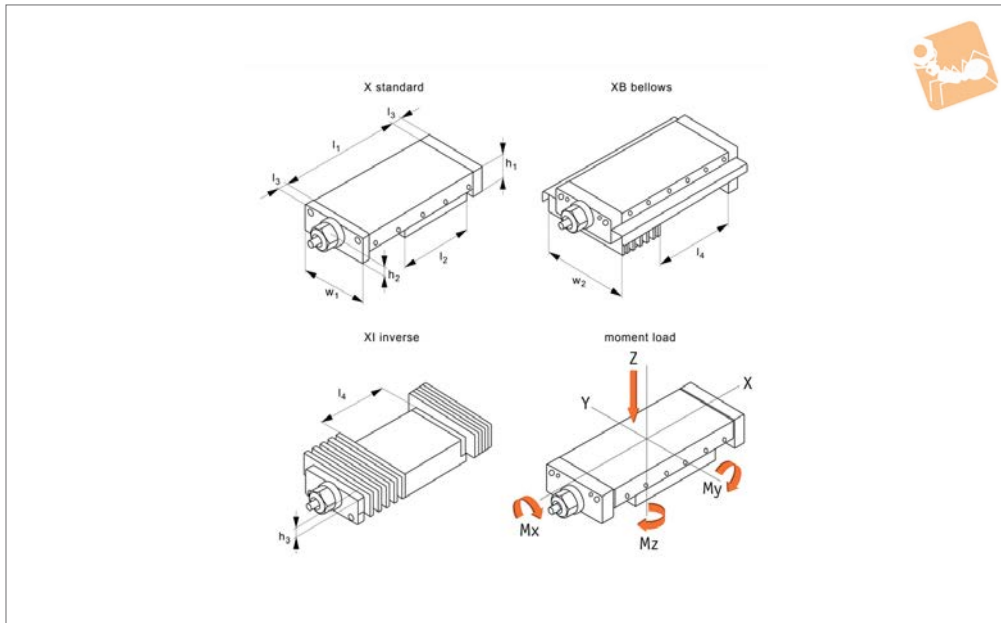




Motor Lead Screw X Stages needle roller

Manual Positioning Stages



L3194

MANUAL POSITIONING STAGES

Material

Cast iron body (ENGJL-250), with hardened needle roller linear rail set. Hardened and ground lead screw, pitch accuracy $\pm 0.015\text{mm}/300\text{mm}$. Can also be supplied with an aluminium body when lighter weight stages are required (approx. 50% of weight of standard slides and have 50% of the load capacity).

Technical Notes

Suitable for horizontal and vertical applications requiring smooth movement, long life and high load capacity.

Needle roller stages are the highest load rating stages. Other versions are also available - cross roller slides (L3470), and dovetail slides (L3480) for use when vibration damping is required. Load ratings are based on even surface loading with the slide in the centre position, and apply to a single slide. Coefficient of friction 0,003. Speeds up to 2000 rpm, max. 20 m/min. Positioning accuracy max. 0.001mm.

Tips

Replace -* with -X for X axis stage

-XB for X axis stage with bellows

-XI for inverse X axis stage with bellows

When limit switches are installed the stroke is reduced by approx. 20mm.

Important Notes

See technical pages for straightness and parallelism accuracy and standard carriage and base fixing holes - other fixing holes can be machined on request. 3D CAD models available.

