

European type roller chains

DIN
8187

Rollenketten; europäische Bauart

Supersedes August 1972 edition.

In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.

See Explanatory notes for connection with International Standard ISO 606 : 1994 published by the International Organization for Standardization (ISO).

Dimensions in mm

1 Scope and field of application

This standard specifies dimensions and technical delivery conditions for European type roller chains which, together with their associated chain wheels, are predominantly used as power transmission elements between two or more shafts.

2 Dimensions and designation

For illustrations, designations and dimension tables, see pages 2 to 5.

3 Material

Plates shall be made of heat treatable steel or case hardening steel, the grade being at the manufacturer's discretion.

4 Design and finish

Roller chains shall be supplied greased or lubricated (at the manufacturer's discretion), other types of finish being the subject of agreement.

Attachment plates shall be cranked or straight, at the manufacturer's discretion.

Bushes and/or rollers shall be wound or seamless, at the manufacturer's discretion.

When a measuring force equal to 1 % of the minimum breaking force is applied to an unlubricated chain, designated by a chain number up to and including 12 B, of at least 610 mm in length and to a chain, designated by a chain number from 16 B to 72 B, of at least 1220 mm in length, the actual length of the chain shall not deviate from the nominal length by more than + 0,15 %.

5 Testing

For length measurement, the chain shall be supported along its entire length.

For testing the breaking force, chains with a length equal to at least $5 \times p$ shall be attached by pins through the outer plates or bushes so as to permit universal movement and prevent any bending stress. The results of tests in which failure occurs near the shackles shall be disregarded. The proof force shall amount to 1/3 of the minimum breaking force.

6 Technical delivery conditions

Chains that are ordered in metres shall always terminate with an inner link at either end and may be supplied without connecting links.

Chains that are ordered on the basis of a given number of links may be supplied either with or without a connecting link. If a roller chain without connecting link is to be supplied on the basis of a given number of links, it shall be stated whether the chain is to terminate with an inner or an outer link.

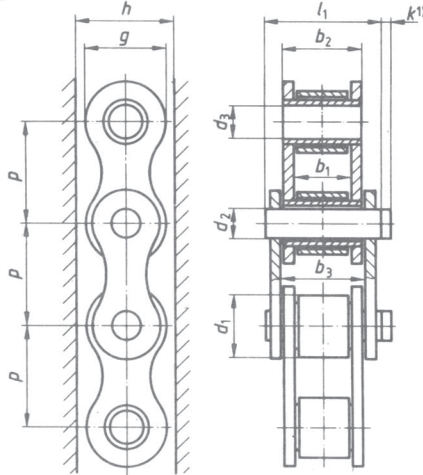
Where a chain is to be supplied ready for assembly with a connecting link, the type of link desired shall be stated in the order. This link is included in the total number of links ordered.

Where type C, D or L cranked links are used (not recommended), the ratio of test force to minimum breaking force may be reduced by 20 %.

Continued on pages 2 to 6.

2.1 Simple roller chains

Simple roller chains are not expected to conform to the designs illustrated here; compliance is only required in the case of the dimensions specified.



Designation of a simple roller chain with chain number 10 B – 1:
Roller chain DIN 8187 – 10 B – 1

If a 10 m simple roller chain with chain number 10 B – 1 is to be ordered, the order designation shall read:
10 m roller chain DIN 8187 – 10 B – 1

If five roller chains with 79 links each, terminating at both ends with inner links (B) and with no connecting link, are to be ordered, the order designation shall read:

5 roller chains DIN 8187 – 10 B – 1 × 79 B

If five roller chains with 100 links each, including a connecting link with spring fastener (E), are to be ordered, the order designation shall read:

