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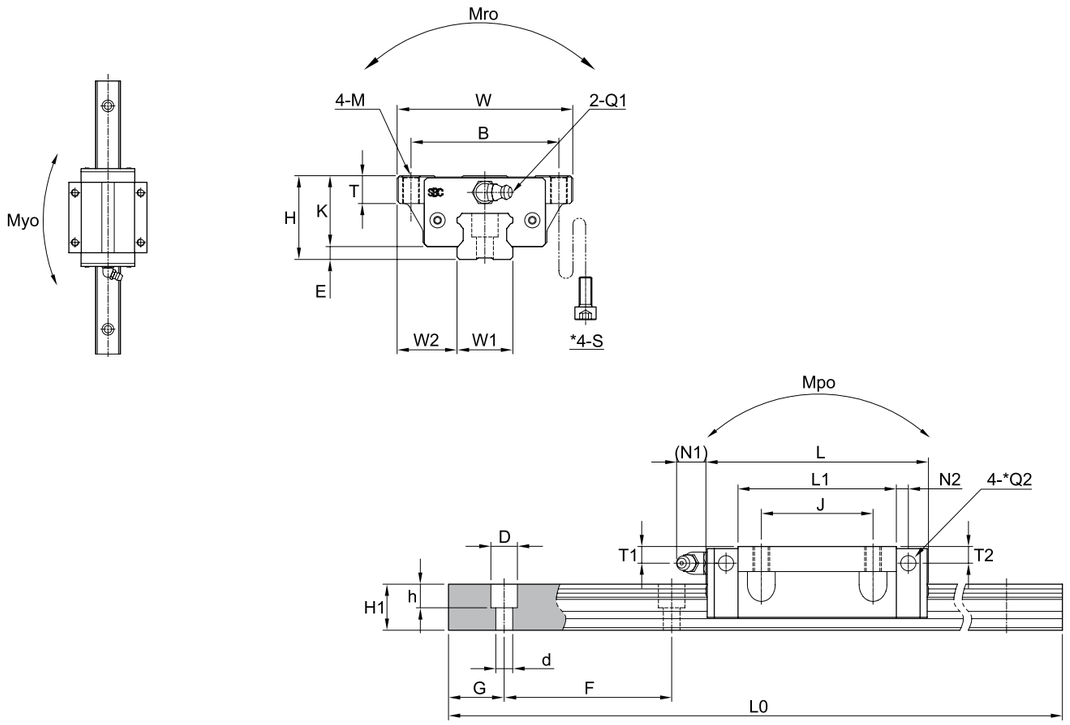
CLIMATE COMPENSATED PAPER

NORDISK MILJØMÆRKNING
Svanemærket trykksag 541 713

SBI-FL-Type



Dimension: mm

Article No	Mounting Dimension				Block Dimensions											
					Mounting tab hole						Grease fitting					
.	H	W	L	E	BxJ	M	*S	L_1	T ±1	K	T_1	N_1	T_2	N_2	Q_1	Q_2
SBI 15FL	24	47	63,8	3	38x30	M5	M4	45,2	9	21	4,5	5,5	3,8	3,8	M4x0,7	Ø3,5
SBI 20FL	30	63	78,8	4,6	53x40	M6	M5	56,8	12	25,4	6	12	5,8	5	M6x0.75	Ø3,5
SBI 25FL	36	70	92	5,5	57x45	M8	M6	70	14	30,5	6	12	5	5	M6x0.75	Ø3,5
SBI 30FL	42	90	107,6	7	72x52	M10	M8	79,6	15,5	35	8.5	12	7,8	5	M6x0.75	Ø5,7
SBI 35FL	48	100	124,6	7,5	82x62	M10	M8	94,6	15	40,5	8	12	8	6	M6x0.75	Ø5,7
SBI 45FL	60	120	142	9	100x80	M12	M10	108	18	51	10.5	13,5	9,3	6,5	PT 1/8	Ø5,7
SBI55FL	70	140	172,4	12	116x95	M14	M12	131	22	58	12	13	12	8	PT1/8	Ø8,7
SBI65FL	90	170	219,8	19	142x110	M16	M14	170,4	26	71	14	13	14	10	PT1/8	Ø8,7

* S: Bolt size for bottom mounting type of block

Order code SBI-FL-Type

Rail example: **SBI 25 - 820 - 20 - 20**

- Type
- Size
- Length of rail
- Distance from end of rail to center of first hole
- Distance from center of last hole to rail end

Block example: **SBI 25FL - N - MF - ZZ - K1**

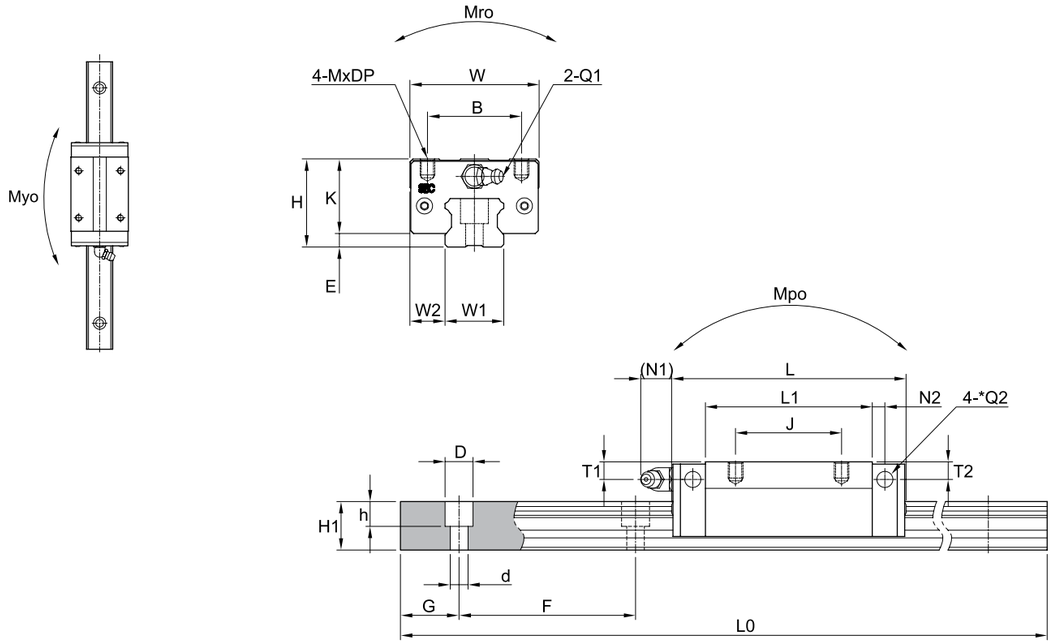
- Type
- Type of block
- No letter = Standard
  Option: Side nipple.
- No letter = Standard
  MF: Self lubrication set
  DF: High dust protection
- No letter = Standard
  ZZ: Steel scraper.
- Standard preload

Example of designation for standard block without any options: SBI 25FL - K1

Dimension: mm

Article No.	Rail size						Load capacity					Weight	
	W1	W2	H1	F	Bolt Hole dxDxh	Max.length of rail L_{omax}	Dynamic C(N)	Static C_o(N)	Static moment (Nm)			Bearing (kgf)	Rail (kgf/m)
									M_{RO}	M_{PO}	M_{YO}		
SBI 15FL	15	16,0	13	60	4.5x7.5x5.5	3000	14100	24100	160	170	170	0,19	1,30
SBI 20FL	20	21,5	16,5	60	6x9.5x8.5	4000	22200	38200	360	330	330	0,41	2,20
SBI 25FL	23	23,5	20	60	7x11x9	4000	31500	52100	560	560	560	0,69	3,00
SBI 30FL	28	31,0	23	80	9x14x12	4000	42800	65400	850	770	770	1,04	4,25
SBI 35FL	34	33,0	26	80	9x14x12	4000	59500	89100	1420	1280	1280	1,56	6,02
SBI 45FL	45	37,5	32	105	14x20x17	4000	79200	116300	2480	1900	1900	2,80	9,77
SBI55FL	53	43,5	38	120	16x23x20	4000	127300	181800	4810	2970	2970	4,42	13,72
SBI65FL	63	53,5	53	150	18x26x22	4000	188300	261700	8240	5570	5570	9,1	23,17

SBI-SL-Type



Dimension: mm

Article No.	Mounting Dimension				Block Dimensions									
					Mounting tab hole				Grease fitting					
	H	W	L	E	BxJ	MxDP	L_1	K	T_1	N_1	T_2	N_2	Q_1	Q_2
SBI15SL	28	34	63,8	3	26x26	M4x5	45,2	25	8,5	5,5	7,8	3,8	M4x0,7	Ø3,5
SBI20SL	30	44	78,8	4,6	32x36	M5x5	56,8	25,4	6	12	5,8	5	M6x0.75	Ø3,5
SBI25SL	40	48	92	5,5	35x35	M6x8	70	34,5	10	12	9	5	M6x0.75	Ø3,5
SBI30SL	45	60	107,6	7	40x40	M8x10	79,6	38	11.5	12	10,8	5	M6x0.75	Ø5,7
SBI35SL	55	70	124,6	7,5	50x50	M8x10	94,6	47,5	15	12	15	6	M6x0.75	Ø5,7
SBI45SL	70	86	142	9	60x60	M10x13	108	61	20.5	13,5	19,3	6,5	PT1/8	Ø5,7
SBI55SL	80	100	172,4	12	75x75	M12x18	131	68	22	13	22	8	PT1/8	Ø8,7
SBI65SL	90	126	219,8	19	76x70	M16x16	170,4	71	14	13	14	10	PT1/8	Ø8,7

