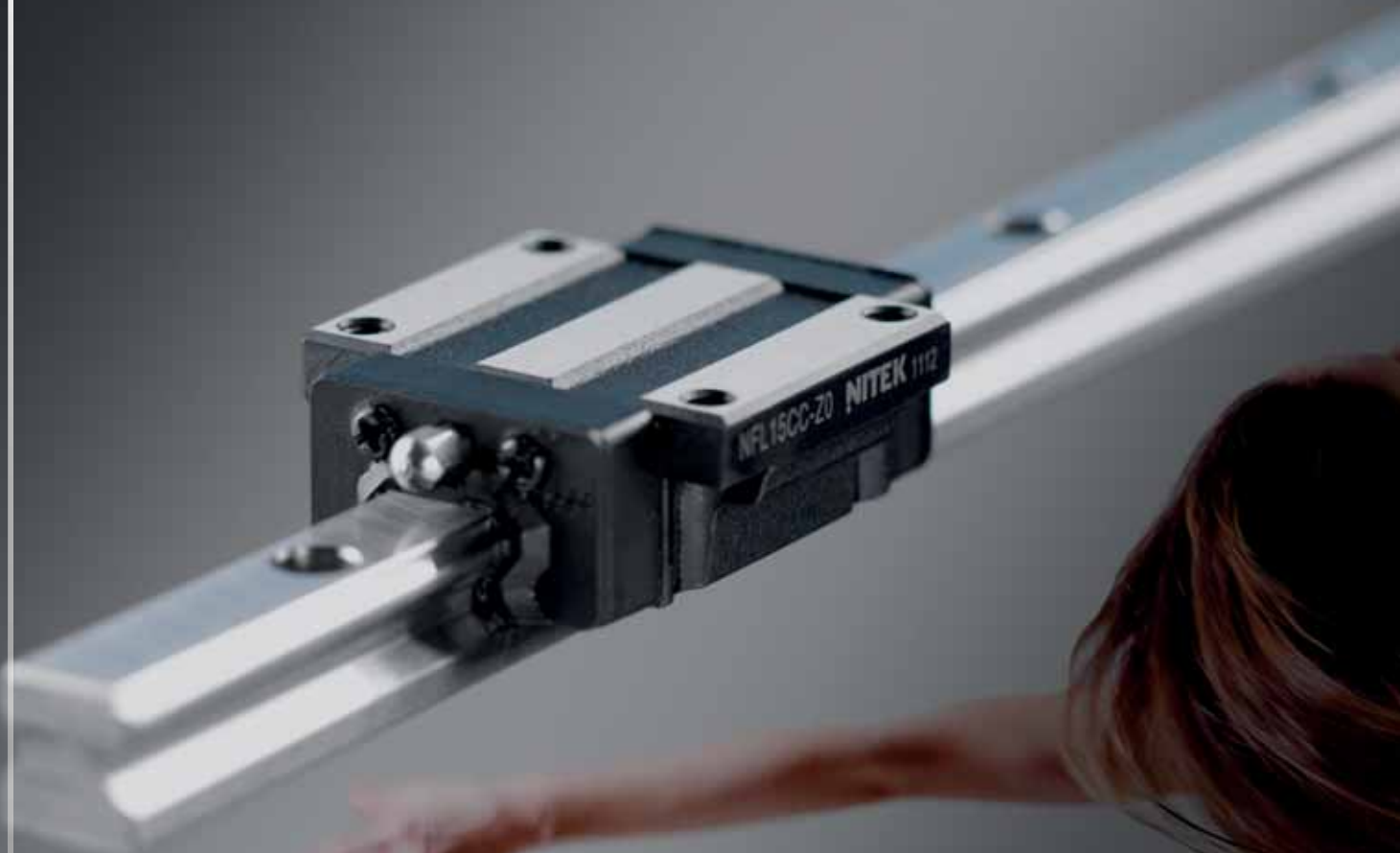


# NITEK®

\_Linear recirculating ball guideways\_



**MAKE+MOVE**  
il gruppo italiano per l'automazione

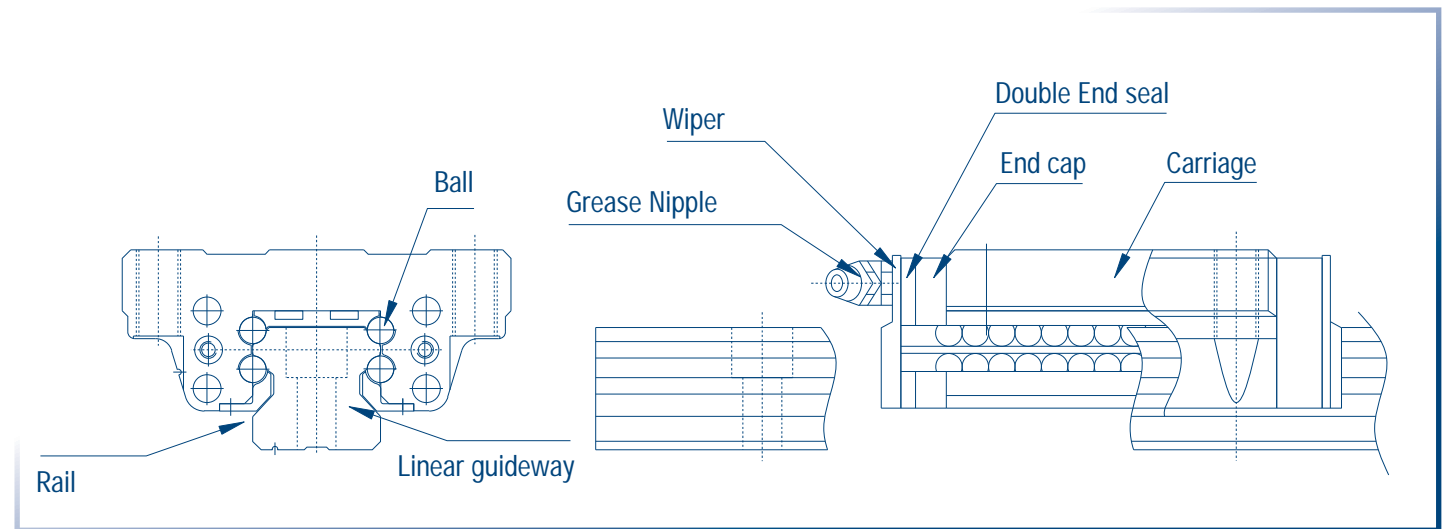


## Index

1.	Characteristics of NITEK linear recirculating ball guideways	4
2.	How to order	4
3.	Model description	5
	Miniature stainless steel linear recirculating ball guideways	
	<b>NGM Type</b>	6
	Linear recirculating ball guideways	
	<b>NFL Type</b>	8
	<b>NGL Type</b>	12
	<b>NFR Type</b>	14
	<b>NGR Type</b>	16

## 1. Characteristics of NITEK linear recirculating ball guideways

- » Allow accurate precision machining
- » Low frictional resistance
- » Four contact points of balls and grooves
- » Low center of gravity and compact design
- » Low noise and smooth movement
- » Low rigidity maintained for a long time



