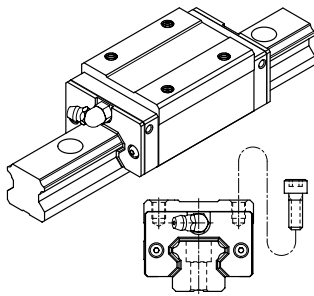


MSA Heavy Load Type Linear Rail

Carriage Types:

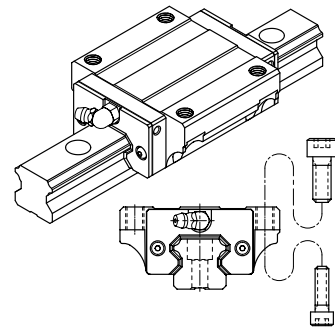
Heavy Load

MSA-S Type



Installed from the top side of the carriage with the thread length longer than MSA-E type

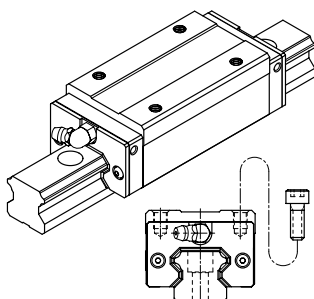
MSA-E Type



This type offers the installation either from the top or bottom side of the carriage

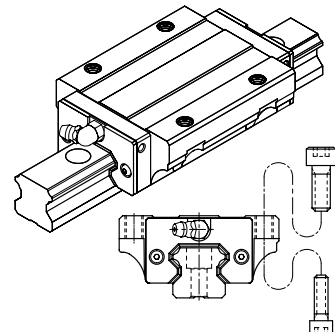
Ultra Heavy Load

MSA-LS Type



All dimensions are the same as MSA-S except the length is longer, making it more rigid.

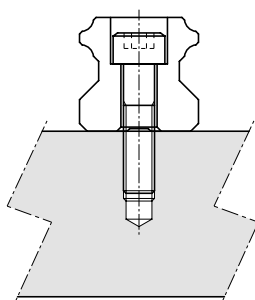
MSA-LE Type



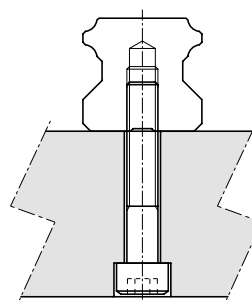
All dimensions are the same as MSA-E except the length is longer, making it more rigid.

MSA Linear Rail Types

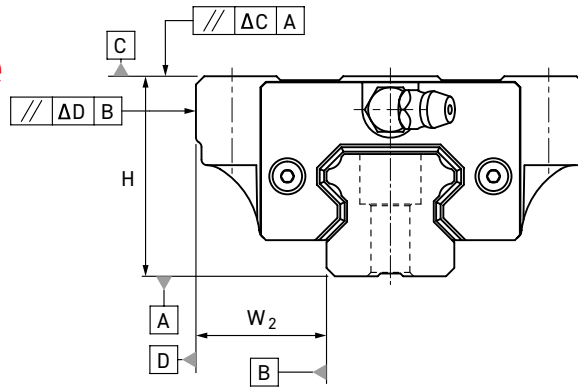
Counter Bore (R Type)



Tapped Hole (T Type)



