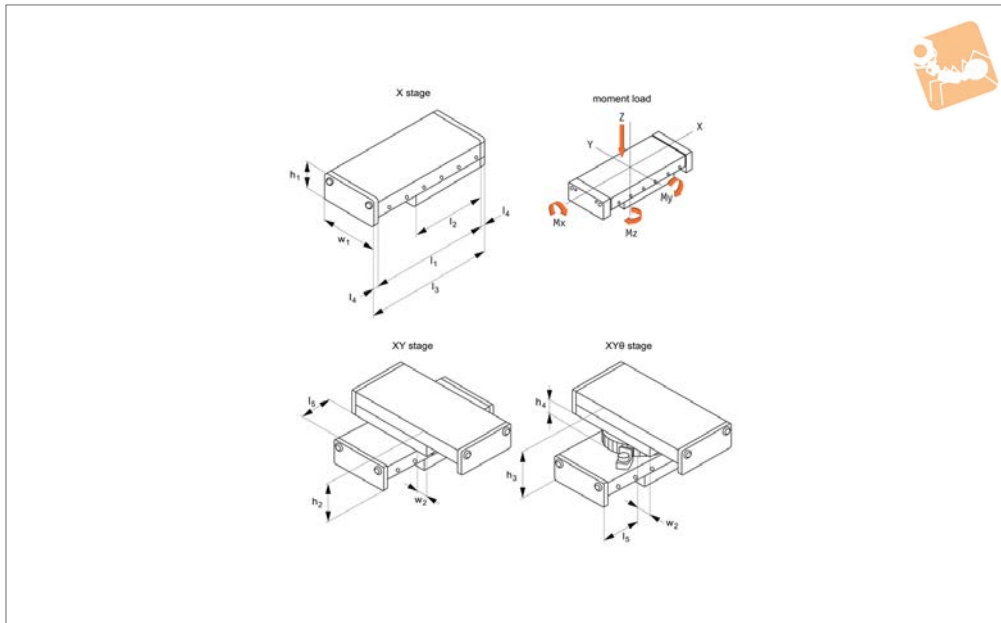




# Plain Positioning Stages

needle roller

# Manual Positioning Stages



## L3190

MANUAL POSITIONING STAGES

### Material

Cast iron body (ENGJL-250), with hardened needle roller linear rail set.

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.

### Tips

With no lead screw drive.

### Replace -\* with

**-X for X axis stage**

**-XY for X,Y axes stage**

### -XYT for X,Y,- stage

Centre mounting of compound slides is standard. Please advise dimensions  $w_2$  and  $l_5$  when off-centre mounting is required.

### 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.

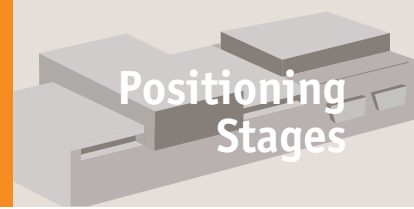
3D CAD models available.

Order No.	$w_1$	Stroke	Load kN max.	$l_1$	$h_1$	$l_2$	$h_2$	$h_3$	$h_4$	Weight kg
L3190.150-050-*	150	50	21.1	203	50	152	100	120	20	10.0
L3190.150-100-*	150	100	28.6	305	50	203	100	120	20	13.2
L3190.150-101-*	150	100	42.9	406	50	304	100	120	20	18.0
L3190.150-150-*	150	150	21.1	305	50	152	100	120	20	12.5
L3190.150-151-*	150	150	35.4	406	50	253	100	120	20	16.5
L3190.150-200-*	150	200	28.6	406	50	203	100	120	20	15.0
L3190.150-250-*	150	250	21.1	406	50	152	100	120	20	13.5
L3190.200-100-*	200	100	22.0	305	58	203	116	136	20	21.0
L3190.200-150-*	200	150	35.4	406	58	253	116	136	20	26.0
L3190.200-151-*	200	150	42.9	457	58	304	116	136	20	30.0
L3190.200-200-*	200	200	42.9	510	58	304	116	136	20	31.5
L3190.200-201-*	200	200	57.2	610	58	405	116	136	20	40.0
L3190.200-250-*	200	250	35.4	510	58	253	116	136	20	29.0
L3190.200-300-*	200	300	42.9	610	58	304	116	136	20	34.5
L3190.300-100-*	300	100	21.0	410	75	308	150	190	30	65.0
L3190.300-200-*	300	200	21.0	510	75	308	150	190	30	70.0
L3190.300-300-*	300	300	21.0	610	75	308	150	190	30	78.0
L3190.300-400-*	300	400	21.0	710	75	308	150	190	30	85.0
L3190.300-201-*	300	200	39.2	610	75	408	150	190	30	88.0
L3190.300-301-*	300	300	39.2	710	75	408	150	190	30	94.0
L3190.300-401-*	300	400	39.2	810	75	408	150	190	30	100.0
L3190.300-500-*	300	500	39.2	910	75	408	150	190	30	108.0

