

Rexroth Ball Rail Systems

Standard Runner Blocks, Steel Version

Runner Block 1653-

Standard Width, long

Versions:

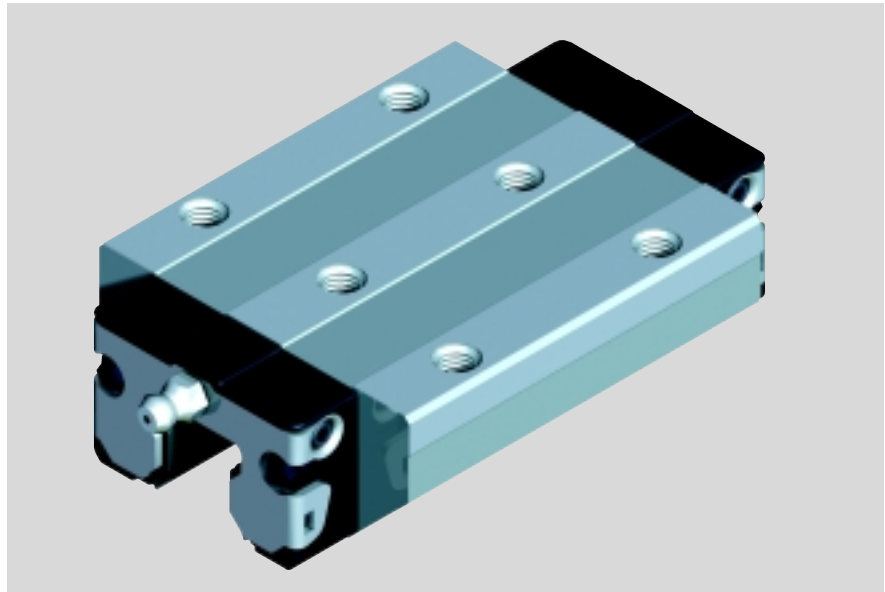
- Runner block without ball chain: for part numbers, see table
- Runner block with ball chain: part numbers 1653-...-22

Dynamic characteristics

Speed $v_{\max} = 5 \text{ m/s}$

Acceleration $a_{\max} = 500 \text{ m/s}^2$

Other technical data, see chapter "General Technical Data and Calculations".



Part numbers

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	1653-194-20	1653-114-20		
	UP		1653-819-20	1653-829-20	1653-839-20
20	SP		1653-811-20	1653-821-20	1653-831-20
	P		1653-812-20	1653-822-20	1653-832-20
	H	1653-893-20	1653-813-20	1653-823-20	
	N	1653-894-20	1653-814-20	1653-824-20	
	UP		1653-219-20	1653-229-20	1653-239-20
25	SP		1653-211-20	1653-221-20	1653-231-20
	P		1653-212-20	1653-222-20	1653-232-20
	H	1653-293-20	1653-213-20	1653-223-20	
	N	1653-294-20	1653-214-20	1653-224-20	
	UP		1653-719-20	1653-729-20	1653-739-20
30	SP		1653-711-20	1653-721-20	1653-731-20
	P		1653-712-20	1653-722-20	1653-732-20
	H	1653-793-20	1653-713-20	1653-723-20	
	N	1653-794-20	1653-714-20	1653-724-20	
	UP		1653-319-20	1653-329-20	1653-339-20
35	SP		1653-311-20	1653-321-20	1653-331-20
	P		1653-312-20	1653-322-20	1653-332-20
	H	1653-393-20	1653-313-20	1653-323-20	
	N	1653-394-20	1653-314-20	1653-324-20	
	UP		1653-419-20	1653-429-20	1653-439-20
45*	SP		1653-411-20	1653-421-20	1653-431-20
	P		1653-412-20	1653-422-20	1653-432-20
	H	1653-493-20	1653-413-20	1653-423-20	
	N	1653-494-20	1653-414-20	1653-424-20	