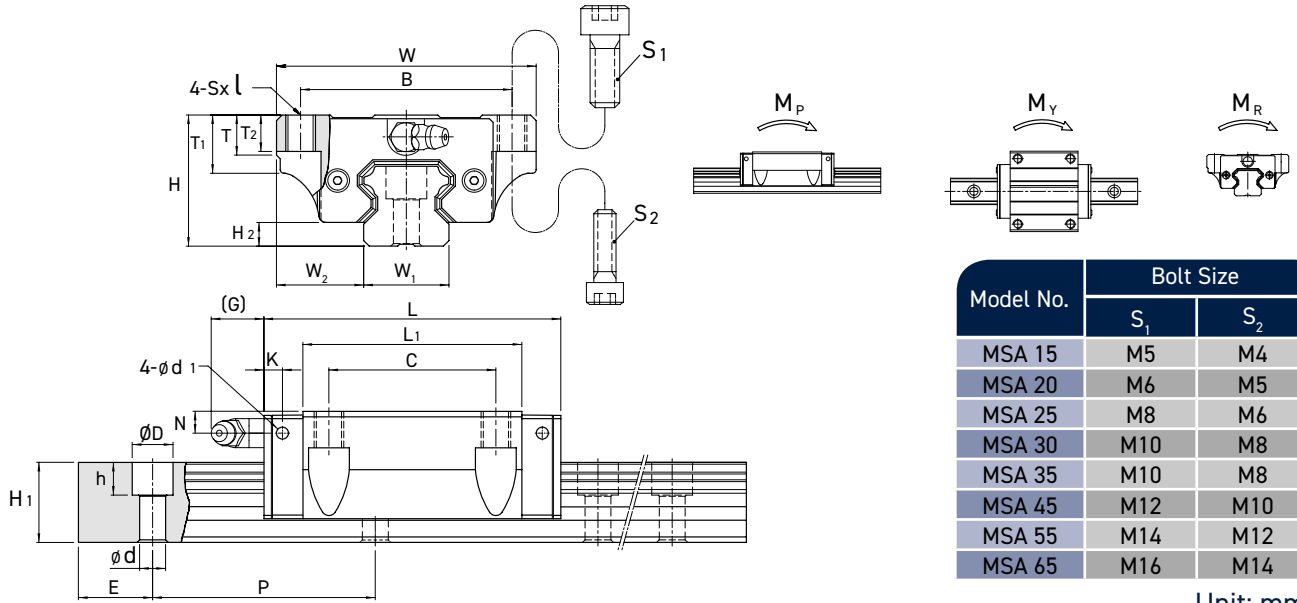
MSA Accuracy Grade



Rail Length (mm)		Running Parallelism Values (µm)				
Above	Or less (incl.)	N	H	P	SP	UP
0	315	9	6	3	2	1.5
315	400	11	8	4	2	1.5
400	500	13	9	5	2	1.5
500	630	16	11	6	2.5	1.5
630	800	18	12	7	3	2
800	1000	20	14	8	4	2
1000	1250	22	16	10	5	2.5
1250	1600	25	18	11	6	3
1600	2000	28	20	13	7	3.5
2000	2500	30	22	15	8	4
2500	3000	32	24	16	9	4.5
3000	3500	33	25	17	11	5
3500	4000	34	26	18	12	6

Model No.	Item	Running Parallelism Values (µm)				
		N	H	P	SP	UP
15 20	Tolerance for height H	±0.1	±0.03	0	0	0
	Height difference ΔH	0.02	0.01	0.006	0.004	0.003
	Tolerance for distance W ₂	±0.1	±0.03	0	0	0
	Difference in distance W ₂ (ΔW ₂)	0.02	0.01	0.006	0.004	0.003
	Running parallelism of surface C with surface A	ΔC (see the Table Above)				
	Running parallelism of surface D with surface B	ΔD (see the Table Above)				
24 30 35	Tolerance for height H	±0.1	±0.04	0	0	0
	Height difference ΔH	0.02	0.015	0.007	0.005	0.003
	Tolerance for distance W ₂	±0.1	±0.04	0	0	0
	Difference in distance W ₂ (ΔW ₂)	0.03	0.015	0.007	0.005	0.003
	Running parallelism of surface C with surface A	ΔC (see the Table Above)				
	Running parallelism of surface D with surface B	ΔD (see the Table Above)				
45 55	Tolerance for height H	±0.1	±0.05	0	0	0
	Height difference ΔH	0.03	0.015	0.007	0.005	0.003
	Tolerance for distance W ₂	±0.1	±0.05	0	0	0
	Difference in distance W ₂ (ΔW ₂)	0.03	0.02	0.01	0.007	0.005
	Running parallelism of surface C with surface A	ΔC (see the Table Above)				
	Running parallelism of surface D with surface B	ΔD (see the Table Above)				
65	Tolerance for height H	±0.1	±0.07	0	0	0
	Height difference ΔH	0.03	0.02	0.01	0.007	0.005
	Tolerance for distance W ₂	±0.1	±0.07	0	0	0
	Difference in distance W ₂ (ΔW ₂)	0.03	0.025	0.015	0.01	0.007
	Running parallelism of surface C with surface A	ΔC (see the Table Above)				
	Running parallelism of surface D with surface B	ΔD (see the Table Above)				