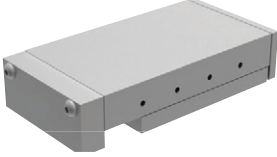




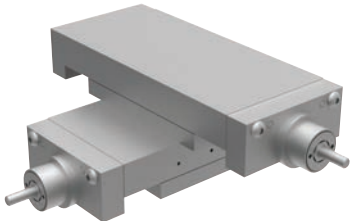


Order No.	w <sub>1</sub>	Stroke	Load kN max.	l <sub>1</sub>	h <sub>1</sub>	l <sub>2</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	Weight kg
L3190.300-600-*	300	600	39.2	1010	75	408	150	190	30	115.0
L3190.300-700-*	300	700	39.2	1110	75	408	150	190	30	122.0
L3190.300-800-*	300	800	39.2	1210	75	408	150	190	30	128.0
L3190.300-302-*	300	300	39.2	810	75	508	150	190	30	111.0
L3190.300-402-*	300	400	39.2	910	75	508	150	190	30	118.0
L3190.300-501-*	300	500	39.2	1010	75	508	150	190	30	125.0
L3190.300-601-*	300	600	39.2	1110	75	508	150	190	30	132.0
L3190.300-701-*	300	700	39.2	1210	75	508	150	190	30	137.0
L3190.400-200-*	400	200	44.3	610	102	408	204	244	40	169.0
L3190.400-300-*	400	300	44.3	710	102	408	204	244	40	182.0
L3190.400-400-*	400	400	44.3	810	102	408	204	244	40	195.0
L3190.400-500-*	400	500	44.3	910	102	408	204	244	40	208.0
L3190.400-600-*	400	600	44.3	1010	102	408	204	244	40	222.0
L3190.400-700-*	400	700	44.3	1110	102	408	204	244	40	235.0
L3190.400-800-*	400	800	44.3	1210	102	408	204	244	40	249.0
L3190.400-301-*	400	300	58.5	810	102	508	204	244	40	210.0
L3190.400-401-*	400	400	58.5	910	102	508	204	244	40	225.0
L3190.400-501-*	400	500	58.5	1010	102	508	204	244	40	238.0
L3190.400-601-*	400	600	58.5	1110	102	508	204	244	40	251.0
L3190.400-701-*	400	700	58.5	1210	102	508	204	244	40	265.0

Order No.	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>	w <sub>2</sub>	Moment M <sub>x</sub> Nm max.	Moment M <sub>y</sub> Nm max.	Moment M <sub>z</sub> Nm max.
L3190.150-050-*	219	8	26.5	1.0	940	435	435
L3190.150-100-*	321	8	77.5	26.5	1270	800	800
L3190.150-101-*	422	8	128.0	77.0	1910	1830	1830
L3190.150-150-*	321	8	77.5	1.0	940	435	435
L3190.150-151-*	422	8	128.0	51.5	1570	1250	1250
L3190.150-200-*	422	8	128.0	26.5	1270	800	800
L3190.150-250-*	422	8	128.0	1.0	940	435	435
L3190.200-100-*	321	8	52.5	1.5	1150	720	720
L3190.200-150-*	422	8	103.0	26.5	2215	1250	1250
L3190.200-151-*	473	8	128.5	52.0	2680	1830	1830
L3190.200-200-*	526	8	155.0	52.0	2680	1830	1830
L3190.200-201-*	626	8	205.0	102.5	3575	3275	3275
L3190.200-250-*	526	8	155.0	26.5	2215	1250	1250
L3190.200-300-*	626	8	205.0	52.0	2680	1830	1830
L3190.300-100-*	430	10	55.0	4.0	5520	2100	2100
L3190.300-200-*	530	10	105.0	4.0	5520	2100	2100
L3190.300-300-*	630	10	155.0	4.0	5520	2100	2100
L3190.300-400-*	730	10	205.0	4.0	5520	2100	2100
L3190.300-201-*	630	10	155.0	54.0	7440	4060	4060
L3190.300-301-*	730	10	205.0	54.0	7440	4060	4060
L3190.300-401-*	830	10	255.0	54.0	7440	4060	4060
L3190.300-500-*	930	10	305.0	54.0	7440	4060	4060
L3190.300-600-*	1030	10	355.0	54.0	7440	4060	4060
L3190.300-700-*	1130	10	405.0	54.0	7440	4060	4060
L3190.300-800-*	1230	10	455.0	54.0	7440	4060	4060
L3190.300-302-*	830	10	255.0	104.0	9290	6600	6600
L3190.300-402-*	930	10	305.0	104.0	9290	6600	6600
L3190.300-501-*	1030	10	355.0	104.0	9290	6600	6600
L3190.300-601-*	1130	10	405.0	104.0	9290	6600	6600
L3190.300-701-*	1230	10	455.0	104.0	9290	6600	6600
L3190.400-200-*	650	10	105.0	4.0	13000	5920	5920
L3190.400-300-*	750	20	155.0	4.0	13000	5920	5920
L3190.400-400-*	850	20	205.0	4.0	13000	5920	5920
L3190.400-500-*	950	20	255.0	4.0	13000	5920	5920
L3190.400-600-*	1050	20	305.0	4.0	13000	5920	5920
L3190.400-700-*	1150	20	355.0	4.0	13000	5920	5920
L3190.400-800-*	1250	20	405.0	4.0	13000	5920	5920
L3190.400-301-*	850	20	205.0	54.0	16430	9750	9750
L3190.400-401-*	950	20	255.0	54.0	16430	9750	9750
L3190.400-501-*	1050	20	305.0	54.0	16430	9750	9750
L3190.400-601-*	1150	20	355.0	54.0	16430	9750	9750
L3190.400-701-*	1250	20	405.0	54.0	16430	9750	9750