5 roller chains DIN 8187 – 10 B – 1 × 100 E

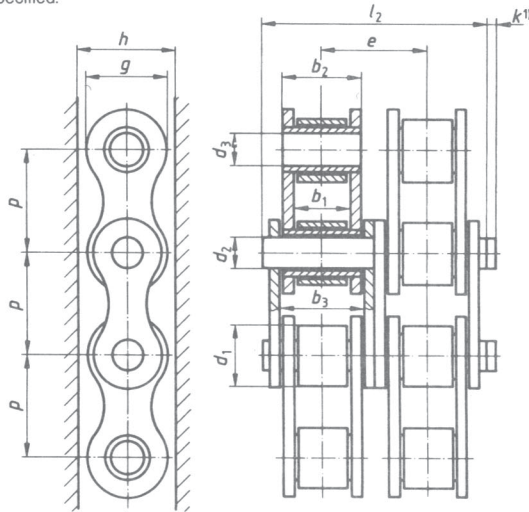
Table 1

Chain number	p	b ₁		b ₂		b ₃		d ₁		d ₂		d ₃		g	h		k ¹⁾	l ₁	Minimum breaking force, in N	Measuring force, in N	Bearing area, in cm ²	Approx. mass, in kg/m
		min.	max.	min.	max.	min.	max.	h9	H11	max.	min.	max.	max.									
03	5	2,5	4,15	4,25	3,2	1,49	1,52	4,1	4,3	2,5	7,4	2 200	22	0,06	0,08							
04	6	2,8	4,1	4,2	4	1,85	1,88	5	5,2	2,9	7,4	3 000	30	0,08	0,12							
05 B – 1	8	3	4,77	4,9	5	2,31	2,36	7,1	7,4	3,1	8,6	5 000	50	0,11	0,18							
06 B – 1	9,525	5,72	8,53	8,66	6,35	3,28	3,33	8,2	8,6	3,3	13,5	9 000	90	0,28	0,41							
081	12,7	3,3	5,8	5,93	7,75	3,66	3,71	9,9	10,2	1,5	10,2	8 200	82	0,21	0,28							
082	12,7	2,38	4,6	4,73	7,75	3,66	3,71	9,9	10,2	–	8,2	10 000	100	0,17	0,26							
083	12,7	4,88	7,9	8,03	7,75	4,09	4,14	10,3	10,6	1,5	12,9	12 000	120	0,32	0,42							
084	12,7	4,88	8,8	8,93	7,75	4,09	4,14	11,1	11,5	1,5	14,8	16 000	160	0,36	0,59							
085	12,7	6,38	9,07	9,2	7,77	3,58	3,63	9,9	10,2	2	14	6 800	68	0,32	0,38							
08 B – 1	12,7	7,75	11,3	11,43	8,51	4,45	4,5	11,8	12,1	3,9	17	18 000	180	0,5	0,70							
10 B – 1	15,875	9,65	13,28	13,41	10,16	5,08	5,13	14,7	15	4,1	19,6	22 400	224	0,67	0,95							
12 B – 1	19,05	11,68	15,62	15,75	12,07	5,72	5,77	16,1	16,4	4,6	22,7	29 000	290	0,89	1,25							
16 B – 1	25,4	17,02	25,4	25,6	15,88	8,28	8,34	21	21,4	5,4	36,1	60 000	600	2,1	2,7							
20 B – 1	31,75	19,56	29	29,2	19,05	10,19	10,26	26,4	26,7	6,1	43,2	95 000	950	2,96	3,6							
24 B – 1	38,1	25,4	37,9	38,2	25,4	14,63	14,71	33,4	33,8	6,6	53,4	160 000	1 600	5,54	6,7							
28 B – 1	44,45	30,99	46,5	46,8	27,94	15,9	15,98	37,0	37,5	7,4	65,1	200 000	2 000	7,39	8,3							
32 B – 1	50,8	30,99	45,5	45,8	29,21	17,81	17,9	42,2	42,8	7,9	67,4	250 000	2 500	8,1	10,5							
40 B – 1	63,5	38,1	55,7	56	39,37	22,89	23	52,9	53,5	10	82,6	355 000	3 550	12,75	16							
48 B – 1	76,2	45,72	70,5	71	48,26	29,24	29,35	63,8	64,6	10	99,1	560 000	5 600	20,61	25							
56 B – 1	88,9	53,34	81,3	82	53,98	34,32	34,43	77,8	78,7	11	114	850 000	8 500	27,9	35							
64 B – 1	101,6	60,96	92	92,7	63,5	39,4	39,6	90,1	91,1	13	130	1 120 000	11 200	36,25	60							
72 B – 1	114,3	68,58	103,8	104,5	72,39	44,5	44,7	103,6	104,7	14	147	1 400 000	14 000	46,19	80							

¹⁾ Pin projecting length for connecting link.