MSA-E & MSA-LE Carriage and Rail Dimensions



Model No.	Bolt Size	
	S ₁	S ₂
MSA 15	M5	M4
MSA 20	M6	M5
MSA 25	M8	M6
MSA 30	M10	M8
MSA 35	M10	M8
MSA 45	M12	M10
MSA 55	M14	M12
MSA 65	M16	M14

Unit: mm

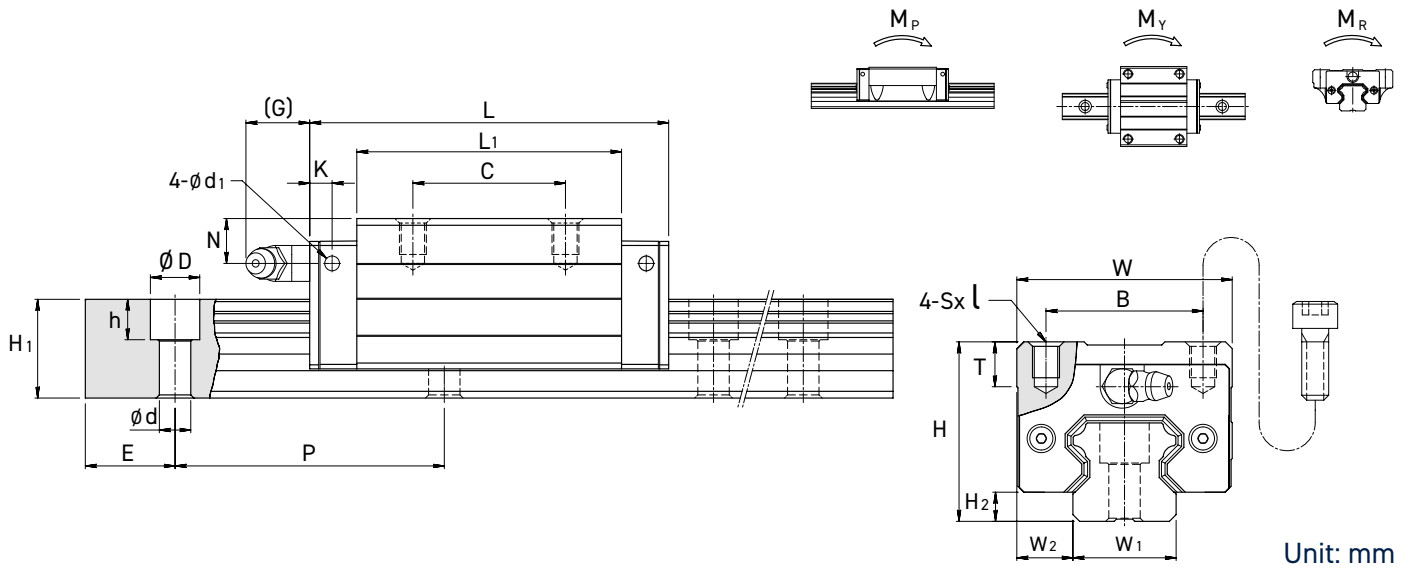
Model No.	External Dimension					Carriage Dimensions												
	H	W	L	W ₂	H ₂	B	C	Sx _l	L ₁	T	T1	T2	N	G	K	d ₁	Grease Nipple	
MSA 15 E	24	47	56.3	16	4.2	38	30	M5×7	39.3	7	11	7	4.3	7	3.2	3.3	G-M4	
MSA 20 E	30	63	72.9	21.5	5	53	40	M6×10	51.3	7	10	10	5	12	5.8	3.3	G-M6	
MSA 20 LE			88.8						67.2									
MSA 25 E	36	70	81.6	23.5	6.5	57	45	M8×10	59	11	16	10	6	12	5.8	3.3	G-M6	
MSA 25 LE			100.6						78									
MSA 30 E	42	90	97	31	8	72	52	M10×10	71.4	11	18	10	7	12	6.8	3.3	G-M6	
MSA 30 LE			119.2						93.6									
MSA 35 E	48	100	111.2	33	9.5	82	62	M10×13	81	13	21	13	8	11.5	8.6	3.3	G-M6	
MSA 35 LE			136.6						106.4									
MSA 45 E	60	120	137.7	37.5	10	100	80	M12×15	102.5	13	25	15	10	13.5	10.6	3.3	G-PT 1/8	
MSA 45 LE			169.5						134.3									
MSA 55 E	70	140	161.5	43.5	13	116	95	M14×17	119.5	19	32	17	11	13.5	8.9	3.3	G-PT 1/8	
MSA 55 LE			199.5						157.5									
MSA 65 E	90	170	199	53.5	15	142	110	M16×23	149	21.5	37.5	23	19	13.5	8.9	3.3	G-PT 1/8	
MSA 65 LE			253						203									

