

Sintered Bushing Roller Chain (UR/ URN)

Roller Chains for Power Transmission

Ultimate Life Chain Series



Maintenance free chains using sintered alloy bushings

Sintered bushing roller chain is maintenance-free chain suitable to a place where lubrication is difficult. It uses bushings made of a sintered alloy which impregnates lubricating oil.

For the use that requires clean appearance, rustless type (URN) is available.

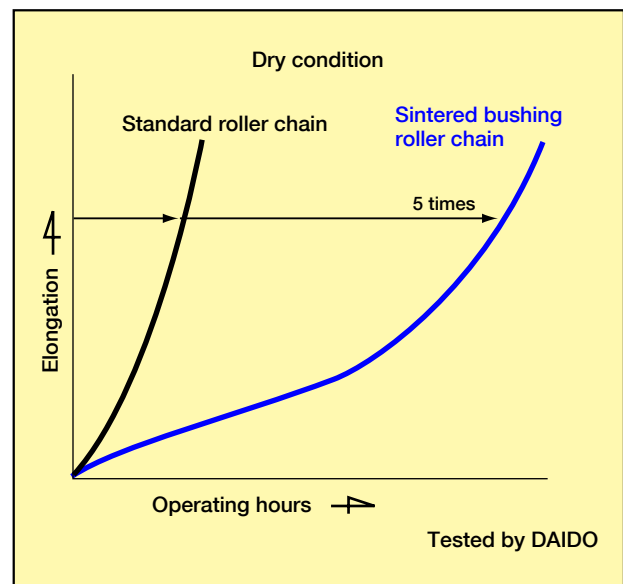
Recommended uses

- Circumstances where lubrication is difficult or elongation of chain frequently occurs.

Remarks for use

- Don't use this chain in dusty environments. In such environments, use O-ring chains.
- This chain is for the use under light or medium load. Use O-ring chain when a large impact is applied to a chain.
- Set the chain feeding speed at 150m/min. or lower.

Wear resistance performance





Selection of chains

As for sintered bushing roller chains, the inner plates are thicker and the pins are longer than those of standard roller chains in order to compensate for the strength lowered by the use of sintered bushings.

For selecting a suitable chain, refer to "Selection of Chains" (P122~125). Use the tables of maximum kilowatt ratings for sintered bushing roller chains that cover low speed ranges (P76~79).

For sintered bushing roller chains, "Low-speed selection" cannot be used since the "Maximum allowable load" in the dimension table considers only the chain tensile tension and neglects the bushing strength.

Connecting links and offset links

For sintered bushing roller chain, RJ type connecting links are used for DID60 or smaller, and CJ type connecting links for DID80 or larger.

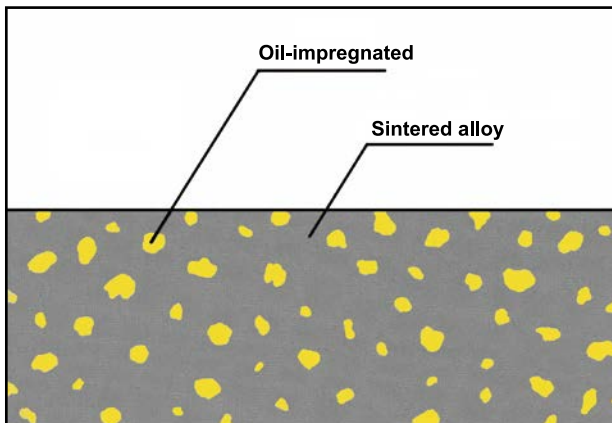
OJ can be used as offset links. Please place an order the connecting links and offset links specifying the type for sintered bushing roller chain.

In the tables of maximum kilowatt ratings, the strength of the connecting links and offset links are taken into account.

