

# STAR – Ball Rail® Systems Runner Blocks, Steel Version

## Runner block 1653-

### Standard width, long

Special versions:

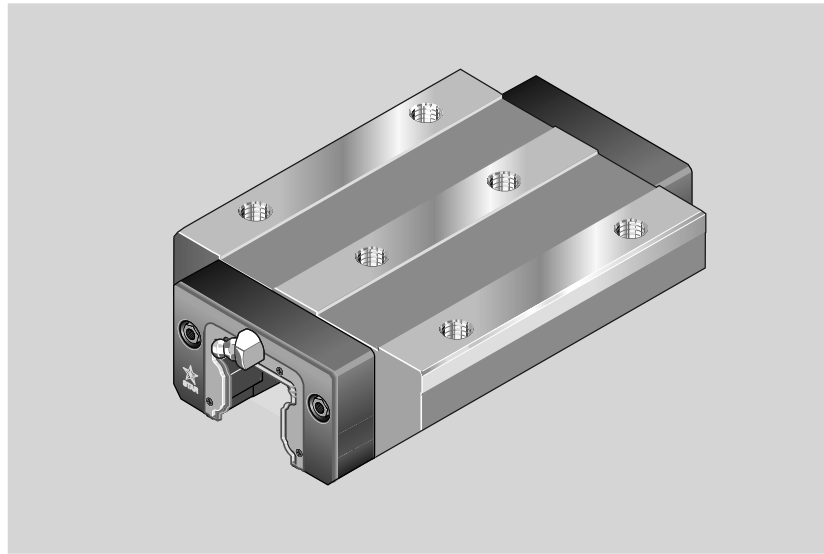
Runner blocks in accuracy class N (clearance and preload 0.02 C) are also available:

- with zinc-iron coating and yellow chromating (part numbers 16...4-30),
- with low friction seals (part numbers 16...4-11).

Size 15 to 35 in accuracy class H (clearance and preload 0.02 C) also available as low noise runner blocks with spacer balls.

Dynamic load capacities and moments are reduced by 35%.

(Part numbers 1653-..3-12)



