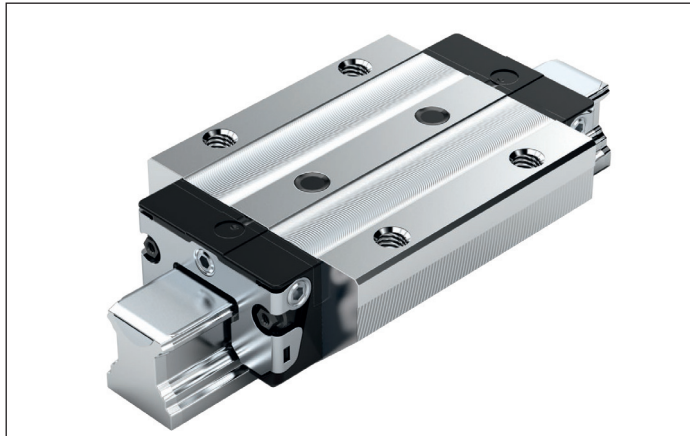


FLS – Flange, long, standard height R1653 ... 2.



Dynamic characteristics

Travel speed: $v_{\max} = 5 \text{ m/s}$

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

(If $F_{\text{comb}} > 2.8 \cdot F_{\text{pr}}$: $a_{\max} = 50 \text{ m/s}^2$)

Note on lubrication

► Pre-lubricated

Note

For all SNS/SNO ball guide rails.

Options and part numbers

Size	Ball runner block with size	Preload class				Accuracy class						Seal with ball runner blocks					
		C0	C1	C2	C3	N	H	P	XP	SP	UP	without ball chain			with ball chain		
												SS	LS ¹⁾	DS	SS	LS ¹⁾	DS
15	R1653 1	9				4	3	–	–	–	–	20	21	–	22	23	–
			1			4	3	2	8	1	9	20	21	–	22	23	–
				2		–	3	2	8	1	9	20	21	–	22	23	–
					3	–	–	–	8	1	9	20	21	–	22	23	–
20	R1653 8	9				4	3	–	–	–	–	20	21	–	22	23	–
			1			4	3	2	8	1	9	20	21	2Z	22	23	2Y
				2		–	3	2	8	1	9	20	21	2Z	22	23	2Y
					3	–	–	–	8	1	9	20	21	2Z	22	23	2Y
25	R1653 2	9				4	3	–	–	–	–	20	21	–	22	23	–
			1			4	3	2	8	1	9	20	21	2Z	22	23	2Y
				2		–	3	2	8	1	9	20	21	2Z	22	23	2Y
					3	–	–	–	8	1	9	20	21	2Z	22	23	2Y
30	R1653 7	9				4	3	–	–	–	–	20	21	–	22	23	–
			1			4	3	2	8	1	9	20	21	2Z	22	23	2Y
				2		–	3	2	8	1	9	20	21	2Z	22	23	2Y
					3	–	–	–	8	1	9	20	21	2Z	22	23	2Y
35	R1653 3	9				4	3	–	–	–	–	20	21	–	22	23	–
			1			4	3	2	8	1	9	20	21	2Z	22	23	2Y
				2		–	3	2	8	1	9	20	21	2Z	22	23	2Y
					3	–	–	–	8	1	9	20	21	2Z	22	23	2Y
45	R1653 4	9				4	3	–	–	–	–	20	–	–	22	–	–
			1			4	3	2	8	1	9	20	–	2Z	22	–	2Y
				2		–	3	2	8	1	9	20	–	2Z	22	–	2Y
					3	–	–	–	8	1	9	20	–	2Z	22	–	2Y
e.g.	R1653 7		1				3								20		

1) With accuracy classes N and H and XP in preload class C1 only.

Order example

Options:

- FLS ball runner block
- Size 30
- Preload class C1
- Accuracy class H
- With standard seal, without ball chain

Part number:

R1653 713 20

Preload classes

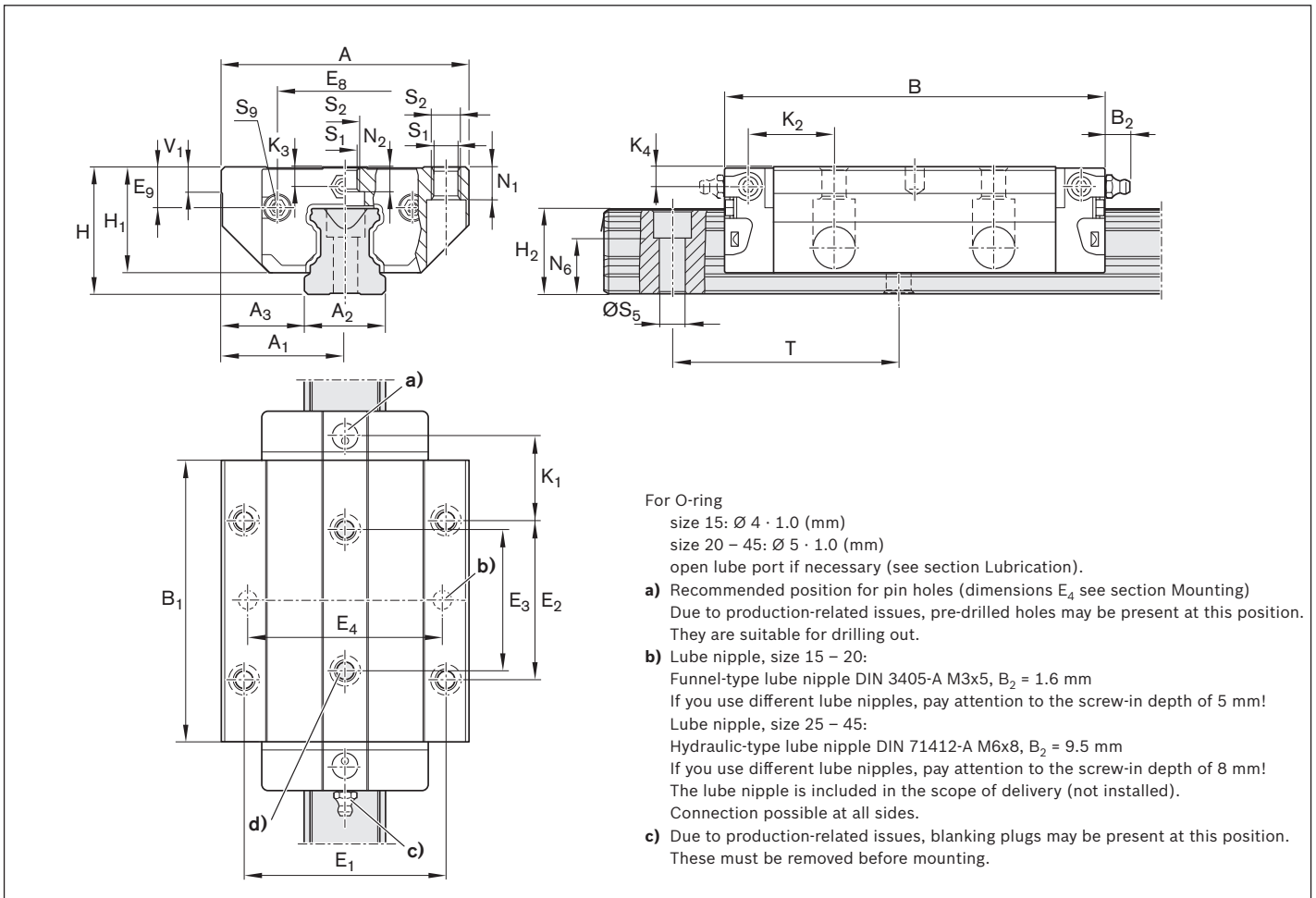
C0 = Without preload (clearance)
 C1 = Moderate preload
 C2 = Average preload
 C3 = High preload

Seals

SS = standard seal
 LS = low-friction seal
 DS = double-lipped seal

Key

Gray digits
 = No preferred variant/combination
 (Some delivery times may be longer)



Size	Dimensions (mm)																			
	A	A ₁	A ₂	A ₃	B ^{+0.5}	B ₁	E ₁	E ₂	E ₃	E ₈	E ₉	H	H ₁	H ₂ ¹⁾	H ₂ ²⁾	K ₁	K ₂	K ₃	K ₄	
15	47	23.5	15	16.0	72.6	53.6	38	30	26	24.55	6.70	24	19.90	16.30	16.20	15.20	16.80	3.20	3.20	
20	63	31.5	20	21.5	91.0	65.6	53	40	35	32.50	7.30	30	25.35	20.75	20.55	19.80	19.80	3.35	3.35	
25	70	35.0	23	23.5	107.9	79.5	57	45	40	38.30	11.50	36	29.90	24.45	24.25	23.30	24.45	5.50	5.50	
30	90	45.0	28	31.0	119.7	89.4	72	52	44	48.40	14.60	42	35.35	28.55	28.35	25.00	26.70	6.05	6.05	
35	100	50.0	34	33.0	139.0	105.5	82	62	52	58.00	17.35	48	40.40	32.15	31.85	28.75	30.25	6.90	6.90	
45	120	60.0	45	37.5	174.1	133.5	100	80	60	69.80	20.90	60	50.30	40.15	39.85	35.50	37.50	8.20	8.20	

Size	Dimensions (mm)										Weight (kg)	Load capacities ³⁾ (N)		Load moments ³⁾ (Nm)			
	N ₁	N ₂	N ₆ ^{±0.5}	S ₁	S ₂	S ₅	S ₉	T	V ₁	m		C	C ₀	M _t	M _{t0}	M _L	M _{L0}
15	5.2	4.40	10.3	4.3	M5	4.5	M2.5x3.5	60	5.0	0.30	12 800	18 400	120	180	120	180	
20	7.7	5.20	13.2	5.3	M6	6.0	M3x5	60	6.0	0.55	29 600	41 800	380	540	340	490	
25	9.3	7.00	15.2	6.7	M8	7.0	M3x5	60	7.5	0.90	37 300	52 500	530	750	530	740	
30	11.0	7.90	17.0	8.5	M10	9.0	M3x5	80	7.0	1.50	46 000	66 900	800	1 160	740	1 080	
35	12.0	10.15	20.5	8.5	M10	9.0	M3x5	80	8.0	2.25	66 700	116 000	1 440	2 500	1 290	2 240	
45	15.0	12.40	23.5	10.4	M12	14.0	M4x7	105	10.0	4.30	111 000	190 000	3 010	5 120	2 730	4 660	

1) Dimension H₂ with cover strip
 2) Dimension H₂ without cover strip
 3) Load capacities and load moments for ball runner blocks **without** ball chain. Load capacities and load moments for ball runner blocks **with** ball chain 12
 Determination of the dynamic load capacities and load moments is based on a 100,000 m travel life according to DIN ISO14728-1. Often only 50,000 m are actually stipulated. For comparison: Multiply values **C**, **M_t** and **M_L** by 1.26 according to the table.