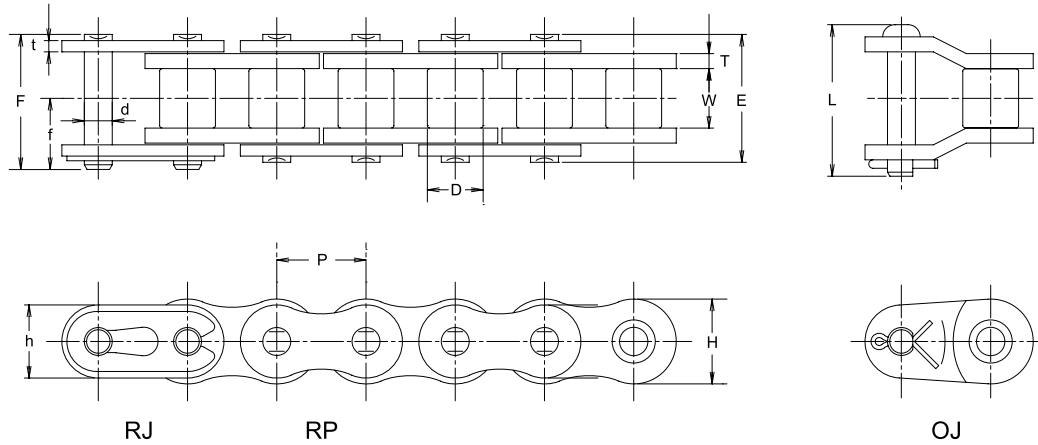
Sprockets

Standard sprockets can be used for sintered bushing roller chains.

Sectional view of sintered alloy



DID 40UR, 40URN



Dimensions

Chain No.	Pitch P	Roller link width W	Roller dia. D	Pin					Plate				Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
				d	E	F	f	L	T	t	H	h	kN	kgf	kN	kgf	
DID 40UR, URN	12.70	7.95	7.92	3.97	17.7	19.0	10.2	21.2	2.0	1.5	12.0	10.4	17.8	1,810	3.72	380	0.69

Note: The values of average tensile strength and maximum allowable load are for chains.