### Part numbers

\* 30% higher dynamic load capacities on request

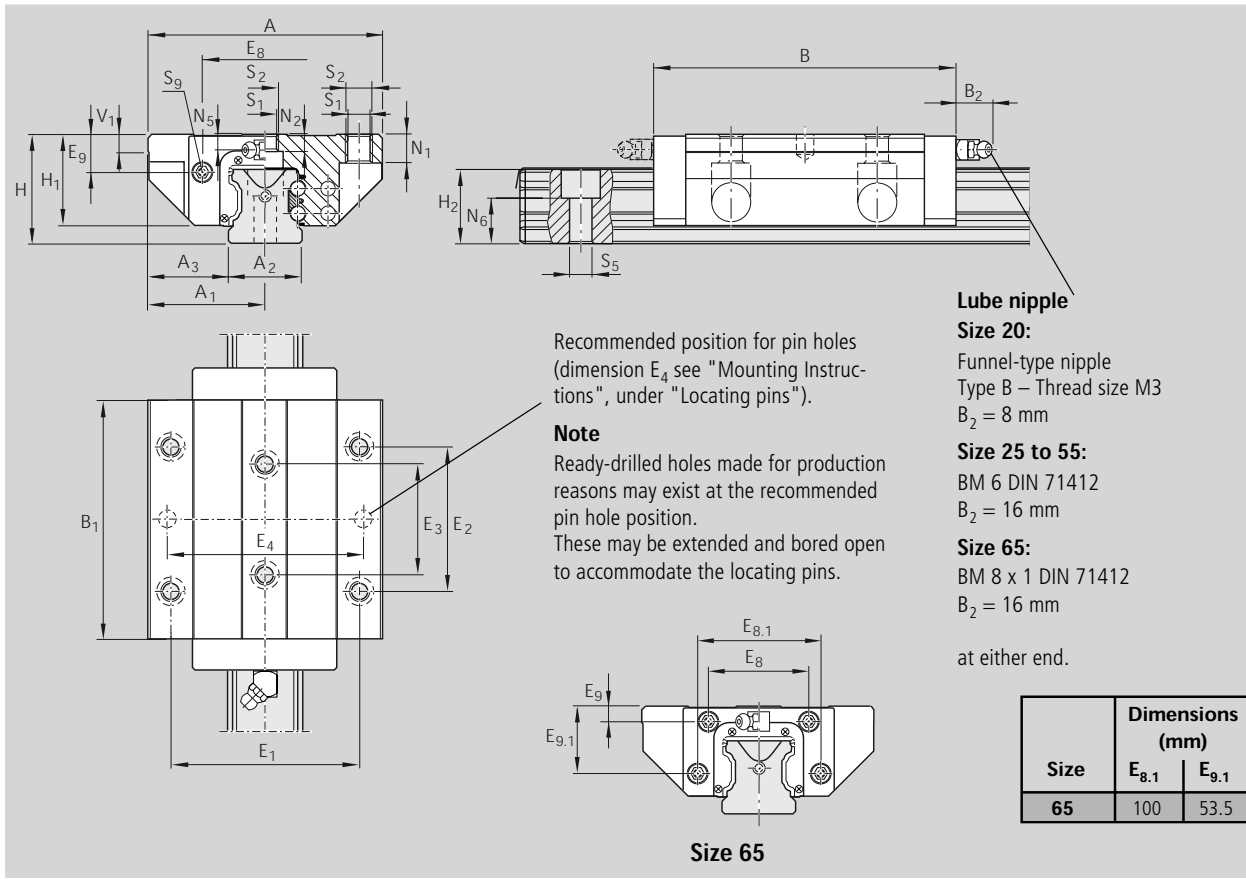
Size	Accuracy class	Part numbers for runner blocks for preload class			
		up to approx. 10 μm clearance	Preload 0.02 C	Preload 0.08 C	Preload 0.13 C
15	N	1653-194-10	1653-114-10		
20	UP		1653-819-10*	1653-829-10*	1653-839-10*
	SP		1653-811-10*	1653-821-10*	1653-831-10*
	P		1653-812-10	1653-822-10	1653-832-10
	H	1653-893-10	1653-813-10	1653-823-10	
	N	1653-894-10	1653-814-10	1653-824-10	
25	UP		1653-219-10*	1653-229-10*	1653-239-10*
	SP		1653-211-10*	1653-221-10*	1653-231-10*
	P		1653-212-10	1653-222-10	1653-232-10
	H	1653-293-10	1653-213-10	1653-223-10	
	N	1653-294-10	1653-214-10	1653-224-10	
30	UP		1653-719-10*	1653-729-10*	1653-739-10*
	SP		1653-711-10*	1653-721-10*	1653-731-10*
	P		1653-712-10	1653-722-10	1653-732-10
	H	1653-793-10	1653-713-10	1653-723-10	
	N	1653-794-10	1653-714-10	1653-724-10	
35	UP		1653-319-10*	1653-329-10*	1653-339-10*
	SP		1653-311-10*	1653-321-10*	1653-331-10*
	P		1653-312-10	1653-322-10	1653-332-10
	H	1653-393-10	1653-313-10	1653-323-10	
	N	1653-394-10	1653-314-10	1653-324-10	
45	UP		1653-419-10*	1653-429-10*	1653-439-10*
	SP		1653-411-10*	1653-421-10*	1653-431-10*
	P		1653-412-10	1653-422-10	1653-432-10
	H	1653-493-10	1653-413-10	1653-423-10	
	N	1653-494-10	1653-414-10	1653-424-10	
55	UP		1653-519-10*	1653-529-10*	1653-539-10*
	SP		1653-511-10*	1653-521-10*	1653-531-10*
	P		1653-512-10*	1653-522-10*	1653-532-10*
	H	1653-593-10*	1653-513-10*	1653-523-10*	
	N	1653-594-10*	1653-514-10*	1653-524-10*	
65	UP		1653-619-10*	1653-629-10*	1653-639-10*
	SP		1653-611-10*	1653-621-10*	1653-631-10*
	P		1653-612-10*	1653-622-10*	1653-632-10*
	H	1653-693-10*	1653-613-10*	1653-623-10*	
	N	1653-694-10*	1653-614-10*	1653-624-10*	

### Note on dynamic load capacities and moments (see table)

Determination of dynamic load capacities and moments is based on a travel life of 100,000 m.

