D.I.D®

GENERAL CATALOG

POWER TRANSMISSION & CONVEYOR CHAIN

ALL PRODUCTS GUIDE

DID is a brand you can depend on.

Quality Assurance in Conformity with World Standards

Let us introduce our quality assurance system recognized at home and abroad.

Quality assurance of DID

- Customer satisfaction is our priority.
- All Daido members are dedicated and 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 ISO9000 series and API.

All of our employees keep Ag Quality Control Practice Manual at hand as the bible of quality and refer to it in routine activities.

Recognition of conformity with ISO9000 series

ISO is the abbreviation of International Standardization Organization, and especially ISO9000 series has been established as "Aga standard of quality assurance from the standpoint of purchasers." Our transmission chains, manufactured at the Fukuda Factory, are ISO9001 certified by the Japanese Quality Assurance Organization (JQA).

Authorization by API

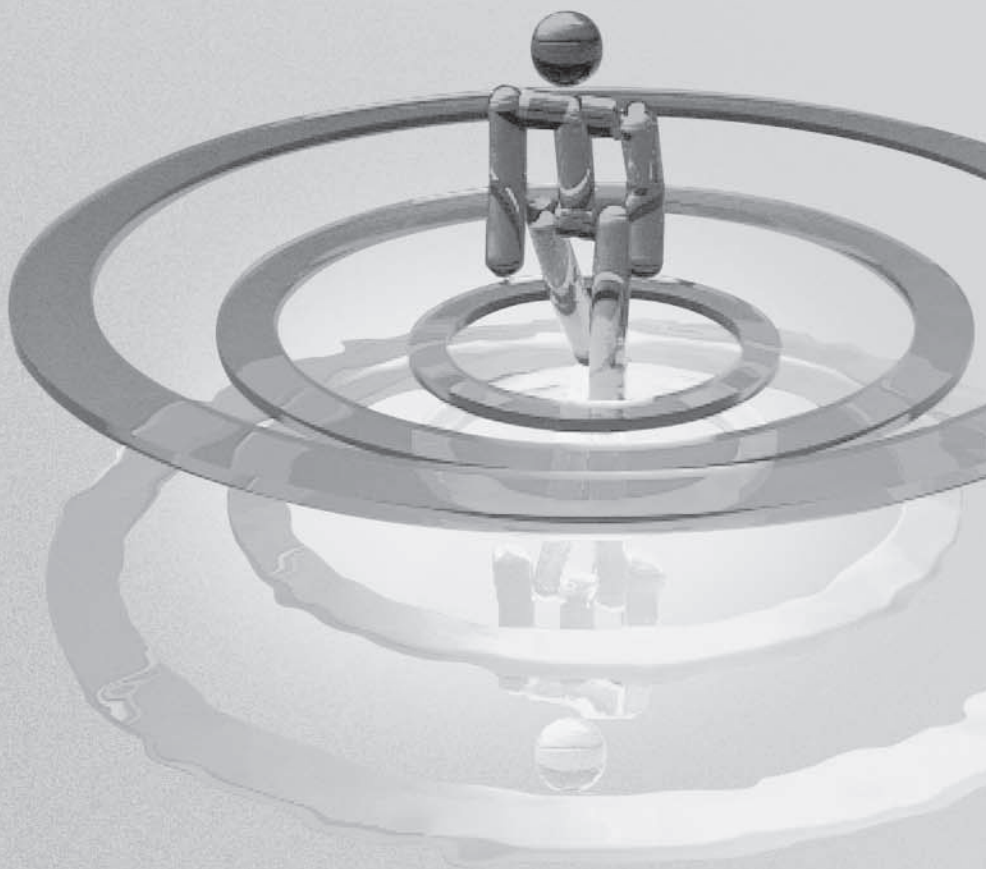
The American oil industry applies rigid quality control standards to all mechanical parts used in oil field development and oil refining. The organization which examines the conformity with their standards for authorization is called API (American Petroleum Institute). Since the authorization by API to use its official monogram 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 the rigid quality control system.

DAIDO KOGYO CO., LTD
Industrial Products Sales & Marketing Div.
3-5-4, Ningyo-Cho Nihonbashi
Chuo-ku, Tokyo 103-0013, Japan
Phone: 81-3-3808-0781 • Fax: 81-3-5695-7146

INTRODUCTION

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 60 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.



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 safely using them.

CAUTION

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 P. 96 ~ 107.)

- For handling, follow the instructions in this catalog and in the instruction manual. Select layout, install, adjust and maintain chain 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

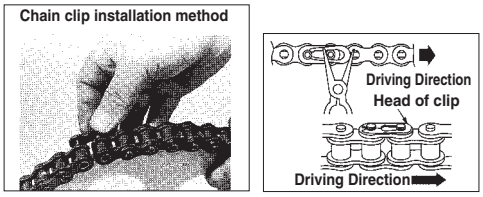
- Do not partially replace a chain.
  Do not partially exchange a worn or damaged chain and sprockets. Replacing only the worn or damaged part does not restore overall strength, and risks further breaking or destruction. Always replace the entire chain and sprockets.
- Do not modify chains or sprockets.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

2. Chain installation

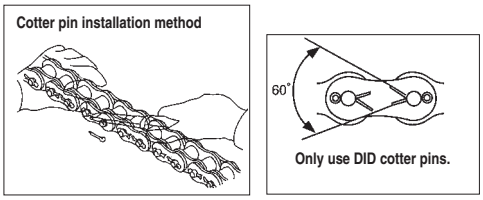
Connection (1) Before installation, please read the previous section (1).

(2) Use connecting links and offset links as described below.
When installing a connecting link or offset link, confirm its construction. (P.11 ~ 13)

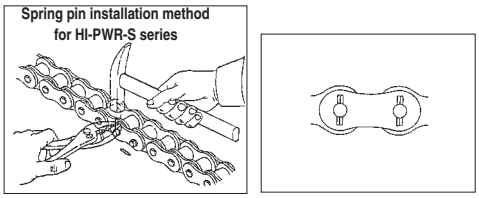
- For installing the spring clip on the connecting link, refer to the method illustrated below.



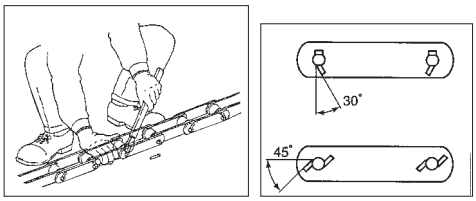
- For installing a cotter pin on the connecting link, refer to the method illustrated below.



- For installing a spring pin, refer to the method illustrated below. Spring pins are used for interference-fitted connecting links used in K, KS, HK, and HKS series (P.30, P.31~39, P.40~P.42).



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



- For installing a one-pitch offset link, refer to the installation method for the cotter type connecting link, and for installing a two-pitch offset link, refer to 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 component.

- When assembling, for example, never drill a hole on a connecting plate to make it larger and never file a pin to make it thinner because it will inhibit inserting the pin into the connecting plate.
  Do not rework damaged chains.
- Do not re-use a clip and do not install a used cotter or connecting link or any other disassembled component of a chain.

Adjustment (3) For rated operation of a chain, install and adjust it correctly. (See P. 97~98.)

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 correct?
- 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 stand in the rotation direction of the chain.

(5) If any abnormal sound 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 an 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 precautions:

Lubrication (1) Lubrication(See P. 102~ 104.)

Except for some chains made of special materials or elements, most chain life can be prolonged with lubrication. Without lubrication, chain life can be shortened, significantly. (For example: chain elongation, corrosion and stiff joint due to wear of some chain parts.)

(2)Washing

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.

(3) Adjustment of tension and timing of exchange (See P.100 ~101, P.107)

Adjustment

Chain and sprockets are consumable products.
The wear of the chain and sprockets causes the chain to sag. Periodically check the sag, and adjust to achieve the optimum tension.
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, replace them immediately.

- Do not use an offset link for lifting.
- Excessive use of oil will cause scattering, etc. Wipe off extra oil so as to prevent it from scattering.
- For washing, do not use gasoline or highly volatile solvent. Furthermore, do not allow any material containing an acid or alkali to come into contact with it.

4. Others

Even chains of the same kind and size have a different service life, depending on the service environment, number of teeth on the sprockets, lubrication and other conditions. This also applies to the life of sprockets. Chain and sprockets are different in wear life. If a new chain is used on an old sprocket with worn teeth, a non-conforming condition 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.

CAUTION

Cautions for using roller chain for lifting

Based on the “Chain Safety (Technical) Standard” and “End Fittings” proposed by Japanese Association of Chain Manufacturers to Japanese Sky Parking Areas Association and Japanese Association of Sky Parking Machine Manufacturers in February and October, 1993, the cautions necessary for using roller chain (hereinafter called chain) for lifting are stated below.

CAUTION

1. Safety factor

The “Mechaincal 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 maximum 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 exchange the chain under strict life control.

2. Selection of chain

2-1 Maximum tension

The maximum tension allowed to act on 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 setting methods recommended by us (see P. 93 and 94), and adopt a safe method.

The maximum tension corresponds to the “corrected chain tension” and refers to a tension with especially dynamic load due to start, stop, etc. considered in addition to the 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

Standard connecting links have pins clearance-fitted in the connecting plate holes.

The connecting link is lower in fatigue strength than the base chain. When higher fatigue strength is necessary, use connecting links with the pins interference-fitted in the connecting plate holes.

In this case do not use any offset link. As for the types of connecting links, see P.11~P.13.

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 problems. For safety purposes, take the following matters into 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, the dimensional difference between the pin diameter and the fitting hole are too large, a large bending stress acts to dramatically lower the pin strength.

Refer to “3-3 Dimensions of fitting” in 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, exchange the fitting.

(3) Rust or corrosion is a major reason for decreased strength. During use, take rust preventive actions such as periodically applying grease.

(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 horizontal 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, a material which ensures the required hardness is selected 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 “wear” or “roll over” during use, press a hard bushing into the fitting hole.

b. Since the strength of the fitting is lower that that of a hardened and tempered fitting, adequate strength must be secured by a adopting corresponding dimensions.

3-3 Dimensions of fitting

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

CAUTION

End fitting for single strand chain

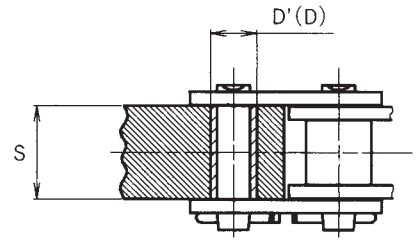
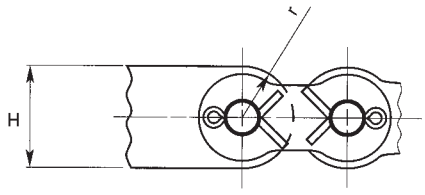
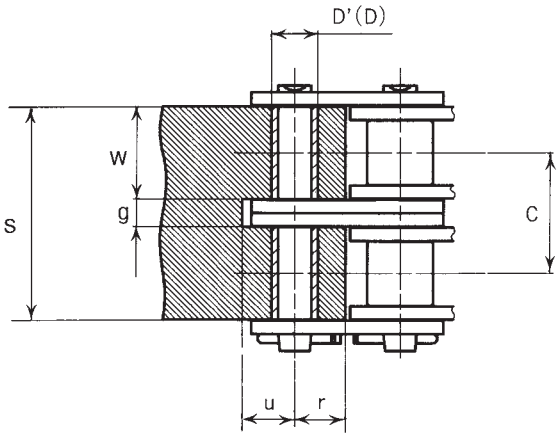
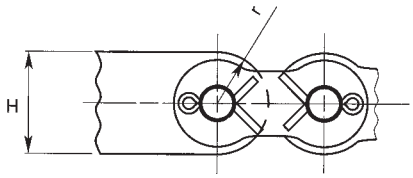


Figure shows bushing press-fitted.



End fitting for double strand chain





Dimensions of End fitting

Unit (inch)

Chain No.	g	S	D (Without Bushing)	D' (With Bushing)	C	r (Referrence)	u (Referrence)	H (Referrence)
RC60-1	—	0.701	0.236	0.331	—	0.362	—	0.713
RC60-2	0.205	1.591	—	—	0.898	0.362	0.374	
RC80-1	—	0.890	0.314	0.444	—	0.480	—	0.953
RC80-2	0.268	2.039	—	—	1.154	0.480	0.500	
RC100-1	—	1.083	0.377	0.530	—	0.598	—	1.189
RC100-2	0.335	2.484	—	—	1.409	0.598	0.622	
RC120-1	—	1.398	0.439	0.616	—	0.717	—	1.425
RC120-2	0.398	3.177	—	—	1.787	0.717	0.748	
RC140-1	—	1.465	0.502	0.706	—	0.835	—	1.665
RC140-2	0.472	3.378	—	—	1.925	0.835	0.874	
RC160-1	—	1.780	0.564	0.746	—	0.953	—	1.902
RC160-2	0.535	4.071	—	—	2.303	0.953	1.000	

Note: The dimensions of D' can be applied only when DID bushings are used. If these dimensions are applied to the bushings for chain produced by other manufacturers, the strength may be lowered.

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Roller Chain for Transmission

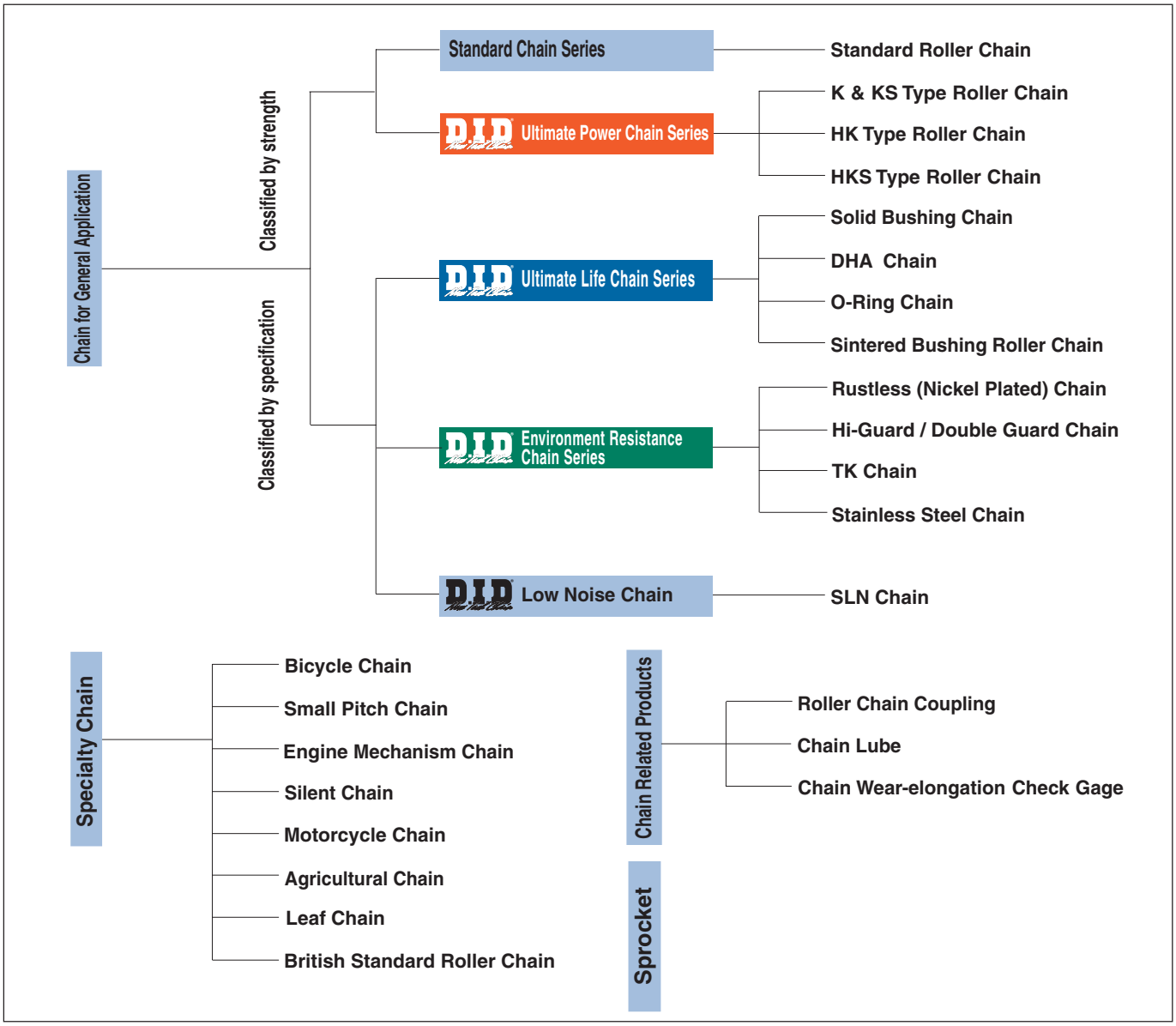
I

1. Outline of DID Power Transmission Chain

1-1 Classification

DID products for transmission can be classified into “General application chain”, “Specialty chain”, “chain-related products” and “sprockets”.
The “General application chain”, with their sprockets in conformity with ANSI, are used in a wide range of areas for various applications. They are provided as “Ultimate life chain series”, “Environment resistant chain series” and “Low noise chain series” to suit respective applications. So, you can select chain for a lubrication rejecting condition, highly corrosive environment, silence demanded environment, etc. The “Specialty chain” include a variety of chain such as “Bicycle chain”, “Small pitch chain” mainly used for office machines and “Engine mechanism chain”, “Silent chain” known for silent operation, “Motorcycle chain”, known for silent operation, “Motorcycle chain”, and “Agricultural chain”. Furthermore, “Leaf chain” for lifting heavy things and quite different from roller chain in form, “BS type roller chain” of British standard, and in addition, “chain related products” such as “roller chain couplings”, “chain lube” and “chain wear-elongation check gage” are also available. As for “sprockets”, those with a hub on one side only, are kept in stock. Our chain technology has grown in areas of motorcycles and motor vehicles, and abundantly accumulated know how supports the ”General application chain” and “Specialty chain” and can rapidly respond to demand for various applications.

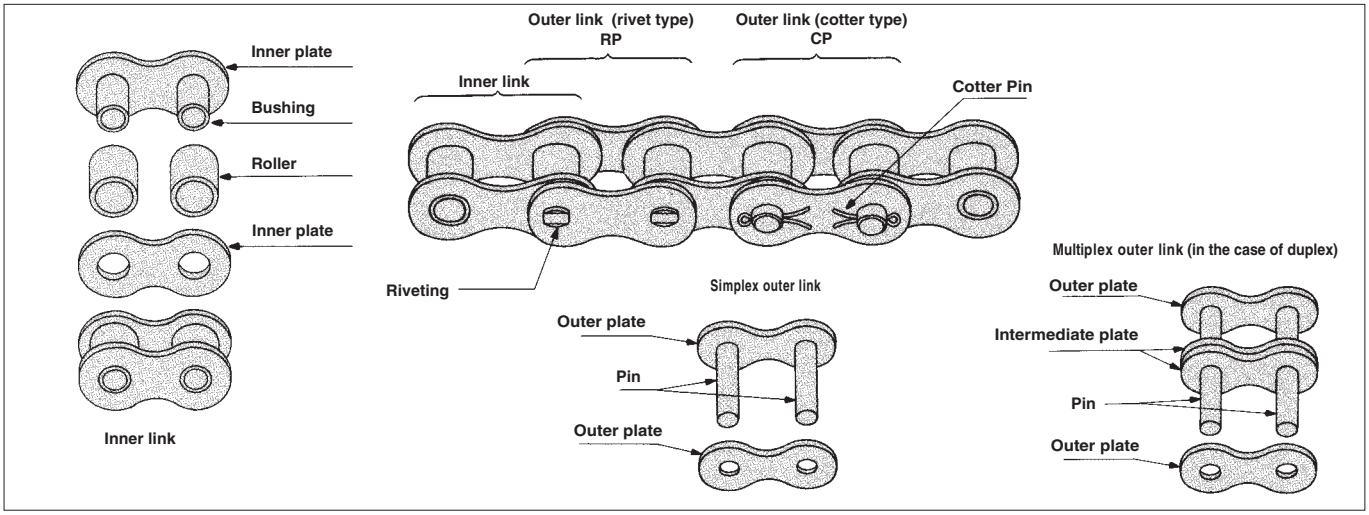
Classification



1-2 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.

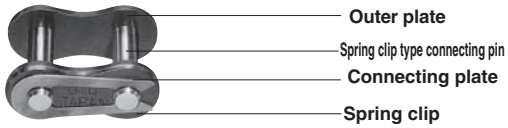
Components	Pin	Pins support all the load acting on the chain, together with inner and outer plates, and when the chain is engaged with a sprocket, the pins slide as bearings. They are required to be high in shearing strength and bending strength, and especially wear resistance.
	Bushing	Bushings act 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



Connecting links

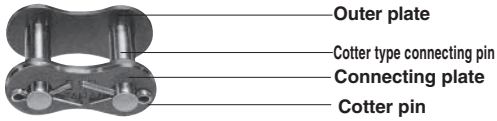
The following four types of connecting links are available.

Spring Clip type connecting link



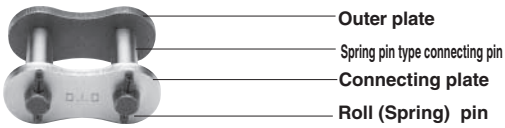
Spring Clip type connecting link is available in clearance fit (slip fit) and interference fit (semi-press fit) types.

Cotter Pin type connecting link



Cotter Pin type connecting link is available in clearance fit (slip fit) and interference fit (semi-press fit) types.

Roll Pin type connecting link



Roll Pin type connecting link is interference fit (semi-press fit) type connecting link for heavy duty chain series (Ultimate Power Series) roller chain such as KS, HK and HKS type roller chain (P.31 - 42).

Offset link

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

One-pitch offset link (HL)

Two-pitch offset link (2PHL)

Since the "connecting link" and "offset link" are lower than the base chain in strength, any service condition in excess of the maximum Horsepower rating is subject to consulting with us.

* Clearance fit (slip fit)

In this fit, when a pin and a hole are combined, it has clearance between them, since the diameter of the hole is slightly larger than the pin diameter. This method is used in standard connecting links.

* Interference fit (press or semi-press fit)

In this fit, when a pin and a hole are combined, an interference occurs always, since the diameter of the hole is slightly smaller than the pin diameter. This method is adopted; in chain such as Ultimate Power Series that require greater fatigue strength than standard chain.

1-3 How to Order Transmission Roller Chain

• When you order RC60LLDR X 160 links endless with standard connecting

[Type indication]

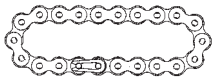
RC 60 LLDR ×160 J E

- RC — Roller Chain
- 60 — Size
- LLDR — Type of Chain
- ×160 — Chain Length
- J E — End Type
- RC 60 LLDR ×160 — Chain No.

Spring clip type — Clearance fit : R; Interference fit : F
Cotter type — Clearance fit : C; Interference fit : H

Some are inapplicable, depending on the chain size. See the table on P13.

Indication of End Type (connecting link)

PS		··· A connecting link is packed separately with the chain.
JE		··· Endless with a connecting link already installed.
ATOE		··· A connecting link is attached to one end.
BERL		··· No connecting link to be included. Both Ends Roller Link. Please provide descriptions for special arrangement.

• When you order RC80C x 121 links including 3 offset link (HL) and 1 cotter type connecting link

RC 80 C × 121 incl. 3HL and 1CL

- RC — Roller Chain
- 80 — Size
- C — Type of Chain
- 121 — Chain Length (links)
- incl. 3HL and 1CL — Description

C: Cotter Pin Type
R: Rivet Pin Type

Please provide descriptions for special arrangement.

• When you order for cotter type slip fit connecting link for RC80

CL 80 Cotter

- CL — Connecting Link
- 80 — Size
- Cotter — Type of Connecting Link

e.g. Clip / Cotter / PL (pin link or R)

Type of Connecting Link
No indication: Daido Standard
- Clip type slip fit connecting link for #60 and smaller.
- Cotter type slip fit connecting link for #80 and larger
- Semi press fit type is our standard connecting link for Ultimate Power Series chain (P30 - P42)

• When you order for half link (offset link) for RC60

HL 60

- HL — Offset (Half) Link
- 60 — Size

- 2 pitch offset link is also available.
- 2 pitch offset link is standard for RC25 (P15) and O-Ring chain (P48).

2. DID General Application Chain

2-1 Dimensions and performance of DID general application chain

DID general application chain can be classified, in reference to strength, into standard series of JIS roller chain and HK series in conformity with ANSI. The inner and outer plates of an HK chain are equal in thickness, to those of a standard chain which is larger than the former by one size.

The standard series include two lines; standard roller chain, and K & KS type chain improved in fatigue strength and shock resistance compared to the standard roller chain. You can use them as basic transmission chain 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 type roller chain and HKS type roller chain further enhanced in fatigue strength.

Sprockets

The chain can be engaged with standard sprockets of the corresponding nominal numbers. For sprockets, see P.76.

Selection of chain

For selecting a standard roller chain, K or KS type roller chain, refer to “General selection”(P.91). However, only for a special case of low speed and less shock, “Slow-speed selection”(P. 92) can also be referred to.

For selecting an HK type roller chain or HKS type roller chain, refer to “Slow-speed selection” (P.92).
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 withus.

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

The numbers of strands which can be manufactured are as listed below.
The standard method for connecting pins and plates is rivet type.
Standard chain and HK type chains of RC80 or larger can also be manufactured as cotter type.
KS type chains and HKS type chains have manufactured as rivet type only.

Connecting links and Offset links

For connecting links and offset links, see the following table showing kinds of general application, chain, connecting links and offset links.

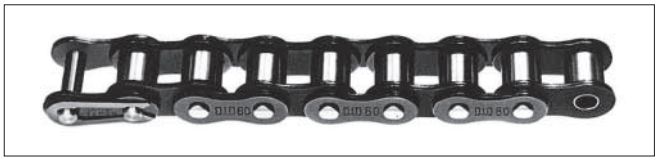
This section describes general application chain only. However since many kinds of engine mechanism chain and agricultural roller chain are also available. Please see the sections describing the respective items.

2-1-1 Variation for General Application Chain and Connecting Links, Offset Links

Classification (Max. allowable load ratio)	ANSI Standard Roller Chain (100%)			KS Series Roller Chain (approx. 130%)			HK Series Roller Chain (approx. 110%)			HKS Series Roller Chain (approx. 150%)		
Standard Connecting Links	Chain Size	Connecting link	Offset link	Chain Size	Connecting link	Offset link	Chain Size	Connecting link	Offset link	Chain Size	Connecting link	Offset link
	RC25	Slip Fit/Clip	2p-Offset Link				RC25H	Slip Fit/Clip	2p-Offset Link			
	RC35	Slip Fit/Clip	2p-Offset Link				RC35HK	Slip Fit/Clip				
	RC41	Slip Fit/Clip	Offset Link									
	RC40	Slip Fit/Clip	Offset Link				RC40HK	Slip Fit/Clip				
	RC50	Slip Fit/Clip	Offset Link				RC50HK	Semi Press/Clip	Offset Link			
	RC60	Slip Fit/Clip	Offset Link				RC60HK	Semi Press/Clip	Offset Link			
	RC80	Slip Fit/Cotter	Offset Link	RC80KS	Simi Press/Roll Pin		RC80HK	Semi Press/Roll Pin	Offset Link	RC80HKS	Semi Press/Roll Pin	NA
	RC100	Slip Fit/Cotter	Offset Link	RC100KS	Simi Press/Roll Pin		RC100HK	Semi Press/Roll Pin	Offset Link	RC100HKS	Semi Press/Roll Pin	NA
	RC120	Slip Fit/Cotter	Offset Link	RC120KS	Simi Press/Roll Pin		RC120HK	Semi Press/Roll Pin	Offset Link	RC120HKS	Semi Press/Roll Pin	NA
	RC140	Slip Fit/Cotter	Offset Link	RC140KS	Simi Press/Roll Pin		RC140HK	Semi Press/Roll Pin	Offset Link	RC140HKS	Semi Press/Roll Pin	NA
	RC160	Slip Fit/Cotter	Offset Link	RC160KS	Simi Press/Roll Pin		RC160HK	Semi Press/Roll Pin	Offset Link	RC160HKS	Semi Press/Roll Pin	NA
	RC180	Slip Fit/Cotter	Offset Link	RC180KS	Simi Press/Roll Pin		RC180HK	Semi Press/Roll Pin		RC180HKS	Semi Press/Roll Pin	NA
	RC200	Slip Fit/Cotter	Offset Link	RC200KS	Simi Press/Roll Pin		RC200HK	Semi Press/Roll Pin	Offset Link	RC200HKS	Semi Press/Roll Pin	NA
	RC240	Slip Fit/Cotter	Offset Link	RC240KS	Simi Press/Roll Pin		RC240HK	Semi Press/Roll Pin	Offset Link	RC240HKS	Semi Press/Roll Pin	NA
Max. Strands Available	5 (single strand only for RC41)			3			Single Strand only for RC60HK and under / 3 for RC80HK and over			3		

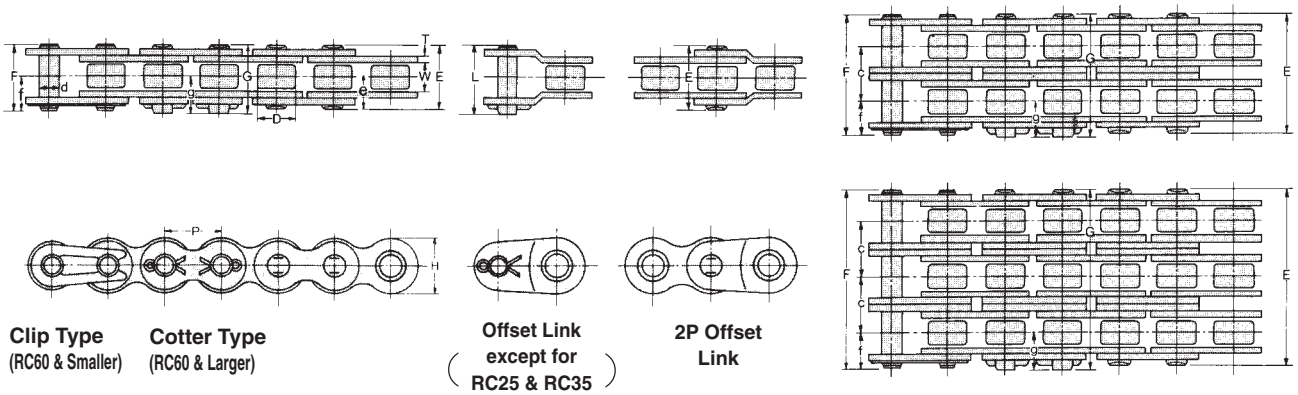
2-1-2 Standard Roller Chain and Maximum Horsepower Ratings

The DID standard roller chains are available in 14 sizes ranging from RC25 to RC240. All are in conformity with JIS (Japanese Industrial Standards) and ANSI (American National Standard Institute) standards.



Cautions for use

1. For chain selection, see “Tables of maximum horsepower ratings for standard roller chains” (P.15~ 28) and “Designing of roller chain transmission” (P.91 ~ 96).
2. Standard roller chains up to quintuplex can be manufactured. For their dimensions, see the pages referring to the maximum horsepower ratings.
3. The connecting links are generally Clip Type or Cotter Type connecting links in which the pins are clearance-fitted with the connecting plate. Since clearance-fit links are inferior to the base chain in maximum allowable load as in the case of one pitch offset links, “Slow-speed selecting”(P. 92) cannot be referred to. Since the maximum horsepower ratings are determined considering the strength of connecting links and offset links, the clearance-fit connecting links and offset links can be used if they are selected according to the “General selection”.
4. For severe applications, use interference-fit connecting links and/or Ultimate Power Series roller chain. For the use of offset links, 2P offset link is recommended



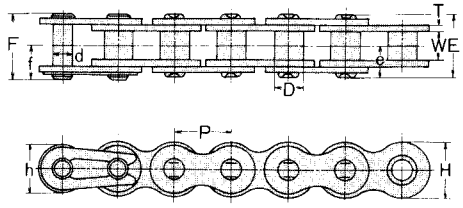
Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller (Bush) Dia.	Pin							Trans-verse Pich	Plate		JIS Min.Tensile Strength	DID Min.Tensile Strength	DID Avg. Tensile Strength	DID Max.Allowable Load	Approx. Weight (kg/m)	No. of Links per Unit
DID	ANSI	P	W	D	d	E	F	G	L	f	g	C	T	H	lbs	lbs	lbs	lbs		
RC25	25	0.250	0.125	0.130	0.091	0.307	0.335	-----	-----	0.185	-----	0.252	0.028	0.232	785	814	990	165	0.09	480
RC35	35	0.375	0.188	0.200	0.141	0.472	0.516	-----	-----	0.287	-----	0.398	0.049	0.354	1773	1980	2530	484	0.21	320
RC41	41	0.500	0.251	0.306	0.141	0.539	0.575	-----	0.602	0.311	-----		0.047	0.378	1503	1980	2420	528	0.26	240
RC40	40	0.500	0.313	0.312	0.156	0.650	0.693	-----	0.760	0.374	-----	0.567	0.059	0.472	3095	3520	4290	836	0.42	240
RC50	50	0.625	0.375	0.400	0.200	0.799	0.862	-----	0.909	0.457	-----	0.713	0.079	0.591	4891	5940	6930	1540	0.71	192
RC60	60	0.750	0.500	0.469	0.235	1.000	1.059	1.098	1.181	0.563	0.594	0.898	0.094	0.713	6978	7920	9900	2090	0.97	160
RC80	80	1.000	0.625	0.625	0.313	1.283	-----	1.394	1.433	-----	0.748	1.154	0.126	0.945	12474	16060	17600	3300	1.71	120
RC100	100	1.250	0.750	0.750	0.376	1.555	-----	1.673	1.713	-----	0.898	1.409	0.157	1.177	19450	24200	26620	5060	2.54	96
RC120	120	1.500	1.000	0.875	0.437	1.957	-----	2.087	2.130	-----	1.110	1.787	0.189	1.413	27953	33000	37400	6820	3.68	80
RC140	140	1.750	1.000	1.000	0.500	2.110	-----	2.299	2.346	-----	1.244	1.925	0.220	1.650	37913	43340	48400	9020	4.77	68
RC160	160	2.000	1.250	1.125	0.563	2.504	-----	2.685	2.744	-----	1.433	2.303	0.252	1.882	49892	55000	60500	11880	6.58	60
RC180	180	2.250	1.406	1.406	0.687	2.815	-----	3.043	3.122	-----	1.630	2.591	0.280	2.118	0	74800	81400	13860	8.52	54
RC200	200	2.500	1.500	1.562	0.781	3.067	-----	3.346	3.437	-----	1.807	2.819	0.315	2.362	77845	96800	105600	16500	11.06	48
RC240	240	3.000	1.875	1.875	0.937	3.748	-----	4.051	4.150	-----	2.189	3.457	0.374	2.815	112259	139700	154000	22220	15.62	40

Note: Those marked with ✚ indicate bush chain.

RC25 Standard Roller Chain (Please refer to P.76 for sprockets)



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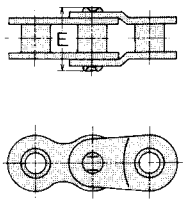
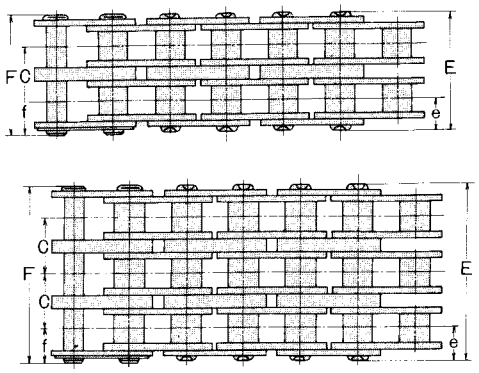


2P Offset Link



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Bush Dia.	Pin					Trans-verse Pitch	Plate			JIS Min.Tensile Strength	DID Min.Tensile Strength	DID Avg. Tensile Strength	DID Max.Allowable Load	Approx. Weight (lbs/ft)
DID	ANSI	P	W	D	d	E	F	e	L	C	T	H	h	lbs	lbs	lbs	lbs	
RC25	25	0.250	0.125	0.130	0.091	0.307	0.335	0.154	0.185	0.252	0.028	0.232	0.205	785	814	990	165	0.09
RC25-2	25-2					0.567	0.591							1571	1628	1980	264	0.17
RC25-3	25-3					0.819	0.843							2356	2442	2970	396	0.26
RC25-4	25-4					1.071	1.094							3142	3256	3960	528	0.35
RC25-5	25-5					1.327	1.350							3927	4070	4950	638	0.44

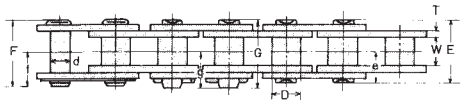
Max. Horsepower Ratings

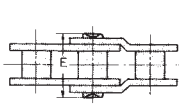
Unit (hp)

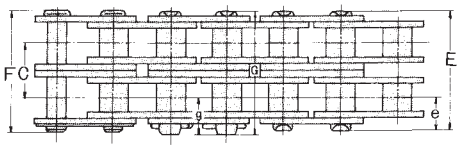
Type of Lubrication / No.of Teeth of Small Sprocket	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type of lubrication A, B and C.)																				
	100	500	900	1200	1800	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	10000	
	A																				
11	0.05	0.24	0.42	0.54	0.78	1.03	1.22	1.41	1.38	1.15	0.99	0.86	0.75	0.67	0.59	0.54	0.48	0.44	0.40	0.35	
12	0.07	0.27	0.46	0.59	0.84	1.14	1.34	1.54	1.57	1.31	1.13	0.98	0.86	0.76	0.68	0.62	0.55	0.51	0.47	0.40	
13	0.07	0.29	0.50	0.64	0.92	1.25	1.46	1.68	1.77	1.49	1.27	1.10	0.97	0.86	0.76	0.68	0.63	0.58	0.52	0.44	
14	0.08	0.32	0.54	0.70	1.01	1.34	1.58	1.82	1.98	1.66	1.42	1.23	1.07	0.95	0.86	0.78	0.70	0.64	0.59	0.50	B
15	0.08	0.34	0.58	0.75	1.07	1.45	1.70	1.96	2.20	1.84	1.57	1.37	1.19	1.06	0.95	0.86	0.78	0.71	0.66	0.55	
16	0.08	0.36	0.62	0.80	1.15	1.55	1.84	2.10	2.37	2.02	1.73	1.50	1.31	1.17	1.05	0.94	0.86	0.78	0.71	0.62	
17	0.09	0.39	0.66	0.86	1.23	1.66	1.96	2.24	2.53	2.23	1.89	1.65	1.45	1.27	1.14	1.03	0.94	0.86	0.79	0.67	
18	0.09	0.42	0.70	0.91	1.31	1.77	2.08	2.39	2.69	2.43	2.06	1.80	1.57	1.39	1.25	1.13	1.02	0.94	0.86	0.72	
19	0.11	0.44	0.75	0.97	1.39	1.88	2.20	2.53	2.86	2.63	2.24	1.94	1.70	1.51	1.35	1.22	1.11	1.01	0.92	0.79	
20	0.11	0.47	0.79	1.02	1.47	1.97	2.33	2.68	3.02	2.83	2.43	2.09	1.84	1.64	1.46	1.31	1.19	1.09	1.01	0.86	
21	0.12	0.50	0.83	1.07	1.55	2.08	2.45	2.82	3.18	3.04	2.60	2.25	1.98	1.76	1.57	1.42	1.29	1.18	1.07	0.92	
22	0.12	0.51	0.87	1.13	1.64	2.18	2.59	2.96	3.35	3.27	2.79	2.43	2.12	1.88	1.69	1.51	1.38	1.26	1.15	0.99	
23	0.12	0.54	0.91	1.19	1.72	2.29	2.71	3.11	3.51	3.50	2.99	2.59	2.27	2.01	1.80	1.62	1.47	1.34	1.23	1.06	
24	0.13	0.56	0.97	1.25	1.80	2.41	2.84	3.26	3.67	3.73	3.18	2.76	2.43	2.14	1.92	1.73	1.57	1.43	1.31	1.13	
25	0.13	0.59	1.01	1.30	1.88	2.52	2.96	3.40	3.83	3.95	3.38	2.94	2.57	2.28	2.04	1.84	1.68	1.53	1.39	1.19	
28	0.16	0.67	1.14	1.47	2.12	2.84	3.35	3.85	4.34	4.69	4.01	3.47	3.04	2.71	2.43	2.18	1.98	1.81	1.66	1.42	
30	0.17	0.72	1.22	1.58	2.28	3.06	3.61	4.14	4.68	5.20	4.45	3.85	3.38	3.00	2.68	2.43	2.20	2.01	1.84	1.57	
32	0.19	0.78	1.31	1.70	2.44	3.28	3.87	4.45	5.01	5.58	4.89	4.25	3.73	3.30	2.96	2.67	2.43	2.21	2.02	1.73	
35	0.20	0.84	1.45	1.86	2.69	3.62	4.26	4.89	5.52	6.14	5.60	4.85	4.26	3.78	3.38	3.04	2.76	2.53	2.32	1.98	
40	0.23	0.98	1.66	2.16	3.11	4.18	4.92	5.66	6.38	7.09	6.85	5.94	5.20	4.61	4.13	3.73	3.38	3.08	2.83	2.43	
45	0.27	1.11	1.89	2.45	3.53	4.75	5.59	6.42	7.24	8.06	8.16	7.08	6.21	5.51	4.93	4.45	4.03	3.69	3.38	2.88	
50	0.29	1.25	2.12	2.75	3.95	5.32	6.26	7.20	8.12	9.02	9.57	8.28	7.28	6.45	5.78	5.20	4.73	4.32	3.95	3.38	
55	0.32	1.38	2.35	3.04	4.38	5.90	6.94	7.98	8.99	10.0	11.0	9.57	8.39	7.44	6.66	6.01	5.46	4.97	4.57	3.90	
60	0.36	1.51	2.59	3.35	4.81	6.47	7.63	8.77	9.88	11.0	12.1	10.9	9.57	8.49	7.59	6.85	6.21	5.67	5.20	4.45	C

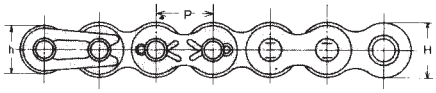
Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

RC35 Standard Roller Chain (Please refer to P.77 for sprockets)









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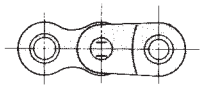
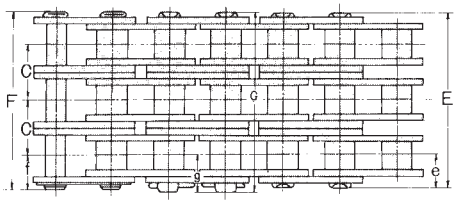


2P Offset Link



Dimensions

Unit (inches)

Chain No.		Pitch	Roller Link Width	Bush Dia.	Pin							Trans-verse Pitch	Plate			JIS Min.Tensile Strength	DID Min.Tensile Strength	DID Avg. Tensile Strength	DID Max.Allowable Load	Approx. Weight (lbs/ft)
DID	ANSI	P	W	D	d	E	F	G	e	f	g	C	T	H	h					
RC35	35	0.375	0.188	0.200	0.141	0.472	0.516	0.555	0.236	0.287	0.291	0.398	0.049	0.354	0.305	1773	1980	2530	484	0.21
RC35-2	35-2					0.870	0.913	0.925								3546	3960	5060	814	0.46
RC35-3	35-3					1.268	1.315	1.327								5320	5940	7590	1210	0.70
RC35-4	35-4					1.665	1.713	1.724								7093	7920	10120	1584	0.95
RC35-5	35-5					2.067	2.114	2.126								8866	9900	12650	1870	1.19

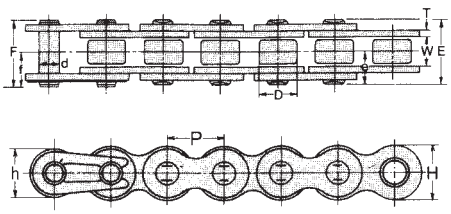
Max. Horsepower Ratings

Unit (hp)

Type of Lubrication / No.of Teeth of Small Sprocket	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding 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	0.23	0.99	1.69	2.18	3.14	3.86	2.94	2.33	1.90	1.60	1.37	1.18	1.03	0.92	0.82	0.74	0.67	0.62	0.56	0.48
12	0.25	1.09	1.85	2.40	3.45	4.40	3.35	2.65	2.17	1.82	1.55	1.35	1.18	1.05	0.94	0.84	0.76	0.70	0.64	0.55
13	0.28	1.19	2.01	2.61	3.77	4.96	3.78	2.99	2.45	2.05	1.76	1.51	1.34	1.18	1.06	0.95	0.87	0.79	0.72	0.62
14	0.31	1.29	2.18	2.83	4.08	5.48	4.22	3.35	2.73	2.29	1.96	1.70	1.49	1.33	1.18	1.07	0.97	0.88	0.82	0.70
15	0.32	1.38	2.36	3.04	4.40	5.90	4.68	3.71	3.04	2.55	2.17	1.89	1.65	1.46	1.31	1.18	1.07	0.98	0.90	0.76
16	0.35	1.49	2.52	3.27	4.71	6.33	5.15	4.09	3.35	2.80	2.40	2.08	1.82	1.62	1.45	1.30	1.18	1.09	0.99	0.84
17	0.38	1.58	2.69	3.49	5.03	6.76	5.64	4.48	3.66	3.07	2.63	2.28	2.00	1.77	1.58	1.43	1.30	1.18	1.09	0.92
18	0.40	1.69	2.87	3.71	5.35	7.18	6.15	4.88	3.99	3.35	2.86	2.48	2.17	1.93	1.73	1.55	1.41	1.29	1.18	1.01
19	0.42	1.78	3.04	3.94	5.67	7.61	6.66	5.29	4.33	3.63	3.10	2.68	2.36	2.09	1.88	1.69	1.53	1.39	1.29	1.10
20	0.44	1.89	3.20	4.16	5.99	8.06	7.20	5.71	4.68	3.91	3.35	2.90	2.55	2.25	2.02	1.82	1.65	1.51	1.38	1.18
21	0.47	2.00	3.38	4.38	6.31	8.49	7.75	6.15	5.03	4.22	3.61	3.12	2.73	2.43	2.17	1.96	1.78	1.62	1.49	1.27
22	0.50	2.09	3.55	4.61	6.64	8.93	8.31	6.60	5.40	4.52	3.86	3.35	2.94	2.60	2.33	2.10	1.90	1.74	1.60	1.37
23	0.52	2.20	3.73	4.84	6.97	9.36	8.89	7.05	5.76	4.84	4.13	3.58	3.14	2.79	2.49	2.25	2.04	1.86	1.70	1.46
24	0.54	2.31	3.91	5.07	7.29	9.80	9.46	7.51	6.15	5.15	4.40	3.81	3.35	2.96	2.65	2.40	2.17	1.98	1.82	1.55
25	0.56	2.41	4.09	5.29	7.63	10.20	10.10	7.99	6.54	5.48	4.68	4.05	3.55	3.15	2.83	2.55	2.31	2.10	1.93	1.65
28	0.64	2.72	4.61	5.98	8.62	11.60	11.90	9.46	7.75	6.49	5.55	4.80	4.22	3.74	3.35	3.02	2.73	2.51	2.29	1.96
30	0.68	2.94	4.97	6.45	9.28	12.50	13.20	10.50	8.59	7.20	6.15	5.34	4.68	4.14	3.71	3.35	3.04	2.77	2.55	2.17
32	0.74	3.14	5.34	6.90	9.95	13.40	14.60	11.60	9.46	7.94	6.77	5.87	5.15	4.57	4.09	3.69	3.35	3.06	2.80	2.40
35	0.82	3.46	5.87	7.61	11.00	14.70	16.60	13.20	10.80	9.08	7.75	6.72	5.90	5.23	4.68	4.22	3.83	3.50	3.20	
40	0.94	3.99	6.78	8.79	12.70	17.00	20.10	16.20	13.20	11.10	9.46	8.20	7.20	6.38	5.71	5.15	4.68			
45	1.07	4.54	7.47	9.99	14.30	19.30	22.80	19.30	15.80	13.20	11.30	9.79	8.59	7.61	6.82	6.15				
50	1.19	5.09	8.63	11.20	16.10	21.70	25.50	22.70	18.50	15.50	13.20	11.50	10.10	8.93						
55	1.33	5.64	9.57	12.40	17.80	24.00	28.30	26.00	21.30	17.80	15.30	13.20	11.60							
60	1.46	6.19	10.50	13.70	19.60	26.40	31.10	29.80	24.30	20.40	17.40									

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

RC41 Standard Roller Chain (Please refer to P.78 for sprockets)



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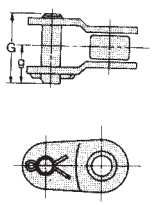
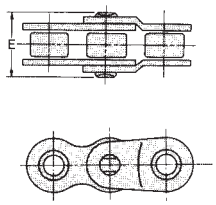


Offset Link



2P Offset Link

Dimensions

Unit (inch)

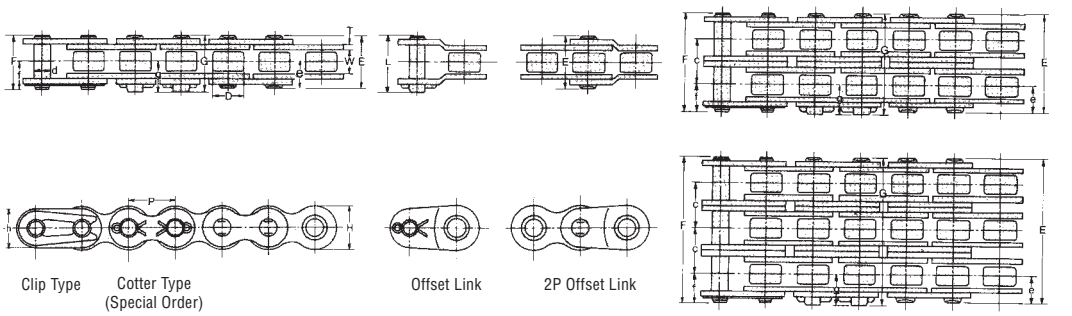
Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin							Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight (lbs/FT)
DID	ANSI	P	W	D	d	E	F	G	e	f	g	T	H	h	lbs	lbs	lbs	lbs	
RC41	41	0.500	0.251	0.306	0.141	0.539	0.575	0.602	0.272	0.311	0.335	0.047	0.378	0.315	1503	1980	2420	528	0.26

Max. Horsepower Ratings

Unit (hp)

No.of Teeth of Small Sprocket \ Type of Lubrication	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type 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	9000
	A							B					C							
11	0.15	0.54	0.99	1.42	2.05	1.72	0.92	0.60	0.43	0.35	0.28	0.24	0.20	0.17	0.15	0.13	0.12	0.11	0.09	
12	0.16	0.58	1.09	1.57	2.25	1.94	1.06	0.68	0.50	0.39	0.32	0.27	0.23	0.20	0.17	0.16	0.13	0.12	0.11	
13	0.19	0.63	1.18	1.70	2.47	2.20	1.19	0.78	0.55	0.44	0.36	0.31	0.25	0.23	0.20	0.17	0.16	0.13	0.13	
14	0.20	0.68	1.29	1.85	2.67	2.45	1.34	0.87	0.62	0.50	0.40	0.34	0.29	0.25	0.21	0.20	0.17	0.16	0.15	
15	0.21	0.74	1.38	2.00	2.87	2.72	1.49	0.97	0.68	0.55	0.44	0.38	0.32	0.28	0.24	0.21	0.19	0.17		
16	0.23	0.79	1.49	2.13	3.08	3.00	1.64	1.06	0.76	0.60	0.50	0.42	0.35	0.31	0.27	0.24	0.21	0.19		
17	0.24	0.84	1.58	2.28	3.28	3.28	1.78	1.17	0.83	0.66	0.54	0.46	0.39	0.34	0.29	0.25	0.23	0.21		
18	0.25	0.90	1.69	2.43	3.50	3.58	1.94	1.26	0.91	0.72	0.59	0.50	0.42	0.36	0.32	0.28	0.25	0.23		
19	0.28	0.95	1.78	2.57	3.71	3.89	2.12	1.37	0.98	0.78	0.64	0.54	0.46	0.40	0.35	0.31	0.28	0.25		
20	0.29	1.02	1.89	2.72	3.91	4.20	2.28	1.49	1.06	0.84	0.68	0.58	0.50	0.43	0.38	0.34	0.29	0.27		
21	0.31	1.07	2.00	2.87	4.13	4.50	2.45	1.60	1.14	0.91	0.74	0.62	0.54	0.46	0.40	0.36	0.32	0.29		
22	0.32	1.13	2.09	3.02	4.34	4.84	2.63	1.72	1.22	0.97	0.79	0.67	0.56	0.50	0.43	0.39	0.35			
23	0.34	1.18	2.20	3.16	4.56	5.17	2.82	1.82	1.31	1.03	0.84	0.71	0.60	0.52	0.46	0.42	0.36			
24	0.35	1.23	2.31	3.31	4.77	5.51	3.00	1.94	1.39	1.11	0.91	0.76	0.64	0.56	0.50	0.44	0.39			
25	0.38	1.29	2.40	3.46	4.99	5.86	3.19	2.06	1.49	1.18	0.97	0.80	0.68	0.60	0.52	0.47				
28	0.42	1.46	2.72	3.91	5.63	6.94	3.78	2.45	1.76	1.39	1.14	0.95	0.82	0.71	0.62	0.55				
30	0.46	1.57	2.92	4.21	6.07	7.69	4.20	2.72	1.94	1.54	1.26	1.06	0.91	0.79	0.68					
32	0.48	1.68	3.14	4.52	6.51	8.43	4.61	3.00	2.14	1.70	1.39	1.17	0.99	0.86	0.76					
35	0.54	1.85	3.46	4.97	7.17	9.29	5.28	3.43	2.45	1.94	1.60	1.34	1.14	0.99						
40	0.62	2.14	3.99	5.75	8.28	10.70	6.45	4.20	3.00	2.39	1.94	1.64	1.39							
45	0.70	2.43	4.53	6.53	9.41	12.20	7.69	5.00	3.58	2.84	2.32	1.94								
50	0.78	2.72	5.08	7.32	10.50	13.70	9.02	5.86	4.20	3.32	2.72									
55	0.87	3.02	5.63	8.11	11.70	15.10	10.40	6.76	4.84	3.83										
60	0.95	3.31	6.18	8.91	12.80	16.60	11.80	7.69	5.51											

RC40 Standard Roller Chain (Please refer to P.78 for sprockets)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin								Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight (lbs/FT)
DID	ANSI	P	W	D	d	E	F	G	L	e	f	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC40	40	0.500	0.313	0.312	0.156	0.650	0.693	0.713	0.752	0.327	0.374	0.398	0.567	0.059	0.472	0.409	3095	3520	4290	836	0.42
RC40-2	40-2					1.220	1.264	1.283	1.323								6191	7040	8580	1408	0.80
RC40-3	40-3					1.787	1.827	1.850	1.886								9286	10560	12870	2090	1.19
RC40-4	40-4					2.358	2.402	2.417	2.417								12382	14080	17160	2750	1.59
RC40-5	40-5					2.925	2.969	2.984	2.984								15477	17600	21450	3256	1.98

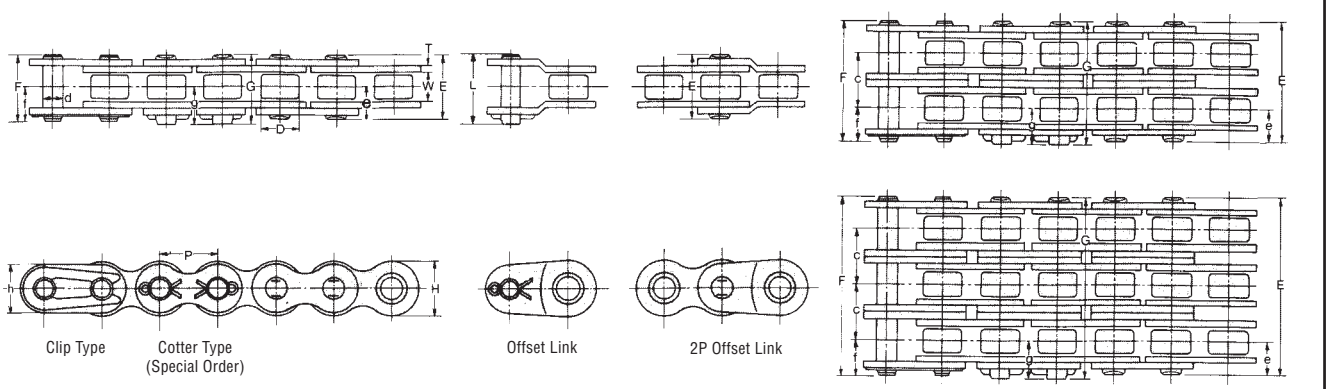
Max. Horsepower Ratings

Unit (hp)

No.of Teeth of Small Sprocket \ Type of Lubrication	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type 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	9000
	A							B					C							
11	0.27	0.94	1.74	2.52	3.63	4.71	4.66	3.03	2.17	1.72	1.41	1.18	1.01	0.87	0.76	0.68	0.60	0.55	0.50	
12	0.29	1.03	1.92	2.76	3.98	5.16	5.31	3.45	2.47	1.96	1.61	1.34	1.15	0.99	0.87	0.78	0.70	0.63	0.56	
13	0.32	1.13	2.09	3.02	4.34	5.63	5.99	3.89	2.79	2.21	1.81	1.51	1.30	1.13	0.98	0.87	0.78	0.71	0.64	
14	0.35	1.22	2.27	3.27	4.71	6.10	6.70	4.34	3.11	2.47	2.02	1.69	1.45	1.26	1.10	0.98	0.87	0.79	0.71	
15	0.38	1.31	2.44	3.53	5.07	6.57	7.43	4.83	3.45	2.73	2.24	1.88	1.61	1.39	1.22	1.09	0.97	0.87		
16	0.40	1.41	2.63	3.78	5.44	7.05	8.18	5.31	3.81	3.02	2.47	2.06	1.77	1.53	1.34	1.19	1.07	0.97		
17	0.43	1.50	2.80	4.03	5.80	7.52	8.95	5.82	4.17	3.31	2.71	2.27	1.93	1.68	1.47	1.30	1.17	1.06		
18	0.46	1.60	2.98	4.29	6.18	8.00	9.76	6.34	4.53	3.61	2.95	2.47	2.10	1.82	1.61	1.42	1.27	1.15		
19	0.48	1.69	3.15	4.54	6.55	8.49	10.60	6.88	4.92	3.90	3.19	2.68	2.29	1.98	1.74	1.54	1.38	1.25		
20	0.51	1.78	3.34	4.80	6.92	8.97	11.40	7.43	5.31	4.22	3.45	2.90	2.47	2.14	1.88	1.66	1.49	1.34		
21	0.54	1.89	3.51	5.07	7.29	9.45	12.30	7.99	5.72	4.53	3.71	3.11	2.65	2.31	2.02	1.80	1.61	1.45		
22	0.56	1.98	3.70	5.32	7.67	9.93	13.20	8.57	6.13	4.87	3.98	3.34	2.86	2.47	2.17	1.92	1.72			
23	0.60	2.08	3.87	5.59	8.04	10.40	14.10	9.16	6.55	5.20	4.26	3.57	3.04	2.64	2.32	2.05	1.84			
24	0.63	2.17	4.06	5.86	8.43	10.90	15.00	9.76	6.98	5.55	4.53	3.81	3.24	2.82	2.47	2.18	1.96			
25	0.66	2.28	4.25	6.11	8.81	11.40	16.00	10.40	7.43	5.90	4.83	4.05	3.45	2.99	2.63	2.33				
28	0.74	2.57	4.80	6.92	9.96	12.90	18.60	12.30	8.81	6.98	5.72	4.79	4.09	3.55	3.11	2.76				
30	0.79	2.77	5.17	7.44	10.70	13.90	20.00	13.70	9.76	7.75	6.34	5.31	4.53	3.93	3.45					
32	0.86	2.98	5.54	7.99	11.50	14.90	21.40	15.00	10.80	8.54	6.98	5.86	5.00	4.33	3.81					
35	0.94	3.27	6.10	8.79	12.70	16.40	23.60	17.20	12.30	9.76	7.99	6.70	5.72	4.96						
40	1.09	3.78	7.05	10.20	14.60	18.90	27.30	21.00	15.00	11.90	9.76	8.18	6.98							
45	1.23	4.29	8.02	11.50	16.60	21.60	31.00	25.10	18.00	14.20	11.60	9.76								
50	1.38	4.81	8.98	12.90	18.60	24.10	34.70	29.40	21.00	16.60	13.70									
55	1.53	5.34	9.95	14.30	20.60	26.80	38.50	33.90	24.30	19.30										
60	1.68	5.86	10.90	15.70	22.70	29.40	42.40	38.60	27.60											

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

RC50 Standard Roller Chain (Please refer to P.79 for sprockets)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin								Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight (lbs/FT)
DID	ANSI	P	W	D	d	E	F	G	L	e	f	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC50	50	0.625	0.375	0.400	0.200	0.799	0.862	0.870	0.913	0.402	0.457	0.476	0.713	0.079	0.591	0.512	4891	5940	6930	1540	0.71
RC50-2	50-2					1.516	1.579	1.587	1.626								9781	11880	13860	2618	1.37
RC50-3	50-3					2.232	2.295	2.303	2.343								14672	17820	20790	3850	2.05
RC50-4	50-4					2.945	3.008	3.016	3.016								19562	23760	27720	5082	2.72
RC50-5	50-5					3.661	3.720	3.728	3.728								24453	29700	34650	6006	3.41

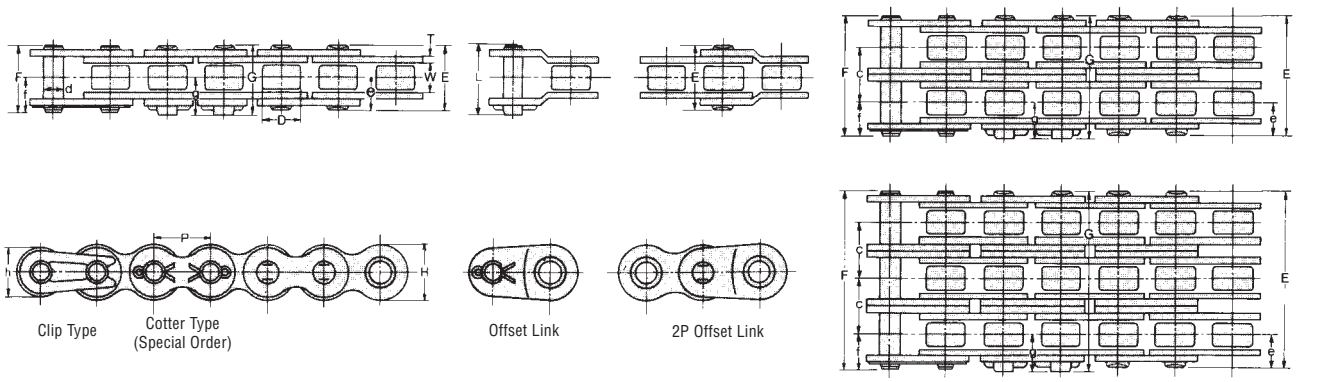
Max. Horsepower Ratings

Unit (hp)

No.of Teeth of Small Sprocket \ Type of Lubrication	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding 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	6200
	A						B							C						
11	0.64	1.21	3.24	5.13	8.70	10.20	7.33	5.58	4.42	3.62	3.03	2.59	2.25	2.05	1.69	1.41	1.21	1.07	0.97	
12	0.71	1.33	3.55	5.63	9.56	11.70	8.35	6.35	5.04	4.13	3.46	2.95	2.56	2.35	1.92	1.61	1.37	1.22	1.10	
13	0.78	1.45	3.87	6.14	10.40	13.20	9.41	7.16	5.68	4.65	3.90	3.32	2.88	2.64	2.16	1.81	1.54	1.38	1.23	
14	0.84	1.57	4.21	6.65	11.30	14.60	10.50	8.00	6.35	5.20	4.36	3.73	3.23	2.95	2.41	2.02	1.73	1.54		
15	0.90	1.69	4.53	7.17	12.20	15.80	11.70	8.87	7.05	5.76	4.84	4.13	3.58	3.27	2.68	2.25	1.92	1.70		
16	0.97	1.81	4.85	7.69	13.00	16.90	12.90	9.79	7.76	6.35	5.32	4.54	3.94	3.61	2.95	2.48	2.12	1.88		
17	1.03	1.93	5.19	8.20	13.90	18.10	14.10	10.70	8.50	6.96	5.83	4.97	4.32	3.95	3.23	2.71	2.32	2.06		
18	1.10	2.05	5.51	8.73	14.90	19.20	15.30	11.70	9.26	7.57	6.35	5.43	4.71	4.30	3.53	2.95	2.52			
19	1.17	2.17	5.84	9.25	15.70	20.40	16.60	12.70	10.00	8.22	6.89	5.88	5.09	4.66	3.82	3.20	2.73			
20	1.23	2.29	6.18	9.79	16.60	21.60	18.00	13.70	10.80	8.87	7.44	6.35	5.51	5.04	4.13	3.46	2.95			
21	1.30	2.43	6.51	10.30	17.60	22.70	19.30	14.70	11.70	9.56	8.00	6.84	5.92	5.43	4.44	3.73	3.18			
22	1.37	2.55	6.85	10.80	18.40	23.90	20.80	15.80	12.50	10.20	8.58	7.33	6.35	5.82	4.76	3.99	3.40			
23	1.43	2.67	7.18	11.40	19.30	25.10	22.10	16.90	13.40	11.00	9.17	7.83	6.80	6.22	5.09	4.26				
24	1.50	2.80	7.52	11.90	20.20	26.10	23.60	18.00	14.20	11.70	9.79	8.35	7.24	6.62	5.43	4.54				
25	1.57	2.92	7.86	12.50	21.20	27.30	25.10	19.20	15.10	12.40	10.40	8.87	7.69	7.05	5.76	4.84				
28	1.77	3.31	8.89	14.10	23.90	31.00	29.80	22.70	18.00	14.70	12.30	10.50	9.12	8.35	6.84					
30	1.90	3.57	9.57	15.10	25.70	33.40	33.00	25.10	20.00	16.40	13.70	11.70	10.10	9.26	7.57					
32	2.05	3.82	10.30	16.20	27.60	35.80	36.30	27.60	22.00	18.00	15.00	12.90	11.10	10.20	8.35					
35	2.25	4.21	11.30	18.00	30.40	39.40	41.60	31.60	25.10	20.50	17.30	14.70	12.70	11.70	9.56					
40	2.60	4.85	13.10	20.60	35.10	45.40	50.80	38.60	30.70	25.10	21.00	18.00	15.50	14.20						
45	2.96	5.52	14.90	23.50	39.80	51.60	60.60	46.10	36.60	30.00	25.10	21.40	18.60							
50	3.31	6.18	16.60	26.30	44.60	57.90	70.80	54.00	42.90	35.10	29.40	25.10								
55	3.67	6.85	18.40	29.20	49.50	64.20	78.40	62.30	49.50	40.50	33.90									
60	4.03	7.53	20.20	32.00	54.40	70.50	86.20	71.00	56.40	46.10										

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.93.)

RC60 Standard Roller Chain (Please refer to P. 80 for sprockets)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin								Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight (lbs/FT)
DID	ANSI	P	W	D	d	E	F	G	L	e	f	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC60	60	0.750	0.500	0.469	0.235	1.000	1.059	1.098	1.173	0.500	0.563	0.594	0.898	0.094	0.713	0.614	6978	7920	9900	2090	0.97
RC60-2	60-2					1.902	1.961	2.004	2.067								13957	15840	19800	3542	2.03
RC60-3	60-3					2.803	2.862	2.902	2.965								20935	23760	29700	5214	3.02
RC60-4	60-4					3.701	3.760	3.799	3.799								27914	31680	39600	6886	4.04
RC60-5	60-5					4.598	4.677	4.697	4.697								34892	39600	49500	8140	5.05

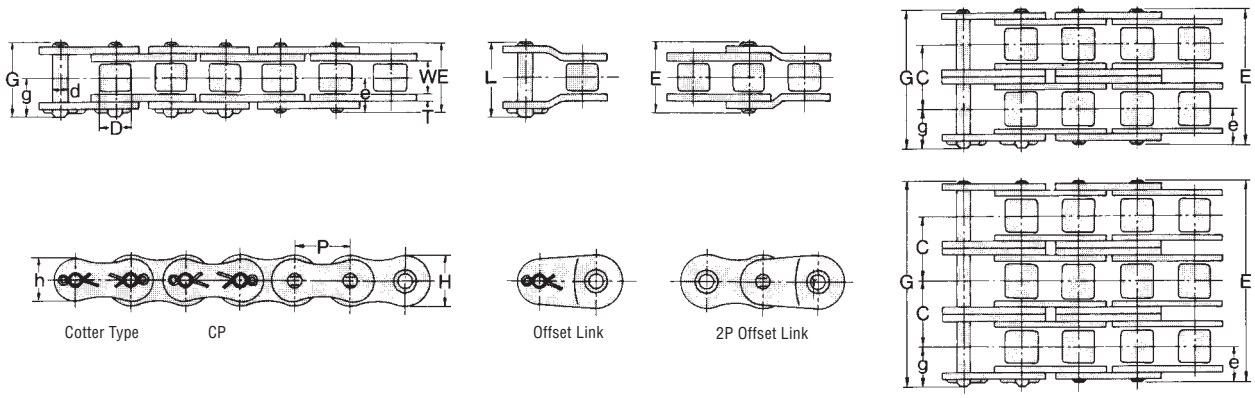
Max. Horsepower Ratings

Unit (hp)

No.of Teeth of Small Sprocket \ Type of Lubrication	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type of lubrication A, B and C.)																		
	50	100	200	500	700	900	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3500	3800	4000	4600
	A						B							C						
11	1.01	1.88	3.51	8.02	10.80	13.70	11.80	9.41	7.69	6.45	5.51	4.77	4.20	3.71	3.32	3.00	2.37	2.10	1.94	
12	1.11	2.06	3.86	8.81	11.90	15.00	13.50	10.70	8.77	7.35	6.27	5.44	4.77	4.24	3.79	3.42	2.71	2.40	2.23	
13	1.21	2.25	4.21	9.60	13.00	16.40	15.30	12.10	9.89	8.28	7.08	6.14	5.39	4.77	4.28	3.85	3.06	2.71	2.51	
14	1.31	2.44	4.56	10.40	14.10	17.70	17.00	13.50	11.00	9.26	7.91	6.85	6.02	5.34	4.77	4.30	3.42	3.02	2.80	
15	1.41	2.63	4.91	11.20	15.10	19.00	18.90	15.00	12.30	10.30	8.77	7.60	6.68	5.91	5.29	4.77	3.79	3.35	3.10	
16	1.51	2.83	5.27	12.00	16.20	20.40	20.80	16.50	13.50	11.30	9.66	8.38	7.35	6.51	5.83	5.25	4.17	3.69	3.42	
17	1.61	3.02	5.62	12.80	17.40	21.70	22.80	18.10	14.70	12.40	10.60	9.17	8.06	7.14	6.39	5.76	4.57	4.03	3.74	
18	1.72	3.20	5.98	13.70	18.50	23.20	24.80	19.70	16.10	13.50	11.50	9.99	8.77	7.77	6.96	6.27	4.99	4.40	4.08	
19	1.82	3.39	6.34	14.50	19.60	24.50	26.90	21.30	17.40	14.60	12.50	10.80	9.52	8.43	7.55	6.81	5.40	4.77	4.42	
20	1.93	3.59	6.70	15.30	20.60	26.00	29.10	23.10	18.90	15.80	13.50	11.70	10.30	9.12	8.15	7.35	5.83	5.16		
21	2.02	3.78	7.06	16.10	21.80	27.30	31.20	24.80	20.40	17.00	14.50	12.60	11.00	9.80	8.77	7.91	6.27	5.55		
22	2.13	3.98	7.43	16.90	22.90	28.80	33.50	26.70	21.70	18.20	15.50	13.50	11.80	10.50	9.41	8.49	6.73	5.95		
23	2.24	4.18	7.79	17.80	24.10	30.20	35.80	28.40	23.30	19.60	16.60	14.50	12.70	11.20	10.10	9.06	7.20			
24	2.35	4.37	8.16	18.60	25.20	31.60	38.20	30.30	24.80	20.80	17.70	15.40	13.50	12.00	10.70	9.66	7.67			
25	2.45	4.57	8.53	19.40	26.30	33.00	40.60	32.20	26.40	22.10	18.90	16.40	14.30	12.70	11.40	10.30	8.15			
28	2.76	5.16	9.64	22.00	29.80	37.30	48.10	38.20	31.20	26.10	22.40	19.40	17.00	15.10	13.50	12.20	9.66			
30	2.98	5.56	10.40	23.70	32.00	40.20	52.10	42.40	34.70	29.10	24.80	21.40	18.90	16.80	15.00	13.50				
32	3.19	5.97	11.10	25.30	34.30	43.20	55.90	46.60	38.20	32.00	27.30	23.70	20.80	18.50	16.50	14.90				
35	3.53	6.57	12.30	28.00	37.90	47.50	61.50	53.40	43.70	36.60	31.20	27.10	23.70	21.00	18.90	17.00				
40	4.06	7.59	14.20	32.30	43.70	54.80	71.00	65.30	53.40	44.80	38.20	33.10	29.10	25.70	23.10					
45	4.62	8.62	16.10	36.70	49.70	62.30	80.70	77.90	63.70	53.40	45.60	39.50	34.70	30.70						
50	5.17	9.66	18.10	41.20	55.60	69.80	90.50	91.20	74.70	62.50	53.40	46.20	40.60							
55	5.74	10.70	20.00	45.60	61.70	77.30	100	105.00	86.10	72.10	61.50	53.40								
60	6.30	11.80	22.00	50.10	67.80	85.00	110	120	98.10	82.20	70.10									

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

RC80 Standard Roller Chain (Please refer to P. 81 for sprockets)



Cotter Type CP Offset Link 2P Offset Link

Dimensions

Unit (inch)

Chain No. DID	Chain No. ANSI	Pitch P	Roller Link Width W	Roller Dia. D	Pin d	Pin E	Pin G	Pin L	Pin e	Pin g	Transverse Pitch C	Plate T	Plate H	Plate h	JIS Min. Tensile Strength lbs	DID Min. Tensile Strength lbs	DID Avg. Tensile Strength lbs	DID Max. Allowable Load lbs	Approx. Weight (lbs/FT)
RC80	80	1.000	0.625	0.625	0.313	1.283	1.394	1.461	0.646	0.748	1.154	0.126	0.945	0.819	12474	16060	17600	3300	1.71
RC80-2	80-2					2.437	2.547	2.610							24948	32120	35200	5610	3.40
RC80-3	80-3					3.594	3.701	3.744							37422	48180	52800	8250	5.08
RC80-4	80-4					4.748	4.854	4.898							49896	64240	70400	10890	6.77
RC80-5	80-5					5.902	6.008	6.051							62370	80300	88000	12870	8.45

Max. Horsepower Ratings

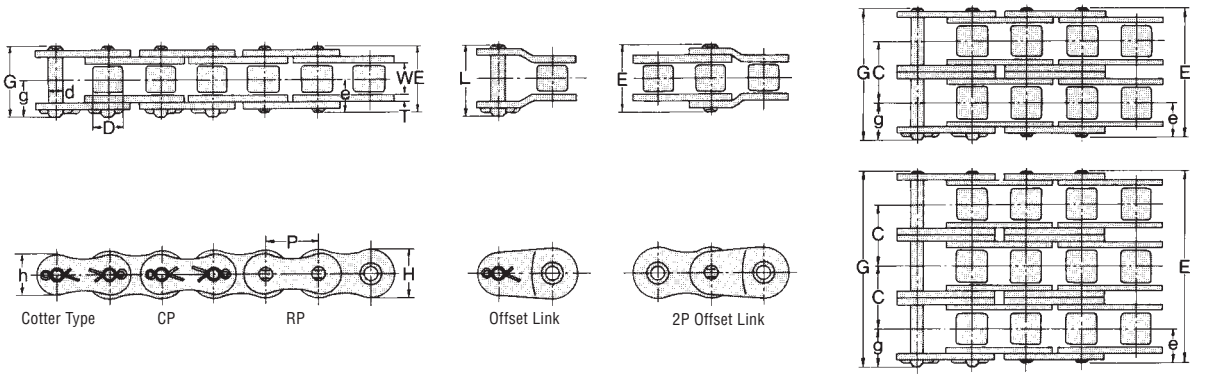
Unit (hp)

Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type of lubrication A, B and C.)

No.of Teeth of Small Sprocket \ Type of Lubrication	25	50	100	200	300	400	500	700	900	1000	1200	1400	1600	1800	2000	2200	2400	2600	2700	2800	3000	3200	3400	3600
	A			**B**										**C**										
11	1.51	2.84	5.29	9.88	14.20	18.50	22.50	30.60	22.90	19.60	14.90	11.80	9.69	8.12	6.93	6.01	5.27	4.68	4.42	4.18	3.78	3.43	3.12	
12	1.68	3.12	5.82	10.90	15.70	20.20	24.80	33.50	26.10	22.40	17.00	13.50	11.00	9.25	7.90	6.85	6.01	5.34	5.04	4.77	4.30	3.90	3.57	
13	1.82	3.40	6.34	11.80	17.00	22.10	26.90	36.60	29.50	25.20	19.20	15.30	12.50	10.40	8.90	7.72	6.77	6.01	5.68	5.38	4.85	4.40	4.02	
14	1.97	3.69	6.88	12.80	18.50	24.00	29.20	39.50	33.00	28.20	21.40	17.00	13.90	11.70	9.96	8.63	7.57	6.72	6.34	6.01	5.42	4.92	4.49	
15	2.13	3.97	7.40	13.80	19.80	25.70	31.50	42.60	36.60	31.20	23.70	18.90	15.40	12.90	11.00	9.57	8.40	7.45	7.04	6.66	6.01	5.46		
16	2.28	4.25	7.94	14.90	21.30	27.60	33.80	45.70	40.30	34.50	26.10	20.80	17.00	14.20	12.20	10.50	9.25	8.20	7.75	7.35	6.62	6.01		
17	2.44	4.54	8.47	15.80	22.80	29.50	36.10	48.80	44.10	37.70	28.70	22.80	18.60	15.50	13.30	11.50	10.10	8.98	8.50	8.04	7.25	6.58		
18	2.59	4.83	9.01	16.90	24.30	31.40	38.30	51.90	48.10	41.00	31.20	24.80	20.20	17.00	14.50	12.60	11.00	9.79	9.25	8.77	7.90	7.17		
19	2.75	5.12	9.56	17.80	25.70	33.20	40.60	55.10	52.10	44.50	33.90	26.90	22.00	18.50	15.70	13.70	12.00	10.60	10.00	9.50	8.57			
20	2.90	5.42	10.10	18.90	27.20	35.10	43.00	58.20	56.30	48.10	36.60	29.10	23.70	20.00	17.00	14.70	12.90	11.50	10.80	10.30	9.25			
21	3.06	5.71	10.60	19.80	28.70	37.10	45.30	61.40	60.60	51.70	39.40	31.20	25.60	21.40	18.20	15.80	13.90	12.30	11.70	11.00	9.96			
22	3.22	6.01	11.20	20.90	30.20	39.00	47.70	64.50	65.00	55.50	42.20	33.50	27.30	22.90	19.60	17.00	14.90	13.20	12.50	11.80	10.70			
23	3.38	6.30	11.70	22.00	31.60	40.90	50.00	67.70	69.40	59.20	45.20	35.80	29.40	24.50	20.90	18.20	16.00	14.20	13.40	12.70	4.91			
24	3.53	6.60	12.30	22.90	33.10	42.80	52.40	70.90	74.00	63.30	48.10	38.20	31.20	26.10	22.40	19.40	17.00	15.10	14.20	13.50				
25	3.69	6.89	12.90	24.00	34.60	44.80	54.70	74.00	78.70	67.20	51.10	40.60	33.20	27.90	23.70	20.60	18.10	16.10	15.10	14.30				
28	4.17	7.79	14.50	27.10	39.00	50.50	61.80	83.60	93.30	79.60	60.60	48.10	39.40	33.00	28.20	24.40	21.40	19.00	18.00					
30	4.49	8.39	15.70	29.20	42.10	53.80	66.60	88.30	67.20	53.40	43.70	36.60	31.20	27.10	23.70	21.00	8.08							
32	4.81	8.99	16.80	31.40	45.00	58.40	71.40	96.60	114	97.30	74.00	58.70	48.10	40.30	34.50	29.80	26.10							
35	5.31	9.91	18.50	34.50	49.70	64.30	78.70	107	130	111	84.70	67.20	55.00	46.10	39.40	34.00								
40	6.13	11.40	21.30	39.80	57.40	74.40	90.90	123	154	135	103	82.00	67.20	56.30	48.10									
45	6.96	13.00	24.30	45.30	65.10	84.50	103	139	176	162	123	98.00	80.20	67.20										
50	7.80	14.60	27.20	50.70	73.10	94.60	116	157	196	190	145	115	94.00											
55	8.65	16.10	30.20	56.20	81.00	105	128	173	217	220	166	132												
60	9.50	17.70	33.10	61.80	88.90	115	141	190	239	249	190													

Note: 1. Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)
2. Please consult with us when the ratings are to the right of the solid blue line.