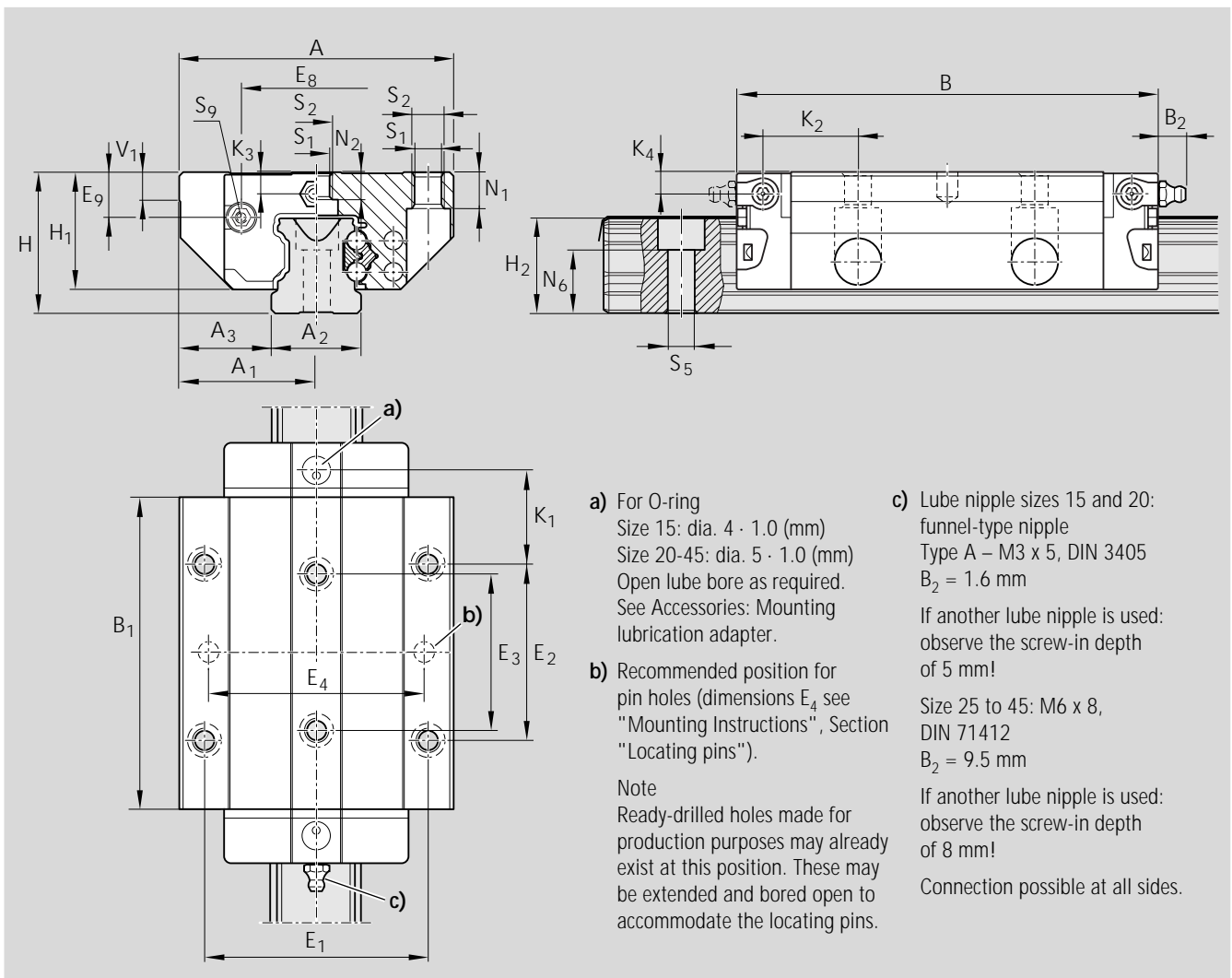
Note on dynamic load capacities and moments (see table)

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

However, frequently this is determined on the basis of only 50 000 m.

In this case for comparison: multiply values **C**, **M_t** and **M_l** by 1.26 in accordance with Rexroth table.

* Under preparation



Dimensions (mm)																				
Size	A	A ₁	A ₂	A ₃	B	B ₁	H	H ₁	H ₂ ¹⁾	H ₂ ²⁾	V ₁	E ₁	E ₂	E ₃	E ₈	E ₉	K ₁	K ₂	K ₃	K ₄
15	47	23.5	15	16.0	72.6	53.6	24	19.90	16.30	16.20	5.0	38	30	26	24.55	6.70	15.20	16.80	3.20	3.20
20	63	31.5	20	21.5	91.0	65.6	30	25.35	20.75	20.55	6.0	53	40	35	32.50	7.30	19.80	19.80	3.35	3.35
25	70	35.0	23	23.5	107.9	79.5	36	29.90	24.45	24.25	7.5	57	45	40	38.30	11.50	23.30	24.45	5.50	5.50
30	90	45.0	28	31.0	119.7	89.4	42	35.35	28.55	28.35	7.0	72	52	44	48.40	14.60	25.00	26.70	6.05	6.05
35	100	50.0	34	33.0	139.0	105.5	48	40.40	32.15	31.85	8.0	82	62	52	58.00	17.35	28.75	30.25	6.90	6.90
45	120	60	45	37.5	174.1	133.5	60	50.30	40.15	39.85	10.0	100	80	60	69.8	20.9	35.5	37.5	8.20	8.20