Max. Kilowatt Ratings DID 40UR, 40URN

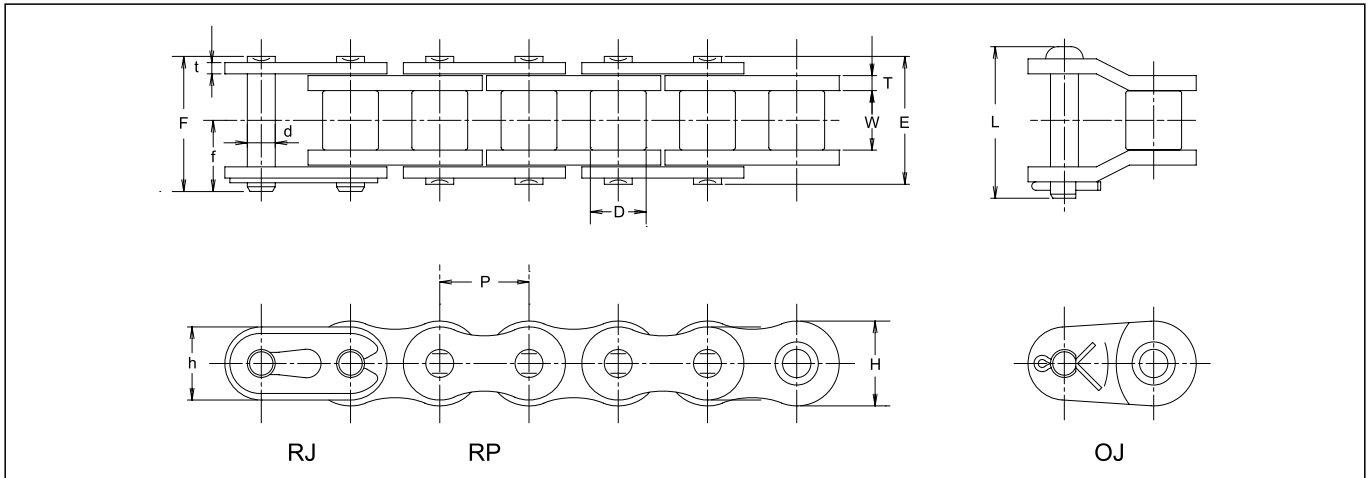
N. T	Small sprocket rpm (r/min)																			
	10	20	30	50	70	90	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1300
9	0.04	0.07	0.10	0.16	0.22	0.27	0.30	0.43	0.56	0.81	1.05	1.28	1.51	1.74	1.96	2.18	2.40	2.27	1.99	1.76
10	0.04	0.08	0.11	0.18	0.25	0.31	0.34	0.49	0.63	0.91	1.18	1.44	1.70	1.95	2.20	2.44	2.69	2.65		
11	0.05	0.09	0.13	0.20	0.27	0.34	0.37	0.54	0.70	1.01	1.30	1.60	1.88	2.16	2.44	2.71	2.98			
12	0.05	0.10	0.14	0.22	0.30	0.37	0.41	0.59	0.77	1.11	1.43	1.75	2.06	2.37	2.67	2.97				
13	0.06	0.11	0.15	0.24	0.33	0.41	0.45	0.65	0.84	1.21	1.56	1.91	2.25	2.59	2.92	3.24				
14	0.06	0.11	0.16	0.26	0.35	0.44	0.49	0.70	0.91	1.31	1.69	2.07	2.44	2.80	3.16					
15	0.07	0.12	0.18	0.28	0.38	0.48	0.52	0.75	0.98	1.41	1.82	2.23	2.63	3.02						
16	0.07	0.13	0.19	0.30	0.41	0.51	0.56	0.81	1.05	1.51	1.96	2.39	2.82	3.24						
17	0.08	0.14	0.20	0.32	0.44	0.55	0.60	0.86	1.12	1.61	2.09	2.55	3.01							
18	0.08	0.15	0.22	0.34	0.46	0.58	0.64	0.92	1.19	1.71	2.22	2.72	3.20							
19	0.09	0.16	0.23	0.36	0.49	0.62	0.68	0.97	1.26	1.82	2.35	2.88	3.39							
20	0.09	0.17	0.24	0.38	0.52	0.65	0.71	1.03	1.33	1.92	2.49	3.04								
21	0.09	0.18	0.25	0.40	0.55	0.69	0.75	1.09	1.41	2.03	2.62	3.21								
22	0.10	0.19	0.27	0.42	0.57	0.72	0.79	1.14	1.48	2.13	2.76	3.37								
23	0.10	0.20	0.28	0.45	0.60	0.76	0.83	1.20	1.55	2.23	2.89	3.54								
24	0.11	0.20	0.29	0.47	0.63	0.79	0.87	1.25	1.62	2.34	3.03									
25	0.11	0.21	0.31	0.49	0.66	0.83	0.91	1.31	1.70	2.44	3.17									
28	0.13	0.24	0.35	0.55	0.75	0.93	1.03	1.48	1.92	2.76	3.58									
30	0.14	0.26	0.37	0.59	0.80	1.01	1.11	1.60	2.07	2.98										
32	0.15	0.28	0.40	0.64	0.86	1.08	1.19	1.71	2.22	3.19										
35	0.16	0.31	0.44	0.70	0.95	1.19	1.31	1.88	2.44	3.52										
40	0.19	0.35	0.51	0.81	1.10	1.37	1.51	2.18	2.82											

Note: The drive performance (kilowatt ratings) of sintered bushing chains is obtained on the basis of approx. 1,000 hour endurance time.