RC100 Standard Roller Chain (Please refer to P. 82 for sprockets)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin						Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight (lbs/FT)
DID	ANSI	P	W	D	d	E	G	L	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC100	100	1.250	0.750	0.750	0.376	1.555	1.673	1.780	0.780	0.894	1.409	0.157	1.177	1.024	19450	24200	26620	5060	2.54
RC100-2	100-2					2.965	3.083	3.193							38900	48400	53240	8602	5.05
RC100-3	100-3					4.378	4.496	4.535							58351	72600	79860	12650	7.58
RC100-4	100-4					5.787	5.906	5.945							77801	96800	106480	16698	10.13
RC100-5	100-5					7.201	7.319	7.358							97251	121000	133100	19734	12.67

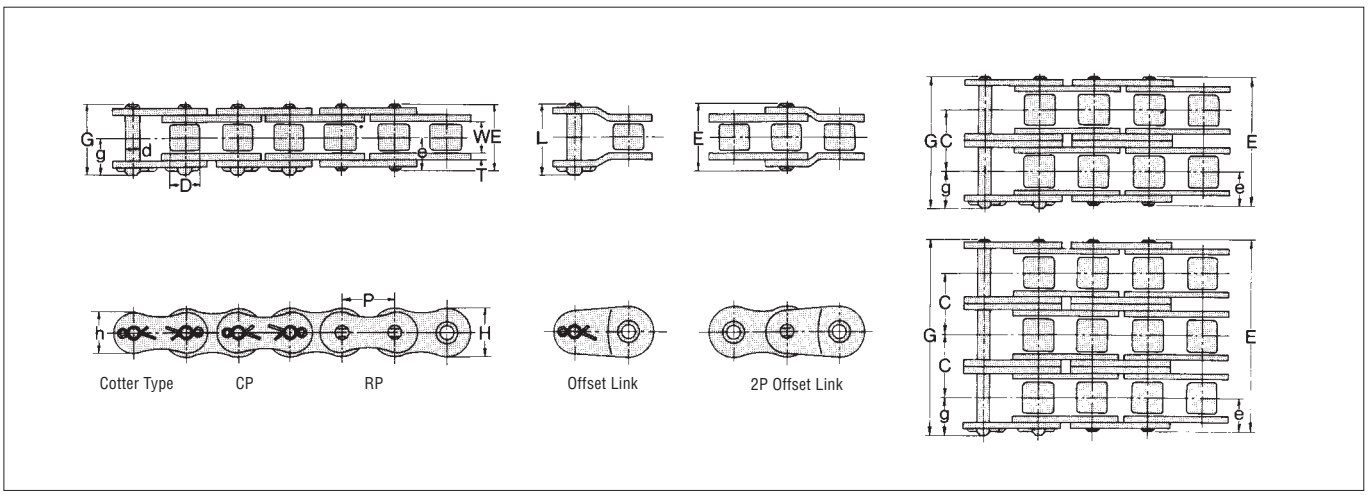
Max. Horsepower Ratings

Unit (hp)

No.of Teeth of Small Sprocket \ Type of Lubrication	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type of lubrication A, B and C.)																										
	10	25	50	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800	2000	2200	2400	2500	2600	2700		
	A				B										C												
11	1.21	2.75	5.13	9.57	17.80	25.70	33.4	40.80	48.00	40.10	32.70	27.50	23.50	20.40	17.80	15.80	14.20	11.60	9.71	8.28	7.18	6.30	5.92	5.59	1.46		
12	1.33	3.02	5.63	10.50	19.60	28.30	36.6	44.80	52.80	45.60	37.40	31.20	26.70	23.20	20.40	18.00	16.10	13.20	11.10	9.44	8.19	7.18	6.76	6.37			
13	1.45	3.30	6.14	11.50	21.40	30.80	39.9	48.80	57.50	51.50	42.10	35.30	30.20	26.10	22.90	20.40	18.20	14.90	12.50	10.60	9.24	8.10	7.61	7.18			
14	1.57	3.57	6.66	12.40	23.20	33.40	43.3	52.90	62.30	57.50	47.10	39.40	33.60	29.20	25.60	22.70	20.40	16.60	13.90	11.90	10.30	9.05	8.51				
15	1.69	3.85	7.17	13.40	24.90	35.90	46.6	57.00	67.20	63.80	52.10	43.70	37.40	32.30	28.40	25.20	22.50	18.50	15.40	13.20	11.40	10.00	9.44				
16	1.81	4.12	7.69	14.30	26.80	38.60	50.0	61.10	72.00	70.20	57.50	48.10	41.20	35.70	31.20	27.70	24.80	20.40	17.00	14.60	12.60	11.10	10.40				
17	1.93	4.40	8.20	15.30	28.60	41.20	53.4	65.30	76.80	76.90	63.00	52.80	45.00	39.00	34.30	30.40	27.20	22.30	18.60	16.00	13.80	12.10					
18	2.05	4.68	8.73	16.40	30.40	43.80	56.7	69.40	81.80	83.80	68.60	57.50	49.10	42.50	37.40	33.10	29.60	24.30	20.40	17.30	15.00	13.20					
19	2.17	4.96	9.26	17.30	32.30	46.40	60.2	73.60	86.60	90.90	74.40	62.30	53.20	46.10	40.50	35.90	32.20	26.30	22.00	18.80	16.40	14.30					
20	2.29	5.24	9.79	18.20	34.00	49.10	63.5	77.70	91.60	98.10	80.40	67.30	57.50	49.90	43.70	38.70	34.70	28.40	23.90	20.40	17.60						
21	2.43	5.52	10.30	19.30	35.90	51.70	67.0	81.90	96.50	106	86.50	72.40	61.80	53.60	47.10	41.70	37.40	30.60	25.60	21.80	18.90						
22	2.55	5.82	10.80	20.20	37.80	54.40	70.5	86.20	101	113	92.60	77.60	66.40	57.50	50.40	44.80	40.10	32.70	27.50	23.50	20.40						
23	2.67	6.10	11.40	21.20	39.70	57.10	74.0	90.30	107	121	99.10	83.00	70.90	61.40	53.90	47.90	42.80	35.00	29.40	25.10	21.70						
24	2.80	6.38	11.90	22.30	41.60	59.80	77.5	94.60	112	128	106	88.50	75.60	65.50	57.50	50.90	45.60	37.40	31.20	26.70	23.20						
25	2.92	6.68	12.50	23.20	43.40	62.50	81.0	98.90	117	134	112	94.10	80.30	69.60	61.10	54.20	48.50	39.70	33.20	28.40	24.50						
28	3.31	7.55	14.10	26.30	49.10	70.60	91.4	112	132	151	133	112	95.20	82.60	72.40	64.20	57.50	47.10	39.40	33.60							
30	3.57	8.12	15.10	28.30	52.80	76.00	98.5	121	142	164	147	124	106	91.60	80.30	71.20	63.80	52.10	43.70								
32	3.82	8.71	16.20	30.30	56.60	81.50	106	129	153	174	162	137	116	101	88.50	78.40	70.20	57.50	48.10								
35	4.21	9.60	18.00	33.40	62.30	89.80	116	142	168	193	186	155	133	115	101	89.80	80.30	66.20									
40	4.87	11.10	20.60	38.60	72.00	104	134	165	193	223	227	190	162	141	124	110	98.10										
45	5.52	12.60	23.50	43.80	81.80	118	153	186	220	252	271	227	194	168	147	131											
50	6.18	14.10	26.30	49.20	91.70	132	172	209	247	283	318	265	227	197													
55	6.85	15.70	29.20	54.40	102	146	189	232	273	314	354	307	263														
60	7.53	17.20	32.00	59.80	112	161	208	255	300	345	389	350															

Note: Value in above table is for single strand chain only. For multiplex chain, please apply the coefficient of Multi-strand.
(Please refer to Chain selection on P.91.) Please consult with us when the ratings are to the right of the solid blue line.

RC120 Standard Roller Chain (Please refer to P. 83 for sprockets)



Dimensions

Unit (inch)

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 (lbs/FT)
DID	ANSI	P	W	D	d	E	G	L	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC120	120	1.500	1.000	0.875	0.437	1.957	2.087	2.209	0.980	1.110	1.787	0.189	1.413	1.228	27953	33000	37400	6820	3.68
RC120-2	120-2					3.748	3.878	3.921							55906	66000	74800	11594	7.38
RC120-3	120-3					5.535	5.665	5.709							83860	99000	112200	17050	11.06
RC120-4	120-4					7.327	7.457	7.500							111813	132000	149600	22506	14.75
RC120-5	120-5					9.114	9.244	9.287							139766	165000	187000	26598	18.44

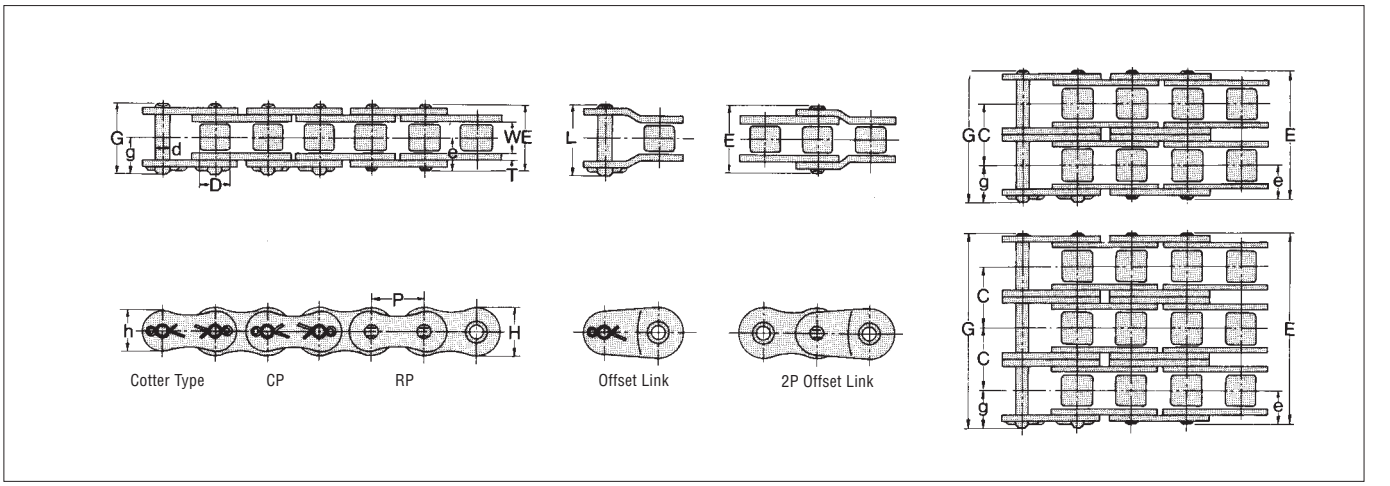
Max. Horsepower Ratings

Unit (hp)

No.of Teeth of Small Sprocket \ Type of Lubrication	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding 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	2.02	4.62	8.65	16.10	23.20	30.20	43.30	56.20	68.60	58.30	46.40	37.90	31.80	27.10	23.50	20.60	18.40	16.40	14.70	13.40	12.20	11.20	10.40	9.58	8.91
12	2.23	5.08	9.49	17.70	25.50	33.10	47.60	61.70	75.50	66.50	52.80	43.20	36.20	31.00	26.80	23.50	20.90	18.60	16.90	15.30	13.90	12.80	11.80	10.90	
13	2.43	5.55	10.30	19.30	27.90	36.10	51.90	67.30	82.20	74.90	59.50	48.70	40.90	34.90	30.20	26.50	23.50	21.00	19.00	17.20	15.70	14.50	13.30	12.30	
14	2.63	6.01	11.20	20.90	30.20	39.00	56.30	72.90	89.00	83.80	66.50	54.40	45.60	39.00	33.80	29.60	26.30	23.50	21.20	19.30	17.60	16.10	14.90	13.80	
15	2.84	6.47	12.10	22.50	32.40	42.10	60.60	78.60	96.00	92.90	73.70	60.30	50.50	43.20	37.40	32.80	29.10	26.10	23.50	21.30	19.40	17.80	16.50		
16	3.04	6.94	12.90	24.10	34.90	45.00	65.00	84.20	103	102	81.20	66.50	55.80	47.60	41.30	36.20	32.20	28.70	25.90	23.50	21.40	19.70	18.20		
17	3.24	7.41	13.80	25.90	37.10	48.10	69.30	89.80	110	112	89.00	72.80	61.00	52.10	45.20	39.70	35.10	31.50	28.40	25.70	23.50	21.60	19.80		
18	3.46	7.88	14.70	27.50	39.50	51.20	73.70	95.60	117	122	96.90	79.40	66.50	56.80	49.20	43.20	38.30	34.30	31.00	28.00	25.60	23.50	21.70		
19	3.66	8.35	15.50	29.10	42.00	54.30	78.20	101	124	132	105	86.10	72.10	61.50	53.40	46.80	41.60	37.10	33.50	30.40	27.70	25.50			
20	3.87	8.83	16.50	30.70	44.20	57.40	82.70	107	131	143	114	92.90	77.90	66.50	57.60	50.50	44.90	40.20	36.20	32.80	30.00	27.50			
21	4.08	9.30	17.40	32.40	46.60	60.50	87.10	113	138	154	122	100	83.80	71.60	62.10	54.40	48.30	43.20	39.00	35.40	32.30	29.60			
22	4.29	9.79	18.20	34.00	49.10	63.70	91.70	119	145	165	131	107	89.80	76.70	66.50	58.30	51.70	46.40	41.80	37.90	34.60	31.80			
23	4.50	10.30	19.20	35.80	51.50	66.80	96.10	125	153	177	139	115	96.10	82.00	71.00	62.30	55.40	49.50	44.60	40.50	37.00				
24	4.72	10.80	20.10	37.40	53.90	69.80	101	130	160	188	149	122	102	87.40	75.70	66.50	59.00	52.80	47.60	43.20	39.40				
25	4.93	11.20	20.90	39.10	56.40	73.10	105	137	166	196	158	130	109	92.90	80.60	70.60	62.70	56.20	50.50	46.00	42.00				
28	5.56	12.70	23.70	44.20	63.70	82.60	119	154	188	221	188	154	129	110	95.40	83.80	74.30	66.50	59.90	54.40					
30	5.99	13.70	25.60	47.70	68.60	88.90	128	166	202	239	209	170	143	122	106	92.90	82.40	73.70	66.50						
32	6.43	14.60	27.30	51.10	73.60	95.30	137	178	217	256	229	188	158	134	117	102	90.80	81.20							
35	7.09	16.20	30.20	56.30	81.10	105	151	196	240	283	263	214	181	155	133	117	104								
40	8.19	18.60	34.90	65.00	93.70	121	174	227	276	326	322	263	220	188	164										
45	9.29	21.20	39.50	73.90	106	138	198	257	314	370	383	314	263	224											
50	10.40	23.70	44.40	82.70	119	154	223	288	353	416	449	367	308												
55	11.50	26.30	49.20	91.70	132	172	247	319	390	460	517	424													
60	12.70	29.00	54.00	101	145	188	271	351	429	505	580														

Note: Value in above table is for single strand chain only. For multiplex chain, please apply the coefficient of Multi-strand.
(Please refer to Chain selection on P.91.) Please consult with us when the ratings are to the right of the solid blue line.

RC140 Standard Roller Chain (Please refer to P. 84 for sprockets)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin						Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight (lbs/FT)
DID	ANSI	P	W	D	d	E	G	L	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC140	140	1.750	1.000	1.000	0.500	2.110	2.299	2.346	1.055	1.248	1.925	0.220	1.650	1.429	37913	43340	48400	9020	4.77
RC140-2	140-2					4.039	4.228	4.276							75825	86680	96800	15334	9.45
RC140-3	140-3					5.965	6.154	6.201							113738	130020	145200	22550	14.15
RC140-4	140-4					7.894	8.083	8.130							151650	173360	193600	29766	18.84
RC140-5	140-5					9.819	10.008	10.055							189563	216700	242000	35178	23.40

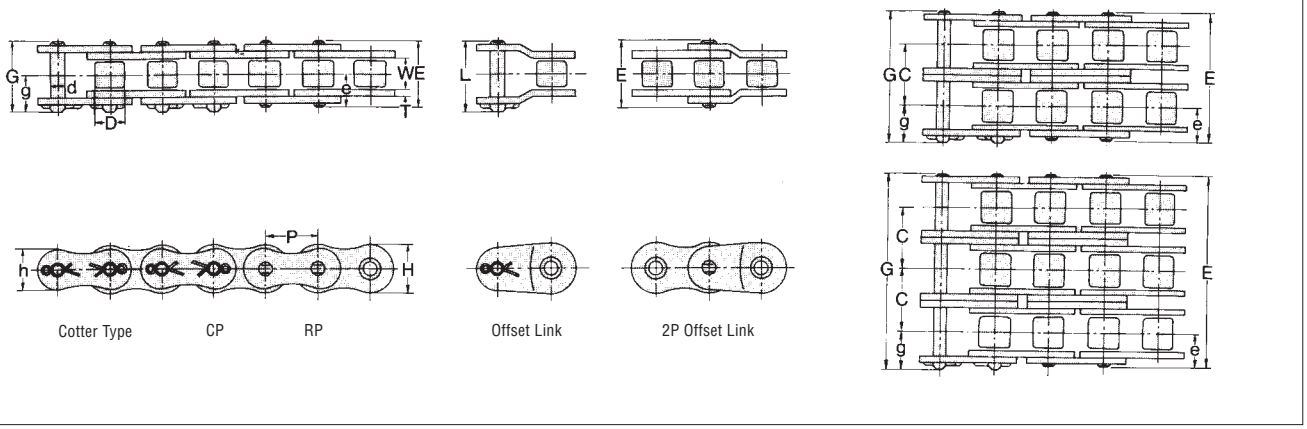
Max. Horsepower Ratings

Unit (hp)

No.of Teeth of Small Sprocket \ Type of Lubrication	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding 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	3.14	7.16	13.40	24.90	35.90	46.60	56.90	67.10	77.00	86.90	96.60	86.80	75.20	66.00	52.40	42.90	35.90	30.70	26.60	23.30	20.70	18.50	16.70	15.20	14.50	
12	3.45	7.87	14.70	27.30	39.50	51.10	62.50	73.70	84.60	95.40	106	98.90	85.70	75.20	59.70	48.90	41.00	35.00	30.30	26.60	23.60	21.10	19.00	17.30	16.50	
13	3.77	8.58	16.10	29.90	43.00	55.80	68.20	80.30	92.30	104	116	112	96.60	84.80	67.30	55.10	46.20	39.40	34.20	30.00	26.60	23.80	21.50	19.50		
14	4.08	9.29	17.30	32.40	46.60	60.40	73.80	87.00	100	113	125	125	108	94.80	75.20	61.60	51.60	44.10	38.20	33.50	29.70	26.60	24.00	21.80		
15	4.40	10.00	18.60	34.90	50.30	65.10	79.50	93.70	108	121	135	138	120	105	83.40	68.30	57.20	48.90	42.30	37.20	33.00	29.50	26.60	7.72		
16	4.71	10.70	20.10	37.40	53.90	69.80	85.30	101	115	130	145	152	132	116	91.90	75.20	63.00	53.80	46.60	41.00	36.30	32.50	29.30			
17	5.03	11.50	21.40	39.90	57.50	74.50	91.10	107	123	139	155	167	145	127	101	82.40	69.00	59.00	51.10	44.80	39.80	35.60	32.10			
18	5.35	12.20	22.80	42.50	61.10	79.20	96.90	114	131	148	164	181	157	138	110	89.80	75.20	64.20	55.70	48.90	43.30	38.80	35.00			
19	5.67	12.90	24.10	45.00	64.90	84.00	103	121	139	157	174	192	171	150	119	97.30	81.60	69.70	60.40	53.00	47.00	42.10	37.90			
20	5.99	13.70	25.50	47.60	68.50	88.80	109	128	147	166	184	203	184	162	128	105	88.10	75.20	65.20	57.20	50.80	45.40	7.63			
21	6.31	14.30	26.90	50.10	72.20	93.60	114	135	155	175	194	213	198	174	138	113	94.80	80.90	70.10	61.60	54.60	48.90				
22	6.64	15.10	28.30	52.70	76.00	98.40	120	142	163	184	204	224	213	187	148	121	102	86.80	75.20	66.00	58.60	52.40				
23	6.97	16.00	29.60	55.40	79.70	103	126	149	171	193	214	236	227	200	158	130	109	92.80	80.40	70.60	62.60	56.00				
24	7.29	16.60	31.10	57.90	83.40	108	132	156	179	202	224	247	242	213	169	138	116	98.90	85.70	75.20	66.70	59.20				
25	7.63	17.40	32.40	60.60	87.20	113	138	163	187	211	234	258	258	226	180	147	123	105	91.10	80.00	70.90	20.80				
28	8.62	19.70	36.70	68.50	98.60	128	156	184	211	238	265	291	305	268	213	174	146	125	108	94.80						
30	9.28	21.20	39.50	73.70	106	138	168	198	228	257	285	314	339	297	236	193	162	138	120							
32	9.95	22.70	42.40	79.10	114	148	180	212	244	275	306	336	367	328	260	213	178	152	132							
35	11.00	25.00	46.70	87.10	125	162	199	234	269	303	337	371	404	375	297	243	204	174								
40	12.70	28.90	53.90	101	145	188	229	270	311	350	389	428	467	458	363	297										
45	14.40	32.80	61.20	114	165	213	261	307	353	398	442	486	530	546	433											
50	16.10	36.80	68.60	128	184	239	292	344	395	446	496	545	594	640	508											
55	17.90	40.70	76.00	142	204	265	324	381	438	494	549	604	658	712												
60	19.60	44.80	83.50	156	224	291	356	419	481	543	603	663	723													

Note: 1. Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)
2. Please consult with us when the ratings are to the right of the solid blue line.

RC160 Standard Roller Chain (Please refer to P. 85 for sprockets)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin						Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight (lbs/FT)
DID	ANSI	P	W	D	d	E	G	L	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC160	160	2.000	1.250	1.125	0.563	2.504	2.685	2.744	1.256	1.437	2.303	0.252	1.882	1.630	49892	55000	60500	11880	6.58
RC160-2	160-2					4.811	4.992	5.051							99783	110000	121000	20196	13.01
RC160-3	160-3					7.118	7.299	7.358							149675	165000	181500	29700	19.45
RC160-4	160-4					9.421	9.598	9.661							199566	220000	242000	39204	25.88
RC160-5	160-5					11.724	11.945	11.965							249458	275000	302500	46332	32.32

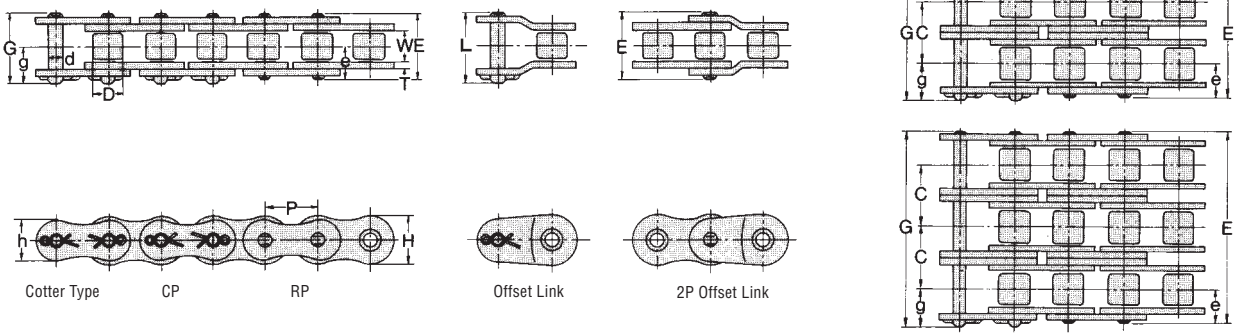
Max. Horsepower Ratings

Unit (hp)

Type of Lubrication / No.of Teeth of Small Sprocket	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding 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	4.56	10.4	19.4	36.2	52.1	67.6	82.6	97.3	112	126	113	96.5	83.6	73.5	65.1	58.3	52.5	47.7	43.6	39.9	34.2	29.6	26.0	23.1
12	5.00	11.4	21.3	39.8	57.2	74.3	90.8	107	123	138	129	110	95.4	83.6	74.3	66.5	59.9	54.4	49.6	45.6	38.9	33.8	29.6	26.3
13	5.46	12.5	23.2	43.3	62.5	81.0	98.9	116	134	151	145	124	108	94.4	83.6	74.9	67.6	61.3	56.0	51.3	43.8	38.1	33.4	29.6
14	5.91	13.5	25.2	46.9	67.7	87.7	107	126	145	164	162	138	120	105	93.6	83.6	75.5	68.5	62.6	57.4	49.1	42.5	37.3	33.1
15	6.37	15.5	27.1	50.5	72.9	94.4	115	135	157	176	180	154	133	117	104	92.9	83.6	76.0	69.4	63.7	54.4	47.2	41.4	19.7
16	6.82	15.5	29.1	54.3	78.2	101	124	146	168	189	198	169	147	129	114	102	92.2	83.6	76.4	70.1	59.9	51.9	45.6	
17	7.29	16.6	31.1	57.9	83.4	108	132	155	178	201	217	185	161	141	125	112	101	91.7	83.6	76.8	65.5	56.8	49.9	
18	7.76	17.7	33.0	61.7	88.7	115	141	166	190	214	237	202	176	154	137	122	110	99.9	91.2	83.6	71.4	61.9	54.4	
19	8.22	18.8	35.0	65.3	94.1	122	149	176	201	228	253	220	190	166	147	132	119	108	98.9	90.8	77.5	67.2	59.0	
20	8.69	19.8	37.0	69.0	99.5	129	157	185	213	240	267	237	205	180	160	143	129	117	107	98.0	83.6	72.5	63.7	
21	9.16	20.9	39.0	72.8	105	135	166	196	225	253	282	255	221	194	172	155	138	126	115	105	90.1	78.0	34.7	
22	9.64	22.0	41.0	76.5	110	143	174	205	236	267	296	273	237	208	184	165	149	135	123	113	96.5	83.6		
23	10.1	23.1	43.0	80.3	116	150	184	216	248	280	311	292	253	223	197	176	160	145	132	121	103	89.5		
24	10.6	24.1	45.0	84.0	121	157	192	227	260	292	326	311	269	237	210	188	169	154	141	129	110	95.4		
25	11.1	25.2	47.1	87.8	127	164	200	236	271	306	340	331	287	252	224	200	180	164	149	137	117	101		
28	12.5	28.6	53.2	99.3	143	185	227	267	307	346	385	393	340	299	264	237	213	194	177	162				
30	13.5	30.7	57.4	107	154	200	244	288	330	373	414	434	377	331	294	263	237	214	196	180				
32	14.5	33.0	61.5	115	165	214	261	308	354	399	444	479	416	365	323	290	261	237	216					
35	16.0	36.3	67.7	126	182	236	290	339	390	440	489	538	716	417	370	331	299							
40	18.4	42.0	78.2	146	210	272	332	393	450	508	564	621	580	509	452									
45	20.9	47.6	88.9	166	239	310	378	445	512	578	642	705	693	607										
50	23.3	53.4	99.5	186	268	347	424	499	574	646	718	791	811											
55	25.9	59.1	110	206	296	385	469	554	635	717	796	877												
60	28.4	64.9	121	227	326	422	516	607	698	787	875													

Note: 1. Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)
2. Please consult with us when the ratings are to the right of the solid blue line.

RC180 Standard Roller Chain (Please refer to P. 86 for sprockets)



Cotter Type CP RP Offset Link 2P Offset Link

Dimensions

Unit (inch)

Chain No. DID	Chain No. ANSI	Pitch P	Roller Link Width W	Roller Dia. D	Pin d	Pin E	Pin G	Pin L	Pin e	Pin g	Transverse Pitch C	Plate T	Plate H	Plate h	JIS Min. Tensile Strength lbs	DID Min. Tensile Strength lbs	DID Avg. Tensile Strength lbs	DID Max. Allowable Load lbs	Approx. Weight (lbs/FT)
RC180	180	2.250	1.406	1.406	0.687	2.815	3.043	3.122	1.409	1.638	2.591	0.280	2.118	1.835		74800	81400	13860	8.52
RC180-2	180-2					5.409	5.638	5.717								149600	162800	23562	16.76
RC180-3	180-3					8.004	8.232	8.311								224400	244200	34650	25.01
RC180-4	180-4					10.594	10.823	10.902								299200	325600	45738	33.26
RC180-5	180-5					13.185	13.413	13.492								374000	407000	54054	41.51

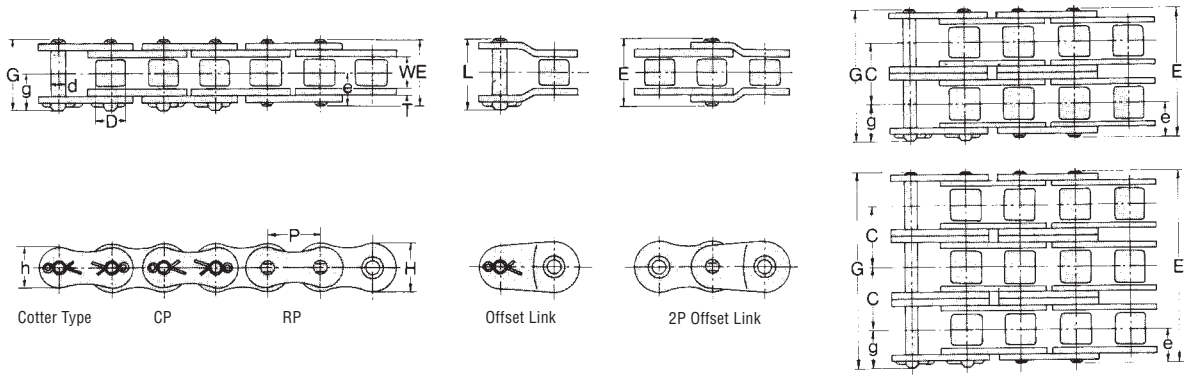
Max. Horsepower Ratings

Unit (hp)

No.of Teeth of Small Sprocket \ Type of Lubrication	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding 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												
11	6.05	13.8	25.7	48.0	69.2	89.7	110	129	149	149	124	106	92	80.7	71.6	64.1	57.8	52.4	47.9	44.0	40.5	37.5	34.9	32.6
12	6.65	15.1	28.3	52.8	76.0	98.5	120	142	164	169	142	121	105	92.0	81.6	73.1	65.8	59.8	54.6	50.1	46.1	42.8	39.7	37.0
13	7.24	16.5	30.8	57.5	82.8	107	131	154	178	190	160	137	118	104	92.0	82.3	74.3	67.4	61.5	56.4	52.0	48.3	44.8	20.1
14	7.84	18.0	33.4	62.3	89.8	116	142	168	193	213	178	153	132	116	103	92.0	83.0	75.3	68.8	63.1	58.2	53.9	50.1	
15	8.46	19.3	35.9	67.2	96.8	125	153	181	208	233	198	169	146	129	114	102	92.0	83.5	76.3	70.0	64.5	59.8	55.5	
16	9.06	20.6	38.6	72.0	104	134	165	193	223	251	218	186	161	142	126	112	101	92.0	84.0	77.1	71.0	65.8	51.3	
17	9.68	22.1	41.2	76.8	111	143	176	206	237	268	239	204	177	155	138	123	111	101	92.0	84.5	77.9	72.1	13.0	
18	10.3	23.5	43.8	81.8	118	153	186	220	252	284	260	223	193	169	150	134	121	110	100	92.0	84.9	78.6		
19	10.9	24.9	46.5	86.7	125	162	197	233	268	302	282	241	209	184	162	145	131	119	109	99.7	92.0	85.1		
20	11.5	26.3	49.1	91.6	132	172	209	247	283	319	304	260	225	198	176	157	142	129	117	108	99.3	51.5		
21	12.2	27.7	51.7	96.5	139	180	220	260	298	336	328	280	243	213	189	169	153	138	126	116	107			
22	12.8	29.2	54.4	102	146	189	232	273	314	354	351	300	260	228	202	181	164	149	135	124	115			
23	13.4	30.6	57.1	107	153	198	243	287	328	371	375	320	277	244	216	193	174	158	145	133				
24	14.1	32.0	59.8	112	161	208	255	300	345	389	401	342	296	260	231	206	186	169	154					
25	14.7	33.5	62.5	117	168	217	265	314	361	406	426	363	315	276	245	220	198	180						
28	16.6	37.8	70.6	132	190	245	300	354	408	458	505	430	374	328	291	260								
30	17.8	40.8	76.1	142	205	265	324	382	438	495	550	479	414	363	323									
32	19.2	43.7	81.5	153	220	284	347	409	471	529	590	527	456	401	355									
35	21.2	48.1	89.8	168	241	312	382	450	517	584	649	602	521											
40	24.4	55.6	104	193	279	362	442	520	598	674	749	736												
45	27.7	63.1	118	220	316	410	501	591	680	765	851													
50	31.1	70.8	132	247	355	460	562	662	761	858														
55	34.5	78.4	146	273	394	509	623	735	843															
60	37.8	86.2	161	300	432	560	685	807																

Note: 1. Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)
2. Please consult with us when the ratings are to the right of the solid blue line.

RC200 Standard Roller Chain (Please refer to P. 87 for sprockets)



Cotter Type CP RP Offset Link 2P Offset Link

Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin						Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight (lbs/FT)
DID	ANSI	P	W	D	d	E	G	L	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC200	200	2.500	1.500	1.562	0.781	3.067	3.346	3.437	1.535	1.811	2.819	0.315	2.362	2.047	77845	96800	105600	16500	11.06
RC200-2	200-2					5.890	6.165	6.260							155690	193600	211200	28050	21.79
RC200-3	200-3					8.713	8.988	9.079							233534	290400	316800	41250	32.52
RC200-4	200-4					11.531	11.807	11.898							311379	387200	422400	54450	43.25
RC200-5	200-5					14.350	14.626	14.717							389224	484000	528000	64350	53.98

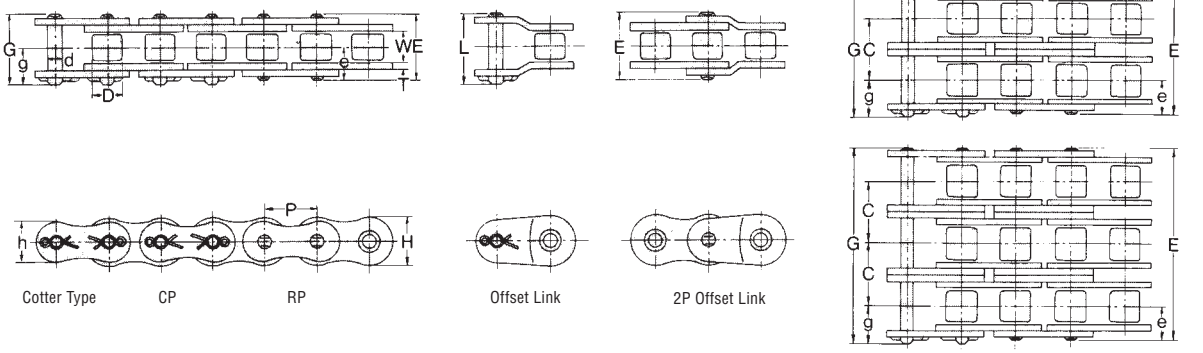
Max. Horsepower Ratings

Unit (hp)

No.of Teeth of Small Sprocket \ Type of Lubrication	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding 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									
11	7.86	11.30	14.60	21.20	27.30	33.50	39.40	51.10	62.50	89.90	116	142	168	193	161	135	100	87.80	77.90	69.70	62.90	57.10	52.10	47.90
12	8.63	12.40	16.10	23.20	30.00	36.70	43.30	56.20	68.60	98.80	128	157	185	212	184	154	114	100	88.70	79.40	71.60	65.00	59.40	54.40
13	9.41	13.50	17.60	25.30	32.80	40.10	47.20	61.10	74.80	108	139	170	201	231	208	174	129	113	100	89.50	80.70	73.30	66.90	61.40
14	10.20	14.70	19.00	27.50	35.50	43.40	51.20	66.20	81.00	117	151	185	217	251	232	194	143	126	112	100	90.20	81.90	74.80	40.50
15	11.00	15.80	20.50	29.50	38.20	46.80	55.10	71.40	87.30	126	164	200	235	269	257	216	160	139	124	111	100	90.90	83.00	2.12
16	11.80	17.00	22.00	31.60	41.00	50.10	59.10	76.50	93.60	135	174	213	252	290	283	237	176	154	137	122	110	100	91.40	
17	12.60	18.10	23.50	33.80	43.80	53.50	63.10	81.80	99.90	143	186	228	268	308	310	260	192	169	150	134	121	110	100	
18	13.40	19.30	24.90	35.90	46.60	57.00	67.20	87.00	106	153	198	243	286	328	338	283	209	184	164	146	132	119	71.2	
19	14.20	20.40	26.50	38.10	49.50	60.30	71.20	92.20	113	162	210	257	303	349	366	307	227	200	177	158	142	129		
20	15.00	21.60	28.00	40.30	52.10	63.80	75.20	97.50	119	172	223	272	320	367	395	331	245	216	190	170	154			
21	15.80	22.80	29.50	42.50	55.10	67.30	79.20	103	125	181	235	287	338	387	425	357	264	232	205	184				
22	16.60	24.00	31.00	44.60	57.90	70.80	83.40	108	132	190	247	302	355	408	456	382	283	248	220	197				
23	17.40	25.10	32.60	46.90	60.70	74.30	87.40	113	138	200	259	316	373	428	483	409	303	265	236					
24	18.20	26.30	34.00	49.10	63.50	77.70	91.60	119	145	209	271	331	390	448	505	436	323	283	251					
25	19.00	27.50	35.70	51.30	66.50	81.20	95.70	124	151	218	283	346	408	468	528	464	343	300						
28	21.60	31.10	40.20	57.90	75.10	91.80	108	141	172	247	319	390	460	529	597	550	406							
30	23.20	33.50	43.30	62.50	80.80	98.90	116	151	185	265	345	421	496	570	642	609								
32	24.90	35.90	46.50	66.90	86.70	106	125	162	198	286	369	452	532	611	689	670								
35	27.50	39.50	51.20	77.70	95.60	117	138	185	221	314	406	497	586	673	759									
40	31.60	45.70	59.10	87.90	110	135	160	206	252	363	469	574	677	777										
45	36.10	51.90	67.20	96.80	125	153	181	233	286	412	534	653	768											
50	40.30	58.00	75.20	108	141	172	202	263	320	461	598	731	861											
55	44.80	64.30	83.40	120	155	190	224	291	355	512	662	810												
60	49.10	70.80	91.70	132	172	209	247	319	390	562	728	890												

Note: 1. Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)
2. Please consult with us when the ratings are to the right of the solid blue line.

RC240 Standard Roller Chain (Please refer to P. 88 for sprockets)



Cotter Type CP RP Offset Link 2P Offset Link

Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin						Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight (lbs/FT)
DID	ANSI	P	W	D	d	E	G	L	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC240	240	3.000	1.875	1.875	0.937	3.748	4.051	4.150	1.878	2.177	3.457	0.374	2.815	2.441	112259	139700	154000	22220	15.62
RC240-2	240-2					7.209	7.512	7.610							224519	279400	308000	37774	30.85
RC240-3	240-3					10.665	10.969	11.067							336778	419100	462000	55550	46.07
RC240-4	240-4					14.122	14.425	14.524							449038	558800	616000	73326	61.22
RC240-5	240-5					17.579	17.882	17.980							561297	698500	770000	86658	76.44

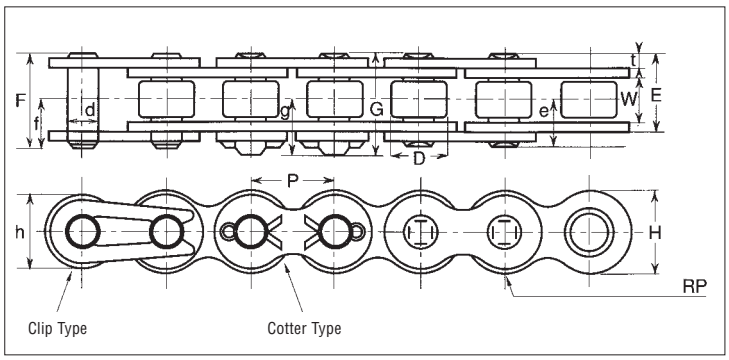
Max. Horsepower Ratings

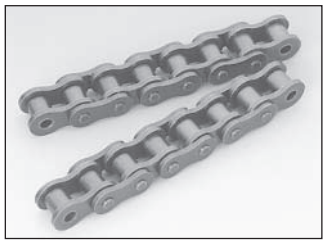
Unit (hp)

No.of Teeth of Small Sprocket \ Type of Lubrication	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding 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								
11	6.78	12.70	18.20	23.60	28.80	34.00	44.10	53.90	63.50	82.30	101	123	145	166	188	229	271	228	186	157	134	116	102	90.10	
12	7.45	13.90	20.00	26.00	31.80	37.40	48.40	59.20	69.70	90.30	110	135	160	182	206	252	298	260	213	178	153	132	116	59.50	
13	8.12	15.10	21.80	28.30	34.60	40.80	52.80	64.60	76.00	98.50	121	147	173	200	225	275	324	294	240	201	172	149	131	21.00	
14	8.81	16.50	23.70	30.70	37.50	44.10	57.20	70.00	82.40	107	130	160	188	216	244	298	351	327	268	225	192	166	146		
15	9.48	17.70	25.50	33.00	40.30	47.60	61.70	75.30	88.70	115	141	172	202	233	263	320	378	363	298	249	213	185	162		
16	10.20	19.00	27.30	35.40	43.30	51.10	66.10	80.80	95.20	123	150	185	217	249	282	343	405	399	327	275	235	204	174		
17	10.90	20.20	29.20	37.80	46.20	54.40	70.50	86.20	102	132	161	197	232	267	300	367	433	438	359	300	256	223	135		
18	11.50	21.60	31.10	40.20	49.20	57.90	75.10	91.70	108	141	172	209	247	283	319	390	460	477	391	327	280	243	97.30		
19	12.20	22.80	33.00	42.60	52.10	61.40	79.50	97.20	115	149	181	221	261	300	339	414	488	517	424	355	303	263	59.00		
20	12.90	24.10	34.90	45.00	55.10	64.90	84.00	103	121	157	192	235	276	318	358	437	516	559	457	383	327	284	20.50		
21	13.70	25.50	36.70	47.50	58.00	68.40	88.50	108	128	165	202	247	291	335	377	461	543	602	492	413	353	273			
22	14.30	26.80	38.60	50.00	61.00	72.00	93.20	114	134	174	213	260	306	351	397	485	571	645	528	442	378	236			
23	15.00	28.20	40.50	52.40	64.10	75.50	97.70	120	141	182	223	272	322	369	417	509	599	689	564	473	403	197			
24	15.80	29.40	42.40	54.80	67.00	79.10	102	125	147	192	233	286	336	386	436	532	627	721	602	504	430				
25	16.50	30.70	44.20	57.40	70.10	82.60	107	131	154	200	244	299	351	403	456	556	655	753	639	536	440				
28	18.60	34.70	50.00	64.70	79.20	93.30	121	147	174	225	276	338	397	457	515	629	741	851	757	635					
30	20.10	37.40	53.90	69.80	85.40	101	130	160	188	243	298	363	428	492	555	678	799	918	840						
32	21.40	40.10	57.80	74.80	91.60	108	139	170	201	261	319	390	458	527	595	727	857	984	920						
35	23.70	44.20	63.70	82.40	100	119	154	188	221	287	351	429	505	580	655	800	944	1084							
40	27.30	51.10	73.60	95.30	116	137	178	217	256	331	405	496	584	672	756	925	1090								
45	31.10	58.00	83.50	108	132	155	202	247	291	377	461	563	664	761	859	1051									
50	34.90	65.00	93.60	121	149	174	227	276	326	422	516	631	743	854	962	1177									
55	38.60	72.00	104	134	165	193	251	307	361	468	572	700	824	946	1067										
60	42.40	79.10	114	147	181	213	275	336	397	513	629	768	905	1040	1173										

Note: 1. Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)
2. Please consult with us when the ratings are to the right of the solid blue line.

ANSI Heavy Type Roller Chain



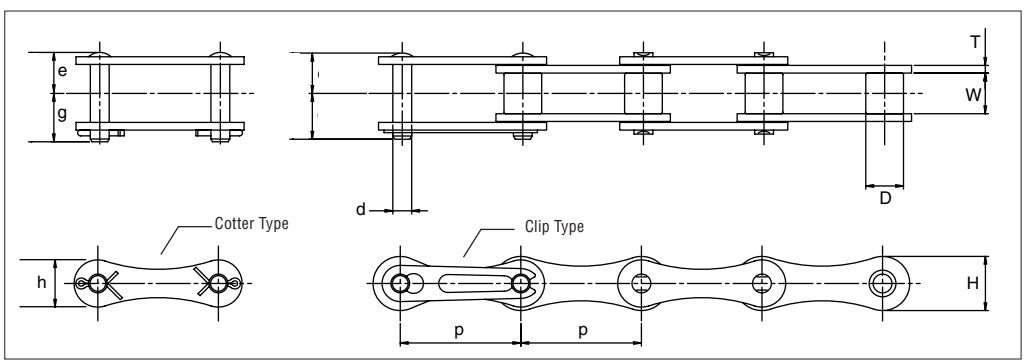


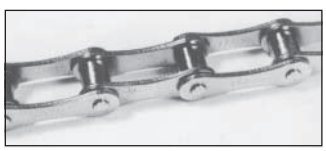
Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin						Plate		DID Avg. Tensile Strength	Approx. Weight
DID	ANSI	P	W	D	d	E	F	G	f	g	T	H	lbs	(lbs/ft)
RC60H	60H	0.750	0.500	0.469	0.235	1.130	1.191	1.228	0.636	0.667	0.126	0.713	10340	1.3
RC80H	80H	1.000	0.625	0.625	0.313	1.413	1.469	1.524	0.770	0.811	0.157	0.945	18480	2.0
RC100H	100H	1.250	0.750	0.750	0.376	1.685	___	1.803	___	0.961	0.189	1.177	27500	2.8
RC120H	120H	1.500	1.000	0.875	0.437	2.094	___	2.224	___	1.177	0.220	1.413	38500	4.1
RC140H	140H	1.750	1.000	1.000	0.500	2.240	___	2.429	___	1.311	0.252	1.650	53900	5.9
RC160H	160H	2.000	1.250	1.007	0.563	2.638	___	2.819	___	1.504	0.280	1.882	68200	7.3
RC200H	200H	2.500	1.500	1.563	0.781	3.335	___	3.610	___	1.945	0.374	2.362	116600	12.9
RC240H	240H	3.000	1.875	1.875	0.937	4.276	___	4.579	___	2.429	0.500	2.815	180400	19.0

A Type Double Pitch Roller Chain





Dimensions

Unit (inch)

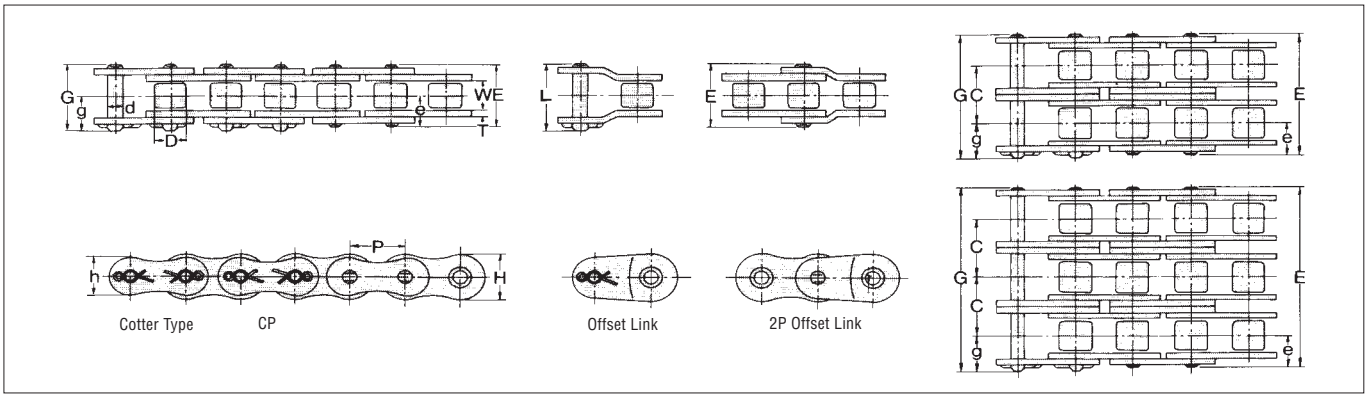
Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin			Plate			DID Avg. Tensile Strength	DID Max Allowable Load	Approx. Weight
DID	ANSI	P	W	D	d	E	G	T	H	h	lbs	lbs	(lbs/ft)
RA2040	A2040	1.000	0.313	0.312	0.156	0.325	0.398	0.059	0.461	0.394	3828	594	0.27
RA2050	A2050	1.250	0.375	0.400	0.200	0.400	0.472	0.079	0.559	0.512	6446	990	0.44
RA2060	A2060	1.500	0.500	0.469	0.235	0.500	0.594	0.094	0.677	0.598	9020	1452	0.64
RA2080	A2080	2.000	0.625	0.625	0.313	0.646	0.748	0.126	0.917	0.748	15400	2530	1.16
RA2100	A2100	2.500	0.750	0.750	0.376	0.791	0.898	0.157	1.134	0.965	25300	4180	1.72
RA2120	A2120	3.000	1.000	0.875	0.437	0.996	1.110	0.189	1.331	1.142	35200	5720	2.47

2-2 D.I.D Ultimate Power Series Roller Chain

2-2-1 D.I.D HI*PWR K Series Roller Chain

Features

D.I.D K Series roller chain is designed to obtain higher tensile strength and shock load capacity with the same physical dimensions as ANSI standard roller chain. K Series roller chain is recommended for slow to moderate speed drive and heavy load conditions.



Max. Horsepower Ratings

Unit (inch)

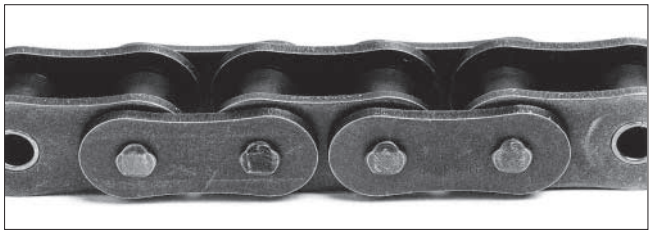
Chain No. DID	ANSI	Pitch	Roller Link Width	Roller (Bush) Dia.	Pin						Trans-verse Pitch	Plate			DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight
		P	W	D	d	E	G	L	e	g	C	T	H	h	lbs	lbs	(lbs/FT)
RC80K	80	1	0.625	0.625	0.313	1.283	1.394	1.461	0.646	0.748	1.154	0.126	0.945	0.819	17,820.00	3,520.00	1.8
RC80K-2	80-2					2.437	2.547	2.610							35,640.00	5,984.00	3.5
RC80K-3	80-3					3.594	3.701	3.744							53,460.00	8,800.00	5.3
RC80K-4	80-4					4.748	4.854	4.898							80,080.00	11,616.00	7.0
RC100K	100	1.25	0.750	0.750	0.376	1.555	1.673	1.780	0.780	0.894	1.409	0.157	1.177	1.024	27,280.00	5,500.00	2.7
RC100K-2	100-2					2.965	3.083	3.193							54,560.00	9,350.00	5.3
RC100K-3	100-3					4.378	4.496	4.535							81,840.00	13,750.00	7.9
RC100K-4	100-4					5.787	5.906	5.945							109,120.00	18,150.00	10.4
RC120K	120	1.5	1.000	0.875	0.437	1.957	2.087	2.209	0.980	1.110	1.787	0.189	1.413	1.228	39,600.00	7,480.00	3.9
RC120K-2	120-2					3.748	3.878	3.921							79,200.00	12,716.00	7.7
RC120K-3	120-3					5.535	5.665	5.709							118,800.00	18,700.00	11.5
RC120K-4	120-4					7.327	7.457	7.500							158,400.00	24,684.00	15.3
RC140K	140	1.75	1.000	1.000	0.500	2.110	2.299	2.346	1.055	1.248	1.925	0.220	1.650	1.429	52,800	99,000	5.1
RC140K-2	140-2					4.039	4.228	4.276							105,600	16,830	10.1
RC140K-3	140-3					5.965	6.154	6.201							158,400	24,750	15.2
RC140K-4	140-4					7.894	8.083	8.130							211,200	32,670	20.2
RC160K	160	2	1.250	1.125	0.563	2.504	2.685	2.744	1.256	1.437	2.303	0.252	1.882	1.630	68,200	12,760	6.8
RC160K-2	160-2					4.811	4.992	5.051							136,400	21,692	13.1
RC160K-3	160-3					7.118	7.299	7.358							204,600	31,900	19.4
RC160K-4	160-4					9.421	9.598	9.661							272,800	42,108	25.5
RC180K	180	2.25	1.406	1.406	0.687	2.815	3.043	3.122	1.409	1.638	2.591	0.280	2.118	1.835	88,000	15,180	9.1
RC180K-2	180-2					5.409	5.638	5.717							176,000	25,806	17.3
RC180K-3	180-3					8.004	8.232	8.311							264,000	37,950	25.5
RC180K-4	180-4					10.594	10.823	10.902							352,000	50,094	33.8
RC200K	200	2.5	1.500	1.562	0.781	3.067	3.346	3.437	1.535	1.811	2.819	0.315	2.362	2.047	106,700	17,160	11.3
RC200K-2	200-2					5.890	6.165	6.260							213,400	29,172	21.1
RC200K-3	200-3					8.713	8.988	9.079							320,100	42,900	31.0
RC200K-4	200-4					11.531	11.807	11.898							426,800	56,628	40.8
RC240K	240	3	1.875	1.875	0.937	3.748	4.051	4.150	1.878	2.177	3.457	0.374	2.815	2.441	155,100	22,880	16.3
RC240K-2	240-2					7.209	7.512	7.610							310,200	38,896	29.8
RC240K-3	240-3					10.665	10.969	11.067							465,300	57,200	43.3
RC240K-4	240-4					14.122	14.425	14.524							620,400	75,306	56.9

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

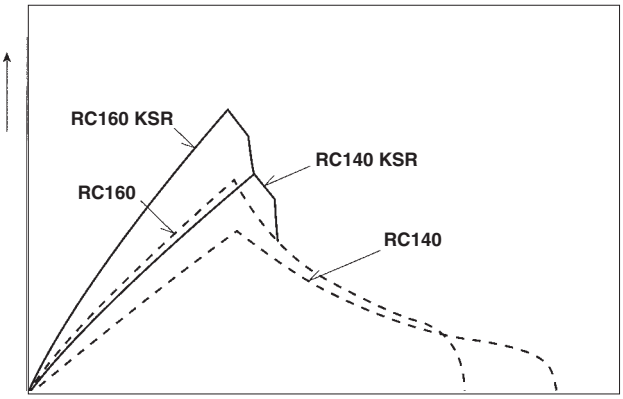
2-2-2 DID Hl*PWR KS Series Roller Chain

Features

KS type roller chain are enhanced in fatigue strength and shock 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 Horsepower rating diagram



Applications

Compared to standard roller chain, KS type roller chain are higher in maximum horsepower rating by about 30 percent in a medium to low speed range. They perform excellent in places where large shock loads apply, frequent start/stop drives, and also in relatively high speed applications.

<Applications> Civil engineering machines such as power shovels, trenchers, trucks, cranes and truck mixers agitators, and shock-applied drives for conveyors, elevators, stackers,etc.

Cautions for use

1. As connecting links, use semi-press fit type connecting links for KS Series. In a semi-press fit type connecting link, the pins are lightly interference-fitted with the connecting plate. For the connection between the connecting plate and the connecting pins, roll pins are used instead of the cotter pins. 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 reduced. The intermediate plates of a semi-press fit type connecting link for multiplex chain has bushings pressed in.
2. KS type roller chain do not have offset links. Use in an even number of links.
3. In general, select your chain with reference to “Designing of roller chain transmission” (P. 91 - 96) and also to the tables of maximum horsepower ratings and dimensions of KS type roller chains (P.31 - 39).
4. The avaiable number of strands is up to triple strands.

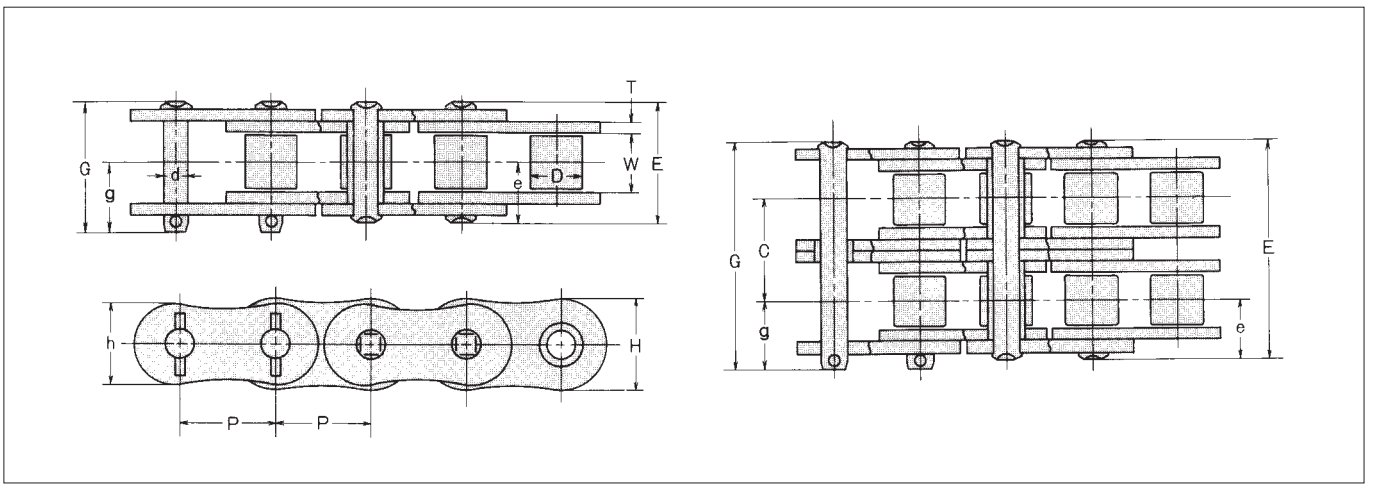
Dimensions

Unit (inch)

Chain No. DID	Chain No. Equivalent to ANSI	Pitch P	Roller Link Width W	Roller Dia. D	Pin d	Pin E	Pin G	Pin L	Pin g	Trans-verse Pitch C	Plate T	Plate H	Plate h	JIS Min. Tensile Strength lbs	DID Min. Tensile Strength lbs	DID Avg. Tensile Strength lbs	DID Max. Allowable Load lbs	Approx. Weight (lbs/FT)
RC80KSR	80	1.000	0.625	0.625	0.313	1.283	1.394	0.646	0.748	1.154	0.126	0.949	0.819	12474	16940	18920	4180	1.89
RC100KSR	100	1.250	0.750	0.750	0.376	1.555	1.673	0.780	0.894	1.409	0.157	1.185	1.024	19450	26180	28600	6820	2.80
RC120KSR	120	1.500	1.000	0.875	0.437	1.957	2.087	0.980	1.110	1.787	0.189	1.425	1.228	27953	38500	41800	9020	4.10
RC140KSR	140	1.750	1.000	1.000	0.500	2.110	2.299	1.055	1.248	1.925	0.220	1.661	1.429	37913	50600	55000	12100	5.17
RC160KSR	160	2.000	1.250	1.125	0.563	2.504	2.685	1.256	1.437	2.303	0.252	1.898	1.630	49892	64680	70400	15840	7.04
RC180KSR	180	2.250	1.406	1.406	0.687	2.815	3.043	1.409	1.638	2.591	0.280	2.134	1.835		84920	92400	18700	9.66
RC200KSR	200	2.500	1.500	1.562	0.781	3.067	3.346	1.535	1.811	2.819	0.315	2.370	2.047	77845	103180	112200	22000	11.73
RC240KSR	240	3.000	1.875	1.875	0.937	3.748	4.051	1.878	2.177	3.457	0.374	2.843	2.441	114459	149600	162800	29700	16.56

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

RC80KS (Please refer to P. 81 for Sprocket)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller (Bush) Dia.	Pin					Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max Allowable Load	Approx. Weight (lbs/ft)
DID	ANSI	P	W	D	d	E	G	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC80KSR	80	1.000	0.625	0.625	0.313	1.283	1.394	0.646	0.748	1.154	0.126	0.949	0.819	12474	16940	18920	4180	1.89
RC80KS-2R	80-2					2.437	2.547							24948	33880	37840	7106	3.76
RC80KS-3R	80-3					3.594	3.701							37422	50820	56760	10450	5.53

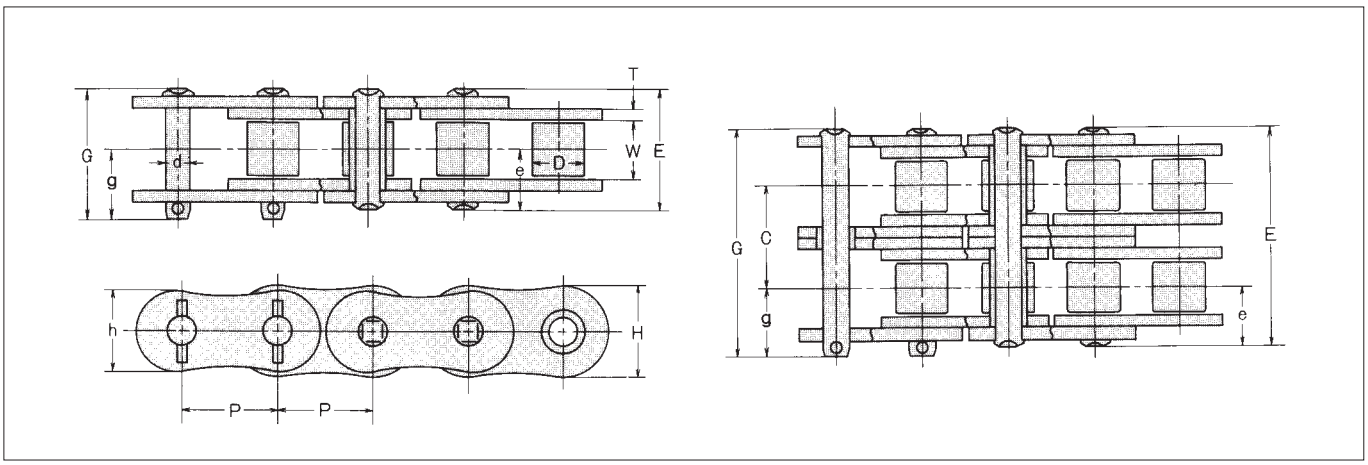
Max. Horsepower Ratings

Unit (hp)

No.of Teeth of Small Sprocket \ Type of Lubrication	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type of lubrication A, B and C.)									
	25	50	100	200	300	400	500	700	900	1000
	A		B					C		
11	1.97	3.69	6.88	12.80	18.50	24.00	29.20	39.70	32.20	
12	2.17	4.05	7.55	14.10	20.20	26.30	32.20	43.60	36.60	
13	2.36	4.41	8.23	15.40	22.10	28.70	35.10	47.50	41.30	
14	2.56	4.79	8.93	16.60	24.00	31.10	37.90	51.50	46.10	
15	2.76	5.15	9.61	18.00	25.90	33.50	40.90	55.40	51.20	
16	2.96	5.52	10.30	19.30	27.70	35.90	43.80	59.40	56.40	
17	3.16	5.90	11.00	20.50	29.60	38.30	46.80	63.40	61.80	
18	3.36	6.27	11.70	21.80	31.50	40.80	49.90	67.40	67.30	
19	3.57	6.65	12.40	23.20	33.40	43.20	52.80	71.40	73.10	
20	3.77	7.02	13.10	24.50	35.30	45.70	55.80	75.50	78.80	67.30
21	3.97	7.41	13.80	25.70	37.10	48.10	58.80	79.60	84.90	72.40
22	4.17	7.79	14.50	27.10	39.00	50.70	61.90	83.80	90.90	77.60
23	4.38	8.18	15.30	28.40	41.00	53.10	64.90	87.90	97.20	83.00
24	4.58	8.55	16.00	29.80	42.90	55.60	68.00	92.00	104.00	88.50
25	4.79	8.94	16.80	31.10	44.90	58.20	71.00	96.10	110.00	94.10
28	5.42	10.10	18.90	35.30	50.70	65.70	80.30	109.00	131.00	112.00
30	5.83	10.90	20.40	37.90	54.60	70.80	86.50	117.00	145.00	124.00
32	6.26	11.70	21.80	40.60	58.60	75.90	92.80	125.00	157.00	137.00
35	6.89	12.90	24.00	44.80	64.50	83.50	102.00	138.00	173.00	155.00
40	7.96	14.90	27.70	51.70	74.50	96.50	118.00	160.00	200.00	190.00

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

RC100KS (Please refer to P. 82 for Sprocket)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller (Bush) Dia.	Pin					Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max Allowable Load	Approx. Weight (lbs/ft)
DID	ANSI	P	W	D	d	E	G	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC100KSR	100	1.250	0.750	0.750	0.376	1.555	1.673	0.780	0.894	1.409	0.157	1.185	1.024	19450	26180	28600	6820	2.80
RC100KS-2R	100-2					2.965	3.083							38900	52360	57200	11594	5.51
RC100KS-3R	100-3					4.378	4.496							58351	78540	85800	17050	8.18

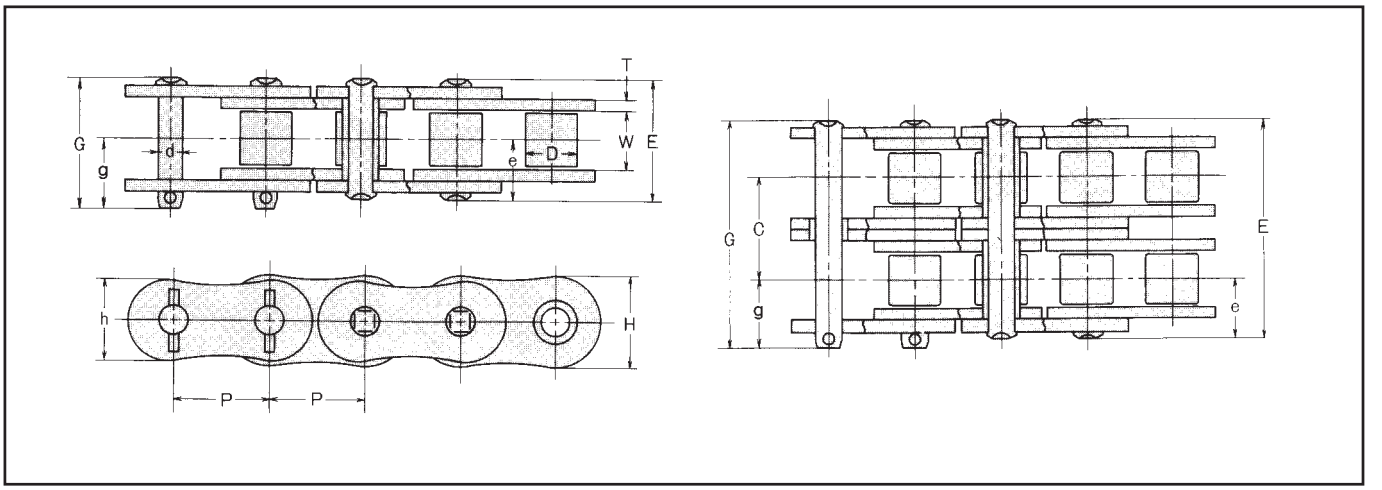
Max. Horsepower Ratings

Unit (hp)

Type of Lubrication / No.of Teeth of Small Sprocket	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type of lubrication A, B and C.)											
	10	25	50	100	200	300	400	500	600	700	800	900
	A			B			C					
11	1.41	3.22	5.99	11.20	20.90	30.00	39.00	47.60	56.00	56.00		
12	1.54	3.53	6.58	12.30	22.90	33.00	42.80	52.30	61.70	63.80		
13	1.69	3.85	7.17	13.40	25.10	36.10	46.60	57.00	67.20	72.00		
14	1.82	4.17	7.77	14.50	27.10	39.00	50.50	61.80	72.80	80.40		
15	1.97	4.49	8.38	15.70	29.20	42.00	54.40	66.50	78.40	89.30	73.10	
16	2.10	4.81	8.98	16.80	31.20	45.00	58.30	71.30	84.00	96.60	80.40	
17	2.25	5.13	9.58	18.00	33.40	48.10	62.30	76.10	89.80	103.00	88.10	
18	2.40	5.47	10.20	19.00	35.50	51.20	66.40	81.00	95.40	110.00	96.00	
19	2.55	5.79	10.80	20.20	37.70	54.30	70.20	85.90	101.00	116.00	104.00	
20	2.68	6.13	11.40	21.30	39.80	57.40	74.30	90.80	107.00	123.00	112.00	
21	2.83	6.46	12.10	22.50	42.00	60.50	78.30	95.70	113.00	129.00	121.00	
22	2.98	6.78	12.70	23.60	44.10	63.50	82.30	101.00	119.00	137.00	130.00	
23	3.12	7.12	13.30	24.80	46.20	66.60	86.30	106.00	124.00	143.00	138.00	
24	3.27	7.45	13.90	26.00	48.50	69.80	90.50	111.00	130.00	150.00	147.00	
25	3.42	7.79	14.60	27.20	50.70	72.90	94.50	116.00	137.00	157.00	157.00	
28	3.86	8.81	16.50	30.70	57.20	82.40	107.00	131.00	154.00	177.00	186.00	
30	4.16	9.49	17.70	33.10	61.70	88.90	115.00	141.00	166.00	190.00	206.00	
32	4.46	10.20	19.00	35.40	66.10	95.30	123.00	151.00	178.00	204.00	228.00	190.00
35	4.92	11.20	20.90	39.00	72.80	105.00	135.00	166.00	196.00	225.00	253.00	218.00
40	5.67	12.90	24.10	45.00	84.20	121.00	157.00	192.00	227.00	260.00	294.00	267.00

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

RC120KS (Please refer to P. 83 for Sprocket)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller (Bush) Dia.	Pin					Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max Allowable Load	Approx. Weight (lbs/ft)
DID	ANSI	P	W	D	d	E	G	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC120KSR	120	1.500	1.000	0.875	0.437	1.957	2.087	0.980	1.110	1.787	0.189	1.425	1.228	27953	36300	41800	9020	4.10
RC120KS-2R	120-2					3.748	3.878							55906	72600	83600	15334	8.18
RC120KS-3R	120-3					5.535	5.665							83860	108900	125400	22550	12.20

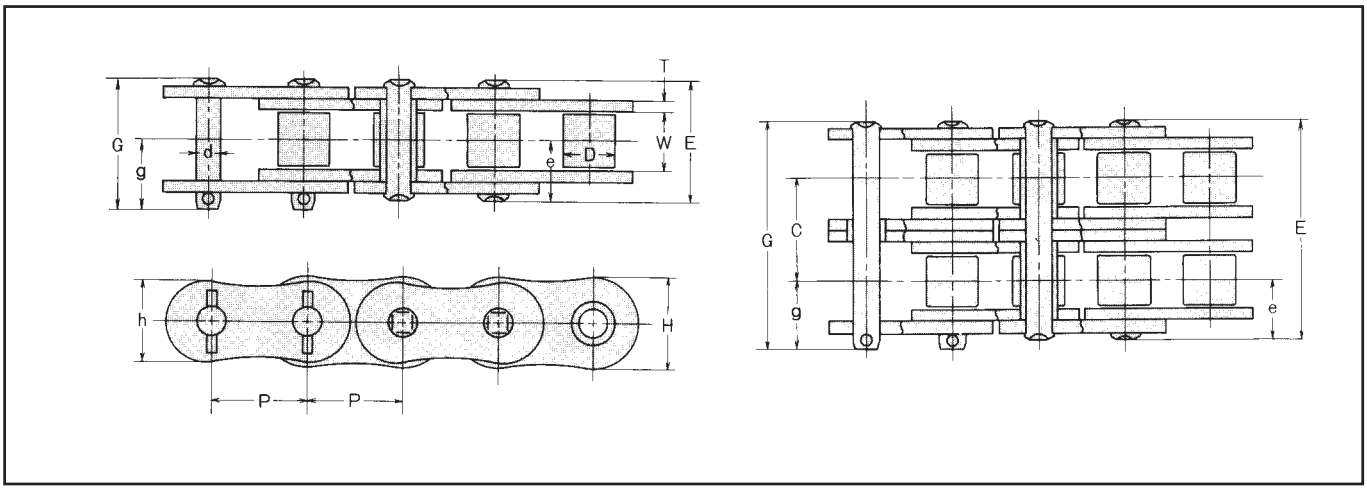
Max. Horsepower Ratings

Unit (hp)

Type of Lubrication / No.of Teeth of Small Sprocket	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type of lubrication A, B and C.) 10	25	50	100	150	200	300	400	500	600	700	800
	A		B				C					
11	2.52	5.75	10.7	20.0	28.8	37.4	53.8	69.7	85.3	81.6		
12	2.76	6.31	11.8	22.0	31.6	41.0	59.1	76.5	93.6	93.0		
13	3.02	6.89	12.8	24.0	34.6	44.8	64.5	83.5	102	105		
14	3.27	7.45	13.9	26.0	37.4	48.5	69.8	90.5	111	117		
15	3.53	8.03	15.0	26.8	40.3	52.3	75.2	97.5	119	130		
16	3.78	8.62	16.1	30.0	43.2	56.0	80.7	104	128	143		
17	4.03	9.20	17.2	32.0	46.1	59.8	86.1	112	137	157	125	
18	4.29	9.79	18.2	34.0	49.1	63.5	91.6	119	145	170	135	
19	4.54	10.4	19.3	36.1	52.0	67.4	97.1	126	154	181	147	
20	4.80	11.0	20.5	38.2	55.0	71.2	103	133	162	192	160	
21	5.07	11.6	21.6	40.2	57.9	75.1	108	141	172	202	172	
22	5.32	12.1	22.7	42.4	61.0	79.0	114	147	180	212	184	
23	5.59	12.7	23.9	44.4	63.9	82.8	119	154	189	223	196	
24	5.86	13.4	24.9	46.5	66.9	86.7	125	162	198	233	209	
25	6.11	13.9	26.0	48.5	70.0	90.6	131	169	206	244	223	
28	6.92	15.8	29.5	55.0	79.1	102	147	192	233	275	263	
30	7.44	17.0	31.6	59.1	85.3	110	160	206	252	296	292	
32	7.99	18.2	34.0	63.4	91.3	118	170	221	269	318	322	
35	8.79	20.1	37.4	69.8	101	130	188	243	298	350	367	
40	10.2	23.2	43.3	80.7	116	150	217	282	343	405	315	367

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

RC140KS (Please refer to P. 84 for Sprocket)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller (Bush) Dia.	Pin					Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max Allowable Load	Approx. Weight (lbs/ft)
DID	ANSI	P	W	D	d	E	G	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC140KSR	140	1.750	1.000	1.000	0.500	2.110	2.299	1.055	1.248	1.925	0.220	1.661	1.429	37913	48400	55000	12100	5.17
RC140KS-2R	140-2					4.039	4.228							75825	96800	110000	20570	10.26
RC140KS-3R	140-3					5.965	6.154							113738	145200	165000	30250	15.36

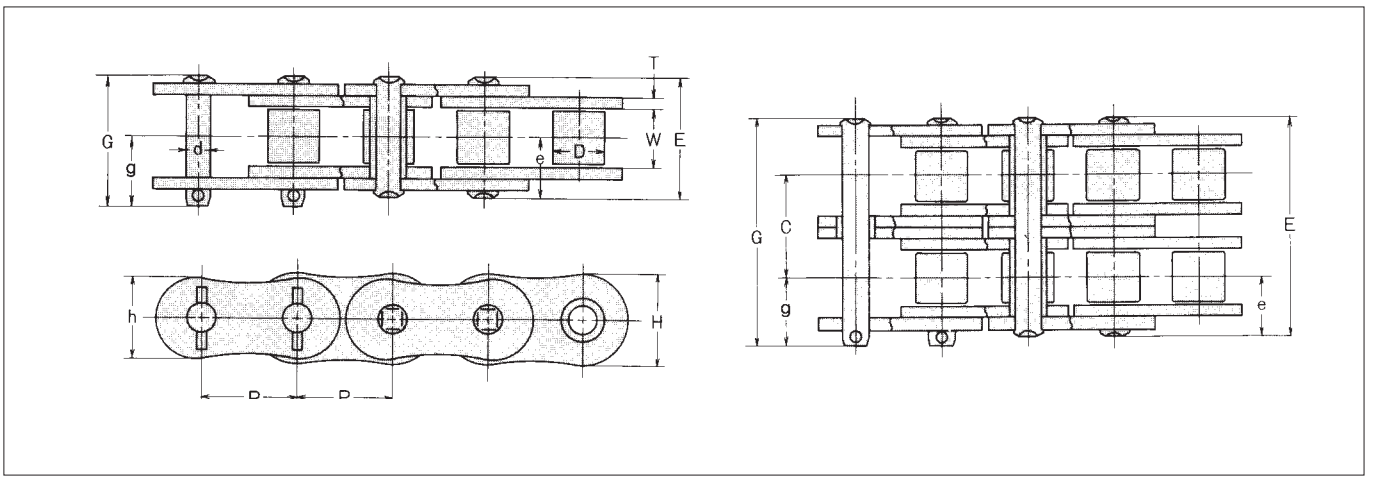
Max. Horsepower Ratings

Unit (hp)

No.of Teeth of Small Sprocket \ Type of Lubrication	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type of lubrication A, B and C.)													
	10	25	50	100	150	200	250	300	350	400	450	500	550	600
	A		B						C					
11	3.87	8.85	16.50	30.80	44.40	57.50	70.20	82.80	95.00	107.00	119.00	121.00	105.00	92.40
12	4.26	9.72	18.10	33.80	48.80	63.10	77.20	90.90	104.00	118.00	131.00	138.00	120.00	105.00
13	4.64	10.60	19.80	36.90	53.10	68.90	84.20	99.20	114.00	128.00	143.00	155.00	135.00	119.00
14	5.03	11.50	21.40	39.90	57.50	74.50	91.20	107.00	123.00	139.00	154.00	170.00	150.00	133.00
15	5.42	12.40	23.10	43.00	62.10	80.30	98.30	116.00	133.00	150.00	166.00	184.00	168.00	147.00
16	5.80	13.30	24.80	46.10	66.50	86.20	105.00	124.00	142.00	161.00	178.00	197.00	185.00	162.00
17	6.21	14.20	26.40	49.30	71.00	92.00	112.00	132.00	153.00	172.00	190.00	209.00	202.00	177.00
18	6.60	15.00	28.20	52.40	75.50	97.90	120.00	141.00	162.00	182.00	202.00	223.00	220.00	193.00
19	7.00	16.00	29.80	55.60	80.00	104.00	127.00	149.00	172.00	193.00	216.00	236.00	239.00	210.00
20	7.40	16.90	31.50	58.70	84.60	110.00	134.00	158.00	181.00	205.00	228.00	251.00	259.00	227.00
21	7.79	17.80	33.20	61.90	89.10	116.00	141.00	166.00	192.00	216.00	240.00	264.00	277.00	244.00
22	8.19	18.80	34.90	65.10	93.80	121.00	149.00	176.00	201.00	227.00	252.00	277.00	298.00	261.00
23	8.61	19.00	36.60	68.40	98.40	127.00	155.00	184.00	210.00	237.00	264.00	291.00	316.00	279.00
24	9.01	20.50	38.30	71.60	103.00	134.00	164.00	192.00	221.00	249.00	277.00	304.00	331.00	298.00
25	9.41	21.40	40.10	74.80	108.00	139.00	170.00	201.00	231.00	260.00	290.00	318.00	347.00	316.00
28	10.60	24.30	45.30	84.50	122.00	158.00	193.00	227.00	261.00	294.00	327.00	359.00	391.00	375.00
30	11.50	26.10	48.80	91.00	131.00	170.00	208.00	244.00	282.00	316.00	353.00	387.00	422.00	417.00
32	12.30	28.00	52.30	97.60	141.00	182.00	223.00	263.00	302.00	339.00	378.00	416.00	453.00	458.00
35	13.50	30.80	57.60	108.00	155.00	201.00	245.00	290.00	332.00	374.00	416.00	457.00	499.00	524.00
40	15.70	35.70	66.50	124.00	178.00	232.00	283.00	334.00	383.00	433.00	481.00	528.00	576.00	

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

RC160KS (Please refer to P. 85 for Sprocket)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller (Bush) Dia.	Pin				Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max Allowable Load	Approx. Weight (lbs/ft)
DID	ANSI	P	W	D	d	E	G	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC160KSR	160	2.000	1.250	1.125	0.563	2.504	2.685	1.256	1.437	2.303	0.252	1.898	1.630	49892	61160	70400	15840	7.04
RC160KS-2R	160-2					4.811	4.992							99783	122320	140800	26928	13.95
RC160KS-3R	160-3					7.118	7.299							149675	183480	211200	39600	20.92

