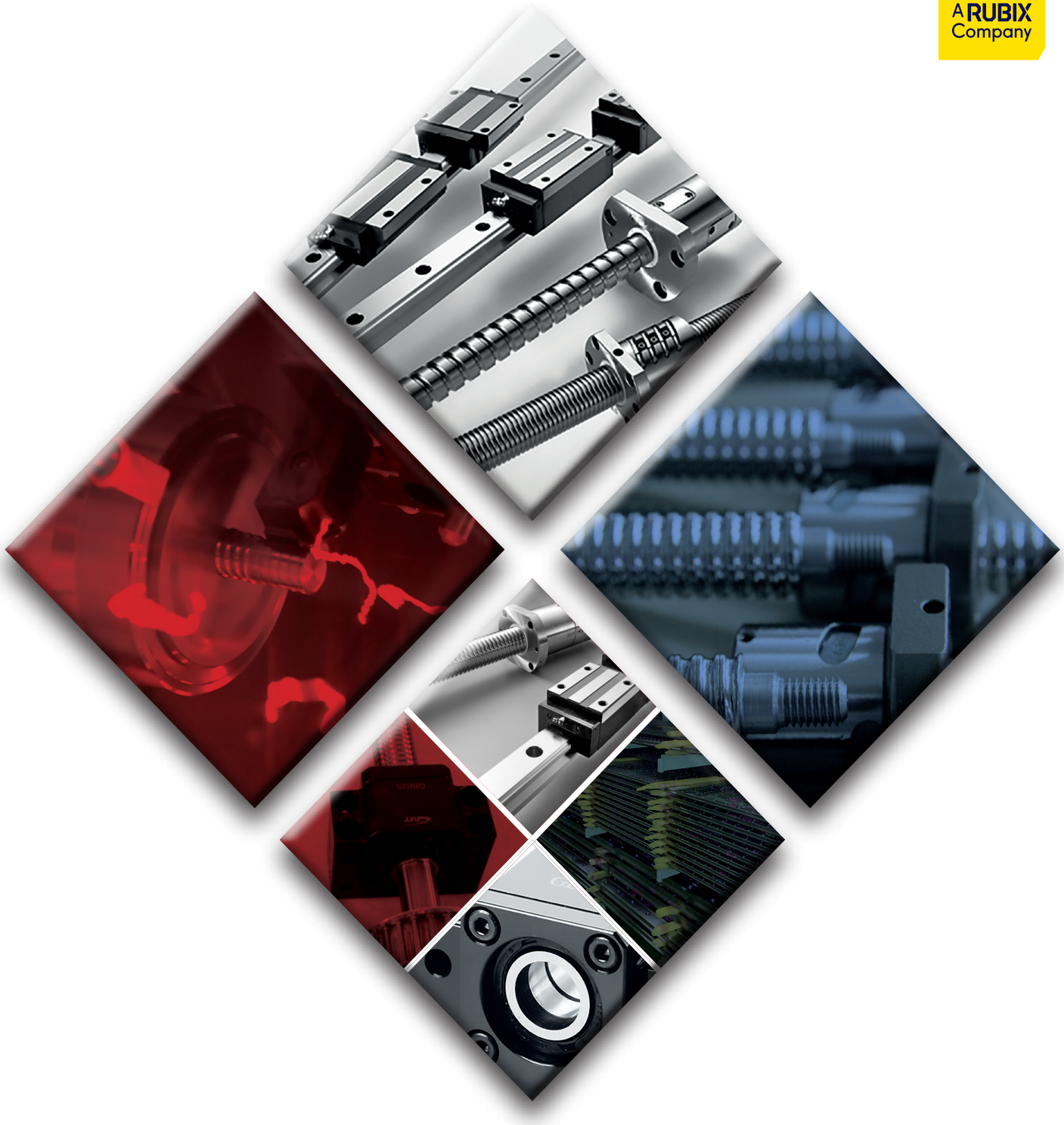
THE **DYNAMICS** OF **MOVEMENT**

MATARA
MATARA UK LTD

A RUBIX Company



LINEAR MOTION

PRODUCT CATALOGUE

MATARA UK LTD - **LM0122-4ED**

Welcome to **MATARA UK**

For more than 25 years Matara has delivered an outstanding range of pneumatic and linear automation products throughout all industrial sectors both in the UK and World-wide.

From automotive to aerospace, food to pharmaceuticals our reputation as the partner of choice for prompt service, rapid delivery and superb after sales support is widely recognised.

Our headquarters, located in Gloucestershire has an extensive CNC machine shop, clean room assembly area and an automated storage facility. Whether its an electronic, pneumatic or linear product we have technical experts on-site ready to deal with your enquiry.

A customer-centric business model allows Matara to offer;

- Unrivalled flexibility
- Consistent pricing policies
- Short and effective lines of communication
- Technical Support through every stage of your project, from concept to completion.

Table of Contents:

Precision Linear Rail

PMI Group

THE **DYNAMICS** OF **MOVEMENT**

PMI

PMI GROUP, LINEAR MOTION TECHNOLOGY:
Partners with Matara for over 20 years, PMI specialise in manufacturing high quality linear rail and carriages, supplying multiple industries worldwide.

Cut To Specification In-House

Large UK Stock

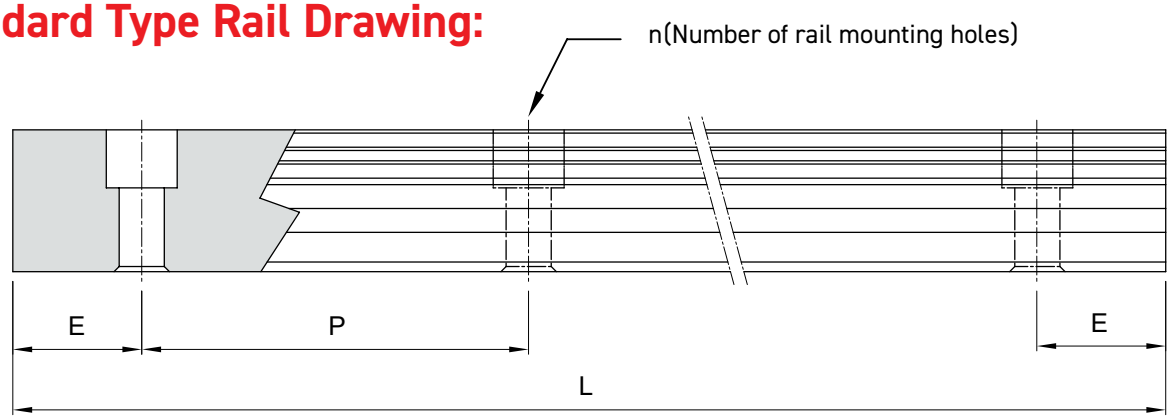
PMI Linear Rail Order Example

Code:	**MSA**	**25**	**A**	**2**	**SS**	**F0**	__	**+R**	**1200**	**-20**	**/40**	**P**	__	__	**II**
Options:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

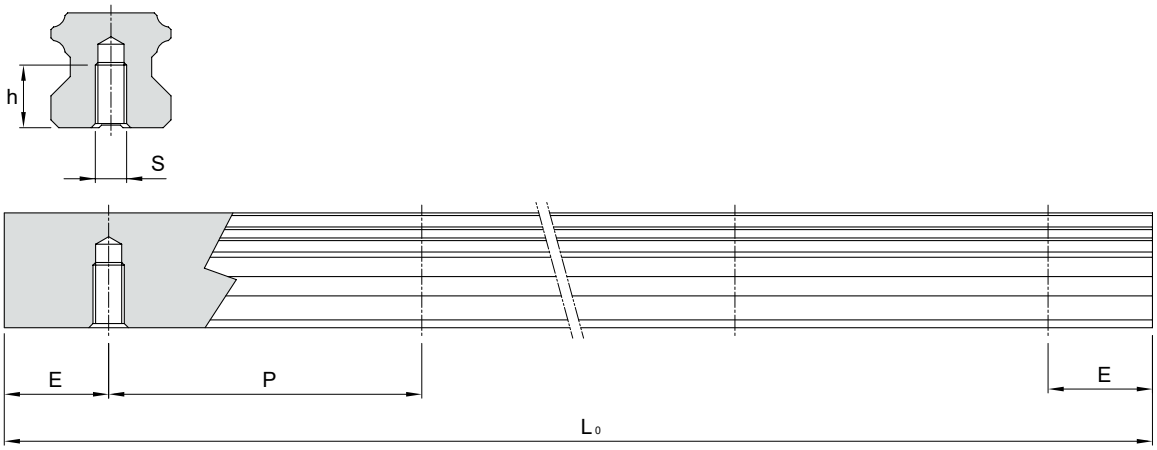
Options		Linear Rail Series						
1		MSA	MSB	MSC/ MSD	MSG	SME	SMR	MSR
2	Size	15, 20, 25, 30, 35, 45, 55, 65	15, 20, 25, 30, 35	7, 9, 12, 15	21, 27, 35	15, 20, 25, 30, 35, 45	20, 25, 30, 35, 45, 55, 65	20, 25, 30, 35, 45, 55, 65
3	Carriage Type	E, S	TE, TS, E, S, LE, LS	M, LM	E, S	EA, EB, SA SB/SV, LEA, LEB, LSA, LSB/LSV	E, S, LE, LS	E, S, LE, LS
4	No. Carriage Per Rail	1, 2, 3,...						
5	Carriage dust protection	No symbol, UU, SS, ZZ, DD, KK, LL, RR, HD Please see Dust Proof table (p.41)						
6	Pre-Load *	FC, F0, F1		FC, F0	FC, F0, F1	FC, F0	F0, F1, F2	
7	Code of Special carriage	No symbol, A, B						
8	Rail Type	R, T	R, U, T	R	R	R, T	R, T	R, T
9	Rail Length (mm)	Please see Rail Dimensions table (p.4-5)						
10	Rail hole pitch from start side (E1)	Please see Rail Dimensions table (p.4-5)						
11	Rail hole pitch from end side (E2)	Please see Rail Dimensions table (p.4-5)						
12	Accuracy Grade	N, H, P, SP, UP	N, H, P, SP, UP	N, H, P	N, H, P, SP, UP	N, H, P	H, P, SP, UP	H, P, SP, UP
13	Code of Special Rail	No symbol, A, B ...						
14	Dust Protection Option Of Rail	Refer to Code of Contamination table (p.38)						
15	Number Of Rails Per Axis	No symbol, II, III, IV ...						

* FC (Light Pre-Load),
F0 (Medium Pre-Load),
F1 (Heavy Pre-Load)
F2 (Ultra Heavy Pre-Load)

Standard Type Rail Drawing:



Tapped Hole Type Rail Drawing:



$L=(n-1)\times P+2\times E$

L: Total Length of rail (mm)

n: Number of mounting holes

P: Distance between any two holes (mm)

E: Distance from the centre of the last hole to the edge (mm)

Standard & Tapped Type Dimensions:

Model No.	Standard Pitch (P)	Standard (Estd.)	Minimum ($E_{min.}$)	Max ($L_{0\ max.}$)	S (Tapped Only)	h (mm) (Tapped Only)
MSA 15	60	20	5	4000	M5	8
MSA 20	60	20	6	4000	M6	10
MSA 25	60	20	7	4000	M6	12
MSA 30	80	20	8	4000	M8	15
MSA 35	80	20	8	4000	M8	17
MSA 45	105	22.5	11	4000	M12	24
MSA 55	120	30	13	4000	M14	24
MSA 65	150	35	14	4000	M20	30

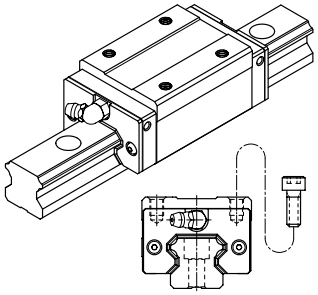
Model No.	Standard Pitch (P)	Standard (Estd.)	Minimum ($E_{min.}$)	Standard Max ($L_{0\ max.}$)	S (Tapped Only)	h (mm) (Tapped Only)
MSB 15	60	20	5	4000	M5	7
MSB 20	60	20	6	4000	M6	9
MSB 25	60	20	7	4000	M6	10
MSB 30	80	20	7	4000	M8	14
MSB 35	80	20	8	4000	M8	16
MSC 7	15	5	3	1000	Tapped Type Not Available	
MSC 9	20	7.5	4	1000	Tapped Type Not Available	
MSC 12	25	10	4	1000	Tapped Type Not Available	
MSC 15	40	15	4	1000	Tapped Type Not Available	
MSD 7	30	10	3	1000	Tapped Type Not Available	
MSD 9	30	10	4	1000	Tapped Type Not Available	
MSD 12	40	15	4	1000	Tapped Type Not Available	
MSD 15	40	15	4	1000	Tapped Type Not Available	
MSG 21	50	15	5	3000	Tapped Type Not Available	
MSG 27	60	20	5	3000	Tapped Type Not Available	
MSG 35	80	20	7	3000	Tapped Type Not Available	
SME 15	60	20	5	4000	M5	8
SME 20	60	20	6	4000	M6	10
SME 25	60	20	7	4000	M6	12
SME 30	80	20	8	4000	M8	15
SME 35	80	20	8	4000	M8	17
SME 45	105	22.5	11	4000	M12	24
MSR 20	30	20	6	4000	M6	11
MSR 25	30	20	7	4000	M6	12
MSR 30	40	20	8	4000	M8	15
MSR 35	40	20	8	4000	M8	17
MSR 45	52.5	22.5	11	4000	M12	24
MSR 55	60	30	13	4000	M14	24
MSR 65	75	35	14	4000	M20	30
SMR 25	30	20	7	4000	M6	12
SMR 30	40	20	8	4000	M8	15
SMR 35	40	20	8	4000	M8	17
SMR 45	52.5	22.5	11	4000	M12	24
SMR 55	60	30	13	4000	M14	24
SMR 65	75	35	14	4000	M20	30

MSA Heavy Load Type Linear Rail

Carriage Types:

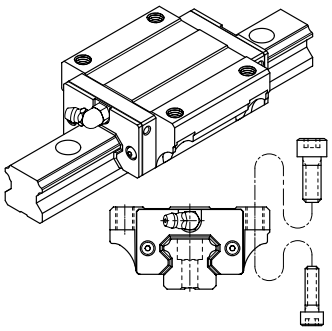
Heavy Load

MSA-S Type



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

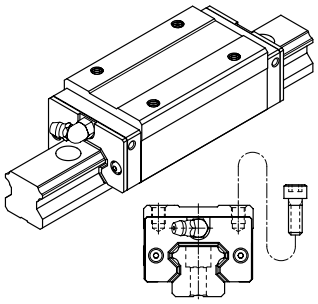
MSA-E Type



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

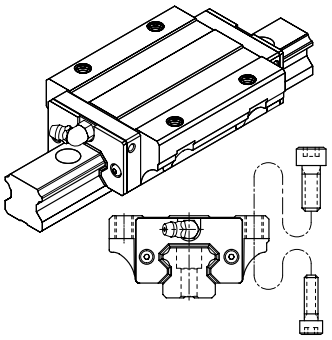
Ultra Heavy Load

MSA-LS Type



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

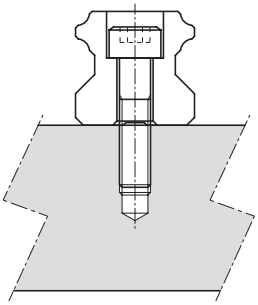
MSA-LE Type



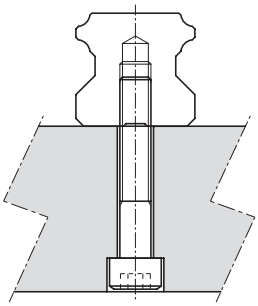
All dimensions are the same as MSA-E except the length is longer, making it more rigid.

MSA Linear Rail Types

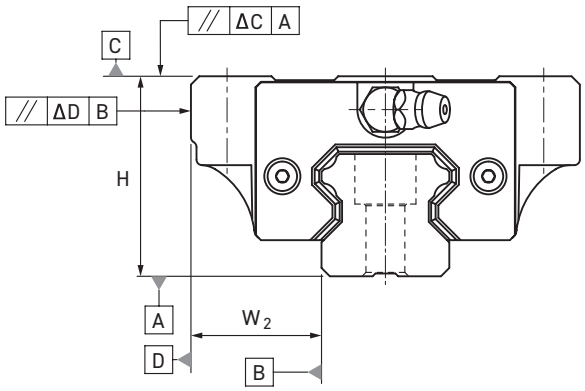
Counter Bore (R Type)



Tapped Hole (T Type)



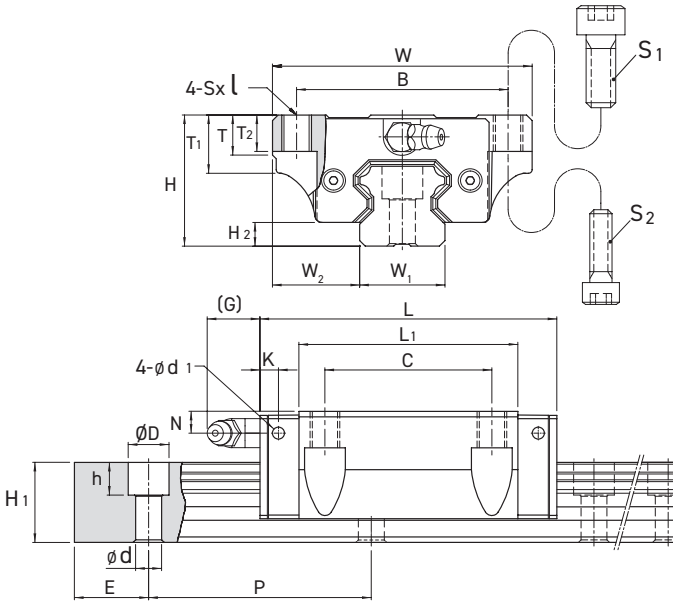
MSA Accuracy Grade

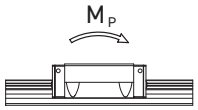


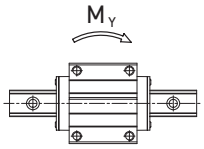
Rail Length (mm)		Running Parallelism Values (µm)				
Above	Or less (incl.)	N	H	P	SP	UP
0	315	9	6	3	2	1.5
315	400	11	8	4	2	1.5
400	500	13	9	5	2	1.5
500	630	16	11	6	2.5	1.5
630	800	18	12	7	3	2
800	1000	20	14	8	4	2
1000	1250	22	16	10	5	2.5
1250	1600	25	18	11	6	3
1600	2000	28	20	13	7	3.5
2000	2500	30	22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

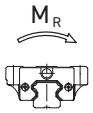
Model No.	Item	Running Parallelism Values (mm)				
		N	H	P	SP	UP
15 20	Tolerance for height H	±0.1	±0.03	0 -0.03	0 -0.015	0 -0.008
	Height difference ΔH	0.02	0.01	0.006	0.004	0.003
	Tolerance for distance W_2	±0.1	±0.03	0 -0.03	0 -0.015	0 -0.008
	Difference in distance $W_2(\Delta W_2)$	0.02	0.01	0.006	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 -0.04	0 -0.02	0 -0.01
	Height difference ΔH	0.02	0.015	0.007	0.005	0.003
	Tolerance for distance W_2	±0.1	±0.04	0 -0.04	0 -0.02	0 -0.01
	Difference in distance $W_2(\Delta W_2)$	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 -0.05	0 -0.03	0 -0.02
	Height difference ΔH	0.03	0.015	0.007	0.005	0.003
	Tolerance for distance W_2	±0.1	±0.05	0 -0.05	0 -0.03	0 -0.02
	Difference in distance $W_2(\Delta W_2)$	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 -0.07	0 -0.05	0 -0.03
	Height difference ΔH	0.03	0.02	0.01	0.007	0.005
	Tolerance for distance W_2	±0.1	±0.07	0 -0.07	0 -0.05	0 -0.03
	Difference in distance $W_2(\Delta W_2)$	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

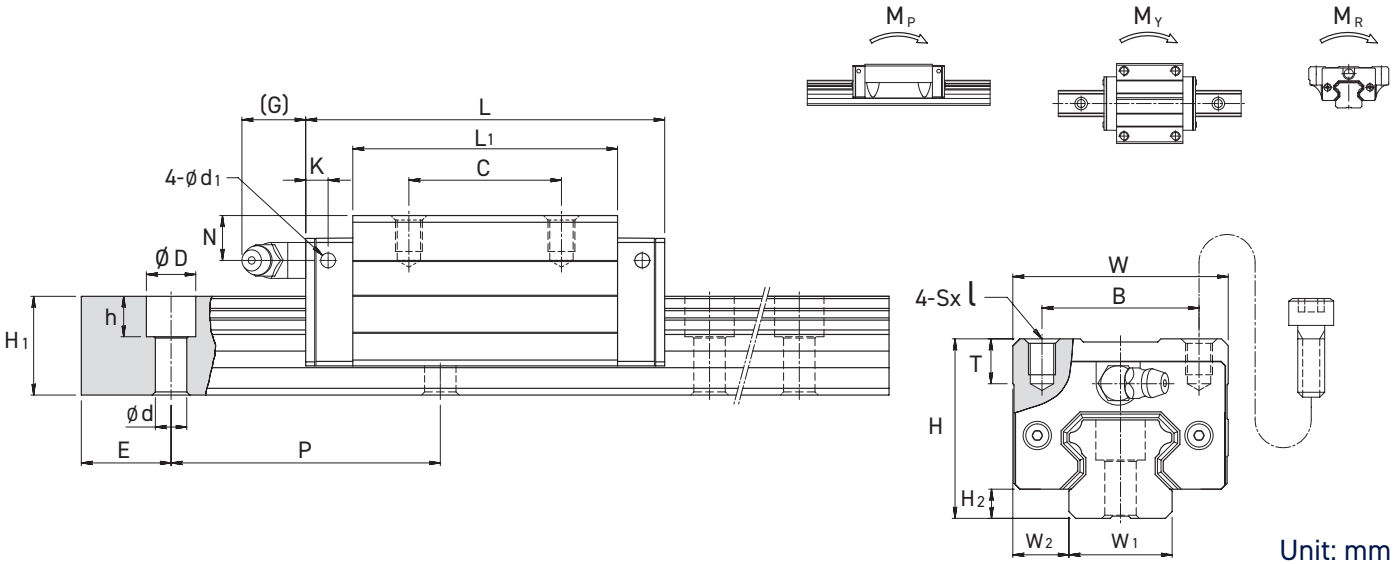
Unit: mm

Model No.	External Dimension					Carriage Dimensions										
	H	W	L	W_2	H_2	B	C	Sxl	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 MSA 20 LE	30	63	72.9 88.8	21.5	5	53	40	M6×10	51.3 67.2	7	10	10	5	12	5.8	3.3	G-M6
MSA 25 E MSA 25 LE	36	70	81.6 100.6	23.5	6.5	57	45	M8×10	59 78	11	16	10	6	12	5.8	3.3	G-M6
MSA 30 E MSA 30 LE	42	90	97 119.2	31	8	72	52	M10×10	71.4 93.6	11	18	10	7	12	6.8	3.3	G-M6
MSA 35 E MSA 35 LE	48	100	111.2 136.6	33	9.5	82	62	M10×13	81 106.4	13	21	13	8	11.5	8.6	3.3	G-M6
MSA 45 E MSA 45 LE	60	120	137.7 169.5	37.5	10	100	80	M12×15	102.5 134.3	13	25	15	10	13.5	10.6	3.3	G-PT 1/8
MSA 55 E MSA 55 LE	70	140	161.5 199.5	43.5	13	116	95	M14×17	119.5 157.5	19	32	17	11	13.5	8.9	3.3	G-PT 1/8
MSA 65 E MSA 65 LE	90	170	199 253	53.5	15	142	110	M16×23	149 203	21.5	37.5	23	19	13.5	8.9	3.3	G-PT 1/8

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 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 MSA 20 LE	20	18	60	20	9.5×8.5×6	19.2 23.3	29.5 39.3	0.23 0.39	1.42 2.23	0.23 0.39	1.42 2.23	0.29 0.38	0.4 0.52	2.4
MSA 25 E MSA 25 LE	23	22	60	20	11×9×7	28.1 34.4	42.4 56.6	0.39 0.67	2.20 3.52	0.39 0.67	2.20 3.52	0.48 0.63	0.62 0.82	3.4
MSA 30 E MSA 30 LE	28	26	80	20	14×12×9	39.2 47.9	57.8 77.0	0.62 1.07	3.67 5.81	0.62 1.07	3.67 5.81	0.79 1.05	1.09 1.43	4.8
MSA 35 E MSA 35 LE	34	29	80	20	14×12×9	52.0 63.6	75.5 100.6	0.93 1.60	5.47 8.67	0.93 1.60	5.47 8.67	1.25 1.67	1.61 2.11	6.6
MSA 45 E MSA 45 LE	45	38	105	22.5	20×17×14	83.8 102.4	117.9 157.3	1.81 3.13	10.67 16.95	1.81 3.13	10.67 16.95	2.57 3.43	2.98 3.9	11.5
MSA 55 E MSA 55 LE	53	44	120	30	23×20×16	123.6 151.1	169.8 226.4	3.13 5.40	17.57 28.11	3.13 5.40	17.57 28.11	4.50 6.00	4.17 5.49	15.5
MSA 65 E MSA 65 LE	63	53	150	35	26×22×18	198.8 253.5	265.3 375.9	6.11 11.84	33.71 57.32	6.11 11.84	33.71 57.32	8.36 11.84	8.73 11.89	21.9

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



Unit: mm

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 MSA 20 LS	30	44	72.9 88.8	12	5	32	36 50	M5×6	51.3 67.2	8	5	12	5.8	3.3	G-M6
MSA 25 S MSA 25 LS	40	48	81.6 100.6	12.5	6.5	35	35 50	M6×8	59 78	10	10	12	5.8	3.3	G-M6
MSA 30 S MSA 30 LS	45	60	97 119.2	16	8	40	40 60	M8×10	71.4 93.6	11.7	10	12	6.8	3.3	G-M6
MSA 35 S MSA 35 LS	55	70	111.2 136.6	18	9.5	50	50 72	M8×12	81 106.4	12.7	15	11.5	8.6	3.3	G-M6
MSA 45 S MSA 45 LS	70	86	137.7 169.5	20.5	10	60	60 80	M10×17	102.5 134.3	16	20	13.5	10.6	3.3	G-PT 1/8
MSA 55 S MSA 55 LS	80	100	161.5 199.5	23.5	13	75	75 95	M12×18	119.5 157.5	18	21	13.5	8.9	3.3	G-PT 1/8
MSA 65 S MSA 65 LS	90	126	199 253	31.5	15	76	70 120	M16×20	149 203	23	19	13.5	8.9	3.3	G-PT 1/8

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		M_R 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 MSA 20 LS	20	18	60	20	9.5×8.5×6	19.2 23.3	29.5 39.3	0.23 0.39	1.42 2.23	0.23 0.39	1.42 2.23	0.29 0.38	0.3 0.39	2.4
MSA 25 S MSA 25 LS	23	22	60	20	11×9×7	28.1 34.4	42.4 56.6	0.39 0.67	2.20 3.52	0.39 0.67	2.20 3.52	0.48 0.63	0.52 0.68	3.4
MSA 30 S MSA 30 LS	28	26	80	20	14×12×9	39.2 47.9	57.8 77.0	0.62 1.07	3.67 5.81	0.62 1.07	3.67 5.81	0.79 1.05	0.86 1.12	4.8
MSA 35 S MSA 35 LS	34	29	80	20	14×12×9	52.0 63.6	75.5 100.6	0.93 1.60	5.47 8.67	0.93 1.60	5.47 8.67	1.25 1.67	1.45 1.9	6.6
MSA 45 S MSA 45 LS	45	38	105	22.5	20×17×14	83.8 102.4	117.9 157.3	1.81 3.13	10.67 16.95	1.81 3.13	10.67 16.95	2.57 3.43	2.83 3.7	11.5
MSA 55 S MSA 55 LS	53	44	120	30	23×20×16	123.6 151.1	169.8 226.4	3.13 5.40	17.57 28.11	3.13 5.40	17.57 28.11	4.50 6.00	4.12 4.91	15.5
MSA 65 S MSA 65 LS	63	53	150	35	26×22×18	198.8 253.5	265.3 375.9	6.11 11.84	33.71 57.32	6.11 11.84	33.71 57.32	8.36 11.84	6.43 8.76	21.9

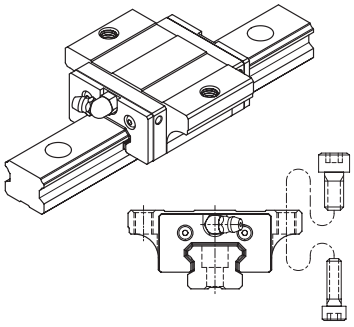
Note: The basic dynamic load rating C of ball type is based on the 50 km for nominal life.
The conversion between C for 50 km and C100 for 100 km is C=1.26 x C100.
Note*: Single: Single carriage/ Double: Two carriages in close proximity to one another.

MSB Series Compact Type Linear Rail

Carriage Types:

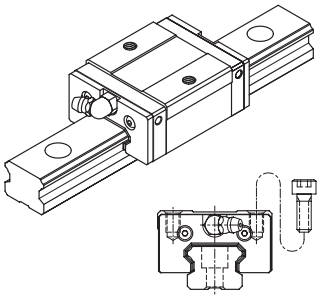
Medium Load

MSB-TE Type



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

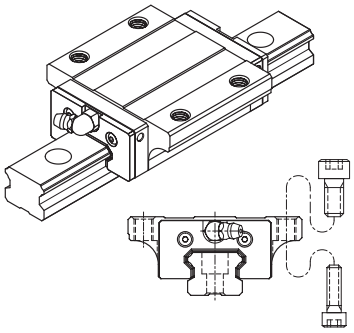
MSB-TS Type



Square type with smaller width and can be installed from top side of carriage.

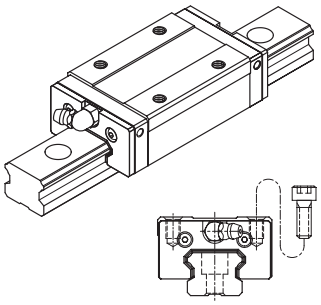
Heavy Load

MSB-E Type



All dimensions are same as MSB-TE except the length is longer, which makes it more rigid.

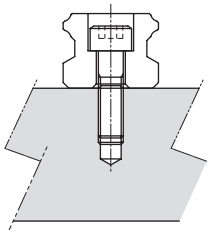
MSB-S Type



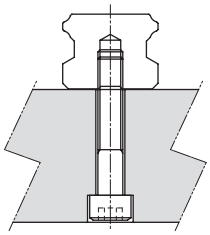
All dimensions are same as MSB-TS except the length is longer, which makes it more rigid.

MSB Linear Rail Types

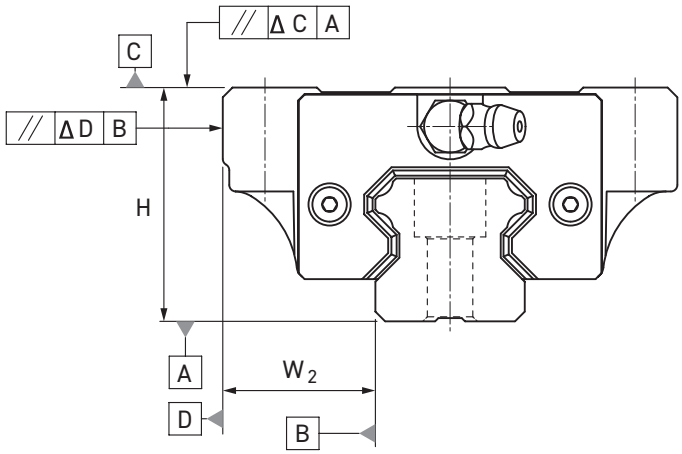
Counter Bore (R, U Type)



Tapped Hole (T Type)



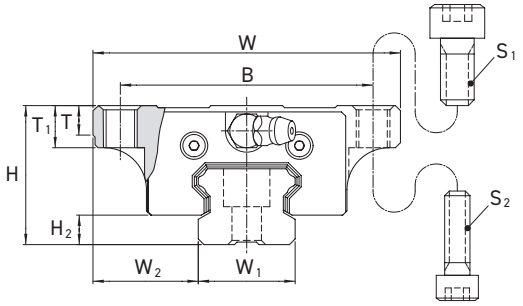
MSB Accuracy Grade

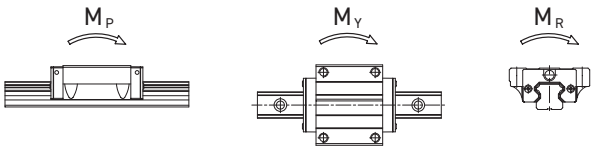


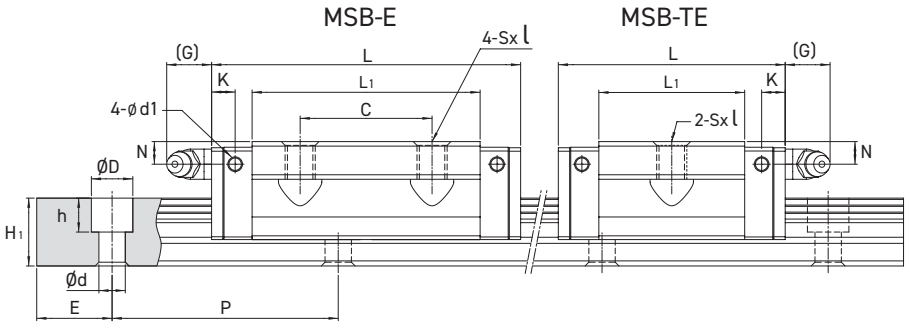
Rail Length (mm)		Running Parallelism Values (µm)				
Above	Or less (incl.)	N	H	P	SP	UP
0	315	9	6	3	2	1.5
315	400	11	8	4	2	1.5
400	500	13	9	5	2	1.5
500	630	16	11	6	2.5	1.5
630	800	18	12	7	3	2
800	1000	20	14	8	4	2
1000	1250	22	16	10	5	2.5
1250	1600	25	18	11	6	3
1600	2000	28	20	13	7	3.5
2000	2500	30	22	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 (mm)				
		Normal N	High H	Precision P	Super Precision SP	Ultra Precision UP
15 20	Tolerance for height H	±0.1	±0.03	0 -0.03	0 -0.015	0 -0.008
	Height difference ΔH	0.02	0.01	0.006	0.004	0.003
	Tolerance for distance W_2	±0.1	±0.03	0 -0.03	0 -0.015	0 -0.008
	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 -0.04	0 -0.02	0 -0.01
	Height difference ΔH	0.02	0.015	0.007	0.005	0.003
	Tolerance for distance W_2	±0.1	±0.04	0 -0.04	0 -0.02	0 -0.01
	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)				

MSB-TE/ MSB-E Carriage and Rail Dimensions







Model No.	Bolt Size	
	S_1	S_2
MSB 15	M5	M4
MSB 20	M6	M5
MSB 25	M8	M6
MSB 30	M10	M8
MSB 35	M10	M8

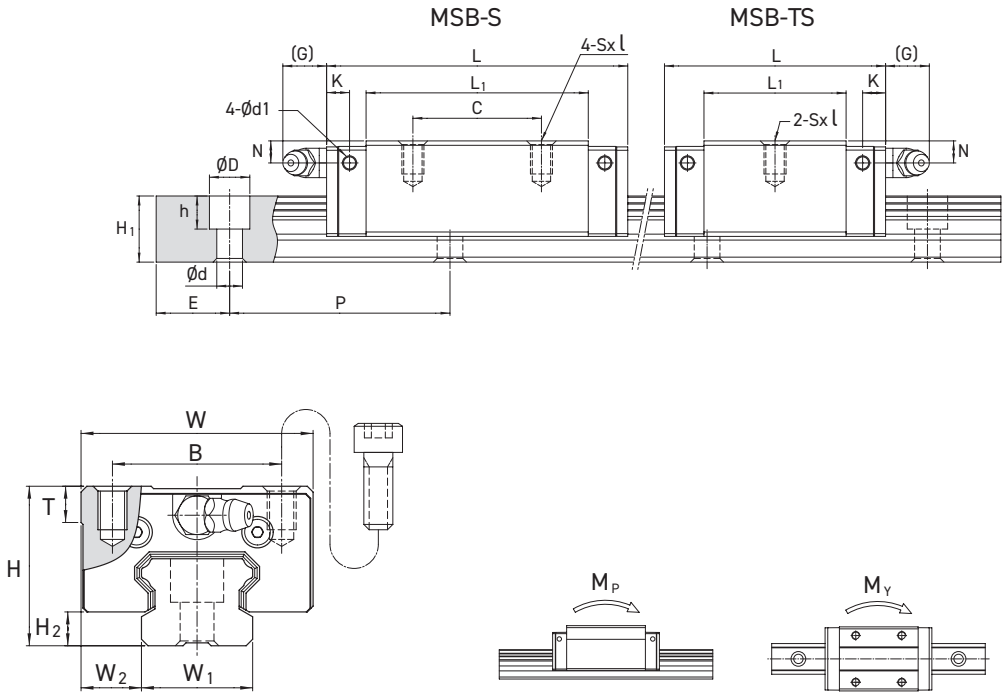
Unit: mm

Model No.	External Dimension					Carriage Dimensions										
	H	W	L	W_2	H_2	B	C	S × l	L_1	T	T1	N	G	K	d_1	Grease Nipple
MSB 15 TE MSB 15 E	24	52	40.2 57.2	18.5	4.5	41	- 26	M5×7	23.5 40.5	5	7	5.5	5.5	5.1	3.3	G-M4
MSB 20 TE MSB 20 E	28	59	48 67	19.5	6	49	- 32	M6×9	29 48	5	9	5.5	12	5.9	3.3	G-M6
MSB 25 TE MSB 25 E	33	73	60.2 82	25	7	60	- 35	M8×10	38.7 60.5	7	10	6	12	6.2	3.3	G-M6
MSB 30 TE MSB 30 E	42	90	68 96.7	31	9.5	72	- 40	M10×10	43.3 72	7	10	8	12	6.3	3.3	G-M6
MSB 35 TE MSB 35 E	48	100	77.4 111.4	33	9.5	82	- 50	M10×13	46 80	9	13	8.5	12	9.8	3.3	G-M6

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		M_R kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
MSB 15 TE MSB 15 E	15	12.5	60	20	6×4.5×3.5 (7.5×5.3×4.5)	6.7 10.0	9.6 16.9	0.04 0.10	0.26 0.61	0.04 0.10	0.26 0.61	0.07 0.13	0.12 0.21	1.2
MSB 20 TE MSB 20 E	20	15	60	20	9.5×8.5×6	9.7 13.9	14.2 23.6	0.07 0.18	0.44 0.97	0.07 0.18	0.44 0.97	0.14 0.24	0.20 0.34	2
MSB 25 TE MSB 25 E	23	18	60	20	11×9×7	15.6 22.3	22.1 36.9	0.13 0.35	0.91 1.87	0.13 0.35	0.91 1.87	0.26 0.43	0.39 0.60	3
MSB 30 TE MSB 30 E	28	23	80	20	11×9×7	23.1 32.9	31.8 53.1	0.23 0.60	1.39 3.15	0.23 0.60	1.39 3.15	0.45 0.74	0.65 1.08	4.4
MSB 35 TE MSB 35 E	34	27.5	80	20	14×12×9	35.7 52.0	44.0 75.5	0.34 0.93	2.81 5.47	0.34 0.93	2.81 5.47	0.75 1.28	0.91 1.61	6.2

Note: Rail mounting holes for M3 (6x4.5x3.5) and M4 (7.5x5.3x4.5) are available for MSB15 rail.
The codes of rail type are MSB15R for M3 mounting holes, and MSB15U for M4 mounting holes.
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.

MSB-TS/ MSB-S Carriage and Rail Dimensions



Unit: mm

Model No.	External Dimension					Carriage Dimensions									
	H	W	L	W_2	H_2	B	C	SXℓ	L_1	T	N	G	K	d_1	Grease Nipple
MSB 15 TS MSB 15 S	24	34	40.2 57.2	9.5	4.5	26	- 26	M4×6	23.5 40.5	6	5.5	5.5	5.1	3.3	G-M4
MSB 20 TS MSB 20 S	28	42	48 67	11	6	32	- 32	M5×7	29 48	6	5.5	12	5.9	3.3	G-M6
MSB 25 TS MSB 25 S	33	48	60.2 82	12.5	7	35	- 35	M6×9	38.7 60.5	8	6	12	6.2	3.3	G-M6
MSB 30 TS MSB 30 S	42	60	68 96.7	16	9.5	40	- 40	M8×12	43.3 72	8	8	12	6.3	3.3	G-M6
MSB 35 TS MSB 35 S	48	70	77.4 111.4	18	9.5	50	- 50	M8×12	46 80	12.5	8.5	11.5	9.8	3.3	G-M6

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		M_R kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
MSB 15 TS MSB 15 S	15	12.5	60	20	6×4.5×3.5 (7.5×5.3×4.5)	6.7 10.0	9.6 16.9	0.04 0.10	0.26 0.61	0.04 0.10	0.26 0.61	0.07 0.13	0.09 0.16	1.2
MSB 20 TS MSB 20 S	20	15	60	20	9.5×8.5×6	9.7 13.9	14.2 23.6	0.07 0.18	0.44 0.97	0.07 0.18	0.44 0.97	0.14 0.24	0.16 0.26	2
MSB 25 TS MSB 25 S	23	18	60	20	11×9×7	15.6 22.3	22.1 36.9	0.13 0.35	0.91 1.87	0.13 0.35	0.91 1.87	0.26 0.43	0.29 0.45	3
MSB 30 TS MSB 30 S	28	23	80	20	11×9×7	23.1 32.9	31.8 53.1	0.23 0.60	1.39 3.15	0.23 0.60	1.39 3.15	0.45 0.74	0.52 0.82	4.4
MSB 35 TS MSB 35 S	34	27.5	80	20	14×12×9	35.7 52.0	44.0 75.5	0.34 0.93	2.81 5.47	0.34 0.93	2.81 5.47	0.75 1.28	0.81 1.13	6.2

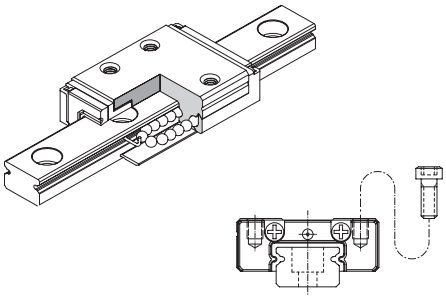
Note: Rail mounting holes for M3 (6x4.5x3.5) and M4 (7.5x5.3x4.5) are available for MSB15 rail.
The codes of rail type are MSB15R for M3 mounting holes, and MSB15U for M4 mounting holes.
Note: The basic dynamic load rating C of ball type is based on the 50 km for nominal life.
The conversion between 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.

MSC Miniature & MSD Miniature Type Linear Rail

Carriage Types:

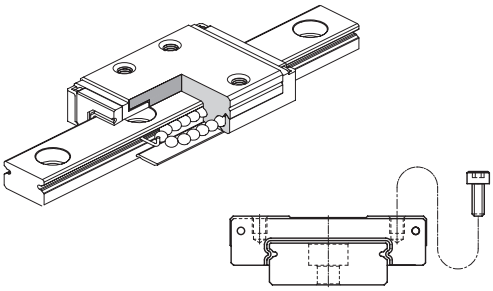
MSC-M Type

Medium Load



Standard length miniature carriage with four fixing holes from above.

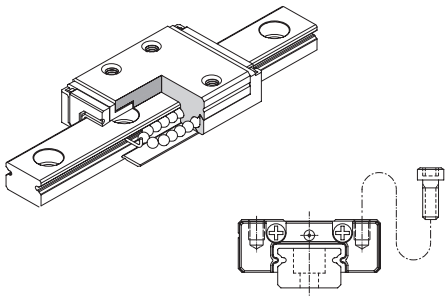
MSD-M Type



Standard length wide miniature carriage with four fixing from above.

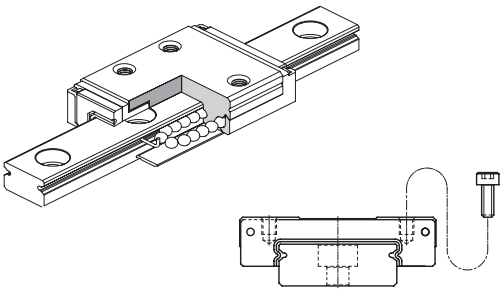
MSC-LM Type

Heavy Load



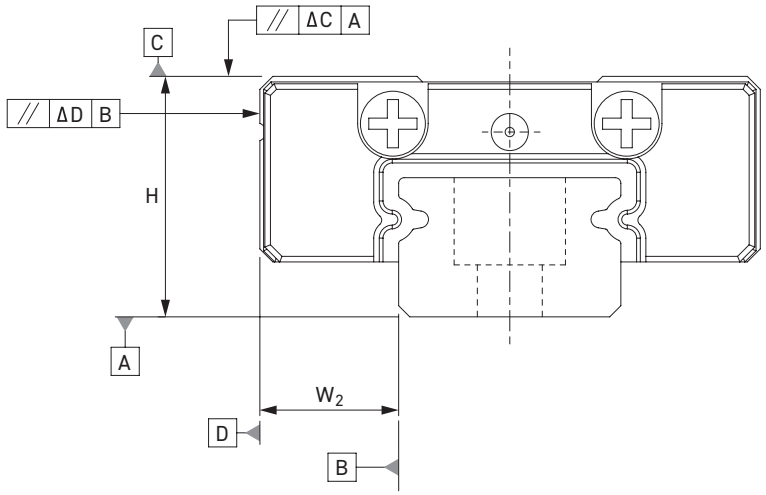
Long length miniature carriage with increased load capacity with fixing from above.

MSD-LM Type



Long length wide miniature carriage with increased load capacity with fixing from above.

MSC/MSD Accuracy Grade

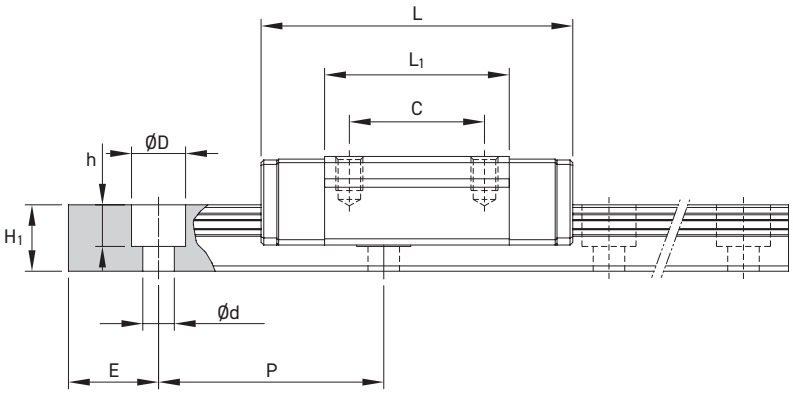


Rail Length (mm)		Running Parallelism Values (μm)		
Above	Or less (incl.)	N	H	P
-	40	8	4	1
40	70	10	4	1
70	100	11	4	2
100	130	12	5	2
130	160	13	6	2
160	190	14	7	2
190	220	15	7	3
220	250	16	8	3
250	280	17	8	3
280	310	17	9	3
310	340	18	9	3
340	370	18	10	3
370	400	19	10	3
400	430	20	11	4
430	460	20	12	4
460	490	21	12	4
490	520	21	12	4
520	550	22	12	4
550	580	22	13	4
580	610	22	13	4
610	640	22	13	4
640	670	23	13	4
670	700	23	13	5
700	730	23	14	5
730	760	23	14	5
760	790	23	14	5

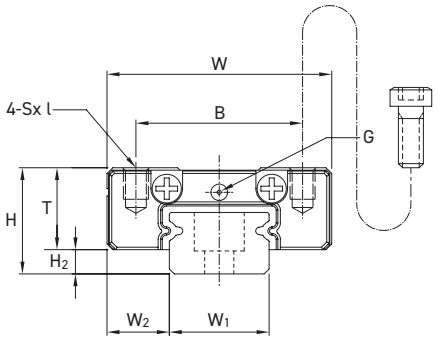
Rail Length (mm)		Running Parallelism Values (μm)		
Above	Or less (incl.)	N	H	P
790	820	23	14	5
820	850	24	14	5
850	880	24	15	5
880	910	24	15	5
910	940	24	15	5
940	970	24	15	5
1000	1030	25	16	5
1030	1060	25	16	6
1060	1090	25	16	6
1090	1120	25	16	6
1120	1150	25	16	6
1150	1180	26	17	6
1180	1210	26	17	6
1210	1240	26	17	6
1240	1270	26	17	6
1270	1300	26	17	6
1300	1330	26	17	6
1330	1360	27	18	6
1360	1390	27	18	6
1390	1420	27	18	6
1420	1450	27	18	7
1450	1480	27	18	7
1480	1510	27	18	7
1510	1540	28	19	7
1540	1570	28	19	7
1570	1800	28	19	7

Model No.	Item	Running Parallelism Values (mm)		
		Normal N	High H	Precision P
15 20	Tolerance for height H	±0.04	±0.02	±0.01
	Height difference ΔH	0.03	0.015	0.007
	Tolerance for distance W_2	±0.04	±0.025	±0.015
	Difference in distance W_2(ΔW_2)	0.03	0.02	0.01
	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)		

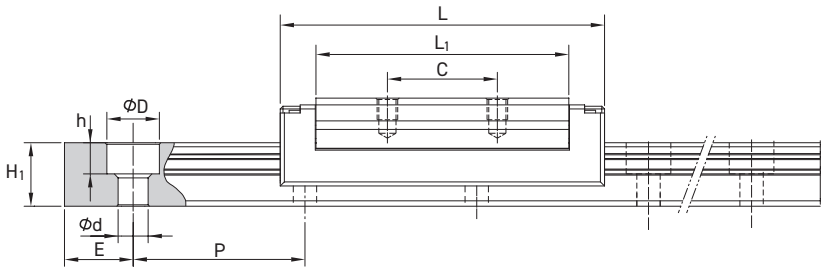
MSC-LM/ MSC-M Carriage and Rail Dimensions



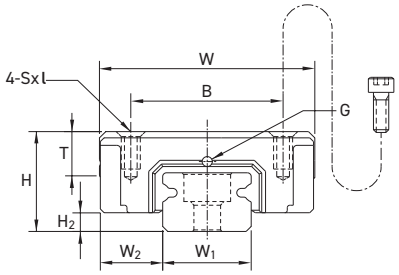
MSC7, MSC9



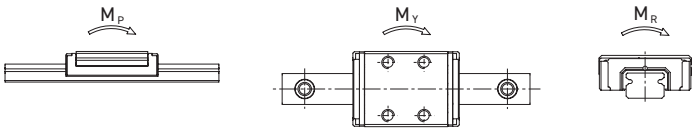
MSC7, MSC9



MSC12, MSC15



MSC12, MSC15



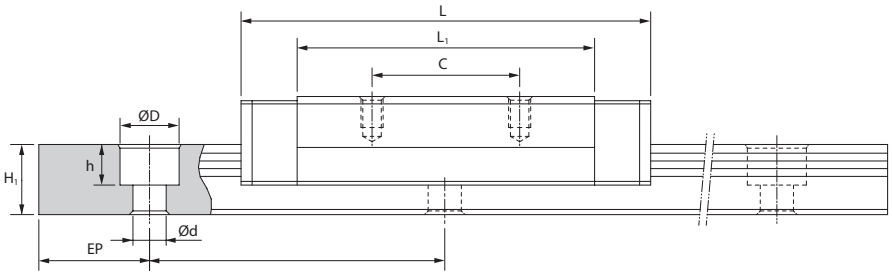
Unit: mm

Model No.	External Dimension					Carriage Dimensions					
	H	W	L	W_2	H_2	B	C	S × l	L_1	T	G
MSC 7 M MSC 7 LM	8	17	23.6 33.0	5	1.5	12	8 13	M2×2.5	13.5 22.9	6.5	Ø0.8
MSC 9 M MSC 9 LM	10	20	31.1 41.3	5.5	2.2	15	10 16	M3×3	19.9 30.1	7.8	Ø1
MSC 12 M MSC 12 LM	13	27	34.6 47.6	7.5	3	20	15 20	M3×3.6	27.9 40.9	6	Ø1.5
MSC 15 M MSC 15 LM	16	32	43.5 60.5	8.5	4	25	20 25	M3×4.2	36 53.1	7	G-M3

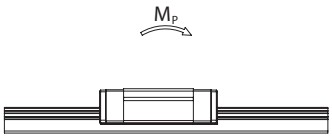
Model No.	Rail Dimension						Basic Load Rating		Static Moment Rating					Weight	
	W_1		H_1	P	E std.	D x h x d	Dynamic C kN	Static C_0 kN	Mp N-m		My N-m		M_R N-m	Carriage g	Rail kg/m
									Single*	Double*	Single*	Double*			
MSC 7 M MSC 7 LM	7	0 -0.05	4.7	15	5	4.2×2.3×2.4	0.94 1.36	1.28 2.24	2.6 7.4	15.33 37.92	2.6 7.4	15.33 37.92	4.7 8.3	7 13	0.22
MSC 9 M MSC 9 LM	9	0 -0.05	5.5	20	7.5	6×3.3×3.5	1.71 2.52	2.24 3.92	6.1 17.4	33.46 84.63	6.1 17.4	33.46 84.63	10.8 18.8	15 24	0.33
MSC 12 M MSC 12 LM	12	0 -0.05	7.5	25	10	6×4.5×3.5	2.62 3.77	3.52 5.72	11.4 28.3	63.96 141.52	11.4 28.3	63.96 141.52	22.2 36.0	40 60	0.63
MSC 15 M MSC 15 LM	15	0 -0.05	9.5	40	15	6×4.5×3.5	4.52 6.47	5.70 9.26	24.7 61.0	132.17 295.87	24.7 61.0	132.17 295.87	44.4 72.2	71 100	1.02

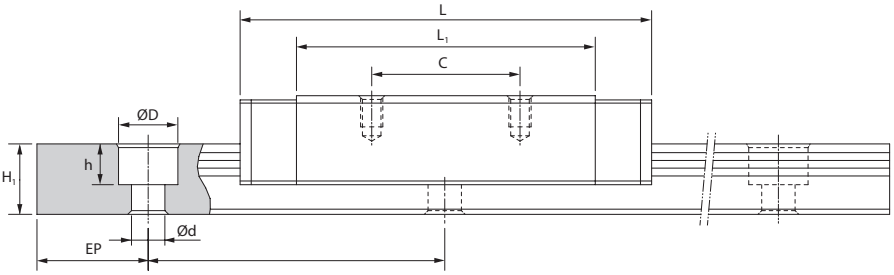
Note: The basic dynamic load rating C of ball type is based on the 50 km for nominal life.
The conversion between C for 50 km and C100 for 100 km is C=1.26 x C100.
Note*: Single: Single carriage/ Double: Two carriages in close proximity to one another.