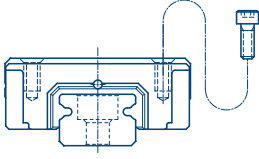
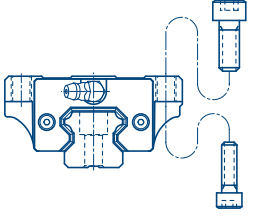
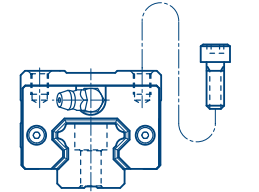
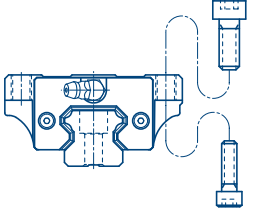
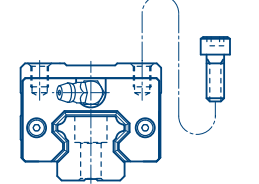
## 2. How to order

**NFL-25 CA 2 R 1800 II P Z1**

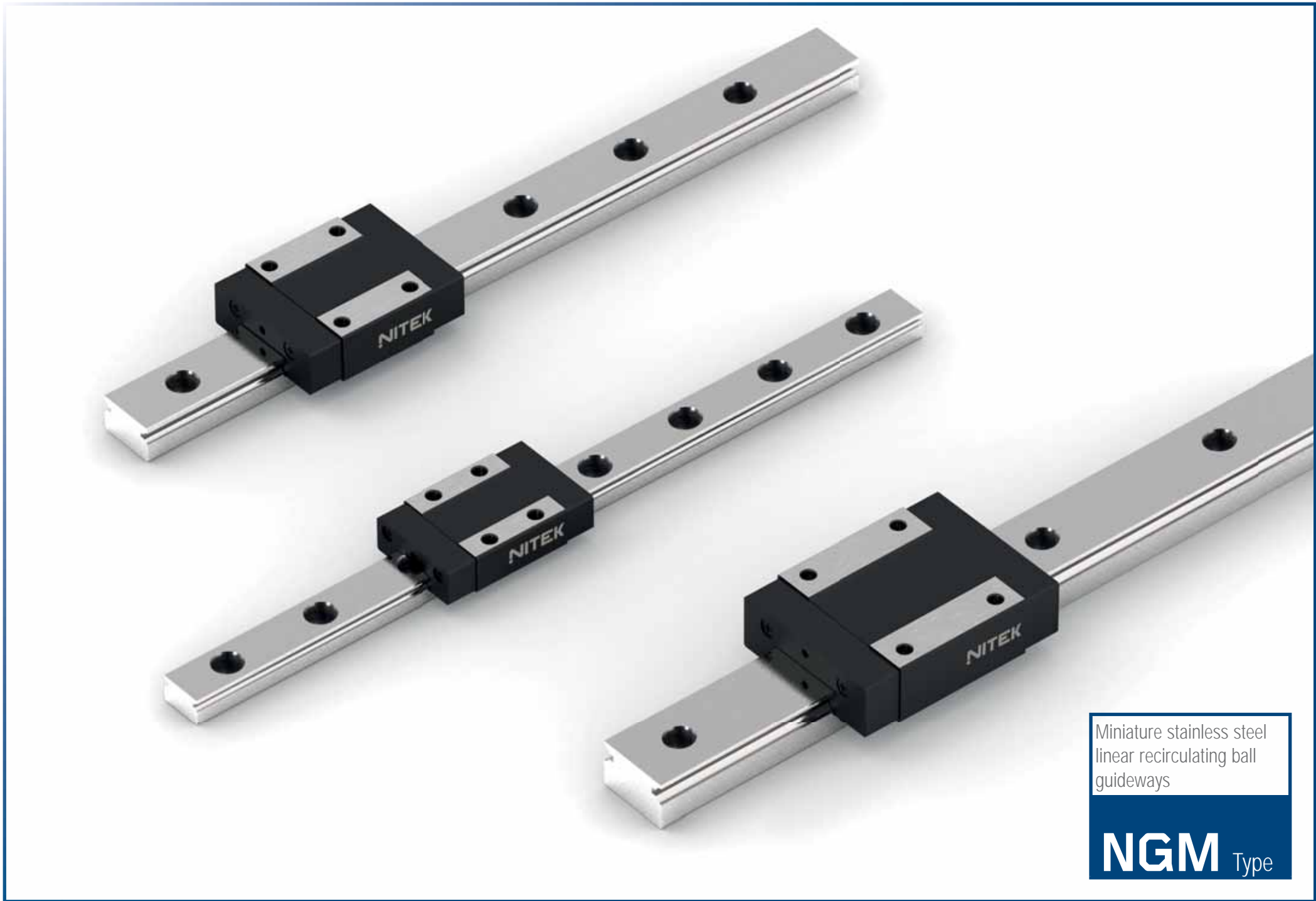
EXAMPLE

- Preload: **ZF, Z0, Z1, Z2**
- Accuracy grade: **C** (normal), **H** (high), **P** (Precision)
- Number of rails per axis: **I** 1 rail, **II** 2 rails
- Rail length (mm)
- Rail mounting: **R** (from top), **T** (from bottom)
- Number of carriages per rail
- Carriage mounting: **A** (from top), **B** (from bottom), **C** (either from top or bottom)
- Code of carriage (type, symbol)
- Carriage type: **NFL, NFR**, (F: Flange type) **NGM, NGL, NGR** (G: square type)
- Sizes: **7, 9, 12, 15, 20, 25, 30, 35, 45**

### 3. Model description

Type	Model	Mounting	Characteristics	Main applications
Full ball Miniature Type	NGM-SA   HA		Compact type Smooth movement Low noise Interchangeability	Machine centers NC lathes
Full ball Heavy load	NFL-CA   HA NFL-CB   HB NFL-CC   HC		Heavy load High rigidity Self-alignment capability Smooth movement Low noise Interchangeability	XYZ axes of heavy cutting machine tools Grinding head feeding axes of grinding machines Lathes Z axes of boring machines and machine tools EDM Z axes of industrial machines Measuring equipment XY precision tables Welding machines Bending machines Auto-packing machines Woodworking machines Industrial automation Medical equipment Printed circuit board assembly tables Wafer transfer equipment Hard disk drives Semiconductor equipment
Full ball Heavy load	NGL-CA   HA			
Full ball Heavy load	NFR-TA   SA NFR-TB   SB NFR-TC   SC			
Full ball Heavy load	NGR-TA   SA			





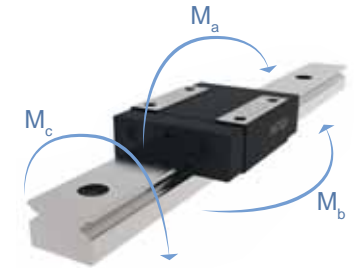
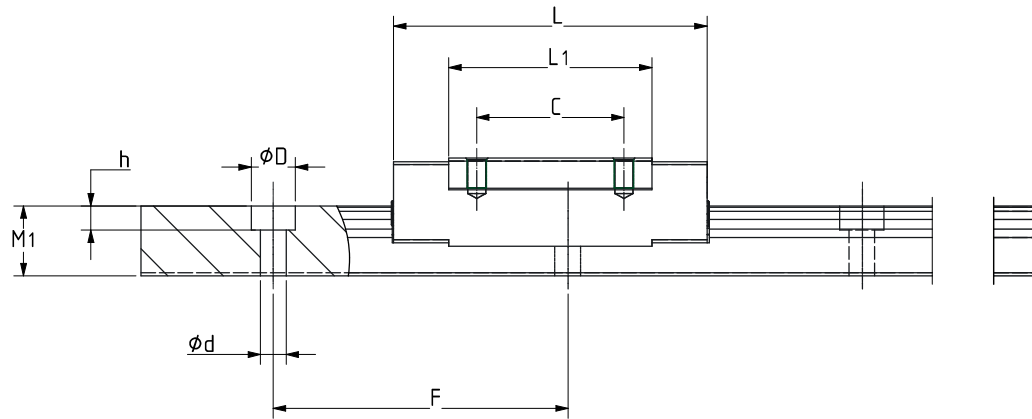
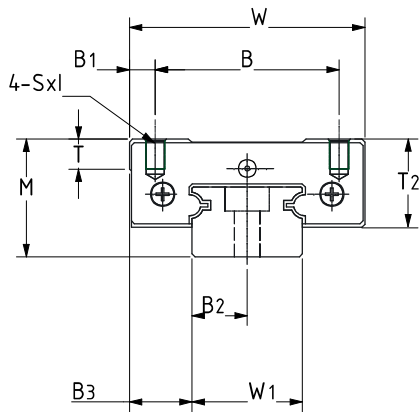
Miniature stainless steel  
linear recirculating ball  
guideways

