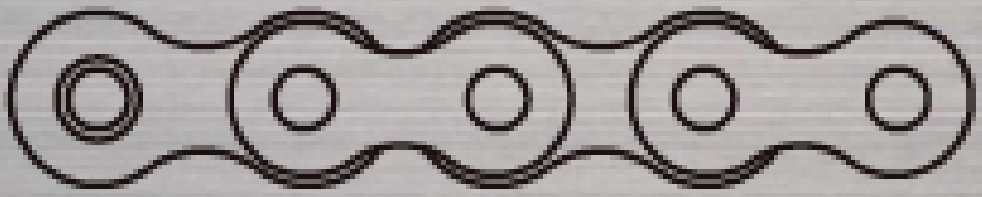
GENERAL CATALOG



POWER TRANSMISSION & CONVEYOR CHAIN

ALL PRODUCTS GUIDE

2015

DRIVEN TO SOLUTIONS
The D.I.D Brand

Known for its Durability and Dependability in Design.

An established technical innovator in the world chain drive market,

serving a broad spectrum of industries with quality products

for over 80 years. That is D.I.D.

Our technology turns timely ideas into productive realities.

D.I.D a professional partnership you can count on

for your optimum drive system solutions.

DID is a brand you can depend on.

Certified Management System in Conformity with World Standards

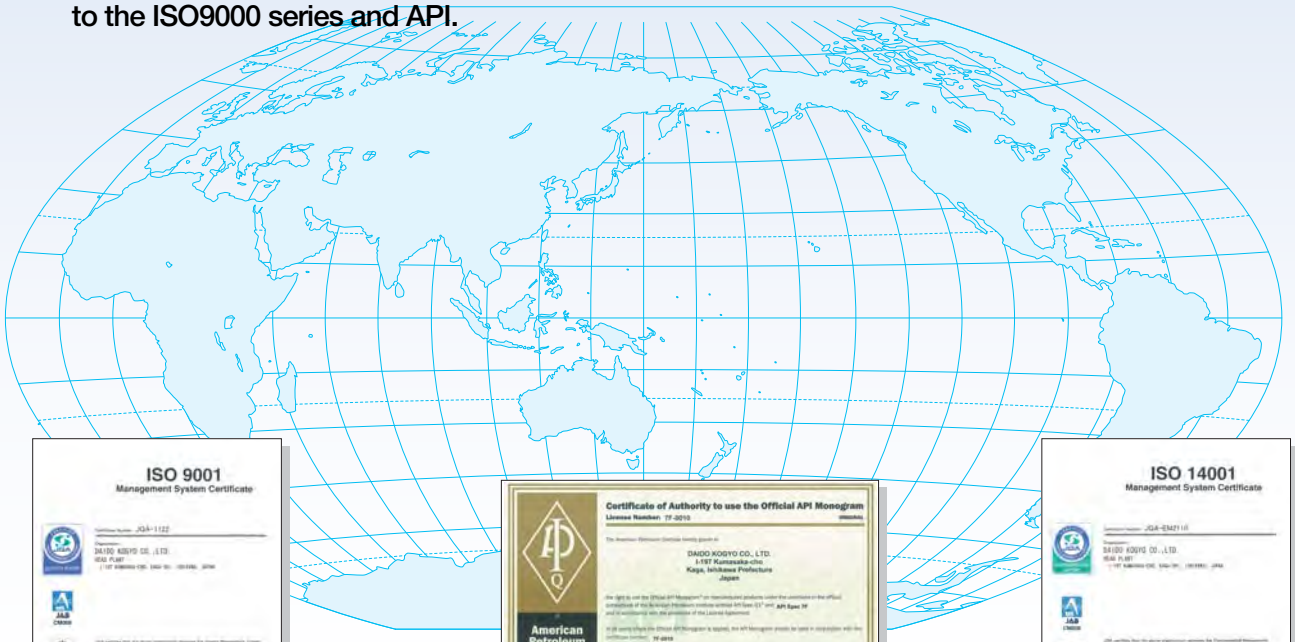
Quality assurance and environmental management system authorized by domestic and overseas standards.

DID's Quality Assurance

- Customer satisfaction is our priority.
- All DAIDO members are committed to quality.
- Quality control based on facts is assured.

With activities based on these quality policies, our quality assurance system is internationally authorized to state that our products conform to the ISO9000 series and API.

All of our employees keep a copy of our "Quality Control Practice Manual" at hand as their bible of quality control and refer to it during routine activities.



ISO9001/2000 Certification

It is indispensable to obtain the certification of ISO9001/2000 for supplying products to overseas markets - not only Europe and the US but also other countries. Our entire production system, including design, development, manufacturing, installation and technical assistance for all of our products including various chains, conveyor systems and welfare equipment, has been certified by the Japan Quality Assurance Organization (JQA).

Authorization by API

The American oil industry applies rigid quality control standards to all mechanical parts used in oil field development and oil refining. The organization that examines the conformity with their standards for authorization is called API (American Petroleum Institute).
Since receiving authorization from API in 1972, we have been supplying DID roller chains and sprockets to many companies not only in the USA but also all over the world under our rigid quality control system.

ISO14001 Certification

ISO14001 was established in 1996 by the International Organization for Standardization, to set requirements for environmental management systems. In order to preserve the global environment, reverse contamination and enhance the health of human beings and ecosystems, DAIDO declared our policies for environmental preservation. As a result, our management system for our activities, products and service for environmental protection was certified by the organization. We have been engaged in various activities for environmental preservation and improvement, such as reduction of waste and classification of waste for recycling, in accordance with our environmental policies.

CAUTION

Before use, be sure to read
the catalog and instruction manual carefully.
If you find something unclear,
please consult with us.

Cautions for handling of chains and sprockets

Before handling chains and sprockets, please understand the respective structures and specifications correctly, and read the following cautions for using them safely.

1 Handling of chains and sprockets

For safe work

- Always wear clothes suitable for work and proper protection (safety glasses, safety shoes, etc.).
- In addition to site workers, other people near the work site are also required to be careful.
- Strictly observe Section 1 "General Standards" (prevention of danger by prime movers, revolution shafts, etc.), Chapter 1, Part 2 of Occupational Safety and Health Regulations.
- For working, keep things in order in and around the work site.
- Before installation, be sure to switch off the power.
  Before installing, removing, lubricating or otherwise servicing a chain and sprockets, be sure the main electric power switch and all secondary power switches of the equipment are turned off. Also, take precaution to ensure that power will not be switched on accidentally.
  Furthermore, exercise care to prevent clothing or any part of the body from being caught by a chain, sprocket or other part during work.
- When any lifting apparatus is used, never stand beneath it.

Handling

For handling (See P127 ~ 137 and P329 ~ 342.)

- For handling, follow the instructions in this catalog and in the instruction manual. Select, layout, install, adjust and maintain chains and sprockets in the way that is recommended to ensure a high-performance installation.
- When connecting a chain, employ an installation method suitable for the type of connecting link.
- For the layout, installation, adjustment and maintenance, observe both recommended equipment instructions and cautions.

Warning

- Do not partially replace a part of a chain.
  Do not partially exchange a worn or damaged chain and sprockets. Replacing only the worn or damaged part does not restore overall strength and risks further breaking or destruction. Always replace the entire chain and sprockets.
- Do not modify chains or sprockets.
  Most of the components of a chain are heat-treated. If they are reprocessed, strength is diminished and breaking or destruction can result.
- Electroplating may cause hydrogen embrittlement.
- Welding may lower the strength of chains and components due to a flaw or heat, and result in destruction.
- Annealing can lower the performance of products and components and may result in destruction.

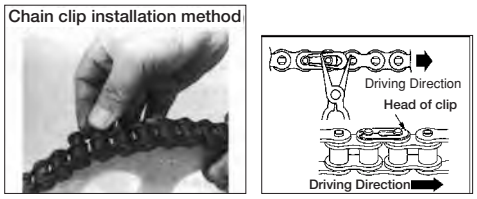
2 Chain Installation

Connection

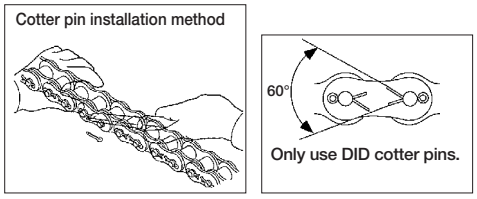
(1) Before installation, please read the previous section (1).

(2) Use connecting links and offset links as described below.
When installing a connecting link or offset link, confirm its construction. (P17)

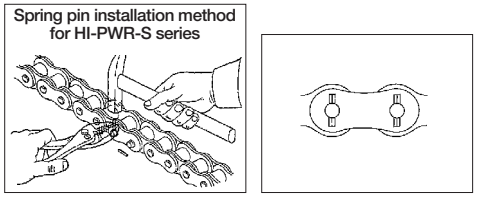
- For installing the clip on the connecting link, refer to the method illustrated below.



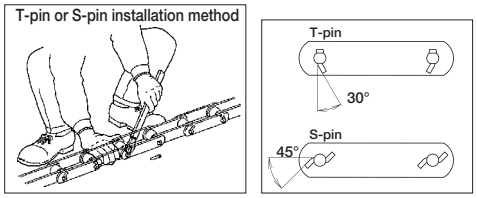
- For installing a cotter pin on the connecting link, refer to the method illustrated below.



- For installing a spring pin, refer to the method illustrated below. Spring pins are used for interference-fitted connecting links used in DIDHI-PWR-S, HK and HI-PWR-SHK series (P50 ~ 59, P60 ~ 61, P62 ~ 63).



- For installing a T-pin or S-pin, refer to the method illustrated below.



- For installing a one-pitch offset link, follow the installation method for the cotter pin type connecting link, and for installing a two-pitch offset link, follow the installation method of the connecting link used.

For other special types of connecting links, please consult us.

Warning

- Do not attempt to modify any components. When assembling, never drill a hole on a connecting plate to make it larger and never file a pin to make it thinner for smooth insertion of the pin into the connecting plate.
- Do not use used chains. Do not reuse clips and do not install a used cotter pin, connecting link or any other component for a new chain.

Adjustment (3) For proper operation of a chain, install and adjust it correctly. (See P127 ~ 134 and P340 ~ 342.)

Confirmation (4) After installing a chain and sprockets, confirm the following before switching on the power:

- Is the connecting link correctly and securely connected?
- Is the chain engaged with the teeth of the sprockets?
- Is the amount of lubrication proper?
- Is anything likely to cause interference or be scattered?
- Is the safety cover correctly installed?
- Is there anything interfering with the safety cover?
- Whether or not there is anything interfering with the chain.
- If there is anything abnormal about the connecting link portion, etc. and whether the respective components of the chain are flawed, rusty or abnormal in any other way.
- Do not stay in the rotation direction of the chain.

(5) If any abnormal noise is generated after switching on the power, switch off the power and re-confirm.

Avoidance of Danger

- Install a safety cover. For the apparatus with a chain and sprockets installed, be sure to install a safety cover. Any unexpected fracture may cause the chain to be thrown from the sprockets. In addition to a sufficient protector, install a stopping device such as an overload limit switch or brake so as not to cause overload.
- Check for chain interference. Any obstacle which interferes with a driven chain and sprockets is dangerous and shortens the life of the chain and sprockets. Always check for any interfering objects, and remove them.

3 Maintenance

To prevent any serious accident caused by a chain and sprockets, and to prolong the life of the chain and sprockets, take the following maintenance actions:

Lubrication (1) Lubrication (See P.132 ~ 134 and P.342.)
Except for some chains of special materials or elements, most chain life can be prolonged with lubrication. A chain which requires lubrication will be shortened in life without lubrication. For example, chain elongation, corrosion and stiff joint occur due to wear of some chain parts.

Washing (2) Washing
If a chain is used with a material such as sand or metallic powder, the promotion of wear, stiff joint, etc. will be caused, shortening life. Wash away such harmful materials.
For washing, dip the chain into kerosene, dry, and sufficiently lubricate. However, in the case of O-ring chain, since the O-ring may be deteriorated by kerosene, do not dip it for more than 10 minutes.
For washing, do not use an acid, alkali, gasoline or highly volatile solvent detrimental to the chain and sprockets. For an O-ring chain, do not use a wire brush.

Adjustment (3) Adjustment of tension and timing of exchange (See P130 ~ 131, P137 and P341 ~342.)
Chains and sprockets are consumable products.
The wear of a chain and sprockets causes sag on the chain. Periodically check the chain for sag, and adjust the tension to the optimum condition.
If a chain and sprockets show any rust or harmful flaw in appearance, or if the elongation of a chain or the wear of a sprocket becomes critical, immediately replace them.

- Do not use an offset link for lifting.
- Excessive oil on the chain will cause fouling by scattering. Wipe off extra oil to prevent it from scattering.
- For washing, do not use gasoline or highly volatile solvent. Furthermore, do not allow any material containing acid or alkali to come in contact with it.

4 Others

Even chains of the same kind and size have a different service life depending on the service environment, numbers of teeth of the sprockets, lubrication and other conditions. This also applies to the life of sprockets. Chains and sprockets are different in wear life. If a new chain is used on an old sprocket with worn teeth, failure or rupture of the chain may occur.
When a chain or sprocket must be replaced, replace both the chain and sprockets.

If anything remains unclear, please consult us.

Cautions for using roller chains for lifting

Based on the "Chain Safety (Technical) Standards" and "End Fittings" proposed by Japan Chain Association to the Japan Parking System Manufacturers Association Incorporated and multilevel parking machine manufacturers in February and October, 1993, the cautions necessary for using roller chains (hereinafter called chains) for lifting are stated below.

1 Safety factor

The "Mechanical Parking Area Technical Standard" sets the safety factors of ropes and chains as "5 for system A", "7 for system B" and "10 for system C". However, if a chain is used at a safety factor of 5 in system A, the acting tension of the chain generally exceeds the Max. allowable tension of the chain. That is, repeated use causes the chain to rupture due to fatigue. Therefore, when a safety factor of 5 for system A is adopted, periodically replace the chain under strict life control.

2 Selection of chain

2-1 Max. tension

The Max. tension allowed to apply to a chain is set at not higher than the value obtained by dividing the minimum tensile strength of the chain by a safety factor. However, be sure to examine the selecting methods recommended by us (See P120 and 121), and adopt a safer method.

The Max. tension corresponds to the "corrected chain tension" which includes dynamic load at starting and stopping in addition to offset load by a motor vehicle (difference in weight between front and rear wheels, horizontal shift of the motor vehicle in reference to a pallet, offset load due to the chain lifting position, etc.)

2-2 Connecting link of chain

A general connecting link (R type and C type in this catalog) has pins clearance-fitted in the connecting plate holes.

The connecting link is lower in fatigue strength than the base chain. When a connecting link higher in fatigue strength is necessary, use a special connecting link with pins interference-fitted connecting plate holes (F type or H type in this catalog).

In this case do not use any offset link (OJ or 2POJ).

As for the types of connecting links, see P16 ~ P17.

3 Connection between a chain and an end fitting

The connection between a chain and an end fitting (hereinafter called a fitting) is the section likely to cause troubles. For safety purposes, take the following matters info account when you design.

3-1 General cautions

(1) If the dimensional difference between the inner width of an outer link of a chain and the width of a fitting or the dimensional difference between the pin diameter and the fitting hole is too large, a large bending stress acts to lower the pin strength dramatically.
Refer to "3-3 Dimensions of fitting" for your design.

(2) If the fitting hole suffers "wear" or "roll over" at its ends during use, the strength of the pin greatly declines as in the case of (1). Periodically check, and if "wear" or "roll over" is found in the fitting hole, replace the fitting.

(3) Rust or corrosion is the major cause of deterioration of strength. Apply grease to chains periodically to prevent rust.

(4) If a partial load, lateral load or torsional load acts on a chain, the strength of the chain declines. To prevent it, exercise sufficient care in the horizontality of fitting of the hole, installation accuracy of fitting, etc.

3-2 Material of fitting and heat treatment

(1) Hardened fitting
The fitting is generally hardened and tempered. Thoroughly examine the size and material hardness of the fitting, and select a material which ensures a sufficient hardness.

a. In general, select a material which ensures the required hardness from tough hardening steels (SCM435, SCM440, etc.) and medium carbon steel.

b. Harden the fitting, and temper at a high temperature, avoiding the temper brittleness range, to a hardness of about HRC30 to 45.

c. In the case of a threaded fitting, keep the hardness at not higher than HRC40, to lower the susceptibility of the threaded portion to delayed fracture.
Select the size of the threaded portion to achieve a tensile strength not lower than the tensile strength of the chain.

(2) Non-hardened fitting
If the fitting is used without being hardened and tempered, the following must be considered.

a. Since the fitting hole is likely to suffer from wearing during use, press a hard bushing into the fitting hole.

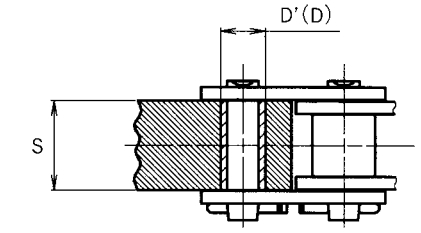
b. Since the strength of the fitting is lower than that of a hardened and tempered fitting,

adequate strength must be secured by adopting corresponding dimensions.

3-3 Dimensions of fitting

Dimensions of general hardened fittings for standard roller chains are listed below. For the fittings of more than triple strand chains and fittings of other shapes, please consult us. When designing an end fitting for any chain other than standard roller chains, work out a safe design based on sufficient understanding of this section. If there is anything unclear, please consult us.

End fitting for simplex chain



End fitting for duplex chain

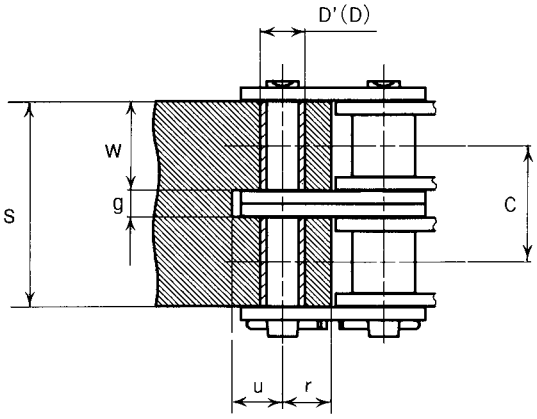
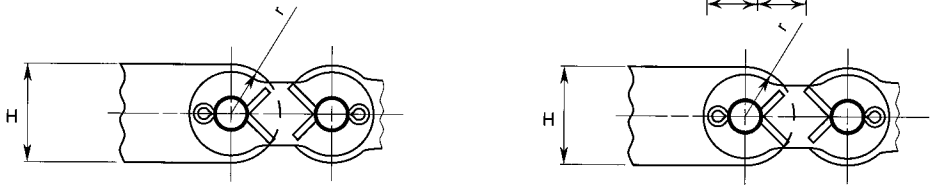


Figure shows bushing press-fitted.



Dimensions of End fitting

Unit (mm)

Chain No.	g	W (Reference)	S	D (Without Bushing)	D' (With Bushing)	C	r (Reference)	u (Reference)	H (Reference)
DID 35-1	———	———	$7.5^{\ 0}_{-0.2}$	$3.62^{+0.05}_{\ 0}$	$5.02^{\pm0.02}$	———	4.5	———	9.0
DID 35-2	$2.8^{+0.1}_{\ 0}$	7.2～ 7.4	$17.5^{\ 0}_{-0.3}$			$10.1^{\pm0.1}$		4.7	
DID 40-1	———	———	$11.2^{\ 0}_{-0.2}$	$4.00^{+0.05}_{\ 0}$	$5.58^{\pm0.02}$	———	6.0	———	12.0
DID 40-2	$3.2^{+0.1}_{\ 0}$	10.9～11.1	$25.4^{\ 0}_{-0.3}$			$14.4^{\pm0.1}$		6.3	
DID 50-1	———	———	$13.8^{\ 0}_{-0.2}$	$5.12^{+0.05}_{\ 0}$	$7.16^{\pm0.02}$	———	7.5	———	15.0
DID 50-2	$4.3^{+0.1}_{\ 0}$	13.6～13.8	$31.9^{\ 0}_{-0.3}$			$18.1^{\pm0.1}$		7.9	
DID 60-1	———	———	$17.8^{\ 0}_{-0.2}$	$5.99^{+0.05}_{\ 0}$	$8.40^{\pm0.02}$	———	9.2	———	18.1
DID 60-2	$5.2^{+0.1}_{\ 0}$	17.4～17.7	$40.4^{\ 0}_{-0.3}$			$22.8^{\pm0.1}$		9.5	
DID 80-1	———	———	$22.6^{\ 0}_{-0.2}$	$7.97^{+0.1}_{\ 0}$	$11.27^{\pm0.02}$	———	12.2	———	24.2
DID 80-2	$6.8^{+0.1}_{\ 0}$	22.3～22.6	$51.8^{\ 0}_{-0.3}$			$29.3^{\pm0.1}$		12.7	
DID 100-1	———	———	$27.5^{\ 0}_{-0.3}$	$9.57^{+0.1}_{\ 0}$	$13.47^{\pm0.02}$	———	15.2	———	30.2
DID 100-2	$8.5^{+0.1}_{\ 0}$	27.1～27.4	$63.1^{\ 0}_{-0.3}$			$35.8^{\pm0.1}$		15.8	
DID 120-1	———	———	$35.5^{\ 0}_{-0.3}$	$11.15^{+0.1}_{\ 0}$	$15.64^{\pm0.02}$	———	18.2	———	36.2
DID 120-2	$10.1^{+0.1}_{\ 0}$	35.1～35.4	$80.7^{\ 0}_{-0.3}$			$45.4^{\pm0.1}$		19.0	
DID 140-1	———	———	$37.2^{\ 0}_{-0.3}$	$12.75^{+0.1}_{\ 0}$	$17.94^{\pm0.02}$	———	21.2	———	42.3
DID 140-2	$12.0^{+0.1}_{\ 0}$	36.7～37.0	$85.8^{\ 0}_{-0.3}$			$48.9^{\pm0.1}$		22.2	
DID 160-1	———	———	$45.2^{\ 0}_{-0.3}$	$14.33^{+0.1}_{\ 0}$	$19.94^{\pm0.02}$	———	24.2	———	48.3
DID 160-2	$13.6^{+0.1}_{\ 0}$	44.7～45.0	$103.4^{\ 0}_{-0.3}$			$58.5^{\pm0.1}$		25.4	

Note:
1) The dimensions of D'can be applied only when DID bushings are used. If these dimensions are applied to the bushings for chains produced by other manufacturers, the strength may be lower.
2) Dimensions "g" and "S" of duplex chain chain with bushings include the dimensions of the bushings.

INDEX

1 Roller Chains for Power Transmission

2 Small Conveyor Chains

3 Conveyor Chains

4 DK Specialty Conveyor Chains

5 Photo / Sprocket

6 Technical Information

Keys and Symbols

Dirty or contaminated lubricants or deterioration of lubrication.

Corrosive atmosphere (by CAS test).

Sandy or dusty environment.

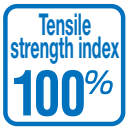
Atmosphere where exposure to rain, moisture, and sea water is present.

Where lubrication is infrequent or prohibited.

Atmosphere where alkaline liquid is present.

Great cost savings can be achieved through longer life and less down time.

Atmosphere where acid liquid is present.



Index of tensile strength (Standard chain is the base line).

Atmosphere where cleanliness is required.

Temperature range in use.

Coating tolerable temperature

Allowable tension index (Standard roller chains)

As conveyor chain in vending machine.

As conveyor and drive chain in packing machine.

As conveyor and drive chain in conveyance machine.

As conveyor and drive chain in chemical processing equipment.

As drive chain in vertical automated parking.

As conveyor and drive chain in outdoor equipment.

As conveyor and drive chain in book binding machine.

As conveyor and drive chain in textile machine.

As conveyor and drive chain in food processing machine.

As conveyor and drive chain in printing machine.

As conveyor and drive chain in water treatment.

As drive chain in construction machine.

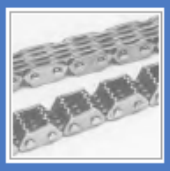
Index (In alphabetical order)

memo

1 Roller Chains for Power Transmission

- General
- Standard Roller Chain
- High-strength Roller Chain Series
- Ultimate Life Chain Series
- Environment Resistance Chain Series
- Low Noise Chain Series
- Specialty Chain Series




Classification by use		Product No.	Page	Functions										
				High tension	Wear resistance	Dusty circumstances	Resistant against corrosive gas	Resistant against alkali, acid liquid	Hygiene circumstances	Low Noise	High temperature	Low temperature	Allowable ambient temperature	
Standard Roller Chain		JIS · ISO	P18~47											
High-strength Roller Chain Series		HK	P48~63	■									-10~80 °C	
		HI-PWR-S		■										
		HI-PWR-S HK		■										
Ultimate Life Chain Series		T, D	P68~71		■									
		DHA			■									
		UR	P72~79		■								-10~60 °C	
		UR-F			■						■		-10~200 °C	
		LX, LD			■	■					■		-10~120 °C	
		LDSSP			■	■					■		120~200 °C	
Environment Resistance Chain Series		N	P82~87				■						-10~80 °C	
		E					■							
		WG					■							
		SS	P88~91				■	■	■		■		-10~400 °C	
		SSK					■	■	■		■			
		SSLT			■	■	■	■	■		■		-10~200 °C	
		TK	P92,93									■	-40~80 °C	
Low Noise Chain Series		UN	P94~97							■			-10~80 °C	
Specialty Chain Series	Bicycle Chain		P101~103,106											
	Small pitch Chain													
	Engine Eechanism chain													
	Agricultural Roller Chain													
	Silent Chain	SCA, SCR, SC	P104,105											
		PS												
	BS roller Chain	ISO-B	P107											
	Leaf Chain	AL	P108,109											
		BL												

	Main uses																			
	Pack	Textile	Print	Home Appliance	Construction	Agriculture	Outdoor	Petrolium	Forestry	Machine	Excavation	Mining	Conveyor	Food	Vending Machine	Chemicals	Parking	Water Treatment	Chemicals/Medical	Machining
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Dimensions and Performance of DID General Application Chains

DID general application chains can be classified into two types in reference to strength; standard series chains complying with ANSI roller chains and HK series chains complying with ANSI, which have outer and inner plates thicker than those of standard chains.

The standard series include two lines; standard roller chains, and HI-PWR-S chains improved in fatigue strength and shock resistance compared to the standard roller chains. You can use them as basic transmission chains for all applications ranging from low speed to high speed.

The HK series are improved in the strength of plates to allow heavy duty transmission mainly in a low speed range, and include two lines; HK roller chains and HI-PWR-SHK roller chains further enhanced in fatigue strength.

Sprockets

The simplex chains can be engaged with standard sprockets of the corresponding nominal numbers. For sprockets, see P115 ~.

Selection of chains

For selecting a standard roller chain or HI-PWR-S roller chain, refer to "Selection of Chains" (P120). However, only for a special case of low speed and less shock, "Low-speed selection method" (P121) can also be referred to.
For selecting an HK roller chain or HI-PWR-SHK roller chain, refer to "Slow-speed selection" (P121).
For selecting a connecting link or offset link, refer to "General selection". Since selection according to "Slow-speed selection" results in insufficient strength, please consult us.

Number of chain strands and method for connecting outer plates with pins

For the numbers of available strands, refer to the table of "Dimensions" for each size of chain.
The standard method for connecting pins and plates is rivet type (RP).
The cotter type (CP) can be used for standard chains and HK chains of DID80 or larger.
* As for HI-PWR-S chains and HI-PWR-SHK chains, only rivet type (RP) is available.

Connecting links and offset links

For connecting links and offset links, refer to the table of "Dimensions" for each size of chain.

This section describes general application chains only. However, since many kinds of engine mechanism chains and agricultural roller chains are also available, please see the sections describing the respective items.

How to Order Roller Chains for Power Transmission

- When you place an order for DID60LX with 160 links and one RJ type connecting link as a loop:

[Type indication]

DID 60 LX × 160 R E

- DID: DAIDO's product
- 60: Size of chain
- LX: Type of chain (LX indicates an O-ring chain)
- 160: Chain No.
- Indicates that the overall length of chain is 160 links.
- R E: Type of connecting link
  - Clip type: Clearance fit: R / Interference fit: F
  - Cotter pin type: Clearance fit: C / Interference fit: H
  - Some are inapplicable, depending on the chain size. See the table on P17.

Installation of connecting link

- B: The connecting link is separate from the chain.
- E: The connecting link is connected with the chain to form a loop.
- T: The connecting link is connected with the chain, without forming a loop.

- When you place an order for DID80CP with 121 links, three offset links and one CJ type connecting link as a straight chain.

DID 80 CP × 117LL + OJ × 3 + CJ +

- DID 80: Chain No.
- CP: Method for connecting pins and plates. Rivet: RP. Cotter pin: CP. No expression means RP.
- 117LL: Indicates that the number of inner links from one end to the other end of a chain is 117.
- OJ × 3: Indicates that 3 offset links (OJ) are required.
- CJ: Indicates a C connecting link.
- +: If the components stated before and after this symbol position are to be connected when the chain is delivered, [+](plus) sign is used, and if not connected, [,](comma) sign is used.
- +: This symbol means that the last link is connected with the first link (to form a loop).
- See the table on P17 for the kinds of connecting and offset links.

- When you place an order for a cotter type connecting link of DID80, in which the pins are clearance-fitted with the upper plate:

DID 80 · C J

- DID 80: Chain No.
- C: Type of connecting link
- J: Indicates a connecting link.

- When you place an order for an offset link of DID60:

DID 60 · OJ

- DID 60: Chain No.
- OJ: Indicates an offset link. One-pitch type: OJ. Two-pitch type: 2POJ

- When you place an order for a cotter type connecting link of DID80HK, in which the pins are interference-fitted with the upper plate:

DID80HK · H J

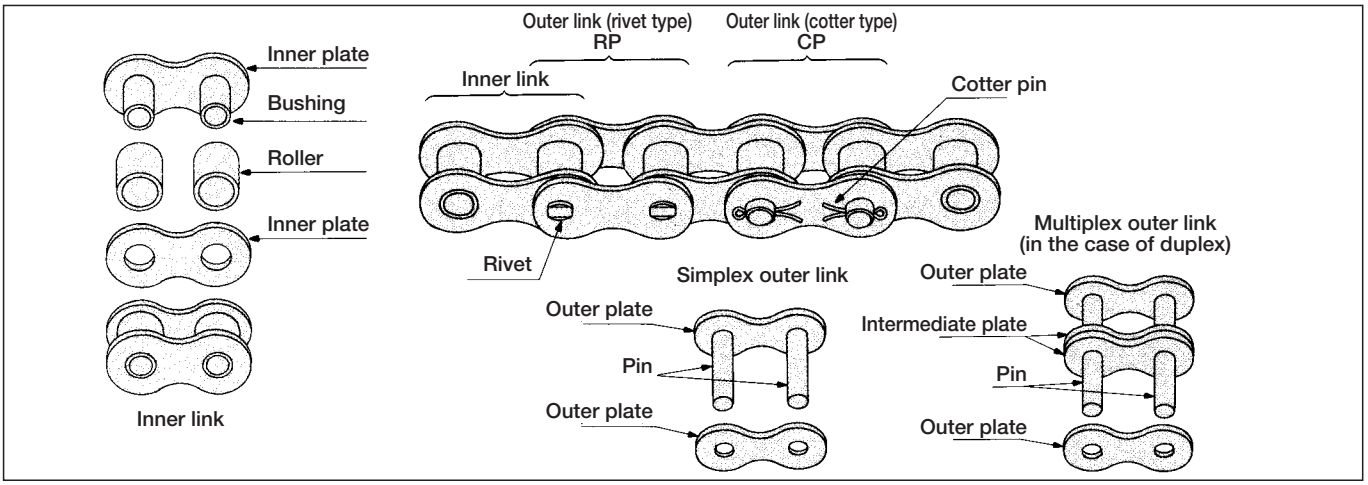
- DID80HK: Chain No.
- H: Type of connecting link
- J: Indicates a connecting link.

*When you place an order, refer to "Set Number of Chains and Links" (P138).

Construction and Components of Chain

A roller chain has a structure as illustrated below, and the names of the components are stated in the drawing. These components act as described below, and are designed to suit the respective actions.

Components	Pin	Pins support all the load acting on the chain, together with inner and outer plates, and when the chain is engaged with a sprocket, the pins slide as bearings. They are required to be high in shearing strength and bending strength, and especially wear resistance.
	Bushing	Bushings act to prevent the shock received through rollers when the chain is engaged with a sprocket from being directly transmitted to pins, and also act as bearings, along with the pins. So, they are required to be high in shock fatigue strength and wear resistance.
	Roller	Rollers act to smoothly bend the chain when the chain is engaged with a sprocket, to protect the chain from shock with the sprocket. They are required to be high in shock fatigue strength, collapse strength and wear resistance.
	Plate	Plates are subject to repeated tension of the chain, and sometimes a large shock. So, they are required to be high in tensile strength, and also in shock resistance and fatigue strength.



Connecting links

The following four types of connecting links are available (R, F, C and H).

Clip type connecting link

Clip type connecting link in which the connecting pins are clearance-fitted with the connecting plate is called an **R** connecting link (**RJ**), and that, interference-fitted, is called an **F** connecting link (**FJ**).

Cotter pin type connecting link

A cotter type connecting link in which the connecting pins are clearance-fitted with the connecting plate is called a **C** connecting link (**CJ**), and that, interference-fitted, is called an **H** connecting link (**HJ**).

Spring pin type connecting link

In a standard spring pin type connecting link, the connecting pins are interference-fitted with the connecting plates (**H** connecting link). **HI-PWR-S**, **HK** and **HI-PWR-SHK** series adopt this type.

Offset link

An offset link is used for increasing or decreasing the length of a chain by one pitch, and the following two types are generally available.

One-pitch offset link (**OJ**)

Two-pitch offset link (**2POJ**)

Since the "connecting link" and "offset link" are lower than the base chain in strength, consult us when using them for any service condition in excess of the Max. kilowatt ratings.

* Clearance fit
In this fit, a clearance is always formed between the pin and the hole when they are assembled. This method is used in standard connecting links.

* Interference fit
In this fit, an interference always occurs when the pin and the hole are assembled. This method is adopted in base chains and H connecting links. However, in H connecting links, the interference is smaller than that of the chain body.

Worldwide standard chains complying with JIS and ANSI

The 14 sizes of DID standard roller chains are available ranging from DID25 to DID240 including those in conformity with ANSI (American National Standard Institute), and ISO (International Organization for Standardization).

The chains not only meet the requirements for the minimum tensile strength prescribed by ANSI and ISO, but they also provide the top class quality in the world including a high fatigue strength.

Suitable uses

- General use for driving and lifting equipment.

Examples

- Driving transfer units and other equipment. For multilevel parking.

Selection of chains

For selection of a chain, see the tables of "Max. Horsepower Ratings" for standard roller chains (P20 ~ P47) and "Designing of Chain Transmission" (P120 ~ P126).
However, only for a special case of low speed and less shock, "Low-speed selection" method (P121) can also be referred to.

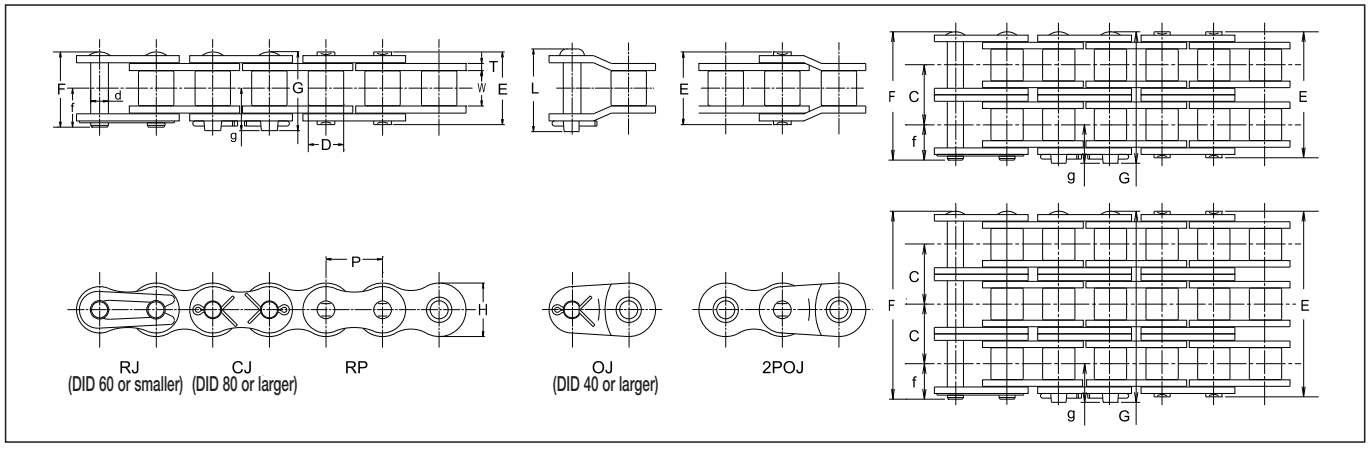
Standard roller chains up to five strands are available.
The standard method for connecting pins and plates is rivet type (RP).
The cotter type (CP) is available for standard chains and HK chains of DID80 or larger.

Sprockets

The standard roller chains can be engaged with standard sprockets of the corresponding nominal numbers. For sprockets, refer to the table of "Dimensions" for each size of chain.

Connecting links and offset links

For connecting links and offset links, refer to the table of "Dimensions" for each size of chain.
The connecting links are generally R or C connecting links in which the pins are clearance-fitted with the connecting plate. Since clearance-fitted links are inferior to the base chain in Max. allowable tension as in the case of one-pitch offset links (OJ), "Low-speed selection" (P121) cannot be referred to. Since the Max. kilowatt ratings are decided considering the strength of connecting links and OJ, the clearance-fitted connecting links and OJ can be used if the chains are selected according to the "General selection".
When a higher Max. allowable tension is required for the connecting link, use the interference-fitted connecting link (H connecting link) of a HI-PWR-S chain, and in the case of offset links, use 2POJ. For details, refer to the table of "Dimensions" for each size of chain.



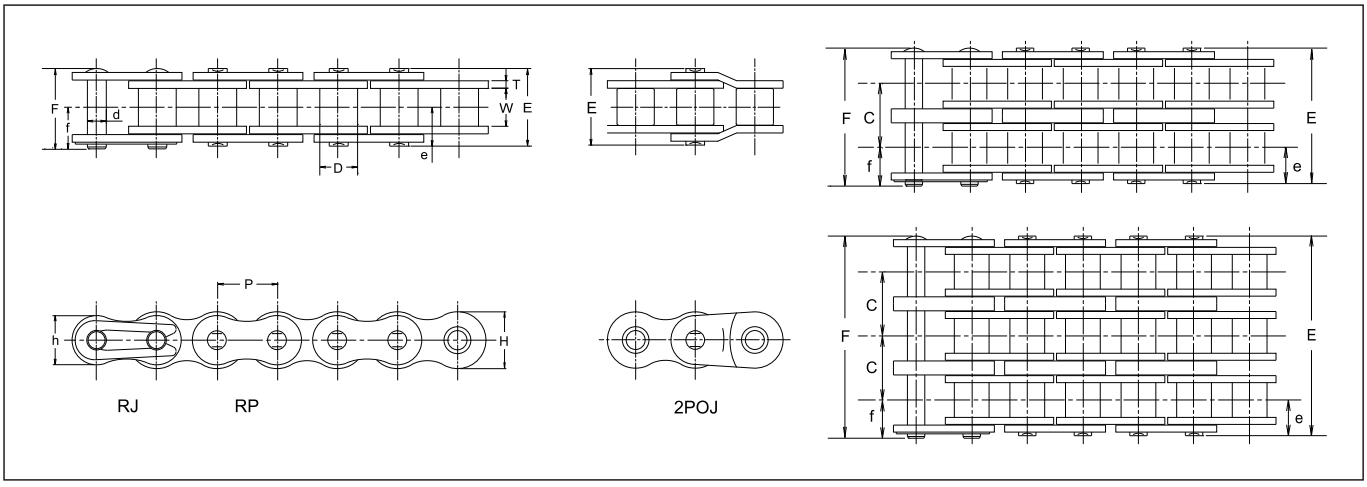
Dimensions

Unit (mm)

Chain No. DID	Chain No. JIS	Pitch P	Roller Link Width W	Bush Dia. D	Pin d	Pin E	Pin F	Pin G	Pin L	Pin f	Pin g	Transverse Pitch C	Plate T	Plate H	JIS Min. Tensile Strength kN	JIS Min. Tensile Strength kgf	DID Min. Tensile Strength kN	DID Min. Tensile Strength kgf	DID Avg. Tensile Strength kN	DID Avg. Tensile Strength kgf	DID Max. Allowable Load kN	DID Max. Allowable Load kgf	Approx. weight (kg/m)	No. of links per unit
*DID 25	25	6.35	3.18	(3.30)	2.31	7.8	8.5	—	—	4.7	—	6.4	0.72	5.9	3.5	360	3.63	370	4.41	450	0.69	70	0.13	160
*DID 35	35	9.525	4.78	(5.08)	3.59	12.0	13.1	—	—	7.3	—	10.1	1.25	9.0	7.9	800	8.83	900	11.2	1,140	2.15	220	0.32	320
DID 41	41	12.70	6.38	7.77	3.59	13.7	14.6	—	15.5	7.9	—	—	1.20	9.6	6.7	680	8.83	900	10.7	1,090	2.35	240	0.39	240
DID 40	40	12.70	7.95	7.92	3.97	16.5	17.6	18.1	19.1	9.5	10.1	14.4	1.50	12.0	13.9	1,410	15.7	1,590	19.1	1,940	3.72	380	0.63	240
DID 50	50	15.875	9.53	10.16	5.09	20.3	21.9	22.1	23.2	11.6	12.1	18.1	2.00	15.0	21.8	2,210	26.5	2,690	30.8	3,130	6.86	700	1.06	192
DID 60	60	19.05	12.70	11.91	5.96	25.4	26.9	27.9	29.8	14.3	15.1	22.8	2.40	18.1	31.3	3,180	35.3	3,580	44.1	4,480	9.31	950	1.53	160
DID 80	80	25.40	15.88	15.88	7.94	32.6	—	35.4	37.1	—	19.0	29.3	3.20	24.0	55.6	5,640	71.6	7,270	78.4	7,960	14.7	1,490	2.55	120
DID 100	100	31.75	19.05	19.05	9.54	39.5	—	42.5	45.2	—	22.7	35.8	4.00	29.9	87	8,830	108	10,960	118	11,980	22.5	2,280	3.79	96
DID 120	120	38.10	25.40	22.23	11.11	49.7	—	53.0	54.0	—	28.2	45.4	4.80	35.9	125	12,690	148	15,030	166	16,850	30.4	3,090	5.49	80
DID 140	140	44.45	25.40	25.40	12.71	53.6	—	58.4	59.6	—	31.6	48.9	5.60	41.9	170	17,260	193	19,590	215	21,830	40.2	4,080	7.11	68
DID 160	160	50.80	31.75	28.58	14.29	63.6	—	68.2	69.7	—	36.5	58.5	6.40	47.8	223	22,640	245	24,870	269	27,310	52.9	5,370	9.82	60
DID 180	180	57.15	35.72	35.71	17.46	71.5	—	77.3	79.3	—	41.6	65.8	7.10	53.8	281	28,530	333	33,810	362	36,750	61.7	6,260	12.7	54
DID 200	200	63.50	38.10	39.68	19.85	77.9	—	85.0	87.3	—	45.9	71.6	8.00	60.0	347	35,230	431	43,760	470	47,720	73.5	7,460	16.5	48
DID 240	240	76.20	47.63	47.63	23.81	95.2	—	102.9	105.4	—	55.3	87.8	9.50	71.5	500	50,760	623	63,250	686	69,640	99	10,050	23.3	40

Note: 1. Those marked with * indicate bushing chains.
2. The values of average tensile strength and Max. allowable load are for chains.

DID 25 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Bush Dia.	Pin					Transverse Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	F	e	f	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID25	25					7.8	8.5							3.5	360	3.63	370	4.41	450	0.69	70	0.13
DID25-2	25-2					14.4	15.0							7	710	7.26	740	8.82	900	1.17	120	0.26
DID25-3	25-3	6.35	3.18	3.30	2.31	20.8	21.4	3.9	4.7	6.4	0.72	5.9	5.2	10.5	1,070	10.9	1,110	13.2	1,340	1.73	180	0.39
DID25-4	25-4					27.2	27.8							–	–	14.5	1,470	17.6	1,790	2.28	230	0.52
DID25-5	25-5					33.7	34.3							–	–	18.2	1,850	20	2,030	2.69	270	0.65

Note: Values of average tensile strength and max. allowable load are for chain body.

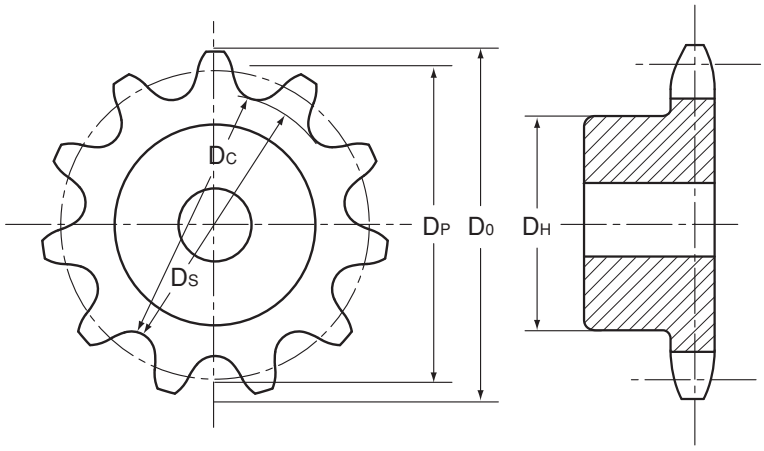
Max. Kilowatt Ratings

Unit (kW)

No. of Teeth of Small Sprocket \ Type of Lubrication	Small Sprocket revolutions per minute (rpm) (See P132 for the details of type of lubrication A, B and C.)																				
	100	500	900	1200	1800	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	10000	
	A					B															C
11	0.04	0.18	0.31	0.40	0.58	0.77	0.91	1.05	1.03	0.86	0.74	0.64	0.56	0.50	0.44	0.40	0.36	0.33	0.30	0.26	
12	0.05	0.20	0.34	0.44	0.63	0.85	1.00	1.15	1.17	0.98	0.84	0.73	0.64	0.57	0.51	0.46	0.41	0.38	0.35	0.30	
13	0.05	0.22	0.37	0.48	0.69	0.93	1.09	1.25	1.32	1.11	0.95	0.82	0.72	0.64	0.57	0.51	0.47	0.43	0.39	0.33	
14	0.06	0.24	0.40	0.52	0.75	1.00	1.18	1.36	1.48	1.24	1.06	0.92	0.80	0.71	0.64	0.58	0.52	0.48	0.44	0.37	
15	0.06	0.25	0.43	0.56	0.80	1.08	1.27	1.46	1.64	1.37	1.17	1.02	0.89	0.79	0.71	0.64	0.58	0.53	0.49	0.41	
16	0.06	0.27	0.46	0.60	0.86	1.16	1.37	1.57	1.77	1.51	1.29	1.12	0.98	0.87	0.78	0.70	0.64	0.58	0.53	0.46	
17	0.07	0.29	0.49	0.64	0.92	1.24	1.46	1.67	1.89	1.66	1.41	1.23	1.08	0.95	0.85	0.77	0.70	0.64	0.59	0.50	
18	0.07	0.31	0.52	0.68	0.98	1.32	1.55	1.78	2.01	1.81	1.54	1.34	1.17	1.04	0.93	0.84	0.76	0.70	0.64	0.54	
19	0.08	0.33	0.56	0.72	1.04	1.40	1.64	1.89	2.13	1.96	1.67	1.45	1.27	1.13	1.01	0.91	0.83	0.75	0.69	0.59	
20	0.08	0.35	0.59	0.76	1.10	1.47	1.74	2.00	2.25	2.11	1.81	1.56	1.37	1.22	1.09	0.98	0.89	0.81	0.75	0.64	
21	0.09	0.37	0.62	0.80	1.16	1.55	1.83	2.10	2.37	2.27	1.94	1.68	1.48	1.31	1.17	1.06	0.96	0.88	0.80	0.69	
22	0.09	0.38	0.65	0.84	1.22	1.63	1.93	2.21	2.50	2.44	2.08	1.81	1.58	1.40	1.26	1.13	1.03	0.94	0.86	0.74	
23	0.09	0.40	0.68	0.89	1.28	1.71	2.02	2.32	2.62	2.61	2.23	1.93	1.69	1.50	1.34	1.21	1.10	1.00	0.92	0.79	
24	0.10	0.42	0.72	0.93	1.34	1.80	2.12	2.43	2.74	2.78	2.37	2.06	1.81	1.60	1.43	1.29	1.17	1.07	0.98	0.84	
25	0.10	0.44	0.75	0.97	1.40	1.88	2.21	2.54	2.86	2.95	2.52	2.19	1.92	1.70	1.52	1.37	1.25	1.14	1.04	0.89	
28	0.12	0.50	0.85	1.10	1.58	2.12	2.50	2.87	3.24	3.50	2.99	2.59	2.27	2.02	1.81	1.63	1.48	1.35	1.24	1.06	
30	0.13	0.54	0.91	1.18	1.70	2.28	2.69	3.09	3.49	3.88	3.32	2.87	2.52	2.24	2.00	1.81	1.64	1.50	1.37	1.17	
32	0.14	0.58	0.98	1.27	1.82	2.45	2.89	3.32	3.74	4.16	3.65	3.17	2.78	2.46	2.21	1.99	1.81	1.65	1.51	1.29	
35	0.15	0.63	1.08	1.39	2.01	2.70	3.18	3.65	4.12	4.58	4.18	3.62	3.18	2.82	2.52	2.27	2.06	1.89	1.73	1.48	
40	0.17	0.73	1.24	1.61	2.32	3.12	3.67	4.22	4.76	5.29	5.11	4.43	3.88	3.44	3.08	2.78	2.52	2.30	2.11	1.81	
45	0.20	0.83	1.41	1.83	2.63	3.54	4.17	4.79	5.40	6.01	6.09	5.28	4.63	4.11	3.68	3.32	3.01	2.75	2.52	2.15	

Note: Values in the table above are for single strand chains only. For multiplex chains, please apply the coefficient of multi-strand. (See "Chain Selection" on P120).

DID 25 Standard Sprocket

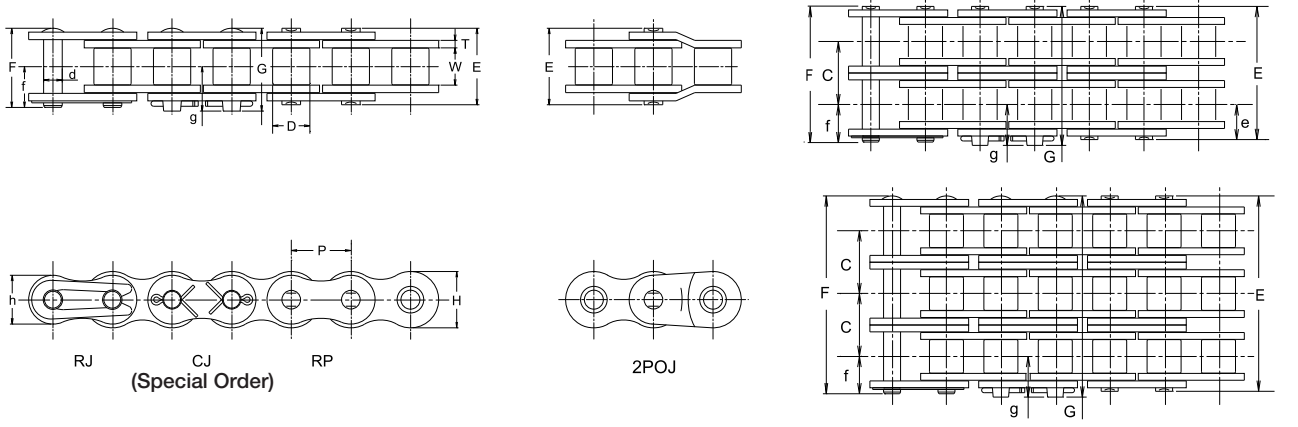


DID 25 sprocket is made to order.

Unit (mm)

Number of Teeth **N**	Pitch Dia **Dp**	Tip Dia **Do**	Root Dia **Ds**	Caliper Dia **Dc**	Max. Hub Dia **DH**
11	22.54	26	19.24	19.01	15
12	24.53	28	21.23	21.23	17
13	26.53	30	23.23	23.04	19
14	28.54	32	25.24	25.24	21
15	30.54	34	27.24	27.07	23
16	32.55	36	29.25	29.25	25
17	34.56	38	31.26	31.11	27
18	36.57	40	33.27	33.27	29
19	38.58	42	35.28	35.15	31
20	40.59	44	37.29	37.29	33
21	42.61	46	39.31	39.19	35
22	44.62	48	41.32	41.32	37
23	46.63	50	43.33	43.23	39
24	48.65	52	45.35	45.35	41
25	50.66	54	47.36	47.26	43
26	52.68	56	49.38	49.38	45
27	54.70	58	51.40	51.31	47
28	56.71	60	53.41	53.41	49
29	58.73	62	55.43	55.35	51
30	60.75	64	57.45	57.45	53
31	62.77	66	59.47	59.39	55
32	64.78	68	61.48	61.48	57
33	66.80	70	63.50	63.43	59
34	68.82	72	65.52	65.52	61
35	70.84	74	67.54	67.47	63
36	72.86	76	69.56	69.56	65
37	74.88	78	71.58	71.51	67
38	76.90	80	73.60	73.60	70
39	78.91	82	75.61	75.55	72
40	80.93	84	77.63	77.63	74
41	82.95	86	79.65	79.59	76
42	84.97	89	81.67	81.67	78
43	86.99	91	83.69	83.63	80
44	89.01	93	85.71	85.71	82
45	91.03	95	87.73	87.68	84
48	97.09	101	93.79	93.79	90
50	101.13	105	97.83	97.83	94
54	109.21	113	105.91	105.91	102
55	111.23	115	107.93	107.88	104
60	121.33	125	118.03	118.03	114
65	131.43	135	128.13	128.10	124
70	141.54	145	138.24	138.24	134
75	151.64	155	148.34	148.31	144

DID 35 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Bush Dia.	Pin							Transverse Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	F	G	e	f	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID35	35					12.0	13.1	14.1								7.9	800	8.83	900	11.2	1,140	2.15	220	0.32
DID35-2	35-2					22.1	23.2	23.5								15.8	1,600	17.7	1,800	22.4	2,270	3.66	370	0.69
DID35-3	35-3	9.525	4.78	5.08	3.59	32.2	33.4	33.7	6.0	7.3	7.4	10.1	1.25	9.0	7.75	23.7	2,410	26.5	2,690	33.6	3,410	5.38	550	1.05
DID35-4	35-4					42.3	43.5	43.8								—	—	35.3	3,580	44.8	4,550	7.1	720	1.41
DID35-5	35-5					52.5	53.7	54.0								—	—	44.2	4,490	56	5,690	8.39	850	1.77

Note: The values of average tensile strength and Max. allowable tension are for chains.

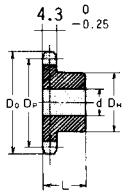
Max. Kilowatt Ratings DID 35

Unit (kW)

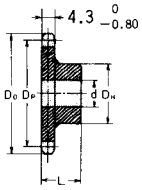
No. of Teeth of Small Sprocket \ Type of Lubrication	Small Sprocket revolutions per minute (rpm) (See P132 for the details of type of lubrication A, B and C.)																				
	100	500	900	1200	1500	1800	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	10000
	A			B														C			
11	0.21	0.92	1.56	2.02	2.47	2.91	2.88	2.19	1.73	1.42	1.19	1.01	0.88	0.77	0.68	0.61	0.55	0.50	0.45	0.42	0.36
12	0.23	1.01	1.71	2.22	2.71	3.20	3.28	2.49	1.98	1.62	1.35	1.16	1.00	0.88	0.78	0.70	0.63	0.57	0.52	0.48	0.41
13	0.25	1.10	1.87	2.42	2.96	3.49	3.70	2.81	2.23	1.82	1.53	1.30	1.13	0.99	0.88	0.78	0.71	0.64	0.59	0.54	0.46
14	0.28	1.19	2.02	2.62	3.21	3.78	4.13	3.14	2.49	2.04	1.71	1.46	1.26	1.11	0.98	0.88	0.79	0.72	0.65	0.60	0.51
15	0.30	1.28	2.18	2.83	3.46	4.07	4.58	3.48	2.76	2.26	1.89	1.62	1.40	1.23	1.09	0.97	0.88	0.80	0.73	0.67	0.57
16	0.32	1.38	2.34	3.03	3.71	4.37	5.05	3.84	3.05	2.49	2.09	1.78	1.54	1.35	1.20	1.07	0.97	0.88	0.80	0.73	0.63
17	0.34	1.47	2.50	3.24	3.96	4.66	5.53	4.20	3.34	2.73	2.29	1.95	1.69	1.48	1.32	1.18	1.06	0.96	0.88	0.81	0.69
18	0.36	1.56	2.66	3.44	4.21	4.96	6.02	4.58	3.63	2.97	2.49	2.13	1.84	1.62	1.43	1.28	1.16	1.05	0.96	0.88	0.75
19	0.39	1.66	2.82	3.65	4.46	5.26	6.53	4.97	3.94	3.23	2.70	2.31	2.00	1.75	1.55	1.39	1.25	1.14	1.04	0.95	0.81
20	0.41	1.75	2.98	3.86	4.72	5.56	7.06	5.37	4.26	3.48	2.92	2.49	2.16	1.89	1.68	1.50	1.35	1.23	1.12	1.03	0.88
21	0.43	1.85	3.14	4.07	4.97	5.86	7.59	5.78	4.58	3.75	3.14	2.68	2.32	2.04	1.81	1.62	1.46	1.32	1.21	1.11	0.94
22	0.45	1.94	3.30	4.28	5.23	6.16	8.14	6.19	4.91	4.02	3.37	2.88	2.49	2.19	1.94	1.73	1.56	1.42	1.29	1.19	1.01
23	0.47	2.04	3.46	4.49	5.49	6.47	8.69	6.62	5.25	4.30	3.60	3.07	2.66	2.34	2.07	1.85	1.67	1.52	1.38	1.27	1.08
24	0.50	2.13	3.63	4.70	5.74	6.77	9.10	7.06	5.60	4.58	3.84	3.28	2.84	2.49	2.21	1.98	1.78	1.62	1.48	1.35	1.16
25	0.52	2.23	3.79	4.91	6.00	7.07	9.51	7.50	5.95	4.87	4.08	3.48	3.02	2.65	2.35	2.10	1.89	1.72	1.57	1.44	1.23
28	0.59	2.52	4.28	5.55	6.79	8.00	10.8	8.89	7.06	5.78	4.84	4.13	3.58	3.14	2.79	2.49	2.25	2.04	1.86	1.71	1.46
30	0.63	2.72	4.61	5.98	7.31	8.62	11.6	9.86	7.83	6.41	5.37	4.58	3.97	3.48	3.09	2.76	2.49	2.26	2.06	1.89	1.62
32	0.68	2.91	4.95	6.41	7.84	9.24	12.4	10.9	8.62	7.06	5.91	5.05	4.37	3.84	3.40	3.05	2.75	2.49	2.27	2.09	—
35	0.75	3.21	5.45	7.06	8.64	10.2	13.7	12.4	9.86	8.07	6.76	5.78	5.01	4.39	3.89	3.48	3.14	2.85	2.60	2.39	—
40	0.87	3.71	6.30	8.16	9.98	11.8	15.8	15.2	12.1	9.86	8.27	7.06	6.12	5.37	4.76	4.26	3.84	3.48	—	—	—
45	0.99	4.21	7.15	9.27	11.3	13.4	18.0	18.1	14.4	11.8	9.86	8.42	7.30	6.41	5.68	5.08	4.58	—	—	—	—

Note: Values in the above table are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P.120).

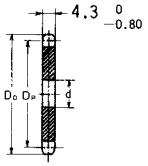
DID 35 Standard Sprocket



Single sprocket with hub on one side (Single B type)



Single sprocket with hub on one side (Single BW type welded)



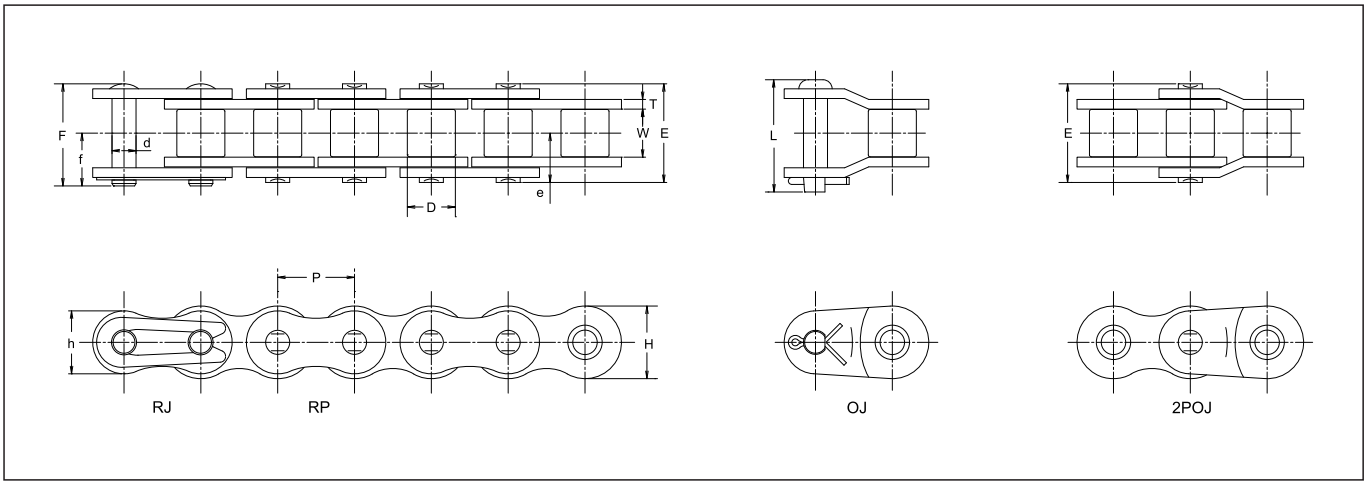
Flat Plain (A type)

Unit (mm)

Number of teeth	Pitch dia. Dp	Tip dia. Do	Single sprocket with hub on one side (B type/ BW type)						Flat plain (A type)			Number of teeth
			Bore d		Hub		Approx. weight (Kg)	Material	Stock d	Approx. weight (Kg)	Material	
			Stock	Max.	(Dia.) DH	(Length) L						
9	27.85	32	8	11	22 ※	20	0.06		8			9
10	30.82	34	8	12	25 ※	20	0.08		8	0.02		10
11	33.81	38	8	14	27 ※	20	0.09		9.5	0.03		11
12	36.80	40	8	17	31 ※	20	0.12		9.5	0.03		12
13	39.80	44	9	17	32 ※	20	0.12		9.5	0.04		13
14	42.80	47	9	17	30	20	0.12		9.5	0.04		14
15	45.81	50	9	20	35	20	0.16		9.5	0.05		15
16	48.82	53	9	22	37	20	0.19		9.5	0.05		16
17	51.84	56	11	25	41	20	0.22		12	0.07		17
18	54.85	59	11	25	44	20	0.25		12	0.07		18
19	57.87	62	11	28.5	47	20	0.28		12	0.09		19
20	60.89	65	11	30	50	20	0.32		12	0.09		20
21	63.91	68	11	32	53	20	0.36		12	0.11		21
22	66.93	71	11	32	53	20	0.37		12	0.11		22
23	69.95	75	11	32	53	20	0.38		12	0.11		23
24	72.97	78	11	32	53	22	0.43	Carbon Steel	12	0.14		24
25	76.00	81	11	32	53	22	0.44		12	0.16		25
26	79.02	84	11	32	53	22	0.45		12	0.16		26
27	82.05	87	11	32	53	22	0.46		12	0.17		27
28	85.07	90	11	32	53	22	0.48		12	0.18		28
29	88.10	93	11	32	53	22	0.49		12	0.20		29
30	91.12	96	11	32	53	22	0.51		12	0.23		30
31	94.15	99	11	32	53	22	0.52		12	0.24	Rolled Steel	31
32	97.18	102	11	32	53	22	0.54		12	0.27		32
33	100.20	105	11	32	53	22	0.55		12	0.28		33
34	103.23	108	11	32	53	22	0.57		12	0.29		34
35	106.26	111	11	32	53	22	0.59		12	0.30		35
36	109.29	114	11	32	53	22	0.61		13	0.32		36
37	112.32	117	11	42	63	22	0.82		13	0.37		37
38	115.34	120	11	42	63	25	0.82		13	0.41		38
39	118.37	123	11	42	63	25	0.83		13	0.42		39
40	121.40	126	11	42	63	25	0.85		13	0.43		40
41	124.43	129	12	42	63	25	0.85					41
42	127.46	132	12	42	63	25	0.86		13	0.47		42
43	130.49	135	12	42	63	25	0.87					43
44	133.52	138	12	42	63	25	0.90					44
45	136.55	142	12	42	63	25	0.95		13	0.50		45
48	145.64	151	12	42	63	25	1.00	Rolled Steel Welded	13	0.55		48
50	151.69	157	12	42	63	25	1.05		13	0.59		50
54	163.82	169	12	42	63	25	1.20		13	0.68		54
55	166.85	172	12	42	63	25	1.22					55
60	182.00	187	12	42	63	25	1.30		13	0.87		60
65	197.15	202	12	45	68	25	1.50					65
70	212.30	218	12	45	68	25	1.70					70
75	227.46	233	12	45	68	25	1.80					75

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. The shaded area of the above table indicates heat treated teeth.
3. Those marked * have slot on hub.

DID 41 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Roller dia.	Pin						Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	F	L	e	f	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID 41	41	12.70	6.38	7.77	3.59	13.7	14.6	15.5	6.9	7.9	1.20	9.6	8.0	6.7	680	8.83	900	10.7	1,090	2.35	240	0.39

Note: The values of average tensile strength and Max. allowable tension are for chains.

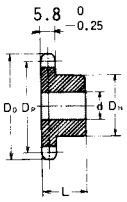
Max. Kilowatt Ratings DID 41

Unit (kW)

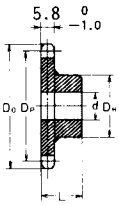
No. of Teeth of Small Sprocket \ Type of Lubrication	Small sprocket rpm (Refer to P132 for the details of lubrication A, B and C.)																		
	50	200	400	600	900	1200	1800	2400	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
	A			B									C						
11	0.11	0.40	0.74	1.06	1.53	1.28	0.69	0.45	0.32	0.26	0.21	0.18	0.15	0.13	0.11	0.10	0.09	0.08	0.07
12	0.12	0.43	0.81	1.17	1.68	1.45	0.79	0.51	0.37	0.29	0.24	0.20	0.17	0.15	0.13	0.12	0.10	0.09	0.08
13	0.14	0.47	0.88	1.27	1.84	1.64	0.89	0.58	0.41	0.33	0.27	0.23	0.19	0.17	0.15	0.13	0.12	0.10	0.10
14	0.15	0.51	0.96	1.38	1.99	1.83	1.00	0.65	0.46	0.37	0.30	0.25	0.22	0.19	0.16	0.15	0.13	0.12	0.11
15	0.16	0.55	1.03	1.49	2.14	2.03	1.11	0.72	0.51	0.41	0.33	0.28	0.24	0.21	0.18	0.16	0.14	0.13	—
16	0.17	0.59	1.11	1.59	2.30	2.24	1.22	0.79	0.57	0.45	0.37	0.31	0.26	0.23	0.20	0.18	0.16	0.14	—
17	0.18	0.63	1.18	1.70	2.45	2.45	1.33	0.87	0.62	0.49	0.40	0.34	0.29	0.25	0.22	0.19	0.17	0.16	—
18	0.19	0.67	1.26	1.81	2.61	2.67	1.45	0.94	0.68	0.54	0.44	0.37	0.31	0.27	0.24	0.21	0.19	0.17	—
19	0.21	0.71	1.33	1.92	2.77	2.90	1.58	1.02	0.73	0.58	0.48	0.40	0.34	0.30	0.26	0.23	0.21	0.19	—
20	0.22	0.76	1.41	2.03	2.92	3.13	1.70	1.11	0.79	0.63	0.51	0.43	0.37	0.32	0.28	0.25	0.22	0.20	—
21	0.23	0.80	1.49	2.14	3.08	3.36	1.83	1.19	0.85	0.68	0.55	0.46	0.40	0.34	0.30	0.27	0.24	0.22	—
22	0.24	0.84	1.56	2.25	3.24	3.61	1.96	1.28	0.91	0.72	0.59	0.50	0.42	0.37	0.32	0.29	0.26	—	—
23	0.25	0.88	1.64	2.36	3.40	3.86	2.10	1.36	0.98	0.77	0.63	0.53	0.45	0.39	0.34	0.31	0.27	—	—
24	0.26	0.92	1.72	2.47	3.56	4.11	2.24	1.45	1.04	0.83	0.68	0.57	0.48	0.42	0.37	0.33	0.29	—	—
25	0.28	0.96	1.79	2.58	3.72	4.37	2.38	1.54	1.11	0.88	0.72	0.60	0.51	0.45	0.39	0.35	—	—	—
28	0.31	1.09	2.03	2.92	4.20	5.18	2.82	1.83	1.31	1.04	0.85	0.71	0.61	0.53	0.46	0.41	—	—	—
30	0.34	1.17	2.18	3.14	4.53	5.74	3.13	2.03	1.45	1.15	0.94	0.79	0.68	0.59	0.51	—	—	—	—
32	0.36	1.25	2.34	3.37	4.86	6.29	3.44	2.24	1.60	1.27	1.04	0.87	0.74	0.64	0.57	—	—	—	—
35	0.40	1.38	2.58	3.71	5.35	6.93	3.94	2.56	1.83	1.45	1.19	1.00	0.85	0.74	—	—	—	—	—
40	0.46	1.60	2.98	4.29	6.18	8.01	4.81	3.13	2.24	1.78	1.45	1.22	1.04	—	—	—	—	—	—
45	0.52	1.81	3.38	4.87	7.02	9.09	5.74	3.73	2.67	2.12	1.73	1.45	—	—	—	—	—	—	—

DID 41 Standard Sprocket

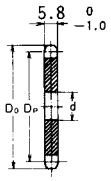
DID 41 is for single only.



Single sprocket with hub on one side (Single B type)



Single sprocket with hub on one side (Single BW type Welded)



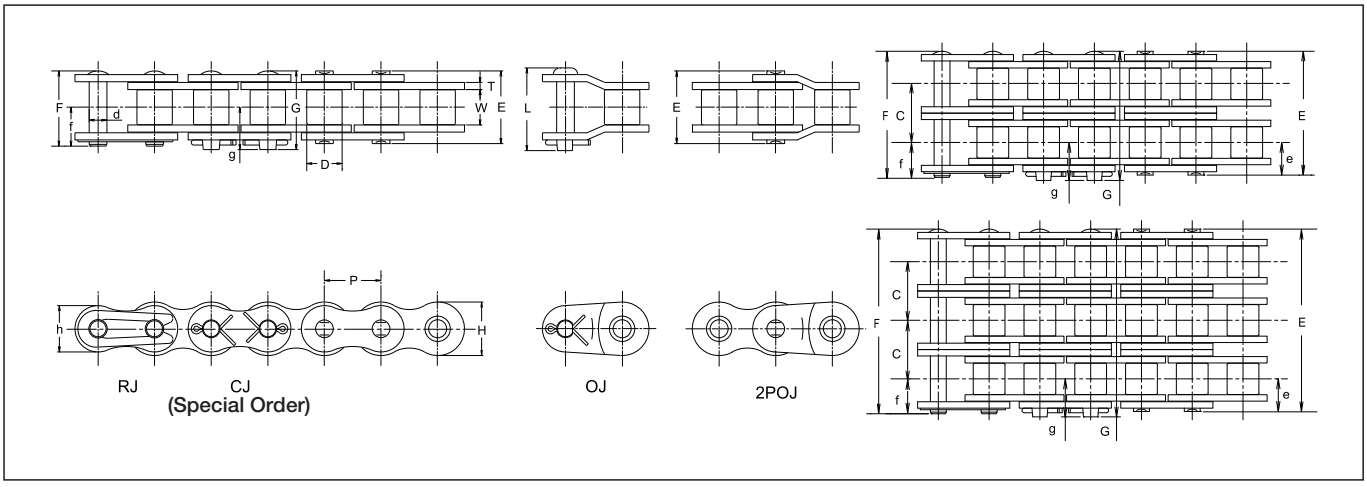
Flat plain (A type)

Unit (mm)

Number of teeth	Pitch dia. Dp	Tip dia. Do	Single sprocket with hub on one side (B type/ BW type)						Flat plain (A type)			Number of teeth
			Bore d		Hub		Approx. weight (Kg)	Material	Stock d	Approx. weight (Kg)	Material	
			Stock	Max.	(Dia.) DH	(Length) L						
9	37.13	42	9	15	28 ※	22	0.11		9			9
10	41.10	46	9	16	32 ※	22	0.14		9	0.05		10
11	45.08	51	10	20	37 ※	22	0.19		10	0.06		11
12	49.07	53	10	22	40 ※	22	0.22		10	0.10		12
13	53.07	58	13	20	37	22	0.23		13	0.10		13
14	57.07	63	13	24	42	22	0.28		13	0.11		14
15	61.08	67	13	28	46	22	0.34		13	0.15		15
16	65.10	71	13	30	50	22	0.40		13	0.17		16
17	69.12	75	13	32	54	22	0.46		13	0.20		17
18	73.14	78	13	35	57	22	0.51		13	0.20		18
19	77.16	83	13	39	62	22	0.59		13	0.26		19
20	81.18	88	14	45	67	25	0.76		14	0.26		20
21	85.21	92	14	45	71	25	0.85		14	0.30		21
22	89.24	96	14	50	75	25	0.95	Carbon Steel	14	0.30		22
23	93.27	98	14	50	77	25	1.00		14	0.35		23
24	97.30	104	14	42	63	25	0.81		14	0.37		24
25	101.33	108	14	42	63	25	0.88		14	0.40		25
26	105.36	112	14	42	63	25	0.92		14	0.35		26
27	109.40	116	14	42	63	25	0.96		14	0.50		27
28	113.43	120	14	42	63	25	1.00		14	0.51		28
29	117.46	124	14	42	63	25	1.10		14	0.51		29
30	121.50	128	14	42	63	25	1.10		14	0.60		30
31	125.53	132	14	45	63	25	1.20		14	0.61	Rolled Steel	31
32	129.57	137	14	45	68	28	1.30		14	0.68		32
33	133.61	140	14	45	68	28	1.30		14	0.70		33
34	137.64	145	14	45	68	28	1.30		14	0.75		34
35	141.68	149	14	45	68	28	1.40		14	0.83		35
36	145.72	153	17	45	67	28	1.40		17	0.90		36
37	149.75	157	17	45	67	28	1.50		17	0.93		37
38	153.79	161	17	45	67	28	1.50		17	0.95		38
39	157.83	165	17	45	67	28	1.60		17	1.05		39
40	161.87	169	17	45	67	28	1.60		17	1.06		40
41	165.91	173	17	45	72	32	1.70		17	1.15		41
42	169.95	177	17	48	72	32	2.00		17	1.20		42
43	173.98	181	17	48	72	32	2.10		17	1.23		43
44	178.02	185	17	48	72	32	2.20	Rolled Steel Welded	17	1.30		44
45	182.06	189	17	48	72	32	2.20		17	1.36		45
48	194.18	201	17	48	72	32	2.30		17	1.53		48
50	202.26	209	17	48	72	32	2.40		17	1.70		50
54	218.42	226	17	48	72	32	2.80		17	2.00		54
60	242.66	250	17	48	72	32	3.20		17	2.50		60
65	262.87	270	17	55	82	32	3.90		17	2.87		65
70	283.07	290	19	55	82	32	4.30		19	3.30		70
72	291.16	299	19	55	82	32	4.80		19	3.40		72
75	303.28	311	19	55	82	32	5.00		19	4.50		75

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. Shaded area of the above dimension table indicates heat treated teeth.
3. Those marked * have slot on hub.

DID 40 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Roller dia.	Pin								Transverse Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	F	G	L	e	f	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID40	40					16.5	17.6	18.1	19.1								13.9	1,410	15.7	1,590	19.1	1,940	3.72	380	0.63
DID40-2	40-2					31.0	32.1	32.6	33.6								27.8	2,820	31.4	3,190	38.2	3,880	6.32	640	1.19
DID40-3	40-3	12.70	7.95	7.92	3.97	45.4	46.4	47.0	47.9	8.3	9.5	10.1	14.4	1.50	12.0	10.4	41.7	4,230	47.1	4,780	57.3	5,820	9.3	940	1.78
DID40-4	40-4					59.9	61.0	61.4	61.4								–	–	62.8	6,380	76.4	7,760	12.3	1,250	2.37
DID40-5	40-5					74.3	75.4	75.8	75.8								–	–	78.5	7,970	95.5	9,700	14.5	1,470	2.96

Note: The values of average tensile strength and Max. allowable tension are for chains.