Order code SBI-SL-Type

Rail example: **SBI 25 - 820 - 20 - 20**

- Type
- Size
- Length of rail
- Distance from end of rail to center of first hole
- Distance from center of last hole to rail end

Block example: **SBI 25SL - N - MF - ZZ - K1**

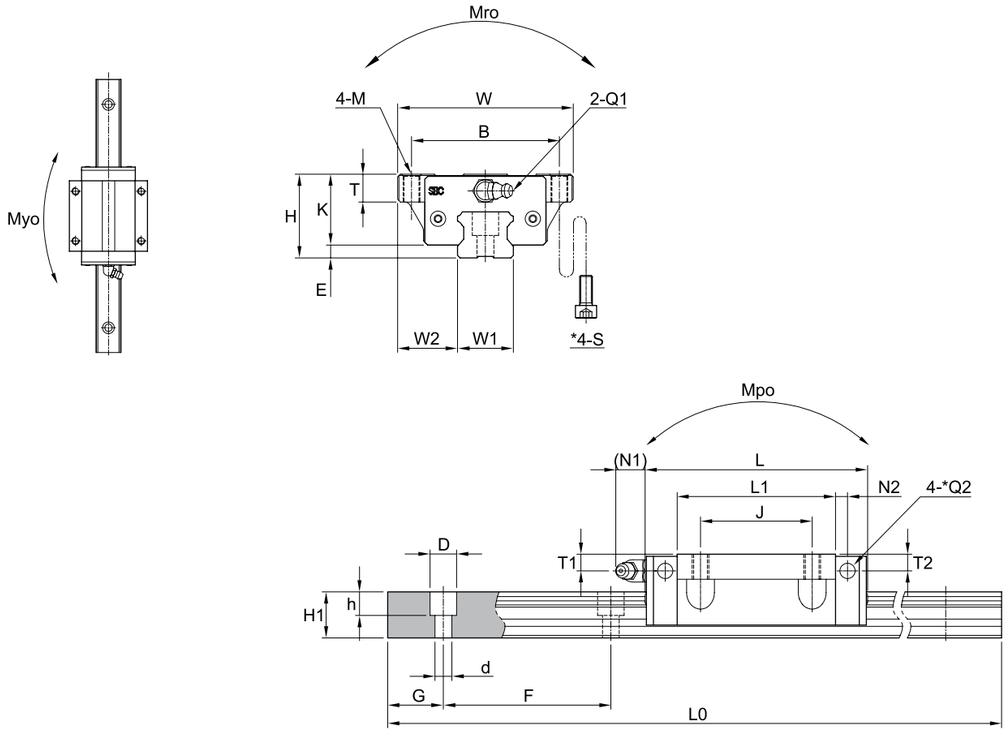
- Type
- Type of block
- No letter = Standard
  Option: Side nipple.
- No letter = Standard
  MF: Self lubrication set
  DF: High dust protection
- No letter = Standard
  ZZ: Steel scraper.
- Standard preload

Example of designation for standard block without any options: SBI 25SL - K1

Dimension: mm

Article No	Rail size						Load capacity					Weight	
	W1	W2	H1	F	Bolt Hole dxDxh	Max.length of rail L_{omax}	Dynamic C(N)	Static C_o(N)	Static moment (Nm) M_{RO}	M_{PO}	M_{YO}	Bearing (kgf)	Rail (kgf/m)
SBI15SL	15	9,5	13	60	4.5x7.5x5.5	3000	14100	24100	160	170	170	0,19	1,3
SBI20SL	20	12	16,5	60	6x9.5x8.5	4000	22200	38200	360	330	330	0,41	2,2
SBI25SL	23	12,5	20	60	7x11x9	4000	31500	52100	560	560	560	0,69	3
SBI30SL	28	16	23	80	9x14x12	4000	42800	65400	850	770	770	1,04	4,25
SBI35SL	34	18	26	80	9x14x12	4000	59500	89100	1420	1280	1280	1,56	6,02
SBI45SL	45	20,5	32	105	14x20x17	4000	79200	116300	2480	1900	1900	2,80	9,77
SBI55SL	53	23,5	38	120	16x23x20	4000	127300	181800	4810	2970	2970	4,42	13,72
SBI65SL	63	31,5	53	150	18x26x22	4000	188300	261700	8240	5570	5570	9,1	23,17

SBI-FLL-Type



Dimension: mm

Article No.	Mounting Dimension				Block Dimensions											
					Mounting tab hole						Grease fitting					
	H	W	L	E	BxJ	M	*S	L_1	T ±1	K	T_1	N_1	T_2	N_2	Q_1	Q_2
SBI15FLL	24	47	79,4	3	38x30	M5	M4	60,8	9	21	4,5	5,5	3,8	3,8	M4x0,7	Ø3,5
SBI20FLL	30	63	96,4	4,6	53x40	M6	M5	74,4	12	25,4	6	12	5,8	5	M6x0.75	Ø3,5
SBI25FLL	36	70	108	5,5	57x45	M8	M6	86	14	30,5	6	12	5	5	M6x0.75	Ø3,5
SBI30FLL	42	90	131,6	7	72x52	M10	M8	103,6	15,5	35	8.5	12	7,8	5	M6x0.75	Ø5,7
SBI35FLL	48	100	152,6	7,5	82x62	M10	M8	122,6	15,0	40,5	8	12	8,0	6	M6x0.75	Ø5,7
SBI45FLL	60	120	174	9	100x80	M12	M10	140	18,0	51	10.5	13,5	9,3	6,5	PT 1/8	Ø5,7
SBI55FLL	70	140	211,8	12	116x95	M14	M12	170,4	22	58	12	13	12	8	PT1/8	Ø8,7
SBI65FLL	90	170	272,2	19	142xx110	M16	M14	222,8	26	71	14	13	14	10	PT1/8	Ø8,7

* S: Bolt size for bottom mounting type of block

Order code SBI-FLL-Type

Rail example: **SBI 25 - 820 - 20 - 20**

- Type
- Size
- Length of rail
- Distance from end of rail to center of first hole
- Distance from center of last hole to rail end

Block example: **SBI 25FLL - N - MF - ZZ - K1**

- Type
- Type of block
  - No letter = Standard
  - Option: Side nipple.
- No letter = Standard
  MF: Self lubrication set
  DF: High dust protection
- No letter = Standard
  ZZ: Steel scraper.
- Standard preload

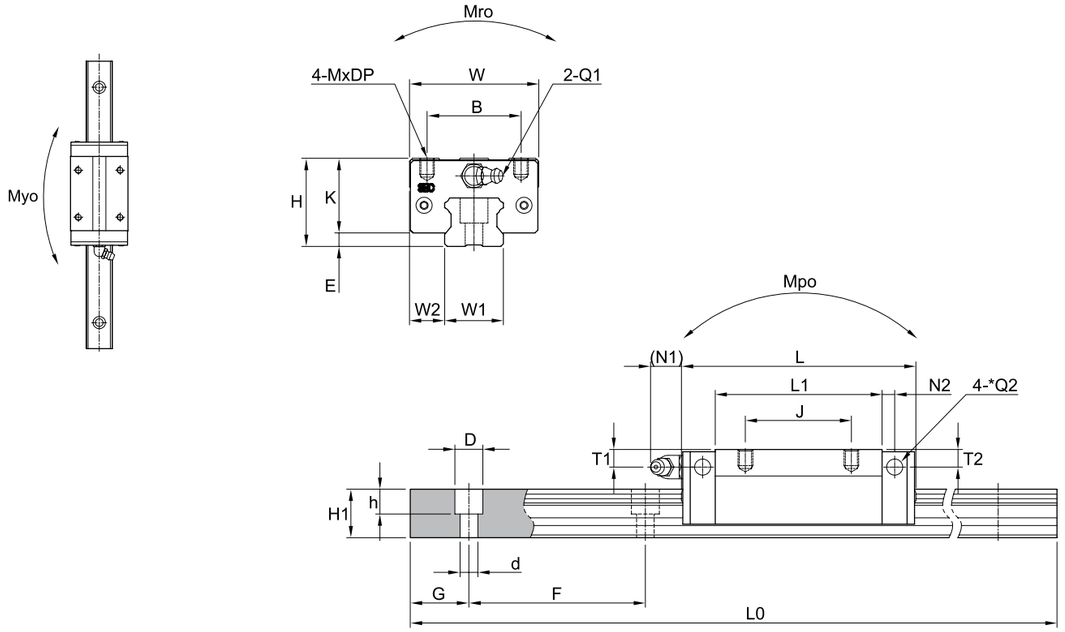
Example of designation for standard block without any options: SBI 25FLL - K1

