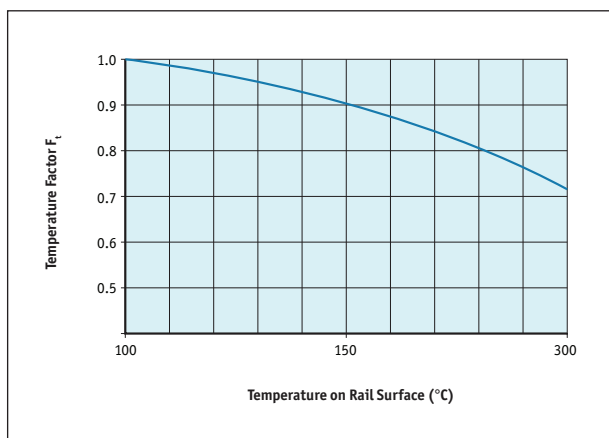


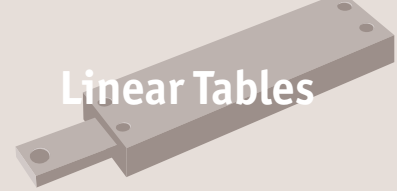
Height tolerance:

- Height $\pm 100\mu$
- Motorised parts $\pm 10\mu$
- Strokes from 10 to 950mm
- Loads to 48kN

Load factor F_w

Shock	Speed	F_w
None	Very slow	1.0 - 1.2
Small	Slow	1.2 - 1.5





Technical accuracy measurements

- High accuracy.
- Low friction: virtually frictionless. Providing stable performance at lower high speeds.
- Rigid: incorporating cross roller linear rails to provide high load capacity as well as high moment load capacity.
- Installation: easy to install with pre-drilled holes in carriage and base. Ensure mounting surface faces are accurately machined.

Table accuracy (μ)			Rail accuracy (μ)		
Table length	Carriage top parallelism	Carriage side parallelism	N tolerance	M tolerance	Straightness
0-50	2	4	-15 -35	-30 -70	2
50-100	2	5			2
100-150	3	6			3
150-200	3	7			3
200-250	3	7			3
250-300	3	7			3
300-350	4	8			4
350-400	4	8			4
400-450	4	8			4
450-500	4	8			4
500-550	4	9			4
550-600	4	9			4