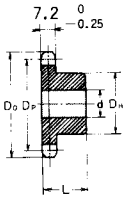
Max. Kilowatt Ratings DID 40

Unit (kW)

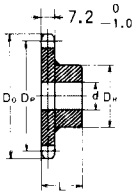
Type of Lubrication / No. of Teeth of Small Sprocket	Small sprocket rpm (Refer to P132 for the details of lubrication A, B and C.)																			
	50	200	400	600	900	1200	1500	1800	2400	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
	A			B										C						
11	0.34	1.21	2.25	3.25	4.68	5.07	4.57	3.47	2.25	1.61	1.28	1.05	0.88	0.75	0.65	0.57	0.50	0.45	0.40	0.37
12	0.38	1.33	2.48	3.57	5.15	5.67	5.21	3.96	2.57	1.84	1.46	1.19	1.00	0.85	0.74	0.65	0.57	0.51	0.46	0.42
13	0.41	1.45	2.70	3.89	5.61	6.18	5.87	4.46	2.90	2.07	1.64	1.34	1.13	0.96	0.83	0.73	0.65	0.58	0.52	0.47
14	0.45	1.57	2.93	4.22	6.08	6.70	6.56	4.99	3.24	2.32	1.84	1.50	1.26	1.07	0.93	0.82	0.72	0.65	0.58	0.53
15	0.48	1.69	3.15	4.55	6.55	7.21	7.21	5.54	3.59	2.57	2.04	1.67	1.40	1.19	1.03	0.91	0.80	0.72	0.65	—
16	0.52	1.81	3.38	4.87	7.02	7.74	7.74	6.10	3.96	2.83	2.25	1.84	1.54	1.31	1.14	1.00	0.88	0.79	0.71	—
17	0.55	1.93	3.61	5.20	7.50	8.26	8.26	6.68	4.34	3.10	2.46	2.01	1.69	1.44	1.25	1.09	0.97	0.87	0.78	—
18	0.59	2.06	3.84	5.54	7.98	8.79	8.79	7.28	4.73	3.38	2.68	2.19	1.84	1.57	1.36	1.19	1.06	0.94	0.85	—
19	0.62	2.18	4.07	5.87	8.46	9.43	9.43	7.89	5.12	3.67	2.91	2.38	1.99	1.70	1.47	1.29	1.15	1.02	0.92	—
20	0.66	2.30	4.31	6.20	8.94	10.2	10.2	8.52	5.54	3.96	3.14	2.57	2.15	1.84	1.59	1.40	1.24	1.11	1.00	—
21	0.69	2.43	4.54	6.54	9.42	11.0	11.0	9.17	5.96	4.26	3.38	2.77	2.32	1.98	1.71	1.50	1.33	1.19	—	—
22	0.73	2.56	4.77	6.88	9.91	11.7	11.7	9.84	6.39	4.57	3.62	2.97	2.48	2.12	1.84	1.61	1.43	1.28	—	—
23	0.77	2.68	5.01	7.22	10.4	12.6	12.6	10.5	6.83	4.88	3.87	3.17	2.66	2.27	1.96	1.72	1.53	1.37	—	—
24	0.80	2.81	5.24	7.55	10.9	13.4	13.4	11.2	7.28	5.21	4.13	3.38	2.83	2.42	2.09	1.84	1.63	1.46	—	—
25	0.84	2.93	5.48	7.90	11.4	14.1	14.1	11.9	7.74	5.54	4.39	3.59	3.01	2.57	2.23	1.95	1.73	—	—	—
28	0.95	3.32	6.19	8.92	12.9	16.0	16.0	14.1	9.17	6.56	5.21	4.26	3.57	3.05	2.64	2.32	2.05	—	—	—
30	1.02	3.57	6.67	9.61	13.9	17.2	17.2	15.7	10.2	7.28	5.77	4.73	3.96	3.38	2.93	2.57	—	—	—	—
32	1.10	3.83	7.16	10.3	14.9	18.4	18.4	17.3	11.2	8.02	6.36	5.21	4.36	3.72	3.23	2.83	—	—	—	—
35	1.21	4.22	7.88	11.4	16.4	20.7	20.7	19.7	12.8	9.17	7.28	5.96	4.99	4.26	3.69	—	—	—	—	—
40	1.40	4.88	9.11	13.1	18.9	24.1	24.1	24.1	15.7	11.2	8.89	7.28	6.10	5.21	—	—	—	—	—	—
45	1.59	5.54	10.3	14.9	21.5	27.4	27.4	27.4	18.7	13.4	10.6	8.69	7.28	—	—	—	—	—	—	—

Note: Values in the above table are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120).

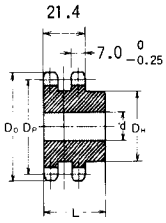
DID 40 Standard Sprocket



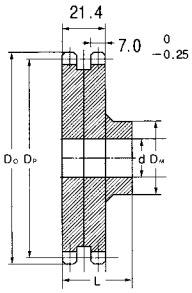
Single sprocket with hub on one side (Single B type)



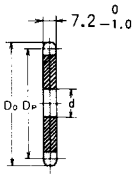
Single sprocket with hub on one side (Single BW type Welded)



Double sprocket with hub on one side (Double B type)



Double sprocket with hub on one Side (Double BW type Welded)



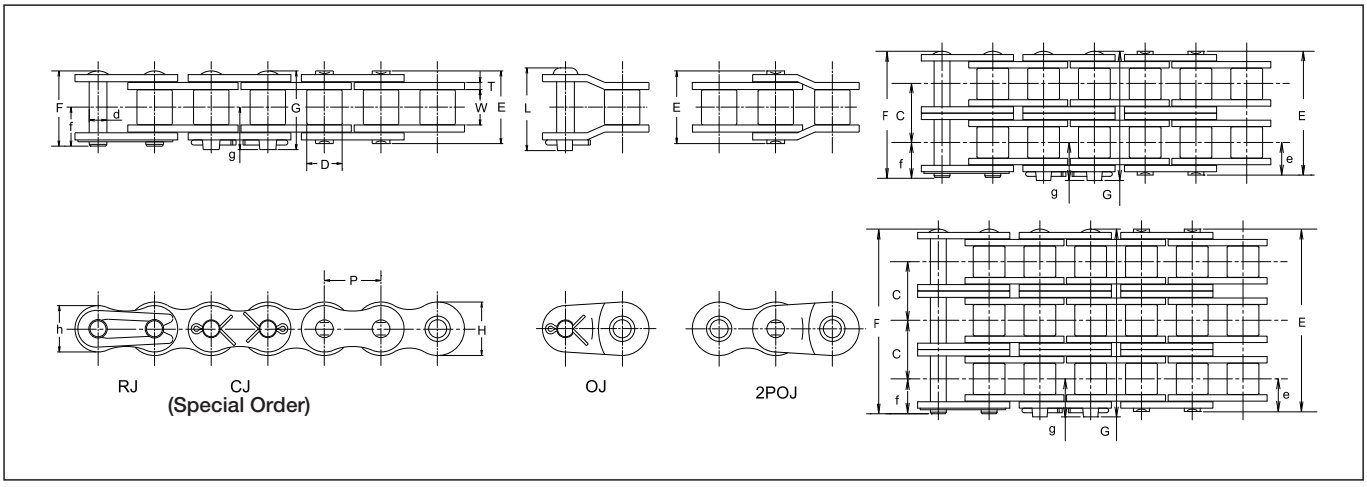
Flat plain (A type)

Unit (mm)

Number of teeth	Pitch dia.	Tip dia.	Single sprocket with hub on one side (B type/ BW type)						Double sprocket with hub on one side (B type/ BW type)						Flat plain (A type)			Number of teeth
			Bore d		Hub		Approx. weight (Kg)	Material	Bore d		Hub		Approx. weight (Kg)	Material	Stock	Approx. weight (Kg)	Material	
	DP	DO	Stock	Max.	(Dia.) DH	(Length) L			Stock	Max.	(Dia.) DH	(Length) L			d			
9	37.13	42	9	15	28 ※	22	0.11	Carbon Steel							9		Rolled Steel	9
10	41.10	46	9	18	32 ※	22	0.14								9	0.05		10
11	45.08	50	10	20	36 ※	22	0.19								10	0.06		11
12	49.07	55	10	22	40 ※	22	0.22		14	18	35	35	0.34		10	0.10		12
13	53.07	59	13	22	37	22	0.23		14	20	37	35	0.39		13	0.10		13
14	57.07	63	13	25	42	22	0.28		14	24	42	35	0.47		13	0.11		14
15	61.08	67	13	30	46	22	0.34		14	28	46	35	0.56		13	0.15		15
16	65.10	71	13	32	50	22	0.40		14	30	50	35	0.65		13	0.17		16
17	69.12	75	13	35	54	22	0.46		14	32	54	35	0.75		13	0.20		17
18	73.14	79	13	35	57	22	0.51		14	35	57	35	0.85		13	0.20		18
19	77.16	83	13	40	62	22	0.59		14	39	62	35	0.98		13	0.20		19
20	81.18	87	14	45	67	25	0.76		14	45	67	40	1.30		14	0.26		20
21	85.21	91	14	45	71	25	0.85		14	47	71	40	1.40		14	0.30		21
22	89.24	95	14	50	75	25	0.95		14	50	75	40	1.60		14	0.30		22
23	93.27	99	14	50	77	25	1.00		14	50	77	40	1.70		14	0.35		23
24	97.30	103	14	42	63	25	0.81		14	55	83	40	1.90	Carbon Steel	14	0.37		24
25	101.33	108	14	42	63	25	0.88		18	59	87	40	2.10		14	0.40		25
26	105.36	112	14	42	63	25	0.92		18	62	91	40	2.30		14	0.45		26
27	109.40	116	14	42	63	25	0.96								14	0.50		27
28	113.43	120	14	42	63	25	1.00								14	0.51		28
29	117.46	124	14	42	63	25	1.10								14	0.51		29
30	121.50	128	14	42	63	25	1.10		18	73	106	40	3.00		14	0.60		30
31	125.53	132	14	45	63	25	1.20								14	0.61		31
32	129.57	136	14	45	68	28	1.30								14	0.68		32
33	133.61	140	14	45	68	28	1.30								14	0.70		33
34	137.64	145	14	45	68	28	1.30								14	0.75		34
35	141.68	149	14	45	68	28	1.40		17	55	100	50	3.80		14	0.83		35
36	145.72	153	17	45	68	28	1.40	Rolled Steel Welded							17	0.90		36
37	149.75	157	17	45	68	28	1.50								17	0.93		37
38	153.79	161	17	45	68	28	1.50								17	0.95		38
39	157.83	165	17	45	68	28	1.60								17	1.05		39
40	161.87	169	17	45	68	28	1.60		17	55	100	50	4.80		17	1.06		40
41	165.91	173	17	45	73	32	1.70								17	1.15		41
42	169.94	177	17	48	73	32	2.00								17	1.20		42
43	173.98	181	17	48	73	32	2.10								17	1.23		43
44	178.02	185	17	48	73	32	2.20								17	1.30		44
45	182.06	189	17	48	73	32	2.20		17	63	97	50	5.50		17	1.36		45
48	194.18	201	17	48	73	32	2.30							Rolled Steel Welded	17	1.53		48
50	202.26	209	17	48	73	32	2.40								17	1.70		50
54	218.42	226	17	48	73	32	2.80		17	63	97	50	7.20		17	2.00		54
60	242.66	250	17	48	73	32	3.20		17	63	107	50	9.20		17	2.50		60
65	262.87	270	17	55	83	32	3.90								17	2.87		65
70	283.07	290	19	55	83	32	4.30								19	3.30		70
72	291.15	299	19	55	83	32	4.80								19	3.40		72
75	303.28	311	19	55	83	32	4.80								19	4.50		75

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. The shaded area of the above table indicates heat treated teeth.
3. Due to material availability and production reasons, carbon steel may be used for teeth portion and rolled steel for hub and welded for double sprockets with 31 ~ 40 teeth without notice.
4. Those marked * have slot on hub.

DID 50 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Roller dia.	Pin								Transverse Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	F	G	L	e	f	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID50	50					20.3	21.9	22.1	23.2								21.8	2,210	26.5	2,690	30.8	3,130	6.86	700	1.06
DID50-2	50-2					38.5	40.1	40.3	41.3								43.6	4,430	53	5,380	61.6	6,250	11.7	1,190	2.04
DID50-3	50-3	15.875	9.53	10.16	5.09	56.7	58.3	58.5	59.5	10.2	11.6	12.1	18.1	2.00	15.0	13.0	65.4	6,640	79.5	8,070	92.4	9,380	17.2	1,750	3.06
DID50-4	50-4					74.8	76.4	76.6	76.6								—	—	106	10,760	123	12,490	22.6	2,290	4.06
DID50-5	50-5					93.0	94.5	94.7	94.7								—	—	132	13,400	154	15,630	26.8	2,720	5.08

Note: The values of average tensile strength and Max. allowable tension are for chains.

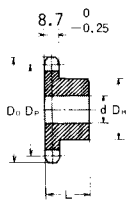
Max. Kilowatt Ratings DID 50

Unit (kW)

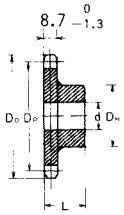
No. of Teeth of Small Sprocket \ Type of Lubrication	Small Sprocket revolutions per minute (rpm) (See P132 for the details of type of lubrication A, B and C.)																		
	50	100	300	500	900	1200	1500	1800	2100	2400	2700	3000	3300	3500	4000	4500	5000	5400	5800
	A			B										C					
11	0.76	1.42	3.82	6.05	7.88	7.64	5.46	4.15	3.30	2.70	2.26	1.93	1.67	1.53	1.25	1.05	0.89	0.80	0.71
12	0.83	1.56	4.19	6.64	8.71	8.70	6.22	4.73	3.76	3.07	2.57	2.20	1.90	1.74	1.43	1.19	1.02	0.91	0.81
13	0.91	1.70	4.57	7.24	9.82	9.81	7.02	5.34	4.24	3.47	2.90	2.48	2.15	1.97	1.61	1.35	1.15	1.02	0.92
14	0.98	1.84	4.95	7.85	11.0	11.0	7.85	5.97	4.73	3.87	3.25	2.77	2.40	2.20	1.80	1.51	1.28	1.14	—
15	1.06	1.98	5.34	8.45	12.2	12.2	8.70	6.62	5.25	4.30	3.60	3.07	2.66	2.44	1.99	1.67	1.43	1.27	—
16	1.14	2.13	5.72	9.06	13.4	13.4	9.59	7.29	5.78	4.73	3.97	3.39	2.93	2.69	2.20	1.84	1.57	1.40	—
17	1.21	2.27	6.11	9.68	14.7	14.7	10.5	7.99	6.34	5.19	4.34	3.71	3.21	2.94	2.41	2.02	1.72	1.53	—
18	1.29	2.41	6.50	10.3	15.8	15.8	11.4	8.70	6.90	5.65	4.73	4.04	3.50	3.21	2.62	2.20	1.88	—	—
19	1.37	2.56	6.89	10.9	16.8	16.8	12.4	9.44	7.49	6.13	5.13	4.38	3.80	3.48	2.85	2.38	2.03	—	—
20	1.45	2.71	7.28	11.5	17.7	17.7	13.4	10.2	8.09	6.62	5.55	4.73	4.10	3.76	3.07	2.57	2.20	—	—
21	1.53	2.85	7.68	12.2	18.7	18.7	14.4	11.0	8.70	7.12	5.97	5.09	4.41	4.04	3.31	2.77	2.36	—	—
22	1.61	3.00	8.07	12.8	19.6	19.6	15.5	11.8	9.33	7.64	6.40	5.46	4.73	4.33	3.55	2.97	2.54	—	—
23	1.68	3.15	8.47	13.4	20.6	20.6	16.5	12.6	9.97	8.16	6.84	5.84	5.06	4.63	3.79	3.18	—	—	—
24	1.76	3.30	8.87	14.1	21.6	21.6	17.6	13.4	10.6	8.70	7.29	6.22	5.39	4.94	4.04	3.39	—	—	—
25	1.84	3.44	9.27	14.7	22.5	22.5	18.7	14.3	11.3	9.25	7.75	6.62	5.74	5.25	4.30	3.60	—	—	—
28	2.08	3.89	10.5	16.6	26.8	26.8	22.2	16.9	13.4	11.0	9.19	7.85	6.80	6.22	5.09	—	—	—	—
30	2.25	4.20	11.3	17.9	29.1	29.1	24.6	18.7	14.9	12.2	10.2	8.70	7.54	6.90	5.65	—	—	—	—
32	2.41	4.50	12.1	19.2	31.4	31.4	27.1	20.6	16.4	13.4	11.2	9.59	8.31	7.61	6.22	—	—	—	—
35	2.65	4.96	13.3	21.1	34.4	34.4	31.0	23.6	18.7	15.3	12.8	11.0	9.50	8.70	7.12	—	—	—	—
40	3.07	5.73	15.4	24.4	40.4	40.4	37.9	28.8	22.9	18.7	15.7	13.4	11.6	10.6	—	—	—	—	—
45	3.48	6.50	17.5	27.7	46.0	46.0	45.2	34.4	27.3	22.4	18.7	16.0	13.9	—	—	—	—	—	—

Note: Values in the table above are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120).

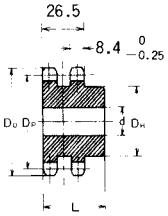
DID 50 Standard Sprocket



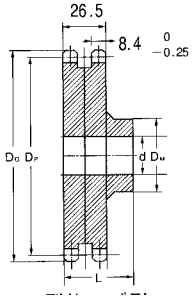
Single sprocket with hub on one side (Single B type)



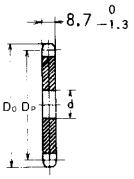
Single sprocket with hub on one side (Single BW type Welded)



Double sprocket with hub on one side (Double B type)



Double sprocket with hub on one side (Double BW type Welded)



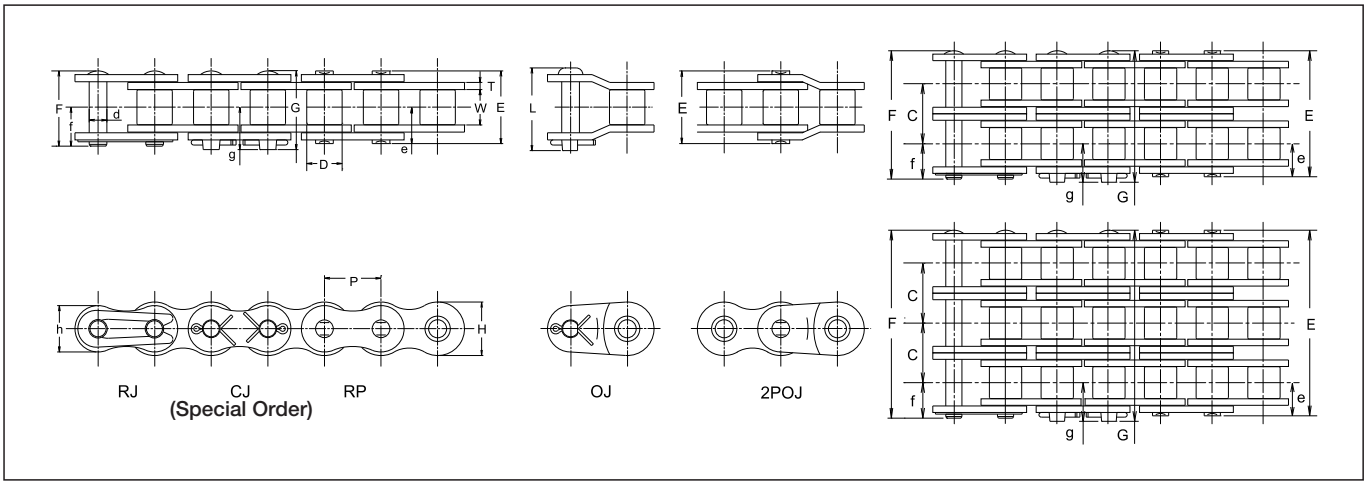
Flat plain (A type)

Unit (mm)

Number of teeth	Pitch dia. Dp	Tip dia. Do	Single sprocket with hub on one side (B type/ BW type)						Double sprocket with hub on one side (B type/ BW type)						Flat plain (A type)			Number of teeth
			Bore d		Hub		Approx. weight (Kg)	Material	Bore d		Hub		Approx. weight (Kg)	Material	Stock d	Approx. weight (Kg)	Material	
			Stock	Max.	(Dia.) DH	(Length) L			Stock	Max.	(Dia.) DH	(Length) L						
9	46.42	53	10	19	34 ※	25	0.20	Carbon Steel							10		Rolled Steel	9
10	51.37	58	10	25	40 ※	25	0.27								10	0.11		10
11	56.35	63	13	25	45 ※	25	0.33								13	0.15		11
12	61.34	68	13	32	50 ※	25	0.41		14	24	42	40	0.60		13	0.18		12
13	66.33	73	13	32	51 ※	25	0.46		14	28	47	40	0.73		13	0.18		13
14	71.34	79	13	35	52	25	0.52		14	32	52	40	0.87		13	0.20		14
15	76.35	84	13	38	57	25	0.62		14	35	57	40	1.00		13	0.26		15
16	81.37	89	13	40	62	25	0.72		14	39	62	45	1.30		13	0.30		16
17	86.39	94	13	45	67	25	0.83		14	45	67	45	1.50		13	0.35		17
18	91.42	99	13	47	72	28	1.00		14	47	72	45	1.70		13	0.40		18
19	96.45	104	13	47	73	28	1.10		14	52	79	45	2.00		13	0.44		19
20	101.48	109	14	47	73	28	1.20		18	55	82	45	2.20		14	0.50		20
21	106.51	114	14	47	73	28	1.20		18	60	89	45	2.50		14	0.54		21
22	111.55	119	16	47	73	28	1.30		18	63	92	50	2.90		16	0.59		22
23	116.59	124	16	47	73	28	1.30		18	67	99	50	3.30		16	0.65		23
24	121.62	129	16	47	73	28	1.40		18	70	102	50	3.60	Carbon Steel	16	0.70		24
25	126.66	134	16	47	73	28	1.50		18	75	109	50	4.00		16	0.80		25
26	131.70	139	16	48	73	28	1.50		18	75	114	50	4.00		16	0.85		26
27	136.74	144	16	48	73	28	1.50								16	0.90		27
28	141.79	149	16	48	73	28	1.60								16	1.00		28
29	146.83	154	16	48	73	28	1.60								16	1.10		29
30	151.87	160	16	48	73	28	1.70		23	63	120	50	5.20		16	1.15		30
31	156.92	165	16	48	73	28	1.80								16	1.20		31
32	161.96	170	16	48	73	28	1.80								16	1.26		32
33	167.01	175	16	48	73	28	1.90								16	1.35		33
34	172.05	180	16	48	73	28	2.10								16	1.45		34
35	177.10	185	16	48	73	28	2.20		23	63	120	50	6.40		16	1.55		35
36	182.15	191	19	55	83	35	2.70	Rolled Steel Welded							19	1.67		36
37	187.19	196	19	55	83	35	2.80								19	1.80		37
38	192.24	201	19	55	83	35	2.90								19	1.85		38
39	197.29	206	19	55	83	35	2.90								19	2.00		39
40	202.33	211	19	55	83	35	3.10		23	66	120	56	8.30		19	2.05		40
41	207.38	216	19	55	83	35	3.20								19	2.12		41
42	212.43	221	19	55	83	35	3.30								19	2.30		42
43	217.48	226	19	55	83	35	3.40								19	2.43		43
44	222.53	231	19	55	83	35	3.50								19	2.60		44
45	227.58	237	19	55	83	35	3.60		23	66	107	56	9.70		19	2.60		45
48	242.73	252	19	55	83	35	4.00							Rolled Steel Welded	19	3.00		48
50	252.82	262	19	55	83	35	4.30								19	3.30		50
54	273.03	282	19	55	83	35	4.80		23	66	107	63	14.20		19	3.90		54
60	303.33	312	19	55	83	35	5.60		23	66	107	63	16.60		19	4.80		60
65	328.58	338	19	63	93	40	6.90								19	5.80		65
70	353.84	363	20	63	93	40	7.70								20	6.35		70
72	363.94	373	20	63	93	40										6.60		72
75	379.10	388	20	63	93	40	8.60								20	7.00		75

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. The shaded area of the above table indicates heat treated teeth.
3. Due to material availability and production reasons, carbon steel may be used for teeth portion and rolled steel for hub and welded for double sprockets with 26 ~ 31 teeth without notice.
4. Those marked * have slot on hub.

DID 60 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Roller dia.	Pin								Transverse Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	F	G	L	e	f	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID60	60					25.4	26.9	27.9	29.8								31.3	3,180	35.3	3,580	44.1	4,480	9.31	950	1.53
DID60-2	60-2					48.3	49.8	50.9	52.5								62.6	6,360	70.6	7,170	88.2	8,950	15.8	1,600	3.03
DID60-3	60-3	19.05	12.70	11.91	5.96	71.2	72.7	73.7	75.3	12.7	14.3	15.1	22.8	2.40	18.1	15.6	93.9	9,530	106	10,760	132	13,400	23.3	2,370	4.51
DID60-4	60-4					94.0	95.5	96.5	96.5								–	–	141	14,310	176	17,870	30.7	3,120	6.03
DID60-5	60-5					116.8	118.8	119.3	119.3								–	–	177	17,970	221	22,440	36.3	3,690	7.53

Note: The values of average tensile strength and Max. allowable tension are for chains.

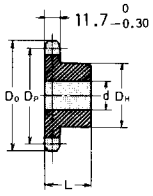
Max. Kilowatt Ratings DID 60

Unit (kW)

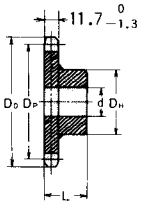
No. of Teeth of Small Sprocket \ Type of Lubrication	Small Sprocket revolutions per minute (rpm) (See P132 for the details of type of lubrication A, B and C.)																				
	50	100	200	500	700	900	1200	1400	1500	1600	1800	2000	2200	2400	2600	2800	3000	3500	3800	4000
	A			B												C				
11	1.26	2.36	4.40	10.1	12.7	12.7	8.84	7.01	6.32	5.74	4.81	4.10	3.56	3.12	2.77	2.48	2.23	1.77	1.56	1.45
12	1.39	2.59	4.84	11.0	13.9	13.9	10.1	7.99	7.20	6.54	5.48	4.68	4.05	3.56	3.15	2.82	2.54	2.02	1.78	1.65
13	1.51	2.83	5.28	12.0	15.2	15.2	11.4	9.01	8.12	7.37	6.18	5.27	4.57	4.01	3.56	3.18	2.87	2.28	2.01	1.86
14	1.64	3.06	5.72	13.1	16.7	16.7	12.7	10.1	9.08	8.24	6.90	5.89	5.11	4.48	3.98	3.56	3.21	2.54	2.25	2.08
15	1.77	3.30	6.16	14.1	18.5	18.5	14.1	11.2	10.1	9.14	7.66	6.54	5.67	4.97	4.41	3.94	3.56	2.82	2.49	2.31
16	1.89	3.54	6.60	15.1	20.4	20.4	15.5	12.3	11.1	10.1	8.44	7.20	6.24	5.48	4.86	4.35	3.92	3.11	2.75	2.54
17	2.02	3.78	7.05	16.1	21.8	22.3	17.0	13.5	12.2	11.0	9.24	7.89	6.84	6.00	5.32	4.76	4.29	3.40	3.01	2.79
18	2.15	4.02	7.50	17.1	23.2	23.7	18.5	14.7	13.2	12.0	10.1	8.60	7.45	6.54	5.80	5.19	4.68	3.71	3.28	3.04
19	2.28	4.26	7.95	18.1	24.6	25.1	20.1	15.9	14.4	13.0	10.9	9.32	8.08	7.09	6.29	5.63	5.07	4.02	3.56	3.29
20	2.41	4.50	8.40	19.2	26.0	26.6	21.7	17.2	15.5	14.1	11.8	10.1	8.73	7.66	6.79	6.08	5.48	4.35	3.84	3.56
21	2.54	4.75	8.86	20.2	27.4	28.0	23.3	18.5	16.7	15.1	12.7	10.8	9.39	8.24	7.31	6.54	5.89	4.68	4.13	3.83
22	2.67	4.99	9.32	21.3	28.8	29.5	25.0	19.8	17.9	16.2	13.6	11.6	10.1	8.84	7.84	7.01	6.32	5.01	4.43	4.10
23	2.80	5.24	9.77	22.3	30.2	30.9	26.7	21.2	19.1	17.4	14.5	12.4	10.8	9.45	8.38	7.49	6.76	5.36	4.74	4.39
24	2.94	5.48	10.2	23.4	31.6	32.5	28.5	22.6	20.4	18.5	15.5	13.2	11.5	10.1	8.93	7.99	7.20	5.71	5.05	4.68
25	3.07	5.73	10.7	24.4	33.0	34.5	30.3	24.0	21.7	19.7	16.5	14.1	12.2	10.7	9.49	8.49	7.66	6.08	5.37	4.97
28	3.47	6.48	12.1	27.6	37.3	40.9	35.9	28.5	25.7	23.3	19.5	16.7	14.5	12.7	11.3	10.1	9.08	7.20	6.37	—
30	3.74	6.98	13.0	29.7	40.2	44.9	39.8	31.6	28.5	25.9	21.7	18.5	16.0	14.1	12.5	11.2	10.1	7.99	—	—
32	4.01	7.48	14.0	31.9	43.1	48.1	43.9	34.8	31.4	28.5	23.9	20.4	17.7	15.5	13.8	12.3	11.1	8.80	—	—
35	4.41	8.24	15.4	35.1	47.5	53.0	50.2	39.8	35.9	32.6	27.3	23.3	20.2	17.7	15.7	14.1	12.7	—	—	—
40	5.10	9.52	17.8	40.6	54.9	61.3	61.3	48.6	43.9	39.8	33.4	28.5	24.7	21.7	19.2	17.2	15.5	—	—	—
45	5.79	10.8	20.2	46.1	62.3	69.4	69.4	58.0	52.3	47.5	39.8	34.0	29.5	25.9	22.9	20.5	—	—	—	—

Note: Values in the table above are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120).

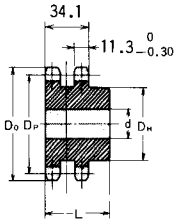
DID 60 Standard Sprocket



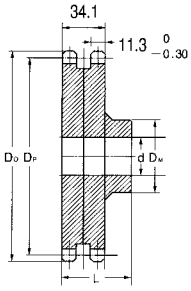
Single sprocket with hub on one side (Single B type)



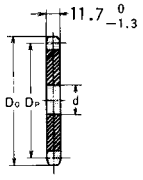
Single sprocket with hub on one side (Single BW type Welded)



Double sprocket with hub on one side (Double B type)



Double sprocket with hub on one side (Double BW type Welded)



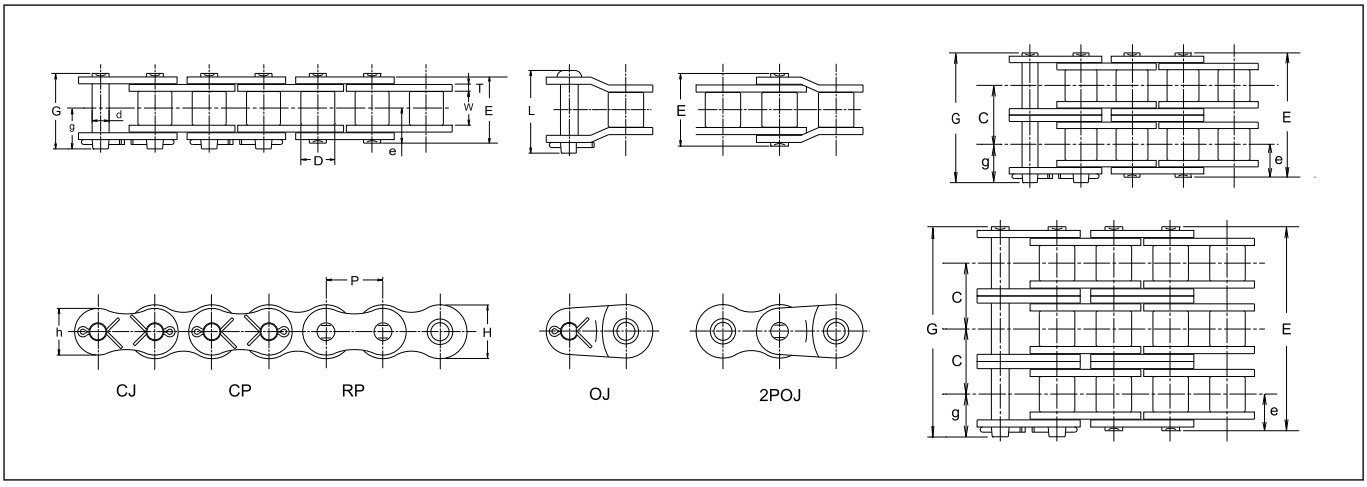
Flat plain (A type)

Unit (mm)

Number of teeth	Pitch dia.	Tip dia.	Single sprocket with hub on one side (B type/ BW type)						Double sprocket with hub on one side (B type/ BW type)						Flat plain (A type)			Number of teeth
			Bore d		Hub		Approx. weight (Kg)	Material	Bore d		Hub		Approx. weight (Kg)	Material	Stock	Approx. weight (Kg)	Material	
	Dp	Do	Stock	Max.	(Dia.) DH	(Length) L			Stock	Max.	(Dia.) DH	(Length) L			d			
9	55.70	63	10	24	42 ※	32	0.40								10			9
10	61.65	70	14	30	49 ※	32	0.49								10	0.20		10
11	67.62	76	14	32	51 ※	32	0.60								14	0.26		11
12	73.60	82	14	35	51	32	0.69		16	32	51	50	1.10		14	0.30		12
13	79.60	88	14	38	57	32	0.81		18	35	57	50	1.30		14	0.37		13
14	85.61	94	16	40	62	32	0.96		18	39	62	56	1.70		16	0.43		14
15	91.63	101	16	45	68	32	1.10		18	45	68	56	2.00		16	0.51		15
16	97.65	107	16	50	73	32	1.30		18	50	76	56	2.40		16	0.60		16
17	103.67	113	16	50	73	32	1.40		18	55	82	56	2.80		16	0.68		17
18	109.70	119	16	55	83	40	2.00		18	59	87	56	3.10		16	0.75		18
19	115.74	125	16	55	83	40	2.10	Carbon Steel	18	63	95	56	3.60		16	0.88		19
20	121.78	131	16	55	83	40	2.20		20	69	101	56	4.10		16	0.96		20
21	127.82	137	16	55	83	40	2.30		20	75	107	56	4.50	Carbon Steel	16	1.10		21
22	133.86	143	16	55	83	40	2.40		20	78	113	56	5.00		16	1.15		22
23	139.90	149	16	55	83	40	2.50		20	80	119	56	5.30		16	1.20		23
24	145.95	155	16	55	83	40	2.50		20	80	120	56	5.40		16	1.40		24
25	151.99	162	16	55	83	40	2.70		20	80	120	56	6.00		16	1.51		25
26	158.04	168	16	55	83	40	2.90		20	80	120	56	5.30		16	1.65		26
27	164.09	174	16	55	83	40	3.00								16	1.70		27
28	170.14	180	16	55	83	40	3.10								16	1.90		28
29	176.19	186	16	55	83	40	3.30								16	2.05		29
30	182.25	193	20	55	83	40	3.40		20	85	130	56	8.40		20	2.25		30
31	188.30	199	20	55	83	40	3.50								20	2.40	Rolled Steel	31
32	194.35	205	20	55	83	40	3.70								20	2.55		32
33	200.41	211	20	55	83	40	3.80								20	2.70		33
34	206.46	217	20	55	83	40	4.00								20	2.90		34
35	212.52	223	20	55	83	40	4.20		20	85	130	56	11.00		20	3.12		35
36	218.57	229	20	55	83	40	4.40								20	3.21		36
37	224.63	235	20	55	83	40	4.60								20	3.45		37
38	230.69	241	20	55	83	40	4.80								20	3.56		38
39	236.74	248	20	55	83	40	4.90								20	3.83		39
40	242.80	253	20	55	83	40	5.10		20	75	117	56	13.00		20	4.05		40
41	248.86	260	20	63	93	45	5.50	Rolled Steel Welded							20	4.22		41
42	254.92	266	20	63	93	45	6.00								20	4.37		42
43	260.98	272	20	63	93	45	6.20								20	4.61		43
44	267.03	278	20	63	93	45	6.40								20	4.89		44
45	273.09	284	20	63	93	45	6.70		20	75	117	71	18.00	Rolled Steel Welded	20	5.10		45
48	291.27	302	20	63	93	45	7.40								20	5.75		48
50	303.39	314	20	63	93	45	7.80								20	6.25		50
54	327.63	338	20	63	93	45	8.80		20	75	117	71	24.20		20	7.25		54
60	363.99	375	20	63	93	45	10.60		20	85	127	71	29.80		20	9.00		60
65	394.30	405	20	75	107	45	12.80								20	10.60		65
70	424.61	436	20	75	107	45	14.40								20	12.20		70
72	436.73	448													20	12.50		72
75	454.92	466	20	75	107	45	16.30								20	13.00		75

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. The shaded area of the above table indicates heat treated teeth.
3. Due to material availability and production reasons, carbon steel may be used for teeth portion and rolled steel for hub and welded for double sprockets with 23 ~ 35 teeth without notice.
4. Those marked * have slot on hub.

DID 80 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Roller dia.	Pin						Transvers e Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	G	L	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID80	80	25.40	15.88	15.88	7.94	32.6	35.4	37.1	16.3	19.00	29.3	3.20	24.0	20.8	55.6	5,640	71.6	7,270	78.4	7,960	14.7	1,490	2.55
DID80-2	80-2					61.9	64.7	66.3							111.2	11,290	143	14,520	157	15,940	25	2,540	5.07
DID80-3	80-3					91.3	94.0	95.1							166.8	16,930	215	21,830	235	23,860	36.8	3,740	7.58
DID80-4	80-4					120.6	123.3	124.4							—	—	286	29,040	314	31,880	48.5	4,920	10.1
DID80-5	80-5					149.9	152.6	153.7							—	—	358	36,350	392	39,800	57.3	5,820	12.6

Note: The values of average tensile strength and Max. allowable tension are for chains.

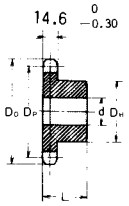
Max. Kilowatt Ratings DID 80

Unit (kW)

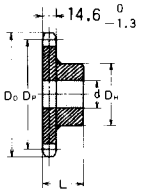
No. of Teeth of Small Sprocket \ Type of Lubrication	Small Sprocket revolutions per minute (rpm) (See P132 for the details of type of lubrication A, B and C.)																								
	20	50	100	200	300	400	500	700	900	1000	1200	1400	1500	1600	1800	2000	2200	2400	2600	2700	2800	3000	3200	3400
	A			B											C									
11	1.22	2.79	5.21	9.73	14.0	18.2	22.2	22.8	17.1	14.6	11.1	8.83	7.96	7.22	6.05	5.17	4.48	3.93	3.48	3.29	3.12	2.81	2.55	2.33
12	1.34	3.07	5.73	10.7	15.4	20.0	24.4	25.0	19.5	16.7	12.7	10.1	9.07	8.23	6.90	5.89	5.10	4.48	3.97	3.75	3.55	3.20	2.91	2.65
13	1.46	3.34	6.25	11.7	16.8	21.8	26.6	27.3	22.0	18.8	14.3	11.3	10.2	9.28	7.78	6.64	5.75	5.05	4.48	4.23	4.01	3.61	3.28	2.99
14	1.59	3.62	6.77	12.6	18.2	23.6	28.8	29.5	24.6	21.0	16.0	12.7	11.4	10.4	8.69	7.42	6.43	5.64	5.01	4.73	4.48	4.04	3.66	3.35
15	1.71	3.90	7.29	13.6	19.6	25.4	31.1	32.6	27.3	23.3	17.7	14.1	12.7	11.5	9.64	8.23	7.13	6.26	5.55	5.25	4.97	4.48	4.06	—
16	1.83	4.19	7.82	14.6	21.0	27.2	33.3	35.9	30.1	25.7	19.5	15.5	14.0	12.7	10.6	9.07	7.86	6.90	6.12	5.78	5.47	4.93	4.48	—
17	1.96	4.47	8.35	15.6	22.4	29.1	35.5	39.3	32.9	28.1	21.4	17.0	15.3	13.9	11.6	9.93	8.61	7.55	6.70	6.33	5.99	5.40	4.90	—
18	2.08	4.75	8.88	16.6	23.9	30.9	37.8	42.8	35.9	30.6	23.3	18.5	16.7	15.1	12.7	10.8	9.38	8.23	7.30	6.90	6.53	5.89	5.34	—
19	2.21	5.04	9.41	17.6	25.3	32.8	40.1	46.0	38.9	33.2	25.3	20.0	18.1	16.4	13.8	11.7	10.2	8.93	7.92	7.48	7.08	6.39	—	—
20	2.33	5.33	9.95	18.6	26.8	34.7	42.4	48.7	42.0	35.9	27.3	21.7	19.5	17.7	14.9	12.7	11.0	9.64	8.55	8.08	7.65	6.90	—	—
21	2.46	5.62	10.5	19.6	28.2	36.5	44.7	51.3	45.2	38.6	29.4	23.3	21.0	19.1	16.0	13.6	11.8	10.4	9.20	8.69	8.23	7.42	—	—
22	2.59	5.91	11.0	20.6	29.7	38.4	47.0	53.9	48.5	41.4	31.5	25.0	22.5	20.4	17.1	14.6	12.7	11.1	9.86	9.32	8.83	7.96	—	—
23	2.71	6.20	11.6	21.6	31.1	40.3	49.3	56.6	51.8	44.2	33.6	26.7	24.1	21.9	18.3	15.6	13.6	11.9	10.5	9.96	9.44	3.65	—	—
24	2.84	6.49	12.1	22.6	32.6	42.2	51.6	59.3	55.2	47.1	35.9	28.5	25.7	23.3	19.5	16.7	14.4	12.7	11.2	10.6	10.1	—	—	—
25	2.97	6.78	12.7	23.6	34.0	44.1	53.9	61.9	58.7	50.1	38.1	30.3	27.3	24.8	20.8	17.7	15.4	13.5	12.0	11.3	10.7	—	—	—
28	3.36	7.67	14.3	26.7	38.5	49.8	60.9	73.5	69.6	59.4	45.2	35.9	32.3	29.4	24.6	21.0	18.2	16.0	14.2	13.4	—	—	—	—
30	3.62	8.26	15.4	28.8	41.5	53.7	65.6	79.6	77.2	65.9	50.1	39.8	35.9	32.6	27.3	23.3	20.2	17.7	15.7	6.03	—	—	—	—
32	3.88	8.86	16.5	30.9	44.4	57.6	70.4	85.0	85.0	72.6	55.2	43.8	39.5	35.9	30.1	25.7	22.2	19.5	—	—	—	—	—	—
35	4.27	9.76	18.2	34.0	49.0	63.4	77.5	95.0	95.0	83.0	63.2	50.1	45.2	41.0	34.4	29.4	25.4	—	—	—	—	—	—	—
40	4.94	11.3	21.0	39.3	56.6	73.3	89.6	110	110	101	77.2	61.2	55.2	50.1	42	35.9	—	—	—	—	—	—	—	—
45	5.61	12.8	23.9	44.6	64.2	83.2	102	126	126	121	92.1	73.1	65.9	59.8	50.1	—	—	—	—	—	—	—	—	—

Note: 1. Values in the table above are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120).
2. Consult us when the ratings beyond the dotted line to rightward.

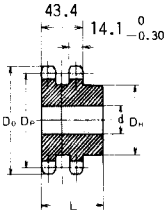
DID 80 Standard Sprocket



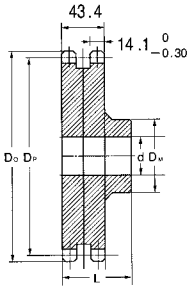
Single sprocket with hub on one side (Single B type)



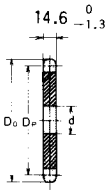
Single sprocket with hub on one side (Single BW type Welded)



Double sprocket with hub on one side (Double B type)



Double sprocket with hub on one side (Double BW type Welded)



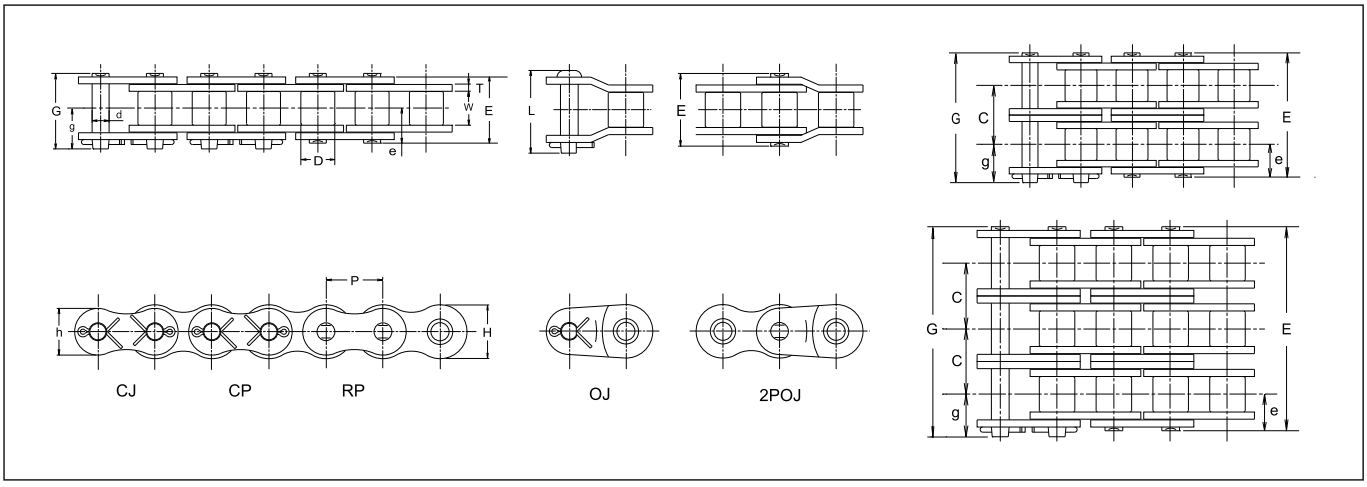
Flat plain (A type)

Unit (mm)

Number of teeth	Pitch dia. Dp	Tip dia. Do	Single sprocket with hub on one side (B type/ BW type)						Double sprocket with hub on one side (B type/ BW type)						Flat plain (A type)			Number of teeth
			Bore d		Hub		Approx. weight (Kg)	Material	Bore d		Hub		Approx. weight (Kg)	Material	Stock d	Approx. weight (Kg)	Material	
			Stock	Max.	(Dia.) DH	(Length) L			Stock	Max.	(Dia.) DH	(Length) L						
9	74.26	85	14	35	58 ※	40	0.87								11			9
10	82.20	93	17	32	52	40	0.97								17	0.58		10
11	90.16	101	17	38	60	40	1.20								17	0.62		11
12	98.14	110	17	45	67	40	1.50		23	45.5	67	63	2.50		17	0.82		12
13	106.14	118	17	50	77	40	1.90		23	50	77	63	3.10		17	0.87		13
14	114.15	126	17	50	77	40	2.00		23	58	86	63	3.70		17	1.02		14
15	122.17	134	20	63	93	40	2.60	Carbon Steel	23	64	94	63	4.30	Carbon Steel	20	1.20		15
16	130.20	142	20	63	93	40	2.80		23	70	102	71	5.50		20	1.35		16
17	138.23	151	20	63	93	40	3.00		23	76	110	71	6.40		20	1.54		17
18	146.27	159	20	63	93	40	3.20		23	76	110	71	6.00		20	1.75		18
19	154.32	167	20	63	93	40	3.40		23	76	110	71	6.40		20	1.95		19
20	162.37	175	20	63	93	40	3.60		23	75	107	71	7.60		20	2.15		20
21	170.42	183	20	63	93	40	3.80		23	75	107	71	7.80		20	2.41		21
22	178.48	192	20	75	107	45	4.80		25	80	117	71	8.80		20	2.63		22
23	186.54	200	20	75	107	45	5.10		25	80	117	71	9.30		20	2.90		23
24	194.60	208	20	75	107	45	5.40		25	80	117	80	10.50		20	3.20		24
25	202.66	216	20	75	107	45	5.60		25	80	117	80	11.10		20	3.45		25
26	210.72	224	20	75	107	45	5.90		25	80	117	80	11.70		20	3.70		26
27	218.79	233	20	75	107	45	6.10								20	3.96		27
28	226.86	241	20	75	107	45	6.50								20	4.26		28
29	234.93	249	20	75	107	45	6.90								20	4.65		29
30	243.00	257	20	75	107	45	7.10		25	80	117	80	17.50		20	5.00	Rolled Steel	30
31	251.07	265	20	75	107	45	7.40								20	5.30		31
32	259.14	273	20	75	107	45	7.80								20	5.60		32
33	267.21	281	20	75	107	45	8.10								20	6.00		33
34	275.28	289	20	75	107	45	8.50								20	6.40		34
35	283.36	297	20	75	107	45	8.90		25	80	117	80	23.50		20	6.85		35
36	291.43	306	20	80	117	50	10.10	Rolled Steel Welded						Rolled Steel Welded	20	7.20		36
37	299.51	314	20	80	117	50	10.50								20	7.40		37
38	307.58	322	20	80	117	50	10.90								20	8.00		38
39	315.66	330	20	80	117	50	11.50								20	8.47		39
40	323.74	338	20	80	117	50	11.80		25	89	127	90	30.50		20	9.00		40
41	331.81	346	20	80	117	50	12.30								20	9.42		41
42	339.89	354	20	80	117	50	12.70								20	9.75		42
43	347.97	362	20	80	117	50	13.20								20	10.34		43
44	356.05	370	20	80	117	50	13.70								20	10.65		44
45	364.12	378	20	80	117	50	14.20		25	89	127	90			20	11.25		45
48	388.36	403	20	80	117	50	15.80								20	13.00		48
50	404.52	419	20	80	117	50	16.80		25	89	127	90			20	14.80		50
54	436.84	451	20	80	117	50	19.20								20	17.00		54
60	485.33	500	30	80	117	50	23.10		30	89	127	90	65.00		30	21.00		60
65	525.73	540	30	89	127	63	28.50								30	25.00		65
70	566.15	581	30	89	127	63	32.10								30	28.30		70
75	606.56	621	30	89	127	63	36.20								30	32.00		75

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. The shaded area of the above table indicates heat treated teeth.
3. Those marked * have slot on hub.

DID 100 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Roller dia.	Pin						Transvers e Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	G	L	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID100	100	31.75	19.05	19.05	9.54	39.5	42.6	45.2	19.8	22.7	35.8	4.0	29.9	26.0	87	8,830	108	10,960	118	11,980	22.5	2,280	3.79
DID100-2	100-2					75.3	78.3	81.1							174	17,660	216	21,930	236	23,960	38.3	3,890	7.53
DID100-3	100-3					111.2	114.2	115.2							261	26,500	324	32,890	354	35,940	56.3	5,720	11.3
DID100-4	100-4					147.0	150.0	151.0							—	—	432	43,860	472	47,920	74.3	7,540	15.1
DID100-5	100-5					182.9	185.9	186.9							—	—	540	54,820	590	59,900	87.8	8,910	18.9

Note: The values of average tensile strength and Max. allowable tension are for chains.

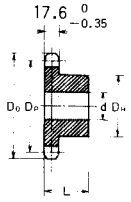
Max. Kilowatt Ratings DID 100

Unit (kW)

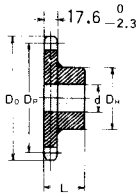
No. of Teeth of Small Sprocket \ Type of Lubrication	Small Sprocket revolutions per minute (rpm) (See P132 for the details of type of lubrication A, B and C.)																										
	10	25	50	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1800	2000	2200	2400	2500	2600	2700
	A				B										C											
11	1.17	2.67	4.99	9.31	17.4	25.0	32.4	35.8	35.8	29.9	24.4	20.5	17.5	15.2	13.3	11.8	10.6	9.51	8.64	7.24	6.18	5.35	4.70	4.42	4.17	1.08
12	1.28	2.93	5.48	10.2	19.1	27.5	35.6	39.4	39.4	34.0	27.8	23.3	19.9	17.3	15.2	13.4	12.0	10.8	9.84	8.25	7.04	6.10	5.35	5.04	4.75	—
13	1.40	3.20	5.97	11.2	20.8	30.0	38.9	42.9	42.9	38.4	31.4	26.3	22.5	19.5	17.1	15.2	13.6	12.2	11.1	9.30	7.94	6.88	6.04	5.68	5.35	—
14	1.52	3.47	6.47	12.1	22.6	32.5	42.1	46.5	46.5	42.9	35.1	29.4	25.1	21.8	19.1	16.9	15.2	13.7	12.4	10.4	8.87	7.69	6.75	6.35	—	—
15	1.63	3.73	6.97	13.0	24.3	35.0	45.3	50.1	50.1	47.5	38.9	32.6	27.8	24.1	21.2	18.8	16.8	15.2	13.8	11.5	9.84	8.53	7.48	7.04	—	—
16	1.75	4.00	7.48	14.0	26.1	37.5	48.6	53.7	53.7	52.4	42.9	35.9	30.7	26.6	23.3	20.7	18.5	16.7	15.2	12.7	10.8	9.40	8.25	7.76	—	—
17	1.87	4.28	7.98	14.9	27.8	40.1	51.9	57.4	57.4	57.4	47.0	39.4	33.6	29.1	25.6	22.7	20.3	18.3	16.6	13.9	11.9	10.3	9.03	—	—	—
18	1.99	4.55	8.49	15.9	29.6	42.6	55.2	62.5	62.5	62.5	51.2	42.9	36.6	31.7	27.8	24.7	22.1	19.9	18.1	15.2	12.9	11.2	9.84	—	—	—
19	2.11	4.82	9.00	16.8	31.4	45.2	58.5	67.8	67.8	67.8	55.5	46.5	39.7	34.4	30.2	26.8	24.0	21.6	19.6	16.4	14.0	12.2	10.7	—	—	—
20	2.23	5.10	9.52	17.8	33.2	47.8	61.9	73.2	73.2	73.2	59.9	50.2	42.9	37.2	32.6	28.9	25.9	23.3	21.2	17.8	15.2	13.1	—	—	—	—
21	2.35	5.37	10.0	18.7	34.9	50.3	65.2	78.8	78.8	78.8	64.5	54.0	46.1	40.0	35.1	31.1	27.8	25.1	22.8	19.1	16.3	14.1	—	—	—	—
22	2.47	5.65	10.6	19.7	36.7	52.9	68.6	83.8	84.5	84.5	69.1	57.9	49.5	42.9	37.6	33.4	29.9	26.9	24.4	20.5	17.5	15.2	—	—	—	—
23	2.60	5.93	11.1	20.7	38.6	55.5	71.9	88.0	90.3	90.3	73.9	61.9	52.9	45.8	40.2	35.7	31.9	28.8	26.1	21.9	18.7	16.2	—	—	—	—
24	2.72	6.21	11.6	21.6	40.4	58.1	75.3	92.1	95.6	95.6	78.8	66.0	56.4	48.9	42.9	38.0	34.0	30.7	27.8	23.3	19.9	17.3	—	—	—	—
25	2.84	6.49	12.1	22.6	42.2	60.8	78.7	96.2	100	100	83.7	70.2	59.9	51.9	45.6	40.4	36.2	32.6	29.6	24.8	21.2	18.3	—	—	—	—
28	3.21	7.33	13.7	25.6	47.7	68.7	89.0	109	113	113	99.3	83.2	71.0	61.6	54.0	47.9	42.9	38.7	35.1	29.4	25.1	—	—	—	—	—
30	3.46	7.90	14.8	27.5	51.4	74.0	95.9	117	122	122	110	92.2	78.8	68.3	59.9	53.1	47.5	42.9	38.9	32.6	—	—	—	—	—	—
32	3.71	8.47	15.8	29.5	55.1	79.3	103	126	130	130	121	102	86.8	75.2	66.0	58.5	52.4	47.2	42.9	35.9	—	—	—	—	—	—
35	4.09	9.33	17.4	32.5	60.7	87.4	113	138	147	147	139	116	99.3	86.0	75.5	67.0	59.9	54.0	49.0	—	—	—	—	—	—	—
40	4.72	10.8	20.1	37.6	70.1	101	131	160	170	170	169	142	121	105	92.2	81.8	73.2	66.0	—	—	—	—	—	—	—	—
45	5.36	12.2	22.9	42.7	79.6	115	149	182	194	194	194	169	145	125	110	97.6	—	—	—	—	—	—	—	—	—	—

Note: 1. Values in the table above are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120).
2. Please consult with us when the ratings beyond the dotted line to rightward.

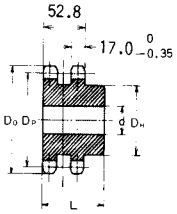
DID 100 Standard Sprocket



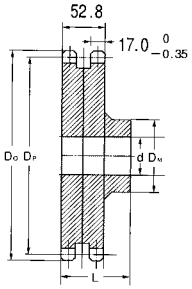
Single sprocket with hub on one side (Single B type)



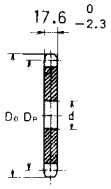
Single sprocket with hub on one side (Single BW type Welded)



Double sprocket with hub on one side (Double B type)



Double sprocket with hub on one side (Double BW type Welded)



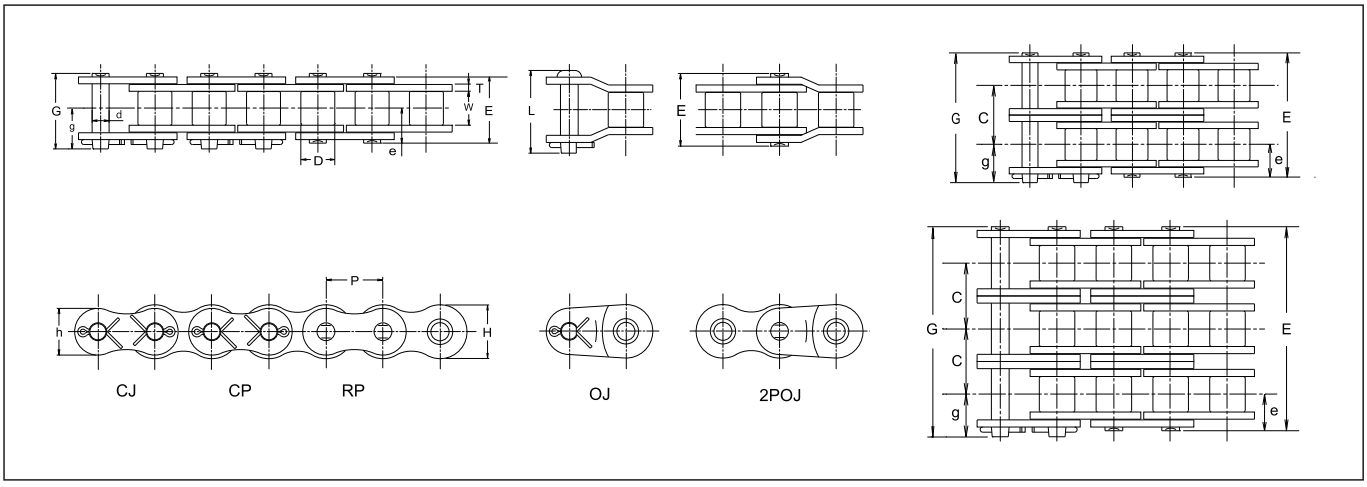
Flat plain (A type)

Unit (mm)

Number of teeth	Pitch dia. Dp	Tip dia. Do	Single sprocket with hub on one side (B type/ BW type)						Double sprocket with hub on one side (B type/ BW type)						Flat plain (A type)			Number of teeth
			Bore d		Hub		Approx. weight (Kg)	Material	Bore d		Hub		Approx. weight (Kg)	Material	Stock d	Approx. weight (Kg)	Material	
			Stock	Max.	(Dia.) DH	(Length) L			Stock	Max.	(Dia.) DH	(Length) L						
10	102.75	116	20	43	65	50	1.90								20	0.90		10
11	112.70	127	20	50	75	50	2.30								20	1.10		11
12	122.67	137	20	57	86	50	2.90		28	58	86	80	5.00		20	1.40		12
13	132.67	147	20	59	88	50	3.10		28	65	95	80	6.00		20	1.70		13
14	142.68	157	20	60	88	50	3.60		28	72	105	80	7.10		20	2.00		14
15	152.71	167	20	65	98	50	4.20	Carbon Steel	28	66	98	80	7.10	Carbon Steel	20	2.30		15
16	162.75	178	20	65	98	50	4.60		28	66	98	80	7.70		20	2.60		16
17	172.79	188	20	75	107	50	5.30		28	75	107	80	8.90		20	2.90		17
18	182.84	198	20	75	107	50	5.70		28	75	107	80	9.60		20	3.30		18
19	192.90	209	20	75	107	50	6.10		28	89	127	90	14.00		20	3.60		19
20	202.96	219	20	75	107	50	6.50		28	89	127	90	15.30		20	4.00		20
21	213.03	229	20	75	107	50	7.00		28	89	127	90	16.70		20	4.50		21
22	223.10	240	20	80	117	56	7.90								20	4.90		22
23	233.17	250	20	80	117	56	8.40								20	5.30		23
24	243.25	260	20	80	117	56	8.80		28	95	137	90	21.70		20	5.90		24
25	253.32	270	20	80	117	56	9.30								20	6.50		25
26	263.41	281	20	80	117	56	9.80								20	6.90		26
27	273.49	291	20	80	117	56	10.40								20	7.50		27
28	283.57	301	20	80	117	56	10.90								20	8.10		28
29	293.66	311	20	80	117	56	11.60								20	8.80		29
30	303.75	321	20	80	117	56	12.10		28	95	137	90	32.00		20	9.40		30
31	313.83	331	20	80	117	56	12.80										Rolled Steel	31
32	323.92	341	20	80	117	56	13.40								20	10.70		32
33	334.01	352	20	80	117	56	14.10											33
34	344.10	362	20	89	127	63	14.80								20	12.40		34
35	354.20	372	20	89	127	63	16.60		28	95	137	90	42.20		20	13.00		35
36	364.29	382	20	89	127	63	17.20	Rolled Steel Welded						Rolled Steel Welded	20	13.80		36
37	374.38	392	20	89	127	63	17.90								20	14.50		37
38	384.48	402	20	89	127	63	19.40								20	16.00		38
39	394.57	412	20	89	127	63	19.90											39
40	404.67	422	20	90	127	63	20.40		28	103	147	90	56.00		20	17.50		40
41	414.77	433	20	90	127	63	21.50								20	18.50		41
42	424.86	443	20	90	127	63	22.70								20	19.50		42
43	434.96	453	20	90	127	63	23.50											43
44	445.06	463	20	90	127	63	24.10											44
45	455.15	473	20	90	127	63	24.70		30	103	147	100	70.70		30	22.00		45
48	485.45	503	30	90	127	63	27.50								30	26.00		48
50	505.65	524	30	90	127	63	28.50								30	27.00		50
54	546.05	564	30	103	147	80	37.40								30	31.00		54
60	606.66	625	30	103	147	80	44.30		30	103	147	125	121.00		30	39.00		60
65	657.17	675	30	103	147	80	54.30								30	48.00		65
70	707.68	726	30	103	147	100	62.50								30	52.00		70
75	758.20	777	30	103	147	100	73.50											75

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. The shaded area of the above table indicates heat treated teeth.

DID 120 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Roller dia.	Pin						Transvers e Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	G	L	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID120	120					49.7	53.0	54.0							125	12,690	148	15,030	166	16,850	30.4	3,090	5.49
DID120-2	120-2					95.2	98.5	99.6							250	25,380	296	30,050	332	33,710	51.7	5,250	11.0
DID120-3	120-3	38.10	25.40	22.23	11.11	140.6	143.9	145.0	24.9	28.2	45.4	4.80	35.9	31.2	375	38,070	444	45,080	498	50,560	76	7,720	16.5
DID120-4	120-4					186.1	189.4	190.5							—	—	592	60,100	664	67,410	100	10,150	22.0
DID120-5	120-5					231.5	234.8	235.9							—	—	740	75,130	830	84,260	119	12,080	27.5

Note: The values of average tensile strength and Max. allowable tension are for chains.

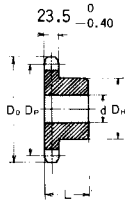
Max. Kilowatt Ratings DID 120

Unit (kW)

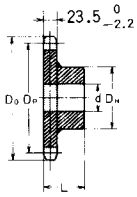
No. of Teeth of Small Sprocket \ Type of Lubrication	Small Sprocket revolutions per minute (rpm) (See P132 for the details of type of lubrication A, B and C.)																								
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
	A			B									C												
11	1.90	4.33	8.09	15.1	21.8	28.2	40.6	51.2	51.2	43.5	34.5	28.3	23.7	20.2	17.5	15.4	13.7	12.2	11.0	9.99	9.12	8.37	7.72	7.15	6.64
12	2.08	4.76	8.89	16.6	23.9	31.0	44.6	56.3	56.3	49.6	39.4	32.2	27.0	23.1	20.0	17.5	15.6	13.9	12.5	11.4	10.4	9.54	8.80	8.15	—
13	2.27	5.19	9.69	18.1	26.1	33.8	48.6	61.3	61.3	55.9	44.4	36.3	30.4	26.0	22.5	19.8	17.5	15.7	14.2	12.8	11.7	10.8	9.92	9.19	—
14	2.46	5.62	10.5	19.6	28.2	36.6	52.7	66.4	66.4	62.5	49.6	40.6	34.0	29.1	25.2	22.1	19.6	17.5	15.8	14.4	13.1	12.0	11.1	10.3	—
15	2.65	6.06	11.3	21.1	30.4	39.4	56.7	71.6	71.6	69.3	55.0	45.0	37.7	32.2	27.9	24.5	21.7	19.5	17.5	15.9	14.5	13.3	12.3	—	—
16	2.84	6.50	12.1	22.6	32.6	42.2	60.8	76.7	76.7	76.4	60.6	49.6	41.6	35.5	30.8	27.0	23.9	21.4	19.3	17.5	16.0	14.7	13.6	—	—
17	3.04	6.94	13.0	24.2	34.8	45.1	65.0	83.7	83.7	83.6	66.4	54.3	45.5	38.9	33.7	29.6	26.2	23.5	21.2	19.2	17.5	16.1	14.8	—	—
18	3.23	7.38	13.8	25.7	37.0	48.0	69.1	89.5	91.2	91.1	72.3	59.2	49.6	42.4	36.7	32.2	28.6	25.6	23.1	20.9	19.1	17.5	16.2	—	—
19	3.43	7.82	14.6	27.3	39.3	50.9	73.3	94.9	98.9	98.8	78.4	64.2	53.8	45.9	39.8	34.9	31.0	27.7	25.0	22.7	20.7	19.0	—	—	—
20	3.62	8.27	15.4	28.8	41.5	53.8	77.4	100	107	107	84.7	69.3	58.1	49.6	43.0	37.7	33.5	29.9	27.0	24.5	22.4	20.5	—	—	—
21	3.82	8.72	16.3	30.4	43.7	56.7	81.6	106	115	115	91.1	74.6	62.5	53.4	46.3	40.6	36.0	32.2	29.1	26.4	24.1	22.1	—	—	—
22	4.01	9.16	17.1	31.9	46.0	59.6	85.8	111	123	123	97.7	80.0	67.0	57.2	49.6	43.5	38.6	34.5	31.2	28.3	25.8	23.7	—	—	—
23	4.21	9.62	18.0	33.5	48.3	62.5	90.0	117	132	132	104	85.5	71.7	61.2	53.0	46.5	41.3	36.9	33.3	30.2	27.6	—	—	—	—
24	4.41	10.1	18.8	35.1	50.5	65.5	94.3	122	140	140	111	91.1	76.4	65.2	56.5	49.6	44.0	39.4	35.5	32.2	29.4	—	—	—	—
25	4.61	10.5	19.6	36.7	52.8	68.4	98.5	128	146	146	118	96.9	81.2	69.3	60.1	52.7	46.8	41.9	37.7	34.3	31.3	—	—	—	—
28	5.21	11.9	22.2	41.4	59.7	77.3	111	144	165	165	140	115	96.2	82.2	71.2	62.5	55.4	49.6	44.7	40.6	—	—	—	—	—
30	5.61	12.8	23.9	44.6	64.3	83.3	120	155	178	178	156	127	107	91.1	79.0	69.3	61.5	55.0	49.6	—	—	—	—	—	—
32	6.02	13.7	25.6	47.9	68.9	89.3	129	167	191	191	171	140	118	100	87.0	76.4	67.7	60.6	—	—	—	—	—	—	—
35	6.63	15.1	28.3	52.7	75.9	98.4	142	184	211	211	196	160	135	115	99.5	87.4	77.5	—	—	—	—	—	—	—	—
40	7.66	17.5	32.6	60.9	87.7	114	164	212	246	246	240	196	164	140	122	—	—	—	—	—	—	—	—	—	—
45	8.70	19.9	37.1	69.2	99.6	129	186	241	286	286	286	234	196	167	—	—	—	—	—	—	—	—	—	—	—

Note: 1. Values in the table above are for simplex chains only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120).
2. Consult us when the ratings beyond the dotted line to rightward.

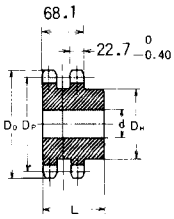
DID 120 Standard Sprocket



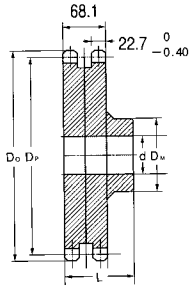
Single sprocket with hub on one side (Single B type)



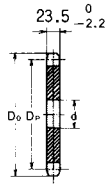
Single sprocket with hub on one side (Single BW type Welded)



Double sprocket with hub on one side (Double B type)



Double sprocket with hub on one side (Double BW type Welded)



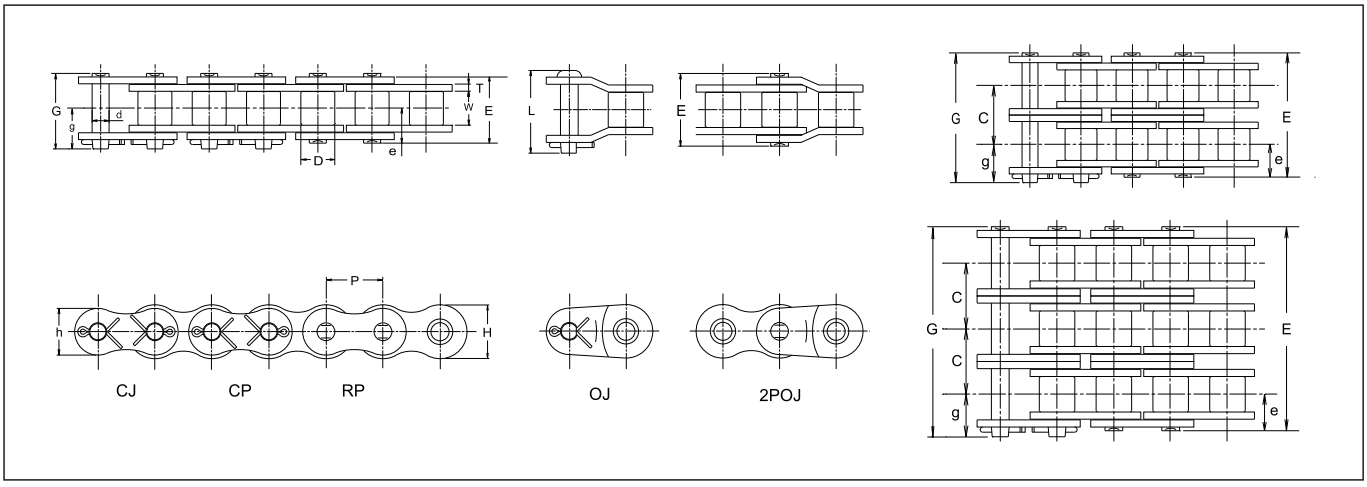
Flat plain (A type)

Unit (mm)

Number of teeth	Pitch dia.	Tip dia.	Single sprocket with hub on one side (B type/ BW type)						Double sprocket with hub on one side (B type/ BW type)						Flat plain (A type)			Number of teeth
			Bore d		Hub		Approx. weight (Kg)	Material	Bore d		Hub		Approx. weight (Kg)	Material	Stock	Approx. weight (Kg)	Material	
	Dp	Do	Stock	Max.	(Dia.) Dh	(Length) L			Stock	Max.	(Dia.) Dh	(Length) L			d			
10	123.29	140	25	50	78	56	3.20								25	1.80		10
11	135.23	152	25	60	91	56	4.00								25	2.27		11
12	147.21	165	25	65	98	56	4.80		28	71	103	100	9.20		25	2.60		12
13	159.20	177	25	65	98	56	5.30		28	75	115	100	11.10		25	3.20		13
14	171.22	190	25	70	107	56	6.30		28	80	120	100	11.40		25	3.67		14
15	183.25	202	25	80	117	63	7.80	Carbon Steel	33	80	120	100	13.20	Carbon Steel	30	4.22		15
16	195.29	214	25	80	117	63	8.40		33	95	140	100	14.40		30	5.00		16
17	207.35	227	25	80	117	63	9.10		33	95	140	100	15.70		30	5.60		17
18	219.41	239	25	80	117	63	9.90		33	100	150	100	18.00		30	6.25		18
19	231.48	251	25	80	117	63	10.70		33	100	150	100	19.40		30	7.00		19
20	243.55	263	25	89	127	63	12.10		33	100	150	100	21.00		30	7.86		20
21	255.63	276	25	89	127	63	13.00		33	100	150	100	22.60		30	8.90		21
22	267.72	288	30	89	127	63	13.40								30	9.80		22
23	279.80	300	30	89	127	63	14.30								30	10.50		23
24	291.90	312	30	89	127	63	15.20		30	110	157	100	36.70		30	11.50		24
25	303.99	324	30	89	127	63	16.20								30	12.56		25
26	316.09	337	30	89	127	63	17.20								30	14.00	Rolled Steel	26
27	328.19	349	30	89	127	63	18.30								30			27
28	340.29	361	30	95	137	71	21.84								30	16.50		28
30	364.49	385	30	95	137	71	23.20		30	110	157	100	55.90		30	19.00		30
32	388.71	410	30	95	137	71	25.70								30	21.50		32
35	425.04	446	30	95	137	71	29.70		30	110	157	100	75.20		30	26.00		35
36	437.15	458	30	95	137	71	30.70	Rolled Steel Welded						Rolled Steel Welded	30	27.50		36
38	461.37	483	30	95	147	80	34.70								30	31.00		38
40	485.60	507	30	103	147	80	38.20		30	125	177	110	101.00		30	34.00		40
42	509.83	531	30	103	147	80	42.00								30	38.00		42
45	546.19	568	30	103	147	80	47.60		30	125	177	110	126.00		30	43.00		45
48	582.54	604	30	103	147	80	53.00								30	49.00		48
50	606.78	628	30	103	147	100	62.87											50
54	655.26	677	30	103	147	100	71.72								30	62.10		54
60	727.99	750	30	118	167	100	75.00		30	125	177	120	223.00		30	76.50		60
65	788.60	811	30	118	167													65
70	849.22	871	30	118	167	112	119.20											70
75	909.84	932	30	118	167	112	134.50											75

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. The shaded area of the above table indicates heat treated teeth.

DID 140 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Roller dia.	Pin						Transvers e Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	G	L	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID140	140					53.6	58.4	59.6							170	17,260	193	19,590	215	21,830	40.2	4,080	7.11
DID140-2	140-2					102.6	107.4	108.6							340	34,520	386	39,190	430	43,650	68.3	6,930	14.1
DID140-3	140-3	44.45	25.40	25.40	12.71	151.5	156.3	157.5	26.8	31.7	48.9	5.60	41.9	36.3	510	51,780	579	58,780	645	65,480	101	10,250	21.1
DID140-4	140-4					200.5	205.3	206.5							—	—	772	78,380	860	87,310	133	13,500	28.1
DID140-5	140-5					249.4	254.2	255.4							—	—	965	97,970	1,075	109,140	157	15,940	34.9

Note: The values of average tensile strength and Max. allowable tension are for chains.

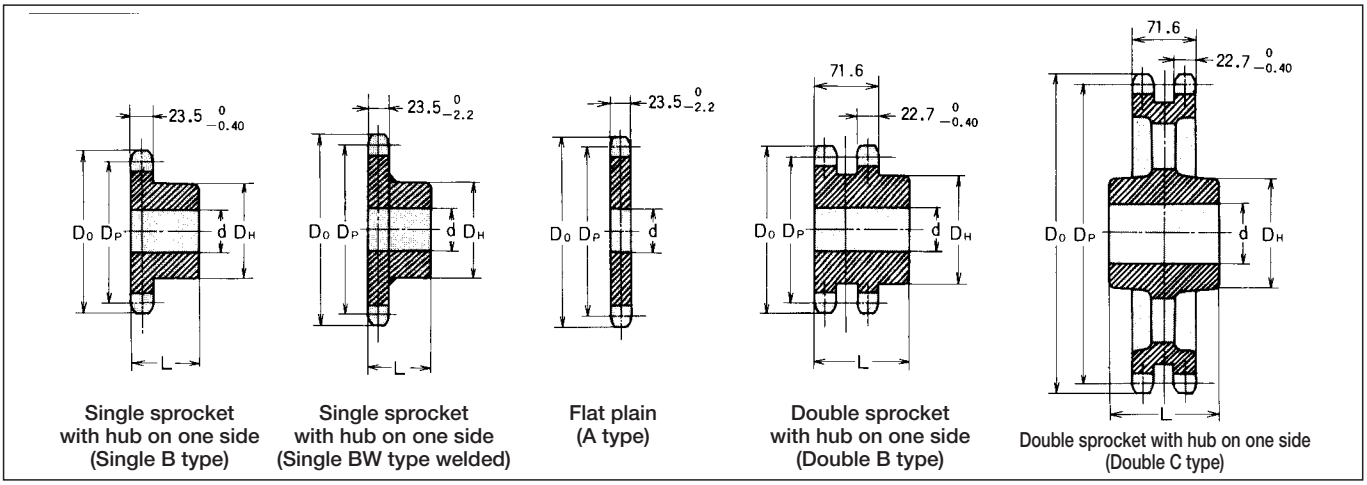
Max. Kilowatt Ratings DID 140

Unit (kW)

No. of Teeth of Small Sprocket \ Type of Lubrication	Small Sprocket revolutions per minute (rpm) (See P132 for the details of type of lubrication A, B and C.)																									
	10	25	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1650
	A			B											C										
11	2.93	6.69	12.5	23.3	33.6	43.5	53.2	62.6	72.0	72.7	72.7	64.7	56.1	49.3	39.1	32.0	26.8	22.9	19.8	17.4	15.4	13.8	12.5	11.3	10.8
12	3.22	7.35	13.7	25.6	36.9	47.8	58.4	68.8	79.0	79.9	79.9	73.8	63.9	56.1	44.5	36.4	30.5	26.1	22.6	19.8	17.6	15.7	14.2	12.9	12.3
13	3.51	8.01	15.0	27.9	40.2	52.1	63.7	75.0	86.2	87.1	87.1	83.2	72.1	63.3	50.2	41.1	34.4	29.4	25.5	22.4	19.8	17.8	16.0	14.5	—
14	3.80	8.68	16.2	30.2	43.5	56.4	69.0	81.3	93.4	94.4	94.4	93.0	80.6	70.7	56.1	45.9	38.5	32.9	28.5	25.0	22.2	19.8	17.9	16.2	—
15	4.10	9.35	17.5	32.6	46.9	60.8	74.3	87.6	101	103	103	103	89.4	78.4	62.2	50.9	42.7	36.4	31.6	27.7	24.6	22.0	19.8	5.75	—
16	4.39	10.0	18.7	34.9	50.3	65.2	79.7	93.9	108	114	114	114	98.4	86.4	68.6	56.1	47.0	40.2	34.8	30.5	27.1	24.2	21.9	—	—
17	4.69	10.7	20.0	37.3	53.7	69.6	85.1	100	115	124	124	124	108	94.6	75.1	61.5	51.5	44.0	38.1	33.5	29.7	26.5	23.9	—	—
18	4.99	11.4	21.3	39.7	57.1	74.0	90.5	107	122	136	136	136	117	103	81.8	67.0	56.1	47.9	41.5	36.4	32.3	28.9	26.1	—	—
19	5.29	12.1	22.5	42.0	60.6	78.5	95.9	113	130	144	144	144	127	112	88.7	72.6	60.9	52.0	45.0	39.5	35.1	31.4	28.3	—	—
20	5.59	12.8	23.8	44.4	64.0	82.9	101	119	137	152	152	152	138	121	95.8	78.4	65.7	56.1	48.6	42.7	37.9	33.9	5.68	—	—
21	5.89	13.5	25.1	46.8	67.5	87.4	107	126	145	161	161	161	148	130	103	84.4	70.7	60.4	52.3	45.9	40.7	36.4	—	—	—
22	6.20	14.1	26.4	49.3	71.0	91.9	112	132	152	169	169	169	159	139	111	90.5	75.8	64.7	56.1	49.3	43.7	39.1	—	—	—
23	6.50	14.8	27.7	51.7	74.4	96.4	118	139	160	177	177	177	170	149	118	96.7	81.1	69.2	60.0	52.6	46.7	41.8	—	—	—
24	6.81	15.5	29.0	54.1	77.9	101	123	145	167	186	186	186	181	159	126	103	86.4	73.8	63.9	56.1	49.8	44.2	—	—	—
25	7.11	16.2	30.3	56.6	81.5	106	129	152	175	194	194	194	192	169	134	110	91.9	78.4	68.0	59.7	52.9	15.5	—	—	—
30	8.66	19.8	36.9	68.9	99.2	128	157	185	213	240	253	253	253	222	176	144	121	103	89.4	—	—	—	—	—	—
32	9.29	21.2	39.6	73.8	106	138	168	198	228	257	276	276	276	244	194	159	133	114	98.4	—	—	—	—	—	—
35	10.2	23.4	43.6	81.3	117	152	186	219	251	283	304	304	304	280	222	182	152	130	—	—	—	—	—	—	—
40	11.8	27.0	50.3	94.0	135	175	214	253	290	327	351	351	351	342	271	222	—	—	—	—	—	—	—	—	—
45	13.4	30.6	57.2	107	154	199	243	287	329	372	408	408	408	408	323	—	—	—	—	—	—	—	—	—	—

Note: 1. Values in the table above are for simplex chains only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120).
2. Consult us when the ratings beyond the dotted line to rightward.