Order No.	w ₁	Stroke	Load kN max.	l ₁	h ₁	l ₂	h ₂	h ₃	Weight kg
L3194.150-050-*	150	50	21.1	203	50	152	19.0	24	10.0
L3194.150-100-*	150	100	21.1	285	50	152	19.0	24	12.0
L3194.150-101-*	150	100	28.6	305	50	203	19.0	24	13.2
L3194.150-102-*	150	100	42.9	406	50	304	19.0	24	18.0
L3194.150-150-*	150	150	21.1	305	50	152	19.0	24	12.5
L3194.150-151-*	150	150	35.4	406	50	253	19.0	24	16.5
L3194.150-200-*	150	200	28.6	406	50	203	19.0	24	15.0
L3194.150-250-*	150	250	21.1	406	50	152	19.0	24	13.5
L3194.150-300-*	150	300	28.6	530	50	203	19.0	24	19.0
L3194.150-400-*	150	400	28.6	650	50	203	19.0	24	19.5
L3194.150-500-*	150	500	28.6	770	50	203	19.0	24	21.0
L3194.150-600-*	150	600	28.6	880	50	203	19.0	24	22.5
L3194.200-100-*	200	100	28.6	335	58	220	21.5	24	22.5
L3194.200-150-*	200	150	35.4	406	58	253	21.5	24	26.0
L3194.200-151-*	200	150	42.9	457	58	304	21.5	24	30.0
L3194.200-200-*	200	200	28.6	460	58	220	21.5	24	25.5
L3194.200-201-*	200	200	42.9	510	58	304	21.5	24	31.5
L3194.200-202-*	200	200	57.2	610	58	406	21.5	24	40.0
L3194.200-250-*	200	250	35.4	520	58	253	21.5	24	29.0
L3194.200-300-*	200	300	28.6	580	58	220	21.5	24	29.0
L3194.200-301-*	200	300	42.9	610	58	304	21.5	24	34.5



Order No.	w ₁	Stroke	Load kN max.	l ₁	h ₁	l ₂	h ₂	h ₃	Weight kg
L3194.200-400-*	200	400	28.6	700	58	220	21.5	24	32.0
L3194.200-500-*	200	500	28.6	820	58	220	21.5	24	35.5
L3194.200-600-*	200	600	28.6	940	58	220	21.5	24	38.5
L3194.200-700-*	200	700	28.6	1070	58	220	21.5	24	42.0
L3194.200-800-*	200	800	28.6	1185	58	220	21.5	24	45.0
L3194.300-100-*	300	100	21.0	410	75	280	26	32	70.0
L3194.300-200-*	300	200	21.0	510	75	280	26	32	75.0
L3194.300-300-*	300	300	21.0	610	75	280	26	32	83.0
L3194.300-400-*	300	400	21.0	710	75	280	26	32	90.0
L3194.300-201-*	300	200	30.2	610	75	380	26	32	93.0
L3194.300-301-*	300	300	30.2	710	75	380	26	32	98.0
L3194.300-401-*	300	400	30.2	810	75	380	26	32	105.0
L3194.300-500-*	300	500	30.2	910	75	380	26	32	113.0
L3194.300-600-*	300	600	30.2	1010	75	380	26	32	120.0
L3194.300-700-*	300	700	30.2	1110	75	380	26	32	127.0
L3194.300-800-*	300	800	30.2	1210	75	380	26	32	133.0
L3194.300-302-*	300	300	39.2	810	75	480	26	32	115.0
L3194.300-402-*	300	400	39.2	910	75	480	26	32	123.0
L3194.300-502-*	300	500	39.2	1010	75	480	26	32	130.0
L3194.300-602-*	300	600	39.2	1110	75	480	26	32	137.0
L3194.300-702-*	300	700	39.2	1210	75	480	26	32	142.0
L3194.400-200-*	400	200	44.3	610	102	380	34	37	174.0
L3194.400-300-*	400	300	44.3	710	102	380	34	37	186.0
L3194.400-400-*	400	400	44.3	810	102	380	34	37	200.0
L3194.400-500-*	400	500	44.3	910	102	380	34	37	213.0
L3194.400-600-*	400	600	44.3	1010	102	380	34	37	227.0
L3194.400-700-*	400	700	44.3	1110	102	380	34	37	240.0
L3194.400-800-*	400	800	44.3	1210	102	380	34	37	254.0
L3194.400-301-*	400	300	58.2	810	102	480	34	37	215.0
L3194.400-401-*	400	400	58.2	910	102	480	34	37	230.0
L3194.400-501-*	400	500	58.2	1010	102	480	34	37	243.0
L3194.400-601-*	400	600	58.2	1110	102	480	34	37	256.0
L3194.400-701-*	400	700	58.2	1210	102	480	34	37	270.0