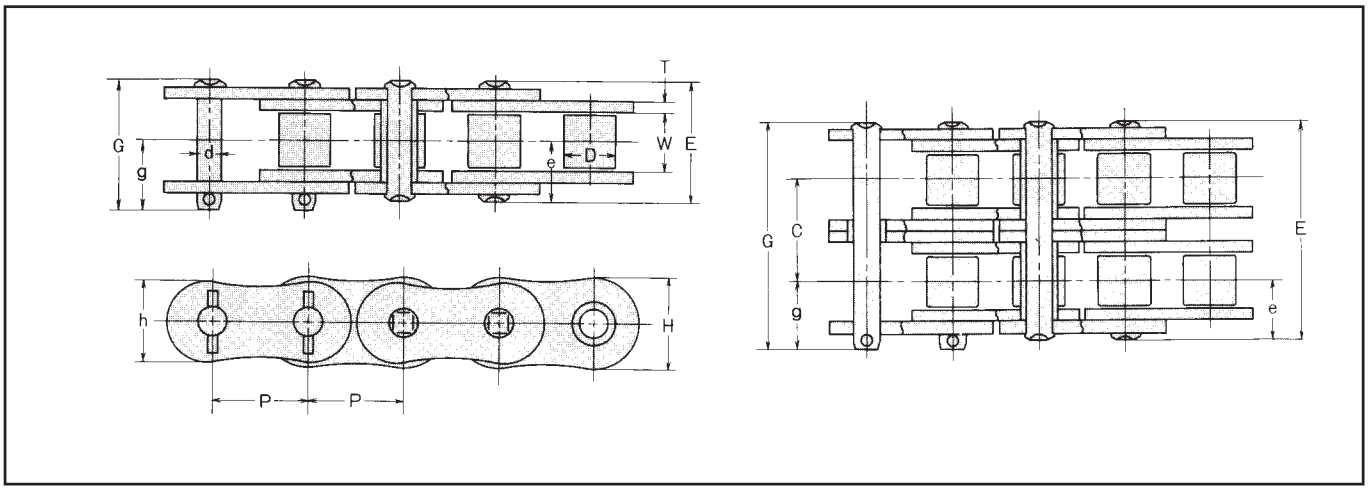
Max. Horsepower Ratings

Unit (hp)

Type of Lubrication / No.of Teeth of Small Sprocket	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type of lubrication A, B and C.)												
	10	25	50	100	150	200	250	300	350	400	450	500	550
	A			B					C				
11	5.40	12.3	22.9	42.9	61.8	80.0	97.9	115	132	149	158	135	
12	5.92	13.5	25.2	47.1	67.8	87.9	108	127	146	164	181	154	
13	6.46	14.7	27.5	51.3	74.0	95.8	117	138	158	178	198	174	
14	7.01	16.0	29.8	55.6	80.2	104	127	150	172	194	216	194	
15	7.55	17.2	32.2	59.9	86.3	112	137	161	185	209	232	216	
16	8.10	18.5	34.5	64.2	92.6	120	146	173	198	224	249	237	
17	8.63	19.7	36.7	68.6	98.8	128	157	185	212	239	265	260	
18	9.18	20.9	39.1	73.1	105	137	166	196	225	255	283	283	
19	9.75	22.3	41.4	77.3	111	145	177	208	239	269	299	307	265
20	10.3	23.5	43.8	81.8	118	153	186	220	252	284	316	331	287
21	10.9	24.8	46.2	86.2	124	161	197	232	267	300	334	357	310
22	11.4	26.0	48.5	90.6	131	169	206	244	268	315	351	382	331
23	12.0	27.3	50.9	95.2	137	177	217	256	294	331	369	405	354
24	12.5	28.6	53.4	99.6	143	186	227	268	307	347	386	424	378
25	13.1	29.9	55.8	104	150	194	237	280	322	362	403	442	401
28	14.9	33.8	63.0	118	169	220	268	316	363	410	456	500	476
30	16.0	36.5	68.0	127	182	236	290	340	391	441	491	539	528
32	17.2	39.0	72.8	135	196	253	310	365	420	473	525	578	582
35	18.9	43.0	80.2	150	216	279	342	402	462	521	579	637	665
40	21.7	49.6	92.6	173	249	323	394	465	534	602	669	736	802

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

RC180KS (Please refer to P. 86 for Sprocket)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller (Bush) Dia.	Pin					Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max Allowable Load	Approx. Weight (lbs/ft)
DID	ANSI	P	W	D	d	E	G	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC180KSR	180					2.815	3.043							0	84920	92400	18700	9.66
RC180KS-2R	180-2	2.250	1.406	1.406	1.406	5.409	5.638	1.409	1.638	2.591	0.280	2.134	1.835	0	169840	184800	31790	19.18
RC180KS-3R	180-3					8.004	8.232							0	254760	277200	46750	28.63

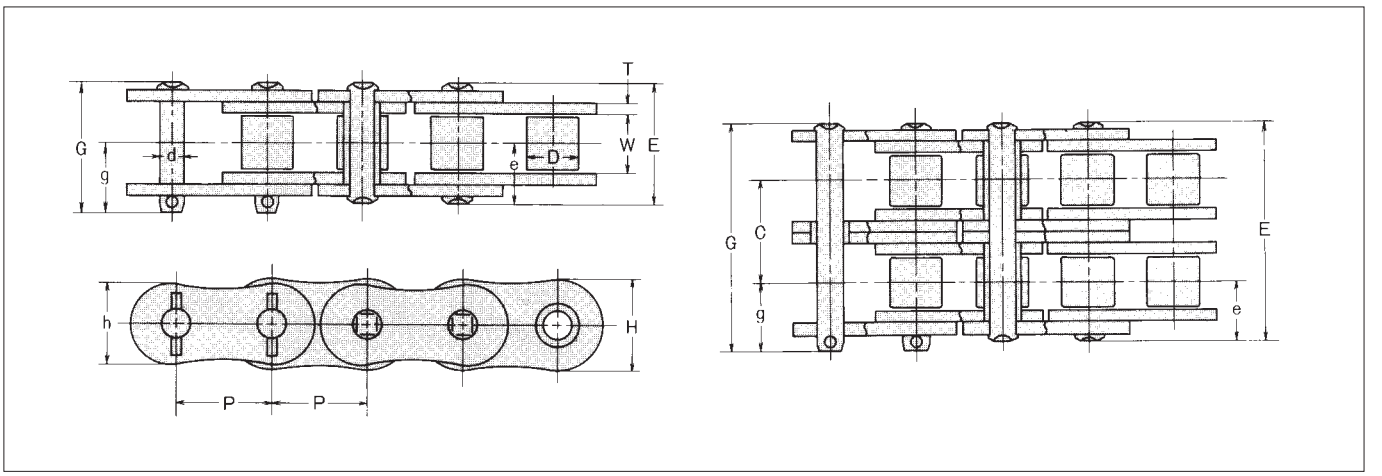
Max. Horsepower Ratings

Unit (hp)

Type of Lubrication / No.of Teeth of Small Sprocket	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type of lubrication A, B and C.)									
	10	25	50	100	150	200	250	300	350	400
	A		B				C			
11	7.02	16.10	29.90	55.80	80.40	104.00	127.00	150.00	173.00	
12	7.72	17.60	32.80	61.30	88.30	114.00	139.00	165.00	189.00	
13	8.42	19.20	35.80	66.90	96.20	125.00	153.00	180.00	206.00	
14	9.12	20.80	38.90	72.40	104.00	135.00	165.00	194.00	224.00	
15	9.83	22.40	41.80	78.00	112.00	146.00	178.00	209.00	241.00	
16	10.50	24.00	44.80	83.60	121.00	155.00	190.00	225.00	259.00	
17	11.20	25.60	47.90	89.30	129.00	166.00	204.00	240.00	276.00	
18	12.00	27.30	50.90	95.00	137.00	177.00	217.00	256.00	294.00	
19	12.70	29.00	54.00	101.00	145.00	188.00	229.00	271.00	311.00	
20	13.40	30.60	57.10	106.00	153.00	198.00	243.00	286.00	328.00	371.00
21	14.10	32.20	60.20	112.00	162.00	209.00	256.00	302.00	347.00	391.00
22	14.90	33.90	63.30	118.00	170.00	220.00	269.00	318.00	365.00	412.00
23	15.50	35.50	66.40	124.00	178.00	231.00	283.00	332.00	382.00	432.00
24	16.40	37.30	69.40	130.00	186.00	241.00	296.00	349.00	401.00	452.00
25	17.00	38.90	72.70	135.00	196.00	253.00	310.00	365.00	418.00	472.00
28	19.30	44.00	82.00	153.00	221.00	286.00	350.00	412.00	473.00	534.00
30	20.80	47.30	88.30	165.00	237.00	308.00	377.00	444.00	509.00	575.00
32	22.30	50.80	94.80	177.00	255.00	330.00	403.00	476.00	546.00	615.00
35	24.50	55.90	104.00	194.00	280.00	363.00	445.00	524.00	602.00	678.00
40	28.30	64.60	121.00	225.00	324.00	420.00	513.00	605.00	694.00	784.00

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

RC200KS (Please refer to P. 87 for Sprocket)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller (Bush) Dia.	Pin					Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max Allowable Load	Approx. Weight (lbs/ft)
DID	ANSI	P	W	D	d	E	G	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC200KSR	200	2.500	1.500	1.562	0.781	3.067	3.346	1.535	1.811	2.819	0.315	2.370	2.047	77845	103180	112200	22000	11.73
RC200KS-2R	200-2					5.890	6.165							155690	206360	224400	37400	23.27
RC200KS-3R	200-3					8.713	8.988							233534	309540	336600	55000	34.87

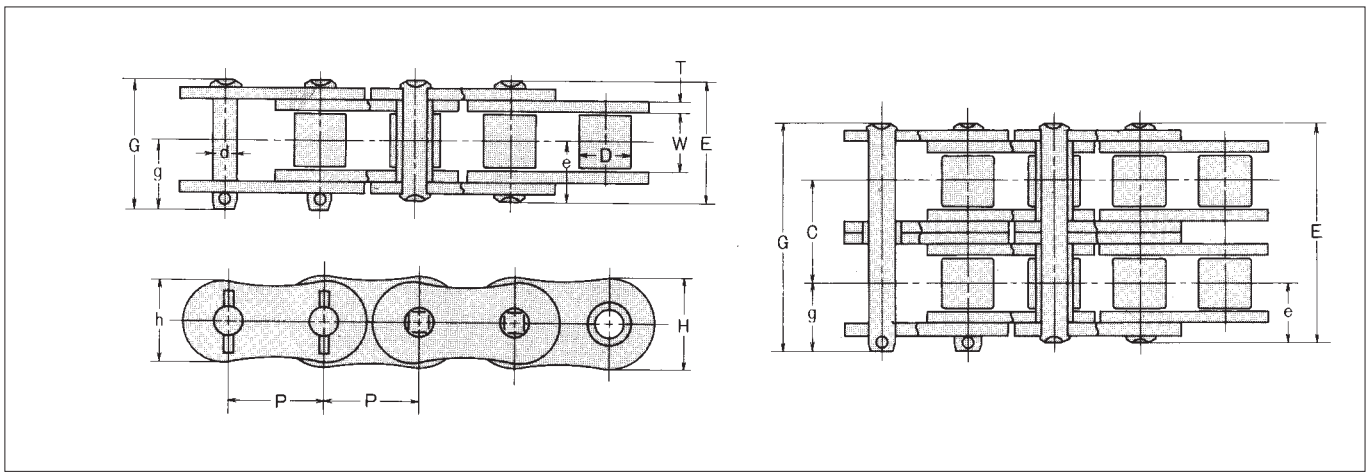
Max. Horsepower Ratings

Unit (hp)

Type of Lubrication / No.of Teeth of Small Sprocket	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type of lubrication A, B and C.) 10	15	20	30	40	50	60	80	100	150	200	250
	A		B			C						
11	9.32	13.40	17.40	25.10	32.40	39.70	46.60	60.50	74.00	107.00	138.00	169.00
12	10.20	14.70	19.00	27.50	35.70	43.60	51.30	66.50	81.20	117.00	151.00	185.00
13	11.20	16.10	20.80	30.00	38.90	47.50	55.90	72.50	88.60	128.00	165.00	202.00
14	12.10	17.40	22.50	32.40	42.10	51.50	60.60	78.60	96.00	138.00	180.00	218.00
15	13.00	18.80	24.30	35.00	45.30	55.40	65.30	84.60	103.00	149.00	193.00	236.00
16	13.90	20.10	26.00	37.50	48.70	59.40	70.00	90.80	111.00	160.00	206.00	253.00
17	14.90	21.40	27.70	40.10	51.90	63.40	74.80	96.80	118.00	170.00	221.00	269.00
18	15.80	22.80	29.60	42.60	55.20	67.40	79.50	103.00	126.00	181.00	235.00	287.00
19	16.80	24.30	31.40	45.20	58.60	71.80	84.30	109.00	134.00	192.00	249.00	304.00
20	17.80	25.60	33.10	47.70	61.80	75.60	89.10	115.00	141.00	204.00	263.00	322.00
21	18.80	26.90	35.00	50.30	62.70	79.60	93.80	122.00	149.00	214.00	277.00	339.00
22	19.70	28.40	36.70	52.90	68.50	83.80	98.80	128.00	157.00	225.00	292.00	357.00
23	20.60	29.80	38.60	55.50	72.00	87.90	104.00	134.00	164.00	236.00	306.00	374.00
24	21.60	31.10	40.30	58.20	75.30	92.10	108.00	141.00	172.00	248.00	320.00	391.00
25	22.70	32.60	42.20	60.70	78.70	96.20	113.00	147.00	180.00	259.00	335.00	
28	25.60	36.70	47.70	68.60	89.00	109.00	128.00	166.00	202.00	292.00	378.00	
30	27.50	39.70	51.30	74.00	95.80	117.00	138.00	178.00	218.00	315.00	408.00	
32	29.50	42.50	55.10	79.40	103.00	126.00	147.00	192.00	235.00	338.00	437.00	
35	32.40	46.80	60.60	87.40	113.00	138.00	164.00	212.00	259.00	371.00	481.00	
40	37.50	54.00	70.10	101.00	131.00	160.00	188.00	244.00	298.00	429.00	556.00	

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

RC240KS (Please refer to P. 88 for Sprocket)



Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller (Bush) Dia.	Pin					Trans-verse Pitch	Plate			JIS Min. Tensile Strength	DID Min. Tensile Strength	DID Avg. Tensile Strength	DID Max Allowable Load	Approx. Weight (lbs/ft)
DID	ANSI	P	W	D	d	E	G	e	g	C	T	H	h	lbs	lbs	lbs	lbs	
RC240KSR	240	3.000	1.875	1.875	0.937	3.748	4.051	1.878	2.177	3.457	0.374	2.843	2.441	112259	149600	162800	29700	16.56
RC240KS-2R	240-2					7.209	7.512							224519	299200	325600	50490	32.86
RC240KS-3R	240-3					10.665	10.969							336778	448800	488400	74250	49.15

Max. Horsepower Ratings

Unit (hp)

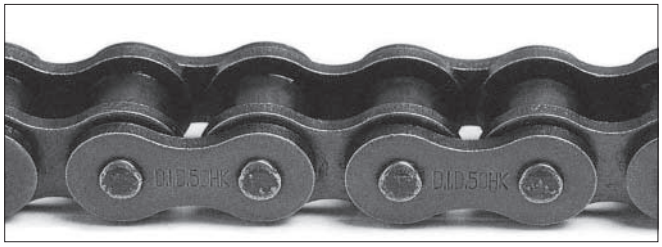
Type of Lubrication / No.of Teeth of Small Sprocket	Revolutions per minute-Small Sprocket (rpm) (Please refer to P.103 for more details regarding type of lubrication A, B and C.)												
	5	10	15	20	25	30	40	50	60	80	100	125	150
	A		B			C							
11	7.98	14.90	21.40	27.70	33.90	39.90	51.70	63.30	74.70	96.60	118.00	145.00	170.00
12	8.75	16.40	23.60	30.60	37.30	44.00	57.00	69.60	81.90	106.00	130.00	158.00	186.00
13	9.54	17.80	25.60	33.20	40.60	47.90	62.10	75.90	89.40	116.00	142.00	173.00	204.00
14	10.30	19.30	27.70	36.10	44.00	51.90	67.20	82.20	96.80	125.00	153.00	188.00	221.00
15	11.10	20.80	29.90	38.90	47.50	55.90	72.40	88.50	104.00	135.00	165.00	202.00	237.00
16	11.90	22.30	32.20	41.60	50.80	59.90	77.60	94.90	112.00	145.00	177.00	216.00	255.00
17	12.80	23.90	34.30	44.40	54.30	63.90	82.80	101.00	119.00	154.00	189.00	231.00	272.00
18	13.50	25.30	36.50	47.30	57.80	68.10	88.20	108.00	127.00	165.00	201.00	245.00	290.00
19	14.30	26.80	38.60	50.10	61.30	72.10	93.40	114.00	134.00	174.00	213.00	260.00	307.00
20	15.10	28.40	40.90	52.90	64.70	76.30	98.80	121.00	142.00	185.00	225.00	276.00	324.00
21	16.10	29.90	43.00	55.80	68.20	80.40	104.00	127.00	150.00	194.00	237.00	291.00	342.00
22	16.90	31.500	45.30	58.70	71.70	84.60	110.00	134.00	158.00	204.00	249.00	306.00	
23	17.70	33.00	47.60	61.50	75.20	88.70	115.00	141.00	165.00	214.00	263.00	320.00	
24	18.50	34.60	49.70	64.50	78.80	92.90	120.00	147.00	173.00	224.00	275.00	335.00	
25	19.30	36.10	52.00	67.40	82.30	97.10	126.00	154.00	181.00	235.00	287.00	351.00	
28	21.80	40.80	58.70	76.10	93.00	110.00	142.00	174.00	205.00	265.00	324.00	397.00	
30	23.60	44.00	63.30	82.00	100.00	118.00	153.00	188.00	220.00	286.00	349.00	426.00	
32	25.20	47.20	67.80	87.90	108.00	127.00	164.00	201.00	236.00	306.00	374.00	457.00	
35	27.90	51.90	74.80	96.90	118.00	139.00	181.00	221.00	260.00	338.00	413.00		
40	32.20	59.90	86.30	112.00	137.00	161.00	209.00	255.00	300.00	390.00	476.00		

Note: Value in above table is for single strand chain only.
For multiplex chain, please apply the coefficient of Multi-strand. (Please refer to Chain selection on P.91.)

2-2-3 DID HI*PWR HK Series Roller Chain

Features

HK type roller chain conform to H type of ANSI, and their inner and outer plates are equal in thickness to those of the next larger size of standard roller chain. Therefore, the tensile strength is higher by approximately 20% and the maximum allowable load is higher by approximately 15% compared to D.I.D ANSI standard roller chain. However, since the weight of the chain is also larger, the performance at high speed declines. So, HK type roller chain are suitable for heavy duty at low speed.



Multiplex chain and sprockets

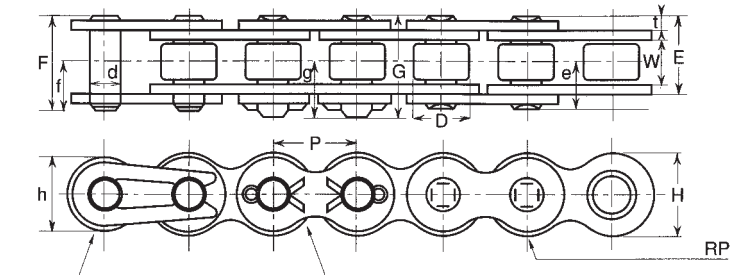
HK type roller chain are available up to triplex. Since the transverse pitches (C dimension: see P.41) are larger than those of standard chain in the case of duplex or triplex, standard sprockets cannot be used. Refer to the sprocket toothprofiles for HK (see P.76).

Selection of chain

. Select a proper HK type roller chain based on “Slow-speed selection” (P.92). For the maximum allowable load,see the following table of dimensions.
. The tensile strength of connecting links and offset links are listed below, but the maximum allowable load is somewhat lower than that of the base chain.

HK Series Connecting Link and Offset Link

	Connecting Link		Offset Link	
	Clearance Fit	Interference Fit	Clearance Fit	Interference Fit 2 Pitch Offset Link
Connecting Link Applicable	Clip: RC50 & under Clip/Cotter: RC60	Clip: RC50 & under Roll Pin: RC80 & over Clip/Cotter: RC60	Offset Link Unavailable for RC40HK & Smaller	2 Pitch Offset Link Unavailable for RC40HK & Smaller
Tensile Strength	Same as chain body	Same as chain body	Same as chain body	Same as chain body



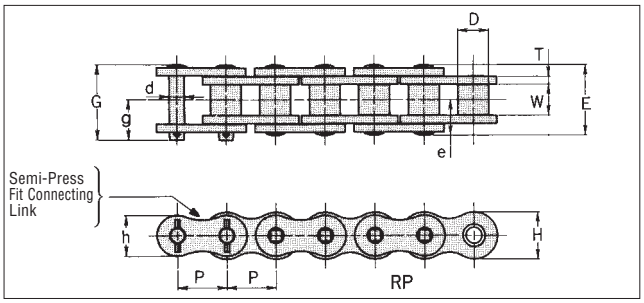
Clip Type Cotter Type

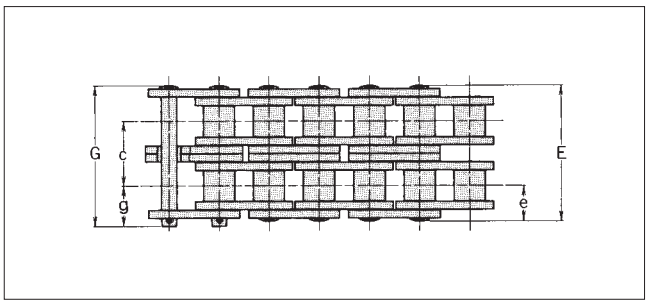
Dimensions

Unit (inch)

Chain No.	Pitch	Roller Link Width	Roller Dia.	Pin						Plate			Min. Tensile Strength	Avg. Tensile Strength	Max Allowable Load	Approx. Weight (lbs/ft)
DID	P	W	D	d	E	F	G	f	g	T	H	h	lbs	lbs	lbs	
RC50HK	0.625	0.375	0.400	0.200	0.858	0.921		0.496		0.094	0.591	0.512	7480	8140	1936	0.75
RC60HK	0.750	0.500	0.469	0.235	1.130	1.201	1.228	0.634	0.665	0.126	0.713	0.614	10560	11660	2420	1.21

HI*PWR HK Series Roller Chain





Dimensions

Unit (inch)

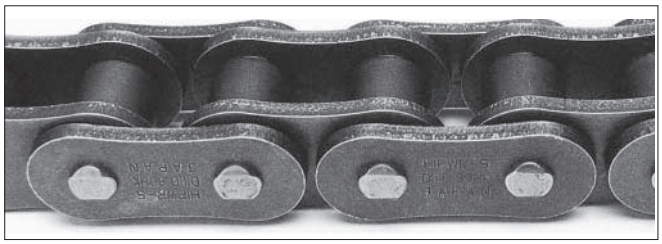
Chain No.	Pitch	Roller Link Width	Roller Dia.	Pin						Plate			Min. Tensile Strength	Avg. Tensile Strength	Max Allowable Load	Approx. Weight
DID	P	W	D	d	E	G	e	G	C	T	H	h	lbs	lbs	lbs	(lbs/ft)
RC80HK						1.524	0.713						18260	21560	3740	1.99
RC80HK-2	1.000	0.625	0.625	0.313	1.421	2.697	2.807	0.811	1.283	0.157	0.945	0.819	36520	43120	6358	3.94
RC80HK-3						3.984	4.094						54780	64680	9350	5.87
RC100HK						1.819	0.858						27720	31900	5940	2.79
RC100HK-2	1.250	0.750	0.750	0.376	1.717	3.228	3.350	0.961	1.539	0.189	1.177	1.024	55440	63800	10098	5.52
RC100HK-3						4.768	4.886						83160	95700	14850	8.23
RC120HK						2.244	1.067						37400	42900	7700	4.08
RC120HK-2	1.500	1.000	0.875	0.437	2.130	4.024	4.154	1.177	1.925	0.220	1.413	1.228	74800	85800	13090	8.07
RC120HK-3						5.949	6.079						112200	128700	19250	12.03
RC140HK						2.445	1.142						48840	56100	10120	5.91
RC140HK-2	1.750	1.000	1.000	0.500	2.280	4.299	4.488	1.311	2.055	0.252	1.650	1.429	97680	112200	17204	11.69
RC140HK-3						6.354	6.543						146520	168300	25300	17.43
RC160HK						2.843	1.339						62260	71500	13200	7.33
RC160HK-2	2.000	1.250	1.125	0.563	2.677	5.272	5.319	1.504	2.437	0.280	1.882	1.630	124520	143000	22440	14.51
RC160HK-3						7.701	7.760						186780	214500	33000	21.62
RC180HK						3.189	1.488						90200	99000	16060	9.93
RC180HK-2	2.250	1.406	1.406	0.687	2.972	5.906	5.984	1.705	2.724	0.315	2.118	1.835	180400	198000	27302	19.66
RC180HK-3						8.634	8.713						270600	297000	40150	29.30
RC200HK						3.594	1.661						109120	125400	18700	12.85
RC200HK-2	2.500	1.500	1.562	0.781	3.323	6.693	6.783	1.945	3.083	0.374	2.362	2.047	218240	250800	31790	25.45
RC200HK-3						9.780	9.870						327360	376200	46750	37.92
RC240HK						4.551	2.126						172260	198000	25300	18.98
RC240HK-2	3.000	1.875	1.875	0.937	4.252	8.567	8.665	2.429	3.984	0.500	2.815	2.441	344520	396000	43010	37.57
RC240HK-3						12.551	12.650						516780	594000	63250	55.98

Note: The above chains are of riveted pin type (RP). As for cottered pin type (CP), please consult us.

2-2-4 D.I.D HI*PWR HKS Series Roller Chain

Features

The DID HKS series roller chain have thicker linkplates than KS type roller chain, and are the highest in tensile strength and allowable load among general application chains. Thus being suitable for low speed heavy duty transmission.
The HKS roller chains are 20 percent higher in tensile strength and 50 percent higher in maximum allowable load than the standard roller chain, but since they are also higher in weight, they are lower in performance at high speed. So, they are suitable for heavy duty at low speed.



Number of strands and sprockets

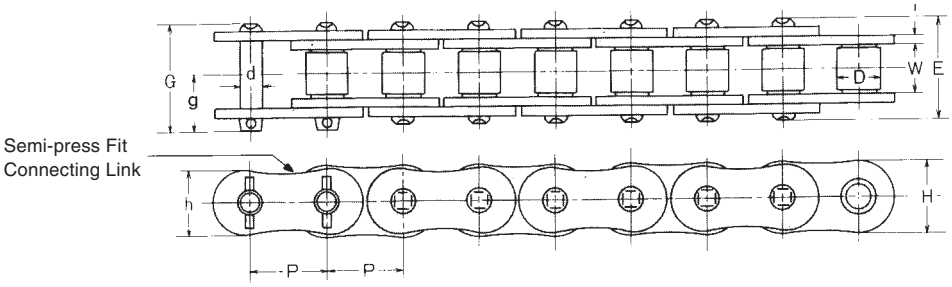
The HKS type roller chain are simplex. As for sprockets, standard sprockets for simplex chain can be used.
For multiplex chain, please consult us.

Selection of chain

Select a proper HKS type chain based on “Slow-speed selection” (P. 92). For the maximum allowable load, see the following table of dimensions.

Connecting links

The best feature of the HKS type roller chains is that they are high in maximum allowable load. Therefore, interference-fitted connecting links are used. The connection between the connecting plate and theconnecting pins is achieved by roll pins. The tensile strength of connecting link is equivalent to that of the base chain but the maximum allowable load is somewhat lower than that of the base chain.



Dimensions

Unit (inch)

Chain No. DID	Pitch	Roller Link Width	Roller Dia.	Pin				Plate			Min. Tensile Strength	Avg. Tensile Strength	Max Allowable Load	Approx. Weight (lbs/ft)
	P	W	D	d	E	G	g	T	H	h	lbs	lbs	lbs	
RC80HKSR	1.000	0.625	0.625	0.313	1.421	1.524	0.811	0.157	0.949	0.819	19,140	22,000	5,060	2.09
RC100HKSR	1.250	0.750	0.750	0.376	1.717	1.819	0.961	0.189	1.185	1.024	28,380	32,560	7,700	2.93
RC120HKSR	1.500	1.000	0.875	0.437	2.130	2.244	1.177	0.220	1.425	1.228	38,280	44,000	10,120	4.28
RC140HKSR	1.750	1.000	1.000	0.500	2.280	2.445	1.311	0.252	1.669	1.429	49,720	57,200	13,640	6.20
RC160HKSR	2.000	1.250	1.125	0.563	2.677	2.843	1.504	0.280	1.898	1.630	63,140	72,600	17,380	7.70
RC180HKSR	2.250	1.406	1.406	0.687	2.972	3.189	1.705	0.315	2.134	1.835	94,600	103,400	20,460	10.43
RC200HKSR	2.500	1.500	1.562	0.781	3.323	3.594	1.945	0.374	2.370	2.047	116,600	134,200	25,300	13.50
RC240HKSR	3.000	1.875	1.875	0.937	4.252	4.551	2.429	0.500	2.843	2.441	179,960	206,800	34,980	19.93

2-3 D.I.D Ultimate Life Chain Series

The DID general application chain are used for various applications, and it can sometimes happen that if they are used without any lubrication at all or in a dusty environment, they cannot maintain the wear life they are designed for. In such a case, we recommend the Ultimate Life Chain Series. The Ultimate Life Chain Series includes Long life chain, Dai-hard chain, O-ring chain and Sintered bushing roller chain. The features of the respective chain are described below.

Solid Bushing

A long life chain uses dimensionally accurate solid bushings (split bushings in the case of standard roller chain), to increase the beating area with the pins for achieving a longer wear life. If a long life chain is used with grease lubrication, the life becomes longer than that of a standard roller chain. Furthermore, if a long life chain is used with D.I.D patented V grease, the chain will have a much longer wear life. (A long life chain can be effectively deceased in initial wear even in a place abundant in oil without grease lubrication.)

DHA chain

This chain has a pin which is treated with D.I.D's patented process that creates an extremely hardened carbide layer, resisting wear even in adverse conditions including the presence of abrasive contaminents.
It exhibits excellent performance even under the conditions where lubrication is not permitted.

O-ring chain

Grease is sealed with O-rings between pin and bushing. It can be used in a verywide range of applications from low speed to high speed and from light duty to heavy duty, ensuring the longest of life. O-ring chain is the best chain among chains, and in view of heavy duty, high speed and maintenance free, this chain is highest in performance. Furthermore, it is durable to some extent even at high temperature, and a chain adopting heat resistant O-rings has actually been used in a 392°F oven. (Since the pin length becomes longer by two O-rings, refer to the table of dimensions for chain selections.)

Sintered bushing roller chain

Sintered bushing roller chain uses bushings made of sintering alloy steel powder. The porous spaces of the sintered bushings are impregnated with oil beforehand, to increase the life of the chain. It is a maintenance free chain that lubricates itself during operation and offers extended wear life. The chain is very suitable for applications where the chain cannot be lubricated during the operation. Furthermore, since the chain has little oil deposit on the outside, it can be used in a place where a cleanliness is required. However, Sintered bushing roller chain is for low speed and light duty applications. For severe environments exposed to water or dust, etc., the use of an environment resistant chain(P. 53) or O-ring chain is recommended. For an apparatus or machine required to be quiet, a low noise chain (P .57) is recommended.

Ultimate Life, Environment Resistance, Low Noise Series chain

Chain Size	Ultimate Life Series				Environment Resistance Series				Low Noise Chain
	Solid Bush	DHA	O-Ring	Sintered Bush	Rustless (Nickel Plated)	Hi-Guard	Low Temp.	Stainless	Low Noise
RC25	T	DHA			N	E		SS	
RC35	T	DHA			N	E		SS	
RC41		DHA			N				
RC40	D	DHA	LLDR	UR	N	E	TK	SS	LN
				URN				SSK	
RC50	D	DHA	LLDR	UR	N	E	TK	SS	LN
				URN					
RC60	D	DHA	LLDR	UR	N	E	TK	SS	LN
				URN				SSK	
RC80	D		LDR	UR	N	E	TK	SS	LN
				URN				SSK	
RC100	D		LDR		N	E	TK	SS	
								SSK	
RC120			LDR		N	E	TK	SS	
RC140			LDR		N		TK	SS	
RC160			LDR		N		TK	SS	
RC200			LDR						
RC240			LDR						

Note: 1. The chain no. is indicated with the letters in the table following the chain size.
For example, RC50DHA
2. UR: Sintered Bushing Roller Chain
URN: Rustless Sintered Bushing Roller Chain

2-3-1 Selection of Ultimate Life Chain Series

In general, refer to the following criteria when you select an Ultimate Life Chain.

Wear of chain in contaminated oil

1. In a place to allow good lubrication without dust, even a standard roller chain can be expected to be very long in life. However, in general, even in “good lubrication”, the entering of worn powder and “contamination” due to deteriorated oil cannot be avoided Contamination can remarkably shorten the life of chain.
2. If you wish to prevent the shortening of wear life even with “contamination”, use Solid bushing chain. Solid bushing chain has accurate solid bushings, to ncrease the bearing area, and unlike split bushings, oil dose not leak from the seam of the split bushing.
3. If you need even longer life, DHA chain is recommended. DHA chain even in contaminated oil has a life of three to seven times longer than standard chain.

Chain wear due to no maintenance

If lubrication and maintenance are impossible or difficult, the initial grease applied in the factory is all the lubrication, and it can happen that the chain could not last long enough as needed. If you need adequate long life even though lubrication and maintenance are difficult, O-ring chain or Sintered bushing roller chain is recommended. O-ring chain can be dependable even in a dusty severe environment in a range from low speed to high speed.

Wear of chain in a dusty place

O-ring chain or DHA chain is effective in this condition. An O-ring chain is the most suitable. O-ring chain has special grease vacuum sealed between pin and bushing preventing the penetration of dust from outside, ensuring long life. For applications where O-ring chain can not be utilized, DHA chain is recommended. DHA chain has excellent wear resistance because of the surface hardness of the pins. The performance of Ultimate Life Chain Series is listed in the following comparison table. For selecting the proper chain, please refer to the table.

Cautions for sintered bushing roller chain

1. Sintered bushing roller chain is available as a series from RC40 to RC80(UR).
2. Do not use a sintered bushing roller chain in a dusty place.
3. Sintered bushing roller chain is not recommended for applications subject to shock loads. Sintered bushing chain is designed for slow speed and light duty applications.

Cautions for sealed chain

1. O-ring chain LLDR/LDR is available as a series from RC35LLDR to RC240LDR.
2. Please bear in mind in your design work, that an O-ring chain has longer pins than a standard roller chain. An O-ring chain is equivalent to a standard roller chain in strength.
3. An O-ring chain is not recommended for an environment in which the nitrile rubber O-ring could be damaged. An environment in which nitrile rubber is eroded means generally an application where any of the following chemical materials is used.

Gasoline, kerosene, benzene, toluene, trichiene, ether, ketone (MEK), ethyl acetate, phosphoric acid, ester based working fluid, organic acid, highly concentrated inorganic acid

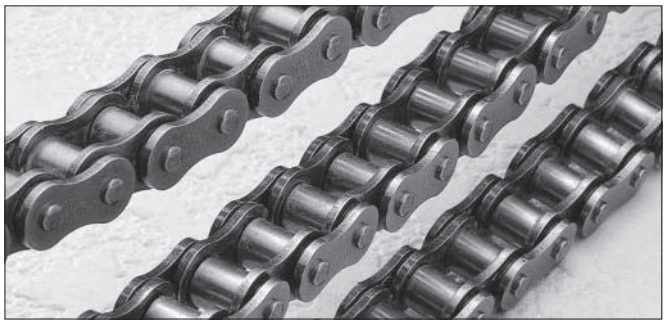
Comparison Chart of Wear Resistant Chain Series

Chain Size		Comparison in strength		Anti wear performance index				Available Temperature Range
				Lubrication to be always possible		Lubrication possible (initial lubrication only)		
		Max. Allowable Load Ratio	Chain Selecting method	Clean lubricant	Used or degraded lubricant	Normal(dust free) condition	Normal(dust free) condition	
Standard Roller Chain	——	100%	Maximum Horsepower Rating or Slow-Speed Selection	1.0	1.0	1.0	1.0	-10ºC~80ºC (14ºF~176ºF)
Solid Bushing	T D	100%		1.3	1.2~1.5	1.5~3	1.8~4	-10ºC~80ºC (14ºF~176ºF)
DHA Chain	DHA	100%		1.5~2	3~7	1.3	1.2~3	-10ºC~100ºC (14ºF~212ºF)
O-Ring Chain	LLDR LDR	100%		——	——	5~12	5~20	-10ºC~80ºC (14ºF~176ºF)
Sintered Bushing Roller Chain	UR URN	70%	Maximum Horsepower Rating or Slow-Speed Selection Please refer to the Maximum Horsepower Rating Table in p.53-54	——	——	Approx. 5 on Slow-Speed and Medium duty	Not available	-10ºC~60ºC (14ºF~140ºF)

Note: 1. Wear resistance performance shows an index compared with standard roller chain as 1.0
2. It is also available in O-ring chain which can be used over 176ºF. Please consult with us.

2-3-2 D.I.D Solid Bushing Chain (T, D)

Daido's "D" AND "T" Series roller chain is manufactured with a cold forged bushing and is lubricated with a Daido patented V-Grease. This lubricant extends the wear life up to 4 times longer than conventional ANSI standard roller chain. This patented V-Grease adheres to the chain in high revolution applications and resists being washed away in outdoor usage. Daido's D & T Series chain is one of the lowest cost upgrades available for your roller chain requirements.

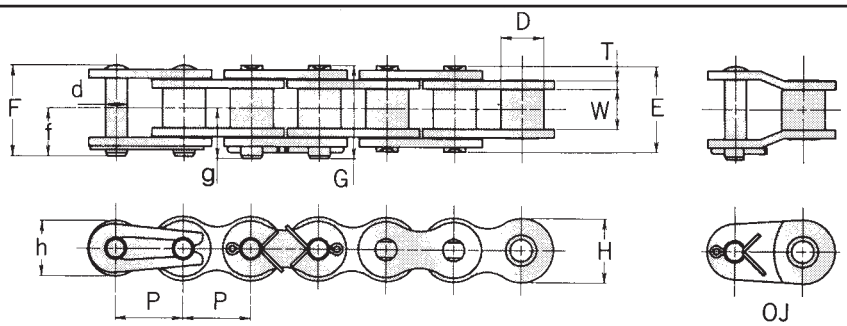


Design of chain transmission

A solid bushing chain is quite the same as a standard roller chain in strength. For selecting the suitable long life chain, refer to "General selection" (P. 91) and "Slow-speed selection" (P. 92).

Connecting links and offset links

For the connecting links and offset links of a solid bushing chain, use standard roller chain series. For RC25HT, no offset link is available.



Clip Type (RC60 & smaller)

Cotter Type (RC60 & larger)

Offset Link

Dimensions

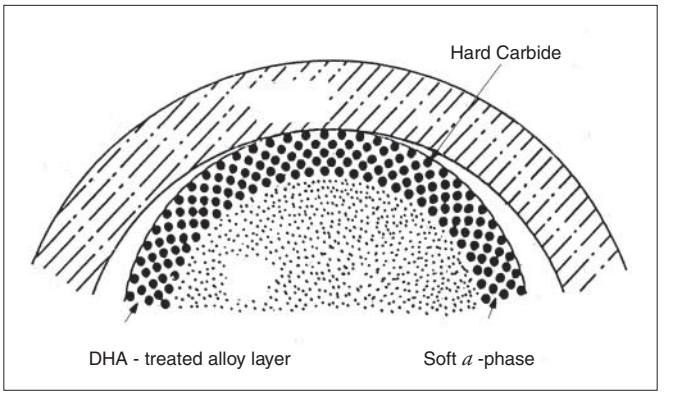
Unit (inch)

Chain No. DID	Pitch	Roller Link Width	Roller (Bush) Dia.	Pin						Plate			Avg. Tensile Strength	Max. Allowable Load	Approx. Weight (lbs/ft)
	P	W	D	d	E	F	G	f	g	T	H	h	lbs	lbs	
RC25HT	0.250	0.125	0.130	0.091	0.354	0.374	—	0.205	—	0.039	0.232	0.205	1320	242	0.107
RC35T	0.625	0.375	0.200	0.141	0.472	0.516	—	0.287	—	0.049	0.354	0.305	2530	484	0.215
RC40D	0.750	0.500	0.312	0.156	0.650	0.693	—	0.374	—	0.059	0.472	0.409	4290	836	0.422
RC50D	1.000	0.625	0.400	0.200	0.799	0.862	—	0.457	—	0.079	0.591	0.512	6930	1540	0.711
RC60D	0.750	0.500	0.469	0.235	1.000	1.059	1.098	0.563	0.594	0.094	0.713	0.614	9900	2090	0.966
RC80D	1.000	0.625	0.625	0.313	1.283	0.000	1.394	0.000	0.748	0.126	0.945	0.819	17600	3300	1.710
RC100D	1.250	0.750	0.750	0.376	1.555	0.000	1.673	0.000	0.898	0.157	1.177	1.024	26620	5060	2.541

Note: Those marked with * indicate bush chains.

2-3-3 DID DHA Chain

Perfect lubrication extends the life of the chain. However, it is not easy to avoid lubricating oil that is deteriorated by the oxidation of the lubricating oil itself, penetration of wear residue and dust, etc. In such situations, the DHA chain is recommended. Even in such severe enviromments where hard and fine particles are evident without any lubricating oil at all, the DHA chain shows excellent performance.



Structure of DHA

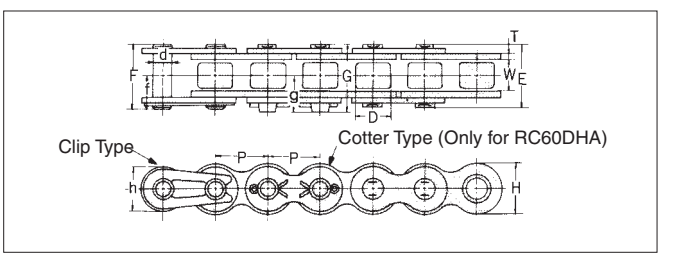
DHA refers to a hard layer formed on the surface of a pin. This layer has a very hard chromium carbide surface as illustrated in the top illustration. Excellent performance can be expected even in adverse conditions including the presence of abrasive contaminents. Furthermore, the DHA pins have excellent rust protection on pins. The following table compares the properties of DHA with other surface treatments.

The white layer is a layer produced by DHA treatment, and the black grains visible in the layer are chromium carbide

Comparison of properties

	Carburizing	Nitriding	H-Cr plating	DHA
Contents of layer	High Carbon	Iron Nitride	Chrome	Chrome Carbide
Surface hardness	750~850	750~1,100	900~1,100	1,300~1,500
Practical thickness of treated layer (μ)	100 & over	10 & over	10~100	5~20
Surface hardness lowering temp.(ºF)	392 & over	932 & over	572 & over	1652 & over
Peeling resistance	○	○	×	◎
Wear resistance	△	○	○	◎

○ Excellent
△ Fair
× Poor



Dimensions

Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller (Bush)Dia. D	Pin d	Pin E	Pin F	Pin G	Pin f	Pin g	Plate T	Plate H	Plate h	Avg. Tensile Strength lbs	Max. Allowable Load lbs	Approx. Weight (lbs/ft)
RC25R-DHA	0.250	0.125	0.130	0.091	0.307	0.335	___	0.185	___	0.028	0.232	0.205	990	165	0.087
RC35R-DHA	0.375	0.188	0.200	0.141	0.472	0.516	___	0.287	___	0.049	0.354	0.305	2530	484	0.215
RC41R-DHA	0.500	0.251	0.306	0.141	0.539	0.575	___	0.311	___	0.047	0.378	0.315	2420	528	0.262
RC40R-DHA	0.500	0.313	0.312	0.156	0.650	0.693	___	0.374	___	0.059	0.472	0.409	4290	836	0.422
RC50R-DHA	0.625	0.375	0.400	0.200	0.799	0.862	___	0.457	___	0.079	0.591	0.512	6930	1540	0.711
RC60R-DHA	0.750	0.500	0.469	0.235	1.000	1.059	1.098	0.563	0.594	0.094	0.713	0.614	9900	2090	0.966

Note: Those marked with * indicate bush chain.

Wear resistance of DHA

Test results for “wear resistance in a deteriorated lubrication condition” and “wear resistance in a sand dust environment” are shown below. The results show the excellent performance of DHA. Applications where a DHA chain can be effectively used are provided on the right for your reference.

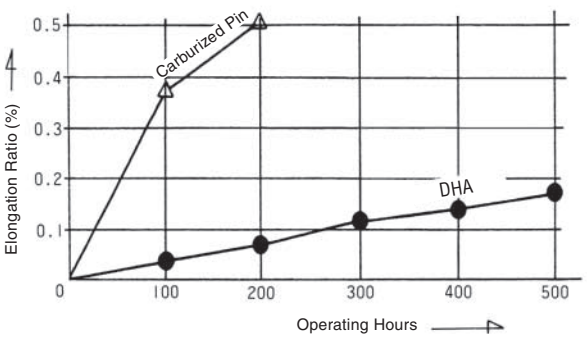
Applications where a DHA chain can be effectively used

An application where soil, sand or dust directly come in contact with the chain (if an O-ring chain can be used in the application, the use of an O-ring chain is more effective).

An application where a chain is lubricated in an oil bath, etc. but where the oil is heavily deteriorated due to the penetration of foreign objects.

Test Results for Wear Resistance Comparison

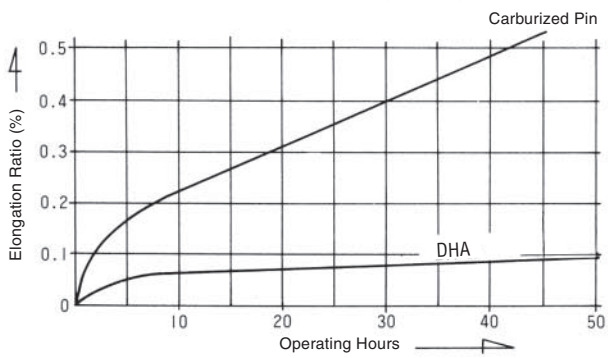
I Wear Resistance Performance under deteriorated lubrication condition



(Test Conditions)

①	**Chain Sample**	**: RC06B (p=0.375)**
②	**Driver**	**: 14N.T/10000rpm • 33N.T/4242rpm**
③	**Tension**	**: 66lbs**
④	**Lubrication**	**: By oil bath with wasted automobile engine oil**

II Wear Resistance Performance under sandy & dusty condition



(Test Conditions)

①	**Chain Sample**	**: RC40 (p=0.500)**
②	**Driver**	**: 21N.T/1090rpm • 21N.T/1090rpm**
③	**Tension**	**: 308 lbs.**
④	**Lubrication**	**: Initial grease only. Continuous scattering of sand on the chain in operation.**

Design of chain transmission

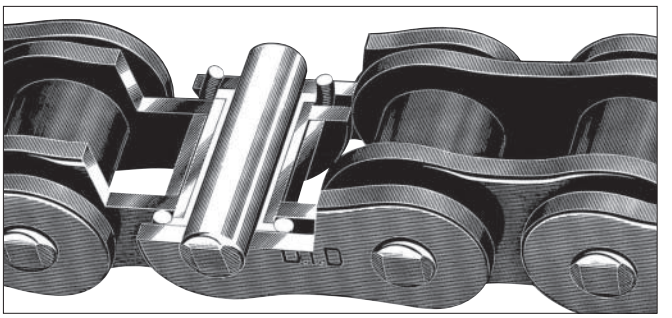
DHA chain is quite the same as a standard roller chain in strength. So, for selecting a proper DHA chain, refer to “General selection” (P. 91) and “Slow-speed selection” (P. 92). For the maximum horsepower rating, see the table of maximum horsepower ratings for standard roller chain.

Connecting links and offset links

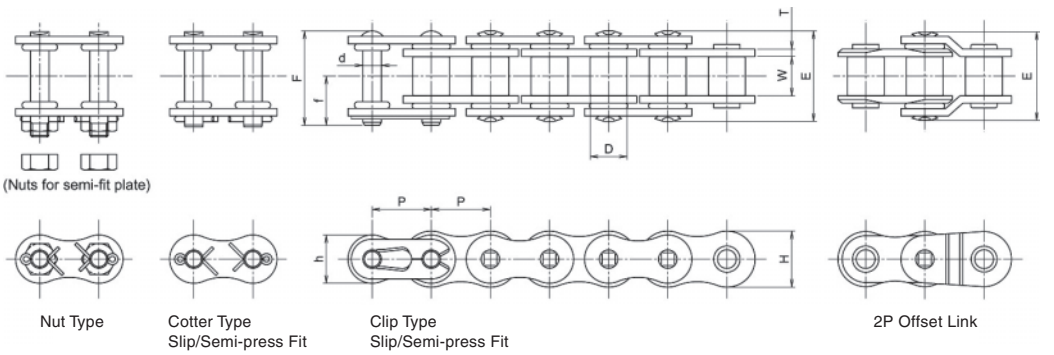
As for the connecting links and offset links of a DHA chain, use those of a standard roller chain. The reason is that while a chain as a whole has many links, the numbers of connecting links and offset links is 1 to 2, therefore their influence on the wear of the entire chain is small.

2-3-4 D.I.D O-Ring Chain (LLDR/LDR)

DID O-ring chain is dramatically improved in durability, since grease is sealed between the pins and bushings by O-rings. O-ring chain is recommended for applications which provide abrasive conditions require frequent maintenance or where sintered bushing roller chain is not applicable due to its insufficient shock load capacity or high speed capacity.



Dimensions



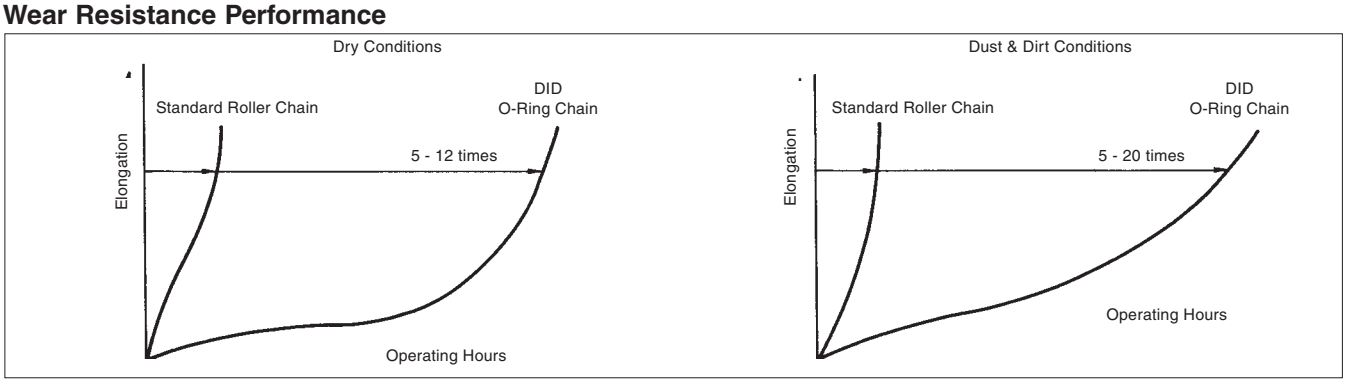
Dimensions

Unit (inch)

Chain No. DID	Pitch	Roller Link Width	Roller (Bush) Dia.	Pin				Plate			Avg. Tensile Strength	Max. Allowable Load	Approx. Weight (lbs/ft)
	P	W	D	d	E	F	f	T	H	h	lbs	lbs	
* RC35LLDR	0.375	0.181	0.200	0.141	0.512	0.569	0.307	0.049	0.354	0.305	2200	330	0.235
RC40LLDR	0.500	0.313	0.312	0.156	0.787	0.787	0.421	0.059	0.472	0.409	4070	836	0.449
RC50LLDR	0.625	0.375	0.400	0.200	0.921	0.941	0.504	0.079	0.591	0.512	6754	1540	0.724
RC60LLDR	0.750	0.500	0.469	0.235	1.150	1.181	0.630	0.094	0.713	0.614	9614	2090	1.086
RC80LDR	1.000	0.625	0.625	0.313	1.437	1.531	0.823	0.126	0.941	0.811	16280	3300	1.898
RC100LDR	1.250	0.750	0.750	0.376	1.732	1.819	0.972	0.157	1.177	1.024	24200	5060	2.729
RC120LDR	1.500	1.000	0.875	0.437	2.126	2.236	1.189	0.189	1.413	1.228	35200	6820	3.956
RC140LDR	1.750	1.000	1.000	0.500	2.307	2.724	1.583	0.220	1.650	1.429	44000	9020	5.277
RC160LDR	2.000	1.250	1.125	0.563	2.717	3.161	1.819	0.252	1.882	1.630	55000	11880	6.913
RC200LDR	2.500	1.500	1.562	0.781	3.299	3.799	2.165	0.315	2.362	2.047	96140	16500	11.326
RC240LDR	3.000	1.875	1.875	0.937	3.984	4.583	2.606	0.374	2.815	2.441	140140	22220	16.630

Note: 1. Those marked with * indicates bush chain
2. Please connect with bolt type connecting link by using nuts. The nuts should be used only for press-fitting of link plates.
3. RC40LLDR - RC80LLDR are X-Ring Chain

Wear Resistance Performance



Design of chain transmission

O-ring chain is almost the same as a standard roller chain in strength. (Since the pins are longer than those of standard roller chain, the average tensile strength is slightly lower.) Therefore, design the chain transmission as you would do with standard roller chain.
If the service environment temperature is higher than 176°C, special heat resistant O-ring must be used. In this case, contact us for more information.

Maintenance

Even an O-ring chain can exhibit increased wear life with additional lubrication added during service. This additional lubrication also has the effect of rust prevention. However, do not use such chemical materials as gasoline, phosphoric acid, ester based working fluids, benzene, trichlene and acetone, since the O-rings may be damaged.
Suitable oil is SAE10W to SAE50W.

Connecting Link and Offset Link

Two types of connecting links are available: Clearance Fit connecting links (clip/cotter) and Interference Fit connecting links (clip/cotter) If strength and/or durability is critical, use Intererence Fit connecting links. Offset links are only available in 2 pitch style.

Chain No. DID	Connecting Link		Offset Link
	Clearance Fit	Interference Fit	
RC35LLDR	———	Clip type	2 Pitch offset link
RC40LLDR RC50LLDR RC60LLDR	Clip type	Clip type	
RC80LDR	———	Cotter pin type	
RC100LDR	Cotter pin type		
RC120LDR	———		
RC140LDR RC160LDR RC200LDR RC240LDR	———	Cotter pin type	

Chain No. DID	Connecting Link		Offset Link
	Clearance Fit	Interference Fit	
06BLDR	Clip type	———	———
08BLDR 10BLDR 12BLDR	Clip type		
16BLDR	Cotter pin type		

06NLDR	———	Clip type	———
08NLDR 10NLDR 12NLDR	———	Clip type	———

DID O-ring Chain Series

There are 5 types of O-Ring Chain for various uses. They can be applied under severe conditions where periodic lubrication is not practical.
Heat resistant O-ring chain is available in the following table, and are equipped with an X-Ring, with wear resistance 1.5 times better than that of normal O-Ring chains.

LLDR(LDR)	featuring SOLID BUSHING
LLDRS (LDRS)	featuring SOLID BUSHING & HEAT-RESISTENT RUBBER O-RING (Up to about 120°C/248°F)
LLDRSS (LDRSS)	featuring SOLID BUSHING & HEAT-RESISTANT RUBBER O-RING (Up to about 200°C/329°F)
LLDRSP (LDRSP)	equals LLDSR, except for its O-RING: LLDRSP has an X -RING.
LLDRSSP (LDRSSP)	equals LDSS, except for its O-RING: LLDRSSP has an X -RING.

*** For heat resistant O-Ring Chain, please consult us for availability**

Service limit of O-ring chain

If even one O-ring comes off or when chain elongation reaches the corresponding value in the following table, immediately replace the chain with a new one. The table shows the critical elongations at which the effect of a sealed ring ceases. If the corresponding value is exceeded, wear increases as in the case of standard roller chain.

# of Teeth Large Sprocket	Max. Allowable Elongation Ratio for Non O-Ring Chain	Max. Allowable Elongation Ratio for O-Ring Chain
40 and under	2.0%	1.0%
41~60	1.5%	1.0%
61~80	1.2%	1.0%
81~100	1.0%	1.0%
101 and over	0.8%	0.8%

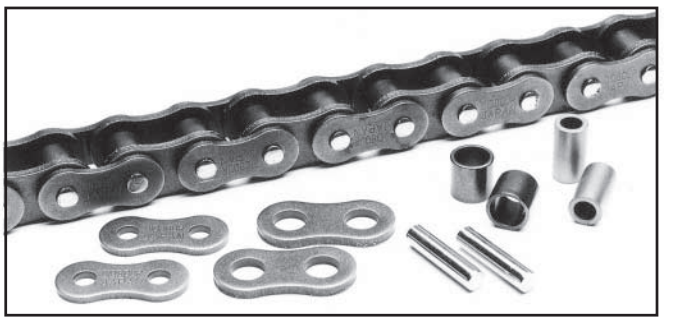
Other features of O-ring chain

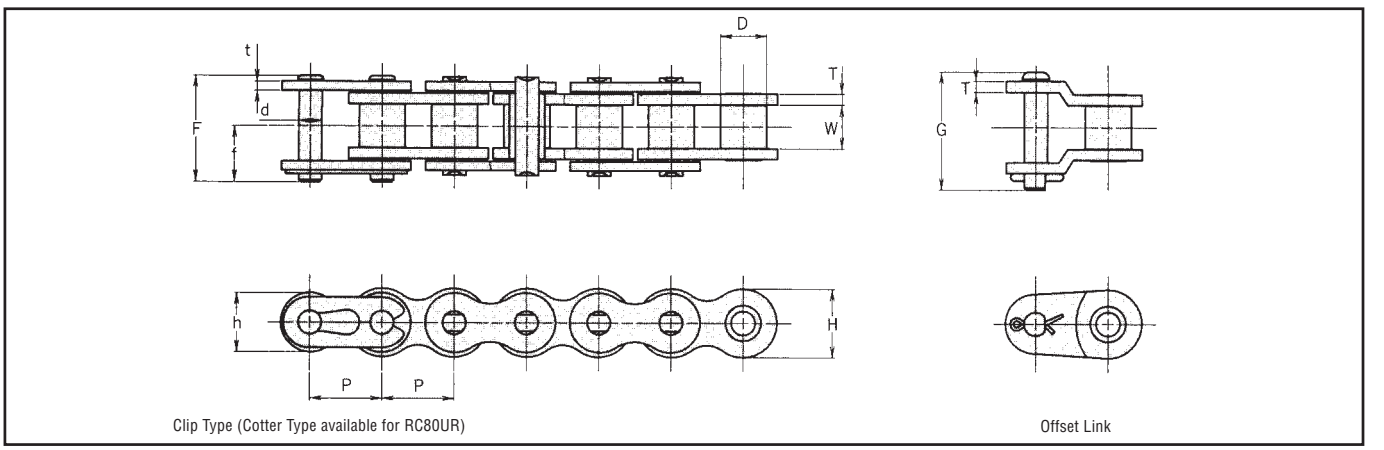
- O-ring chain has a silencing effect. (According to tests, the noise level is 3 dB less compared to a standard roller chain.)
- O-ring chain has friction in bending. However, the power loss is almost negligible, since the frictional force acting between the pins and bushing when a load acting on the chain is greater.

2-3-5 D.I.D UR (URN/URF) Chain and Maximum HP Ratings

DID UR roller chain has bushings made of a sintered alloy which is impregnated with lubricating oil during manufacture. The sintered bushing roller chain is a maintenance -free chain suitable for applications where lubrication is not permitted. In appearance sensitive applications, a rustless (URN) is recommended (for rustless chain, see P.54). In applications, limit the traveling speed 492 ft/min. or less. For a dusty environment, the use of an O-ring chain is recommended.

URF is the heat resistant version of UR chain which is applicable up to 400°F. The wear life at 400°F is two times as long as the regular UR chain.





Clip Type (Cotter Type available for RC80UR)

Offset Link

Dimensions

Unit (inch)

Chain No.	Pitch P	Roller Link Width W	Roller Dia. D	Pin				Plate				Avg. Tensile Strength	Max. Allowable Load	Approx. Weight
				d	F	f	G	T	t	H	h	lbs.	lbs.	(lbs/FT)
RC40UR, URN, URF	0.500	0.313	0.312	0.156	0.748	0.409	0.807	0.079	0.059	0.472	0.409	4004	836	0.463
RC50UR, URN, URF	0.625	0.375	0.400	0.200	0.898	0.484	0.984	0.094	0.079	0.591	0.591	6710	1540	0.731
RC60UR, URN, URF	0.750	0.500	0.469	0.235	1.138	0.622	1.303	0.126	0.094	0.713	0.713	9460	2090	1.147
RC80UR, URN, URF	1.000	0.623	0.625	0.313	1.461	0.787	1.563	0.157	0.126	0.945	0.945	17270	3300	1.878

Note) UR: Sintered Bushing Roller Chain URN: Rustless Sintered Bushing Roller Chain

Design of chain transmission

In a sintered bushing roller chain, to compensate for the strength lowered by the use of sintered bushing, the inner plates are thicker than those of a standard roller chain, and
the pins are longer.
For selecting a proper sintered bushing roller chain, refer to “General selection”(P. 91). Use the tables for sintered bushing roller chain which specify the maximum horsepower speed selection”. In the tables of dimensions, the “maximum allowable load”, only the tensile tension is taken into account, and the shock load is not considered.

Connecting links and offset links

For sintered bushing roller chain, clip type connecting links are used for 60 or smaller, and cotter type connecting link, for 80 or larger. Offset links, are available. In either case, please specify “For a sintered bushing roller chain”.
In the table of maximum horsepower ratings, the strength of the connecting links and offset links are taken into account.

Sintered Bushing Roller Chain Max. Horsepower Ratings (RC40UR, RC50UR)

RC40UR

Unit (hp)

N.T	Revolutions per minute - Small Sprocket (rpm)																			
	10	20	30	50	70	90	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1300
9	0.05	0.09	0.13	0.21	0.29	0.36	0.40	0.58	0.75	1.09	1.41	1.72	2.02	2.33	2.63	2.92	3.22	3.04	2.67	2.36
10	0.05	0.11	0.15	0.24	0.34	0.42	0.46	0.66	0.84	1.22	1.58	1.93	2.28	2.61	2.95	3.27	3.61	3.55		
11	0.07	0.12	0.17	0.27	0.36	0.46	0.50	0.72	0.94	1.35	1.74	2.14	2.52	2.90	3.27	3.63	3.99			
12	0.07	0.13	0.19	0.29	0.40	0.50	0.55	0.79	1.03	1.49	1.92	2.35	2.76	3.18	3.58	3.98				
13	0.08	0.15	0.20	0.32	0.44	0.55	0.60	0.87	1.13	1.62	2.09	2.56	3.02	3.47	3.91	4.34				
14	0.08	0.15	0.21	0.35	0.47	0.59	0.66	0.94	1.22	1.76	2.27	2.77	3.27	3.75	4.24					
15	0.09	0.16	0.24	0.38	0.51	0.64	0.70	1.01	1.31	1.89	2.44	2.99	3.53	4.05						
16	0.09	0.17	0.25	0.40	0.55	0.68	0.75	1.09	1.41	2.02	2.63	3.20	3.78	4.34						
17	0.11	0.19	0.27	0.43	0.59	0.74	0.80	1.15	1.50	2.16	2.80	3.42	4.03							
18	0.11	0.20	0.29	0.46	0.62	0.78	0.86	1.23	1.60	2.29	2.98	3.65	4.29							
19	0.12	0.21	0.31	0.48	0.66	0.83	0.91	1.30	1.69	2.44	3.15	3.86	4.54							
20	0.12	0.23	0.32	0.51	0.70	0.87	0.95	1.38	1.78	2.57	3.34	4.08								
21	0.12	0.24	0.34	0.54	0.74	0.92	1.01	1.46	1.89	2.72	3.51	4.30								
22	0.13	0.25	0.36	0.56	0.76	0.97	1.06	1.53	1.98	2.86	3.70	4.52								
23	0.13	0.27	0.38	0.60	0.80	1.02	1.11	1.61	2.08	2.99	3.87	4.75								
24	0.15	0.27	0.39	0.63	0.84	1.06	1.17	1.68	2.17	3.14	4.06									
25	0.15	0.28	0.42	0.66	0.88	1.11	1.22	1.76	2.28	3.27	4.25									
28	0.17	0.32	0.47	0.74	1.01	1.25	1.38	1.98	2.57	3.70	4.80									
30	0.19	0.35	0.50	0.79	1.07	1.35	1.49	2.14	2.77	3.99										
32	0.20	0.38	0.54	0.86	1.15	1.45	1.60	2.29	2.98	4.28										
35	0.21	0.42	0.59	0.94	1.27	1.60	1.76	2.52	3.27	4.72										
40	0.25	0.47	0.68	1.09	1.47	1.84	2.02	2.92	3.78											

RC50UR

Unit (hp)

N.T	Revolutions per minute - Small Sprocket (rpm)																			
	10	20	30	50	70	90	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1300
9	0.12	0.23	0.32	0.52	0.71	0.88	0.97	1.39	1.81	2.21	2.61	2.99	3.38	3.75	4.13	4.87	5.59	5.86	4.91	4.18
10	0.13	0.25	0.36	0.58	0.79	0.99	1.09	1.57	2.02	2.48	2.92	3.35	3.78	4.21	4.62	5.46	6.26	6.85	5.75	
11	0.15	0.28	0.40	0.64	0.87	1.10	1.21	1.73	2.25	2.75	3.24	3.73	4.20	4.66	5.13	6.05	6.94	7.83		
12	0.16	0.31	0.44	0.71	0.97	1.21	1.33	1.90	2.47	3.02	3.55	4.09	4.61	5.12	5.63	6.64	7.63			
13	0.19	0.34	0.48	0.78	1.05	1.31	1.45	2.08	2.69	3.30	3.87	4.45	5.03	5.59	6.14	7.24	8.31			
14	0.20	0.36	0.52	0.84	1.14	1.42	1.57	2.25	2.92	3.57	4.21	4.83	5.44	6.06	6.65	7.84				
15	0.21	0.40	0.58	0.90	1.22	1.53	1.69	2.43	3.14	3.85	4.53	5.20	5.87	6.53	7.17	8.45				
16	0.23	0.43	0.62	0.97	1.31	1.65	1.81	2.60	3.36	4.12	4.85	5.58	6.29	7.00	7.69					
17	0.24	0.46	0.66	1.03	1.39	1.76	1.93	2.77	3.59	4.40	5.19	5.95	6.72	7.47	8.20					
18	0.25	0.48	0.70	1.10	1.49	1.86	2.05	2.95	3.83	4.68	5.51	6.33	7.14	7.94	8.73					
19	0.27	0.51	0.74	1.17	1.58	1.98	2.17	3.14	4.06	4.96	5.84	6.72	7.57	8.42						
20	0.29	0.54	0.78	1.23	1.66	2.09	2.29	3.31	4.29	5.24	6.18	7.09	8.00	8.90						
21	0.31	0.56	0.82	1.30	1.76	2.20	2.43	3.49	4.52	5.52	6.51	7.48	8.43							
22	0.32	0.60	0.86	1.37	1.85	2.32	2.55	3.67	4.76	5.82	6.85	7.87	8.87							
23	0.34	0.63	0.90	1.43	1.94	2.43	2.67	3.85	4.99	6.10	7.18	8.26	9.30							
24	0.35	0.66	0.95	1.50	2.02	2.55	2.80	4.03	5.23	6.38	7.52	8.65								
25	0.36	0.68	0.99	1.57	2.12	2.65	2.92	4.21	5.46	6.68	7.86	9.03								
28	0.42	0.78	1.11	1.77	2.40	3.00	3.31	4.76	6.17	7.53	8.89									
30	0.44	0.83	1.21	1.90	2.59	3.24	3.57	5.13	6.65	8.12	9.57									
32	0.48	0.90	1.29	2.05	2.77	3.47	3.82	5.50	7.13	8.71										
35	0.54	0.99	1.42	2.25	3.06	3.82	4.21	6.06	7.86	9.60										
40	0.62	1.14	1.65	2.60	3.53	4.42	4.85	7.00	9.06											

Ref: Horsepower Rating table of sintered bushing chains is made on the basis of approx. 1000 hour endurance time.

Sintered Bushing Roller Chain Max. Horsepower Ratings (RC60UR, RC80UR)

RC60UR

Unit (hp)

N.T	Revolutions per minute - Small Sprocket (rpm)																			
	10	20	30	50	70	90	100	150	200	250	300	350	400	450	500	550	600	650	700	800
9	0.19	0.36	0.51	0.82	1.10	1.38	1.51	2.18	2.83	3.46	4.08	4.68	5.28	5.87	6.45	7.02	7.60	8.18	8.27	6.77
10	0.21	0.40	0.58	0.91	1.23	1.54	1.70	2.45	3.16	3.87	4.57	5.24	5.91	6.58	7.23	7.88	8.53	9.16	9.69	
11	0.24	0.44	0.64	1.01	1.37	1.72	1.88	2.71	3.51	4.29	5.07	5.82	6.55	7.29	8.02	8.73	9.44	10.1	10.8	
12	0.25	0.48	0.70	1.11	1.50	1.88	2.06	2.98	3.86	4.72	5.56	6.38	7.20	8.00	8.81	9.60	10.4	11.2		
13	0.28	0.54	0.76	1.21	1.64	2.05	2.25	3.24	4.21	5.15	6.06	6.96	7.86	8.73	9.60	10.5	11.3			
14	0.31	0.58	0.83	1.31	1.77	2.23	2.44	3.51	4.56	5.58	6.57	7.55	8.51	9.46	10.4	11.33				
15	0.34	0.62	0.88	1.41	1.90	2.40	2.63	3.79	4.91	6.01	7.08	8.12	9.17	10.2	11.2					
16	0.36	0.66	0.95	1.51	2.05	2.56	2.83	4.06	5.27	6.43	7.59	8.71	9.83	10.9						
17	0.38	0.71	1.02	1.61	2.18	2.73	3.02	4.34	5.62	6.88	8.10	9.30	10.5	11.7						
18	0.40	0.75	1.09	1.72	2.32	2.91	3.20	4.61	5.98	7.31	8.62	9.89	11.2							
19	0.43	0.80	1.15	1.82	2.47	3.10	3.39	4.89	6.34	7.75	9.13	10.5	11.8							
20	0.46	0.84	1.22	1.93	2.60	3.27	3.59	5.17	6.70	8.19	9.65	11.1								
21	0.48	0.88	1.29	2.02	2.75	3.45	3.78	5.46	7.06	8.63	10.2	11.7								
22	0.50	0.94	1.34	2.13	2.88	3.62	3.98	5.74	7.43	9.08	10.7	12.3								
23	0.52	0.98	1.41	2.24	3.03	3.79	4.18	6.02	7.79	9.53	11.2									
24	0.55	1.03	1.47	2.35	3.18	3.98	4.37	6.30	8.16	9.97	11.8									
25	0.58	1.07	1.54	2.45	3.31	4.16	4.57	6.58	8.53	10.4	12.3									
28	0.64	1.22	1.74	2.76	3.74	4.69	5.16	7.44	9.64	11.8										
30	0.70	1.31	1.88	2.98	4.03	5.05	5.56	8.02	10.4	12.7										
32	0.75	1.41	2.02	3.19	4.33	5.43	5.97	8.59	11.1											
35	0.83	1.54	2.23	3.53	4.77	5.98	6.57	9.46	12.3											
40	0.95	1.78	2.57	4.06	5.51	6.90	7.59	10.9												

RC80UR

Unit (hp)

N.T	Revolutions per minute - Small Sprocket (rpm)																					
	10	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250	300	400	150	500	550	600
9	0.47	0.86	1.25	1.61	1.97	2.32	2.67	3.00	3.34	3.67	4.33	4.97	5.62	6.23	6.86	8.38	9.88	12.8	14.2	15.6	15.0	13.1
10	0.52	0.97	1.39	1.81	2.21	2.60	2.99	3.36	3.74	4.12	4.85	5.58	6.29	6.98	7.68	9.40	11.1	14.3	15.9	17.5	17.5	
11	0.58	1.07	1.54	2.00	2.44	2.88	3.31	3.74	4.16	4.57	5.38	6.18	6.97	7.75	8.51	10.4	12.3	15.9	17.7	19.4		
12	0.63	1.18	1.70	2.20	2.68	3.16	3.63	4.10	4.56	5.01	5.91	6.78	7.65	8.51	9.36	11.4	13.5	17.5	19.4			
13	0.68	1.29	1.85	2.40	2.94	3.46	3.97	4.48	4.97	5.47	6.45	7.40	8.35	9.28	10.2	12.5	14.7	19.0	21.2			
14	0.75	1.39	2.01	2.60	3.18	3.74	4.30	4.84	5.39	5.92	6.98	8.02	9.03	10.1	11.1	13.5	15.9	20.6				
15	0.80	1.50	2.16	2.80	3.42	4.03	4.62	5.21	5.80	6.38	7.52	8.63	9.75	10.8	11.9	14.6	17.2					
16	0.86	1.61	2.32	3.00	3.67	4.32	4.96	5.60	6.22	6.84	8.06	9.26	10.4	11.6	12.8	15.6	18.4					
17	0.92	1.72	2.47	3.20	3.91	4.61	5.29	5.98	6.65	7.31	8.61	9.89	11.2	12.4	13.6	16.7	19.6					
18	0.98	1.82	2.63	3.40	4.17	4.91	5.63	6.35	7.06	7.77	9.16	10.5	11.9	13.2	14.5	17.7	20.9					
19	1.03	1.93	2.79	3.61	4.41	5.20	5.98	6.74	7.49	8.23	9.71	11.2	12.6	14.0	15.4	18.8	22.1					
20	1.10	2.05	2.95	3.82	4.66	5.50	6.31	7.12	7.92	8.70	10.3	11.8	13.3	14.8	16.2	19.9						
21	1.15	2.16	3.11	4.02	4.92	5.79	6.66	7.51	8.35	9.18	10.8	12.4	14.0	15.6	17.1	20.9						
22	1.22	2.27	3.27	4.24	5.17	6.10	7.00	7.90	8.78	9.65	11.4	13.1	14.7	16.4	18.0	22.0						
23	1.27	2.37	3.43	4.44	5.43	6.39	7.35	8.28	9.21	10.1	11.9	13.7	15.5	17.2	18.9	23.1						
24	1.34	2.49	3.59	4.65	5.68	6.69	7.69	8.67	9.64	10.6	12.5	14.4	16.2	18.0	19.8							
25	1.39	2.60	3.75	4.85	5.94	7.00	8.04	9.06	10.1	11.1	13.1	15.0	16.9	18.8	20.7							
28	1.58	2.94	4.24	5.48	6.72	7.91	9.09	10.2	11.4	12.5	14.8	16.9	19.1	21.2	23.4							
30	1.70	3.16	4.57	5.91	7.23	8.51	9.79	11.0	12.3	13.5	15.9	18.3	20.6	22.9								
32	1.82	3.39	4.89	6.34	7.75	9.13	10.5	11.8	13.2	14.5	17.0	19.6	22.1	24.5								
35	2.01	3.74	5.39	6.98	8.54	10.1	11.6	13.0	14.5	15.9	18.8	21.6	24.3									
40	2.32	4.33	6.23	8.07	9.87	11.6	13.4	15.1	16.7	18.4	21.7	24.9										

Ref : Horsepower Rating table of sintered bushing chains is made on the basis of approx. 1000 hour endurance test.

2-4 D.I.D Environment Resistant Chain Series

2-4-1 Selection of Environment Resistant Chain Series

The DID general application chain include the Environment Resistant Chain Series. This series is intended for use in special environments, such as outdoor use with exposure to rain, use on a ship, exposure to a salty environment, and use in a place where a chemical material is dispersed. The Environment Resistant Chain Series includes the following four kinds.

Rustless Chain.....Brilliant, clean, shiny nickel plating.
Hi-Guard Chain.....Excellent in corrosion resistance without sacrificing strength
Low temperature chain....For use in cold storage, warehouse and conveyors.
Stainless steel chain.....Corrosion resistant and heat resistance for food processing, water treatment,chemical, etc.

Design of chain transmission

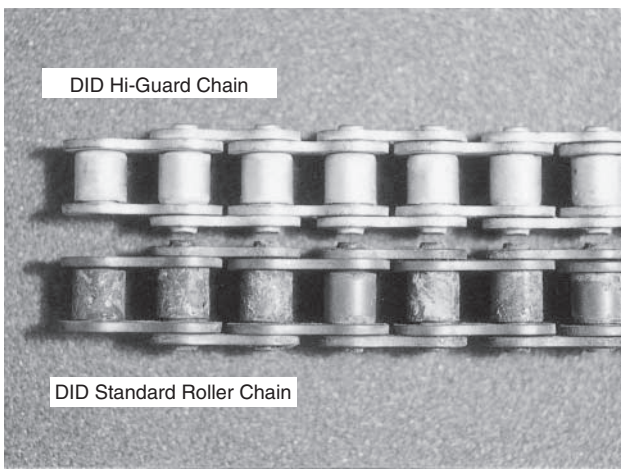
An environment resistant chain is equivalent to ANSI standard roller chain in strength, except for the stainless steel chain. Therefore, for selecting a proper environment resistant chain, refer to "General selecting"(P. 91) and "Slow - speed selection"(P. 92). For the maximum horsepower ratings, use the table of maximum horsepower ratings for standard roller chains. Stainless steel chain is lower in strength. Refer to "Slow-speed selection" based on the "maximum allowable tension".

Connecting links and offset links

For all kinds of environment resistant chain, slip fit (clip type) connecting links are available for 60 or smaller, and slip fit (cotter type) connecting link for 80 or larger. 2P Offset Link is available for RC25 and RC35, and Half Link and 2P Offset Link, for the other sizes. However, for low temperature chain, no offset link is available. For stainless steel chain, 2P Offset Link is not available.

Sprockets

Since the dimensions of these chain are the same as those of standard roller chain, standard sprockets can be used.



Surface conditions after corrosion test

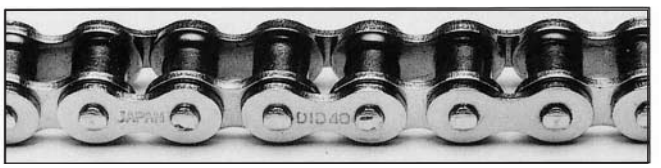
Comparison Chart of Environment Resistant Chain Series (please refer to pg. 43 for Chain No.)

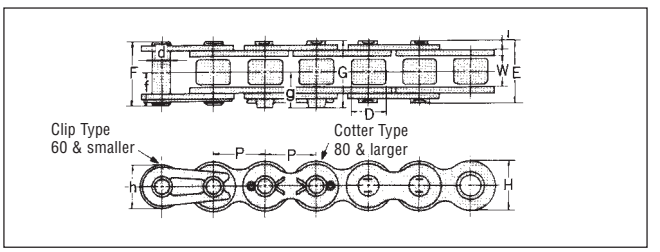
Series	Mark	Strength		Moisture Resistance Performance (without additional lubrication)		Corrosion Resistance Performance				
		Max. Allowable Load Ratio	Chain Selecting Method	Initial Lubricant Applied		Based on CASS test	Exposed to water or salt water	Alkaline Resistance Performance	Acid Resistance Performance	Heat Resistance Performance
Standard Roller Chain	—	100%	Max. Horsepower Ratings or Slow-Speed Selection	Rust Prevention Oil	inferior	inferior	not recommended	normal	not recommended	-10ºC~80ºC (14ºF~176ºF)
				Grease	normal	normal				
Rustless Chain	N	100%		Rust Prevention Oil	inferior	good (note)	good	excellent	Applicable in light acid	Layer withstands up to 250ºC (482ºF)
				Grease	normal	very good (note)				
Hi-Guard Chain	E	100%		Rust Prevention Oil	inferior	excellent	excellent	normal	not recommended	Layer withstands up to 250ºC (482ºF)
				Grease	normal					
Low Temperature Chain	TK	100%		Special Grease	normal	normal	not recommended	normal	not recommended	-40ºC~80ºC (40ºF~176ºF)
Stainless Chain	SS	10%	Slow-Speed Selection	Stainless Chain is inferior to others in wear resistance performance. Chain tension must be within allowable range.		Same as Stainless Steel				
	SSK	15%								

Note: Even rustless chain, 25N, 35N and 41N should be read from "good" to "normal" and "excellent" to "good" because of the thin plating layer.

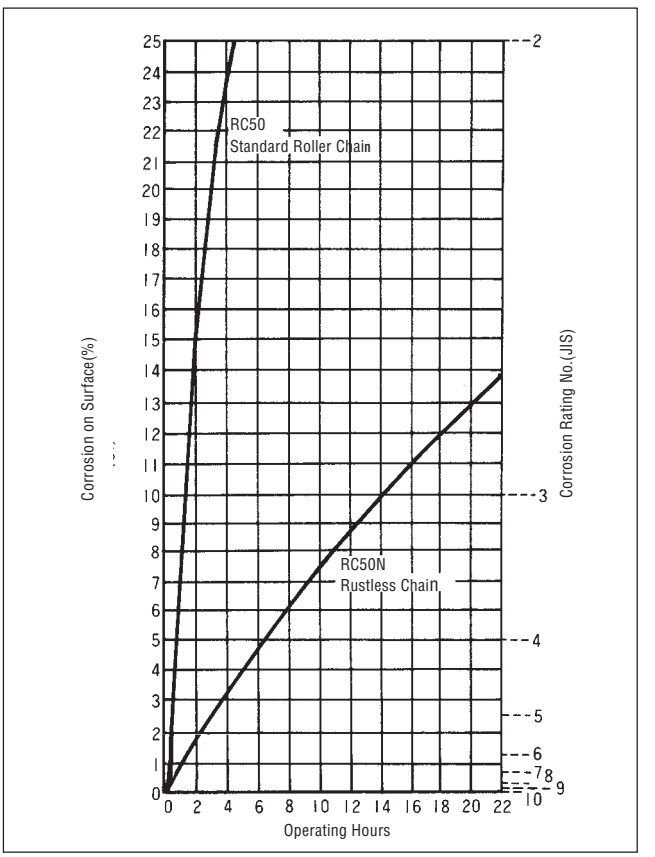
2-4-2 D.I.D Rustless Chain (N)

D.I.D Rustless Chain is an outstanding corrosion resistant chain because its surface is nickel plated. In applications where chain is exposed to the possibility of hydrogen brittlement caused by acid vapor or salty environment, nickel plating delays the corrosive effect on the chain.