DID 140 Standard Sprocket



Single sprocket with hub on one side (Single B type)

Single sprocket with hub on one side (Single BW type welded)

Flat plain (A type)

Double sprocket with hub on one side (Double B type)

Double sprocket with hub on one side (Double C type)

Unit (mm)

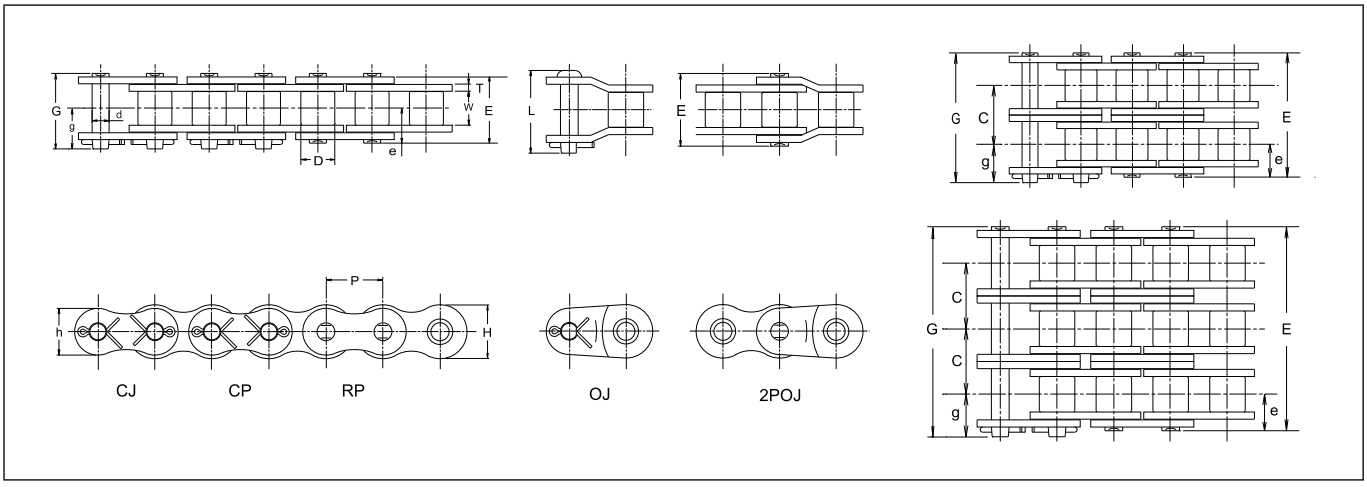
Number of teeth	Pitch dia. DP	Tip dia. DO	Single sprocket with hub on one side (B type/ BW type)						Flat plain (A type)			Number of teeth
			Bore d		Hub		Approx. weight (Kg)	Material	Stock d	Approx. weight (Kg)	Material	
			Stock	Max.	(Dia.) DH	(Length) L						
10	143.84	163	25	60	91	56	4.40	Carbon Steel	25	2.90	Rolled Steel	10
11	157.77	178	25	73	106	56	5.50		25	3.40		11
12	171.74	193	25	80	117	56	6.60		25	4.00		12
13	185.74	207	25	80	117	63	7.90		25	4.70		13
14	199.76	221	25	89	127	63	9.30		25	5.50		14
15	213.79	236	25	89	127	63	10.10	Carbon Steel	25	6.30		15
16	227.84	250	25	89	127	63	11.00		25	7.20		16
17	241.91	264	25	89	127	63	12.00		25	8.10		17
18	255.98	279	25	89	127	63	13.00	Rolled Steel Welded	25	9.10		18
19	270.06	293	25	95	137	71	15.60		25	10.30		19
20	284.14	307	25	95	137	71	16.70		25	11.40		20
21	298.24	322	25	95	137	71	17.90		25	12.60		21
22	312.34	336	30	95	137	71	18.40	Rolled Steel Welded	30	13.80		22
23	326.44	350	30	95	137	71	20.50		30	15.10		23
24	340.54	364	30	95	137	71	20.90		30	16.40		24
25	354.65	379	30	103	147	80	24.10		30	17.80		25
26	368.77	393	30	103	147	80	25.50		30	19.20		26
30	425.24	450	30	103	147	80	31.50		30	25.50		30
32	453.49	478	30	110	157	90	36.60		30	29.00		32
35	495.88	521	30	110	157	90	42.90		30	34.60		35
38	538.27	563	30	110	157	90	51.00		30	41.00		38
40	566.54	591	30	110	157	90	53.10		30	45.40		40
42	594.81	620	30	110	157	90	59.50		30	50.00		42
45	637.22	662	30	118	167	100	67.60		30	57.30		45
48	679.63	705	30	118	167	100	77.70		30	65.20		48
60	849.32	875	38	118	167	112	118.00		30	104.00		60

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. DID's finishing process is the basic application to the bore surface finishing for doubled sprockets of B type and C type.
3. For double C type sprockets, three or four types of bore size are available in 26 and larger number of teeth than that. The bigger standard bore is applied in case the required bore size ranges between the two types of bore size.
4. Heat treatment on teeth portion is available when requested.

Unit (mm)

Double sprocket with hub on one side (B type), Both Sides (C type)									
Type	Number of teeth	Pitch dia. DP	Tip dia. DO	Bore d		Hub		Approx. weight (Kg)	Material
				Min.	Max.	(Dia.) DH	(Length) L		
B	13	185.74	207	28	85	137	110	16.7	Carbon steel or cast steel
	14	199.76	221	28	85	137	110	18.9	
	15	213.79	236	28	90	147	120	23.3	
	16	227.84	250	28	90	147	120	25.8	
	17	241.91	264	28	90	147	125	29.2	
	18	255.98	279	28	100	157	125	33.0	
	19	270.06	293	28	100	157	125	36.4	
	20	284.14	307	28	100	157	125	39.6	
	21	298.24	322	28	100	157	125	43.1	
C	22	312.34	336	32	100	167	125	47.4	
	24	340.54	364	32	100	167	125	55.0	
	26	368.77	393	32	100	167	125	63.5	
	30	425.24	450	32	110	177	130	84.4	
	32	453.49	478	32	110	177	130	95.0	
	35	495.88	521	32	110	177	130	112.0	
	38	538.27	563	32	110	177	130		
	40	566.54	591	32	120	187	135	145.0	
	45	637.22	662	32	120	187	135	183.0	
	50	707.91	733	32	120	187	135	221.0	
	55	778.61	804	32	120	187	135		
	60	849.32	875	32	120	187	135	317.0	

DID 160 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Roller dia.	Pin						Transvers e Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	G	L	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID160	160					63.6	68.2	69.7							223	22,640	245	24,870	269	27,310	52.9	5,370	9.82
DID160-2	160-2					122.2	126.8	128.3							446	45,280	490	49,750	538	54,620	89.9	9,130	19.4
DID160-3	160-3	50.80	31.75	28.58	14.29	180.8	185.4	186.9	31.9	36.5	58.5	6.40	47.8	41.4	669	67,920	735	74,620	807	81,930	132	13,400	29.0
DID160-4	160-4					239.3	243.8	245.4							—	—	980	99,490	1,076	109,240	175	17,770	38.6
DID160-5	160-5					297.8	303.4	303.9							—	—	1,225	124,370	1,345	136,550	206	20,910	48.2

Note: The values of average tensile strength and Max. allowable tension are for chains.

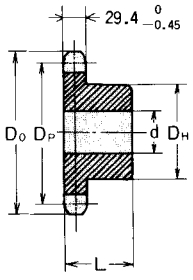
Max. Kilowatt Ratings DID 160

Unit (kW)

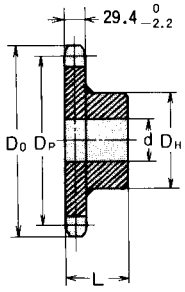
No. of Teeth of Small Sprocket \ Type of Lubrication	Small Sprocket revolutions per minute (rpm) (See P132 for the details of type of lubrication A, B and C.)																								
	10	25	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	1000	1100	1200	1300
	A			B										C										
11	4.41	10.1	18.8	35.0	50.5	65.4	79.9	94.2	98.5	98.5	84.4	72.0	62.4	54.8	48.6	43.5	39.2	35.6	32.5	29.8	25.5	22.1	19.4	17.2
12	4.84	11.1	20.6	38.5	55.4	71.8	87.8	103	108	108	96.1	82.1	71.1	62.4	55.4	49.6	44.7	40.6	37.0	34.0	29.0	25.2	22.1	19.6
13	5.28	12.1	22.5	42.0	60.5	78.3	95.7	113	118	118	108	92.6	80.2	70.4	62.4	55.9	50.4	45.7	41.8	38.3	32.7	28.4	24.9	22.1
14	5.72	13.1	24.4	45.5	65.5	84.8	104	122	128	128	121	103	89.7	78.7	69.8	62.4	56.3	51.1	46.7	42.8	36.6	31.7	27.8	24.7
15	6.16	14.1	26.3	49.0	70.6	91.4	112	132	138	138	134	115	99.4	87.3	77.4	69.3	62.4	56.7	51.8	47.5	40.6	35.2	30.9	14.7
16	6.61	15.1	28.1	52.5	75.7	98.0	120	141	148	148	148	126	110	96.1	85.3	76.3	68.8	62.4	57.0	52.3	44.7	38.7	34.0	—
17	7.05	16.1	30.1	56.1	80.8	105	128	151	162	162	162	138	120	105	93.4	83.6	75.3	68.4	62.4	57.3	48.9	42.4	37.2	—
18	7.50	17.1	32.0	59.6	85.9	111	136	160	177	177	177	151	131	115	102	91.0	82.1	74.5	68.0	62.4	53.3	46.2	40.6	—
19	7.96	18.2	33.9	63.2	91.1	118	144	170	192	192	192	164	142	124	110	98.7	89.0	80.8	73.8	67.7	57.8	50.1	44.0	—
20	8.41	19.2	35.8	66.8	96.3	125	152	180	206	207	207	177	153	134	119	107	96.1	87.3	79.7	73.1	62.4	54.1	47.5	—
21	8.86	20.2	37.8	70.5	101	131	161	189	218	220	220	190	165	145	128	115	103	93.9	85.7	78.7	67.2	58.2	25.9	—
22	9.32	21.3	39.7	74.1	107	138	169	199	229	231	231	204	177	155	137	123	111	101	91.9	84.4	72.0	62.4	—	—
24	10.2	23.4	43.6	81.4	117	152	186	219	251	254	254	232	201	177	157	140	126	115	105	96.1	82.1	71.1	—	—
25	10.7	24.4	45.6	85.0	123	159	194	229	263	266	266	247	214	188	167	149	134	122	111	102	87.3	75.6	—	—
30	13.0	29.7	55.5	104	149	193	236	278	320	330	330	324	281	247	219	196	177	160	146	134	—	—	—	—
32	14.0	31.9	59.5	111	160	207	253	298	343	358	358	357	310	272	241	216	195	177	161	—	—	—	—	—
35	15.4	35.1	65.5	122	176	228	279	329	378	409	409	409	354	311	276	247	223	—	—	—	—	—	—	—
40	17.8	40.6	75.7	141	204	264	322	380	436	467	467	467	433	380	337	—	—	—	—	—	—	—	—	—
45	20.2	46.1	86.0	160	231	299	366	431	495	532	532	532	517	453	—	—	—	—	—	—	—	—	—	—

Note: 1. Values in the table above are for simplex chains only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120).
2. Consult us when the ratings beyond the dotted line to rightward.

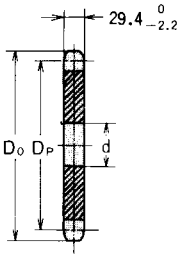
DID 160 Standard Sprocket



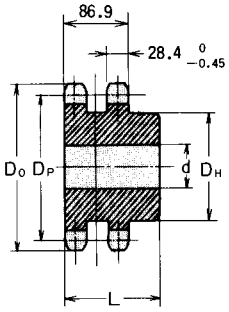
Single sprocket with hub on one side (Single B type)



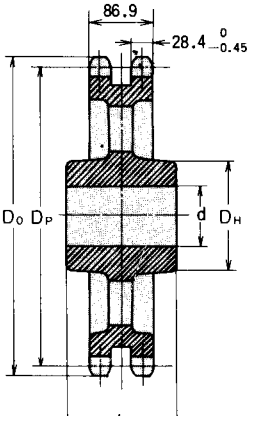
Single sprocket with hub on one side (Single BW type welded)



Flat plain (A type)



Double sprocket with hub on one side (Double B type)



Double sprocket with hub on one side (Double C type)

Unit (mm)

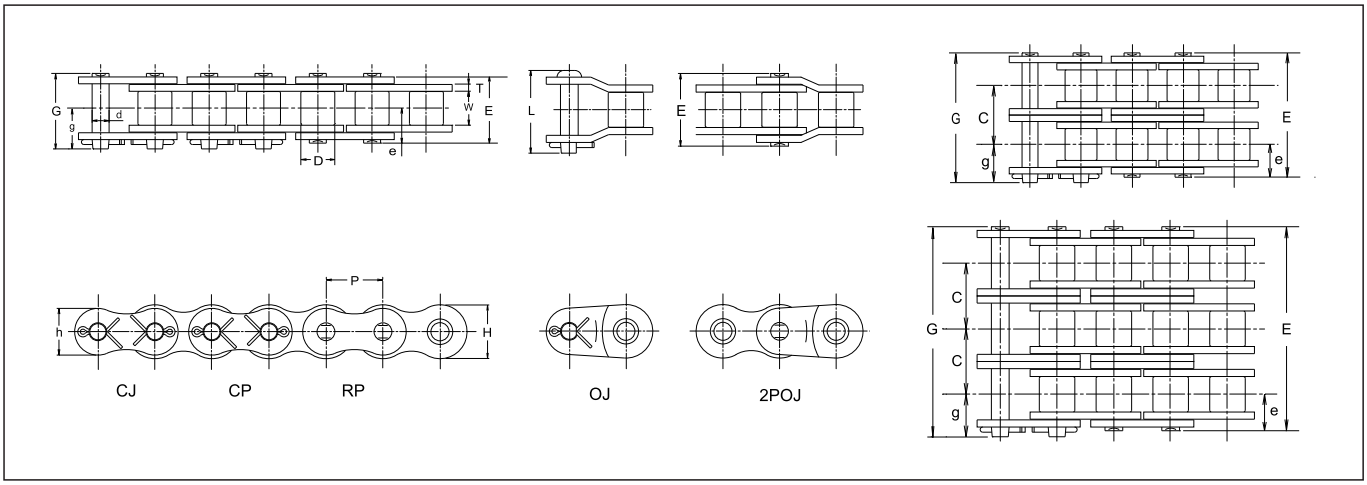
Number of teeth	Pitch dia. DP	Tip dia. DO	Single sprocket with hub on one side (B type/ BW type)						Flat plain (A type)			Number of teeth
			Bore d		Hub		Approx. weight (Kg)	Material	Stock d	Approx. weight (Kg)	Material	
			Stock	Max.	(Dia.) DH	(Length) L						
10	164.39	186	25	70	105	63	6.80	Carbon Steel	25	4.80		10
11	180.31	204	25	80	117	63	8.30		25	5.79		11
12	196.28	220	25	89	127	63	9.90		25	6.86		12
13	212.27	237	25	95	137	71	12.50		25	8.03		13
14	228.29	253	25	95	137	71	13.80		25	9.28		14
15	244.33	269	30	95	137	71	15.20	Carbon Steel	30	10.63		15
16	260.39	286	30	103	147	71	17.40		30	12.08		16
17	276.46	302	30	103	147	71	18.90	Rolled Steel Welded	30	13.61		17
18	292.55	319	30	103	147	71	20.60		30	15.23		18
19	308.64	335	30	103	147	71	22.30		30	16.95		19
20	324.74	351	30	103	147	71	24.20		30	18.75	Rolled Steel	20
21	340.84	368	30	103	147	71	26.10		30	20.65		21
22	356.96	384	35	118	167	80	30.20		35	22.64		22
24	389.19	416	35	118	167	80	34.40		35	26.90		24
25	405.32	433	35	118	167	80	36.60		35	29.16		25
26	421.45	449	35	118	167	80	38.90		35	31.52		26
30	485.99	514	35	118	167	100	52.30	Rolled Steel Welded	35	41.86		30
32	518.28	546	35	118	167	100	59.90		35	47.95		32
35	566.72	595	35	118	167	100	66.90		35	57.24		35
40	647.47	676	35	118	167	112	85.80		35	74.57		40
45	728.25	757	35	132	187	125	114.40		35	94.71		45
48	776.72	806	35	132	187	125			35	107.61		48
60	970.65	1,000	35	132	187	125	187.80		35	168.14		60

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. DID's finishing process is the basic application to the bore surface finishing for doubled sprockets of B type and C type.
3. For double C type sprockets, three or four types of bore size are available in 26 and larger number of teeth than that. The bigger standard bore is applied in case the required bore size ranges between the two types of bore size.
4. Heat treatment on teeth portion is available when requested.
5. Due to production reasons, Carbon Stell may be used for those with 13 ~ 21 teeth without notice.

Unit (mm)

Double sprocket with hub on one side (B type), Both Sides (C type)										
Type	Number of teeth	Pitch dia. DP	Tip dia. DO	Bore d		Hub		Approx. weight (Kg)	Material
				Min.	Max.	(Dia.) DH	(Length) L		
B	13	212.27	237	45	90	155	120	23.9	Carbon steel or cast steel
	14	228.30	253	45	90	165	120	27.7	
	15	244.33	269	45	100	180	120	32.3	
	16	260.39	286	50	105	195	140	41.5	
	17	276.46	302	60	120	210	150	49.3	
	18	292.55	319	60	130	225	160	59.2	
	19	308.64	335	65	140	240	170	69.8	
	20	324.74	351	65	150	260	180	84.2	
	21	340.84	368	65	150	260	180	89.8	
C	22	356.95	384	65	150	260	180	95.7	
	24	389.19	416	65	150	260	180	108.0	
	26	421.45	449	85	110	180	130	141.0	
	30	485.99	514					121.0	
	32	518.28	546					128.0	
	35	566.71	595	110	145	225	170	138.0	
	38	615.17	644					150.0	
	40	647.47	676	145	175	270	200	157.0	
	45	728.25	757					214.0	
	50	809.04	838					238.0	
	55	889.84	919					264.0	
	60	970.65	1,000	85	110	180	130	293.0	
	65	1,051.47	1,081	110	145	225	170	322.0	
	70	1,132.29	1,162	145	180	270	200	352.0	
	75	1,213.11	1,243	180	225	340	235	386.0	
	80	1,293.94	1,323					420.0	
	90	1,455.61	1,485					502.0	

DID 180 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Roller dia.	Pin						Transvers e Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	G	L	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID180	180					71.5	77.3	79.3							281	28,530	333	33,810	362	36,750	61.7	6,260	12.7
DID180-2	180-2					137.4	143.2	145.2							562	57,060	666	67,610	724	73,500	105	10,660	25.0
DID180-3	180-3	57.15	35.72	35.71	17.46	203.3	209.1	211.1	35.8	41.6	65.8	7.10	53.8	46.6	843	85,580	999	101,420	1,086	110,250	154	15,630	37.3
DID180-4	180-4					269.1	274.9	276.9							—	—	1,332	135,230	1,448	147,010	204	20,710	49.6
DID180-5	180-5					334.9	340.7	342.7							—	—	1,665	169,040	1,810	183,760	241	24,470	61.9

Note: The values of average tensile strength and Max. allowable tension are for chains.

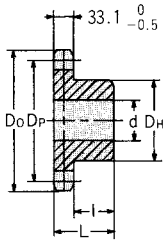
Max. Kilowatt Ratings DID 180

Unit (kW)

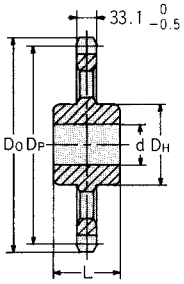
No. of Teeth of Small Sprocket \ Type of Lubrication	Small Sprocket revolutions per minute (rpm) (See P132 for the details of type of lubrication A, B and C.)																								
	10	25	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
	A		B							C														
13	6.93	15.8	29.5	55.1	79.3	103	126	142	142	142	119	102	88.2	77.4	68.6	61.4	55.4	50.3	45.9	42.1	38.8	36.0	33.4	15.0
14	7.51	17.1	32.0	59.7	85.9	111	136	159	159	159	133	114	98.5	86.5	76.7	68.6	61.9	56.2	51.3	47.1	43.4	40.2	37.3	—
15	8.09	18.5	34.4	64.3	92.6	120	147	173	176	176	148	126	109	95.9	85.0	76.1	68.6	62.3	56.9	52.2	48.1	44.6	41.4	—
16	8.67	19.8	36.9	68.9	99.3	129	157	185	191	191	163	139	120	106	93.7	83.8	75.6	68.6	62.6	57.5	53.0	49.1	38.3	—
17	9.26	21.1	39.4	73.6	106	137	168	198	201	201	178	152	132	116	103	91.8	82.8	75.1	68.6	63.0	58.1	53.8	9.66	—
18	9.85	22.5	41.9	78.3	113	146	179	210	216	216	194	166	144	126	112	100	90.2	81.9	74.8	68.6	63.3	58.6	—	—
19	10.4	23.8	44.5	83.0	120	155	189	223	229	229	210	180	156	137	121	108	97.8	88.8	81.1	74.4	68.6	63.5	—	—
20	11.0	25.2	47.0	87.7	126	164	200	236	243	243	227	194	168	148	131	117	106	95.9	87.6	80.4	74.1	38.4	—	—
21	11.6	26.5	49.5	92.4	133	173	211	248	256	256	245	209	181	159	141	126	114	103	94.2	86.5	79.7	—	—	—
22	12.2	27.9	52.1	97.2	140	181	222	261	269	269	262	224	194	170	151	135	122	111	101	92.7	85.5	—	—	—
24	13.4	30.7	57.2	107	154	199	244	287	299	299	299	255	221	194	172	154	139	126	115	—	—	—	—	—
26	14.7	33.4	62.4	116	168	217	266	313	339	339	337	288	249	219	194	174	—	—	—	—	—	—	—	—
30	17.1	39.0	72.8	136	196	254	310	365	402	402	402	357	309	271	241	—	—	—	—	—	—	—	—	—
35	20.2	46.1	86.0	160	231	300	366	431	478	478	478	449	389	—	—	—	—	—	—	—	—	—	—	—
40	23.3	53.2	99.4	185	267	346	423	498	559	559	559	549	—	—	—	—	—	—	—	—	—	—	—	—
45	26.5	60.5	113	211	303	393	480	566	635	635	635	—	—	—	—	—	—	—	—	—	—	—	—	—

Note: 1. Values in the above table are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120.).
2. Consult us when the ratings beyond the dotted line to rightward.

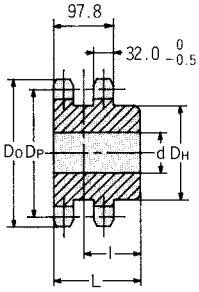
DID 180 Standard Sprocket



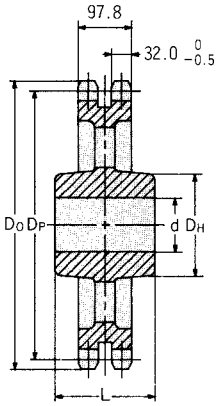
Single sprocket with hub on one side (Single B type)



Single sprocket with hub on one side (Single BW type welded)



Double sprocket with hub on one side (Double B type)



Double sprocket with hub on one side (Double C type)

Unit (mm)

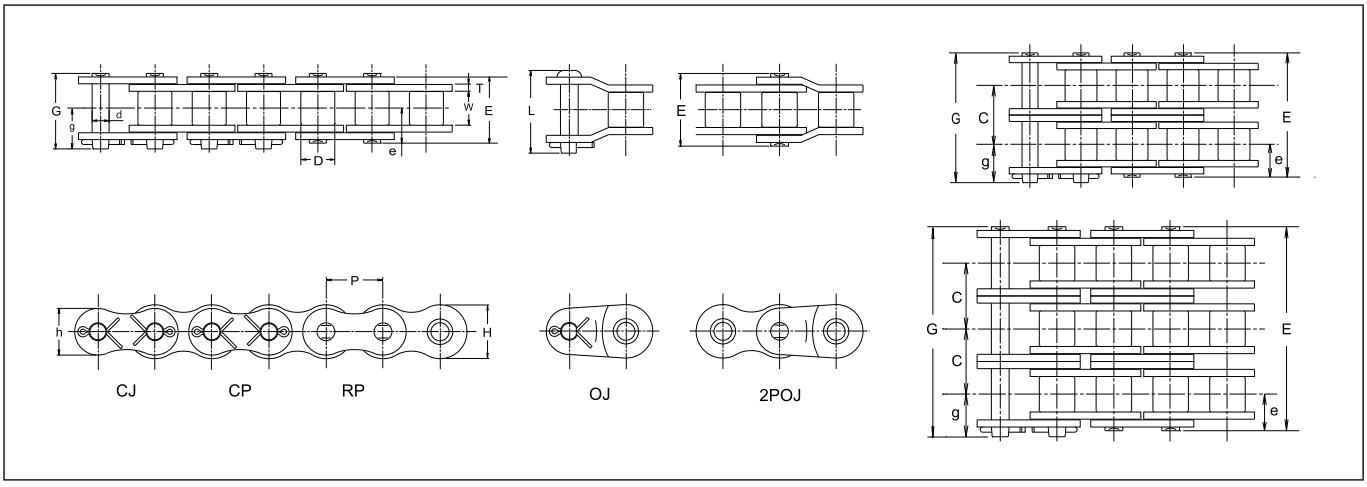
Single sprocket with hub on one side (B type), Both Sides (C type)									
Type	Number of teeth	Pitch dia. DP	Tip dia. DO	Bore d		Hub		Center position l	Material
				Min.	Max.	(Dia.) DH	(Length) L		
B	13	238.81	266	43	95	147	75	93.45	carbon steel or cast steel
	14	256.83	285	43	105	167	80	93.45	
	15	274.88	303	43	110	177	80	93.45	
	16	292.94	322	43	110	177	80	113.45	
	17	311.02	340	43	115	177	80	113.45	
	18	329.11	358	43	115	177	80	113.45	
	19	347.22	377	43	115	177	80	113.45	
	20	365.33	395	43	115	177	80	113.45	
C	21	383.45	413	63	120	187	85		Carbon steel or cast steel
	22	401.57	432	63	120	187	85		
	24	437.84	468	63	125	197	90		
	26	474.13	505	63	125	197	90		
	30	546.74	578	63	125	217	110		
	35	637.56	669	63	135	217	110		
	40	728.41	760	63	150	237	125		
	45	819.28	852	63	150	237	125		
	60	1,091.98	1,125	63	150	237	125		

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. Given dimensions of bore and DH and L of hub to those with 21 teeth and larger is reference. Please consult with us about them when ordering.
3. DID's finishing process is the basic application to the bore surface finishing for double sprockets of B Type and C type.
4. For double C type sprockets, three or four types of bore size are available in 26 and larger number of teeth than that. The bigger standard bore is applied in case the required bore size ranges between the two types of bore size.
5. Heat treatment on teeth portion is available when requested.

Unit (mm)

Double sprocket with hub on one side (B type), Both Sides (C type)									
Type	Number of teeth	Pitch dia. DP	Tip dia. DO	Bore d		Hub		Center position l	Material
				Min.	Max.	(Dia.) DH	(Length) L		
B	13	238.81	266	60	100	170	130	81.1	Carbon steel or cast steel
	14	256.83	285	60	110	190	140	91.1	
	15	274.87	303	60	120	210	150	101.1	
	16	292.94	322	60	130	225	160	111.1	
	17	311.02	340	65	140	245	170	121.1	
	18	329.12	358	65	150	265	180	131.1	
	19	347.21	377	70	170	280	190	141.1	
	20	365.33	395	70	185	300	200	151.1	
C	21	383.45	413	70	185	300	200		
	22	401.58	432	70	185	300	200		
	24	437.84	468	70	185	300	200		
	26	474.13	505						
	30	546.74	578						
	32	583.06	615						
	35	637.55	669						
	38	692.06	724						
	40	728.41	760						
	45	819.28	852	110	145	225	170		
	50	910.17	943	145	180	270	200		
	55	1,001.07	1,034	180	225	340	235		
	60	1,091.98	1,125						
	65	1,182.90	1,216						
	70	1,273.83	1,307						
	75	1,364.75	1,398						
	80	1,455.69	1,489						
	90	1,637.56	1,671						

DID 200 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Roller dia.	Pin						Transverse Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	G	L	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID200	200					77.9	85.0	87.3							347	35,230	431	43,760	470	47,720	73.5	7,460	16.5
DID200-2	200-2					149.6	156.6	159.0							694	70,460	863	87,610	940	95,430	125	12,690	32.5
DID200-3	200-3	63.50	38.10	39.68	19.85	221.3	228.3	230.6	39.0	46.0	71.6	8.00	60.0	52.0	1,041	105,690	1,294	131,370	1,410	143,150	184	18,680	48.5
DID200-4	200-4					292.9	299.9	302.2							—	—	1,725	175,130	1,880	190,860	243	24,670	64.5
DID200-5	200-5					364.5	371.5	373.8							—	—	2,157	218,980	2,350	238,580	287	29,140	80.5

Note: The values of average tensile strength and Max. allowable tension are for chains.

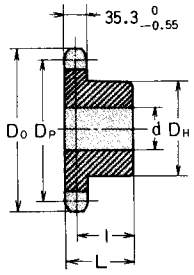
Max. Kilowatt Ratings DID 200

Unit (kW)

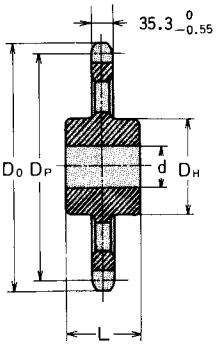
No. of Teeth of Small Sprocket \ Type of Lubrication	Small Sprocket revolutions per minute (rpm) (See P132 for the details of type of lubrication A, B and C.)																								
	10	15	20	30	40	50	60	80	100	150	200	250	300	350	400	450	550	600	650	700	750	800	850	900
	A				B									C										
13	9.60	13.8	17.9	25.8	33.5	40.9	48.2	62.4	76.3	110	142	172	172	172	155	130	95.9	84.2	74.6	66.8	60.2	54.7	49.9	45.8
14	10.4	15.0	19.4	28.0	36.2	44.3	52.2	67.6	82.7	119	154	187	187	187	173	145	107	94.1	83.4	74.6	67.3	61.1	55.8	30.2
15	11.2	16.2	20.9	30.1	39.0	47.7	56.2	72.9	89.1	128	166	201	201	201	192	161	119	104	92.5	82.8	74.6	67.8	61.9	1.57
16	12.0	17.3	22.4	32.3	41.9	51.2	60.3	78.1	95.5	138	178	216	216	216	211	177	131	115	102	91.2	82.2	74.6	68.2	—
17	12.8	18.5	24.0	34.5	44.7	54.6	64.4	83.4	102	147	190	231	231	231	231	194	143	126	112	99.9	90.1	81.8	74.6	—
18	13.7	19.7	25.5	36.7	47.5	58.1	68.5	88.7	108	156	202	247	252	252	252	211	156	137	122	109	98.1	89.1	53.1	—
19	14.5	20.8	27.0	38.9	50.4	61.6	72.6	94.1	115	166	215	262	273	273	273	229	169	149	132	118	106	96.6	—	—
20	15.3	22.0	28.5	41.1	53.3	65.1	76.7	99.4	122	175	227	277	293	293	293	247	183	161	142	127	115	—	—	—
21	16.1	23.2	30.1	43.3	56.2	68.6	80.9	105	128	185	239	292	317	317	317	266	197	173	153	137	—	—	—	—
22	17.0	24.4	31.6	45.6	59.0	72.2	85.1	110	135	194	251	307	340	340	340	285	211	185	164	147	—	—	—	—
24	18.6	26.8	34.8	50.1	64.9	79.3	93.4	121	148	213	276	338	377	377	377	325	241	211	187	—	—	—	—	—
26	20.3	29.3	37.9	54.6	70.7	86.5	102	132	161	232	301	368	408	408	408	367	271	238	—	—	—	—	—	—

Note: 1. Value in the above table is for simplex chain only. For multiplex chains, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.120).
2. Consult us when the ratings beyond the dotted line to rightward.

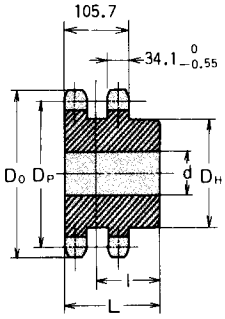
DID 200 Standard Sprocket



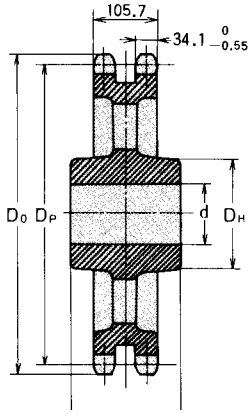
Single sprocket with hub on one side (Single B type)



Single sprocket with hub on one side (Single BW type welded)



Double sprocket with hub on one side (Double B type)



Double sprocket with hub on one side (Double C type)

Unit (mm)

Single sprocket with hub on one side (B type), Both Sides (C type)

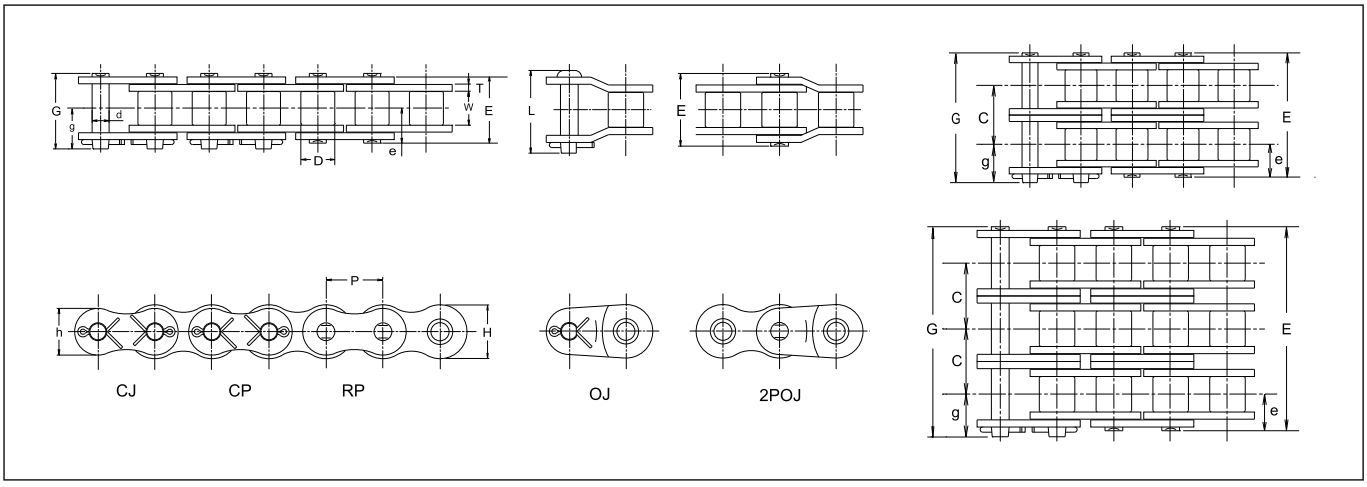
Type	Number of teeth	Pitch dia. DP	Tip dia. DO	Bore d Min.	Bore d Max.	Hub (Dia.) DH	Hub (Length) L	Center position l	Approx. weight (Kg)	Material
B	13	265.34	296	43	100	167	80	102.40	22.4	Carbon steel or cast steel
	14	285.37	316	43	110	177	80	102.40	25.7	
	15	305.42	337	43	115	177	80	102.40	28.3	
	16	325.49	357	43	115	177	80	122.40	30.3	
	17	345.58	378	43	120	187	85	122.40	35.3	
	18	365.68	398	43	120	187	85	122.40	38.4	
	19	385.80	419	63	125	197	90	122.40	42.9	
	20	405.92	439	63	125	197	90	122.40	46.4	
C	21	426.05	459	63	135	217	110		59.1	
	22	446.19	480	63	135	217	110		62.2	
	24	486.49	520	63	140	227	110		73.1	
	26	526.81	561	63	140	227	110		82.0	
	30	607.49	642	63	150	237	125		109.1	
	35	708.39	744	63	150	237	125		138.0	
	40	809.34	845	63	170	267	140		186.1	
	45	910.31	946	63	170	267	140		223.9	
	60	1,213.31	1,250	68	170	267	140		363.2	

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. DID's finishing process is the basic application to the bore surface finishing for double sprockets of B type and C type.
3. For double C type sprockets, three or four types of bore size are available in 26 and larger number of teeth than that. The bigger standard bore is applied in case the required bore size ranges between the two types of bore size.

Double sprocket with hub on one side (B type), Both Sides (C type)

Type	Number of teeth	Pitch dia. DP	Tip dia. DO	Bore d Min.	Bore d Max.	Hub (Dia.) DH	Hub (Length) L	Center position l	Approx. weight (Kg)	Material
B	13	265.34	296	60	105	190	140	87.15	43.0	Carbon steel or cast steel
	14	285.37	316	60	115	205	150	97.15	52.6	
	15	305.42	337	60	130	225	160	107.15	64.9	
	16	325.49	357	70	145	245	170	117.15	77.8	
	17	345.58	378	70	160	265	190	137.15	98.0	
	18	365.68	398	70	175	285	200	147.15	117	
	19	385.79	419	70	190	305	210	157.15	133	
	20	405.92	439	70	190	305	210	157.15	149	
	21	426.05	459	70	190	305	210	157.15	159	
C	22	446.20	480	70	190	305	210		171	
	24	486.49	520	70	190	305	210		181	
	26	526.81	561						201	
	30	607.49	642						224	
	32	647.85	683						237	
	35	708.39	744						256	
	38	768.96	804						284	
	40	809.34	845						296	
	45	910.31	946	110	145	225	170		336	
	50	1,011.30	1,047	145	180	270	200		380	
	55	1,112.30	1,149	180	225	340	235		422	
	60	1,213.31	1,250						473	
	65	1,314.34	1,351						528	
	70	1,415.36	1,452						582	
	75	1,516.39	1,553						643	
	80	1,617.43	1,654						704	
	90	1,819.51	1,856						839	

DID 240 standard roller chain



Dimensions

Unit (mm)

Chain No.		Pitch	Roller Link Width	Roller dia.	Pin						Transverse Pitch	Plate			JIS Min. Tensile Strength		DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	JIS	P	W	D	d	E	G	L	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	kN	kgf	
DID240	240					95.2	102.9	105.4							500	50,760	623	63,250	686	69,640	99	10,050	23.3
DID240-2	240-2					183.1	190.7	193.3							1,000	101,520	1,246	126,500	1,372	139,290	168	17,060	46.0
DID240-3	240-3	76.20	47.63	47.63	23.81	270.9	278.5	281.1	47.7	55.3	87.8	9.50	71.5	62.0	1,500	152,280	1,869	189,750	2,058	208,930	248	25,180	68.7
DID240-4	240-4					358.7	366.4	368.9							—	—	2,492	252,990	2,744	278,580	327	33,200	91.3
DID240-5	240-5					446.5	454.2	456.7							—	—	3,115	316,240	3,430	348,220	386	39,190	114

Note: The values of average tensile strength and Max. allowable tension are for chains.

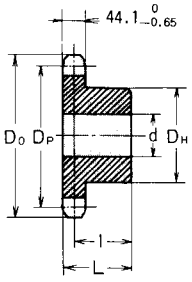
Max. Kilowatt Ratings DID 240

Unit (kW)

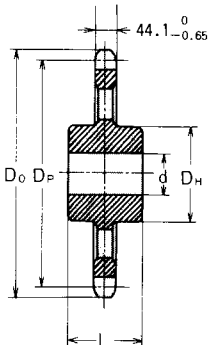
No. of Teeth of Small Sprocket \ Type of Lubrication	Small Sprocket revolutions per minute (rpm) (See P132 for the details of type of lubrication A, B and C.)																								
	5	10	15	20	25	30	40	50	60	80	100	125	150	175	200	250	300	350	400	450	500	550	600	650
	A				B											C								
13	7.78	14.5	20.9	27.1	33.1	39.1	50.6	61.9	72.9	94.4	115	141	166	191	215	242	242	219	179	150	128	111	97.4	15.7
14	8.43	15.7	22.7	29.4	35.9	42.3	54.8	67.0	79.0	102	125	153	180	207	233	263	263	244	200	168	143	124	109	—
15	9.08	17.0	24.4	31.7	38.7	45.6	59.1	72.2	85.1	110	135	165	194	223	251	283	283	271	222	186	159	138	121	—
16	9.74	18.2	26.2	33.9	41.5	48.9	63.3	77.4	91.2	118	144	177	208	239	270	302	302	298	244	205	175	152	130	—
17	10.4	19.4	28.0	36.2	44.3	52.2	67.6	82.6	97.4	126	154	189	222	255	288	327	327	327	268	224	191	166	101	—
18	11.1	20.7	29.7	38.5	47.1	55.5	71.9	87.9	104	134	164	201	236	271	306	356	356	356	291	244	209	181	72.6	—
19	11.7	21.9	31.5	40.9	49.9	58.8	76.2	93.2	110	142	174	213	251	288	325	386	386	386	316	265	226	196	44.0	—
20	12.4	23.1	33.3	43.2	52.8	62.2	80.6	98.5	116	150	184	225	265	304	343	417	417	417	341	286	244	212	15.3	—
21	13.1	24.4	35.1	45.5	55.6	65.6	84.9	104	122	159	194	237	279	321	362	442	449	449	367	308	263	204	—	—
22	13.7	25.7	36.9	47.9	58.5	68.9	89.3	109	129	167	204	249	293	337	380	465	481	481	394	330	282	176	—	—
24	15.1	28.2	40.6	52.6	64.3	75.7	98.1	120	141	183	224	274	322	370	418	511	538	538	449	376	321	—	—	—
26	16.5	30.7	44.3	57.3	70.1	82.6	107	131	154	200	244	298	352	404	455	557	582	582	506	424	299	—	—	—

Note: 1. Values in the above table are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120).
2. Consult us when the ratings beyond the dotted line to rightward.

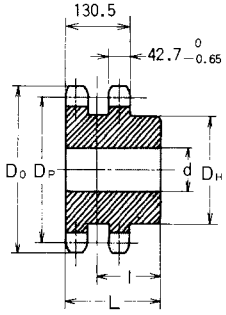
DID 240 Standard Sprocket



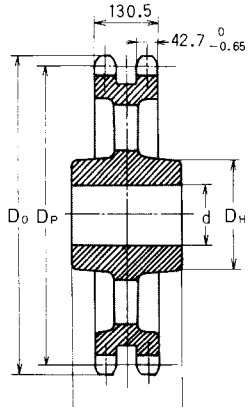
Single sprocket with hub on one side (Single B type)



Single sprocket with hub on one side (Single BW type welded)



Double sprocket with hub on one side (Double B type)



Double sprocket with hub on one side (Double C type)

Unit (mm)

Single sprocket with hub on one side (B type), Both Sides (C type)										
Type	Number of teeth	Pitch dia. DP	Tip dia. DO	Bore d		Hub		Center position l	Approx. weight (Kg)	Material
				Min.	Max.	(Dia.) DH	(Length) L			
B	13	318.41	355	50	120	197	100	127.95	39.2	Carbon steel or cast steel
	14	342.44	380	50	130	207	110	127.95	47.4	
	15	366.50	404	63	140	227	110	127.95	54.2	
	16	390.59	429	63	140	227	110	147.95	59.1	
	17	414.69	453	63	145	227	110	147.95	64.4	
	18	438.82	478	63	145	227	110	147.95	71.1	
	19	462.96	502	63	150	237	120	147.95	82.2	
	20	487.10	527	63	150	237	120	147.95	88.5	
C	21	511.26	551	63	155	237	120		95.0	
	22	535.43	576	63	155	237	120		101.9	
	24	583.79	625	63	160	257	140		129.2	
	26	632.17	673	63	160	257	140		145.2	
	30	728.99	771	63	165	257	140		181.0	
	35	850.07	892	63	165	257	140		233.0	
	40	971.21	1,014	90	170	267	140		295.5	
	45	1,092.37	1,135	90	170	267	140		363.5	
	60	1,455.98	1,500	100	170	267	140		615.4	

Note: 1. Determine the required bore size less than the Max. value shown above taking strength reduction into consideration.
2. DID's finishing process is the basic application to the bore surface finishing for double sprockets of B type and C type.
3. For double C type sprockets, three or four types of bore size are available in 26 and larger number of teeth than that. The bigger standard bore is applied in case the required bore size ranges between the two types of bore size.

Unit (mm)

Double sprocket with hub on one side (B type), Both Sides (C type)										
Type	Number of teeth	Pitch dia. DP	Tip dia. DO	Bore d		Hub		Center position l	Approx. weight (Kg)	Material
				Min.	Max.	(Dia.) DH	(Length) L			
B	13	318.41	355	70	130	225	170	104.75	75.3	Carbon steel or cast steel
	14	342.44	380	70	145	250	170	104.75	89.9	
	15	366.50	404	70	160	270	190	124.75	113	
	16	390.59	429	70	175	290	200	134.75	135	
	17	414.70	453	70	190	310	210	144.75	159	
	18	438.82	478	70	210	340	210	144.75	185	
	19	462.95	502	70	210	340	210	144.75	201	
	20	487.11	527	70	210	340	210	144.75	220	
	21	511.26	551	70	210	340	210	144.75	238	
C	22	535.43	576	70	210	340	210		260	
	24	583.79	625	110	145	225	170		255	
	26	632.17	673						265	
	30	728.99	771						322	
	32	777.42	819						352	
	35	850.07	892						390	
	38	922.75	965						432	
	40	971.21	1,014						462	
	45	1,092.37	1,135	145	180	270	200		534	
	50	1,213.56	1,257						624	
	55	1,334.76	1,378	180	225	340	235		715	
	60	1,455.98	1,500						806	
	65	1,577.20	1,621						911	
	70	1,698.44	1,742						1,030	
	75	1,819.67	1,864						1,130	
	80	1,940.91	1,985						1,260	
	90	2,183.41	2,228						1,550	

Strong chains suitable for use in various conditions

	HI-PWR-S Roller Chain	HK Roller Chain
Name		
Features	①Higher fatigue strength and shock strength are provided without changing dimensions from standard roller chain ②Oval figured link-plates are provided	①Thickness of inner and outer plates are the same as the link-plates of the next size larger standard chain ②Allows the selection of a chain one size smaller than would be necessary
Functions	Allowable Load 130% Tensile strength index 110% Temperature Range in Use −10℃～80℃	Allowable Load 115% Tensile strength index 120% Temperature Range in Use −10℃～80℃
Main uses	CONST-RUCTION AGRICULTURE OUTDOOR	PETROLIUM CONST-RUCTION FORESTRY MACHINE AGRICULTURE

■ Table of Ultimate Power Chain Series

Chain No.	HI-PWR-S	HK	HI-PWR-SHK
DID 50	-	HK	-
DID 60	-	HK	-
DID 80	HI-PWR-S	HK	HI-PWR-SHK
DID 100	HI-PWR-S	HK	HI-PWR-SHK
DID 120	HI-PWR-S	HK	HI-PWR-SHK
DID 140	HI-PWR-S	HK	HI-PWR-SHK
DID 160	HI-PWR-S	HK	HI-PWR-SHK
DID 180	HI-PWR-S	HK	HI-PWR-SHK
DID 200	HI-PWR-S	HK	HI-PWR-SHK
DID 240	HI-PWR-S	HK	HI-PWR-SHK

HI-PWR-SHK Roller Chain

Name

Features

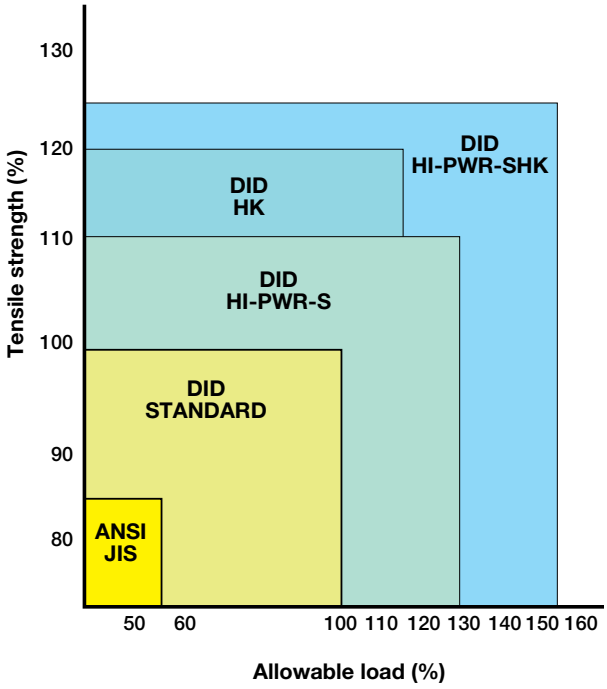
①Both thicker link plates and oval figured link plates are provided
②Thus it makes it possible to have maximum tensile strength and allowable load

Functions

Allowable Load 150%
Tensile strength index 125%
Temperature Range in Use −10℃~80℃

Main uses

CONST-RUCTION
EXCAVATION
MINING



Symbols

Functions

Allowable Load 130% — **Allowable load index** (Compared to standard chains)

Tensile strength index 110% — **Tensile strength index** (Compared to standard chains)

Temperature Range in Use −10℃~80℃ — **Allowable ambient temperature**

Main uses

CONST-RUCTION — Feed and drive in construction machines

FORESTRY — Feed and drive of forestry-related equipment

EXCAVATION — Drive of excavation machines

OUTDOOR — Feed and drive in outdoor equipment

MACHINE — Feed and drive of industrial machinery equipment

MINING — Feed and drive of mining equipment

PETROLIUM — Feed and drive of petroleum-related equipment

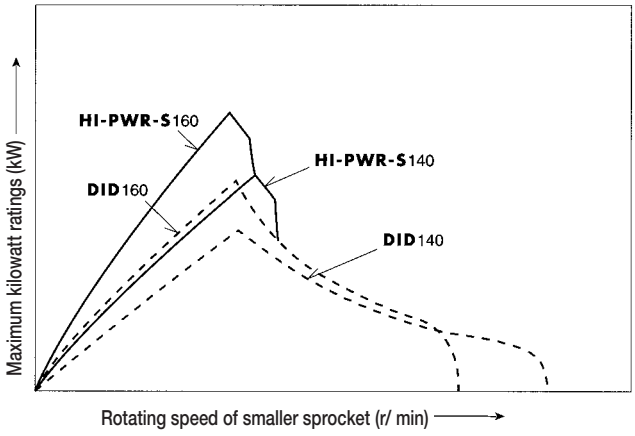
AGRICULTURE — Drive of agricultural machines

HI-PWR-S Type Roller Chains

High power roller chains with improved fatigue strength and impact strength

HI-PWR-S roller chains are enhanced in fatigue strength and impact strength without changing the dimension in the pin length direction of standard roller chains. Plates are enlarged, and the machining accuracy and assembling accuracy of components are improved. The roller chains hold high transmission efficiency for applications from low to high speeds and are powerful enough to withstand long-term use.

Maximum kilowatt rating diagram



Recommended uses

- Compared to standard roller chains, HI-PWR-S roller chains are higher in maximum kilowatt rating by about 30 percent in a medium to low speed range. They exhibit excellent capability in places where large shock loads are applied, drive units for frequent start/ stop, and also in high speed applications.

<Examples>

- Civil engineering machines such as skid steer, trenchers, trucks, cranes, agitating trucks, forklifts and drive units for conveyors, elevators, stackers, etc.

Selection of chains

In general, select your chain with reference to "Designing of Chain Transmission" (P120~126) and also to the tables of "Drive Performance" and "Dimensions" of HI-PWR-S type roller chains (P52~59)
However, only for a special case of low speed and less shock, "Low-speed selection" (P121) is also applicable.

Sprockets

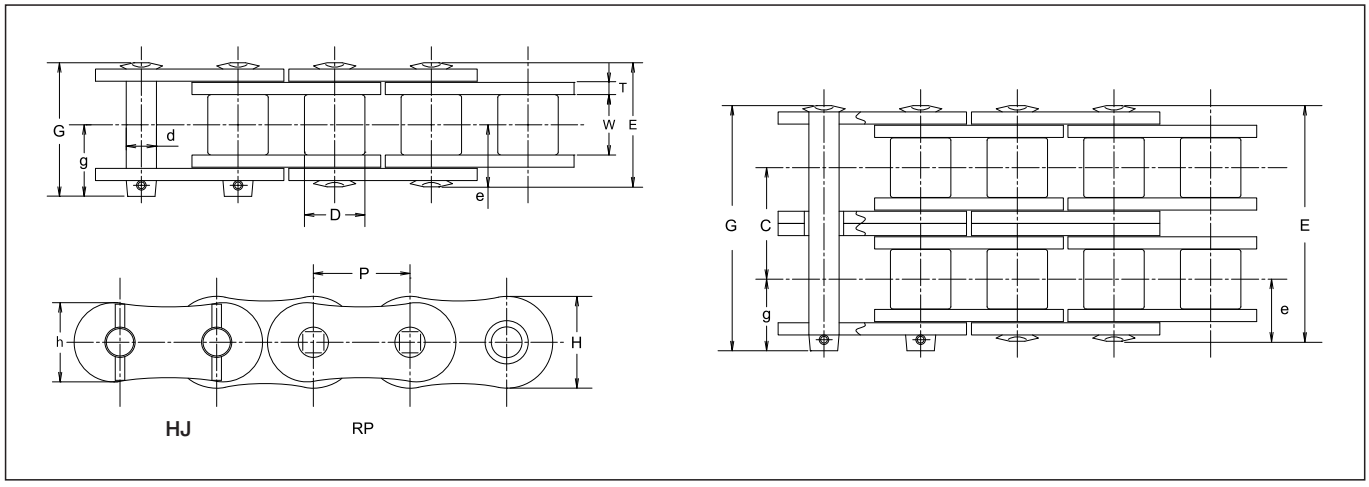
HI-PWR-S Roller chains and ANSI standard chains are the same in basic dimensions. Use ANSI standard sprockets.

Connecting links and offset links

Use H connecting links for HI-PWR-S. In an H connecting link, the pins are lightly interference-fitted with the connecting plate. For the connection between the connecting plate and the connecting pins, spring pins are used instead of cotter pins for a standard roller chain.
The center plates of an H connecting link for multiplex chain has bushings pressed in.

HI-PWR-S roller chains do not have any offset link. Use an even number of links.

Never make the holes of the connecting plate larger and never make the pins thinner to facilitate the work for fitting the pins into the connecting plate, since otherwise the fatigue strength will be lowered.



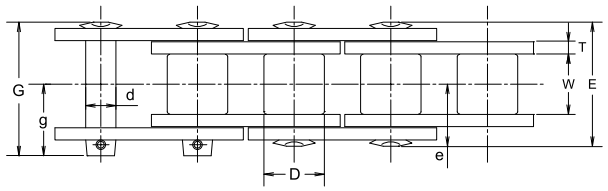
Dimensions

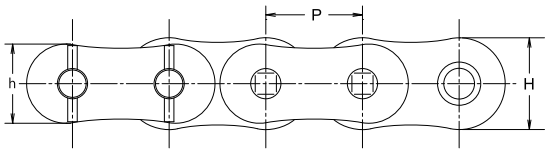
Unit (mm)

Chain No. DID	Chain No. ANSI*	Pitch P	Roller link width W	Roller dia. D	Pin d	Pin E	Pin G	Pin e	Pin g	Transverse pitch C	Plate T	Plate H	Plate h	DID Avg. tensile strength kN	DID Avg. tensile strength kgf	DID Max. allowable load kN	DID Max. allowable load kgf	DID Max. allowable load kN	DID Max. allowable load kgf	Approx. Weight (kg/m)
DID HI-PWR-S 80	80	25.40	15.88	15.88	7.94	32.6	35.4	16.4	19.0	29.3	3.2	24.1	20.8	75.6	7,680	84	8,530	18.6	1,890	2.82
DID HI-PWR-S 100	100	31.75	19.05	19.05	9.54	39.5	42.5	19.8	22.7	35.8	4.0	30.1	26.0	117	11,880	127	12,890	30.4	3,090	4.18
DID HI-PWR-S 120	120	38.10	25.40	22.23	11.11	49.7	53.0	24.9	28.2	45.4	4.8	36.2	31.2	162	16,450	186	18,880	40.2	4,080	6.12
DID HI-PWR-S 140	140	44.45	25.40	25.40	12.71	53.6	58.4	26.8	31.7	48.9	5.6	42.2	36.3	216	21,930	245	24,870	53.9	5,470	7.71
DID HI-PWR-S 160	160	50.80	31.75	28.58	14.29	63.6	68.2	31.9	36.5	58.5	6.4	48.2	41.4	273	27,720	313	31,780	70.6	7,170	10.5
DID HI-PWR-S 180	180	57.15	35.72	35.71	17.46	71.5	77.3	35.8	41.6	65.8	7.1	54.3	46.6	379	38,480	412	41,830	83.3	8,460	14.4
DID HI-PWR-S 200	200	63.50	38.10	39.68	19.85	77.9	85.0	39.0	46.0	71.6	8.0	60.3	52.0	460	46,700	500	50,760	98.1	9,960	17.5
DID HI-PWR-S 240	240	76.20	47.63	47.63	23.81	95.2	102.9	47.7	55.3	87.8	9.5	72.3	62.0	667	67,720	725	73,600	132	13,400	24.7

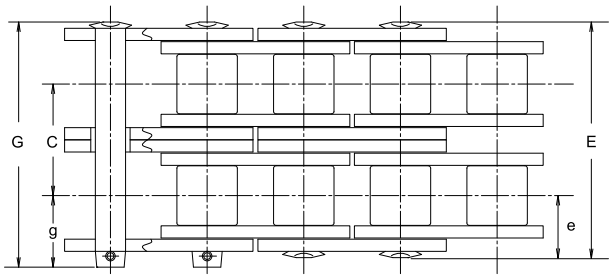
Note: 1. The values of average tensile strength and maximum allowable load are for chains.
2. Ask us for the delivery time.
3. *Equivalent to ANSI

DID HI-PWR-S80 (Please refer to P33 for sprocket)





HJ RP



Dimensions

Unit (mm)

Chain No.		Pitch	Roller link width	Roller dia.	Pin					Transverse Pitch	Plate			DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	ANSI*	P	W	D	d	E	G	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	
DID HI-PWR-S 80	80	25.40	15.88	15.88	7.94	32.6	35.4	16.4	19.0	29.3	3.2	24.1	20.8	75.6	7,680	84	8,530	18.6	1,890	2.82
DID HI-PWR-S 80-2	80-2					61.9	64.7							151	15,330	168	17,060	31.6	3,210	5.61
DID HI-PWR-S 80-3	80-3					91.3	94.0							227	23,050	252	25,580	46.5	4,720	8.24

Note: The values of average tensile strength and maximum allowable tension are for chains.
*Equivalent to ANSI

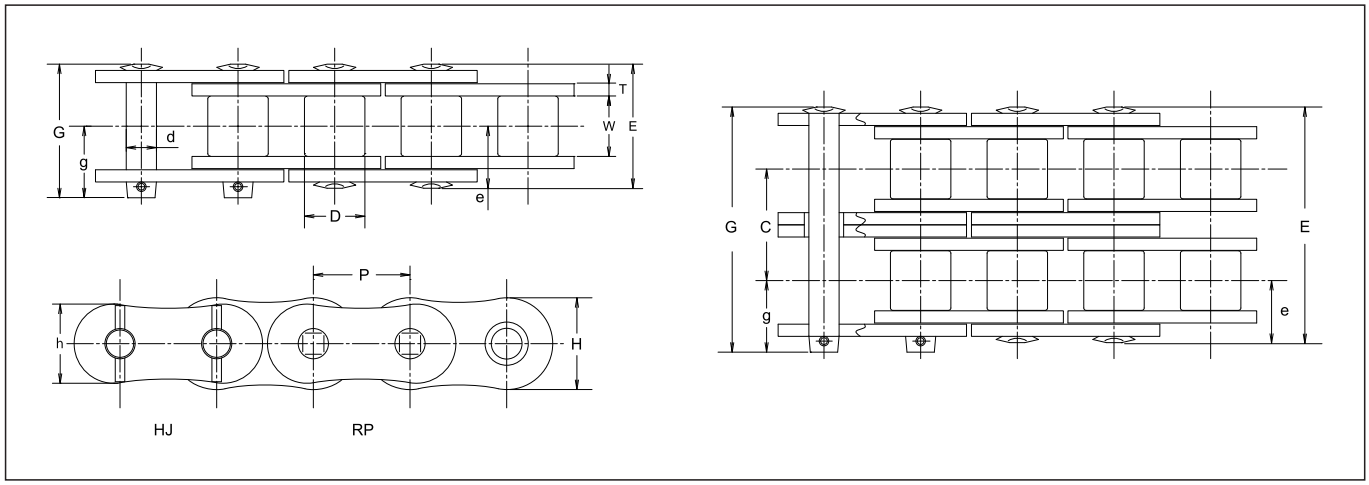
Max. kilowatt Ratings HI-PWR-S80

Unit (kW)

No. of Teeth of Small Sprocket \ Type of Lubrication	Small sprocket rpm (Refer to P132 for the details of lubrication A, B and C.)									
	25	50	100	200	300	400	500	700	900	1000
	A		B					C		
11	1.90	3.55	6.63	12.4	17.8	23.1	28.2	29.6	24.0	—
12	2.09	3.90	7.28	13.6	19.6	25.4	31.0	32.5	27.3	—
13	2.28	4.25	7.94	14.8	21.4	27.7	33.8	35.4	30.8	—
14	2.47	4.61	8.60	16.1	23.1	30.0	36.6	38.4	34.4	—
15	2.66	4.96	9.27	17.3	24.9	32.3	39.5	41.3	38.2	—
16	2.85	5.32	9.94	18.6	26.7	34.6	42.3	44.3	42.1	—
17	3.04	5.68	10.6	19.8	28.5	37.0	45.2	48.0	46.1	—
18	3.24	6.05	11.3	21.1	30.3	39.3	48.1	51.4	50.2	—
19	3.43	6.41	12.0	22.3	32.2	41.7	51.0	54.5	54.4	—
20	3.63	6.77	12.7	23.6	34.0	44.1	53.9	58.8	58.8	50.2
21	3.82	7.14	13.3	24.9	35.8	46.4	56.8	63.3	63.3	54.0
22	4.02	7.51	14.0	26.2	37.7	48.8	59.7	67.8	67.8	57.9
23	4.22	7.88	14.7	27.5	39.5	51.2	62.6	72.5	72.5	61.9
24	4.42	8.25	15.4	28.7	41.4	53.6	65.6	77.3	77.3	66.0
25	4.62	8.62	16.1	30.0	43.3	56.1	68.5	82.2	82.2	70.2
28	5.22	9.75	18.2	34.0	48.9	63.4	77.5	97.4	97.4	83.2
30	5.62	10.5	19.6	36.6	52.7	68.3	83.4	108	108	92.2
32	6.03	11.3	21.0	39.2	56.5	73.2	89.5	117	117	102
35	6.64	12.4	23.2	43.2	62.2	80.6	98.6	129	129	116
40	7.68	14.3	26.7	49.9	71.9	93.1	114	149	149	142
45	8.72	16.3	30.4	56.7	81.6	106	129	169	169	169

Note: Values in the above table are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120.).

DID HI-PWR-S100 (Please refer to P35 for sprocket)



Dimensions

Unit (mm)

Chain No.		Pitch	Roller link width	Roller dia.	Pin					Transverse Pitch	Plate			DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	ANSI*	P	W	D	d	E	G	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	
DID HI-PWR-S 100	100	31.75	19.05	19.05	9.54	39.5	42.5	19.8	22.7	35.8	4.0	30.1	26.0	117	11,880	127	12,890	30.4	3,090	4.18
DID HI-PWR-S 100-2	100-2					75.3	78.3							234	23,760	255	25,890	51.6	5,240	8.21
DID HI-PWR-S 100-3	100-3					111.2	114.2							351	35,630	382	38,780	76	7,720	12.2

Note: The values of average tensile strength and maximum allowable tension are for chains.
*Equivalent to ANSI

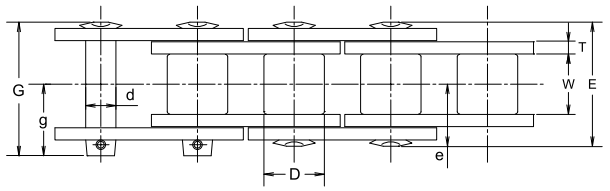
Max. kilowatt Ratings HI-PWR-S100

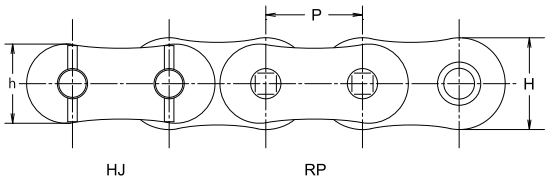
Unit (kW)

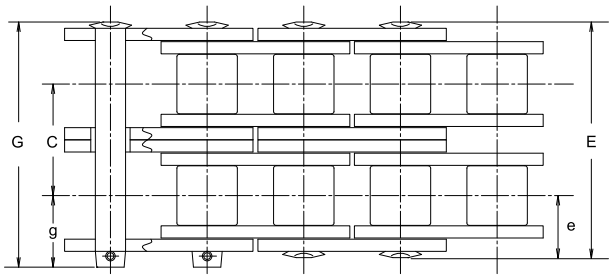
No. of Teeth of Small Sprocket \ Type of Lubrication	Small sprocket rpm (Refer to P132 for the details of lubrication A, B and C.)											
	10	25	50	100	200	300	400	500	600	700	800	900
	A			B			C					
11	1.59	3.64	6.81	12.7	23.7	34.2	41.8	41.8	41.8	41.8	—	—
12	1.75	4.00	7.48	14.0	26.1	37.5	47.6	47.6	47.6	47.6	—	—
13	1.91	4.37	8.15	15.2	28.4	40.9	53.0	53.7	53.7	53.7	—	—
14	2.07	4.73	8.83	16.5	30.8	44.3	57.4	60.0	60.0	60.0	—	—
15	2.23	5.10	9.51	17.8	33.2	47.7	61.9	66.6	66.6	66.6	54.5	—
16	2.39	5.46	10.2	19.0	35.5	51.2	66.3	72.1	72.1	72.1	60.0	—
17	2.56	5.83	10.9	20.3	37.9	54.7	70.8	76.9	76.9	76.9	65.7	—
18	2.72	6.21	11.6	21.6	40.4	58.1	75.3	81.8	81.8	81.8	71.6	—
19	2.88	6.58	12.3	22.9	42.8	61.6	79.9	86.7	86.7	86.7	77.7	—
20	3.05	6.96	13.0	24.2	45.2	65.1	84.4	91.8	91.8	91.8	83.9	—
21	3.21	7.33	13.7	25.5	47.7	68.7	89.0	96.8	96.8	96.8	90.2	—
22	3.38	7.71	14.4	26.9	50.1	72.2	93.6	102	102	102	96.8	—
23	3.54	8.09	15.1	28.2	52.6	75.8	98.2	107	107	107	103	—
24	3.71	8.47	15.8	29.5	55.1	79.3	103	112	112	112	110	—
25	3.88	8.85	16.5	30.8	57.6	82.9	107	117	117	117	117	—
28	4.38	10.0	18.7	34.9	65.0	93.7	121	139	139	139	139	—
30	4.72	10.8	20.1	37.6	70.1	101	131	154	154	154	154	—
32	5.06	11.6	21.6	40.3	75.1	108	140	170	170	170	170	142
35	5.58	12.7	23.8	44.4	82.8	119	154	189	189	189	189	163
40	6.45	14.7	27.5	51.2	95.6	138	178	218	219	219	219	199
45	7.32	16.7	31.2	58.2	109	156	203	247	247	247	247	237

Note: Values in the above table are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120.).

DID HI-PWR-S120 (Please refer to P37 for sprocket)







Dimensions

Unit (mm)

Chain No.		Pitch	Roller link width	Roller dia.	Pin					Transverse Pitch	Plate			DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	ANSI*	P	W	D	d	E	G	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	
DID HI-PWR-S 120	120	38.10	25.40	22.23	11.11	49.7	53.0	24.9	28.2	45.4	4.8	36.2	31.2	162	16,450	186	18,880	40.2	4,080	6.12
DID HI-PWR-S 120-2	120-2					95.2	98.5							324	32,890	372	37,770	68.3	6,930	12.2
DID HI-PWR-S 120-3	120-3					140.6	143.9							486	49,340	559	56,750	100	10,150	18.2

Note: The values of average tensile strength and maximum allowable tension are for chains.
*Equivalent to ANSI

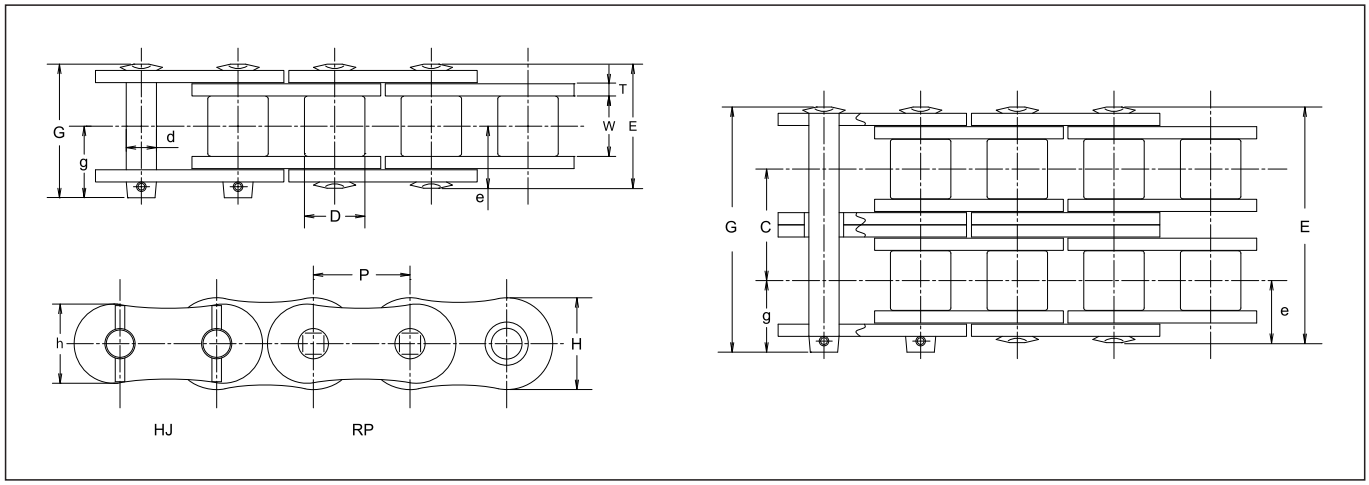
Max. kilowatt Ratings HI-PWR-S120

Unit (kW)

No. of Teeth of Small Sprocket \ Type of Lubrication	Small sprocket rpm (Refer to P132 for the details of lubrication A, B and C.)											
	10	25	50	100	150	200	300	400	500	600	700	800
	A		B				C					
11	2.53	5.79	10.8	20.2	29.0	37.6	54.2	63.6	63.6	60.9	—	—
12	2.78	6.36	11.9	22.2	31.9	41.3	59.5	69.8	69.8	69.4	—	—
13	3.04	6.93	12.9	24.2	34.8	45.1	64.9	78.3	78.3	78.3	—	—
14	3.29	7.51	14.0	26.2	37.7	48.8	70.3	87.5	87.5	87.5	—	—
15	3.54	8.09	15.1	28.2	40.6	52.6	75.8	97.1	97.1	97.0	—	—
16	3.80	8.67	16.2	30.2	43.5	56.4	81.2	105	107	107	—	—
17	4.06	9.26	17.3	32.3	46.5	60.2	86.7	112	117	117	92.9	—
18	4.32	9.85	18.4	34.3	49.4	64.1	92.3	120	127	127	101	—
19	4.58	10.4	19.5	36.4	52.4	67.9	97.8	127	135	135	110	—
20	4.84	11.0	20.6	38.5	55.4	71.8	103	134	143	143	119	—
21	5.10	11.6	21.7	40.5	58.4	75.7	109	141	151	151	128	—
22	5.36	12.2	22.8	42.6	61.4	79.6	115	148	158	158	137	—
23	5.63	12.8	24.0	44.7	64.4	83.5	120	156	166	166	146	—
24	5.89	13.4	25.1	46.8	67.5	87.4	126	163	174	174	156	—
25	6.16	14.1	26.2	48.9	70.5	91.3	132	170	182	182	166	—
30	7.50	17.1	31.9	59.6	85.8	111	160	208	221	221	218	—
32	8.04	18.3	34.2	63.9	92.0	119	172	222	237	237	237	—
35	8.86	20.2	37.7	70.4	101	131	189	245	261	261	261	—
40	10.2	23.3	43.6	81.3	117	152	219	283	302	302	302	274
45	11.6	26.5	49.5	92.3	133	172	248	322	360	360	360	328

Note: Values in the above table are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120.).

DID HI-PWR-S140 (Please refer to P39 for sprocket)



Dimensions

Unit (mm)

Chain No.		Pitch	Roller link width	Roller dia.	Pin					Transverse Pitch	Plate			DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	ANSI*	P	W	D	d	E	G	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	
DID HI-PWR-S 140	140	44.45	25.40	25.40	12.71	53.6	58.4	26.8	31.7	48.9	5.6	42.2	36.3	216	21,930	245	24,870	53.9	5,470	7.71
DID HI-PWR-S 140-2	140-2					102.6	107.4							432	43,860	490	49,750	91.7	9,310	15.3
DID HI-PWR-S 140-3	140-3					151.5	156.3							648	65,790	735	74,620	134	13,600	22.9

Note: The values of average tensile strength and maximum allowable tension are for chains.
*Equivalent to ANSI

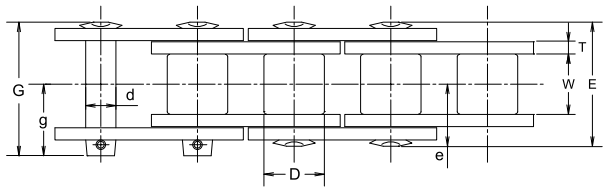
Max. kilowatt Ratings HI-PWR-S140

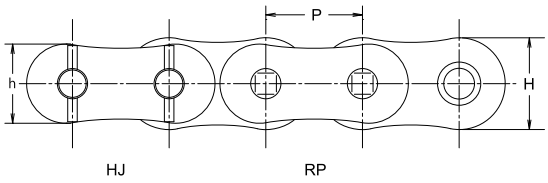
Unit (kW)

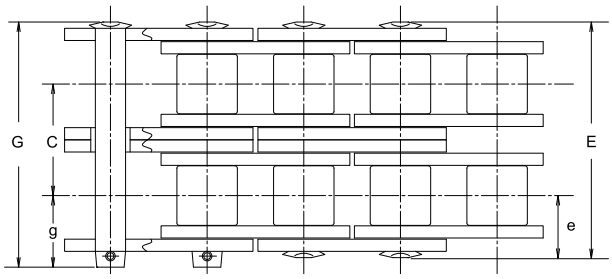
No. of Teeth of Small Sprocket \ Type of Lubrication	Small sprocket rpm (Refer to P132 for the details of lubrication A, B and C.)													
	10	25	50	100	150	200	250	300	350	400	450	500	550	600
	A		B				C							
11	3.97	9.05	16.9	31.5	45.4	58.9	72.0	84.8	90.6	90.6	90.6	90.6	78.6	68.9
12	4.36	9.95	18.6	34.7	49.9	64.7	79.0	93.1	103	103	103	103	89.5	78.6
13	4.75	10.8	20.2	37.8	54.4	70.5	86.2	102	116	116	116	116	101	88.6
14	5.15	11.8	21.9	40.9	59.0	76.4	93.4	110	126	127	127	127	113	99.0
15	5.55	12.7	23.6	44.1	63.5	82.3	101	119	136	137	137	137	125	110
16	5.95	13.6	25.3	47.3	68.1	88.2	108	127	146	147	147	147	138	121
17	6.35	14.5	27.1	50.5	72.7	94.2	115	136	156	156	156	156	151	132
18	6.75	15.4	28.8	53.7	77.3	100	122	144	166	166	166	166	164	144
19	7.16	16.3	30.5	56.9	82.0	106	130	153	176	178	178	178	178	157
20	7.57	17.3	32.2	60.2	86.7	112	137	162	186	193	193	193	193	169
21	7.98	18.2	34.0	63.4	91.3	118	145	170	196	207	207	207	207	182
22	8.39	19.2	35.7	66.7	96.1	124	152	179	206	222	222	222	222	195
23	8.80	20.1	37.5	70.0	101	131	160	188	216	236	236	236	236	208
24	9.22	21.0	39.3	73.3	106	137	167	197	226	247	247	247	247	222
25	9.63	22.0	41.0	76.6	110	143	175	206	236	259	259	259	259	236
30	11.7	26.8	50.0	93.2	134	174	213	251	288	315	315	315	315	311
32	12.6	28.7	53.6	100	144	187	228	269	309	342	342	342	342	342
35	13.9	31.6	59.0	110	159	205	251	296	340	383	391	391	391	391
40	16.0	36.5	68.2	127	183	237	290	342	393	430	430	430	430	—
45	18.2	41.5	77.4	144	208	270	329	388	446	498	498	498	498	—

Note: Values in the above table are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120.).