Order No.	l ₃	l ₄	w ₂	Moment M _x Nm max.	Moment M _y Nm max.	Moment M _z Nm max.	Lead screw
L3194.150-050-*	16	120	200	940	435	435	15x2
L3194.150-100-*	16	120	200	940	435	435	15x2
L3194.150-101-*	16	150	200	1270	800	800	15x2
L3194.150-102-*	16	250	200	1910	1830	1830	15x2
L3194.150-150-*	30	130	200	940	435	435	15x2
L3194.150-151-*	16	190	200	1570	1250	1250	15x2
L3194.150-200-*	16	150	200	1270	800	800	15x2
L3194.150-250-*	35	130	200	940	435	435	15x2
L3194.150-300-*	16	150	200	1270	800	800	15x2
L3194.150-400-*	16	150	200	1270	800	800	15x2
L3194.150-500-*	16	150	200	1270	800	800	15x2
L3194.150-600-*	16	150	200	1270	800	800	15x2
L3194.200-100-*	16	200	250	1270	800	800	15x2
L3194.200-150-*	16	200	250	2215	1250	1250	15x2
L3194.200-151-*	16	200	250	2680	1830	1830	15x2
L3194.200-200-*	16	200	250	1785	800	800	15x2
L3194.200-201-*	16	200	250	2680	1830	1830	15x2
L3194.200-202-*	16	200	250	3575	3275	3275	15x2
L3194.200-250-*	16	200	250	2215	1250	1250	15x2
L3194.200-300-*	16	200	250	1785	800	800	15x2
L3194.200-301-*	16	200	250	2680	1830	1830	15x2
L3194.200-400-*	16	200	250	1785	800	800	15x2
L3194.200-500-*	16	200	250	1785	800	800	15x2
L3194.200-600-*	16	200	250	1785	800	800	15x2
L3194.200-700-*	16	200	250	1785	800	800	15x2
L3194.200-800-*	16	200	250	1785	800	800	15x2
L3194.300-100-*	70	280	375	5520	2100	2100	23x4
L3194.300-200-*	70	280	375	5520	2100	2100	23x4
L3194.300-300-*	70	280	375	5520	2100	2100	23x4
L3194.300-400-*	70	280	375	5520	2100	2100	23x4



Motor Lead Screw X Stages needle roller




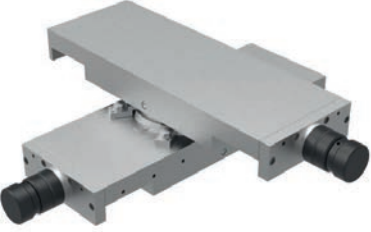
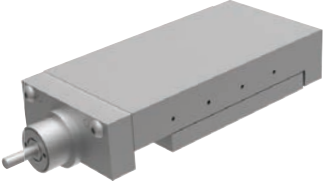
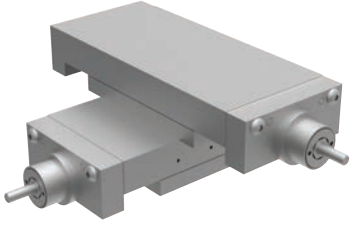
Manual Positioning Stages

Order No.	l_3	l_4	w_2	Moment M_x Nm max.	Moment M_y Nm max.	Moment M_z Nm max.	Lead screw
L3194.300-201-*	70	380	375	7440	4060	4060	23x4
L3194.300-301-*	70	380	375	7440	4060	4060	23x4
L3194.300-401-*	70	380	375	7440	4060	4060	23x4
L3194.300-500-*	90	380	375	7440	4060	4060	23x4
L3194.300-600-*	100	380	375	7440	4060	4060	23x4
L3194.300-700-*	100	380	375	7440	4060	4060	23x4
L3194.300-800-*	110	380	375	7440	4060	4060	23x4
L3194.300-302-*	70	480	375	9290	6600	6600	23x4
L3194.300-402-*	70	480	375	9290	6600	6600	23x4
L3194.300-502-*	90	480	375	9290	6600	6600	23x4
L3194.300-602-*	100	480	375	9290	6600	6600	23x4
L3194.300-702-*	100	480	375	9290	6600	6600	23x4
L3194.400-200-*	70	380	480	13000	5920	5920	30x4
L3194.400-300-*	70	380	480	13000	5920	5920	30x4
L3194.400-400-*	90	380	480	13000	5920	5920	30x4
L3194.400-500-*	90	380	480	13000	5920	5920	30x4
L3194.400-600-*	100	380	480	13000	5920	5920	30x4
L3194.400-700-*	100	380	480	13000	5920	5920	30x4
L3194.400-800-*	110	380	480	13000	5920	5920	30x4
L3194.400-301-*	90	480	480	16430	9750	9750	30x4
L3194.400-401-*	90	480	480	16430	9750	9750	30x4
L3194.400-501-*	100	480	480	16430	9750	9750	30x4
L3194.400-601-*	100	480	480	16430	9750	9750	30x4
L3194.400-701-*	110	480	480	16430	9750	9750	30x4