### Heavy duty linear stages

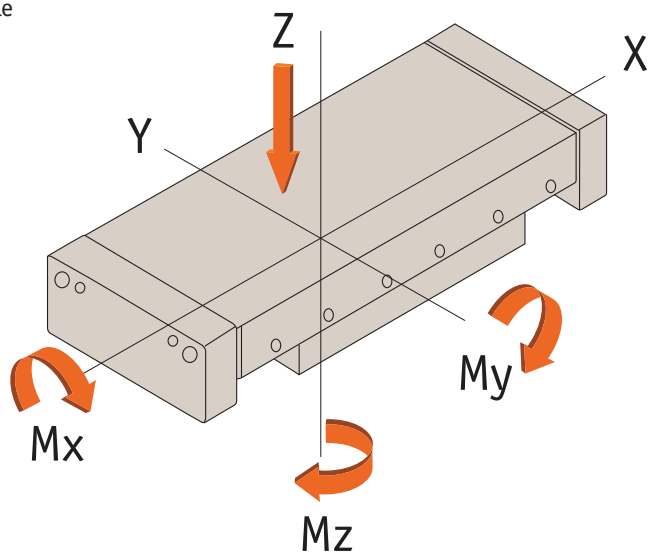
<p><b>Plain stages</b></p> 	<p><b>Lead screw &amp; handle</b></p> 	<p><b>Lead screw &amp; knob</b></p> 
<p><b>XYθ stage</b></p> 	<p><b>Motorised stage</b></p> 	<p><b>XY stage</b></p> 

Available with the following sliding elements:


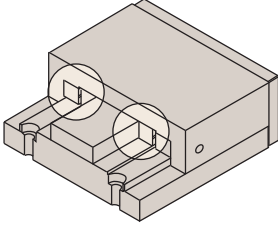
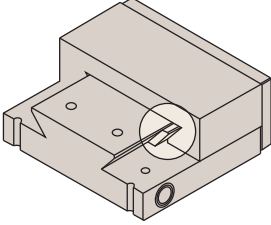
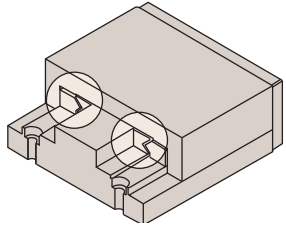
- Cross roller: For medium loads, low friction.
- Dovetail: Less expensive, higher friction, higher loads.
- Needle roller: Highest loads, low friction, more expensive.