DID HI-PWR-S160 (Please refer to P41 for sprocket)







Dimensions

Unit (mm)

Chain No.		Pitch	Roller link width	Roller dia.	Pin					Transverse Pitch	Plate			DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	ANSI*	P	W	D	d	E	G	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	
DID HI-PWR-S 160	160					63.6	68.2							273	27,720	313	31,780	70.6	7,170	10.5
DID HI-PWR-S 160-2	160-2	50.80	31.75	28.58	14.29	122.2	126.8	31.9	36.5	58.5	6.4	48.2	41.4	546	55,430	626	63,550	120	12,180	20.8
DID HI-PWR-S 160-3	160-3					180.8	185.4							819	83,150	939	95,330	176	17,870	31.2

Note: The values of average tensile strength and maximum allowable tension are for chains.
*Equivalent to ANSI

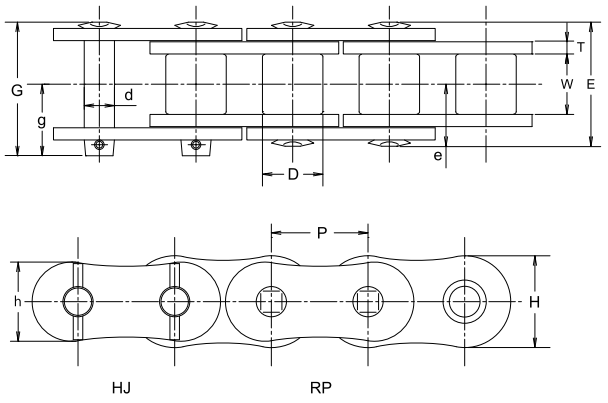
Max. kilowatt Ratings HI-PWR-S160

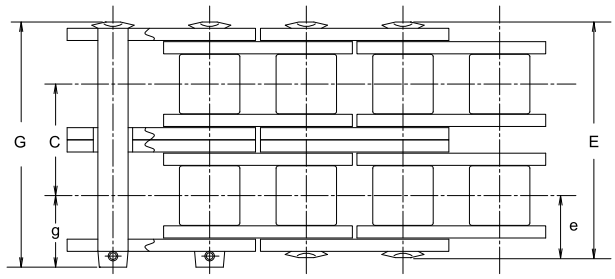
Unit (kW)

No. of Teeth of Small Sprocket \ Type of Lubrication	Small sprocket rpm (Refer to P132 for the details of lubrication A, B and C.)												
	10	25	50	100	150	200	250	300	350	400	450	500	550
	A	B				C							
11	5.94	13.6	25.3	47.2	68.0	88.1	108	118	118	118	118	101	—
12	6.53	14.9	27.8	51.9	74.7	96.8	118	135	135	135	135	115	—
13	7.12	16.2	30.3	56.6	81.5	106	129	148	148	148	148	130	—
14	7.71	17.6	32.8	61.3	88.3	114	140	161	161	161	161	145	—
15	8.31	19.0	35.4	66.0	95.1	123	151	173	173	173	173	161	—
16	8.91	20.3	37.9	70.8	102	132	161	186	186	186	186	177	—
17	9.51	21.7	40.5	75.6	109	141	172	198	198	198	198	194	—
18	10.1	23.1	43.1	80.4	116	150	183	211	211	211	211	211	—
19	10.7	24.5	45.7	85.2	123	159	194	229	229	229	229	229	198
20	11.3	25.9	48.3	90.1	130	168	205	242	247	247	247	247	214
21	12.0	27.3	50.9	94.9	137	177	217	255	266	266	266	266	231
22	12.6	28.7	53.5	99.8	144	186	228	268	285	285	285	285	247
24	13.8	31.5	58.8	110	158	205	250	295	316	316	316	316	282
25	14.4	32.9	61.4	115	165	214	261	308	330	330	330	330	299
30	17.6	40.1	74.8	140	201	260	318	375	402	402	402	402	394
32	18.8	43.0	80.2	150	216	279	341	402	434	434	434	434	434
35	20.8	47.3	88.3	165	237	308	376	443	496	496	496	496	496
40	24.0	54.7	102	190	274	355	434	512	588	598	598	598	598
45	27.2	62.1	116	216	311	403	493	581	654	654	654	654	654

Note: Values in the above table are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120.).

DID HI-PWR-S180 (Please refer to P43 for sprocket)





Dimensions

Unit (mm)

Chain No.		Pitch	Roller link width	Roller dia.	Pin					Transverse Pitch	Plate			DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	ANSI*	P	W	D	d	E	G	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	
DID HI-PWR-S 180	180	57.15	35.72	35.71	17.46	71.5	77.3	35.8	41.6	65.8	7.1	54.3	46.6	379	38,480	412	41,830	83.3	8,460	14.4
DID HI-PWR-S 180-2	180-2					137.4	143.2							758	76,950	824	83,650	141	14,310	28.6
DID HI-PWR-S 180-3	180-3					203.3	209.1							1,137	115,430	1,236	125,480	208	21,120	42.7

Note: The values of average tensile strength and maximum allowable tension are for chains.
*Equivalent to ANSI

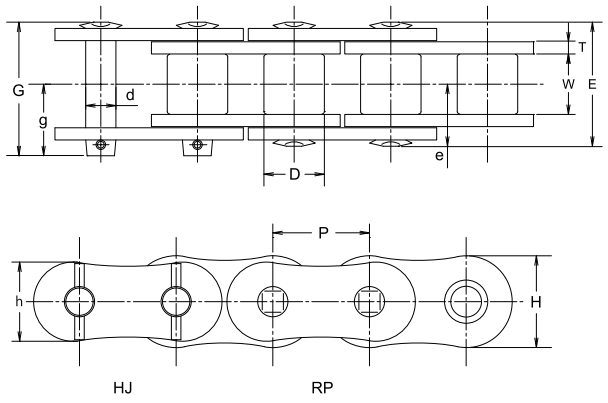
Max. kilowatt Ratings HI-PWR-S180

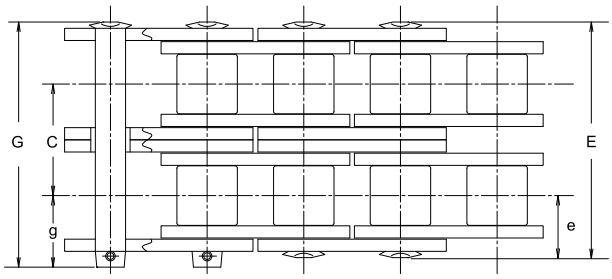
Unit (kW)

No. of Teeth of Small Sprocket \ Type of Lubrication	Small sprocket rpm (Refer to P132 for the details of lubrication A, B and C.)									
	10	25	50	100	150	200	250	300	350	400
	A	B			C					
13	8.88	20.3	37.8	70.6	102	132	154	154	154	—
14	9.62	22.0	41.0	76.5	110	143	167	167	167	—
15	10.4	23.7	44.2	82.4	119	154	180	180	180	—
16	11.1	25.4	47.3	88.4	127	165	193	193	193	—
17	11.9	27.1	50.6	94.3	136	176	206	206	206	—
18	12.6	28.8	53.8	100	145	187	219	219	219	—
19	13.4	30.5	57.0	106	153	198	232	232	232	—
20	14.2	32.3	60.2	112	162	210	256	277	277	277
21	14.9	34.0	63.5	119	171	221	270	292	292	292
22	15.7	35.8	66.8	125	180	233	284	307	307	307
24	17.2	39.3	73.4	137	197	255	312	337	337	337
26	18.8	42.9	80.0	149	215	279	340	368	368	368
30	21.9	50.0	93.4	174	251	325	397	429	429	429
35	25.9	59.1	110	206	296	384	469	506	506	506
40	29.9	68.3	127	238	342	444	542	585	585	585
45	34.0	77.5	145	270	389	504	616	660	660	660

Note: Values in the above table are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120.).

DID HI-PWR-S200 (Please refer to P45 for sprocket)





Dimensions

Unit (mm)

Chain No.		Pitch	Roller link width	Roller dia.	Pin					Transverse Pitch	Plate			DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	ANSI*	P	W	D	d	E	G	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	
DID HI-PWR-S 200	200					77.9	85.0							460	46,700	500	50,760	98.1	9,960	17.5
DID HI-PWR-S 200-2	200-2	63.50	38.10	39.68	19.85	149.6	156.6	39.0	46.0	71.6	8.0	60.3	52.0	920	93,400	1,000	101,520	166	16,850	34.7
DID HI-PWR-S 200-3	200-3					221.3	228.3							1,380	140,100	1,500	152,280	245	24,870	52.0

Note: The values of average tensile strength and maximum allowable tension are for chains.
*Equivalent to ANSI

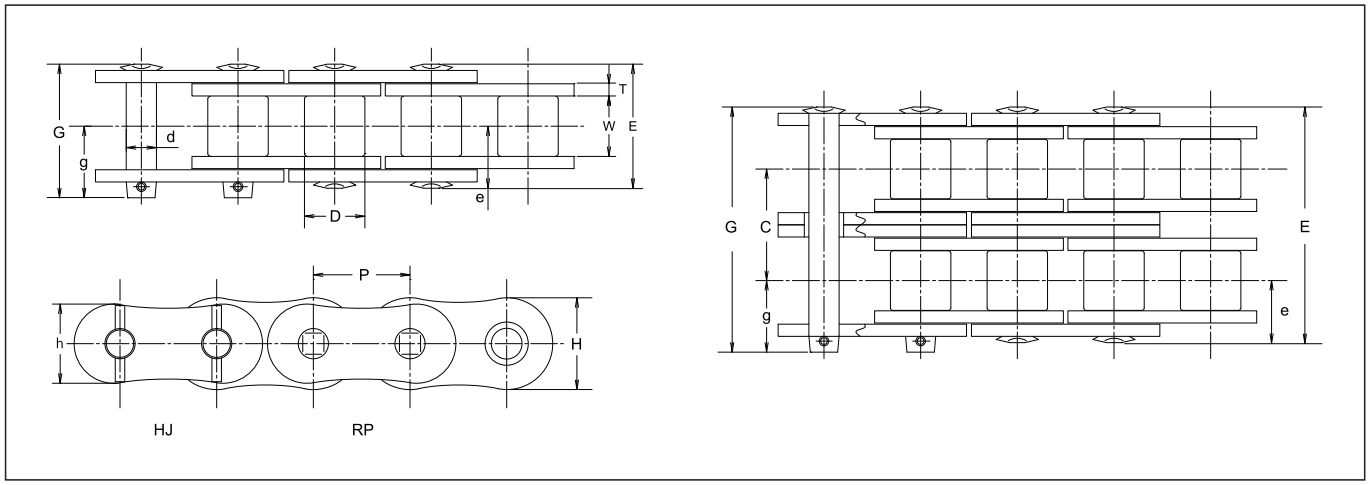
Max. kilowatt Ratings HI-PWR-S200

Unit (kW)

No. of Teeth of Small Sprocket \ Type of Lubrication	Small sprocket rpm (Refer to P132 for the details of lubrication A, B and C.)											
	10	15	20	30	40	50	60	80	100	150	200	250
	A		B						C			
13	12.4	17.8	23.1	33.2	43.1	52.6	62.0	80.4	98.2	141	183	194
14	13.4	19.3	25.0	36.0	46.7	57.0	67.2	87.1	106	153	199	211
15	14.4	20.8	26.9	38.8	50.3	61.4	72.4	93.8	115	165	214	234
16	15.5	22.3	28.9	41.6	53.9	65.9	77.6	101	123	177	229	258
17	16.5	23.8	30.8	44.4	57.5	70.3	82.9	107	131	189	245	283
18	17.6	25.3	32.8	47.2	61.2	74.8	88.2	114	140	201	261	308
19	18.6	26.8	34.8	50.1	64.9	79.3	93.5	121	148	213	276	334
20	19.7	28.4	36.7	52.9	68.6	83.8	98.8	128	156	225	292	355
21	20.8	29.9	38.7	55.8	72.3	88.4	104	135	165	238	308	374
22	21.8	31.4	40.7	58.7	76.0	92.9	109	142	173	250	324	393
24	24.0	34.5	44.7	64.5	83.5	102	120	156	190	274	355	432
26	26.1	37.7	48.8	70.3	91.0	111	131	170	208	299	388	—

Note: Values in the above table are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120.).

DID HI-PWR-S240 (Please refer to P47 for sprocket)



Dimensions

Unit (mm)

Chain No.		Pitch	Roller link width	Roller dia.	Pin					Transverse Pitch	Plate			DID Min. Tensile Strength		DID Avg. Tensile Strength		DID Max. Allowable Load		Approx. Weight (kg/m)
DID	ANSI*	P	W	D	d	E	G	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	
DID HI-PWR-S 240	240	76.20	47.63	47.63	23.81	95.2	102.9	47.7	55.3	87.8	9.50	72.3	62.0	667	67,720	725	73,600	132	13,400	24.7
DID HI-PWR-S 240-2	240-2					183.1	190.7							1,334	135,430	1,450	147,210	225	22,840	49.0
DID HI-PWR-S 240-3	240-3					270.9	278.5							2,001	203,150	2,175	220,810	331	33,600	73.3

Note: The values of average tensile strength and maximum allowable tension are for chains.
*Equivalent to ANSI

Max. kilowatt Ratings HI-PWR-S240

Unit (kW)

No. of Teeth of Small Sprocket \ Type of Lubrication	Small sprocket rpm (Refer to P132 for the details of lubrication A, B and C.)												
	5	10	15	20	25	30	40	50	60	80	100	125	150
	A		B							C			
13	10.0	18.7	26.9	34.9	42.6	50.2	65.1	79.5	93.7	121	148	181	214
14	10.8	20.2	29.2	37.8	46.2	54.4	70.5	86.2	102	132	161	197	232
15	11.7	21.8	31.4	40.7	49.8	58.6	76.0	92.8	109	142	173	212	250
16	12.5	23.4	33.7	43.6	53.3	62.9	81.4	99.5	117	152	186	227	268
17	13.4	25.0	36.0	46.6	57.0	67.1	86.9	106	125	162	198	242	286
18	14.2	26.6	38.3	49.6	60.6	71.4	92.5	113	133	173	211	258	304
19	15.1	28.2	40.6	52.5	64.2	75.7	98.0	120	141	183	224	273	322
20	15.9	29.8	42.9	55.5	67.9	80.0	104	127	149	193	236	289	340
21	16.8	31.4	45.2	58.5	71.6	84.3	109	134	157	204	249	305	359
22	17.7	33.0	47.5	61.6	75.2	88.7	115	140	165	214	262	320	—
24	19.4	36.2	52.2	67.6	82.7	97.4	126	154	182	235	288	352	—
26	21.2	39.5	56.9	73.7	90.1	106	138	168	198	257	314	384	—

Note: Values in the above table are for simplex chain only. For multiplex chains, please multiply the coefficient of multi-strand. (See "Chain Selection" on P120.).

HK Type Roller Chains

Downsizing Your System with Higher Power Chains

HK type roller chains conform to H type of ANSI, and their thickness of inner and outer link plates are equal to those of the next larger size chain. Therefore, HK type roller chains are higher in tensile strength by about 20% and in maximum allowable load by about 15% than those of standard roller chains. Since the weight of the chains is also larger, HK type roller chains are suitable for the application of heavy duty at low speed.

Recommended uses

- Optimal for places where higher strength is required but large and heavier chains cannot be used.

<Examples>

Asphalt finishers

HK Type Connecting Link and Offset Link

	Connecting link		Offset link	
	Clearance fit	Interference fit	Clearance fit	2-Pitch Offset link (Interference fit)
Applicable connecting link	**RJ: DID 50** & under **CJ: DID 80** & over **RJ/ CJ: DID 60**	**FJ: DID 50** & under **HJ: DID 80** & over **FJ/ HJ: DID 60**	**OJ**: exclusive use for **HK** unavailable (for **DID 40HK** & under)	**2POJ**: exclusive use for **HK** unavailable (for **DID 40HK** & under)
Tensile Strength	Same as chain			

Selection of chains

Select a proper HK type roller chain based on "Low-speed selection". (P121)
For the maximum allowable load, see the following table of dimensions.

HK type roller chains are available up to triplex.

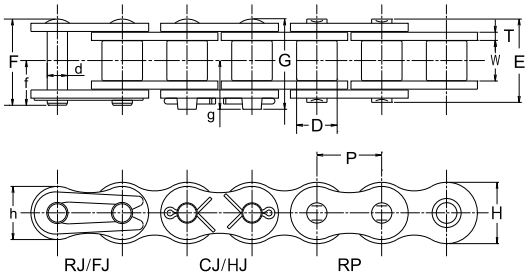
Sprockets

Use standard sprockets for a simplex HK roller chain
Since the transverse pitches (C dimension: see P61) are larger than those of standard chains in the case of duplex or triplex, standard sprockets cannot be used. Refer to the sprocket tooth profiles for HK. (see P116~117)

Connecting link and offset link

The tensile strength of connecting links and offset links are listed on the left, but the maximum allowable load is lower than that of the base chain. Please consult us should you have any questions. It is recommended to use the connecting link of interference-fitted. (FJ, HJ)

Never make the holes of the connecting plate larger and never make the pins thinner to facilitate the work for fitting the pins into the connecting plate, since otherwise the fatigue strength will be lowered.

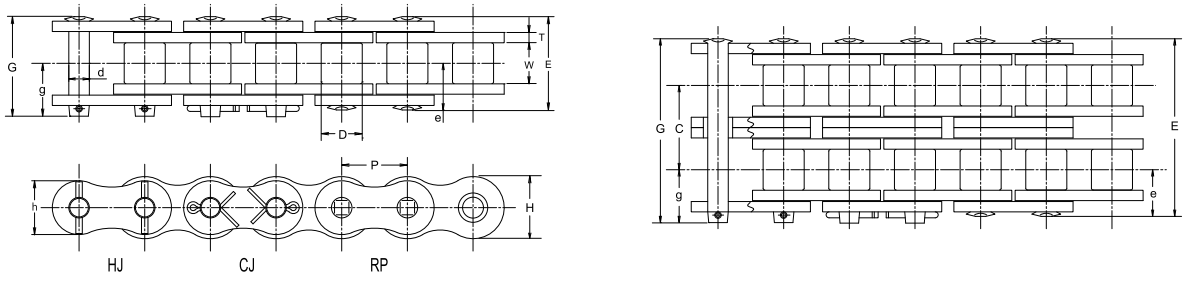


Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller dia.	Pin						Plate			Min. tensile strength		Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
	P	W	D	d	E	F	G	f	g	T	H	h	kN	kgf	kN	kgf	kN	kgf	
DID 40HK	12.70	7.95	7.92	3.97	18.5	19.5	—	10.5	—	2.0	12.0	10.4	19.6	1,990	21.5	2,180	4.51	460	0.72
DID 50HK	15.875	9.53	10.16	5.09	21.8	23.4	—	12.6	—	2.4	15.0	13.0	33.3	3,380	36.3	3,690	7.85	800	1.12
DID 60HK	19.05	12.70	11.91	5.96	28.7	30.5	31.2	16.1	16.9	3.2	18.1	15.6	47.1	4,780	52	5,280	10.7	1,090	1.81

Note: 1. The values of average tensile strength and maximum allowable tension are for chains.
2. When grooving using sprockets with smaller number of teeth, the grooves may interfere with the chain outer plate. Consult us for advise.
3. Ask us for the delivery time.



Dimensions

Unit (mm)

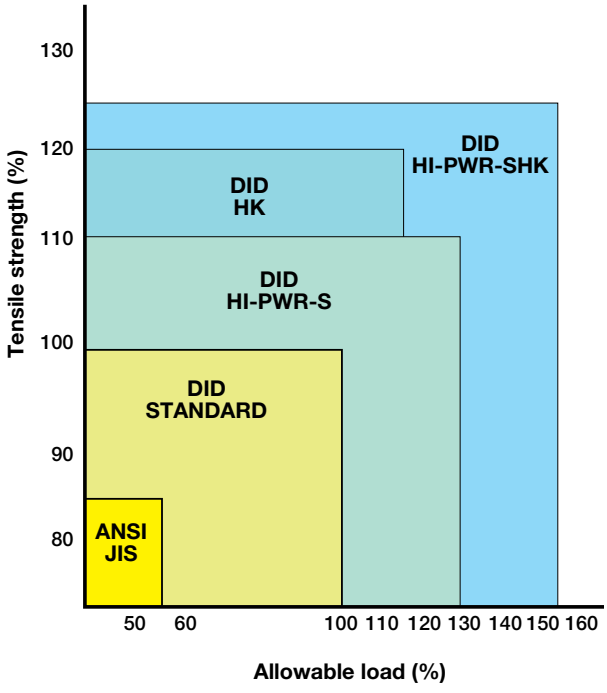
Chain No.	Pitch	Roller link width	Roller dia.	Pin					Transverse Pitch	Plate			Min. tensile strength		Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
	P	W	D	d	E	G	e	g	C	T	H	h	kN	kgf	kN	kgf	kN	kgf	
DID 80HK					35.9	38.7							81.3	8,250	96.1	9,760	16.6	1,690	2.97
DID 80HK-2	25.40	15.88	15.88	7.94	68.5	71.3	18.0	20.6	32.6	4.0	24.0	20.8	162	16,450	192	19,490	28.3	2,870	5.88
DID 80HK-3					101.2	104.0							244	24,770	288	29,240	41.6	4,220	8.76
DID 100HK					42.7	45.8							123	12,490	142	14,420	26.4	2,680	4.16
DID 100HK-2	31.75	19.05	19.05	9.54	82.0	85.0	21.4	24.4	39.1	4.8	29.9	26.0	246	24,970	284	28,830	45	4,570	8.23
DID 100HK-3					121.1	124.1							369	37,460	426	43,250	66.1	6,710	12.27
DID 120HK					53.2	56.5							167	16,950	191	19,390	34.3	3,480	6.08
DID 120HK-2	38.10	25.40	22.23	11.11	102.2	105.5	26.6	29.9	48.9	5.6	35.9	31.2	334	33,910	382	38,780	58.3	5,920	12.04
DID 120HK-3					151.1	154.4							501	50,860	573	58,170	85.8	8,710	17.94
DID 140HK					56.9	61.7							217	22,030	250	25,380	45.1	4,580	8.81
DID 140HK-2	44.45	25.40	25.40	12.71	109.2	114.0	28.5	33.3	52.2	6.4	41.9	36.3	434	44,060	500	50,760	76.6	7,780	17.44
DID 140HK-3					161.4	166.2							651	66,090	750	76,140	113	11,470	25.99
DID 160HK					67.0	71.6							278	28,220	318	32,280	58.8	5,970	10.93
DID 160HK-2	50.80	31.75	28.58	14.29	129.0	133.6	33.5	38.2	61.9	7.1	47.8	41.4	556	56,450	637	64,670	100	10,150	21.64
DID 160HK-3					191.9	195.6							834	84,670	956	97,060	147	14,920	32.24
DID 180HK					74.9	80.8							402	40,810	441	44,770	71.5	7,260	14.81
DID 180HK-2	57.15	35.72	35.71	17.46	144.2	150.0	37.5	43.3	69.2	8.0	53.8	46.6	804	81,620	882	89,540	121	12,280	29.32
DID 180HK-3					213.5	219.3							1,200	121,830	1,320	134,010	178	18,070	43.69
DID 200HK					84.7	91.7							487	49,440	558	56,650	83.3	8,460	19.17
DID 200HK-2	63.50	38.10	39.68	19.85	163.0	170.0	42.4	49.4	78.3	9.5	60.0	52.0	974	98,880	1,110	112,690	141	14,310	37.95
DID 200HK-3					241.4	248.4							1,461	148,320	1,670	169,540	208	21,120	56.55
DID 240HK					108.5	116.3							768	77,970	882	89,540	112	11,370	28.30
DID 240HK-2	76.20	47.63	47.63	23.81	209.9	217.6	54.3	61.7	101.2	12.7	71.5	62.0	1,536	155,940	1,760	178,680	191	19,390	56.03
DID 240HK-3					311.1	318.8							2,304	233,910	2,640	268,020	281	28,530	83.48

Note: 1. The above chains are of riveted pin type (RP). As for cotter pin type (CP), consult us.
2. The values of average tensile strength and maximum allowable tension are for chains.
3. When grooving using sprockets with smaller number of teeth, the grooves may interfere with the chain outer plate. Consult us.

HI-PWR-SHK Type Roller Chains

High-end type of the high strength series

The DID HI-PWR-SHK roller chains have thicker link plates than HI-PWR-S roller chains, and are the highest in tensile strength and allowable load among general application chains, thus being suitable for low speed heavy duty transmission.



Recommended uses

- The HI-PWR-SHK roller chains are 25 percent higher in tensile strength and 50 percent higher in maximum allowable load than the standard roller chains, but since their weight is heavier, driving performance declines at high speed. So, they are suitable for heavy duty at low speed applications.

<Examples>

Multilevel parking machines, pipe benders, construction machines, etc.

Selection of chains

Select a proper HI-PWR-SHK type chain based on "Low-speed selection" (P121)
For the maximum allowable load, see the following table of dimensions.
HI-PWR-SHK series is available in simplex.

Sprockets

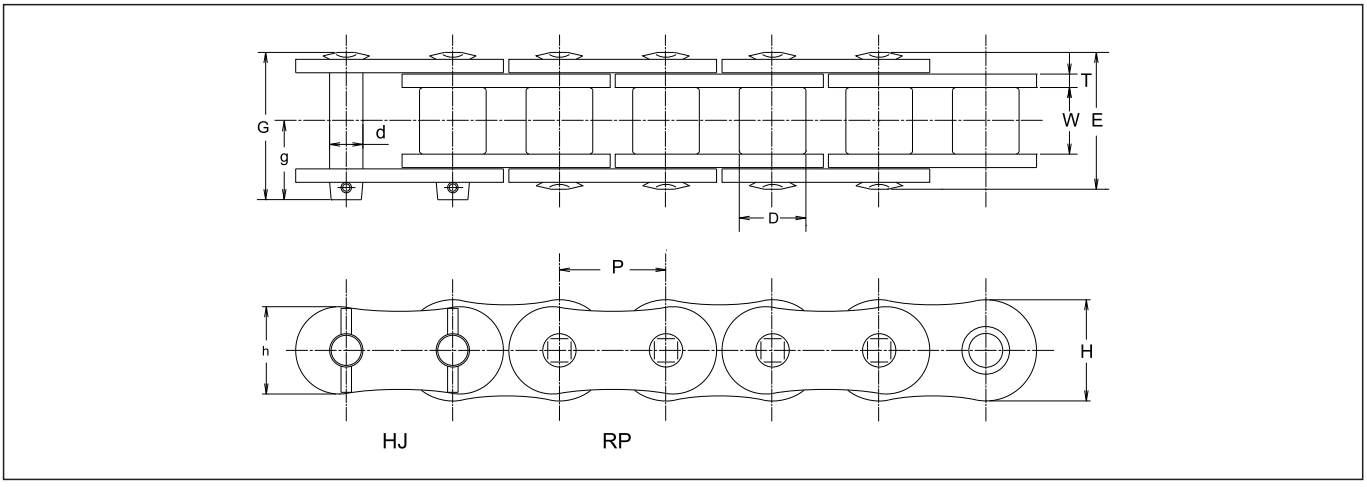
Standard sprockets for multiplex chains cannot be used.

Connecting links and offset links

The best feature of the HI-PWR-SHK roller chains is high maximum allowable load. Therefore, interference-fitted connecting links (H connecting links) with little strength degradation are used.
The connecting plate and the connecting pins are connected with spring pins. The tensile strength of an H connecting link is equivalent to that of the chain, but the allowable load is somewhat lower than that of the chain.

HI-PWR-S type roller chains do not have any offset link. Use an even number of links.

Never make the holes of the connecting plate larger and never make the pins thinner to facilitate the work for fitting the pins into the connecting plate, since otherwise the fatigue strength will be lowered.



Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller dia.	Pin				Plate			Min. tensile strength		Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
	P	W	D	d	E	G	g	T	H	h	kN	kgf	kN	kgf	kN	kgf	
DID HI-PWR-S 80HK	25.40	15.88	15.88	7.94	35.9	38.7	20.6	4.0	24.1	20.8	85.4	8,670	98.1	9,960	22.5	2,280	3.12
DID HI-PWR-S 100HK	31.75	19.05	19.05	9.54	42.7	45.8	24.4	4.8	30.1	26.0	132	13,400	145	14,720	34.3	3,480	4.37
DID HI-PWR-S 120HK	38.10	25.40	22.23	11.11	53.2	56.5	29.9	5.6	36.2	31.2	171	17,360	196	19,900	45.1	4,580	6.39
DID HI-PWR-S 140HK	44.45	25.40	25.40	12.71	56.9	61.7	33.3	6.4	42.2	36.3	222	22,540	255	25,890	60.8	6,170	9.25
DID HI-PWR-S 160HK	50.80	31.75	28.58	14.29	67.0	71.6	38.2	7.1	48.2	41.4	282	28,630	323	32,790	77.4	7,860	11.48
DID HI-PWR-S 180HK	57.15	35.72	35.71	17.46	74.9	80.8	43.3	8.0	54.3	46.6	422	42,840	461	46,800	91.2	9,260	15.55
DID HI-PWR-S 200HK	63.50	38.10	39.68	19.85	84.7	91.7	49.4	9.5	60.3	52.0	520	52,790	598	60,710	112	11,370	20.13
DID HI-PWR-S 240HK	76.20	47.63	47.63	23.81	108.5	116.3	61.7	12.7	72.3	62.0	803	81,520	922	93,600	155	15,740	29.72

Note: 1. The values of average tensile strength and maximum allowable tension are for chains.
2. When grooving using sprockets with smaller number of teeth, the grooves may interfere with the chain outer plate. Consult us.

Dependable in severe conditions

	Solid Bushing Chain (HT/ T), (D)	DH-α Chain (DHA)
Name		
Features	①Incorporating high precision solid bushing. ②Ideally suited when increased wear resistance is required.	①Forming extremely hardened carbide layer on pin surface. ②Suitable for bad atmosphere such as deterioration of lubrication and invasion of contaminant particles between pin and bushing.
Functions	Dirty Environment; Tensile strength index 100%; Temperature Range in Use −10℃~80℃	Dirty Environment; Dusty; Tensile strength index 100%; Temperature Range in Use −10℃~80℃
Main uses	PACK; TEXTILE; PRINT; HOME APPLIANCE	PACK; TEXTILE; PRINT; CONVEYOR; CONST-RUCTION; AGRICULTURE

■ Table of Ultimate Life Chain Series

Chain No.	Long Life	DH-α	O-Ring	Sintered Bushing
DID 25	HT	DHA	-	-
DID 35	T	DHA	LD	-
DID 41	-	DHA	-	-
DID 40	D	DHA	LX	UR, URN
DID 50	D	DHA	LX	UR, URN
DID 60	D	DHA	LX	UR, URN
DID 80	D	-	LD	UR, URN
DID 100	D	-	LD	-
DID 120	-	-	LD	-
DID 140	-	-	LD	-
DID 160	-	-	LD	-
DID 200	-	-	LD	-
DID 240	-	-	LD	-

■ Chain dimensions

Dimensions for Roller Chains for Transmission are shown on the pages of their descriptions and dimensions for Small Chains for Conveyor System are on P148-P155.

	O-Ring Chain/X-Ring Chain (LD/ LX)	Sintered Bushing Roller Chain (UR), (URN)
Name		
Features	①DID X-Ring chain is the best value of maintenance-free chain available. ②The patented X-Ring design has half the friction of normal O-Ring chain and provides great sealing performance. It keeps the dirt out and the grease in much better than any other O-rings. ③Up to 2 times longer wear resistance performance compared to normal O-Ring chains. ④Great cost savings can be achieved through longer life and less down time.	①Sintered bushing is incorporated. ②Ultimate Life Chain for low speed and light lord applications. ③Up to 5 times longer wear life than standard chain.
Functions	Dirty Environment, Dusty, Maintenance-Free, Tensile strength index 100%, ※Temperature Range in Use −10℃~120℃	Maintenance-Free, Tensile strength index 70%, Temperature Range in Use −10℃~60℃
Main uses	FOOD, PACK, TEXTILE, PRINT, CONVEYOR, VENDING MACHINE, CONST-RUCTION, HOME APPLIANCE, AGRICULTURE	FOOD, PACK, TEXTILE, PRINT, CONVEYOR, HOME APPLIANCE

※LX: Temp. -10°C~120°C, LD: Temp. -10°C~80°C

■ Symbols

Functions

Dirty Environment	Resistant against contaminated or deteriorated oil
Maintenance-Free	No lubrication or maintenance
Temperature Range in Use −10℃~100℃	Allowable ambient temperature
Dusty	Resistant against dusty circumstances
Tensile strength index 100%	Tension strength index (Compared to standard roller chains)

Main uses

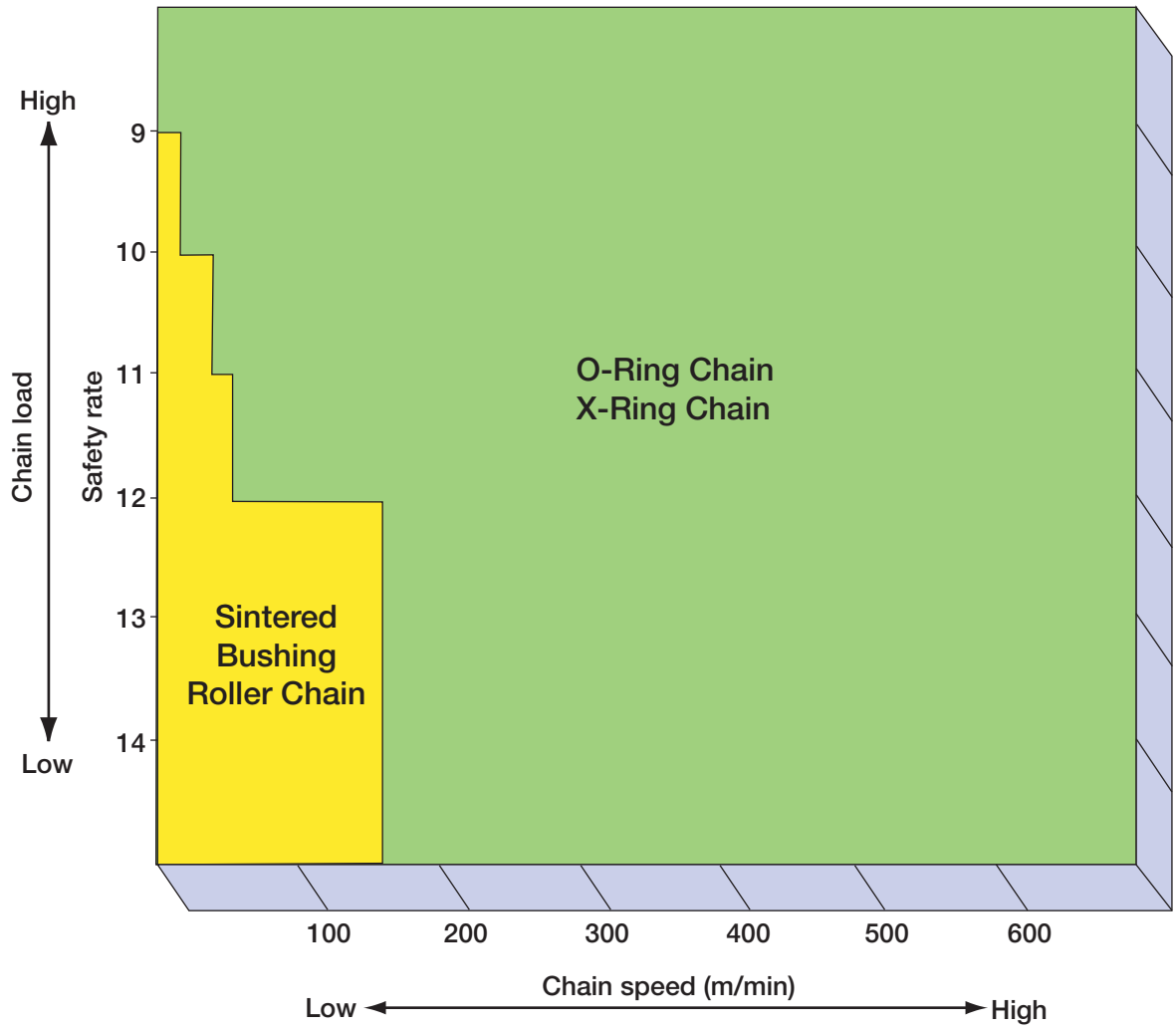
FOOD — Feed and drive in food processing machines	PACK — Feed and drive in packaging machines	TEXTILE — Feed and drive in textile machines
PRINT — Feed and drive in printing machines	CONVEYOR — Feed and drive in the conveyors and transfer equipment	VENDING MACHINE — Feed and drive in can conveyors and for painting and drying cans
CONST-RUCTION — Feed and drive in construction machines	HOME APPLIANCE — Feed and drive of home appliances	AGRICULTURE — Drive of agricultural machines

Wide range of product line-up

O-Ring Chain and Sintered Bushing Roller Chain applicable for use under various conditions

Two types of maintenance-free chains

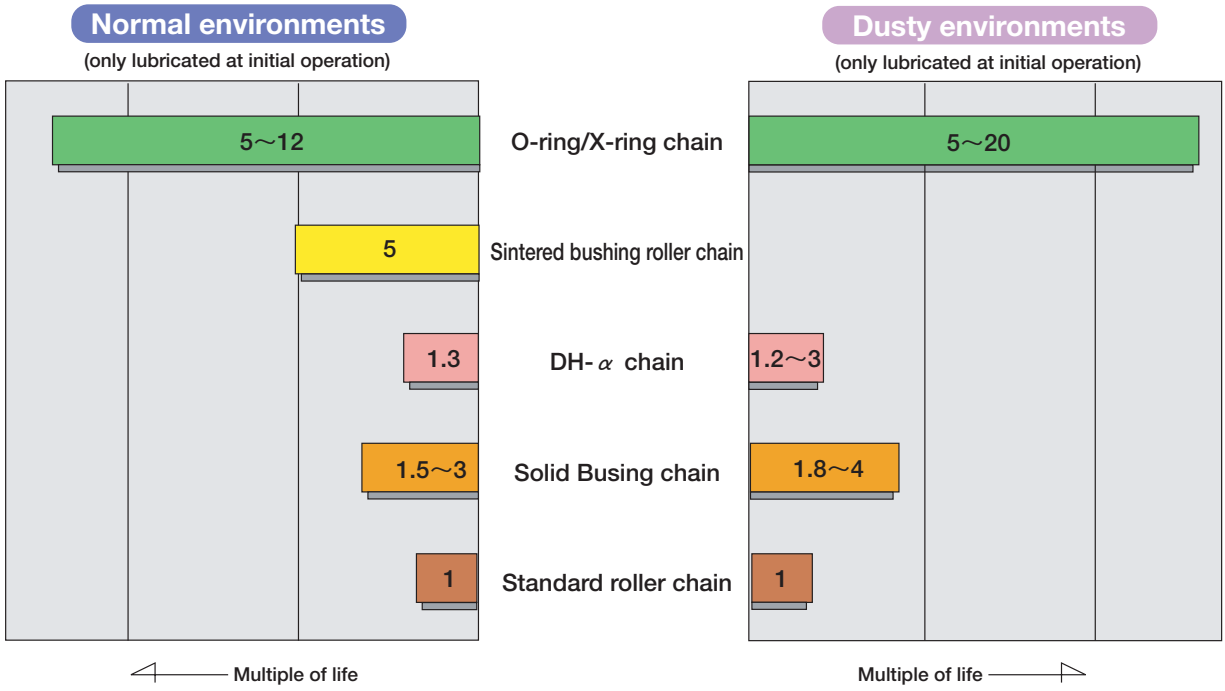
The Ultimate Life Chain Series includes two types of maintenance-free chains, O-Ring Chain and Sintered Bushing Roller Chain. They can be applied in various conditions from low-speed to high-speed operation, or from low-load to high-load operation as you can see in the chart below.



Life Comparison Test

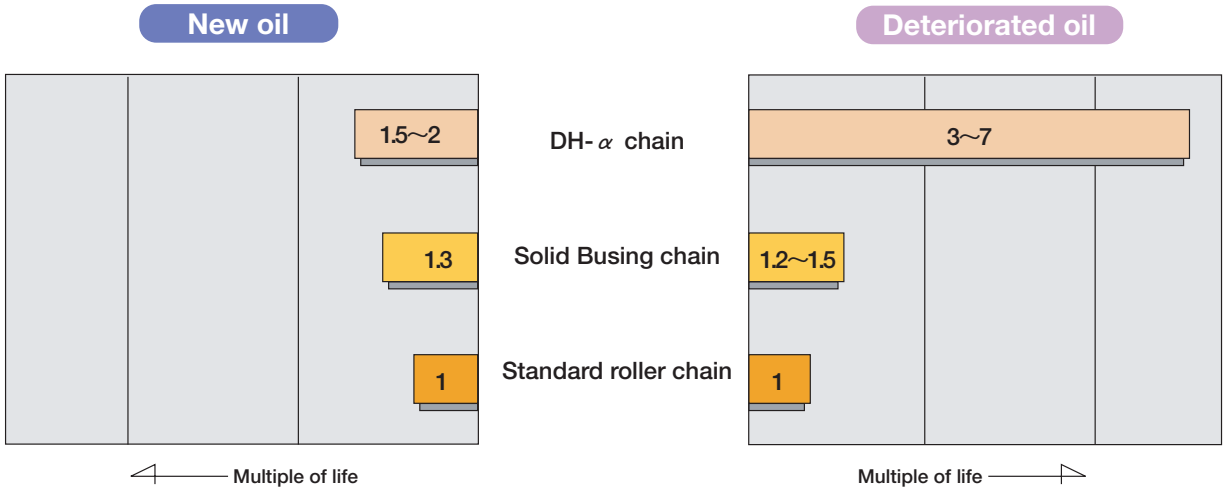
● Chain life comparison without lubrication

(Compared with standard roller chain as the bench mark)



● Chain life comparison by new oil and deteriorated oil

(Compared with standard roller chain as the bench mark)



Solid Bushing Chain (HT/D), (D)

Seamless High-precision Solid Bushings Prevent Chain Elongation

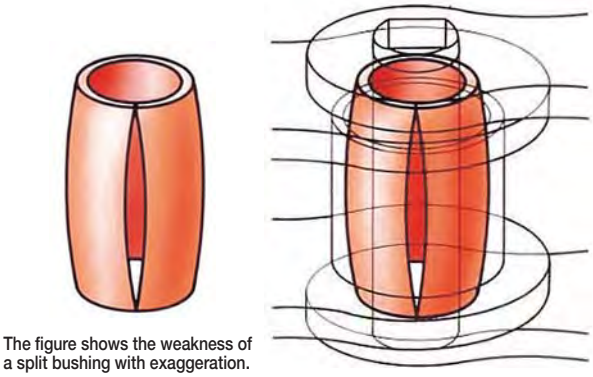
Solid Bushing chain is highly wear-resistant using cold formed solid bushings with a seamless smooth surface and complete roundness.
This is the popular type among the Ultimate Life Chain Series with its improved grease retention between the bushing and the pin.
The solid bushings and our patented V grease extend the wear life from up to 4 times compared to standard roller chains. We recommend you to adopt this solid bushing chain if you are wishing to reduce the frequency of maintenance.

Recommended uses

- For improving wear resistance while retaining the merits of standard roller chains.
- For Circumstances where chain elongation occurs frequently or lubrication is difficult.

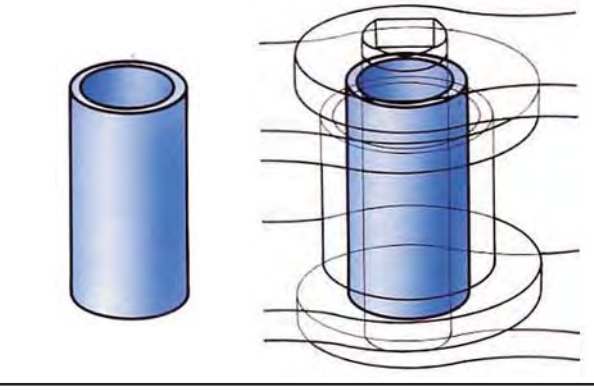
∗ Wear resistance can be further enhanced when DH-α coating pins are used.

Curled bushing of a standard roller chain

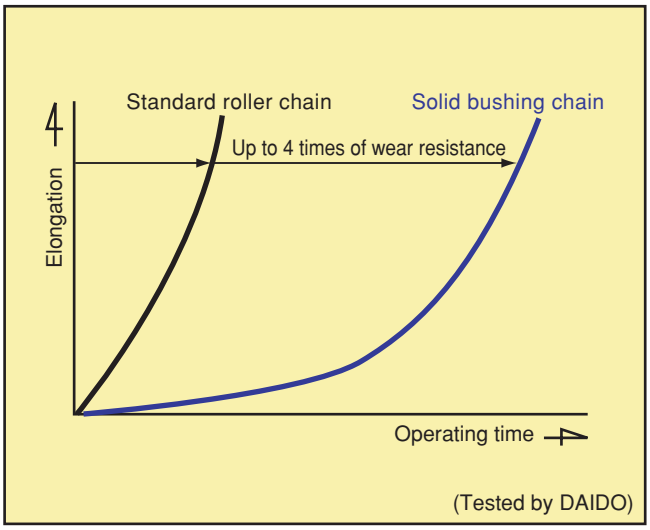


The figure shows the weakness of a split bushing with exaggeration.

Solid bushing for longer chain life



Wear resistance



Selection of chains

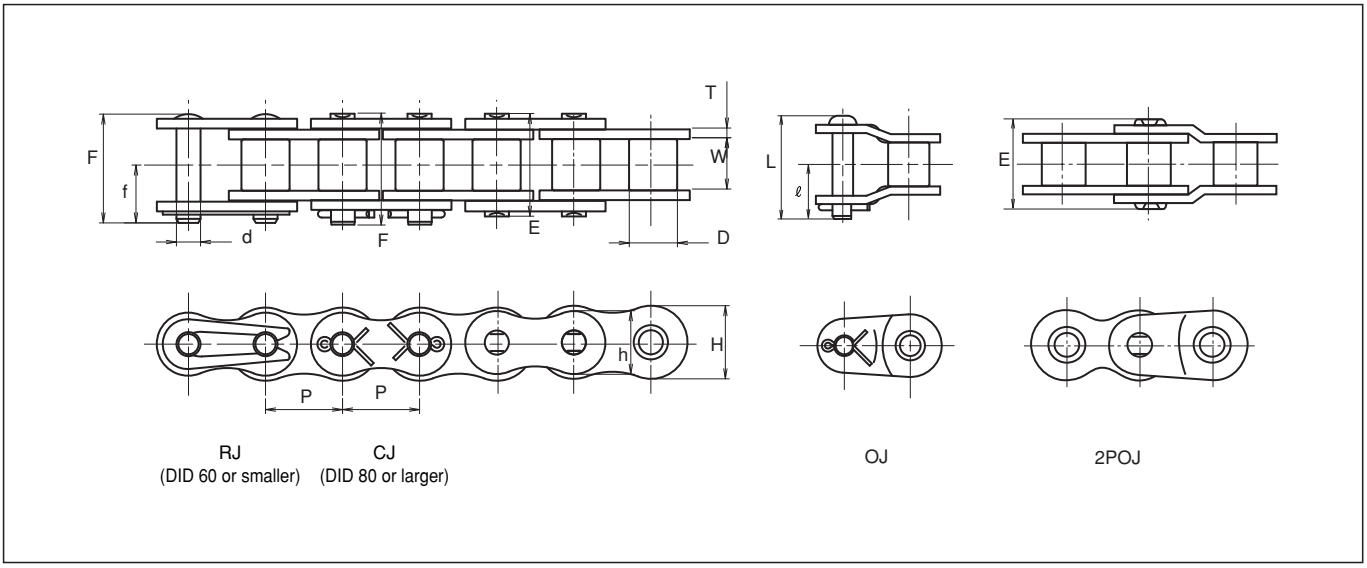
The strength of a solid bushing chain is the same as that of standard roller chains. For selecting a suitable chain, refer to "Selection of Chains" (P120~123).

Connecting links and offset links

R connecting links are used for DID 60 or smaller chains, and C connecting links are used for DID 80 or larger chains. As for offset links, 2POJ is used for DID 25 and DID 35, and both OJ and 2POJ can be used for larger sizes. Standard offset links can be used.

Sprockets

The dimensions of the solid bushing chain are the same as those of the standard roller chain. The standard sprocket can be used.



Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (Bush) dia.	Pin						Plate			Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
	P	W	D	d	E	F	f	L	ℓ	T	H	h	kN	kgf	kN	kgf	
＊DID 25HT	6.35	3.18	(3.30)	2.31	9.0	9.5	5.2	——	——	1.00	5.9	5.2	5.88	600	1.07	110	0.16
＊DID 35T	9.525	4.78	(5.08)	3.59	12.0	13.1	7.3	13.9	7.8	1.25	9.0	7.75	11.2	1,150	2.15	220	0.32
DID 40D	12.70	7.95	7.92	3.97	16.5	17.6	9.5	19.3	10.6	1.50	12.0	10.4	19.1	1,950	3.72	380	0.63
DID 50D	15.875	9.53	10.16	5.09	20.3	21.9	11.6	23.1	12.1	2.00	15.0	13.0	30.8	3,150	6.86	700	1.06
DID 60D	19.05	12.70	11.91	5.96	25.4	26.9	14.3	30.0	15.7	2.40	18.1	15.6	44.1	4,500	9.31	950	1.44
DID 80D	25.40	15.88	15.88	7.94	32.6	35.4	19.0	36.4	19.5	3.20	24.0	20.8	78.4	8,000	14.7	1,500	2.55
DID 100D	31.75	19.05	19.05	9.54	39.5	42.5	22.8	43.5	23.5	4.00	29.9	26.0	118.0	12,100	22.5	2,300	3.79

Note: 1. Those marked with ＊ indicate bushing chains.
2. Consult us for the delivery time.

DH-α Chain (DHA)

The pin with a super-hard surface coating protects the critical area from adverse environments

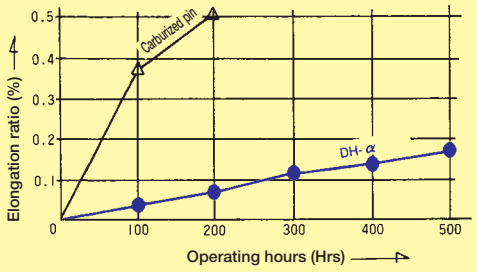
Perfect lubrication makes chain life longer. It is not easy to avoid deterioration due to its own oxidation and mixture with contaminants. In this case, DH-α chain shows good performance. Excellent performance can be expected under non-lubricated conditions and in such critical conditions where dirt, dust or fine metal particles work into the chain.

Recommended uses

- Environments where soil, sand or dust directly comes into contact with the chain (O-ring chains are recommended if applicable.).
- Applications where a chain is lubricated in an oil bath and the oil is heavily deteriorated due to the contamination of foreign objects.
- To avoid chain kinking by heat between pin and bushing.

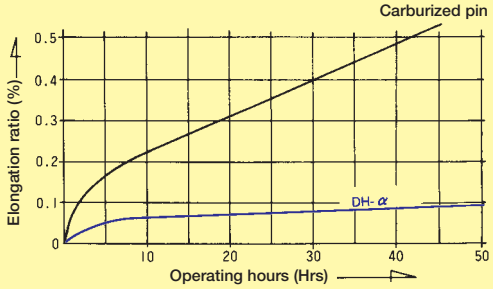
Wear resistance performance

Ⅰ. Wear resistance performance under degraded lubricant condition



(Test conditions)
①Chain Sample: DID06B (p=9.525)
②Drive: 14N.T/10,000rpm·33N.T/ 4242rpm
③Tension: 30kgf (6.0kW)
④Lubrication: By oil bath with wasted automobile engine oil

Ⅱ. Wear resistance performance under sandy & dusty condition



(Test conditions)
①Chain Sample: DID40 (p=12.70)
②Drive: 21N.T/ 1090rpm·21N.T/ 1090rpm
③Tension: 140kgf (6.8kW)
④Lubrication: Initial grease only. Continuous scattering of sand on the chain in operation

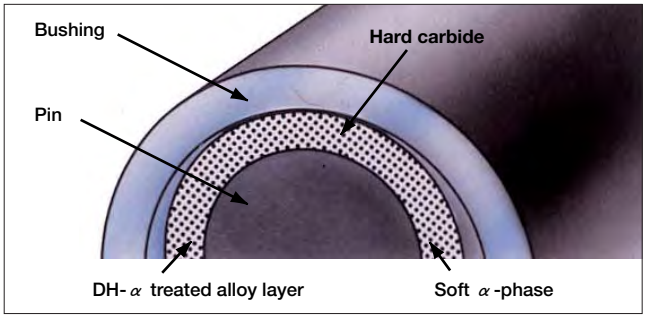
Tested by DAIDO

Comparison of properties

	Carburizing	Nitriding	H-Cr plating	DH-α
Layer	High carbon	Iron nitride	Chrome	Chrome carbide
Surface hardness (HV)	750~850	750~1,100	900~1,100	1,300~1,500
Actual thickness of treated layer	100 or more	10 or more	10~100	5~20
Surface hardness lowering temperature	200 or more	500 or more	300 or more	900 or more
Peeling resistance	○	○	×	◎
Wear resistance	△	○	○	◎

Structure of DH-α

DH-α refers to a hard layer formed on the surface of a pin. This layer contains harder carbide as illustrated below, so it provides excellent wear resistance even in the use for adverse conditions such as the contamination of hard foreign objects as well as in oxidation resistance. (Patented)



Selection of chains

The strength of DH-α chain is the same as that of standard roller chains. For selecting a suitable DH-α chain, refer to "Selection of Chains" (P120~123).

Connecting links and offset links

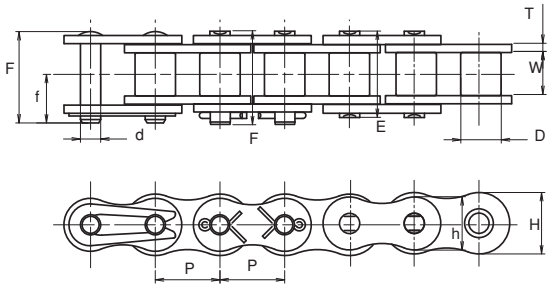
Use the connecting links and offset links for standard roller chains. While a chain has many links, the numbers of connecting link and offset link is 1 or 2, and, therefore, their influence on the wear of the entire chain is small.

Sprockets

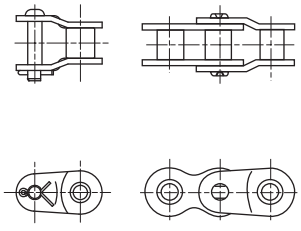
The dimensions of DH-α chain is the same as those of standard roller chains. Use standard sprockets for standard roller chains.

Microstructure

The white layer is a layer by DH-α treatment, and the black grains visible in the layer are chromium carbide.



RJ (DID 60 or smaller) CJ (DID 80 or larger)



OJ 2POJ

Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (Bush) dia.	Pin						Plate			Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
	P	W	D	d	E	F	f	L	ℓ	T	H	h	kN	kgf	kN	kgf	
* DID 25 DHA	6.35	3.18	(3.30)	2.31	7.8	8.5	4.7	——	——	0.72	5.9	5.20	4.41	450	0.73	75	0.13
* DID 35 DHA	9.525	4.78	(5.08)	3.59	12.0	13.1	7.3	13.9	7.8	1.25	9.0	7.75	11.2	1,150	2.15	220	0.32
DID 41 DHA	12.70	6.38	7.77	3.59	13.7	14.6	7.9	15.2	8.6	1.20	9.6	8.00	10.7	1,100	2.35	240	0.39
DID 40 DHA	12.70	7.95	7.92	3.97	16.5	17.6	9.5	19.3	10.6	1.50	12.0	10.40	19.1	1,950	3.72	380	0.63
DID 50 DHA	15.875	9.53	10.16	5.09	20.3	21.9	11.6	23.1	12.1	2.00	15.0	13.00	30.9	3,150	6.86	700	1.06
DID 60 DHA	19.05	12.70	11.91	5.96	25.4	26.9	14.3	30.0	15.7	2.40	18.1	15.60	44.1	4,500	9.31	950	1.44

Note: Those marked with * indicate bushing chains.

O-Ring Chain (LD)/X-Ring Chain (LX)

Highest wear resistance available by sealing grease between pins and bushings

The durability of chain is dramatically improved since grease is sealed between the pins and bushings by O-rings. The O-ring chain is the most dependable model of the Ultimate Life Chain Series with its excellent wear resistance even in the conditions or environments where chain maintenance is difficult.

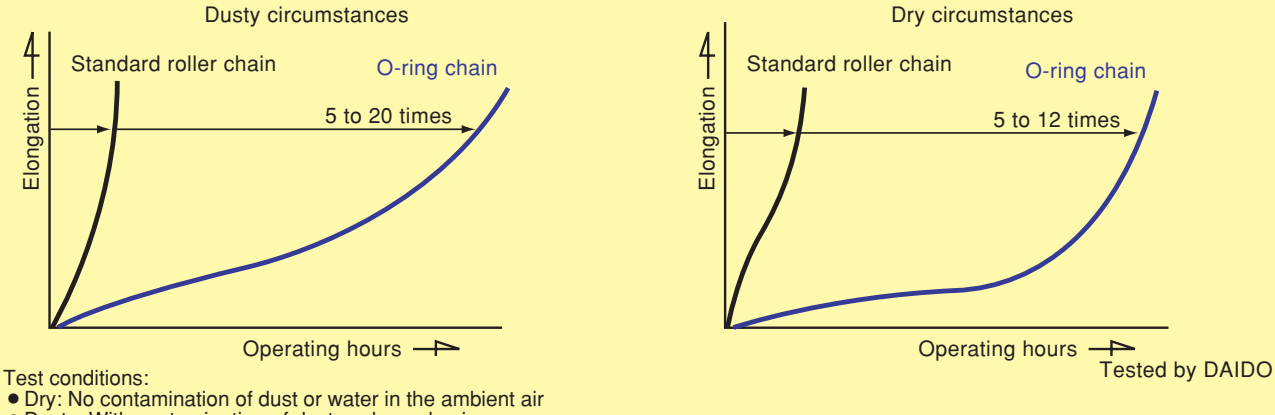
Recommended uses.

- Circumstances where frequent chain replacement is required due to wear stretch.
- Circumstances where lubrication during the service is impossible.
- In an environment with much soil, sand, dust, etc.
- Applications that require strength higher than that of a sintered bushing roller chain.

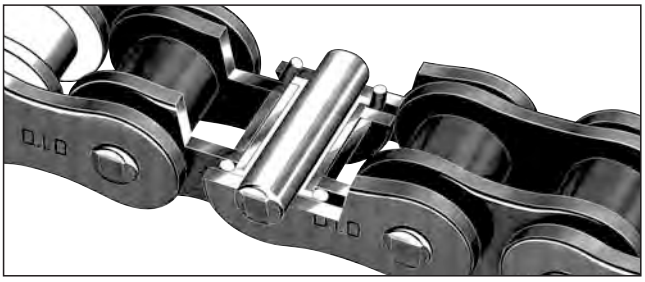
Other features

- Reducing noise. (The noise level is 3 dB lower compared to standard roller chains.)
- Reducing vibration with the friction created by O-Ring. (The power loss due to the friction is almost negligible, since the frictional force between the pins and bushings is for usually in the applications.)

Wear resistance performance



Test conditions:
- Dry: No contamination of dust or water in the ambient air
- Dusty: With contamination of dust such as alumina
- Initial lubrication only. No lubrication during service.
- The operating hours of the chains are different. The operating time of a standard roller chain can be extended when it is periodically lubricated or an oil bath is used during operation.



Selection of chains

The strength of an O-ring chain is almost the same as that of a standard roller chain. (Since the pins are longer than those of standard roller chain, the average rupture strength is slightly lower.)
For selecting a suitable chain, refer to "Selection of Chains" (P120~123).
When the service ambient temperature is higher than 80 °C, special heat resistant O-rings must be used. In this case, contact us for more information.

Connecting links and offset links

Two types of connecting links are available: clearance fit and interference fit. When high strength or durability is required, use interference-fit connecting link. Only 2POJ is available as the offset link for all sizes.

Chain No.	Connecting link		Offset link
	Clearance fit	Interference fit	
DID 35LD	RJ (D clip type)	FJ (D clip type)	2POJ (2 pitch offset link)
DID 40LX DID 50LX DID 60LX	RJ (M clip type)	FJ (M clip type)	
DID 80LD DID 100LD	CJ (Cotter pin type)	HJ (Cotter pin type)	
DID 120LD	———		
DID 140LD DID 160LD DID 200LD DID 240LD	———	NJ (Cotter pin type. with nut)	

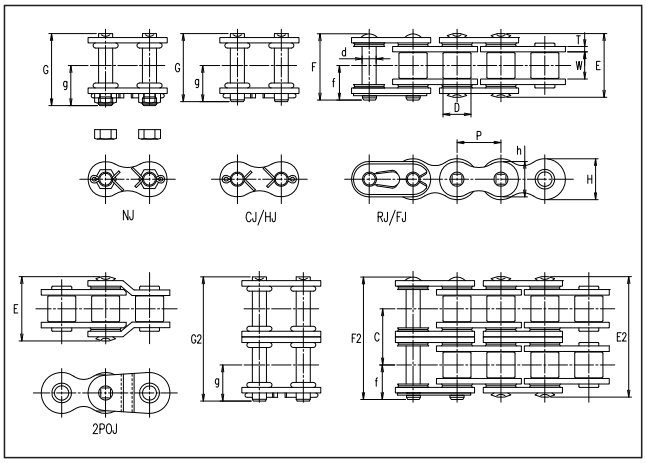
Sprockets

O-ring chain uses longer pins than a standard roller chain. When using multiplex O-ring chain, the standard sprocket for multiplex chains cannot be used.

Caution

O-ring chain is not recommended in applications where solvents or other substances may attack “Nitric Rubber”. Special material O-rings are also available for these conditions: Please consult us for details. In general, “Nitric Rubber” is damaged by contact with the following chemical materials.

Gasoline, Light oil, Benzene, Toluene, Trichloroethylene, Ether, Ketone (MEK), Ethyl acetate, Phosphoric acid, Ester hydraulic oil, Organic acid, High-concentration inorganic acid



Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (Bush) dia.	Pin									Transverse Pitch	Plate			Avg. tensile strength		Max. allowable tension		Approx. weight
	P	W	D	d	E	F	G	f	g	E2	F2	G2	C2	T	H	h	kN	kgf	kN	kgf	(kg/m)
* DID 35 LD	9.525	4.60	(5.08)	3.59	13.0	14.45	—	7.8	—	—	—	—	—	1.25	9.0	7.75	9.8	990	1.47	150	0.35
DID 40 LX	12.70	7.95	7.92	3.97	20	20	—	10.7	—	36.7	36.8	—	16.7	1.5	12.0	10.4	18.1	1,840	3.72	380	0.67
DID 50 LX	15.875	9.53	10.16	5.09	23.4	23.9	—	12.8	—	43.7	44.2	—	20.3	2.0	15.0	13.0	30.1	3,060	6.86	700	1.08
DID 60 LX	19.05	12.70	11.91	5.96	29.2	30.0	—	16.0	—	54.9	55.7	—	25.7	2.4	18.1	15.6	42.8	4,350	9.31	950	1.62
DID 80 LD	25.40	15.88	15.88	7.94	36.5	—	38.5	—	20.9	69.4	—	71.3	32.8	3.2	24.0	20.6	72.5	7,360	14.7	1,490	2.83
DID 100 LD	31.75	19.05	19.05	9.54	44.0	—	46.2	—	24.7	83.6	—	85.7	39.5	4.0	29.9	26.0	107	10,860	21.1	2,140	4.07
DID 120 LD	38.10	25.40	22.23	11.11	54.0	—	56.8	—	30.2	—	—	—	—	4.8	35.9	31.2	157	15,940	28.4	2,880	5.90
DID 140 LD	44.45	25.40	25.40	12.71	58.6	—	69.2	—	40.2	—	—	—	—	5.6	41.9	36.3	196	19,900	40.2	4,080	7.87
DID 160 LD	50.80	31.75	28.58	14.29	69.0	—	80.3	—	46.2	—	—	—	—	6.4	47.8	41.4	245	24,870	52.9	5,370	10.31
DID 200 LD	63.50	38.10	39.68	19.85	83.8	—	96.5	—	55.0	—	—	—	—	8.0	60.0	52.0	428	43,450	73.5	7,460	16.89
DID 240 LD	76.20	47.63	47.63	23.81	101.2	—	116.4	—	66.2	—	—	—	—	9.5	71.5	62.0	624	63,350	99	10,050	24.80

Note: 1. Those marked with * indicate bushing chain.
2. The values of average tensile strength and maximum allowable load are for chains.
3. When grooving using sprockets with smaller number of teeth, the grooves may interfere with the chain outer plate. Consult us for advise.
4. LX-type is a less-friction O-ring chain using specially formed X-rings.

Sintered Bushing Roller Chain (UR/ URN)

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.

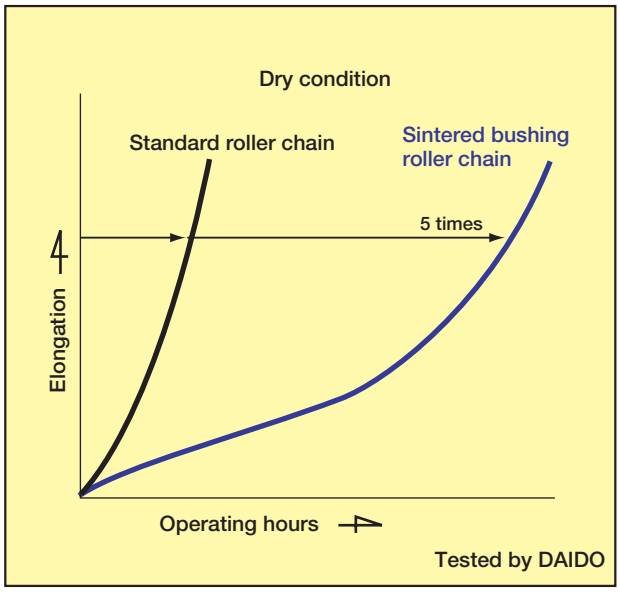
Recommended uses

- 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" (P120~123). 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.

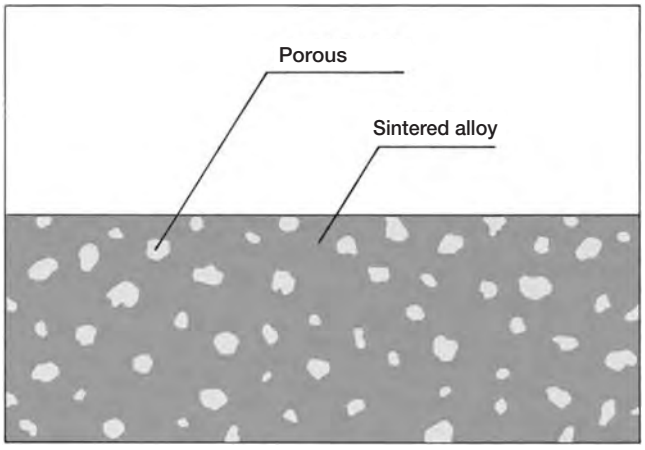
Connecting links and offset links

For sintered bushing roller chain, R connecting links are used for DID60 or smaller, and C 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.

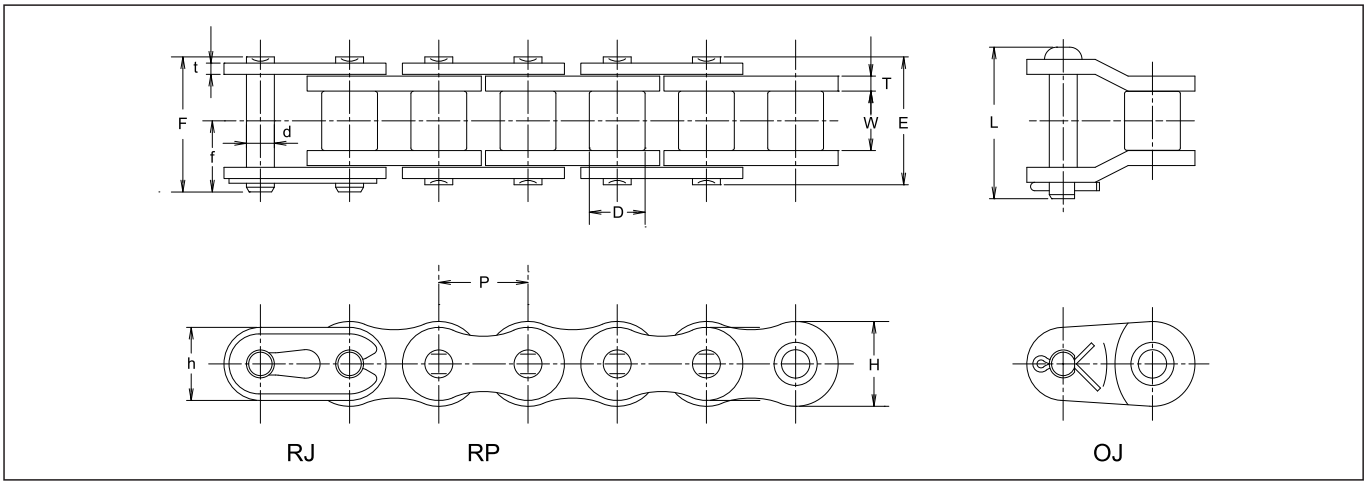
Sprockets

Standard sprockets can be used for sintered bushing roller chains.

Sectional view of sintered alloy



DID 40UR, 40URN



Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller dia.	Pin					Plate				Avg. tensile strength		Max. allowable load		Approx. weight
	P	W	D	d	E	F	f	L	T	t	H	h	kN	kgf	kN	kgf	(kg/m)
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.

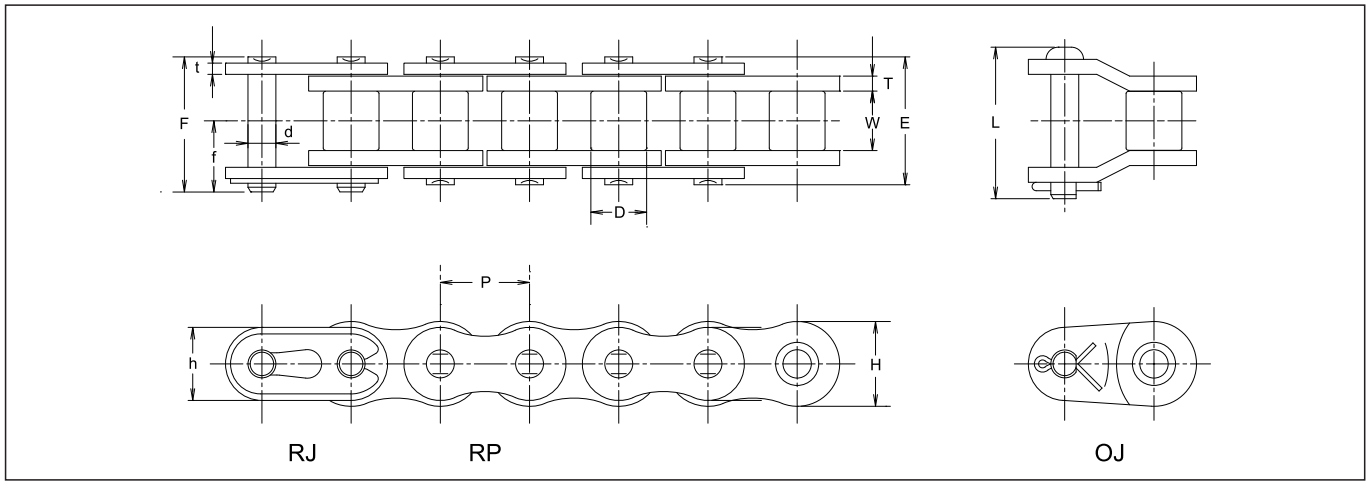
Max. Kilowatt Ratings DID 40UR, 40URN

Unit(kW)

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



Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller dia.	Pin					Plate				Avg. tensile strength		Max. allowable load		Approx. weight
	P	W	D	d	E	F	f	L	T	t	H	h	kN	kgf	kN	kgf	(kg/m)
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.

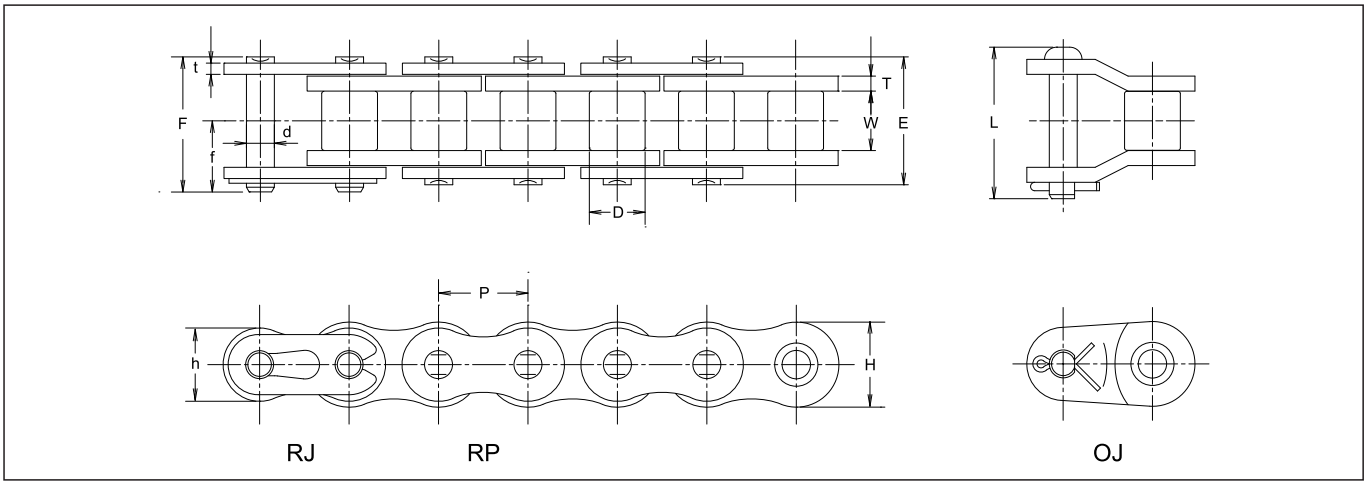
DID 50UR, 50URN (kW Ratings)

Unit(kW)

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

Unit (mm)

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.

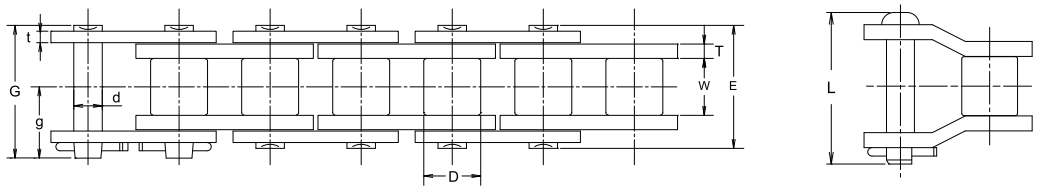
DID 60UR, 60URN (kW Ratings)

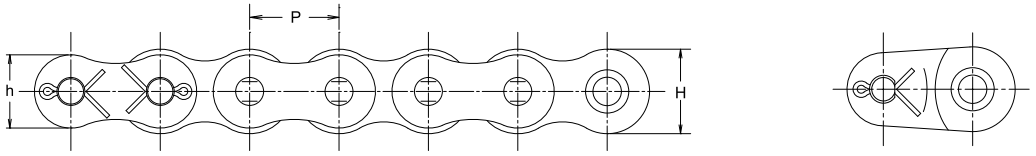
Unit(kW)

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





CJ RP OJ

Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller dia.	Pin					Plate				Avg. tensile strength		Max. allowable load		Approx. weight
	P	W	D	d	E	G	g	L	T	t	H	h	kN	kgf	kN	kgf	(kg/m)
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)

Unit(kW)

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										

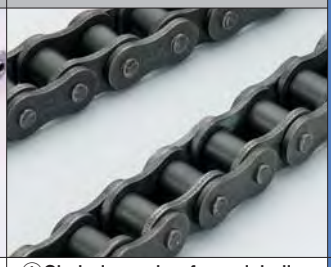
Note: The drive performance (kilowatt ratings) of sintered bushing chains is obtained on the basis of approx. 1,000 hour endurance time.