Dimension: mm

Article No.	Rail size						Load capacity					Weight	
	W1	W2	H1	F	Bolt Hole dxDxh	Max.length of rail L_{omax}	Dynamic C(N)	Static C_o(N)	Static moment (Nm) M_{RO}	M_{PO}	M_{YO}	Bearing (kgf)	Rail (kgf/m)
SBI15FLL	15	16,0	13	60	4.5x7.5x5.5	3000	17100	31700	210	290	290	0,26	1,30
SBI20FLL	20	21,5	16,5	60	6x9.5x8.5	4000	27900	50000	470	560	560	0,54	2,20
SBI25FLL	23	23,5	20	60	7x11x9	4000	36700	64400	690	840	840	0,85	3,00
SBI30FLL	28	31,0	23	80	9x14x12	4000	51300	84700	1100	1300	1300	1,37	4,25
SBI35FLL	34	33,0	26	80	9x14x12	4000	71300	115300	1830	2120	2120	2,04	6,02
SBI45FLL	45	37,5	32	105	14x20x17	4000	94800	150500	3210	3140	3140	3,69	9,77
SBI55FLL	53	43,5	38	120	16x23x20	4000	147900	224500	5950	4780	4780	5,82	13,72
SBI65FLL	63	53,5	53	150	18x26x22	4000	232500	354100	11150	9860	9860	11,98	23,17

STANDARD LONG NARROW TYPE SBI-SLL

SBI-SLL-Type



Dimension: mm

Article No.	Mounting Dimension				Block Dimensions									
					Mounting tab hole				Grease fitting					
	H	W	L	E	BxJ	MxDP	L_1	K	T_1	N_1	T_2	N_2	Q_1	Q_2
SBI15SLL	28	34	79,4	3	26x34	M4x5	60,8	25	8,5	5,5	7,8	3,8	M4x0,7	Ø3,5
SBI20SLL	30	44	96,4	4,6	32x50	M5x5	74,4	25,4	6	12	5,8	5	M6x0.75	Ø3,5
SBI25SLL	40	48	108	5,5	35x50	M6x8	86	34,5	10	12	9	5	M6x0.75	Ø3,5
SBI30SLL	45	60	131,6	7,0	40x60	M8x10	103,6	38	11.5	12	10,8	5	M6x0.75	Ø5,7
SBI35SLL	55	70	152,6	7,5	50x72	M8x10	122,6	47,5	15	12	15	6	M6x0.75	Ø5,7
SBI45SLL	70	86	174	9,0	60x80	M10x13	140	61	20.5	13,5	19,3	6,5	PT1/8	Ø5,7
SBI55SLL	80	100	211,8	12	75x95	M12x18	170,4	68	22	13	22	8	PT1/8	Ø8,7
SBI65SLL	90	126	272,2	19	76x120	M16x16	222,8	71	14	13	14	10	PT1/8	Ø8,7

Order code SBI-SLL-Type

Rail example: SBI 25 - 820 - 20 - 20

- Type
- Size
- Length of rail
- Distance from end of rail to center of first hole
- Distance from center of last hole to rail end

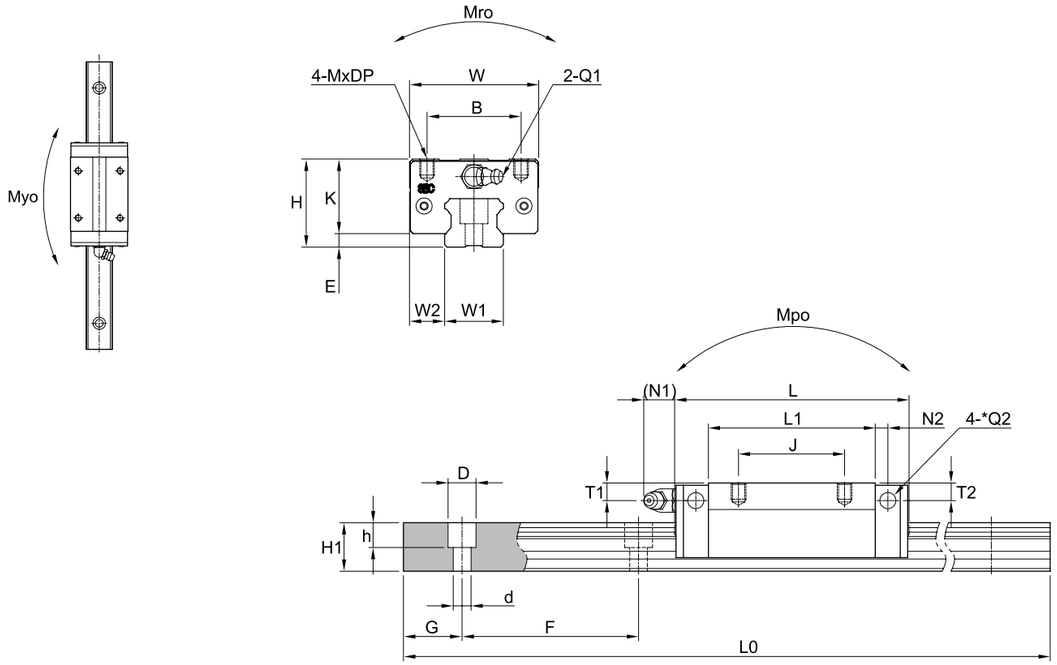
Block example: SBI 25SLL - N - MF - ZZ - K1

- Type
- Type of block
- No letter = Standard
  Option: Side nipple.
- No letter = Standard
  MF: Self lubrication set
  DF: High dust protection
- No letter = Standard
  ZZ: Steel scraper.
- Standard preload

Example of designation for standard block without any options: SBI 25SLL - K1

Article No.	Rail size						Load capacity					Weight	
	W1	W2	H1	F	Bolt Hole dxDxh	Max.length of rail L_{omax}	Dynamic C(N)	Static C_o(N)	Static moment (Nm)			Bearing (kgf)	Rail (kgf/m)
									M_{RO}	M_{PO}	M_{YO}		
SBI15SLL	15	9,5	13	60	4.5x7.5x5.5	3000	17100	31700	210	290	290	0,26	1,3
SBI20SLL	20	12	16,5	60	6x9.5x8.5	4000	27900	50000	470	560	560	0,54	2,2
SBI25SLL	23	12,5	20	60	7x11x9	4000	36700	64400	690	840	840	0,85	3
SBI30SLL	28	16	23	80	9x14x12	4000	51300	84700	1100	1300	1300	1,37	4,25
SBI35SLL	34	18	26	80	9x14x12	4000	71300	115300	1830	2120	2120	2,04	6,02
SBI45SLL	45	20,5	32	105	14x20x17	4000	94800	150500	3210	3140	3140	3,69	9,77
SBI55SLL	53	23,5	38	120	16x23x20	4000	147900	224500	5950	4780	4780	5,82	13,72
SBI65SLL	63	31,5	53	150	18x26x22	4000	232500	354100	11150	9860	9860	11,98	23,17

SBI-HL/SBI-HLS/SBI-CL/SBI-CLS-Types



Dimension: mm

Article No.	Mounting Dimension				Block Dimensions									
					Mounting tab hole				Grease fitting					
	H	W	L	E	BxJ	MxDP	L_1	K	T_1	N_1	T_2	N_2	Q_1	Q_2
SBI15HL	24	34	63,8	3	26x26	M4x4	45,2	21	4,5	5,5	3,8	3,8	M4x0,7	Ø3,5
SBI15HLS	24	34	56,8	3	26x26	M4x4	38,2	21	4,5	5,5	3,8	3,8	M4x0,7	Ø3,5
SBI20CL	28	44	78,8	4,6	32x32	M5x5	56,8	23,4	4,8	12	4	5	M6x0,75	Ø3,5
SBI20CLS	28	42	65,2	4,6	32x32	M5x5	43,2	23,4	4,8	12	4,3	5	M6x0,75	Ø3,5
SBI25CL	33	48	92	5,5	35x35	M6x6	70	27,5	5,4	12	5,4	5	M6x0,75	Ø3,5
SBI25HL	36	48	92	5,5	35x35	M6x6	70	30,5	6	12	5	5,5	M6x0.75	Ø3,5
SBI30HL	42	60	107,6	7,0	40x40	M8x8	79,6	35	8,5	12	7,8	5	M6x0.75	Ø5,7
SBI35HL	48	70	124,6	7,5	50x50	M8x8	94,6	40,5	8	12	8	6	M6x0.75	Ø5,7
SBI45HL	60	86	142	9,0	60x60	M10x10	108	51	10,5	13,5	9,3	6,5	PT1/8	Ø5,7
SBI55HL	70	100	172,4	12	75x75	M12x12	131	58	12	13	12	8	PT1/8	Ø8,7

Order Code SBI-HL-Type

Rail example: **SBI 25 - 820 - 20 - 20**

- Type
- Size
- Length of rail
- Distance from end of rail to center of first hole
- Distance from center of last hole to rail end