**NGM** Type



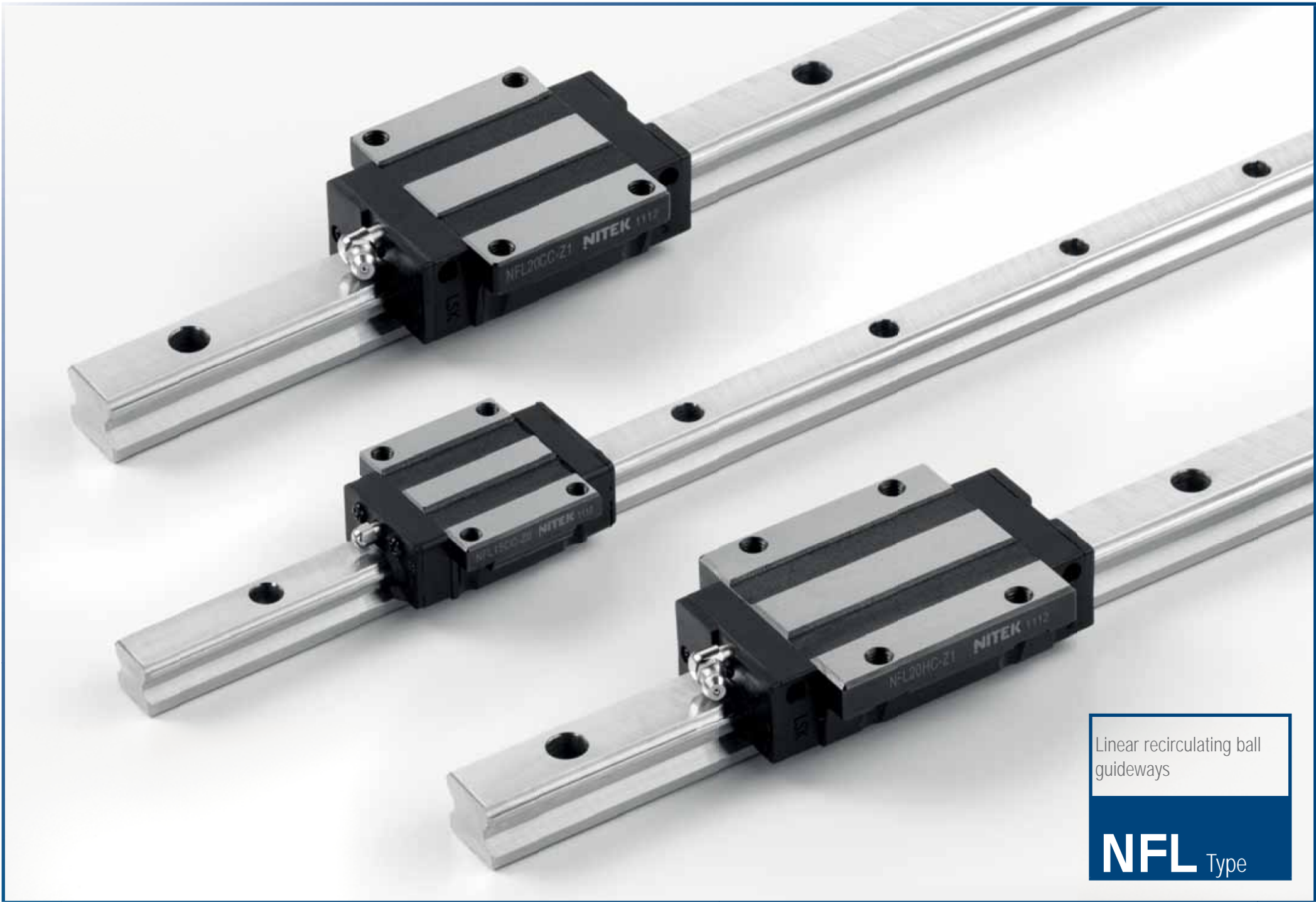
A(10:1)

Grease nipple for MGM15



Model	Width	Length	Height of rail and carriage		Guideway height										Carriage weight		Rail weight							
Symbol	W	L	M	B	B <sub>1</sub>	L <sub>1</sub>	C	T	T <sub>2</sub>	Sxl	Gn	W <sub>1</sub>	M <sub>1</sub>	F	B <sub>2</sub>	B <sub>3</sub>	dxDxh	C kgf	C <sub>0</sub> kgf	M <sub>a</sub> kgf-m	M <sub>b</sub> kgf-m	M <sub>c</sub> kgf-m	kg	kg-m
NGM 7SA	17	23,7	8	12	2,5	14,3	8	2,8	6,5	M2X2,5	1,2	7	4,7	15	3,5	5	2,4x4,2x2,3	935	1340	4,95	3,07	3,07	0,010	0,20
NGM 7HA	17	31,2	8	12	2,5	21,8	13	2,8	6,5	M2X2,5	1,2	7	4,7	15	3,5	5	2,4x4,2x2,3	1340	2200	8,30	6,25	6,25	0,015	0,20
NGM 9SA	20	30,6	10	15	2,5	20,5	10	3,3	7,8	M3X3,0	1,4	9	5,5	20	4,5	5,5	3,5x6x3,5	1715	2523	11,80	6,88	6,88	0,016	0,35
NGM 9HA	20	40,9	10	15	2,5	30,8	16	3,3	7,8	M3X3,0	1,4	9	5,5	20	4,5	5,5	3,5x6x3,5	2345	3950	18,90	15,51	15,51	0,025	0,35
NGM 12SA	27	35,4	13	20	3,5	22,0	15	4,3	10,35	M3X3,5	1,6	12	7,5	25	6,0	7,3	3,5x6x4,5	2574	3693	23,49	13,31	13,31	0,035	0,60
NGM 12HA	27	47,0	13	20	3,5	33,0	20	4,3	10,35	M3X3,5	1,6	12	7,5	25	6,0	7,3	3,5x6x4,5	3480	5755	36,56	33,23	33,23	0,055	0,60
NGM 15SA	32	43,0	16	25	3,5	27,0	20	4,3	12,0	M3X5,5	M3	15	9,5	40	7,5	8,5	3,5x6x4,5	4210	5610	44,34	24,28	24,28	0,061	1,10
NGM 15HA	32	60,0	16	25	3,5	44,0	25	4,3	12,0	M3X5,5	M3	15	9,5	40	7,5	8,5	3,5x6x4,5	5860	9095	71,75	60,56	60,56	0,095	1,10