MSD-LM/ MSD-M Carriage and Rail Dimensions

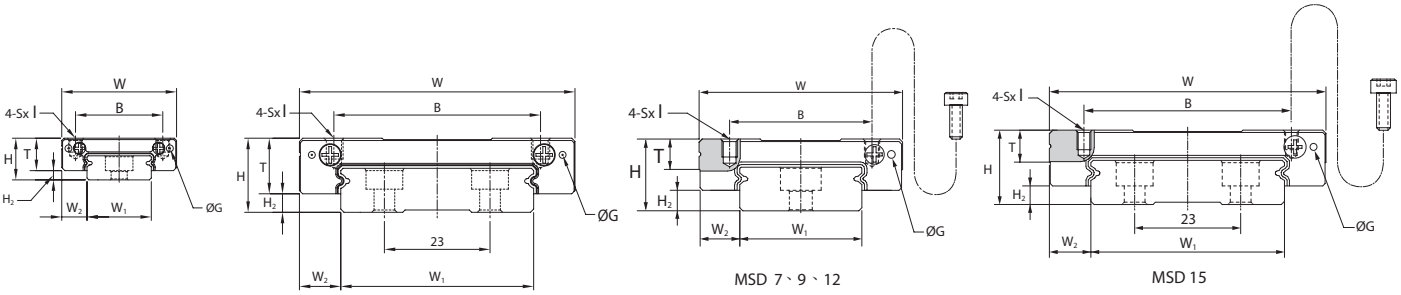


MSD7,MSD9, MSD12LM, MSD15L M





MSD12M, MSD15M



MSD12M, MSD15M

MSD 7、9、12

MSD 15

MSD7,MSD9, MSD12LM, MSD15L M

Unit: mm

Model No.	External Dimension					Carriage Dimensions					
	H	W	L	W_2	H_2	B	C	S × l	L_1	T	G
MSD 7 M MSD 7 LM	9	25	30.8 40.5	5.5	2	19	10 19	M3×3	20.6 30.3	3.9	Ø1.5
MSD 9 M MSD 9 LM	12	30	38.7 50.7	6	3.7	21 23	12 24	M3×3	27.1 39.1	5	Ø1.5
MSD 12 M MSD 12 LM	14	40	44.5 60	8	4	28	15 28	M3×4	31.0 46.5	10 6	Ø1.5
MSD 15 M MSD 15 LM	16	60	55.5 74.5	9	4	45	20 35	M4×4.5	40.3 59.3	12 7	Ø1.5

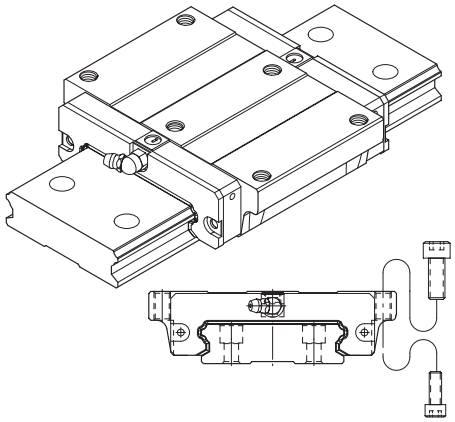
Model No.	Rail Dimension						Basic Load Rating		Static Moment Rating					Weight	
	W_1		H_1	P	E std.	D x h x d	Dynamic C kN	Static C_0 kN	Mp N-m		My N-m		M_R N-m	Carriage g	Rail kg/m
									Single*	Double*	Single*	Double*			
MSD 7 M MSD 7 LM	14	0 -0.05	5.2	30	10	6×3.2×3.5	1.51 2.04	2.46 3.79	6.6 17.5	39.0 84.0	6.6 17.5	39.0 84.0	17.7 27.3	23 31	0.55
MSD 9 M MSD 9 LM	18	0 -0.05	7	30	10	6×4.5×3.5	2.79 3.64	4.37 6.39	15.6 33.8	90.3 175.2	15.6 33.8	90.3 175.2	40.7 59.5	41 57	0.96
MSD 12 M MSD 12 LM	24	0 -0.05	8.5	40	15	8×4.5×4.5	4.05 5.28	6.20 9.06	26.3 57.0	151.5 294.4	26.3 57.0	151.5 294.4	76.3 116.6	70 101	1.55
MSD 15 M MSD 15 LM	42	0 -0.05	9.5	40	15	8×4.5×4.5	7.08 9.40	10.18 15.26	62.5 135.2	301.4 616.1	62.5 135.2	301.4 616.1	216.9 325.3	130 150	2.99

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.

MSG Wide Type Linear Rail

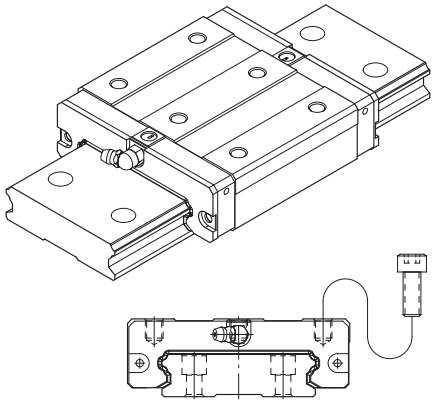
Carriage Types:

MSG-E Type



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

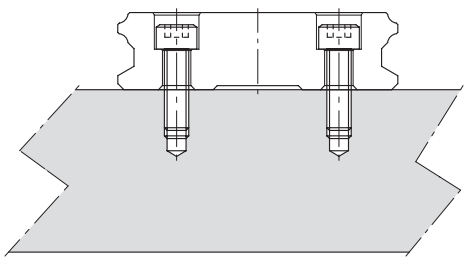
MSG-S Type



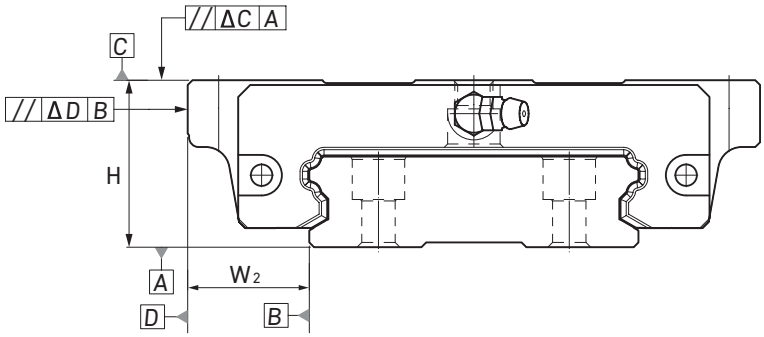
Square type with smaller width and can be installed from top side of carriage.

MSG Linear Rail Types

Counter Bore (R Type)



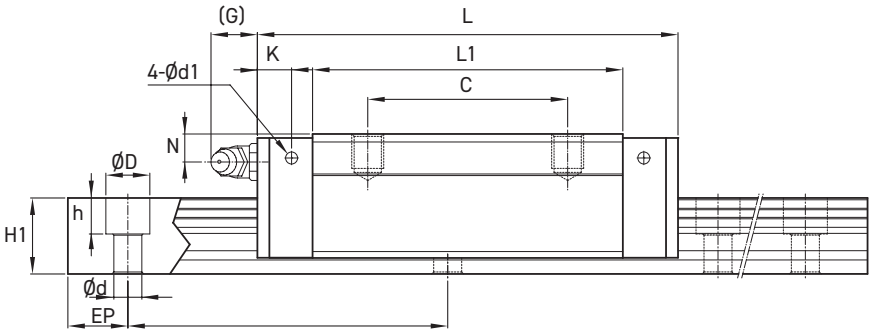
MSG Accuracy Grade

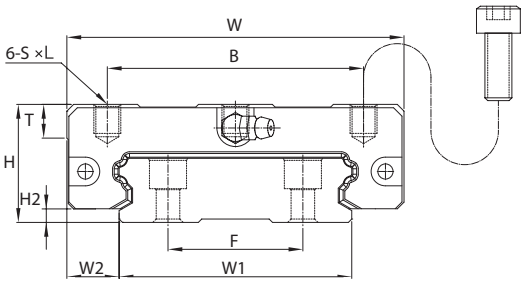


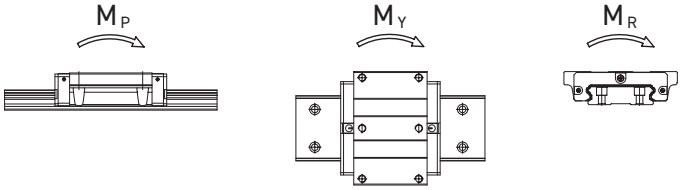
Rail Length (mm)		Running Parallelism Values (µm)				
Above	Or less (incl.)	N	H	P	SP	UP
0	315	9	6	3	2	1.5
315	400	11	8	4	2	1.5
400	500	13	9	5	2	1.5
500	630	16	11	6	2.5	1.5
630	800	18	12	7	3	2
800	1000	20	14	8	4	2
1000	1250	22	16	10	5	2.5
1250	1600	25	18	11	6	3
1600	2000	28	20	13	7	3.5
2000	2500	30	22	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 (mm)				
		Normal N	High H	Precision P	Super Precision SP	Ultra Precision UP
17 21	Tolerance for height H	±0.1	±0.03	0 -0.03	0 -0.015	0 -0.008
	Height difference ΔH	0.02	0.01	0.006	0.004	0.003
	Tolerance for distance W_2	±0.1	±0.03	0 -0.03	0 -0.015	0 -0.008
	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)				
27 35	Tolerance for height H	±0.1	±0.04	0 -0.04	0 -0.02	0 -0.01
	Height difference ΔH	0.02	0.015	0.007	0.005	0.003
	Tolerance for distance W_2	±0.1	±0.04	0 -0.04	0 -0.02	0 -0.01
	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)				

MSG-S Carriage and Rail Dimensions







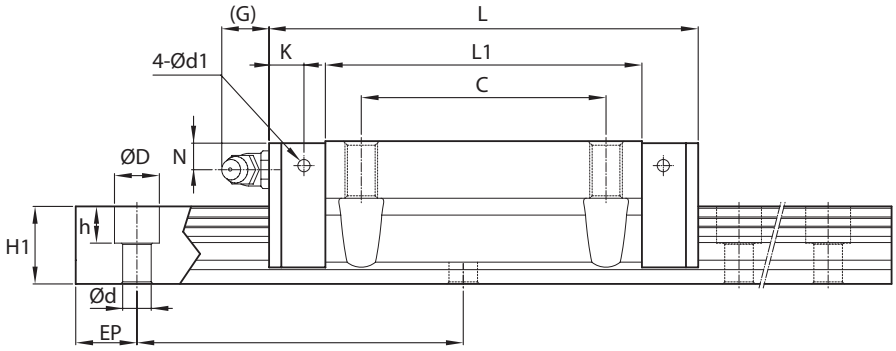
Unit: mm

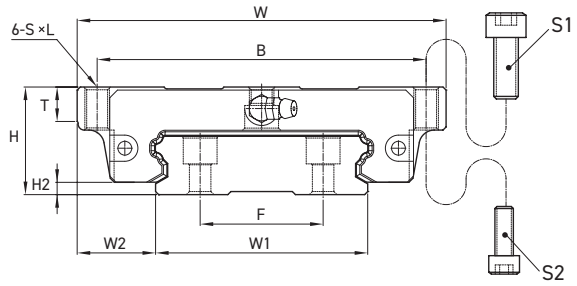
Model No.	External Dimension					Carriage Dimensions										
	H	W	L	W_2	H_2	B	C	F	S × l	L_1	T	N	G	K	d_1	Grease Nipple
MSG17 S	17	50	50.2	8.5	2.5	29	15	18	M4x4	33.6	6	4.15	4	3.3	2.4	G-M3
MSG21 S	21	54	59	8.5	3	31	19	22	M5×6	40	8	5	12	5.5	2.5	G-M6
MSG27 S	27	62	72.2	10	3	46	32	24	M6x6	51.8	10	6	12	6.2	3.3	G-M6
MSG35 S	35	100	105.2	15.5	4	76	50	40	M8×8	77.6	10	7	12	8.55	3.3	G-M6

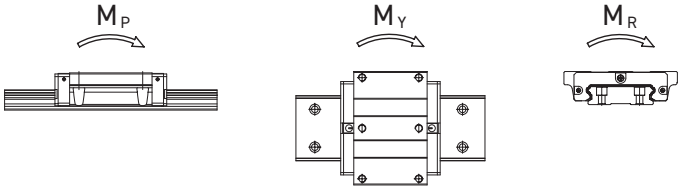
Model No.	Rail Dimension					Basic Load Rating		Rail					Weight	
	W_1	H_1	P	E std.	D x h x d	Dynamic C kN	Static C_0 kN	Mp kN-m		My kN-m		M_R kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
MSG17 S	33	9	40	15	7.5×5.3×4.5	4.8	8.6	0.05	0.24	0.05	0.24	0.14	0.12	2.02
MSG21 S	37	11	50	15	7.5×5.3×4.5	7	12.1	0.08	0.46	0.08	0.46	0.22	0.25	2.86
MSG27 S	42	15	60	20	7.5×5.3×4.5	12.4	20.2	0.15	0.87	0.15	0.87	0.42	0.31	4.49
MSG35 S	69	19	80	20	11×9×7	30.7	48.6	0.65	3.6	0.65	3.6	1.67	0.99	9.4

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.

MSG-E Carriage and Rail Dimensions







Model No.	Bolt Size	
	S_1	S_2
MSG 21	M5	M4
MSG 27	M6	M5
MSG 35	M8	M6

Unit: mm

Model No.	External Dimension					Carriage Dimensions										
	H	W	L	W_2	H_2	B	C	F	S × l	L_1	T	N	G	K	d1	Grease Nipple
MSG17 E	17	60	50.2	13.5	2.5	53	26	18	M4x6	33.6	4.7	4.15	4	3.3	2.4	G-M3
MSG21 E	21	68	59	15.5	3	60	29	22	M5x8	40	6	5	12	5.5	2.5	G-M6
MSG27 E	27	80	72.2	19	3	70	40	24	M6x10	51.8	8	6	12	6.2	3.3	G-M6
MSG35 E	35	120	105.2	25.5	4	107	60	40	M8x14	77.6	11.42	7	12	8.55	3.3	G-M6

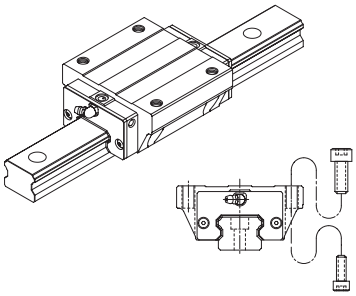
Model No.	Rail Dimension					Basic Load Rating		Rail					Weight	
	W_1	H_1	P	E std.	D x h x d	Dynamic C kN	Static C_0 kN	Mp kN-m		My kN-m		M_R kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
MSG17 E	33	9	40	15	7.5×5.3×4.5	4.8	8.6	0.05	0.24	0.05	0.24	0.14	0.14	2.02
MSG21 E	37	11	50	15	7.5×5.3×4.5	7	12.1	0.08	0.46	0.08	0.46	0.22	0.25	2.86
MSG27 E	42	15	60	20	7.5×5.3×4.5	12.4	20.2	0.15	0.87	0.15	0.87	0.42	0.31	4.49
MSG35 E	69	19	80	20	11×9×7	30.7	48.6	0.65	3.6	0.65	3.6	1.67	0.99	9.4

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.

SME Series Ballchain Type Linear Rail

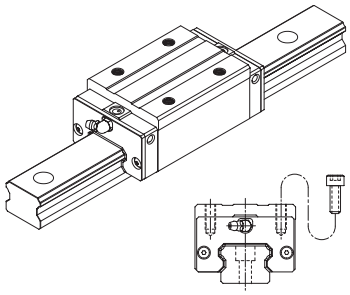
Carriage Types:

SME-EA Type



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

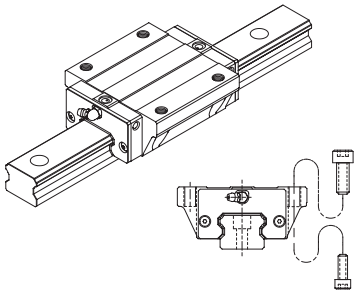
SME-SA Type



Square type with smaller width and can be installed from top side of carriage.

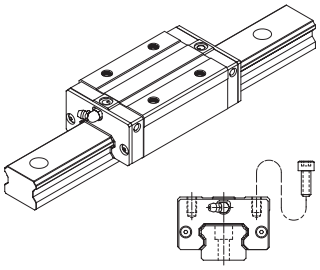
Heavy Load

SME-EB Type



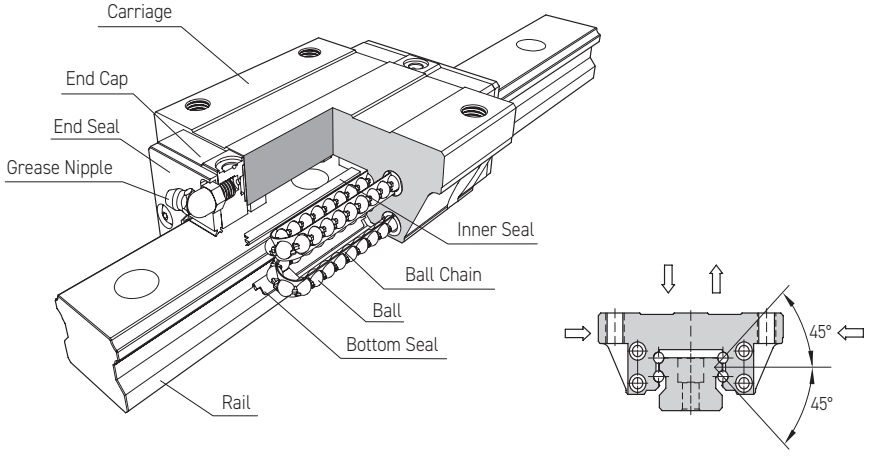
All dimensions are the same as SME-EA except the mounting hole dimensions of the carriage are different and the height is lower. This does not change the basic loading ratings.

SME-SB / SME-SV Type

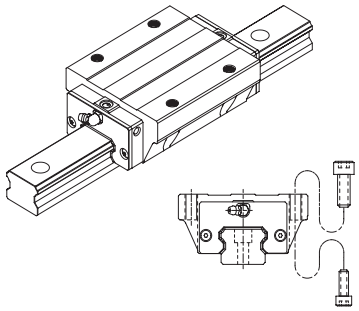


All dimensions are the same as SME-SA except the mounting hole dimensions of the carriage are different and the height is lower. This does not change the basic loading ratings.

SME Carriage Construction:

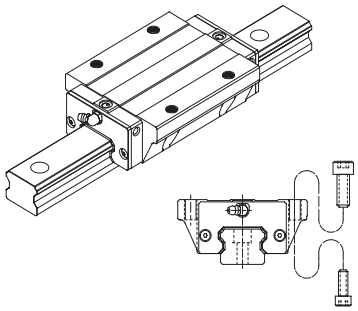


SME-LEA Type



All dimensions are the same as SME-EA except the length is longer, which makes it more rigid.

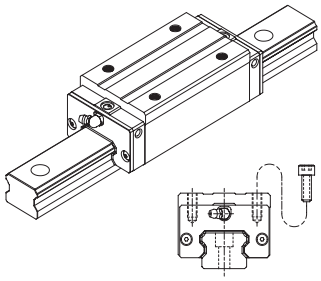
SME-LEB Type



All dimensions are the same as SME-EB except the length is longer, which makes it more rigid.

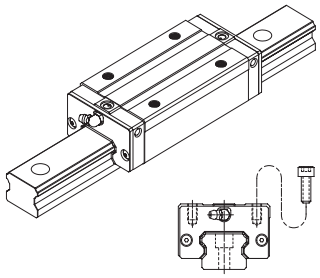
Ultra Heavy Load

SME-LSA Type



All dimensions are the same as SME-SA except the length is longer, which makes it more rigid.

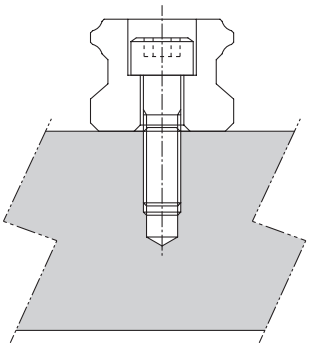
SME-LSB / SME-LSV Type



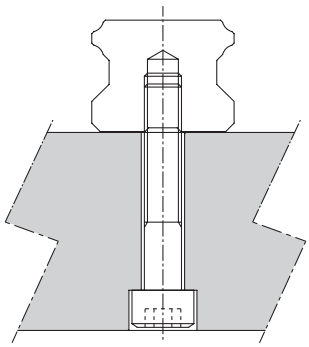
All dimensions are the same as SME-SB and the SME-SV except the length is longer, which makes it more rigid.

SME Linear Rail Types

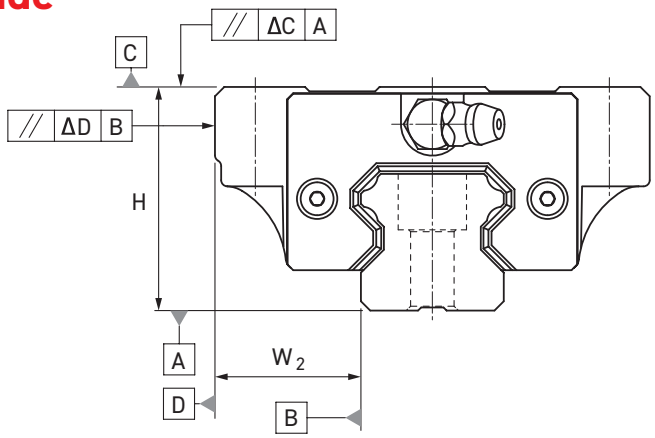
Counter Bore (R Type)



Tapped Hole (T Type)



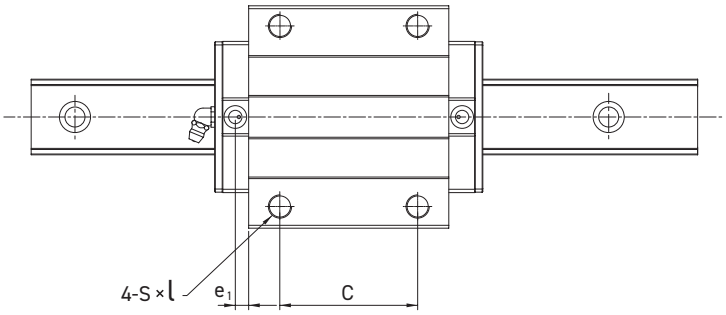
SME Accuracy Grade

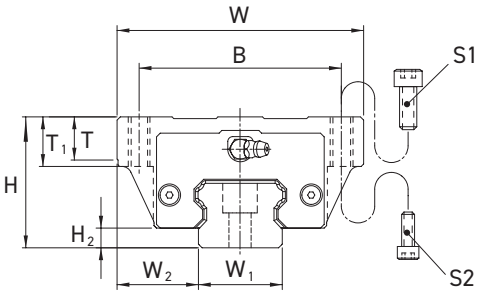


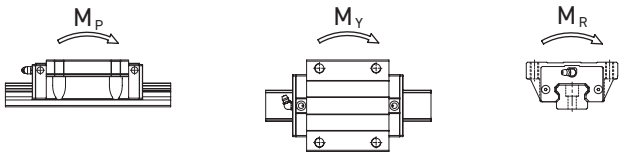
Rail Length (mm)		Running Parallelism Values (μm)				
Above	Or less (incl.)	N	H	P	SP	UP
0	315	9	6	3	2	1.5
315	400	11	8	4	2	1.5
400	500	13	9	5	2	1.5
500	630	16	11	6	2.5	1.5
630	800	18	12	7	3	2
800	1000	20	14	8	4	2
1000	1250	22	16	10	5	2.5
1250	1600	25	18	11	6	3
1600	2000	28	20	13	7	3.5
2000	2500	30	22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

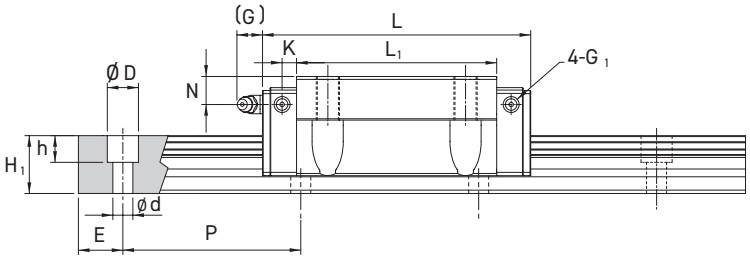
Model No.	Item	Running Parallelism Values (mm)				
		Normal N	High H	Precision P	Super Precision SP	Ultra Precision UP
15 20	Tolerance for height H	±0.1	±0.03	0 -0.03	0 -0.015	0 -0.008
	Height difference ΔH	0.02	0.01	0.006	0.004	0.003
	Tolerance for distance W_2	±0.1	±0.03	0 -0.03	0 -0.015	0 -0.008
	Difference in distance $W_2(\Delta W_2)$	0.02	0.01	0.006	0.004	0.003
	Running parallelism of surface C with surface A	ΔC (see the Table to the Left)				
	Running parallelism of surface D with surface B	ΔD (see the Table to the Left)				
24 30 35	Tolerance for height H	±0.1	±0.04	0 -0.04	0 -0.02	0 -0.01
	Height difference ΔH	0.02	0.015	0.007	0.005	0.003
	Tolerance for distance W_2	±0.1	±0.04	0 -0.04	0 -0.02	0 -0.01
	Difference in distance $W_2(\Delta W_2)$	0.03	0.015	0.007	0.005	0.003
	Running parallelism of surface C with surface A	ΔC (see the Table to the Left)				
	Running parallelism of surface D with surface B	ΔD (see the Table to the Left)				
45	Tolerance for height H	±0.1	±0.04	0 -0.04	0 -0.02	0 -0.01
	Height difference ΔH	0.02	0.015	0.007	0.005	0.003
	Tolerance for distance W_2	±0.1	±0.04	0 -0.04	0 -0.02	0 -0.01
	Difference in distance $W_2(\Delta W_2)$	0.03	0.015	0.007	0.005	0.003
	Running parallelism of surface C with surface A	ΔC (see the Table to the Left)				
	Running parallelism of surface D with surface B	ΔD (see the Table to the Left)				

SME-EA/SME-LEA Carriage and Rail Dimensions









Model No.	Bolt Size	
	S_1	S_2
SME 15	M5	M4
SME 20	M6	M5
SME 25	M8	M6
SME 30	M10	M8
SME 35	M10	M8
SME 45	M12	M10

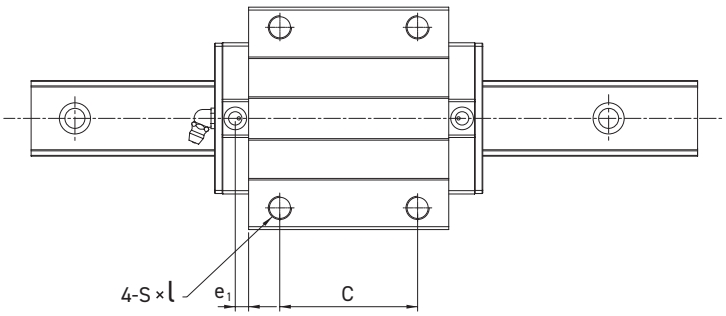
Unit: mm

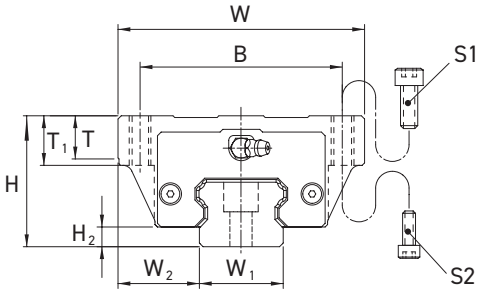
Model No.	External Dimension					Carriage Dimensions											
	H	W	L	W_2	H_2	B	C	S × l	L_1	T	T_1	N	G	K	e_1	G_1	Grease Nipple
SME 15 EA SME 15 LEA	24	47	64.4 79.4	16	3.5	38	30	M5×8	48 63	5.5	8	5	5.5	2.7	-	M4	G-M4
SME 20 EA SME 20 LEA	30	63	78.5 97.5	21.5	4.7	53	40	M6×10	58.3 77.3	7	10	8	12	3.7	-	M4	G-M6
SME 25 EA SME 25 LEA	36	70	92 109	23.5	5.8	57	45	M8×13	71 88	7	13	10	12	4	-	M4	G-M6
SME 30 EA SME 30 LEA	42	90	107.6 132.6	31	7.5	72	52	M10×15	80 105	12	15	8	12	6.5	5.4	M6	G-M6
SME 35 EA SME 35 LEA	48	100	120.6 150.6	33	8	82	62	M10×15	90 120	12	15	8	12	6.5	6	M6	G-M6
SME 45 EA SME 45 LEA	60	120	140 174.5	37.5	10	100	80	M12×18	106 140.5	12	18	10	13.5	8.5	6.1	M6	G-PT 1/8

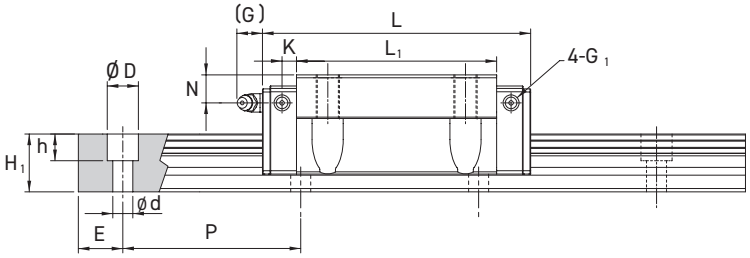
Model No.	Rail Dimension					Basic Load Rating		Rail					Weight	
	W_1	H_1	P	E std.	D x h x d	Dynamic C kN	Static C_0 kN	Mp kN-m		My kN-m		M_R kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
SME 15 EA SME 15 LEA	15	13	60	20	7.5×5.8×4.5	12.5 15.4	20.2 27.5	0.14 0.25	0.69 1.15	0.14 0.25	0.69 1.15	0.16 0.21	0.22 0.29	1.4
SME 20 EA SME 20 LEA	20	15.5	60	20	9.5×8.5×6	20.4 25.3	32.1 43.6	0.27 0.49	1.34 2.24	0.27 0.49	1.34 2.24	0.33 0.44	0.42 0.62	2.3
SME 25 EA SME 25 LEA	23	18	60	20	11×9×7	28.3 33.0	44.3 56.1	0.45 0.71	2.14 3.20	0.45 0.71	2.14 3.20	0.52 0.66	0.67 0.89	3.2
SME 30 EA SME 30 LEA	28	23	80	20	14×12×9	39.4 47.0	59.5 76.5	0.68 1.11	3.37 5.32	0.68 1.11	3.37 5.32	0.83 1.07	1.18 1.54	4.5
SME 35 EA SME 35 LEA	34	26	80	20	14×12×9	54.7 67.6	81.0 109.9	1.07 1.92	5.25 8.75	1.07 1.92	5.25 8.75	1.41 1.91	1.74 2.28	6.2
SME 45 EA SME 45 LEA	45	32	105	22.5	20×17×14	72.7 90.0	105.8 143.6	1.61 2.88	7.82 13.08	1.61 2.88	7.82 13.08	2.41 3.27	3.22 4.21	10.5

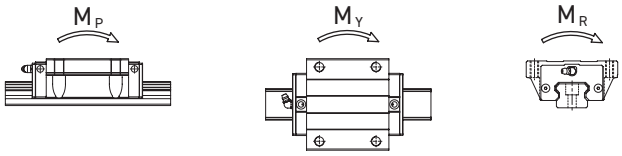
Note: The basic dynamic load rating C of ball type is based on the 50 km for nominal life.
The conversion between C for 50 km and C100 for 100 km is C=1.26 x C100.
Note*: Single: Single carriage/ Double: Two carriages in close proximity to one another.

SME-EB/SME-LEB Carriage and Rail Dimensions









Model No.	Bolt Size	
	S_1	S_2
SME 15	M5	M4
SME 20	M6	M5
SME 25	M8	M6

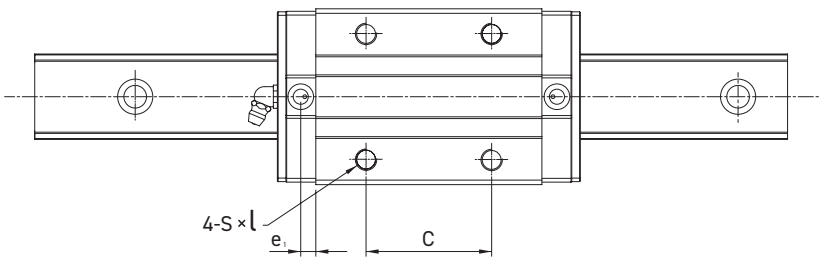
Unit: mm

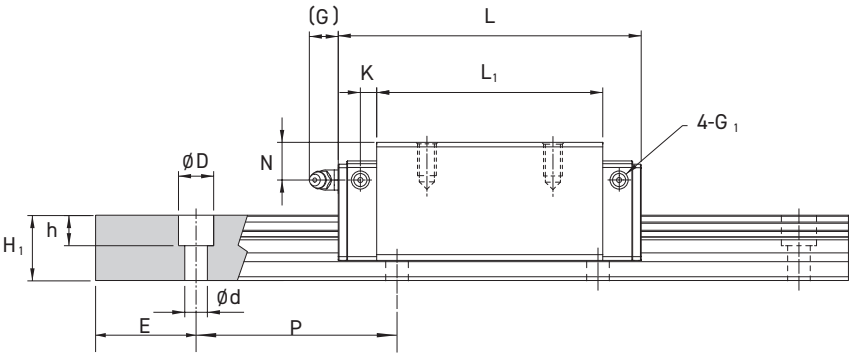
Model No.	External Dimension					Carriage Dimensions											
	H	W	L	W_2	H_2	B	C	S × l	L_1	T	T_1	N	G	K	e_1	G_1	Grease Nipple
SME 15 EB SME 15 LEB	24	52	64.4 79.4	18.5	3.5	41	26 36	M5×8	48 63	5.5	8	5	5.5	2.7	-	M4	G-M4
SME 20 EB SME 20 LEB	28	59	78.5 97.5	19.5	4.7	49	32 45	M6×8	58.3 77.3	7.0	8	6.0	12	3.7	-	M4	G-M6
SME 25 EB SME 25 LEB	33	73	92 109	25	5.8	60	35 50	M8×10	71 88	7.0	10	7.0	12	4	-	M4	G-M6
SME 30 EA SME 30 LEA	42	90	107.6 132.6	31	7.5	72	52	M10×15	80 105	12	15	8	12	6.5	5.4	M6	G-M6
SME 35 EA SME 35 LEA	48	100	120.6 150.6	33	8	82	62	M10×15	90 120	12	15	8	12	6.5	6	M6	G-M6
SME 45 EA SME 45 LEA	60	120	140 174.5	37.5	10	100	80	M12×18	106 140.5	12	18	10	13.5	8.5	6.1	M6	G-PT 1/8

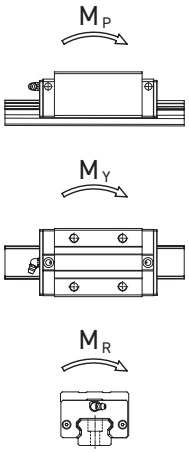
Model No.	Rail Dimension					Basic Load Rating		Rail					Weight	
	W_1	H_1	P	E std.	D x h x d	Dynamic C kN	Static C_0 kN	Mp kN-m		My kN-m		M_R kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
SME 15 EB SME 15 LEB	15	13	60	20	7.5×5.8×4.5	12.5 15.4	20.2 27.5	0.14 0.25	0.69 1.15	0.14 0.25	0.69 1.15	0.16 0.21	0.21 0.27	1.4
SME 20 EB SME 20 LEB	20	15.5	60	20	9.5×8.5×6	20.4 25.3	32.1 43.6	0.27 0.49	1.34 2.24	0.27 0.49	1.34 2.24	0.33 0.44	0.39 0.55	2.3
SME 25 EB SME 25 LEB	23	18	60	20	11×9×7	28.3 33.0	44.3 56.1	0.45 0.71	2.14 3.20	0.45 0.71	2.14 3.20	0.52 0.66	0.42 0.65	3.2
SME 30 EA SME 30 LEA	28	23	80	20	14×12×9	39.4 47.0	59.5 76.5	0.68 1.11	3.37 5.32	0.68 1.11	3.37 5.32	0.83 1.07	1.18 1.54	4.5
SME 35 EA SME 35 LEA	34	26	80	20	14×12×9	54.7 67.6	81.0 109.9	1.07 1.92	5.25 8.75	1.07 1.92	5.25 8.75	1.41 1.91	1.74 2.28	6.2
SME 45 EA SME 45 LEA	45	32	105	22.5	20×17×14	72.7 90.0	105.8 143.6	1.61 2.88	7.82 13.08	1.61 2.88	7.82 13.08	2.41 3.27	3.22 4.21	10.5

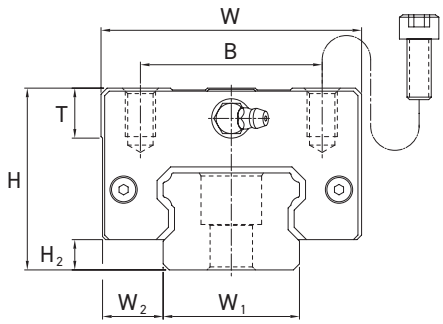
Note: The basic dynamic load rating C of ball type is based on the 50 km for nominal life.
The conversion between C for 50 km and C100 for 100 km is C=1.26 x C100.
Note*: Single: Single carriage/ Double: Two carriages in close proximity to one another.

SME-SA/SME-LSA Carriage and Rail Dimensions









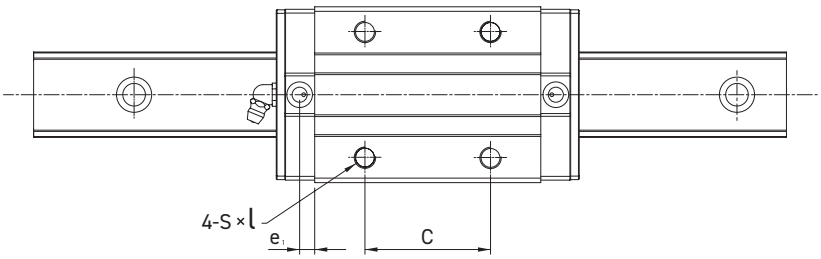
Unit: mm

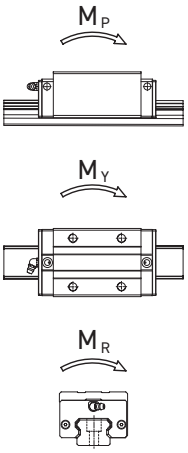
Model No.	External Dimension					Carriage Dimensions										
	H	W	L	W_2	H_2	B	C	S × l	L_1	T	N	G	K	e_1	G_1	Grease Nipple
SME 15 SA SME 15 LSA	28	34	64.4 79.4	9.5	3.5	26	26	M4×7.5	48 63	6	9	5.5	2.7	-	M4	G-M4
SME 20 SA SME 20 LSA	30	44	78.5 97.5	12	4.7	32	36 50	M5×7	58.3 77.3	6	8	12	3.7	-	M4	G-M6
SME 25 SA SME 25 LSA	40	48	92 109	12.5	5.8	35	35 50	M6×12	71 88	8	14	12	4	-	M4	G-M6
SME 30 SA SME 30 LSA	45	60	107.6 132.6	16	7.5	40	40 60	M8×12	80 105	8	11	12	6.5	5.4	M6	G-M6
SME 35 SA SME 35 LSA	55	70	120.6 150.6	18	8	50	50 72	M8×14	90 120	11	15	12	6.5	6	M6	G-M6
SME 45 SA SME 45 LSA	70	86	140 174.5	20.5	10	60	60 80	M10×20	106 140.5	16	20	13.5	8.5	6.1	M6	G-PT 1/8

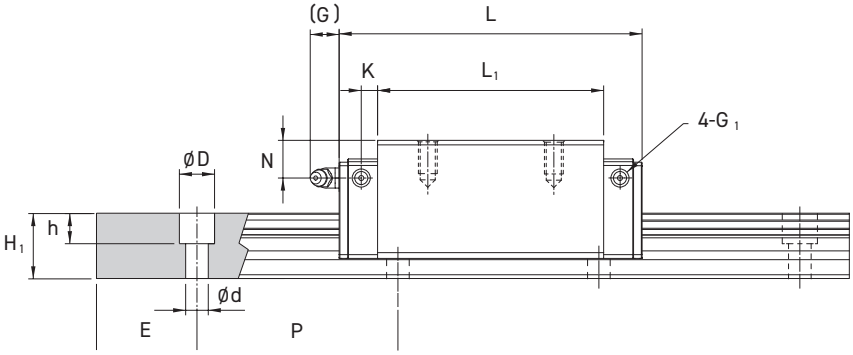
Model No.	Rail Dimension					Basic Load Rating		Rail					Weight	
	W_1	H_1	P	E std.	D x h x d	Dynamic C kN	Static C_0 kN	Mp kN-m		My kN-m		MR kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
SME 15 SA SME 15 LSA	15	13	60	20	7.5×5.8×4.5	12.5 15.4	20.2 27.5	0.14 0.25	0.69 1.15	0.14 0.25	0.69 1.15	0.16 0.21	0.22 0.25	1.4
SME 20 SA SME 20 LSA	20	15.5	60	20	9.5×8.5×6	20.4 25.3	32.1 43.6	0.27 0.49	1.34 2.24	0.27 0.49	1.34 2.24	0.33 0.44	0.30 0.39	2.3
SME 25 SA SME 25 LSA	23	18	60	20	11×9×7	28.3 33.0	44.3 56.1	0.45 0.71	2.14 3.20	0.45 0.71	2.14 3.20	0.52 0.66	0.56 0.73	3.2
SME 30 SA SME 30 LSA	28	23	80	20	14×12×9	39.4 47.0	59.5 76.5	0.68 1.11	3.37 5.32	0.68 1.11	3.37 5.32	0.83 1.07	0.93 1.21	4.5
SME 35 SA SME 35 LSA	34	26	80	20	14×12×9	54.7 67.6	81.0 109.9	1.07 1.92	5.25 8.75	1.07 1.92	5.25 8.75	1.41 1.91	1.57 2.05	6.2
SME 45 SA SME 45 LSA	45	32	105	22.5	20×17×14	72.7 90.0	105.8 143.6	1.61 2.88	7.82 13.08	1.61 2.88	7.82 13.08	2.41 3.27	3.06 4.00	10.5

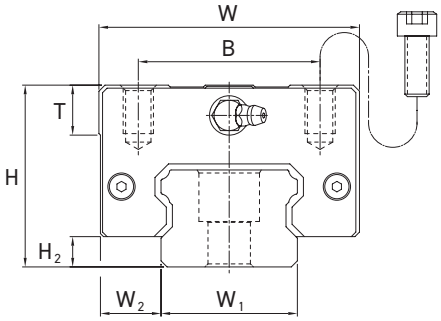
Note: The basic dynamic load rating C of ball type is based on the 50 km for nominal life.
The conversion between C for 50 km and C100 for 100 km is C=1.26 x C100.
Note*: Single: Single carriage/ Double: Two carriages in close proximity to one another.

SME-SB/SME-LSB Carriage and Rail Dimensions









Unit: mm

Model No.	External Dimension					Carriage Dimensions										
	H	W	L	W_2	H_2	B	C	S × l	L_1	T	N	G	K	e_1	G_1	Grease Nipple
SME 15 SB SME 15 LSB	24	34	64.4 79.4	9.5	3.5	26	26 34	M4×5	48 63	6	5	5.5	2.7	-	M4	G-M4
SME 20 SB SME 20 LSB	28	42	78.5 97.5	11	4.7	32	32 45	M5×5.5	58.3 77.3	6	6	12	3.7	-	M4	G-M6
SME 25 SB SME 25 LSB	33	48	92 109	12.5	5.8	35	35 50	M6×7	71 88	8	7	12	4	-	M4	G-M6
SME 25 SV SME 25 LSV	36	48	92 109	12.5	5.8	35	35 50	M6×9	71 88	8	10	12	4	-	M4	G-M6
SME 30 SB SME 30 LSB	42	60	107.6 132.6	16	7.5	40	40 60	M8×10	80 105	8	8	12	6.5	5.4	M6	G-M6
SME 35 SB SME 35 LSB	48	70	120.6 150.6	18	8	50	50 72	M8×11	90 120	11	8	12	6.5	6	M6	G-M6
SME 45 SB SME 45 LSB	60	86	140 174.5	20.5	10	60	60 80	M10×16	106 140.5	16	10	13.5	8.5	6.1	M6	G-PT 1/8

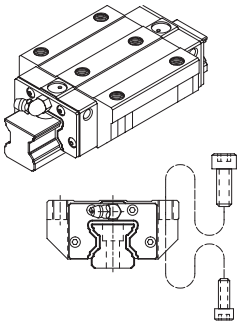
Model No.	Rail Dimension					Basic Load Rating		Rail					Weight	
	W_1	H_1	P	E std.	D x h x d	Dynamic C kN	Static C_0 kN	Mp kN-m		My kN-m		M_R kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
SME 15 SB SME 15 LSB	15	13	60	20	7.5×5.8×4.5	12.5 15.4	20.2 27.5	0.14 0.25	0.69 1.15	0.14 0.25	0.69 1.15	0.16 0.21	0.19 0.22	1.4
SME 20 SB SME 20 LSB	20	15.5	60	20	9.5×8.5×6	20.4 25.3	32.1 43.6	0.27 0.49	1.34 2.24	0.27 0.49	1.34 2.24	0.33 0.44	0.26 0.35	2.3
SME 25 SB SME 25 LSB	23	18	60	20	11×9×7	28.3 33.0	44.3 56.1	0.45 0.71	2.14 3.20	0.45 0.71	2.14 3.20	0.52 0.66	0.31 0.49	3.2
SME 25 SV SME 25 LSV	23	18	60	20	11×9×7	28.3 33.0	44.3 56.1	0.45 0.71	2.14 3.20	0.45 0.71	2.14 3.20	0.52 0.66	0.44 0.62	3.2
SME 30 SB SME 30 LSB	28	23	80	20	14×12×9	39.4 47.0	59.5 76.5	0.68 1.11	3.37 5.32	0.68 1.11	3.37 5.32	0.83 1.07	0.85 1.10	4.5
SME 35 SB SME 35 LSB	34	26	80	20	14×12×9	54.7 67.6	81.0 109.9	1.07 1.92	5.25 8.75	1.07 1.92	5.25 8.75	1.41 1.91	1.22 1.61	6.2
SME 45 SB SME 45 LSB	45	32	105	22.5	20×17×14	72.7 90.0	105.8 143.6	1.61 2.88	7.82 13.08	1.61 2.88	7.82 13.08	2.41 3.27	2.86 3.57	10.5

SMR Series Roller Chain Type Linear Rail

Carriage Types:

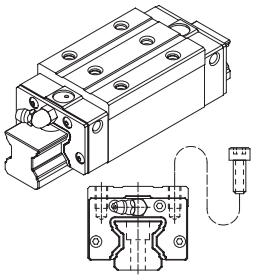
SMR-E Type

Heavy Load



This type allows for installation of the bolt from either the bottom or top side of the carriage.