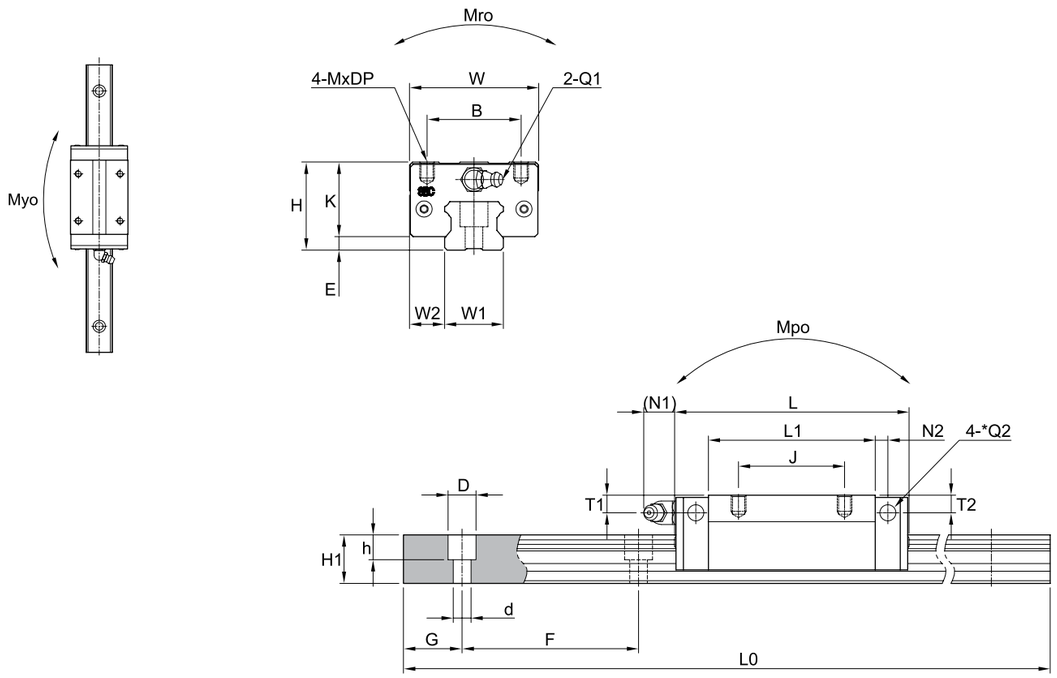
Block example: **SBI 25HL - N - MF - ZZ - K1**

- Type
- Type of block
- No letter = Standard
  Option: Side nipple
- No letter = Standard
  MF: Self lubrication set
  DF: High dust protection
- No letter = Standard
  ZZ: Steel scraper
- Standard preload

Example of designation for standard block without any options: SBI 25HL - K1

Article No.	Rail size						Load capacity					Weight	
									Static moment (Nm)				
	W1	W2	H1	F	Bolt Hole dxDxh	Max.length of rail L_{omax}	Dynamic C(N)	Static C_o(N)	M_{RO}	M_{PO}	M_{YO}	Bearing (kgf)	Rail (kgf/m)
SBI15HL	15	9,5	13	60	4.5x7.5x5.5	3000	14100	24100	160	170	170	0,19	1,30
SBI15HLS	15	9,5	13	60	4,5x7,5x5,5	3000	12300	18300	130	80	80	0,15	1,30
SBI20CL	20	12	16,5	60	6x9,5x8,5	4000	22200	38200	360	330	330	0,39	2,20
SBI20CLS	20	11	16,5	60	6x9,5x8,5	4000	19100	27000	270	150	150	0,23	2,20
SBI25CL	23	12,5	20	60	7x11x9	4000	31500	52100	560	560	560	0,66	3,00
SBI25HL	23	12,5	20	60	7x11x9	4000	31500	52100	560	560	560	0,69	3,00
SBI30HL	28	16	23	80	9x14x12	4000	42800	65400	850	770	770	1,04	4,25
SBI35HL	34	18	26	80	9x14x12	4000	59500	89100	1420	1280	1280	1,56	6,02
SBI45HL	45	20,5	32	105	14x20x17	4000	79200	116300	2480	1900	1900	2,80	9,77
SBI55HL	53	23,5	38	120	16x23x20	4000	127300	181800	4810	2970	2970	4,42	13,72

SBI-HLL & SBI-CLL-Type



Dimension: mm

Article No.	Mounting Dimension				Block Dimensions									
					Mounting tab hole				Grease fitting					
	H	W	L	E	BxJ	MxDP	L_1	K	T_1	N_1	T_2	N_2	Q_1	Q_2
SBI15HLL	24	34	79,4	3	26x34	M4x4	60,8	21	4,5	5,5	3,8	3,8	M4x0,7	Ø3,5
SBI20CLL	28	44	96,4	4,6	32x50	M5x5	74,4	23,4	4,8	12	4	5	M6x0,75	Ø3,5
SBI25CLL	33	48	108	5,5	35x50	M6x6	86	27,5	5,4	12	5,4	5	M6x0,75	Ø3,5
SBI25HLL	36	48	108	5,5	35x50	M6x6	86	30,5	6	12	5	5,5	M6x0.75	Ø3,5
SBI30HLL	42	60	131,6	7,	40x60	M8x8	103,6	35	8,5	12	7,8	5	M6x0.75	Ø5,7
SBI35HLL	48	70	152,6	7,5	50x72	M8x8	122,6	40,5	8	12	8	6	M6x0.75	Ø5,7
SBI45HLL	60	86	174	9,	60x80	M10x10	140	51	10,5	13,5	9,3	6,5	PT1/8	Ø5,7
SBI55HLL	70	100	211,8	12	75x95	M12x12	170,4	58	12	13	12	8	PT1/8	Ø8,7

Order Code SBI-HLL-Type

Rail example: SBI 25 - 820 - 20 - 20

- Type
- Size
- Length of rail
- Distance from end of rail to center of first hole
- Distance from center of last hole to rail end

Block example: SBI 25HLL - N - MF - ZZ - K1

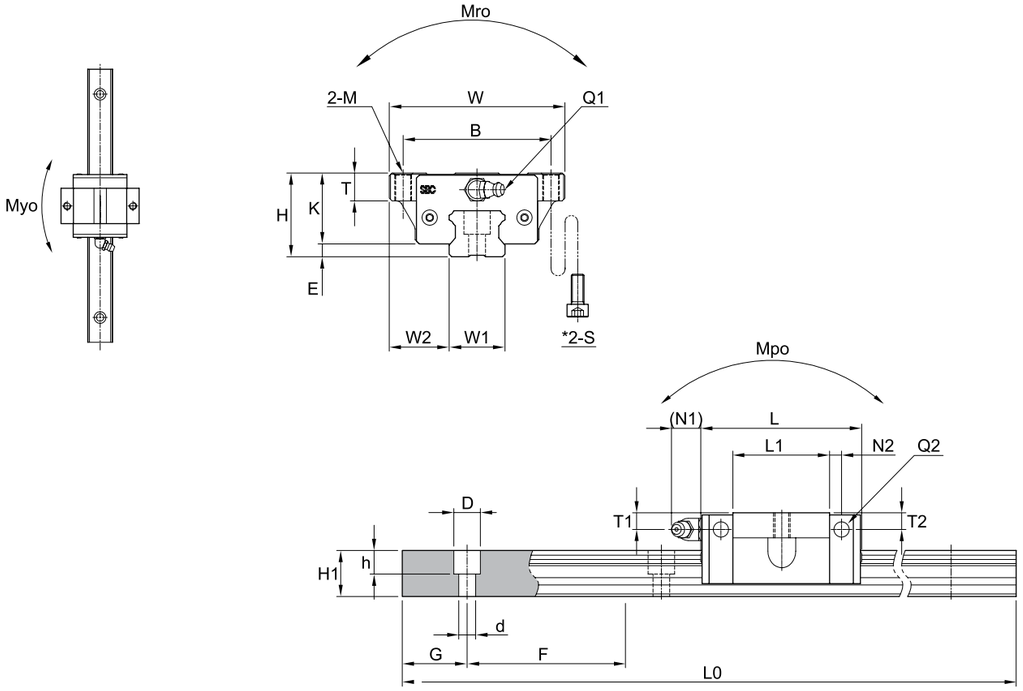
- Type
- Type of block
- No letter = Standard
  Option: Side nipple.
- No letter = Standard
  MF: Self lubrication set
  DF: High dust protection
- No letter = Standard
  ZZ: Steel scraper.
- Standard preload