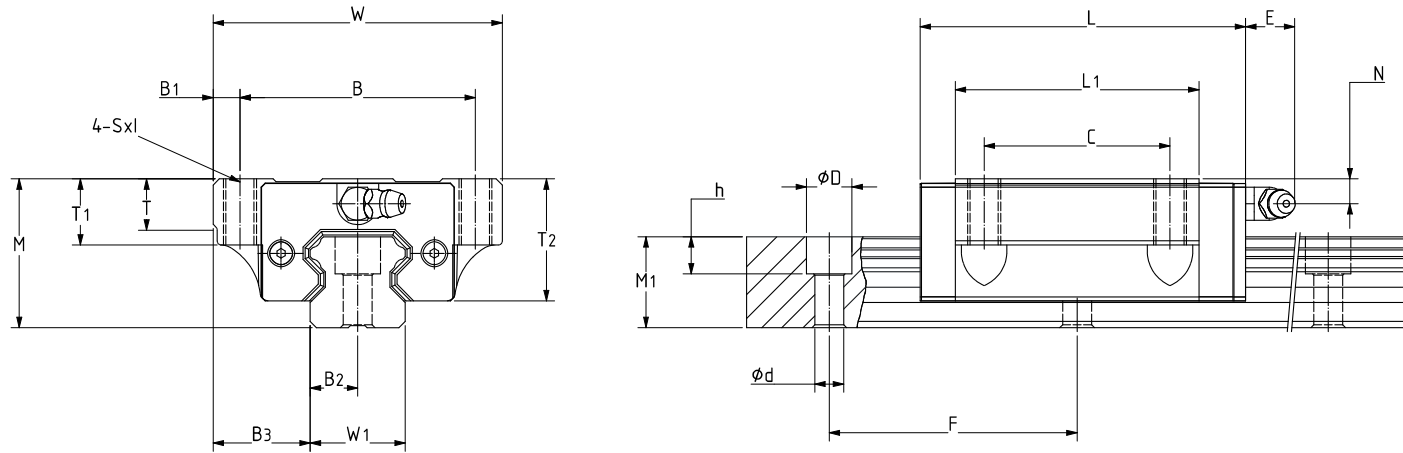
Unless otherwise specified all dimensions are in mm