MANUAL POSITIONING STAGES



Heavy duty linear stages

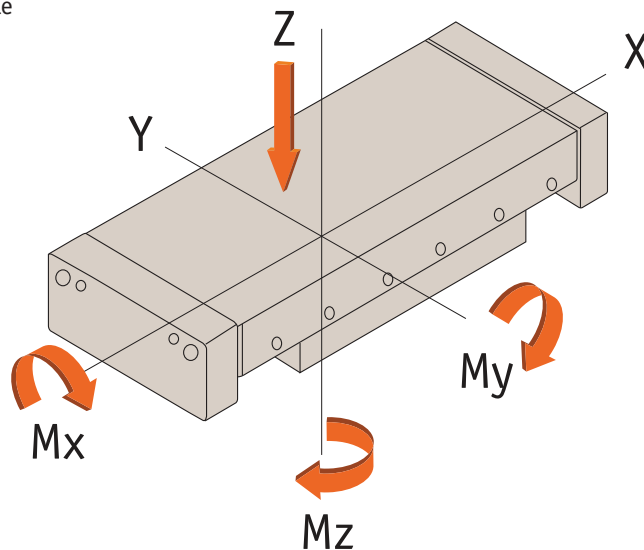
<p>Plain stages</p> 	<p>Lead screw & handle</p> 	<p>Lead screw & knob</p> 
<p>XYθ stage</p> 	<p>Motorised stage</p> 	<p>XY stage</p> 

Available with the following sliding elements:

- Cross roller: For medium loads, low friction.
- Dovetail: Less expensive, higher friction, higher loads.
- Needle roller: Highest loads, low friction, more expensive.

Moment loads

All loads shown in tables are based upon an evenly distributed load with slide in centre position. All loads apply to a single slide.

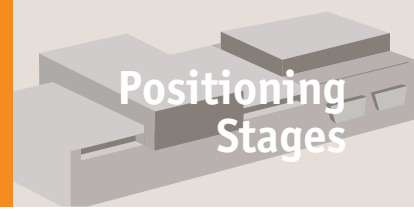





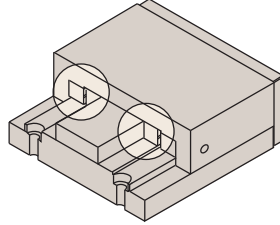
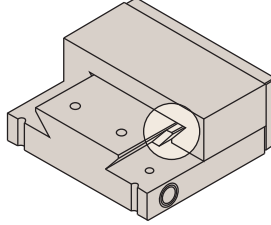
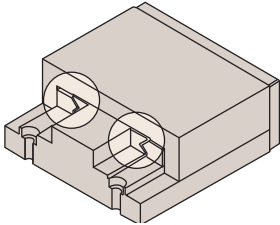
Precision Linear Stages