Example of designation for standard block without any options: SBI 25HLL - K1

Dimension: mm

Article No.	Rail size						Load capacity					Weight	
	W1	W2	H1	F	Bolt Hole dxDxh	Max.length of rail L_{omax}	Dynamic C(N)	Static C_o(N)	Static moment (Nm) M_{RO}	M_{PO}	M_{YO}	Bearing (kgf)	Rail (kgf/m)
SBI15HLL	15	9,5	13	60	4.5x7.5x5.5	3000	17100	31700	210	290	290	0,26	1,30
SBI20CLL	20	12	16,5	60	6x9,5x8,5	4000	27900	50000	470	560	560	0,52	2,2
SBI25CLL	23	12,5	20	60	7x11x9	4000	36700	64400	690	840	840	0,82	3,0
SBI25HLL	23	12,5	20	60	7x11x9	4000	36700	64400	690	840	840	0,85	3,0
SBI30HLL	28	16	23	80	9x14x12	4000	51300	84700	1100	1300	1300	1,37	4,25
SBI35HLL	34	18	26	80	9x14x12	4000	71300	115300	1830	2120	2120	2,04	6,02
SBI45HLL	45	20,5	32	105	14x20x17	4000	94800	150500	3210	3140	3140	3,69	9,77
SBI55HLL	53	23,5	38	120	16x23x20	4000	147900	224500	5950	4780	4780	5,82	13,72

SBI-FV-Type



Dimension: mm

Article No.	Mounting Dimension				Block Dimensions											
					Mounting tab hole						Grease fitting					
	H	W	L	E	B	M	S	L_1	T ±1	K	T_1	N_1	T_2	N_2	Q_1	Q_2
SBI 15FV	24	47	39,9	3	38	M5	M4	21,3	8,8	21	4,5	5,5	3,8	3,4	M4x0,7	Ø3,5
SBI 20FV	28	63	49,1	4,5	53	M6	M5	27,1	8	23,4	4,8	12	4	5	M6x0,75	Ø3,5
SBI 25FV	33	70	52,6	5,5	57	M8	M6	30,6	9	27,5	5,4	12	5,4	5	M6x0,75	Ø3,5

Order Code SBI-FV-Type

Rail example: SBI 25 - 820 - 20 - 20

- Type
- Size
- Length of rail
- Distance from end of rail to center of first hole
- Distance from center of last hole to rail end

Block example: SBI 25FV - N - MF - ZZ - K1

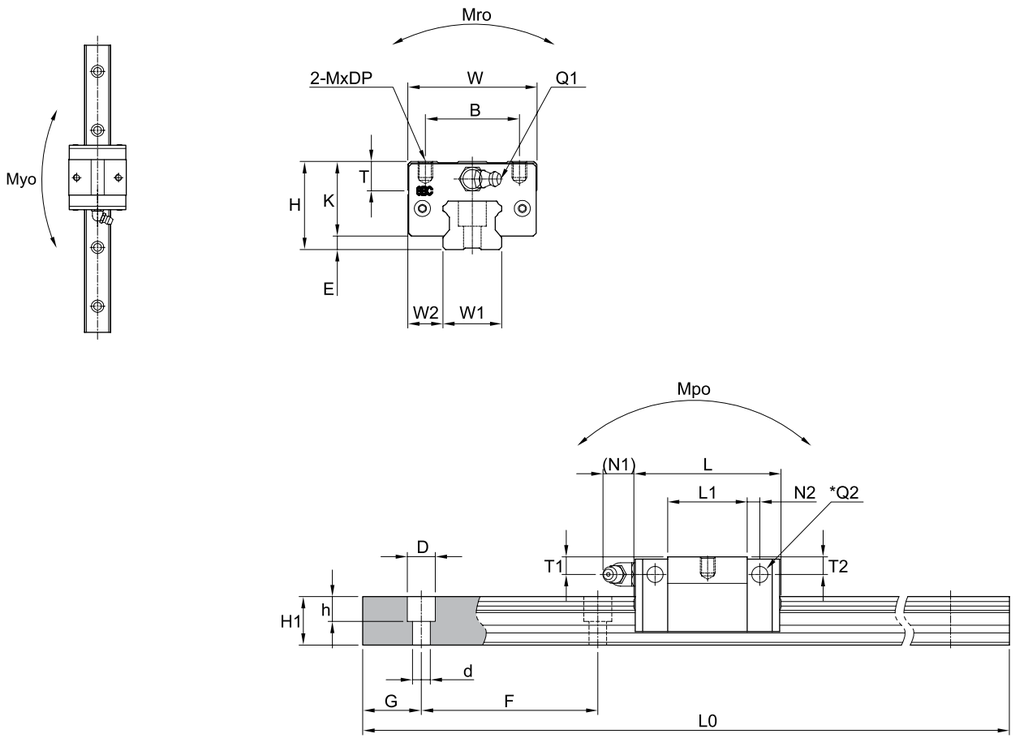
- Type
- Type of block
- No letter = Standard
  Option: Side nipple.
- No letter = Standard
  MF: Self lubrication set
  DF: High dust protection
- No letter = Standard
  ZZ: Steel scraper.
- Standard preload

Example of designation for standard block without any options: SBI 25FV - K1

Dimension: mm

Article No.	Rail size						Load capacity					Weight	
	W1	W2	H1	F	Bolt Hole dxDxh	Max.length of rail L_{omax}	Dynamic C(N)	Static C_o(N)	Static moment (Nm)			Bearing (kgf)	Rail (kgf/m)
									M_{RO}	M_{PO}	M_{YO}		
SBI 15FV	15	16	13	60	4.5x7.5x5.5	3000	5800	12800	40	30	30	0,10	1,3
SBI 20FV	20	21,5	16,5	60	6x9,5x8,5	4000	9400	20200	120	100	100	0,24	2,2
SBI 25FV	23	23,5	20	60	7x11x9	4000	12400	26100	190	170	170	0,37	3

SBI-SV-Type



Dimension: mm

Article No.	Mounting Dimension				Block Dimensions										
					Mounting tab hole					Grease fitting					
	H	W	L	E	B	M	DP	L_1	K	T_1	N_1	T_2	N_2	Q_1	Q_2
SBI 15SV	24	34	39,9	3	26	M4	4	21,3	21	4,5	5,5	3,8	3,4	M4x0,7	Ø3,5
SBI 20SV	28	44	49,1	4,6	32	M5	5	27,1	23,4	4,8	12	4	5	M6x0,75	Ø3,5
SBI 25SV	33	48	52,6	5,5	35	M6	6	30,6	27,5	5,4	12	5,4	5	M6x0,75	Ø3,5

Order Code SBI-SV-Type

Rail example: **SBI 25 - 820 - 20 - 20**

- Type
- Size
- Length of rail
- Distance from end of rail to center of first hole
- Distance from center of last hole to rail end

Block example: **SBI 25SV - N - MF - ZZ - K1**

- Type
- Type of block
- No letter = Standard
  Option: Side nipple.
- No letter = Standard
  Option: Lubrication set (available sizes 20, 25, 30, 35)
- No letter = Standard
  ZZ: Steel scraper.
- Standard preload

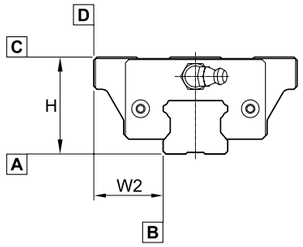
Example of designation for standard block without any options: SBI 25SV - K1

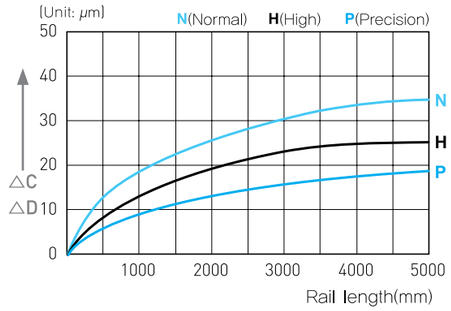
Dimension: mm

Article No.	Rail size						Load capacity					Weight	
	W1	W2	H1	F	Bolt Hole dxDxh	Max.length of rail L_{omax}	Dynamic C(N)	Static C_o(N)	Static moment (Nm) M_{RO}	M_{PO}	M_{YO}	Bearing (kgf)	Rail (kgf/m)
SBI15SV	15	9,5	13	60	4.5x7.5x5.5	3000	5800	12800	40	30	30	0,10	1,3
SBI20SV	20	12	16,5	60	6x9,5x8,5	4000	9400	20200	120	100	100	0,24	2,2
SBI25SV	23	12,5	20	60	7x11x9	4000	12400	26100	190	170	170	0,37	3

Precision Classes (μm)

Precision classes are divided into three classes.





Dimension: mm

Item	N	H	P
Tolerance for the height H	±0,1	±0,04	±0,02
Tolerance for the rail-to-block lateral distance W2	±0,1	±0,04	±0,02
Tolerance for the height H difference among blocks	0,03	0,015	0,007
Tolerance for the rail-to-block lateral distance W2 distance among blocks	0,03	0,015	0,007
Running parallelism of surface C with surface A		Δ C	
Running parallelism of surface D with surface B		Δ D	

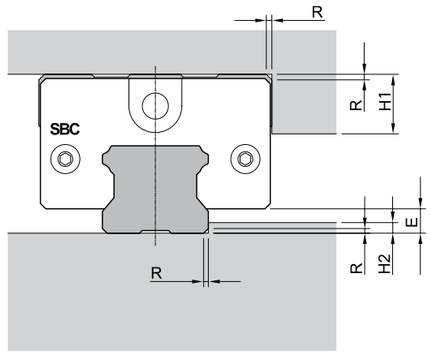
N: Normal H: High P: Precision

Preload

Preload affects the rigidity, internal-load and clearance. Also, it is very important to select appropriate preload according to applied load, impact and vibration expected in the application.