2.2 Duplex roller chains

Duplex roller chains are not expected to conform to the designs illustrated here; compliance is only required in the case of the dimensions specified.



Designation of a duplex roller chain with chain number 10 B – 2:

Roller chain DIN 8187 – 10 B – 2

If a 10 m duplex roller chain with chain number 10 B – 2 is to be ordered, the order designation shall read:

10 m roller chain DIN 8187 – 10 B – 2

If five roller chains with 79 links each, terminating at both ends with inner links (B) and with no connecting link, are to be ordered, the order designation shall read:

5 roller chains DIN 8187 – 10 B – 2 × 79 B

If five roller chains with 100 links each, including a connecting link with spring fastener (E), are to be ordered, the order designation shall read:

5 roller chains DIN 8187 – 10 B – 2 × 100 E

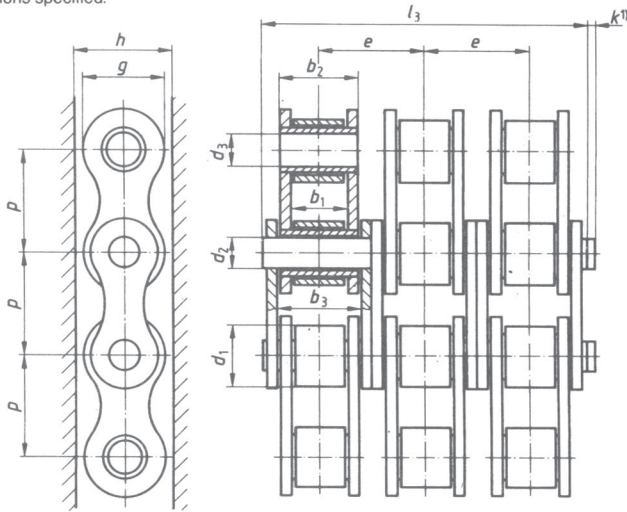
Table 2

Chain number	p	b ₁	b ₂	b ₃	d ₁	d ₂	d ₃	e	g	h	k ¹⁾	l ₂	Minimum breaking force, in N	Measuring force, in N	Bearing area, in cm ²	Approx. mass, in kg/m
		min.	max.	min.	max.	h10	H11		max.	min.	max.					
05 B – 2	8	3	4,77	4,9	5	2,31	2,36	5,64	7,1	7,4	3,1	14,3	7 500	75	0,22	0,36
06 B – 2	9,525	5,72	8,53	8,66	6,35	3,28	3,33	10,24	8,2	8,6	3,3	23,8	16 000	160	0,56	0,78
08 B – 2	12,7	7,75	11,3	11,43	8,51	4,45	4,5	13,92	11,8	12,1	3,9	31	32 000	320	1,01	1,35
10 B – 2	15,875	9,65	13,28	13,41	10,16	5,08	5,13	16,59	14,7	15	4,1	36,2	40 000	400	1,34	1,35
12 B – 2	19,05	11,68	15,62	15,75	12,07	5,72	5,77	19,46	16,1	16,4	4,6	42,2	53 000	530	1,79	2,5
16 B – 2	25,4	17,02	25,4	25,6	15,88	8,28	8,34	31,88	21	21,4	5,4	68	106 000	1 060	4,21	5,4
20 B – 2	31,75	19,56	29	29,2	19,05	10,19	10,26	36,45	26,4	26,7	6,1	79	170 000	1 700	5,91	7,2
24 B – 2	38,1	25,4	37,9	38,2	25,4	14,63	14,71	48,36	33,4	33,8	6,6	101	280 000	2 800	11,09	13,5
28 B – 2	44,45	30,99	46,5	46,8	27,94	15,9	15,98	59,56	37	37,7	7,4	124	360 000	3 600	14,79	16,6
32 B – 2	50,8	30,99	45,5	45,8	29,21	17,81	17,9	58,55	42,2	42,8	7,9	126	450 000	4 500	16,21	21
40 B – 2	63,5	38,1	55,7	56	39,37	22,89	23	72,29	52,9	53,5	10	154	630 000	6 300	25,5	32
48 B – 2	76,2	45,72	70,5	71	48,26	29,24	29,35	91,21	63,8	64,6	10	190	1 000 000	10 000	41,23	50
56 B – 2	88,9	53,34	81,3	82	53,98	34,32	34,43	106,6	77,8	78,7	11	221	1 600 000	16 000	55,8	70
64 B – 2	101,6	60,96	92	92,7	63,5	39,4	39,6	119,89	90,1	91,1	13	250	2 000 000	20 000	72,5	120
72 B – 2	114,3	68,58	103,8	104,5	72,39	44,5	44,7	136,27	103,6	104,7	14	283	2 500 000	25 000	92,4	160