Linear recirculating ball  
guideways

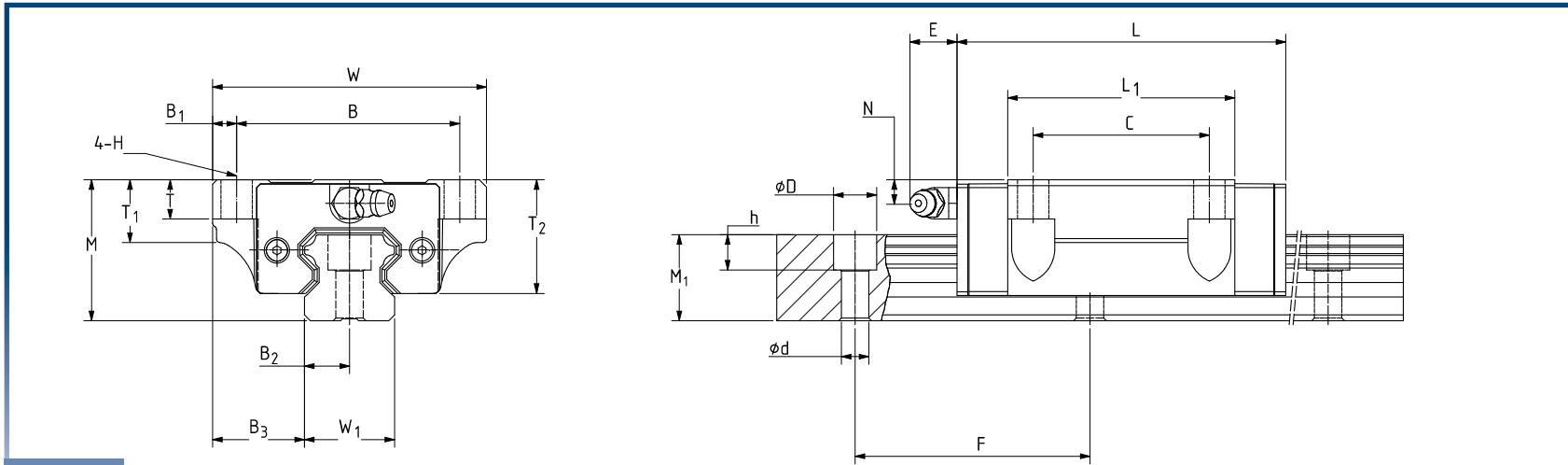
**NFL** Type





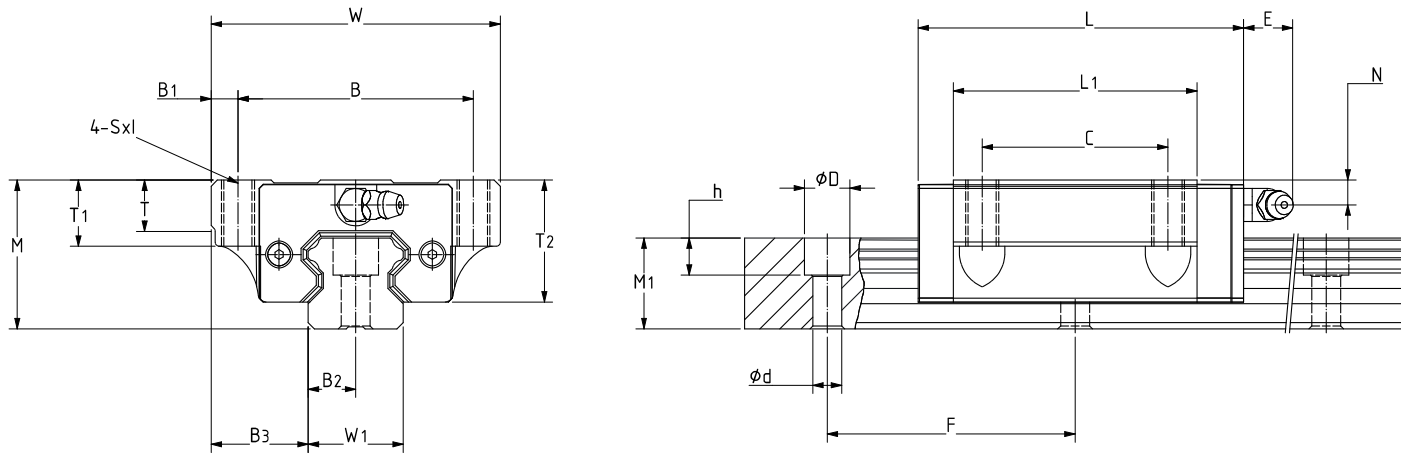
Model	Width	Length	Height of rail and carriage												Grease nipple	Width	Guideway height	Pitch				Carriage weight	Rail weight				
Symbol	W	L	M	B	B <sub>1</sub>	L <sub>1</sub>	C	T	T <sub>1</sub>	T <sub>2</sub>	SxI	N	E	W <sub>1</sub>	M <sub>1</sub>	F	B <sub>2</sub>	B <sub>3</sub>	dxDxh	C kgf	C <sub>0</sub> kgf	M <sub>a</sub> kgf-m	M <sub>b</sub> kgf-m	M <sub>c</sub> kgf-m	kg	kg-m	
NFL 15CA	47	56.2	24	38	4.5	38.2	30	7	11	19.5	M5x11	4.5	5,5	M4x0.7P	15	15	60	7.5	16	4.7x7.5x5.5	850	1380	7.3	7.3	10.1	0.175	1.45
NFL 20CA	63	76.5	30	53	5	50.5	40	9.5	10	24.5	M6x9.5	5	12	M6x1.0P	20	18	60	10	21.5	6x9.5x8.5	1410	2430	15.9	15.9	23.7	0.400	2.26
NFL 20HA	63	92.5	30	53	5	66.5	40	9,5	10	24.5	M6x9.5	5	12	M6x1.0P	20	18	60	10	21.5	6x9.5x8.5	2170	3240	27.5	27.5	31.6	0.530	2.26
NFL 25CA	70	84	36	57	6.5	58	45	12	16	29.0	M8x12	6	12	M6x1.0P	23	22	60	11.5	23.5	7x11x9	2570	4480	27.5	27.5	40.0	0.595	3.20
NFL 25HA	70	103	36	57	6.5	77	45	12	16	29.0	M8x12	6	12	M6x1.0P	23	22	60	11.5	23.5	7x11x9	2770	4680	46.8	46.8	51.8	0.795	3.20
NFL 30CA	90	100.5	42	72	9	70.5	52	12	18	34.0	M10x12	7	12	M6x1.0P	28	26	80	14	31	9x14x12	2860	4770	43.8	43.8	65.8	1.065	4.54
NFL 30HA	90	122.5	42	72	9	92.5	52	12	18	34.0	M10x12	7	12	M6x1.0P	28	26	80	14	31	9x14x12	3800	6730	74.4	74.4	87.7	1.410	4.54
NFL 35CA	100	105.5	48	82	9	80.5	62	13	21	39.0	M10x21	8	12	M6x1.0P	34	29	80	17	33	9x14x12	3800	6230	65.4	65.4	104.7	1.545	6.37
NFL 35HA	100	130.5	48	82	9	105.5	62	13	21	39.0	M10x21	8	12	M6x1.0P	34	29	80	17	33	9x14x12	5120	8310	111.1	111.1	139.9	2.050	6.37
NFL 45CA	120	128.2	60	100	10	99.2	80	14	25	48.5	M12x14	10	16	1/8 PT	45	38	105	22.5	37.5	14x20x17	6120	9750	127.6	127.6	213.2	2.750	11.26
NFL 45HA	120	159.5	60	100	10	130.5	80	14	28	48.5	M12x14	10	16	1/8 PT	45	38	105	22.5	37.5	14x20x17	8200	13000	217.1	217.1	284.1	3.705	11.26

Unless otherwise specified all dimensions are in mm



Model	Width	Length	Height of rail and carriage		Grease nipple										Width	Guideway height	Pitch	Carriage weight		Rail weight							
Symbol	W	L	M	B	B <sub>1</sub>	L <sub>1</sub>	C	T	T <sub>1</sub>	T <sub>2</sub>	H	N	E		W <sub>1</sub>	M <sub>1</sub>	F	B <sub>2</sub>	B <sub>3</sub>	dxDxh	C kgf	C <sub>0</sub> kgf	M <sub>a</sub> kgf-m	M <sub>b</sub> kgf-m	M <sub>c</sub> kgf-m	kg	kg-m
NFL 15CB	47	56.2	24	38	4.5	38.2	30	7	11	19.5	4.5	4.5	5,5	M4x0.7P	15	15	60	7.5	16	4.7x7.5x5.5	850	1380	7.3	7.3	10.1	0.175	1.45
NFL 20CB	63	76.5	30	53	5	50.5	40	9.5	10	24.5	6	5	12	M6x1.0P	20	18	60	10	21.5	6x9.5x8.5	1410	2430	15.9	15.9	23.7	0.400	2.26
NFL 20HB	63	92.5	30	53	5	66.5	40	9,5	10	24.5	6	5	12	M6x1.0P	20	18	60	10	21.5	6x9.5x8.5	2170	3240	27.5	27.5	31.6	0.530	2.26
NFL 25CB	70	84	36	57	6.5	58	45	12	16	29.0	7	6	12	M6x1.0P	23	22	60	11.5	23.5	7x11x9	2570	4480	27.5	27.5	40.0	0.590	3.20
NFL 25HB	70	103	36	57	6.5	77	45	12	16	29.0	7	6	12	M6x1.0P	23	22	60	11.5	23.5	7x11x9	2770	4680	46.8	46.8	51.8	0.795	3.20
NFL 30CB	90	100.5	42	72	9	70.5	52	12	18	34.0	9	7	12	M6x1.0P	28	26	80	14	31	9x14x12	2860	4770	43.8	43.8	65.8	1.065	4.54
NFL 30HB	90	122.5	42	72	9	92.5	52	12	18	34.0	9	7	12	M6x1.0P	28	26	80	14	31	9x14x12	3800	6730	74.4	74.4	87.7	1.410	4.54
NFL 35CB	100	105.5	48	82	9	80.5	62	13	21	39.0	9	8	12	M6x1.0P	34	29	80	17	33	9x14x12	3800	6230	65.4	65.4	104.7	1.545	6.37
NFL 35HB	100	130.5	48	82	9	105.5	62	13	21	39.0	9	8	12	M6x1.0P	34	29	80	17	33	9x14x12	5120	8310	111.1	111.1	139.9	2.050	6.37
NFL 45CB	120	128.2	60	100	10	99.2	80	14	25	48.5	11	10	16	1/8 PT	45	38	105	22.5	37.5	14x20x17	6120	9750	127.6	127.6	213.2	2.750	11.26
NFL 45HB	120	159.5	60	100	10	130.5	80	14	28	48.5	11	10	16	1/8 PT	45	38	105	22.5	37.5	14x20x17	8200	13000	217.1	217.1	284.1	3.705	11.26