Model No.	Rail Dimension					Basic Load Rating		Static Moment Rating				Weight		
	W ₁	H ₁	P	E std.	D x h x d	Dynamic C kN	Static C ₀ kN	M _p kN-m		M _y kN-m		M _R kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
MSA 15 E	15	15	60	20	7.5×5.3×4.5	11.8	18.9	0.12	0.68	0.12	0.68	0.14	0.18	1.5
MSA 20 E	20	18	60	20	9.5×8.5×6	19.2	29.5	0.23	1.42	0.23	1.42	0.29	0.4	2.4
MSA 20 LE						23.3	39.3	0.39	2.23	0.39	2.23	0.38	0.52	
MSA 25 E	23	22	60	20	11×9×7	28.1	42.4	0.39	2.20	0.39	2.20	0.48	0.62	3.4
MSA 25 LE						34.4	56.6	0.67	3.52	0.67	3.52	0.63	0.82	
MSA 30 E	28	26	80	20	14×12×9	39.2	57.8	0.62	3.67	0.62	3.67	0.79	1.09	4.8
MSA 30 LE						47.9	77.0	1.07	5.81	1.07	5.81	1.05	1.43	
MSA 35 E	34	29	80	20	14×12×9	52.0	75.5	0.93	5.47	0.93	5.47	1.25	1.61	6.6
MSA 35 LE						63.6	100.6	1.60	8.67	1.60	8.67	1.67	2.11	
MSA 45 E	45	38	105	22.5	20×17×14	83.8	117.9	1.81	10.67	1.81	10.67	2.57	2.98	11.5
MSA 45 LE						102.4	157.3	3.13	16.95	3.13	16.95	3.43	3.9	
MSA 55 E	53	44	120	30	23×20×16	123.6	169.8	3.13	17.57	3.13	17.57	4.50	4.17	15.5
MSA 55 LE						151.1	226.4	5.40	28.11	5.40	28.11	6.00	5.49	
MSA 65 E	63	53	150	35	26×22×18	198.8	265.3	6.11	33.71	6.11	33.71	8.36	8.73	21.9
MSA 65 LE						253.5	375.9	11.84	57.32	11.84	57.32	11.84	11.89	

Note: The basic dynamic load rating C of ball type is based on the 50 km for nominal life. The conversion between C for 50 km and C100 for 100 km is C=1.26 x C100.

Note*: Single: Single carriage/ Double: Two carriages in close proximity to one another.

