

JIS

JAPANESE INDUSTRIAL STANDARD

Double-Pitch Conveyor Roller Chains, Attachments and Chain Wheels

JIS B 1803—1983

Translated and Published

by

Japanese Standards Association

Printed in Japan

Translation without guarantee
In the event of any doubt arising, the original
standard in Japanese is to be evidence

JAPANESE INDUSTRIAL STANDARD

J I S

Double-Pitch Conveyor Roller Chains,
Attachments and Chain Wheels

B 1803-1983

1. Scope

This Japanese Industrial Standard specifies the double-pitch roller chains used for general conveyance, hereinafter referred to as the "double-pitch chains".

Attachments are specified in Appendix 1 and the chain wheels in Appendix 2.

- Remarks 1. The double-pitch conveyor roller chains, hereinafter referred to as the "double-pitch chains", mean such roller chains that are used for conveyance, having the roller pitch of twice the nominal pitch of the single-row transmission roller chains conforming to JIS B 1801 or else is and the inner plate and the outer plate of which have the same elliptic shape.
2. In this standard, the units and numerical values of force are in accordance with the International System of Units (SI) and those shown in { } are in accordance with the conventional gravitational system of units and are appended for reference only.

2. Classification

2.1 Series The double-pitch chains are classified into the following four series by the roller diameter and plate thickness used.

- (1) Small-Roller Series Those having rollers of the same diameter as that of the rollers of the basic chain (¹).

Note (¹) The transmission roller chain on which the double-pitch chains are based.

- (2) Large-Roller Series Those having rollers with a diameter same as or near to that of the rollers of the transmission roller chain having the same pitch as that of the double-pitch chain.
- (3) Regular Series Those having plates of the same thickness as that of the plates of the basic chain.
- (4) Heavy Series Those having plates of the same thickness as that of the plates of the transmission roller chains of the nominal number next above the basic chain.

2.2 Nominal Number The nominal numbers of the double-pitch chains are divided according to the series of their respective basic chains into series A ⁽²⁾ and series B ⁽³⁾, and further subdivided into the 36 classes as given in Table 1 (series A, 24 classes) and Table 2 (series B, 12 classes).

Notes ⁽²⁾ The basic chains of series A double-pitch chains conform to JIS B 1801.

The roller chains conforming to JIS B 1801 coincide with ANSI B 29.1 (Precision Power Transmission Roller Chains, Attachments and Sprockets) and their nominal numbers coincide with the chain numbers in ANSI B 29.4 (Double-Pitch Conveyor Roller Chains, Attachments and Sprockets).

- ⁽³⁾ The basic chains of series B double-pitch chains are based on ISO 606 (Short pitch transmission precision roller chains and chain wheels), and their nominal numbers coincide with those of series B chains for conveyor in ISO 1275 (Extended pitch precision roller chains and chain wheels for transmission and conveyors).

Table 1. Nominal Numbers of Series A Double-Pitch Chains

Nominal number	Remark
C 2040 C 2042	The nominal number for the small-roller series of series A double-pitch chain is expressed by the symbol "C" representing "for conveyor use" followed by a number that is the sum of 2000 for double pitch, and the nominal number of its basic chain.
C 2050 C 2052	
C 2060 C 2062 C 2060 H C 2062 H	The nominal number for the large-roller series chain is shown by substituting "2" for the last numeral "0" of the nominal number for the corresponding small-roller series chain.
C 2080 C 2082 C 2080 H C 2082 H	
C 2100 C 2102 C 2100 H C 2102 H	The nominal number for the heavy series chain is shown by adding a suffix "H" to the nominal number for the corresponding regular series chain.
C 2120 C 2122 C 2120 H C 2122 H	
C 2160 C 2162 C 2160 H C 2162 H	

Example 1: The nominal number C 2060 shows a regular series double-pitch chain of the small-roller series having a pitch of 38.10 mm that is twice the 19.05 mm pitch of the basic chain bearing a nominal number of 60 in accordance with JIS B 1801.