Unless otherwise specified all dimensions are in mm



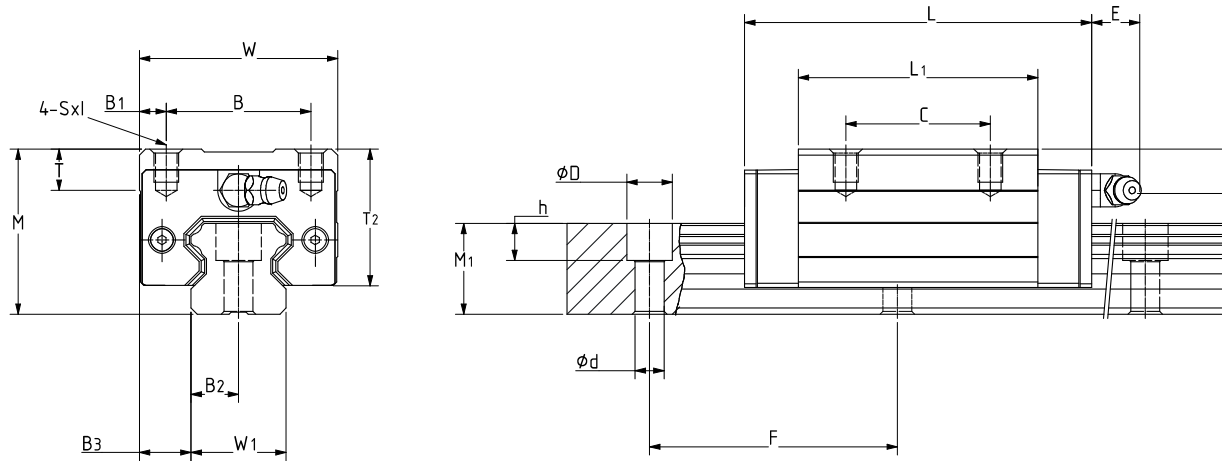
Model	Width	Length	Height of rail and carriage		Carriage mounting from top		Carriage mounting from bottom		Grease nipple	Width	Guideway height	Pitch	Carriage weight			Rail weight												
Symbol	W	L	M	B	B <sub>1</sub>	L <sub>1</sub>	C	T	T <sub>1</sub>	T <sub>2</sub>	SxI	N	E	W <sub>1</sub>	M <sub>1</sub>	F	B <sub>2</sub>	B <sub>3</sub>	dxDxh	C kgf	C <sub>0</sub> kgf	M <sub>a</sub> kgf-m	M <sub>b</sub> kgf-m	M <sub>c</sub> kgf-m	kg	kg-m		
NFL 15CC	47	56.2	24	38	4.5	38.2	30	7	11	19.5	M5x7	M4	4.5	5.5	M4x0.7P	15	15	60	7.5	16	4.7x7.5x5.5	850	1380	7.3	7.3	10.1	0.175	1.45
NFL 20CC	63	76.5	30	53	5	50.5	40	9.5	10	24.5	M6x9.5	M5	5	12	M6x1.0P	20	18	60	10	21.5	6x9.5x8.5	1410	2430	15.9	15.9	23.7	0.400	2.26
NFL 20HC	63	92.5	30	53	5	66.5	40	9.5	10	24.5	M6x9.5	M5	5	12	M6x1.0P	20	18	60	10	21.5	6x9.5x8.5	2170	3240	27.5	27.5	31.6	0.530	2.26
NFL 25CC	70	84	36	57	6.5	58	45	12	16	29.0	M8x12	M6	6	12	M6x1.0P	23	22	60	11.5	23.5	7x11x9	2570	4480	27.5	27.5	40.0	0.590	3.20
NFL 25HC	70	103	36	57	6.5	77	45	12	16	29.0	M8x12	M6	6	12	M6x1.0P	23	22	60	11.5	23.5	7x11x9	2770	4680	46.8	46.8	51.8	0.795	3.20
NFL 30CC	90	100.5	42	72	9	70.5	52	12	18	34.0	M10x12	M8	7	12	M6x1.0P	28	26	80	14	31	9x14x12	2860	4770	43.8	43.8	65.8	1.065	4.54
NFL 30HC	90	122.5	42	72	9	92.5	52	12	18	34.0	M10x12	M8	7	12	M6x1.0P	28	26	80	14	31	9x14x12	3800	6730	74.4	74.4	87.7	1.410	4.54
NFL 35CC	100	105.5	48	82	9	80.5	62	13	21	39.0	M10x13	M8	8	12	M6x1.0P	34	29	80	17	33	9x14x12	3800	6230	65.4	65.4	104.7	1.545	6.37
NFL 35HC	100	130.5	48	82	9	105.5	62	13	21	39.0	M10x13	M8	8	12	M6x1.0P	34	29	80	17	33	9x14x12	5120	8310	111.1	111.1	139.9	2.050	6.37
NFL 45CC	120	128.2	60	100	10	99.2	80	14	25	48.5	M12x14	M10	10	16	1/8 PT	45	38	105	22.5	37.5	14x20x17	6120	9750	127.6	127.6	213.2	2.750	11.26
NFL 45HC	120	159.5	60	100	10	130.5	80	14	28	48.5	M12x14	M10	10	16	1/8 PT	45	38	105	22.5	37.5	14x20x17	8200	13000	217.1	217.1	284.1	3.705	11.26

Unless otherwise specified all dimensions are in mm



Linear recirculating ball  
guideways

**NGL** Type



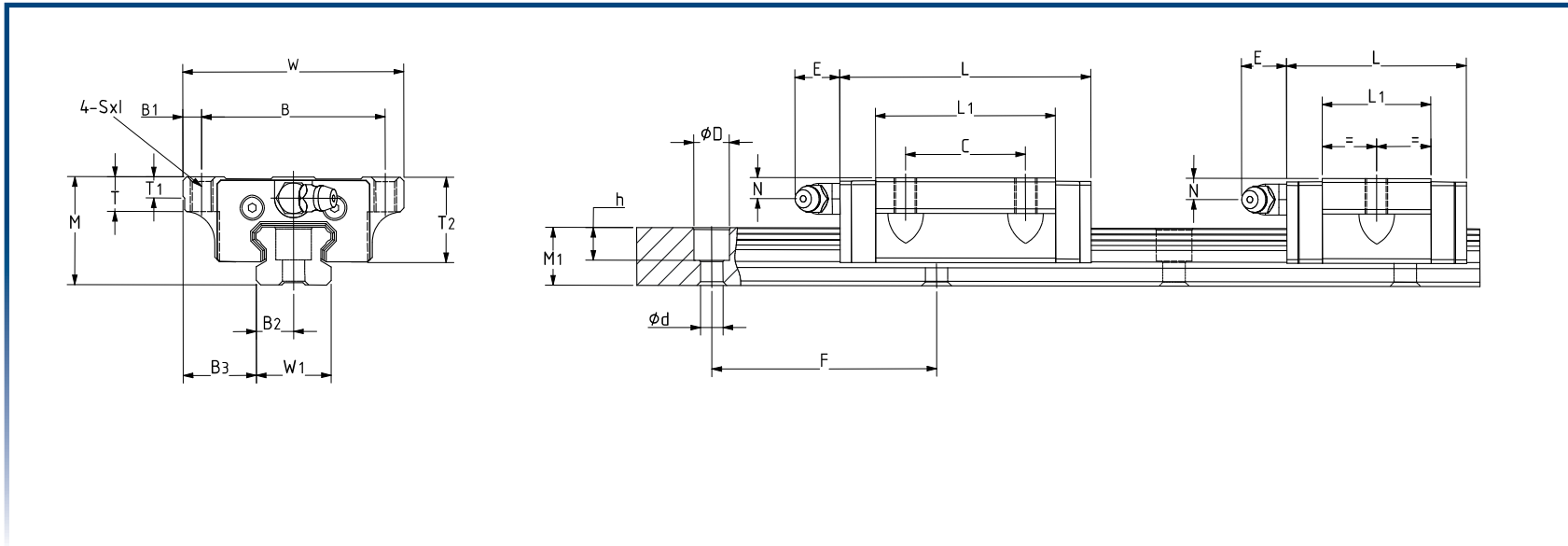
Model	Width	Length	Height of rail and carriage											Grease nipple	Width	Guideway height	Pitch				Carriage weight	Rail weight				
Symbol	W	L	M	B	B <sub>1</sub>	L <sub>1</sub>	C	T	T <sub>2</sub>	Sx1	N	E		W <sub>1</sub>	M <sub>1</sub>	F	B <sub>2</sub>	B <sub>3</sub>	dxDxh	C kgf	C <sub>0</sub> kgf	M <sub>a</sub> kgf-m	M <sub>b</sub> kgf-m	M <sub>c</sub> kgf-m	kg	kg-m
NGL 15CA	34	56.2	28	26	4	38.2	26	7	23.5	M4x5	8.5	5.5	M4x0.7P	15	15	60	7.5	9.5	4.7x7.5x5.5	850	1380	7.3	7.3	10.1	0.180	1.45
NGL 20CA	44	76.5	30	32	6	50.5	36	8	24.5	M5x6	5	12	M6x1.0P	20	18	60	10	12	6x9.5x8.5	1410	2430	15.9	15.9	23.7	0.320	2.26
NGL 20HA	44	92.5	30	32	6	66.5	50	8	24.5	M5x6	5	12	M6x1.0P	20	18	60	10	12	6x9.5x8.5	2170	3240	27.5	27.5	31.6	0.405	2.26
NGL 25CA	48	84	40	35	6.5	58	35	9.5	33.0	M6x8	10	12	M6x1.0P	23	22	60	11.5	12.5	7x11x9	2570	4480	27.5	27.5	40.0	0.503	3.20
NGL 25HA	48	103	40	35	6.5	77	50	10	33.0	M6x8	10	12	M6x1.0P	23	22	60	11.5	12.5	7x11x9	2770	4680	46.8	46.8	51.8	0.675	3.20
NGL 30CA	60	100.5	45	40	10	70.5	40	10	37.0	M8x10	10	12	M6x1.0P	28	26	80	14	16	9x14x12	2860	4770	43.8	43.8	65.8	0.905	4.54
NGL 30HA	60	122.5	45	40	10	92.5	60	10	37.0	M8x10	10	12	M6x1.0P	28	26	80	14	16	9x14x12	3800	6730	74.4	74.4	87.7	1.050	4.54
NGL 35CA	70	105.5	55	50	10	80.5	50	13	46.0	M8x12	15	12	M6x1.0P	34	29	80	17	18	9x14x12	3800	6230	65.4	65.4	104.7	1.495	6.37
NGL 35HA	70	130.5	55	50	10	105.5	72	12	46.0	M8x12	15	12	M6x1.0P	34	29	80	17	18	9x14x12	5120	8310	111.1	111.1	139.9	1.935	6.37
NGL 45CA	86	128.2	70	60	13	99.2	60	16	58.5	M10x17	20	16	1/8 PT	45	38	105	22.5	20.5	14x20x17	6120	9750	127.6	127.6	213.2	2.760	11.26
NGL 45HA	86	159.5	70	60	13	130.5	80	16	58.5	M10x17	20	16	1/8 PT	45	38	105	22.5	20.5	14x20x17	8200	13000	217.1	217.1	284.1	3.625	11.26