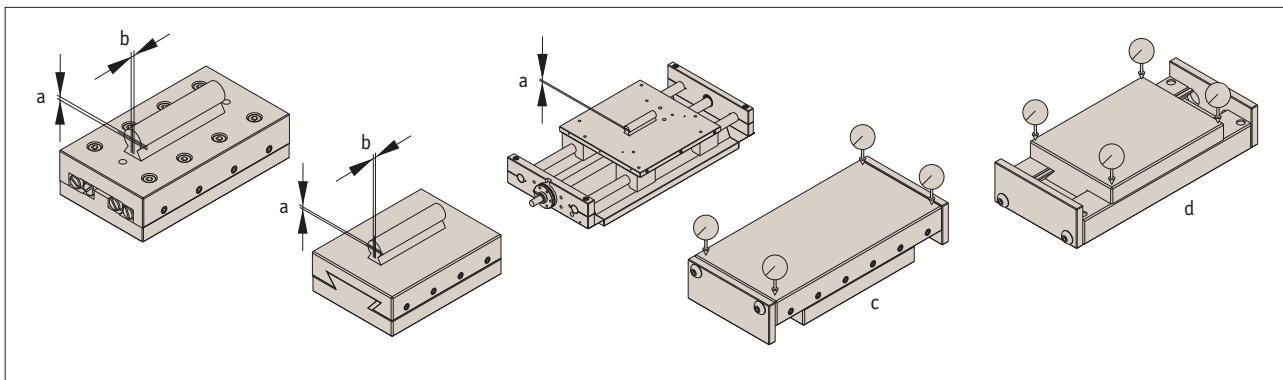
### Moment loads

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





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



Straightness of travel ( $\mu$ )		Stroke up to	Slide type	Slide length up to	Parallelism ( $\mu$ )	
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

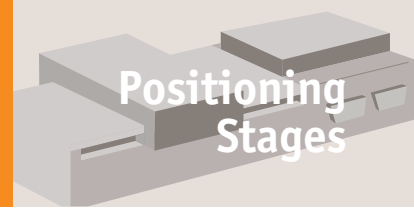
**Height tolerance for roller and dovetail slides**  
 $\pm 0,01$ mm. DIN 7168 medium is the dimensional variations of the sliders. Closer tolerances upon request.

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



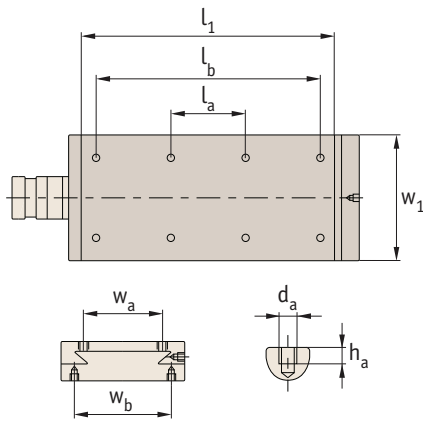
# Heavy Duty Linear Stages

Standard mounting holes

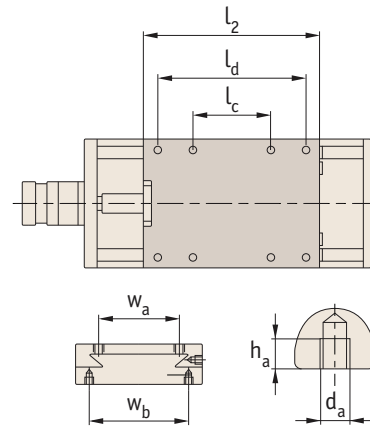
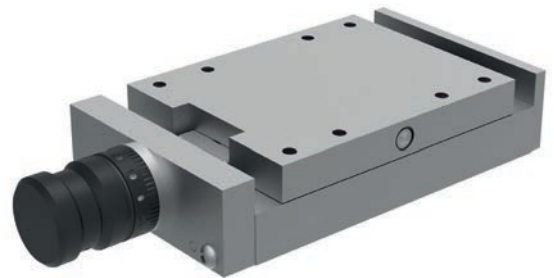


# Positioning Stages

Carriage - Standard holes



Base - Standard holes



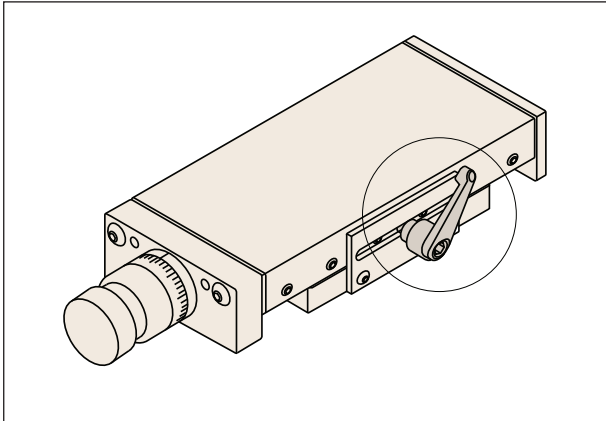
Carriage							Base					
w <sub>1</sub>	l <sub>1</sub>	l <sub>a</sub>	l <sub>b</sub>	h <sub>a</sub>	d <sub>a</sub>	w <sub>a</sub>	l <sub>2</sub>	l <sub>c</sub>	l <sub>d</sub>	w <sub>b</sub>	d <sub>a</sub>	h <sub>a</sub>
50	76	36	-	4	4xM4	24	50	20	-	37	4xM4	4
50	102	62	-	4	4xM4	24	76	36	-	37	4xM4	4
50	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