Result of CASS Test



Dimensions

Unit (inch)

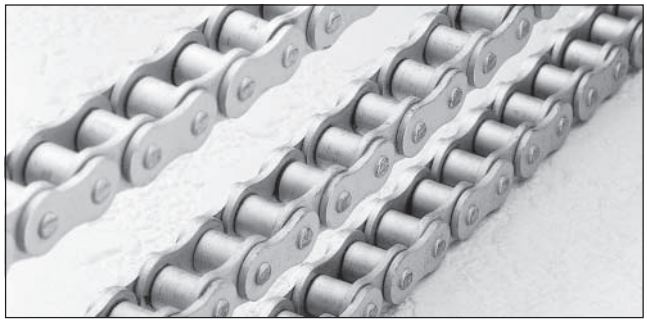
Chain No.	Pitch	Roller Link Width	Roller Dia.	Pin					Trans-verse Pitch	Plate			DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight
DID	P	W	D	d	E	G	e	g	C	T	H	h	lbs	lbs	(lbs/FT)
RC25N	0.250	0.125	0.130	0.091	0.307	0.335	0.000	0.185	0.000	0.028	0.232	0.205	990	165	0.087
RC35N	0.375	0.188	0.200	0.141	0.472	0.516	0.555	0.287	0.291	0.049	0.354	0.305	2530	484	0.215
RC41N	0.500	0.251	0.306	0.141	0.539	0.575	0.602	0.311	0.335	0.047	0.378	0.315	2420	528	0.262
RC40N	0.500	0.313	0.312	0.156	0.650	0.693	0.713	0.374	0.398	0.059	0.472	0.409	4290	836	0.422
RC50N	0.625	0.375	0.400	0.200	0.799	0.862	0.870	0.457	0.472	0.079	0.591	0.512	6930	1540	0.711
RC60N	0.750	0.500	0.469	0.235	1.000	1.059	1.098	0.563	0.594	0.094	0.713	0.614	9900	2090	0.966
RC80N	1.000	0.625	0.625	0.313	1.283	0.000	1.394	0.000	0.748	0.126	0.945	0.819	17600	3300	1.710
RC100N	1.250	0.750	0.750	0.376	1.555	0.000	1.673	0.000	0.894	0.157	1.177	1.024	26620	5060	2.541
RC120N	1.500	1.000	0.875	0.437	1.957	0.000	2.087	0.000	1.110	0.189	1.413	1.228	37400	6820	3.681
RC140N	1.750	1.000	1.000	0.500	2.110	0.000	2.299	0.000	1.248	0.220	1.650	1.429	48400	9020	4.768
RC160N	2.000	1.250	1.125	0.563	2.504	0.000	2.685	0.000	1.437	0.252	1.882	1.630	60500	11880	6.585

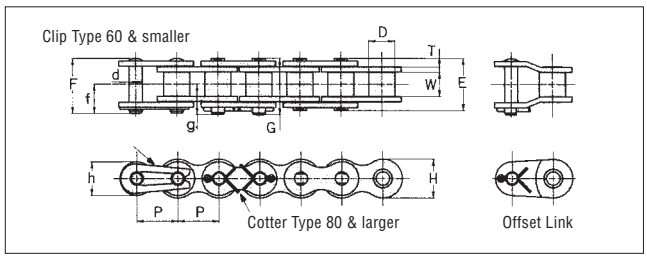
Note: Those marked with * indicated bush chain.

2-4-3 D.I.D Hi-Guard Chain (E)/Double Guard Chain (WE)

Hi-Guard chain is second in corrosion resistance performance, next to a stainless steel chain. A luster-less white protective film is formed on the surface of the chain by a special baking process. The Hi-Guard chain has excellent galvanic corrosion resistance and rust resistance. Since the film is heat-resistant up to 482ºF, it protects the chain even in high temperature. The Hi-Guard chain has slightly lower tensile strength than standard chain, but it is equivalent in maximum allowable load and wear resistance. Stainless steel chain is lower in strength and wear resistance. For this reason, when sufficient corrosion resistance is required without sacrificing strength, Hi-Guard chain is recommended. Since the Hi-Guard film works as a sacrificial anode for the base chain, sufficient corrosion resistance can be expected even if the film peels.

Double Guard Chain (WE) has DID's unique two different coatings applied before assembly on the ANSI standard chain. It achieves approximately two times higher anti-corrosion performance than a Hi-Guard Chain in a salt water spray test. This chain also withstands light alkali and an acidic atmosphere and the best alternative of Stainless Steel Chain. The strength is the same as Hi-Guard Chain.





Dimensions

Unit (inch)

Chain No. DID	Pitch	Roller Link Width	Roller Dia.	Pin						Plate			DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight
	P	W	D	d	E	F	G	f	g	T	H	h	lbs	lbs	(lbs/FT)
RC25-E	0.250	0.125	0.130	0.091	0.307	0.335	0.000	0.185	0.000	0.028	0.232	0.205	924	165	0.087
RC35-E	0.375	0.188	0.200	0.141	0.472	0.516	0.000	0.287	0.000	0.049	0.354	0.305	2310	484	0.215
RC40-E/WE	0.500	0.313	0.312	0.156	0.650	0.693	0.000	0.374	0.000	0.059	0.472	0.409	3740	836	0.422
RC50-E/WE	0.625	0.375	0.400	0.200	0.799	0.862	0.000	0.457	0.000	0.079	0.591	0.512	6380	1540	0.711
RC60-E/WE	0.750	0.500	0.469	0.235	1.000	1.059	0.000	0.563	0.000	0.094	0.713	0.614	9020	2090	0.966
RC80-E/WE	1.000	0.625	0.625	0.313	1.283	0.000	1.394	0.000	0.748	0.126	0.945	0.819	16830	3300	1.710
RC100-E/WE	1.250	0.750	0.750	0.376	1.555	0.000	1.673	0.000	0.894	0.157	1.177	1.024	25300	5060	2.541
RC120-E/WE	1.500	1.000	0.875	0.437	1.957	0.000	2.087	0.000	1.110	0.189	1.413	1.228	35420	6820	3.681

Note: 1. Those marked with * indicate bush chains.
2. Please consult us when multiplex chain is desired

2-4-4 D.I.D Low Temperature Chain (TK)

Standard roller chain is likely to become brittle at low temperature and must be used at higher than 14°F. TK chain is unlikely to suffer from low temperature brittleness. TK chain can be used down to -40°F by setting the maximum allowable load as listed below.

The lubricating oil applied on the chain is a special low temperature oil.

Max. Allowable Load of TK Chain

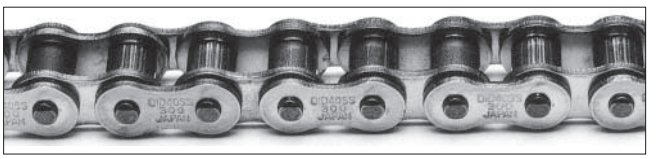
Chain No. DID	Max. Allowable Load 80°~ -10°C (176°F ~ 14°F)		Max. Allowable Load -11°C ~ -30°C (12º F~ -22º F)		Max. Allowable Load -31°C ~ -40°C (-24º F~ -40º F)		
RC40R-TK	3.72	836	2.54	572	2.15	484	Dimensions are same as those of standard roller chain (Please refer to P.14)
RC50R-TK	6.86	1540	4.80	1078	3.92	880	
RC60R-TK	9.31	2090	6.47	1452	5.39	1210	
RC80R-TK	14.70	3300	10.29	2310	8.53	1914	
RC100R-TK	22.55	5060	15.78	3542	13.04	2926	
RC120R-TK	30.40	6820	21.28	4774	17.55	3938	
RC140R-TK	40.20	9020	28.14	6314	23.24	5214	
RC160R-TK	52.95	11880	37.06	8316	30.69	6886	

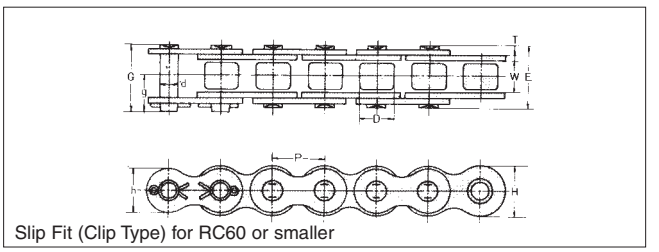
2-4-5 DID Stainless Steel Chain (SS, SSK, SSLT)

DID Stainless Steel chain is available either as an SS chain with all of the components made of austenitic steel (SUS304, 18-8 stainless steel) or an SSK chain with pins, bushings and rollers made of quench-hardened stainless steel (SUS631) and with plates made of austenitic stainless steel (SUS304). An SS chain is the highest in corrosion resistance and heat resistance, and can be used in all chemical plants, food processing machines, water treatment machines, etc. However, since it is made of austenitic stainless steel, its tensile strength is less than 70 percent that of a standard roller chain. Furthermore, the maximum allowable tension is as low as 10 percent of standard roller chain. Therefore, these factors must be carefully examined when you select SS chain.

SSK chain is 1.5 times higher than SS chain in maximum allowable load. This is accomplished by improving the strengths of pins, bushings and rollers. Both SS & SSK are comparable in corrosion resistance.

Stainless Steel X-Ring chain (SSLT) with chemical resistant X-Ring and FDA/USDA approved lubricant is also available for up to 10 times longer wear life. See P. 48 for dimensions (Available in 40, 50, 60 and 80).





Slip Fit (Clip Type) for RC60 or smaller

Strength of SS Type

Chain No. DID	Max. Allowable Load KN	lbs
RC25SSR	0.12	29
RC35SSR	0.26	59
RC40SSR	0.44	99
RC50SSR	0.69	154
RC60SSR	1.03	231
RC80SSR	1.77	396
RC100SSR	2.55	572
RC120SSR	3.82	858
RC140SSR	4.6	1034
RC160SSR	6.37	1430
RC200SSR	10.78	2420

Strength of SSK Type

Chain No. DID	Max. Allowable Load KN	lbs
RC40SR	0.69	154
RC50SR	1.03	231
RC60SR	1.57	352
RC80SR	2.65	594
RC100SR	3.82	858

Dimensions

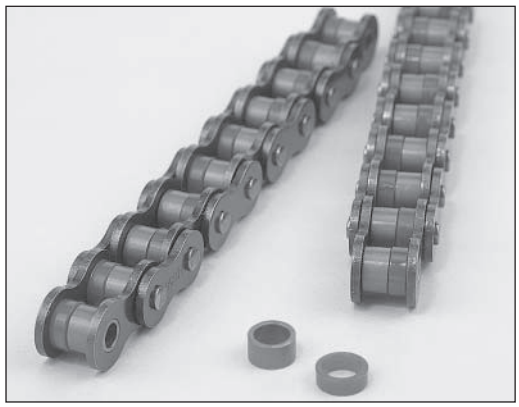
Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller (Bush) Dia. D	Pin d	Pin E	Pin F	Pin G	Pin f	Plate g	Plate T	Plate H	Plate h	Approx. Weight (lbs/FT)
RC25SSR	0.250	0.122	0.130	0.091	0.299	0.335	0.000	0.185	0.000	0.030	0.236	0.205	0.087
RC35SSR, 35SR	0.375	0.184	0.200	0.141	0.465	0.508	0.000	0.276	0.000	0.050	0.354	0.307	0.228
RC40SSR, 40SR	0.500	0.309	0.313	0.156	0.642	0.689	0.000	0.368	0.000	0.059	0.472	0.409	0.429
RC50SSR, 50SR	0.625	0.370	0.400	0.200	0.807	0.850	0.000	0.447	0.000	0.079	0.591	0.512	0.711
RC60SSR, 60SR	0.750	0.495	0.469	0.234	1.018	1.063	0.000	0.555	0.000	0.094	0.713	0.614	1.046
RC80SSR, 80SR	1.000	0.620	0.625	0.312	1.280	0.000	1.366	0.000	0.726	0.126	0.949	0.819	1.757
RC100SSR, 100SR	1.250	0.744	0.750	0.375	1.587	0.000	1.667	0.000	0.874	0.157	1.185	1.024	2.769
RC120SSR	1.500	1.000	0.875	0.435	2.071	0.000	2.185	0.000	1.146	0.197	1.413	1.228	4.111
RC140SSR	1.750	1.000	1.000	0.498	2.272	0.000	2.437	0.000	1.295	0.236	1.650	1.429	5.304
RC160SSR	2.000	1.250	1.125	0.560	2.531	0.000	2.697	0.000	1.417	0.236	1.882	1.630	7.282
RC200SSR	2.500	1.500	1.562	0.776	3.122	0.000	3.398	0.000	1.827	0.315	2.362	2.047	11.091

Note: Those marked with * indicate bush chain.

2-5 D.I.D Low Noise Chain Series

The demand for and lower equipment noise in the working significant environment is growing. The chain greatly enhanced in silencing effect to meet such demands is the DID Low Noise Chain Series. In printing, packaging, engineering, parking and various conveyors, low noise chain provides a silencing effect.

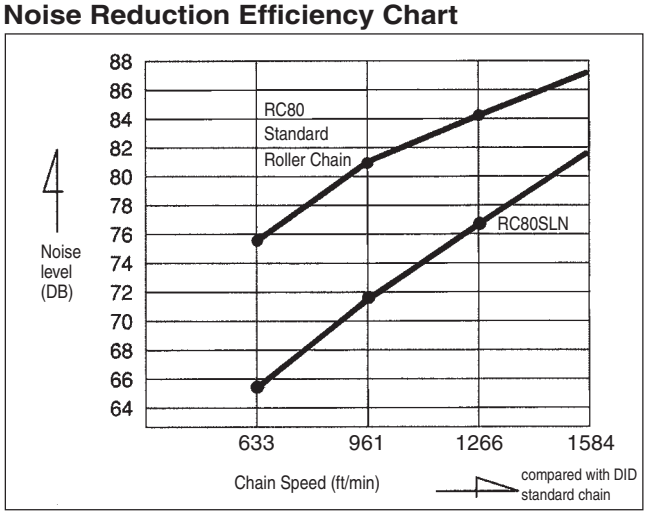


Note: Color of elastomer roller may be changed for the required specification.

2-5-1 D.I.D Super Low Noise Chain (SLN)

A "two piece roller structure" achieves a significant noise reduction effect. hen the chain is engaged with a sprocket, the audible shock is reduced by the elastic deformation of rollers, made of special elastomer, achieving a silencing effect as much as 10 DB. When the chain is used for conveying, the sliding noise between the rails and the rollers is effectively reduced. Available sizes are RC40SLN to 80SLN.

Noise Reduction Efficiency Chart



Design of chain transmission

For selecting a proper low noise chain, refer to "general selection". Also refer to the tables of maximum horsepower ratings for SLN chain (P.58-59).
For SLN chain, "Slow-speed selection" cannot be used. The maximum allowable load in the tables of dimensions considers only the tensile strength of the chain, and neglects roller strength.

Connecting links and offset links

For low noise connecting links, the standard chain can be used. Both Half link and 2P Offset link are available. Please specify "for SLN chain".

Sprockets

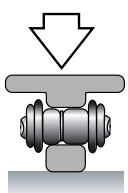
Standard sprockets can be used.

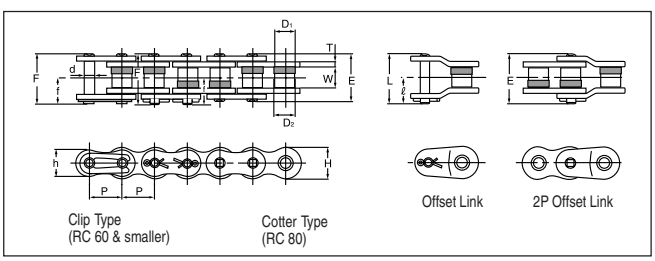
Max. Allowable Load in Roller

Unit: N(lbs) /pc

Chain No.	Allowable Load	
RC40SLN	78	18
RC50SLN	117	26
RC60SLN	196	44
RC80SLN	313	70

1 Roller (1pc of steel rollers and 1pc of rubber roller)





Dimensions

Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D_1	Roller Dia. D_2	Pin d	Pin E	Pin F	Pin f	Pin L	Pin I	Plate T	Plate H	Plate h	DID Avg.Tensile Strength lbs	DID Max. Allowable Load lbs	Approx. Weight (lbs/FT)
RC40SLN	0.500	0.313	0.304	0.321	0.156	0.650	0.693	0.374	0.7600	.417	0.059	0.472	0.409	4290	836	0.396
RC50SLN	0.625	0.375	0.388	0.409	0.200	0.799	0.862	0.457	0.9090	.476	0.079	0.591	0.512	6930	1540	0.657
RC60SLN	0.750	0.500	0.455	0.478	0.235	1.000	1.059	0.563	1.1810	.618	0.094	0.713	0.614	9900	2090	0.959
RC80SLN	1.000	0.625	0.604	0.634	0.313	1.291	1.390	0.748	1.4610	.768	0.126	0.945	0.819	17600	3300	1.583

Note: Above Max. allowable load is determined only by link plates and pin, and roller is not considered for the chain.

Super Low-Noise Chain Max. Horsepower Ratings (RC40SLN, RC50SLN)

RC40SLN

Unit (inch)

N.T	Revolutions per minute - Small Sprocket (rpm)																				
	10	20	30	50	70	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1500
11	0.07	0.12	0.17	0.27	0.36	0.50	0.70	0.67	0.64	0.63	0.62	0.60	0.59	0.59	0.58	0.58	0.56	0.56	0.56	0.55
12	0.07	0.13	0.19	0.29	0.40	0.55	0.79	0.76	0.74	0.71	0.70	0.68	0.68	0.67	0.66	0.66	0.64	0.64	0.63	
13	0.08	0.15	0.20	0.32	0.44	0.60	0.87	0.87	0.83	0.80	0.79	0.78	0.76	0.75	0.75	0.74	0.72	0.72		
14	0.08	0.15	0.21	0.35	0.47	0.66	0.94	0.97	0.92	0.90	0.88	0.87	0.86	0.84	0.83	0.82	0.82			
15	0.09	0.16	0.24	0.38	0.51	0.70	1.01	1.07	1.03	1.01	0.98	0.97	0.95	0.94	0.92	0.91	0.90			
16	0.09	0.17	0.25	0.40	0.55	0.75	1.09	1.18	1.14	1.10	1.07	1.06	1.05	1.03	1.02	1.01				
17	0.11	0.19	0.27	0.43	0.59	0.80	1.15	1.30	1.25	1.21	1.18	1.15	1.14	1.13	1.11					
18	0.11	0.20	0.29	0.46	0.62	0.86	1.23	1.41	1.35	1.31	1.29	1.26	1.25	1.23	1.21					
19	0.12	0.21	0.31	0.48	0.66	0.91	1.30	1.53	1.47	1.42	1.39	1.37	1.35	1.33						
20	0.12	0.23	0.32	0.51	0.70	0.95	1.38	1.65	1.58	1.54	1.50	1.47	1.46	1.43						
21	0.12	0.24	0.34	0.54	0.74	1.01	1.46	1.78	1.70	1.66	1.62	1.60	1.57							
22	0.13	0.25	0.36	0.56	0.76	1.06	1.53	1.90	1.82	1.78	1.74	1.70	1.68							
23	0.13	0.27	0.38	0.60	0.80	1.11	1.61	2.04	1.96	1.90	1.86	1.82	1.80							
24	0.15	0.27	0.39	0.63	0.84	1.17	1.68	2.17	2.08	2.02	1.98	1.94								
25	0.15	0.28	0.42	0.66	0.88	1.22	1.76	2.28	2.21	2.16	2.10	2.06								
28	0.17	0.32	0.47	0.74	1.01	1.38	1.98	2.57	2.63	2.55	2.49									
30	0.19	0.35	0.50	0.79	1.07	1.49	2.14	2.77	2.91	2.83	2.76									
32	0.20	0.38	0.54	0.86	1.15	1.60	2.29	2.98	3.20	3.12	3.04									
35	0.21	0.42	0.59	0.94	1.27	1.76	2.52	3.27	3.67	3.57										
40	0.25	0.47	0.68	1.09	1.47	2.02	2.92	3.78	4.49	4.36										
45	0.29	0.54	0.78	1.23	1.66	2.31	3.31	4.29	5.35											
50	0.32	0.60	0.87	1.38	1.86	2.57	3.71	4.81	6.27											
55	0.36	0.67	0.97	1.53	2.08	2.86	4.12	5.34	7.23											
60	0.39	0.74	1.06	1.68	2.28	3.14	4.52	5.86												

RC50SLN

Unit (inch)

N.T	Revolutions per minute - Small Sprocket (rpm)																			
	10	20	30	50	70	100	150	200	250	300	350	400	450	500	600	700	800	900	1000	1200
11	0.15	0.28	0.40	0.64	0.87	1.21	1.73	1.76	1.72	1.69	1.66	1.64	1.62	1.61	1.57	1.55	1.53	1.51	1.50	1.47
12	0.16	0.31	0.44	0.71	0.97	1.33	1.90	2.00	1.96	1.92	1.89	1.86	1.85	1.82	1.80	1.77	1.74	1.73	1.70	
13	0.19	0.34	0.48	0.78	1.05	1.45	2.08	2.25	2.21	2.17	2.13	2.10	2.08	2.06	2.02	2.00	1.97	1.94	1.92	
14	0.20	0.36	0.52	0.84	1.14	1.57	2.25	2.52	2.47	2.43	2.39	2.36	2.33	2.31	2.27	2.23	2.20	2.17		
15	0.21	0.40	0.58	0.90	1.22	1.69	2.43	2.80	2.73	2.68	2.64	2.61	2.59	2.56	2.51	2.47	2.44			
16	0.23	0.43	0.62	0.97	1.31	1.81	2.60	3.08	3.02	2.96	2.91	2.88	2.84	2.82	2.76	2.72	2.68			
17	0.24	0.46	0.66	1.03	1.39	1.93	2.77	3.38	3.30	3.24	3.19	3.15	3.11	3.08	3.03	2.98				
18	0.25	0.48	0.70	1.10	1.49	2.05	2.95	3.67	3.59	3.54	3.49	3.43	3.39	3.35	3.30	3.24				
19	0.27	0.51	0.74	1.17	1.58	2.17	3.14	3.99	3.90	3.83	3.77	3.73	3.67	3.65	3.58					
20	0.29	0.54	0.78	1.23	1.66	2.29	3.31	4.29	4.21	4.14	4.08	4.02	3.97	3.93	3.86					
21	0.31	0.56	0.82	1.30	1.76	2.43	3.49	4.52	4.53	4.45	4.38	4.33	4.28	4.24	4.16					
22	0.32	0.60	0.86	1.37	1.85	2.55	3.67	4.76	4.87	4.77	4.71	4.64	4.58	4.53	4.45					
23	0.34	0.63	0.90	1.43	1.94	2.67	3.85	4.99	5.20	5.11	5.03	4.96	4.91	4.85						
24	0.35	0.66	0.95	1.50	2.02	2.80	4.03	5.23	5.54	5.44	5.36	5.28	5.23	5.17						
25	0.36	0.68	0.99	1.57	2.12	2.92	4.21	5.46	5.88	5.78	5.70	5.62	5.55	5.50						
28	0.42	0.78	1.11	1.77	2.40	3.31	4.76	6.17	6.98	6.85	6.74	6.66	6.58							
30	0.44	0.83	1.21	1.90	2.59	3.57	5.13	6.65	7.75	7.60	7.48	7.39								
32	0.48	0.90	1.29	2.05	2.77	3.82	5.50	7.13	8.53	8.38	8.24	8.14								
35	0.54	0.99	1.42	2.25	3.06	4.21	6.06	7.86	9.60	9.58	9.44									
40	0.62	1.14	1.65	2.60	3.53	4.85	7.00	9.06	11.09	11.70										
45	0.70	1.30	1.86	2.96	4.01	5.52	7.95	10.29	12.59											
50	0.78	1.45	2.09	3.31	4.49	6.18	8.90	11.54	14.10											
55	0.86	1.61	2.32	3.67	4.97	6.85	9.87	12.79												
60	0.95	1.77	2.55	4.03	5.46	7.53	10.84	14.05												

Super Low-Noise Chain Max. Horsepower Ratings (RC60SLN, RC80SLN)

RC60SLN

Unit (inch)

N.T	Revolutions per minute - Small Sprocket (rpm)																			
11	0.24	0.44	0.64	1.01	1.37	1.88	2.71	2.95	2.88	2.83	2.79	2.75	2.71	2.68	2.65	2.64	2.60	2.56	2.53	2.51
12	0.25	0.48	0.70	1.11	1.50	2.06	2.98	3.35	3.28	3.22	3.18	3.12	3.10	3.06	3.03	3.00	2.96	2.92	2.88	
13	0.28	0.54	0.76	1.21	1.64	2.25	3.24	3.78	3.70	3.63	3.58	3.53	3.49	3.45	3.42	3.39	3.34	3.30		
14	0.31	0.58	0.83	1.31	1.77	2.44	3.51	4.22	4.13	4.06	3.99	3.94	3.90	3.86	3.82	3.78	3.73			
15	0.34	0.62	0.88	1.41	1.90	2.63	3.79	4.69	4.58	4.50	4.44	4.37	4.32	4.28	4.24	4.20	4.13			
16	0.36	0.66	0.95	1.51	2.05	2.83	4.06	5.16	5.05	4.96	4.88	4.81	4.76	4.71	4.66	4.62				
17	0.38	0.71	1.02	1.61	2.18	3.02	4.34	5.62	5.54	5.43	5.35	5.28	5.21	5.16	5.11	5.07				
18	0.40	0.75	1.09	1.72	2.32	3.20	4.61	5.98	6.02	5.91	5.83	5.75	5.68	5.62	5.56	5.52				
19	0.43	0.80	1.15	1.82	2.47	3.39	4.89	6.34	6.53	6.42	6.31	6.23	6.17	6.10	6.05					
20	0.46	0.84	1.22	1.93	2.60	3.59	5.17	6.70	7.05	6.93	6.82	6.73	6.65	6.58	6.53					
21	0.48	0.88	1.29	2.02	2.75	3.78	5.46	7.06	7.59	7.45	7.35	7.24	7.16	7.08						
22	0.50	0.94	1.34	2.13	2.88	3.98	5.74	7.43	8.14	7.99	7.87	7.76	7.68	7.60						
23	0.52	0.98	1.41	2.24	3.03	4.18	6.02	7.79	8.70	8.55	8.42	8.30	8.20							
24	0.55	1.03	1.47	2.35	3.18	4.37	6.30	8.16	9.28	9.12	8.97	8.85	8.75							
25	0.58	1.07	1.54	2.45	3.31	4.57	6.58	8.53	9.87	9.68	9.53	9.41								
28	0.64	1.22	1.74	2.76	3.74	5.16	7.44	9.64	11.7	11.5	11.3									
30	0.70	1.31	1.88	2.98	4.03	5.56	8.02	10.4	12.7	12.7	12.5									
32	0.75	1.41	2.02	3.19	4.33	5.97	8.59	11.1	13.6	14.0										
35	0.83	1.54	2.23	3.53	4.77	6.57	9.46	12.3	15.0	16.0										
40	0.95	1.78	2.57	4.06	5.51	7.59	10.9	14.2	17.3											
45	1.09	2.02	2.92	4.62	6.26	8.62	12.4	16.1												
50	1.22	2.27	3.27	5.17	7.01	9.66	13.9	18.0												
55	1.35	2.52	3.62	5.74	7.76	10.7	15.4	20.0												
60	1.47	2.76	3.98	6.30	8.54	11.8	16.9													

RC80SLN

Unit (inch)

N.T	Revolutions per minute - Small Sprocket (rpm)																			
11	0.58	1.07	1.54	2.00	2.44	2.88	3.31	3.74	4.57	5.38	6.02	5.91	5.86	5.72	5.62	5.46	5.34	5.24	5.16	5.13
12	0.63	1.18	1.70	2.20	2.68	3.16	3.63	4.10	5.01	5.91	6.86	6.74	6.68	6.53	6.41	6.22	6.09	5.98		
13	0.68	1.29	1.85	2.40	2.94	3.46	3.97	4.48	5.47	6.45	7.73	7.60	7.52	7.36	7.23	7.02	6.86	6.74		
14	0.75	1.39	2.01	2.60	3.18	3.74	4.30	4.84	5.92	6.98	8.53	8.50	8.40	8.22	8.07	7.84	7.67			
15	0.80	1.50	2.16	2.80	3.42	4.03	4.62	5.21	6.38	7.52	9.20	9.42	9.32	9.12	8.95	8.70	8.51			
16	0.86	1.61	2.32	3.00	3.67	4.32	4.96	5.60	6.84	8.06	9.85	10.4	10.3	10.0	9.87	9.58	9.37			
17	0.92	1.72	2.47	3.20	3.91	4.61	5.29	5.98	7.31	8.61	10.5	11.4	11.2	11.0	10.8	10.5				
18	0.98	1.82	2.63	3.40	4.17	4.91	5.63	6.35	7.77	9.16	11.2	12.4	12.3	12.0	11.8	11.4				
19	1.03	1.93	2.79	3.61	4.41	5.20	5.98	6.74	8.23	9.71	11.9	13.4	13.3	13.0	12.8	12.4				
20	1.10	2.05	2.95	3.82	4.66	5.50	6.31	7.12	8.70	10.3	12.5	14.5	14.4	14.0	13.8	13.4				
21	1.15	2.16	3.11	4.02	4.92	5.79	6.66	7.51	9.18	10.8	13.2	15.6	15.4	15.1	14.8					
22	1.22	2.27	3.27	4.24	5.17	6.10	7.00	7.90	9.65	11.4	13.9	16.4	16.6	16.2	15.9					
23	1.27	2.37	3.43	4.44	5.43	6.39	7.35	8.28	10.1	11.9	14.6	17.2	17.7	17.3	17.0					
24	1.34	2.49	3.59	4.65	5.68	6.69	7.69	8.67	10.6	12.5	15.3	18.0	18.9	18.4	18.1					
25	1.39	2.60	3.75	4.85	5.94	7.00	8.04	9.06	11.1	13.1	16.0	18.8	20.1	19.6	19.3					
28	1.58	2.94	4.24	5.48	6.72	7.91	9.09	10.2	12.5	14.8	18.0	21.2	23.4	23.2						
30	1.70	3.16	4.57	5.91	7.23	8.51	9.79	11.0	13.5	15.9	19.4	22.9	25.2	25.8						
32	1.82	3.39	4.89	6.34	7.75	9.13	10.5	11.8	14.5	17.0	20.8	24.5	27.0	28.4						
35	2.01	3.74	5.39	6.98	8.54	10.1	11.6	13.0	15.9	18.8	22.9	27.0	29.7							
40	2.32	4.33	6.23	8.07	9.87	11.6	13.4	15.1	18.4	21.7	26.5	31.2	34.3							
45	2.63	4.91	7.08	9.17	11.2	13.2	15.2	17.1	20.9	24.6	30.1	35.5								
50	2.95	5.50	7.92	10.3	12.5	14.8	17.0	19.2	23.4	27.6	33.7									
55	3.27	6.10	8.78	11.4	13.9	16.4	18.8	21.2	26.0	30.6	37.4									
60	3.59	6.70	9.65	12.5	15.3	18.0	20.7	23.3	28.5	33.6										

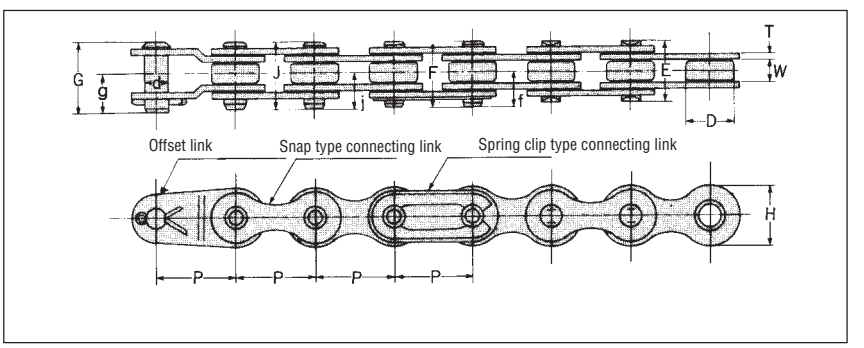
3. DID Speciality Chain

In addition to general application chain, we also manufacture a number of specific application chain such as bicycle chain. Some specialty chain are applicable with standard sprockets and others are not. Various wear resistance measures taken for general application chain are not to apply for DID specialty chain.
Specialty chain can be classified as follows:

- Bicycle chain
- Small pitch chain
- Engine mechanism chain
- Silent chain
- Motorcycle chain
- Agricultural chain
- Leaf chain
- British Standard roller chain

Bicycle Chain

Bicycle chain is a pronoun of the DID brand, as we were founded for the production of bicycle chain. Because if its consistent quality, they are used for many bicycles in Japan and other foreign countries. Recently, Hi-Guard chain (E) with an additional rust preventive treatment have been favorably received by users. The bicycle chain has been continuously examined and improved in performance, quality and specifications as evidenced by the availability of current product lines. As a result, they have dimensions and forms that make them the lightest and most compact chain in their pitch length. Presently, they are used in many applications other than bicycles, including vending and automatic change machines, agricultural implements, etc.



Dimensions

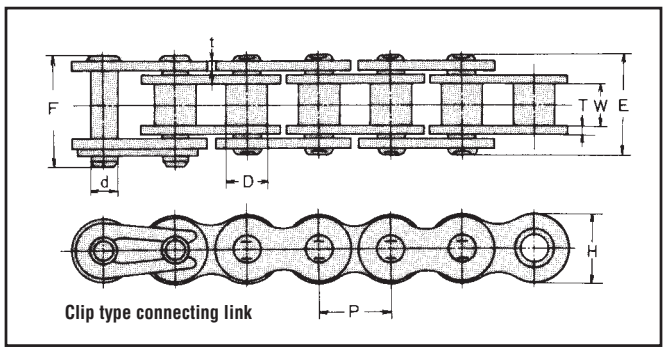
Unit (inch)

Chain No.	Pitch	Roller Link Width	Roller (Bush) Dia.	Pin								Plate		DID Min. Tensil Strength	DID Avg. Tensil Strength	Approx. Weight
DID	P	W	D	d	E	F	G	J	f	g	I	H	T	lbs	lbs	(lbs/FT)
RC65	0.500	0.140	0.306	0.143	0.358	0.415	0.435	0.437	0.236	0.256	0.240	0.380	0.039	1826	2024	0.18
RC65-E	0.500	0.140	0.306	0.143	0.358	0.415	0.435	0.437	0.236	0.256	0.240	0.380	0.039	1826	2024	0.182

Note: (E) model are high Anti-tight joint performance type.

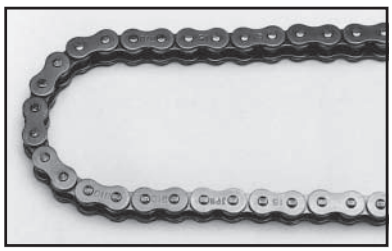
Small Pitch Chain

The smallest chain among ANSI roller chain is RC25 with 1/4" in pitch. In recent years, high technology machinery such as office equipment, medical machines and industrial robots demand smaller chain, and we are manufacturing RC15 with 3/16"pitch, and also RC15H which is the high-power version of RC15. They are precision manufactured chain with good wear resistance resulting from our stringent quality control.

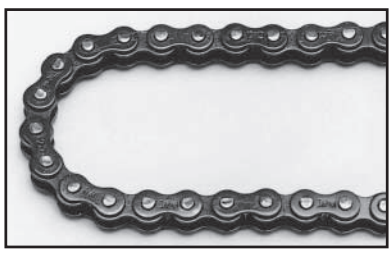


Clip type connecting link

RC15: A high precision micro-pitch bushing chain smaller than RC25 is designed for general mini-driving applications.



RC25: The smallest bushing chain among ANSI chain.



RC35: ANSI bushing chain recommended for small precision machines, etc. require greater strength.

Dimensions

Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller (Bush) Dia. D	Pin			Plate			Bearing Area (cm^2)	DID Avg. Tensil Strength lbs	DID Max. Allowable Load lbs	Approx. Weight (lbs/FT)
				Dia	Length		Thickness		Width				
				d	E	F	T	t	H				
RC15	0.188	0.094	0.098	0.064	0.246	0.272	0.024	0.024	0.169	0.009	594	110	0.060
RC15H	0.188	0.125	0.098	0.064	0.287	0.000	0.028	0.028	0.169	0.122	704	132	0.069
RC25	0.250	0.125	0.130	0.091	0.307	0.335	0.028	0.028	0.232	0.017	990	165	0.090
RC25H	0.250	0.125	0.130	0.091	0.354	0.372	0.039	0.039	0.232	0.019	1320	242	0.109
RC25T	0.250	0.125	0.130	0.091	0.315	0.335	0.028	0.028	0.232	0.017	990	165	0.090
RC35	0.375	0.188	0.200	0.141	0.472	0.512	0.049	0.049	0.354	0.041	2530	484	0.223
RC35T	0.375	0.188	0.200	0.141	0.472	0.512	0.049	0.049	0.354	0.041	2530	484	0.223

Selection of chain

Refer to the "Slow-speed selection"(p. 92). However, the chain operation speed can be very high, depending on the type of lubrication, as shown in the table on the right.

Connecting link and offset links

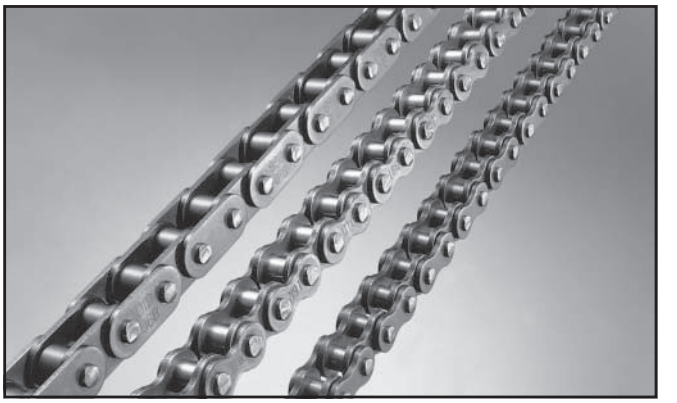
As for the connecting link, Slip fit clip type connecting links are available. However, since its strength is lower than that of the base chain, and since the spring clip can possibly come off in high speed operation, the use of clip type connecting links is not recommended. For high speed operation, riveted endless chain is recomended. Offset links are available for chain other than RC15 and RC15H, but their use is not recommended for the same reason as stated for the Slip fit clip type connecting links.

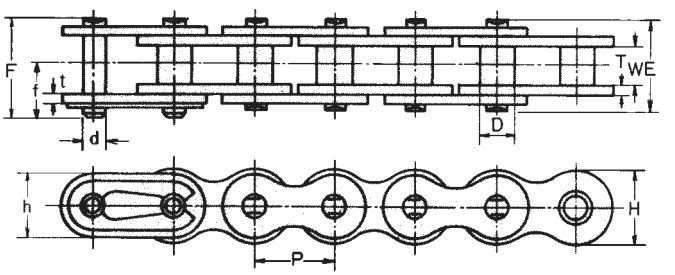
Operating Speed and Type of Lubrication

	Type A oil feeder, brush piling, dropping	Type B pil bath, oil splatter	Type C Pump oiling
RC15 RC15H	656FT/min and under	3937FT/min	and under
RC25 RC25H RC25T	492FT/min and under	3280FT/min	and under
RC35 RC35T	360FT/min and under	2789FT/min	and under

Engine Mechanism Chain

Engine mechanism chain such as timing chain for driving cam shafts on 4-cycle engines used in motorcycles and motor vehicles, chain for driving oil pumps and auxiliaries of generator, etc., and chain for driving balancer shafts must meet the advanced engineering demands of the automobile industry. We have world class technical expertise in this area. Th DID engine mechanism chain has excellent wear resistance, fatigue strength, silencing effect and shock load capability to withstand high speed operation, and meet the conditions required for today's powerful high performance engines. For silent chain, see the section for silent chain in this catalog.





Clip Type

Dimensions

Unit (inch)

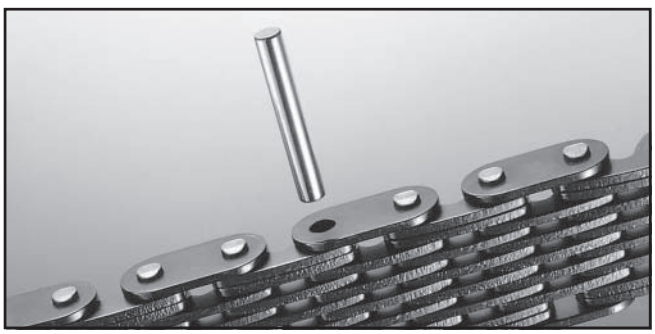
Chain No. DID	Connecting Link	Pitch	Roller Link Width	Roller (Bush) Dia.	Pin				Plate				DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight
		P	W	D	d	E	F	f	T	t	H	h	lbs	lbs	(lbs/FT)
RC25	Clip	0.250	0.125	0.130	0.091	0.307	0.335	0.185	0.028	0.028	0.232	0.205	990	165	0.087
RC25H	Clip	0.250	0.125	0.130	0.091	0.354	0.372	0.203	0.039	0.039	0.232	0.205	1320	242	0.107
RC25T	Clip	0.250	0.125	0.130	0.091	0.307	0.335	0.185	0.028	0.028	0.232	0.205	990	165	0.087
RC25SH	N/A	0.250	0.125	0.130	0.079	0.354	0.000	0.000	0.039	0.039	0.232	0.205	1144	205	0.114
RC25HT	Clip	0.250	0.125	0.130	0.091	0.354	0.372	0.203	0.039	0.039	0.232	0.205	1320	242	0.107
RC25-2	Clip	0.250	0.125	0.130	0.091	0.567	0.591	0.185	0.028	0.028	0.232	0.205	1848	264	0.174
RC25S-2	N/A	0.250	0.125	0.130	0.079	0.567	0.000	0.000	0.028	0.028	0.232	0.205	1936	264	0.174
RC25T-2	Clip	0.250	0.125	0.130	0.091	0.567	0.591	0.185	0.028	0.028	0.232	0.205	1848	286	0.174
RC219H	Clip	0.306	0.197	0.181	0.119	0.472	0.500	0.268	0.047	0.039	0.299	0.260	1738	286	0.181
RC219TS DHA	N/A	0.306	0.197	0.181	0.103	0.467	0.000	0.000	0.047	0.039	0.299	0.260	1936	352	0.181
RC219HTM	Clip	0.306	0.181	0.181	0.119	0.478	0.508	0.272	0.055	0.051	0.301	0.256	2200	396	0.201
RC219FT H1	N/A	0.306	0.197	0.181	0.103	0.484	0.000	0.000	0.047	0.047	0.299	0.299	2002	484	0.221
RC219FTSS DHA	N/A	0.306	0.197	0.181	0.103	0.467	0.000	0.000	0.047	0.039	0.299	0.299	1892	440	0.20
RC05T DHA	N/A	0.315	0.181	0.185	0.119	0.453	0.000	0.000	0.051	0.039	0.307	0.307	2156	484	0.221
RC05R SDH	N/A	0.315	0.181	0.222	0.103	0.467	0.000	0.000	0.051	0.039	0.307	0.307	2013	484	0.248
RC270HR	N/A	0.335	0.187	0.197	0.129	0.518	0.000	0.000	0.071	0.055	0.339	0.280	2728	484	0.262
RC270FH	N/A	0.335	0.187	0.197	0.129	0.518	0.000	0.000	0.071	0.055	0.339	0.339	3300	550	0.335
RC270S DHA	N/A	0.335	0.187	0.197	0.119	0.472	0.000	0.000	0.051	0.047	0.339	0.280	2420	440	0.221
RC06B	Clip	0.375	0.225	0.250	0.129	0.518	0.535	0.291	0.051	0.039	0.323	0.323	2354	440	0.262
RC06B-2	Clip	0.375	0.225	0.250	0.129	0.896	0.941	0.291	0.051	0.039	0.323	0.323	4356	704	0.496
RC317FM2	N/A	0.375	0.199	0.250	0.129	0.518	0.000	0.000	0.059	0.047	0.323	0.323	2860	726	0.188
RC35T	Clip	0.375	0.187	0.200	0.141	0.472	0.512	0.287	0.049	0.049	0.354	0.305	2530	484	0.181

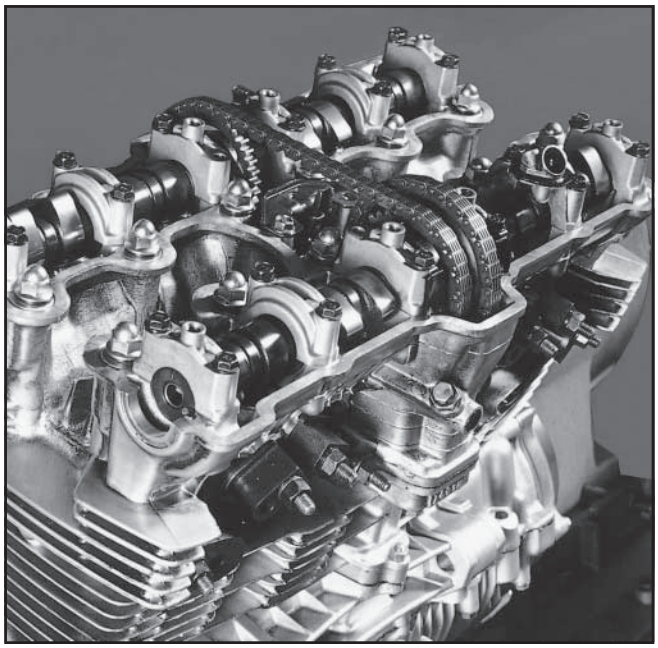
Note: 1. Those marked with * stand for bush chain and indicate bush diameter.
2. Chain marked* are straight link type.
3. DHA type is available. Please consult us.
4. Given maximum allowable load is not applicable to connecting link.

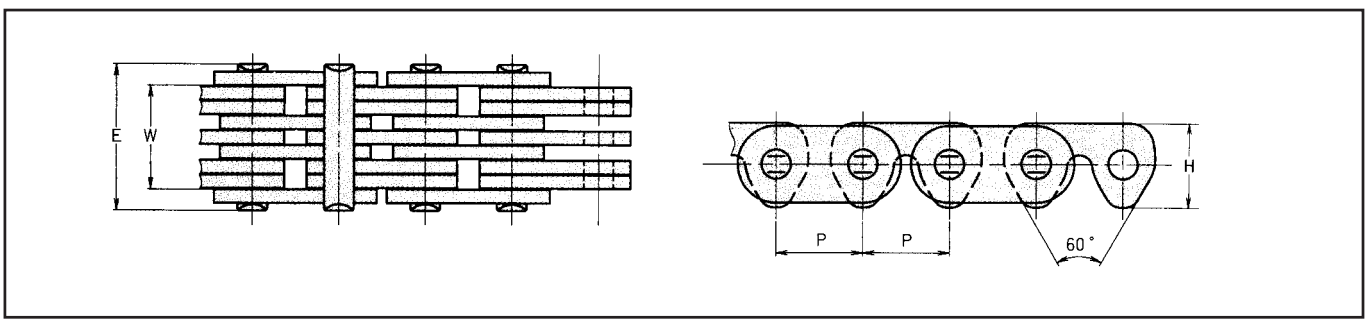
Silent Chain

SC type silent chain

An SC type silent chain uses round pins and special plates to achieve an ideal engagement mechanism, and keep the noise levels significantly lower than conventional roller chain. DID SC type silent chain allows high speed, large tension transmission like a toothed metallic belt since plates are directly engaged with the sprockets for driving.







Dimensions

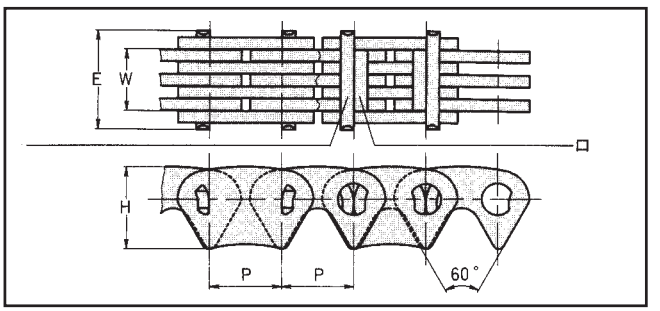
Unit (inch)

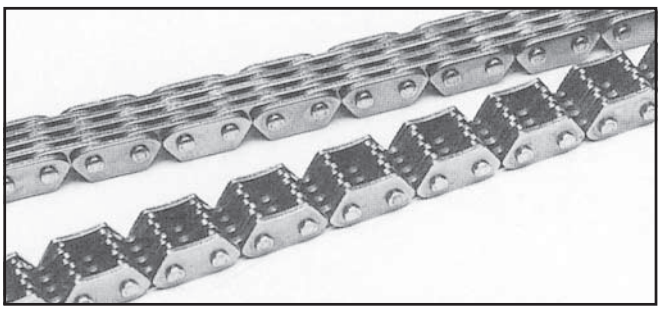
Chain No.	Pitch P	Plate Lacing	W	E	H	Tensil Strength lbs	Approx. Weight (lbs/FT)
DID SC 325		5X4	0.441	0.637	0.362	2860	0.444
DID SC 330	0.375	6X5	0.555	0.752		3520	0.536
DID SC 335		7X6	0.689	0.886		4070	0.630
DID SC 340		8X7	0.815	1.012		4620	0.723
DID SC 425		5X4	0.441	0.637	0.472	4048	0.587
DID SC 430	0.500	6X5	0.555	0.752		4950	0.710
DID SC 435		7X6	0.689	0.886		5852	0.836
DID SC 440		8X7	0.815	1.012		6754	0.962

Silent chain sprocket

Sprocket	Sprockets for DID silent chain adopt involute tooth forms of special modules for the SCA 04_ _, SC 25_ _, SC 06_ _ and PS type silent chain listed on the next page, to ensure silent high speed operation. SC 3_ _ and SC 4_ _ type sprockets basically adopt straight tooth forms in a design to prevent the disengagement of the chain and jumping of the chain on the sprocket teeth. In all sizes, the sprocket tooth heads are usually hardened by induction hardening or carburizing.

Silent chain and sprockets other than the above can also be designed and manufactured.





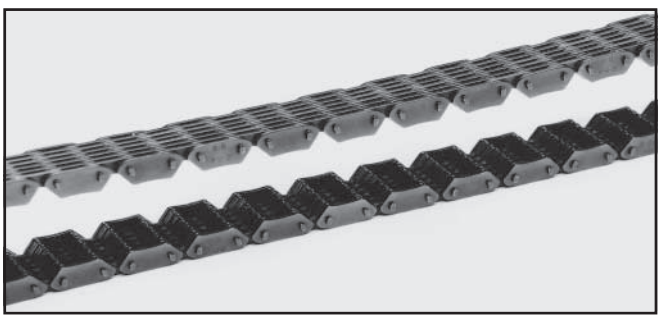
Dimensions

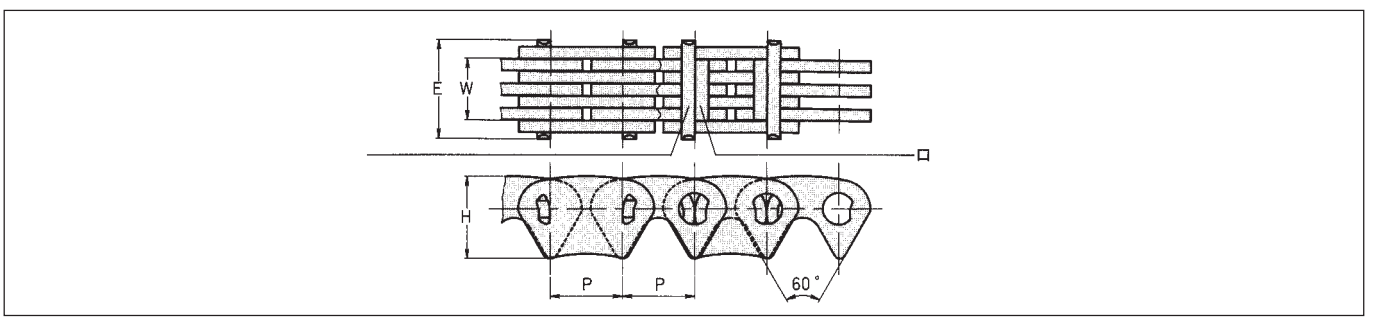
Unit (inch)

Chain No.	Pitch P	Plate Lacing	W	E	H	Tensile Strength lbs	Approx. Weight (lbs/FT)
DID SCA 0404 SDH	0.250	2X3	0.126	0.236	0.264	1408	0.108
DID SCA 0409 SDH		3X4	0.201	0.319		2200	0.152
DID SCA 0412 SDH		4X5	0.281	0.433		2750	0.212
DID SCA 0417 SDH		6X7	0.445	0.598		3960	0.301
DID SC 2515 DHA	0.313	5X4	0.281	0.435	0.332	3674	0.275
DID SC 0618A DHA	0.375	4X5	0.443	0.642	0.398	6160	0.496

PS type silent chain

The PS type silent chain design structure has a set of specially formed connecting pins and rocker pins contacting each other while rotating at each flexible bearing portion. Therefore, it generates less heat especially in high speed operation with is excellent durability. The specially formed pins greatly reduce shock when the chain is engaged with a sprocket, providing a greater silencing effect than an SC type silent chain.





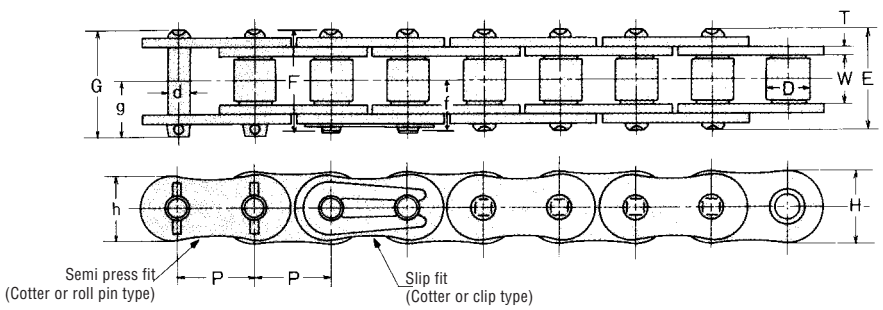
Dimensions

Unit (inch)

Chain No.	Pitch P	Plate Lacing	W	E	H	Tensile Strength lbs	Approx. Weight (lbs/FT)
DID PS 207	0.250	6X7	0.445	0.598	0.281	3454	0.340
DID PS 308	0.375	4X5	0.441	0.646	0.427	5170	0.496
DID PS 314		7X8	0.819	1.028		8800	0.798

Agricultural Roller Chain Series

The roller chain used for tractors, combines, binders, power tillers, etc. must assure the utmost productivity in modern agriculture and are required to have the strength and durability to withstand wear, heavy load and shocks. D.I.D Agricultural roller chain series should withstand those conditions.



Dimensions

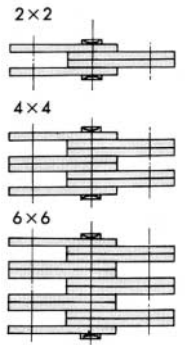
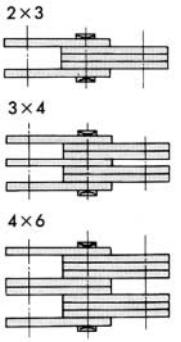
Unit (inch)

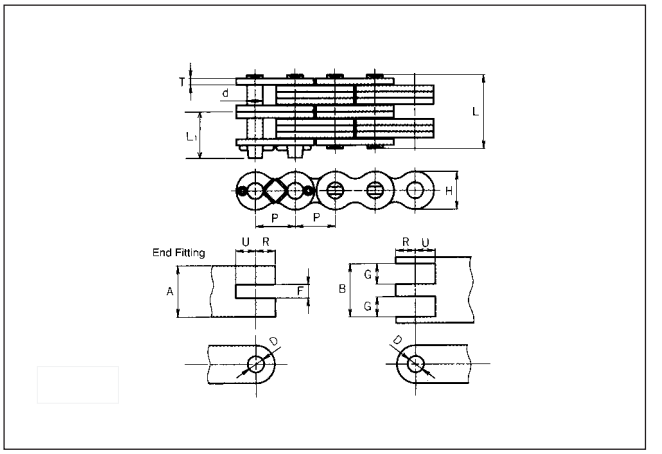
Chain No.	Connecting link	Pitch	Roller Link Width	Roller (Bush) Dia.	Pin						Plate				DID Avg. Tensile Strength	DID Max. Allowable Load	Approx. Weight
DID		P	W	D	d	E	F	f	G	g	T	t	H	h	lbs	lbs	(lbs/FT)
RC35	Clip	0.375	0.188	0.200	0.141	0.472	0.516	0.287	0.000	0.000	0.049	0.049	0.354	0.305	2530	484	0.215
RC35HS	Clip	0.375	0.188	0.200	0.141	0.516	0.539	0.307	0.000	0.000	0.059	0.059	0.354	0.305	2860	572	0.262
RC35HK2	N/A	0.375	0.188	0.200	0.141	0.610	0.654	0.000	0.000	0.000	0.079	0.079	0.354	0.305	4290	726	0.308
RC083	Clip	0.500	0.192	0.305	0.161	0.492	0.533	0.289	0.000	0.000	0.049	0.049	0.406	0.378	2948	528	0.288
RC415S	Clip	0.500	0.187	0.306	0.156	0.522	0.563	0.314	0.000	0.000	0.059	0.059	0.472	0.409	4290	836	0.369
RC420	Clip	0.500	0.250	0.306	0.156	0.581	0.636	0.346	0.000	0.000	0.059	0.059	0.472	0.409	4004	836	0.389
RC40	Clip	0.500	0.313	0.312	0.156	0.650	0.693	0.374	0.000	0.398	0.059	0.059	0.472	0.409	4290	836	0.456
RC40HK	Clip	0.500	0.313	0.312	0.156	0.728	0.768	0.413	0.000	0.000	0.079	0.079	0.472	0.409	4840	1012	0.483
RC428	Clip	0.500	0.313	0.335	0.178	0.657	0.711	0.387	0.000	0.000	0.059	0.059	0.472	0.409	4400	880	0.443
RC428H	Clip	0.500	0.313	0.335	0.178	0.744	0.791	0.428	0.000	0.000	0.079	0.079	0.472	0.409	5236	1100	0.510
RC520	Clip	0.625	0.250	0.400	0.200	0.687	0.742	0.404	0.000	0.000	0.079	0.079	0.591	0.512	6820	1540	0.597
RC50	Clip	0.625	0.375	0.400	0.200	0.799	0.862	0.457	0.000	0.472	0.079	0.079	0.591	0.512	6930	1540	0.711
RC520HK	Clip	0.625	0.250	0.400	0.200	0.732	0.795	0.421	0.000	0.000	0.094	0.094	0.591	0.512	8140	1760	0.671
RC50HK	Clip	0.625	0.375	0.400	0.200	0.858	0.921	0.500	0.000	0.000	0.094	0.094	0.591	0.512	8448	1936	0.751
RC50Y	N/A	0.625	0.375	0.402	0.213	0.886	0.000	0.000	0.000	0.000	0.094	0.094	0.614	0.614	9900	2860	0.939
RC630K	Clip	0.750	0.375	0.469	0.235	0.870	0.929	0.496	0.000	0.000	0.094	0.094	0.713	0.614	9900	2090	0.919
RC630HK	Clip	0.750	0.375	0.469	0.235	1.012	1.055	0.563	0.000	0.000	0.126	0.126	0.713	0.614	11330	2420	1.153
RC630HKS	Clip	0.750	0.375	0.469	0.235	1.012	1.055	0.563	0.000	0.000	0.126	0.126	0.713	0.614	12100	2420	1.153
RC630SK	N/A	0.750	0.375	0.562	0.280	1.033	0.000	0.575	0.000	0.000	0.142	0.126	0.713	0.713	14520	2420	1.361
RC630FSK	N/A	0.750	0.375	0.562	0.261	1.079	0.000	0.000	0.000	0.000	0.157	0.126	0.752	0.752	15070	3960	1.623
RC630FSK2	N/A	0.750	0.375	0.562	0.280	1.122	0.000	0.000	0.000	0.000	0.165	0.134	0.752	0.752	16280	3960	1.656
RC635SK	N/A	0.750	0.437	0.562	0.280	1.094	0.000	0.000	0.000	0.000	0.142	0.126	0.713	0.713	14520	2420	1.482
RC635ST	N/A	0.750	0.437	0.562	0.296	1.181	0.000	0.000	0.000	0.000	0.165	0.134	0.724	0.724	16280	2420	1.663
RC60	Clip	0.750	0.500	0.469	0.235	1.000	1.059	0.563	0.000	0.594	0.094	0.094	0.713	0.614	9900	2090	0.966
RC60H	Clip	0.750	0.500	0.469	0.235	1.130	1.201	0.634	1.228	0.000	0.126	0.126	0.713	0.614	10340	2420	1.214
RC60HK	Clip	0.750	0.500	0.469	0.235	1.130	1.201	0.634	1.228	0.000	0.126	0.126	0.713	0.614	12100	2420	1.214
RC60SK	N/A	0.750	0.500	0.562	0.280	1.173	0.000	0.646	0.000	0.000	0.142	0.126	0.713	0.713	14520	2420	1.495
RC80KSR	Semi-Press	1.000	0.625	0.625	0.313	1.283	0.000	0.000	1.390	0.748	0.126	0.126	0.949	0.819	18920	4180	1.891
RC80HKSR	Semi-Press	1.000	0.625	0.625	0.313	1.421	0.000	0.000	1.524	0.811	0.157	0.157	0.949	0.819	22000	5060	2.092
RC80GS	Semi-Press	1.000	0.625	0.625	0.343	1.484	0.000	0.000	1.587	0.000	0.189	0.157	0.972	0.972	26400	6160	2.890
RC100KSR	Semi-Press	1.250	0.750	0.750	0.376	1.555	0.000	0.000	1.685	0.894	0.157	0.157	1.185	1.024	28600	6820	2.803
RC100HKSR	Semi-Press	1.250	0.750	0.750	0.376	1.717	0.000	0.000	1.819	0.961	0.189	0.189	1.185	1.024	32560	7700	2.930

Note: 1. The plate shape of RC630FSK2, RC630FSK2, RC80GS are straight sidebar chain.
2. Max. Allowable load is not applicable to connecting link.

Leaf Chain

Leaf chain consists of pins and plates only and generally have greater tensile strength than roller chain. Leaf chain is suitable for lifting and pulling applications

AL type	BL type
	



Dimensions

Unit (inch)

Chain No.	Pitch	Plate		Pin		Min. Tensile Strength	Max. Allowable Load	Approx. Weight	End Fittings						
	P	H (Max)	T	d	L (Max)	(lbs)	(lbs)	(lbs/ft)	b (Min.)	R	U (Min.)	F (Min.)	G (Min.)	A (Min.)	B
AL 422	0.50	0.41	0.06	0.16	0.33	3740	418	0.24	0.16	0.25	0.22	—	0.13	0.12	
AL 444					0.58	7480	792	0.48				0.13	0.13	0.36	
AL 466					0.82	11220	924	0.72				0.13	0.13	0.61	
AL 522	0.63	0.51	0.08	0.20	0.43	6160	682	0.42	0.20	0.31	0.28	—	0.17	0.16	
AL 544					0.74	12320	1430	0.82				0.17	0.17	0.48	
AL 566					1.08	18480	1518	1.23				0.17	0.17	0.81	
AL 588					1.41	24640	1936	1.63				0.17	0.17	1.15	
AL 622	0.75	0.61	0.09	0.23	0.51	8580	968	0.58	0.24	0.37	0.34	—	0.20	0.19	
AL 644					0.89	17160	1848	1.15				0.20	0.20	0.58	
AL 666					1.28	25740	2134	1.71				0.20	0.20	0.96	
AL 688					1.67	34320	2750	2.27				0.20	0.20	1.36	
AL 822	1.00	0.82	0.13	0.31	0.65	14520	1782	1.03	0.31	0.50	0.45	—	0.27	0.25	
AL 844					1.17	29744	3300	2.03				0.27	0.27	0.77	
AL 866					1.69	43560	3938	3.02				0.27	0.27	1.29	
AL 888					2.19	58080	5060	4.02				0.27	0.27	1.80	
AL 1022	1.25	1.02	0.16	0.38	0.81	22000	2904	1.68	0.38	0.62	0.56	—	0.33	0.31	
AL 1044					1.45	44000	5566	3.31				0.33	0.33	0.96	
AL 1066					2.10	66000	6424	4.94				0.33	0.33	1.61	
AL 1088					2.72	88000	8316	6.56				0.33	0.33	2.23	
AL 1222	1.50	1.22	0.19	0.44	0.96	31020	4202	2.33	0.44	0.75	0.67	—	0.39	0.38	
AL 1244					1.73	62040	8074	4.61				0.39	0.39	1.15	
AL 1266					2.49	93060	9284	6.87				0.39	0.39	1.91	
AL 1288					3.26	124080	11990	9.13				0.39	0.39	2.68	
AL 1444	1.75	1.42	0.22	0.50	2.03	80080	9724	5.79	0.50	0.87	0.78	0.46	0.46	1.34	Please contact us for these dimensions
AL 1466					2.89	120120	11176	8.64				0.46	0.46	2.20	
AL 1644	2.00	1.61	0.25	0.56	2.29	103400	13002	7.60	0.57	1.00	0.89	0.52	0.52	1.53	
AL 1666					3.32	155100	14982	11.35				0.52	0.52	2.57	
BL 423	0.50	0.47	0.08	0.20	0.51	5280	990	0.48	0.20	0.25	0.25	—	0.25	0.24	
BL 434					0.68	8360	1122	0.66				0.08	0.17	0.41	
BL 446					0.93	11000	1320	0.76				0.17	0.25	0.66	
BL 466					1.08	16500	1386	1.13				0.17	0.17	0.81	
BL 523	0.63	0.59	0.09	0.23	0.60	8800	1672	0.77	0.24	0.31	0.31	—	0.30	0.29	
BL 534					0.79	13200	1914	1.06				0.10	0.20	0.48	
BL 544					0.89	17600	2024	1.21				0.20	0.20	0.58	
BL 546					1.08	17600	2222	1.51				0.20	0.30	0.77	
BL 566					1.28	26400	2332	1.80				0.20	0.20	0.97	
BL 623	0.75	0.71	0.13	0.31	0.78	15400	2442	1.15	0.31	0.37	0.37	—	0.39	0.39	
BL 634					1.04	23100	2794	1.60				0.13	0.26	0.65	
BL 644					1.17	30800	2970	1.81				0.26	0.26	0.78	
BL 646					1.44	30800	3234	2.25				0.26	0.39	1.05	
BL 666					1.69	46200	3410	2.69				0.26	0.26	1.30	
BL 823	1.00	0.95	0.16	0.38	0.97	23100	4444	1.90	0.38	0.50	0.50	—	0.49	0.48	
BL 834					1.29	34760	5060	2.64				0.17	0.33	0.80	
BL 844					1.45	46200	5368	3.01				0.33	0.33	0.96	
BL 846					1.77	46200	5896	3.74				0.33	0.49	1.28	
BL 866					2.10	67320	6182	4.48				0.33	0.33	1.61	
BL 1023	1.25	1.19	0.19	0.44	1.15	31680	7216	2.88	0.44	0.62	0.62	—	0.59	0.57	
BL 1034					1.54	50600	8228	4.00				0.20	0.39	0.96	
BL 1044					1.73	61600	8734	4.56				0.39	0.39	1.15	
BL 1046					2.11	63360	9570	5.68				0.39	0.59	1.53	
BL 1066					2.49	94600	10054	6.80				0.39	0.39	1.91	
BL 1223	1.50	1.43	0.22	0.50	1.32	44000	11132	3.71	0.50	0.75	0.75	—	0.69	0.67	
BL 1234					1.78	70400	12694	5.16				0.23	0.46	1.13	
BL 1246					2.45	88000	14740	7.33				0.46	0.69	1.80	
BL 1423	1.75	1.66	0.25	0.56	1.52	52800	14652	5.47	0.57	0.87	0.87	—	0.79	0.76	
BL 1434					2.05	86900	16698	7.60				0.26	0.52	1.30	
BL 1446					2.80	105600	19404	10.79				0.52	0.79	2.04	
BL 1623	2.00	1.90	0.28	0.69	1.75	80300	17336	7.05	0.69	1.00	1.00	—	0.89	0.86	
BL 1634					2.34	156200	20922	9.80				0.30	0.60	1.45	
BL 1646					3.23	160600	24244	13.92				0.60	0.89	2.34	

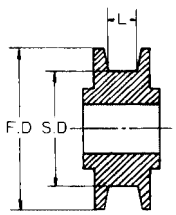
Selection of leaf chain

Please consider BL type for new applications. AL type was removed from ANSI B29.8 Leaf chain standard in 1977.

The chain size is selected according to the following formula:

Acting tension x Service factor < Maximum allowable load

Notes: 1. Acting tension includes the dead weight of the chain, the weight of the attachment and inertia.
2. If the chain speed exceeds 90ft/min, use a DID roller chain.



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

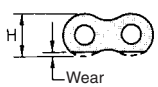
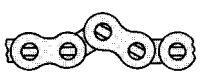
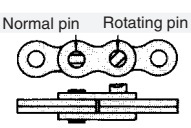
Minimum width between flanges: L = Overall length of pin x 1.05

- If connecting pins are provided: L1 x 1.05
  L1 is the value stated in the table of dimensions.
  F.D = S.D + Maximum link plate height (H)

Note: If dimension H exceeds 1.00, F.D = S.D 1.00 can be adopted as the minimum flange outer diameter.

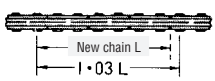
Periodical inspection and replacement for leaf chain

Be sure to provide periodical inspection and lubrication to maintain the safety and prolong chain life. Non-conforming conditions, and possible causes and solutions for such conditions for leaf chain are summarized in the following table.

Non-conforming condition	Possible Cause	Repair
Circumferential wear of plate 	Wear	Replace the chain if wear loss reaches 5 percent of H.
Oblique wear of plate and pin head 	Misalignment of guide or pulleys	Correct alignment.
Stiff link 	• Dust or foreign materials in articulation • Corrosion and rust • Bent pin (Plastic deformation)	• Wash and re-lubricate • Replace the chain. • Replace the chain.
Abnormal protrusion or rotation of pin head 	Excessive tension or insufficient lubrication for the load	Replace the chain, improve lubrication and eliminate overload.

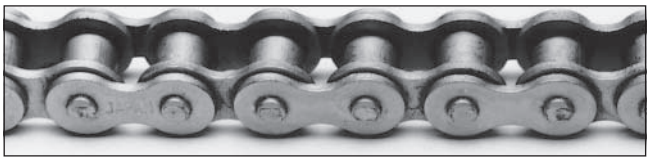
Service factor

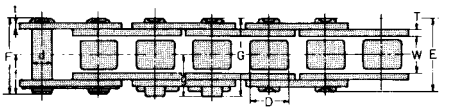
Nature of load		Service factor	Examples of applications	Recommendation
Smooth transmission	When start and stop are smooth with small load varies.	1.0	For lifting a balance weight	AL type
With some light to medium shock	When start, stop, load variation or reversing occurs often.	1.2	Forklift, etc.	AL type and BL type
With large shock	When sudden start, stop or reversing occurs and when the load varies greatly.	1.4	Mining, construction machine, etc.	BL type and DID roller chains

Non-conforming condition	Possible Cause	Repair
Wear elongation 	Wear Plastic deformation (elongation) due to overload	Replace the chain at 1.03L. Note: Wear elongation of a chain reduces its tensile strength. Wear elongated of 3% reduces 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	Overload conditions	Replace the chain with a chain larger in maximum allowable load, or eliminate the overload condition or dynamic (shock) overload.
Cracked plate (2)  Crack: In an oblique direction against tension direction	Heavy rust or exposure to an acidic or corrosive environment	Replace the chain and protect from corrosive environment.
Broken plate (Tension direction) 	High level of overload	Replace the chain and eliminate the cause of overload.
Extended plate hole 	High level of overload	Replace the chain and eliminate the cause of overload.
Pitting Corrosion	Corrosive environment	Replace the chain and protect from corrosive environment.
Wear of connecting pin	Normal wear	Exchange the worn component.

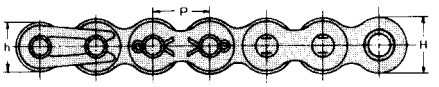
British Standard Roller Chain

DID British Standard roller chain conform to the ISO "B series". The chain in conformity with the ISO-B standard is manufactured with the British Standard and German Standard.
For sprockets, use those in conformity with the British Standard.

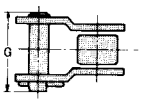




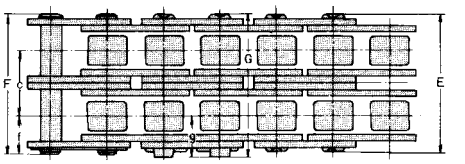
Clip Type
(12B & Smaller)

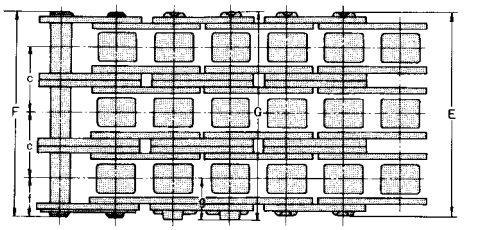


Cotter Type
(16B & Larger)



Offset Link





Dimensions

Unit (inch)

Chain No.		Pitch	Roller Link Width	Roller (Bush) Dia.	Pin						Trans verse	Plate				ISO "B" Min. Tensile Strength	DID Avg. Tensile Strength	Approx. Weight
DID	ISO "B"	P	W	D	d	E	F	G	f	g	c	T	t	H	h	lbs	lbs	(lbs/FT)
RC04B	04B	0.236	0.110	0.157	0.073	0.254	0.289		0.163			0.025	0.025	0.193	0.193	660	748	0.080
RC05B	05B	0.315	0.118	0.197	0.091	0.299	0.339		0.189		0.222	0.030	0.030	0.280	0.244	990	1276	0.121
RC05B-2	05B-2					0.522	0.561									1760	2068	0.228
RC06B	06B	0.375	0.225	0.250	0.129	0.518	0.535		0.291		0.403	0.051	0.039	0.323	0.323	2002	2354	0.262
RC06B-2	06B-2					0.896	0.941									3784	4356	0.496
RC06B-3	06B-3					1.299	1.350									5588	6160	0.738
RC08B	08B	0.500	0.305	0.335	0.175	0.657	0.713		0.390		0.548	0.059	0.059	0.469	0.409	4004	4400	0.449
RC08B-2	08B-2					1.209	1.260									6974	7700	0.872
RC08B-3	08B-3					1.756	1.811									9988	11000	1.287
RC10B	10B	0.625	0.380	0.400	0.200	0.744	0.803		0.429		0.653	0.059	0.059	0.579	0.512	4972	5720	0.577
RC10B-2	10B-2					1.398	1.457									9988	11440	1.127
RC10B-3	10B-3					2.055	2.114									14960	17160	1.703
RC12B	12B	0.750	0.460	0.475	0.225	0.874	0.929		0.500		0.766	0.071	0.071	0.634	0.575	6490	7040	0.764
RC12B-2	12B-2					1.642	1.697									12958	14080	1.529
RC12B-3	12B-3					2.413	2.469									19448	21120	2.320
RC16B	16B	1.000	0.670	0.625	0.326	1.378	0.000	1.500		0.811	1.255	0.157	0.126	0.819	0.819	13464	14300	1.717
RC16B-2	16B-2					2.638	0.000	2.756								23782	28600	3.433
RC16B-3	16B-3					3.898	0.000	4.012								35904	42900	5.090
RC20B	20B	1.250	0.770	0.750	0.401	1.614	0.000	1.732		0.925	1.435	0.177	0.138	1.024	1.024	21318	22000	2.555
RC20B-2	20B-2					3.047	0.000	3.169								38148	44000	5.076
RC20B-3	20B-3					4.488	0.000	4.606								56078	66000	7.577
RC24B	24B	1.500	1.000	1.000	0.576	2.102	0.000	2.311		1.260	1.904	0.236	0.197	1.224	1.224	35904	37400	4.748
RC24B-2	24B-2					4.008	0.000	4.217								62810	74800	9.321
RC24B-3	24B-3					5.913	0.000	6.122								95348	112200	13.881

Note: 1. The plate shape of 06B is straight edged.
2. The connecting link for 06B-12B is clip type and that for 16B-24B is cotter pin type.

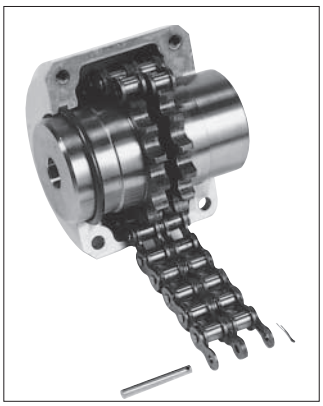
4. Other Roller Chain Products

Roller chain coupling

Features

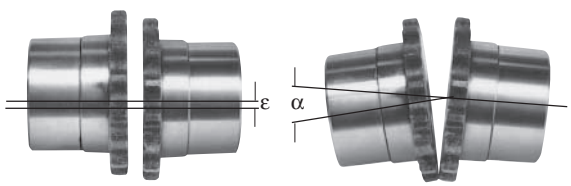
1. Simple structure

A roller chain coupling consists of one duplex roller chain and two sprockets for a single strand chain. A drive shaft and a driven shaft can be connected and disconnected by simply 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 in the engagement 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 used 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 and powerful

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

4 . Excellent durability

Precision roller chain is made of heat-treated steel and manufactured under the highest manufacturing standard. The sprockets have induction-hardened special teeth, and are always engaged with the roller chain. Therefore, the durability is outstanding.

5 . Protection of machine

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

Standard case

The standard case for the 8022 or smaller is an aluminum alloy die casting and for 10020 or larger, an aluminum alloy casting. If a case is installed for a roller chain coupling, the following benefits can be obtained.

1. Benefits of case

- Holding of lubrication
  Since a roller chain coupling rotates together, the teeth of the sprockets and roller chain slide slightly during operation.So, they must be kept lubricated to minimize the wear. Therefore, the case works as a grease box for the lubrication.
- Prevention of splashing of grease
  Especially in high speed rotation, grease may splash by centrifugal force. The case works as a grease cover.
- Protection from dust and moisture (corrosive atmosphere)
  When a roller chain coupling is used in abrasive or corrosive environment, the service life is dramatically reduced unless the coupling is perfectly shielded from the atmosphere. The case protects the roller chain coupling from environmental attack.
- High safety and beautiful appearance
  Since he case has no protrusions outside, it is safe even if it rotates with the roller chain coupling. It is also beautiful in appearance. (To avoid possible injury, do not rotate.)

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 case firmly holds the coupling's sprocket hub. The hole on the driven shaft side keeps a clearance of 0.039" or more from the sprocket hub to maintain flexibility of the coupling. Oil leakage from this portion is prevented by O-rings.

⚠ Cautions

For safe operationss	• Always wear clothing suitable for work and proper protection (safety glasses, safety shoes, etc.) • Strictly observe Section 1 "General standards (orevebtion of danger by prime movers, revolution shafts, etc.), Chapter 1, Part 2 of Occupational Safety and Health Regulations. • Be sure to switch off the electric powersource or any other power source before starting work, and ensure that the power is never accidently switched on. Furthermore, exercise care not to allow your clothes and any part of the body to be caught by the chain and sprockets, or by any other nearby equipment.
Case & safety device	For lubrication type C, see "Table of Lubrication Types" be sure to install a case, and for lubrication type B, install a case for safety. • For installing the roller chain coupling into a high speed machine or heavily vibrating machine, coat the bolts with a loosening preventative. • Install a safety cover to prevent any unexpected bolt loss, broken case, broken chain, etc.
Inhibition of modification, partial re-use and partial replacement	• Partial replacement or re-use of the coupling will lower the strength of the coupling, causing breaking or destruction. Furthermore, since the coupling is heat-treated, never modify the cotter holes, etc. When replacement is necessary, replacement the roller chain coupling or case respectively as a set.
Noise	• Noise during operation can be considered as a sing of trouble or time to replace. Immediately switch off the power, and determine the cause.

Lubrication of roller chain coupling

The lubrication of a roller chain coupling belongs to any one of the listed three types of A, B and C, depending on the rotating speed. Refer to “General selection” on (P.71)

1. Lubrication grease

Lubrication type A	Grease every month.
Lubrication type B	Grease once every 1 to 2 weeks, and install a case.
Lubrication type C	Be sure to install a case, and replace grease every 3 months.

2. Lubrication grease

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

- Excellent in mechanical stability, oxidation stability and viscosity.
- Grease based on metallic soap for low speed, grease based on sodium soap, ie., fiber grease can be used, but for high speed (in the range of lubrication types B and C), be sure to use grease based on lithium soap.

3. Grease filling amount

The amount of grease to be filled into the case should be as listed below.