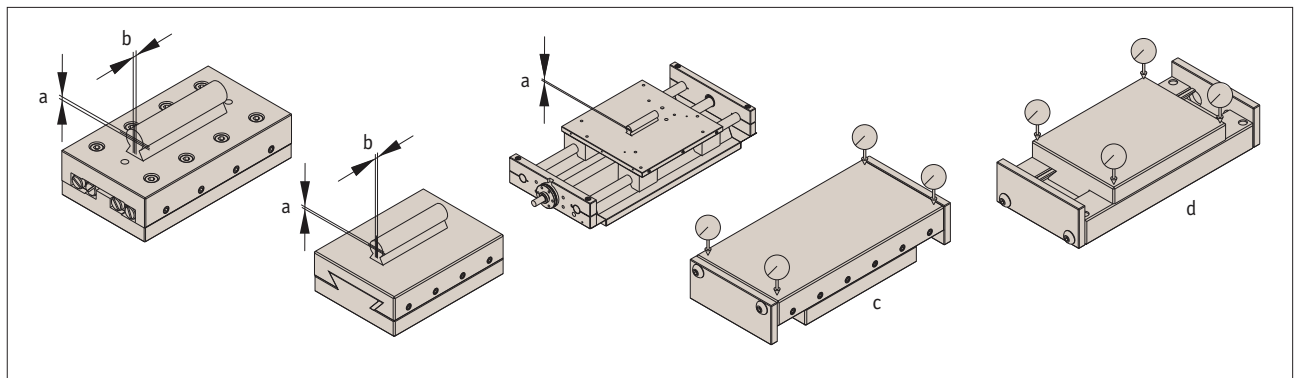
Overview

Positioning Stages



MANUAL POSITIONING STAGES

	• Crossed roller	• Dovetail	• Needle roller
			
Width	30-300mm	30-400mm	100-400mm
Stroke	12-950mm	10-600mm	50-800mm
Load capacity	29 kN	33 kN	59 kN
Max speed	20 m/min	15 m/min	20 m/min
Coefficient of friction	0,003	0,1	0,003



Straightness of travel (μ)		Stroke up to	Slide type	Slide length up to	Parallelism (μ)	
a	b				c	d
2	3	50	Cross roller & Needle roller	100	12	10
3	4	100	Cross roller & Needle roller	200	18	15
5	6	200	Cross roller & Needle roller	300	21	18
6	8	300	Cross roller & Needle roller	400	25	22
8	10	400	Cross roller & Needle roller	600	32	30
10	14	500	Cross roller & Needle roller	800	45	40
12	17	600	Cross roller & Needle roller	1000	60	50
15	20	700	Cross roller & Needle roller	1210	80	60
18	25	800	Cross roller & Needle roller			
3	5	50	Dovetail	100	15	12
5	8	100	Dovetail	200	22	18
8	12	200	Dovetail	300	28	25
10	15	300	Dovetail	400	35	30
14	20	400	Dovetail	600	50	40
18	25	500	Dovetail	800	60	50
20	30	600	Dovetail	1000	80	65
20	30	600	Dovetail	1210	100	80

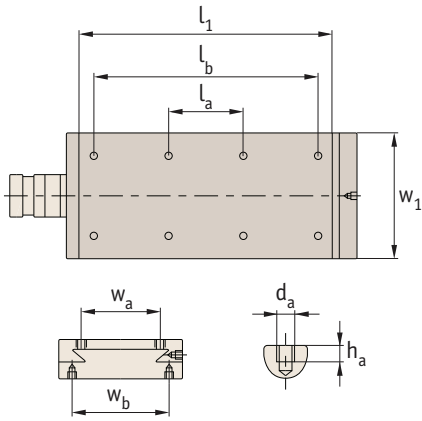
Height tolerance for roller and dovetail slides
 $\pm 0,01$ mm. DIN 7168 medium is the dimensional variations of the sliders. Closer tolerances upon request.