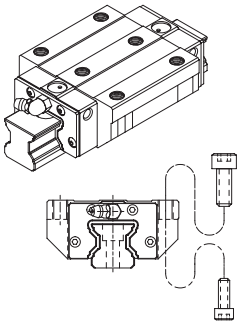
SMR-S Type



Square type with smaller width and can be installed from the top side of the carriage.

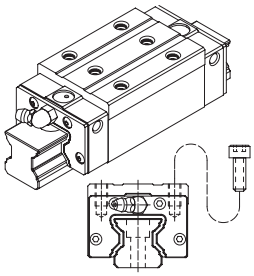
SMR-LE Type

Ultra Heavy Load



All dimensions are same as SMR-E except the length is longer, which makes it more rigid.

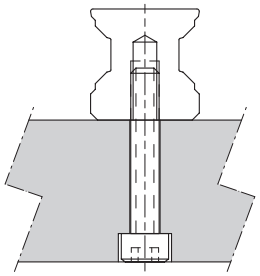
SMR-LS Type



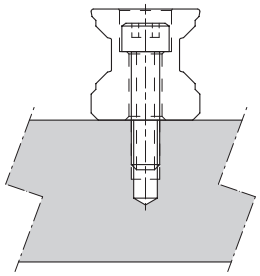
All dimensions are same as SMR-S except the length is longer, which makes it more rigid.

SMR Linear Rail Types

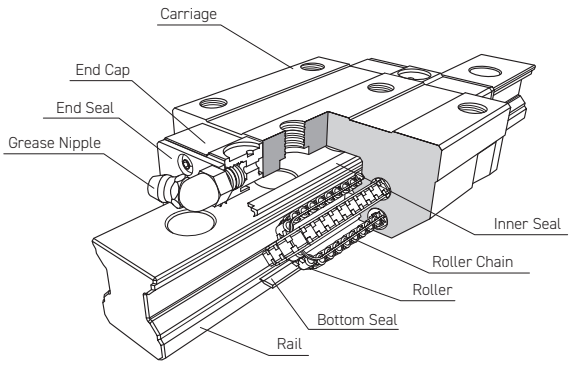
Tapped Hole (T Type)

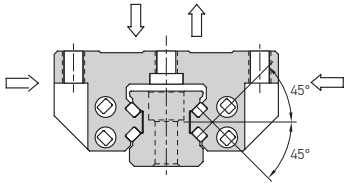


Counter Bore (R Type)

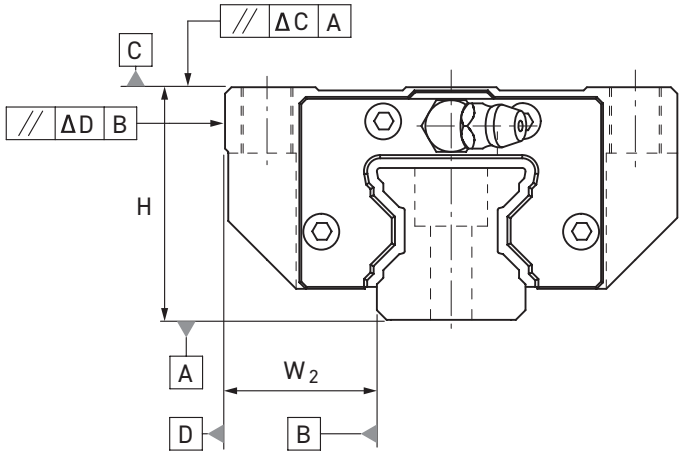


SMR Carriage Construction





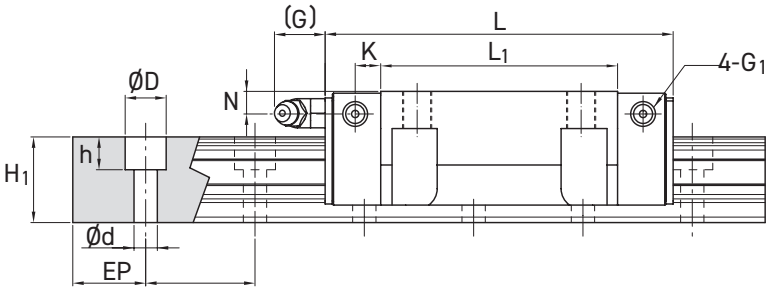
SMR Accuracy Grade

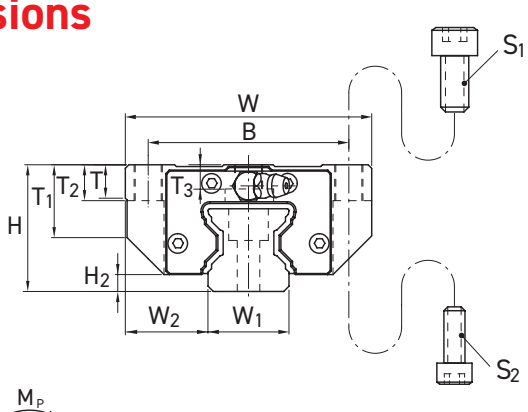


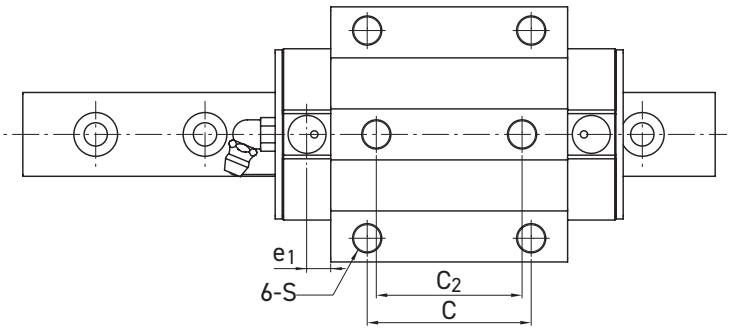
Rail Length (mm)		Running Parallelism Values (μm)			
Above	Or less (incl.)	H	P	SP	UP
0	315	6	3	2	1.5
315	400	8	4	2	1.5
400	500	9	5	2	1.5
500	630	11	6	2.5	1.5
630	800	12	7	3	2
800	1000	14	8	4	2
1000	1250	16	10	5	2.5
1250	1600	18	11	6	3
1600	2000	20	13	7	3.5
2000	2500	22	15	8	4
2500	3000	24	16	9	4.5
3000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

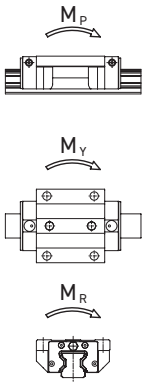
Model No.	Item	Running Parallelism Values (mm)				
		Normal N	High H	Precision P	Super Precision SP	Ultra Precision UP
15 20	Tolerance for height H	±0.04	0 -0.04	0 -0.02	0 -0.01	0 -0.008
	Height difference ΔH	0.015	0.007	0.005	0.003	0.003
	Tolerance for distance W_2	±0.04	0 -0.04	0 -0.02	0 -0.01	0 -0.008
	Difference in distance W_2(ΔW_2)	0.015	0.007	0.005	0.003	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	±0.05	0 -0.05	0 -0.03	0 -0.02	0 -0.01
	Height difference ΔH	0.015	0.007	0.005	0.003	0.003
	Tolerance for distance W_2	±0.05	0 -0.05	0 -0.03	0 -0.02	0 -0.01
	Difference in distance W_2(ΔW_2)	0.02	0.01	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)				
24 30 35	Tolerance for height H	±0.07	0 -0.07	0 -0.05	0 -0.02	0 -0.01
	Height difference ΔH	0.02	0.01	0.007	0.005	0.003
	Tolerance for distance W_2	±0.07	0 -0.07	0 -0.05	0 -0.02	0 -0.01
	Difference in distance W_2(ΔW_2)	0.025	0.015	0.01	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)				

SMR-E / SMR-LE Carriage and Rail Dimensions









Model No.	Bolt Size	
	S_1	S_2
SMR 25	M8	M6
SMR 30	M10	M8
SMR 35	M10	M8
SMR 45	M12	M10
SMR 55	M14	M12
SMR 65	M16	M14

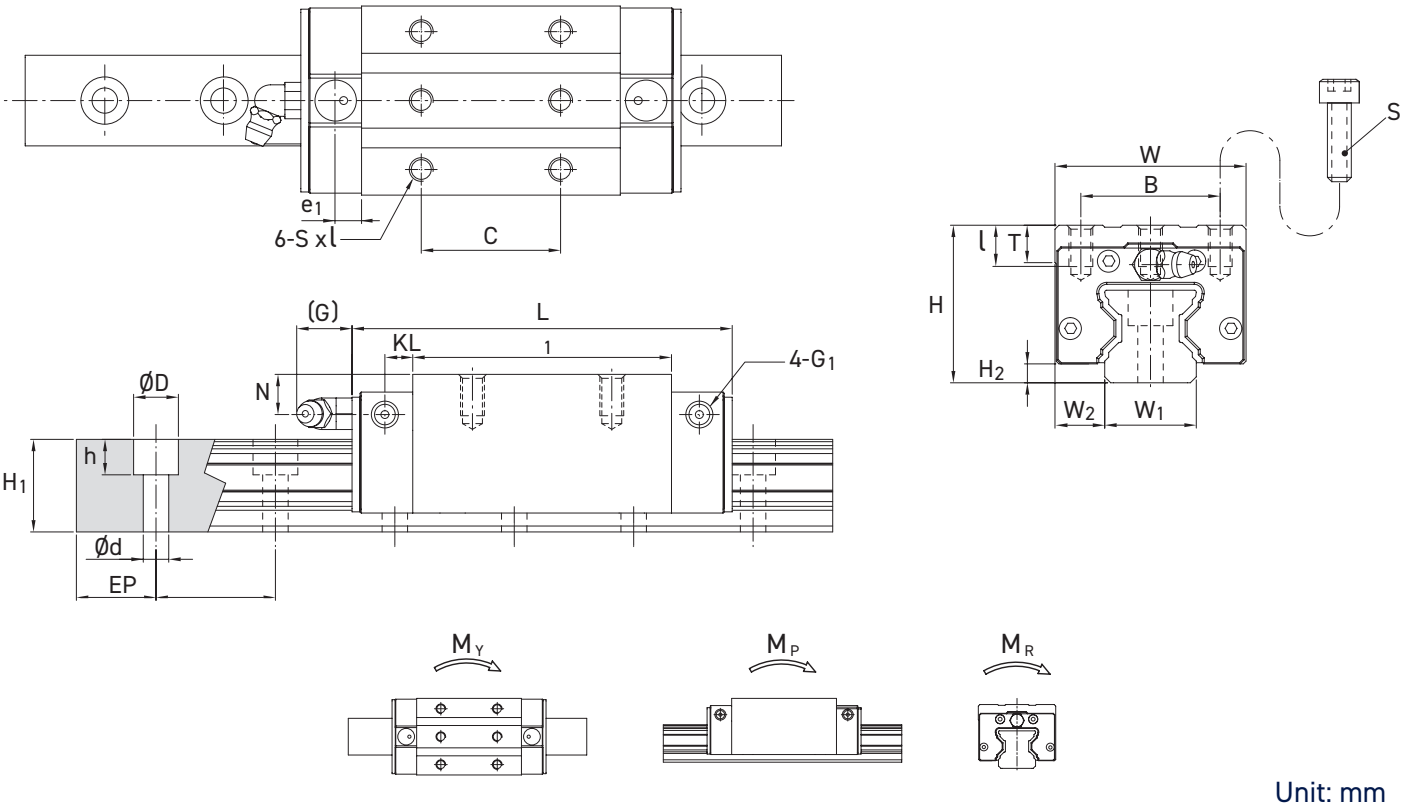
Unit: mm

Model No.	External Dimension					Carriage Dimensions														
	H	W	L	W_2	H_2	B	C	C_2	S	L_1	T	T_1	T_2	T_3	N	G	K	e1	G1	Grease Nipple
SMR 25 E SMR 25 LE	36	70	97.5 115.5	23.5	4.8	57	45	40	M8	65.5 83.5	9.5	20.2	10	5.8	6	12	6.6	6.5	M6	G-M6
SMR 30 E SMR 30 LE	42	90	112.4 135.2	31	6	72	52	44	M10	75.9 98.7	10	21.6	13	6.7	7	12	8	7	M6	G-M6
SMR 35 E SMR 35 LE	48	100	125.3 153.5	33	6.5	82	62	52	M10	82.3 110.5	12	27.5	15	9.5	8	12	8	7	M6	G-M6
SMR 45 E SMR 45 LE	60	120	154.2 189.4	37.5	8	100	80	60	M12	106.5 141.7	14.5	35.5	15	12.5	10	13.5	10	8	M6	G-PT 1/8
SMR 55 E SMR 55 LE	70	140	185.4 235.4	43.5	10	116	95	70	M14	129.5 179.5	17.5	41	18	15.5	11	13.5	12	7.95	M6	G-PT 1/8
SMR 65 LE	90	170	300.4	53.5	12	142	110	82	M16	230	19.5	56	20	26	16.5	13.5	12	8	M6	G-PT 1/8

Model No.	Rail Dimension					Basic Load Rating		Rail					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		M_R kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
SMR 25 E SMR 25 LE	23	23.5	30	20	11×9×7	27.4 33.1	57.4 73.3	0.63 1.01	3.63 5.49	0.63 1.01	3.63 5.49	0.66 0.84	0.75 0.95	3.5
SMR 30 E SMR 30 LE	28	27.5	40	20	14×12×9	39.5 49.4	82.7 110.3	1.01 1.78	5.90 9.60	1.01 1.78	5.90 9.60	1.15 1.53	1.4 1.72	5
SMR 35 E SMR 35 LE	34	30.5	40	20	14×12×9	55.6 69.6	117.0 156.0	1.63 2.86	9.59 15.57	1.63 2.86	9.59 15.57	1.98 2.63	1.95 2.45	7
SMR 45 E SMR 45 LE	45	37	52.5	22.5	20×17×14	89.3 110.6	184.1 242.2	3.27 5.6	18.48 29.56	3.27 5.6	18.48 29.56	4.18 5.5	3.9 4.5	11.2
SMR 55 E SMR 55 LE	53	43	60	30	23×20×16	127.8 163.2	256.5 351.0	5.51 10.16	30.89 53.02	5.51 10.16	30.89 53.02	6.96 9.52	6 7.9	15.6
SMR 65 LE	63	52	75	35	26×22×18	263.5	583.7	21.49	111.99	21.49	111.99	18.73	17.6	22.4

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

SMR-S / SMR-LS Carriage and Rail Dimensions



Unit: mm

Model No.	External Dimension					Carriage Dimensions											
	H	W	L	W_2	H_2	B	C	C2	S	L1	T	N	G	K	e1	G1	Grease Nipple
SMR 25 S SMR 25 LS	40	48	97.5 115.5	12.5	4.8	35	35 50	M6	10.5	65.5 83.5	9.5	10	12	6.6	6.5	M6	G-M6
SMR 30 S SMR 30 LS	45	60	112.4 135.2	16	6	40	40 60	M8	12	75.9 98.7	10	10	12	8	7	M6	G-M6
SMR 35 S SMR 35 LS	55	70	125.3 153.5	18	6.5	50	50 72	M8	14	82.3 110.5	12	15	12	8	7	M6	G-M6
SMR 45 S SMR 45 LS	70	86	154.2 189.4	20.5	8	60	60 80	M10	19	106.5 141.7	17	20	13.5	10	8	M6	G-PT 1/8
SMR 55 S SMR 55 LS	80	100	185.4 235.4	23.5	10	75	75 95	M12	19	129.5 179.5	18	21	13.5	12	7.95	M6	G-PT 1/8
SMR 65 LS	90	126	300.4	31.5	12	76	120	M16	20	230	19.5	16.5	13.5	12	8	M6	G-PT 1/8

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		M_R kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
SMR 25 S SMR 25 LS	23	23.5	30	20	11×9×7	27.4 33.1	57.4 73.3	0.63 1.01	3.63 5.49	0.63 1.01	3.63 5.49	0.66 0.84	0.65 0.85	3.5
SMR 30 S SMR 30 LS	28	27.5	40	20	14×12×9	39.5 49.4	82.7 110.3	1.01 1.78	5.90 9.60	1.01 1.78	5.90 9.60	1.15 1.53	1 1.22	5
SMR 35 S SMR 35 LS	34	30.5	40	20	14×12×9	55.6 69.6	117.0 156.0	1.63 2.86	9.59 15.57	1.63 2.86	9.59 15.57	1.98 2.63	1.65 2.15	7
SMR 45 S SMR 45 LS	45	37	52.5	22.5	20×17×14	89.3 110.6	184.1 242.2	3.27 5.6	18.48 29.56	3.27 5.6	18.48 29.56	4.18 5.5	3.2 4.1	11.2
SMR 55 S SMR 55 LS	53	43	60	30	23×20×16	127.8 163.2	256.5 351.0	5.51 10.16	30.89 53.02	5.51 10.16	30.89 53.02	6.96 9.52	5.1 7	15.6
SMR 65 LS	63	52	75	35	26×22×18	263.5	583.7	21.43	111.99	21.43	111.99	18.73	13.3	22.4

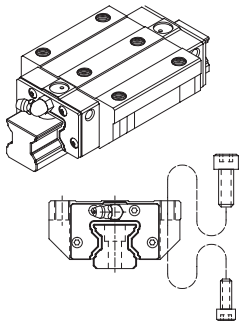
Note*: Single: Single carriage/ Double: Two carriages in close proximity to one another.

MSR Series Full Roller Type Linear Rail

Carriage Types:

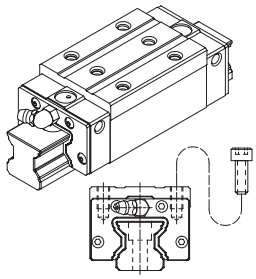
MSR-E Type

Heavy Load



This type allows for installation of the bolt from either the bottom or top side of the carriage.

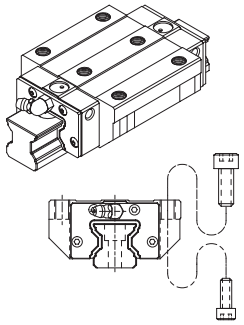
MSR-S Type



Square type with smaller width and can be installed from the top side of the carriage.

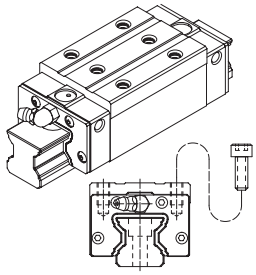
MSR-LE Type

Ultra Heavy Load



All dimensions are same as MSR-E except the length is longer, which makes it more rigid.

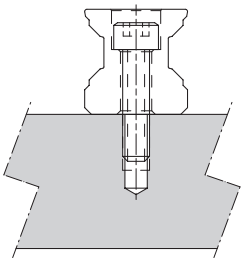
MSR-LS Type



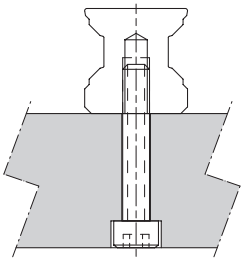
All dimensions are same as MSR-S except the length is longer, which makes it more rigid.

MSR Linear Rail Types

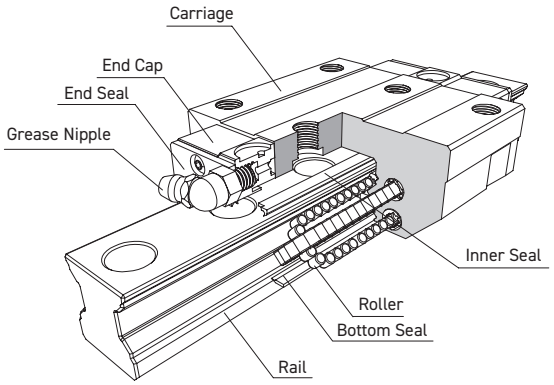
Counter Bore (R Type)

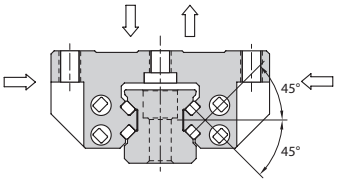


Tapped Hole (T Type)

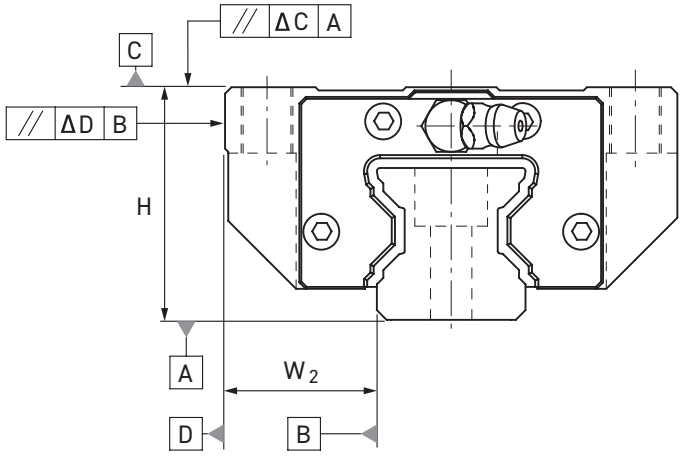


MSR Carriage Construction





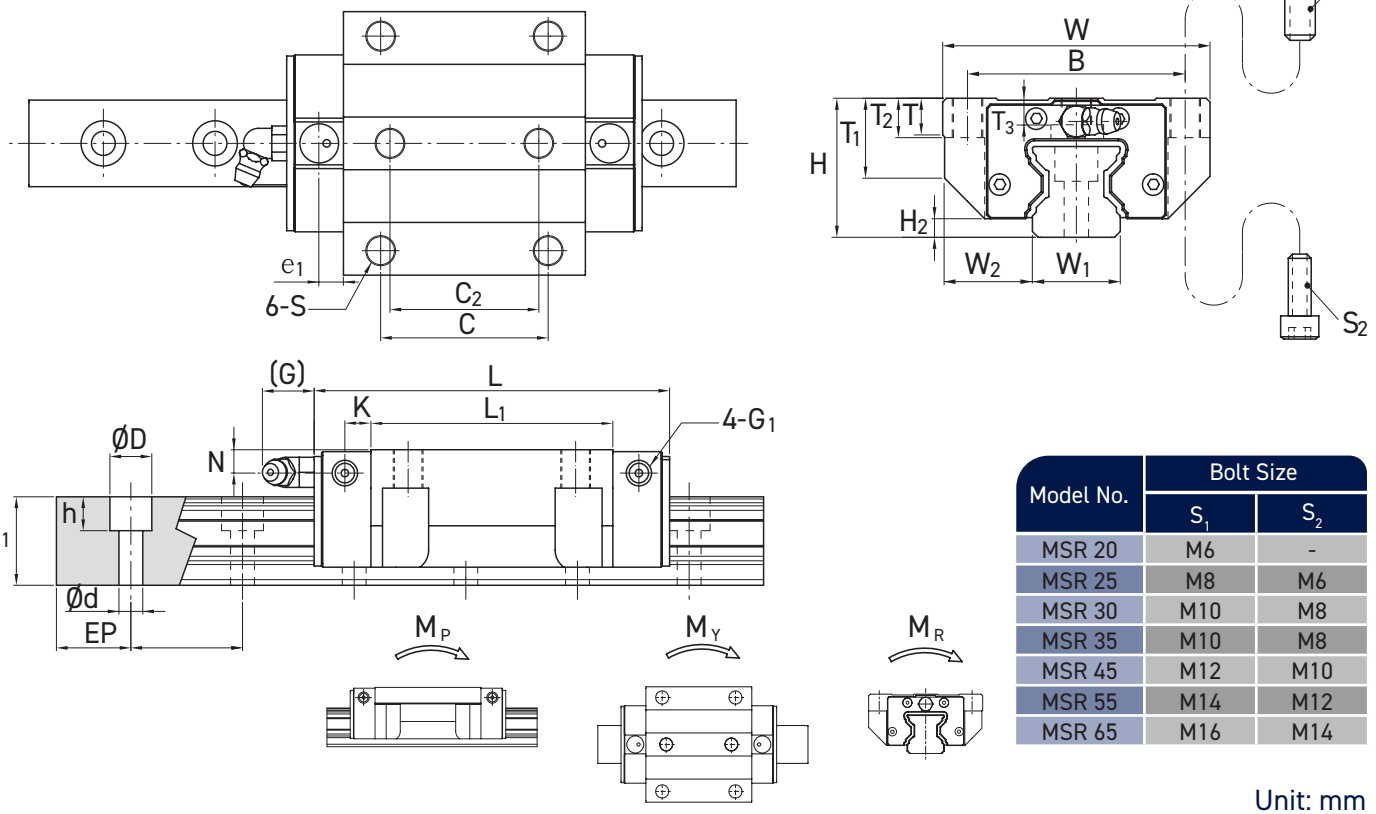
MSR Accuracy Grade



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

Model No.	Item	Running Parallelism Values (mm)				
		Normal N	High H	Precision P	Super Precision SP	Ultra Precision UP
15 20	Tolerance for height H	±0.04	0 -0.04	0 -0.02	0 -0.01	0 -0.008
	Height difference ΔH	0.015	0.007	0.005	0.003	0.003
	Tolerance for distance W_2	±0.04	0 -0.04	0 -0.02	0 -0.01	0 -0.008
	Difference in distance W_2(ΔW_2)	0.015	0.007	0.005	0.003	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	±0.05	0 -0.05	0 -0.03	0 -0.02	0 -0.01
	Height difference ΔH	0.015	0.007	0.005	0.003	0.003
	Tolerance for distance W_2	±0.05	0 -0.05	0 -0.03	0 -0.02	0 -0.01
	Difference in distance W_2(ΔW_2)	0.02	0.01	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)				
24 30 35	Tolerance for height H	±0.07	0 -0.07	0 -0.05	0 -0.02	0 -0.01
	Height difference ΔH	0.02	0.01	0.007	0.005	0.003
	Tolerance for distance W_2	±0.07	0 -0.07	0 -0.05	0 -0.02	0 -0.01
	Difference in distance W_2(ΔW_2)	0.025	0.015	0.01	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)				

MSR-E / MSR-LE Carriage and Rail Dimensions



Model No.	Bolt Size	
	S_1	S_2
MSR 20	M6	-
MSR 25	M8	M6
MSR 30	M10	M8
MSR 35	M10	M8
MSR 45	M12	M10
MSR 55	M14	M12
MSR 65	M16	M14

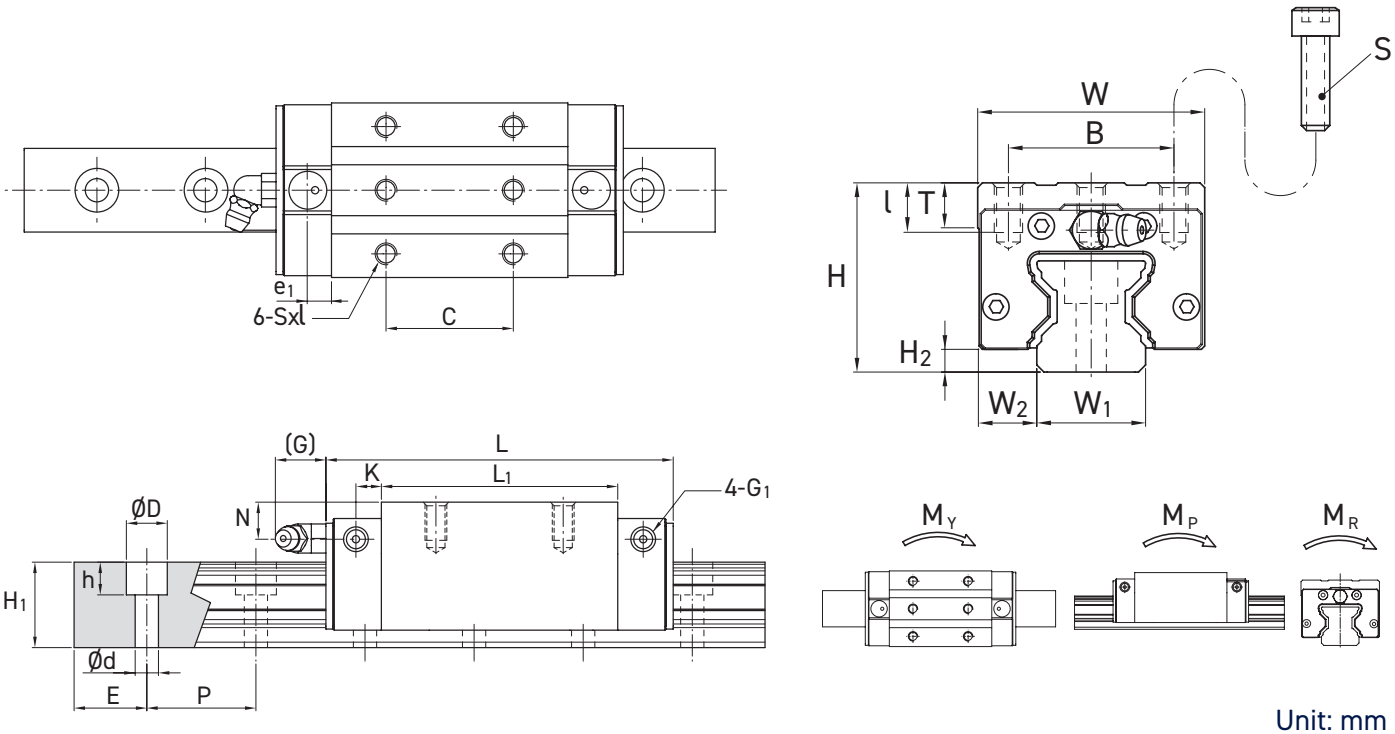
Unit: mm

Model No.	External Dimension					Carriage Dimensions														
	H	W	L	W_2	H_2	B	C	C2	S	L1	T	T_1	T_2	T_3	N	G	K	e1	G1	Grease Nipple
MSR 20 E	30	63	89.8	21.5	4.6	53	40	35	M6	57.8	10	25.4	10	7.95	5	5.15	4	6.5	M4	G-M4
MSR 25 E MSR 25 LE	36	70	97.5 115.5	23.5	4.8	57	45	40	M8	65.5 83.5	9.5	20.2	10	5.8	6	12	6.6	6.5	M6	G-M6
MSR 30 E MSR 30 LE	42	90	112.4 135.2	31	6	72	52	44	M10	75.9 98.7	10	21.6	13	6.7	7	12	8	7	M6	G-M6
MSR 35 E MSR 35 LE	48	100	125.3 153.5	33	6.5	82	62	52	M10	82.3 110.5	12	27.5	15	9.5	8	12	8	7	M6	G-M6
MSR 45 E MSR 45 LE	60	120	154.2 189.4	37.5	8	100	80	60	M12	106.5 141.7	14.5	35.5	15	12.5	10	13.5	10	8	M6	G-PT 1/8
MSR 55 E MSR 55 LE	70	140	185.4 235.4	43.5	10	116	95	70	M14	129.5 179.5	17.5	41	18	15.5	11	13.5	12	7.95	M6	G-PT 1/8
MSR 65 LE	90	170	300.4	53.5	12	142	110	82	M16	230	19.5	56	20	26	16.5	13.5	12	8	M6	G-PT 1/8

Model No.	Rail Dimension					Basic Load Rating		Rail					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		M_R kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
MSR 20 E	20	20	30	20	9.5×8.5×6	22.8	60.8	0.51	2.85	0.51	2.85	0.62	0.54	2.6
MSR 25 E MSR 25 LE	23	23.5	30	20	11×9×7	29.6 36.3	63.8 82.9	0.65 1.08	3.82 5.94	0.65 1.08	3.82 5.94	0.73 0.95	0.75 0.95	3.5
MSR 30 E MSR 30 LE	28	27.5	40	20	14×12×9	42.8 54.0	91.9 124.0	1.09 1.96	6.38 10.60	1.09 1.96	6.38 10.60	1.27 1.75	1.4 1.72	5
MSR 35 E MSR 35 LE	34	30.5	40	20	14×12×9	57.9 73.9	123.5 169.0	1.59 2.94	9.56 16.18	1.59 2.94	9.56 16.18	2.09 2.85	1.95 2.45	7
MSR 45 E MSR 45 LE	45	37	52.5	22.5	20×17×14	92.8 117.2	193.8 261.6	3.28 5.90	18.76 31.32	3.28 5.90	18.76 31.32	4.40 5.94	3.9 4.5	11.2
MSR 55 E MSR 55 LE	53	43	60	30	23×20×16	132.8 172.5	270.0 378.0	5.49 10.60	31.18 55.58	5.49 10.60	31.18 55.58	7.33 10.28	6 7.9	15.6
MSR 65 LE	63	52	75	35	26×22×18	277.0	624.0	22.50	117.87	22.50	117.87	20.02	17.6	22.4

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

MSR-S / MSR-LS Carriage and Rail Dimensions



Unit: mm

Model No.	External Dimension					Carriage Dimensions											
	H	W	L	W_2	H_2	B	C	C2	S	L1	T	N	G	K	e1	G1	Grease Nipple
MSR 20 S	30	44	89.8	12	4.6	32	36	M5	7	57.8	8	5	5.15	4	6.5	M4	G-M4
MSR 25 S MSR 25 LS	40	48	97.5 115.5	12.5	4.8	35	35 50	M6	9	65.5 83.5	9.5	10	12	6.6	6.5	M6	G-M6
MSR 30 S MSR 30 LS	45	60	112.4 135.2	16	6	40	40 60	M8	12	75.9 98.7	10	10	12	8	7	M6	G-M6
MSR 35 S MSR 35 LS	55	70	125.3 153.5	18	6.5	50	50 72	M8	14	82.3 110.5	12	15	12	8	7	M6	G-M6
MSR 45 S MSR 45 LS	70	86	154.2 189.4	20.5	8	60	60 80	M10	19	106.5 141.7	17	20	13.5	10	8	M6	G-PT 1/8
MSR 55 S MSR 55 LS	80	100	185.4 235.4	23.5	10	75	75 95	M12	19	129.5 179.5	18	21	13.5	12	7.95	M6	G-PT 1/8
MSR 65 LS	90	126	300.4	31.5	12	76	120	M16	20	230	19.5	16.5	13.5	12	8	M6	G-PT 1/8

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		M_R kN-m	Carriage kg	Rail kg/m
								Single*	Double*	Single*	Double*			
MSR 20 S	20	20	30	20	9.5×8.5×6	22.8	60.8	0.51	2.85	0.51	2.85	0.62	0.34	2.6
MSR 25 S MSR 25 LS	23	23.5	30	20	11×9×7	29.6 36.3	63.8 82.9	0.65 1.08	3.82 5.94	0.65 1.08	3.82 5.94	0.73 0.95	0.65 0.85	3.5
MSR 30 S MSR 30 LS	28	27.5	40	20	14×12×9	42.8 54.0	91.9 124.0	1.09 1.96	6.38 10.60	1.09 1.96	6.38 10.60	1.27 1.72	1 1.22	5
MSR 35 S MSR 35 LS	34	30.5	40	20	14×12×9	57.9 73.9	123.5 169.0	1.59 2.94	9.56 16.18	1.59 2.94	9.56 16.18	2.09 2.85	1.65 2.15	7
MSR 45 S MSR 45 LS	45	37	52.5	22.5	20×17×14	92.8 117.2	193.8 261.6	3.28 5.90	18.76 31.32	3.28 5.90	18.76 31.32	4.40 5.94	3.2 4.1	11.2
MSR 55 S MSR 55 LS	53	43	60	30	23×20×16	132.8 172.5	270.0 378.0	5.49 10.60	31.18 55.58	5.49 10.60	31.18 55.58	7.33 10.26	5.1 7	15.6
MSR 65 LE	63	52	75	35	26×22×18	277.0	624.0	22.50	117.87	22.50	117.87	20.02	17.6	22.4

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

The Recommended Tightening Torque For Rails

The improper tightening torque could affect the mounting accuracy, so tightening the bolts by torque wrench to specified toque is highly recommended. Different types of mounting surface should have different torque value for applications.

Model No.	Torque Value		
	Iron	Cast iron	Aluminum
M2	0.6	0.4	0.3
M3	2	1.3	1
M4	4	2.7	2
M5	8.8	5.9	4.4
M6	13.7	9.2	6.8
M8	30	20	15
M10	68	45	33
M12	120	78	58
M14	157	105	78
M16	196	131	98
M20	382	255	191

Note: 1 N-m = 0.738 lbf-ft

Dust Proof Code Of Contamination Protection

For: MSA, MSB Series

Code	Contamination Protection
no symbol	Scraper (both ends)
UU	Bidirectional end seal (both ends)
SS	Bidirectional end seal+Bottom seal
ZZ	SS+Scraper
DD	Double bidirectional end seal+Bottom seal
KK	DD+Scraper
LL	Low friction end seal
HD	High dust end seal+high dust inner and bottom seal (supply MSA15S~35S , MSB15S~20S)

For: MSC, MSD Series

Code	Contamination Protection
LL	Low friction end seal
RR	LL+Bottom seal

For: MSA, MSB, MSG, MSR, SMR, SME Series

Code	Contamination Protection
/CC	Cover strip
/CB	Cover strip (Buckle Type)
/MC	Copper bolt cap
/MD	Stainless bolt cap

Note: There are two metallic bolt caps of copper and stainless that could be supplied by customer's choice.
Note: Buckle Type: Apply to MSR, SMR Series

For: MSG, MSR, SMR, SME Series

Code	Contamination Protection
no symbol	Scraper(both ends)
UU	Bidirectional end seal(both ends)
SS	Bidirectional end seal+Bottom seal+Inner seal
ZZ	SS+Scraper
DD	Double bidirectional end seal+Bottom seal +Inner seal
KK	DD+Scraper

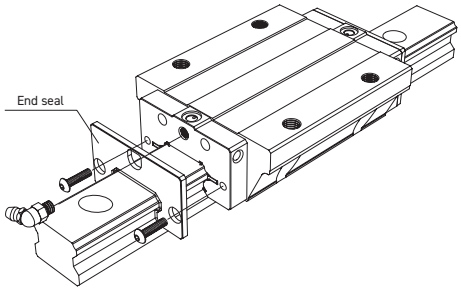
Seals Material Choice:

As well as the standard NBR seal, we also offer FKM (Fluorocarbon Rubber) and HNBR (Hydrogenated Nitrile Butadiene Rubber) seals as per every customer's requirements.

Contamination Protection

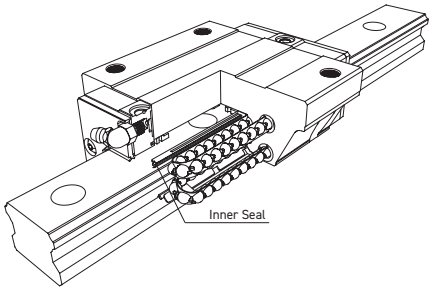
Each series of linear guideway offers various kinds of dust protection accessory to keep contaminants from entering into the carriage.

End Seal



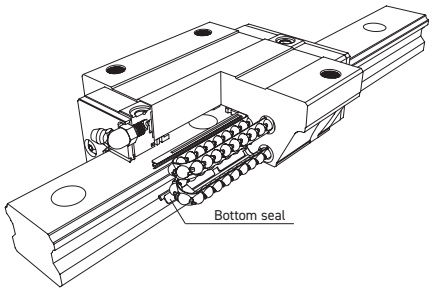
Two types sealing are available:
1. Bidirectional seal for high dust protection required.
2. Unidirectional seal for low frictional resistance required.

Inner Seal



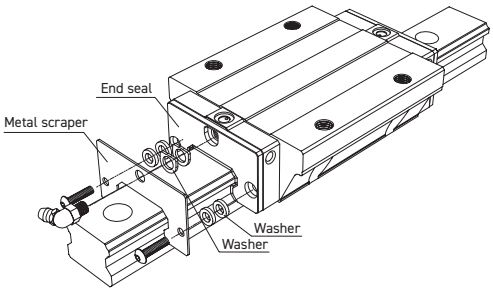
All dimensions are same as MSR-E except the length is longer, which makes it more rigid.

Bottom Seal



Prevents contaminants from becoming lodged in the bolt hole.

Metal Scraper



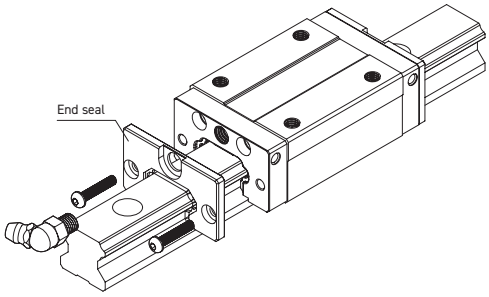
Removing spatters, iron chips , and large foreign matters as well as protecting the end seals.

HD-Enhanced Dust-Proof

Construction:

We can also offer, upon customer request, a carriage with enhanced contamination protection to prevent dust and other common contaminants from entering it.

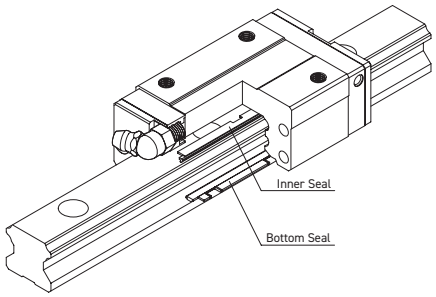
High Dust End Seal



offer special design bidirectional end seal

Prevents the inclusion of foreign matters form the bolt hole.

High Dust Inner Bottom Seal



Prevents the foreign matters enter the carriage from the bolt hole.

Features:

- Inner seal attached, having better seal effect than normal dust-proof attachment.
- Bidirectional end seal design strengthens the contact of rails with dust-proof end seal and high dust-proof inner & bottom seal.
- Enhanced dust-proof carriages have the same size and length as standard ones, however they have double the dust-proofing capability.

Application Examples:

- Applicable to carpentry industry.
- Other high-dust environments.

Test Conditions:

Specification: **MSA25SHD**

Running Length	500mm (per cycle)
Test Distance	150Km
Feed Rate	1.7m/min
Particle Amount	Spray continuously

Result:

After running 150 KM in a saw dust test environment, the carriage is still moving smoothly and the steel balls are also glossy. The end seal and inner seal protect against saw dust from entering the carriage. Overall running smoothness is not effected.

Dust Protection

Shown in the tables below, the change in overall length of a series carriage depending on the dust protection option chosen:

MSA Series

Unit: mm

Model No.	No Symbol	UU	SS	LL	RR	ZZ	DD	KK	HD
15	2	-	-	-	-	6	5	11	3
20	1.4	-	-	-	-	7	5.6	12.6	0.4
25	1.4	-	-	-	-	7	5.6	12.6	0.4
30	1.4	-	-	-	-	7	5.6	12.6	0.4
35	0.6	-	-	-	-	7.8	7.2	15	-
45	0.6	-	-	-	-	7.8	7.2	15	-
55	-	-	-	-	-	7.8	7.8	15.6	-
65	-	-	-	-	-	7.8	7.8	15.6	-

MSB Series

Unit: mm

Model No.	No Symbol	UU	SS	LL	RR	ZZ	DD	KK	HD
15	-	-	-	-	-	5	5	10	1
20	1	-	-	-	-	7	6	13	-
25	1	-	-	-	-	7	6	13	-
30	1	-	-	-	-	7	6	13	-
35	1.2	-	-	0.6	0.6	7.8	6.6	14.4	-

MSG Series

Unit: mm

Model No.	No Symbol	UU	SS	ZZ	DD	KK
21	1	-	-	7	6	13
27	1	-	-	7	6	13
35	1.8	-	-	7.8	6	13.8

MSR, SMR Series

Unit: mm

Model No.		No Symbol	UU	SS	ZZ	DD	KK
MSR 20	-	2	-	-	6	6	12
MSR 25	SMR 25	2	-	-	6	6	12
MSR 30	SMR 30	2	-	-	7	6	13
MSR 35	SMR 35	2	-	-	7	6	13
MSR 45	SMR 45	1.6	-	-	7	6.4	13.4
MSR 55	SMR 55	0.8	-	-	7.8	7.2	15
MSR 65	SMR 65	0.8	-	-	7.8	7.8	15.6

SME Series

Unit: mm

Model No.		No Symbol	UU	SS	ZZ	DD	KK
MSR 20	-	2	-	-	6	6	12
MSR 25	SMR 25	2	-	-	6	6	12
MSR 30	SMR 30	2	-	-	7	6	13
MSR 35	SMR 35	2	-	-	7	6	13
MSR 45	SMR 45	1.6	-	-	7	6.4	13.4
MSR 55	SMR 55	0.8	-	-	7.8	7.2	15
MSR 65	SMR 65	0.8	-	-	7.8	7.8	15.6

Resistance Value Of Seal

MSA series

The maximum resistance value of MSA series with seals type UU when it is applied with grease is shown below.

Model No.	Resistance	
	UU	HD
15	2	18
20	3.5	19
25	4	30
30	6	23
35	10	25
45	12	-
55	18	-
65	30	-

MSB series

The maximum resistance value of MSB series with seals type UU when it is applied with grease is shown below.

Model No.	Resistance	
	UU	HD
15	2	18
20	3.5	19
25	4	-
30	6	-
35	10	-

MSC, MSD series

The maximum resistance value of MSC series with seals type LL when it is applied with grease is shown below.

MSC series

Model No.	Resistance
7	0.08
9	0.1
12	0.4
15	0.8

MSC series

Model No.	Resistance
7	0.4
9	0.8
12	1.1
15	1.3

MSR, SMR series

The maximum resistance value of MSR and SMR series with seals type UU when it is applied with grease is shown below.

Model No.		Resistance
MSR 20	-	3.5
MSR 25	SMR 25	4.5
MSR 30	SMR 30	8
MSR 35	SMR 35	12
MSR 45	SMR 45	18
MSR 55	SMR 55	20
MSR 65	SMR 65	35

SME series

The maximum resistance value of SME series with seals type UU when it is applied with grease is shown below.

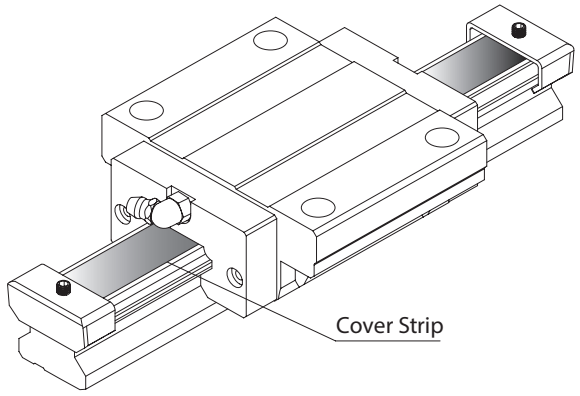
Model No.	Resistance
15	2
20	3.5
25	4
30	6
35	10
45	12

Cover Strip

A special design of cover strip is used to cover the bolt hole to prevent the foreign matters from entering the carriage. Indicate that the cover strip is required when ordering the guideway. Please refer to page 40 for the "Code of Contamination Protection for Rail" for the ordering code.

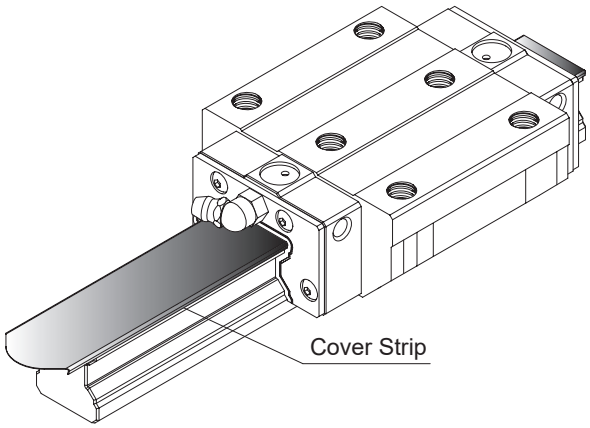
Standard Type (Applicable to MSA, MSB, SME, MSR & SMR Series)

Note: When mounting the cover strip, the rail needs to be machined. The cover strip does not increase the height of rail.



Buckle Type (Apply to MSR, SMR Series)

For the customer application, PMI design the buckle type of cover strip. The cover strip is fixed on the rail, and that will increase the assembly height of rail.



Series		Increment (mm)	Assembly Height of Rail(mm)
MSR 25	SMR 25	0.3	23.8
MSR 30	SMR 30	0.3	27.8
MSR 35	SMR 35	0.3	30.8
MSR 45	SMR 45	0.3	37.3
MSR 55	SMR 55	0.3	43.3
MSR 65	SMR 65	0.3	52.3

Note: Due to the increased cover strip thickness, the pre-load will increase after mounting.

Caps For Rail Mounting Hole

Features:

A special design of cap is used to cover the bolt hole to prevent the foreign matters from entering the carriage. Application dependant, we can provide two kind of caps for selection, standard plastic or metallic type. When ordering, if required, please specify the metallic type.

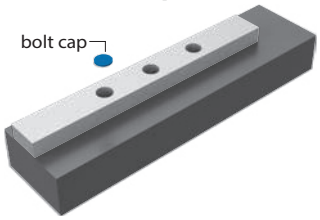
The plastic cap is mounted by using a plastic hammer with a pad placed on the top, until the top of cap is flush to the top surface of rail. The dimensions of the caps for different sizes of rail are shown below.

Installation of plastic and metal cap:

When specifying either the plastic or metallic caps, please refer to the cap sizes, seen in the table on p.43.