Unless otherwise specified all dimensions are in mm



Linear recirculating ball  
guideways

**NFR** Type



Model	Width	Length	Height of rail and carriage												Carriage with	Carriage with	Grease nipple	Width	Guideway height	Pitch				Carriage weight	Rail weight			
Symbol	W	L	M	B	B <sub>1</sub>	L <sub>1</sub>	C	T	T <sub>1</sub>	T <sub>2</sub>	Sxl		N	E		W <sub>1</sub>	M <sub>1</sub>	F	B <sub>2</sub>	B <sub>3</sub>	dxDxh	C kgf	C <sub>0</sub> kgf	M <sub>a</sub> kgf-m	M <sub>b</sub> kgf-m	M <sub>c</sub> kgf-m	kg	kg-m
<b>NFR 15TC</b>	52	56.2	24	41	5.5	38.2	26	12	7	19.5	M5x7	M4	4	5.5	M4x0.7P	15	15	60	7.5	18.5	4.7x7.5x5.5	850	1380	7.3	7.3	10.1	0.205	1.45
<b>NFR 15SC</b>	52	39.3	24	41	5.5	21.3	-	10	7	19.5	M5x10	M4	4	5.5	M4x0.7P	15	15	60	7.5	18.5	4.7x7.5x5.5	550	1132	2.04	2.04	4.08	0.115	1.45
<b>NFR 20TC</b>	59	67.2	28	49	5	47.2	32	11	10	22	M6x10	M5	4	12	M6x1.0P	20	18	60	10	19.5	6x9.5x8.5	1410	2430	15.9	15.9	23.7	0.270	2.26
<b>NFR 20SC</b>	59	47.5	28	49	5	27.5	-	10	9.5	22	M6x9.5	M5	5	12	M6x1.0P	20	18	60	10	19.5	6x9.5x8.5	730	1468	3.06	2.04	7.14	0.190	2.26

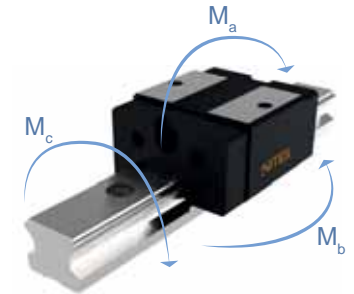
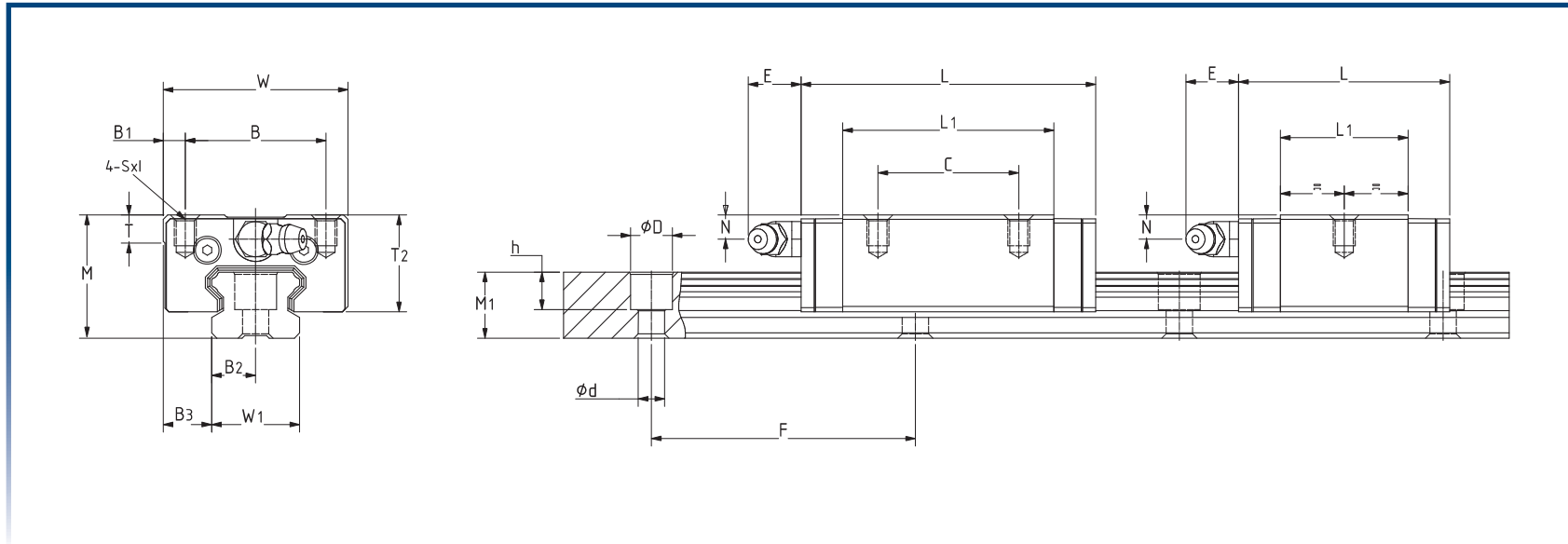
Unless otherwise specified all dimensions are in mm