Rectangularity of XY-tables
 $\pm 0,005$ mm per 100mm slide length

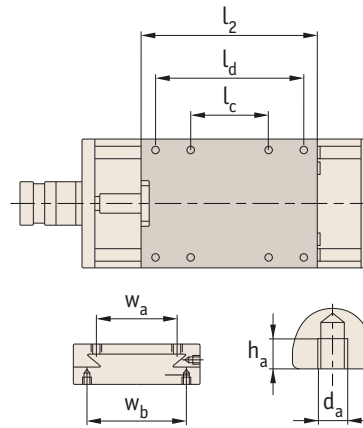
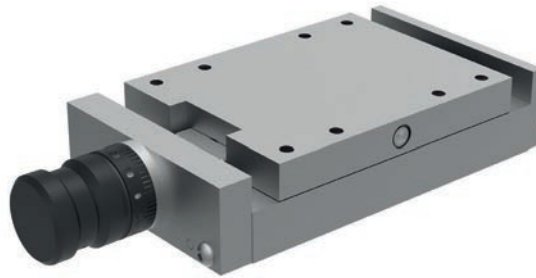
ov-precision-linear-stages-overview-rmh - Updated - 01-03-2023



Carriage - Standard holes



Base - Standard holes



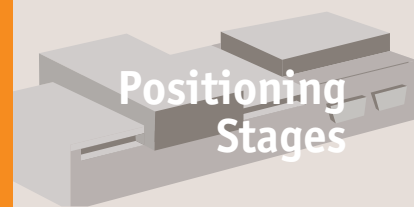
Carriage							Base					
w ₁	l ₁	l _a	l _b	h _a	d _a	w _a	l ₂	l _c	l _d	w _b	d _a	h _a
50	76	36	-	4	4xM4	24	50	20	-	37	4xM4	4
50	102	62	-	4	4xM4	24	76	36	-	37	4xM4	4
50	152	112	-	4	4xM4	24	101	61	-	37	4xM4	4
75	102	62	-	5	4xM5	34	76	36	-	56	4xM5	5
75	127	87	-	5	4xM5	34	101	61	-	56	4xM5	5
75	152	112	-	5	4xM5	34	101	61	-	56	4xM5	5
100	152	112	-	6	4xM6	52	126	86	-	74	4xM6	8
100	203	163	-	6	4xM6	52	152	112	-	74	4xM6	8
100	254	214	-	6	4xM6	52	203	163	-	74	4xM6	8
100	305	90	265	6	8xM6	52	228	188	-	74	8xM6	8
150	203	163	-	6	4xM8	95	152	112	-	120	4xM8	12
150	305	90	265	6	8xM8	95	203	163	-	120	8xM8	12
150	406	240	366	6	8xM8	95	304	90	264	120	8xM8	12
150	406	240	366	6	8xM8	95	253	213	-	120	8xM8	12
200	457	240	417	8	8xM10	120	304	90	264	155	8xM10	8
200	610	190	570	8	8xM10	120	406	190	366	155	8xM10	8
300	410	190	370	15	8xM10	200	308	90	268	255	8xM10	15
300	610	190	570	15	8xM12	200	408	190	368	255	8xM12	15
300	710	290	670	15	8xM12	200	408	190	368	255	8xM12	15
300	910	290	870	15	8xM12	200	508	290	468	255	8xM12	15
300	1010	490	970	15	8xM12	200	508	290	468	255	8xM12	15
300	1210	490	1170	15	8xM12	200	608	190	568	255	8xM12	15