¹⁾ Dimension H_2 with rail seal cover strip

²⁾ Dimension H_2 without rail seal cover strip

Dimensions (mm)										Load capacities (N) ³⁾		Moments (Nm)			
Size	N ₁	N ₂	N ₆ ^{±0.5}	S ₁	S ₂	S ₅	S ₉	Mass (kg)	C dyn.	C ₀ stat.	M _t dyn.	M _{t0} stat.	M _L dyn.	M _{L0} stat.	
15	5.2	4.4	10.3	4.3	M5	4.4	M2.5-3.5 deep	0.30	10 000	20 200	130	190	98	150	
20	7.7	5.2	13.2	5.3	M6	6.0	M3-5 deep	0.55	24 400	35 200	310	450	225	330	
25	9.3	7.0	15.2	6.7	M8	7.0	M3-5 deep	0.90	30 400	45 500	430	650	345	510	
30	11.0	7.9	17.0	8.5	M10	9.0	M3-5 deep	1.50	40 000	57 800	690	1 000	495	715	
35	12.0	10.2	20.5	8.5	M10	9.0	M3-5 deep	2.25	55 600	81 000	1 200	1 740	830	1215	
45	15.0	12.4	23.5	10.4	M12	14.0	M4-7 deep	4.30	90 400	128 500	2 440	3 470	1700	2425	

³⁾ Load capacities for version without ball chain. Load capacities for version without ball chain, see Product Overview with Load Capacities.

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Runner Block 1653-

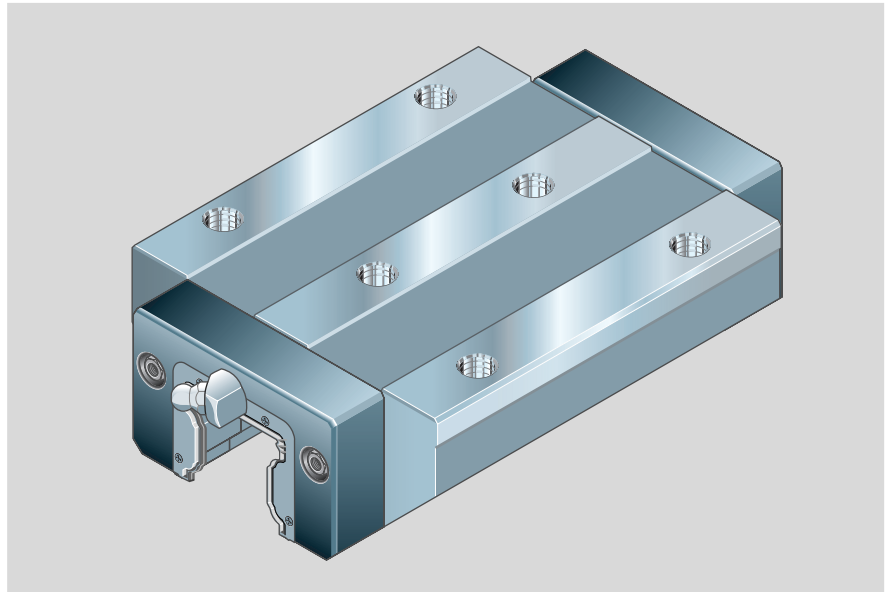
Standard Width, long

Dynamic characteristics

Speed $v_{\max} = 3 \text{ m/s}$

Acceleration $a_{\max} = 250 \text{ m/s}^2$

Other technical data, see chapter "General Technical Data and Calculations".



Part numbers

Size	Accuracy class	up to approx. 10 μm clearance	Part numbers for runner blocks for preload class		
			Preload 0.02 C	Preload 0.08 C	Preload 0.13 C
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	