Applicable for many different environments

	Nickel Plated Chain (N)	Hi-Guard Chain (E)	Double Guard Chain (WG)
Name			
Features	①Special nickel plated finish. ②Where brilliance and cleanliness are required. ③Strong corrosion resistance (highly resistant to salt water spray ard acid atmophere).	①High corrosion resistant film coating. ②Where long periods of seasonal inactivity create need for orotection against indoor or out. ③Outstanding resistance to rusting or corrosion, particularly in salt water environments.	①Rust protection "twice as tough" as DID Hi-Guard Chain. ②Amazing performance in acidic and alkaline atmospheres. ③The tensile strength and working load is the same as ANSI standard chain and makes the downsizing possible where stainless steel chain is used.
Functions	Corrosive Atmosphere; Moisture, Salt Water; Alkaline Environment; 250℃ OK; Allowable Load 100%	Corrosive Atmosphere; Moisture, Salt Water; 250℃ OK; Allowable Load 100%	Corrosive Atmosphere; Moisture, Salt Water; Alkaline Environment; Acidic Environment; 250℃ OK; Allowable Load 100%
Main uses	TEXTILE; CONVEYOR※1; FOOD; CHEMICALS; PRINT; PARKING	TEXTILE; CONVEYOR; PARKING; WATER TREATMENT; OUTDOOR; CONST-RUCTION	TEXTILE; CONVEYOR; PARKING; WATER TREATMENT※2; OUTDOOR; CONST-RUCTION; FOOD※2; CHEMICALS※2

■ Environment Resistant Series: Chain No. and Codes

Chain No.	Nickel Plated	HI-Guard	Double Guard	Stainless steel			Low temperature
				Non O-Ring		X-Ring	
DID 25	N	-	-	SS	-	-	-
DID 35	N	E	-	SS	-	-	-
DID 41	N	-	-	-	-	-	-
DID 40	N	E	WG	SS	SSK	SSLT	TK
DID 50	N	E	WG	SS	SSK	SSLT	TK
DID 60	N	E	WG	SS	SSK	SSLT	TK
DID 80	N	E	WG	SS	SSK	SSLT	TK
DID 100	N	E	-	SS	SSK	-	TK
DID 120	N	E	-	SS	SSK	-	TK
DID 140	N	-	-	SS	-	-	TK
DID 160	N	-	-	SS	-	-	TK
DID 180	-	-	-	-	-	-	-
DID 200	-	-	-	SS	-	-	-
DID 240	-	-	-	-	-	-	-

	Stainless Steel Chain (SS)	Stainless Steel Chain (SSK)	Stainless Steel X-Ring Chain (SSLT)	Low Temperature (TK)	
Name					
Features	①SUS304 ②Where chains is exposed to chemicals, water and high temperature. ③The best resistance to corrosion and heat.	①SUS304 (plate) + SUS631 (pin,bushing,and roller). ②Where chain is exposed to chemicals, water and high temperature. ③1.5 times higher max allowable load than SS type.	①Up to 10 times greater wear resistance performance compared to standard stainless steel chain. ②Great cost saving can be achieved through longer life and less down time. ③The patented X-ring design provides great sealing performance at half the friction of standard O-ring.	①Chain is made of special alloy steel lubricated with a special grease,both ideally suited for cold temperature operation. ②Where temperature reaches to -40 degrees ℃. ③Excellent strength and operation at low temperatures.	
Functions	Corrosive Atmosphere, Moisture, Salt Water, Alkaline Environment, Acidic Environment, Clean Areas, Temperature Range in Use -10℃~400℃ Allowable Load 10%	Allowable Load 15%	Corrosive Atmosphere, Moisture, Salt Water, Alkaline Environment, Acidic Environment, Clean Areas, Dirty Environment, Dusty, Maintenance-Free, Great Savings, Allowable Load 10%, Temperature Range in Use -10℃~200℃	Corrosive Atmosphere, Alkaline Environment, Temperature Range in Use -40℃~80℃, Allowable Load 100%	
Main uses	CONVEYOR, FOOD, CHEMICALS, WATER TREATMENT		CONVEYOR, FOOD, CHEMICALS, WATER TREATMENT	PACK, CONVEYOR, FOOD, CONST-RUCTION	

Symbols

Functions

- Corrosive Atmosphere — Resistant against corrosive gas (by CASS test)
- Moisture, Salt Water — Resistant against rain, moisture or sea water
- Alkaline Environment — Resistant against alkali liquid
- Acidic Environment — Resistant against acid liquid
- Clean Areas — Suitable for circumstances required hygiene
- Temperature Range in Use -20℃~400℃ — Allowable ambient temperature
- 250℃ OK — Coating tolerable temperature
- Allowable Load 100% — Allowable tension index (Compared to standard roller chains)
- Dirty Environment — Resistant against contaminated or deteriorated oil
- Maintenance-Free — No lubrication or maintenance
- Dusty — Resistant against dusty circumstances
- Great Savings $ — Running cost and maintenance cost can be saved

Main uses

- PACK — Feed and drive in packaging machines
- TEXTILE — Feed and drive in textile machines
- CONVEYOR — Feed and drive in the conveyors and transfer equipment
- FOOD — Feed and drive in food processing machines
- CHEMICALS — Feed and drive in chemicals facilities
- PRINT — Feed and drive in printing machines
- PARKING — Feed and drive in multilevel parking machines
- WATER TREATMENT — Feed and drive in water treatment equipment
- OUTDOOR — Feed and drive in outdoor equipment
- CONST-RUCTION — Feed and drive in construction machines
- CHEMICALS — Feed and drive in medical facilities

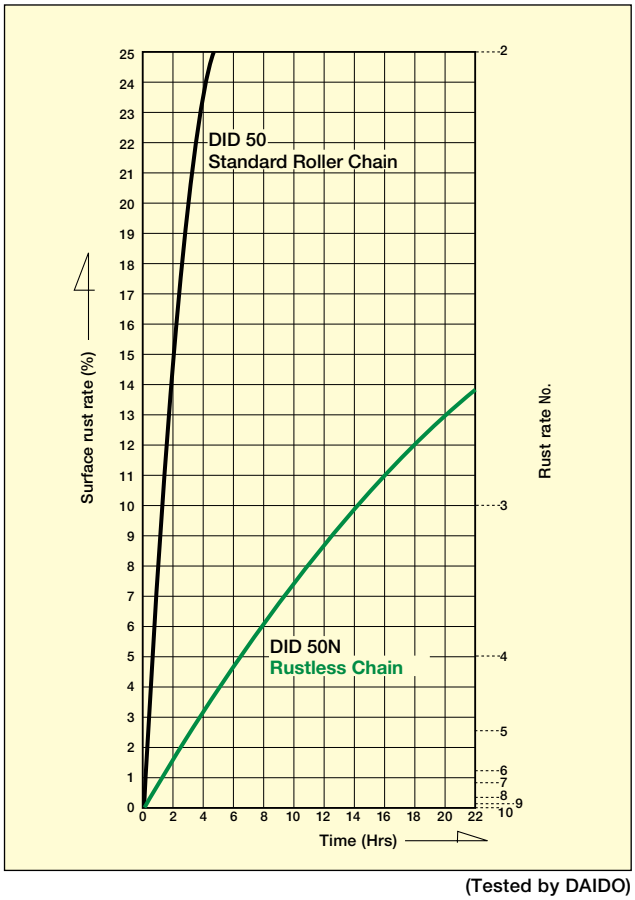
※1. Consult us when you use chains for hoisting.
※2. Consult us when you use chains for these particular uses.

Nickel Plated Chain (N)

Specialized nickel plating for a neat and clean appearance and corrosion resistance

The surface of Rustless Chains is nickel plated for an appealing exterior and corrosion resistance. It will exhibit excellent corrosion resistance especially when used in combination with grease lubrication. You can expect the effect to delay hydrogen brittle destruction when used in circumstances where chains are exposed to sea breeze or acidic sprays.

Results of CASS test



(Tested by DAIDO)

Features

- The chain is protected even when in use with gilding or alumite machines that emit corrosive steam.
  The effectiveness of rust resistance and corrosion resistance of the nickel plating does not deteriorate even under conditions of high temperature and continues to protect the chain.
- The chain's fine exterior makes it ideal for machines for demonstration.

Recommended uses

- When a clean appearance is preferable
  Food sanitation machines, office machines, textile machines, printing machines, pulp processing machines etc.
- When using in a corrosive environment
  Chemical machines, gilding machines, alumite machines
- When a neat exterior is necessary
  Demonstration machines at exhibitions etc.

Selection of chains

The strength of Rustless Chain is equivalent with standard roller chains. For chain selection, refer to P120-122.

Connecting links and offset links

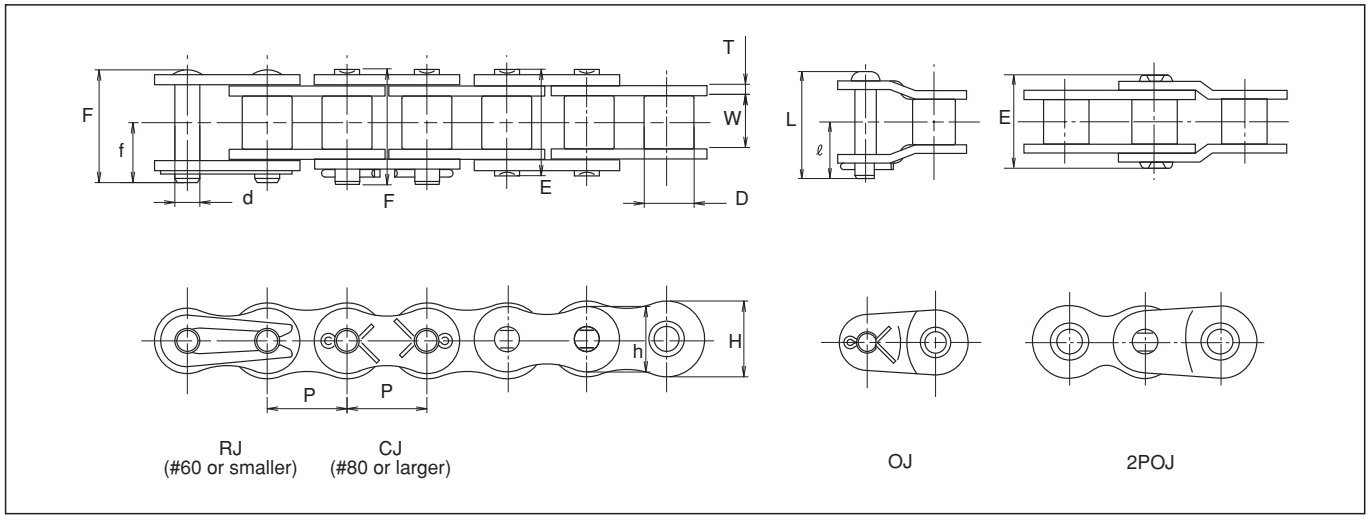
R connecting links are used for Rustless Chains #60 or smaller and C connecting links for #80 or larger. We provide 2POJ offset links for sizes #25 and #35, and OJ and 2POJ for all other sizes.

Sprockets

Standard sprockets for Rustless Chains can be used since the dimensions are the same as standard roller chains.

Caution

①Please use stainless steel chains when the chains are to be constantly exposed to water, sea water, liquid solutions or corrosive solutions.
②Unless wot so specified by the customer, chains are coated with grease before delivery. Please use the recommended lubricant (p.132) for the maintenance of the chain since lubrication using grease can cause lubrication failure.
③Consult us if the chain is to be used for hoisting applications.



Dimensions

Unit (mm)

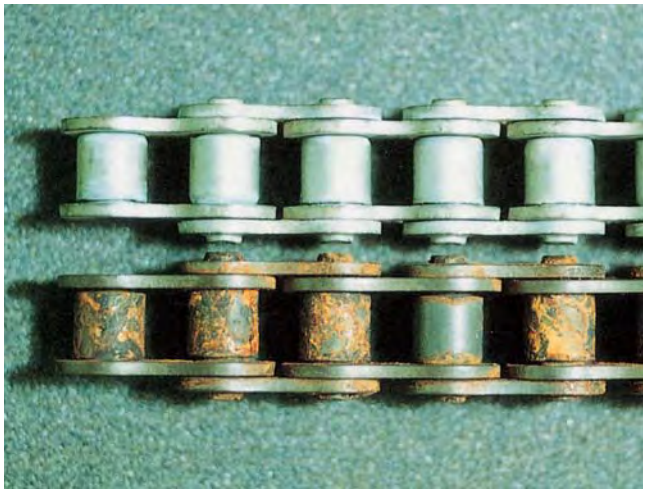
Chain No.	Pitch	Roller link width	Roller (Bush) dia.	Pin						Plate			Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
	P	W	D	d	E	F	f	L	ℓ	T	H	h	kN	kgf	kN	kgf	
＊DID 25N	6.35	3.18	(3.30)	2.31	7.8	8.5	4.7	——	——	0.72	5.9	5.20	4.41	450	0.69	70	0.13
＊DID 35N	9.525	4.78	(5.08)	3.59	12.0	13.1	7.3	13.9	7.8	1.25	9.0	7.75	11.2	1,140	2.15	220	0.32
DID 41N	12.70	6.38	7.77	3.59	13.7	14.6	7.9	15.3	8.6	1.20	9.6	8.00	10.7	1,090	2.35	240	0.39
DID 40N	12.70	7.95	7.92	3.97	16.5	17.6	9.5	19.3	10.6	1.50	12.0	10.40	19.1	1,940	3.72	380	0.63
DID 50N	15.875	9.53	10.16	5.09	20.3	21.9	11.6	23.1	12.1	2.00	15.0	13.00	30.8	3,130	6.86	700	1.06
DID 60N	19.05	12.70	11.91	5.96	25.4	26.9	14.3	30.0	15.7	2.40	18.1	15.60	44.1	4,480	9.31	950	1.44
DID 80N	25.40	15.88	15.88	7.94	32.6	35.4	19.0	36.4	19.5	3.20	24.0	20.80	78.4	7,960	14.7	1,490	2.55
DID 100N	31.75	19.05	19.05	9.54	39.5	42.5	22.8	43.5	23.5	4.00	29.9	26.00	118	11,980	22.5	2,280	3.79
DID 120N	38.10	25.40	22.23	11.11	49.7	53.0	28.2	54.1	28.2	4.80	35.9	31.20	166	16,850	30.4	3,090	5.49
DID 140N	44.45	25.40	25.40	12.71	53.6	58.4	31.6	59.6	31.7	5.60	41.9	36.30	215	21,830	40.2	4,080	7.11
DID 160N	50.80	31.75	28.58	14.29	63.6	68.2	36.4	69.7	36.5	6.40	47.8	41.40	269	27,310	52.9	5,370	9.82

Note: Those marked with ＊ indicate bushing chains.

Hi-Guard Chain (E)

Highly protective coating that goes far beyond the performance of nickel plating

Hi-Guard Chain has higher corrosion resistance next to stainless steel chains. The surface of the chain is finished in non-gloss white highly protective coating. It has superb resistance to anti-corrostion and rusting. It has equal strength to standard roller chains, and can be used in circumstances where strength higher than that of stainless steel chains is required.



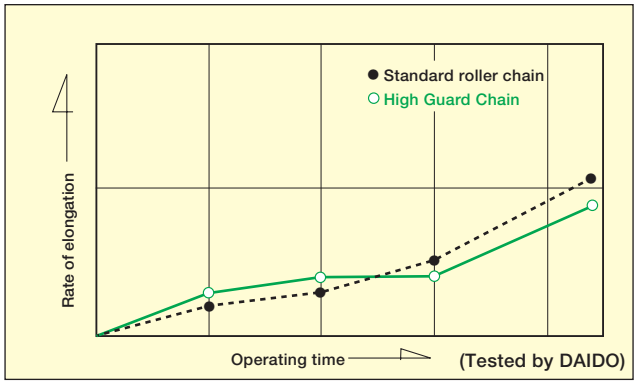
Features

- Since high guard coating acts as a sacrificial anode for the chain body, you can expect sufficient corrosion resistance even when the coating has come off to some extent.
- The coating consists of environmentally friendly chromium free material. To comply with the EU's Restriction of Hazardous Substances (RoHS) Directive, hexavalent chromium is not used.

Recommended uses

- Applications require both strength and corrosion resistance.
  Multilevel parking facility, moving decks, cleansing lines etc.
- Conditions exposed to rain or sea water
  Machines installed outside, amusement machines.

Wear resistance



Selection of chains

High Guard Chain has strength equivalent to standard roller chain. Refer to p.120~122 for chain selection.

Connecting links and offset links

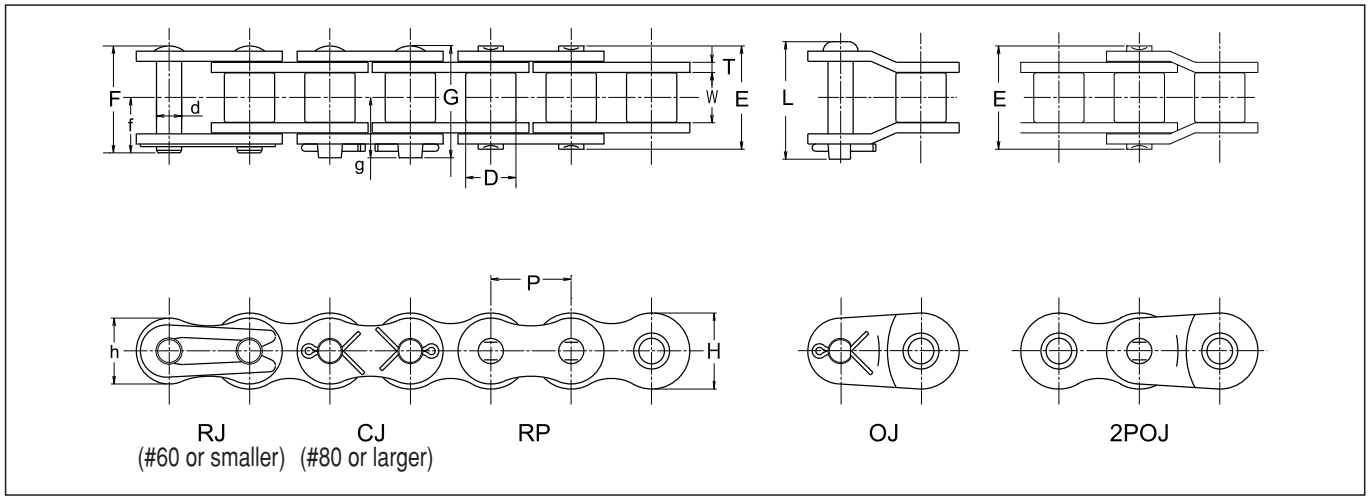
R connecting links are used for High Guard Chains #60 or smaller and C connecting links for #80 or larger. 2POJ offset links can be used for sizes #25 and #35, and OJ and 2POJ for all other sizes.

Sprockets

Standard sprockets for High Guard Chains can be used since their dimensions are the same as those of standard roller chains.

Caution

①Use stainless steel chains if the chains come in direct contact with food.
②High Guard Chain does not have a gloss like the plated chain.
③High-guard coating has superb general corrosion resistance, but has poor alkaline and acidic resistance.
④Unless not so specified by the customer, chains are coated with grease before delivery. If possible, lubricate the spaces between pins and bushings and bushes and rollers. Please use the recommended lubricant (p.132) for the maintenance of the chain since lubrication using grease can cause flexion failure.



Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (Bush) dia.	Pin							Plate			Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
	P	W	D	d	E	F	G	f	g	L	T	H	h	kN	kgf	kN	kgf	
＊DID 35E	9.525	4.78	(5.08)	3.59	12.0	13.1	—	7.3	—	13.9	1.25	9.0	7.75	10.2	1,040	2.15	220	0.32
DID 40E	12.70	7.95	7.92	3.97	16.5	17.6	—	9.5	—	19.3	1.50	12.0	10.40	16.6	1,690	3.72	380	0.63
DID 50E	15.875	9.53	10.16	5.09	20.3	21.9	—	11.6	—	23.1	2.00	15.0	13.00	28.4	2,880	6.86	700	1.06
DID 60E	19.05	12.70	11.91	5.96	25.4	26.9	—	14.3	—	30.0	2.40	18.1	15.60	40.2	4,080	9.31	950	1.44
DID 80E	25.40	15.88	15.88	7.94	32.6	—	35.4	—	19.0	37.1	3.20	24.0	20.80	75	7,610	14.7	1,490	2.55
DID 100E	31.75	19.05	19.05	9.54	39.5	—	42.5	—	22.7	45.3	4.00	29.9	26.00	112	11,370	22.5	2,280	3.79
DID 120E	38.10	25.40	22.23	11.11	49.7	—	53.0	—	28.2	54.1	4.80	35.9	31.20	157	15,940	30.4	3,090	5.49

Note: 1. Those marked with ＊ indicate bushing chains.
2. Consult us for sizes not included in the chart or multiplex chains.
3. Ask us for the delivery time. Also, consult us for High Guard Chains not included in the chart.

Double Guard Chain (WG)

Steel chain approaching stainless steel chain in corrosion resistance

Double Guard Chain is highly corrosion resistant with coating of double layers of two different materials. Compared to the High-Guard Chain, it exhibits nearly doubled corrosion resistance in the salt water spray test, and can be used in mild alkaline and mild acidic conditions.

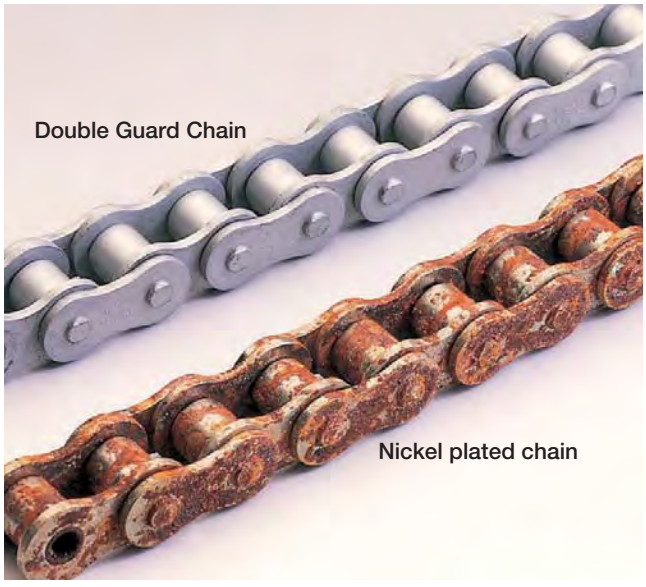
Features

- With its improved corrosion resistance, it can be used in circumstances where High-Guard or Rustless Chains cannot be used, and even in some conditions where only stainless steel can be used.
- The coating consists of environmentally friendly non-chrome material. To comply with the EU's Restriction of Hazardous Substances (RoHS) Directive, hexavalent chromium is not used.

Recommended uses

- Conditions that require both strength and corrosion resistance.
  Multilevel parking facility, moving decks, cleansing lines etc.
- Conditions exposed to rain or sea water.
  Machines installed outside, amusement machines.
- Conditions exposed to mild alkaline and mild acidic chemical agents, sea water or wastewater. Various chemical plants and water treatment plants.

Surface conditions after corrosion test



CASS test - Double Guard Chain: 60Hr, Nickel plated chain: 20Hr

Performance Comparison Consult us about the selection of chains depending on your circumstances.

Name	Code	Strength Maximum allowance tension rate	Corrosive resistance			
			General atmosphere (Results of CASS test)	Conditions exposed to water or salt water	Alkaline resistance	Acidic resistance
Double-Guard	WG	100%	◎ (Double of High-Guard)	◎ (Double of High-Guard)	○	△ Resistant to mild acidity (up to PH3)
Hi-Guard	E	100%	○	○	△ (No alkaline resistance)	×
Standard	——	100%	△	× (Rusting)	△	× (Cracking)
Nickel plated	N	100%	○	△	○	△
Stainless steel	SS	10%	◎	◎	◎	◎

Note: ◎: Excellent, ○: Very good, △: Good, ×: No good

Selection of chains

Double Guard Chain has an equivalent strength to a standard roller chain. Please refer to p120~122 for chain selection.

Connecting links and offset links

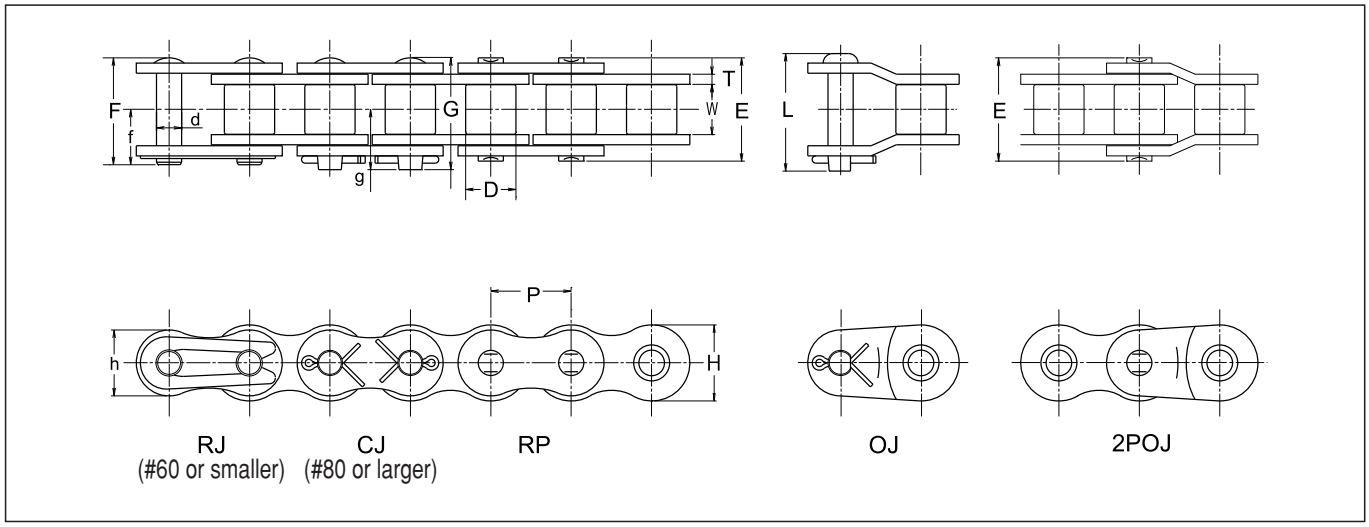
R connecting links are used for high-guard chains #60 or smaller and C connecting links for #80 or larger, and OJ and 2POJ are used as offset links.

Sprockets

Standard sprockets for high-guard chains can be used since the dimensions are the same as standard roller chains.

Caution

①Use stainless steel chains if the chains will come in direct contact with food.
②Double Guard chain does not have a gloss like the nickel coated chain.
③Unless not so specified by the customer, chains are coated with grease and shipped. If possible, oil the spaces between pins and bushes and bushes and rollers. Please use the recommended lubrication oil (P132) for the maintenance of the chain as oiling with grease can cause flexion failure.



Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (Bush) dia.	Pin							Plate			Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
	P	W	D	d	E	F	G	f	g	L	T	H	h	kN	kgf	kN	kgf	
DID 40WG	12.70	7.95	7.92	3.97	16.5	17.6	—	9.5	—	19.1	1.50	12.0	10.40	16.6	1,690	3.72	380	0.63
DID 50WG	15.875	9.53	10.16	5.09	20.3	21.9	—	11.6	—	23.1	2.00	15.0	13.00	28.4	2,880	6.86	700	1.06
DID 60WG	19.05	12.70	11.91	5.96	25.4	26.9	—	14.3	—	30.0	2.40	18.1	15.60	40.2	4,080	9.31	950	1.44
DID 80WG	25.40	15.88	15.88	7.94	32.6	—	35.4	—	19.0	37.1	3.20	24.0	20.80	75	7,610	14.7	1,490	2.55

Note: Ask us for the delivery time

Stainless Steel Chain (SS/SSK)

Excellent resistance to corrosion and heat that allows use in almost everywhere

There are two types of Stainless Steel Chain: SS and SSK. The SS type has the highest resistance to corrosion and heat. However, it is made entirely of austenite stainless steel and thus its tensile strength is slightly lower than 70% of a standard roller chain, and maximum allowable load drops to a little over 10%.
By using precipitation hardened stainless steel for the pins, bushes and rollers, the SSK type has 1.5 times higher maximum allowable load compared to the SS type. Select SSK when you need more strength than SS, or desire longer product life.
Both types have equivalent corrosion resistance.

Recommended uses

- Conditions exposed to mild alkaline and mild acidic chemical agents, sea water and wastewater. Various chemical plants and water treatment plants.
- Conditions of high temperature
  Heat-treating furnaces, dry furnaces, incinerators

Maximum allowable load (Double pitch)

	Maximum allowable load			
	SS		SSK	
	kN	kgf	kN	kgf
DID C2040SS **DID C2042SS**	0.44	45	0.69	70
DID C2050SS **DID C2052SS**	0.69	70	1.03	105
DID C2060HSS **DID C2062HSS**	1.03	105	1.57	160

Average tensile strength and maximum allowable load (Single pitch)

SS

Chain No.	Average tensile strength		Maximum allowable load	
	kN	kgf	kN	kgf
* **DID 25SS**	3.33	340	0.12	12
* **DID 35SS**	7.55	770	0.26	26
DID 40SS	13.3	1,350	0.44	45
DID 50SS	20.9	2,120	0.69	70
DID 60SS	30	3,050	1.03	105
DID 80SS	53.4	5,420	1.77	180
DID 100SS	82.3	8,360	2.55	259

Note: Those marked with * indicate bushing chains.

SSK

Chain No.	Average tensile strength		Maximum allowable load	
	kN	kgf	kN	kgf
DID 40SSK	13.3	1,350	0.69	70
DID 50SSK	20.9	2,120	1.03	105
DID 60SSK	30	3,050	1.57	159
DID 80SSK	53.4	5,420	2.65	269

Selection of chains

Stainless Steel Chain has lower average tensile strength and maximum allowable load compared to the standard roller chain. Please refer to the maximum allowable load chart in the previous page and p120~122 for chain selection.

Connecting links and offset links

R connecting links are used for Stainless Steel Chains #60 or smaller and C connecting links for #80 or larger. 2POJ offset links are used for sizes #25, and OJ links for all other sizes.

Sprockets

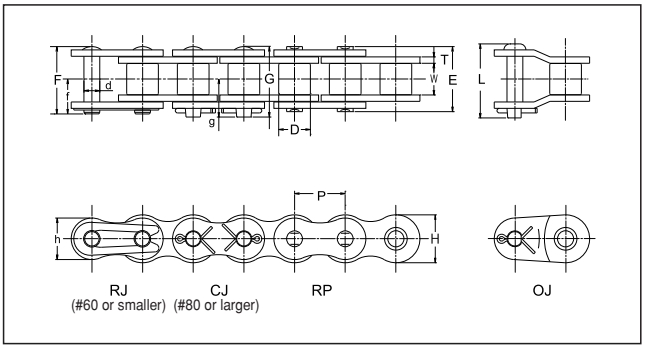
Standard sprockets for Stainless Steel chains can be used since the dimensions are the same as standard roller chains.

Caution

①As a general property of stainless steel, stress corrosion cracking and pitting corrosion can be caused by chlorine and chlorine ion (C ℓ -).

②The chart on right shows the data of tests on the level of corrosion resistance for each medium and does not guarantee the performance of the chains. Please take into consideration the conditions, temperature, level and other overall situation when using.

Dimensional Drawing



Corrosion resistance

Medium	Standard	Stainless steel
Aceton	×	○
Sulfurous gas (wet)	×	○
Sulfurous gas (dry)	—	○
Ammonia gas (cool)	—	○
Ammonia gas (hot)	×	×
Ammonia water	△	○
Ethanol	○	○
Sodium chloride, salt	×	△
Hydrochloric acid	×	×
Chlorine gas (wet)	×	×
Sea water	×	△
Hydrogen peroxide	×	△
Caustic soda (20%)	×	○
Gasoline	○	○
Potassium permanganate	△	○
Formic acid	×	×
Milk	○	○
Citric acid	×	○
Glycerin	△	○
Acetic acid (10%)	×	○
Bleaching powder, sodium hypochlorite	×	×
Carbon tetrachloride (dry)	△	△
Alcoholic soap	×	△
Oxalic acid (5%)	×	△
Oxalic acid (10%, boiled)	×	×
Nitric acid	×	○
Vinegar	×	△
Calcium hypochlorite	×	×
Baking soda	○	○
Water	×	○
Calcium hydroxide	△	○
Phenic acid, Phenol	×	△
Petroleum	○	○
Soapwater	△	○
Carbonic water	○	○
Sodium carbonate	○	○
Kerosene	○	○
Lactic acid (5%)	×	○
Lactic acid (10%, 65°C)	×	△
Paraffin	○	○
Beer	○	○
Benzene, benzol	○	○
Boric acid (5%)	×	○
Pottasium alum	×	△
Methanol	○	○
Iodine	×	×
Butyric acid	×	△
Sulfuric acid	×	×
Phosphoric acid (10%)	×	△
Sodium sulfate (5%)	△	○
Wine	○	○

Note: 1. ○:Corrosion resistant
△:Corrosion resistant depending on conditions
×: No resistance
2. Unless specified, tests were conducted at 20°C.

Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (Bush) dia.	Pin							Plate			Approx. weight (kg/m)
	P	W	D	d	E	F	G	f	g	L	T	H	h	
* DID 25SS	6.35	3.18	(3.30)	2.31	7.65	8.65	—	4.83	—	—	0.75	5.8	5.0	0.14
* DID 35SS	9.525	4.78	(5.08)	3.59	11.55	12.90	—	7.13	—	13.85	1.25	8.8	7.3	0.33
DID 40SS 40SSK	12.70	7.95	7.92	3.97	16.15	17.65	—	9.58	—	19.05	1.50	11.7	10.1	0.63
DID 50SS 50SSK	15.875	9.53	10.16	5.09	20.40	21.80	—	11.60	—	23.05	2.00	14.6	12.6	1.04
DID 60SS 60SSK	19.05	12.70	11.91	5.96	25.40	26.90	—	14.20	—	29.55	2.40	17.5	15.0	1.50
DID 80SS 80SSK	25.40	15.88	15.88	7.94	32.30	—	35.40	—	19.25	37.10	3.20	23.0	19.7	2.62
DID 100SS	31.75	19.05	19.05	9.54	40.40	—	43.35	—	23.15	44.05	4.00	28.9	24.8	4.09

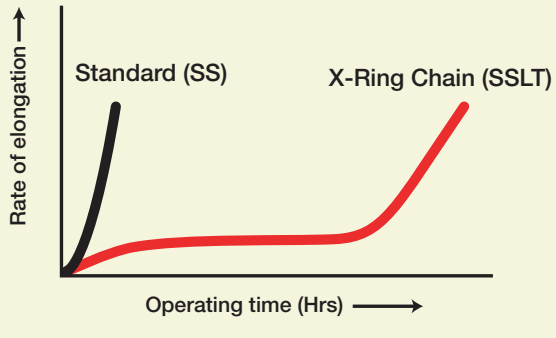
Note: Those marked with * indicate bushing chains.

Stainless Steel X-Ring Chain

Stainless Steel Chains with the features of environment resistant and wear resistant chain series. With the use of X-rings, durability improved remarkably.

X rings were added to the Stainless Steel Chain (SS) that has the best resistance to corrosion and heat. Compared to the conventional Stainless Steel Chain, this chain has about 5~10 times resistance to abrasion. This improvement makes possible a large reduction in the running and maintenance costs.

Wear resistance of Stainless Steel Chain

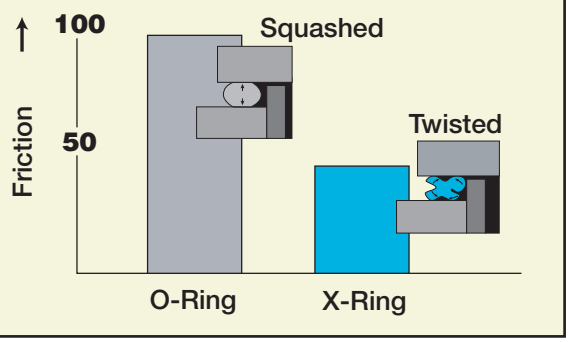


Recommended uses

- Conditions continuously exposed to chemical agents, sea water and wastewater.
  Various chemical plants, water treatment plants
- Conditions of high temperature
  Heat-treating furnaces, dry furnaces, incinerators

The grease and seal rings meet the standards of the Food Sanitation Law.
Consult us about the environmental conditions and chain selection.

Friction chart



Selection of chains

The average tensile strength and maximum allowable load of the Stainless Steel Chain are both lower than a standard roller chain. Refer to the maximum allowable load for the selection of chains.

Connecting links

R connecting links are used for Stainless Steel Chains #60 or smaller and C connecting links for #80 or larger.

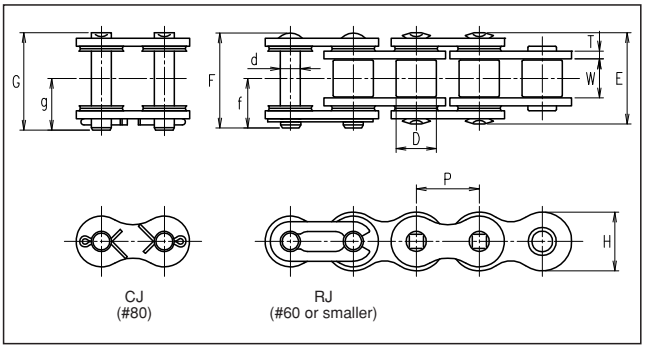
Sprockets

The pins for the X-Ring chains are longer than those of standard roller chains, and thus standard sprockets for multiplex chain cannot be used for the X-Ring chains when using this chain in multiplex.

Caution

①As a general property of stainless steel, stress corrosion cracking and pitting corrosion can be caused by chlorine and chlorine ion (C ℓ -).

②The chart on right shows the data of tests on the level of corrosion resistance for each medium and does not guarantee the performance of the chains. Please take into consideration the conditions, temperature, level and other overall situation when using.



Corrosion resistance

Medium	Standard	Stainless steel
Aceton	×	○
Sulfurous gas (wet)	×	○
Sulfurous gas (dry)	—	○
Ammonia gas (cool)	—	○
Ammonia gas (hot)	×	×
Ammonia water	△	○
Ethanol	○	○
Sodium chloride, salt	×	△
Hydrochloric acid	×	×
Chlorine gas (wet)	×	×
Sea water	×	△
Hydrogen peroxide	×	△
Caustic soda (20%)	×	○
Gasoline	○	○
Potassium permanganate	△	○
Formic acid	×	×
Milk	○	○
Citric acid	×	○
Glycerin	△	○
Acetic acid (10%)	×	○
Bleaching powder, sodium hypochlorite	×	×
Carbon tetrachloride (dry)	△	△
Alcoholic soap	×	△
Oxalic acid (5%)	×	△
Oxalic acid (10%, boiled)	×	×
Nitric acid	×	○
Vinegar	×	△
Calcium hypochlorite	×	×
Baking soda	○	○
Water	×	○
Calcium hydroxide	△	○
Phenic acid, Phenol	×	△
Petroleum	○	○
Soapwater	△	○
Carbonic water	○	○
Sodium carbonate	○	○
Kerosene	○	○
Lactic acid (5%)	×	○
Lactic acid (10%, 65°C)	×	△
Paraffin	○	○
Beer	○	○
Benzene, benzol	○	○
Boric acid (5%)	×	○
Pottasium alum	×	△
Methanol	○	○
Iodine	×	×
Butyric acid	×	△
Sulfuric acid	×	×
Phosphoric acid (10%)	×	△
Sodium sulfate (5%)	△	○
Wine	○	○

Note: 1. ○:Corrosion resistant
△:Corrosion resistant depending on conditions
×: No resistance
2. Unless specified, tests were conducted at 20°C.

Dimensions

Unit (mm)

Chain No.		Pitch	Roller link width	Roller (Bush) dia.	Pin						Plate		Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
		P	W	D	d	E	F	G	f	g	T	H	kN	kgf	kN	kgf	
Single Pitch Chain	DID 40SSLT	12.70	7.95	7.92	3.96	20	20.3	—	10.7	—	1.5	11.7	13.3	1,350	0.44	45	0.68
	DID 50SSLT	15.875	9.53	10.16	5.08	23.4	24.3	—	12.8	—	2.0	14.6	20.9	2,120	0.69	70	1.1
	DID 60SSLT	19.05	12.70	11.91	5.95	29.2	29.9	—	15.6	—	2.4	17.5	30	3,050	1.03	105	1.6
	DID 80SSLT	25.40	15.88	15.88	7.93	36.5	—	39.0	—	20.7	3.2	23.0	53.4	5,420	1.77	180	2.7

Low-Temperature Resistant Chain (TK)

Chain made of specialized material for extreme low-temperature down to -40°C.

Standard roller chains often become susceptible to brittle fracture when used in temperatures under -10°C. We recommend using this chain made of specialized material with high resistance to cold brittleness when using chains in extremely low temperatures. By setting the conditions according to the below table of maximum allowable load, the chain can be used in temperatures down to -40°C.

Recommended uses

- Inside freezers, conditions of high altitude or cold climates

Maximum allowable load

Chain No.	+80°C~ -10°C		-11°C~ -30°C		-31°C~ -40°C	
	kN	kgf	kN	kgf	kN	kgf
DID 40TK	3.72	380	2.54	260	2.15	220
DID 50TK	6.86	700	4.8	490	3.92	400
DID 60TK	9.31	950	6.47	660	5.39	550
DID 80TK	14.7	1,490	10.3	1,050	8.53	870
DID 100TK	22.5	2,280	15.8	1,600	13	1,320
DID 120TK	30.4	3,090	21.3	2,160	17.6	1,790
DID 140TK	40.2	4,080	28.1	2,850	23.2	2,360
DID 160TK	53	5,380	37.1	3,770	30.7	3,120

Selection of chains

The maximum allowable load of Low-temperature Resistant chains differ by temperature. Please refer to the table in the previous page for chain selection. Please refer to P120~122 for other criteria. If used in normal temperature, better shock resistance can be expected compared to standard roller chains.

Connecting links and offset links

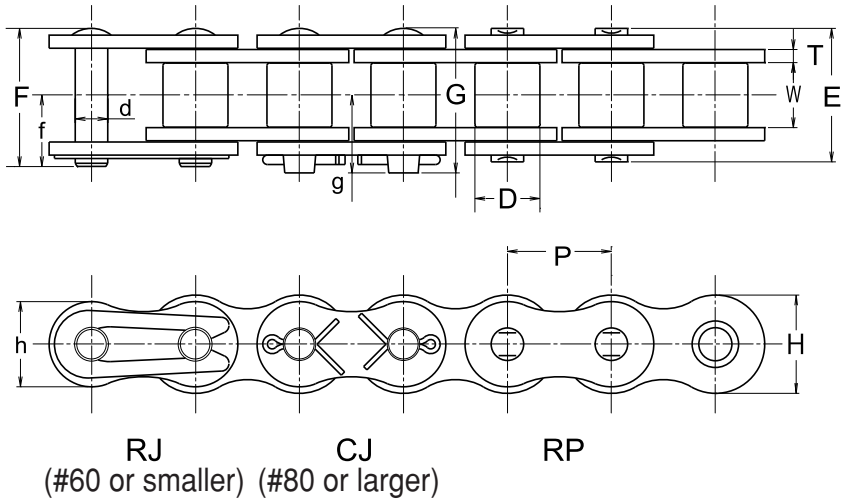
R connecting links are used for Low-temperature Resistance chains #60 or smaller and C connecting links for #80 or larger. There are no offset links.

Sprockets

Standard sprockets can be used for Low-temperature Resistance Chain as their dimensions are equivalent to standard roller chains.

Caution

Please use lubrication oil for cold resistance for the maintenance of the chain.



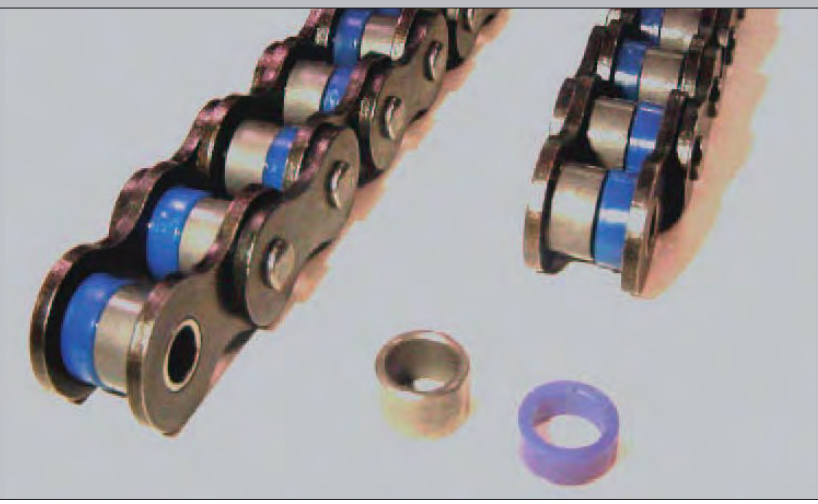
Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (Bush) dia.	Pin						Plate			Approx. weight (kg/m)
	P	W	D	d	E	F	G	f	g	T	H	h	
DID 40TK	12.70	7.95	7.92	3.97	16.5	17.6	—	9.5	—	1.50	12.0	10.4	0.63
DID 50TK	15.875	9.53	10.16	5.09	20.3	21.9	—	11.6	—	2.00	15.0	13.0	1.06
DID 60TK	19.05	12.70	11.91	5.96	25.4	26.9	—	14.3	—	2.40	18.1	15.6	1.44
DID 80TK	25.40	15.88	15.88	7.94	32.6	—	35.5	—	19.0	3.20	24.0	20.8	2.55
DID 100TK	31.75	19.05	19.05	9.54	39.5	—	42.6	—	22.7	4.00	29.9	26.0	3.79
DID 120TK	38.10	25.40	22.23	11.11	49.7	—	53.8	—	28.9	4.80	35.9	31.2	5.49
DID 140TK	44.45	25.40	25.40	12.71	53.6	—	58.4	—	31.7	5.60	41.9	36.3	7.11
DID 160TK	50.80	31.75	28.58	14.29	63.6	—	63.6	—	36.5	6.40	47.8	41.4	9.82

Unparalleled noise reduction

Super Low Noise Chain (UN) has achieved a higher drive performance while having equivalent noise reduction performance to Previous Low Noise Chain (TB). By improving the drive performance to the level of standard roller chains, Low Noise Chains are now applicable to many more machines and equipment.

Name	**Super Low Noise Chain (UN)**
	
Features	①Approx. 10dB noise reduction compared to a standard chain ②Two Piece roller ③Equivalent durability (strength) to standard roller chains
Functions	Max. KW Rating 100%　Noiseless 10dB ※Noise reduction values differ by the chain sizes and conditions for use
Main uses	PRINT　PACK　CONVEYOR　MACHINING　PARKING

■ Table of Low Noise Series

Chain No.	Super Low Noise
DID 40	UN
DID 50	UN
DID 60	UN
DID 80	UN

1. Drive performance equivalent to standard chains

Max. KW Rating 100%

Excerpt from the table of Drive Performance 40TB

No. of teeth of small sprocket	Small sprocket rpm 50	200	400	600
11	0.20	0.50	0.47	0.45
12	0.22	0.57	0.53	0.51
13	0.24	0.65	0.60	0.58
14	0.26	0.72	0.67	0.65

DID 40TB

DID 40TB VS DID 40UN (Unit: kW)

Excerpt from the table of Drive Performance 40 in the general catalog

No. of teeth of small sprocket	Small sprocket rpm 50	200	400	600
11	0.20	0.70	1.30	1.88
12	0.22	0.77	1.43	2.06
13	0.24	0.84	1.56	2.25
14	0.26	0.91	1.69	2.44

Super Low Noise DID 40UN

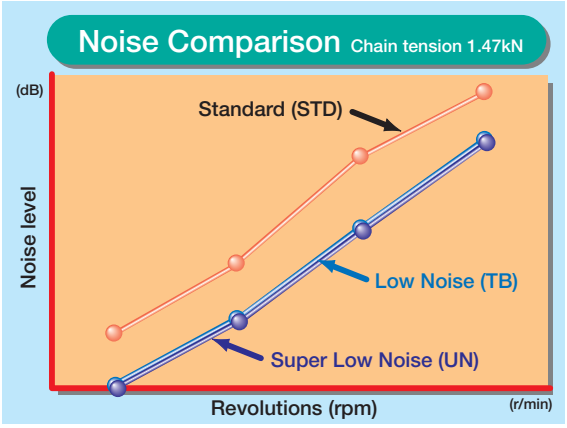
Set the chain speed within 210m/min.

2. Noise reduction equivalent to Previous Low Noise chains

Noiseless 10dB

※Noise reduction value differs by the chain sizes and conditions for use

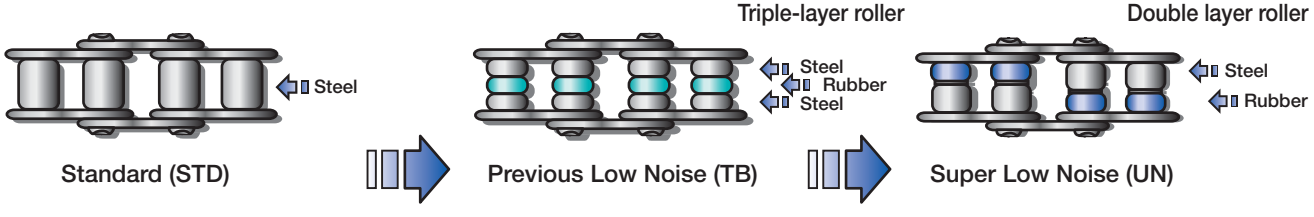
The noise emitted when the chain engages with the sprockets can be reduced by approx. 10dB. For conveyor chains, sliding noise of the rails and the rollers can be reduced as well.



3. Durability equivalent to standard chains

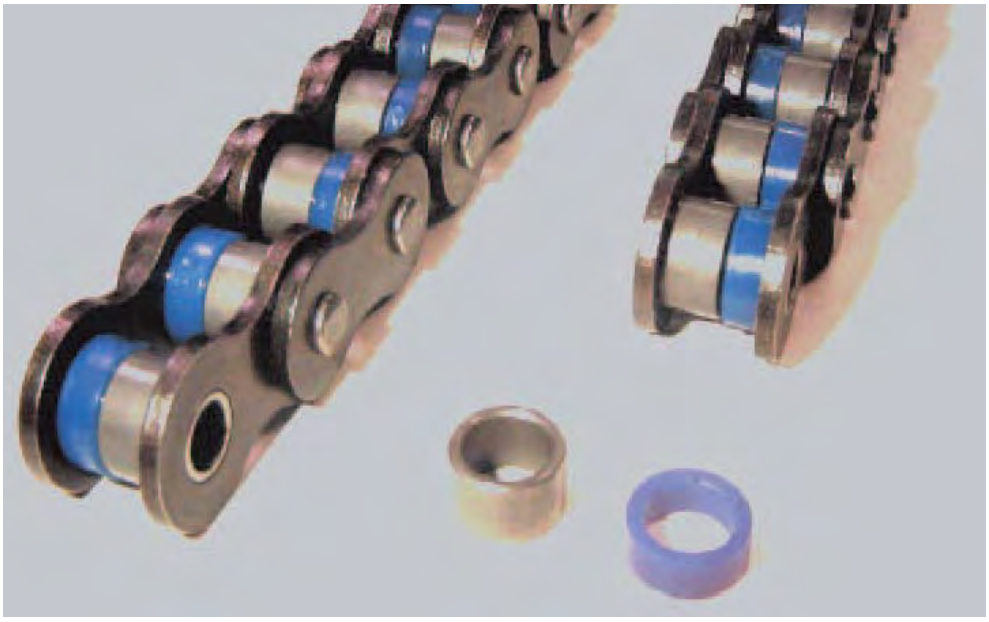
The chains exhibit durability higher than Previous Low Noise chains and at the same level as standard chains.

Structures of the chains and noise reduction mechanism



- Standard connecting links and sprockets can be used. Offset links are specialized.
- Low noise chains available in sizes DID40UN~80UN.
- Preventing partial wear of sprockets and rails
  Compared to Previous Low Noise chains, the steel rollers of the Super Low Noise are in staggered assembling in the traveling direction to reduce partial wear of the sprockets and rails.

Super Low Noise Chain (UN)



A brand new low noise chain with unparalleled noise reduction

Super Low Noise Chain (UN) has achieved a higher drive performance while having reduced noise like Previous Low Noise Chain (TB). By improving the drive performance to the level of standard roller chains, Low Noise Chains are now applicable to many more machines and equipment.

Features

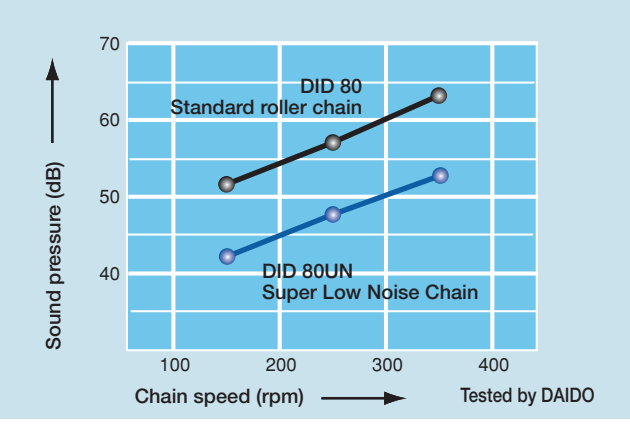
- Super Low Noise Chain was developed in response to the needs for a wider application of low noise chains by modifying the triple-layer roller structure of the TB Chain into a double layer roller. Noise reduction level is equivalent to that of TB Chain.

Recommended uses

- Circumstances requiring the drive performance of chains at the noise level of belt conveyors.
- Printing machines, packaging machines, office appliances etc.

Noise reduction comparison

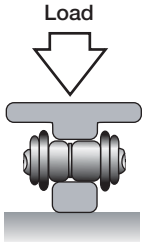
There is about 10dB noise reduction to the noise from when the chain engages with the sprockets. (Fig. below) The sliding noise from the rails and the rollers can be reduced as well.



Allowable Load of Rollers

Unit: N(kgf)/piece

Chain No.	Allowable load
DID 40UN	78 (8)
DID 50UN	117 (12)
DID 60UN	196 (20)
DID 80UN	313 (32)



Selection of chains

See the "Selection by max. kilowatt ratings" (P120) or "Low-speed selection" (P121) for chain selection.
Note: Set the chain speed within 210 m/min.

Super low noise chains are available up to five strands.

Sprockets, connecting links and offset links

Standard sprockets and connecting links can be used. Offset links are also available.

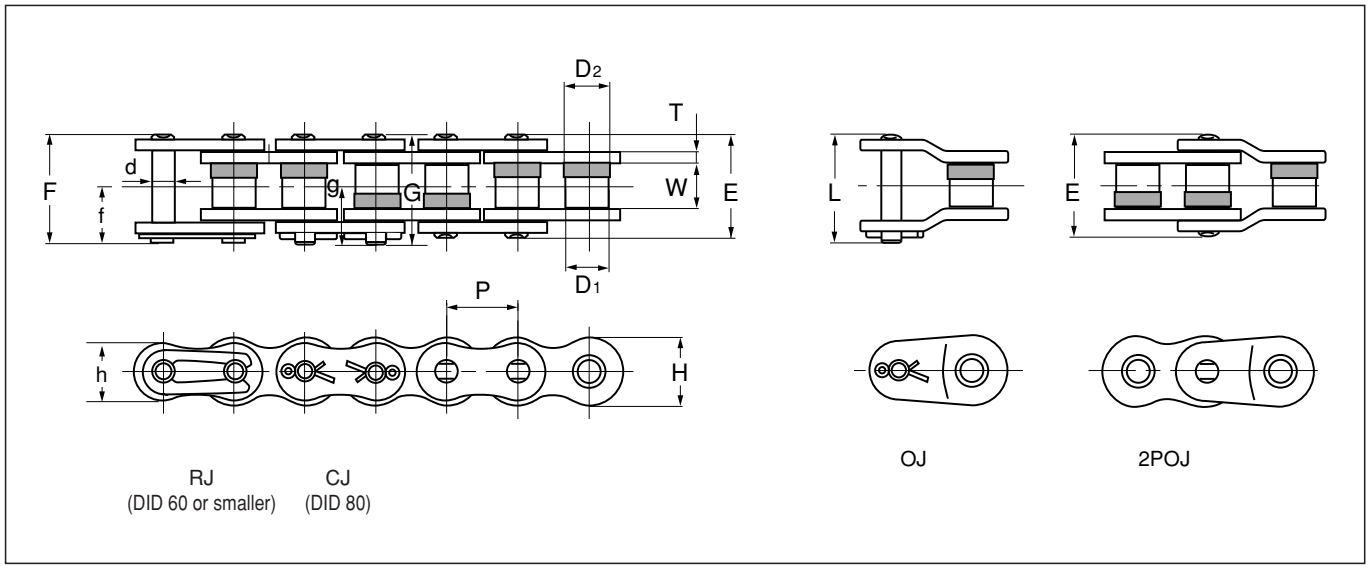
It is recommended to use the sprockets with teeth of odd numbers or even numbers indivisible by four to engage them with the chain rollers.

Caution

The rollers are made of risen and their performance deteriorates when exposed to ultraviolet (UV) rays. In addition, do not use in circumstances where the resin roller are exposed to sprays and vapors of substances listed below:

Nonflammable hydraulic oil (phosphoric esters, water-glycol fluid), oils containing extreme-pressure additives, hot water, vapor, ester, ketone, organohalogen, pure aromatic compounds, strong acid, strong basic agents, strong acidic reagents, carbon disulfide, sulfur dioxide.

The applicable conditions are equivalent to those of standard roller chains.
The corrosion resistance against water, acid, alkaline, and other chemical substances are also equivalent to that of standard roller chains.



Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (Bush) dia.		Pin							Plate			Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
	P	W	D_1	D_2	d	E	F	G	f	g	L	T	H	h	kN	kgf	kN	kgf	
DID 40UN	12.70	7.95	7.72	8.15	3.97	16.5	17.6	—	9.5	—	19.3	1.50	12.0	10.4	19.1	1,940	3.72	380	0.59
DID 50UN	15.875	9.53	9.85	10.40	5.09	20.3	21.9	—	11.6	—	23.1	2.00	15.0	13.0	30.8	3,130	6.86	700	0.98
DID 60UN	19.05	12.70	11.55	12.14	5.96	25.4	26.9	—	14.3	—	30.0	2.40	18.1	15.6	44.1	4,480	9.31	950	1.43
DID 80UN	25.40	15.88	15.34	16.10	7.94	32.8	—	35.3	—	19.0	37.1	3.20	24.0	20.8	78.4	7,960	14.7	1,490	2.36

Note: 1. The values of the average tensile strength and maximum allowable tension are for the chain body.
2. Consult us for multiplex chains and other specifications.
3. Refer to the table "Allowable Load of Rollers" on P96 for an optimum sprocket.

Responding to various kind of needs

Name	Bicycle Chain	Small Pitch Chain	Engine Mechanism Chain	Silent Chain SCA, SCR, SC	
					
Features	①DID brand Major product ②Rustproof treated Hi-Guard (E) available ③Lightest of the same size models	①Ultra-precise chain ②4.7625 mm pitch available ③For high-tech machines	①Camshaft drive timing chain ②Drive chain of attached units (oil pumps etc) ③For high performance engines	①Ideal engaging structure ②High-speed strong tensile transmission possible ③High noise reduction	
Main uses	PRINT CONVEYOR HOME APPLIANCE	PRINT HOME APPLIANCE			

	Silent Chain PS	Agricultural Roller Chain	BS Roller Chain (ISO B-series roller chain)	Leaf Chain	
					Name
	①Higher durability compared to SC ②Larger noise reduction compared to SC	①Highly wear resistant ②Highly heavy-load resistant ③Highly shock load resistant	①Complying with ISO "B series" standard ②Complying with the British and German Standards ③Sprockets comply with the British Standard.	①Composed of pins and plates only. ②Higher strength compared to roller chains ③Two types are available: AL and BL	Features
		CONST-RUCTION AGRICULTURE	PACK TEXTILE PRINT CONVEYOR AGRICULTURE	PARKING CONST-RUCTION CONVEYOR	Main uses

Symbols

Main uses

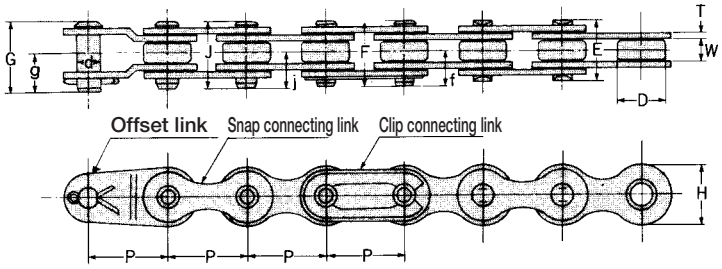
- PRINT — Feed and drive in printing machines
- CONST-RUCTION — Feed and drive in construction machines
- PACK — Feed and drive in packaging machines
- CONVEYOR — Feed and drive in the conveyors and transfer equipment
- HOME APPLIANCE — Feed and drive of home appliances
- TEXTILE — Feed and drive in textile machines
- AGRICULTURE — Drive of agricultural machines

In addition to general chains, we also manufacture numerous chains developed for specific applications such as bicycle chains and motorcycle chains.
Some specialty chains can be engaged with standard sprockets. Wear resistant properties of general chains are included in the specifications of each type of specialty chains.
Specialty chains are classified as follows:

- **Bicycle Chain**
- **Small Pitch Chain**
- **Engine Mechanism Chain**
- **Silent Chain**
- **Agricultural Chain**
- **Leaf Chain**
- **BS type Roller Chain (British Standard Roller Chain)**

Bicycle Chain

Bicycle chains are emblematic of the DID brand, and we were founded originally for the production of bicycle chains. They have been used in many bicycles made in Japan and worldwide countries.
Recently, our Hi Guard Chain (E) with an additional rust preventive treatment has favorable reputation by users.
The bicycle chains have been continuously examined and improved in performance, quality and specifications as seen in the availability of current products. As a result, they are the lightest and most compact chains among products of the same size. Presently, they are used not only for bicycles but for many purposes such as the driving of vending machines and agricultural implements and for conveyor systems.



Dimensions

Unit (mm)

Chain No.	Pitch	Roller link width	Roller dia.	Pin								Plate		Guaranteed tensile strength	Avg. tensile strength		Approx. weight
	P	W	D	d	E	F	G	J	f	g	i	H	T	(kN)	kN	kgf	(kg/m)
DID 1/2×1/8	12.70	3.45	7.77	3.62	9.10	10.55	11.05	11.10	6.0	6.5	6.1	9.65	1.0	8.14	9.02	920	0.271
DID 1/2×1/8M	12.70	3.45	7.77	3.62	9.10	10.55	11.05	11.10	6.0	6.5	6.1	9.65	1.0	8.14	9.02	920	0.271
DID 1/2×1/8（E）	12.70	3.45	7.77	3.62	9.10	10.55	11.05	11.10	6.0	6.5	6.1	9.65	1.0	8.14	9.02	920	0.271
DID 1/2×1/8 Track racer	12.70	3.45	7.77	3.62	9.40	10.55	11.05	11.10	6.0	6.5	6.1	9.65	1.0	8.82	9.61	980	0.274
DID 1/2×3/16	12.70	4.80	7.77	3.62	10.75	11.95	12.30	12.15	6.7	7.2	6.8	9.65	1.0	8.14	9.02	920	0.313

Note: 1. Bolt connecting link is the standard connecting link for the track racer chain.
2. M and (E) models are high anti-tight type.
3. The values of avg. tensile strength are for chains.

Small Pitch Chain

The smallest chain complying to ANSI is DID25 of 6.35 mm pitch. However, in response to the demands for smaller chains in recent years for high technology machinery such as office equipment, medical machines and industrial robots, we provide DID15 of 4.7625 mm (3/16 inch) pitch and also DID15H1 as a high-power version of DID15. These high precision chains are manufactured under severe quality control especially required for small sizes, taking wear resistance also into account.

Selection of chain

Refer to the "Low-speed selection" (P.121). However, the chain operation speed can be set considerably high depending on the type of lubrication as shown in the table below.

Connecting links and offset links

R connecting links are used for small pitch chains. However, since their strength is lower than that of the base chain, and since the clip is likely to come off in high speed operation, the use of connecting links is not recommended. Use a loop chain without attaching connecting links.

Offset links are available for chains other than DID15 and DID15H1, but their use is not recommended for the same reason as stated for the R Connecting links.

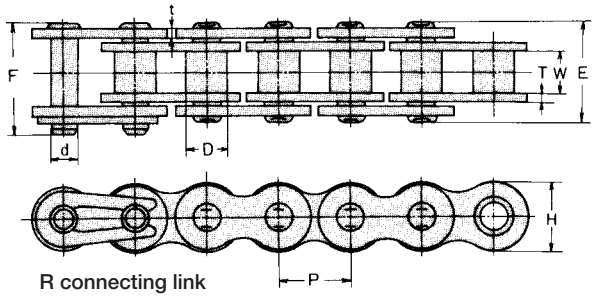
DID15: A high precision mini-pitch bushing chain that is smaller than a compact drive chain for general applications, DID25

DID25: Smallest bushing chain among ANSI standard chains using curl bushings.

DID35: A ANSI standard bushing chain suitable for small precision machines that require high strength.

Operating speed and type of lubrication

	Type **A** Oil feeder, brush, drip	Type **B** Oil bath, disk	Type **C** Forced pump feed
DID 15 **DID 15H1**	200m/min or less	1200m/min or less	
DID 25 **DID 25H** **DID 25T**	150 〃	1000 〃	Over 1200m/min
DID 35 **DID 35T**	110 〃	850 〃	



R connecting link

Dimensions

Unit (mm)

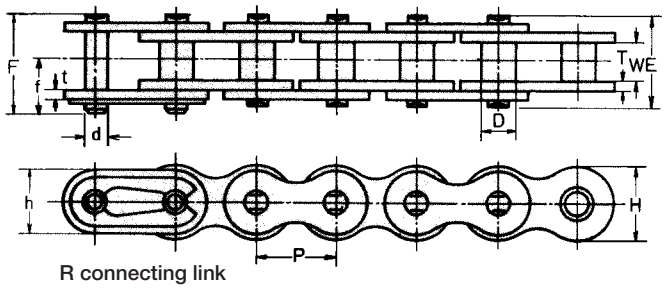
Chain No.	Pitch	Bushing		Pin			Plate			Baring area (cm²)	Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
		Width	Dia.	Dia.	Length		Thickness		Width		kN	kgf	kN	kgf	
	P	W	D	d	E	F	T	t	H						
DID 15	4.7625	2.40	2.48	1.62	6.25	6.90	0.60	0.60	4.30	0.060	1.96	270	0.49	50	0.089
DID 15H1	4.7625	3.18	2.48	1.62	7.30	—	0.72	0.72	4.30	0.789	3.14	320	0.58	60	0.103
DID 25	6.35	3.18	3.30	2.31	7.80	8.50	0.72	0.72	5.90	0.109	4.41	450	0.73	75	0.134
DID 25H	6.35	3.18	3.30	2.31	9.00	9.45	1.00	1.00	5.90	0.122	5.88	600	1.07	110	0.163
DID 25T	6.35	3.18	3.30	2.31	8.00	8.50	0.72	0.72	5.90	0.109	4.41	450	0.73	75	0.134
DID 35	9.525	4.78	5.08	3.59	12.00	13.00	1.25	1.25	9.00	0.265	11.20	1,150	2.15	220	0.332
DID 35T	9.525	4.78	5.08	3.59	12.00	13.00	1.25	1.25	9.00	0.265	11.20	1,150	2.15	220	0.332

Note: The values of max. allowable tension are not applied to connecting links.

Engine Mechanism Chain

Due to the extremely high technical demands derived from the development of the automobile industry, rapid strides were made in the development of engine mechanism chains such as timing chains for driving cam shafts on 4-cycle engines used in motorcycles and motor vehicles, chains for driving oil pumps, generators and other auxiliary machines, and chains for driving balancer shafts. We have world class technical expertise in this area. The DID engine mechanism chains have excellent wear resistance, fatigue strength, silencing effect and shock strength capable of withstanding high speed operation, and can meet the conditions required for today's powerful yet down-sized high performance engines. For silent chains, see the section for silent chains in this catalog.

Dimensional Drawing



R connecting link

Dimensions

Unit (mm)

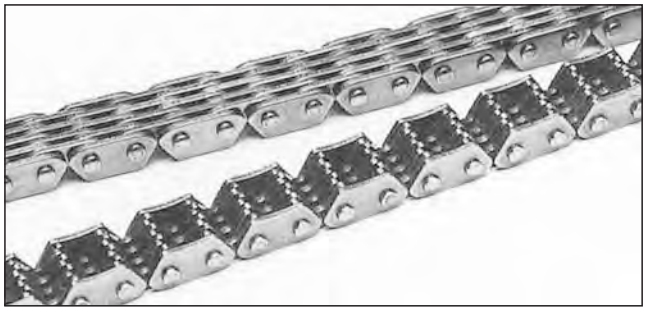
Chain No.	Connecting link	Pitch	Roller link width	Roller dia.	Pin				Plate				Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
		P	W	D	d	E	F	f	T	t	H	h	kN	kgf	kN	kgf	
DID 25	RJ	6.35	3.18	∗3.30	2.31	7.8	8.5	4.7	0.72	0.72	5.9	5.2	4.41	450	0.73	75	0.13
DID 25H	RJ	6.35	3.18	∗3.30	2.31	9.0	9.45	5.15	1.0	1.0	5.9	5.2	5.88	600	1.07	110	0.16
DID 25SH	—	6.35	3.18	∗3.30	2.01	9.0	—	—	1.0	1.0	5.9	5.2	5.09	520	0.91	93	0.17
DID 25SD	—	6.35	3.18	∗3.30	2.00	9.0	—	—	1.0	1.0	5.9	5.2	5.59	570	0.88	90	0.17
DID 25-2	RJ	6.35	3.18	∗3.30	2.31	14.4	15.0	4.7	0.72	0.72	5.9	5.2	8.23	840	1.17	120	0.26
DID 25H-2	RJ	6.35	3.18	∗3.30	2.29	16.6	17.2	5.15	1.0	1.0	5.9	5.2	10.79	1,100	1.76	180	0.38
DID 215F DHA	—	7.00	3.50	∗4.00	2.51	10.15	—	—	1.2	1.0	6.7	6.7	8.14	830	1.62	165	0.26
DID 219H	RJ	7.774	5.00	∗4.59	3.01	12.0	12.7	6.8	1.2	1.0	7.6	6.6	7.74	790	1.27	130	0.27
DID 219HTM	RJ	7.774	4.60	∗4.59	3.01	12.15	12.9	6.9	1.4	1.3	7.6	6.5	9.80	1,000	1.76	180	0.30
※ **DID 219FTS DHA**	—	7.774	5.00	∗4.59	2.61	11.85	—	—	1.2	1.0	7.6	7.6	8.92	910	1.77	180	0.31
※ **DID 219FTH1**	—	7.774	5.00	∗4.59	2.62	12.3	—	—	1.2	1.2	7.6	7.6	8.92	910	2.15	220	0.33
※ **DID 05T DHA**	—	8.00	4.61	∗4.71	3.01	11.5	—	—	1.3	1.0	7.8	7.8	9.61	980	2.15	220	0.33
※ **DID 05R SDH**	—	8.00	4.61	5.65	2.62	11.85	—	—	1.3	1.0	7.8	7.8	8.97	915	2.15	220	0.37
※ **DID 05S SDH**	—	8.00	4.61	5.65	3.00	12.30	—	—	1.3	1.2	7.8	7.8	12.1	1,230	3.00	305	0.40
DID 270H	—	8.50	4.75	∗5.00	3.28	13.15	—	—	1.8	1.4	8.6	7.1	12.1	1,240	2.15	220	0.39
DID 270S DHA	—	8.50	4.75	∗5.00	3.01	12.0	—	—	1.3	1.2	8.6	7.1	10.7	1,100	1.96	200	0.33
DID 270FH DHA	—	8.50	4.75	∗5.00	3.28	13.15	—	—	1.8	1.4	8.6	8.6	14.7	1,500	2.45	250	0.50
※ **DID 06B DHA**	RJ	9.525	5.72	6.35	3.28	13.15	13.6	7.4	1.3	1.0	8.2	8.2	10.4	1,070	1.96	200	0.39
※ **DID 06BH DHA**	—	9.525	5.72	6.35	3.27	13.85	—	—	1.4	1.2	8.2	8.2	11.1	1,130	2.65	270	0.43
※ **DID 06B-2**	RJ	9.525	5.72	6.35	3.28	22.75	23.9	7.4	1.3	1.0	8.2	8.2	19.4	1,980	3.13	320	0.74
※ **DID 317FM2**	—	9.525	5.05	6.35	3.28	13.15	—	—	1.5	1.2	8.2	8.2	12.7	1,300	3.23	330	0.28
※ **DID 317FM-2**	—	9.525	5.05	6.35	3.27	24.7	—	—	1.5	1.2	8.2	8.2	24.3	2,480	4.90	500	0.81

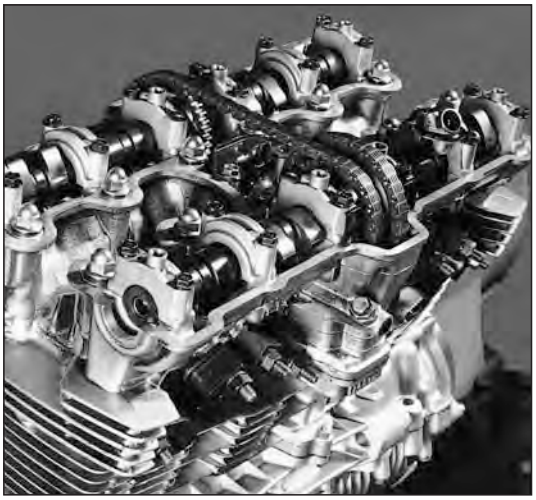
Note: 1. Those marked with ∗ are bushing chains, and thus the values indicate bushing diameters.
2. Chains marked with ※ have flat oval-shaped plates.
3. DH-α treatment (DHA) is available. Consult us for DHA types.
4. The values of max. allowable load are not applied to connecting links. Don't use connecting links in engines.

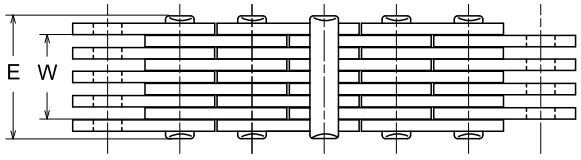
Silent Chain

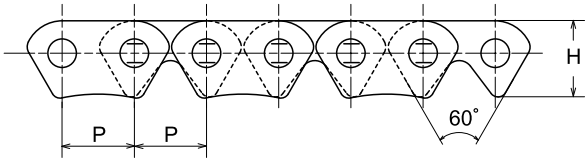
SC silent chains (SCA, SCR, SC)

SC silent chains use specially-coated round pins and special plates to achieve an ideal engagement mechanism, and can keep a noise level remarkably lower than conventional roller chains.
SC type silent chains can be used for high speed and large tension transmission just like a toothed metallic belt since the plates directly engage with the sprockets for driving.
SCR-04 silent chains are designed with inner engaging structure for further reduced noise level.









Dimensions

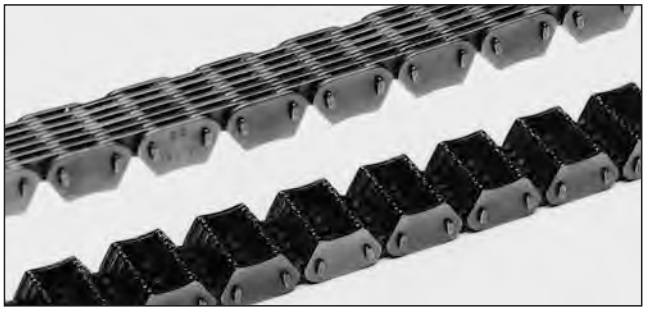
Unit (mm)

Chain No.	Pitch P	Plate quantity	W	E	H	Min. tensile strength kN	Min. tensile strength kgf	Approx. weight (kg/m)
DID SCA-0404A SDH	6.35	2×3	3.20	6.00	6.70	6.27	640	0.161
DID SCA-0409A SDH		3×4	5.10	8.10		9.81	1,000	0.238
DID SCA-0412A SDH		4×5	7.15	11.00		12.26	1,250	0.316
DID SCR-0404 SDH	6.35	2×3	3.20	6.00	6.85	6.93	705	0.172
DID SCR-0409 SDH		3×4	5.10	8.10		10.00	1,020	0.255
DID SCR-0412 SDH		4×5	7.15	10.30		13.23	1,350	0.322
DID SC-2614H SDH	8.00	5×4	8.65	12.75	8.70	19.10	1,950	0.520
DID SC-0624A SDH	9.525	6×7	17.65	22.70	10.10	40.99	4,180	1.05
DID SC-0628A SDH		7×8	20.85	26.00		48.05	4,900	1.20

Silent Chain

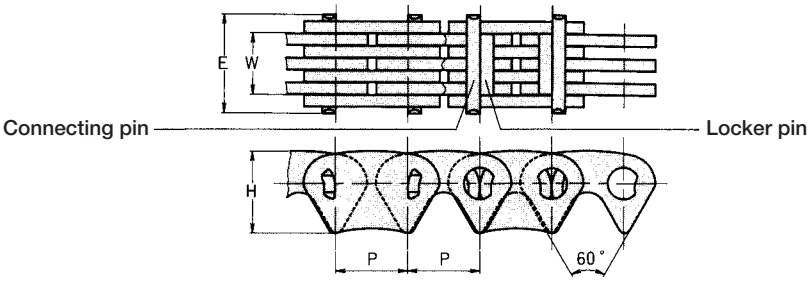
PS silent chain

A PS type silent chain has a structure in which a set of specially formed connecting pins and locker pins contact each other while rotating at each flexible bearing position. Thus, it generates less heat especially in high speed operation and is excellent in durability. Furthermore, the specially formed pins greatly reduce shock when the chain is engaged with sprockets, providing a higher silencing effect than SC silent chains.



Sprockets

Sprockets for DID silent chains adopt special modules in involute tooth forms for the SCA 04××, SC 25××, SC 06×× on the previous page and PS silent chains to ensure silent high speed operation. For all sizes, the sprocket tooth heads are usually hardened by induction hardening or carburizing.



Dimensions

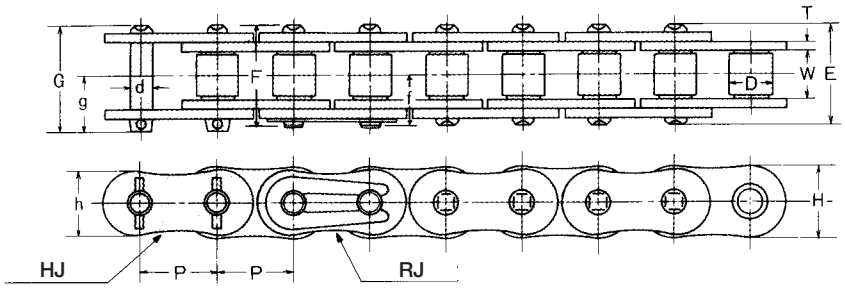
Unit (mm)

Chain No.	Pitch P	Plate quantity	W	E	H	Min. tensile strength		Approx. weight (kg/m)
						kN	kgf	
DID PS-207 DHA	6.35	6×7	11.30	15.20	7.15	15.4	1,570	0.507
DID PS-314 DHA	9.525	7×8	20.80	26.10	10.85	39.2	4,000	1.19

Note: Combination of plate numbers can be changed upon request.