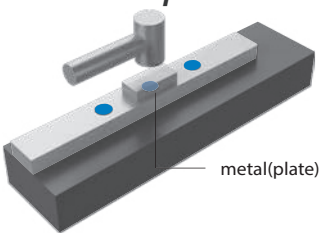
The steps of installing bolt cap with rail by below indicated figures:

Step 1



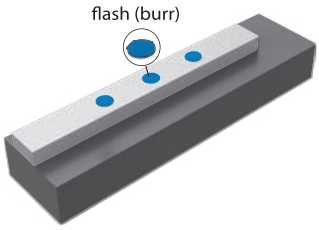
Put the cap into the bolt hole of rail.

Step 2



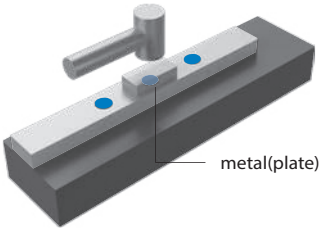
Put the plate on the cap, then pound it into the bolt hole of the rail with a rubber hammer, vertically.

Step 3



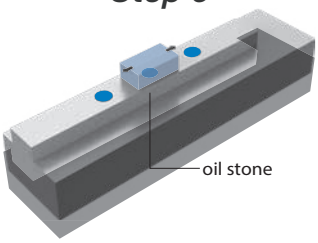
De-burr from the side of bolt hole.

Step 4



Hammer the plate until the cap is on the same plane with the top surface of rail.

Step 5



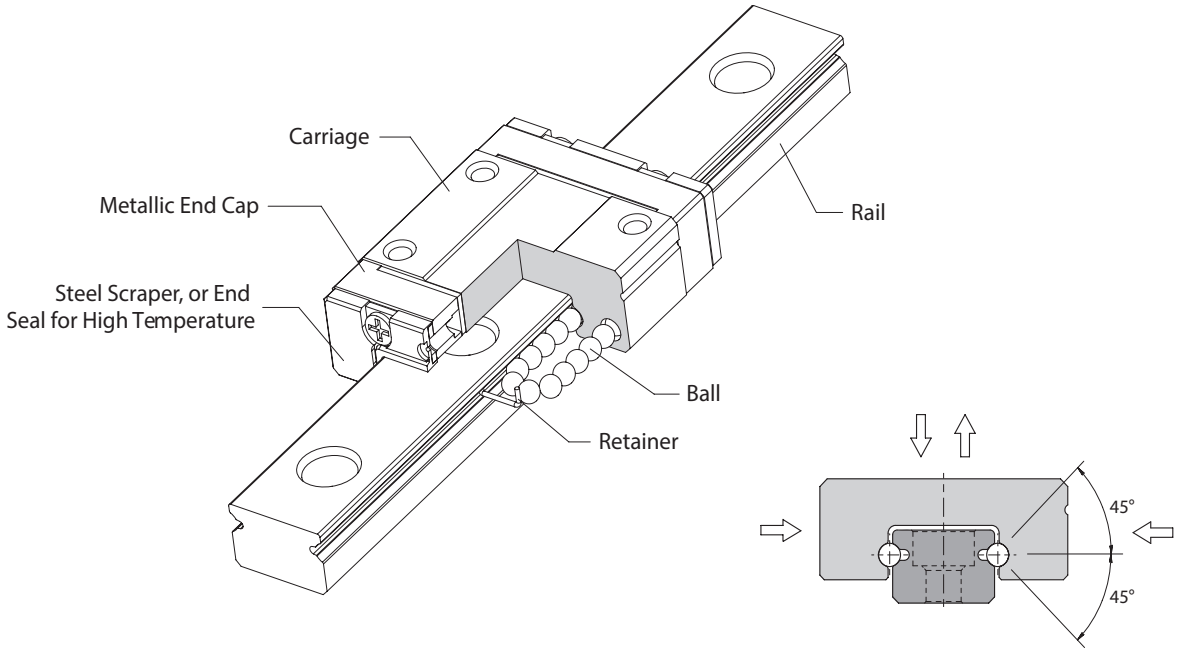
Use oil stone to polish the surface of caps and mop them with clean cloth. Finally, check the installation is perfectly flush with the rail.

Code of Plastic Cap	Bolt Size	Rail Model					
M3C	M3		MSB15R				
M4C	M4	MSA15R	MSB15U		SME15R		MSG21R MSG27R
M5C	M5	MSA20R	MSB20R	MSR20R	SME20R		
M6C	M6	MSA25R	MSB25R MSB30R	MSR25R	SME25R	SMR25R	MSG35R
M8C	M8	MSA30R MSA35R	MSB30U MSB35R	MSR30R MSR35R	SME30R SME35R	SMR30R SMR35R	
M12C	M12	MSA45R		MSR45R	SME45R	SMR45R	
M14C	M14	MSA55R		MSR55R		SMR55R	
M16C	M16	MSA65R		MSR65R		SMR65R	

Code of Plastic Cap	Bolt Size	Rail Model					
M4MC	M4	MSA15R	MSB15U		SME15R		MSG21R MSG27R
M5MC	M5	MSA20R	MSB20R	MSR20R	SME20R		
M6MC	M6	MSA25R	MSB25R MSB30R	MSR25R	SME25R	SMR25R	MSG35R
M8MC	M8	MSA30R MSA35R	MSB30U MSB35R	MSR30R MSR35R	SME30R SME35R	SMR30R SMR35R	
M12MC	M12	MSA45R		MSR45R	SME45R	SMR45R	
M14MC	M14	MSA55R		MSR55R		SMR55R	
M16	MSA65R		MSR65R		SMR65R		
M16C	M16	MSA65R		MSR65R		SMR65R	

ME Type- Metallic End Cap Linear Guideway

Construction and Characteristics:



Features:

- Use of metallic parts.
- Excellent temperature resistance; service temperature under 140°C
- If the end seal is needed, the high-temperature rubber (FKM) in end seal is available.

Applications:

- Welding equipment.
- Heat treatment equipment.
- Applications using vacuums (no vapour dispersion from plastic or rubber).

Lubrication

Lubrication is important for maintaining the function of linear guideway. If the lubrication is not sufficient, the frictional resistance at rolling area will increase and the service life will be shortened as a result of wear of rolling parts.

Two primary lubricants are both grease and oil used for linear motion system, and the lubrication methods are categorized into manual and forced oiling. The selection of lubricant and its method should be based on the consideration of operating speed and environmental operation conditions.

Grease lubrication

- Use of metallic parts.
- Excellent temperature resistance; service temperature under 140°C
- If the end seal is needed, the high-temperature rubber (FKM) in end seal is available.

Note: Carriages are supplied with assembly grease only.

Code of Plastic Cap	Initial Feeding Amount (cm^3)	Amount for Replenishing (cm^3)
MSA 15	1.1	0.4
MSA 20	2.1	0.7
MSA 25	3.5	1.2
MSA 30	5.8	1.9
MSA 35	8.2	2.7
MSA 45	16.1	5.4
MSA 55	27.1	9.0
MSA 65	51.6	17.2
MSA 20L	3.1	1.0
MSA 25L	5.1	1.7
MSA 30L	8.2	2.7
MSA 35L	11.8	3.9
MSA 45L	23.0	7.7
MSA 55L	38.8	12.9
MSA 65L	77.8	25.9
MSB 15	1.0	0.3
MSB 20	1.5	0.5
MSB 25	2.8	0.9
MSB 30	4.5	1.5
MSB 35	8.2	2.7
MSB 15T	0.4	0.1
MSB 20T	0.7	0.2
MSB 25T	1.5	0.5
MSB 30T	2.2	0.7
MSB 35L	11.8	3.9
MSG 21	1.2	0.4
MSG 27	2.1	0.7
MSG 35	5.6	1.9
MSC 7	0.06	0.02
MSC 9	0.16	0.05
MSC 12	0.25	0.08
MSC 15	0.49	0.16
MSC 7L	0.11	0.04
MSC 9L	0.24	0.08
MSC 12L	0.42	0.14
MSC 15L	0.80	0.27
MSD 7	0.19	0.06
MSD 9	0.42	0.14
MSD 12	0.73	0.24

Code of Plastic Cap	Initial Feeding Amount (cm^3)	Amount for Replenishing (cm^3)
MSD 15	1.51	0.50
MSD 7L	0.28	0.09
MSD 9L	0.60	0.20
MSD 12L	1.07	0.36
MSD 15L	2.18	0.73
MSR 20	3.0	1.0
MSR 25	4.5	1.5
MSR 30	7.0	2.3
MSR 35	9.6	3.2
MSR 45	17.1	5.7
MSR 55	26.0	8.7
MSR 25L	5.5	1.8
MSR 30L	8.7	2.9
MSR 35L	12.3	4.1
MSR 45L	22.0	7.3
MSR 55L	34.3	11.4
MSR 65L	64.8	21.6
SMR 25	5.9	2.0
SMR 30	8.8	2.9
SMR 35	12.6	4.2
SMR 45	21.0	7.0
SMR 55	32.1	10.7
SMR 25L	7.2	2.4
SMR 30L	11.0	3.7
SMR 35L	16.0	5.3
SMR 45L	26.5	8.8
SMR 55L	42.6	14.2
SMR 65L	76.1	25.4
SME 15	1.6	0.5
SME 20	2.6	0.9
SME 25	4.1	1.4
SME 30	6.0	2.0
SME 35	9.7	3.2
SME 45	13.2	4.4
SME 20L	3.6	1.2
SME 25L	5.2	1.7
SME 30L	8.1	2.7
SME 35L	13.0	4.3
SME 45L	18.5	6.2

Oil Lubrication

The recommended viscosity of oil is 30~150 Centistokes, and the recommended feeding rate per hour is shown in the table below.

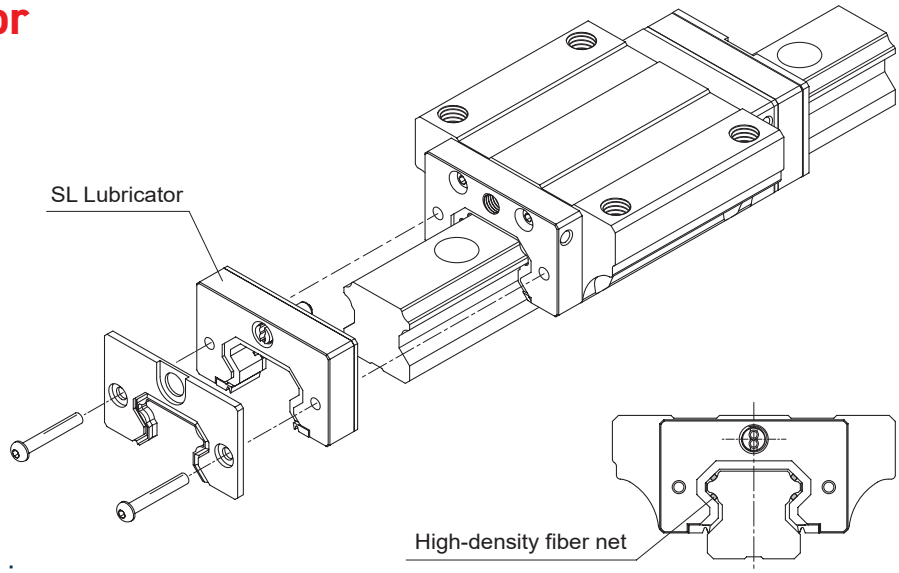
Note: Installation other than horizontal may result in the oil being unable to reach the raceway area.

Oil lubrication feeding rate:

Code of Plastic Cap	Initial Feeding Amount (cm^3)	Amount for Replenishing (cm^3)
15	0.6	0.4
20	0.6	0.7
25	0.9	1.2
30	0.9	1.9
35	0.9	2.7
45	1.2	5.4
55	1.5	9.0
65	1.8	17.2
MSG 21	0.6	1.0
MSG 27	0.9	1.7
MSG 35	0.9	2.7

Note: When the operating stroke length is less than the sum of the length of two carriages, the lubrication fitting should be applied on both ends of carriage for adequacy. Moreover, if the stroke length is less than a half of the length of a carriage, the carriage should be moved back and forth up to the length of two carriages while lubricating.

SL Lubricator



Characteristics:

The PMI SL lubricator unit is designed with an oil reservoir which equipped with a high-density fibre net. Through the fibre net the lubricant can be steadily fed onto the surface of raceway to satisfy the required lubricating function.

- **Lengthening the interval between maintenance works**

The SL Lubricator, unlike ordinary lubrication methods, effectively and evenly distributes the correct amount of oil to the raceway. This allows for a greater interval between maintenance.

- **Environmentally Friendly**

Through the use of SL lubricator, only the needed amount of oil will be fed for the purpose of lubrication, thereby the oil is almost nothing to lose in application. As a result, the environment will not be contaminated by waste oil.

• Cost reduction

The SL Lubricator, unlike ordinary lubrication methods, effectively and evenly distributes the correct amount of oil to the raceway. This allows for a greater interval between maintenance.

• Enables the most suitable oil for the purpose of use to be selected

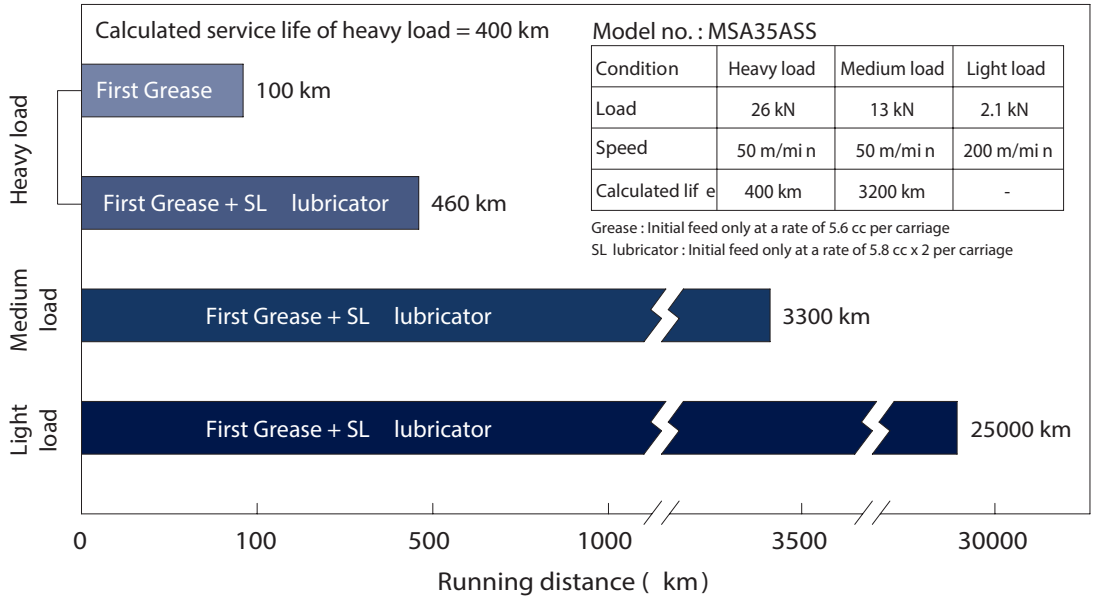
The SL lubricator makes it possible to select the most proper lubricant for your application of linear guideway.

Performance:

• Lengthening the interval between maintenance works

By using the SL lubricator, the time between carriage maintenance can be increased further, regardless of whether the load rating is dynamic or static.

• Running Test without Replenishment of Lubricant:



Condition	Heavy load	Medium load	Light load
Load	26 kN	13 kN	2.1 kN
Speed	50 m/mi n	50 m/mi n	200 m/mi n
Calculated lif e	400 km	3200 km	-

Grease : Initial feed only at a rate of 5.6 cc per carriage
SL lubricator : Initial feed only at a rate of 5.8 cc x 2 per carriage

•Effective use of lubricant

The SL Lubricator uses oil effectively as it only applies the correct amount to the rail. This results in a lower amount of waste in the long run.

• Annual Lubricant Consumption per Carriage

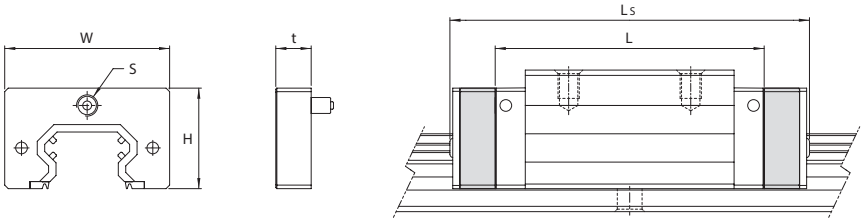
Amount of oil contained in SL Lubricator
5.8 cc x 2 / carriage
= 11.6 cc

Compared

Forced lubricatio n
0.3 cc/hr x 8 hrs/day x 260 days/year
= 624 cc

SL Lubricator Dimensions

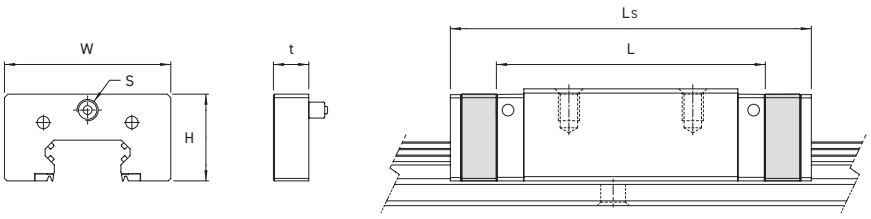
MSA Series



Model No.		Height H	Width W	Thickness t	Tapped Hole S	Carriage dimension (mm) Standard length L	Carriage dimension (mm) SL Lubricator Overall Length Ls
MSA 15SL	E/S	19	31.2	10	M4	56.3	81.3
MSA 20SL	E/S	21.2	42.8	10	M6	67.3	92.9
	LE/LS					83.2	108.8
MSA 25SL	E/S	28.5	46.8	10	M6	76	101.6
	LE/LS					95	120.6
MSA 30SL	A/E/S	32	57	10	M6	91.4	117
	LE/LS					113.6	139.2
MSA 35SL	A/E/S	36.5	68	10	M6	104	131.2
	LE/LS					129.4	156.6
MSA 45SL	A/E/S	49	83.6	15	1/8PT	130.5	167.7
	LE/LS					162.3	199.5
MSA 55SL	A/E/S	53	97	15	1/8PT	153.7	191.5
	LE/LS					191.7	229.5
MSA 65SL	A/E/S	67	120	15	1/8PT	191.2	229
	LE/LS					245.2	283

Note: Supply the Dust proof series (UU, SS, ZZ, LL, RR)

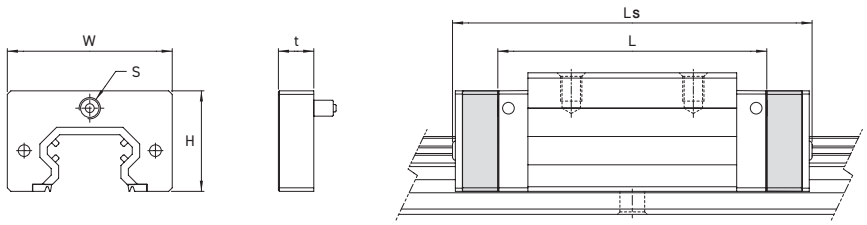
MSB Series



Model No.		Height H	Width W	Thickness t	Tapped Hole S	Carriage dimension (mm) Standard length L	Carriage dimension (mm) SL Lubricator Overall Length Ls
MSB 15SL	TE/TS	18.5	33	10	M4	65	35
	E/S					82	52
MSB 20SL	TE/TS	21.2	40.8	10	M6	68	42
	E/S					87	61
MSB 25SL	TE/TS	24.5	47	10	M6	80.2	54.2
	E/S					102	76
MSB 30SL	TE/TS	30.8	57	10	M6	88	62
	E/S					116.7	90.7
MSB 35SL	TE/TS	37	68.5	10	M6	98	70.8
	E/S					132	104.8
	LE/LS					157.5	130.3

Note: Supply the Dust proof series (UU, SS, ZZ, LL, RR)

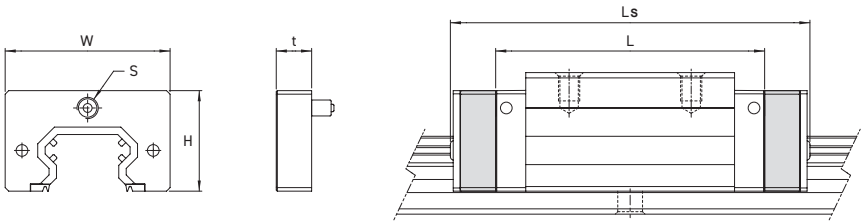
MSR Series



Model No.		Height H	Width W	Thickness t	Tapped Hole S	Carriage dimension (mm) Standard length L	Carriage dimension (mm) SL Lubricator Overall Length Ls
MSR 25SL	E/S	30.2	47	10	M6	91.5	117.5
	LE/LS					109.5	135.5
MSR 30SL	E/S	34.5	58.6	10	M6	106.4	132.4
	LE/LS					129.2	155.2
MSR 35SL	E/S	40.5	69	10.3	M6	119.3	145.9
	LE/LS					147.5	174.1
MSR 45SL	E/S	50.9	84	15.3	1/8PT	147.8	184.8
	LE/LS					183	220
MSR 55SL	E/S	58.5	98	15.3	1/8PT	178.2	216
	LE/LS					228.2	266
MSR 65SL	LE/LS	76.5	122	15	1/8PT	294.2	332

Note: Supply the Dust proof series (UU, SS, ZZ)

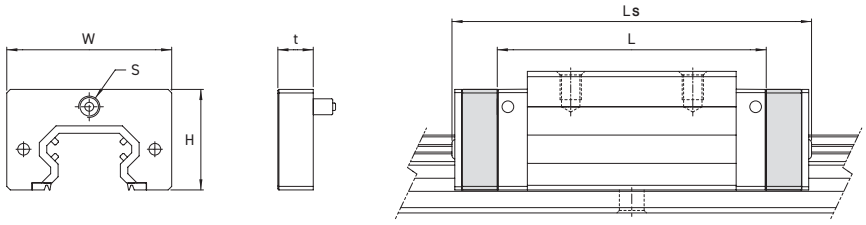
SMR series



Model No.		Height H	Width W	Thickness t	Tapped Hole S	Carriage dimension (mm) Standard length L	Carriage dimension (mm) SL Lubricator Overall Length Ls
SMR 25SL	E/S	30.2	47	10	M6	91.5	117.5
	LE/LS					109.5	135.5
SMR 30SL	E/S	34.5	58.6	10	M6	106.4	132.4
	LE/LS					129.2	155.2
SMR 35SL	E/S	40.5	69	10.3	M6	119.3	145.9
	LE/LS					147.5	174.1
SMR 45SL	E/S	50.9	84	15.3	1/8PT	147.8	184.8
	LE/LS					183	220
SMR 55SL	E/S	58.5	98	15.3	1/8PT	178.2	216
	LE/LS					228.2	266
SMR 65SL	LE/LS	76.5	122	15	1/8PT	294.2	332

Note: Supply the Dust proof series (UU, SS, ZZ)

SME series



Model No.		Height H	Width W	Thickness t	Tapped Hole S	Carriage dimension (mm) Standard length L	Carriage dimension (mm) SL Lubricator Overall Length Ls
SME 15SL	E/S	20.1	33.2	10	M4	59	84.4
	LE/LS					22.8	41.4
SME 20SL	E/S	22.8	41.4	10	M6	72.5	98.5
	LE/LS					33.5	58.5
SME 25SL	E/S	26.1	47.2	10	M6	86	112
	LE/LS					49	83.6
SME 30SL	E/S	33.5	58.5	10	M6	102	127.6
	LE/LS					127	152.6
SME 35SL	E/S	38.5	68	10	M6	113.8	140.6
	LE/LS					143.8	170.6
SME 45SL	E/S	49	83.6	15	1/8PT	132.8	170
	LE/LS					167.3	204.5

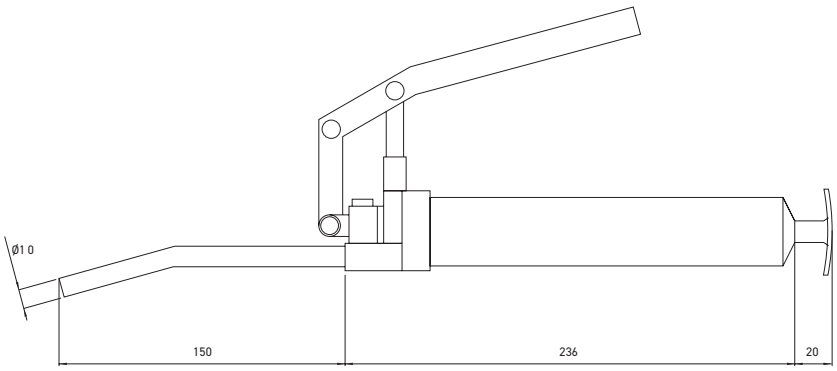
Note: Supply the Dust proof series (UU, SS, ZZ)

Lubrication Equipment - Grease Gun

Note: Different nozzles are required for different greases and oils.

Size and working condition:

Discharge pressure: 15MPa
Discharge rate: 0.35g/stroke
Weight (excluding the grease): 680g
Overall length: about 400mm
Width: about 120mm
Outside diameter of nozzle: Ø10mm



Greasing Information For Standard Applications.

Load Ratio: Max. 15% Of Dynamic Basic Load Rating
Temperature Range: -10 ~ 80 °C
Speed: < 1 M/S
Speed Co-Efficient: < 120,000

Manufacturer	Part Number
Kluber	Kluberlub GL-261.4
Mobil	Mobilux EP1
Fuch Lubritech	Lagermeister BF2
Lubcon	Turmogrease CAK 25002

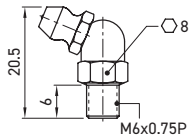
Load Ratio: Max. 50% Of Dynamic Basic Load Rating
Temperature Range: -10 ~ 80 °C
Speed: < 1 M/S
Speed Co-Efficient: < 120,000

Manufacturer	Part Number
Kluber	Kluberlub BE 71-501
Fuch Lubritech	Lagermeister EP2
Lubcon	Turmogrease Li 802EP

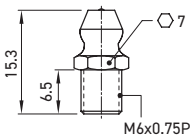
Grease Nipple & Piping Joint

Grease Nipple

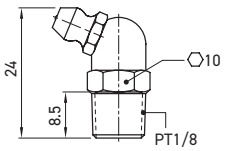
G-M6



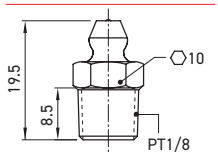
GS-M6G



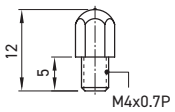
-PT1/8



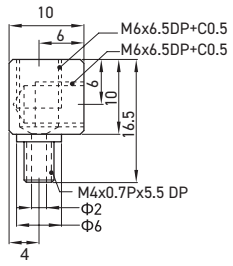
GS-PT1/8G



-M4T



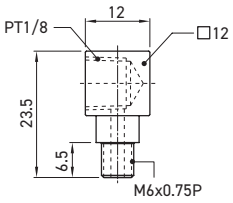
S-A(Connect Fitting)



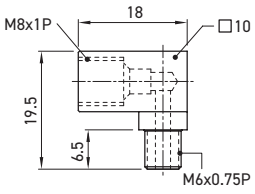
Oil Piping Joint

•OL Type

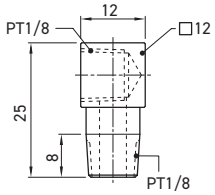
OL-A



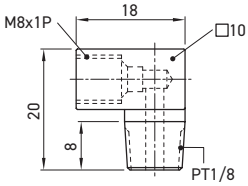
OL-B



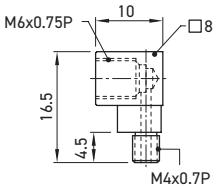
OL-C



OL-D

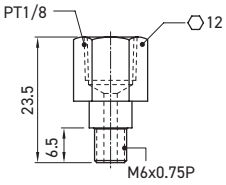


OL-E

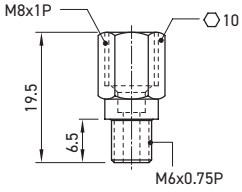


•OS Type

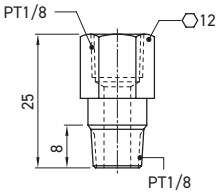
OS-A



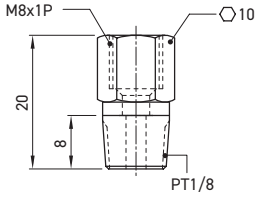
OS-B



OS-C



OS-D



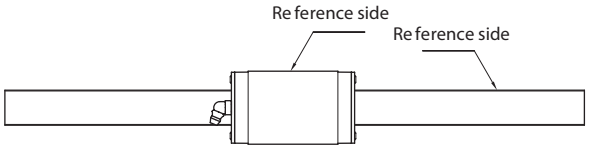
Model No.						Dust Proof Type							
						SS		DD		ZZ		KK	
MSA15	MSB15	SME15		MSR20		G-M4	OL-E	G-M4L	OL-EL	G-M4L	OL-EL	G-M4L	OL-EL
MSA20	MSB20	SME20				G-M6 OL-A OS-A	GS-M6 OL-B OS-B	G-M6M OL-AL OS-AL	GS-M6M OL-BLR OS-BL	G-M6M OL-AL OS-AL	GS-M6M OL-BLR OS-BL	G-M6L OL-AL OS-AL	GS-M6L OL-BLR OS-BL
MSA25	MSB25	SME25	SMR25	MSR25	MSG21								
MSA30	MSB30	SME30	SMR30	MSR30	MSG27								
MSA35	MSB35	SME35	SMR35	MSR35	MSG35								
MSA45		SME45	SMR45	MSR45		G-PT1/8	GS-PT1/8	G-PT1/8L	GS-PT1/8L	G-PT1/8L	GS-PT1/8L	G-PT1/8L	GS-PT1/8L
MSA55			SMR55	MSR55		OL-C	OL-D	OL-CL	OL-DL	OL-CL	OL-DL	OL-CL	OL-DL
MSA65			SMR65	MSR65		OS-C	OS-D	OS-CL	OS-DL	OS-CL	OS-DL	OS-CL	OS-DL

Note: 1. MSA15-ZZ and MSA15-DD use the nipple"G-M4"
2. MSB15 uses the "OL-EL" nipple, rather than "OL-E".

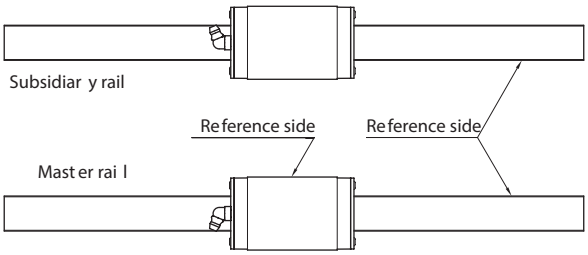
The Relationship Between The Direction Of Lubrication And The Reference Side

The standard lubrication fitting is grease nipple (G-M6, G-PT1/8, G-M4). The codes for different application types for lubrication fittings are shown below. For cases other than specified, please contact us for confirmation.

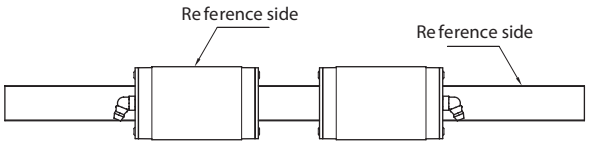
Code: C1R1



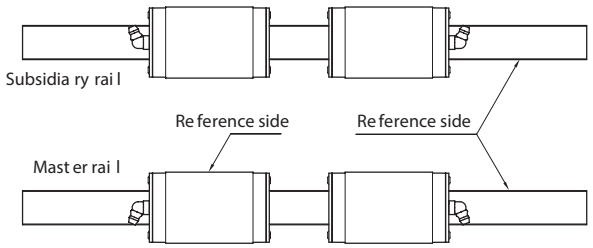
Code: C1R2



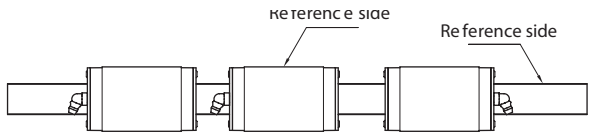
Code: C2R1



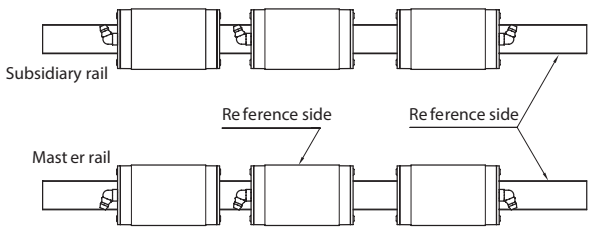
Code: C2R2



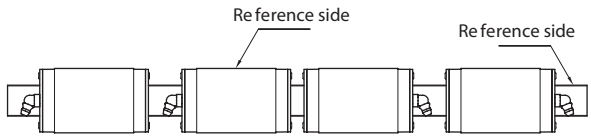
Code: C3R1



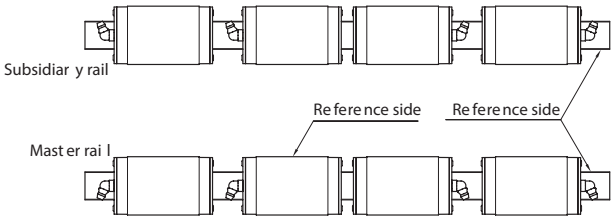
Code: C3R2



Code: C4R1



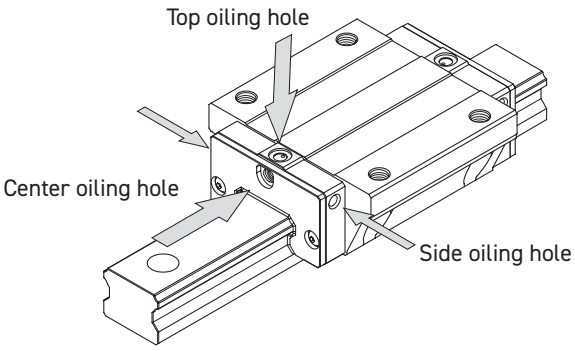
Code: C4R2



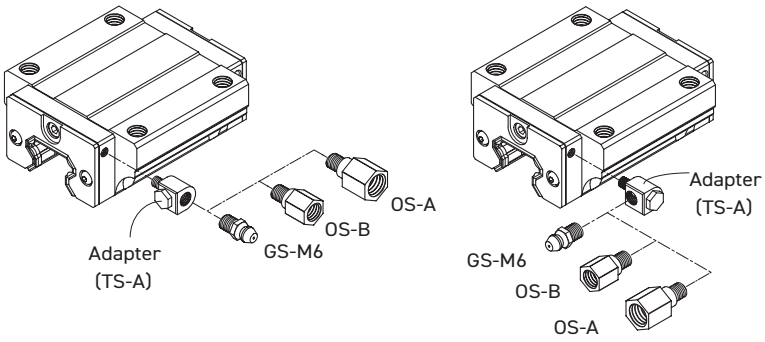
Lubrication Position

The standard mounting location for the lubrication nipples on all types of carriage can be found at the centre of both ends. For lateral and top application, please specify when ordering. As shown below, the lateral application is achieved by using a adapter to connect the grease/oil fitting to the hole on the carriage.

Lubrication Location

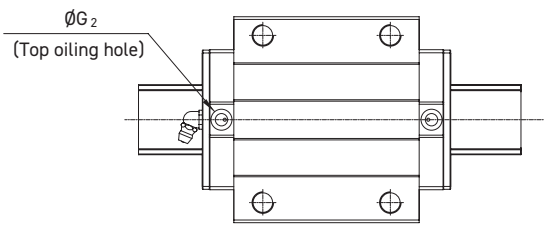


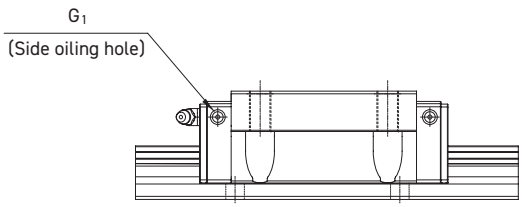
Lateral Usage



Model No.		Center	Side	
		Nipple	G1	Nipple
MSA 15	MSB 15	G-M4	M4×0.7P	G-M4
MSA 20	MSB 20	G-M6	M4×0.7P	G-M4
MSA 25	MSB 25	G-M6	M4×0.7P	G-M4
MSA 30	MSB 30	G-M6	M4×0.7P	G-M4
MSA 35	MSB 35	G-M6	M4×0.7P	G-M4
MSA 45		G-PT1/8	M4×0.7P	G-M4
MSA 55		G-PT1/8	M4×0.7P	G-M4
MSA 65		G-PT1/8	M4×0.7P	G-M4

Note: MSA and MSB series have no top oiling hole option.





Model No.	Center	Side		Top	
	Nipple	G1	Nipple	G2	O-Ring
MSG 21	G-M6	M4×0.7P	G-M4	-	-
MSG 27	G-M6	M4×0.7P	G-M4	6.1	P3
MSG 35	G-M6	M4×0.7P	G-M4	7.3	P4

Clamping Elements
For Linear Guides and Shafting

THE **DYNAMICS** OF **MOVEMENT**

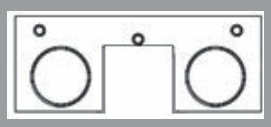
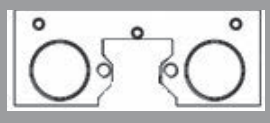
CLAMPING ELEMENTS FROM MATARA:

Matara's range of linear motion clamping elements suit Linear Rail and Shafting, with both manual and pneumatic types available. The Shafting type suits diameters from as small as Ø12 all the way up to Ø60. Furthermore, the Linear Rail type suits linear rail sizes from 9 all the way up to 65.

Clamping Elements Order Example

Code: **FRC** **15** **T** **SE**

Options: 1 2 3 4

Options		Clamping Elements			
1	Series	FRC, FRCDP, FRCDPH,FRCDPM, FRCMC, FRCC, FRCMAN-M LT, FRCCMAN LT, FRCMAN LT			
2	Guide/ Shaft Size	15~65		12~60	
3	Guide Type	**T Type=** 		*Only for FRCDPM **S Type=** 	
4	Clamp Type (Only for linear rail clamps)	**SE** Single action configuration "Normally Open" – Air to close	**SEM** Single action configuration "Normally Closed" – Air to open	**DE** Double action configuration "Normally Open" – Air to close and to open	**DEM** Double action configuration "Normally Closed" – Air to open and to close

FRC Series Pneumatic Clamping Element

The tightening is done using an amplification system with inclined plane. Made in construction steel, for high axial and horizontal stiffness.

FRC SE
FRC DE

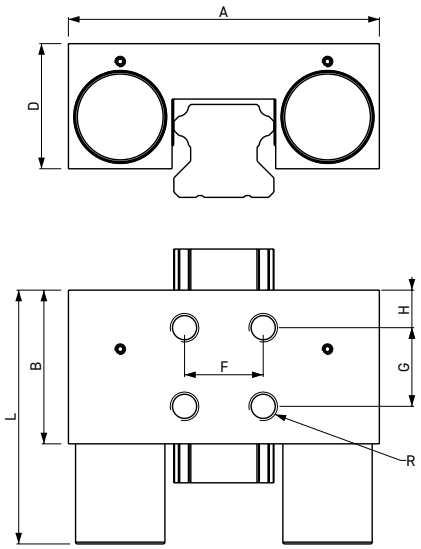
- Limited length
- High clamping forces
- Precise positioning
- High rigidity

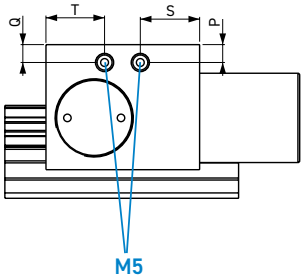
Guide size: 15 ~ 65
Guide type: T
Working type: Norm. Open
Body: Steel
Operating Temp: -20°C ~ 80°C
Operating Pressure: 5,5 ~ 8 bar

FRC SEM
FRC DEM

- Locking element without the use of energy
- Includes springs for closing, while the pressure is for opening

Guide size: 15 ~ 65
Guide type: T
Working type: Norm. Closed
Body: Steel
Operating Temp: -20°C ~ 80°C
Operating Pressure: 5,5 ~ 8 bar



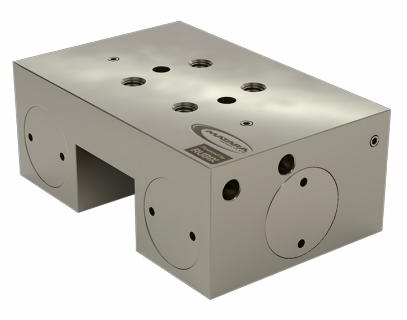


M5
AIR CONNECTION
we recommend
the use of compressed
air hose ø 6x4

Model No.	Guide Type and Size	Clamping Force (N)				A [mm]	B [mm]	D [mm]	F [mm]	G [mm]	H [mm]	L [mm]	P [mm]	Q [mm]	R	S [mm]	T [mm]
		SEM	SE	DE	DEM												
FRC	T 15	400	650	650	1050	60	43	21.5	15	15	12.5	62	5.5	15.5	M4x5	37	6
FRC	T 20	600	1000	1000	1600	70	39	25.5	20	20	14	61	5	5	M5x5	18.5	5
FRC	T 25	750	1200	1200	1950	77	39	28	20	20	14	63.5	5	6	M6x8	19	5.5
FRC	T 30	1050	1750	1750	2800	87	43	35	22	22	10.5	71	5	5	M8x8	16.5	16.5
FRC	T 35	1250	2000	2000	3250	106	46	42.5	24	24	7.5	78	12	11	M8x15	23	7
FRC	T 45	1500	2300	2300	3800	120	50	52	26	26	12	82	15	8	M10x19	20	20
FRC	T 55	2000	3000	3000	5000	136	49	54	30	30	9.5	82	13	8	M10x19	18.5	18.5
FRC	T 65	2000	3000	3000	5000	146	49	67	50	30	9.5	82	26	21	M10x20	18.5	18.5

FRCDP Double Piston Element

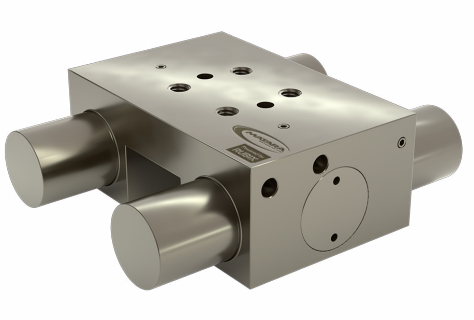
New line created to obtain a high clamping force in small spaces.
Dual Locking Action made by a pair of pistons for each tightening part.



FRCDP SE
FRCDP DE

- Dual piston system: high clamping force
- Small size
- Short reaction time

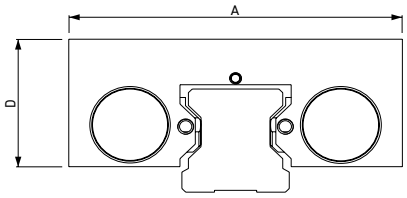
Guide size: 20 ~ 45
Guide type: T
Working type: Norm. Open
Body: Steel
Operating Temp: -20°C ~ 80°C
Operating Pressure: 5,5 ~ 8 bar

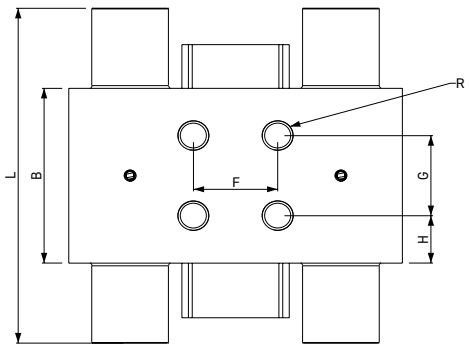


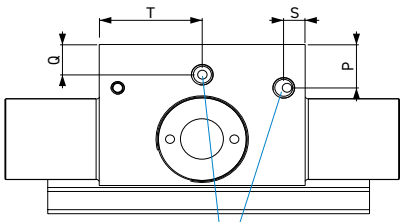
FRCDP SEM
FRCDP DEM

- Locking element without the use of energy
- High clamping force thanks to a double piston system
- Small size
- Short reaction times

Guide size: 20 ~ 45
Guide type: T
Working type: Norm. Closed
Body: Steel
Operating Temp: -20°C ~ 80°C
Operating Pressure: 5,5 ~ 8 bar







M5
AIR CONNECTION
we recommend
the use of compressed
air hose ø 6x4

Model No.	Guide Type and Size	Clamping Force (N)				A [mm]	B [mm]	D [mm]	F [mm]	G [mm]	H [mm]	L [mm]	P [mm]	Q [mm]	R	S [mm]	T [mm]
		SEM	SE	DE	DEM												
FRCDP	T 20	800	1300	1300	2100	73	51	25.5	20	27	12	89	5.5	5	M5x6	15	10
FRCDP	T 25	1200	2000	2000	3200	78	51	30.5	20	20	15.5	95	5	6.5	M6x7	30.5	5.5
FRCDP	T 30	1200	2000	2000	3200	89	48	33	22	22	13	92	6	9.5	M8x10	19.5	6
FRCDP	T 35	1500	2200	2200	3700	100	49	36.5	24	24	12.5	98	7.5	5.25	M8x15	30.5	4.5
FRCDP	T 45	2000	3000	3000	5000	120	56	43.5	26	26	15	114	13	9.5	M10x17	22	5

FRCDPH Powered Double Piston Element

New line created to obtain a high clamping force in small spaces.
Powered Dual Locking Action: with a pair of pistons for each tightening part.
The clamping force of this element is double that of FRC line.

FRCDPH SE
FRCDPH DE

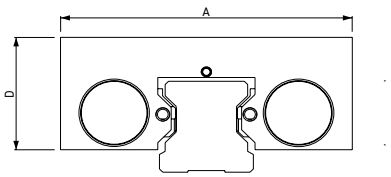
- Dual piston system: high clamping force
- Small size
- Short reaction time

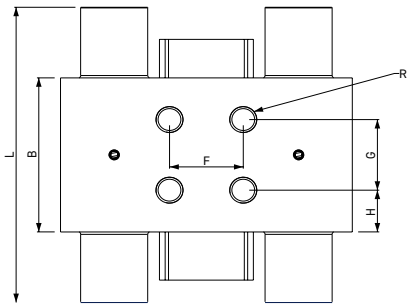
Guide size: 15 ~ 55
Guide type: T
Working type: Norm. Open
Body: Steel
Operating Temp: -20°C ~ 80°C
Operating Pressure: 5,5 ~ 8 bar

FRCDPH SEM
FRCDPH DEM

- Locking element without the use of energy
- High clamping force thanks to a double piston system
- Small size
- Short reaction times

Guide size: 15 ~ 55
Guide type: T
Working type: Norm. Closed
Body: Steel
Operating Temp: -20°C ~ 80°C
Operating Pressure: 5,5 ~ 8 bar





Model No.	Guide Type and Size	Clamping Force (N)				A [mm]	B [mm]	D [mm]	F [mm]	G [mm]	H [mm]	L [mm]	P [mm]	Q [mm]	R	S [mm]	T [mm]
		SEM	SE	DE	DEM												
FRCDPH	T 15	800	1300	1300	2100	61	56	21.5	15	15	19.7	94	5	5.2	M4x4	17	17
FRCDPH	T 20	1200	2000	2000	3200	73	51	25.5	20	27	12	95	5	5	M5x6	16.1	15.8
FRCDPH	T 25	1500	2400	2400	3900	78	51	32.5	20	20	15.5	100	5	7.25	M6x7	20.5	5
FRCDPH	T 30	2100	3500	3500	5600	93	50	38	22	22	14	108	9	5	M8x10	20.5	5
FRCDPH	T 35	2500	4000	4000	6500	109	60.8	42.3	24	24	18.4	124.6	7	5	M8x16	30.4	5
FRCDPH	T 45	3000	4600	4600	7600	120	60.8	49.3	26	26	17.4	124.8	12.3	7	M10x19	30.4	5
FRCDPH	T 55	4000	6000	6000	10000	136	60	54	30	30	15	126	13	8	M10X20	23.5	23.5

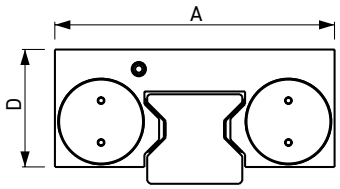
FRCDPM Clamping and Braking Element

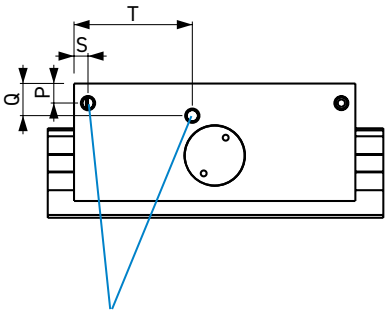
Braking element with high clamping force.
Material and shape of contact parts allow high clamping force without damaging the rail.

FRCDPMS SEM
FRCDPMS DEM

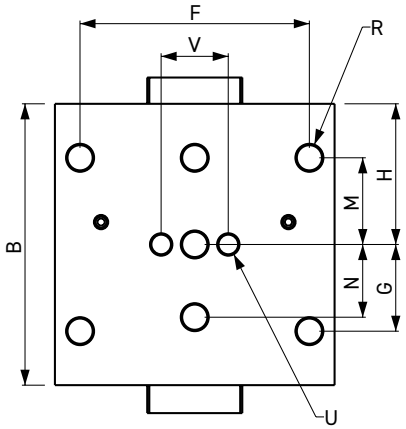
- Locking element without the use of energy
- High clamping force thanks to a double piston system
- Short reaction times
- Compact and rigid body
- Clamping in case of pressure drop
- Working in emergency stop

Guide size: 25 ~ 55
Guide type: T
Working type: Norm. Closed
Body: Steel
Operating Temp: -20°C ~ 80°C
Operating Pressure: 5,5 ~ 8 bar





M5
AIR CONNECTION
we recommend
the use of compressed
air hose ø 6x4



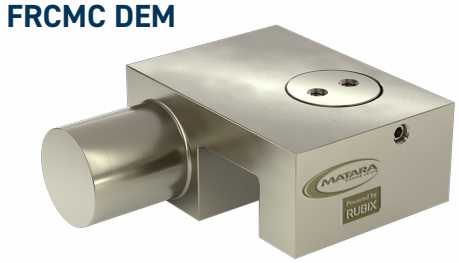
Model No.	Guide Type and Size	Clamping Force (N)		A [mm]	B [mm]	D [mm]	F [mm]	G [mm]	H [mm]	M [mm]	N [mm]	P [mm]	Q [mm]	R	S [mm]	T [mm]	U	V [mm]
		SEM	DEM															
FRCDPM	S 25	1500	3900	70	99	32.5	57	22.5	49.5	22.5	20	7.75	5.25	M8x7	5	56	M6x7	20
FRCDPM	S 30	2100	5600	90	109	38	72	22	54.5	26	22	9	6	M10x8	5	47	M8x8	22
FRCDPM	S 35	2600	6600	100	100.6	42	82	31	50.3	31	26	7	11.5	M10x10	5	42.3	M8x10	24
FRCDPM	T 35	2600	6600	108	100.6	42	82	31	50.3	31	26	7	11.5	M10x10	5	42.3	M8x10	24
FRCDPM	S55	7700	9200	140	219	59	116	47.5	109.5	47.5	35	10	17	M14x14	92	92	-	-

FRCMC Powered Double Piston Element

Compact and inexpensive locking element.
These characteristics are obtained using a single contact section.
The clamping action is allowed by the floating system of the body that ensures:

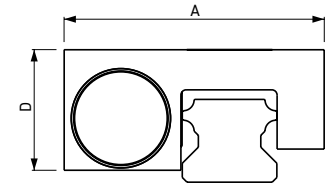
- The clamping of the rail on one side by the contact section and on the other by the body itself;
- A symmetrical distribution of clamping force on the linear guide;
- Absolutely no friction between the linear guide with the body
- And with the contact section when the clamping is released.