Example 2: The nominal number C 2062 shows a large-roller series chain of the double-pitch chain shown in Example 1.

Example 3: The nominal number C 2060 H shows a heavy series chain of the double-pitch chain shown in Example 1.

Example 4: The nominal number C 2062 H shows a heavy series chain of the double-pitch chain shown in Example 2.

Table 2. Nominal Numbers of Series B Double-Pitch Chains

Nominal number	Remark
C 208 BS C 208 BL	The nominal number for the series B double-pitch chain is expressed by placing a number 200 representing double-pitch chain added with the nominal number of its basic chain after the symbol "C" for "conveyor use", and adding "B" for "series B". A small-roller series chain is shown by adding a suffix "S", and a large-roller series one by adding a suffix "L".
C 210 BS C 210 BL	
C 212 BS C 212 BL	
C 216 BS C 216 BL	
C 220 BS C 220 BL	
C 224 BS C 224 BL	

Example 1: The nominal number C 212 BS shows a small-roller series double-pitch chain having a pitch of 38.10 mm that is twice the 19.05 mm pitch of the basic chain bearing the nominal number of 12 B in accordance with ISO 606.

Example 2: The nominal number C 212 BL shows a large-roller series chain of the double-pitch chain shown in Example 1.

2.3 Fastening Methods The double-pitch chains are divided into the two types by the types of outer link, as the riveted type in which the link is fastened by riveting the both ends of the bearing pin and the split pin type in which one end of the bearing pin is fastened by means of a split pin or by any other method.

3. Performance

3.1 Appearance On appearance the double-pitch chains shall not show any defective flaw, rust, fin or any other defects detrimental to practical use.

3.2 Length When measured by the method of 6.2.3, the tolerances on the length of a double-pitch chain shall not exceed the value given in Table 3 for the value of the standard value for the nominal pitch multiplied by the number of links of the chain under test.

Table 3. Tolerances on Length

Unit: %

Condition of double-pitch chain	Tolerances on length
Without attachments	+0.15 0
With attachments	+0.3 0

The mutual differences when two or more double-pitch chains are used in parallel shall be as agreed upon, as necessary, between the parties concerned.

3.3 Breaking Load When measured by the method of 6.2.4, the breaking load of the double-pitch chains shall satisfy the value in Table 4 or Table 5.

Table 4. Breaking Load of Series A Double-Pitch Chain

Unit: kN {kgf}

Nominal number	Breaking load (min.)
C 2040 C 2042	13.8 { 1407 }
C 2050 C 2052	21.8 { 2223 }
C 2060 C 2062	31.1 { 3171 }
C 2060 H C 2062 H	31.1 { 3171 }
C 2080 C 2082	55.6 { 5670 }
C 2080 H C 2082 H	55.6 { 5670 }
C 2100 C 2102	86.7 { 8841 }
C 2100 H C 2102 H	86.7 { 8841 }
C 2120 C 2122	124.6 {12706 }
C 2120 H C 2122 H	124.6 {12706 }
C 2160 C 2162	222.4 {22678 }
C 2160 H C 2162 H	222.4 {22678 }

Table 5. Breaking Load of Series B Double-Pitch Chain
Unit: kN {kgf}

Nominal number	Breaking load (min.)
C 208 B	17.8 {1815}
C 210 B	22.2 {2264}
C 212 B	28.9 {2947}
C 216 B	42.3 {4313}
C 220 B	64.5 {6577}
C 224 B	97.9 {9983}

3.4 Running Function The running function of the double-pitch chains shall be such that when moved incorporated with chain wheels the relative motion of assembled links is smooth.

4. Construction

The double-pitch chains shall be constructed by connecting outer links and inner links alternately as shown in Fig. 1, where ordinary or cranked-plate connecting links are used for the joint. The name of each part shall, as a general rule, comply with Figs. 1 and 2.