Linear recirculating ball  
guideways

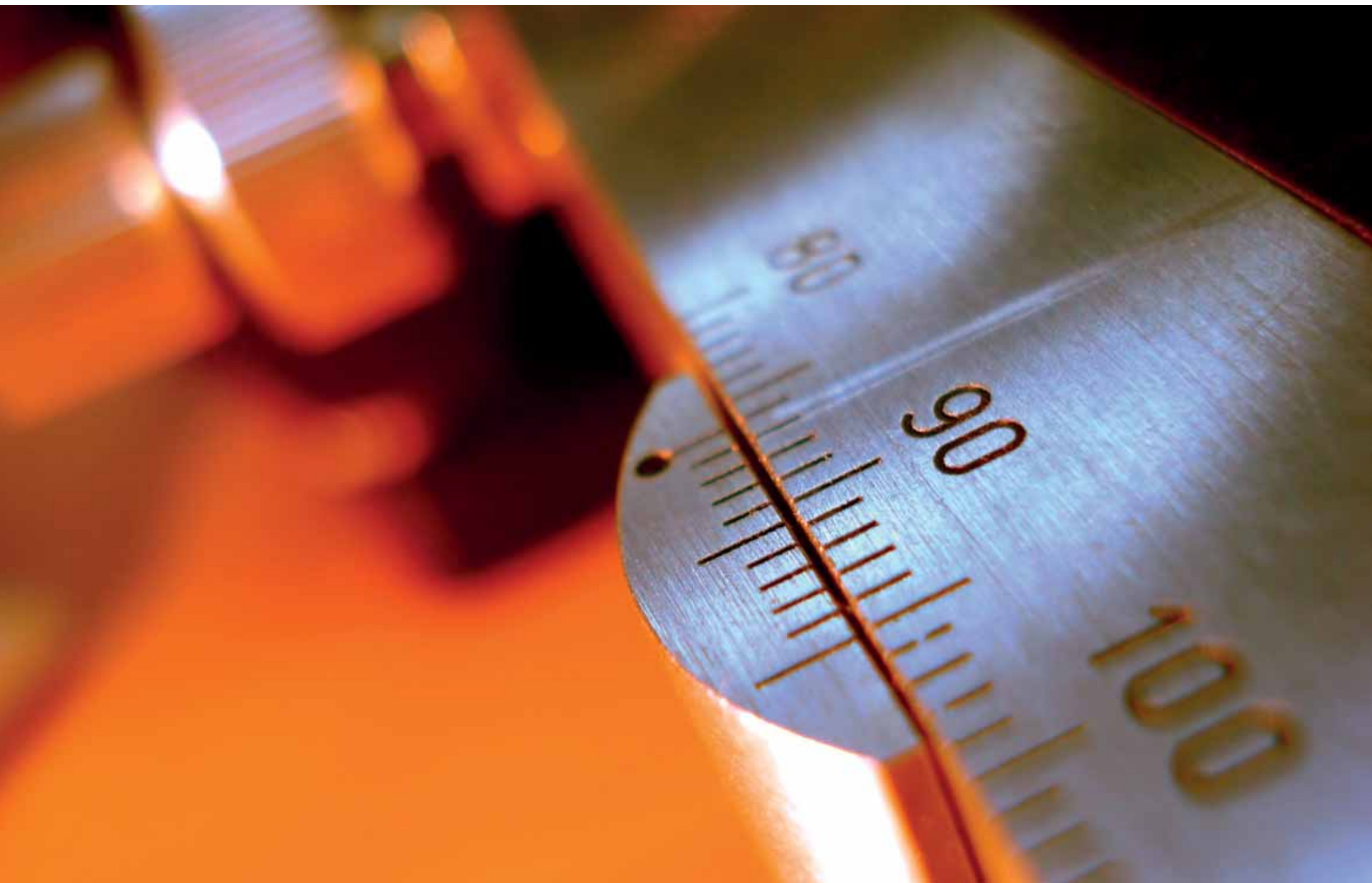
**NGR** Type





Model	Width	Length	Height of rail and carriage											Grease nipple	Width	Guideway height	Pitch				Carriage weight	Rail weight				
	W	L	M	B	B <sub>1</sub>	L <sub>1</sub>	C	T	T <sub>2</sub>	SxI	N	E		W <sub>1</sub>	M <sub>1</sub>	F	B <sub>2</sub>	B <sub>3</sub>	dxDxh	C kgf	C <sub>0</sub> kgf	M <sub>a</sub> kgf-m	M <sub>b</sub> kgf-m	M <sub>c</sub> kgf-m	kg	kg-m
NGR 15TA	34	56.2	24	26	4	38.2	26	7	19.5	M4x5	4	5.5	M4x0.7P	15	15	60	7.5	9.5	4.7x7.5x5.5	850	1380	7.3	7.3	10.1	0.145	1.45
NGR 15SA	34	39.5	24	26	4	21.3	-	7	19.5	M4x5	4	5.5	M4x0.7P	15	15	60	7.5	9.5	4.7x7.5x5.5	550	1132	2.04	2.04	4.08	0.090	1.45
NGR 20TA	42	67.2	28	32	5	47.2	32	7.5	22	M5x6	4	12	M6x1.0P	20	18	60	10	11	6x9.5x8.5	1410	2430	15.9	15.9	23.7	0.235	2.26
NGR 20SA	42	47.5	28	32	5	27.5	-	7.5	22	M5x6	4	12	M6x1.0P	20	18	60	10	11	6x9.5x8.5	730	1468	3.06	2.04	7.14	0.150	2.26
NGR 25TA	48	79.5	33	35	6.5	59.5	35	8	26	M6x8	4.5	12	M6x1.0P	23	22	60	11.5	12.5	7x11x9	2030	3510	27.5	27.5	40.0	0.385	3.2
NGR 25SA	48	55.0	33	35	6.5	35.0	-	8.5	26	M6x8	4.7	12	M6x1.0P	23	22	60	11.5	12.5	7x11x9	1190	2295	5.1	4.08	12.24	0.240	3.2

Unless otherwise specified all dimensions are in mm



All information inside this catalog are copyright protected.  
Any copies without permission are not allowed without agreement.

All data and drawings inside this catalog are subject to change  
without prior notice and without any obligation on the part of the  
manufacturer.

**NISE srl - NITEK<sup>®</sup> Copyright 2015**

Project supervisor: Ing. Marco Gavesi

Technical draws: Ing. Matteo Indovini

3D Rendering: Ing. Andrea Paci

Graphic design: [www.loryland.it](http://www.loryland.it)

English translation: Roberta D'Adamo

Photos copyright: Claudio Visentin | Creative Studio srl  
License Shutterstock.com

The NITEK Linear guideways are manufactured in the Leadchin Slider Inc. production plant in Taichung, Taiwan.

Nitek® is a registered brand name of NISE srl



NISE srl headquarter in Bologna



**NITEK**®

NISE srl

Via del Campo, 3  
40012 Calderara di Reno  
Bologna - Italy  
Tel. +39 051 727079  
Fax +39 051 729543  
info@nise.it  
www.nise.it  
www.nitek.it