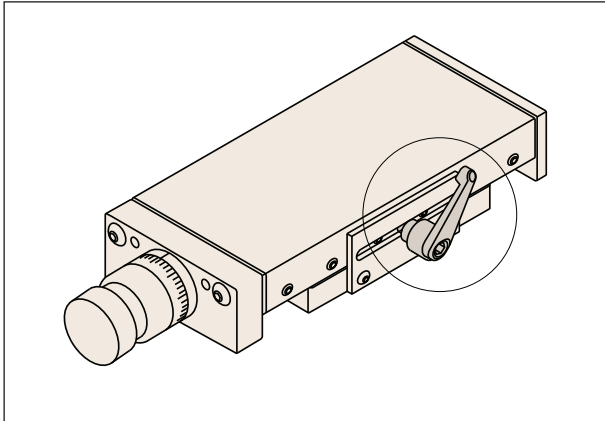
Positioning Stages

Medium - heavy duty accessories

Positioning Stages

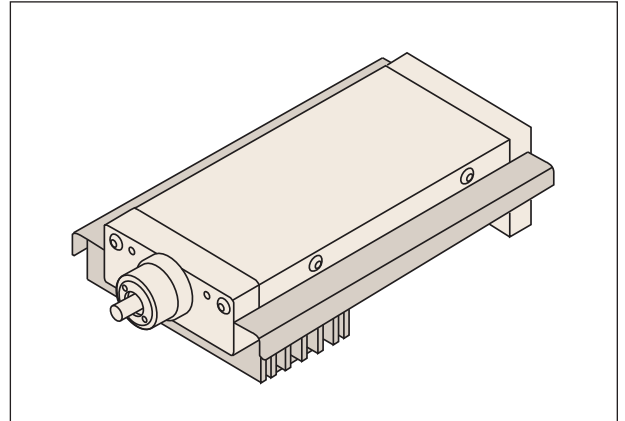


Locking device



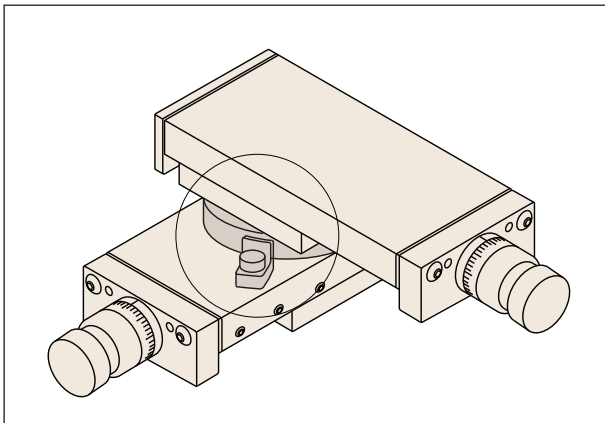
Either mounted on a side plate, a swivel rod or direct to slideway - dependent on stage type.

Bellows



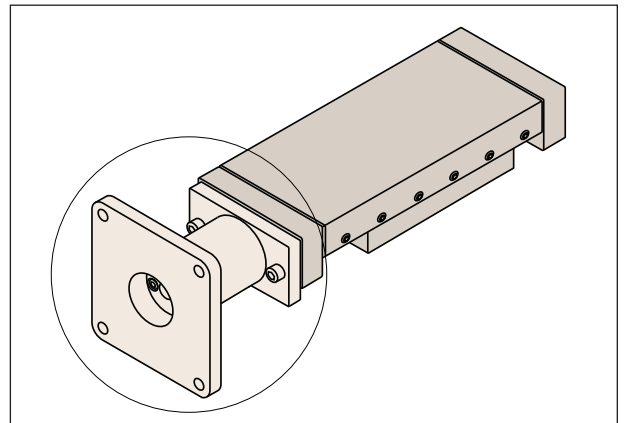
Recommended for general industrial applications. The installation of bellows affects the stroke, height and width of the slide. The bellows are made of PVC and can be used at temperatures up to 80° consult us for dimensions.

Swivelling plates



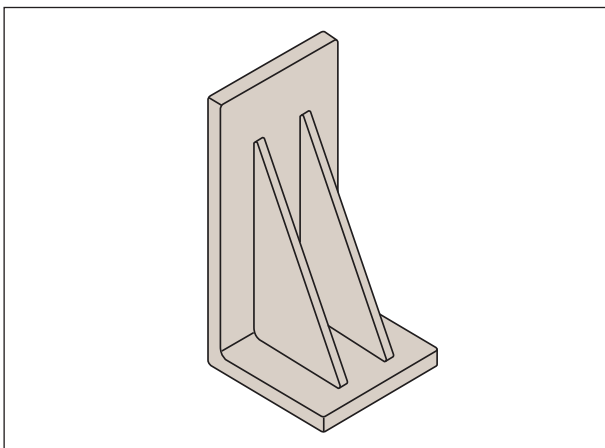
These can be rotated 360° in graduations of 10°. Graduations of 10° up to 90° clockwise and counter-clockwise.

Motor adaptors



For slides with a width greater than 75mm, a flanged motor adaptor with coupling can be provided. Please advise motor size.

Mounting brackets



From cast iron or on request aluminium.