Roller Chain Coupling No.	Required Amount of Grease (lbs.)	Roller Chain Coupling No.	Required Amount of Grease (lbs.)
RD4012	0.22	RD10020	3.96
RD4014	0.286	RD12018	7.04
RD4016	0.374	RD12022	9.68
RD5014	0.484	RD16018	15.84
RD5016	0.572	RD16022	21.78
RD5018	0.792	RD20018	25.96
RD6018	1.1	RD20022	34.76
RD6022	1.54	RD24022	48.18
RD8018	1.98	RD24026	61.82
RD8022	2.64		

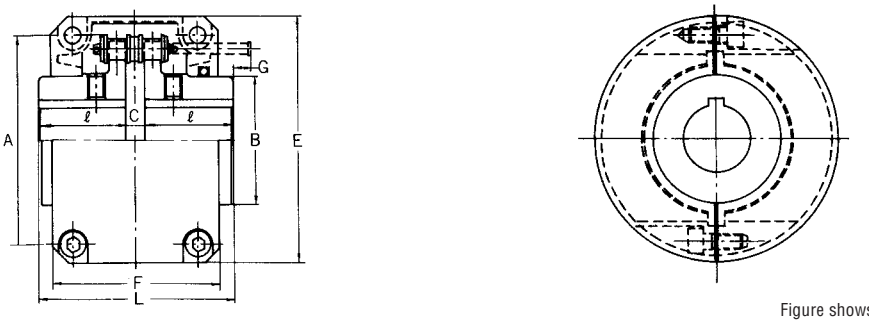


Figure shows that a case is set in the chain coupling.

Dimensions

Unit (inch)

Roller Chain Coupling No. DID	JIS	Applicable Range of Shaft Dia	Prepared Hole Dia.	E	F	A (max.)	L	I	C	B	G	Locking Screw Bolt	Max. Allowable Torque of Under 50rpm	Allowable rpm	Approx. Weight lbs	Moment of inertia x10 lbs	GD2 x 10^{-3} ft lbs^2
RD4012	4012	0.433-0.866	0.394	2.953	2.953	2.402	3.126	1.417	0.291	1.378	0.354	M6	1.419	4800	2.42	13.03	52.10
RD4014	4014	0.551-1.102	0.394	3.307	2.953	2.717	3.126	1.417	0.291	1.693	0.354	M6	1.878	4800	2.86	22.97	91.18
RD4016	4016	0.630-1.260	0.551	3.622	2.953	3.031	3.441	1.575	0.291	1.969	0.236	M6	2.392	4800	4.07	34.10	136.41
RD5014	5014	0.630-1.378	0.551	4.016	3.346	3.386	3.925	1.772	0.382	2.087	0.433	M8	3.537	3600	5.94	66.31	265.25
RD5016	5016	0.709-1.575	0.551	4.370	3.346	3.780	3.925	1.772	0.382	2.362	0.433	M8	4.510	3600	7.15	87.63	350.51
RD5018	5018	0.709-1.772	0.551	4.803	3.346	4.173	3.925	1.772	0.382	2.756	0.433	M8	5.582	3000	9.35	133.34	532.87
RD6018	6018	0.866-2.205	0.709	5.591	4.173	5.039	4.862	2.205	0.453	3.346	0.591	M10	10.338	2500	16.06	325.17	1300.20
RD6022	6022	1.102-2.953	0.709	6.575	4.173	5.984	4.862	2.205	0.453	4.331	0.591	M10	14.920	2500	25.52	698.65	2794.59
RD8018	8018	1.260-3.150	0.906	7.323	5.118	6.693	5.559	2.480	0.598	4.528	1.063	M12	22.352	2000	35.53	1231.52	4926.06
RD8022	8022	1.575-3.937	1.102	8.661	5.118	7.992	6.189	2.795	0.598	5.512	0.748	M12	32.187	1800	53.46	2628.81	10515.25
RD10020	10020	1.772-4.331	1.575	10.039	6.299	9.196	7.039	3.150	0.740	6.299	1.142	M12	47.889	1800	87.34	5778.65	23114.61
RD12018	12018	1.969-4.921	1.772	11.024	7.244	10.063	7.980	3.543	0.894	6.693	1.850	M12	72.644	1500	118.36	9331.10	37300.73
RD12022	12022	2.165-5.512	1.969	12.992	7.480	11.965	8.768	3.937	0.894	7.874	1.457	M12	104.496	1250	169.62	18496.42	73938.33
RD16018	16018	2.480-6.299	2.165	14.764	9.449	13.415	10.004	4.409	1.185	8.858	2.520	M16	150.876	1100	237.6	34411.40	137621.91
RD16022	16022	3.150-7.874	2.756	17.323	9.646	15.951	12.209	5.512	1.185	11.024	1.417	M16	217.373	1000	411.4	76306.63	305273.87
RD20018	20018	3.228-8.071	2.953	18.307	11.220	16.771	17.224	7.874	1.476	11.417	0.591	M20	308.458	800	629.2	120735.93	482896.37
RD20022	20022	3.937-10.039	3.543	21.457	11.811	19.941	18.799	8.661	1.476	14.173	0.000	M20	443.687	600	968	263118.13	1052709.35
RD24022	24022	4.724-12.205	4.331	25.591	13.386	23.930	25.591	11.909	1.772	17.520	0.000	M20	782.320	600	1911.8	734173.00	2939060.30
RD24026	24026	5.906-14.173	5.512	29.331	13.780	27.739	27.559	12.894	1.772	20.669	0.000	M20	1061.720	500	2772	1417427.55	5669710.20

Note: 1. Dimension G indicates the required margin for assembling and disassembling of the dollar roller chain coupling.
2. Allowable rpm is applicable only when the case is mounted together.
3. The weight of both case and grease is included in approx. weight and GD^2

Selection of roller chain coupling

1. General selection

1. Based on the type of prime mover, operation time per day, and the type of load, identify the service factor in the table of service factors.
2. Multiply the horsepower to be transmitted, by the service factor identified in the following table, to obtain a corrected horsepower to be transmitted(HP). Horsepower to be transmitted (HP) x Service factor = corrected horsepower to be transmitted (HP)
3. In the following table of maximum horsepower ratings of roller chain couplings, there is a maximum horsepower rating at the speed concerned which exceeds, for the first time, the corrected power to be transmitted. Select the maximum horsepower rating.
4. If the necessary shaft diameter is within the shaft diameter range of the selected roller chain coupling, select the coupling. When the shaft diameter exceeds the maximum shaft diameter of the roller chain coupling, select the next larger coupling.

A table of JIS/ANSI key way dimensions is shown on the following page

Service Factor

Type of impact	Operating Time/Day	Source of Power		
		Electric Motor or Turbine	Steam Engine/ Gasoline Engine (with 4 cylinders or more)	Diesel Engine/ Gas Engine
Smooth (no inversion)	8 hours or less	1.0	1.5	2.0
	8 - 16 Hours	1.5	2.0	2.5
	Over 16 Hours	2.0	2.5	3.0
Some Impact (no inversion)	8 hours or Less	1.5	2.0	2.5
	8 - 16 Hours	2.0	2.5	3.0
	Over 16 Hours	2.5	3.0	3.5
Large Impact	8 hours or Less	2.0	2.5	3.0
	8 - 16 Hours	2.5	3.0	3.5
	Over 16 Hours		3.5	4.0

Note: Service Factor of 8 Hours or Less to be applied when the revolution is under 50 rpm

2. Selection Chart in Use with Directly Connected Electric Motor

Electric Motor			Roller Chain Coupling No.
Output (HP)		Shaft Dia.(inch)	
4 poles	6 poles	E Type	
0.54	—	0.551	RD4012
1.01	0.54	0.748	
2.01	1.01	0.945	RD4016
2.95	2.01	1.102	
4.96	2.95	1.102	
7.37	4.96	1.496	RD5016
10.05	7.37	1.496	
14.75	10.05	1.654	RD5018
—	14.75	1.654	

Note: 1. General selecting method to be applied when the output of motor exceeds 20.11 HP.
2. Table of Dimensions of Roller Chain Coupling is applied when the shaft diameter of motor is not given in the table above.

Max Horsepower Ratings of Roller Chain Coupling

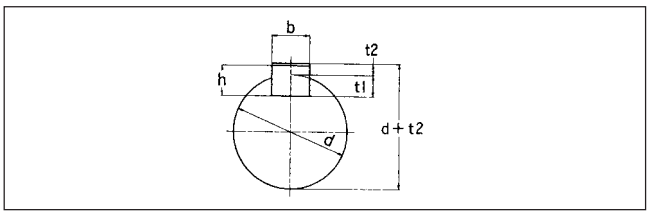
Unit (hp)

Roller Chain Coupling No.	Max. Allowable Torque under 50rpm	Number of Revolution (rpm)																								
		1	5	10	25	50	100	200	300	400	500	600	800	1000	1200	1500	1800	2000	2500	3000	3600	4000	4800	5200	6000
RD 4012	183.3	0.04	0.17	0.35	0.87	1.76	2.68	4.17	5.44	6.58	7.67	8.69	10.6	12.5	14.2	16.9	19.4	21.0	25.3	29.4	34.3	37.7	44.2		
RD 4014	242.5	0.04	0.23	0.47	1.15	2.32	3.55	5.52	7.20	8.71	10.1	11.5	14.1	16.5	18.9	22.4	25.7	27.9	33.5	38.9	45.4	49.7	58.4		
RD 4016	308.9	0.05	0.29	0.59	1.47	2.95	4.53	7.04	9.17	11.1	12.9	14.6	17.8	21.0	24.0	28.4	32.8	35.7	42.6	49.6	57.9	63.4	74.5		
RD 5014	456.9	0.09	0.44	0.87	2.18	4.36	6.69	10.4	13.5	16.4	19.0	21.6	26.4	31.1	35.5	42.1	48.4	52.7	63.0	73.3	85.5				
RD 5016	582.5	0.11	0.55	1.11	2.77	5.55	8.51	13.2	17.2	20.8	24.3	27.5	33.6	39.5	45.3	53.6	61.8	67.0	80.3	93.4	109				
RD 5018	721.1	0.13	0.68	1.38	3.45	6.88	10.5	16.4	21.3	25.9	30.0	34.0	41.7	49.1	56.0	66.4	76.4	83.1	99.5	116					
RD 6018	1335.3	0.25	1.27	2.56	6.39	12.8	19.6	30.4	39.7	48.0	55.9	63.4	77.6	91.3	104	123	142	154	185						
RD 6022	1927.2	0.36	1.84	3.67	9.20	18.4	28.2	43.8	57.1	69.2	80.4	91.3	112	131	150	177	204	221	265						
RD 8018	2887.1	0.55	2.76	5.51	13.7	27.6	42.2	65.7	85.5	104	121	137	166	196	224	265	306	332							
RD 8022	4157.5	0.79	3.97	7.92	19.8	39.7	60.7	94.4	123	149	173	196	240	283	323	382	441	479							
RD 10020	6185.7	1.18	5.90	11.8	29.5	59.0	90.3	139	182	221	257	292	358	421	481	570	655								
RD 12018	9383.2	1.78	8.94	17.8	44.8	89.4	137	213	277	336	391	444	543	638	729	863									
RD 12022	13497.4	2.57	12.9	25.7	64.3	129	197	306	399	484	563	638	782	918	1050										
RD 16018	19488.2	3.73	18.6	37.3	93.2	186	286	444	578	701	815	925	1133	1330											
RD 16022	28077.4	5.36	26.8	53.6	134	268	410	638	832	1008	1173	1330	1622	1903											
RD 20018	39842.5	7.60	37.94	76	190	379	582	905	1180	1421	1662	1877	2306												
RD 20022	57309.7	10.9	54.7	109	273	547	838	1302	1689	2051	2386	2708													
RD 24022	101049.9	19.3	96.8	193	484	968	1475	2306	3003	3633	4236	4799													
RD 24026	137139.1	26.1	131	261	655	1310	1997	3110	4062	4920	5724														
Lubrication Method		A		B			C																		

Note: Please refer to P.70 for Type of Lubrication

3. Dimensions of Standard Key Slot

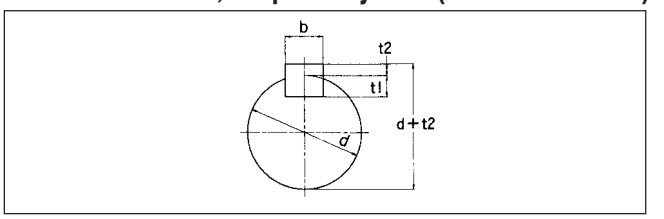
New Standard Key Slot (JIS 1301-1976)



Unit (inch)

Shaft Dia. d				Dimension of Key b x h			Depth of Key Slot			
							Axle t1	Hub d+t2		
								Parallel Key		Sloped Key
0.236	over	less than	0.315	0.079	x	0.079	0.047	d+	0.039	d+ 0.020
0.315	"	"	0.394	0.118	x	0.118	0.071	d+	0.055	d+ 0.035
0.394	"	"	0.472	0.157	x	0.157	0.098	d+	0.071	d+ 0.047
0.472	"	"	0.669	0.197	x	0.197	0.118	d+	0.091	d+ 0.067
0.669	"	"	0.866	0.236	x	0.236	0.138	d+	0.110	d+ 0.087
0.787	"	"	0.984	0.276	x	0.276	0.157	d+	0.118	d+ 0.118
0.866	"	"	1.181	0.315	x	0.276	0.157	d+	0.130	d+ 0.094
1.181	"	"	1.496	0.394	x	0.315	0.197	d+	0.130	d+ 0.094
1.496	"	"	1.732	0.472	x	0.315	0.197	d+	0.130	d+ 0.094
1.732	"	"	1.969	0.551	x	0.354	0.217	d+	0.150	d+ 0.114
1.969	"	"	2.165	0.591	x	0.394	0.197	d+	0.197	d+ 0.197
1.969	"	"	2.283	0.630	x	0.394	0.236	d+	0.169	d+ 0.134
2.283	"	"	2.559	0.709	x	0.433	0.276	d+	0.173	d+ 0.134
2.559	"	"	2.953	0.787	x	0.472	0.295	d+	0.193	d+ 0.154
2.953	"	"	3.346	0.866	x	0.551	0.354	d+	0.213	d+ 0.173
3.150	"	"	3.543	0.945	x	0.630	0.315	d+	0.315	d+ 0.315
3.346	"	"	3.740	0.984	x	0.551	0.354	d+	0.213	d+ 0.173
3.740	"	"	4.331	1.102	x	0.630	0.394	d+	0.252	d+ 0.213
4.331	"	"	5.118	1.260	x	0.709	0.433	d+	0.291	d+ 0.252
4.921	"	"	5.512	1.378	x	0.866	0.433	d+	0.433	d+ 0.433
5.118	"	"	5.906	1.417	x	0.787	0.472	d+	0.331	d+ 0.280
5.512	"	"	6.299	1.496	x	0.945	0.472	d+	0.472	d+ 0.472
5.906	"	"	6.693	1.575	x	0.866	0.512	d+	0.370	d+ 0.319
6.299	"	"	7.087	1.654	x	1.024	0.512	d+	0.512	d+ 0.512
6.693	"	"	7.874	1.772	x	0.984	0.591	d+	0.409	d+ 0.358
7.874	"	"	9.055	1.969	x	1.102	0.669	d+	0.449	d+ 0.398

Standard Parallel, Sloped Key Slot (JIS B 1301-1959)

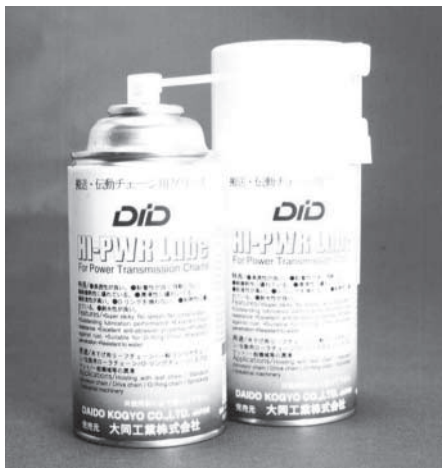


Unit (inch)

Shaft Dia. d				Dimension of Key b x h (t2 + t1)			Depth of Key Slot	
							Axle t1	Hub d+t2
0.394	and over	less than	0.512	0.157	x	0.157	0.098	d+ 0.059
0.512	over	"	0.787	0.197	x	0.197	0.118	d+ 0.079
0.787	"	"	1.181	0.276	x	0.276	0.157	d+ 0.118
1.181	"	"	1.575	0.394	x	0.315	0.177	d+ 0.138
1.575	"	"	1.969	0.472	x	0.315	0.177	d+ 0.138
1.969	"	"	2.362	0.591	x	0.394	0.197	d+ 0.197
2.362	"	"	2.756	0.709	x	0.472	0.236	d+ 0.236
2.756	"	"	3.150	0.787	x	0.512	0.276	d+ 0.236
3.150	"	"	3.740	0.945	x	0.630	0.315	d+ 0.315
3.740	"	"	4.331	1.102	x	0.709	0.354	d+ 0.354
4.331	"	"	4.921	1.260	x	0.787	0.394	d+ 0.394
4.921	"	"	5.512	1.378	x	0.866	0.433	d+ 0.433
5.512	"	"	6.299	1.496	x	0.945	0.472	d+ 0.472
6.299	"	"	7.087	1.654	x	1.024	0.512	d+ 0.512
7.087	"	"	7.874	1.772	x	1.102	0.551	d+ 0.551
7.874	"	"	8.819	1.969	x	1.240	0.630	d+ 0.610
8.819	"	"	9.843	2.205	x	1.398	0.709	d+ 0.689

DID Chain Lube (300 ml) HI-PWR-LUBE

Chain lube is a spray type oil developed specifically for chain and has excellent features that include the wear elongation life of the chain can be lengthened and the transmission efficiency can be exhibited to the maximum range.



Note: available in our stock.

Applications

- Transmission roller chain
- Sealed chain
- Leaf chain
- General conveyor chain
- Motorcycle chain
- Bicycle chain
- Sprocket

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.

⚠ precautions

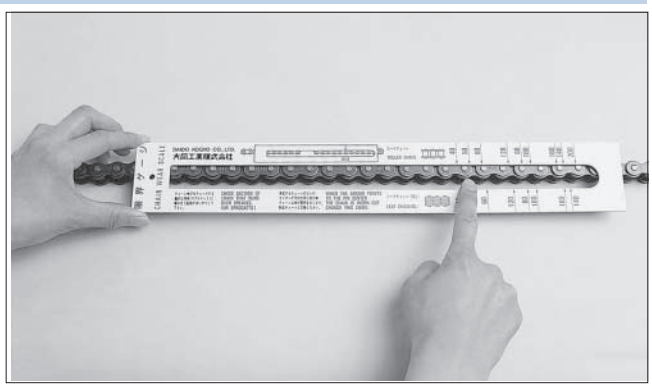
Warning	. Must not be inhaled or swallowed: Since it is toxic, do not inhale or swallow. Do not point it toward any person when using it.
	. A class 2 organic solvent is contained. If the sprayed liquid directly contacts fire, a toxic gas may be generated. Never use it near fire.
Flammable	. If a person with sensitive skin touches it, he/she may have an outbreak on the skin. So, wear protective gloves.
	. Do not leave it in a place exposed to direct sunlight or in a garage since it is combustible.
	. Since it is flammable, keep it away from fire.
Combustible	. Do not leave it in a place which can be reached by children.
Emergency action	. If anyone should drink it, do not induce vomiting. Contact a doctor immediately. If it enters an eye, wash it away with fresh water, without rubbing the eye. If irritation persists, contact a doctor immediately.
	. If it should come in contact with the skin, immediately sufficiently wash with water and soap.
	. If someone feels sick, immediately stop using it, and provide fresh ventilation. If any abnormal feeling persists, contact a doctor immediately. A person suffering from a respiratory disease is required to use it carefully.
Cautions for use	. Do not use it for any purpose other than lubrication and rust prevention.
	. Since inhaling it is harmful, use it in a well ventilated place,
	. Use it while keeping it away from the eyes and skin.
	. Keep away from clothes and keep it out of reach of children.
Storing and disposal Methods	. Do not store at temperatures above 40^0 C. Use only as directed.
	. For final disposal of the container, use all the chain lube inside and, before disposing, keep pressing the button outdoors and away from fire, till no spray sound is heard.

Chain wear-elongation check gage

This gage is designed for easy checking of the wear-elongation.

- Check the chain elongation at a portion which is most frequently engaged with the sprocket (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 chain wear-elongation check gage to roughly know the wear elongation of your chain.



5. Sprockets

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 RC50, RC50HK, and RC50LLDR can be engaged with a sprocket RC50. It is followed by symbols and characters indicating the number of strands of the chain, the number of teeth of the sprocket, hub type, tooth head hardening, etc.

DID80-2-B-21NT-Induction Hardened Tooth Heads

- DID80: Sprocket for RC80 double strand chain
- 2: double strand
- B: Hub type
- 21: 21 teeth
- NT: Induction Hardened Tooth Heads

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, a table of JIS/ANSI key way dimensions is shown on P. 72.

Hardening of tooth heads

The teeth of a sprocket are impacted when engaged with the Rollers of the chain, and worn by sliding with the rollers. So, they are required to be tough and resistant against wear.
If severe wear and large shocks are anticipated, carbon steel or cast steel is used and induction-hardened.
The standard sprockets RC40 to RC120 with a hub on one side only for single and double strand chain are induction-hardened even if the number or teeth is small. Whether or not induction hardening is effected is shown in the tables of dimensions of respective sprockets (P.76-P.88) for your reference. Furthermore, in the following cases, induction-harden the teeth of the sprocket.

- A smaller sprocket which has 20 or less teeth and is used at 1/6 or more of the maximum speed stated in the table of maximum horsepower ratings.
- A smaller sprocket which is used at a change gear ratio of 4: 1 or more.
- A small sprocket on which a low speed large load acts as in the case of selection based on the “Slow-speed selection.
- A sprocket used in an environment where the teeth are heavily worn.
- A sprocket very frequently started and stopped or suddenly rotated regularly and reversely.

General cautions

For selecting the number of teeth and speed ratio of the sprocket, see “How to select proper chain” in Chapter 6.
For cautions for installing a sprocket on a shaft and replacement timing, see Chapter 7 “Installation adjustment maintenance”.

Types, construction and materials

Type	Construction		Material
Flat plane (A type)		Without hub. A standard sprocket is not hardened at the tooth heads.	Carbon Steel for General Structural Purpose (SS400)
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 for the shaft diameter range used. Two kinds of integral structure (B type) and welded structure (BW type) are available.	Carbon Steel for Machine Structural Purpose (S35C) Cast Steel (SCC3) Carbon Steel for General Structural Purpose (SS400)
Hub on both side (C type)	 Single  Single  Double  Double	A sprocket with hubs on both sides. The standard hub diameter and hub length are set for the shaft diameter range used. Integral construction and welded construction are available.	Carbon Steel for Machine Structural Purpose (S35C) Cast Steel (SCC3)

Dimensions of sprocket

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

1. Standard sprocket

Standard sprockets are JIS/ANSI sprockets which can be engaged with standard series roller chains, and their dimensions are stated in P.76 - P.78. JIS/ANSI tooth gap forms include U-tooth with a circumferential clearance kept between the pressure face of the tooth and the roller, and S-tooth form without it. Our standard sprockets adopt the S-tooth form. For details of tooth gap forms, see P.90.

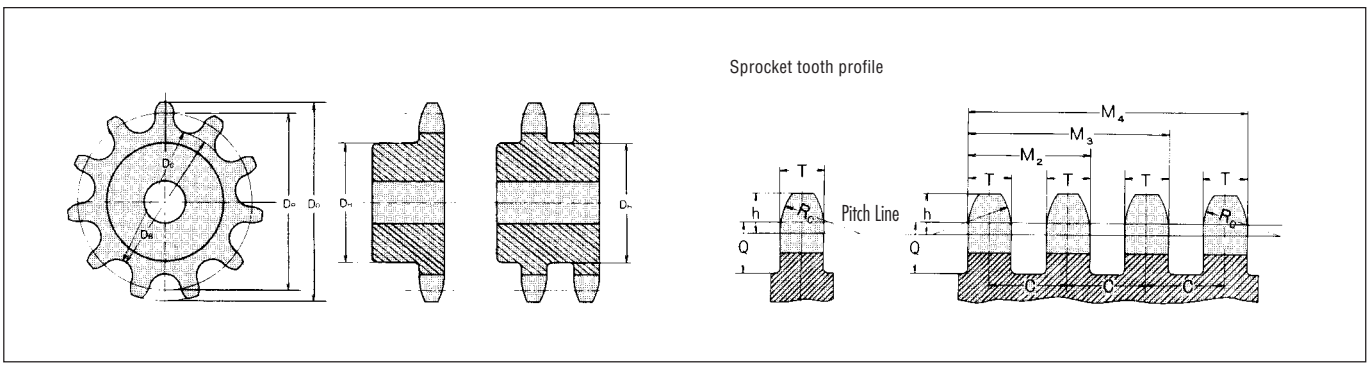
2. HK sprocket

HK sprockets can be engaged with HK series roller chains, and ,those for single strand chains are quite the same as standard sprockets. However, sprockets for multiple strand chains are different from standard sprockets in sprocket tooth profile. See the corresponding table of P.76.

3. Other sprockets

Other sprockets are designed according to the following calculation formulas to suit respective speciality chain. Calculation results of sprocket tooth profiles of main sprockets are shown in the corresponding table on P.76. 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)
RC40=DID415, DID420
RC50=DID520, DID525
RC60=DID630



4. Calculation of sprocket dimensions

The dimensions of standard sprockets and other general sprockets are calculated as follows. At first, the diameters of a sprocket are calculated from the following calculation formulas. Calculation formulas of tooth gap forms are shown on P. 90.

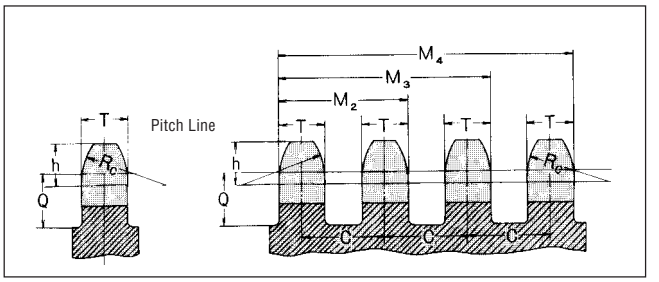
Calculation formulas of diameters (For simple calculation methods, see P. 89.)

Calculation formulas of diameters (For simple calculation methods, see P.89.)

Item	Formula
Pitch diameter (Dp)	$Dp = \frac{P}{\sin\frac{180^0}{N^0}}$ P: Chain pitch N: Number of sprocket teeth
Standard tip diameter (Do)	$Do = P\ (0.6+\cot\frac{180^0}{N})$
Root diameter (Da)	$D_B = Dp - Dr$ Roller outer diameter
Caliper diameter (Dc)	When the number of teeth is even $D_C = D_B$ When the number of teeth is odd $D_C = Dp\cos\frac{90^0}{N} - Dr$ $= P\frac{1}{2\sin\frac{180^0}{2N}} - Dr$
Maximum hub diameter and maximum groove diameter	$D_H = P\left(\cot\frac{180^0}{2N} - 1\right) - 0.76/25.4$

Calculation formulas of sprocket tooth profile

Item	Formula
Tooth width (T)	In the case of single strand T=1.93W–0.15/25.4 In the case of double and triple strand T=0.90W–0.15/25.4 In the case of 4 strand and 5 strand T=0.86W–0.30/25.4 W: Inner width of chain
Transverse pitch (C)	C=W+ (4.22X Plate thickness)
Total tooth width (M)	M=C (Number of chain rows–1) +T
Total face radius (Rc)	Rc≒1.063P (Minimum)
Center position of Rc (h)	h≒0.5P P : Chain pitch
Depth of face (groove) from pitch line to maximum hub diameter (Q)	Q≒0.5P



Standard Sprocket Tooth Profile

Unit (inch)

Sprocket No.	Dimensions of Single and Multiplex Sprocket												
	ANSI No.	Center Position of **Rc** **h**	Radius of Tooth Form (min.) **Rc**	Depth of Slot **Q**	Transverse Pitch **C**	Tooth Width (Max.)			Total Tooth Width				
						Single	Double Triple	Multi-plex	M2	M3	M4	M5	M6
DID 25	25	0.126	0.268	0.138	0.252	0.110	0.106	0.094	0.358	0.610	0.850	1.102	1.354
DID 35	35	0.189	0.402	0.205	0.398	0.169	0.161	0.150	0.559	0.957	1.343	1.740	2.138
DID 41	41	0.252	0.531	0.276	—	0.228	—	—	—	—	—	—	—
DID 40	40	0.252	0.531	0.276	0.567	0.283	0.276	0.256	0.843	1.409	1.957	2.524	3.091
DID 50	50	0.311	0.665	0.346	0.713	0.343	0.331	0.311	1.043	1.756	2.449	3.161	3.874
DID 60	60	0.374	0.799	0.417	0.898	0.461	0.445	0.417	1.343	2.240	3.110	4.008	4.906
DID 80	80	0.500	1.063	0.555	1.154	0.575	0.555	0.524	1.709	2.862	3.984	5.138	6.291
DID 100	100	0.626	1.331	0.693	1.409	0.693	0.669	0.634	2.079	3.488	4.862	6.272	7.681
DID 120	120	0.752	1.594	0.831	1.787	0.925	0.894	0.846	2.681	4.469	6.209	7.996	9.783
DID 140	140	0.874	1.862	0.972	1.925	0.925	0.894	0.846	2.819	4.744	6.622	8.547	10.472
DID 160	160	1.000	2.126	1.110	2.303	1.157	1.118	1.063	3.421	5.724	7.972	10.276	12.579
DID 180	180	1.126	2.394	1.248	2.591	1.303	1.260	—	3.850	6.441	—	—	—
DID 200	200	1.252	2.657	1.386	2.819	1.390	1.343	1.280	4.161	6.980	9.736	12.555	15.374
DID 240	240	1.500	3.189	1.665	3.457	1.736	1.681	1.602	5.138	8.594	11.972	15.429	18.886

HK Type Sprocket Tooth Profile

Unit (inch)

Sprocket No.	Dimensions of Single and Multiplex Sprocket								
	ANSI No.	Center Position of **Rc** **h**	Radius of Tooth Form (min.) **Rc**	Depth of Slot **Q**	Transverse Pitch **C**	Tooth Width (Max.)		Total Tooth Width (Max.)	
						Single	Double Triple	M2	M3
DID 25H	25H	0.126	0.268	0.138	—	0.110	—	—	—
DID 35HK	35H	0.189	0.402	0.205	—	0.169	—	—	—
DID 40HK	40H	0.252	0.531	0.276	—	0.283	—	—	—
DID 50HK	50H	0.311	0.665	0.346	—	0.343	—	—	—
DID 60HK	60H	0.374	0.799	0.417	—	0.46	—	—	—
DID 80HK	80H	0.500	1.063	0.555	1.283	0.575	0.555	1.839	3.122
DID 100HK	100H	0.626	1.331	0.693	1.539	0.693	0.669	2.209	3.748
DID 120HK	120H	0.752	1.594	0.831	1.925	0.925	0.894	2.819	4.744
DID 140HK	140H	0.874	1.862	0.972	2.055	0.925	0.894	2.949	5.004
DID 160HK	160H	1.000	2.126	1.110	2.437	1.157	1.118	3.555	5.992
DID 180HK	180H	1.126	2.394	1.248	2.724	1.303	1.260	3.984	6.709
DID 200HK	200H	1.252	2.657	1.386	3.083	1.390	1.343	4.425	7.508
DID 240HK	240H	1.500	3.189	1.665	3.984	1.736	1.681	5.665	9.650

Other Sprocket Tooth Profile

Unit (inch)

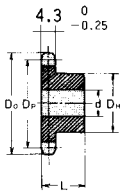
Sprocket No.	Dimensions of Single and Multiplex Sprocket							
	Center Position of **Rc** **h**	Radius of Tooth Form (min.) **Rc**	Depth of Slot **Q**	Transverse Pitch **C**	Tooth Width (Max.)		Total Tooth Width	
					Single	Double	M2	M3
DID 10	0.016	X20°	0.067	—	0.051	—	—	—
DID 15	0.020	X20°	0.102	—	0.079	—	—	—
DID 06B	0.165	0.374	0.197	0.403	0.209	0.205	0.608	1.011
DID 083	0.252	0.531	0.276	—	0.177	—	—	—
DID 415	0.252	0.531	0.276	—	0.169	—	—	—
DID 420	0.252	0.531	0.276	—	0.228	—	—	—
DID 428	0.252	0.531	0.276	—	0.283	—	—	—
DID 520	0.311	0.665	0.346	—	0.228	—	—	—
DID 525	0.311	0.665	0.346	—	0.283	—	—	—
DID 630	0.374	0.799	0.417	—	0.343	—	—	—
DID 635	0.374	0.799	0.417	—	0.398	—	—	—

DID 25 Standard Sprocket

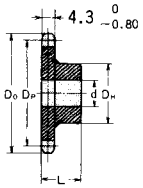
Unit (inch)

Number of Teeth **N**	Pitch Dia. **Dp**	Tip Dia. **Do**	Root Dia. **Ds**	Caliper Dia. **Dc**	Max Hub Dia, **DH**
11	0.887	0.984	0.757	0.748	0.591
12	0.966	1.102	0.836	0.836	0.669
13	1.044	1.181	0.915	0.907	0.748
14	1.124	1.260	0.994	0.994	0.827
15	1.202	1.339	1.072	1.066	0.906
16	1.281	1.417	1.152	1.152	0.984
17	1.361	1.496	1.231	1.225	1.063
18	1.440	1.575	1.310	1.310	1.142
19	1.519	1.654	1.389	1.384	1.220
20	1.598	1.732	1.468	1.468	1.299
21	1.678	1.811	1.548	1.543	1.378
22	1.757	1.890	1.627	1.627	1.457
23	1.836	1.969	1.706	1.702	1.535
24	1.915	2.047	1.785	1.785	1.614
25	1.994	2.126	1.865	1.861	1.693
26	2.074	2.205	1.944	1.944	1.772
27	2.154	2.283	2.024	2.020	1.850
28	2.233	2.362	2.103	2.103	1.929
29	2.312	2.441	2.182	2.179	2.008
30	2.392	2.520	2.262	2.262	2.087
31	2.471	2.598	2.341	2.338	2.165
32	2.550	2.677	2.420	2.420	2.244
33	2.630	2.756	2.500	2.497	2.323
34	2.709	2.835	2.580	2.580	2.402
35	2.789	2.913	2.659	2.656	2.480
36	2.869	2.992	2.739	2.739	2.559
37	2.948	3.071	2.818	2.815	2.638
38	3.028	3.150	2.898	2.898	2.756
39	3.107	3.228	2.977	2.974	2.835
40	3.186	3.307	3.056	3.056	2.913
41	3.266	3.425	3.136	3.133	2.992
42	3.345	3.504	3.215	3.215	3.071
43	3.425	3.583	3.295	3.293	3.150
44	3.504	3.661	3.374	3.374	3.228
45	3.584	3.740	3.454	3.452	3.307
48	3.822	3.976	3.693	3.693	3.543
50	3.981	4.134	3.852	3.852	3.701
54	4.300	4.449	4.170	4.170	4.016
55	4.379	4.528	4.249	4.247	4.094
60	4.777	4.921	4.647	4.647	4.488
65	5.174	5.315	5.044	5.043	4.882
70	5.572	5.709	5.443	5.443	5.276
75	5.970	6.102	5.840	5.839	5.669

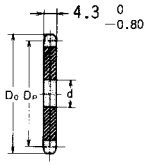
DID35 Standard Sprocket



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)

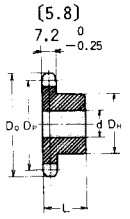
Unit (inch)

Number of Teeth **N**	Pitch Dia. **Dp**	Tip Dia. **Do**	Single Sprocket with Hub on One Side (B Type/BW Type)						Full Plain (A Type)			Number of Teeth **N**
			Bore **d**		Hub		Approx. Weight (lbs)	Material	Stock **d**	Approx. Weight (lbs)	Material	
			Stock	Max.	(Dia.) **DH**	(Length) **L**						
9	1.096	1.260	0.315	0.433	0.866	0.787	0.132		0.315	—		9
10	1.213	1.339	0.315	0.472	0.984	0.787	0.176		0.315	0.044		10
11	1.331	1.496	0.315	0.551	1.063	0.787	0.198		0.374	0.066		11
12	1.449	1.575	0.315	0.650	1.220	0.787	0.264		0.374	0.066		12
13	1.567	1.732	0.354	0.709	1.260	0.787	0.264		0.374	0.088		13
14	1.685	1.811	0.354	0.650	1.181	0.787	0.264		0.374	0.088		14
15	1.804	2.008	0.354	0.748	1.378	0.787	0.352		0.374	0.11		15
16	1.922	2.087	0.354	0.787	1.457	0.787	0.418		0.374	0.11		16
17	2.041	2.244	0.433	0.945	1.614	0.787	0.484		0.472	0.154		17
18	2.159	2.362	0.433	0.965	1.732	0.787	0.55		0.472	0.154		18
19	2.278	2.480	0.433	1.122	1.850	0.787	0.616		0.472	0.198		19
20	2.397	2.598	0.433	1.181	1.969	0.787	0.704		0.472	0.198		20
21	2.516	2.717	0.433	1.260	2.087	0.787	0.792		0.472	0.242		21
22	2.635	2.835	0.433	1.260	2.087	0.787	0.814		0.472	0.242		22
23	2.754	2.953	0.433	1.260	2.087	0.787	0.836		0.472	0.242		23
24	2.873	3.071	0.433	1.260	2.087	0.866	0.946	S35C	0.472	0.308		24
25	2.992	3.189	0.433	1.260	2.087	0.866	0.968		0.472	0.352		25
26	3.111	3.268	0.433	1.260	2.087	0.866	0.99		0.472	0.352		26
27	3.230	3.425	0.433	1.260	2.087	0.866	1.012		0.472	0.374		27
28	3.349	3.543	0.433	1.260	2.087	0.866	1.056		0.472	0.396		28
29	3.468	3.661	0.433	1.260	2.087	0.866	1.078		0.472	0.44		29
30	3.587	3.780	0.433	1.260	2.087	0.866	1.122		0.472	0.506		30
31	3.707	3.898	0.433	1.260	2.087	0.866	1.144		0.472	0.528		31
32	3.826	4.016	0.433	1.260	2.087	0.866	1.188		0.472	0.594	SS400	32
33	3.945	4.134	0.433	1.260	2.087	0.866	1.21		0.472	0.616		33
34	4.064	4.291	0.433	1.260	2.087	0.866	1.254		0.472	0.638		34
35	4.183	4.409	0.433	1.260	2.087	0.866	1.298		0.472	0.66		35
36	4.303	4.528	0.433	1.260	2.087	0.866	1.342		0.512	0.704		36
37	4.422	4.606	0.433	1.654	2.441	0.866	1.804		0.512	0.814		37
38	4.541	4.764	0.433	1.654	2.441	0.984	1.804		0.512	0.902		38
39	4.660	4.843	0.433	1.654	2.441	0.984	1.826		0.512	0.924		39
40	4.780	5.000	0.433	1.654	2.441	0.984	1.87		0.512	0.946		40
41	4.899	5.079	0.472	1.654	2.441	0.984	1.87		—	—		41
42	5.018	5.197	0.472	1.654	2.441	0.984	1.892		0.512	1.034		42
43	5.137	5.315	0.472	1.654	2.441	0.984	1.914		—	—		43
44	5.257	5.433	0.472	1.654	2.441	0.984	1.98		—	—		44
45	5.376	5.591	0.472	1.654	2.441	0.984	2.09		0.512	1.144		45
48	5.734	5.945	0.472	1.654	2.441	0.984	2.2	SS400	0.512	1.21		48
50	5.972	6.181	0.472	1.654	2.441	0.984	2.31	Welded	0.512	1.298		50
54	6.449	6.654	0.472	1.654	2.441	0.984	2.64		0.512	1.518		54
55	6.569	6.772	0.472	1.654	2.441	0.984	2.684		—	—		55
60	7.165	7.362	0.472	1.654	2.441	0.984	2.86		0.512	1.914		60
65	7.762	7.953	0.472	1.654	2.638	0.984	3.3		—	—		65
70	8.358	8.583	0.472	1.772	2.638	0.984	3.74		—	—		70
75	8.955	9.173	0.472	1.772	2.638	0.984	3.96		—	—		75

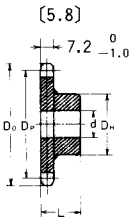
Note: 1. Max bore shown is conventional. To determine required bore size, general engineering practice should be employed.
Surface pressure on key should be checked also.
2. Shaded area of above dimension table indicates heat treated teeth.
3. Those marked * have slot on hub.

DID40 (DID41) Standard Sprocket

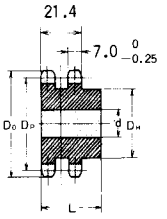
The number in [ ] indicates the dimensions of DID 41.
DID 41 is for single only.



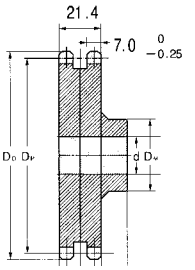
Single Sprocket with Hub on One Side (Single B Type)



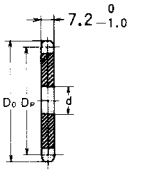
Single Sprocket with Hub on One Side (Single BW Type Welded)



Double Sprocket with Hub on One Side (Double B Type)



Double Sprocket with Hub on One Side (Double BW Type Welded)



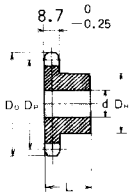
Flat Plain (A Type)

Unit (inch)

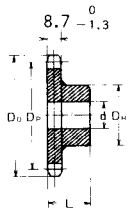
Number of Teeth **N**	Pitch Dia. **Dp**	Tip Dia. **Do**	Single Sprocket with Hub on One Side (B Type/BW Type)						Double Sprocket with Hub on One Side (B Type/BW Type)						Full Plain (A Type)			Number of Teeth **N**
			Bore **d**		Hub		Approx. Weight (lbs)	Material	Bore **d**		Hub		Approx. Weight (lbs)	Material	Stock **d**	Approx. Weight (lbs)	Material	
			Stock	Max.	(Dia.) **DH**	(Length) **L**			Stock	Max.	(Dia.) **DH**	(Length) **L**						
9	1.462	1.654	0.354	0.591	1.102	0.866	0.242		—	—	—	—	—		0.354	—		9
10	1.618	1.811	0.354	0.630	1.260	0.866	0.308		—	—	—	—	—		0.354	0.11		10
11	1.775	2.008	0.394	0.787	1.457	0.866	0.418		—	—	—	—	—		0.394	0.132		11
12	1.932	2.087	0.394	0.866	1.575	0.866	0.484		0.512	0.709	1.260	1.378	0.748		0.394	0.22		12
13	2.089	2.283	0.512	0.787	1.457	0.866	0.506		0.551	0.787	1.457	1.378	0.858		0.512	0.22		13
14	2.247	2.480	0.512	0.945	1.654	0.866	0.616		0.551	0.945	1.654	1.378	1.034		0.512	0.242		14
15	2.405	2.638	0.512	1.102	1.811	0.866	0.748		0.551	1.102	1.811	1.378	1.232		0.512	0.33		15
16	2.563	2.795	0.512	1.181	1.969	0.866	0.88		0.551	1.181	1.969	1.378	1.43		0.512	0.374		16
17	2.721	2.953	0.512	1.260	2.126	0.866	1.012		0.551	1.260	2.126	1.378	1.65		0.512	0.44		17
18	2.880	3.071	0.512	1.378	2.244	0.866	1.122		0.551	1.378	2.244	1.378	1.87		0.512	0.44		18
19	3.038	3.268	0.512	1.535	2.441	0.866	1.298		0.551	1.535	2.441	1.378	2.156		0.512	0.572		19
20	3.196	3.465	0.551	1.772	2.638	0.984	1.672		0.551	1.772	2.638	1.575	2.86		0.551	0.572		20
21	3.355	3.622	0.551	1.772	2.795	0.984	1.87	S35C	0.551	1.850	2.795	1.575	3.08		0.551	0.66		21
22	3.513	3.780	0.551	1.969	2.953	0.984	2.09		0.551	1.969	2.953	1.575	3.52		0.551	0.66		22
23	3.672	3.858	0.551	1.969	3.031	0.984	2.2		0.551	1.969	3.031	1.575	3.74	S35C	0.551	0.77		23
24	3.831	4.094	0.551	1.654	2.480	0.984	1.782		0.551	2.165	3.268	1.575	4.18		0.551	0.814		24
25	3.989	4.252	0.551	1.654	2.480	0.984	1.936		0.709	2.323	3.425	1.575	4.62		0.551	0.88	SS400	25
26	4.148	4.409	0.551	1.654	2.480	0.984	2.024		0.709	2.441	3.583	1.575	5.06		0.551	0.77		26
27	4.307	4.567	0.551	1.654	2.480	0.984	2.112		—	—	—	—	—		0.551	1.1		27
28	4.466	4.724	0.551	1.654	2.480	0.984	2.2		—	—	—	—	—		0.551	1.122		28
29	4.624	4.882	0.551	1.654	2.480	0.984	2.42		—	—	—	—	—		0.551	1.122		29
30	4.783	5.039	0.551	1.654	2.480	0.984	2.42		0.709	2.874	4.173	1.575	6.6		0.551	1.32		30
31	4.942	5.197	0.551	1.772	2.480	0.984	2.64		—	—	—	—	—		0.551	1.342		31
32	5.101	5.394	0.551	1.772	2.677	1.102	2.86		—	—	—	—	—		0.551	1.496		32
33	5.260	5.512	0.551	1.772	2.677	1.102	2.86		—	—	—	—	—		0.551	1.54		33
34	5.419	5.709	0.551	1.772	2.677	1.102	2.86		—	—	—	—	—		0.551	1.65		34
35	5.578	5.866	0.551	1.772	2.677	1.102	3.08		0.669	2.165	3.268	1.969	6.82		0.551	1.826		35
36	5.737	6.024	0.669	1.772	2.638	1.102	3.08		—	—	—	—	—		0.669	1.98		36
37	5.896	6.181	0.669	1.772	2.638	1.102	3.3		—	—	—	—	—		0.669	2.046		37
38	6.055	6.339	0.669	1.772	2.638	1.102	3.3		—	—	—	—	—		0.669	2.09		38
39	6.214	6.496	0.669	1.772	2.638	1.102	3.52		—	—	—	—	—		0.669	2.31		39
40	6.373	6.654	0.669	1.772	2.638	1.102	3.52		0.669	2.165	3.268	1.969	7.92		0.669	2.332		40
41	6.532	6.811	0.669	1.772	2.835	1.260	3.74		—	—	—	—	—		0.669	2.53		41
42	6.691	6.969	0.669	1.890	2.835	1.260	4.4		—	—	—	—	—		0.669	2.64		42
43	6.850	7.126	0.669	1.890	2.835	1.260	4.62		—	—	—	—	—		0.669	2.706		43
44	7.009	7.283	0.669	1.890	2.835	1.260	4.84	SS400	—	—	—	—	—		0.669	2.86		44
45	7.168	7.441	0.669	1.890	2.835	1.260	4.84	Welded	0.669	2.480	3.661	1.969	10.12		0.669	2.992		45
48	7.645	7.913	0.669	1.890	2.835	1.260	5.06		—	—	—	—	—	SS400	0.669	3.366		48
50	7.963	8.228	0.669	1.890	2.835	1.260	5.28		—	—	—	—	—	Welded	0.669	3.74		50
54	8.599	8.898	0.669	1.890	2.835	1.260	6.16		0.669	2.480	3.661	1.969	12.76		0.669	4.4		54
60	9.554	9.843	0.669	1.890	2.835	1.260	7.04		0.669	2.480	3.661	1.969	14.74		0.669	5.5		60
65	10.349	10.630	0.669	2.165	3.228	1.260	8.58		—	—	—	—	—		0.669	6.314		65
70	11.144	11.417	0.748	2.165	3.228	1.260	9.46		—	—	—	—	—		0.748	7.26		70
72	11.463	11.772	0.748	2.165	3.228	1.260	10.56		—	—	—	—	—		0.748	7.48		72
75	11.940	12.244	0.748	2.165	3.228	1.260	11		—	—	—	—	—		0.748	9.9		75

Note: 1. Max bore shown is conventional. To determine required bore size, general engineering practice should be employed.
Surface pressure on key should be checked also.
2. Shaded area of above dimension table indicates heat treated teeth.
3. Due to material availability and production reasons, forged S35C may be used for teeth portion and SS400 for hub and welded for double sprockets with 31-40 teeth without notice.
4. Those marked * have slot on hub.

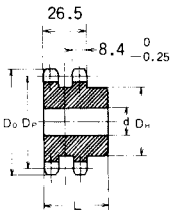
DID50 Standard Sprocket



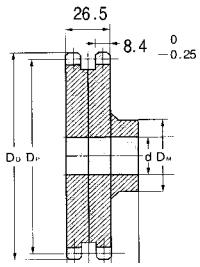
Single Sprocket with Hub on One Side
(Single B Type)



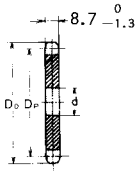
Single Sprocket with Hub on One Side
(Single BW Type Welded)



Double Sprocket with Hub on One Side
(Double B Type)



Double Sprocket with Hub on One Side
(Double BW Type Welded)



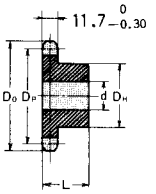
Flat Plain
(A Type)

Unit (inch)

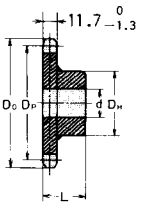
Number of Teeth N	Pitch Dia. Dp	Tip Dia. Do	Single Sprocket with Hub on One Side (B Type/BW Type)						Double Sprocket with Hub on One Side (B Type/BW Type)						Full Plain (A Type)			Number of Teeth N
			Bore d		Hub		Approx. Weight (lbs)	Material	Bore d		Hub		Approx. Weight (lbs)	Material	Stock d	Approx. Weight (lbs)	Material	
			Stock	Max.	(Dia.) DH	(Length) L			Stock	Max.	(Dia.) DH	(Length) L						
9	1.819	2.087	0.394	0.748	1.339	0.984	0.44		—	—	—	—	—		0.394	—		9
10	2.023	2.283	0.394	0.866	1.575	0.984	0.594		—	—	—	—	—		0.394	0.242		10
11	2.219	2.480	0.512	0.945	1.811	0.984	0.726		—	—	—	—	—		0.512	0.33		11
12	2.415	2.677	0.512	1.260	2.008	0.984	0.902		0.551	0.945	1.654	1.575	1.32		0.512	0.396		12
13	2.612	2.874	0.512	1.260	2.008	0.984	1.012		0.551	1.102	1.850	1.575	1.606		0.512	0.396		13
14	2.809	3.110	0.512	1.260	2.047	0.984	1.144		0.551	1.260	2.047	1.575	1.914		0.512	0.44		14
15	3.006	3.307	0.512	1.378	2.244	0.984	1.364		0.551	1.378	2.244	1.575	2.2		0.512	0.572		15
16	3.204	3.504	0.512	1.575	2.441	0.984	1.584		0.551	1.535	2.441	1.772	2.86		0.512	0.66		16
17	3.401	3.701	0.512	1.772	2.638	0.984	1.826		0.551	1.772	2.638	1.772	3.3		0.512	0.77		17
18	3.599	3.898	0.512	1.850	2.835	1.102	2.2		0.551	1.850	2.835	1.772	3.74		0.512	0.88		18
19	3.797	4.094	0.512	1.850	2.874	1.102	2.42		0.551	2.047	3.110	1.772	4.4		0.512	0.968		19
20	3.995	4.291	0.551	1.850	2.874	1.102	2.64		0.709	2.165	3.228	1.772	4.84		0.551	1.1		20
21	4.193	4.488	0.551	1.850	2.874	1.102	2.64		0.709	2.362	3.504	1.772	5.5		0.551	1.188		21
22	4.392	4.685	0.630	1.850	2.874	1.102	2.86		0.709	2.480	3.622	1.969	6.38		0.630	1.298		22
23	4.590	4.882	0.630	1.850	2.874	1.102	2.86		0.709	2.638	3.898	1.969	7.26		0.630	1.43		23
24	4.788	5.079	0.630	1.850	2.874	1.102	3.08	S35C	0.709	2.756	4.016	1.969	7.92		0.630	1.54		24
25	4.987	5.276	0.630	1.850	2.874	1.102	3.3		0.709	2.953	4.291	1.969	8.8	S35C	0.630	1.76		25
26	5.185	5.472	0.630	1.890	2.874	1.102	3.3		0.709	2.480	3.661	1.969	7.48		0.630	1.87		26
27	5.383	5.669	0.630	1.890	2.874	1.102	3.3		—	—	—	—	—		0.630	1.98		27
28	5.582	5.866	0.630	1.890	2.874	1.102	3.52		—	—	—	—	—		0.630	2.2		28
29	5.781	6.063	0.630	1.890	2.874	1.102	3.52		—	—	—	—	—		0.630	2.42	SS400	29
30	5.979	6.299	0.630	1.890	2.874	1.102	3.74		0.709	2.480	3.661	1.969	8.8		0.630	2.53		30
31	6.178	6.496	0.630	1.890	2.874	1.102	3.96		—	—	—	—	—		0.630	2.64		31
32	6.376	6.693	0.630	1.890	2.874	1.102	3.96		—	—	—	—	—		0.630	2.772		32
33	6.575	6.890	0.630	1.890	2.874	1.102	4.18		—	—	—	—	—		0.630	2.97		33
34	6.774	7.087	0.630	1.890	2.874	1.102	4.62		—	—	—	—	—		0.630	3.19		34
35	6.972	7.283	0.630	1.890	2.874	1.102	4.84		0.709	2.480	3.661	1.969	10.56		0.630	3.41		35
36	7.171	7.520	0.748	2.165	3.228	1.378	5.94		—	—	—	—	—		0.748	3.674		36
37	7.370	7.717	0.748	2.165	3.228	1.378	6.16		—	—	—	—	—		0.748	3.96		37
38	7.569	7.913	0.748	2.165	3.228	1.378	6.38		—	—	—	—	—		0.748	4.07		38
39	7.767	8.110	0.748	2.165	3.228	1.378	6.38		—	—	—	—	—		0.748	4.4		39
40	7.966	8.307	0.748	2.165	3.228	1.378	6.82		0.748	2.598	3.858	2.205	13.64		0.748	4.51		40
41	8.165	8.504	0.748	2.165	3.228	1.378	7.04		—	—	—	—	—		0.748	4.664		41
42	8.363	8.701	0.748	2.165	3.228	1.378	7.26		—	—	—	—	—		0.748	5.06		42
43	8.562	8.898	0.748	2.165	3.228	1.378	7.48		—	—	—	—	—		0.748	5.346		43
44	8.761	9.094	0.748	2.165	3.228	1.378	7.7		—	—	—	—	—		0.748	5.72		44
45	8.960	9.331	0.748	2.165	3.228	1.378	7.92		0.748	2.598	3.858	2.205	16.06		0.748	5.72		45
48	9.556	9.921	0.748	2.165	3.228	1.378	8.8		—	—	—	—	—	SS400 Welded	0.748	6.6		48
50	9.954	10.315	0.748	2.165	3.228	1.378	9.46	SS400 Welded	—	—	—	—	—		0.748	7.26		50
54	10.749	11.102	0.748	2.165	3.228	1.378	10.56		0.748	2.598	3.858	2.480	21.78		0.748	8.58		54
60	11.942	12.283	0.748	2.165	3.228	1.378	12.32		0.748	2.598	3.858	2.480	25.74		0.748	10.56		60
65	12.936	13.307	0.748	2.480	3.622	1.575	15.18		—	—	—	—	—		0.748	12.76		65
70	13.931	14.291	0.787	2.480	3.622	1.575	16.94		—	—	—	—	—		0.787	13.97		70
72	14.328	14.685	0.787	2.480	3.622	1.575	—		—	—	—	—	—		0.000	14.52		72
75	14.925	15.276	0.787	2.480	3.622	1.575	18.92		—	—	—	—	—		0.787	15.4		75

Note: 1. Max bore shown is conventional. To determine required bore size, general engineering practice should be employed.
Surface pressure on key should be checked also.
2. Shaded area of above dimension table indicates heat treated teeth.
3. Due to material availability and production reasons, forged S35C may be used for teeth portion and SS400 for hub and welded for double sprockets with 26-31 teeth without notice.
4. Those marked * have slot on hub.

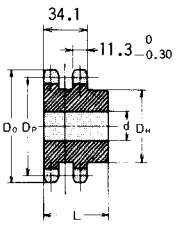
DID60 Standard Sprocket



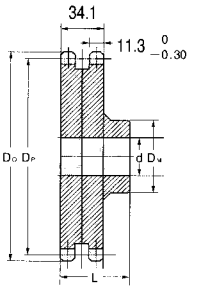
Single Sprocket with Hub on One Side
(Single B Type)



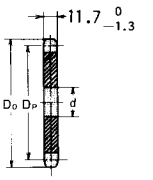
Single Sprocket with Hub on One Side
(Single BW Type Welded)



Double Sprocket with Hub on One Side
(Double B Type)



Double Sprocket with Hub on One Side
(Double BW Type Welded)



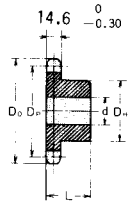
Flat Plain
(A Type)

Unit (inch)

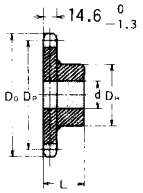
Number of Teeth **N**	Pitch Dia. **Dp**	Tip Dia. **Do**	Single Sprocket with Hub on One Side (B Type/BW Type)						Double Sprocket with Hub on One Side (B Type/BW Type)						Full Plain (A Type)			Number of Teeth **N**
			Bore **d**		Hub		Approx. Weight (lbs)	Material	Bore **d**		Hub		Approx. Weight (lbs)	Material	Stock **d**	Approx. Weight (lbs)	Material	
			Stock	Max.	(Dia.) **DH**	(Length) **L**			Stock	Max.	(Dia.) **DH**	(Length) **L**						
9	2.193	2.480	0.394	0.945	1.693	1.260	0.88	S53C	—	—	—	—	—	S53C	0.394	—	SS400	9
10	2.427	2.677	0.551	1.181	1.929	1.260	1.078		—	—	—	—	—		0.394	0.44		10
11	2.662	2.992	0.551	1.260	2.008	1.260	1.32		—	—	—	—	—		0.551	0.572		11
12	2.898	3.228	0.551	1.260	2.008	1.260	1.518		0.630	1.260	2.008	1.969	2.42		0.551	0.66		12
13	3.134	3.465	0.551	1.378	2.244	1.260	1.782		0.709	1.378	2.244	1.969	2.86		0.551	0.814		13
14	3.370	3.661	0.630	1.535	2.441	1.260	2.112		0.709	1.535	2.441	2.205	3.74		0.630	0.946		14
15	3.607	3.898	0.630	1.772	2.677	1.260	2.42		0.709	1.772	2.677	2.205	4.4		0.630	1.122		15
16	3.844	4.213	0.630	1.850	2.874	1.260	2.86		0.709	1.969	2.992	2.205	5.28		0.630	1.32		16
17	4.081	4.449	0.630	1.850	2.874	1.260	3.08		0.709	2.165	3.228	2.205	6.16		0.630	1.496		17
18	4.319	4.685	0.630	2.165	3.268	1.575	4.4		0.709	2.323	3.425	2.205	6.82		0.630	1.65		18
19	4.557	4.961	0.630	2.165	3.268	1.575	4.62		0.787	2.480	3.740	2.205	7.92		0.630	1.936		19
20	4.794	5.197	0.630	2.165	3.268	1.575	4.84		0.787	2.717	3.976	2.205	9.02		0.630	2.112		20
21	5.032	5.433	0.630	2.165	3.268	1.575	5.082		0.787	2.953	4.213	2.205	9.9		0.630	2.42		21
22	5.270	5.669	0.630	2.165	3.268	1.575	5.346		0.787	3.071	4.449	2.205	11		0.630	2.53		22
23	5.508	5.906	0.630	2.165	3.268	1.575	5.5		0.787	2.598	3.858	2.205	10.12		0.630	2.64		23
24	5.746	6.142	0.630	2.165	3.268	1.575	5.5		0.787	2.598	3.858	2.205	10.56		0.630	3.08		24
25	5.984	6.378	0.630	2.165	3.268	1.575	5.94		0.787	2.598	3.858	2.205	11		0.630	3.322		25
26	6.222	6.614	0.630	2.165	3.268	1.575	6.38		0.787	2.598	3.858	2.205	11		0.630	3.63		26
27	6.460	6.850	0.630	2.165	3.268	1.575	6.6		—	—	—	—	—		0.630	3.74		27
28	6.698	7.087	0.630	2.165	3.268	1.575	6.82		—	—	—	—	—		0.630	4.18		28
29	6.937	7.323	0.630	2.165	3.268	1.575	7.26		—	—	—	—	—		0.630	4.51		29
30	7.175	7.598	0.787	2.165	3.268	1.575	7.48		0.787	2.598	3.858	2.205	14.3		0.787	4.95		30
31	7.413	7.835	0.787	2.165	3.228	1.575	7.7		—	—	—	—	—		0.787	5.28		31
32	7.652	8.071	0.787	2.165	3.228	1.575	8.14		—	—	—	—	—		0.787	5.61		32
33	7.890	8.307	0.787	2.165	3.228	1.575	8.36		—	—	—	—	—		0.787	5.94		33
34	8.128	8.543	0.787	2.165	3.228	1.575	8.8		—	—	—	—	—		0.787	6.38		34
35	8.367	8.780	0.787	2.165	3.228	1.575	9.24		0.787	2.598	3.858	2.205	17.16		0.787	6.864		35
36	8.605	9.016	0.787	2.165	3.228	1.575	9.68		—	—	—	—	—		0.787	7.062		36
37	8.844	9.291	0.787	2.165	3.228	1.575	10.12	SS400 Welded	—	—	—	—	—		0.787	7.59		37
38	9.082	9.488	0.787	2.165	3.228	1.575	10.56		—	—	—	—	—		0.787	7.832		38
39	9.320	9.764	0.787	2.165	3.228	1.575	10.78		—	—	—	—	—		0.787	8.426		39
40	9.559	9.961	0.787	2.165	3.228	1.575	11.22		0.787	2.598	3.858	2.205	21.34		0.787	8.91		40
41	9.798	10.236	0.787	2.480	3.622	1.772	12.1		—	—	—	—	—		0.787	9.284		41
42	10.036	10.472	0.787	2.480	3.622	1.772	13.2		—	—	—	—	—	SS400 Welded	0.787	9.614		42
43	10.275	10.709	0.787	2.480	3.622	1.772	13.64		—	—	—	—	—		0.787	10.142		43
44	10.513	10.945	0.787	2.480	3.622	1.772	14.08		—	—	—	—	—		0.787	10.758		44
45	10.752	11.181	0.787	2.480	3.622	1.772	14.74		0.787	2.953	4.213	2.795	28.16		0.787	12.496		45
48	11.467	11.890	0.787	2.480	3.622	1.772	16.28		—	—	—	—	—		0.787	12.65		48
50	11.944	12.362	0.787	2.480	3.622	1.772	17.16		—	—	—	—	—		0.787	13.75		50
54	12.899	13.307	0.787	2.480	3.622	1.772	19.36		0.787	2.953	4.213	2.795	39.6		0.787	15.95		54
60	14.330	14.764	0.787	2.480	3.622	1.772	23.32		0.787	2.953	4.213	2.795	47.3		0.787	19.8		60
65	15.524	15.945	0.787	2.953	4.213	1.772	28.16		—	—	—	—	—		0.787	23.32		65
70	16.717	17.165	0.787	2.953	4.213	1.772	31.68		—	—	—	—	—		0.787	26.84		70
72	17.194	17.638	—	—	—	—	—		—	—	—	—	—		0.787	27.5		72
75	17.910	18.346	0.787	2.953	4.213	1.772	35.86		—	—	—	—	—		0.787	28.6		75

Note: 1. Max bore shown is conventional. To determine required bore size, general engineering practice should be employed.
Surface pressure on key should be checked also.
2. Shaded area of above dimension table indicates heat treated teeth.
3. Due to material availability and production reasons, forged S35C may be used for teeth portion and SS400 for hub and welded for double sprockets with 26-31 teeth without notice.
4. Those marked * have slot on hub.

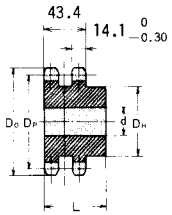
DID80 Standard Sprocket



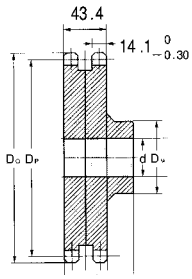
Single Sprocket with Hub on One Side
(Single B Type)



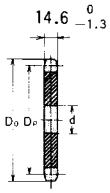
Single Sprocket with Hub on One Side
(Single BW Type Welded)



Double Sprocket with Hub on One Side
(Double B Type)



Double Sprocket with Hub on One Side
(Double BW Type Welded)



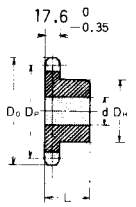
Flat Plain
(A Type)

Unit (inch)

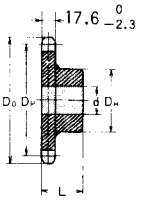
Number of Teeth **N**	Pitch Dia. **Dp**	Tip Dia. **Do**	Single Sprocket with Hub on One Side (B Type/BW Type)						Double Sprocket with Hub on One Side (B Type/BW Type)						Full Plain (A Type)			Number of Teeth **N**
			Bore **d**		Hub		Approx. Weight (lbs)	Material	Bore **d**		Hub		Approx. Weight (lbs)	Material	Stock **d**	Approx. Weight (lbs)	Material	
			Stock	Max.	(Dia.) **DH**	(Length) **L**			Stock	Max.	(Dia.) **DH**	(Length) **L**						
9	2.924	3.346	0.433	1.378	2.283	1.575	1.54	S35C	—	—	—	—	—	S35C	0.433	—	SS400	9
10	3.236	3.661	0.669	1.260	2.047	1.575	2.134		—	—	—	—	—		0.669	1.276		10
11	3.550	3.976	0.669	1.496	2.362	1.575	2.64		—	—	—	—	—		0.669	1.364		11
12	3.864	4.331	0.669	1.772	2.638	1.575	3.3		0.906	1.791	2.638	2.480	5.5		0.669	1.21		12
13	4.179	4.646	0.669	1.890	3.031	1.575	4.18		0.906	1.969	3.031	2.480	6.82		0.669	1.914		13
14	4.494	4.961	0.669	1.969	3.031	1.575	4.4		0.906	2.283	3.386	2.480	8.14		0.669	2.244		14
15	4.810	5.276	0.787	2.480	3.661	1.575	5.698		0.906	2.520	3.701	2.480	9.46		0.787	2.64		15
16	5.126	5.591	0.787	2.480	3.661	1.575	6.116		0.906	2.756	4.016	2.795	12.1		0.787	2.97		16
17	5.442	5.945	0.787	2.480	3.661	1.575	6.6		0.906	2.992	4.331	2.795	14.08		0.787	3.388		17
18	5.759	6.260	0.787	2.480	3.661	1.575	7.04		0.906	2.598	3.858	2.795	13.2		0.787	3.85		18
19	6.076	6.575	0.787	2.480	3.661	1.575	7.48		0.906	2.598	3.858	2.795	14.3		0.787	4.29		19
20	6.393	6.890	0.787	2.480	3.661	1.575	7.92		0.906	2.953	4.213	2.795	16.72		0.787	4.73		20
21	6.709	7.205	0.787	2.480	3.661	1.575	8.36		0.906	2.953	4.213	2.795	17.16		0.787	5.302		21
22	7.027	7.559	0.787	2.953	4.213	1.772	10.56		0.787	3.150	4.606	2.795	19.36		0.787	5.786		22
23	7.344	7.874	0.787	2.953	4.213	1.772	11.22		0.787	3.150	4.606	2.795	20.46		0.787	6.38		23
24	7.661	8.189	0.787	2.953	4.213	1.772	11.88		0.787	3.150	4.606	3.150	23.1		0.787	7.04		24
25	7.979	8.504	0.787	2.953	4.213	1.772	12.32		0.787	3.150	4.606	3.150	24.42		0.787	7.59		25
26	8.296	8.819	0.787	2.953	4.213	1.772	12.98		0.787	3.150	4.606	3.150	25.74		0.787	8.14		26
27	8.614	9.173	0.787	2.953	4.213	1.772	13.42		—	—	—	—	—		0.787	8.712		27
28	8.931	9.488	0.787	2.953	4.213	1.772	14.3		—	—	—	—	—		0.787	9.372		28
29	9.249	9.803	0.787	2.953	4.213	1.772	15.18		—	—	—	—	—		0.787	10.23		29
30	9.567	10.118	0.787	2.953	4.213	1.772	15.62		0.787	3.150	4.606	3.150	31.24		0.787	11		30
31	9.885	10.433	0.787	2.953	4.213	1.772	16.28		—	—	—	—	—		0.787	11.66		31
32	10.202	10.748	0.787	2.953	4.213	1.772	17.16		—	—	—	—	—		0.787	12.32		32
33	10.520	11.063	0.787	2.953	4.213	1.772	17.82		—	—	—	—	—		0.787	13.2		33
34	10.838	11.378	0.787	2.953	4.213	1.772	18.7		—	—	—	—	—	SS400 Welded	0.787	14.08		34
35	11.156	11.693	0.787	2.953	4.213	1.772	19.58		0.787	3.150	4.606	3.150	39.38		0.787	15.07		35
36	11.474	12.047	0.787	3.150	4.606	1.969	22.22		—	—	—	—	—		0.787	15.84		36
37	11.792	12.362	0.787	3.150	4.606	1.969	23.1	SS400 Welded	—	—	—	—	—		0.787	16.28		37
38	12.109	12.677	0.787	3.150	4.606	1.969	23.98		—	—	—	—	—		0.787	17.6		38
39	12.428	12.992	0.787	3.150	4.606	1.969	25.3		—	—	—	—	—		0.787	18.634		39
40	12.746	13.307	0.787	3.150	4.606	1.969	25.96		0.787	3.504	5.000	3.543	52.14		0.787	19.8		40
41	13.063	13.622	0.787	3.150	4.606	1.969	27.06		—	—	—	—	—		0.787	20.724		41
42	13.381	13.937	0.787	3.150	4.606	1.969	27.94		—	—	—	—	—		0.787	21.45		42
43	13.700	14.252	0.787	3.150	4.606	1.969	29.04		—	—	—	—	—		0.787	22.748		43
44	14.017	14.567	0.787	3.150	4.606	1.969	30.14		—	—	—	—	—		0.787	23.43		44
45	14.335	14.882	0.787	3.150	4.606	1.969	31.24		0.787	3.504	5.000	3.543	—		0.787	24.75		45
48	15.290	15.866	0.787	3.150	4.606	1.969	34.76		—	—	—	—	—		0.787	28.6		48
50	15.926	16.496	0.787	3.150	4.606	1.969	36.96		0.787	3.504	5.000	3.543	—		0.787	32.56		50
54	17.198	17.756	0.787	3.150	4.606	1.969	42.24		—	—	—	—	—		0.787	37.4		54
60	19.107	19.685	0.787	3.150	4.606	1.969	50.82		0.787	3.504	5.000	3.543	101.64		0.787	46.2		60
65	20.698	21.260	0.787	3.150	4.606	1.969	63.36		—	—	—	—	—		0.787	55		65
70	22.289	22.874	0.787	3.504	5.000	2.480	70.62		—	—	—	—	—		0.787	62.26		70
75	23.880	24.449	0.787	3.504	5.000	2.480	79.64		—	—	—	—	—		0.787	70.4		75

Note: 1. Max bore shown is conventional. To determine required bore size, general engineering practice should be employed.
Surface pressure on key should be checked also.
2. Shaded area of above dimension table indicates heat treated teeth.
3. Those marked * have slot on hub.

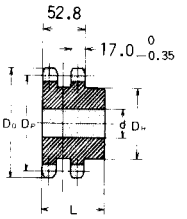
DID100 Standard Sprocket



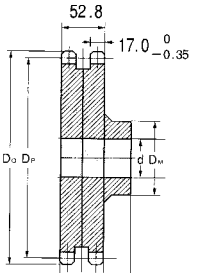
Single Sprocket with Hub on One Side
(Single B Type)



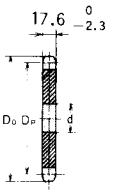
Single Sprocket with Hub on One Side
(Single BW Type Welded)



Double Sprocket with Hub on One Side
(Double B Type)



Double Sprocket with Hub on One Side
(Double BW Type Welded)



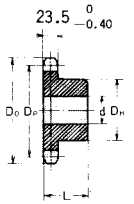
Flat Plain
(A Type)

Unit (inch)

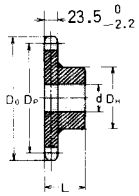
Number of Teeth **N**	Pitch Dia. **Dp**	Tip Dia. **Do**	Single Sprocket with Hub on One Side (B Type/BW Type)						Double Sprocket with Hub on One Side (B Type/BW Type)						Full Plain (A Type)			Number of Teeth **N**
			Bore **d**		Hub		Approx. Weight (lbs)	Material	Bore **d**		Hub		Approx. Weight (lbs)	Material	Stock **d**	Approx. Weight (lbs)	Material	
			Stock	Max.	(Dia.) **DH**	(Length) **L**			Stock	Max.	(Dia.) **DH**	(Length) **L**						
10	4.045	4.567	0.787	1.969	2.559	1.969	4.092	S35C	—	—	—	—	—	S35C	0.787	3.696	SS400	10
11	4.437	5.000	0.787	2.362	2.953	1.969	5.06		—	—	—	—	—		0.787	6.6		11
12	4.830	5.394	0.787	2.559	3.386	1.969	6.38		1.102	2.283	3.386	3.150	11		0.787	8.492		12
13	5.223	5.787	0.787	2.756	3.465	1.969	6.82		1.102	2.559	3.740	3.150	13.2		0.787	7.48		13
14	5.617	6.181	0.787	2.756	3.465	1.969	7.92		1.102	2.835	4.134	3.150	15.62		0.787	12.32		14
15	6.012	6.575	0.787	2.756	3.858	1.969	9.24		1.102	2.598	3.858	3.150	15.62		0.787	13.2		15
16	6.407	7.008	0.787	2.953	3.858	1.969	10.12		1.102	2.598	3.858	3.150	16.94		0.787	14.3		16
17	6.803	7.402	0.787	2.953	4.213	1.969	11.66		1.102	2.953	4.213	3.150	19.58		0.787	16.72		17
18	7.198	7.795	0.787	3.150	4.213	1.969	12.54		1.102	2.953	4.213	3.150	21.12		0.787	17.38		18
19	7.594	8.228	0.787	3.150	4.213	1.969	13.42		1.102	3.504	5.000	3.543	27.94		0.787	18.26		19
20	7.991	8.622	0.787	3.150	4.213	1.969	14.3		1.102	3.504	5.000	3.543	29.7		0.787	18.92		20
21	8.387	9.016	0.787	3.150	4.213	1.969	15.4		1.102	3.504	5.000	3.543	31.46		0.787	19.58		21
22	8.783	9.449	0.787	3.150	4.606	2.205	17.38	SS400 Welded	—	—	—	—	—	SS400 Welded	0.787	18.832		22
23	9.180	9.843	0.787	3.150	4.606	2.205	18.48		—	—	—	—	—		0.787	20.064		23
24	9.577	10.236	0.787	3.150	4.606	2.205	19.36		0.787	3.740	5.394	3.543	39.16		0.787	21.12		24
25	9.973	10.630	0.787	3.150	4.606	2.205	20.46		—	—	—	—	—		0.787	22.22		25
26	10.370	11.063	0.787	3.150	4.606	2.205	21.56		—	—	—	—	—		0.787	23.54		26
27	10.767	11.457	0.787	3.150	4.606	2.205	22.88		—	—	—	—	—		0.787	25.3		27
28	11.164	11.850	0.787	3.150	4.606	2.205	23.98		—	—	—	—	—		0.787	26.18		28
29	11.561	12.244	0.787	3.150	4.606	2.205	25.52		—	—	—	—	—		0.787	27.72		29
30	11.959	12.638	0.787	3.150	4.606	2.205	26.62		0.787	3.740	5.394	3.543	53.46		0.787	29.04		30
31	12.356	13.031	0.787	3.150	4.606	2.205	28.16		—	—	—	—	—		—	—		31
32	12.753	13.425	0.787	3.150	4.606	2.205	29.48		—	—	—	—	—		0.787	35.156		32
33	13.150	13.858	0.787	3.150	4.606	2.205	31.02		—	—	—	—	—		—	—		33
34	13.548	14.252	0.787	3.150	5.000	2.480	32.56		—	—	—	—	—		0.787	37.18		34
35	13.945	14.646	0.787	3.504	5.000	2.480	36.52		0.787	3.740	5.394	3.543	67.98		0.787	39.336		35
36	14.342	15.039	0.787	3.504	5.000	2.480	37.84		—	—	—	—	—		0.787	37.18		36
37	14.739	15.433	0.787	3.504	5.000	2.480	39.38		—	—	—	—	—		0.787	41.36		37
38	15.137	15.827	0.787	3.504	5.000	2.480	42.68		—	—	—	—	—		0.787	44.176		38
39	15.534	16.220	0.787	3.504	5.000	2.480	43.78		—	—	—	—	—		—	—		39
40	15.932	16.614	0.787	3.543	5.000	2.480	44.88		0.787	4.055	5.787	3.543	89.54		0.787	48.356		40
41	16.330	17.047	0.787	3.543	5.000	2.480	47.3		—	—	—	—	—		0.787	49.5		41
42	16.727	17.441	0.787	3.543	5.000	2.480	49.94		—	—	—	—	—		0.787	52.096		42
43	17.124	17.835	0.787	3.543	5.000	2.480	51.7		—	—	—	—	—		—	—		43
44	17.522	18.228	0.787	3.543	5.000	2.480	53.02		—	—	—	—	—		—	—		44
45	17.920	18.622	0.787	3.543	5.000	2.480	54.34		0.787	4.055	5.787	3.937	108.46		0.787	58.256		45
48	19.112	19.803	0.787	3.543	5.000	2.480	60.5		—	—	—	—	—		0.787	64.856		48
50	19.907	20.630	0.787	3.543	5.000	2.480	62.7		—	—	—	—	—		0.787	69.696		50
54	21.498	22.205	0.787	4.055	5.787	3.150	82.28		—	—	—	—	—		0.787	80.256		54
60	23.884	24.606	0.787	4.055	5.787	3.150	97.46		0.787	4.055	5.787	4.921	195.8		0.787	97.416		60
65	25.873	26.575	0.787	4.055	5.787	3.150	120.736		—	—	—	—	—		0.787	111.056		65
70	27.861	28.583	0.787	4.055	5.787	3.937	142.912		—	—	—	—	—		0.787	128.656		70
75	29.850	30.591	0.787	4.055	5.787	3.937	160.556		—	—	—	—	—		—	—		75

Note: 1. Max bore shown is conventional. To determine required bore size, general engineering practice should be employed.
Surface pressure on key should be checked also.
2. Shaded area of above dimension table indicates heat treated teeth.