Fig. 1

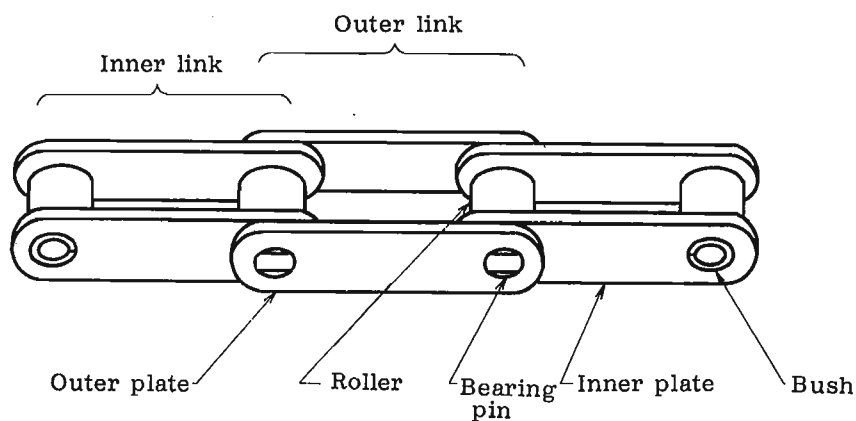
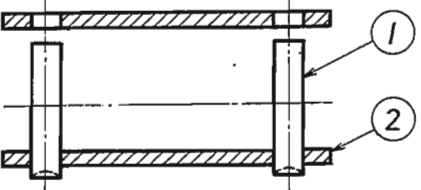
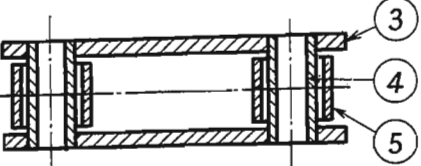
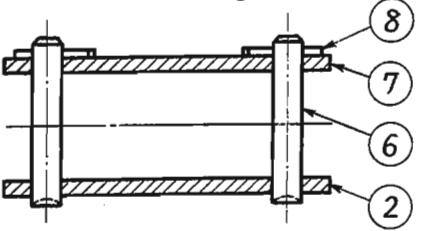
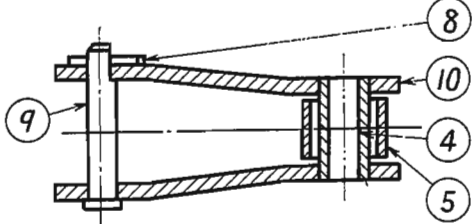


Fig. 2

Link name and illustration	Part number	Part name	Remark
Outer link 	①	Bearing pin	The outer link is formed by pressing two pins into two outer plates. In one type the both ends of each pin is riveted and in the other each pin is fastened at one end by means of a split pin or by any other method.
	②	Outer plate	
Inner link 	③	Inner plate	Two bushes are pressed into two inner plates and a revolvable roller is slipped on each bush.
	④	Bush	
	⑤	Roller	
Connecting link 	②	Outer plate	The ends of two connecting pins are pressed into the outer plate on one side and the other ends are loosely inserted into the connecting plate on the other side so as to be able to be removed easily. The connecting link is used in a series of joints of a double-pitch chain, and the illustration shows the case where split pins are used.
	⑥	Connecting pin	
	⑦	Connecting plate	
	⑧	Split pin	
Cranked-plate link 	④	Bush	A bush is pressed into two cranked plates and a roller is placed on it. Though the pin for the cranked-plate link can easily be removed, its one end is provided with a revolution checking device such as notching or the like. The illustration shows the case where a split pin is used. This link is used in the joint of a chain composed of odd links.
	⑤	Roller	
	⑧	Split pin	
	⑨	Pin for cranked plate link	
	⑩	Cranked plate	