Agricultural Roller Chain

The roller chains used for agricultural machinery like tractors, combines, binders, power tillers, and planters that provide higher productivity in modern agriculture are required to have the strength and durability to withstand wear, heavy load and shocks. Agricultural roller chains can sufficiently satisfy these conditions.



Dimensions

Unit (mm)

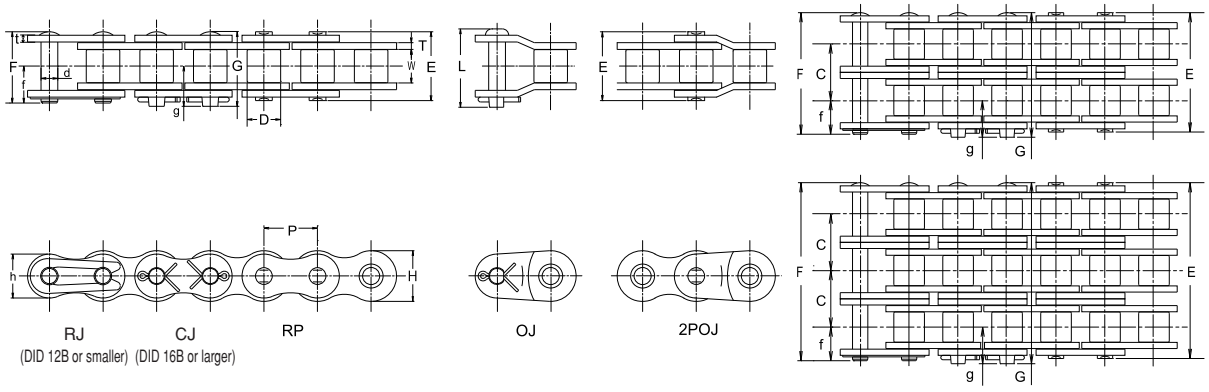
Chain No.	Connecting link	Pitch	Roller link width	Roller dia.	Pin						Plate				Avg. tensile strength		Max. allowable load		Approx. weight (kg/m)
		P	W	D	d	E	F	f	G	g	T	t	H	h	kN	kgf	kN	kgf	
※DID 35	RJ	9.525	4.78	(5.08)	3.59	12.0	13.1	7.3			1.25	1.25	9.0	7.75	11.2	1,150	2.15	220	0.32
※DID 35HS	RJ	9.525	4.78	(5.08)	3.59	13.1	13.7	7.8			1.50	1.50	9.0	7.75	12.7	1,300	2.54	260	0.39
※DID 35HK2	—	9.525	4.78	(5.08)	3.59	15.5	15.4				2.00	2.00	9.0	7.75	19.1	1,950	3.23	330	0.46
DID 083	RJ	12.70	4.88	7.75	4.09	12.5	13.55	7.35			1.25	1.25	10.3	9.6	13.1	1,340	2.35	240	0.43
DID 415S	RJ	12.70	4.76	7.77	3.97	13.25	14.3	7.98			1.5	1.5	12.0	10.4	19.1	1,950	3.72	380	0.55
DID 420	RJ	12.70	6.35	7.77	3.97	14.75	16.15	8.80			1.5	1.5	12.0	10.4	17.8	1,820	3.72	380	0.58
DID 40	RJ	12.70	7.95	7.92	3.97	16.5	17.6	9.5		10.1	1.5	1.5	12.0	10.4	19.1	1,950	3.72	380	0.68
DID 40HK	RJ	12.70	7.95	7.92	3.97	18.5	19.50	10.5			2.0	2.0	12.0	10.4	21.5	2,200	4.51	460	0.72
DID 428	RJ	12.70	7.94	8.50	4.51	16.7	18.05	9.83			1.5	1.5	12.0	10.4	19.6	2,000	3.92	400	0.66
DID 428H	RJ	12.70	7.94	8.50	4.51	18.9	20.1	10.88			2.0	2.0	12.0	10.4	23.3	2,380	4.90	500	0.76
DID 520	RJ	15.875	6.35	10.16	5.09	17.45	18.85	10.25			2.0	2.0	15.0	13.0	30.4	3,100	6.86	700	0.89
DID 50	RJ	15.875	9.53	10.16	5.09	20.3	21.9	11.6		12.0	2.0	2.0	15.0	13.0	30.8	3,150	6.86	700	1.06
DID 520HK	RJ	15.875	6.35	10.16	5.09	18.6	20.2	10.7			2.4	2.4	15.0	13.0	36.2	3,700	7.84	800	1.00
DID 50HK	RJ	15.875	9.53	10.16	5.09	21.8	23.4	12.7			2.4	2.4	15.0	13.0	37.6	3,840	8.63	880	1.12
DID 50Y	—	15.875	9.53	10.22	5.40	22.5					2.4	2.4	15.6	15.6	44.1	4,500	12.74	1,300	1.40
DID 630K	RJ	19.05	9.53	11.91	5.96	22.1	23.6	12.6			2.4	2.4	18.1	15.6	44.1	4,500	9.31	950	1.37
DID 630HK	RJ	19.05	9.53	11.91	5.96	25.7	26.8	14.3			3.2	3.2	18.1	15.6	50.5	5,150	10.7	1,100	1.72
DID 630HKS	RJ	19.05	9.53	11.91	5.96	25.7	26.8	14.3			3.2	3.2	18.1	15.6	53.9	5,500	10.7	1,100	1.72
DID 630SK	—	19.05	9.53	14.28	7.11	26.25		14.6			3.6	3.2	18.1	18.1	64.7	6,600	10.7	1,100	2.03
DID 630FSK	—	19.05	9.53	14.28	6.63	27.4					4.0	3.2	19.1	19.1	67.1	6,850	17.6	1,800	2.42
DID 630FSK2	—	19.05	9.53	14.28	7.11	28.5					4.2	3.4	19.1	19.1	72.5	7,400	17.6	1,800	2.47
DID 635SK	—	19.05	11.10	14.28	7.11	27.8					3.6	3.2	18.1	18.1	64.7	6,600	10.7	1,100	2.21
DID 635ST	—	19.05	11.10	14.28	7.51	30.0					4.2	3.4	18.4	18.4	72.5	7,400	10.7	1,100	2.48
DID 60	RJ	19.05	12.70	11.91	5.96	25.4	26.9	14.3		15.1	2.4	2.4	18.1	15.6	44.1	4,500	9.3	950	1.44
DID 60H	RJ	19.05	12.70	11.91	5.96	28.7	30.5	16.1	31.2		3.2	3.2	18.1	15.6	46.0	4,700	10.7	1,100	1.81
DID 60HK	RJ	19.05	12.70	11.91	5.96	28.7	30.5	16.1	31.2		3.2	3.2	18.1	15.6	53.9	5,500	10.7	1,100	1.81
DID 60SK	—	19.05	12.70	14.28	7.11	29.8		16.4			3.6	3.2	18.1	18.1	64.7	6,600	10.7	1,100	2.23
HI-PWR-S80	HJ	25.40	15.88	15.88	7.94	32.6			35.3	19.0	3.2	3.2	24.1	20.8	84.3	8,600	18.6	1,900	2.82
HI-PWR-S80HK	HJ	25.40	15.88	15.88	7.94	36.1			38.7	20.6	4.0	4.0	24.1	20.8	98.0	10,000	22.5	2,300	3.12
DID 80GS	HJ	25.40	15.88	15.88	8.71	37.7			40.3		4.8	4.0	24.7	24.7	117.0	12,000	27.4	2,800	4.31
HI-PWR-S100	HJ	31.75	19.05	19.05	9.54	39.5			42.8	22.7	4.0	4.0	30.1	26.0	127.0	13,000	30.4	3,100	4.18
HI-PWR-S100HK	HJ	31.75	19.05	19.05	9.54	43.6			46.2	24.4	4.8	4.8	30.1	26.0	145.0	14,800	34.3	3,500	4.37

Note: 1. DID630FSK, DID630FSK2, DID80GS have flat oval-shaped plates.
2. The values of max. allowable tension are not applied to connecting links.
3. Those marked with ※ are bushing chains.

BS Roller Chain (British Standard Roller Chain)

DID BS Roller Chains conform to the ISO (International Organization for Standardization) "B series", and they are manufactured in conformity with the British Standard or German Standard. For sprockets, use those in conformity with the BS standard.

Dimensional drawing



Dimensions

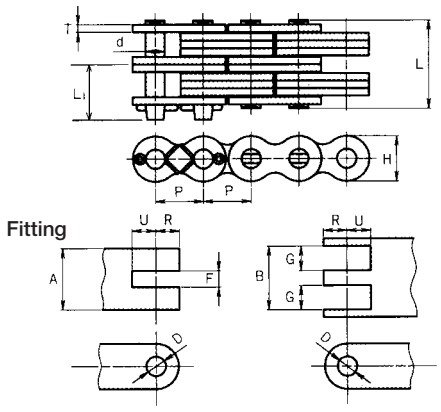
Unit (mm)

Chain No.		Pitch	Roller link width	Roller dia.	Pin							Transverse pitch	Plate				JIS Min. tensile strength		DID Avg. tensile strength		Approx. weight
DID	JIS B	P	W	D	d	E	F	G	L	f	g	C	T	t	H	h	kN	kgf	kN	kgf	(kg/m)
DID 04B	—	6.00	2.80	4.00	1.85	6.7	7.35	—	—	4.15	—	—	0.63	0.63	4.9	4.9	—	—	3.33	340	0.12
DID 05B	05B					7.75	8.60	—	—								4.4	449	5.68	580	0.18
DID 05B-2	05B-2	8.00	3.00	5.00	2.31	13.45	14.25	—	—	4.80	—	5.64	0.75	0.75	7.1	6.2	7.8	795	9.21	940	0.34
DID 06B	06B					13.15	13.6	—	—								8.9	908	10.4	1,070	0.39
DID 06B-2	06B-2	9.525	5.72	6.35	3.28	22.75	23.9	—	—	7.4	—	10.24	1.3	1.0	8.2	8.2	16.9	1,720	19.4	1,980	0.74
DID 06B-3	06B-3					33.0	34.3	—	—								24.9	2,539	27.4	2,800	1.10
DID 08B	08B					16.7	18.1	—	19.45								17.8	1,815	19.6	2,000	0.67
DID 08B-2	08B-2	12.70	7.75	8.51	4.45	30.7	32.0	—	33.25	9.9	—	13.92	1.5	1.5	11.9	10.4	31.1	3,170	34.3	3,500	1.30
DID 08B-3	08B-3					44.6	46.0	—	47.25								44.5	4,537	49.0	5,000	1.92
DID 10B	10B					18.9	20.4	—	22.1								22.2	2,260	25.4	2,600	0.86
DID 10B-2	10B-2	15.875	9.65	10.16	5.08	35.5	37.0	—	38.7	10.9	—	16.59	1.5	1.5	14.7	13.0	44.5	4,537	50.9	5,200	1.68
DID 10B-3	10B-3					52.2	53.7	—	55.25								66.7	6,800	76.4	7,800	2.54
DID 12B	12B					22.2	23.6	—	26.45								28.9	2,946	31.3	3,200	1.14
DID 12B-2	12B-2	19.05	11.68	12.07	5.72	41.7	43.1	—	45.9	12.7	—	19.46	1.8	1.8	16.1	14.6	57.8	5,890	62.7	6,400	2.28
DID 12B-3	12B-3					61.3	62.7	—	65.45								86.7	8,840	94.1	9,600	3.46
DID 16B	16B					35.7		38.2	40								60	6,118	63.7	6,500	2.56
DID 16B-2	16B-2	25.40	17.02	15.88	8.28	67.6	—	70.3	71.9	—	20.7	31.88	4.0	3.2	21.0	21.0	106	10,808	127	13,000	5.12
DID 16B-3	16B-3					99.5		102.2	103.8								160	16,315	191	19,500	7.59
DID 20B	20B					41.2		44.0	45.1								95	9,687	98.0	10,000	3.81
DID 20B-2	20B-2	31.75	19.56	19.05	10.19	77.7	—	80.5	82.7	—	23.5	36.45	4.5	3.5	26.4	26.4	170	17,335	196	20,000	7.57
DID 20B-3	20B-3					114.2		117.0	119.2								250	25,490	294	30,000	11.3
DID 24B	24B					53.4		58.7	59.4								160	16,315	166	17,000	7.08
DID 24B-2	24B-2	38.10	25.40	25.40	14.63	101.8	—	107.1	109.1	—	32.0	48.36	6.0	5.0	33.4	33.4	280	28,550	333	34,000	13.9
DID 24B-3	24B-3					150.2		155.5	157.5								425	43,337	500	51,000	20.7

Note: 1. 2POJ offset links are used for DID04B and DID05B.
2. DID06B has flat oval-shaped plates.
3. Clip connecting links (RJ) are used for DID06B-12B and cotter connecting links (CJ) for DID16B-24B.

Leaf Chain

Leaf chains consist of pins and plates only and are higher in strength than roller chains. They are suitable for tasks like hoisting and pulling. Leaf chains conform to ANSI and have two types: AL and BL.

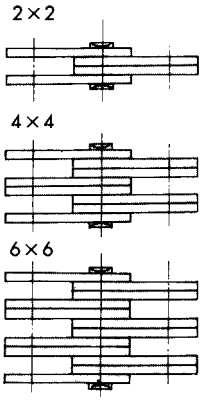
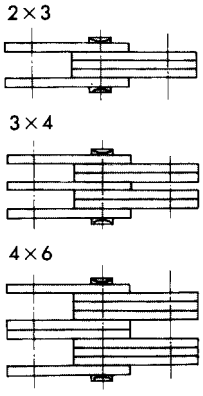


Dimensions

Unit (mm)

Chain No.	Pitch	Plate		Pin			Min. tensile strength		Max. allowable load		Approx. weight	Fitting						
	P	H (Max)	T	d	L (Max)	L1 (Max)	kN	kgf	kN	kgf	(kg/m)	b (Min)	R	U (Min)	F (Min)	G (Min)	A (Max)	B (Min)
DID AL 422	12.59	10.4	1.5	3.97	8.1	6.0	16.6	1,690	1.86	190	0.40	4.00	6.3	6.3	—	—	3.0	3.3
DID AL 444					14.6	9.8	33.3	3,380	3.43	350	0.77				3.3	3.3	9.3	9.7
DID AL 466					21.1	12.6	50	5,080	3.92	400	1.14				3.3	3.3	15.7	16.1
DID AL 522	15.75	13.0	2.0	5.09	10.5	7.3	27.9	2,830	3.04	310	0.65	5.12	7.9	7.9	—	—	4.0	4.3
DID AL 544					19.0	11.5	55.8	5,660	5.29	540	1.26				4.3	4.3	12.3	12.7
DID AL 566					27.5	15.8	83.8	8,510	6.27	640	1.85				4.3	4.3	20.7	21.1
DID AL 622	19.05	15.6	2.4	5.96	12.5	8.8	38.2	3,880	4.41	450	0.90	6.00	9.5	9.5	—	—	4.8	5.1
DID AL 644					22.7	13.9	76.4	7,760	7.45	760	1.75				5.1	5.1	14.7	15.1
DID AL 666					32.6	19.0	114	11,570	8.72	890	2.59				5.1	5.1	24.7	25.1
DID AL 822	25.19	20.8	3.2	7.94	16.4	11.0	66.6	6,760	7.35	750	1.55	8.00	12.7	12.7	—	—	6.4	6.8
DID AL 844					29.7	17.8	133	13,500	13.2	1,340	3.04				6.8	6.8	19.8	20.1
DID AL 866					43.1	24.5	200	20,300	15.3	1,550	4.51				6.8	6.8	32.9	33.4
DID AL 1022	31.64	26.0	4.0	9.54	19.9	13.1	100	10,150	11.5	1,170	2.46	9.60	15.8	15.8	—	—	8.0	8.4
DID AL 1044					36.4	21.3	200	20,300	20.5	2,080	4.80				8.4	8.4	24.4	24.9
DID AL 1066					53.1	29.7	300	30,460	24	2,440	7.15				8.4	8.4	40.9	41.4
DID AL 1222	37.98	31.2	4.8	11.11	23.8	15.3	141	14,310	16.4	1,660	3.32	11.20	19.0	19.0	—	—	9.6	10.0
DID AL 1244					43.4	25.2	282	28,630	29.1	2,950	6.50				10.0	10.0	29.2	29.7
DID AL 1266					63.4	35.1	423	42,940	34.2	3,470	9.68				10.0	10.0	48.9	49.4
DID AL 1444	44.32	36.3	5.6	12.71	50.6	30.1	372	37,770	38.9	3,950	10.0	12.80	22.2	22.2	11.6	11.6	34.0	34.5
DID AL 1446					73.6	41.6	558	56,650	46	4,670	14.6				11.6	11.6	56.9	57.4
DID AL 1644	50.62	41.4	6.4	14.29	57.5	33.4	470	47,720	49.9	5,070	12.7	14.40	25.4	25.4	13.2	13.2	38.8	39.4
DID AL 1666					83.6	46.4	706	71,680	58.8	5,970	19.6				13.2	13.2	64.9	65.5
DID BL 423	12.70	12.0	2.0	5.09	12.5	8.5	24.5	2,490	4.51	460	0.86	5.12	6.3	6.3	—	—	6.0	6.3
DID BL 434					16.9	10.6	37.2	3,780	5.29	540	1.16				2.2	4.3	10.3	10.7
DID BL 446					23.2	13.7	49	4,970	5.98	610	1.69				4.3	6.4	16.3	16.8
DID BL 523	15.875	15.0	2.4	5.96	15.0	9.9	39.2	3,980	6.86	700	1.30	6.00	7.9	7.9	—	—	7.2	7.5
DID BL 534					20.2	12.5	58.8	5,970	8.33	850	1.73				2.6	5.1	12.3	12.7
DID BL 546					27.7	16.3	78.4	7,960	9.41	960	2.44				5.1	7.6	19.5	20.0
DID BL 623	19.05	18.1	3.2	7.94	19.8	12.6	68.6	6,960	9.8	990	2.08	8.00	9.5	9.5	—	—	9.7	10.0
DID BL 634					26.7	16.2	103	10,460	12.2	1,240	2.85				3.4	6.8	16.2	16.9
DID BL 646					36.7	21.1	127	12,890	13.7	1,390	4.07				6.8	10.1	26.0	26.6
DID BL 823	25.40	24.0	4.0	9.54	24.0	15.3	102	10,360	16.9	1,720	3.25	9.60	12.7	12.7	—	—	12.1	12.4
DID BL 834					32.4	19.3	154	15,630	20.5	2,080	4.50				4.2	8.4	20.2	20.9
DID BL 846					44.8	25.5	205	20,810	23.5	2,390	6.39				8.4	12.5	32.4	33.0
DID BL 1023	31.75	29.9	4.8	11.11	28.6	17.7	141	14,310	25.9	2,630	4.33	11.20	15.8	15.8	—	—	14.4	14.8
DID BL 1034					38.6	22.7	220	22,340	31.3	3,180	6.03				5.0	10.0	24.2	24.9
DID BL 1046					53.9	30.2	282	28,630	36.2	3,680	8.53				10.0	14.9	38.8	39.4
DID BL 1223	38.10	35.9	5.6	12.71	33.3	21.5	193	19,590	36.7	3,730	6.06	12.80	19.0	19.0	—	—	16.8	17.3
DID BL 1234					44.8	27.2	313	31,780	44.1	4,480	8.45				5.9	11.6	28.0	28.8
DID BL 1246					61.7	36.1	386	39,190	50.5	5,130	12.0				11.6	17.4	45.2	45.9
DID BL 1423	44.45	41.9	6.4	14.29	37.6	23.4	254	25,790	49	4,970	8.74	14.40	22.2	22.2	—	—	19.2	19.7
DID BL 1434					50.7	30.0	421	42,740	58.8	5,970	10.9				6.7	13.2	32.0	32.8
DID BL 1446					70.4	39.8	509	51,680	67.6	6,860	20.3				13.2	19.8	51.6	52.3
DID BL 1623	50.80	47.8	7.1	17.46	41.7	26.7	353	35,840	58.8	5,970	11.9	17.60	25.4	25.4	—	—	21.3	21.8
DID BL 1634					56.4	34.0	554	56,240	70.6	7,170	16.6				7.4	14.6	35.5	36.3
DID BL 1646					78.0	44.8	706	71,680	80.4	8,160	23.6				14.6	11.9	57.2	57.9

Note: 1. Except for AI-60 series, the pitch of AL type chains is slightly different to that of ANSI standard.
2. The values of max. allowable tension are not applied to connecting links.

AL type	BL type
For the use that static load is applied with little concern of wearing.	For the use that wear resistance is required since impact load is applied.
	

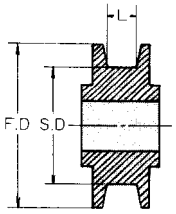
Selection of leaf chains

The chain size is selected according to the following formula:

Acting tension×Service factor≦Maximum allowable tension

Notes: 1. Acting tension includes the dead weight of the chain, the weight of the attachments and inertia.

2. If the chain speed exceeds 30 m/min, use a DID roller chain.



Minimum sheave diameter: S.D
= Chain pitch×5

Minimum width between flanges: L
= Overall length of pin×1.05

● If connecting pins are provided: L≧2L1×1.05
L1 is the value stated in the dimensions table.

F.D = S.D + Maximum link plate height (H)

Note: ● If dimension H exceeds 25.4, F.D = S.D + 25.4 can be adopted as the minimum flange outer diameter.

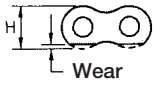
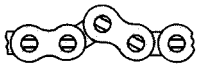
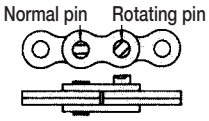
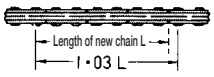
Service factor

Type of Impact		Service factor	Examples of applications	Applicable chains
Smooth transmission	When starts and stops are smooth and loads hardly vary.	1.0	For lifting a balance weight, stretching in cold and hot processing etc.	AL type
With some shock	When starts, stops, load variations or reversing occurs often.	1.2	Forklift, etc.	AL type and BL type
With large shock	When sudden start, stop or reversing occurs and load largely varies.	1.4	Mining and construction machinery, etc.	BL type and DID roller chains

Periodical inspection and instructions for replacement

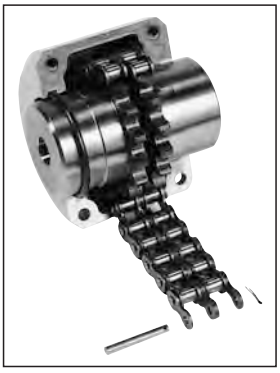
Be sure to carry out periodical inspection and lubrication to confirm safety and prolong chain life. Problems, possible causes and instructions for solution are outlined in the following table.

Periodical inspection table

Problem	Possible cause	Solution
Circumferential wear of plate 	Wear	Replace the chain if wear loss becomes 5 percent of H.
Oblique wear of plate and pin head 	Misalignment of guide or pulleys	Align the unit.
Stiff link 	Dust or foreign substances are contained in a bending portion Corrosion and rust Bent pin	Wash and lubricate. Replace the chain. Replace the chain.
Abnormal protrusion or rotation of pin head 	Excessive tension by overload or insufficient lubrication	Replace the chain Lubricate and eliminate overload.
Wear elongation 	Wear Permanent deformation (elongation) due to overload	Replace the chain when its length becomes 1.03L. Note: Wear elongation of a chain lowers its tensile strength. Wear elongation of 3% lowers the tensile strength by 18 percent. The wear life of chain can be improved by lubrication. Replace the chain.
Cracked plate (1)  Crack: From the hole of a link plate toward the end of the link plate in the direction perpendicular to tension direction.	Load exceeding the allowable tension of chain	Replace the chain with a chain of higher maximum allowable tension, or lower the load or dynamic (shock) load.
Cracked plate (2)  Crack: In an oblique direction against tension direction.	Heavy rust or exposure to an acid or corrosive material	Replace the chain, and protect from corrosive circumstances.
Broken plate (by high tension) 	Overload	Replace the chain, and eliminate the cause of overload.
Enlarged plate hole 	Overload	Replace the chain, and eliminate the cause of overload.
Corrosion of pit	Corrosive circumstances	Replace the chain, and protect from corrosive circumstances.
Wear of connecting pin	Normal wear	Replace the worn component.

Roller Chain Coupling

Features

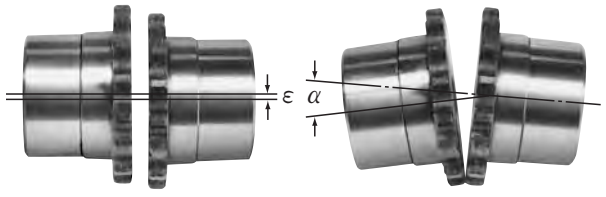


1. Simple structure

A roller chain coupling consists of one duplex roller chain and two sprockets for a simplex chain. Handling is very simple as both the shafts (driving shaft and driven shaft) can be connected and disconnected by inserting or removing connecting pins (cotter type).

2. Easy alignment

Owing to the play between the respective components of the chain and the play between the roller chain and the sprockets, the eccentricity and angle error can be generally allowed as follows:



- Eccentricity ε : Up to 2% of the roller chain pitch
- Angle error α : Up to 1°

When the roller chain coupling is used for high speed rotation (in the range of lubrication types B and C), keep the allowances less than half of the above.

3. Small but powerful

Since a powerful roller chain is engaged with the sprockets at all the teeth, a large torque can be transmitted, though the coupling itself is smaller than other kinds of couplings.

4. Excellent durability

The roller chain is made of heat-treated steel and manufactured precisely and solidly to the highest manufacturing standard. The durability is outstanding and little time is required for maintenance as the sprockets have induction-hardened special teeth, and are always engaged with the roller chain.

5. Protection of machine

Rational flexibility decreases vibration, overheating and wear of the bearings caused by the eccentricities and angle errors of the shafts.

Standard housing

The standard housings for No. 8022 or smaller are made of aluminum alloy die casting, and those for No. 10020 or larger are made of aluminum alloy casting. Installation of housings has the following advantages.

1. Advantages of housing

- **Holding of lubrication**
  Since a roller chain coupling rotates with flexibility, the teeth of the roller chain and sprockets slide slightly during operation. So, they must be kept lubricated for prevention of wear as much as possible. The housing functions as a grease box for the lubrication.
- **Prevention of grease scattering**
  Especially in high speed rotation, grease may be scattered by centrifugal force. The housing functions as a protector that prevents this.
- **Protection from dust and moisture (corrosive atmosphere)**
  When a roller chain coupling is used in a wear-causing or corrosive circumstances, the chain life is extremely shortened unless the coupling is perfectly shielded from the circumstances. The housing functions to protect the roller chain coupling, preventing the shortening of life.
- **High safety and neat appearance**
  Since the housing has no protrusions outside, it is safe even if it rotates with the roller chain coupling. It is also neat in appearance. (To avoid possible injury, do not touch the housing when rotating.)

2. Structure

The roller chain coupling can be split in the direction perpendicular to the shafts. The hole on the driving shaft side of the housing firmly holds the coupling's sprocket hub. The hole on the driven shaft side keeps a clearance of 1 mm or more from the sprocket hub to maintain flexibility of the coupling. Oil leakage from this portion is prevented by a seal ring.

⚠ Cautions

For safe work	• Always wear clothing suitable for work and proper protection (safety glasses, safety shoes, etc.). • Strictly observe Section 1 "General standards (prevention of danger by motors, revolving shafts, etc.), Chapter 1, Part 2 of Occupational Safety and Health Regulations. • Be sure to switch off the electric power source or any other power source before starting maintenance work, and ensure that the power is never accidentally switched on. Furthermore, make sure not to allow your clothes or any parts of the body to be caught by the chain or sprockets, or by any other nearby equipment.
Housings and safety covers	• Be sure to install a chain housing for type C and type B (see "Table of Lubrication Types"). • For installing the roller chain coupling into a high-speed machine or heavily vibrating machine, coat the bolts with a loosening preventive. • Install a safety cover to prevent any unexpected flying of loosened bolts, or scattering of a broken housing or chain.
Inhibition of modification, re-use, and partial replacement	• Never partially replace or re-use the coupling as its strength will be lowered, causing damage or destruction. Furthermore, since the coupling is heat-treated, never modify the cotter holes or any other parts. When replacement is necessary, replace the roller chain coupling or housing as a set respectively.
Noise	• Noise during operation may be caused by malfunction and the unit may need to be replaced. Immediately switch off the power, and check the cause.

Lubrication of roller chain coupling

The lubrication of a roller chain coupling belongs to the following three types: A, B and C, depending on the speed of rotation used. Refer to the table of Max. Horsepower Ratings (P112).

1. Lubrication types

Type A	Greasing once a month.
Type B	Greasing every 1 ~ 2 weeks, or install a lubrication housing.
Type C	Be sure to install a housing, and replace grease every 3 months.

2. Grease

Since a roller chain coupling is usually used at high speed for a long time, grease must satisfy the following conditions.

- ○ Excellent in mechanical stability, oxidation stability and adhesion.
- ○ Grease based on metallic soap: For low speed operation, grease based on sodium soap, i.e., fiber grease can be used, but for high speed operation (for lubrication type B and C), be sure to use grease based on lithium soap.

3. Greasing amount

Fill appropriate amount of grease in the housing in accordance with the following table.

Roller chain coupling No.	Required amount of grease kg	Roller chain coupling No.	Required amount of grease kg
DID C-4012	0.10	**DID C-10020**	1.8
DID C-4014	0.13	**DID C-12018**	3.2
DID C-4016	0.17	**DID C-12022**	4.4
DID C-5014	0.22	**DID C-16018**	7.2
DID C-5016	0.26	**DID C-16022**	9.9
DID C-5018	0.36	**DID C-20018**	11.8
DID C-6018	0.5	**DID C-20022**	15.8
DID C-6022	0.7	**DID C-24022**	21.9
DID C-8018	0.9	**DID C-24026**	28.1
DID C-8022	1.2		

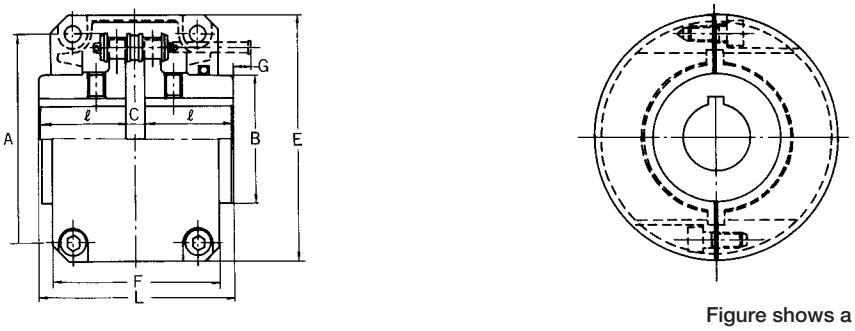


Figure shows a chain coupling with a housing.

Dimensions

Unit (mm)

Roller chain coupling No.		Applicable range of shaft dia.	Prepared hole dia.	E	F	A (max.)	L	ℓ	C	B	G	Set screw	Max. allowable torque of under 50rpm		Allowable rotation (r/min)	Approx. weight (kg)	Moment of inertia ×10⁻³ kg·m	GD² ×10⁻³ kgf·m²
DID	JIS												kN·m	kgf·m				
DID C-4012	4012	11～ 22	10	75	75	61	79.4	36	7.4	35	9	M 6	0.249	25.4	4,800	1.1	0.55	2.20
DID C-4014	4014	14～ 28	10	84	75	69	79.4	36	7.4	43	9	M 6	0.329	33.6	4,800	1.3	0.97	3.85
DID C-4016	4016	16～ 32	14	92	75	77	87.4	40	7.4	50	6	M 6	0.419	42.8	4,800	1.85	1.44	5.76
DID C-5014	5014	16～ 35	14	102	85	86	99.7	45	9.7	53	11	M 8	0.620	63.3	3,600	2.7	2.80	11.2
DID C-5016	5016	18～ 40	14	111	85	96	99.7	45	9.7	60	11	M 8	0.791	80.7	3,600	3.25	3.70	14.8
DID C-5018	5018	18～ 45	14	122	85	106	99.7	45	9.7	70	11	M 8	0.979	99.9	3,000	4.25	5.63	22.5
DID C-6018	6018	22～ 56	18	142	106	128	123.5	56	11.5	85	15	M10	1.81	185	2,500	7.3	13.73	54.9
DID C-6022	6022	28～ 75	18	167	106	152	123.5	56	11.5	110	15	M10	2.61	267	2,500	11.6	29.5	118
DID C-8018	8018	32～ 80	23	186	130	170	141.2	63	15.2	115	27	M12	3.92	400	2,000	16.15	52.0	208
DID C-8022	8022	40～100	28	220	130	203	157.2	71	15.2	140	19	M12	5.64	576	1,800	24.3	111	444
DID C-10020	10020	45～110	40	255	160	233	178.8	80	18.8	160	29	M12	8.40	857	1,800	39.7	244	976
DID C-12018	12018	50～125	45	280	184	255	202.7	90	22.7	170	47	M12	12.7	1,300	1,500	53.8	394	1,575
DID C-12022	12022	56～140	50	330	190	303	222.7	100	22.7	200	37	M12	18.3	1,870	1,250	77.1	781	3,122
DID C-16018	16018	63～160	55	375	240	340	254.1	112	30.1	225	64	M16	26.4	2,700	1,100	108	1,453	5,811
DID C-16022	16022	80～200	70	440	245	405	310.1	140	30.1	280	36	M16	38.1	3,890	1,000	187	3,222	12,890
DID C-20018	—	82～205	75	465	285	425	437.5	200	37.5	290	15	M20	54.1	5,520	800	286	5,098	20,390
DID C-20022	—	100～255	90	545	300	506	477.5	220	37.5	360	—	M20	77.8	7,940	600	440	11,110	44,450
DID C-24022	—	120～310	110	650	340	607	650	302.5	45.0	445	—	M20	137	14,000	600	869	31,000	124,100
DID C-24026	—	150～360	140	745	350	704	700	327.5	45.0	525	—	M20	186	19,000	500	1,260	59,850	239,400

Note: 1. Dimension G indicates the required margin for assembling and de-assembling of the roller chain coupling.
2. Allowable rotation is applicable only when the housing is mounted.
3. The weight of the housing and grease is included in Approx. weight and GD².

Selection of roller chain coupling

1. Selection by drive performance

1. Based on the type of motor, operation time per day, and the type of load, obtain the service factor in the table of service factors.
2. Multiply the power (kW) to be transmitted, by the service factor identified in the following table, to obtain a corrected power to be transmitted (kW).
   Transmission power (kW)(Service factor
   = Corrected transmission power (kW)

Table of Service Factor

Type of load	Operating time/day	Source of power		
		Electric motor or turbine	Steam engine/ gasoline engine (with 4 cylinders or more)	Diesel engine/ gas engine
Load variation, impact, start torque is small (No reverse)	8 hrs or less	1.0	1.5	2.0
	8-16 hrs	1.5	2.0	2.5
	16 hrs or more	2.0	2.5	3.0
Load variation, impact is at medium level (No reverse)	8 hrs or less	1.5	2.0	2.5
	8-16 hrs	2.0	2.5	3.0
	16 hrs or more	2.5	3.0	3.5
Load variation, impact, start torque is large, (No reverse)	8 hrs or less	2.0	2.5	3.0
	8-16 hrs	2.5	3.0	3.5
	16 hrs or more	3.0	3.5	4.0

Note: Service factor of 8 hours or less to be applied regardless of operation time when the revolution is under 50 r/min.

3. Select a roller chain coupling in the drive performance (kW ratings) table: Identify the chain coupling number when the transmission power starts to exceed the corrected transmission power (calculated in 2.) according to the motor rpm.
4. When the shaft diameter is within the range of the selected roller chain coupling shaft diameter, select the coupling. When the shaft diameter exceeds the maximum shaft diameter of the roller chain coupling, select a one size larger coupling.
   A table of ANSI key slot dimensions is shown on the following page.

2. Selection when connected with an electric motor directly

Low voltage three-phase squirrel-cage induction motor (ANSI standard)			Roller chain coupling No.
Output (kW)		Shaft dia. (mm)	
4 poles	6 poles	E type	
0.4	—	14	**DID C-4012**
0.75	0.4	19	
1.5	0.75	24	**DID C-4016**
2.2	1.5	28	
3.7	2.2	28	
5.5	3.7	38	**DID C-5016**
7.5	5.5	38	
11	7.5	42	**DID C-5018**
—	11	42	

Note: 1. Drive performance selecting method to be applied when the output of motor exceeds 15 kW.
2. Table of dimensions of roller chain coupling is applied when the shaft diameter of motor is not given in the table above.

Drive performance (kW ratings)

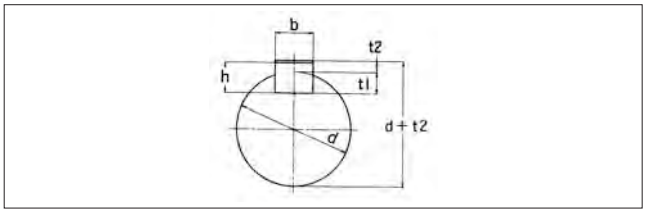
Unit (kW)

Roller chain coupling No.	Max. allowable torque under 50 r/min		Number of revolution (r/min)																								
	kN·m	kgf·m	1	5	10	25	50	100	200	300	400	500	600	800	1000	1200	1500	1800	2000	2500	3000	3600	4000	4800	5200	6000
DID C-4012	0.249	25.4	0.03	0.13	0.26	0.65	1.31	2.00	3.11	4.06	4.91	5.72	6.48	7.94	9.33	10.6	12.6	14.5	15.7	18.9	21.9	25.6	28.1	33.0		
DID C-4014	0.329	33.6	0.03	0.17	0.35	0.86	1.73	2.65	4.12	5.37	6.50	7.56	8.58	10.5	12.3	14.1	16.7	19.2	20.8	25.0	29.0	33.9	37.1	43.6		
DID C-4016	0.419	42.8	0.04	0.22	0.44	1.10	2.20	3.38	5.25	6.84	8.28	9.64	10.9	13.3	15.7	17.9	21.2	24.5	26.6	31.8	37.0	43.2	47.3	55.6		
DID C-5014	0.620	63.3	0.07	0.33	0.65	1.63	3.25	4.99	7.75	10.1	12.2	14.2	16.1	19.7	23.2	26.5	31.4	36.1	39.3	47.0	54.7	63.8				
DID C-5016	0.791	80.7	0.08	0.41	0.83	2.07	4.14	6.35	9.88	12.8	15.5	18.1	20.5	25.1	29.5	33.8	40.0	46.1	50.0	59.9	69.7	81.3				
DID C-5018	0.979	99.9	0.10	0.51	1.03	2.57	5.13	7.87	12.2	15.9	19.3	22.4	25.4	31.1	36.6	41.8	49.5	57.0	62.0	74.2	86.3					
DID C-6018	1.81	185	0.19	0.95	1.91	4.77	9.54	14.6	22.7	29.6	35.8	41.7	47.3	57.9	68.1	77.8	92.1	106	115	138						
DID C-6022	2.61	267	0.27	1.37	2.74	6.86	13.7	21.0	32.7	42.6	51.6	60.0	68.1	83.4	97.9	112	132	152	165	198						
DID C-8018	3.92	400	0.41	2.06	4.11	10.2	20.6	31.5	49.0	63.8	77.3	89.9	102	124	146	167	198	228	248							
DID C-8022	5.64	576	0.59	2.96	5.91	14.8	29.6	45.3	70.4	91.8	111	129	146	179	211	241	285	329	357							
DID C-10020	8.40	857	0.88	4.40	8.80	22.0	44.0	67.4	104	136	165	192	218	267	314	359	425	489								
DID C-12018	12.7	1,300	1.33	6.67	13.3	33.4	66.7	102	159	207	251	292	331	405	476	544	644									
DID C-12022	18.3	1,870	1.92	9.60	19.2	48.0	96.0	147	228	298	361	420	476	583	685	783										
DID C-16018	26.4	2,700	2.78	13.9	27.8	69.5	139	213	331	431	523	608	690	845	992											
DID C-16022	38.1	3,890	4.00	20.0	40.0	100	200	306	476	621	752	875	992	1210	1420											
DID C-20018	54.1	5,520	5.67	28.3	56.7	142	283	434	675	880	1060	1240	1400	1720												
DID C-20022	77.8	7,940	8.15	40.8	81.5	204	408	625	971	1260	1530	1780	2020													
DID C-24022	137	14,000	14.4	72.2	144	361	722	1100	1720	2240	2710	3160	3580													
DID C-24026	186	19,000	19.5	97.7	195	489	977	1490	2320	3030	3670	4270														
Type of lubrication			A		B			C																		

Note: Please refer to P133 for type of lubrication.

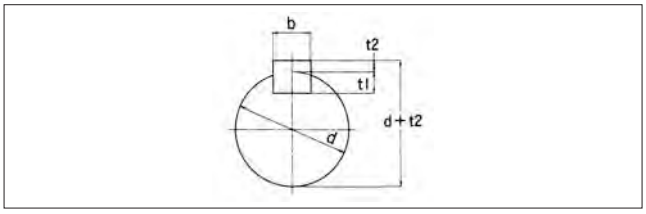
3. Dimensions of ANSI key slot

New ANSI key slot (ANSI 1301-1976)



Shaft dia. d		Dimension of key 幅×高 b×h	Depth of key slot		
			Shaft t1	Hub d+t2	
				Parallel key	Sloped key
Over 6	8 or less	2×2	1.2	d+ 1.0	d+ 0.5
8 〃	10 〃	3×3	1.8	d+ 1.4	d+ 0.9
10 〃	12 〃	4×4	2.5	d+ 1.8	d+ 1.2
12 〃	17 〃	5×5	3.0	d+ 2.3	d+ 1.7
17 〃	22 〃	6×6	3.5	d+ 2.8	d+ 2.2
20 〃	25 〃	(7×7)	4.0	d+ 3.0	d+ 3.0
22 〃	30 〃	8×7	4.0	d+ 3.3	d+ 2.4
30 〃	38 〃	10× 8	5.0	d+ 3.3	d+ 2.4
38 〃	44 〃	12× 8	5.0	d+ 3.3	d+ 2.4
44 〃	50 〃	14× 9	5.5	d+ 3.8	d+ 2.9
50 〃	55 〃	(15×10)	5.0	d+ 5.0	d+ 5.0
50 〃	58 〃	16×10	6.0	d+ 4.3	d+ 3.4
58 〃	65 〃	18×11	7.0	d+ 4.4	d+ 3.4
65 〃	75 〃	20×12	7.5	d+ 4.9	d+ 3.9
75 〃	85 〃	22×14	9.0	d+ 5.4	d+ 4.4
80 〃	90 〃	(24×16)	8.0	d+ 8.0	d+ 8.0
85 〃	95 〃	25×14	9.0	d+ 5.4	d+ 4.4
95 〃	110 〃	28×16	10.0	d+ 6.4	d+ 5.4
110 〃	130 〃	32×18	11.0	d+ 7.4	d+ 6.4
125 〃	140 〃	(35×22)	11.0	d+11.0	d+11.0
130 〃	150 〃	36×20	12.0	d+ 8.4	d+ 7.1
140 〃	160 〃	(38×24)	12.0	d+12.0	d+12.0
150 〃	170 〃	40×22	13.0	d+ 9.4	d+ 8.1
160 〃	180 〃	(42×26)	13.0	d+13.0	d+13.0
170 〃	200 〃	45×25	15.0	d+10.4	d+ 9.1
200 〃	230 〃	50×28	17.0	d+11.4	d+10.1

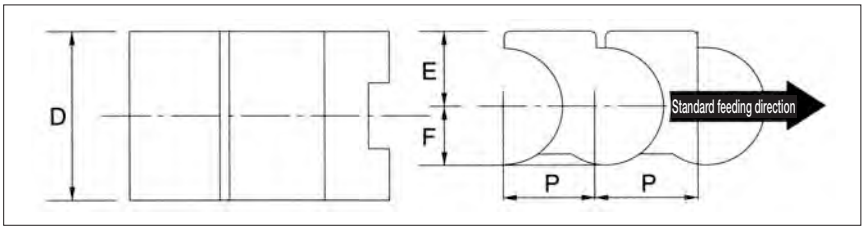
ANSI parallel, sloped key slot (ANSI B 1301-1959)

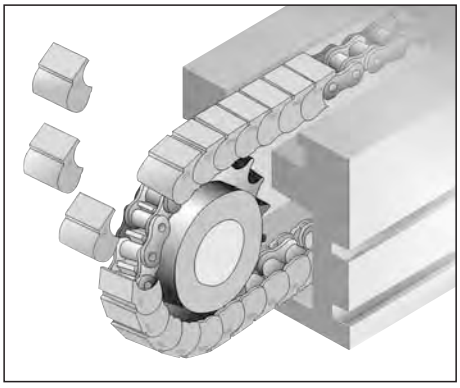


Shaft dia. d		Dimension of key 幅×高 b×h (t2+t1)	Depth of key slot	
			Shaft t1	Hub d+t2
10 or more	13 or less	4× 4	2.5	d+ 1.5
Over 13	20 〃	5× 5	3.0	d+ 2.0
20 〃	30 〃	7× 7	4.0	d+ 3.0
30 〃	40 〃	10× 8	4.5	d+ 3.5
40 〃	50 〃	12× 8	4.5	d+ 3.5
50 〃	60 〃	15×10	5	d+ 5
60 〃	70 〃	18×12	6	d+ 6
70 〃	80 〃	20×13	7	d+ 6
80 〃	95 〃	24×16	8	d+ 8
95 〃	110 〃	28×18	9	d+ 9
110 〃	125 〃	32×20	10	d+10
125 〃	140 〃	35×22	11	d+11
140 〃	160 〃	38×24	12	d+12
160 〃	180 〃	42×26	13	d+13
180 〃	200 〃	45×28	14	d+14
200 〃	224 〃	50×31.5	16	d+15.5
224 〃	250 〃	56×35.5	18	d+17.5

DID C-Top (Chain Cover) PAT.

DID C-Top is a plastic cover for chains that can be easily attached. It has sufficient load strength for chains conveying goods. Unlike conventional plastic chains, it can be used under high tension as stainless steel chains. It is an ideal solution for the use that requires the strength of steel chains free from concerns of damaging, soiling, and jamming of products. It also prevents operators from being caught by the chains. It can also be used as the cover for chains used for elevating devices such as multilevel parking machines.





Note: Stock product

Dimensions

Unit (mm)

Cover No.	Dimension (mm)				Weight (g/link)
	P	D	E	F	※A, B
DID CT-40	12.70	27	10	7.6	4.5
DID CT-50	15.88	32	12	9.5	7.6
DID CT-60	19.05	37	14	11.2	11.5

●Material: POM ●200/package

Live load

DID CT-40	6kg/pitch
DID CT-50	8kg/pitch
DID CT-60	10kg/pitch

Applicable chains

Can be attached to chains corresponding to ANSI #40, 50, 60.

Sprocket teeth number

Use sprockets with 12 or more teeth.
※Check the outer diameter of the hub.

Color

The standard color for this product is blue gray. Other colors can be provided depending on the quantity. Consult us.

DID Chain Lube (420 ml)/ DID HI-PWR Lube (330 ml)

Chain Lube is a spray type lubricant that was developed specifically for chains. It has outstanding features that lengthens the chain life preventing it from wearing and maximizes the chain's transmission efficiency.

Applications

- Roller Chains for Power Transmissions
- O-ring chains
- Leaf chains
- General conveyor chains
- Motorcycle chains
- Bicycle chains
- Sprockets

Features

- Good adhesion and less splatter.
- Good lubricity to enhance wear resistance.
- Good penetration.
- High corrosion prevention effect.
- Good water resistance and unlikely to be washed away by water.
- Excellent heat resistance.
- Does not impair the O-rings.

- Set number: Chain Lubes: 24/case, HI-PWR Lubes: 48/case
- Stock product

Chain lube
(Mainly for drive use)

HI-PWR lube
(Mainly for conveyor use)

Chain Wear-elongation Check Gage

This gage checks the wear-elongation of chains.

- Check the chain elongation at a portion which is most frequently engaged with the sprockets (portion most likely to be worn).
- When the center of the pin of the chain to be measured reaches the arrow point, it means that the chain has been critically elongated. In this case, replace the chain.

※Use the gage to check the wear elongation of your chain.

Note: Stock product

General terms for sprockets

Nominal number of sprockets

The nominal number of a sprocket is the same as the nominal number of the corresponding chain. For example, Chains such as DID50, DID50HK, and DID 50LD can be engaged with a sprocket DID50. It is followed by symbols and characters indicating the number of chain strands, the number of sprocket teeth, hub type, tooth head hardening, etc.

DID80-2-B-21NT - Induction hardened tooth heads

- DID80-2: Sprocket for DID80 duplex chain
- B: Hub type
- 21: 21 teeth

Diameter of prepared hole and shaft hole finishing

A standard sprocket for a single strand or double strand chain has a shaft hole prepared at a diameter stated in the table of dimensions. When you finish the shaft hole, machine it in reference to the outer diameter or root diameter. For reference, the table of ANSI key slot dimensions is shown on P113.

Hardening of tooth heads

The teeth of a sprocket must be tough and wear resistant as they are impacted when engaged with the rollers of the chain and worn by sliding with the rollers. When severe wear and large shocks are anticipated, sprocket made of carbon steel or cast steel should be used and high-frequency hardening should be conducted.
The standard sprockets DID40 to DID120 with a hub on only one side for single and double strand chains are induction-hardened even if the number of teeth is small. Whether the product is induction hardened or not is shown in the tables of dimensions of respective sprockets for your reference. Furthermore, in the following cases, induction-harden the teeth of the sprocket.

- The small sprocket has 20 or less teeth and is used at 1/6 or more of the maximum speed stated in the table of maximum kilowatt ratings.
- The small sprocket is used at a change gear ratio of 4:1 or more.
- The small sprocket is used for a low speed large load transmission as in cases of selection based on the "Low-speed selection".
- Sprockets are used in circumstances where the teeth are heavily worn.
- Sprockets are used under conditions where there are frequent starts and stops or sudden regular or reverse rotations.

General cautions

For selecting the number of teeth and speed ration of the sprocket, see "How to select proper chain" (P120~123).
For cautions for installing a sprocket on a shaft and replacement timing, see "Installation adjustment maintenance" (P127~137).

Types, construction and materials

Type	Construction		Material
Flat plane (**A** type)		Without hub. Standard specification does not include hardening of tooth heads.	Rolled steel for general structural purposes
Hub on one side only (**B**, **BW** type)	 Single  Double  Single  Double	A sprocket with a hub on one side only. The standard hub diameter and hub length are set relative to the shaft diameter range used. Two structural types are available: integral structure (B type) and welded structure (BW type).	Carbon steel for machine structural purposes Cast steel Rolled steel for general structural purposes
Hubs on both sides (**C** type)	 Single  Single  Double  Double	A sprocket with hubs on both sides. The standard hub diameter and hub length are set relative to the shaft diameter range used. Integral structure and welded structure types are available.	Carbon steel for machine structural purpose Cast steel

Dimensions of Sprocket

Sprockets can be classified into standard sprockets, HK sprockets and other sprockets.

1. Standard sprocket

Standard sprockets are ANSI sprockets which can be engaged with standard series roller chains. See P125 for dimensions.
There are two types of tooth profiles: U-tooth and S-tooth. See P119 for tooth profile.

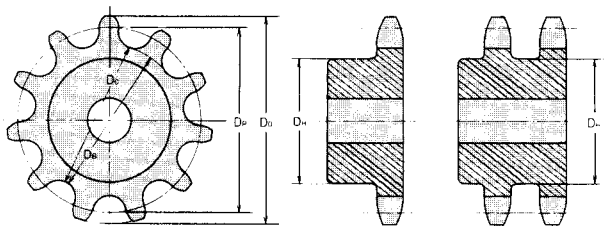
2. HK sprocket

HK sprockets can be engaged with HK series roller chains, and those for single strand chains are identical to standard sprockets. However, sprockets for multiple strand chains are different from standard sprockets in sprocket tooth profile. See the corresponding table in P117.

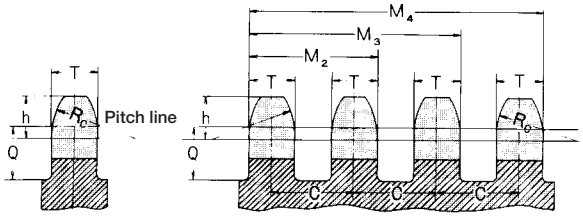
3. Other sprockets

Other sprockets are designed according to the following calculation formulas to suit respective specialty chains. Calculation results of sprocket tooth profiles of main sprockets are shown in the corresponding table on P117.
The sprockets used for the following chains are the same as the standard sprockets in tooth gap form, but different in tooth thickness (sprocket tooth profile).

Sprockets identical in tooth gap form (different in tooth thickness)
DID40=DID415, DID420 DID50=DID520, DID525 DID60=DID630



Sprocket tooth profile



4. Calculation of sprocket dimensions

The dimensions of standard sprockets and other general sprockets are calculated as follows. At first, the diameters of sprockets are calculated from the following calculation formulas. Calculation formulas of tooth gap forms are shown on P118.

Next, sprocket tooth profile (the shape of the tooth depending on its thickness) is calculated from the following calculation formulas. (The values shown in the following pages were calculated by these formulas and regarded as the standard values.)

Calculation formulas of diameters (For simple calculation methods, see P124.)

Item	Formula
Pitch diameter (Dp)	$Dp=\frac{P}{\sin\frac{180^\circ}{N}}$ P: Chain pitch N: Number of sprocket teeth
Standard tip diameter (Do)	$Do=P\left(0.6+\cot\frac{180^\circ}{N}\right)$
Root diameter (D_B)	$D_B=Dp-Dr$ Dr: Roller outer diameter
Caliper diameter (Dc)	Even-numbered teeth $Dc=D_B$ Odd-numbered teeth $Dc=Dp\cos\frac{90^\circ}{N}-Dr$ $=P\frac{1}{2\sin\frac{180^\circ}{2N}}-Dr$
Maximum hub diameter and maximum groove diameter (D_H)	$D_H=P\left(\cot\frac{180^\circ}{N}-1\right)-0.76$

Calculation formulas of sprocket tooth profile

Item	Formula
Tooth width (T)	Single strand $T=0.93W-0.15$ Double or triple strands $T=0.90W-0.15$ Four or more strands $T=0.86W-0.30$ W: Inner width of chain
Transverse pitch (C)	$C=W+$ (4.22×Plate thickness)
Total tooth width (M)	$M=C$ (Number of chain rows−1)$+T$
Tooth face radius (Rc)	$Rc\fallingdotseq1.063P$ (Minimum value)
Center position of Rc (h)	$h\fallingdotseq0.5P$ P: Chain pitch
Depth of face (groove) from pitch line to maximum hub diameter (Q)	$Q\fallingdotseq0.5P$

Standard sprocket tooth profile

Unit (mm)

Sprocket No.	Dimensions of simplex and multiplex sprocket											
	Center position of Rc h	Radius of tooth form (Min.) Rc	Depth of slot Q	Transverse pitch C	Tooth width (Max.) T			Total tooth width				
					Simplex	Duplex/ Triplex	Multiplex	M2	M3	M4	M5	M6
DID 25	3.2	6.8	3.5	6.4	2.8	2.7	2.4	9.1	15.5	21.6	28.0	34.4
DID 35	4.8	10.2	5.2	10.1	4.3	4.1	3.8	14.2	24.3	34.1	44.2	54.3
DID 41	6.4	13.5	7.0	—	5.8	—	—	—	—	—	—	—
DID 40	6.4	13.5	7.0	14.4	7.2	7.0	6.5	21.4	35.8	49.7	64.1	78.5
DID 50	7.9	16.9	8.8	18.1	8.7	8.4	7.9	26.5	44.6	62.2	80.3	98.4
DID 60	9.5	20.3	10.6	22.8	11.7	11.3	10.6	34.1	56.9	79.0	101.8	124.6
DID 80	12.7	27.0	14.1	29.3	14.6	14.1	13.3	43.4	72.7	101.2	130.5	159.8
DID 100	15.9	33.8	17.6	35.8	17.6	17.0	16.1	52.8	88.6	123.5	159.3	195.1
DID 120	19.1	40.5	21.1	45.4	23.5	22.7	21.5	68.1	113.5	157.7	203.1	248.5
DID 140	22.2	47.3	24.7	48.9	23.5	22.7	21.5	71.6	120.5	168.2	217.1	266.0
DID 160	25.4	54.0	28.2	58.5	29.4	28.4	27.0	86.9	145.4	202.5	261.0	319.5
DID 180	28.6	60.8	31.7	65.8	33.1	32.0	—	97.8	163.6	—	—	—
DID 200	31.8	67.5	35.2	71.6	35.3	34.1	32.5	105.7	177.3	247.3	318.9	390.5
DID 240	38.1	81.0	42.3	87.8	44.1	42.7	40.7	130.5	218.3	304.1	391.9	479.7

Other sprocket tooth profile

Unit (mm)

Sprocket No.	Dimensions of simplex and multiplex sprocket							
	Center position of Rc h	Radius of tooth form (Min.) Rc	Depth of slot Q	Transverse pitch C	Tooth width (Max.) T		Total tooth width	
					Simplex	Duplex/ Triplex	M2	M3
DID 15	0.5	×20°	2.6	—	2.0	—	—	—
DID 06B	4.2	9.5	5.0	10.24	5.3	5.2	15.44	25.68
DID 083	6.4	13.5	7.0	—	4.5	—	—	—
DID 415	6.4	13.5	7.0	—	4.3	—	—	—
DID 420	6.4	13.5	7.0	—	5.8	—	—	—
DID 428	6.4	13.5	7.0	—	7.2	—	—	—
DID 520	7.9	16.9	8.8	—	5.8	—	—	—
DID 525	7.9	16.9	8.8	—	7.2	—	—	—
DID 630	9.5	20.3	10.6	—	8.7	—	—	—
DID 635	9.5	20.3	10.6	—	10.1	—	—	—

HK type sprocket tooth profile

Unit (mm)

Sprocket No.	Dimensions of simplex and multiplex sprocket							
	Center position of Rc h	Radius of tooth form (Min.) Rc	Depth of slot Q	Transverse pitch C	Tooth width (Max.) T		Total tooth width	
					Simplex	Duplex/ Triplex	M2	M3
DID 25H	3.2	6.8	3.5	—	2.8	—	—	—
DID 35HK	4.8	10.2	5.2	—	4.3	—	—	—
DID 40HK	6.4	13.5	7.0	—	7.2	—	—	—
DID 50HK	7.9	16.9	8.8	—	8.7	—	—	—
DID 60HK	9.5	20.3	10.6	—	11.7	—	—	—
DID 80HK	12.7	27.0	14.1	32.6	14.6	14.1	46.7	79.3
DID 100HK	15.9	33.8	17.6	39.1	17.6	17.0	56.1	95.2
DID 120HK	19.1	40.5	21.1	48.9	23.5	22.7	71.6	120.5
DID 140HK	22.2	47.3	24.7	52.2	23.5	22.7	74.9	127.1
DID 160HK	25.4	54.0	28.2	61.9	29.4	28.4	90.3	152.2
DID 180HK	28.6	60.8	31.7	69.2	33.1	32.0	101.2	170.4
DID 200HK	31.8	67.5	35.2	78.3	35.3	34.1	112.4	190.7
DID 240HK	38.1	81.0	42.3	101.2	44.1	42.7	143.9	245.1

Calculation formulas for diameters and tooth gap forms

Calculation formulas for diameters

Calculation of pitch diameter, tip diameter and caliper diameter

The basic dimensions of a sprocket suitable for a chain pitch of 1 mm are respectively called pitch diameter factor, tip diameter factor and caliper diameter factor. The respective factors for respective numbers of teeth are listed below. If these factors are multiplied by chain pitch, the basic dimensions of the corresponding sprocket can be obtained.

Example:
In the case of DID80 (25.40 mm pitch) with 35 teeth
Pitch diameter (Dp)
= P×Pitch diameter factor
= 25.40×11.1558≒283.36
Tip diameter (Do)
= P×Pitch diameter factor
= 25.40×11.711≒297
Root diameter (DB)
= Pitch diameter (Dp)−Roller diameter (Dr)
= 283.36−15.88=267.48
Caliper diameter factor (Dc)
= P×Caliper diameter factor−Roller diameter (Dr)
= 25.40×11.1446−15.88≒267.19

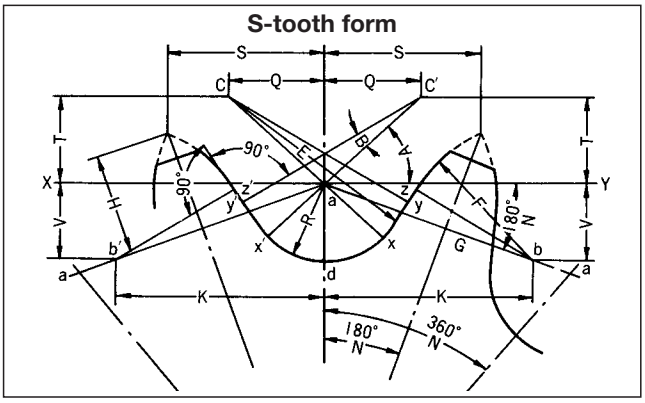
Note: Above sign (≒) means approximate value.

Number of teeth	Pitch dia. factor	Tip dia. factor	Caliper dia. factor	Number of teeth	Pitch dia. factor	Tip dia. factor	Caliper dia. factor	Number of teeth	Pitch dia. factor	Tip dia. factor	Caliper dia. factor	Number of teeth	Pitch dia. factor	Tip dia. factor	Caliper dia. factor
11	3.5495	4.006	3.5133	**39**	12.4275	12.987	12.4174	**67**	21.3346	21.911	21.3287	**95**	30.2449	30.828	30.2408
12	3.8637	4.332	——	**40**	12.7455	13.306	——	**68**	21.6528	22.230	——	**96**	30.5632	31.147	——
13	4.1786	4.657	4.1481	**41**	13.0635	13.625	13.0539	**69**	21.9710	22.548	21.9653	**97**	30.8815	31.465	30.8774
14	4.4940	4.981	——	**42**	13.3815	13.944	——	**70**	22.2892	22.867	——	**98**	31.1997	31.784	——
15	4.8097	5.304	4.7834	**43**	13.6995	14.263	13.6902	**71**	22.6074	23.185	22.6018	**99**	31.5180	32.102	31.5140
16	5.1258	5.627	——	**44**	14.0175	14.582	——	**72**	22.9256	23.504	——	**100**	31.8362	32.421	——
17	5.4422	5.949	5.4190	**45**	14.3356	14.901	14.3269	**73**	23.2438	23.822	23.2384	**101**	32.1545	32.739	32.1506
18	5.7588	6.271	——	**46**	14.6536	15.219	——	**74**	23.5620	24.141	——	**102**	32.4727	33.057	——
19	6.0755	6.593	6.0543	**47**	14.9717	15.538	14.9634	**75**	23.8802	24.459	23.8750	**103**	32.7910	33.376	32.7872
20	6.3925	6.914	——	**48**	15.2898	15.857	——	**76**	24.1984	24.778	——	**104**	33.1093	33.694	——
21	6.7095	7.235	6.6907	**49**	15.6079	16.176	15.5999	**77**	24.5167	25.096	24.5116	**105**	33.4275	34.013	33.4238
22	7.0267	7.555	——	**50**	15.9260	16.495	——	**78**	24.8349	25.415	——	**106**	33.7458	34.331	——
23	7.3439	7.876	7.3268	**51**	16.2441	16.813	16.2364	**79**	25.1531	25.733	25.1481	**107**	34.0641	34.649	34.0604
24	7.6613	8.196	——	**52**	16.5622	17.132	——	**80**	25.4713	26.052	——	**108**	34.3823	34.968	——
25	7.9787	8.516	7.9630	**53**	16.8803	17.451	16.8729	**81**	25.7896	26.370	25.7847	**109**	34.7006	35.286	34.6970
26	8.2962	8.836	——	**54**	17.1984	17.769	——	**82**	26.1078	26.689	——	**110**	35.0188	35.605	——
27	8.6138	9.156	8.5992	**55**	17.5166	18.088	17.5094	**83**	26.4261	27.007	26.4213	**111**	35.3371	35.923	35.3336
28	8.9314	9.475	——	**56**	17.8347	18.407	——	**84**	26.7443	27.326	——	**112**	35.6554	36.241	——
29	9.2491	9.795	9.2355	**57**	18.1529	18.725	18.1460	**85**	27.0625	27.644	27.0580	**113**	35.9437	36.560	35.9702
30	9.5668	10.114	——	**58**	18.4710	19.044	——	**86**	27.3807	27.962	——	**114**	36.2919	36.878	——
31	9.8845	10.434	9.8718	**59**	18.7892	19.363	18.7825	**87**	27.6990	28.281	27.6945	**115**	36.6102	37.197	36.6068
32	10.2023	10.753	——	**60**	19.1073	19.681	——	**88**	28.0172	28.599	——	**116**	36.9285	37.515	——
33	10.5201	11.073	10.5082	**61**	19.4255	20.000	19.4190	**89**	28.3355	28.918	28.3310	**117**	37.2467	37.833	37.2434
34	10.8380	11.392	——	**62**	19.7437	20.318	——	**90**	28.6537	29.236	——	**118**	37.5650	38.152	——
35	11.1558	11.711	11.1446	**63**	20.0618	20.637	20.0556	**91**	28.9720	29.555	28.9676	**119**	37.8833	38.470	37.8800
36	11.4737	12.030	——	**64**	20.3800	20.956	——	**92**	29.2902	29.873	——	**120**	38.2016	38.788	——
37	11.7916	12.349	11.7810	**65**	20.6982	21.274	20.6922	**93**	29.6085	30.192	29.6042				
38	12.1096	12.668	——	**66**	21.0164	21.593	——	**94**	29.9267	30.510	——				

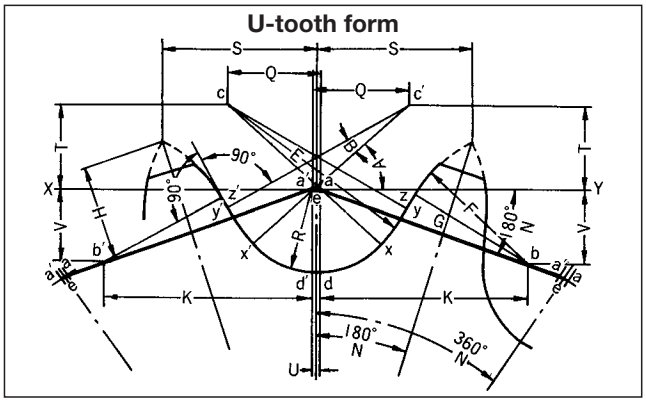
Calculation formulas for tooth gap forms

As the most rational tooth gap forms in which the pressure angle changes in response to the elongation of a smoothly rotated roller chain with the lapse of service time, ANSI specify two types of tooth profiles: U-type and S-type. In general, S-type tooth profiles are adopted in accordance with ANSI, and our standard sprockets also have S-tooth profiles.

S-tooth form

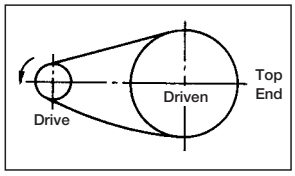


U-tooth form



Item	Formula	Item	Formula
Ds (Tooth arc diameter)	$Ds=2R=1.055Dr+0.076$ Dr: Roller diameter	**G**	$G=ab=1.4Dr$ Point b is on the line drawn from point a on line xy at an angle of 180°/N. (With U-tooth form, aa' is parallel to chordal pitch line e-e.)
R	$R=0.5025Dr+0.038$	**K**	$K=1.4Dr\cos\frac{180^\circ}{N}$
U (Pitch clearance)	$U=0.07\ (P-Dr)\ +0.051$ (S-tooth form: U=0) P: Chain pitch	**V**	$V=1.4Dr\sin\frac{180^\circ}{N}$
A	$A=35^\circ+\frac{60^\circ}{N}$ N: Number of teeth	**F**	$F=Dr\left\{0.8\cos\left(18^\circ-\frac{56^\circ}{N}\right)+1.4\cos\left(17^\circ-\frac{64^\circ}{N}\right)-1.3025\right\}-0.038$
B	$B=18^\circ-\frac{56^\circ}{N}$	**H**	$H=\sqrt{F^2-\left(1.4Dr-\frac{Pt}{2}+\frac{U}{2}\cos\frac{180^\circ}{N}\right)^2}+\frac{U}{2}\sin\frac{180^\circ}{N}$ $Pt=$ Chordal pitch equal to chain pitch $=P\ \left(1+\frac{Ds-Dr}{Dp}\right)$ (S-tooth form:a-a, U-tooth form:e-e)
ac	$ac=0.8Dr$	**S**	$S=\frac{Pt}{2}\cos\frac{180^\circ}{N}+H\sin\frac{180^\circ}{N}$
Q	$Q=0.8Dr\cos\left(35^\circ+\frac{60^\circ}{N}\right)$	Approximate outer diameter of sprocket	Approximate outer diameter of sprocket (at J=0.3p) $=Pt\ \left(0.6+\cot\frac{180^\circ}{N}\right)$
T	$T=0.8Dr\sin\left(35^\circ+\frac{60^\circ}{N}\right)$	Outer diameter of sprocket when sprocket tooth heads are sharp	Outer diameter of sprocket with sharp tooth head (at J=H) $=Pt\cot\frac{180^\circ}{N}+2H$ (In this case, generally this formula is corrected to obtain the outer diameter.)
E	$E=cy=1.3025Dr+0.038$	Maximum pressure angle	Maximum pressure angle $=xab=35^\circ-\frac{120^\circ}{N}$ (Pressure angle in the case of a new chain)
$\overline{xy}$	$\overline{xy}=(2.605Dr+0.076)\sin(9^\circ-\frac{28^\circ}{N})$	Minimum pressure angle	Minimum pressure angle $=xab-B=17^\circ-\frac{64^\circ}{N}$
yz	$yz=Dr\left\{1.4\sin(17^\circ-\frac{64^\circ}{N})-0.8\sin(18^\circ-\frac{56^\circ}{N})\right\}$	Average pressure angle	Average pressure angle $=26^\circ-\frac{92^\circ}{N}$

1. The description in this chapter can be applied when a chain is endlessly engaged for transmission with two sprockets parallel in their shafts and accurate in alignment as illustrated below.



2. Consult us when a chain is to be used for lifting, pulling dollies or being engaged with a pin gear, etc.
3. When there are any regulations or guidelines concerning the selection of chains, select a chain in accordance with such regulations and the maximum kilowatt ratings (Drive performance) table described below, and choose the one with a larger allowance.

How to Select the Proper Chain

The chain can be selected according to the following two methods:
(1) Selection by drive performance
(2) Low-speed selection

The drive performance method considers not only chain tension but also the shock load on the bushings and rollers due to the engagement between the sprockets and the chain, and the wear of pins, bushings and rollers.

The slow-speed method is applied when the chain is operated at a speed of 50 rpm or less. In general, the chain selected by this method is subject to conditions more severe than that selected according to the selection by drive performance. Thus, carefully assess the conditions when selecting with this method.

Selection by drive performance

First, the following information is required.
①Power to be transmitted (kW)
②Speeds of driving shaft and driven shaft (speed ratio) and shaft diameters
③Center distance between driving shaft and driven shaft

(a) Correction of power to be transmitted (kW)

Correction must be made to obtain the actual power to be transmitted as the level of load fluctuates depending on the machine and power source used, affecting the expected service life (for example, 15,000 hours in the case of capacities shown in the table of maximum kilowatt ratings). The service factor shown in Table 1 is an indicator of the load level. The power to be transmitted (kW) is multiplied by the corresponding service factor to obtain a corrected power.

Corrected power (kW) =
Power to be transmitted (kW) × Service factor

Table 1. Service factor

Type of input power / Type of load	Electric motor or turbine	Inner combustion engine	
		With multiple cylinders or hydraulic drive	Without multiple cylinders nor hydraulic drive
Smooth (agitator, centrifugal blower, feeder, textile machines, etc.)	1.0	1.0	1.2
Moderate shock (general work machines, compressors, machining tools, dryers, etc.)	1.3	1.2	1.4
Large shock (presses, civil engineering or mining machines, vibration machines, machines with reverse impact, etc.)	1.5	1.4	1.7

(b) Selection of chain size and the number of teeth of small sprocket

Use of simple selection chart
The number of teeth of small sprocket and the chain to be used are tentatively decided with reference to the simple selection chart (P122~P123) and the corrected power (P120~P121).

Using the table of maximum kilowatt ratings
If the results tentatively decided as described above are close to the design values, the number of teeth of small sprocket can be finalized with reference to the table of maximum kilowatt ratings. The maximum kilowatt ratings are established anticipating that an endless chain with 100 links has a life of 15,000 hours under the following conditions. (That is, the breaking of the chain and the loss of bushings and rollers do not occur at a wear elongation of 2 percent or less.)
①Operation is carried out in ambient temperature (-10°C~ +60°C) free from dust and dust-containing liquid.
②There is no corrosive gas, or humidity, etc. to adversely affect the chain.
③Proper lubrication is maintained.
④The chain is used under conditions of a low start-stop frequency and a fairly stable load.

In the case of multiplex chain

Select a multiplex chain when the capacity of a simplex chain is insufficient. The maximum kilowatt rating of a multiplex chain cannot be obtained by multiplying the maximum kilowatt rating of a simplex chain by the number of multiplex chain since the loads are not evenly distributed between the strands. For the correction factor in this case, see the multiplex chain factor table. Our standard HI-PWR-S Roller Chains and HI-PWR-SHK Roller Chains are available up to triplex.

Table 2. Multiplex chain factor

Number of roller chain stand	Multiplex chain factor
2	1.7
3	2.5
4	3.3
5	3.9

kW rating of multiplex chain =
kW rating of simplex chain × multiplex chain factor

Remarks for determining the number of teeth of small sprocket

When a chain of the minimum chain pitch required maximum kilowatt rating is selected, relatively silent and smooth transmission can be achieved, and the equipment can be compact.

However, considering smooth chain transmission, the wear of the chain and sprockets, etc., it is desirable that the sprocket have 15 or more teeth, and preferably an odd number. Avoid 12 teeth, 14 teeth and 16 teeth. When the sprocket has 12 or less teeth, the chain and sprocket heavily vibrate and are extremely worn, and transmission is not smooth. Likewise, avoid a small number of teeth as much as possible except in the case of low speed without shock.

Shaft diameter

After the number of teeth of small sprocket is determined, multiply it by the speed ratio, and confirm whether the required shaft bore can be secured in reference to the maximum shaft bore in the table of sprocket dimensions. If the required shaft bore is larger than the maximum shaft bore, increase the number of teeth, or choose a one size larger chain.

(c) Selection of the number of teeth of large sprocket

When the number of teeth of small sprocket is determined, multiply it by the speed ratio to determine the number of teeth of large sprocket.

In general, increasing the sprocket teeth number makes the chain bending angle smaller, which increases durability and enhances transmission efficiency. However, if the number of teeth is too large, slight elongation tends to cause the chain to ride over the sprocket, so keep the maximum number of teeth at 114 or less.

Speed ratio

A speed ratio refers to the ratio of the speed of the driving shaft to the speed of the driven shaft, and usually a speed ratio of 7:1 or less is safe. If the speed ratio is larger than this ratio, the take-up angle of the chain on the small sprocket decreases, and chain jumping or abnormal wear of sprocket are likely to occur. If a large speed ratio is necessary, two-step speed change may be necessary.

Low-speed selection

The low-speed selection method is used when the chain operation speed is 50 m/min or less and there is no worry of wear elongation and shock fracture of rollers and bushings.

In low-speed selection, the chain is selected in reference to the tensile fatigue strength of the chain. Therefore, a chain selected according to this method will be subject to more severe conditions than one selected according to the selection by drive performance method. When the Low-speed selection method is used, special care must be exercised. The Low-speed selection method cannot be used for the connecting links and offset links.

(a) How to obtain corrected chain tension

Corrected chain tension＝
(Maximum tension acting on chain kN (kgf)) × (service factor)
See Table 1 on the previous page. ←

To calculate the corrected chain tension, identify the exact maximum tension acting on the chain. The shock is considered to some extent in the service factor, but it is not absolute. Also consider the increase of tension by the inertia of equipment caused by starting and stopping.

(b) Comparison with the maximum allowable tension of chain

Using the maximum allowable tension in the table of chain dimensions, sprocket tooth factor and rotating factor of the small sprocket listed below, obtain the corrected maximum allowable tension from the following formula:

Corrected maximum allowable tension＝
(Maximum allowable tension) X (Sprocket tooth factor) X (Rotating factor)
See the table of chain dimensions　See Table 1.　See Table 2.

If the corrected maximum allowable tension is larger than the corrected chain tension, you can select the chain.

For the number of teeth and speed of small sprocket not stated in Table 1 or 2, obtain the sprocket tooth factor and rotating factor by linear interpolation.