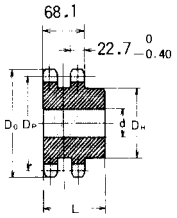
DID120 Standard Sprocket



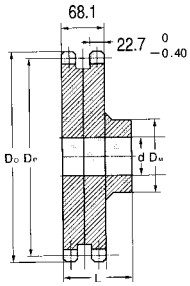
Single Sprocket with Hub on One Side
(Single B Type)



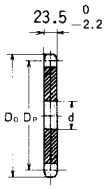
Single Sprocket with Hub on One Side
(Single BW Type Welded)



Double Sprocket with Hub on One Side
(Double B Type)



Double Sprocket with Hub on One Side
(Double BW Type Welded)



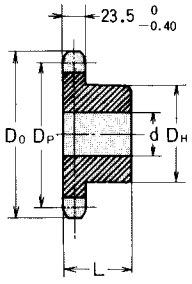
Flat Plain
(A Type)

Unit (inch)

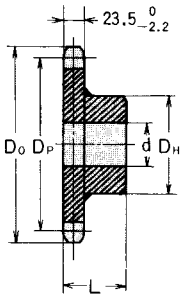
Number of Teeth **N**	Pitch Dia. **Dp**	Tip Dia. **Do**	Single Sprocket with Hub on One Side (B Type/BW Type)						Double Sprocket with Hub on One Side (B Type/BW Type)						Full Plain (A Type)			Number of Teeth **N**
			Bore **d**		Hub		Approx. Weight (lbs)	Material	Bore **d**		Hub		Approx. Weight (lbs)	Material	Stock **d**	Approx. Weight (lbs)	Material	
			Stock	Max.	(Dia.) **DH**	(Length) **L**			Stock	Max.	(Dia.) **DH**	(Length) **L**						
10	4.854	5.512	0.984	1.969	3.071	2.205	7.04	S35C	1.024	1.969	3.150	3.937	—	S35C	0.984	3.96	SS400	10
11	5.324	5.984	0.984	2.362	3.583	2.205	8.8		1.024	2.362	3.543	3.937	—		0.984	4.994		11
12	5.796	6.496	0.984	2.559	3.858	2.205	10.56		1.102	2.795	4.055	3.937	20.24		0.984	5.72		12
13	6.268	6.969	0.984	2.756	3.858	2.205	11.66		1.102	3.150	4.528	3.937	24.42		0.984	7.04		13
14	6.741	7.480	0.984	2.756	4.213	2.205	13.86		1.102	2.953	4.724	3.937	25.08		0.984	8.074		14
15	7.215	7.953	0.984	2.756	4.606	2.480	17.16		1.299	3.150	4.724	3.937	29.04		0.984	9.284		15
16	7.689	8.425	0.984	3.150	4.606	2.480	18.48		1.299	3.150	5.512	3.937	31.68		0.984	11		16
17	8.163	8.937	0.984	3.150	4.606	2.480	20.02		1.299	3.150	5.512	3.937	34.54		0.984	12.32		17
18	8.638	9.409	0.984	3.150	4.606	2.480	21.78		1.299	3.504	5.906	3.937	39.6		0.984	13.75		18
19	9.113	9.882	0.984	3.150	4.606	2.480	23.54		1.299	3.504	5.906	3.937	42.68		0.984	15.4		19
20	9.589	10.354	0.984	3.504	5.000	2.480	26.62		1.299	3.504	5.906	3.937	46.2		0.984	17.292		20
21	10.064	10.866	0.984	3.504	5.000	2.480	28.6		1.299	3.504	5.906	3.937	49.72		0.984	19.58		21
22	10.540	11.339	1.181	3.504	5.000	2.480	29.48		—	—	—	—	—		1.181	21.56		22
23	11.016	11.811	1.181	3.504	5.000	2.480	31.46		—	—	—	—	—		1.181	23.1		23
24	11.492	12.283	1.181	3.504	5.000	2.480	33.44		1.181	4.331	6.181	3.937	68.2		1.181	25.3		24
25	11.933	12.756	1.181	3.504	5.000	2.480	35.64		—	—	—	—	—		1.181	27.632		25
26	12.444	13.268	1.181	3.504	5.000	2.480	37.84		—	—	—	—	—		1.181	30.8		26
27	12.921	13.740	1.181	3.504	5.000	2.480	40.26		—	—	—	—	—		0.610	0		27
28	13.397	14.213	1.181	3.740	5.394	2.795	48.048		—	—	—	—	—		1.181	36.3		28
30	14.350	15.157	1.181	3.740	5.394	2.795	51.04		1.181	4.331	6.181	3.937	96.58		1.181	41.8		30
32	15.304	16.142	1.181	3.740	5.394	2.795	56.54		—	—	—	—	—		1.181	47.3		32
35	16.734	17.559	1.181	3.740	5.394	2.795	65.34		1.181	4.331	6.181	3.937	124.96	SS400 Welded	1.181	57.2		35
36	17.211	18.031	1.181	3.740	5.394	2.795	67.54	SS400 Welded	—	—	—	—	—		1.181	60.5		36
38	18.165	19.016	1.181	3.740	5.394	2.795	76.34		—	—	—	—	—		1.181	68.2		38
40	19.118	19.961	1.181	4.055	5.787	3.150	84.04		1.181	4.921	6.969	5.512	178.86		1.181	74.8		40
42	20.072	20.906	1.181	4.055	5.787	3.150	92.4		—	—	—	—	—		1.181	83.6		42
45	21.504	22.362	1.181	4.055	5.787	3.150	104.72		1.181	4.921	6.969	5.512	216.7		1.181	94.6		45
48	22.935	23.780	1.181	4.055	5.787	3.150	116.6		—	—	—	—	—		1.181	107.8		48
50	23.889	24.724	1.181	4.055	5.787	3.937	138.314		—	—	—	—	—		—	—		50
54	25.798	26.654	1.181	4.055	5.787	3.937	157.784		—	—	—	—	—		.181	132		54
60	28.661	29.528	1.181	4.646	6.575	3.937	165		1.181	4.921	6.969	6.299	289.52		1.181	157.3		60
65	31.047	31.929	1.181	4.646	6.575	3.937	178.2		—	—	—	—	—		—	—		65
70	33.434	34.291	1.181	4.646	6.575	4.409	181.06		—	—	—	—	—		—	—		70
75	35.820	36.693	1.181	4.646	6.575	4.409	198.88		—	—	—	—	—		—	—		75

Note: 1. Max bore shown is conventional. To determine required bore size, general engineering practice should be employed.
Surface pressure on key should be checked also.
2. Shaded area of above dimension table indicates heat treated teeth.

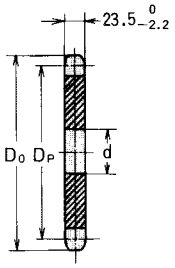
DID140 Standard Sprocket



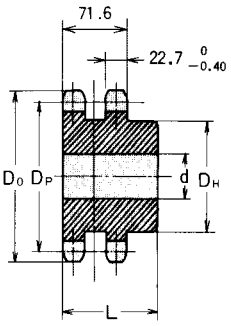
Single Sprocket with Hub on One Side
(Single B Type)



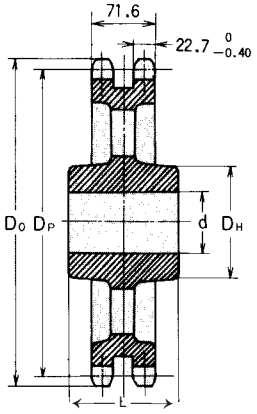
Single Sprocket with Hub on One Side
(Single B Type)



Flat Plain
(A Type)



Double Sprocket with Hub on One Side
(Double B Type)



Double Sprocket with Hub on Both Side (Double C Type)

Unit (inch)

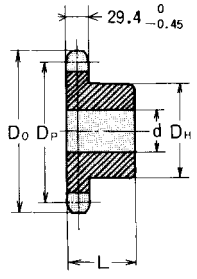
Number of teeth	Pitch Dia. DP	Tip Dia. DO	Single Sprocket with Hub on One Side (B Type/BW Type)									Number of teeth
			Bore d		Hub		Approx. Weight (lbs)	Material	Stock	Approx. Weight (lbs)	Material	
			Stock	Max.	(Dia.)Dh	(Length)L						
10	5.663	6.417	0.984	2.362	3.583	2.205	9.68	S35C	0.984	6.38		10
11	6.212	7.008	0.984	2.874	4.173	2.205	12.1		0.984	7.48		11
12	6.761	7.598	0.984	3.150	4.606	2.205	14.52		0.984	8.8		12
13	7.313	8.150	0.984	3.150	4.606	2.480	17.38		0.984	10.34		13
14	7.865	8.701	0.984	3.504	5.000	2.480	20.46		0.984	12.1		14
15	8.417	9.291	0.984	3.504	5.000	2.480	22.22		0.984	13.86		15
16	8.970	9.843	0.984	3.504	5.000	2.480	24.618	S35C	0.984	15.84		16
17	9.524	10.394	0.984	3.504	5.000	2.480	26.708	SS400	0.984	17.82		17
18	10.078	10.984	0.984	3.504	5.000	2.480	28.6	Welded	0.984	20.02		18
19	10.632	11.535	0.984	3.740	5.394	2.795	34.32		0.984	22.66		19
20	11.187	12.087	0.984	3.740	5.394	2.795	36.74		0.984	25.08		20
21	11.742	12.677	1.181	3.740	5.394	2.795	39.38		0.984	27.72	SS400	21
22	12.297	13.228	1.181	3.740	5.394	2.795	40.48		1.181	30.36		22
23	12.852	13.780	1.181	3.740	5.394	2.795	41.58		1.181	33.22		23
24	13.407	14.331	1.181	3.740	5.394	2.795	45.98		1.181	36.08		24
25	13.963	14.921	1.181	4.055	5.787	3.150	53.02		1.181	39.16		25
26	14.519	15.472	1.181	4.055	5.787	3.150	56.1	SS400	1.181	42.24		26
30	16.742	17.717	1.181	4.055	5.787	3.150	69.3	Welded	1.181	56.1		30
32	17.854	18.819	1.181	4.331	6.181	3.543	74.8		1.181	63.8		32
35	19.523	20.512	1.181	4.331	6.181	3.543	88.22		1.181	76.12		35
38	21.192	22.165	1.181	4.331	6.181	3.543	112.2		1.181	90.2		38
40	22.305	23.268	1.181	4.331	6.181	3.543	116.82		1.181	99.88		40
42	23.418	24.409	1.181	4.331	6.181	3.543	132		1.181	110		42
45	25.087	26.063	1.181	4.646	6.575	3.937	148.72		1.181	126.06		45
48	26.757	27.756	1.181	4.646	6.575	3.937	163.46		1.181	143.44		48
60	33.438	34.449	1.496	4.646	6.575	4.409	244.64		1.181	264		60

Note: 1. Max Bore shown is conventional. To determine required bore sizes, general engineering practice should be employed. Surface pressure on key should be checked also.
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 sizes 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 that two types of bore size.
4. Heat treatment on teeth portion is available when requested.

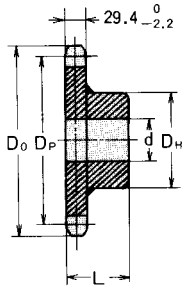
Unit (inch)

Doubled 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 (lbs)	Material
				Mini.	Max.	(Dia)DH	(Length)L		
B	13	7.313	8.150	1.575	3.150	5.118	3.937	32.12	SCC3
	14	7.865	8.701	1.575	3.150	5.512	3.937	37.4	
	15	8.417	9.291	1.772	3.543	6.102	4.331	43.78	
	16	8.970	9.843	1.772	3.740	6.693	4.724	51.26	
	17	9.524	10.394	1.969	4.134	7.283	5.118	58.52	
	18	10.078	10.984	1.969	4.528	7.874	5.906	67.32	
	19	10.632	11.535	2.362	4.921	8.465	5.906	75.02	
	20	11.187	12.087	2.362	5.118	8.858	6.299	83.16	
	21	11.742	12.677	2.559	5.512	9.449	6.693	92.62	
	22	12.297	13.228	2.559	5.906	9.843	6.693	158.4	
C	24	13.407	14.331	2.559	6.299	10.236	6.693	181.94	
	26	14.519	15.472	2.559	3.346	5.512	3.937	163.9	
	30	16.742	17.717					168.3	
	32	17.854	18.819	3.346	4.331	7.087	5.118	177.98	
	35	19.523	20.512					192.5	
	38	21.192	22.165	4.331	5.512	8.858	6.693	206.36	
	40	22.305	23.268					217.58	
	45	25.087	26.063	2.559	3.346	5.512	3.937	246.4	
	50	27.870	28.858					310.2	
	55	30.654	31.654	3.346	4.331	7.087	5.118	347.6	
	60	33.438	34.449					387.2	
	65	36.222	37.244	4.331	5.709	8.858	6.693	431.2	
	70	39.006	40.000					477.4	
	75	41.790	42.795	5.709	6.890	10.630	7.874	525.8	
	80	44.575	45.591					574.2	
	90	50.144	51.181					690.8	

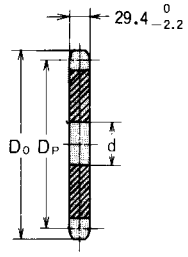
DID160 Standard Sprocket



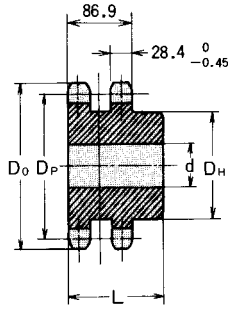
Single Sprocket with Hub on One Side
(Single C Type)



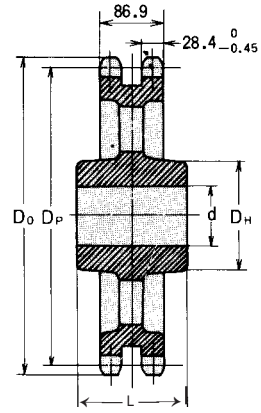
Single Sprocket with Hub on One Side
(Single BW Type)
Welded



Flat Plain
(A Type)



Doubled Sprocket with Hub on One Side
(Double B Type)



Doubled Sprocket with Hub on Both Side
(Double C Type)

Unit (inch)

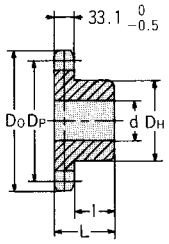
Number of Teeth	Pitch Dia. DP	Tip Dia. DO	Doubled Sprocket with HUB on One Side (B Type/BW Type)						Flat Plain (A Type)			Number of Teeth
			Bore d		Hub		Approx. Weight (lbs)	Material	Stock d	Approx. Weight (lbs)	Material	
			Stock	Max.	(Dia)DH	(Length)L						
10	6.472	7.323	0.984	2.756	4.134	2.480	14.96	S35C	0.984	10.56	SS400	10
11	7.099	8.031	0.984	3.150	4.606	2.480	18.26		0.984	12.738		11
12	7.728	8.661	0.984	3.504	5.000	2.480	21.78		0.984	15.092		12
13	8.357	9.331	0.984	3.740	5.394	2.795	27.5		0.984	17.666		13
14	8.988	9.961	0.984	3.740	5.394	2.795	30.36	S35C	0.984	20.416		14
15	9.619	10.591	1.181	3.740	5.394	2.795	33.44	SS400	1.181	23.386		15
16	10.252	11.260	1.181	4.055	5.787	2.795	38.28	Welded	1.181	26.576		16
17	10.884	11.890	1.181	4.055	5.787	2.795	41.734		1.181	29.942		17
18	11.518	12.559	1.181	4.055	5.787	2.795	45.364		1.181	33.506		18
19	12.151	13.189	1.181	4.055	5.787	2.795	49.236		1.181	37.29		19
20	12.785	13.819	1.181	4.055	5.787	2.795	53.24		1.181	41.25		20
21	13.419	14.488	1.181	4.055	5.787	2.795	57.42		1.181	45.43		21
22	14.054	15.118	1.378	4.646	6.575	3.150	66.44	SS400	1.378	49.808		22
24	15.322	16.378	1.378	4.646	6.575	3.150	75.68	Welded	1.378	59.18		24
25	15.957	17.047	1.378	4.646	6.575	3.150	80.52		1.378	64.152		25
26	16.593	17.677	1.378	4.646	6.575	3.150	84.48		1.378	69.344		26
30	19.133	20.236	1.378	4.646	6.575	3.937	115.06		1.378	92.092		30
32	20.405	21.496	1.378	4.646	6.575	3.937	136.4		1.378	105.49		32
35	22.311	23.425	1.378	4.646	6.575	3.937	147.18		1.378	125.928		35
40	25.491	26.614	1.378	4.646	6.575	4.409	188.76		1.378	164.054		40
45	28.671	29.803	1.378	5.197	7.362	4.921	203.28		1.378	208.362		45
48	30.580	31.732	1.378	5.197	7.362	4.921	—		1.378	236.742		48
60	38.215	39.370	1.378	5.197	7.362	4.921	297.88		1.378	369.908		60

Note: 1. Max Bore shown is conventional. To determine required bore sizes, general engineering practice should be employed. Surface pressure on key should be checked also.
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 sizes 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 that two types of bore size.
4. Heat treatment on teeth portion is available when requested.
5. Due to production reasons, S25C may be used for those with 13-21 teeth without notice.

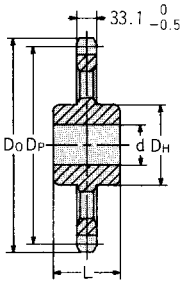
Unit (inch)

Doubled 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 (lbs)	Material
				Min.	Max.	(Dia)DH	(Length)L		
B	13	8.357	9.331	1.772	3.543	6.102	4.724	52.58	SCC3
	14	8.988	9.961	1.772	3.543	6.496	4.724	60.94	
	15	9.619	10.591	1.772	3.937	7.087	4.724	71.06	
	16	10.252	11.260	1.969	4.134	7.677	5.512	91.3	
	17	10.884	11.890	2.362	4.724	8.268	5.906	108.46	
	18	11.518	12.559	2.362	5.118	8.858	6.299	130.24	
	19	12.151	13.189	2.559	5.512	9.449	6.693	153.56	
	20	12.785	13.819	2.559	5.906	10.236	7.087	185.24	
	21	13.419	14.488	2.559	5.906	10.236	7.087	197.56	
C	22	14.053	15.118	2.559	5.906	10.236	7.087	210.54	
	24	15.322	16.378	2.559	5.906	10.236	7.087	237.6	
	26	16.593	17.677	3.346	4.331	7.087	5.118	310.2	
	30	19.133	20.236					266.2	
	32	20.405	21.496	4.331	5.709	8.858	6.693	281.6	
	35	22.311	23.425					303.6	
	38	24.219	25.354	5.709	6.890	10.630	7.874	330	
	40	25.491	26.614					345.4	
	45	28.671	29.803	3.346	4.331	7.087	5.118	470.8	
	50	31.852	32.992					523.6	
	55	35.033	36.181	4.331	5.709	8.858	6.693	580.8	
	60	38.215	39.370					644.6	
	65	41.396	42.559	5.709	7.087	10.630	7.874	708.4	
	70	44.578	45.748					774.4	
	75	47.760	48.937	7.087	8.858	13.386	9.252	849.2	
	80	50.943	52.087					924	
	90	57.307	58.465					1104.4	

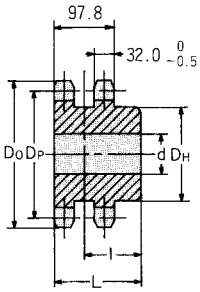
DID180 Standard Sprocket



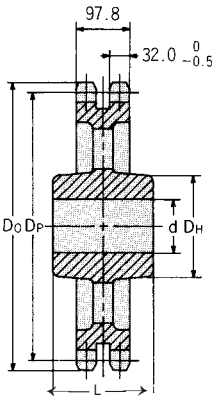
Single Sprocket with Hub on One Side
(Single B Type)



Single Sprocket with Hub on Both Sides
(Single CType)



Double Sprocket with Hub on One Side
(Double B Type)



Double Sprocket with Hub on Both Sides
(Double C Type)

Unit (inch)

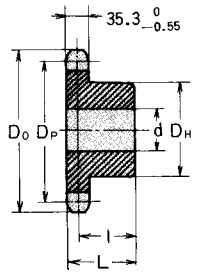
Single Sprocket with Hub on One Side (B Type), Both Sides (C Type)									
Type	Number of Teeth	Pitch Dia. DP	Tip Dia. DO	Bore d		Hub		Center Position l	Material
				Min.	Max.	(Dia.)DH	(Length)L		
B	13	9.402	10.472	1.969	3.543	6.299	4.331	3.679	SCC3 and/or SCC3
	14	10.111	11.220	1.969	3.543	6.299	4.331	3.679	
	15	10.822	11.929	1.969	3.543	6.299	4.331	3.679	
	16	11.533	12.677	2.362	4.134	7.087	5.118	4.467	
	17	12.245	13.386	2.362	4.134	7.087	5.118	4.467	
	18	12.957	14.094	2.362	4.134	7.087	5.118	4.467	
	19	13.670	14.843	2.362	4.134	7.087	5.118	4.467	
	20	14.383	15.551	2.362	4.134	7.087	5.118	4.467	
C	21	15.096	16.260	2.756	4.724	7.677	5.512	—	SCC3
	22	15.810	17.008	2.756	4.724	7.677	5.512	—	
	24	17.238	18.425	2.756	4.724	7.677	5.512	—	
	26	18.667	19.882	2.756	4.724	7.677	5.512	—	
	30	21.525	22.756	2.756	4.724	7.677	5.512	—	
	32	22.955	24.213	2.756	4.724	7.677	5.512	—	
	35	25.100	26.339	2.756	4.724	7.677	5.512	—	
	38	27.246	28.504	3.150	5.315	8.465	6.693	—	
	40	28.678	29.921	3.150	5.315	8.465	6.693	—	
	45	32.255	33.543	3.150	5.315	8.465	6.693	—	
	50	35.833	37.126	3.150	5.315	8.465	6.693	—	
	55	39.412	40.709	3.150	5.315	8.465	6.693	—	
	60	42.991	44.291	3.150	5.315	8.465	6.693	—	
	65	46.571	47.874	3.543	5.906	9.843	7.480	—	
	70	50.151	51.457	3.543	5.906	9.843	7.480	—	
	75	53.730	55.039	3.543	5.906	9.843	7.480	—	
	80	57.311	58.622	3.543	5.906	9.843	7.480	—	
	90	64.471	65.787	3.543	5.906	9.843	7.480	—	

Unit (inch)

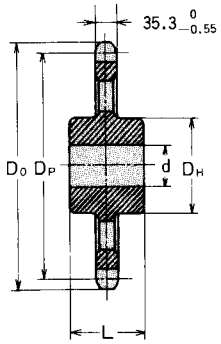
Single Sprocket with Hub on One Side (B Type), Both Sides (C Type)									
Type	Number of Teeth	Pitch Dia. DP	Tip Dia. DO	Bore d		Hub		Center Position l	Material
				Min.	Max.	(Dia.)DH	(Length)L		
B	13	9.402	10.472	2.362	3.937	6.693	5.118	3.193	SCC3
	14	10.111	11.220	2.362	4.331	7.480	5.512	3.587	
	15	10.822	11.929	2.362	4.724	8.268	5.906	3.980	
	16	11.533	12.677	2.362	5.118	8.858	6.299	4.374	
	17	12.245	13.386	2.559	5.512	9.646	6.693	4.768	
	18	12.957	14.094	2.559	5.906	10.433	7.087	5.161	
	19	13.670	14.843	2.756	6.693	11.024	7.480	5.555	
	20	14.383	15.551	2.756	7.283	11.811	7.874	5.949	
C	21	15.096	16.260	2.756	7.283	11.811	7.874	—	
	22	15.810	17.008	2.756	7.283	11.811	7.874	—	
	24	17.238	18.425	2.756	7.283	11.811	7.874	—	
	26	18.667	19.882	4.331	5.709	8.858	6.693	—	
	30	21.525	22.756					—	
	32	22.955	24.213					—	
	35	25.100	26.339					—	
	38	27.246	28.504					—	
	40	28.678	29.921	5.709	7.087	10.630	7.874	—	
	45	32.255	33.543					—	
	50	35.833	37.126					—	
	55	39.412	40.709					—	
	60	42.991	44.291					—	
	65	46.571	47.874	7.087	8.858	13.386	9.252	—	
	70	50.151	51.457					—	
	75	53.730	55.039					—	
	80	57.311	58.622					—	
	90	64.471	65.787					—	

Note: 1. Max Bore shown is conventional. To determine required bore sizes, general engineering practice should be employed. Surface pressure on key should be checked also.
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.

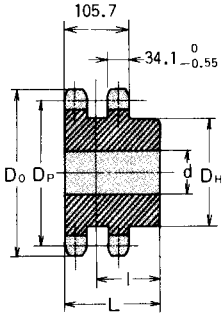
DID200 Standard Sprocket



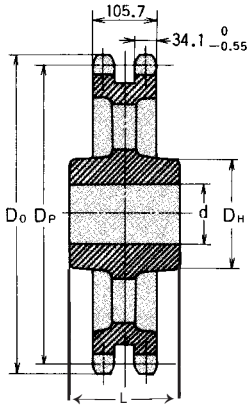
Single Sprocket with Hub on One Side
(Single B Type)



Single Sprocket with Hub on Both Sides
(Single C Type)



Double Sprocket with Hub on One Side
(Double B Type)



Double Sprocket with Hub on Both Sides
(Double C Type)

Unit (inch)

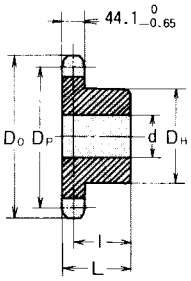
Single Sprocket with Hub on One Side (B Type), Both Sides (C Type)										
Type	Number of Teeth	Pitch Dia. DP	Tip Dia. DO	Bore d		Hub		Center Position l	Approx. Weight (lbs)	Material
				Min.	Max.	(Dia.)DH	(Length)L			
B	13	10.446	11.654	2.362	3.937	6.693	4.724	4.031	63.800	SCC3
	14	11.235	12.441	2.362	3.937	6.693	4.724	4.031	69.300	
	15	12.024	13.268	2.362	3.937	6.693	4.724	4.031	75.240	
	16	12.815	14.055	2.756	4.724	7.677	5.512	4.819	99.880	
	17	13.606	14.882	2.756	4.724	7.677	5.512	4.819	106.700	
	18	14.397	15.669	2.756	4.724	7.677	5.512	4.819	113.960	
	19	15.189	16.496	2.756	4.724	7.677	5.512	4.819	121.660	
	20	15.981	17.283	2.756	4.724	7.677	5.512	4.819	129.800	
C	21	16.774	18.071	2.756	4.724	7.677	5.512	—	139.480	
	22	17.567	18.898	2.756	4.724	7.677	5.512	—	146.960	
	24	19.153	20.472	2.756	4.724	7.677	5.512	—	162.580	
	26	20.741	22.087	2.756	4.724	8.465	5.906	—	196.460	
	30	23.917	25.276	2.756	4.724	8.465	5.906	—	231.000	
	32	25.506	26.890	2.756	4.724	8.465	5.906	—	248.600	
	35	27.889	29.291	2.756	4.724	8.465	5.906	—	310.200	
	38	30.274	31.654	3.150	5.906	9.843	6.693	—	356.400	
	40	31.864	33.268	3.150	5.906	9.843	6.693	—	396.000	
	45	35.839	37.244	3.150	5.906	9.843	6.693	—	440.000	
	50	39.815	41.220	3.150	5.906	9.843	6.693	—	486.200	
	55	43.791	45.236	3.150	5.906	9.843	6.693	—	552.200	
	60	47.768	49.213	3.543	5.906	9.843	7.480	—	596.200	
	65	51.746	53.189	3.543	5.906	9.843	7.480	—	651.200	
	70	#VALUE!	57.165	3.543	5.906	9.843	7.480	—	770.000	
	75	59.700	61.142	3.543	6.693	11.417	7.480	—	829.400	
	80	63.678	65.118	3.543	6.693	11.417	7.480	—	919.600	
	90	71.634	73.071	3.543	6.693	11.417	7.480	—		

Unit (inch)

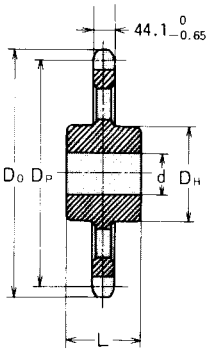
Single Sprocket with Hub on One Side (B Type), Both Sides (C Type)										
Type	Number of Teeth	Pitch Dia. DP	Tip Dia. DO	Bore d		Hub		Center Position l	Approx. Weight (lbs)	Material
				Min.	Max.	(Dia.)DH	(Length)L			
B	13	10.446	11.654	2.362	4.134	7.480	5.512	3.431	94.600	SCC3
	14	11.235	12.441	2.362	4.528	8.071	5.906	3.825	115.720	
	15	12.024	13.268	2.362	5.118	8.858	6.299	4.219	142.780	
	16	12.815	14.055	2.756	5.709	9.646	6.693	4.612	171.160	
	17	13.606	14.882	2.756	6.299	10.433	7.480	5.400	215.600	
	18	14.397	15.669	2.756	6.890	11.220	7.874	5.793	257.400	
	19	15.189	16.496	2.756	7.480	12.008	8.268	6.187	292.600	
	20	15.981	17.283	2.756	7.480	12.008	8.268	6.187	327.800	
	21	16.774	18.071	2.756	7.480	12.008	8.268	6.187	349.800	
C	22	17.567	18.898	2.756	7.480	12.008	8.268	—	376.200	
	24	19.153	20.472	2.756	7.480	12.008	8.268	—	398.200	
	26	20.741	22.087	4.331	5.709	8.858	6.693	—	442.200	
	30	23.917	25.276					—	492.800	
	32	25.506	26.890					—	521.400	
	35	27.889	29.291					—	563.200	
	38	30.274	31.654					—	624.800	
	40	31.864	33.268	5.709	7.087	10.630	7.874	—	651.200	
	45	35.839	37.244					—	739.200	
	50	39.815	41.220					—	836.000	
	55	43.791	45.236					—	928.400	
	60	47.768	49.213					—	1040.600	
	65	51.746	53.189	7.087	8.858	13.386	9.252	—	1161.600	
	70	55.723	57.165					—	1280.400	
	75	59.700	61.142					—	1414.600	
	80	63.678	65.118					—	1548.000	
	90	71.634	73.071					—	1845.800	

Note: 1. Max Bore shown is conventional. To determine required bore size, general engineering practice should be employed. Surface pressure on key should be checked also.
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 sizes 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 that two types of bore size.

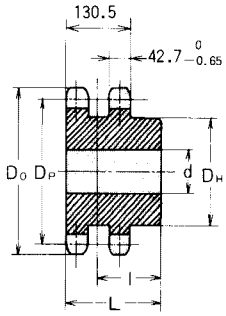
DID240 Standard Sprocket



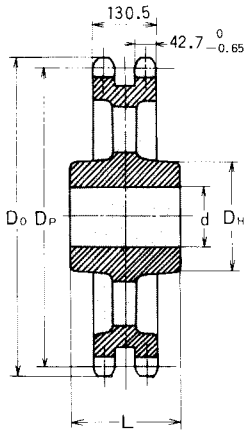
Single Sprocket with Hub on One Side
(Single B Type)



Single Sprocket with Hub on One Sides
(Single B Type)



Double Sprocket with Hub on Both Sides
(Double C Type)



Double Sprocket with Hub on Both Sides
(Double C Type)

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 (lbs)	Material
				Min.	Max.	(Dia.)DH	(Length)L			
B	13	12.536	13.976	2.756	4.724	7.677	5.906	5.037	109.780	SCC3
	14	13.482	14.961	2.756	4.724	7.677	5.906	5.037	119.900	
	15	14.429	15.906	2.756	4.724	7.677	5.906	5.037	130.680	
	16	15.378	16.890	3.150	5.315	9.055	6.693	5.825	174.020	
	17	16.327	17.835	3.150	5.315	9.055	6.693	5.825	186.340	
	18	17.276	18.819	3.150	5.315	9.055	6.693	5.825	198.660	
	19	18.226	19.764	3.150	5.315	9.055	6.693	5.825	202.400	
	20	19.178	20.748	3.150	5.906	9.843	6.693	5.825	244.200	
C	21	20.128	21.693	3.150	5.906	9.843	6.693	—	266.200	
	22	21.080	22.677	3.150	5.906	9.843	6.693	—	281.600	
	24	22.984	24.606	3.150	5.315	8.465	6.693	—	277.200	
	26	24.889	26.496	3.150	5.315	8.465	6.693	—	308.000	
	30	28.700	30.354	3.150	5.315	8.465	6.693	—	341.000	
	32	30.607	32.244	3.150	5.315	8.465	6.693	—	360.800	
	35	33.467	35.118	3.543	5.906	9.843	7.480	—	444.400	
	38	36.329	37.992	3.543	5.906	9.843	7.480	—	556.600	
	40	38.237	39.921	3.543	5.906	9.843	7.480	—	596.200	
	45	43.007	44.685	3.543	5.906	9.843	7.480	—	675.400	
	50	47.778	49.488	3.543	5.906	9.843	7.480	—	765.600	
	55	52.550	54.252	3.543	5.906	9.843	7.480	—	860.200	
	60	57.322	59.055	3.937	6.693	11.41	77.874	—	1029.600	
	65	62.094	63.465	3.937	6.693	11.41	77.874	—	1119.800	
	70	66.868	68.583	3.937	6.693	11.41	77.874	—	1227.600	
	75	71.641	73.386	3.937	7.874	12.99	27.874	—	1399.200	
	80	76.414	78.150	3.937	7.874	12.99	27.874	—	1531.200	
	90	85.961	87.717	3.937	7.874	12.99	27.874	—	1718.200	

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 (lbs)	Material
				Min.	Max.	(Dia.)DH	(Length)L			
B	13	12.536	13.976	2.756	5.118	8.858	6.693	4.124	165.660	SCC3
	14	13.482	14.961	2.756	5.709	9.843	6.693	4.124	197.780	
	15	14.429	15.906	2.756	6.299	10.630	7.480	4.911	248.600	
	16	15.378	16.890	2.756	6.890	11.417	7.874	5.305	297.000	
	17	16.327	17.835	2.756	7.480	12.205	8.268	5.699	349.800	
	18	17.276	18.819	2.756	8.268	13.386	8.268	5.699	407.000	
	19	18.226	19.764	2.756	8.268	13.386	8.268	5.699	442.200	
	20	19.178	20.748	2.756	8.268	13.386	8.268	5.699	484.000	
	21	20.128	21.693	2.756	8.268	13.386	8.268	5.699	523.600	
C	22	21.080	22.677	2.756	8.268	13.386	8.268	—	572.000	
	24	22.984	24.606	2.756	8.268	13.386	8.268	—	561.000	
	26	24.889	26.496	4.331	5.709	8.858	6.693	—	583.000	
	30	28.700	30.354					—	708.400	
	32	30.607	32.244					—	774.400	
	35	33.467	35.118					—	858.000	
	38	36.329	37.992					—	950.400	
	40	38.237	39.921	5.709	7.087	10.630	7.874	—	1016.400	
	45	43.007	44.685					—	1174.800	
	50	47.778	49.488					—	1372.800	
	55	52.550	54.252					—	1573.000	
	60	57.322	59.055					—	1773.200	
	65	62.094	63.465	7.087	8.858	13.386	9.252	—	2004.200	
	70	66.868	68.583					—	2266.000	
	75	71.641	73.386					—	2486.000	
	80	76.414	78.150					—	2772.000	
	90	85.961	87.717					—	3410.000	

Note: 1. Max Bore shown is conventional. To determine required bore size, general engineering practice should be employed. Surface pressure on key should be checked also.
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 sizes 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 that two types of bore size.

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.

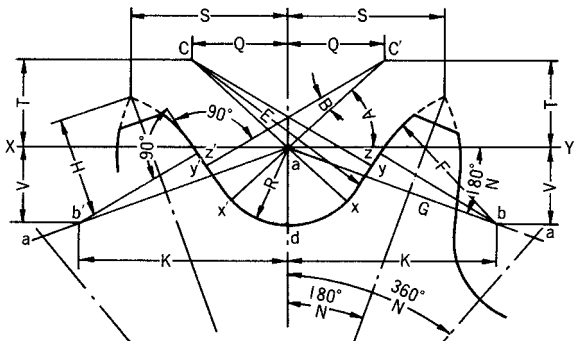
Example: In the case of DID80 (1.000" pitch) with 35 teeth
Pitch diameter (Dp) = P x Pitch diameter factor
= 1.000"x 11.1558 ≒ 11.156
Tip diameter (Do) = P x Tip diameter factor
= 1.000 x 11.711 ≒ 11.711
Root diameter (DB) = Pitch diameter (Dp) - Roller diameter (Dr)5
= 11.156 - 0.625 = 10.531
Caliper diameter factor (Dc) = P x Caliper diameter factor - Roller diameter (Dr)
= 1.000 x 11.466 - 0.625
≒ 10.841
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	22.23		**96**	30.5632	31.147	
13	4.1786	4.657	4.1481	**41**	13.0635	13.625	13.0539	**69**	21.971	22.548	21.9653	**97**	30.8815	31.465	30.8774
14	4.494	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**	31.518	32.102	31.514
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	5.419	**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**	23.562	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	23.875	**103**	32.791	33.376	32.7872
20	6.3925	6.914		**48**	15.2898	18.857		**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**	15.926	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	7.963	**53**	16.8803	17.451	16.8729	**81**	25.7896	26.37	25.7847	**109**	34.7006	35.286	34.697
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	18.146	**85**	27.0625	27.644	27.058	**113**	35.9437	36.56	35.9702
30	9.5668	10.114		**58**	18.471	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**	27.699	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	19.419	**89**	28.3355	28.918	28.331	**117**	37.2467	37.833	37.2434
34	10.838	11.392		**62**	19.7437	20.318		**90**	28.6537	29.236		**118**	37.565	38.152	
35	11.1558	11.711	11.1446	**63**	20.0618	20.637	20.0556	**91**	28.972	29.555	28.9676	**119**	37.8833	38.47	37.88
36	11.4737	12.03		**64**	20.38	20.956		**92**	29.2902	29.873		**120**	38.2016	38.788	
37	11.7916	12.349	11.781	**65**	20.6982	21.274	20.6922	**93**	29.6085	30.192	29.6042	**121**			
38	12.1096	12.668		**66**	21.0164	21.593		**94**	29.9267	30.51		**122**			

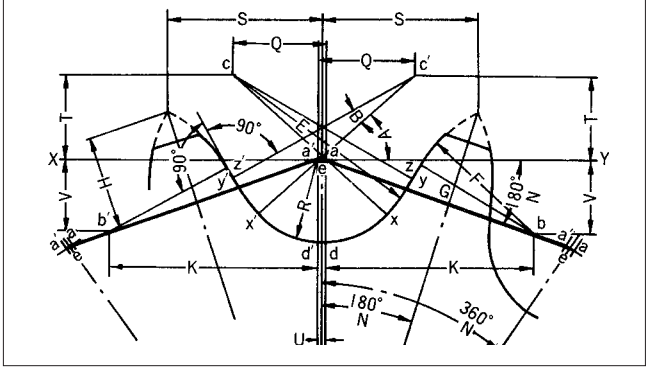
Calculation formulas for tooth gap forms

As the most rational standard 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, JIS/ANSI and ANSI specifies two kinds: U-tooth forms and S-tooth forms. In general, ANSI compliant S-tooth forms are adopted. Our standard sprockets also adopt S-tooth forms.

S-tooth form



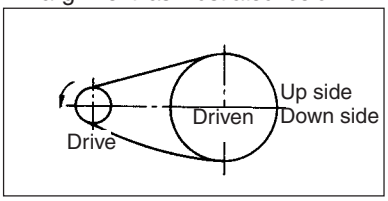
U-tooth form



Item	Formula	Item	Formula
Ds (Diameter of circular arc at tooth gap form portion)	Ds = ZR = 1.055Dr + 0.076/25.4 Dr: Roller diameter	**G**	G = ab = 1.4 Dr Point b exists on the line drawn from point a on line xy an angle of 180°/N. (In the case of U-tooth form, aa' is parallel to chordal pitch line e-e.)
R	R= 0.5025 DR + 0.038/25.4	**K**	$K = 1.4\,Dr\cos\frac{180^0}{N}$
U (Pitch clearance)	U = 0.07 (P-Dr) + 0.051/25.4 (**S-tooth form**: U = 0) **P : Chain pitch**	**V**	$V = 1.4\,Dr\sin\frac{180^0}{N}$
A	$A = 35^0 + \frac{60^0}{N}$ **N : Number of teeth**	**F**	$F = Dr\left\{0.8\cos\left(18^0 - \frac{56^0}{N}\right)\left(17^0 - \frac{64^0}{N}\right) - 1.3025\right\} - 0.038/25.4$
B	$B = 18^0 - \frac{56^0}{N}$	**H**	$H = \sqrt{F^2 - \left(1.4\,Dr - \frac{Pt}{2} + \frac{U}{2}\cos\frac{180^0}{N}\right)^2} + \frac{U}{2}\sin\frac{180^0}{N}$ Pt = Chordal pitch equal to chain pitch $= P\left(1 + \frac{Ds - Dr}{Dp}\right)$ (a-a in the case of S-tooth form, and e-e in the case of U-tooth form)
ac	ac = 0.8Dr	**S**	$S = \frac{Pt}{2}\cos\frac{180^0}{N} + H\sin\frac{180^0}{N}$
Q	$Q = 0.8Dr\cos\left(35^0 + \frac{56^0}{N}\right)$	Approximate outer diameter of sprocket	Approximate outer diameter of sprocket (at J = 0.3p) $= Pt\left(0.6 + \cot\frac{180^0}{N}\right)$
T	$T = 0.8Dr\sin\left(35^0 + \frac{60^0}{N}\right)$	Outer diameter of sprocket when sprocket tooth heads are sharp	Outer diameter of sprocket when sprocket tooth head is sharp (at J= H) $= Pt\cot\frac{180^0}{N} + 2H$ (In this case, generally this formula is corrected to obtain the outer diameter.)
E	E= cy = 1.3025Dr + 0.038/25.4	Maximum pressure angle	Maximum pressure angle = xab = $35^0 - \frac{120^0}{N}$ (Pressure angle in the case of new chain)
$\overline{xy}$	$\overline{xy} = (2.605\,Dr + 0.076/25.4)\sin\left(9^0 - \frac{28^0}{N}\right)$	Minimum pressure angle	Maximum pressure angle = xab – B = $17^0 - \frac{64^0}{N}$
yz	$yz = Dr\left\{1.4\sin\left(17^0 - \frac{64^0}{N}\right) - 0.8\sin\left(18^0 - \frac{64^0}{N}\right)\right\}$	Average pressure angle	Average pressure angle = $26 - \frac{92^0}{N}$

6. Design of Roller Chain Transmission

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.



6-1 How to select the proper chain

The chain can be selected according to the following two methods:
(1) General selection
(2) Slow-speed selection

The general selection method (1) considers, not only chain tension but also the shock load on the bushing and rollers due to the engagement between the sprockets and the chain and the wear of pins, bushings and rollers.

The slow-speed method (2) is applied when the chain is operated at a speed of 164 ft/min or less. In general, the chain selected by this method is subject to conditions more severe than that selected according to method (1). Thus, careful assessment of conditions characterize this method.

6-1-1 General selection

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

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

Actual power to be transmitted is affected by the load and depends on the machine and power source used, to realize the expected service life (for example, 15,000 hours in the case of capacities shown in the table of maximum horsepower ratings). Correction must be made. An indicator of the degree of loading is the factor shown in Table 1. The power to be transmitted (HP) is multiplied by the corresponding service factor to obtain a corrected power.

Corrected power (HP) = Power to be transmitted (HP) x Service factor

Table 1. Service Factor

Type of Drive Load \ Type of Input Power	Electric Motor or Turbine	Inner Combustion Engine	
		with Multiple Cylinder or Hydraulic Drive	without Multiple Cylinder nor Hydraulic Drive
Smooth (ex. Agitator, Centrifugal Blower , Feeder, Textile machines	1.0	1.0	1.2
Moderate Shock (ex. General work machines, Compressors, dryers)	1.3	1.2	1.4
Large Impact (Presses, Construction or mining machines, Vibration machines, General machine with reverse or Impact load)	1.5	1.4	1.7

2. When a chain is to be used for lifting, pulling dollies or being engaged with a pin gear, etc., please consult us.
3. To ensure that a selection has a sufficiently large allowance, select a chain in conformity with regulation guides, if any, and with reference to the maximum horsepower rating described below.

(b) Determination of number of teeth of chain and smaller sprocket

Use of simple selection chart
The number of teeth of the smaller sprocket and the chain to be used are tentatively decided with reference to the simple selection chart (P.93-P.94) and the corrected power (P.91-P.92).

Using the table of maximum horsepower ratings
If the results tentatively decided as described above are close to the design values, the number of teeth of the smaller sprocket can be determined with reference to the table of maximum horsepower ratings. The maximum horsepower 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 coming-off of bushings and rollers do not occur at a wear elongation of 2 percent or less.)
① Operation is carried out in room temperature (14°F ~ 140°F) free from dust and dust-containing liquid.
② There is no corrosive gas, or humidity, etc. to adversely affect the chain.
③ Proper lubrication is maintained.
④ The chain is used under conditions of a low start-stop frequency and a fairly stable load.

For multiplex chain

Select a multiplex chain, when the capacity of a sinplex chain is insufficient. The maximum horsepower rating of a multiplex chain cannot be obtained by multiplying the maximum horsepower rating of a simplex chain by the number of strands, since the load acting on the respective stands of the multiplex chain cannot be accurately divided. For the correction factor in this case, see the following table of multi-strand factors. Our K, KS Type Roller Chain and HKS Type Roller Chain are available up to triplex.

Table 2. Multi-Strand Factor

Number of Roller Chain Strand	Multi-Strand Factor
2	1.7
3	2.5
4	3.3
5	3.9

Horsepower Rating of Multi-Strand Chain
=Horsepower Rating of Simplex Chain X Multi-Strand Factor

Cautions for determining the number of teeth of smaller sprocket

When a chain of the minimum chain pitch required maximum horsepower 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,16 teeth, etc. as much as possible. If the sprocket has 12 or fewer teeth, the chain and sprocket willl be heavily worn and vibrate, and transmission will not be smooth. Likewise, avoid a small number of teeth as much as possible except in the case of low speed without shock.

Examination of shaft diameter

When the number of teeth of the samller sprocket is determined, multiply it by the speed ratio, and confirm whether the required shaft hole diameter can be secured in reference to the maximum shaft hole diameter in the table of sprocket dimensions. If the required shaft hole diameter is larger than the maximum shaft hole diameter, increase the number of teeth further or choose the next higher chain size and re-examine

(c) Determine of the number of teeth of larger sprocket

When the number of teeth of the smaller sprocket is decided, multiply it by the speed ratio to determine the number of teeth of the larger sprocket.
In general, if the number of teeth of the sprocket is larger, the bending angle of the chain is smaller to increase durabillty and enhance 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, the take-up angle of the chain on the smaller sprocket decreases, and the jumping of chain and abnormal sprocket wear are likely to occur. If a large speed ratio is necessary, selection of two-step speed change may be necessary.

6-1-2 Slow-speed selection

The slow-speed selection method is used when the chain operation speed is 164 ft/min or less and there is no worry of wear elongation and shock fracture of rollers and bushing.
In slow-speed selection, the chain is selected in reference to the tensile fatigue strength of the chain. Therefore, a chain selected according to this method willl be subject to more severe conditions than one selected according to the general selection method. When the slow-speed selection method is used, special care must be exercised. For the connecting links and offset links, the slow-speed selection method cannot be used.

(a) How to obtain corrected chain tension

Corrected chain tension =
(Maximum tension acting on chain lbs x (Service factor)

See Table 1 on the previous page.

To calculate the corrected chain tension, correctly identify the 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 load of chain

Using the maximum allowable load stated in the table of dimensions of respective chain, the sprocket tooth factor, and speed factor of the smaller sprocket listed below, obtain the corrected maximum allowable load from the following formula:
Corrected maximum allowable load =

(Maximum allowable load)x(Sprocket tooth factor) x (Speed factor)

See the table of chain dimensions — See the following Table 1. — See the following Table 2.

If the corrected maximum allowable load is larger than the corrected chain tension, you can select the chain.
For the number of teeth and speed of smaller sprocket not stated in Table 1 or 2, obtain the sprocket tooth factor and speed factor by linear interpolation.

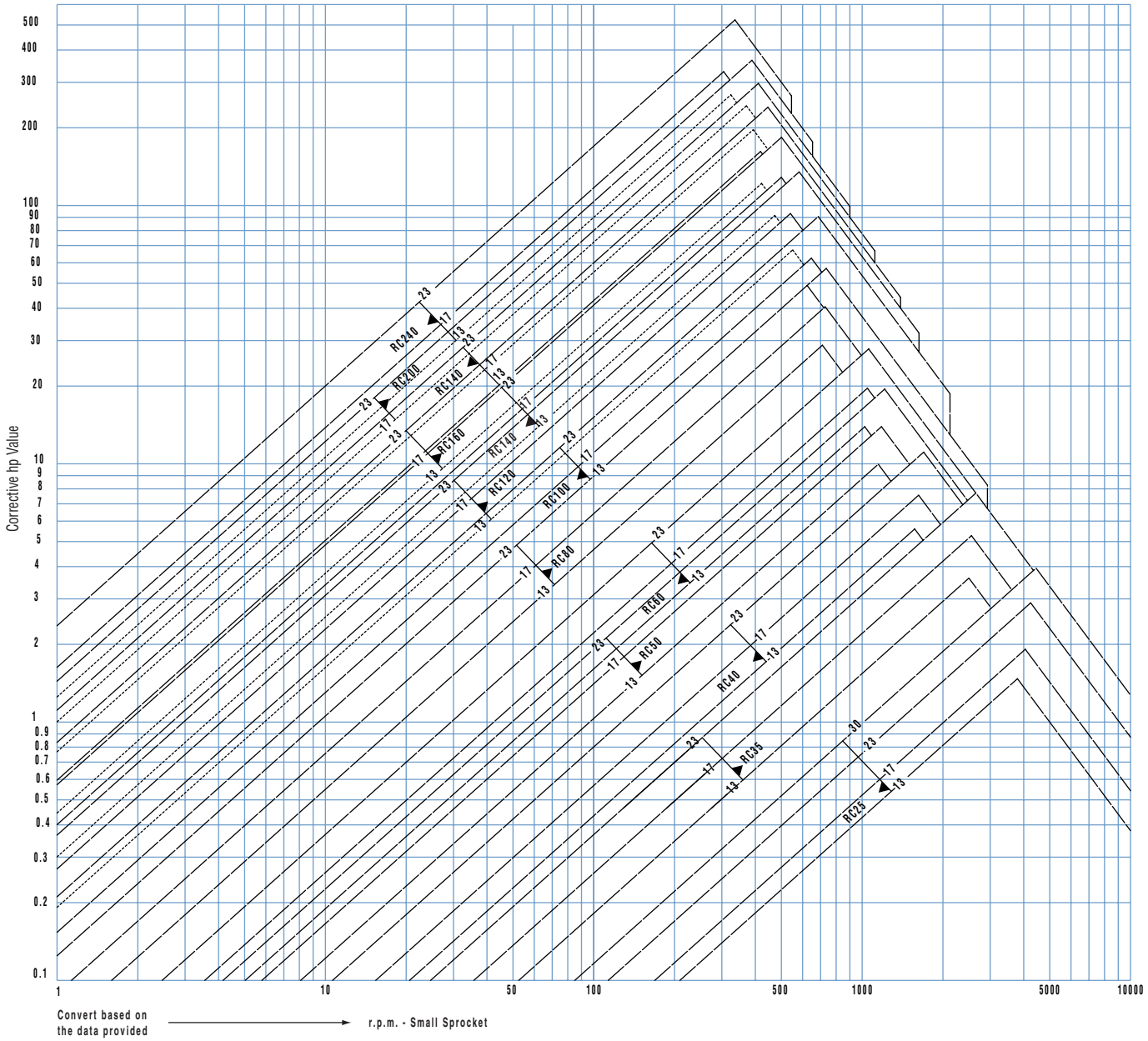
Table 1. Sprocket Tooth Factor

Number of Tooth on Small Sprocket	Sprocket Tooth Factor **CNT**
9 T	0.903
11T	0.923
13T	0.939
15T	0.952
20T	0.978
23T	0.990
26T & over	1.00

Table 2. Rotating Factor

rpm on Small Sprocket	Rotating Factor **CV**
10 rpm & under	1.00
20 rpm	0.933
30 rpm	0.896
40 rpm	0.871
50 rpm	0.851
100 rpm	0.794
200 rpm	0.741

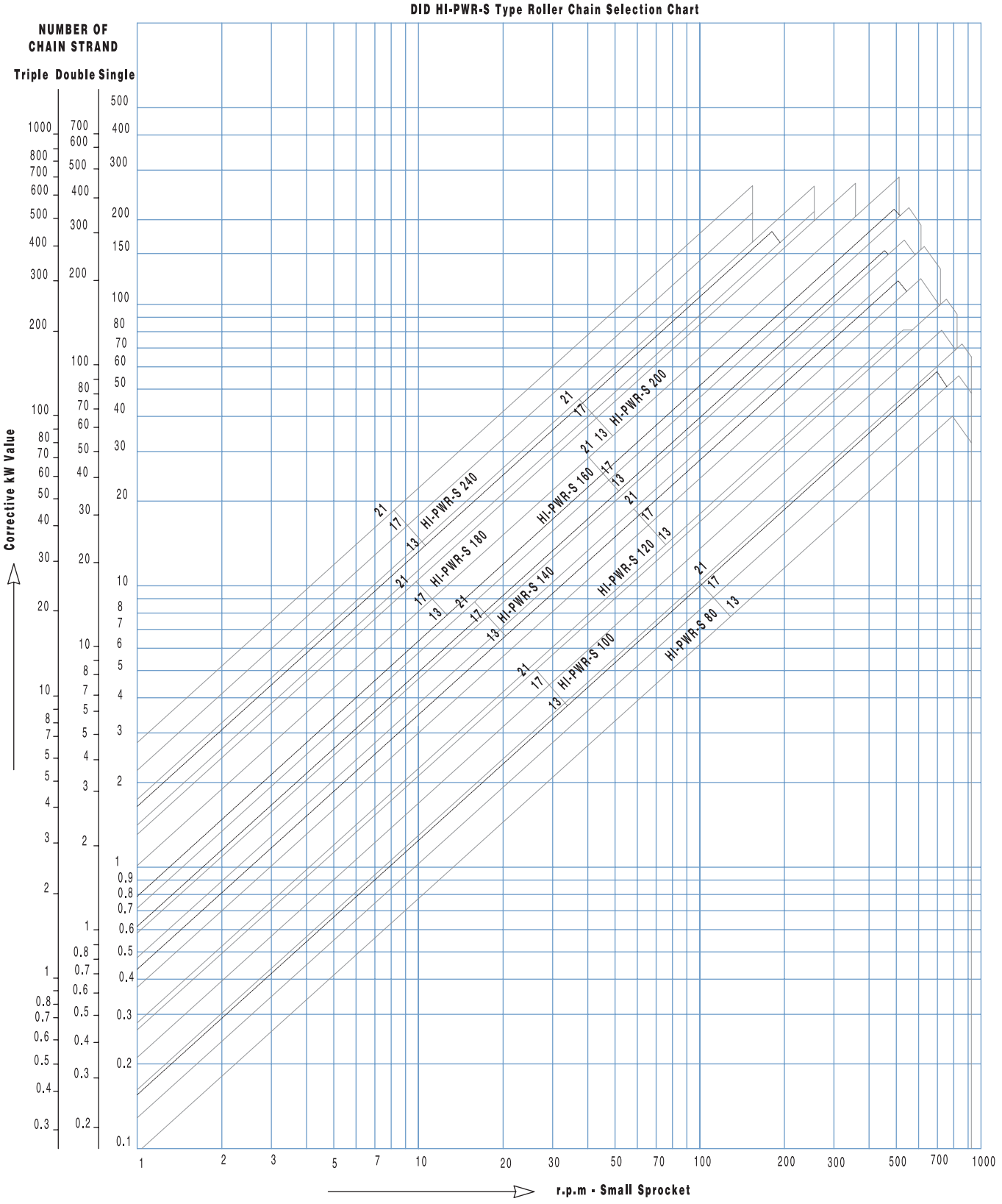
6-1-3 DID Standard Roller Chain Selection Chart



(How It Works)

Assuming that the corrected hp value and r.p.m. of small sprocket are 13hp and 100rpm respectively, the suggested roller chain size is read as “RC100” and the number of teeth on the small sprocket is read as “17”. This is in reference to the intersection of the corrected horsepower value 13hp (vertical axis) and the number of small sprocket tooth (horizontal axis).

DID KS Type Roller Chain Selection Chart



Convert based on the data provided

KEY:

HI-PWR-S 240 = RC240 KSR	HI-PWR-S 140 = RC140 KSR
HI-PWR-S180 = RC180 KSR	HI-PWR-S 120 = RC120 KSR
HI-PWR-S 200 = RC200 KSR	HI-PWR-S 100 = RC100 KSR
HI-PWR-S 160 = RC160 KSR	HI-PWR-S 80 = RC80 KSR

Please refer to p.83 for how to use this chart.

6-2 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:

$$Lp = \frac{N_1 + N_2}{2} + 2\,Cp + \frac{\{N_2 - N_1 / 2\}^2}{Cp}$$

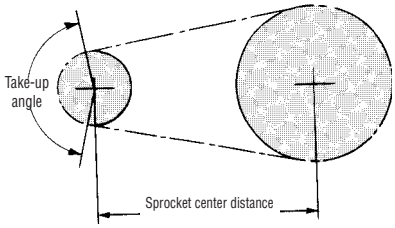
Lp:Total length of chain (pitch number)
N1: Number of teeth of smaller sprocket
N2: Number of teeth of larger sprocket
Cp: Center distance between two sprockets/Chain pitch

$\{(N2 - N1)/2\}^2$ can be obtained from the following table.

The Lp (pitch number) obtained from the above formula can seldom be an integer,and usually includes a decimal fraction. Raise it to a unit to make it an integer.
If the number is odd, use a offset link. 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 paragraph below. If the sprocket center distance cannot be altered, eliminate the chain sag using an idler or chain tightener shown on P.96.

Center distance between driving and driven shafts

The center distance between the driving and driven shafts must be, of course, more than the sum of the radius of both sprockets. In general, it is said that a proper sprocket center distance is 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 smaller 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:



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

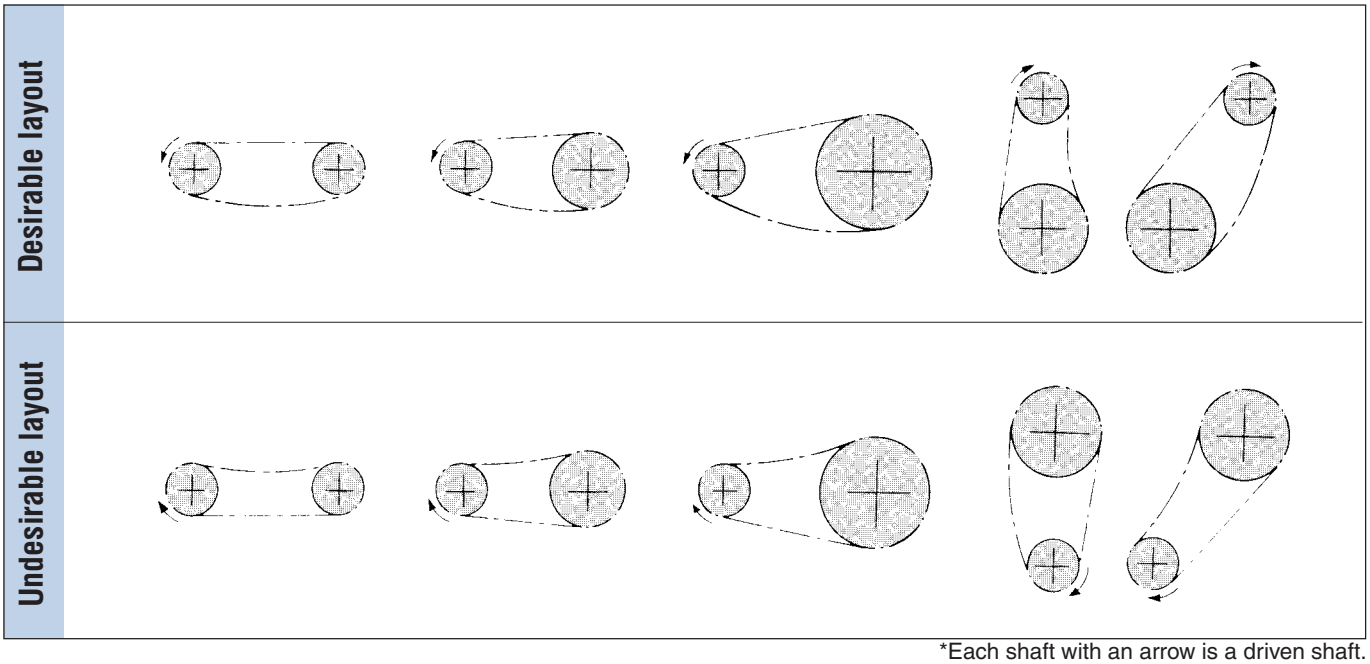
Cp: Sprocket center distance (pitch number)
Lp: Total length of chain (pitch number)
N1: Number of teeth of smaller sprocket
N2: Number of teeth of larger sprocket

N_2-N_1	$\{(N_2-N_1)/2\}^2$	N_2-N_1	$\{(N_2-N_1)/2\}^2$	N_2-N_1	$\{(N_2-N_1)/2\}^2$
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	$\{(N_2-N_1)/2\}^2$	N_2-N_1	$\{(N_2-N_1)/2\}^2$	N_2-N_1	$\{(N_2-N_1)/2\}^2$
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		

6-3 Layout

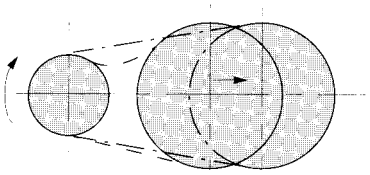
When a roller chain is used, shaft positions can be optionally determined. However, in principle, decide as illustrated below. That is, if the chain is tensioned horizontally, keep the top tensioned. Avoid vertical transmission whenever possible. In an inevitable case, place the larger sprocket below regardless of the directiion of rotation.



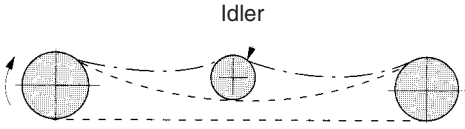
*Each shaft with an arrow is a driven shaft.

When the chain layout is undesirable:

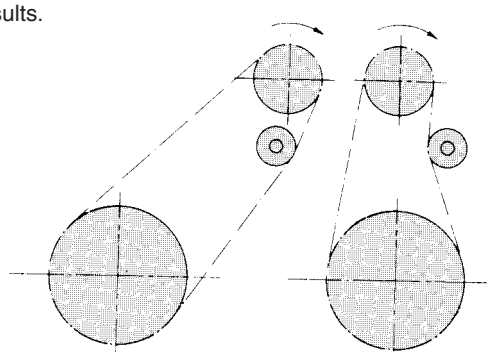
- When the top is sag and the sprocket center distance short:
  As illustrated below, adjust the sprocket center distance shaft to eliminate the sag.



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



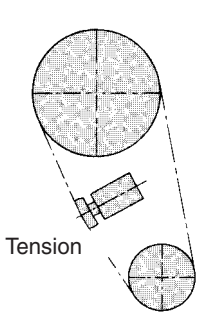
- When the chain is vertical or inclined:
  As illustrated below, eliminate the extra sag by a tensioner. In this case, a tensioner that eliminates sag automatically gives better results.

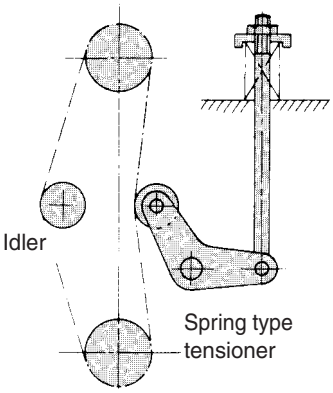


When a pulsating load acts in high speed operation:

The natural frequency of the chain and load shock cycle or chordal action can be synchronized to vibrate the chain. Vibration adversely affects the chain. Prevent it by any of the following methods:

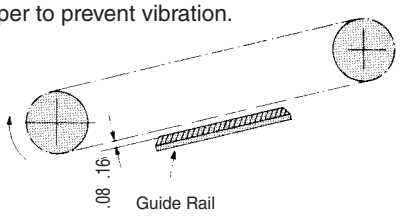
- Change the chain speed.
- Increase chain tension. However, note that over-tensioning can shorten the life of the chain.
- Use and idler or tensioner to divide the span.





- Install a guide stopper to prevent vibration.

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



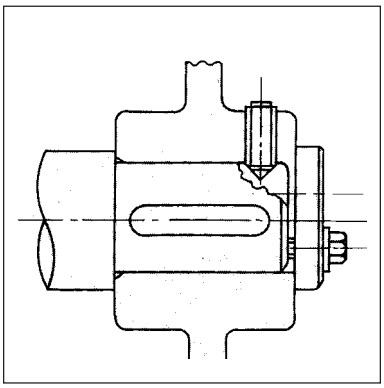
7. Installation, Adjustment and Maintenance

7-1 Installation

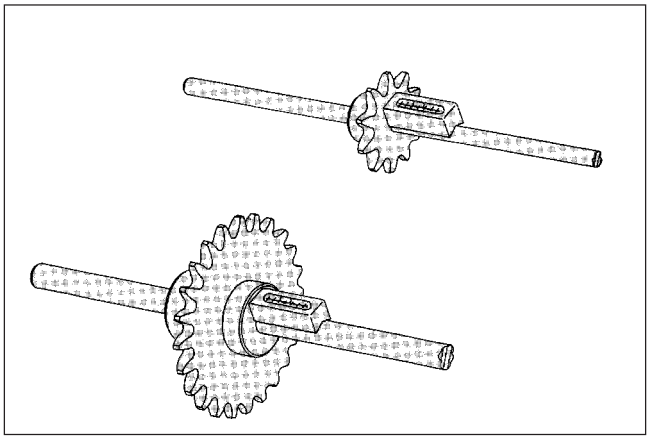
7-1-1 Installation of sprockets

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

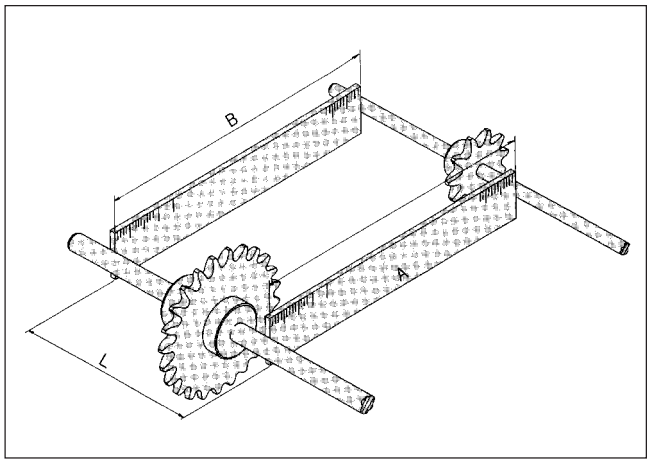
1. Correctly install a sprocket on a shaft, and fix it by a key, etc. to the shaft to prevent play between the sprocket and shaft during operation.



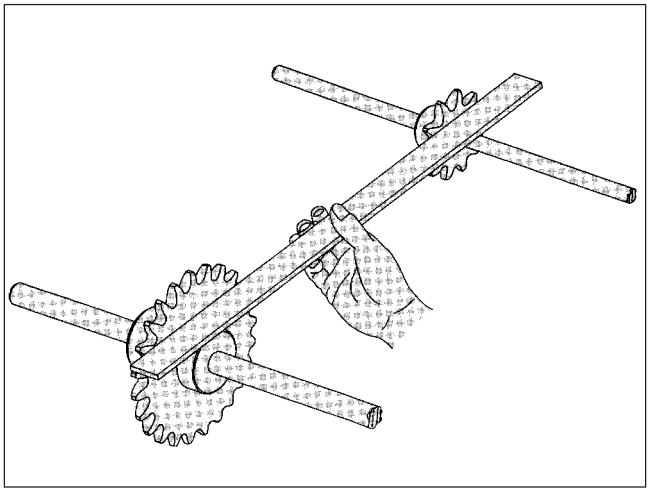
2. Adjust the axial measurement using a level, to within ±1/300.



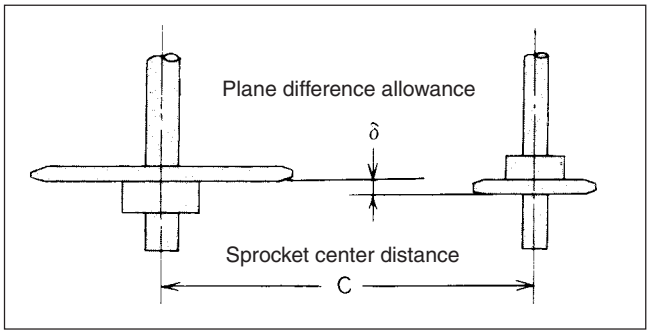
3. Adjust the parallel measurement $(\frac{A-B}{L})$ to it within ±1/300.



4. Adjust the driving and driven sprockets using a straight edge so they are on the same plane. (Also adjust the idler and the sprockets, or the tensioner and the sprockets similarly.)



Keep the allowance δ within the following value.



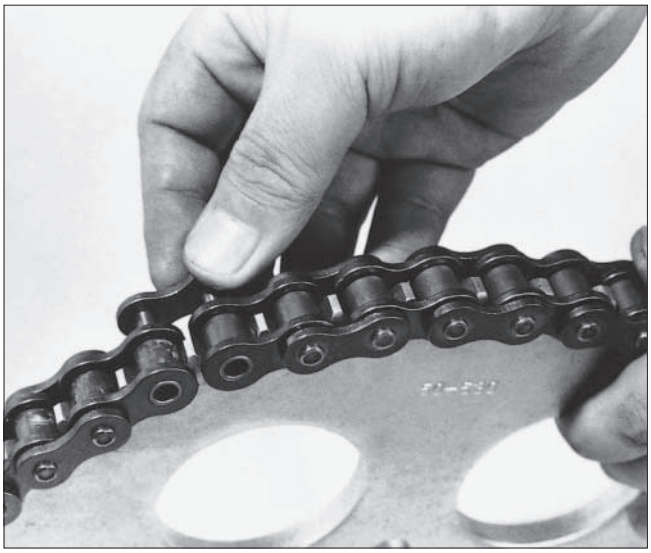
Sprocket center distance C	Allowance § (in)
up to 3.3 Ft	±0.04
3.3 ~ 33 Ft	±C (in) /1000
over 33 Ft	±0.4

7-1-2 Installation of roller chain

When connecting a chain after engaging it with the sprockets, observe the following procedure.

When using the sprocket teeth

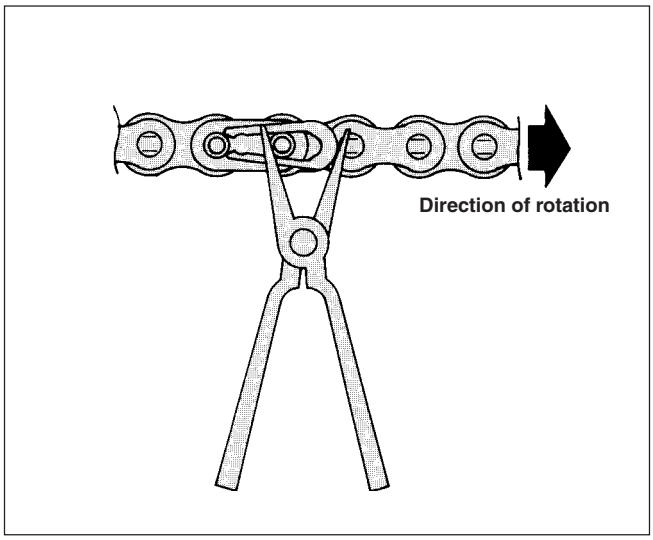
1. Engage the chain with the sprockets that both ends of the chain are on either of the sprockets, as shown in the following photo.
2. Insert connecting link pins in the ends of chain.
3. Install a connecting link plate, and fasten with a spring clip or cotter pins.



In installation take extra care to avoid damaging sprocket teeth.

Cautions

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



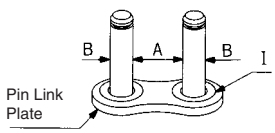
2. In a place where the sprocket center distance can be adjusted minimally, an odd number of links may be used. However, add one link, to use an even number of links, and eliminate the sag by shifting a sprocket or installing an idler.

3. When a semi press fit 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.

Connection of O-ring chain for general application

When an O-ring chain for general application is connected, the following should be kept in mind:

1. A connecting link of an O-ring chain for general application is pre-coated with grease on the pins. Before connection, make sure the grease is on the surfaces of pins, and if the amount of grease is insufficient, apply grease manually. (If a glove is used , the grease may be absorbed by the glove.) Example: When the connecting link (I) of a O-ring chain for general application is shipped, O-ring are fitted at the roots of the pins. If the O-ring comes loose due to vibration during transport, refit the O-ring 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 portions A than at portions B in the above illustration. (Portions A are worn because of sliding with the bushings.)

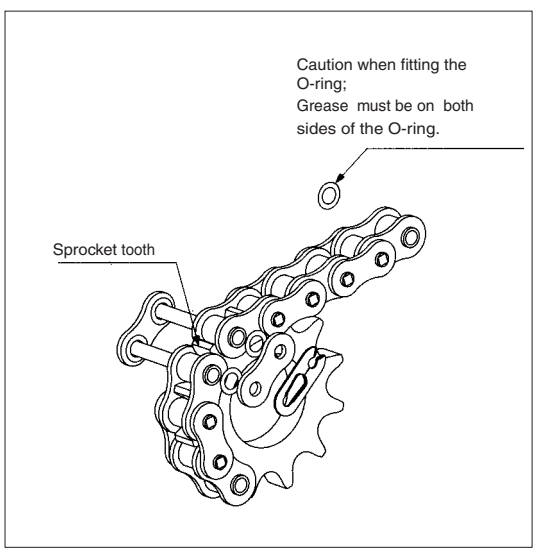


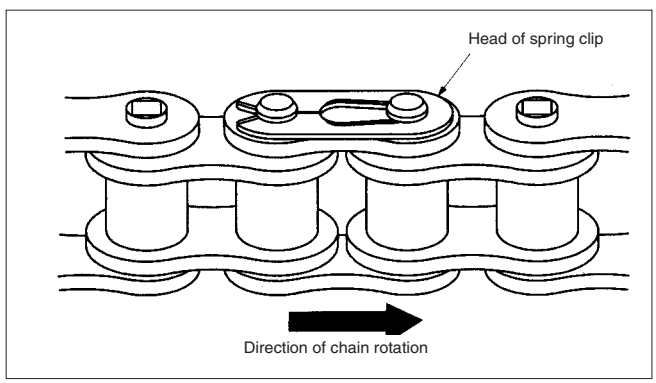
2. The chain can be easily connected if worked on the teeth of a sprocket. Engage the links at both the ends of the chain with the sprocket teeth and fit connecting pins. If the sprocket can be moved, the chain can also be connected on the sag side.

3. Connecting procedure

① Confirm whether O-ring are installed at the roots of the pins.
② If the amount of grease applied on the connecting pins is small, coat the pins with grease at the central portions.
③ Insert the connecting pins into the bushings of the inner links at both ends.
④ Confirm that the grease is applied to the entire face of the O-ring, and fit the O-ring onto the connecting pins.
⑤ Insert 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 progresssion direction of the chain. (See the following illustration.)
⑥ Be sure to confirm that the spring clip is securely fitted in the clip grooves of the connecting pins.

This completes installation of the connecting link. Note that grease on the surfaces of connecting pins and O-ring 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.





7-2 Maintenance

7-2-1 Check

A. Confirm the following before operation

Connected joint	• Confirm whether the connection is sufficient and whether components are normal. • Confirm whether bending is smooth. (in the case of O-ring chain, bending is slightly stiff).
Chain sprocket attachment	• Confirm whether there is any serious flaw, rust or wear. • Confirm whether sag is proper. • Confirm whether any pin rotates. • Confirm whether rollers rotate smoothly. • Confirm whether the chain engages the teeth of sprockets.
Interference	• Confirm whether there is anything interfering with the chain, or whether anything is likely to interfere with the chain or safety cover.
Lubrication	• Confirm whether the amount of lubrication is appropriate. (For the amount of lubrication, see the table of lubrication types.)
Driving and driven shafts	• Confirm whether the axial measurement and parallel measurement are proper. • Confirm whether the difference of sprocket planes is within the allowance.
Peripheral equipment	• Confirm whether 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 pieces and injure persons 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 flaw or rust is visible, it may cause the chain to break and fracture and possibly injure a person nearby. Confirm whether the chain has any potentially harmful flaw 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 a person nearby. Confirm whether or not the sprockets are worn.
Devices that prevent accidents	• Install accident prevention devices. To avoid injury caused by scattered pieces, install accident prevention devices (safety cover, drop net, etc.). • Install an emergency shutdown device. To avoid injury due to unexpected overload, install an emergency shutdown device such as a load controller or brake.

Before trial operation

Confirm the status of chain installation before starting operation.
- Whether the chain correctly engages the sprockets.
- Whether the joint is normal. (Whether the spring clip is incorrectly installed or whether cotters are bent.)
- Whether chain sag is proper.
- Whether the chain contacts the chain case.
- Whether lubrication is proper.

Checks during trial operation

If the chain can be manually rotated, rotate it to confirm 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, abornmal noise occurs. Check the installation of chain case chain sag.
- Whether lubrication is normal during operation
  Re-check the condition of lubrication.

7-2-2 Elongation limit of chain

Sag and elongation of chain

- Events caused by sag failure

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

a. Abnomal 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 occur not only when the chain is broken, but also when there is an equipment problem. A preliminary check is necessary.

- Elongation limit of chain

Even if sag adjustment is normal, excessive elongation of the chain can cause similar abnormality, inhibiting smooth transmission. In such a case, replace the chain. The elongation of chains to the extent that replacement is recommended 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. Adequately understand the contents of "Lubrication" in the next section, for performance of maintenance.

Elongation limits of chain

Number of teeth of larger sprocket	Regular chain	Sealed chain and sintered bushing roller cain
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

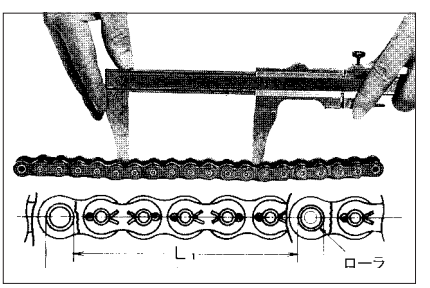
* If elongation of a sealed chain or sintered bushing roller chain exceeds the value in the above table, the chain becomes equivalent to a standard chain, and is accelerated compared to the wearing rate until then.
* The above elongations are applicable when the chain can be taken up or when a sag adjusting 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 other than a slight amount of play in the chain as a whole, measure with the chain lightly tensioned.

Note: For the sake of accuracy, the chain is tensioned by a length measuring load specified by JIS/ANSI during measurement.

2. As illustrated below, between the rollers for the number of links to be measured, the inner length (L1) and the outer length (L2) are measured to obtain the judgment length (L).



3. Then, obtain chain elongation.

Chain elongation =
(Judgment length - Reference length)/ Reference length x 100 (%)
Reference length = Chain pitch x number of links

4. For measurement, measure the length of about six to ten links to keep the measurement error as small as possible.

Chain wear-elongation check gage

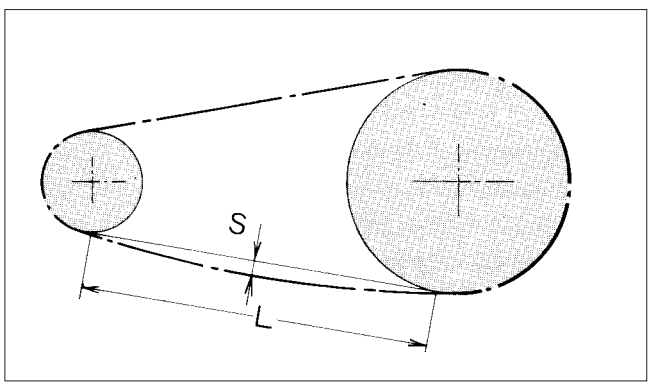
We recommend and can supply a chain wear-elongation check gage (P.73) that facilitates finding the elongation limit.

7-2-3 Sag adjustment of roller chain

To use a roller chain for a longer period of time, proper sag is an important point to consider. 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 is excessively sagged, the chain will vibrate or be seized by the sprocket. In about 50 hours (though 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 the proper intervals.

Optimum sag

In general, sag S is about 2 percent of the span L, but in the cases described below, it is about 1 percent.



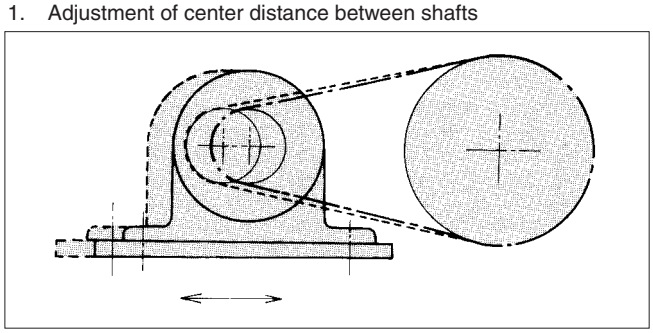
Keep sag at 0.01L or less in the following cases:

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

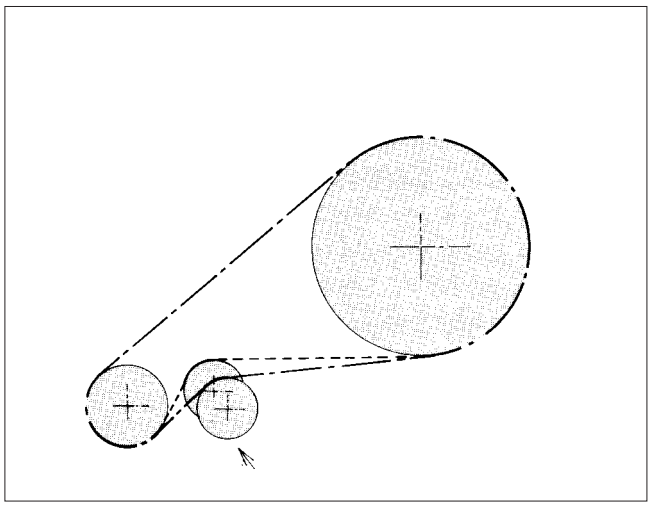
Sag adjusting method

Sag can be adjusted by the following methods.

1. Adjustment of center distance between shafts



2 . Adjustment using a tensioner or idler



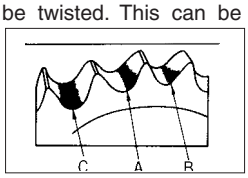
3 . Increase or decrease of pitch number by offset link

By using a 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.

7-2-4 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 abonormal.

- Checking chain accessories

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

For problems during operation, see “Trouble Shooting ”.

7-3 Lubrication

7-3-1 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. Locations and the effect of proper lubrication are listed below.

Proper lubrication locations	Effect of proper lubrication
• Selection of lubricating oil. See 7-3-2. • Lubricating points See 7-3-3. • Lubrication type (lubricating method, lubrication, intervals, amount of lubrication) See 7-3-4.	• 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.