MSA-S & MSA-LS Carriage and Rail Dimensions



Model No.	External Dimension					Carriage Dimensions										
	H	W	L	W ₂	H ₂	B	C	SXL	L1	T	N	G	K	d1	Grease Nipple	
MSA 15 S	28	34	56.3	9.5	4.2	26	26	M4×5	39.3	7.2	8.3	7	3.2	3.3	G-M4	
MSA 20 S	30	44	72.9	12	5	32	36	M5×6	51.3	8	5	12	5.8	3.3	G-M6	
MSA 20 LS			88.8						67.2							
MSA 25 S	40	48	81.6	12.5	6.5	35	35	M6×8	59	10	10	12	5.8	3.3	G-M6	
MSA 25 LS			100.6						78							
MSA 30 S	45	60	97	16	8	40	40	M8×10	71.4	11.7	10	12	6.8	3.3	G-M6	
MSA 30 LS			119.2						93.6							
MSA 35 S	55	70	111.2	18	9.5	50	50	M8×12	81	12.7	15	11.5	8.6	3.3	G-M6	
MSA 35 LS			136.6						106.4							
MSA 45 S	70	86	137.7	20.5	10	60	60	M10×17	102.5	16	20	13.5	10.6	3.3	G-PT 1/8	
MSA 45 LS			169.5						134.3							
MSA 55 S	80	100	161.5	23.5	13	75	75	M12×18	119.5	18	21	13.5	8.9	3.3	G-PT 1/8	
MSA 55 LS			199.5						157.5							
MSA 65 S	90	126	199	31.5	15	76	70	M16×20	149	23	19	13.5	8.9	3.3	G-PT 1/8	
MSA 65 LS			253						203							

Model No.	Rail Dimension					Basic Load Rating		Static Moment Rating					Weight	
	W ₁	H ₁	P	E _{std.}	D x h x d	Dynamic C kN	Static C ₀ kN	Mp kN-m		My kN-m		MR kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
MSA 15 S	15	15	60	20	7.5×5.3×4.5	11.8	18.9	0.12	0.68	0.12	0.68	0.14	0.18	1.5
MSA 20 S	20	18	60	20	9.5×8.5×6	19.2	29.5	0.23	1.42	0.23	1.42	0.29	0.3	2.4
MSA 20 LS						23.3	39.3	0.39	2.23	0.39	2.23	0.38		
MSA 25 S	23	22	60	20	11×9×7	28.1	42.4	0.39	2.20	0.39	2.20	0.48	0.52	3.4
MSA 25 LS						34.4	56.6	0.67	3.52	0.67	3.52	0.63		
MSA 30 S	28	26	80	20	14×12×9	39.2	57.8	0.62	3.67	0.62	3.67	0.79	0.86	4.8
MSA 30 LS						47.9	77.0	1.07	5.81	1.07	5.81	1.05		
MSA 35 S	34	29	80	20	14×12×9	52.0	75.5	0.93	5.47	0.93	5.47	1.25	1.45	6.6
MSA 35 LS						63.6	100.6	1.60	8.67	1.60	8.67	1.67		
MSA 45 S	45	38	105	22.5	20×17×14	83.8	117.9	1.81	10.67	1.81	10.67	2.57	2.83	11.5
MSA 45 LS						102.4	157.3	3.13	16.95	3.13	16.95	3.43		
MSA 55 S	53	44	120	30	23×20×16	123.6	169.8	3.13	17.57	3.13	17.57	4.50	4.12	15.5
MSA 55 LS						151.1	226.4	5.40	28.11	5.40	28.11	6.00		
MSA 65 S	63	53	150	35	26×22×18	198.8	265.3	6.11	33.71	6.11	33.71	8.36	6.43	21.9
MSA 65 LS						253.5	375.9	11.84	57.32	11.84	57.32	11.84		

Note: The basic dynamic load rating C of ball type is based on the 50 km for nominal life. The conversion between C for 50 km and C100 for 100 km is C=1.26 x C100.

Note*: Single: Single carriage/ Double: Two carriages in close proximity to one another.