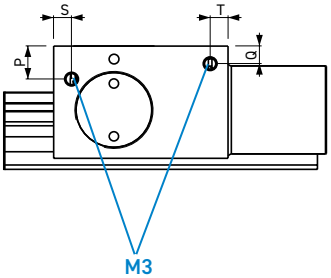
FRCMC SEM
FRCMC DEM



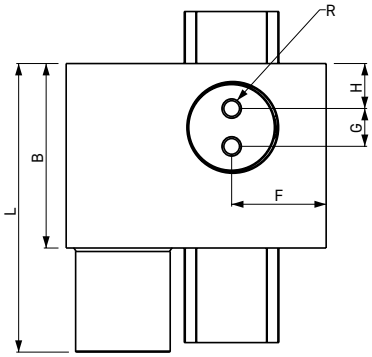
FRCMC SE
FRCMC DE

Guide size: 15 ~ 25
Guide type: T
Working type: Norm. Open
Body: Steel
Operating Temp: -20°C ~ 80°C
Operating Pressure: 5,5 ~ 8 bar





M3
AIR CONNECTION
we recommend
the use of compressed
air hose ø 6x4



Model No.	Guide Type and Size	Clamping Force (N)				A [mm]	B [mm]	D [mm]	F [mm]	G [mm]	H [mm]	L [mm]	P [mm]	Q [mm]	R	S [mm]	T [mm]
		SEM	SE	DE	DEM												
FRCMC	T 15	200	320	320	520	41.5	36	18	14.25	7	8.9	55	4	4	M4x4.5	3	4.5
FRCMC	T 20	300	500	500	800	55	39	25.5	21	8	9.5	61	5	4	M4x5.8	4	4
FRCMC	T 25	375	600	600	975	60.5	39	30	22	8	9.5	63.5	5	7.5	M4x5.8	5	5

FRCC Pneumatic Clamping Elements for Round Bars

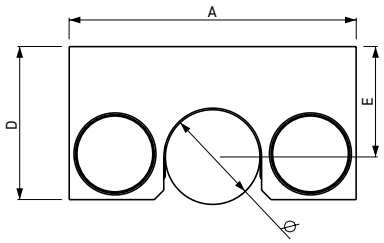
The same high performance of FRC line for round guides
The tightening is done using an amplification system with inclined plane.

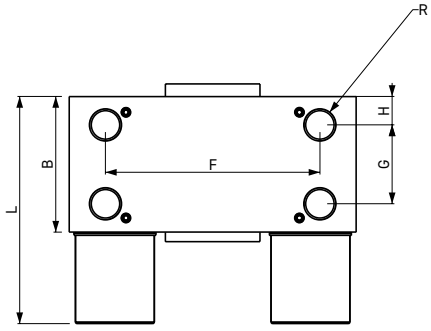
FRCC SE
FRCC DE

Guide size: 16 ~ 60
Working type: Norm. Open
Body: Steel
Operating Temp: -20°C ~ 80°C
Operating Pressure: 5,5 ~ 8 bar

FRCC SEM
FRCC DEM

Guide size: 16 ~ 60
Working type: Norm. Closed
Body: Steel
Operating Temp: -20°C ~ 80°C
Operating Pressure: 5,5 ~ 8 bar





Model No.	Ø Shaft	Clamping Force (N)				A [mm]	B [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L [mm]	P [mm]	Q [mm]	R	S [mm]	T [mm]
		SEM	SE	DE	DEM													
FRCC	16	400	650	650	1050	55	35	31.5	22	15	15	10	54	11.65	11.65	M5x6	5	5
FRCC	20	600	1000	1000	1600	66	38	36.5	25	45	18	13	60	12.5	12.5	M8x10	13.5	5
FRCC	25	750	1200	1200	1950	77	38.5	43	30	60	20	8	63	10.5	15.5	M10x12	5	5
FRCC	30	1050	1750	1750	2800	91	43	48.5	35	68	25	9	72	16	16	M10x12	5	5
FRCC	40	1500	2300	2300	3800	115	49	63	45	90	26	9	81	20	20	M10x15	5	17
FRCC	50	2000	3000	3000	5000	131	48	70	50	108	30	9	81	21.5	21.5	M10x15	5	5
FRCC	60	2000	3000	3000	5000	141	48	70	50	108	30	9	81	15	15	M10x15	20	17

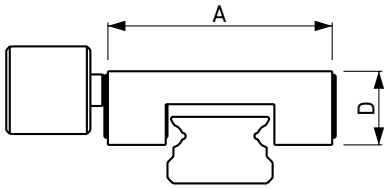
FRCMAN-M LT for Miniature Linear Guides

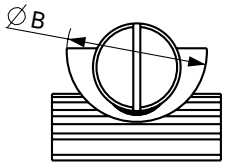
Manual clamping element for miniature linear guides.
By acting on the locking screw, the contact sections press with sync on the surfaces of the rail.
The floating profiles of contact ensure a symmetrical distribution of the force on the linear guide.
New ergonomic design to save space.

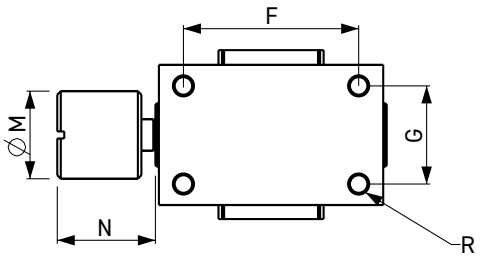
FRCMAN M LT

- Simple and inexpensive
- Floating locking contacts

Guide size: 9 ~ 15
Guide type: T
Working type: Manual
Body: Steel



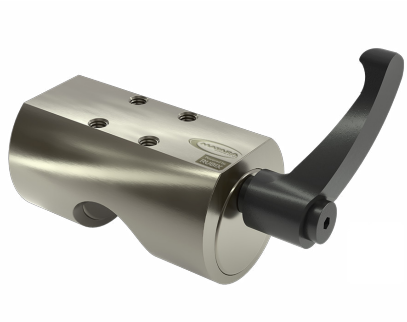




Model No.	Guide Size	Clamping Force [N]	A [mm]	B [mm]	D [mm]	F [mm]	G [mm]	M [mm]	N [mm]	R
FRCMAN-M LT	7	65	17	12	6	12	8	6	7.5	M2X3
FRCMAN-M LT	9	100	20	17	7.3	15	11	8	9	M3x3
FRCMAN-M LT	12	150	27	19	9.5	20	13	10	10	M3x4
FRCMAN-M LT	15	180	32	20	10.5	25	14	12.5	14	M3X5

FRCCMAN LT Manual Clamping Element for Round Bars
LIGHT LINE

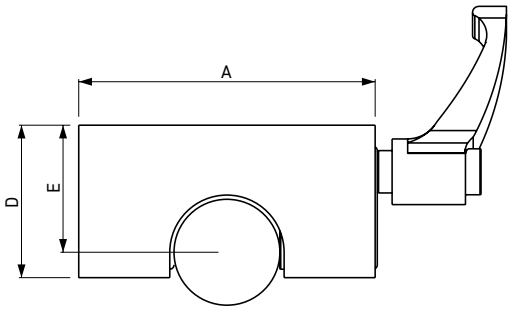
Simple and reliable, this clamping element is manually controlled.
By acting on the adjustable locking lever, the contact profiles press with sync on the surfaces of the bar.
The floating profiles of contact ensure a symmetrical distribution of the force on the round bar or guide.
New ergonomic design.

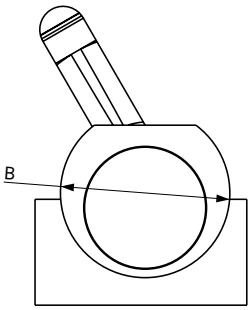


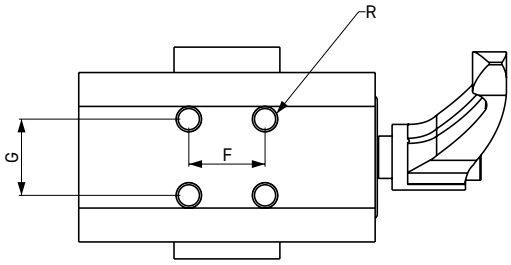
FRCCMAN LT

- Simple and inexpensive
- Floating locking contacts

Guide size: 12 ~ 50
Working type: Manual
Body: Steel







Model No.	Ø Shaft	Clamping Force [N]	A [mm]	B [mm]	D [mm]	E [mm]	F [mm]	G [mm]	R
FRCCMAN LT	12	1200	43	30	24	18	17	17	M4x5
FRCCMAN LT	16	1200	47	30	26	22	17	17	M4x5
FRCCMAN LT	20	1200	60	32	28	25	15	15	M5X6
FRCCMAN LT	25	1200	70	40	36	30	18	18	M6x8
FRCCMAN LT	30	2000	90	45	41	35	20	20	M6x8
FRCCMAN LT	40	2000	107	58	51	45	25	25	M10x15
FRCCMAN LT	50	2000	130	65	55	50	30	30	M14x20

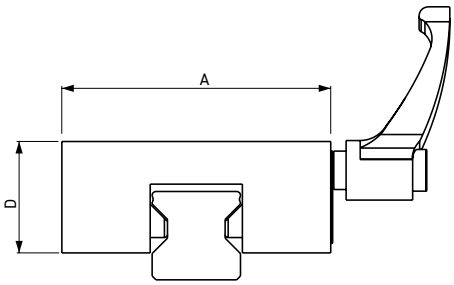
FRCMAN LT Manual Clamping Element for Linear

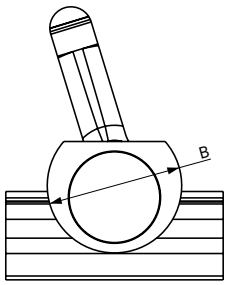
Simple and reliable, this clamping element is manually controlled.
By acting on the adjustable locking lever, the contact profiles press with sync on the surfaces of the rail.
The floating profiles of contact ensure a symmetrical distribution of the force on the linear guide.
New ergonomic design.

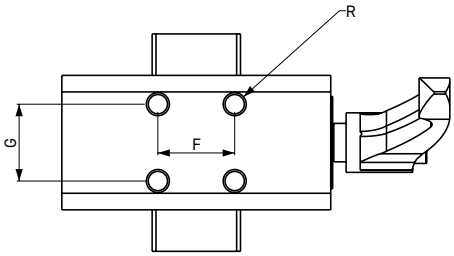
FRCMAN LT

- Simple and inexpensive
- Floating locking contacts

Guide size: 15 ~ 65
Guide type: T
Working type: Manual
Body: Steel





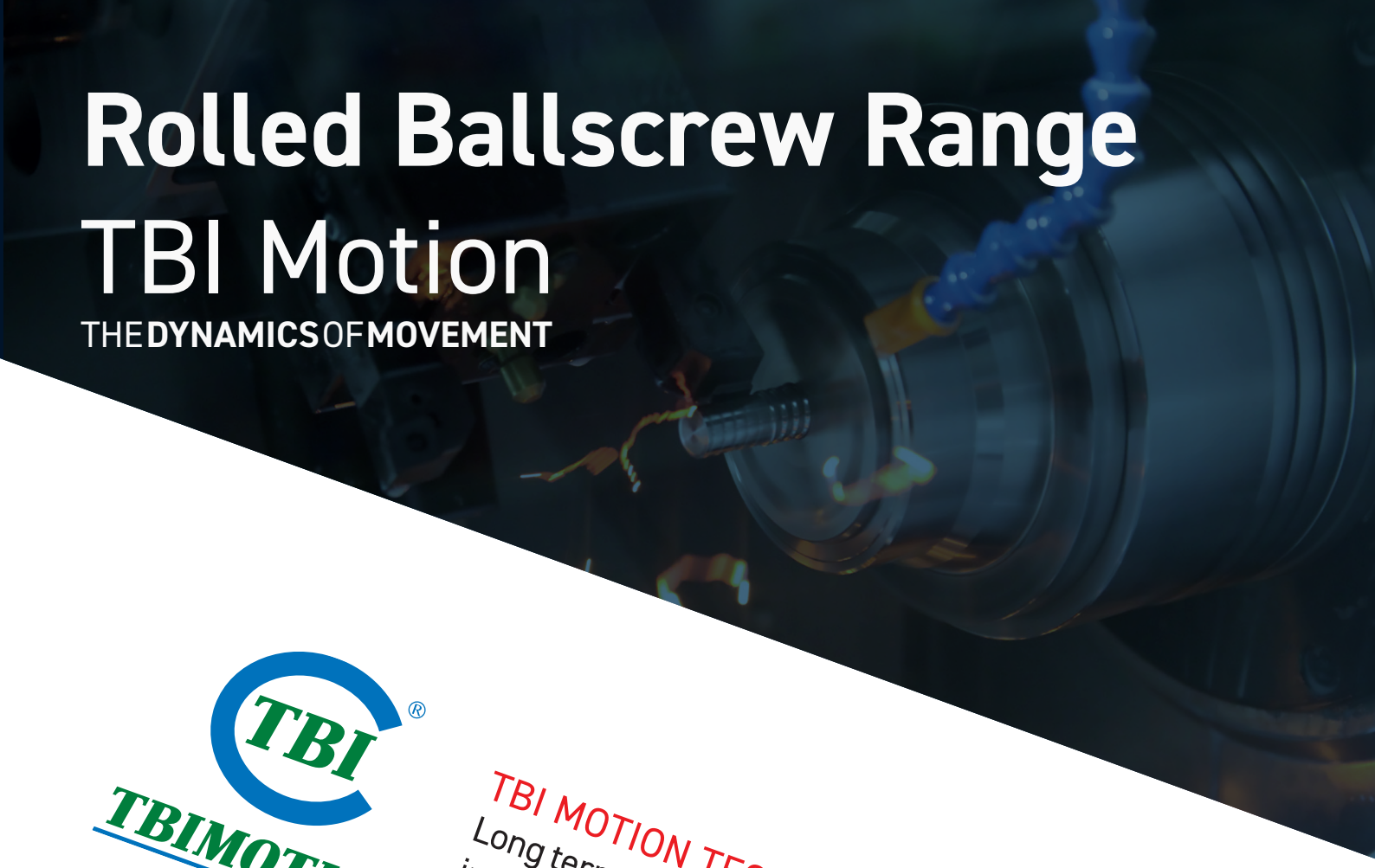


Model No.	Guide Type and Size	Clamping Force [N]	A [mm]	B [mm]	D [mm]	F [mm]	G [mm]	R
FRCMAN LT	T 15	1200	47	25	17.5	17	17	M4x5
FRCMAN LT	T 20	1200	60	26	20	15	15	M5X6
FRCMAN LT	T 25	1200	70	32	24	20	20	M6x8
FRCMAN LT	T 30	2000	90	38	29	22	22	M6x8
FRCMAN LT	T 35	2000	98	42	32	24	24	M8x10
FRCMAN LT	T 45	2000	118	50	42	26	26	M10x14
FRCMAN LT	T 55	2000	138	56	47	30	30	M14x16
FRCMAN LT	T 65	2000	160	70	58	35	35	M16x20

Rolled Ballscrew Range

TBI Motion

THE **DYNAMICS** OF **MOVEMENT**



TBI MOTION TECHNOLOGY CO.LTD:
Long term partners with Matara, TBI Motion are experts in producing high quality rolled ballscrews and ball nuts, supplying various industries across the globe.

Machined In-House
Your Order, Your Way

TBI Rolled Ballscrew Shaft Order Example

Code:	SC	R	025	05	F	C7	1000	+N3
Options:	1	2	3	4	5	6	7	8

	Options	Rolled Ballscrew Series						
1	Type of Screw Shaft	**SC** : Standard			**SS** : For SFS, DFS Only			
2	Threading Direction	**R** : Right			**L** : Left			
3	Nominal Diameter	Unit: mm						
4	Lead	Unit: mm						
5	Product Code	**F**: Rolled						
6	Accuracy Grade	**C5**			**C7**			
7	Overall Length of Shaft	Unit: mm						
8	Shaft Surface Treatment	___ : Standard	**B1** : Black Oxidation	**N1** : Hard Chrome Plating	**P** : Phosphating	**N3** : Nickel Plating	**N4** : Raydent	**N5** : Black Chrome Plating

TBI Ball Nut Order Example

Code:	SFU	R	025	05	T4	D	+N3
Options:	1	2	3	4	5	6	7

	Options	Specifications					
1	Nut Type	Please See Nut Type/Flange Type Table					
2	Threading Direction	**R** : Right			**L** : Left		
3	Nominal Diameter	Unit : mm					
4	Lead	Unit : mm					
5	Number of Turns	**T** : 1	**A** : 1.5 (or 1.7/ 1.8)	**B** : 2.5/ 2.8	**C** : 3.5	**D** : 4.8	**Example (2.5 • 2=B2)**
6	Flange Type	**N** : Not cutting		**S** : Single Cutting		**D** : Double Cutting	
7	Nut Surface Treatment	___ : Standard	**B1** : Black Oxidation	**N1** : Hard Chrome Plating	**P** : Phosphating	**N3** : Nickel Plating	**N4** : Raydent

Preload of Rolled Ballscrew

The standard preloading for Rolled Ball Screw is P0. If P1 preloading is required, please contact Matara UK.

Unit: μm

Accuracy Grade	C5 (DIN)	C7
e3oo	23	50

Life Design

Life of Ballscrews:

Even if the ballscrew is used under correct conditions, it would still fail after a period of time due to deterioration. The period of time up until the ballscrew is out of service is called the service life of the screw. This is generally classified into the fatigue life, when the delamination phenomenon occurs, and the accuracy deterioration life, caused by wear-out, etc.

Basic Static Load Rating C_{oa}:

The basic load rating is an axial static load which will produce a permanent deformation at contact points of the balls to ball grooves to 0.01 % of ball diameter.

Basic Dynamic Load Rating C_a:

The basic dynamic load rating is an axial load which allow 90% of a group of identical ball screws (rotated under the same condition) to rotate without flaking for 10^6 revolutions.
This basic dynamic load rating is shown in the table of dimensions.

Relation between load and service life:

$$L_\alpha = \left(\frac{1}{P} \right)^3 \qquad L : \text{Service life} \qquad P : \text{Load}$$

Fatigue Life:

Average load Pe

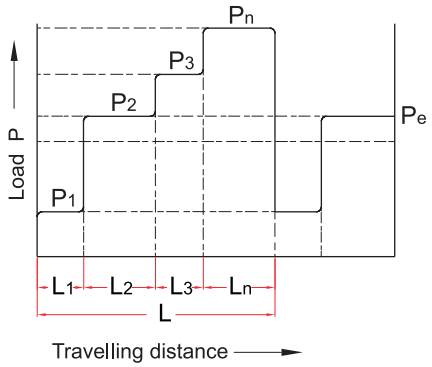
(1) When axial is changing, please calculate in order to find out the average load for the equivalent fatigue life under different load condition changes. (see Table below)

$$Pe = \left(\frac{P_1^3 n_1 t_1 + P_2^3 n_2 t_2 + \ldots + P_n^3 n_n t_n}{n_1 t_1 + n_2 t_2 + \ldots + n_n t_n} \right)^{\frac{1}{3}} \text{(kgf)}$$

Axial Load (kgf)	Rotating Speed (min^{-1})	Time(%)
P_1	n_1	t_1
P_2	n_2	t_2
⋮	⋮	⋮
P_n	n_n	t_n

But, $t_1 + t_2 + t_3 + \ldots + t_n = 100$

Usage	Life in Hours
Working machines	20000
General industrial machines	10000
Automatic control machines	15000
Measurement machines	15000



$$P_e = \frac{2P_{max} + P_{min}}{3} \text{ (kgf)}$$

P_{max} : Maximal axial load (kgf)

P_{min} : Minimal axial load (kgf)

(2) When load changes according to sine curve.

$P_e \fallingdotseq 0.65\ P_{max}$ ..... (Fig A)

$P_e \fallingdotseq 0.75\ P_{max}$ ..... (Fig B)

Fig A

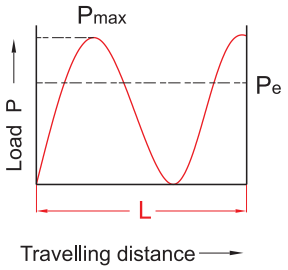
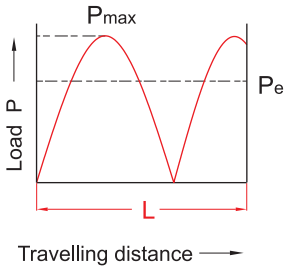


Fig B



Calculation of Life:

The fatigue life is generally expressed by the total number of revolutions. The total rotation hours or total travel distance may also be used to express life. The fatigue life is calculated as follows:

$$L = \left(\frac{C_a}{P_a \cdot f_w} \right)^3 \cdot 10^6 \qquad L_t = \frac{L}{60n} \qquad L_s = \frac{L \cdot \ell}{10^6}$$

Where
L : Rated fatigue life (rev)
L_s : Life in travel distance (km)
P_a : Axial (kgf)
f_w : Load factor (Factor depending on operation conditions)
L_t : Life in hours (h)
C_a : Basic dynamic load rating (kgf)
n : Rotating speed (rpm)
f: Lead (mm)

Vibration and Impact	Velocity (V)	f_w
Very Slight	Very Low V≤ 0.25 m/s	1.0 ~1.2
Slight	Low 0.25 < V ≤ 1 m/s	1.2 ~ 1.5
Moderate	Medium 1 < V ≤ 2 m/s	1.5 ~2.0
Strong	high V > 2 m/s	2.0 ~3.5

Usage	Operation	f_s
Industrial machines	Normal operation	1.0 ~1.3
	Operation with impact and vibration	2.0 ~ 3.0
General industrial machines	Normal operation	1.0 ~1.5
	Operation with impact and vibration	2.5 ~7.0

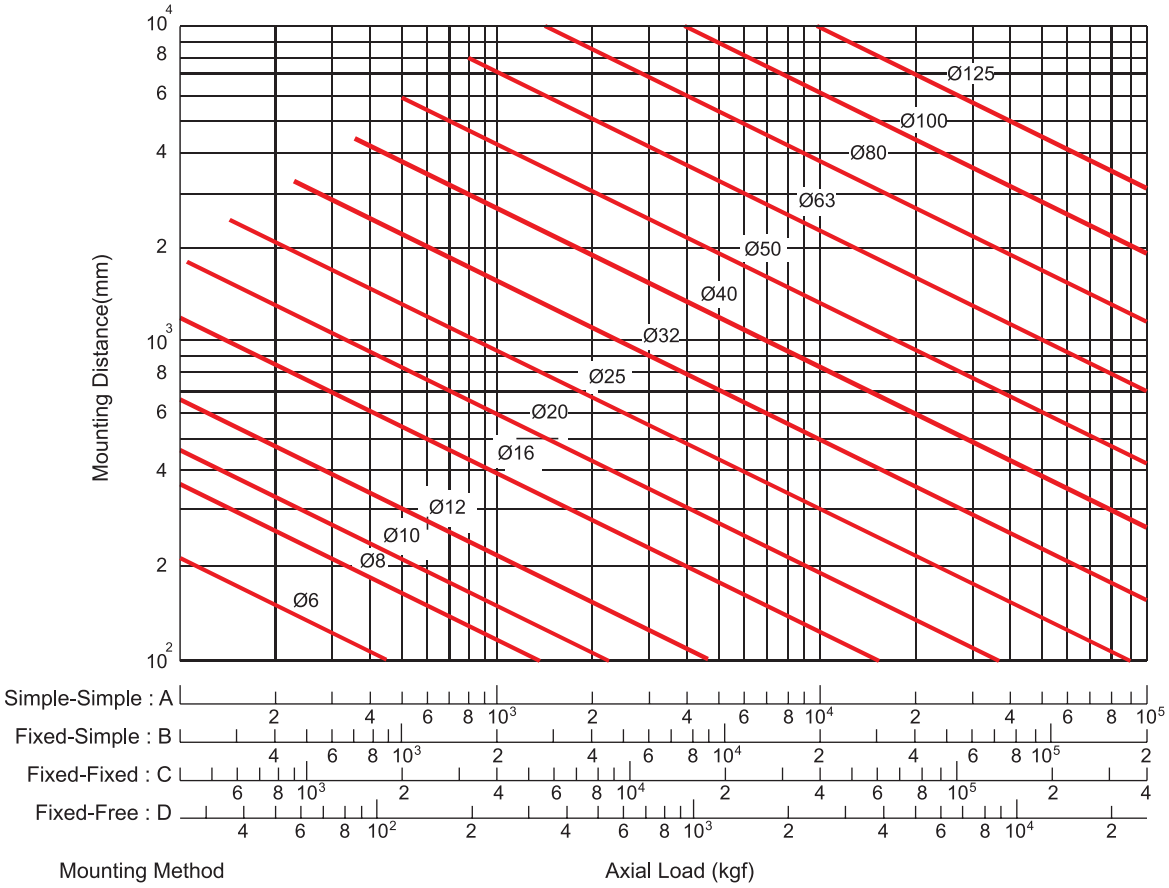
Basic Dynamic Load Rating C_a

$C_a = Pe \cdot fs$

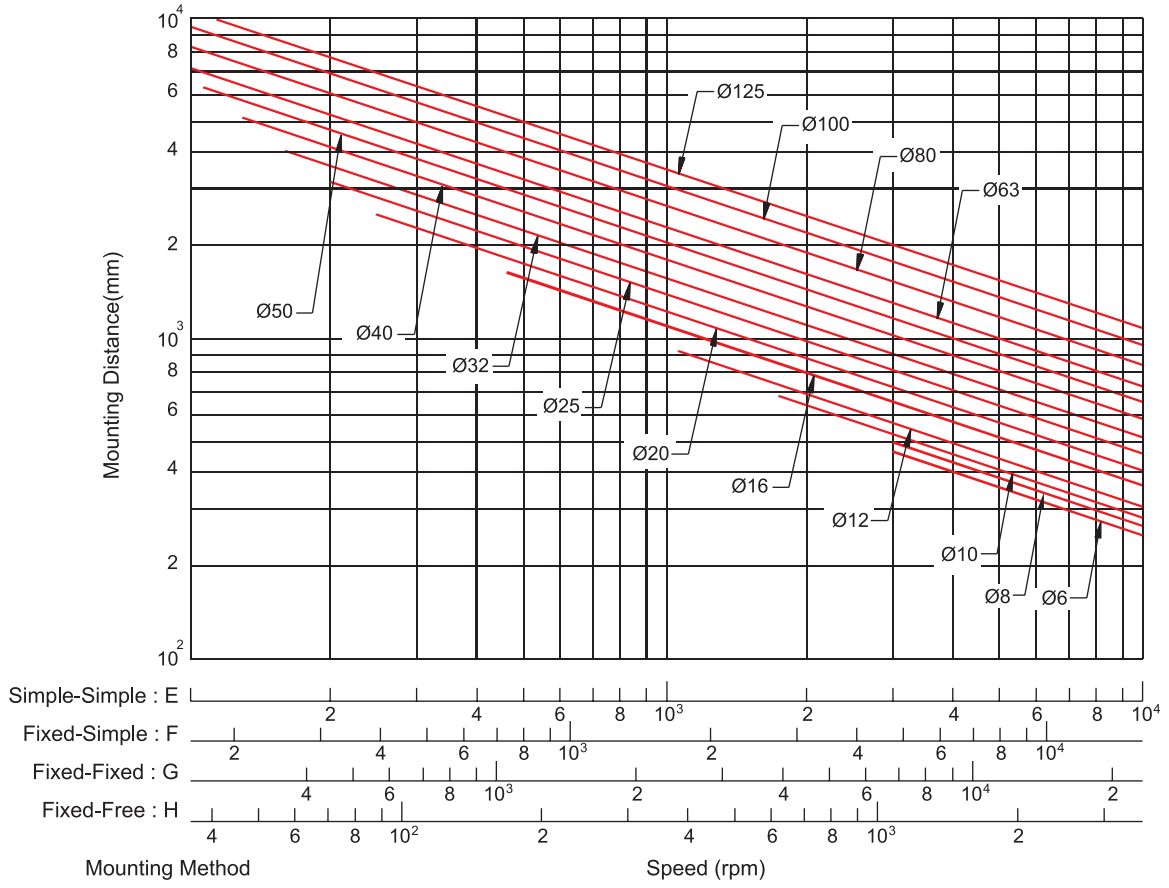
Basic Static Load Rating Coa

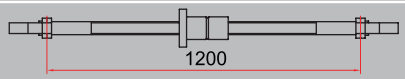
$C_{oa} = Pmax \cdot fs$

Buckling Load vs. Nominal Diameter & Length

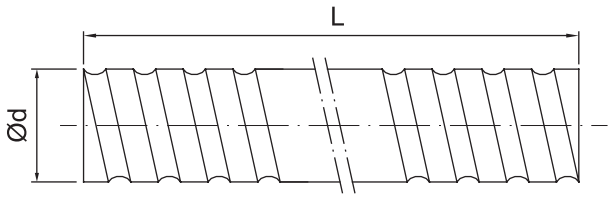


Critical Speed vs. Nominal Diameter



Key Point for Ball Screws Selection	Calculation Examples For Ball Screws Selection
Calculation of life confirmation Lt (h) $L_t = \frac{L}{60n} = (\frac{Ca}{Pe \cdot fw})^3 \cdot 10^6 \cdot \frac{1}{60n}$	$L_t = (\frac{2954}{189 \cdot 2})^3 \cdot 10^6 \cdot \frac{1}{60 \cdot 470} = 42544(h)$
Mounting distance of screw length	 (Fixed)(BK17) (Fixed)(BK17)
Determination of screw length Screw length = Maximal stroke + Nut length + Two reserved length at shaft end	Screw length = 700 + 85 + 76 + 76 = 937 mm 937 mm < 1200 mm
Permissible axial load	Omitted because of F-F support
Permissible revolution speed n and dm $n = \alpha \cdot \frac{60\lambda^2}{2\pi L^2}\sqrt{\frac{Elg}{\gamma A}} = f\frac{dr}{L^2} \cdot 10^7$ (rpm) dm = Shaft dia · Maximal speed	$n = \frac{21.9 \cdot 21.86 \cdot 10^7}{1200^2} = 3324\ min^{-1} < nmax$ dm = 25 · 1000 = 25000 < 50000
Countermeasure against thermal displacement $\triangle \ell = \alpha \cdot \triangle t \cdot L$ $\triangle \ell$: Thermal displacement α : Coefficient of thermal expansion $\triangle t$: Temperature rise (deg) at screw shaft L : Screw shaft length	It is estimated there would be a temperature rise 2~5°C with the ball screws of the general machinery, take temperature rise of 2°C to compute the extension of ball screw. $\triangle \ell = \alpha \cdot \triangle t \cdot L = 11.7 \cdot 10^{-6} \cdot 2 \cdot 700mm$ $\fallingdotseq 0.016mm$ $F_p = \frac{EA\triangle \ell}{L}$ $= \frac{2.06 \cdot 10^4 \cdot \frac{\pi \cdot 21.86^2}{4} \cdot 0.016}{700} \fallingdotseq 177(kgf)$
Rigidity (1) Axial rigidity Ks and displacement δs of screw shaft $Ks = \frac{P}{\delta s}$ (kgf/mm) P : Axial load (kgf) $\delta SF = \frac{PL}{4AE}$ (mm).....(with reference to page C20) (2) Axial rigidity KN and displacement δs of nut $\delta NS = \frac{K}{\sin\beta}\left(\frac{Q^2}{d}\right)^{\frac{1}{3}} \cdot \frac{1}{\zeta}$ (mm) $Q = \frac{P}{n \cdot \sin\beta}$ (kgf) $n = \frac{D0\pi m}{d}$ (each) (3) Axial rigidity Ks and displacement δs of bracing shaft $K_B = \frac{P}{\delta B}$ (kgf/mm)	Deviation can be corrected by estimating the temperature rise per extension of 0.016 mm, and taking into consideration of the pre-tension of 177 kgf. (1) Directional rigidity $\delta SF = \frac{PL}{4AE} = \frac{27 \cdot 1200}{4 \cdot \frac{\pi \cdot 21.86^2}{4} \cdot 2.06 \cdot 10^4}$ = 0.00105 (mm) $K_s = \frac{370}{0.00105} = 3.5 \cdot 10^5$ kgf/mm (2) Rigidity of steel ball and nut groove $n = \frac{26.62 \cdot \pi \cdot 4}{4.762} = 70$ $Q = \frac{370}{70\sin45^\circ} = 10$ $\delta NS = \frac{0.00057}{\sin45^\circ}\left(\frac{10^{kg}}{4.762}\right)^{\frac{c}{3}} \cdot \frac{1}{0.7}$ $= 3.2 \cdot 10^{-3}$ mm $K_N = \frac{370}{3.2 \cdot 10^{-3}} = 1.27 \cdot 10^5$ kgf/mm (3) Rigidity of support bearings Where, nut rigidity 50 kgf/μm $\delta B = \frac{370}{51 \cdot 2} = 3.6\ \mu m$ $K_B = \frac{370}{0.0036} = 1 \cdot 10^5$ kgf/mm ● $\delta TOTAL = 1.05 + 3.2 + 3.6 = 7.85\ \mu m$
Confirmation of the ball screw life	L = 42544 (h) > 18000 (h)

Rolled Ballscrew Specifications Ø6-32



Unit: mm

Model No.			Accuracy Grade	Threading Direction	Number Of Grooves	Standard Code Of Shaft	Type Of Nut	Overall Length Of Shaft (mm)
d	L	Da		R:Right L:Left				
6	1	0.8	C7	R	1	SCR00601	K	1000
8	1	0.8	C7, C5	R	1	SCR00801	K	1000
	2	1.2	C7, C5	R	1	SCR00802	K	
	2.5	1.2	C7, C5	R	1	SCR00825	K, BSH	
10	2	1.2	C7, C5	R	1	SCR01002	K, BSH	3000
	4	2	C7, C5	R	1	SCR01004	K, BSH	
12	2	1.2	C7, C5	R	1	SCR01202	K	3000
	4	2.5	C7, C5	R	1	SCR01204	NU,BSH	
	5	2.5	C7, C5	R	1	SCR01205-A	V,NU,BSH,A	
	5	2.5	C7, C5	R	1	SCR01205-B	K	
	10	2.5	C7, C5	R	2	SCR01210-B	V	
	20	2.5	C7	R	4	SCR01220	Y	
14	2	1.2	C7, C5	R	1	SCR01402	K	1800
	4	2.5	C7	R	1	SCR01404	BSH	3000
16	4	2.381	C7, C5	R	1	SCR01604(N)	V,N I, NU, BSH	3000
	5	3.175	C7, C5	R/L	1	SCR01605	V,N I, NU, BSH	
	10	3.175	C7, C5	R	2	SCR01610	V,N I, NU, BSH	
	16	2.778	C7, C5	R	4	SCR01616	Y	
	32	2.778	C7	R	8	SCR01632	Y	
20	4	2.381	C7, C5	R	1	SCR02004(N)	V, NI, NU	3000
	5	3.175	C7, C5	R/L	1	SCR02005	V, NI, NU, BSH, A	
	20	3.175	C7, C5	R	4	SCR02020	V,Y, A	
	40	3.175	C7	R	8	SCR02040	Y	
25	4	2.381	C7	R	1	SCR02504(N)	NI, NU	6000
	5	3.175	C7, C5	R/L	1	SCR02505	V, NI, NU, BSH, A	
	10	4.762	C7, C5	R	1	SCR02510-A	NI, NU,B SH	
	10	6.35	C7, C5	R	1	SCR02510-B	V	
	25	3.969	C7, C5	R	4	SCR02525	V,Y	
	50	3.969	C7	R	8	SCR02550	Y	
32	4	2.381	C7, C5	R	1	SCR03204(N)	V, NI, NU	6000
	5	3.175	C7, C5	R/L	1	SCR03205	V,N I,N U, M,A	
	10	6.35	C7, C5	R/L	1	SCR03210	V, NI, NU	
	32	4.762	C7	R	4	SCR03232	Y	
	64	4.762	C7	R	8	SCR03264	Y	

Standard Specification Ø40-80

Unit: mm

Model No.			Accuracy Grade	Threading Direction	Number Of Grooves	Standard Code Of Shaft	Type Of Nut	Overall Length Of Shaft (mm)
d	L	Da		R:Right L:Left				
40	5	3.175	C7, C5	R/L	1	SCR04005	V, NI, NU, A	6000
	10	6.35	C7	R/L	1	SCR04010	V, NI, NU	
	20	6.35	C7	R	2	SCR04020	V	
	40	6.35	C7	R	4	SCR04040	Y	
	80	6.35	C7	R	8	SCR04080	Y	
50	5	3.175	C7, C5	R	1	SCR05005	V,A	6000
	10	6.35	C7, C5	R/L	1	SCR05010	V, NI, NU	
	20	9.525	C7	R	1	SCR05020	V	
	50	7.938	C7	R	4	SCR05050	Y	
	100	7.938	C7	R	8	SCR050100	Y	
63	10	6.35	C7, C5	R	1	SCR06310	V, NI, NU	7000
	20	9.525	C7	R	1	SCR06320	V, NU	
80	10	6.35	C7, C5	R	1	SCR08010	V, NI, NU	7000
	20	9.525	C7	R	1	SCR08020	V, NU	

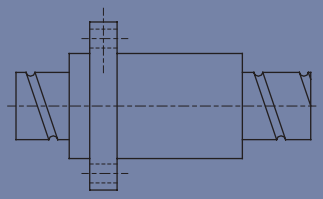
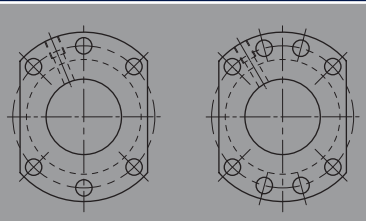
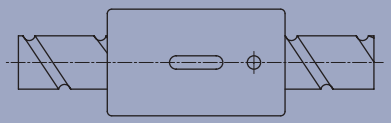
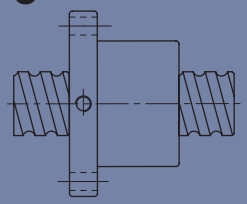
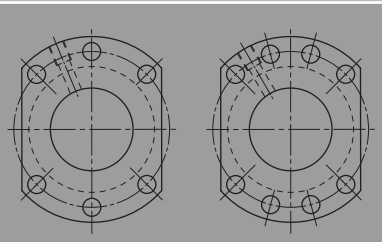
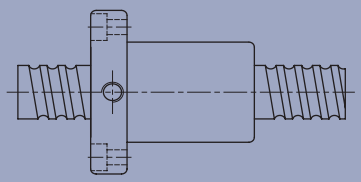
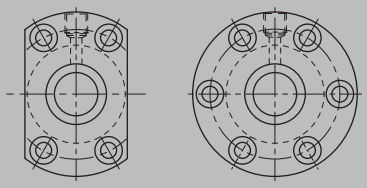
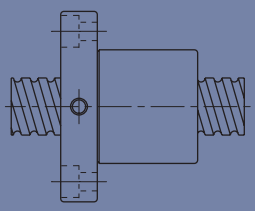
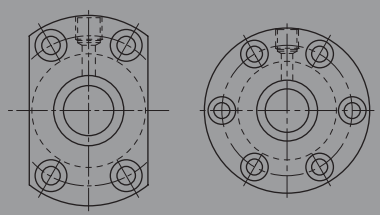
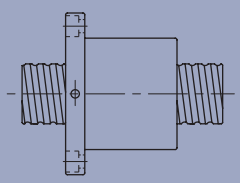
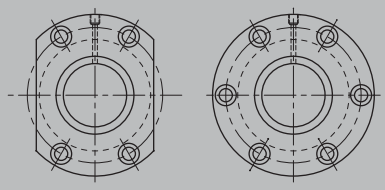
Standard Specifications Ø16-50

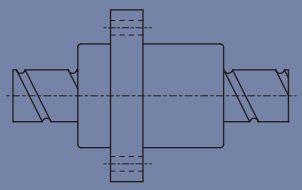
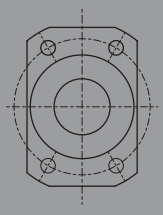
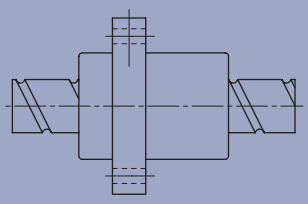
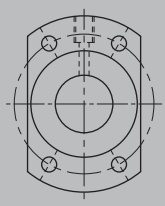
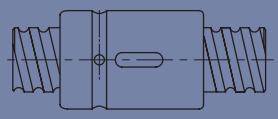
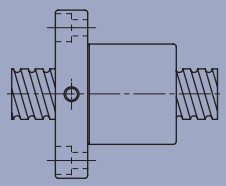
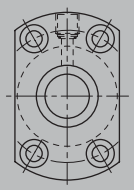
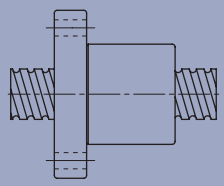
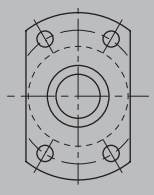
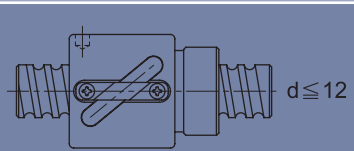
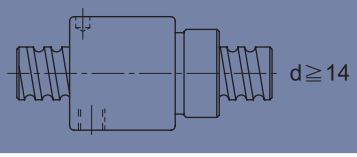
Unit: mm

Model No.			Accuracy Grade	TAreading Direction	Number Of Grooves	Standard Code Of SAaft	Type Of Nut	Overall Length Of Shaft (mm)
d	L	Da		R:RigAt L:Left				
16	5	2.778	C7, C5	R	1	SSR01605	A	3000
	10	2.778	C7, C5	R	2	SSR01610	A	
	16	2.778	C7, C5	R	4	SSR01616	A	
20	10	3.175	C7, C5	R	2	SSR02010	A	3000
25	10	3.175	C7, C5	R	2	SSR02510	A	6000
	25	3.175	C7	R	4	SSR02525	A	
32	10	3.969	C7, C5	R	1	SSR03210	A	6000
	20	3.969	C7	R	2	SSR03220	A	
40	10	6.35	C7	R	1	SSR04010	A	6000
50	10	6.35	C7	R	1	SSR05010	A	6000

Note: We offer C7 accuracy grade screws as standard with the option of C5 upon request.