7-3-2 Selection of lubricating oil

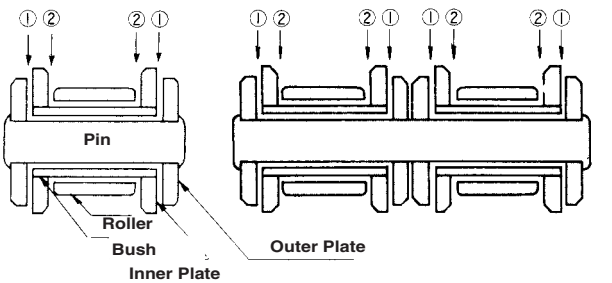
Select the lubricating oil of a roller chain in reference to the lubrication type (P. 103), ambient temperature and chain No., according to the following table.
Lubricating oil should be a mineral oil of good quality. It is important that the lubricating oil contains no dust or foreign matter. Never use waste oil. If the ambient temperature is lower than 14° F or higher than 140° F, a special oil is necessary. In this case, please consult our engineering department.

7-3-3 Lubricating points

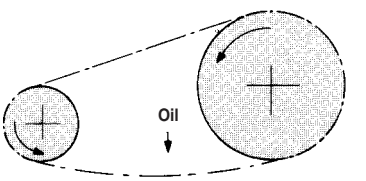
If the chain is immersed in an oil bath, oil will penetrate every part of the chain. In the case of manual lubrication, brush lubrication or drip lubrication, ensure that the oil sufficiently penetrates the portions of ① and ② in the following illustration.

Places to be lubricated

①Between outer link and inner link (against wear elongation)
②Between bush and inner plate (for noise reductiion and protection against wear and impact damage on bush & roller)



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

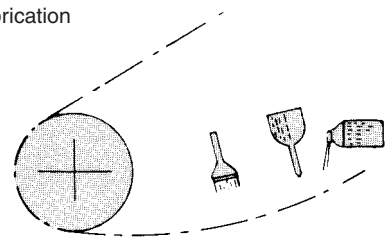
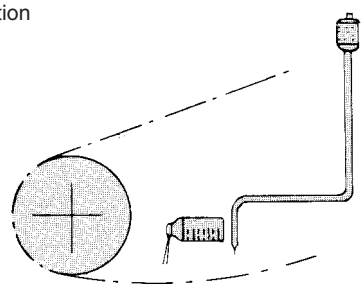
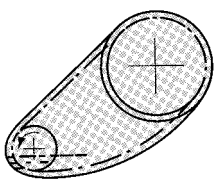
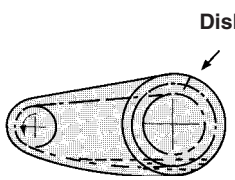
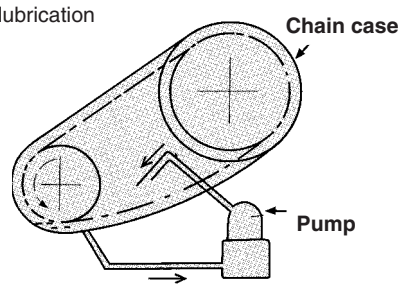


Type of Lubrication	A, B				C			
Atmospheric Temperature / Chain No.	−10°C ~0°C (14°F~32°F)	0°C ~40°C (32°F~104°F)	40°C ~50°C (104°F~122°F)	50°C ~60°C (122°F~140°F)	−10°C ~0°C (14°F~32°F)	0°C ~40°C (32°F~104°F)	40°C ~50°C (104°F~122°F)	50°C ~60°C (122°F~140°F)
RC25~RC50	SAE10W	SAE20	SAE30	SAE40	SAE10W	SAE20	SAE30	SAE40
RC60~RC80	SAE20	SAE30	SAE40	SAE50				
RC100					SAE50	SAE30	SAE40	SAE50
RC120~RC240	SAE30	SAE40	SAE50					

Specially designed lubricant must be applied when atmospheric temperature is under 14°F or over -140°F. Please consult with us for appropriate selection of lubricant.

7-3-4 Lubrication Types (Explanation of A, B and C in the tables of maximum horsepower ratings)

The chain is selected with reference to the table of maximum horsepower ratings, and the allowable horsepower rating for a case where the chain size, number of sprocket teeth and speed are decided is based on the assumption that any of the following appropriate types of lubrication is adopted. If any of the following lubrication types cannot be adopted or in an environment where earth, sand or dust exists, use the DID Ultimate Life Chain Series (see P. 43).

Lubrication type	Name and method	Lubrication intervals and amount	Caution
A Use DID Chain Lube (see P.75).	Manual lubrication Brush lubrication 	Carry out periodical manual or brush lubrication, 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 five to 20 drops of oil per one 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.	Oil bath should be leak proof. Before using the case for the first time, thoroughly wash the inside to remove dust and other foreign matter.
	Disc lubrication 	A disc is used to apply oil to the chain, Keep the disk immersed in oil, at a depth of about .787". Keep the peripheral speed higher than 656 ft/min.	
C	Forced fed lubrication 	The amount of lubrication must be set to avoid abnormal heating. In general, the amount should not allow the chain temperatrue to exceed 140°F.	The case leak proof. When using the case for the first time, thoroughly wash the inside to remove all dust and foreign matter.

7-3-5 General cautions for lubrication

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

In the case of insufficient lubrication

If the lubricating oil is exhausted, red rust is generated between the inner and outer plates, causing sudden wear. Therefore, the lubricating oil must be applied before this happens. When a chain whose lubrications is exhausted is disassembled,red rust is visible on the surfaces of pins, and the surfaces are roughened, as ahown in this photo. (Normally, pins have a mirror finish.)

Do not use grease for lubrication !!

Do not use grease to lubricate your chain, since it takes too long for grease to reach the clearances between pins and bushings at room temperature. Use the machine oil shown in the table on P.102 or DID Chain Lube (a spray lubricant).

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

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

In this case, check to ensure that:
1. The lubricating oil is not dirty.
2. The amount of lubricating oil is correct.
3. Lubricating oil is uniformly applied to the chain.

Cautions

Dust contamination must be avoided to maintain wear resistance. If temperature rises abnormally or the chain squeakes, the oil may be exhausted. Verify by checking.

7-4 Troubleshooting Guide

Trouble	Possible cause	Correction
A pin, bushing or roller is fractured. Note: "Fracture patterns of respective components of chain" on P.106.	High speed rotation exceeding the tolerance of chain and sprockets	Lower the speed, or select a chain with a smaller pitch. Otherwise, select a sprocket with a larger number of teeth. In this case, refer to general selection details (P.91).
	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 lubricating oil. Spray type chain oil "DID Chain Lube" is recommended.
	Corrosion of chain	Check the service environment 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.
	Check for foreign objects.	Immediately remove foreign matter; strictly control the service environment.
Abnormal noise	Chain is excessively tensioned or slackened.	Pay constant attention to the chain sag. Correct by adjusting it according to the procedure stated in "Sag adjustment of roller chain" (P.101).
	Incorrect alignment of sprockets	Check the alignment between both the larger and smaller sprockets.
	Large wear elongation of chain or wear of sprocket	Replace a chain that is elongating beyond the tolerance and replace 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. 103).
	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 when an HK Type Series Multiplex Chain is replaced, sufficient care is necessary.)

Trouble	Possible cause	Correction
When the chain rides over a sprocket.	Excessive wear elongation of chain	Replace an excessively worn chain.
	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 deposit of foreign matter on tooth gap bottom	Replace a worn sprocket with a new one. If foreign matter is deposited on a tooth gap bottom, immediately remove it.
Wear of plates and sprockets on their lateral sides	Incorrect alignment of sprockets	Misalignment of drive and driven sprockets result in abnomal wear of sides of link plate, 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 with a new one, and practice perfect and uniform lubrication.
	Occurrence of stiff link	See the following column
Stiff link	Load in excess of tolerance	Select a DID chain larger in tolerance.
	Misalignment of sprockets	If the alignment between sprockets is incorrect, the force acting on the sprockets on their lateral sides opens and causes inner plates to interfere with the outer plates, which causes stiff links. Correctly align the larger and smaller sprockets.
	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 plate and foreign matter	If a chain is in contact with foreign matter during running, the inner and outer plates may be opened. Immediately remove the foreign matter.
	Ingress of foreign matter into a bendable portion of chain.	If sand or mud enters a bendable portion, remove the chain, and wash and re-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 components of chain " on P.106.	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 willl occur. If the 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 of bending	If a load or shock load is greatly 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 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 a proper chain, and practice correct lubrication.
	Hydrogen embrittlement	Remember that a chain might be broken suddenly by hydrogen embrittlement if it comes in contact with acids.
	Interference with foreign matter	If foreign objects should interfere with the running of chain or be caught, the chain is likely to be over loaded and its life will be shortened or it may break suddenly. Watch the shop atmosphere carefully, and be sure to remove any foreign objects without delay.
Rotation of pin (see P.106)	Excessive tension Riding of chain over sprocket Corrosion of chain and improper lubrication	If excessive tension is a 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 components of chain

When a roller chain is broken during operation due to improper use, knowing how and what portion is broken greatly helps to clarify the cause and determine corrective measures.

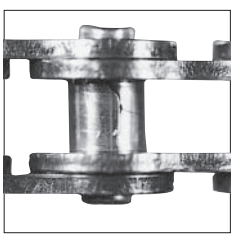
● Fracture of plates

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 little plastic deformation occurs as shown in (b). A large feature of fatigue fracture is when 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

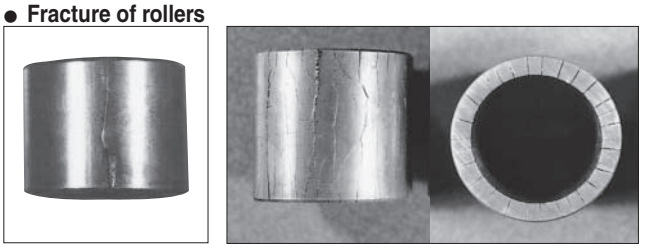
If a pin is fractured by excessive tension, the fracture occurs near the link plate, with a lustrous finished surface formed by shearing, as shown in (d). However, when the acting force is not so strong, fatigue fracture takes place after a long period around the center of the pin as shown in (e) then supposed to be flat with small undulations.

● Fracture of bushings



A bushing is fractured by a shock, in a way similar to a roller. 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, generally vertical splitting occurs as shown in the photo, and in general, pitch marks of fatigue grow from the inside of the roller, to cause splitting. If splitting occurs all at once due to a large tension, the split faces do not have a polishing mark to allow the cause to be identified.

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 since the rivet mark on the pin head shifts from the correct position. If the chain is disassembled, galling is found between a pin and bushing in most cases. The cause of galling is incorrect lubrication or excessive tension. In the case of a machine not used for a long time, rust may develop between pins and bushings, causing the pin to rotate.

Elongation of chain

In general, the elongation of chain 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 can be 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. The performance of a plastically elongated chain may be diminished. Quickly replace it with a new one.

3. Wear elongation of chain
   If a chain is operated, pins and bushings are worn through 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.100.

7-5 Timing for Replacement

If the engagement between chain and sprockets becomes defective or any factor occurs which remarkably promotes a decline in the strength of the chain, replace the whole chain. When any of the following conditions occur in the chain you use, replace the whole chain to maintain safety.

- When a replace chain is worn close to the" Elongation limit of chain" (P.100)
- 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

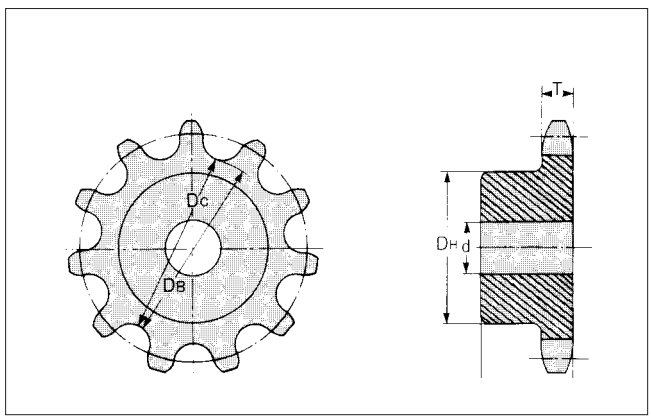
The life of sprockets is generally several times the life of a chain, but if the teeth are worn because of insufficient lubrication or damaged because of a shock load, etc., the sprockets must be replaced.

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

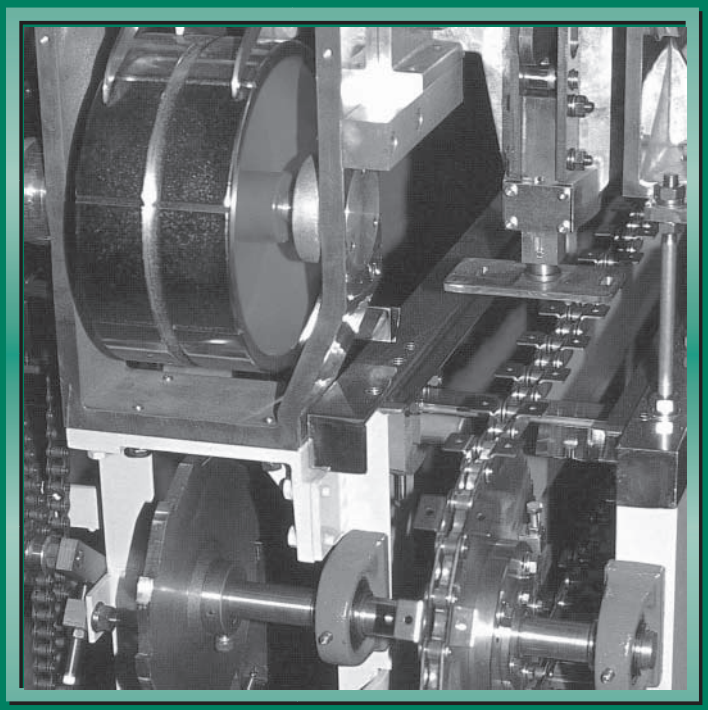
1. Chain No. and number of strands
2. Type of sprockets
3. Prepared shaft hole diameter (d) (This is not necessary if you drill this hole; in this case, drill a hole not exceeding the maximum shaft hole diameter.)
4. Number of teeth
5. Boss diameter (DH) and length (L) (in the case of other than standard sprocket)
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 - numbered teeth)



Roller Chain & Double Pitch Chain for Conveyor Applications



II

1. Outline of DID Small Chain for Conveyor Applications

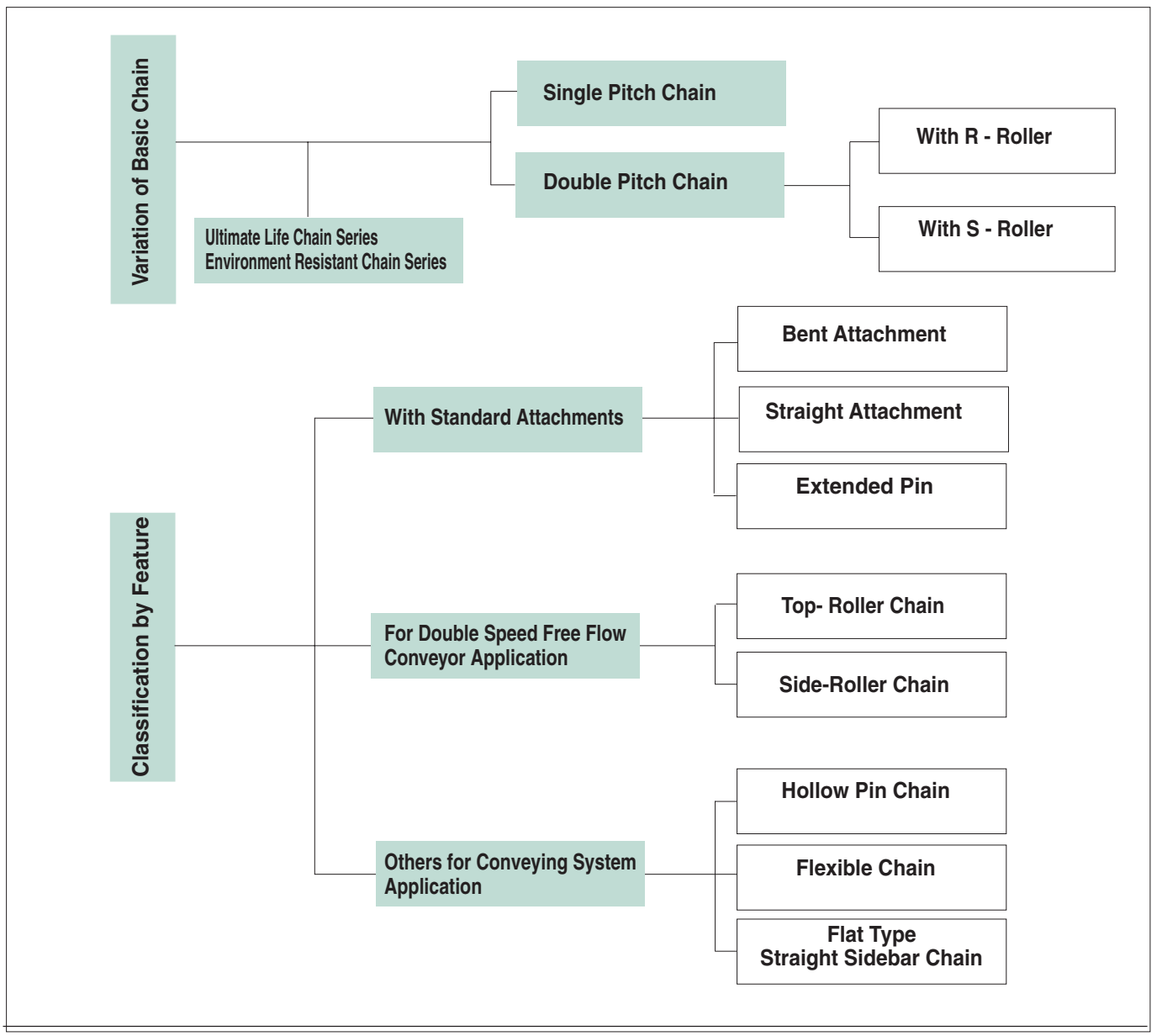
1-1 Variation of base chain

DID Small Sized Roller Chain for Conveyor Systems are called base chain, and include single pitch chain and double pitch chain.
Single pitch chain correspond to Section 2 "General application chain" in the previous chapter of "Transmission chain" , and are used with "JIS/ANSI standard sprockets".
Double pitch chain are standardized as "JIS/ANSI Double Pitch Chain", and the design of pins , bushings and rollers are basically the same as that of "single pitch chain". The plates only are made longer to make the pitch double that of single pitch. The sprockets of double pitch rollers are also standardized as "JIS/ANSI double pitch chain sprockets".
Small Sized Roller Chain for Conveyor Systems are based on the above base chain, and have various top rollers, side rollers and attachments that customize chain for different applications. Classifications of DID Small Sized Roller Chain for Conveyor Systems are shown below.

1-2 Ultimate Life Chain Series and Environment Resistant Chain Series

The "2-3 Ultimate Life Chain Series and "2-4 Environment Resistant Chain Series" described in the previous chapter, "Transmission chain", are also available in Small Sized Roller Chain for Conveyor Applications. Chain in the Small Sized Roller Chain for Conveyor Applications Series are listed on the following page for reference.

Classification



List of small chain for convey or systems (Ultimate Life Series and Enviromnent Resistant Series)

Uitimate Reistant Series			Type of chain (for both single pitch and double pitch)								
			Standard chain					O-ring chain		Stintered bushing roller chain	
Environment Resistant Series		Size classified table	Regular	Solid Bushing	Rustless	Hi-guard	Stainless	Regular	Rustless	Regular	Rustless
Standard attachments		Table of P.126	0	0	0	0	0	0	0	0	0
Fortune flow	S2 chain	Table of P.134	0	–	–	–	–	–	–	–	–
Fortune flow	Top roller chain	"	0	0	0	–	–	0	0	0	0
Fortune flow	Side roller chain	"	0	0	0	–	–	0	0	0	0
Hollow pin chain		"	0	–	0	–	–	–	–	–	–
Flexible chain		"	0	0	0	–	–	–	–	–	–
Flat Type Roller chain		"	0	0	0	0	–	0	0	–	–

Note 1 Standard sintered bushing roller chain is available for RC80 and smaller single pitch chain and for RC2080H and RC2082H and smaller double pitch chain.
Note 2 Standard O-ring chain are available for RC240 and smaller single pitch chain and for RC2060H and RC2062H and smaller double pitch chain.
Note 3 Standard Hi-guard chain are available for RC120 and smaller single pitch chain and RC2120H and RC2122H and smaller double pitch chain.
Note 4 For stainless steel chain, see P.56 and P.114.

1-3 How to order a small chain for conveyor applications

• When you order RC2050 with 96 links with K1 attachments (one hole) every other link with a connecting link attached to one end.

[Example]

RC 2050 K1 2 X 96 incl. 1 CL ATOE

- RC: Roller Chain
- 2050: Chain Size
- K1: Attachment Spacing
- 2: Attachment Type
- 96: Chain Length
- incl. 1 CL ATOE: Description for Connecting Link

Indication of connecting link

- P/S: A connecting link is packed separately with the chain
- JE: Endless with a connecting link already installed
- ATOE: A connecting link is attached to one end
- BERL: No connecting link is to be included Both Ends Roller Link

Please provide descriptions for special arrangement.

* For connections other than those above, see P.118. For any other style, please consult us.
* In case of top roller chain or side roller chain, see the pages for the chain concerned.

2. Double Pitch Chain and Sprockets

In general, Small Sized Roller Chain for Conveyor Applications are operated for longer distances and at lower speeds than transmission chain. In this case, even if the plate pitch is double with the pins, bushings and rollers unchanged , to half the number of teeth engaged with the sprockets, the wear of pins bushings and rollers is small since the chain speed is low, while the number overall is halved. DID Double Pitch Chain, conform to ANSI and are manufactured in "Ultimate Life Chain Series" and " "Environment Resistant Chain Series," as are single pitch chain. Generally, sprockets for double pitch chain utilize single pitch type sprockets. For more details, see" Sprockets for double pitch chain" on P.115

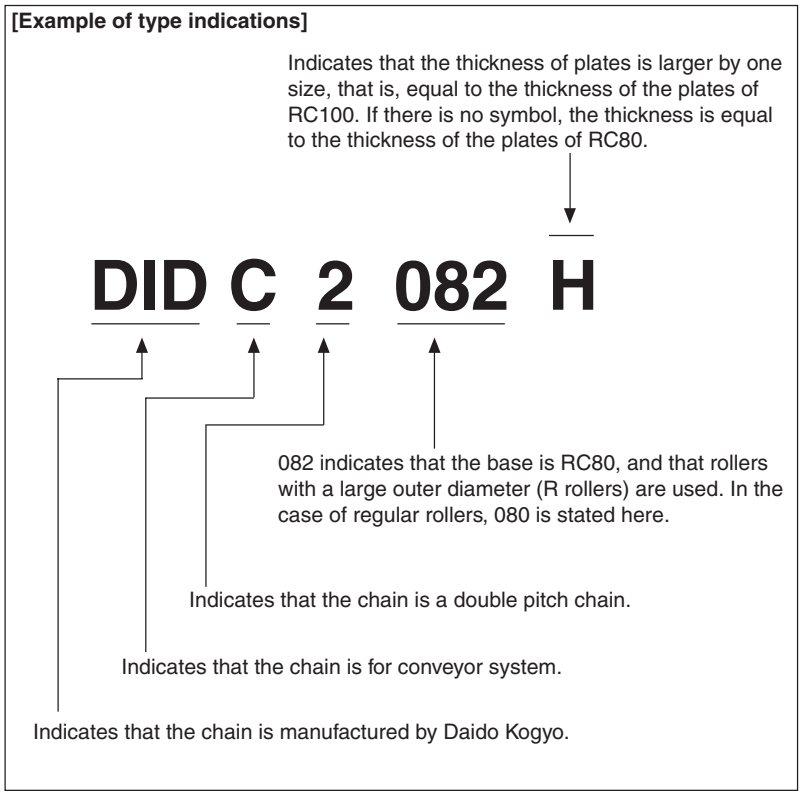
Large rollers (R) and small rollers

Since double pitch chain are frequently used to travel on a horizontal floor, conveying products, chain designed for this purpose are equal in roller diameter to single pitch chain of the same pitch length for increased live load capacity and lower traveling resistance. The rollers larger in outer diameter are called "large rollers", and the regular rollers are called "small rollers".
In this catalogue, large rollers are expressed as R rollers, and small rollers as S rollers.

Designation of Double Pitch Chain

A double pitch chain is designated, as in the following example, based on the nominal number of the basic single pitch chain.

[Example of type indications]



Cautions for selection and use

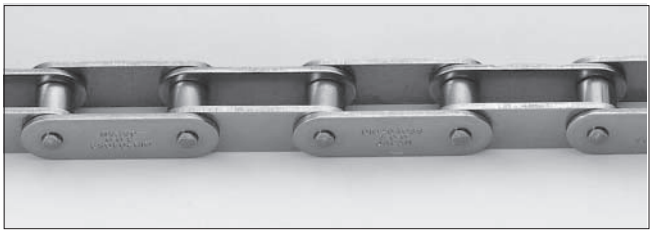
Cautions are described in "Calulation of chain tension" See P.138.

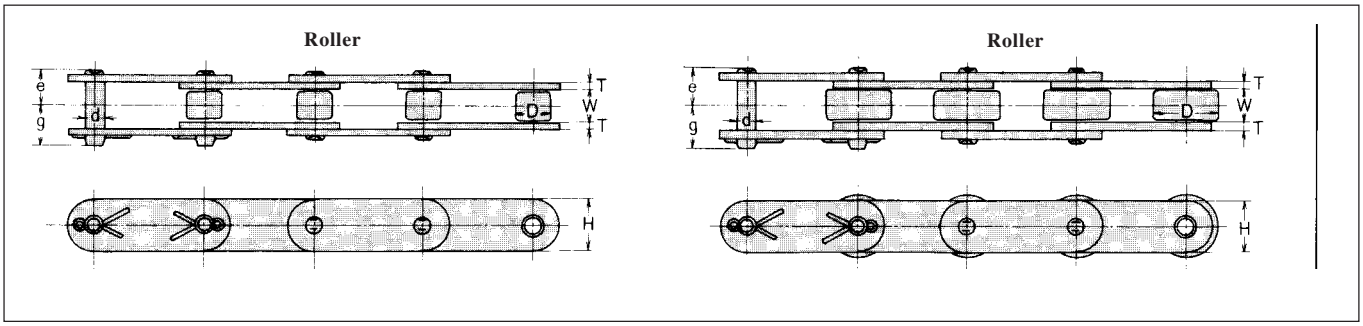
Connecting links

In the connecting links of double pitch chain of all sizes, the connecting plate and connecting pins are clearance-fitted. For RC2060H or smaller, the spring clip type (R connecting link) is standard. For RC2080H or larger, the cotter type (C connecting link) is standard. Connecting links with an attachment, top roller or side roller are available.

2-1 Double Pitch Chain and Dimensions

Double Pitch Chain

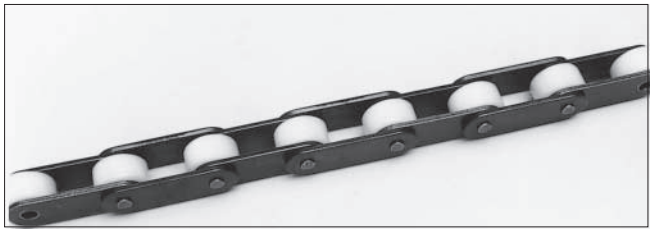


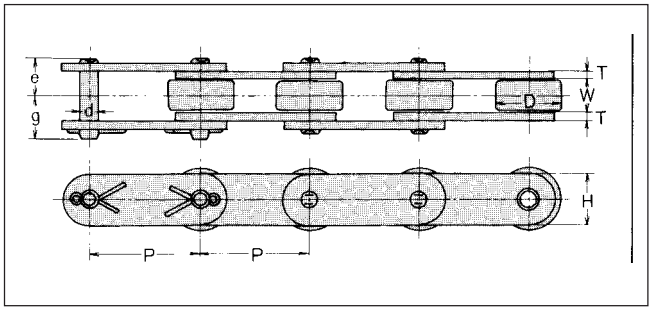


Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Pin d	Pin e	Pin g	Plate T	Plate H	Avg. Tensile Strength lbs.	Max. Allowable Load lbs.	Approx. Weight lbs.
RC2040	1.000	0.313	0.312	0.156	0.327	0.398	0.059	0.461	3828	594	0.329
RC2042			0.625								0.577
RC2050	1.250	0.375	0.400	0.200	0.402	0.476	0.079	0.594	6446	990	0.563
RC2052			0.750								0.885
RC2060H	1.500	0.500	0.469	0.235	0.563	0.669	0.126	0.677	9020	1452	0.972
RC2062H			0.875								1.455
RC2080H	2.000	0.625	0.625	0.313	0.713	0.811	0.157	0.917	15400	2530	1.650
RC2082H			1.125								2.367
RC2100H	2.500	0.750	0.750	0.376	0.858	0.961	0.189	1.134	25300	4180	2.414
RC2102H			1.562								3.896
RC2120H	3.000	1.000	0.875	0.437	1.067	1.177	0.220	1.331	35200	5720	3.413
RC2122H			1.750								5.425
RC2160H	4.000	1.250	1.125	0.563	1.339	1.504	0.280	1.866	58300	9460	5.975
RC2162H			2.250								9.120

Double pitch chain with resin rollers

This is a DID double pitch chain with R rollers made of a resin, which are quieter and lighter than steel rollers. Thus, the chain is suitable for a conveyor system designed to operate quietly and convey light-weight articles.
Since the components other than rollers are made of steel, the average tensile strength of a resin roller chain is the same as that of a steel roller chain. However, if the engagement pressure with the sprockets risks damaging the resin rollers, the "maximum allowable load" of the chain is kept low, as shown in the following table.
The "Allowable load of resin rollers" refers to the allowable load acting when conveyed articles press the resin rollers traveling on the floor surface.





Chain No. DID	Material of Roller	Variation of Chain Components except Roller	Max. Allowable Load lbs	Max. Allowable Load of Plastic Roller lbs	Weight (lbs/FT)	Allowable Operational Temperature
RC2042	Engineering Plastic (Polyacetal)	3 Variations are available. • Standard Steel • Rustless Type (Nickel Plated) • Stainless Steel	99	44	0.51	– 10°C~80°C (14°F~176°F)
RC2052			154	66	0.85	
RC2062H			231	110	1.46	
RC2082H			396	198	2.58	

2-2 D.I.D Ultimate Life Chain and Environment Resistant Chain Series of Double Pitch Chain

Double pitch chain are manufactured in Ultimate Life and Environment Resistance types, as are chain for general applications. For details of their characteristics, see Chapter I (P.43-56). For applicable sizes, see the notes on the top table on P.111.

Environment Resistant Chain Series	
Sealed chain	The width of the chain is larger than a standard double pitch chain by the seal thickness. (See the following table of maximum half widths of chain.)
Sintered bushing roller chain	Dimensions are the same as those of a standard chain, but strength is lower.

Environment Resistant Chain Series	
Long life chain Rustless chain Hi-guard chain	Strength and dimensions are equivalent to those of a standard double pitch chain.
Stainless steel chain	Dimensions are the same but strength is lower. (See the following table.)

	Maximum half width of chain	
	Regular chain (Dimension g)	Sealed chain (Dimension f)
RC2040 RC2042	0.398	0.417
RC2050 RC2052	0.476	0.500
RC2060H RC2062H	0.669	0.705
RC2080H RC2082H	0.811	0.00
RC2100H RC2102H	1.177	0.00
RC2120H RC2122H	1.504	0.00

	Maximum allowable load			
	Regular chain		Stainless steel chain	
	kN	lbs	kN	lbs
RC2040 RC2042	2.64	594	0.44	99
RC2050 RC2052	4.41	990	0.68	154
RC2060H RC2062H	6.47	1452	1.03	231
RC2080H RC2082H	11.20	2530	0.00	0
RC2100H RC2102H	18.60	4180	0.00	0
RC2120H RC2122H	25.50	5720	0.00	0

Comparison of performance of respective types of Ultimate Life Chain

	Strength ratio	Comparison of wear life				Operational temperature range
		Location where maintenance can be practiced		Location where maintenance cannot be practiced (initial grease only)		
		Clean oil	Dirty oil	Regular environment	Dusty environment	
Standard Chain	100%	1-0	1-0	1-0	1-0	14ºC ~ 176ºF
Long life Chain	100%	1-3	1-2 ~ 1.5	1-5 ~ 3	1-8 ~ 4	14ºC ~ 176ºF
DHA Chain	100%	1.5 ~ 2	3 ~ 7	1.3	1.2 ~ 3	14ºC ~ 212ºF
Sealed Chain	100%	—	—	5 ~ 12	5 ~ 20	14ºC ~ 140ºF
Sintered bushing roller chain	70%	—	—	5	Not applicable	Not applicable

Note: The wear life is expressed as an index with the life of a Standard Roller Chain as 1.0.

Comparison of performance of respective types of Environment Resistant Chain

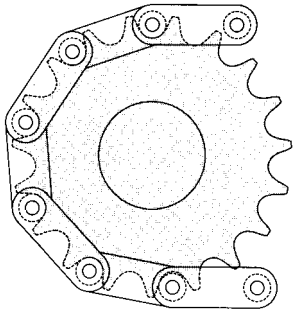
Series	Mark	Strength		Moisture Resistance Performance (without additional lubrication)		Corrosion Resistance Performance				
		Max. Allowable Load Ratio	Chain Selecting Method	Initial Lubricant Applied		Based on CASS test	Exposed to water or sea water	Alkaline Resistance Performance	Acid Resistance Performance	Heat Resistance Performance
Standard Roller Chain	—	100%	Max. Horse-power Ratings or Slow-Speed Selection	Rust Prevention Oil	inferior	inferior	not recommended	normal	not recommended	-10ºC~80ºC (14ºF~176ºF)
				Grease	normal	normal				
Rustless Chain	N	100%		Rust Prevention Oil	inferior	good (note)	good	excellent	Applicable in light acid	Layer withstands up to 250ºC (482ºF)
				Grease	normal	very good (note)				
Hi-Guard Chain	E	100%		Rust Prevention Oil	inferior	excellent	excellent	normal	not recommended	Layer withstands up to 250ºC (482ºF)
				Grease	normal					
Low Temperature Chain	TK	100%		Special Grease	normal	normal	not recommended	normal	not recommended	-40ºC~80ºC (40ºF~176ºF)
Stainless Steel Chain	SS	10%	Slow-Speed Selection	Stainless Chain is inferior to others in wear resistance performance. Chain tension must be within allowable range.		Same as Stainless Steel (Equal to S3 in p. 151)				
	SSK	15%								

Note: Even rustless chain, RC25N, 35N and 41N should be read from “good” to “normal” and “excellent” to “good” because of the thin plating layer.

2-3 Sprockets for Double Pitch Chain

Sprockets for double pitch chain are different from sprockets of single pitch chain.
Therefore, use the sprockets shown on P.116. However, since a chain is, to some extent, not subject to error in the engagement with a sprocket, the sprocket of a single pitch chain may be used if a larger number of teeth is adopted. Recommended sprockets are listed below.

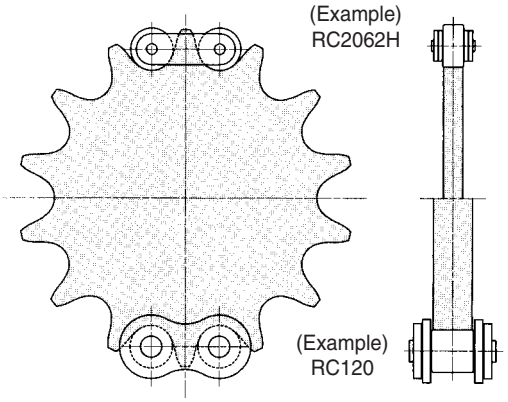
	Number of teeth of double pitch sprocket	Recommended sprocket
	9 or less	Avoid using a sprocket with nine or fewer teeth if possible, since the noise is greater and the vibration shortens the life of the chain and equipment.
Small Roller (S roller)	9.5 to 14 (Example) For RC2050 chain if a sprocket with 13 teeth is necessary, adopt a hob with 26 teeth for RC50, preferably 27 teeth. From the table at bottom left on P. 116, Dp= 4.1786 x 31.75 = 132.67 (since 26 teeth mean 13 operating teeth), or PCD = 4.3362 x 31.75 = 137.67 (since 27 teeth mean 13.5 operating teeth). (In the above formulas, 31.75 is the chain pitch of RC2050.)	When the number of teeth is 9.5 to 14, use a hob for the basic single pitch chain, and cut the sprocket teeth to achieve the Dp shown in the left table on P. 116. Keep the number of cut teeth double the intended operating teeth of the double pitch sprocket, or odd-numbered teeth larger than this by one. Odd-numbered teeth cause different teeth too operate each revolution of the sprocket, enhancing sprocket durabillty. (In general, the Dp of the sprocket for a double pitch chain obtained by teeth cutting using a hob for a single pitch chain is larger than the Dp of the sprocket for a single pitch chain with the same number of teeth.) When the number of teeth is in this range, do not use the sprocket for a single pitch chain. The wear life of the chain becomes about one half compared to the case where a correct sprocket is used. (For example, if a double pitch chain is engaged with a single pitch sprocket with 22 teeth, the chain is equivalent to a chain elongated by about 1.0% from the beginning.)
	15 or more	When the number of teeth is 15 or more, the sprocket for a single pitch chain can be used practically without any problem. Of course, the number of teeth of the single pitch sprocket should be double the number of teeth of the double pitch sprocket. Preferably use odd-numbered teeth by adding one to the value.



S roller type double pitch chain

The above illustration shows the state of an S roller types double pitch chain engaged with a sprocket with 19 teeth for single pitch chain. The number of operating teeth as a double pitch chain is 9.5.

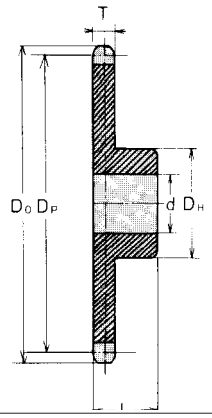
R roller type double pitch chain



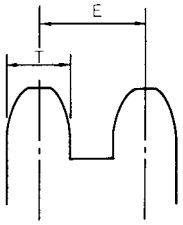
Standard Roller Chain

The above illustration shows the state of an R roller type double pitch chain and standard roller chain with the same pitch engaged with a sprocket. It can be seen that the sprocket is different in thickness only. No sprocket is available for using a single pitch chain with both chains. Should you need such a sprocket, please consult us.

Dimensions of Sprocket for Double Pitch Chain



Tranverse Pitch



S type roller

Size	No. of teeth	Operation teeth	Pitch Circle dia. Dp	Outside dia. Do	Tooth thickness T	Transverse pitch E	Shaft bore dia. Normal dia.	Shaft bore dia. Max dia.	Hub dia.	Hub Length	Approx. Weight (kg)	Material
C2040	19	9 1/2	3.080	3.307	0.276	0.567	0.551	1.260	2.126	0.866	1.276	S35C
C2050	19	9 1/2	3.850	4.134	0.331	0.713	0.591	1.575	2.559	1.102	2.200	
C2060H	19	9 1/2	4.620	4.961	0.445	1.031	0.669	1.772	2.756	1.575	3.960	
	21	10 1/2	5.089	5.433	0.445	1.031	0.669	1.969	3.150	1.575	4.950	
	23	11 1/2	5.560	5.906	0.445	1.031	0.669	1.969	3.150	1.575	5.500	
	25	12 1/2	6.031	6.378	0.445	1.031	0.669	1.969	3.150	1.575	6.050	
C2080H	19	9 1/2	6.159	6.575	0.555	1.283	0.866	2.362	3.543	1.575	7.480	
C2100H	19	9 1/2	7.700	8.228	0.669	1.539	1.024	2.953	4.213	1.969	13.420	

Note: Tooth end is hardened.

Pitch circle diameter (**Dp**) is generally calculated by the following formula in accordance with number of operation teeth (**Z**) which engage with a chain.

Dp = **KP** X **P**

Kp : Coefficient of pitch circle diameter. (refer to the table given below)

P : Nominal pitch of double pitch chain

Operation teeth **Z**	Coefficient of pitch circle dia. **Kp**	Operation teeth **Z**	Coefficient of pitch circle dia. **Kp**
5	1.7013	11	3.5495
5 1/2	1.8497	11 1/2	3.7065
6	2.0000	12	3.8637
6 1/2	2.1518	12 1/2	4.0211
7	2.3048	13	4.1786
7 1/2	2.4586	13 1/2	4.3362
8	2.6131	14	4.4940
8 1/2	2.7682	14 1/2	4.6518
9	2.9238		
9 1/2	3.0798		
10	3.2361		
10 1/2	3.3926		

R type roller

Size	No. of Teeth	Operation teeth	Pitch Circle dia. Dp	Outside dia. Do	Tooth thickness T	Transverse pitch E	Shaft bore dia. Normal dia.	Shaft bore dia. Max dia.	Hub dia. DH	Hub Length L	Approx. weight (kg)	Material
C2042	10	10	3.236	3.661	0.276	0.567	0.591	1.339	2.205	0.984	1.386	S35C
	11	11	3.550	4.016	0.276	0.567	0.591	1.339	2.205	0.984	1.584	
	12	12	3.864	4.252	0.276	0.567	0.591	1.339	2.205	0.984	1.650	
	13	13	4.179	4.646	0.276	0.567	0.591	1.654	2.480	0.984	2.134	
	14	14	4.494	5.000	0.276	0.567	0.591	1.654	2.480	0.984	2.200	
	15	15	4.810	5.315	0.276	0.567	0.591	1.693	2.480	1.102	2.530	
	16	16	5.126	5.630	0.276	0.567	0.591	1.693	2.480	1.102	2.750	
	17	17	5.442	5.945	0.276	0.567	0.669	1.772	2.756	1.102	3.190	
	18	18	5.759	6.260	0.276	0.567	0.669	1.772	2.756	1.102	3.366	
	19	19	6.076	6.575	0.276	0.567	0.669	1.772	2.756	1.102	3.630	
	20	20	6.393	6.929	0.276	0.567	0.669	1.772	2.756	1.102	4.400	
C2052H	10	10	4.045	4.567	0.331	0.713	0.669	1.772	2.756	1.102	2.860	
	11	11	4.437	5.000	0.331	0.713	0.669	1.772	2.756	1.102	2.904	
	12	12	4.830	5.433	0.331	0.713	0.669	1.772	2.756	1.102	3.190	
	13	13	5.223	5.827	0.331	0.713	0.669	1.772	2.756	1.102	3.410	
	14	14	5.617	6.220	0.331	0.713	0.669	1.772	2.756	1.102	3.960	
	15	15	6.012	6.614	0.331	0.713	0.669	1.772	2.756	1.102	4.180	
	16	16	6.407	7.047	0.331	0.713	0.669	1.772	2.756	1.102	4.730	
	17	17	6.803	7.441	0.331	0.713	0.787	1.969	3.346	1.378	5.500	
	18	18	7.198	7.835	0.331	0.713	0.787	2.165	3.543	1.575	6.600	
	19	19	7.594	8.228	0.331	0.713	0.787	2.165	3.543	1.575	7.040	
	20	20	7.991	8.661	0.331	0.713	0.787	2.165	3.543	1.575	7.480	
C2062H	10	10	4.854	5.512	0.445	1.031	0.669	1.969	3.150	1.772	5.280	
	11	11	5.324	6.024	0.445	1.031	0.669	1.969	3.150	1.772	5.720	
	12	12	5.796	6.496	0.445	1.031	0.669	1.969	3.150	1.772	6.160	
	13	13	6.268	6.969	0.445	1.031	0.827	1.969	3.346	1.772	6.600	
	14	14	6.741	7.480	0.445	1.031	0.827	1.969	3.346	1.772	8.140	
	15	15	7.215	7.953	0.445	1.031	0.827	1.969	3.346	1.772	8.360	
	16	16	7.689	8.425	0.445	1.031	0.827	1.969	3.346	1.969	8.800	
	17	17	8.163	8.937	0.445	1.031	0.906	2.165	3.543	2.165	10.780	
	18	18	8.638	9.409	0.445	1.031	0.906	2.165	3.543	2.165	11.660	
	19	19	9.113	9.882	0.445	1.031	0.906	2.165	3.543	2.165	12.320	
	20	20	9.589	10.354	0.445	1.031	0.906	2.165	3.543	2.165	13.200	
C2082H	11	11	7.099	8.031	0.575	1.283	0.984	2.953	4.213	1.772	10.560	
C2102H	11	11	8.874	10.000	0.693	1.539	1.181	3.150	4.606	2.205	17.380	

Note: Teeth end is not hardened.

3. Standard Attachments

For “DID small sized roller chain for conveyor applications”, various links are available for coupling and attaching custom devices directly to the chain. These links are called attachments. The following atandard attachments are available.

Types and names of standard attachments

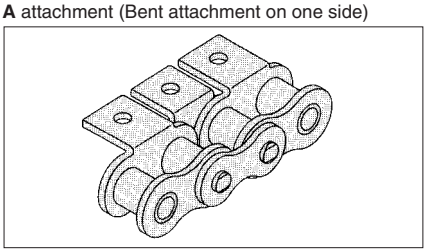
DID Standard Attachments include five kinds for single pitch chain and five kinds for double pitch chain as illustrated below. Furthermore, for single pitch chain, four kinds of wide attachments, as wide as outer plates are available. Standard attachments for respective chain sizes are listed on the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

Description of Attachment Chain

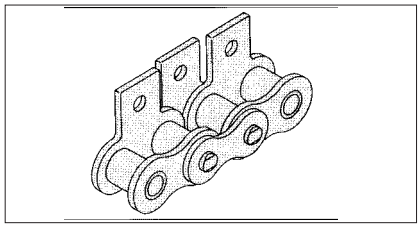
(Example) RC60 with A1 attachment every four pitches

RC	60	A1	4
Roller Chain	Chain size	Attachment Type	Spacing

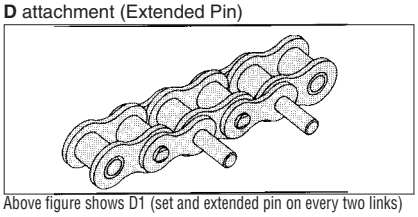
A attachment (Bent attachment on one side)



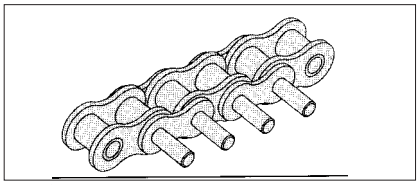
SA(M35) attachment (Straight attachment on one side)



D attachment (Extended Pin)



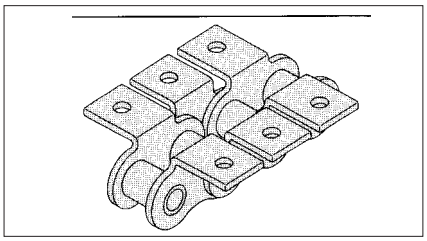
Above figure shows D1 (set and extended pin on every two links)



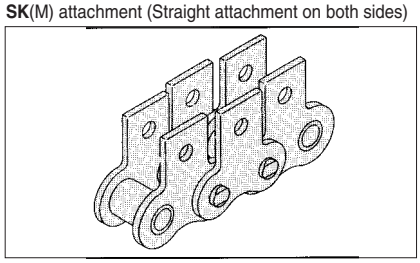
Above figure shows D3 (set an extended pin on every two link)

[Ref : D pin having particular length is called “LP attachment” (Abbreviation of Long Pin)]

K attachment (Bent attachment on both side)

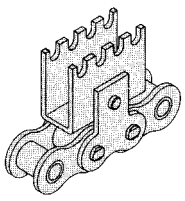


SK(M) attachment (Straight attachment on both sides)

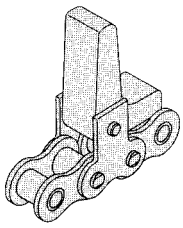


Example of Use of Standard Attachment

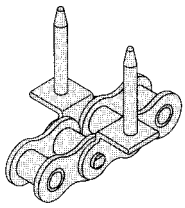
Installation of a U slot with **SK1**(M1) attachment



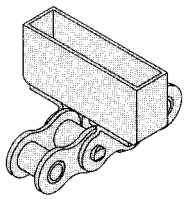
Installation of a dog with **SK1**(M1) attachment



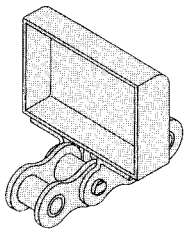
Installation of a pins with **K1** attachment



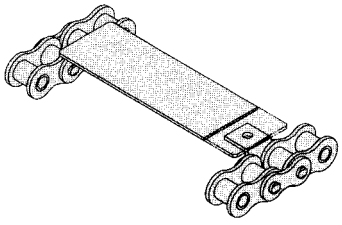
Installation of a bucket with **K1** attachment



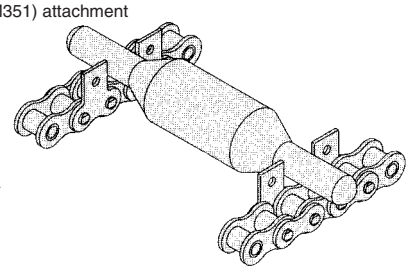
Installation of a bucket with **K1** attachment



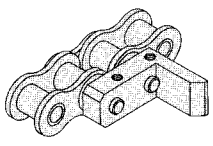
Installation of a strut with **A1** attachment



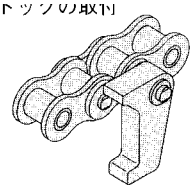
Conveyance of long article by two strands of **SA1**(M351) attachment



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



Installation of a dog with **D1** attachment

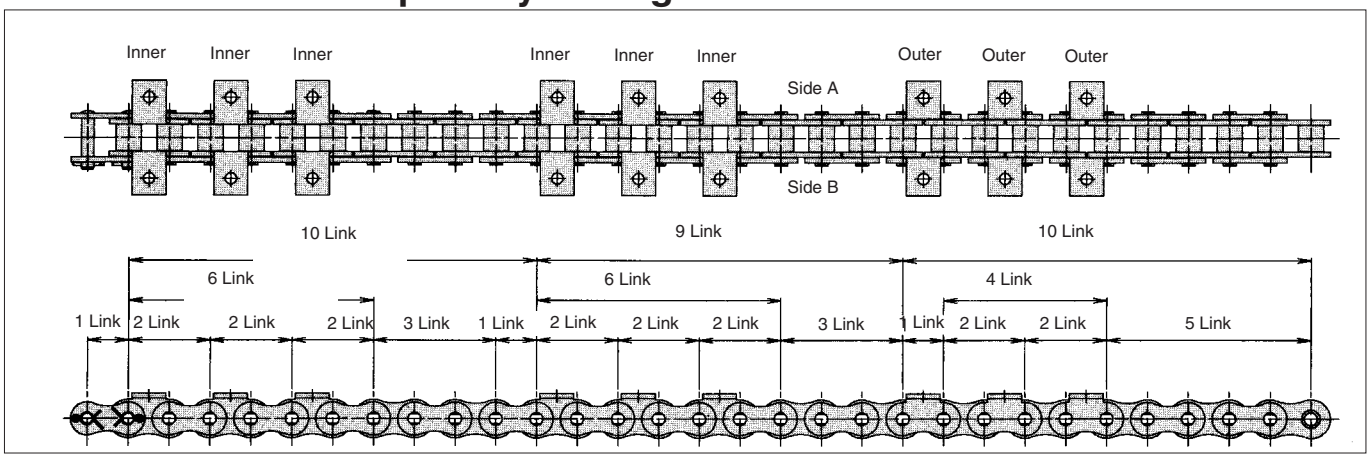


3-1 Standard Roller Chain Attachments

O Available in stock
Made-to-Order
X Special

		DID Standard Attachment																	
		Normal Type										Wide Type							
		One-side Bent		Both-Sides Bent		One-side Straight Type		Both-sides Straight Type		Extended Pin		One-side Bent		Both-Sides Bent		One-side Straight Type		Both-sides Straight Type	
		A1	**A2**	**K1**	**K2**	**SA1**	**SA2**	**SK1**	**SK2**	**D1**	**D3**	**WA1**	**WA2**	**WK1**	**WK2**	**WSA1**	**WSA2**	**WSK1**	**WSK2**
Single pitch	**RC25**	O	X	O	X	O	X	O	X										
	RC35	O	X	O	X	O	X	O	X										
	RC41		X		X		X		X	X	X								
	RC40	O	X	O	X	O	X	O	X										
	RC50	O	X	O	X	O	X	O	X										
	RC60	O	X	O	X	O	X	O	X										
	RC80	O	X	O	X	O	X	O	X										
	RC100	O	X	O	X	O	X	O	X										
	RC120	O	X	O	X	O	X	O	X			X	X	X	X	X	X	X	X
	RC140	O	X	O	X	O	X	O	X										
	RC160	O	X	O	X	O	X	O	X										
	RC200		X		X		X		X										
	RC240		X		X		X		X	X	X								
Double pitch "S" roller	**RC2040**	O	O	O	O	O	O	O	O										
	RC2050	O	O	O	O	O	O	O	O										
	RC2060H	O	O	O	O	O	O	O	O										
	RC2080H	O	O	O	O	O	O	O	O										
	RC2100H	O	O	O	O	O	O	O	O										
	RC2120H	O	O	O	O	O	O	O	O										
	RC2120H	O	O	O	O	O	O	O	O										
Double pitch "R" roller	**RC2042**	O	O	O	O	O	O	O	O										
	RC2052	O	O	O	O	O	O	O	O										
	RC2062H	O	O	O	O	O	O	O	O										
	RC2082H	O	O	O	O	O	O	O	O										
	RC2102H	O	O	O	O	O	O	O	O										
	RC2122H	O	O	O	O	O	O	O	O										
	RC2162H	O	O	O	O	O	O	O	O										

How to Indicate The Specially Arranged Attachment Chain



A chain with K1 attachments specially arranged, as in the above illustration, is indicated as follows:

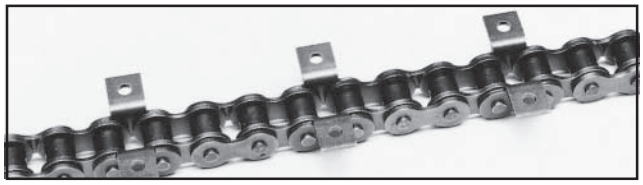
CL+ (K1 inner+ PL) X3+3LL+PL + (K1 inner+PL) X 3+3LL + K1 outer+ (RL +K1 outer X2 +5LL

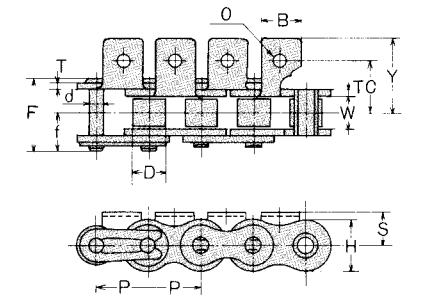
"CL" stands for a connecting link;"K1 inner", an inner link K1 attachment; "PL", an outer link; "3LL", three links from an inner link to an inner link; " K1 outer ", an outer link K1 attachment; and "RL", an inner link.
A "+" sign means "connect", and an x sign means " repeat"
(For one-side attachments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

For other styles not mentioned, please consult us.

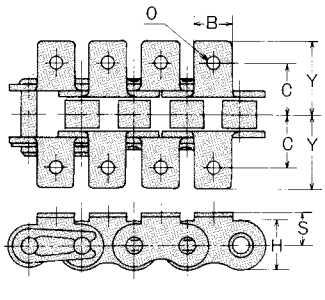
3-2 Based on Standard Chain (single pitch)

A chain with attachments is installed on a Standard Roller Chain for a light weight conveyor system. Use this chain when exceptional highly accurate conveyance is required or when a compact layout is desired.

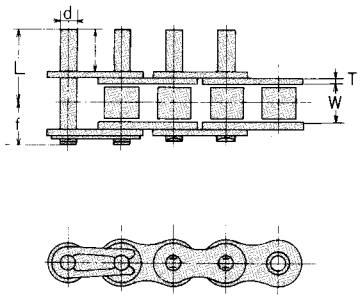




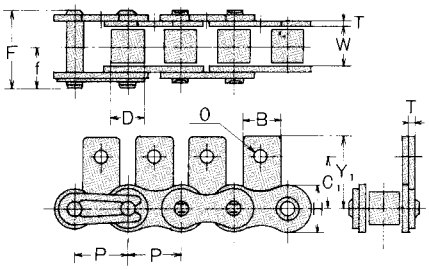
A1 Attachment



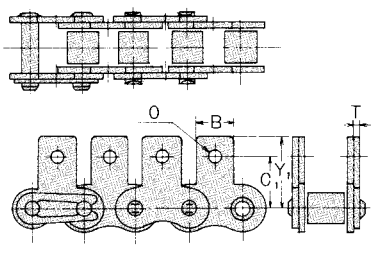
K1 Attachment



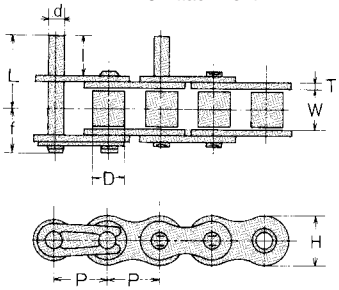
D3 Attachment



SA1 (M351) Attachment



SK1 (M1) Attachment



D1 Attachment

Cotter Type connecting link is applied to RC80 and larger. Above connecting link is Clip type applied to RC60 and smaller.

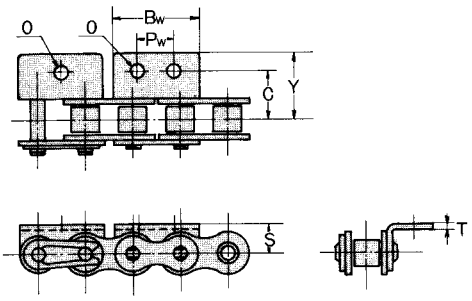
Dimensions Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller (Bush) Dia. D	Pin d	Pin F	Pin f	Plate T	Plate H	Avg. Tensile Strength lbs.	Max. Allowable Load lbs.	Approx. weight without attachment (lbs/FT)
RC25	0.250	0.125	0.130	0.091	0.335	0.185	0.028	0.232	902	143	0.087
RC35	0.375	0.188	0.200	0.141	0.516	0.287	0.049	0.354	2090	330	0.215
RC41	0.500	0.251	0.306	0.141	0.575	0.311	0.047	0.378	2266	374	0.262
RC40	0.500	0.313	0.312	0.156	0.693	0.374	0.059	0.472	3740	594	0.422
RC50	0.625	0.375	0.400	0.200	0.862	0.457	0.079	0.591	6270	990	0.711
RC60	0.750	0.500	0.469	0.235	1.059	0.563	0.094	0.713	9020	1430	0.966
RC80	1.000	0.625	0.625	0.313	1.394	0.748	0.126	0.945	17600	2420	1.790
RC100	1.250	0.750	0.750	0.376	1.673	0.894	0.157	1.177	26620	3850	2.676
RC120	1.500	1.000	0.875	0.437	2.087	1.110	0.189	1.413	37400	5500	3.909
RC140	1.750	1.000	1.000	0.500	2.299	1.248	0.220	1.650	48400	7260	5.110
RC160	2.000	1.250	1.125	0.563	2.685	1.437	0.252	1.882	60500	9240	6.766
RC200	2.500	1.500	1.562	0.781	3.346	1.811	0.315	2.362	105600	15400	11.279

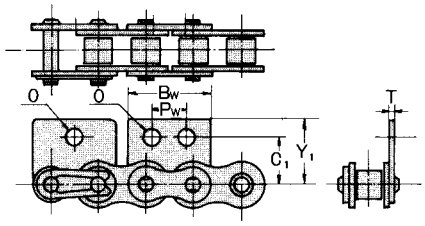
Dimensions Unit (inch)

Chain No. DID	Pitch P	A1, K1 Attachment C	A1, K1 Attachment Y	A1, K1 Attachment S	SA1, SK1 Attachment C1	SA1, SK1 Attachment Y1	Common Dimensions B	Common Dimensions O	D1, D3 Attachment I	D1, D3 Attachment L	Approx. additional weight per attachment (kg) A, SA	K, SK	D1, D3
RC25	0.250	0.281	0.421	0.187	0.313	0.461	0.219	0.134	0.236	0.362	0.001	0.001	0.000
RC35	0.375	0.375	0.563	0.250	0.375	0.579	0.313	0.134	0.375	0.569	0.002	0.004	0.002
RC41	0.500	0.469	0.689	0.281	0.484	0.701	0.375	0.128	0.375	0.618	0.003	0.007	0.002
RC40	0.500	0.500	0.709	0.312	0.500	0.693	0.375	0.142	0.375	0.648	0.004	0.009	0.002
RC50	0.625	0.625	0.902	0.406	0.625	0.890	0.504	0.205	0.469	0.827	0.007	0.013	0.004
RC60	0.750	0.750	1.091	0.469	0.719	1.039	0.634	0.205	0.562	1.020	0.013	0.026	0.007
RC80	1.000	1.000	1.386	0.625	0.969	1.341	0.750	0.268	0.750	1.335	0.024	0.048	0.015
RC100	1.250	1.250	1.748	0.781	1.250	1.709	1.000	0.343	0.938	1.638	0.053	0.106	0.026
RC120	1.500	1.500	2.161	0.906	1.437	2.031	1.125	0.413	1.125	2.000	0.081	0.163	0.044
RC140	1.750	1.750	2.437	1.125	1.750	2.437	1.375	0.500	1.312	2.250	0.150	0.299	0.066
RC160	2.000	2.000	2.811	1.250	2.000	2.752	1.500	0.563	1.500	2.614	0.200	0.400	0.099
RC200	2.500	2.500	3.543	1.688	2.500	3.327	1.874	0.669	1.875	3.283	0.409	0.818	0.233

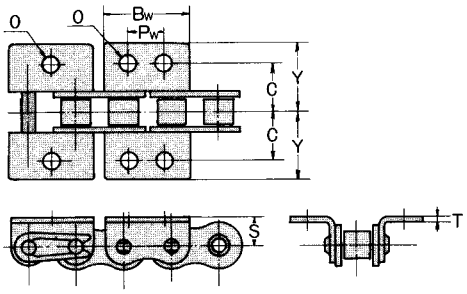
Note: Those marked with * indicate bush chain.



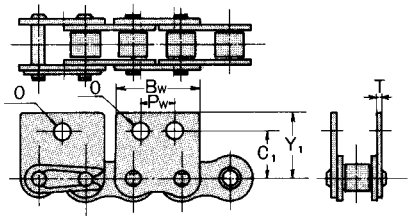
WA1, WA2 Attachment



WSA1 (WM351), WSA2 (WM352) Attachment



WK1, WK2 Attachment



WSK1 (WM1), WSK2 (WM2) Attachment

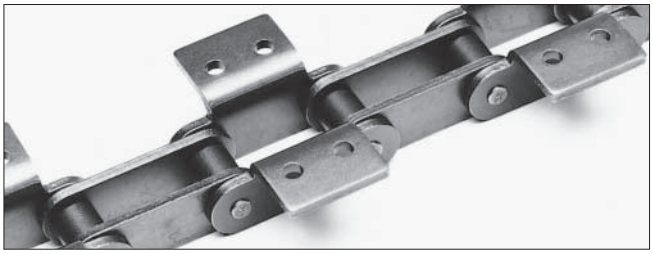
Cotter Type connecting link is applied to RC80 and larger. Above connecting link is Clip type to be applied to RC60 and smaller.

Unit (inch)

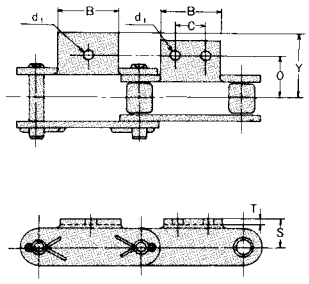
Chain **No.**	Pitch	Attachment									Approx. additional weight per attachment (lbs)	
DID	**P**	**C**	**C**	**O**	**S**	**T**	**Y**	**Y1**	**Bw**	**Pw**	**WA,WSA (WM352)**	**WK, WSK (WM)**
RC40	0.500	0.500	0.500	0.142	0.311	0.059	0.689	0.689	0.953	0.500	0.007	0.013
RC50	0.625	0.626	0.626	0.205	0.406	0.079	0.890	0.890	1.189	0.625	0.015	0.031
RC60	0.750	0.750	0.720	0.205	0.469	0.094	1.063	1.031	1.421	0.750	0.026	0.053
RC80	1.000	1.000	0.969	0.268	0.626	0.126	1.390	1.343	1.890	1.000	0.057	0.114
RC100	1.250	1.250	1.252	0.327	0.780	0.157	1.906	1.870	2.358	1.250	0.112	0.224

Based on Standard Chain (double pitch)

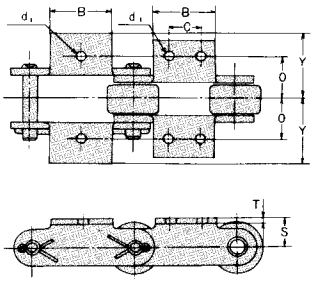
A double pitch chain for a conveyor system is a Standard Roller Chain doubled in pitch. Since the pins and bushings are the same as those used in a Standard Roller Chain, the chain is strong, light weight and economical. A double pitch conveyor chain is available either as S roller type or R roller type. By installing attachments suitable for the application, a compact conveyor layout can be achieved.



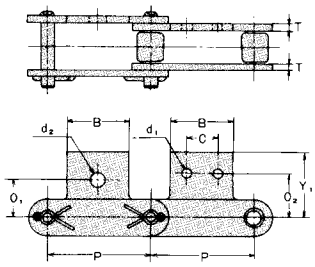
A type
(Pictured chain is **S** Roller type)



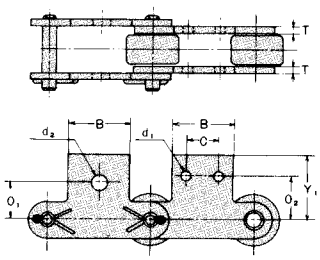
K type
(Pictured chain is **R** Roller type)



SA (M35) type
(Pictured chain is **S** Roller type)



SK (M) type
(Pictured chain is **R** Roller type)



Clip Type connecting link is applied to RC2060H and smaller. Pictured connecting link is Cotter type applied to RC2060H and larger.

Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Pin d	Pin e	Pin g	Plate T	Plate H	Avg. Tensile Strength lbs.	Max. Allowable Load lbs.	Approx. weight without attachment (lbs/FT)
RC2040	1.000	0.313	0.312	0.156	0.327	0.374	0.059	0.461	3828	594	0.329
RC2042			0.625								0.577
RC2050	1.250	0.375	0.400	0.200	0.402	0.457	0.079	0.594	6446	990	0.563
RC2052			0.750								0.885
RC2060H	1.500	0.500	0.469	0.235	0.567	0.669	0.126	0.677	9020	1452	0.972
RC2062H			0.875								1.455
RC2080H	2.000	0.625	0.625	0.313	0.713	0.811	0.157	0.917	15400	2530	1.650
RC2082H			1.125								2.367
RC2100H	2.500	0.750	0.750	0.376	0.858	0.961	0.189	1.134	25300	4180	2.414
RC2102H			1.562								3.896
RC2120H	3.000	1.000	0.875	0.437	1.063	1.177	0.220	1.331	35200	5720	3.413
RC2122H			1.750								5.425
RC2160H	4.000	1.250	1.125	0.563	1.354	1.504	0.280	1.866	58300	9460	5.975
RC2162H			2.250								9.120

Dimensions of Attachment

Unit (inch)

Chain No. DID	Pitch P	Attachment S	O	Y	Y1	O1	O2	C	B	d1	d2	T	Approx. additional weight per attachment (kg) A, SA	K, SK
RC2040	1.000	0.359	0.500	0.748	0.780	0.437	0.531	0.375	0.780	0.142	0.205	0.059	0.0066	0.0132
RC2042														
RC2050	1.250	0.437	0.625	0.949	0.969	0.563	0.625	0.469	0.937	0.205	0.268	0.079	0.0132	0.0264
RC2052														
RC2060H	1.500	0.578	0.844	1.236	1.205	0.687	0.750	0.563	1.134	0.205	0.343	0.126	0.0352	0.0704
RC2062H														
RC2080H	2.000	0.750	1.094	1.642	1.630	0.875	1.000	0.750	1.500	0.268	0.406	0.157	0.0748	0.1496
RC2082H														
RC2100H	2.500	0.937	1.313	2.055	2.087	1.125	1.250	0.937	1.874	0.343	0.563	0.189	0.1408	0.2816
RC2102H														
RC2120H	3.000	1.094	1.563	2.390	2.362	1.313	1.485	1.125	2.252	0.551	0.630	0.220	0.2376	0.4752
RC2122H														
RC2160H	4.000	1.437	2.063	3.110	3.094	1.750	2.000	1.500	3.000	0.563	0.866	0.276	0.5412	1.0824
RC2162H														

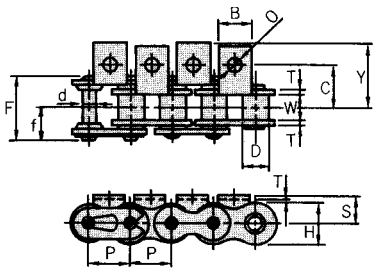
Note: 1. Attachments SA1(M351), SK1(M1), A1 and K1 are featured by only one hole given. Attachments SA2(M352), SK2(M1), A2, and K2 are featured by two holes given.
2. Interval of attachments must be specified when you order.
3. Without special instruction, attachments are given to outer link plates in case of even number of pitch between attachments.

3-3 Based on O-ring Chain (single pitch)

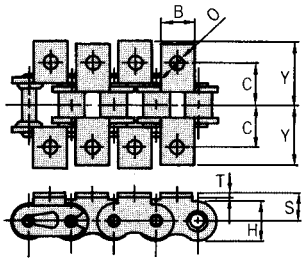
Chain with attachments in which grease is sealed by seal rings are available as a series for use in the following cases.

- Machine service condition is likely to cause elongation of chain
- Machine cannot be lubricated during the service life
- Machine is used in an environment with water or dust

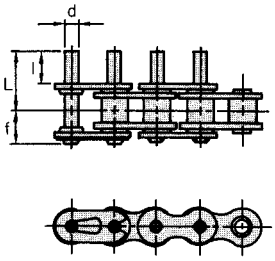
The hole pitch of attachments (the dimension in the following illustration) is the same as in the case of a Standard Roller Chain, DID standard sprockets can be used.
Heat resistant seal rings and light friction type seal rings are also available.
When you desire to use special attachments, please consult us.



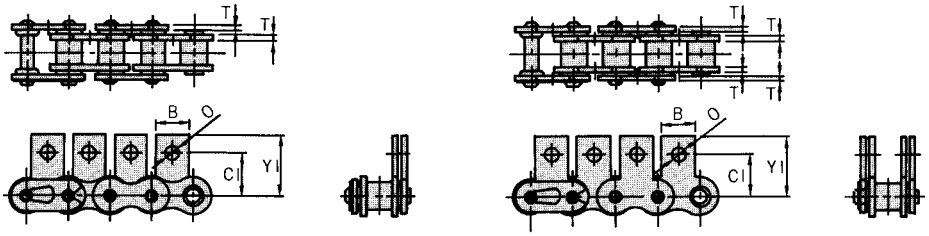
A1 Attachment



K1 Attachment



LP Attachment



SA1 (**M351**) Attachment

SK1 (**M1**) Attachment

Cotter type connecting link is applied to RC80 and larger. Above connecting link is Clip type to be applied to RC60 and smaller.

Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Pin d	Pin F	Pin f	Plate T	Plate H	Avg. Tensile Strength lbs	Max. Allowable Load lbs	Approx. weight without attachment (lbs/FT)
RC40LLDR	0.500	0.313	0.312	0.156	0.787	0.417	0.059	0.472	4070	836	0.449
RC50LLDR	0.625	0.375	0.400	0.200	0.941	0.500	0.079	0.591	6754	1540	0.724
RC60LLDR	0.750	0.500	0.469	0.235	1.181	0.626	0.094	0.713	9614	2090	1.086
RC80LDR	1.000	0.625	0.625	0.313	1.531	0.819	0.126	0.945	16280	3300	1.898
RC100LDR	1.250	0.750	0.750	0.376	1.819	0.969	0.157	1.177	24200	4730	2.729

Dimensions of Attachment

Unit (inch)

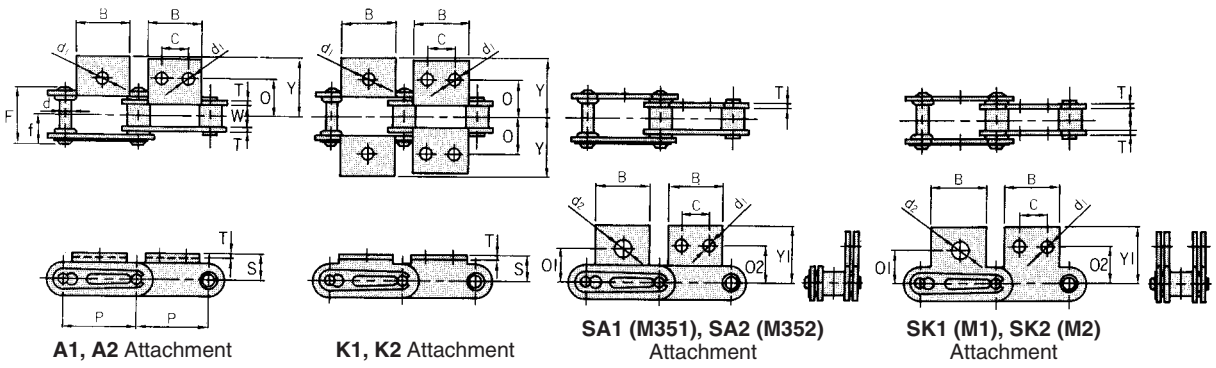
Chain No. DID	Attachment C	Y	S	C1	Y1	B	O	I	L	Approx. additional weight per attachment (lbs) A, SA	K, SK	D1, D3
RC40LLDR	0.500	0.740	0.312	0.500	0.689	0.375	0.138	0.375	0.705	0.0044	0.0088	0.0022
RC50LLDR	0.625	0.969	0.406	0.625	0.890	0.500	0.205	0.469	0.870	0.0066	0.0132	0.0044
RC60LLDR	0.750	1.118	0.469	0.719	1.031	0.625	0.205	0.562	1.071	0.0132	0.0264	0.0066
RC80LDR	1.000	1.441	0.625	0.969	1.341	0.750	0.268	0.750	1.394	0.0242	0.0484	0.0154
RC100LDR	1.250	1.776	0.781	1.250	1.683	1.000	0.343	0.938	1.717	0.0528	0.1056	0.0264

Based on O-ring Chain (double pitch)

Standard double pitch conveyor chain and double pitch conveyor chain with attachments, respectively with grease sealed by o-rings are available as a series for use in the following cases.

- Machine service condition is likely to cause elongation of chain
- Machine cannot be lubricated during the service life
- Machine is used in an environment with water or dust

Heat resistant o-rings and light friction type o-rings are also available. Please consult us.



A1, A2 Attachment | **K1, K2** Attachment | **SA1 (M351), SA2 (M352)** Attachment | **SK1 (M1), SK2 (M2)** Attachment

Above connecting link is Clip type.

Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Pin d	Pin e	Pin g	Plate T	Plate H	Avg. Tensile Strength lbs	Max. Allowable Load lbs	Approx. weight without attachment (lbs/FT)
RC2040LLDR	1.000	0.313	0.312	0.156	0.787	0.417	0.059	0.461	3630	594	0.349
RC2042LLDR			0.625								0.597
RC2050LLDR	1.250	0.375	0.400	0.200	0.941	0.500	0.079	0.594	6160	990	0.583
RC2052LLDR			0.750								0.905
RC2060HLLDR	1.500	0.500	0.469	0.235	1.319	0.705	0.126	0.677	8580	1452	0.979
RC2062HLLDR			0.875								1.462

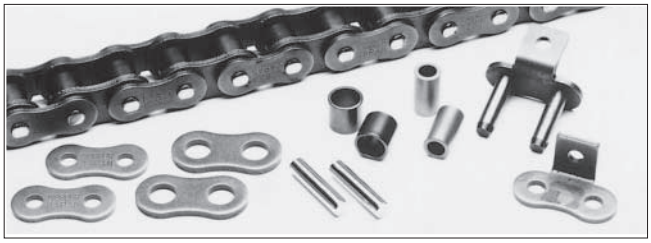
Dimensions of Attachment

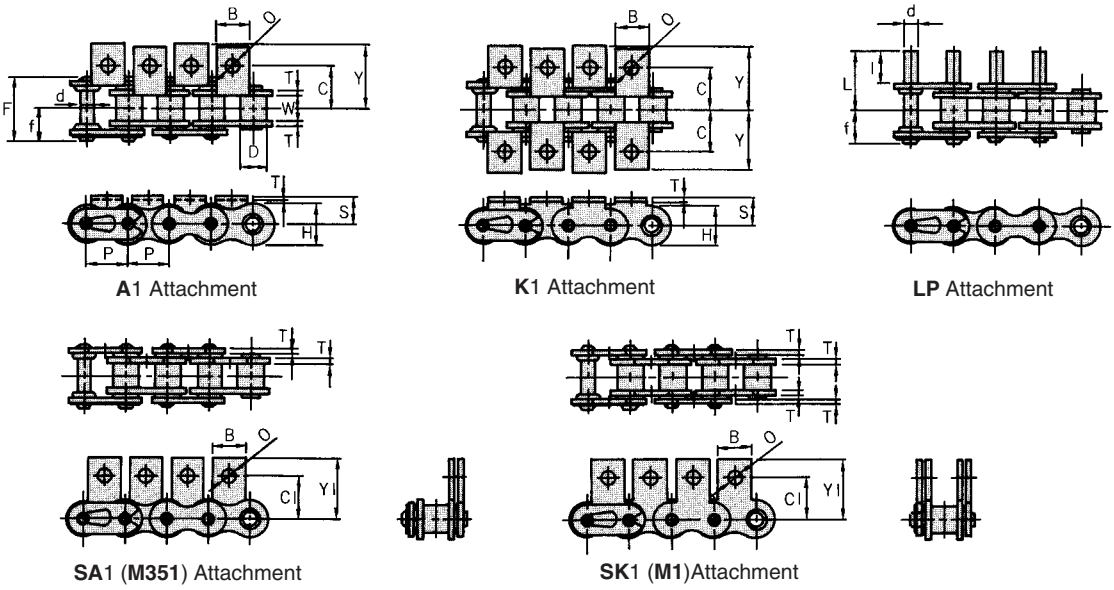
Unit (inch)

Chain No. DID	Attachment S	O	Y	Y1	O1	O2	C	B	d1	d2	T	Approx. additional weight per attachment (lbs) A, SA	K, SK
RC2040LLDR	0.359	0.500	0.811	0.780	0.437	0.531	0.375	0.752	0.138	0.205	0.059	0.0066	0.0132
RC2042LLDR													
RC2050LLDR	0.437	0.625	1.004	0.969	0.563	0.625	0.469	0.937	0.205	0.268	0.079	0.0132	0.0264
RC2052LLDR													
RC2060HLLDR	0.578	0.844	1.366	1.205	0.687	0.750	0.563	1.126	0.205	0.343	0.126	0.0352	0.0704
RC2062HLLDR													

3-4 Based on UR Chain (single pitch)

UR chain using sintered bushings can be expected to have a longer service life than Standard Roller Chain in lubrication-free operation. The amount of oil deposited in the sintered bushing is appropriate for contamination sensitive applications. They are interchangeable with Standard Roller Chain, and standard sprockets can be used.
Rustless type, delivering excellent corrosion resistance with nickel plated parts is also available (URN).





A1 Attachment

K1 Attachment

LP Attachment

SA1 (**M351**) Attachment

SK1 (**M1**)Attachment

Cotter type connecting link is applied to RC80 and larger. Above connecting link is Clip type to be applied to RC60 and smaller.

Unit (inch)

DID Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin			Plate		Avg. Tensile Strength	Max. Allowable Load	Approx. weight without attachment
Standard Type	Rustless Type	P	W	D	d	F	f	T	H	lbs	lbs	(lbs/FT)
RC40UR	**RC40URN**	0.500	0.313	0.312	0.156	0.693	0.374	0.059	0.472	3520	594	0.422
RC50UR	**RC50URN**	0.625	0.375	0.400	0.200	0.862	0.457	0.079	0.591	5720	968	0.711
RC60UR	**RC60URN**	0.750	0.500	0.469	0.235	1.067	0.563	0.094	0.713	8360	1408	0.966
RC80UR	**RC80URN**	1.000	0.625	0.625	0.313	1.394	0.748	0.126	0.945	14300	2398	1.790

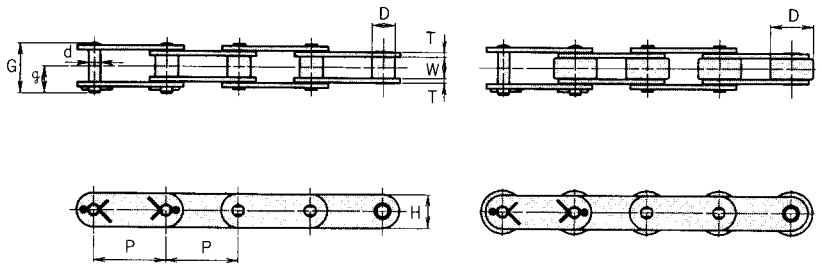
Note: Chains marked C before the chain No. are for conveying system application.
Thickness of inner link plate is equal to outer link plate.
(Inner link plate of sintered bush chain for transmission is thicker than outer link plate.)