Preload	Conditions	Example
K0 (No preload)	• Where the load direction is constant, impact and vibration are light • Precision is not required	• Welding machine • Binding machine • Automatic wrapping machine • Material handling equipment
K1 (Normal preload) Standard version	• Where the load direction is constant, impact and vibration are light • Precision is not required	• Welding machine • Binding machine • Automatic wrapping machine • Material handling equipment
K2 (Light preload)	• Where overhung loads or moment occur • Single axis operation • Light load that requires precision	• Measuring equipment • Electric discharge machine • High speed material handling equipment • NC drilling machine • Industrial robot • Z axis for general industrial equipment
K3 (Heavy preload)	• Where rigidity is required, vibration and impact are present • Engineered machinery for heavy equipment	• Machining center • NC lathe • Grinding machine • Milling machine • vertical axis of machine tool

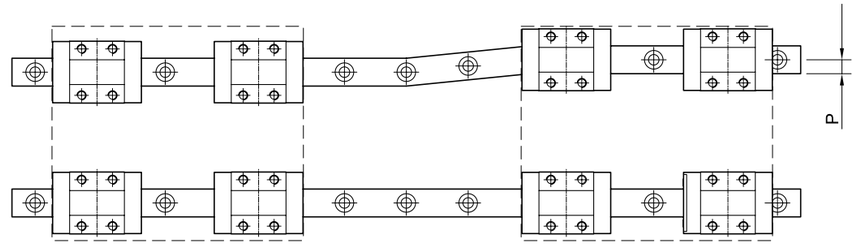
Shoulder Height and Fillet Radius R



Dimension: mm

Model size	Fillet radius R	Shoulders height H1	Shoulders height H2	E
15	0,6	7	2,5	3
20	1	8	3,5	4,6
25	1	10	4,5	5,5
30	1	11	5	7
35	1	13	6	7,5
45	1,6	16	8	9
55	1,6	20	10	12
65	1,6	25	15	19

Permissible Tolerance (P) of Parallelism

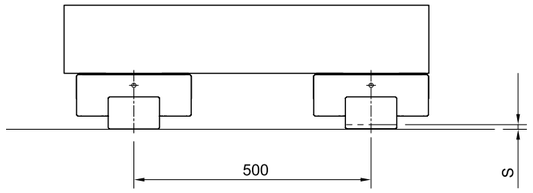


Dimension: mm

Model size	K1 (standard version)	K2 (light preload)	K3 (heavy preload)
15	0,025	0,018	-
20	0,025	0,020	0,018
25	0,030	0,022	0,020
30	0,040	0,030	0,027
35	0,050	0,035	0,030
45	0,060	0,040	0,035
55	0,070	0,050	0,045
65	0,080	0,060	0,055

Permissible Tolerance (S) of Height

Permissible tolerance (S) of two level offset



Dimension: mm

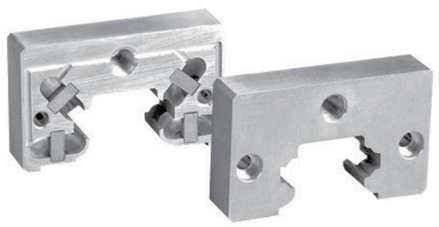
Model size	K1	K2	K3
15	0,13	0,085	-
20	0,13	0,085	0,05
25	0,13	0,085	0,07
30	0,17	0,11	0,09
35	0,21	0,15	0,12
45	0,25	0,17	0,14
55	0,30	0,21	0,17
65	0,35	0,25	0,20

High Temperature Design

HT end-plate

If working temperature is more than 80°C, Rollco supply the high temperature end-plate which is made of aluminum. Recommended working temperature : -20 ~ 180°C.

For high temperature applications we can replace all plastic components with steel or aluminum. Please contact Rollco for more information.



Stainless ST Dustproof Tape

Stainless steel ST dustproof tape improves rail face sealing and works in conjunction with guide block seals. Conventional plastic plugs do not offer the same improved sealing performance.

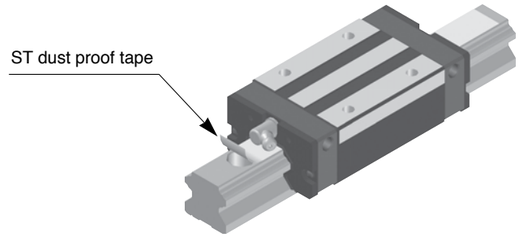
INSTALLATION OF ST TAPE:

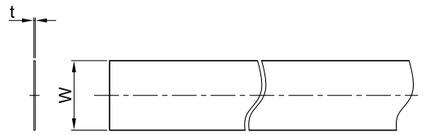
1. After assembling a rail to the bed, clean the surface of the rail and remove any oil.

2. Attach the ST tape slowly over the rail length to within 2 or 3 mm from each end of the rail.

3. After attachment to the rail, apply pressure with dry cloth 3 or 4 times along the length of the rail to release encapsulated epoxy. Tape should be applied 4 to 6 hours prior to use to allow initial bonding.

Note: It is strongly recommended to wear safety gloves, the edge of this tape is sharp and can cut as you attach it to the rail.





Dimension: mm

Article No.	W	t
SBI15ST	11	0,1
SBI20ST	15	0,1
SBI25ST	17	0,1
SBI30ST	21	0,1
SBI35ST	27	0,1
SBI45ST	37	0,1
SBI55ST	43	0,1
SBI65ST	51	0,1

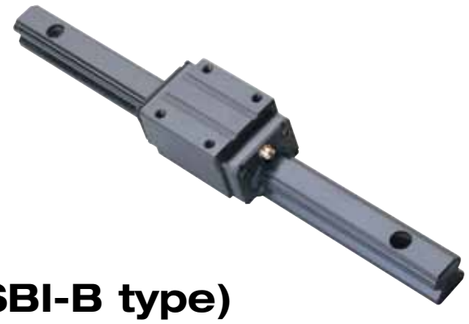
Ordering example: SBI15ST - 1000

Article No.

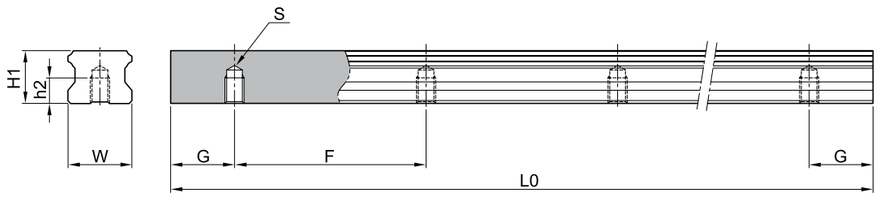
Length

Raydent Linear Rail and Block

- Patented black surface treatment
- Please contact Rollco for more information.



Bottom Mounting Rail (SBI-B type)



Article No.	W1	H1	S	h2	F	L0 (max length)	Weight (kg/m)
SBI15-B	15	13	M5x0,8	8	60	3000	1,39
SBI20-B	20	16,5	M6	9	60	4000	2,37
SBI25-B	23	20	M6	9	60	4000	3,26
SBI30-B	28	23	M8	12	80	4000	4,63
SBI35-B	34	26	M8	12	80	4000	6,45
SBI45-B	45	32	M12	18	105	4000	10,49

Note: If the maximum length exceeds this size please contact Rollco

Order Code for Raydent and Bottom Mounting Rail:

Rail example: SBI25 - 820 - 20 - 20 - R

Size

Length of rail

Distance from end of rail to center of first hole

Distance from center of last hole to rail end

R: Raydent treatment
B: Bottom mounted rail

Bolt Mounting Torque

The below mounting torque is recommended for mounting the rail.

Unit: Nm

Bolt	Rail	Mounting torque		
		Steel	Cast iron	Aluminium
M4	SBI15	4,1	2,7	2,1
M5	SBI20	8,8	5,9	4,4
M6	SBI25	14	9,2	6,9
M8	SBI30, 35	30	20	15
M12	SBI45	118	78	59
M14	SBI55	157	105	78
M16	SBI65	196	131	98

Hole Cap

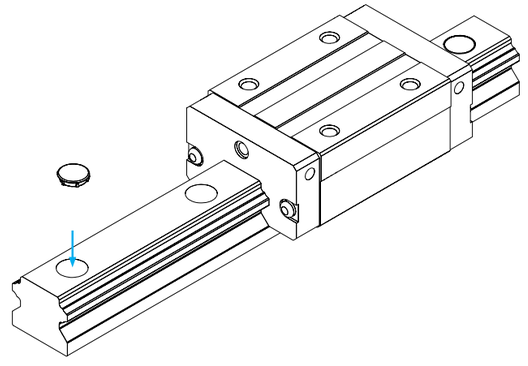
Contaminants invade into the bolt holes of the rail and pollute the inside of the bearing. You can use hole caps made from hardened rubber to fill the holes. Hole caps are provided with the rails.