DID 50UR, 50URN

Roller Chains for Power Transmission

Ultimate Life Chain Series



Dimensions

Chain No.	Pitch P	Roller link width W	Roller dia. D	Pin					Plate				Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
				d	E	F	f	L	T	t	H	h	kN	kgf	kN	kgf	
DID 50UR, URN	15.875	9.53	10.16	5.09	21.2	22.8	12.3	25.0	2.4	2.0	15.0	13.0	29.9	3,040	6.86	700	1.09

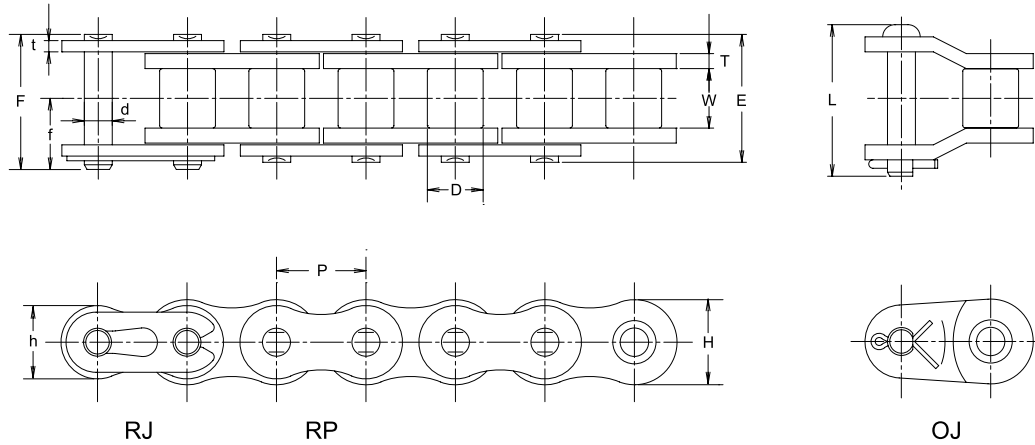
Note: The values of average tensile strength and maximum allowable load are for chains.

DID 50UR, 50URN (kW Ratings)

N. T	Small sprocket rpm (r/min)																			
	10	20	30	50	70	90	100	150	200	250	300	350	400	450	500	600	700	800	900	1000
9	0.09	0.17	0.24	0.39	0.53	0.66	0.72	1.04	1.35	1.65	1.95	2.23	2.52	2.80	3.08	3.63	4.17	4.37	3.66	3.12
10	0.10	0.19	0.27	0.43	0.59	0.74	0.81	1.17	1.51	1.85	2.18	2.50	2.82	3.14	3.45	4.07	4.67	5.11	4.29	
11	0.11	0.21	0.30	0.48	0.65	0.82	0.90	1.29	1.68	2.05	2.42	2.78	3.13	3.48	3.83	4.51	5.18	5.84		
12	0.12	0.23	0.33	0.53	0.72	0.90	0.99	1.42	1.84	2.25	2.65	3.05	3.44	3.82	4.20	4.95	5.69			
13	0.14	0.25	0.36	0.58	0.78	0.98	1.08	1.55	2.01	2.46	2.89	3.32	3.75	4.17	4.58	5.40	6.20			
14	0.15	0.27	0.39	0.63	0.85	1.06	1.17	1.68	2.18	2.66	3.14	3.60	4.06	4.52	4.96	5.85				
15	0.16	0.30	0.43	0.67	0.91	1.14	1.26	1.81	2.34	2.87	3.38	3.88	4.38	4.87	5.35	6.30				
16	0.17	0.32	0.46	0.72	0.98	1.23	1.35	1.94	2.51	3.07	3.62	4.16	4.69	5.22	5.74					
17	0.18	0.34	0.49	0.77	1.04	1.31	1.44	2.07	2.68	3.28	3.87	4.44	5.01	5.57	6.12					
18	0.19	0.36	0.52	0.82	1.11	1.39	1.53	2.20	2.86	3.49	4.11	4.72	5.33	5.92	6.51					
19	0.20	0.38	0.55	0.87	1.18	1.48	1.62	2.34	3.03	3.70	4.36	5.01	5.65	6.28						
20	0.22	0.40	0.58	0.92	1.24	1.56	1.71	2.47	3.20	3.91	4.61	5.29	5.97	6.64						
21	0.23	0.42	0.61	0.97	1.31	1.64	1.81	2.60	3.37	4.12	4.86	5.58	6.29							
22	0.24	0.45	0.64	1.02	1.38	1.73	1.90	2.74	3.55	4.34	5.11	5.87	6.62							
23	0.25	0.47	0.67	1.07	1.45	1.81	1.99	2.87	3.72	4.55	5.36	6.16	6.94							
24	0.26	0.49	0.71	1.12	1.51	1.90	2.09	3.01	3.90	4.76	5.61	6.45								
25	0.27	0.51	0.74	1.17	1.58	1.98	2.18	3.14	4.07	4.98	5.86	6.74								
28	0.31	0.58	0.83	1.32	1.79	2.24	2.47	3.55	4.60	5.62	6.63									
30	0.33	0.62	0.90	1.42	1.93	2.42	2.66	3.83	4.96	6.06	7.14									
32	0.36	0.67	0.96	1.53	2.07	2.59	2.85	4.10	5.32	6.50										
35	0.40	0.74	1.06	1.68	2.28	2.85	3.14	4.52	5.86	7.16										
40	0.46	0.85	1.23	1.94	2.63	3.30	3.62	5.22	6.76											