Dimensions of Attachment

Unit (inch)

DID Chain No.		Attachment									Approx. additional weight per attachment (lbs)		
Standard Type	Rustless Type	C	Y	S	C1	Y1	B	O	I	L	A, SA	K, SK	D1, D3
RC40UR	**RC40URN**	0.500	0.693	0.312	0.500	0.689	0.375	0.138	0.375	0.661	0.0044	0.0088	0.0022
RC50UR	**RC50URN**	0.625	0.906	0.406	0.625	0.890	0.500	0.205	0.469	0.827	0.0066	0.0132	0.0044
RC60UR	**RC60URN**	0.750	1.063	0.469	0.719	1.031	0.625	0.205	0.562	1.012	0.0132	0.0264	0.0066
RC80UR	**RC80URN**	1.000	1.374	0.625	0.969	1.341	0.750	0.268	0.750	1.335	0.0242	0.0484	0.0154

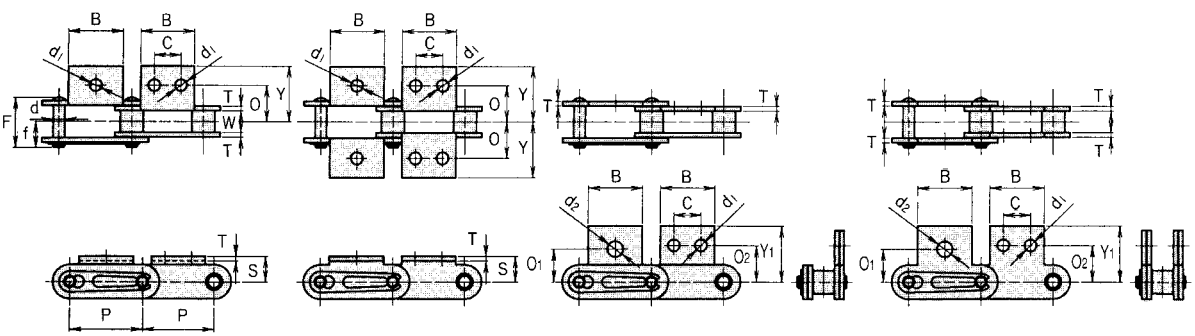
Based on UR Chain (double pitch)



Clip type connecting link is applied to RC2060H and smaller. Above connecting link is Cotter type to be applied to RC2080H and larger.

Unit (inch)

DID Chain No.		Pitch	Roller Link Width	Roller Dia.	Pin			Plate		Avg. Tensile Strength	Max. Allowable Load	Approx. weight without attachment
Standard Type	Rustless Type	P	W	D	f	G	g	T	H	lbs	lbs	(lbs/FT)
RC2040UR	**RC2040URN**	1.000	0.313	0.312	0.156	0.693	0.374	0.059	0.461	3520	594	0.329
RC2042UR	**RC2042URN**			0.625								0.577
RC2050UR	**RC2050URN**	1.250	0.375	0.400	0.200	0.862	0.457	0.079	0.594	5720	968	0.563
RC2052UR	**RC2052URN**			0.750								0.885
RC2060HUR	**RC2060HURN**	1.500	0.500	0.469	0.235	1.185	0.669	0.126	0.677	8360	1408	0.972
RC2062HUR	**RC2062HURN**			0.875								1.455
RC2080HUR	**RC2080HURN**	2.000	0.625	0.625	0.313	1.524	0.811	0.157	0.917	14300	2398	1.650
RC2082HUR	**RC2082HURN**			1.125								2.367



Cotter type connecting link is applied to RC2080H. Above connecting link is Clip type to be applied to RC2060H and smaller.

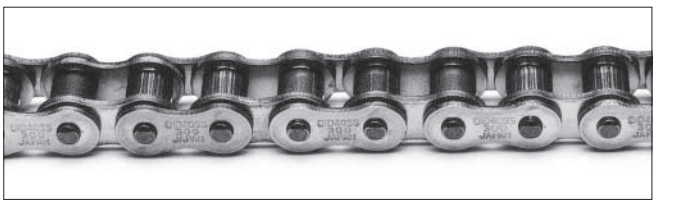
Dimensions of Attachment

Unit (inch)

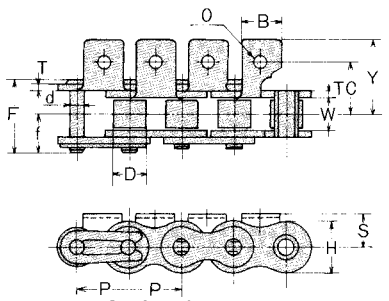
DID Chain No.		Attachment											Approx. additional weight per attachment (lbs)	
Standard Type	Rustless Type	S	O	Y	Y1	O1	O2	C	B	d1	d2	T	A, SA	K, SK
RC2040UR	**RC2040URN**	0.359	0.500	0.764	0.780	0.437	0.531	0.375	0.752	0.138	0.205	0.059	0.0066	0.0132
RC2042UR	**RC2042URN**													
RC2050UR	**RC2050URN**	0.437	0.625	0.961	0.969	0.563	0.625	0.469	0.937	0.205	0.268	0.079	0.0132	0.0264
RC2052UR	**RC2052URN**													
RC2060HUR	**RC2060HURN**	0.578	0.844	1.311	1.205	0.687	0.750	0.563	1.126	0.205	0.343	0.126	0.0352	0.0704
RC2062HUR	**RC2062HURN**													
RC2080HUR	**RC2080HURN**	0.750	1.094	1.606	1.594	0.875	1.000	0.750	1.500	0.268	0.406	0.157	0.0748	0.1496
RC2082HUR	**RC2082HURN**													

3-5 Based on Stainless Steel Chain (single pitch)

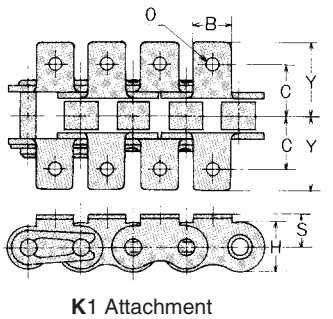
Stainless steel chain is in our environment resistant chain series, and is suitable for machines and apparatus to be prevented from oils and rust in the industries of food, chemicals and so on. Also, it has a very good heat resistance perfomance and can work well in the furnace and oven at high temperature.



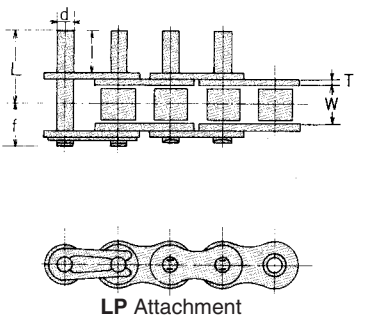
You can select from two different types of stainless steel, SSR and SR type.
SSR type use SS300 (18-8 stainless steel) in all components, and SR type uses precipitation hardened stainless steel in round parts.
Please select the proper stainless steel chain, based upon its maximum allowable load.



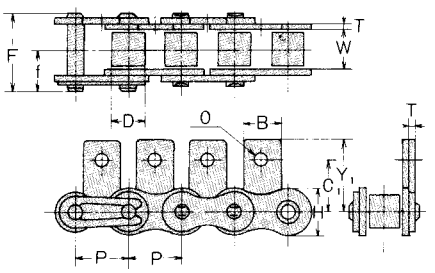
A1 Attachment



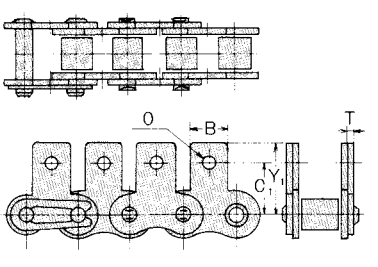
K1 Attachment



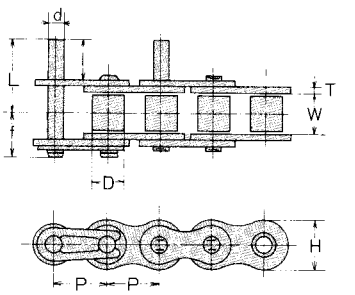
LP Attachment



SA1(M351) Attachment



SK1(M1) Attachment



D1 Attachment

Cotter type connecting link is applied to RC80 and larger. Above connecting link is Clip type applied to RC60 and smaller.

Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Pin d	Pin E	Pin F	Pin G	Pin f	Pin g	Plate T	Plate H	Plate h	Max. Allowable Load (SS) lbs.	Max. Allowable Load (SSK) lbs.	Approx. weight without attachment (lbs/FT)
RC25SSR	0.250	0.122	0.130	0.091	0.299	0.335	———	0.185	———	0.030	0.236	0.205	29	--	0.087
RC35SSR, 35SR	0.375	0.184	0.200	0.141	0.465	0.508	———	0.276	———	0.050	0.354	0.307	59	88	0.228
RC40SSR, 40SR	0.500	0.309	0.313	0.156	0.642	0.689	———	0.368	———	0.059	0.472	0.409	99	154	0.429
RC50SSR, 50SR	0.625	0.370	0.400	0.200	0.807	0.850	———	0.447	———	0.079	0.591	0.512	154	231	0.711
RC60SSR, 60SR	0.750	0.495	0.469	0.234	1.018	1.063	———	0.555	———	0.094	0.713	0.614	231	352	1.046
RC80SSR, 80SR	1.000	0.620	0.625	0.312	1.280	———	1.366	———	0.726	0.126	0.949	0.819	396	594	1.757
RC100SSR, 100 SR	1.250	0.744	0.750	0.375	1.587	———	1.667	———	0.874	0.157	1.185	1.024	572	858	2.769

Note: Those marked with * indicate bush chain

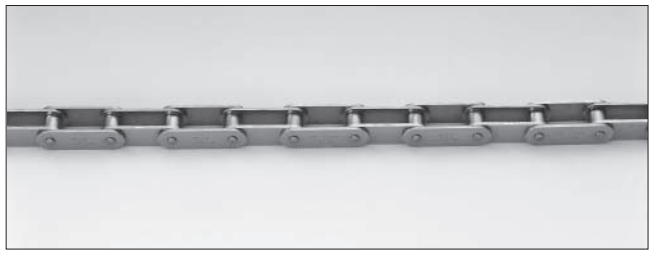
Dimensions of Attachment

Unit (inch)

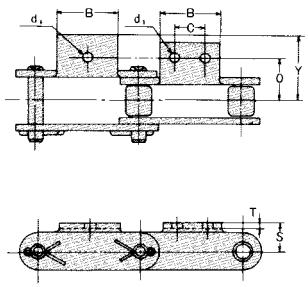
Chain No. DID	Pitch P	A1, K1 Attachment C	A1, K1 Attachment Y	A1, K1 Attachment S	SA1, SK1 Attachment C1	SA1, SK1 Attachment Y	Common Dimensions B	Common Dimensions O	D1, D3 Attachment I	D1, D3 Attachment L	Approx. additional weight per attachment (kg) A, SA	Approx. additional weight per attachment (kg) K, SK	Approx. additional weight per attachment (kg) D1, D3
*RC25SSR	0.250	———	———	———	———	———	———	———	———	———	———	———	———
*RC35SSR, 35SR	0.375	0.374	0.563	0.252	0.374	0.579	0.311	0.110	0.375	0.575	0.002	0.004	0.002
RC40SSR, 40SR	0.500	0.500	0.709	0.311	0.500	0.693	0.378	0.142	0.375	0.648	0.004	0.009	0.002
RC50SSR, 50SR	0.625	0.626	0.902	0.406	0.626	0.890	0.504	0.205	0.469	0.825	0.007	0.013	0.004
RC60SSR, 60SR	0.750	0.748	1.091	0.469	0.720	1.039	0.634	0.205	0.562	1.020	0.013	0.026	0.007
RC80SSR, 80SR	1.000	1.000	1.386	0.626	0.969	1.343	0.748	0.268	0.750	1.335	0.024	0.048	0.015
RC100SSR, 100 SR	1.250	1.252	1.748	0.780	1.248	1.709	1.000	0.343	0.938	1.638	0.053	0.106	0.026

Note: Those marked with * indicate bush chain

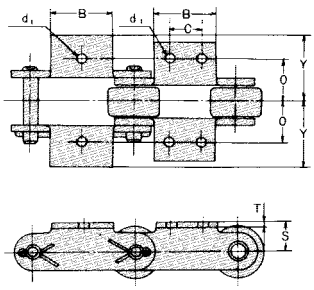
Based on Stainless Steel Chain (double pitch)



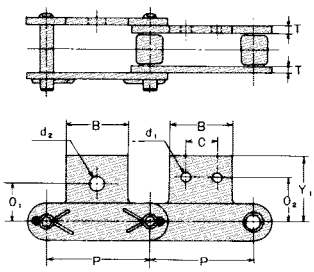
Atype
(Pictured chain is **S** Roller type)



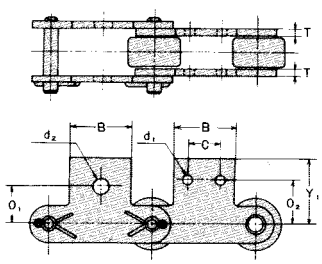
Ktype
(Pictured chain is **R** Roller type)



SA (**M35**) type
(Pictured chain is **S** Roller type)



SK (**M**) type
(Pictured chain is **R** Roller type)



Clip type connecting link to be applied to RC2060H and smaller. Above connecting link is Cotter type applied to RC2080H and larger.

Unit (inch)

Chain No. DID		Pitch	Roller Link Width	Roller Dia.	Pin			Plate		Avg. Tensile Strength	Max. Allowable Load	Approx. weight without attachment
		P	W	D	d	e	g	T	H	lbs.	lbs.	(lbs./FT)
RC2040SSR	RC2040SR	1.000	0.313	0.313	0.156	0.313	0.374	0.059	0.461	99	154	0.329
RC2042SSR	RC2042SR			0.625								0.563
RC2050SSR	RC2050SR	1.250	0.370	0.400	0.200	0.388	0.463	0.079	0.587	154	231	0.543
RC2052SSR	RC2052SR			0.750								0.858
RC2060HSSR	RC2060HSR	1.500	0.495	0.469	0.234	0.577	0.663	0.126	0.669	308	462	0.959
RC2062HSSR	RC2062HSR			0.875								1.435
RC2080HSSR	RC2080HSR	2.000	0.620	0.625	0.312	0.705	0.791	0.157	0.925	495	737	1.650
RC2082HSSR	RC2082HSR			1.125								2.354

Dimensions of Attachment

Unit (inch)

Chain No. DID		Pitch	Attachment											Approx. additional weight per attachment (kg)	
		P	S	O	Y	Y1	O1	O2	C	B	d1	d2	B	A, SA	K, SK
RC2040SSR	RC2040SR	1.000	0.358	0.500	0.748	0.780	0.437	0.531	0.375	0.760	0.142	0.205	0.059	0.0066	0.0132
RC2042SSR	RC2042SR														
RC2050SSR	RC2050SR	1.250	0.437	0.625	0.949	0.969	0.563	0.626	0.469	0.945	0.205	0.268	0.079	0.0132	0.0264
RC2052SSR	RC2052SR														
RC2060HSSR	RC2060HSR	1.500	0.579	0.844	1.236	1.205	0.689	0.752	0.563	1.134	0.205	0.343	0.126	0.0374	0.0748
RC2062HSSR	RC2062HSR														
RC2080HSSR	RC2080HSR	2.000	0.752	1.094	1.642	1.630	0.874	1.000	0.750	1.500	0.268	0.406	0.157	0.0814	0.1628
RC2082HSSR	RC2082HSR														

Note: 1. Attachments SA1, SK1, A1 and K1 are featured by only one hole given. Attachments SA2, SK2, A2,and K2 are featured by two holes given.
2. Interval of attachments must be specified when you order.
3. Without special instruction, attachments are given to outer link plates in case of even number of pitch between attachments.

4. DID Chain for Free Flow Conveyors

Many conveyors allowing the flow of conveyed articles to be blocked by inserting a stopper and flow freely by retracting the stopper are used in assemby lines of electric products and household appliances. DID chain for free flow conveyors are originally designed for free flow , and allow conveyed articles to start flowing freely with a minimum of blocking resistance.

4-1 List of Chain for Free Flow Conveyors

DID chain for free flow conveyors can be classified into the following three major types.

Top roller chain

The chain has a third roller (top roller) above each link, and conveyed articles are placed on the rollers. It is an equal speed free flow Chain for a conveyor system in which the top rollers rotate idly when the conveyed articles are stopped.

Side roller chain

The pins of the chain are extended, and third rollers (outboard rollers) are installed with the pins as shafts. If the side rollers run on a floor, the chain becomes a double speed free flow chain for conveyor system, and if the chain rollers run on a rail, the chain becomes an equal speed free flow chain for conveyor system. Chain is available for single pitch and double pitch, and chain with a brake is also available. The chain is listed below.

DID Top Roller and Side Roller Chain

	Top Roller Chain						Side Roller Chain					
	Single Strand				Double Strand							
	every 2 pitches (2P-TR)	every single pitches (2P-TR)	with Guide Plate (TG)	with Brake	every 2 pitches (2P-TR Inner)	with Guide Plate (1P-TR)		with Guide Plate (SG)	with Brake	Hollow Pin Chain (HP)	Flexible Chain (FX)	Straight Link Plate Roller Chain (F)
RC35	—	—	—	—	— ✻2	—	—	—	—	—	—	○
RC40	inner	Ⓢ ✻3	inner/outer	○	outer/inner	—	○✻1	—	○✻1	○	○	○
RC50	inner	Ⓢ	inner/outer	—	outer/inner	—	○	—	—	○	○	○
RC60	inner	Ⓢ	inner/outer	—	outer/inner	—	○	—	—	○	○	○
RC80	inner	Ⓢ	inner/outer	—	outer/inner	—	—	—	—	—	○	○
RC100	inner	Ⓢ	inner/outer	—	outer/inner	—	—	—	—	—	○	○
RC120	—	—	—	—	—	—	—	—	—	—	—	○
RC2040	outer/inner	○	inner	—	outer/inner	○	○	—	—	○	—	—
RC2050	outer/inner	○	inner	—	outer/inner	○	○	—	—	○	—	—
RC2060H	outer/inner	○	inner	—	outer/inner	○	○	—	—	○	—	—
RC2080H	outer/inner	○	inner	—	outer/inner	○	○	—	—	○	—	—
RC2100H	outer/inner	○	inner	—	outer/inner	○	○	—	—	—	—	—
RC2042	outer/inner	○	inner	—	outer/inner	○	—	Ⓛ✻3	—	○	—	—
RC2052	outer/inner	○	inner	—	outer/inner	○	—	Ⓛ	—	○	—	—
RC2062H	outer/inner	○	inner	—	outer/inner	○	—	Ⓛ	—	○	—	—
RC2082H	outer/inner	○	inner	—	outer/inner	○	—	Ⓛ	—	○	—	—
RC2102H	outer/inner	○	inner	—	outer/inner	○	—	Ⓛ	—	—	—	—

Note: ✻1. Marked ○ are lined up as standard.

✻2. Inner and outer specifies the link plate on which attachment is fixed.
For the chain marked inner/outer, top roller to be affixed on inner link plates when no instruction is given.
For the chain marked outer/inner, top roller to be affixed on outer link plated when no instructiion is given.

✻3. Diameter of top roller of those marked Ⓢ is smaller than normal in the same size.
Diameter of top roller of those marked Ⓛ is larger than normal in the same size.

4-2 Top Roller Chain

With conveyed articles directly placed on top rollers, the chain is continuously driven, and a stopper provided on the conveyor keeps the conveyed articles stored or temporarily stopped. For selection and design of chain, see Section 6 of this chapter (P. 138).

4-2-1 Single pitch Top roller chain

• Every-Link Top Roller Chain

[Example of Description: RC50TR-DU1)]

RC 50-TR DU-1

- RC — Roller Chain
- 50 — Chain Size
- TR — Top Roller
- DU — Plastic Rollers (blank: steel rollers)
- 1 — Spacing

(The diameter of top rollers is smaller than that of every-other-link top roller)

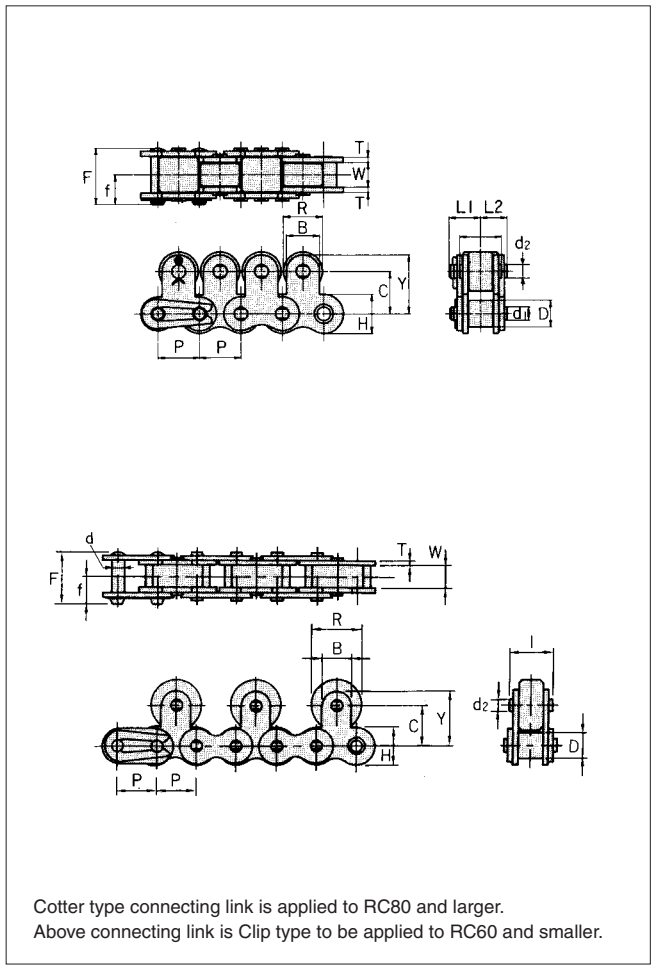
• Every-Other-Link Top Roller Chain

[Example of Description: RC50TR2]

RC 50-TR 2

- RC — Roller Chain
- 50 — Chain Size
- TR — Top Rollers
- (blank) — Steel Rollers (DU: plastic rollers)
- 2 — Spacing

(Inner link top rollers are the standard for every-other-pitch top roller chain)



Cotter type connecting link is applied to RC80 and larger.
Above connecting link is Clip type to be applied to RC60 and smaller.

Dimensions of Chain Portion

Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Pin d	Pin F	Pin f	Plate T	Plate H	Avg. Tensile Strength lbs.	Max. Allowable Load lbs.
RC40-TR	0.500	0.313	0.312	0.156	0.693	0.374	0.059	0.472	4180	594
RC50-TR	0.625	0.375	0.400	0.200	0.862	0.457	0.079	0.591	6380	990
RC60-TR	0.750	0.500	0.469	0.235	1.059	0.563	0.094	0.713	9900	1430
RC80-TR	1.000	0.625	0.625	0.313	1.394	0.748	0.126	0.945	17600	2420
RC100-TR	1.250	0.750	0.750	0.376	1.673	0.898	0.157	1.177	26620	3850

Dimensions of Top Roller Portion

Unit (inch)

Chain No. DID	Every 2 Pitch Top Roller R	C	Y	B	d2	I	Approx. Weight (lbs/FT) Steel Top Roller	Plastic Top Roller	Every 2 Pitch Top Roller R	C	Y	B	d2	L1	L2	L3	Approx. Weight (lbs./FT) Steel Top Roller	Plastic Top Roller
RC40-2P-TR	0.625	0.500	0.687	0.374	0.156	0.520	0.811	0.570	0.433	0.500	0.687	0.374	0.156	0.398	0.327	0.520	1.274	0.697
RC50-2P-TR	0.750	0.638	0.888	0.500	0.206	0.638	1.247	0.945	0.591	0.638	0.888	0.500	0.206	0.472	0.402	0.638	1.670	1.187
RC60-2P-TR	0.875	0.720	1.033	0.626	0.235	0.803	1.891	1.388	0.709	0.720	1.033	0.626	0.235	0.594	0.500	0.803	2.555	1.743
RC80-2P-TR	1.125	0.969	1.344	0.752	0.313	1.012	3.212	2.427	0.945	0.969	1.344	0.752	0.313	0.748	0.646	1.012	4.439	3.138
RC100-2P-TR	1.563	1.252	1.752	1.000	0.376	1.220	5.116	3.641	1.181	1.252	1.752	1.000	0.376	0.898	0.795	1.220	6.545	4.573

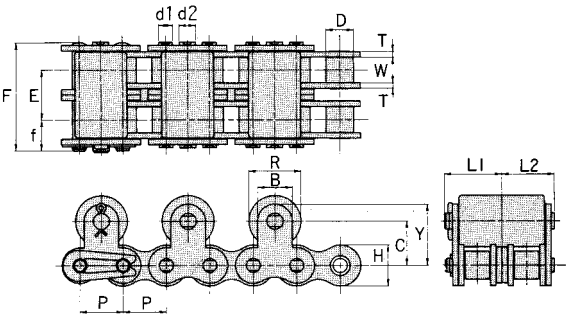
Note: 1. Approx.weight is of the chain with every 2 pitch Top Roller.
2. The material of plastic top roller is polyacetal.

• Double Strand Every-Other-Link Top Roller Chain

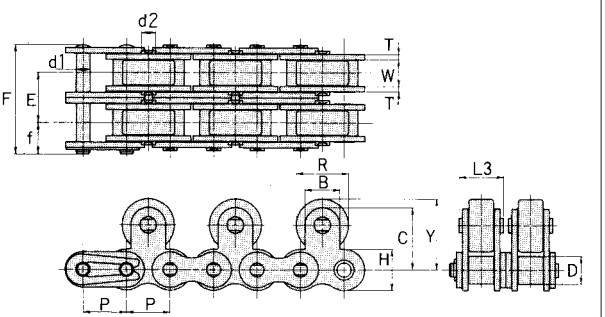
[Example of Description: RC40-2TRDU2 (Top Roller Outer Link)]

RC 40-2-TR outer DU 2

- RC — Roller Chain
- 40 — Chain Size
- 2 — Spacing
- TR — Top Rollers
- outer — Indication of outer link top roller
- DU — Plastic Rollers (blank: steel rollers)



Outer Link Top Roller Type
Cotter type connectig link is applied to RC80 and over.
Above connecting link is Clip type to be applied to RC60 and under.



Inner Link Top Roller Type
Cotter type connecting link is applied to RC80 and larger.
Above connecting link is Clip type to be applied to RC60 and smaller.

1. Standard inner link top roller type uses two separate rollers as illustrated. However, one-piece roller is also available.
2. A chain with top rollers attached to all the links is available. In this type, the dimension R is different. See every-link top roller chain section (P. 129).
3. The connecting link for RC80-2 ~ RC100-2 are cotter type. Dimensions of pins are as shown in the table below.

Dimensions of Chain Portion

Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Transverse Pitch E	Pin d	Pin F	Pin f	Plate T	Plate H	Plate h
RC40-2-2PTR-F	0.500	0.313	0.312	0.567	0.156	1.264	0.374	0.059	0.472	0.409
RC50-2-2PTR-F	0.625	0.375	0.400	0.713	0.200	1.579	0.457	0.079	0.591	0.512
RC60-2-2PTR-F	0.750	0.500	0.469	0.898	0.235	1.961	0.563	0.094	0.713	0.614
RC80-2-2PTR-F	1.000	0.625	0.625	1.154	0.313	2.547	0.748	0.126	0.945	0.819
RC100-2-2PTR-F	1.250	0.750	0.750	1.409	0.376	3.098	0.898	0.157	1.177	1.024

Dimensions of Top Roller Portion

Unit (inch)

Chain No. DID	R	C	Y	B	d2	L1	L2	L3
RC40-2-2PTR-F	0.625	0.500	0.687	0.374	0.156	0.673	0.610	0.520
RC50-2-2PTR-F	0.750	0.638	0.888	0.500	0.206	0.827	0.760	0.638
RC60-2-2PTR-F	0.875	0.720	1.033	0.626	0.235	1.047	0.953	0.803
RC80-2-2PTR-F	1.125	0.969	1.344	0.752	0.313	1.323	1.224	1.012
RC100-2-2PTR-F	1.563	1.252	1.752	1.000	0.376	1.598	1.500	1.220

4-2-2 Double Pitch Top Roller Chain

• Simplex Every-Link Top Roller Chain

[Example of Description]

RC 2050-TR- ___ 1

- Roller Chain
- Chain Size
- Top Roller
- Steel (DU: plastic rollers)
- Spacing

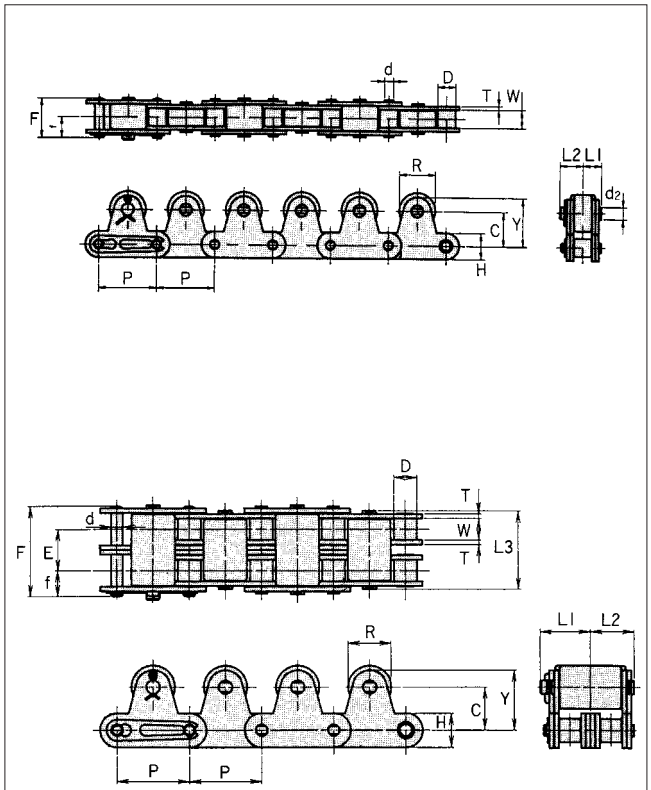
• Duplex Every-Link Top Roller Chain

[Example of Type Indication]

RC 2060H-2- TR ___ 1

- Roller Chain
- Chain Size
- Top Roller
- Steel (DU: plastic rollers)
- Spacing

1. The connecting links for RC2080H-2 ~ RC2100H -2 are cotter types. The dimensions of pins are as shown in the table below.
2. For RC2060H-2 or larger, dimension E, transverse pitch, is different from that of the corresponding DID standard sprocket. See HK type sprocket tooth profile (P. 76).
3. When a top roller is required for every even-numbered link, the top rollers will be attached to inner links unless otherwise specified.



Cotter type connecting link is applied to RC2080H and larger.
Above connecting link is Clip type to be applied to RC2060H and smaller.

Dimensions of Chain Portion

Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Pin d	Pin e	Pin g	Plate T	Plate H	Transverse Pitch, Double E	Strength, Single Strand Avg. Tensile Strength lbs.	Strength, Single Strand Max. Allowable Load lbs.	Strength, Single Strand Avg. Tensile Strength lbs.	Strength, Single Strand Max. Allowable Load lbs.
RC2040-TR	1.000	0.313	0.312	0.156	0.693	0.374	0.059	0.461	0.567	3828	594	7656	1012
RC2042-TR			0.625										
RC2050-TR	1.250	0.375	0.400	0.200	0.862	0.457	0.079	0.594	0.713	6446	990	12892	1672
RC2052-TR			0.750										
RC2060H-TR	1.500	0.500	0.469	0.235	1.232	0.669	0.126	0.677	1.031	9020	1452	18040	2464
RC2062H-TR			0.875										
RC2080H-TR	2.000	0.625	0.625	0.313	1.524	0.815	0.157	0.917	1.283	15400	2530	30800	4290
RC2082H-TR			1.125										
RC2100H-TR	2.500	0.750	0.750	0.376	1.823	0.965	0.189	1.134	1.539	25300	4180	50600	7106
RC2102H-TR			1.563										

Dimensions of Top Roller Portion

Unit (inch)

Chain No. DID	Every 2 Pitch Top Roller Dimensions R	C	Y	B	d2	I	Approx. Weight (lbs/FT) Steel Top Roller	Plastic Top Roller	Every 2 Pitch Top Roller Dimensions R	C	Y	B	d2	L1	L2	Approx. Weight (lbs./FT) Steel Top Roller	Plastic Top Roller
RC2040-TR	0.625	0.591	0.827	0.333	0.398	0.206	0.878	0.597	0.625	0.591	0.827	0.206	0.673	0.610	1.091	1.663	1.100
RC2042-TR							1.127	0.845								2.092	1.569
RC2050-TR	0.750	0.748	1.043	0.413	0.508	0.235	1.368	0.966	0.750	0.748	1.043	0.235	0.866	0.772	1.354	2.595	1.831
RC2052-TR							1.690	1.287								3.205	2.441
RC2060H-TR	0.875	0.906	1.244	0.581	0.699	0.313	2.427	1.817	0.875	0.906	1.244	0.313	1.201	1.098	1.929	4.607	3.447
RC2062H-TR							2.910	2.307								5.525	4.379
RC2080H-TR	1.125	1.142	1.594	0.715	0.837	0.376	3.742	2.830	1.125	1.142	1.594	0.376	1.472	1.358	2.382	7.108	5.371
RC2082H-TR							4.486	3.574								8.523	6.786
RC2100H-TR	1.563	1.394	1.957	0.870	1.071	0.563	6.048	4.305	1.563	1.394	1.957	0.563	1.819	1.642	2.874	11.487	8.174
RC2102H-TR							7.564	5.820								14.370	11.058

4-2-3 Overturn Prevention Type Chain

Chain with overturn prevention links installed to prevent overturning of conveyed articles is also available.

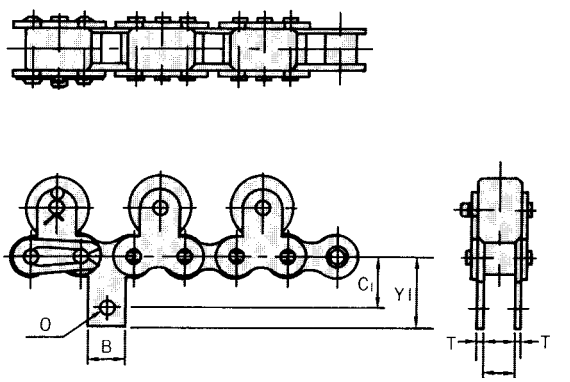
[Example of Description]

RC 50 TR 2 (TG 6 inner)

- RC: Roller Chain
- 50: Chain Size
- TR: Top Roller
- 2: Steel (DU: plastic rollers)
- (TG: T-Shaped Guide (overturn prevention link)
- 6: Spacing for TG
- inner: Inner LinkTG

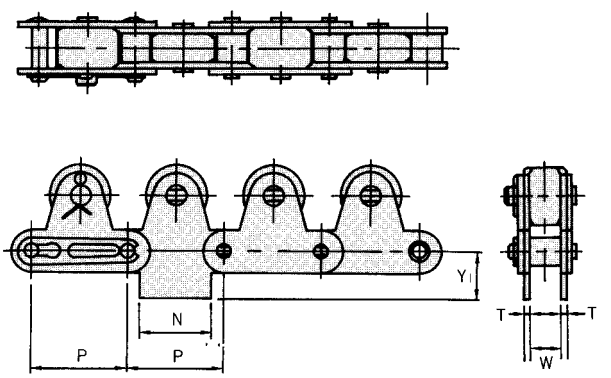
1. A single pitch every-link top roller chain with overturn prevention links is not available. SK1 (M1) attachments can be used as TG for overturn prevention.
2. Overturn prevention links for double pitch chain are inner link TG.

Guide Link on Inner Link Plate for Single Pitch Chain



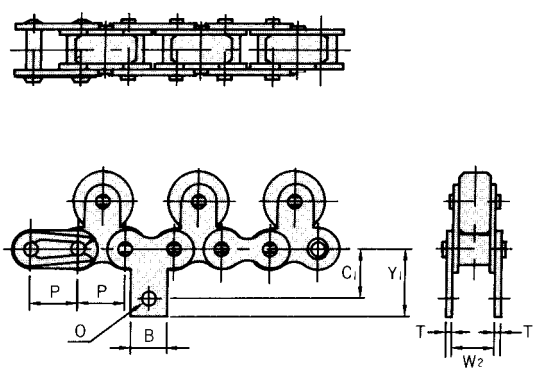
Cotter type connecting link is applied to RC80 and larger.
Above connecting link is Clip type to be applied to RC60 and smaller.

Guide Link for Double Pitch Chain



Cotter type connecting link is applied to RC2080H and larger.
Above connecting link is Clip type to be applied to RC2060H and smaller.

Guide Link on Outer Link Plate for Single Pitch Chain



Cotter type connecting link is applied to RC80 and larger.
Above connecting link is Clip type to be applied to RC60 and smaller.

Double Pitch TG Link

Unit (inch)

Chain No. DID	Pitch P	Dimensions N	Y1	T	W
RC2040-TG	1.000	0.752	0.500	0.059	0.313
RC2050-TG	1.250	0.937	0.626	0.079	0.375
RC2060H-TG	1.500	1.126	0.752	0.126	0.500
RC2080H-TG	2.000	1.500	1.000	0.157	0.625
RC2100H-TG	2.500	1.874	1.252	0.189	0.750

Single Pitch TG Link

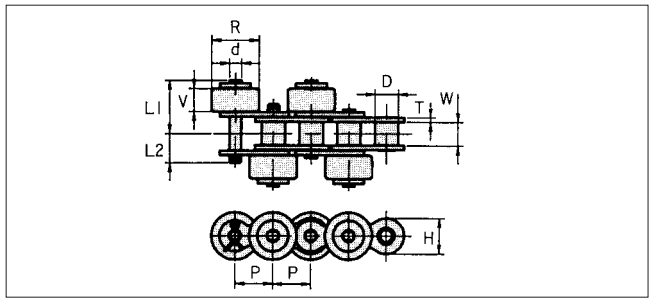
Unit (inch)

Chain No. DID	Pitch P	Dimensions B	Y1	C1	T	W1	W2	O
RC40-TG	0.500	0.374	0.689	0.500	0.059	0.313	0.442	0.138
RC50-TG	0.625	0.500	0.890	0.625	0.079	0.375	0.547	0.205
RC60-TG	0.750	0.626	1.031	0.719	0.094	0.500	0.701	0.205
RC80-TG	1.000	0.752	1.341	0.969	0.126	0.625	0.892	0.268
RC100-TG	1.250	1.000	1.683	1.250	0.157	0.750	1.083	0.343

4-3 Side Roller Chain

4-3-1 Single pitch side roller chain

A side roller chain receives the loads of conveyed articles by side rollers, and is used for a free flow conveyor running on a rail. Since the number of rollers for receiving the loads of conveyed articles is large, a side roller chain can convey heavier articles than a top roller chain made of the same material. Furthermore, since the center of gravity of the chain is low, stability is also good. For selection and design of chain, see Section 6 of this chapter (P. 138). All the connecting links of side roller chain are cotter types as illustrated.



Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Plate T	Plate H	Pin d	Pin L1	Pin L2	Pin L3	Side Roller R	Side Roller V	Avg. Tensile Strength lbs.	Max. Allowable Load lbs.	Approx. Weight (lbs/FT) Steel Side Roller	Approx. Weight (lbs/FT) Plastic Side Roller
RC40-SR	0.500	0.313	0.312	0.059	0.472	0.156	0.697	0.398	0.768	0.625	0.307	3740	594	1.113	0.624
RC50-SR	0.625	0.375	0.400	0.079	0.591	0.200	0.854	0.472	0.925	0.750	0.370	6270	990	1.636	0.966
RC60-SR	0.750	0.500	0.469	0.094	0.713	0.235	1.094	0.594	1.260	0.875	0.496	9020	1430	2.401	1.381
RC80-SR	1.000	0.625	0.625	0.126	0.945	0.313	1.382	0.815	1.484	1.125	0.622	17600	2420	3.976	2.401
RC100-SR	1.250	0.750	0.750	0.157	1.177	0.376	1.748	0.898	1.850	1.563	0.748	26620	3850	6.706	3.728

Note: 1. L3 indicates the value of L1 when cotter type pin is applied.
2 .The material of plastic side roller is polyacetal.

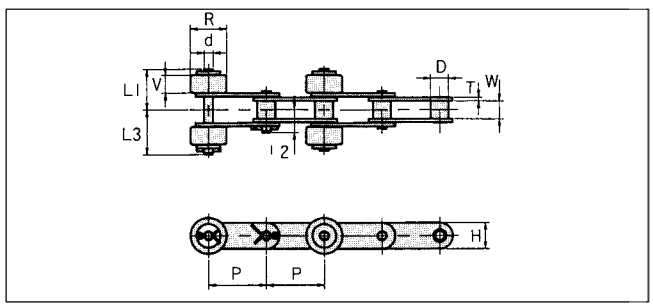
4-3-2 Double pitch side roller chain

S roller chain

[Example of type expression]

RC 2050-SR-2 DU T

- RC 2050: Roller Chain Chain Size
- SR: Side Roller
- 2: Spacing
- DU: Plastic Roller *Blank: steel rollers *DUAS: plastic anti-static rollers
- T: Installation Method (T: staggered, H: parallel type)



Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Plate T	Plate H	Pin d	Pin L1	Pin L2	Pin L3	Side Roller R	Side Roller V	Avg. Tensile Strength lbs.	Max. Allowable Load lbs.	Approx. Weight (lbs/FT) Steel Side Roller	Approx. Weight (lbs/FT) Plastic Side Roller
RC2040-SR	1.000	0.313	0.312	0.059	0.461	0.156	0.697	0.398	0.768	0.625	0.307	3828	594	0.671	0.429
RC2050-SR	1.250	0.375	0.400	0.079	0.594	0.200	0.854	0.472	0.925	0.750	0.370	6446	990	1.026	0.691
RC2060H-SR	1.500	0.500	0.469	0.126	0.677	0.235	1.157	0.669	1.260	0.875	0.496	9020	1452	1.750	1.167
RC2080H-SR	2.000	0.625	0.625	0.157	0.917	0.313	1.445	0.815	1.563	1.125	0.622	15400	2530	2.890	2.132
RC2100H-SR	2.500	0.750	0.750	0.189	1.134	0.376	1.740	0.965	1.862	1.563	0.748	25300	4180	4.734	3.239

Note: The material of plastic side roller is polyacetal.

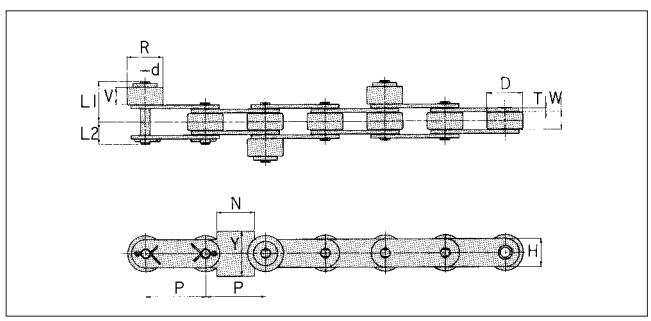
4-3-3 Meandering prevention type chain

An R roller type double pitch chain with side rollers has a construction in which higher inner plates are used to keep the rail between them, prevent derailing of the R rollers. Furthermore, side rollers are also larger, enabling them to withstand a higher live load.

[Example of type expression]

RC 2052-SG-2 DU T

- RC 2052: Roller Chain Chain Size
- SG: Meandering Prevention
- 2: Spacing
- DU: Plastic Roller *Blank: steel rollers *DUAS: plastic anti-static rollers
- T: Installation Method (T: staggered, H: parallel type)



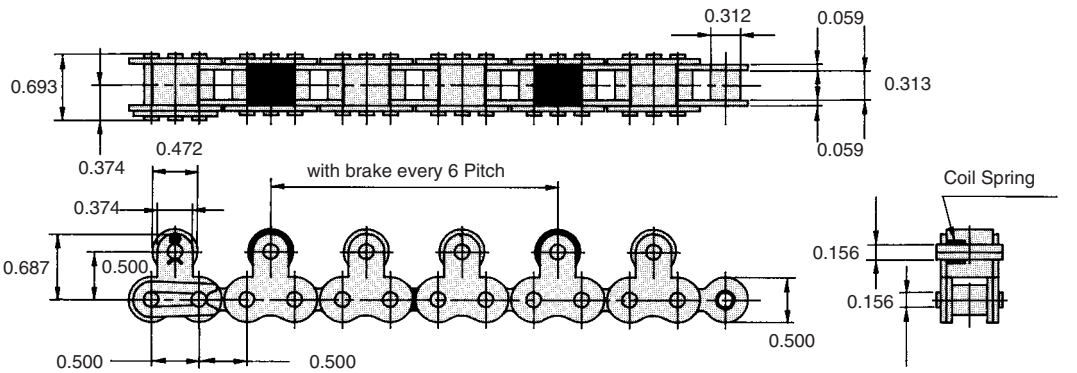
Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Plate H	Plate d	Pin d	Pin L1	Pin L2	Side Roller R	Side Roller V	N	Y	Approx. Weight (lbs/FT) Steel Side Roller	Approx. Weight (lbs/FT) Plastic Side Roller
RC2042-SG	1.000	0.313	0.625	0.059	0.461	0.156	0.697	0.398	0.906	0.512	0.650	0.748	1.140	0.697
RC2052-SG	1.250	0.375	0.750	0.079	0.594	0.200	0.854	0.472	1.063	0.512	0.787	0.945	1.502	1.019
RC2062H-SG	1.500	0.500	0.875	0.126	0.677	0.235	1.157	0.669	1.181	0.512	1.000	1.063	2.106	1.603

Note: The material of plastic side roller is polyacetal.

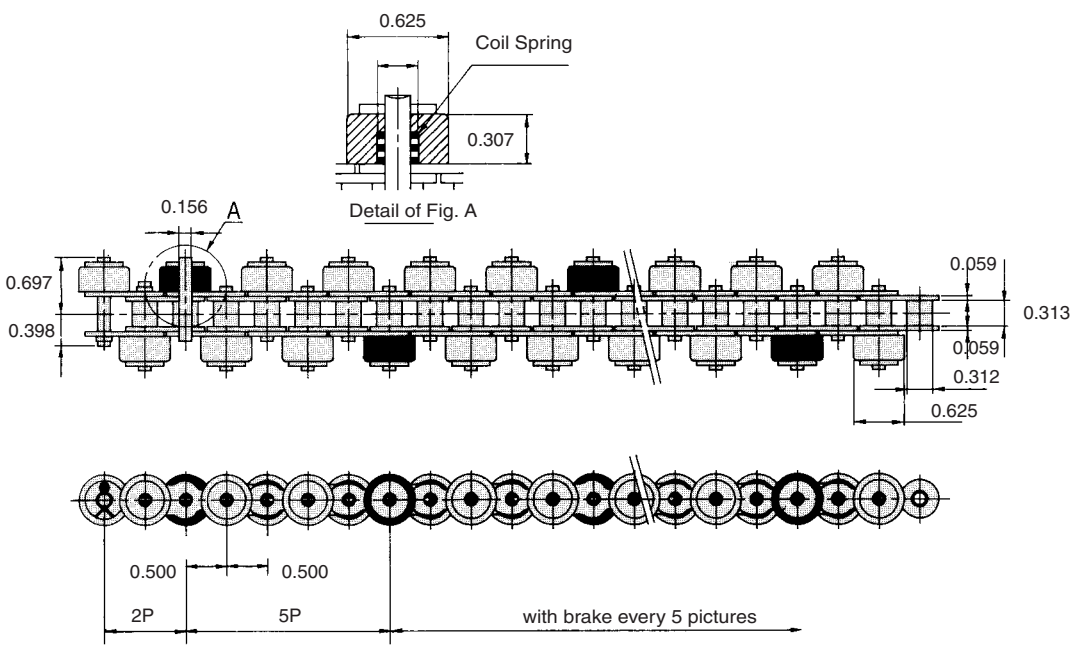
4-4 Free Flow Chain with Brake

If the coefficient of rotating friction of carrier rollers is too small, an unintended slight resistance causes conveyed articles to be retained.
To prevent unstable retention, several brakes of carrier rollers are installed to increase the coefficient of rotating friction in a free flow chain with brakes.

4-4-1 Top roller chain with brake



4-4-2 Side roller chain with brake



The above illustrations show cases where brakes are installed for top rollers and side rollers of RC40.Top rollers and side rollers can be arranged as requested.

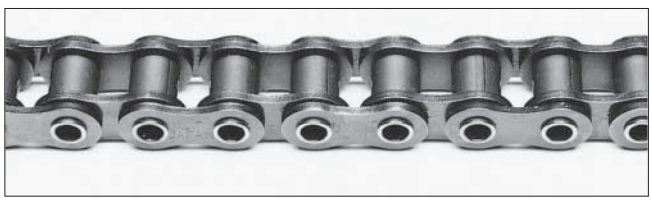
5. Other Chains for Conveyor Systems

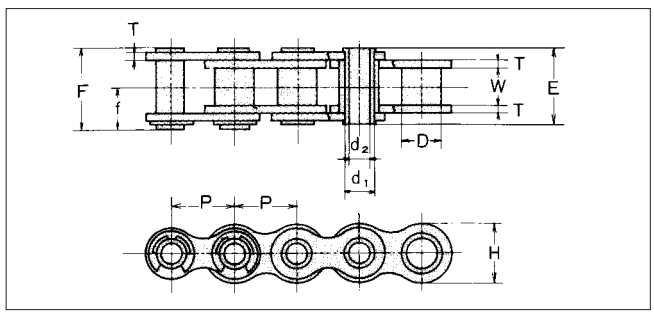
5-1 Hollow pin chain

This chain is connected by hollow pins, and the hollow holes can be used to install various attachments.
In a hollow pin chain, the hollow pins are the same as the bushings of the corresponding standard chain in diameter, and it can be said that a hollow pin chain is a bushing chain in which pins with the same diameter as that of the rollers of the corresponding standard chain are used as bushings.

Standard sprockets can be used.
For design of chain transmission, refer to the slow-speed selection on P. 92.
The connecting links are special snap ring types for hollow pin chain as illustrated below.
Since no offset link is available, determine the length of a chain by an even number of links.

• Single Pitch Chain

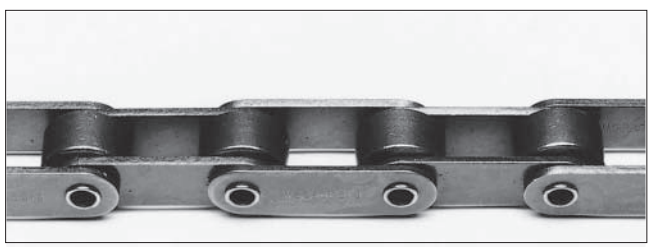


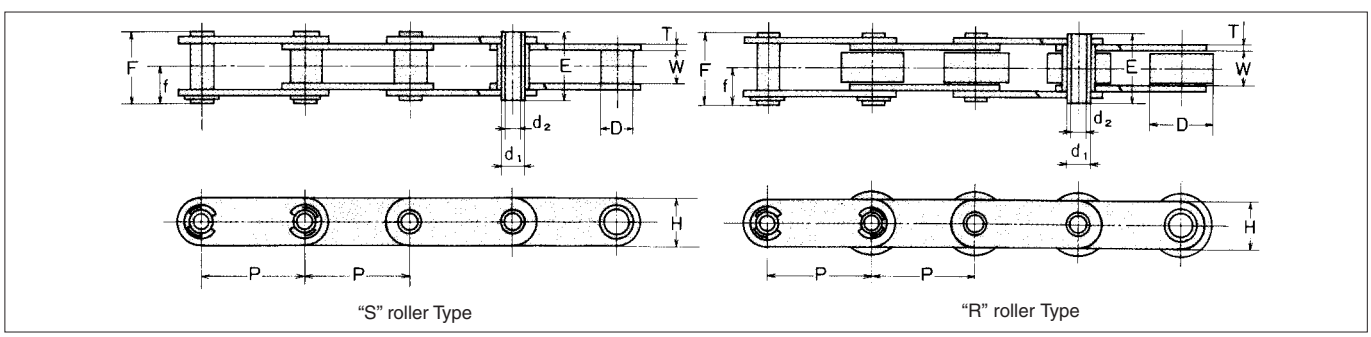


Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Pin d1	Pin d2	Pin E	Pin F	Pin f	Plate T	Plate H	Avg. Tensile Strength lbs	Max. Allowable Load lbs	Approx. Weight (lbs/FT)
RC40HP	0.500	0.313	0.312	0.221	0.157	0.630	0.689	0.374	0.059	0.472	2420	396	0.349
RC50HP	0.625	0.375	0.400	0.283	0.202	0.795	0.854	0.457	0.079	0.591	4400	704	0.577
RC60HP	0.750	0.500	0.469	0.333	0.236	0.988	1.055	0.563	0.094	0.713	5940	968	0.805

• Double Pitch Chain



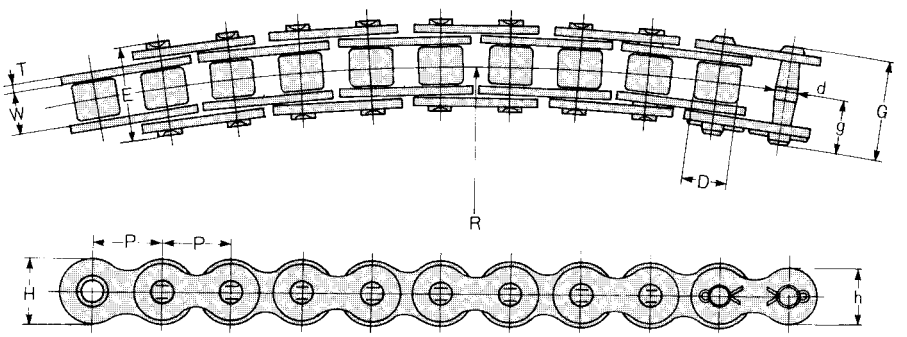


Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Pin d1	Pin d2	Pin E	Pin F	Pin f	Plate T	Plate H	Avg. Tensile Strength lbs	Max. Allowable Load lbs	Approx. Weight (lbs/FT)
RC2040HP	1.000	0.313	0.312	0.221	0.157	0.630	0.689	0.374	0.059	0.461	2420	396	0.295
RC2042HP			0.625										0.543
RC2050HP	1.250	0.375	0.400	0.283	0.202	0.795	0.854	0.457	0.079	0.594	4400	704	0.503
RC2052HP			0.750										0.811
RC2060HP	1.500	0.500	0.469	0.333	0.236	0.988	1.055	0.563	0.094	0.677	5940	946	0.885
RC2062HP			0.875										1.871
RC2080HP	2.000	0.625	0.625	0.445	0.316	1.280	1.343	0.701	0.126	0.917	10780	1716	1.153
RC2082HP			1.125										1.790

5-2 Flexible Chain

A DID flexible chain is a roller chain which can be greatly bent in the transverse direction, and is suitable for curved traveling. For the chain, sprockets for JIS/ANSI Standard Roller Chain can be used. This chain with attachments can also be used as a conveyor for curved applications.



Connecting link is Cotter type only.

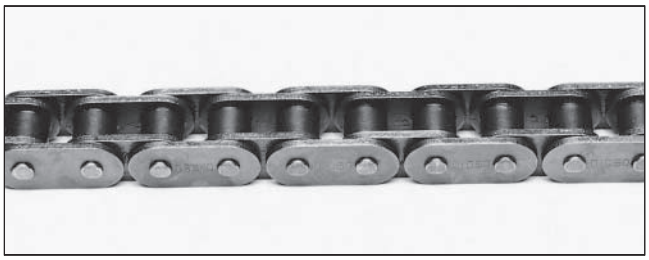
Unit (inch)

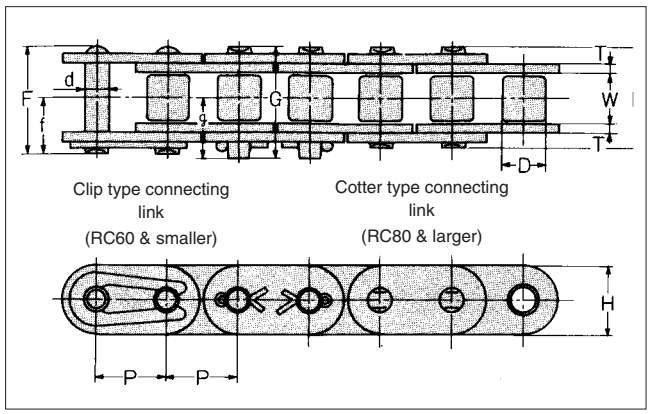
Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Pin d1	Pin d2	Pin E	Pin F	Pin f	Plate T	Plate H	Min. lateral bending radius R	Avg. Tensile Strength lbs	Max. Allowable Load lbs	Approx. Weight (lbs/FT)
RC40FX	0.500	0.313	0.312	0.156	0.665	0.732	0.409	0.059	0.472	0.409	13.780	3520	418	0.402
RC50FX	0.625	0.375	0.400	0.200	0.815	0.886	0.484	0.079	0.591	0.512	15.748	5500	638	0.691
RC60FX	0.750	0.500	0.469	0.235	1.016	1.118	0.606	0.094	0.713	0.614	19.685	7920	902	0.878
RC80FX	1.000	0.625	0.625	0.313	1.331	1.437	0.768	0.126	0.945	0.819	23.622	13860	1562	1.743

Note: Lateral bending radius shoud be designed being larger than above R in bending operation.

5-3 Flat Plate (Straight Sidebar) Type Roller Chain

Since the plates are flat, chain guides, etc. are less susceptible to damage, and a roller chain can also be used for a conveyor system. (Outer plates are the same as inner plates in form.)



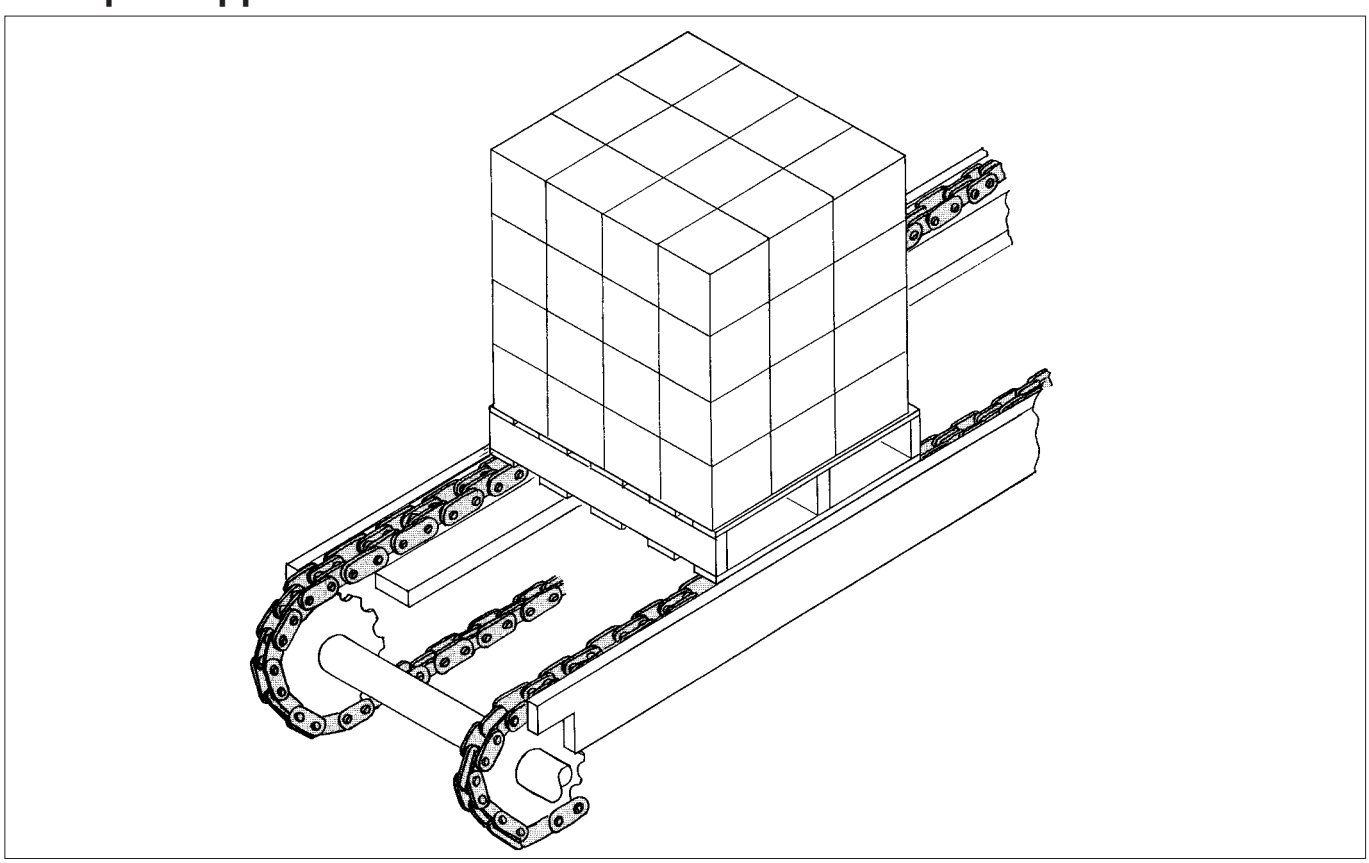


Unit (inch)

Chain No. DID	Pitch P	Roller Link Width W	Roller Dia. D	Pin d	Pin E	Pin G	Pin g	Plate T	Plate H	Avg. Tensile Strength lbs	Approx. Weight (lbs/FT)
RC35FR	0.375	0.188	0.200	0.141	0.472	0.516	0.287	0.049	0.354	2530	0.262
RC40FR	0.500	0.313	0.312	0.156	0.650	0.693	0.374	0.059	0.472	4290	0.436
RC50FR	0.625	0.375	0.400	0.200	0.799	0.862	0.457	0.079	0.591	6930	0.771
RC60FR	0.750	0.500	0.469	0.235	1.000	1.059	0.563	0.094	0.713	9900	1.140
DID Chain No.	**P**	**W**	**D**	**d**	**E**	**G**	**g**	**T**	**H**	lbs	(lbs/FT)
RC80FR	1.000	0.625	0.625	0.313	1.283	1.394	0.748	0.126	0.945	17600	1.790
RC100FR	1.250	0.750	0.750	0.376	1.555	1.673	0.894	0.157	1.177	26620	2.810
RC120FR	1.500	1.000	0.875	0.437	1.957	2.087	1.110	0.189	1.413	37400	4.104

Note: Please consult with us if desired size is not available in above table.

Example: Application of Flat Link Plate Roller Chain



6. Engineering Information

When you design any of the various conveyor systems using a DID small sized roller chain for conveyor systems, the following basic conditions must be satisfied.

a. Chain tension: The tensile strength acting on the chain must be positively smaller than the strength of the chain.

b. Strength of loaded components of chain: The loads acting on attachments, rollers of base chain, top rollers, side rollers, etc. must be positively smaller than the strength of these component.

c. Wear resistance life of chain: Lubrication conditions to ensure a sufficiently long wear life of the chain must be considered.

d. Sag adjustment of chain: The sag of the chain must be kept optimum by a tensioner, take-up device, or guide, etc.

e. Others: Prevention of rail wear, prevention of machine vibration, and other necessary factors must be considered.

General points of the above conditions are described below.

6-1 Calculation of chain tension

In general, at first tentatively determine the chain size to be used. (For this temporary decision, see "Tentatively determination of chain size" column. Then, obtain "theoretical chain tension T" (P. 139) based on the tentatively determined chain, and multiply it by "speed factor K", to obtain "substantial chain tension Ta". For safety, the substantial chain load must not be higher than the "maximum allowable load " stated in the table of dimensions of respective chain.

Safety condition of chain tension

Substantial chain tension Ta = Theoretical chain tension T × Speed factor K

Substantial chain tension < Maximum allowable tension

If this condition is not satisfied, raise the temporarily decided chain size by one size and re-calculate.

Tentative determination of chain size

① At first, assume that the mass (weight) ω_c {lbs/FT} per unit length of operational components such as chain and attachment as 10 % of the mass (weight) ω_1 {lbs/FT} of the conveyed object, to assume the unit (weight) of the operational components.

② From calculation formulas of P. 139, obtain "theoretical chain tension T" {lbs/FT} and "speed factor K", and calculate "substantial chain tension Ta" {lbs}.

③ In reference to the table of dimensions of chain, identify the minimum chain, the "maximum allowable load" of which is not lower than the " substantial chain tension Ta", as the "temporarily decided chain".

Value of speed factor K

If the running speed of the chain is higher, the service condition is more severe for the chain. The speed factor expresses the severity.

Multiply the "theoretical tension" by the "speed factor K", to obtain the "substantial chain tension".

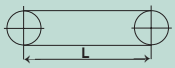
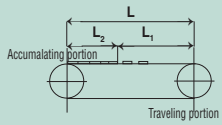
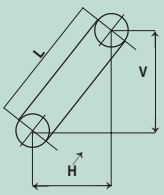
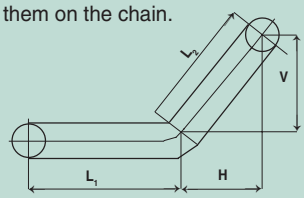
Speed factor K

Chain speed (FT/min)	Speed factor
Less than 49	1
49~98	1.2
98~164	1.4
164~230	1.6
230~295	2.2
295~360	2.8
360~394	3.2

In the case of resin rollers (including anti-static rollers), use the chain at 230 FT or less.

Note: When the chain speed exceeds 394 FT, please consult with us.

Calculation formulas of theoretical chain tension T

Conveying method	Calculation formulas of theoretical chain tension T	
	SI unit	Gravitational unit
To convey articles horizontally with them on the chain. 	$T = \{(W+2.1\times \omega c\times L)\ \times f_1 \times \frac{g}{1{,}000}$ $kW = \frac{T\times S}{54.6\times \eta}$	$T = (W+2.1\times \omega c\times L)\ \times f_1$ $kW = \frac{T\times S}{30{,}000\times \eta}$
To convey articles horizontally for accumulaion (free from conveyor) 	$T = \{(\omega_1+\omega c)\times L_1\times f1+\omega_2\times L_2\times f_2$ $+ (\omega_1+\omega c)\times L_2\times f_3+1.1\times\omega c\times L\times f_3\}$ $\times \frac{g}{1{,}000}$ $kW = \frac{T\times S}{54.6\times \eta}$	$T = (\omega_1+\omega c)\times L_1\times f1+\omega_2\times L_2\times f_2$ $+ (\omega_2+\omega c)\times L_2\times f_3+1.1\times\omega_2\times L_2\times f_2\}$ $kW = \frac{T\times S}{30{,}000\times \eta}$
To convey articles vertically. 	$T = \{(W+\omega c\times V)\times \frac{g}{1{,}000}$ $kW = \frac{W\times S}{54.6\times \eta}$	$T = W+\omega_2\times V$ $kW = \frac{W\times S}{30{,}000\times \eta}$ Note: L = V in this method.
To convey articles on a slope with them on the chain. 	$T = \{(W+\omega_2\times L)\times \frac{H\times f_1+V}{L}$ $+1.1\times\omega_c(H\times f_1-V)\}\times \frac{g}{1{,}000}$ $kW = \frac{S}{54.6\times \eta}\ \{T+\omega_c\times(H\times f_1-V)\}$	$T = (W+\omega_2\times L)\times \frac{H\times f_1+V}{L}$ $+1.1\times\omega_c(H\times f_1-V)$ $kW = \frac{S}{30{,}000\times \eta}(T+\omega_c\times(H\times f_1-V)$ In the above, if H x f1 -V < 0, then assume H x f1 - V = 0. In the above, if H x f1 - V > 0, then assume H x f1 - V = 0.
To convey articles on a slope and horizontal surface with them on the chain. 	$T = \{(\frac{W}{\quad} +2.1\times\omega c)\times L_2\times f_1$ $+ \{(\frac{W}{L_1+L_2} +\omega c)\times (H\times f_1+V)$ $+1.1\times\omega_c(H\times f_1-V)\}\times \frac{g}{1{,}000}$ $kW = \frac{S}{54.6\times \eta}\ \{T+\omega_c\times(H\times f_1-V)\}$	$T = (\frac{W}{L_1+L_2} +2.1\times\omega c)\times L_1\times f_1$ $+ \{(\frac{W}{L_1+L_2} +\omega c)\times (H\times f_1+V)$ $+1.1\omega_c\times (H\times f_1-V)$ $kW = \frac{S}{30{,}000\ \eta}\ \{T+\omega_c\times(H\times f_1-V)\}$ In the above, if H x f1 -V < 0, then assume H x f1 - V = 0. In the above, if H x f1 - V > 0, then assume H x f1 - V = 0.

Meanings of symbols.

		SI units	Gravitational units
T	: Theoretical chain tension	kN	(lbs)
W	: Total mass (total weight) of the conveyor	kg	(lbs)
$\omega 1$	: Mass (weight) of conveyed articles per unit machine length in the traveling portion	kg/m	(lbs/ft)
	$\omega 1$ = Total mass (total weight) of conveyed articles in the traveling portion {kg (or lbs for USA). Length traveling portion L1 (or ft for USA)}.	kg/m	(lbs/ft)
$\omega 2$	: Mass (weight) of conveyed articles per unit machine length in the accumulating portion	kg/m	(lbs/ft)
	$\omega 2$ = Total mass (total weight) of conveyed articles in the accumulating portion {kg (or lbs for USA). Length of accumulating portion L2 (or ft for USA)}.	m/min	(ft/min)
ωc	: Weight of operating components such as chain and attachments per unit length		
S	: Chain speed (traveling speed of chain)		
η	: Transmission mechanical efficiency of drive		
g	: Gravitational acceleration, 9.80665 m/s2		
kw	: Required power		

- As unit symbols, SI units and gravitational units stated together. Parenthesized units are gravitational units. For the weight (lbs) as the mass (lbs), the same value is used.
- For L, L1, L2, V and H, see the illustrations showing conveying methods.
- For coefficients of friction f1, f2 and f3, see P. 140.

Values of coefficients of friction

f1: Coefficient of traveling friction of chain (the coefficient of friction is decided differently for the following three cases.)

- When the rollers of a chain roll on a rail . . . . . .Table 1
- When side rollers roll on a floor . . . . . .Table 2
- When plates slide on a rail as in the case of a flat plate type chain . . . . . .Table 3

Also, for f1 used for calculation of the traveling portion of a free flow conveyor, the same values are used.

Table 1

f1 used when the rollers of a chain roll			
Kind of chain		Lubrication	
		Not provided	Provided
Chain with iron rollers	**S** rollers	0.21	0.14
	R rollers	0.12	0.08
Chain with resin rollers	**S** rollers	0.12	
	R rollers	0.08	
Sintered bushing roller chain	**S** rollers	0.14	
	R rollers	0.08	

Table 2

f1 used when side rollers roll on a floor		
Kind of chain	Lubrication	
	Not provided	Provided
Chain with iron rollers	0.09	0.06
Chain with resin rollers	0.06	
Chain with anti-static resin rollers	0.06	
Chain with resin rollers and brakes	0.09	

Table 3

f1 used when the plates of a chain slide (in he case of iron rail)			
Without lubrication	0.3	With lubrication	0.2

f2 : Coefficient of friction acting between conveyed articles and chain in the accumulating portion of a free flow conveyor (that is, it is a frictional resistance acting when the side rollers or top rollers roll while being loaded with conveyed object. Table 4 shows the values.)

Table 4

Kind of side rollers or top rollers	Value of **f2**	
	Without lubrication	With lubrication
Iron rollers	0.09	0.06
Resin rollers	0.06	—
Anti-static resin rollers	0.06	—
Resin rollers with brakes	0.09	—

6-2 Strength of Loaded Components

The load of conveyed articles act on the attachments, top rollers, side rollers, etc. of a chain. Confirm that the strength of these load components is sufficient.

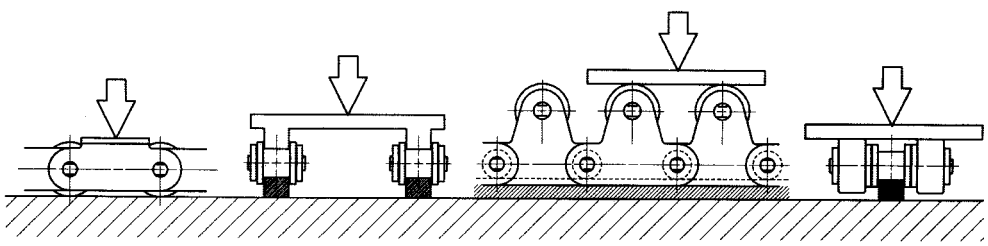
Various strength calculation methods are available for various chain use methods. Only the allowable loads of rollers of the base chain proper, top rollers and side rollers are shown.

Allowable loads per one roller of chain proper, top roller and side roller

Unit N(lbs)

Chain No. / DID	Roller of base chain				Top roller				Side roller			
	Iron		Resin		Iron		Resin		Iron		Resin	
RC40	156	(35.2)	—	—	156	(35.2)	49	(11)	156	(35.2)	49	(11)
RC2040	156	(35.2)	—	—	156	(35.2)	49	(11)	156	(35.2)	49	(11)
RC2042	627	(140.8)	196	(44)	156	(35.2)	49	(11)	156	(35.2)	117	(26.4)
RC50	225	(50.6)	—	—	225	(50.6)	68	(15.4)	225	(50.6)	68	(15.4)
RC2050	225	(50.6)	—	—	225	(50.6)	68	(15.4)	225	(50.6)	68	(15.4)
RC2052	989	(215.6)	294	(66)	225	(50.6)	68	(15.4)	225	(50.6)	137	(30.8)
RC60	372	(83.6)	—	—	372	(83.6)	107	(24.2)	372	(83.6)	107	(24.2)
RC2060H	372	(83.6)	—	—	372	(83.6)	107	(24.2)	372	(83.6)	107	(24.2)
RC2062H	1530	(345.4)	490	(110)	372	(83.6)	107	(24.2)	372	(83.6)	156	(35.2)
RC80	627	(140.8)	—	—	627	(140.8)	176	(39.6)	627	(140.8)	176	(39.6)
RC2080H	627	(140.8)	—	—	627	(140.8)	176	(39.6)	627	(140.8)	176	(39.6)
RC2082H	2540	(572)	882	(198)	627	(140.8)	176	(39.6)	627	(140.8)	—	—
RC100	912	(204.6)	—	—	912	(204.6)	294	(66)	912	(204.6)	294	(66)
RC2100H	912	(204.6)	—	—	912	(204.6)	294	(66)	912	(204.6)	294	(66)
RC2102H	3660	(822.8)	1270	(286)	912	(204.6)	294	(66)	912	(204.6)	—	—

Examples of support of conveyed object



6-3 Wear Life of Small Sized Roller Chain

When wear of a chain cannot be avoided, the chain is a consumable product. However, if lubrication is practiced as much as possible, and if the calculation of 6-1 and 6-2 is practiced very carefully, there will be no practical problem.

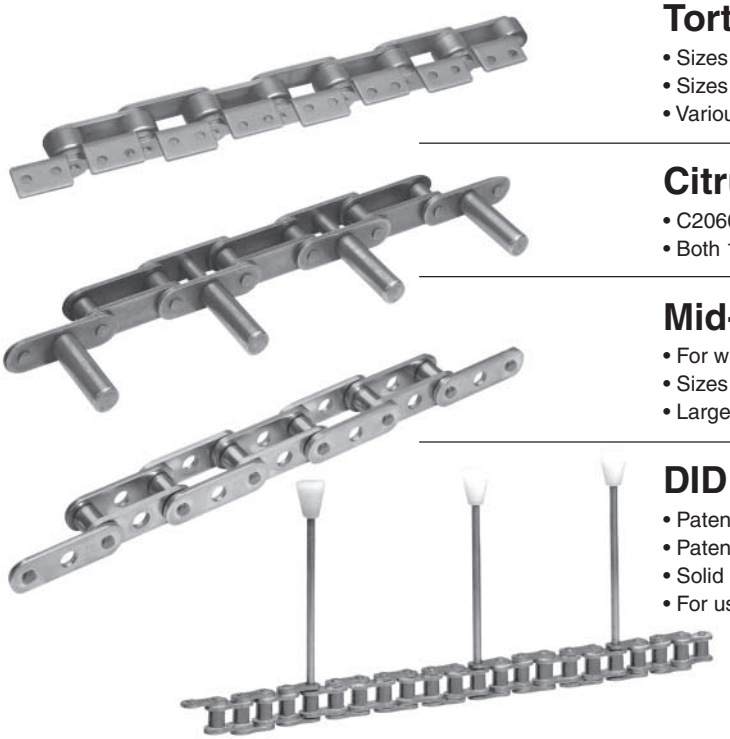
See the maintenance of transmission chain (P. 97). If chain elongation occurs frequently, we recommend selection of the Ultimate Life Chain Series.

6-4 Adjustment of Chain Span and Other Maintenance

See “Transmission chains” (P.97)

DID Products Which Are Not Covered in This Catalog

Specialty Roller Chain



Tortilla Chain

- Sizes 40, 50, 60, 40-2, 50-2
- Sizes C2052, C2062H, C2082H
- Various attachments & hole diameters

Citrus Chain

- C2060H with D5 Extended Pin
- Both 1\2" & 9\16" pin diameters available

Mid-Pitch Hole Chain

- For wire belt conveyors
- Sizes 2050, 2060H, 2080H
- Large Roller sizes 2052, 2062H, 2082H

DID PIN OVEN CHAIN

- Patented X-Ring, O-Ring or Standard Chain
- Patented Spring Loaded Tip
- Solid Bushings
- For use in temperatures to 425°F

- **ENGINEERING CLASS CHAIN**
- **MOTORCYCLE CHAIN**
  - Motorcycle Drive Chain
- **CONVEYOR SYSTEMS**
  - Steel Handling Conveyor Systems
  - Bulk Handling Conveyor Systems
  - Material Handling Conveyor Systems
  - Control System of the Conveyor Systems
  - Coil Conveyors
  - Walking-Beams
  - Transfer Conveyors
  - Roller Tables
  - Down/Up Enders
  - Coil Car (CROSLOADER)
  - Transport Equipment
  - Bucket Elevator (NE Type: Normal Speed Type)
  - Bucket Elevator (NSE Type: High Speed Type)
  - Belt-Bucket Elevators
  - AEROBELT (Air Film Supported Belt Conveyor)
  - Continuous Flow Conveyors
  - Dust Conveyors
  - Pan Conveyors
  - Long Pan Conveyors
  - Apron Conveyors
  - Chain/Apron Feeders
  - Drag-Chain Conveyors
  - MOCVEYOR (Bulk Transport Conveyor for Adhesive Materials)
  - Auto-Motors (Auto Monorail Conveyor)
  - Power-And-Free Conveyors
  - Trolley Conveyor Systems
  - Drop/Table Lifters
  - Slat Conveyors
  - Tow-Line Conveyor Systems
  - Roller Conveyors
  - Free Flow Conveyors
  - Transport Systems for Garbage Transaction Plants
  - Other Transport Systems
- **CONVEYOR PARTS**
  - Safety Relay
  - Anti-Back Equipment
  - Take-Up Equipment
  - Various Casting
  - One Touch Window for Inspection (Dr. Window®)
- **RIMS**
  - Motorcycle Light Alloy Rims
  - Motorcycle Steel Rims
- **SPOKES**
  - Motorcycle Spokes
- **WHEELS**
  - Wheels for Agricultural Machinery
  - Wheels for Industrial Machinery
  - Small-Sized Wheels for Scooters
- **ALUMINUM PRODUCTS**
  - Motorcycle Aluminum-Alloy Swing Arms
- **PLATED PRODUCTS**
  - Aluminum Forming Products
  - Aluminum Welding Products
  - Aluminum Chrome Plating Products
  - Surface Treated Products
- **AMENITY SYSTEMS**
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  - Stair Lifts for Wheel Chairs "Rakuchin-Go"

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RC50-4	19	RC120H	29	RC180HK-3	41	RC25N	54
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RC60	20	RC160H	29	RC200HK-2	41	RC41N	54
RC60-2	20	RC200H	29	RC200HK-3	41	RC40N	54
RC60-3	20	RC240H	29	RC240HK	41	RC50N	54
RC60-4	20	RC80K	30	RC240HK-2	41	RC60N	54
RC60-5	20	RC100K	30	RC240HK-3	41	RC80N	54
RC80	21	RC120K	30	RC80HKSR	42	RC100N	54
RC80-2	21	RC140K	30	RC100HKSR	42	RC120N	54
RC80-3	21	RC160K	30	RC120HKSR	42	RC140N	54
RC80-4	21	RC180K	30	RC140HKSR	42	RC160N	54
RC80-5	21	RC200K	30	RC160HKSR	42	RC25-E	55
RC100	22	RC240K	30	RC180HKSR	42	RC35-E	55
RC100-2	22	RC80KSR	32	RC200HKSR	42	RC40-E	55
RC100-3	22	RC80KSR-2	32	RC240HKSR	42	RC50-E	55
RC100-4	22	RC80KSR-3	32	RC25HT	45	RC60-E	55
RC100-5	22	RC100KSR	33	RC35T	45	RC80-E	55
RC120	23	RC100KSR-2	33	RC40D	45	RC100-E	55
RC120-2	23	RC100KSR-3	33	RC50D	45	RC120-E	55
RC120-3	23	RC1200KSR	34	RC60D	45	RC40-WE	55
RC120-4	23	RC120KSR-2	34	RC80D	45	RC50-WE	55
RC120-5	23	RC120KSR-3	34	RC100D	45	RC60-WE	55
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DAIDO® CORPORATION OF AMERICA

P.O. Box 7659
1031 Fred White Blvd.
Portland, TN 37148
Toll Free: 866.219.9972
Tel: 615.323.4020
Fax: 615.323.4015
www.daidocorp.com

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