¹⁾ Pin projecting length for connecting link.

2.3 Triplex roller chains

Triplex roller chains are not expected to conform to the designs illustrated here; compliance is only required in the case of the dimensions specified.



Designation of a triplex roller chain with chain number 10 B – 3:

Roller chain DIN 8187 – 10 B – 3

If a 10 m triplex roller chain with chain number 10 B – 3 is to be ordered, the order designation shall read:

10 m roller chain DIN 8187 – 10 B – 3

If five roller chains, with 79 links each, terminating at both ends with inner links (B) and with no connecting link, are to be ordered, the order designation shall read:

5 roller chains DIN 8187 – 10 B – 3 × 79 B

If five roller chains with 100 links each, including a connecting link with spring fastener (E), are to be ordered, the order designation shall read:

5 roller chains DIN 8187 – 10 B – 3 × 100 E

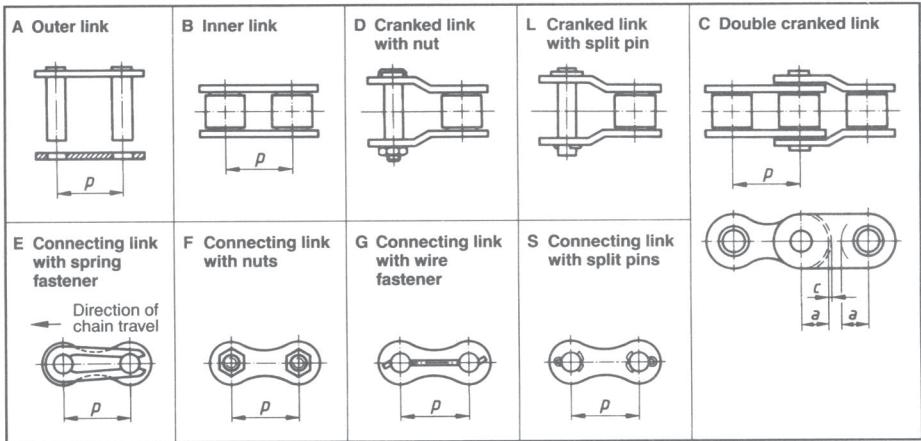
Table 3

Chain number	p	b_1	b_2	b_3	d_1	d_2	d_3	e	g	h	k^1	l_3	Minimum breaking force, in N	Measuring force, in N	Bearing area, in cm^2	Approx. mass, in kg/m
		min.	max.	min.	max.	h10	H11			min.	max.					
05 B – 3	8	3	4,77	4,9	5	2,31	2,36	5,64	7,1	7,4	3,1	19,9	13 200	132	0,33	0,54
06 B – 3	9,525	5,72	8,53	8,66	6,35	3,28	3,33	10,24	8,2	8,6	3,3	34	23 600	236	0,84	1,18
08 B – 3	12,7	7,75	11,3	11,43	8,51	4,45	4,5	13,92	11,8	12,1	3,9	44,9	47 500	475	1,51	2,0
10 B – 3	15,875	9,65	13,28	13,41	10,16	5,08	5,13	16,59	14,7	15	4,1	52,8	60 000	600	2,02	2,8
12 B – 3	19,05	11,68	15,62	15,75	12,07	5,72	5,77	19,46	16,1	16,4	4,6	61,7	80 000	800	2,68	3,8
16 B – 3	25,4	17,02	25,4	25,6	15,88	8,28	8,34	31,88	21	21,4	5,4	99,9	160 000	1 600	6,31	8
20 B – 3	31,75	19,56	29	29,2	19,05	10,19	10,26	36,45	26,4	26,7	6,1	116	250 000	2 500	8,87	11
24 B – 3	38,1	25,4	37,9	38,2	25,4	14,63	14,71	48,36	33,4	33,8	6,6	150	425 000	4 250	16,63	21
28 B – 3	44,45	30,99	46,5	46,8	27,94	15,9	15,98	59,56	37	37,5	7,4	184	530 000	5 300	22,18	25
32 B – 3	50,8	30,99	45,5	45,8	29,21	17,81	17,9	58,55	42,2	42,8	7,9	184	670 000	6 700	24,31	32
40 B – 3	63,5	38,1	55,7	56	39,37	22,89	23	72,29	52,9	53,5	10	227	950 000	9 500	38,25	48
48 B – 3	76,2	45,72	70,5	71	48,26	29,24	29,35	91,21	63,8	64,6	10	281	1 500 000	15 000	61,84	75
