



MEDIUM LOAD - HIGH SPEED TYPE



CLASSIFICATION	HEAVY LOAD-COMPACT TYPE
MODEL TYPE	NN-TR
Mounting Direction	
Main Features	Compact Flange
Permissible speed (m/min)	200
Accuracy	C001-C7
Preload	T-T3
Vibration Behaviors	<input checked="" type="radio"/>
Noise	<input checked="" type="radio"/>

Low

Very Low

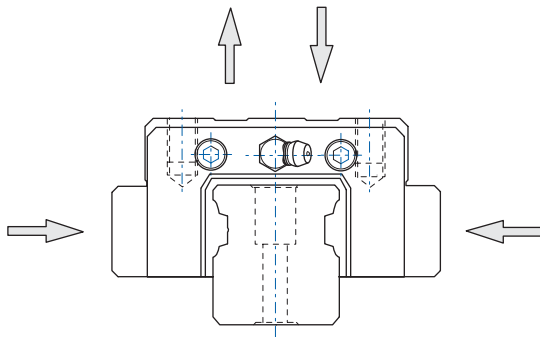
FEATURES

NOOK Profile Rail Design

NOOK Medium Load and High Speed Type Runner Blocks recirculate the balls via a tube. The four rows of balls on the inner runner block are arranged 2 rows each on either side facing each other and contacting at a 45° angle. As the load is transmitted the balls contact the track 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.



Excellent Vibration Behavior

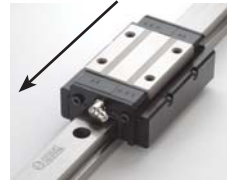
NOOK Heavy Load and Compact Type Runner Blocks have improved dynamic stiffness at high oscillation rates. The four-way load construction offers high rigidity and high dynamic stiffness to eliminate resonance with motor, etc.

Consistent Travelling Accuracy

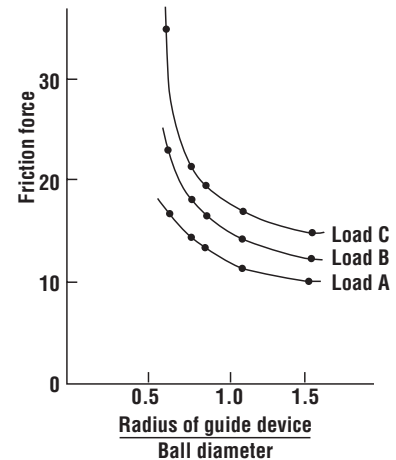
High Speed type runner block has a simple machined form offering continuity of movement at elevated speeds.

Ratio Ball Recirculation Method

Experimentation has shown that a ratio of the ball diameter to the return curvature radius of 1.5:1 results in reduced friction with less noise and lower vibration and less variation in friction at high speeds when compared normal ratios of 0.6:1 to 1.1:1 as found in standard return systems. NOOK high-speed runner blocks utilize this ratio.