Note: The drive performance (kilowatt ratings) of sintered bushing chains is obtained on the basis of approx. 1,000 hour endurance time.

DID 60UR, 60URN



Dimensions

Chain No.	Pitch P	Roller link width W	Roller dia. D	Pin					Plate				Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
				d	E	F	f	L	T	t	H	h	kN	kgf	kN	kgf	
DID 60UR, URN	19.05	12.70	11.91	5.96	27.2	28.9	15.8	33.1	3.2	2.4	18.1	15.6	42.1	4,270	9.31	950	1.71

Note: The values of average tensile strength and maximum allowable load are for chains.

DID 60UR, 60URN (kW Ratings)

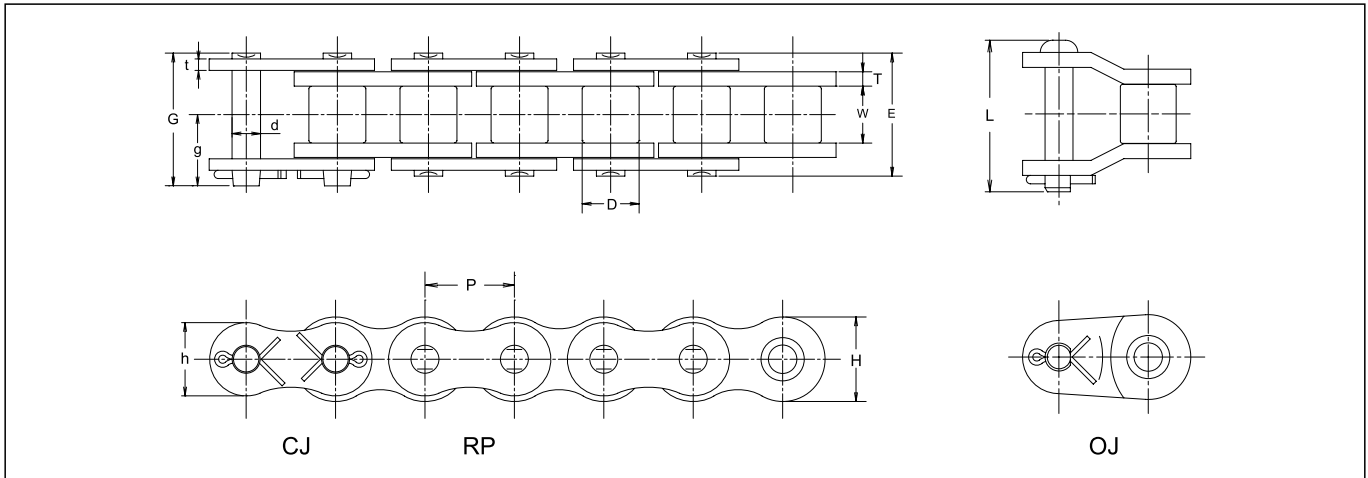
N. T	Small sprocket rpm (r/min)																			
	10	20	30	50	70	90	100	150	200	250	300	350	400	450	500	550	600	650	700	800
9	0.14	0.27	0.38	0.61	0.82	1.03	1.13	1.63	2.11	2.58	3.04	3.49	3.94	4.38	4.81	5.24	5.67	6.10	6.17	5.05
10	0.16	0.30	0.43	0.68	0.92	1.15	1.27	1.83	2.36	2.89	3.41	3.91	4.41	4.91	5.39	5.88	6.36	6.83	7.23	
11	0.18	0.33	0.48	0.75	1.02	1.28	1.40	2.02	2.62	3.20	3.78	4.34	4.89	5.44	5.98	6.51	7.04	7.57	8.09	
12	0.19	0.36	0.52	0.83	1.12	1.40	1.54	2.22	2.88	3.52	4.15	4.76	5.37	5.97	6.57	7.16	7.74	8.32		
13	0.21	0.40	0.57	0.90	1.22	1.53	1.68	2.42	3.14	3.84	4.52	5.19	5.86	6.51	7.16	7.80	8.44			
14	0.23	0.43	0.62	0.98	1.32	1.66	1.82	2.62	3.40	4.16	4.90	5.63	6.35	7.06	7.76	8.45				
15	0.25	0.46	0.66	1.05	1.42	1.79	1.96	2.83	3.66	4.48	5.28	6.06	6.84	7.60	8.36					
16	0.27	0.49	0.71	1.13	1.53	1.91	2.11	3.03	3.93	4.80	5.66	6.50	7.33	8.15						