HOLE CAP MOUNTING METHOD:

1. Bolt the rail on the plate.

2. Put the hole cap on the rail mounting hole and place a larger plate on the cap.
Then tap it with a hammer.

3. Check the hole cap to make sure it is properly seated.



Lubrication

Lubrication for linear rail system is a key part of its performance:

- Reduce friction and wearing for each moving part.
- Eliminate the heat on linear rail system.
- Prevent corrosion on inside and outside of linear rail system.
- Dust-prevention.

Lubricants interval

Lubricants intervals vary according to the environment and working condition of machine. Therefore, below lubricant intervals are recommended. Do not mix oil and grease systems.

Item	Working condition and outcome
Grease	Normal working condition 100 km/6 months
Oil	Volume and contamination of oil According to manual inspection

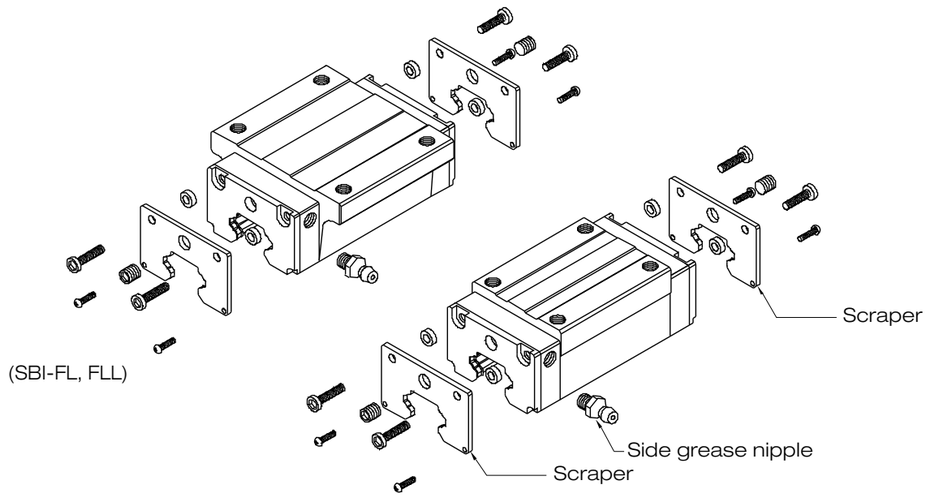
Classification and selection of lubrication

Lubricant for linear rail system must be selected after considering vibration, clean room, vacuum and working condition. For special working conditions please contact Rollco.

Item	Application	Brand
Normal working condition	Multipurpose industrial application	Shell Alvania EP(LF)0

Steel Scrapers and Side Nipple

Steel scrapers can be added to the additional rubber-seals. Blocks with side-nipple can be supplied. For all blocks ordered with both MF lubrication system and the steel scraper, the blocks will be supplied with side nipple. Please contact Rollco for more information.



(SBI-FL, FLL)

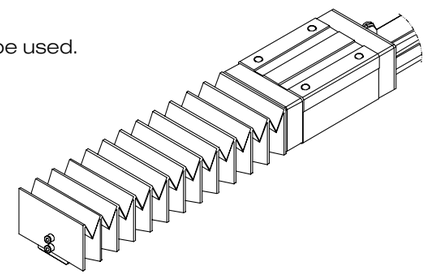
(SBG-SL, SLL)

Bellows

For the best protection of the linear rail system, bellows can be used.

Reference: SBI type: SH-A
SBG type: SH

Please contact Rollco for more information.

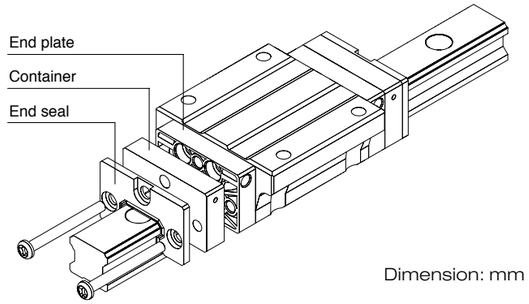


High Dust-proof and Self-lubricant Container

For protecting the linear rail system from fine foreign matter and where grease feeding is not easy, Rollco created the high dust-proof (DF) seal and self-lubricant container (MF).

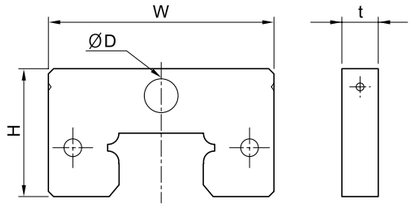
Function and classification in accordance with seal type:

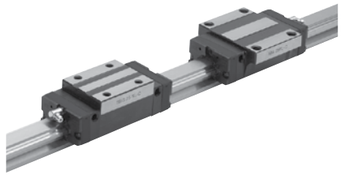
DF : Dust protection for fine foreign matter
MF: Self lubricating for long maintenance intervals



Dimension: mm

Article No DF	Article No MF	Block type	W	t	H	D
SBI15-DFA	SBI15-MFA	FL/FLL/HL/HLL/SL/SLL/FV/SV	33,4	7	20,2	4
SBI20-DFA	SBI20-MFA	FL/FLL/SL/SLL	43,4	7	24,6	6,5
SBI20-DFB	SBI20-MFB	CL/CLL/FV/SV	43,4	7	22,6	6,5
SBI25-DFA	SBI25-MFA	FL/FLL/HL/HLL/SL/SLL	47	7	29,7	6,5
SBI25-DFB	SBI25-MFB	CL/CLL/FV/SV	47	7	26,7	6,5
SBI30-DFA	SBI30-MFA	FL/FLL/HL/HLL/SL/SLL	59	8	34,2	6,5
SBI35-DFA	SBI35-MFA	FL/FLL/HL/HLL/SL/SLL	69	8	39,7	6,5
SBI45-DFA	SBI45-MFA	FL/FLL/HL/HLL/SL/SLL	85	8	49,7	10,5
SBI55-DFA	SBI55-MFA	FL/FLL/HL/HLL/SL/SLL	98	9	56	10,5
SBI65-DFA	SBI65-MFA	FL/FLL/SL/SLL	123	9	69	10,5

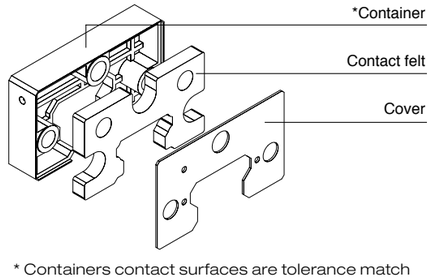




High dust proof seal: DF seal

High-density felt built in DF container wipes the raceway tracking profile with a thin film of oil. An additional seal or scraper may be added for highly contaminated applications.

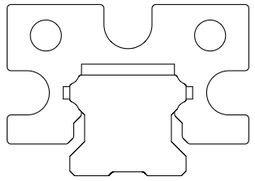
Caution: If you would like to use DF seal in watery or clean-room working condition, please contact Rollco



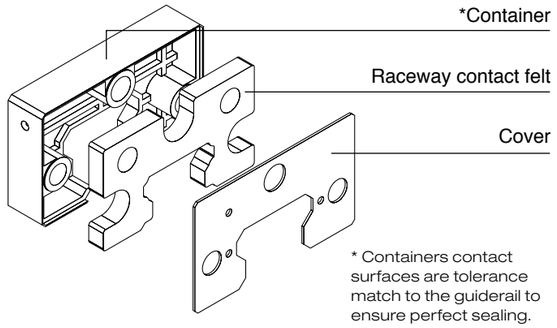
* Containers contact surfaces are tolerance match to the guiderail to ensure perfect sealing.

Self lubricant: MF container

MF (Self lubricanting) contains grease impregnated felt which feeds the grease on the raceway continuously. Each compact seal kit will guarantee total surface lubrication and long maintenance free bearing life.



(wipe the raceway and grease is coating on the raceway)



* Containers contact surfaces are tolerance match to the guiderail to ensure perfect sealing.

When ordering slider with MF container the slider is supplied without grease nipple.

MF Container Lifetime Test

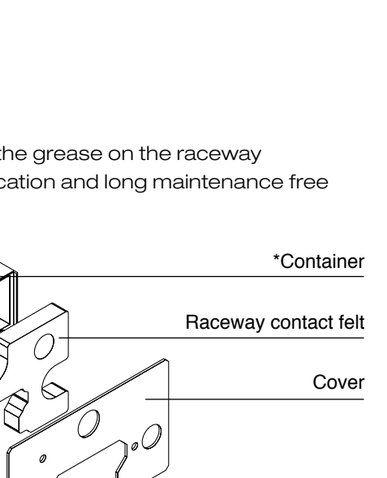
Performance test

SBG20SL-1-K1-1500

Condition	Heavy	medium	Light
Load	4900 N	2500 N	1000 N
Velocity	20 m/min	20 m/min	20 m/min
Theoretical lifetime	600 km	1500 km	-

GREASE FEEDING:
The MF container may be re-charged by adding grease to hole inside of block with a syringe.

Caution: If MF container is required to use in special working condition like clean room, please contact Rollco.