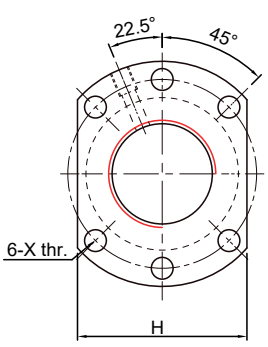
Nut Types & Flange types

	Nut Type	Flange Type
A (High speed/ Strong dust-proof type)	**SFA** 	 d≦32 d≧40
CNH (Actuator Type)	**SCNH** 	No Flange
NU/U (Strong dust-proof type)	**SFNU/ SFU** 	 d≦32 d≧40
NI (Strong dust-proof type)	**SFNI/SFI** 	
M (Design for milling)	**SFM** 	
V (High load external circulation type)	**SFV** 	

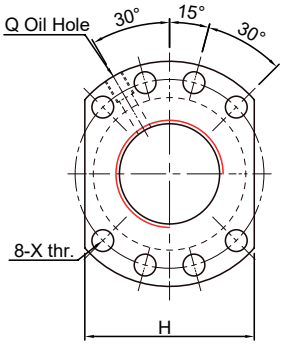
	Nut Type	Flange Type
XSY (Miniature Type)	**XSY** 	
Y (High DM-N Rating)	**SFY** 	
CNI/ I (Standard)	**SCNI** 	No Flange
K (Miniature type)	**SFK** 	 (SFK 01004) (SFK 02002) (SFK 02502)
	SFK 	
BSH (Threaded Nut Type)	**BSH**  d≦12  d≧14	No Flange

Note: The ball nuts shown are all standard stock, if you can't find something that meets your requirements, contact us, our friendly staff are always happy to help

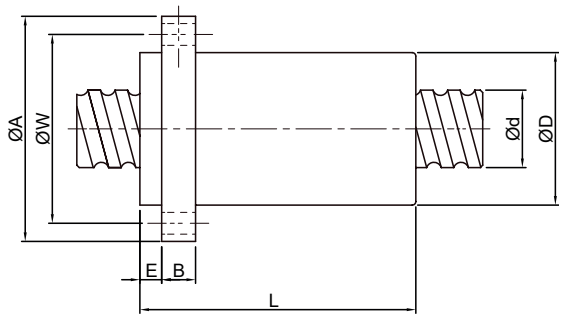
SFA (DIN 69051 FORM B) Series Specifications



d≦32



d≧40

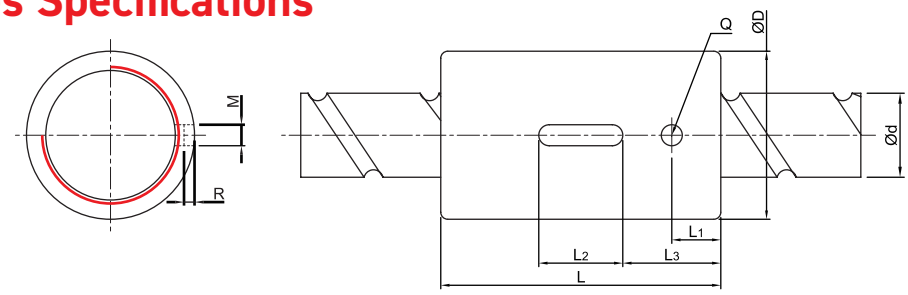


Unit: mm

Model No.	d	l	Da	Dimension										Load Rating		K kgf/μm
				D	A	E	B	L	W	H	X	Q	n	C_a (kgf)	C_{oa} (kgf)	
SFA1205-2.8*	12	5	2.5	24	40	5	10	30	32	30	4.5	-	2.8×1	661	1316	19
SFA1210-2.8 *		10	2.5	24	40	5	10	42	32	30	4.5	-	2.8×1	642	1287	19
SFA1605-3.8 *	15	5	2.778	28	48	5	10	31	38	40	5.5	M6	3.8×1	1112	2507	30
SFA1610-2.8 *		10	2.778	28	48	5	10	42	38	40	5.5	M6	2.8×1	839	1821	23
SFA1616-1.8 *		16	2.778	28	48	5	10	43	38	40	5.5	M6	1.8×1	552	1137	14
SFA1616-2.8 *		16	2.778	28	48	5	10	59	38	40	5.5	M6	2.8×1	808	1769	22
SFA1620-1.8 *		20	2.778	28	48	5	10	50	38	40	5.5	M6	1.8×1	554	1170	14
SFA2005-3.8 *	20	5	3.175	36	58	7	10	33	47	44	6.6	M6	3.8×1	1484	3681	37
SFA2010-3.8 *		10	3.175	36	58	7	10	52	47	44	6.6	M6	3.8×1	1516	3833	40
SFA2020-1.8 *		20	3.175	36	58	7	10	52	47	44	6.6	M6	1.8×1	764	1758	19
SFA2020-2.8 *		20	3.175	36	58	7	10	72	47	44	6.6	M6	2.8×1	1118	2734	29
SFA2505-3.8 *	25	5	3.175	40	62	7	10	33	51	48	6.6	M6	3.8×1	1650	4658	43
SFA2510-3.8 *		10	3.175	40	62	7	12	52	51	48	6.6	M6	3.8×1	1638	4633	45
SFA2525-1.8 *		25	3.175	40	62	7	12	60	51	48	6.6	M6	1.8×1	843	2199	22
SFA2525-2.8 *		25	3.175	40	62	7	12	85	51	48	6.6	M6	2.8×1	1232	3421	34
SFA3205-3.8	32	5	3.175	50	80	9	12	35	65	62	9	M6	3.8×1	1839	6026	51
SFA3210-3.8	31	10	3.969	50	80	9	12	53	65	62	9	M6	3.8×1	2460	7255	55
SFA3220-2.8		20	3.969	50	80	9	12	72	65	62	9	M6	2.8×1	1907	5482	43
SFA3232-1.8		32	3.969	50	80	9	12	78	65	62	9	M6	1.8×1	1257	3426	27
SFA3232-2.8		32	3.969	50	80	9	12	110	65	62	9	M6	2.8×1	1838	5329	42
SFA4005-3.8	40	5	3.175	63	93	9	14	39	78	70	9	M8	3.8×1	2018	7589	60
SFA4010-3.8	38	10	6.35	63	93	9	14	57	78	70	9	M8	3.8×1	5035	13943	67
SFA4020-2.8		20	6.35	63	93	9	14	78	78	70	9	M8	2.8×1	3959	10715	54
SFA4040-1.8		40	6.35	63	93	9	14	96	78	70	9	M8	1.8×1	2585	6648	34
SFA4040-2.8		40	6.35	63	93	9	14	136	78	70	9	M8	2.8×1	3780	10341	52
SFA5005-3.8*	50	5	3.175	75	110	10.5	15	42	93	85	11	M8	3.8×1	2207	9542	68
SFA5010-3.8*	48	10	6.35	75	110	10.5	18	57	93	85	11	M8	3.8×1	5638	17852	79
SFA5020-3.8*		20	6.35	75	110	10.5	18	98	93	85	11	M8	3.8×1	5749	18485	87
SFA5050-1.8*		50	6.35	75	110	10.5	18	117	93	85	11	M8	1.8×1	2946	8749	42
SFA5050-2.8*		50	6.35	75	110	10.5	18	167	93	85	11	M8	2.8×1	4308	13610	65

* Actuator type available

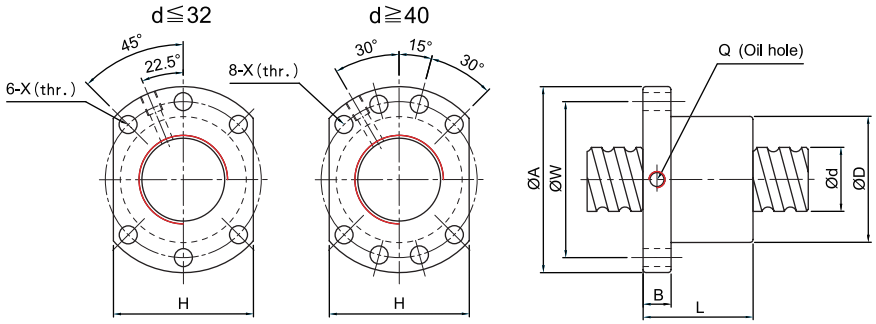
SCNH Series Specifications



Unit: mm

Model No.	d	l	Da	Dimension									Load Rating		K kgf/μm
				D	L	L1	L2	L3	M	R	Q	n	C_a (kgf)	C_{oa} (kgf)	
SCNH01205-4.8	12	5	2.5	24	40	7	12	14	3	1.5	3	4.8x1	536	794	34
SCNH01210-2.8		10	2.5	24	45	8	15	15	3	1.5	3	2.8x1	642	1287	19
XCNH01210-1.8		10	2.5	24	40	10.5	12	14	3	1.5	3	1.8x1	422	771	33
SCNH01605-5.8	15	5	2.778	28	45	7	20	12.5	5	3	3	5.8x1	1599	3827	49
SCNH01610-2.8		10	2.778	28	45	7	20	12.5	5	3	3	2.8x1	839	1821	23
SCNH01616-1.8		16	2.778	28	45	7	20	12.5	5	3	3	1.8x1	552	1137	18
SCNH01620-1.8		20	2.778	28	58	10	20	19	5	3	3	1.8x1	808	1769	14
SCNH02005-5.8	20	5	3.175	36	47	8	20	13.5	5	3	3	5.8x1	2134	5619	60
SCNH02010-3.8		10	3.175	36	55	8	20	17.5	5	3	3	3.8x1	1516	3833	40
SCNH02020-1.8		20	3.175	36	55	8	20	17.5	5	3	3	1.8x1	764	1758	19

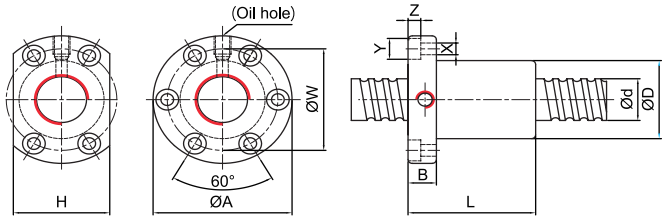
SFNU/SFU (DIN 69051 FORM B) Series Specifications



Unit: mm

Model No.	d	l	Da	Dimension									Load Rating		K kgf/μm
				D	A	B	L	W	H	X	Q	n	C_a (kgf)	C_{oa} (kgf)	
SFNU01605-4	16	5	3.175	28	48	10	45	38	40	5.5	M6	1x4	1380	3052	32
SFNU01610-3		10	3.175	28	48	10	57	38	40	5.5	M6	1x3	1103	2401	26
SFNU02005-4	20	5	3.175	36	58	10	51	47	44	6.6	M6	1x4	1551	3875	39
SFNU02505-4	25	5	3.175	40	62	10	51	51	48	6.6	M6	1x4	1724	4904	45
SFNU02510-4		10	4.762	40	62	12	80	51	48	6.6	M6	1x4	2954	7295	50
SFNU03205-4	32	5	3.175	50	80	12	52	65	62	9	M6	1x4	1922	6343	54
SFNU03210-4		10	6.35	50	80	12	85	65	62	9	M6	1x4	4805	12208	61
SFNU04005-4	40	5	3.175	63	93	14	55	78	70	9	MB	1x4	2110	7988	63
SFNU04010-4		10	6.35	63	93	14	88	78	70	9	MB	1x4	5399	15500	73
SFNU05010-4	50	10	6.35	75	110	16	88	93	85	11	MB	1x4	6004	19614	85
SFNU06310-4	63	10	6.35	90	125	18	93	108	95	11	MB	1x4	6719	25358	99
SFNU08010-4	80	10	6.35	105	145	20	93	125	110	13.5	MB	1x4	7346	31953	109
SFU01204-4	12	4	2.5	24	40	10	40	32	30	4.5		1x4	902	1884	26
SFU01604-4	16	4	2.381	28	48	10	40	38	40	5.5	M6	1x4	973	2406	32
SFU02004-4	20	4	2.381	36	58	10	42	47	44	6.6	M6	1x4	1066	2987	38
SFU02504-4	25	4	2.381	40	62	10	42	51	48	6.6	M6	1x4	1180	3795	43
SFU03204-4	32	4	2.381	50	80	12	44	65	62	9	M6	1x4	1296	4838	51
SFU05020-4	50	20	7.144	75	110	16	138	93	85	11	MB	1x4	7142	22588	94
SFU06320-4	63	20	9.525	95	135	20	149	115	100	13.5	MB	1x4	11444	36653	112
SFU08020-4	80	20	9.525	125	165	25	154	145	130	13.5	MB	1x4	12911	47747	138
SFU10020-4	100	20	9.525	150	202	30	180	170	155	17.5	MB	1x4	14303	60698	162

SFNI/SFI Series Specifications

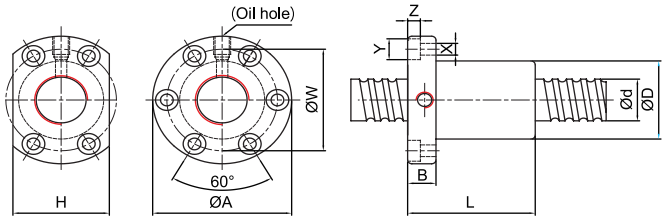


Unit: mm

Model No.	d	l	Da	Dimension											Load Rating		K kgf/μm
				D	A	B	L	W	H	X	Y	Z	Q	n	C_a (kgf)	C_{oa} (kgf)	
SFNI01605-4	16	5	3.175	30	49	10	45	39	34	4.5	8	4.5	M6	1x4	1380	3052	33
SFNI01610-3		10	3.175	34	58	10	57	45	34	5.5	9.5	5.5	M6	1x3	1103	2401	27
SFNI02005-4	20	5	3.175	34	57	11	51	45	40	5.5	9.5	5.5	M6	1x4	1551	3875	39
SFNI02505-4	25	5	3.175	40	63	11	51	51	46	5.5	9.5	5.5	M8	1x4	1724	4904	45
SFNI02510-4		10	4.762	46	72	12	80	58	52	6.5	11	6.5	M6	1x4	2954	7295	51
SFNI03205-4	32	5	3.175	46	72	12	52	58	52	6.5	11	6.5	M8	1x4	1922	6343	52
SFNI03210-4		10	6.35	54	88	15	85	70	62	9	14	8.5	MB	1x4	4805	12208	62
SFNI04005-4	40	5	3.175	56	90	15	55	72	64	9	14	8.5	M8	1x4	2110	7988	59
SFNI04010-4		10	6.35	62	104	18	88	82	70	11	17.5	11	M8	1x4	5399	15500	72
SFNI05010-4	50	10	6.35	72	114	18	88	92	82	11	17.5	11	M8	1x4	6004	19614	83
SFNI06310-4	63	10	6.35	85	131	22	93	107	95	14	20	13	M8	1x4	6719	25358	95
SFNI08010-4	80	10	6.35	105	150	22	93	127	115	14	20	13	M8	1x4	7346	31953	109
SFI01604-4	16	4	2.381	30	49	10	45	39	34	4.5	8	4.5	M6	1x4	973	2406	32
SFI02004-4	20	4	2.381	34	57	11	46	45	40	5.5	9.5	5.5	M6	1x4	1066	2987	37
SFI0205T-4		5.08	3.175	34	57	11	51	45	40	5.5	9.5	5.5	M6	1x4	1550	3875	39
*SFI02504-4	25	4	2.381	40	63	11	46	51	46	5.5	9.5	5.5	M6	1x4	1180	3795	43
SFI0255T-4		5.08	3.175	40	63	11	51	51	46	5.5	9.5	5.5	MB	1x4	1724	4904	45
SFI03204-4	32	4	2.381	46	72	12	47	58	52	6.5	11	6.5	M6	1x4	1296	4838	49

* : Left helix available

SFM Series Specifications (Design for Milling)

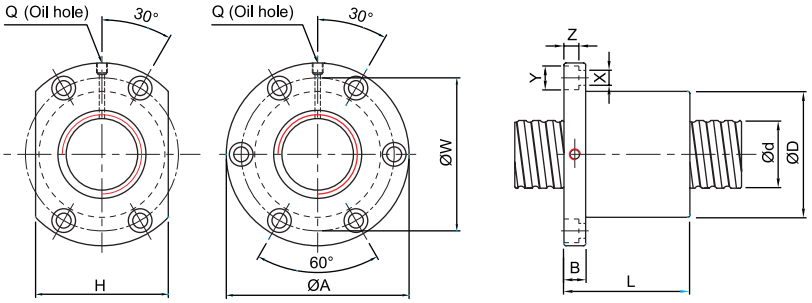


Unit: mm

Model No.	d	l	Da	Dimension											Load Rating		K kgf/μm
				D	A	B	L	W	H	X	Y	Z	Q	n	C_a (kgf)	C_{oa} (kgf)	
*SFM03205-4	32	5	3.175	48	74	12	52	60	60	6.5	11	6.5	MB	1x4	1922	6343	53
*SFM0325T-4		5.08	3.175	48	74	12	53	60	60	6.5	11	6.5	MB	1x4	1922	6343	53

Note: For double ballscrew nut order, please contact Matara in advance.
* : Left helix available

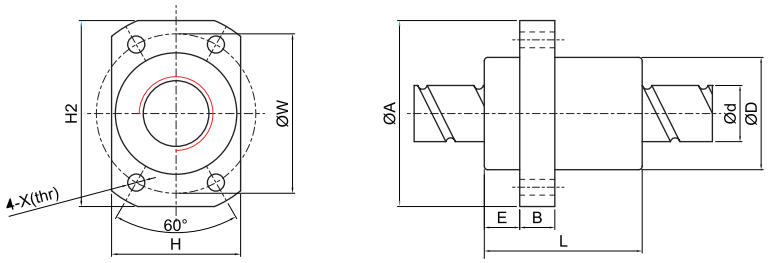
SFV Series Specifications



Unit: mm

Model No.	d	l	Da	Dimension											Load Rating		K kgf/μm
				D	A	B	L	W	H	X	Y	Z	Q	n	C_a (kgf)	C_{oa} (kgf)	
SFV01205-2.8	12	5	2.5	30	50	10	42	40	32	4.5	8	4.5	M6	2.8x1	661	1316	19
SFV01210-2.7		10	2.5	30	50	10	53	40	32	4.5	8	4.5	M6	2.7x1	623	1241	18
SFV01510-2.7	15	10	3.175	34	58	10	57	45	34	5.5	9.5	5.5	M6	2.7x1	972	2020	23
SFV01604-3.8	16	4	2.381	34	57	11	45	45	34	5.5	9.5	5.5	M6	3.8x1	931	2285	31
SFV01605-4.8		5	3.175	40	63	11	58	51	42	5.5	9.5	5.5	M6	4.8x1	1614	3662	40
SFV01610-2.7		10	3.175	40	63	11	56	51	42	5.5	9.5	5.5	M6	2.7x1	1008	2161	24
SFV02004-4.8	20	4	2.381	40	60	10	50	50	40	4.5	8	4	M6	4.8x1	1247	3584	45
SFV02005-4.8		5	3.175	44	67	11	57	55	52	5.5	9.5	5.5	M6	4.8x1	1814	4650	47
SFV02010-2.7		10	3.969	46	74	13	57	59	46	6.6	11	6.5	M6	2.7x1	1518	3398	30
SFV02020-1.8		20	3.175	46	74	13	70	59	46	6.6	11	6.5	M6	1.8x1	764	1758	19
SFV02505-4.8	25	5	3.175	50	73	11	55	61	52	5.5	9.5	5.5	M8	4.8x1	2017	5884	56
SFV02510-2.7		10	6.35	68	102	15	70	84	82	9	14	8.5	M8	2.7x1	3040	6547	37
SFV02525-1.8		25	3.175	50	73	13	83	61	52	5.5	9.5	5.5	M8	1.8x1	843	2199	22
SFV03204-4.8	32	4	2.381	54	81	12	50	67	64	6.6	11	6.5	M8	4.8x1	1517	5806	62
SFV03205-4.8		5	3.175	58	85	12	56	71	64	6.6	11	6.5	M8	4.8x1	2249	7612	66
SFV03210-4.8		10	6.35	74	108	15	96	90	82	9	14	9	M8	4.8x1	5620	14649	76
SFV03220-2.7		20	6.35	74	108	16	100	90	82	9	14	8.5	M8	2.7x1	3509	8644	46
SFV04005-4.8	40	5	3.175	67	101	15	59	83	72	9	14	8.5	M8	4.8x1	2468	9586	76
SFV04010-4.8		10	6.35	82	124	18	100	102	94	11	17.5	11	M8	4.8x1	6316	18600	90
SFV04020-2.7		20	6.35	82	124	18	100	102	90	11	17.5	11	M8	2.7x1	3935	10893	56
SFV05005-4.8	50	5	3.175	80	114	15	60	96	82	9	14	8.5	M8	4.8x1	2698	12053	87
SFV05010-4.8		10	6.35	93	135	16	93	113	98	11	17.5	11	M8	4.8x1	7023	23537	106
SFV05020-2.7		20	9.525	105	152	28	121	128	110	14	20	13	M8	2.7x1	7336	19700	68
SFV06310-4.8	63	10	6.35	108	154	22	105	130	110	14	20	13	M8	4.8x1	7860	30430	126
SFV06320-2.7		20	9.525	122	180	28	120	150	130	18	26	17.5	M8	2.7x1	8162	24741	80
SFV08010-4.8	80	10	6.35	130	176	22	105	152	132	14	20	13	M8	4.8x1	8593	38344	145
SFV08020-4.8		20	9.525	143	204	28	180	172	148	18	26	18	M8	4.8x1	15103	57296	168
SFV08020-7.6		20	9.525	143	204	28	240	172	148	18	26	18	M8	3.8x2	22423	90719	260

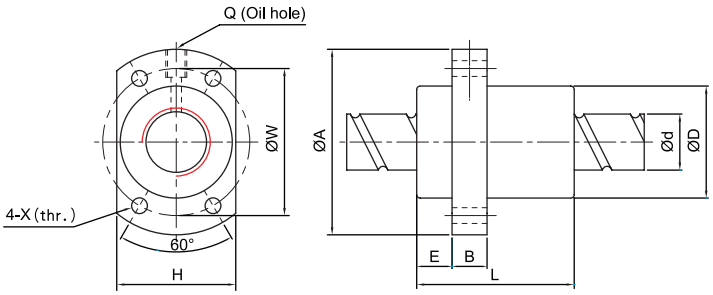
XSY Series Specifications



Unit: mm

Model No.	d	l	Da	Dimension									Load Rating		K kgf/μm
				D	A	E	B	L	W	H	H2	X	n	C_a (kgf)	C_{oa} (kgf)	
XSYR01220A2D-00	12	20	2.5	24	41	3.8	5	50	32	24	36	4.5	1.8x2	777	1718	13

SFY Series Specifications

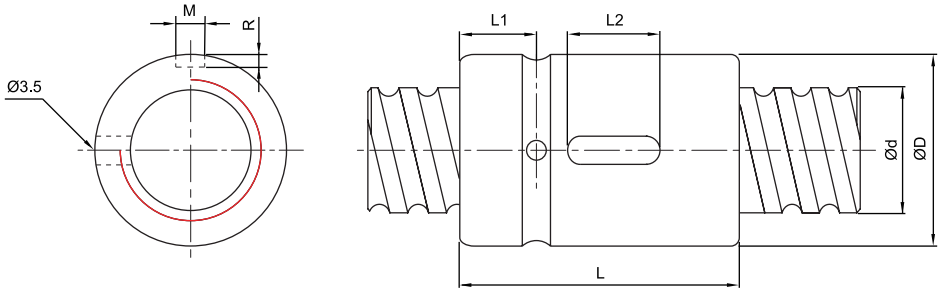


Unit: mm

Large Lead Model No.	d	l	Da	Dimension										Load Rating		K kgf/μm
				D	A	E	B	L	W	H	X	Q	n	C_a (kgf)	C_{oa} (kgf)	
SFY01616-3.6	16	16	2.778	32	53	10.1	10	45	42	34	4.5	M6	1.8x2	1073	2551	31
SFY02020-3.6	20	20	3.175	39	62	13	10	52	50	41	5.5	M6	1.8x2	1387	3515	37
SFY02525-3.6	25	25	3.969	47	74	15	12	64	60	49	6.6	M6	1.8x2	2074	5494	45
SFY03232-3.6	32	32	4.762	58	92	17	12	78	74	60	9	M6	1.8x2	3021	8690	58
SFY04040-3.6	40	40	6.35	73	114	19.5	15	99	93	75	11	M6	1.8x2	4831	14062	70
SFY05050-3.6	50	50	7.938	90	135	21.5	20	117	112	92	14	M6	1.8x2	7220	21974	86

Twin Lead Model No.	d	l	Da	Dimension										Load Rating		K kgf/μm
				D	A	E	B	L	W	H	X	Q	n	C_a (kgf)	C_{oa} (kgf)	
SFY01632-1.6	16	32	2.778	32	53	10.1	10	42.5	42	34	4.5	M6	0.8x2	493	1116	11
SFY02040-1.6	20	40	3.175	39	62	13	10	48	50	41	5.5	M6	0.8x2	653	1597	15
SFY02550-1.6	25	50	3.969	47	74	15	12	58	60	49	6.6	M6	0.8x2	976	2495	19
SFY03264-1.6	32	64	4.762	58	92	17	12	71	74	60	9	M6	0.8x2	1374	3571	22
SFY04080-1.6	40	80	6.35	73	114	19.5	15	90	93	75	11	M6	0.8x2	2273	6387	29
SFY050100-1.6	50	100	7.938	90	135	21.5	20	111	112	92	14	M6	0.8x2	3398	9980	35

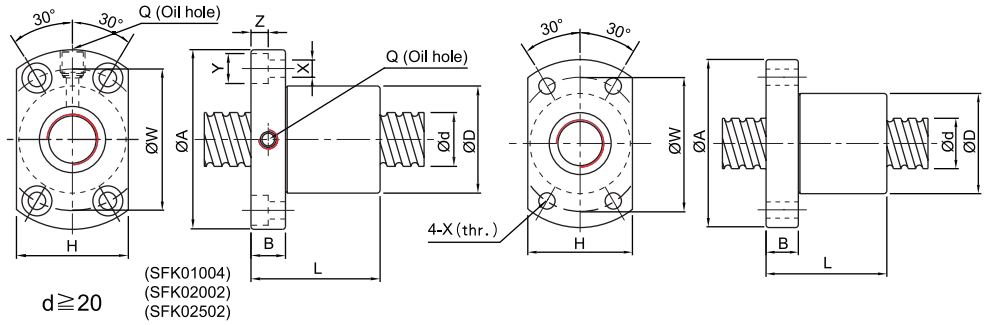
SCNI Series Specifications



Unit: mm

Model No.	d	l	Da	Dimension							Load Rating		K kgf/μm
				D	L	L1	L2	M	R	n	C_a (kgf)	C_{oa} (kgf)	
SCNI01605-4	16	5	3.175	30	45	9	20	5	3	1x4	1380	3052	33
SCNI02005-4	20	5	3.175	34	45	9	20	5	3	1x4	1551	3875	39
SCNI02505-4	25	5	3.175	40	45	9	20	5	3	1x4	1724	4904	45
SCNI02510-4		10	4.762	46	85	13	30	5	3	1x4	2954	7295	51
SCNI03205-4	32	5	3.175	46	45	9	20	5	3	1x4	1922	6343	52
SCNI03210-4		10	6.35	54	85	13	30	5	3	1x4	4805	12208	62
SCNI04005-4	40	5	3.175	56	45	9	20	5	3	1x4	2110	7988	59
SCNI04010-4		10	6.35	62	85	13	30	5	3	1x4	5399	15500	72
SCNI05010-4	50	10	6.35	72	85	13	30	5	3	1x4	6004	19614	83
SCNI06310-4	63	10	6.35	85	85	13	30	6	3.5	1x4	6719	25358	95
SCNI08010-4	80	10	6.35	105	85	13	30	8	4.5	1x4	7346	31953	109
SCI01604-4	16	4	2.381	30	40	9	15	3	1.5	1x4	973	2406	32
SCI02004-4	20	4	2.381	34	40	9	15	3	1.5	1x4	1066	2987	37
SCI02504-4	25	4	2.381	40	40	9	15	3	1.5	1x4	1180	3795	43
SCI03204-4	32	4	2.381	46	40	9	15	3	1.5	1x4	1296	4838	49

SFK Series Specifications



d≧20

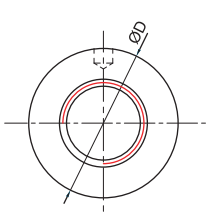
(SFK01004)
(SFK02002)
(SFK02502)

Unit: mm

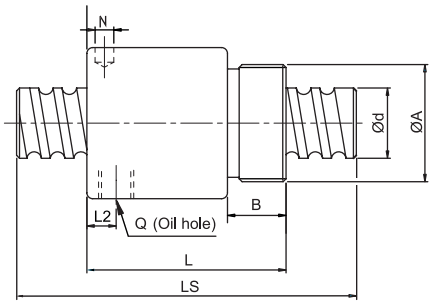
Model No.	d	l	Da	Dimension											Load Rating		K kgf/μm
				D	A	B	L	W	H	X	Y	Z	Q	n	C_a (kgf)	C_{oa} (kgf)	
SFK00601	6	1	0.8	12	24	3.5	15	18	16	3.4	-	-	-	1x3	111	224	9
SFK00801	8	1	0.8	14	27	4	16	21	18	3.4	-	-	-	1x4	161	403	14
SFK00802		2	1.2	14	27	4	16	21	18	3.4	-	-	-	1x3	222	458	13
SFK0082.5		2.5	1.2	16	29	4	26	23	20	3.4	-	-	-	1x3	221	457	13
SFK01002	10	2	1.2	18	35	5	28	27	22	4.5	-	-	-	1x3	243	569	15
SFK01004		4	2	26	46	10	34	36	28	4.5	8	4.5	M6	1x3	468	905	17
SFK01202	12	2	1.2	20	37	5	28	29	24	4.5	-	-	-	1x4	334	906	22
SFK01402	14	2	1.2	21	40	6	23	31	26	5.5	-	-	-	1x4	354	1053	24

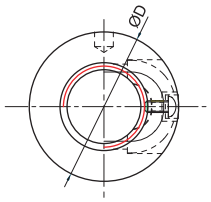
Model No.	d	l	Da	Dimension											Load Rating		K kgf/μm
				D	A	B	L	W	H	X	Y	Z	Q	n	C_a (kgf)	C_{oa} (kgf)	
XSUR01204T3D-02	12	4	2.5	24	40	6	28	32	25	3.5	-	-	-	1x3	454	722	-
XSUR01205T3D-00		5		22	37	8	39	29	24	4.5	-	-	-	1x3	675	1316	17

BSH Series Specifications

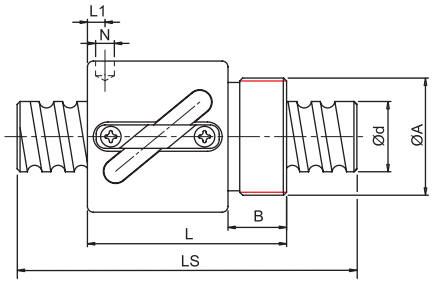


d≧14
(Internal circulation type)





d≦12
(External circulation type)



Unit: mm

Model No.	d	l	Da	Dimension									Load Rating		K kgf/μm
				D	A	B	L	L1	N	L2	Q	n	C_a (kgf)	C_{oa} (kgf)	
BSHR0082.5-2.5	8	2.5	1.2	17.5	M15x1P	7.5	23.5	10	3	-	-	2.5x1	189	381	11
BSHR01002-3.5	10	2	1.2	19.5	M17x1P	7.5	22	3	3.2	-	-	3.5x1	277	664	17
BSHR01004-2.5		4	2	25	M20x1P	10	34	3	3	-	-	2.5x1	400	754	14
BSHR01204-3.5	12	4	2.5	25.5	M20x1P	10	34	13	3	-	-	3.5x1	804	1649	23
BSHR01205-3.5		5	2.5	25.5	M20x1P	10	39	16.25	3	-	-	3.5x1	801	1644	24
BSHR01404-3	14	4	2.5	32.1	M25x1.5P	10	35	11	3	-	-	1x3	748	1609	26
BSHR01604-3	16	4	2.381	29	M22x1.5P	8	32	4	3.2	-	-	1x3	759	1804	24
BSHR01605-3		5	3.175	32.5	M26x1.5P	12	42	19.25	3	-	-	1x3	1077	2289	25
BSHR01610-2		10	3.175	32	M26x1.5P	12	50	3	4	3	M4	1x2	675	1316	14
BSHR02005-3	20	5	3.175	38	M35x1.5P	15	45	20.3	3	-	-	1x3	1211	2906	30
BSHR02505-4	25	5	3.175	43	M40x1.5P	19	69	32.11	3	8	M6	1x4	1724	4904	37
BSHR02510-4		10	4.762	43	M40x1.5P	19	84	8	6	8	M6	1x4	2954	7295	41

Power Leadscrew

THE **DYNAMICS** OF **MOVEMENT**

LEADSCREWS MACHINED IN-HOUSE:

Power Leadscrews are available in both steel and stainless steel with a range of bespoke machining options available. These can be supplied with a large selection of round bodied flange

Power Leadscrew Order Example

Single Start Screws:

Code: **TR 20 X4 R -2000 C45**

Options: 1 2 3 4 5 6

Options	Lead Screw Specifications
1	Trapezoidal Thread
2	Nominal Screw Diameter
3	Pitch
4	Thread Direction: R or L (Right or Left)
5	Total Screw Length
6	Material

Multi Start Screws:

Code: **TR 2 -24 X4 R -1000 C45**

Options: 1 2 3 4 5 6 7

Options	Lead Screw Specifications
1	Trapezoidal Thread
2	Number Of Starts
3	Nominal Screw Diameter
4	Pitch
5	Thread Direction: R or L (Right or Left)
6	Total Screw Length
7	Material

Leadscrew Nut:

Code: **MLN-FB 10 2 R**

Options: 1 2 3 4

Options	Lead Screw Specifications
1	Nut Type
2	Diameter
3	Lead
4	Thread Direction: R or L (Right or Left)

Trapezoidal Screw Specifications

Diameter x Lead	d1 Major diameter tollerance 4h min. mm	d1 max. mm	d2 Effective or pitch dia. tollerance 7e min. mm	d2 max. mm	d3 Minor diameter tollerance 7h min. mm	d3 max. mm	Thread Starts	Lead Angle	(1) Efficiency η f=0.1	Efficiency η f=0.2	(2) H1 mm	I Moment of inertia mm^4
Tr 10 x 2	9.820	10.000	8.739	8.929	7.191	7.500	1	4°02'	0.41	0.26	1.0	131
Tr 10 x 3	9.764	10.000	8.203	8.415	6.150	6.500	1	6°25'	0.52	0.35	1.5	70
Tr 10 x 4 (P2)	9.820	10.000	8.739	8.929	7.191	7.500	2	8°03'	0.58	0.40	1.0	131
Tr 12 x 3	11.764	12.000	10.191	10.415	8.135	8.500	1	5°12'	0.47	0.31	1.5	215
Tr 12 x 6 (P3)	11.764	12.000	10.191	10.415	8.135	8.500	2	10°19'	0.63	0.46	1.5	215
Tr 14 x 3	13.764	14.000	12.191	12.415	10.135	10.500	1	4°22'	0.43	0.27	1.5	518
Tr 14 x 4	13.700	14.000	11.640	11.905	9.074	9.500	1	6°03'	0.51	0.34	2.0	333
Tr 14 x 6 (P3)	13.764	14.000	12.191	12.415	10.135	10.500	2	8°41'	0.59	0.42	1.5	518
Tr 16 x 4	15.700	16.000	13.640	13.905	11.074	11.500	1	5°12'	0.47	0.31	2.0	738
Tr 16 x 8 (P4)	15.700	16.000	13.640	13.905	11.074	11.500	2	10°19'	0.63	0.46	2.0	738
Tr 18 x 4	17.700	18.000	15.640	15.905	13.074	13.500	1	4°33'	0.44	0.28	2.0	1434
Tr 18 x 8 (P4)	17.700	18.000	15.640	15.905	13.074	13.500	2	9°02'	0.60	0.43	2.0	1434
Tr 20 x 4	19.700	20.000	17.640	17.905	15.074	15.500	1	4°03'	0.41	0.26	2.0	2534
Tr 20 x 8 (P4)	19.700	20.000	17.640	17.905	15.074	15.500	2	8°03'	0.58	0.40	2.0	2534
Tr 20 x 20 (P5)	19.665	20.000	17.114	17.394	14.044	14.500	4	20°00'	0.76	0.60	2.5	1910
Tr 22 x 5	21.665	22.000	19.114	19.394	16.044	16.500	1	4°40'	0.45	0.28	2.5	3232
Tr 22 x 10 (P5)	21.665	22.000	19.114	19.394	16.044	16.500	2	9°16'	0.61	0.43	2.5	3232
Tr 24 x 5	23.665	24.000	21.094	21.394	18.019	18.500	1	4°14'	0.42	0.27	2.5	5175
Tr 24 x 10 (P5)	23.665	24.000	21.094	21.394	18.019	18.500	2	8°25'	0.59	0.41	2.5	5175
Tr 25 x 3	24.764	25.000	23.165	23.415	21.103	21.500	1	2°20'	0.29	0.17	1.5	9735
Tr 25 x 5	24.665	25.000	22.094	22.394	19.019	19.500	1	4°03'	0.41	0.26	2.5	6423
Tr 25 x 10 (P5)	24.665	25.000	22.094	22.394	19.019	19.500	2	8°03'	0.58	0.40	2.5	6423
Tr 25 x 25 (P5)	24.665	25.000	22.094	22.394	19.019	19.500	5	19°30'	0.75	0.60	2.5	6423
Tr 26 x 5	25.665	26.000	23.094	23.394	20.019	20.500	1	3°52'	0.40	0.25	2.5	7884
Tr 26 x 10 (P5)	25.665	26.000	23.094	23.394	20.019	20.500	2	7°42'	0.57	0.39	2.5	7884
Tr 28 x 5	27.665	28.000	25.094	25.394	22.019	22.500	1	3°34'	0.38	0.23	2.5	11539
Tr 28 x 10 (P5)	27.665	28.000	25.094	25.394	22.019	22.500	2	7°07'	0.55	0.37	2.5	11539
Tr 30 x 3	29.764	30.000	28.165	28.415	26.103	26.500	1	1°55'	0.25	0.14	1.5	22900
Tr 30 x 4	29.700	30.000	27.640	27.905	25.074	25.500	1	2°36'	0.31	0.18	2.0	19400
Tr 30 x 5	29.665	30.000	27.094	27.394	24.019	24.500	1	3°19'	0.36	0.22	2.5	16340
Tr 30 x 6	29.625	30.000	26.547	26.882	22.463	23.000	1	4°03'	0.41	0.26	3.0	13650
Tr 30 x 12 (P6)	29.625	30.000	26.547	26.882	22.463	23.000	2	8°03'	0.58	0.40	3.0	13650
Tr 30 x 30 (P5)	29.665	30.000	27.094	27.394	24.019	24.500	6	19°09'	0.75	0.59	2.5	16340
Tr 32 x 6	31.625	32.000	28.547	28.882	24.463	25.000	1	3°46'	0.39	0.24	3.0	17580
Tr 32 x 12 (P6)	31.625	32.000	28.547	28.882	24.463	25.000	2	7°30'	0.56	0.38	3.0	17580
Tr 35 x 3	34.764	35.000	33.165	33.415	31.103	31.500	1	1°38'	0.22	0.12	1.5	46128
Tr 35 x 4	34.700	35.000	32.640	32.905	30.074	30.500	1	2°13'	0.28	0.16	2.0	40150
Tr 35 x 5	34.665	35.000	32.094	32.394	29.019	29.500	1	2°48'	0.33	0.19	2.5	34810
Tr 35 x 6	34.625	35.000	31.547	31.882	27.463	28.000	1	3°25'	0.37	0.23	3.0	30000
Tr 35 x 8	34.550	35.000	30.493	30.868	25.399	26.000	1	4°42'	0.45	0.29	4.0	21980
Tr 36 x 6	35.625	36.000	32.547	32.882	28.463	29.000	1	3°19'	0.36	0.22	3.0	34540
Tr 36 x 12 (P6)	35.625	36.000	32.547	32.882	28.463	29.000	2	6°36'	0.53	0.36	3.0	34540
Tr 40 x 3	39.764	40.000	38.165	38.415	36.103	36.500	1	1°25´	0.20	0.11	1.5	83395
Tr 40 x 4	39.700	40.000	37.640	37.905	35.074	35.500	1	1°55´	0.25	0.14	2	74290
Tr 40 x 5	39.665	40.000	37.094	37.394	34.019	34.500	1	2°26´	0.30	0.17	2.5	65740
Tr 40 x 6	39.625	40.000	36.547	36.882	32.463	33.000	1	2°57´	0.34	0.20	3	57950
Tr 40 x 7	39.575	40.000	36.020	36.375	31.431	32.000	1	3°30´	0.38	0.23	3.5	51030
Tr 40 x 8	39.550	40.000	35.493	35.868	30.399	31.000	1	4°03´	0.41	0.26	4	44560
Tr 40 x 10	39.470	40.000	34.450	34.850	28.350	29.000	1	5°12´	0.47	0.31	5	31700
Tr 40 x 14 (P7)	39.575	40.000	36.020	36.375	31.431	32.000	2	6°58´	0.54	0.37	3.5	51030
Tr 40 x 40 (P8)	39.550	40.000	35.493	35.868	30.399	31.000	5	19°30´	0.75	0.60	4	44560
Tr 44 x 7	43.575	44.000	40.020	40.375	35.431	36.000	1	3°09´	0.35	0.21	3.5	81820
Tr 45 x 8	44.550	45.000	40.493	40.868	35.399	36.000	1	3°33´	0.38	0.23	4	81245
Tr 50 x 3	49.764	50.000	48.150	48.415	46.084	46.500	1	1°08´	0.16	0.09	1.5	121400
Tr 50 x 4	49.700	50.000	47.605	47.905	45.074	45.500	1	1°31´	0.21	0.12	2	202600
Tr 50 x 5	49.665	50.000	47.094	47.394	44.019	44.500	1	1°55´	0.25	0.14	2.5	184300
Tr 50 x 6	49.625	50.000	46.547	46.882	42.463	43.000	1	2°20´	0.29	0.17	3	167240
Tr 50 x 8	49.550	50.000	45.468	45.868	40.368	41.000	1	3°10´	0.35	0.21	4	136930
Tr 50 x 10	49.470	50.000	44.425	44.850	38.319	39.000	1	4°03´	0.41	0.26	5	105834
Tr 55 x 9	54.500	55.000	49.935	50.360	44.329	45.000	1	3°15´	0.36	0.22	4.5	189550
Tr 60 x 6	59.625	60.000	56.547	56.882	52.463	53.000	1	1°55´	0.25	0.14	3	386240
Tr 60 x 7	59.575	60.000	56.020	56.375	51.431	52.000	1	2°16´	0.28	0.16	3.5	343450
Tr 60 x 9	59.500	60.000	54.935	55.360	49.329	50.000	1	2°57´	0.34	0.20	4.5	302600
Tr 70 x 10	69.470	70.000	64.425	64.850	58.319	59.000	1	2°48´	0.33	0.19	5	587540
Tr 80 x 10	79.470	80.000	74.425	74.850	68.319	69.000	1	2°26´	0.30	0.17	5	1069390
Tr 90 x 12	89.400	90.000	83.335	83.830	76.246	77.000	1	2°36´	0.31	0.18	6	1658969
Tr 95 x 16	94.290	95.000	86.250	86.810	76.110	77.000	1	3°21´	0.37	0.22	8	1647164
Tr 100 x 12	99.400	100.000	93.330	93.830	86.215	87.000	1	2°19´	0.29	0.17	6	2712072
Tr 100 x 16	99.290	100.000	91.250	91.810	81.110	82.000	1	3°10´	0.35	0.21	8	2124553
Tr 120 x 14	119.330	120.000	112.290	112.820	103.157	104.00	1	2°16´	0.28	0.16	7	5558591
Tr 120 x 16	119.290	120.000	111.250	111.810	101.110	102.00	1	2°36´	0.31	0.16	8	5130342
Tr 140 x 14	139.330	140.000	132.290	132.820	123.157	124.00	1	1°55´	0.25	0.14	7	11292921
Tr 160 x 16	159.290	160.000	151.250	151.810	141.110	142.00	1	1°55´	0.25	0.14	8	19462609

(1) Useful effect for conversion of rotary movement to linear movement with friction coefficient f=0.1 and f=0.2.
(2) Radial support dimension between screw and nut teeth.

Single Start Trapezoidal Screw List

Single Start	Carbon Steel				Stainless Steel			
	C45		C15		A2 (304)		A4 (316)	
	TRC45 accuracy 0.1mm / 300mm		TRC15 accuracy 0.2mm / 300mm		TR304 accuracy 0.2mm / 300mm		TR316 accuracy 0.2mm / 300mm	
Thread	RH	LH	RH	LH	RH	LH	RH	LH
Tr 10 x 2	•	•	•	•	•	•	•	•
Tr 10 x 3	•	•	•	•	•	•	•	•
Tr 12 x 3	•	•	•	•	•	•	•	•
Tr 14 x 3	•	•	•	•	•	•	•	•
Tr 14 x 4	•	•	•	•	•	•	•	•
Tr 16 x 4	•	•	•	•	•	•	•	•
Tr 18 x 4	•	•	•	•	•	•	•	•
Tr 20 x 4	•	•	•	•	•	•	•	•
Tr 22 x 5	•	•	•	•	•	•	•	•
Tr 24 x 5	•	•	•	•	•	•	•	•
Tr 25 x 3	•	•	•	•	•	•	•	•
Tr 25 x 5	•	•	•	•	•	•	•	•
Tr 26 x 5	•	•	•	•	•	•	•	•
Tr 28 x 5	•	•	•	•	•	•	•	•
Tr 30 x 3	•	•	•	•	•	•	•	•
Tr 30 x 4	•	•	•	•	•	•	•	•
Tr 30 x 5	•	•	•	•	•	•	•	•
Tr 30 x 6	•	•	•	•	•	•	•	•
Tr 32 x 6	•	•	•	•	•	•	•	•
Tr 35 x 3	•	•	•	•	•	•	•	•
Tr 35 x 4	•	•	•	•	•	•	•	•
Tr 35 x 5	•	•	•	•	•	•	•	•
Tr 35 x 6	•	•	•	•	•	•	•	•
Tr 35 x 8	•	•	•	•	•	•	•	•
Tr 36 x 6	•	•	•	•	•	•	•	•
Tr 40 x 3	•	•	•	•	•	•	•	•
Tr 40 x 4	•	•	•	•	•	•	•	•
Tr 40 x 5	•	•	•	•	•	•	•	•
Tr 40 x 6	•	•	•	•	•	•	•	•
Tr 40 x 7	•	•	•	•	•	•	•	•
Tr 40 x 8	•	•	•	•	•	•	•	•
Tr 40 x 10	•	•	•	•	•	•	•	•
Tr 44 x 7	•	•	•	•	•	•	•	•
Tr 45 x 8	•	•	•	•	•	•	•	•
Tr 50 x 3	•	•	•	•	•	•	•	•
Tr 50 x 4	•	•	•	•	•	•	•	•
Tr 50 x 5	•	•	•	•	•	•	•	•
Tr 50 x 6	•	•	•	•	•	•	•	•
Tr 50 x 8	•	•	•	•	•	•	•	•
Tr 50 x 10	•	•	•	•	•	•	•	•
Tr 55 x 9	•	•	•	•	•	•	•	•
Tr 60 x 6	•	•	•	•	•	•	•	•
Tr 60 x 7	•	•	•	•	•	•	•	•
Tr 60 x 9	•	•	•	•	•	•	•	•
Tr 70 x 10	•	•	•	•	•	•	•	•
Tr 80 x 10	•	•			•	•	•	•
Tr 90 x 12	•	•			•	•	•	•
Tr 95 x 16	•	•			•	•	•	•
Tr 100 x 12	•	•			•	•	•	•
Tr 100 x 16	•	•			•	•	•	•
Tr 120 x 14	•	•			•	•	•	•
Tr 120 x 16	•	•			•	•	•	•
Tr 140 x 14	•	•			•	•	•	•

• : Standard UK Stocked Product • : Made To Order

Multiple Start Trapezoidal Screw List

Multiple Start	Carbon Steel				Stainless Steel	
	C15		C45		A2 (304)	
	TRC15 accuracy 0.2mm / 300mm		TRC45 accuracy 0.1mm / 300mm		TR304 accuracy 0.2mm / 300mm	
Thread	RH	LH	RH	LH	RH	LH
Tr 10 x 4 (P2)	•	•	•	•	•	•
Tr 12 x 6 (P3)	•	•	•	•	•	•
Tr 14 x 6 (P3)	•	•	•	•	•	•
Tr 16 x 8 (P4)	•	•	•	•	•	•
Tr 18 x 8 (P4)	•	•	•	•	•	•
Tr 20 x 8 (P4)	•	•	•	•	•	•
Tr 20 x 20 (P5)	•	•	•	•	•	•
Tr 22 x 10 (P5)	•	•	•	•	•	•
Tr 24 x 10 (P5)	•	•	•	•	•	•
Tr 25 x 10 (P5)	•	•	•	•	•	•
Tr 25 x 25 (P5)	•	•	•	•		
Tr 26 x 10 (P5)	•	•	•	•	•	•
Tr 28 x 10 (P5)	•	•	•	•	•	•
Tr 30 x 12 (P6)	•	•	•	•	•	•
Tr 30 x 30 (P5)	•	•	•	•		
Tr 32 x 12 (P6)	•	•	•	•	•	•
Tr 36 x 12 (P6)	•	•	•	•	•	•
Tr 40 x 14 (P7)	•	•	•	•	•	•
Tr 40 x 40 (P8)	•	•	•	•		

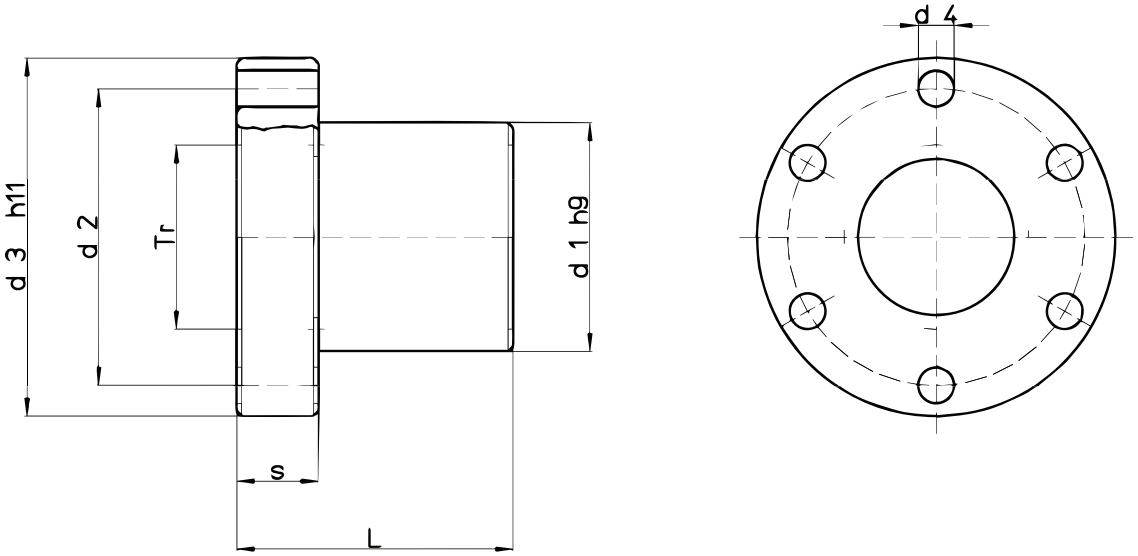
• : Standard UK Stocked Product • : Made To Order

Trapezoidal Nut Type MLN-FB Bronze Flanged Nut

Material: EN 1982 Cu Sn5 Zn5 Pb5-C - CC491K

Bronze flanged nut for movement with good wear resistance. Good lubrication is recommended.

Chamfer 1x45°



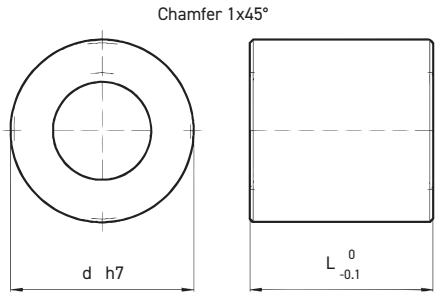
Nut Stock no. RIGHT	Nut Stock no. LEFT	Diameter x Lead	Thread Starts	d1 mm	d2 mm	d3 mm	d4 mm	L mm	S mm	no. screw holes	Screws of fixing (class 8.8)	Wt. kg/each	At mm^2 (1)
MLN-FB 10 2 R	MLN-FB 10 2 L	Tr 10 x 2	1	25	34	42	5	25	10	6	M6	0.164	250
MLN-FB 12 3 R	MLN-FB 12 3 L	Tr 12 x 3	1	28	38	48	6	35	12	6	M6	0.276	400
MLN-FB 12 6 R	-	Tr 12 x 6 (P3)	2	28	38	48	6	35	12	6	M6	0.276	400
MLN-FB 14 3 R	MLN-FB 14 3 L	Tr 14 x 3	1	28	38	48	6	35	12	6	M6	0.272	460
MLN-FB 14 6 R	-	Tr 14 x 6 (P3)	2	28	38	48	6	35	12	6	M6	0.272	460
MLN-FB 16 4 R	MLN-FB 16 4 L	Tr 16 x 4	1	28	38	48	6	35	12	6	M6	0.26	530
MLN-FB 16 8 R	-	Tr 16 x 8 (P4)	2	28	38	48	6	35	12	6	M6	0.26	530
MLN-FB 18 4 R	MLN-FB 18 4 L	Tr 18 x 4	1	28	38	48	6	35	12	6	M6	0.247	610
MLN-FB 18 8 R	-	Tr 18 x 8 (P4)	2	28	38	48	6	35	12	6	M6	0.247	610
MLN-FB 20 4 R	MLN-FB 20 4 L	Tr 20 x 4	1	32	45	55	7	44	12	6	M6	0.37	870
MLN-FB 20 8 R	-	Tr 20 x 8 (P4)	2	32	45	55	7	44	12	6	M6	0.37	870
MLN-FB 22 5 R	MLN-FB 22 5 L	Tr 22 x 5	1	32	45	55	7	44	12	6	M6	0.36	1030
MLN-FB 22 10 R	-	Tr 22 x 10 (P5)	2	32	45	55	7	44	12	6	M6	0.36	1030
MLN-FB 24 5 R	MLN-FB 24 5 L	Tr 24 x 5	1	32	45	55	7	44	12	6	M6	0.337	1040
MLN-FB 24 10 R	-	Tr 24 x 10 (P5)	2	32	45	55	7	44	12	6	M6	0.337	1040
MLN-FB 26 5 R	MLN-FB 26 5 L	Tr 26 x 5	1	38	50	62	7	46	14	6	M6	0.516	1280
MLN-FB 28 5 R	MLN-FB 28 5 L	Tr 28 x 5	1	38	50	62	7	46	14	6	M6	0.472	1200
MLN-FB 28 10 R	-	Tr 28 x 10 (P5)	2	38	50	62	7	46	14	6	M6	0.472	1200
MLN-FB 30 6 R	MLN-FB 30 6 L	Tr 30 x 6	1	38	50	62	7	46	14	6	M6	0.472	1370
MLN-FB 12 B R	-	Tr 30 x 12 (P6)	2	32	50	62	7	46	14	6	M6	0.472	1370
MLN-FB 32 6 R	MLN-FB 32 6 L	Tr 32 x 6	1	45	58	70	7	54	16	6	M6	0.779	1710
MLN-FB 32 12 R	-	Tr 32 x 12 (P6)	2	45	58	70	7	54	16	6	M6	0.779	1710
MLN-FB 36 6 R	MLN-FB 36 6 L	Tr 36 x 6	1	45	58	70	7	54	16	6	M6	0.694	1950
MLN-FB 36 12 R	-	Tr 36 x 12 (P6)	2	45	58	70	7	54	16	6	M6	0.694	1950
MLN-FB 40 7 R	MLN-FB 40 7 L	Tr 40 x 7	1	63	78	95	9	66	16	6	M6	1.788	2650
MLN-FB 40 14 R	-	Tr 40 x 14 (P7)	2	63	78	95	9	66	16	6	M6	1.788	2650
MLN-FB 44 7 R	MLN-FB 44 7 L	Tr 44 x 7	1	63	78	95	7	66	16	6	M6	1.657	2940
MLN-FB 50 8 R	MLN-FB 50 8 L	Tr 50 x 8	1	72	90	110	11	75	18	6	M6	2.500	4540
MLN-FB 60 9 R	MLN-FB 60 9 L	Tr 60 x 9	1	88	110	130	13	90	20	6	M6	4.260	5490
MLN-FB 70 10 R	MLN-FB 70 10 L	Tr 70 x 10	1	95	120	140	13	105	22	6	M6	5.303	7500

(1) Total bearing surface between screw and nut teeth on plane perpendicular to axis.

Trapezoidal Nut Type MLN-CBD Cylindrical Bronze

Material: EN 1982 Cu Sn5 Zn5 Pb5-C - CC491K

Cylindrical Bronze Nut for movement with modest loads. Good lubrication is recommended.