17	0.28	0.53	0.76	1.20	1.63	2.04	2.25	3.24	4.19	5.13	6.04	6.94	7.83	8.70						
18	0.30	0.56	0.81	1.28	1.73	2.17	2.39	3.44	4.46	5.45	6.43	7.38	8.32							
19	0.32	0.60	0.86	1.36	1.84	2.31	2.53	3.65	4.73	5.78	6.81	7.83	8.83							
20	0.34	0.63	0.91	1.44	1.94	2.44	2.68	3.86	5.00	6.11	7.20	8.27								
21	0.36	0.66	0.96	1.51	2.05	2.57	2.82	4.07	5.27	6.44	7.59	8.72								
22	0.37	0.70	1.00	1.59	2.15	2.70	2.97	4.28	5.54	6.77	7.98	9.17								
23	0.39	0.73	1.05	1.67	2.26	2.83	3.12	4.49	5.81	7.11	8.37									
24	0.41	0.77	1.10	1.75	2.37	2.97	3.26	4.70	6.09	7.44	8.77									
25	0.43	0.80	1.15	1.83	2.47	3.10	3.41	4.91	6.36	7.78	9.16									
28	0.48	0.91	1.30	2.06	2.79	3.50	3.85	5.55	7.19	8.79										
30	0.52	0.98	1.40	2.22	3.01	3.77	4.15	5.98	7.75	9.47										
32	0.56	1.05	1.51	2.38	3.23	4.05	4.45	6.41	8.30											
35	0.62	1.15	1.66	2.63	3.56	4.46	4.90	7.06	9.15											
40	0.71	1.33	1.92	3.03	4.11	5.15	5.66	8.16												

Note: The drive performance (kilowatt ratings) of sintered bushing chains is obtained on the basis of approx. 1,000 hour endurance time.

DID 80UR, 80URN

Roller Chains for Power Transmission

Ultimate Life Chain Series



Dimensions

Chain No.	Pitch P	Roller link width W	Roller dia. D	Pin					Plate				Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
				d	E	G	g	L	T	t	H	h	kN	kgf	kN	kgf	
DID 80UR, URN	25.40	15.88	15.88	7.94	34.2	37.1	20.0	39.7	4.0	3.2	24.0	20.8	77	7,820	14.7	1,490	2.80

Note: The values of average tensile strength and maximum allowable load are for chains.