ov-standard-mounting-holes-rnh - Updated - 01-03-2023

MANUAL POSITIONING STAGES

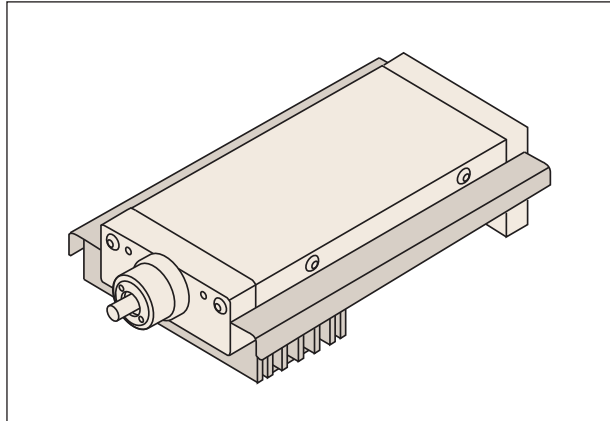


### Locking device



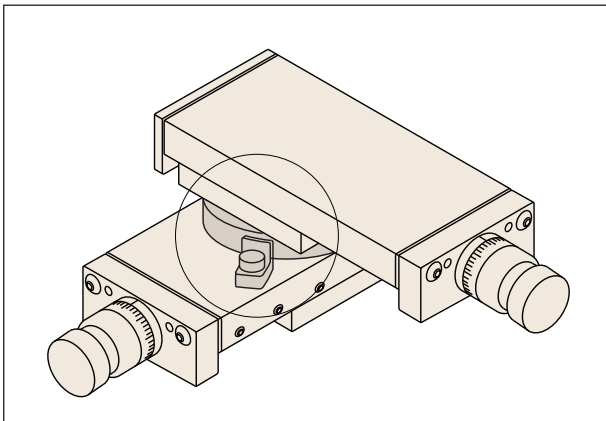
Either mounted on a side plate, a swivel rod or direct to slideway - dependent on stage type.

### Bellows



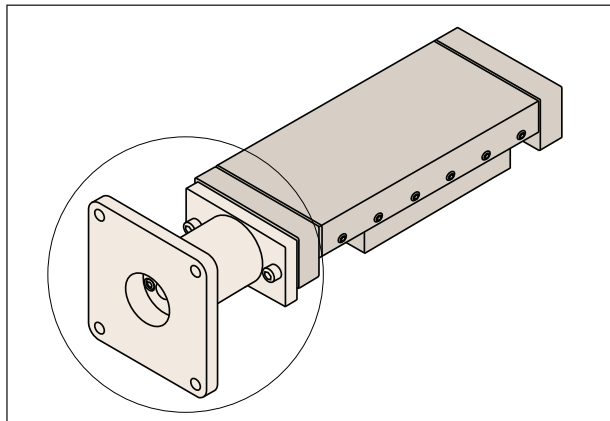
Recommended for general industrial applications. The installation of bellows affects the stroke, height and width of the slide. The bellows are made of PVC and can be used at temperatures up to 80° consult us for dimensions.

### Swivelling plates



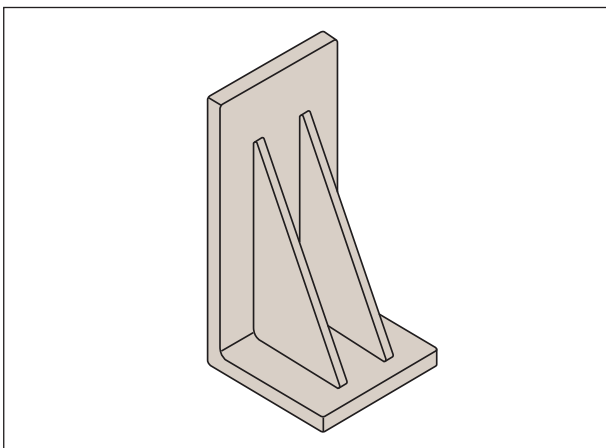
These can be rotated 360° in graduations of 10°. Graduations of 10° up to 90° clockwise and counter-clockwise.

### 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.