Load Rating & Life

Under normal conditions, the linear rail system can be damaged by metal fatigue as the result of repeated stress. The repeated stress causes flaking of the raceways and steel balls. The life of linear rail system is defined as the total travel distance that the linear rail system travels until flaking occurs.

The nominal life is defined as the total distance of travel (L=km) without flaking by 90% of a group of an identical group of linear rail systems operating under the same condition.

Nominal life (km): $L = \left(\frac{C}{P}\right)^3 \times 50\ km$

L: Nominal life
P: Load
C: Basic dynamic load rating (N)

The basic dynamic load rating C is a statistical number and it is based on 90% of the bearings surviving 50 km of travel carrying the full load.

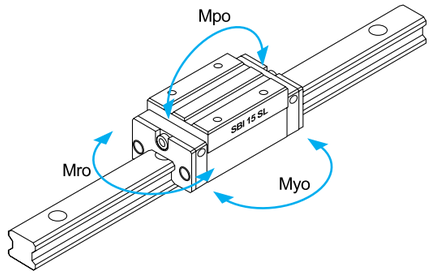
Basic Static Load Rating : Co (N)

If an excessive load or shock is applied to the linear rail system in the static or dynamic state, permanent but local deformation can occur to the steel balls and raceway. The Basic Static Load Rating is the maximum load the bearing can accept without affecting the dynamic life. This value is usually associated with a permanent deformation of the race way surface of 0.0001 time the ball diameter.

Static Permissible Moment : Mo (Nm)

These load are maximum moments or torque loads that can be applied to the bearing without damaging the bearing or affecting subsequent dynamic life.

Mro : Moment in rolling direction
Mpo : Moment in pitching direction
Myo : Moment in yawing direction



Life Calculation

The equation of nominal life for linear rail system is shown as below.

Calculation of nominal life

L (km) : Nominal life
P_C(N) : Calculated load
C (N) : Basic dynamic load rating
f_C : Contact factor
f_W : Load factor

$$L = \left(\frac{f_C}{f_W} \cdot \frac{C}{P_C}\right)^3 X\ 50$$

Contact factor (f_C)

When two or more blocks are used in close contact, it is hard to obtain a uniform load distribution because of mounting errors and tolerances. The basic dynamic load C should be multiplied by the contact factors fc shown here.

Number of blocks in close contact	Contact factor f_C
Normal condition	1,0
2	0,81
3	0,72
4	0,66
5	0,61
6 or more	0,6

Load factor (fw)

Reciprocating machines create vibrations. The effects of vibrations are difficult to calculate precisely. Refer to the following table to compensate for these vibrations.

Vibration and impact	Velocity	Load factor fw
Very slight	Very low V ≤ 0,25 m/s	1 ~ 1,2
Slight	Low 0,25 < V ≤ 1,0 m/s	1,2 ~ 1,5
Moderate	Medium 1,0 < V ≤ 2,0 m/s	1,5 ~ 2,0
Strong	High V > 2,0 m/s	2,0 ~ 3,5

Temperature

Please contact us if you need linear rail system with over 80°C working condition.

Static Safety Factor: fs

$$fs = \frac{Co}{P}$$ (radial load)

$$fs = \frac{Mo}{M}$$ (moment load)

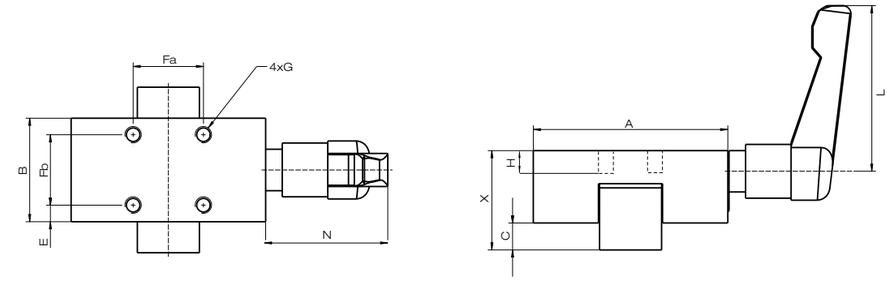
These load are maximum moments or torque loads that can be applied to the bearing without damaging the bearing or affecting subsequent dynamic life.

Co: Basic static load
P: Load
Mo: Static permissible moment (Mro, Mpo, Myo)
M: Load moment

Operating	Load conditions	fs
Normally stationary	Impact load or machine deflection is small	1,0 ~ 1,3
	Impact or twisting load is applied	2,0 ~ 3,0
Normally moving	Normal load is exerted or machine deflection is small	1,0 ~ 1,5
	Impact or twisting load is applied	2,5 ~ 7,0

Hand Clamps

Clamping elements are designed to be used for holding a position when using SBI Linear Rail Guides

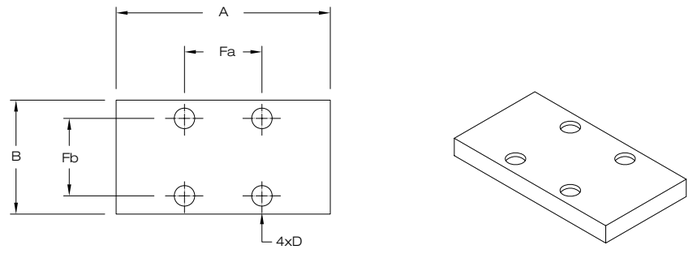


Dimensions: mm

Article No.	A	B	C	X	E	Fa	Fb	L	N	G	H	Clamping force	Tightening torque
												N	N
RCS15	47	25	6,5	24	4	17	17	45	41	M4	6	1200	5
RCS20	60	24	7	30	4,5	15	15	45	41	M5	6	1200	5
RCS25	70	30	7	36	5	20	20	64	52	M6	8	1200	7
RCS30	90	39	9	42	8,5	22	22	64	52	M6	14	2000	15
RCS35	100	39	13	48	7,5	24	24	83	67	M8	14	2000	15

Steel Plates for Hand Clamps

Because of the height difference of different rail guide blocks and to ensure the proper function of the RCS Hand Clamps, the use of adapter plates is sometimes needed. A table showing the individual block types and whether an adapter plate is needed can be found on page 33.



Dimensions: mm

Article No.	A	B	Fa	Fb	D	T
RCP15-4	47	25	17	17	4,5	4
RCP20-2	60	24	15	15	5,5	2
RCP25-4	70	30	20	20	6,5	4
RCP30-3	90	39	22	22	6,5	3
RCP35-7	100	39	24	24	8,5	7

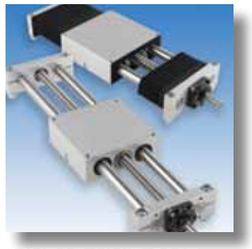
Selection of Hand Clamps

Rail Guide Type	Hand Clamp	Adapter Plate
SBI15FL	RCS15	-
SBI15SL	RCS15	RCP 15-4
SBI15HL	RCS15	-
SBI15FV	RCS15	-
SBI15SV	RCS15	-
SBI20FL	RCS20	-
SBI20SL	RCS20	RCP 20-2
SBI20FLL	RCS20	-
SBI20SLL	RCS20	RCP 20-2
SBI20CL	RCS20	-
SBI20CLL	RCS20	-
SBI20FV	RCS20	-
SBI20SV	RCS20	-
SBI25FL	RCS25	-
SBI25SL	RCS25	RCP 25-4
SBI25FLL	RCS25	-
SBI25SLL	RCS25	RCP 25-4
SBI25HL	RCS25	-
SBI25HLL	RCS25	-
SBI30FL	RCS30	-
SBI30SL	RCS30	RCP 30-3
SBI30FLL	RCS30	-
SBI30SLL	RCS30	RCP 30-3
SBI30HL	RCS30	-
SBI30HLL	RCS30	-
SBI35FL	RCS35	-
SBI35SL	RCS35	RCP 35-7
SBI35FLL	RCS35	-
SBI35SLL	RCS35	RCP 35-7
SBI35HL	RCS35	-
SBI35HLL	RCS35	-

For other types - please contact Rollco.

Product Overview

BALL SCREWS
High effiency ball screws and nuts.



LINEAR UNIT QME
Complete linear drive unit with ball bushings and ball screws.

LINEAR UNIT RHL
Complete unit with tooth belt.

LINEAR UNITS
Complete unit with ball screw or tooth belt.

ALUMINIUM PROFILES
A full program of aluminium profiles and accessories.

BELT CONVEYOR
Transportation system with different drive options

U-RAIL
Rollers in steel or polyamide. For light, standard or heavy load. Mounted in U-rails.

COMPACT RAIL
No more problems with parallelism. Low noise. Lifetime lubricated bearings.

C-RAIL
A simple and cost effective linear bearing system

LINEAR RAIL SYSTEM
The most standardized linear rail system.

MINIATURE
Range from 3 mm up to 15 mm.

EASY RAIL
A strong solution for short strokes.

ROLLER GUIDES
Four raceways with rollers. High load capacity.

HEAVY TELESCOPIC
The strongest solution for extraction.

LIGHT TELESCOPIC
Telescopic systems for smooth movement. Steel and aluminium.

BALL BEARINGS
Linear ball bearings and hardened steel shafts.

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