For comparison with the 50,000 m travel sometimes applied for rail-type guideways, the figures for **C**, **M<sub>t</sub>** and **M<sub>l</sub>** in the table should be multiplied by 1.26.





Dimensions (mm)																		
Size	A	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	B	B <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub> <sup>1)</sup>	H <sub>2</sub> <sup>2)</sup>	V <sub>1</sub>	E <sub>1</sub>	E <sub>2</sub>	E <sub>3</sub>	E <sub>8</sub>	E <sub>9</sub>	N <sub>1</sub>	N <sub>2</sub>
15	47	23.5	15	16.0	68.5	53.6	24	19.8	16.3	16.20	5.0	38	30	26	24.55	6.7	5.0	4.4
20	63	31.5	20	21.5	86.0	65.6	30	25.0	20.7	20.55	6.0	53	40	35	32.4	7.3	7.5	5.2
25	70	35.0	23	23.5	103.0	79.5	36	29.5	24.4	24.25	7.5	57	45	40	38.3	11.5	9.0	7.0
30	90	45.0	28	31.0	116.0	89.4	42	35.0	28.5	28.35	7.0	72	52	44	48.4	14.6	11.0	8.0
35	100	50.0	34	33.0	133.0	105.5	48	40.0	32.15	31.85	8.0	82	62	52	58.0	17.5	12.0	10.2
45	120	60.0	45	37.5	170.0	133.5	60	50.0	40.15	39.85	10.0	100	80	60	70.0	21.0	15.0	12.4
55	140	70.0	53	43.5	200.0	155.5	70	57.0	48.15	47.85	12.0	116	95	70	80.0	22.3	18.0	13.5
65	170	85.0	63	53.5	243.0	194.6	90	76.0	60.15	59.85	15.0	142	110	82	76.0	11.0	23.0	14.0

<sup>1)</sup> Dimension  $H_2$  with Rail Seal® cover strip

<sup>2)</sup> Dimension  $H_2$  without Rail Seal® cover strip

Size	Dimensions (mm)							Mass (kg)	Load capacities (N)				Moments (Nm)			
	N <sub>5</sub>	N <sub>6</sub> <sup>±0.5</sup>	S <sub>1</sub>	S <sub>2</sub>	S <sub>5</sub>	S <sub>9</sub>	C dyn.		C <sub>0</sub> stat.	M <sub>t</sub> dyn.	M <sub>t0</sub> stat.	M <sub>L</sub> dyn.	M <sub>L0</sub> stat.			
15	4.0	10.3	4.4	M5	4.4	M2.5-3.5 deep	0.32	10 000	20 200	130	190	98	150			
20	4.7	13.2	5.4	M6	6	M3-5 deep	0.80	24 400	35 200	310	450	225	330			
25	5.5	15.2	6.8	M8	7	M3-5 deep	1.00	30 400	45 500	430	650	345	510			
30	6.0	17.0	8.6	M10	9	M3-5 deep	1.60	40 000	57 800	690	1 000	495	715			
35	7.0	20.5	8.6	M10	9	M3-5 deep	2.45	55 600	81 000	1 200	1 740	830	1 215			
45	8.0	23.5	10.5	M12	14	M4-7 deep	4.50	90 400	128 500	2 440	3 470	1 700	2 425			
55	9.0	29.0	12.5	M14	16	M5-8 deep	7.50	124 200	170 000	3 950	5 400	2 630	3 600			
65	16.0	38.5	14.5	M16	18	M4-7 deep	14.15	211 900	289 000	8 370	11 420	6 000	8 190			

30% higher dynamic load capacities and moments