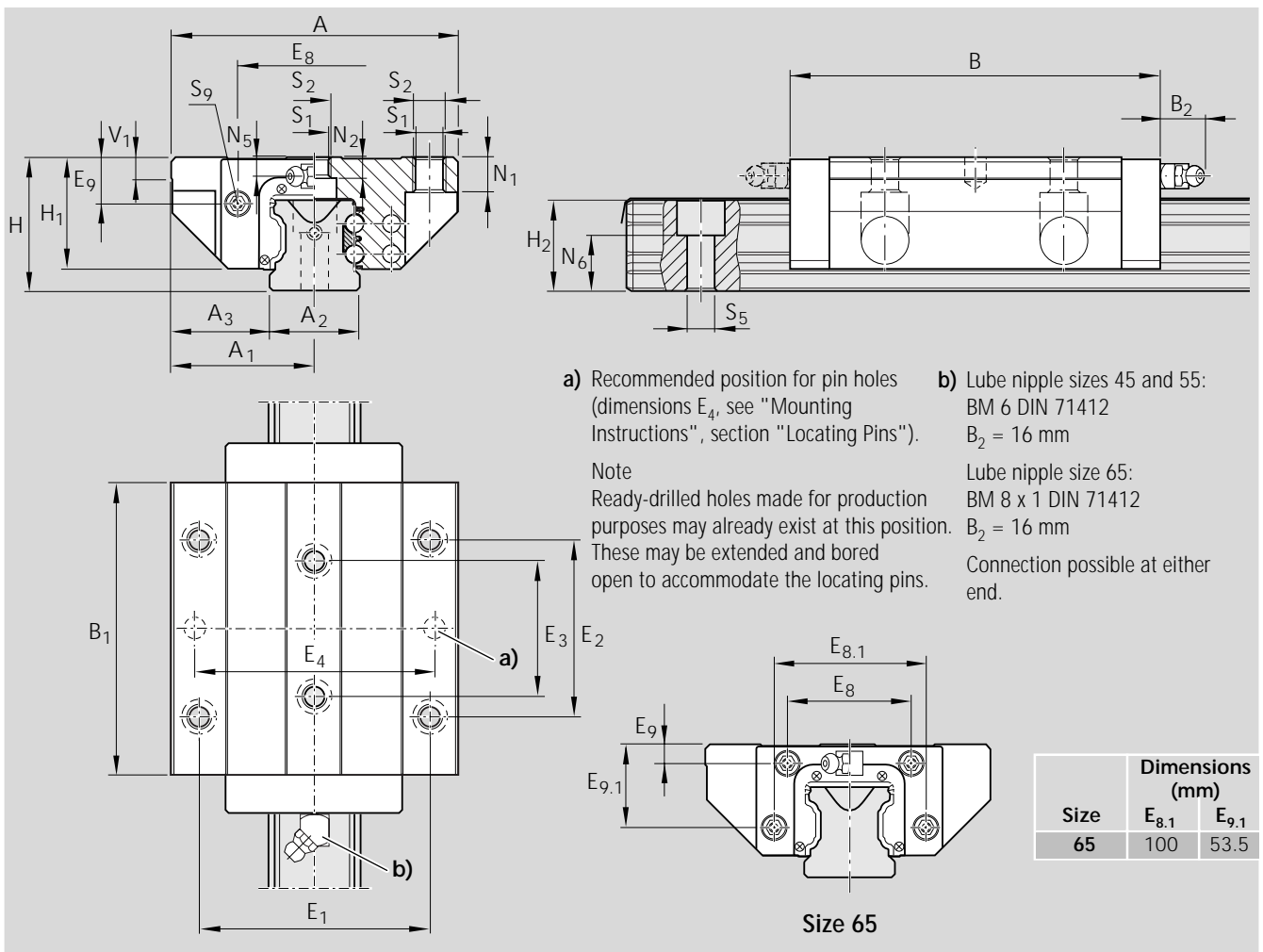
* Phased-out model

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.

However, frequently this is determined on the basis of only 50 000 m.

In this case for comparison:
multiply values **C**, **M_L** and **M_L** by 1.26
in accordance with Rexroth table.



Size	Dimensions (mm)																	
	A	A_1	A_2	A_3	B	B_1	H	H_1	$H_2^{1)}$	$H_2^{2)}$	V_1	E_1	E_2	E_3	E_8	E_9	N_1	N_2
45	120	60.0	45	37.5	170.0	133.5	60	50.0	40.15	39.85	10.0	100	80	60	69.8	20.9	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

¹⁾ Dimension H_2 with rail seal cover strip

²⁾ Dimension H_2 without rail seal cover strip

Size	Dimensions (mm)							Mass (kg)	Load capacities (N)		Moments (Nm)			
	N_5	$N_6^{\pm 0.5}$	S_1	S_2	S_5	S_9	C dyn.		C_0 stat.	M_t dyn.	M_{t0} stat.	M_L dyn.	M_{L0} stat.	
45	8.0	23.5	10.5	M12	14	M4-7 deep	4.20	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	163 000	289 000	6 440	11 420	4 620	8 190	