56 B – 3	88,9	53,34	81,3	82	53,98	34,32	34,43	106,6	77,8	78,7	11	330	2 240 000	22 400	83,71	105
64 B – 3	101,6	60,96	92	92,7	63,5	39,4	39,6	119,89	90,1	91,1	13	370	3 000 000	30 000	108,74	180
72 B – 3	114,3	68,58	103,8	104,5	72,39	44,5	44,7	136,27	103,6	104,7	14	420	3 750 000	31 500	138,57	240

¹⁾ Pin projecting length for connecting link.

2.4 Connecting links

The connecting links shall always be fitted as a complete unit.
Other dimensions as in tables 1 to 3.



Designation of an outer link (A) for a roller chain with chain number 10 B, in the form of a simple roller chain (1):
Link DIN 8187 – A – 10 B – 1

Table 4

Chain number	p	a min.	c min.
03	5	—	—
04	6	—	—
05 B	8	3,7	0,1
06 B	9,525	4,3	0,1
081	12,7	5,3	0,1
082	12,7	5,3	0,1
083	12,7	5,3	0,1
084	12,7	5,7	0,1
085	12,7	5,2	0,1
08 B	12,7	6,1	0,1
10 B	15,875	7,6	0,1

Chain number	p	a min.	c min.
12 B	19,05	8,3	0,1
16 B	25,4	11,1	0,2
20 B	31,75	13,9	0,2
24 B	38,1	17,5	0,2
28 B	44,45	19,5	0,2
32 B	50,8	22,2	0,2
40 B	63,5	27,7	0,2
48 B	76,2	33,4	0,2
56 B	88,9	40,6	0,2
64 B	101,6	46,8	0,3
72 B	114,3	53,3	0,3

Standard referred to

ISO 606 : 1994 Short-pitch transmission precision roller chains and chain wheels

Other relevant standards

DIN 8181 Extended-pitch roller chains
DIN 8188 American type roller chains
DIN 8195 Design and selection of chain drives
DIN 8196-1 Tothing of chain wheels for use with DIN 8187 and DIN 8188 roller chains; profile dimensions

Previous editions

DIN KrW 501: 07.22; DIN FAFA 17: 06.30; DIN Kr 3231 Part 1: 12.35; DIN 8180 Part 1: 04.44, 07.48; DIN 8180: 08.56, 02.61; DIN 8187: 08.56, 12.69, 08.72.

Amendments

The following amendments have been made to the August 1972 edition.

- a) The clearance between pin and bush has been altered in some cases.
- b) The breaking force has been increased in some cases.
- c) The measuring force has been specified as being equal to 1 % of the breaking force.
- d) The standard has been editorially revised.

Explanatory notes

Most dimensions of roller chains as specified in this standard conform to International Standard ISO 606, except for chain sizes 03 and 04, which are not included in the ISO Standard.

Chain numbers which include the letter B designate types that conform to British Standards.

International Patent Classification

F 16 G 13-06