DID 80UR, 80URN (kW Ratings)

N. T	Small sprocket rpm (r/min)																					
	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	400	450	500	550	600
9	0.35	0.64	0.93	1.20	1.47	1.73	1.99	2.24	2.49	2.74	3.23	3.71	4.19	4.65	5.12	6.25	7.37	9.55	10.62	11.67	11.16	9.79
10	0.39	0.72	1.04	1.35	1.65	1.94	2.23	2.51	2.79	3.07	3.62	4.16	4.69	5.21	5.73	7.01	8.26	10.70	11.89	13.08	13.07	
11	0.43	0.80	1.15	1.49	1.82	2.15	2.47	2.79	3.10	3.41	4.01	4.61	5.20	5.78	6.35	7.77	9.15	11.86	13.18	14.50		
12	0.47	0.88	1.27	1.64	2.00	2.36	2.71	3.06	3.40	3.74	4.41	5.06	5.71	6.35	6.98	8.53	10.05	13.03	14.48			
13	0.51	0.96	1.38	1.79	2.19	2.58	2.96	3.34	3.71	4.08	4.81	5.52	6.23	6.92	7.61	9.30	10.96	14.20	15.79			
14	0.56	1.04	1.50	1.94	2.37	2.79	3.21	3.61	4.02	4.42	5.21	5.98	6.74	7.50	8.25	10.08	11.88	15.39				
15	0.60	1.12	1.61	2.09	2.55	3.01	3.45	3.89	4.33	4.76	5.61	6.44	7.27	8.08	8.88	10.86	12.80					
16	0.64	1.20	1.73	2.24	2.74	3.22	3.70	4.18	4.64	5.10	6.01	6.91	7.79	8.66	9.52	11.64	13.72					
17	0.69	1.28	1.84	2.39	2.92	3.44	3.95	4.46	4.96	5.45	6.42	7.38	8.32	9.25	10.17	12.43	14.65					
18	0.73	1.36	1.96	2.54	3.11	3.66	4.20	4.74	5.27	5.80	6.83	7.85	8.85	9.84	10.82	13.22	15.58					
19	0.77	1.44	2.08	2.69	3.29	3.88	4.46	5.03	5.59	6.14	7.24	8.32	9.38	10.43	11.47	14.02	16.52					
20	0.82	1.53	2.20	2.85	3.48	4.10	4.71	5.31	5.91	6.49	7.65	8.79	9.91	11.02	12.12	14.82						
21	0.86	1.61	2.32	3.00	3.67	4.32	4.97	5.60	6.23	6.85	8.07	9.27	10.45	11.62	12.78	15.62						
22	0.91	1.69	2.44	3.16	3.86	4.55	5.22	5.89	6.55	7.20	8.48	9.75	10.99	12.22	13.43	16.42						
23	0.95	1.77	2.56	3.31	4.05	4.77	5.48	6.18	6.87	7.55	8.90	10.22	11.53	12.82	14.09	17.23						
24	1.00	1.86	2.68	3.47	4.24	4.99	5.74	6.47	7.19	7.91	9.32	10.71	12.07	13.42	14.76							
25	1.04	1.94	2.80	3.62	4.43	5.22	6.00	6.76	7.52	8.26	9.74	11.19	12.62	14.03	15.42							
28	1.18	2.19	3.16	4.09	5.01	5.90	6.78	7.64	8.50	9.34	11.01	12.64	14.26	15.85	17.43							
30	1.27	2.36	3.41	4.41	5.39	6.35	7.30	8.23	9.15	10.06	11.86	13.62	15.36	17.08								
32	1.36	2.53	3.65	4.73	5.78	6.81	7.83	8.83	9.81	10.79	12.71	14.61	16.47	18.31								
35	1.50	2.79	4.02	5.21	6.37	7.51	8.62	9.72	10.81	11.89	14.01	16.09	18.14									
40	1.73	3.23	4.65	6.02	7.36	8.67	9.96	11.23	12.49	13.73	16.18	18.59										

Note: The drive performance (kilowatt ratings) of sintered bushing chains is obtained on the basis of approx. 1,000 hour endurance time.