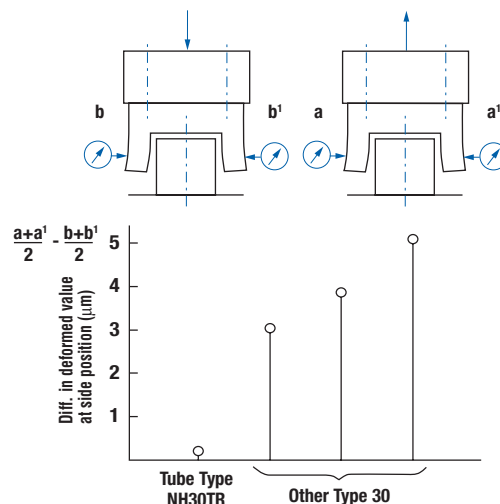


Friction force during steel ball recirculating



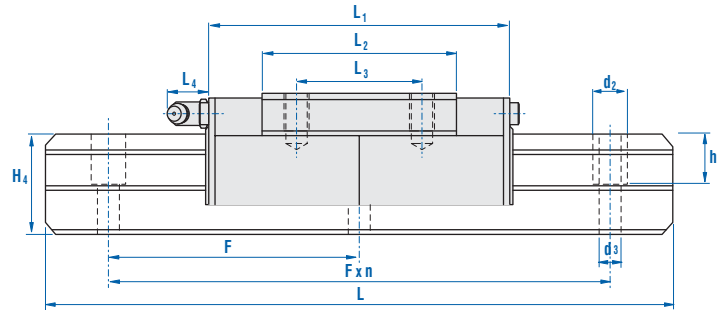
Rigidity of Runner Block

The "Tube" Type NOOK runner block has a solid structure with no return holes for balls as with the conventional runner block. The tube type design offers a stronger construction, giving the advantage of near equal resistance to deformation in both the radial and reverse radial loaded directions at the sides of the runner block.





NN-TR series
medium load • high speed
four tapped holes

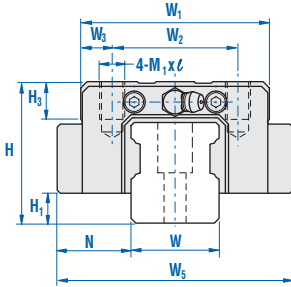


NOOK Precision Profile Rail Systems provide stable and efficient linear motion guidance under variable speeds and high load conditions.

- Interchangeable with other manufacturers
- NN-TR provides Medium Load with High Speeds
- Precision Class: C0001 - C7
- Preload: T - T3
- Maximum Rail Length:
 15 - 1500mm
 20 thru 50 - 3000mm

Mod	assembly dimensions			runner blocks dimensions										grease fitting
	height H	width W ₁	length L ₁	W ₂	W ₅	L ₃	M ₁ xℓ	L ₂	H ₃	L ₄	W ₃	H ₁		
NN15TR	27	34	65	26	46	26	M4x7	36	8	0	4	5	NAS516-1A	
NN20TR	37	48	89	35	62	35	M6x10	54	12	3	6.5	8	PB1021B	
NN25TR	45	60	102	40	75	40	M8x12	62	12	10	10	9.5	B-M6F	
NN30TR	55	70	116	50	88	50	M8x12	71	16	10	10	13	B-M6F	
NN40TR	70	86	141	60	109	60	M10x14	88	18	10	13	17	B-M6F	
NN50TR	80	100	162	75	127	75	M12x17	97	21.5	10	12.5	13	B-PT 1/8	

See unit conversion on page 56



rail dimensions					load ratings										weights	
height H_4	width W	N	pitch F	$d_3 \times d_2 \times h$	basic load rating				static moment ratings						block	rail
					C		C_0		M_A		M_B		M_C		kg	kg/m
					kN	lb	kN	lb	kN-m	lb-in	kN-m	lb-in	kN-m	lb-in		
18	15	9.5	60	3.5 x 6 x 9	5.10	1,146	7.84	1,763	0.05	434	0.05	434	0.07	608	0.16	1.9
25	23	12.5	60	6 x 9.5 x 13	10.39	2,336	15.69	3,526	0.14	1,215	0.14	1,215	0.23	1,996	0.44	4.0
32	28	16	80	7 x 11 x 16	15.49	3,482	21.86	4,915	0.22	1,910	0.22	1,910	0.37	3,298	0.7	6.4
37	34	18	80	7 x 11 x 16	21.96	4,937	29.51	6,634	0.31	2,278	0.31	2,278	0.60	5,295	1.2	9.0
48	45	20.5	105	9 x 14 x 23	38.82	8,728	48.92	10,998	0.66	5,816	0.66	5,816	1.31	11,631	2.1	15.5
49	48	26	120	11 x 17.5 x 24	58.24	13,091	70.98	15,966	1.11	9,808	1.11	9,808	2.07	18,315	3.7	16.6

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