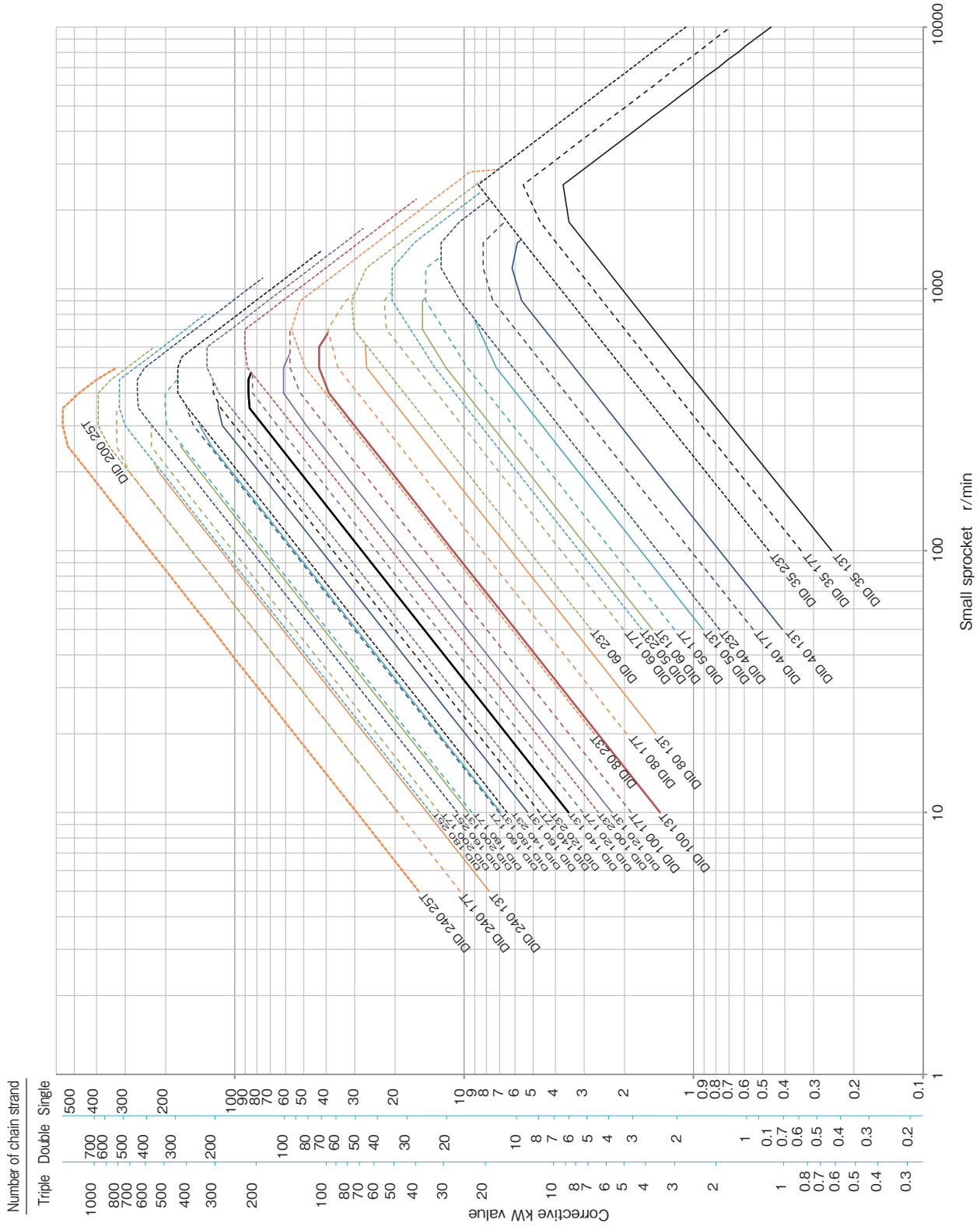
Table 1. Sprocket tooth factor

Number of tooth on small sprocket	Sprocket tooth factor C_{NT}
9 枚	0.903
11 枚	0.923
13 枚	0.939
15 枚	0.952
20 枚	0.978
23 枚	0.990
26T or larger	1.00

Table 2. Rotating factor

Small sprocket rpm	Rotating factor C_V
10 rpm or less	1.00
20 r/min	0.933
30 r/min	0.896
40 r/min	0.871
50 r/min	0.851
100 r/min	0.794
200 r/min	0.741

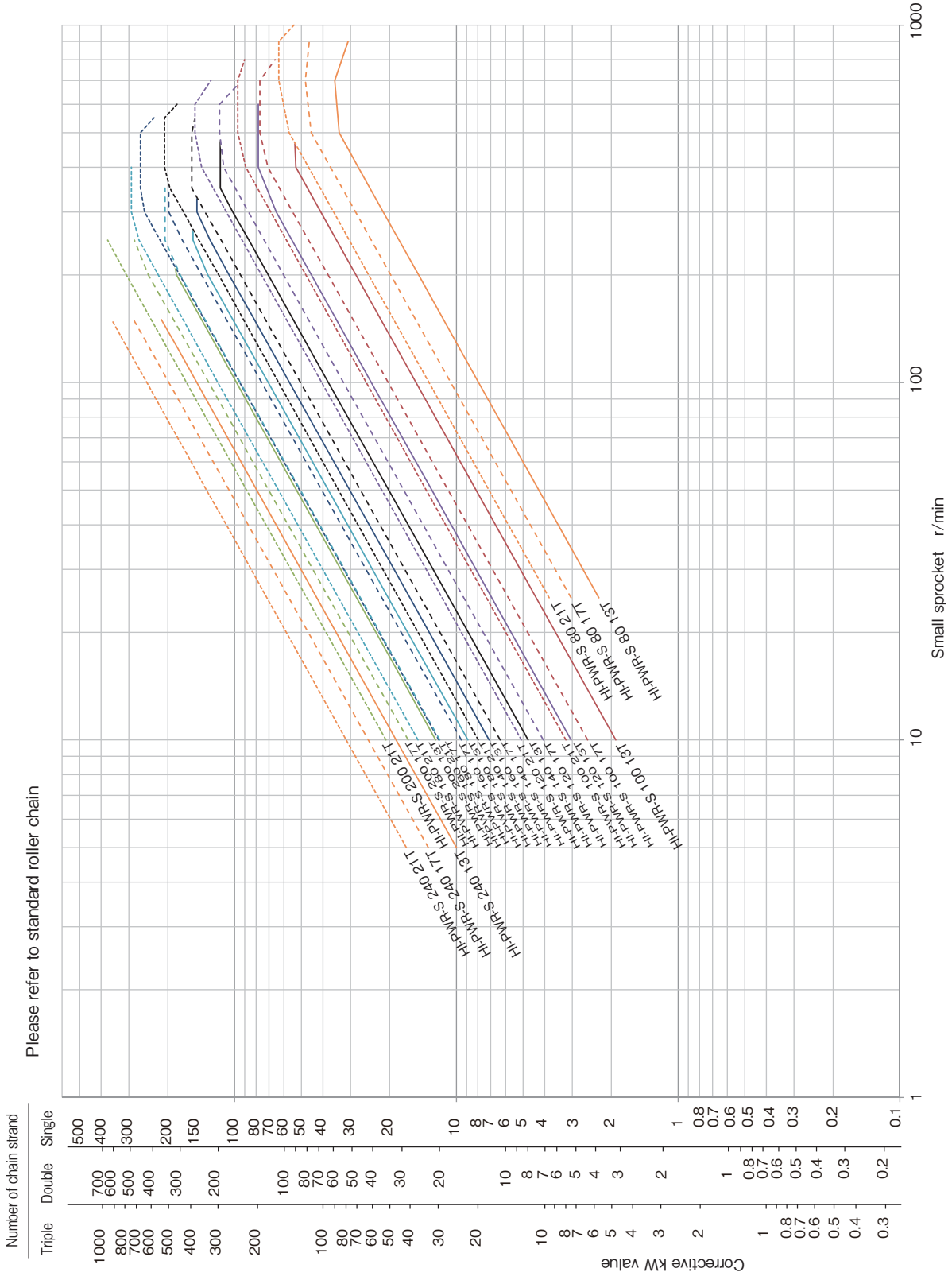
Chart for chain selection
DID standard roller chain



(How to select a chain)

In the case that the corrective kW is 10kW and sprocket rpm is 100 rpm:
the intersection of the corrective kW value (vertical axis) and the number of small sprocket tooth (horizontal axis) shows "DID100" for roller chain size and 17 for the number of the small sprocket teeth.

Chart for chain selection
DID HI-PWR-S roller chain



Please refer to P99 for how to use this chart.

Chain Selection by Temperature

This is a chain selection method taking deterioration of strength in relation to temperature into consideration. Please use appropriate lubricant for the temperature at which the chain is to be used. Consult us for details.

1. Effects of temperature on the chains

1.1 Effects of high temperature
1) Increased wear caused by decrease in hardness
2) Increased elongation caused by softening
3) Lubricant degradation, defective flexion caused by carbonization
4) Increase in wear and defective flexion caused by development of scales

1.2 Effects of low temperature
1) Decrease in resistance to shock caused by low temperature brittleness.
2) Defective flexion caused by lubrication oil coagulation.
3) Defective flexion caused by adhesion of frost and ice.
4) Rusting caused by water-drops.

2. Kilowatt ratings according to temperature

Temperature	Roller Chain		Low Temperature resistance (TK)
	DID60 or smaller	DID80 or larger	
250°C and above	NA	NA	NA
200°C to less than 250°C	Catalog value×0.50	Catalog value×0.50	NA
150°C to less than 200°C	Catalog value×0.75	Catalog value×0.75	NA
80°C to less than 150°C	Catalog value	Catalog value	Catalog value (Max. allowable load at normal temperature)
-10°C to less than 80°C	Catalog value	Catalog value	Catalog value (Max. allowable load at normal temperature)
-30°C to less than -10°C	Catalog value×0.33	Catalog value×0.50	Catalog value (Max. allowable load at normal temperature×0.70)
-40°C to less than -30°C	Catalog value×0.25	Catalog value×0.33	Catalog value (Max. allowable load at normal temperature×0.58)
-50°C to less than -40°C	NA	Catalog value×0.25	Catalog value×0.46 (Max. allowable load at normal temperature×0.46)
-60°C to less than -50°C	NA	NA	Catalog value×0.41 (Max. allowable load at normal temperature×0.41)
-60°C or less	NA	NA	NA

※Please be aware that ambient temperature and the temperature of chains may differ.

3. Chain Selection according to Temperature
See slow-speed selection (p121) for use at extreme temperatures other than normal temperature.
(Chain speed=50m/min or less)

4. Use of Stainless Steel Chains (SS, SSK) at high temperatures
Stainless steel chains (SS, SSK) can be used up to 400°C, but be aware that the ambient temperature and the chain temperature may differ. The strength of the chain decreases as the temperature rises. Especially at high temperatures, the higher the temperature rises, the chain will rupture by a lower load (creep rupture).
In addition, defective flexion or defective chain revolution occurs due to heat expansion. In order to prevent such problems, adjust the clearance between chains. Consult us when using chains at 400°C or higher.
Chains cannot be used at 700°C or higher.

Chain Length and Sprocket Center Distance

Required length of roller chain

Using the center distance between the sprocket shafts and the number of teeth of both sprockets, the chain length (pitch number) can be obtained from the following formula:

$$Lp=\frac{N_1+N_2}{2}+2Cp+\frac{\{(N_2-N_1)/2\pi\}^2}{Cp}$$

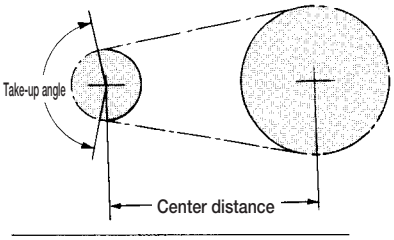
Lp : Overall length of chain (Pitch number)
N_1 : Number of teeth of small sprocket
N_2 : Number of teeth of large sprocket
Cp: Center distance between two sprocket shafts (Chain pitch)

$\{(N_2-N_1)/2\pi\}^2$ can be obtained from the following table.

The Lp (pitch number) obtained from the above formula hardly becomes an integer, and usually includes a decimal fraction. Round up the decimal to an integer.
Use an offset link if the number is odd, but select an even number as much as possible.
When Lp is determined, re-calculate the center distance between the driving shaft and driven shaft as described in the following paragraph. If the sprocket center distance cannot be altered, tighten the chain using an idler or chain tightener shown on P.126.

Center distance between driving and driven shafts

Obviously, the center distance between the driving and driven shafts must be more than the sum of the radius of both sprockets, but in general, a proper sprocket center distance is considered to be 30 to 50 times the chain pitch. However, if the load is pulsating, 20 times or less is proper.
The take-up angle between the small sprocket and the chain must be 120° or more. If the roller chain length Lp is given, the center distance between the sprockets can be obtained from the following formula:



$$C_p=\frac{1}{4}\left\{L_p-\frac{N_1+N_2}{2}+\sqrt{\left(L_p-\frac{N_1+N_2}{2}\right)^2-\frac{2}{\pi^2}(N_2-N_1)^2}\right\}$$

C_p : Sprocket center distance (pitch number)
L_p : Overall length of chain (pitch number)
N_1 : Number of teeth of small sprocket
N_2 : Number of teeth of large sprocket

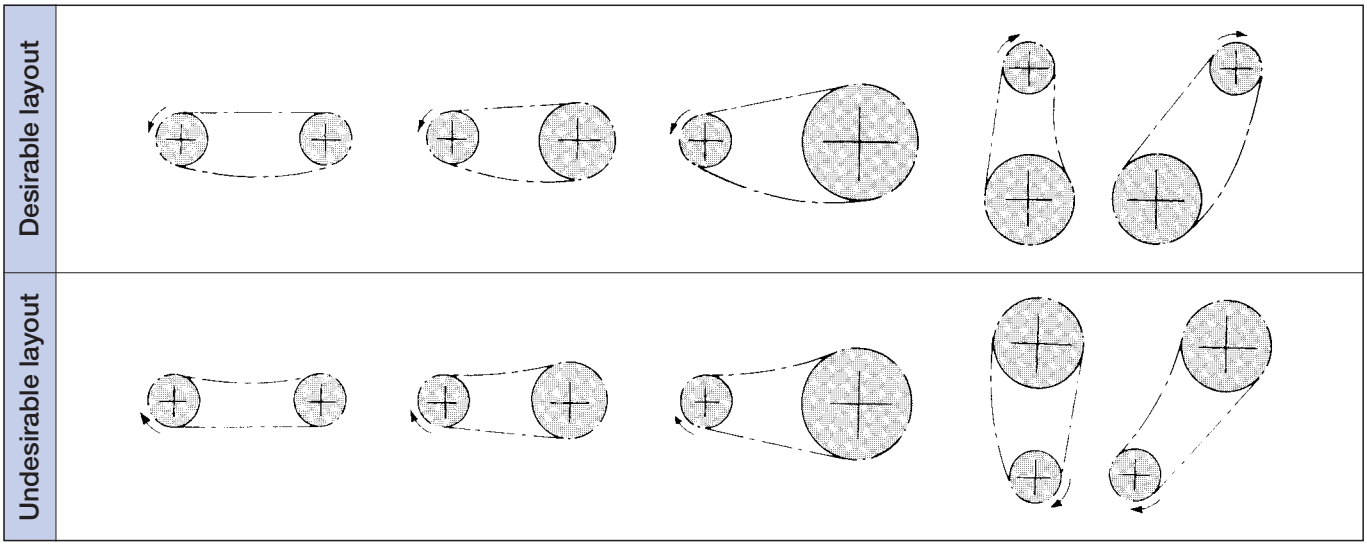
$\frac{2}{\pi^2}(N_2-N_1)^2$ can be obtained from the following table.

N_2-N_1	$\{(N_2-N_1)/2\pi\}^2$	N_2-N_1	$\{(N_2-N_1)/2\pi\}^2$	N_2-N_1	$\{(N_2-N_1)/2\pi\}^2$
1	0.03	35	31.03	69	120.60
2	0.10	36	32.83	70	124.12
3	0.23	37	34.68	71	127.69
4	0.41	38	36.58	72	131.31
5	0.63	39	38.53	73	134.99
6	0.91	40	40.53	74	138.71
7	1.24	41	42.58	75	142.48
8	1.62	42	44.68	76	146.31
9	2.05	43	46.84	77	150.18
10	2.53	44	49.04	78	154.11
11	3.07	45	51.29	79	158.09
12	3.65	46	53.60	80	162.12
13	4.28	47	55.96	81	166.19
14	4.97	48	58.36	82	170.32
15	5.70	49	60.82	83	174.50
16	6.49	50	63.33	84	178.73
17	7.32	51	65.88	85	183.01
18	8.21	52	68.49	86	187.34
19	9.14	53	71.15	87	191.72
20	10.13	54	73.86	88	196.16
21	11.17	55	76.62	89	200.64
22	12.26	56	79.44	90	205.17
23	13.40	57	82.30	91	209.76
24	14.59	58	85.21	92	214.40
25	15.83	59	88.18	93	219.08
26	17.12	60	91.19	94	223.82
27	18.47	61	94.25	95	228.61
28	19.86	62	97.37	96	233.44
29	21.30	63	100.54	97	238.33
30	22.80	64	103.75	98	243.27
31	24.34	65	107.02	99	248.26
32	25.94	66	110.34	100	253.30
33	27.59	67	113.71		
34	29.28	68	117.13		

N_2-N_1	$\frac{2}{\pi^2}(N_2-N_1)^2$	N_2-N_1	$\frac{2}{\pi^2}(N_2-N_1)^2$	N_2-N_1	$\frac{2}{\pi^2}(N_2-N_1)^2$
1	0.20	35	248.24	69	964.78
2	0.81	36	262.63	70	992.95
3	1.82	37	277.42	71	1021.52
4	3.24	38	292.62	72	1050.50
5	5.07	39	308.22	73	1079.88
6	7.30	40	324.23	74	1109.67
7	9.93	41	340.64	75	1139.87
8	12.97	42	357.46	76	1170.46
9	16.41	43	374.69	77	1201.47
10	20.26	44	392.32	78	1232.88
11	24.52	45	410.35	79	1264.69
12	29.18	46	428.79	80	1296.91
13	34.25	47	447.64	81	1329.54
14	39.72	48	466.89	82	1362.57
15	45.59	49	486.55	83	1396.01
16	51.88	50	506.61	84	1429.85
17	58.56	51	527.07	85	1464.09
18	65.66	52	547.95	86	1498.74
19	73.15	53	569.22	87	1533.80
20	81.06	54	590.91	88	1569.27
21	89.37	55	612.99	89	1605.13
22	98.08	56	635.49	90	1641.41
23	107.20	57	658.39	91	1678.08
24	116.72	58	681.69	92	1715.17
25	126.65	59	705.40	93	1752.66
26	136.99	60	729.51	94	1790.55
27	147.73	61	754.03	95	1828.85
28	158.87	62	778.96	96	1867.55
29	170.42	63	804.29	97	1906.66
30	182.38	64	830.02	98	1946.18
31	194.74	65	856.17	99	1986.10
32	207.51	66	882.71	100	2026.43
33	220.68	67	909.66		
34	234.26	68	937.02		

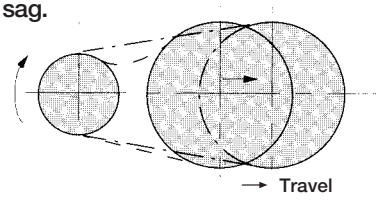
Layout

When a roller chain is used, shaft positions can be arbitrarily determined. However, in principle, follow the illustration shown below. That is, if the chain is tensioned horizontally, keep the top tensioned. Avoid vertical transmission whenever possible. In an inevitable case, place the large sprocket at the bottom regardless of the direction of rotation.

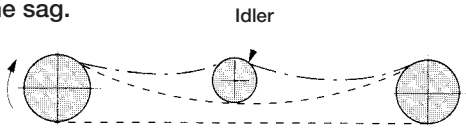


When the chain layout is undesirable:

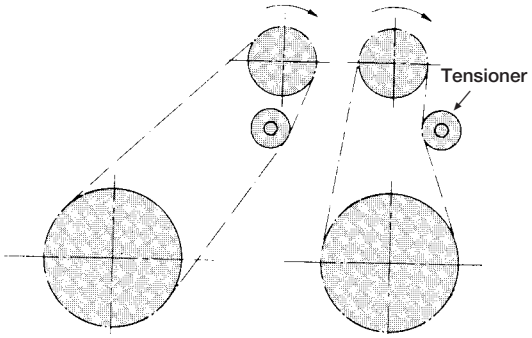
- When the top is sagging and the sprocket center distance is short:
  As illustrated below, adjust the sprocket center distance shaft to eliminate the sag.



- When the top is sagging and the sprocket center distance is long:
  As illustrated below, install an idler from inside to eliminate the sag.



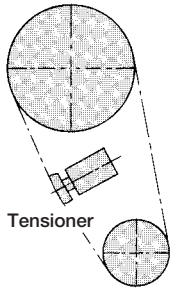
- When the chain is vertical or inclined:
  As illustrated below, eliminate the extra sag by a tensioner. In this case, a tensioner that automatically eliminates the sag gives better results.

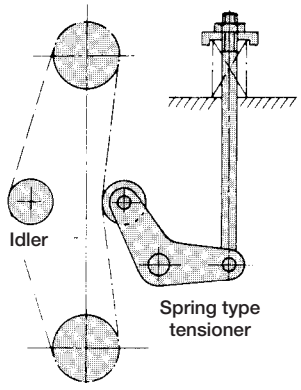


When a pulsating load acts in high speed operation:

The chain's vibration and the load impact frequency or chordal action may synchronize to amplify vibration on the chain. Since vibration affects the chain, take countermeasures to prevent vibration in the following measures:

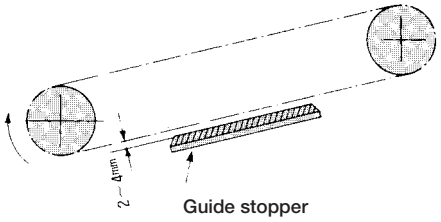
- Change the chain speed.
- Increase chain tension. However, note that over-tensioning can shorten the life of the chain.
- Use an idler or tensioner to divide the span.





- Install a guide stopper to prevent vibration.

Note:
Chordal action refers to the vertical motion of chain caused when it is engaged with sprockets.

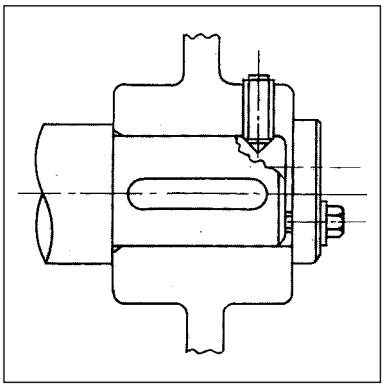


Installation

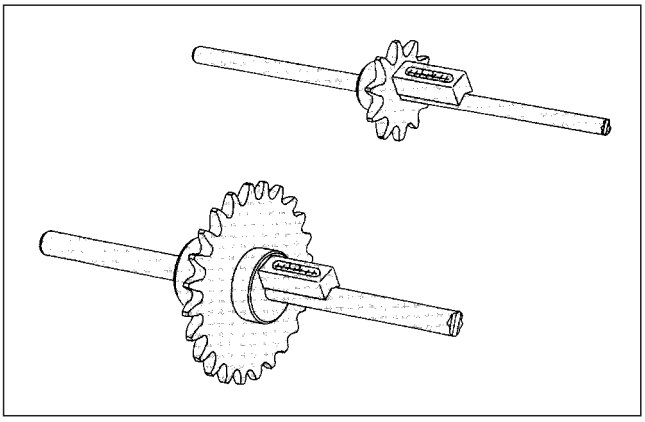
Installation of sprockets

For smooth transmission and extended life of the roller chain, it is important to correctly install proper sprockets. Use the following installation procedure.

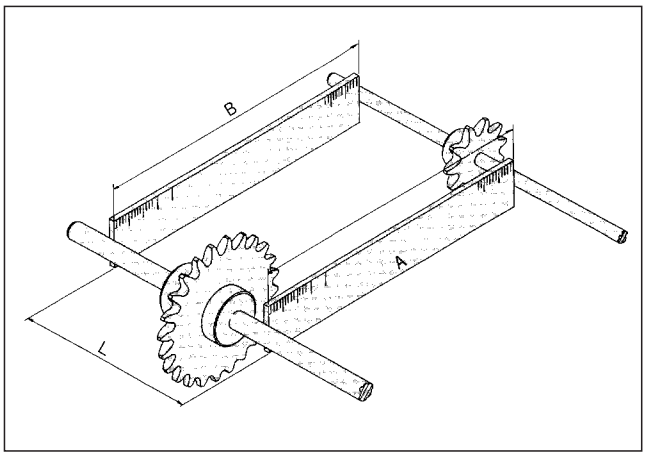
1. Properly install a sprocket on a shaft, and fix it with a key to prevent it from rattling during operation. Also, place the sprocket as close as possible to the bearing.



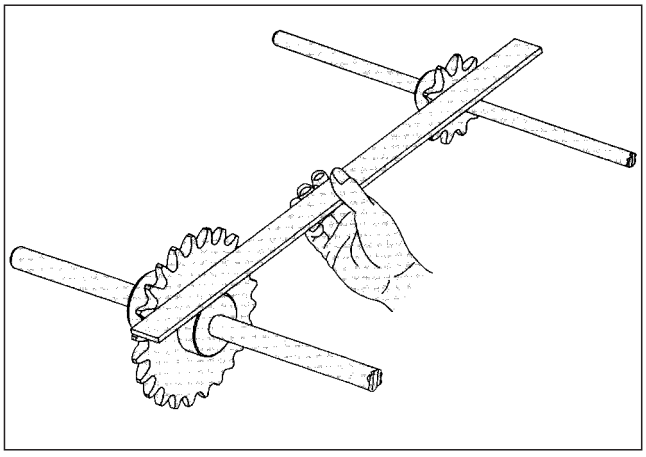
2. Adjust the shaft levelness to ±1/300 or less using a level.



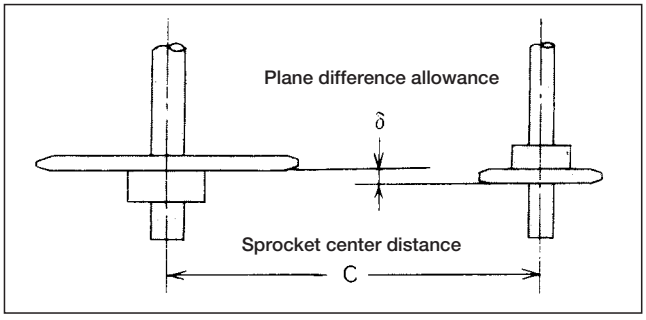
3. Adjust the shaft parallelism $\left(\frac{A-B}{L}\right)$ to ±1/300 or less.



4. Adjust the level of driving and driven sprockets using a linear scale. (Also adjust the idler and the sprockets, or the tensioner and the sprockets in the same way.)



Keep the allowance δ in the range specified below.



Sprocket center distance C	Allowance δ (mm)
1m or less	±1
1m～10m	±C（mm）／1000
10m or more	±10

Installation of roller chain

When connecting a roller chain with the sprockets, observe the following procedure. When the connecting link is not well lubricated, apply sufficient grease.

When using the sprocket teeth

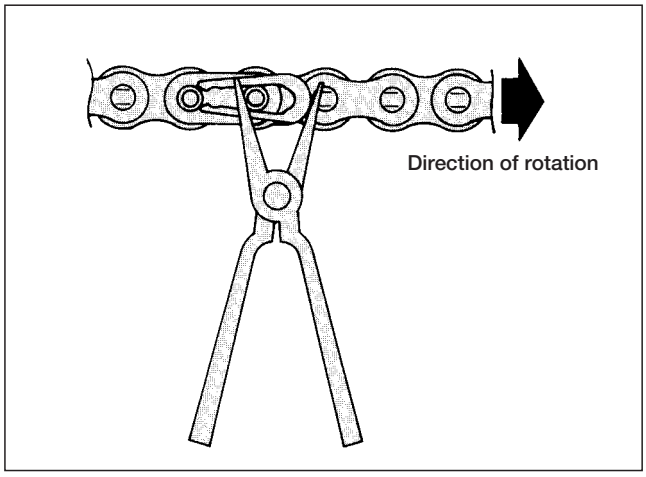
1. Engage the chain with the sprockets so that both ends of the chain are on one of the sprockets, as shown in the following photo.
2. Insert connecting pins at the joint.
3. Fit a connecting plate, and fasten by a spring clip or cotters.

Pay extra attention not to damage the tooth heads of the sprocket.

When using tools

Cautions

1. When a connecting plate is fastened by a spring clip, apply the spring clip to the pin grooves of the connecting pins as illustrated below, and lock it using pliers, etc. As for the direction of spring clip insertion, keep the opening of the spring clip turned in the direction opposite to the direction of chain rotation, as illustrated below.

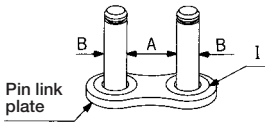


2. In circumstances where the sprocket center distance can hardly be adjusted, an odd number of links may be used. However, add one link, to use an even number of links and eliminate the sag by shifting a sprocket or installing an idler.
3. When an H-connecting link is used, pins must be driven into the connecting plate because of interference. In this case, ensure that the pair of pins are kept parallel to each other when inserted into the connecting plate. Never make the holes of the connecting plate larger or make the pins thinner for easier connection work. This applies also when a cotter type outer link (CP) is used instead of a connecting link.

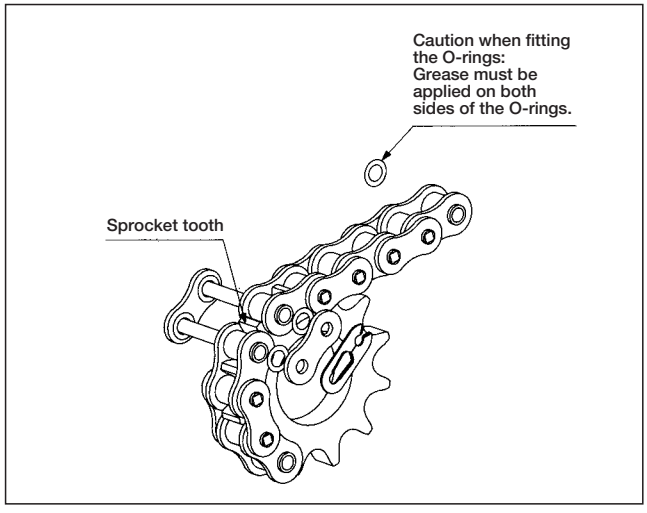
How to connect O-ring Chains

Remarks to connect general O-ring Chains:

1. A connecting link of an O-ring Chain for general application is pre-coated with grease at the pins. Before connection, confirm the grease on the surfaces of pins, and if the amount of grease is small, apply grease with bare hands. (If gloves are used, the grease will be absorbed by the gloves.)
   Example: When the connecting link (I) of an O-ring chain for general application is shipped, O-rings are fitted at the roots of the pins. If the O-rings come loose due to vibration during transport, refit the O-rings in to the roots of the pins.

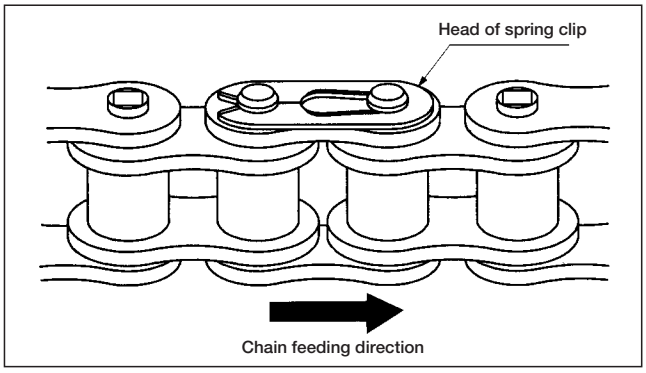


   In this case, be sure to return the grease collected at the roots of the pins to the central surfaces of the pins, more at portion A than at portions B shown in the above illustration. (Portions A is worn because of sliding with the bushings.)
2. The chain can be most easily connected on the teeth of a sprocket. Engage the links at both ends of the chain with the sprocket teeth and fit connecting pins. If the sprocket can be moved, the chain can also be connected on the loosened side.



3. Connecting procedure
   ①Confirm that O-rings are attached to the roots of the pins.
   ②If the amount of grease applied on the connecting pins is small, coat the pins with grease at the central portions.
   ③Insert the connecting pins into the bushings of the inner links at both ends.
   ④Confirm that the grease is applied to the entire face of the O-ring, and fit the O-ring onto the connecting pins.
   ⑤Insert the connecting pins into the connecting plate and while pressing the connecting plate, install the spring clip. Confirm whether the head (the end without a split) of the spring clip is turned in the feeding direction of the chain. (See the following illustration.)
   ⑥Be sure to confirm that the spring clip is securely fitted in the clip grooves of the connecting pins.

This completes jointing of the connecting link. Note that grease on the surfaces of connecting pins and O-rings can be removed during installation work. In this case, re-grease using the grease on the surface of the base chain or the grease in the polyethylene bag in which the connecting link was contained.



Maintenance

Check

a. Confirm the following before operation

Connected joint	● Confirm that the connection is sufficient and that components have no problem. ● Confirm that bending is smooth (in the case of O-ring chain, bending is slightly stiff).
Chain sprocket attachment	● Confirm that there is no serious flaw, rust or wear. ● Confirm that sag is proper. ● Confirm that no pin rotates. ● Confirm that rollers rotate smoothly. ● Confirm that the chain engages with the teeth of sprockets.
Interference	● Confirm that there is nothing interfering with the chain, or that nothing is likely to interfere with the chain or safety cover.
Lubrication	● Confirm that the amount of lubrication is appropriate. (For the amount of lubrication, see the table of lubrication types.)
Driving and driven shafts	● Confirm that the axial measurement and parallel measurement are proper. ● Confirm that the difference of sprocket planes is within the allowance.
Peripheral equipment	● Confirm that peripheral equipment is installed correctly.

b. After confirmation and adjustment of the above a, install the safety cover, and switch on the power to start operation.

● It is possible for the chain to be thrown should it break. Do not stay in the direction of rotation during operation.

⚠ Caution

Obstacles	● Obstacles may cause breaking or fracturing which can scatter materials and injure people nearby. Be sure to remove all obstacles.
Abnormal noise	● Abnormal noise during operation is a sign of trouble. Immediately switch off the power, and determine the cause.
Flaws and rust	● If any serious flaws or rust is visible, it may cause the chain to break and fracture and possibly injure people nearby. Confirm that the chain has no serious flaws or rust.
Sprocket	● If a sprocket is worn, the sprocket may break, or the chain may ride over the sprocket, breaking it and possibly resulting in injury to people nearby. Confirm that the sprockets are not worn.
Devices that prevent accidents	● Install accident prevention devices. To avoid human injury caused by scattered materials, install safety devices (safety cover, safety net, etc.). ● Install an emergency stop device. To avoid human injury due to unexpected overload, install an emergency shutdown device such as a load controller or a brake.

Before trial operation

Confirm the following on chain installation before starting operation.

- The chain correctly engages with the sprockets.
- The joints are normal. (The spring clips are correctly installed and cotters are not bent.)
- The chain sag is proper.
- The chain is not in contact with the chain case.
- The lubrication is proper.

Check items during trial operation

If the chain can be manually rotated, rotate it to confirm that there is no abnormality before starting trial operation. Be alert to the following during trial operation.

- Whether there is abnormal noise.
  If the chain contacts the chain case or if the chain heavily vibrates, abnormal noise occurs. Check the installation of chain case and chain sag.
- Whether lubrication is normal during operation.
  Re-check the condition of lubrication.

Elongation limit of chain
Limit of Chain Sag

● Events caused by sag failure

Even if the sag of the chain is normal before the start of operation, it can increase if the chain is elongated due to wear of pins, bushings, etc. If the sag is excessive, the following will occur.

a. Abnormal vibration
b. Chain rollers ride over the heads of sprocket teeth.
c. The chain is seized by a sprocket.
d. The chain contacts the chain case.

These conditions can often cause abnormal noise. Should any abnormal noise occur, immediately stop operation, and check carefully to determine the cause. Such conditions often cause damage not only to the chains, but to the entire equipment. A preliminary check is necessary.

● Elongation limit of chain

Even if sag adjustment is normal, excessive elongation of the chain can cause abnormalities similar to those caused by sag failure that inhibit smooth transmission. In such cases, replace the chain. A guide for replacement based on chain elongation limit is listed below. Even if only one link reaches the elongation limit, replace the entire chain with a new one. Unless lubrication is normal, the chain will elongate quickly, causing the aforementioned troubles. Read the contents of "Lubrication" in the next section carefully for performing proper maintenance.

Elongation limits of chain

Number of teeth of large sprocket	Regular chain	O-ring chain and Sintered bushing roller chain
40 or less	2.0%	1.0%
41～60	1.5	1.0
61～80	1.2	1.0
81～100	1.0	1.0
101 or more	0.8	0.8

※If elongation of an O-ring chain or Sintered bushing roller chain exceeds the value in the above table, the wear rate of the chain becomes equivalent to a standard chain, and chain wear rapidly increases from that point.
※The above elongation limits are applicable when the chain can be taken up or when a sag adjusting device is installed. If the shafts are fixed without any sag adjusting device, the recommended elongation limit is 0.5 to 0.7%.

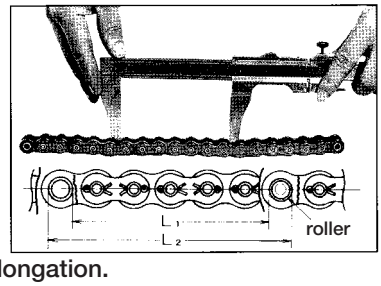
● Elongation measuring method

1. To eliminate rattling other than a slight amount of play in the chain as a whole, tighten the chain lightly and measure the elongation.

Note: For an accurate measurement, measure the elongation of the chain applying a measuring load (specified by ANSI) to the chain.

2. As illustrated below, measure the inner length (L_1) and the outer length (L_2) and obtain the measured length (L).

$$L = \frac{L_1 + L_2}{2}$$



3. Then, obtain chain elongation.

$$\text{Chain elongation} = \frac{\text{Measured length} - \text{Reference length}}{\text{Reference length}} \times 100(\%)$$

Reference length = Chain pitch × Number of links

4. In order to reduce the measuring gap, measure the length of about six to ten links.

Chain wear-elongation check gage

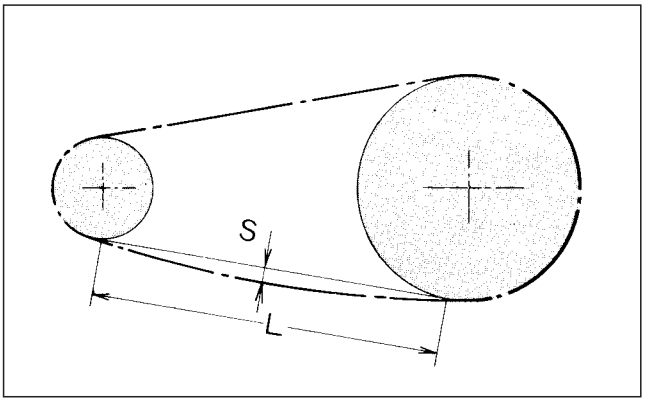
We recommend and can supply a chain wear-elongation check gage (P.114) for facilitated finding of elongation limit.

Sag adjustment of roller chain

To use a roller chain for a longer period of time, proper sag is an important component. If the roller chain is over-tensioned, the oil film between pins and bushings is lost, shortening chain life and damaging the bearings. If the chain sags overly, the chain will vibrate or be seized by the sprocket. In about 50 hours (it differs depending on the service conditions) after starting the roller chain use, the chain will be elongated by about 0.1 percent of the entire length due to the conformability of respective contacts. So, adjust the sag at this time. Thereafter, if proper lubrication is maintained, the elongation will be negligible. Check and adjust the sag at proper intervals.

Optimum sag

In general, keep sag S at about 2 % of span L, but in the case described below, keep it at about 1 %.



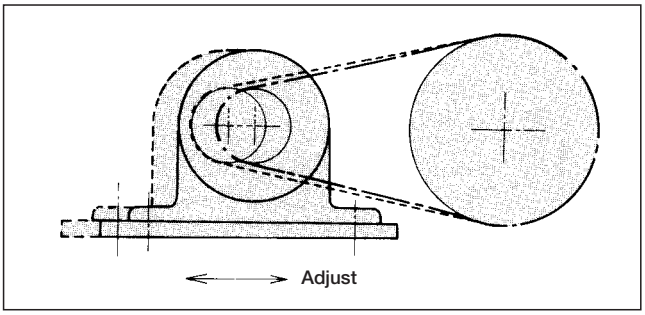
Keep sag at 0.01L or less in the following cases:

- ○ When the chain is installed vertically or almost vertically.
- ○ When the chain is installed horizontally or almost horizontally with the top slackened.
- ○ When the center distance between sprockets exceeds 50 times the chain pitch.
- ○ When vibration or shock occurs.
- ○ When the chain is frequently started and stopped.
- ○ When the chain is suddenly reversed.
- ○ When the speed ratio is 7:1 or more (keeping the speed ratio at 7:1 or less is safer and preferable).)

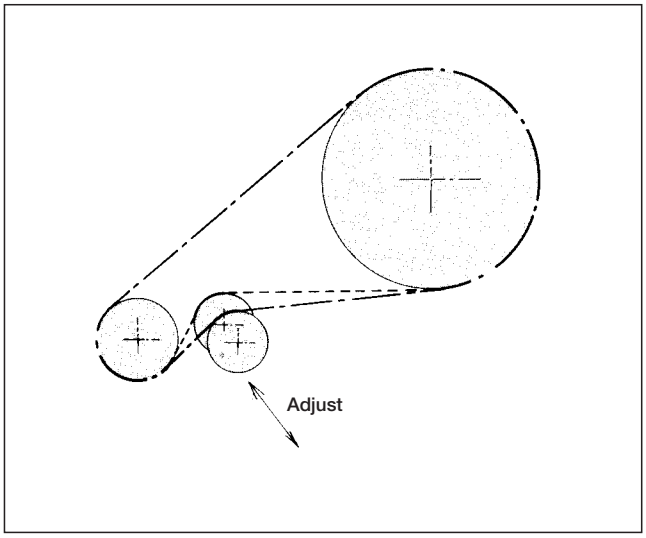
How to adjust sag

Adjust sag in the following ways.

1. Adjustment of the center distance



2. Adjustment using a tensioner or idler



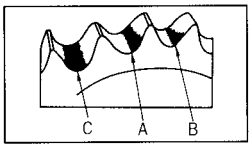
3. Increase or decrease of pitch number by offset link

By using an offset link, the total length of a chain can be increased or decreased by one pitch. However, since offset link performance is generally poor, an even number of links, if possible, is recommended.

Other checks

● Checking sprocket

If a sprocket is not installed at the correct position of the shaft or is not parallel to the shaft, the plates of the chain may be flawed, or the chain may be twisted. This can be judged by examining the contact faces of the sprocket teeth. In this illustration, a uniform contact as indicated by A is normal. If the contact is different on both sides as indicated by B, correction is necessary.



● Checking idler or tensioner

When sag is adjusted, check also whether the idler or tensioner itself is damaged. If the contact between an idler or tensioner and a chain is at the center of the tooth gap bottom as indicated by C, it is normal. If the contact is as indicated by A or B, the bearing of the idler or tensioner may be abnormal.

● Checking chain attachments

In the case of a chain with attachments, it can result in accidents if a mounted part is loosely installed or comes off. Furthermore, if an installation hole is enlarged due to wear, the chain life may be shortened.

For troubles during operation, see "Trouble Shooting".

Lubrication

Necessity of lubrication

In a roller chain transmission, even if the chain and sprockets are designed to suit the service conditions, poor lubrication inhibits maintaining performance and life to design specifications. In the case of a roller chain, the wear loss caused under proper lubrication is dramatically different from that caused without it. Troubles caused due to insufficient lubrication include the wear of pins and bushings, rough engagement with the sprockets, increased noise, and breakage as a result of prolonged undesirable conditions. Proper lubrication is very important. Requirements of lubrication and the effects of proper lubrication are listed below.

Requirements of lubrication	Effects of proper lubrication
● Selection of lubricant ● Lubricating points ● Lubrication type (lubricating method, lubrication intervals, amount of lubrication)	● The wear of frictional portions is decreased. ● Power loss is decreased. ● Seizure is prevented. ● Frictional heat is decreased. ● Generated heat is eliminated. ● Ensure smooth operation and extends machine life.

Selection of lubricant

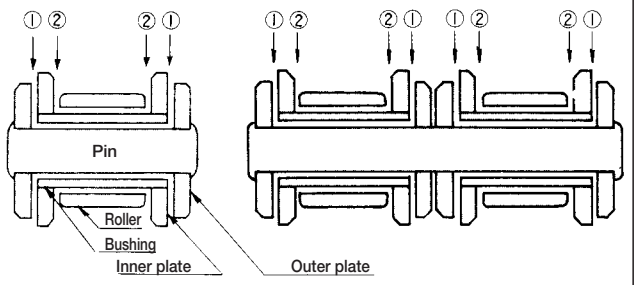
Select the lubricant of a roller chain in reference to the lubrication type (P.133), ambient temperature and chain No., according to the following table.
Lubricant should be a mineral oil of good quality. It is important that the lubricant contains no dust or foreign substance. Never use waste oil. If the ambient temperature is extremely low (-10°C or lower) or high (+60°C or higher), a specific oil is necessary. In this case, please consult our engineering department.

Lubricating points

If the chain is immersed in an oil bath, oil penetrates every part of the chain. In the case of manual lubrication, brush lubrication or drip lubrication, ensure that the oil sufficiently penetrates the portions of ① and ② in the following illustration.

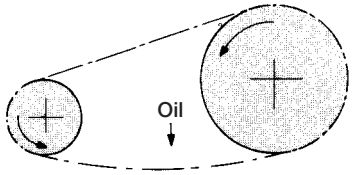
Lubricating points

①Between outer links and inner links (for prevention of elongation)
②Between bushings and inner plates (for noise reduction and protection against wear and impact damage on bushings and rollers.)



Simplex roller chain　　Duplex roller chain

Lubricate on the sag side of the chain, i.e., at the position indicated in the following illustration. Since the lubricant is also useful for rust prevention, coating the entire surface of the chain with the oil is recommended.

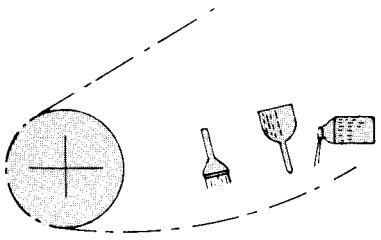
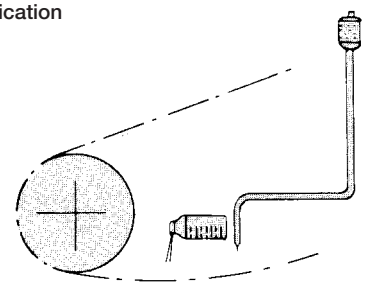
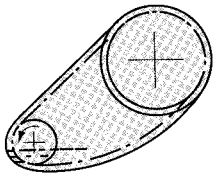
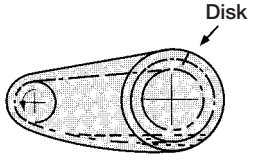
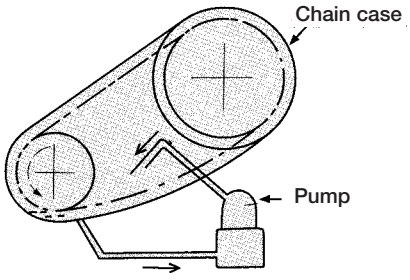


Type of lubrication	A, B				C			
Chain No. \ Atmospheric temperature	−10℃～0℃	0℃～40℃	40℃～50℃	50℃～60℃	−10℃～0℃	0℃～40℃	40℃～50℃	50℃～60℃
DID 25～DID 50	SAE10W	SAE20	SAE30	SAE40	SAE10W	SAE20	SAE30	SAE40
DID 60～DID 80	SAE20	SAE30	SAE40	SAE50				
DID 100					SAE20	SAE30	SAE40	SAE50
DID 120～DID 240	SAE30	SAE40	SAE50					

Special kind of lubricant must be applied when ambient temperature is -10°C or lower or 60°C or higher. Please consult us for appropriate selection of lubricant.

Lubrication types (Explanation of A, B and C in the tables of Drive performance (kW ratings)

The allowable kilowatt ratings of chains shown in table of the drive performance (kW ratings) is based on the condition that any of the following lubrication is adopted. If any of the following lubrication cannot be adopted or in circumstances where earth, sand or dust exists, see the DID Ultimate Life Chain Series (see P.64).

Lubrication type	Name and method	Lubrication intervals and amount	Caution
A Use DID chain lube (see P.114).	Lubricator Brush 	Carry out periodical using a lubricator or brush at least once a day.	While rotating the chain slowly, lubricate the entire length uniformly three to four times. Take care not to allow your hand or clothes to be caught by the chain during lubrication. Note that extra oil will be scattered when the operation is started.
	Drip lubrication 	Supply about 5 to 20 drops of oil per minute.	In this case, since extra oil is scattered, installing a simple casing is recommended.
B	Oil bath lubrication 	Keep the chain immersed in oil, about 10 mm below the oil surface. If immersion is too deep, the oil will become abnormally hot.	The container should be leak proof. Before using the container for the first time, thoroughly wash the inside to remove dust and other foreign substance.
	Disk lubrication 	A disk is used to apply oil to the chain. Keep the disk immersed in oil, at a depth of about 20 mm. Keep the peripheral speed higher than 200 m/ min.	
C	Forced feed lubrication 	The amount of lubrication must be set to avoid abnormal heating. In general, the oil amount should be set at a level not to allow the chain high temperature over 60°C.	The oil container should be leak proof. When using the container for the first time, thoroughly wash the inside to remove all dust and foreign substance.

General cautions for lubrication

Unless proper lubrication is carried out, chain fatigue will result earlier, causing various problems. Careful inspection is necessary.

In the case of insufficient lubrication

If the lubricant is exhausted, red rust is generated between the inner and outer plates, causing wear drastically. When a chain is disassembled after going under such condition, red rust is visible on the surfaces of pins, and the surfaces are roughened, as shown in this photo. (Normally, pins have a mirror surface.) The lubricant must be applied before this happens.

Do not use grease for lubrication !!

Do not use grease to lubricate your chains, since grease takes too long to reach the inside through pins and bushings at ambient temperature. Use the machine oil shown in the table on P.132 or DID Chain Lube/DID HI-PWR Lube (a spray lubricant).

Before lubrication, remove foreign substances and dirt from the chain as thoroughly as possible. If water is used for washing the chain, quickly dry it to prevent rusting, and then lubricate.

In the case of drip lubrication, oil bath lubrication or forced feed lubrication

Check the following:
1. The lubricant is not dirty.
2. The amount of lubricant is correct.
3. Lubricant is uniformly applied to the chain.

Cautions

Dust contamination must be avoided to maintain wear resistance. If temperature rises abnormally or the chain squeaks, the oil may be exhausted. Check to verify the condition.

Troubleshooting Guide

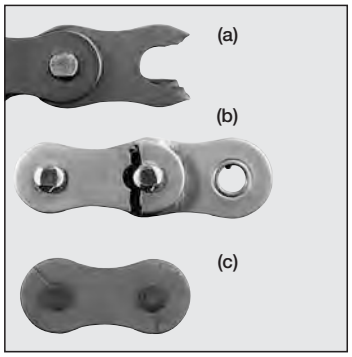
Trouble	Possible cause	Correction
A pin, bushing or roller is fractured. Note: See "Fracture patterns of respective chain components" on P.136.	High speed revolution exceeding the tolerance of chain and sprockets	Decelerate the speed, or select a chain with a smaller pitch. Otherwise, select a sprocket with a larger number of teeth. Refer to the details of "Selection by Drive Performance (kilowatt ratings)" (P.120).
	Sudden large shock load	Avoid shock load as much as possible. Install a damper, etc., to damp the shock load.
	Improper lubrication	Periodically supply the correct lubricant. Spray type chain oil "DID Chain Lube" is recommended.
	Corrosion of chain	Check the service circumstances and lubrication condition, and select a proper chain.
	Wear of sprocket	Replace it with a new one. Use a sprocket conforming to the correct standard dimensions.
	Seized foreign substances	Immediately remove the foreign substances, and strictly control the service circumstances.
Abnormal noise	Chain is excessively tensioned or sagged.	Pay constant attention to the chain sag. Correct by adjusting it according to the procedure stated in "Sag adjustment of roller chain" (P.131).
	Incorrect alignment of sprockets	Check the alignment between both the large and small sprockets.
	Large wear elongation of chain or wear of sprocket	Replace chains that are elongated beyond the tolerance and worn sprockets with new ones.
	Incorrect installation of chain case	If the chain contacts the chain case, immediately correct and adjust.
	Improper lubrication	Lubricate properly and periodically. (See "Lubrication types" (P.133).
	Improper combination of chain and sprockets	When replacing the chain, use the correct chain size and sprocket sizes. Select a chain suitable for sprocket sizes, and sprockets suitable for the chain size. (Especially be alert when replacing HK Series multiplex chain.)

Trouble	Possible cause	Correction
When a chain rides over a sprocket	Excessive wear elongation of chain	Replace the excessively worn chain with a new one.
	Chain too slack	A chain with too much slack causes the chain to ride over a sprocket, and can damage the tooth heads of a sprocket. Correctly adjust it.
	Worn sprocket or deposition of foreign substances on tooth gap bottom	Replace the worn sprocket with a new one. If foreign substances are deposited on the bottoms of the teeth, immediately remove them.
Wear of plates and sprockets on their lateral sides	Incorrect alignment of sprockets	Misalignment of large and small sprockets result in abnormal wear of the sides of link plates and the sprockets, thereby shortening chain life. Apply a straight edge to the lateral sides of sprockets to check alignment.
Vibration of chain (whipping)	Chain too slack	Adjust to a proper sag. Consider the installation of spring type idler or tensioner.
	Uneven wear elongation	Imperfect and uneven lubrication causes uneven wear and pitch irregularity. Immediately replace the chain, and lubricate the entire chain evenly.
	Stiff link	See the following column.
Stiff link	Load in excess of tolerance	Select a DID chain with a larger allowable tension.
	Misalignment of sprockets	If the alignment between sprockets is incorrect, the force applied from the sides of the sprockets opens the inner plates, which interferes with the outer plates and cause stiff links. Align the large and small sprockets properly.
	Corrosion of chain Improper lubrication	If a chain is left without lubrication for a long time or in a corrosive atmosphere, rust is generated and smooth motion is inhibited. A corroded chain must be replaced. Be sure to lubricate periodically.
	Interference between plates and foreign substances	If a chain comes in contact with foreign substances during feeding, the inner and outer plates may be opened. Immediately remove the foreign substance.
	Ingress of foreign substances into bending sections of chain.	If sand or mud enters bending sections, remove the chain, and wash and lubricate, or replace the chain. Furthermore, install a case, etc. to prevent the ingress of sand and mud.
Fractured chain Note: See "Fracture patterns of respective chain components" on P.136.	Fatigue fracture	If a chain is used for a long time at a load exceeding the maximum allowable tension, fatigue fracture of plates and bending fatigue fracture of pins occur. If the chain life before fatigue fracture is shorter than the expected life, select a chain with a larger maximum allowable tension. For example, if a DID50 Standard Roller Chain is used for 750 cc motor-cycles, it may be fractured in a short time. In this case, rather than the chain being faulty, the selection was incorrect.
	Ductile fracture of plates Fracture of pins by shear or bending	If a load or impact extremely larger than the allowable tension acts on a chain, ductile fracture of plates or fracture of pins by shear or bending occurs. This fracture occurs when the chain size selected is incorrect and allowable tension is too small. Re-select a proper chain.
	When the chain rides over a sprocket	The fracture caused when the chain rides over a sprocket is mainly caused by wear elongation. Select an appropriate chain, and lubricate properly.
	Hydrogen embrittlement	Remember that a chain might be broken suddenly by hydrogen embrittlement if it comes in contact with acids.
	Interference of foreign substances	If foreign substances interfere with or are seized by the chain during feeding, excessive load acts on the chain, and its life will be shortened or it may break suddenly. Make necessary arrangements for an appropriate service circumstances, and be sure to immediately remove any foreign substances.
Rotation of pin (see P.136)	Excessive tension Riding of chain over sprocket Corrosion of chain and improper lubrication	If excessive tension is the cause, select a chain larger in allowable tension. See the column "When the chain rides over a sprocket". See the third frame of "Stiff link".

Fracture patterns of respective chain components

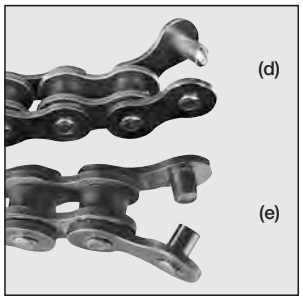
To be aware aforetime of how and which part of the chain is damaged under improper use greatly helps to clarify the cause and determine corrective measures in such an event.

● Fracture of plate.



When a large tension acts to fracture a plate, as shown in (a), the cut ends are oblique and plastic deformation occurs. However, when the load is slightly larger than the maximum allowable tension, fatigue fracture occurs, and any plastic deformation does not occur as shown in (b). A significant feature of fatigue fracture is that a crack occurs in the direction almost perpendicular to the pitch line (center line between both pins). In the case of hydrogen embrittlement by an acid, the crack mostly occurs in the direction as shown in (c), and the cut ends are flat, while the area around the cut ends may be decolored due to erosion by the acid.

● Fracture of pins

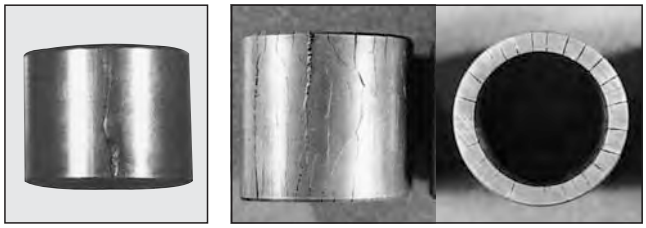


When a pin is fractured by excessive tension, the fracture occurs close to the plate, with a bulged specular surface formed by shearing, as shown in (d). However, when the acting force is not so strong, fatigue fracture takes place after a long period of time around the center of the pin as shown in (e), and the fractured surface is flat with small undulations.

● Fracture of bushings

As with rollers, bushings fracture by shock. Generally, as shown in the photo, a vertical crack occurs and stops near the plates. One crack can also be superimposed on another, causing the central portion to come off. In general, it can be said that a larger crack is caused by a larger tension.

● Fracture of rollers



When a roller fractures during operation, typically vertical splitting occurs as shown in the photo, and in general, pitch marks of fatigue extend from the inside of the roller and cause splitting. If splitting occurs all at once due to a large tension, the cause can be identified easily since the split faces are not polished. If tension is excessive, the rollers are forcefully pressed against the tooth faces of sprockets, and a roller end may be cracked and deformed.

● Rotation of pins

As shown in the photo, the rotation of a pin can be identified by the deviance of the rivet mark on the pin head from the correct position. If the chain is disassembled, galling is found between pins and bushings in most cases. The cause of galling is improper lubrication or excessive tension. When a machine has been out of use for a long period of time, rust may develop between pins and bushings, causing the pin to rotate.

Elongation of chain

In general, the elongation of chains includes the following three types;

1. Elastic elongation by chain tension

If a load acts on a chain, the respective components of the chain are elastically deformed, causing elongation. If the load is removed, the original length is restored.

2. Plastic elongation by chain tension

If a load in excess of the elastic limit acts on a chain, plastic elongation occurs. In this case, even if the load is removed, the original length cannot be restored. Plastic elongation of chain may diminish its performance. Replace it without delay.

3. Wear elongation of chain

Chains are subject to wear since pins and bushings are worn by mutual contact. After use for a long time, the wear appears as an increase of chain length. This is wear elongation. Wear elongation is an important factor for deciding the timing of chain replacement. See P.137.

Timing for Replacement

If the engagement between chain and sprockets becomes defective or any factor that causes excessive decline in the strength of the chain occurs, replace the entire chain. When any of the following conditions occur in the chain you use, replace the entire chain to maintain safety.

- When a chain is worn close to the "Elongation limit of chain" on P.130.
- When a flaw or crack occurs in a plate.
- When a flaw or crack or defective rotation of a roller is observed.
- When a chain link is stiff.
- When a pin has been rotated.
- When a pin is bent or otherwise deformed or when a plate is seriously warped.
- When rust buildup prevents smooth bending of the chain.
- When diluted sulfuric acid or any other corrosive material is deposited.

※If you cannot judge whether a flaw is "harmful", please consult us.

Replacement of sprockets and how to order

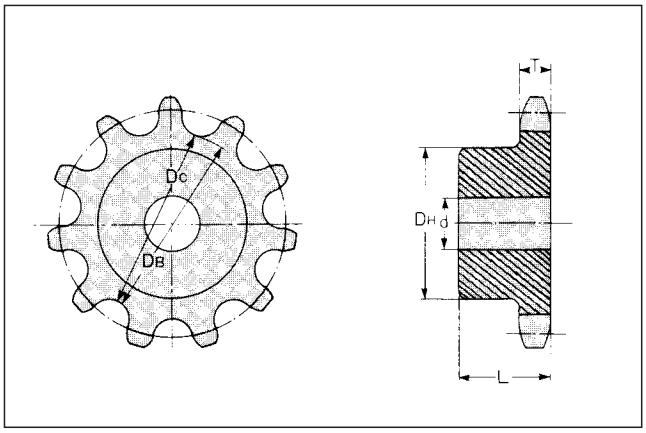
The life of sprockets is generally several times the life of a chain, but if the teeth are worn because of insufficient lubrication or damaged because of a shock load, etc., the sprockets must be replaced.

○When placing an order, please specify the following if the chain No. is known.

1. Chain No. and number of strands
2. Type of sprockets
3. Shaft hole diameter (d) (This is not necessary if you drill this hole; in this case, drill a hole not exceeding the maximum shaft hole diameter.)
4. Number of teeth
5. Hub diameter (DH) and length (L) (in the case of non-standard sprockets)
6. Whether the tooth heads are hardened

○Specify the following items, if the chain No. is unknown

1. Tooth thickness (T)
2. Root diameter (DB) (Caliper diameter (DC) in the case of odd-number teeth)



2 Small Conveyor Chains

- General
- Single Pitch
- Double Pitch
- Others
- Technical Information

Variation of Chain Bodies

The main components of DID Small Conveyor Chain consists of two basic types single pitch chains and double pitch chains.
Single pitch chains correspond to "General application chains" in the previous chapter of "Roller Chains for Power Transmission", and are used with ANSI standard sprockets". Double pitch chains are standardized as ANSI Double Pitch Chains, and the design of pins, bushings and rollers are basically the same as that of single pitch chains. The plates only are made longer to double the pitch of single pitch chains. The sprockets of double pitch roller are also standardized as ANSI double pitch chain sprockets. Small Conveyor Chain is mainly composed of the above base chains, and is attached with various top rollers, side rollers or attachments that customize chains for different applications. Classifications of DID Small Chains for Conveyor Systems are shown on P141.

Ultimate Life Chain Series and Environment Resistant Chain Series

Ultimate Life Chain Series and Environment Resistant Chain Series described in the previous chapter are also available for Small Conveyor Chains, which are listed on P142-143 for reference.

How to Order Small Conveyor Chains

- **To order DID C2050 with 96 links, with bent attachments (one-hole) on both sides every two links, with a connecting link attached (in straight shape).**

[Example]

DID C2050 2P K 1 × 96 R T

Chain No.

Attachment intervals

Number of holes on attachment

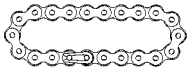
Indicates that the overall length of chain is 96 links.

Type of connecting link
R: Clip type (DID60 or DIDC2060H or smaller)
C: Cotter type (DID80 or DIDC2080H or larger)

Types of attachments
K: Bent attachments are installed on both sides
A: Bent attachments are installed on one side
SK: Straight attachments are installed on both sides
SA: Straight attachments are installed on one side

Conditions of connecting link

B : ···Apart from the base chain



E : ···Connected with the base chain to form a loop

T : ···Connected with the base chain to form a straight shape

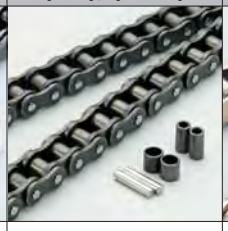
J : ···Connecting link only

※For connections other than those above, see P.145. For any other style, please consult us.
※In case of top roller chains or side roller chains, see the corresponding pages.

Classification

Major division		Medium division	Minor division	Page
Standard Conveyor Chain with Attachments		Single pitch	Standard	P144～P167
			Ultimate Life	
			Environment Resistance	
		Double pitch	Standard	P174～P195
			Ultimate Life	
			Environment Resistance	
Free Flow Chain	Top Roller Chain	Single pitch	Standard	P198～P203,P206
			Ultimate Life	
			Environment Resistance	
		Double pitch	Standard	
			Ultimate Life	
			Environment Resistance	
	Side Roller Chain	Single pitch	Standard	P204～P205,P207
			Ultimate Life	
			Environment Resistance	
		Double pitch	Standard	
			Ultimate Life	
			Environment Resistance	
Others	Hollow Pin Chain	Single pitch	Standard	P208
			Ultimate Life	
			Environment Resistance	
		Double pitch	Standard	
			Ultimate Life	
			Environment Resistance	
	Flexible Chain	Single pitch	Standard	P209
			Ultimate Life	
			Environment Resistance	
	Frat Plate type Roller Chain	Double pitch	Standard	P210
			Ultimate Life	
			Environment Resistance	

Standard Conveyor Chain with Attachments Series (Single Pitch)

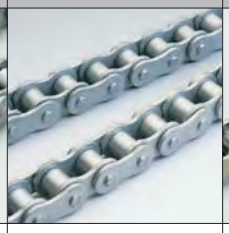
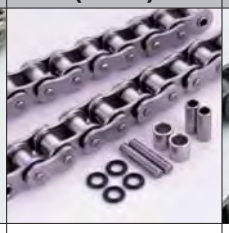
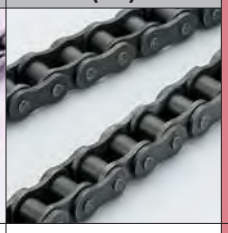
	Standard Roller Chain	Ultimate Life Chain Series					
		Solid Bushing (HT/ T), (D)	DH-α (DHA)	O-Ring (LD) X-Ring (LX)	Sintered Bushing (UR), (URN)	Nickel Plate (N)	
Name							
Features		①Using high precision solid bushings ②Higher wear resistance than standard chains ③Wear life is improved by 1.2 to 4 times of standard chains	①Ultra hardening coated pin surface ②Suitable for circumstances where foreign substance contamination or extreme oil degradation occurs ③Wear life is improved by 1.2 to 7 times of standard chains	①Grease is filled between pins and bushings. ②High-end product of Ultimate Life Chain that can be used anywhere ③Wear life is improved by 5 to 20 times of standard chains	①Using sintered alloy for bushings ②Long life chain for low-speed and light load operation ③Wear life is improved by 5 times of standard chains	①Specialized nickel coating ②Suitable for circumstances requiring a clean impression and neat appearance ③Withstands salt breeze and acidic conditions	
Functions	Tensile strength index 100% Temperature Range in Use -10℃~80℃	Dirty Environment Tensile strength index 100% Temperature Range in Use -10℃~80℃	Dirty Environment Dusty Tensile strength index 100% Temperature Range in Use -10℃~80℃	Dirty Environment Dusty Maintenance-Free Tensile strength index 100% Temperature Range in Use -10℃~120℃ ※ ※LX: Temp. -10°C~120°C, LD: Temp. -10°C~80°C	Maintenance-Free Tensile strength index 70% Temperature Range in Use -10℃~60℃	Corrosive Atmosphere Moisture, Salt Water Alkaline Environment 250℃ OK Allowable Load 100%	
Main uses		PACK TEXTILE PRINT HOME APPLIANCE	PACK TEXTILE PRINT CONVEYOR CONST-RUCTION AGRICULTURE	CONVEYOR VENDING MACHINE CONST-RUCTION FOOD PACK TEXTILE HOME APPLIANCE AGRICULTURE PRINT	FOOD PACK TEXTILE PRINT CONVEYOR HOME APPLIANCE	TEXTILE CONVEYOR FOOD CHEMICALS PRINT PARKING	

■ Standard Conveyor Chain with attachments (Single pitch): Chain No. and Codes

Chain No.	Standard	Solid Bushing	DHA	O-Ring/X-Ring	Sintered Bushing	Nickel Plating	Hi-Guard
DID 25	○	HT	DHA	-	-	N	-
DID 35	○	T	DHA	LD	-	N	E
DID 41	○	-	DHA	-	-	N	-
DID 40	○	D	DHA	LX	C**UR,URN	N	E
DID 50	○	D	DHA	LX	C**UR,URN	N	E
DID 60	○	D	DHA	LX	C**UR,URN	N	E
DID 80	○	D	-	LD	C**UR,URN	N	E
DID 100	○	D	-	LD	-	N	E
DID 120	○	-	-	LD	-	N	E
DID 140	○	-	-	LD	-	N	-
DID 160	○	-	-	LD	-	N	-
DID 180	○	-	-	LD	-	-	-
DID 200	○	-	-	LD	-	-	-

Note: 1. Standard chains are available for those indicated with ○.
2. Although the ones marked with - aren't standard products, consult us.

Environment Resistance Chain Series

	Hi-Guard (E)	Double Guard (WG)	Stainless Steel Chain (SS)	Stainless Steel Chain (SSK)	Stainless Steel X-Ring Chain (SSLT)	Low Temperature Resistant Chain (TK)
Name						
Features	①High corrosion resistance coating ②Suitable for circumstances both indoors and outdoors where long-term resistance to rusting is required ③Excellent resistance to corrosion, salt and rusting	①Approx. twice more corrosion resistant compared to High Guard Chain ②Applicable in mildly acidic or mildly alkaline conditions ③Downsizing is possible compared to Stainless Steel Chain	①18-8 stainless steel ②Suitable for circumstances exposed to chemical agents, water or high temperature ③Best corrosion resistance and heat resistance	①18-8 stainless steel (plate) + precipitation hardened steel (pin/ bush/ roller) ②Suitable for places exposed to chemical agents, water and high temperature ③1.5 times more allowable tension compared to SS type	①Superb wear resistance ②Outstanding cost performance ③Significant reduction in friction-loss	①Using material suitable for low temperature and specialized grease ②Suitable for circumstances where temperatures drop down to -40 °C. ③Excellent low temperature strength
Functions	Corrosive Atmosphere, Moisture, Salt Water, 250°C OK, Allowable Load 100%	Corrosive Atmosphere, Moisture, Salt Water, Alkaline Environment, Acidic Environment, 250°C OK, Allowable Load 100%	Corrosive Atmosphere, Moisture, Salt Water, Alkaline Environment, Acidic Environment, Clean Areas, Temperature Range in Use -10°C~400°C, Allowable Load 10%	Allowable Load 15%	Corrosive Atmosphere, Moisture, Salt Water, Alkaline Environment, Acidic Environment, Dirty Environment, Dusty, Maintenance-Free, Great Savings, Temperature Range in Use -10°C~200°C, Allowable Load 10%, Clean Areas	Corrosive Atmosphere, Alkaline Environment, Temperature Range in Use -40°C~80°C, Allowable Load 100%
Main uses	TEXTILE, CONVEYOR, PARKING, WATER TREATMENT, OUTDOOR, CONST-RUCTION	TEXTILE, CONVEYOR, PARKING, WATER TREATMENT, OUTDOOR, CONST-RUCTION, FOOD, CHEMICALS	CONVEYOR, FOOD, CHEMICALS, WATER TREATMENT		CONVEYOR, FOOD, CHEMICALS, WATER TREATMENT	PACK, CONVEYOR, FOOD, CONST-RUCTION

	Double Guard	Stainless Steel		Stainless Steel X-Ring Chain	Low Temperature
	-	SS	-	-	-
	-	SS	-	-	-
	-	-	-	-	-
	WG	SS	SSK	SSLT	TK
	WG	SS	SSK	SSLT	TK
	WG	SS	SSK	SSLT	TK
	WG	SS	SSK	SSLT	TK
	-	SS	SSK	-	TK
	-	SS	SSK	-	TK
	-	SS	-	-	TK
	-	SS	-	-	TK
	-	SS	-	-	-
	-	SS	-	-	-

Standard Attachments

For "DID Small Conveyor Chains", various links are available for coupling and attaching custom devices directly to the chains. These links are called attachments. The following standard attachments are available.

Types and names of standard attachments

DID standard attachments include five kinds for single pitch chains and five kinds for double pitch chains as illustrated below. Furthermore, for single pitch chains, four kinds of wide attachments, as wide as outer plates, are available. Standard attachments for respective chain sizes are listed on the following page.

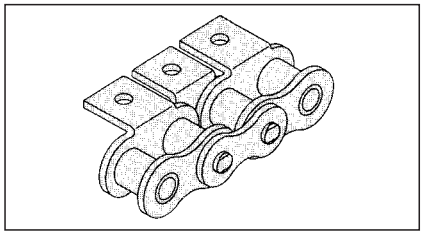
Nominal number of attachment

(Example) DID 60 4 P A 1

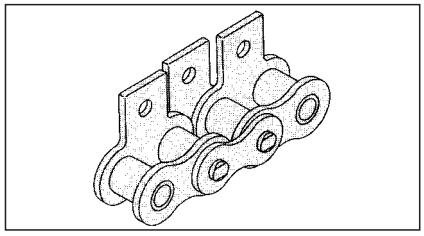
- DID 60: Chain size
- 4 P: Attachment intervals
- A: Types of attachments
- 1: Number of holes

The above indicates a DID60 chain provided with Attachment As with one hole at every four links.

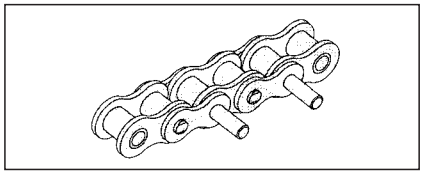
Attachment **A** (Bent attachment on one side)



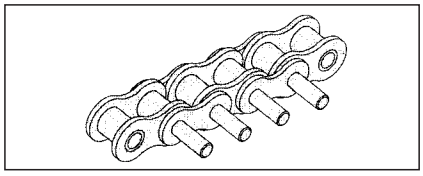
Attachment **SA** (Straight attachment on one side)



Attachment **D** (Extended pin)



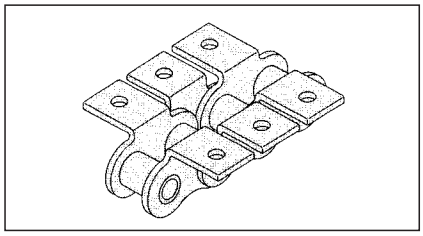
Above figure shows D1 (with an extended pin on every two links)



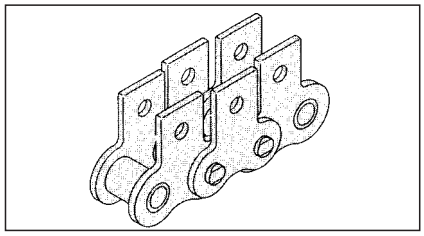
Above figure shows D3 (with an extended pin on every link)

Ref : D pin in longer length is called "LP attachment" (abbreviation of Long Pin)

Attachment **K** (Bent attachments on both sides)

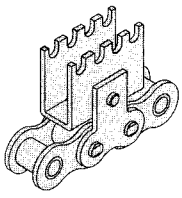


Attachment **SK** (Straight attachments on both sides)

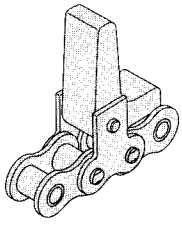


Example of use of standard attachment

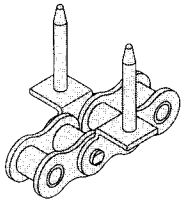
Installation of a U groove holder with Attachment **SK1**



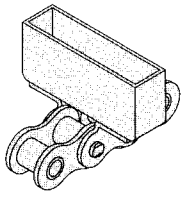
Installation of a dog with Attachment **SK1**



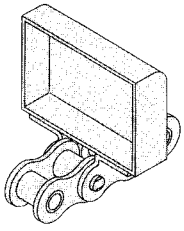
Installation of pins with Attachment **K1**



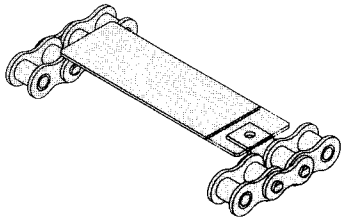
Installation of a bucket with Attachment **K1**



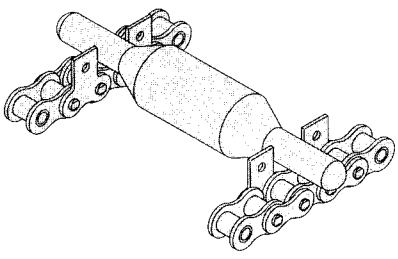
Installation of a bucket with Attachment **K1**



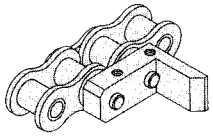
Installation of a slat with Attachment **A1**



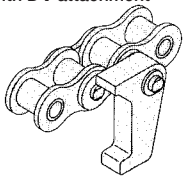
Conveyance of long article by two stands of Attachment **SA1**



Installation of L metal fitting with **D3** attachment



Installation of a dog with **D1** attachment

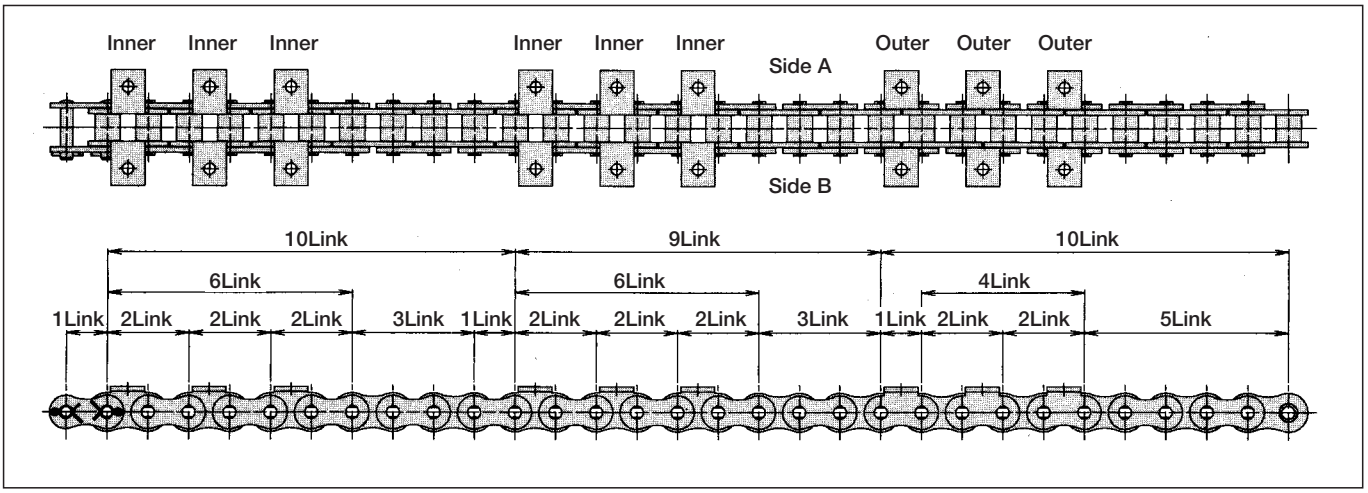


Standard Attachment Chart

○ : In stock
△ : Made-to-order
× : Special

		DID standard attachment																	
		Standard type										Wide type							
		One-side bent		Both-side bent		One-side straight		Both-side straight		Extended pin		One-side bent		Both side bent		One-side straight		Both-side straight	
		A1	A2	K1	K2	SA1	SA2	SK1	SK2	D1	D3	WA1	WA2	WK1	WK2	WSA1	WSA2	WSK1	WSK2
Single pitch	DID 25	△	×	△	×	△	×	△	×	△	△								
	DID 35	△	×	△	×	△	×	△	×	△	△								
	DID 41	△	×	△	×	△	×	△	×	×	×								
	DID 40	○	×	○	×	△	×	△	×	△	△	△	△	△	△	△	△	△	△
	DID 50	○	×	○	×	△	×	△	×	△	△	△	△	△	△	△	△	△	△
	DID 60	○	×	○	×	△	×	△	×	△	△	△	△	△	△	△	△	△	△
	DID 80	○	×	○	×	△	×	△	×	△	△	△	△	△	△	△	△	△	△
	DID 100	○	×	○	×	△	×	△	×	△	△	△	△	△	△	△	△	△	△
	DID 120	○	×	○	×	△	×	△	×	△	△	×	×	×	×	×	×	×	×
	DID 140	△	×	△	×	△	×	△	×	△	△								
	DID 160	△	×	△	×	△	×	△	×	△	△								
	DID 200	△	×	△	×	△	×	△	×	△	△								
	DID 240	△	×	△	×	△	×	△	×	×	×								

How to indicate the specially arranged chains with attachments



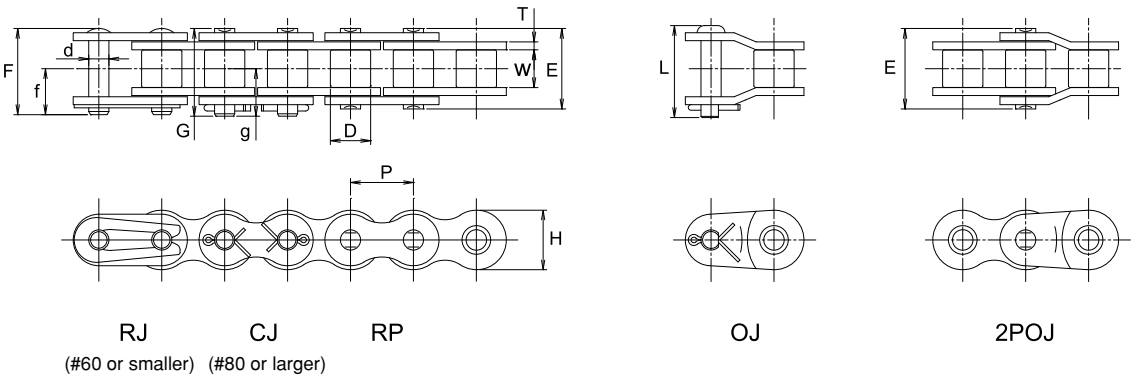
A chain with Attachment K1s specially arranged as above is indicated as follows:

CJ+(K1 inner+PL)×3+3LL+PL+(K1 inner+PL)×3+3LL+K1 outer+(RL+K1 outer)×2+5LL

"CJ" stands for a C connecting link; "K1 inner", an inner link Attachment K1; "PL", an outer link; "3LL", three links from an inner link to an inner link; "K1 outer", an outer link Attachment K1; and "RL", an inner link, respectively. A "+" sign means "connection", and a "×" sign means "repeat". (For one-side attachments such as Attachment A and Attachment SA, the position of attachment plates is on side A in the above illustration.)

