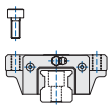
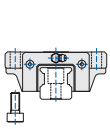
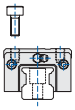
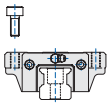
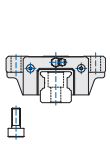
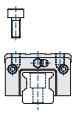
HEAVY LOAD TYPE

SELECTION OF ULTRA HEAVY AND HEAVY LOAD TYPE

CLASSIFICATION	ULTRA HEAVY LOAD TYPE			HEAVY LOAD TYPE		
MODEL TYPE	NH-LEA	NH-LEB	NH-LER	NH-EA	NH-EB	NH-ER
Mounting Direction						
Main Features	Ultra heavy load type with long runner blocks			Flange type heavy load type		Narrow width heavy load type
Permissible speed (m/min.)	120	120	120	120	120	120
Accuracy	C001-C7	C001-C7	C001-C7	C001-C7	C001-C7	C001-C7
Preload	T-T3	T-T3	T-T3	T-T3	T-T3	T-T3
Vibration Behavior	○	○	○	○	○	○
Noise	○	○	○	○	○	○

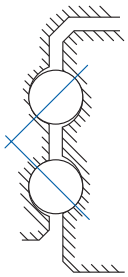
See unit conversion on page 48

○ Low ◉ Very Low

FEATURES

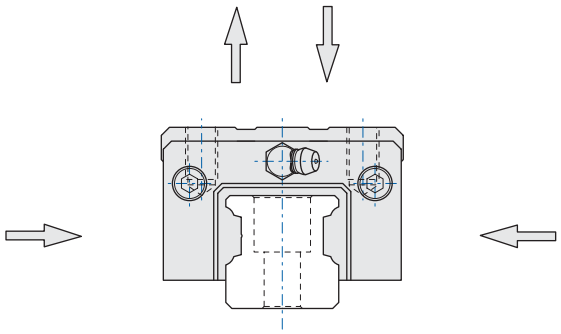
NOOK Profile Rail Design

NOOK Ultra Heavy Load Type Runner Blocks maintain circulation of the balls by a retainer and end cap. The four rows of balls on the inner runner block are arranged in two rows on either side facing each other and contacting at a 45° angle. As the load is transmitted the balls contact the rail at two points at an inclusive angle of 90°. In turn, the contact with the outer track is the same, making a square load force configuration.



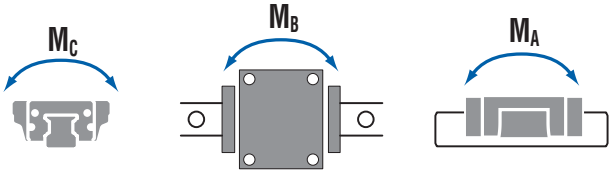
Equal Load in Four Directions

The shape of NOOK runner blocks have an equal rated load capacity in any direction. Equal rigidity is therefore obtained in any of the four loading directions making NOOK runner blocks ideal for single or combination loads.

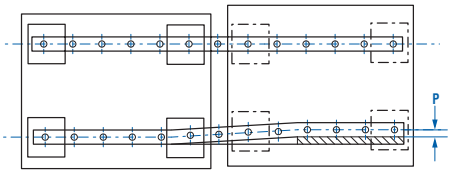


Mounting Error Absorbtion and Rolling Moment Rigidity

NOOK runner blocks are designed to absorb some of the mounting inaccuracies without any significant increase in the sliding friction.



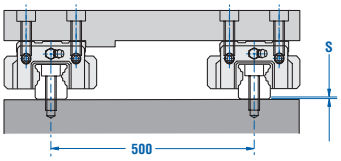
Error Allowance in the Parallelism Between Two Rails—Horizontal Plane



Permissible Tolerance (P) for Parallelism

Model NH	P		unit = µm
Model No.	Clearance T0	Clearance T1	Normal Clearance
15	—	18	25
20	18	20	25
25	20	22	30
30	27	30	40
35	30	35	50
45	35	40	60
55	45	50	70
65	55	60	80

Error Allowance Between Two Rails

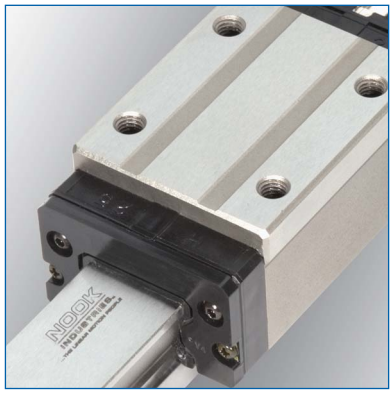


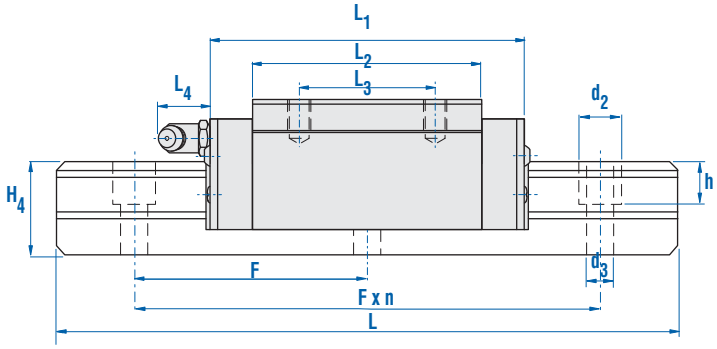
Permissible Tolerance (S) for Two Level

TWO LEVEL OFFSET: The values in the figures show the permissible tolerances for the rail-to-rail distance of 500 mm. The permissible values are proportional to the rail-to-rail distances.