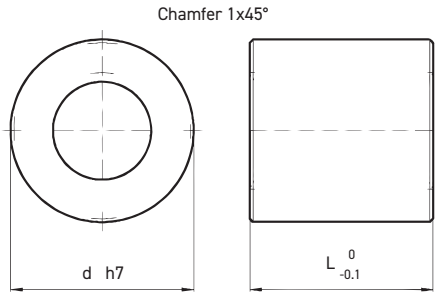


Nut Stock no. RIGHT	Nut Stock no. LEFT	Diameter x Lead	Thread Starts	d mm	L mm	S mm	Wt. kg/each	At mm² (1)
MLN-CBD 12 3 R	MLN-CBD 12 3 L	Tr 12 x 3	1	36	36	0.302	594	250
MLN-CBD 14 4 R	MLN-CBD 14 4 L	Tr 14 x 4	1	36	36	0.29	677	400
MLN-CBD 16 4 R	MLN-CBD 16 4 L	Tr 16 x 4	1	36	36	0.276	792	400
MLN-CBD 16 8 R	-	Tr 16 x 8 (P4)	2	36	36	0.276	792	460
MLN-CBD 18 4 R	MLN-CBD 18 4 L	Tr 18 x 4	1	36	36	0.259	905	460
MLN-CBD 20 4 R	MLN-CBD 20 4 L	Tr 20 x 4	1	40	40	0.354	1130	530
MLN-CBD 20 8 R	-	Tr 20 x 8 (P4)	2	40	40	0.354	1130	530
MLN-CBD 22 5 R	MLN-CBD 22 5 L	Tr 22 x 5	1	40	40	0.33	1225	610
MLN-CBD 25 5 R	MLN-CBD 25 5 L	Tr 25 x 5	1	45	45	0.47	1590	610
MLN-CBD 25 10 R	-	Tr 25 x 10 (P5)	2	45	45	0.47	1590	870
MLN-CBD 28 5 R	MLN-CBD 28 5 L	Tr 28 x 5	1	45	45	0.42	1800	870
MLN-CBD 28 10 R	-	Tr 28 x 10 (P5)	2	45	45	0.42	1800	1030
MLN-CBD 30 6 R	MLN-CBD 30 6 L	Tr 30 x 6	1	50	50	0.6	2120	1030
MLN-CBD 30 12 R	-	Tr 30 x 12 (P6)	2	50	50	0.6	2120	1040
MLN-CBD 35 6 R	MLN-CBD 35 6 L	Tr 35 x 6	1	55	55	0.75	2764	1040
MLN-CBD 40 7 R	MLN-CBD 40 7 L	Tr 40 x 7	1	60	60	0.92	3440	1280
MLN-CBD 40 14 R	-	Tr 40 x 14 (P7)	2	60	60	0.92	3440	1200
MLN-CBD 45 8 R	MLN-CBD 45 8 L	Tr 45 x 8	1	65	65	1.1	4186	1200
MLN-CBD 50 8 R	MLN-CBD 50 8 L	Tr 50 x 8	1	70	70	1.3	5057	1370
MLN-CBD 55 9 R	-	Tr 55 x 9	1	80	80	2.07	6345	1370
MLN-CBD 60 9 R	MLN-CBD 60 9 L	Tr 60 x 9	1	80	80	1.75	6975	1710

Trapezoidal Nut Type MLN-CB Cylindrical Bronze

Material: EN 1982 Cu Sn7 Zn4 Pb7-C - CC493K

Cylindrical Bronze Nut for movement with modest loads. Good lubrication is recommended.



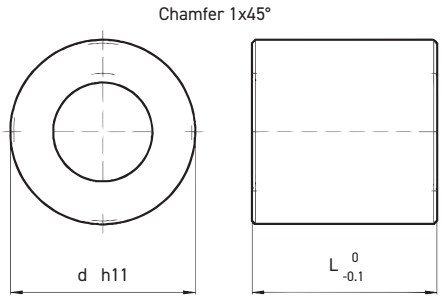
Nut Stock no. RIGHT	Nut Stock no. LEFT	Diameter x Lead	Thread Starts	d mm	L mm	S mm	Wt. kg/each	At mm² (1)
MLN-CB 10 3 R	MLN-CB 10 3 L	Tr 10 x 3	1	22	20	0.057	320	250
MLN-CB 12 3 R	MLN-CB 12 3 L	Tr 12 x 3	1	26	24	0.094	396	400
MLN-CB 12 6 R	-	Tr 12 x 6 (P3)	2	26	24	0.094	396	400
MLN-CB 14 4 R	MLN-CB 14 4 L	Tr 14 x 4	1	30	28	0.146	526	460
MLN-CB 16 4 R	MLN-CB 16 4 L	Tr 16 x 4	1	36	32	0.245	704	460
MLN-CB 18 4 R	MLN-CB 18 4 L	Tr 18 x 4	1	40	36	0.337	905	530
MLN-CB 20 4 R	MLN-CB 20 4 L	Tr 20 x 4	1	45	40	0.476	1130	530
MLN-CB 22 5 R	MLN-CB 22 5 L	Tr 22 x 5	1	45	40	0.456	1225	610
MLN-CB 24 5 R	MLN-CB 24 5 L	Tr 24 x 5	1	50	48	0.68	1620	610
MLN-CB 26 5 R	MLN-CB 26 5 L	Tr 26 x 5	1	50	48	0.648	1770	870
MLN-CB 28 5 R	MLN-CB 28 5 L	Tr 28 x 5	1	60	60	1.237	2400	870
MLN-CB 30 6 R	MLN-CB 30 6 L	Tr 30 x 6	1	60	60	1.195	2544	1030
MLN-CB 32 6 R	MLN-CB 32 6 L	Tr 32 x 6	1	60	60	1.145	2733	1030
MLN-CB 36 6 R	MLN-CB 36 6 L	Tr 36 x 6	1	75	72	2.232	3732	1040
MLN-CB 40 7 R	MLN-CB 40 7 L	Tr 40 x 7	1	80	80	2.823	4587	1040
MLN-CB 44 7 R	MLN-CB 44 7 L	Tr 44 x 7	1	80	80	2.639	5090	1280
MLN-CB 50 8 R	MLN-CB 50 8 L	Tr 50 x 8	1	90	100	4.142	7224	1200
MLN-CB 60 9 R	MLN-CB 60 9 L	Tr 60 x 9	1	100	120	5.716	10462	1200
MLN-CB 70 10 R	MLN-CB 70 10 L	Tr 70 x 10	1	110	140	7.548	10200	1370
MLN-CB 80 10 R	MLN-CB 80 10 L	Tr 80 x 10	1	120	160	9.6	18850	1370

(1) Total bearing surface between screw and nut teeth on plane perpendicular to axis.

Trapezoidal Nut Type MLN-CSD Cylindrical Steel

Material: EN 10277-3 11S Mn Pb 37 - 1.0737

Nut for fastening or manual movement with small load; steel-to-steel coupling tends to seize.
Can be MIG welded only.
Electrode welding is not recommended because of the lead.

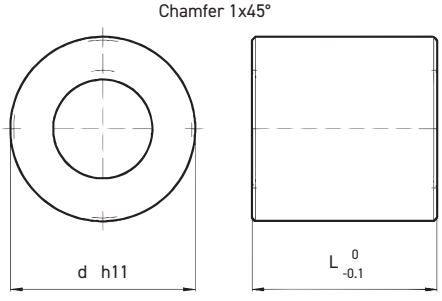


Nut Stock no. RIGHT	Nut Stock no. LEFT	Diameter x Lead	Thread Starts	d mm	L mm	Wt. kg/each	At mm² (1)
MLN-CSD 12 3 R	MLN-CSD 12 3 L	Tr 12 x 3	1	36	36	0.255	592
MLN-CSD 14 4 R	MLN-CSD 14 4 L	Tr 14 x 4	1	36	36	0.25	677
MLN-CSD 16 4 R	MLN-CSD 16 4 L	Tr 16 x 4	1	36	36	0.238	792
MLN-CSD 16 8 R	-	Tr 16 x 8 (P4)	2	36	36	0.238	792
MLN-CSD 18 4 R	MLN-CSD 18 4 L	Tr 18 x 4	1	36	36	0.224	905
MLN-CSD 20 4 R	MLN-CSD 20 4 L	Tr 20 x 4	1	40	40	0.306	1130
MLN-CSD 20 8 R	-	Tr 20 x 8 (P4)	2	40	40	0.306	1130
MLN-CSD 22 5 R	MLN-CSD 22 5 L	Tr 22 x 5	1	40	40	0.29	1225
MLN-CSD 25 5 R	MLN-CSD 25 5 L	Tr 25 x 5	1	45	45	0.4	1590
MLN-CSD 25 10 R	-	Tr 25 x 10 (P5)	2	45	45	0.4	1590
MLN-CSD 28 5 R	MLN-CSD 28 5 L	Tr 28 x 5	1	45	45	0.36	1800
MLN-CSD 28 10 R	-	Tr 28 x 10 (P5)	2	45	45	0.36	1800
MLN-CSD 30 6 R	MLN-CSD 30 6 L	Tr 30 x 6	1	50	50	0.52	2120
MLN-CSD 30 12 R	-	Tr 30 x 12 (P6)	2	50	50	0.52	2120
MLN-CSD 35 6 R	MLN-CSD 35 6 L	Tr 35 x 6	1	55	55	0.65	2764
MLN-CSD 40 7 R	MLN-CSD 40 7 L	Tr 40 x 7	1	60	60	0.79	3440
MLN-CSD 40 14 R	-	Tr 40 x 14 (P7)	2	60	60	0.79	3440
MLN-CSD 45 8 R	MLN-CSD 45 8 L	Tr 45 x 8	1	65	65	0.95	4186
MLN-CSD 50 8 R	MLN-CSD 50 8 L	Tr 50 x 8	1	70	70	1.12	5057
MLN-CSD 55 9 R	-	Tr 55 x 9	1	80	80	1.78	6345
MLN-CSD 60 9 R	MLN-CSD 60 9 L	Tr 60 x 9	1	80	80	1.51	6975

Trapezoidal Nut Type MLN-CS Cylindrical Steel

Material: EN 10277-3 11S Mn 30 - 1.0715

Used as fastening nut for manual movement where load is negligible because steel-to-steel coupling used for moving under loads tends to seize.
Material is weldable.



Nut Stock no. RIGHT	Nut Stock no. LEFT	Diameter x Lead	Thread Starts	d mm	L mm	Wt. kg/each	At mm² (1)
MLN-CS 10 3 R	MLN-CS 10 3 L	Tr 10 x 3	1	22	15	0.037	240
MLN-CS 12 3 R	MLN-CS 12 3 L	Tr 12 x 3	1	26	18	0.061	296
MLN-CS 12 6 R	-	Tr 12 x 6 (P3)	2	26	18	0.061	296
MLN-CS 14 4 R	MLN-CS 14 4 L	Tr 14 x 4	1	30	21	0.095	395
MLN-CS 16 4 R	MLN-CS 16 4 L	Tr 16 x 4	1	36	24	0.158	528
MLN-CS 18 4 R	MLN-CS 18 4 L	Tr 18 x 4	1	40	27	0.218	553
MLN-CS 20 4 R	MLN-CS 20 4 L	Tr 20 x 4	1	45	30	0.308	847
MLN-CS 22 5 R	MLN-CS 22 5 L	Tr 22 x 5	1	45	33	0.324	1010
MLN-CS 24 5 R	MLN-CS 24 5 L	Tr 24 x 5	1	50	36	0.44	1215
MLN-CS 26 5 R	MLN-CS 26 5 L	Tr 26 x 5	1	50	39	0.454	1440
MLN-CS 28 5 R	MLN-CS 28 5 L	Tr 28 x 5	1	60	42	0.747	1680
MLN-CS 30 6 R	MLN-CS 30 6 L	Tr 30 x 6	1	60	45	0.773	1908
MLN-CS 32 6 R	MLN-CS 32 6 L	Tr 32 x 6	1	60	48	0.79	2186
MLN-CS 36 6 R	MLN-CS 36 6 L	Tr 36 x 6	1	75	54	1.476	2800
MLN-CS 40 7 R	MLN-CS 40 7 L	Tr 40 x 7	1	80	60	1.826	3440
MLN-CS 44 7 R	MLN-CS 44 7 L	Tr 44 x 7	1	80	66	1.878	4200
MLN-CS 50 8 R	MLN-CS 50 8 L	Tr 50 x 8	1	90	75	2.68	5418
MLN-CS 60 9 R	MLN-CS 60 9 L	Tr 60 x 9	1	100	90	3.698	7847
MLN-CS 70 10 R	MLN-CS 70 10 L	Tr 70 x 10	1	110	105	4.884	10200
MLN-CS 80 10 R	MLN-CS 80 10 L	Tr 80 x 10	1	120	120	6.21	14137

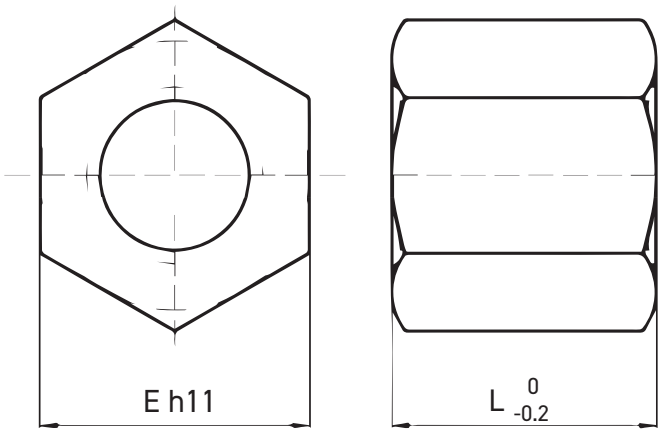
(1) Total bearing surface between screw and nut teeth on plane perpendicular to axis.

Trapezoidal Nut Type MLN-HS-Hexagonal Nut In Steel

Material: EN 10277-3 11SMnPb37 - 1.0737

Fixing nut is very convenient thanks to its hexagonal shape. Not suitable for operations with high loads, because the coupling steel-to-steel tends to seize. This nut can be MIG welded only. Electrode welding is not recommended because of the lead.

Chamfer 1x45°



Nut Stock no. RIGHT	Nut Stock no. LEFT	Diameter x Lead	Thread Starts	d mm	L mm	Wt. kg/each	At mm² (1)
MLN-HS 10 2 R	MLN-HS 10 2 L	Tr 10 x 2	1	17	15	0.023	150
MLN-HS 10 3 R	MLN-HS 10 3 L	Tr 10 x 3	1	17	15	0.021	240
MLN-HS 12 3 R	MLN-HS 12 3 L	Tr 12 x 3	1	19	18	0.027	296
MLN-HS 14 3 R	MLN-HS 14 3 L	Tr 14 x 3	1	22	21	0.044	395
MLN-HS 14 4 R	MLN-HS 14 4 L	Tr 14 x 4	1	22	21	0.044	395
MLN-HS 16 4 R	MLN-HS 16 4 L	Tr 16 x 4	1	27	24	0.082	528
MLN-HS 18 4 R	MLN-HS 18 4 L	Tr 18 x 4	1	27	27	0.084	553
MLN-HS 20 4 R	MLN-HS 20 4 L	Tr 20 x 4	1	30	30	0.114	847
MLN-HS 22 5 R	MLN-HS 22 5 L	Tr 22 x 5	1	30	33	0.112	1010
MLN-HS 24 5 R	MLN-HS 24 5 L	Tr 24 x 5	1	36	36	0.2	1215
MLN-HS 26 5 R	MLN-HS 26 5 L	Tr 26 x 5	1	36	39	0.193	1440
MLN-HS 28 5 R	MLN-HS 28 5 L	Tr 28 x 5	1	41	42	0.291	1680
MLN-HS 30 6 R	MLN-HS 30 6 L	Tr 30 x 6	1	46	45	0.42	1908
MLN-HS 32 6 R	MLN-HS 32 6 L	Tr 32 x 6	1	46	48	0.411	2186
MLN-HS 36 6 R	MLN-HS 36 6 L	Tr 36 x 6	1	55	54	0.706	2800
MLN-HS 40 7 R	MLN-HS 40 7 L	Tr 40 x 7	1	65	60	1.172	3440
MLN-HS 44 7 R	MLN-HS 44 7 L	Tr 44 x 7	1	65	66	1.159	4200
MLN-HS 50 8 R	MLN-HS 50 8 L	Tr 50 x 8	1	75	75	1.783	5418
MLN-HS 60 9 R	MLN-HS 60 9 L	Tr 60 x 9	1	90	90	3.087	7847
MLN-HS 70 10 R	MLN-HS 70 10 L	Tr 70 x 10	1	90	105	2.837	10200

(1) Total bearing surface between screw and nut teeth on plane perpendicular to axis.

End Support Range

THE **DYNAMICS** OF **MOVEMENT**

LARGE UK STOCK OF END SUPPORTS:
Matara stock a vast range of fixed and floated side end supports, supporting ballscrews and leadscrews of many different sizes.

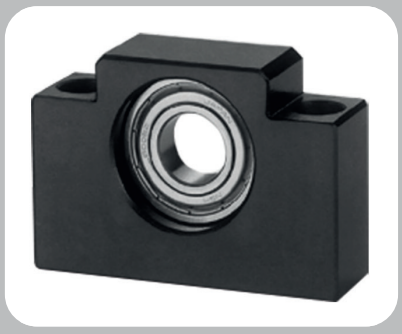
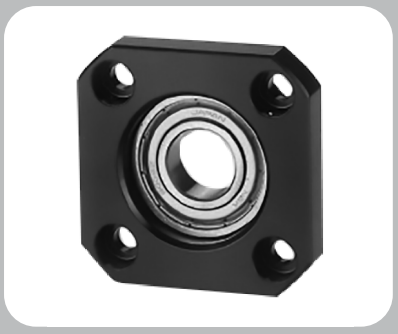
End Supports Order Example

Code:	**BF**	**20**	**C7**
Options:	1	2	3

Options	Lead Screw Specifications
1	End Support Series
2	Size
3	Material

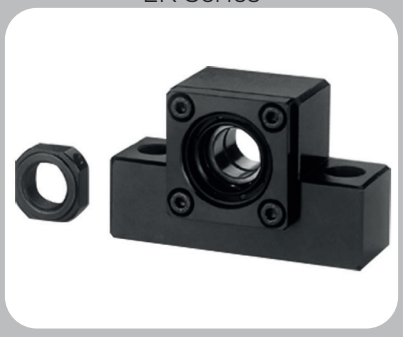
Types of Support and Suggested Diameter of Ballscrew

Fixed Side Model

BF Series	EF Series	FF Series
		

Types of Support and Suggested Diameter of Ballscrew

Floated Side Model

BK Series	EK Series
	
FK Series	**WBK Series**
	

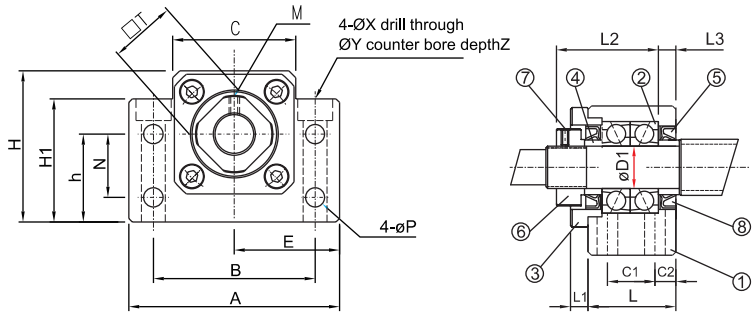
Types of Support and Suggested Diameter of Ballscrew

Fixed Side Model			Floated Side Model			Suggested Diameter
Flange Type	Square Type		Flange Type	Square Type		
-	EK-6	-	FF-6	EF-6	-	Ø4, Ø6
FK-8	EK-8	-	-	EF-8	-	Ø8, Ø10, Ø12
FK-10	EK-10	BK-10	FF-10	EF-10	BF-10	Ø10, Ø12, Ø14,Ø15
FK-12	EK-12	BK-12	FF-12	EF-12	BK-12	Ø14, Ø15, Ø16
FK-15	EK-15	BK-15	FF-15	EF-15	BF-15	Ø18, Ø20
-	-	BK-17	-	-	BF-17	Ø20, Ø25
FK-20	EK-20	BK-20	FF-20	EF-20	BF-20	Ø25, Ø28
FK-25	EK-25	BK-25	FF-25	EF-25	BF-25	Ø32, Ø36
FK-30	-	BK-30	FF-30	-	BF-30	Ø36, Ø40
-	-	BK-35	-	-	BF-35	Ø40, Ø45
-	-	BK-40	-	-	BF-40	Ø50, Ø55

Function

Floated Side Model				Suggested Diameter			
Support Model	Bearing Model	Axial		Support Model	Bearing Model	Radial	
		Ca (kgf)	K kgf/µm			Ca (kgf)	Coa (kgf)
EK-6	706ATYDF	273	2.9	EF-6, FF-6	606ZZ	231	88
EK-8, FK-8	708ATYDF	450	5.4	EF-8, FF-8	606ZZ	231	88
BK-10, EK-10, FK-10	7000ATYDF	620	9.6	BF-10, EF-10, FF-10	608ZZ	335	142
BK-12, EK-12, FK-12	7001ATYDF	679	10.6	BF-12, EF-12, FF-12	6000ZZ	465	200
BK-15, EK-15, FK-15	7002ATYDF	775	11.5	BF-15, EF-15, FF-15	6002ZZ	570	289
BK-17	7203ATYDF	1397	12.7	BF-17	6203ZZ	979	469
BK-20	7004ATYDF	1295	14.2	BF-20	6004ZZ	958	515
EK-20, FK-20	7204ATYDF	1820	15.8	EF-20, FF-20	6204ZZ	1300	702
BK-25, EK-25, FK-25	7205ATYDF	2060	19.4	BF-25, EF-25, FF25	6205ZZ	1430	800
BK-30, FK-30	7206ATYDF	2856	19.8	BF-30, FF30	6206ZZ	1989	1152
BK-35	7207ATYDF	3794	26.0	BF-35	6207ZZ	2621	1560
BK-40	7208ATYDF	4498	27.5	BF-40	6208ZZ	2968	1815

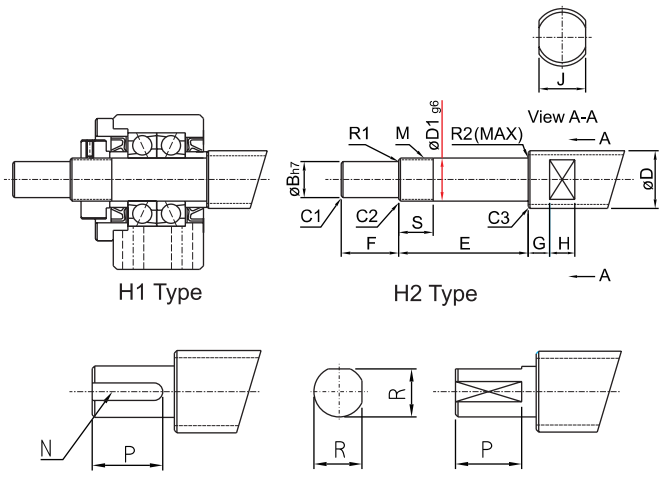
BK Series (Fixed End) Size 10-20



Code	Items	pcs
1	Housing	1 PCS
2	Bearing	1 SET
3	Lid	1 PCS
4	Spacer	2 PCS
5	Seal	2 PCS
6	Lock Nut	1 PCS
7	Screw with Washer	1 PCS

Model No.	D1	A	B	C	C1	C2	E ±0.02	H1	h ±0.02	H	L	L1	L2	L3	T	p	N	M	X	Y	Z	Bearing Model
BK-10	10	60	46	34	13	6	30	32.5	22	39	25	5	29	5	16	5.5	15	M3	6.6	11	5	7000ATYDFC8P5
BK-12	12	60	46	34	13	6	30	32.5	25	43	25	5	29	5	19	5.5	18	M3	6.6	11	1.5	7001ATYDFC8P5
BK-15	15	70	54	40	15	6	35	38	28	48	27	6	32	6	22	5.5	18	M3	6.6	11	6.5	7002ATYDFC8P5
BK-17	17	86	68	50	19	8	43	55	39	64	35	9	44	7	24	6.6	28	M4	9	14	8.5	7203ATYDFC8P5
BK-20	20	88	70	52	19	8	44	50	34	60	35	8	43	8	30	6.6	22	M4	9	14	8.5	7004ATYDFC8P5

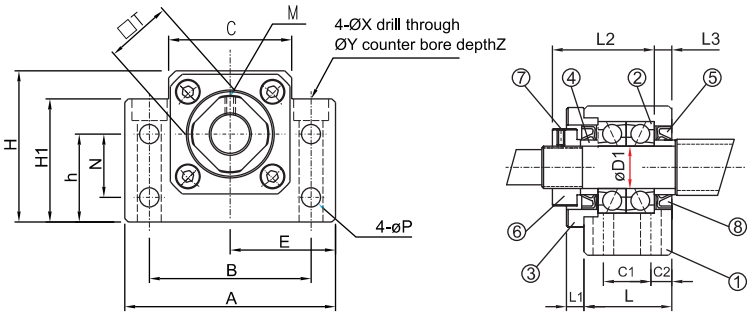
Suggested End Machining Dimensions



Dimension(mm)		h unit0.001
Above	Under	
6	10	-2 -15
10	18	-3 -18
18	30	-3 -21

Model No.	Diameter	D1	B	E	F	M	S	J	G	H	Chamfering			Circular Radius		H1 Keyway (WxDxL)		h unit0.001	
											C1	C2	C3	R2	N	P	R	P	C3
BK-10	Ø12, Ø14, Ø15	10	8	39	15	M10x1	16	10	5	7	0.5	0.5	0.5	0.3	0.6	2x1.2	11	7.5	11
BK-12	Ø14, Ø15, Ø16, Ø18	12	10	39	15	M12X1	14	13	6	8	0.5	0.5	0.5	0.3	0.6	3x1.8	12	9.5	12
BK-15	Ø18, Ø20	15	12	40	20	M15x1	12	16	6	9	0.5	0.5	0.5	0.3	0.6	4x2.5	16	11.3	16
BK-17	Ø20, Ø25	17	15	53	23	M17x1	17	18	7	10	0.5	0.5	0.5	0.3	0.6	5x3.0	21	14.3	21
BK-20	Ø25, Ø28	20	17	53	25	M20x1	15	21	8	11	0.5	0.5	0.5	0.5	0.6	5x3.0	21	16	21

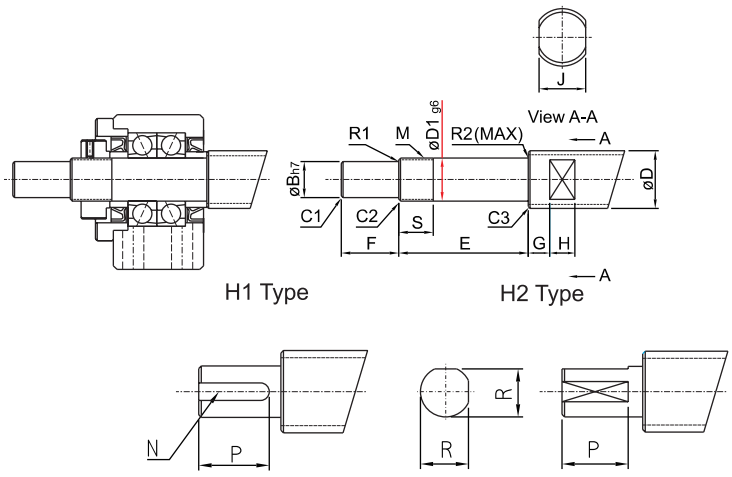
BK Series (Fixed End) Size 25-40



Code	Items	pcs
1	Housing	1 PCS
2	Bearing	1 SET
3	Lid	1 PCS
4	Spacer	2 PCS
5	Seal	2 PCS
6	Lock Nut	1 PCS
7	Screw with Washer	1 PCS

Model No.	D1	A	B	C	C1	C2	E ±0.02	H1	h ±0.02	H	L	L1	L2	L3	T	p	N	M	X	Y	Z	Bearing Model
BK-25	25	106	85	64	22	10	53	70	48	80	42	12	54	9	35	9	33	M5	11	17.5	11	7205ATYDFC8P5
BK-30	30	128	102	76	23	11	64	78	51	89	45	14	61	9	40	11	33	M6	14	20	13	7206ATYDFC8P5
BK-35	35	140	114	88	26	12	70	79	52	96	50	14	67	12	50	11	35	MB	14	20	13	7207ATYDFC8P5
BK-40	40	160	130	100	33	14	80	90	60	110	61	18	76	15	50	14	37	MB	18	26	17.5	7208ATYDFC8P5

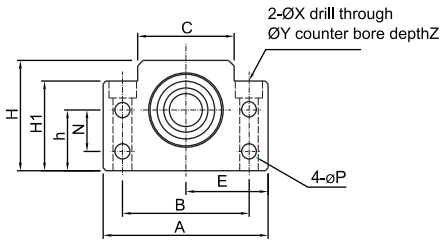
Suggested End Machining Dimensions

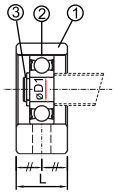


Dimension(mm)		h
Above	Under	unit 0.001
18	30	-3 -21
30	50	-4 -25

Model No.	Diameter	D1	B	E	F	M	S	J	G	H	Chamfering			Circular Radius		H1 Keyway (WxDxL)		h unit 0.001	
											C1	C2	C3	R1	R2	N	P	R	P
BK-25	Ø32, Ø36	25	20	65	30	M25x1.5	18	27	10	13	0.5	0.7	1.0	0.5	0.6	6x3.5	25	19	25
BK-30	Ø36, Ø40	30	25	72	38	M30x1.5	25	32	10	15	0.5	0.7	1.0	0.5	1.0	8x4.0	32	23.5	32
BK-35	Ø40, 045, Ø50	35	30	83	45	M35x1.5	28	36	12	15	0.5	1.0	1.0	0.5	1.0	8x4.0	40	28.5	40
BK-40	Ø50, Ø55	40	35	98	50	M40x1.5	35	41	14	19	0.5	1.0	1.0	0.5	1.0	10x5.0	45	33	45

BF Series (Floated End) Size 10-40

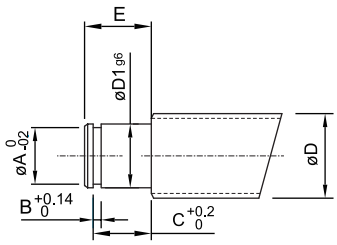


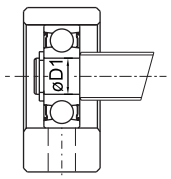


Code	Items	pcs
1	Housing	1 PCS
2	Bearing	1 PCS
3	C-Ring	1 PCS

Model No.	D1	A	B	C	E ±0.02	H1	h ±0.02	H	L	N	P	X	Y	Z	C-Ring	Bearing Model
BF-10	8	60	46	34	30	32.5	22	39	20	15	5.5	6.6	11	5	CS	608ZZ
BF-12	10	60	46	34	30	32.5	25	43	20	18	5.5	6.6	11	1.5	C10	6000ZZ
BF-15	15	70	54	40	35	38	28	48	20	18	5.5	6.6	11	6.5	C15	6002ZZ
BF-17	17	86	68	50	43	55	39	64	23	28	6.6	9	14	8.5	C17	6203ZZ
BF-20	20	88	70	52	44	50	34	60	26	22	6.6	9	14	8.5	C20	6004ZZ
BF-25	25	106	85	64	53	70	48	80	30	33	9	11	17.5	11	C25	6205ZZ
BF-30	30	128	102	76	64	78	51	89	32	33	11	14	20	13	C30	6206ZZ
BF-35	35	140	114	88	70	79	52	96	32	35	11	14	20	13	C35	6207ZZ
BF-40	40	160	130	100	80	90	60	110	37	37	14	18	26	17.5	C40	6208ZZ

Suggested End Machining Dimensions



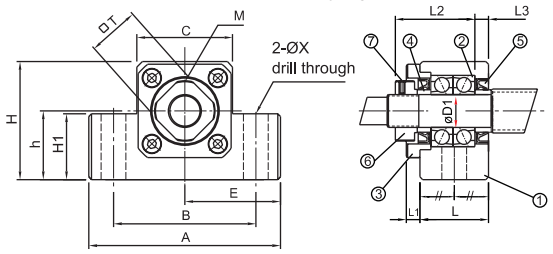


Dimension(mm) Above	Under	h unit 0.001
6	10	-2 -15
10	18	-3 -21
18	30	-3 -21
30	50	-4 -25

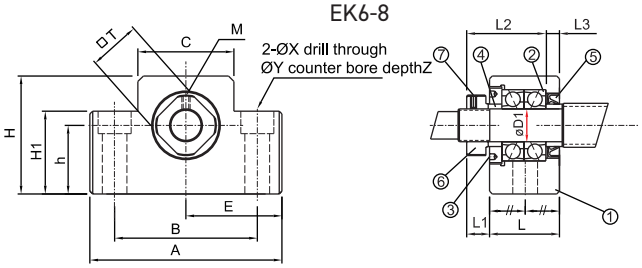
Model No.	Diameter	D1	E	A	B	C
BF-10	Ø12, Ø14, Ø15	8	10	7.6	0.9	7.9
BF-12	Ø14, Ø15, Ø16	10	11	9.6	1.15	9.15
BF-15	Ø18, Ø20	15	13	14.3	1.15	10.15
BF-17	Ø20, Ø25	17	16	16.2	1.15	13.15
BF-20	Ø25, Ø28	20	16	19.0	1.35	13.35
BF-25	Ø32, Ø36	25	20	23.9	1.35	16.35
BF-30	Ø36, Ø40	30	21	28.6	1.75	17.75
BF-35	Ø40, Ø45, Ø50	35	22	33.0	1.75	18.75
BF-40	Ø50, Ø55	40	23	38.0	1.95	19.95

EK Series (Fixed End) Size 6-15

EK10-16



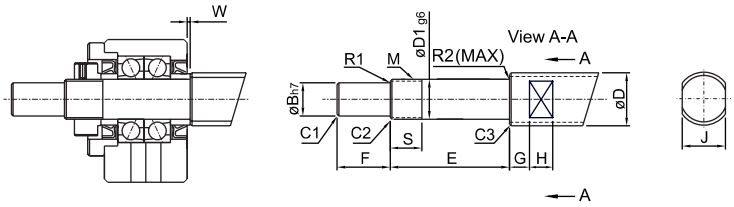
EK6-8

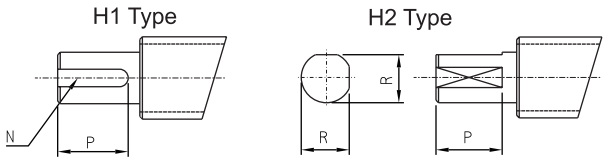


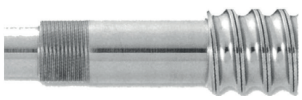
Code	Items	pcs
1	Housing	1 PCS
2	Bearing	1 SET
3	Lid	1 PCS
4	Spacer	2 PCS
5	Seal	2 PCS
6	Lock Nut	1 PCS
7	Screw with Washer	1 PCS

Model No.	D1	A	B	C	E ±0.02	H1	h ±0.02	H	L	L1	L2	L3	M	X	Y	Z	T	Bearing Model
EK-6	6	42	30	18	21	20	13	25	20	5.5	22	3.5	M3	5.5	9.5	11	12	706ATYDFC7P5
EK-8	8	52	38	25	26	26	17	32	23	7	26	4	M3	6.6	11	12	14	708ATYDFCBP5
EK-10	10	70	52	36	35	24	25	43	24	6	29.5	6	M3	9	-	-	16	7000ATYDFCBP5
EK-12	12	70	52	36	35	24	25	43	24	6	29.5	6	M3	9	-	-	19	7001ATYDFCBP5
EK-15	15	80	60	41	40	25	30	49	25	6	36	5	M3	11	-	-	22	7002ATYDFCBP5

Suggested End Machining Dimensions





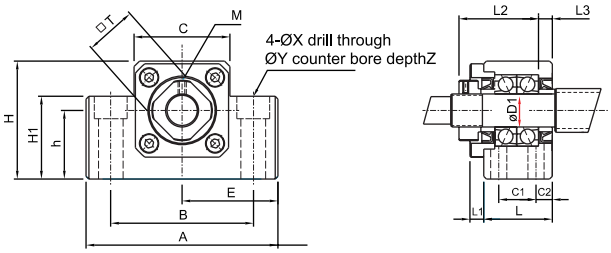


Dimension(mm) Above	Under	h unit 0.001
6	10	-2 -15
10	18	-3 -21
18	30	-3 -21
30	50	-4 -25

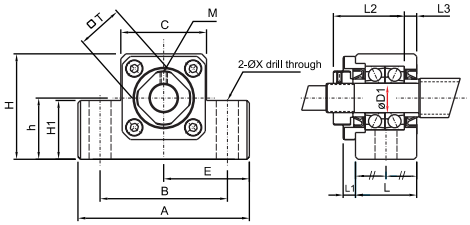
Model No.	Diameter	D1	B	E	F	M	S	J	G	H	Chamfering			Circular Radius		H1 Keyway (WxDxL)		H2		W
											C1	C2	C3	R1	R2	N	P	R	P	
EK-6	Ø6, Ø8	6	4	30	8	M6x0.75	10	5	4	4	0.3	0.3	0.3	0.3	0.6	-	-	3.7	6	1.5
EK-8	Ø10, Ø12	8	6	35	9	M8x1	10	8	5	5	0.3	0.3	0.3	0.3	0.6	-	-	5.6	7	1.5
EK-10	Ø12, Ø14, Ø15	10	8	36	15	M10x1	11	10	5	7	0.5	0.5	0.5	0.3	0.6	2x1.2	11	7.5	11	-0.5
EK-12	Ø14, Ø15, Ø16	12	10	36	15	M12x1	11	13	6	8	0.5	0.5	0.5	0.3	0.6	3x1.8	12	9.5	12	-0.5
EK-15	Ø18, Ø20	15	12	49	20	M15x1	13	16	6	9	0.5	0.5	0.5	0.3	0.6	4x2.5	16	11.3	16	5.0

EK Series (Fixed End) Size 20-25

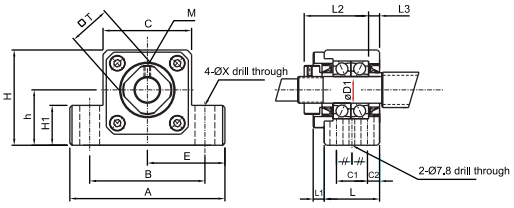
EK-20S



EK-20

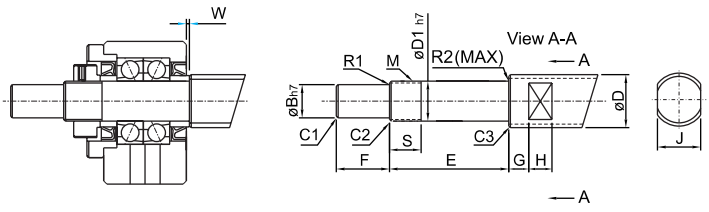


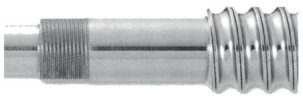
EK-25



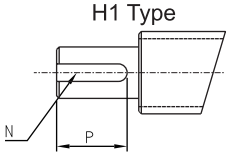
Model No.	D1	A	B	C	E ±0.02	H1	h ±0.02	C2	C1	H	L	L1	L2	L3	M	X	Y	Z	T	Bearing Model
EK-20	20	95	75	56	47.5	25	30	-	-	58	42	10	50	10	M4	11	-	-	30	7204ATYDFC8P5
EK-25	25	105	85	66	52.5	25	35	9	30	68	48	13	60	14	M5	11	-	-	35	7205ATYDFC8P5

Suggested End Machining Dimensions

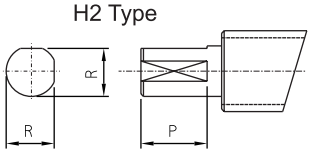




H1 Type



H2 Type

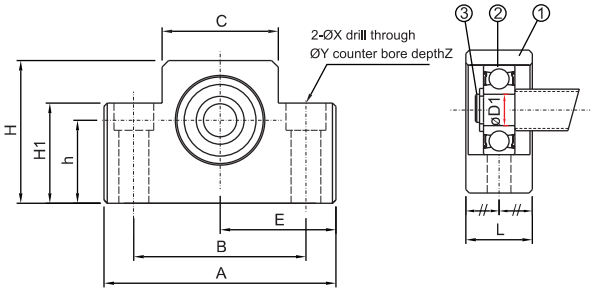


Dimension(mm) Above	Under	h unit 0.001
6	10	-2 -15
10	18	-3 -18
18	24	-3 -21

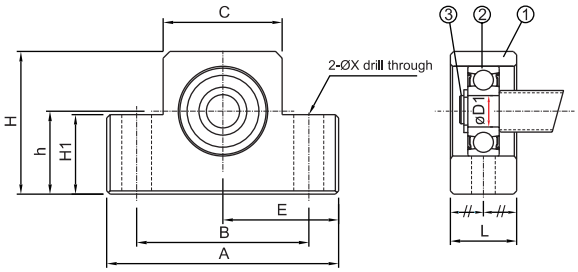
Model No.	Diameter	D1	B	E	F	M	S	J	G	H	Chamfering			Circular Radius		H1 Keyway (WxDxL)		H2		W
											C1	C2	C3	R1	R2	N	P	R	P	
EK-20	Ø25, Ø28, Ø32	20	17	64	25	M20x1	17	21	8	11	0.5	0.5	0.5	0.5	0.6	5x3.0	21	16	21	1.0
EK-25	Ø32, Ø36	25	20	76	30	M25x1.5	18	27	10	13	0.5	0.7	1.0	0.5	0.6	6x3.5	25	19	25	1.0

EF Series (Floated End) Size 6-25

Code	Items	pcs
1	Housing	1 PCS
2	Bearing	1 PCS
3	C-Ring	1 PCS



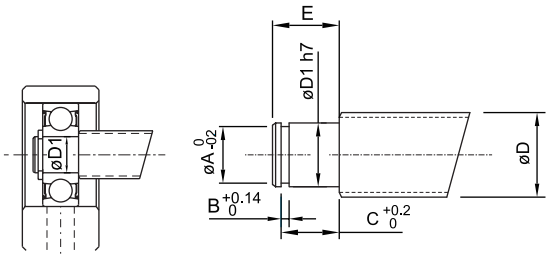
EF6~8



EF10~15, EF20~25

Model No.	D1	A	B	C	E ±0.02	H1	h ±0.02	H	L	X	Y	Z	C-Ring	Bearing Model
EF-6	6	42	30	18	21	20	13	25	12	5.5	9.5	11	C6	606ZZ
EF-8	6	52	38	25	26	26	17	32	14	6.6	11	12	C6	606ZZ
EF-10	8	70	52	36	35	24	25	43	20	9	-	-	CB	608ZZ
EF-12	10	70	52	36	35	24	25	43	20	9	-	-	C10	6000ZZ
EF-15	15	80	60	41	40	25	30	49	20	9	-	-	C15	6002ZZ
EF-20	20	95	75	56	47.5	25	30	58	26	11	-	-	C20	6204ZZ
EF-25	25	105	85	66	52.5	25	35	68	30	-	11	-	C25	6205ZZ

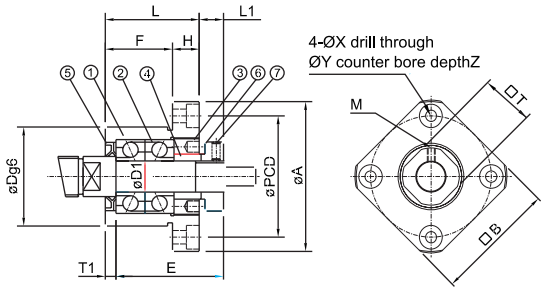
Suggested End Machining Dimensions



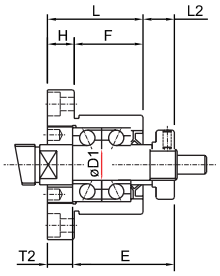
Dimension(mm) Above	Under	h unit 0.001
6	10	-2 -15
10	18	-3 -18
18	24	-3 -21

Model No.	Diameter	D1	E	C-Ring A	B	C
EF-6	Ø6, Ø8	6	9	5.7	0.8	6.8
EF-8	Ø10, Ø12	6	9	5.7	0.8	6.8
EF-10	Ø12, Ø14, Ø15	8	10	7.6	0.9	7.9
EF-12	Ø14, Ø15, Ø16	10	11	9.6	1.15	9.15
EF-15	Ø18, Ø20	15	13	14.3	1.15	10.15
EF-20	Ø25, Ø28	20	19	19	1.35	15.35
EF-25	Ø32, Ø36	25	20	23.9	1.35	16.35

FK Series (Fixed End) Size 8



Method A



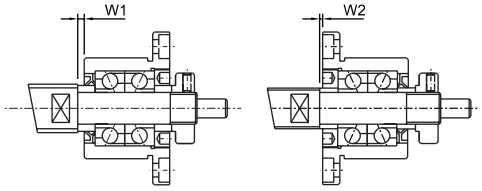
Method B

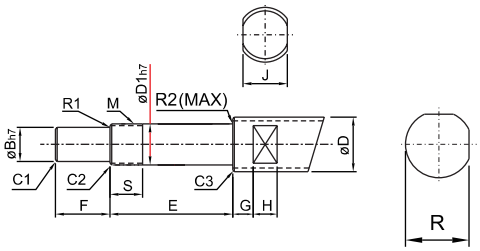
Code	Items	pcs
1	Housing	1 PCS
2	Bearing	1 SET
3	Lid	1 PCS
4	Spacer	2 PCS
5	Seal	2 PCS
6	Lock Nut	1 PCS
7	Screw with Washer	1 PCS

D	h unit0.001
28	-0.007 -0.020

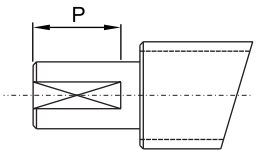
Model No.	D1	A	F	L	E	Dg6	H	PCD	M	B	L1	T1	L2	T2	X	Y	Z	T	Bearing Model
FK-8	8	43	14	23	26	28	9	35	M3	35	7	4	8	5	3.4	6.5	4	14	708ATYDFC8P5

Suggested End Machining Dimensions





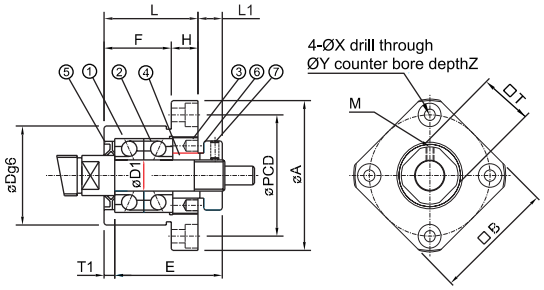
H1 Type



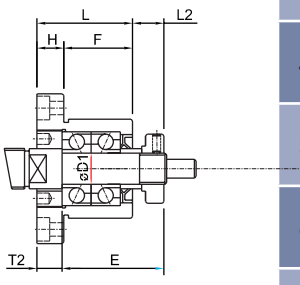
Dimension(mm) Above	Dimension(mm) Under	h unit 0.001
6	10	-2 -15

Model No.	Diameter	D1	B	E	F	M	S	Chamfering			Circular Radius		H1 Keyway (WxDxL)		W1	W2
								C1	C2	C3	R1	R2	N	P		
FK-8	Ø10, Ø12	8	6	35	9	M8x1	15	0.5	0.5	0.5	0.3	0.6	5.6	7	1.5	0.5

FK Series (Fixed End) Size 10-30



Method A



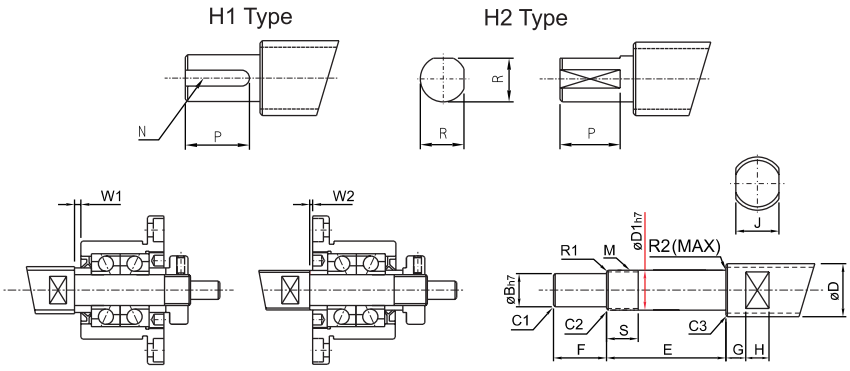
Method B

D	h unit0.001
34	-0.009 -0.025
36	-0.009 -0.025
40	-0.009 -0.025
57	-0.010 -0.029
63	-0.010 -0.029
75	-0.010 -0.029

Code	Items	pcs
1	Housing	1 PCS
2	Bearing	1 SET
3	Lid	1 PCS
4	Spacer	2 PCS
5	Seal	2 PCS
6	Lock Nut	1 PCS
7	Screw with Washer	1 PCS

Model No.	D1	A	F	L	E	Dg6	H	PCD	M	B	L1	T1	L2	T2	X	Y	Z	T	Bearing Model
FK-10	10	52	17	27	29.5	34	10	42	M3	42	7.5	5	8.5	6	4.5	8	4	16	7000ATYDFC8P5
FK-12	12	54	17	27	29.5	36	10	44	M3	44	7.5	5	8.5	6	4.5	8	4	19	7001ATYDFC8P5
FK-15	15	63	17	32	36	40	15	50	M3	52	10	6	12	8	5.5	9.5	6	22	7002ATYDFC8P5
FK-20	20	85	30	52	50	57	22	70	M4	68	8	10	12	14	6.6	11	10	30	7204ATYDFC8P5
FK-25	25	98	30	57	60	63	27	80	M5	79	13	10	20	17	9	15	13	35	7205ATYDFC8P5
FK-30	30	117	32	62	61	75	30	95	M6	93	14	12	17	18	11	17.5	15	40	7206ATYDFC8P5