Consult us for other arrangements that cannot be indicated as above.
Note: When attaching attachments to every even-number link, they are attached to outer links, unless specified.

Chain Body

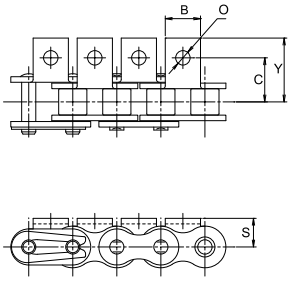


RJ CJ RP OJ 2POJ

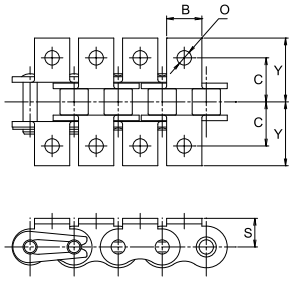
(#60 or smaller) (#80 or larger)

Attachment

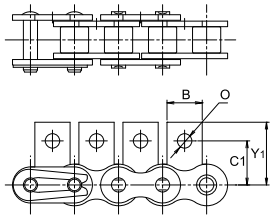
Attachment A1



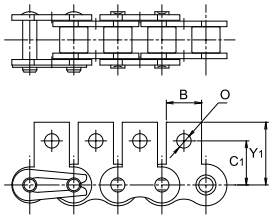
Attachment K1



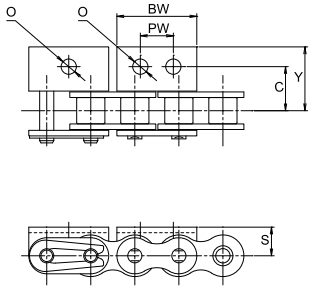
Attachment SA1



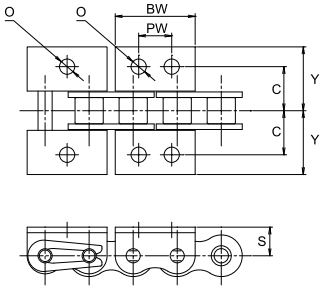
Attachment SK1



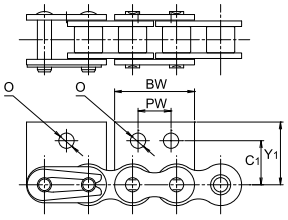
Attachment WA1, WA2



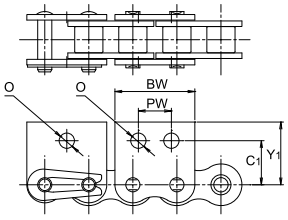
Attachment WK1, WK2



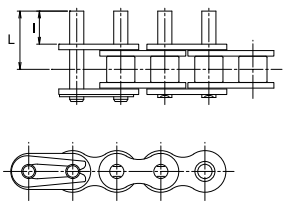
Attachment WSA1, WSA2



Attachment WSK1, WSK2



Attachment D



These figures show RJ type connecting links, but CJ type connecting links are used for #80 or larger.

Dimensions of Standard Roller Chain (Single pitch)

● Dimensions of Chain Bodies

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (bushing) dia.	Pin							Plate		Avg. tensile strength		Max. allowable load		Approx. weight without attachments
	P	W	D	d	E	F	G	L	f	g	T	H	kN	kgf	kN	kgf	(kg/m)
＊DID 25	6.35	3.18	(3.30)	2.31	7.8	8.5	—	—	4.7	—	0.72	5.9	4.02	410	0.63	65	0.13
＊DID 35	9.525	4.78	(5.08)	3.59	12.0	13.1	—	—	7.3	—	1.25	9.0	9.31	950	1.47	150	0.32
DID 41	12.70	6.38	7.77	3.59	13.7	14.6	—	15.5	7.9	—	1.20	9.6	10.1	1,030	1.67	170	0.39
DID 40	12.70	7.95	7.92	3.97	16.5	17.6	18.1	19.1	9.5	10.1	1.50	12.0	16.6	1,700	2.64	270	0.63
DID 50	15.875	9.53	10.16	5.09	20.3	21.9	22.1	23.2	11.6	12.1	2.00	15.0	27.9	2,850	4.41	450	1.06
DID 60	19.05	12.70	11.91	5.96	25.4	26.9	27.9	29.8	14.3	15.1	2.40	18.1	40.2	4,100	6.37	650	1.44
DID 80	25.40	15.88	15.88	7.94	32.6	—	35.4	37.1	—	19.0	3.20	24.0	78.4	8,000	10.7	1,100	2.55
DID100	31.75	19.05	19.05	9.54	39.5	—	42.5	45.2	—	22.7	4.00	29.9	118	12,100	17.1	1,750	3.79
DID120	38.10	25.40	22.23	11.11	49.7	—	53.0	54.0	—	28.2	4.80	35.9	166	17,000	24.5	2,500	5.49
DID140	44.45	25.40	25.40	12.71	53.6	—	58.4	59.6	—	31.6	5.60	41.9	215	22,000	32.3	3,300	7.11
DID160	50.80	31.75	28.58	14.29	63.6	—	68.2	69.7	—	36.5	6.40	47.8	269	27,500	41.2	4,200	9.82
DID200	63.50	38.10	39.68	19.85	77.9	—	85.0	87.3	—	45.9	8.00	60.0	470	48,000	68.6	7,000	16.50

● Dimensions of attachment

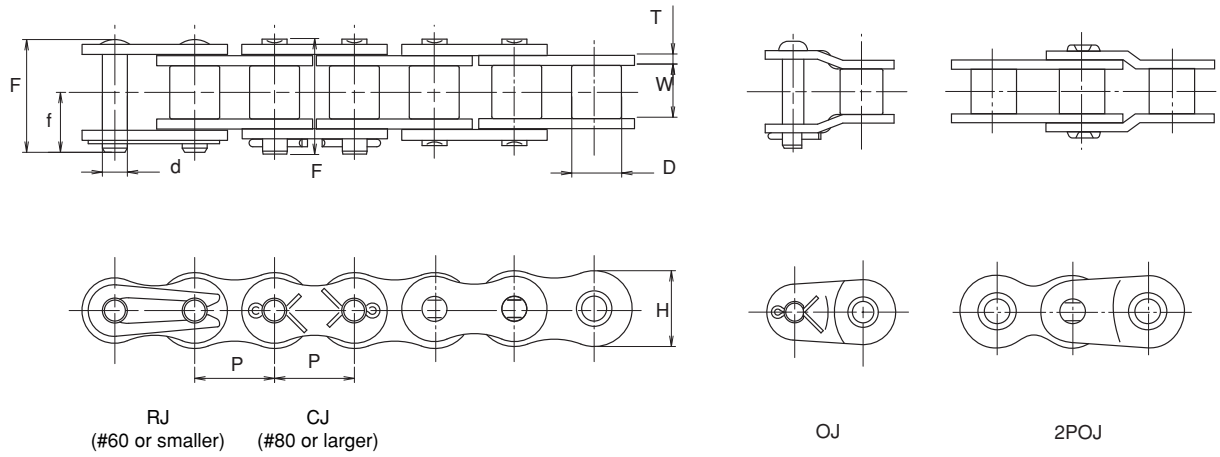
Chain No.	Pitch	Attachment A1, K1			Attachment SA1, SK1		Common dimensions		Attachment D		Approx. additional weight per attachment (kg)		
	P	C	Y	S	C_1	Y_1	B	O	I	L	A,SA	K,SK	D
＊DID 25	6.35	7.15	10.7	4.76	7.94	11.50	5.56	3.4	6.00	9.3	0.0003	0.0006	0.00002
＊DID 35	9.525	9.52	14.4	6.35	9.52	14.70	7.94	3.5	9.52	14.6	0.001	0.002	0.0009
DID 41	12.70	11.91	17.5	7.14	12.30	17.50	9.53	3.5	9.52	15.4	0.0015	0.003	0.0009
DID 40	12.70	12.70	17.6	7.92	12.70	17.50	9.53	3.5	9.52	16.8	0.002	0.004	0.001
DID 50	15.875	15.88	23.0	10.31	15.88	22.60	12.70	5.2	11.91	21.0	0.003	0.006	0.002
DID 60	19.05	19.05	27.0	11.91	18.26	26.20	15.88	5.2	14.27	25.7	0.006	0.012	0.003
DID 80	25.40	25.40	34.9	15.88	24.61	34.05	19.05	6.8	19.05	33.9	0.011	0.022	0.007
DID100	31.75	31.75	43.3	19.84	31.75	42.75	25.40	8.7	23.83	41.9	0.024	0.048	0.012
DID120	38.10	38.10	53.2	23.01	36.53	50.30	28.58	10.3	28.58	51.4	0.037	0.074	0.02
DID140	44.45	44.45	61.9	28.58	44.45	62.40	34.92	12.3	33.32	57.8	0.068	0.136	0.03
DID160	50.80	50.80	69.9	31.75	50.80	68.10	38.10	14.3	38.10	67.4	0.091	0.182	0.045
DID200	63.50	63.50	90.0	42.87	63.50	84.50	47.60	17.0	47.62	83.4	0.186	0.372	0.106

● Dimensions of wide attachment

Chain No.	Pitch	Attachment WA1, WA2, WK1, WK2			Attachment WSA1, WSA2, WSK1, WSK2		Common dimensions			Approx. additional weight per attachment (kg)	
	P	C	Y	S	C_1	Y_1	O	Bw	Pw	WA,WSA	WK,WSK
DID 40	12.70	12.70	17.6	7.92	12.70	17.5	4.5	23.0	9.5	0.003	0.006
DID 50	15.875	15.88	23.0	10.31	15.88	22.6	5.5	28.8	11.9	0.007	0.014
DID 60	19.05	19.05	27.0	11.91	18.26	26.2	6.6	34.6	14.3	0.012	0.024
DID 80	25.40	25.40	34.9	15.88	24.61	34.1	9.0	46.1	19.1	0.026	0.052
DID100	31.75	31.75	43.3	19.84	31.75	42.8	11.0	57.8	23.8	0.051	0.102

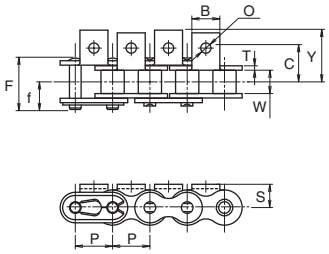
Note: 1. Those marked with ＊ indicate Bushing Chain.
2. The values of the Avg. tensile strength and Max. allowable load are for the chain body (attachments aren't included).

Chain Body

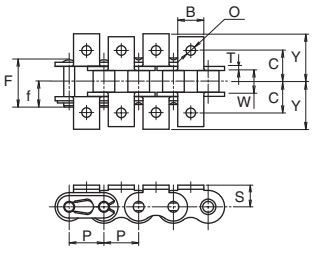


Attachment

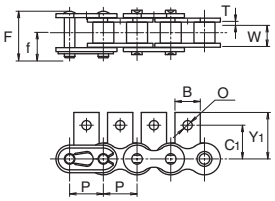
Attachment A1



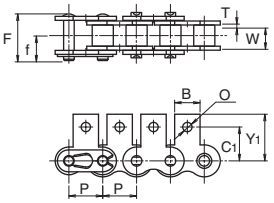
Attachment K1



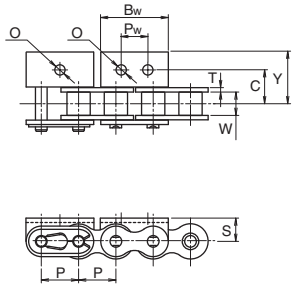
Attachment SA1



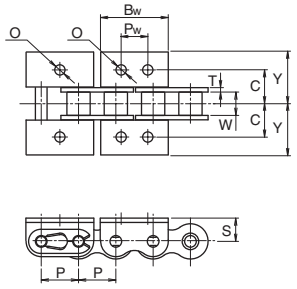
Attachment SK1



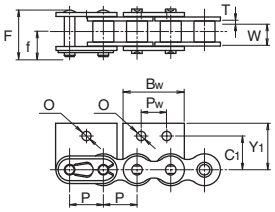
Attachment WA1, WA2



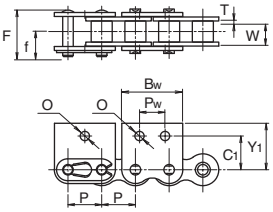
Attachment WK1, WK2



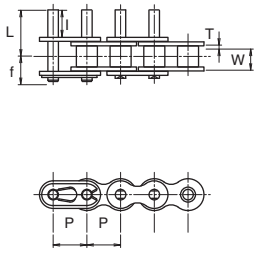
Attachment WSA1, WSA2



Attachment WSK1, WSK2



Attachment D



These figures show RJ type connecting links, but CJ type connecting links are used for #80 or larger.

Dimensions of Long Life Chains (Single pitch)

● Dimensions of Chain Bodies

Unit (mm)

Chain No.	Pitch P	Roller link width W	Roller (bush) dia. D	Pin			Plate		Avg. tensile strength		Max. allowable load		Approx. weight without attachments (kg/m)
				d	F	f	T	H	kN	kgf	kN	kgf	
＊DID35T	9.525	4.78	(5.08)	3.59	13.1	7.3	1.25	9.0	9.31	950	1.47	150	0.32
DID40D	12.70	7.95	7.92	3.97	17.6	9.5	1.5	12.0	16.6	1,700	2.64	270	0.63
DID50D	15.875	9.53	10.16	5.09	21.9	11.6	2.0	15.0	27.9	2,850	4.41	450	1.06
DID60D	19.05	12.7	11.91	5.96	26.9	14.3	2.4	18.1	40.2	4,100	6.37	650	1.44
DID80D	25.40	15.88	14.88	7.94	35.4	19.0	3.2	24.0	78.4	8,000	10.7	1,100	2.67
DID100D	31.75	19.05	19.05	9.54	42.5	22.7	4.0	29.9	118	12,100	17.1	1,750	3.99

● Dimensions of attachment

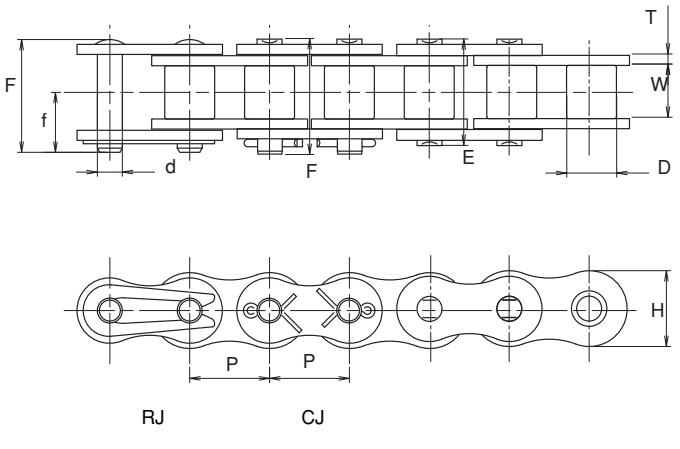
Chain No.	Attachment A1, K1			Attachment SA1, SK1		Common dimensions		Attachment D		Approx. additional weight per attachment (kg)		
	C	Y	S	C_1	Y_1	B	O	I	L	A,SA	K,SK	D
＊DID 35T	9.52	14.4	6.35	9.52	14.70	7.94	3.5	9.52	14.6	0.001	0.002	0.0009
DID 40D	12.70	17.6	7.92	12.70	17.50	9.53	3.5	9.52	16.8	0.002	0.004	0.001
DID 50D	15.88	23.0	10.31	15.88	22.60	12.70	5.2	11.91	21.0	0.003	0.006	0.002
DID 60D	19.05	27.0	11.91	18.26	26.20	15.88	5.2	14.27	25.7	0.006	0.012	0.003
DID 80D	25.40	34.9	15.88	24.61	34.05	19.05	6.8	19.05	33.9	0.011	0.022	0.007
DID100D	31.75	43.3	19.84	31.75	42.75	25.40	8.7	23.83	41.9	0.024	0.048	0.012

● Dimensions of wide attachment

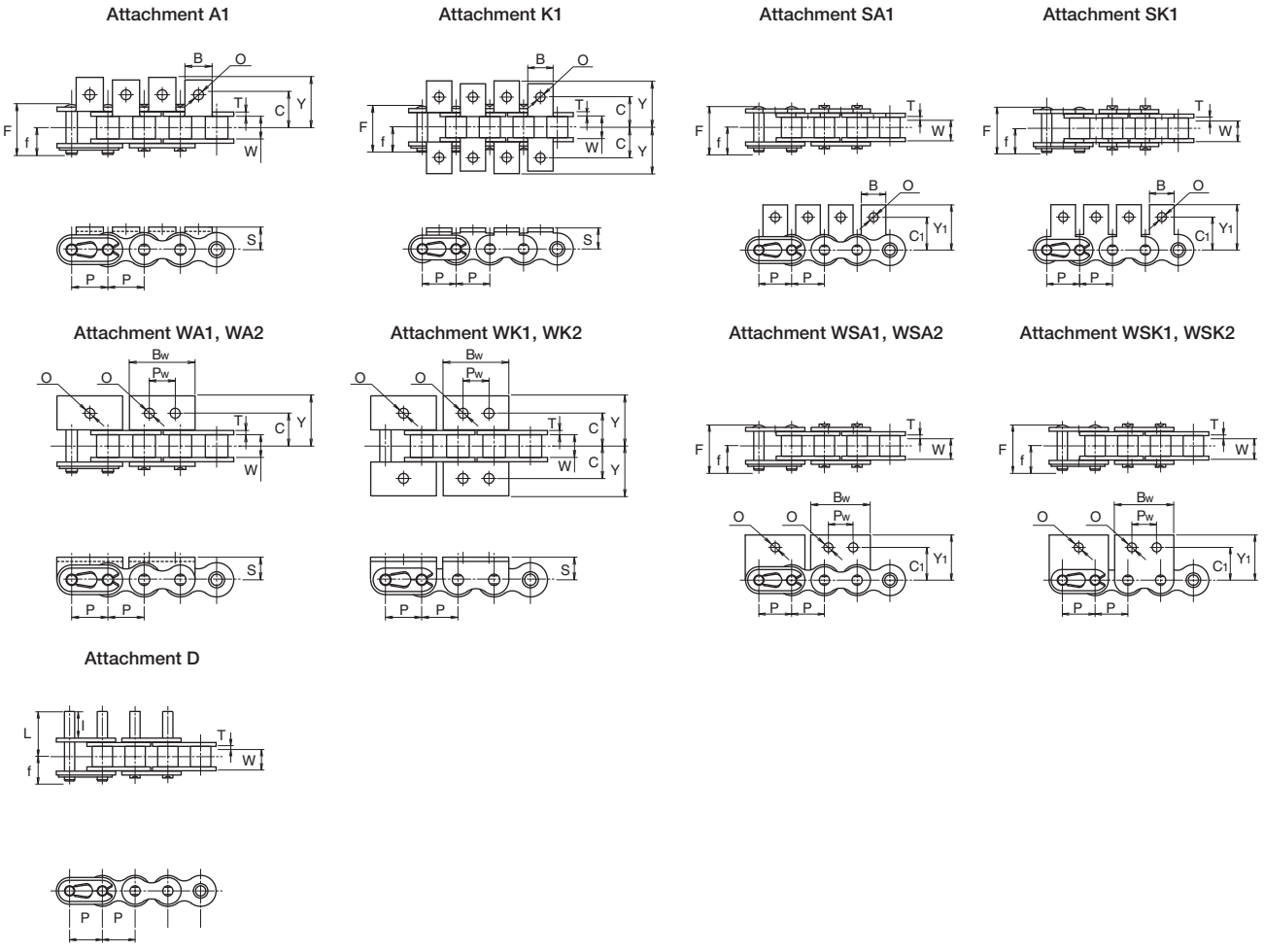
Chain No.	Pitch P	Attachment WA1, WA2, WK1, WK2			Attachment WSA1, WSA2, WSK1, WSK2		Common dimensions			Approx. additional weight per attachment (kg)	
		C	Y	S	C_1	Y_1	O	Bw	Pw	WA,WSA	WK,WSK
＊DID 35T	9.525	-	-	-	-	-	-	-	-	-	-
DID 40D	12.70	12.70	17.6	7.92	12.70	17.5	4.5	23.0	9.5	0.003	0.006
DID 50D	15.875	15.88	23.0	10.31	15.88	22.6	5.5	28.8	11.9	0.007	0.014
DID 60D	19.05	19.05	27.0	11.91	18.26	26.2	6.6	34.6	14.3	0.012	0.024
DID 80D	25.40	25.40	34.9	15.88	24.61	34.1	9.0	46.1	19.1	0.026	0.052
DID100D	31.75	31.75	43.3	19.84	31.75	42.8	11.0	57.7	23.8	0.051	0.102

Note: 1. Those marked with ＊ indicate Bushing Chain.
2. The values of the Avg. tensile strength and Max. allowable load are for the chain body (attachments aren't included).

Chain Body



Attachment



Dimensions of DH-α Chain (Single pitch)

● Dimensions of Chain Bodies

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (bush) dia.	Pin				Plate		Avg. tensile strength		Max. allowable load		Approx. weight without attachments
	P	W	D	d	E	F	f	T	H	kN	kgf	kN	kgf	(kg/m)
＊DID25DHA	6.35	3.18	(3.30)	2.31	7.8	8.5	4.7	0.72	5.9	4.02	410	0.63	65	0.13
＊DID35DHA	9.525	4.78	(5.08)	3.59	12.0	13.1	7.3	1.25	9.0	9.31	950	1.47	150	0.32
DID41DHA	12.70	6.38	7.77	3.59	13.7	14.6	7.9	1.2	9.6	10.1	1,030	1.67	170	0.39
DID40DHA	12.70	7.95	7.92	3.97	16.5	17.6	9.5	1.5	12.0	16.6	1,700	2.64	270	0.63
DID50DHA	15.875	9.53	10.16	5.09	20.3	21.9	11.6	2.0	15.0	27.9	2,850	4.41	450	1.06
DID60DHA	19.05	12.70	11.91	5.96	25.4	26.9	14.3	2.4	18.1	40.2	4,100	6.37	650	1.44

● Dimensions of attachment

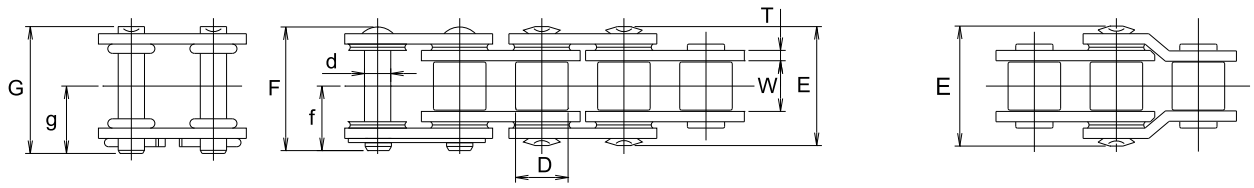
Chain No.	Attachment A1, K1			Attachment SA1, SK1		Common dimensions		Attachment D		Approx. additional weight per attachment (kg)		
	C	Y	S	C_1	Y_1	B	O	I	L	A,SA	K,SK	D
＊DID 25DHA	7.15	10.7	4.76	7.94	11.5	5.56	3.4	6.00	9.2	0.0003	0.0006	0.00002
＊DID 35DHA	9.52	14.4	6.35	9.52	14.7	7.94	3.5	9.52	14.6	0.001	0.002	0.0009
DID 41DHA	11.91	17.5	7.14	12.30	17.5	9.53	3.5	9.52	15.4	0.0015	0.003	0.0009
DID 40DHA	12.70	17.6	7.92	12.70	17.5	9.53	3.5	9.52	16.8	0.002	0.004	0.001
DID 50DHA	15.88	23.0	10.31	15.88	22.6	12.70	5.2	11.91	21.0	0.003	0.006	0.002
DID 60DHA	19.05	27.0	11.91	18.26	26.2	15.88	5.2	14.27	25.7	0.006	0.012	0.003

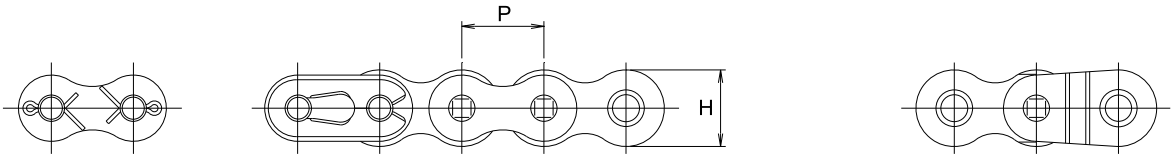
● Dimensions of wide attachment

Chain No.	Pitch	Attachment WA1, WA2, WK1, WK2			Attachment WSA1, WSA2, WSK1, WSK2		Common dimensions			Approx. additional weight per attachment (kg)	
	P	C	Y	S	C_1	Y_1	O	Bw	Pw	WA,WSA	WK,WSK
＊DID 25DHA	6.35	-	-	-	-	-	-	-	-	-	-
＊DID 35DHA	9.525	-	-	-	-	-	-	-	-	-	-
DID 41DHA	12.70	-	-	-	-	-	-	-	-	-	-
DID 40DHA	12.70	12.70	17.6	7.92	12.70	17.5	4.5	23.0	9.5	0.003	0.006
DID 50DHA	15.875	15.88	23.0	10.31	15.88	22.6	5.5	28.8	11.9	0.007	0.014
DID 60DHA	19.05	19.05	27.0	11.91	18.26	26.2	6.6	34.6	14.3	0.012	0.024

Note: 1. Those marked with ＊ indicate Bushing Chain.
2. The values of the Avg. tensile strength and Max. allowable load are for chain bodies (attachments aren't included).

Chain Body





CJ/HJ

CJ (#100)
HJ (#80, 100)

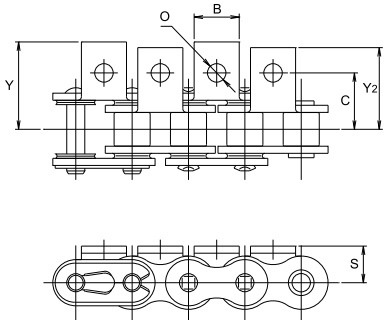
RJ/FJ

RJ/ FJ
(#60 or smaller)

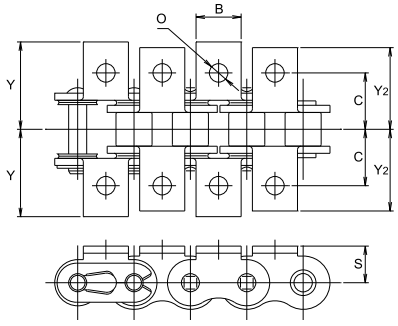
2POJ

Attachment

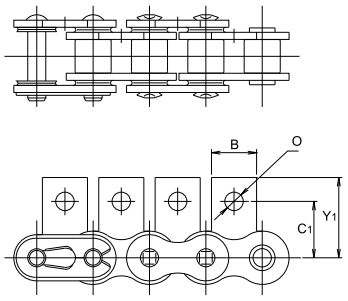
Attachment A1



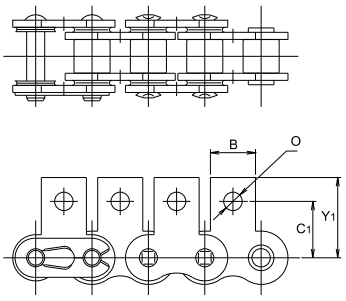
Attachment K1



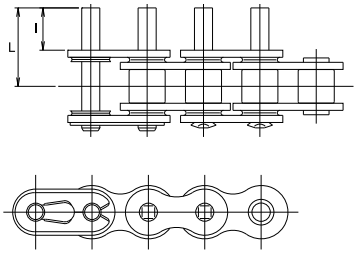
Attachment SA1



Attachment SK1



Attachment D



These figures show RJ/FJ type connecting links,
but CJ/HJ type connecting links are used for #80 or larger.

Dimensions of O-Ring/ X-Ring Chains (Single pitch)

● Dimensions of Chain Bodies

Unit (mm)

Chain No.		Pitch	Roller link width	Roller (bush) dia.	Pin						Plate		Avg. tensile strength		Max. allowable load		Approx. weight without attachments
Standard	Rustless	P	W	D	d	E	F	G	f	g	T	H	kN	kgf	kN	kgf	(kg/m)
DID 40LX	**DID 40LXN**	12.70	7.95	7.92	3.97	20.0	20.0	—	10.7	—	1.5	12.0	16.6	1,690	2.64	270	0.67
DID 50LX	**DID 50LXN**	15.875	9.53	10.16	5.09	23.4	23.9	—	12.8	—	2.0	15.0	27.9	2,830	4.41	450	1.08
DID 60LX	**DID 60LXN**	19.05	12.70	11.91	5.96	29.2	30.0	—	16.0	—	2.4	18.1	40.2	4,080	6.37	650	1.62
DID 80LD	**DID 80LDN**	25.40	15.88	15.88	7.94	36.5	—	38.5	—	20.9	3.2	24.0	72.5	7,360	10.7	1,090	2.83
DID100LD	**DID100LDN**	31.75	19.05	19.05	9.54	44.0	—	46.2	—	24.7	4.0	29.9	107	10,860	17.1	1,740	4.07

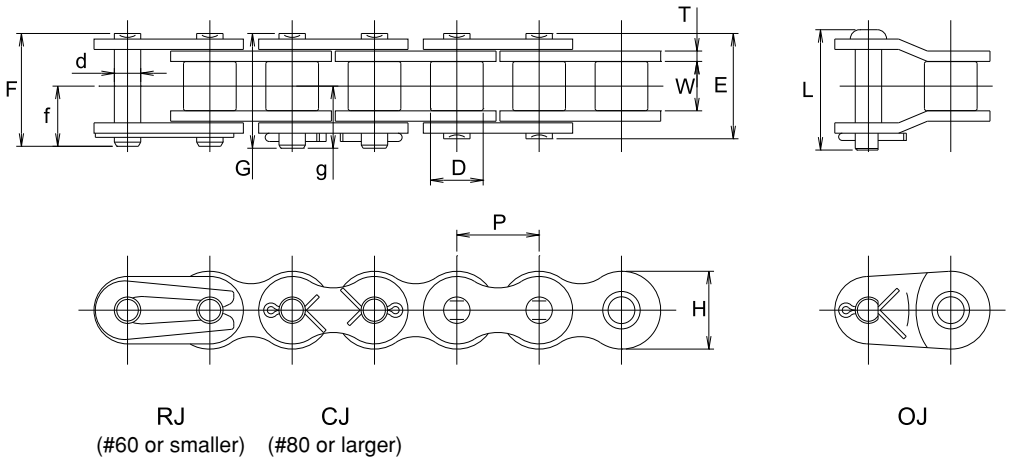
Note: The values of the Avg. tensile strength and Max. allowable load are for chain bodies (attachments aren't included).

● Dimensions of attachment

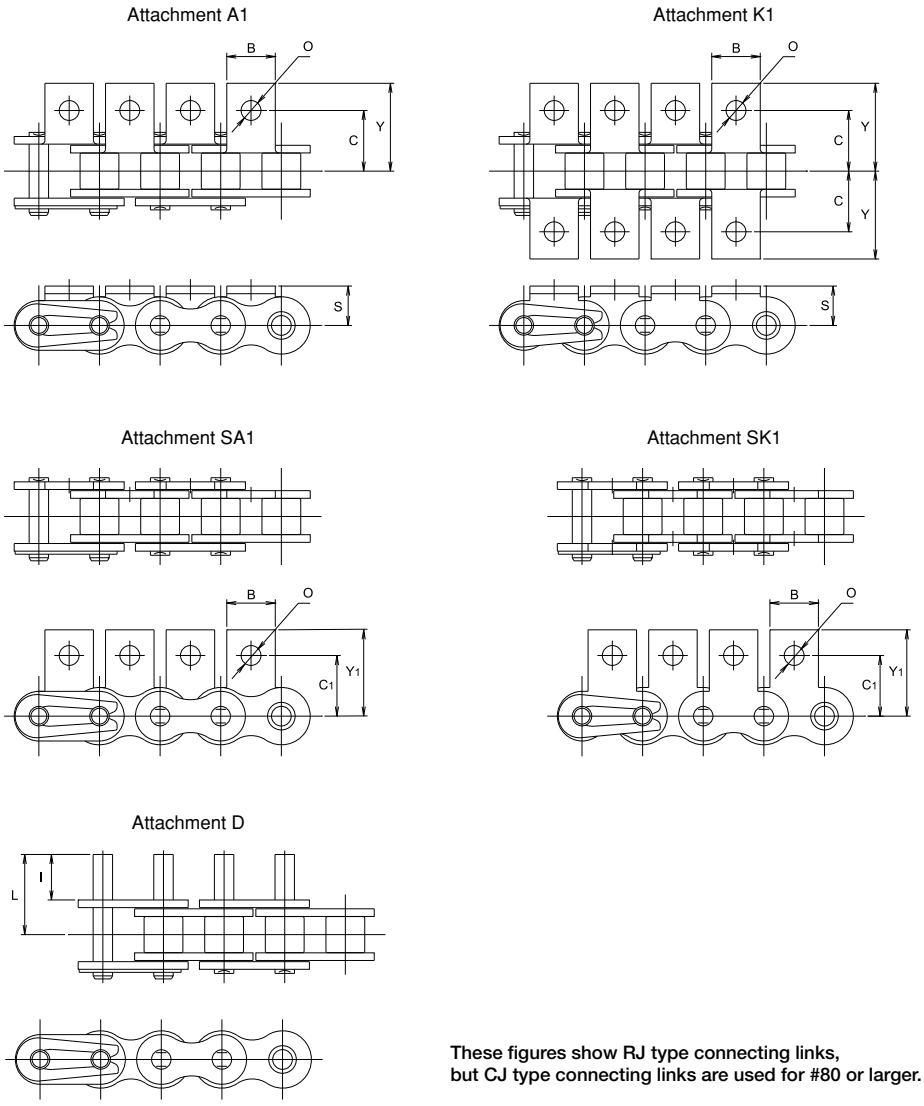
Chain No.		Attachment A1, K1				Attachment SA1, SK1		Common dimensions		Attachment D		Approx. additional weight per attachment (kg)		
Standard	Rustless	C	Y	Y_2	S	C_1	Y_1	B	O	I	L	A,SA	K,SK	D
DID 40LX	**DID 40LXN**	12.70	18.8	17.6	7.92	12.70	17.50	9.53	3.5	9.52	17.9	0.002	0.004	0.001
DID 50LX	**DID 50LXN**	15.88	24.1	23.0	10.31	15.88	22.60	12.70	5.2	11.91	22.1	0.003	0.006	0.002
DID 60LX	**DID 60LXN**	19.05	28.4	27.0	11.91	18.26	26.20	15.88	5.2	14.27	27.2	0.006	0.012	0.003
DID 80LD	**DID 80LDN**	25.40	36.7	34.9	15.88	24.61	34.05	19.05	6.8	19.05	35.4	0.011	0.022	0.007
DID100LD	**DID100LDN**	31.75	45.1	43.3	19.84	31.75	42.75	25.40	8.7	23.83	43.6	0.024	0.048	0.012

Note: Consult us for the use of Attachment WA, WSA, WK, and WSK for O-Ring Chains.

Chain Body



Attachment



These figures show RJ type connecting links,
but CJ type connecting links are used for #80 or larger.

Dimensions of Sintered Bushing Roller Chain (Single pitch)

● Dimensions of Chain Bodies

Unit (mm)

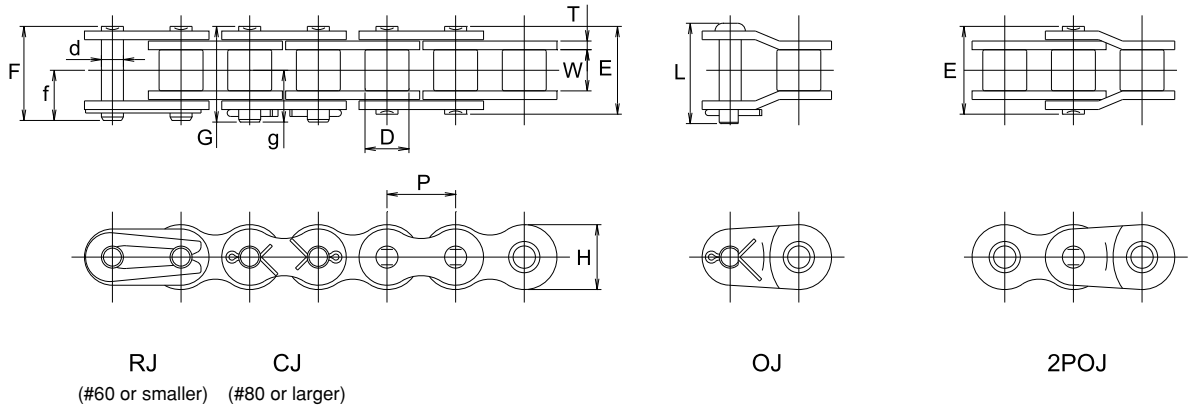
Chain No.		Pitch	Roller link width	Roller (bush) dia.	Pin							Plate		Avg. tensile strength		Max. allowable load		Approx. weight without attachments
Standard	Rustless	P	W	D	d	E	F	G	L	f	g	T	H	kN	kgf	kN	kgf	(kg/m)
DID C40 UR	**DID C40 URN**	12.70	7.95	7.92	3.97	16.5	17.6	—	19.1	9.5	—	1.5	12.0	15.6	1,580	2.64	270	0.63
DID C50 UR	**DID C50 URN**	15.875	9.53	10.16	5.09	20.3	21.9	—	23.2	11.6	—	2.0	15.0	25.4	2,580	4.31	440	1.06
DID C60 UR	**DID C60 URN**	19.05	12.70	11.91	5.96	25.4	26.9	—	29.8	14.3	—	2.4	18.1	37.2	3,780	6.27	640	1.44
DID C80 UR	**DID C80 URN**	25.40	15.88	15.88	7.94	32.6	—	35.4	37.1	—	19.0	3.2	24.0	68.6	6,960	10.7	1,090	2.67

● Dimensions of attachment

Chain No.		Pitch	Attachment A1, K1			Attachment SA, SK		Common dimensions		Attachment D		Approx. additional weight per attachment (kg)		
Standard	Rustless	P	C	Y	S	C_1	Y_1	B	O	I	L	A,SA	K,SK	D
DID C40 UR	**DID C40 URN**	12.70	12.70	17.6	7.92	12.70	17.50	9.53	3.5	9.52	16.8	0.002	0.004	0.001
DID C50 UR	**DID C50 URN**	15.875	15.88	23.0	10.31	15.88	22.60	12.70	5.2	11.91	21.0	0.003	0.006	0.002
DID C60 UR	**DID C60 URN**	19.05	19.05	27.0	11.91	18.26	26.20	15.88	5.2	14.27	25.7	0.006	0.012	0.003
DID C80 UR	**DID C80 URN**	25.40	25.40	34.9	15.88	24.61	34.05	19.05	6.8	19.05	33.9	0.011	0.022	0.007

Note: 1. The values of the Avg. tensile strength and Max. allowable load are for chain bodies (attachments aren't included).
2. The alphabet C following DID indicates that the chain is for a conveyor system, and the thickness of the inner plate is the same as the outer plate. (The thickness of the inner plate of the Bushing Roller Chain for Transmission is thicker.)

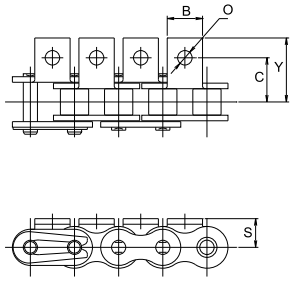
Chain Body



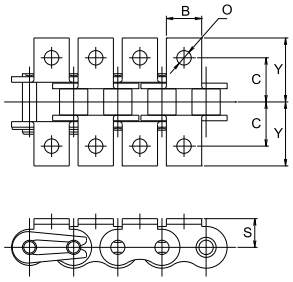
RJ (#60 or smaller) CJ (#80 or larger) OJ 2POJ

Attachment

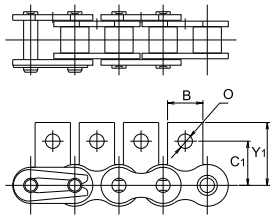
Attachment A1



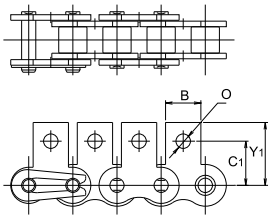
Attachment K1



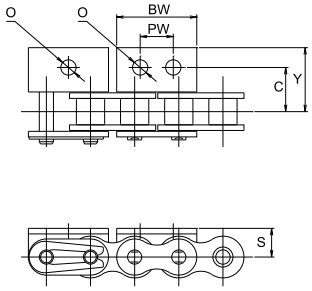
Attachment SA1



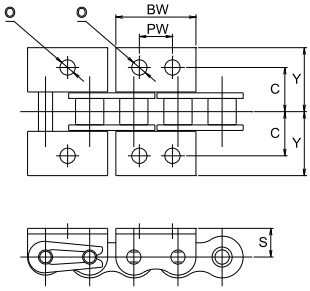
Attachment SK1



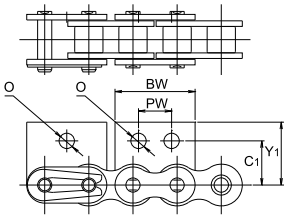
Attachment WA1, WA2



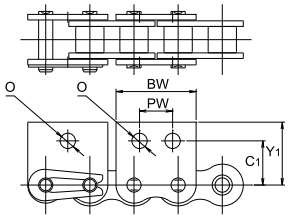
Attachment WK1, WK2



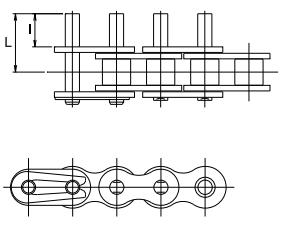
Attachment WSA1, WSA2



Attachment WSK1, WSK2



Attachment D



These figures show RJ type connecting links, but CJ type connecting links are used for #80 or larger.

Dimensions of Rustless Chain (Single pitch)

● Dimensions of Chain Bodies

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (bush) dia.	Pin							Plate		Avg. tensile strength		Max. allowable load		Approx. weight without attachments
	P	W	D	d	E	F	G	L	f	g	T	H	kN	kgf	kN	kgf	(kg/m)
＊DID 25N	6.35	3.18	(3.30)	2.31	7.8	8.5	—	—	4.7	—	0.72	5.9	4.02	410	0.63	65	0.13
＊DID 35N	9.525	4.78	(5.08)	3.59	12.0	13.1	—	—	7.3	—	1.25	9.0	9.31	950	1.47	150	0.32
DID 41N	12.70	6.38	7.77	3.59	13.7	14.6	—	15.5	7.9	—	1.20	9.6	10.1	1,030	1.67	170	0.39
DID 40N	12.70	7.95	7.92	3.97	16.5	17.6	18.1	19.1	9.5	10.1	1.50	12.0	16.6	1,700	2.64	270	0.63
DID 50N	15.875	9.53	10.16	5.09	20.3	21.9	22.1	23.2	11.6	12.1	2.00	15.0	27.9	2,850	4.41	450	1.06
DID 60N	19.05	12.7	11.91	5.96	25.4	26.9	27.9	29.8	14.3	15.1	2.40	18.1	40.2	4,100	6.37	650	1.44
DID 80N	25.40	15.88	15.88	7.94	32.6	—	35.4	37.1	—	19.0	3.20	24.0	78.4	8,000	10.7	1,100	2.55
DID100N	31.75	19.05	19.05	9.54	39.5	—	42.5	45.2	—	22.7	4.00	29.9	118	12,100	17.1	1,750	3.79
DID120N	38.10	25.4	22.23	11.11	49.7	—	53.0	54.0	—	28.2	4.80	35.9	166	17,000	24.5	2,500	5.49
DID140N	44.45	25.4	25.4	12.71	53.6	—	58.4	59.6	—	31.6	5.60	41.9	215	22,000	32.3	3,300	7.11
DID160N	50.80	31.75	28.58	14.29	63.6	—	68.2	69.7	—	36.5	6.40	47.8	269	27,500	41.2	4,200	9.82

● Dimensions of attachment

Chain No.	Pitch	Attachment A1, K1			Attachment SA1, SK1		Common dimensions		Attachment D		Approx. additional weight per attachment (kg)		
	P	C	Y	S	C_1	Y_1	B	O	I	L	A,SA	K,SK	D
＊DID 25N	6.35	7.15	10.7	4.76	7.94	11.50	5.56	3.4	6.00	9.2	0.0003	0.0006	0.00002
＊DID 35N	9.525	9.52	14.4	6.35	9.52	14.70	7.94	3.5	9.52	14.6	0.001	0.002	0.0009
DID 41N	12.70	11.91	17.5	7.14	12.30	17.50	9.53	3.5	9.52	15.4	0.0015	0.003	0.0009
DID 40N	12.70	12.70	17.6	7.92	12.70	17.50	9.53	3.5	9.52	16.8	0.002	0.004	0.001
DID 50N	15.875	15.88	23.0	10.31	15.88	22.60	12.70	5.2	11.91	21.0	0.003	0.006	0.002
DID 60N	19.05	19.05	27.0	11.91	18.26	26.20	15.88	5.2	14.27	25.7	0.006	0.012	0.003
DID 80N	25.40	25.40	34.9	15.88	24.61	34.05	19.05	6.8	19.05	33.9	0.011	0.022	0.007
DID100N	31.75	31.75	43.3	19.84	31.75	42.75	25.40	8.7	23.83	41.9	0.024	0.048	0.012
DID120N	38.10	38.10	53.2	23.02	36.51	50.30	28.58	10.3	28.58	51.4	0.037	0.074	0.02
DID140N	44.45	44.45	61.9	28.58	44.45	62.40	34.92	12.3	33.32	57.8	0.068	0.136	0.03
DID160N	50.80	50.80	69.9	31.75	50.80	68.10	38.10	14.3	38.10	67.4	0.091	0.182	0.045

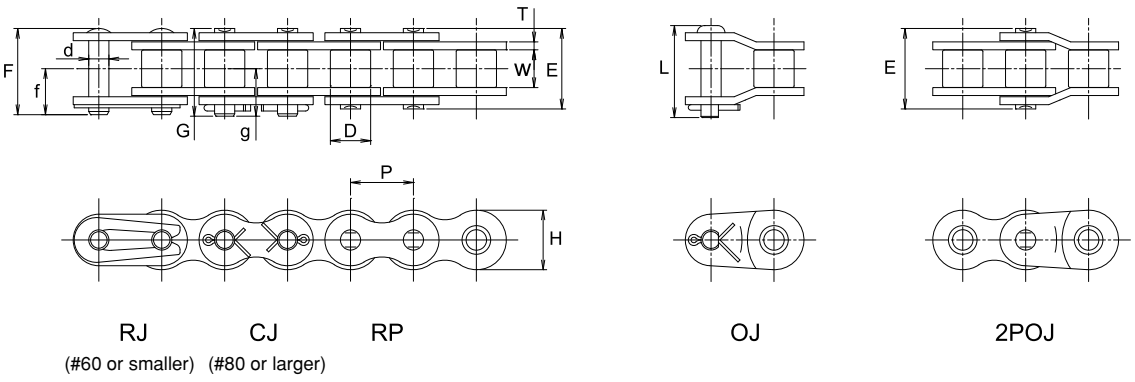
● Dimensions of wide attachment

Chain No.	Pitch	Attachment WA1, WA2, WK1, WK2			Attachment WSA1, WSA2, WSK1, WSK2		Common dimensions			Approx. additional weight per attachment (kg)	
	P	C	Y	S	C_1	Y_1	O	Bw	Pw	WA,WSA	WK,WSK
DID 40N	12.70	12.70	17.6	7.92	12.70	17.5	4.5	23.0	9.5	0.003	0.006
DID 50N	15.875	15.88	23.0	10.31	15.88	22.6	5.5	28.8	11.9	0.007	0.014
DID 60N	19.05	19.05	27.0	11.91	18.26	26.2	6.6	34.6	14.3	0.012	0.024
DID 80N	25.40	25.40	34.9	15.88	24.61	34.1	9.0	46.1	19.1	0.026	0.052
DID100N	31.75	31.75	43.3	19.84	31.75	42.8	11.0	57.8	23.8	0.051	0.102

Note: 1. Those marked with ＊ indicate Bushing Chain.
2. The values of the Avg. tensile strength and Max. allowable load are for chain bodies (attachments aren't included).

High Guard Chain (E)

Chain Body

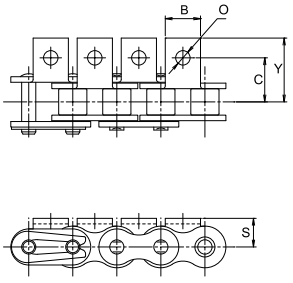


RJ CJ RP OJ 2POJ

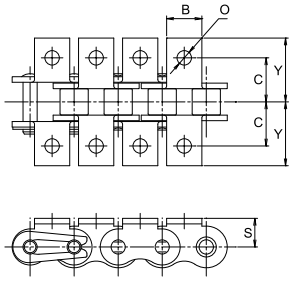
(#60 or smaller) (#80 or larger)

Attachment

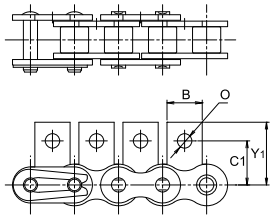
Attachment A1



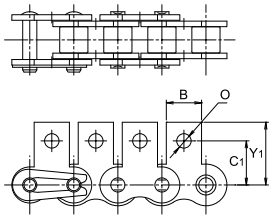
Attachment K1



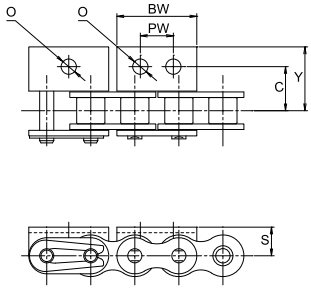
Attachment SA1



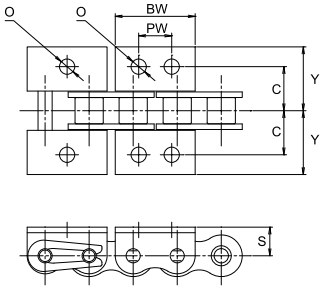
Attachment SK1



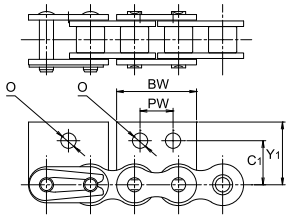
Attachment WA1, WA2



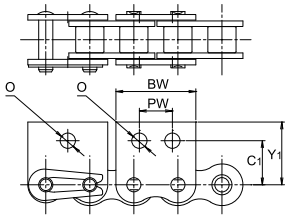
Attachment WK1, WK2



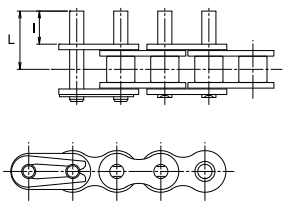
Attachment WSA1, WSA2



Attachment WSK1, WSK2



Attachment D



These figures show RJ type connecting links, but CJ type connecting links are used for #80 or larger.

Dimensions of High Guard Chain (Single pitch)

● Dimensions of Chain Bodies

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (bush) dia.	Pin							Plate		Avg. tensile strength		Max. allowable load		Approx. weight without attachments
	P	W	D	d	E	F	G	L	f	g	T	H	kN	kgf	kN	kgf	(kg/m)
＊DID 35E	9.525	4.78	(5.08)	3.59	12.0	13.1	—	—	7.3	—	1.25	9.0	10.2	1,050	2.15	220	0.32
DID 40E	12.70	7.95	7.92	3.97	16.5	17.6	18.1	19.1	9.5	10.1	1.5	12.0	16.6	1,700	3.72	380	0.63
DID 50E	15.875	9.53	10.16	5.09	20.3	21.9	22.1	23.2	11.6	12.1	2.0	15.0	28.4	2,900	6.86	700	1.06
DID 60E	19.05	12.70	11.91	5.96	25.4	26.9	27.9	29.8	14.3	15.1	2.4	18.1	40.2	4,100	9.31	950	1.44
DID 80E	25.40	15.88	15.88	7.94	32.6	—	35.4	37.1	—	19.0	3.2	24.0	75.0	7,650	14.7	1,500	2.55
DID100E	31.75	19.05	19.05	9.54	39.5	—	42.5	45.2	—	22.7	4.0	29.9	112.0	11,500	22.5	2,300	3.79
DID120E	38.10	25.40	22.23	11.11	49.7	—	53.0	54.0	—	28.2	4.8	35.9	157.0	16,100	30.4	3,100	5.49

● Dimensions of attachment

Chain No.	Pitch	Attachment A1, K1			Attachment SA1, SK1		Common dimensions		Attachment D		Approx. additional weight per attachment (kg)		
	P	C	Y	S	C_1	Y_1	B	O	I	L	A,SA	K,SK	D
＊DID 35E	9.525	9.52	14.4	6.35	9.52	14.70	7.94	3.5	9.52	14.6	0.001	0.002	0.0009
DID 40E	12.70	12.70	17.6	7.92	12.70	17.50	9.53	3.5	9.52	16.8	0.002	0.004	0.001
DID 50E	15.875	15.88	23.0	10.31	15.88	22.60	12.70	5.2	11.91	21.0	0.003	0.006	0.002
DID 60E	19.05	19.05	27.0	11.91	18.26	26.20	15.88	5.2	14.27	25.7	0.006	0.012	0.003
DID 80E	25.40	25.40	34.9	15.88	24.61	34.05	19.05	6.8	19.05	33.9	0.011	0.022	0.007
DID100E	31.75	31.75	43.3	19.84	31.75	42.75	25.40	8.7	23.83	41.9	0.024	0.048	0.012
DID120E	38.10	38.10	53.2	23.02	36.51	50.30	28.58	10.3	28.58	51.4	0.037	0.074	0.02

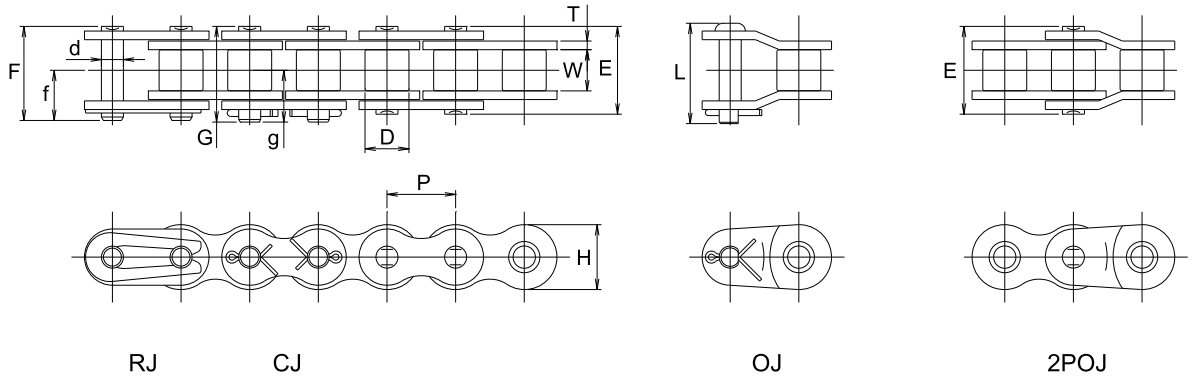
● Dimensions of wide attachment

Chain No.	Pitch	Attachment WA1, WA2, WK1, WK2			Attachment WSA1, WSA2, WSK1, WSK2		Common dimensions			Approx. additional weight per attachment (kg)	
	P	C	Y	S	C_1	Y_1	O	Bw	Pw	WA,WSA	WK,WSK
DID 40E	12.70	12.70	17.6	7.92	12.70	17.5	4.5	23.0	9.5	0.003	0.006
DID 50E	15.875	15.88	23.0	10.31	15.88	22.6	5.5	28.8	11.9	0.007	0.014
DID 60E	19.05	19.05	27.0	11.91	18.26	26.2	6.6	34.6	14.3	0.012	0.024
DID 80E	25.40	25.40	34.9	15.88	24.61	34.1	9.0	46.1	19.1	0.026	0.052

Note: 1. Those marked with ＊ indicate Bushing Chain.
2. The values of the Avg. tensile strength and Max. allowable load are for chain bodies (attachments aren't included).

Double Guard Chain (WG)

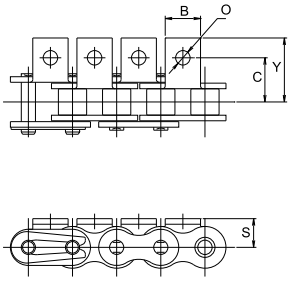
Chain Body



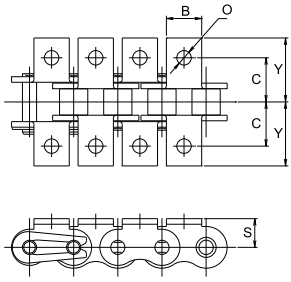
RJ (#60 or smaller) CJ (#80 or larger) OJ 2POJ

Attachment

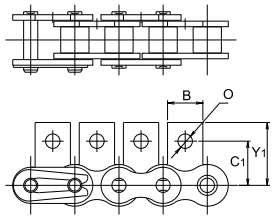
Attachment A1



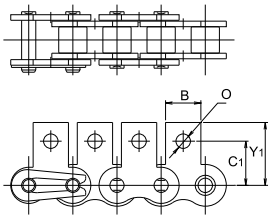
Attachment K1



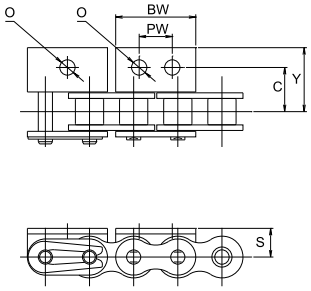
Attachment SA1



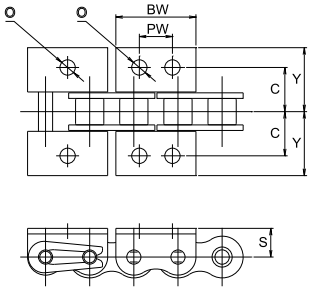
Attachment SK1



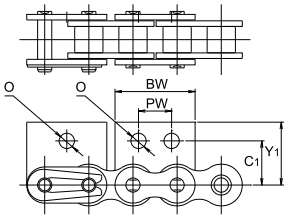
Attachment WA1, WA2



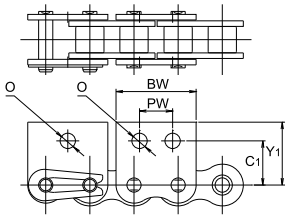
Attachment WK1, WK2



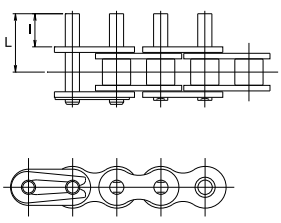
Attachment WSA1, WSA2



Attachment WSK1, WSK2



Attachment D



These figures show RJ type connecting links, but CJ type connecting links are used for #80 or larger.

Dimensions for Double Guard Chain (Single Pitch)

● Dimensions of Chain Bodies

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (bush) dia.	Pin							Plate		Avg. tensile strength		Max. allowable load		Approx. weight without attachments
	P	W	D	d	E	F	G	L	f	g	T	H	kN	kgf	kN	kgf	(kg/m)
DID 40WG	12.70	7.95	7.92	3.97	16.5	17.6	—	19.1	9.5	—	1.5	12.0	16.6	1,700	3.72	380	0.63
DID 50WG	15.875	9.53	10.16	5.09	20.3	21.9	—	23.2	11.6	—	2.0	15.0	28.4	2,900	6.86	700	1.06
DID 60WG	19.05	12.70	11.91	5.96	25.4	26.9	27.9	29.8	14.3	15.1	2.4	18.1	40.2	4,100	9.31	950	1.44
DID 80WG	25.40	15.88	15.88	7.94	32.6	—	35.4	37.1	—	19.0	3.2	24.0	75.0	7,650	14.70	1,500	2.55

● Dimensions of attachment

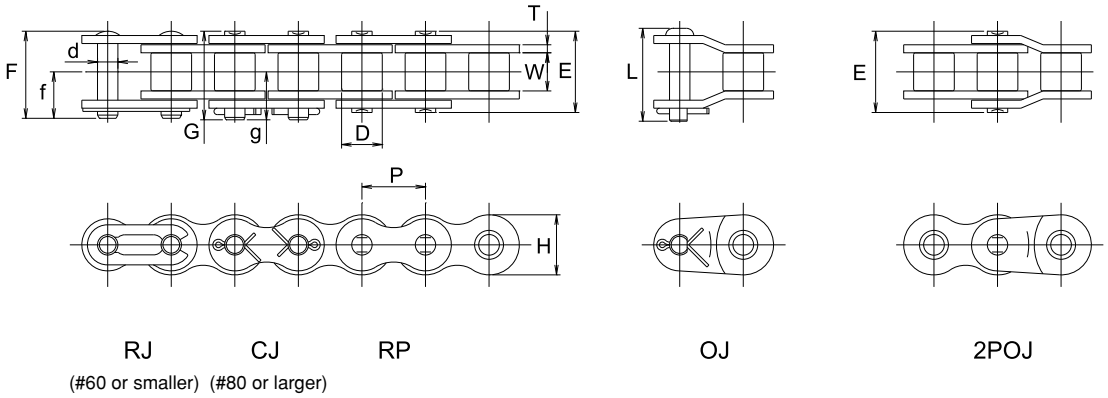
Chain No.	Pitch	Attachment A1, K1			Attachment SA1, SK1		Common dimensions		Attachment D		Approx. additional weight per attachment (kg)		
	P	C	Y	S	C_1	Y_1	B	O	I	L	A,SA	K,SK	D
DID 40WG	12.70	12.70	17.6	7.92	12.70	17.50	9.53	3.5	9.52	16.8	0.002	0.004	0.001
DID 50WG	15.875	15.88	23.0	10.31	15.88	22.60	12.70	5.2	11.91	21.0	0.003	0.006	0.002
DID 60WG	19.05	19.05	27.0	11.91	18.26	26.20	15.88	5.2	14.27	25.7	0.006	0.012	0.003
DID 80WG	25.40	25.40	34.9	15.88	24.61	34.05	19.05	6.8	19.05	33.9	0.011	0.022	0.007

● Dimensions of wide attachment

Chain No.	Pitch	Attachment WA1, WA2, WK1, WK2			Attachment WSA1, WSA2, WSK1, WSK2		Common dimensions			Approx. additional weight per attachment (kg)	
	P	C	Y	S	C_1	Y_1	O	Bw	Pw	WA,WSA	WK,WSK
DID 40WG	12.70	12.70	17.6	7.92	12.70	17.5	4.5	23.0	9.5	0.003	0.006
DID 50WG	15.875	15.88	23.0	10.31	15.88	22.6	5.5	28.8	11.9	0.007	0.014
DID 60WG	19.05	19.05	27.0	11.91	18.26	26.2	6.6	34.6	14.3	0.012	0.024
DID 80WG	25.40	25.40	34.9	15.88	24.61	34.1	9.0	46.1	19.1	0.026	0.052

Note: The values of the Avg. tensile strength and Max. allowable load are for chain bodies (attachments aren't included).

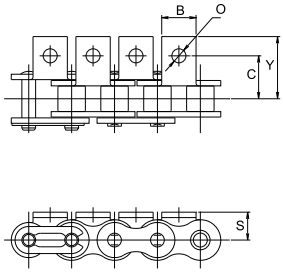
Chain Body



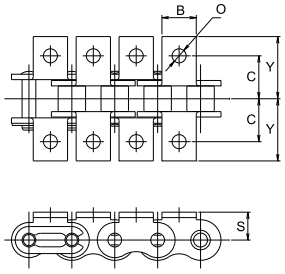
RJ (#60 or smaller) CJ (#80 or larger) RP OJ 2POJ

Attachment

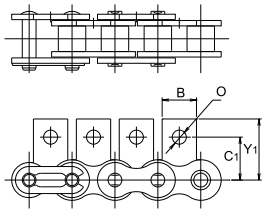
Attachment A1



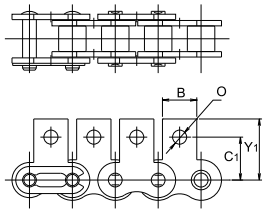
Attachment K1



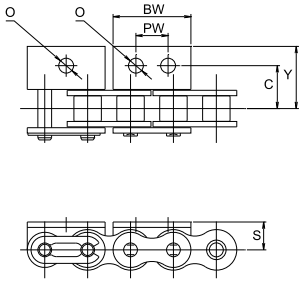
Attachment SA1



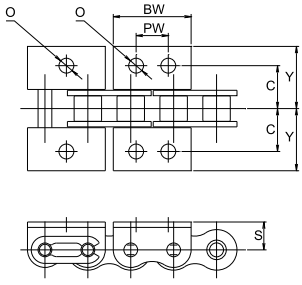
Attachment SK1



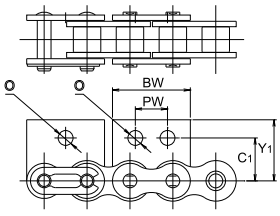
Attachment WA1, WA2



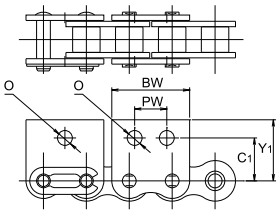
Attachment WK1, WK2



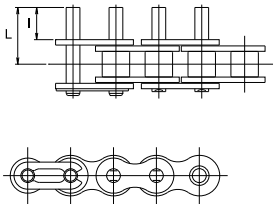
Attachment WSA1, WSA2



Attachment WSK1, WSK2



Attachment D



These figures show RJ type connecting links, but CJ type connecting links are used for #80 or larger.

Dimensions of Stainless Steel Chain (Single pitch)

● Dimensions of Chain Bodies

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (bush) dia.	Pin							Plate			Avg. tensile strength		Max. allowable load		Approx. weight
	P	W	D	d	E	F	G	f	L	g	T	H	h	kN	kgf	kN	kgf	(kg/m)
＊DID 25SS	6.35	3.18	(3.30)	2.31	7.65	8.65	-	4.83	-	-	0.75	5.8	5.0	3.33	340	0.12	12	0.14
＊DID 35SS	9.525	4.78	(5.08)	3.59	11.55	12.90	-	7.13	13.85	-	1.25	8.8	7.3	7.55	770	0.26	26	0.33
DID 40SS	12.70	7.95	7.92	3.97	16.15	17.65	-	9.58	19.05	-	1.50	11.7	10.1	13.3	1,350	0.44	45	0.63
DID 50SS	15.875	9.53	10.16	5.08	20.40	21.80	-	11.60	23.05	-	2.00	14.6	12.6	20.9	2,120	0.69	70	1.04
DID 60SS	19.05	12.70	11.91	5.96	25.40	26.90	-	14.20	29.55	-	2.40	17.5	15.0	30.0	3,050	1.03	105	1.50
DID 80SS	25.40	15.88	15.88	7.94	32.30	-	35.40	-	37.10	19.25	3.20	23.0	19.7	53.4	5,420	1.77	180	2.62
DID100SS	31.75	19.05	19.05	9.54	40.40	-	43.35	-	43.75	23.15	4.00	28.9	24.8	82.3	8,360	2.55	259	4.09

● Dimensions of Chain Bodies

Chain No.	Pitch	Roller link width	Roller (bush) dia.	Pin							Plate			Avg. tensile strength		Max. allowable load		Approx. weight
	P	W	D	d	E	F	G	f	L	g	T	H	h	kN	kgf	kN	kgf	(kg/m)
DID 40 SSK	12.70	7.95	7.92	3.97	16.15	17.65	-	9.58	19.05	-	1.50	11.7	10.1	13.3	1,350	0.69	70	0.63
DID 50 SSK	15.875	9.53	10.16	5.09	20.40	21.80	-	11.60	23.05	-	2.00	14.6	12.6	20.9	2,120	1.03	100	1.04
DID 60 SSK	19.05	12.70	11.91	5.96	25.40	26.90	-	14.20	29.55	-	2.40	17.5	15.0	30.0	3,050	1.57	160	1.50
DID 80 SSK	25.40	15.88	15.88	7.94	32.30	-	35.40	-	37.10	19.25	3.20	23.0	19.7	53.4	5,420	2.65	270	2.62

● Dimensions of attachment

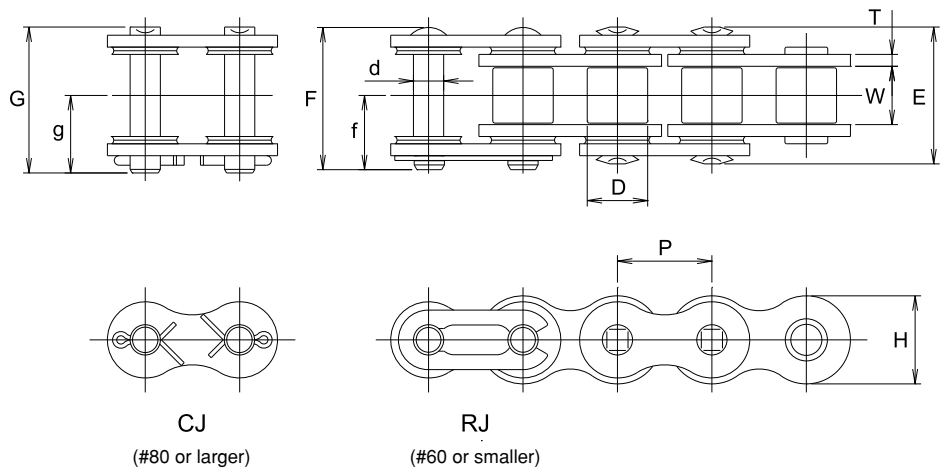
Chain No.	Attachment A1, K1			Attachment SA1, SK1		Common dimensions		Attachment D		Approx. additional weight per attachment (kg)		
	C	Y	S	C_1	Y_1	B	O	I	L	A,SA	K,SK	D
＊DID 25SS	7.1	10.7	4.8	7.95	11.9	5.6	2.8	6.00	13.90	0.0003	0.0006	0.0002
＊DID 35SS	9.5	13.8	6.4	9.50	14.25	7.9	2.8	9.52	21.60	0.0009	0.0018	0.0007
DID 40SS.SSK	12.7	17.4	7.9	12.70	17.3	9.5	3.6	9.52	25.80	0.0014	0.0028	0.0009
DID 50SS.SSK	15.9	22.3	10.3	15.90	22.3	12.7	5.2	11.91	32.30	0.0032	0.0064	0.0017
DID 60SS.SSK	19.1	27.2	11.9	18.30	26.3	15.9	5.2	14.27	40.00	0.0056	0.012	0.0034
DID 80SS.SSK	25.4	35.2	15.9	24.60	34.2	19.1	6.8	19.05	52.35	0.013	0.026	0.007
DID 100SS	31.8	44.7	19.8	31.8	44.1	25.4	8.7	-	-	0.025	0.050	-

● Dimensions of wide attachment

Chain No.	Attachment WA1, WA2, WK1, WK2			Attachment WSA1, WSA2, WSK1, WSK2		Common dimensions			Approx. additional weight per attachment (kg)	
	C	Y	S	C_1	Y_1	O	Bw	Pw	WA,WSA	WK,WSK
DID 40SS.SSK	12.7	17.4	7.9	12.70	17.3	3.6	23.0	12.70	0.003	0.006
DID 50SS.SSK	15.9	23.0	10.3	15.90	22.6	5.2	28.8	15.88	0.007	0.014
DID 60SS.SSK	19.05	28.2	11.9	18.30	26.7	5.2	34.6	19.05	0.013	0.026
DID 80SS.SSK	25.4	36.6	15.9	24.60	35.4	6.8	46.1	25.40	0.03	0.06
DID 100SS	31.75	44.9	19.8	31.80	44.0	8.3	57.7	31.75	0.06	0.12

Note: 1. Those marked with ＊ indicate Bushing Chain.
2. The values of the Avg. tensile strength and Max. allowable load are for chain bodies (attachments aren't included).

Chain Body

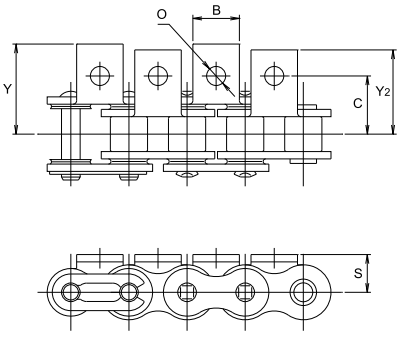


CJ
(#80 or larger)

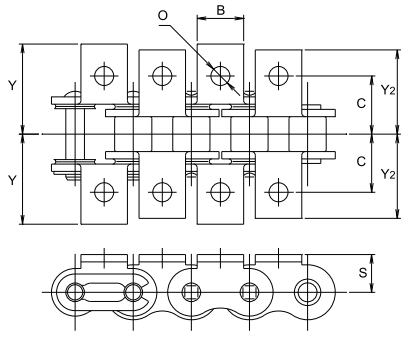
RJ
(#60 or smaller)

Attachment

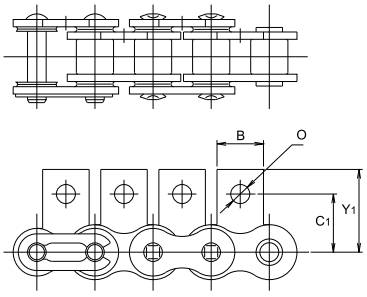
Attachment A1



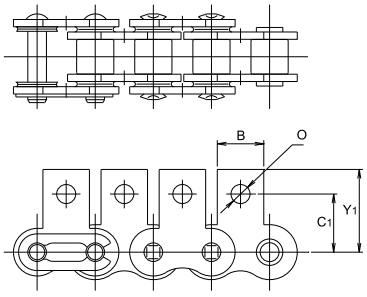
Attachment K1



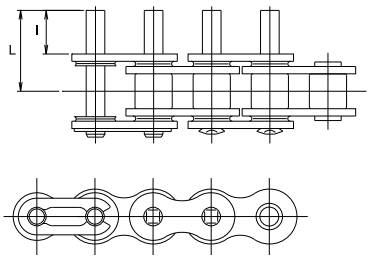
Attachment SA1



Attachment SK1



Attachment D



These figures show RJ type connecting links,
but CJ type connecting links are used for #80 or larger.

Dimensions of Stainless Steel X-Ring Chains (Single pitch)

● Dimensions of Chain Bodies

Unit (mm)

Chain No.	Pitch	Roller link width	Roller (bush) dia.	Pin						Plate		Avg. tensile strength		Max. allowable load		Approx. weight
	P	W	D	d	E	F	G	f	g	T	H	kN	kgf	kN	kgf	kg/m
DID40SSLT	12.70	7.95	7.92	3.96	20.0	20.3	-	10.7	-	1.5	11.7	13.3	1,350	0.44	40	0.68
DID50SSLT	15.875	9.53	10.16	5.08	23.4	24.3	-	12.8	-	2.0	14.6	20.9	2,120	0.69	70	1.1
DID60SSLT	19.05	12.70	11.91	5.95	29.2	29.9	-	15.6	-	2.4	17.5	30.0	3,050	1.03	100	1.6
DID80SSLT	25.40	15.88	15.88	7.93	36.5	-	39.0	-	20.7	3.2	23.0	53.4	5,420	1.77	180	2.7

● Dimensions of attachment

Chain No.	Pitch	Attachment A1, K1				Attachment SA1, SK1		Common dimensions		Attachment D		Approx. additional weight per attachment (kg)		
	P	C	Y	Y_2	S	C_1	Y_1	B	O	I	L	A,SA	K,SK	D
DID40SSLT	12.70	12.7	18.6	17.5	7.9	12.7	17.3	9.5	3.6	9.52	17.9	0.002	0.004	0.001
DID50SSLT	15.875	15.9	23.4	22.3	10.3	15.9	22.3	12.7	5.2	11.91	22.1	0.003	0.006	0.002
DID60SSLT	19.05	19.0	28.6	27.3	11.9	18.3	26.3	15.9	5.2	14.27	27.1	0.006	0.012	0.003
DID80SSLT	25.40	25.4	36.9	35.3	15.9	24.6	34.2	19.1	6.8	19.05	35.4	0.011	0.022	0.007

Note: The values of the Avg. tensile strength and Max. allowable load are for chain bodies (attachments aren't included).