Model NH	S		unit = µm
Model No.	Clearance T0	Clearance T1	Normal Clearance
15	—	85	130
20	50	85	130
25	70	85	130
30	90	110	170
35	120	150	210
45	140	170	250
55	170	210	300
65	200	250	350

NH-ER • NH-LER series
heavy load • narrow width
four tapped holes



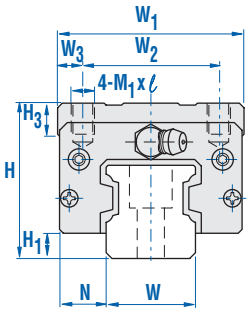


NOOK Precision Profile Rail Systems provide stable and efficient linear motion guidance under variable speeds and high load conditions.

- Interchangeable with other manufacturers
- NH-ER provides Heavy Load with Narrow Width
- NH-LER provides Heavy Load with Long Slide Unit
- Precision Class: C0001 - C7
- Preload: T - T3
- Maximum Rail Length:
  20,45, 55, 65 - 3000mm
  25, 30, 35 - 4000mm

	assembly dimensions			runner block dimensions								grease fitting
Model	height H	width W_1	length L_1	W_2	L_3	$M_1 x \ell$	L_2	H_3	L_4	W_3	H_1	
NH15ER	28	34	59	26	26	M4x5	38.5	6	0	4	4.5	NAS516-1A
NH20ER	30	44	73	32	36	M5x6	50	8	0	6	5	NAS516-1A
NH25ER	40	48	83	35	35	M6x8	59	8	12	6.5	6.5	B-M6F
NH25LER	40	48	107	35	50	M6x8	83	8	12	6.5	6.5	B-M6F
NH30ER	45	60	97	40	40	M8x10	68	8	12	10	7	B-M6F
NH30LER	45	60	123	40	60	M8x10	94	8	12	10	7	B-M6F
NH35ER	55	70	112	50	50	M8x12	80	10	12	10	8	B-M6F
NH35LER	55	70	141	50	72	M8x12	109	10	12	10	8	B-M6F
NH45ER	70	86	139	60	60	M10x17	102	15	16	13	11	B-PT 1/8
NH45LER	70	86	167	60	80	M10x17	130	15	16	13	11	B-PT 1/8
NH55ER	80	100	168	75	75	M12x18	124	18	16	12.5	14	B-PT 1/8
NH55LER	80	100	200	75	95	M12x18	156	18	16	12.5	14	B-PT 1/8
NH65ER	90	126	198	90	70	M16x20	148	23	16	18	14	B-PT 1/8
NH65LER	90	126	257	90	120	M16x20	207	23	16	18	14	B-PT 1/8

See unit conversion on page 48



rail dimensions					load ratings										weights	
					basic load ratings				static moment ratings						block	rail
height H_4	width W	N	pitch F	d_3 x d_2 x h	C kN	lbf	C_0 kN	lbf	M_A kN-m	lb-in	M_B kN-m	lb-in	M_C kN-m	lb-in	kg	kg/m
17	15	9.5	60	7.5 x 4.5 x 7	**8.82**	1,982	**17.02**	3,826	**0.12**	1,036	**0.12**	1,036	**0.18**	1,523	0.20	1.7
21	20	12	60	6 x 9.5 x 11	**13.92**	3,130	**23.83**	5,157	**0.16**	1,389	**0.16**	1,389	**0.26**	2,344	0.29	2.8
24	23	12.5	60	7 x 11 x 11	**20.00**	4,496	**34.42**	7,736	**0.27**	2,430	**0.27**	2,430	**0.44**	3,906	0.57	3.7
24	23	12.5	60	7 x 11 x 11	**27.36**	6,149	**45.88**	10,314	**0.47**	4,166	**0.47**	4,166	**0.64**	5,642	0.8	3.7
28	28	16	80	9 x 14 x 14	**28.24**	6,347	**46.87**	10,535	**0.43**	3,819	**0.43**	3,819	**0.72**	6,336	0.99	5.3
28	28	16	80	9 x 14 x 14	**37.55**	8,441	**62.56**	14,061	**0.73**	6,423	**0.73**	6,423	**0.98**	8,680	1.4	5.3
32	34	18	80	9 x 14 x 15	**37.55**	8,441	**62.56**	14,061	**0.64**	5,642	**0.64**	5,642	**1.13**	9,982	1.6	7.5
32	34	18	80	9 x 14 x 15	**50.30**	11,306	**81.59**	18,337	**1.13**	9,982	**1.13**	9,982	**1.64**	14,496	2.2	7.5
42	45	20.5	105	14 x 20 x 21	**60.20**	13,532	**95.71**	21,510	**1.30**	11,544	**1.30**	11,544	**2.30**	20,398	2.9	12.9
42	45	20.5	105	14 x 20 x 21	**80.61**	18,116	**127.48**	28,651	**2.11**	18,662	**2.11**	18,662	**3.13**	27,689	3.7	12.9
48	53	23.5	120	16 x 23 x 24	**90.02**	20,232	**137.09**	30,811	**2.22**	19,617	**2.22**	19,617	**4.25**	37,671	4.5	17.3
48	53	23.5	120	16 x 23 x 24	**119.05**	26,756	**183.09**	41,147	**3.71**	32,810	**3.71**	32,810	**5.31**	47,046	5.8	17.3
58	63	31.5	150	18 x 26 x 25	**141.11**	31,714	**215.16**	48,354	**4.21**	37,237	**4.21**	37,237	**7.38**	65,360	7.2	24.9
58	63	31.5	150	18 x 26 x 25	**192.11**	43,175	**286.15**	64,310	**7.21**	63,798	**7.21**	63,798	**10.75**	95,133	10.5	24.9