B 1803-1983

JIS B*1803 83 ■ 4933608 0011129 A ■

Table 6. Dimensions of Series A Double-Pitch Chains

Unit: mm

Nominal number	Nominal pitch p	Roller diameter		Width between inner plate b_1 (min.)	Width over inner link b_2 (max.)	Width between outer plate b_3 (min.)	Bearing pin body diameter d_2 (max.)	Bush bore d_3 (min.)	Length of bearing pin b_4 (max.)	Length of bearing pin body b_c (max.)	Plate depth h_2 (max.)	Parallel part of cranked plate l_1 (min.)	Plate thickness b_0 (Reference value)
		d_1 (max.)	d_7 (max.)										
C 2040	25.40	7.95	—	7.95	11.18	11.31	3.96	4.01	17.8	12.8	12.0	6.9	1.5
C 2042		—	15.88										
C 2050	31.75	10.16	—	9.53	13.84	13.97	5.08	5.13	21.8	15.0	15.0	8.4	2.0
C 2052		—	19.05										
C 2060	38.10	11.91	—	12.70	17.75	17.88	5.94	5.99	26.9	18.0	18.0	9.9	2.4
C 2062		—	22.23										
C 2060 H	38.10	11.91	—	12.70	19.43	19.56	5.94	5.99	29.8	19.6	18.0	9.9	3.2
C 2062 H		—	22.23										
C 2080	50.80	15.88	—	15.88	22.61	22.74	7.92	7.97	33.5	22.1	24.1	13.0	3.2
C 2082		—	28.58										
C 2080 H	50.80	15.88	—	15.88	24.28	24.41	7.92	7.97	36.7	23.7	24.1	13.0	4.0
C 2082 H		—	28.58										
C 2100	63.50	19.05	—	19.05	27.46	27.59	9.53	9.58	41.1	26.6	30.1	16.0	4.0
C 2102		—	39.67										
C 2100 H	63.50	19.05	—	19.05	29.11	29.24	9.53	9.58	44.3	28.2	30.1	16.0	4.8
C 2102 H		—	39.67										
C 2120	76.20	22.23	—	25.40	35.46	35.59	11.10	11.15	50.8	32.0	36.2	19.1	4.8
C 2122		—	44.45										
C 2120 H	76.20	22.23	—	25.40	37.18	37.31	11.10	11.15	54.0	33.6	36.2	19.1	5.6
C 2122 H		—	44.45										
C 2160	101.60	28.58	—	31.75	45.21	45.34	14.27	14.33	65.5	40.3	48.2	25.2	6.4
C 2162		—	57.15										
C 2160 H	101.60	28.58	—	31.75	46.89	47.02	14.27	14.33	68.7	41.9	48.2	25.2	7.2
C 2162 H		—	57.15										

B 1803-1983

9

Documents

Document Sharing Hub

Table 7. Dimensions of Series B Double-Pitch Chains

Unit: mm

Nominal number	Nominal pitch p	Roller diameter		Width between inner plate	Width over inner link	Width between outer plate	Bearing pin body diameter	Bush bore	Length of bearing pin	Length of bearing pin body	Plate depth	Parallel part of cranked plate
		d_1 (max.)	d_2 (max.)	b_1 (min.)	b_2 (max.)	b_3 (min.)	d_2 (max.)	d_3 (min.)	b_4 (max.)	b_c (max.)	h_2 (max.)	l_1 (min.)
C 208 BS	25.40	8.51	—	7.75	11.30	11.43	4.45	4.50	17.0	12.4	11.81	6.9
C 208 BL		—	15.88									
C 210 BS	31.75	10.16	—	9.65	13.28	13.41	5.08	5.13	19.6	13.9	14.73	8.4
C 210 BL		—	19.05									
C 212 BS	38.10	12.07	—	11.68	15.62	15.75	5.72	5.77	22.7	16.0	16.13	9.9
C 212 BL		—	22.23									
C 216 BS	50.80	15.88	—	17.02	25.45	25.58	8.28	8.33	36.1	23.5	21.08	13.0
C 216 BL		—	28.58									
C 220 BS	63.50	19.05	—	19.56	29.01	29.14	10.19	10.24	43.2	27.7	26.42	16.0
C 220 BL		—	39.67									
C 224 BS	76.20	25.40	—	25.40	37.92	38.05	14.63	14.68	53.4	33.3	33.40	19.1
C 224 BL		—	44.45									