Suggested End Machining Dimensions



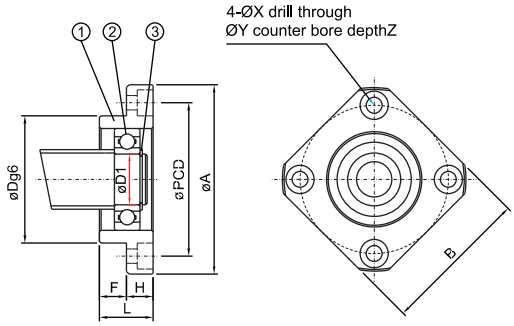
Dimension(mm) Above	Dimension(mm) Under	h unit0.001
6	10	-2 -15
10	18	-3 -18
18	24	-3 -21

Model No.	Diameter	D1	B	E	F	M	S	J	G	H	Chamfering			Circular Radius		H1 Keyway (WxDxL)		W1	W2
											C1	C2	C3	R1	R2	N	P		
FK-10	Ø12, Ø14, Ø15	10	8	36	15	M10x1	11	10	5	7	0.5	0.5	0.5	0.3	0.6	2x1.2	11	7.5	11
FK-12	Ø14, Ø15, Ø16	12	10	36	15	M12x1	11	13	6	8	0.5	0.5	0.5	0.3	0.6	3x1 .8	12	9.5	12
FK-15	Ø18, Ø20	15	12	49	20	M15x1	13	16	6	9	0.5	0.5	0.5	0.3	0.6	4x2.5	16	11.6	16
FK-20	Ø25, Ø28	20	17	64	25	M20x1	17	21	8	11	0.5	0.5	0.5	0.5	0.6	5X3.0	21	16	21
FK-25	Ø32, Ø36	25	20	76	30	M25x1. 5	20	27	10	13	0.5	0.5	0.5	0.5	0.6	6x3.5	25	19	25
FK-30	Ø40, Ø50	30	25	72	38	M30x1.5	25	32	10	15	0.5	0.5	0.5	0.5	0.6	8x4	32	23.5	32

FF Series (Floated End) Size 6-30

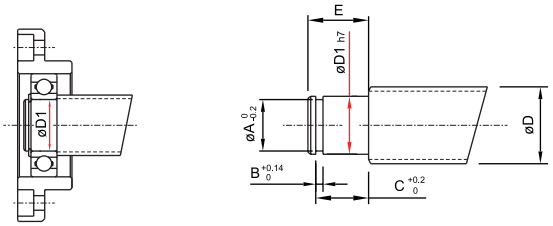
Code	Items	pcs
1	Housing	1 PCS
2	Bearing	1 PCS
3	C-Ring	1 PCS

D	h unit0.001
22	-0.007 -0.020
28	-0.007 -0.020
34	-0.009 -0.025
40	-0.009 -0.025
57	-0.010 -0.029
63	-0.010 -0.029
75	-0.010 -0.029



Model No.	D1	L	H	F	Dg6	A	PCD	B	X	Y	Z	C-Ring	Bearing Model
FF-6	6	10	6	4	22	36	28	28	3.4	6.5	4	C6	606ZZ
FF-10	8	12	7	5	28	43	35	35	3.4	6.5	4	CB	608ZZ
FF-12	10	15	7	8	34	52	42	42	4.5	8	4	C10	6000ZZ
FF-15	15	17	9	8	40	63	50	52	5.5	9.5	5.5	C15	6002ZZ
FF-20	20	20	11	9	57	85	70	68	6.6	11	6.5	C20	6204ZZ
FF-25	25	24	14	10	63	98	80	79	9	14	8.5	C25	6205ZZ
FF-30	30	27	18	9	75	117	95	93	11	17.5	11	C30	6206ZZ

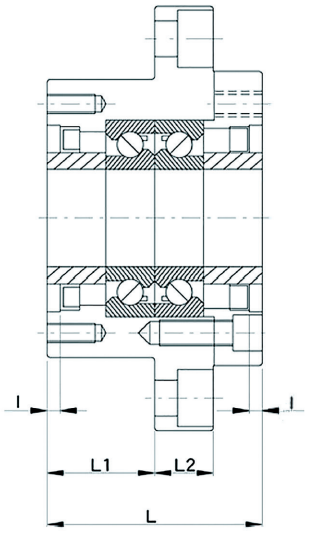
Suggested End Machining Dimensions



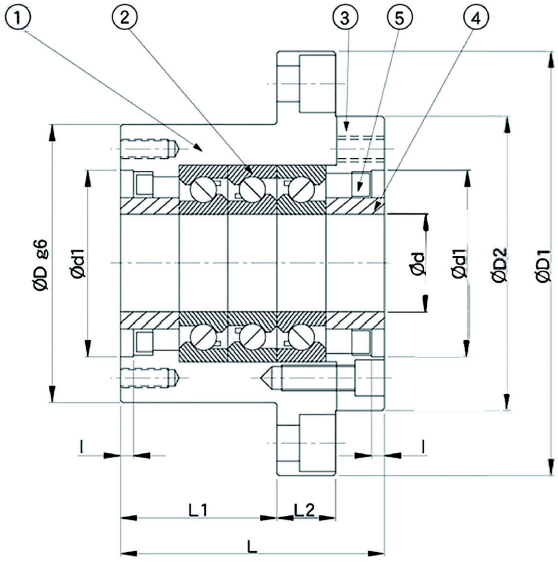
Dimension(mm)		h unit 0.001
Above	Under	
6	10	-2 -15
10	18	-3 -18
18	24	-3 -21

Model No.	Diameter	D1	E	C-Ring		
				A	B	C
FF-6	Ø10, Ø12	6	9	5.7	0.8	6.8
FF-10	Ø12, Ø14, Ø15	8	10	7.6	0.9	7.9
FF-12	Ø14, Ø15, Ø16	10	11	9.6	1.15	9.15
FF-15	Ø18, Ø20	15	13	14.3	1.15	10.15
FF-20	Ø25, Ø28	20	19	19	1.35	15.35
FF-25	Ø32, Ø36	25	20	23.9	1.35	16.35
FF-30	Ø40, Ø50	30	21	28.6	1.75	17.75

WBK Series (Fixed End) Heavy Load Type



Assembly way DF



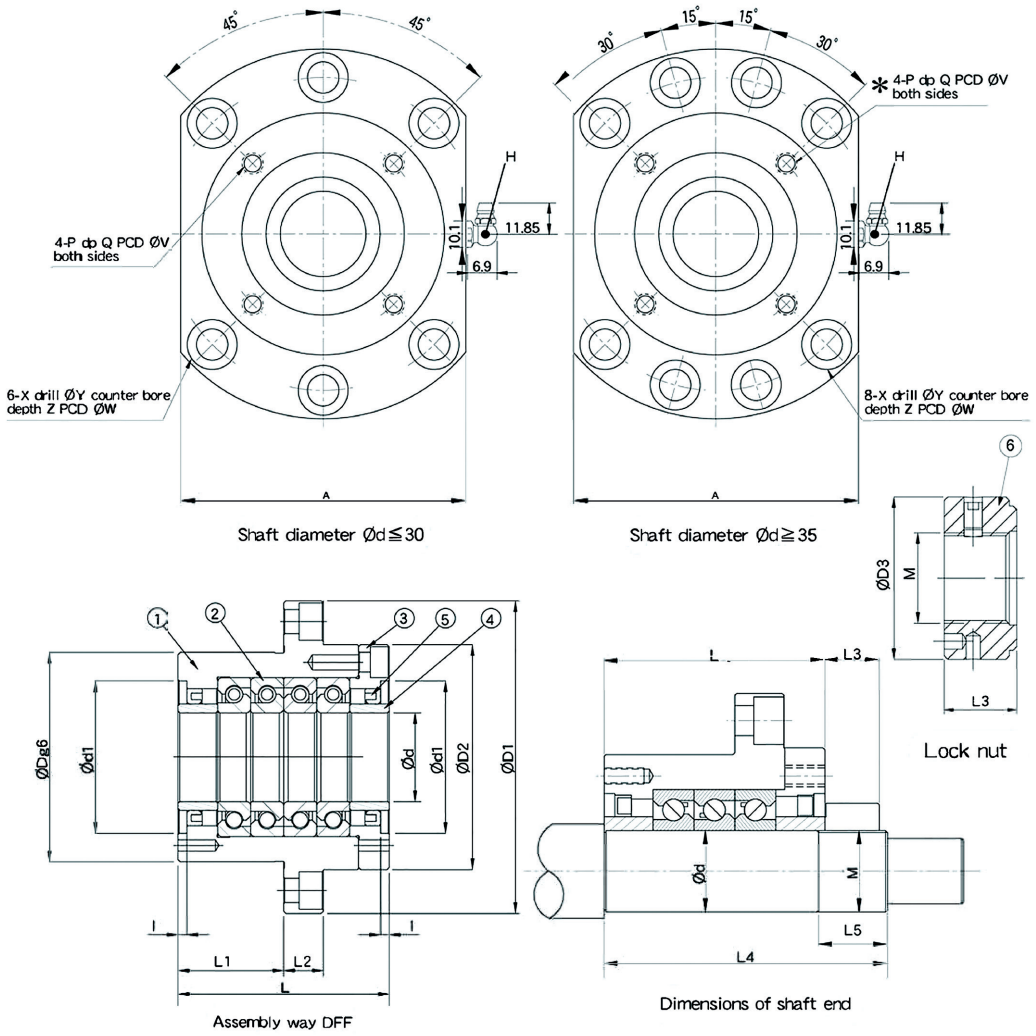
Assembly way DFD

Code	Items	pcs
1	Housing	1 PCS
2	Bearing	1 SET
3	Lid	1 PCS
4	Collar	2 PCS
5	Seal	2 PCS
6	Lock Nut	1 PCS

Model No.	Dimensions Of Shaft End																	
	d	D	D1	D2	L	L1	L2	A	W	X	Y	Z	d1	l	V	P	Q	H
WBK 17DF	17	70	106	72	60	32	15	80	88	9	14	8.5	45	3	58	M5	10	M6
WBK 200F	20	70	106	72	60	32	15	80	88	9	14	8.5	45	3	58	M5	10	M6
WBK 25DF	25	85	130	90	66	33	18	100	110	11	17	11	57	4	70	M6	12	M6
WBK 25DFD					81	48												
WBK 25DFF					96	48												
WBK 300F	30	85	130	90	66	33	18	100	110	11	17	11	57	4	70	M6	12	M6
WBK 300FD					81	48												
WBK 30DFF					96	48												
WBK 35DF	35	95	142	102	66	33	18	106	121	11	17	11	69	4	80	M6	12	M6
WBK 35DFD					81	48												
WBK 35DFF					96	48												
WBK 400F	40	95	142	102	66	33	18	106	121	11	17	11	69	4	80	M6	12	M6
WBK 400FD					81	48												
WBK 400FF					96	48												

Note:
1. Inside bearings use Japanese & Taiwanese P4 grade TAC 60 degree contact ball bearing.
2. The standard type is without H, if required, please advise in advance.

WBK Series (Fixed End) Heavy Load Type



Model No.	Basic Dynamic Load Rating Ca (kgf)	Permissible axial load (kgf)	Preload (kgf)	Axial Rigidity (kgf/um)	Max Starting torque	Lock Nut			Weight (kgs)	Dimensions Of Shaft End		
						M	D3	L3		d	L4	L5
WBK 17DF	2240	2710	220	75	1.9	M17Xl	37	18	1.24	17	81	23
WBK 20DF	2240	2710	220	75	1.9	M20Xl	40	18	2	20	81	23
WBK 25DF	2910	4150	320	100	2.9	M25Xl.5	45	20	3.27	25	89	26
WBK 25DFD	4700	8300	440	150	4				3.81		104	
WBK 25DFF	4700	8300	640	200	5				4.46		119	
WBK 30DF	2980	4400	340	105	3	M30Xl.5	50	20	3.18	30	89	26
WBK 30DFD	4850	8800	460	155	4				3.7		104	
WBK 30DFF	4850	8800	680	205	5.2				4.3		119	
WBK 35DF	3150	5100	390	120	3.6	M35Xl.5	55	22	3.79	35	92	30
WBK 35DFD	5150	10200	530	175	4.6				4.45		107	
WBK 35DFF	5150	10200	780	240	6				5.21		122	
WBK 40DF	3250	5300	400	125	3.8	M40Xl.5	60	22	3.65	40	92	30
WBK 40DFD	5250	10600	540	185	4.8				4.27		107	
WBK 40DFF	5250	10600	800	245	6.2				5		122	

Note:

3. Dimensions on the drawing with the star mark can be used for dust cover and damper installation. For any more information please contact our friendly, expert team.

Couplings Range
Compensation Type

THE **DYNAMICS** OF **MOVEMENT**

HA-CO
The brand for best couplings

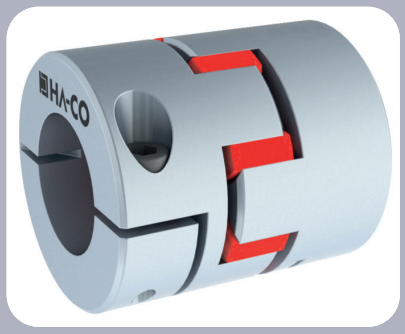
HA-CO GMBH:
From compensation to safety type, HA-CO help Matara to supply the highest quality couplings globally.

Machined In-House
Your Order, Your Way

Complete Couplings Range

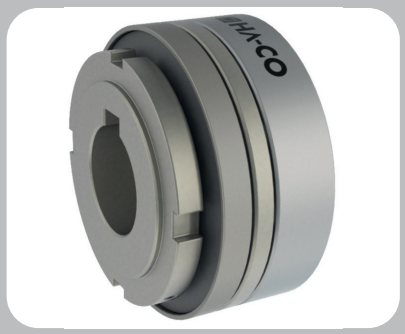
Coupling Types

Compensation Couplings:
Compensation couplings (shaft couplings) are the solution to balance all types of misalignment.
Data sheets available p.90-95



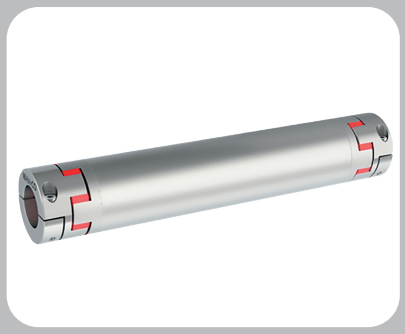
Oldham Compensation Couplings:
The oldham coupling is the solution for space-saving assembly situations. Our backlash-free oldham coupling is a three part pluggable coupling.
Data Sheets available upon request.

Safety Couplings:
Safety couplings protect against damage caused by blocking, overload, etc
Data Sheets available upon request.

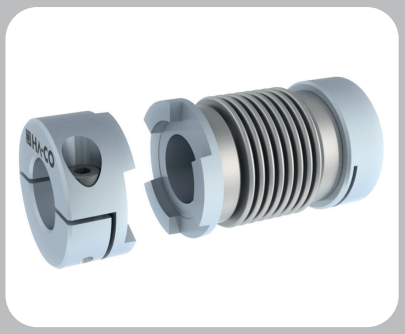


Rigid Couplings:
Rigid couplings are used when no shift or misalignment of the shaft exists.
Data Sheets available upon request.

Line Shafts (Distance Couplings):
Line shafts are used as backlash-free distance couplings, connecting, drive/synchronous shaft.
Data sheets available p.96-99



Special Couplings:
Special, custom-made couplings are available, depending on the application they are required on.
Contact Matara for more information on bespoke, special couplings.



Elastomer Compensation Couplings

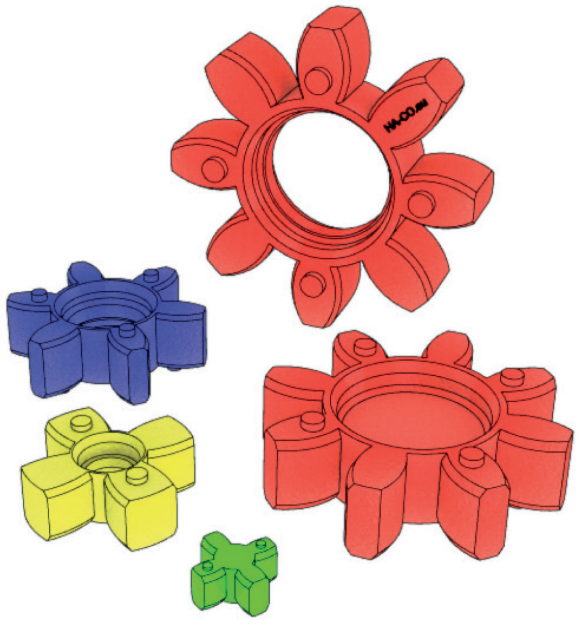
Elastomeric couplings are a form of flexible coupling that uses an insert, made of an elastomeric polymer, to help transmit torque. The design of elastomeric couplings mean that the elastic material is meant to wear out before any metal components. This not only saves time and money on maintenance, but also means that the couplings do not require any form of lubrication.

Elastomer spiders provide anti-backlash and absorb vibration.

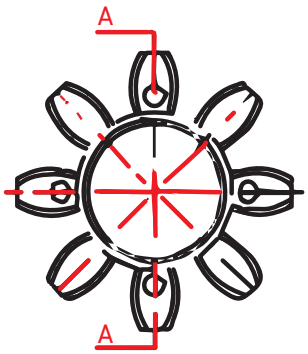
Spider Shore Hardness	Colour	Material	Allowable Temperature °C		Typical applications
			Continuous Temperature	Max. temp. short term	
98 Sh A	Red	polyurethane	-30 to +90	-40 to +120	Positioning drives; backlash-free when pre-compressed
80 Sh A	Blue	polyurethane	-50 to +80	-60 to +120	Drives in electronic measuring systems; backlash-free when pre-compressed
92 Sh A	Yellow	polyurethane	-40 to +90	-50 to +120	Main spindle dirves; backlash-free when pre-compressed
64 Sh D-H	Green	hytrel	-50 to +120	-60 to +150	Machine tool spindles, control drives, lead units, planetary gearboxes; heavy loads, torsionally stiff, high ambient temperature, water proof
64 Sh D	Green	polyurethane	-20 to +110	-30 to +120	

Pre-Compression

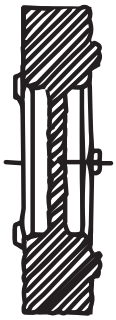
Jaw type couplings are general purpose and consist of an elastomeric element, commonly refered to as a spider, sandwiched between two metal hubs with interlocking teeth. The spider acts as a shock absorber for the coupling and helps to reduce vibrations and, in some applications, electrical isolation. Jaw couplings are fail-safe because, if the spider were to fail, the teeth of the two hubs would interlock and continue to transmit torque. This would decrease coupling performance but would prevent damage to the machine and give engineers time to shut the system down.



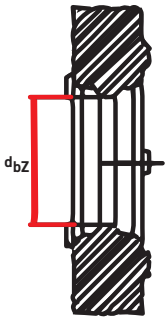
Elastometric Spider



Standard



Optional with bore hole

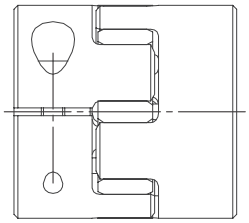


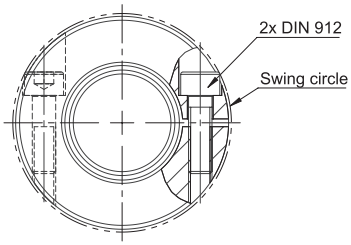
Size	Outer-ø	Sh	nmax SKK	nmax SKL	TN	Tmax	CTstat	CTdyn	Cr	optional dbZ	ΔKa	ΔKr	ΔKw
1	ø 10	80 Sh A 92 Sh A 98 Sh A	–	–	0.3 0.5 0.9	0.6 1.0 1.7	3.2 5.2 8.3	10 16 25	82 154 296	–	+0.4/-0.2	0.12 0.06 0.04	1.1 1.0 0.9
2	ø 14	64 Sh D-H 80 Sh A 92 Sh A 98 Sh A	27000	–	2.4 0.7 1.2 2.0	4.8 1.4 2.4 4.0	34 8.6 14.3 23	103 26 43 69	630 114 219 421	–	+0.6/-0.3	0.04 0.15 0.1 0.06	0.8 1.1 1.0 0.9
5	ø 20	64 Sh D-H 80 Sh A 92 Sh A 98 Sh A	19000	–	6 1.8 3 5	12 3.6 6 10	74 17 31 51	224 52 95 155	769 125 262 518	6.5	+0.8/-0.4	0.05 0.19 0.13 0.08	0.8 1.1 1.0 0.9
9	ø 25	64 Sh D-H 80 Sh A 92 Sh A 98 Sh A	15000 15000	–	12 3 5 9	24 6 10 18	328 84 160 241	982 252 482 718	1198 274 470 846	7.5	+0.9/-0.4	0.05 0.2 0.14 0.08	0.8 1.1 1.0 0.9
12	ø 30	64 Sh D-H 80 Sh A 92 Sh A 98 Sh A	13000	13000	16 4 7.5 12.5	32 8 15 25	234 60 115 172	702 180 344 513	856 153 336 654	8.5	+1.0/-0.5	0.06 0.21 0.15 0.09	0.8 1.1 1.0 0.9
17	ø 40	64 Sh D-H 80 Sh A 92 Sh A 98 Sh A	10000	10000	21 5 10 17	42 10 20 34	1240 340 570 860	3720 1030 1720 2580	2930 582 1120 2010	16	+1.2/-0.5	0.04 0.15 0.1 0.06	0.8 1.1 1.0 0.9
60	ø 55	64 Sh D-H 92 Sh A 98 Sh A	7000	7000	75 35 60	150 70 120	2980 1430 2060	8934 4296 6189	3696 1480 2560	24	+1.4/-0.5	0.07 0.14 0.1	0.8 1.0 0.9
160	ø 65	64 Sh D-H 92 Sh A 98 Sh A	6000	6000	200 95 160	400 190 320	4350 2290 3440	13050 6876 10314	4348 1780 3200	27	+1.5/-0.7	0.08 0.15 0.11	0.8 1.0 0.9
325	ø 80	64 Sh D-H 92 Sh A 98 Sh A	5000	5000	405 190 325	810 380 650	10540 4580 7160	31620 13752 21486	6474 2350 4400	35	+1.8/-0.7	0.09 0.17 0.12	0.8 1.0 0.9
450	ø 95	64 Sh D 92 Sh A 98 Sh A	4000	4000	560 265 450	1120 530 900	27580 6300 19200	71700 24300 48000	7270 2430 5930	42	+2.0/-1.0	0.1 0.19 0.14	0.8 1.0 0.9
525	ø 105	64 Sh D 92 Sh A 98 Sh A	3600	3600	655 310 525	1310 620 1050	36200 7850 22370	90500 18055 55925	8274 2580 5930	46	+2.1/-1.0	0.11 0.23 0.16	0.8 1.0 0.9

SKK Series Elastomer Compensation Couplings

SKK Series Characteristics

- Clamping hub made of high strength aluminium
- Backlash-free torque transmission
- Easy assembly, connectable
- Electrically isolating
- Optimum damping behaviour by spider(s)
- 98° Shore A execution
- High level of thermal stability
- Very low mass moment of inertia
- Ideal for servomotors
- Compensation of radial, axial and angular misalignment
- Various kinds of elastomer hardness of spiders





SKK Series Short Compact Type
With Clamping Hub

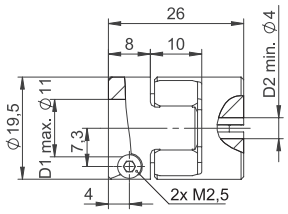
SKK Series Order Example

Code: **SKK - 160 - 20H7 - 22H7 - A - 98 Sh A - U - P**

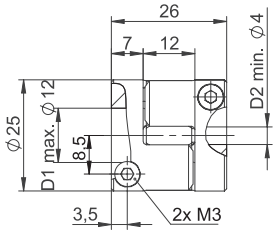
Options: 1 2 3 4 5 6 7 8

Options	Coupling Specifications
1	Coupling Series
2	Size
3	Bore D1
4	Bore D2
5	Material: A= Aluminium (Standard) | S= Steel | E= Stainless Steel
6	Elastomer Spider Shore Hardness
7	U: Undrilled | G: Drilled
8	Keyway: _ = No Keyway | P= DIN 6885 Keyway

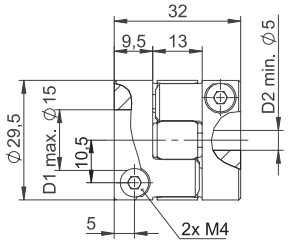
SKK-5



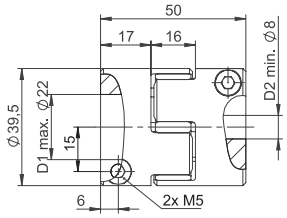
SKK-9



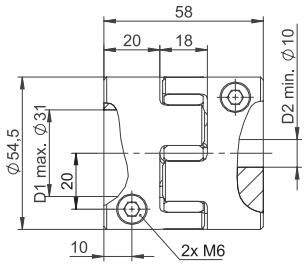
SKK-12



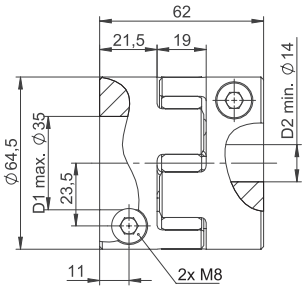
SKK-17



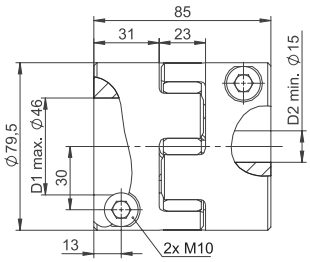
SKK-60



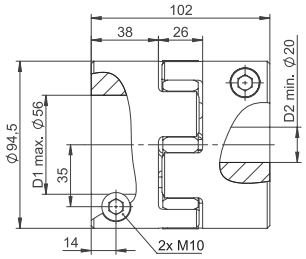
SKK-160



SKK-325



SKK-450

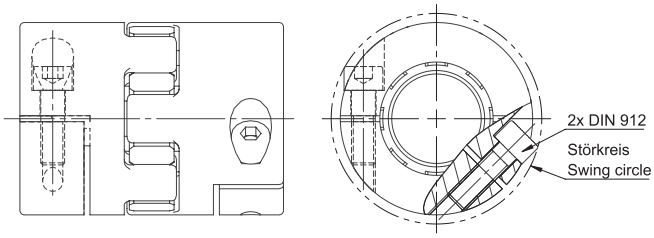


Model No.	Colour	Nominal Torque (Nm)	Max. Torque (Nm)	Static spring stiffness (Nm/rad)	Lateral spring stiffness (N/mm)	Max. lateral shaft misalignment (mm)	Max. angular shaft misalignment (Degree)	Max. axial shaft misalignment (mm)	max. speed (rpm)	Tightening torque of screws MA(Nm)	Swing circle (ø mm)
SKK-5	Red	5	10	51	518	0.08	0.9	+0.8 / -0.4	19000	4.0	23.0
	Blue	1.8	3.6	17	125	0.19	1.1				
	Yellow	3	6	31	262	0.13	1.0				
	Green	6	12	74	796	0.05	0.8				
SKK-9	Red	9	18	241	846	0.08	0.9	+0.9 / -0.4	15000	1.5	26.0
	Blue	3	6	84	274	0.20	1.1				
	Yellow	5	10	160	470	0.14	1.0				
	Green	12	24	328	1198	0.05	0.8				
SKK-12	Red	12.5	25	172	654	0.09	0.9	+1.0 / -0.5	13000	5.0	33.0
	Blue	4	8	60	153	0.21	1.1				
	Yellow	7.5	15	115	336	0.15	1.0				
	Green	16	32	234	856	0.06	0.8				
SKK-17	Red	17	34	860	2010	0.06	0.9	+1.2 / -0.5	10000	11.0	43.0
	Blue	5	10	340	582	0.15	1.1				
	Yellow	10	20	570	1120	0.10	1.0				
	Green	21	42	1240	2930	0.04	0.8				
SKK-60	Red	60	120	2060	2560	0.10	0.9	+1.4 / -0.5	7000	18.0	56.0
	Yellow	35	70	1430	1480	0.14	1.0				
	Green	75	150	2980	3969	0.07	0.8				
SKK-160	Red	160	320	3440	3200	0.11	0.9	+1.5 / -0.7	6000	36.0	67.0
	Yellow	95	190	2290	1780	0.15	1.0				
	Green	200	400	4350	4348	0.08	0.8				
SKK-325	Red	325	650	7160	4400	0.12	0.9	+1.8 / -0.7	5000	84.0	88.0
	Yellow	190	380	4580	2350	0.17	1.0				
	Green	405	810	10540	6474	0.09	0.8				
SKK-450	Red	450	900	19200	5930	0.14	0.9	+2.0 / -1.0	4000	84.0	95.0
	Yellow	265	530	6300	2430	0.19	1.0				
	Green	560	1120	27580	7270	0.10	0.8				

SKL Series Elastomer Compensation Couplings

SKL Series Characteristics

- Clamping hub made of high strength aluminium
- Backlash-free torque transmission
- Easy assembly, connectable
- Electrically isolating
- Optimum damping behaviour by spider(s)
- 98° Shore A execution
- High level of thermal stability
- Very low mass moment of inertia
- Ideal for servomotors
- Compensation of radial, axial and angular misalignment
- Various kinds of elastomer hardness



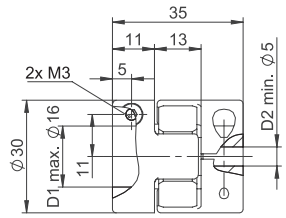
SKL Series Long Type
With Clamping Hub

SKL Series Order Example

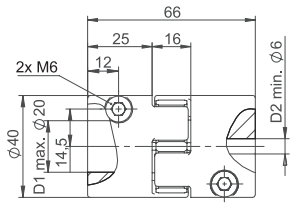
Code:	SKL	-	160	-	20H7	-	22H7	-	A	-	98 Sh A	-	U
Options:	1		2		3		4		5		6		7

Options	Coupling Specifications
1	Coupling Series
2	Size
3	Bore D1
4	Bore D2
5	Material: A= Aluminium (Standard) | S= Steel | E= Stainless Steel
6	Elastomer Spider Shore Hardness
7	Star Drilling: U= Undrilled | G= Drilled

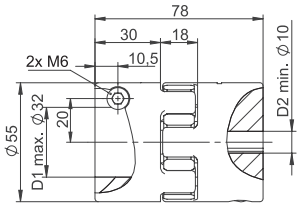
SKL-12



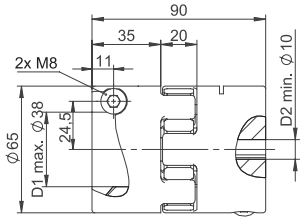
SKL-17



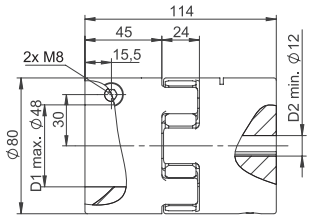
SKL-60



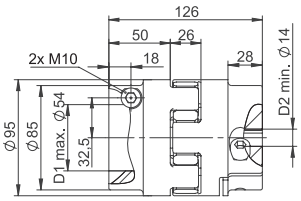
SKL-160



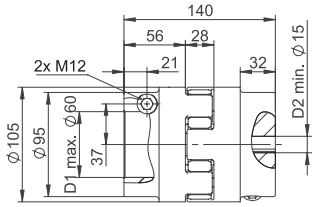
SKL-325



SKL-450



SKL-525



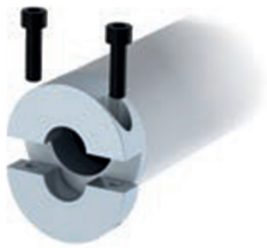
Model No.	Colour	Nominal Torque (Nm)	Max. Torque (Nm)	Static spring stiffness (Nm/rad)	Lateral spring stiffness (N/mm)	Max. lateral shaft misalignment (mm)	Max. angular shaft misalignment (Degree)	Max. axial shaft misalignment (mm)	max. speed (rpm)	Tightening torque of screws MA(Nm)	Swing circle (ø mm)
SKL-12	Red	12	24	172	654	0.09	0.9	+1.0 / -0.5	13000	2.0	32.2
	Blue	4	8	60	153	0.21	1.1				
	Yellow	7.5	15	115	336	0.15	1.0				
	Green	18	36	234	856	0.06	0.8				
SKL-17	Red	17	34	860	2010	0.06	0.9	+1.2/-0.5	10000	11.0	46.0
	Blue	5	10	340	582	0.15	1.1				
	Yellow	10	20	570	1120	0.10	1.0				
	Green	21	42	1240	2930	0.04	0.8				
SKL-60	Red	60	120	2060	2560	0.10	0.9	+1.4/-0.5	7000	15.0	57.0
	Yellow	35	70	1430	1480	0.14	1.0				
	Green	75	150	2980	3696	0.07	0.8				
SKL-160	Red	160	320	3440	3200	0.11	0.9	+1.5/-0.7	6000	32.0	71.0
	Yellow	95	190	2290	1780	0.15	1.0				
	Green	200	400	4350	4348	0.08	0.8				
SKL-325	Red	325	650	7160	4400	0.12	0.9	+1.8/-0.7	5000	38.0	83.0
	Yellow	190	380	4580	2350	0.17	1.0				
	Green	405	810	10540	6474	0.09	0.8				
SKL-450	Red	450	900	19200	5930	0.14	0.9	+2.0/-1.0	4000	84.0	95.0
	Yellow	265	530	6300	2430	0.19	1.0				
	Green	560	1120	27580	7270	0.10	0.8				
SKL-525	Red	525	1050	22370	5930	0.16	0.9	+2.1/-1.0	3600	145.0	106.0
	Yellow	310	620	7850	2580	0.23	1.0				
	Green	655	1310	36200	8274	0.11	0.8				

SWA-EE Series Aluminium Line Shafts

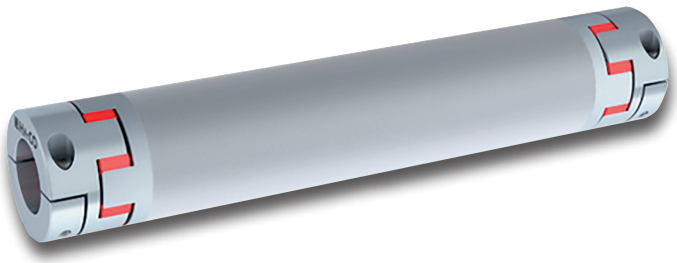
SWA-EE Series Characteristics

- Aluminium construction
- Very low mass inertia torque
- Backlash-free
- High torsional stiffness
- Equipped with two elastomer spiders
- Allows for large misalignment

Easy to mount with divided clamping hub



SWA-EE Series Aluminium Type
With Double Ended Elastomer Connections

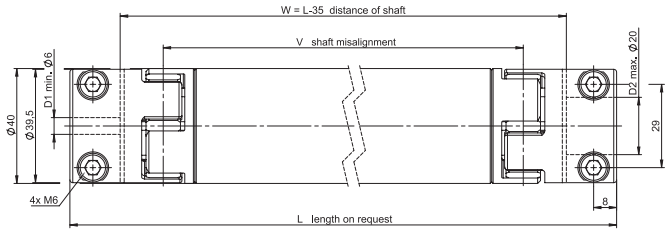


SWA-EE Series Order Example

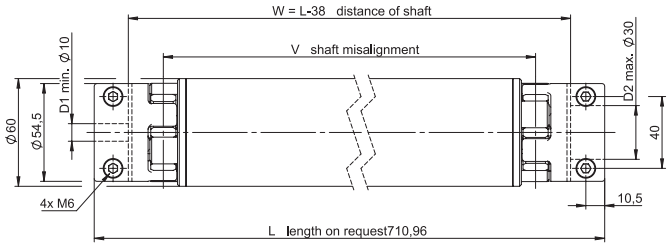
Code:	**SWA-EE**	-	**325**	-	**40H7**	-	**42H7**	-	**850mm**
Options:	1		2		3		4		5

Options	Coupling Specifications
1	Coupling Series
2	Size
3	Bore D1
4	Bore D2
5	Total Length (mm)

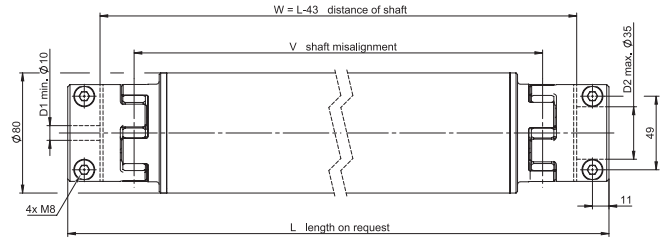
SWA-EE-17



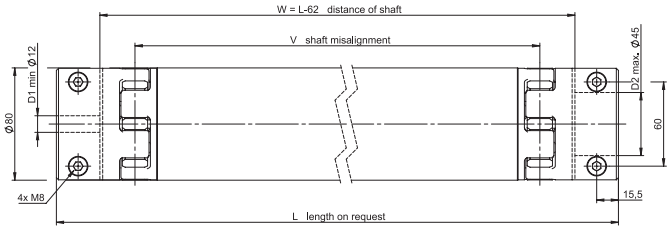
SWA-EE-60



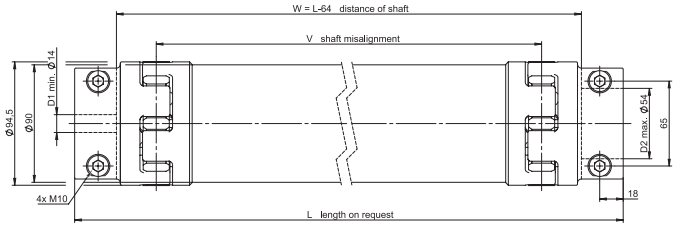
SWA-EE-160



SWA-EE-325



SWA-EE-450



Model No.	Nominal torque	Max. length	Max. axial shaft misalignment	Max. lateral shaft misalignment V	Mass (pipe/m) / Mass of the couplings	Torsional stiffness (pipe/m)	Torsional stiffness of the couplings	Lateral spring stiffness	Tightening torque of screws
	(Nm)	(mm)	(mm)	(mm)	(ca. kg)	(Nm/rad)	(Nm/rad)	(N/mm)	M_A(Nm)
SWA-EE-17	17	3000	1.8	L x tan 0.9	0.95 / 0.26	3360	1425	1005	17.5
SWA-EE-60	60	4000	2.1	L x tan 0.9	1.90 / 0.53	15500	3050	1280	17.5
SWA-EE-160	160	4000	2.2	L x tan 0.9	2.20 / 1.00	46600	10734	2200	42.0
SWA-EE-325	325	4000	2.7	L x tan 0.9	2.20 / 1.80	46600	24000	2785	42.0
SWA-EE-450	450	4000	3.0	L x tan 0.9	3.60 / 2.50	78600	27700	3360	85.0

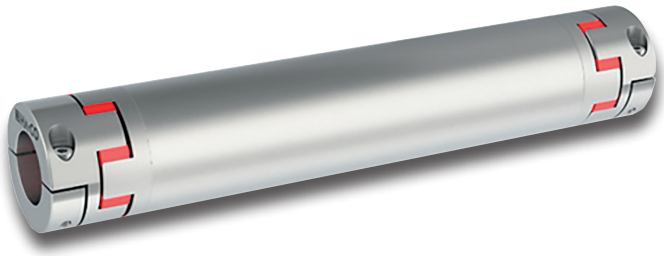
SWE-EE Series Stainless Steel Line Shafts

SWE-EE Series Characteristics

- Stainless Steel construction
- Very low mass inertia torque
- Backlash-free
- High torsional stiffness
- Equipped with two elastomer spiders
- Allows for large misalignment

Easy to mount with divided clamping hub

SWE-EE Series Stainless Steel Type
With Double Ended Elastomer Connections

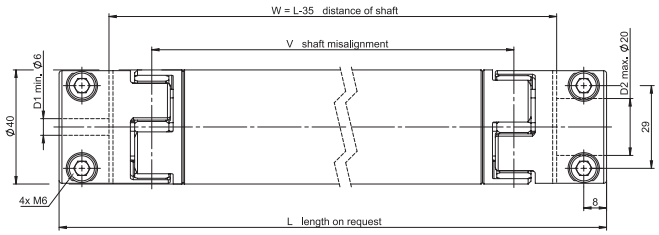


SWE-EE Series Order Example

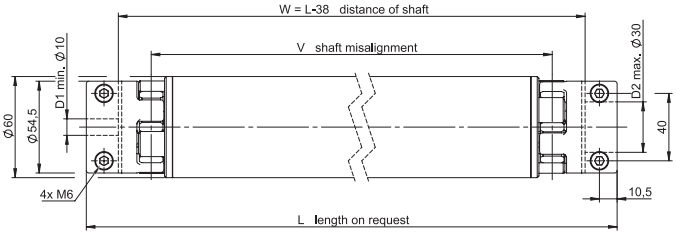
Code:	**SWE-EE**	-	**325**	-	**40H7**	-	**42H7**	-	**850mm**
Options:	1		2		3		4		5

Options	Coupling Specifications
1	Coupling Series
2	Size
3	Bore D1
4	Bore D2
5	Total Length (mm)

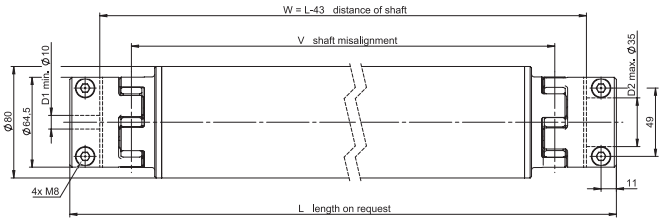
SWE-EE-17



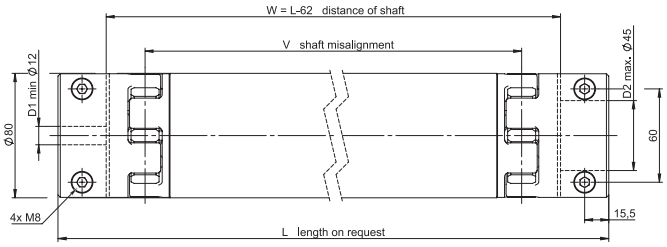
SWE-EE-60



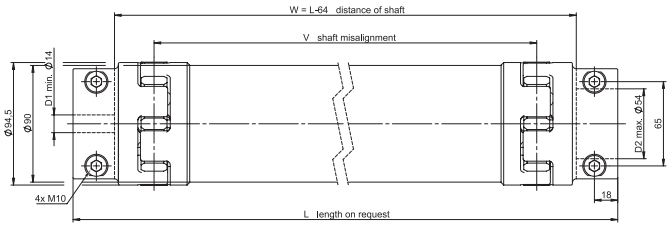
SWE-EE-160



SWE-EE-325



SWE-EE-450



Model No.	Nominal torque	Max. length	Max. axial shaft misalignment	Max. lateral shaft misalignment V	Mass (pipe/m) / Mass of the couplings	Torsional stiffness (pipe/m)	Torsional stiffness of the couplings	Lateral spring stiffness	Tightening torque of screws
	(Nm)	(mm)	(mm)	(mm)	(ca. kg)	(Nm/rad)	(Nm/rad)	(N/mm)	M_A(Nm)
SWE-EE-17	17	3000	1.8	L x tan 0.9	2.30 / 0.74	8320	1425	1005	10.0
SWE-EE-60	60	4000	2.1	L x tan 0.9	4.20 / 1.52	35000	3050	1280	10.0
SWE-EE-160	160	4000	2.2	L x tan 0.9	5.70 / 2.90	86190	10724	2200	24.0
SWE-EE-325	325	4000	2.7	L x tan 0.9	5.70 / 5.20	86190	24000	2785	24.0
SWE-EE-450	450	4000	3.0	L x tan 0.9	8.50 / 7.20	160200	27700	3360	48.0

Rack and Pinion Systems

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- Round racks 
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- Straight gears 
- Helical pinion shafts 
- Straight pinion shafts 
- Pinions with spline profile 
- Gearwheels 
- Worm shafts - Worm gears
  Hollow worms - Worm gears 

HELICAL AND STRAIGHT RACKS

Gambini Meccanica manufactures high quality racks both with straight and helical tooth system, by employing several tyeps of raw materials. Most used materials are C45, SAE1141, 16MnCr5, 42CrMo4.

Standard racks range goes from module 1 up to module 12, from quality 5 to quality 10. Customized products can be manufactured from module 0.5 up to module 42.

Quality 5 racks are manufactured at a maximum length of 1000 mm, quality 6 until 2000 mm, whereas for lower qualities we reach 3000 mm.

Depending on quality and material, racks are ground and heat-treated in order to obtain higher mechanicals performance teeth. Independently from material, racks are ground from quality 5 to quality 8. For hardening and tempering steels, teeth are induction-hardened from quality 5 to 8 and for quality 10.

ROUND RACKS

Gambini Meccanica manufactures round racks, with ground or cold drawn raw materials, with straight or helical tooth system, right- or left-hand. Quality classes and modules which can be realized are the standard ones. Racks' length can exceed 3000 mm and the most common raw materials employed are C45 and stainless steel.

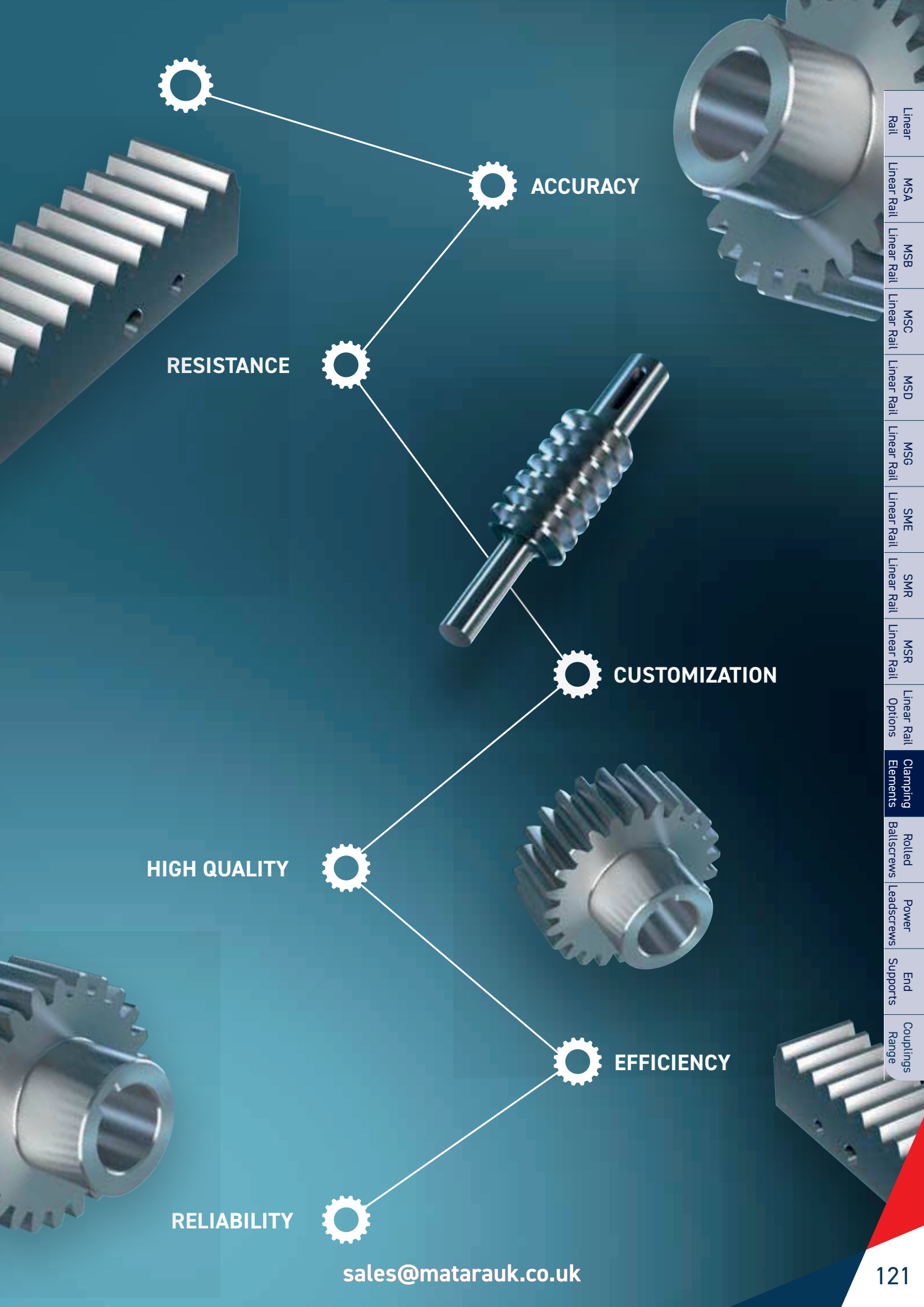
HELICAL AND STRAIGHT GEARS

Gambini Meccanica manufactures high precision gears with milled or ground teeth, straight or helical teeth, right or left-hand and with any helix angle inclination. Standard gears module range goes from 1.5 up to 10, from quality 5 to 10, and from minimum external diameter 28.5 mm up to 232 mm.

For customized products, Gambini Meccanica can manufacture gears from module 0,5 to 30, the maximum external diameter is 1000 mm. We use different raw materials: C45 and 20MnCr5 for standard, all the alloy, like 18NiCrMo5 and 39NiCrMo3, or not alloy materials, different types of nylon, cast irons, alloys of common bronze and bronze-aluminium, stainless steel and different typologies of Bakelite.

WORMS & WHEELS

Gambini Meccanica realizes worms and wheels whose profile can be both just milled and ground and module goes from 1 up to 12. Maximum worm length is 2500 mm, whereas the maximum gear diameter is 900 mm. Employed raw materials are: alloy steel, hardened and tempered alloy steel, case-hardened and induction-hardened steel and stainless steel.



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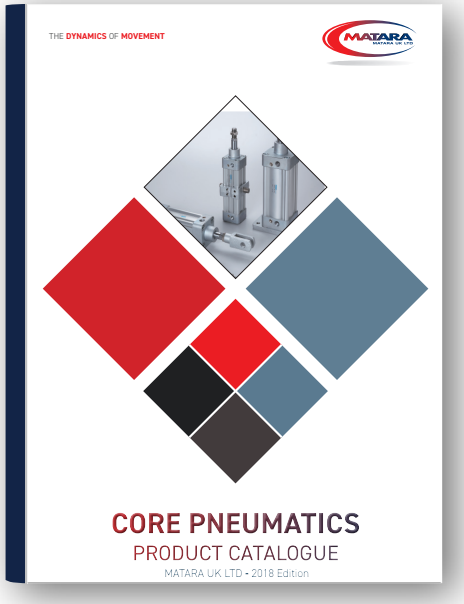

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